Carney Johnson
Fac/Perm/Co ID # 85-05
Date 4/24/12
Doc ID#
5/14/12 (y)

Duke Power
Belews Creek Steam Station
Stokes County, N.C.

APPROVED
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION
DATE 6/29/2006 BY TAD
PERMIT # 85-05
PTC ATTACH 1, DOC 7
RALEIGH CENTRAL FILE COPY

Flue Gas Desulfurization (FGD) Residue
Landfill Permit Application
Site Suitability Information

Received
OCT 2005
Solid Waste Section

Revision 1

October 14, 2005

15A NCAC 13B
.0503(1) and .0504(1) Requirements and Responses

Volume 1 of 1

CHAS. H. SELLS, INC.
Consulting Engineers, Surveyors & Photogrammetrists
128 Overhill Drive, Suite 105
Mooresville, NC 28117

Sells Project Number: 046119

NORTH CAROLINA PROFESSIONAL SEAL 17582 ENGINEER DAN E. BREWER
10/14/05

Brian Wootton

PROCUREMENT, CONSTRUCTION AND EH&S

Duke Power
526 South Church St.
Charlotte, NC 28202

Mailing Address:
EC13K / P. O. Box 1006
Charlotte, NC 28201

October 6, 2005

NC Department of Environment and Natural Resources
Division of Waste Management
Solid Waste Section
401 Oberlin Road - Suite 150
Raleigh, NC 27605

Attention: Mr. Geoffrey H. Little
Permitting Engineer, Solid Waste Section

Subject: Duke Power – Belews Creek Steam Station
FGD Scrubber Residue Landfill
Submittal of Application Documents

Dear Mr. Little:

Duke Power is herein submitting three (3) copies of the following documents in support of the proposed Belews Creek Flue Gas Desulfurization (FGD) landfill. The documents are listed below with a general description of the contents/ approaches for each:

- **Geologic and Hydrologic Siting Report (Volumes I and II)** – The Geologic and Hydrologic Siting Report (S&ME –September 28, 2005) was revised based on DENR review comments and a meeting with DENR representatives on June 16. The requested changes regarding descriptions of geological/hydro-geological layers have been incorporated into the report.

- **Assessment of Fate and Transport Report** – The Assessment of Fate and Transport of Constituents of Concern (ES&T – October 2005) contains information on waste and soils characterization, as well as groundwater modeling to demonstrate the effectiveness of an alternate liner design involving one synthetic layer. This modeling demonstrates the suitability of the lined landfill for disposal of both gypsum and clarifier sludge. As noted in the modeling report, the maximum contaminant concentrations results from boron in the clarifier sludge. However, the maximum concentration identified for boron is well below the 2L groundwater standard. Duke Power feels that this modeling demonstrates that the proposed liner system will effectively support disposal of gypsum and/or clarifier sludge at the Belews Creek site.

- **Construction Plan Application** – The Construction Plan Application (Chas. H. Sells – October 2005) describes construction and operation of the lined Belews Creek FGD landfill. The inclusion of the clarifier sludge requires that the slope of the top of the landfill be reduced to 4:1 as opposed to the previous 3:1. This results in reduced landfill capacity resulting in a maximum lifetime of 3 years for the landfill if there is no reuse of either the gypsum or clarifier sludge. Duke Power will pursue reuse of both of these materials, but we are providing a conservative design and estimate that will support the worst-case volume scenario of no reuse coupled with worst-case assumptions regarding geotechnical characteristics of the material to be buried.

Duke Power will provide a revised Site Suitability Demonstration document by October 31, 2005 that will include the revisions and additional information as outlined in our initial May 26 meeting and your June 30 letter.

Duke Power would like to meet with you the week of October 17, 2005 regarding the schedule for your review and issuance of a permit to construct for this landfill. Because of the change from an unlined landfill approach to a lined landfill approach, we think we will need a permit earlier than the previous April 2006 date we had provided. The project schedule needs are being further evaluated, and we want to include your expectations regarding permit issuance in that evaluation.

Thanks you for your efforts in working with Duke Power in this process to support the Clear Skies Initiative. If you have any comments or questions, please feel free to contact me at (704) 382-7161.

Sincerely,

Patrick J. McCabe

Patrick J. McCabe, PE
Environmental Support

00132

NCDENR

North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

November 3, 2005

Mr. Pat McCabe, P.E.
Environmental Support
Duke Power
526 S. Church Street
EC10A / PO Box 1006
Charlotte, NC 28201-1006

RE: Revised Site Suitability Application – by Chas. H. Sells, Inc. Volume I, Revised Geologic and Hydrogeologic Siting Report – by S&ME, Volumes 1 & 2 for Duke Power, Belews Creek Steam Station
Craig Road FGD Scrubber Residue Landfill - Phase 1
Stokes County, NC
Additional Review Comments
ID# P0135

Dear Mr. McCabe,

On April 1, 2005, the Solid Waste Section (SWS) received a site suitability application (Volumes 1 & 2) for the proposed FGD Scrubber residue disposal landfill site in Stokes County. Volume 1 was completed by Duke Energy and Volume 2 was completed by S&ME on behalf of Duke Power, Inc.

On April 29, 2005 I requested additional information pertaining to the Site Study (both volumes).

On October 7, 2005 the SWS received from S&ME, Inc., two (2) revised volumes (I &II) titled "Geologic and Hydrogeologic Siting Report". A Construction Plan Application, composed by Chas. H. Sells, Inc. on behalf of Duke Power was also received by the SWS. The SWS also received on October 7, 2005, computer groundwater transport modeling results performed by Environmental Systems & Technologies (ES&T) on behalf of Duke Power, Inc.

On October 18, 2005 the SWS received a revised Site Suitability Application – Volume I of I (pertaining to the .0503 and .0504 requirements) by Chas.H. Sells, Inc., on behalf of Duke Power, Inc.

The revised Site Suitability Application and revised Geologic and Hydrogeologic Siting Report address most of the questions/concerns that the SWS requested in the April 29, 2005 letter; however, the following questions need to be addressed

to enhance the review of the Study. The review of the computer ground-water modeling report by ES&T and the review of the Construction Plan Application have not been completed at this time. I will notify you at a later time if any question(s) arise. Please have your consultants respond the following questions and comments.

Volume I of II S&ME – Geologic and Hydrologic Siting Report
Pages 3,4 of Volume I - Section 2.2 - Project Site Conditions
Appendix I – Potable Wells-Well Construction and Abandonment Records
Figure 2 - Landfill Area Site Plan

Pages 3 and 4 state in part: *"Two abandoned water supply wells and a well house were identified along the southern side of the site. The abandoned water supply wells are believed to have been installed in the mid-1970's to service a construction camp utilized during construction of the BCSS. The abandoned wells have not been surveyed. No well completion information is available for these wells. During the initial phase of the siting study, two operating potable wells were identified adjacent to the proposed landfill along Craig Road. These wells were 405 and 900 feet deep and provided the potable water for the BCSS. In March 2003, BCSS was connected to a municipal water line from the City of Winston-Salem and the potable wells were abandoned. Well construction and well abandonment records for these two potable wells and one of the old potable wells are included in Appendix I".*

SWS Response:
According to North Carolina Well Construction Standards, **15A NCAC 2C .0113,** well(s) no longer in use shall be abandoned (sealed) correctly in order the well(s) are not a source or channel of contamination. The fourth well (the abandoned well that does not have a well abandonment record associated with it) needs to be inspected for proper abandonment criteria that meets **15A NCAC 2C .0113**. If the well was abandoned incorrectly, then re-abandonment procedures shall be implemented that adhere to **15A NCAC 2C .0113**. If re-abndonment procedures are necessary, submit a report/record after completion to the SWS.

Volume I of II S&ME – Geologic and Hydrologic Siting Report
Page 7 of Volume I – Section 3.1.1 Soil Test Borings and Rock Coring

Page 7 states in part: *"Borings BC-12A, BC-12B, BC-14A, and BC-23 were drilled to evaluate groundwater conditions at the saprolite, PWR, bedrock contact". "No monitor wells were constructed in these borings. Following evaluation of groundwater conditions at these locations, the borings were abandoned."*

SWS Response:
How were these borings abandoned (sealed)? Submit well abandonment records according to **15A NCAC 2C .0114 (b)(2).**

Volume I of II S&ME – Geologic and Hydrologic Siting Report
Volume II of II S&ME – Geologic and Hydrologic Siting Report
Page 9 of Volume I – Section 3.1.1 Soil Test Borings and Rock Coring
Figures 3,4,5,6,7,8,9.10,11 Cross Sections
Appendix II (Volume II) – Boring Logs

SWS Response:
It has always been the SWS policy that auger refusal is indicative of top of rock and lithologic materials with blow counts of 100 per foot or greater (by use of Standard Penetration Test according to American Standard Testing Methods (ASTM) D 1586) is indicative of partially weathered rock (PWR).

Some of the Cross Sections in the Study depict units of partially weathered rock (PWR) where there should be bedrock (auger refusal) when compared to cross referenced boring log profiles. Listed below are some of the discrepancies:

Cross Section Drawing #	*Boring Log #*	*Cross Section Depth to Top of Rock, bls*	*Boring log profile Depth to (Auger Refusal) bls*
*H-H' #11	BC-3	54.5 feet	38.0 feet
*H-H' #11	BC-5	53.5 feet	46.0 feet
*A-A' #4	BC-8	Top of rock not depicted	25.2 feet
*A-A' #4	BC-9	24 feet	13.8 feet
*B-B' #5	BC-10	41.5 feet	38.5 feet

*Note: Some of the boring log numbers/profiles mentioned above (under the category Cross Section Drawing #) are also depicted on additional cross sections (Figures). Please examine all figures for consistency and modify accordingly.

According to the cross section profiles and ground-water data submitted, the potentiometric water table surface (taken 10/27/2004) exists at some locations in bedrock. The figures and supporting data also depict estimated average seasonal high ground-water surface. The SWS would also like to know the elevation of the estimated average seasonal low ground-water table at the piezometer locations. Please provide updated tables (and cross-sections) depicting the average seasonal low ground-water table.

If there are significant areas of the proposed site that have groundwater located mostly in bedrock, additional charcacterization of bedrock hydrology may be necessary in order to design an effective ground-water monitoring system. In order to better understand the fracture flow regime of this site, a ground-water pumping test maybe necessary to determine possible fracture patterns, preferential flow paths, and hydraulic characteristics of the bedrock aquifer.

Volume I of II S&ME – Geologic and Hydrologic Siting Report
Page 38 of Volume I – Section 5.2.1- Monitor Well Network
Appendix II – Boring Logs

SWS Response:
Existing monitor wells, BC-15 and BC-20 may be invalid for ground-water quality monitoring purposes if water levels continue to be above the well screens. According to the boring logs for these wells, the water level symbols depict water level readings (24 hours after well completion), above the well screens. In most situations for ground-water quality sampling purposes, the ground-water monitoring well screens should bracket the water table. These subject wells may have to be abandoned or not used for monitoring ground-water parameters, depending on subsequent water level data results. Please submit any recent groundwater level data, since 10/27/04 for these two (2) wells. If no data is available, then measure, record, and submit water level results from these wells.

==========

Please note the comments and questions mentioned above and have your Engineering and Geologic Consultants provide additional information and revisions as needed. If you, your Geologic Consultant, or your Engineering Consultant have any questions, or wish to schedule a meeting to discuss the items referenced in this letter, please call me at (919) -508-8524.

Sincerely,

Brian Wootton

Brian Wootton
Hydrogeologist
Solid Waste Section

cc:	Ed Mussler	Solid Waste Section
	Geoff Little	Solid Waste Section
	Hugh Jernigan	Solid Waste Section
	Samuel P. Watts	S&ME
	David B. Wells	S&ME
	Central File	

Duke Power
Belews Creek Steam Station
Stokes County, N.C.

Flue Gas Desulfurization (FGD) Residue
Landfill Permit Application
Site Suitability Information

Revision 1

October 14, 2005

15A NCAC 13B
.0503(1) and .0504(1) Requirements and Responses

Volume 1 of 1

CHAS. H. SELLS, INC.
Consulting Engineers, Surveyors & Photogrammetrists
128 Overhill Drive, Suite 105
Mooresville, NC 28117

Sells Project Number: 046119

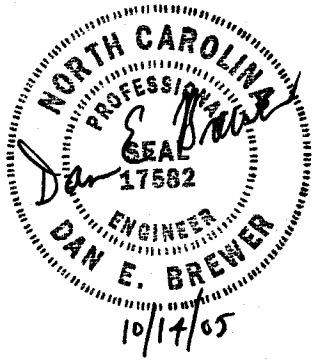


Table of Contents

Description of Revisions

This document presents changes to the original Site Suitability Report, dated March 28, 2005 as a result of comments by NCDNER.

Changes from the original document text are marked with a vertical line in the right margin.

List of Figures

Attachments

Drawings[1]

[1] Design Drawings for the FGD Residue Landfill are included in the Construction Plan Application, submitted October 6, 2005.

1.0 INTRODUCTION

The Clean Smokestacks Act passed in 2002 requires significant reductions in emissions from coal-fired power plants operating in North Carolina. NC utilities must reduce the actual emissions of nitrous oxides (NO_X) by 77% by the year 2009 and must reduce actual sulfur dioxide (SO_2) emissions by 49% by the year 2009 and by 73% by 2013. As part of Duke Power's effort to meet the SO_2 reduction requirements, a Flue Gas Desulfurization (FGD) system will be installed at the Belews Creek Steam Station. Duke will also install similar FGD systems at other power plants located in NC. Duke's intent is that a large portion of the residue from this process will be utilized in beneficial products and the remainder will be placed in the proposed FGD residue landfill.

2.0 DESCRIPTION OF PLANT AND LANDFILL SITE

Belews Creek Steam Station is located in south-eastern Stokes County, on Pine Hall Road. Belews Creek Steam Station is a coal-fired electric generating facility located on Belews Lake near Walnut Cove, North Carolina. The station has two units, each of which can generate 1,200 megawatts of electricity.

The plant is located in the Piedmont physiographic region. Figure 1 shows the location of the plant and the location of the proposed FGD landfill. The footprint for the landfill (actual waste footprint) contains an area of approximately 23.2 acres[2]. The adjacent stormwater pond contains an area of approximately 2.4 acres.

The FGD landfill will be located on Duke Power property, south of the Belews Creek plant. The landfill site is located on land between two arms of the Belews Creek Lake. The West Belews Creek arm is located west of the landfill site and the Belews Creek arm is located east of the site. Craig Road is located to the west of the landfill.

3.0 DESCRIPTION OF FGD SYSTEM

The FGD system contracted for installation at Belews Creek is a Wet Scrubber system. In a Wet Scrubber system the SO_2 component of the flue gas produced from the coal combustion process is removed by reaction with a limestone-water slurry.

The particular system to be used at Belews Creek will collect the flue gas after it passes through the electrostatic precipitator and route the gas into the lower end of a vertical tank. As the gas rises through the tank to the outlet at the top, the gas passes through a spray header. An atomized slurry of water and limestone droplets is continually sprayed through this header into the stream of flue gas. The SO_2 in the flue gas reacts with the calcium in the limestone and produces SO_3. The SO_3 slurry falls to the bottom of the tank where a stream of air is injected to oxidize the slurry to form gypsum ($CaSO_4 \cdot H_2O$). The gypsum slurry is then drawn off to a hydroclone and subsequently routed to a vacuum belt filter. The liquid waste from this process will be treated as wastewater.

[2] The acreage of the landfill footprint in the previous Site Suitability Report was reported as 23.9 acres. During preparation of the CPA the footprint was slightly modified to accommodate a drainage ditch. This resulted in the decrease in footprint acreage.

Duke is presently investigating beneficial uses for the FGD residue (gypsum). If these options are determined to be viable, the FGD residue meeting the material requirements for the beneficial uses will not be disposed in the landfill.

The typical parameters for this material produced by the system to be used at Belews Creek are:

Typical FGD Residue Parameters

Gypsum	93% to 95%
Sulfite	0.35%
CO_3	1.3%
CaF_2	0.2%
Inerts	2.5% to 3.5%
Fly ash Content	0.5% to 0.8%
pH	6.0 to 8.3
Unit Weight	76 lb/ft^3 to 97 lb/ft^3
Specific Gravity	2.35
Moisture	10% to 12%

FGD residue material that is not suitable for beneficial use will be placed in the landfill. Synthetic Precipitation Leaching Procedure (SPLP EPA Method 1312) leaching has been performed on samples of FGD residue material provided by the equipment vendor. These results will be presented in subsequent submittals to NCDENR. Duke will also provide results of geotechnical tests performed on the FGD residue in subsequent submittals.

In addition to this material, material will periodically be removed from the clarifier stage of the waste-water treatment system and placed in the landfill.

The clarifier material will be generated by a process detailed on the process flow diagrams Drawing Nos. 57001271-PRO-A02-01, 02, and 03 Revision 1 (See Figures). FGD purge stream (wastewater) is discharged to an equalization basin. From the equalization basin, the wastewater is treated through a series of reaction tanks, where lime, sulfide, ferric chloride, and a polymer are added to the wastewater, prior to the flow entering the clarifier. The sludge collecting in the bottom of the clarifier is then pumped to a sludge holding tank, where it is periodically discharged to the filter press. Dewatering will be achieved by plate and frame presses on a batch basis.

The suspended solids in the Belews Creek FGD (waste water) Purge Stream are expected to have the following characteristics:

Constituent	Units	Design Operation	Operation Range
$CaSO_4 \cdot 2H_2O$	Wt %	49.8	30 to 55
$CaSO_3 \cdot 1/2H_2O$	Wt %	0.2	0 to 1
$CaCO_3$	Wt %	4.0	0 to 10
CaF_2	Wt %	0.4	0 to 2
Flyash	Wt %	6.8	0 to 15
Inerts	Wt %	38.8	0 to 55

Based on a solids density of 80 lbs/cf and a predicted dewatered cake dry solids concentration of 45 percent, the design solids volume will be approximately 3700 cubic feet per day (50,000 cubic yards per year).

No operational problems are anticipated with the disposal of this material. Duke has obtained similar clarifier sludge material from a FGD system with similar wastewater design features and is in the process of performing geotechnical testing on this material. The results from these tests will be provided to the Solid Waste Section.

Additional testing and SPLP leaching will be performed on this material once the FGD system is operational.

4.0 DESCRIPTION OF FGD RESIDUE LANDFILL

The FGD landfill will be located on Duke Power property, south of the Belews Creek plant. The landfill footprint contains approximately 23.2 acres.

The surface drainage at the site is described below:

Direction	Description of Surface Drainage Features
North	Low gradient drainage feature draining to Belews Lake
East	Drains overland approx. ¼ mile to Belews Creek arm of Belews Lake
South	Low Gradient drainage feature draining to West Belews Creek arm of Belews Lake
West	Due to the location of Craig Rd, surface water flow drains to the North.

As described in the Geologic and Hydrologic Siting Report, the subsurface conditions in the landfill area consist of residual soils, saprolite, partially weathered rock, and bedrock. The residual soil, saprolite, partially weathered rock have been formed by the in-place weathering of the parent rock. As is typical in the groundwater systems located in the Piedmont region, groundwater at the landfill site occurs within the residuum, saprolite, partially weathered rock, and shallow fractured bedrock under unconfined aquifer conditions. The predominant groundwater discharge areas are expected to be the drainage feature to the north of the landfill, the drainage feature to the south of the landfill, and to Belews Lake, located to the east and the west of the landfill.

The FGD residue will be conveyed to the landfill site by truck, where the material will be spread and compacted. The landfill will begin receiving FGD residue in October 2007. The volumetric capacity of the landfill is 1,478,500 yd^3.

The FGD residue landfill at Belews Creek will receive FGD residue generated at Belews Creek.

5.0 .0503 SITING AND DESIGN REQUIREMENTS FOR DISPOSAL SITES

Disposal sites shall comply with the following requirements in order for a permit to be issued:
(1) A site shall meet the following siting requirements:

Response:
The specific requirements of .0503 (1) are addressed on the following pages.

Requirement .0503(1)(a)
A site located in a floodplain shall not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain or result in washout of solid waste so as to pose a hazard to human life, wildlife or land or water resources.

Response
The proposed landfill site for the Belews Creek Steam Station FGD Residue Landfill is not located in the 100-year floodplain. Therefore, the proposed landfill will not restrict the flow of a 100-year flood, nor will the proposed landfill reduce the temporary water storage capacity of the floodplain or result in washout of solid waste so as to pose a hazard to human life, wildlife or land or water resources.

Figure 2 is the National Flood Insurance Program Flood Insurance Rate Map, prepared by FEMA, for the area adjacent to Belews Creek Steam Station.

The location of the proposed landfill relative to the 100-year floodplain is shown on Figure 2.

Requirement .0503(1)(b) (i) and (ii)

A site shall be located in consideration of the following:

(i) a site shall not cause or contribute to the taking of any endangered or threatened species of plants, fish or wildlife;

(ii) a site shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 C.F.R. Part 17 which is hereby incorporated by reference including any subsequent amendments and editions. This information is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, North Carolina 27605 where copies can be obtained at no cost;

Response

Site surveys were performed to investigate the presence of endangered or threatened species of plants, fish or wildlife or critical habitat of endangered or threatened species that included evaluation for wetlands and Waters of the U.S. The Duke Power letters to the United States Fish and Wildlife Service (USFWS), the Army Corps of Engineers (ACOE) and the North Carolina Department of Environment and Natural Resources (NCDENR) providing the results of the site survey are dated March 17, 2005 (Attachments 1 and 2). The agency responses agreed with these assessment reports on endangered and threatened species, as well as plans to minimize impact to jurisdictional streams and wetland areas associated with construction of the landfill and the FGD scrubber system. Construction activities will comply with ACOE Nationwide Permit Number 39 and conditions of the NCDENR 401 Water Quality Certification (Attachment 8).

Requirement 0503(1)(b)(iii)
A site shall not damage or destroy an archaeological or historical site.

Response
The North Carolina Department of Cultural Resources, State Historic Preservation Office (SHPO) was consulted to determine if an archaeological or historic site was listed at the proposed site. The response provided by the SHPO is dated May 5, 2003. The response stated that:

> *"We have conducted a review of the proposed undertaking and are aware of no historic resources which would be affected by the project."*

The letter to the SHPO providing the location of the landfill is included in Attachment 3.

The response from the SHPO is found in Attachment 4.

Requirement 0503(1)(b)(iv)
A site shall not cause an adverse impact on a state park, recreation or scenic area, or any other lands included in the state nature and historic preserve.

Response
The proposed landfill will not adversely impact a state park, recreation or scenic area or nature or historic preserves. There are no state parks, recreation or scenic areas, or any other lands included in the state nature and historic preserve within ten (10) kilometers (6.2 miles) of the proposed landfill site.

The Pine Hall and Piney Bluff boating access areas are located within ten (10) kilometers (6.2 miles) of the proposed landfill site. These access areas are owned by Duke Power. As operation of the current facility adjacent to the proposed landfill has not adversely impacted the access areas, there will be no impact resulting from the proposed landfill.

Requirement 0503(1)(c)
A new site disposing of putrescible wastes shall not be located within 10,000 feet of an airport runway used by turbojet aircraft or within 5,000 feet of an airport runway used by piston-type aircraft;

Response
The proposed landfill will not receive putrescible wastes.

Requirement 0503(1)(d)
A site shall have available adequate suitable soils for cover either on-site or from off-site.

Response
The proposed landfill site has adequate suitable soils available on-site. Drawing CP-2 FGD Residue Landfill Top of Liner Grading Plan shows the grading plan for the proposed landfill.

The planned excavation within the proposed landfill footprint is 597,600 cubic yards. The planned fill (for roads, ponds, etc.) required for the landfill is 115,000 cubic yards. The soil volume required for operational and the final cover system is 167,700 cubic yards. This leaves an excess of 314,900 cubic yards of soil. Therefore, there are adequate suitable soils on site.

The excess soil will be stored in adjacent stockpile areas. The Proposed Stockpile Areas #1 through #4 are shown on Drawing C-11 (found in the CPA).There are no current plans to utilize the soil contained in these stockpiles. The areas where these stockpiles are located will be cleared and grubbed prior to placement of the excess soil. The surfaces of these stockpiles will be stabilized and surface water drainage features will be installed as described in the approved Erosion & Sediment Control Plans (Facility Number: Stoke 2005-007 and Stoke 2006-001).

6.0 .0504 APPLICATION REQUIREMENTS FOR SANITARY LANDFILLS

A permit for a sanitary landfill shall be based upon a particular stream of identified waste, as set forth in Rule .0504 (g)(i) and (ii) of this Section. Any substantial change in the population or area to be served, or in the type, quantity or source of waste shall require a new permit and operation plan, including waste determination procedures where appropriate. Five sets of plans shall be required with each application.

(1) The following information shall be required for reviewing a site application for a proposed sanitary landfill:

Requirement .0504(1)(a)

An aerial photograph on a scale of at least 1 inch equals 400 feet and a blueprint of the photograph accurately showing the area within one-fourth mile of the proposed site's boundaries with the following specifically identified:

(i) Entire property owned or leased by the person proposing the disposal site;

(ii) Land use and zoning;

(iii) Location of all homes, industrial buildings, public or private utilities, and roads;

(iv) Location of wells, watercourses, dry runs, and other applicable details regarding the general topography; and

(v) Floodplains.

Response

The information listed above is identified on Figure 3. An electronic version of an aerial photograph of the site is used as the background for Figure 3.

A survey plat showing the property associated with the landfill is provided as Sheets 1 and 2 Belews Creek Steam Station Scrubber Landfill Property.

Requirement .0504(1)(b)

A map on a scale of at least 1 inch equals 1000 feet showing the area within two miles of the proposed site's boundaries with the following specifically identified:

(i) Significant ground-water users;

(ii) Potential or existing sources of ground-water and surface water pollution;

(iii) Water intakes;

(iv) Airport and runways; and

(v) Subdivisions.

Response

As shown on Figure 4, there are no significant ground-water users, water intakes, airports and runways, or subdivisions within two miles of the proposed site's boundaries.

The Environmental Data Resources report, dated November 30, 2004 (Inquiry Number 01316566.1r) provides information on significant groundwater users and was used as a source of information for items (i) and (iii). A copy of this report is found in Attachment 5[3].

The Environmental Data Resources report, dated September 28, 2004 (Inquiry Number 01277555.1r) provides information on potential or existing sources of groundwater contamination and was used as a source for of information for items (ii). A copy of this report is found in Attachment 6.

[3] Note that only wells are shown on Figure 4. The EDR report lists several Public Water Supply (PWS) Systems identified by the PWS system ID (example) PWS ID: NC0279169. These PWS's are comprised of one or more individual wells. The wells are identified in the report as (example) NC WELLS NCWS0004909. For example EDR MAP ID E17 is PWS NC0279695, serving 290 users. Wells listed as EDR MAP ID D13 and D16 are included in this PWS system.

Requirement .0504(1)(c)

A geological and hydrological study of the site which provides:

(i) Soil borings for which the numbers and depths have been confirmed by the Division and lab testing of selected soil samples that provide:

(A) standard penetration - resistance;

(B) particle size analysis;

(C) soil classification - USCS;

(D) geologic considerations (slopes, solution features, etc.);

(E) undisturbed representative geologic samples of the unconfined or confined or semiconfined hydrological units within a depth of 50 feet that provide the following information for each major lithologic units:

(I) saturated hydraulic conductivity (or by in-situ);

(II) volume percent water; and

(III) porosity;

(F) remolded sample of cover soils that provide:

(I) saturated hydraulic conductivity,

(II) total porosity,

(III) atterberg limits;

(G) stratagraphic cross-sections identifying hydrogeological units including lithology;

(H) tabulation of water table elevations at time of boring, 24 hours, and seven days (The number of cased borings to provide this information shall be confirmed by the Division.); and

(I) boring logs;

(ii) A boundary plat locating soil borings with accurate horizontal and vertical control which are tied to a permanent onsite bench mark;

(iii) A potentiometric map of the surfical aquifer based on stabilized water table elevations; and

(iv) A report summarizing the geological and hydrological evaluation.

Response

The geological and hydrological study of the site was submitted to NCDENR Solid Waste Section with the initial submittal of the Site Suitability Report. Subsequent comments and questions by the Solid Waste Section led to a revision of the document. The title of this report is:

Geologic and Hydrologic Siting Report
FGD Scrubber Residue Disposal Site
Belews Creek Steam Station
3195 Pine Hall Road
Belews Creek, North Carolina
S&ME Project No: 1054-04-955
September 28, 2005

A survey plat showing the accurate horizontal and vertical location of the soil borings and wells and the property associated with the landfill is provided as Sheets 1 and 2 Belews Creek Steam Station Scrubber Landfill Property.

Information on the depths of the borings and wells is found in the hydrogeologic study.

Requirement .0504(1)(d)
A conceptual design plan presenting special engineering features or considerations which must be included or maintained in site construction, operation, maintenance and closure.

Response
The design for the proposed FGD Residue landfill is shown on drawings CP-1 through CP-14. These drawing were submitted as part of the Construction Plan Application for the FGD Residue Landfill, dated September 30, 2005, submitted October 6, 2005.

The regulatory requirements for the design of a solid waste, industrial landfill are found in North Carolina Administrative Code, Title 15A, Chapter 13 Solid Waste Management, Section .0503 Siting and Design Requirements for Disposal Sites. In particular, Section .0504(2)(d)(ii) requires that:

> *(A) a design that will ensure that the ground water standards established under 15A NCAC 2L will not be exceeded in the uppermost aquifer at the compliance boundary established by the Division in accordance with 15A NCAC 2L. The design shall be based upon modeling methods acceptable to the Division, which shall include, at a minimum, the following factors:*
>
> > *(I) the hydrogeologic characteristics of the facility and surrounding lands;*
> > *(II) the climatic factors of the area; and*
> > *(III) the volume and physical and chemical characteristics of the leachate; or*
>
> *(B) a design with a leachate collection system, a closure cap system, and a composite liner system consisting of two components: the upper component shall consist of a minimum 30-ml flexible membrane (FML), and the lower components shall consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1 X 10^{-7}cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-ml thick. The FML component shall be installed in direct and uniform contact with the compacted soil component.*

The design for this landfill calls for the following components:

Upper Components (Engineered Cover System):
A closure cap system composed of 2 feet of soil with a vegetated cover, underlain by a geocomposite drainage system, which is underlain by a 40 mil low density polyethylene geomembrane. Underneath the 40 mil low density polyethylene geomembrane will be 18" of soil placed over the waste.

Lower Components (Engineered Liner System):
A leachate collection system and removal system, composed of perforated HDPE piping underlain by a non-woven geotextile, which is placed above an HDPE geonet drainage system. This leachate collection and removal system is in turn underlain by a 60 mil HDPE geomembrane liner. Underneath this 60 mil HDPE geomembrane will be a minimum of 4 feet of undisturbed site soil with a permeability of no greater than 1.23 x 10^{-4} cm/sec.

Fate and Transport modeling was performed by EST[4]. This modeling used results from HELP[5] analyses[6] for the volume for leachate percolation/leakage through the 60 mil HDPE geomembrane. This modeling was performed with four feet of site soil underneath the 60 mil HDPE geomembrane liner. The results of the modeling were that landfill design presented in the Construction Plan Application will ensure that the ground water standards established under 15A NCAC 2L will not be exceeded in the uppermost aquifer at the compliance boundary.

Other Engineering Features or Considerations

Other than the engineered liner and cover systems described above, there are no special engineering features or considerations that must be included or maintained in site construction, operation, maintenance and closure.

[4] Assessment and Fate and Transport of Constituents of Concern - for the Proposed FGD Scrubber Residue Disposal Site - Belews Creek Steam Station. The report is dated October 2005

[5] Hydrologic Evaluation of Landfill Performance (HELP), USACOE.

[6] These HELP analyses were performed by Charles H. Sells, Inc. and submitted as part of the Construction Plan Application for the Belews Creek FGD Residue Landfill, dated September 30, 2005.

Requirement .0504(1)(e)
Local government approvals:

> (i) If the site is located within an incorporated city or town, or within the extra-territorial jurisdiction of an incorporated city or town, the approval of the governing board of the city or town shall be required. Otherwise, the approval of the Board of Commissioners of the county in which the site is located shall be required. Approval may be in the form of either a resolution or a vote on a motion. A copy of the resolution, or the minutes of the meeting where the vote was taken, shall be forwarded to the Division.
>
> (ii) A letter from the unit of government having zoning jurisdiction over the site which states that the proposal meets all of the requirements of the local zoning ordinance, or that the site is not zoned.

Response
Requirement .0504(1)(e)(i) is not applicable.

A zoning approval letter from Stokes County, as stipulated by .0504(1)(e)(ii), is included as Attachment 7.

Requirement .0504(1)(f)
A discussion of compliance with siting standards in Rule .0503(1) of this Subchapter.

Response:
The .0503 (1) requirements and the Duke response are included with this site suitability package. The proposed design will ensure that the siting requirements specified in Rule .0503 (1) are met.

Requirement .0504(1)(q)

A report indicating the following:

(i) population and area to be served;

(ii) type, quantity and source of waste;

(iii) the equipment that will be used for operating the site;

(iv) a proposed groundwater monitoring plan including well location and schematics showing proposed screened interval, depth and construction.

Response

(i) The FGD residue landfill at Belews Creek will receive FGD related material that is generated at Belews Creek.

(ii) The FGD residue will primarily be residue from the FGD system and material that is periodically removed from the clarifier stage of the waste-water treatment system. The quantity of waste placed in the landfill will not exceed 1,478,500 yd^3. Source of the waste will be FGD equipment located at Belews Creek.

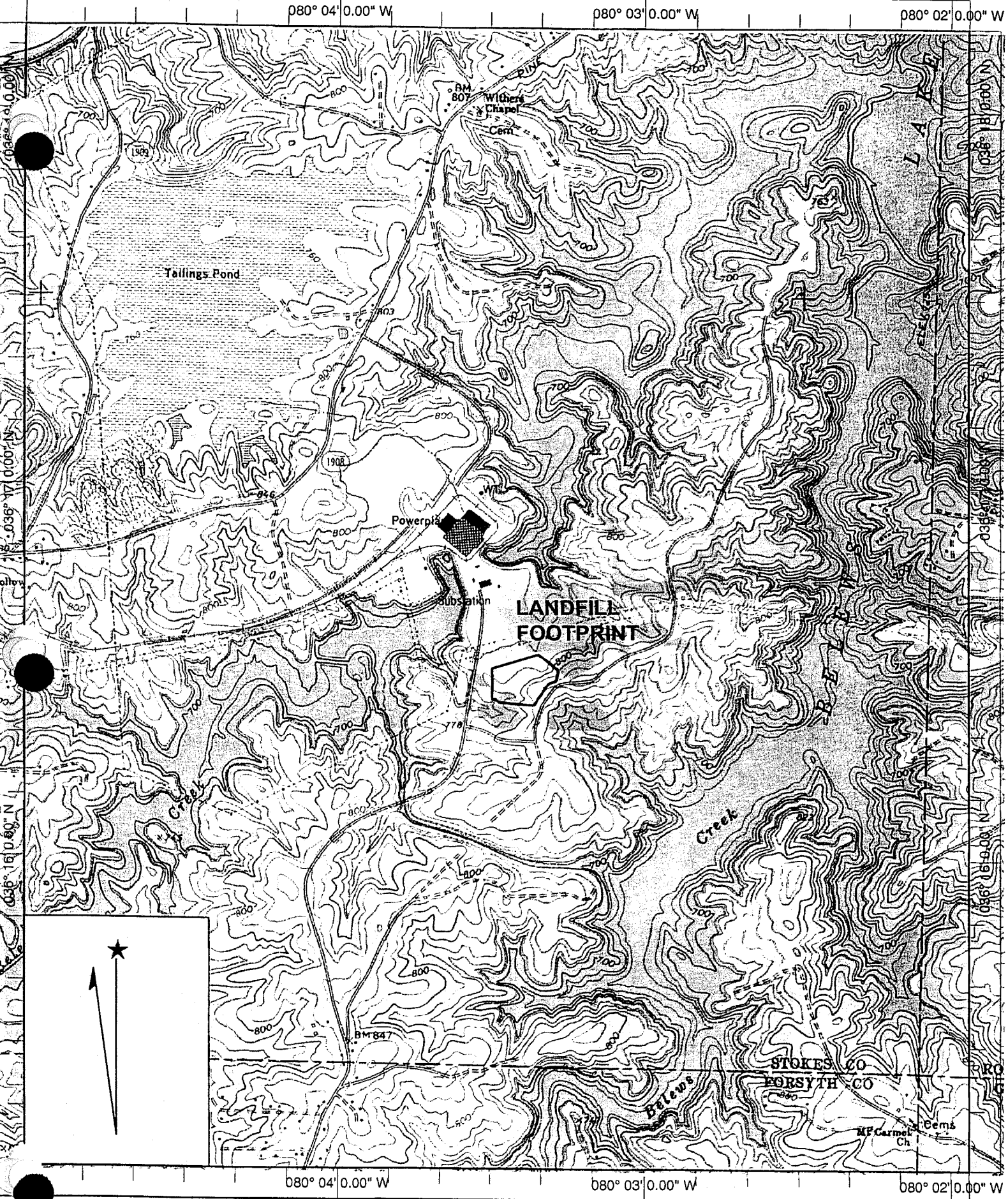
(iii) The equipment used to operate the landfill includes but is not limited to: backhoes, bulldozers, front end loaders, trucks to haul the material, excavators, watering and maintenance trucks.

(iv) The proposed groundwater monitoring plan including well locations, screened intervals, depths, and construction details is included in the Geologic and Hydrologic Siting Report, dated September 28, 2005.

Requirement .0504(1)(h)
Any other information pertinent to the suitability of the proposed site.

Response
The review performed by Duke and by its consultants has not identified any concerns with the suitability of the proposed site.

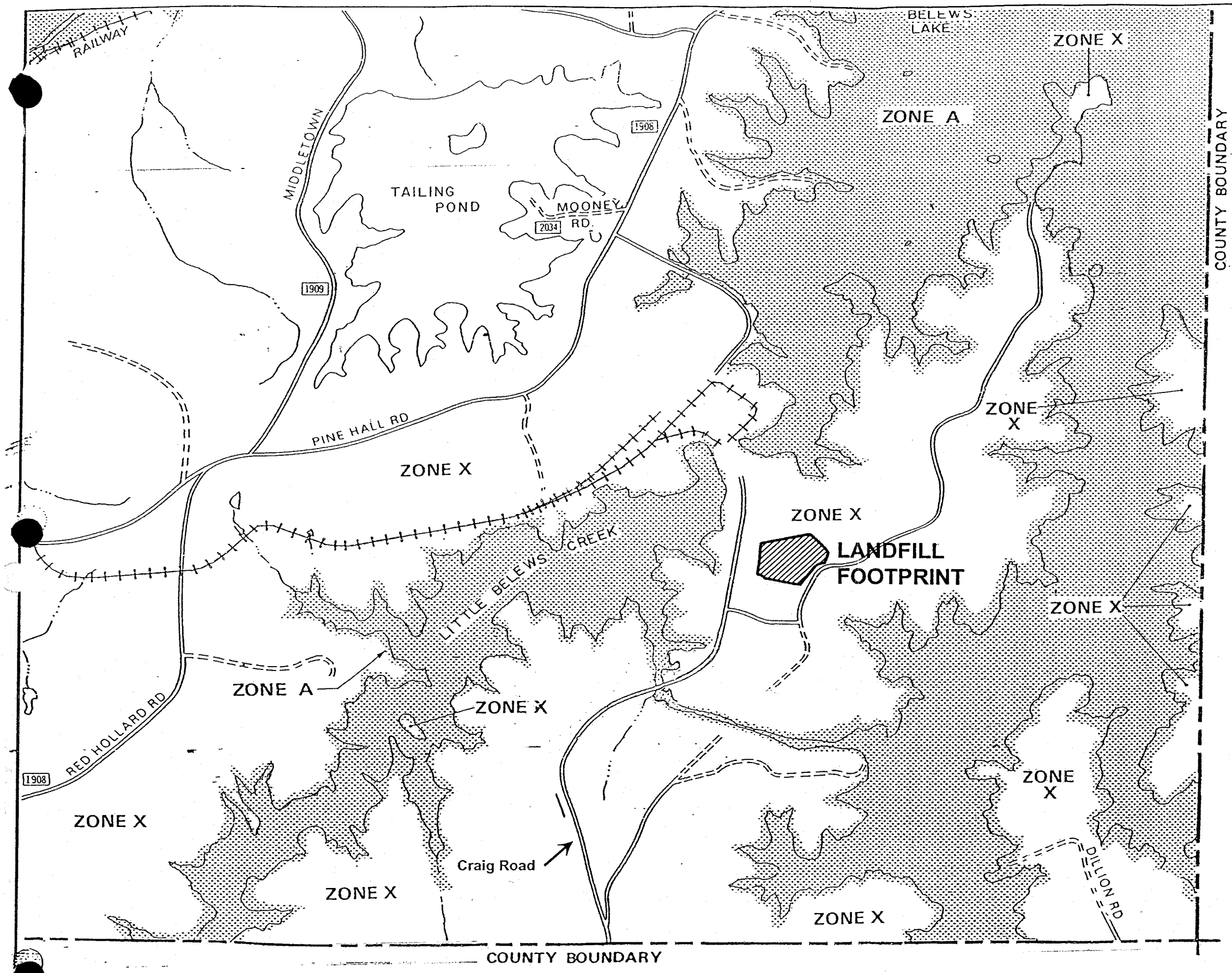
Duke is not aware of additional information pertinent to the suitability of the proposed site.



Name: BELEWS LAKE
Date: 9/1/2004
Scale: 1 inch equals 2000 feet

Location: 036° 16' 41.8" N 080° 03' 29.3" W
Caption: Duke Power
Belews Creek Station
FGD Landfill Site

Figure 1



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AE — Base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year flood plain.
- ZONE D — Areas in which flood hazards are undetermined.

- Flood Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet*
- D — D — Cross Section Line
- (EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*
- $RM7_X$ — Elevation Reference Mark
- •M1.5 — River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Certain areas not in the Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at 1/20 inch.

Coastal base flood elevations apply only landward of the shoreline.

Elevation reference marks are described in the Flood Insurance Study Report.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of this map.

For adjoining panels, see separately printed Map Index.

MAP REPOSITORY

Planning Department, County Courthouse, Danbury, North Carolina (Maps available for reference only, not for distribution.)

INITIAL IDENTIFICATION:
MARCH 17, 1978

FLOOD HAZARD BOUNDARY MAP REVISIONS:

FLOOD INSURANCE RATE MAP EFFECTIVE:
SEPTEMBER 30, 1988

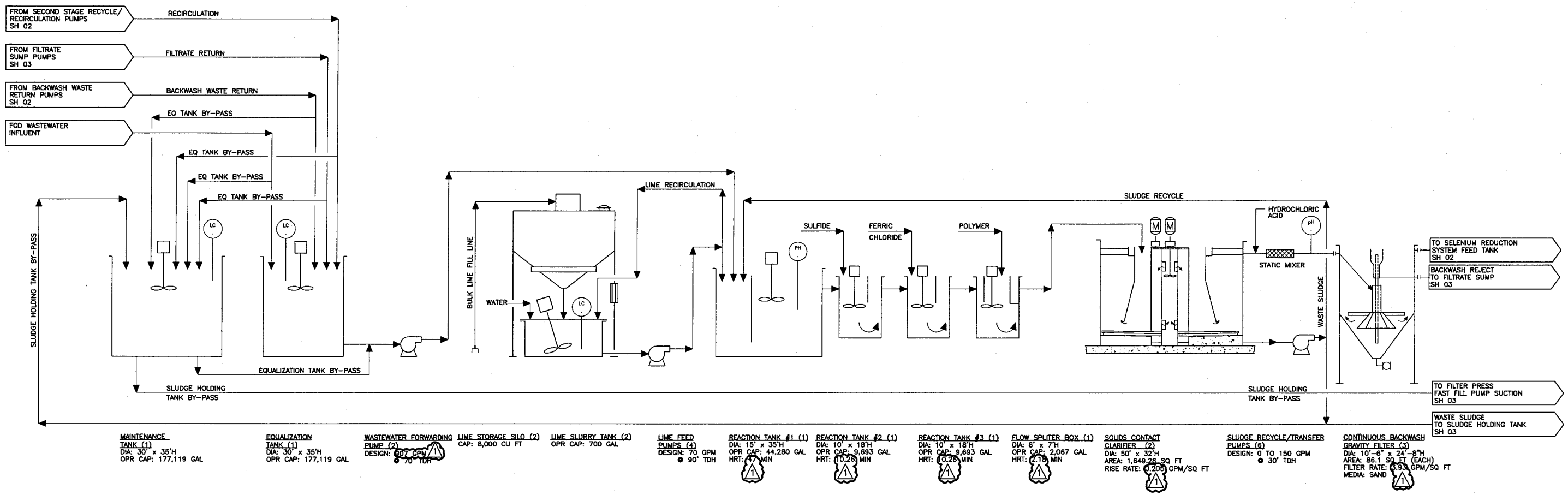
FLOOD INSURANCE RATE MAP REVISIONS:

Source: Flood Insurance Rate Map, Stokes County North Carolina, September 30, 1988

Figure 2

Belews Creek Scrubber Residue Landfill
Flood Hazard Area Map – 100 Yr Flood

Drawings Under Seperate Cover



MAINTENANCE TANK (1)
DIA: 30' x 35'H
OPR CAP: 177,119 GAL

EQUALIZATION TANK (1)
DIA: 30' x 35'H
OPR CAP: 177,119 GAL

WASTEWATER FORWARDING PUMP (2)
DESIGN: 807 GPM @ 70' TDH (1)

LIME STORAGE SILO (2)
CAP: 8,000 CU FT

LIME SLURRY TANK (2)
OPR CAP: 700 GAL

LIME FEED PUMPS (4)
DESIGN: 70 GPM @ 90' TDH

REACTION TANK #1 (1)
DIA: 15' x 35'H
OPR CAP: 44,280 GAL
HRT: 47 MIN (1)

REACTION TANK #2 (1)
DIA: 10' x 18'H
OPR CAP: 9,693 GAL
HRT: 10.28 MIN (1)

REACTION TANK #3 (1)
DIA: 10' x 18'H
OPR CAP: 9,693 GAL
HRT: 10.28 MIN (1)

FLOW SPLITER BOX (1)
DIA: 8' x 7'H
OPR CAP: 2,067 GAL
HRT: 2.18 MIN (1)

SOLIDS CONTACT CLARIFIER (2)
DIA: 50' x 32'H
AREA: 1,649.28 SQ FT
RISE RATE: 0.205 GPM/SQ FT (1)

SLUDGE RECYCLE/TRANSFER PUMPS (6)
DESIGN: 0 TO 150 GPM @ 30' TDH

CONTINUOUS BACKWASH GRAVITY FILTER (3)
DIA: 10'-6" x 24'-8"H
AREA: 86.1 SQ FT (EACH)
FILTER RATE: 3.93 GPM/SQ FT (1)
MEDIA: SAND

GENERAL NOTES:
1. DETENTION TIMES BASED ON NORMAL OPERATION. (1)

NO.	REVISIONS	DRN	CHKD	APPR	DATE
1	REVISED PER CUSTOMER COMMENTS	TR	RCL	LS	09/23/05
0	FOR REVIEW AND COMMENT	JM	RCL	LS	08/25/05
A	PERMIT APPLICATION ISSUE	ACH	MR	MG	07/07/05

USFilter INDUSTRIAL WASTEWATER SYSTEM
WARRENDALE, PA
TEL: 1-866-525-0621

ALSTOM Power Inc. Shaw Stone & Webster, Inc.

DUKE ENERGY
CHARLOTTE, N.C.

PRETREATMENT SYSTEM
PROCESS FLOW DIAGRAM

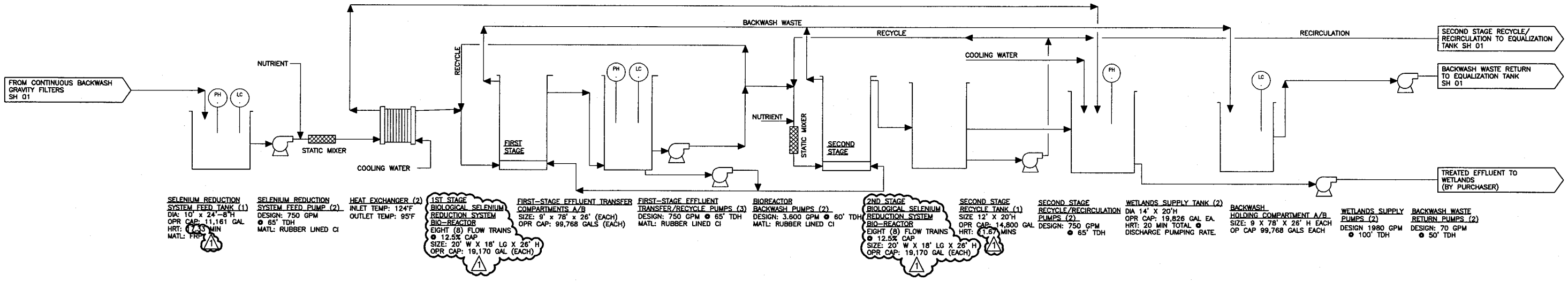
DRAWN ACH DATE 08/30/04
CHECKED JC DATE 08/25/05
APPR. RL DATE 08/25/05
APPR. MR DATE 08/25/05

JOB REF. NO. 24004
STATION
BELEWS CREEK STATION

SCALE NONE
DWG NO. 57001271-PRO-A02-01 REV. 1

ERN: FHS008MU

Duke No.: BCM 6208.06-0001.001



FOR GENERAL NOTES REFERENCE SH NO. A02-01

NO.	REVISIONS	DRN	CHKD	APPR	DATE
1	REVISED PER CUSTOMER COMMENTS	TR	RCL	LS	09/23/05
0	FOR REVIEW AND COMMENT	JM	RCL	LS	08/25/05
A	PERMIT APPLICATION ISSUE	ACH	MR	MG	07/07/05

USFilter — INDUSTRIAL WASTEWATER SYSTEM, WARRENDALE, PA, TEL: 1-866-525-0621

ALSTOM Power Inc. — Shaw Stone & Webster, Inc.

DUKE ENERGY
CHARLOTTE, N.C.

BIOLOGICAL TREATMENT SYSTEM
PROCESS FLOW DIAGRAM

DRAWN JM DATE 08/25/05
CHECKED JC DATE 08/25/05
APPR. RL DATE 08/25/05
APPR. MR DATE 08/25/05

JOB REF. NO. 24004
STATION
BELEWS CREEK STATION

SCALE NONE | DWG NO. 57001271-PRO-A02-02 | REV. 1

ERN: FHS008MV

Duke No.: BCN 6208.06-0002.001

FROM CONTINUOUS BACKWASH GRAVITY FILTERS SH 01

BACKWASH REJECT

FROM MAINTENANCE TANK SH 01

SLUDGE HOLDING TANK BY-PASS

FROM SLUDGE RECYCLE/ TRANSFER PUMPS SH 01

WASTE SLUDGE

LC

PLANT AIR

FILTRATE

FILTRATE SUMP TO EQUALIZATION TANK SH 01

SLUDGE DISPOSAL TRUCK (BY OTHERS)

SLUDGE HOLDING TANK (1)
DIA: 30' x 35'H
OPR CAP: 177,119 GAL
HRT: 21.86 HR

FILTER PRESS FAST FILL PUMP (4)
DESIGN: 550 GPM @ 132' TDH

FILTER PRESS PRESSURIZATION PUMP (6)
DESIGN: 70 GPM @ 231' TDH

FILTER PRESS (4)
SIZE: 1500 MM
OPR CAP: 250 CU FT
AUTOMATIC PLATE SHIFTER

FILTRATE SUMP (1)
SIZE: 32'W x 16'L x 13'D
OPR CAP: 31,596 GAL
VOLUMETRIC CAP: EQUALS TO 3.8 PRESS VOLUMES

FILTRATE SUMP PUMPS (2)
DESIGN: 600 GPM @ 65 TDH
MATL: HIGH CHROME

FOR GENERAL NOTES REFERENCE SH NO. A02-01

NO.	REVISIONS	DRN	CHKD	APPR	DATE
1	REVISED PER CUSTOMER COMMENTS	TR	RCL	LS	09/23/05
0	FOR REVIEW AND COMMENT	JM	RCL	LS	08/25/05
A	PERMIT APPLICATION ISSUE	ACH	MR	MG	07/07/05

USFilter — INDUSTRIAL WASTEWATER SYSTEM, WARRENDALE, PA, TEL: 1-866-525-0621

ALSTOM Power Inc. — Shaw Stone & Webster, Inc.

DUKE ENERGY
CHARLOTTE, N.C.

SLUDGE TREATMENT SYSTEM
PROCESS FLOW DIAGRAM

DRAWN	JM	DATE 08/25/05	JOB REF. NO. 24004
CHECKED	JC	DATE 08/25/05	STATION
APPR.	RL	DATE 08/25/05	BELEWS CREEK STATION
APPR.	MR	DATE 08/25/05	

SCALE NONE — DWG NO. 57001271-PRO-A02-03 — REV. 1

ERN: FHS008MW

Duke No.: BCN 6208.06-0003.001

Attachments

Attachment 1

Duke Letter to USFWS

Duke Power®
A Duke Energy Company

PROCUREMENT, CONSTRUCTION AND EH&S

Duke Power
EC11E / P.O. Box 1006
Charlotte, NC 28201-1006

March 17, 2005

Mr. Mark Cantrell
U.S. Fish and Wildlife Service
160 Zillicoa Street
Asheville, NC 28801

Subject : Belews Creek Steam Station - Flue Gas Desulfurization System

Dear Mr. Cantrell:

Duke Power contacted your office in a letter of April 30, 2003 (USFWS Log Number 4-2-03-275) regarding a rare, threatened, and endangered species inventory of a site proposed for the fill of gypsum, a by-product of Flue Gas Desulfurization System, which will be installed to enhance air emission controls to comply with the new North Carolina clean air legislation at Duke Power's Belews Creek Steam Station in southeastern Stokes County, North Carolina. In addition to the permitted fill site, additional facilities are necessary to complete the system. Duke Power is in the process of engineering and environmental planning for additional facilities. As part of the planning, Duke Power contracted to conduct a biological inventory, including rare, threatened and endangered species inventory, of a study area where additional facilities may be necessary. A copy of the biological inventory is attached.

The study area drains to Belews Lake, a cooling reservoir built for Belews Creek Steam Station, in the Dan River drainage. Additional new facilities are regulated through a NPDES permit administered by North Carolina Department of Environment and Natural Resources (NCDENR). Any new facilities will be associated with using limestone to enhance air emission, as necessary to comply with the new North Carolina Clean Smokestacks legislation.

The permitting of the landfill is under the jurisdiction of the NCDENR, Division of Waste Management, Solid Waste Section. The landfill permit application siting regulation NCAC 15A .0503 (1) requires that:

> (b) A site shall be located in consideration of the following:
>
> (i) a site shall not cause or contribute to the taking of any endangered or threatened species of plants, fish or wildlife;
>
> (ii) a site shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 C.F.R. Part 17 which is hereby incorporated by reference including any subsequent amendments and editions.

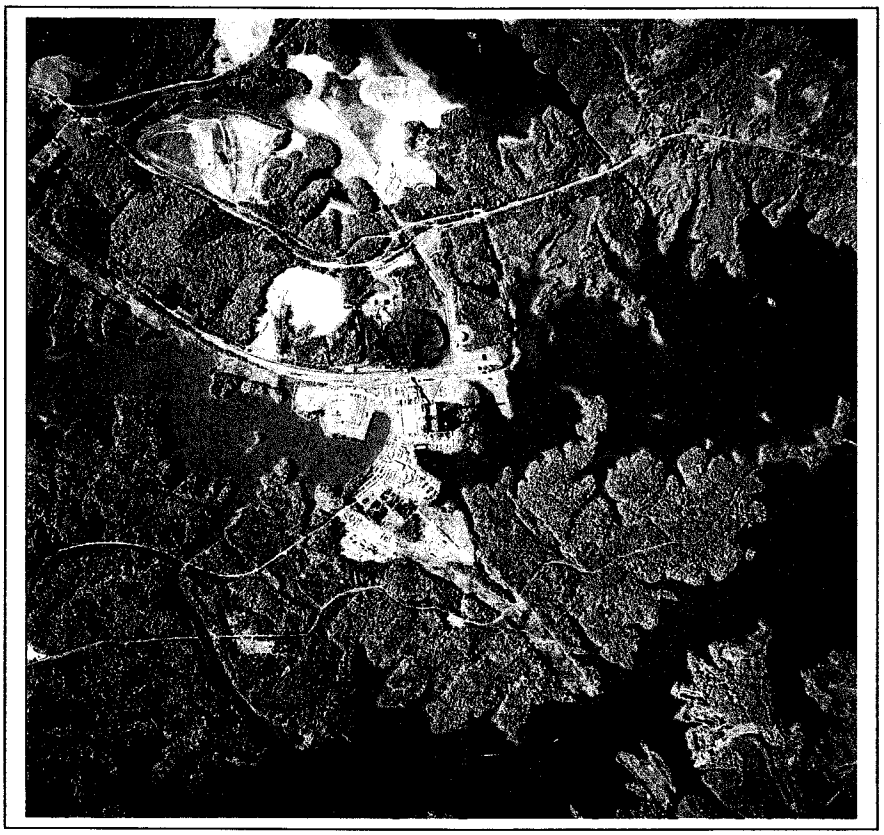
I request your concurrence with the attached investigation and request that you respond within 30 days so we can include your review with our permit application. Should you have questions or need additional information, please contact me at (980) 373-5710.

Sincerely,

Ron Lewis

Ron Lewis, Senior Scientist
Environmental Support

DUKE POWER
CHARLOTTE, NORTH CAROLINA



BIOLOGICAL INVENTORY OF BELEWS CREEK STEAM STATION LANDS ASSOCIATED WITH INSTALLATION OF A FLUE GAS DESULFURIZATION SYSTEM

March 2005

Prepared by:

Environmental Resources of the Carolinas
7550 Forest Oak Drive
Denver, NC
(704) 483-0972

INTRODUCTION

Duke Power is planning for facility expansions associated with the installation of a Flue Gas Desulfurization System at Belews Creek Steam Station in Stokes County, NC. The system is necessary to meet the air emission standards for the new NC Clean Smokestacks legislation. As part of this planning process, they contracted for a biological inventory of a study area that would emcompass feasible areas for required future facilities. The inventory included a characterization of potential waters and wetland and a description of plant communities and animal habitats, with a special emphasis on protected plant and animal species. This report summarizes the rare species component of the investigation.

The study area (Figure 1) was inventoried over a period of September 2004 to March 2005, with information included from previous inventories in October and December 2002. The vegetation communities of the study area were characterized and areas where potential rare plant or animal habitats may occur were thoroughly searched for rare species. Species list, community characteristics, and photographs of representative communities are provided in the report.

OVERVIEW

The study area for potential facility expansions included a variety of habitats from old fields to relatively mature oak-hickory forests. Some of the area has been disturbed from construction of the plant and associated transmission lines in the late 1960-early 1970's. Construction yards established during initial construction have been reused as recently as 2002.

Vegetation communities of the study area are relatively undisturbed oak-hickory stands, natural pine stands that succeeded from past farm fields, pine plantations, and early succession openings such as right-of-ways and recent clearing. No unique habitats were found and no rare species were observed.

VEGETATION

A biological inventory was conducted in a study area (Figure 1) at Belews Creek Steam Station to assist in planning for facility expansions necessary for installation of a Flue Gas Desulfurization System in order to comply with North Carolina's new Clean Smokestacks legislation. The inventory focused on identifying any rare or special vegetation or aquatic communities with special emphasis placed on identifying any protected species.

The US Fish & Wildlife Service and the NC Department of Environment and Natural Resources have identified that the following protected species occur in Stokes County:

Orangefin madtom	*Noturus gilberti*	FSC[1]
Rustyside sucker	*Thoburnia hamiltoni*	FSC
Diana fritillary butterfly	*Speyeria diana*	FSC
Green floater	*Lasmigonia subviridis*	FSC
James spinymussel	*Pleurobema collina*	Endangered
Small-anthered bittercress	*Cardamine micranthera*	Endangered
Schweinitz's sunflower	*Helianthus schweiniitzii*	Endangered
Butternut	*Juglans cinerea*	FSC

[1]FCS-Federal candidate for listing under the Endangered Species Act

A biological inventory of the study area (Figures 1 and 2) was conducted on October 23, 2002, September 10 and 14, 2004, December 14, 2004, March 4 and 10, 2005. The area includes five general vegetation community types: "pine plantations", "natural pine stands", "oak-hickory forests", "early succession old fields and logging operations", a farm pond, and "early succession wetlands".

Some surface waters in the study area are associated with a network of blocked, intermittent drainages resulting from the placement of fill for past construction yards, access roads, and associated sediment control ponds. In Figure 3 seven intermittent or ephemeral stream channels (S-2, 5, 5a, 6, 7, 8 and 9) and five man-made ditch complexes (S-1, 3, 3a, 4, and 4a) occur in the study area that all consist of negligible or no discharge at the time of the inventory, despite substantial rainfall associated with Hurricane Francis that passed through the area on September 8, 2004, as well as runoff and seepage from snowmelt of a winter storm in March 2005. Wetland habitats were primarily ephemeral, but potential wetlands W-2, W-5, W-6, and W-7 and farm pond, W-9, (Figures 4 and 5) contain perennial habitat for amphibians and reptiles. These perennial waters offer some habitat for shorebirds but none were observed using them. Habitat for the orangefin madtom, rustyside sucker, green floater, and James spinymussell does not exist in the study area.

The "pine plantation" vegetation type (Figures 6 through 9) includes areas that have been logged less than 10-years ago and planted with loblolly pine (*Pinus taeda*), as well as several stands where the loblolly pines are approximately 20-40 years old. Of the younger stands, one contains

numerous wildlife openings/and trails that have been planted with sericea lespedeza (*Lespedeza cuneata*) and bicolor lespedeza (*Lespedeza bicolor*) (Figure 6). This type also includes Virginia pine (*Pinus virginiana*), short-leaf pine (*P. echinata*), persimmon (*Diospyros virginiana*), tulip poplar (*Liriodendron tulipifera*), red maple (*Acer rubrum*), white oak (*Quercus alba*) and scarlet oak (*Q. coccinea*) among other species; the trees in this area are generally less than 20-feet tall (Figure 6). A sparsely planted loblolly pine stand exists in another area of the study area and here the plantation includes a mixture of mixed hardwoods and natural pines (similar to stands described above) that form a dense thicket of saplings (Figure 7). Habitat for protected species in the young pines exists only in openings, along roads and an associated power line right-of way (Figure 8); while this type and associated roadside areas contains habitat for Schweinitz's sunflower, none were found, despite a thorough search for the species.

The older pine plantations (Figure 9) are dominated by loblolly pines and have a relatively open understory and few other species. One of these plantations includes areas of saturated soils from altered drainages associated with construction yards, roads, and sediment basins and occurs on lands that have been cut and filled during construction of Belews Creek Steam Station in the 1970's. In addition to loblolly pines, this site contains wetland vegetation such as bulrush (*Scirpus cyperinus*), sedge (*Cyperus strigosus*), Vietnam grass (*Microstegium virmineum*), and beggar ticks (*Bidens aristosa*) and upland species such as thoroughwort (*Eupatorium hyssopifolium*), Indian woodoats (*Chasmanthium latifolium*), muscadine (*Vitis rotundifolia*), and beggar lice (*Desmodium paniculatum*). Habitat for protected species does not occur in this vegetation type.

"Natural pine stands" are a major vegetation type of the study area (Figure 1) and some adjacent lands. These appeared to have succeeded from previously farmed fields and contain relatively dense stands of Virginia and shortleaf pine (Figure 10). Berms in the stands suggest that contour farming occurred in the area. These stands contain a few herbaceous species, such as pipsissewa (*Chimaphila umbellate*), and scattered deciduous sub-canopy and under-story trees, primarily sourwood, dogwood, and red maple. Habitat for listed or candidate species does not exist in this community.

The "oak-hickory" community includes several separate stands and buffers along the drainages of previously logged tracts. In the hardwood buffers, young hardwoods including American beech (*Fagus grandifolia*), hickory (*Carya* spp.), tulip popular, chestnut oak (*Q. prinus*), sourwood (*Oxydendrum arboreum*), white oak, and black gum (*Nyssa sylvatica*) are found with sparse, larger white oaks, scarlet oaks, and tulip poplars (Figure 11). A diverse, but by no means

rich, assemblage of herbaceous vegetation exists along some of the intermittent drainages, including wild ginger (*Hexastylis* spp., probably *Hexastylis virginica*), Christmas fern (*Polystichum acrostichoides*), bellwort (*Uvularia pudica*), ebony spleenwort (*Asplenium platyneuron*), Southern grape fern (*Botrychium biternatum)*, New York fern (*Thelypteris noveboracensis*), and pipsissewa.

Mature and early succession oak-hickory stands occur in the study area (Figures 12 and 13). These stands contain white oak, black oak (*Q. velutina*), post oak (*Q. stellata*), pignut hickory (*Carya glabra*), mockernut hickory (*C. tomentosa*), bitternut hickory (*C. cordiformis*), tulip poplar, American beech, red maple (*Acer rubrum*), sourwood, and dogwood (*Cornus florida*). The shrub layer includes blueberry (*Vaccinium* spp.) and mountain laurel (*Kalmia latifolia*) or rosebay (*Rhododendron maximum*) along some of the intermittent drainages. Herbaceous species are generally sparse here and include Indian woodoats (*Chasmanthium latifolium*), Christmas fern, downy rattlesnake plantain (*Goodyera pubescens*), wild ginger, bellwort (*Uvularia pudica*) Southern lady fern (*Athyrium asplenioides*), sedge (*Carex* spp.), New York fern, elephant's foot (*Elephantopus carolinianus*), and black cohosh (*Cimicifuga racemosa*). This community contains potentially low-grade habitat for sweet pinesap, a Federal candidate species, but because of the time of the survey and the difficulty in locating specimens, the occurrence of this species was not determined. The basic soils usually necessary for butternut appear not to occur in the area.

"Early succession old fields" occur in electric transmission line corridors and cut and fill sites from past construction (Figure 14), and forest openings. These sites contain Indian grass (*Sorghastrum nutans*), little bluestem (*Andropogon scoparius*), beard grass (*Erianthus contortus*), sericea lespedeza, thoroughwort (*Eupatorium hyssopifolium, E. serotinium*), gamma grass (*Tripsacum dactyloides*), partridge pea (*Cassia fasciculate*), coreopsis (*Coreopsis major*), and senecio (*Senecio smalli*), including other early succession species. Some of the construction yards are covered in gravel. This vegetation type occurs in habitat that is suitable for Schweinitz's sunflower, but none were found, despite a thorough search for the species.

"Early succession wetlands" (Figure 15) occur associated with past construction practices where water has been diverted off and around construction yards and to sediment basins. In some cases the soils contain gravel from roads and construction yards. Some areas are inundated because of blocked drainages. Dominant species include alder (*Alnus serrulata*), bulrush, barnyard grass (*Echinochloa crusgalli*), rushes (*Juncus canadensis, J. acuminatus*), beak rush (*Rhynchospora glomerata*), umbrella grass (*Fuirena squarrosa*), boneset (*Eupatorium perfoliatum*), gerardia

(*Agalinis purpurea*), seedbox (*Ludwigia alternifolia*), and nodding ladies' tresses (*Spiranthes cernua*). No protected species or their habitats occur in the "early succession wetlands". Potential habitat for the bog turtle exists in some of these sites but none were found.

The intermittent drainages in the study area do not consistently support aquatic life and contain water primarily during rainfall events. The slopes along these drainages, while canopy covered, had the highest potential for small-anthered bittercress, a winter annual species. While no small-anthered bittercress were found in the area, potential low-grade habitat exists.

The study area for facility expansions contains a diversity of plant habitats from recently disturbed lands to relatively mature oak-hickory forests. No unique plant communities or habitats exist in the study area. The drainage courses of the type found at the site are common in the area. While potential habitat exists for small-anthered bittercress (adjacent slopes of intermittent drainages) and Schweinitz's sunflower (old fields, transmission rights-of-way, roadsides), no plants were found. The study area for the proposed facility expansions necessary to meet the requirements for the new Clean Smokestacks legislation has little or no potential to impact listed species or critical habitat for listed species.

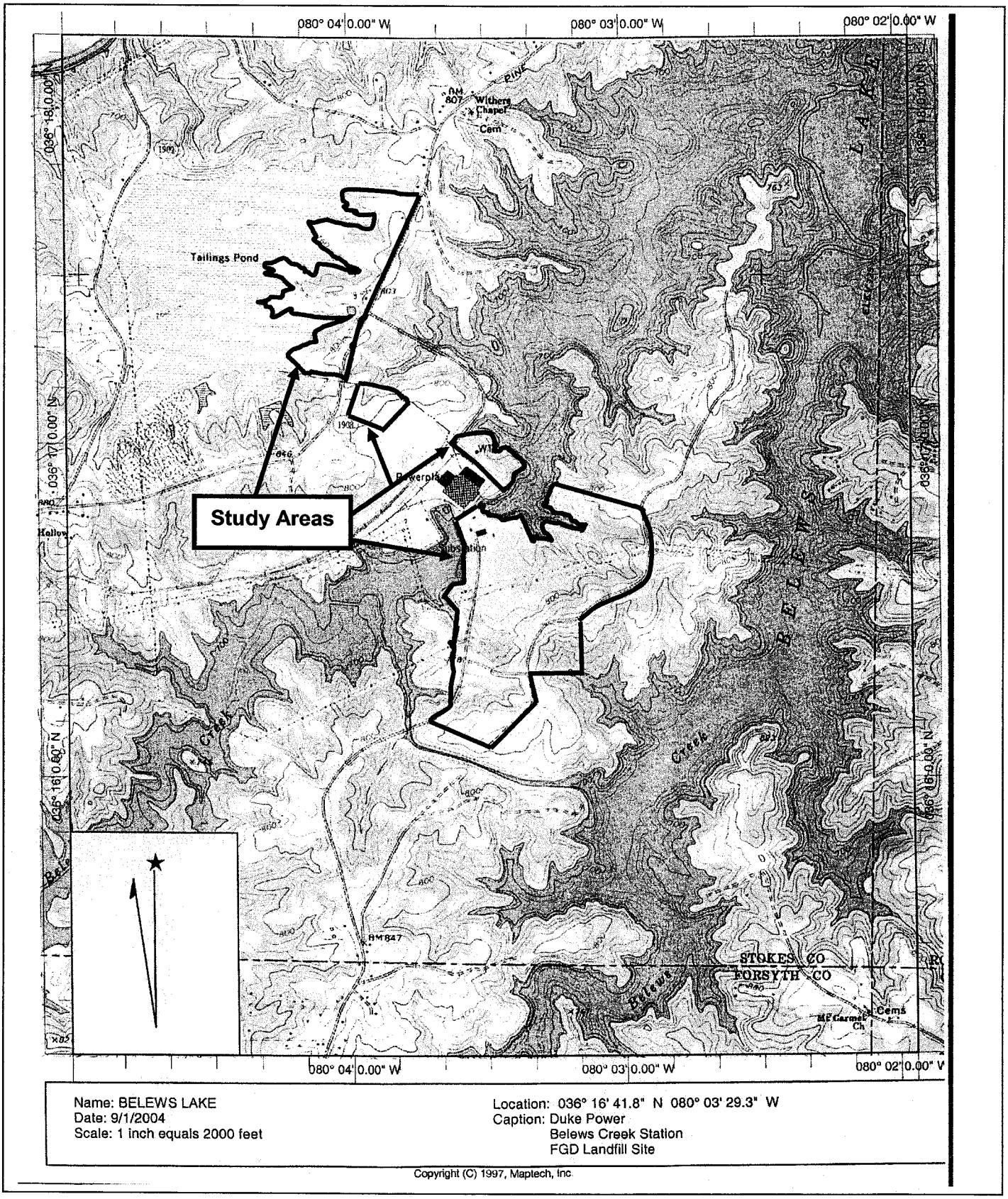


Figure 1. Portion of the Belews Lake USGS 7.5 minute map, showing the approximate boundary of the study area for facility expansions associated with the installation of a Flue Gas Desulfurization System at Belews Creek Steam Station in Stokes County, NC.

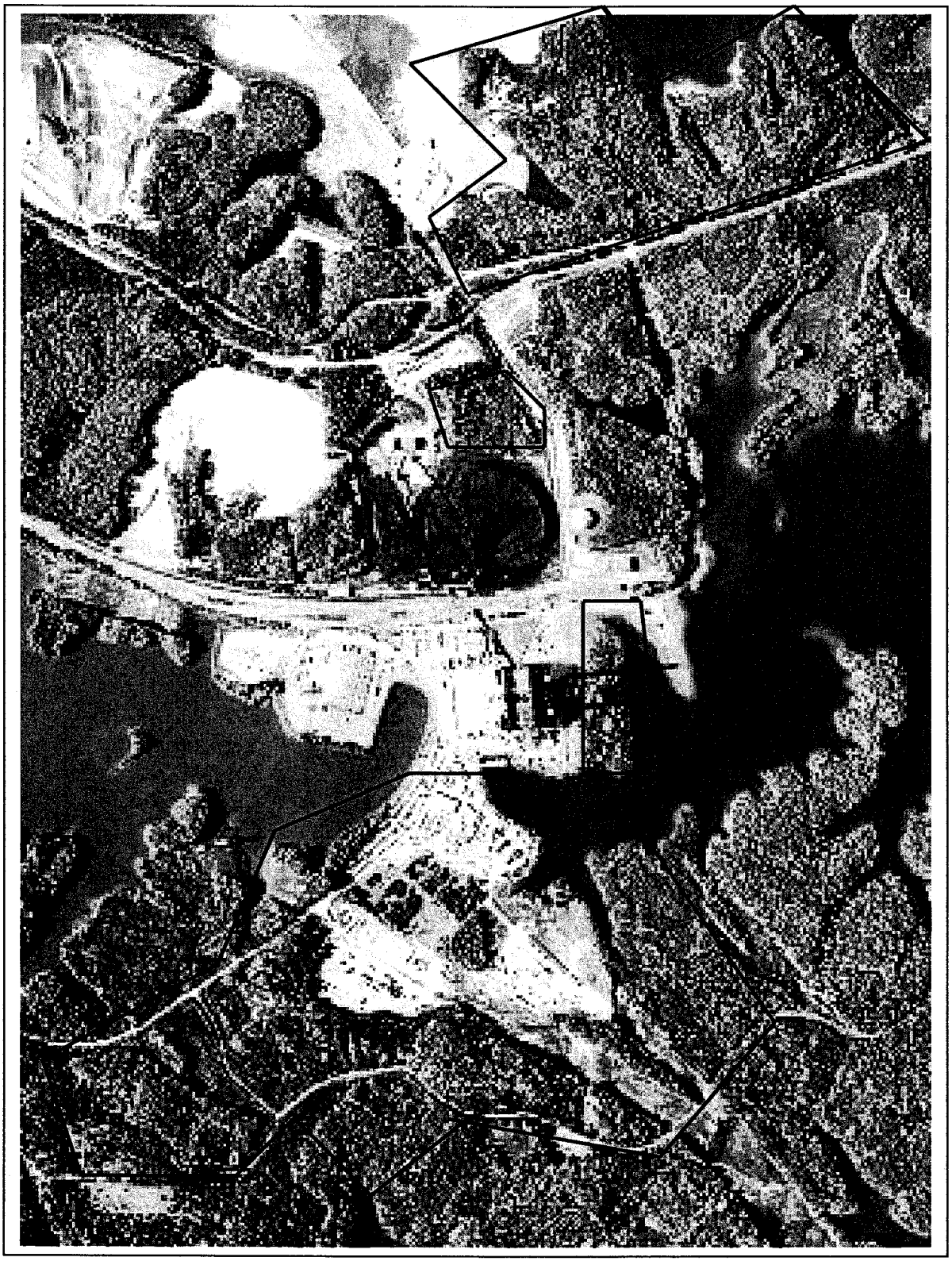


Figure 2. Aerial photograph of Belews Creek Steam Station taken in 2003 with the rough boundary of the study area for a Flue Gas Desulfurization identified.

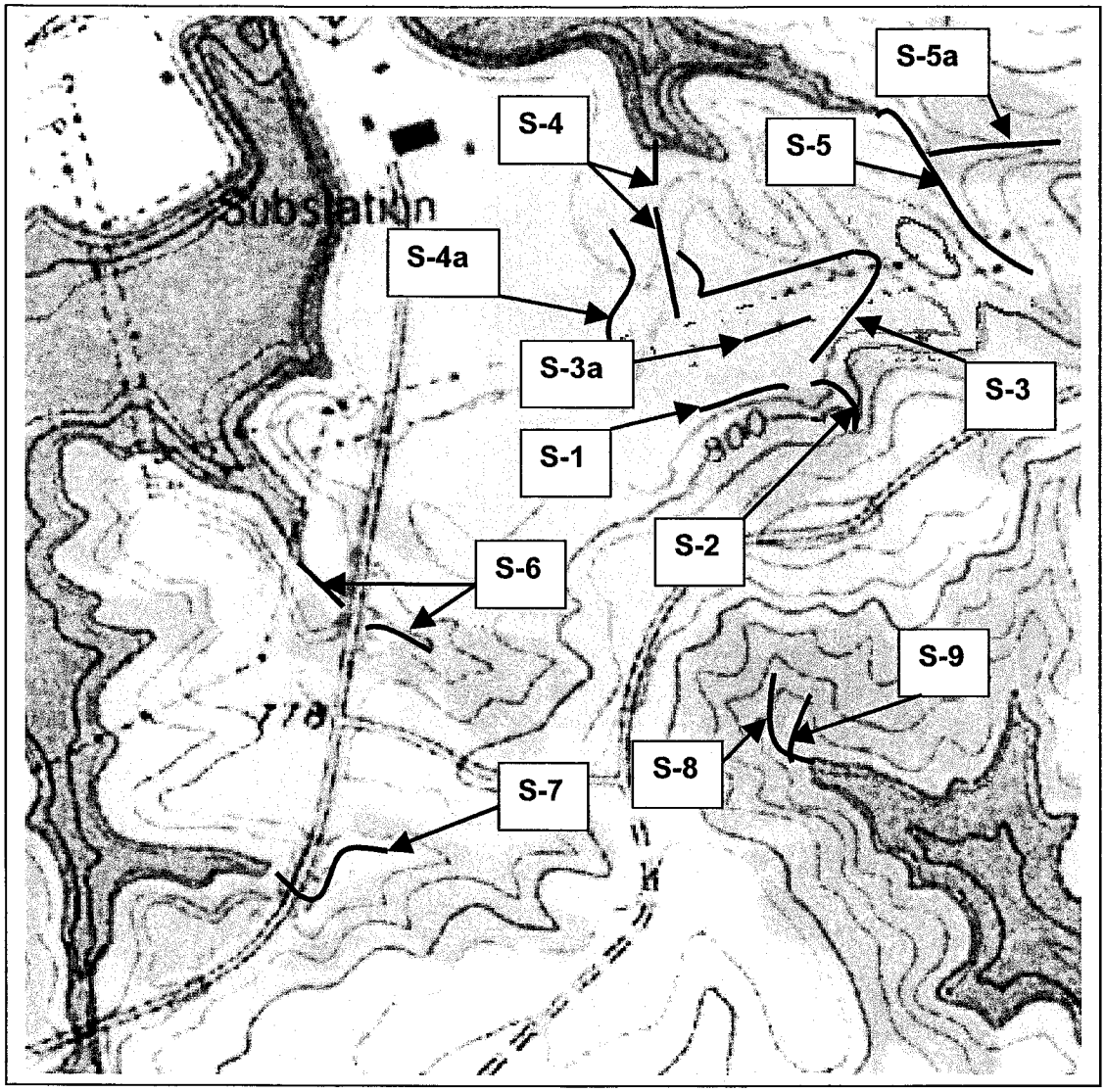


Figure 3. Approximate locations of stream channels investigated in the study area for facility expansion associated with the installation of a Flue Gas Desulfurization System at Belews Creek Steam Station.

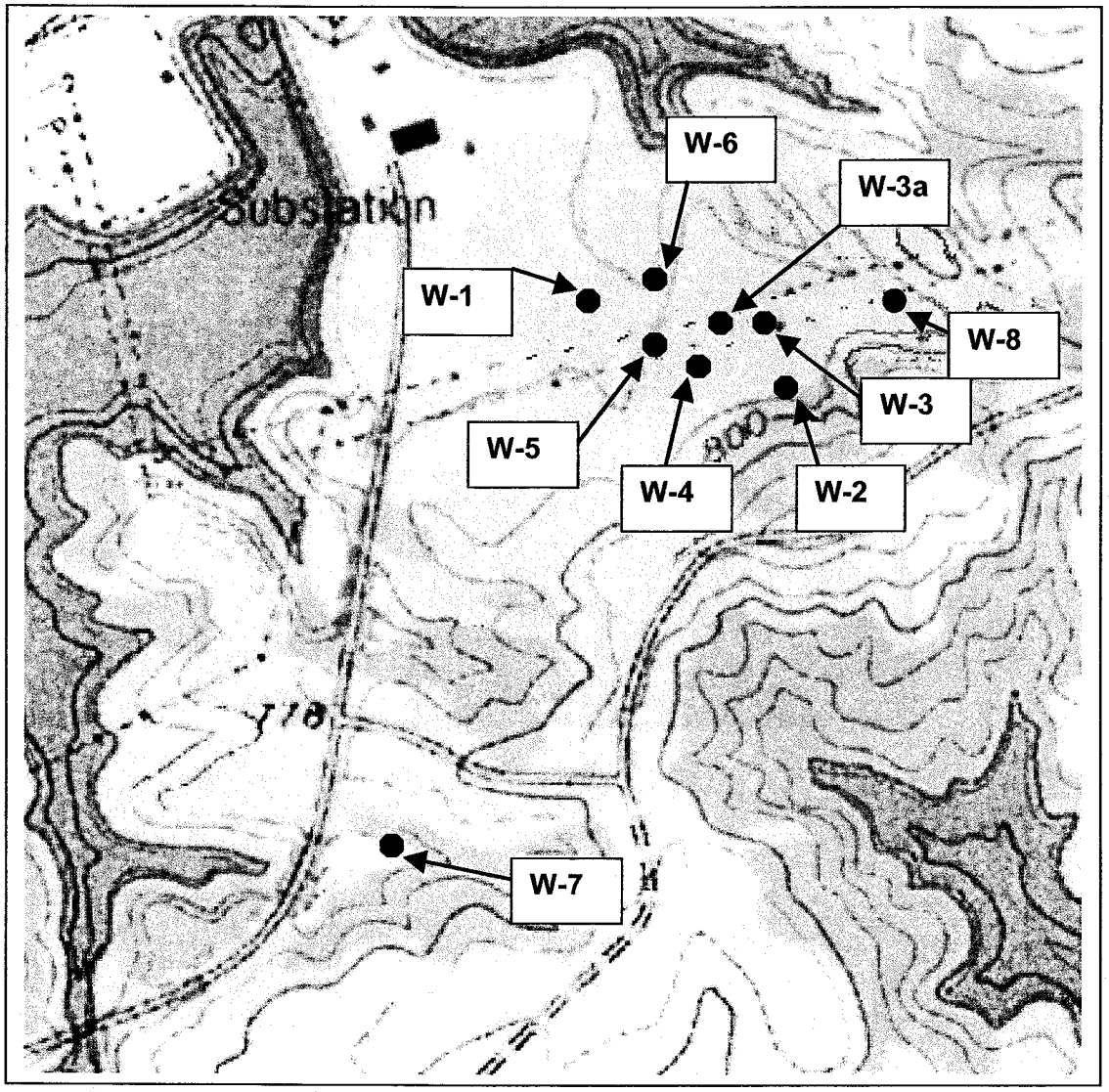


Figure 4. Approximate locations of areas investigated for wetland in the study area for facility expansion associated with the installation of a Flue Gas Desulfurization System at Belews Creek Steam Station.

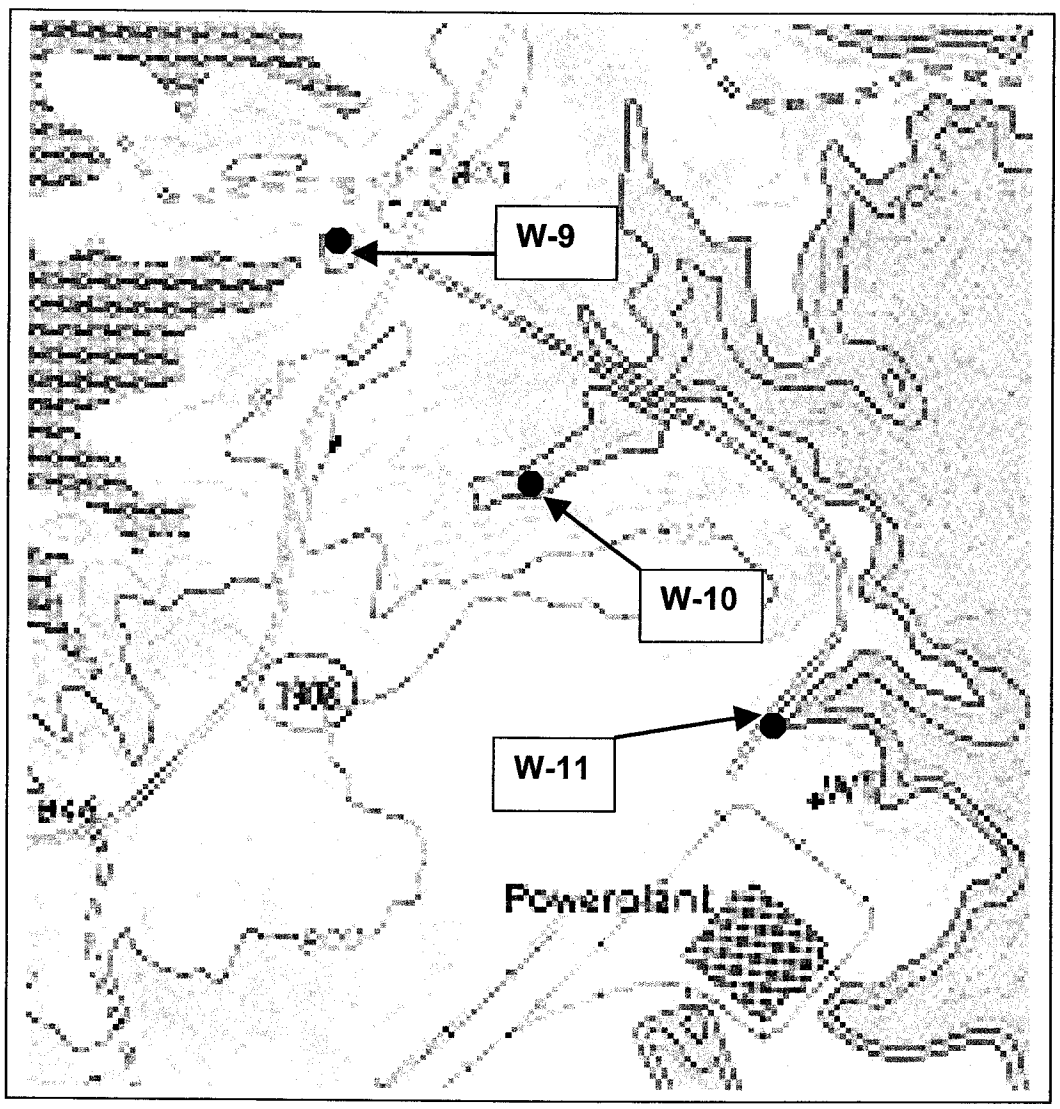


Figure 5. Additional areas investigated for wetlands in the study area for facility expansion associated with the installation of a Flue Gas Desulfurization System at Belews Creek Steam Station.

Figure 6. A pine plantation, in the study area for facility expansion at Belews Creek Steam Station, that was sparsely planted with loblolly pines and also planted with sericea and bicolor lespedeza, as observed on October 23, 2002.

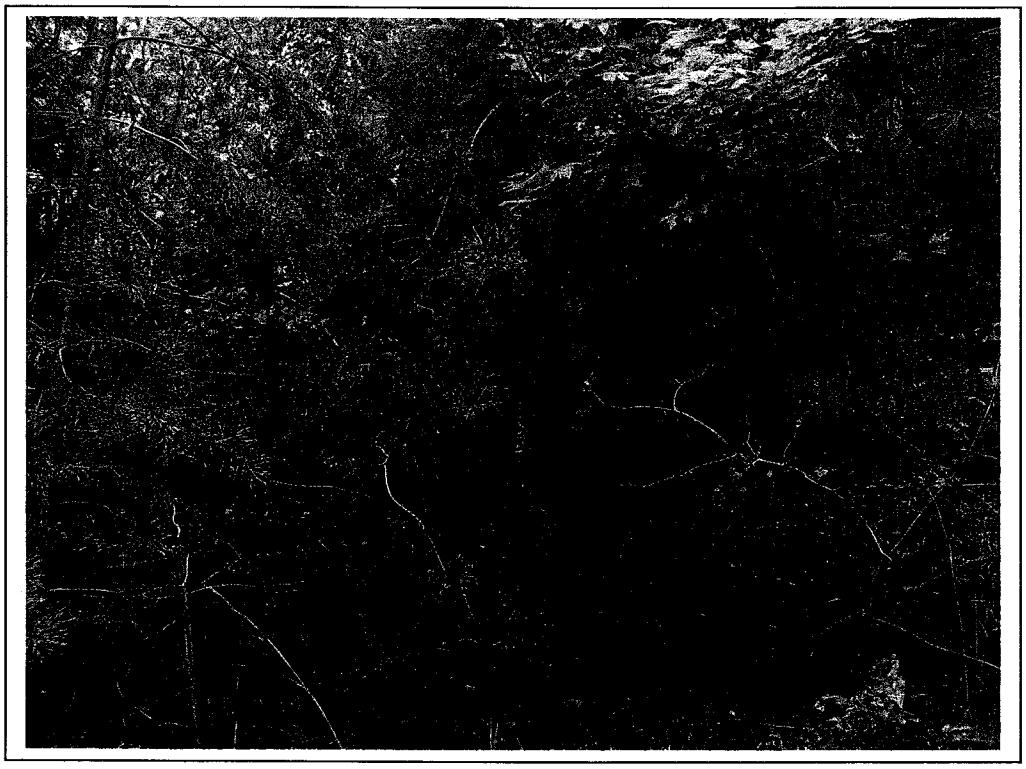


Figure 7. A pine plantation, in the study area for facility expansion at Belews Creek Steam Station, that was sparsely planted with loblolly pines, but contains both natural pines and hardwood sprouts, as observed on September 14, 2004.

Figure 8. Roadside areas within the study area for facility expansion at Belews Creek Steam Station, as observed on September 14, 2004.

Figure 9. Pine plantation, in the study area for facility expansion at Belews Creek Steam Station, as observed on March 10, 2005.

Figure 10. Natural pine stand within the study area for facility expansion at Belews Creek Steam Station, as observed on September 10, 2004.

Figure 11. Oak-hickory forest that is a buffer along intermittent stream channels in the study area for facility expansion at Belews Creek Steam Station, as observed on October 23, 2002.

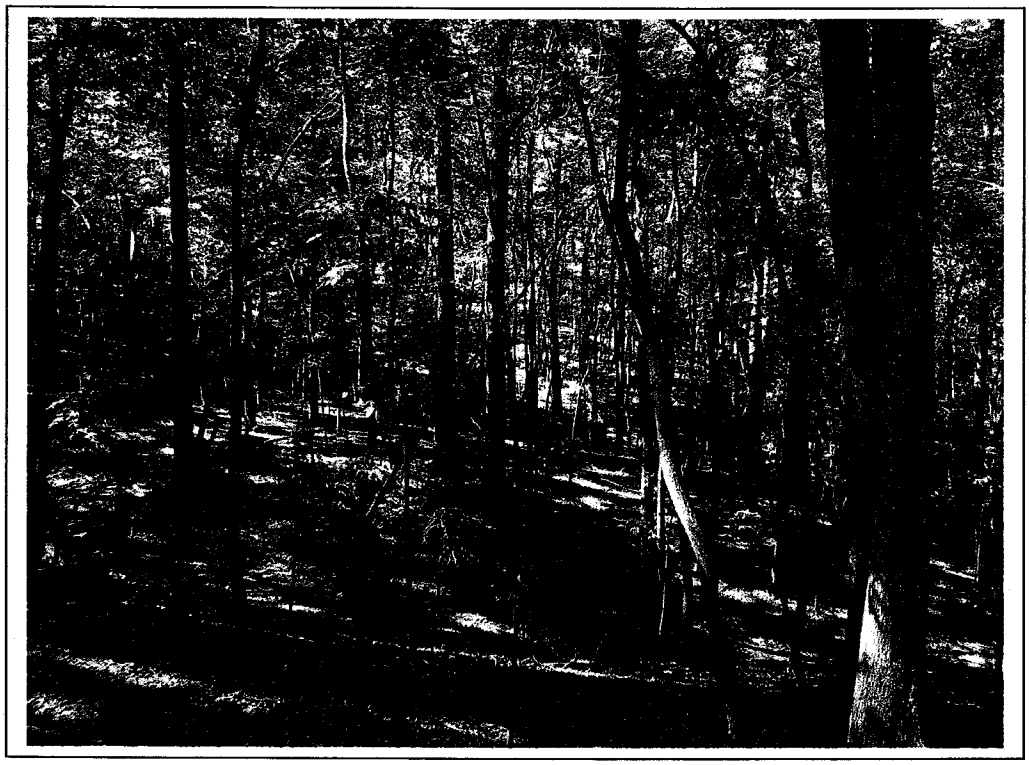


Figure 12. Young oak-hickory forest within the study area for facility expansion at Belews Creek Steam Station, as observed on September 10, 2004.

Figure 13. Relatively mature oak-hickory forest within the study area for facility expansion at Belews Creek Steam Station, as observed on March 10, 2005.

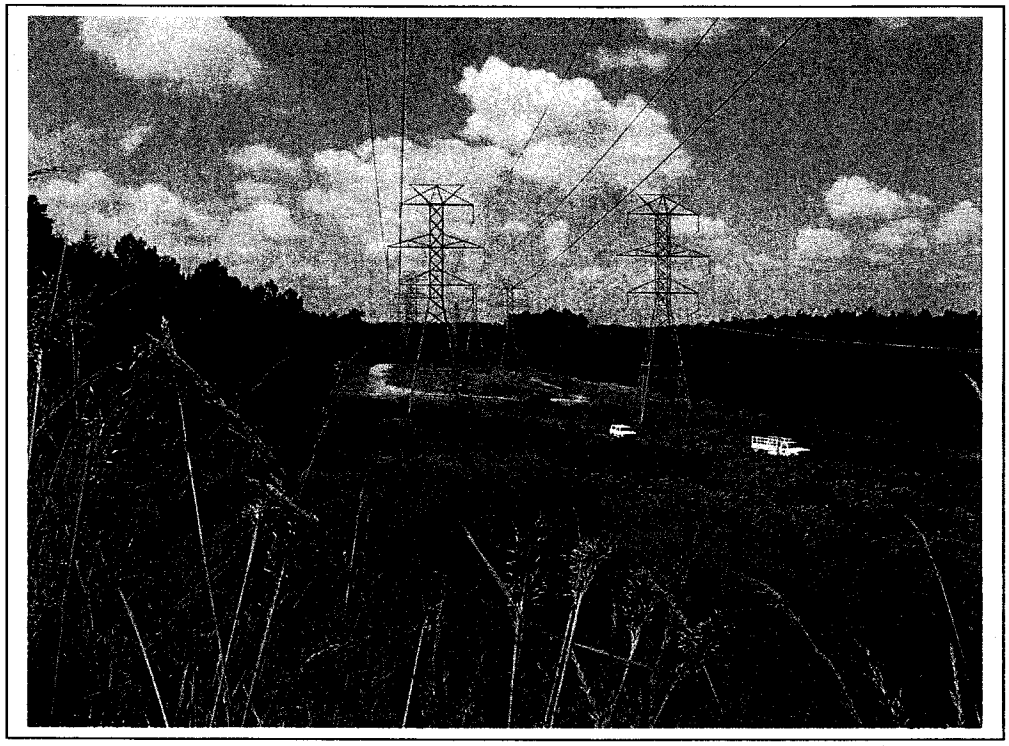


Figure 14. Early succession habitat in electric transmission corridors and construction yards within the study area for facility expansion at Belews Creek Steam Station, as observed on September 10, 2004.

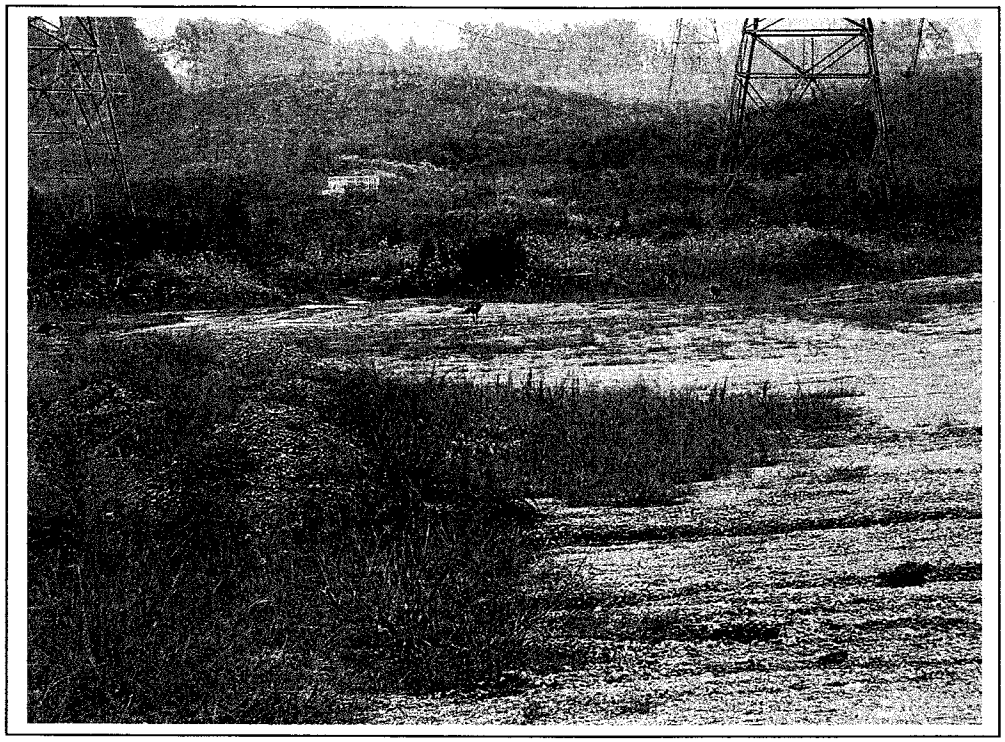


Figure 15. Early succession wetlands in the right side of the photo and located under the transmission structure, in the study area for facility expansions at Belews Creek Steam Station, as observed on September 14, 2004.

Attachment 2

Duke Letter to US Army Corps of Engineers

Duke Power®
A Duke Energy Company

PROCUREMENT, CONSTRUCTION AND EH&S

Duke Power
EC11E / P.O. Box 1006
Charlotte, NC 28201-1006

March 17, 2005

Ms. Andrea Wade
United States Army Corps of Engineers
Raleigh Regional Field Office
6508 Falls of Neuse Road
Suite 120
Raleigh, NC 27615

Subject: Request for a Jurisdictional Review at Belews Creek Steam Station

Dear Ms. Wade:

Duke Power is in the process of planning for the installation of a Flue Gas Desulfurization System, which will be installed to comply with the new North Carolina Clean Smokestacks legislation at Duke Power's Belews Creek Steam Station in southeastern Stokes County, North Carolina. Several facilities will need to be upgraded or added to the plant. Duke Power is in the process of engineering and environmental planning for additional facilities. As part of the planning, Duke Power contracted to conduct a biological inventory, including waters, wetlands, and a rare, threatened and endangered species inventory, of a study area where additional facilities may be necessary. A copy of the waters and wetlands inventory is attached. The area is located in the Belews Lake/Dan River Drainage (Belews Lake, NC USGS 7.5 minute map).

I would like to schedule a review of the jurisdictional status of potential stream channels and wetlands as soon as your schedule permits. I will coordinate your visit with appropriate personnel from NC Department of Environment and Natural Resources. If you have questions, please call me at (980) 373-5710.

Sincerely,

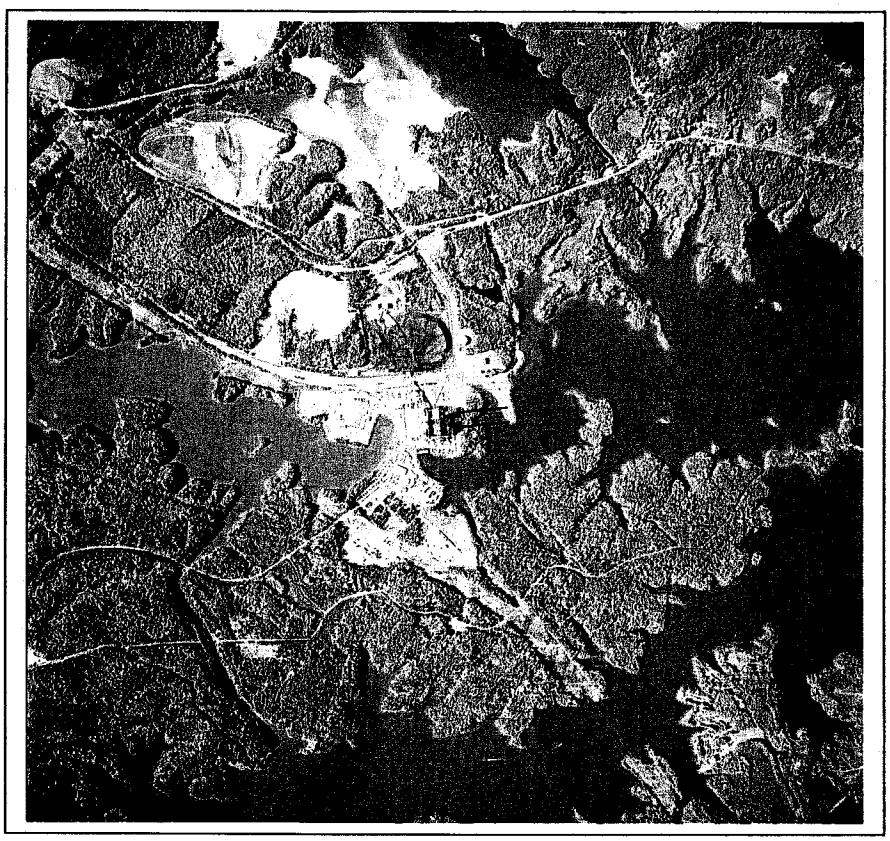
Ron Lewis

Ron Lewis, Senior Scientist
Environmental Support

Attachments

cc: Mr. John Dorney
NC DENR/Division of Water Quality,
Wetlands Unit,
1650 Mail Service Center,
Raleigh, NC 27699-1650

DUKE POWER
CHARLOTTE, NORTH CAROLINA



BIOLOGICAL INVENTORY OF BELEWS CREEK STEAM STATION LANDS ASSOCIATED WITH INSTALLATION OF A FLUE GAS DESULFURIZATION SYSTEM

March 2005

Prepared by:

Environmental Resources of the Carolinas
7550 Forest Oak Drive
Denver, NC
(704) 483-0972

INTRODUCTION

Duke Power is planning for facility expansions associated with the installation of a Flue Gas Desulfurization System at Belews Creek Steam Station in Stokes County, NC. The system is necessary to meet the air emission standards for the new NC Clean Smokestacks legislation. As part of this planning process, they contracted for a biological inventory of a study area that would emcompass feasible areas for required future facilities. The inventory included a characterization of potential waters and wetland and a description of plant communities and animal habitats, with a special emphasis on protected plant and animal species.

The study area (Figures 1 and 2) was inventoried over a period of September 2004 to March 2005, with information included from previous inventories in October and December 2002. During the field inventory, potential wetlands within the study areas (Figures 3 through 6) were evaluated using the 1987 US Army Corps of Engineers "Routine On-Site Determination Method" (Environmental Laboratory 1987). Wetlands were considered present when observations of vegetation, hydrology, and soils indicated that the three-parameter criteria for wetland identification were met, but because of past disturbances in the study area, consideration was given to past land uses (see Figures 3 and 7). Wetlands found in the area were characterized using Data 1 Forms and boundaries were marked, where appropriate, with survey ribbon and photographed. Stream channels were evaluated using the US Army Corp of Engineers' "Intermittent Channel Evaluation Form" and photographed. Data and key photographs are included in this report.

The vegetation communities of the study area were characterized and areas where potential rare plant or animal habitats may occur were thoroughly searched for rare species. Species list, community characteristics, and photographs of representative communities are provided in the report.

OVERVIEW

The study area for potential facility expansions included a variety of habitats from old fields to relatively mature oak-hickory forests. Much of the area has been disturbed from construction of the plant and associated transmission lines in the late 1960-early 1970's. Construction yards established during initial construction have been reused as recently as 2002.

The topography and hydrology of the study area are such that no perennial streams are present, and wetlands would not be expected to occur here. Land disturbances from initial construction required substantial grading (Figures 6 and 7) and these disturbances resulted in diversion, and in

some cases ponding, of ephemeral or intermittent channels to route water around construction yards. In some cases these activities blocked drainages, which inhibited natural flows; in many cases soils are extremely compacted and hold surface water. After a period of 35 years, some areas, primarily in places where it was necessary to alter water courses around construction activities and laydown yards, hydric soils, hydrophytic vegetation, and wetlands hydrology have developed. These areas, because of their proximity to construction yards and the station, offer opportunities for facility expansion. This is the case for potential wetlands W-1, W-2, W-3, W-3a, W-4, W-5, and W-6 (Table 1 and Figures 4, 5, and 8 through 29) and associated intermittent channels or diversion ditches (Table 2 and Figures 30 through 60). Similarily, W-7 results from substantial instream erosion (probably from activities associated with excavation of the connecting canal between the Belews Lake basins), W-8 from grading associated with the clearing of the right-of-way for a transmission line, and W-11 from a stormwater drain to Belews Lake from the main access road. These circumstances lead to difficult agency jurisdictional determinations.

Certain areas within the drainage area of the Station's ash basin wastewater treatment system were not evaluated for wetlands as soil were primarily ash, hydrology from the impounded basin. Additionally, they were connected to the NPDES permitted basin.

Vegetation communities of the study area are relatively undisturbed oak-hickory stands, natural pine stands that succeeded from past farm fields, pine plantations, and early succession openings such as right-of-ways and recent clearing. No unique habitats were found and no rare species were observed.

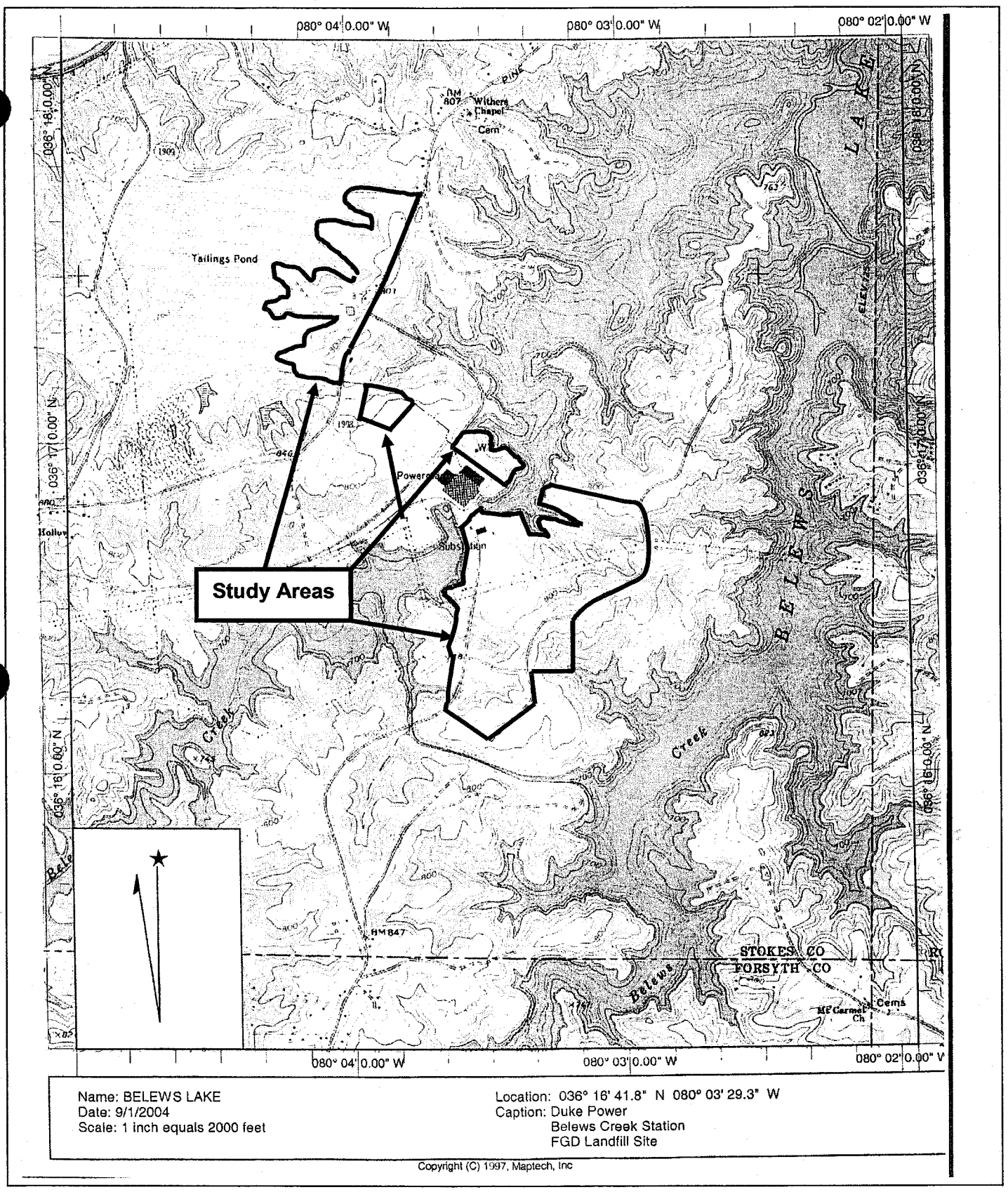


Figure 1. Portion of the Belews Lake USGS 7.5 minute map, showing the approximate boundary of the study area for facility expansions associated with the installation of a Flue Gas Desulfurization System at Belews Creek Steam Station in Stokes County, NC.

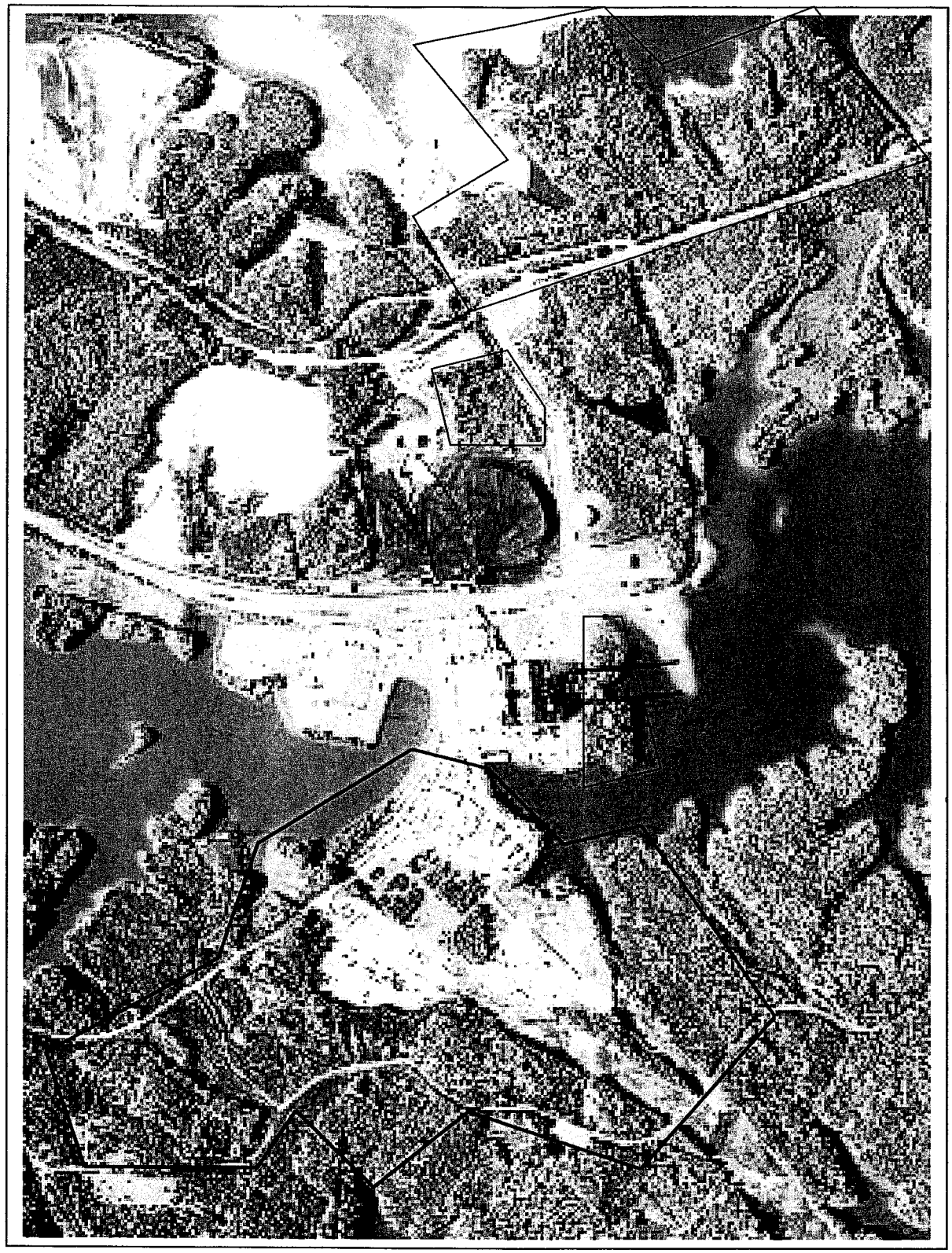


Figure 2. Aerial photograph of Belews Creek Steam Station taken in 2003 with the rough boundary of the study area for a Flue Gas Desulfurization identified.

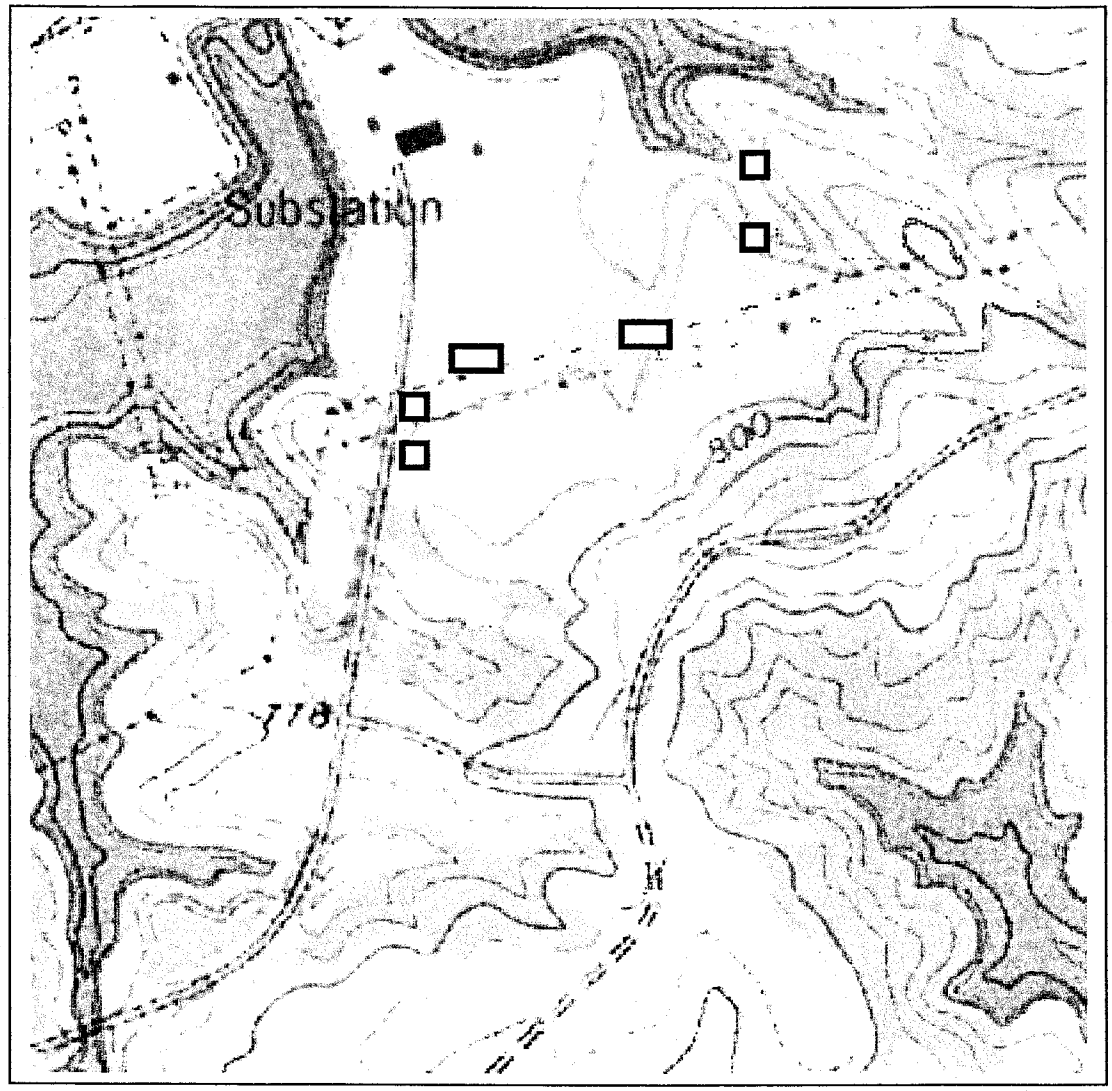


Figure 3. Approximate location of past and current sediment basins, excluding those used during initial construction of Belews Creek Steam Station.

WETLANDS

Table 1. Summary characteristics of areas investigated for jurisdictional wetlands.

Plot Number	Associated Water	Vegetation	Soils	Hydrology	Jurisdictional Wetland
W-1	Ditch/Blocked Drainage	Yes	Yes	No	No[1]
W-2	Sediment Basin / Ditch-Diversion / Ephemeral Channel	Yes	Yes	Yes	No[1]
W-3	Ditch-Diversion/Blocked Drainage	Yes	No	Yes	No[1]
W-3a	Ditch-Diversion/Blocked Drainage	Yes	Yes	?	Not-Probable[1]
W-4	Ditch-Diversion/Blocked Drainage	Yes	Yes	Yes	Not-Probable[1]
W-5	Ditch-Diversion/Blocked Drainage	Yes	Yes	Yes	Not-Probable[1]
W-6	Ditch-Diversion/Blocked Drainage	Yes	Yes	Yes	No[1]
W-7	Unimportant Channel	Yes	Yes	Yes	Yes[2]
W-8	Ephemeral Channel	Yes	Yes	?	Probable[2]
W-9	Upland Farm Pond	Yes	?	Yes	No
W-10	Coal Storage	Yes	No	Yes	No[3]
W-12	Stormwater Drain to Lake	Yes	Yes	Yes	No[4]

[1]Previous cut and fill and used as a construction yard.
[2]Isolated wetland
[3]NPDES permitted discharge
[4]Hydrology from storm drain from road

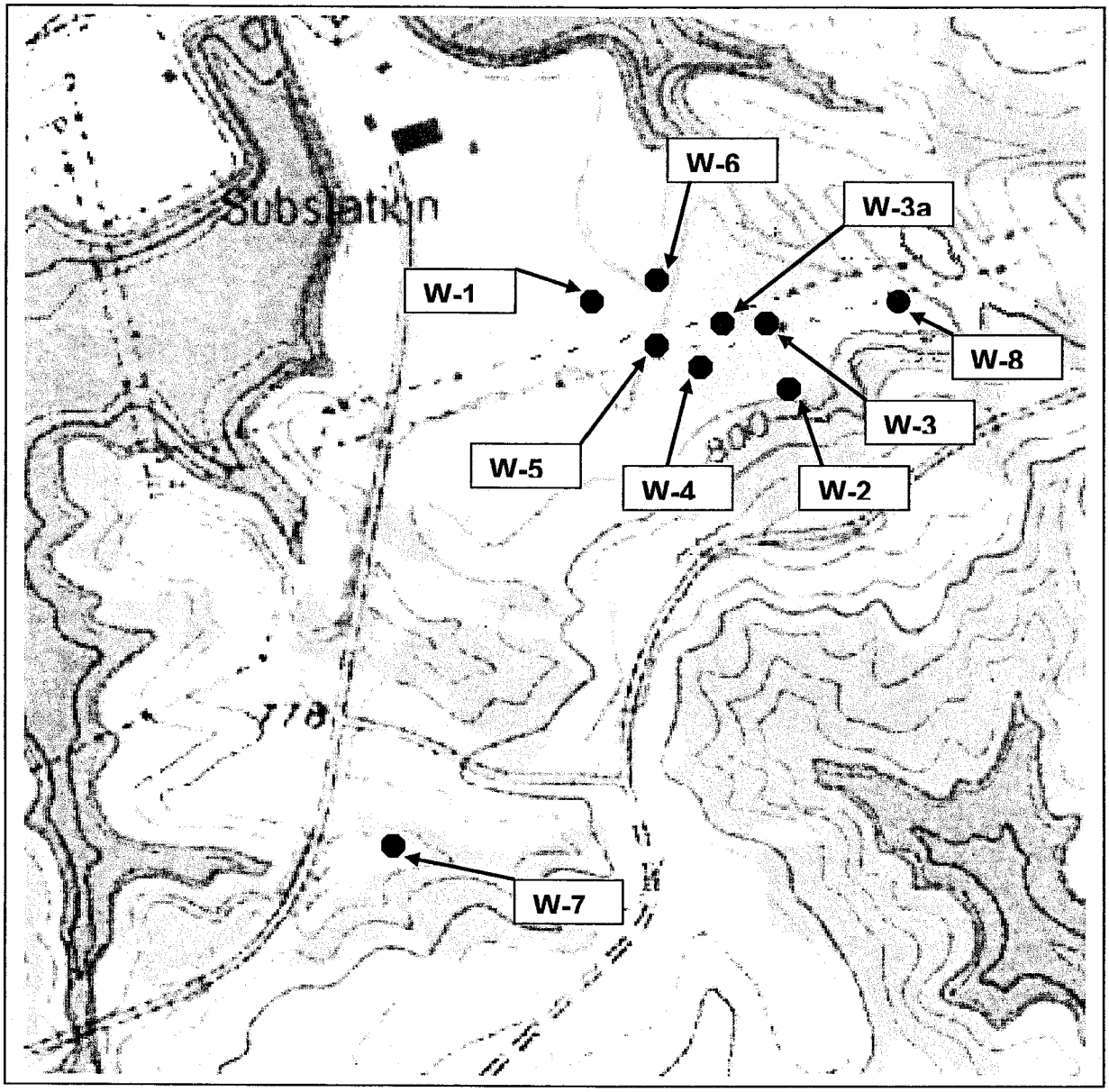


Figure 4. Approximate locations of areas investigated for wetland in the study area for facility expansion associated with the installation of a Flue Gas Desulfurization System at Belews Creek Steam Station.

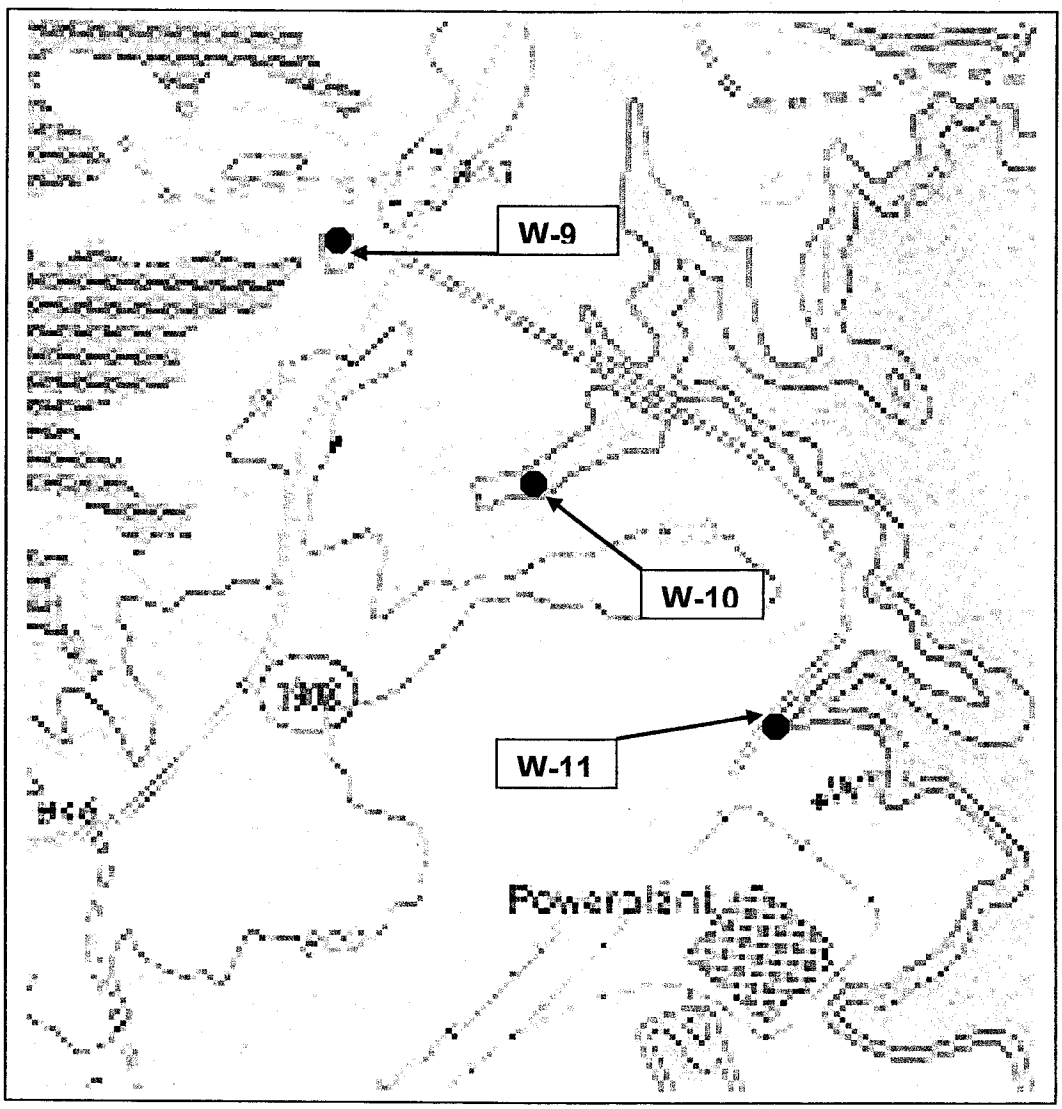


Figure 5. Additional areas investigated for wetlands in the study area for facility expansion associated with the installation of a Flue Gas Desulfurization System at Belews Creek Steam Station.

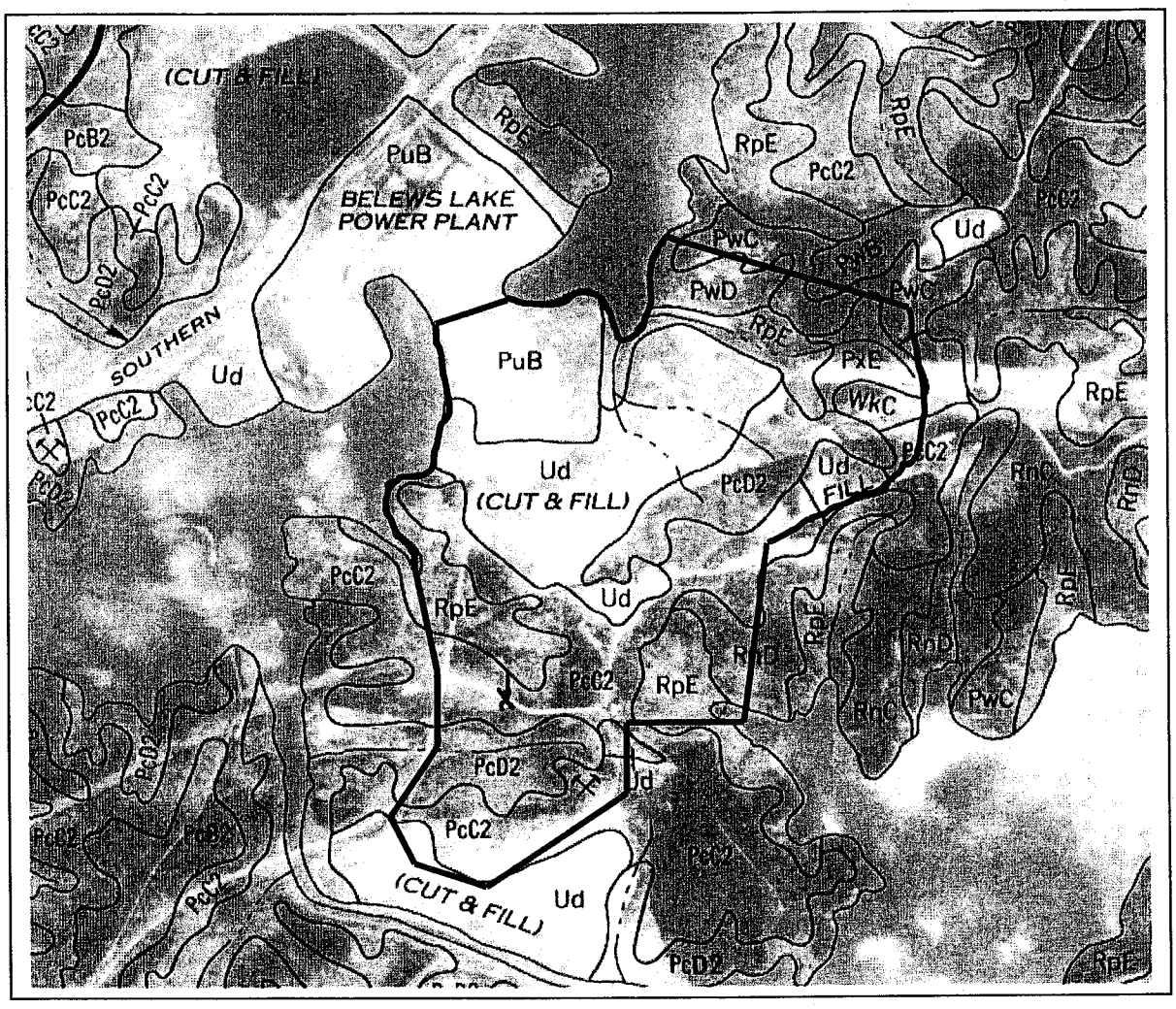


Figure 6. Soil map showing the approximate area where the majority of potential wetlands were found in the study area for facility expansion, associated with a Flue Gas Desulfurization System for Belews Creek Steam Station in Stokes County, NC.

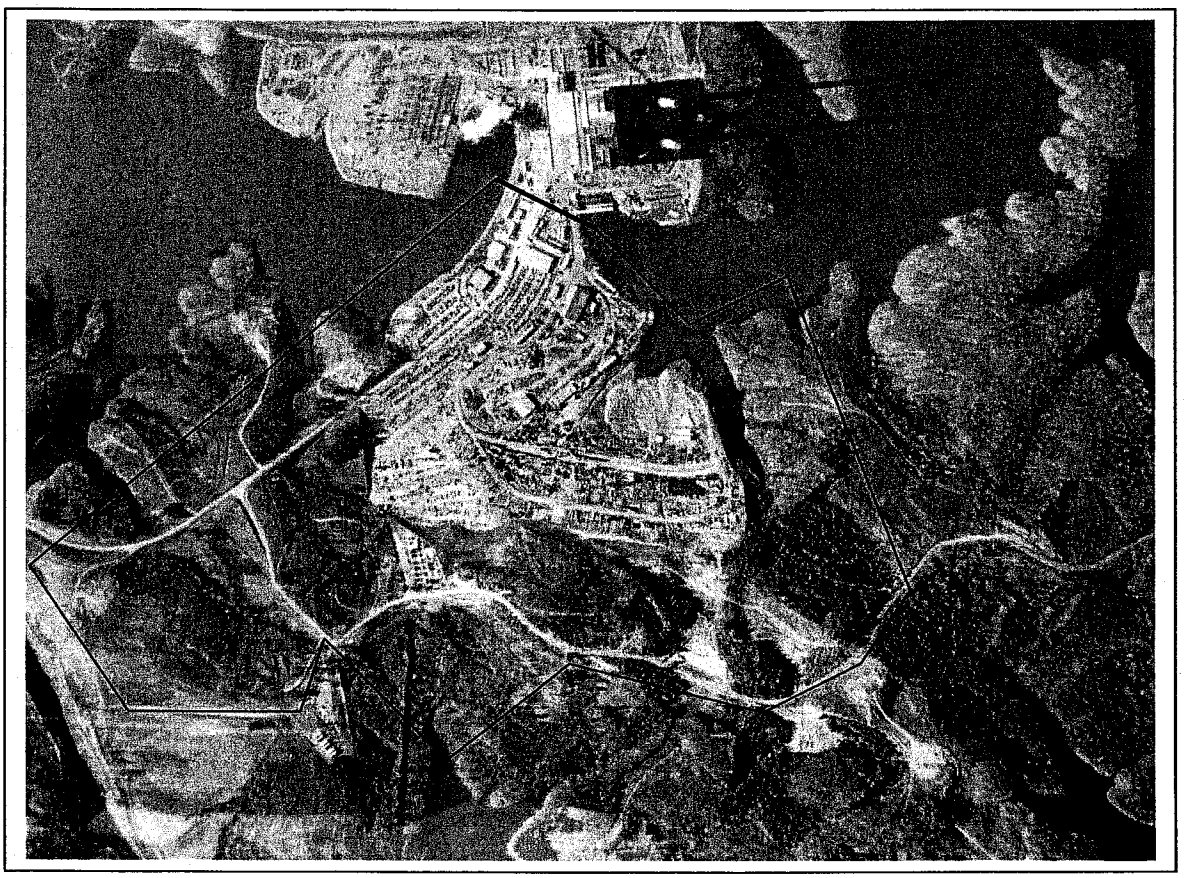


Figure 7. Aerial photograph from December 1973 during construction of Belews Creek Steam Station, showing land disturbances during construction.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 9/10/04. Section: Belews Lake, USGS 7.5-minute map
Transect and Plot No.: W-1 (Figures 4, 8, and 9).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
Pinus taeda	FAC	*Microstegium vimineum*	FAC+
Saplings/shrubs		*Scirpus cyperinus*	OBL
Liquidambar styraciflua	FAC+	*Bidens aristosa*	FACW
Liriodendron tulipifera	FAC	*Lespedeza cuneata*	NI
Platanus occidentalis	FACW-	**Woody vines**	
		Vitis rotundifolia	FAC

% of species that are OBL, FACW, and/or FAC: 100% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Ud-Udorthents, loamy (Cut and Fill) .
Mottled: Yes: X No: .
Mottled color: 10YR5/6 @12 inches ; Matrix color: 10YR7/2 @ 12 inches.
Gleyed: Yes: . No: X . Other indicators: None.
Hydric soils: Yes: X . No: . Basis: Chroma <2 .

Hydrology
Inundated: Yes: . No: X .
Depth of standing water: Isolated pockets in ditch (S-4a) .
Saturated soils: Yes: No: X , except in channel .
Depth to saturated soil: None.
Other indicators: None .
Wetland hydrology: Yes: No: X . Basis: No saturated or inundated soils.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: Non-wetland: X .
Comment: Area is isolated and not considered a water of the US. Not considered water of the state because hydrology, when present, is the result of blocked drainages from construction yards, man-made ditches, and an associated sediment basin. Soils are variable due to past cut and fill.

Determined by: Robert Siler
Environmental Resources of the Carolinas
7550 Forest Oak Drive,
Denver, NC 28037
(704) 483-0972

Figure 8. Vegetation at wetland sampling station W-1, as observed on September 10, 2004.

Figure 9. Soils at 8-14 inches deep at wetlands sampling station W-1, as observed on September 10, 2004. Soil matrix was classified as 10YR7/2 and mottles were 10YR5/6. Soil profiles are variable from previous cut and fill.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 9/10/04. Section: Belews Lake, USGS 7.5-minute map
Transect and Plot No.: W-2 (Figures 4, 10, and 11).

Vegetation
Vegetation: Algae ; % of species that are OBL, FACW, and/or FAC: 100% .
Other indicators: No emergent vegetation; algae is the primary vegetation.
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Pacolet sandy clay loam .
Mottled: Yes: X No: .
Mottled color: ; Matrix color: 2.5Y5/3 @ 6"+; 2.5Y3/1 at 0-6".
Gleyed: Yes: . No: X . Other indicators: None.
Hydric soils: Yes: X . No: . Basis: Chroma <2 .

Hydrology
Inundated: Yes: X . No: .
Depth of standing water: Greater than 8 inches .
Saturated soils: Yes: X No: .
Depth to saturated soil: 12 in. .
Other indicators: None .
Wetland hydrology: Yes: X No: . Basis: Inundated soils.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: Non-wetland: X .
Comment: Area is a constructed basin during early construction of the plant that receives water from two manmade diversion ditches and an ephemeral channel. Not considered water of the US.

Determined by: Robert Siler
Environmental Resources of the Carolinas
7550 Forest Oak Drive,
Denver, NC 28037
(704) 483-0972

Figure 10. Inundated area, W-2, that is the result of past use as a collection basin, as observed on September 10, 2004. Area receives water from two ditch systems (S-1 and 3) that divert water from construction yards and from an ephemeral stream channel (S-2).

Figure 11. Soils at 0-8 inches deep at wetlands sampling station W-2, as observed on March 4, 2005. Soil matrix was classified as 2.5Y3/1 at 0-6" and 2.5Y5/3 at 6".

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 9/10/04. Section: Belews Lake, USGS 7.5-minute map
Transect and Plot No.: W-3 (Figures 4, 12, and 13).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
None		*Scirpus cyperinus*	OBL
		Ludwigia alternifolia	OBL
Saplings/shrubs		*Juncus effusus*	FACW+
Salix nigra	OBL	*Eupatorium hyssopifolium*	U
		Woody vines	
		None	

% of species that are OBL, FACW, and/or FAC: 80% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Ud Udorthents, loamy (Cut and Fill) .
Mottled: Yes: No: X .
Mottled color: ; Matrix color: 10YR6/4 @ 3 in..
Gleyed: Yes: . No: X . Other indicators: Soil compacted from vehicle traffic; soils heavily graveled from stone placement.
Hydric soils: Yes: . No: X . Basis: Chroma >2 .

Hydrology
Inundated: Yes: X . No: .
Depth of standing water: 2 inches .
Saturated soils: Yes: X (at surface) No: .
Depth to saturated soil: Heavy gravel prevented digging of pit.
Other indicators: None .
Wetland hydrology: Yes: X No: . Basis: Saturated and inundated soils.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: Non-wetland: X .
Comment: Area is isolated and not considered a water of the US. Area appears to be past construction access road and construction yard as hydrology appears to occurs as result of vehicle traffic and resulting compacted soil. Area contains heavily graveled soil, apparently placed for an access road or construction yard. Area has been cut and filled during past construction. Hydrology apparently enhanced by Hurricane Francis, which passed through the area on September 8, 2004.

Determined by: Robert Siler, Environmental Resources of the Carolinas
7550 Forest Oak Drive, Denver, NC 28037, (704) 483-0972

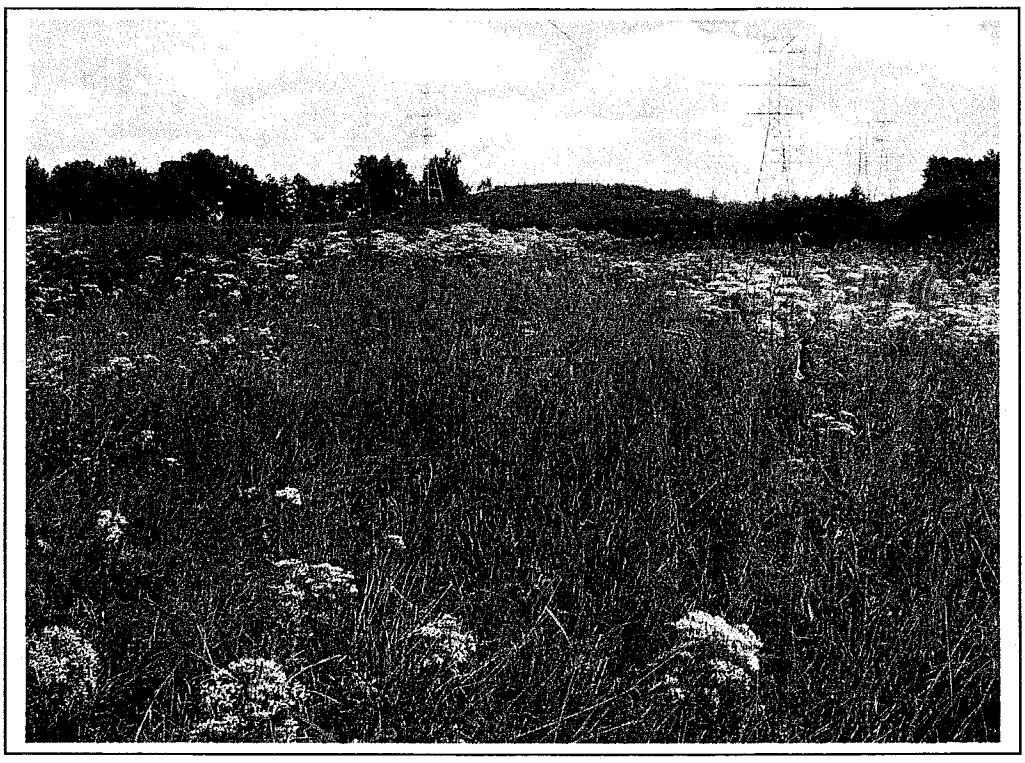


Figure 12. Area W-3 that is apparently the result of vehicle traffic on a graveled area, as observed on September 10, 2004. Area is part of access for past, adjacent construction yards and part of construction yard.

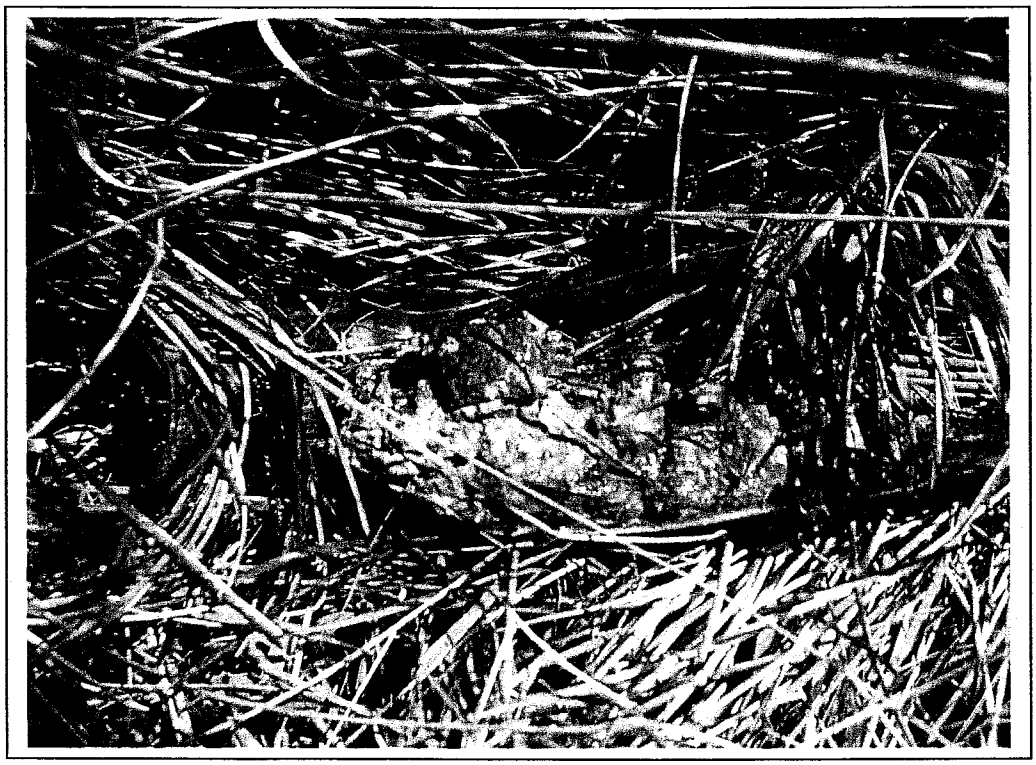


Figure 13. Soils at 3 inches deep at wetlands sampling station W-3, as observed on September 10, 2004. Soil matrix was classified as 10YR4/6 and was heavily graveled.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 9/10/04. Section: Belews Lake, USGS 7.5-minute map
Transect and Plot No.: W-3a (Figures 4, 14, and 15).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
None		*Panicum* spp.	FAC
		Juncus effusus	FACW+
Saplings/shrubs		*Eupatorium hyssopifolium*	U
Alnus serrulata	FACW+	*Asclepias incarnata*	OBL
Diospyros virginiana	FAC	**Woody vines**	
		Lonicera japonica	FAC-

% of species that are OBL, FACW, and/or FAC: 83% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Ud Udorthents, loamy (Cut and Fill) .
Mottled: Yes: No: X .
Mottled color: ; Matrix color: 10YR7/2 @ 8 inches; 10YR7/4 @ 6 inches.
Gleyed: Yes: . No: X . Other indicators: .
Hydric soils: Yes: X . No: . Basis: Chroma = or <2 .

Hydrology
Inundated: Yes: . No: X .
Depth of standing water: None . .
Saturated soils: Yes: X No: .
Depth to saturated soil: 0-4 in/ not below/ soils compacted .
Other indicators: None .
Wetland hydrology: Yes: No: X . Basis: No deep saturation; previous heavy rainfall.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: Non-wetland: X .
Comment: Area is isolated and not considered a water of the US. Hydrology apparently enhanced by Hurricane Francis which passed through the area on September 8, 2004; uncertain if hydrology is met during the growing season. Drainage from the area is blocked by construction access road. Area is part of cut and fill associated with construction activities; soils compacted. Little development of hydric soils.

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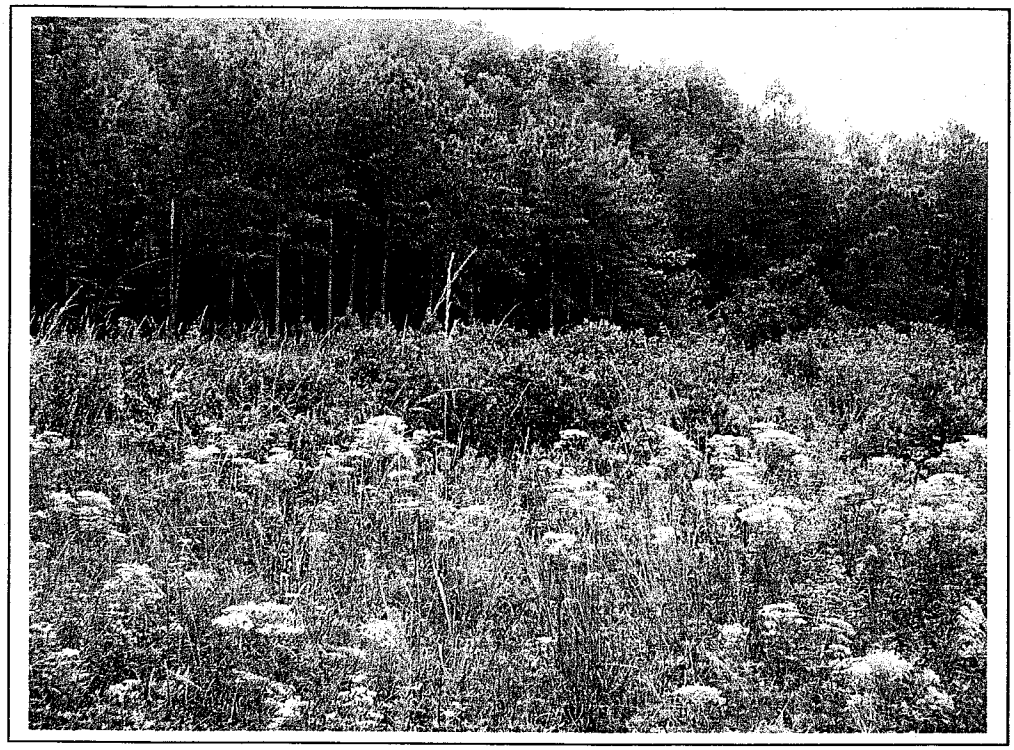

Figure 14. Area W-3a that is the result of blocked drainage from a construction access road, as observed on September 10, 2004. Hydrology is likely associated with rainfall from Hurricane Francis, which passed through the area on September 8, 2004. Soils compacted from past construction activities.

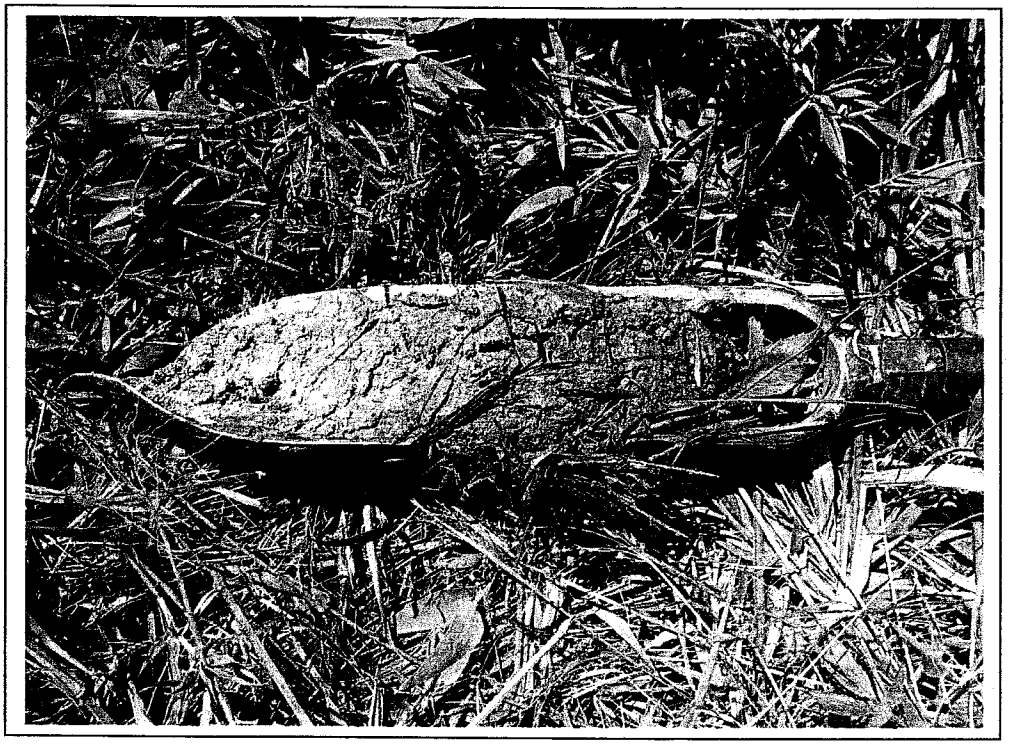

Figure 15. Soils at 0-6 inches deep at wetlands sampling station W-3a, as observed on September 10, 2004. Soil matrix was classified as 10YR7/4 at 6 in. and 10YR7/2 at 8 inches.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 9/10/04. Section: Belews Lake, USGS 7.5-minute map
Transect and Plot No.: W-4 (Figures 4, 16, and 17).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
None		*Scirpus cyperinus.*	OBL
		Typha latifolia	OBL
Saplings/shrubs		*Cyperus strigosus*	FACW
Alnus serrulata	FACW+	*Asclepias incarnata*	OBL
Salix nigra	OBL	**Woody vines**	
		Lonicera japonica	FAC-

% of species that are OBL, FACW, and/or FAC: 86% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Ud Udorthents, loamy (Cut and Fill) .
Mottled: Yes: No: X .
Mottled color: ; Matrix color: 5BG6/1.
Gleyed: Yes: X . No: . Other indicators: .
Hydric soils: Yes: X . No: . Basis: Gleyed soils .

Hydrology
Inundated: Yes: X . No: .
Depth of standing water: >8 inches .
Saturated soils: Yes: X No: .
Depth to saturated soil: 12 in. .
Other indicators: None .
Wetland hydrology: Yes: X No: . Basis: Inundated and saturated soils.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: Non-wetland: ? .
Comment: Area is isolated and not considered a water of the US. Area meets all wetland criteria. Hydrology results from a blocked drainage from a construction access road and part of network of ditches to a past sediment basin. Major portion of wetland is under a electric transmission structure.

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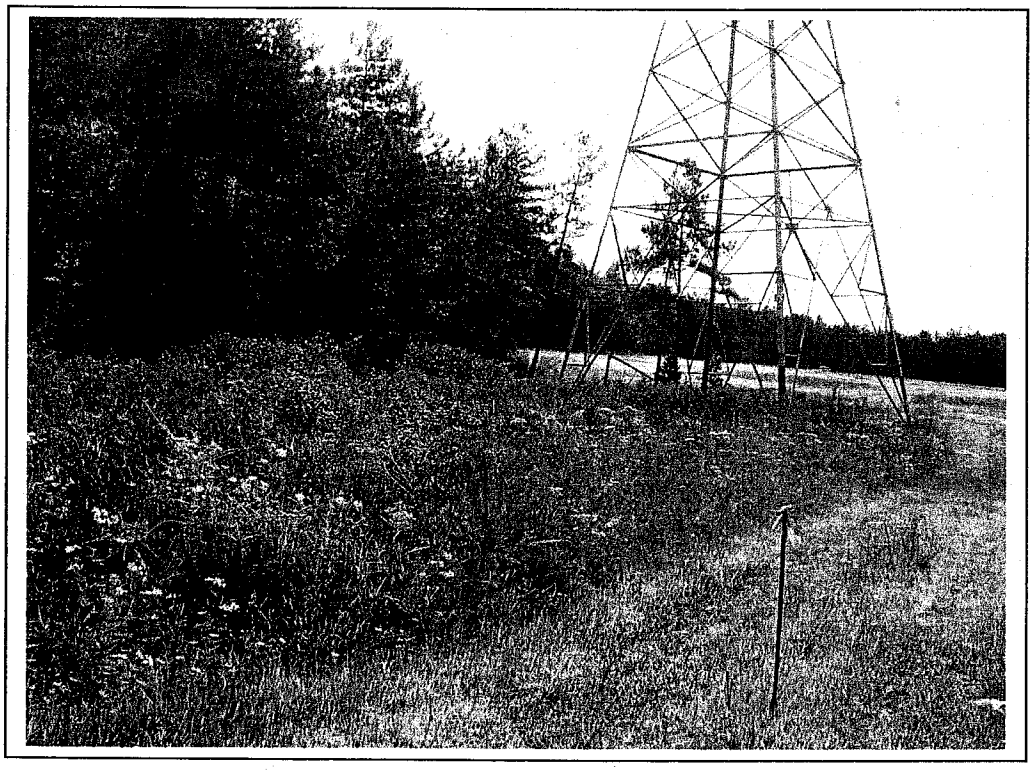

Figure 16. Area W-4 that is the result of blocked drainage from a construction access road (on right side of tower), as observed on September 10, 2004.

Figure 17. Soils at 0-6 inches deep at wetlands sampling station W-4, as observed on September 10, 2004. Soil matrix was classified as 5BG6/1.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 9/14/04. Section: Belews Lake, USGS 7.5-minute map
Transect and Plot No.: W-5 (Figures 4, 18, and 19).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
Pinus taeda	FAC	*Juncus canadensis*	OBL
		Agalinis purpurea	FAC
Saplings/shrubs		*Fuirena squarrosa*	OBL
Alnus serrulata	FACW+	*Bidens aristosa*	FACW
		Woody vines	
		None	

% of species that are OBL, FACW, and/or FAC: 100% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Ud Udorthents, loamy (Cut and Fill) .
Mottled: Yes: No: X .
Mottled color: ; Matrix color: Variable profile (See Figure 19) 5GY6/1 at 10 inches.
Gleyed: Yes: X . No: . Other indicators: Oxidized root channels at 6 inches .
Hydric soils: Yes: X . No: . Basis: Gleyed soils .

Hydrology
Inundated: Yes: X . No: .
Depth of standing water: 2 inches .
Saturated soils: Yes: X (mainly at surface) No: .
Depth to saturated soil: Mainly at surface due to compacted soils .
Other indicators: None .
Wetland hydrology: Yes: X No: . Basis: Inundated and saturated soils.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: Non-wetland: ? .
Comment: Area is isolated and not considered a water of the US. Area meets all wetland criteria. Hydrology appears enhanced due to Hurricane Francis. Major portion of wetland is around an electric transmission structure; hydrology is from blocked drainage through and over a transmission access road fill.

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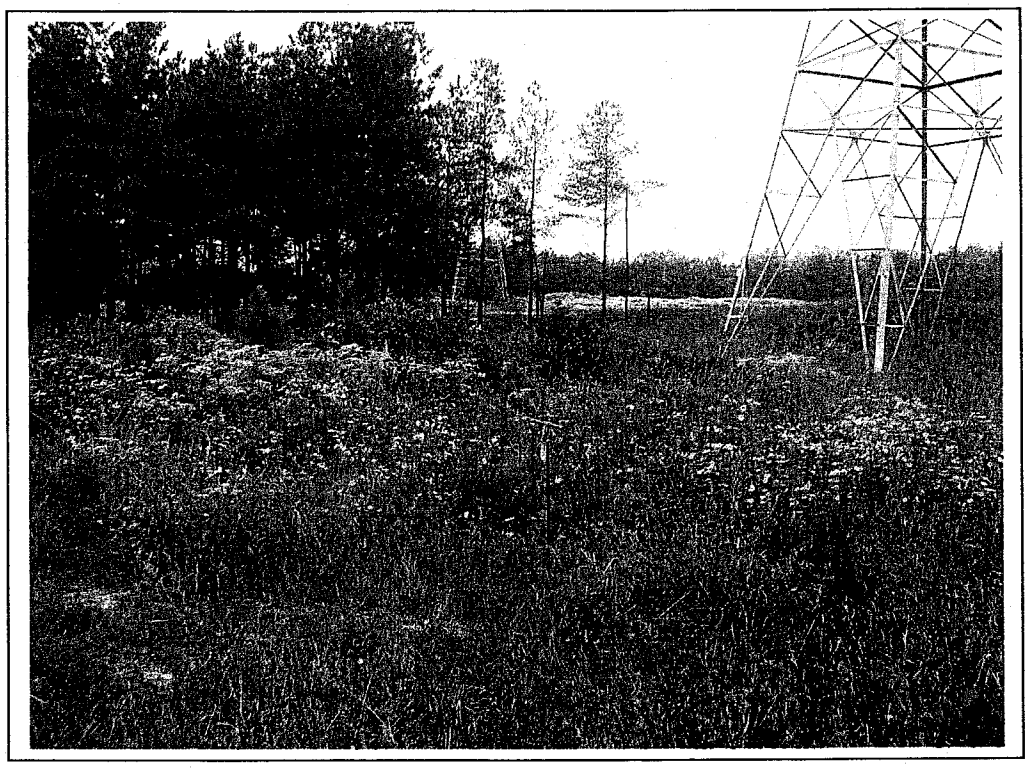

Figure 18. Area W-5 that is the result of blocked drainage from a diversion to a sediment basin, as observed on September 14, 2004.

Figure 19. Soils at 0-6 inches deep at wetlands sampling station W-5, as observed on September 14, 2004. Soil profile was variable. Soil matrix was classified as 2.5Y5/1 at 6 inches and 5GY6/1 at 10 inches with inlayed sand and clay.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 9/14/04. Section: Belews Lake, USGS 7.5-minute map
Transect and Plot No.: W-6 (Figures 4, 20, and 21).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
Pinus taeda	FAC	*Juncus canadensis*	OBL
		Typha latifolia	OBL
Saplings/shrubs		*Fuirena squarrosa*	OBL
Alnus serrulata	FACW+	*Bidens aristosa*	FACW
		Woody vines	
		None	

% of species that are OBL, FACW, and/or FAC: 100% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Ud Udorthents, loamy (Cut and Fill) .
Mottled: Yes: No: X .
Mottled color: ; Matrix color: Variable profile (See Figure 21) 5GY6/1 at 10 inches.
Gleyed: Yes: X . No: . Other indicators: Oxidized root channels at 6 inches .
Hydric soils: Yes: X . No: . Basis: Gleyed soils .

Hydrology
Inundated: Yes: X . No: .
Depth of standing water: 2 inches .
Saturated soils: Yes: X (mainly at surface) No: .
Depth to saturated soil: Mainly in top 3 inches except in basin .
Other indicators: None .
Wetland hydrology: Yes: X No: . Basis: Inundated and saturated soils.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: Non-wetland: ? .
Comment: Area is isolated and not considered a water of the US. Area meets all wetland criteria. Hydrology results from diversion of water from adjacent construction yards and upslope sediment basin (now removed). Hydrology appears more prevalent due to Hurricane Francis.

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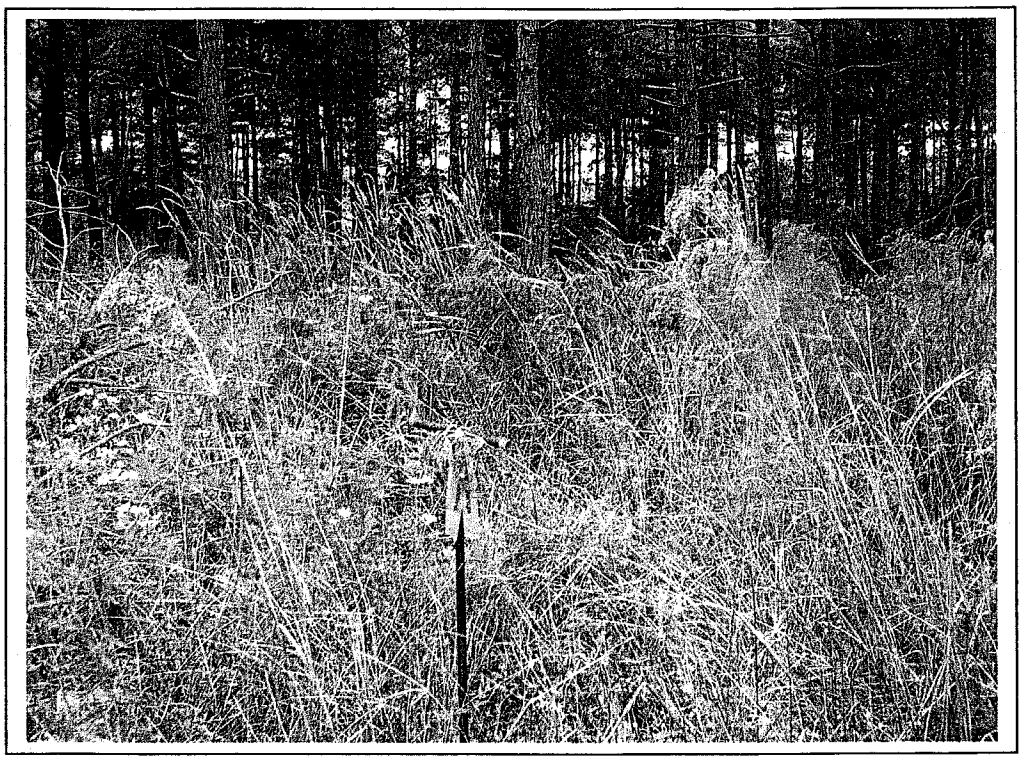

Figure 20. Area W-6 that is the result of upslope sediment basin and blocked drainages during construction, as observed on September 14, 2004.

Figure 21. Soils at 0-6 inches deep at wetlands sampling station W-6, as observed on September 14, 2004. Soil profile was variable. Soil matrix was classified as 10YR6/1 at 3 inches and 7.5YR5/6 at 5 inches.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 12/19/02. Section: Belews Lake, USGS 7.5-minute map
Transect and Plot No.: W-7 (Figures 4 and 22).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
Acer rubrum	FAC	*Boehmeria cylindrica*	FACW+
Salix nigra	OBL	*Carex* spp.	FAC
Betula nigra	FACW+	*Microstegium vimineum*	FAC+
Saplings/shrubs		**Woody vines**	
Fraxinus pennsylvanica	FACW	*Lonicera japonica*	FAC-
Carpinus caroliniana	FAC		
Alnus serrulata	FACW		

% of species that are OBL, FACW, and/or FAC: 90% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Pacolet sandy clay loam-Adjacent Upland 10YR5/2; Wetlands: 5G4/1 to 5G7/1 .
Mottled: Yes: No: X .
Mottled color: ; Matrix color: .
Gleyed: Yes: X . No: . Other indicators: Oxidized root channels.
Hydric soils: Yes: X . No: . Basis: Gleyed soils 5G4/1 to 5G7/1 .

Hydrology
Inundated: Yes: X . No: .
Depth of standing water: 2 feet-variable .
Saturated soils: Yes: X No: .
Depth to saturated soil: 12 inches .
Other indicators: .
Wetland hydrology: Yes: X No: . Basis: Inundated.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: X Non-wetland: .
Comment: Unimportant channel blocked by sediment deposition, likely from previous changes in drainage and from fill during construction of channel connecting basins, as indicated by upstream erosion. Area of inundation variable based on annual rainfall. Hydric soils well developed: vegetation less developed due to variable hydrology and scouring. Boundary and channel reviewed by Todd Tugwell, USACOE.

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Figure 22. Area W-7 located within the channel of an unimportant channel (S-7) to Belews Lake, as observed on December 18, 2002.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 3/4/2005. Section: Belews Lake, USGS 7.5-minute map
Transect and Plot No.: W-8 (Figures 4, 23, and 24).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
Salix nigra	OBL	*Boehmeria cylindrica*	FACW+
Salix spp.	OBL	*Carex* spp.	FAC
		Microstegium vimineum	FAC+
Saplings/shrubs		*Polygonum sagittatum*	OBL
Alnus serrulata	FACW		
		Woody vines	
		Lonicera japonica	FAC-

% of species that are OBL, FACW, and/or FAC: 88% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Pacolet sandy clay loam.
Mottled: Yes: No: X .
Mottled color: ; Matrix color: 2.5Y5/2@ 0-5 inches; 2.5Y6/3 at 5+ inches.
Gleyed: Yes: . No: X . Other indicators: Oxidized root channels.
Hydric soils: Yes: X . No: . Basis: Chroma = or <2 .

Hydrology
Inundated: Yes: X . No: .
Depth of standing water: 1 inch .
Saturated soils: Yes: X No: .
Depth to saturated soil: 12 inches .
Other indicators: .
Wetland hydrology: Yes: X No: . Basis: Inundated and saturated soil.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: ? Non-wetland: .
Comment: Wetland located at head of a swale that leads across a transmission r/w. Drainage has been altered from construction of the line and grubbing of the r/w in the 1970's, allowing retention of water in the r/w. Fill placed in swale during early construction. Hydrology enhanced by recent snowmelt .

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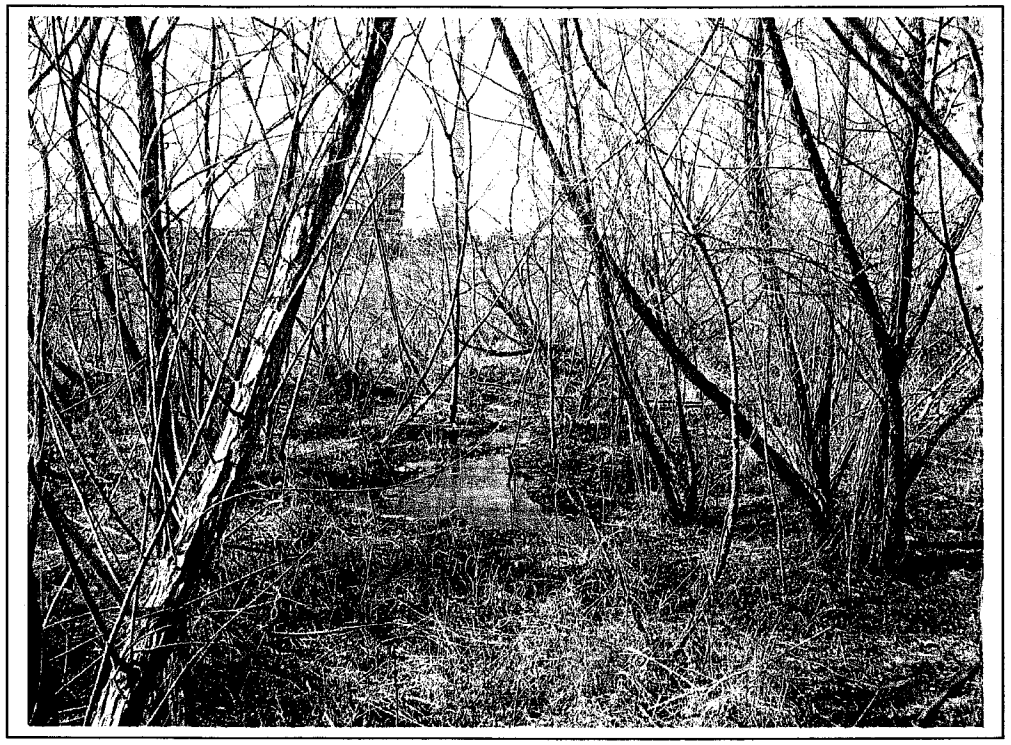

Figure 23. Area W-8 located within a transmission right-of-way and at the head of a swale that drains to a diversion ditch (S-3) around a past construction yard, as observed on March 4, 2005. Hydrology enhanced due to recent snowmelt.

Figure 24. Soils at 0-6 inches deep at wetlands sampling station W-8, as observed on March 4, 2005. Soil matrix was classified as 2.5Y5/2 @ 0-5 inches and 2.5Y6/3 at 5 + inches.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 3/10/2005. Section: Belews Lake, USGS 7.5-minute map Transect and Plot No.: W-9 (Figures 5, 25, and 26).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
Betula nigra	FACW	*Carex* spp.	FAC
Acer rubrum	FAC		
Saplings/shrubs			
		Woody vines	

% of species that are OBL, FACW, and/or FAC: 100% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Pacolet sandy clay loam.
Mottled: Yes: No: X .
Mottled color: ; Matrix color: 2.5Y5/3 at 6 inches.
Gleyed: Yes: . No: X . Other indicators: Oxidized root channels.
Hydric soils: Yes: . No: X . Basis: Chroma >2 .

Hydrology
Inundated: Yes: X . No: .
Depth of standing water: >1 foot .
Saturated soils: Yes: X No: .
Depth to saturated soil: 12 inches .
Other indicators: .
Wetland hydrology: Yes: X No: . Basis: Inundated and saturated soil.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: Non-wetland: X .
Comment: Farm pond with no channel in or out of pond. .

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Figure 25. Farm pond (W-9) investigated as water of US, as observed on March 10, 2005. No channel is apparent into or out of the pond.

Figure 26. Soils at 0-6 inches deep at wetlands sampling station W-9, as observed on March 10, 2005. Soil matrix was classified 2.5Y5/3 @ 6 inches with oxidized root channels.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 3/10/2005. Section: Belews Lake, USGS 7.5-minute map Transect and Plot No.: W-10 (Figures 5 and 27).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
Pinus taeda	FAC	*Carex* spp.	FAC
Pinus virginiana	Upland	*Scirpus cyperinus.*	OBL
Liriodendron tulipifera	FAC	*Rubus* spp.	FAC
Saplings/shrubs			
Liquidambar styraciflua	FAC+		
Salix nigra	OBL	**Woody vines**	
		Lonicera japonica	FAC-

% of species that are OBL, FACW, and/or FAC: 78% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Ud Udorthents, loamy (Cut and Fill.
Mottled: Yes: No: X .
Mottled color: ; Matrix color: Surface soils are coal residue.
Gleyed: Yes: . No: X . Other indicators: None.
Hydric soils: Yes: . No: X . Basis: Lack of soils .

Hydrology
Inundated: Yes: X . No: .
Depth of standing water: <6 inches .
Saturated soils: Yes: X No: .
Depth to saturated soil: 12 inches .
Other indicators: .
Wetland hydrology: Yes: X No: . Basis: Inundated and saturated soil.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: Non-wetland: X .
Comment: Area is basin for collection and routing of water from coal storage. Area is a permitted NPDES discharge .

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Figure 27. Area W-10 is located within the area of coal storage for Belews Creek Steam Station, as observed on December 14, 2004. Discharge for coal storage is part of plant NPDES discharge permit. Soils are primarily coal residue.

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Duke Power
Project Name: Belews Creek Steam Station, Flue Gas Desulfurization System
State: NC . County: Stokes . Date: 3/10/2005. Section: Belews Lake, USGS 7.5-minute map Transect and Plot No.: W-11 (Figures 5, 28, and 29).

Vegetation

Species	Indicator status	Species	Indicator status
Trees		**Herbs**	
Acer rubrum	FAC	*Festuca* spp.	FAC-
Liriodendron tulipifera	FAC	*Solidago* spp.	FAC
		Rubus spp.	FAC
Saplings/shrubs			
Alnus serrulata	FACW+		
		Woody vines	
		Lonicera japonica	FAC-

% of species that are OBL, FACW, and/or FAC: 71% .Other indicators:
Hydrophytic vegetation: Yes: X .No: .Basis: % of FAC and wetter,

Soil
Series and phase: Mapped- Ud Udorthents, loamy (Cut and Fill.
Mottled: Yes: No: X .
Mottled color: ; Matrix color: 2.5Y2/0 at 0-6 inches.
Gleyed: Yes: . No: X . Other indicators: None.
Hydric soils: Yes: X . No: . Basis: chroma <2 .

Hydrology
Inundated: Yes: X . No: .
Depth of standing water: <2 inches .
Saturated soils: Yes: X No: .
Depth to saturated soil: 12 inches .
Other indicators: .
Wetland hydrology: Yes: X No: . Basis: Inundated and saturated soil.
Atypical situation: Yes: X No: .
Normal Circumstances? Yes: No: X .

Wetland Determination: Wetland: Non-wetland: ? .
Comment: Area is the confluence of a storm drain from the adjacent road and Belews Lake. Areas above the full pool elevation of Belews Lake was not considered a water of the US because drainage is from storm drain.

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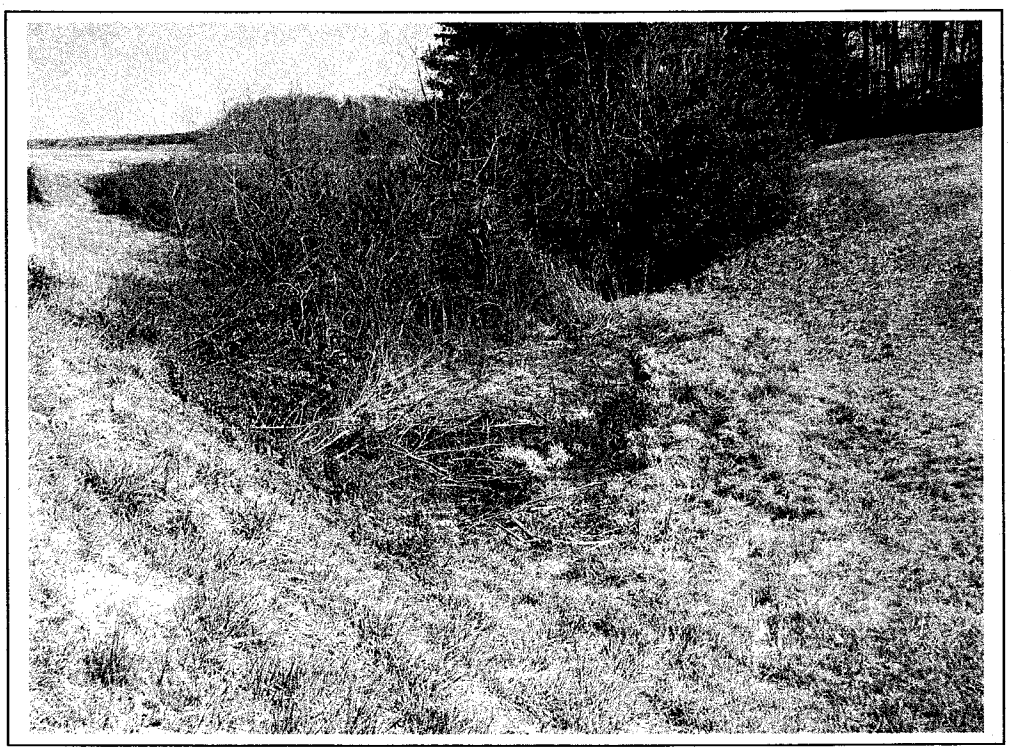


Figure 28. Area W-11 is located at the confluence of a storm drain through a road fill and Belews Lake, as observed on March 10, 2005.

Figure 29. Soils at 0-6 inches deep at wetlands sampling station W-11, as observed on March 10, 2005. Soil matrix was classified 2.5Y2/0 @ 0-8 inches.

INTERMITTENT CHANNELS

Table 2. Summary characteristics of channels investigated for jurisdictional status.

Waters	Status	Jurisdictional Distance	Predominant Substrate
S-1	Ditch through uplands	NA	Leaves, sand, silt, clay
S-2	Ephemeral Channel	NA	Leaves, cobble, sand
S-3	Ditch through cut and fill	NA	Vegetation, silt, clay, sand
S-3a	Ditch through cut and fill	NA	Leaves, silt, clay, sand
S-4	Ditch through cut and fill	NA	Clay, stone, silt, sand
S-4a	Ditch through cut and fill	NA	Clay, pine needles, silt
S-5	Unimportant Channel	919 feet	Bedrock, cobble, leaves, sticks, silt, sand, gravel
S-5a	Ephemeral Channel	NA	Leaves, sticks, silt, roots
S-6	Unimportant Channel	325 feet	Leaves, roots, sand, gravel
S-7	Unimportant Channel	256 feet	Leaves, gravel, sand
S-8	Unimportant Channel	217 feet	Sand, gravel, cobble
S-9	Unimportant Channel	180 feet	Sand, gravel, cobble

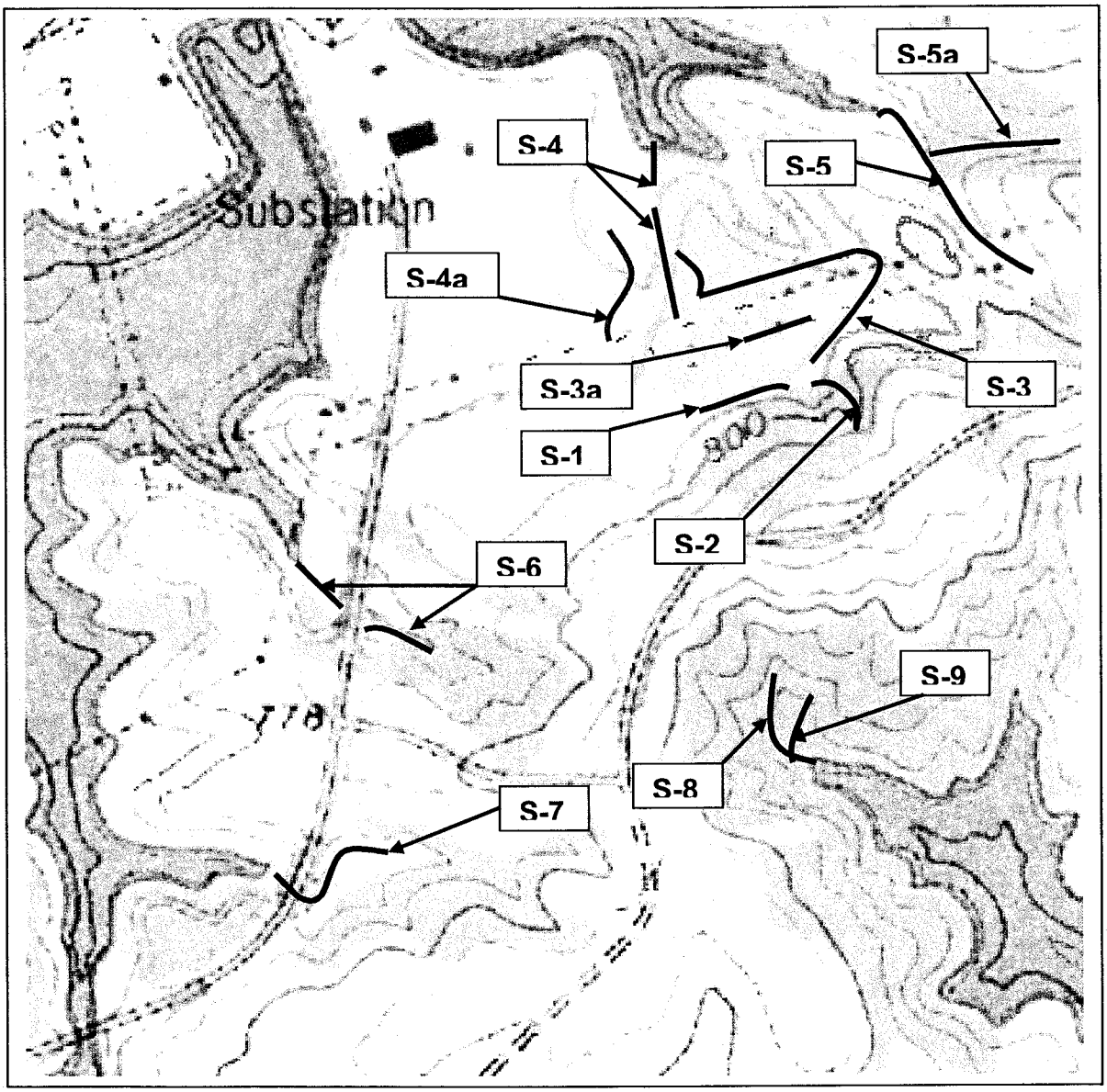


Figure 30. Approximate locations of channels investigated in the study area for facility expansion associated with the installation of a Flue Gas Desulfurization System at Belews Creek Steam Station.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-1 (Figures 30, 31, and 32). APPLICANT NAME Duke Power .
DATE 9/10/04 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System.
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Substantial rainfall from Hurricane Francis on 9/8/04.

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
X			Benthic Macro Invertebrates	Dipteran larvae, oligochaetes
X			Amphibians Present/Breeding	
		X	Algae and/or Fungus (water quality function)	Iron Flocculent dominant
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
		X	Riffle/Pool/Structure	
		X	Stable Streambanks	Side-cast material on banks
		X	Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Leaves, silt, clay, sand
X			Riparian Canopy Present (SP>/=50% Closure)	Alder, Virginia pine, sourwood, red maple
		X	Undercut Banks/Instream Habitat Structure	
		X	Flow in Channel	
		X	Wetlands Adjacent to /Contiguous with Channel (Discontinue)	
X			Persistent Pools/Saturated Bottom (June-September)	
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
	X		Hydrophytic Vegetation in/adjacent to Channel	Southern lady fern, cinnamon fern, royal fern, netted chain fern

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: roughly 15 acres .

Determination:
Perennial Channel ___. Important Channel: _____. Project Manager Initials:___.
Intermittent Channel ____. Unimportant Channel: ____.
Ephemeral Channel: _____. (non-jurisdictional)
Ditch Through Upland: X . (non-jurisdictional)

Evaluator's Signature: .

P=Present SP=Strongly Present NP=Not Present

Figure 31. Ditch, S-1, constructed to route water around construction yard, as observed on September 10, 2004.

Figure 32. Ditch, S-1, as observed on March 4, 2005 and influenced by recent snowmelt.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-2 (Figures 30, 33, and 34). APPLICANT NAME Duke Power .
DATE 9/10/04 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System.
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Substantial rainfall from Hurricane Francis on 9/8/04.

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
		X	Benthic Macro Invertebrates	
		X	Amphibians Present/Breeding	
		X	Algae and/or Fungus (water quality function)	Iron Flocculent dominant
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
		X	Riffle/Pool/Structure	Primarily dry
		X	Stable Streambanks	Eroded banks present, especially at head
X			Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Leaves, cobble, sand
		X	Riparian Canopy Present (SP>/=50% Closure)	Riparian vegetation similar to surrounding upland forests
		X	Undercut Banks/Instream Habitat Structure	
		X	Flow in Channel	Mainly wet channel, but some ephemeral pools
		X	Wetlands Adjacent to /Contiguous with Channel (Discontinue)	
		X	Persistent Pools/Saturated Bottom (June-September)	Some ephemeral pools <3 inched deep
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
		X	Hydrophytic Vegetation in/adjacent to Channel	

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: roughly 10 acres; distance 79 feet .

Determination:
Perennial Channel ____. Important Channel: _____. Project Manager Initials:___.
Intermittent Channel ____.Unimportant Channel: _____.
Ephemeral Channel: __X__. (non-jurisdictional)
Ditch Through Upland:___. (non-jurisdictional)

Evaluator's Signature: .

P=Present SP=Strongly Present NP=Not Present

Figure 33. Ephemeral channel, S-2, as observed on September 10, 2004 following Hurricane Francis.

Figure 34. Ephemeral channel, S-2, as observed on March 4, 2005, following a period of snowmelt.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-3 (Figures 30, 35, 36, 37). APPLICANT NAME Duke Power .
DATE 9/10/04 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System.
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Substantial rainfall from Hurricane Francis on 9/8/04.

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
X			Benthic Macro Invertebrates	Oligochaetes, dipteran larvae
X			Amphibians Present/Breeding	
X			Algae and/or Fungus (water quality function)	Iron Flocculent dominant; some algae in channel
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
		X	Riffle/Pool/Structure	
		X	Stable Streambanks	Ditch/diversion around construction yard
		X	Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Vegetation, silt, gravel, sand
		X	Riparian Canopy Present (SP>/=50% Closure)	Alder in some areas of electric transmission corridor
		X	Undercut Banks/Instream Habitat Structure	
		X	Flow in Channel	Culvert block some flow from channel
		X	Wetlands Adjacent to /Contiguous with Channel (Discontinue)	
X			Persistent Pools/Saturated Bottom (June-September)	Culverts and vegetation block drainage
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
	X		Hydrophytic Vegetation in/adjacent to Channel	Bulrush, cattail, alder, soft rush

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: roughly 20 acres .

Determination:
Perennial Channel ____. Important Channel: _____. Project Manager Initials:___.
Intermittent Channel ____. Unimportant Channel: ____.
Ephemeral Channel: _____. (non-jurisdictional)
Ditch Through Upland: X . (non-jurisdictional)

Evaluator's Signature: J Robert Shelton .

P=Present SP=Strongly Present NP=Not Present

Figure 35. Ditch, S-3, constructed to route water around construction yard, as observed on September 10, 2004.

Figure 36. Culvert that drains from ditch S-3 to W-2, as observed on September 10, 2004.

Figure 37. Ditch, S-3, constructed to route water around construction yard, as observed on March 4, 2005 and during a period of snowmelt.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-3a (Figures 30 and 38). APPLICANT NAME Duke Power .
DATE 3/4/05 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System.
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Surface runoff and seepage from snowmelt.

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
X			Benthic Macro Invertebrates	
X			Amphibians Present/Breeding	
		X	Algae and/or Fungus (water quality function)	Iron Flocculent dominant
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
		X	Riffle/Pool/Structure	
		X	Stable Streambanks	Ditch in past construction yard
		X	Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Leaves, silt, clay, sand
		X	Riparian Canopy Present (SP>/=50% Closure)	In electric transmission corridor with herbaceous vegetation
		X	Undercut Banks/Instream Habitat Structure	
		X	Flow in Channel	Primarily standing water
		X	Wetlands Adjacent to /Contiguous with Channel (Discontinue)	
X			Persistent Pools/Saturated Bottom (June-September)	
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
	X		Hydrophytic Vegetation in/adjacent to Channel	Alder, herbaceous vegetation

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: roughly 5 acres .

Determination:
Perennial Channel ____. Important Channel: _____. Project Manager Initials:___.
Intermittent Channel ____. Unimportant Channel: ____.
Ephemeral Channel: ____. (non-jurisdictional)
Ditch Through Upland: X . (non-jurisdictional)

Evaluator's Signature: J Robert Shelton .

P=Present SP=Strongly Present NP=Not Present

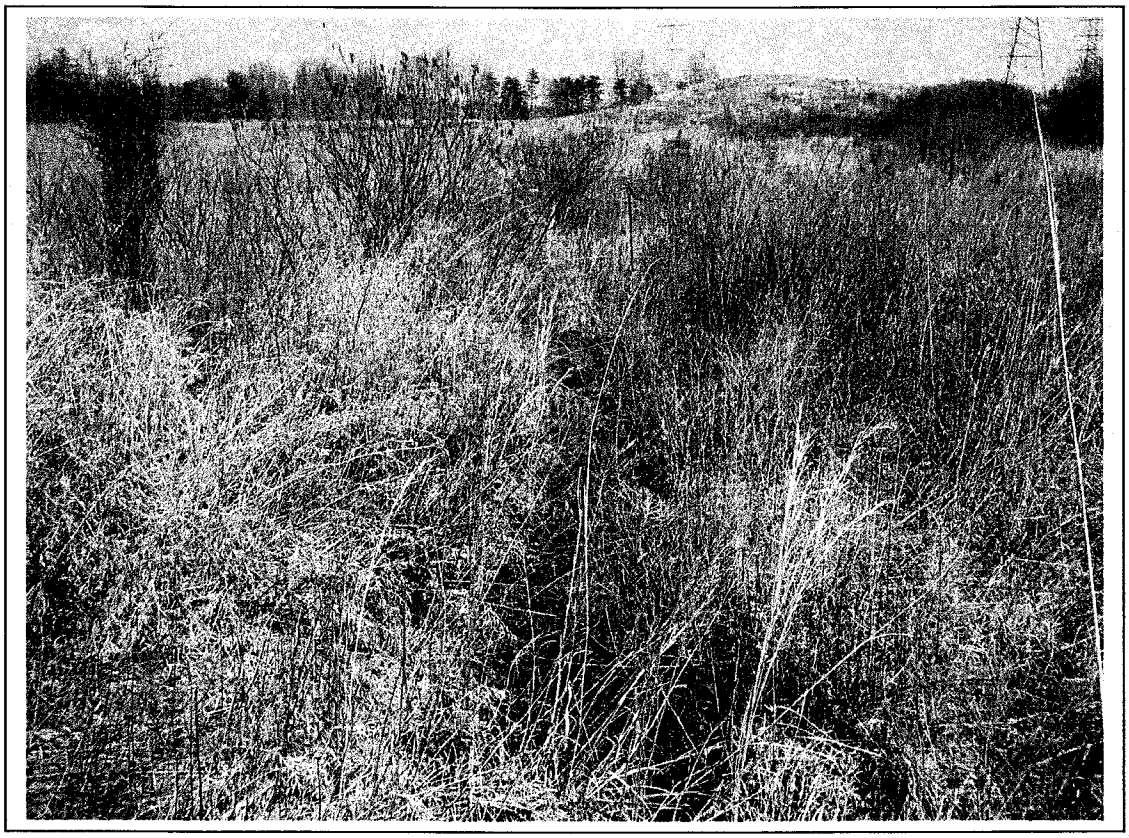


Figure 38. Ditch, S-3a, appears to be an erosion channel through a past construction yard, as observed on March 4, 2005.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-4 (Figures 30, 39, 40, and 41). APPLICANT NAME Duke Power .
DATE 3/4/ 2005 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System.
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS: Surface runoff and seepage from snowmelt.

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
X			Benthic Macro Invertebrates	Oligochaetes
X			Amphibians Present/Breeding	
		X	Algae and/or Fungus (water quality function)	Iron Flocculent
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
		X	Riffle/Pool/Structure	
		X	Stable Streambanks	Ditch around construction yard and to sediment basin
		X	Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Clay, placed stone, silt, sand
		X	Riparian Canopy Present (SP>/=50% Closure)	Only herbaceous vegetation present
		X	Undercut Banks/Instream Habitat Structure	
		X	Flow in Channel	
		X	Wetlands Adjacent to /Contiguous with Channel (Discontinue)	
X			Persistent Pools/Saturated Bottom (June-September)	
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
X			Hydrophytic Vegetation in/adjacent to Channel	Soft rush

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: roughly 20 acres .

Determination:
Perennial Channel ____. Important Channel: _____. Project Manager Initials:___.
Intermittent Channel ____. Unimportant Channel: ____.
Ephemeral Channel: _____. (non-jurisdictional)
Ditch Through Upland: X . (non-jurisdictional)

Evaluator's Signature: .

P=Present SP=Strongly Present NP=Not Present

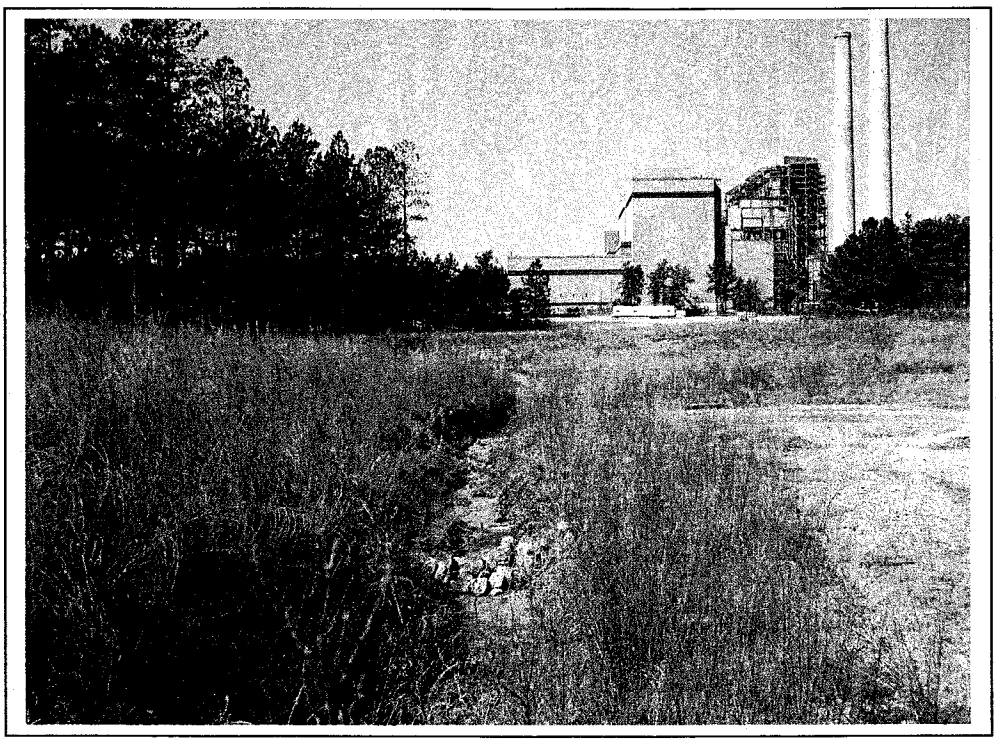


Figure 39. Ditch, S-4, constructed to route water around construction yard through a sediment basin to Belews Lake, as observed on March 4, 2005.

Figure 40. Ditch, S-4, constructed to route water around construction yard, as observed on December 14, 2004.

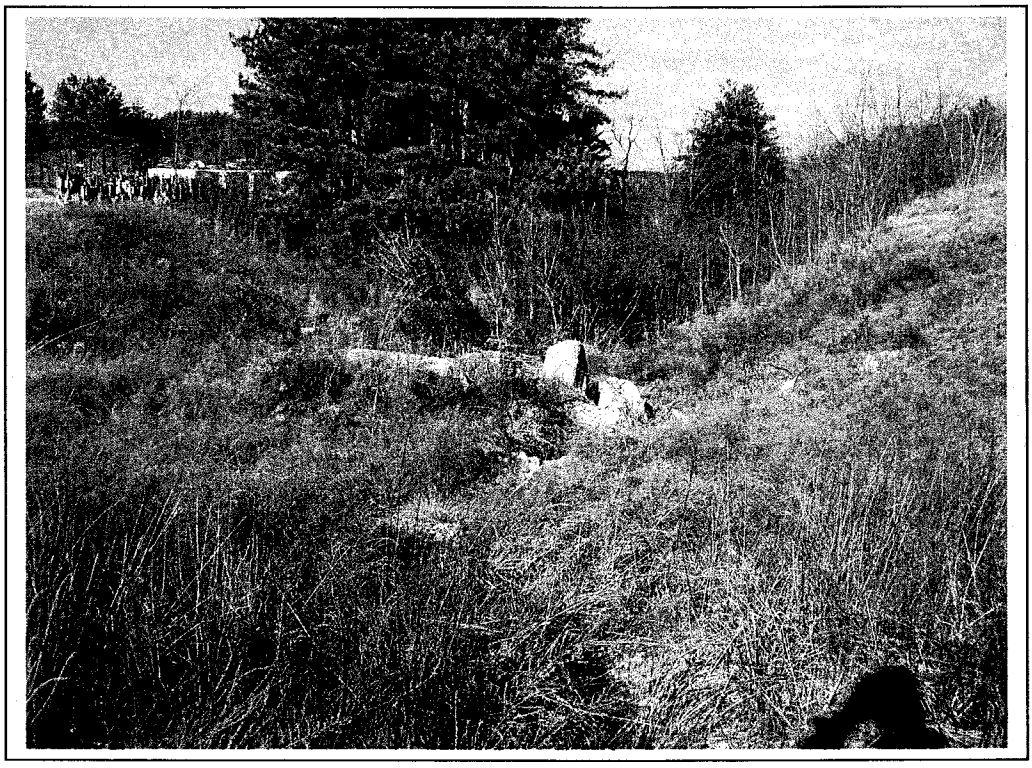


Figure 41. Ditch, S-4 just upstream from its confluence with Belews Lake, as observed on December 14, 2004.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-4a (Figures 30 and 42). APPLICANT NAME Duke Power .
DATE 3/4/05 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System.
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Surface runoff and seepage from snowmelt.

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
X			Benthic Macro Invertebrates	Oligocheates, dipteran larvae
		X	Amphibians Present/Breeding	
		X	Algae and/or Fungus (water quality function)	Iron Flocculent dominant
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
		X	Riffle/Pool/Structure	
		X	Stable Streambanks	Apparent erosion ditch through past const. yard
		X	Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	clay, pine needles, silt
		X	Riparian Canopy Present (SP>/=50% Closure)	Same as adjacent lands; Loblolly pine plantation
		X	Undercut Banks/Instream Habitat Structure	
		X	Flow in Channel	Channel discontinuous downstream and not connected to other channels
		X	Wetlands Adjacent to /Contiguous with Channel (Discontinue)	
X			Persistent Pools/Saturated Bottom (June-September)	
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
		X	Hydrophytic Vegetation in/adjacent to Channel	Loblolly pine plantation

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: roughly 15 acres .

Determination:
Perennial Channel ____. Important Channel: _____. Project Manager Initials:___.
Intermittent Channel ____. Unimportant Channel: ____.
Ephemeral Channel: ____. (non-jurisdictional)
Ditch Through Upland: X . (non-jurisdictional)

Evaluator's Signature: J Robert Shelton .

P=Present SP=Strongly Present NP=Not Present

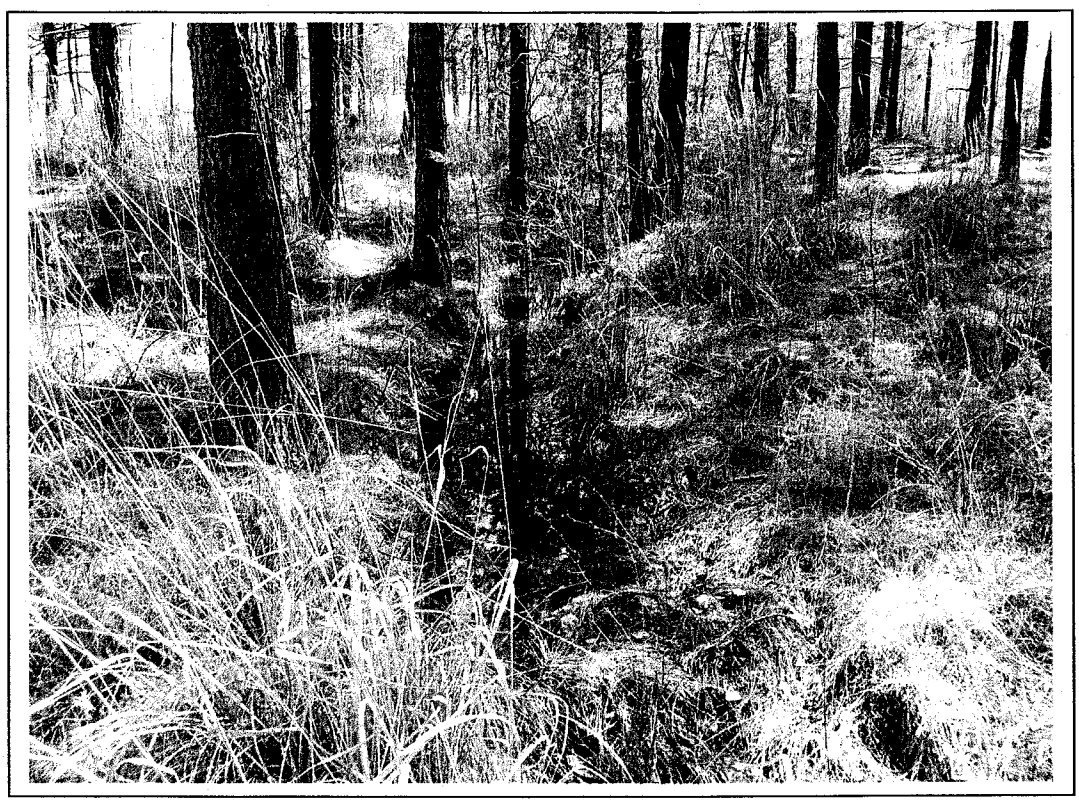


Figure 42. Ditch, S-4a where it terminates, as observed on March 4, 2005 following a period of snowmelt.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-5 (Figures 30, 43, 44, 45, 46, 47, and 48). APPLICANT NAME Duke Power .
DATE 3/10/05 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System.
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Surface runoff and seepage from snowmelt.

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
X			Benthic Macro Invertebrates	Dipteran larvae, caddis larvae, oligochaetes, beetle larvae near confluence with Belews Lake
X			Amphibians Present/Breeding	In upper section
		X	Algae and/or Fungus (water quality function)	Iron Flocculent dominant throughout channel
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	Deer
		X	Federally Protected Species Present (Discontinue)	
X			Riffle/Pool/Structure	Bedrock shelves on lower section
X			Stable Streambanks	Incised channel on lower section; braided channel in upstream section
X			Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Bedrock cobble downstream; leaves, sticks, gravel, silt, sand upstream
		X	Riparian Canopy Present (SP>/=50% Closure)	Alders in some upstream section; same as surrounding forest below
		X	Undercut Banks/Instream Habitat Structure	
X			Flow in Channel	Most sections dry during fall, flow during observations in March, December
X			Wetlands Adjacent to /Contiguous with Channel (Discontinue)	Narrow adjacent wetlands in braided section that was grubbed during trans. line construction
X			Persistent Pools/Saturated Bottom (June-September)	Dry ephemeral channel below confluence of S-5 and S-5a
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	Only where channel previously disturbed
		X	Wrack material or Drift Lines	
X			Hydrophytic Vegetation in/adjacent to Channel	Alder, sedges, soft rush, red maple

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: roughly 30 acres; 919 feet in total length; 98 feet of bedrock just upstream of Belews Lake; 112 feet of dry channel.

Determination:
Perennial Channel ___. Important Channel: _____. Project Manager Initials:___.
Intermittent Channel X . Unimportant Channel: X .
Ephemeral Channel: ____. (non-jurisdictional)
Ditch Through Upland:___. (non-jurisdictional)

Evaluator's Signature: J Robert Shelton .

P=Present SP=Strongly Present NP=Not Present

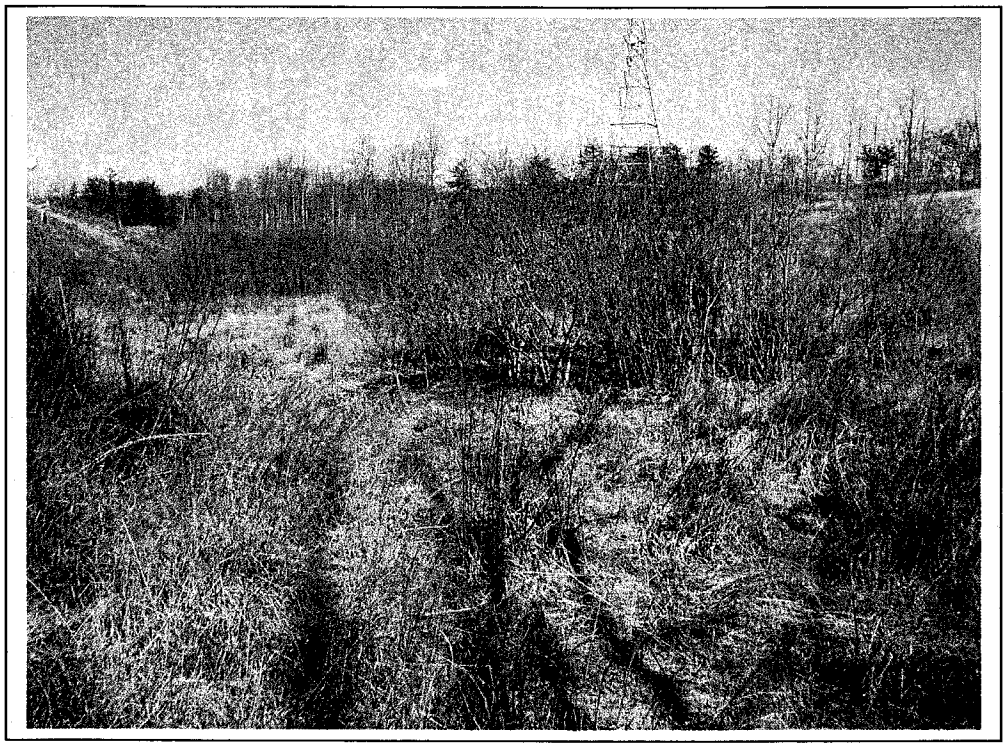


Figure 43. Upper section of S-5 in an area that has been grubbed and reshaped during clearing of transmission line in 1970's, as observed on March 10, 2005 following a period of snowmelt.

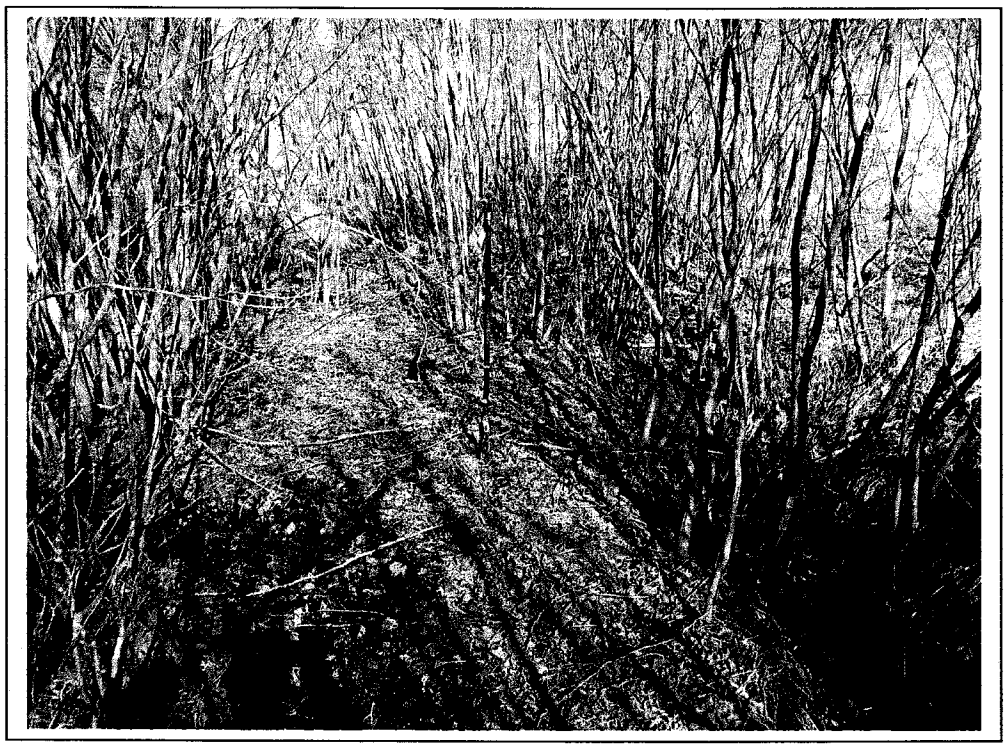


Figure 44. Upper section of S-5 in an area that has been grubbed and reshaped during clearing of transmission line in 1970's and contains 2 channels, as observed on March 10, 2005.

Figure 45. Middle section of S-5 in an area that has been grubbed and reshaped during clearing of transmission line in 1970's and some recent logging, as observed on March 10, 2005. Channel is culverted just upstream.

Figure 46. Confluence of S-5 and S-5a, as observed on December 14, 2004.

Figure 47. Section of S-5 downstream of confluence of S-5 and S-5a where stream channel is dry, even during a period of runoff and seepage from snowmelt, as observed on March 10, 2005.

Figure 48. Section of S-5 just before its confluence with Belews Lake, showing bedrock and cobble, as observed on March 10, 2005.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-5a (Figures 30, 49, and 50). APPLICANT NAME Duke Power .
DATE 3/10/05 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System.
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Surface runoff and seepage from snowmelt.

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
		X	Benthic Macro Invertebrates	
		X	Amphibians Present/Breeding	
		X	Algae and/or Fungus (water quality function)	Iron Flocculent throughout
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
		X	Riffle/Pool/Structure	Pools from jams of leaves and sticks
		X	Stable Streambanks	Channel incised 2-8 feet,
		X	Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Leaves, sticks, silt, roots
		X	Riparian Canopy Present (SP>/=50% Closure)	Same as surrounding forest
		X	Undercut Banks/Instream Habitat Structure	
		X	Flow in Channel	Goes underground in several locations
		X	Wetlands Adjacent to /Contiguous with Channel (Discontinue)	
		X	Persistent Pools/Saturated Bottom (June-September)	
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
		X	Hydrophytic Vegetation in/adjacent to Channel	

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: roughly 15 acres , 289 feet in length .

Determination:
Perennial Channel ____. Important Channel: _____. Project Manager Initials:___.
Intermittent Channel ____. Unimportant Channel: ____.
Ephemeral Channel: X . (non-jurisdictional)
Ditch Through Upland:___. (non-jurisdictional)

Evaluator's Signature: J Robert Shaw .

P=Present SP=Strongly Present NP=Not Present

Figure 49. Section of S-5a in the upstream section, showing eroded banks, as observed on March 10, 2005. Channel incised to 8 feet.

Figure 50. Section of S-5a just before its confluence with S-5, as observed on March 10, 2005, following period of snowmelt.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-6 (Figures 30, 51, 52, and 53). APPLICANT NAME Duke Power .
DATE 3/10,2005 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System .
WATERBODY/RIVER BASIN Belews Lake. COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Snowfall runoff and seepage occurring .

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
		X	Benthic Macro Invertebrates	
		X	Amphibians Present/Breeding	
		X	Algae and/or Fungus (water quality function)	Iron Flocculent dominant
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
		X	Riffle/Pool/Structure	Stick and Leaf jams
X			Stable Streambanks	Defined channel with moss covered banks
X			Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Leaves, roots, sand, gravel
		X	Riparian Canopy Present (SP>/=50% Closure)	Similar to surrounding forests
		X	Undercut Banks/Instream Habitat Structure	
		X	Flow in Channel	Leaf jams restrict flow
		X	Wetlands Adjacent to /Contiguous with Channel (Discontinue)	
		X	Persistent Pools/Saturated Bottom (June-September)	Present in periods of rainfall only
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
		X	Hydrophytic Vegetation in/adjacent to Channel	

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: Roughly 25 acres; 325 feet in total length; 69 feet below road .

Determination:
Perennial Channel ____. Important Channel: ____. Project Manager Initials:_____.
Intermittent Channel X . Unimportant Channel: X .
Ephemeral Channel: ____. (non-jurisdictional)
Ditch Through Upland:___. (non-jurisdictional)

Evaluator's Signature:__ J Robert Lohr .

P=Present SP=Strongly Present NP=Not Present

Figure 51. Section of S-6 just upstream of culvert at paved road, as observed on October 23, 2002.

Figure 52. Section of S-6 just upstream of culvert at paved road, as observed on March 10, 2005, following a period of snowmelt.

Figure 53. Section of S-6 downstream of paved road and just upstream of confluence with Belews Lake, as observed on March 4, 2005, following period of runoff from snowmelt.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-7 (Figures 30, 54, and 55). APPLICANT NAME Duke Power .
DATE 12/19/2002. PROPOSED CHANNEL WORK Flue Gas Desulfurization System .
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Minor snowfall in past week

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
		X	Benthic Macro Invertebrates	
X			Amphibians Present/Breeding	In section just below instream wetland W-7
		X	Algae and/or Fungus (water quality function)	Iron Flocculent dominant
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
		X	Riffle/Pool/Structure	
X			Stable Streambanks	Distinct u-shaped channel, vegetated banks
X			Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Leaves, gravel, sand
X			Riparian Canopy Present (SP>/=50% Closure)	Same as surrounding forests, except below wetland area where alder present
		X	Undercut Banks/Instream Habitat Structure	
		X	Flow in Channel	
X			Wetlands Adjacent to /Contiguous with Channel (Discontinue)	Isolated wetland in mid-channel upstream of jurisdiction channel-W-7
		X	Persistent Pools/Saturated Bottom (June-September)	
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
X			Hydrophytic Vegetation in/adjacent to Channel	Alder just below W-7

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: Roughly 20 acres; 256 feet in length .

Determination:
Perennial Channel ____. Important Channel: ____. Project Manager Initials:_____.
Intermittent Channel X . Unimportant Channel: X .
Ephemeral Channel: ____. (non-jurisdictional)
Ditch Through Upland:___. (non-jurisdictional)

Evaluator's Signature: J Robert Shelton .

P=Present SP=Strongly Present NP=Not Present

Figure 54. Section of S-7 just upstream of culvert at paved road, as observed on December 19, 2002.

Figure 55. Section of S-7 just upstream of culvert at paved road, as observed on December 14, 2004.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-8 (Figures 30, 56, 57, and 58). APPLICANT NAME Duke Power .
DATE 9/10/04 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System.
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Substantial rainfall from Hurricane Francis on 9/8/04.

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
X			Benthic Macro Invertebrates	Some oligochaetes
		X	Amphibians Present/Breeding	
		X	Algae and/or Fungus (water quality function)	Iron Flocculent dominant
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
X			Riffle/Pool/Structure	Some pools separated by dry cobble
X			Stable Streambanks	Some defined channel, Eroded banks present
X			Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Sand, gravel, cobble
X			Riparian Canopy Present (SP>/=50% Closure)	Riparian vegetation similar to surrounding upland forests, except rhododendron on slopes
		X	Undercut Banks/Instream Habitat Structure	
		X	Flow in Channel	Channel mainly dry with intermittent pools; flow during periods of runoff
		X	Wetlands Adjacent to /Contiguous with Channel (Discontinue)	
X			Persistent Pools/Saturated Bottom (June-September)	Some saturated channel with intermittent pools <4 inched deep
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
X			Hydrophytic Vegetation in/adjacent to Channel	Rhododendron, Southern lady fern, cinnamon fern on slopes of channel bank

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: roughly 15 acres; 217 feet of channel, some ephemeral.

Determination:
Perennial Channel ____. Important Channel: _____. Project Manager Initials:___.
Intermittent Channel ____.Unimportant Channel: X .
Ephemeral Channel: _____. (non-jurisdictional)
Ditch Through Upland:___. (non-jurisdictional)

Evaluator's Signature: J Robert Lee .

P=Present SP=Strongly Present NP=Not Present

Figure 56. Unimportant channel, S-8. which has a section that appears to be an ephemeral channel between 2 sections of unimportant channel, as observed on September 10, 2004.

Figure 57. Unimportant channel, S-8, as observed on March 10, 2005.

Figure 58. Ephemeral section of S-8, as observed on March 10, 2005.

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID S-9 (Figures 30, 59, and 60). APPLICANT NAME Duke Power .
DATE 9/10/04 . PROPOSED CHANNEL WORK Flue Gas Desulfurization System.
WATERBODY/RIVER BASIN Belews Lake .COUNTY/CITY Stokes County .
RECENT WEATHER CONDITIONS Substantial rainfall from Hurricane Francis on 9/8/04.

P	SP	NP	OBSERVATION	COMMENTS OR DESCRIPTION
		X	Fish/Shellfish/Crustaceans Present	
X			Benthic Macro Invertebrates	Some oligochaetes
		X	Amphibians Present/Breeding	
		X	Algae and/or Fungus (water quality function)	Iron Flocculent dominant
		X	Wildlife Channel Use (i.e. tracks, feces, shell, other)	
		X	Federally Protected Species Present (Discontinue)	
X			Riffle/Pool/Structure	Riffles, primarily dry
		X	Stable Streambanks	Eroded banks present, some defined channel
X			Channel Substrate(i.e. gravel, cobble, rock, coarse sand)	Leaves, sand, gravel, cobble
X			Riparian Canopy Present (SP>/=50% Closure)	Riparian vegetation similar to surrounding upland forests, except rhododendron
		X	Undercut Banks/Instream Habitat Structure	
X			Flow in Channel	Mainly within 60 feet from Lake
		X	Wetlands Adjacent to /Contiguous with Channel (Discontinue)	
X			Persistent Pools/Saturated Bottom (June-September)	Some saturated channel constrictions <2 inched deep
		X	Seeps/Groundwater Discharge (June-September)	
		X	Adjacent Floodplain Present	
		X	Wrack material or Drift Lines	
X			Hydrophytic Vegetation in/adjacent to Channel	Rhododendron, Mountain Laurel, Christmas Fern

Important To Domestic Water Supply? Y/N N .
Does Channel Appear On A Quad or Soils Map? Y/N N .
Approx. Drainage Area: roughly 10 acres ; 180 feet in length .

Determination:
Perennial Channel ____. Important Channel: _____. Project Manager Initials:___.
Intermittent Channel ____.Unimportant Channel: X (Approximately 200 feet long).
Ephemeral Channel: _____. (non-jurisdictional)
Ditch Through Upland:___. (non-jurisdictional)

Evaluator's Signature: J Robert Sloan .

P=Present SP=Strongly Present NP=Not Present

Figure 59. Unimportant channel, S-9, as observed on March 10, 2005.

Figure 60. Unimportant channel, S-9, as observed on September 10, 2004.

Attachment 3

Duke letter to SHPO

Duke Power
A Duke Energy Company

Duke Power
526 South Church Street
P.O. Box 1006
Charlotte, NC 28201-1006
Mail Code EC12Y

October 7, 2004

Ms. Renee Gledhill-Earley
North Carolina Department of Cultural Resources
4617 Mail Service Center
Raleigh, NC 27699-4617

Subject: Proposed Landfill at Belews Creek Steam Station
Stokes County

Dear Ms. Gledhill-Earley:

Duke Power is in the process of siting a new landfill for its Belews Creek Steam Station. The landfill will be filled with gypsum, a by-product of a new Flue Gas Desulfurization System. The new system is being installed to comply with North Carolina's new clean air regulations.

A total of 50 acres will be disturbed during construction of the landfill; the proposed landfill itself will encompass 22 acres (see enclosed map). The site consists of loblolly pine plantations, natural pine stands that succeeded from previously farmed fields, some hardwoods that have been logged, and electric transmission line corridors. The loblolly pine stands are located in areas that were utilized as borrow and fill areas during the construction of the Belews Creek Steam Station.

Duke Power is not aware of any known cultural resources in the proposed landfill area. However, there is an old tobacco barn located within the footprint (see enclosed photos).

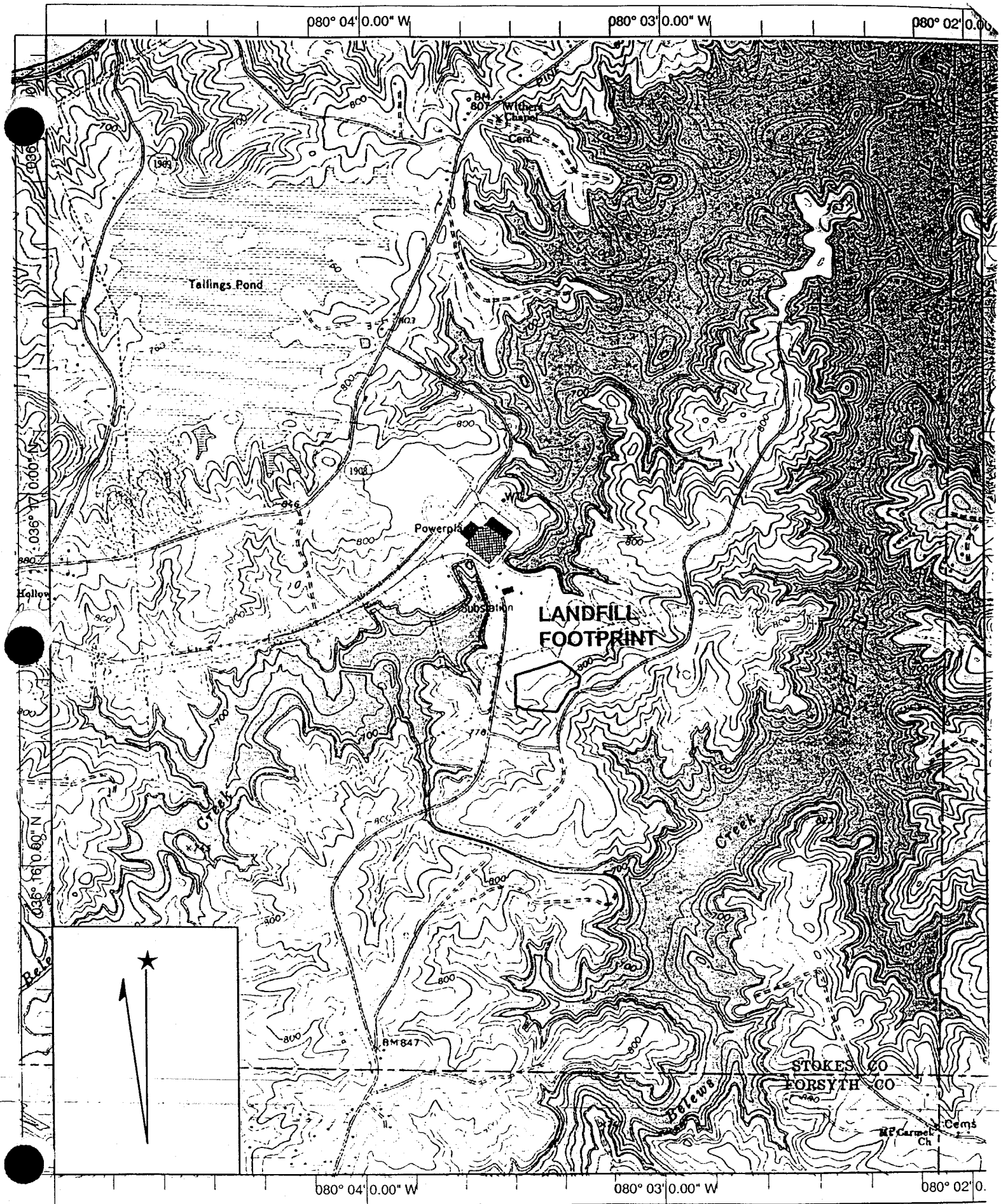
Please let us know by November 12, 2004, if we need to take any additional actions to ensure that we are appropriately considering archaeological and historic sites. Please do not hesitate to contact me at 980.373.4392 should we need to discuss this issue further.

Sincerely:

Jennifer Huff
Sr. Environmental Resource Manager

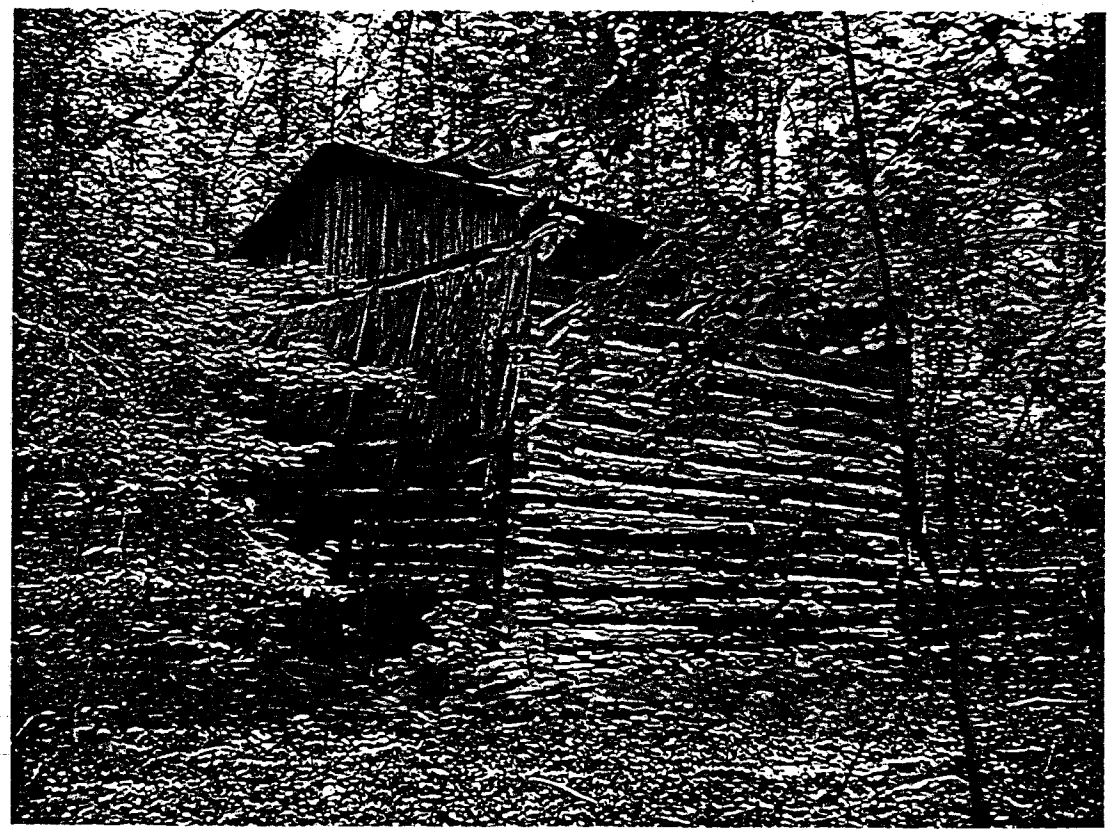
Enclosure

cc w/o enclosure: W.M. Miller



Name: BELEWS LAKE
Date: 9/1/2004
Scale: 1 inch equals 2000 feet

Location: 036° 16' 41.8" N 080° 03' 29.3" W
Caption: Duke Power
Belews Creek Station
FGD Landfill Site



Belews Creek Steam Station Landfill Site: Tobacco Barn

Attachment 4

SHPO letter to Duke

North Carolina Department of Cultural Resources

State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

November 3, 2004

Jennifer Huff
Senior Environmental Resource Manager
Duke Power
PO Box 1006
Charlotte, NC 28201-1006

Re: Proposed Landfill at Belews Creek Steam Station, Stokes County, ER 04-2651

Dear Ms. Huff:

Thank you for your letter of October 7, 2004, concerning the above project.

We have conducted a review of the proposed undertaking and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the undertaking as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

Peter B. Sandbeck

Attachment 5

EDR Report - November 30, 2004

The EDR GeoCheck® Report

Belews Creek
3195 Pine Hall Road
Belews Creek, NC 27052

Inquiry Number: 01316566.1r

November 30, 2004

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM-ERN

TABLE OF CONTENTS

SECTION **PAGE**

GEOCHECK ADDENDUM

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

GEOCHECK® - PHYSICAL SETTING SOURCE REPORT

TARGET PROPERTY ADDRESS

BELEWS CREEK
3195 PINE HALL ROAD
BELEWS CREEK, NC 27052

TARGET PROPERTY COORDINATES

Latitude (North):	36.275002 - 36° 16' 30.0"
Longitude (West):	80.056900 - 80° 3' 24.8"
Universal Tranverse Mercator:	Zone 17
UTM X (Meters):	584706.4
UTM Y (Meters):	4014662.0
Elevation:	790 ft. above sea level

EDR's GeoCheck Report has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Report is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

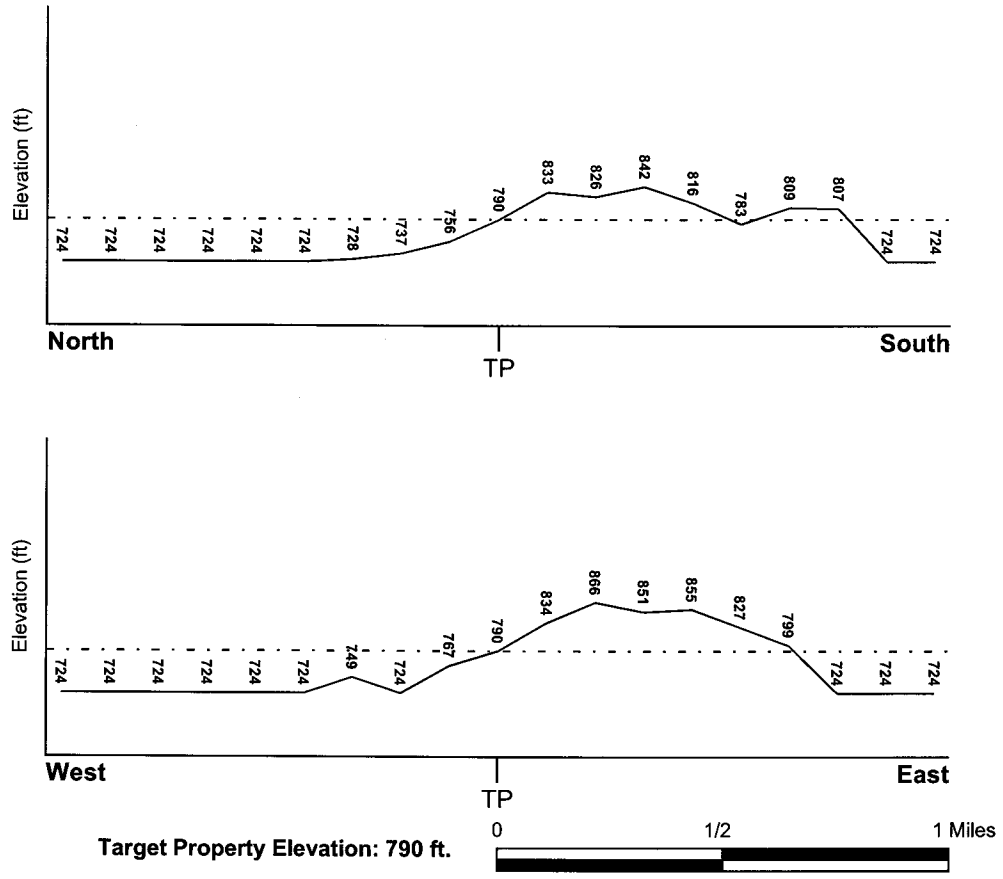
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	36080-C1 BELEWS LAKE, NC
General Topographic Gradient:	General WNW
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
STOKES, NC	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area:
37067C0090H
37067C0095H
37067C0180H
37067C0185H
3701110005B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
BELEWS LAKE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Paleozoic
System:	Pennsylvanian
Series:	Felsic paragneiss and schist
Code:	mm1 *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Metamorphic Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	PACOLET
Soil Surface Texture:	fine sandy loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	3 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 6.50 Min: 4.50
2	3 inches	29 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
3	29 inches	52 inches	clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
4	52 inches	70 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: clay loam
gravelly - sandy loam
sandy loam
loam

Surficial Soil Types: clay loam
gravelly - sandy loam
sandy loam
loam

Shallow Soil Types: clay
sandy clay loam
silt loam
clay loam
silty clay loam

Deeper Soil Types: fine sandy loam
weathered bedrock

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	2.000
Federal FRDS PWS	2.000
State Database	2.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A3	NC0285495	1/8 - 1/4 Mile WNW
D10	NC0279169	1 - 2 Miles ENE
D11	NC0279169	1 - 2 Miles ENE
D12	NC0279169	1 - 2 Miles ENE
E14	NC0279750	1 - 2 Miles East
D15	NC0279695	1 - 2 Miles ENE
E17	NC0279695	1 - 2 Miles ENE
F18	NC0285423	1 - 2 Miles West

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	NCWS005098	0 - 1/8 Mile West
A2	NCWS005097	1/8 - 1/4 Mile WSW
B4	NCWS004908	1 - 2 Miles ENE
B5	NCWS004907	1 - 2 Miles ENE
C6	NCWS004909	1 - 2 Miles ENE
C7	NCWS004906	1 - 2 Miles ENE
C8	NCWS004994	1 - 2 Miles ENE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
9	NCWS004161	1 - 2 Miles South
D13	NCWS004986	1 - 2 Miles ENE
D16	NCWS004987	1 - 2 Miles ENE
19	NCWS005047	1 - 2 Miles North
F20	NCWS005091	1 - 2 Miles West
F21	NCWS005108	1 - 2 Miles WSW

OTHER STATE DATABASE INFORMATION

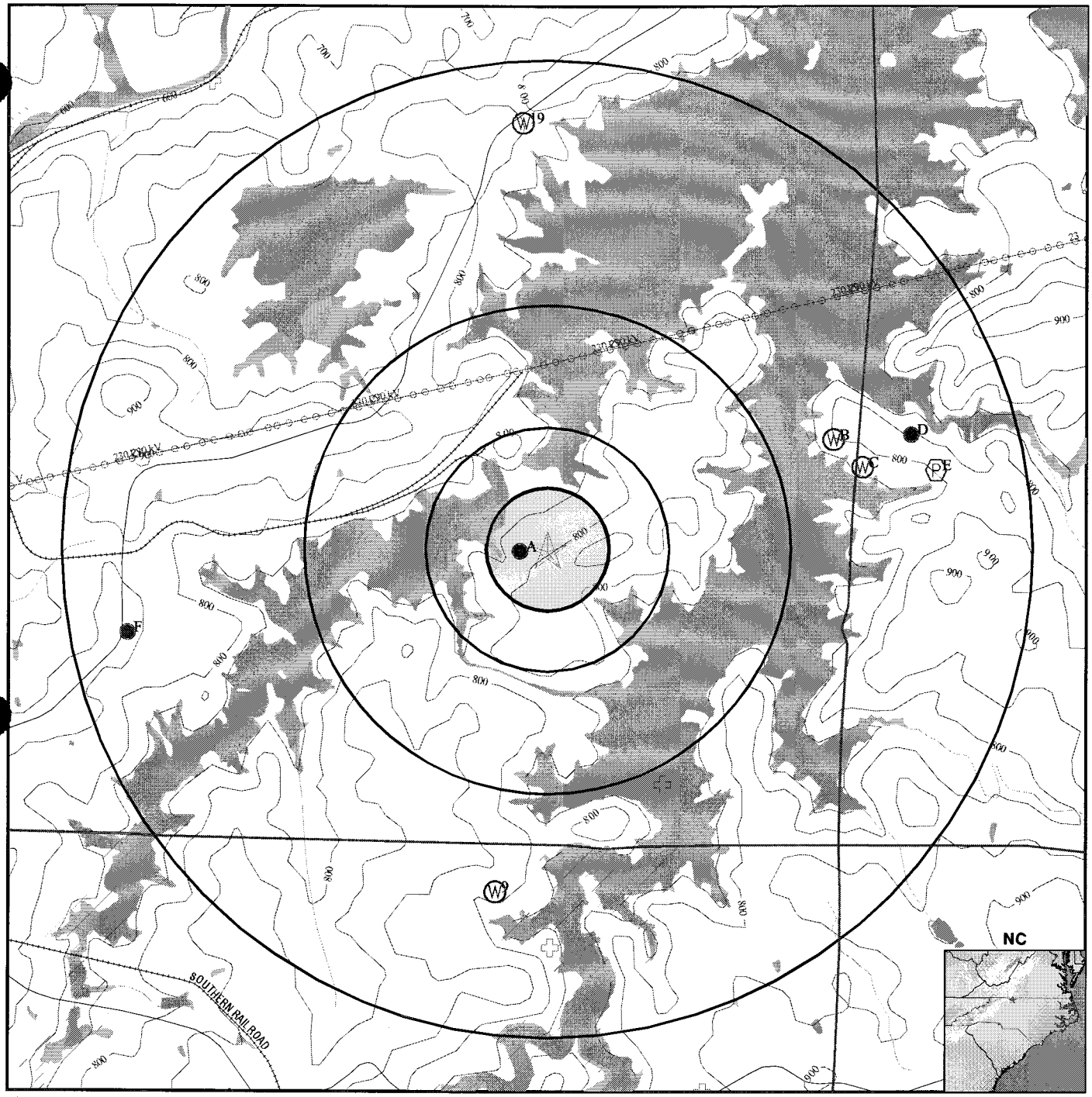
NORTH CAROLINA NATURAL HERITAGE ELEMENT OCCURRENCES

ID	Class
NC50003670	Animal
NC50006460	Animal
NC50009996	Plants
NC50012795	Plants

NORTH CAROLINA SIGNIFICANT NATURAL HERITAGE AREAS DATABASE:

ID	Name
NC10000155	TOWN FORK CREEK BOTTOMLANDS
NC10003359	DAN RIVER (STOKES) AQUATIC HABITAT

PHYSICAL SETTING SOURCE MAP - 01316566.1r



- County Boundary
- Major Roads
- Contour Lines
- Power transmission lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- 100-year flood zone
- 500-year flood zone
- Wetlands
- Wildlife Areas
- Natural Areas
- Rare & Endangered Species

TARGET PROPERTY:	Belews Creek	CUSTOMER:	Duke Power Company
ADDRESS:	3195 Pine Hall Road	CONTACT:	William Miller
CITY/STATE/ZIP:	Belews Creek NC 27052	INQUIRY #:	01316566.1r
LAT/LONG:	36.2750 / 80.0569	DATE:	November 30, 2004 3:54 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
A1 **West** **0 - 1/8 Mile** **Lower**	**NC WELLS**	**NCWS005098**

Site Name:	WELL #2		
PWS ID:	0285495	Source code:	RW2
City:	WALNUT COVE		
County:	Stokes		
Latitude:	361630.21	Longitude:	800330.967
Availability:	Permanent		
Type:	Ground	Depth:	400
Owner:	DUKE ENERGY CORPORATION		

A2 **WSW** **1/8 - 1/4 Mile** **Lower**	**NC WELLS**	**NCWS005097**	
Site Name:	WELL #1		
PWS ID:	0285495	Source code:	RW1
City:	WALNUT COVE		
County:	Stokes		
Latitude:	361627.03	Longitude:	800332.4
Availability:	Permanent		
Type:	Ground	Depth:	900
Owner:	DUKE ENERGY CORPORATION		

A3 **WNW** **1/8 - 1/4 Mile** **Lower**	**FRDS PWS**	**NC0285495**	
PWS ID:	NC0285495	PWS Status:	Active
Date Initiated:	7706	Date Deactivated:	Not Reported
PWS Name:	DUKE POWER-BELEWS CREEK STEAM WALNUT COVE, NC 27052		
Addressee / Facility:	System Owner/Responsible Party JIM BURNETTE OR MANAGER NOW PO BOX 557 WALNUT COVE, NC 27052		
Addressee / Facility:	System Owner/Responsible Party DUKE POWER COMPANY 13339 HAGERS FERRY RD HUNTERSVILLE, NC 28078		
Facility Latitude:	36 16 31	Facility Longitude:	080 03 34
City Served:	WALNUT COVE		
Treatment Class:	Treated	Population:	00000181

PWS currently has or had major violation(s) or enforcement: Yes

VIOLATIONS INFORMATION:

Violation ID:	9400419	Source ID:	000	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	10/31/93	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Routine Major (TCR)				
Contaminant:	COLIFORM (TCR)				
Vio. Awareness Date:	111593				

Violation ID:	9408781	Source ID:	Not Reported	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	12/31/93	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:		000	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	NITRATE				
Vio. Awareness Date:	061594				

ENFORCEMENT INFORMATION:

System Name:	DUKE POWER-BELEWS CREEK ST		
Violation Type:	Monitoring, Routine Major (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1999-10-01 - 1999-12-31	Analytical Value:	0000000.000000000
Violation ID:	0004090	Enforcement ID:	0007581
Enforcement Date:	2000-02-04	Enf. Action:	State Formal NOV Issued

System Name:	DUKE POWER-BELEWS CREEK ST		
Violation Type:	Monitoring, Routine Major (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1999-10-01 - 1999-12-31	Analytical Value:	0000000.000000000
Violation ID:	0004090	Enforcement ID:	0007582
Enforcement Date:	2000-02-04	Enf. Action:	State Public Notif Requested

---

B4
ENE
1 - 2 Miles
Higher

NC WELLS **NCWS004908**

Site Name:	WELL #2		
PWS ID:	0279169	Source code:	200
City:	STOKESDALE		
County:	Rockingham		
Latitude:	361654.29	Longitude:	800210.35
Availability:	Permanent		
Type:	Ground	Depth:	0
Owner:	SYLVIA MIDDLETON		

B5
ENE
1 - 2 Miles
Higher

NC WELLS **NCWS004907**

Site Name:	WELL #1		
PWS ID:	0279169	Source code:	100
City:	STOKESDALE		
County:	Rockingham		
Latitude:	361652.84	Longitude:	800207.69
Availability:	Emergency		
Type:	Ground	Depth:	0
Owner:	SYLVIA MIDDLETON		

C6
ENE
1 - 2 Miles
Lower

NC WELLS **NCWS004909**

Site Name:	WELL #3		
PWS ID:	0279169	Source code:	300
City:	STOKESDALE		
County:	Rockingham		
Latitude:	361648.551	Longitude:	800202.084
Availability:	Permanent		
Type:	Ground	Depth:	0
Owner:	SYLVIA MIDDLETON		

C7
ENE
1 - 2 Miles
Lower

NC WELLS **NCWS004906**

Site Name:	WELL #1		
PWS ID:	0279168	Source code:	100
City:	STOKESDALE		
County:	Rockingham		
Latitude:	361648.54	Longitude:	800201.95
Availability:	Permanent		
Type:	Ground	Depth:	0
Owner:	SYLVIA MIDDLETON		

C8
ENE
1 - 2 Miles
Lower

NC WELLS **NCWS004994**

Site Name:	WELL #1		
PWS ID:	0279750	Source code:	100
City:	STOKESDALE		
County:	Rockingham		
Latitude:	361645.78	Longitude:	800159.966
Availability:	Permanent		
Type:	Ground	Depth:	0
Owner:	HUMPHREY'S GRILL		

9
South
1 - 2 Miles
Higher

NC WELLS **NCWS004161**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Site Name:	WELL #1		
PWS ID:	0234198	Source code:	SR1
City:	BELEWS CREEK		
County:	Forsyth		
Latitude:	361516.8	Longitude:	800338.54
Availability:	Permanent		
Type:	Ground	Depth:	0
Owner:	HYDRAULICS LTD		

D10
ENE
1 - 2 Miles
Higher

FRDS PWS **NC0279169**

PWS ID:	NC0279169	PWS Status:	Active
Date Initiated:	9106	Date Deactivated:	Not Reported
PWS Name:	HUMPHREY'S RIDGE #3 STOKESDALE, NC 27357		
Addressee / Facility:	System Owner/Responsible Party SYLVIA MIDDLETON OR MANAGER 435 HUMPHREY'S RIDGE DR STOKESDALE, NC 27357		
Addressee / Facility:	System Owner/Responsible Party SYLVIA MIDDLETON 435 HUMPHREY'S RIDGE DR STOKESDALE, NC 27357		
Facility Latitude:	36 16 55	Facility Longitude:	080 01 50
Facility Latitude:	36 16 53	Facility Longitude:	080 01 52
Facility Latitude:	36 16 52	Facility Longitude:	080 01 50
City Served:	STOKESDALE		
Treatment Class:	Treated	Population:	00000075

PWS currently has or had major violation(s) or enforcement: Yes

VIOLATIONS INFORMATION:

Violation ID:	9401530	Source ID:	Not Reported	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	12/31/93	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:		000	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TTHM				
Vio. Awareness Date:	020994				

Violation ID:	9400409	Source ID:	000	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	10/31/93	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Routine Major (TCR)				
Contaminant:	COLIFORM (TCR)				
Vio. Awareness Date:	111593				

Violation ID:	9408684	Source ID:	Not Reported	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/90	Vio. end Date:	12/31/93	Vio. Period:	048 Months
Num required Samples:	000	Number of Samples Taken:		000	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	GROSS ALPHA, EXCL. RADON & U				
Vio. Awareness Date:	060194				

D11
ENE
1 - 2 Miles
Higher

FRDS PWS **NC0279169**

PWS ID:	NC0279169	PWS Status:	Active
Date Initiated:	9106	Date Deactivated:	Not Reported
PWS Name:	HUMPHREY'S RIDGE #3 STOKESDALE, NC 27357		
Addressee / Facility:	System Owner/Responsible Party SYLVIA MIDDLETON OR MANAGER 435 HUMPHREY'S RIDGE DR STOKESDALE, NC 27357		
Addressee / Facility:	System Owner/Responsible Party SYLVIA MIDDLETON 435 HUMPHREY'S RIDGE DR STOKESDALE, NC 27357		
Facility Latitude:	36 16 55	Facility Longitude:	080 01 50
Facility Latitude:	36 16 53	Facility Longitude:	080 01 52
Facility Latitude:	36 16 52	Facility Longitude:	080 01 50
City Served:	STOKESDALE		
Treatment Class:	Treated	Population:	00000075

PWS currently has or had major violation(s) or enforcement: Yes

VIOLATIONS INFORMATION:

Violation ID:	9401530	Source ID:	Not Reported	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	12/31/93	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:		000	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TTHM				
Vio. Awareness Date:	020994				

Violation ID:	9400409	Source ID:	000	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	10/31/93	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Routine Major (TCR)				
Contaminant:	COLIFORM (TCR)				
Vio. Awareness Date:	111593				

Violation ID:	9408684	Source ID:	Not Reported	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/90	Vio. end Date:	12/31/93	Vio. Period:	048 Months
Num required Samples:	000	Number of Samples Taken:		000	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	GROSS ALPHA, EXCL. RADON & U				
Vio. Awareness Date:	060194				

D12
ENE
1 - 2 Miles
Lower

FRDS PWS **NC0279169**

PWS ID:	NC0279169	PWS Status:	Active
Date Initiated:	9106	Date Deactivated:	Not Reported
PWS Name:	HUMPHREY'S RIDGE #3 STOKESDALE, NC 27357		
Addressee / Facility:	System Owner/Responsible Party SYLVIA MIDDLETON OR MANAGER 435 HUMPHREY'S RIDGE DR STOKESDALE, NC 27357		
Addressee / Facility:	System Owner/Responsible Party SYLVIA MIDDLETON 435 HUMPHREY'S RIDGE DR STOKESDALE, NC 27357		
Facility Latitude:	36 16 55	Facility Longitude:	080 01 50
Facility Latitude:	36 16 53	Facility Longitude:	080 01 52
Facility Latitude:	36 16 52	Facility Longitude:	080 01 50
City Served:	STOKESDALE		
Treatment Class:	Treated	Population:	00000075

PWS currently has or had major violation(s) or enforcement: Yes

VIOLATIONS INFORMATION:

Violation ID:	9401530	Source ID:	Not Reported	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	12/31/93	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:		000	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TTHM				
Vio. Awareness Date:	020994				

Violation ID:	9400409	Source ID:	000	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	10/31/93	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Routine Major (TCR)				
Contaminant:	COLIFORM (TCR)				
Vio. Awareness Date:	111593				

Violation ID:	9408684	Source ID:	Not Reported	PWS Phone:	Not Reported
Vio. beginning Date:	01/01/90	Vio. end Date:	12/31/93	Vio. Period:	048 Months
Num required Samples:	000	Number of Samples Taken:		000	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	GROSS ALPHA, EXCL. RADON & U				
Vio. Awareness Date:	060194				

D13
ENE
1 - 2 Miles
Lower

NC WELLS **NCWS004986**

Site Name:	WELL #1		
PWS ID:	0279695	Source code:	100
City:	STOKESDALE		
County:	Rockingham		
Latitude:	361658.41	Longitude:	800149.64
Availability:	Permanent		
Type:	Ground	Depth:	0
Owner:	SYLVIA MIDDLETON		

E14
East
1 - 2 Miles
Lower

FRDS PWS **NC0279750**

PWS ID:	NC0279750	PWS Status:	Active
Date Initiated:	9105	Date Deactivated:	Not Reported
PWS Name:	HUMPHREY'S GRILL STOKESDALE, NC 27357		
Addressee / Facility:	System Owner/Responsible Party SYLVIA MIDDLETON OR MANAGER RT 1 BOX 50-C STOKESDALE, NC 27357		
Addressee / Facility:	System Owner/Responsible Party SYLVIA MIDDLETON RT 1 BOX 50-C STOKESDALE, NC 27357		
Facility Latitude:	36 16 45	Facility Longitude:	080 01 45
City Served:	STOKESDALE		
Treatment Class:	Treated	Population:	00000050

PWS currently has or had major violation(s) or enforcement: No

---

D15
ENE
1 - 2 Miles
Higher

FRDS PWS **NC0279695**

PWS ID:	NC0279695	PWS Status:	Active
Date Initiated:	7706	Date Deactivated:	Not Reported
PWS Name:	HUMPHREY'S RIDGE #1 STOKESDALE, NC 27357		
Addressee / Facility:	System Owner/Responsible Party MS SILVIA MIDDLETON OR DIR RT 1 BOX 50-C STOKESDALE, NC 27357		
Addressee / Facility:	System Owner/Responsible Party SYLVIA MIDDLETON RT 1 BOX 50-C STOKESDALE, NC 27357		
Facility Latitude:	36 16 48	Facility Longitude	080 01 40
Facility Latitude:	36 16 50	Facility Longitude	080 01 45
City Served:	STOKESDALE		
Treatment Class:	Treated	Population:	00000290

PWS currently has or had major violation(s) or enforcement: Yes

VIOLATIONS INFORMATION:

Violation ID:	9401531	Source ID:	Not Reported	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	10/31/93	Vio. Period:	001 Months
Num required Samples:	000	Number of Samples Taken:		000	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	TTHM				
Vio. Awareness Date:	020994				

Violation ID:	9400412	Source ID:	000	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	10/31/93	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Routine Major (TCR)				
Contaminant:	COLIFORM (TCR)				
Vio. Awareness Date:	111593				

D16
ENE
1 - 2 Miles
Higher

NC WELLS **NCWS004987**

Site Name:	WELL #2		
PWS ID:	0279695	Source code:	200
City:	STOKESDALE		
County:	Rockingham		
Latitude:	361657.56	Longitude:	800146.701
Availability:	Permanent		
Type:	Ground	Depth:	0
Owner:	SYLVIA MIDDLETON		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
E17 **ENE** **1 - 2 Miles** **Higher**	**FRDS PWS**	**NC0279695**

PWS ID: NC0279695 PWS Status: Active
Date Initiated: 7706 Date Deactivated: Not Reported
PWS Name: HUMPHREY'S RIDGE #1
STOKESDALE, NC 27357

Addressee / Facility: System Owner/Responsible Party
MS SILVIA MIDDLETON OR DIR
RT 1 BOX 50-C
STOKESDALE, NC 27357

Addressee / Facility: System Owner/Responsible Party
SYLVIA MIDDLETON
RT 1 BOX 50-C
STOKESDALE, NC 27357

Facility Latitude: 36 16 48 Facility Longitude: 080 01 40
Facility Latitude: 36 16 50 Facility Longitude: 080 01 45
City Served: STOKESDALE
Treatment Class: Treated Population: 00000290

PWS currently has or had major violation(s) or enforcement: Yes

VIOLATIONS INFORMATION:

Violation ID: 9401531 Source ID: Not Reported PWS Phone: Not Reported
Vio. beginning Date: 10/01/93 Vio. end Date: 10/31/93 Vio. Period: 001 Months
Num required Samples: 000 Number of Samples Taken: 000
Analysis Result: Not Reported Maximum Contaminant Level: Not Reported
Analysis Method: Not Reported
Violation Type: Monitoring, Regular
Contaminant: TTHM
Vio. Awareness Date: 020994

Violation ID: 9400412 Source ID: 000 PWS Phone: Not Reported
Vio. beginning Date: 10/01/93 Vio. end Date: 10/31/93 Vio. Period: 001 Months
Num required Samples: Not Reported Number of Samples Taken: Not Reported
Analysis Result: Not Reported Maximum Contaminant Level: Not Reported
Analysis Method: Not Reported
Violation Type: Monitoring, Routine Major (TCR)
Contaminant: COLIFORM (TCR)
Vio. Awareness Date: 111593

	Database	EDR ID Number
F18 **West** **1 - 2 Miles** **Higher**	**FRDS PWS**	**NC0285423**

PWS ID: NC0285423 PWS Status: Active
Date Initiated: 7706 Date Deactivated: Not Reported
PWS Name: FOREST CHAPEL METHODIST CHURCH
WALNUT COVE, NC 27052

Addressee / Facility: System Owner/Responsible Party
BYRON SHELTON OR PASTOR
RT 2
WALNUT COVE, NC 27052

Addressee / Facility: System Owner/Responsible Party
FOREST CHAPEL METH CHURCH
RT 2
WALNUT COVE, NC 27052

Facility Latitude: 36 16 15
Facility Longitude: 080 05 15
City Served: WALNUT COVE
Treatment Class: Untreated
Population: 00000070

PWS currently has or had major violation(s) or enforcement: No

---

19
North
1 - 2 Miles
Higher

NC WELLS **NCWS005047**

Site Name: WELL #1
PWS ID: 0285432
Source code: W01
City: PINE HALL
County: Stokes
Latitude: 361801.093
Longitude: 800331.502
Availability: Permanent
Type: Ground
Depth: 0
Owner: WITHERS CHAPEL UMC

F20
West
1 - 2 Miles
Higher

NC WELLS **NCWS005091**

Site Name: WELL #1
PWS ID: 0285483
Source code: 1
City: WALNUT COVE
County: Stokes
Latitude: 361612.5
Longitude: 800516.3
Availability: Permanent
Type: Ground
Depth: 0
Owner: ELSIE STULTZ OR RAY CALHOUNE

F21
WSW
1 - 2 Miles
Higher

NC WELLS **NCWS005108**

Site Name: WELL #1
PWS ID: 0285515
Source code: W01
City: WALNUT COVE
County: Stokes
Latitude: 361608.264
Longitude: 800518.304
Availability: Permanent
Type: Ground
Depth: 103
Owner: SAM BRAY

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance

Database EDR ID Number

NC_NHEO NC50003670

GIS ID: 92548
Classification by Type: Animal
Occurrence Status: Extant

NC_NHEO NC50006460

GIS ID: 212410
Classification by Type: Animal
Occurrence Status: Extant

NC_NHEO NC50009996

GIS ID: 62438
Classification by Type: Plants
Occurrence Status: Historic, no evidence of destruction

NC_NHEO NC50012795

GIS ID: 42592
Classification by Type: Plants
Occurrence Status: X

NC_SNHA NC10000155

Site Name: TOWN FORK CREEK BOTTOMLANDS
Quality: Not Reported
Acres per Polygon: 102.56

NC_SNHA NC10003359

Site Name: DAN RIVER (STOKES) AQUATIC HABITAT
Quality: Not Reported
Acres per Polygon: 567.8

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: NC Radon

Radon Test Results

County	Result Type	Total Sites	Avg pCi/L	Range pCi/L
STOKES	Statistical	12	1.43	0.20-3.60
STOKES	Non-Statistical	120	2.69	0.00-15.30

Federal EPA Radon Zone for STOKES County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 27052

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.400 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

NC Natural Areas: Significant Natural Heritage Areas
Source: Center for Geographic Information and Analysis
Telephone: 919-733-2090
A polygon converage identifying sites (terrestrial or aquatic that have particular biodiversity significance. A site's significance may be due to the presenceof rare species, rare or hight quality natural communities, or other important ecological features.

NC Game Lands: Wildlife Resources Commission Game Lands
Source: Center for Geographic Information and Analysis
Telephone: 919-733-2090
All publicly owned game lands managed by the North Carolina Wildlife Resources Commission and as listed in Hunting and Fishing Maps.

NC Natural Heritage Sites: Natural Heritage Element Occurrence Sites
Source: Center for Geographic Information and Analysis
Telephone: 919-733-2090
A point coverage identifying locations of rare and endangered species, occurrences of exemplary or unique natural ecosystems (terrestrial or aquatic), and special animal habitats (e.g., colonial waterbird nesting sites).

North Carolina Public Water Supply Wells
Source: Department of Environmental Health
Telephone: 919-715-3243

RADON

State Database: NC Radon
Source: Department of Environment & Natural Resources
Telephone: 919-733-4984
Radon Statistical and Non Statiscal Data

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Attachment 6

EDR Report – September 28, 2004

The EDR Radius Map
with GeoCheck®

Belews Creek
3195 Pine Hall Rd
Belews Creek, NC 27052

Inquiry Number: 01277555.1r

September 28, 2004

EDR™ Environmental
Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM-ERN

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

3195 PINE HALL RD
BELEWS CREEK, NC 27052

COORDINATES

Latitude (North):	36.275000 - 36° 16' 30.0"
Longitude (West):	80.056900 - 80° 3' 24.8"
Universal Tranverse Mercator:	Zone 17
UTM X (Meters):	584706.4
UTM Y (Meters):	4014662.0
Elevation:	790 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	36080-C1 BELEWS LAKE, NC
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following government records. For more information on this property see page 6 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
DUKE POWER/WALNUT COVE POWER HOUSE ROAD WALNUT COVE, NC	SHWS	N/A
DUKE POWER - WALNUT COVE- SOUTHERN 3195 PINE HALL ROAD WALNUT COVE, NC 27052	IMD LUST	N/A
DUKE POWER - BELEWS CREEK SR 1904 WALNUT COVE, NC 27052	LUST	N/A
DUKE POWER/BELEWS CREEK ST PLT SR 1908 STOKES, NC	SWF/LF	N/A

EXECUTIVE SUMMARY

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
CORRACTS	Corrective Action Report
RCRIS-TSD	Resource Conservation and Recovery Information System
RCRIS-LQG	Resource Conservation and Recovery Information System
RCRIS-SQG	Resource Conservation and Recovery Information System
ERNS	Emergency Response Notification System

STATE ASTM STANDARD

UST	Petroleum Underground Storage Tank Database
OLI	Old Landfill Inventory
INDIAN UST	Underground Storage Tanks on Indian Land
VCP	Responsible Party Voluntary Action Sites

FEDERAL ASTM SUPPLEMENTAL

CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
Delisted NPL	National Priority List Deletions
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens
PADS	PCB Activity Database System
ODI	Open Dump Inventory
UMTRA	Uranium Mill Tailings Sites
FUDS	Formerly Used Defense Sites
INDIAN RESERV	Indian Reservations
US BROWNFIELDS	A Listing of Brownfields Sites
DOD	Department of Defense Sites
RAATS	RCRA Administrative Action Tracking System
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
SSTS	Section 7 Tracking Systems
FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

NC HSDS	Hazardous Substance Disposal Site

EXECUTIVE SUMMARY

AST..... AST Database
LUST TRUST..... State Trust Fund Database
DRYCLEANERS..... Drycleaning Sites

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas..... Former Manufactured Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

US BROWNFIELDS..... A Listing of Brownfields Sites
Brownfields..... Brownfields Projects Inventory
INST CONTROL..... No Further Action Sites With Land Use Restrictions Monitoring
VCP..... Responsible Party Voluntary Action Sites

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

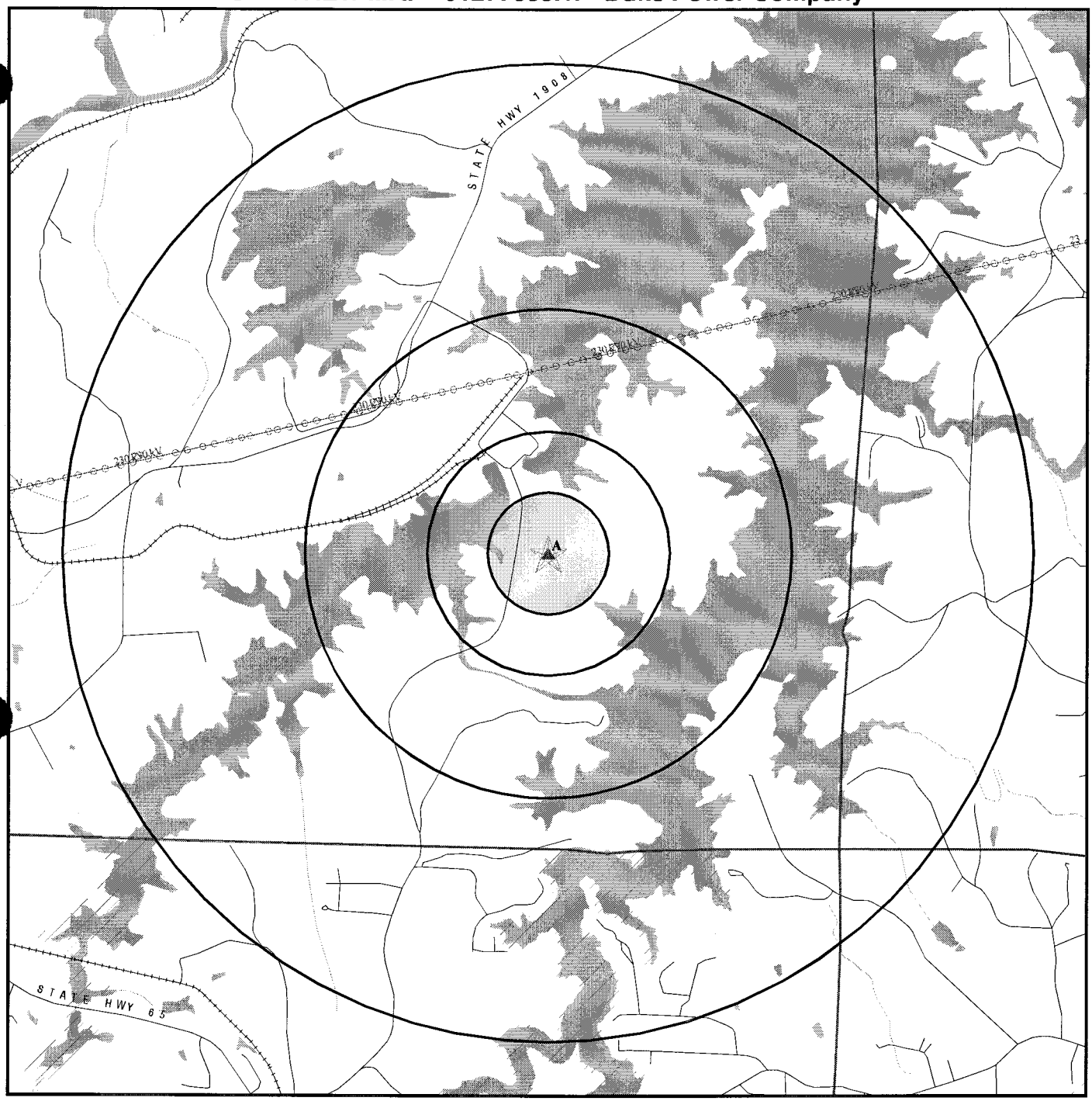
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
PRIVATE FARM	SHWS
PRIVATE FARM	CERC-NFRAP
THOMAS STANLEY GRADING AND HAULING	SWF/LF
CARL WHITE GROCERY	LUST
STOKES COUNTY - NORTH STOKES HIGH	LUST
J.B. DALTON'S STORE	LUST
TIMES TURN AROUND - STOKESDALE	IMD, LUST
LAWSON PROPERTY, MITCHELL	LUST
TUCKERS GROCERY	LUST
TUCKER GROCERY - STOKESDALE	LUST
VULCAN - STOKESDALE QUARRY	LUST
ROCKINGHAM BANDAG CORP.	LUST
WOODS COUNTRY STORE	LUST, UST
BREWER'S STORE	LUST
KOUNTRY KORNER - WALNUT COVE	IMD, LUST
FRIENDLY FOOD MART 6	LUST, UST
BONNIE'S	LUST
NCDOT - WALNUT COVE FACILITY - B	LUST
NCDOT - WALNUT COVE FACILITY	LUST
BETTY'S COUNTRY GROCERY	LUST
MEADOWBROOK FIELD	LUST
WHITE'S GROCERY (CARL & NADIA)	LUST
DEHART PROPERTY, V.L.	IMD, LUST
WHITE'S GROCERY	LUST TRUST
WALNUT COVE TIRE SHOP	LUST TRUST
A.V. CHAPMAN	UST
SPENCER'S GROCERY	UST
VINCENT B. SANDY	UST
WALNUT COVE TIRE CTR INC	UST
CROSS CREEK APPAREL	UST
NC DOR. DIV. OF HWY	UST
COUNTRY GROCERY	UST
BONNIES	UST
MRS V L DEHART	UST
NCDOT-WALNUT COVE	IMD
NCDOT-WALNUT COVE-B	IMD

OVERVIEW MAP - 01277555.1r - Duke Power Company

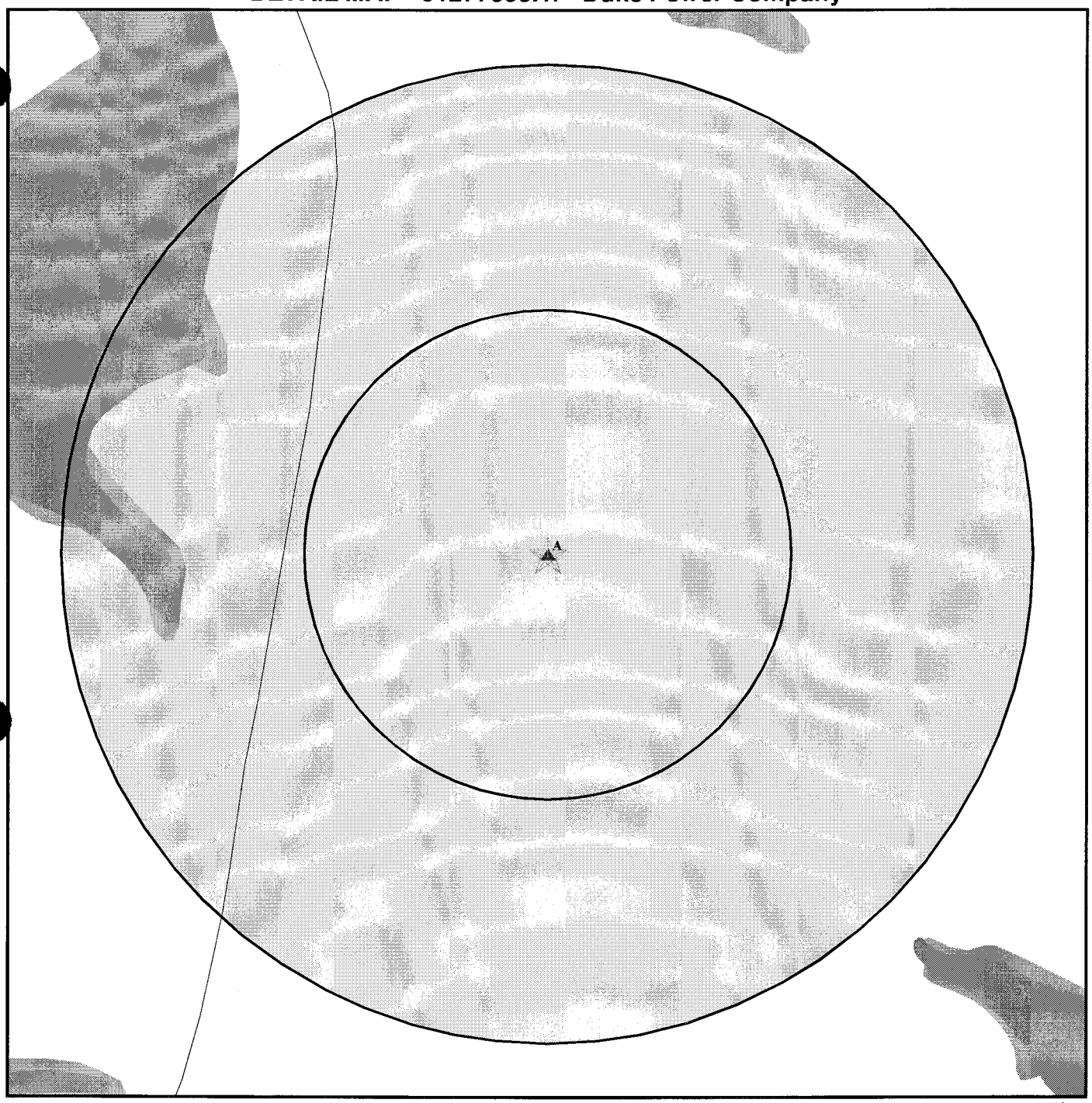


0 1/2 1 2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Hazardous Substance Disposal Sites

TARGET PROPERTY:	Belews Creek	CUSTOMER:	Duke Power Company
ADDRESS:	3195 Pine Hall Rd	CONTACT:	Ralph Roberts
CITY/STATE/ZIP:	Belews Creek NC 27052	INQUIRY #:	01277555.1r
LAT/LONG:	36.2750 / 80.0569	DATE:	September 28, 2004 2:57 pm

DETAIL MAP - 01277555.1r - Duke Power Company



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Oil & Gas pipelines
- Federal Wetlands
- Hazardous Substance Disposal Sites

0 1/16 1/8 1/4 Miles

TARGET PROPERTY:	Belews Creek	CUSTOMER:	Duke Power Company
ADDRESS:	3195 Pine Hall Rd	CONTACT:	Ralph Roberts
CITY/STATE/ZIP:	Belews Creek NC 27052	INQUIRY #:	01277555.1r
LAT/LONG:	36.2750 / 80.0569	DATE:	September 28, 2004 2:57 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		2.000	0	0	0	0	0	0
Proposed NPL		2.000	0	0	0	0	0	0
CERCLIS		2.000	0	0	0	0	0	0
CERC-NFRAP		2.000	0	0	0	0	0	0
CORRACTS		2.000	0	0	0	0	0	0
RCRIS-TSD		2.000	0	0	0	0	0	0
RCRIS Lg. Quan. Gen.		0.750	0	0	0	0	NR	0
RCRIS Sm. Quan. Gen.		0.750	0	0	0	0	NR	0
ERNS		0.500	0	0	0	NR	NR	0
STATE ASTM STANDARD								
State Haz. Waste	X	2.000	0	0	0	0	0	0
State Landfill	X	2.000	0	0	0	0	0	0
LUST	X	2.000	0	0	0	0	0	0
UST		0.750	0	0	0	0	NR	0
OLI		1.000	0	0	0	0	NR	0
INDIAN UST		0.750	0	0	0	0	NR	0
VCP		2.000	0	0	0	0	0	0
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.500	0	0	0	0	0	0
ROD		1.500	0	0	0	0	0	0
Delisted NPL		1.500	0	0	0	0	0	0
FINDS		0.500	0	0	0	NR	NR	0
HMIRS		0.500	0	0	0	NR	NR	0
MLTS		0.500	0	0	0	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		0.500	0	0	0	NR	NR	0
PADS		0.500	0	0	0	NR	NR	0
ODI		2.000	0	0	0	0	0	0
UMTRA		1.000	0	0	0	0	NR	0
FUDS		1.500	0	0	0	0	0	0
INDIAN RESERV		1.500	0	0	0	0	0	0
US BROWNFIELDS		1.000	0	0	0	0	NR	0
DOD		1.500	0	0	0	0	0	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		0.500	0	0	0	NR	NR	0
TSCA		0.500	0	0	0	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
FTTS		0.500	0	0	0	NR	NR	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
NC HSDS		1.500	0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
AST		0.500	0	0	0	NR	NR	0
LUST TRUST		2.000	0	0	0	0	0	0
DRYCLEANERS		0.750	0	0	0	0	NR	0
IMD	X	1.000	0	0	0	0	NR	0
EDR PROPRIETARY HISTORICAL DATABASES								
Coal Gas		1.500	0	0	0	0	0	0
BROWNFIELDS DATABASES								
US BROWNFIELDS		1.000	0	0	0	0	NR	0
Brownfields		0.500	0	0	0	NR	NR	0
INST CONTROL		0.500	0	0	0	NR	NR	0
VCP		2.000	0	0	0	0	0	0

NOTES:

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A1 **DUKE POWER/WALNUT COVE** **SHWS** **S104918893**
Target **POWER HOUSE ROAD** **N/A**
Property **WALNUT COVE, NC**

Site 1 of 4 in cluster A

Actual:
791 ft.

SHWS:
Facility ID: NONCD0000091
Facility Status: Not reported

A2 **DUKE POWER - WALNUT COVE- SOUTHERN** **IMD** **S104914460**
Target **3195 PINE HALL ROAD** **LUST** **N/A**
Property **WALNUT COVE, NC 27052**

Site 2 of 4 in cluster A

Actual:
791 ft.

LUST:
Incident Number: 22402
Date Occurred: 07/17/00
5 Min Quad: Not reported
Lat/Long: 0000000000 / 0000000000
Source Type: 3
Facility ID: Not reported
GPS Confirmed: No
Operation: Industrial
UST Number : WS-6088
Testlat : 0000000000
Regional Officer Project Mgr : SYW
Region : Winston-Salem
Responsible Party DUKE POWER (LAND OWNER)
Contact Person : TRACY BEER
RP Address : P O BOX 1006
CHARLOTTE, NC 28201 - 1006
RP County : MECKLENBURG
Product Type : Petroleum
Date Reported : 07/17/00
Comm / Non-comm UST Site : Non commercial
Tank Regulated Status : Non Regulated
NORR Issued Date : 01/05/01
NOV Issued Date / /
Phase Of LSA Req 1
Risk Classification H
Risk Classification Based On Review : L
Site Risk Reason Not reported
Land Use : Residential
Corrective Action Plan Type: Not reported
Level Of Soil Cleanup Achieved : soil to GW levels
Closure Request Date : 10/25/01
NFA Letter Date : 10/31/01
Contamination Type : SL
MTBE : 0
Of Supply Wells : 0
Comments : Contaminted soil must be addressed to lowest level.
Potential future use is making it a HIGH risk. Contaminated soil got ot remediated to lowest level.
Telephone : Not reported
Flag : 0
Error Flag : 0
LUR Filed : / /
MTBE1 : Unknown
Flag1 : No
Cleanup : 09/30/01
Current Status : File Located in House
RBCA GW : Not reported
PETOPT : 4
CD Num : 0
Reel Num : 0
RPOW : False
RPOP : False
RPL : False
Type : 5

DUKE POWER - WALNUT COVE- SOUTHERN (Continued) **S104914460**

Date Occurred: Not reported
Date Reported : Not reported
Incident Description : Not reported
Ownership: Not reported
Location: Not reported
Site Priority: Not reported
Type : Not reported
Priority Update : Not reported
Wells Affected: Not reported
Num Affected: Not reported
7.5 Min Quad: Not reported
5 Min Quad: Not reported
Release Code: Not reported
Source Type: Not reported
Error Type : Not reported
UST Number : Not reported
Operation Type : Not reported
Last Modified: 12/06/01
Incident Phase: Closed Out
NOV Issued: / /
NORR Issued: / /
45 Day Report: / /
SOC Sighned: / /
Public Meeting Held: / /
Close-out Report: 10/31/01
RS Designation: / /
Corrective Action Planned: / /
Reclassification Report: / /
Closure Request Date: / /

Incident Number: 23034
Date Occurred: 07/20/00
5 Min Quad: Not reported
Lat/Long: 0000000000 / 0000000000
Source Type: 3
Facility ID: Not reported
GPS Confirmed: No
Operation: Industrial
UST Number : WS-6179
Testlat : 0000000000
Regional Officer Project Mgr : SYW
Region : Winston-Salem
Responsible Party DUKE POWER (LAND OWNER)
Contact Person : TRACY BEER
RP Address : PO BOX 1006
CHARLOTTE, NC 28201 - 1006
RP County : Not reported
Product Type : Petroleum
Date Reported : 07/25/00
Comm / Non-comm UST Site : Non commercial
Tank Regulated Status : Non Regulated
NORR Issued Date : 01/05/01
NOV Issued Date / /
Phase Of LSA Req 1
Risk Classification H
Risk Classification Based On Review : L
Site Risk Reason Not reported
Land Use : Residential
Corrective Action Plan Type: Not reported
Level Of Soil Cleanup Achieved : soil to GW levels
Closure Request Date : 12/04/01
NFA Letter Date : 12/13/01
Contamination Type : SL
MTBE : 0
Of Supply Wells : 0
Comments : Contaminted soil must be addressed to lowest level.
Potential future use is making it a HIGH risk. Contaminated soil got ot remediated to lowest level.
Telephone : Not reported
Flag : 0
Error Flag : 0
LUR Filed : / /
MTBE1 : Unknown
Flag1 : No
Cleanup : 09/30/01
Current Status : File Located in House

DUKE POWER - WALNUT COVE- SOUTHERN (Continued) **S104914460**

RBCA GW :	Not reported	PETOPT :	4
CD Num :	0	Reel Num :	0
RPOW :	False	RPOP :	False
RPL :	False		
Type :	5		
Date Occurred:	Not reported		
Date Reported :	Not reported		
Incident Description :	Not reported		
Ownership:	Not reported	Location:	Not reported
Site Priority:	Not reported		
Type :	Not reported	Priority Update :	Not reported
Wells Affected:	Not reported	Num Affected:	Not reported
7.5 Min Quad:	Not reported	5 Min Quad:	Not reported
Release Code:	Not reported	Source Type:	Not reported
Error Type :	Not reported		
UST Number :	Not reported		
Operation Type :	Not reported		
Last Modified:	01/25/02		
Incident Phase:	Closed Out		
NOV Issued:	/ /	NORR Issued:	/ /
45 Day Report:	/ /	SOC Sighned:	/ /
Public Meeting Held:	/ /		
Close-out Report:	12/13/01	RS Designation:	/ /
Corrective Action Planned:	/ /		
Reclassification Report:	/ /		
Closure Request Date:	/ /		

IMD:

Incident Number:	22402
Region:	WS
Date Occurred:	07/17/00
Submit Date:	10/12/00
GW Contam:	Not reported
Soil Contam:	Yes
Operator:	TRACY BEER P.O. BOX 1006 CHARLOTTE, NC 28201 IREDE County
Contact Phone:	704 373-7890
Priority Code:	Not reported
Priority Update:	10/12/00
Site Priority:	U
Dem Contact:	Not reported
Wells Affected:	No
Num Affected:	0
Sampled By:	Samples Include:
7.5 Min Quad:	Not reported
5 Min Quad:	Not reported
Incident Desc:	SOIL CONTAMINATION DISCOVERED UPON UST REMOVAL
Ownership:	Private
Operation:	Industrial
Material:	Not reported
Qty Lost:	Not reported
Qty Recovered:	Not reported
Source:	Leak-underground
Type:	Heating Oil
Location:	Residence
Setting:	Rural
Wells Contam:	Not reported

DUKE POWER - WALNUT COVE- SOUTHERN (Continued) **S104914460**

Sampled By: Not reported
Samples Include: Not reported
Owner Company: DUKE POWER
Lat/Long: 361810 / 800126
Risk Site Not reported
Lat/Long Decimal: 36.30278 / 80.02389
Lat/Long Number 361810 / 800126
GPS: EST Agency : DWM
Last Modified: 12/06/01 Incident Phase: CO
NOV Issued: / /
45 Day Report: / / SOC Sighned: / /
Public Meeting Held: / /
Corrective Action Planned: / /
Reclassification Report: / /
Close-out Report: 10/31/01 RS Designation: / /
Closure Request Date: / /

Incident Number: 23034
Region: WS
Date Occurred: 07/20/00
Submit Date: 03/21/01
GW Contam: Not reported
Soil Contam: Yes
Operator: Not reported
Not reported
Not reported
Contact Phone: Not reported
Priority Code: Not reported
Priority Update: 03/21/01
Site Priority: U
Dem Contact: Not reported
Wells Affected: No
Num Affected: 0
Sampled By: Samples Include:
7.5 Min Quad: Not reported
5 Min Quad: Not reported
Incident Desc: SOIL CONTAMINATION DISCOVERED DURING UST CLOSURE
Ownership: Private
Operation: Residential
Material: Not reported
Qty Lost: Not reported
Qty Recovered: Not reported
Source: Leak-underground
Type: Heating Oil
Location: Residence
Setting: Rural
Wells Contam: Not reported
Sampled By: Not reported
Samples Include: Not reported
Owner Company: Not reported
Lat/Long: 361810 / 800126
Risk Site Not reported
Lat/Long Decimal: 36.30278 / 80.02389
Lat/Long Number 361810 / 800126
GPS: EST Agency : DWM
Last Modified: 01/25/02 Incident Phase: CO
NOV Issued: / /

DUKE POWER - WALNUT COVE- SOUTHERN (Continued) **S104914460**

45 Day Report: / /
Public Meeting Held: / /
Corrective Action Planned: / /
Reclassification Report: / /
Close-out Report: 12/13/01
Closure Request Date: / /
SOC Sighned: / /
RS Designation: / /

A3 Target Property **DUKE POWER - BELEWS CREEK** **LUST** **S105766452**
SR 1904 **N/A**
WALNUT COVE, NC 27052

Site 3 of 4 in cluster A

Actual: 791 ft.

LUST:
Incident Number: 3884
Date Occurred: / /
5 Min Quad: Not reported
Lat/Long: 0000000000 / 0000000000
Source Type: 3
Facility ID: N/A
GPS Confirmed: No
Operation: Industrial
UST Number : WS-2518
Testlat : 0000000000
Regional Officer Project Mgr : LME
Region : Winston-Salem
Responsible Party DUKE POWER COMPANY
Contact Person : RICHARD BAKER
RP Address : 13339 HAGERS FERRY ROAD
HUNTERSVILLE, NC 28078 - 7929
RP County : Not reported
Product Type : Petroleum
Date Reported : 07/27/89
Comm / Non-comm UST Site : Commercial
Tank Regulated Status : Regulated
NORR Issued Date : 06/12/89
NOV Issued Date / /
Phase Of LSA Req Not reported
Risk Classification H
Risk Classification Based On Review : I
Site Risk Reason : FS
Land Use : Not reported
Corrective Action Plan Type: pump and treat
Level Of Soil Cleanup Achieved : Industrial/commercial levels
Closure Request Date : / /
NFA Letter Date : / /
Contamination Type : GW
MTBE : 0
Of Supply Wells : 0
Comments : RP PROCEEDING W/CORRECTIVE ACTION W/OUT TF REIMBURSEMNET EXPECTED
Telephone : Not reported
Flag : 0
Error Flag : 0
LUR Filed : / /
MTBE1 : Unknown
Flag1 : No
Cleanup : 07/15/92
Current Status : File Located in House
RBCA GW : Not reported
PETOPT : 3
CD Num : 0
Reel Num : 0
RPOW : False
RPOP : False
RPL : False
Type : 5
Date Occurred: Not reported
Date Reported : Not reported
Incident Description : Not reported
Ownership: Not reported
Location: Not reported
Site Priority: Not reported
Type : Not reported
Priority Update : Not reported
Wells Affected: Not reported
Num Affected: Not reported

DUKE POWER - BELEWS CREEK (Continued) **S105766452**

7.5 Min Quad:	Not reported	5 Min Quad:	Not reported
Release Code:	Not reported	Source Type:	Not reported
Error Type :	Not reported		
UST Number :	Not reported		
Operation Type :	Not reported		
Last Modified:	05/13/91		
Incident Phase:	Follow Up		
NOV Issued:	/ /	NORR Issued:	/ /
45 Day Report:	/ /	SOC Sighned:	/ /
Public Meeting Held:	/ /		
Close-out Report:	/ /	RS Designation:	/ /
Corrective Action Planned:	/ /		
Reclassification Report:	/ /		
Closure Request Date:	/ /		

A4 **DUKE POWER/BELEWS CREEK ST PLT** **SWF/LF** **S103240134**
Target **SR 1908** **N/A**
Property **STOKES, NC**

Site 4 of 4 in cluster A

Actual:
791 ft.

LF:

Facility Id:	P0135
Facility Telephone:	(336) 445-0324
Facility Fax:	(336) 445-0423
Contact:	RANDY PRICE
Waste Mgmt Specialist:	Hugh Jernigan
Contact Address:	DUKE ENERGY 3195 PINE HALL ROAD BELEWS CREEK, NC 27009
Public/Private:	PRIVATE
Facility Status:	OPEN
Lined:	False
Facility Type 1:	Industrail Solid Waste

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BELEWES CREEK	S105521161	WHITE'S GROCERY	7296 HWY 65	27009	LUST TRUST
BELEWS CREEK	S106204984	CARL WHITE GROCERY	ROUTE 1 HWY 65	27009	LUST
DANBURY	S105766955	STOKES COUNTY - NORTH STOKES HIGH	ROUTE 1, BOX 346	27052	LUST
GERMANTON	U001191575	A.V. CHAPMAN	N.C. HIGHWAY 8	27052	UST
STOKESDALE	1003868320	PRIVATE FARM	RTE #1	27357	CERC-NFRAP
STOKESDALE	S104919075	PRIVATE FARM	ROUTE 1	27357	SHWS
STOKESDALE	S105766940	J.B. DALTON'S STORE	RT 1 BOX 52	27357	LUST
STOKESDALE	S101166341	TIMES TURN AROUND - STOKESDALE	7915 HWY 68	27357	IMD, LUST
STOKESDALE	S105766471	LAWSON PROPERTY, MITCHELL	HWY 68	27357	LUST
STOKESDALE	S105897682	TUCKERS GROCERY	7911 HWY 68 N	27357	LUST
STOKESDALE	S105897683	TUCKER GROCERY - STOKESDALE	HWY 68 / US 158	27357	LUST
STOKESDALE	S105766603	VULCAN - STOKESDALE QUARRY	SR 6826	27357	LUST
STOKESDALE	S105805034	THOMAS STANLEY GRADING AND HAULING	NC HWY 68	27357	SWF/LF
STOKESDALE	S105898034	ROCKINGHAM BANDAG CORP.	400 LEMONS/SR 1104	27357	LUST
WALNUT COVE	U001204279	WOODS COUNTRY STORE	HWY #8 @PINEY MT ROAD	27052	LUST, UST
WALNUT COVE	U001190960	SPENCER'S GROCERY	RT 1 BOX 311	27052	UST
WALNUT COVE	U001199838	VINCENT B. SANDY	RT 1 BOX 112-1	27052	UST
WALNUT COVE	S106406768	BREWER'S STORE	ROUTE 1, BOX 177	27052	LUST
WALNUT COVE	U001204188	WALNUT COVE TIRE CTR INC	RT 2 BOX 17	27052	UST
WALNUT COVE	S103040598	KOUNTRY KORNER - WALNUT COVE	ROUTE 2, BOX 194-A	27052	IMD, LUST
WALNUT COVE	S105219199	WALNUT COVE TIRE SHOP	ROUTE 2, BOX 17	27052	LUST TRUST
WALNUT COVE	U003143629	FRIENDLY FOOD MART 6	ROUTE 2, BOX 733	27052	LUST, UST
WALNUT COVE	U003562330	CROSS CREEK APPAREL	RT. 3 HWY 89	27052	UST
WALNUT COVE	S104547247	NCDOT-WALNUT COVE	ROUTE 3 BOX 97	27052	IMD
WALNUT COVE	U003563074	NC DOR. DIV. OF HWY	RT. 3	27052	UST
WALNUT COVE	S102554561	NCDOT-WALNUT COVE-B	RT 3, BOX 97	27052	IMD
WALNUT COVE	S105766634	BONNIE'S	ROUTE 3, BOX 185	27052	LUST
WALNUT COVE	S105766824	NCDOT - WALNUT COVE FACILITY - B	ROUTE 3, BOX 97	27052	LUST
WALNUT COVE	S105766952	NCDOT - WALNUT COVE FACILITY	ROUTE 3, BOX 95	27052	LUST
WALNUT COVE	S106205003	BETTY'S COUNTRY GROCERY	ROUTE 3, BOX 58	27052	LUST
WALNUT COVE	U001187980	COUNTRY GROCERY	ROUTE 3, BOX 58	27052	UST
WALNUT COVE	U001191121	BONNIES	ROUTE 3, BOX 185	27052	UST
WALNUT COVE	S106204887	MEADOWBROOK FIELD	ROUTE 4	27052	LUST
WALNUT COVE	U003179296	MRS V L DEHART	NC 65 @ PINE HALL ROAD	27052	UST
WALNUT COVE	S105766951	WHITE'S GROCERY (CARL & NADIA)	NC HIGHWAY 65 @ PINE HALL RD.	27052	LUST
WALNUT COVE	S102868538	DEHART PROPERTY, V.L.	7294 E. HWY 65 @PINEHAL	27052	IMD, LUST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/30/04
Date Made Active at EDR: 09/09/04
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 08/03/04
Elapsed ASTM days: 37
Date of Last EDR Contact: 08/03/04

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 6
Telephone: 214-655-6659

EPA Region 8
Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 07/22/04
Date Made Active at EDR: 09/09/04
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 08/03/04
Elapsed ASTM days: 37
Date of Last EDR Contact: 08/03/04

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 05/17/04
Date Made Active at EDR: 08/10/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 06/23/04
Elapsed ASTM days: 48
Date of Last EDR Contact: 06/23/04

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 05/17/04
Date Made Active at EDR: 08/10/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 06/23/04
Elapsed ASTM days: 48
Date of Last EDR Contact: 06/23/04

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/15/04
Date Made Active at EDR: 08/10/04
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 06/25/04
Elapsed ASTM days: 46
Date of Last EDR Contact: 06/07/04

RCRIS: Resource Conservation and Recovery Information System
Source: EPA
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/15/04
Date Made Active at EDR: 07/20/04
Database Release Frequency: Varies

Date of Data Arrival at EDR: 06/23/04
Elapsed ASTM days: 27
Date of Last EDR Contact: 08/24/04

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/03
Date Made Active at EDR: 03/12/04
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/26/04
Elapsed ASTM days: 46
Date of Last EDR Contact: 07/26/04

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/01/01
Database Release Frequency: Biennially

Date of Last EDR Contact: 06/22/04
Date of Next Scheduled EDR Contact: 09/13/04

CONSENT: Superfund (CERCLA) Consent Decrees
Source: Department of Justice, Consent Decree Library
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/05/04
Database Release Frequency: Varies

Date of Last EDR Contact: 07/30/04
Date of Next Scheduled EDR Contact: 10/25/04

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 06/07/04
Database Release Frequency: Annually

Date of Last EDR Contact: 07/07/04
Date of Next Scheduled EDR Contact: 10/04/04

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/30/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 08/03/04
Date of Next Scheduled EDR Contact: 11/01/04

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/08/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/06/04
Date of Next Scheduled EDR Contact: 10/04/04

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 02/17/04
Database Release Frequency: Annually

Date of Last EDR Contact: 04/20/04
Date of Next Scheduled EDR Contact: 07/19/04

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/15/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/06/04
Date of Next Scheduled EDR Contact: 10/04/04

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 06/04/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/30/04
Date of Next Scheduled EDR Contact: 09/27/04

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 08/23/04
Date of Next Scheduled EDR Contact: 11/22/04

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/29/04
Database Release Frequency: Annually
Date of Last EDR Contact: 08/10/04
Date of Next Scheduled EDR Contact: 11/08/04

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-692-8801
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 08/12/04
Date of Next Scheduled EDR Contact: 11/08/04

STORMWATER: Storm Water General Permits
Source: Environmental Protection Agency
Telephone: 202-564-0746
A listing of all facilities with Storm Water General Permits.

Date of Government Version: 02/04/04
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/06/04
Date of Next Scheduled EDR Contact: 10/04/04

INDIAN RESERV: Indian Reservations
Source: USGS
Telephone: 202-208-3710
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 10/01/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 08/12/04
Date of Next Scheduled EDR Contact: 11/08/04

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 07/06/04
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 06/14/04
Date of Next Scheduled EDR Contact: 09/13/04

RMP: Risk Management Plans
Source: Environmental Protection Agency
Telephone: 202-564-8600
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/27/04
Database Release Frequency: Varies

Date of Last EDR Contact: 08/23/04
Date of Next Scheduled EDR Contact: 11/22/04

FUDS: Formerly Used Defense Sites
Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/03
Database Release Frequency: Varies

Date of Last EDR Contact: 07/06/04
Date of Next Scheduled EDR Contact: 10/04/04

ODI: Open Dump Inventory
Source: Environmental Protection Agency
Telephone: 800-424-9346
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/23/95
Date of Next Scheduled EDR Contact: N/A

UMTRA: Uranium Mill Tailings Sites
Source: Department of Energy
Telephone: 505-845-0011
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 04/22/04
Database Release Frequency: Varies

Date of Last EDR Contact: 06/21/04
Date of Next Scheduled EDR Contact: 09/20/04

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 06/07/04
Date of Next Scheduled EDR Contact: 09/06/04

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-566-0250
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/02
Database Release Frequency: Annually

Date of Last EDR Contact: 06/22/04
Date of Next Scheduled EDR Contact: 09/20/04

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 06/07/04
Date of Next Scheduled EDR Contact: 09/06/04

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-564-2501

Date of Government Version: 04/13/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/21/04
Date of Next Scheduled EDR Contact: 09/20/04

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-5008
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/01
Database Release Frequency: Annually

Date of Last EDR Contact: 07/20/04
Date of Next Scheduled EDR Contact: 10/18/04

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-564-2501
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/13/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/21/04
Date of Next Scheduled EDR Contact: 09/20/04

STATE OF NORTH CAROLINA ASTM STANDARD RECORDS

SHWS: Inactive Hazardous Sites Inventory
Source: Department of Environment, Health and Natural Resources
Telephone: 919-733-2801
State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 04/15/04
Date Made Active at EDR: 05/26/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/15/04
Elapsed ASTM days: 41
Date of Last EDR Contact: 07/12/04

SWF/LF: List of Solid Waste Facilities
Source: Department of Environment and Natural Resources
Telephone: 919-733-0692
Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 07/27/04
Date Made Active at EDR: 08/31/04
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 07/27/04
Elapsed ASTM days: 35
Date of Last EDR Contact: 07/26/04

LUST: Incidents Management Database
Source: Department of Environment and Natural Resources
Telephone: 919-733-1315
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 06/04/04
Date Made Active at EDR: 07/09/04
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 06/08/04
Elapsed ASTM days: 31
Date of Last EDR Contact: 06/08/04

UST: Petroleum Underground Storage Tank Database
Source: Department of Environment and Natural Resources
Telephone: 919-733-1308
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 06/21/04
Date Made Active at EDR: 07/12/04
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 06/23/04
Elapsed ASTM days: 19
Date of Last EDR Contact: 06/11/04

OLI: Old Landfill Inventory
Source: Department of Environment & Natural Resources
Telephone: 919-733-4996

Date of Government Version: 04/05/04
Date Made Active at EDR: 05/26/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 04/28/04
Elapsed ASTM days: 28
Date of Last EDR Contact: 08/25/04

VCP: Responsible Party Voluntary Action Sites
Source: Department of Environment and Natural Resources
Telephone: 919-733-4996

Date of Government Version: 07/14/04
Date Made Active at EDR: 08/16/04
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 07/15/04
Elapsed ASTM days: 32
Date of Last EDR Contact: 07/12/04

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 4
Telephone: 404-562-9424

Date of Government Version: 10/22/03
Date Made Active at EDR: 01/09/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 12/19/03
Elapsed ASTM days: 21
Date of Last EDR Contact: 08/23/04

STATE OF NORTH CAROLINA ASTM SUPPLEMENTAL RECORDS

HSDS: Hazardous Substance Disposal Site
Source: North Carolina Center for Geographic Information and Analysis
Telephone: 919-733-2090
Locations of uncontrolled and unregulated hazardous waste sites. The file includes sites on the National Priority List as well as those on the state priority list.

Date of Government Version: 06/21/95
Database Release Frequency: Biennially
Date of Last EDR Contact: 08/30/04
Date of Next Scheduled EDR Contact: 11/29/04

AST: AST Database
Source: Department of Environment and Natural Resources
Telephone: 919-715-6170
Facilities with aboveground storage tanks that have a capacity greater than 21,000 gallons.

Date of Government Version: 01/09/04
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 07/19/04
Date of Next Scheduled EDR Contact: 10/18/04

LUST TRUST: State Trust Fund Database
Source: Department of Environment and Natural Resources
Telephone: 919-733-1315
This database contains information about claims against the State Trust Funds for reimbursements for expenses incurred while remediating Leaking USTs.

Date of Government Version: 08/06/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/10/04
Date of Next Scheduled EDR Contact: 11/08/04

DRYCLEANERS: Drycleaning Sites
Source: Department of Environment & Natural Resources
Telephone: 919-733-2801
Potential and known drycleaning sites, active and abandoned, that the Drycleaning Solvent Cleanup Program has knowledge of and entered into this database.

Date of Government Version: 05/19/04
Database Release Frequency: Varies

Date of Last EDR Contact: 07/19/04
Date of Next Scheduled EDR Contact: 10/18/04

IMD: Incident Management Database
Source: Department of Environment and Natural Resources
Telephone: 919-733-1315
Groundwater and/or soil contamination incidents

Date of Government Version: 06/15/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/27/04
Date of Next Scheduled EDR Contact: 10/25/04

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

BROWNFIELDS DATABASES

Brownfields: Brownfields Projects Inventory
Source: Department of Environment and Natural Resources
Telephone: 919-733-4996
A brownfield site is an abandoned, idled, or underused property where the threat of environmental contamination has hindered its redevelopment. All of the sites in the inventory are working toward a brownfield agreement for cleanup and liabitliy control.

Date of Government Version: 03/31/04
Database Release Frequency: Varies

Date of Last EDR Contact: 08/03/04
Date of Next Scheduled EDR Contact: 11/01/04

VCP: Responsible Party Voluntary Action Sites
Source: Department of Environment and Natural Resources
Telephone: 919-733-4996

Date of Government Version: 07/14/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/12/04
Date of Next Scheduled EDR Contact: 10/11/04

INST CONTROL: No Further Action Sites With Land Use Restrictions Monitoring
Source: Department of Environment, Health and Natural Resources
Telephone: 919-733-2801

Date of Government Version: 07/14/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/12/04
Date of Next Scheduled EDR Contact: 10/11/04

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: N/A
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Child Care Facility List
Source: Department of Health & Human Services
Telephone: 919-662-4499

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

BELEWS CREEK
3195 PINE HALL RD
BELEWS CREEK, NC 27052

TARGET PROPERTY COORDINATES

Latitude (North):	36.275002 - 36° 16' 30.0"
Longitude (West):	80.056900 - 80° 3' 24.8"
Universal Tranverse Mercator:	Zone 17
UTM X (Meters):	584706.4
UTM Y (Meters):	4014662.0
Elevation:	790 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

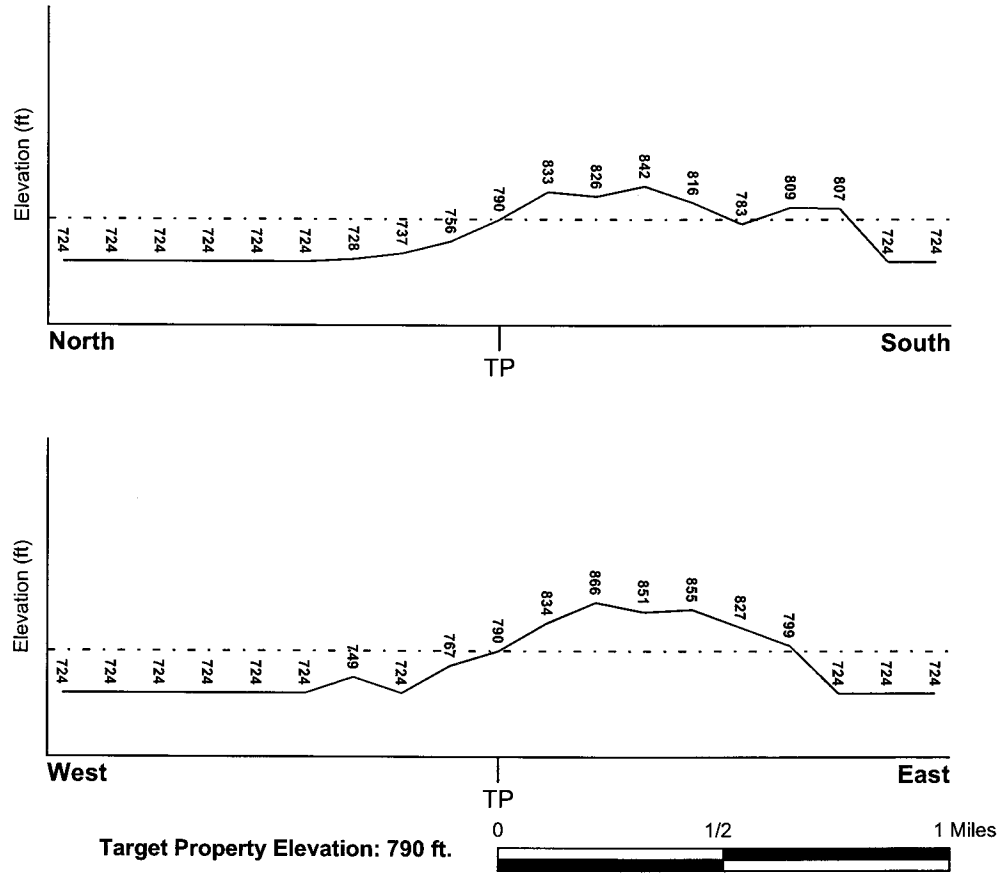
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	36080-C1 BELEWS LAKE, NC
General Topographic Gradient:	General WNW
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
STOKES, NC	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
BELEWS LAKE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Paleozoic
System:	Pennsylvanian
Series:	Felsic paragneiss and schist
Code:	mm1 *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Metamorphic Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	PACOLET
Soil Surface Texture:	fine sandy loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	3 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 6.50 Min: 4.50
2	3 inches	29 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
3	29 inches	52 inches	clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
4	52 inches	70 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: clay loam
gravelly - sandy loam
sandy loam
loam

Surficial Soil Types: clay loam
gravelly - sandy loam
sandy loam
loam

Shallow Soil Types: clay
sandy clay loam
silt loam
clay loam
silty clay loam

Deeper Soil Types: fine sandy loam
weathered bedrock

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A3	NC0285495	1/8 - 1/4 Mile WNW

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

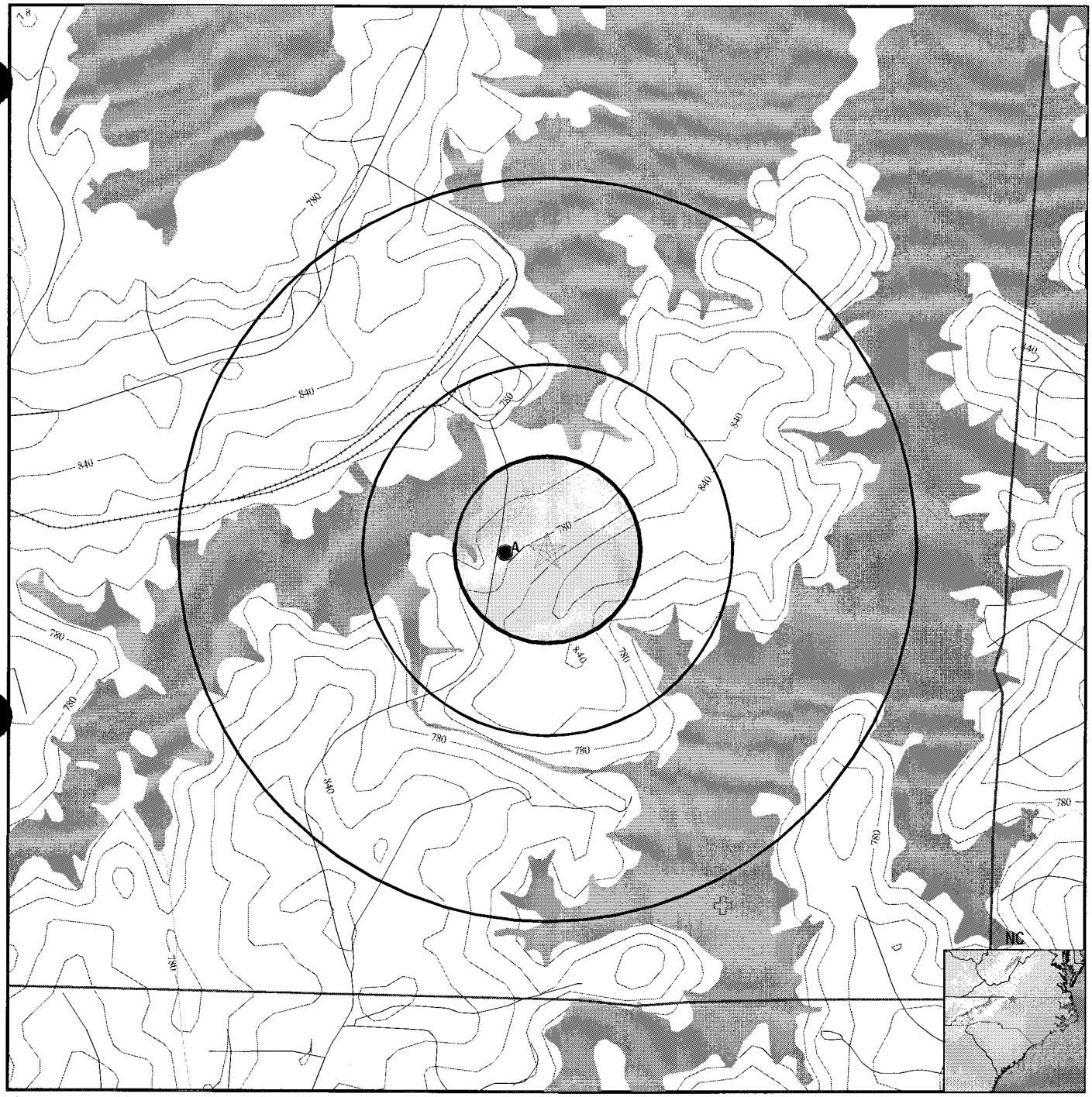
MAP ID	WELL ID	LOCATION FROM TP
A1	NCWS005098	0 - 1/8 Mile West
A2	NCWS005097	1/8 - 1/4 Mile WSW

OTHER STATE DATABASE INFORMATION

NORTH CAROLINA NATURAL HERITAGE ELEMENT OCCURRENCES

ID	Class
NC50006460	Animal

PHYSICAL SETTING SOURCE MAP - 01277555.1r



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- Wildlife Areas
- Natural Areas
- Rare & Endangered Species

TARGET PROPERTY:	Belews Creek	CUSTOMER:	Duke Power Company
ADDRESS:	3195 Pine Hall Rd	CONTACT:	Ralph Roberts
CITY/STATE/ZIP:	Belews Creek NC 27052	INQUIRY #:	01277555.1r
LAT/LONG:	36.2750 / 80.0569	DATE:	September 28, 2004 2:57 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
A1 **West** **0 - 1/8 Mile** **Lower**	**NC WELLS**	**NCWS005098**

Site Name:	WELL #2		
PWS ID:	0285495	Source code:	RW2
City:	WALNUT COVE		
County:	Stokes		
Latitude:	361630.21	Longitude:	800330.967
Availability:	Permanent		
Type:	Ground	Depth:	400
Owner:	DUKE ENERGY CORPORATION		

A2 **WSW** **1/8 - 1/4 Mile** **Lower**	**NC WELLS**	**NCWS005097**

Site Name:	WELL #1		
PWS ID:	0285495	Source code:	RW1
City:	WALNUT COVE		
County:	Stokes		
Latitude:	361627.03	Longitude:	800332.4
Availability:	Permanent		
Type:	Ground	Depth:	900
Owner:	DUKE ENERGY CORPORATION		

A3 **WNW** **1/8 - 1/4 Mile** **Lower**	**FRDS PWS**	**NC0285495**

PWS ID:	NC0285495	PWS Status:	Active
Date Initiated:	7706	Date Deactivated:	Not Reported
PWS Name:	DUKE POWER-BELEWS CREEK STEAM WALNUT COVE, NC 27052		
Addressee / Facility:	System Owner/Responsible Party JIM BURNETTE OR MANAGER NOW PO BOX 557 WALNUT COVE, NC 27052		
Addressee / Facility:	System Owner/Responsible Party DUKE POWER COMPANY 13339 HAGERS FERRY RD HUNTERSVILLE, NC 28078		
Facility Latitude:	36 16 31	Facility Longitude:	080 03 34
City Served:	WALNUT COVE		
Treatment Class:	Treated	Population:	00000181

PWS currently has or had major violation(s) or enforcement: Yes

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

VIOLATIONS INFORMATION:

Violation ID:	9400419	Source ID:	000	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	10/31/93	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Routine Major (TCR)				
Contaminant:	COLIFORM (TCR)				
Vio. Awareness Date:	111593				

Violation ID:	9408781	Source ID:	Not Reported	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	12/31/93	Vio. Period:	003 Months
Num required Samples:	000	Number of Samples Taken:		000	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Regular				
Contaminant:	NITRATE				
Vio. Awareness Date:	061594				

ENFORCEMENT INFORMATION:

System Name:	DUKE POWER-BELEWS CREEK ST		
Violation Type:	Monitoring, Routine Major (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1999-10-01 - 1999-12-31	Analytical Value:	0000000.000000000
Violation ID:	0004090	Enforcement ID:	0007581
Enforcement Date:	2000-02-04	Enf. Action:	State Formal NOV Issued

System Name:	DUKE POWER-BELEWS CREEK ST		
Violation Type:	Monitoring, Routine Major (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1999-10-01 - 1999-12-31	Analytical Value:	0000000.000000000
Violation ID:	0004090	Enforcement ID:	0007582
Enforcement Date:	2000-02-04	Enf. Action:	State Public Notif Requested

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance		Database	EDR ID Number
		NC_NHEO	**NC50006460**

GIS ID: 212410
Classification by Type: Animal
Occurrence Status: Extant

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: NC Radon

Radon Test Results

County	Result Type	Total Sites	Avg pCi/L	Range pCi/L
STOKES	Statistical	12	1.43	0.20-3.60
STOKES	Non-Statistical	120	2.69	0.00-15.30

Federal EPA Radon Zone for STOKES County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 27052

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.400 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

NC Natural Areas: Significant Natural Heritage Areas
Source: Center for Geographic Information and Analysis
Telephone: 919-733-2090
A polygon converage identifying sites (terrestrial or aquatic that have particular biodiversity significance. A site's significance may be due to the presenceof rare species, rare or hight quality natural communities, or other important ecological features.

NC Game Lands: Wildlife Resources Commission Game Lands
Source: Center for Geographic Information and Analysis
Telephone: 919-733-2090
All publicly owned game lands managed by the North Carolina Wildlife Resources Commission and as listed in Hunting and Fishing Maps.

NC Natural Heritage Sites: Natural Heritage Element Occurrence Sites
Source: Center for Geographic Information and Analysis
Telephone: 919-733-2090
A point coverage identifying locations of rare and endangered species, occurrences of exemplary or unique natural ecosystems (terrestrial or aquatic), and special animal habitats (e.g., colonial waterbird nesting sites).

North Carolina Public Water Supply Wells
Source: Department of Environmental Health
Telephone: 919-715-3243

RADON

State Database: NC Radon
Source: Department of Environment & Natural Resources
Telephone: 919-733-4984
Radon Statistical and Non Statiscal Data

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Attachment 7

Letter from Stokes County Planning and Community Development Department dated November 9, 2004

PLANNING AND COMMUNITY
DEVELOPMENT DEPARTMENT
P.O. Box 20 • Danbury, NC 27016 • (910) 593-2811 • fax (910) 593-5434

Mr. Allen Stowe
Duke Power Company
526 South Church St.
Interoffice – EC11E
Charlotte, NC 28202

November 9, 2004

Dear Mr. Stowe:

This letter is to inform you that the property owned by Duke Power on which the Belews Creek Steam Station is located is zoned M-1 (Light Manufacturing). This is the proper zoning classification for the power plant and its related facilities. After reviewing NCGS 130A-294 (bl) and NCAC 15A 13B .0504 (1) (e) (ii), it is determined that the proposed FGD landfill on Duke Power's property located off of Craig Rd. will meet the applicable requirements of the Stokes County Zoning Ordinance as a related use and facility in the production of electrical power by the Belews Creek Steam Station. This letter will serve as determination of consistency with the Stokes County Zoning Ordinance for this proposed site.

Should you have any questions please do not hesitate to contact me at (336)-593-2408.

Sincerely,

David N. Sudderth

David N. Sudderth
Director of Planning & Community Dev.

RECEIVED
NOV 15 2004
EH & S

Attachment 8

NCDENR 401 Water Quality Certification

Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director
Division of Water Quality

September 8, 2005
DWQ# 05-1549
Stokes County

Mr. Ron Lewis
Duke Energy Corporation
Mail Code 13K, P. O. Box 1006
Charlotte, NC 28201-1006

APPROVAL of 401 Water Quality Certification with Additional Conditions

Dear Mr. Lewis:

Duke Energy Corporation has our approval, in accordance with the attached conditions, to place permanent fill in 114 linear feet of perennial stream and in 609 linear feet of intermittent stream in order to construct a railroad spur line to provide limestone to a flue gas desulfurization system at the Belews Creek Steam Station, located on Pine Hall Road near Walnut Cove in Stokes County, as described in your application received by the Division of Water Quality (DWQ) on August 30, 2005. After reviewing your application, we have determined that this fill is covered by General Water Quality Certification Number 3402, which can be viewed on our web site at http://h2o.enr.state.nc.us/ncwetlands. This Certification allows you to use Nationwide Permit Number 39 when it is issued by the U.S. Army Corps of Engineers. In addition, you should secure any other applicable federal, state or local permits before you proceed with your project, including (but not limited to) those required by Sediment and Erosion Control, Non-Discharge, and Water Supply Watershed regulations.

This approval is only valid for the purpose and design that you described in your application. If you change your project, you must notify us in writing and you may be required to send us a new application for a new certification. If the property is sold, the new owner must be given a copy of the Permit and approval letter and is thereby responsible for complying with all conditions. If total wetland fills for this project (now or in the future) exceed one acre, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h). **For this approval to be valid, you must follow the conditions listed in the attached certification, as well as the additional conditions listed below:**

1. The following impacts are hereby approved as long as all other specific and general conditions of this Certification are met. No other impacts, including incidental impacts, are approved:

	Amount Approved	Plan Location or Reference
Streams	723 linear feet	Streams as depicted on the "Wetland Survey for Belews Creek Steam Station" (Sheets 1 & 2) and on Figure 4 of the application attachment titled "Supporting Information"

North Carolina Division of Water Quality
Wetlands Certification Unit 1650 Mail Service Center Raleigh, NC 27699-1650 Phone (919) 733-1786 FAX (919) 733-2496
2321 Crabtree Blvd. Raleigh, NC 27604-2260 Internet http//:h2o.enr.state.nc.us/ncwetlands
Customer Service Number: 1-877-623-6748

2. Appropriate sediment and erosion control measures which equal or exceed those outlined in the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* (available from the Division of Land Resources at NCDENR regional offices or the central office), whichever is more appropriate, shall be designed, installed and maintained properly to assure compliance at all times with the North Carolina water quality standards that are applicable to Class C, waters as described in *15A NCAC 02B .0211 Fresh Surface Water Quality Standards For Class C Waters*. Such measures must equal or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. These measures must be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor owned and leased borrow pits, which are associated with this project.

3. Sediment and erosion control measures shall not be placed in wetlands or waters to the maximum extent practicable. If placement of sediment and erosion control measures in wetlands or waters is unavoidable, they shall be removed and the natural grade restored within six months of the date that the project is completed or, if applicable, within six months of the date that the project is released by the North Carolina Division of Land Resources.

4. No waste, spoil, solids, or fill of any kind shall occur in wetlands, waters, or riparian areas beyond the footprint of the impacts depicted in the Pre-Construction Notification. All construction activities, including the design, installation, operation, and maintenance of sediment and erosion control "Best Management Practices" shall be performed so that no violations of state water quality standards, statutes, or rules occur.

5. Where riprap is required for energy dissipation and scour protection, it shall be limited to the minimum dimensions specified by appropriate engineering calculations. Riprap may only be used below the normal high water level. The original grade and elevation of the stream's cross-section must be maintained. Riprap placed in the stream bottom must be inserted into the bottom matrix to a depth sufficient to provide the thickness of riprap required for scour protection. The elevation of the stream bottom must not be increased by the placement of riprap. Placement of riprap must not result in destabilization of the streambed or banks upstream or downstream.

6. Energy dissipation and sheet flow must be provided for all discharges of stormwater before such discharges reach stream channels or wetlands.

7. All construction activities associated with this project shall minimize built-upon surface area, direct stormwater runoff away from surface waters, and incorporate best management practices to minimize water quality impacts. If concrete is used with any fill material, it shall not be allowed to come in contact with surface waters until it has cured. If any stormwater must be collected for discharge into a stream channel, it shall not enter the stream as a point source, but shall be slowed and discharged as sheet flow prior to entering the riparian buffer on either side of the stream.

8. Upon completion of the project, the Applicant shall complete and return the enclosed "Certificate of Completion" form to notify NCDWQ when all work included in the §401 Certification has been finished. This certificate should be sent to the 401/Wetlands Unit of the NC Division of Water Quality at the address listed on the form. *Along with the Certificate of Completion form, please send photographs upstream and downstream of each culvert site to document correct installation.*

If you do not accept any of the conditions of this certification, you may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. To ask for a hearing, send a written petition which conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. This certification and its conditions are final and binding unless you ask for a hearing.

This letter completes the review of the Division of Water Quality under Section 401 of the Clean Water Act. If you have any questions, please telephone Daryl Lamb in the DWQ Winston-Salem Regional Office at 336-771-4600 or Cyndi Karoly in the Central Office in Raleigh 919-733-9721.

Sincerely,

Alan W. Klimek, P.E.

AWK/cdl

Attachments

cc: Eric Alsmeyer, U. S. Army Corps of Engineers, Raleigh Regulatory Field Office
Winston-Salem DWQ Regional Office
Central Files
Wetlands/401 File Copy
Robert Siler, Environmental Resources of the Carolinas, 7550 Forest Oak Drive, Denver, NC 28037-8224

Certificate of Completion

DWQ Project No.: _____ **County:** _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Upon completion of all work approved within the 401 Water Quality Certification and Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1621 Mail Service Center, Raleigh, NC, 27699-1621. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

If this project was designed by a Certified Professional

I, _____, as a duly registered Professional _____ (i.e., Engineer, Landscape Architect, Surveyor, etc.) in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Registration No.: _____ Date: _____

WQC #3402

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBERS 18 (MINOR DISCHARGES) 39 (RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL DEVELOPMENTS), 41 (RESHAPING EXISTING DRAINAGE DITCHES), 42 (RECREATIONAL FACILITIES), 43 (STORMWATER MANAGEMENT FACILITIES) AND 44 (MINING ACTIVITIES), AND RIPARIAN AREA PROTECTION RULES (BUFFER RULES)

This General Certification is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15A NCAC 2H, Section .0500 and 15A NCAC 2B .0200 for the discharge of fill material to waters and adjacent wetland areas or to wetland areas that are not a part of the surface tributary system to interstate waters or navigable waters of the United States (i.e., isolated wetlands) as described in 33 CFR 330 Appendix A (B) (18, 39, 41, 42, 43 and 44) of the Corps of Engineers regulations (i.e., Nationwide Permit No. 39) and for the Riparian Area Protection Rules (Buffer Rules) in 15A NCAC 2B .0200. This Certification replaces Water Quality Certification Numbers 3106 and 3108 issued on February 11, 1997, and Water Quality Certification Number 3287 issued on June 1, 2000 and Water Quality Certification Number 3362 issued March 18, 2002. This WQC is rescinded when the Corps of Engineers re-authorizes Nationwide Permits 18, 39, 41, 42, 43 or 44 or when deemed appropriate by the Director of DWQ.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Conditions of Certification:

1. Enumerating and Reporting of Impacts:
   - Streams - Impacts to streams as determined by the Division of Water Quality shall be measured as length of the centerline of the normal flow channel. Permanent and/or temporary stream impacts shall be enumerated on the entire project for all impacts regardless of which 404 Nationwide Permits are used. Stream relocations and stream bed and/or bank hardening are considered to be permanent stream impacts. Any activity that results in a loss of use of stream functions including but not limited to filling, relocating, flooding, excavation, dredging and complete shading shall be considered stream impacts. Enumeration of impacts to streams shall include streams enclosed by bottomless culverts, bottomless arches or other spanning structures when a 404 Permit is used anywhere in a project unless the entire structure (including construction impacts) spans the entire bed and both banks of the stream, is only used for a road, driveway or path crossing, and is not mitered to follow the stream pattern. Impacts for dam footprints and flooding will count toward the threshold for stream impacts, but flooding upstream of the dam will not (as long as no filling, excavation, relocation or other modification of the existing stream dimension, pattern or profile occurs) count towards mitigation requirements. Any filling, excavation, relocation or other modification of the existing stream (other than flooding) must re-establish the same dimensions, patterns and profiles of the existing channel (or those of a stable reference reach if the existing channel is unstable) to the maximum extent practical.
   - Wetlands - Impacts to wetlands as determined by the Division of Water Quality shall be measured as area. Permanent and/or temporary wetland impacts shall be enumerated on the entire project for all impacts regardless of which 404 Nationwide Permits are used. Any activity that results in a loss of use of wetland functions including but not limited to filling, excavating, draining, and flooding shall be considered wetland impacts. Enumeration of impacts to wetlands shall include activities that change the hydrology of a wetland when a 404 Permit is used anywhere in a project.

- Lakes and Ponds – Impacts to waters other than streams and wetlands as determined by the Division of Water Quality shall be measured as area. Permanent and/or temporary water impacts shall be enumerated on the entire project for all impacts proposed regardless of which 404 Nationwide Permits are used. Any activity that results in a loss of use of aquatic functions including but not limited to filling and dredging shall be considered waters impacts.

Application Thresholds - Stream, wetland and water impacts that exceed any of the thresholds below require a complete application and written concurrence to use this Certification:

- Total stream impacts of greater or equal to 150 cumulative feet of stream length for the entire project require written notification to and approval by the Division of Water Quality, and/or
- Impacts to waters of equal to or greater than 1/3 of an acre require written notification to and approval by the Division of Water Quality, and/or
- Wetland impacts of greater or equal to 1/3 of an acre east of I-95 and 1/10 of an acre west of I-95 require written notification to and approval by the Division of Water Quality except as specified below. Any impacts to wetlands adjacent to waters designated as ORW, SA, WS-I, WS-II or Trout or are designated as a North Carolina or National Wild and Scenic River and wetlands classified as SWL and/or UWL as well as wetlands described in 15A NCAC 2H .0506 (e) require a complete application and written concurrence from the Division of Water Quality to use this Certification. These thresholds apply for the entire project regardless of the number of Nationwide Permits applicable to the Certification that are issued by the USACE for the project;
- Written notification to DWQ is required for all applications that propose to use Nationwide Permit 18. This notification requirement will be satisfied by providing two (2) copies of the PCN form to DWQ at the same time that the PCN form is sent to the US Army Corps of Engineers. A formal application and fee is not required unless DWQ decides that an Individual Certification will be required for the project. In this case, the applicant will be notified in writing from DWQ within 30 days of the receipt of the written notification.
- Proposed fill or substantial modification of any amount of wetlands classified in accordance with 15A NCAC 2B .0101(e)(7) as Unique Wetlands (UWL) shall require written concurrence from the Division of Water Quality;

2. Impacts to any stream length in the Neuse, Tar-Pamlico or Randleman River Basins (or any other major river basins with Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) requires written concurrence for this Certification from DWQ in accordance with 15A NCAC 2B.0200. Activities listed as "exempt" from these rules do not need to apply for written concurrence under this Certification. New development activities located in the protected 50-foot wide riparian areas (whether jurisdictional wetlands or not) within the Neuse and Tar-Pamlico River Basins shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B .0200. All new development shall be located, designed, constructed, and maintained to have minimal disturbance to protect water quality to the maximum extent practicable through the use of best management practices;

3. Irrespective of other application thresholds in this General Certification, all impacts to perennial waters and their associated buffers require written approval from DWQ since such impacts are allowable as provided in 15A NCAC 2B. 0212 (WS-I), 2B .0213 (WS-II), 2B .0214 (WS-III) and 2B .0215 (WS-IV). Only water dependent activities, public projects and structures with diminimus increases in impervious surfaces will be allowed as outlined in those rules. All other activities require a variance from the delegated local government and/or the NC Environmental Management Commission before the 401 Water Quality Certification can be processed. In addition, a 30 foot wide vegetative buffer for low density development or a 100 foot wide vegetative buffer for high density development

must be maintained adjacent to all perennial waters except for allowances as provided under the Water Supply Watershed Protection Rules. For the purposes of this condition, perennial waters are defined as those shown as perennial waters on the most recent USGS 1:24,000 topographic map or as otherwise determined by local government studies;

4. Additional site-specific stormwater management requirements may be added to this Certification at DWQ's discretion on a case by case basis for projects that have or are anticipated to have impervious cover of greater than 30 percent. Site-specific stormwater management shall be designed to remove 85% TSS according to the latest version of DWQ's Stormwater Best Management Practices manual at a minimum.

   Additionally, in watersheds within one mile and draining to 303(d) listed waters, as well as watersheds that are classified as nutrient sensitive waters (NSW), water supply waters (WS), trout waters (Tr), high quality waters (HQW), and outstanding resource waters (ORW), the Division shall require that extended detention wetlands, bio-retention areas, and ponds followed by forested filter strips (designed according to latest version of the NC DENR Stormwater Best Management Practices Manual) be constructed as part of the stormwater management plan when a site-specific stormwater management plan is required.

   For streams classified as Water Supply, High Quality Waters and Outstanding Resource Waters, post-construction, on-site stormwater management shall be required as appropriate and as outlined in 15A NCAC 2B .0104(m) and 2H .1000 to .1007, respectively, in addition to that required in this General Certification.

   Alternative designs may be requested by the applicant and will be reviewed on a case-by-case basis by the Division of Water Quality.

   Approval of stormwater management plans by the Division of Water Quality's other existing state stormwater programs including appropriate local programs are sufficient to satisfy this Condition as long as the stormwater management plans meet or exceed the design requirements specified in this condition. This condition applies unless more stringent requirements are in effect from other state water quality programs.

   - Unless specified otherwise in the approval letter, the final, written stormwater management plan shall be approved in writing by the Division of Water Quality's Wetlands Unit before the impacts specified in this Certification occur.
   - The facilities must be designed to treat the runoff from the entire project, unless otherwise explicitly approved by the Division of Water Quality.
   - Also, before any permanent building or other structure is occupied at the subject site, the facilities (as approved by the Wetlands Unit) shall be constructed and operational, and the stormwater management plan (as approved by the Wetlands Unit) shall be implemented.
   - The structural stormwater practices as approved by the Wetlands Unit as well as drainage patterns must be maintained in perpetuity.
   - No changes to the structural stormwater practices shall be made without written authorization from the Division of Water Quality.

5. Compensatory stream mitigation shall be required at a 1:1 ratio for not only perennial but also intermittent stream impacts that require application to DWQ in watersheds classified as ORW, HQW, Tr, WS-I and WS-II unless the project is a linear, publicly-funded transportation project, which has a 150-foot per-stream impact allowance;

6. In accordance with North Carolina General Statute Section 143-215.3D(e), any application for a 401 Water Quality Certification must include the appropriate fee. If a

project also requires a CAMA Permit, one payment to both agencies shall be submitted and will be the higher of the two fees;

7. In accordance with 15A NCAC 2H .0506 (h) compensatory mitigation may be required for impacts to 150 linear feet or more of streams and/or one acre or more of wetlands for an entire project. For linear public transportation projects, impacts equal to or exceeding 150 feet per stream may require mitigation. In addition, buffer mitigation may be required for any project with Riparian Area Protection Rules (Buffer Rules) in effect at the time of application for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A determination of buffer, wetland and stream mitigation requirements shall be made for any Certification for this Nationwide Permit. The most current design and monitoring protocols from DWQ shall be followed and written plans submitted for DWQ approval as required in those protocols. When compensatory mitigation is required for a project, the mitigation plans must be approved by DWQ in writing before the impacts approved by the Certification occur, unless otherwise specified in the approval letter. The mitigation plan must be implemented and/or constructed before any permanent building or structure on site is occupied. In the case of public road projects, the mitigation plan must be implemented before the road is opened to the travelling public. Please note that if a stream relocation is conducted as a stream restoration as defined in *The Internal Technical Guide for Stream Work in North Carolina* , April 2001, the restored length can be used as compensatory mitigation for the impacts resulting from the relocation;

8. For any project involving re-alignment of streams, a stream relocation plan must be included with the 401 application for written DWQ approval. Relocated stream designs should include the same dimensions, patterns and profiles as the existing channel (or a stable reference reach if the existing channel is unstable), to the maximum extent practical. The new channel should be constructed in the dry and water shall not be turned into the new channel until the banks are stabilized. Vegetation used for bank stabilization shall be limited to native woody species, and should include establishment of a 30 foot wide wooded and an adjacent 20 foot wide vegetated buffer on both sides of the relocated channel to the maximum extent practical. A transitional phase incorporating coir fiber and seedling establishment is allowable. Also, rip-rap, A-Jacks, concrete, gabions or other hard structures may be allowed if it is necessary to maintain the physical integrity of the stream, but the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage requested. If suitable stream mitigation is not practical on-site, then stream impact will need to be mitigated elsewhere. Please note that if a stream relocation is conducted as a stream restoration as defined in *The Internal Technical Guide for Stream Work in North Carolina* , April 2001, the restored length can be used as compensatory mitigation for the impacts resulting from the relocation;

9. Placement of culverts and other structures in waters, streams, and wetlands must be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. Design and placement of culverts including open bottom or bottomless arch culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in aggradation, degradation or significant changes in hydrology of wetlands or stream beds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium shall be maintained if requested to do so in writing by DWQ. Additionally, when roadways, causeways or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges must be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in aggradation, degradation or significant changes in hydrology of streams or wetlands;

10. That appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" whichever is more appropriate (available from the Division of Land Resources (DLR) in the DENR Regional or Central Offices) shall be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard;

11. All sediment and erosion control measures placed in wetlands and waters shall be removed and the original grade restored within two months after the Division of Land Resources has released the project;

12. That additional site-specific conditions may be added to projects proposed under this Certification in order to ensure compliance with all applicable water quality and effluent standards;

13. Measures shall be taken to prevent live or fresh concrete from coming into contact with waters of the state until the concrete has hardened;

14. If an environmental document is required, this Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse;

15. If this Certification is used to access building sites, all lots owned by the applicant must be buildable without additional fill beyond that explicitly allowed under other General Certifications. The applicant is required to provide evidence that the lots are buildable without requiring additional impacts to wetlands, waters or buffers if required to do so in writing by DWQ. For road construction purposes, this Certification shall only be utilized from natural high ground to natural high ground;

16. Deed notifications or similar mechanisms shall be placed on all lots with remaining jurisdictional wetlands and waters or areas within 50 feet of all streams and ponds. These mechanisms shall be put in place within 30 days of the date of issuance of the 401 Certification letter or the issuance of the 404 Permit (whichever is later). A sample deed notification format can be downloaded from the 401/Wetlands Unit web site at http://h2o.enr.state.nc.us/ncwetlands . DWQ shall be sent copies of all deed restrictions applied to these lots;

17. When written concurrence is required, the applicant is required to use the most recent version of the Certification of Completion form to notify DWQ when all work included in the 401 Certification has been completed;

18. Concurrence from DWQ that this Certification applies to an individual project shall expire three years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding Nationwide Permit 18, 39, 41, 42, 43 or 44, whichever is sooner.

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Non-compliance with or violation of the conditions herein set forth by a specific fill project may result in revocation of this Certification for the project and may also result in criminal and/or civil penalties.

The Director of the North Carolina Division of Water Quality may require submission of a formal application for Individual Certification for any project in this category of activity that requires written concurrence under this certification, if it is determined that the project is likely to have a significant adverse effect upon water quality or degrade the waters so that existing uses of the wetland or downstream waters are precluded.

Public hearings may be held for specific applications or group of applications prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Quality.

Effective date: March 2003

DIVISION OF WATER QUALITY

By

Alan W. Klimek, P.E.

Director

Drawing Under Seperate Cover