



Tom Welborn /R4/USEPA/US

03/18/2009 09:27 AM

To Palmer Hough/DC/USEPA/US@EPA, Rebecca

Fox/R4/USEPA/US@EPA

cc Jennifer Derby/R4/USEPA/US@EPA

bcc

Subject Fw: Scan from a Xerox WorkCentre Pro

I will send the complete attachment in another scan. Jennifer, please get Tressa to mail out originals as over night, thanks.

Tom Welborn, Chief  
Wetlands, Coastal and Oceans Branch  
EPA Region 4  
61 Forsyth Street, SW  
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----- Forwarded by Tom Welborn/R4/USEPA/US on 03/18/2009 09:25 AM -----



wetland@epa.gov

03/18/2009 09:44 AM

Please respond to  
wetland@epa.gov

To Tom Welborn/R4/USEPA/US@EPA, Jennifer

Derby/R4/USEPA/US@EPA

cc

Subject Scan from a Xerox WorkCentre Pro

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

March 17, 2009

**MEMORANDUM**

**SUBJECT:** Request for Higher Level Review of Wilmington District Permit  
Permit AID 200110096, Potash Corporation of Saskatchewan,  
Phosphate Division, Aurora Operation Mine Continuation

**FROM:** A. Stanley Meiburg  
Acting Regional Administrator, Region 4

A handwritten signature in black ink, appearing to read "A. Stanley Meiburg", written over the typed name and title.

**TO:** Michael H. Shapiro  
Acting Assistant Administrator  
Office of Water

I am requesting that you seek review by the Assistant Secretary of the Army (Civil Works) of a proposed Clean Water Act (CWA) Section 404 permit to the Potash Corporation of Saskatchewan, Phosphate Division, Aurora Operation, to be issued by the Corps of Engineers Wilmington District. This request for elevation of the Corps permit is being made pursuant to Part IV paragraph 3(d)(2) of the Memorandum of Agreement (MOA) between the U.S. Environmental Protection Agency (EPA) and the Department of Army, under CWA Section 404(q). The Wilmington District issued a Notice of Intent to Proceed on this permit under a letter dated February 24, 2009, and received by the regional office on March 2, 2009. The proposed project involves the mine expansion of the 1997 permit, and will impact 3,953 acres of wetlands and 25,727 linear feet of streams, including a portion of a Significant Natural Heritage Area designated as "nationally significant."<sup>1</sup> The project, as currently proposed, will result in a loss of approximately 70 percent of the watersheds of the project area streams which drain to estuaries of the Pamlico River.

EPA remains concerned that the proposed project will result in unacceptable adverse impacts to aquatic resources of national importance, including direct and indirect impacts to waters of the U.S. which support the nationally significant Albemarle Pamlico Estuary System. We have actively coordinated with the Wilmington District and the applicant over the past eight years through the Section 404 and National Environmental Policy Act processes to resolve our concerns regarding this project. However, based on our review of the economic analysis included in the project's Final Environmental Impact Statement (FEIS), we continue to believe there are less environmentally damaging practicable alternatives for mining the project site. We also believe that there are significant opportunities to avoid and minimize impacts to important wetland and stream resources on the project site, as well as opportunities to improve the compensatory mitigation required to offset the permitted impacts.

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<sup>1</sup>The NC Natural Heritage Program (NHP) designates areas it believes to be important for the conservation of the state's biodiversity as Significant Natural Heritage Areas (SNHAs). These areas can be designated as significant at the county, regional, state or national level. This nationally significant designation by the NC NHP means the Bonneron SNHA has been determined to be one of the five best examples of this community type in the nation.

We have been working closely with your staff on this issue and will continue to do so as we proceed to the next stage of the MOA process. Attached for your review is our July 23, 2008, letter to Colonel Ryscavage regarding this project's FEIS which discusses our outstanding concerns with the proposed project in more detail. We have already shared extensive background material with your staff, and will continue to prepare and forward information regarding this matter.

Attachment



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

July 23, 2008

Colonel Jefferson Ryscavage  
District Engineer  
U.S. Army Corps of Engineers  
Wilmington District  
P.O. Box 1890  
Wilmington, NC 28402-1890

Attn: Tom Walker  
Project Manager  
File Number 2001-10096

Subject: COE Regulatory Final Environmental Impact Statement (FEIS) for  
"PCS Phosphate Mine Continuation"; Aurora, Beaufort County, NC;  
CEQ# 20080213; ERP# COE-E67005-NC

Dear Colonel Ryscavage:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, EPA Region 4 has reviewed the above-referenced U.S. Army Corps of Engineers (COE) regulatory Final Environmental Impact Statement (FEIS). This FEIS evaluates the environmental consequences of the Applicant's (Potash Corporation of Saskatchewan Phosphate Division: PCS) proposed expansion of its phosphate mining operations adjacent to the Pamlico River, South Creek and associated tributaries, north of Aurora in Beaufort County, North Carolina.

EPA has previously provided NEPA comment letters on the Draft EIS (DEIS) and its Draft Supplement (DSEIS). Our December 28, 2007, DSEIS letter continued to describe our environmental objections to this mine continuation project, as proposed. Similarly, from a Clean Water Act (CWA) section 404 permitting standpoint, the EPA Region 4 Wetlands Regulatory Section also objected to this proposal pursuant to CWA Section 404(q), Part IV, paragraphs 3(a) and 3(b), in letters dated February 9 and March 6, 2007, respectively. The Wetlands Regulatory Section also provided pre-FEIS comments in a April 30, 2008, letter regarding the significant natural heritage area on the Bonnerton tract, the scope of the section 404 silviculture exemption, and the economic evaluation/Least Environmentally Damaging Practicable Alternative (LEDPA) determination. We offer the following comments on our current review of the FEIS.

The FEIS (5/2008) provided additional information on Alternatives L and M. The FEIS lists Alternatives SCRA<sup>1</sup>, SCRB, SJAB, DL1B, S33AP and the No Action alternative as not being practicable, while finding that Alternatives AP, EAPA, EAPB, SJAA, L and M were practicable. The COE indicates that of the alternatives identified as practicable, the L alternative is the most restrictive and therefore avoids the most aquatic resources. Alternative L would impact approximately 4,135 acres of waters of the U.S. over a 37-year mining span. The 11 community types within the impacted waters of the U.S. include pocosin-bay forests (264 ac), bottomland hardwood forests (73 ac), hardwood forests (1,075 ac) as well as 29,288 linear feet of perennial and intermittent streams. These community types are located within an approximate 11,909-acre mine advance distributed throughout the project area. Impacts of Alternative M include 4,592 acres of waters of the U.S. and 36,990 linear feet of streams over a 41-year mining span.

The COE does not identify a NEPA “preferred alternative” or a LEDPA in the FEIS. However, Alternative L was considered the Applicant’s “Proposed Action” in the COE’s FEIS and Public Notice (pg. e). PCS’s previous mining application was for the AP (NCPC tract only).

#### **“Modified Alternative L”**

While we believe that S33AP is the “environmentally preferable alternative”, EPA prefers Alternative L (of the alternatives determined to be practicable by the COE in the FEIS) from a NEPA perspective since it avoids valuable wetland habitat, mainly on the NCPC tract. The COE’s economic analysis indicates Alternative L is the alternative which would allow the least environmental impacts and still be economically practicable (pg. 2-32). EPA agrees that Alternative L is economically practicable (see *Detailed Comments*); however, we also believe that it could be improved environmentally through further avoidance of waters of the U.S.

Nevertheless, we acknowledge that Alternative L does avoid a large portion of the important tidal creeks and some of their associated watersheds on the NCPC tract and an approximate 58-acre area of biocommunity type 7 (“wetland hardwood forest”) on the Bonnerton tract, as shown on Figure 4-7b (Vol. I). This is the eastern portion of an approximate 271-acre plot within the Bonnerton base tract that has been designated as a “nationally significant” Significant Natural Heritage Area (SNHA) by the North Carolina Natural Heritage Program (NHP).

While we appreciate the Applicant’s avoidance of this eastern portion of the SNHA, EPA strongly believes that the entire SNHA tract should be avoided. Therefore, in order for Alternative L to be improved environmentally, we recommend that Alternative L be further modified to also exclude the remaining approximate 213-acre component of the SNHA tract from the proposed mining. For convenience of reference, we have designated this modified alternative as “Modified Alternative L”. Overall, EPA considers “Modified Alternative L” to be an economically practicable and

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<sup>1</sup> The ‘A’ and ‘B’ portions of ‘SCRA’ and ‘SCRB’ indicate a sequencing for the SCR Alternative. Other sequenced alternatives were also labeled this way.

If the S33 tract is mined under the S33AP Alternative or as part of the "Modified Alternative L", EPA recommends the completion of a detailed mitigation plan for impacts to the S33 tract well in advance of any plans to mine this area. The potential economic reopener clause may be an appropriate means to address this issue, if this tract were to be mined under "Modified Alternative L". EPA also recommends that the reopener clause, or other suitable measures, remain an option for future adaptive management needs. We also believe compensation for impacts to mature, high quality wetlands would require greater than the 2:1 mitigation ratio specified in the current mitigation plan. We understand the overall stream mitigation ratio of 1.8:1 is based on the 2003 Stream Mitigation Guidelines ratio determination methodology utilizing stream quality ratings of "poor," "good," and "excellent". We support the use of this methodology to determine appropriate stream compensation, but recommend the stream quality ratings be confirmed by the COE.

### **Significance of the SNHA Resource**

The need to preserve the entire SNHA tract is based on the NHP designation (*i.e.*, nationally significant SNHA), the community types represented, and the contiguous nature of the SNHA. The NHP rates SNHAs by significance as national, state, regional and county. The "nationally significant" rating of the Bonnerton nonriverine wetland hardwood forest SNHA means the NHP considers this area to one of the five best examples of this community type in the nation. The size and maturity of this area are critical to the NHP rating.

Valuable biocommunity types are represented in the nationally significant SNHA. In addition to the eastern portion (58 ac) of the SNHA (within Porter Creek headwaters) already excluded from mining by Alternative L, the remaining 213 acres primarily consist of a western portion (135 ac) and a northwestern portion (45 ac). There are also two secondary connecting sections (totaling approximately 33 ac) for continuity of the wetland hardwood forest community. Of these, the most mature plots are the eastern portion within the Porter Creek headwaters and the western portion across from the Porter Creek area, which both have stands of mature (75-100 years old) "wetland hardwood forest" (biocommunity type 7). The two secondary areas of different biocommunity types serve to connect the main areas. Biocommunity type 5 ("wetland scrub-shrub") is found in the secondary area between Porter Creek and the western area and the biocommunity type 6 ("wetland pine plantation") is found in the portion between the western and northwestern areas. The northwestern area also contains biocommunity type 7, and was added to the SNHA after the recent NHP site visit. Although this area is not as mature as the other areas, the NHP concluded it should be added to the SNHA due to the rarity of the community type. The NHP considers this area to also be highly significant and to have good recovery potential over time. (We also note that if the biocommunity type 8 area ("wetland mixed pine-hardwood forest") located west of the northwestern portion of the SNHA was not mined due to logistical mining restrictions, it would provide an excellent opportunity for mitigation enhancement/rehabilitation, as recommended by the NHP.)

more than looking only at costs. As is pointed out numerous times in the FEIS, phosphate prices are determined by the global and national market (and not influenced by the Applicant's production levels). Comparing estimated costs (which the Applicant can control) to expected market prices (which the firm does not control) simply adds context to the cost numbers and allows for better decision making.

An appropriate method to evaluate practicability is by calculating the annual discounted net present value (NPV) of the stream of costs and revenues over the lifespan of each alternative. The NPV analysis is theoretically and empirically sound and EPA is legally required to use such analysis when evaluating all new regulations. Using the discounted NPV, projects of different lengths can be compared on equal terms. EPA (NCEE) has prepared an NPV table using OMB mandated discounted rates of 3 percent and 7 percent comparing the project alternatives. This summary table, with additional discussion on the economic practicability of the alternatives, is included in EPA's comments on the COE's responses to our DEIS comment letter provided in the enclosed *Detailed Comments*. We are available to discuss information concerning this summary table and how it was prepared.

Based on these calculations and as shown in our summary table, EPA believes that more alternatives appear to be practicable than those determined by the COE (*i.e.*, the COE believes that Alternatives AP, EAPA, EAPB, SJAA, L and M are practicable), including SCRA and SCRB, S33AP, SJAB and DL1. In fact, we find that all alternatives considered in the FEIS, except the No Action Alternative (*i.e.*, all the action alternatives), are economically practicable. Based on this analysis, the "Modified Alternative L" would also be an economically practicable alternative, despite its slightly shorter mining term. Since "Modified Alternative L" allows more mining than the SCR alternative (but less than the original Alternative L), we strongly believe that "Modified Alternative L" will be economically practicable and will have a positive NPV greater than the SCRA and SCRB Alternatives, but slightly less than the original Alternative L. With detailed cost and annual production estimates, it would be relatively straightforward to calculate a more precise value.

#### **Other Comments**

In addition to these primary concerns, EPA has also reviewed the COE's responses in the FEIS to our EPA NEPA letter on the DEIS (pg. J-111.A.1) and DSEIS (pg. J-111.B.1), as well as the EPA Wetlands Regulatory Section's letter pursuant to CWA Section 404(q), Part IV, paragraph 3(a) (pg. J-111.A.2) and the EPA Regional Administrator's letter pursuant to CWA Section 404(q), Part IV, paragraph 3(b) (pg. J-111.A.3). Copies of these letters and the COE's responses to comments are found in Appendix J of Volume IV. Our follow-up comments on selected responses, as well as other project topics, are provided in the enclosed *Detailed Comments*.

Thank you for the opportunity to comment on the FEIS. If we can be of further assistance, please do not hesitate to contact me at (404) 562-9611 or [mueller.heinz@epa.gov](mailto:mueller.heinz@epa.gov). We request a copy of the COE's prospective ROD for our files. For technical questions on wetlands and economics, please contact Becky Fox at (828) 497-3531 or [fox.rebecca@epa.gov](mailto:fox.rebecca@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Heinz Mueller", with a horizontal line extending to the right.

Heinz J. Mueller, Chief  
NEPA Program Office  
Office of Policy and Management

Enclosure: *Detailed Comments*



tons of phosphate produced for each alternative to determine the annual costs and revenues. Finally, using a standard discount rate, the discounted NPV of the streams of annual costs and revenues can be determined over the life of an alternative. Using the discounted NPV, projects of different lengths can be compared on equal terms.

EPA (NCEE) prepared the following summary table using OMB mandated discounted rates of 3 percent and 7 percent to demonstrate this method and NPVs for the FEIS alternatives. Because it allows for more total acres mined in similar locations, "Modified Alternative L" would almost certainly fall on this table above the SCRA alternative. EPA is available to discuss information concerning this summary table and how it was prepared.

**NET PRESENT VALUE OF EACH ALT**

	3%	7%
<b>EAPA</b>	\$537,695,130	\$359,773,753
<b>EAPB</b>	\$494,254,356	\$335,778,624
<b>ALT M</b>	\$457,571,214	\$328,592,452
<b>ALT L</b>	\$370,782,148	\$278,777,886
<b>AP</b>	\$370,653,570	\$282,757,722
<b>SJAB</b>	\$366,884,793	\$255,241,110
<b>SJAA</b>	\$359,076,689	\$274,240,083
<b>SCRA</b>	\$333,406,793	\$259,781,521
<b>SCRB</b>	\$304,200,087	\$238,057,997
<b>DL1B</b>	\$225,807,683	\$161,206,026
<b>S33AP</b>	\$130,534,890	\$128,544,556
<b>No Action</b>	-\$9,332,194	\$11,700,463

**\* R8, R10 and R12 (Mitigation Costs)**

The mitigation costs used in the economic model described in the Summarized Comment Response 10 are somewhat confusing. In one place, it states mitigation costs were \$5,000/acre for non-brackish marsh wetlands and \$205/linear foot of stream with an average stream mitigation ratio of 1:1. Later in this section, the numbers cited are \$9,000/acre for wetland and \$245/linear foot for streams with a 1.5:1 stream ratio. The current fees (updated July 1, 2008) for the North Carolina Ecosystem Enhancement Program's (EEP) in lieu fee mitigation program are \$15,396 for nonriverine wetlands, \$30,790 for riverine wetlands and \$258/linear foot for streams. The average stream mitigation ratio proposed for project impacts is stated in the FEIS (Section 4.3.2.3.4.2 *Mitigation Ratios*) as 1.8:1. Although we understand the actual mitigation costs used may vary from EEP fees due to the factors discussed by the COE in Summarized Response 10, it is still unclear from the discussion as to which costs were used in the model. We recommend that the economic model be run again with the correct mitigation cost estimates.

**\* R8, R9, R10, R16, R17, R18 (Bonnerton SNHA)**

As indicated in the cover letter and in EPA's April 30, 2008 letter, and as acknowledged by the COE in these responses, the NHP has designated the Bonnerton SNHA as "nationally significant." Such designation reinforces the need to preserve the entire SNHA tract, the community type represented, and the contiguous nature of the SNHA. The "nationally significant" designation of the Bonnerton nonriverine wetland hardwood forest SNHA means the NHP considers this area to one of the five best examples of this community type in the nation. The size and maturity of this area are critical to the NHP rating.

**\* R11, R12 (Reopener Clause)**

EPA reiterates the concerns stated in our DSEIS letter for the potential economic reopener clause and recommends that the reopener clause, or other suitable measures, remain an option for future adaptive management needs. As you are aware, the FEIS did not include a detailed mitigation plan for S33 impacts. The Applicant would need to address unavoidable and unminimizable impacts well in advance of planned mining into this tract. The economic reopener clause may be the appropriate vehicle to effectuate this action.

**III. EPA Wetlands Regulatory Section Letter on CWA Section 404(q),  
Part IV, Paragraph 3(a) – 2/9/07**

**\* R1, R6, R8, R9, R12, R13, R16 and R17 (CWA Section 404 (q) and Compliance with 404 (b)(1) Guidelines)**

EPA supports the COE's position that there are less environmentally damaging practicable alternatives than the AP/EAP alternatives. We appreciate the Applicant for changing its request from these alternatives to the L alternative. However, as stated in the cover letter, we believe the S33AP Alternative is the NEPA "environmentally preferable alternative" and that Alternative L could be improved environmentally as "Modified Alternative L". Overall, EPA considers "Modified Alternative L" to be an economically practicable and environmentally reasonable alternative that is more environmentally preferable than Alternative L.

**\* R5 (Impacts to Fisheries Habitats)**

EPA acknowledges the COE's response. We defer to the state and federal marine and wildlife agencies for more in depth comments on fisheries habitats impacted and avoided. However, we believe the COE's response could be misleading in its enumeration of bottomland hardwood wetland and stream impacts, as these refer to NCPC tract impacts and not project impacts as a whole which are greater.

other pollutant. If the Pamlico River segments downstream of the PCS facility are ever listed for any other pollutants besides Chlorophyll-*a*, then TMDLs will need to be developed for each pollutant.

We are aware that monitoring is being conducted as part of the Applicant's existing National Pollutant Discharge Elimination (NPDES) permit and that pollutant concentrations in existing stormwater runoff appear to be relatively low for the ongoing mining, although the operation is not a zero-discharge facility. We understand that after on-site stormwater at PCS Phosphates meets a certain water quality, it will no longer enter the plant site recycle system, but instead will be directed either to the Pamlico River (through the NPDES permitted and monitored Outfalls 009 or 101) or allowed to re-enter the individual creek systems.

Therefore, while nutrient discharges are not currently a major concern, the Applicant should be advised that once the State develops nutrient TMDLs and EPA Region 4 approves those TMDLs, the existing and proposed mining activities will need to be compliant with those daily load limitations for the impaired segments of the Pamlico River and its tributaries.

\* **EFH** – EPA will defer to the state and federal marine and wildlife agencies regarding mining impacts to Essential Fish Habitat (EFH). However, the Applicant should consider EFH in the avoidance and minimization process, as it relates to minimizing the loss of habitat that is essential to local fish species.