MITIGATION PLAN

SUMMIT SEEP WETLAND MITIGATION SITE
DAVIDSON COUNTY, NORTH CAROLINA

(RFP #16-002835)
(Contract #003244)
FULL DELIVERY PROJECT
TO PROVIDE WETLAND MITIGATION
IN THE YADKIN RIVER BASIN
CATALOGING UNIT 03040103

Prepared for:

NC Department of Environment and Natural Resources
Ecosystem Enhancement Program
1652 Mail Service Center
Raleigh, NC 27699-1652

February 2011

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Prepared for:

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Prepared by:

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And

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February 2011

EXECUTIVE SUMMARY

This mitigation plan has been written in conformance with the requirements of the following:

- Federal rule for compensatory mitigation project sites as described in the Federal Register Title 33 Navigation and Navigable Waters Volume 3 Chapter 2 Section § 332.8 paragraphs (c)(2) through (c)(14).
- NCDENR Ecosystem Enhancement Program In-Lieu Fee Instrument signed and dated July 28, 2010

These documents govern NCEEP operations and procedures for the delivery of compensatory mitigation.

This mitigation report describes the **Summit Seep Wetland Mitigation Site** (Site) and is designed specifically to assist in fulfilling North Carolina Ecosystem Enhancement Program wetland restoration goals. The Site is located within 14-digit Cataloging Unit 03040103020010 approximately 5 miles southwest of Lexington, in western Davidson County (Figures 1 and 2). The Site encompasses approximately 6.9 acres of land used as pasture. Within the Site, 4.1 acres of nonriparian hydric soil have been cleared and ditched. A total of 4.0 Nonriparian Wetland Mitigation Units (WMUs) are being offered, as depicted in the following table.

	Acres	**Percentage of WMUs**	**Nonriparian WMUs**
Nonriparian Wetland Restoration	3.914	98%	3.914
Nonriparian Wetland Enhancement	0.186	2%	0.093
Total	**4.1**	**Total Nonriparian WMUs**	**4.0**

The Site is encompassed within one parcel owned by the Parson family (Hillcrest Farms). The Site is situated upslope from the western edge of the floodplain of an unnamed tributary to North Potts Creek. The 6.9-acre Site has been cleared of native forest vegetation, ditched and drained to remove groundwater hydrology from a spring and hillside seeps on the western edge of the Site, and is currently utilized as pasture. Based on preliminary analyses, the Site is best suited for the removal of livestock and restoration of a natural, nonriparian wetland system, by filling ditches and diverting hydrology from a spring across the Site.

The Site is located upslope from an unnamed tributary to North Potts Creek, which has been assigned a Best Usage Classification of **C** and is Fully Supporting its intended uses. The Site is located within **Targeted Local Watershed** 03040103020010.

The primary goals of this nonriparian wetland restoration project focus on improving water quality, enhancing flood attenuation, and restoring wildlife habitat and will be accomplished by the following.

1. Remove nonpoint sources of pollution associated with vegetation maintenance including a) the cessation of broadcasting fertilizer, pesticides, and other agricultural chemicals into and adjacent to Site drainage ditches and b) providing a vegetated wetland to aid in the treatment of runoff.
2. Restore wetland hydroperiods that satisfy wetland jurisdictional requirements and approximate the Site's natural range of variation.
3. Promote floodwater attenuation by filling ditches and enhancing groundwater storage capacity.
4. Restore and reestablish natural community structure, habitat diversity, and functional continuity.
5. Enhance and protect the Site's full potential of wetland functions and values in perpetuity.

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Summit Seep Wetland Mitigation Plan
Davidson County, North Carolina

1. RESTORATION PROJECT GOALS AND OBJECTIVES

The 2009 Yadkin Pee-Dee River Basin RBRP identified HUC 03040103020010 as a Targeted Local Watershed (TLW) (2009 *Yadkin Pee-Dee River Basin RBRP*, NCEEP 2009). The watershed is characterized by approximately 21 percent agricultural use with approximately 12 percent of the stream length located in this watershed identified as impaired for aquatic life according to 2006 DWQ 303(d) data.

The 2009 *Yadkin Pee-Dee River Basin RBRP* identified stormwater runoff and other development impacts as likely contributors to turbidity and chlorophyll violations within this TLW. The Summit Seep Wetland Mitigation Project was identified as a nonriparian wetland restoration opportunity to improve water quality, enhance flood attenuation, and to restore wildlife habitat within the TLW.

The project goals address stressors identified in the TLW and include the following:

- Remove nonpoint sources of pollution associated with vegetation maintenance including:
  a. the cessation of broadcasting fertilizer, pesticides, and other agricultural chemicals into and adjacent to Site drainage ditches; and
  b. providing a vegetated wetland to aid in the treatment of runoff.
- Restore wetland hydroperiods that satisfy wetland jurisdictional requirements and approximate the Site's natural range and variation.
- Promote floodwater attenuation by filling ditches and enhancing groundwater storage capacity.
- Restore and reestablish natural community structure, habitat diversity, and functional continuity.
- Enhance and protect the Site's full potential of wetland functions and values in perpetuity.

The project goals will be addressed through the following project objectives:

- Providing 4.0 Nonriparian Wetland Mitigation Units, as calculated in accordance with the requirements stipulated in RFP #16-002835, by restoring 3.914 acres and enhancing 0.186 acres of nonriparian wetland. This will be accomplished by filling ditches, removing spoil castings, excluding livestock, redirecting hydrology from a spring across the Site, and planting with native forest vegetation.
- Protecting the Site in perpetuity with a conservation easement.

2. SITE SELECTION

2.1 Directions to Site

The Site is located within 14-Digit Cataloging Unit 03040103020010 approximately 5 miles southwest of Lexington, in western Davidson County. From Raleigh, take I-40 W to I-85 S. Continue on I-85 S until exit 88. Turn left onto NC 47 E. Continue on NC 47 E then make a right onto Sam Sharpe Road. The Site is located approximately 1.4 miles down Sam Sharpe Road on the left.

2.2 Site Selection

The Site is encompassed within one parcel utilized by livestock as pasture. The Site includes 6.9 acres of land situated upslope from the western edge of an unnamed tributary to North Potts Creek floodplain. The Site has been cleared of native forest vegetation, ditched and drained to remove groundwater

hydrology from a spring and hillside seeps on the western edge of the Site, and is currently utilized as pasture (Figure 4).

2.3 Physiography and Land Use

The Site is located in the Southern Outer Piedmont physiographic province of North Carolina. Regional physiography is characterized by dissected irregular plains, some low rounded hills and ridges, and low to moderate gradient streams with mostly cobble, gravel, and sandy substrates (Griffith et al. 2002). Elevations within the Site range from 690-720 feet National Geodetic Vertical Datum (USGS Lexington West, NC 7.5-minute topographic quadrangle).

2.4 Water Quality

The Site is located within the Yadkin River Basin in 14-digit United States Geological Survey (USGS) Cataloging Unit 03040103020010 of the South Atlantic/Gulf Region (North Carolina Division of Water Quality [NCDWQ] subbasin number 03-07-04). The Site is located upslope from an unnamed tributary to North Potts Creek, which has been assigned Stream Index Number 12-112, a Best Usage Classification of **C,** and is Fully Supporting its intended uses (NCDWQ 2010b). Streams classified as **C** are suitable for aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. Secondary recreation includes wading, boating, and other uses not involving human body contact with waters on an organized or frequent basis.

North Potts Creek and its tributaries are not listed on the NCDWQ final 2006 or draft 2008 and 2010 303(d) lists (NCDWQ 2007, 2008, 2010a). The Site is located within Targeted Local Watershed 03040103020010 (NCEEP 2009).

2.5 Soil and Land Form

Soils that occur within the Site, according to the *Soil Survey of Davidson County, North Carolina* (USDA 1994) are depicted in Figure 3 and are described in Table 1.

Restorable portions of the Site are predominantly underlain by soils of the Aremenia series. Armenia soils are "Class A" hydric soils characterized by a dark gray matrix. Soils have been impacted by land clearing, ditching, and hoof shear from livestock.

Table 1. NRCS Soils Mapped within the Site

Soil Series	Hydric Status	Family	Description
Armenia	Class A	*Typic Argioaquolls*	This series consists of nearly level, poorly drained, slowly permeable soils on broad flats or in depressions on uplands, at or near the head of drainage ways, or on floodplains. The seasonal high water table occurs at a depth of 0.5-1.5 feet.
Davidson	Non-Hydric	*Rhodic Kandiudults*	This series consists of well-drained, moderately permeable soils on side slopes in the uplands. The seasonal high water table occurs at a depth of more than 6 feet.

Detailed soil mapping conducted by licensed soil scientists in February 2010 indicate that 4.1 acres of the Site is currently underlain by nonriparian hydric soils of the Armenia Series (Figure 4).

2.6 Protected Species

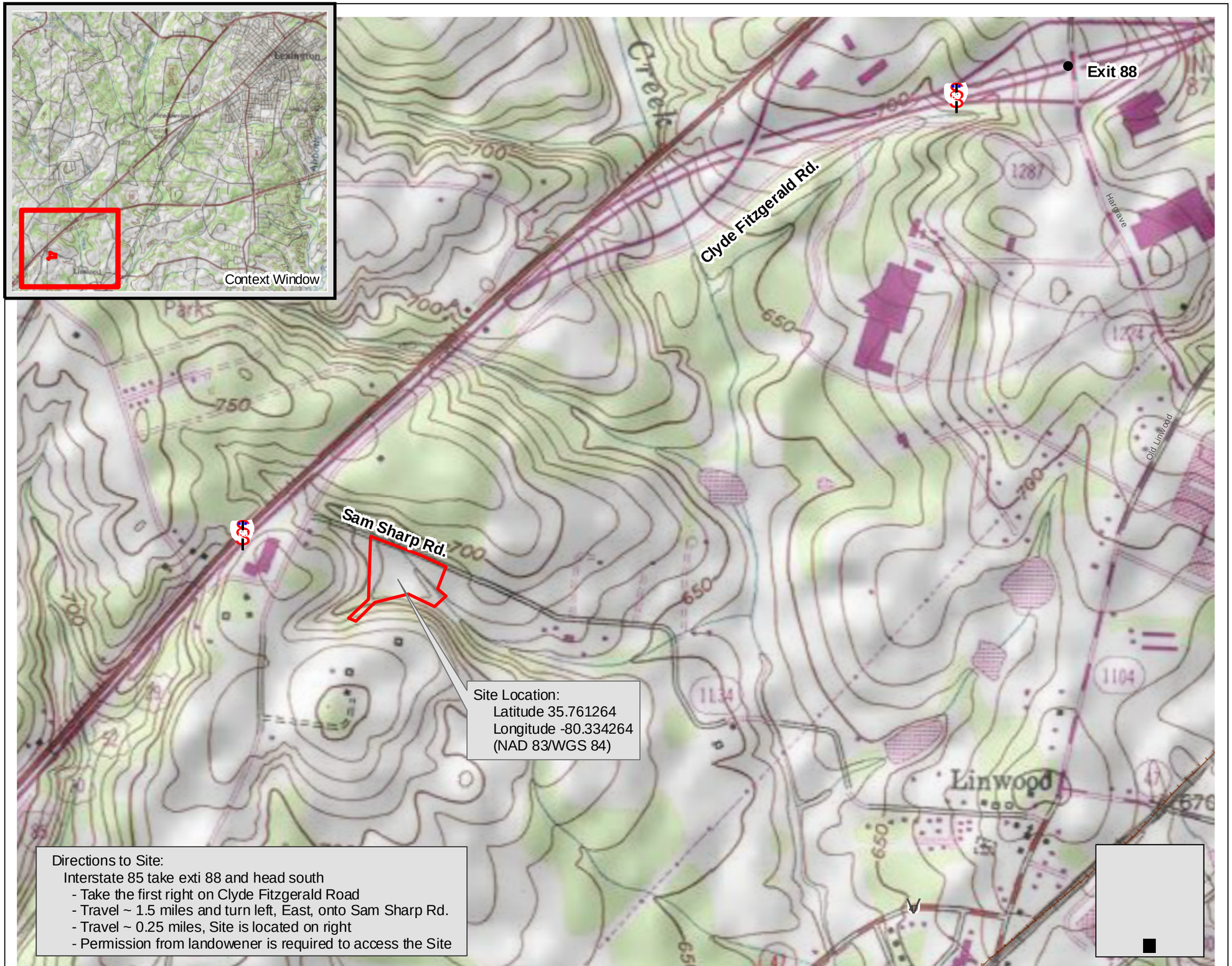
Based on the most recently updated county-by-county database of federally listed species in North Carolina as posted by the United States Fish and Wildlife Service (USFWS) at http://nc-es.fws.gov/es/countyfr.html, three federally protected species are listed for Davidson County. Table 2 lists the federally protected species and indicates if potential habitat exists within the Site for each species.

Table 2. Federally Protected Species for Davidson County

Common Name	Scientific Name	Status*	Habitat Present Within Site
Vertebrates			
Bald eagle	*Haliaeetus leucocephalus*	BGPA	No
Bog turtle	*Clemmys muhlenbergii*	Threatened (S/A)	Yes
Plants			
Schweinitz's sunflower	*Helianthus schweinitzii*	Endangered	Yes

*Endangered = a taxon "in danger of extinction throughout all or a significant portion of its range"; Threatened = a taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range"; Threatened (S/A) = a species that is threatened due to similarity of appearance with other rare species and is listed for its protection; these species are not biologically endangered or threatened and are not subject to Section 7 consultation.

No habitat is present within or adjacent to the Site for bald eagle. Potential habitat occurs within the Site for bog turtle; however, this species is threatened due to similarity of appearance with another rare species and is not subject to Section 7 consultation. Habitat for Schweinitz's sunflower is present throughout the Site in the form of pasture and disturbed forest edges. Surveys for Schweinitz's sunflower were completed during the optimal survey window between late August and October prior to Site implementation and no species were found. No Designated Critical Habitat for federally protected species is documented to occur in Davidson County.



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Notes & Revisons

Project:

Summit Seep
Non-Riparian Wetland
Restoration Site

Davidson County
North Carolina

Title:

Site Vicinity

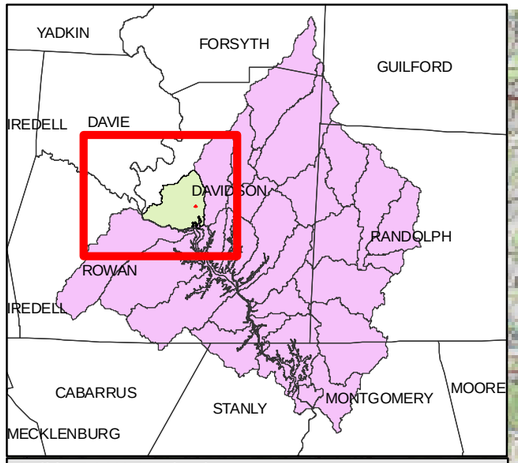
Scale: 1 : 10,000

Date: 11.11.2010

EEP Project No.:

FIGURE NO.

1



Yadkin 04 Watershed

Davie County

Davidson County

Site is Located in 14-Digit Hydrologic Unit:
0304103020010

Rowan County

Salisbury

A

0 0.5 1 2 3 4 5
Miles

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Raleigh, NC 27604

Notes & Revisons

Project:
Summit Seep
Non-Riparian Wetland
Restoration Site

Davidson County
North Carolina

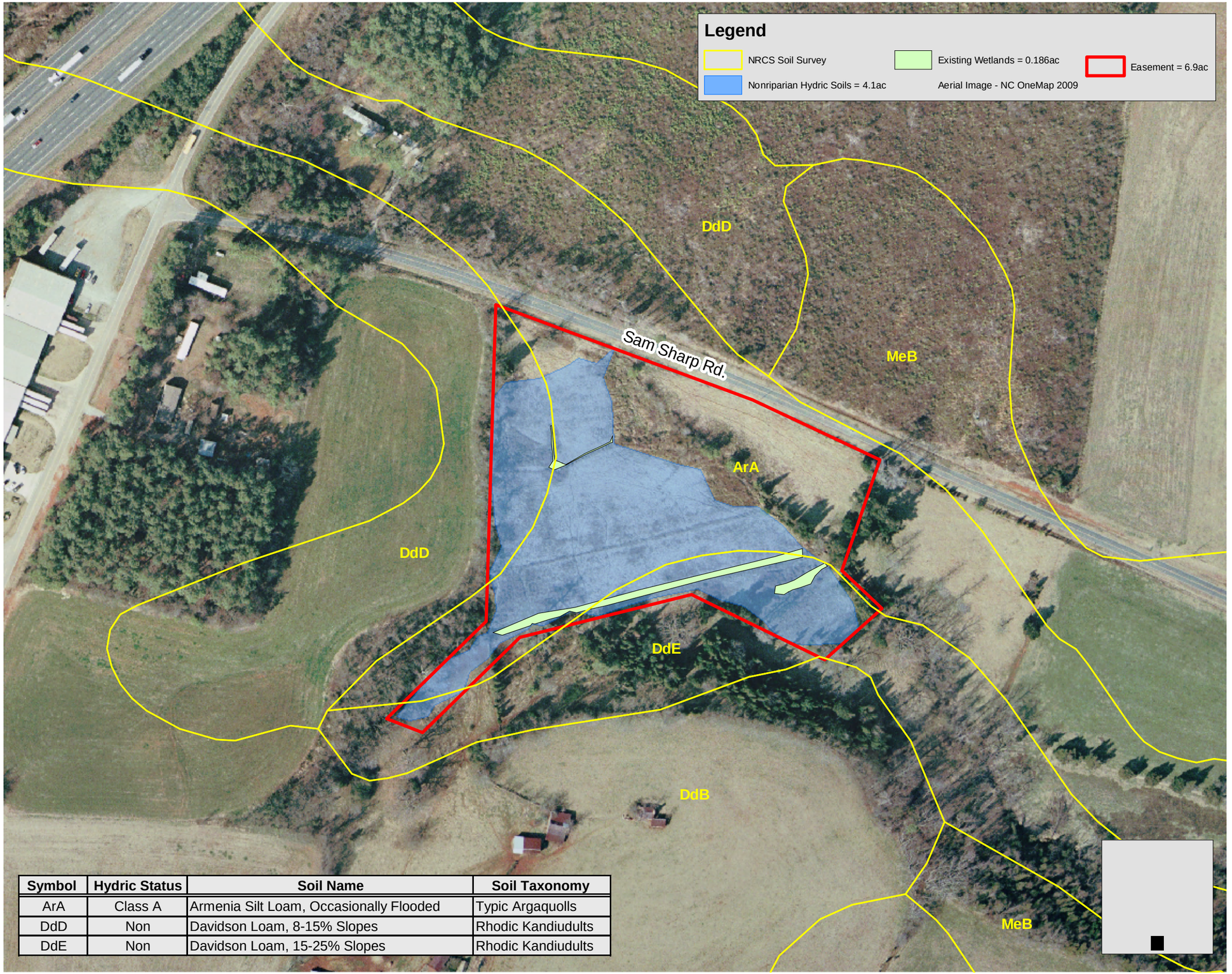
Title:
Hydrologic Unit Map

Scale: 1:100,000

Date: 11.11.2010

EEP Project No.:

FIGURE NO.
2



Symbol	Hydric Status	Soil Name	Soil Taxonomy
ArA	Class A	Armenia Silt Loam, Occasionally Flooded	Typic Argaquolls
DdD	Non	Davidson Loam, 8-15% Slopes	Rhodic Kandiudults
DdE	Non	Davidson Loam, 15-25% Slopes	Rhodic Kandiudults

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Notes & Revisons

Project:
Summit Seep
Non-Riparian Wetland
Restoration Site

Davidson County
North Carolina

Title:
NRCS Soil Survey

Scale: 1 : 2,000

Date: 11.11.2010

EEP Project No.:

FIGURE NO.
3

RESTORATION SYSTEMS | LLC

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Raleigh, NC 27604

Notes & Revisons

Project:
Summit Seep
Non-Riparian Wetland
Restoration Site

Davidson County
North Carolina

Title:
Existing Conditions

Scale: 1 : 2,000

Date: 11.11.2010

EEP Project No.:

FIGURE NO.
4

Figure 5. Site Photographs

Panoramic view of Site looking across the existing pasture to the Northeast.

Panoramic view of Site looking across the existing pasture, along the UT to North Plots Creek.

Persimmon sapling found in existing pasture.

Among many, a crawfish hole located on Site.

3. SITE PROTECTION INSTRUMENT

3.1 Site Protection Instrument Summary Information

The land required for the construction, management, and stewardship of this mitigation project includes the following parcel. The Site is currently not protected, but will be done so by the purchase and subsequent transfer of a conservation easement to the NCEEP during Task 2. Restoration Systems will await approval of Task 3 before this purchase and transfer is conducted.

Table 3. Site Parcel Information

	Landowner	PIN	County	Site Protection Instrument	Deed Book and Page Number	Acreage protected
Parcel A	Hillcrest Acres, LLC	6703-03-42-2822	Davidson		Book 1173 Pg. 875	6.9

When available, the recorded document will be provided. If the recorded document is not available, the template document will be provided.

All site protection instruments require 60-day advance notification to the Corps and the State prior to any action to void, amend, or modify the document. No such action shall take place unless approved by the State.

A site protection instrument figure will be completed once a final survey of the Site has been completed, after the conservation easement is purchased.

4. BASELINE INFORMATION

Table 4. Baseline Project Information

Project Information			
Project Name	Summit Seep		
County	Davidson		
Project Area (acres)	6.9		
Project Coordinates (latitude and longitude)	35.76130, 80.33430		
Project Watershed Summary Information			
Physiographic Province		Southern Outer Piedmont	
River Basin		Yadkin	
USGS Hydrologic Unit 8-digit	03040103	USGS Hydrologic Unit 14-digit	03040103020010
DWQ Sub-basin		03-07-04	
Project Drainage Area, Total Outfall (acres)		51.5	
Groundwater Treated by Site (acres)		35.6	
Project Drainage Area Percentage of Impervious Area		< 3%	
CGIA Land Use Classification		Cropland and Pasture	
Wetland Summary Information			
Parameters		**Wetland 1**	
Size of Wetland (acres)		4.1	
Wetland Type (non-riparian, riparian riverine or riparian non riverine)		Non-riparian	
Mapped Soil Series		Armenia silt loam	
Drainage class		Class A	
Soil Hydric Status		Hydric	
Source of Hydrology		Natural Seep	
Hydrologic Impairment		Ditches	
Native vegetation community		Low Elevation Seep	
Percent composition of exotic invasive vegetation		0%	
Regulatory Considerations			
Regulation	**Applicable?**	**Resolved?**	**Supporting Documentation**
Waters of the United States – Section 404	No		
Waters of the United States – Section 401	No		
Endangered Species Act	No		
Historic Preservation Act	No		
Coastal Zone Management Act [CZMA/Coastal Area Management Act (CAMA)]	No		
FEMA Floodplain Compliance	No		
Essential Fisheries Habitat	No		

5. DETERMINATION OF CREDITS

Mitigation credits presented in these tables are projections based upon site design. Upon completion of site construction the project components and credits data will be revised to be consistent with the as-built condition.

Table 5. Site Credit Determination

Summit Seep Wetland Mitigation Site, Davidson County, Contract # 003244									
Mitigation Credits									
	Stream		Riparian Wetland		Non-riparian Wetland		Buffer	Nitrogen Nutrient Offset	Phosphorous Nutrient Offset
Type	R	RE	R	RE	R	RE			
Totals					3.914	0.186			
Project Components									
Project Component -or- Reach ID	Stationing/Location		Existing Footage/Acreage		Approach (PI,PII etc.)		Restoration – or- Restoration Equivalent	Restoration Footage or Acreage	Mitigation Ratio
Non-riparian restoration	NA		3.914		NA		Restoration	3.914	1.0
Non-riparian enhancement	NA		0.186		NA		Enhancement	0.186	0.5
Component Summation									
Restoration Level	Stream (linear feet)		Riparian Wetland (acres)		Non-riparian Wetland (acres)		Buffer (square feet)	Upland (acres)	
			Riverine	Non-Riverine					
Restoration	0		0	0	3.914		0	0	
Enhancement			0	0	0.186		0	0	
Enhancement 1	0								
Enhancement II	0								
Creation			0	0	0				
Preservation	0		0	0	0			0	
High Quality Preservation	0		0	0	0			0	

6. MITIGATION WORK PLAN

6.1 Target Wetland Type & Plant Communities

The EPA classification of a wetland is based on soil, hydrology, and vegetation characteristics. The Summit Seep nonriparian wetland restoration project contains Armenia silt loam hydric soil. This soil is hydrated by year round flow from upland seeps and springs. Restoration efforts aim to reproduce characteristic pre-disturbed vegetation.

Soils

Hydric A, Armenia silt loam soils are the primary soil type present within this nonriparian wetland restoration project. Subsoils extend to roughly 45 inches with upper soil layers consisting of very dark grayish brown sandy clay loam, transitioning to a mottled olive gray and yellowish brown, black sandy clay loam. Underlying materials are described as multicolored saprolite with a texture of sandy loam reaching to a depth of 60 inches (USDA 1994)

Hydrology

Armenia silt loam soils are nearly level, slowly permeating and tend to drain poorly. The current ditching of the Site has capped surface and sub-surface hydrology. Filling ditches will restore hydrology to characteristic levels expected with Armenia silt loam, fueled by year round hydrology from the Site seep.

Vegetation

Native, nonriparian forest species will be restored within the entire 6.9-acre Site. Planting vegetation is proposed to reestablish vegetation community patterns to provide soil stability, habitat for wildlife, and filter pollutants prior to entering the groundwater table. Planted species composition will mimic Schafale and Weakley's *Classification of the Natural Communities of North Carolina* (1990) of a Low Elevation Seep, supplemented by reference forest and onsite observations (Table 6).

Table 6. Reference Vegetation Species

Schafale and Weakley's Character Vegetation Species	**Reference Forest Ecosystem & Onsite observations**	
	Armenia silt loam (ArA) & Davidson Loam 8-25% slope (DdD, DdE) Soils	
	Canopy Species	Understory Species
Betula nigra	*Acer negundo*	*Asimina triloba*
Carpinus caroliniana	*Acer rubrum*	*Cephalanthus occidentalis*
Celtis laevigata	*Celtis occidentalis*	*Cornus amomum*
Platanus occidentalis	*Diospyros virginiana*	*Crataegus monogyna*
Quercus michauxii	*Fraxinus pennsylvanica*	*Juniperus virginiana*
Quercus pagoda	*Juglans nigra*	*Sambucus canadensis*
Quercus phellos	*Liquidambar styraciflua*	*Symphoricarpos orbiculatus*
Ulmus americana	*Nyssa sylvatica*	
	Pinus taeda	
	Quercus alba	
	Quercus phellos	
	Salix nigra	
	Ulmus americana	

6.2 Design Parameters

The presence of conditions or characteristics that have the potential to hinder restoration activities on the Site was evaluated. The evaluation focused primarily on the presence of hazardous materials, utilities and restrictive easements, rare/threatened/endangered species or critical habitats, and the potential for hydrologic trespass. Existing information regarding Site constraints was acquired and reviewed. In addition, any Site conditions that have the potential to restrict the restoration design and implementation were documented during the field investigation.

No evidence of natural and/or man-made conditions was identified that has the potential to impede proposed restoration activities.

The primary goals of this restoration concept include:

(1) Enhancement of water quality functions (reduce non-point source nutrient inputs and sedimentation);
(2) Establishment of a natural nonriparian wetland community;
(3) Restoration of jurisdictional wetland hydrology by filling ditches draining a spring and hillside seeps; and
(4) Placement of a conservation easement over the site that will encompass and protect all restoration activities in perpetuity.

Primary activities, designed to restore 3.914 acres and enhance 0.186 acres of nonriparian wetland, include filling ditches, redirecting hydrology from springs across the Site, excluding livestock, and planting native, deep rooted forest species (Appendix D).

The Summit Seep Restoration Site encompasses 6.9 acres that have been cleared of native forest vegetation, ditched and drained to remove groundwater hydrology from a spring and hillside seep on the western edge of the Site, and is currently utilized as a pasture. Based on detailed mapping conducted by licensed soil scientists, approximately 4.1 acres of the Site is underlain by nonriparian hydric soils proposed for nonriparian wetland restoration.

Wetland restoration is designed to restore a fully functioning nonriparian wetland system that will provide water storage, nutrient cycling, removal of imported elements and compounds, and will create a variety and abundance of wildlife habitat.

Portions of the Site underlain by nonriparian hydric soils have been impacted by vegetation clearing, ditch excavation, and hoof shear from livestock. Wetland restoration options will focus on the restoration of nonriparian hydric soils, forest communities, elevation of groundwater tables, and the reestablishment of soil structure and microtopographic variations.

Restoration of wetland hydrology and wetland soil attributes will involve 1) ditch cleaning prior to backfill, 2) ditch plug installation, 3) diverting water from springs across the Site, 4) ditch backfill, and 5) scarification of soils prior to planting. These activities will restore 3.914 acres and enhance 0.186 acres of nonriparian wetland at the Site.

Ditch Cleaning

Ditches identified for backfilling will be cleaned, as needed, to remove unconsolidated sediments. Removal of unconsolidated sediments is particularly critical in areas where ditch plugs are proposed. Accumulated sediment within the ditches provides a relatively high permeability material that may act as a conduit for drainage after restoration. The unconsolidated sediments will be lifted from the channel to expose the underlying, relatively undisturbed soil material beneath the ditch invert. The unconsolidated sediment will be incorporated into top soils and spread evenly throughout the Site.

Ditch Plugs

Impermeable ditch plugs will be installed within ditches at critical locations throughout the Site. The plugs will consist of low density material or permanent hardened structures. If earthen material is used, each plug will be backfilled in 2-foot lifts of vegetation-free material and compacted into the bottom of the ditch. The earthen material may be obtained from adjacent fields through construction of shallow wetland pools. The plugs will consist of a core of impervious material and shall be of sufficient width and depth to form an imbedded overlap in the existing ditch banks and ditch bed.

Ditch Backfilling

Ditches will be backfilled using onsite material excavated from spoil piles adjacent to ditches and borrow material from upland areas within the easement. Where vegetation has colonized fields or spoil areas, rooting debris will be removed to the maximum extent feasible before insertion of earthen material into the ditch. The ditches will be filled, compacted, and graded to the approximate elevation of the adjacent wetland surface.

Vegetation Planting

Bare-root seedlings of tree and shrub species will be planted within the Site at a density up to 1000 stems per acre (6.6-foot centers). Planting will be performed between December 1st and March 15th to allow plants to stabilize during the dormant period and set root during the spring season. Bare-root seedlings will be hand planted to minimize Site soil disturbance, thus minimizing potential for sedimentation / siltation runoff from the Site. A total of 6,900 diagnostic tree and shrub seedlings will be planted in support of Site wetland restoration (Table 7). The entire 6.9 - acre restoration area will be re-vegetated or supplementally planted during the implementation of this plan.

Table 7. Planting Plan

Vegetation Association (Planting Area)	**Low Elevation Seep**	
Area (acres)	**6.9**	
SPECIES	Total Number Planted	Percentage of Total
American Elm *(Ulmus americana)*	900	13.04%
Black Gum *(Nyssa sylvatica)*	900	13.04%
Hackberry *(Celtis occidentalis)*	900	13.04%
Willow Oak *(Quercus phellos)*	800	11.59%
American Persimmon (*Diospyros virginiana*)	800	11.59%
River Birch *(Betula nigra)*	900	13.04%
Silky Dogwood *(Cornus amomum)*	900	13.04%
Common Pawpaw *(Asimina triloba)*	800	11.59%
totals:	6900	100.00%

6.3 Data Analysis

No data has been analyzed, nor has it been necessary to this point. The spring and uphill seepage are the Sites main groundwater source. Currently these sources of groundwater are collected by the existing ditches and carried to an unnamed tributary and subsequently off-site to nearby North Potts Creek. Therefore, groundwater modeling is impractical at this time. Also, a jurisdictional determination was done and it was determined that hydric soils proposed for restoration are currently drained and those proposed for enhancement are jurisdictional. Drained soils result from existing ditches. Rehydration will occur when the ditches are cleaned, plugged, and backfilled.

7. MAINTENANCE PLAN

RS shall monitor the site on a regular basis and shall conduct a physical inspection of the site a minimum of once per year throughout the post-construction monitoring period until performance standards are met. These site inspections may identify site components and features that require routine maintenance. Routine maintenance should be expected most often in the first two years following site construction and may include the following:

Table 8. Site Maintenance Plan

Component/Feature	Maintenance through project close-out
Wetland	Routine wetland maintenance and repair activities will occur. Areas where stormwater and floodplain flows intercept the wetland may require maintenance to prevent scour.
Vegetation	Vegetation shall be maintained to ensure the health and vigor of the targeted plant community. Routine vegetation maintenance and repair activities may include supplemental planting, pruning, mulching, and fertilizing. Exotic invasive plant species shall be controlled by mechanical and/or chemical methods. Any vegetation control requiring herbicide application will be performed in accordance with NC Department of Agriculture (NCDA) rules and regulations.
Site Boundary	Site boundaries shall be identified in the field to ensure clear distinction between the mitigation site and adjacent properties. Boundaries may be identified by fence, marker, bollard, post, tree-blazing, or other means as allowed by site conditions and/or conservation easement. Boundary markers disturbed, damaged, or destroyed will be repaired and/or replaced on an as needed basis.
Utility Right-of-Way	Utility right-of-way within the site may be maintained only as allowed by Conservation Easement or existing easement, deed restriction, rights of way, or corridor agreements.

8. PERFORMANCE STANDARDS

Monitoring of Site restoration efforts will be performed until success criteria are fulfilled. Monitoring for wetland components include hydrology and vegetation.

Hydrology Monitoring

A total of four (4) groundwater monitoring gauges will be installed to take measurements after hydrological modifications are performed at the Site. Hydrological sampling will continue throughout the growing season at intervals necessary to satisfy jurisdictional hydrology success criteria (EPA 1990).

Hydrology Success Criteria

Target hydrological characteristics include saturation or inundation for 7.5 percent of the growing season, during average climatic conditions. During growing seasons with atypical climatic conditions, groundwater gauges in reference wetlands may dictate threshold hydrology success criteria. These areas are expected to support hydrophytic vegetation. If wetland parameters are marginal as indicated by vegetation and/or hydrology monitoring, a jurisdictional determination will be performed.

Vegetation Monitoring

After planting has been completed in winter or early spring, an initial evaluation will be performed to verify planting methods and to determine initial species composition and density. Supplemental planting and additional Site modifications will be implemented, if necessary.

During quantitative vegetation sampling, six (6) sample plots (10-meter by 10-meter) will be installed within the Site as per guidelines established in *CVS-EEP Protocol for Recording Vegetation, Version 4.0* (Lee et al. 2006). In each sample plot, vegetation parameters to be monitored include species composition and density. Visual observations of the percent cover of shrub and herbaceous species will be documented by photograph.

Vegetation Success Criteria

An average density of 320 stems per acre of Characteristic Tree Species must be surviving in the first three monitoring years. Subsequently, 290 Characteristic Tree Species per acre must be surviving in year 4 and 260 Characteristic Tree Species per acre in year 5.

Hydrologic Contingency

Hydrologic contingency may include soil surface modifications such as construction of ephemeral pools and deep ripping of the soil profile. Recommendations for contingency to establish wetland hydrology may be implemented and monitored until Hydrology Success Criteria is achieved.

Vegetation Contingency

If vegetation success criteria are not achieved based on average density calculations from combined plots over the entire restoration area, supplemental planting may be performed with tree species approved by regulatory agencies. Supplemental planting may be performed as needed until achievement of vegetation success criteria.

9. MONITORING REQUIREMENTS

Annual monitoring data will be reported using the EEP monitoring template. The monitoring report shall provide a project data chronology that will facilitate an understanding of project status and trends, population of EEP databases for analysis, research purposes, and assist in decision making regarding project close-out.

Table 9. Site Monitoring Requirements

Required	Parameter	Quantity	Frequency	Notes
No	Pattern	As per April 2003 USACE Wilmington District Stream Mitigation Guidelines	annual	
No	Dimension	As per April 2003 USACE Wilmington District Stream Mitigation Guidelines	annual	
No	Profile	As per April 2003 USACE Wilmington District Stream Mitigation Guidelines	annual	
No	Substrate	As per April 2003 USACE Wilmington District Stream Mitigation Guidelines	annual	
No	Surface Water Hydrology	As per April 2003 USACE Wilmington District Stream Mitigation Guidelines	annual	
Yes	Groundwater Hydrology	As per April 2003 USACE Wilmington District Stream Mitigation Guidelines	annual	Groundwater monitoring gauges with data recording devices will be installed on site; the data will be downloaded at least every 30 days during the growing season
Yes	Vegetation	As per April 2003 USACE Wilmington District Stream Mitigation Guidelines	annual	Vegetation will be monitored using the Carolina Vegetation Survey (CVS) protocols
Yes	Exotic and nuisance vegetation		annual	Location of exotic and nuisance vegetation will be mapped
Yes	Project boundary		Semi-annual	Locations of fence damage, vegetation damage, boundary encroachments, etc. will be mapped

10. LONG-TERM MANAGEMENT PLAN

Upon approval for close-out by the Interagency Review Team (IRT) the site will be transferred to the EEP. This party shall be responsible for periodic inspection of the site to ensure that restrictions required in the conservation easement or the deed restriction document(s) are upheld.

11. ADAPTIVE MANAGEMENT PLAN

Upon completion of site construction RS will implement the post-construction monitoring protocols previously defined in this document. Project maintenance will be performed as described previously in this document. If, during the course of annual monitoring it is determined the site's ability to achieve site performance standards are jeopardized, RS will notify the EEP of the need to develop a Plan of Corrective Action. The Plan of Corrective Action may be prepared using in-house technical staff or may require engineering and consulting services. Once the Corrective Action Plan is prepared and finalized RS will:

1. Notify the EEP as required by the Nationwide 27 permit general conditions.
2. Revise performance standards, maintenance requirements, and monitoring requirements as necessary and/or required by the USACE / EEP.
3. Obtain other permits as necessary.
4. Implement the Corrective Action Plan.
5. Provide the EEP a Record Drawing of Corrective Actions. This document shall depict the extent and nature of the work performed.

12. FINANCIAL ASSURANCES

As required by RFP # 16-002835 RS will provide a performance bond for 55% of the total value of the contract to be submitted with this document. This bond will remain in effect until the successful completion of Task 6. See Appendix E.

13. Other Information

13.1 Definitions

Cataloging Unit ("CU") – A geographic area representing part or all of a River Basin and identified by an 8-digit number as depicted on the "Hydrologic Unit Map – 1974, State of North Carolina, published by the U.S. Department of Interior, Geological Survey".

Categorical Exclusion – Categories of actions that do not individually or cumulatively have a significant effect on the human or natural environment and for which, therefore, neither an Environmental Assessment nor an Environmental Impact Statement is required.

Categorical Exclusion Action Form and Document – An abbreviated environmental document, prefaced by an Action Form, that briefly describes the mitigation site, the plan for its implementation, and documents that it will have minimal or no impact on the environment.

Conservation Easement – A restriction landowners voluntarily place on specified uses of their property to protect its natural, productive, or cultural features. It is recorded as a written legal agreement between the landowner and the "holder" of the easement***. The State of North Carolina must receive directly from***

the landowner a conservation easement as prepared and facilitated by the full delivery provider for all Ecosystem Enhancement Program full delivery projects.

EEP – The North Carolina Ecosystem Enhancement Program.

Hydrologic Unit ("HU") – A geographic area representing a portion of a Cataloging Unit as depicted on the "Hydrologic Unit Map – 1974, State of North Carolina, published by the U.S. Department of Interior, Geological Survey," and identified by a 14-digit number.

Jurisdictional Wetland - A wetland as defined in the 1987 Corps of Engineers Wetlands Delineation Manual.

Mitigation – The term **mitigation,** when used throughout this RFP and any subsequent contracts that may be executed is **Compensatory Mitigation**. **Compensatory Mitigation** is defined as those mitigation activities implemented after all practicable measures to **Avoid** and **Minimize** adverse impacts to waters of the United States have been carried out.

Mitigation Plan – A written document, supplemented with graphics, which describes: the existing site conditions, the goals and objectives of the project and other pertinent information. The Mitigation Plan is developed and submitted prior to the implementation of the project.

Morphological description – The stream type; stream type is determined by quantifying channel entrenchment, dimension, pattern, profile, and boundary materials; as described in Rosgen, D. (1996), *Applied River Morphology*, 2nd edition.

Native Vegetation Community – A distinct and reoccurring assemblage a populations of plants, animals, bacteria and fungi naturally associated with each other and their population; as described in Schafale, M.P. and Weakley, A.S. (1990), *Classification of the Natural Communities of North Carolina, Third Approximation.*

Non-Riparian Wetland – an area underlain with hydric soils that has developed and is located in interstream divide physiographic areas. The hydrology of non-riverine wetlands is driven by precipitation and is characterized by groundwater being at or near the surface for much of the year. Must meet US Army Corps of Engineers wetlands definition (33 CFR 328.3(b)).

Project Area – Includes all protected lands associated with the mitigation project.

RFP – Request For Proposals; the document issued by the **Department** to solicit **Proposals** from interested **Offerors.**

River Basin – The largest category of surface water drainage; there are seventeen (17) river basins in North Carolina.

Site – Property or properties identified by an **Offeror** in a **Proposal** as having potential to provide either wetland, stream, or buffer mitigation.

USACE – United States Army Corps of Engineers, Regulatory Branch, Wilmington District

USGS – United States Geological Survey.

Wetland Mitigation Unit ("WMU") – The unit of measurement of the extent of wetland mitigation being offered in a **Proposal.** The WMU value for a **Site** is the sum of the **Restoration** acres, one-third of the **Creation** acres, one-half of the **Enhancement** acres, and one-fifth of the **Preservation** acres.

13.2 References

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. United States Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Environmental Protection Agency (EPA). 1990. Mitigation Site Type Classification (MiST). EPA Workshop, August 13-15, 1989. EPA Region IV and Hardwood Research Cooperative, NCSU, Raleigh, North Carolina.

Faber-Langendoen, D., Rocchio, J., Schafale, M., Nordman, C., Pyne, M., Teague, J., Foti, T., Comer, P. (2006), *Ecological Integrity Assessment and Performance Measures for Wetland Mitigation.*

Griffith, G.E., J.M. Omernik, J.A. Comstock, M.P. Schafale, W.H. McNab, D.R. Lenat, T.F. MacPherson, J.B. Glover, and V.B. Shelbourne. 2002. Ecoregions of North Carolina and South Carolina. U.S. Geological Survey, Reston, Virginia.

Lee, M.T., R.K. Peet, S.D. Roberts, and T.R. Wentworth. 2006. CVS-EEP Protocol for Recording Vegetation. Version 4.0. North Carolina Department of Environment and Natural Resources, Ecosystem Enhancement Program. Raleigh, North Carolina.

Lindenmayer, D.B., and J.F. Franklin. (2002), *Conserving forest biodiversity: A comprehensive multiscaled approach.* Island Press, Washington, DC.

NatureServe, Arlington, Virginia.

North Carolina Division of Water Quality (NCDWQ). 2007. Final North Carolina Water Quality Assessment and Impaired Waters List (2006 Integrated 305(b) and 303(d) Report) (online). Available: http://h2o.enr.state.nc.us/tmdl/documents/303d_Report.pdf [February 19, 2010]. North Carolina Department of Environment and Natural Resources, Raleigh, North Carolina.

North Carolina Division of Water Quality (NCDWQ). 2008. Draft North Carolina Water Quality Assessment and Impaired Waters List (2008 Integrated 305(b) and 303(d) Report) (online). Available: http://h2o.enr.state.nc.us/tmdl/documents/2008Cat4and520100215.pdf [February 19, 2010]. North Carolina Department of Environment and Natural Resources, Raleigh, North Carolina.

North Carolina Division of Water Quality (NCDWQ). 2010 a. Draft North Carolina Water Quality Assessment and Impaired Waters List (2010 Integrated 305(b) and 303(d) Report) (online). Available: http://h2o.enr.state.nc.us/tmdl/documents/draft_2010_Cat_5.pdf [February 19, 2010]. North Carolina Department of Environment and Natural Resources, Raleigh, North Carolina.

North Carolina Division of Water Quality (NCDWQ). 2010 b. North Carolina Water Bodies Report (online). Available: http://h2o.enr.state.nc.us/bims/reports/basinsandwaterbodies/03-07-04.pdf [February 19, 2010]. North Carolina Department of Environment and Natural Resources, Raleigh.

North Carolina Ecosystem Enhancement Program (NCEEP). 2009. Yadkin-Pee Dee River Basin Restoration Priorities (online). Available: http://www.nceep.net/services/restplans/Yadkin_Pee_Dee_RBRP_2009_Final.pdf [February 19, 2010]. North Carolina Department of Environment and Natural Resources, Raleigh, North Carolina.

Peet, R.K., Wentworth, T.S., and White, P.S. (1998), *A flexible, multipurpose method for recording vegetation composition and structure*. Castanea 63:262-274.

Rosgen, D. (1996), *Applied River Morphology, 2nd edition*, Wildland Hydrology, Pagosa Springs, CO.

Schafale, M.P. and A.S. Weakley. 1990. Classification of the Natural Communities of North Carolina: Third Approximation. North Carolina Natural Heritage Program, Division of Parks and Recreation, N.C. Department of Environment, Health, and Natural Resources. Raleigh, North Carolina.

Science Advisory Board. Washington, DC.

Stream Mitigation Guidelines, April 2003, US Army Corps of Engineers Wilmington District.

United States Department of Agriculture (USDA). 1994. *Soil Survey of Davidson County, North Carolina*. United States Department of Agriculture, Natural Resource Conservation Service. Fort Worth, Texas.

Young, T.F. and Sanzone, S. (editors). (2002), *A framework for assessing and reporting on ecological condition*. Ecological Reporting Panel, Ecological Processes and Effects Committee. EPA.

APPENDIX A
SITE PROTECTION INSTRUMENT(S)

When available, the recorded document will be provided. If the recorded document is not available, the template document will be provided. All site protection instruments require 60-day advance notification to the Corps and the State prior to any action to void, amend, or modify the document. No such action shall take place unless approved by the State. A site protection instrument figure will be completed once a final survey of the Site has been completed, after the conservation easement is purchased.

APPENDIX B
BASELINE INFORMATION DATA

FHWA Categorical Exclusion Form
FEMA Compliance -EEP Floodplain Requirements Checklist NCEEP Mitigation Plan

Ecosystem Enhancement PROGRAM

October 13, 2009

Mr. Worth Creech – Project Manager
Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, North Carolina 27604

Subject: Categorical Exclusion Form for the
Summit Seep Wetland Mitigation Site – Full Delivery Project
Yadkin River Basin – CU# 03040103 – Davidson County
Contract No. 003244

Dear Mr. Creech:

Attached please find the approved Categorical Exclusion Form for the subject full delivery project. I have approved your invoice, in the amount of $12,812.50 (5% of contract) for completion of the Task 1 deliverable. Please include a copy of the form in your Restoration Plan.

If you have any questions, or wish to discuss this matter further, please contact me at any time. I can be reached at (919) 715-1656, or email me at guy.pearce@ncdenr.gov

Sincerely,

Guy C. Pearce
EEP Full Delivery Program Supervisor

cc: file

Appendix A

Categorical Exclusion Form for Ecosystem Enhancement Program Projects Version 1.4

Note: Only Appendix A should to be submitted (along with any supporting documentation) as the environmental document.

Part 1: General Project Information	
Project Name:	Summit Seep Wetland Mitigation Site
County Name:	Davidson
EEP Number:	Contract # 003244
Project Sponsor:	Restoration Systems, LLC
Project Contact Name:	Worth Creech
Project Contact Address:	1101 Haynes Street, Suite 211, Raleigh, NC 27604
Project Contact E-mail:	worth@restorationsystems.com
EEP Project Manager:	Jeff Jurek

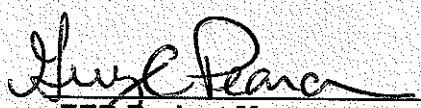
Project Description

The Summit Seep Site is located in the 14-digit Cataloging Unit 03040103020010 approximately 5 miles southwest of Lexington, in western Davidson County. The Site encompasses approximately 6.9 acres of land that is currently used as pasture. Restoration of wetland hydrology and re-vegetation activities will result in approximately 4.1 acres of restoration.

For Official Use Only

Reviewed By:

10/13/2010
Date


EEP Project Manager

Conditional Approved By:

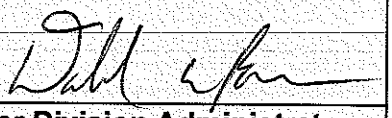
Date

For Division Administrator FHWA

☐ **Check this box if there are outstanding issues**

Final Approval By:

10-12-10
Date


For Division Administrator FHWA

EEP Floodplain Requirements Checklist

This form was developed by the National Flood Insurance program, NC Floodplain Mapping program and Ecosystem Enhancement Program to be filled for all EEP projects. The form is intended to summarize the floodplain requirements during the design phase of the projects. The form should be submitted to the Local Floodplain Administrator with three copies submitted to NFIP (attn. Edward Curtis), NC Floodplain Mapping Unit (attn. John Gerber) and NC Ecosystem Enhancement Program.

Project Location

Name of project:	Summit Seep Wetland Mitigation Site
Name of stream or feature:	Unnamed Tributary to North Potts Creek
County:	Davidson
Name of river basin:	Yadkin
Is project urban or rural?	Rural
Name of Jurisdictional municipality/county:	Davidson County
DFIRM panel number for entire site:	6703
Consultant name:	Worth Creech
Phone number:	919-334-0114
Address:	1101 Haynes Street, Suite 211 Raleigh, NC 27604

Design Information

Restoration Systems, L.L.C. has contracted with EEP through the full Delivery Process (RFP #16-002835) to provide 4.1 Nonriparian Wetland Mitigation Units through the completion of the **Summit Seep Wetland Mitigation Site** (Site) located approximately 5 miles southwest of Lexington in western Davidson County. The Site encompasses approximately 6.9-acres of land (hereafter referred to as the "Site"), which has been cleared and ditched, and used as pasture. The Site is situated along an unnamed tributary to North Potts Creek, a major tributary to the Yadkin River. The Site is located within DWQ sub-basin 03-07-04 of the Yadkin River Basin and is encompassed within USGS 14-digit Hydrologic Unit and Targeted Local Watershed 03040103020010. The primary goals of this wetland restoration project focus on improving water quality, enhancing flood attenuation, and restoring wildlife habitat. Restoration activities include recording of a permanent conservation easement, plugging and filling of ditches, and replanting of Site.

Wetland	Area (acres)	Priority
Wetland Area 1	3.914	Non-riparian Restoration
Wetland Area 2	0.186	Non-riparian Enhancement

Floodplain Information

Is project located in a Special Flood Hazard Area (SFHA)?

○ Yes ◉ No

If project is located in a SFHA, check how it was determined:

☐ Redelineation

☐ Detailed Study

☐ Limited Detail Study

☐ Approximate Study

☐ Don't know

List flood zone designation:

Check if applies:

☑ AE Zone

- ○ Floodway
- ○ Non-Encroachment
- ◉ None

☐ A Zone

○ Local Setbacks Required

○ No Local Setbacks Required

If local setbacks are required, list how many feet:

Does proposed channel boundary encroach outside floodway/non-encroachment/setbacks?

○ Yes ◉ No

Land Acquisition (Check)

☐ State owned (fee simple)

☐ Conservation easment (Design Bid Build)

☑ Conservation Easement (Full Delivery Project)

Note: if the project property is state-owned, then all requirements should be addressed to the Department of Administration, State Construction Office (attn: Herbert Neily, (919) 807-4101)

Is community/county participating in the NFIP program?

◉ Yes ○ No

Note: if community is not participating, then all requirements should be addressed to NFIP (attn: Edward Curtis, (919) 715-8000 x369)

Name of Local Floodplain Administrator: Ron Triplette
Phone Number: 336-242-2231

Floodplain Requirements

This section to be filled by designer/applicant following verification with the LFPA

☑ No Action

☐ No Rise

☐ Letter of Map Revision

☐ Conditional Letter of Map Revision

☐ Other Requirements

List other requirements:

Comments:

Name: North Creek

Signature: [signature]

Title: Project Manager

Date: Nov 16, 2010

APPENDIX C
MITIGATION WORK PLAN DATA and ANALYSES

Groundwater Modeling/Hydrologic Budget

No data has been analyzed, nor has it been necessary to at this point. The spring and uphill seepage are the Sites main groundwater source. Currently these sources of groundwater are collected by the existing ditches and carried to an un-named tributary and subsequently off-site to nearby North Potts Creek. Therefore, groundwater modeling is impractical at this time. Also, jurisdictional determination was done and stated that the area is currently dry. This is caused by the existing ditches. Lateral flow will occur when the ditches are cleaned, plugged, and backfilled. There will be a slight final grade to the Site causing lateral flow. Groundwater modeling will occur once this lateral flow is established.

CVS Vegetation Assessment

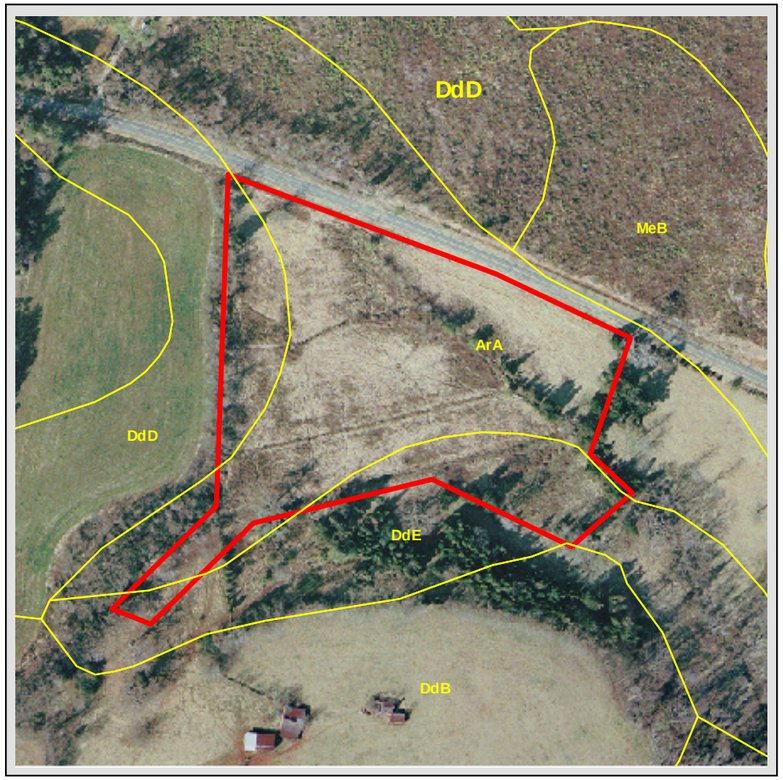
Vegetation surveys will begin after construction, and be monitored just before, during and just after the growing season. Based on the *Microsoft Access* CVS template the Site will hold six (6) vegetation plots. Four (4) groundwater modeling wells will also be installed during construction. These wells and plots will be marked and referenced in the Sites as built documents. Planned vegetation distribution is detailed in Figure D, Appendix D.

APPENDIX D
PROJECT PLAN SHEETS (11”x 17”)

Figure A. Title Page
Figure B. Boundary Plan
Figure C. Grading Plan
Figure D. Planting Plan

SUMMIT SEEP
NONRIPARIAN WETLAND RESTORATION
PROJECT PLAN SHEETS

DAVIDSON COUNTY, NORTH CAROLINA



PROJECT DESCRIPTION

THE SUMMIT SEEP NONRIPARIAN WETLAND RESTORATION SITE ENCOMPASSES 6.9 ACRES INCLUDING 3.914 ACRES OF WETLAND RESTORATION AND 0.186 ACRES OF WETLAND ENHANCEMENT WITHIN FORMER FARM PASTURE LAND. THE SITE HAS BEEN CLEARED OF NATIVE FOREST VEGETATION, DITCHED, AND DRAINED TO REMOVE GROUNDWATER HYDROLOGY FROM AN EXISTING SPRING AND HILLSIDE SEEPS. THE SITE IS LOCATED UPSLOPE FROM AN UNNAMED TRIBUTARY TO NORTH POTTS CREEK, WHICH HAS BEEN ASSIGNED A BEST USAGE CLASSIFICATION OF C AND IS FULLY SUPPORTING ITS INTENDED USES. THE SITE IS LOCATED WITHIN TARGETED LOCAL WATERSHED 03040103020010.

CONSTRUCTION ACTIVITIES AT THE SITE WILL RE-ELEVATE THE GROUNDWATER TABLE TO HISTORIC CONDITION THAT EXISTED PRIOR TO DITCHING OF THE SITE. CONSTRUCTION METHODS WERE BASED PRIMARILY UPON CARBON COPY METHOD FOR WETLAND RESTORATION, MIMICKING REFERENCE (RELATIVELY UNDISTURBED) WETLANDS IN THE REGION. THE PROJECT IS DESIGNED TO MAXIMIZE GROUNDWATER RECHARGE AND WATER QUALITY BENEFITS IN THE YADKIN RIVER BASIN.

PROJECT LOCATION

THE SITE IS LOCATED WITH 14-DIGIT CATALOGING UNIT 03040103020010 APPROXIMATELY 5 MILES SOUTHWEST OF LEXINGTON, IN WESTERN DAVIDSON COUNTY.

LATITUDE: 35.761264
LONGITUDE: -80.334264
(NAD 83/WGS 84)

TYPE OF WORK: WETLAND RESTORATION & PRESERVATION I

- DITCH CLEARING
- DITCH FILLING
- SITE GRADING
- SITE PLANTING

INDEX OF SHEETS

RESTORATION SYSTEMS | LLC

Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, NC 27604

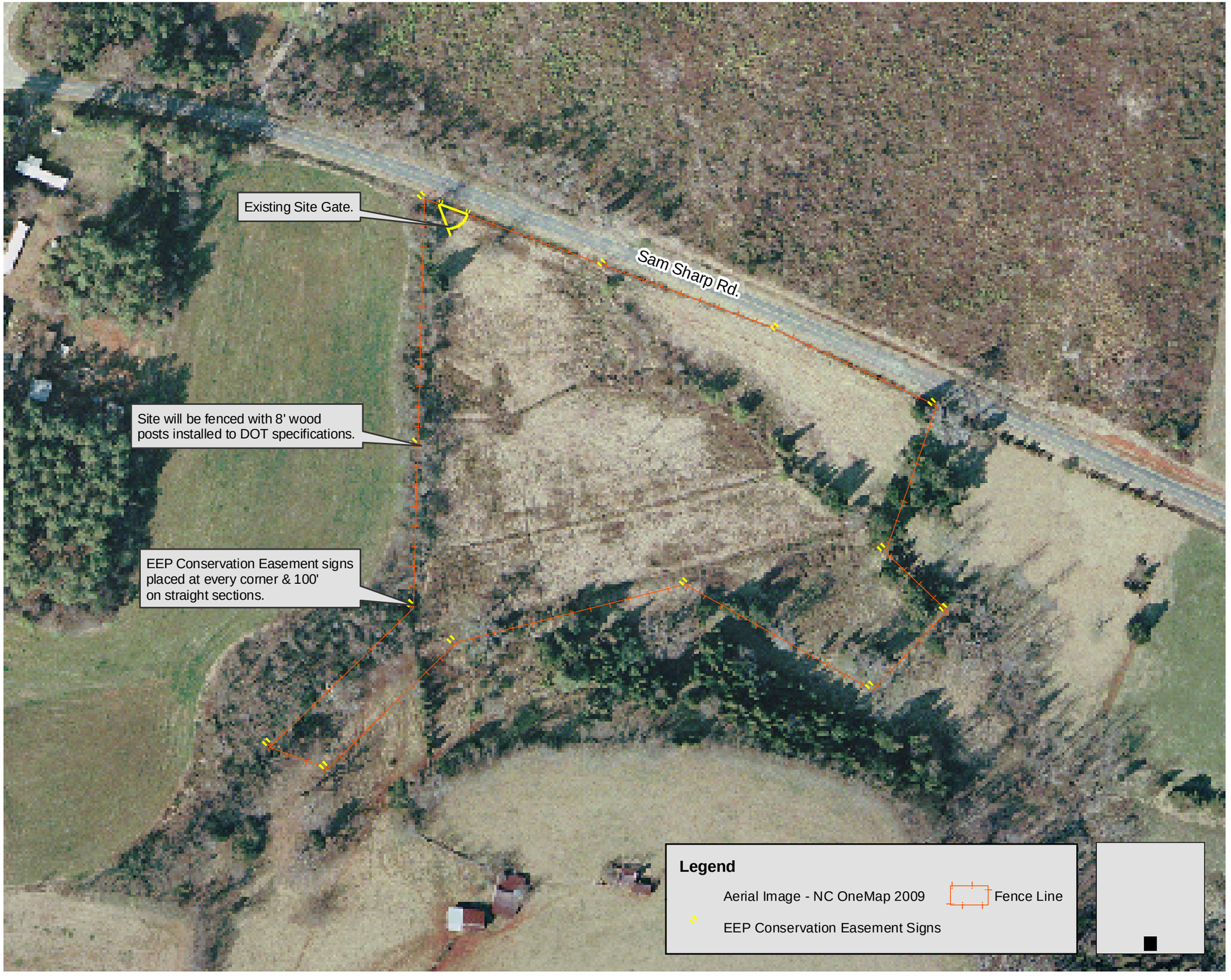
Notes & Revisons

Project:
Summit Seep
Non-Riparian Wetland
Restoration Site

Davidson County
North Carolina

Title:
TITLE PAGE

Scale:	FIGURE NO.
No Scale	A
Date: 11.11.2010	
EEP Project No.:	



RESTORATION SYSTEMS | LLC

Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, NC 27604

Notes & Revisons

Project:
Summit Seep
Non-Riparian Wetland
Restoration Site

Davidson County
North Carolina

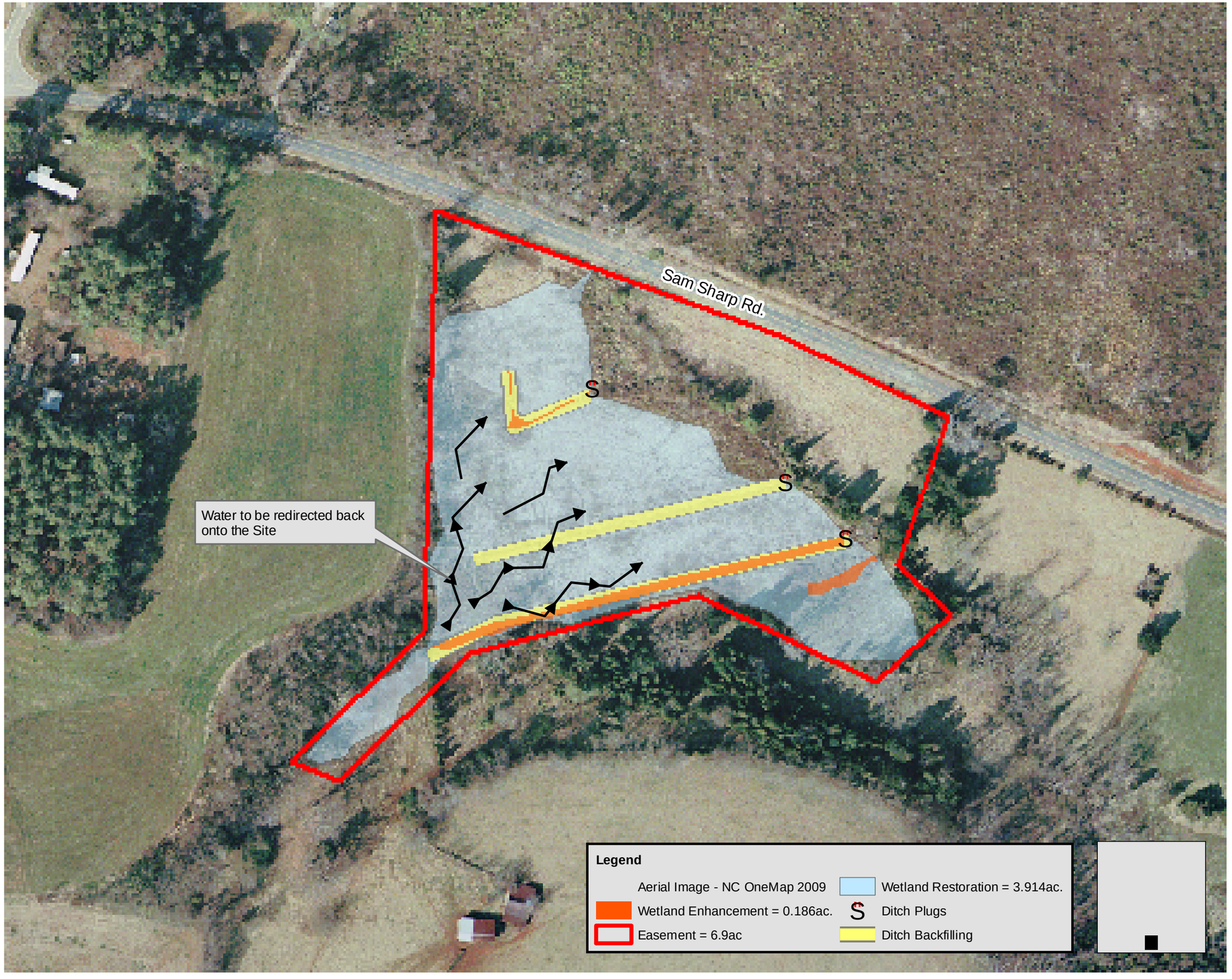
Title:
Boundary Plan

Scale: 1 : 1,500

Date: 11.11.2010

EEP Project No.:

FIGURE NO.
B



RESTORATION SYSTEMS | LLC

Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, NC 27604

Notes & Revisons

Project:

Summit Seep
Non-Riparian Wetland
Restoration Site

Davidson County
North Carolina

Title:

Grading Plan

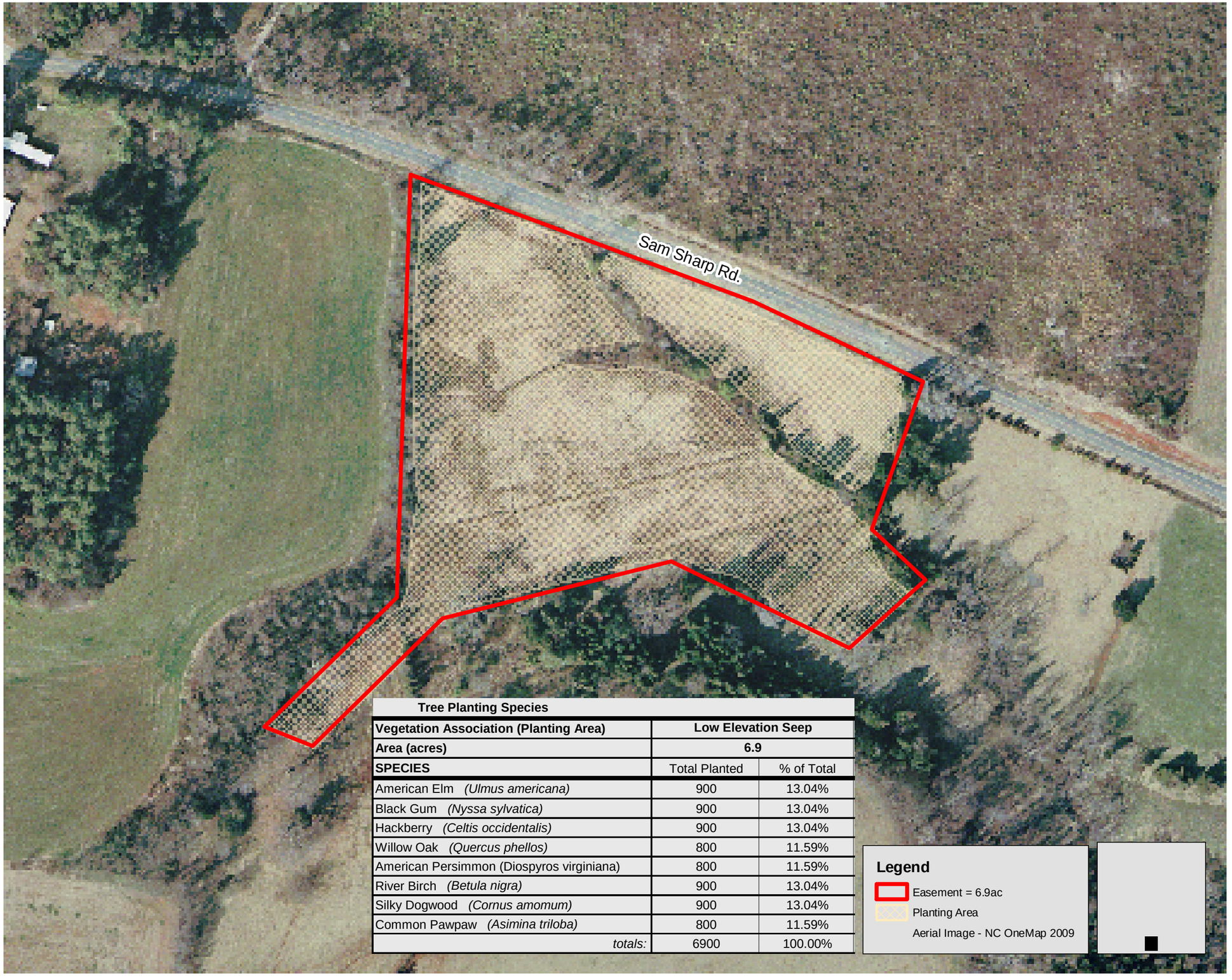
Scale: 1 : 1,500

Date: 11.11.2010

EEP Project No.:

FIGURE NO.

C



Tree Planting Species		
Vegetation Association (Planting Area)	**Low Elevation Seep**	
Area (acres)	**6.9**	
SPECIES	Total Planted	% of Total
American Elm *(Ulmus americana)*	900	13.04%
Black Gum *(Nyssa sylvatica)*	900	13.04%
Hackberry *(Celtis occidentalis)*	900	13.04%
Willow Oak *(Quercus phellos)*	800	11.59%
American Persimmon (Diospyros virginiana)	800	11.59%
River Birch *(Betula nigra)*	900	13.04%
Silky Dogwood *(Cornus amomum)*	900	13.04%
Common Pawpaw *(Asimina triloba)*	800	11.59%
totals:	6900	100.00%

Legend

Easement = 6.9ac

Planting Area

Aerial Image - NC OneMap 2009

RESTORATION SYSTEMS | LLC

Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, NC 27604

Notes & Revisons

Project:

Summit Seep
Non-Riparian Wetland
Restoration Site

Davidson County
North Carolina

Title:

Planting Plan

Scale: 1 : 1,500

Date: 11.11.2010

EEP Project No.:

FIGURE NO.

D

APPENDIX E
Notification of Jurisdictional Determination

Axiom Environmental, Inc.

Axiom Environmental, Inc.

20 Enterprise St, Suite 7 Raleigh, North Carolina 27607 919-270-9306, 696-3045

December 29, 2010

Mr. John Thomas
United States Army Corps of Engineers
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

RE: Section 404 Jurisdictional Area Delineation **10-017**
Summit Seep (Parson Property)
Davidson County, NC

Mr. Thomas:

Axiom Environmental Inc. (Axiom) was contracted by Restoration Systems, LLC to conduct an assessment of a proposed 6.8-acre environmental easement (hereafter, the Easement Area) within a parcel of land, the Parson Property, located 6 miles southwest of Lexington, North Carolina. Axiom conducted jurisdictional area delineations within Easement Area of the Parson property in October 2010. All jurisdictional areas were delineated in accordance with the methodology established by the United States Army Corps of Engineers (USACE) Wetland Delineation Manual (Technical Report Y-87-1) and Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (ERDC/EL TR-08-30), and USACE Jurisdictional Determination Form Instructional Guidebook.

Axiom identified one (1) perennial stream within the Easement Area, an unnamed tributary (UT) to North Potts Creek [Second Potts Creek (Figures 1 and 2)]. The perennial stream located within the proposed conservation easement is a UT to North Potts Creek [North Carolina Division of Water Quality (NCDWQ) Stream Index Number 12-112]. All water resources located on the proposed Easement Area are part of the Yadkin-Pee Dee River Basin USGS Hydrologic Unit (HU) 03040103020010 (Figure 2). A USACE Stream Quality Assessment Worksheet has been completed for UT to North Potts Creek. The perennial stream corresponds to a 50-foot reach adjacent to flag PC15 (as noted on the form). Total length of UT to North Potts Creek within the preliminary conservation easement is 543 linear feet of perennial stream.

In addition, UT to North Potts Creek Easement Area encompasses approximately 0.3 acre of wetlands. The approximate location of jurisdictional wetland areas within the Easement Area are depicted on Figure 4. Wetland Determination Data Forms, NC Wetland Assessment Method (NCWAM) Field Assessment Form, NCWAM Wetland Rating Sheet (Results), and Approved Jurisdictional Determination Form have been completed for the wetland area. Wetlands occurring within UT to North Potts Creek may generally be classified as a palustrine, emergent, persistent (PEM1).

Axiom is interested in obtaining USACE verification of all jurisdictional features delineated within the preliminary conservation easement.

Attached to this letter are the following items:

- Figure 1. Vicinity Map
- Figure 2. Watershed Map
- Figure 3. Soils Map
- Figure 4. Jurisdictional Areas Map
- Figure 5. LiDAR Map
- Figure 6. Contour Map
- Completed USACE Stream Quality Assessment Worksheet
- Completed pair of USACE Wetland Determination Data Forms
- Completed NC Wetland Assessment Method (NCWAM) Rating Sheets (Results)
- Approved Jurisdictional Determination Form

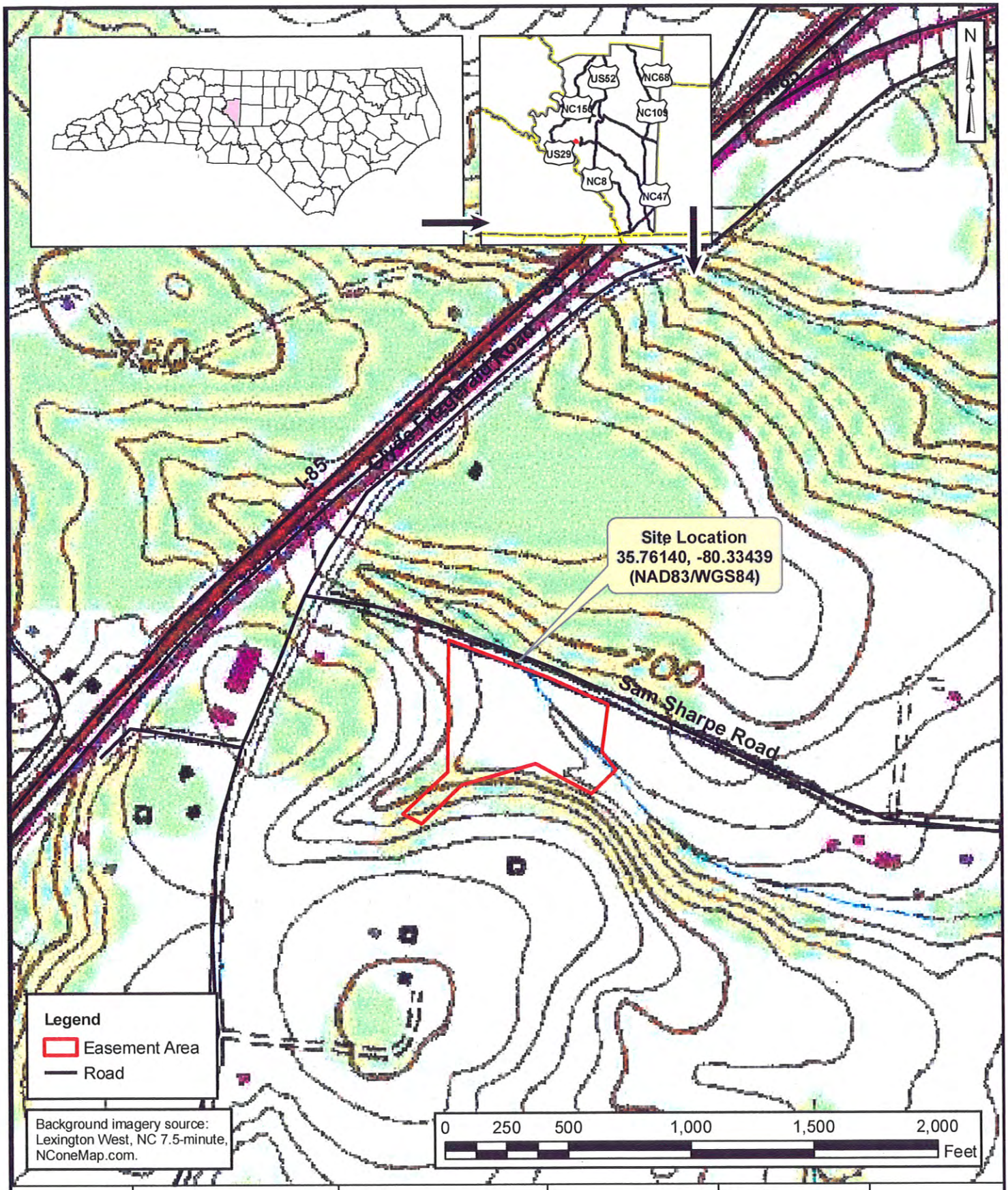
Again, we are interested in obtaining USACE verification of all jurisdictional features that occur within the proposed conservation easement. Please let me know if you need additional information or have any questions about the information provided to you in this package. Axiom is happy to meet you in the field to look at the project if you are interested, and will work with you to schedule a site visit. Thank you for your assistance with this project.

Sincerely,

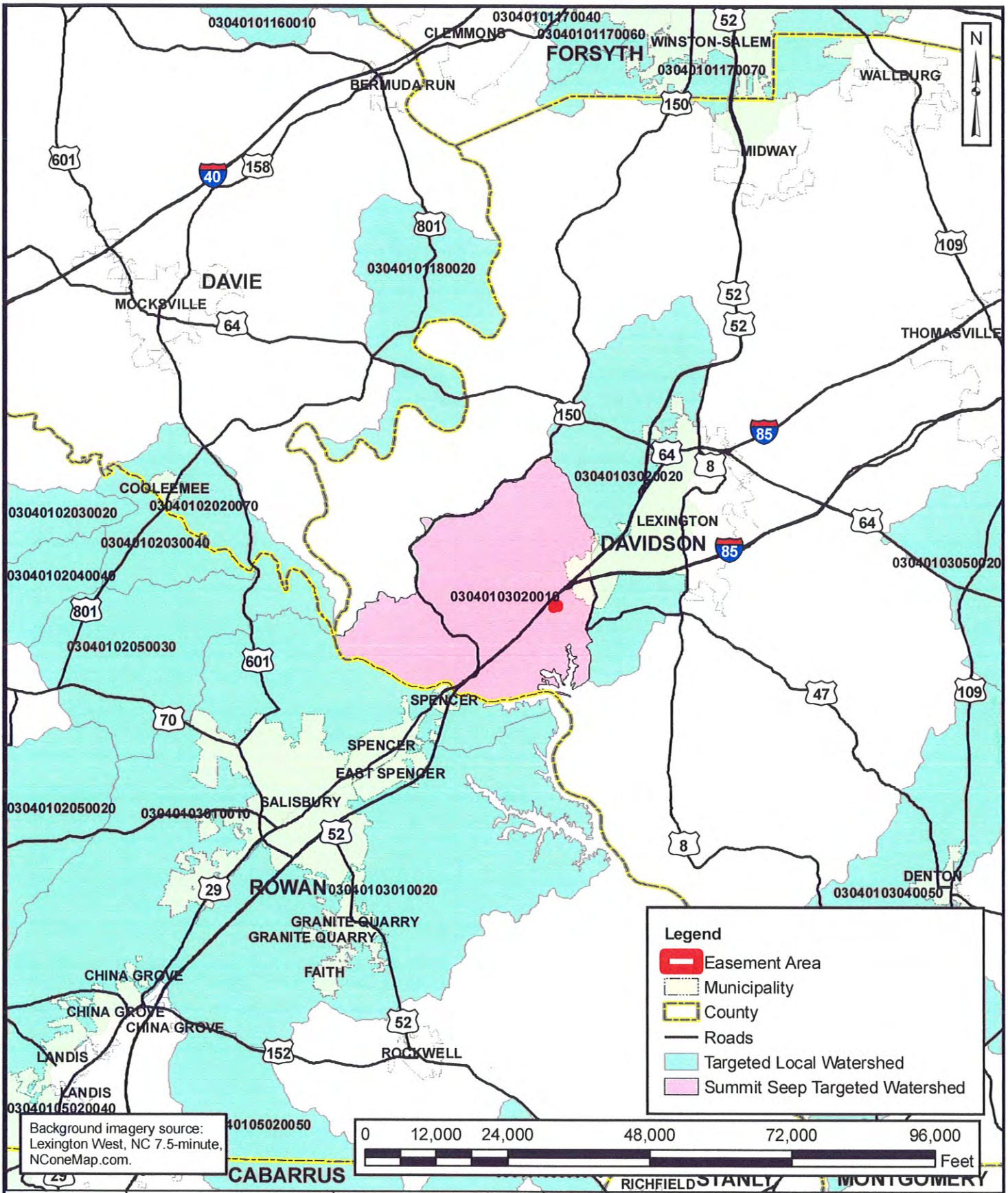
AXIOM ENVIRONMENTAL, INC.

Matthew D. Thomas
Senior Scientist

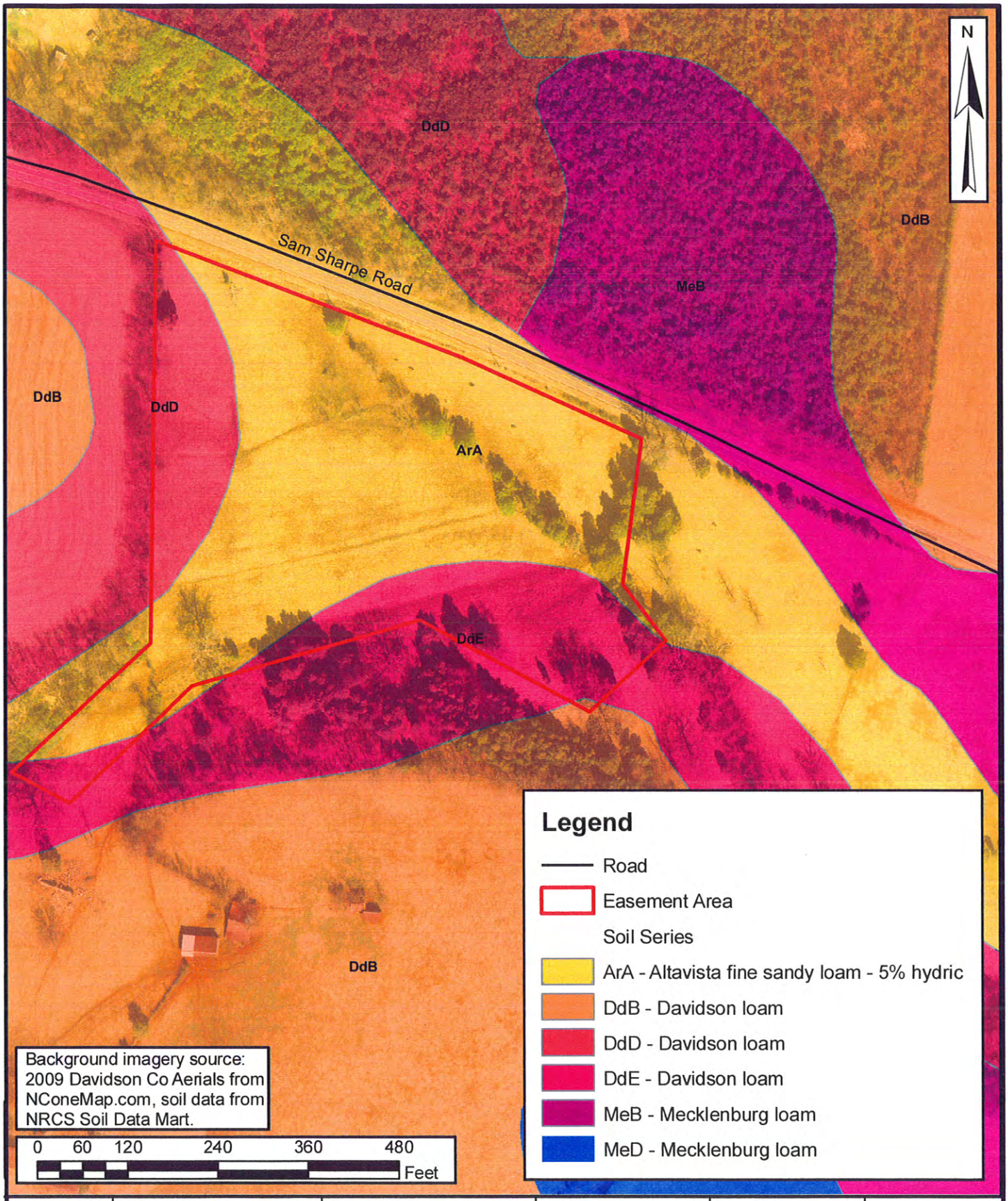
CC: John Preyer, Restoration Systems, LLC



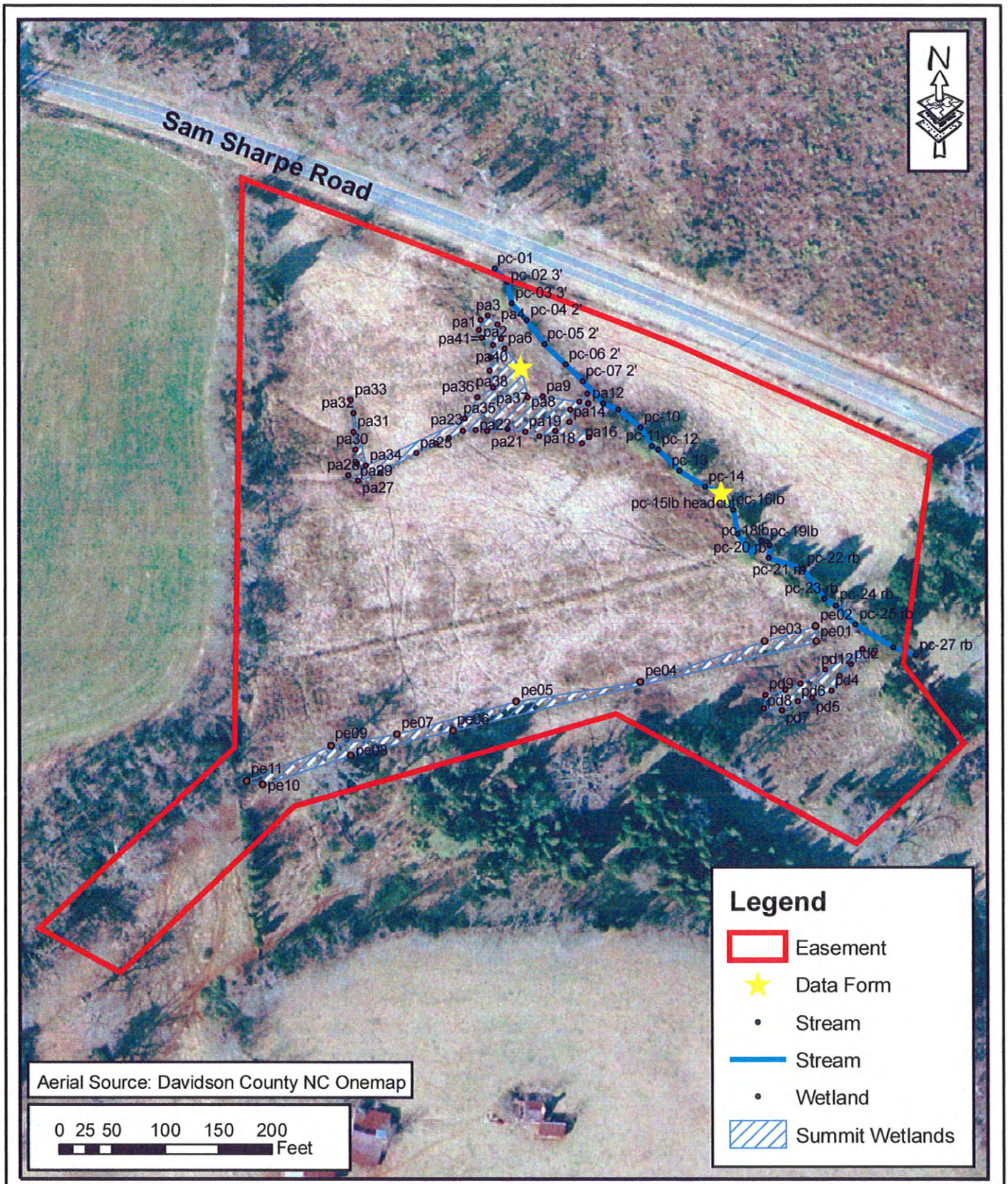
Axiom Environmental, Inc.	Prepared for: RESTORATION SYSTEMS LLC	Project: SUMMIT SEEP, Davidson County, NC	Title: VICINITY MAP	Drawn by: MDT Date: DEC 2010 Scale: 1:6000 Project No.: 10-017	FIGURE 1



Axiom Environmental, Inc.	Prepared for: RESTORATION SYSTEMS LLC	Project: SUMMIT SEEP, Davidson County, NC	Title: WATERSHED MAP	Drawn by: MDT Date: DEC 2010 Scale: 1:250000 Project No.: 10-017	FIGURE 2



Axiom Environmental, Inc.	Prepared for: RESTORATION SYSTEMS LLC	Project: SUMMIT SEEP, Davidson County, NC	Title: SOILS MAP	Drawn by: MDT Date: DEC 2010 Scale: 1:2000 Project No.: 10-017	FIGURE 3

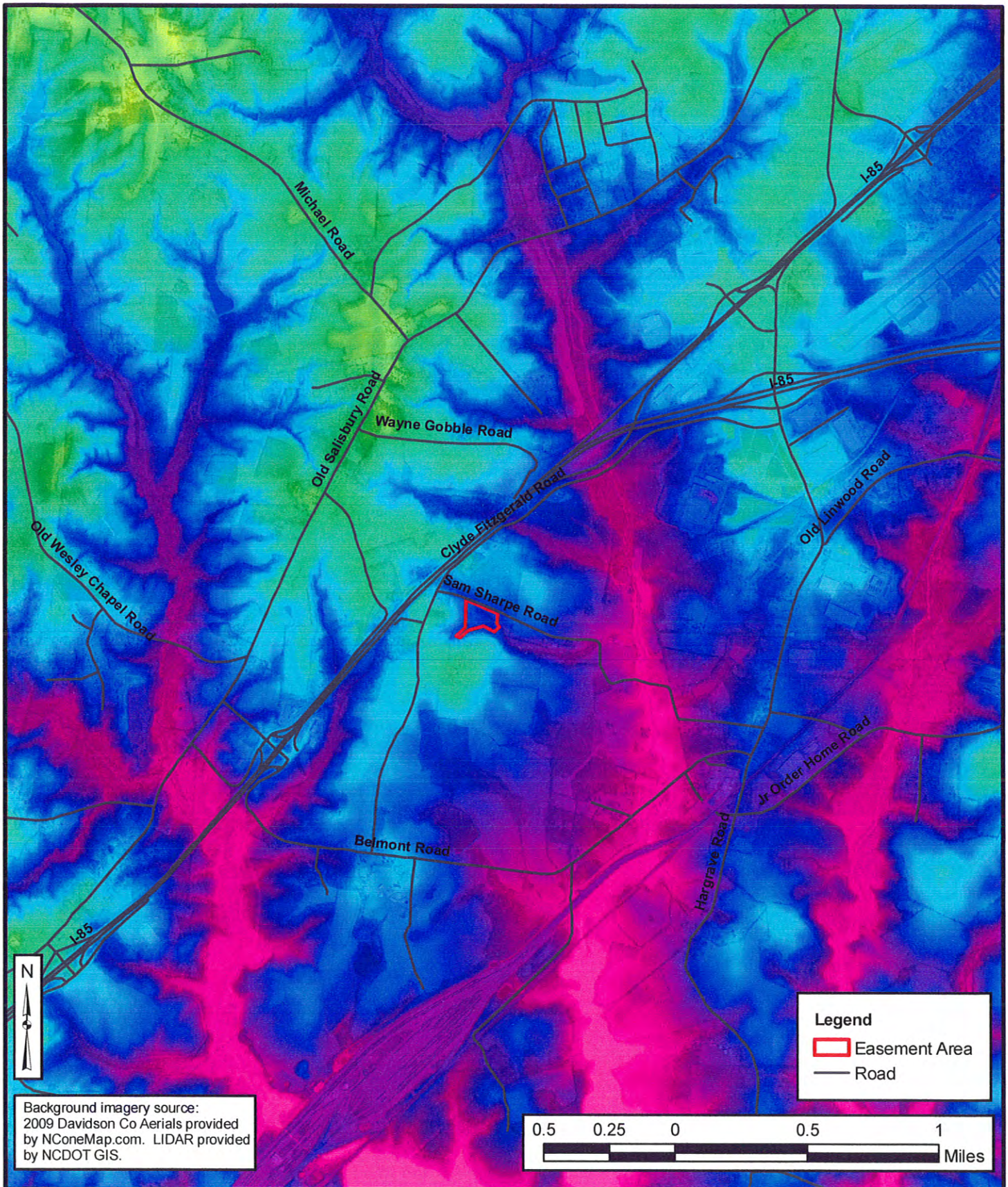


Axiom Environmental, Inc.

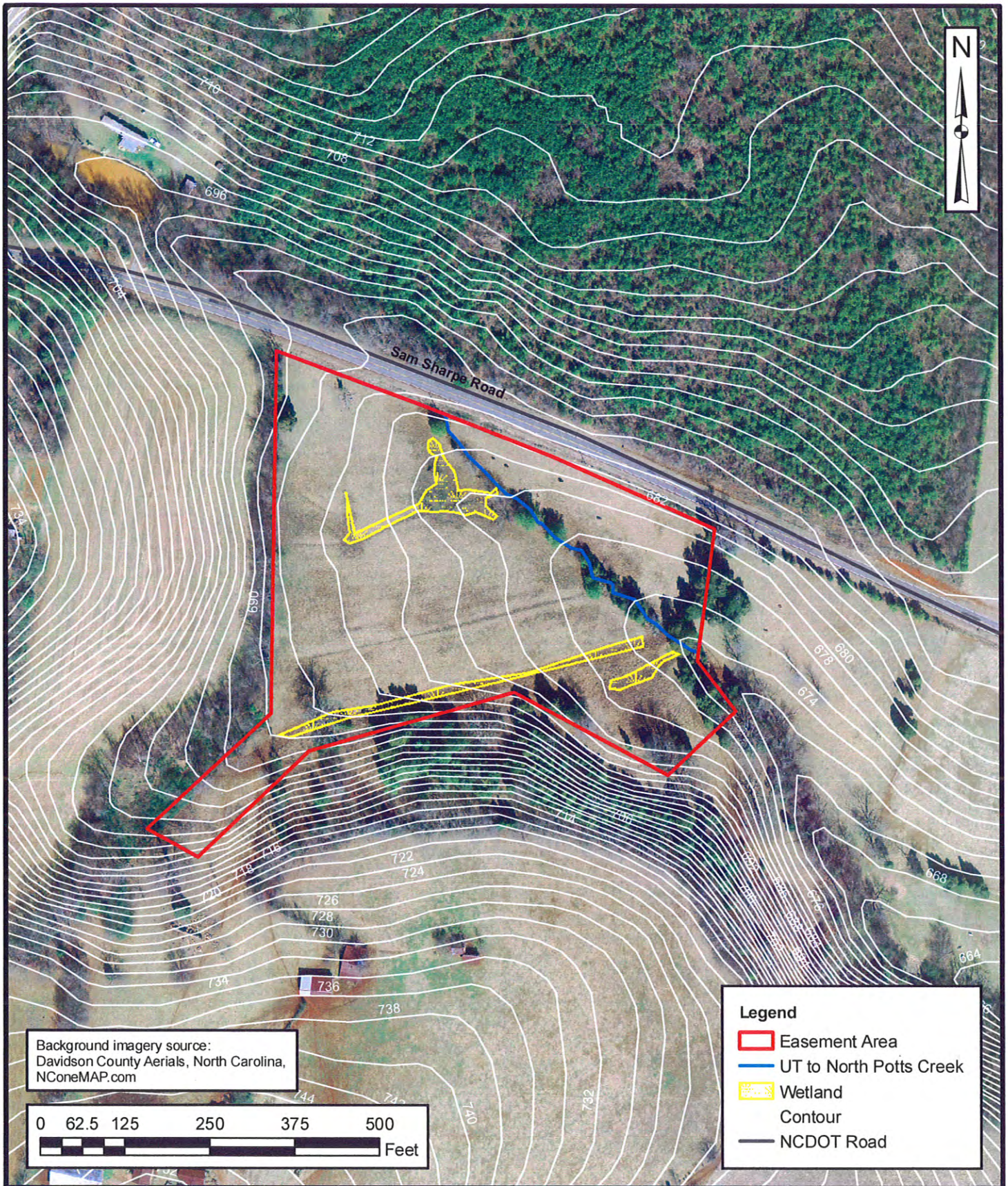
Axiom Environmental
20 Enterprise Street
Suite 7
Raleigh NC, 27607

Summit Seep
Jusrisdictional Areas
Davidson County, North Carolina

Dwn. by:	FIGURE
PHP	4
Date: December 2010	
Project: 10-017	



Axiom Environmental, Inc.	Prepared for: RESTORATION SYSTEMS LLC	Project: **SUMMIT SEEP** Davidson County, NC	Title: **LiDAR MAP**	Drawn by: MDT Date: DEC 2010 Scale: 1:30000 Project No.: 10-017	FIGURE 5



Axiom Environmental, Inc.	Prepared for: RESTORATION SYSTEMS LLC	Project: **SUMMIT SEEP** Davidson County, NC	Title: **CONTOUR MAP**	Drawn by: MDT Date: DEC 2010 Scale: 1:2200 Project No.: 10-017	FIGURE 6

Flag PC-15

USACE AID# _____ DWQ # _____ Site # ____ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: Restoration Systems
2. Evaluator's name: Perkinson
3. Date of evaluation: 10-14-10
4. Time of evaluation: 10:30am
5. Name of stream: Summit Corp. PC-15
6. River basin: YADKIN
7. Approximate drainage area: ~130acres
8. Stream order: 2nd
9. Length of reach evaluated: 50'
10. County: Davidson
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any): _____

Latitude (ex. 34.872312): 35.76218 Longitude (ex. -77.55661): -80.33477

Method location determined (circle): GPS Topo Sheet (Ortho (Aerial) Photo/GIS) (Other GIS) Other _____

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): Sam Sharpe road

14. Proposed channel work (if any): None

15. Recent weather conditions: rain in past 24 hours

16. Site conditions at time of visit: Overcast / drizzle

17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat ___Trout Waters ___Outstanding Resource Waters ___Nutrient Sensitive Waters ___Water Supply Watershed ___(I-IV)

18. Is there a pond or lake located upstream of the evaluation point? YES (NO) If yes, estimate the water surface area: _____

19. Does channel appear on USGS quad map? (YES) NO

20. Does channel appear on USDA Soil Survey? (YES) NO

21. Estimated watershed land use: 10 % Residential 5 % Commercial ___% Industrial 45 % Agricultural 30 % Forested ___% Cleared / Logged ___% Other (_____)

22. Bankfull width: 3' 23. Bank height (from bed to top of bank): _____

24. Channel slope down center of stream: ___Flat (0 to 2%) X Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)

25. Channel sinuosity: ___Straight X Occasional bends ___Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 56 **Comments:** _____

Evaluator's Signature _____ **Date** 10-14-10

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change - version 06/03. To Comment, please call 919-876-8441 x 26.

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0 - 5	0 - 4	0 - 5	4
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0 - 6	0 - 5	0 - 5	2
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0 - 6	0 - 4	0 - 5	1
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0 - 5	0 - 4	0 - 4	4
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 - 3	0 - 4	0 - 4	4
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0 - 4	0 - 4	0 - 2	3
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0 - 5	0 - 4	0 - 2	1
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0 - 6	0 - 4	0 - 2	4
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0 - 5	0 - 4	0 - 3	2
	10	**Sediment input** (extensive deposition = 0; little or no sediment = max points)	0 - 5	0 - 4	0 - 4	2
	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 - 4	0 - 5	4
	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0 - 5	0 - 4	0 - 5	2
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0 - 5	0 - 5	0 - 5	1
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0 - 3	0 - 4	0 - 5	2
	15	**Impact by agriculture, livestock, or timber production** (substantial impact = 0; no evidence = max points)	0 - 5	0 - 4	0 - 5	0
	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0 - 3	0 - 5	0 - 6	4
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0 - 6	0 - 6	0 - 6	4
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0 - 5	0 - 5	0 - 5	4
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0 - 4	0 - 4	2
	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0 - 4	0 - 5	0 - 5	3
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0 - 4	0 - 4	0 - 4	3
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0 - 4	0 - 4	0 - 4	0
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0 - 6	0 - 5	0 - 5	0
Total Points Possible			100	100	100	
TOTAL SCORE (also enter on first page)						56

56

* These characteristics are not assessed in coastal streams.

wP

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Summit Seep City/County: Davidson Sampling Date: 10-14-10

Applicant/Owner: Restoration Systems State: NC Sampling Point: [illegible]

Investigator(s): [illegible]/Axiom Section, Township, Range: Linwood

Landform (hillslope, terrace, etc.): flood plain Local relief (concave, convex, none): TSCL Slope (%): 3-5

Subregion (LRR or MLRA): P Lat: 35.76216 Long: 80.33477 Datum: NAD 83

Soil Map Unit Name: [illegible] silt loam NWI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:
hydrology is being removed to drainage [illegible] site.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: PA07_WD

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		

Herb Stratum (Plot size: 10ft r)			
1. Juncus Effusus	30		FACW
2. Andropogon Virginicus	70	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Site is maintained for annual grazing.

SOIL

Sampling Point: PA07 up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10yr 7-1	100					S:L	
4-8	10yr 7-1	60	10yr 5/8	30	C/M	M	S:L	
8+	10yr 7-1	90	10yr 5-2	10	C/M	M	S:L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) (LRR N)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ___ Thin Dark Surface (S9) (MLRA 147, 148)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) (LRR N, MLRA 130)
- ___ Umbric Surface (F13) (MLRA 136, 122)
- ___ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (MLRA 147)
- ___ Coast Prairie Redox (A16) (MLRA 147, 148)
- ___ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

wet

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Summit Geep City/County: Davidson Sampling Date: 10-14-10

Applicant/Owner: Restoration Systems State: NC Sampling Point: PA-07

Investigator(s): Perkinson / Axiom Section, Township, Range: [illegible]

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): [illegible] Slope (%): 2-5

Subregion (LRR or MLRA): P Lat: 35.76214 Long: -80.33477 Datum: NAD 1983

Soil Map Unit Name: Armenia Silt Loam NWI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes Y	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? Yes X No ___

Remarks: 1) at time of site visit NC drought monitor indicated abnormally dry (D0) conditions. 2) site has been ditched to reduce hydrology

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 0
Water Table Present?	Yes X	No ___	Depth (inches): 5"
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: PA-07

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10ft r)			
1. Lonicera occidentalis	5		OBL
2. Rhododendron viscosum	15		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20 = Total Cover		
Herb Stratum (Plot size: 10ft r)			
1. Juncus effusus	40		FACW
2. Phalaris arundinacea	20		OBL
3. Symphyotrichum lateriflorum	10		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1.	0		
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 2	x 1 = 2
FACW species 1	x 2 = 2
FAC species 1	x 3 = 3
FACU species	x 4 =
UPL species	x 5 =
Column Totals: 5 (A)	7 (B)

Prevalence Index = B/A = 1.6

Hydrophytic Vegetation Indicators:

- X 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: PW7 U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10yr 7-1	90	10yr 6-8	10	C M	M	S L	
3-6	10yr 4-1	90	10yr 5-1	10	C M	M	S L	
6+	10yr 5/1	90	10yr 5-8	10	C M	M	S L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) (LRR N)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ___ Thin Dark Surface (S9) (MLRA 147, 148)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ___ Umbric Surface (F13) (MLRA 136, 122)
- ___ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (MLRA 147)
- ___ Coast Prairie Redox (A16) (MLRA 147, 148)
- ___ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: North Carolina County/parish/borough: Davidson City: Linwood
Center coordinates of site (lat/long in degree decimal format): Lat. 35.76218° N, Long. -80.33477° W.
Universal Transverse Mercator:
Name of nearest waterbody: North Potts Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Yadkin River
Name of watershed or Hydrologic Unit Code (HUC): 03040103 Yadkin River Basin
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There Are no *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There Are *"waters of the U.S."* within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: 578 linear feet: 4 width (ft) and/or acres.
      Wetlands: .31 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain:

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW:

   Summarize rationale supporting determination:

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: Pick List
   Drainage area: Pick List
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through Pick List tributaries before entering TNW.

   Project waters are Pick List river miles from TNW.
   Project waters are Pick List river miles from RPW.
   Project waters are Pick List aerial (straight) miles from TNW.
   Project waters are Pick List aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain:

   Identify flow route to TNW[5]:
   Tributary stream order, if known:

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: Pick List.

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: Pick List
Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: Pick List
Estimate average number of flow events in review area/year: Pick List
Describe flow regime:
Other information on duration and volume:

Surface flow is: Pick List. Characteristics:

Subsurface flow: Pick List. Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain:
Identify specific pollutants, if known:

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[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**
- ☐ Riparian corridor. Characteristics (type, average width):
- ☐ Wetland fringe. Characteristics:
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings:
  - ☐ Fish/spawn areas. Explain findings:
  - ☐ Other environmentally-sensitive species. Explain findings:
  - ☐ Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain:

Surface flow is: Pick List

Characteristics:

Subsurface flow: Pick List. Explain findings:

- ☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain:
  - ☐ Ecological connection. Explain:
  - ☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.

Project waters are Pick List aerial (straight) miles from TNW.

Flow is from: Pick List.

Estimate approximate location of wetland as within the Pick List floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**
- ☐ Riparian buffer. Characteristics (type, average width):
- ☐ Vegetation type/percent cover. Explain:
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings:
  - ☐ Fish/spawn areas. Explain findings:
  - ☐ Other environmentally-sensitive species. Explain findings:
  - ☐ Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: Pick List

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: Based on score of ACOE stream assement form.
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☒ Tributary waters: 578 linear feet 4 width (ft).
- ☐ Other non-wetland waters: acres.
  Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   - ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☐ Tributary waters: linear feet width (ft).
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
     - ☒ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: .31 acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   - ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
   - ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
   - ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
   - ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]**
- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  - Identify type(s) of waters: .
- ☐ Wetlands: acres.

E. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- ☐ Other; (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☒ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☒ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: Lexington West 7.5 Minute.
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Davidson County.
- ☐ National wetlands inventory map(s). Cite name: .
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☐ Photographs: ☐ Aerial (Name & Date): .
  - or ☒ Other (Name & Date): Summit Seep 10-14-2010 .
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☒ Other information (please specify): Figure 1.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

NC WAM FIELD ASSESSMENT FORM
Accompanies User Manual Version 4.1
Rating Calculator Version 4.1

Wetland Site Name	Summit Seep	**Date**	10/14/10
Wetland Type	Seep	**Assessor Name/Organization**	M. Thomas/Axiom
Level III Ecoregion	Piedmont	**Nearest Named Water Body**	North Potts Creek
River Basin	Yadkin-PeeDee	**USGS 8-Digit Catalogue Unit**	03040103
☐ Yes ☒ No	**Precipitation within 48 hrs?**	**Latitude/Longitude (deci-degrees)**	35.761549, -080.334097

Evidence of stressors affecting the assessment area (may not be within the assessment area).
Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed? ☒ Yes ☐ No

Regulatory Considerations (select all that apply to the assessment area.)

☐ Anadromous fish
☐ Federally protected species or State endangered or threatened species
☐ NCDWQ riparian buffer rule in effect
☐ Abuts a Primary Nursery Area (PNA)
☐ Publicly owned property
☐ N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
☐ Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
☐ Designated NCNHP reference community
☐ Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

What type of natural stream is associated with the wetland, if any? (check all that apply)

☐ Blackwater
☒ Brownwater
☐ Tidal (if tidal, check one of the following boxes) ☐ Lunar ☐ Wind ☐ Both

Is the assessment area on a coastal island? ☐ Yes ☒ No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver? ☐ Yes ☒ No

Does the assessment area experience overbank flooding during normal rainfall conditions? ☒ Yes ☐ No

1. Ground Surface Condition/Vegetation Condition – assessment area condition metric

Check a box in each column. Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence an effect.

GS	VS	
☐A	☐A	Not severely altered
☒B	☒B	Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, less diversity [if appropriate], hydrologic alteration)

2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric

Check a box in each column. Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. Refer to the current NRCS lateral effect of ditching guidance for North Carolina hydric soils (see USACE Wilmington District website) for the zone of influence of ditches in hydric soils. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

Surf	Sub	
☐A	☐A	Water storage capacity and duration are not altered.
☒B	☒B	Water storage capacity or duration are altered, but not substantially (typically, not sufficient to change vegetation).
☐C	☐C	Water storage capacity or duration are substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines).

3. Water Storage/Surface Relief – assessment area/wetland type condition metric (answer for non-marsh wetlands only)

Check a box in each column. Select the appropriate storage for the assessment area (AA) and the wetland type (WT).

	AA	WT	
3a.	☐A	☐A	Majority of wetland with depressions able to pond water > 1 deep
	☐B	☐B	Majority of wetland with depressions able to pond water 6 inches to 1 foot deep
	☐C	☐C	Majority of wetland with depressions able to pond water 3 to 6 inches deep
	☒D	☒D	Depressions able to pond water < 3 inches deep

3b. ☐A Evidence that maximum depth of inundation is greater than 2 feet
☐B Evidence that maximum depth of inundation is between 1 and 2 feet
☒C Evidence that maximum depth of inundation is less than 1 foot

4. Soil Texture/Structure – assessment area condition metric

Check a box from each of the three soil property groups below. Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent National Technical Committee for Hydric Soils guidance for regional indicators.

4a.
- ☐A Sandy soil
- ☒B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)
- ☐C Loamy or clayey soils not exhibiting redoximorphic features
- ☐D Loamy or clayey gleyed soil
- ☐E Histosol or histic epipedon

4b.
- ☒A Soil ribbon < 1 inch
- ☐B Soil ribbon ≥ 1 inch

4c.
- ☒A No peat or muck presence
- ☐B A peat or muck presence

5. Discharge into Wetland – opportunity metric

Check a box in each column. Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

Surf	Sub	
☐A	☒A	Little or no evidence of pollutants or discharges entering the assessment area
☒B	☐B	Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area
☐C	☐C	Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor)

6. Land Use – opportunity metric

Check all that apply (at least one box in each column). Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

WS	5M	2M	
☐A	☐A	☐A	≥ 10% impervious surfaces
☒B	☒B	☒B	< 10% impervious surfaces
☐C	☐C	☐C	Confined animal operations (or other local, concentrated source of pollutants
☒D	☒D	☒D	≥ 20% coverage of pasture
☐E	☐E	☐E	≥ 20% coverage of agricultural land (regularly plowed land)
☐F	☐F	☐F	≥ 20% coverage of maintained grass/herb
☐G	☐G	☐G	≥ 20% coverage of clear-cut land
☐H	☐H	☐H	Little or no opportunity to improve water quality. Lack of opportunity may result from hydrologic alterations that prevent drainage or overbank flow from affecting the assessment area.

7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric

7a. Is assessment area within 50 feet of a tributary or other open water?
☒Yes ☐No If Yes, continue to 7b. If No, skip to Metric 8.
Wetland buffer need only be present on one side of the water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.

7b. How much of the first 50 feet from the bank is wetland? Descriptor E should be selected if ditches effectively bypass the buffer.
- ☐A ≥ 50 feet
- ☒B From 30 to < 50 feet
- ☐C From 15 to < 30 feet
- ☐D From 5 to < 15 feet
- ☐E < 5 feet or buffer bypassed by ditches

7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.
☒≤ 15-feet wide ☐> 15-feet wide ☐ Other open water (no tributary present)

7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?
☒Yes ☐No

7e. Is stream or other open water sheltered or exposed?
☒Sheltered – adjacent open water with width < 2500 feet and no regular boat traffic.
☐Exposed – adjacent open water with width ≥ 2500 feet or regular boat traffic.

8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate for riparian wetlands only)

Check a box in each column for riverine wetlands only. Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

WT	WC	
☐A	☐A	≥ 100 feet
☐B	☐B	From 80 to < 100 feet
☐C	☐C	From 50 to < 80 feet
☐D	☐D	From 40 to < 50 feet
☐E	☐E	From 30 to < 40 feet
☒F	☒F	From 15 to < 30 feet
☐G	☐G	From 5 to < 15 feet
☐H	☐H	< 5 feet

9. Inundation Duration – assessment area condition metric

Answer for assessment area dominant landform.

☒A Evidence of short-duration inundation (< 7 consecutive days)
☐B Evidence of saturation, without evidence of inundation
☐C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

10. Indicators of Deposition – assessment area condition metric

Consider recent deposition only (no plant growth since deposition).

☒A Sediment deposition is not excessive, but at approximately natural levels.
☐B Sediment deposition is excessive, but not overwhelming the wetland.
☐C Sediment deposition is excessive and is overwhelming the wetland.

11. Wetland Size – wetland type/wetland complex condition metric

Check a box in each column. Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)	
☐A	☐A	☐A	≥ 500 acres
☐B	☐B	☐B	From 100 to < 500 acres
☐C	☐C	☐C	From 50 to < 100 acres
☐D	☐D	☐D	From 25 to < 50 acres
☐E	☐E	☐E	From 10 to < 25 acres
☐F	☐F	☐F	From 5 to < 10 acres
☐G	☐G	☐G	From 1 to < 5 acres
☐H	☐H	☐H	From 0.5 to < 1 acre
☒I	☒I	☐I	From 0.1 to < 0.5 acre
☐J	☐J	☐J	From 0.01 to < 0.1 acre
☐K	☐K	☒K	< 0.01 acre or assessment area is clear-cut

12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)

☐A Pocosin is the full extent (≥ 90%) of its natural landscape size.
☐B Pocosin type is < 90% of the full extent of its natural landscape size.

13. Connectivity to Other Natural Areas – landscape condition metric

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
☐A	☐A	≥ 500 acres
☐B	☐B	From 100 to < 500 acres
☐C	☐C	From 50 to < 100 acres
☐D	☐D	From 10 to < 50 acres
☐E	☐E	< 10 acres
☐F	☒F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

☐Yes ☐No Wetland type has a surface hydrology connection to open waters/stream or tidal wetlands.

14. Edge Effect – wetland type condition metric (skip for all marshes)

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass.

☐A No artificial edge within 150 feet in all directions
☐B No artificial edge within 150 feet in four (4) to seven (7) directions
☒C An artificial edge occurs within 150 feet in more than four (4) directions or assessment area is clear-cut

15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)

☐A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
☐B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
☒C .
Vegetation severely altered from reference in composition. Expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species). Exotic species are dominant in at least one stratum.

16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)

☐A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
☐B Vegetation diversity is low or has > 10% to 50% cover of exotics.
☐C Vegetation is dominated by exotic species (> 50 % cover of exotics).

17. Vegetative Structure – assessment area/wetland type condition metric

17a. Is vegetation present?
☒Yes ☐No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.
☐A ≥ 25% coverage of vegetation
☐B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	☐A	☐A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	☐B	☐B	Canopy present, but opened more than natural gaps
	☒C	☒C	Canopy sparse or absent
Mid-Story	☐A	☐A	Dense mid-story/sapling layer
	☐B	☐B	Moderate density mid-story/sapling layer
	☒C	☒C	Mid-story/sapling layer sparse or absent
Shrub	☐A	☐A	Dense shrub layer
	☐B	☐B	Moderate density shrub layer
	☒C	☒C	Shrub layer sparse or absent
Herb	☒A	☒A	Dense herb layer
	☐B	☐B	Moderate density herb layer
	☐C	☐C	Herb layer sparse or absent

18. Snags – wetland type condition metric

☐A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).
☒B Not A

19. Diameter Class Distribution – wetland type condition metric

☐A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.
☐B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.
☒C Majority of canopy trees are < 6 inches DBH or no trees.

20. Large Woody Debris – wetland type condition metric

Include both natural debris and man-placed natural debris.
☐A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).
☒B Not A

21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.

☐A ☐B ☐C ☐D

22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands only)

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision.
☒A Overbank and overland flow are not severely altered in the assessment area.
☐B Overbank flow is severely altered in the assessment area.
☐C Overland flow is severely altered in the assessment area.
☐D Both overbank and overland flow are severely altered in the assessment area.

Notes

NC WAM Wetland Rating Sheet
Accompanies User Manual Version 4.1
Rating Calculator Version 4.1

Wetland Site Name	Summit Seep	Date of Assessment	10/14/10
Wetland Type	Seep	Assessor Name/Organization	M. Thomas/Axiom

Notes on Field Assessment Form (Y/N)	NO
Presence of regulatory considerations (Y/N)	NO
Wetland is intensively managed (Y/N)	YES
Assessment area is located within 50 feet of a natural tributary or other open water (Y/N)	YES
Assessment area is substantially altered by beaver (Y/N)	NO
Assessment area experiences overbank flooding during normal rainfall conditions (Y/N)	YES
Assessment area is on a coastal island (Y/N)	NO

Sub-function Rating Summary

Function	Sub-function	Metrics	Rating
Hydrology	Surface Storage and Retention	Condition	NA
	Sub-surface Storage and Retention	Condition	NA
Water Quality	Pathogen Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Particulate Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Soluble Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Physical Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Pollution Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
Habitat	Physical Structure	Condition	**MEDIUM**
	Landscape Patch Structure	Condition	**LOW**
	Vegetation Composition	Condition	**LOW**

Function Rating Summary

Function	Metrics	Rating
Hydrology	Condition	**MEDIUM**
Water Quality	Condition	**LOW**
	Condition/Opportunity	NA
	Opportunity Presence (Y/N)	NA
Habitat	Condition	**LOW**

Overall Wetland Rating LOW

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **201100149** County: **Davidson** U.S.G.S. Quad: **Lexington West**

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: **Restoration Systems LLC / Worth Creech**
Address: **1101 Haynes Street, Suite 211**

Raleigh, NC 27604
Telephone No.: **919 334-9114**

Property description:
Size (acres) **8** Nearest Town **Linwood**
Nearest Waterway **North Potts Creek** River Basin **Yadkin River**
USGS HUC **03040103** Coordinates N **35.7611706** W **-80.3348213**
Location description **Site known as Summit Seep located off of Sam Sharpe Road east of intersection with Clyde Fitzgerald Road, adjacent to tributaries of North Potts Creek, west of Linwood, in Davidson County, North Carolina.**

Indicate Which of the Following Apply:

A. Preliminary Determination

_ Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).

B. Approved Determination

_ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

X There are waters of the U.S. on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.

X The waters of the U.S. including wetland on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

_ The wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Washington, NC, at (252) 946-6481 to determine their requirements.

Action ID: _____

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **John Thomas** at **919 554-4884 ext. 25**.

C. Basis For Determination

There are stream channels within your project site which are tributaries of North Potts Creek which flows into the Yadkin River and the Atlantic Ocean.

D. Remarks

E. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

District Engineer, Wilmington Regulatory Division
Attn:Jean Manuele, Project Manager,
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the District Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **March 22, 2011**.

It is not necessary to submit an RFA form to the District Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: _____

Date **01/20/2011** Expiration Date **01/20/2016**

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at our website at http://regulatory.usacesurvey.com/ to complete the survey online.

Copy furnished:
Joyce Stokes Parsons, 1889 Clyde Fitzgerald Road, Linwood, NC 27299;
Grant Lewis, Axiom Environmental, Inc., 20 Enterprise St. Suite 7, Raleigh, NC 27607

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Restoration Systems LLC, Summit Seep, Worth Creech	File Number: SAW 2011 00149	Date: January 20, 2011
Attached is:		See Section below
☐ INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
☐ PROFFERED PERMIT (Standard Permit or Letter of permission)		B
☐ PERMIT DENIAL		C
☒ APPROVED JURISDICTIONAL DETERMINATION		D
☐ PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: John Thomas @ 919 554-4884 ext. 25	If you only have questions regarding the appeal process you may also contact: Mr. Mike Bell, Administrative Appeal Review Officer CESAD-ET-CO-R U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 9M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

For appeals on Initial Proffered Permits and approved Jurisdictional Determinations send this form to:

District Engineer, Wilmington Regulatory Division, Attn:Jean Manuele, Project Manager, Raleigh Regulatory Field Office, 3331 Heritage Trade Drive , Suite 105, Wake Forest, North Carolina 27587

For Permit denials and Proffered Permits send this form to:

Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Mike Bell, Administrative Appeal Officer, CESAD-ET-CO-R, 60 Forsyth Street, Room 9M15, Atlanta, Georgia 30303-8801

APPENDIX F
PERFORMANCE BOND

.

NORTH AMERICAN
SPECIALTY INSURANCE COMPANY

North American Specialty Insurance Company
1200 Arlington Heights Road, Suite 400, Itasca, IL 60143-2625

Performance Bond

Bond No. **2138925**

KNOW ALL MEN BY THESE PRESENTS, that we, **Restoration Systems, LLC**, as Principal, and **North American Specialty Insurance Company**, licensed to do business in the State of, **NC** as Surety, are held and firmly bound unto **North Carolina Department of Environment and Natural Resources** (Obligee), in the penal sum of **One Hundred Forty Thousand, Nine Hundred Thirty Seven and 50/100** Dollars (**$140,937.50**), lawful money of the United States of America, for the payment of which sum, well and truly to be made, the Principal and Surety do bind themselves, their heirs, executors, administrators, and successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the above bounden Principal has entered into certain written Contract with the above named Obligee, effective the **30th** day of **June**, **2010**, for **Summit Seep Wetland Mitigation Site Site, Contract #003244** and more fully described in said Contract, a copy of which is attached, which Agreement is made a part hereof and incorporated herein by reference, except that nothing said therein shall alter, enlarge, expand or otherwise modify the term of the bond as set out below.

NOW, THEREFORE, if Principal, its executors, administrators, successors and assigns shall promptly and faithfully perform the Contract, according to the terms, stipulations or conditions thereof, then this obligation shall become null and void, otherwise to remain in full force and effect subject to the following:

Notwithstanding the provisions of the Contract, this bond will commence on the date of the submittal of Task 3 (submittal of Restoration Plan) and will terminate the earlier of two years from the submittal of the Restoration Plan or receipt of written notification from EEP that the requirements of Task 6 (Submittal of Mitigation Plan) have been met.

Sealed with our seals and dated this **8th** day of **February, 2011**.

Jane Ralston
Witness

Restoration Systems, LLC

John Preyer
Principal

Heather Kennedy
Witness

North American Specialty Insurance Company

Kenneth J. Peeples, Attorney-in-Fact

Agreed and acknowledged this ___ day of _____, **2011**

By: _____
Obligee

S-5025 (08-99)

NAS SURETY GROUP

NORTH AMERICAN SPECIALTY INSURANCE COMPANY
WASHINGTON INTERNATIONAL INSURANCE COMPANY

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT North American Specialty Insurance Company, a corporation duly organized and existing under laws of the State of New Hampshire, and having its principal office in the City of Manchester, New Hampshire, and Washington International Insurance Company, a corporation organized and existing under the laws of the State of New Hampshire and having its principal office in the City of Schaumburg, Illinois, each does hereby make, constitute and appoint:

KENNETH J. PEEPLES, SOUTHGATE JONES, III, JAMES P. CARTER, II, BOBBI D. PENDLETON,
PHOEBE C. HONEYCUTT, KITARA A. SMITH, NEIL B. BILLER and HEATHER KENNEDY

JOINTLY OR SEVERALLY

Its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

FIFTY MILLION ($50,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on the 24th of March, 2000:

"RESOLVED, that any two of the Presidents, any Managing Director, any Senior Vice President, any Vice President, any Assistant Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."

NORTH AMERICAN SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1973 NEW HAMPSHIRE

By _____
Steven P. Anderson, President & Chief Executive Officer of Washington International Insurance Company & Senior Vice President of North American Specialty Insurance Company

By _____
David M. Layman, Senior Vice President of Washington International Insurance Company & Vice President of North American Specialty Insurance Company

WASHINGTON INTERNATIONAL INSURANCE COMPANY CORPORATE SEAL NEW HAMPSHIRE

IN WITNESS WHEREOF, North American Specialty Insurance Company and Washington International Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 12th day of October, 2010.

North American Specialty Insurance Company
Washington International Insurance Company

State of Illinois
County of Cook ss:

On this 12th day of October, 2010, before me, a Notary Public personally appeared Steven P. Anderson, President and CEO of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and David M. Layman, Senior Vice President of Washington International Insurance Company and Vice President of North American Specialty Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.

"OFFICIAL SEAL"
DONNA D. SKLENS
Notary Public, State of Illinois
My Commission Expires 10/06/2011

Donna D. Sklens
Donna D. Sklens, Notary Public

I, James A. Carpenter, the duly elected Assistant Secretary of North American Specialty Insurance Company and Washington International Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said North American Specialty Insurance Company and Washington International Insurance Company, which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 8 day of February, 2011.

James A. Carpenter
James A. Carpenter, Vice President & Assistant Secretary of Washington International Insurance Company & North American Specialty Insurance Company