



## ⊠ North Carolina Wildlife Resources Commission ⊠

Gordon Myers, Executive Director

### MEMORANDUM

**TO:** Tom Belnick  
NC Division of Water Quality – NPDES

**FROM:** Shannon L. Deaton, Habitat Conservation Program Manager  
Division of Inland Fisheries *Shannon Deaton*

**DATE:** April 12, 2013

**SUBJECT:** NPDES Public Notice for Martin Marietta Materials, Inc. Vanceboro Quarry, Beaufort and Craven Counties, North Carolina.  
**NPDES Permit NC0089168**

Biologists with the North Carolina Wildlife Resources Commission (NCWRC) reviewed the NPDES public notice and draft permit with regard to impacts on fish and wildlife resources. The project site is located approximately seven miles east of US Hwy 17 on the Beaufort-Craven County border between the communities of Wilmar, NC and Blounts Creek, NC. The site is located on the drainage basin divide between the Neuse River and Tar-Pamlico River basins. Our comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), Sections 401 and 404 of the Clean Water Act (as amended), and Coastal Area Management Act (G.S. 113A-100 through 113A-128), as amended.

The applicant, Martin Marietta Materials, Inc. proposes to develop a 649 acre open pit aggregate mine within a 1,664 acre project area. The site is currently owned and managed by the Weyerhaeuser Corporation for the silviculture of loblolly pine. Impacts associated with the direct mining of the land include permanent impacts to 6.69 acres of wetlands and 58,671 linear feet of jurisdictional ditches. To facilitate the open pit mining, Martin Marietta Materials has applied to the NC Division of Water Resources (NCDWR) to withdraw up to 12 MGD of water from the Castle Hayne aquifer. This NC Division of Water Quality (NCDWQ) NPDES public notice addresses the request to discharge up to 9 MGD of water into the headwaters of Blounts Creek. The discharge locations will be located at outfall 001 and outfall 002 into an unnamed tributary (non-jurisdictional ditch) of Blounts Creek. The waters of Blounts Creek are classified C, Sw, NSW by the Environmental Management Commission, are subject to the Tar-Pamlico Basin Buffer Rules, and are designated an anadromous fish spawning area (AFSA) by the NCWRC.

We have reviewed previous documents from the applicant regarding this mine proposal and submitted comments during the US Army Corps of Engineers 404 public notice and the NCDWQ 401

permitting process (18 January 2012, Cox). Our primary concern with this project continues to be the proposed discharge into Blounts Creek. We do not feel that our concerns expressed in our previous correspondence have been adequately addressed. Discharging 9 MGD of water into the headwaters of Blounts Creek has the potential for significant adverse impacts to fish and wildlife resources and their habitat. We request that alternative discharge options be considered in the project proposal that minimize the impacts to Blounts Creek.

### Resources of Blounts Creek

Blounts Creek is a deep water creek with hardwood riparian wetlands characteristic of a black, swamp water drainage. The headwaters of the system are generally acidic and exhibit extremely low flows that can vary seasonally from no flow to less than 18 cfs. There are no point source discharges into Blounts Creek and the riparian areas are, for the most part, undisturbed and naturally vegetated except downstream of the confluence with Herring Run where some residential development occurs along the upland shoreline. The absence of discharges and intact riparian buffers greatly reduce sedimentation and erosion in the upper reaches of the system. The mouth of the creek opens into Blounts Bay and the Pamlico River. Salinity levels in the creek vary seasonally providing habitat for freshwater, estuarine, and marine aquatic species.

Blounts Creek supports numerous and varied fish species including Striped Bass (*Morone saxatilis*), Alewife (*Alosa pseudoharengus*), Blueback Herring (*Alosa aestivalis*), American and Hickory Shad, Largemouth Bass (*Micropterus salmoides*), Yellow Perch (*Perca flavescens*), White Perch (*Morone americana*), Black Crappie (*Pomoxis nigromaculatus*), Chain Pickerel (*Esox niger*), Redfin Pickerel (*Esox americanus*), American Eel (*Anguilla rostrata*), and occasionally Red Drum (*Sciaenops ocellatus*), Southern Flounder (*Paralichthys lethostigma*), and Spotted Seatrout (*Cynoscion nebulosus*). These fish inhabit Blounts Creek seasonally depending on water temperatures and salinity. Blounts Creek is fished heavily by recreational anglers because of the rich diversity of fish species. NCWRC recently completed Blounts Creek boating access area to enhance access to this system for anglers and other outdoor recreational users.

Blounts Creek is also designated as an anadromous fish spawning area, providing environmental conditions and favorable spawning habitat for anadromous fish such as Striped Bass and River Herring (Blueback Herring and Alewife). While adult Striped Bass clearly use Blounts Creek for spawning, it is more difficult to demonstrate spawning in this system by River Herring. River Herring populations are severely depressed and both the NC Division of Marine Fisheries and NCWRC currently prohibit the take of River Herring in an effort to increase population numbers. Further, River Herring are under consideration for inclusion on the endangered species list by the National Oceanic and Atmospheric Administration. Historical "runs" of River Herring are locally known in the Herring Run tributary as well as in Blounts Creek upstream and downstream of the NC Hwy 33 bridge. Sampling conducted from June 1974 through June 1976 in the Tar-Pamlico system demonstrated spawning activity in Herring Run from about 200 yards downstream of the confluence with Blounts Creek to the NC SR 1110 bridge near Cox's Crossroads. This area also produced the highest catch-per-unit-effort (CPUE) of River Herring eggs in the Tar-Pamlico system with 163 eggs in a five minute tow (Marshall, 1976).

### Recent NCWRC Sampling of Blounts Creek

On April 1, 2013 NCWRC staff electroshocked four locations in Blounts Creek upstream of the NCWRC Blounts Creek Landing Boating Access Area. River Herring were collected in the Herring Run tributary as well as within the mainstem of Blounts Creek, upstream of the confluence with Herring Run. Access to the upper most sample site was limited due to the size of the electrofishing boat. Thirty nine fish were collected; the sample was comprised mostly of Blueback Herring males and one gravid female Alewife was captured (NCWRC personal communication). This sample resulted in the highest CPUE of

River Herring in years from the Tar-Pamlico system, and demonstrated the importance of Blounts Creek as potential spawning habitat. (see attached map)

Wildlife resource comments and concerns presented below are provided in response to system changes projected in technical documents prepared by Martin Marietta.

1) Change in Flow System

NCWRC is concerned that significant changes in flow can adversely impact River Herring spawning success. Technical documents provided by Martin Marietta Materials, Inc. state that the upper reaches of the system will change from essentially a low flow system to a moderate flow system. Projected discharges will more than double water flow and volumes into Blounts Creek, thus altering the creeks response to large rain events. Dramatic, sustained increases in flow to a riverine system will cause a stream system to alter by adjusting its banks and bankfull height, which increases the sediment load in a system. River Herring require a low flow system in order for eggs to settle on vegetation near the bank. The moderate freshwater flow system resulting from this project proposal would cause eggs to be flushed further downstream to water conditions unsuitable for hatching. Additionally, the success of River Herring eggs depends on a low sediment load to minimize the potential for eggs being covered.

2) Water quality conditions

We are concerned that any significant changes to the water chemistry in Blounts Creek can also affect River Herring's ability to spawn successfully. The infusion of water from the Castle Hayne aquifer is projected to change pH, salinity, DO, iron, manganese, and other elements at the discharge location and downstream. Many fish species use olfactory cues to locate their biological spawning grounds. River Herring are known to spawn in their natal systems and, olfactory cues play an important role in their spawning behavior. Any chemical alteration of these cues could impair herrings' ability to find their historic spawning grounds.

3) Collection of baseline data

We recommend increased sampling over a broader period of time that represents seasonal and annual water quality data prior to performing any project models that predict the influence of the mine discharge on water chemistry. Accurate projections of project impacts rely heavily on collecting representative baseline data of sufficient scope. Based on NCWRC's recent sampling results, we do not concur that the freshwater input will improve conditions in Blounts Creek from its current swamp water conditions. Current water quality conditions in Blounts Creek support spawning for River Herring and numerous other fish species. Baseline data collected by Kimley-Horn and Associates, Inc. (Kimley-Horn) for Martin Marietta Materials, Inc. and projections in the project proposal shows the pH in the system upstream of the confluence of Herring Run will increase from a current range of 4.0 -5.5 to 6.3-6.9. This change in pH would be a marked difference from the current conditions and may no longer sustain the current resource use.

In addition to the pH changes, the introduction of a 9MGD freshwater discharge would decrease overall salinity levels in the upstream portion of the system and move the salt wedge further downstream. During the April 1, 2013 NCWRC sampling event, surface salinity levels at the Herring Run confluence were 5.1 ppt. In the project proposal, the salinity range gathered by Kimley-Horn was only 0.03 – 1.08 ppt. These data differences show the high variability of salinity that can occur in this system and demonstrate the importance of designing a baseline monitoring plan that captures the variability of critical water quality parameters such as pH and salinity annually as well as seasonally or during weather events.

The documents provided by Martin Marietta Materials, Inc. state that Blounts Creek downstream of the confluence of Herring Run will see minimal changes. This area is especially important for

anadromous fish spawning, and we are concerned that impacts and changes to this upper reach may be more heavily affected and need to be adequately addressed in the project proposal.

4) Planning for future monitoring and mitigation needs

NCWRC requests that additional details be incorporated into the project proposal regarding monitoring and mitigation to compensate for anticipated system changes during and after the life of the mine operation. Specifically, we request the applicant collect baseline data and model the potential impacts of a 9MPG discharge on stream morphology and hydrology.

5) Discharge alternatives

NCWRC requests that alternative methods of discharging 9MGD of freshwater be proposed to avoid the potential significant effect on Blounts Creek. Several alternatives presented in this project proposal could result in minimized impacts to Blounts Creek, but were not chosen primarily due to cost.

One alternative considered by the applicant included injection of 4.5 MGD into the aquifer and a discharge of 4.5 MGD into Blounts Creek. Although this alternative was dismissed due to costs; however, this or a similar alternative could significantly reduce fish and wildlife impacts. Water withdrawn from the Castle Hayne aquifer could be injected back into the aquifer while water withdrawn from the surficial aquifer could be discharged into Blounts Creek. This alternative would significantly reduce the volume and velocity of water discharged in addition to minimizing water chemistry differences between aquifer and surface waters. Injection could be done well away from the aquifer withdrawal to lessen any influence on the needed cone of depression and minimize impacts to aquatic resources.

The applicant determined the discharge option mentioned above was a more expensive alternative than a complete surface water discharge. However, costs presented in the application did not take into account the value of fish and wildlife impacts, the cost of increased monitoring not currently proposed, and the cost of stream mitigation post-mine closure. Total project costs should take all these factors into account as well.

We believe that the project as proposed will have significant adverse impacts to the significant aquatic resources in Blounts Creek. Potential impacts to water quality and aquatic habitat in Blounts Creek could be reduced if an alternate method of water discharge such as the split alternative were employed.

Thank you for the opportunity to provide comment on this permit. We look forward to reviewing additional information as it becomes available. If we can be of further assistance, please contact me at (919) 707-0222.

Ec: Maria Dunn and David Cox, NC Wildlife Resources Commission

*Literature Cited*

Marshall, Michael D. 1976. Anadromous Fisheries Research Program - Tar River, Pamlico River and Northern Pamlico Sound. Completion Report for Project AFCS – 10. North Carolina Division of Marine Fisheries, Morehead City, 90p.

Map depicting recent NCWRC sampling of Blounts Creek

