

STATE OF NORTH CAROLINA

IN THE GENERAL COURT OF JUSTICE

SUPERIOR COURT DIVISION

COUNTY OF WAKE

13 CVS 11032

STATE OF NORTH CAROLINA ex rel.)
NORTH CAROLINA DEPARTMENT OF)
ENVIRONMENTAL QUALITY, DIVISION)
OF WATER RESOURCES,)

Plaintiff,)

ROANOKE RIVER BASIN ASSOCIATION,)
SIERRA CLUB, WATERKEEPER)
ALLIANCE, CAPE FEAR RIVER WATCH,)
INC., NEUSE RIVERKEEPER)
FOUNDATION, AND WINYAH RIVERS)
FOUNDATION,)

Plaintiff-Intervenors,)

v.)

DUKE ENERGY PROGRESS, LLC,)
Defendant.)

CONSENT ORDER

COUNTY OF MECKLENBURG

13 CVS 14661

STATE OF NORTH CAROLINA ex rel.)
NORTH CAROLINA DEPARTMENT OF)
ENVIRONMENTAL QUALITY, DIVISION)
OF WATER RESOURCES,)

Plaintiff,)

CATAWBA RIVERKEEPER)
FOUNDATION, INC., APPALACHIAN)
VOICES, YADKIN RIVERKEEPER,)
MOUNTAINTRUE, DAN RIVER BASIN)
ASSOCIATION, ROANOKE RIVER BASIN)
ASSOCIATION, SOUTHERN ALLIANCE)
FOR CLEAN ENERGY, AND)
WATERKEEPER ALLIANCE,)

Plaintiff-Intervenors,)

v.)

DUKE ENERGY CAROLINAS, LLC,)
Defendant.)

CONSENT ORDER

CONSENT ORDER

Plaintiff, the State of North Carolina ex rel. North Carolina Department of Environmental Quality (“DEQ”), Division of Water Resources, Plaintiff-Intervenors, Roanoke River Basin Association, Sierra Club, Catawba Riverkeeper Foundation, Inc., Appalachian Voices, MountainTrue, and Waterkeeper Alliance (“Community Groups”), and Defendants, Duke Energy Carolinas LLC and Duke Energy Progress LLC (“Duke Energy”) (collectively the “Parties”), hereby consent to the entry of this Consent Order in order to resolve the matters in controversy between them.

The Honorable Paul Ridgeway, Senior Resident Superior Court Judge, is presiding over these matters pursuant to designation under Rule 2.1 of the General Rules of Practice. The Court makes, and the Parties hereby stipulate to, the following findings of fact and conclusions of law.

Findings of Fact and Conclusions of Law

1. These actions were brought by the State of North Carolina upon the relation of the Secretary of DEQ, the State agency established pursuant to N.C. Gen. Stat. § 143B-279.1 *et seq.*, and vested with the statutory authority to enforce the State’s environmental protection laws, including laws enacted to protect the water quality of the State. The Division of Water Resources (“DWR”) is a division within DEQ and all actions taken by DWR are necessarily actions of DEQ.
2. This Court has jurisdiction over this action for injunctive relief for claims of existing or threatened violations of the laws, rules, and regulations governing the protection of the State’s water resources pursuant to N.C. Gen. Stat. §§ 7A-245 and 143-215.6C.
3. Venue is proper in Wake County for 13 CVS 11032 and Mecklenburg County for 13 CVS 14661 under N.C. Gen. Stat. §§ 1-79 and 143-215.6C.

4. Defendant, Duke Energy Carolinas, LLC (“Duke Energy Carolinas”), is a corporation organized and existing under the laws of the State of North Carolina. Duke Energy Carolinas owns, operates, or has operated the coal-fired steam station facilities¹ addressed by DEQ’s Mecklenburg County Complaint, Case No. 13 CVS 14661, and this Order at the following locations: the Allen Steam Station (“Allen”) in Gaston County, Buck Steam Station (“Buck”) in Rowan County,² Cliffside Steam Station (now referred to as the Rogers Energy Complex) (“Cliffside/Rogers”) in Rutherford County and Cleveland County, the Belews Creek Steam Station (“Belews Creek”) in Stokes County, and the Marshall Steam Station (“Marshall”) in Catawba County.³
5. Defendant Duke Energy Progress, LLC (“Duke Energy Progress”), is a corporation organized and existing under the laws of the State of North Carolina. Duke Energy Progress owns or operates coal-fired steam station facilities addressed by DEQ’s Wake County Complaint, Case No. 13 CVS 11032, and this Order at the following locations: Mayo Steam Electric Generating Plant (“Mayo”) in Person County and the Roxboro Steam Electric Generating Plant (“Roxboro”) in Person County.⁴

¹ The facilities listed in Paragraphs 4 and 5 may be referred to singularly as “Facility” and collectively as “Facilities.”

² Buck has been selected by Duke Energy Carolinas, LLC as a beneficiation site pursuant to N.C. Gen. Stat. § 130A-309.216(a). On December 16, 2016, the Community Groups dismissed their Complaint in Intervention with prejudice as to Buck. As set forth below, this Consent Order resolves the claims raised in DEQ’s Complaint as to Buck.

³ In the Mecklenburg County Complaint, 13 CVS 14661, the Dan River Combined Cycle Station is also included. Complaint at 2, ¶ 3. The Dan River Combined Cycle Station was addressed by a prior order of the Court, and is not at issue in this Consent Judgment. Order Granting Motions for Partial Summary Judgment, 13 CVS 14661 & 11032 (June 1, 2016) (the “Four Plant Order”).

⁴ In the Wake County Complaint, 13 CVS 11032, the Cape Fear Steam Electric Generating Plant, H.F. Lee Steam Electric Plant, Weatherspoon Steam Electric Plant and L.V. Sutton Electric Plant were also included. Complaint at 2, ¶ 3. These facilities were addressed by prior orders of the Court and are not at issue in this Order.

6. Plaintiff-Intervenors, the “Community Groups,” are non-profit public interest organizations whose mission and interests include advocating for the protection of water quality for the health, protection, and enjoyment of their members. The Community Groups were allowed to intervene in these actions with no objection from DEQ. The Community Groups have stipulated that they assert no additional causes of action in these proceedings beyond those asserted by DEQ.
7. DEQ filed these civil enforcement actions in August of 2013. As set forth in the Complaints, DEQ sought mandatory injunctions requiring Duke Energy to assess and abate what it alleged were threatened or claimed violations of North Carolina’s groundwater rules, found at Title 15A, Subchapter 2L of the North Carolina Administrative Code (the “2L groundwater rules”), threatened or claimed violations of North Carolina’s water pollution laws set forth at N.C. Gen. Stat. § 143-215.1, and threatened or claimed violations of National Pollutant Discharge Elimination System (“NPDES”) permits at the above-referenced facilities (“Facilities”) caused by the coal combustion residuals (“CCR”) surface impoundments, and to seek through mandatory injunctive relief compliance with these laws, regulations, and rules.
8. In 2018 and 2019, DEQ issued NPDES permits (or, in the case of Marshall, a major modification of an NPDES permit) for each of the Facilities except Roxboro. For Roxboro, the NPDES permit is currently out for public comment. The NPDES permits set effluent limits on the discharge of wastewater. Constructed seeps—engineered features on or within the dam structures (such as toe drains or filter blankets) to collect seepage—are incorporated as permitted outfalls in these NPDES permits with monitoring and effluent limits.

9. In 2018, the Environmental Management Commission (“EMC”) approved a Special Order by Consent (“SOC”) for each of the Facilities. The SOC’s require accelerated decanting—removal of free water from the surface of the CCR impoundments—in a manner that protects surface water quality. Decanting is expected to substantially reduce or eliminate seepage flows of wastewater from CCR impoundments to non-constructed or non-engineered seeps.
10. Subsequent to the filing of these actions, the General Assembly enacted Session Law 2014-122, which became effective on September 20, 2014. Part II of Session Law 2014-122 provided for the “Comprehensive Management of Coal Combustion Residuals” and added new Part 2I to Article 9 of Chapter 130A of the North Carolina General Statutes, which may be cited as the “Coal Ash Management Act of 2014” (“CAMA”).
11. In July of 2016 CAMA was amended by House Bill 630, Session Law 2016-95. Pursuant to this amendment, on November 13, 2018, after Duke Energy established permanent water supplies to certain households and rectified deficiencies noted in dam safety orders, DEQ classified the CCR impoundments at the above-referenced Facilities as “low risk.”
12. Pursuant to the provisions of CAMA and at the election of DEQ, low risk impoundments may be closed by excavation, by capping in place largely in compliance with the State rules for municipal solid waste landfills, or by closing in compliance with the federal CCR Rule. N.C. Gen. Stat. § 130A-309.214(a)(3).

13. The CCR impoundments⁵ at each of the Facilities are as follows:

- a. At Allen, there are two CCR impoundments, the Retired Ash Basin and the Active Ash Basin. The Retired Ash Basin is approximately 123 acres and contains approximately 6,100,000 tons of coal ash and the Active Ash Basin is approximately 170 acres and contains approximately 10,480,000 tons of coal ash.⁶ The Retired Ash Basin and the Active Ash Basin are CCR impoundments as defined by CAMA, N.C. Gen. Stat. § 130A-309.201(6), and the Federal CCR Rule 40 CFR Parts 257 and 261. For illustration purposes only, these CCR impoundments are depicted on **Exhibit A**.
- b. At Belews Creek, there is one CCR impoundment, the Ash Basin. The Ash Basin is approximately 270 acres and contains approximately 11,970,000 tons of coal ash. The Ash Basin is a CCR impoundment as defined by CAMA, N.C. Gen. Stat. § 130A-309.201(6), and the Federal CCR Rule 40 CFR Parts 257 and 261. For illustration purposes only, this CCR impoundment is depicted on **Exhibit B**.
- c. At Buck, there are three CCR impoundments, Basin 1, Additional Primary Pond/Basin (“Basin 1”); Basin 2, Primary Pond/Basin (“Basin 2”); and Basin 3, Secondary Pond/Basin (“Basin 3”). There is also one ash stack. Basin 1 is

⁵ CCR impoundments are defined in CAMA, N.C. Gen. Stat. § 130A-309.201(6).

⁶ Note that the tonnage of coal ash includes only the coal ash contained within the CCR impoundments and not coal ash in landfills or structural fills. Duke Energy Carolinas and Duke Energy Progress, on the one hand, and DEQ and the Community Groups on the other, have a dispute as to whether coal ash under a lawfully permitted landfill is regulated by CAMA. At Allen, the Retired Ash Basin Landfill and subgrade is 25 acres and contains approximately 1,740,000 tons of coal ash. There are approximately 1,392,000 tons of coal ash beneath the Retired Ash Basin Landfill, and approximately 991,000 tons of coal ash in the area designated as the “DORS” area.

approximately 71 acres and contains 3,550,000 tons of coal ash. The ash stack is adjacent to and partially above Basin 1, encompasses approximately 14 acres, and contains approximately 263,000 tons of coal ash. Basins 2 and 3 are separated by a divider dike built over ash, encompass approximately 57.5 acres and 21.5 acres, respectively, and contain approximately 1,998,000 and 864,000 tons of coal ash, respectively. Basin 1 and the ash stack are contained within one waste boundary, while Basin 2 and Basin 3 are contained in another waste boundary. For illustration purposes only, these CCR impoundments are depicted on **Exhibit C**.

- d. At Cliffside/Rogers there are two CCR impoundments, the Unit 5 Inactive Ash Basin and the Active Ash Basin.⁷ The Unit 5 Inactive Ash Basin is approximately 46 acres and contains approximately 2,350,000 tons of coal ash and the Active Ash Basin is approximately 86 acres and contains approximately 5,240,000 tons of coal ash. The Unit 5 Inactive Ash Basin and the Active Ash Basin are CCR impoundments as defined by CAMA, N.C. Gen. Stat. § 130A-309.201(6), and the Federal CCR Rule 40 CFR Parts 257 and 261. For illustration purposes only, these CCR impoundments are depicted on **Exhibit D**.
- e. At Marshall, there is one CCR impoundment, the Ash Basin. The Ash Basin is approximately 360 acres and contains approximately 17,650,000 tons of coal ash.⁸ The Ash Basin is a CCR impoundment as defined by CAMA, N.C. Gen.

⁷ The Units 1-4 Ash Basin was fully excavated and closed in February 2018.

⁸ Note that the tonnage of coal ash includes only the coal ash contained within the impoundments and not coal ash in landfills or structural fills. Duke Energy Carolinas and Duke Energy Progress

Stat. § 130A-309.201(6), and the Federal CCR Rule 40 CFR Parts 257 and 261.

For illustration purposes only, this CCR impoundment is depicted on **Exhibit E**.

- f. At Mayo, there is one CCR impoundment, the Ash Basin. The Ash Basin is approximately 153 acres and contains approximately 6,630,000 tons of coal ash. The Ash Basin is a CCR impoundment as defined by CAMA, N.C. Gen. Stat. § 130A-309.201(6), and the Federal CCR Rule 40 CFR Parts 257 and 261.

For illustration purposes only, this CCR impoundment is depicted on **Exhibit F**.

- g. At Roxboro, there are two CCR impoundments, the East Ash Basin and the West Ash Basin. The West Ash Basin is approximately 225 acres and contains approximately 12,970,000 tons of coal ash and the East Ash Basin is approximately 71 acres and contains approximately 7,100,000 tons of coal ash.⁹

on the one hand, and DEQ and the Community Groups on the other, have a dispute as to whether coal ash under a lawfully permitted landfill is regulated by CAMA. At Marshall, the Structural Fill beneath solar panels contains approximately 6,490,000 tons of coal ash. The subgrade fill beneath Industrial Landfill (“ILF”) Cells 1 and 2 contains approximately 460,000 tons of coal ash. The subgrade fill beneath ILF Cells 3 and 4, contains approximately 409,000 tons of coals ash. The Old Ash Fill (1804 Phase I Landfill) contains approximately 626,000 tons of coal ash. The Retired Landfill (1804 Phase II Landfill) contains approximately 4,870,000 tons of coal ash. The ILF (Permit 18-12) contains approximately 2,050,000 tons of coal ash. The Marshall ILF continues to receive production ash and these tonnages represent the approximate tonnages as of December 31, 2019.

⁹ Note that the tonnage of coal ash includes only the coal ash contained within the CCR impoundments and not coal ash in landfills or structural fills. Duke Energy Carolinas and Duke Energy Progress on the one hand, and DEQ and the Community Groups on the other, have a dispute as to whether coal ash under a lawfully permitted landfill is regulated by CAMA. For Roxboro, the Roxboro Landfill contains approximately 6,818,000 tons of coal ash in one portion of the landfill and an additional 7,635,000 tons of coal ash in a separate portion of that landfill. The Roxboro Landfill continues to receive production ash and these tonnages represent the approximate tonnages as of December 31, 2019.

The East Ash Basin and the West Ash Basin are CCR impoundments as defined by CAMA, N.C. Gen. Stat. § 130A-309.201(6), and the Federal CCR Rule 40 CFR Parts 257 and 261. For illustration purposes only, these CCR impoundments are depicted on **Exhibit G**.

14. On April 1, 2019, DEQ issued Coal Combustion Residuals Surface Impoundment Closure Determinations (“Closure Determinations”), pursuant to its authority under CAMA, electing and ordering excavation of the coal combustion residuals from the CCR impoundments as the method of closure in compliance with CAMA at six of the above-referenced Facilities: Allen, Belews Creek, Cliffside/Rogers, Marshall, Mayo and Roxboro. DEQ’s election of this method of closure was based upon its assessment of the required statutory criteria as applied to these Facilities.
15. On April 26, 2019, Duke Energy filed six Petitions for Contested Case Hearing in the North Carolina Office of Administrative Hearings (“OAH”) challenging DEQ’s Closure Determination for each of these Facilities, and on May 24, 2019 Duke Energy filed six Amended Petitions challenging subsequent DEQ actions related to the Closure Determinations (the “OAH Proceedings”). Duke Energy has filed twelve petitions for judicial review (“PJR”) appealing from two Orders issued in the OAH Proceedings.
16. Certain Plaintiff-Intervenors in these actions—Appalachian Voices, MountainTrue, Catawba Riverkeeper Foundation, Inc., Waterkeeper Alliance, Roanoke River Basin Association, and The Sierra Club—were allowed to intervene as Respondent-Intervenors in the OAH Proceedings.
17. On December 31, 2019, the Parties, desiring to resolve and settle the OAH Proceedings and related PJRs, and to ensure that the CCR impoundments are excavated on an

expedited basis and to remove any uncertainty associated with the litigation, entered into a Settlement Agreement (the “Agreement”), obligating each of the parties to take certain actions.

18. Pursuant to this Agreement, the Parties agreed to submit to the Court this Consent Order incorporating the terms of the Agreement with the exception of certain provisions.

19. For impoundment sources of groundwater contamination at each Facility, the obligations of Duke Energy Carolinas or Duke Energy Progress, as appropriate, are set forth below, including the closure method to be employed for closing the CCR impoundment(s) at each Facility, the requirements for remediating the alleged 2L groundwater violations caused by the CCR impoundment(s) at each Facility, and the requirements for addressing the alleged surface water violations at each Facility.

20. For any alleged 2L groundwater violations caused by sources other than CCR impoundments at any Facility (e.g., on-site landfills, on-site structural fills, or coal piles at certain Facilities), DEQ shall retain the authority to order appropriate corrective action under its administration and implementation of the statutes, rules and regulations under its purview.¹⁰

21. The counter-obligations of DEQ and the Community Groups are also as set forth below.

¹⁰ For clarity, the Parties understand the Complaints to address only groundwater contamination caused by impoundment sources. Groundwater contamination, if any, caused by non-impoundment sources is not resolved by this Consent Order and, as noted, will be separately addressed through DEQ’s administration of the statutes, rules and regulations that it implements. By way of information, DEQ anticipates receiving Comprehensive Site Assessments for non-impoundment sources of groundwater contamination that are not hydrologically connected to impoundment sources on March 31, 2020 for Allen, Belews Creek, Cliffside/Rogers, Mayo and Roxboro, and on July 1, 2021 for Buck.

INJUNCTIVE RELIEF

The Parties stipulate and agree that for the above-referenced Facilities, Duke Energy's compliance with approved Groundwater Corrective Action Plans, NPDES permits, and SOC's, along with the actions required by this Consent Order and through DEQ's administration of the statutes, rules and regulations that it implements, have resolved or will resolve the remaining alleged groundwater violations and surface water violations (i.e., those caused by impoundment sources) set forth in the Complaints filed in these actions.¹¹ Based upon the foregoing findings of fact and conclusions of law as well as the stipulations of the Parties,¹² **IT IS THEREFORE ORDERED, ADJUDGED, AND DECREED** as follows:

Facility-Specific Obligations of Duke Energy Carolinas

Allen

22. Closure of CCR Impoundments. Duke Energy Carolinas shall excavate and remove all coal ash from the Retired Ash Basin and Active Ash Basin, either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy Carolinas shall provide reasonable notice to the Community Groups and DEQ. Duke Energy Carolinas shall remove or permanently close all pipes

¹¹ The claims regarding facilities at the Cape Fear Steam Electric Generating Plant, H.F. Lee Steam Electric Plant, Weatherspoon Steam Electric Plant and L.V. Sutton Electric Plant in the Wake County Complaint, and the Asheville Steam Station, the Riverbend Steam Station, and the Dan River Steam Station were addressed by prior orders of the Court, and are not at issue in this Order.

¹² Notwithstanding the foregoing, the Parties waive any requirement for formal findings of fact and conclusions of law regarding the allegations set forth in the Complaints filed by Plaintiff or Plaintiff-Intervenors in these actions, and agree that this Consent Order shall be binding upon them and enforceable to the same extent, including by contempt, as if entered by a Superior Court Judge after a hearing on the merits of all matters now pending.

currently running through or beneath the Retired Ash Basin and Active Ash Basin. Duke Energy Carolinas shall thereafter stabilize and close the area where the Retired Ash Basin and Active Ash Basin are located pursuant to applicable law. The total coal ash that will be excavated is estimated to be approximately 16,632,000 tons.

23. Disposition of Other Coal Ash. Additionally, Duke Energy Carolinas shall excavate and remove coal ash from the Storage Areas, Structural Fills, and Landfill (each of which is located on the top of the Retired Ash Basin), either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy Carolinas shall provide reasonable notice to the Community Groups and DEQ. Duke Energy Carolinas is not required to excavate the ash required for structural stability around the footers for the transmission towers; that ash shall be covered with a geomembrane layer.

24. Deadline for Closure. Duke Energy Carolinas projects that it will require until December 31, 2037, to complete all excavation as required in Paragraphs 22 and 23 and the Parties understand that Duke Energy Carolinas will request variances to meet the deadline imposed by this Consent Order. Duke Energy Carolinas shall complete all excavation required in Paragraphs 22 and 23 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to

time, and subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2038.¹³

25. Groundwater Corrective Action Plan. On December 31, 2019, Duke Energy Carolinas submitted a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan includes active remedial measures intended by Duke Energy Carolinas to address any groundwater contamination caused by the Retired Ash Basin and Active Ash Basins as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 74 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 75. Upon approval of the proposed Groundwater Corrective Action Plan by DEQ, Duke Energy Carolinas shall implement the plan subject to such modification and amendments approved pursuant to N.C. Gen. Stat. § 130A-309.211(b)(3) and the 2L groundwater rules.¹⁴

26. NPDES Permit and Special Order by Consent. On July 13, 2018, DEQ issued NPDES Permit No. NC0004979 for Allen. On April 18, 2018, the EMC approved SOC S17-009 for Allen, which sets a compliance schedule that requires completion of decanting by June 30, 2020. Duke Energy Carolinas shall comply with the terms of NPDES Permit No. NC0004979 and SOC S17-009 including any future amendments by DEQ or the EMC, respectively, when such an amendment becomes effective (unless

¹³ For clarity, this paragraph does not constitute a variance of the CAMA deadline for completion of closure. DEQ will approve or disapprove a request for variance at the appropriate time.

¹⁴ For clarity, this paragraph does not constitute approval of any portion or aspect of the Groundwater Corrective Action Plan. DEQ will approve or disapprove the Groundwater Corrective Action Plan at the appropriate time.

otherwise ordered by the North Carolina Office of Administrative Hearings or a court of competent jurisdiction).

Belews Creek

27. Closure of CCR Impoundment. Duke Energy Carolinas shall excavate and remove all coal ash from the Ash Basin except the impoundment coal ash under or within the waste boundary of the Pine Hall Road Landfill either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy Carolinas shall provide reasonable notice to the Community Groups and DEQ. Duke Energy Carolinas shall remove or permanently close all pipes currently running through or beneath the Ash Basin. Duke Energy Carolinas shall thereafter stabilize and close the area where the Ash Basin is located pursuant to applicable law. The total coal ash that will be excavated is estimated to be approximately 11,870,000 tons. The closure plan provides that ash shall remain underneath the Pine Hall Road Landfill, which is capped with a geosynthetic cap and a soil cap and was closed pursuant to Permit No. 8503-INDUS-1984 in 2009. The amount of coal ash underneath the Pine Hall Road Landfill is estimated to be no more than 100,000 tons.¹⁵ An approximate depiction of this excavation is attached as **Exhibit H**. On or before May 4, 2020, Duke Energy Carolinas shall submit either (a) a demonstration that it is able to meet the requirements of Paragraph 30 or (b) if it is not able to make such a

¹⁵ To the extent that any portion of the Pine Hall Road Landfill is not currently covered by a geosynthetic cap, Duke Energy Carolinas shall install such a cap in accordance with the Belews Creek closure plan approved by DEQ.

demonstration, an addendum to the closure plan providing for the full excavation of the impoundment coal ash under or within the waste boundary of the Pine Hall Road Landfill. The closure plan for Belews Creek shall not be deemed complete prior to this submission.

28. Deadline for Closure. Duke Energy Carolinas projects that it will require until December 31, 2031, to complete all excavation as required in Paragraph 27, and the Parties understand that Duke Energy Carolinas will request variances to meet the deadline imposed by this Consent Order. Duke Energy Carolinas shall complete all excavation required in Paragraph 27 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to time, and subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2034.¹⁶

29. Structural Stability, Monitoring, and Sampling. Duke Energy Carolinas shall stabilize the coal ash under and within the waste boundary of the Pine Hall Road Landfill and within the waste boundary of the Ash Basin with a permanent structure (“stability feature”) for purposes of preserving the structural stability through the use of a wall unless a slope is shown to be as appropriate, so as to prevent lateral movement of the coal ash, pursuant to a plan to be submitted for DEQ approval no later than June 30, 2020. Within seven (7) days of completing the stability feature, Duke Energy Carolinas shall notify DEQ. Additionally, pursuant to a plan approved by DEQ, following excavation in the footprint of the former Ash Basin and downgradient of the

¹⁶ For clarity, this paragraph does not constitute a variance of the CAMA deadline for completion of closure. DEQ will approve or disapprove a request for variance at the appropriate time.

Pine Hall Road Landfill, Duke Energy Carolinas shall conduct groundwater monitoring (including the installation of new wells if reasonably necessary) and, upon re-formation of surface water features that demonstrate DEQ-confirmed intermittent or perennial flows (not merely precipitation), surface water sampling. Consistent with the provisions of Paragraph 74, in this plan Duke Energy Carolinas shall propose (1) additional groundwater remedial measures for any coal ash constituent if the data indicate an increasing trend in groundwater concentrations in excess of the standards set forth in 15A NCAC 2L .0202 (“2L groundwater standards”) for four (4) consecutive semi-annual sampling events for that constituent, subject to the provisions of Paragraph 75, and (2) surface water treatment if the data shows impact from coal ash constituents above the concentrations in standards set forth in 15A NCAC 2B .0101 *et seq.* (“2B standards”) to waters of the State notwithstanding the provisions of Paragraph 75. This plan shall be submitted to DEQ no later than 120 days following completion of the stability feature. If appropriate, the additional monitoring plan will be integrated into the existing site monitoring plan to avoid redundant or conflicting monitoring programs. This paragraph shall not apply if the coal ash under and within the waste boundary of the Pine Hall Road Landfill and within the waste boundary of the Ash Basin is excavated.

30. Groundwater Corrective Action Plan. On December 31, 2019, Duke Energy Carolinas submitted a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan includes active remedial measures intended by Duke Energy Carolinas to address any groundwater contamination caused by the Ash Basin as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater

rules, and any other applicable laws, statutes, or regulations, provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 75. If the coal ash under and within the waste boundary of the Pine Hall Road Landfill and within the waste boundary of the Ash Basin is not excavated, then at a minimum, Duke Energy Carolinas shall remedy violations that DEQ determines are material violations of the 2L groundwater standards attributable to the Ash Basin at or beyond the geographic limitation as described in Paragraph 75 by December 31, 2029, subject to the provisions of Paragraph 74. Upon approval of the proposed Groundwater Corrective Action Plan by DEQ, Duke Energy Carolinas shall implement the plan subject to such modification and amendments approved pursuant to N.C. Gen. Stat. § 130A-309.211(b)(3) and the 2L groundwater rules.¹⁷

31. NPDES Permit and Special Order by Consent. On March 21, 2019, DEQ issued NPDES Permit No. NC0024406 for Belews Creek. On July 12, 2018, the EMC approved SOC S18-004 for Belews Creek, which sets a compliance schedule that requires completion of decanting by September 30, 2020. Duke Energy Carolinas shall comply with the terms of NPDES Permit No. NC0024406 and SOC S18-004 including any future amendments by DEQ or the EMC, respectively, when such an amendment becomes effective (unless otherwise ordered by the North Carolina Office of Administrative Hearings or a court of competent jurisdiction).

¹⁷ For clarity, this paragraph does not constitute approval of any portion or aspect of the Groundwater Corrective Action Plan. DEQ will approve or disapprove the Groundwater Corrective Action Plan at the appropriate time.

Buck

32. **Closure of CCR Impoundments.** Duke Energy Carolinas shall excavate and remove all coal ash from Basins 1, 2, and 3 either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes. Duke Energy Carolinas shall remove or permanently close all pipes currently running through or beneath Basins 1, 2, and 3. Duke Energy Carolinas shall thereafter stabilize and close the area where Basins 1, 2, and 3 are located pursuant to applicable law. The total coal ash that will be excavated is estimated to be approximately 6,412,000 tons.
33. **Disposition of Other Coal Ash.** Additionally, Duke Energy Carolinas shall excavate and remove coal ash from the ash stack either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes.
34. **Deadline for Closure.** Duke Energy Carolinas projects that it will require until December 31, 2035, to complete all excavation as required in Paragraphs 32 and 33. Duke Energy Carolinas shall complete all excavation required in Paragraphs 32 and 33 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to time, and subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2035.¹⁸
35. **Groundwater Corrective Action Plan.** Duke Energy Carolinas shall submit a proposed Groundwater Corrective Action Plan to DEQ for its review and approval.

¹⁸ For clarity, this paragraph does not constitute a variance of the CAMA deadline for completion of closure. DEQ will approve or disapprove a request for variance at the appropriate time.

The Corrective Action Plan must include remedial measures designed to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 74 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 75. Upon approval of the proposed Groundwater Corrective Action Plan, Duke Energy Carolinas shall implement the plan subject to such modification and amendment approved pursuant to N.C. Gen. Stat. § 130A-309.211(b)(3) and the 2L groundwater rules.¹⁹

36. NPDES Permit and Special Order by Consent. On September 17, 2018, DEQ issued NPDES Permit No. NC0004774 for Buck. On July 12, 2018, the EMC approved SOC S18-004 for Buck, which sets a compliance schedule that requires completion of decanting by March 31, 2020. Duke Energy Carolinas shall comply with the terms of NPDES Permit No. NC004774 and SOC S18-004 including any future amendments by DEQ or the EMC, respectively, when such an amendment becomes effective (unless otherwise ordered by the North Carolina Office of Administrative Hearings or a court of competent jurisdiction).

37. Prior Settlement of Buck Unaffected. Nothing in this Consent Order alters, changes, overrides, or invalidates the separate Settlement Agreement and Release dated December 21, 2016, between Yadkin Riverkeeper, Inc., and Waterkeeper Alliance,

¹⁹ For clarity, this paragraph does not constitute approval of any portion or aspect of the Groundwater Corrective Action Plan. DEQ will approve or disapprove the Groundwater Corrective Action Plan at the appropriate time.

Inc., on the one hand, and Duke Energy Carolinas, on the other, or any provision thereof.

Cliffside/Rogers

38. Closure of CCR Impoundments. Duke Energy Carolinas shall excavate and remove all coal ash from the Unit 5 Inactive Ash Basin and Active Ash Basin, either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy Carolinas shall provide reasonable notice to the Community Groups and DEQ. Duke Energy Carolinas shall remove or permanently close all pipes currently running through or beneath the Unit 5 Inactive Ash Basin and Active Ash Basin. Duke Energy Carolinas shall thereafter stabilize and close the area where the Unit 5 Inactive Ash Basin and Active Ash Basin are located pursuant to applicable law. The total coal ash that will be excavated is estimated to be approximately 7,590,000 tons.

39. Deadline for Closure. Duke Energy Carolinas projects that it will require until December 31, 2028, to complete all excavation as required in Paragraph 38. Duke Energy Carolinas shall complete all excavation required in Paragraph 38 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to time, but in any event not later than December 31, 2029.

40. Groundwater Corrective Action Plan. On December 31, 2019, Duke Energy Carolinas submitted a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan includes active remedial measures

intended by Duke Energy Carolinas to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 74 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 75. Upon approval of the proposed Groundwater Corrective Action Plan by DEQ, Duke Energy Carolinas shall implement the plan subject to such modification and amendment approved pursuant to N.C. Gen. Stat. § 130A-309.211(b)(3) and the 2L groundwater rules.²⁰

41. NPDES Permit and Special Order by Consent. On July 13, 2018, DEQ issued NPDES Permit No. NC0005088 for Cliffside/Rogers. On April 18, 2018, the EMC approved SOC S17-009, which sets a compliance schedule that requires completion of decanting by March 31, 2020. Duke Energy Carolinas shall comply with the terms of NPDES Permit No. NC0005088 and SOC S17-009 including any future amendments by DEQ or the EMC, respectively, when such an amendment becomes effective (unless otherwise ordered by the North Carolina Office of Administrative Hearings or a court of competent jurisdiction).

Marshall

42. Closure of CCR Impoundment. Duke Energy Carolinas shall excavate and remove all coal ash from the Ash Basin, except the coal ash under or within the waste boundaries of the PV Structural Fill and the 1804 Phase II Landfill, either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid

²⁰ For clarity, this paragraph does not constitute approval of any portion or aspect of the Groundwater Corrective Action Plan. DEQ will approve or disapprove the Groundwater Corrective Action Plan at the appropriate time.

waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy Carolinas shall provide reasonable notice to the Community Groups and DEQ. Duke Energy Carolinas shall remove or permanently close all pipes currently running through or beneath the Ash Basin. Duke Energy Carolinas shall thereafter stabilize and close the area where the Ash Basin is located pursuant to applicable law. The total coal ash that will be excavated is estimated to be approximately 16,800,000 tons. An approximate depiction of the excavation at Marshall is attached as **Exhibit I**.

43. **Disposition of Other Coal Ash.** Additionally, for the Marshall site, and due to the hydrogeological setting of the 1804 Phase I Landfill (sometime referred to as the “old ash fill”) adjacent to the Ash Basin, Duke Energy Carolinas shall excavate and remove approximately 626,000 tons of coal ash from the 1804 Phase I Landfill adjacent to the Ash Basin either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy Carolinas shall provide reasonable notice to the Community Groups and DEQ. Such excavation shall be complete no later than December 31, 2024. An approximate depiction of the excavation at Marshall is attached as **Exhibit I**.

44. **Deadline for Closure.** Duke Energy Carolinas projects that it will require until December 31, 2034, to complete all excavation as required in Paragraph 42, and the Parties understand that Duke Energy Carolinas will request variances to meet the

deadline imposed by this Consent Order. Duke Energy Carolinas shall complete all excavation required in Paragraph 42 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to time, and subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2035.²¹

45. Structural Stability, Monitoring, and Sampling. The coal ash under and within the waste boundary of the PV Structural Fill and the 1804 Phase II Landfill and within the waste boundary of the Ash Basin shall be stabilized with a permanent structure (“stability feature”) for purposes of preserving the structural stability through the use of a wall unless a slope is shown to be as appropriate, so as to prevent lateral movement of the coal ash pursuant to a plan to be submitted for DEQ approval no later than June 30, 2020. Within seven (7) days of completing the stability feature, Duke Energy Carolinas shall notify DEQ. Additionally, pursuant to a plan approved by DEQ, following excavation in the footprint of the former Ash Basin and downgradient of the PV Structural Fill and the 1804 Phase II Landfill, Duke Energy Carolinas shall conduct groundwater monitoring (including the installation of new wells if reasonably necessary) and, upon re-formation of surface water features that demonstrate DEQ-confirmed intermittent or perennial flows (not merely precipitation), surface water sampling. If Duke Energy Carolinas demonstrates to the satisfaction of DEQ that groundwater monitoring in the footprint of the former Ash Basin and downgradient of the PV Structural Fill and the 1804 Phase II Landfill is impracticable, DEQ may require

²¹ For clarity, this paragraph does not constitute a variance of the CAMA deadline for completion of closure. DEQ will approve or disapprove a request for variance at the appropriate time.

upgradient or side-gradient monitoring. Consistent with the provisions of Paragraph 74, in this plan Duke Energy Carolinas shall propose (1) additional groundwater remedial measures for any coal ash constituent if the data indicate an increasing trend in groundwater concentrations in excess of the 2L groundwater standards for four (4) consecutive semi-annual sampling events for that constituent, subject to the provisions of Paragraph 75, and (2) surface water treatment if the data shows impact from coal ash constituents above the 2B standards to waters of the State notwithstanding the provisions of Paragraph 75. This plan shall be submitted to DEQ no later than 120 days following completion of the stability feature. If appropriate, the additional monitoring plan will be integrated into the existing site monitoring plan to avoid redundant or conflicting monitoring programs.

46. Groundwater Corrective Action Plan. On December 31, 2019, Duke Energy Carolinas submitted a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan includes active remedial measures intended by Duke Energy Carolinas to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 74 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 75. Upon approval of the proposed Groundwater Corrective Action Plan by DEQ, Duke Energy Carolinas shall implement the plan subject to such modification and amendment approved pursuant to N.C. Gen. Stat. § 130A-309.211(b)(3) and the 2L groundwater rules. In addition, Duke Energy Carolinas shall install a geosynthetic cap over the PV Structural Fill and 1804 Phase II

Landfill by December 31, 2024. At a minimum, Duke Energy Carolinas shall remedy any material violations of the 2L groundwater standards as determined by DEQ that are attributable to the Ash Basin at or beyond the geographic limitation as described in Paragraph 75 by December 31, 2029, subject to the provisions of Paragraph 74.²²

47. NPDES Permit and Special Order by Consent. On April 2, 2018, DEQ issued a major modification of NPDES Permit No. NC0004987 for Marshall. On April 18, 2018, the EMC approved SOC S17-009 for Marshall, which sets a compliance schedule that requires the completion of decanting by March 31, 2021. Duke Energy Carolinas shall comply with the terms of NPDES Permit No. NC0004987 and SOC S17-009 including any future amendments by DEQ or the EMC, respectively, when such an amendment becomes effective (unless otherwise ordered by the North Carolina Office of Administrative Hearings or a court of competent jurisdiction).

Facility-Specific Obligations of Duke Energy Progress

Mayo

48. Closure of CCR Impoundment. Duke Energy Progress shall excavate and remove all coal ash from the Ash Basin either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy Progress will provide reasonable notice to the Community Groups and DEQ. Duke

²² For clarity, this paragraph does not constitute approval of any portion or aspect of the Groundwater Corrective Action Plan. DEQ will approve or disapprove the Groundwater Corrective Action Plan at the appropriate time.

Energy Progress shall remove or permanently close all pipes currently running through or beneath the Ash Basin. Duke Energy Progress will stabilize and close the area where the Ash Basin is located pursuant to applicable law. The total coal ash that will be excavated is estimated to be approximately 6,630,000 tons.

49. Deadline for Closure. Duke Energy Progress projects that it will require until December 31, 2028, to complete all excavation as required in Paragraph 48. Duke Energy Progress may request variances to meet the deadline imposed by this Consent Order. Duke Energy Progress shall complete all excavation required in Paragraph 48 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to time, but in any event not later than December 31, 2029.

50. Groundwater Corrective Action Plan. On December 31, 2019, Duke Energy Progress submitted a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan includes remedial measures intended by Duke Energy Progress to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 74 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 75. Upon approval of the proposed Groundwater Corrective Action Plan by DEQ, Duke Energy Progress shall implement

the plan subject to such modification and amendment approved pursuant to N.C. Gen. Stat. § 130A-309.211(b)(3) and the 2L groundwater rules.²³

51. NPDES Permit and Special Order by Consent. On July 13, 2018, DEQ issued NPDES Permit No. NC0038377 for Mayo. On August 15, 2018, the EMC approved SOC S18-005, which sets a compliance schedule that requires the completion of decanting by December 31, 2020. Duke Energy Progress shall comply with the terms of NPDES Permit No. NC0038377 and SOC S18-005 including any future amendments by DEQ or the EMC, respectively, when such an amendment becomes effective (unless otherwise ordered by the North Carolina Office of Administrative Hearings or a court of competent jurisdiction).

Roxboro

52. Closure of CCR Impoundment. Duke Energy Progress shall excavate and remove all coal ash from the West Ash Basin (and its extension impoundment area, sometimes referred to as the “Southern Extension Impoundment”) and all coal ash from the East Ash Basin (and its extension impoundment area, sometimes referred to as the “Eastern Extension Impoundment”) except the coal ash under or within the waste boundary of the Roxboro Landfill, Permit No. 7302-INDUS-1988. The excavated ash shall be either (1) disposed of at lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) used for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy Progress shall

²³ For clarity, this paragraph does not constitute approval of any portion or aspect of the Groundwater Corrective Action Plan. DEQ will approve or disapprove the Groundwater Corrective Action Plan at the appropriate time.

provide reasonable notice to the Community Groups and DEQ. The scope of excavation of the East Ash Basin is approximately depicted on **Exhibit J** to this Consent Order. Duke Energy Progress shall remove or permanently close all pipes currently running through or beneath the West Ash Basin and East Ash Basin except those associated with the Roxboro Landfill. Duke Energy Progress shall thereafter stabilize and close the area where the West Ash Basin and East Ash Basin are located pursuant to applicable law. The total coal ash that will be excavated is estimated to be approximately 16,860,000 tons. Additionally, Duke Energy Progress shall remove all coal ash fill from the Gypsum Pad area following retirement of the coal-fired generating units at Roxboro.

53. Disposition of Other Coal Ash. Duke Energy Progress shall commence closure of the Roxboro Landfill, Permit No. 7302-INDUS-1988, no later than 30 days after the date on which the Roxboro Landfill receives the final receipt of waste utilizing a cap system that meets the requirements of North Carolina and federal law.

54. Deadline for Closure. Duke Energy Progress projects that it will require until December 31, 2035, to complete all excavation as required in Paragraph 52, and that the Parties understand that Duke Energy Progress will request variances to meet the deadline imposed by this Consent Order. Duke Energy Progress shall complete all excavation required in Paragraph 52 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to time, and

subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2036.²⁴

55. Structural Stability, Monitoring, and Sampling. The coal ash under and within the waste boundary of the Roxboro Landfill and within the waste boundary of the East Ash Basin shall be stabilized with a permanent structure (“stability feature”) for purposes of preserving the structural stability through the use of a wall unless a slope is shown to be as appropriate so as to prevent lateral movement of the coal ash pursuant to a plan to be submitted for DEQ approval no later than June 30, 2020. Within seven (7) days of completing the stability feature, Duke Energy Progress shall notify DEQ. Additionally, pursuant to a plan approved by DEQ, following excavation in the footprint of the former East Ash Basin and downgradient of the Roxboro Landfill, Duke Energy Progress shall conduct groundwater monitoring (including the installation of new wells if reasonably necessary) and, upon re-formation of surface water features that demonstrate DEQ-confirmed intermittent or perennial flows (not merely precipitation), surface water sampling. Consistent with the provisions of Paragraph 74, in this plan Duke Energy Progress shall propose (1) additional groundwater remedial measures for any coal ash constituent if the data indicate an increasing trend in groundwater concentrations in excess of the 2L groundwater standards for four (4) consecutive semi-annual sampling events for that constituent, subject to the provisions of Paragraph 75, and (2) surface water treatment if the data shows impact from coal ash constituents above the 2B standards to waters of the State notwithstanding the

²⁴ For clarity, this paragraph does not constitute a variance of the CAMA deadline for completion of closure. DEQ will approve or disapprove a request for variance at the appropriate time.

provisions of Paragraph 75. This plan shall be submitted to DEQ no later than 120 days following completion of the stability feature. If appropriate, the additional monitoring plan will be integrated into the existing site monitoring plan to avoid redundant or conflicting monitoring programs.

56. Groundwater Corrective Action Plan. On December 31, 2019, Duke Energy Progress submitted a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan includes active remedial measures intended by Duke Energy Progress to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 74 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 75. Upon approval of the proposed Groundwater Corrective Action Plan by DEQ, Duke Energy Carolinas shall implement the plan subject to such modification and amendment approved pursuant to N.C. Gen. Stat. § 130A-309.211(b)(3) and the 2L groundwater rules. At a minimum, Duke Energy Progress shall remedy any material violations of the 2L groundwater standards as determined by DEQ that is attributable to the East Ash Basin at or beyond the geographical limitation described in Paragraph 75 by December 31, 2029, subject to the provisions of Paragraph 74.²⁵

57. Progress Towards Groundwater Remediation. Subject to the provisions of this Consent Order regarding substantial compliance in Paragraph 74, no later than June 30,

²⁵ For clarity, this paragraph does not constitute approval of any portion or aspect of the Groundwater Corrective Action Plan. DEQ will approve or disapprove the Groundwater Corrective Action Plan at the appropriate time.

2020, Duke Energy Progress shall submit a report for approval by DEQ analyzing the progress required by June 30, 2023 and by June 30, 2026 to achieve compliance with 2L groundwater standards by December 31, 2029 at or beyond the geographic limitation described in Paragraph 75 around the East Ash Basin. Subject to the provisions of this Consent Order regarding substantial compliance in Paragraph 74, no later than September 30, 2023 and September 30, 2026, Duke Energy Progress shall submit reports demonstrating sufficient progress toward the goal of achieving compliance with the 2L groundwater standards. If DEQ determines that sufficient progress has not been made towards achieving this goal, Duke Energy Progress shall implement additional remedial measures as required by DEQ.

58. NPDES Permit and Special Order by Consent. On January 18, 2020, DEQ provided public notice of draft NPDES Permit No. NC0003425 for Roxboro. On August 15, 2018, the EMC approved SOC S18-005 for Roxboro, which sets a compliance schedule that requires the completion of decanting by June 30, 2020. Duke Energy Progress shall comply with the terms of the NPDES Permit No. NC0003425 as issued following public comment and SOC S18-005 including any future amendments by DEQ or the EMC, respectively, when such an amendment becomes effective (unless otherwise ordered by the North Carolina Office of Administrative Hearings or a court of competent jurisdiction).

Additional Obligations of Duke Energy Carolinas and Duke Energy Progress

59. Submission of Closure Plans. On December 31, 2019, Duke Energy Carolinas and Duke Energy Progress submitted to DEQ one closure plan for each CCR impoundment

pursuant to N.C. Gen. Stat. § 130A-309.214(a) for each of the above-referenced Facilities.

60. Notice to Community Groups. During the implementation of the Groundwater Corrective Action Plans and any monitoring required by the terms of this Consent Order, Duke Energy Carolinas and Duke Energy Progress shall provide concurrent copies to the Community Groups of annual reports required under Paragraph 84 of this Consent Order, coal ash excavation reports and groundwater monitoring data (including spreadsheets) for the Facilities as these are provided to DEQ. This may occur through U.S. Mail or electronic means to the person designated in Paragraph 80.

Obligations of DEQ

61. Review of Closure Plans. DEQ shall review proposed closure plans and provide for public participation consistent with N.C. Gen. Stat. § 130A-309.214(b). DEQ may request the submittal of additional information pursuant to N.C. Gen. Stat. § 130A-309.214(c). After receiving public comment, DEQ shall approve or disapprove the proposed closure plans pursuant to N.C. Gen. Stat. § 130A-309.214(c). DEQ will not disapprove a proposed closure plan on the basis of the closure methodology employed, to the extent that such methodology is consistent with this Consent Order.

62. Timely Review. In accordance with applicable law, DEQ shall conduct an expeditious review and act expeditiously on all applications by Duke Energy Carolinas and Duke Energy Progress for permits necessary to undertake the actions required under this Consent Order as required by N.C. Gen. Stat. § 130A-309.203.

63. **Review of Variance Requests.** DEQ acknowledges that the deadline for closure is a deadline for which the Secretary is authorized to grant a variance provided that the requirements of N.C. Gen. Stat. § 130A-309.215 are satisfied. DEQ acknowledges that an extension of time required to complete excavation ordered by DEQ and mandated by the terms of this Consent Order may be a valid basis for seeking a variance from CAMA deadlines, including requests for variance under Paragraph 66 below for purposes of beneficiation. DEQ will approve or disapprove a request for variance at the appropriate time.
64. **CCR Rule Deadlines.** DEQ agrees to cooperate with (including as appropriate to support) and not oppose Duke Energy Carolinas's or Duke Energy Progress's efforts to extend the deadlines imposed by the federal CCR rule in court or before an administrative body to the extent that such an extension is necessary for Duke Energy Carolinas or Duke Energy Progress to meet its obligations under this Consent Order.
65. **Further Excavation.** For CCR impoundments, structural fills, and landfills identified in this Consent Order, DEQ shall not require additional excavation for CCR-impacted groundwater at Allen, Belews Creek, Buck, Cliffside/Rogers, Marshall, Mayo, and Roxboro unless DEQ determines (1) there are material violations of the 2L groundwater standards or this Consent Order within the meaning of Paragraph 74 and (2) these material violations cannot reasonably be remedied by active remediation.

Obligations of the Community Groups

66. **CAMA Variance Requests.** The Community Groups will not oppose requests for variances made by Duke Energy Carolinas or Duke Energy Progress as to the closure

deadlines set forth in CAMA in court or before an administrative body, provided that there are no requests to extend such deadlines past December 31, 2034 for the basins at Belews Creek, December 31, 2035 for the basins at Marshall or Buck, December 31, 2036 for the basins at Roxboro, and December 31, 2038 for the basins at Allen.

67. Closure Plans and Corrective Action Plans. The Community Groups will not challenge in court or before an administrative body DEQ's approval of Duke Energy Carolinas's and Duke Energy Progress's closure plans, Corrective Action Plans (including application of a Restricted Designation), Corrective Action Plan implementation, landfill construction or operation permits, components or terms of NPDES permits or modifications to NPDES permits to the extent these components or terms are reasonably necessary for the obligations imposed by this Consent Order (including, for example, NPDES permits or modifications relating to decanting and dewatering), stormwater permits, dam removal authorizations, or post-closure monitoring plans for Allen, Belews Creek, Buck, Cliffside/Rogers, Marshall, Mayo, and Roxboro, or such other permits as required by this Consent Order, provided those closure plans and Corrective Action Plans conform with the terms of this Consent Order.

68. CCR Rule Deadlines. The Community Groups will not oppose Duke Energy Carolinas's or Duke Energy Progress's efforts in court or in an administrative proceeding to extend the deadlines imposed by the federal CCR rule to the extent that such an extension is necessary to meet the obligations under this Consent Order. If appropriate, the Community Groups will support such requests.

69. Deadlines for Coal Ash Recycling. The Community Groups will not oppose in court or before an administrative body, extensions to the CAMA closure dates as may be requested for the purposes of completing beneficiation at Buck, Cape Fear, and HF Lee, through December 31, 2035. For purposes of this paragraph only, Cape Fear River Watch, Inc., Waterkeeper Alliance, Sound Rivers, and Winyah Rivers Foundation (together “additional community groups”), DEQ, and Duke Energy Progress consent to amending the Order Granting Motion for Partial Summary Judgment entered on April 4, 2016 and amended on June 9, 2017, with respect to Paragraph 19 (H.F. Lee) and Paragraph 34 (Cape Fear). The signatures of these additional community groups on this Consent Order shall apply only to the provisions of this paragraph. The Motion seeking an amendment to the Order Granting Motion for Partial Summary Judgment shall be filed separately from this Consent Order.

Further Obligations

70. Closure Method. The terms of this Consent Order satisfy the closure method requirements of N.C. Gen. Stat. § 130A-309.214 for Duke Energy Carolinas and Duke Energy Progress at the Facilities. In the event of inconsistency between this Consent Order and the closure method ordered in DEQ’s April 1 Closure Determinations, the terms of this Consent Order shall control.²⁶

71. Consent Order and Settlement Agreement. The Court takes judicial notice that the Parties entered into a Settlement Agreement on December 31, 2019. Nothing in this

²⁶ For clarity, this paragraph does not constitute approval of the closure plan. DEQ will approve or disapprove the closure plan at the appropriate time.

Consent Decree is intended to alter, amend, or change any surviving obligations of the Settlement Agreement. The Parties further agree that:

- a. Except as set forth in Paragraph 72, below, the only State entity bound by this Consent Order is DEQ.
- b. Except as set forth in Paragraph 72, below, the resolution of cases or issues pursuant to this Consent Order shall have no preclusive, *res judicata*, or collateral estoppel effect against the State of North Carolina or any other State entity other than DEQ.
- c. Nothing in this Consent Order shall limit the arguments that may be made or conclusions that may be drawn by other State entities in any matter or proceeding concerning recovery through rates of costs incurred by Duke Energy.

72. Release of Claims. Notwithstanding any other provision of this Consent Order, for the Facilities listed in Paragraphs 4 and 5, this Consent Order releases and resolves the civil claims for injunctive relief set forth or which could have been set forth by Plaintiff against Duke Energy Progress and Duke Energy Carolinas in the above-captioned matters for past and continuing alleged violations of the water quality statutes and regulations referenced in the Complaints based on information reasonably known to DEQ at the time of filing of the Consent Order. For clarity, this release does not apply to any alleged groundwater violations referenced in Paragraph 20.

73. No Limitation of Authority for Unknown or Future Endangerment. Plaintiff retains all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment that is presently unknown or which may arise in the future as a result of activities at the Facilities

whether related to the violations addressed in this Consent Order or otherwise. The Parties reserve all legal and equitable remedies available to enforce the provisions of this Consent Order, including requesting the Court to exercise its contempt powers.

74. Substantial Compliance. For any term of this Consent Order that requires compliance with the 2L groundwater standards, neither Duke Energy Carolinas nor Duke Energy Progress will be deemed to be in violation of any such term of this Consent Order and shall not be subject to civil penalties or enforcement action by DEQ at a Facility covered by this Consent Order so long as Duke Energy Carolinas or Duke Energy Progress, as applicable, has used best efforts (as described in Paragraph 77) to implement the Corrective Action Plan and post-closure monitoring and care plan unless DEQ determines that there are multiple and material deviations from such standards at or beyond the geographic limitation set forth in Paragraph 75.

75. Geographic Limitation. Active remediation will not be required in the area within 500 feet of the waste boundary of each CCR impoundment as shown on the most recent NPDES permit for each of the Facilities (except that if a property boundary or body of water is located closer than 500 feet to the waste boundary, that property boundary or body of water shall define the geographic limits for active remediation) (“geographic limitation”), provided that, subject to the provisions of Paragraph 74, coal ash constituents outside the geographic limitation described in this paragraph do not increase beyond the 2L groundwater standards post-closure. DEQ will not assess a civil penalty or pursue an enforcement action for any exceedances of the 2L groundwater standards within the geographical limitation so long as Duke Energy Carolinas or Duke Energy Progress, as applicable, is making best efforts (as defined by

Paragraph 77) to implement the approved Corrective Action Plan and closure plan as determined by DEQ. The Corrective Action Plans may be periodically updated as required by DEQ if the groundwater cleanup fails to meet projected targets.

76. **No Admission.** No Party admits wrongdoing or liability related to matters covered in this Consent Order.

77. **Force Majeure.** It will not be a violation of this Consent Order if performance of any of the obligations contained in any paragraph is delayed by an extraordinary event that is beyond the control of Duke Energy Carolinas or Duke Energy Progress, as applicable, or any entity controlled by Duke Energy Carolinas or Duke Energy Progress, as applicable, or their contractors, despite best efforts to fulfill the obligation. Such causes are war, civil unrest, act of God, or act of a governmental or regulatory body delaying performance or making performance impossible including any appeal or decision remanding, overturning, modifying, or otherwise acting (or failing to act) on a permit or similar permission or action that prevents or delays an action needed for the performance of any of the work contemplated under this Consent Order such that it prevents or substantially interferes with Duke Energy Carolinas's or Duke Energy Progress's performance within the time frames specified herein. Duke Energy Carolinas or Duke Energy Progress, as applicable, shall bear the burden of proving by a preponderance of the evidence the existence of such circumstances. Such circumstances do not include the financial inability to complete the work, increased cost of performance, or changes in business or economic circumstances.

a. To qualify as a force majeure under this Consent Order, the failure of a permitting authority to issue a necessary permit in a timely fashion which prevents Duke

Energy Carolinas or Duke Energy Progress from meeting the requirements in this Consent Order must be beyond the control of Duke Energy Carolinas or Duke Energy Progress, as applicable, and Duke Energy Carolinas or Duke Energy Progress must have taken all steps available to obtain the necessary permit, including but not limited to submitting a complete permit application, responding to requests for additional information by the permitting authority in a timely fashion, and accepting lawful permit terms and conditions after expeditiously exhausting any legal rights to appeal those terms and conditions imposed by the permitting authority.

- b. The requirement that Duke Energy Carolinas and Duke Energy Progress use “best efforts” in this Consent Order includes using commercially reasonable efforts to anticipate any event that delays obligations and to address the event in a commercially reasonable manner as it is occurring or following the event such that delay is minimized to the greatest extent possible.
- c. Duke Energy Carolinas or Duke Energy Progress, as applicable, shall notify the Court, DEQ, and the Community Groups in writing within ten (10) days of 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 Duke Energy Progress or Duke Energy Carolinas to prevent or minimize the delay, and a timetable by which those measures will be implemented. Failure to comply with the notice requirements constitutes a waiver of any defense to a failure to comply with the terms and conditions of this Order.

The Parties may, in advance of the actual occurrence of an event causing delay, move the Court for a determination as to whether the event will excuse the delay.

78. Obligations of the Defendants. Duke Energy Progress and Duke Energy Carolinas shall be responsible for carrying out their respective obligations of the Consent Order until relieved by the Court.

79. No Limitation on Administrative Process and Judgment. DEQ is a governmental agency with statutory rights or obligations, and must abide by all applicable procedural and substantive laws and regulations in the exercise of such authority during the implementation of the provisions in this Consent Order. No provision in this Consent Order shall diminish, modify, or otherwise affect the statutory or regulatory authority of DEQ. For any provision in this Consent Order where DEQ makes a determination on a matter, nothing in this Consent Order waives any rights of a Party under the North Carolina Administrative Procedure Act (including the right to appeal, if any), nor does a determination by DEQ on a matter prohibit a challenge to that determination under the terms of this Consent Order, where appropriate. Nothing in this Consent Order shall limit the opportunity for the Community Groups to participate in any administrative process to the extent consistent with their commitments in this Consent Order and as set forth in Paragraph 71.

80. Notice. Whenever notice is required to be given or a document is required to be sent by one Party to another under the terms of this Consent Order, it shall be provided to all Parties, directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. Notice or submission by electronic mail is acceptable.

- a. As to DEQ:

Sheila Holman
Assistant Secretary for the Environment
1601 Mail Service Center
Raleigh, NC 27699-1601
sheila.holman@ncdenr.gov

Cc: William F. Lane
General Counsel
1601 Mail Service Center
Raleigh, NC 27699-1601
Bill.Lane@ncdenr.gov

- b. As to Duke Energy:

Kodwo Ghartey-Tagoe
Executive Vice-President and Chief Legal Officer
Duke Energy Corp.
Mail Code DEC48H
550 South Tryon Street
Charlotte, NC 28202
Kodwo.Ghartey-Tagoe@duke-energy.com

- c. As to the Community Groups:

Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for Community Groups
601 West Rosemary Street, Suite 220
Chapel Hill, NC 27516-2356
fholleman@selcnc.org

81. **Effective Date.** This Consent Order shall take effect immediately upon entry and shall remain in effect until further order of this Court. The Parties shall comply with the terms of this Consent Order.

82. **Continuing Jurisdiction.** The Court shall retain continuing jurisdiction to enforce the terms and conditions of this Consent Order, to modify this Consent Order, and to resolve disputes arising under this Consent Order. This Consent Order may be

modified, altered, or changed upon application to the Court by written consent of all Parties. Absent consent of all Parties, a Party may seek modification or amendment of this Consent Order only upon a showing of a substantial change of facts and circumstances such that it would no longer be equitable to enforce the terms and conditions of this Consent Order absent such modification or amendment. In the event that any Party seeks such a modification or amendment without the consent of any other Party, all Parties have the right to be heard by the Court. This Consent Order shall remain in force and effect until all obligations and terms have been completed or satisfied. Upon Duke Energy Carolinas and Duke Energy Progress demonstrating completion of all obligations imposed by this Consent Order for each Facility to the satisfaction of Plaintiff and Plaintiff-Intervenors, Plaintiff and Plaintiff-Intervenors shall file appropriate notice and satisfaction documents with the Court.

83. **Compliance.** The parties agree that the actions required by this Consent Order (including costs incurred) are for the purpose of complying with CAMA and coming into compliance with applicable laws, rules, and regulations. For clarity, in ordering methods of closure for the impoundments, DEQ did not seek to impose a fine or penalty. This paragraph relates solely to issues arising under federal tax law.

84. **Reporting.** Duke Energy Carolinas and Duke Energy Progress shall submit annual progress reports to DEQ detailing the work and activities undertaken and completed pursuant to the requirements set forth in this Consent Order. The annual reports are due no later than the thirtieth (30th) day of January for the duration of this Consent Order.

85. **Enforcement.** The full power of the Court, including the contempt provisions of Article 2, Chapter 5A of the North Carolina General Statutes, shall be available to enforce this Consent Order. In no event shall any Party be entitled to monetary damages for breach of this Consent Order. In addition, no action under this Consent Order shall be brought or maintained until: (a) the non-breaching Party provides written notice to the breaching Party which explains with particularity the nature of the claimed breach, and (b) within thirty (30) days after receipt of said notice, the breaching Party fails to cure the claimed breach or, in the case of a claimed breach which cannot be reasonably remedied within a thirty (30) day period, the breaching Party fails to commence to cure the claimed breach within such thirty (30) day period, and thereafter diligently complete the activities reasonably necessary to remedy the claimed breach.
86. **Signature.** This Consent Order may be signed by the Court out-of-court, out-of-term, and out-of-county, and by the Parties in counterparts.

CONSENTED TO BY:

THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

By: Michael S. Regan
Michael Regan
Secretary

Date: January 30, 2020

By: Francisco Benzoni
Francisco Benzoni, as to form only
Special Deputy Attorney General

Date: 01/30/2020

DUKE ENERGY CAROLINAS, LLC

By: Kodwo Ghartey-Tagoe
Kodwo Ghartey-Tagoe

Date: January 31, 2020

Executive Vice-President, Chief Legal Officer
DUKE ENERGY CAROLINAS, LLC and Authorized
Designated Official for DUKE ENERGY CAROLINAS, LLC

DUKE ENERGY PROGRESS, LLC

By: Kodwo Ghartey-Tagoe
Kodwo Ghartey-Tagoe

Date: January 31, 2020

Executive Vice-President, Chief Legal Officer
DUKE ENERGY PROGRESS, LLC and Authorized
Designated Official for DUKE ENERGY PROGRESS, LLC

THE COMMUNITY GROUPS:

THE WATERKEEPER ALLIANCE

By: Frank S. Holleman III Date: 1/31/2020
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

THE ROANOKE RIVER BASIN ASSOCIATION

By: Frank S. Holleman III Date: 1/31/2020
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

CAPE FEAR RIVER WATCH, INC.

By: Frank S. Holleman III Date: 1/31/2020
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

NEUSE RIVER FOUNDATION/SOUND RIVERS, INC.

By: Frank S. Holleman III Date: 1/31/2020
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

THE COMMUNITY GROUPS:

APPALACHIAN VOICES

By: Frank S. Holleman III

Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: 1/31/2020

MOUNTAIN TRUE

By: Frank S. Holleman III

Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: 1/31/2020

THE CATAWBA RIVERKEEPER FOUNDATION

By: Frank S. Holleman III

Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: 1/31/2020

THE SIERRA CLUB

By: Frank S. Holleman III

Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: 1/31/2020

WINYAH RIVERS FOUNDATION, INC.

By: Frank S. Holleman III

Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: 1/31/2020

IT IS HEREBY ORDERED.

This ____ day of _____, 2020.

The Honorable Paul C. Ridgeway
Senior Resident Superior Court Judge

IT IS HEREBY ORDERED.

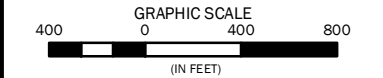
This ____ day of _____, 2020.

The Honorable Paul C. Ridgeway
Senior Resident Superior Court Judge

NOTE
1. BOUNDARIES OBTAINED FROM HDR SAMPLE LOCATION MAP, DATED JUNE 2017.
2. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON DECEMBER 13, 2018. AERIAL WAS COLLECTED ON MARCH 30, 2018.



LEGEND
--- ACTIVE ASH BASIN WASTE BOUNDARY
___ RETIRED ASH BASIN WASTE BOUNDARY



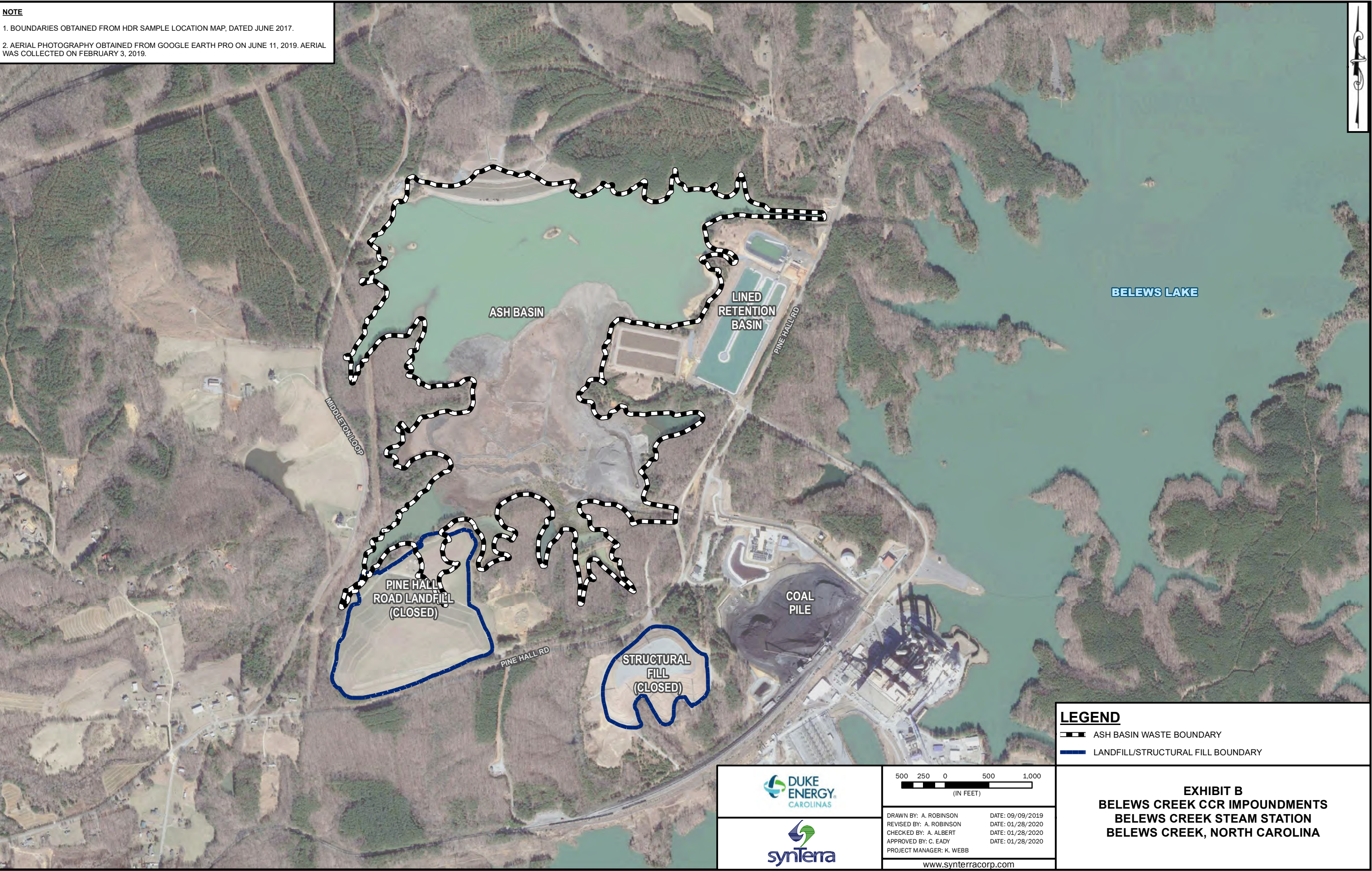
DRAWN BY: A. ROBINSON
REVISED BY: A. ROBINSON
CHECKED BY: L. DRAGO
APPROVED BY: K. WEBB
PROJECT MANAGER: K. WEBB

DATE: 05/03/2019
DATE: 01/24/2020
DATE: 01/24/2020
DATE: 01/24/2020

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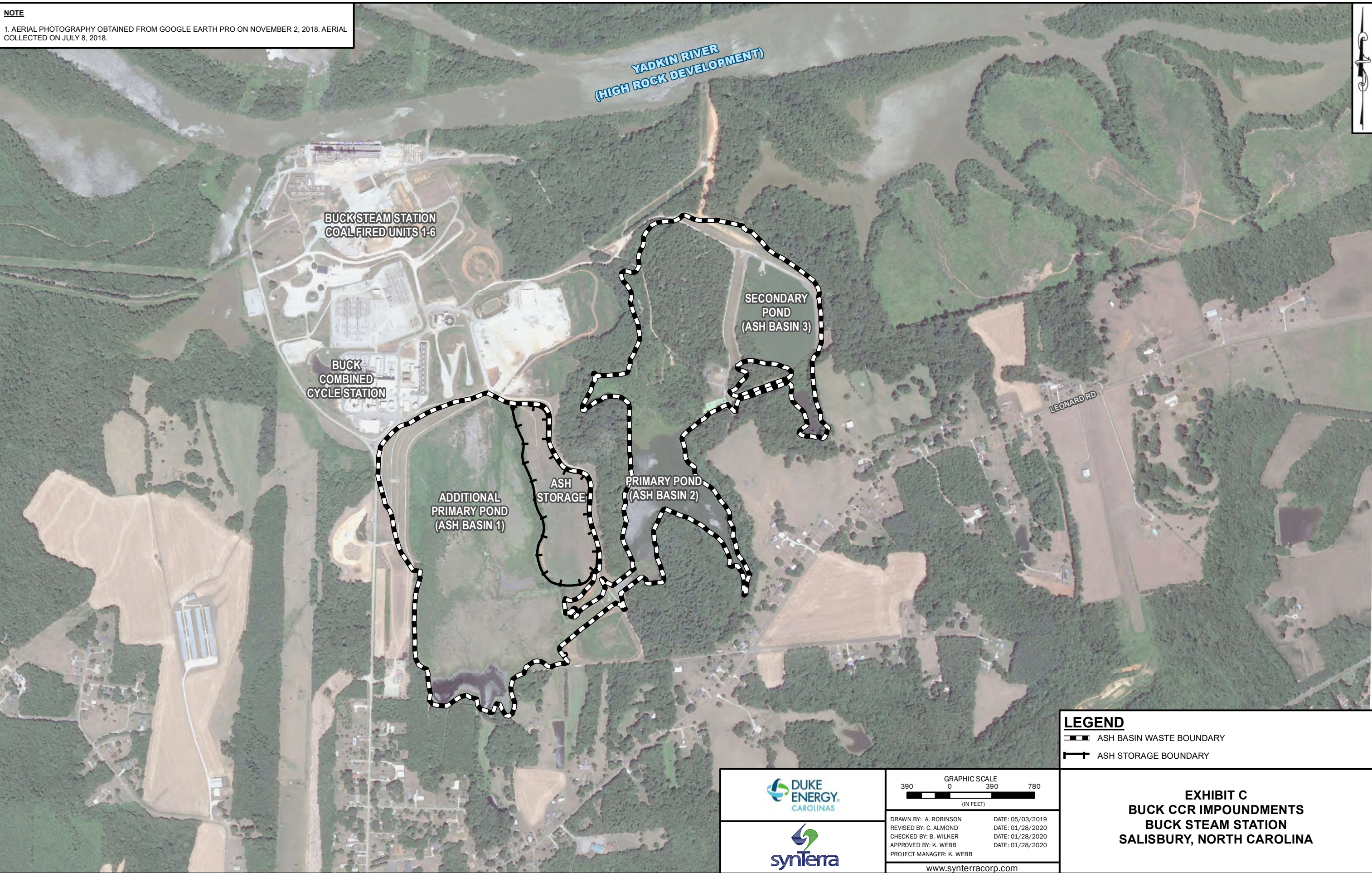
**EXHIBIT A
ALLEN CCR IMPOUNDMENTS
ALLEN STEAM STATION
BELMONT, NORTH CAROLINA**

NOTE
1. BOUNDARIES OBTAINED FROM HDR SAMPLE LOCATION MAP, DATED JUNE 2017.
2. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON JUNE 11, 2019. AERIAL WAS COLLECTED ON FEBRUARY 3, 2019.

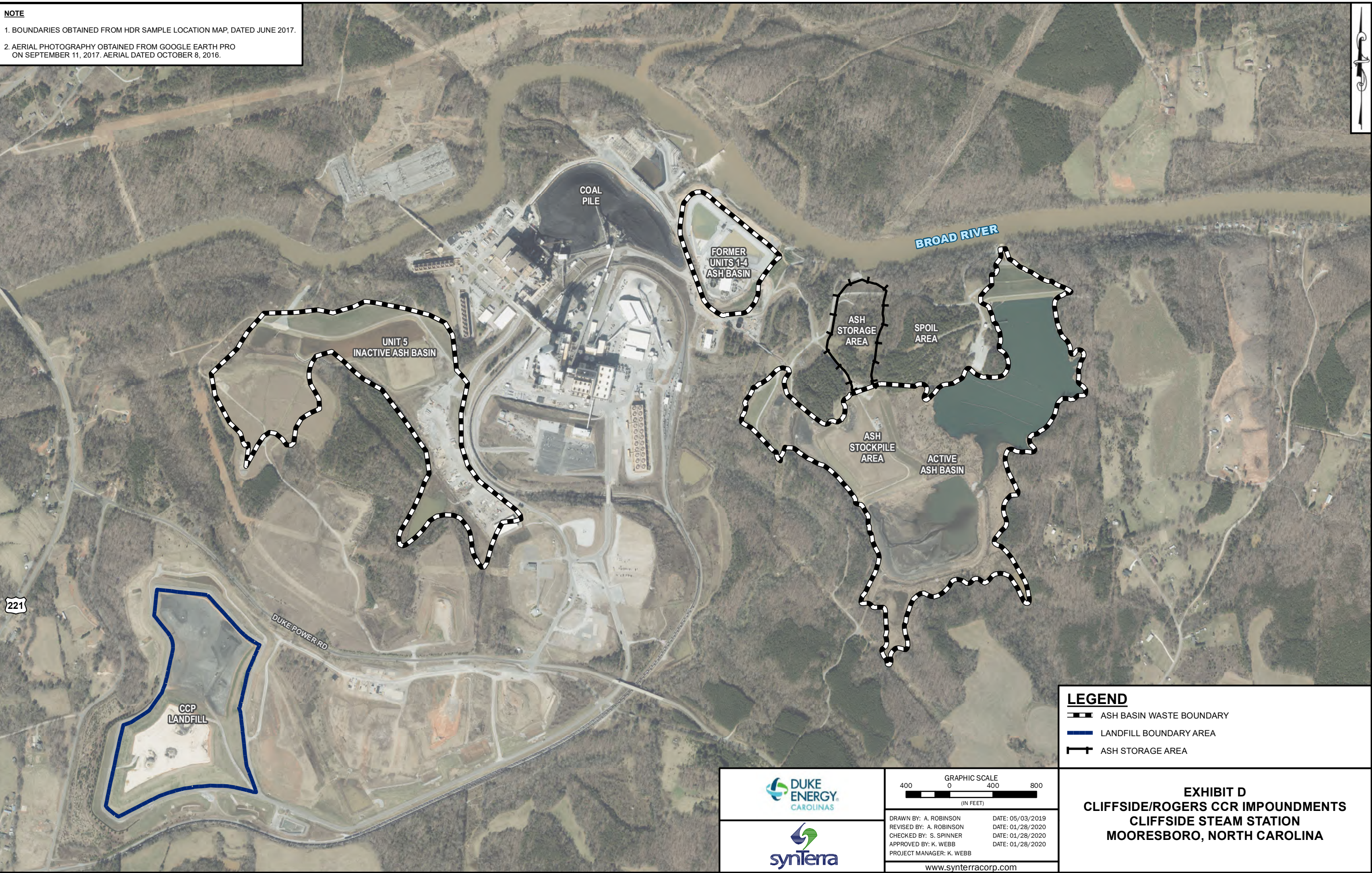


NOTE

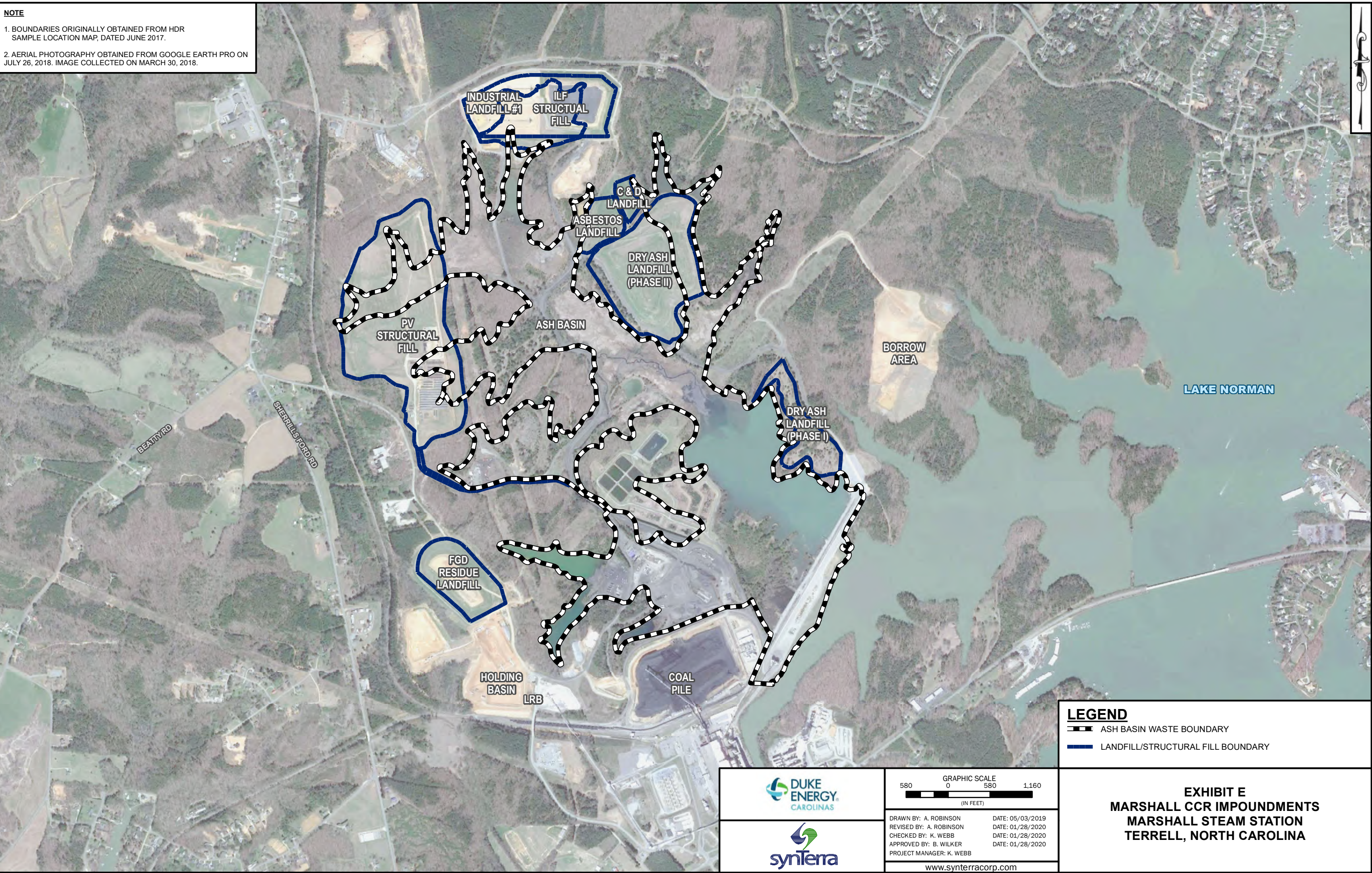
1. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON NOVEMBER 2, 2018. AERIAL COLLECTED ON JULY 8, 2018.



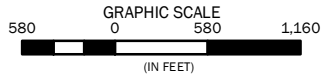
NOTE
1. BOUNDARIES OBTAINED FROM HDR SAMPLE LOCATION MAP, DATED JUNE 2017.
2. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO
ON SEPTEMBER 11, 2017. AERIAL DATED OCTOBER 8, 2016.



NOTE
1. BOUNDARIES ORIGINALLY OBTAINED FROM HDR
SAMPLE LOCATION MAP, DATED JUNE 2017.
2. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON
JULY 26, 2018. IMAGE COLLECTED ON MARCH 30, 2018.



LEGEND
--- ASH BASIN WASTE BOUNDARY
— LANDFILL/STRUCTURAL FILL BOUNDARY



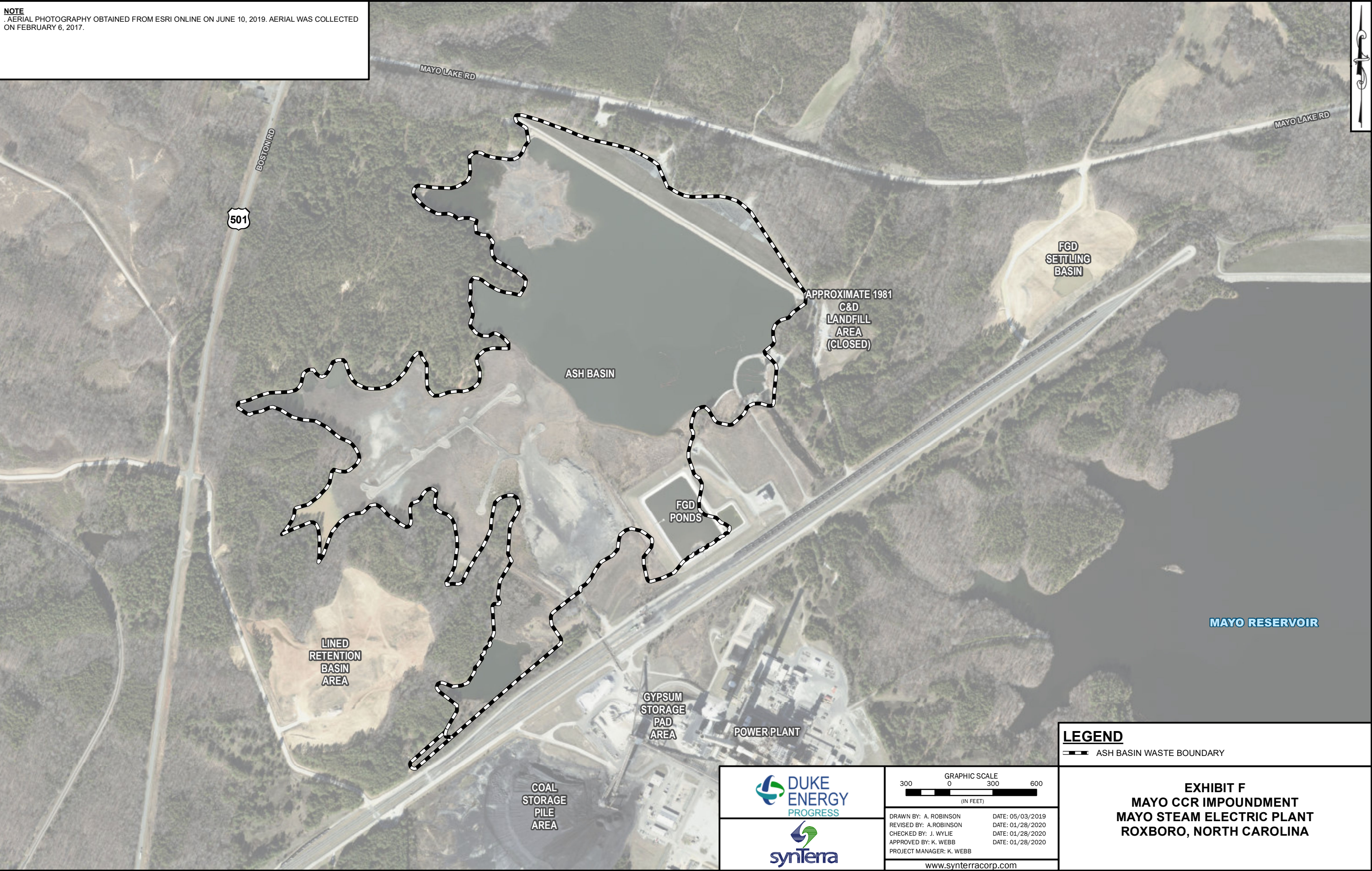
DRAWN BY: A. ROBINSON
REVISED BY: A. ROBINSON
CHECKED BY: K. WEBB
APPROVED BY: B. WILKER
PROJECT MANAGER: K. WEBB

DATE: 05/03/2019
DATE: 01/28/2020
DATE: 01/28/2020
DATE: 01/28/2020

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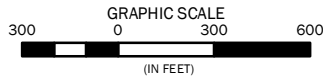
**EXHIBIT E
MARSHALL CCR IMPOUNDMENTS
MARSHALL STEAM STATION
TERRELL, NORTH CAROLINA**

NOTE
AERIAL PHOTOGRAPHY OBTAINED FROM ESRI ONLINE ON JUNE 10, 2019. AERIAL WAS COLLECTED ON FEBRUARY 6, 2017.



LEGEND

--- ASH BASIN WASTE BOUNDARY

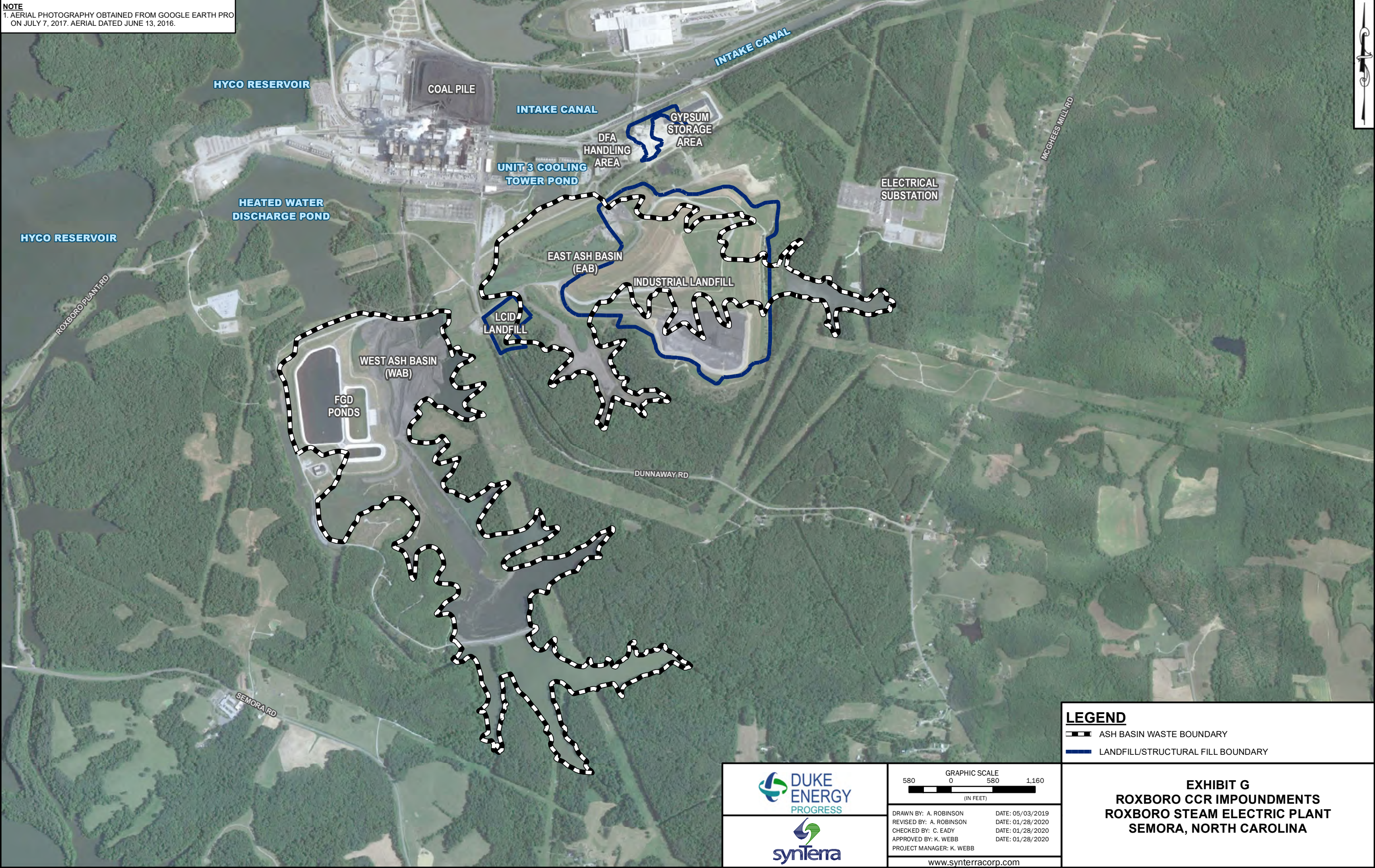


DRAWN BY: A. ROBINSON DATE: 05/03/2019
REVISED BY: A. ROBINSON DATE: 01/28/2020
CHECKED BY: J. WYLIE DATE: 01/28/2020
APPROVED BY: K. WEBB DATE: 01/28/2020
PROJECT MANAGER: K. WEBB

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**EXHIBIT F
MAYO CCR IMPOUNDMENT
MAYO STEAM ELECTRIC PLANT
ROXBORO, NORTH CAROLINA**

NOTE
1. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO
ON JULY 7, 2017. AERIAL DATED JUNE 13, 2016.



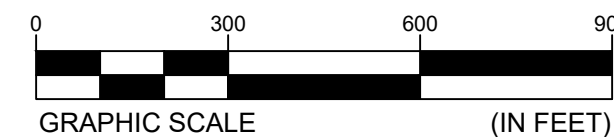
**LEGEND**

- APPROXIMATE ASH BASIN WASTE BOUNDARY
- EXISTING SITE FEATURE (APPROXIMATE)
- ESTIMATED BOTTOM OF ASH MINOR CONTOUR (5 FT)
- ESTIMATED BOTTOM OF ASH MAJOR CONTOUR (25 FT)
- EXISTING MINOR CONTOUR OUTSIDE OF ASH BASIN (5 FT)
- EXISTING MAJOR CONTOUR OUTSIDE OF ASH BASIN (25 FT)
- STREAMS
- WETLANDS
- ASH BASIN AREAS WHERE HISTORICAL GRADES ARE SHOWN

NOTE




1. BASIS OF BEARINGS: NC GRID NAD83/2011. ELEVATIONS ARE BASED ON NAVD88.
2. HISTORICAL TOPOGRAPHY SURVEY (SITE PLAN, DWG. NO. BC-1002-1, REV. 9) PROVIDED BY DUKE ENERGY WAS PREPARED FROM AERIAL PHOTOGRAPHY TAKEN OCTOBER 1966. AECOM DIGITIZED THE CONTOURS FROM THE TOPOGRAPHIC MAP PROVIDED.
3. HISTORICAL TOPOGRAPHIC CONTOURS REFERENCED IN NOTE 2 WERE ASSUMED TO BE ESTIMATED BOTTOM OF ASH CONTOURS AT THIS TIME.
4. EXISTING CONTOURS AND HISTORICAL CONTOURS DO NOT TIE-IN WHERE CUT/FILL HAS OCCURRED DURING OR AFTER CONSTRUCTION OF THE ASH BASIN.

BELEWS LAKE
NORMAL WATER SURFACE ELEVATION = 725



NOT FOR CONSTRUCTION

Exhibit H

 N.C. ENGINEERING LICENSE NO. F-0342	TITLE ESTIMATED BOTTOM OF ASH CONTOUR MAP BELEWS CREEK STEAM STATION CLOSURE BY EXCAVATION CLOSURE PLAN STOKES COUNTY, NORTH CAROLINA		
	FOR ISSUED FOR APPROVAL		
			SCALE: AS SHOWN DWG TYPE: DWG JOB NO: 60603274 DATE: 12-12-2019
	FILENAME: O-6C-BOTTOM OF ASH.DWG DWG SIZE: 22.0"x34.0" ANSI D		DES: SD/KO DFTR: SD/KO CHKD: KK ENGR: SD/KO APPD: KK REVISION: A

LEGEND

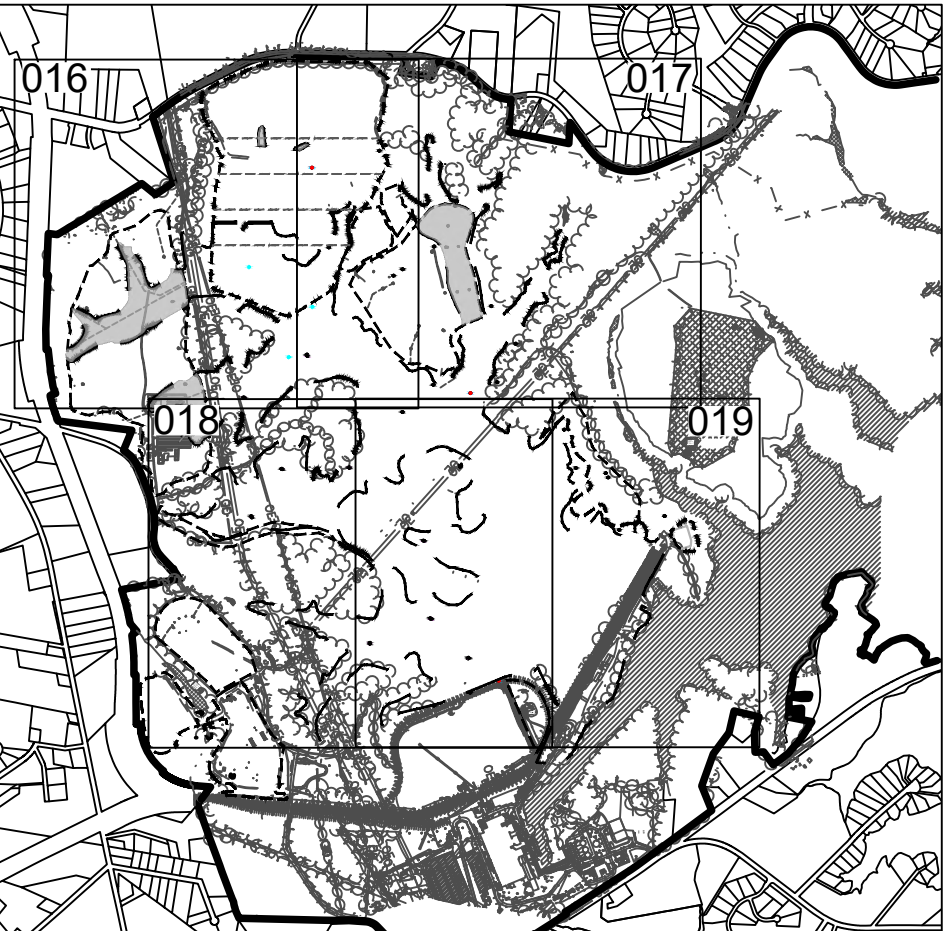
- EXISTING MAJOR TOPOGRAPHIC CONTOUR
- EXISTING MINOR TOPOGRAPHIC CONTOUR
- ESTIMATED BOTTOM OF CCR MAJOR TOPOGRAPHIC CONTOUR
- ESTIMATED BOTTOM OF CCR MINOR TOPOGRAPHIC CONTOUR
- ASH BASIN WASTE BOUNDARY (APPROXIMATE)
- MAR-145 UPDATED ASH BASIN WASTE BOUNDARY (APPROXIMATE)
- EXISTING SITE FEATURE (APPROXIMATE)
- INDUSTRIAL LANDFILL (ILF) PHASE BOUNDARY (APPROXIMATE)
- PROPERTY BOUNDARY

NOTES

- BASIS OF BEARINGS: NC GRID NAD83/2011. ELEVATIONS ARE BASED ON NAVD88.
- HORIZONTAL LIMITS OF ASH BASIN BASED UPON HISTORICAL TOPOGRAPHIC SURVEYS AND AVAILABLE DESIGN DRAWINGS FROM DUKE ENERGY. ACTUAL LIMITS TO BE ESTABLISHED DURING CLOSURE.
- VERTICAL EXTENTS OF CCR WITHIN ASH BASIN BASED UPON AVAILABLE PRE-DEVELOPMENT TOPOGRAPHY SURVEY AND 2014 BATHYMETRIC SURVEY. ACTUAL DEPTH OF CCR TO BE DETERMINED DURING ASH BASIN CLOSURE.
- PHASE I OF THE 1804 LANDFILL AND THE STRUCTURAL FILL ACCESS ROAD TO BE EXCAVATED AND REMOVED AS PART OF ASH BASIN CLOSURE. EXCAVATION GRADES SHOWN ARE APPROXIMATE.
- CCR EXCAVATION GRADES ADJACENT TO CCR TO REMAIN IN PLACE INSIDE HISTORICAL ASH BASIN LIMITS TO BE ESTABLISHED AFTER ENGINEERING ANALYSES BASED UPON CONDITIONS AT THE TIME OF CLOSURE ARE COMPLETED. SLOPES SHOWN NOT TO EXCEED 5-HORIZONTAL TO 1-VERTICAL FOR PLANNING PURPOSES.
- CCR WITHIN THESE AREAS TO REMAIN IN-PLACE AFTER CLOSURE.

REFERENCES

- SEE SHEET MAR_C999.002.002 FOR DRAWING REFERENCES.



DRAWING KEY

DRAFT

NOT FOR CONSTRUCTION

AECOM

N.C. ENGINEERING LICENSE NO. F-0342

SEAL

DRAFT

ESTIMATED BOTTOM OF ASH CONTOUR MAP (OVERALL)
MARSHALL STEAM STATION
CLOSURE PLAN (DRAFT 100%)
CATAWBA COUNTY, NORTH CAROLINA

ISSUED FOR APPROVAL (DRAFT 100%)



SCALE: AS SHOWN
DWG TYPE: .DWG
JOB NO: 60603377
DATE: 11/6/2019
DES: JMW
DFTR: MAW
CHKD: RJB
ENGR: RJB

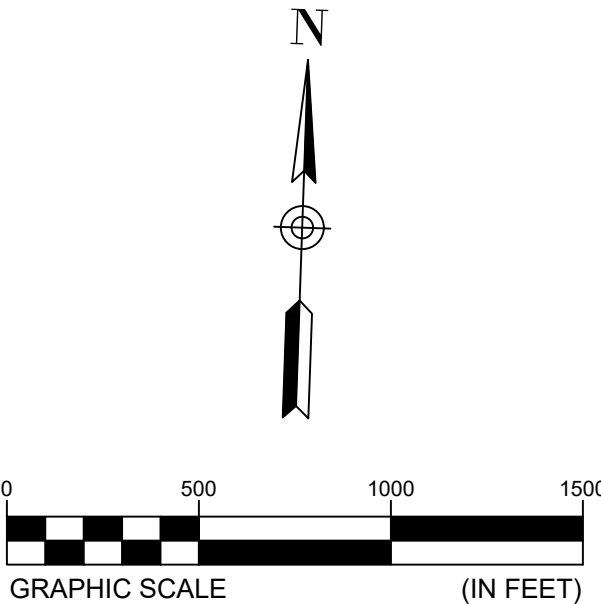
FILENAME: EXPECTED BOTTOM OF ASH.DWG

DWG SIZE

ANSI D 22.0"x34.0"

Exhibit I Marshall Excavation Limits

E



REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENG	APPD	DESCRIPTION
A	06/21/19	60603377		JMW	MAW	RJB	RJB	JAB	ISSUED FOR REVIEW (DRAFT 30%)
B	08/30/19	60603377		JMW	MAW	RJB	RJB	JAB	ISSUED FOR REVIEW (DRAFT 60%)
C	10/11/19	60603377		JMW	MAW	RJB	RJB	JAB	ISSUED FOR APPROVAL (DRAFT 100%)
D	11/6/19	60603377		JMW	MAW	RJB	RJB	JAB	ISSUED FOR APPROVAL (DRAFT 100%)

