

STATE OF NORTH CAROLINA
COUNTY OF WAKE

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION
13 CVS 4061

STATE OF NORTH CAROLINA *ex rel.*)
NORTH CAROLINA DEPARTMENT OF)
ENVIRONMENT AND NATURAL)
RESOURCES, DIVISION OF WATER)
QUALITY,)
)
Plaintiff,)
)
v.)
)
DUKE ENERGY PROGRESS, INC.,)
)
Defendant)
)

STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION
13 CVS 9352

STATE OF NORTH CAROLINA *ex rel.*)
NORTH CAROLINA DEPARTMENT OF)
ENVIRONMENT AND NATURAL)
RESOURCES, DIVISION OF WATER)
QUALITY,)
)
Plaintiff,)
)
v.)
)
DUKE ENERGY CAROLINAS, LLC,)
)
Defendant)
)

DRAFT CONSENT ORDER

Plaintiff State of North Carolina *ex rel.* North Carolina Department of Environment and Natural Resources, Division of Water Quality (“DENR”) filed actions against Duke

Energy Progress, Inc. (“Duke Energy Progress”) and Duke Energy Carolinas, LLC (“Duke Energy Carolinas”)¹ for claims related to the discharge of wastewater at power plants operated by the two companies in North Carolina.² DENR, Duke Energy Progress and Duke Energy Carolinas (the “parties”) enter into this Consent Order in full settlement of the following proceedings in Superior Court: *State of North Carolina ex rel. North Carolina Department of Environment and Natural Resources, Division of Water Quality v. Duke Energy Progress, Inc.*, No. 13 CVS 4061, pending in Wake County (“Wake Action”); and *State of North Carolina ex rel. North Carolina Department of Environment and Natural Resources, Division of Water Quality v. Duke Energy Carolinas, LLC*, No. 13 CVS 9352, pending in Mecklenburg County (“Mecklenburg Action”). This matter being before the Court on a joint motion for entry of a Consent Order, it appears to the satisfaction of the Court that the parties have consented to the entry of the following order without further adjudication of the issues raised in the Complaint in the Wake Action and the Complaint in the Mecklenburg Action (collectively, the “Complaints”), but in full settlement of all factual and legal issues raised in those Complaints and these underlying actions.

NOW THEREFORE, without admission of the non-jurisdictional allegations in the Complaints, without further adjudication of any issue of fact or law pertaining to these actions, and upon consent of the parties, IT IS ORDERED AND ADJUDGED THAT:

¹ Duke Energy Progress, Inc. and Duke Energy Carolinas, LLC are separate but affiliated operating companies. In some instances, they are referred to in this Consent Order as the “companies,” and each may be referred to as the “company.”

² The power plants at issue in these cases are referred to collectively as the “Power Plants.”

I. PARTIES

1. Plaintiff in both the Wake Action and the Mecklenburg Action (sometimes hereafter, “these actions”) is the sovereign State of North Carolina (“State”). These actions were brought upon the relation of DENR and its Division of Water Quality (“DWQ”), an agency of the State established pursuant to the provisions of N.C. Gen. Stat. § 143B-279.1 *et seq.*, and vested with the statutory authority regarding the environment of the State and the enforcement of its environmental laws and rules, including those pertaining to surface water quality and groundwater quality, pursuant to N.C. Gen. Stat. § 143-211 *et seq.*

2. Defendant Duke Energy Progress, prior to April 29, 2013, was Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc. Duke Energy Progress is a corporation organized and existing under the laws of the State and has a corporate office and principal place of business in Wake County located at 410 South Wilmington Street, Raleigh, Wake County, North Carolina 27601.

3. Defendant Duke Energy Carolinas is a corporation organized and existing under the laws of the State and has a corporate office Mecklenburg County. Duke Energy Carolinas has a principal place of business in both Mecklenburg County located at 550 South Tryon Street, Charlotte, Mecklenburg County, North Carolina 28202 and a place of business in Wake County located at 410 South Wilmington Street, Raleigh, Wake County, North Carolina 27601.

II. JURISDICTION AND VENUE

4. This Court has jurisdiction over the subject matter and the parties to these actions pursuant to N.C. Gen. Stat. §§ 1-75.4, 1-79, and 143-215.6C. DENR has reasonable cause to believe that Duke Energy Progress and Duke Energy Carolinas have violated or are

threatening to violate provisions of N.C. Gen. Stat. § 143-215.1 and 15A N.C. Admin. Code (“NCAC”) Subchapter 2L. The requirements contained in this Consent Order are necessary to prevent or abate the alleged violations or threatened violations.

5. Both actions have been designated as exceptional cases and the undersigned assigned to hear them pursuant to Rule 2.1 of the General Rules of Practice for the Superior and District Courts.

6. Venue in the Wake Action (Case No. 13 CVS 4061) is proper in Wake County under N.C. Gen. Stat. §§ 1-79 and 143-215.6C.

7. Venue in the Mecklenburg Action (Case No. 13 CVS 9352) is proper in Mecklenburg County under N.C. Gen. Stat. §§ 1-79 and 143-215.6C.

III. COVERED FACILITIES

8. Duke Energy Progress owns and operates the Asheville Steam Electric Generating Plant, located in Buncombe County (“Asheville Plant”);

9. Duke Energy Carolinas owns the Riverbend Steam Station, located in Gaston County (“Riverbend Station”), which has been retired, in that it is no longer used for the production of electricity.

IV. BACKGROUND

10. These actions were filed on behalf of DENR pursuant to its authority under N.C. Gen. Stat. § 143-215.6C to abate the discharge of wastewater not permitted by a National Pollutant Discharge Elimination System (“NPDES”) Permit, to enforce existing NPDES permits, and to abate discharges to groundwater that result in violations of North Carolina’s groundwater standards, located at 15A NCAC Subchapter 2L.

Asheville Plant

11. The Asheville Plant holds NPDES Permit No. NC0000396.
12. NPDES Permit No. NC0000396 authorizes discharges from the following outfalls:
 - a. Outfall 001, which discharges to the French Broad River, receives effluent from the Ash Pond Treatment System, including an ash pond constructed in 1982 (the “1982 ash pond”);
 - b. Outfall 002, which discharges to Lake Julian, receives once-through, non-contact cooling water; and
 - c. Stormwater Outfalls SW-1, SW-2, SW-3, SW-4, and SW-6, which discharge to Lake Julian, and Outfall SW-5, which discharges to an unnamed tributary of Powell Creek in the French Broad River Basin.
13. The Asheville Plant’s wastewater treatment system also includes components that discharge only to other components of the system, including:
 - a. an ash pond constructed in 1964 (the “1964 ash pond”), which can discharge to Outfall 001;
 - b. a Chemical Metal Cleaning Treatment System, which can discharge through internal Outfall 004 and flow to Outfall 001; and
 - c. a Flue Gas Desulfurization wet scrubber wastewater treatment system, which discharges through internal Outfall 005 and flows to Outfall 001.

14. The Asheville Plant's ash ponds have a compliance boundary (as the term is defined under 15A NCAC 2L.0102(3)), the location of which has been determined pursuant to 15A NCAC 2L.0107 and approved by DWQ.

Riverbend Station

15. The Riverbend Station holds NPDES Permit No. NC0004961.

16. NPDES Permit No. NC0004961 authorizes discharges from the following outfalls:

- a. Outfall 001, for discharge of once-through cooling water to Mountain Island Lake;
- b. Outfall 002, for discharges from the Ash Pond to Mountain Island Lake; and
- c. Outfall 002A, which discharges yard sump overflows to Mountain Island Lake.

17. The Riverbend Station's ash pond has a compliance boundary (as the term is defined under 15A NCAC 2L.0102(3)), the location of which has been determined pursuant to 15A NCAC 2L.0107 and approved by DWQ.

V. SCOPE

18. The express purpose of the parties in entering into this Consent Order is for Duke Energy Progress and Duke Energy Carolinas to:

- a. pay a civil penalty to resolve the past violations at the Power Plants alleged in the Complaints;
- b. undertake investigation and, as necessary, remedial action at the Power Plants to address existing conditions; and

- c. assure current and future compliance with N.C. Gen. Stat. §§ 143-215.1(a)(1) and (6) and the North Carolina Groundwater Standards contained in 15A NCAC Subchapter 2L.

The following sections of this Consent Order constitute the injunctive relief and remedial measures that Duke Energy Progress and Duke Energy Carolinas shall undertake.

19. This Consent Order sets forth a schedule according to which Duke Energy Progress and Duke Energy Carolinas will, under the oversight of DWQ, investigate potential noncompliance with the requirements of N.C. Gen. Stat. §§ 143-215.1(a)(1) and (6), and address activities that are determined to be noncompliant.

20. To the extent that the work set forth in this Consent Order does not bring the Power Plants into full compliance, no provision of this Consent Order shall limit DWQ's authority to require additional measures or take further enforcement action for violations not covered by this Consent Order.

VI. PRE-EXISTING REMEDIAL MEASURES

Asheville Plant

21. Since 2006, Duke Energy Progress has been engaged in ongoing efforts to maintain and upgrade the ash ponds and associated components of its wastewater treatment system at the Asheville Plant.

22. Actions taken by Duke Energy Progress have included:
- a. Dewatering and removal of ash from the 1982 pond to increase storage capacity.
 - b. Structural improvements to the 1964 pond dam.
 - c. Installation of a drainage system to ensure stability of the 1964 pond.

- d. Dewatering of and sediment removal from a stormwater pond to prepare for its eventual use as a settling basin.
- e. Construction of a lined stilling basin.

23. From 2006 to 2010, Duke Energy Progress engaged in voluntary groundwater monitoring at the Asheville Plant and submitted the results to DWQ. In 2010, Duke Energy Progress, acting with oversight from DWQ, installed additional groundwater monitoring wells and began submitting mandatory groundwater monitoring data to DWQ.

24. Since 2011, DWQ has worked with Duke Energy Progress to implement DWQ's June 17, 2011 Policy for Compliance Evaluation of Long-Term Permitted Facilities with No Prior Groundwater Monitoring Requirements (the "Policy for Compliance Evaluation"). The Policy for Compliance Evaluation establishes an approach to evaluate groundwater compliance at long-term facilities. Specifically, the Policy for Compliance Evaluation requires DWQ staff and responsible parties to consider multiple factors before determining if groundwater concentration in samples taken at the permitted facility are a violation of groundwater standards or if the concentrations are naturally occurring. The parties believe and intend that that this Consent Order is consistent with this Policy for Compliance Evaluation.

25. In 2013, Duke Energy Progress retained SynTerra Corporation to evaluate groundwater data and prepare a site conceptual model in response to the March 29, 2012 DWQ correspondence requesting assessment activities. The site conceptual model report was submitted to DWQ via cover letter dated April 22, 2013.

Riverbend Station

26. From 2008 to 2010, Duke Energy Carolinas engaged in voluntary groundwater monitoring at the Riverbend Station and submitted the results to DWQ. In 2010, Duke Energy Carolinas began submitting mandatory groundwater monitoring data to DWQ. In 2011, this groundwater monitoring program was incorporated into a groundwater monitoring plan pursuant to the facility's NPDES permit NC0004961.

27. Since 2011, DWQ has worked with Duke Energy Carolinas to implement DWQ's Policy for Compliance Evaluation at the Riverbend Station.

28. In 2012, Duke Energy Carolinas retained HDR Engineering, Inc. of the Carolinas to evaluate groundwater data and prepare a site conceptual model in response to the March 16, 2012 DWQ correspondence requesting assessment activities. On May 31, 2013, the results of this assessment were submitted to DWQ.

VII. CIVIL PENALTIES

29. Duke Energy Progress agrees to pay the State of North Carolina within 30 days of the entry of this Consent Order a total of \$60,200.24, reflecting both a civil penalty (\$51,500.00) and reimbursement for DWQ's expenses (\$8,700.24) related to its investigation and oversight of the Asheville Plant matter.

30. Duke Energy Carolinas agrees to pay the State of North Carolina within 30 days of the entry of this Consent Order a total of \$38,911.48, reflecting both a civil penalty (\$36,000.00) and reimbursement for DWQ's expenses (\$2,911.48) related to its investigation and oversight of the Riverbend Plant matter.

31. Civil penalties paid under this Consent Order resolve alleged violations or threatened violations known to DWQ that occurred or existed on or before July 15, 2013.

VIII. COMPLIANCE ACTIVITIES

Asheville Plant

32. Duke Energy Progress shall continue to conduct groundwater monitoring to support site assessment activities and to evaluate compliance with 15A NCAC 2L at the Asheville Plant and shall report results to DWQ. Groundwater monitoring shall be conducted according to the approved sampling plan or according to any subsequent plan as determined by DWQ.

33. No later than _____ [45 days from the date of the entry of this Consent Order], Duke Energy Progress shall submit to DWQ a proposed site assessment (“proposal”) and schedule for the completion and submission of a site assessment report in accordance with 15A NCAC 2L.0106(g), assessing the cause, significance and extent of exceedances of the groundwater standards for iron, manganese, boron, thallium, and total dissolved solids at or beyond the Asheville Plant’s compliance boundary. Assessment activities shall determine:

- a. the source and cause of the contamination;
- b. any imminent hazards to public health and safety and actions taken to mitigate them in accordance with 15A NCAC 2L.0106(f);
- c. all receptors and significant exposure pathways;
- d. the horizontal and vertical extent of soil and groundwater contamination and all significant factors affecting contaminant transport; and
- e. geological and hydrogeological features influencing the movement, chemical, and physical character of the contaminants.

The proposed schedule will provide for the completion of assessment activities and submission of the final report as soon as practicable. Once the proposal and schedule have been approved by DWQ, they will be enforceable as though set out in this Consent Order, including by the imposition of stipulated civil penalties in accordance with Article IX of this Consent Order. Unless Duke Energy Progress demonstrates to the satisfaction of DWQ using statistical or other approved methods that a particular constituent no longer exceeds the groundwater standard at or beyond the compliance boundary, and that exceedances for that constituent are not likely to recur, Duke Energy Progress shall comply with the corrective action requirements of 15A NCAC 2L.0106(c).

34. No later than ____ [60 days of the entry of this Consent Order], Duke Energy Progress shall submit to DWQ a proposal and schedule for determining the naturally occurring concentration of substances in the site's groundwater such that an appropriate statistical comparison may be made between compliance wells and background wells. The proposal and schedule will include the submission of a final report. Once the proposal is approved and the schedule established by DWQ, they will be enforceable as though they were set out in this Consent Order. The final report will address those groundwater substances detected above the standard in compliance boundary wells, as identified in the Wake Amended Complaint in ¶¶ 90 through 97. The report shall include, but not be limited to:

- a. an assessment and evaluation of existing background wells and associated data, including the data's applicability to compliance boundary wells and screened intervals;

- b. evaluation of data from off-site wells and other data sources for naturally occurring groundwater conditions, to the extent such off-site wells and other data sources can be shown to accurately represent on-site conditions; and
- c. a detailed analysis of stratigraphy, horizontal and vertical groundwater flow, and groundwater chemistry within the three areas of the site: 1964 ash pond, 1982 ash pond and French Broad River floodplain.

35. If the evaluation indicates that natural concentrations vary across the three areas and (or) vary with groundwater flow horizon, or if existing background wells or associated data are insufficient for the purpose of determining the naturally occurring substance concentrations pursuant to 15A NCAC 2L.0201(b)(3), Duke Energy Progress shall, within 60 days after receiving notice of this conclusion, initiate additional evaluations, assessments or other activities to assist with making the determination.

36. No later than 120 days of the DWQ determination of naturally occurring concentrations, Duke Energy Progress shall submit a report evaluating whether or not substances in compliance boundary wells (other than those addressed in ¶ 34 above) exceed the groundwater standards. Pursuant to 15A NCAC 2L.0202(b)(3), where naturally occurring substances exceed the established standard, the standard shall be the naturally occurring concentration as determined by DWQ. The report shall incorporate statistics and other acceptable comparative methods to evaluate compliance. All compliance boundary wells and constituents occurring above the groundwater standard, as determined by DWQ pursuant to 15A NCAC 2L.0202(b)(3), shall be addressed. DWQ shall consider this report in determining which substances and wells exceed the groundwater standard.

37. Within 60 days of receipt of notice of any determination by DWQ that a groundwater constituent exceeds the groundwater standard at or beyond the compliance boundary pursuant to Paragraph ¶ 36, Duke Energy Progress shall submit to DWQ a plan to conduct a site assessment in accordance with 15A NCAC 2L.0106(g), assessing the cause, significance and extent of the exceedance. Assessment activities shall determine:

- a. the source and cause of the contamination;
- b. any imminent hazards to public health and safety and actions taken to mitigate them in accordance with 15A NCAC 2L.0106(f);
- c. all receptors and significant exposure pathways;
- d. the horizontal and vertical extent of soil and groundwater contamination and all significant factors affecting contaminant transport; and
- e. geological and hydrogeological features influencing the movement, chemical, and physical character of the contaminants.

The site assessment plan will include a schedule for completion of assessment activities and submission of a final report. Once approved by DWQ, the schedule will be enforceable as though set out in this Consent Order. For each such exceedance, Duke Energy Progress shall comply with the corrective action requirements of 15A NCAC 2L.0106.

38. Duke Energy Progress shall implement the plan described in paragraphs 39-45 to identify and address any unpermitted discharges to surface waters at the Asheville Plant.

39. No later than _____ [180 days of the entry of this Consent Order], Duke Energy Progress shall submit a topographic map at a scale approved by DWQ that indicates

the locations of all toe drain outfalls associated with the 1964 and 1982 ash ponds. For each toe drain outfall, the map will:

- a. specify its latitude and longitude;
- b. specify whether the discharge is continuous or intermittent; and
- c. provide a monthly average flow measurement, including a description of the method used to measure flow.

With the topographic map, Duke Energy Progress will submit to DWQ a schedule according to which Duke Energy Progress shall conduct water quality sampling of the toe drain outfalls in order to further characterize the discharging water. Within 30 days of approval of the schedule by DWQ, Duke Energy Progress shall begin to sample the toe drain outfalls in accordance with the schedule and submit the samples for water quality analysis. Water quality analyses shall include the same parameters required for groundwater samples and for surface water discharges, as specified in the NPDES permit. If Duke Energy Progress demonstrates to the satisfaction of DWQ that sampling of a toe drain outfall is unlikely to generate usable data or is otherwise infeasible, Duke Energy Progress will not be required to sample that toe drain outfall.

40. No later than _____ [180 days from the entry of this Consent Order], Duke Energy Progress shall submit a topographic map at a scale approved by DWQ that indicates the locations of any non-engineered discharges of wastewater (“seeps”) from the 1964 and 1982 ash ponds that are not captured by an engineered toe drain and that are known to Duke Energy Progress either through a routine dike inspection or by identification in the SynTerra site conceptual model report. For each such seep, the map will:

- a. specify its latitude and longitude;

- b. specify whether the discharge is continuous or intermittent;
- c. provide a monthly average flow measurement, including a description of the method used to measure flow;
- d. specify whether the discharge from the seep reaches surface waters; and
- e. if the discharge from the seep reaches surface water, identify the location where the seep reaches surface water on the map (to include latitude and longitude).

41. No later than _____ [180 days from the entry of this Consent Order], Duke Energy Progress shall submit a plan to determine whether toe drain or seep discharges from the 1964 or the 1982 ash ponds have reached surface waters of the French Broad River basin and are causing violations of water quality standards. The plan shall include the following:

- a. sampling of creeks and/or drainage channels draining to the French Broad River from the floodplain to the east of Interstate Highway 26;
- b. sampling of culverts conveying water under Interstate Highway 26 from the Asheville Plant to the floodplain; and
- c. sampling of the French Broad River upstream and downstream of the creeks and/or drainage channels sampled pursuant to subparagraph (a).

The plan shall also provide:

- a. water quality analysis for the same parameters required for groundwater and surface water sampling as specified in the NPDES permit;
- b. frequency and duration of the sampling activities; and

- c. reporting requirements.

42. For any discharge, whether toe drain or seep, that is determined to be causing a violation of N.C. Gen. Stat. § 143-215.1, or any other law, Duke Energy Progress shall, within 180 days of the determination, do one of the following:

- a. stop the discharge,
- b. capture and route the discharge so that it is discharged through an NPDES permitted outfall,
- c. address the seep using Best Management Practices (“BMPs”) approved by DWQ pursuant to ¶ 43,
- d. propose alternative BMPs subject to the approval of DWQ, or
- e. apply for an NPDES discharge permit or permit amendment to cover the discharge.

43. No later than _____ [180 days from the date of this Consent Order], Duke Energy Progress shall submit to DWQ for approval a set of BMPs designed to prevent unpermitted discharges from the 1964 and 1982 ash ponds of unpermitted pollutants to surface waters. Thereafter, Duke Energy Progress may submit additional BMPs for DWQ approval.

44. No later than _____ [30 days from the entry of this Consent Order], Duke Energy Progress shall submit to DWQ a plan for identifying new seeps on the dike areas of the 1964 and 1982 ash ponds that arise after the submission of the maps described in ¶¶ 39 and 40 and which require action pursuant to ¶¶ 41 and 42. The plan shall include, at a minimum, the following elements:

- a. a procedure for routine inspection of the dike areas of the Asheville

Plant east of Interstate Highway 26 and downgradient of the 1964 and 1982 ash ponds to identify indicators of potential new seeps;

- b. a decision flow chart (including criteria and procedures) for determining whether a new seep is actually present; and
- c. a procedure for notifying DWQ after a new seep is confirmed.

45. No later than _____ [12 months from the entry of this Consent Order], Duke Energy Progress shall submit any information, forms, and fees necessary to request that DWQ incorporate the process described in ¶¶ 38-44 into the Asheville Plant's NPDES permit.

46. For any areas where the compliance boundary extends into a river, stream, or lake, Duke Energy Progress shall sample and analyze water from those features, in accordance with directions from DWQ, to determine compliance with applicable water quality standards. Duke Energy Progress shall complete sampling and water quality analysis within 180 days of receiving directions from DWQ.

47. Duke Energy Progress shall sample water supply wells selected by, and at a frequency established by, the DWQ to assess whether coal combustion residual constituents are present in the wells. This requirement will only apply to wells for which access is granted by the landowner. If contaminants determined to be from coal combustion activities occurring at the site are found to be present in the water supply wells above the groundwater standard as specified in 15A NCAC 2L.0202, Duke Energy Progress will provide alternate water for those impacted wells pursuant to 15A NCAC 2L.0106(b). Access to water supply wells will be facilitated by DWQ.

48. If the investigations described in this Section, in combination with any other

appropriate information, demonstrate that corrective action is required to bring the Asheville Plant into compliance with N.C. Gen. Stat. §§ 143-215.1(a)(1) and (6) and the groundwater standards, Duke Energy Progress will propose corrective action measures according to 15A NCAC 2L.0106. Upon approval by DWQ, Duke Energy Progress will implement the approved corrective action measures.

49. In order to reduce its future reliance on the 1982 coal ash pond, Duke Energy Progress will evaluate the costs and feasibility of installing a dry handling system for processing fly ash at the Asheville Plant and, no later than _____ [12 months from the date of this Consent Order], submit a report to DWQ containing the results of that evaluation.

50. Duke Energy Progress shall accept a limit for total mercury annual average at Outfall 001 of 0.1 µg/l when NPDES Permit No. NC0000396 is renewed. This represents a reduction in the allowable mercury discharge from this outfall of 84.13%. This reduction in allowable discharge is in excess of the target 67% reduction targeted by the statewide mercury TMDL. Previously submitted fish tissue data for mercury, over the last three years, indicates that fish tissue mercury samples did not demonstrate an increasing concentration gradient from upstream to downstream based on the percentage of samples with results greater than 0.4 ppm which is the Department of Health and Human Services (“DHHS”) fish consumption advisory action level for mercury.

Riverbend Station

51. Duke Energy Carolinas shall continue to conduct groundwater monitoring to support site assessment activities and to evaluate compliance with 15A NCAC 2L at the Riverbend Station and shall report results to DWQ at the times already determined for such submittals. Groundwater monitoring shall be conducted according to the approved sampling

plan or according to any subsequent plan as determined by DWQ.

52. No later than _____ [60 days from the entry of this Consent Order], Duke Energy Carolinas shall submit to DWQ a proposal and schedule for determining the naturally occurring concentration of substances in the site's groundwater such that an appropriate statistical comparison may be made between compliance wells and background wells. The proposal and schedule will include the submission of a final report. Once the proposal is approved and the schedule is established by DWQ, they will be enforceable as though they were set out in this Consent Order. The final report will address those groundwater substances detected above the standard in compliance boundary wells as identified in the Mecklenburg Complaint in ¶¶ 61 and 62, and via modeled concentrations. The report shall include, but not be limited to:

- a. an assessment and evaluation of existing background wells and associated data, including the data's applicability to compliance boundary wells;
- b. if necessary, evaluation of data from off-site wells and other data sources for naturally occurring groundwater conditions, to the extent such off-site wells and other data sources can be shown to accurately represent on-site conditions; and
- c. a detailed analysis of stratigraphy, groundwater flow, and groundwater chemistry across the Riverbend site.

53. If the evaluation indicates statistically significant variation in the concentration of naturally occurring concentrations dependent upon hydrogeologic setting, the concentration of naturally occurring substances shall be determined for each setting for

accurate comparison to compliance boundary well data. If DWQ concludes that existing background wells or associated data are insufficient for the purpose of determining the naturally occurring substance concentrations pursuant to 15A NCAC 2L.0201(b)(3), Duke Energy Carolinas shall, within 60 days after receiving notice of this conclusion, initiate additional evaluations, assessments or other activities to assist with making the determination.

54. No later than 120 days of the DWQ determination of naturally occurring concentrations, Duke Energy Carolinas shall submit a report evaluating whether or not substances in compliance boundary wells and modeled values at the compliance boundary exceed the groundwater standards. Pursuant to 15A NCAC 2L.0202(b)(3), where naturally occurring substances exceed the established standard, the standard shall be the naturally occurring concentration as determined by DWQ. The report shall incorporate statistics and other acceptable comparative methods to evaluate compliance. All compliance boundary wells and constituents occurring and modeled above the groundwater standard, as determined by DWQ pursuant to 15A NCAC 2L.0202(b)(3), shall be addressed. DWQ shall consider this report in determining which substances and wells exceed the groundwater standard.

55. Within 60 days of receipt of notice of any determination by DWQ that a groundwater constituent exceeds the groundwater standard at or beyond the compliance boundary pursuant to Paragraph ¶ 54, Duke Energy Carolinas shall submit to DWQ a plan to conduct a site assessment in accordance with 15A NCAC 2L.0106(g), assessing the cause, significance and extent of the exceedance. Assessment activities shall determine:

- a. the source and cause of the contamination;

- b. any imminent hazards to public health and safety and actions taken to mitigate them in accordance with 15A NCAC 2L.0106(f);
- c. all receptors and significant exposure pathways;
- d. the horizontal and vertical extent of soil and groundwater contamination and all significant factors affecting contaminant transport; and
- e. geological and hydrogeological features influencing the movement, chemical, and physical character of the contaminants.

The site assessment plan will include a schedule for completion of assessment activities and submission of a final report. Once approved by DWQ, the schedule will be enforceable as though set out in this Consent Order. For each such exceedance, Duke Energy Carolinas shall comply with the corrective action requirements of 15A NCAC 2L.0106.

56. Duke Energy Carolinas shall implement the plan described in the following paragraphs 57-64 to identify and address any unpermitted discharges to surface waters at the Riverbend Station.

57. No later than _____ [180 days from the entry of this Consent Order], Duke Energy Carolinas shall submit a topographic map at a scale approved by DWQ, that indicates the locations of all outfalls from engineered channels designed and/or improved (such as through the placement of rip rap) for the purpose of collecting groundwater flowing from the toe of the ash pond dam. For each outfall, the map will:

- a. specify its latitude and longitude;
- b. specify whether the discharge is continuous or intermittent; and

- c. provide a monthly average flow measurement, including a description of the method used to measure flow.

With the topographic map, Duke Energy Carolinas will submit to DWQ a schedule according to which Duke Energy Carolinas shall conduct water quality sampling of the outfalls in order to further characterize the discharging water. Unless directed otherwise by DWQ, Duke Energy Carolinas shall conduct water quality sampling of the outfalls in order to further characterize the discharging water. Within 30 days of approval of the schedule by DWQ, Duke Energy Carolinas shall begin to sample the outfalls in accordance with the schedule and submit the samples for water quality analysis. Water quality analyses shall include the same parameters required for groundwater and surface water sampling as specified in the NPDES permit. If Duke Energy Carolinas demonstrates to the satisfaction of DWQ that sampling of an outfall is unlikely to generate usable data or is otherwise infeasible, Duke Energy Carolinas will not be required to sample that outfall.

58. No later than _____ [180 days of the entry of this Consent Order], Duke Energy Carolinas shall submit a topographic map at a scale approved by DWQ that indicates the locations of any seeps not captured by an engineered channel identified pursuant to ¶57. For each such seep, the map will:

- a. specify its latitude and longitude;
 - b. specify whether the discharge is continuous or intermittent;
 - c. provide a monthly average flow measurement, including a description of the method used to measure flow;
 - d. specify whether the discharge from the seep reaches surface waters;
- and

- e. if the discharge from the seep reaches surface water, identify the location where the seep reaches surface water on the map (to include latitude and longitude).

59. No later than _____ [180 days from the entry of this Consent Order], Duke Energy Carolinas shall submit a plan to determine whether engineered channel outfalls or seep discharges have reached surface waters of the Catawba River basin and are causing violations of water quality standards. The plan shall include the following:

- a. sampling locations within upstream and downstream of all channels that potentially carry such discharges;
- b. water quality analyses shall include the same parameters required for groundwater and surface water sampling as specified in the NPDES permit;
- c. frequency and duration of the sampling activities; and
- d. reporting requirements.

60. For any discharge, whether from an engineered channel or seep, that is determined to be causing a violation of N.C. Gen. Stat. § 143-215.1, or any other law, Duke Energy Carolinas shall, within 180 days of the determination, do one of the following:

- a. stop the discharge;
- b. capture and route the discharge so that it is discharged through an NPDES permitted outfall;
- c. address the seep using BMPs approved by DWQ pursuant to ¶ 61;
- d. propose alternative BMPs subject to approval by DWQ; or

- e. apply for an NPDES discharge permit or permit amendment to cover the discharge.

61. No later than _____ [180 days from the entry of this Consent Order], Duke Energy Carolinas shall submit to DWQ for approval a set of BMPs designed to prevent unpermitted discharges of unpermitted pollutants to surface waters. Thereafter, Duke Energy Carolinas may submit additional BMPs for DWQ approval.

62. No later than _____ [30 days from the entry of this Consent Order], Duke Energy Carolinas shall submit to DWQ a plan for identifying new seeps that arise after the submission of the maps described in ¶¶ 57 and 58. The plan shall include, at a minimum, the following elements:

- a. a procedure for routine inspection of the ash pond area to identify indicators of potential new seeps,
- b. a decision flow chart (including criteria and procedures) for determining whether a new seep is actually present, and
- c. a procedure for notifying DWQ after a new seep is confirmed.

63. No later than _____ [30 days from the entry of this Consent Order], Duke Energy Carolinas shall submit to DWQ a completed survey of all water supply wells located within 0.5 miles of the Riverbend compliance boundary. This survey shall include, but not be limited to, well location, the nature of groundwater use, available well construction details and ownership information.

64. Duke Energy Carolinas has ceased generating power at the Riverbend Station. If and when Duke Energy Carolinas applies for a modified NPDES permit to incorporate the

change in operations, it shall request that the procedure described in ¶¶ 52-59, or a comparable procedure, be incorporated into the NPDES permit.

65. If the investigations described in this Section, in combination with any other appropriate information, demonstrate that corrective action is required to bring the Riverbend Station into compliance with N.C. Gen. Stat. §§ 143-215.1(a)(1) and (6) and the groundwater standards, Duke Energy Carolinas shall propose corrective action measures according to 15A NCAC 2L.0106. Upon approval by DWQ, Duke Energy Progress will implement the approved corrective action measures.

66. No later than _____ [12 months from the date of this Consent Order], but at least 12 months prior to the closure of the facility, Duke Energy Carolinas shall submit a closure plan for the Riverbend ash pond.

IX. ENFORCEABILITY OF PLANS AND STIPULATED CIVIL PENALTIES

67. Every proposal, schedule, work plan or other document having a deadline for submission and/or having deadlines for the completion of one or more tasks shall be considered incorporated into this Consent Order and fully enforceable as those may a part of this Consent Order, including the imposition of stipulated civil penalties, as described below.

68. In the event Duke Energy Progress or Duke Energy Carolinas fails to comply in a timely manner with any provision of this Consent Order (including the timely submission of any document or plan and the completion of any such plan), it shall pay a stipulated civil penalty for any violation of paragraphs 32-66 as follows:

- a. \$1000.00 per day for the first thirty days, and
- b. \$5000.00 per day thereafter for each violation.

69. Stipulated civil penalty payments shall be payable monthly on before the fifteenth day of each succeeding month.

70. Any payment under this section shall neither waive either company's duty to meet its obligations under this Consent Order nor preclude DWQ from commencing an action to compel its compliance with the terms of the Order.

X. DISPUTE RESOLUTION

71. Unless otherwise expressly provided for in this Consent Order, the dispute resolution procedures of this Section X shall be the exclusive mechanism to resolve a dispute arising under or with respect to this Consent Order ("Covered Dispute").

72. A Covered Dispute shall be considered to have arisen when Duke Energy Progress or Duke Energy Carolinas serves on DWQ a written notice of dispute. Such notice of dispute shall state clearly the matter in dispute. Any Covered Dispute shall first be the subject of informal dispute resolution. Informal dispute resolution shall proceed from the date the notice of dispute is served, as follows, unless these periods are modified by written agreement. If either company invokes dispute resolution procedures, within 15 days of service of written notice of the dispute, Duke Energy Progress or Duke Energy Carolinas shall serve on DWQ a written statement of position, including a concise statement of the Covered Dispute, the company's position, and an explanation of that position. DWQ shall serve its Statement of Position within 30 days of the company's statement of position, including a concise statement of the Covered Dispute, DWQ's position, and an explanation of that position. Upon receipt of DWQ's statement, Duke Energy Progress or Duke Energy Carolinas will work with DWQ to resolve the Covered Dispute. If no resolution is reached within 15 days, or such longer period as may be agreed to in writing by the parties, DWQ's

statement of position shall be binding, unless Duke Energy Progress or Duke Energy Carolinas seeks further review of the Covered Dispute within 30 days after the conclusion of informal negotiations in accordance with the following Paragraph.

73. If informal dispute resolution is unsuccessful, Duke Energy Progress or Duke Energy Carolinas may seek resolution of the Covered Dispute by filing with this Court and serving on DWQ a motion requesting resolution of the Covered Dispute. DWQ shall respond to the motion within the time period allowed by the rules of civil procedure or court order. The moving company may file a reply memorandum, to the extent permitted by the Local Rules. In the event that this Court determines that it does not have jurisdiction to resolve the dispute, the company reserves the right to pursue state administrative or judicial review, as applicable.

74. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of Duke Energy Progress or Duke Energy Carolinas under this Consent Order, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first day of noncompliance, but payment shall be stayed pending resolution of the dispute as provided. If the company does not prevail on the disputed issue, stipulated penalties awarded at the conclusion of dispute resolution shall be paid as provided in Section VII of this Consent Order (Stipulated Civil Penalties).

XI. MODIFICATION

75. This Consent Order contains all of the terms to which the parties have consented and shall not be modified by any prior oral or written agreement, representation, or understanding. The parties may, at any time, jointly petition the Court for a modification of

any provision. A party shall not unilaterally petition the Court for modification without having first made a good faith effort to reach agreement with the other party on such modification. Notwithstanding the above, any party may after having made such effort petition the Court for a modification of this Consent Order and the Court shall rule on any such petition pursuant to law in effect at such time. Any ruling by the Court on a petition for modification may be appealed by a party in accordance with law.

76. Any schedule or deadline for the completion of one or more tasks that has been incorporated into this Consent Order as described above may, for good cause, be modified by written agreement between DWQ and Duke Energy Progress or Duke Energy Carolinas without the need for approval by the Court.

XII. FORCE MAJEURE

77. Duke Energy Progress and Duke Energy Carolinas agree to perform all requirements under this Consent Order within the time limits established under this Consent Order, unless the performance is delayed by a force majeure. For purposes of this Consent Order, a force majeure is defined as any event arising from causes beyond the control of the company, or any entity controlled by the company or its contractors, which delays or prevents performance of any obligation under this Consent Order despite best efforts to fulfill the obligation. The requirement that the Duke Energy Progress and Duke Energy Carolinas exercise "best efforts to fulfill the obligation" includes using commercially reasonable efforts to anticipate any potential force majeure event and to address the effects of any potential force majeure event: (1) as it is occurring, and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. Force majeure does

not include financial inability to complete the work, increased cost of performance, or changes in the companies' business or economic circumstances.

78. Each company shall notify DWQ in writing within 10 days of its knowledge of the event which causes or may cause delay, describing in detail the anticipated length of the delay, the precise cause or causes of the delay, the measures taken and to be taken by the company to prevent or minimize the delay, and a timetable by which those measures will be implemented. The companies shall adopt all reasonable measures to avoid or minimize any such delay.

79. Failure by Duke Energy Progress or Duke Energy Carolinas to comply with the notice requirements set forth in the preceding paragraph constitutes a waiver of its right to request an extension of the applicable deadline associated with the work at issue.

80. Duke Energy Progress and Duke Energy Carolinas shall have the burden of proving that any delay is caused by circumstances beyond their control.

XIII. CONTINUING JURISDICTION OF THE COURT

81. This Court shall have jurisdiction to enforce the terms and conditions of this Consent Order, to modify the Consent Order upon petition of either party, and to resolve disputes arising under this Consent Order.

XIV. PUBLIC PARTICIPATION

82. On July 15, 2013, prior to its lodging with the Court, a draft of this Consent Order was published on DWQ's website with a notice that DWQ would receive public comments on the draft for 30 days. The website also provided instructions for the submission of public comments. A notice of the Consent Order and instructions for submitting public comments will be published in appropriate newspapers. DWQ is required

to review all comments submitted during the 30-day period. The draft Consent Order that the parties jointly lodged with this Court on _____ will reflect DWQ's review of those comments and its efforts to incorporate them into the draft in a manner consistent with all applicable rules and statutes in DWQ's judgment and discretion.

83. Any proposal, schedule, work plan, or final report submitted to DWQ by Duke Energy Progress or Duke Energy Carolinas in compliance with the requirements of this Consent Order will be made available for public review by posting on a webpage accessible through DWQ's web portal.

XV. AUTHORITY OF THE PARTIES

84. Signatories to this Consent Order for the State and for Duke Energy Carolinas and Duke Energy Progress represent that they have full and adequate authority to enter into this Consent Order.

XVI. TERMINATION

85. This Consent Order shall remain in force and effect until all obligations and terms and payment of all required penalties have been completed or satisfied (including by incorporation into a permit). Upon completion of all obligations imposed by this Consent Order, DWQ shall file appropriate notice and satisfaction documents with the Court.

This the _____ day of _____, 2013.

Superior Court Judge

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

Date

Tom Reeder, Acting Director
Division of Water Quality

DUKE ENERGY PROGRESS, INC.

Date

Name

DUKE ENERGY CAROLINAS, LLC

Date

Name