UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 17 2009

Terrence "Rock" Salt
Acting Assistant Secretary (Civil Works)
Department of the Army
108 Army Pentagon
Room 3E446
Washington, DC 20310-7401

OFFICE OF
WATER

Dear Acting Assistant Secretary Salt:

I am writing to inform you that the U.S. Environmental Protection Agency (EPA) has decided not to seek additional review of the Section 404 permit to the Potash Corporation of Saskatchewan Phosphate Division (PCS or the Applicant) to expand an existing phosphate mining operation (Action ID: AID 200110096) in Beaufort County, North Carolina (NC). EPA Headquarters and Region 4 have jointly made this decision after thoroughly reviewing the U.S. Army Corps of Engineers Wilmington District's (the Corps) June 3, 2009, proffered permit and Record of Decision (ROD), received on June 4, 2009. The 15,100 acre project area is located adjacent to the Pamlico River which is part of the nationally significant Albemarle Pamlico Estuary Complex. The project area is composed of three tracts identified as the NCPC, Bonnerton, and South of NC Highway 33 (S33) tracts which collectively contain 6,293 acres of wetlands and 115,843 linear feet of streams that support the Albemarle Pamlico Estuary. The mine advance described in the proffered permit involves mining and mining related activities within approximately 11,343 total acres, resulting in direct adverse impacts to approximately 3,909 acres of wetlands and 22,435 linear feet of streams.

On April 3, 2009, EPA elevated an earlier version of the proposed permit (February 24, 2009, proposed permit) to the Assistant Secretary of the Army - Civil Works (ASA-CW) for review pursuant to Part IV of the 1992 Memorandum of Agreement (MOA) between EPA and the Department of the Army under Section 404(q) of the CWA. In response to this permit elevation, a number of changes have been made to the proposed project to reduce the scope of its environmental impacts, particularly in the most valuable and sensitive areas, and reflect additional conditions designed to improve site reclamation practices and the monitoring and adaptive management of both the impact and compensatory mitigation sites. EPA has fully considered the revised project in the context of CWA Section 404 (q) and 404(c), including assessment under relevant portions of the CWA Section 404(b)(1) Guidelines. Based on the revisions made to the proposed permit as well as the other factors discussed below, and after close consultation, EPA Headquarters and Region 4 have decided that the Section 404(q) process has been resolved, and EPA has decided not to pursue review of the project pursuant to Section 404(c) at this time.

Impact Avoidance

The first step of the section 404(b)(1) review is to avoid impacts to waters of the U.S. Under the Guidelines, an alternative is practicable if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." The Applicant is currently operating under a CWA Section 404 permit issued by the Corps in 1997 that authorized impacts to approximately 1,268 acres of wetlands at the project site. Rather than continuing to permit impacts to the site's valuable aquatic resources in a "piecemeal" manner, the Corps is approaching the current permit more holistically and issuing what it has referred to as a "life of mine" permit. Consistent with this approach, the project's Environmental Impact Statement (EIS) classifies and maps aquatic resources across the entire 15,100 acre project area. The revised permit authorizes impacts to approximately 11,343 acres of uplands and wetlands and avoids impacts to the approximately 2,445 acres of waters of the United States (see ROD permit Special Condition DD) that the Corps, EPA and the other federal and state resource agencies agree represent the site's most ecologically important aquatic resources.

In this case, the Corps Wilmington District determined that economic practicability of the project turns on the availability of approximately 15 years of mining in the two tracts north of Highway 33 (the NCPC and Bonnerton tracts). In our elevation we raised concerns with the economic analysis used by the Corps in determining practicability. The District's analysis was reviewed by Corps HQ and confirmed by the ASA-CW in his response to EPA's Section 404(q) elevation. Although EPA continues to have questions regarding this specific analysis, we recognize that economic viability is an important part of the alternatives analysis. The Applicant has stated that at this time, given the current state of the phosphate market, it would not be economically feasible to move to S33 in the near future. Further, PCS has emphasized that the phosphate ore in the northern tracts is of higher value, and more cost-effective to mine, than that in the southern tract. The Applicant has stated that, as a result of these factors, mining in the southern tract would not be cost-effective in the absence of a substantial improvement in the market. (It should be noted that the Applicant did not originally apply for a permit for S33; the Corps required that tract to be included as part of the "life of mine" permit process.) Therefore, the Applicant has asserted that there must be significant mining north of S33 in order for the project to be viable. The Applicant has also reiterated that the project which was the subject of the 404(q) elevation, and would provide about 14 years of mining in the two northern tracts, is marginally practicable under current market conditions.

In our elevation we looked to the statement in the FEIS that an alternative would be reasonable if it provided "the applicant with the certainty of practicable costs for at least 15 years." Based on that statement, our analysis of what the least environmentally damaging practicable alternative would be used the assumption that 15 years of mining on any combination of the three tracts would make the project viable. However, after considering the company's analysis and conclusions on this matter, we now are

convinced that mining on S33 can not be considered to provide the "certainty of practicable costs" in the near future. While we are not able to determine exactly how many years of mining would be required on the two northern tracts to make a project economically viable, we now accept that something closer to 15 years on the northern tract is appropriate.

Subsequent to our elevation we suggested that avoidance of approximately 450 acres would be practicable. However, just as we have strongly argued throughout this process that not all waters are of equal value, similarly not all mining configurations are of equal value (or practicability). The Corp has determined that achieving that level of avoidance would make the project impractical. It is important to note that it can be particularly difficult to determine practicability of alternatives in situations such as this, where mining can occur only where the resource is located, and not all resources are equal in value or cost-effectiveness. The revised permit does in fact provide for less than the original goal of 15 years of mining in the northern tracts (by about a year and a half).

The FEIS identified Alternative L as the applicant's modified permit request. This proposed permit request was subsequently reduced in impacts on NCPC and S33 tracts through discussions between the Corps District and the applicant. The proposed impacts for the original Alternative L were for 4120 acres of wetlands and 29,288 linear feet of stream. The State of North Carolina further reduced the impacts through the State's Section 401 certification. EPA proposed additional avoidance in its permit elevation. In response to additional avoidance sought by EPA, a number of changes have been made to the proposed project to reduce the scope of its environmental impacts, including additional impact avoidance to approximately 111 acres of wetlands, waters, and uplands, including 3,293 linear feet of streams. EPA, along with FWS and NMFS believe these additional changes protect the most valuable resources that were minable under the revised permit, and thus reduce the expected over-all environmental impact.

Our April 3, 2009, elevation request emphasized the importance of permanently protecting, via conservation easements, those wetlands and streams avoided under the proposed permit from the adverse effects of future mining. In response to this recommendation, the Applicant has agreed to expand the amount of avoided areas protected via conservation easements from 174 acres to 598[1] acres on the proposed site. These additional easements are along the 4 tidal creeks on the NCPC tract and one tidal creek on the Bonnerton tract discussed below under Significant Degradation, and one creek on the S33 tract. This will ensure that some of the highest value aquatic resources on the NCPC and Bonnerton tracts are protected from future mining and other development. The Applicant has also agreed to place conservation easements on approximately 206 acres of the Porter Creek and Cypress Run Creek watersheds that are

[1] This number reflects the 174 acres (as stated in the Corps' February 24, 2009 notice of intent letter to EPA Region 4 and in the June 3, 2009, ROD) already protected by the State's CWA Section 401 Water Quality Certification as well as the additional acreage PCS has offered to put under easement in response to EPA's elevation which includes approximately 354 acres on the NCPC Tract, 42 acres on the Bonnerton Tract, and 28 acres on the S33 Tract.

adjacent to the project site.[2] In light of the high quality of the remaining avoided areas not subject to conservation easements, and the expectation that this is a life-of-mine permit, future requests to impact the over 1,800 acres of avoided wetlands and other waters not protected from future mining by conservation easements could trigger review pursuant to CWA Section 404(c).

In light of the information provided by the Applicant, the avoidance described above (and in greater detail below under Significant Degradation), and the difficulty inherent in this determination, EPA accepts that the current configuration is the least environmentally damaging, economically feasible, and practicable alternative.

Impact Minimization

The second step in the Section 404(b)(1) analysis concerns minimizing the unavoidable impacts to waters of the U.S. In addition to highlighting the need for additional impact avoidance, our April 3, 2009, elevation request also stressed the need to incorporate additional measures into the permit to minimize project impacts by improving post-mining land reclamation practices at the site. In response to this request, the revised permit includes new reclamation measures that require: 1) stockpiling and reuse of topsoil for the reclaimed areas, especially in the drainage areas; 2) planting of agency-specified tree species; and 3) development of a plan to monitor and manage water within the reclamation area to optimize the amount and quality of water being released.

Impact Compensation

The third step in the Section 404(b)(1) analysis is to provide compensatory mitigation to offset the impacts to waters of the U.S. To compensate for the ecosystem services lost over the life of the project, the Applicant has developed a comprehensive mitigation plan that involves multiple sites and strategies. The proposed restoration efforts primarily focus on croplands and drained forested wetlands underlain by hydric soils that are expected to be good candidates for wetland restoration. Targeting mitigation in these areas is expected to have a positive benefit for water quality in the Pamlico River which is designated as nutrient sensitive water and is currently listed as impaired for chlorophyll a. Achieving further reductions in nutrient loadings from agricultural lands will support the State's implementation of actions to restore the nutrient sensitive waters of the Pamlico River. The proposed mitigation would not occur on-site but rather at sites further south of the Pamlico River, and at sites north of the Pamlico River.

Under the plan, 7,968; 756; and 2,472 acres of wetlands would be restored, enhanced, and preserved, respectively. Wetland replacement-to-loss ratios used by the Corps are 2:1 for restoration, 3:1 for enhancement, and 8:1 to 10:1 for preservation. Also

[2] The Applicant has stated that protection of this off-site acreage is subject to its "inability to place restrictions on non-owned properties" and it indicated to the Corps on June 5, 2009, that it owns approximately 90 percent of this off-site acreage.

under the plan, 44,043; 7,994; and 32,851 linear feet of streams would be restored, enhanced and preserved, respectively. The ratio for linear feet of stream impact will meet the requirements of the 2003 NC Stream Mitigation Guidelines (1:1 for poor quality streams, 2:1 for good quality streams and 3:1 for excellent quality streams).

Significant Degradation

Finally, the Section 404(b)(1) Guidelines require a determination that significant degradation will not occur to waters of the U.S. Our April 3, 2009, elevation package highlighted our concerns regarding the magnitude of the proposed impacts associated with the February 24, 2009, proposed permit, specifically the direct impacts to portions of a nonriverine hardwood wetland forest on the Bonnerton tract designated as a Nationally Significant Natural Heritage Area (SNHA) by the NC Natural Heritage Program (NCNHP), and the indirect impacts associated with the large reduction in the drainage basins of the site's tidal creeks, four of which have been designated as Primary Nursery Areas (PNAs)[3] by the NC Wildlife Resources Commission.

Significant Natural Heritage Area: The SNHA is an approximately 272 acre area on the Bonnerton tract. The Corps' February 24, 2009, notice of intent letter to EPA Region 4 indicated that, as part of the NC Division of Water Quality's (NCDWQ) CWA Section 401 water quality certification, 174 acres of this 272 acre area would be avoided. The State certification allows a 1,145 foot wide mining and utility corridor through the connecting area with a requirement for this area to be restored pursuant to a State approved reclamation and revegetation plan, and monitored for at least 10 years post mining in order to ensure that restoration has established reference hydrology for this area. In addition, a reclamation and revegetation plan for this area is required for State approval. The State's certification also requires the avoided area to be protected in perpetuity with a conservation easement. The 174 acre area protected by the State's certification represents the most mature portions of the SNHA.

The remaining 98 acres of the SNHA that was not protected by the NCDWQ's CWA Section 401 certification consists of the northwest portion of the SNHA and a connecting area between this portion and the southwest portion. In response to questions from the NCDWQ concerning this portion of the SNHA, the NCNHP responded that this area is the least ecologically significant of the three portions of the SNHA because the patch size is smaller and the forest is less mature. We note that a study conducted for the Applicant similarly concludes that this area was less ecologically significant. The NCNHP concluded that the SNHA would still be considered to be a "nationally" SNHA without the northwest portion unless, in the unlikely circumstance, another better area

[3] The State of North Carolina was the first state to designate nursery areas to protect the salt marshes and estuaries along the coast that serve as nursery grounds for 90 percent of the State's fisheries. Primary Nursery Areas (PNAs) are located in the upper portions of creeks and bays. These are usually shallow with soft muddy bottoms and surrounded by marshes and wetlands. The low salinity and abundance of food in these areas is ideal for young fish and shellfish. There are 80,144 acres designated as PNAs in North Carolina. (www.ncfisheries.net/habitat/pna.htm). Tidal creeks and streams that are not formally designated PNAs may still provide similar functions.

was discovered in North Carolina or Virginia. [Email correspondence from Mike Schafale (NCNHP) to John Dorney (NCDWQ) dated April 23, 2009]. Based on this information it does not appear that the mining impacts to the remaining 98 acres would cause or contribute to significant degradation of the SNHA.

Primary Nursery Areas: In our April 3, 2009, elevation request we highlighted our concerns regarding the proposed project's potential indirect impacts to the site's ten tidal creeks, four of which have been designated as PNAs for fisheries by the NC Wildlife Resources Commission (i.e., Jacks, Jacobs, Tooley and Porter Creeks). The functions of the PNAs most critical to supporting fisheries are their ability to provide refuge for the larval and juvenile life stages of important commercial and recreational species, to maintain adequate water quality to ensure survival of these life stages, and to provide sufficient input of organic carbon and nutrients to drive the detrital food web needed to support these life stages. Maintenance of adjacent areas in the watershed is critical to the streams being able to support these functions.

The additional wetland and stream impact avoidance reflected in the revised permit has been targeted to maximize protection of the four PNAs as well as a fifth tidal creek, Drinkwater Creek, which although not formally designated as a PNA, provides similar functions. With the additional impact avoidance in the revised permit, based on the most recent estimates provided in the ROD, the cumulative percent of the watershed for each of these five tidal creeks that will be impacted by mining has been reduced. EPA continues to have concerns that reductions in watershed area of this magnitude could potentially impair functions, particularly by affecting the hydrology and the delivery of organic carbon and nutrients. The Corps, however, has asserted that, for these PNAs, hydrology and delivery of organic carbon and nutrients are tidally driven as opposed to headwater/watershed driven. Therefore, the Corps has concluded that the reduction in watershed area will not have a significant adverse effect. The May 2008 final EIS and June 2009 ROD point to site-specific data collected on the NCPC Tract to support this position. However, this remains a continuing concern for EPA, and we are pleased that Special Condition S in the proffered permit incorporates additional scientific review on this subject.

Following the elevation to the ASA (CW), EPA held further discussions with the FWS and the NMFS to ensure that we fully understood their concerns and considered their recommendations with respect to further avoidance actions at the permit site. The FWS stated that while avoidance of additional wetlands at the site would have been desirable; based on the information currently available it is not possible to clearly quantify the impacts to the Albemarle-Pamlico Estuary, which according to the FWS is a nationally significant resource. FWS recommended that the permit contain a robust and enforceable adaptive management component that would provide a structured process for addressing the uncertainty inherent in this decision and to provide decision support tools for determining needed avoidance, restoration, remediation, and monitoring measures through the life of the permit.

We also discussed the project further with the NMFS. These discussions were especially important because some of the most significant concerns which EPA raised in its elevation and which the ASA-CW cited in his referral to the District focused on the PNAs in the tidal creek area on the NCPC and Bonnerton tracts. In response to our concerns, NMFS informed us that the modifications adopted by the Applicant and the Corps following EPA's elevation bolstered NMFS' conclusion that direct impacts to these PNAs would be unlikely. NMFS agreed with FWS on the importance of strong restoration, remediation, and monitoring measures to promote adaptive management at the site.

Adaptive Management: We are pleased that to address scientific uncertainty and EPA, FWS, and NMFS concerns, the Corps is requiring an extensive monitoring and adaptive management program of both the impact and mitigation sites. According to the revised permit, this plan will be carried out by the Applicant, with federal oversight, as a safeguard, to modify or prohibit mining that would be allowed under the permit should monitoring data reveal that direct and indirect impacts are greater than expected.

The Applicant will be required to monitor ground water within and surrounding the reclamation areas to ensure that heavy metal/toxic pollutants including cadmium are not entering the groundwater. In addition to these ground water monitoring requirements, the Applicant will be required to develop a Plan of Study to address the effects of the reduction in headwater wetlands on the utilization of Porter Creek, Tooley Creek, Jacobs Creek, Drinkwater Creek, and Jacks Creek as nursery areas by resident fish and appropriate invertebrate species. According to the revised permit, this plan will be submitted to the Corps and NCDWQ for approval within 1 year of the issuance of this permit.

The monitoring will be required to commence immediately upon approval of the monitoring plan by the Corps and the State and continue for 10 years following the completion of all reclamation work in the subject headwater creeks. The monitoring provisions also require the establishment of an independent panel of scientists to provide input on the design, study methods and data analysis included in the Plan of Study and to annually evaluate whether direct and indirect impacts from mining and benefits from the compensatory mitigation are in accordance with expectations at the time of permitting.

The challenge to implementing an effective adaptive management program will be to successfully achieve early detection of unacceptable adverse impacts on the streams and functions of the PNAs. As previously noted, there is uncertainty regarding the degree to which mining significant portions of a watershed will impact the hydrodynamics, water quality, nursery habitat and other ecological processes and functions of the site's tidal creeks. The changes to the monitoring provisions adopted by the Corps at the request of the NMFS are designed to provide for the early detection of unacceptable impacts. Should the monitoring and adaptive management reveal that the proposed levels of watershed impacts are indeed adversely impacting the functions of the site's tidal creeks to an "unacceptable" level and the Corps does not take appropriate

compliance action, then EPA would consider the project as a candidate for review pursuant to 404(c).

Conclusion

EPA has fully considered the revised project in the context of CWA Section 404(c), including consideration of relevant portions of the CWA Section 404(b)(1) Guidelines. Based on the revisions made to the proposed permit as well as the other factors discussed above, EPA has decided that the Section 404(q) elevation process has been resolved and has decided not to pursue review of the project as currently permitted pursuant to Section 404(c) at this time.

We appreciate your efforts and the efforts of your staff to coordinate with EPA on the review of this project. If you have any questions, please contact me, or Stan Meiburg at 404-562-8357 or Jim Giattina at (404) 562-9470.

Sincerely,

Michael H. Shapiro
Acting Assistant Administrator

Cc: Stan Meiburg, Administrator, EPA Region 4
Brigadier General Todd Semonite, South Atlantic Division, U.S. Army Corps of Engineers
Sam Hamilton, U.S. Fish and Wildlife Service
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