



February 28, 2007

Alliance Consulting Engineers, Inc.
Post Office Box 8147
Columbia, South Carolina 29202-8147

Attention: Mr. Ross Oakley, Project Manager

Reference: **Protected Species Assessment**
Black River Airport Industrial Park – 547 Acres
Sumter County, South Carolina
S&ME Project No. 1614-06-539

Dear Mr. Oakley:

S&ME, Inc. (S&ME) is pleased to submit this report detailing our Protected Species Assessment for the above-referenced site located in Sumter County, South Carolina (Figure 1). This work was performed in general accordance with S&ME Proposal No. 1614-4906-06, dated December 12, 2006 and our Agreement for Services (AS-041) Form. This report and the on-site pedestrian survey have been conducted to assess the potential for the presence of protected species habitat at the subject site in preparation for proposed future development.

1.0 PROJECT BACKGROUND

The approximate 547-acre site (33° 45' 59"N/80° 13' 15"W) is part of the Black River Airport Industrial Park located approximately two miles north, northwest of the City of Sumter. The site consists of seven separate tracts. The site is identified on a portion of the Sumter East, South Carolina USGS 7.5-minute topographic quadrangle map, dated 1957, revised 1982 (Figure 2). Currently, the site is mainly used as farmland and timberland.

The site is proposed for development with industrial or light industrial facilities. Future entrance roads and detention ponds are likely to be constructed. At this time, plans have not been created for specific development.

2.0 SITE/HABITAT DESCRIPTIONS

The site is located in central Sumter County within the Atlantic Southern Loam Plains ecoregion of South Carolina. The properties adjacent to the site consist of commercial businesses, industrial and light industrial facilities, woodland, farmland, a golf course, and residential parcels. The site primarily consists of the following habitat types: open/agricultural fields, planted pines, forested wetlands, and mixed pine-hardwood forest. Refer to the Aerial Map (Figure 3) for the locations of various habitats.

Tract 1 (Photos 1 and 2)

Tract 1 (15.2 acres) consists of an open field. Species observed include common dandelion (*Taraxacum officinale*), henbit (*Lamium aplexicaule*), geranium (*Geranium carolinianum*), wild onion (*Allium vineale*), vetch (*Vicia* sp.), bahiagrass (*Paspalum notatum*), and crabgrass (*Digitaria ciliaris*). A small stand of short longleaf pine (*Pinus palustris*) was also observed.

Tract 2 (Photos 3-5)

Tract 2 (63.5 acres) is primarily a agricultural field. Two large ditched streams are located along the eastern and western boundaries of Tract 2. Species observed in and around these ditched streams include loblolly pine (*P. taeda*), water oak (*Quercus nigra*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), red bay (*Persea borbonia*), wax myrtle (*Morella cerifera*), sea myrtle (*Baccharis halimifolia*), switchcane (*Arundinaria gigantea*), laurel-leaf greenbrier (*Smilax laurifolia*), lance-leaf greenbrier (*S. smallii*), common greenbrier (*S. rotundifolia*), yellow jessamine (*Gelsemium sempervirens*), goldenrod (*Solidago* sp.), blackberry (*Rubus* sp.), and bracken fern (*Pteridium aquilinum*). A small wooded area was observed on the northern portion of Tract 2. Species in the wooded area included water oak, loblolly pine, post oak (*Q. stellata*), and yellow jessamine.

Tract 3 (Photos 6 and 7)

Tract 3 (200 acres) consists primarily of planted loblolly pine approximately 40 to 45 feet tall. An understory of sweetgum, water oak, wax myrtle, black cherry (*Prunus serotina*), yellow jessamine, broomsedge (*Andropogon virginicus*), and blackberry were typically observed among the pines. Hardwood areas mixed with scattered pines were observed on the southern portion of Tract 3 near Jefferson Road and on the central portion Tract 3. These areas appeared to have been agricultural fields in the past.

Tract 4 (Photos 8 and 9)

Tract 4 (27.8 acres) consists primarily of open field surrounding a large existing speculative building. Small loblolly pine stands were observed on the western and southern portions of Tract 4. Scrubby pine and blackberry thickets were observed on the eastern portion of Tract 4 near Airport Road.

Tracts 5 and 6 (Photos 10-13)

Tracts 5 (39 acres) and 6 (35 acres) consist primarily of planted loblolly pine stands. An understory of sweetgum, water oak, wax myrtle, black cherry, yellow jessamine, broomsedge, and blackberry were typically observed among the pines. A small hardwood area was observed on the southeastern portion of Tract 5. Species observed in this area were sweetgum, American sycamore (*Platanus occidentalis*), Japanese honeysuckle (*Lonicera japonica*), and ebony spleenwort (*Asplenium platyneuron*). A small wetland area (<0.1 acre) was observed on the northern portion of Tract 6. Species within the small wetland include sweetgum, red maple, common greenbrier, and sedge (*Carex* sp.).

Tract 7 (Photos 14-18)

A majority of Tract 7 (140.1 acres) consists of fallow agricultural fields. Loblolly pine stands were observed at several locations throughout Tract 7. Several forested wetlands were observed on Tract 7. According to the *Soil Survey for Florence and Sumter Counties*, the soils underlying the on-site wetlands consist of Rains sandy loam, Pantego loam, Rutledge loamy sand, and Lynchburg sandy loam. Although these mapped soil series appear to be broad and expansive on the soil maps within the site boundaries, the areas in which these soils are located have been heavily ditched, resulting in altered hydrology. Some of these former wetland areas have been both ditched and cultivated with planted pine monoculture, further altering their natural hydrological regimes.

The areas resembling jurisdictional wetlands (containing hydrophytic vegetation, hydric soils and wetland hydrology) appear to be isolated pockets of various sizes within the larger, forested system. Ditches draining these wetland areas were prevalent. The canopies of these wetland areas were primarily closed (70 to 90 percent closure).

The dominant tree and sapling species observed within the forested wetland areas include sweetgum, red maple, water oak, and tulip poplar (*Liriodendron tulipifera*). Dominant understory and shrub species include individuals of the canopy dominants as well as red bay, switchcane, fetterbush (*Lyonia lucida*),

and ti-ti (*Cyrilla racemiflora*). Dominant woody vine species include common greenbrier, laurel-leaf greenbrier, and poison ivy (*Toxicodendron radicans*).

The remainder of the upland wooded areas consists of mixed pine-hardwood forest. The dominant tree and sapling species observed within the upland areas include sweetgum, loblolly pine, black cherry, and water oak. Dominant understory and shrub species include individuals of the canopy dominant and red bay. Dominant woody vine species include common greenbrier, muscadine (*Vitis rotundifolia*), Japanese honeysuckle, and poison ivy. Dominant herbaceous species include bracken fern and ebony spleenwort.

3.0 PROTECTED SPECIES

The South Carolina Heritage Trust Program (SCHTP) online database and the U.S. Fish and Wildlife Service (USFWS) website were consulted regarding current federal and state listed species within Sumter County. Listed species and their respective federal and state status are identified in Table 1. Explanations of federal and state rankings are included at the end of the table. The SCHTP database identified the following federal and state listed species in the vicinity of the site:

TABLE 1: PROTECTED FLORA & FAUNA SUMMARY BLACK RIVER AIRPORT INDUSTRIAL PARK – SUMTER COUNTY			
Species	State Status	Federal Status	Brief Habitat Description
Red-cockaded woodpecker <i>Picoides borealis</i>	E	E	Open pine stands with minimum age of 60 years; nests in live pines with red-heart disease
Bald eagle <i>Haliaeetus leucocephalus</i>	T	T	Mature forests or cliffs near larger bodies of water
American chaffseed <i>Schwalbea americana</i>	E	E	Sandy soils; margins of seasonally wet savannas and cypress ponds
Shortnose sturgeon <i>Acipenser brevirostrum</i>	E	E	Brackish water of large rivers and estuaries; spawns in freshwater areas
Canby's dropwort <i>Oxypolis canbyi</i>	E	E	Wet pineland ponds, savannas, wet meadows, and around edges of open cypress ponds; prefers habitat with little or no canopy closure

E – Endangered

T – Threatened

The SCHTP database records did not identify the presence of known occurrences on or near the site. A pedestrian field survey was performed for the federal and state listed species in suitable habitats within the site on multiple dates in January and February 2007. Chris Daves of S&ME performed the field review. Descriptions of the species listed above, and the results of the pedestrian field review are included in the following sections of this report.

Red-Cockaded Woodpecker – Federally Listed Endangered, State Listed Endangered

BIOLOGICAL OPINION: NO EFFECT

The red-cockaded woodpecker is a black and white bird measuring approximately seven inches long. The bird displays black and white horizontal stripes on its back. The cheeks and underparts are white and the sides are streaked in black. The cap and stripe on the throat and neck of the bird are black. Male individuals of the species have a small red spot on each side of the black cap and display a red crown patch after the first post-fledgling molt.

The red-cockaded woodpecker's range is closely linked to the distribution of southern pines. Loblolly and longleaf pines that are 60-plus years old are generally selected for nesting sites. However, other species of southern pines are occasionally used for nesting. The woodpecker usually excavates nest cavities in trees infected with a fungus that produces red-heart disease. Preferred nesting sites generally include relatively open, mature pine stands with an undeveloped or low understory layer. Foraging habitat is frequently limited to pine or pine-hardwood stands that are 30 years or older, with a preference for pine trees with a diameter of 10 inches or larger. The USFWS indicates that the maximum foraging range for the red-cockaded woodpecker is approximately one-half mile.

The site does not contain suitable nesting habitat for the red-cockaded woodpecker. There are no relatively open older pine stands of proper age to be considered suitable habitat for the red-cockaded woodpecker located within the site. Accordingly, future development of the site is not expected to impact this species.

Bald eagle – Federally Listed Threatened, State Listed Threatened

BIOLOGICAL OPINION: NO EFFECT

This large raptor has characteristic adult plumage consisting of a white head and tail with a dark brown body. Juvenile eagles are completely dark brown and do not fully develop the majestic white head and tail until the fifth or sixth year. Fish are the primary food source, but bald eagles will also take a variety of birds, mammals, and turtles (both live and as carrion) when fish are not readily available. Adults average about three feet from head to tail, weigh approximately 10 to 12 pounds and have a wingspread that can reach seven feet. Generally, female bald eagles are somewhat larger than the males. The typical nest is constructed of large sticks and is lined with soft materials such as pine needles and grasses. The nests are very large, measuring up to six feet across and weighing hundreds of pounds. Nesting and feeding sites are generally in the vicinity of large bodies of open water.

The site does not contain suitable habitat for the bald eagle. There are no large, open waters on or near the site. No active or abandoned bald eagle nest sites were observed during the pedestrian field review. Accordingly, future development of the site is not expected to impact this species.

American Chaffseed – Federally Listed Endangered, State Listed Endangered

BIOLOGICAL OPINION: NO EFFECT

American chaffseed is a perennial herb growing to a height of one to two feet tall. The entire plant, including the leaves and flowers, is covered with fine hairs. Chaffseed is an erect herb with simple, alternate leaves that are lance-shaped to elliptic and purplish tinged. The corollas are creamy yellow to purple-tinted green and rose-tinted green, and shaped like turtle heads. The fruit resembles a capsule that is divided into four sections that shed numerous, winged seeds. The seeds are greenish-brown in color and linear in shape. The flowering period for chaffseed occurs in May through June, with the fruiting period occurring from June through July. American chaffseed is found in moist to dry, sandy soils in the Coastal Plain. The species prefers fire-maintained areas such as wet savannas and open, moist pine forests. Chaffseed also occurs within open, grass and sedge systems. The species depends on a fluctuating water table and frequent fire to maintain the open habitat that it requires.

The site does not contain suitable habitat for American chaffseed. There are no wet savannas, open pine forests or other fire-maintained ecosystems located on the site. The canopies of the wetland areas are closed. Accordingly, the future development of the site is not expected to impact this species.

Shortnose Sturgeon – Federally Listed Endangered, State Listed Endangered

BIOLOGICAL OPINION: NO EFFECT

The shortnose sturgeon is a bony, anadromous fish growing to a length of up to four feet. Shortnose sturgeon exhibit five rows of plates along the body, with olive to black coloring along the back, and yellow to white coloring on the belly. Four barbels located in front of the mouth are used to locate food along the river bottom. The shortnose sturgeon migrates from salt water to freshwater to spawn from April to May. Spawning occurs every other year for males and every third year for females. The shortnose sturgeon's habitat consists of tidal river systems along the Atlantic coast of North America. This species typically occupies the channels and deeper holes within the river, while feeding in shallow areas at night.

The site does not contain suitable habitat for the shortnose sturgeon. There are no streams or rivers located within the site with adequate depth and breadth to support this species. Accordingly, future development of the site is not expected to impact this species.

Canby's Dropwort – Federally Listed Endangered, State Listed Endangered

BIOLOGICAL OPINION: NO EFFECT

Canby's dropwort is a perennial herb growing from elongate, stoloniferous rhizomes to a height of 2.5 to four feet. The stems are hollow and erect with slender leaves. The species is aromatic, smelling like dill. The flowering period is from August through October. The flowers of Canby's dropwort have white petals and pale green sepals and are five-parted. The leaves are round in cross-section, thin, and divided by partitions. The primary habitats of Canby's dropwort are wet pineland ponds and savannas, wet meadows, and around the edges of open cypress ponds. The species prefers habitat with little or no canopy closure. Canby's dropwort prefers soils with a high water table.

The site contains does not contain suitable habitat for Canby's dropwort. There are no wet pineland ponds, savannas, wet meadows or open cypress ponds on the site. The canopies of the wetland areas are closed. Accordingly, the future development of the site is not expected to impact this species.

4.0 METHODOLOGY

S&ME reviewed the SCHTP database for records of protected species known to occur within Sumter County. The purpose of the search was to identify current and historic documented occurrences of protected species located within this county. Additionally, S&ME personnel reviewed available supporting information including the USGS Sumter East Topographic Quadrangle and applicable soil survey sheets. The purpose of reviewing this supporting information was to identify drainage features and soil types in the study area. During field reconnaissance, S&ME personnel integrated the information obtained from this supporting documentation with field evaluation for the presence of protected species or potential protected species habitat. Portions of the site that matched descriptions of preferred habitat for protected species listed in Table 1 were considered to be potential habitat for the respective protected species. These areas were subsequently field reviewed to confirm the presence/absence of habitat for the respective species.

5.0 QUALIFICATIONS

The field survey was performed by Chris Daves of S&ME. Mr. Daves is a biologist and natural resources project manager with over six years experience in environmental consulting. Mr. Daves is proficient in conducting wetland delineations, environmental permitting activities, and habitat assessments, including protected species surveys. He is a Professional Wetland Scientist (PWS) and holds a B.S. degree in Biology from Wofford College and a Master's degree in Earth & Environmental Resources Management from the University of South Carolina.

6.0 SUMMARY AND CONCLUSIONS

Based on the literature review, habitat assessment, and pedestrian field review of the site, it is our opinion that the site does not provide suitable habitat for listed protected species with documented populations in Sumter County.

S&ME appreciates the opportunity to be of service to you by performing this protected species assessment for the site. Please contact us at (803) 561-9024 with any questions regarding this report or if you require any additional information.

Sincerely,

S&ME, Inc.



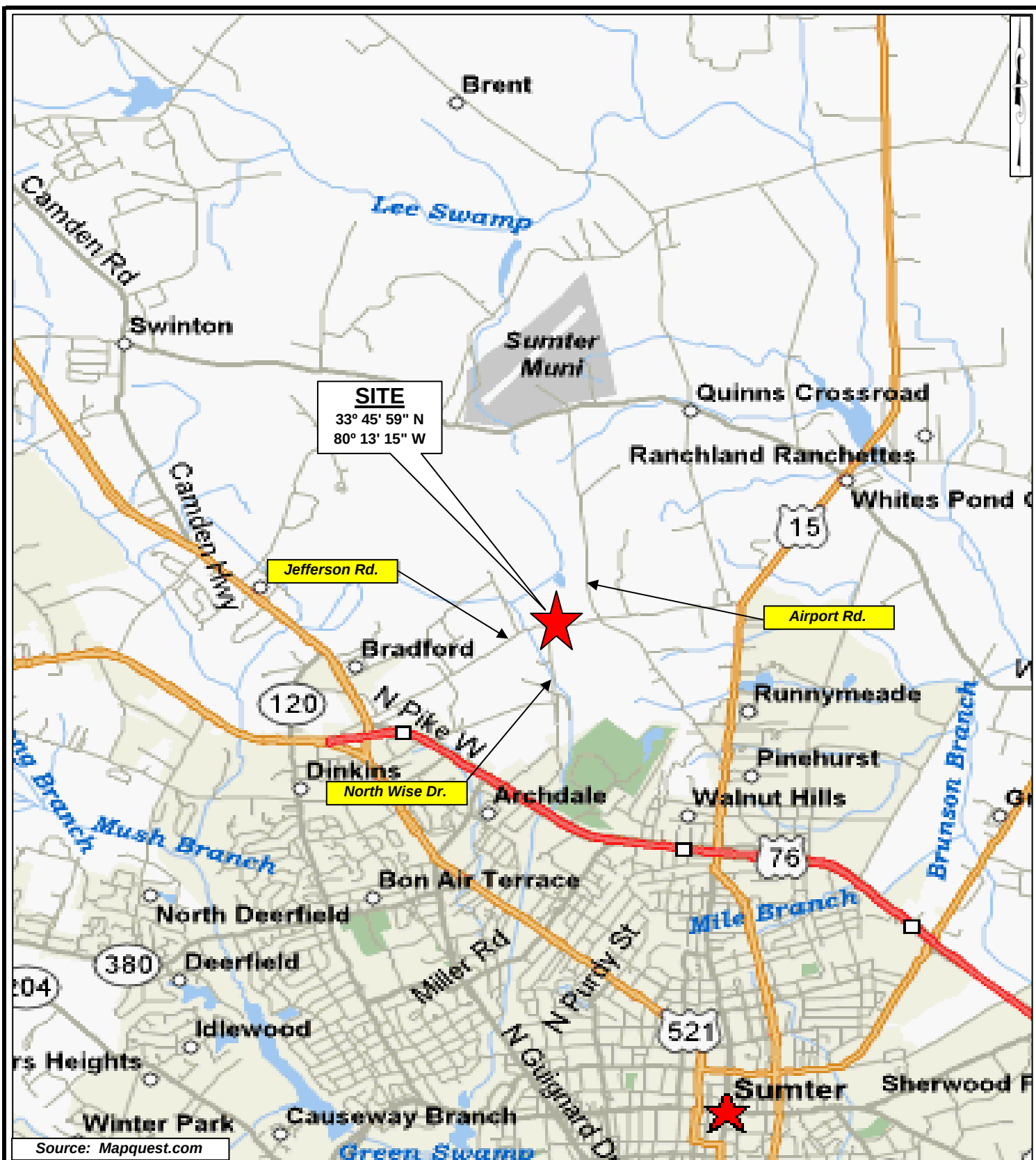
Chris Daves
Biologist



Lisa J. Beckstrom, C.E., C.W.B.
Senior Reviewer

Attachments:

Figure 1 – Vicinity Map
Figure 2 – Topographic Map – USGS Sumter East, SC Quad
Figure 3 – Aerial Map w/ Habitat Locations
Site Photographs



Source: Mapquest.com

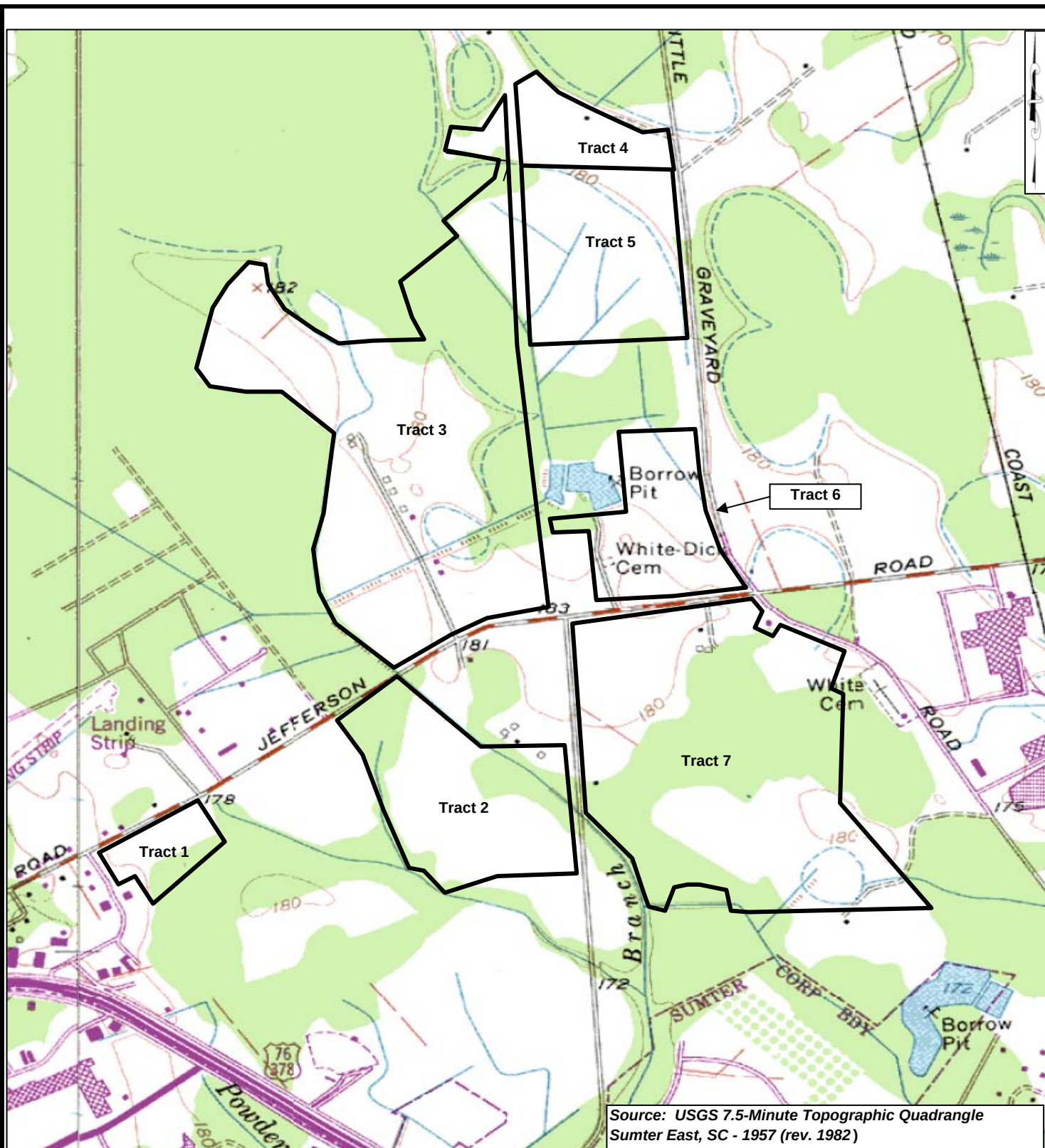
SCALE:	NTS
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DRAWN BY:	WCD
DATE:	2/26/2007



VICINITY MAP
 BLACK RIVER INDUSTRIAL PARK - 547 ACRES
 SUMTER COUNTY, SOUTH CAROLINA

S&ME PROJECT NO. 1614-06-539

FIGURE NO.
 1



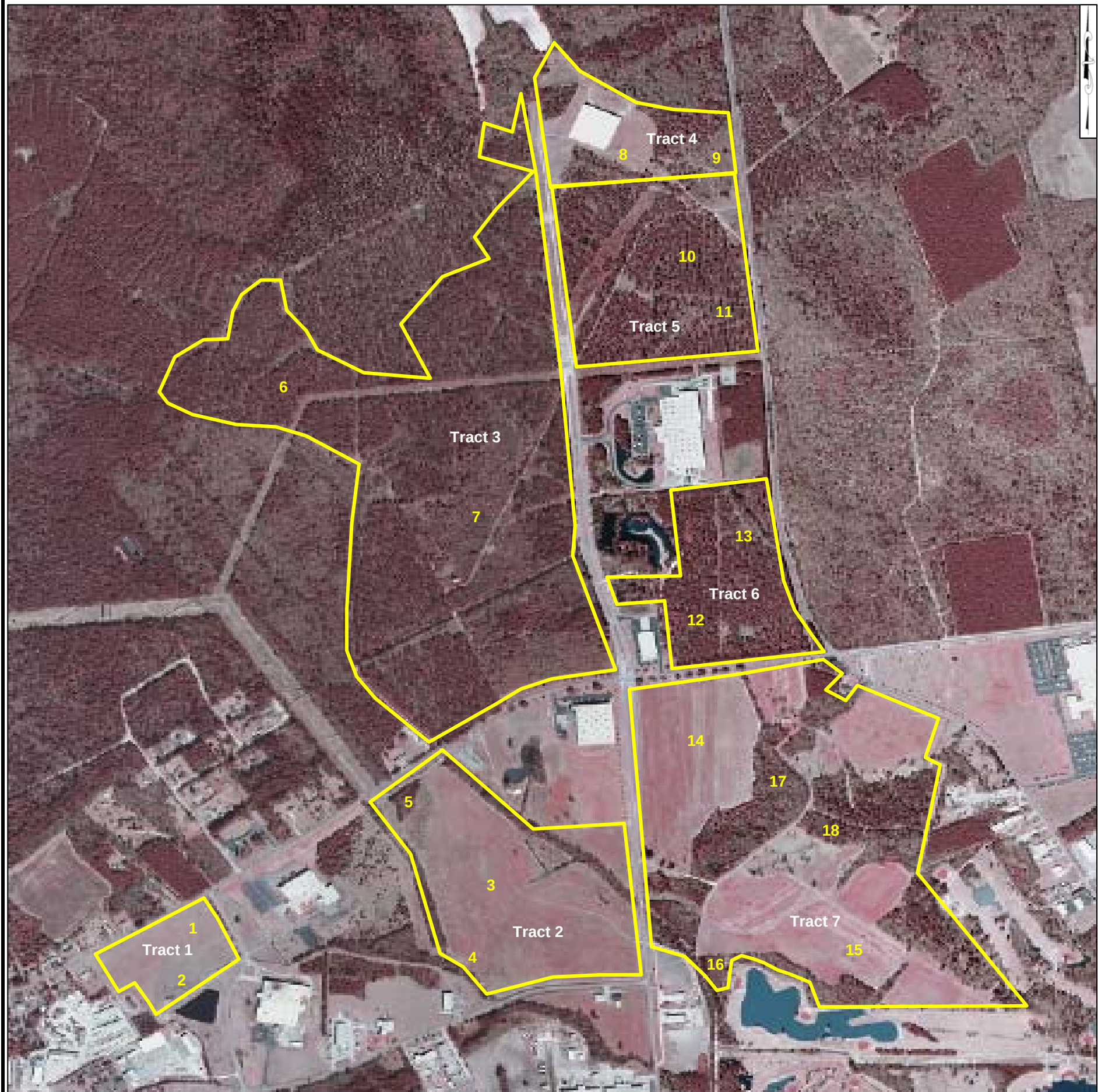
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DATE:	2/26/2007



TOPOGRAPHIC MAP	
BLACK RIVER INDUSTRIAL PARK - 547 ACRES SUMTER COUNTY, SOUTH CAROLINA	
S&ME PROJECT NO.	1614-06-539

FIGURE NO.

2



SOURCE: SCDNR NAPP AERIAL PHOTOGRAPH - 2006

TRACT 1	15.16 AC
TRACT 2	63.55 AC
TRACT 3	210 AC
TRACT 4	27.8 AC
TRACT 5	39 AC
TRACT 6	35 AC
TRACT 7	156.1 AC
TOTAL	547 AC

**** Yellow Numbers Correspond to Photograph Numbers**

SCALE:	NTS
DRAWN BY:	WCD
DATE:	2/21/2007



AERIAL MAP
BLACK RIVER AIRPORT INDUSTRIAL PARK
SUMTER, SUMTER COUNTY, SOUTH CAROLINA
S&ME PROJECT NO. 1614-06-539

FIGURE
3



Photo #1 Open field on Tract 1.



Photo #2 Longleaf pine patch on Tract 1.



Photo #3 Agricultural field on Tract 2.



Photo #4 Ditched stream on Tract 2.



Photo #5 Wooded area on northern portion of Tract 2.



Photo #6 Planted pines on Tract 3.



Photo #7 Former agricultural field overgrown with hardwoods on southern portion of Tract 3.



Photo #8 Open field surrounding speculative building on Tract 4.



Photo #9 Pines and blackberry thickets on eastern portion of Tract 4.



Photo #10 Typical pine rows on Tract 5.



Photo #11 Small hardwood area on southeastern portion of Tract 5.



Photo #12 Typical pine rows on Tract 6.



Photo #13 Small wetland area on Tract 6.



Photo #14 Open field on northwestern portion of Tract 7.



Photo #15 Fallow agricultural field on southern portion of Tract 7.



Photo #16 Wetland area on southern portion of Tract 7.



Photo #17 Wetland area on central portion of Tract 7.



Photo #18 Wetland area on central portion of Tract 7.