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**Brickhaven Mine
Approximately 311 Acres
Chatham County, NC**

Threatened and Endangered Species Review and Habitat Assessment

Prepared For
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August 27, 2014

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1.0 INTRODUCTION

The following report includes methods used and results for a threatened and endangered species survey and habitat assessment for the proposed approximately 311 acre project known as the Brickhaven Mine. The project is located off Moncure Flatwood Road in Moncure, Chatham County, North Carolina (Figures 1-2). The site ranges in elevation from 334 feet to 230 feet above mean sea level.

The threatened and endangered species survey was conducted to determine the occurrence of or the potential for existence of federally listed threatened and endangered animal and plant species on the proposed site. Completion of this survey is directed by three current state and federal regulations: the Federal Endangered Species Act of 1973 (16 USC 1531-1543), the North Carolina Endangered Species Act (N.C.G.S. Sect. 113 article 25), and the North Carolina Plant Protection and Conservation Act of 1979 (N.C.G.S. Sect. 19b 106: 202.12-22).

2.0 METHODOLOGY

The protected species survey and habitat assessment was conducted on August 18-20 and 22, 2014 on the 311 acre project by ClearWater Environmental Consultants, Inc. (CEC) to determine the potential for occurrences of animal and plant species listed as endangered or threatened by current federal regulations.

A database search from the US Fish and Wildlife Service (FWS) dated August 6, 2014 provided existing data concerning the presence or potential occurrence of threatened or endangered species in Chatham County, North Carolina (Appendix A). The FWS lists the following five federally threatened and endangered species as occurring or potentially occurring in Chatham County, N.C. The species listed below were included in the surveys and assessment.

Table 1. Federally threatened and endangered species listed as occurring or potentially occurring.

Common Name	Scientific Name	Status
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Cape Fear shiner	<i>Notropis mekistocholas</i>	Endangered
Harperella	<i>Ptilimnium viviparum</i>	Endangered
Northern long-eared bat	<i>Myotis septentrionalis</i>	Proposed
Bald Eagle	<i>Haliaeetus leucocephalus</i>	BGPA

A database search from the NC Natural Heritage Program (NHP) dated August 6, 2014 provided existing data concerning the presence or potential occurrences of federal listed species in Chatham County, North Carolina within five miles of the site (Appendix A).

The NHP indicates a documented occurrence of the Cape Fear shiner and Harperella approximately 2.8 miles upstream from the project in the lower Deep River subbasin. In addition, there are three occurrences of the Red-cockaded woodpecker documented within five miles of the site.

The protected species survey consisted of a pedestrian survey by CEC staff. During field surveys, site habitats were identified and compared with recognized habitats for each of the five species potentially occurring on the site. Potential flora were identified to the taxonomic unit level necessary to determine if the observed specimen was a protected species.

3.0 HABITAT CLASSIFICATION

During our site visits on August 18-20 and 22, Kevin Mitchell, Clement Riddle, and Steve Glickauf with CEC identified six habitats: ruderal corridors, loblolly pine forest, stream bank and riparian, mixed pine/hardwood forest, oak hickory forest, and wetland. The site has been highly disturbed by mining and silviculture activities.

3.1 Ruderal Corridors

The ruderal habitat consists of road edges and power line rights-of way. It is considered a disturbed and/or transitional community type. These areas are dominated by early successional saplings, shrubs, and herbaceous plants. Species observed include baccharis (*Baccharis sp.*), lespedeza (*Lespedeza sp.*), blackberry (*Rubus sp.*), dog fennel (*Eupatorium capillifolium*), goldenrod (*Solidago sp.*), and switchgrass (*Panicum virgatum*). Other species observed include loblolly pine (*Pinus taeda*) persimmon (*Diospyros virginiana*), sweetgum (*Liquidambar styraciflua*), Johnson grass (*Sorghum halepense*), and bracken fern (*Pteridium aquilinum*).

3.2 Loblolly Pine Forest

This habitat is dominated by planted loblolly pines approximately five to ten years old. Other species observed include sweetgum, big bluestem (*Andropogon gerardii*), blackberry, baccharis persimmon, winged sumac (*Rhus copallinum*), white oak (*Quercus alba*), water oak (*Quercus nigra*), post oak (*Quercus stellata*), mockernut hickory (*Carya tomentosa*), and princess tree (*Paulownia tomentosa*).

3.3 Stream Bank and Riparian

These freshwater habitats include the streambeds and banks and immediate riparian areas of unnamed tributaries to Shaddox Creek. These tributaries are intermittent in character and lack base flow throughout. Streams on site are dominated by sand and silt substrate. Permanently rooted aquatic plants are practically non-existent in on-site streams. The unnamed tributaries are narrow systems varying from 2-6 feet wide. Dominant overstory species include red maple (*Acer rubrum*), sweetgum, water oak, willow oak (*Quercus phellos*), and black gum (*Nyssa sylvatica*). Herbaceous species include bracken fern, cinnamon fern (*Osmundastrum cinnamomeum*), Virginia creeper (*Parthenocissus quinquefolia*), poison ivy (*Toxicodendron radicans*) and greenbrier (*Smilax rotundifolia*). Other species noted include tulip poplar (*Liriodendron tulipifera*), American holly (*Ilex opaca*),

northern red oak (*Quercus rubra*) and American beautyberry (*Callicarpa americana*).

3.4 Mixed Pine/Hardwood Forest

The mixed pine/hardwood is dominated by 30-50 year old loblolly pine, white oak, mockernut hickory, red maple, sweetgum, and black gum. The understory is comprised of highbush blueberry (*Vaccinium corymbosum*), muscadine (*Vitis rotundifolia*), bracken fern, and greenbrier. Other species observed include American holly, sourwood (*Oxydendrum arboretum*) post oak, and black oak (*Quercus velutina*).

3.5 Oak Hickory Forest

This habitat consists of predominately oak species and hickory. Species include white oak (*Quercus alba*), northern red oak, mockernut hickory, pignut hickory (*Carya glabra*) tulip poplar, sweetgum, sourwood, red maple, and a few scattered loblolly pines. The understory consists of blueberry (*Vaccinium sp.*), dogwood (*Cornus florida*), black cherry (*Prunus serotina*), sourwood, Christmas fern (*Polystichum acrostichoides*) grapevine (*Vitis sp.*), and (*Hexastylis sp.*). Other species noted include willow oak, American beech (*Fagus grandifolia*), ironwood (*Carpinus caroliniana*), and bracken fern.

3.6 Wetland

The majority of wetlands within the project boundary are seepage and stream-flow driven systems adjacent to or at the head of intermittent streams. Dominant overstory species include red maple, sweetgum, and black gum. The herbaceous layer consists of woolgrass (*Scirpus cyperinus*), common rush (*Juncus effusus*), cinnamon fern, Virginia chain fern (*Woodwardia virginica*), false nettle (*Boehmeria cylindrica*), and sedges (*Carex sp.*).

Mining operations have influenced wetland development along the eastern portion of the project. Abandoned sediment basins have been reclaimed with wetland vegetation. Dominant overstory species include black willow (*Salix nigra*), red maple, and sweetgum. In addition to saplings of the above trees, species observed in the shrub layer were limited to buttonbush (*Cephalanthus occidentalis*) and beautyberry. Dominant species in the herbaceous layer include lizard's tail (*Saururus cernuus*), cattail (*Typha latifolia*), and woolgrass. Other species observed include loblolly pine, pickerelweed (*Pontederia cordata*), ironweed (*Vernonia sp.*), false nettle, and common rush.

3.7 Soils

Soils mapped by the Natural Resources Conservation Service (NRCS) Chatham County Soil Survey for the site include: White Store-Polkton Complex (WhD, WhC) 6-15 percent slopes, Creedmoor-Green Level complex (CrC) 6-10 percent

slopes, Peawick fine sandy loam (PeA, PeB) 0-8 percent slopes, Udorthents loamy (UdC) 2-10 percent slopes, and Water (W) (Figure 3) (NRCS 2014).

4.0 PROTECTED SPECIES

The following is a brief description of each federally listed species included in the survey, its recognized habitat, and comments regarding survey results for that species.

4.1 Red-cockaded woodpecker

The Red-cockaded woodpecker (RCW) (*Picoides borealis*) is a small bird measuring about 7 inches in length. Identifiable by its white cheek patch and black and white barred back, the males have a few red feathers, or "cockade". These red feathers usually remain hidden underneath black feathers between the black crown and white cheek patch unless the male is disturbed or excited. Female RCWs lack the red cockade. Juvenile males have a red patch in the center of their black crown. This patch disappears during the fall of their first year at which time their red-cockades appear.



Red-cockaded woodpecker habitat includes forests with trees old enough for roosting, generally at least 60-120 years old, depending on the species of pine. The most prominent adaptation of RCWs is their use of living pines for cavity excavation.

For nesting and roosting habitat, red-cockaded woodpeckers need open stands of pine containing trees 60 years old and older. RCWs need live, large older pines in which to excavate their cavities. Longleaf pines (*Pinus palustris*) are preferred, but other species of southern pine are also acceptable. Dense stands (stands that are primarily hardwoods, or that have a dense hardwood understory) are avoided. Foraging habitat is provided in pine and pine hardwood stands 30 years old or older with foraging preference for pine trees 10 inches or larger in diameter. In good, moderately-stocked, pine habitat, sufficient foraging substrate can be provided on 80 to 125 acres.

Suitable habitat for the red-cockaded woodpecker does not exist within the proposed project boundary. The mixed pine/hardwood stands are dominated by hardwood species. The pine plantation is too young and dense to provide foraging habitat for the red-cockaded woodpecker. It is the opinion of CEC that the proposed project is not likely to adversely affect the red-cockaded woodpecker.

4.2 Cape Fear shiner

The Cape Fear shiner (*Notropis mekistocholas*) was first described as a new species in 1971. It is a small (approximately 2 inches long), yellowish minnow

with a black band along the sides of its body. The shiner's fins are yellow and somewhat pointed. It has a black upper lip, and the lower lip bears a thin black bar along its margin.

The Cape Fear shiner is generally associated with gravel, cobble, and boulder substrates, and has been observed in slow pools, riffles, and slow runs. These areas occasionally support water willow (*Justicia americana*), which may be used as cover or protection from predators (e.g. flathead catfish (*Pylodictis olivaris*), bass (*Micropterus spp.*) and crappie (*Pomoxis spp.*)). The Cape Fear shiner can be found swimming in schools of other minnow species but is never the most abundant species. During the spawning season, May through July, the Cape Fear shiner adults move to slower flowing pools to lay eggs on the rocky substrate. Juveniles are often found in slack water, among large rock outcrops of the midstream, and in flooded side channels and pools.



Suitable habitat for the Cape Fear shiner does not exist within the proposed project boundary. The streams on site are intermittent and did not have base flow at the time of the delineation. It is the opinion of CEC that the proposed project is not likely to adversely affect the Cape Fear shiner.

4.3 Harperella

Harperella in North Carolina (described as *Ptilimnium viviparum*) is a perennial herb that grows to a height of 6 - 36 inches (in) (0.15 - 1.0 meter; m). The leaves are reduced to hollow, quill-like structures. The small, white flowers occur in heads, or umbels, reminiscent of a small Queen Anne's lace (*Daucus carota*) flower head. Flowers have five regular parts and are bisexual or unisexual, each umbel containing both perfect and male florets. Seeds are elliptical and laterally compressed, measuring 0.06 - 0.08 in (1.5 - 2.0 millimeters; mm) in length. In pond habitats, flowering begin in May, while riverine populations flower much later, beginning in late June or July and continuing until frost.

Harperella in North Carolina typically occurs on rocky or gravel shoals and sandbars and along the margins of clear, swift-flowing stream sections. Harperella is known from only two locations in North Carolina. One population occurs in the Tar River in Granville County. Another population was reintroduced to the Deep River recently after the original population known from that area disappeared. This population occurs in Chatham County, but the river serves as the divide between Chatham and Lee counties.

Suitable habitat for the Harperella does not exist within the project boundary. It is the opinion of CEC that the proposed project is not likely to adversely affect the Harperella.

4.4 Northern long-eared bat

The Northern long-eared bat (*Myotis septentrionalis*) has been proposed to be federally listed as an endangered species. Currently there are no regulations protecting this species and no development constraints due to its potential presence; however, the listing decision is expected to be finalized in April of 2015.

Summer habitat for the Northern long-eared bat consists of the cavities, hollows, cracks, or loose bark of live or dead trees typically greater than three inches DBH (diameter at breast height). Suitable summer habitat for the Northern long-eared bat does exist within the proposed site and permanent removal of forested habitat may adversely affect this species. The timing of tree clearing activities at the site may be affected once the final listing decision is made. Once listed, a moratorium on tree cutting could go into effect from approximately May 15th to August 15th. Final dates of the tree cutting moratorium will not be known until the FWS makes a final listing decision.

4.5 Bald Eagle

Bald eagles (*Haliaeetus leucocephalus*) were removed from the endangered species list in August 2007 because their populations recovered sufficiently. Bald and Golden eagles are protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Act (Eagle Act)

Distinguished by a white head and white tail feathers, bald eagles are powerful, brown birds that may weigh 14 pounds and have a wingspan of 8 feet. Male eagles are smaller, weighing as much as 10 pounds and have a wingspan of 6 feet. Sometimes confused with golden eagles, bald eagles are mostly dark brown until they are four to five years old and acquire their characteristic coloring.

Bald eagles live near rivers, lakes, and marshes where they can find fish, their staple food. Bald eagles will also feed on waterfowl, turtles, rabbits, snakes, and other small animals and carrion. Bald eagles require a good food base, perching areas, and nesting sites. Their habitat includes estuaries, large lakes, reservoirs, rivers, and some seacoasts. In winter, the birds congregate near open water in tall trees for spotting prey and night roosts for sheltering.

No bald eagles nest were observed at the site. It is the opinion of CEC that the proposed project is not likely to adversely affect the bald eagle.

5.0 CONCLUSION AND RECOMMENDATIONS

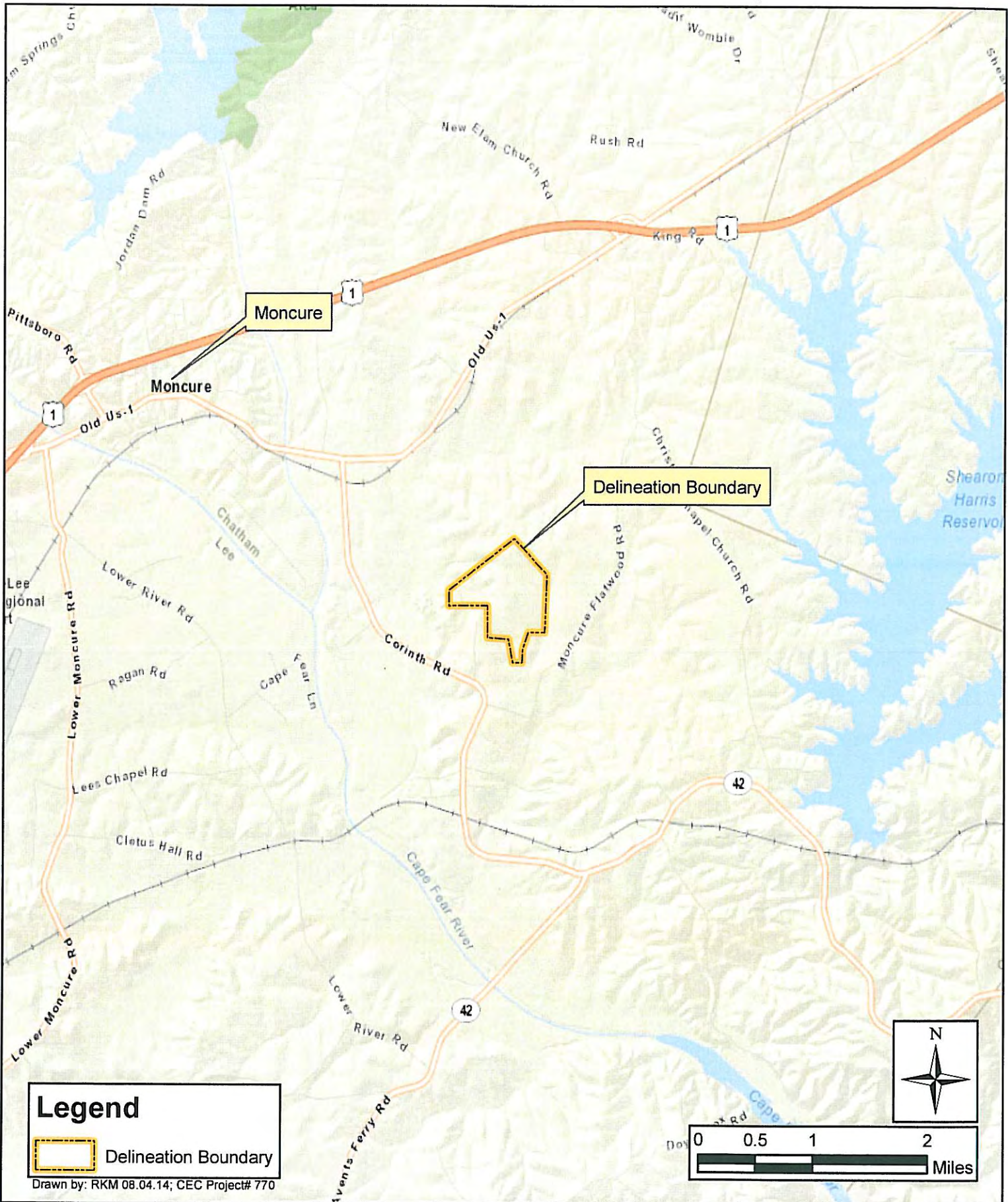
During completion of threatened and endangered species habitat assessments for the Brickhaven Mine, CEC observed suitable summer habitat for the Northern long-eared bat. Currently there are no regulations protecting this species and no development constraints due to its potential presence; however, the listing decision is expected to be finalized in April of 2015.

As such, development of the Brickhaven Mine is not likely to adversely affect federally threatened or endangered species. Because of the transitory nature of some of the listed threatened and endangered species and the particular flower/fruitletting periods of some plants; it is possible that endangered species populations and locations may change over time. Therefore, any potential findings at a later date should be fully investigated and coordinated with appropriate agencies to prevent potential adverse impacts.

6.0 REFERENCES

- NCNHP (North Carolina Natural Heritage Program Database). 2014.
<http://portal.ncdenr.org/web/nhp/database-search>; accessed August 2014.
- NRCS (Natural Resources Conservation Service). 2010. Web Soil Survey for Chatham County. <http://websoilsurvey.sc.egov.usda.gov>; Accessed August 2014.
- USFWS (United States Fish and Wildlife Service Database). 2014.
http://www.fws.gov/Raleigh/species/cntylist/nc_counties.html. accessed August 2014.

Brickhaven Mine (+/- 311 AC)



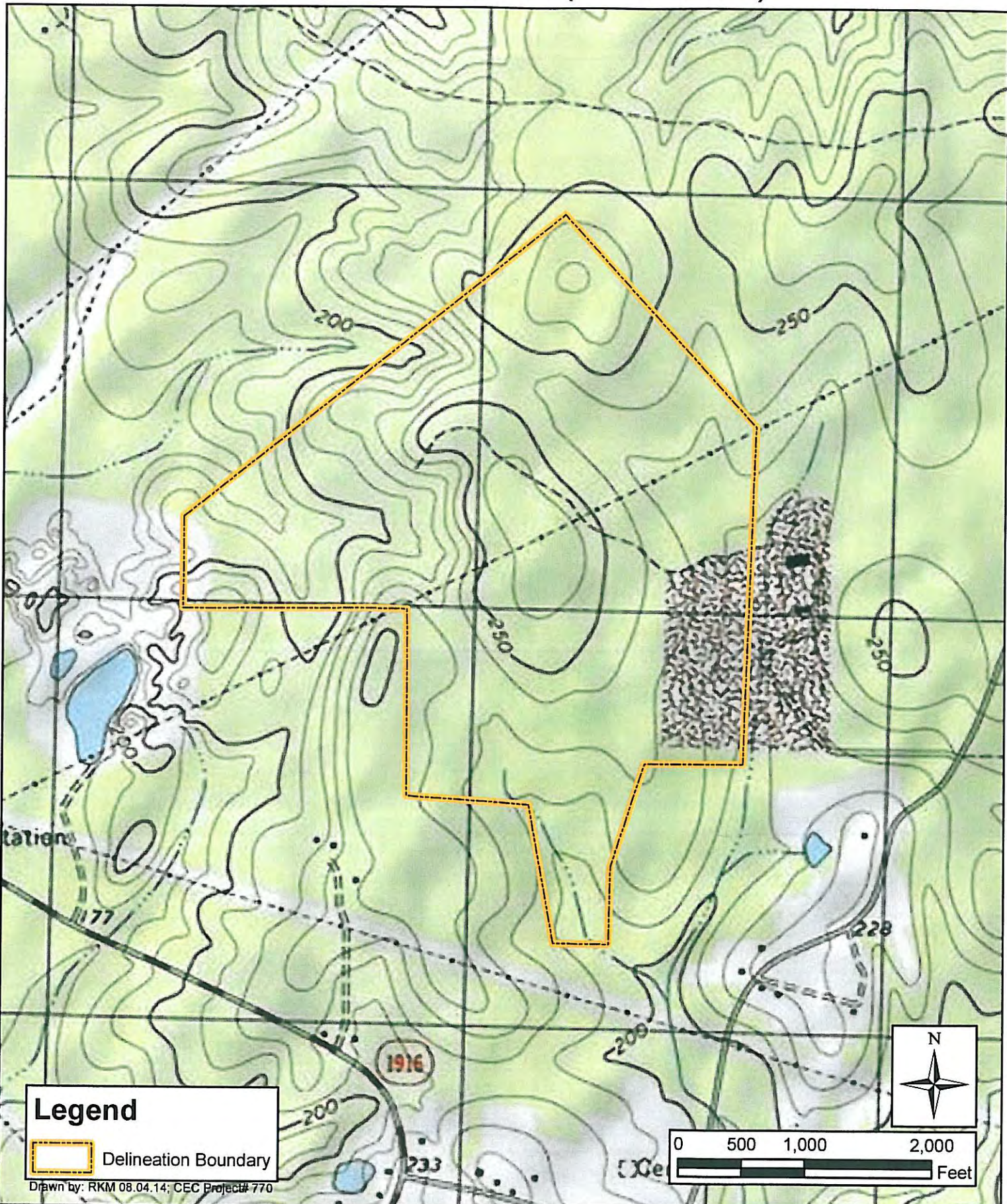
Chatham County,
North Carolina

ClearWater

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Site Vicinity
Figure 1

Brickhaven Mine (+/- 311 AC)



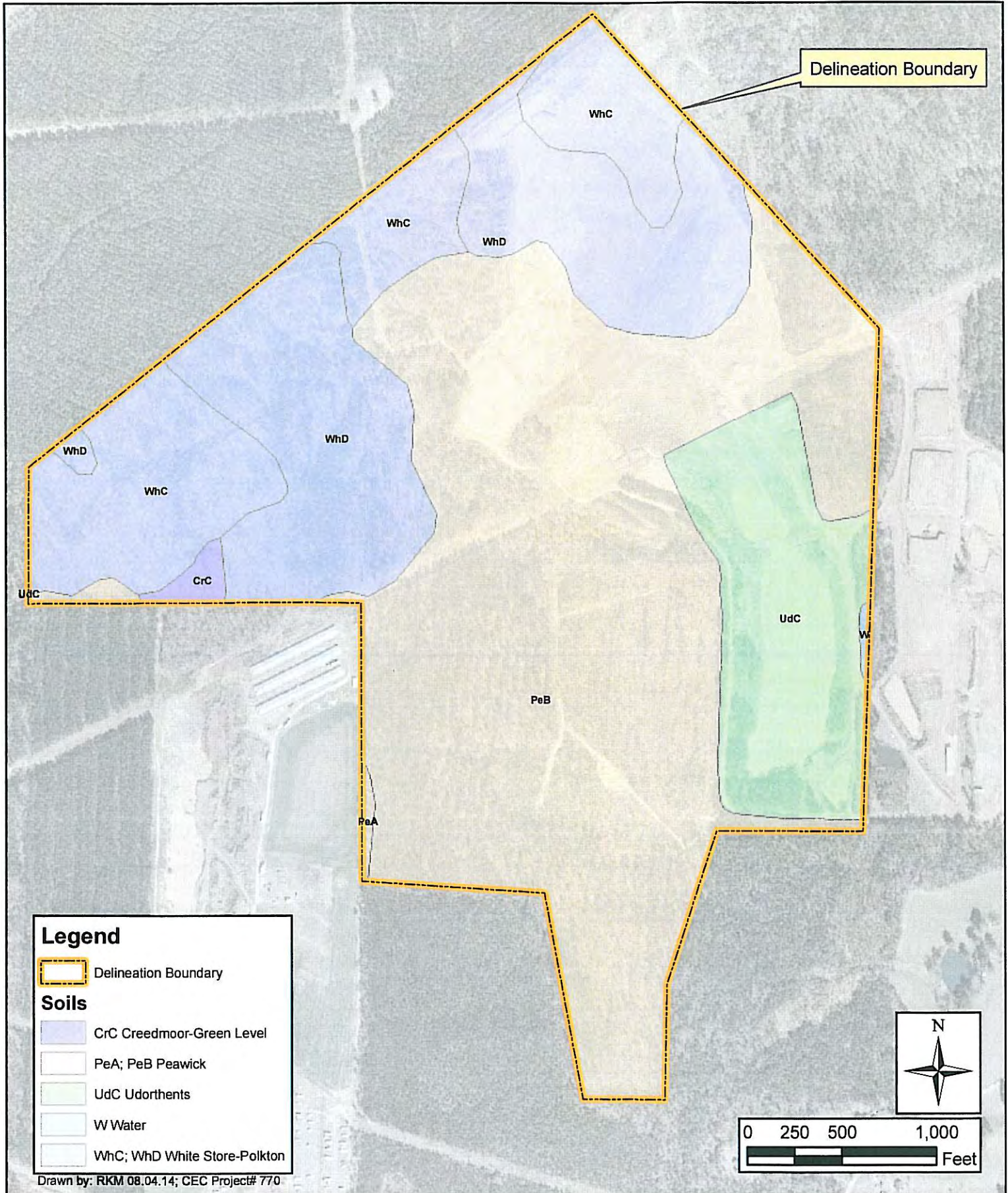
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North Carolina

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USGS Topographic Map
Moncure Quad
Figure 2

Brickhaven Mine (+/- 311 AC)



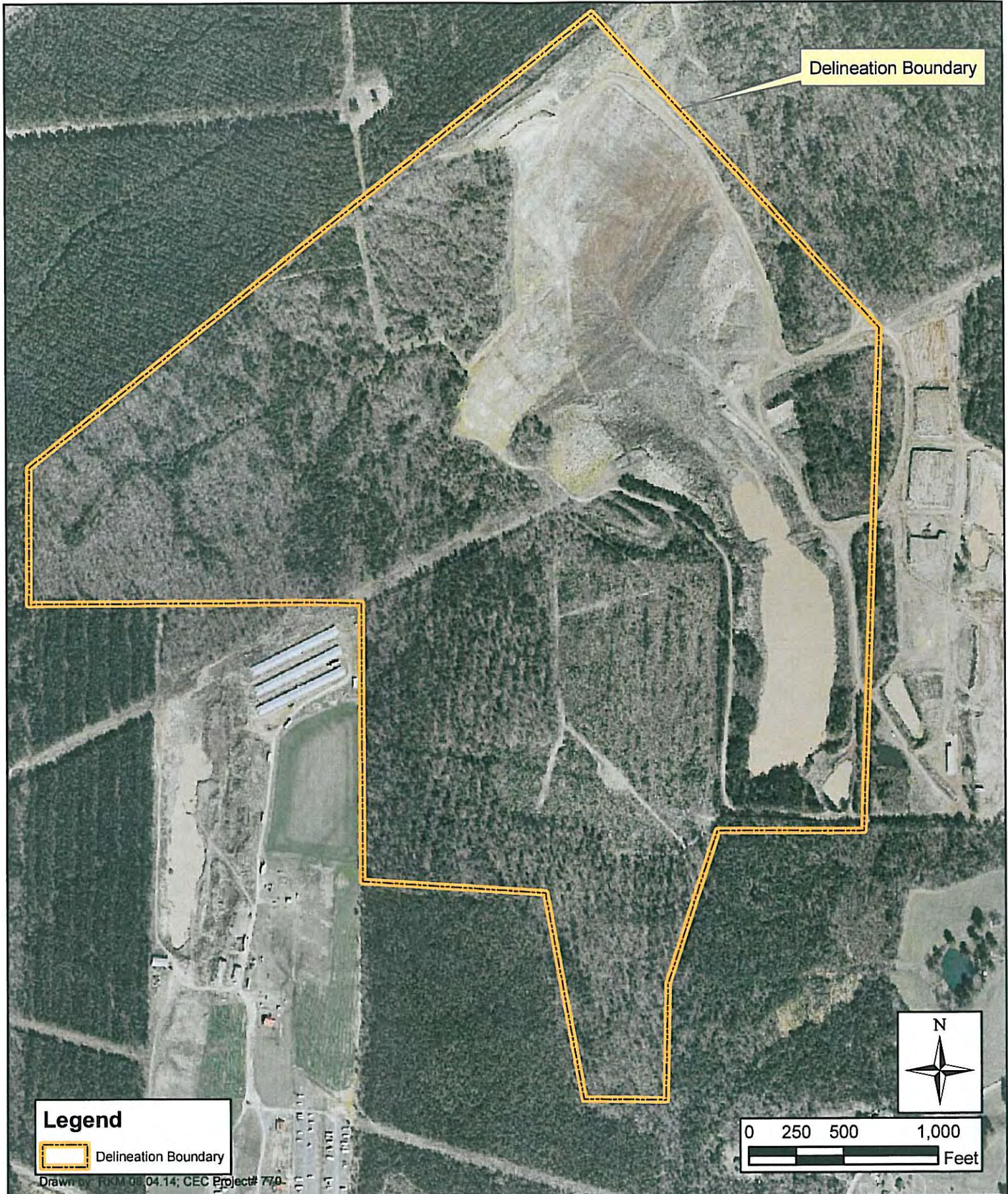
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USDA Soils Map
Figure 3

Brickhaven Mine (+/- 311 AC)



Delineation Boundary

Legend
Delineation Boundary

0 250 500 1,000
Feet



Chatham County,
North Carolina

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Aerial (2010)
NCCGIA
Figure 4

Appendix A

Database Information August 6, 2014

US Fish and Wildlife Service

&

North Carolina Natural Heritage Program

U.S. Fish & Wildlife Service

Endangered Species, Threatened Species, Federal Species of Concern, and Candidate Species, Chatham County, North Carolina



Updated: 04-29-2014

Critical Habitat Designations:

Cape Fear shiner - *Notropis mekistocholas* - Approximately 4.1 miles of the Rocky River from North Carolina State Highway 902 Bridge downstream to Chatham County Road 1010 Bridge; and approximately 0.5 river mile of Bear Creek, from Chatham County Road 2156 Bridge downstream to the Rocky River, then downstream in the Rocky River (approximately 4.2 river miles) to the Deep River, then downstream in the Deep River (approximately 2.6 river miles) to a point 0.3 river mile below the Moncure, North Carolina, U.S. Geological Survey Gaging Station. Constituent elements include clean streams with gravel, cobble, and boulder substrates with pools, riffles, shallow runs and slackwater areas with large rock outcrops and side channels and pools with water of good quality with relatively low silt loads.

Federal Register Reference: September 25, 1987, Federal Register, 2: 36034-36039.

Common Name	Scientific name	Federal Status	Record Status
Vertebrate:			
American eel	<i>Anguilla rostrata</i>	FSC	Current
Bachman's sparrow	<i>Aimophila aestivalis</i>	FSC	Current
<u>Bald eagle</u>	<i>Haliaeetus leucocephalus</i>	BGPA	Current
<u>Cape Fear shiner</u>	<i>Notropis mekistocholas</i>	E	Current
Carolina darter	<i>Etheostoma collis lepidinion</i>	FSC	Current
Carolina redhorse	<i>Moxostoma sp. 2</i>	FSC	Current

<u>Northern long-eared bat</u>	<i>Myotis septentrionalis</i>	P	Current
<u>Red-cockaded woodpecker</u>	<i>Picoides borealis</i>	E	Historic
Invertebrate:			
Atlantic pigtoe	<i>Fusconaia masoni</i>	FSC	Current
Brook floater	<i>Alasmidonta varicosa</i>	FSC	Current
Carolina creekshell	<i>Villosa vaughaniana</i>	FSC	Current
Septima's clubtail	<i>Gomphus septima</i>	FSC	Current
Yellow lampmussel	<i>Lampsilis cariosa</i>	FSC	Current
Vascular Plant:			
Buttercup phacelia	<i>Phacelia covillei</i>	FSC	Current
<u>Harperella</u>	<i>Ptilimnium nodosum</i>	E	Current
Sweet pinesap	<i>Monotropis odorata</i>	FSC	Current
Virginia quillwort	<i>Isoetes virginica</i>	FSC	Historic

Nonvascular Plant:**Lichen:****Definitions of Federal Status Codes:**

E = endangered. A taxon "in danger of extinction throughout all or a significant portion of its range."

T = threatened. A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

C = candidate. A taxon under consideration for official listing for which there is sufficient information to support listing. (Formerly "C1" candidate species.)

BGPA = Bald and Golden Eagle Protection Act. See below.

FSC = federal species of concern. A species under consideration for listing, for which there is insufficient information to support listing at this time. These species may or may not be listed in the future, and many of these species were formerly recognized as "C2" candidate species.

T(S/A) = threatened due to similarity of appearance. A taxon that is threatened due to similarity of appearance with another listed species and is listed for its protection. Taxa listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation. See below.

EXP = experimental population. A taxon listed as experimental (either essential or nonessential). Experimental, nonessential populations of endangered species (e.g., red wolf) are treated as threatened species on public land, for consultation purposes, and as species proposed for listing on private land.

P = proposed. Taxa proposed for official listing as endangered or threatened will be noted as "PE" or "PT", respectively.

Bald and Golden Eagle Protection Act (BGPA):

In the July 9, 2007 Federal Register(72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8,2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) becomes the primary law protecting bald eagles. The Eagle Act prohibits take of bald and golden eagles and provides a statutory definition of "take" that includes "disturb". The USFWS has developed National Bald Eagle Management Guidelines to provide guidance to land managers, landowners, and others as to how to avoid

disturbing bald eagles. For more information, visit <http://www.fws.gov/migratorybirds/baldeagle.htm>

Threatened due to similarity of appearance(T(S/A)):

In the November 4, 1997 Federal Register (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T (threatened), and the southern population (from Virginia south to Georgia) was listed as T(S/A) (threatened due to similarity of appearance). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T(S/A) designation has no effect on land management activities by private landowners in North Carolina, part of the southern population of the species. In addition to its official status as T(S/A), the U.S. Fish and Wildlife Service considers the southern population of the bog turtle as a Federal species of concern due to habitat loss.

Definitions of Record Status:

Current - the species has been observed in the county within the last 50 years.

Historic - the species was last observed in the county more than 50 years ago.

Obscure - the date and/or location of observation is uncertain.

Incidental/migrant - the species was observed outside of its normal range or habitat.

Probable/potential - the species is considered likely to occur in this county based on the proximity of known records (in adjacent counties), the presence of potentially suitable habitat, or both.

FID	Shape *	EO_ID	SCI_NAME	EO_NUM	COM_NAME	SURVEYDATE	LAST_OBS	FIRST_OBS	EO_STATUS	EO_RANK	ACCURACY	NC_STATUS
7	Polygon	3224	Nairopsis melisochlois	18	Cagle Fern Shiner	2013-05-29	2013-05-29	1971-06-09	Current	A	3- Medium	E
8	Polygon	973	Picoides borealis	285	Red-cockaded Woodpecker	1993	1980-02	1980-02	Historical	X	4- Low	E
14	Polygon	3981	Ptilinum nodosum	285	Harporhina	1992	1971-08	1956-08	Historical	F	4- Low	E
18	Polygon	19143	Picoides borealis	285	Red-cockaded Woodpecker	1976	1978	1978	Historical	H	4- Low	E
19	Polygon	8539	Picoides borealis	92	Red-cockaded Woodpecker	1980-02	1980-02	1980-02	Historical	H	4- Low	E

USA_STATUS	S_RANK	G_RANK	TYPE	TAXO_GROUP	HAB_COM	ELEMENT_ID	DATA_SENS	HOR
E	S1	G1	Aquatic	Freshwater/Fish	P: Cape Fear drainage (endemic to North Carolina)	20206	N	Y
E	S2	G3	Upland	Bird	CSP: mature open pine forests, mainly in longleaf pine [breeding evidence only]	19153	N	N
E	S1	G2	Aquatic	Vascular Plant	P: Rocky wetbeds	19598	N	N
E	S2	G3	Upland	Bird	CSP: mature open pine forests, mainly in longleaf pine [breeding evidence only]	19153	N	N
E	S2	G3	Upland	Bird	CSP: mature open pine forests, mainly in longleaf pine [breeding evidence only]	19153	N	N



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August 22, 2014

Mr. Clement Riddle
Clearwater Environmental Consultants
224 South Grove Street #F
Hendersonville, North Carolina 28792

RE: Management Summary, Archaeological Survey at the Brickhaven #2 Mine, Chatham County, North Carolina

Dear Mr. Riddle:

TRC Environmental Corporation (TRC) has completed the archaeological survey at the Brickhaven #2 Mine in Chatham County, North Carolina. The field investigations were accomplished from August 12th through August 21st, 2014, under the direction of Brooke Kenline. Paul Webb served as Principal Investigator.

PROJECT DEFINITION

The archaeological survey included approximately 300 acres of potentially undisturbed land situated west of Moncure-Flatwood Road and 2 km southeast of Old US Highway 1. The work included shovel test excavations and surface surveys in areas where 50% or more of the ground surface was visible. All shovel tests were described in terms of depth, stratigraphy, and artifact recovery, and the texture and Munsell soil color of representative soils were recorded. The location of all shovel tests and surface surveys were plotted on a project map. Standard procedures were followed when archaeological sites were located to gather data on site size, location, integrity, and cultural affiliation. These procedures include intensive surface inspection and/or the excavation of additional shovel tests at 10-m to 15-m intervals within project boundaries. The location and limits of the site were recorded and a sketch map showing the location of all shovel tests was generated. The sites were photographed, general notes were taken concerning site location and condition, and GPS readings were taken.

FIELDWORK RESULTS

The survey fieldwork included the excavation of 490 shovel tests and the surface survey of dirt roads and other exposed surfaces in which surface visibility was greater than 50%. Twenty four of the excavated shovel tests produced prehistoric artifacts and three surface collections were made.

The survey identified 6 prehistoric archaeological sites, including three low density and one moderate density unknown prehistoric lithic artifact scatters, one low density Early Archaic lithic scatter and one Middle to Late Archaic lithic scatter. All but one of the sites (FS 1, 3, 4, 5, and 6) were located on eroded upland landforms and lack the potential for cultural features or deeply buried deposits (Figure 1; Table 1).

Table 1. Archaeological Sites Identified by the Brickhaven Mine Phase I Survey.

FS#	Component(s)	Shovel Tests			Features	Artifacts (including surface)				NRHP Recommendation
		Excavated	Prehistoric	Historic		Lithics	Ceramics	Historic	Total	
1	Prehistoric: Unknown Lithic Scatter	6	1	0	0	1	0	0	1	Not Eligible
2	Prehistoric: Unknown Lithic Scatter	27	9	0	0	109	0	0	109	Possibly Eligible
3	Prehistoric: Unknown Lithic Scatter	7	1	0	0	5	0	0	5	Not Eligible
4	Prehistoric: Unknown Lithic Scatter	8	1	0	0	1	0	0	1	Not Eligible
5	Prehistoric: Early Archaic Lithic Scatter	25	4	0	0	7	0	0	7	Not Eligible
6	Prehistoric: Middle to Late Archaic Lithic Scatter	40	9	0	0	70	0	0	70	Not Eligible

Two diagnostic artifacts were recovered from two of the prehistoric lithic scatter sites (Field Sites 5 and 6). Field Site 5 produced a rhyolite Stanly narrow stemmed projectile point dating to the late Early Archaic to Middle Archaic period (ca. 6000 to 3000 B.C.) and Field Site 6 produced a metavolcanic Halifax projectile point dating to the Late Archaic period (ca. 3500 to 1000 B.C.). No prehistoric ceramics were recovered and no features were identified at these sites. Five of the six sites lack integrity and the potential to provide meaningful information concerning the prehistory of the area, and are recommended not eligible for the National Register of Historic Places (National Register).

The 6th site (FS 2) is characterized as a moderate density unknown prehistoric lithic scatter. The site measures approximately 120m on the N/S axis (along the project boundary) and 40m on the E/W axis, and extends outside the site area to the east. In addition to 9 positive shovel tests, 2 surface collections were also made at the site, the combined work produced 109 artifacts including metavolcanic and quartz debitage in addition to fire cracked rock (FCR). This site is located just southwest of the flooded clay borrow pit and is believed to be the site previously recorded as 31CH857 by Terri Russ in a 2007 reconnaissance of selected parcels at Brickhaven #2 mine, including areas both within and outside the current project area (see attached). (Russ’s work was very limited in scope and is not sufficient for compliance purposes.) Russ reported intact subsurface deposits during her work, but suggested that this site might be eligible for the National Register. Although the present work did not encounter intact subsurface materials, the artifact density suggests that such deposits or cultural features might be present, and that avoidance or further assessment of the site is warranted. In the event that this site cannot be avoided, additional close-order shovel testing and excavation of four 1 × 1 m test units is recommended to further assess the site’s integrity and National Register eligibility.

SUMMARY

The archaeological investigations at Brickhaven #2 Mine have been completed in accordance with the project proposal, and have identified a total of 6 archaeological sites within the project area. Laboratory analysis and reporting are now in progress.

Of the 6 sites identified, one (FS 2; possibly 31CH857) is considered potentially eligible for the National Register and avoidance or further investigations are recommended. The other five sites appear to have little integrity or research potential; these are recommended not eligible for the National Register and should require no further consideration.

Thank you for the opportunity to complete this work. Please do not hesitate to contact me at 919 530-8446 or via email at bkenline@trcsolutions.com if you have any questions or would like any additional information prior to completion of the full report.

Sincerely,



Brooke Kenline
Field Director

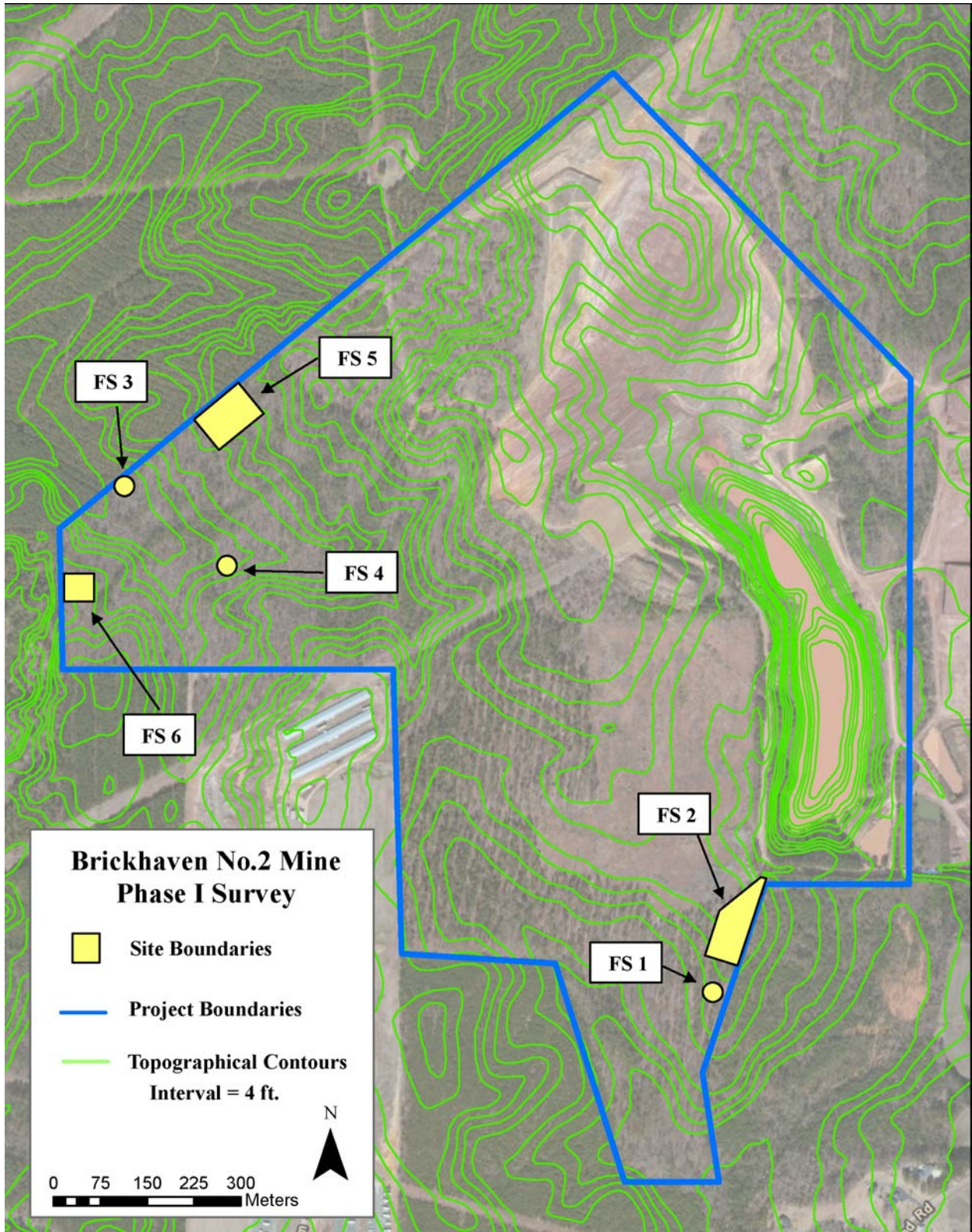
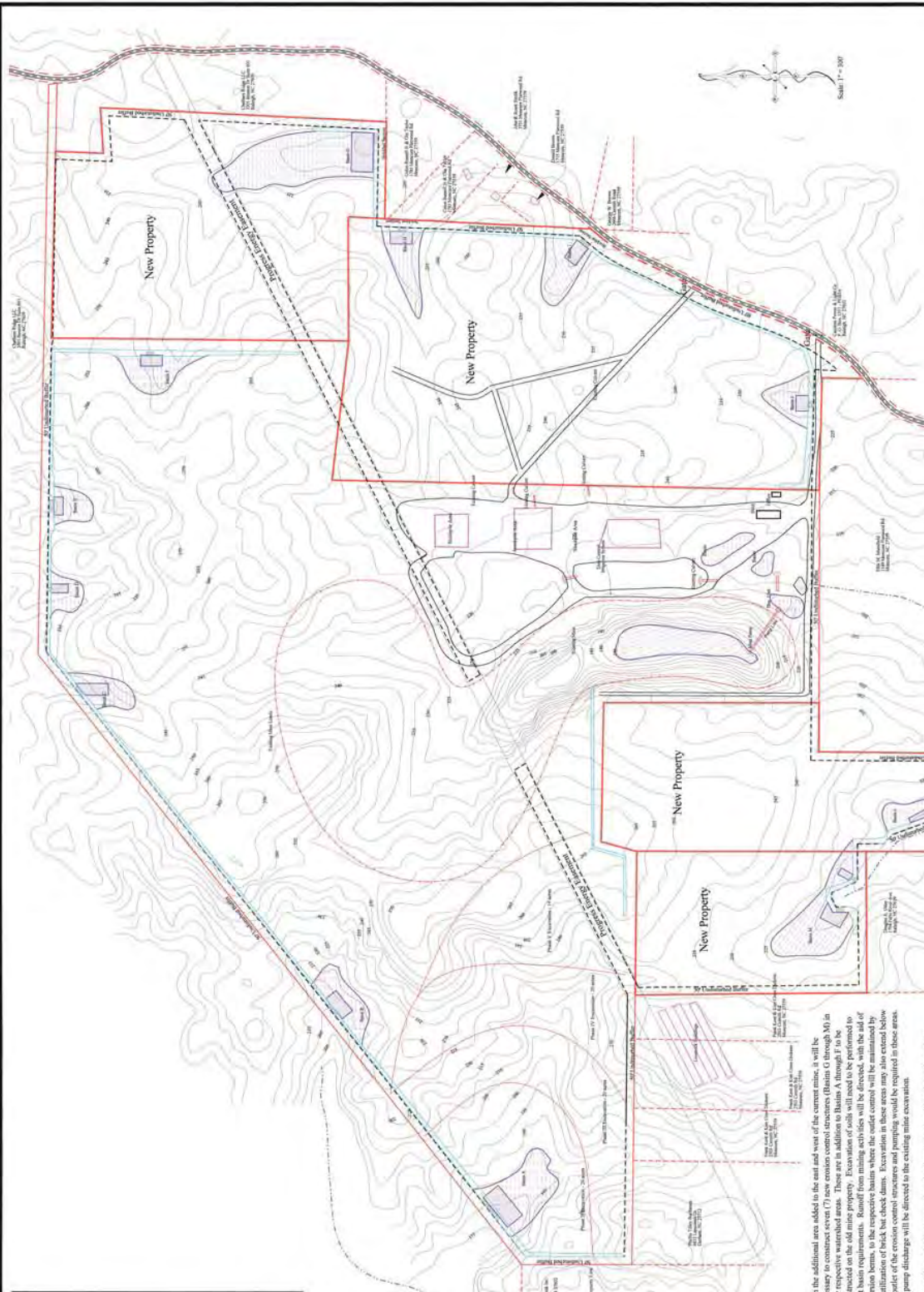
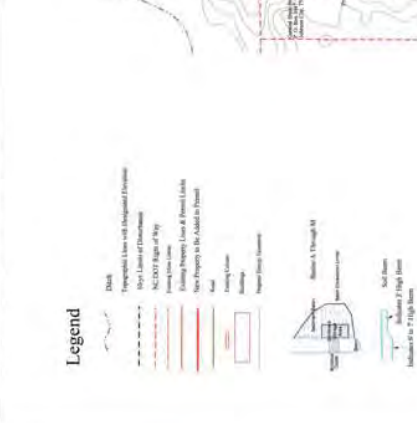
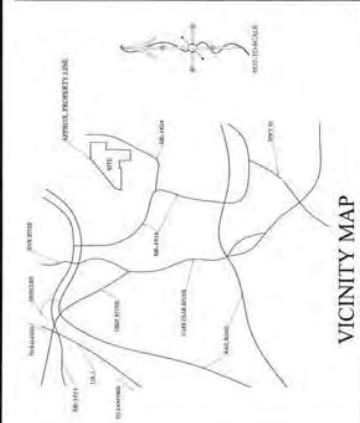


Figure 1. Archaeological Sites Identified within Project Area.

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DATE	05/08/09
PROJECT	SR 1924
SCALE	1" = 200'
PROJECT NO.	01/03/08
CLIENT	Mine Details Brickhaven No. 2 Mine Brickhaven No. 2, 19104 Chatham Co., NC
DESIGNER	General Shale Brick, Inc. 300 Brick Plant Rd. Monroeville, NC 27559
PROJECT	ENGINEERING & ENVIRONMENTAL SCIENCE COMPANY Raleigh, NC 27609 919-791-7799
PROJECT	1
DATE	3



The Brickhaven No. 2 Mine (Permit No. 19-08) in Chatham County, North Carolina, contains 384.1 acres of permitted land. Up to 86.17 acres (includes off-site haul roads) can be disturbed at one time within the property and permit boundaries. The modification to the permit increases the area of permitted land by 264.55 acres and increases the area to be disturbed by 225.42 acres. The total permitted area is now 649.65 acres, with a maximum affected (disturbed) area of 598.89 acres.

The main erosion control structure in the mine itself. Water collected in the mine is periodically pumped into a settlement basin where the water drains by gravity. Experimental reductions of the sediment in the water is being conducted on the water as it flows through the settlement basin. The water is then pumped into a silt trap (a concrete liquid polymer). At other areas of the mine, excavation may also be below the brick outlet structures and removal of water could require pumping. The pump discharge will be discharged to an adjacent basin.

Currently, mining activities will continue from the existing mine in a northern direction. The new mine will be located to the south of the existing mine. The new mine will be located to the south of the existing mine. The new mine will be located to the south of the existing mine.

With the additional area added to the east and west of the current mine, it will be necessary to construct seven (7) new erosion control structures (Barricade through M) in the disturbed areas. These are in addition to the existing structures. The new mine pump and pump lines will be removed and an approximately 238 acre lake or larger ditch crossing. The ditches for these roadways (if present) are presently grassed and stable. The buildings or sheds will be removed.

After mining activities are complete, the disturbed areas will be sloped for positive drainage, re-vegetated in grasses, and the erosion control structures will be removed. The mine pump and pump lines will be removed and an approximately 238 acre lake or larger ditch crossing. The ditches for these roadways (if present) are presently grassed and stable. The buildings or sheds will be removed.

For the A through M, the ditches between will be revegetated and graded flush with the ground. The brickhaven county will also be flattened to form a road grade.

Some of the haul roads will remain in-place to include from SR-1924 to slightly past the ditch crossing. The ditches for these roadways (if present) are presently grassed and stable. The buildings or sheds will be removed.

The two incinerators (grey incinerators) and associated piping will remain in place. The ends of the pipes will be capped. The north and south roads will be removed.

MINIMUM CONSTRUCTION

1. All erosion and sediment control practices shall be planned for stability and erosion. Temporary practices shall be installed immediately after construction activities. Erosion control practices shall be installed on all exposed soil surfaces. Erosion control practices shall be installed on all exposed soil surfaces.
2. Practices shall be installed after erosion control practices are installed and before construction activities.
3. All installed areas shall be bermed, as needed as necessary, and installed according to specifications in the respective plans.

EXISTING DITCH EROSION CONTROL

1. Construct erosion control practices for existing ditches.
2. Erosion control practices shall be installed, as needed as necessary, and installed according to specifications in the respective plans.
3. All installed areas shall be bermed, as needed as necessary, and installed according to specifications in the respective plans.

NEW DITCH CONSTRUCTION SPECIFICATIONS

1. Construct the bermed areas and erosion control practices in ditches according to the specifications in the respective plans.
2. Erosion control practices shall be installed, as needed as necessary, and installed according to specifications in the respective plans.
3. All installed areas shall be bermed, as needed as necessary, and installed according to specifications in the respective plans.

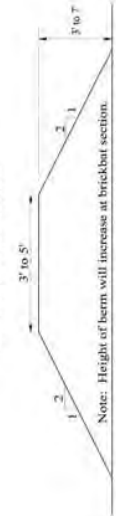
SOIL BERM CROSS-SECTION



Note: Height of berm will increase at brickbat section.

Erosion Control Structures A Through F And Pump Basin

Soil Berm Cross-Section



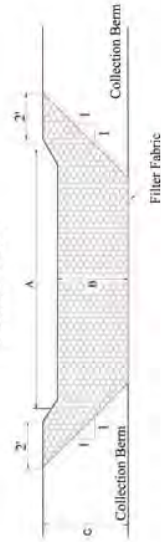
Collection Berm Specifications

1. Construct berm by placement of overburden.
2. Prior to placement of materials for berm formation, cut vegetation neatly flush with ground (if applicable).
3. Compact materials in 1ft. lifts by construction traffic.

Brick Bat Section (NTS)



Front View

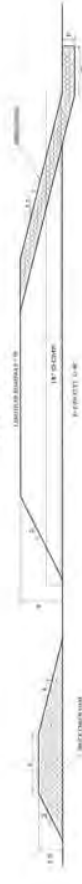


Existing Ditch Erosion Control Cross-Section (NTS)

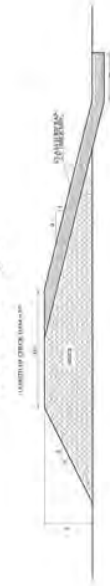
Up Slope



Middle



Down Slope



Sediment Basin Schedule

Basin	Basin Size Storage Area (ft ²)	Sediment Storage Area (ft ²)	Brickbat Length (A) (ft)	Outlet Height (B) (ft)	Adjacent Berm Height (C) (ft)
A	296,100	122' x 243' x 5'	199	6	7
B	104,200	83' x 164' x 4'	68	5	6
C	82,940	74' x 147' x 4'	55	5	6
D	31,020	52' x 104' x 3'	20	5	6
E	50,880	55' x 115' x 4'	32	5	6
F	73,530	69' x 138' x 4'	48	5	6
G	283,768	250' x 136' x 4'	67	5	6
H	83,635	78' x 140' x 4'	48	5	6
I	93,044	134' x 90' x 4'	61	5	6
J	60,287	100' x 78' x 4'	35	5	6
K	13,626	40' x 44' x 4'	10	5	6
L	43,908	32' x 180' x 4'	29	5	6
M1	29,516	44' x 87' x 4'	19	5	6
M2	127,123	112' x 140' x 4'	45	5	6

Existing Pump Basin Outlet Cross-Section (NTS)

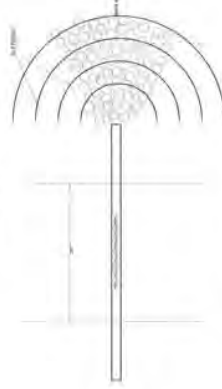
Cross-Section



Typical Roadway Cross-Section (NTS)



Plan View



ENGINEERING & ENVIRONMENTAL SCIENCE COMPANY
 Raleigh, NC 27609
 Phone: 919.286.7228
 Fax: 919.286.7228



Erosion Control Details
 Project No. 19-04
 Mine Permit No. 19-04
 Chatham Co., NC
 See Drawing
 Drawing No. 2
 Sheet No. 3

General Shale Brick, Inc.
 300 Brick Plant Rd.
 Monroeville, NC 27559

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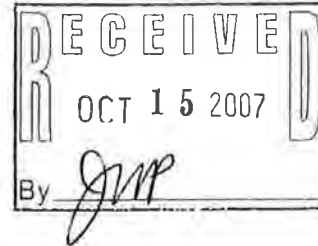
North Carolina Department of Environment and Natural Resources
Division of Land Resources
Land Quality Section

James D. Simons, PG, PE
Director and State Geologist

Michael F. Easley, Governor
William G. Ross Jr., Secretary

October 10, 2007

Mr. Warren Paschal
Environmental Compliance Manager
General Shale Brick, Inc.
1600 Colon Road
Sanford, NC 27330



RE: Permit No. 19-08
Brickhaven No. 2 Mine
Chatham County
Cape Fear River Basin

Dear Mr. Paschal:

Your recent request to have the above referenced mining permit modified has been approved. The modification is to increase the permitted acreage to 648.65 acres and the affected acreage at this site to 590.89 acres as indicated on the Mine Details Map last revised April 23, 2007. The modification includes the addition of several tracts to the east and south of the existing permit boundaries. In addition, the modification includes expansion of the mine excavation area into said tracts and installation and includes the maintenance of all associated erosion and sediment control measures. A copy of the modified permit is enclosed.

Please note that the modification is being approved with the condition that a more thorough revised reclamation plan be filed with this office within 30 days of issuance of this approval. The revised reclamation plan must include final contours of all existing and proposed mined areas, removal and backfilling of sediment basins, providing groundcover on affected exposed areas, etc.

The conditions in the modified permit were based primarily upon the initial application. Modifications were made as indicated by the modification request and as required to insure compliance with The Mining Act of 1971. The expiration date, mine name and permit number shall remain the same as before the modification. I would like to draw your particular attention to the following conditions where minor additions or changes were made: Operating Condition Nos. 4E, 5 and 9A.

The issuance of a mining permit and/or any modification to it does not supersede local zoning regulations. The responsibility of compliance with any applicable zoning regulations lies with you.


1612 Mail Service Center, Raleigh, North Carolina 27699-1612 • 919-733-4574 / FAX: 919-715-8801
512 North Salisbury Street, Raleigh, North Carolina 27604

Mr. Paschal
Page Two

As a reminder, your permitted acreage at this site is 648.65 acres and the amount of land you are approved to disturb is 590.89 acres.

Please review the modified permit and contact Ms. Judy Wehner, Assistant Mining Specialist, at (919) 733-4574 should you have any questions concerning this matter.

Sincerely,


Floyd R. Williams, PG, CPG, CPM
State Mining Specialist
Land Quality Section

FRW/jw

Enclosures

cc: Mr. John Holley, PE
Ms. Shannon Deaton - WRC, w/permit
Mr. Bradley Bennett - DWQ, w/permit
Mr. William Gerringier-Mine and Quarry Bureau, w/o enclosures
US Fish and Wildlife Service, w/ permit

**DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES**

DIVISION OF LAND RESOURCES

LAND QUALITY SECTION

P E R M I T

for the operation of a mining activity

In accordance with the provisions of G.S. 74-46 through 68, "The Mining Act of 1971," Mining Permit Rule 15A NCAC 5 B, and other applicable laws, rules and regulations

Permission is hereby granted to:

General Shale Brick, Inc.

Brickhaven No. 2 Mine

Chatham County - Permit No. 19-08

for the operation of a

Clay Mine

which shall provide that the usefulness, productivity and scenic values of all lands and waters affected by this mining operation will receive the greatest practical degree of protection and restoration.

MINING PERMIT EXPIRATION DATE: September 15, 2015

In accordance with the application for this mining permit, which is hereby approved by the Department of Environment and Natural Resources, hereinafter referred to as the Department, and in conformity with the approved Reclamation Plan attached to and incorporated as part of this permit, provisions must be made for the protection of the surrounding environment and for reclamation of the land and water affected by the permitted mining operation. This permit is expressly conditioned upon compliance with all the requirements of the approved Reclamation Plan. However, completed performance of the approved Reclamation Plan is a separable obligation, secured by the bond or other security on file with the Department, and may survive the expiration, revocation or suspension of this permit.

This permit is not transferable by the permittee with the following exception: If another operator succeeds to the interest of the permittee in the permitted mining operation, by virtue of a sale, lease, assignment or otherwise, the Department may release the permittee from the duties imposed upon him by the conditions of his permit and by the Mining Act with reference to the permitted operation, and transfer the permit to the successor operator, provided that both operators have complied with the requirements of the Mining Act and that the successor operator agrees to assume the duties of the permittee with reference to reclamation of the affected land and posts a suitable bond or other security.

In the event that the Department determines that the permittee or permittee's successor is not complying with the Reclamation Plan or other terms and conditions of this permit, or is failing to achieve the purposes and requirements of the Mining Act, the Department may give the operator written notice of its intent to modify, revoke or suspend the permit, or its intent to modify the Reclamation Plan as incorporated in the permit. The operator shall have right to a hearing at a designated time and place on any proposed modification, revocation or suspension by the Department. Alternatively and in addition to the above, the Department may institute other enforcement procedures authorized by law.

Definitions

Wherever used or referred to in this permit, unless the context clearly indicates otherwise, terms shall have the same meaning as supplied by the Mining Act, N.C.G.S. 74-49.

Modifications

October 5, 1995: This permit has been modified to increase the affected acreage from 17 acres to 83.5 acres, approve the pit expansion and the upgrading of the associated sediment and erosion control measures as per the Mine Site Map dated August 27, 1995, and allow modification to the spray irrigation system as approved by the Division of Water Quality.

August 2, 1996: This permit has been modified to change the corporate name from Cherokee Sanford Group, Inc. to Cherokee Sanford Group, LLC.

September 24, 1998: This permit has been modified to allow the temporary use (two year approval) of Photafloc polymer for enhanced sediment control experimentation purposes, with stipulations as outlined in the approval letter.

November 4, 1999: This permit has been modified to increase the affected acreage at the site to 337 acres as indicated on the mine map dated September 9, 1999. This modification also includes the revised erosion and sediment control plan dated September 22, 1999 and allows the use of Calgon Catr-Floc DL for flocculation of fine particles in the basins onsite.

April 6, 2005: This permit has been modified to change the corporate name from Cherokee Sanford Group, LLC to General Shale Brick, Inc.

October 10, 2007: This permit has been modified to increase the permitted acreage to 648.65 acres and the affected acreage at this site to 590.89 acres as indicated on the Mine Details Map last revised April 23, 2007. The modification includes the addition of several tracts to the east and south of the existing permit boundaries. In addition, the modification includes expansion of the mine excavation area into said tracts and installation and includes the maintenance of all associated erosion and sediment control measures.

Expiration Date

This permit shall be effective from the date of its issuance until September 15, 2015.

Conditions

This permit shall be subject to the provisions of the Mining Act, N.C.G.S. 74-46, et. seq., and to the following conditions and limitations:

OPERATING CONDITIONS:

1. A. Any wastewater processing or mine dewatering shall be in accordance with the permitting requirements and rules promulgated by the N.C. Environmental Management Commission.
- B. Any stormwater runoff from the affected areas at the site shall be in accordance with any applicable permit requirements and regulations promulgated by the Environmental Protection Agency and enforced by the N.C. Environmental Management Commission. It shall be the permittee's responsibility to contact the Division of Water Quality to secure any necessary stormwater permits or other approval documents.
- C. Wastewater processing and mine dewatering shall be conducted in accordance with Permit No. WQ 0007589 issued and enforced by the Division of Water Quality.
2. A. Any mining process producing air contamination emissions shall be subject to the permitting requirements and rules promulgated by the N.C. Environmental Management Commission and enforced by the Division of Air Quality.

- B. During mining operations, water trucks or other means that may be necessary shall be utilized to prevent dust from leaving the permitted area.
3.
 - A. Sufficient buffer shall be maintained between any affected land and any adjoining waterway or wetland to prevent sedimentation of that waterway or wetland from erosion of the affected land and to preserve the integrity of the natural watercourse or wetland.
 - B. Any mining activity affecting waters of the State, waters of the U. S., or wetlands shall be in accordance with the requirements and regulations promulgated and enforced by the N. C. Environmental Management Commission.
 4.
 - A. Adequate mechanical barriers including but not limited to diversions, earthen dikes, check dams, sediment retarding structures, rip rap pits, or ditches shall be provided in the initial stages of any land disturbance and maintained to prevent sediment from discharging onto adjacent surface areas or into any lake, wetland or natural watercourse in proximity to the affected land.
 - B. All drainage from the affected area around the mine excavations shall be diverted internal to said excavation or into the sediment basins as indicated on the Mine Details map last revised April 23, 2007.
 - C. Mining activities, including the installation and maintenance of sediment and erosion control measures, shall be conducted as indicated on the Mine Details map and the Erosion Control Details plan last revised April 23, 2007.
 - D. All sediment and erosion control measures shall be dipped out when they become half full with sediment.
 - E. Mining activities associated with the expansion of the mine excavation areas to the east and south shall be conducted as indicated on the Mine Details Map, Reclamation Plan and Erosion Control Detail Sheet last revised April 23, 2007 and the supplemental information received by the Land Quality Section on April 27, 2007, and September 18, 2007.
 - F. Access to Progress Energy facilities must be maintained at all times along the transmission line rights of way.
 5. All affected area boundaries (590.89 acres) shall be permanently marked at the site on 100-foot intervals unless the line of sight allows for larger spacing intervals.
 6. The angle for graded slopes and fills shall be no greater than the angle that can be retained by vegetative cover or other adequate erosion control measure, structure, or device. In any event, exposed slopes or any excavated channels, the erosion of which may cause off-site damage because of siltation, shall be planted or otherwise provided with ground cover, devices or structures sufficient to restrain such erosion.

7. The affected land shall be graded so as to prevent collection of pools of water that are, or likely to become, noxious or foul. Necessary structures such as drainage ditches or conduits shall be constructed or installed when required to prevent such conditions.
8. Existing vegetation or vegetated earthen berms shall be maintained between the mine and public thoroughfares whenever practical to screen the operation from the public.
9.
 - A. Sufficient buffer (minimum of 25 foot undisturbed) shall be maintained between any excavation and any mining permit boundary to protect adjacent property.
 - B. A minimum 40 foot undisturbed buffer (with adjacent excavation side slopes maintained at a minimum of three (3) horizontal to one (1) vertical) shall be maintained around all power line structures.
10. A physical barrier consisting of a fence or earthen berm, etc., shall be maintained around the perimeter of any highwall.
11.
 - A. No on-site disposal of refuse or other solid waste that is generated outside of the mining permit area shall be allowed within the boundaries of the mining permit area unless authorization to conduct said disposal has first been obtained from both the Division of Waste Management and the Land Quality Section, Department of Environment and Natural Resources. The method of disposal shall be consistent with the approved reclamation plan.
 - B. Mining refuse as defined by G.S. 74-49 (14) of The Mining Act of 1971 generated on-site and directly associated with the mining activity may be disposed of in a designated refuse area. All other waste products must be disposed of in a disposal facility approved by the Division of Waste Management. No petroleum products, acids, solvents or their storage containers or any other material that may be considered hazardous shall be disposed of within the permitted area.
 - C. For the purposes of this permit, the Division of Land Resources considers the following materials to be "mining refuse" (in addition to those specifically listed under G.S. 74-49 (14) of the N.C. Mining Act of 1971):
 1. on-site generated land clearing debris
 2. conveyer belts
 3. wire cables
 4. v-belts
 5. steel reinforced air hoses
 6. drill steel
 - D. If mining refuse is to be permanently disposed within the mining permit boundary, the following information must be provided to and approved by the Division of Land Resources prior to commencement of such disposal:

1. the approximate boundaries and size of the refuse disposal area;
 2. a list of refuse items to be disposed;
 3. verification that a minimum of 4 feet of cover will be provided over the refuse;
 4. verification that the refuse will be disposed at least 4 feet above the seasonally high water table; and,
 5. verification that a permanent vegetative groundcover will be established.
- E. Stockpiling of only petroleum-contaminated soil shall be conducted in accordance with Permit Nos. WQ0003219, WQ0007589 and SR0500046, issued by the North Carolina Environmental Management Commission and any revisions approved or new permits issued by the Division of Water Quality.
12. An Annual Reclamation Report shall be submitted on a form supplied by the Department by February 1 of each year until reclamation is completed and approved.
13. The operator shall notify the Department in writing of the desire to delete, modify or otherwise change any part of the mining, reclamation, or erosion/sediment control plan contained in the approved application for a mining permit or any approved revision to it. Approval to implement such changes must be obtained from the Department prior to on-site implementation of the revisions.
14. The security, which was posted pursuant to N.C.G.S. 74-54 in the form of a \$500,000.00, blanket bond is sufficient to cover the operation as indicated in the approved application. This security must remain in force for this permit to be valid. The total affected land shall not exceed the bonded acreage.
15. A. Authorized representatives of the Division of Archives and History shall be granted access to the site to determine the presence of significant archaeological resources.
- B. Pursuant to N. C. G. S. 70 Article 3, "The Unmarked Human Burial and Human Skeletal Remains Protection Act," should the operator or any person in his employ encounter human skeletal remains, immediate notification shall be provided to the county medical examiner and the chief archaeologist, North Carolina Division of Archives and History.

APPROVED RECLAMATION PLAN

The Mining Permit incorporates this Reclamation Plan, the performance of which is a condition on the continuing validity of that Mining Permit. Additionally, the Reclamation Plan is a separable obligation of the permittee, which continues beyond the terms of the Mining Permit.

The approved plan provides:

Minimum Standards As Provided By G.S. 74-53

1. The final slopes in all excavations in soil, sand, gravel and other unconsolidated materials shall be at such an angle as to minimize the possibility of slides and be consistent with the future use of the land.
2. Provisions for safety to persons and to adjoining property must be provided in all excavations in rock.
3. All overburden and spoil shall be left in a configuration which is in accordance with accepted conservation practices and which is suitable for the proposed subsequent use of the land.
4. No small pools of water shall be allowed to collect or remain on the mined area that are, or are likely to become noxious, odious or foul.
5. The revegetation plan shall conform to accepted and recommended agronomic and reforestation practices as established by the North Carolina Agricultural Experiment Station and the North Carolina Forest Service.
6. Permittee shall conduct reclamation activities pursuant to the Reclamation Plan herein incorporated. These activities shall be conducted according to the time schedule included in the plan, which shall to the extent feasible provide reclamation simultaneous with mining operations and in any event, provide reclamation at the earliest practicable time after completion or termination of mining on any segment of the permit area and shall be completed within two years after completion or termination of mining.

RECLAMATION CONDITIONS:

1. Provided further, and subject to the Reclamation schedule, the planned reclamation shall be to regrade and revegetate any disturbed areas other than the mine excavations, which shall be restored to lake areas.
2. The specifications for surface gradient restoration to a surface suitable for the planned future use are as follows:
 - A. The lake area shall be excavated to maintain a minimum water depth of four feet measured from the low water table elevation.

- B. The side slopes to the lake excavation shall be graded to a 3 horizontal to 1 vertical or flatter to the water line and 2 horizontal to 1 vertical or flatter below the water line.
- C. All the final perimeter side slopes shall be graded to a 3 horizontal to 1 vertical or flatter slope.
- D. Any settling ponds or sediment basins shall be backfilled and stabilized.
- E. The processing, stockpile, and other disturbed areas neighboring the mine excavation shall be leveled and smoothed.
- F. Compacted surfaces shall be disced, subsoiled or otherwise prepared before revegetation.
- G. Any areas used for wastepiles, screening, stockpiling or other processing shall be leveled and smoothed.
- H. No contaminants shall be permanently disposed of at the mine site. On-site disposal of waste shall be in accordance with Operating Condition Nos. 11A through 11E.
- I. The affected land shall be graded to prevent the collection of noxious or foul water.

3. Revegetation Plan:

After site preparation, all disturbed land areas shall be revegetated as per the Revegetation Plan submitted by Mr. T. Patrick Shillington, PE, of Engineering & Environmental Science Company, dated August 1, 2005.

Whenever possible, disturbed areas should be vegetated with native warm season grasses such as switch grass, Indian grass, bluestem and gamma grass.

In addition, the permittee shall consult with a professional wildlife biologist with the N.C. Wildlife Resources Commission to enhance post-project wildlife habitat at the site.

4. Reclamation Plan:

Reclamation shall be conducted simultaneously with mining to the extent feasible. In any event, reclamation shall be initiated as soon as feasible after completion or termination of mining of any mine segment under permit. Final reclamation, including revegetation, shall be completed within two years of completion or termination of mining.

This permit, issued to Cherokee Brick Company on August 30, 1985, transferred to Cherokee Sanford Group on November 4, 1988, simultaneously renewed and modified October 5, 1995, modified August 2, 1996 (to change the name to Cherokee Sanford Group, LLC), September 24, 1998, November 4, 1999, and April 6, 2005 (to change the corporate name from Cherokee Sanford Group, LLC to General Shale Brick, Inc.) and renewed September 15, 2005, is hereby modified this 10th day of October, 2007 pursuant to G.S. 74-52.

By: 

James D. Simons, Director
Division of Land Resources
By Authority of the Secretary
Of the Department of Environment and Natural Resources

**NOTICE OF ISSUANCE OF
MINING PERMIT**

You have previously expressed an interest and/or are listed as an adjoining landowner in the application to modify this mining permit filed by General Shale Brick Inc. to conduct mining activities off SR 1924 (Corinth Road) in Chatham County. The mining permit (no. 19-08) was modified on October 10, 2007.

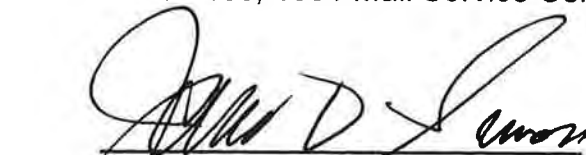
North Carolina law allows persons aggrieved by the issuance of a mining permit to contest the decision by filing a petition for a contested case in the Office of Administrative Hearings pursuant to N.C.G.S. 150B-23 of the Administrative Procedure Act (APA).

If you believe that you are an aggrieved party within the meaning of the APA and NC General Statute 74-61, a petition for a contested case must be filed in the Office of Administrative Hearings within thirty (30) days of the mailing of this notice to you.

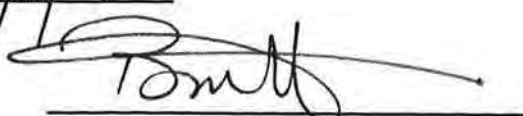
If you file a contested case petition, it must be in writing and in the form prescribed by N.C. General Statutes 150B-23. File the original petition and one copy with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714.

Any questions about filing a petition may be directed to the Clerk of the Office of Administrative Hearings by telephoning (919) 733-0926.

You must serve the **Department of Environment and Natural Resources** by mailing a copy of the petition to Ms. Mary Penny Thompson, Registered Agent and General Counsel, Department of Environment and Natural Resources, 1601 Mail Service Center, Raleigh, NC 27699-1601.


James D. Simons
Director
Division of Land Resources
North Carolina Department of
Environment and Natural
Resources

This notice was mailed on 10/11/07.


Brenda Harris
Mining Program Secretary



North Carolina Department of Environment and Natural Resources
Division of Land Resources
Land Quality Section

James D. Simons, PG, PE
Director and State Geologist

Michael F. Easley, Governor
William G. Ross Jr., Secretary

July 2, 2007

Certified Mail
Return Receipt Requested
7002 3150 0003 7045 0254

Mr. Warren paschal
General Shale Brick Inc.
1600 Colon Road
Sanford, North Carolina 27330

RE: Brickhaven No. 2 Mine
Permit No. 19-08
Chatham County
Cape far River Basin

Dear Mr. Paschal:

We have reviewed the modification request your company submitted for the referenced mine site. However, the following information is needed to continue processing your application:

As previously requested, provide supporting calculations for the basins and diversion berms. The measures must be designed to pass a 25 year 24 hour storm event, have 1800 cubic feet per acre disturbed storage capacity and surface area of .01 times the flow of a ten year storm event.

Please be advised that our review cannot be completed until all of the items listed above have been fully addressed. In addition, please note the Land Quality Section may request additional information, not included in this letter, as the mining application review progresses.

In order to complete the processing of your application, please forward two (2) copies of the requested information to my attention at the following address:

Land Quality Section
Division of Land Resources
Department of Environment and Natural Resources
1612 Mail Service Center
Raleigh, NC 27699-1612

1612 Mail Service Center, Raleigh, North Carolina 27699-1612 • 919-733-4574 / FAX: 919-715-8801
512 North Salisbury Street, Raleigh, North Carolina 27604

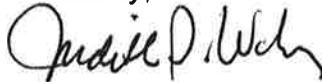
Certified Mail
Mr. Paschal
Page Two

As required by 15A NCAC 5B.0013, you are hereby advised that you have 180 days from the date of your receipt of this letter to submit all of the requested information. If you are unable to meet this deadline and wish to request additional time, you must submit information, in writing, to the Director clearly indicating why the deadline can not be met and request that an extension of time be granted. If an extension of time is not granted, a decision will be made to grant or deny the mining permit based upon the information currently in the Department's files at the end of the 180-day period.

Though the preceding statement cites the maximum time limit for your response, we encourage you to provide the additional information requested by this letter as soon as possible. Your prompt response will help us to complete processing your application sooner.

Please contact me at (919) 733-4574 if you have any questions.

Sincerely,



Judith A. Wehner
Assistant State Mining Specialist
Land Quality Section

cc: Mr. John Holley, PE
Mr. Pat Shillington, PE – E2S, 3008 Anderson Drive, Raleigh, NC27609

Drawings

Brickhaven No.2 Mine Tract "A"

Charah, Inc.

Moncure, NC

November 2014