



"Jolly, Samuel K SAW"
<Samuel.K.Jolly@usace.army.mil>

06/04/2009 10:49 AM

To Stan Meiburg/R4/USEPA/US@EPA
cc Rebecca Fox/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Tom
Welborn/R4/USEPA/US@EPA, Palmer
bcc

Subject PCS ROD

<<PCS ROD.pdf>>
Mr. Meiburg,

Attached find a copy of the signed, proffered permit and ROD for PCS Phosphate. PCS has requested we remove condition "EE" which states no work authorized by the permit may begin until 10 days after the ROD is provided to EPA. We will not remove that condition unless you provide written concurrence with such an action.

Ken Jolly
Chief, Regulatory Division
Wilmington District
910-251-4630

DEPARTMENT OF THE ARMY PERMIT

Permittee **POTASH CORPORATION OF SASKATCHEWAN PHOSPHATE
DIVISION, AURORA MINE**

Permit No. **200110096**

Issuing Office **CESAW-RG-L**

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: **discharge fill material into 3,927 acres of Section 404 jurisdictional waters of the U.S.**

Project Location: **adjacent to the Pamlico River and several of its tributaries located north of the town of Aurora, Beaufort County, North Carolina**

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2045**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit,

Special Conditions:

SEE ATTACHED SPECIAL CONDITIONS

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 - Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 - Section 404 of the Clean Water Act (33 U.S.C. 1344).
 - Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
 - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.

- e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. **Reliance on Applicant's Data:** The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
 5. **Reevaluation of Permit Decision.** This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
 - a. You fail to comply with the terms and conditions of this permit.
 - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
 - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. **Extensions.** General condition 1 establishes a time limit for the completion of the activity authorized by this permit, Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

 (PERMITEE) **POTASH CORPORATION OF SASKATCHEWAN** (DATE)
PHOSPHATE DIVISION, AURORA MINE

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

 (DISTRICT ENGINEER) **JEFFERSON M. RYSCAVAGE, COLONEL** (DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

 (TRANSFEREE) (DATE)

SPECIAL CONDITIONS

Action ID. 200110096

MINING

- A) This permit authorizes mining and mine related impacts as described fully in the FEIS within the boundary depicted in the attached maps labeled "Modified Alt L – NCPC Proposed Impact Boundary" dated May 28, 2009 and "Modified Alt L – Bonnerton Proposed Impact Boundary" and "Modified Alt L – South of 33 Proposed Impact Boundary", as presented May 18, 2009. All work authorized by this permit must be performed in strict compliance with these attached plans, which are a part of this permit. Any modification to these plans must be approved by the U.S. Army Corps of Engineers (USACE) prior to implementation.
- B) Within 1 year of the issuance date of this permit, the Permittee shall demarcate the outer limits of disturbance on the NCPC tract by establishing a cleared line at least 10 feet and not to exceed 40 feet along the Impact Boundary as identified in the attached map labeled "Modified Alt L – NCPC Proposed Impact Boundary" as presented May 18, 2009. Additionally, the Permittee shall, within 1 year of the issuance of this permit work with the Corps to identify locations and establish permanent monuments identified with GPS coordinates to further demarcate this boundary on the NCPC Tract. No less than 1 year prior to relocating any mine related activity to the Bonnerton or S33 Tracts, the Permittee shall undertake identical actions within these tracts utilizing the information provided on the "Modified Alt L – Bonnerton Proposed Impact Boundary" and "Modified Alt L – South of 33 Proposed Impact Boundary", as presented May 18, 2009, respectively. This will facilitate compliance monitoring by establishing long-term reference points.
- C) Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.
- D) Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters or wetlands.
- E) Figure 2 of the Record of Decision (ROD) included and incorporated here by reference depicts approximate timing of the requirement for major pre-mining, land manipulation and clearing impacts and is incorporated here by reference. Table 3 of the ROD included and incorporated here by reference lists those impacts and the

years in which they will occur. These yearly figures are estimates. Actual timing and area may be in part determined by several factors including but not limited to site and equipment constraints, weather, and economics. However, to ensure that temporal losses are minimized to the extent practicable, the Permittee shall not undertake major land-clearing and/or land manipulating activities within any area sooner than 1 year prior to the dates indicated on this figure. For example, major land clearing and manipulation activities within the block labeled 2012-2013 may not begin any sooner than January 1, 2011.

RECLAMATION

- F) The Permittee shall undertake full reclamation of all areas mined under this authorization as described in Section 4.3 of the EIS. This includes reestablishment of varied topography and drainage ways. Figure 3 of the ROD included and incorporated here by reference indicates the required completion date for the capping and successful vegetation of mine reclamation areas. To demonstrate adherence to this schedule, the Permittee shall submit to the Corps an annual summary detailing all reclamation efforts complete within the previous year and indicating the degree of completeness of each reclamation area. Any deviation from the reclamation schedule will be addressed in these reports and the report shall include an explanation for the deviation and proposed remedial action.
- G) The Permittee shall cap all mined areas that are reclaimed with the gypsum-clay blend process materials. The goal of the cap will be a minimum 3-foot thick cap of overburden material (similar to background soils from the region) over 100% of the blend areas. Minimal acceptable performance standards in achieving this cap are as follows: 70% of the total surface area with a minimum of 3-foot cap; 25% of the total surface area with a minimum of 2-foot cap; 5% of the total surface area unspecified.
- H) Following successful completion of the capping requirements within each reclamation area, the Permittee shall submit an as-built report including final topographical surveys for the reclamation areas. This report shall contain final cap depth and coverage information. This report shall further include an explanation of site development that will minimize erosion, eliminate contaminant transportation from the clay/gypsum blend through any waterway or drainage area, and facilitate the development of a mature vegetated riparian buffer. Finally, this report shall include information on surface water retention within the reclamation area and flows within and from the reclamation area.
- I) To minimize temporal impacts and accelerate the return of watershed functions within the reclamation areas, the Permittee shall to the extent appropriate and practicable apply an average of 1-foot of topsoil cover to the reclaimed areas utilizing the topsoil removed prior to site mining. This topsoil addition should be concentrated within and around areas of surface water flow and/or retention.

- J) To the extent appropriate and practicable, upland portions of the reclamation area shall be replanted, in longleaf pine (*Pinus palustris*) and wetland areas shall be replanted in bald cypress (*Taxodium distichum*) and/or Atlantic white cedar (*Chamaecyparis thyoides*) if Atlantic white cedar is shown to do well on the reclamation sites. It is suggested that the Permittee work with the Corps, the USFWS and any other interested parties to determine growth and survivability of these and other species utilizing areas currently being reclaimed under the previous permit action.
- K) Within 2 years of the issuance of this permit, the Permittee shall work with the Corps and NCDWQ to develop a plan to monitor the quality of water discharged from the reclamation areas into the surrounding watersheds. The Permittee shall seek input from all appropriate and interested agencies including but not limited to EPA, USFWS, NFMS, NCWRC, NCDMF, NCDCM and NCDLR in developing this monitoring plan. This plan shall include monitoring of radionuclides, total and dissolved phosphorus, nitrate nitrogen, ammonia nitrogen, particulate nitrogen, dissolved Kjeldahl nitrogen, and dissolved and particulate organic carbon. Data collected will be used to manage water within the reclamation areas to optimize both the amount and quality of those waters being released. It is suggested that the applicant initiate pilot studies in the areas currently being reclaimed.

MITIGATION

- L) Compensatory mitigation identified in the document entitled "Compensatory Section 404/401 Mitigation Plan: Comprehensive Approach" as presented in Appendix I of the FEIS shall be accomplished pursuant to that Plan and/or any subsequent Corps approved modification or amendment. Construction and monitoring of each site shall be conducted according to each site-specific mitigation plan and the schedule presented in Table 3 of the ROD included and incorporated here by reference.
- M) Within one year of the issuance of this permit, the Permittee shall cause to be recorded, a preservation mechanism acceptable to the Corps for the permanent protection of the area identified for preservation in the "South Creek Corridor" plan.
- N) Table 2 of the ROD lists the impacts as they would occur during 2-year timeframes and is included by reference in Condition "E" above. By November 1st of the year preceding the permitted impact, the Permittee shall submit to the Corps and NCDWQ, a mitigation ledger demonstrating that all mitigation work is complete as described in the mitigation plan and pursuant to the identified timetable. This ledger will be used to determine whether sufficient mitigation is available for impacts occurring over the next 2-year timeframe. For Example, by November 1st 2009, the Permittee shall submit a ledger demonstrating that sufficient mitigation for impacts occurring during

the 2010 – 2011 timeframe (526.56 ac) is completed. Should the ledger indicate that insufficient mitigation exists to compensate for the next 2-year timeframe, the Permittee shall work with the Corps to develop a strategy to ensure that the mitigation requirement is satisfactorily met prior to those impacts occurring.

- O) The Permittee shall submit yearly monitoring reports for each mitigation site. Monitoring reports will be submitted by the dates specified within each site-specific mitigation plan. Monitoring will continue until such time as the Corps deems the mitigation site successful and confirms in writing that monitoring may be discontinued.
- P) Once compensatory mitigation sites have been deemed successful and the Corps has agreed in writing that monitoring may cease, the Permittee shall, within one year of the date of that correspondence, cause to be recorded an acceptable preservation mechanism ensuring the permanent protection of all mitigation sites.

MONITORING

- Q) As required by the State Water Quality Certification, the Permittee shall work with the Corps and the NC Division of Water Quality to establish a monitoring plan for groundwater in and around mine and reclamation areas. At a minimum, this plan shall include sufficient monitoring within and surrounding the reclamation areas to ensure that heavy metal/toxic pollutants including cadmium and radionuclides are not entering the groundwater. The monitoring plan shall also include nitrate nitrogen, sulfate, chloride, total phosphorus, sodium, TDS, and pH. It is suggested that this monitoring commence with monthly samples until such time as the NCDWQ and the Corps in consultation with all interested and appropriate agencies determines sufficient baseline information exists. After such time, samples will be collected and analyzed every 3 months until blend material is introduced to the reclamation area. Following introduction of the blend material to the reclamation site, monthly sampling will recommence until such time as the NCDWQ and the Corps in consultation with all interested and appropriate agencies determines another sampling timeframe is appropriate. Yearly results of this monitoring shall be reported to the Corps and NCDWQ no later than January 31 of the year following data collection. The permittee and/or the Corps will make these reports available in whole or in summary to any interested party. If increases in the levels of any sampled substance are observed for more than 1 sampling occurrence in any given year, or for more than 1 year, the permittee shall include in the yearly report, a plan for mitigating the effect or satisfactory justification as to why no action is necessary. If the Corps, in consultation with other agencies, including but not limited to NCDWQ, NCDLR and EPA, determines that the current

reclamation practices are causing an unacceptable adverse impact to groundwater, the DE may modify, suspend or revoke the permit.

- R) Prior to introducing the gypsum/clay blend in the reclamation of any mined area covered by this permit, the Permittee shall submit to the Corps and NCDWQ a remediation strategy in anticipation of the possibility of heavy metal or radionuclide contamination of groundwater or surface tributaries that drain or are adjacent to mined areas. That strategy will be made available for public review.
- S) In concert with the monitoring requirements contained in the Water Quality Certification, the Permittee shall develop a Plan of Study to address the effects of the reduction in headwater wetlands on the utilization of Porters Creek, Tooley Creek, Jacobs Creek, Drinkwater Creek, and Jacks Creek as nursery areas by resident fish and appropriate invertebrate species. This plan shall be submitted to the Corps and NCDWQ for approval within 1 year of the issuance of this permit. At a minimum, the plan shall address the following issues:
- 1) Has mining altered the amount or timing of water flows within the creeks?
Data collection may include:
 - i) Continuous water level recorders to measure flow
 - ii) Rain gauges to measure local water input
 - iii) Groundwater wells to measure input to the creeks
 - iv) Semi-continuous salinity monitoring
 - v) Periodic DO monitoring (continuously monitored for several days at strategic times of year)
 - 2) Has mining altered the geomorphic or vegetative character of the creeks?
Data collection may include:
 - i) Annual aerial photography to determine creek position, length, width, sinuosity
 - ii) Annual cross sectional surveys of each creek at established locations
 - iii) Annual sediment characterization
 - iv) Annual vegetation surveys along creeks
 - v) Spring and fall sediment surface chlorophylls or organic content in vegetation zone.
 - vi) Spring and fall location of flocculation zones with each creek.
 - 3) Has mining altered the forage base of the creeks? Data collection may include:
 - i) Spring and fall benthic cores to sample macroinfauna.
 - ii) Spring and fall benthic grabs focused upon bivalves, such as *Rangia* sp.

- iii) Periodic sampling for pelagic species such as grass shrimp, blue crabs, and small forage fish. Sampling gears would be chosen to reflect ontogenetic shifts in creek usage.
- 4) Has mining altered the use of the creeks by managed fish? Data collection may include periodic sampling for species managed under the Magnuson-Stevens Fishery Conservation Management Act. Sampling would occur during appropriate times of year and gears would be chosen to reflect ontogenetic shifts in creek usage.
- 5) Has mining increased contaminate levels within creek sediments to levels that could impact fish or invertebrates? Data collection may include annual sediment and water column sampling for metals, including cadmium, mercury, silver, copper, and arsenic. If elevated levels are detected, the availability and uptake by appropriate aquatic species (e.g., *Rangia* sp., blue crabs) should be measured using appropriate bioassay techniques.
- 6) Has mining altered overall water quality within creeks? Water quality parameters analyzed will include: Salinity, Temperature, Dissolved Oxygen, pH, Secchi depth, Turbidity, Chlorophyll a, Dissolved orthophosphate phosphorus, Total dissolved phosphorus, Particulate phosphorus, Nitrate nitrogen, Ammonia nitrogen, particulate nitrogen, and Dissolved Kjeldahl nitrogen.
- T) Monitoring under the Plan of Study referenced in condition "S" above shall commence immediately upon the Plan's approval by the Corps and NCDWQ. Monitoring shall continue for 10 years following the completion of all reclamation work within the headwaters of the subject creeks unless the Corps, in consultation with the appropriate resource agencies agrees that monitoring can be discontinued.

REPORTING AND ADAPTIVE MANAGEMENT

- U) The Permittee shall within 6 months of the issuance date of this permit, work with the Corps and NCDWQ to establish an independent multidisciplinary panel of researchers qualified in the subject matter to be examined (Science Panel). In identifying potential participants for this Panel, the Permittee shall seek input from all interested and appropriate resource agencies including but not limited to EPA, NMFS, USFWS, NCWRC, NCDMF, and the appropriate permitting agencies including NCDCM, NCDLR. The panel shall be comprised of between 2 and 5 members. The members of this panel shall be given opportunity to provide input and recommendations on the monitoring required by conditions "K" and "S" above including research design, reference site selection, sampling stations, schedules, and methods; laboratory

methods; data management and analysis; and quality control and quality assurance. Any input supplied by members of this panel will be presented to the Corps and NCDWQ and will be incorporated as appropriate into the preparation of the Plan of Study referenced in condition "S". Members of this panel will also be given the opportunity to oversee all research conducted toward fulfillment of conditions "K" and "S".

- V) The Permittee shall be responsible for fully implementing the approved Plan of Study referenced in conditions "S", "T" and "U" above. Annual summaries of all data collected in compliance with conditions "K" and "S" shall be presented to the Corps, NCDWQ and all members of the Science Panel on or before May 1 of the year following collection. The Permittee and/or the Corps will make these reports available in whole or in summary to any interested party.

- W) The Permittee shall coordinate and facilitate an annual meeting of the Science Panel, the Corps, NCDWQ, and all other interested state and federal agencies including but not limited to EPA, NMFS, USFWS, NCWRC, NCDMF, NCDCM, NCDLR. This meeting shall occur no later than July 30 of each year. The purpose of this meeting will be to allow the members of the Science Panel to provide input to the agencies on any observed trends in parameters measured and general discussions on whether direct and indirect impacts from mining and benefits from the compensatory mitigation appear to be in accordance with expectations at the time of permitting. Members of the Science Panel shall also be given the opportunity to provide any recommendations for management or further study. The proceedings of this meeting including data summaries, reports, presentations and any conclusions of the group will be made available in whole or in summary to any interested party. The Corps will fully consider all information presented by the Science Panel as well as comments from state and federal agencies and all other parties supplying input to determine if corrective actions or permit modifications are needed. If substantive changes to the mine plan, compensatory mitigation plan or monitoring plan are made, the Corps will announce such change by Public Notice and allow for public comment.

- X) At appropriate intervals to be decided by the Corps after input from the Science Panel (eg. 3 to 5 years) beginning from the date of permit issuance, members of the panel shall be given the opportunity to review the monitoring methods, sampling locations, parameters analyzed, and other elements of monitoring protocol to determine if modifications to the plan are appropriate. All data reviewed by the panel shall be made available to the public.

MISCELLANEOUS

- Y) The Permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.
- Z) The Permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project.
- AA) The Permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).
- BB) The Permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to an acceptable condition.
- CC) Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the Permittee's discovery of the violation.
- DD) Wetland Avoidance/Minimization Areas: The Permittee shall avoid the remaining 2,445 acres of waters of the United States within the 15,100 acre project area. These natural wetland areas were avoided as part of the permit application review process and therefore will not be disturbed by any dredging, filling, mechanized land clearing, agricultural activities, or other construction work whatsoever. The Corps reserves the right to deny review of any requests for future impacts to these natural wetland areas. In addition, within one year of the date of this permit, the Permittee shall cause to be recorded a conservation instrument acceptable to the Corps for the permanent preservation of the areas identified as conservation easements on maps entitled "Conservation easement – Tooley Creek Modified Alternative L –NCPC; " "Conservation Easement – Jacobs Creek Modified Alternative L

- NCPC;" "Conservation Easement - Drinkwater Creek Modified Alternative L - NCPC;" "Conservation Easement - Jacks Creek Modified Alternative L - NCPC;" and "Conservation Easement - Porter Creek Modified Alt L - Bonnerton" all dated May 18, 2009 and attached here.

EE) The Permittee shall not begin work authorized by this permit until 10 days following the date I provide the Record of Decision to EPA. I expect to provide the ROD to EPA on June 4, 2009; however, the permittee shall verify that date prior to beginning work.



Beverly Eaves Perdue, Governor

Dee Freeman, Secretary
North Carolina Department of Environment and Natural Resources

Coleen H. Sullins, Director
Division of Water Quality

January 15, 2009

Mr. Ross M. Smith, Manager
Environmental Affairs
PCS Phosphate Company, Inc.
P.O. Box 48
Aurora, NC 27808

Re: PCS Phosphate Mine Expansion, Beaufort County
DWQ #2008-0868, version 2.0; USACE Action ID. No. 200110096
MODIFIED APPROVAL of 401 Water Quality Certification with Additional Conditions

Dear Mr. Smith:

Attached hereto is a copy of Certification No. 3771 issued to PCS Phosphate Company, Inc. of Aurora, NC, dated January 15, 2009. In addition, you must get any other federal, state or local permits before you proceed with your project including (but not limited to) Solid Waste, Sediment and Erosion Control, Stormwater, Dam Safety, Mining, Non-discharge and Water Supply Watershed regulations. This Certification completely replaces one issued to you on December 6, 2008.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Coleen H. Sullins", is written over a horizontal line.

Coleen H. Sullins

CHS/jrd

Attachments: Certificate of Completion

cc: Mr. Tom Walker, U.S. Army Corps of Engineers, Asheville Regulatory Field Office
Dave Lekson, US Army Corps of Engineers, Washington Regulatory Field Office
Scott McLendon, Wilmington District, USACOE
Kyle Barnes, DWQ, Washington Regional Office
Al Hodge, DWQ, Washington Regional Office
DLR Washington Regional Office
File Copy
Matt Matthews, DWQ Wetlands and Stormwater Branch
Cyndi Karoly, DWQ
John Payne, NC Attorney General's Office, Environmental Division
Mike Schafele, NC Natural Heritage Program

Linda Pearsall, NC Natural Heritage Program
Jimmie Overton, DWQ
Jeff Furness, PCS Phosphate
Stephen Rynas, NC Division of Coastal Management
Shannon Deaton, NC Wildlife Resources Commission
Derb Carter, Southern Environmental Law Center
Geoffrey Gisler, Southern Environmental Law Center
Heather Jacobs, Pamlico Tar River Foundation
Sean McKenna, NC Division of Marine Fisheries
Eric Kulz, DWQ
Tammy Hill, DWQ
Becky Fox, US Environmental Protection Agency
Tom Welborn, US Environmental Protection Agency – Region 4 Atlanta
Melba McGee, DENR
Dee Freeman, DENR
Coleen Sullins, DWQ
Chuck Wakild, DWQ
Paul Rawls, DWQ
Ted Strong, Washington Daily News
Susan Massengale, DWQ
Julia Berger, CZR
George House, Brooks, Pierce, McLendon, Humphrey and Leonard, LLP
Jim Stanfill, EEP
Mary Penny Thompson, DENR
Susan Massengale, DWQ
Ann Deaton, NC Division of Marine Fisheries
John Hennessy, DWQ
Ted Strong, Washington Daily News
Wade Rawlins, News and Observer

Filename: 20080868v2PCSPhosphate(Beaufort) 401 modified

NORTH CAROLINA 401 WATER QUALITY CERTIFICATION

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H, Section .0500 to PCS Phosphate Company, Inc. of Aurora, NC based on an application to fill 4,124 acres of jurisdictional wetlands, 29,288 linear feet of streams, 19 acres of ponds and 55.14 acres of stream buffers in the Pamlico River Basin, associated with the expansion of PCS Phosphate's mining operation including the relocation of Highway 306 and Sandy Landing Road in Beaufort County, North Carolina, pursuant to an application filed on the 22nd day of May of 2008 through the published Public Notice by the US Army Corps of Engineers, and in additional correspondence received September 5, 2008 (dated September 4, 2008), November 3, 2008 (received November 5, 2008), December 19, 2008 (received December 22, 2008) and proposed impact maps dated January 6, 2009.

The application and supporting documentation provide adequate assurance that the proposed work will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application, the supporting documentation, the additional correspondence noted above and conditions hereinafter set forth.

This approval is only valid for the purpose and design submitted in the application materials, additional correspondence and as described in the Public Notice. If the property is sold after the Certification is granted, the new owner must be given a copy of the Certification and approval letter and is thereby responsible for complying with all conditions of this Certification. Any new owner must notify the Division and request the Certification be issued in their name. Should wetland, buffer or stream fill be requested in the future, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). If any plan revisions from the approved site plan result in a change in stream, buffer or wetland impact or an increase in impervious surfaces, the DWQ shall be notified in writing and a new application for 401 Certification may be required and a modified 401 Certification may be required. For this approval to be valid, compliance with all the conditions listed below is required.

Conditions of Certification:

1. Impacts Approved

The following impacts are hereby approved as long as all of the other specific and general conditions of this Certification are met. No other impacts are approved including incidental impacts other than listed in this table. Also, please note that these impacts are those approved by DWQ and are only a portion of the impacts that were originally applied for and listed in the Public Notice. These impacts are depicted on maps entitled "PCS Phosphate Mine Continuation – Modified Alt. L – NPCS, Bonneron and South of 33 Proposed Impact" dated January 6, 2009.

	Amount Approved (Units)	Plan Location or Reference
Streams	25,727 feet	Final EIS, page e as well as June 6, 2008 and December 19, 2008 submittals to DWQ
404/CAMA Wetlands	3,953 acres	Final EIS, page e as well as June 6, 2008 and December 19, 2008 submittals to DWQ
Waters	19 acres	Final EIS, page e as well as June 6, 2008 and December 19, 2008 submittals to DWQ
Buffers	47.87 acres	Final EIS, page e as well as June 6, 2008 and December 19, 2008 submittals to DWQ

Sediment and Erosion Control:

2. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards:
 - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
 - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
 - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
 - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act or Mining Act of 1971 (as amended).

3. No waste, spoil, solids, or fill of any kind shall occur in wetlands, waters, or riparian areas beyond the footprint of the impacts depicted in the 404/401 Permit Application. All construction activities, including the design, installation, operation, and maintenance of sediment and erosion control Best Management Practices, shall be performed so that no violations of state water quality standards, statutes, or rules occur.

4. Sediment and erosion control measures shall not be placed in wetlands or waters without prior approval by the Division. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in a manner that may result in disequilibrium of wetlands or stream beds or banks, adjacent to or upstream and down stream of the above structures. All sediment and erosion control devices shall be removed and the natural

grade restored within two (2) months of the date that the Division of Land Resources or locally delegated program has released the project.

Continuing Compliance:

5. PCS Phosphate Company, Inc. shall conduct construction activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with section 303(d) of the Clean Water Act), the 401 Water Quality Certification rules (15A NCAC 2H .0500) and any other appropriate requirements of State law and federal law. If the Division determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the Division may reevaluate and modify this Certification to include conditions appropriate to assure compliance with such standards and requirements in accordance with 15A NCAC 2H .0507(d). Before modifying the Certification, the Division shall notify PCS Phosphate Company, Inc. and the US Army Corps of Engineers, provide public notice in accordance with 15A NCAC 2H.0503 and provide opportunity for public hearing in accordance with 15A NCAC 2H.0504. Any new or revised conditions shall be provided to PCS Phosphate Company, Inc. in writing, shall be provided to the United States Army Corps of Engineers for reference in any Permit issued pursuant to Section 404 of the Clean Water Act, and shall also become conditions of the 404 Permit for the project. This condition is intended to conform with the provisions of 15A NCAC 2H .0507 (d).

Mitigation:

6. Wetland and stream mitigation shall be done as follows and in accordance with mitigation as approved by the US Army Corps of Engineers. DWQ shall be copied on all draft mitigation plans and copied on all annual reporting on mitigation success. In addition, buffer mitigation shall be done in accordance with condition 7 below. In addition, DWQ shall be copied on a final accounting of the amount and type of proposed wetland, stream and buffer mitigation within 60 days of the issuance of the 404 Permit from the US Army Corps of Engineers. Any mitigation done outside the 8-digit HUC where PCS is located should follow the guidance for out of HUC mitigation as described in "Guidance on the Use of Compensatory Mitigation in Adjacent Cataloging Units" dated May 20, 2005 or its update by DWQ. Conservation easements or similar mechanisms to protect these mitigation sites shall be recorded on all mitigation sites to the written satisfaction of the US Army Corps of Engineers.
7. Buffer mitigation shall be conducted by PCS Phosphate at those mitigation sites with riparian buffer credit which total about 24.4 acres of buffer credit. If the Environmental Management Commission approves a flexible buffer mitigation program, then PCS Phosphate may submit a list and description of those sites to DWQ for written approval. If no additional riparian buffer mitigation sites and no flexible buffer mitigation sites are approved by DWQ and/or the NC Environmental Management Commission, then disturbance of buffers in the NCPC, Bonneron or South of 33 tracts shall not be done beyond the limits of the 2014 impact area shown on PCS' Project Impact Schedule Year 2008-2016 (generally south of Drinkwater Creek) (see Attachment One). DWQ shall be copied on all buffer mitigation site plans and written approval from DWQ is required for these plans before planting or land grading occurs.

8. Porter Creek enhancement – Additional written approval is required from DWQ for a wetland enhancement and stream restoration plan as well as a monitoring plan for the stream, headwater forest and hardwood flat at the upper end of Porter Creek. This plan shall include plugging or filling the existing ditch in order to reestablish surface flow into the wetland and stream channel. DWQ acknowledges wetland functional uplift for the 3.4 acre hardwood flat that is located between the stream and existing ditch and will count 1.7 acres of functional uplift of these non-riparian wetlands in order to account for DWQ's mitigation requirement in 15A NCAC 2H .0506 (h)(6). Stream mitigation credits are also available for the restoration of flow into the existing channel with appropriate monitoring and wetland mitigation for the functional uplift of the headwater forest if additional analysis documents that uplift.

Additional Minimization of Impact:

9. Hardwood Flat Avoidance and Minimization – Impact to the 135 acre ("135 A" on Attachment Two) portion, the 58 acre (" 58 A" on Attachment Two) portion and the 20 acre secondary connection between these two locations ("20 acre connect" on Attachment Two) of the Bonnerton Road Non-Riverine Wet Hardwood Forest as depicted on Exhibit A of the letter dated October 20, 2008 from George House of Brooks, Pierce, McLendon, Humphrey and Leonard, LLP to Paul Rawls of the NC Division of Water Quality shall be avoided and the area not mined or cleared since this wetland is a "wetland of exceptional state or national ecological significance" in accordance with 15A NCAC 2H .0506(e) except that a 1,145 foot wide mining and utility corridor is allowed in the narrowest part of the Bonnerton Road Non-Riverine Wet Hardwood Forest. Mining is also allowed in the northeast triangle of "58A" WHR area as outlined in exhibit 14 of PCS's December 19, 2008 letter. In order to protect the uses of this Non-Riverine Wet Hardwood Forest wetland that will not be mined, a conservation easement shall be placed on the wetland and restored mining and utility corridor to preclude impacts including mining, logging and any other disturbance of the vegetation or soils that would result in its delisting as a state or nationally significant wetland area. This conservation easement shall be sent to DWQ within 60 days of the issuance of the 404 Permit and the Division must review and approve this easement before it is recorded. Eventual donation to a local land trust or similar organization is acceptable to DWQ with DWQ's written approval.

The exact location of this 1,145 foot wide mining corridor shall be submitted to DWQ and the Corps of Engineers for written approval. A detailed stratigraphy study shall be done on both sides and throughout the area to be mined in order to determine the presence, extent and permeability of any aquitards and aquicludes (mainly clay-based) within the mining corridor. A plan for restoration of each of these aquitards and aquicludes shall be included with the revegetation plan in order to ensure that pre-mining hydrology is reestablished in the mining corridor. Additional written approval is needed from DWQ before this stratigraphic study is done or restoration is initiated. Groundwater monitoring shall be done before, during and after mining and restoration for at least 10 years post-mining in order to ensure that restoration has established reference hydrology for this site. In addition, a reclamation and revegetation plan for the mining corridor shall be submitted to DWQ for written approval. The reclamation plan for the mining corridor shall include the installation of appropriate topsoil on the site within the rooting zone of the restored hardwood flat. The width of the reclamation zone shall ensure that a continuous hardwood flat is restored to reconnect the two undisturbed hardwood flats with a width similar to the width of the remnant, undisturbed hardwood flats. Revegetation shall be done with native tree species. The mining corridor shall be restored and replanted within ten (10) years of the initiation of mining preparation

- for the area. DWQ shall be copied on a letter once that mining preparation begins on the mining corridor in order to establish this ten year clock.
10. Additional minimization of appx. 3 acres of wetland impact shall be provided for the NCPC tract as depicted on the letter from PCS Phosphate dated November 3, 2008 to John Dorney of the NC Division of Water Quality.
 11. South of 33 tract – The impact boundaries for the South of 33 tract shall be as outlined in an email from Mr. Tom Walker of the US Army Corps of Engineers dated August 19, 2008 (forwarded to Mr. John Dorney of the Division of Water Quality on December 13, 2008).

Monitoring

12. Groundwater monitoring – Additional written approval is required from DWQ for a final groundwater monitoring plan that supplements and compliments the existing groundwater monitoring that is being conducted by PCS for various state and federal agencies. In addition to other parameters subject to groundwater standards, cadmium and fluoride shall be monitored in the final groundwater monitoring plan. This plan shall include groundwater monitoring of the protected portion of the Bonnerton Road Non-Riverine Wet Hardwood Forest as noted in condition 9 above in order to ensure that the existing hydrology of this site is maintained. This monitoring shall focus on the "58A" area of the Bonnerton Road Non-Riverine Wet Hardwood Forest to ensure that its groundwater hydrology is maintained.
13. Stream and watershed monitoring – The existing water management and stream monitoring plan for water quality, water quantity and biology (macroinvertebrates and fish) shall be continued for the life of the Permit by the applicant. Additional monitoring shall be proposed by the applicant and approved by DWQ for tributaries in the Bonnerton and South of 33 tracts before land clearing or impacts occur to those locations. This additional monitoring plan shall collect data from a representative number of streams in each tract and be designed to assure the protection of downstream water quality standards including Primary and Secondary Nursery Area functions in tributaries to South Creek, Porter Creek, Durham Creek and the Pamlico River adjacent to the mine site. Monitoring locations shall include the upper end of Porter Creek in the "58A" portion of the Bonnerton Road Non-Riverine Wet Hardwood Forest in order to ensure that hydrology of this wet hardwood forest is maintained.

The plan shall identify any deleterious effects to riparian wetland functions including by not limited to water storage, pollutant removal, streambank stabilization, as well as resident wetland-dependent aquatic life and resident wetland-dependent wildlife and aquatic life in wetlands and streams tributary to the Pamlico River in the NCPC, Bonnerton and South of 33 tracts. If necessary, management activities to protect or restore these uses will be required for all the tributaries of these three tracts.

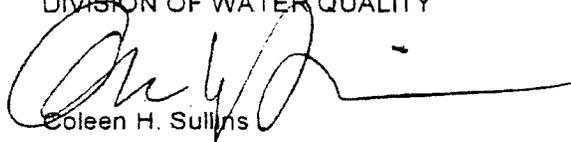
PCS shall notify DWQ in writing at least one month in advance of any biological sampling so DWQ biologists can accompany PCS biologists as needed. Also a certified lab is required for the identification of freshwater benthic macroinvertebrate samples. For estuarine samples, a knowledgeable lab shall be used until such time as DWQ certifies laboratories for estuarine analysis and after that time, only suitably certified labs shall be used. Finally a fish monitoring plan shall be included in the final monitoring plan submitted to DWQ for written approval.

This stream and watershed monitoring plan shall be submitted to DWQ for written approval within six months of the issuance of the 404 Permit. Seven copies (two hard copies and five CD's) of the draft plan and annual reports shall be submitted to DWQ for circulation and review by the public and other federal and state agencies.

Expiration of Certification – This approval to proceed with your approved impacts or to conduct impacts to waters as depicted in your application shall expire upon expiration of the 404 Permit with the proviso that changes to this Certification may be made in accordance with condition 5 (Continuing Compliance) above.

If this Certification is unacceptable to you, you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this modified Certification. Since as noted above, this Certification completely replaces the one issued to you on December 6, 2008, the sixty (60) day appeal period is for all the conditions of this modified Certification. Any request for adjudicatory hearing must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. If modifications are made to an original Certification, you have the right to an adjudicatory hearing on the modifications upon written request within sixty (60) days following receipt of the Certification. Unless such demands are made, this Certification shall be final and binding.

This the 15th day of January 2009
DIVISION OF WATER QUALITY



Coleen H. Sullins

CHS/jrd

Alternative	Total Area	Waters of the US	Stream	% Total Area	% Total Waters of the US	% Total Stream
Single Tract Alternatives						
Base (NCPC)	3,608	2,549	55,528			
AP (NCPC only)	3,412	2,408	38,558	95	94	69
Base (S33 only)	8,686	1,701	43,209			
S33AP (S33 only)	7,743	1,130	33,486	89	66	77
Holistic Alternatives						
Base (holistic)	15,100	6,380	115,843			
EAPA/B	13,961	5,668	89,150	92	89	77
SJAA/B	12,892	5,030	2,508	85	79	2
Alt. M	12,572	4,592	36,999	83	72	32
Alt. L (mod)	11,343	3,927	22,435	75	62	19
SCRA/B	10,659	3,506	14,360	71	55	12
DL1B	9,033	2,285	13,845	60	36	12
No Action	5,745	0	0	38	0	0

Table 1. Comparison of impacts for each alternative. Impacts associated with single tract alternatives are compared only to the base area within that single tract. Impacts associated with holistic alternatives are compared to the total base area of the three tracts combined.

Site	Wetland (acres)			Stream (linear feet)		
	Restoration	Enhancement	Preservation	Restoration	Enhancement	Preservation
Bay city	565.0	0.0	119.0	3000.0		
Hell Swamp	885.0	46.0	41.0	19783.0		
Gum Run	27.0	0.0	0.0			
Parker Farm	245.0	162.0	196.0			3960
SC Corridor			1143.0			26736
P Lands	2075.0	381.0	135.0			
U Lands	608.0		117.0			
Upper Back Creek	116.0	38.0	18.0	7066.0		1149.0
Rutman	3342.0	129.0	701.0	8793.0	7994.0	
Sage Gut	105.0		2.0	5401		1006
totals	7968.0	756.0	2472.0	44043.0	7994.0	32851.0

Table 2. Wetland and stream mitigation by site and type.

By year	Impact	Site Complete	Available Credits*	Acre Credit Balance		Impact**	Available Credits***	Linear Feet Credit Balance
	Acres		Acres	Available - Impacted		Linear Feet	Linear Feet	Available - Impacted
2009	312.39	Gum Run, Parker Farm, Bay City, Upper Back Creek	576.5	264.08		4544	11087.8	7115.8
2010	506.56	Sage Gut. Hell Swamp	1666.0	1403.53		148	30794.8	37762.6
2011		Rutman	828.1	2231.63			11990.6	49753.2
2012	304.81		0.0	1917.82		1108.5		48910.2
2013		P Lands, U Lands	1493.7	3411.52				48910.2
2014	303.53		0.0	3087.99		4677		45104.2
2015			0.0	3087.99				45104.2
2016	203.58		0.0	2884.41		1358		43746.2
2017			0.0	2884.41				43746.2
2018	458.74			2425.67		10620.5		34562.2
2019				2425.67				34562.2
2020	528.79			1896.88		0		34562.2
2021				1896.88				34562.2
2022	592.38			1304.50		0		34562.2
2023				1304.50				34562.2
2024	476.17			828.33		11974.5		24467.2
2025				828.33				24467.2
2026	30.34			797.99		3862.5		21892.2
2027				797.99				21892.2
2028	45.19			752.80		763.5		21383.2
2029				752.80				21383.2
2030	2.1			750.70		0		21383.2
2031				750.70				21383.2
2032	0			750.70		0		21383.2
2033				750.70				21383.2
2034	5.86			744.84		0		21383.2
2035				744.84				21383.2
2036	15.76			729.08		1239		20557.2
2037				729.08				20557.2
2038	31.42			697.66		4366.5		17646.2
2039				697.66				17646.2
2040	26.39			671.27		0		17646.2
2041				671.27				17646.2
2042	75.11			596.16		832.5		17091.2
2043				596.16				17091.2
2044	6.61			589.55		0		17091.2
2045				589.55				17091.2
2046	2.06			587.49		0		17091.2
2047				587.49				17091.2
2048	0			587.49		0		17091.2

Table 3. Mitigation completion date and impact dates

* an acre credit of wetland is comprised of 2:1 restoration, 3:1 enhancement or 8-10:1 preservation

** This column reflects total mitigation linear feet needed after adjustments to stream quality (1:1 for poor, 2:1 for Fair and 3:1 for excellent)

*** A linear foot credit is comprised of 1:1 restoration, 2.5:1 enhancement or 5:1 preservation

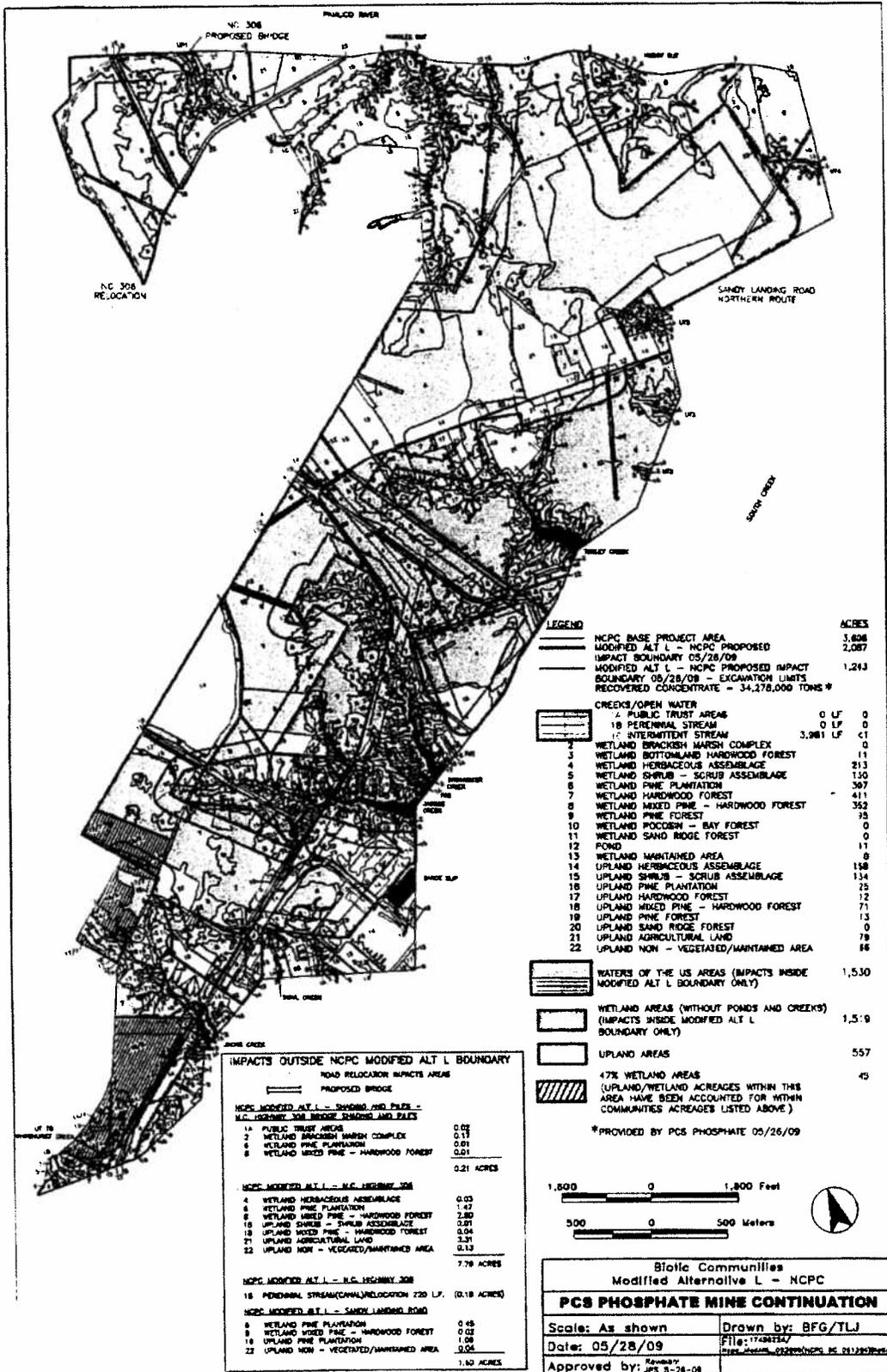


Figure 1A. Modified Alternative L mining alignment for NCPC

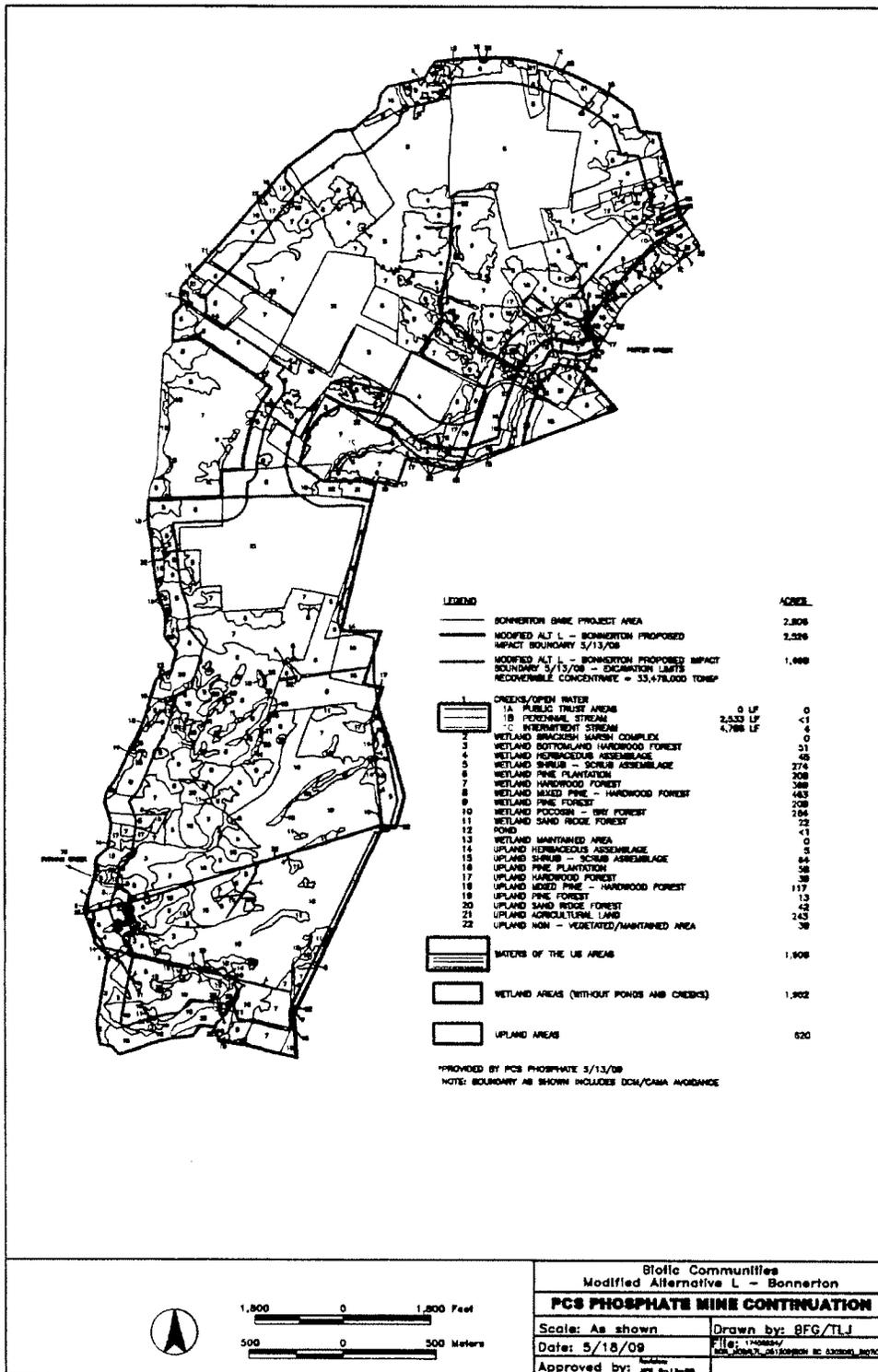


Figure 1B. Modified Alternative L mining alignment for Bonerton.

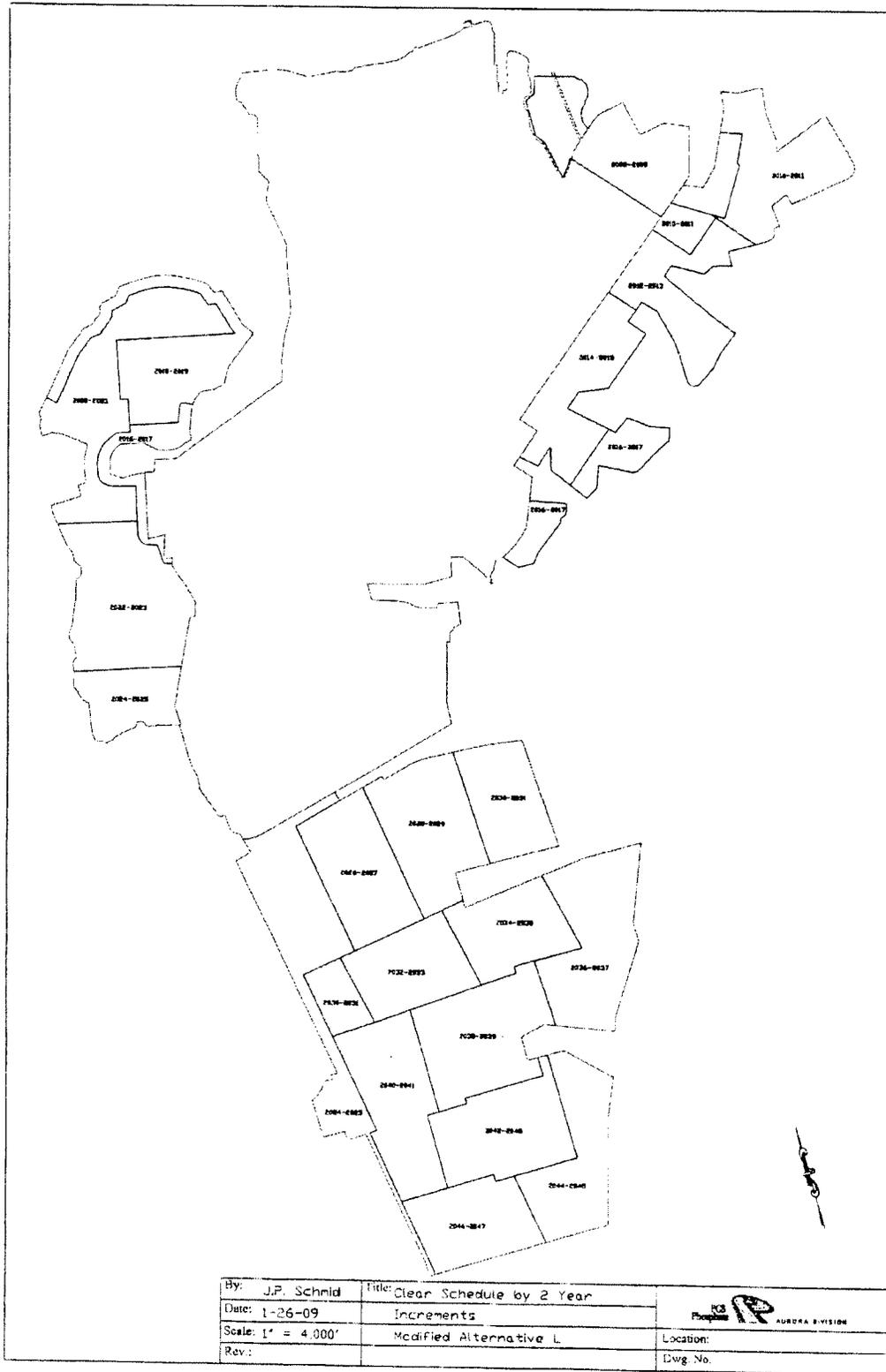


Figure 2. Initial impact schedule. This reflects dates when mechanized land clearing will be necessary in order to prepare for mine advance.

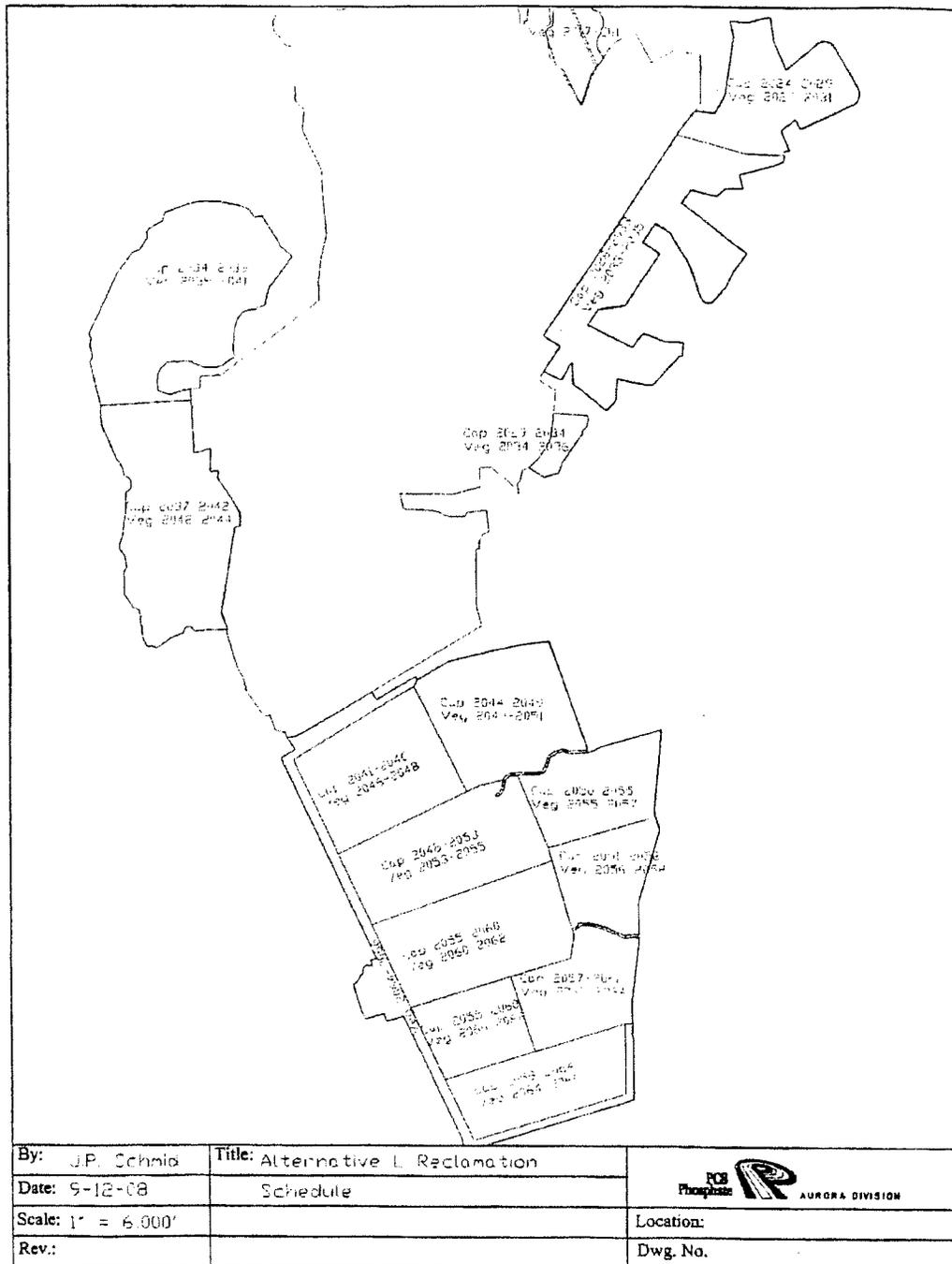


Figure 3. Depicts projected timeframes for completion of reclamation activities.

Action ID: 200110096

Permittee: Potash Corporation of Saskatchewan Phosphate Division, Aurora Operation

Location: Aurora, Beaufort County, North Carolina

Date: June 3, 2009

RECORD OF DECISION

1. Introduction

The Potash Corporation of Saskatchewan Phosphate Division, Aurora Operation (PCS) has applied for Department of the Army authorization to undertake an approximately 11,343 acre mine advance into the approximately 15,100 acre project area surrounding its current mining operation located north of Aurora, Beaufort County, North Carolina. Provided below are my findings and decision regarding this application.

On November 2, 2000, PCS applied for Department of the Army authorization to continue its phosphate mining operation on the Hickory Point peninsula adjacent the Pamlico River and South Creek, north of Aurora, Beaufort County, North Carolina, once reserves are depleted under the existing permitted area. In response to public and agency comments on this original application, PCS elected to further reduce proposed impacts to waters of the US and on August 13, 2001, submitted a revised permit application. After a substantial review process including multiple public notices, publication of a Draft Environmental Impact Statement (DEIS), and a Supplement to the DEIS (SDEIS), extensive public and agency comment, a Public Hearing and multiple meetings of an interdisciplinary Review Team, PCS revised its application to request authorization of Alternative L, the project now being considered. The Final Environmental Impact Statement (FEIS) identifying Alternative L as the Applicant's proposal was published on May 23, 2008.

As the District Engineer for the Wilmington District, US Army Corps of Engineers, it is my decision that the proposed project should proceed as modified by the attached special conditions (Attachment 1). This decision is based on the Final Environmental Impact Statement for the PCS Phosphate Mine Continuation, Aurora, North Carolina dated May 2008 (FEIS), the District's files on this matter, the Public Interest Review, and my 404(b)(1) Guidelines analysis. I find Alternative L, PCS's proposed plan, as modified by additional avoidance and minimization of wetlands and streams and special conditions discussed below, to be acceptable in light of my analysis of the available alternatives in relation to applicable factors including engineering, economics, social criteria and the environment. These findings were made prior to and support my decision to issue Department of the Army authorization pursuant to Section 404 of the Clean Water Act for the proposed project identified as Alternative L, modified to minimize impacts to waters and wetlands, as described more fully below.

2. Description of the Applicant's Proposed Project

The Applicant's proposed project, identified herein and in the FEIS as Alternative L, would allow PCS to continue its open pit phosphate mining operation into a portion of the approximately 15,100 acre project area. As presented in the FEIS, Alternative L included an approximately 11,909 acre mine boundary located to the east, west and south of the existing facility adjacent the Pamlico River, South Creek and Durham Creek, near Aurora in Beaufort County, North Carolina, allowing recovery of approximately 183,846,000 metric tons of the phosphate concentrate. Alternative L as presented in the FEIS included impacts to 4,140 acres of Waters of the US (4,135 acres within the mining footprint and an additional 5 acres associated with the relocation of NC Highway 306), over an approximately 37 year period.

Following release of the FEIS, impacts associated with Alternative L have been further minimized. The NC Division of Water Quality worked with the applicant to further minimize impacts to State designated Significant Natural Heritage Areas. Additional minimization efforts have focused on further avoidance of bottomland hardwoods and surrounding areas as suggested by National Marine Fisheries Service (NMFS) to further protect and buffer tributaries originating in the project area including designated Inland Primary Nursery Areas (PNA). Finally, the applicant has worked with the Corps and Federal Resource Agencies to minimize impacts to riparian areas buffering tributaries of South Creek.

The current Alternative L boundary (Modified Alternative L) would allow mining and mine related activities within an 11,343 acre area of the 15,100 acre project area. This boundary would produce approximately 172,473,000 metric tons of phosphate concentrate over a period of approximately 35 years. Modified Alternative L will result in the loss of 3,927 acres of waters of the United States (3,922 acres within the mining boundary and an additional 5 acres associated with the relocation of NC Highway 306) including 3,909 acres of wetlands. Modified Alternative L would also result in the loss of 18 acres of open water including 11 acres of pond, 10,332 linear feet of perennial stream and 12,103 linear feet of intermittent stream. The project will result in the loss of 3,448 acres of prime farmland in cultivation and will result in direct impacts to 47.87 acres of buffers regulated by the North Carolina Division of Water quality under the Tar/Pamlico River Buffer Rules. The mine project will not result in direct impacts to areas regulated by the North Carolina Division of Coastal Management as Areas of Environmental Concern pursuant to the Coastal Area Management Act. A detailed discussion of impacts associated with Alternative L is provided in the FEIS.

PCS is currently mining a 4,903 acre area adjacent the proposed project, including 1,286 acres of waters of the US, pursuant to a Department of the Army Clean Water Act permit issued on August 16, 1997 (1997 CWA permit). This previous authorization is thoroughly described in the Corps' Final Environmental Impact Statement for the Texasgulf Inc. Mine Continuation, Aurora, North Carolina dated August 1996.

3. Purpose and Need

a. Applicant's Purpose and Need

The Purpose and Need for the proposed action is to continue mining its [the applicant's] phosphate reserve in an economically viable fashion. More specifically, the applicant's purpose and need is to implement a long-term systematic and cost-effective mine advance within the project area for the ongoing PCS mine operation at Aurora, North Carolina. The basic purpose of this project is to mine phosphate. Although much of the nation's phosphate deposits are located beneath wetland areas, the Corps has determined that this activity is not water dependant. Therefore, less environmentally damaging alternatives, including no action (no permit) alternatives have been studied.

b. The Public Need

The public need for phosphate rock is evident. Phosphate rock minerals are the only significant global commercial sources of elemental phosphorus. The agricultural sector is the largest user of phosphorus in the form of both fertilizer and animal feed supplements. Phosphate rock is also processed for use in consumer products such as soft drinks, toothpaste, foods, and flavors. Global demands for phosphate based products will likely increase because population growth, especially in developing nations, will necessitate greater food production in the years to come. The national and international reliance on phosphate rock and phosphate based products is discussed further in the FEIS.

PCS is a large and long-standing socio-economic force in Beaufort and surrounding eastern North Carolina counties. If allowed to continue mining operations, this facility will continue to provide much needed jobs, tax dollars, and donations to the local economy and the state of North Carolina. At the close of 2007 PCS Phosphate Aurora permanently employed approximately 600 direct employees and several hundred contractors working in the mine and mill operations of the Beaufort County facility. It has been estimated that for every one job at PCS, another 2.5 jobs are created in service and supply industries across the state.

PCS Phosphate is an important part of both the local and statewide economy. A 2006 study titled "PCS Phosphate Economic Impact" prepared by Dr. James W. Kleckley, Director of the Bureau of Business Research at the East Carolina University College of Business, contained the following facts. PCS is the largest private employer in Beaufort County, and one of the largest private employers in the region. PCS outputs over \$64 million in direct payroll per year with approximately 40% going to employees in the mine and mill operation. The average annual wage for PCS Phosphate in 2005 was \$62,160, a level that was much higher than the average wage for the County, the employment region, or the State.

Through payroll activities, local purchasing, and taxes, the total economic impact that PCS Phosphate's mine and mill facility has on the state of North Carolina is about \$400 million annually. PCS is Beaufort County's largest taxpayer. Based on the economic activity generated throughout the state, North Carolina's annual tax impact from PCS Phosphate is well over \$70 million with approximately forty percent attributed to the mining area. One way in which this is

achieved is through local purchasing. In 2007 almost 69% of PCS's purchases were made within the state of North Carolina, contributing about \$150 million dollars to the statewide economy. Approximately 50% (\$75 million) of this can be attributed to the mine and milling facility.

4. Public Coordination

In compliance with my responsibility under the National Environmental Policy Act (NEPA) of 1969, I determined that the issuance of Department of the Army Authorization under Section 404 of the Clean Water Act for the originally proposed mine continuation (Alternative AP) would constitute a major Federal action significantly affecting the quality of the human environment. Therefore, I have prepared an FEIS in accordance with the requirements of NEPA (40 CFR Parts 1500 – 1508) and USACE regulations (33 CFR Part 325, Appendix B). Alternative L is discussed in detail in the SDEIS and FEIS.

In response to the original November 2, 2000 application, the Corps circulated a Public Notice describing the proposed project on January 2, 2001 (Action ID No. 200110096), and held a public scoping meeting on February 28, 2001 to identify significant issues to be considered and evaluated prior to making a decision on the proposal. In addition to the public scoping meeting and other requests for input from the public at large, the Corps formed a review team (Review Team) made up of PCS, CZR Incorporated, State and Federal review agencies and interested environmental advocacy groups. The purpose of the Review Team was to provide a forum to allow each member to provide input to identify the major issues to be addressed, and potential alternatives to be explored.

In response to comments on the January, 2, 2001 Public Notice, PCS elected to revise its application by removing proposed impacts to approximately 49 acres of open water from its mining plan. The Corps circulated a second Public Notice on October 4, 2001, describing the revised application.

a. Draft Environmental Impact Statement

After extensive study, review of public comments, and coordination with the members of the Review Team, the Corps prepared and filed a draft Environmental Impact Statement (DEIS) with the U.S. Environmental Protection Agency (EPA) and released the document via Federal Register Notice on October 20, 2006. The Corps simultaneously issued a public notice requesting comments on the proposed project, on the DEIS and on the various alternatives described in that document. The original 3 month comment period was extended 2 weeks at the request of various commenters. The DEIS identified and evaluated 9 alternative mining alignments within the 15,100 acre project area. Several additional alternatives, including a "no action" alternative boundary, were identified, considered and eventually eliminated from detailed study. The Corps held a public hearing on the proposed project and the DEIS on December 14, 2006.

b. Supplement to the Draft Environmental Impact Statement

Following review of the comments received and further discussion with review agencies and PCS, the Corps determined it was appropriate to evaluate an additional alternative, which became known as Alternative L. PCS requested a second additional alternative, Alternative M, be evaluated as well. Both Alternatives L and M are within the project area established in the DEIS. These two additional alternatives were presented in Supplement I to the DEIS (SDEIS) submitted to the EPA and released by Federal Register Notice in November 2007. Information necessary to evaluate both alternatives and to compare these alternatives to the alternatives introduced in the DEIS was contained in the SDEIS. The comment period for the SDEIS was originally 45 days, extended an additional 10 days at the request of commenters.

c. Final Environmental Impact Statement

The Corps filed the Final Environmental Impact Statement for the PCS Phosphate Mine Continuation, Aurora, North Carolina (FEIS) with the EPA and released the document via Federal Register Notice on May 23, 2008. The Corps simultaneously issued a public notice requesting comment on the proposed activity, the alternatives and the FEIS.

Section 2 of the FEIS describes in detail the development of alternatives and identifies a full range of alternatives for the proposed project. Section 3 describes the existing conditions in the project area and Section 4 thoroughly discusses the potential impacts of each alternative. I have determined that all NEPA requirements for the consideration of DA authorization of modified Alternative L have been satisfied

5. Alternatives considered

The 15,100 acre project area contains approximately 262 million tons of recoverable ore. The Corps thoroughly evaluated a number of alternatives during the EIS process, all of which are located within this project area. The project area consists of three separate tracts; the NCPC Tract (3,608 acres), the Bonnerton Tract (2,806 acres) and the S33 Tract (8,686 acres). Two alternatives, (AP and S33AP), are limited to a single tract within the project area, the NCPC Tract and S33 Tract, respectively. The remaining alternatives (the holistic alternatives), consist of two elements, a physical boundary including all three tracts, and a mining sequence among the three tracts within the project area. The Corps fully evaluated 9 action alternatives in the DEIS, and an additional 2 alternatives in the SDEIS. The FEIS addressed all 11 alternatives. Section 2.5.1 of the FEIS lists and describes the 11 action alternatives studied in detail. Table 1 provides impact information for each alternative.

a. Single Tract Alternatives

(1) AP Alternative

The applicant's original preferred plan, the **AP Alternative**, was to continue the current mine advance on the Hickory Point peninsula into an approximately 3,412 acre area of the NCPC Tract. This alternative would provide approximately 15 years of mining and would impact 2,408 acres of waters of the US including 38,558 linear feet of stream, 2,377 acres of wetlands and 20

acres of open water ponds. Mining this alternative would impact 94¹ percent of the total acres of waters of the US within the NCPC Tract.

(2) S33AP Alternative. The **S33AP Alternative** is the other single tract alternative, and consists of mining the applicant's preferred alignment within the S33 Tract only. It would provide approximately 25 years of mining and impact 1,130 acres of waters of the US including 33,486 linear feet of stream and 1,123 acres of wetlands. Mining this alternative would impact 66 percent of the total acres of waters of the US within the S33 Tract. The Corps concurs with EPA that of the action alternatives, the S33AP alternative is the Environmentally Preferred Alternative.

b. Holistic Alternatives

Based on early scoping comments and coordination with the review team, the Corps determined it appropriate to expand the scope of its review to include holistic mine plan alternatives for the entire project area. The rationale for this determination is thoroughly explained in Section 2.4 of the FEIS. PCS has indicated its intention to mine the entire project if suitable market conditions exist, therefore, the Corps determined it was reasonable to consider mining of the entire project area in this permit application, allowing the evaluation of all impacts, as well as mitigation for those impacts, before making a permit decision.

(1) EAPA/EAPB Alternatives

Once the decision was made to expand the scope to include holistic alternatives, PCS submitted its preferred mining alignment for the entire project area. The **EAPA and EAPB Alternatives** consist of mining this alignment in Sequence A (NCPC to Bonnerton to S33) and Sequence B (NCPC to S33 to Bonnerton). These alternatives would provide approximately 49 years of mining and impact 5,668 acres of waters of the US including 89,150 linear feet of stream, 5,623 acres of wetlands and 20 acres of open ponds. Mining these alternatives would impact 89 percent of the total area of waters of the US within the project area. Of the 262,000,000 tons of recoverable ore within the project area, these alternatives would allow the recovery of approximately 244,000,000 tons, or a 93% recovery of the ore in the area.

(2) DL1B Alternative

The **DL1B Alternative** was designed to provide the minimum area for a reasonable 1-dragline mine corridor on the NCPC tract. PCS currently must operate three draglines concurrently to meet production needs. Therefore this alternative requires separate and simultaneous mining operations with two draglines in the S33 Tract within the SCR boundary. Once allowable mining is completed in the NCPC and S33 Tracts under this alternative, the operation would progress to the Bonnerton Tract. This alternative would provide approximately 27 years of mining and would impact 2,285 acres of water of the US including 13,845 linear feet of stream,

¹ The project area includes approximately 87 acres of Coastal Marsh and 49 acres of Public Trust Waters which some have argued could not be mined under State law. Although this matter has never been conclusively settled, the 136 acres have been removed for the purpose of the percentage calculations cited here.

2,281 acres of wetlands and 2 acres of open ponds. Mining this alternative would impact approximately 36 percent of the total area of waters of the US within the project area. Of the 262,000,000 tons of recoverable ore within the project area, this alternative would allow the recovery of approximately 135,000,000 tons, or a 51% recovery of the ore in the area.

(3) SCRA/SCRB Alternatives

The Corps, after coordination with the review team and PCS, requested that PCS explore an alternative mining alignment designed to maximize avoidance of waterways, riparian corridors and relatively undisturbed expanses of aquatic resources that are more difficult to mitigate, such as bottomland hardwood forest and marshes. The **SCRA and SCRB Alternatives** are separate sequences for mining this alignment. These alternatives would provide approximately 32 years of mining and would impact 3,506 acres of waters of the US, including 14,360 linear feet of stream, 3,493 acres of wetlands and 12 acres of open ponds. Mining either of these alternatives would impact 56 percent of the total area of waters of the US within the project area. Of the 262,000,000 tons of recoverable ore within the project area, these alternatives would allow the recovery of approximately 160,000,000 tons, or 61% of the ore in the area.

(4) SJAA/SJAB Alternatives

At the request of the North Carolina Division of Water Quality (NCDWQ) PCS explored a mining alignment within the project area that would avoid essentially all streams and buffers under the jurisdiction of the NCDWQ and all Coastal Area Management Act (CAMA) Areas of Environmental Concern under the jurisdiction of the North Carolina Division of Coastal Management (NCCDM). The **SJAA and SJAB Alternatives** are separate sequences for mining this alignment. These alternatives would provide approximately 38 years of mining and would impact 5,030 acres of waters of the US, including 2,508 linear feet of stream, 5,014 acres of wetlands and 15 acres of open ponds. Mining either of these alternatives would impact 81 percent of the total area of waters of the US within the project area. Of the 262,000,000 tons of recoverable ore within the project area, these alternatives would allow the recovery of approximately 190,000,000 tons, or 73% recovery of the ore in the area.

(5) Alternative L

Alternative L is a mining alignment designed to minimize impacts to those aquatic resources identified by the members of the Review Team as providing important functions supporting the Albemarle-Pamlico Sound Estuary, while allowing PCS approximately 15 years of mining within the NCPC and Bonnerton Tracts combined. As presented in the FEIS, this alternative provided approximately 37 years of mining within the project area and resulted in impacts to 4,140 acres of waters of the US including 29,288 linear feet of stream, 4,120 acres of wetlands and 12 acres of ponds. By letter dated April 24, 2008 PCS revised its application to request authorization of this alternative.

The Corps, NCDWQ and the Federal agencies have worked with PCS to further minimize impacts associated with Alternative L. The mining alignment for Modified Alternative L is depicted in Figures 1 A-C. Modified Alternative L would provide approximately 14 years of

mining within the NCPC and Bonnerton Tracts combined, and approximately 35-36 years of mining within the entire project area. Modified Alternative L would provide for mining of 11,343 acres of the 15,100 acre project area and would impact 3,927 acres of waters of the US including 22,435 linear feet (approximately 7 acres) of stream, 11 acres of open water pond and 3,909 acres of wetlands. This includes 5 acres of wetland that will be impacted as a result of a highway relocation necessitated by the mine advance. Mining this alternative would impact 62 percent of the total area of waters of the US within the project area. Of the 262,000,000 tons of recoverable ore within the project area, this alternative would allow the recovery of approximately 172,473,000 tons, or 66% recovery of the ore in the area.

(6) Alternative M

Alternative M was developed by PCS. According to PCS the intent of this alternative is to minimize impacts to the NCPC Tract drainage basins and the tributaries of South Creek, while providing a holistic boundary that serves the applicant's purpose and need. This alternative would provide approximately 41 years of mining and impact 4,592 acres of waters of the US including 36,990 linear feet of stream, 4,569 acres of wetlands and 13 acres of ponds. Mining this alternative would impact 72 percent of the total area of waters of the US within the project area. Of the 262,000,000 tons of recoverable ore within the project area, this alternative would allow the recovery of approximately 204,000,000 tons, or 78% recovery of the ore in the area.

c. No Action Alternative

The **No Action Alternative** consists of 12 years of mining and would have no impacts to waters of the US. This alternative is located entirely within the S33 Tract because there is not sufficient non-jurisdictional area within either of the other tracts to develop a logistically reasonable mine plan. The Corps found that this No Action Alternative is not economically feasible in Section 2.7.4 of the DEIS.

d. Mine Discontinuation/Importation of Phosphate Rock Alternatives

Other no action alternatives including **Mine Discontinuation and Importation of Phosphate Rock** were explored and eliminated from detailed study, as were other alignments and mining sequences. Different mining methods were also considered and eliminated from detailed study. These alternatives and the reasons for their elimination from study are discussed in Section 2.6 of the FEIS.

6. Impacts of the Proposed Action

Section 4 of the FEIS provides a full discussion of the environmental impacts associated with the proposed project. Many of the environmental concerns expressed in comments on the FEIS and proposed project focus on; 1) the direct effects and overall scale of the impact to wetlands and other waters, and the effects of the loss of upland and wetland watershed on the surrounding waters 2) potential effects to surface and groundwater quantity and quality, 3) potential for heavy metal, particularly cadmium, contamination and 4) direct and indirect effects on fish and wildlife communities.

Late in this review process, an area of wetland hardwood forest within the Bonnerton Tract was characterized by the North Carolina Natural Heritage Program as a Significant Natural Heritage Area of national importance. This area has become an issue of interest and is further discussed below.

a. Wetlands, Open Waters, Watersheds and the Surrounding Estuary

Wetlands perform many important functions, including surface water storage, groundwater discharge and recharge, nutrient accumulation and cycling, organic matter production and export, capture of sediment and other pollutants, and wildlife refuge and habitat. The types of wetland communities within the project area, the functions they perform and the potential impacts that would occur to these as a result of this project, are thoroughly described in Sections 3 and 4 of the FEIS.

All of the locational alternatives, including Modified Alternative L, are within the 15,100 acre project area. The project area contains 6,380 acres of wetlands and open waters, and 115,843 linear feet of streams. The alternatives presented represent varying degrees of impact to those waters of the US, ranging from 0 to nearly 100% of the streams and wetlands found in the project area.

Modified Alternative L would allow mining and mine related activities to occur within approximately 11,343 acres. The project will impact 3,927 acres of waters of the US, including 22,435 linear feet of streams tributary and subtributary to the Pamlico River, 3,909 acres of wetlands and 11 acres of ponds. The open water, wetland and upland communities within the project area, and within Modified Alternative L, are thoroughly described in Sections 3.8 and 3.9 of the FEIS. As described in Section 3.8 of the FEIS, various community types found within the project areas were mapped as "Biotic Communities". The review team identified the bottomland hardwood forest as a community type that should be a primary focus in minimization efforts. As a result, bottomland hardwood forests represent only a small percentage of the project's total impacts. The wetland communities to be impacted consist of 63 acres of bottomland hardwood forest, 939 acres of hardwood forest, 879 acres of mixed pine-hardwood forest, 349 acres of pine forest, 264 acres of pocosin bay forest, and 22 acres of sand ridge forest. More altered wetland communities include 329 acres of herbaceous assemblage, 435 acres of shrub-scrub assemblage, and 624 acres of pine plantation.

Within the NCPC tract, mining Modified Alternative L would result in the loss of intermittent headwater sections of Tooley, Drinkwater, Jacobs and Jacks Creeks; Huddles Cut; Huddy Gut, 1 unnamed tributary to the Pamlico River (Identified as UP1) and 4 unnamed tributaries to South Creek (Identified as UTs 2, 3, 4 and 5). Direct stream impacts within the NCPC Tract would total 3,981 linear feet of intermittent headwaters. An approximately 220 linear foot section of PCS's main depressurization water outfall canal will be relocated as part of the NC Highway 306 realignment. Within the Bonnerton tract, mining Modified Alternative L would result in the loss of 2,533 linear feet of perennial and 4,786 linear feet of intermittent tributaries to Porter and Durham Creeks. Within the S33 Tract, mining under Modified Alternative L would result in the loss of headwater portions of Bailey Creek, Broomfield Swamp and Cypress Run totaling 7,799

linear feet of perennial stream and 3,336 linear feet of intermittent stream. These impacts are more thoroughly described in Section 4.2.2.6.7 of the FEIS.

Impacts to most of the less disturbed and/or higher quality wetlands have been avoided. Many of the wetlands that will be lost to this mine expansion are in extreme headwater and non-riparian landscape positions. Many are wet flats typically found on inter-stream divides and terraces. A large portion of the wetlands to be impacted by this project have been subject to agricultural and silvicultural activities over at least the last 6 decades, and many are currently being manipulated and maintained in an early to mid-successional condition through non-regulated land-use practices. The review team identified the bottomland hardwood forest as a community type that should be a primary focus in minimization efforts. As a result, bottomland hardwood forests represent only a small percentage of the project's total impacts (63 acres). All of the bottomland hardwood areas to be impacted by this project have been compromised by past ditching and channelization efforts. The NCPC Tract contains numerous named and unnamed tributaries to South Creek and the Pamlico River, all of which have been ditched and channelized in their upstream portions. Past agricultural, forestry and mining practices have altered the headwater stream valleys. None of the streams to be impacted within the NCPC Tract are perennial. An approximately 220 linear foot section of PCS's main depressurization water outfall canal will be relocated as part of the NC Highway 306 realignment. This canal has been determined a Water of the US and exhibits perennial flow but does not exhibit natural stream form or function. The Bonnerton Tract contains the headwaters of Porter Creek and several other unnamed small streams, most of which have also been ditched and channelized by past agricultural and silvicultural practices. S33 contains the headwaters of South Creek, Cypress Run and Broomfield Swamp all of which have been ditched and/or deeply channelized and are actively maintained as part of ongoing agricultural operations.

Direct impacts to uplands and wetlands under Modified Alternative L will result in short term reduction and permanent alteration to the watersheds of two named creeks that are direct tributaries to the Pamlico River. Huddles Cut will experience an approximately 75% reduction in existing watershed and Huddy Gut will experience an approximately 30% reduction in existing watershed. Additionally, a third, unnamed tributary to the Pamlico River (Identified as UP1) Pamlico River will experience an approximately 45% reduction in existing watershed.

There will also be short term loss and permanent alteration of the watersheds of two major tributaries of the lower Pamlico River, South and Durham Creeks, and their tributaries, as a result of direct impacts to uplands and wetlands under modified Alternative L. Approximately 18% of the South Creek watershed will be affected by mining and mine related activities (a total of approximately 23% of the estimated historic watershed when added to impacts of previous mining activity). This includes approximately 45% of the total watershed of 5 unnamed tributaries, approximately 36% of the current Tooley Creek watershed, approximately 51% of the current Drinkwater Creek watershed, approximately 41% of the current Jacobs Creek watershed, approximately 64% of the current Jacks Creek watershed, approximately 40% of the current Bailey Creek watershed, approximately 3% of the current Whitehurst Creek watershed, approximately 78% of the Broomfield Swamp watershed, and approximately 91% of the Cypress Run watershed. Approximately 7% of the Durham Creek watershed will be altered by mining and mine related activities (a total of 10% of the estimated historic watershed when added to

impacts of previous mining activity) including approximately 65% of the current Porter Creek watershed. Reclamation activities will eventually restore some watershed function to these impacted areas.

Several of these systems have experienced previous alteration in watershed as a result of past activities including agriculture, silviculture and mining. The estimated total cumulative watershed alteration for these creeks, when this action is combined with past actions, is as follows: approximately 84% of the estimated historic watershed of Huddles Cut, approximately 40% of the estimated historic watershed of Tooley Creek, approximately 60% of the estimated historic watershed of Drinkwater Creek, approximately 58% of the estimated historic watershed of Jacob Creek, approximately 84% of the estimated historic watershed of Jacks Creek, approximately 59% of the estimated historic watershed of Whitehurst Creek², approximately 58% of the estimated historic watershed of Bailey Creek, and approximately 76% of the estimated historic watershed of Porter Creek.

It should be noted that the watershed percentages reported in the above 3 paragraphs differ from those reported in the FEIS for Alternative L. This is due in part to the further minimization efforts accomplished since release of the FEIS. This is also due in part to a further refinement of the drainage basin estimations. During the 404q elevation process, EPA and other agencies became more focused on the exact amount of drainage basin reduction. Calculating exact watershed for these creeks is difficult since there is little topography in this area, making it therefore difficult to determine exact breaks in surface flow. Determining overall reduction in watershed is further complicated by the fact that previous ditching activities have changed flow patterns, redirecting flow from the watershed of one creek to the watershed of another. This resulted in an increase in watershed size for some creeks. As more focus was placed on the amount of watershed alteration the Corps found it appropriate to attempt to better define the historic watersheds and estimate the change that has taken place from that original acreage.

It should also be recognized, that some of the acreage contributing to the historic alteration in watershed consists of previously mined areas that have been or are actively being reclaimed as required by State of North Carolina mining regulations. The reclamation activity has returned some of this watershed area, albeit in a somewhat reduced functional state. The watershed reduction figures provided above include all areas previously mined, without any consideration of the reclamation efforts. Any permit I issue, and likely any mining permit issued by the State of North Carolina, will require that future mining areas are also reclaimed to a useful state that will contribute watershed functions to the surrounding waters.

Indirect impacts to surface waters resulting from watershed reduction may include local reductions in nutrient input and cycling capabilities and reduction in the quantity and quality of water introduced into the system by both surface runoff and shallow groundwater. Possible impacts include potential changes in water chemistry and water quality, including alterations in salinity dynamics, increases in turbidity and changes and reductions in both dissolved and particulate organic matter inputs. These alterations could lead to at least local decreases in productivity and habitat value, and degradation of Essential Fish Habitat (EFH) and Habitat

² It should be noted that approximately 113 acres of the Whitehurst Creek watershed has been restored to pre-mining contours and successfully revegetated with native species.

Areas of Particular Concern (HAPC) including nursery areas. The potential scale, severity and results of direct and potential indirect impacts to wetlands, watersheds, and the surrounding estuary are discussed in detail in Sections 4.2.1 and 4.2.2 of the FEIS.

The impacted tributary creeks are part of the larger South and Durham Creek systems, which in turn flow into the Pamlico River and the extensive Albemarle/Pamlico Estuary. The water quality benefits of the impacted areas to some degree affect the overall water quality of the larger systems into which they flow. It is not likely, however, that changes in water quality within these impacted tributary creeks will result in unacceptable adverse effects in their receiving waters, because of the relatively small size of these impacted waterways, and the overarching influences of the Pamlico-Tar River discharge, and the wind-tide driven Albemarle/Pamlico estuarine system.

The compensatory mitigation, performed within the same watershed, will offset many of the adverse effects by replacing many lost functions to the receiving waters of South Creek and the Pamlico River, including cycling and sequestration of nutrients, retention of floodwaters, and overall filtration of surface water input. The locations of the mitigation sites are shown on figure 7, Appendix, I of the FEIS. Additionally, the Corps, in consultation with State and Federal resource agencies and the Permittee has developed a monitoring and assessment program designed to ensure that any unexpected adverse effects to the aquatic system are identified and all practicable measures are undertaken to reduce such effects. The applicant has accepted this program and it will be incorporated as a special condition to any permit I issue.

Bonnerton Nonriverine Wet Hardwood Forest

The Environmental Protection Agency (EPA) advised the Corps by letter dated April 30, 2008 that approximately 272 acres of nonriverine wet hardwood forest within the center of the Bonnerton Tract was considered by the North Carolina Natural Heritage Program (NCNHP) as a Significant Natural Heritage Area (SNHA) of national importance. NCNHP classified the area as a nonriverine wet hardwood forest. The NCNHP describes these communities as wetland forests of poorly drained, mineral soils on broad interstream flats, which are “naturally dominated by some of the same trees as bottomland hardwood forests along large brownwater rivers.” Widespread species such as white-tailed deer, black bear, gray squirrel and turkey are present in these areas, as are high densities and diversities of neotropical migrant birds such as wood thrush, ovenbird, Swainson’s warbler, worm-eating warbler, prothonotary warbler, hooded warbler, white-breasted nuthatch, and the Coastal Plain black-throated green warbler. Nonriverine Wet Hardwood Forests are caused by seasonal high water tables and limited runoff of rainfall, due to flatness and natural absence of streams. Generally, no additional nutrients are brought in to these systems by flowing water, and aquatic animals cannot move in from the river during flooded times³. The Corps concurs that most of the area is a relatively mature, contiguous wetland system and exhibits most, if not all, of the characteristics described above. According to

³ Schafale, Michael P., 2008, North Carolina Natural Heritage Program, “Nonriverine Wet Hardwood Forests in North Carolina, Status and Trends” North Carolina Natural Heritage Program Publication available at <http://www.ncnhp.org>

the description provided by NCNHP, however, this system has little communication with the other communities which comprise the surrounding aquatic ecosystem. The wildlife common to these areas are not unique to these areas, and are not dependent on wetlands or aquatic ecosystems⁴.

The entire Bonnerton Tract, including the nonriverine wet hardwood forest, has been a part of the project area since 2001. In 2005, the Corps, North Carolina Division of Water Quality (NCDWQ) and NCNHP personnel conducted a site visit to the project area, for the purpose of identifying any natural heritage areas. NCNHP submitted an assessment in 2005 discussing the Bonnerton area. The 2005 assessment classified approximately 203 acres of the Bonnerton Tract as a SNHA of State (rather than National) significance. The area identified at that time consisted of approximately 194 acres nonriverine wet hardwood forest, as described in Schafale and Weakley's "Classification of the Natural Communities of North Carolina Third Approximation" (Schafale and Weakley 1990), and approximately 9 acres of "secondary area." The NCNHP found the area to be of "excellent condition" and "one of the best remaining examples in the state" noting, however that the flood regime had been somewhat altered by ditching within and adjacent to the site.

NCNHP's January 2008 report on nonriverine wet hardwood forests listed 25 known sites within North Carolina and ranked the sites based on a combination of condition, size, and landscape context, with condition "primarily based on stand maturity and composition." Of these 25 sites, 3 ranked "excellent" 7 ranked a "very good" and the remainder ranked a "fair". The Bonnerton site, listed as 198 acres and the third largest site ranked, was considered "very good". The report noted that the almost exclusive range of nonriverine wet hardwood forests is northeastern North Carolina and southeastern Virginia.

It was unclear to the Corps why NCNHP changed the characterization of the site from "state significance" in 2005 to "national significance" in April 2008, and why the size increased from approximately 200 acres in both the 2005 assessment and the January, 2008 report to 272 acres in April 2008. In an attempt to understand the classification more fully, the Corps posed several questions to Mr. Schafale. Mr. Schafale responded by an August 26, 2008 e-mail, stating that the SNHA on the Bonnerton Tract is now comprised of the 198 acre nonriverine wet hardwood Forest and an additional approximately 73 acres comprised of a headwater stream on the face of the Suffolk Scarp to the west of the Bonnerton Tract, and other areas that are included as "connectors but aren't otherwise in good condition." Mr. Schafale explained that the listing of sites as either state or nationally significant is a product of the North Carolina Natural Heritage Program, and is vetted only internally within that program. There is no oversight by any outside agency or group, no rulemaking concerning how these sites are designated, and no public input into the designations. The listing "does not confer protection to a site, nor does it give sites regulatory status or indicate that they have regulatory status with any agency. "North Carolina Natural Heritage Program Biennial Protection Plan 2008," p. i. Mr. Schafale explained the elevation of the status of the Bonnerton site as resulting from the degradation of other known sites, and gave as examples sites logged in the 1980's and 1990's.

⁴ Hall, Stephen P. and Schafale, Michael P., 1999, "Conservation Assessment of the Southeast Coastal Plain of North Carolina, Using Site-Oriented and Landscape-Oriented Analyses", North Carolina Natural Heritage Program Publication available at <http://www.ncnhp.org>

Alternative L as presented in the FEIS avoided impacts to approximately 50 acres (approximately 25%) of the 198 acres of nonriverine wet hardwood forest within the 272 acre SNHA in the immediate riparian areas and headwaters of Porter Creek. On January 15, 2009, NCDWQ issued certification pursuant to Section 401 of the Clean Water Act that mining Alternative L would not violate State water quality standards provided several conditions were followed. One of these conditions required the avoidance of an additional approximately 124 acres of the SNHA. Modified Alternative L will avoid impacts to approximately 174 acres (approximately 64%) of this SNHA. The areas of this SNHA to be impacted under Modified Alternative L include mostly nonriverine wet hardwood forest area that has been more recently (previous 15- 20 years) impacted through normal silvicultural activities and areas of other community types that were added to the SNHA as connectors.

b. Surface and Groundwater Quantity and Quality

The proposed project also has the potential to impact surface water quality through the introduction of contaminants and/or sediments into adjacent waters. As discussed in Section 4.2.1.6 of the FEIS, mining activities are not expected to result in increased sedimentation within surrounding waters. As mining progresses, the first stage of mine development includes construction of perimeter canals and utility corridors. Prior to this construction, a silt ditch is constructed along the outside of the disturbance area. This silt ditch is not connected to any outlet and contains all sediment generated during construction activities. Additionally, these activities will require authorization through the NC Division of Land Resources (NCDLR) and it is anticipated that potential impacts will be further minimized through implementation of NCDLR requirements.

It is likely that the project will have some affect on the upstream reaches of creeks flowing from the project area. Based on available data from the site however, it does not appear that these affects will result in significant degradation of these waters. The 2008 end of year report for the NCPC Tract Stream Monitoring Program for PCS Phosphate Company, Inc.⁵ assessed conditions within Huddles Gut, a tributary of the Pamlico River located at the north end of the NCPC Tract, both before and after mine related disturbance. During 2006, approximately 15% of the drainage basin for Huddles cut was effectively removed due to ongoing mine related activities. This report recognizes a post-disturbance reduction of flow in the upper reaches of the system on the stream portions affected, as well as differences in salinity. Other water quality parameters, including turbidity, dissolved oxygen, pH, ammonium, nitrate and Kjeldahl nitrogen, particulate nitrogen, orthophosphate, total dissolved and particulate phosphorus, chlorophyll *a*, and fluoride, exhibited little difference in pre- and post-disturbance trends and values.

The introduction of any other contaminants into surrounding watersheds will also be minimal. Once the perimeter canal system and utility corridors are constructed, all runoff from mining activities will be contained internally. The only input of water into the estuary as a result of the mining activities will occur with the discharge of groundwater removed from the aquifer during

⁵ CZR Incorporated, Skaggs, and Clough, 2009, "Post-Disturbance Year Two (2008) End of Year Report for the NCPC Tract Stream Monitoring Program for PCS Phosphate Company, Inc.", Prepared for PCS Phosphate Company, Inc., Environmental Affairs Department, Aurora, North Carolina.

the depressurization process into the Pamlico River proper. This discharge is authorized and monitored pursuant to an NPDES permit issued by the North Carolina Department of Environment and Natural Resources (NCDENR).

Section 4.1.2 of the FEIS describes the dewatering of the Castle Hayne aquifer as well as periodic dewatering of the shallow aquifer systems surrounding the mine facility. PCS currently holds a permit from the NCDENR to withdraw up to 78 mgd from the aquifers in association with the mine depressurization. Potential indirect effects to adjacent shallow groundwater quantity and quality are discussed in Section 4.2.1.4 of the FEIS. Study has indicated that the pumping of the aquifer has minimal to no affect on the perched water table surrounding the activity due to confining layers between the perched zone and the underlying aquifers. Therefore, the depressurization activities are not likely to affect the hydrology of neighboring surface waters or wetlands. Investigation of the groundwater within older reclaimed areas revealed that some areas exhibit elevated levels of arsenic (As), cadmium (Cd), copper (Cu), and Zinc (Zn) however, all were well below national primary and secondary drinking water standards. The Castle Hayne withdrawal creates a cone of depression with an approximately 20 mile radius. As discussed in Section 4.1.2.4 of the FEIS, study of vertical and lateral movement of groundwater into the cone of depression indicates that while contamination of the aquifer from brackish water intrusion is a remote possibility, it is highly unlikely

Finally, the NC Division of Water Quality has issued a Water Quality Certification pursuant to Section 401 of the Clean Water Act, finding that modified Alternative L will not result in a violation of applicable Water Quality Standards. The certification includes conditions requiring the monitoring of surface waters and groundwater. These conditions will be incorporated as conditions to any permit I issue.

c. Cadmium Concentrations

As thoroughly discussed in Section 4.1.3.1 of the FEIS, study indicates that the use of the gypsum-clay blend material in the reclamation process results in an above background level accumulation of the heavy metal cadmium (Cd) in soils of the reclaimed areas. Cadmium is a teratogen, a carcinogen and a possible mutagen, and is known to bioaccumulate.

In complying with conditions of the 1997 CWA permit, PCS worked with the Corps and other review agencies to investigate and mitigate for any potential effects of this cadmium accumulation. As a result of these efforts, PCS was required to cap reclamation sites with an average of 3 feet of clean soil. Recent compliance inspections have revealed that PCS has met or exceeded this requirement in all areas. Soil samples were taken in 2008 and are being analyzed to determine whether cadmium levels in the capped areas are similar to background soils for the region, as required by the 1997 CWA permit. PCS will be required to continue this effort in the reclamation of all mine areas authorized by this permit action, and the capped areas will be monitored to ensure efforts are successful in reducing the levels of cadmium available for uptake in the soil surface.

PCS has also conducted a study to determine whether cadmium has been introduced to surrounding areas outside of the mine and reclamation areas as a result of the mining and/or reclamation activity. Cadmium is a naturally occurring element in the surrounding land and waters, and can become enriched as a result of many human activities. All findings above expected background levels were either not attributable to PCS activity or were attributable to historic practices long discontinued. Section 4.1.3.1 contains a thorough description of this study.

d. Fish and Wildlife Communities

Authorization of Modified Alternative L will allow mining and mine related activities to occur within approximately 11,343 acres including 7,416 acres of uplands and 3,927 acres of wetland habitats. As discussed in sections 4.2.1.8, 4.2.1.9, and 4.2.1.11, this activity will result in the long-term alteration and, in some cases permanent loss of wetland and upland wildlife habitat. As further discussed in these sections, the mining activities will take place incrementally, allowing most mobile terrestrial and aquatic wildlife species to seek refuge in other areas as mining progresses. Additionally, reclamation efforts will result in reestablishment of terrestrial wildlife habitat in the mined areas. This incremental mine progression combined with reclamation efforts will also ensure that over time wildlife populations are not isolated by the work. Finally, the avoidance and minimization efforts incorporated into Modified Alternative L will result in the continued existence of unaltered upland and wetland buffer and wildlife corridors along the Pamlico River, South Creek, Durham Creek and their tributaries.

Under Modified Alternative L, direct impacts to much of the headwaters and riparian areas of the creeks originating in the project area, as well as all of the coastal marsh and open water nursery areas, are avoided. Of the four North Carolina Wildlife Resources Commission (NCWRC) designated inland Primary Nursery Areas (PNA) affected, approximately 15% of the Jacks Creek watershed, approximately 40% of the Jacobs Creek watershed, approximately 60% of the Tooley Creek watershed and approximately 25% of the Porter Creek watershed will remain intact. Regularly flooded, riparian wetlands such as those avoided typically provide high rates of organic carbon exports providing the base for many downstream food webs. Avoidance of these vegetated riparian areas will ensure that the project area creeks will continue to receive some level of dissolved and particulate carbon.

While loss of watershed area will likely have some localized effect on the tributaries originating in the project area, evidence indicates that the habitat value and nursery functions of these tributaries will not be lost. Section 4.2 of the FEIS thoroughly discusses the likely indirect effects of the project on surrounding wetlands and aquatic habitat, including nursery areas and EFH. As part of the ongoing NCPC Tract Stream Monitoring Program, the investigators sampled fish and benthic invertebrate populations within downstream portions of Huddles Cut pre- and post- watershed reduction and found no relationship between abundance, richness or community structure and drainage basin reduction (CZR, Skaggs and Clough, 2009). As referenced in Sections 3 and 4 of the FEIS, onsite research has indicated that relatively large watersheds are not essential to the recruitment and development of fishery species. Work

conducted in the project area^{6 7 8} indicates that recruitment and development of post larval fisheries species such as spot (*Leiostomus xanthurus*), croaker (*Micropogonias undulates*) and Atlantic menhaden (*Brevoortia tyrannus*) as well as benthic invertebrate populations are similar within the natural creeks of the project area and PAII, a man-made system within the project area with less than 20 acres of watershed. An article in the September 2008 edition of the NCWRC's publication "Wildlife in North Carolina" reported that recent sampling revealed a "similar mixture of fresh and saltwater species" within the PNA creeks and PAII.

Sections 4.2.1.6 and 4.2.1.11.2 of the FEIS discuss the controlling influence the Pamlico River, Durham and South Creek have on their respective tributaries. South Creek has an approximately 49,700 acre watershed. Approximately 18% of this, will be affected by the proposed mining activities. Durham Creek has an approximately 37,500 acre watershed. Approximately 7% of this watershed will be affected by the proposed mining activity, primarily through impacts to the Porter Creek watershed. Otherwise, the Durham Creek watershed is relatively undisturbed and forested. Because of the relatively small percentage of watershed alteration, and the fact that Porter Creek empties essentially at the mouth of Durham Creek thereby limiting the influence to upstream areas, any impact to the estuarine functions of Durham Creek will be minimal.

Effects to the estuarine functions of the Pamlico River and greater Albemarle/Pamlico Sound Estuary as a result of this project should be minimal. The lower Pamlico River has an immediate watershed in excess of 800,000 acres; Modified Alternative L would impact less than 1% of this. While the Pamlico River and Sound do exert an influence on the salinity of the creeks within the project area as indicated by available data discussed in Sections 4.2.1.6, 4.2.1.11.2 of the FEIS, it is unlikely that the reduction of freshwater input in these tributary creeks will impact the salinity regime of the River or Sound. The contribution of nutrients including dissolved and particulate organic matter from the affected creeks may be decreased, however, this decrease should be adequately mitigated by the increase of inputs from the mitigation areas. Finally, the reduction of habitat value within the tributaries of the project area, particularly those PNAs, may result in a decrease in their contribution to fish and invertebrate population within the River and Sound. This decrease too should be adequately compensated for by the increased contribution made by creeks in and around the mitigation areas.

7. Proposed Compensatory Mitigation Plan

On April 10, 2008, the Corps and EPA issued a new final rule entitled "Compensatory Mitigation for Losses of Aquatic Resources; Final Rule," governing compensatory mitigation for activities authorized by DA permits. This new regulation provided that permit applications received prior to the effective date of the rule would be processed in accordance with previous

⁶ West, T.L., 1990, "Benthic Invertebrate Utilization of Man-Made and Natural Wetlands", Report to Texasgulf Chemicals, Inc. Aurora, NC.

⁷ Rulifson, R.A., 1990, "Finfish Utilization of Man-Initiated and Adjacent Natural Creeks of South Creek Estuary, North Carolina, 1984-88", Report to Texasgulf Chemicals, Inc. Aurora, NC, Institute for Coastal and Marine Resource Technical Report No. 90-01.

⁸ West, T.L., L.M. Clough and W.G. Ambrose Jr., 2000, Assessment of Function in an Oligohaline Environment: Lessons Learned by Comparing Created and Natural Habitats", Ecological Engineering 15 (2000), pp 303-321.

compensatory mitigation guidance. Although this specific permit application predates the mitigation regulation, PCS voluntarily considered the new regulations in the development of its comprehensive mitigation plan.

The compensatory mitigation provided for this project is discussed in Section 4.3.2.3 of the FEIS and thoroughly described in Appendix I. Compensatory mitigation for wetlands, streams, and riparian buffers will be achieved through restoration of prior converted cropland to hardwood wetlands or pond pine-bay forest wetlands, restoration of hydrology and natural vegetation in wetland areas that have been drained or partially drained and are currently heavily managed pine plantation, restoration of hydrology to headwater stream and riparian systems, restoration of geomorphology and hydrology to degraded intermittent and perennial streams using principles of natural channel design appropriate for landscape position, enhancement of adjacent wetland areas either by replanting appropriate vegetation and/or manipulation of hydroperiods, restoration of riparian buffers in conjunction with stream mitigation and/or flexible buffer mitigation approaches and preservation of existing wetlands and/or streams by expansion of mitigation sites to include adjacent natural areas which may be threatened by development or degradation, or preservation of other valuable high quality wetlands. In total, the plan includes restoration of 7,968 acres of wetlands, 756 acres of wetland enhancement, and 2,472 acres of preservation. The plan also includes 44,043 linear feet of stream restoration, 7,994 linear feet of stream enhancement, and 32,851 linear feet of preservation. Table 2 provides total acreages and mitigation types by site.

PCS employed a team of biologists, stream ecologists, engineers, hydrogeologists, soils scientists, and compensatory mitigation practitioners to design a comprehensive mitigation package using a watershed based strategy. As suggested by USGS a larger scale, watershed focus will likely yield more successful and beneficial compensatory mitigation than locally focused projects⁹. The Corps and the NCDWQ worked with this group to develop a comprehensive mitigation package that includes the re-establishment, rehabilitation, enhancement of previously lost or degraded wetland areas within similar landscape positions as impacted areas as well as the preservation of similarly situated high quality wetlands. The mitigation will provide important hydrology, water quality and habitat functions to South Creek, Bath Creek, Pantego Creek, the Pungo River and the Bay River, most part of the lower Pamlico River watershed and all part of the greater Pamlico Sound estuary.

The Corps and the NCDWQ worked with PCS to develop a comprehensive mitigation package that includes the re-establishment, rehabilitation, enhancement of previously lost or degraded wetland areas within similar landscape positions as impacted areas as well as the preservation of similarly situated high quality wetlands. Several of the mitigation properties involve the restoration of entire watersheds, greatly increasing the potential for success. The mitigation will provide important hydrology, water quality and habitat functions to South Creek, Bath Creek,

⁹ Spruill, T.B., Harned, D.A., Ruhl, P.M., Eimers, J.L., McMahon, G., Smith, K.E., Galeone, D.R., and Woodside, M.D., 1998, Water Quality in the Albemarle-Pamlico Drainage Basin, North Carolina and Virginia, 1992-95: U.S. Geological Survey Circular 1157, on line at <URL: <http://water.usgs.gov/pubs/circ1157>>, updated May 11, 1998 .

Pantego Creek, the Pungo River and the Bay River, most of which are part of the lower Pamlico River watershed and all of which are part of the greater Pamlico Sound estuary. Successful mitigation will provide enhanced flood storage, nursery habitat, nutrient storage, input and cycling as well as improved overall water quality. These areas will also restore and enhance wildlife habitat, groundwater recharge and other functional values of wetland systems. Several of the mitigation properties are currently intensively farmed and/or logged and contain large portions or entire watersheds of named creeks that flow directly into fisheries nursery areas. For example, the Hell Swamp site contains the majority of the Scott Creek watershed and Scott Creek empties directly into Pungo Creek, a NCDMF designated Special Secondary Nursery Area.

The mitigation plan is comprised of 9 sites. PCS will provide compensatory mitigation in the form of restoration or restoration equivalents for all wetland impacts at a 2:1 ratio. Within the South Creek watershed, PCS will restore approximately 3,520 acres of wetland, enhance approximately 543 acres of wetland and preserve approximately 1,710 acres of wetland. PCS will restore approximately 885 acres of wetland, enhance 46 acres of wetlands and preserve 41 acres of wetlands in the watershed of Pungo Creek, which flows into the Pungo River, a tributary to the Pamlico River. PCS will restore 221 acres of wetland, enhance 38 acres of wetlands and preserve 20 acres of wetland within the upper watershed of 2 creeks tributary to Bath Creek which flows into the Pamlico River immediately across the River from the impact areas. Any remaining required mitigation will come from an approximately 4,200 acre site also located in the watershed of the Pungo River and made up of 3,342 acres of wetland restoration, 129 acres of wetland enhancement and 701 acres of wetland preservation.

The majority of the mitigation will be within the same 8-digit hydrologic unit code (HUC) as the project, HUC 03020104, which includes the Lower Pamlico River, South Creek and the Pungo River. A 603 acre mitigation tract is located within the 8-digit HUC immediately south of HUC 03020104. This tract consists of approximately 110 acres of wetland restoration, 162 acres of wetland enhancement and 196 acres of wetland preservation, as well as 3,960 linear feet of headwater stream preservation. This tract is contiguous with the Parker Farm, a 2000+ acre wetland restoration site located within HUC 03020104, a part of which was used as compensatory mitigation for PCS's 1997 CWA permit. Although this acreage is in an adjacent 8-digit HUC, it is considered appropriate compensation for the impacts of Modified Alternative L, because it is contiguous with forested wetlands adjacent to South Creek and will provide for an unbroken forested system of wildlife habitat and refuge. In addition, this tract is in the headwaters of Vandamere Creek, a tributary of the Neuse River. Both the Neuse and Pamlico Rivers are tributary to the Albemarle/Pamlico Sound Estuary. Surface waters are routinely exchanged between these sub-basins because of existing manmade drainage features in combination with area topography.

The comprehensive plan also includes mitigation to offset the loss of streams associated with Modified Alternative L. To compensate for the 10,332 linear feet of perennial stream and 12,103 linear feet of intermittent stream lost under Modified Alternative L, PCS will provide restoration or restoration equivalent (enhancement at a 2.5:1 ratio or preservation at a 5:1 ratio) stream mitigation at or above the maximum ratios recommended in the April 2003 Stream Mitigation Guidelines developed by the Wilmington District, USEPA, NCDWQ, and North Carolina

Wildlife Resources Commission. Many of the restoration projects are riparian headwater systems being constructed pursuant to the April 2007 paper titled "Information Regarding Stream Restoration with Emphasis on the Coastal Plain" prepared by the Wilmington District Corps of Engineers and the NCDWQ. All of the stream mitigation will be accomplished within wetland restoration or preservation sites.

All stream reaches impacted under Modified Alternative L are located in the upper headwaters of tributaries to the Pamlico River Estuary, as is the stream mitigation proposed by the applicant. Within the South Creek watershed, the applicant will restore approximately 3,000 linear feet of stream and preserve approximately 30,696 linear feet of stream. PCS will restore approximately 19,783 linear feet of stream at Hell Swamp, in the watershed of Pungo Creek, which flows into the Pungo River, a tributary to the Pamlico River. PCS will also restore 12,467 linear feet of stream and preserve 2,155 linear feet of stream within the upper watershed of 2 creeks that flow into Bath Creek, a tributary of the Pamlico River. Finally, PCS will restore approximately 8,793 linear feet of stream and enhance approximately 7,994 linear feet of stream in the watershed of Rutman Creek, also tributary to Pungo River. All of this work will occur within the same HUC as the project except for approximately 3,960 linear feet of preservation which will occur in the HUC to the south of the project area discussed above.

The broad suite of functions typically provided by all wetlands includes the maintenance of hydrologic features (surface and subsurface water storage), improvement and maintenance of water quality (sediment and pollutant retention, nutrient and pathogen transformation and removal), and wildlife habitat (food, cover and travel corridors). PCS's overall mitigation plan is designed to replace these wetland functions lost to the mining activities. If fully successful, the restoration and enhancement work will offset project impacts, and, in some cases result in higher functioning wetland systems than those impacted. Water that discharges into streams originating within these restored wetlands will be of much higher quality than what is currently discharging, unchecked, into the larger estuarine system via ditches and canals within the project area. Hydrologic and water quality improvements will be realized very quickly once ditches are plugged and the sites constructed.

The common wetland function that takes more time to replace is the habitat function provided by older plant communities. However, the temporal lag that exists between a newly planted mitigation site and a mature condition does not mean that the younger mitigation sites provide no habitat functions. Past mitigation work undertaken by PCS within similarly situated landscape positions clearly shows that animal species adapted to early successional sites will rapidly colonize the restored areas and as these sites mature, the array of species evolve toward those adapted to older wetland community types. At maturity, PCS's mitigation work will provide enhanced habitat functions over those wetlands lost to mining that are currently being kept in early successional stages and pine plantation monocultures via forestry practices. The fact that this mitigation work will be developed ahead of impacts also minimizes the effects of such temporal lag.

Execution of the mitigation plan will result in the restoration of higher functioning riparian wetlands in support of the Pamlico estuarine system. Currently, both the impact area wetlands and the restoration sites exhibit similar channelization and ditching features that have altered the

exchange of waters between waterways and their adjacent floodplains. This disconnection allows storm water to rapidly discharge directly into the river, carrying with it sediment and other pollutants. Several of the mitigation sites contain entire watersheds, including intermittent to second-order streams that will be buffered by restored riparian wetlands. These wetlands will stabilize the riparian zones, remove sediments and nutrients, provide organic input to the food web, store and attenuate flood waters, and provide valuable riparian habitat.

Additionally, many of the mitigation sites are currently in intensive agriculture and silviculture production. Removal of these areas from agricultural production will provide benefits to the overall Albemarle-Pamlico estuarine system. The Albemarle-Pamlico National Estuarine Program (APNEP) has identified agricultural runoff as a major source of nitrogen loading leading to algal blooms and eutrophication within the estuarine portion of the Albemarle-Pamlico system¹⁰. Based on USGS research within the Albemarle-Pamlico system, it is probable that conversion of these areas from agriculture to forested watershed will substantially reduce the nutrient load (Spruill et al 1998). The APNEP has also identified freshwater intrusion from increased runoff rates promoted by agricultural drainage practices as a potential harm to fisheries nursery areas. PCS's compensatory mitigation package includes removal of intense agricultural and silvicultural drainage and reestablishment of more natural drainage regimes within the headwaters of South Creek and Pungo Creek, both identified as Special Secondary Nursery Areas by the North Carolina Division of Marine Fisheries.

Execution of the mitigation plan will result in the restoration, enhancement or preservation of over 84,000 linear feet of high functioning streams and headwater systems within the same watershed as the project. Appropriate coastal plain stream morphology will be restored, reconnecting stream channels with their respective floodplains, thereby allowing the adjacent riparian wetland areas to cleanse the water. This represents a functional uplift in that most of the streams that will be impacted by this project are channelized and rapidly distribute their waters directly into South Creek and the lower Pamlico River, without the benefit of the flow attenuation and treatment functions wetlands provide.

This mitigation plan includes an approximately 10% overbuild of wetlands to be used as a contingency in the event some of the mitigation projects do not meet success criteria. PCS proposes to fully construct and preserve all sites as described in Appendix I, and subsequent Corps approved site specific mitigation plans. If all sites are 100% successful, the plan will deliver more wetland mitigation acreage than is necessary to compensate for the authorized impacts. PCS has requested that in that event, it be allowed to "bank" the excess mitigation for future use. I have agreed with that concept. If all mitigation is successful, a portion of Rutman Phase II and the entirety of Rutman Phase I will be excess mitigation. The success and value of the remainder of Rutman Phase II and all of Rutman Phase III is not dependant upon the existence or success of the remainder of the site. If all mitigation is successful, I will therefore allow PCS to hold a portion of Rutman Phase II and all of Rutman Phase I as potential mitigation for potential future impacts. Because of the interrelatedness of the streams and surrounding wetlands, all stream mitigation contained within the wetland mitigation areas applied, will be included as compensation for the authorized impacts. Stream areas within any portions of the Rutman Site to be banked, may also be banked.

¹⁰ http://h2o.enr.state.nc.us/nep/tarpamlico_river_basin.htm

Any permit I issue will include special conditions requiring the approval of each site-specific plan before PCS may move forward with mining beyond specified areas. Any permit will also include conditions to ensure that sufficient compensatory mitigation has taken place prior to specific impacts occurring. In other words, all compensatory mitigation will be provided in advance of the impact for which they are mitigating.

a. Specific Mitigation Sites

(1) South Creek Corridor Complex. This 8,795 acre Complex includes all mitigation sites associated with this permit action, and the former permit action, preserved in perpetuity and located adjacent to and/or contiguous with South Creek and its headwaters. The Complex is an extensive wildlife corridor and diverse ecosystem of interconnected parcels of existing wetlands, restored, enhanced and preserved wetland and stream mitigation areas, and interspersed uplands linked to a riparian corridor along both sides of South Creek. The establishment of this expansive corridor beginning at its headwaters and progressing 8 miles downstream will greatly benefit South Creek and the Pamlico estuary, offsetting the unavoidable losses of the smaller systems impacted by the mining. The entire Complex has been previously impacted by agriculture and forestry activities, and remaining older tree communities are currently being methodically clear cut. Preservation of the mature systems within the Complex will offset the temporal lag of habitat functions at the younger mitigation sites and when coupled with the wetland restoration work, creates a very important wooded wetland corridor along the upper reaches of South Creek.

(a) Bay City Farm. Formerly Prior-Converted Cropland in intensive agricultural row-crop production, the 709-acre Bay City Farm headwater wetland and stream restoration project, located within the South Creek watershed upstream of the project area, has already been constructed and monitoring is underway. Early results indicate that more than 3,000 linear feet of headwater stream will likely be restored within a historic riparian headwater valley that flows directly into South Creek. Riparian and non-riparian indigenous wetland tree species have been planted on the site within appropriate hydrologic zones. Conversion of this agricultural land back to a wetland ecosystem immediately removed agricultural pesticides, herbicides, fertilizers and sediments from South Creek. Functional uplift over time will include water quality improvement through retention of sediments and other pollutants, nutrient retention and reduction, production and export of organic nutrients, surface water storage, increased groundwater recharge and/or discharge, wildlife habitat, and flood flow attenuation. Plugging of the agricultural ditches for purposes of restoration immediately decelerated the flow of storm water into South Creek. Portions of the Bay City Farm lie within the FEMA 100-year floodplain and the project will also attenuate floods during extreme events.

(b) P Lands. This area is currently in intensive loblolly pine forestry production. Mitigation work on this property will result in the re-establishment and rehabilitation of approximately 2,900 acres of non-riparian and riparian wetlands located within the headwaters of South Creek. The property has been ditched and much of it drained by forestry related activities, rendering the area a mosaic of former and highly stressed wetlands. The filling of the canals and ditches and subsequent conversion of the vegetation community

from a monoculture pine plantation to more appropriate riparian and non-riparian hardwood systems will benefit habitat value and water quality within South Creek, offsetting the losses resulting from the mining of the headwater areas on the NCPC and Bonnerton Tracts. Functional uplift as a result of this work includes increased surface and sub-surface water storage, reduction of runoff and flow velocity, increased production of organic matter, increased opportunity for groundwater recharge and/or discharge, and increased and improved wildlife habitat. Restoration of the P Lands will also decelerate the current rapid delivery of storm water to South Creek via the ditches and canals and result in the re-establishment of a very large, contiguous hardwood wetland ecosystem. The 2,900 acre P Lands tract is located in the headwaters of South Creek, and is an important component of the South Creek Corridor Complex as the 2,900 acre property is located in the headwaters of South Creek.

(c) U Lands. Immediately to the west of the P Lands, this 787 acre site is also located within the headwaters of South Creek and is currently in loblolly pine forestry production. The majority of the site is ditched and is currently being clear cut in phases by Weyerhaeuser. The property is divided into clear cut areas, regenerating clear cuts, and uncut forests. A non-riparian wet hardwood forest will be restored to a majority of the site by filling the drainage network, removing existing vegetation and replanting the site with appropriate wetland trees and shrubs. A large, regenerating wetland at the northeastern tip of the property will be included as preservation mitigation. Functional uplift through restoration of the U Lands will be the same as the P Lands with the biggest gains coming from the deceleration of the current rapid delivery of storm water to South Creek and the re-establishment of a large, contiguous hardwood wetland ecosystem.

(d) Parker Farm Sections H, I and J. The Parker Farm is located adjacent to the P Lands and just east of the Bay City Farm and Gum Run mitigation sites. The 603 acres of Sections H, I, and J are offered as mitigation for this permit. The tract is part of the 2,811-acre Parker Farm property restored as part of the compensatory mitigation plan for the previous permit. Although constructed as part of the Parker Farm, the 603 acres offered here were not part of the mitigation required for the previous permit. Long-term hydrology monitoring documents that 245 acres of non-riparian, wet hardwood flats have been restored in Section H and I, 162 acres of non-riparian wetlands enhancement exists within Section I, and 196 acres of wetland preservation exists in Section J (including the headwaters of Vandemere Creek containing bottomland hardwoods and brackish marsh). The cessation of intensive agricultural practices and plugging of ditches on the Parker Farm resulted in immediate and permanent water quality improvement through retention of sediment and other pollutants, nutrient retention and reduction, production and export of organic nutrients, surface water storage, increased groundwater recharge and/or discharge, wildlife habitat, and flood flow attenuation. Due to the age of the project, larger trees now exist on the site, lessening the effects of overall temporal lag on wildlife habitat. Most of the Parker Farm is located above the 100-year floodplain, although the lower portions of Section J closer to Vandemere Creek perform flood flow attenuation functions. The preserved headwaters along 3,960 feet of Vandemere Creek in Section J and the proximity of Sections H and I to both South Creek and Vandemere Creek, respectively, create multiple hydrologic links for organic matter production and export. The preservation of Section J will allow natural riparian buffer zones to continue to filter pollutants and protect water quality for the headwaters of Vandemere Creek. The Parker Farm

provides a wide and contiguous wildlife corridor connecting two river basins (Pamlico and Bay Rivers).

(e) **Gum Run Sites.** Formerly Prior-Converted Cropland in agricultural row-crop production, the Gum Run sites encompass 89 acres split among three separate tracts: a) Gum Run East (24 acres); b) Gum Run West (24 acres); and c) Gum Run 2 (41 acres). These properties are located immediately to the northeast of the Bay City Farm mitigation site and were developed by PCS in the early 1990's to demonstrate the feasibility of plugging ditches and restoring agricultural land back to non-riparian wet hardwood forest. The sites are located within the watershed of Gum Swamp Run, a tributary to South Creek. A diverse vegetative community has been established and Gum Run East and Gum Run 2 are dominated by hardwoods, while Gum Run West contains a mixed pine/hardwood community. Monitoring of these sites documents that 27 acres of non-riparian wooded wetlands have been restored and continued monitoring and analysis may reveal additional restored acreage is available. Restoration of this agricultural land to a forested community immediately and permanently removed agricultural pesticides, herbicides, fertilizers and sediments from the waters of Gum Swamp Run and South Creek. The project increased organic matter production, sediment capture, nutrient transformation and flood flow attenuation functions and the age of the project (16 years) lessens the effects of overall temporal lag on wildlife habitat. Many wildlife species, such as bear, deer, skunks, rabbits, snakes, and neo-tropical song birds have been documented on the sites over the years.

(f) **South Creek Corridor Preservation Parcels.** These parcels represent the primary preservation component of the larger South Creek Corridor Complex. The South Creek Corridor Preservation Parcels match the landscape and hydrogeomorphic conditions of the NCPC Tract. The terrestrial and aquatic functions provided by this natural corridor include flood storage, sediment removal, nutrient cycling and wildlife habitat. These preservation parcels are located upstream of the mine project area and encompass portions of three general landscape positions, a) lower floodplain; b) terraces; and c) non-riparian wetland flats. These areas have been and are still subject to logging practices. Preservation of these parcels and the cessation of logging activities within this corridor will augment the habitat and buffering functions of these wetlands in perpetuity.

(2) **Hell Swamp/Scott Creek.** Located across the Pamlico River and to the north of the mine area, this 1,306 acre site is currently a designated Prior-Converted Cropland in intensive agricultural row-crop production. The Hell Swamp project is an important component of the Applicant's comprehensive mitigation plan, encompassing the majority of the Scott Creek watershed that flows directly into Pungo Creek, a designated Special Secondary Nursery Area (SSNA). South Creek is also a designated SSNA and the Hell Swamp project, when coupled with the South Creek Corridor Complex, will directly benefit fisheries nursery areas that are a part of the greater Pamlico estuarine system. Scott Creek has been impacted by channelization and agricultural practices and is influenced by wind tides well up into the site. Approximately 19,480 linear feet of streams will be restored and enhanced on the site, including reconnection to historic floodplain and the restoration of several riparian headwater systems. Bottomland hardwood systems will be restored and enhanced along lower Scott Creek. Within the remainder of the site, headwater swamp forests and non-riverine wet hardwoods will be restored and

preserved. Additionally, over 100 acres of uplands will be restored via the plugging of farm ditches and the planting of appropriate upland species. This unique component of the overall mitigation plan will augment the functioning of the Hell Swamp restoration work and will provide diverse wildlife habitat in perpetuity. Preservation on this site includes approximately 35 acres of old-growth, non-riverine wet hardwood forest at the top of the Scott Creek watershed.

The restoration of this agricultural land to a forested community will immediately and permanently remove agricultural pesticides, herbicides, fertilizers and sediments from the waters of Scott Creek, Pungo Creek and ultimately, the Pungo River. Restoration of appropriate coastal plain stream features on the site will benefit fish and other aquatic species by increasing habitat, refuge and foraging areas for post larval fisheries species adjoining the Special Secondary Nursery Area. The restoration of this large, contiguous hardwood wetland ecosystem will also increase the surface and subsurface water storage capacity of the site and will decelerate the current rapid delivery of storm water and pollutants to Scott Creek and the fisheries nursery area waters of Pungo Creek. The restored headwater wetlands will provide a contiguous wildlife corridor between the preserved high quality non-riverine wetlands at the top of the watershed all the way down to the estuarine areas of lower Scott Creek. The variety of landscapes and hydrologic regimes on this site, including the restored upland areas, will provide important food and cover habitat for terrestrial and aquatic wildlife.

(3) Upper Back Creek. Formerly Prior-Converted Cropland in intensive agricultural row-crop production, this headwater wetland and stream restoration project, located across the Pamlico River and to the north of the mine area, is currently under construction. Upper Back Creek is a tributary to Bath Creek and ultimately the Pamlico River. This project includes restoration and preservation of riparian and non-riparian wooded wetlands directly abutting the headwaters of Upper Back Creek. The project also includes the restoration of the flooded headwater areas of Upper Back Creek and preservation of upper portions of existing Upper Back Creek. Conversion of this agricultural land back to a wetland community immediately and permanently removed agricultural pesticides, herbicides, fertilizers and sediments from the waters of Upper Back Creek and Bath Creek. Functional uplift over time will include water quality improvement through retention of sediments and other pollutants, nutrient retention and reduction, production and export of organic nutrients, surface water storage, increased groundwater recharge and/or discharge, wildlife habitat, and flood flow attenuation. This project will directly benefit Bath Creek, a major tributary of the Pamlico River, providing water quality and habitat improvements to the Pamlico estuarine system. The variety of landscapes and aquatic hydrologic regimes on this site will provide diverse cover and food opportunities for terrestrial and aquatic wildlife.

(4) Sage Gut. Located to the south of the Hell Swamp site, this 135 acre property is currently a designated Prior-Converted Cropland in intensive agricultural row-crop production. Sage Gut is a tributary to Jack Creek and Pungo Creek, a designated fisheries nursery area. This project includes restoration and preservation of stream and abutting riverine and non-riverine wetlands. Conversion of this agricultural land back to a forested wetland community will immediately and permanently remove agricultural pesticides, herbicides, fertilizers and sediments from the waters of Sage Gut, Jacks Creek and most importantly, Pungo

Creek. Functional uplift will include water quality improvement through retention of sediments and other pollutants, nutrient retention and reduction, production and export of organic nutrients, surface water storage, enhancement of wildlife habitat, and flood flow attenuation. Restoration of the Sage Gut site will also decelerate the current rapid delivery of storm water to Jacks and Pungo Creeks via the agricultural ditches.

(5) Rutman Creek Watershed. Located northeast of the Hell Swamp project and adjacent to the Pocosin Lakes National Wildlife Refuge and Ducks Unlimited restoration lands, this 4,303 acre property is currently a designated Prior-Converted Cropland in intensive agricultural, row-crop production. Like the Hell Swamp restoration project, Rutman Creek is a large wetland restoration site that encompasses the entire watershed of Rutman Creek, a second-order tributary of the Pungo River. Rutman Creek has been impacted by channelization and agricultural practices and the goal of this project is to restore the pocosin-bay forest habitat similar to that lost to mining. Conversion of this agricultural land back to a forested wetland community will immediately and permanently remove agricultural pesticides, herbicides, fertilizers and sediments from the waters of Rutman Creek and the upper Pungo River. Restoration of the Rutman property will also decelerate the current rapid delivery of storm water to the Pungo River via the ditches and canals. This project will re-establish a wildlife corridor connecting the refuge with the Pungo River.

8. Other Required Coordination and Authorizations

a. Cultural Resources

As described in Section 4.2.2.16 of the FEIS, investigation of the entire 15,100 acre project area revealed no sites either listed or eligible for listing in the National Register of Historic Places. By letter dated July 27, 2006, the NC Department of Cultural Resources concurred with this finding and that no further cultural resource investigation was necessary. It is therefore my finding that the proposed alternative L will result in no effect to historic properties either listed or eligible for listing in the National Register of Historic Places pursuant to Section 106 of the National Historic Preservation Act.

b. Endangered Species

Section 4.2.1.12 of the FEIS contains a thorough discussion of the Corps' position on federally listed species and their critical habitat protected under the Endangered Species Act of 1973. The Corps has determined that the proposed project will result in no affect to the red wolf (*Canis rufus*), the red-cockaded woodpecker (*Picoides borealis*), the Carolina gopher frog (*Rana capito capito*), the shortnose sturgeon (*Acipenser breviorstrum*), rough-leaved loosestrife (*Lysimachia asperulaefolia*) and sensitive joint-vetch (*Aeschynomene virginica*). In the FEIS, the Corps determined that due to a necessary bridge construction across an unnamed tributary of the Pamlico River, the proposed project may affect, but was not likely to adversely affect, the West Indian manatee (*Trichechus manatus*), Kemp's ridley sea turtle (*Lepidochelys kempii*), loggerhead sea turtle (*Caretta caretta*) and the green sea turtle (*Chelonia midas*). Since issuance of the FEIS, PCS revised its plan for bridge construction to eliminate all in-water structures. As

a result of this modification, I have revised my determination on these species to a no effect. This has been coordinated with the National Marine Fisheries Service (NMFS) and by e-mail dated September 29, 2009, NMFS concurred with this determination.

c. Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation Management Act established procedures for identifying Essential Fish Habitat (EFH) and required interagency coordination to further the conservation of federally managed fisheries. The Corps is required to consult with NMFS prior to authorizing any action that could adversely affect EFH.

In a February 8, 2007 comment letter on the DEIS, the National Marine Fisheries Service (NMFS) identified 151 acres within the AP Alternative on the NCPC Tract as Essential Fish Habitat (EFH) designated by the South Atlantic Fishery Management Council (SAFMC). These included 11 acres of estuarine tidal creeks and their associated SAV/freshwater aquatic beds (corresponding to community type 1, "Creeks/Open Waters" in the biotic community mapping described in Section 3.8 of the FEIS), 38 acres of estuarine/palustrine marsh (corresponding to community type 2, "Wetland Brackish Marsh Complex") and 102 acres of palustrine forested wetlands (Corresponding to community type 3 "Wetland Bottomland Hardwood Forest"). NMFS also expressed concern over the impacts to the remaining wetlands affected by the AP Alternative within the NCPC Tract, which it specifically referenced as "not EFH". Based on these concerns, NMFS included as an EFH Conservation Recommendation: "The Department of the Army shall not authorize mining activities within the NCPC Tract."

NMFS commented on the SDEIS by letter dated December 27, 2007, stating that "Both Alternative L and M would avoid direct impacts to 141 acres of EFH associated with South Creek and other tributaries in the NCPC Tract." NMFS expressed concern over the potential scale and severity of indirect impacts to EFH as a result of the loss of surrounding wetlands associated with Alternative L. Among other concerns, NMFS stated that activities associated with Alternative L would result in a reduction in the amount of organic detritus delivered to estuarine food chains from forested wetlands. Finally, NMFS concluded that PCS's proposed mitigation plan, as presented at the time, lacked sufficient detail to demonstrate that sufficient mitigation would be provided in a timely manner and suggested the establishment of mitigation trajectories with respect to mining schedules. Based on these concerns, NMFS included as an EFH Conservation Recommendation: "Mining activities within the NCPC and the Bonnerton tracts shall not be authorized. NMFS believes further discussion regarding the size for buffers for creek headwaters, compensatory mitigation plans, and the schedules for mitigation and reclamation would be fruitful."

On May 22, 2008 the Corps released the Final Environmental Impact Statement (FEIS) identifying Alternative L as the applicant's proposed project and preferred alternative. Section 3.11.3 of the FEIS presents information on the existing EFH and Habitat Areas of Particular Concern (HAPC) for managed species potentially occurring within and/or around the study area. Sections 4.2.1.6 and 4.2.1.11.2 discuss the potential impacts to EFH resulting from drainage basin reduction and metal concentration enrichment common to all alternatives and 4.2.2.11.3.7

along with Tables 4-24 and 4-25 present the potential direct and indirect impacts to EFH and HAPC under Alternative L.

By letter dated July 14, 2008, NMFS submitted comments on the FEIS and Alternative L. In this letter, NMFS stated that it remained “opposed to mining within the NCPC and Bonnerton Tract in the manner currently proposed”. However, NMFS went on to state that should Alternative L as described in the FEIS be selected as the Least Environmentally Damaging Practicable Alternative, it would “provide an adequate framework for developing and evaluating site-specific impact-avoidance measures that will culminate in a permit decision.” In general, NMFS expressed concern over identification of EFH, the need to minimize direct and indirect impacts, compensatory mitigation plan and compliance monitoring.

Among concerns identified by NMFS in the July 14, 2008 letter was the opinion that the FEIS was incorrect in stating that direct impacts to state designated Primary Nursery Area (PNA) were avoided under Alternative L. NMFS pointed out that upper limits of PNAs are not defined or delineated by the state and it is not possible to assess the aerial extent of a PNA without the establishment of this limit. NMFS stated that “Forested wetlands that surround or serve as headwaters for estuarine creeks are essential for the creeks to serve as PNAs and why the South Atlantic Fishery Management Council designates forested wetlands and PNAs as EFH.”

The Corps holds that its statements in the FEIS are correct. North Carolina Wildlife Resources Commission (NCWRC) designated inland primary nursery areas within the project area include Tooley, Jacobs and Jacks Creeks within the NCPC Tract and Porter Creek within the Bonnerton Tract. Indeed, the upper limits of these PNAs have not been delineated in the field. However, North Carolina State Statute (15A NCAC 03I .0101) defines Nursery Area as “Those areas in which for reasons such as food, cover, bottom type, salinity, temperature and other factors, young finfish and crustaceans spend the major portion of their initial growing season.” The statute further defines Primary Nursery Area as “Those areas in the estuarine system where initial post-larval development takes place. These are areas where populations are uniformly early juveniles.” This definition seems to logically limit the PNA designation to those areas that are permanently or at-least regularly flooded. Direct impacts to the above mentioned creeks are limited to intermittent, extreme headwater areas which we do not believe meet the statutory definition of PNA. There will be impacts to forested wetlands surrounding these creeks, however, these impacts will be limited to those wetlands that are not flooded or, at most, are flooded only during extreme storm events. Again, we do not believe these areas meet the statutory definition of PNA.

NMFS commented that Alternative L does not avoid indirect impacts to EFH including PNAs. The Corps agrees with this statement. The potential indirect impacts to the PNAs and other surface waters within the project area are discussed throughout Section 4.2. It is likely that these areas will experience some alteration in salinity and in nutrient input and cycling as a result of watershed reduction. However, as discussed in Sections 4.2.1.6, 4.2.1.11.2, 4.2.2.11.2 and 4.2.2.11.3, existing data indicate that these reductions should be localized and should not result in a substantial loss of habitat value. NMFS and others have suggested that these indirect impacts could be further reduced by minimizing mining impacts within the forested wetlands adjacent these water bodies and increasing buffer areas.

Based on comments from NMFS and others, the Corps worked with PCS to further minimize impacts associated with Alternative L. Within the NPC Tract, the 3.79 acres of tidal palustrine forest EFH at the headwater of Huddy Gut was eliminated from the mine boundary and additional minimization was also accomplished in the headwaters of Tooley Creek, in the areas buffering Broomfield Swamp and Cypress Run in the S33 Tract and in the headwater area of Porter Creek in the Bonnerton Tract. In March 2009, the Corps notified NMFS pursuant to CWA Section 404(q) of our intention to issue a conditioned permit for a modified version of Alternative L that would have avoided 2,403 acres (38%) of the waters of the US within the project area. In a letter dated April 17, 2009 NMFS informed the Corps that it would not request higher level review of the permit action pursuant to CWA Section 404(q). In this correspondence, NMFS also included that as a result of the above referenced minimization efforts, “direct impacts to HAPCs are no longer likely”.

While NMFS did not request elevation of the permit decision, NMFS staff did participate in further meetings aimed at minimizing project impacts. Further coordination occurred during which NMFS identified specific areas in which it believed further avoidance would be appropriate. After coordination with the Corps, NMFS, EPA, USFWS the applicant agreed to further minimization focused on the areas identified by NMFS. As a result of these efforts, an additional 52 acres of wetlands in the headwaters of Jacks, Jacobs, Tooley, Drinkwater and Porter Creeks, as well as Cypress Run, have been avoided. In total, wetland impacts have been further minimized by approximately 202 acres.

Under Modified Alternative L, direct impacts to many of the headwaters and riparian areas of creeks within the project area, including all coastal marsh, are avoided. Of the four NCWRC designated inland Primary Nursery Areas (PNA) approximately 15% of the estimated historic Jacks Creek watershed, approximately 40% of the estimated historic Jacobs Creek watershed, approximately 60% of the estimated historic Tooley Creek watershed and approximately 25% of the estimated historic Porter Creek watershed will remain intact. While loss of watershed area will likely have some localized affect on the tributaries originating in the project area, evidence indicates that the habitat value and nursery functions of these tributaries will not be lost. In fact, a recent article in the September 2008 edition of the NCWRC’s publication “Wildlife in North Carolina” reported that recent sampling revealed a “similar mixture of fresh and saltwater species” from the PNA creeks and a man-made marsh and creek system located within the project area. This man-made marsh and creek system, known as “PA II” was created from uplands approximately 30 years ago and has functionally no watershed. As referenced in this article and in the FEIS, research conducted over 15 years ago on these same systems found little difference between the community assemblages within PA II and the surrounding creeks.

NMFS commented that Alternative L does not avoid indirect impacts to estuarine waters of Durham Creek, South Creek and the Pamlico River. NMFS stated the loss of the 4,135 acres of wetlands within Alternative L “would result in substantial and unacceptable indirect impacts to this estuarine system and its ability to support fishery resources.” As discussed above, Alternative L impacts have been further reduced. Sections 4.2.1.6 and 4.2.1.11.2 discuss the controlling influence the Pamlico River, Durham and South Creek have on their respective tributaries. South Creek has an approximately 49,700 acre watershed. Approximately 18% of this, including approximately 2,000 acres of wetlands and approximately 6,757 acres of uplands,

will be affected by the proposed mining activities. As part of the compensatory mitigation plan, PCS will restore approximately 3,520 acres of wetlands previously in agricultural and silviculture production, enhance approximately 543 acres of wetlands and preserve approximately 1,710 acres of wetlands within the South Creek watershed. As discussed above and in Appendix I of the FEIS, it is expected that any loss of estuarine function experienced by South Creek will be adequately mitigated by this activity.

Durham Creek has an approximately 37,500 acre watershed. Approximately 7% of this watershed will be affected by the proposed mining activity. Otherwise, the Durham Creek watershed is relatively undisturbed and forested. The majority of impacts will occur within the Porter Creek watershed. Due to the relatively small percentage of watershed alteration and the fact that Porter Creek empties essentially at the mouth of Durham Creek, any impact to the upstream areas and functions of Durham Creek will be minimal.

Effects to the estuarine functions of the Pamlico River and greater Albemarle/Pamlico Sound Estuary as a result of this project should be minimal. The lower Pamlico River has an immediate watershed in excess of 800,000 acres; Modified Alternative L would impact less than 1% of this. While the Pamlico River and Sound do exert an influence on the salinity of the creeks within the project area as indicated by available data discussed in Sections 4.2.1.6, 4.2.1.11.2 of the FEIS, it is unlikely that the reduction of freshwater input in these tributary creeks will impact the salinity regime of the River or Sound. The contribution of nutrients including dissolved and particulate organic matter from the affected creeks may be decreased. However, this decrease should be adequately mitigated by the increased inputs from the mitigation areas. Finally, the reduction of habitat value within the tributaries of the project area, particularly those PNAs, may result in some decrease in their contribution to fish and invertebrate population within the River and Sound. This decrease too should be adequately compensated for by the increased contribution made by creeks in and around the mitigation areas.

Finally, the permit will be conditioned to require monitoring. The Water Quality Certification issued by the NC Division of Water Quality (NCDWQ) January 15, 2009, required that PCS continue the existing water management and stream monitoring plan for water quality, water quantity and biology, and that this monitoring plan be expanded into the Bonnerton and S33 Tracts. Additionally, the Corps has worked with NCDWQ, EPA, USFWS and NMFS staff to develop conditions that will require PCS to carry out monitoring to insure that unanticipated impacts to fisheries resources do not occur. The results of this monitoring will be submitted to the Corps, NMFS, the USFWS, EPA and the NCDWQ annually and will be made available either in whole or in summary to any other agency or member of the public so desiring. Input to the Corps regarding any corrective management that may be necessary will be encouraged. Analysis of the data and all subsequent input will be used by the Corps to determine whether further or additional action is needed to protect these resources.

I have considered all input provided by NMFS. I have included draft permit conditions requiring PCS to work with the Corps, NMFS and others to establish a sufficient monitoring and reporting program. I find after consideration of the information provided and the compensatory mitigation proposed, that the issuance of a permit for modified Alternative L will not result in adverse impacts to Essential Fish Habitat.

d. Clean Air Act

As explained more fully in Section 3.13 of the FEIS, the project is in an attainment area, and the emissions from the proposed project fall below *de minimis* levels, so that a Clean Air Act conformity determination is not required.

e. Clean Water Act Water Quality Certification

The Clean Water Act provides that the applicant must obtain from the North Carolina Division of Water Quality (NCDWQ) a Section 401 water quality certification that the proposed discharge will comply with applicable effluent limitations and water quality standards before I may issue a CWA permit. NCDWQ issued a conditioned certification on January 15, 2009. The conditions require sedimentation and erosion control, mitigation, groundwater monitoring, and stream and watershed monitoring. The conditions also require avoidance of 213 acres of the Bonneron SNHA and 3 acres of wetlands on the NCPC tract. These conditions will be incorporated into the Department of the Army permit.

f. Coastal Zone Management Act Consistency Determination

The Coastal Zone Management Act requires that the applicant obtain from the North Carolina Division of Coastal Management (NCDCM) a concurrence that the proposed project will comply with North Carolina's coastal zone management program. NCDCM issued a conditioned concurrence on December 12, 2009 finding that the proposed project is consistent with the enforceable policies of North Carolina's coastal management program. Following issuance of the modified Water Quality Certification, NCDCM issued an amended Consistency Certification on January 30, 2009.

9. Consideration of Agency and Public Comments

The Corps received numerous comments on the DEIS, SDEIS and the proposed action. These were fully addressed in Appendix J of the FEIS. Additional comments were received on the FEIS and the proposed action, Alternative L. My response to those comments can be found at Attachment 1 to this document. I have considered all comments prior to making my decision on this permit application.

10. 404(b)(1) Analysis; 40 CFR Part 230

a. Factual Determinations

Pursuant to 40 CFR 230.11, the Corps must determine the potential short-term or long-term effects of a proposed discharge on the physical, chemical and biological components of the aquatic environment. These factual determinations shall be used in making a determination of compliance or non-compliance with the restrictions on discharge. My evaluation and factual determinations follow.

(1) Physical Substrate Determinations. The progression of the mining and reclamation activities within the permitted boundary are fully discussed in Section 4.1 of the FEIS. Sections 4.2.1.1-3 describe the impacts to land resources within the mine areas generally and Sections 4.2.2.1-3 describe those related specifically to Alternative L. Mining operations will result in substantial and permanent alteration of topography and soil profiles. Some soil profile alteration will be mitigated through the reclamation process by the use of the upper 30 feet of soil as capping for the reclamation sites. Impacts to the existing upland and wetland communities within the mined area will be long term, however, the goal of the reclamation process is to eventually return reclaimed areas to some form of a mixed upland and wetland habitat as will likely be required by the mining permit issued by the NCDLR. Additionally, all wetland areas directly affected by the mine activity will be fully mitigated through PCS's compensatory mitigation plan.

The cumulative effects of the mining activity combined with other mining activity and development within the area are discussed in Section 4.2.1.21 of the FEIS. The majority of past and future impacts are known, as they have either already occurred, or will occur as a result of the proposed project. This activity has and will result in substantial long-term modification of topography and soil profile. However, reclamation efforts either have already, or will be required to eventually return these areas to a useful state. Secondary effects to surrounding, undisturbed areas will be minimized through activities described in Sections 4.1, including implementation of all necessary sedimentation and erosion control measures and control of all surface waters generated on the site.

(2) Water Circulation, Fluctuation and Salinity Determinations. The direct and cumulative effects of the mining activity on surface waters are discussed thoroughly in Section 4.2.1.6 of the FEIS. Wetlands and streams within the mine area will be permanently lost, resulting in a reduction of watershed input to the small tributaries that originate within the project area. The stream and wetland losses will be fully mitigated with the implementation of the compensatory mitigation plan as described above and in Appendix I of the FEIS. Although mining activities will result in the long-term loss of watershed of several creeks surrounding the project area, reclamation activities will eventually return these areas to vegetated watershed acreage.

The tributaries of South Creek within the project area will experience, on average, an approximately 45% - 50% reduction in existing watershed. The remaining watershed areas, which are mostly forested, should experience no direct impact from the mining activity. Therefore, the avoided areas should continue to supply runoff and cycle and supply nutrients including dissolved and particulate organic carbon to the surrounding aquatic system. Flow from headwater perennial and intermittent streams directly impacted by the mine activity will be lost. Research conducted in the vicinity over several years suggests that this reduction of watershed may result in a slight increase in salinity maximums in upstream areas of the smaller tributaries; however, this increase should be well within the normal range of salinity fluctuation currently experienced within these wind tide influenced systems. As discussed in Sections 4.2.1.6 and 4.2.1.11.2 the Pamlico River and Sound complex exert a controlling influence on South and Durham Creeks, which in turn substantially influence water circulation and quality in the downstream reaches of these tributaries. Therefore, downstream areas of these tributaries should

not experience unacceptable adverse effects as a result of the reduced flows. Likewise, any resultant water quality impacts to waters of South and Durham Creeks and the greater Pamlico River Estuary should be minimal and fully offset by the benefits provided through compensatory mitigation discussed in section 7, above.

South Creek has an approximately 49,700 acre watershed. Approximately 18% of this, including approximately 2,000 acres of wetlands and approximately 6,757 acres of uplands, will be affected by the proposed mining activities. As part of the compensatory mitigation plan, PCS will restore approximately 3,520 acres of wetlands previously in agricultural production, enhance approximately 543 acres of wetlands and preserve approximately 1,710 acres of wetlands within the South Creek watershed. As discussed above and in Appendix I of the FEIS, it is expected that any changes to water circulation, flow regime or water chemistry, including salinity, experienced by South Creek will be adequately mitigated by this activity.

Durham Creek has an approximately 37,500 acre watershed. Approximately 7% of this watershed will be affected by the proposed mining activity. Otherwise, the Durham Creek watershed is relatively undisturbed and forested. The majority of impacts will occur within the Porter Creek watershed. Due to the relatively small percentage of watershed alteration it is not likely that flows and circulation patterns or salinity within Durham Creek will be significantly affected. This is further supported by the fact that Porter Creek, where the majority of the impacts will occur, empties into Durham Creek very close to Durham Creek's confluence with the Pamlico River. It is likely that the overarching influence of the River at this point will counteract any change in Porter Creek flows or salinity patterns.

Effects to the flows, circulation patterns and water quality of the Pamlico River and greater Albemarle/Pamlico Sound Estuary as a result of this project should be minimal. The lower Pamlico River has an immediate watershed in excess of 800,000 acres; alternative L would impact less than 1% of this. While the Pamlico River and Sound do exert an influence on the salinity of the creeks within the project area as indicated by available data discussed in Sections 4.2.1.6, 4.2.1.11.2 of the FEIS, it is unlikely that the reduction of freshwater input in these tributary creeks will impact the salinity regime of the River or Sound. The contribution of nutrients including dissolved and particulate organic matter from the affected creeks into the River and Sound may be decreased. However, this decrease should be adequately mitigated by the increased inputs from the mitigation areas.

It is therefore my determination that, with implementation of the mitigation plan discussed above and in Appendix I, impacts to water circulation, flows, fluctuations and salinity will not be significant or unacceptable.

(3) Suspended Particulate/Turbidity Determinations. As discussed in Section 4.1.1 of the FEIS, I anticipate that any potential for sedimentation and erosion during the mining activity will be minimal due to the implementation of construction techniques employed by PCS and/or measures required by North Carolina sedimentation and erosion control regulations. All storm water runoff from the mine area is controlled under a National Pollutant Discharge Elimination System (NPDES) permit issued by the NCDWQ. Therefore, it is not expected that

an appreciable increase in suspended particulates or turbidity will be experienced in surrounding waters.

(4) Contaminant Determinations. The presence and potential for release of contaminants is thoroughly discussed in Section 4.1.3.1 of the FEIS. With the implementation of capping requirements to mitigate for cadmium accumulation within the reclaimed areas as described above, it is not likely that the mining activity will result in the introduction or accumulation of contaminants into the terrestrial system at adverse levels. All available data from surrounding water bodies indicate that heavy metal levels are comparable to those found in most areas of the estuary and in other estuarine systems.

Data has been collected to determine whether cadmium levels in surrounding waters has been increased as a result of mining activities. Results indicate that any introduction of cadmium into surface waters occurred through discrete events or discharges. These practices have been discontinued or modified and as a result, cadmium levels have remained static or decreased. Groundwater analysis conducted within the older reclamation areas revealed that while heavy metals were elevated in some groundwater samples, all were well below national primary and secondary drinking water standards. Finally, to ensure that the reclamation practices do not result in unacceptable increases in metal content of surrounding surface or groundwater, PCS will be required by condition to any permit issued to regularly monitor both surface and groundwater.

Based on the information available to me I find that with the implementation of the proposed permit special conditions, the project will not adversely effect or significantly degrade surface waters, ground waters or the terrestrial environment through the introduction of contaminants.

(5) Aquatic Ecosystem and Organism Determinations. The activities associated with mining Alternative L will result in direct impacts to approximately 11,343 acres. The project will result in the loss of 3,927 acres of waters of the United States over approximately 35 years ,including 10,332 linear feet of perennial stream,12,541 linear feet of intermittent stream, 3,909 acres of wetlands, and 11 acres of ponds. The potential direct and indirect effects of this impact are thoroughly discussed in Section 4 of the FEIS.

In designing the mine boundary for this alternative, PCS considered comments from Federal and state permitting and review agencies and others to avoid and/or minimize impacts to open water areas, and areas riparian to the existing open waters. Under Alternative L, direct impacts to much of the headwaters and riparian areas of creeks within the project area, including all coastal marsh, are avoided. These avoidance efforts not only reduce the direct effects to important nursery areas of the lower Pamlico River estuary, they also minimize indirect effects by preserving watershed acreage and maintaining buffers along the tributaries within the project area. Of the four NCWRC designated inland Primary Nursery Areas (PNA) approximately 15% of the Jacks Creek watershed, 40% of the Jacobs Creek watershed, 60% of the Tooley Creek watershed and 25% of the watershed of Porter Creek will remain intact. Watershed loss as a result of mining activity will likely have some localized affect on the tributaries originating in the project area. As discussed in Section 4.2.1.11.2, these indirect impacts will primarily be a result of the loss in organic detrital matter input and change in salinity regime in the upper

reaches of these tributaries. Data collected in these areas indicate that the habitat value and nursery functions of these tributaries will not be lost.

As described in Section 4.3.1.3, mined areas are eventually reclaimed to a useful purpose, including the establishment of vegetative cover, soil stability, and water and safety conditions appropriate to the area. While the reclamation will not result in the reestablishment of the currently existing communities, some of the lost watershed function will be returned. PCS currently plans to retain ownership of much of the reclaimed area and manage the area for wildlife habitat. These areas should eventually reestablish as a mixture of upland herbaceous, shrub and forested communities and wetland hardwood forests, ponds and freshwater marshes.

I have reviewed all of the information available to me on the likely adverse effects of this action and have considered the benefits of the proposed compensatory mitigation plan as discussed above. I find that with the implementation of the compensatory mitigation plan, the mining and mine related activities authorized by the modified Alternative L will have minimal adverse effect on and will not significantly degrade the aquatic ecosystem or the organisms that depend upon it.

(6) Proposed Disposal Site Determinations. The mining process is described in Sections 2.1 and 2.2 of the FEIS. The reclamation process is described in Section 4.3.1. The impacts of both mining and reclamation are discussed in Sections 4.1 and 4.2. Material generated by the mining process will be contained onsite and used in the reclamation process. Therefore, the disposal site will be within the Alternative L boundary. Sedimentation and erosion to offsite areas will be minimized through the implementation of construction techniques discussed in Section 4.1, including all necessary sedimentation and erosion control measures and control of all surface waters generated on the site. Additionally, the Section 401 Water Quality Certification contains conditions for maintaining appropriate sediment and erosion control measures. These conditions will be incorporated into any permit I issue.

(7) Determination of Cumulative Effects. Cumulative effects are discussed in Section 4.2.1.21 of the FEIS. The large majority of cumulative impacts within the local watershed can be attributed to existing agricultural and silvicultural practices and the previous mining activities at PCS's Aurora operation. Data collected through both independent research and monitoring required of PCS indicate that to date, the mining activity has not resulted in substantial degradation of water quality or the surrounding aquatic ecosystem. Several of the creeks flowing from the project area are considered inland Primary Nursery Area (PNA) by the state of North Carolina. This includes Porter Creek, which originates within the Bonnerton Tract and flows between that tract and previously mined areas. During the 1980s PCS mined along the east bank of Porter Creek, coming within 100 feet of the shore in many locations. This mined area is now reclaimed or in the late stages of reclamation, and Porter Creek continues to function as a PNA.

In consultation with members of the review team, the Corps determined that considering a permit to cover the entire area that PCS currently intends to mine, i.e. the project area, would result in a more thorough consideration of impacts of likely remaining mining impacts in the area. The cumulative impacts of reasonably foreseeable mining activity have therefore been covered in the FEIS and discussed and considered in this decision. With the progression of the mining activity

and the implementation of the compensatory mitigation plan, agricultural activity and related runoff within the watershed should decrease. Silvicultural activities within the watershed will likely continue, however, since these activities typically involve reforestation, impact should be short term.

As discussed above, authorization of Modified Alternative L, when considered in combination with past mining activities, will result in the cumulative loss of large portions of the watersheds of tributaries to South and Durham Creeks and the Pamlico River. These tributaries will experience, on average, cumulative losses of approximately 65% of their estimated historic watersheds. The most affected of these will be Jacks Creek, with a loss of approximately 84% of its estimated historic watershed, and the least impacted will be Tooley Creek with a loss of approximately 40% of its estimated historic watershed. The loss of watershed area will likely have some localized affect on the tributaries originating in the project area. However, as discussed above in section 10.a.(5), evidence indicates that the habitat value and nursery functions of these tributaries will not be lost.

Much of the South Creek riparian corridor is currently owned by PCS and is included either in the project area or the compensatory mitigation plan. Therefore, it is not likely that any appreciable development, either residential or commercial, will take place along South Creek. There has been some discussion of an ethanol producing facility being located in proximity to Aurora. At this time, the Corps has no indication that this project will occur and no way of assessing likely impacts if plans were to go forward. If plans for this facility do move forward and authorization from the Corps is required, potential impacts, both direct and cumulative, will be fully evaluated.

(8) Determination of Secondary Effects. Secondary effects are discussed in Section 4.2.1.21 of the FEIS. Following mining activities, State law and regulations require mined land to be reclaimed to a useful state, including revegetation and return of some watershed function. Therefore, in the long term, effects of mining activities should be minimized. Authorization of Alternative L will result in a continuation of existing mine operation and will not result in appreciable increases in employment or payroll over that currently experienced. Therefore, secondary development associated with residential, commercial and infrastructure construction is not expected to increase as a result of this activity. All foreseeable highway, railway and utility relocation necessary for the mining of Alternative L have either taken place or have been considered in this evaluation.

b. Restrictions On Discharge

(1) Least Environmentally Damaging Practicable Alternative (LEDPA). The 404(b) (1) Guidelines Restrictions on Discharge (40 CFR Part 230.10) specify that no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem. Part 230.10(a)(2) defines practicable as “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose.” The determination of the LEDPA must be made without considering compensatory mitigation.

The agreed upon purpose and need for this action is “To continue mining of its [the applicant’s] phosphate reserve in an economically viable fashion. More specifically, the applicant’s purpose and need is to implement a long-term, systematic and cost-effective mine advance within the project area for the ongoing PCS mine operation at Aurora, North Carolina.” To be considered “systematic” an alternative should allow mining to proceed in a reasonable fashion that does not inappropriately restrict potential to recover the resource or increase cost.

PCS has consistently asserted that to be sufficiently “long-term” any alternative must provide approximately 20 years of cost effective mining, to allow time to make decisions on the large scale investments in property, personnel, and equipment that must be made to efficiently mine. This position is consistent with the Corps’ decision to consider 20 year mine plans in evaluating the 1997 CWA permit, as well as EIS’s for other phosphate mine plans prepared in other parts of the country. It is noteworthy that this permit process has taken over eight years of evaluation and review before reaching this decision point. Additional permitting time may be required if this or any future permit is elevated pursuant to 33 U.S.C.A. Section 404(q) or vetoed pursuant to 33 U.S.C.A. Section 404 (c).

The Corps initially considered a 20 year timeframe to be reasonable. PCS, however, introduced its original preferred alternative (AP), which provided only 15 years of mining. On that basis, the Corps determined in the DEIS that at least within certain parameters, approximately 15 years provides an adequate known planning horizon, and compared each alternative on that basis. As more fully discussed in Section 2.7.5 of the FEIS, the Corps determined that only alternatives that provide PCS with costs that are currently considered practicable for approximately 15 years and a reasonable plan for additional future mining is a practicable alternative.

(2) Practicability Evaluation. Section 2 of the FEIS discusses the process of alternative selection and my practicability determinations. All of the alternatives carried forward for detailed study were determined to be logistically and technologically practicable. The No Action boundary, while technologically practicable, presents substantial logistic constraints based largely on the requirement for multiple, non-continuous mining pits. Additionally, the No Action Boundary allows only 12 years of mining. All mining is within the S33 Tract and at costs substantially exceeding what I consider practicable. The No Action Boundary is therefore not a practicable alternative.

Perhaps the most difficult part of the practicability determination has been determining what constitutes a practicable cost. Generally, an alternative is not practicable if it is unreasonably expensive. Section 2.7 of the FEIS thoroughly discusses the method employed by the Corps to determine what constitutes a practicable alternative cost for the proposed activity. This section also discusses how alternatives were eliminated as impracticable from a cost standpoint and which alternatives the Corps considers to be practicable. Comments received on the FEIS indicate that there remains some misunderstanding of and disagreement on this issue. Therefore, I will attempt here to again summarize the pertinent points.

(a) The Marston Cost Model. In 2002, the Corps directed PCS to provide an economic model which could be used to compare cost parameters among various alternatives. In 2003, PCS presented a model developed by the mine consulting firm Marston, Inc. designed to 1)

estimate operating costs for any mine plan boundary, 2) develop cost estimates for mining within these boundaries using a standard cost base and consistent methods for estimation, and 3) address site specific operating and development costs.

(b) Input Data. In early 2006, the Corps provided each review team member with the results of the cost model runs for each of the alternatives identified at that point. Expense data was entered into the model in basically three ways; day-to-day operational costs (eg. labor, maintenance, etc.) were fully expensed in the year during which they are incurred, capital expenditures for large equipment were expensed over the estimated life of the equipment, and capital expenditures for mine development were expensed over the entire mining area made available by the particular development (e.g. cost of opening the mine in a new tract or area, such as opening a new pit, utility and road relocations were expensed over all years of mining within that tract or area). The model programmed with data in this fashion has been referred to as the “Marston Full Plan” or the “Original Marston model”.

(c) Analysis and Evaluation of Cost Model Results. Suggested methods for analysis of the cost data include comparison of overall cost between alternatives and comparison of alternative costs to the applicant’s “profit”. These methods and the difficulty in applying each are discussed in Section 2.7 of the FEIS. One major concern with each of these approaches is in determining a frame of reference with which to analyze the information. As discussed in the FEIS, approaches simply comparing overall cost between alternatives would require the Corps to set a limit or range of acceptable cost increase over the applicant’s original preferred alternative, with little information on which to base such a decision. Approaches comparing the cost information to the applicant’s profit would require the Corps to first define what constitutes “profit” (gross margin, operating income, internal performance goals, etc.), then to determine the period over which to assess profit (last year, last five years, etc.) and finally, in order to arrive at a practicability determination, decide how much profit the applicant should be allowed. As stated in Section 2.7.4.1 of the FEIS, regulations and guidance implementing NEPA and CWA Section 404 do not require the Corps to establish such a profit limit for a private corporation and, in fact, recommend against the cumbersome inquiry. Regulatory Guidance Letter 93-02, “Guidance on Flexibility for the 404(b)(1) Guidelines and Mitigation Banking.”

In both the draft and the final EIS, the Corps suggested comparison of the predicted yearly costs per ton of the various alternatives to the “price” or “value” of phosphate ore reported yearly by the United States Geologic Survey (USGS) to give an indication of cost practicability. This estimate, developed by an independent Federal government agency and derived by comparison of industry information, provides the Corps an unbiased reference for determining what constitutes a practicable alternative from the standpoint of cost. Comparing this information to predicted costs, as well as comparing overall and yearly cost between alternatives, the Corps eliminated alternatives that involved immediate relocation to the S33 Tract, in whole or in part, as being unreasonably expensive and not practicable. This approach is more thoroughly explained in Sections 2.7.4.4 and 2.7.5 of the FEIS.

Following release of the DEIS, PCS submitted a run of the Marston model using a quasi-cash cost accounting method for input data. This run of the cost model expensed capital and development expenditures during the years in which the commitment to expend the funds would

have to be made, rather than amortizing the costs over the years that mining was made possible by those expenditures. PCS presented this information, in part, to demonstrate that the lower mining costs predicted in the original cost model runs for the initial years of the S33 Tract could be misleading, if not considered in the context of the entire alternative. This information generated lively debate over whether a full cash cost accounting method of calculating input data should be used for all cost comparisons in lieu of the methods applied in the original Marston Model. Ultimately, the Corps decided that such an analysis would result in no better information than had already been obtained and presented, and would, in the end, not further inform the decision maker as to the practicability of alternatives.

The Corps did, however, acknowledge that PCS's point of considering the S33 Tract cost information in the proper context was valid. I find PCS's argument that, for the purpose of my analysis, the cost of mining the initial few years of S33 must be considered with recognition of the real development cost and how they must be applied. Important facts that must be considered are that; 1) there is a somewhat fixed development cost associated with the relocation of the mine to the S33 Tract and the affects of this cost on yearly mining expense within the cost model is dependant upon the number of years over which it is amortized and 2) the costs of mining within the S33 Tract increase substantially as mining progresses southward in that Tract, independent of the development costs and unlike the other Tracts, there is a large area of the S33 Tract that cannot be mined at what is currently considered a reasonable cost.

The relocation of the mine to the S33 Tract requires that a substantial amount of capital be committed for establishment of a new initial pit, necessary infrastructure relocation and investment in material transport equipment. These development costs total approximately \$103M, to be expended at the time of or shortly after the mine is relocated to S33, and are the same regardless of how many years of mining the relocation provides. In the original cost model, the development capital required to mine in the S33 tract was amortized over the years made available for mining in the S33 Tract; for example, in the case of the SCRA alternative, costs were amortized over almost 20 years of mining. For each of the holistic alternatives, the reported yearly cost of mining in the upper part of the S33 Tract appear essentially equal to or lower than the USGS value estimate. However, because the original Marston Model amortizes the development cost over the entire alternative, these lower costs are only realized if the entire area presented by the alternative is mined.

The northernmost portion of the S33 Tract provides for the lowest cost mining of any area within that Tract. The holistic alternative mine plans include mining this area first as a three dragline width pass from west to east. The mine would then shift south and mine a three dragline pass, east to west. Due to factors including ore depth, ore quality and distance from the processing facility, costs associated with this second pass increase substantially. From that point, mining cost continues to increase over the remainder of the Tract. Even if considered independent of the development costs associated with the mine relocation, mining costs for much of the S33 Tract still would meet or exceed the average USGS cost estimates. For this reason, I do not consider mining most of the area in the S33 Tract to be currently practicable.

I have considered whether amortization of the entirety of the development over the initial, less expensive, years of the S33 Tract would present any area for mining at a practicable cost. For

example, the SCRA alternative includes 20 years of mining in the S33 tract. The annual costs of mining the last 13 of those years is well above the average USGS estimated cost and therefore not practicable under current conditions. On that premise, I considered the cost of mining the initial 7 years with the approximately \$103 million in development cost amortized over only that period. This resulted in mining costs that still approach or exceed the average USGS cost estimates, exceed any cost previously experienced by PCS, and exceed the cost of mining within the other tracts under the SCRA plan by 10 – 16% and under the EAPA plan by 13 – 18%. I consider these costs standing alone to be unreasonable; the fact that all of the following years of mining under this alternative become increasingly expensive underscores the impracticability of mining this tract under current market conditions.

Therefore, the Corps does not consider alternatives that would require PCS to move to S33 within the initial approximately 15 year planning window practicable, because they would require PCS to commit to expending the development capital within the 15 years when it is not clear that those funds could be recouped. This is not a rejection of the Marston full cost model, nor is it adoption of the cash cost model. This is recognition of one limitation of the Marston full cost model in the face of a particular circumstance (that mining S33 may not be practicable and amortizing costs over a period of mining which very possibly may not occur is inappropriate.)

Of the alternatives carried forward for detailed study, I consider the AP, EAPA, EAPB, SJAA, M and L to be practicable alternatives from the standpoint of cost. The AP alternative encompasses a mining plan only within the NCPC tract. The other alternatives I find to be practicable have greater total impacts than the AP alternative, however, these plans also include the Bonnerton and S33 tracts within their mine boundaries, and each provides several more years of mining at current levels than the AP alternative. The appropriate comparison to the AP alternative is therefore the impacts to the NCPC tract of each of the remaining alternatives. Alternatives SJAA, M and L would result in fewer impacts to the NCPC tract than does Alternative AP.

I realize that any approximately 15 year alternative would have fewer impacts than any of the holistic alternatives. In consultation with members of the review team, however, the Corps determined early in this process that making a permit decision addressing the entire project area is appropriate. Considering holistic alternatives allows the Corps and others to consider more fully adequate avoidance and minimization of impacts over the entire project area, as well as potential impacts of this project over an extended period of time. I therefore do not consider it necessary to consider further alternatives limited to mining for the approximately 15 year planning horizon in making my decision on the least damaging practicable alternative.

Based on the record before me, I find that Modified Alternative L is the least damaging practicable alternative.

c. Degradation of Waters of the United States

The 404(b)(1) guidelines state that the Corps may not issue a permit if it will result in significant degradation to the waters of the US. In making this decision, my key focus is on the effect of the impacts on human health and welfare; lifestages of aquatic life such as plankton, fish and shellfish and other wildlife dependant on the aquatic ecosystem; special aquatic sites; aquatic

ecosystem diversity, productivity and stability; and recreational, aesthetic and economic values (40 CFR § 230.10(c)).

The affected environment and the potential impacts, both direct and indirect, have been thoroughly examined in the FEIS. The likelihood and magnitude of these impacts are further discussed above. Indeed this authorization will affect a substantial amount of both upland and wetland habitats as well as streams. However, several mitigating factors must be considered. First, all impacts will not occur at once, but rather will occur over time, most over the initial 15 year period. Additionally, PCS will be required by conditions of this authorization, and likely by the State, to reclaim mined areas to a vegetated state. This reclamation will progress over time along with impacts. Finally, successful completion of the compensatory mitigation plan described in the FEIS and constructed pursuant to Corps approved site specific plans will compensate for the unavoidable impacts associated with the mining activity.

There has been some discussion that impacts to the Bonnerton nonriverine wet hardwood forest, considered by the NCNHP to be a significant natural heritage area (SNHA) of national importance, would constitute significant degradation of the waters of the United States under the 404(b) (1) Guidelines. Based on a review of all available information I understand that the NCNHP's designation of this site as a SNHA is largely based on the fact that it is a terrestrial community that has become increasingly rare in North Carolina and not necessarily because of any unique or special contribution to the aquatic ecosystem. Therefore, I do not believe it is appropriate to consider impact to this specific area a significant degradation to the aquatic environment solely on the basis of its designation as a SNHA by the NCNHP. Nevertheless, impacts to approximately 64% (174 acres) of the site has been avoided by Modified Alternative L. Additionally, the Permittee has agreed to place these avoided areas under a conservation easement, further protecting the site. Finally, the proposed mitigation will result in reestablishment and/or permanent preservation of over 1,000 acres of this community type including the preservation of an approximately 40 acre non-riverine wet hardwood site immediately adjacent to the Hells Swamp mitigation site that has been designated an SNHA by NCNHP. Development of the proposed mitigation will yield satisfactory compensatory mitigation to sufficiently offset losses of part of the Bonnerton system.

I further find that the proposed compensatory mitigation will adequately offset the unavoidable impacts associated with the modified Alternative L. Compensatory mitigation for all unavoidable impacts is discussed in detail in Section 7, above, as well as in Appendix I of the FEIS. Figures 7, 8 and 9 of Appendix I provide a graphical representation of the mitigation sites in relation to the permit area. As compensatory mitigation for the proposed impact, PCS will provide 2:1 restoration or restoration equivalent for each acre of wetland impacted. This approach is consistent with EPA Region IV's mitigation policy and standard mitigation banking and permitting within North Carolina. Stream mitigation will be provided in several of the mitigation sites and the ratio of linear feet impacted to linear feet mitigated will meet or exceed the ratios recommended in the Wilmington District's April 2003 Stream Mitigation Guidelines (1:1 for poor quality streams, 2:1 for good quality streams and 3:1 for excellent quality streams).

Within and adjacent to the South Creek watershed, PCS will restore approximately 3,520 acres of wetland and 3,000 linear feet of stream, enhance approximately 543 acres of wetland and

preserve approximately 1,710 acres of wetland and 30,696 linear feet of stream. As further compensatory mitigation, PCS will restore approximately 885 acres of wetland and 19,783 linear feet of stream, enhance 46 acres of wetlands and preserve 41 acres of wetlands in the watershed of Pungo Creek, which flows into the Pungo River, a tributary to the Pamlico River. PCS will also restore 221 acres of wetland and 12,467 linear feet of stream, enhance 38 acres of wetlands and preserve 20 acres of wetland and 2,155 linear feet of stream within the upper watersheds of 2 tributaries of Bath Creek, a tributary to the Pamlico River. All remaining required mitigation will come from an approximately 4,200 acre site also located in the watershed of the Pungo River and comprised of 3,342 acres of wetland and 8,793 linear feet of stream restoration, 129 acres of wetland and 7,994 linear feet of stream enhancement and 701 acres of wetland preservation. The majority of the mitigation work will take place within the same 8-digit hydrologic unit (HUC) as the project (HUC 03020104). The only exception is a 481 acre portion of the Parker Farm, one of the South Creek sites, which is located within an adjacent hydrologic unit (HUC 03020105) immediately to the south of HUC 03020104.

Construction on several of the sites has been completed (Parker Farm, Gum Run, Bay City Farm and Upper Back Creek). Currently, PCS proposes to have all sites constructed no later than 2015. Table 3 depicts mitigation available and construction completion date. By this schedule, all mitigation will be in place before the impacts for which they are mitigating occur. Any permit I issue will be conditioned to require PCS to adhere to the mitigation construction timelines indicated in Table 3, and to periodically submit information demonstrating compliance with construction and monitoring timetables and achievement of success criteria. These reports will be submitted for review prior to pre-determined impact milestones

Finally, the NC Division of Water Quality has issued a Water Quality Certification pursuant to Section 401 of the Clean Water Act, finding that Alternative L will not result in a violation of applicable Water Quality Standards.

After consideration of the above factual determinations in light of the information contained in the FEIS and the overall record for this case, it is my determination that with the implementation of the attached Special Conditions, including full and successful completion of the compensatory mitigation plan, authorization of Modified Alternative L will not cause or contribute to significant degradation of the waters of the US.

d. Avoidance and Minimization of Impact

The alternative selection process is thoroughly described in Section 2 of the FEIS. Minimization efforts are demonstrated by contrasting the direct impacts to aquatic systems under the various alternatives as described in Section 4.2.2.11.2 and presented here in Table 1. Table 4-20 of the FEIS presents data on wetlands and biotic community impacts for each alternative considered. Pursuant to 40CFR Part 230.10(d) I have considered whether all appropriate and practicable steps have been taken to minimize potential adverse effects to the aquatic ecosystem and in accordance with the 1990 Memorandum of Agreement between EPA and the Corps regarding the determination of mitigation under the Clean Water Act 404(b)(1) guidelines, I have first considered avoidance through the determination of the least environmentally damaging practicable alternative and then considered further steps to minimize impacts including further

reduction of direct impacts as well as temporal minimization of impacts through permit conditions addressing timing of actual impacts and reclamation.

PCS's initial request was for authorization of the AP Alternative within the NCPC Tract. This mine plan avoided direct impacts to approximately 198 acres (5%) of the established 3,608 acre project area on NCPC. This avoidance included 140 acres (6%) of the waters of the US within the NCPC Tract project area. Approximately 131 of the 140 acres avoided by the AP Alternative are Public Trust Waters or Coastal Marsh Areas of Environmental Concern as regulated by NC Division of Coastal Management. This alternative would have resulted in recovery of 75,798,000 concentrate tons of the available ore at an average cost of approximately \$21.71 per ton. PCS was clear that its intention would then be to apply to mine the Bonnerton Tract and, if economically viable, the S33 Tract.

Based on PCS's intention to mine all three tracts if economically viable, the Corps, in consultation with the Review Team, decided that PCS should explore holistic mine plan alternatives that included mining in all three Tracts. PCS submitted the EAPA/B Alternatives in response to this decision. The EAPA/B Alternatives avoid direct impacts to 1,139 acres (8%) of the 15,100 acre project area including 712 acres (11%) of the waters of the US within the Project Area. Again, this avoided area includes approximately 136 acres of Public Trust Waters or Coastal Marsh. This alternative would have resulted in recovery of approximately 244,122,000 concentrate tons of the available ore at an average cost of approximately \$21.29 in the NCPC Tract, approximately \$22.32 in the Bonnerton Tract and approximately \$26.72 in the S33 Tract. The Corps evaluated several other alternatives in the DEIS.

Following the release of the DEIS, the Corps requested PCS explore Alternative L. Along with the required study of Alternative L, PCS submitted Alternative M as a potentially practicable alternative. Alternative M avoided direct impacts to 2,528 acres (17%) of the 15,100 acre project area including 1,788 acres (28%) of the waters of the US within the project area. This alternative would have resulted in recovery of approximately 204,269,000 concentrate tons (approximately 80%) of the available ore at an average cost of approximately \$21.51 in the NCPC Tract, approximately \$23.47 in the Bonnerton Tract and approximately \$27.16 in the S33 Tract.

By letter dated April 25, 2008, PCS requested authorization of Alternative L as described in the FEIS. This alternative avoids approximately 3,191 acres (21%) of the 15,100 acre project area including 2,245 acres (35%) of the waters of the US within the project area. This alternative would have resulted in recovery of approximately 185,213,000 concentrate tons (approximately 75%) of the available ore at an average cost of approximately \$22.01 in the NCPC Tract, approximately \$23.48 in the Bonnerton Tract and approximately \$27.09 in the S33 Tract.

Following release of the FEIS, the Corps and NCDWQ worked with PCS to further minimize the impacts associated with Alternative L. In March of 2009, the Corps notified EPA, NMFS and USFWS pursuant to CWA Section 404(q) of our intention to issue a conditioned permit for a modified version of Alternative L that would have avoided 2,403 acres (38%) of the waters of the US within the project area. EPA ultimately chose to request elevation of this decision to the Assistant Secretary of the Army for Civil Works (ASA-CW) pursuant to CWA Section 404(q). Following a site visit and thorough review by ASA-CW and USACE Headquarters personnel,

the ASA-CW remanded the decision back to the Wilmington District Commander with instructions to work with PCS, EPA, USFWS and NMFS to identify any further impact minimization deemed practicable or otherwise agreed to by PCS. As a result of this effort, further minimization was identified and agreed to by the PCS. Modified Alternative L avoids direct impacts to approximately 3,757 acres (25%) of the 15,100 acre project area including 2,453 acres (38%) of the waters of the US within the project area and result in recovery of approximately 172,473,000 concentrate tons (approximately 66%) of the available ore. Modified Alternative L avoids all of the 49 acres of Public Trust Waters and 87 acres of brackish marsh within the project area as well as 142 acres (70%) of the bottomland hardwood forest. Within the Bonnerton Tract, Modified Alternative L avoids approximately 212 acres (78%) of the NCNHP SNHA. The modified Alternative L will result in the direct loss of 3,927 acres of waters of the US including 10,332 linear feet of perennial and 12,103 linear feet of intermittent stream.

To further minimize impacts, any permit I issue will be conditioned to ensure that mine related impacts do not occur on any area until necessary to facilitate the mine progression. Figure 2 shows the areas to be impacted under modified Alternative L and the timeframe during which mine preparation work would begin. The reclamation efforts will further minimize the duration of these impacts. While reclamation will not return the impacted areas to pre-project conditions, reclamation activities will return mined areas to a stable and vegetated condition. These reclaimed areas will be contoured to allow overland flow to be returned to the surrounding natural areas and creeks to extend practicable. To assure timely accomplishment of the reclamation, permit conditions will require reclamation milestones be met. These conditions will be coordinated with the NC Division of Land Resources.

This incremental progression of impacts combined with the reclamation activities will minimize temporal losses and will allow mobile terrestrial and aquatic wildlife species to seek refuge in other areas as mining progresses. Additionally, reclamation efforts will result in reestablishment of terrestrial wildlife habitat in the mined areas. This incremental mine progression, combined with reclamation efforts, will also ensure over time that wildlife populations are not isolated by the work.

I find that, with the minimization measures discussed above, PCS has taken all appropriate and practicable steps to minimize adverse impacts to the aquatic ecosystem.

11. Public Interest Review

All public interest factors have been reviewed. Both cumulative and secondary impacts on the public interest were considered. The following public interest factors are considered relevant to this proposal.

a. Conservation. Avoidance and minimization efforts, as discussed above and in Sections 2 and 4 of the FEIS, have resulted in a mining footprint that minimizes impacts to the aquatic environment to the maximum extent practicable. Modified Alternative L as conditioned allows for reasonable recovery of the available mineral resource while resulting in only those environmental impacts necessary to make that recovery at a reasonable and practicable cost.

b. Economics

The public need and local, regional and state economic benefit are discussed in Sections 1.2.1, 3.17, 4.2.1.17 and 4.2.2.17 of the FEIS. PCS is the largest private employer in Beaufort County, and one of the largest private employers in the region. PCS outputs over \$64 million in direct payroll per year with approximately half going to employees in the mine and mill operation. PCS is Beaufort County's largest taxpayer and based on the economic activity generated throughout the state, North Carolina's annual tax impact from PCS Phosphate is well over \$70 million.

Recreational and commercial fisheries, tourism and agriculture also play a major role in the local economies of Beaufort and surrounding counties, as discussed in Sections 3.17.1.1.2.3 and 3.17.1.1.2.4. The areas proposed to be mined do not support tourism, and tourism should therefore not be appreciably affected. There may be some minor, localized impacts to agriculture operations due to the loss of farmlands either as a result of mining or compensatory mitigation; however, the agriculture industry as a whole will benefit from the products produced by PCS. There may be some localized impacts to commercial fisheries landings due to the potential reduction of nursery functions within waters immediately adjacent the project area. This impact should not be substantial and should be offset by the enhancement of fisheries resources in adjacent areas of the Pamlico River through the benefits provided by the compensatory mitigation.

c. Aesthetics

Section 4.2.1.17.10 of the FEIS discusses impacts to aesthetics. The aesthetic value of the project area has been historically impacted through mining, agricultural and silvicultural activities. The aesthetic value of the mine area will be impacted during mining activities but should largely be returned through reclamation activities. Large, vegetated earthen dikes are constructed around the mining activities so the impacts to aesthetics of the surrounding areas should not be appreciably affected.

d. General environmental concerns

Sections 4.1 and 4.2 of the FEIS discuss the likely affects of the project on environmental resources. Section 4.3 of the FEIS discusses the reclamation efforts and proposed compensatory mitigation, detailed in Appendix I of the FEIS. The mining activities associated with the authorization of Modified Alternative L will impact important terrestrial and aquatic resources and will alter the natural environment of the project area. The completion of reclamation activities will ensure that, in the long term, the project area is returned to some useful state, providing return of some functions similar to that provided by the existing natural environment. Implementation of the compensatory mitigation plan will ensure that any permanent environmental impacts are adequately offset.

e. Wetlands

Sections 4.1 and 4.2 of the FEIS discuss the likely affects of the project on wetlands in and around the project area. The permanence and severity of those affects is also discussed above. I recognize that the proposed project includes permanent impacts to a substantial area of wetlands, which serve important functions, including flood storage, nutrient cycling and habitat. PCS has demonstrated that impacts to wetlands are necessary in order to provide practicable recovery of the ore resources. In compliance with the 404(b)(1) guidelines, all appropriate and practicable steps to avoid and minimize impacts to wetlands have been taken. This avoidance and minimization has focused on avoiding direct impacts to open waters and wetlands riparian to those waters and avoiding fragmentation of large contiguous wetlands. As discussed fully in Appendix I of the FEIS and above, all unavoidable impacts to wetlands will be offset by PCS's proposed mitigation plan.

Modified Alternative L includes impacts to a site the North Carolina Natural Heritage Program has characterized as a significant natural heritage area of national importance. The context of that assessment and its implications for my decision are thoroughly addressed above. PCS has made every appropriate and practicable attempt to minimize impacts to these and other important wetlands, and has offered compensatory mitigation at the Hells Swamp site to specifically offset unavoidable impacts to this area.

I have considered the overall impacts to wetlands, both individually and cumulatively, the efforts undertaken to avoid and/or minimize those impacts and the degree to which those impacts will be offset by the compensatory mitigation. I have also considered the elements of the public interest served by the authorization of this project and my finding that the modified Alternative L is the least environmentally damaging practicable alternative. Based on this evaluation, I have determined that the overall project will benefit aspects of the public interest, and the wetland impacts associated with Modified Alternative L are necessary for the practicable undertaking of the overall project. I have also determined that the lost or degraded functions of the impacted wetlands will be returned or offset by the reclamation and compensatory mitigation described in Section 4.3 of the FEIS. Therefore, considering the degree to which the wetland impacts are minimized and compensated for, I have determined that the benefits gained by these impacts outweigh the overall impacts.

f. Historic properties

As described in Section 4.2.2.16, investigation of the entire 15,100 acre project area revealed no sites either listed or eligible for listing in the National Register of Historic Places. By letter dated July 27, 2006, the NC Department of Cultural Resources concurred with this finding and that no further cultural resource investigation was necessary. It is therefore my finding that the proposed alternative L will result in no effect to historic properties either listed or eligible for listing in the National Register of Historic Places pursuant to Section 106 of the National Historic Preservation Act.

g. Fish and wildlife values

Section 4.2.1.11 of the FEIS discusses likely impacts to fish and wildlife values. The scale and likely magnitude of these impacts are discussed above. With modified Alternative L all appropriate and practicable steps to minimize the adverse effects of this action on the aquatic environment have been taken. Minimization efforts have resulted in the maintenance of wildlife corridors around all major water bodies. Additionally, conditions included in any authorization will ensure that impacts and reclamation occur over time, thereby affording more motile wildlife the opportunity to relocate to undisturbed or reclaimed areas.

Section 4.2 of the FEIS thoroughly discusses the likely indirect effects of the project on surrounding wetlands and aquatic habitat, including nursery areas and EFH. As discussed above, the project will likely result in some modification of the ecosystems of the upper reaches of tributaries located within the project area, but outside the actual impact footprint. Impacts will, however, be minimized by the avoidance of riparian wetlands and watershed. As referenced throughout Sections 3 and 4 of the FEIS, onsite research indicates that while the nursery functions of these areas may be impaired to some degree, they will not be completely lost. It is fully expected that nutrient cycling will continue, organic matter will continue to be provided and any changes in water quality will be within the toleration limits of most aquatic species present. This, combined with the benefits provided to these and other nursery areas within the watershed by the compensatory mitigation efforts should ensure that overall impacts to nursery functions and habitat suitability of the lower Pamlico River estuary are appropriately minimized, and are within acceptable limits.

h. Flood hazards and Floodplain values

Flood storage reduction due to local wetland losses associated with this project is not likely to result in adverse impacts to neighboring properties or to the extended Pamlico River watershed. Wetland restoration associated with PCS's mitigation plan will likely increase the flood storage capacity within the hydrologic unit as a result of additional wetland acreage (restoration of wetlands at a ratio greater than 1:1). Additional discussion of flood storage and storm flood abatement can be found at Sections 4.2.1.7 and 4.2.2.7 of the FEIS.

Impacts to floodplain values related to water resources, cultural resources and cultivated resources are thoroughly discussed in Sections 4.1 and 4.2 of the FEIS and elsewhere in this document. The proposed floodplain impacts associated with Modified Alternative L have been minimized to the maximum extent practicable as discussed above in the 404(b)(1) analysis. This minimization, combined with the compensatory mitigation described in Section 4.3 and Appendix I of the FEIS will ensure that impacts to the floodplain resources are not contrary to the public interest.

As directed by Executive Order 11988, agencies shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare and to restore and preserve the natural and beneficial values served by floodplains. The potential impacts of the proposed action on floodplain values was discussed in the DEIS and the FEIS. I have considered the potential affects of this authorization on floodplains and I find that, as discussed above, PCS has

taken all appropriate and practicable steps to minimize the impacts of the proposed project on floodplain values.

i. Land use

The majority of land within the boundary of Modified Alternative L is either owned or controlled by PCS. As such, public access and use of much of this land is limited. Implementation of this project will not restrict the general public's use of surrounding lands.

j. Navigation

There will be some impacts to perennial and intermittent streams associated with mining under Modified Alternative L, however, these impacts will occur in areas not considered navigable. This project will not restrict navigation within navigable or Public Trust waters.

k. Shore erosion and accretion

This project should have no appreciable affect on the erosion and/or accretion of shoreline.

l. Recreation

Section 4.2.1.17.9 addresses impacts to recreational resources. There may be some localized decline in the availability of fisheries sought by recreational fishermen, however, this decline should not be substantial and should be offset by the enhancement of fisheries resources in adjacent areas of the Pamlico River through the benefits provided by the compensatory mitigation.

m. Water supply and conservation

As discussed in Sections 4.1.2.3 and 4.1.2.4 any mining at this site will require depressurization of the Castle Hayne aquifer as well as local shallow aquifers. These depressurizations should not result in any adverse affect or long term reduction in these systems. As discussed in Section 4.2.2.4, any impacts to local water supplies attributable to the depressurization will be fully mitigated by PCS.

n. Water quality

On January 15, 2009 the NC Division of Water Quality issued a Water Quality Certification pursuant to Section 401 of the Clean Water Act, finding that Modified Alternative L will not result in a violation of applicable Water Quality Standards.

o. Energy needs

The PCS operation at Aurora does have some ability to generate electricity. This is predominantly for use within the operation but is at times sold to the local electric provider. The authorization of Modified Alternative L would constitute a continuation of existing operations

but not an expansion of production. Therefore, energy demands in the form of electricity and fuel should have no appreciable change.

p. Safety

The authorization of Modified Alternative L would constitute a continuation of existing operations and must be fully compliant with all Occupational Safety and Health Administration (OSHA) and Mining Safety and Health Administration (MSHA) requirements. Dike structures are not likely to present danger to the surrounding area or the general public. Safety and reliability of all dike structures is discussed in Section 4.3.1.5.4.

q. Food and fiber production

The authorization of Modified Alternative L will not directly result in any production of food or fiber and will not have a substantial negative effect on the production of food or fiber. The mining, reclamation and mitigation efforts will result in the removal from production of agricultural and silvicultural lands. However, the overall effect on the regional production of agricultural and silvicultural commodities should be negligible. The authorization will have indirect positive effects by allowing for the recovery of phosphate ore to be used in the production of fertilizer and livestock feed supplements.

r. Mineral needs

The authorization of Modified Alternative L will allow for cost effective recovery of one of the United States' largest deposits of phosphate ore. Over the 35 – 36 years of operation included in the modified Alternative L, PCS will recover approximately 172,473,000 tons of phosphate concentrate. Currently, this mine and operations in Florida account for more than 85% of the domestic output of phosphate rock. Section 1.3 of the FEIS discusses both the local and national need for the product produced by this operation. According to USGS, more than 90% of the phosphate rock mined in the US is used in the production of fertilizers and animal feed supplements. Currently, the US is dependant upon foreign sources for approximately 10 – 14% of the phosphate rock we consume. As recovery at the few remaining mining operations becomes limited, the US reliance on foreign suppliers for this necessary commodity will increase.

s. Considerations of property ownership

The Applicant began purchasing land in the early 1960s. PCS currently owns or holds mineral rights to approximately 95% of the project area. In making this decision, I have considered the right of the property owner to reasonable use of its property. I have balanced this with the rights and interest of the general public to environmental protection. As discussed throughout the FEIS and this document, the proposed work, when considered in light of the reclamation requirements and the compensatory mitigation, should not result in substantial adverse impacts to the aquatic environment. I have further considered the degree to which the proposed project will affect real property not under the ownership of PCS. The work will not affect full and free access to surrounding properties nor should it result in any substantial degradation of surrounding

properties. It is my determination that the authorization of modified Alternative L will allow PCS reasonable use of its property while sufficiently protecting the rights of surrounding property owners and the general public.

12. Territorial sea, activities affecting coastal zones, activities in Marine Sanctuaries.

This project will have no effect on the limits of the territorial sea or on Marine Sanctuaries. NCDCM issued a conditioned concurrence on January 30, 2009 finding that the proposed project is consistent with the enforceable policies of North Carolina's coastal management program.

13. Other Federal, state or local requirements

My issuance of any authorization for this activity does not remove the responsibility of PCS to obtain any other required federal, state or local authorizations.

14. Findings and Conclusions

I have reviewed the proposed project pursuant to the 404(b)(1) guidelines (40 CFR Part 230). On the basis of my analysis, discussed in greater detail in the FEIS and Section 10, above, I find that modified Alternative L is the least damaging practicable alternative, and that Alternative L, as modified, avoids and/or minimizes impacts to wetlands and other waters to the maximum extent practicable. I have also found that PCS's proposed work would eliminate or degrade waters of the United States, specifically, the wetlands and other waters that will be mined. I find, however, that the implementation of the proposed compensatory mitigation plan will adequately compensate for the wetland losses associated with Alternative L, as modified, so that the proposed plan, including the mitigation, does not cause or contribute to significant degradation of the waters of the United States.

In addition, I have found that the proposed work will reduce the watersheds of creeks that are tributaries of the Pamlico River. These impacts are not permanent; I have conditioned the permit to require that these mining areas be reclaimed to a useful state that will contribute watershed functions to the surrounding waters. The compensatory mitigation discussed in Appendix I of the FEIS and Section 7, above, will also offset impacts of this loss of drainage area. The mitigation plan will not replace the streams and wetlands mined; however, it will restore wetlands and streams in other areas feeding into South Creek, the Pamlico River and the Albemarle/Pamlico Estuary, and compensate for any decreases in productivity and habitat values in the areas adjacent the mined resources.

I have reviewed and evaluated the impacts of this application, considering all relevant public interest factors as discussed in Section 11 of this document, the impacts of this application described in the FEIS, and the comments of Federal and non-Federal agencies, environmental groups and other members of the public.

I find that the work can be permitted in accordance with regulations published in 33 CFR Parts 320-327. My decision to issue this permit is based on my evaluation of the probable impacts, including cumulative impacts, as described in the FEIS, and anticipated effects on the public interest. Evaluation of the probable impacts that the proposal could have on the public interest

included a careful weighing of all relevant factors. The benefits that reasonably could be expected to accrue from the proposal, including the public's need for phosphate products and the economic benefit the mine provides the region, and PCS's private need to utilize its phosphate resources in an economically viable manner, were balanced against reasonably foreseeable detriments, including the loss of wetlands and other waters, reductions in watersheds of area creek, the Bonneron SNHA, and potential impacts to the Albemarle/Pamlico Estuary. I have considered the overall impacts to wetlands, both individually and cumulatively, and find that the benefits gained by these impacts outweigh the overall impacts. My decision reflects the national concern for both protection and utilization of important resources, as well as the relative extent of public and private need for the proposed work.

I have also evaluated the extent and permanence of the beneficial and/or detrimental effects of the proposed work, and on the public and private uses to which the area is suited. The proposed work will permanently impact 3,927 acres of wetlands, streams and open water. These impacts will be offset by the compensatory mitigation required as a condition of this permit to be available as impacts occur. Reduction of watersheds, also a concern, will be long-term; however, it will not be permanent, as I have required that the mined area be returned to vegetated watershed acreage during the reclamation process. Concerns have also been raised about potential water quality impacts of the proposed project, as well as impacts from cadmium levels resulting from the reclamation process. Permit conditions requiring monitoring and, if necessary, remedial action, as well as capping of the reclamation areas, should address these concerns. The benefits of the proposed work, including the utilization of the phosphate reserves found in the area, and the benefits to the economy of the general area, will last for at least the life of the mine authorized by this permit.

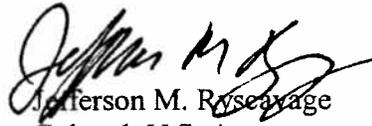
On balance, the total public interest would best be served by the issuance of a Department of the Army permit for Modified Alternative L. I find that the proposed project is not contrary to the public interest, and that there are no practicable alternatives that meet PCS's purpose and need that have less environmental, including wetland, impacts. The State of North Carolina has considered the potential water quality impacts of the proposed project, and has issued a conditioned Clean Water Act Section 401 Water Quality Certification for the Project.

The EPA, USFWS, and NMFS have continued to express concern over this project. The EPA, in fact, elevated this permit action to the Assistant Secretary of the Army, Civil Works (ASA(CW)), pursuant to Section 404(q) of the Clean Water Act (33 U.S.C.A § 1344 (q)), and the Memorandum of Agreement (MOA) between the Corps and EPA dated August 11, 1992. Both the Department of the Interior (USFWS) and the Department of Commerce (NMFS) also have the authority to elevate permit actions to the ASA(CW); neither agency did so.

The ASA (CW) responded to EPA by letter dated May 6, 2009, concluding that the impacts I proposed to authorize are not unacceptable, in light of the proposed mitigation, reclamation, and monitoring conditions. The ASA (CW) directed me, however, to meet with EPA, the applicant, and, if interested, USFWS and NMFS, to determine if further avoidance and minimization of impacts were either practicable or otherwise agreed to by the applicant, prior to proceeding with final action on the permit decision in accordance with the MOA. I was directed to focus this effort to the headwater areas of Jacks, Jacobs and Porter Creeks, based on discussions the ASA

(CW) had with EPA. As a result of those discussions, the applicant offered to reduce impacts by 111 additional acres in areas of interest to the Federal agencies. This reduction is reflected in Modified Alternative L.

I have considered the comments of these Federal agencies, as well as State and local agencies, environmental groups, and other interested members of the public. I find that the project complies with the 404(b)(1) guidelines, 33 CFR Parts 320-327, and is not contrary to the public interest. I am therefore issuing the permit for modified Alternative L, to include the attached Special Conditions.



Jefferson M. Rosecrance
Colonel, U.S. Army
District Commander

ATTACHMENT 1 TO RECORD OF DECISION
ACTION ID 200110096
RESPONSE TO COMMENTS

General Issues

a. Practicability Considerations (Economic Analysis)

The Corps received comments on both the SDEIS and FEIS stating that the Corps' economic evaluation of alternatives is faulty. In particular, EPA, the Southern Environmental Law Center (SELC), and the Pamlico Tar River Foundation (PTRF) have attempted to identify an approach to the economic analysis of alternatives that would demonstrate that alternatives having lesser impacts than Alternative L are indeed practicable. Those comments are addressed below.

The Corps' approach to determining alternative practicability as it relates to cost was fully described in Section 2.7 of the FEIS. The concerns expressed regarding the Corps' approach and other suggested approaches were addressed either in that section or in the response to comments section of the FEIS (Appendix J). In addition to the formal comment and response process, the Corps has met numerous times with these groups and has analyzed each alternate approach recommended. The Corps has determined that the original approach using the Marston model, which amortizes major capital expenditures over the mining area for which those expenditures are necessary, is most appropriate. The Corps has also concluded that comparison of these cost estimates to an independently generated industry estimate of product value (the USGS value) is the most appropriate gauge available for determining cost practicability. Finally, the Corps has determined that alternatives that give PCS approximately 15 years of operation within the less costly Tracts (NCPC and Bonneron) are practicable while alternatives that would require mining within the S33 Tract within the initial approximately 15 years are not practicable.

The Corps' evaluation of the cost of alternatives for the purposes of its 404(b)(1) analysis consisted of three basic steps; developing a model to predict cost, inputting data into that model, and analyzing and evaluating the results. Some comments seem to be a result of the commenter confusing the steps of the cost analysis.

1. Marston Model v. Cash Cost Model. The SELC commented that the Corps has not consistently applied the DEIS Marston cost model, but rather has incorporated the cash cost model into its practicability analysis. The SELC also stated that the Corps improperly claimed it used the Marston model, when it in fact used the cash cost model. I disagree with this assessment.

The Corps has been discussing the use of the Marston model for many years with PCS, members of the review team, and several economists, including Dr. Douglas Wakeman (an economist whose comments were provided to the Corps by PTRF and SELC) and economists from EPA. After the opportunity for full review of and comment on the Marston model by interested parties and their economists, and after calibrating the Marston full cost model with past costs of the PCS mine, the Corps determined that the Marston full cost method of calculating future costs is a

reasonable method to determine future costs of mining phosphate at the PCS Aurora facility. This method is presented as the basis for the Corps economic analysis in both the DEIS and the FEIS.

Following release of the DEIS, PCS submitted what it termed a “cash cost basis evaluation” using the Marston model but inputting capital and development cost on a cash cost rather than full cost basis. Specifically, those capital and development costs associated with mine relocation were placed fully in the years in which they must be expended, rather than amortized over the life of the mining those costs make possible. PCS’s purpose in this presentation was, among other things, to demonstrate that by basing decisions on the seemingly lower cost in the initial years of mining in the S33 Tract, the Corps was ignoring the fact that there were substantial costs that must be incurred to move into the S33 Tract, which may not be recovered.

PCS must make major capital investments when developing a new mine area. When making the decision to proceed with these investments, PCS must look at whether these capital investments are worth making by amortizing the cost of the investment over the production that the investment makes possible; rather than by simply assessing whether or not sufficient capital is readily available. In this case, the move to S33 does not, under current market conditions, appear to be a cost effective investment of capital, because estimated cost of production in most of S33 exceeds the estimated value, based on USGS data, of the product being produced. It was that consideration that led to the development of Alternative L and the Supplement to the DEIS.

The Corps considered all comments suggesting a shift to a “cash-cost” accounting method of inputting data into the model, and ultimately determined that such a shift would not be appropriate. The basic concern that I find with this approach is that a true “cash cost” method involves placing capital expenditures fully within the years in which the money must be invested, rather than amortizing the capital investments over the years of operation for which the capital investment is required. Applying the data in this way gives an indication of when capital must be available, but does not necessarily inform the decision maker whether a capital investment will be returned in an economically viable fashion.

2. Net Present Value. In comments received following the release of the SDEIS and FEIS, EPA and SELC, with the assistance of Dr. Douglas Wakeman, suggested using the model with costs input in a cash cost basis, applying an NPV adjustment and then comparing the results to PCS’s profits. For reasons already thoroughly addressed both here and in Section 2.7 of the FEIS, the Corps did not find the cash cost analysis or the use of profit to be appropriate. The Corps did consider the approach of applying the principles of net present value in conducting its economic analysis but ultimately decided that this approach would introduce further confusion and uncertainty into the analysis without providing any further or different information to the decision maker.

Comparing the total cost of alternatives, regardless of whether those total costs are calculated using the full cost model, the cash cost model, or whether the net present value method has been used, is not particularly useful in answering the question of whether a particular alternative is practicable. Such an analysis does not show the reality that some years can have very reasonable

costs, followed by many years of unreasonable costs. This is particularly true where the analysis covers a very long period of time.

In comments received by e-mail dated June, 25, 2008, EPA took the NPV analysis a step farther, by comparing the NPV of the annual costs for each alternative costs as calculated by the Marston cost model to the NPV of the USGS value estimates. (footnote 1)

The EPA analysis begins by calculating a "Net Present Value of Each Alt," using both a 3% and 7% discount rate. EPA also calculated the value for ore for each year, using an "ordinary least squares regression" to predict the USGS per ton prices over a 75 year period, beginning in 1991, and ending in 2065. EPA then subtracted the annual per ton cost of ore under each alternative from the predicted USGS price to determine the annual net value of that alternative. Using this method, EPA calculated the net present value of the SCRA alternative as approximately \$333.4M with a 3% discount rate, and the net present value of Alternative L as \$370.8M at 3%.

Although EPA's method of calculating the NPV of each alternative differs from Dr. Wakeman's method, the fundamental problem with both of these analyses is the same. Both Dr. Wakeman and EPA looked at these values cumulatively, generally over a period of at least 30 years. This cumulative view results in large positive numbers. What the total net present value considered by both Dr. Wakeman and EPA does not show is that when the net present value is annualized over the appropriate time periods, the total cumulative NPV remains positive because large positive numbers in the early years offset a persistent stream of negative results in the out years. This approach can work fine when used in public finance decisions where alternatives are weighed to find the one that might do the most public good. When business and industry are faced with years of negative results, however, they will most likely direct their capital into other ventures. Therefore, I consider applying this approach to private industry and expecting a private business to continue operation when faced with several years of negative value is not reasonable.

The NPV method is an important tool in evaluating major capital expenditure projects, because it provides a means of calculating the time value of money. Ideally, it allows one to compare the net cash flows of various projects as well as the amount of money in today's dollars needed to implement each project. NPV analysis is well suited for public investment evaluations, such as evaluating the economic impact of proposed regulations, as mentioned by EPA. The Corps of Engineers uses similar analysis in evaluating the economic benefit of proposed Federal water resources projects. The method is also useful in evaluating businesses with fairly constant costs. The net present value technique, however, is less valuable in analyzing economic outlook in a business such as PCS, where costs fluctuate substantially. While I accept that PCS can withstand short time periods of high costs, I do not consider it reasonable to require a private business to incur several years of unreasonable costs, even if the average of annual costs, or the total costs of an alternative that covers many years, appears to be reasonable. Discounting and calculating a net present value does not change that dynamic.

Another limitation of standard Total NPV analysis is that there is no reassessment of the company's financial standing taken into account during the period of evaluation. In other words, neither annual improvements in the company's capital situation or annual losses are factored into the decision on an updated basis. This is largely recognized as a limitation of NPV methods; that it excludes the value of real options within the investment. PCS's option of abandoning a

losing project in the future is a very real possibility that cannot be evaluated using the suggested Total NPV approach. Put more simply, the large and positive cumulative net present value of each alternative implies that all will be well; in other words, price will always exceed costs. In reality, with all alternatives, costs become unreasonably high in later years, coming within or exceeding the upper range of the USGS price or value. This is essentially the same information gained through the approach employed by the Corps and leads to the same conclusions described in Section 2.7 of the FEIS.

Regardless of the method used to calculate costs, it is clear that mining the S33 tract has much higher annual costs than mining other portions of the project area. I consider the annual cost of mining the majority of S33 to be unreasonable under current market conditions. I also consider it reasonable to consider the full cost of the move to S33 as part of the annual costs for mining the small portion of S33 where mining costs would otherwise be reasonable. Considering cost in that manner makes the cost of mining any of S33 currently unreasonable. Because I have considered an approximately 15 year time frame to be reasonable in making my assessment, I have found that an alternative must provide approximately 15 years of mining north of the S33 tract to be considered practicable. I do not believe that either the wholesale adoption of the cash cost model, or performing a net present value analysis changes my conclusion, or makes the basis of my decision clearer to the public.

b. Mitigation

Some commenters raised concern over the adequacy and appropriateness of the compensatory mitigation proposed. As compensatory mitigation for the proposed impact, PCS would provide 2:1 restoration or restoration equivalent for each acre of wetland impacted, the majority (more than 7,000 ac.) being restoration. Stream mitigation would be provided in several of the mitigation sites, and the ratio of linear feet impacted to linear feet mitigated will meet or exceed the ratios suggested in the Wilmington District's April 2003 Stream Mitigation Guidelines (1:1 for poor quality streams, 2:1 for good quality streams and 3:1 for excellent quality streams).

Within the South Creek watershed, PCS would restore approximately 3,445 acres of wetland and 3,000 linear feet of stream, enhance approximately 162 acres of wetland and preserve approximately 1,575 acres of wetland and 31,008 linear feet of stream. As further compensatory mitigation, PCS would restore approximately 885 acres of wetland and 19,783 linear feet of stream, enhance 46 acres of wetlands and preserve 41 acres of wetlands in the watershed of Pungo Creek, which flows into the Pungo River, a tributary to the Pamlico River. PCS would also restore 221 acres of wetland and 12,467 linear feet of stream, enhance 38 acres of wetlands and preserve 20 acres of wetland and 2,155 linear feet of stream within the upper watershed of 2 creeks tributary to the Pamlico River. All remaining required mitigation would come from an approximately 4,200 acre site also located in the watershed of the Pungo River and comprised of 3,342 acres of wetland and 8,793 linear feet of stream restoration, 129 acres of wetland and 7,994 linear feet of stream enhancement and 701 acres of wetland preservation.

The majority of the mitigation work would take place within the same 8-digit hydrologic unit (HUC) as the project (HUC 03020104). The only exception is a 481 acre portion of the Parker Farm, one of the South Creek watershed projects, which is located within an adjacent hydrologic

unit (HUC 03020105) immediately to the south of HUC 03020104. It should be noted that due to existing manmade drainage features in combination with topography, surface waters are routinely exchanged between these sub-basins.

Site-specific restoration plans have already been approved, or are under development for each mitigation property. Special conditions in the form of mitigation milestones are added to the permit to require the approval, and if necessary, authorization of each site-specific plan before PCS may move forward with mining beyond each milestone. PCS employed a team of biologists, stream ecologists, engineers, hydrogeologists, soils scientists, and compensatory mitigation practitioners to ensure that all aspects of project design are appropriately implemented. The work plans include components that are specific, measurable, attainable, reasonable, and trackable utilizing pertinent mitigation literature and guidance including Wilmington District's stream and wetland mitigation checklists. As-built reports will be generated for each site to verify compliance with construction standards and to provide baseline conditions for annual monitoring. Monitoring will be undertaken and detailed reports submitted on a yearly basis for a minimum of five years, or until success is documented, whichever is longer.

The mitigation sites are thoroughly described in Appendix I of the FEIS and Section 7 of the ROD. The detailed mitigation site plans for several of the sites (Bay City Farm, Upper Back Creek, Sage Gut and Rutman Creek) have been circulated to the Federal and state review agencies. All agencies and NGOs involved with the review team were given the opportunity to visit each site and provide comment, however, few participated. The Corps has subsequently approved site specific mitigation plans for the Bay City Farms, Upper Back Creek and Rutman sites. Construction on several of the sites has been completed (Parker Farm, Gum Run, Bay City Farm and Upper Back Creek) totaling approximately 950 acres of restoration and 200 acres of enhancement. Currently, PCS proposes to and is on schedule to have all sites constructed no later than 2015. Table 3 of the ROD depicts mitigation available and construction completion date.

PCS's current mitigation plan includes an approximately 10% overbuild on wetlands as a contingency in case adjustments are needed in the future. PCS proposes to fully construct and preserve all sites as described in Appendix I and subsequent Corps approved site specific mitigation plans. If all sites are 100% successful, the total plan will result in more wetland mitigation acreage than is necessary to compensate for the authorized impacts. Should this occur, a portion of Rutman Phase II and the entirety of Rutman Phase I will not be used as mitigation for this impact. This is more thoroughly discussed in Section 7 of the ROD.

Any permit issued for Modified Alternative L will be conditioned to require PCS to adhere to the mitigation construction timelines indicated in Table 2, and to periodically submit information demonstrating compliance with construction and monitoring timetables and achievement of success criteria. These reports will be submitted for review prior to pre-determined impact milestones, likely annually. These reports will be made available either in whole or in summary to any agency or member of the public so desiring. The information in these reports and any comments received on these reports will be used by the Corps to determine whether impacts schedules need be adjusted or halted.

Specific Comments

The purpose of this section is to address specific comments not addressed either in the FEIS, ROD or General Issues Section above.

a. Environmental Protection Agency (EPA)

C1. The Corps does not identify a NEPA “preferred alternative” or a LEDPA in the FEIS.

R1. Section 1.3 of the FEIS identifies Alternative L as the proposed action and applicant preferred alternative, as required by our regulations at 33 CFR Part 325, Appendix B 9.b.(5), which also states the Corps is neither an opponent nor proponent of the proposed action. The decision as to whether the preferred alternative is the Least Environmentally Damaging Practicable Alternative (LEDPA) is made during the 404(b)(1) analysis phase of the permit decision, to allow for consideration of comments received on the FEIS. Both the LEDPA and environmentally preferred alternative are identified in this Record of Decision.

C2. EPA recommends the completion of a detailed mitigation plan for impacts to the S33 tract well in advance of any mining in this area.

R2. A detailed mitigation plan to offset impacts for the entirety of modified alternative L has been developed and provided to review team members including EPA. This detailed plan is described in Section 7 of the ROD. Any permit issued will include special conditions requiring such mitigation, with a timetable requiring sufficient compensatory mitigation for impacts to aquatic resources be constructed and approved prior to those impacts.

C3. EPA recommends that the economic reopener clause, or other suitable measures, remain an option for future adaptive management.

R3. Permit conditions will require PCS to periodically report information on impact progression, mitigation success, reclamation progression and environmental monitoring. This information will be made available in whole or in summary to any interested party and the Corps will accept comment on the information. As with any permit, the Corps reserves the right to modify, suspend or revoke any permit decision if appropriate.

C4. EPA stated that its primary concerns are with the “wetland and stream impacts to watersheds supporting the Albemarle Pamlico Estuary system over an extended timeframe, together with the cumulative impacts of ongoing mining.”

R4. Based on these and similar comments, the Corps worked with PCS and NCDWQ to further minimize impacts associated with Alternative L. In March of 2009, the Corps notified EPA, pursuant to CWA Section 404(q) of our intention to issue a conditioned permit for a modified version of Alternative L that would have avoided 2,403 acres (38%) of the waters of the US within the project area. This modification included further avoidance of approximately 163 acres

of Waters of the US including an additional 3.79 acres of tidal palustrine forest identified as Essential Fish Habitat (EFH) at the headwater of Huddy Gut as well as additional avoidance within the headwaters of Tooley Creek. Further minimization was also achieved in the areas buffering Broomfield Swamp and Cypress Run in the S33 Tract and in the headwater area of Porter Creek in the Bonnerton Tract. EPA ultimately chose to request elevation of this decision to the Assistant Secretary of the Army for Civil Works (ASA-CW) pursuant to CWA Section 404(q). Following a site visit and thorough review by ASA-CW and USACE Headquarters personnel, the ASA-CW remanded the decision back to the Wilmington District Commander with instructions to work with PCS, EPA, USFWS and NMFS to identify any further impact minimization deemed practicable or otherwise agreed to by PCS. As a result of this effort, further minimization was identified and agreed to by the PCS. Modified Alternative L avoids direct impacts to 2,453 acres (38%) of the waters of the US within the project area including all of the 49 acres of Public Trust Waters and 87 acres of brackish marsh within the project area as well as 142 acres (70%) of the bottomland hardwood forest. While this activity will result in the long-term alteration and, in some cases, permanent loss of wetland and upland wildlife habitat within the mined footprint, the avoidance and minimization efforts incorporated into Alternative L will result in the maintenance of upland and wetland wildlife corridors along the Pamlico River, South Creek, Durham Creek and their tributaries. The compensatory mitigation required will offset impacts to the Albemarle Pamlico Estuary System.

C5. EPA commented that the impacts of Alternative L should be further minimized and identified specifically, the nonriverine hardwood wetland area in Bonnerton listed by the North Carolina Natural Heritage Program as a Significant Natural Heritage Area (SNHA) of national importance, and areas surrounding Broomfield Swamp and Cypress Run in the S33 Tract that were avoided under the SCR boundary.

R4. Through efforts led by the North Carolina division of Water Quality, further minimization of the impacts to the SNHA has occurred. On January 15, 2009, the NC Division of Water Quality (NCDWQ) issued certification pursuant to Section 401 of the Clean Water Act that mining Alternative L would not violate State water quality standards provided several conditions were followed. One of these conditions required the avoidance of an additional approximately 124 acres of the SNHA, resulting in total avoidance of approximately 174 acres (approximately 64%) of this SNHA as depicted on the attached modified Alternative L boundary graphics. Additionally, modified alternative L includes further avoidance of areas surrounding Broomfield Swamp and Cypress Run. The current modified Alternative L impacts 19 more wetland acres than does the SCR boundary in S33 and the majority of these acres are highly degraded wetlands in heavily managed agricultural area.

b. US Fish and Wildlife Service (USFWS)

The majority of the concerns raised by USFWS were similar to those raised in its comments on the Draft and Supplemental EIS and have been thoroughly addressed either in the FEIS or in the ROD.

C1. USFWS expressed concern that the Corps had not considered importation of ore in the analysis.

R1. The potential for ore importation and the reasons it was eliminated from study are thoroughly addressed in Section 2.6.2 of the FEIS.

c. North Carolina Division of Marine Fisheries (NCDMF)

C1. Disappointed that the Corps “chose not to adequately address” the concerns raised by NCDMF in comments to the Draft EIS and the Supplement to the Draft EIS and that the Corps “never contacted the NCDMF to talk about these issues during preparation of the Final EIS.”

R1. The Corps responded directly to the concerns raised by the NCDMF both in modifications made to the EIS between the Draft and Final, and in specific response to comments on the DEIS and SDEIS included as part of the FEIS. During the more than 8 year process of analyzing the potential impacts of the proposed activity and preparation of the FEIS, the Corps met 22 times with representatives of state and Federal review agencies and concerned non-governmental organizations. The NCDMF was invited to each of these meetings, given ample advance notice of these meetings and given the opportunity to present information at all. The NCDMF chose not to attend 10 of the last 13 meetings.

C2. NCDMF and others have argued that all avoided streams and wetlands on the NCPC tract need to be addressed as “lost” aquatic resources.

R2. Section 4.2.1.11 of the FEIS discusses likely impacts to fish and wildlife values. The scale and likely magnitude of these impacts are discussed above. With Modified Alternative L all appropriate and practicable steps to minimize the adverse effects of this action on the aquatic environment have been taken. Minimization efforts have resulted in the maintenance of wildlife corridors around all major water bodies. Additionally, conditions included in any authorization will ensure that impacts and reclamation occur over time, thereby affording more motile wildlife the opportunity to relocate to undisturbed or reclaimed areas.

Section 4.2 of the FEIS thoroughly discusses the likely indirect effects of the project on surrounding wetlands and aquatic habitat, including nursery areas and EFH. As discussed above, the project will likely result in some modification of the ecosystems of the upper reaches of tributaries located within the project area, but outside the actual impact footprint. Impacts will, however, be minimized by the avoidance of riparian wetlands and watershed. As referenced throughout Sections 3 and 4 of the FEIS, onsite research indicates that while the nursery functions of these areas may be impaired to some degree, they will not be completely lost. It is fully expected that nutrient cycling will continue, organic matter will continue to be provided and any changes in water quality will be within the toleration limits of most aquatic species present. This, combined with the benefits provided to these and other nursery areas within the watershed by the compensatory mitigation efforts should ensure that overall impacts to nursery

functions and habitat suitability of the lower Pamlico River estuary are appropriately minimized, and unavoidable impacts are compensated for.

C3. NCDMF calculated that the “indirect impacts to EFH/HAPC total 3,349 acres” and stated that the only way to substantially avoid these impacts is to avoid mining in the NCPC Tract.

R3. I disagree with this assessment. It should be noted that Alternative L directly impacts only approximately 2 acres of area meeting the South Atlantic Fisheries Management Council’s (SAFMC) definition of EFH. The NCDMF’s calculation of EFH/HAPC impacted through Alternative L (3,349 ac) appears to include all areas within the project area that could meet the EFH definition (613 ac) and the entire surface area of South Creek proper (2,736 ac). Many of the areas within the project area overlap, resulting in the same acre being counted more than once. For example, there are 38 acres of area meeting the SAFMC designation of “tidal creeks” within the original project area, all or portions of these areas also meet the SAFMC designation of “unconsolidated bottom” and “estuarine SAV habitat”, and the state definition of “Primary Nursery Area”. Rather than pare these areas out as falling into more than one category, NCDMF has used the acreages repetitively to inappropriately inflate the overall number of acres. Table 3-18 of the FEIS provides the correct acreage (410) of EFH and HAPC listed by the SAFMC in the project area. As discussed in the ROD, Modified Alternative L would avoid approximately 3.7 acres of tidal palustrine forest EFH at the headwater of Huddy Gut. Direct impacts to EFH under Modified Alternative L would be less than 2 .

C4. NCDMF expressed the opinion that the mitigation addresses only direct impacts.

R4. The Corps disagrees with his statement. The minimization efforts associated with the development of Alternative L were specifically targeted at reducing both direct and indirect impacts to the open waters and nursery areas of the Pamlico River estuary. With the exception of a small portion of the Parker Farm mitigation site included to increase the function of that site as a large and contiguous wildlife corridor, the compensatory mitigation efforts are located entirely within the Lower Pamlico River watershed. The direct and indirect benefits this mitigation will supply to the Lower Pamlico River Watershed and to South Creek Specifically are discussed in Appendix I of the FEIS and in Section 7 of the ROD. All members of the review team have been asked to participate in site visits and review of specific plans for most of the proposed mitigation sites. Only NMFS, NCWRC and NCDWQ have participated.

C5. The potential effect on fishery resources exposed to heavy metals and the likelihood of this exposure is not addressed in the FEIS.

R5. Section 4.1.3.1 of the FEIS thoroughly addresses the current conditions in the surrounding estuary through citation of site specific research projects. This section explains the findings and likely sources of increased concentrations of heavy metals. This section also provides context for metal concentrations found in the vicinity of the existing mining operation by comparing them to concentrations found in other areas of the Pamlico Sound estuary as well as other estuaries. As indicated in Section 4.1.3.1, as well as in NCDMF’s memo, evidence suggests that

any increase in metals potentially related to the PCS operation were likely a result of historic practices that have been discontinued.

d. North Carolina Wildlife Resources Commission (NCWRC)

C1. The Entrix report provided in Appendix F of the EIS did not adequately address impacts to freshwater species nor did it establish a linkage between biota and previous mining impacts in the area. Therefore NCWRC asserts that the ability to predict impacts based on the Entrix alone is negated.

R1. Likely impacts to the water quality and habitat value of the nursery creeks originating in the project area are assessed in Section 4.2 of the FEIS. The value and limitations of the information contained in the Entrix report is thoroughly discussed in Summarized Comment 5 and individual responses to comments found in Appendix J of the FEIS.

C2. NCWRC cites that review of data collected from areas surrounding the existing mine operation indicated elevated levels of cadmium within Huddles Cut and Jacks Creek as compared to background levels within the Pamlico River estuary.

R2. The results of this study are discussed in Section 4.1.3.1 of the document along with probable causes and controls.

C3. Appropriate avoidance and minimization has not been conducted prior to consideration of compensatory mitigation.

R3. For reasons discussed in the ROD and FEIS, I find that all appropriate and practicable measures to minimize impacts to aquatic resources have been accomplished. Determination of the LEDPA, as well as appropriate avoidance and minimization, was made without consideration of compensatory mitigation.

C4. The NCWRC does not agree that a 1.8:1 mitigation ratio is adequate to compensate for the impacts the project will have on the ecosystem.

R4. Implementation of the currently proposed compensatory mitigation plan will result in a 2:1 ratio of wetland restoration along with additional preservation and enhancement.

C5. NCWRC does not believe the compensatory mitigation plan addresses the difference in complexity and function between ecosystems within the NCPC Tract and the proposed mitigation areas.

R5. This issue was addressed in Appendix I of the FEIS and is further addressed in Section 7 of the ROD.

e. Pamlico Tar River Foundation (PTRF)

The majority of the comments made by PTRF have been thoroughly addressed either in the FEIS or the ROD.

C1. The Corps process places emphasis on maintaining profit at all times at the expense of the public's resources.

It seems by this comment that PTRF suffers from a fundamental misunderstanding of both the Corps' practicability evaluation and the overall decision making process. Our decision is in no way based on measuring PCS's profit. The only use we have made of reported "profit" is in demonstrating that a change in the ratio of PCS's cost of mining to USGS's reported "value" of the product appears to have an affect on the company's operating income.

The Corps has given extensive consideration to both the cost of mining the various alternatives, and the important resources impacted by each alternative. As discussed fully in this ROD, I have determined the least damaging practicable alternative, as required by the 404(b)(1) guidelines, and have fully considered both the public interest and the potential for significant degradation to the aquatic environment.

f. Southern Environmental Law Center (SELC)

C1. The economic analysis does not overcome the presumption that less damaging practicable alternatives [than Alternative L] exist

R1. The presumption created by the 404(b)(1) Guidelines is that if a proposed project is not water dependent, "practicable alternatives that do not involve special aquatic sites are presumed to be available" and are also presumed to have less adverse impact on the aquatic ecosystem. 40 CFR Section 230.10 (a)(3). The Corps has agreed, over PCS's strenuous objection, that phosphate mining is not water dependent, which raises a rebuttable presumption that there is a practicable alternative that does not involve special aquatic sites, including wetlands. PCS has provided information in the form of a mine plan that would not involve filling waters or wetlands (the no action alternative), as well as detailed costs for that plan. The Corps has reviewed that information, and concurred in Section 2.7 of the FEIS that mining S33 is currently not practicable.

PCS also has the burden of showing that there is no less damaging practicable alternative to the proposed action, in this case, Alternative L. PCS has provided extensive cost and economic information, in the form of cost models, and information on phosphate market conditions. The Corps has reviewed that data carefully, and has solicited input from EPA economists; the USGS, and others. As explained in Section 2.7 of the FEIS, the Corps has found that Modified Alternative L is the least damaging practicable alternative.

Finally, SELC has argued that the Corps has not considered alternatives "between" SCRA, which the Corps has found to be not practicable, and Alternative L, which the Corps has found to

be practicable. While the Corps has not developed an additional alternative, we have required further minimization of Alternative L, resulting in Modified Alternative L.

C2. The Corps' treatment of potential mining S33 is inconsistent, because the Corps is considering alternatives that include mining essentially all of S33, while at the same time making decisions on practicability recognizing that S33 may not be mined.

R2. I do not find these positions to be inconsistent. Based on the high annual cost of mining the southern portion of the S33 tract, the Corps has consistently found that the stand-alone S33 alternative is not economically practicable under current market conditions. See, e.g., DEIS, Section 2.7.4. The Corps has also noted that the phosphate market is extremely volatile, depending on world demand for and production of phosphate products. Because of this volatility, predicting economic viability of longer term plans becomes increasingly uncertain in the later years of those plans. The Corps' position is that market conditions may change in the future, potentially making the cost of mining all of S33 practicable, and that it is therefore reasonable to include S33 in long term mine plans. Mining S33 occurs after the initial approximately 15 years of all holistic alternatives I have found to be practicable; a permit for any of these alternatives would allow mining S33; it does not require mining S33. In contrast, I cannot find that it is certain that mining all of S33 will become viable, and therefore consider that a practicable alternative must allow approximately 15 years of mining before being required to move to S33. I believe these two treatments of the S33 question are reasonable and consistent.

C3. The FEIS failed to respond to substantive comments of economist Dr. Douglas Wakeman on the SDEIS.

R3. The substantive issues raised by Dr. Wakeman were presented as an Exhibit to SELC's, comment letter of December 31, 2007, on the SDEIS. Dr. Wakeman discussed three perceived problems with "the original 'full cost' analysis in the DEIS"

1. "[T]he analysis was truncated at 15 years, which is wholly inadequate when several of the alternatives exceed 40 years in length. This failure appears to be both arbitrary and capricious, and must be remedied."
2. "[T]he analysis applied Generally-Accepted Accounting Principles . . . financial analysts much prefer to use actual cash flows rather than accounting measures."
3. Failure to use discounted values, so that conclusions could be properly and defensibly drawn on the basis of Net Present Values

SELC's FEIS comment letter also stated that Dr. Wakeman's calculation and comparison of the Net Present Value of the total cost of the various alternatives showed that Alternatives SCRA and SJAA, and possibly DL1B were practicable alternatives. SELC contends that the Corps did not respond to these substantive comments.

The Corps responded appropriately to Dr. Wakeman's comments. With regard to Dr. Wakeman's disapproval of the Marston Cost Model, which used Generally-Accepted Accounting Principles, the Corps pointed out that "the applicant, members of the Review Team and others, including Dr. Wakeman, reviewed the cost model as well as the Corps approach to

practicability during the DEIS process, and no indication was ever given that the model or approach may not be appropriate.” The “others” mentioned included Corps and EPA economists. The cost model was presented to Review Team members, including SELC’s client, Pamlico Tar River Foundation (PTRF), on April 21, 2005, and discussed at that and subsequent review team meetings. The meeting minutes for June 27, 2006, again attended by PTRF, state that the Corps economist had reviewed the cost model favorably and review team members were invited to have other economists evaluate the model. Pointing out that professional economists had reviewed the Marston model and found it acceptable is a substantive response to Dr. Wakeman’s contention that a different method of calculating cost would be preferable. The Corps response that Dr. Wakeman did not raise a concern about any of the DEIS analysis in his comments on the DEIS is also a valid response to this later comment that the DEIS analysis is arbitrary, capricious and unreasonable.

In addition, the Corps responded to the SELC’s SDEIS comments regarding use of the Marston Cost model, or full cost model, as opposed to the cash cost model. See, e.g. comments and responses 50 and 52. Interestingly, while Dr. Wakeman’s letter, which is Exhibit F to SELC’s SDEIS comment letter, criticized the Marston Cost model because of its use of Generally-Accepted Accounting principals instead of the actual cash flows the cash cost model uses, the body of SELC’s letter commented that the Corps should continue to use the Marston full cost model, stating that it “is logical and is how PCS actually accounts for its costs.”

With regard to Dr. Wakeman’s criticism of the approximately 15 year analysis period, the Corps appropriately responded that Section 2.7 of the FEIS was updated to provide further explanation of the relevance of the 15-year period. Section 2.75 of the FEIS includes an added discussion of why the Corps considers the approximately 15 year period to be appropriate.

Dr. Wakeman’s final point of criticism was that the Corps failed to use discounted values in conjunction with a cost analysis using the Capital Budgeting, or cash cost method of calculating costs. Dr. Wakeman’s analysis compared the total cost of alternatives, albeit at discounted costs, to one another. The Corps responded by referring the reader to Section 2.7 and the Corps’ determination that comparison of total cost of alternatives was “of little use in determining practicability in Section 2.7 of the FEIS, and in response to SELC’s comment letter (Response 43). See also, response to general comments; Net Present Value, above.

C4. The Corps’ statement that it has not adopted the cash cost model is false.

R4. SELC has also argued that the Corps has been less than candid about its use of the Marston model and cash cost model, by stating in the FEIS that it has not adopted the cash cost model. I believe that SELC’s argument is more of a disagreement about terminology than about any misunderstanding of the data and rationale the Corps used in reaching its decision in this matter. The Corps explanation in Section 2.7 of the FEIS is an open and frank explanation of the data and reasoning supporting the practicability determination. See also general discussion, Marston Model v. Cash Cost Model, above.

C5. The FEIS failed to respond to substantive comments contained in a document submitted by PTRF, entitled “Impacts to the Aquatic Environment Associated with PCS Phosphate, Inc. Proposed Mine Expansion” (Report).

R5. The referenced report was attached to PTRF’s comment letter dated February 8, 2007, addressing the DEIS, and the merits of the proposed project, which at that time consisted of the AP/EAP alternatives. According to PTRF, the Report shows that “the proposed mine advance [alternatives AP/EAP] would result in the significant degradation of the aquatic environment, and therefore cannot be permitted under CWA Section 404(b)1 guidelines.” The Report itself details the specific impacts of the proposed project [alternatives AP/EAP]. The Corps’ response to PTRF’s comment designated C32 was a statement that the report included relevant information to the consideration of impacts and to the final decision on compliance with the 404(b)(1) Guidelines, and that much of the information had been incorporated into the FEIS. Contrary to SELC’s statement, however, that is not the only response the Corps made to the discussions contained in the report.

The Corps also designated as C4 PTRF’s comment that the Report states that the “proposed mine advance [AP/EAP] would result in significant degradation”, and therefore cannot be permitted. The Corps responded by concurring that the AP/EAP alternative cannot be permitted, because it is not the least damaging practicable alternative, that other alternatives were being considered in the FEIS, and that PTRF’s input would be considered in making the final permit decision.

In addition, the body of PTRF’s comment letter made the same points as did the Report, albeit in less detail, to which the Corps provided substantive responses. The Report discussed potential elemental contamination, primarily from cadmium; impacts of drainage basin reductions; nutrient cycling; loss of the water quality filtration provided by headwater streams and associated wetlands; impacts from dike construction and mitigation. All of these topics were addressed in the body of the PTRF letter; the Corps properly identified these specific comments and responded to them substantively. See, e.g. comment/responses 24, 26, 27, 31, 34-41 and 44-47. In addition, many of the issues raised in the Report were raised by several commenters, and were discussed in some detail in Summary Responses 5, 7 and 11.

g. National Marine Fisheries Service.

The comments of the National Marine fisheries Service have been thoroughly addressed in ROD, predominantly in Section 8.c.

ATTACHMENT 2 TO RECORD OF DECISION
ACTION ID 200110096
PROPOSED PERMIT SPECIAL CONDITIONS

This Permit authorizes impacts associated with the Modified Alternative L mining boundary depicted on the attached figures titled PCS Phosphate Mine Continuation, for the NCPC Tract dated May 28, 2009 and Bonnerton, and S33 Tracts dated May 18, 2009. This includes impacts to 3,922 acres of Waters of the US included in the Modified 401 Water Quality Certification No 3771 issued by the NC Division of Water Quality on 15 January 2009.

This Permit also provisionally authorizes impacts to 4.98 acres of Waters of the US associated with the relocation of NC Highway 306 as depicted on the attached figure titled PCS Phosphate Mine Continuation, for NCPC dated January 6, 2009. Authorization of this 4.98 acre impact is provisional upon receipt of a 401 Water Quality Certification from the NC Division of Water Quality and approval from the NC Division of Coastal Management in the form of either a Coastal Zone Consistency Determination or a Coastal Area Management Act Permit.

MINING

- A) This permit authorizes mining and mine related impacts as described fully in the FEIS within the boundary depicted in the attached maps labeled “Modified Alt L – NCPC Proposed Impact Boundary” dated May 28, 2009 and “Modified Alt L – Bonnerton Proposed Impact Boundary” and “Modified Alt L – South of 33 Proposed Impact Boundary”, as presented May 18, 2009. All work authorized by this permit must be performed in strict compliance with these attached plans, which are a part of this permit. Any modification to these plans must be approved by the US Army Corps of Engineers (USACE) prior to implementation.
- B) Within 1 year of the issuance date of this permit, the Permittee shall demarcate the outer limits of disturbance on the NCPC tract by establishing a cleared line at least 10 feet and not to exceed 40 feet along the Impact Boundary as identified in the attached map labeled “Modified Alt L – NCPC Proposed Impact Boundary” as presented May 18, 2009. Additionally, the Permittee shall, within 1 year of the issuance of this permit work with the Corps to identify locations and establish permanent monuments identified with GPS coordinates to further demarcate this boundary on the NCPC Tract. No less than 1 year prior to relocating any mine related activity to the Bonnerton or S33 Tracts, the Permittee shall undertake identical actions within these tracts utilizing the information provided on the “Modified Alt L – Bonnerton Proposed Impact Boundary” and “Modified Alt L – South of 33 Proposed Impact Boundary”, as presented May 18, 2009, respectively. This will facilitate compliance monitoring by establishing long-term reference points.
- C) Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands. This permit does not authorize temporary placement or double handling of excavated or fill material within waters

or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.

- D) Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters or wetlands.
- E) Figure 2 of the Record of Decision (ROD) included and incorporated here by reference depicts approximate timing of the requirement for major pre-mining, land manipulation and clearing impacts and is incorporated here by reference. Table 3 of the ROD included and incorporated here by reference lists those impacts and the years in which they will occur. These yearly figures are estimates. Actual timing and area may be in part determined by several factors including but not limited to site and equipment constraints, weather, and economics. However, to ensure that temporal losses are minimized to the extent practicable, the Permittee shall not undertake major land-clearing and/or land manipulating activities within any area sooner than 1 year prior to the dates indicated on this figure. For example, major land clearing and manipulation activities within the block labeled 2012-2013 may not begin any sooner than January 1, 2011.

RECLAMATION

- F) The Permittee shall undertake full reclamation of all areas mined under this authorization as described in Section 4.3 of the EIS. This includes reestablishment of varied topography and drainage ways. Figure 3 of the ROD included and incorporated here by reference indicates the required completion date for the capping and successful vegetation of mine reclamation areas. To demonstrate adherence to this schedule, the Permittee shall submit to the Corps an annual summary detailing all reclamation efforts complete within the previous year and indicating the degree of completeness of each reclamation area. Any deviation from the reclamation schedule will be addressed in these reports and the report shall include an explanation for the deviation and proposed remedial action.
- G) The Permittee shall cap all mined areas that are reclaimed with the gypsum-clay blend process materials. The goal of the cap will be a minimum 3-foot thick cap of overburden material (similar to background soils from the region) over 100% of the blend areas. Minimal acceptable performance standards in achieving this cap are as follows: 70% of the total surface area with a minimum of 3-foot cap; 25% of the total surface area with a minimum of 2-foot cap; 5% of the total surface area unspecified.
- H) Following successful completion of the capping requirements within each reclamation area, the Permittee shall submit an as-built report including final topographical surveys for the reclamation areas. This report shall contain final cap depth and coverage information. This report shall further include an explanation of site development that will minimize erosion, eliminate contaminant transportation from the clay/gypsum blend through any waterway or drainage area, and facilitate the development of a mature vegetated riparian buffer. Finally,

this report shall include information on surface water retention within the reclamation area and flows within and from the reclamation area.

- I) To minimize temporal impacts and accelerate the return of watershed functions within the reclamation areas, the Permittee shall to the extent appropriate and practicable apply an average of 1-foot of topsoil cover to the reclaimed areas utilizing the topsoil removed prior to site mining. This topsoil addition should be concentrated within and around areas of surface water flow and/or retention.
- J) To the extent appropriate and practicable, upland portions of the reclamation area shall be replanted, in longleaf pine (*Pinus palustris*) and wetland areas shall be replanted in bald cypress (*Taxodium distichum*) and/or Atlantic white cedar (*Chamaecyparis thyoides*) if Atlantic white cedar is shown to do well on the reclamation sites. It is suggested that the Permittee work with the Corps, the USFWS and any other interested parties to determine growth and survivability of these and other species utilizing areas currently being reclaimed under the previous permit action.
- K) Within 2 years of the issuance of this permit, the Permittee shall work with the Corps and NCDWQ to develop a plan to monitor the quality of water discharged from the reclamation areas into the surrounding watersheds. The Permittee shall seek input from all appropriate and interested agencies including but not limited to EPA, USFWS, NFMS, NCWRC, NCDMF, NCDCM and NCDLR in developing this monitoring plan. This plan shall include monitoring of radionuclides, total and dissolved phosphorus, nitrate nitrogen, ammonia nitrogen, particulate nitrogen, dissolved Kjeldahl nitrogen, and dissolved and particulate organic carbon. Data collected will be used to manage water within the reclamation areas to optimize both the amount and quality of those waters being released. It is suggested that the applicant initiate pilot studies in the areas currently being reclaimed.

MITIGATION

- L) Compensatory mitigation identified in the document entitled "Compensatory Section 404/401 Mitigation Plan: Comprehensive Approach" as presented in Appendix I of the FEIS shall be accomplished pursuant to that Plan and/or any subsequent Corps approved modification or amendment. Construction and monitoring of each site shall be conducted according to each site-specific mitigation plan and the schedule presented in Table 3 of the ROD included and incorporated here by reference.
- M) Within one year of the issuance of this permit, the Permittee shall cause to be recorded, a preservation mechanism acceptable to the Corps for the permanent protection of the area identified for preservation in the "South Creek Corridor" plan.
- N) Table 2 of the ROD lists the impacts as they would occur during 2-year timeframes and is included by reference in Condition "E" above. By November 1st of the year preceding the permitted impact, the Permittee shall submit to the Corps and NCDWQ, a mitigation ledger demonstrating that all mitigation work is complete as described in the mitigation plan and pursuant to the identified timetable. This ledger will be used

to determine whether sufficient mitigation is available for impacts occurring over the next 2-year timeframe. For Example, by November 1st 2009, the Permittee shall submit a ledger demonstrating that sufficient mitigation for impacts occurring during the 2010 – 2011 timeframe (526.56 ac) is completed. Should the ledger indicate that insufficient mitigation exists to compensate for the next 2-year timeframe, the Permittee shall work with the Corps to develop a strategy to ensure that the mitigation requirement is satisfactorily met prior to those impacts occurring.

- O) The Permittee shall submit yearly monitoring reports for each mitigation site. Monitoring reports will be submitted by the dates specified within each site-specific mitigation plan. Monitoring will continue until such time as the Corps deems the mitigation site successful and confirms in writing that monitoring may be discontinued.
- P) Once compensatory mitigation sites have been deemed successful and the Corps has agreed in writing that monitoring may cease, the Permittee shall, within one year of the date of that correspondence, cause to be recorded an acceptable preservation mechanism ensuring the permanent protection of all mitigation sites.

MONITORING

- Q) As required by the State Water Quality Certification, the Permittee shall work with the Corps and the NC Division of Water Quality to establish a monitoring plan for groundwater in and around mine and reclamation areas. At a minimum, this plan shall include sufficient monitoring within and surrounding the reclamation areas to ensure that heavy metal/toxic pollutants including cadmium and radionuclides are not entering the groundwater. The monitoring plan shall also include nitrate nitrogen, sulfate, chloride, total phosphorus, sodium, TDS, and pH. It is suggested that this monitoring commence with monthly samples until such time as the NCDWQ and the Corps in consultation with all interested and appropriate agencies determines sufficient baseline information exists. After such time, samples will be collected and analyzed every 3 months until blend material is introduced to the reclamation area. Following introduction of the blend material to the reclamation site, monthly sampling will recommence until such time as the NCDWQ and the Corps in consultation with all interested and appropriate agencies determines another sampling timeframe is appropriate. Yearly results of this monitoring shall be reported to the Corps and NCDWQ no later than January 31 of the year following data collection. The permittee and/or the Corps will make these reports available in whole or in summary to any interested party. If increases in the levels of any sampled substance are observed for more than 1 sampling occurrence in any given year, or for more than 1 year, the permittee shall include in the yearly report, a plan for mitigating the effect or satisfactory justification as to why no action is necessary. If the Corps, in consultation with other agencies, including but not limited to NCDWQ, NCDLR and EPA, determines that the current reclamation practices are causing an unacceptable adverse impact to groundwater, the DE may modify, suspend or revoke the permit.

- R) Prior to introducing the gypsum/clay blend in the reclamation of any mined area covered by this permit, the Permittee shall submit to the Corps and NCDWQ a remediation strategy in anticipation of the possibility of heavy metal or radionuclide contamination of groundwater or surface tributaries that drain or are adjacent to mined areas. That strategy will be made available for public review.
- S) In concert with the monitoring requirements contained in the Water Quality Certification, the Permittee shall develop a Plan of Study to address the effects of the reduction in headwater wetlands on the utilization of Porters Creek, Tooley Creek, Jacobs Creek, Drinkwater Creek, and Jacks Creek as nursery areas by resident fish and appropriate invertebrate species. This plan shall be submitted to the Corps and NCDWQ for approval within 1 year of the issuance of this permit. At a minimum, the plan shall address the following issues:
- 1) Has mining altered the amount or timing of water flows within the creeks? Data collection may include:
 - i) Continuous water level recorders to measure flow
 - ii) Rain gauges to measure local water input
 - iii) Groundwater wells to measure input to the creeks
 - iv) Semi-continuous salinity monitoring
 - v) Periodic DO monitoring (continuously monitored for several days at strategic times of year)
 - 2) Has mining altered the geomorphic or vegetative character of the creeks? Data collection may include:
 - i) Annual aerial photography to determine creek position, length, width, sinuosity
 - ii) Annual cross sectional surveys of each creek at established locations
 - iii) Annual sediment characterization
 - iv) Annual vegetation surveys along creeks
 - v) Spring and fall sediment surface chlorophylls or organic content in vegetation zone.
 - vi) Spring and fall location of flocculation zones with each creek.
 - 3) Has mining altered the forage base of the creeks? Data collection may include:
 - i) Spring and fall benthic cores to sample macroinfauna.
 - ii) Spring and fall benthic grabs focused upon bivalves, such as *Rangia* sp.
 - iii) Periodic sampling for pelagic species such as grass shrimp, blue crabs, and small forage fish. Sampling gears would be chosen to reflect ontogenetic shifts in creek usage.
 - 4) Has mining altered the use of the creeks by managed fish? Data collection may include periodic sampling for species managed under the Magnuson-Stevens Fishery Conservation Management Act. Sampling would occur during appropriate times of year and gears would be chosen to reflect ontogenetic shifts in creek usage.

- 5) Has mining increased contaminate levels within creek sediments to levels that could impact fish or invertebrates? Data collection may include annual sediment and water column sampling for metals, including cadmium, mercury, silver, copper, and arsenic. If elevated levels are detected, the availability and uptake by appropriate aquatic species (e.g., *Rangia* sp., blue crabs) should be measured using appropriate bioassay techniques.
 - 6) Has mining altered overall water quality within creeks? Water quality parameters analyzed will include: Salinity, Temperature, Dissolved Oxygen, pH, Secchi depth, Turbidity, Chlorophyll a, Dissolved orthophosphate phosphorus, Total dissolved phosphorus, Particulate phosphorus, Nitrate nitrogen, Ammonia nitrogen, particulate nitrogen, and Dissolved Kjeldahl nitrogen.
- T) Monitoring under the Plan of Study referenced in condition "S" above shall commence immediately upon the Plan's approval by the Corps and NCDWQ. Monitoring shall continue for 10 years following the completion of all reclamation work within the headwaters of the subject creeks unless the Corps, in consultation with the appropriate resource agencies agrees that monitoring can be discontinued.

REPORTING AND ADAPTIVE MANAGEMENT

- U) The Permittee shall within 6 months of the issuance date of this permit, work with the Corps and NCDWQ to establish an independent multidisciplinary panel of researchers qualified in the subject matter to be examined (Science Panel). In identifying potential participants for this Panel, the Permittee shall seek input from all interested and appropriate resource agencies including but not limited to EPA, NMFS, USFWS, NCWRC, NCDMF, and the appropriate permitting agencies including NCDCM, NCDLR. The panel shall be comprised of between 2 and 5 members. The members of this panel shall be given opportunity to provide input and recommendations on the monitoring required by conditions "K" and "S" above including research design, reference site selection, sampling stations, schedules, and methods; laboratory methods; data management and analysis; and quality control and quality assurance. Any input supplied by members of this panel will be presented to the Corps and NCDWQ and will be incorporated as appropriate into the preparation of the Plan of Study referenced in condition "S". Members of this panel will also be given the opportunity to oversee all research conducted toward fulfillment of conditions "K" and "S".
- V) The Permittee shall be responsible for fully implementing the approved Plan of Study referenced in conditions "S", "T" and "U" above. Annual summaries of all data collected in compliance with conditions "K" and "S" shall be presented to the Corps, NCDWQ and all members of the Science Panel on or before May 1 of the year following collection. The Permittee and/or the Corps will make these reports available in whole or in summary to any interested party.

- W) The Permittee shall coordinate and facilitate an annual meeting of the Science Panel, the Corps, NCDWQ, and all other interested state and federal agencies including but not limited to EPA, NMFS, USFWS, NCWRC, NCDMF, NCDCM, NCDLR. This meeting shall occur no later than July 30 of each year. The purpose of this meeting will be to allow the members of the Science Panel to provide input to the agencies on any observed trends in parameters measured and general discussions on whether direct and indirect impacts from mining and benefits from the compensatory mitigation appear to be in accordance with expectations at the time of permitting. Members of the Science Panel shall also be given the opportunity to provide any recommendations for management or further study. The proceedings of this meeting including data summaries, reports, presentations and any conclusions of the group will be made available in whole or in summary to any interested party. The Corps will fully consider all information presented by the Science Panel as well as comments from state and federal agencies and all other parties supplying input to determine if corrective actions or permit modifications are needed. If substantive changes to the mine plan, compensatory mitigation plan or monitoring plan are made, the Corps will announce such change by Public Notice and allow for public comment.
- X) At appropriate intervals to be decided by the Corps after input from the Science Panel (eg. 3 to 5 years) beginning from the date of permit issuance, members of the panel shall be given the opportunity to review the monitoring methods, sampling locations, parameters analyzed, and other elements of monitoring protocol to determine if modifications to the plan are appropriate. All data reviewed by the panel shall be made available to the public.

MISCELLANEOUS

- Y) The Permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.
- Z) The Permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project.
- AA) The Permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).

- BB) The Permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to an acceptable condition.
- CC) Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the Permittee's discovery of the violation.
- DD) Wetland Avoidance/Minimization Areas: The Permittee shall avoid the remaining 2,445 acres of waters of the United States within the 15,100 acre project area. These natural wetland areas were avoided as part of the permit application review process and therefore will not be disturbed by any dredging, filling, mechanized land clearing, agricultural activities, or other construction work whatsoever. The Corps reserves the right to deny review of any requests for future impacts to these natural wetland areas. In addition, within one year of the date of this permit, the Permittee shall cause to be recorded a conservation instrument acceptable to the Corps for the permanent preservation of the areas identified as conservation easements on maps entitled "Conservation easement – Tooley Creek Modified Alternative L – NCPC;" "Conservation Easement – Jacobs Creek Modified Alternative L – NCPC;" "Conservation Easement – Drinkwater Creek Modified Alternative L – NCPC;" "Conservation Easement – Jacks Creek Modified Alternative L – NCPC;" and "Conservation Easement – Porter Creek Modified Alt L – Bonnerton" all dated May 18, 2009 and attached here.
- EE) The Permittee shall not begin work authorized by this permit until 10 days following the issuance date of the permit or until the permittee receives written notification from the Environmental Protection Agency that it will not exercise its veto authority within the 10 day period.

- BB) The Permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to an acceptable condition.
- CC) Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the Permittee's discovery of the violation.
- DD) Wetland Avoidance/Minimization Areas: The Permittee shall avoid the remaining 2,445 acres of waters of the United States within the 15,100 acre project area. These natural wetland areas were avoided as part of the permit application review process and therefore will not be disturbed by any dredging, filling, mechanized land clearing, agricultural activities, or other construction work whatsoever. The Corps reserves the right to deny review of any requests for future impacts to these natural wetland areas. In addition, within one year of the date of this permit, the Permittee shall cause to be recorded a conservation instrument acceptable to the Corps for the permanent preservation of the areas identified as conservation easements on maps entitled "Conservation easement – Tooley Creek Modified Alternative L – NCPC;" "Conservation Easement – Jacobs Creek Modified Alternative L – NCPC;" "Conservation Easement – Drinkwater Creek Modified Alternative L – NCPC;" "Conservation Easement – Jacks Creek Modified Alternative L – NCPC;" and "Conservation Easement – Porter Creek Modified Alt L – Bonnerton" all dated May 18, 2009 and attached here.
- EE) The Permittee shall not begin work authorized by this permit until 10 days following the date I provide the record of decision to EPA. I expect to provide the ROD to EPA on June 4, 2009 however, the permittee shall verify that date prior to beginning work.

Alternative	Total Area	Waters of the US	Stream	% Total Area	% Total Waters of the US	% Total Stream
Single Tract Alternatives						
Base (NCPC)	3,608	2,549	55,528			
AP (NCPC only)	3,412	2,408	38,558	95	94	69
Base (S33 only)	8,686	1,701	43,209			
S33AP (S33 only)	7,743	1,130	33,486	89	66	77
Holistic Alternatives						
Base (holistic)	15,100	6,380	115,843			
EAPA/B	13,961	5,668	89,150	92	89	77
SJAA/B	12,892	5,030	2,508	85	79	2
Alt. M	12,572	4,592	36,999	83	72	32
Alt. L (mod)	11,343	3,927	22,435	75	62	19
SCRA/B	10,659	3,506	14,360	71	55	12
DL1B	9,033	2,285	13,845	60	36	12
No Action	5,745	0	0	38	0	0

Table 1. Comparison of impacts for each alternative. Impacts associated with single tract alternatives are compared only to the base area within that single tract. Impacts associated with holistic alternatives are compared to the total base area of the three tracts combined.

Site	Wetland (acres)			Stream (linear feet)		
	Restoration	Enhancement	Preservation	Restoration	Enhancement	Preservation
Bay city	565.0	0.0	119.0	3000.0		
Hell Swamp	885.0	46.0	41.0	19783.0		
Gum Run	27.0	0.0	0.0			
Parker Farm	245.0	162.0	196.0			3960
SC Corridor			1143.0			26736
P Lands	2075.0	381.0	135.0			
U Lands	608.0		117.0			
Upper Back Creek	116.0	38.0	18.0	7066.0		1149.0
Rutman	3342.0	129.0	701.0	8793.0	7994.0	
Sage Gut	105.0		2.0	5401		1006
totals	7968.0	756.0	2472.0	44043.0	7994.0	32851.0

Table 2. Wetland and stream mitigation by site and type.

By year	Impact	Site Complete	Available Credits*	Acre Credit Balance		Impact**	Available Credits***	Linear Feet Credit Balance
	Acres		Acres	Available - Impacted		Linear Feet	Linear Feet	Available - Impacted
2009	312.39	Gum Run, Parker Farm, Bay City, Upper Back Creek	576.5	264.08		4544	11087.8	7115.8
2010	506.56	Sage Gut, Hell Swamp	1666.0	1403.53		148	30794.8	37762.6
2011		Rutman	828.1	2231.63			11990.6	49753.2
2012	304.81		0.0	1917.82		1108.5		48910.2
2013		P Lands, U Lands	1493.7	3411.52				48910.2
2014	303.53		0.0	3087.99		4677		45104.2
2015			0.0	3087.99				45104.2
2016	203.58		0.0	2884.41		1358		43746.2
2017			0.0	2884.41				43746.2
2018	458.74			2425.67		10620.5		34562.2
2019				2425.67				34562.2
2020	528.79			1896.88		0		34562.2
2021				1896.88				34562.2
2022	592.38			1304.50		0		34562.2
2023				1304.50				34562.2
2024	476.17			828.33		11974.5		24467.2
2025				828.33				24467.2
2026	30.34			797.99		3862.5		21892.2
2027				797.99				21892.2
2028	45.19			752.80		763.5		21383.2
2029				752.80				21383.2
2030	2.1			750.70		0		21383.2
2031				750.70				21383.2
2032	0			750.70		0		21383.2
2033				750.70				21383.2
2034	5.86			744.84		0		21383.2
2035				744.84				21383.2
2036	15.76			729.08		1239		20557.2
2037				729.08				20557.2
2038	31.42			697.66		4366.5		17646.2
2039				697.66				17646.2
2040	26.39			671.27		0		17646.2
2041				671.27				17646.2
2042	75.11			596.16		832.5		17091.2
2043				596.16				17091.2
2044	6.61			589.55		0		17091.2
2045				589.55				17091.2
2046	2.06			587.49		0		17091.2
2047				587.49				17091.2
2048	0			587.49		0		17091.2

Table 3. Mitigation completion date and impact dates

* an acre credit of wetland is comprised of 2:1 restoration, 3:1 enhancement or 8-10:1 preservation

** This column reflects total mitigation linear feet needed after adjustments to stream quality (1:1 for poor, 2:1 for Fair and 3:1 for excellent)

*** A linear foot credit is comprised of 1:1 restoration, 2.5:1 enhancement or 5:1 preservation

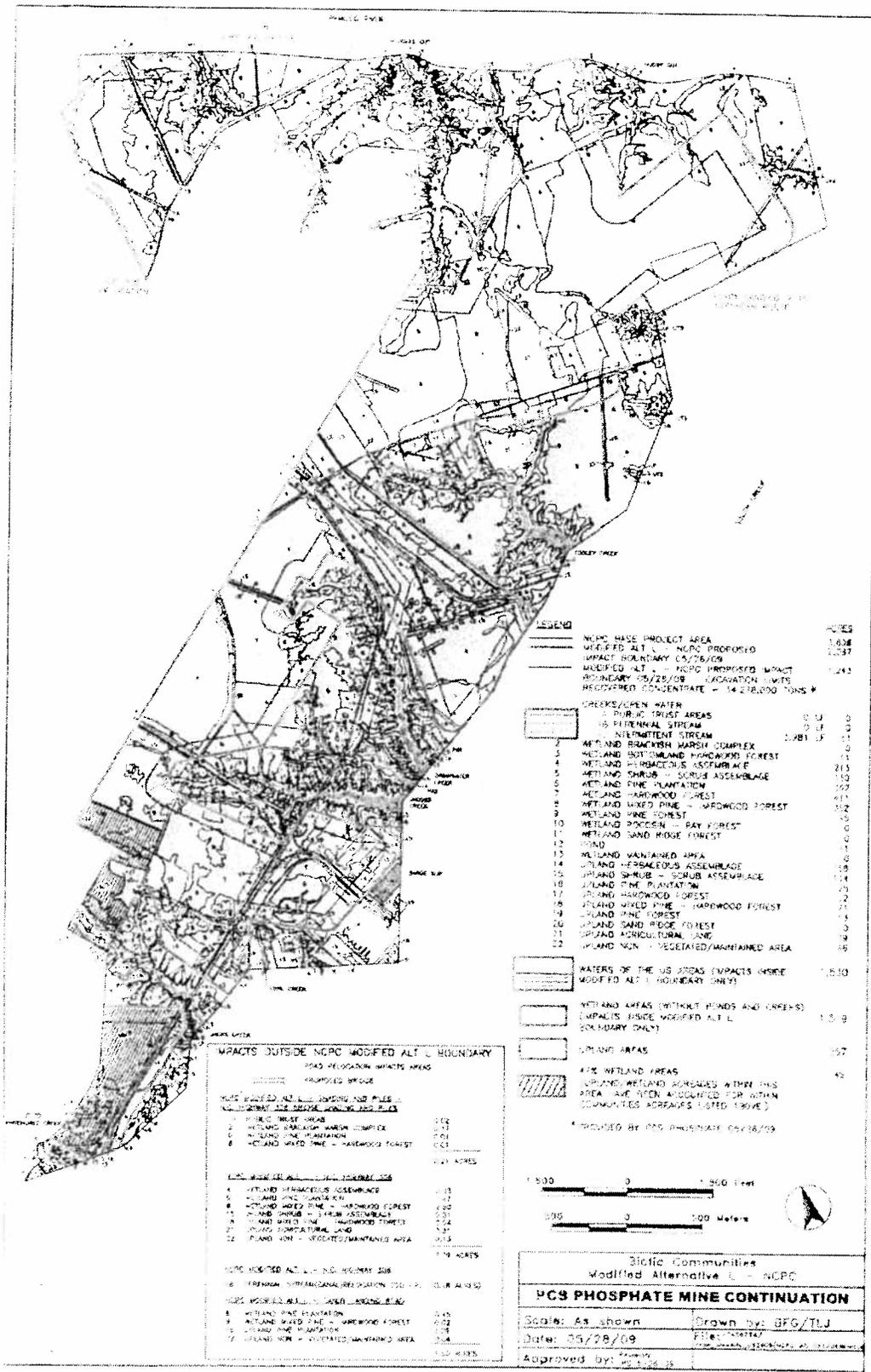


Figure 1A. Modified Alternative L mining alignment for NCPC

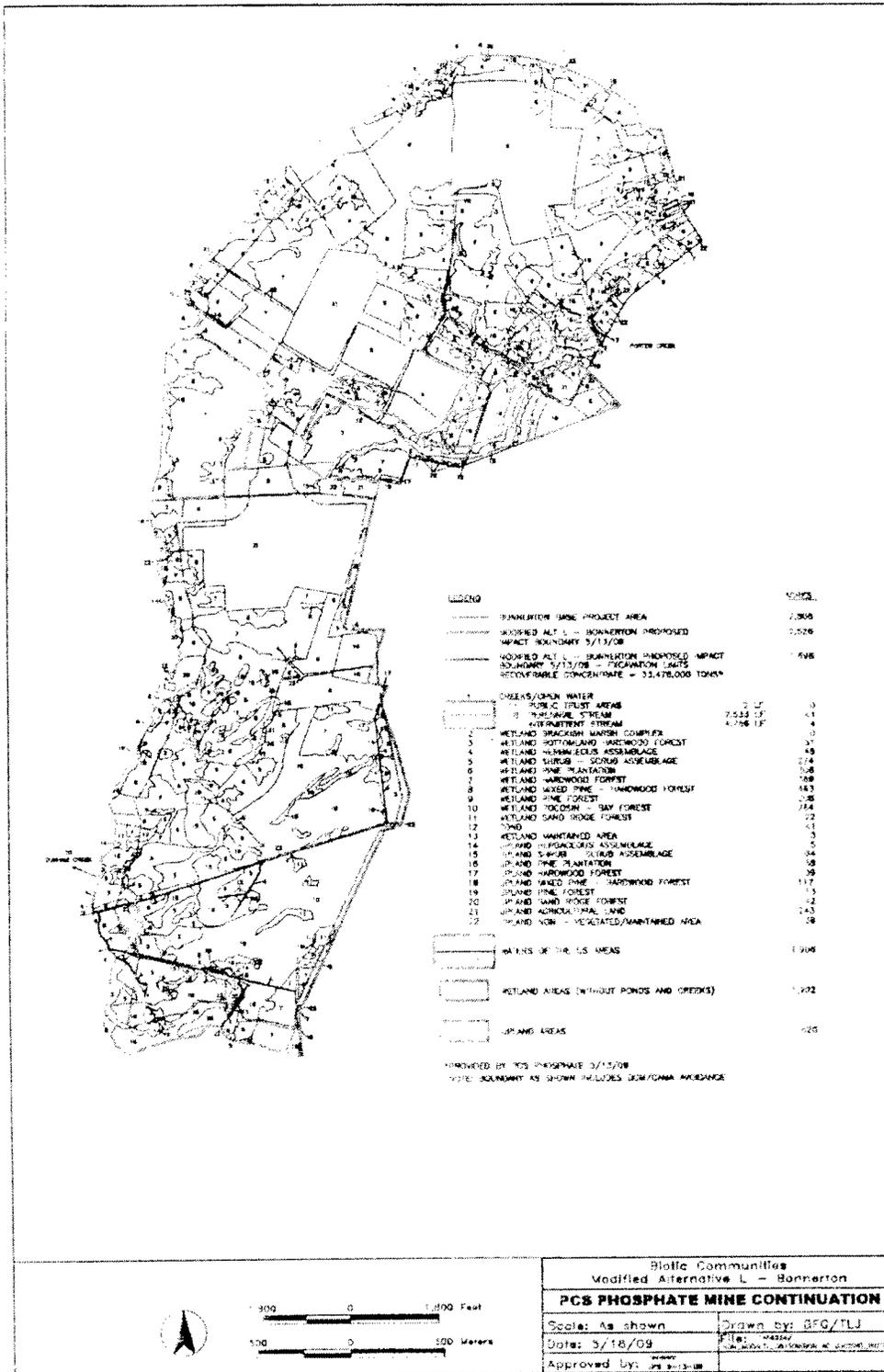


Figure 1B. Modified Alternative L mining alignment for Bonerton.

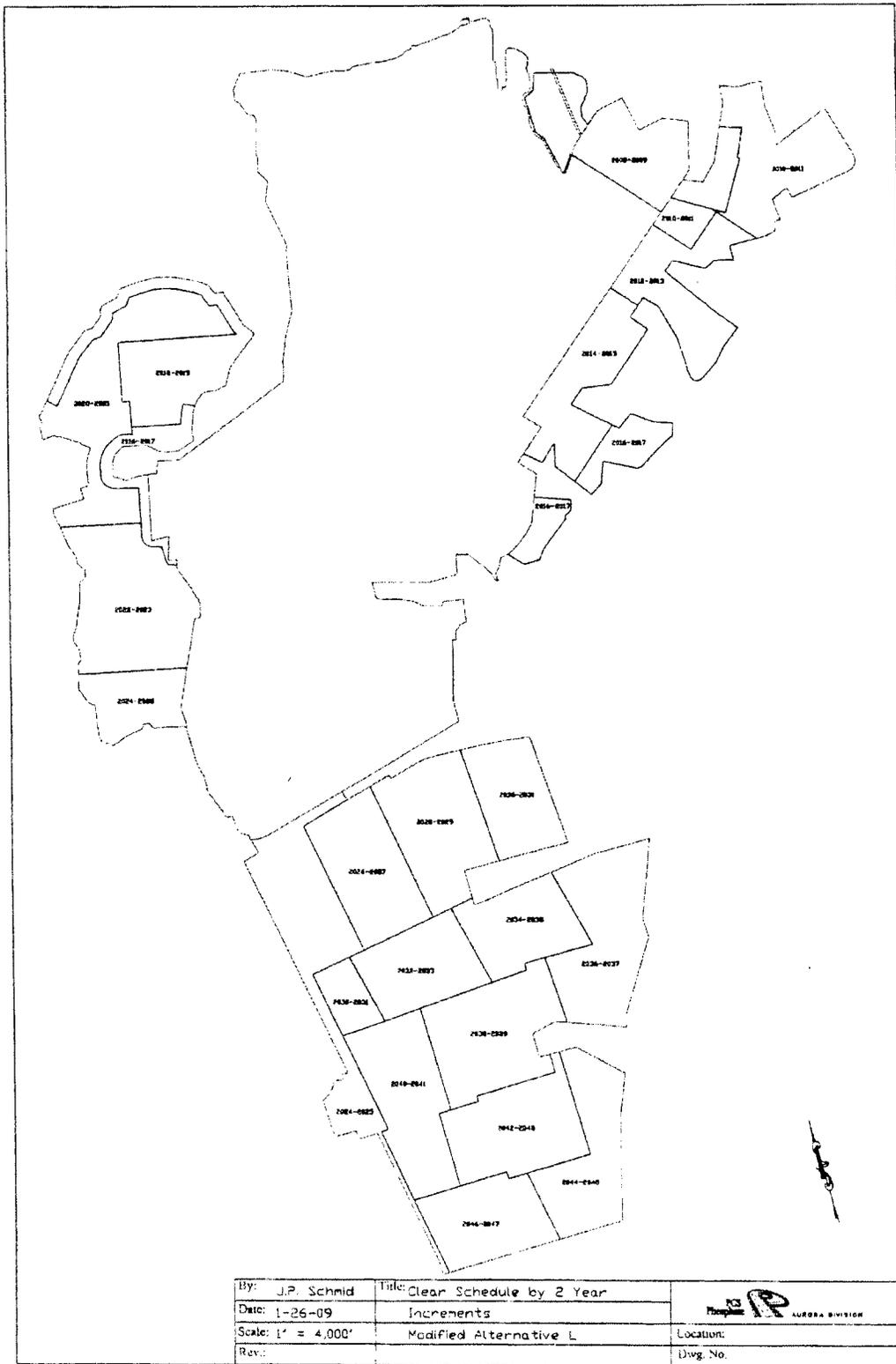


Figure 2. Initial impact schedule. This reflects dates when mechanized land clearing will be necessary in order to prepare for mine advance.

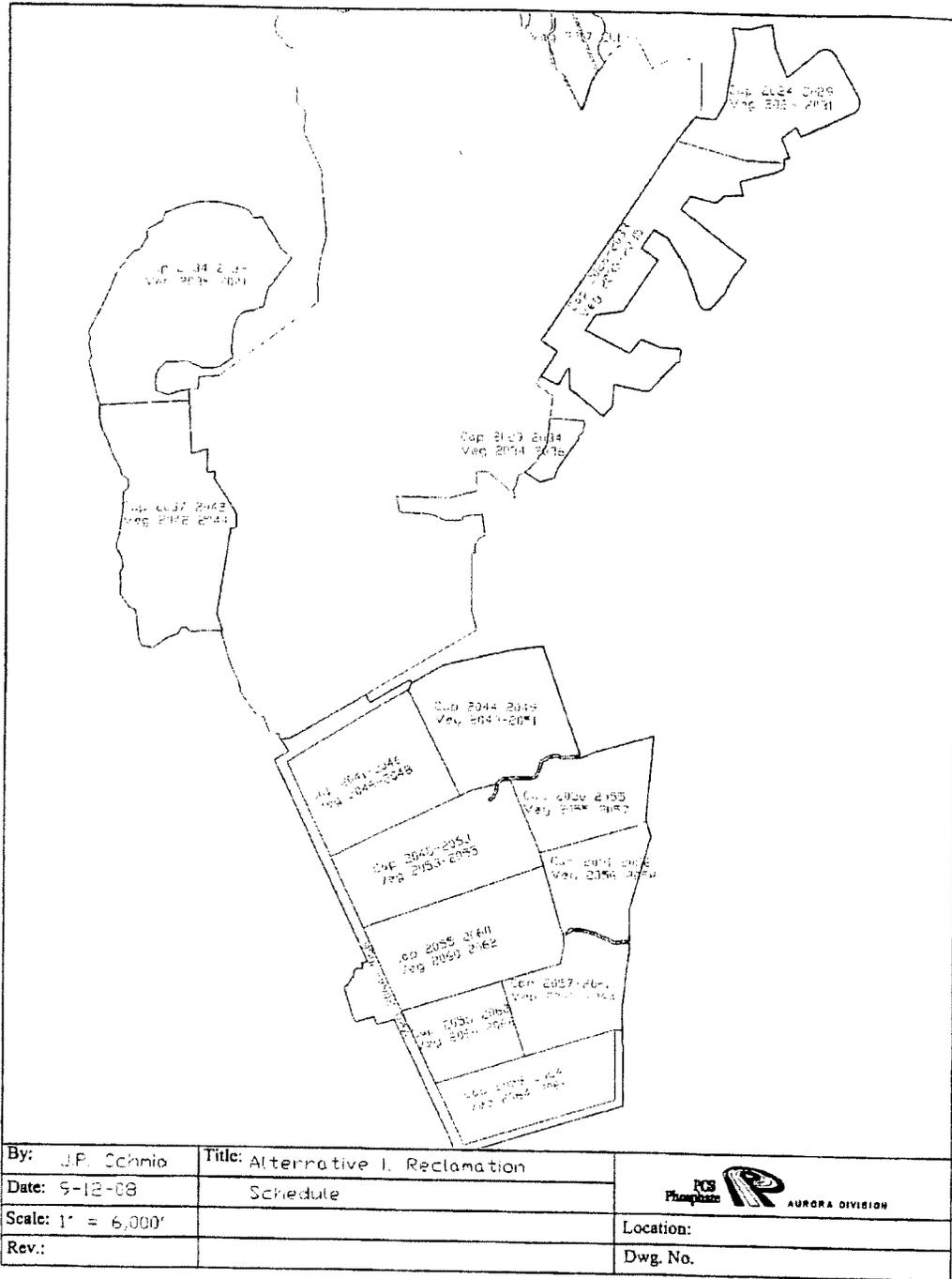


Figure 3. Depicts projected timeframes for completion of reclamation activities.



"Walker, William T SAW"
<William.T.Walker@usace.army.mil>

06/04/2009 03:15 PM

To Palmer Hough/DC/USEPA/US@EPA, "Jolly, Samuel K SAW"
<Samuel.K.Jolly@usace.army.mil>
cc "Lamson, Brooke SAW" <Brooke.Lamson@usace.army.mil>,
"Lekson, David M SAW"
<David.M.Lekson@usace.army.mil>, "Ryscavage, Jefferson"
bcc

Subject RE: PCS ROD

Palmer,

Thanks, we have corrected the map date of the "Conservation Easement - Jacks Creek - Modified Alternative L _ NCPC" to 5/28/09 (see attached) and included the Cypress Run reference. The 22,435 linear feet of stream impact is correct and includes the most recent avoidance efforts. We will send the corrected conditions to everyone shortly.

Thanks
Tom

-----Original Message-----

From: Hough.Palmer@epamail.epa.gov [mailto:Hough.Palmer@epamail.epa.gov]
Sent: Thursday, June 04, 2009 1:29 PM
To: Jolly, Samuel K SAW
Cc: Lamson, Brooke SAW; Lekson, David M SAW; Ryscavage, Jefferson COL SAW; Moyer, Jennifer A HQ02; Giattina.Jim@epamail.epa.gov; Gaffney-Smith, Margaret E; Fox.Rebecca@epamail.epa.gov; Meiburg.Stan@epamail.epa.gov; Welborn.Tom@epamail.epa.gov; Walker, William T SAW
Subject: Re: PCS ROD

Ken:

Thanks for sharing this so quickly. We are reviewing the ROD and have a few quick questions to make sure we are on the same page.

- 1) Condition "DD" in the ROD and proffered permit appears to have omitted reference to the conservation easement for Cypress Run promised by the company in its 6-2-09 proposal. Has this been included somewhere else?
- 2) Condition "DD" also refers to maps "all dated May 18, 2009". Didn't the company's 6-2-09 proposal increase the amount of acreage protected in the Jacks Creek watershed by 82 acres, necessitating an updated map for that creek?
- 3) Condition "DD" also noted that the conservation easement maps have been attached. However, we have not been able to locate them in the ROD package.
- 4) Also the ROD estimates total remaining stream impacts to be 22,435 linear feet which is consistent with the number EPA came up with based on the company's 6-2-09 proposal, however, the Corps' Press Release yesterday reported total remaining stream impacts at 22,082 linear feet. Which is the correct number according to the Corps?

Thanks, Palmer

Palmer F. Hough
US Environmental Protection Agency

Wetlands Division
Room 7231, Mail Code 4502T
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Office: 202-566-1374
Cell: 202-657-3114
FAX: 202-566-1375
E-mail: hough.palmer@epa.gov

Street/Courier Address
USEPA
Palmer Hough
EPA West -- Room 7231-L
Mail Code 4502T
1301 Constitution Avenue, NW
Washington, DC 20460

From: "Jolly, Samuel K SAW" <Samuel.K.Jolly@usace.army.mil>

To: Stan Meiburg/R4/USEPA/US@EPA

Cc: Rebecca Fox/R4/USEPA/US@EPA, Jim Giattina/R4/USEPA/US@EPA, Tom
Welborn/R4/USEPA/US@EPA, Palmer Hough/DC/USEPA/US@EPA, "Moyer,
Jennifer A HQ02" <Jennifer.A.Moyer@usace.army.mil>, "Gaffney-Smith, Margaret E"
<Meg.E.Gaffney-Smith@usace.army.mil>, "Smith, Chip R HQDA"
<SmithCR@HQDA.Army.Mil>, "Ryscavage, Jefferson COL SAW"
<Jefferson.Ryscavage@us.army.mil>, "Walker, William T SAW"
<William.T.Walker@usace.army.mil>, "Lekson, David M SAW"
<David.M.Lekson@usace.army.mil>, "Lamson, Brooke SAW"
<Brooke.Lamson@usace.army.mil>

Date: 06/04/2009 10:53 AM

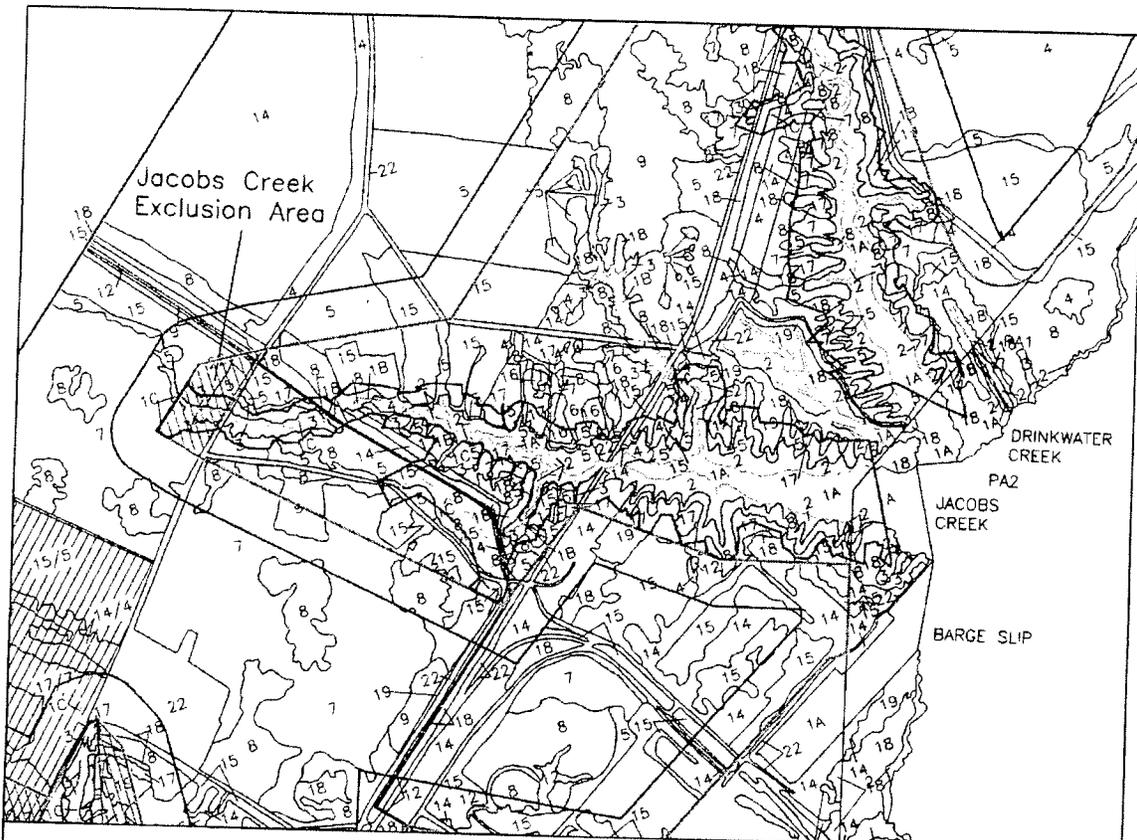
Subject: PCS ROD

<<PCS ROD.pdf>>
Mr. Meiburg,

Attached find a copy of the signed, proffered permit and ROD for PCS Phosphate. PCS has requested we remove condition "EE" which states no work authorized by the permit may begin until 10 days after the ROD is provided to EPA. We will not remove that condition unless you provide written concurrence with such an action.

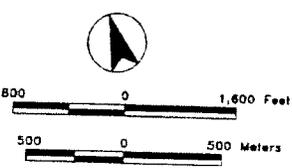
Ken Jolly
Chief, Regulatory Division
Wilmington District
910-251-4630

[attachment "Proffered Permit.pdf" deleted by Palmer Hough/DC/USEPA/US]
[attachment "PCS ROD.pdf" deleted by Palmer Hough/DC/USEPA/US]

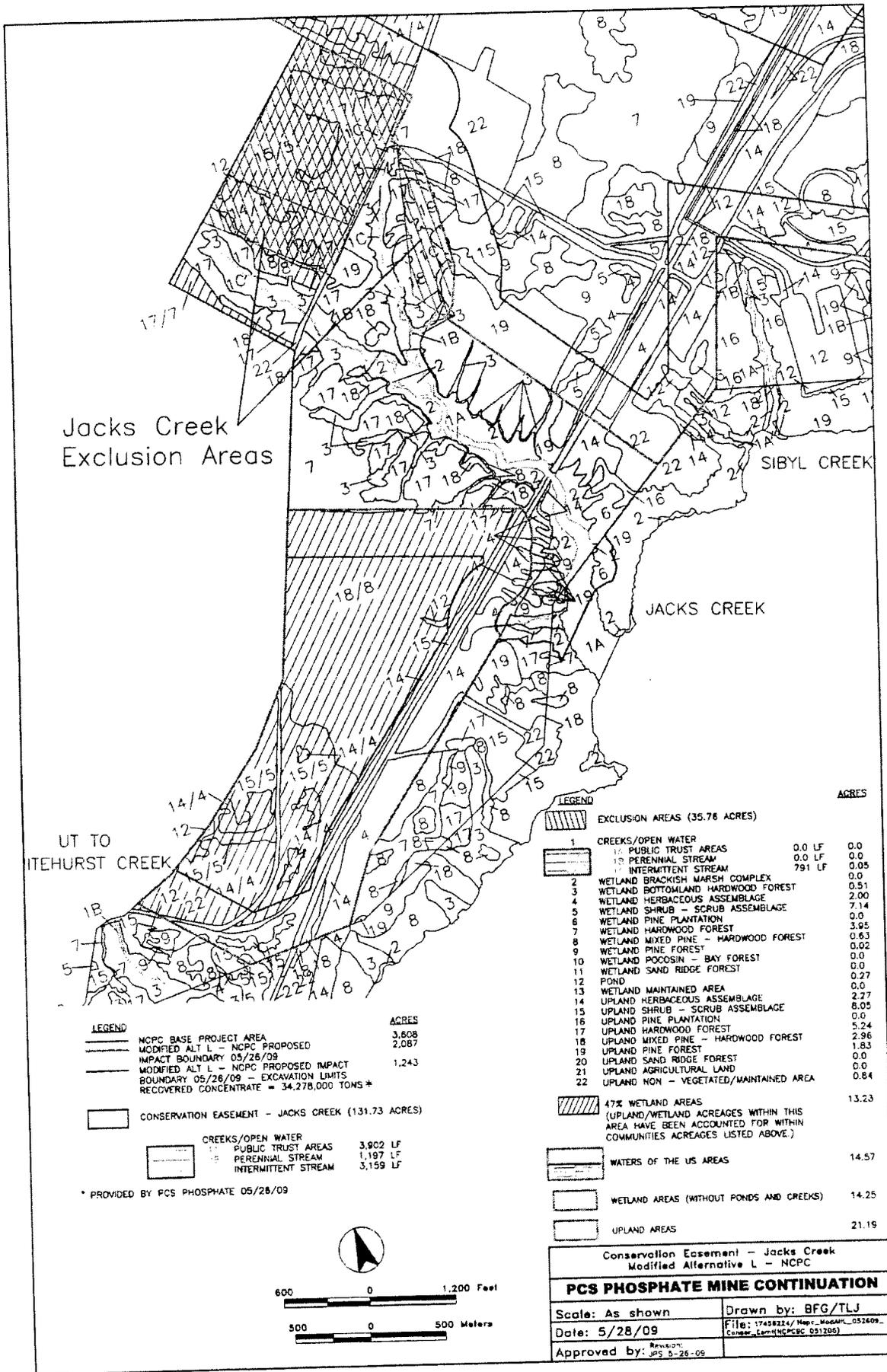


LEGEND		ACRES	
[Solid Line]	NCPC BASE PROJECT AREA		3,608
[Dashed Line]	MODIFIED ALT L - NCPC PROPOSED		2,109
[Dotted Line]	IMPACT BOUNDARY 05/13/09		
[Dash-dot Line]	MODIFIED ALT L - NCPC PROPOSED IMPACT BOUNDARY 05/13/09 - EXCAVATION LIMITS		1,264
[Cross-hatched]	RECOVERED CONCENTRATE = 34,878,000 TONS *		
[Diagonal Hatching]	EXCLUSION AREAS (5.98 ACRES)		
[Numbered Box]	CREEKS/OPEN WATER		
[1]	1 PUBLIC TRUST AREAS	0.0 LF	0.0
[2]	2 PERENNIAL STREAM	0.0 LF	0.0
[3]	3 INTERMITTENT STREAM	830 LF	0.19
[4]	4 WETLAND BRACKISH MARSH COMPLEX		0.0
[5]	5 WETLAND BOTTOMLAND HARDWOOD FOREST		0.56
[6]	6 WETLAND HERBACEOUS ASSEMBLAGE		0.0
[7]	7 WETLAND SHRUB - SCRUB ASSEMBLAGE		1.28
[8]	8 WETLAND PINE PLANTATION		0.0
[9]	9 WETLAND HARDWOOD FOREST		1.82
[10]	10 WETLAND MIXED PINE - HARDWOOD FOREST		0.0
[11]	11 WETLAND PINE FOREST		0.08
[12]	12 WETLAND POCOSIN - BAY FOREST		0.0
[13]	13 WETLAND SAND RIDGE FOREST		0.0
[14]	14 POND		0.04
[15]	15 WETLAND MAINTAINED AREA		0.0
[16]	16 UPLAND HERBACEOUS ASSEMBLAGE		0.0
[17]	17 UPLAND SHRUB - SCRUB ASSEMBLAGE		1.64
[18]	18 UPLAND PINE PLANTATION		0.0
[19]	19 UPLAND HARDWOOD FOREST		0.0
[20]	20 UPLAND MIXED PINE - HARDWOOD FOREST		0.01
[21]	21 UPLAND PINE FOREST		0.0
[22]	22 UPLAND SAND RIDGE FOREST		0.0
[23]	23 UPLAND AGRICULTURAL LAND		0.0
[24]	24 UPLAND NON - VEGETATED/MAINTAINED AREA		0.35
[Diagonal Hatching]	47% WETLAND AREAS (UPLAND/WETLAND ACRES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACRES LISTED ABOVE.)		0.0
[Horizontal Hatching]	WATERS OF THE US AREAS		3.98
[Vertical Hatching]	WETLAND AREAS (WITHOUT PONDS AND CREEKS)		3.75
[White Box]	UPLAND AREAS		2.00
[Dotted Box]	CONSERVATION EASEMENT - JACOBS CREEK (78 ACRES)		
[Numbered Box]	CREEKS/OPEN WATER		
[1]	1 PUBLIC TRUST AREAS	5,194 LF	
[2]	2 PERENNIAL STREAM	565 LF	
[3]	3 INTERMITTENT STREAM	3,590 LF	

* PROVIDED BY PCS PHOSPHATE 05/13/09



Conservation Easement - Jacobs Creek Modified Alternative L - NCPC	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17456224/Map_ModAlt_051309_Conser_Easmt/NCPC MC 061205
Approved by: JPS 3-13-09	



Jacks Creek
Exclusion Areas

SIBYL CREEK

JACKS CREEK

UTEHURST CREEK

LEGEND

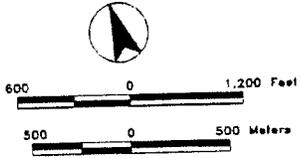
	ACRES
NCPC BASE PROJECT AREA	3,808
MODIFIED ALT L - NCPC PROPOSED	2,087
IMPACT BOUNDARY 05/26/09	
MODIFIED ALT L - NCPC PROPOSED IMPACT	1,243
BOUNDARY 05/26/09 - EXCAVATION LIMITS	
RECOVERED CONCENTRATE = 34,278,000 TONS*	

CONSERVATION EASEMENT - JACKS CREEK (131.73 ACRES)	
CREEKS/OPEN WATER	
PUBLIC TRUST AREAS	3,902 LF
PERENNIAL STREAM	1,197 LF
INTERMITTENT STREAM	3,159 LF

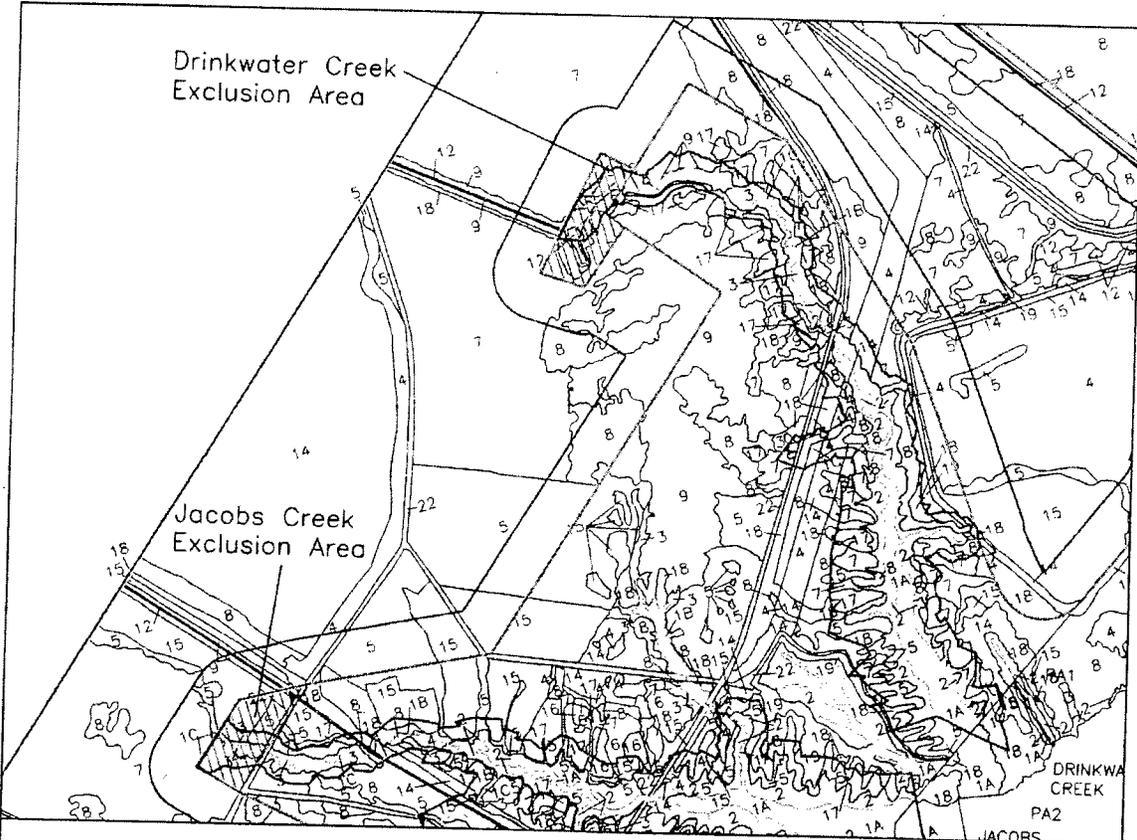
* PROVIDED BY PCS PHOSPHATE 05/28/09

LEGEND

	ACRES
EXCLUSION AREAS (35.76 ACRES)	
1 CREEKS/OPEN WATER	
12 PUBLIC TRUST AREAS	0.0 LF
13 PERENNIAL STREAM	0.0 LF
14 INTERMITTENT STREAM	791 LF
2 WETLAND BRACKISH MARSH COMPLEX	0.0
3 WETLAND BOTTOMLAND HARDWOOD FOREST	0.51
4 WETLAND HERBACEOUS ASSEMBLAGE	2.00
5 WETLAND SHRUB - SCRUB ASSEMBLAGE	7.14
6 WETLAND PINE PLANTATION	0.0
7 WETLAND HARDWOOD FOREST	3.95
8 WETLAND MIXED PINE - HARDWOOD FOREST	0.63
9 WETLAND PINE FOREST	0.02
10 WETLAND POCOSIN - BAY FOREST	0.0
11 WETLAND SAND RIDGE FOREST	0.0
12 POND	0.27
13 WETLAND MAINTAINED AREA	0.0
14 UPLAND HERBACEOUS ASSEMBLAGE	2.27
15 UPLAND SHRUB - SCRUB ASSEMBLAGE	8.05
16 UPLAND PINE PLANTATION	0.0
17 UPLAND HARDWOOD FOREST	5.24
18 UPLAND MIXED PINE - HARDWOOD FOREST	2.96
19 UPLAND PINE FOREST	1.83
20 UPLAND SAND RIDGE FOREST	0.0
21 UPLAND AGRICULTURAL LAND	0.0
22 UPLAND NON - VEGETATED/MAINTAINED AREA	0.84
47% WETLAND AREAS (UPLAND/WETLAND ACRES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACRES LISTED ABOVE)	13.23
WATERS OF THE US AREAS	14.57
WETLAND AREAS (WITHOUT PONDS AND CREEKS)	14.25
UPLAND AREAS	21.19

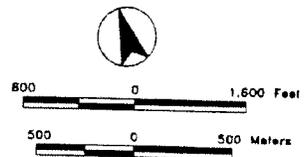


Conservation Easement - Jacks Creek Modified Alternative L - NCPC	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/28/09	File: 17458224_Map_MoAAlt_052609_Conser_Land(NCPC) 051205
Approved by: JPS 8-26-09	Revision: 05/28/09

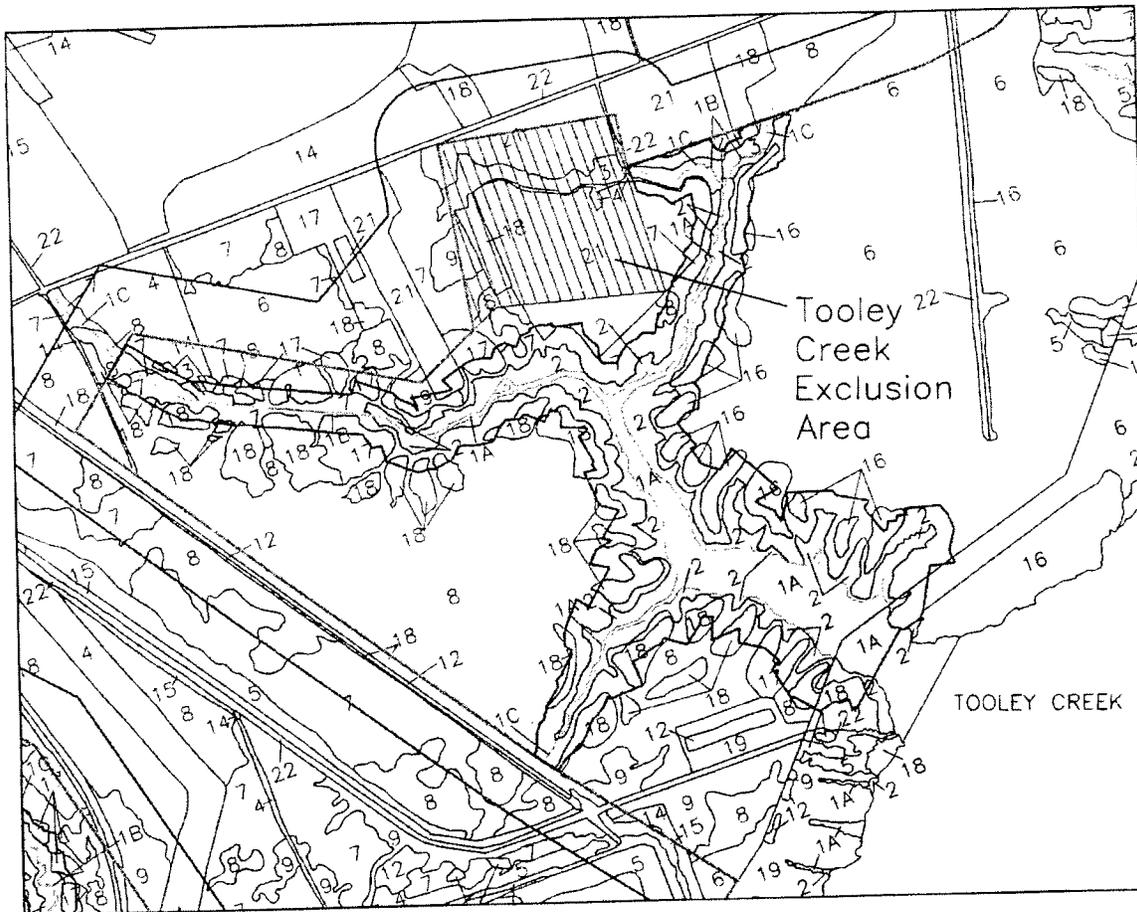


LEGEND		ACRES
NCPG BASE PROJECT AREA		3,608
MODIFIED ALT L - NCPG PROPOSED		2,109
IMPACT BOUNDARY 05/13/09		
MODIFIED ALT L - NCPG PROPOSED IMPACT		1,264
BOUNDARY 05/13/09 - EXCAVATION LIMITS		
RECOVERED CONCENTRATE = 34,878,000 TONS *		
EXCLUSION AREAS (6.65 ACRES)		
1 CREEKS/OPEN WATER		
○	PUBLIC TRUST AREAS	0.0 LF 0.0
○	PERENNIAL STREAM	0.0 LF 0.0
○	INTERMITTENT STREAM	492 LF 0.04
2 WETLAND BRACKISH MARSH COMPLEX		
3 WETLAND BOTTOMLAND HARDWOOD FOREST		
4 WETLAND HERBACEOUS ASSEMBLAGE		
5 WETLAND SHRUB - SCRUB ASSEMBLAGE		
6 WETLAND PINE PLANTATION		
7 WETLAND HARDWOOD FOREST		
8 WETLAND MIXED PINE - HARDWOOD FOREST		
9 WETLAND PINE FOREST		
10 WETLAND POCOSIN - BAY FOREST		
11 WETLAND SAND RIDGE FOREST		
12 POND		
13 WETLAND MAINTAINED AREA		
14 UPLAND HERBACEOUS ASSEMBLAGE		
15 UPLAND SHRUB - SCRUB ASSEMBLAGE		
16 UPLAND PINE PLANTATION		
17 UPLAND HARDWOOD FOREST		
18 UPLAND MIXED PINE - HARDWOOD FOREST		
19 UPLAND PINE FOREST		
20 UPLAND SAND RIDGE FOREST		
21 UPLAND AGRICULTURAL LAND		
22 UPLAND NON - VEGETATED/MAINTAINED AREA		
47% WETLAND AREAS (UPLAND/WETLAND ACREAGES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACREAGES LISTED ABOVE.)		0.0
WATERS OF THE US AREAS		5.29
WETLAND AREAS (WITHOUT PONDS AND CREEKS)		4.93
UPLAND AREAS		1.36
CONSERVATION EASEMENT - DRINKWATER CREEK (63 ACRES)		
CREEKS/OPEN WATER		
○	PUBLIC TRUST AREAS	5.318 LF
○	PERENNIAL STREAM	409 LF
○	INTERMITTENT STREAM	2,113 LF

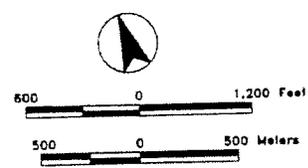
* PROVIDED BY PCS PHOSPHATE 05/13/09



Conservation Easement - Drinkwater Creek Modified Alternative L - NCPG	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17454224/npcp_modaltl_051309 Conserv...Term/NCPG BC 0512C6
Approved by: JPS S-13-09	Revision

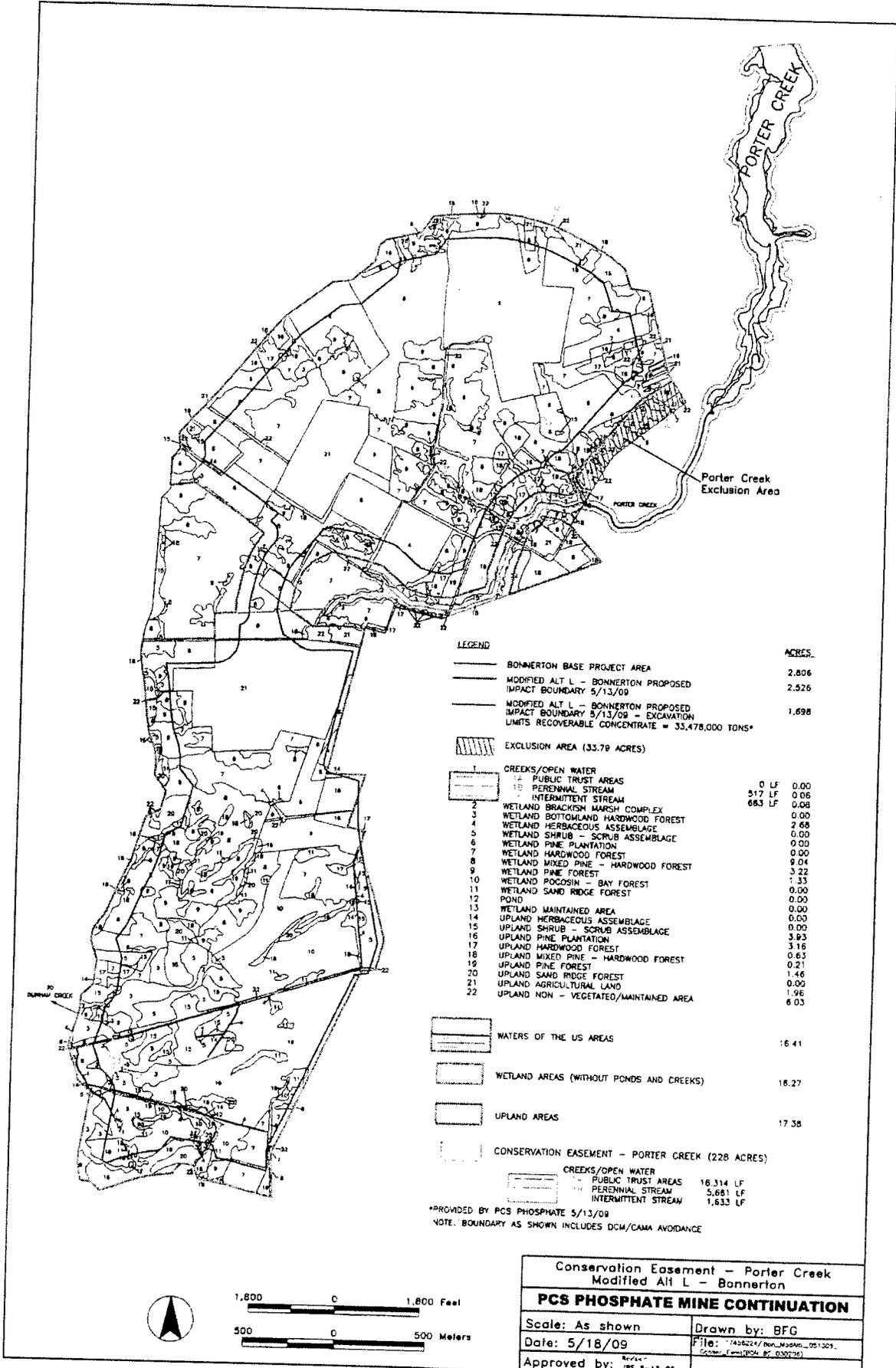


LEGEND		ACRES
NPCP BASE PROJECT AREA		3,608
MODIFIED ALT L - NPCP PROPOSED		2,109
IMPACT BOUNDARY 05/13/09		1,264
MODIFIED ALT L - NPCP PROPOSED IMPACT BOUNDARY 05/13/09 - EXCAVATION LIMITS		
RECOVERED CONCENTRATE = 34,878,000 TONS *		
EXCLUSION AREAS		21.19
CREEKS/OPEN WATER		
PUBLIC TRUST AREAS		0.0 LF
PERENNIAL STREAM		0.0 LF
INTERMITTENT STREAM		0.0 LF
2	WETLAND BRACKISH MARSH COMPLEX	2.33
3	WETLAND BOTTOMLAND HARDWOOD FOREST	0.40
4	WETLAND HERBACEOUS ASSEMBLAGE	0.0
5	WETLAND SHRUB - SCRUB ASSEMBLAGE	0.0
6	WETLAND PINE PLANTATION	0.48
7	WETLAND HARDWOOD FOREST	0.54
8	WETLAND MIXED PINE - HARDWOOD FOREST	0.54
9	WETLAND PINE FOREST	0.0
10	WETLAND POCCOSIN - BAY FOREST	0.0
11	WETLAND SAND RIDGE FOREST	0.0
12	POND	0.0
13	WETLAND MAINTAINED AREA	0.0
14	UPLAND HERBACEOUS ASSEMBLAGE	0.0
15	UPLAND SHRUB - SCRUB ASSEMBLAGE	0.0
16	UPLAND PINE PLANTATION	0.0
17	UPLAND HARDWOOD FOREST	0.0
18	UPLAND MIXED PINE - HARDWOOD FOREST	1.30
19	UPLAND PINE FOREST	0.0
20	UPLAND SAND RIDGE FOREST	15.44
21	UPLAND AGRICULTURAL LAND	0.16
22	UPLAND NON - VEGETATED/MAINTAINED AREA	0.0
47% WETLAND AREAS (UPLAND/WETLAND ACRES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACRES LISTED ABOVE.)		0.0
WATERS OF THE US AREAS		4.29
WETLAND AREAS (WITHOUT PONDS AND CREEKS)		4.29
UPLAND AREAS		16.90
CONSERVATION EASEMENT - TOOLEY CREEK (81 ACRES)		
CREEKS/OPEN WATER		
PUBLIC TRUST AREAS		6.54 LF
PERENNIAL STREAM		918 LF
INTERMITTENT STREAM		1,494 LF



Conservation Easement - Tooley Creek Modified Alternative L - NPCP	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17458224/Ncpc_MacAPL_051309_... Conserv_Esm(NCPC BC 051309)
Approved by: JPS 5-13-09	Revision

* PROVIDED BY PCS PHOSPHATE 05/13/09

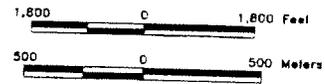


LEGEND

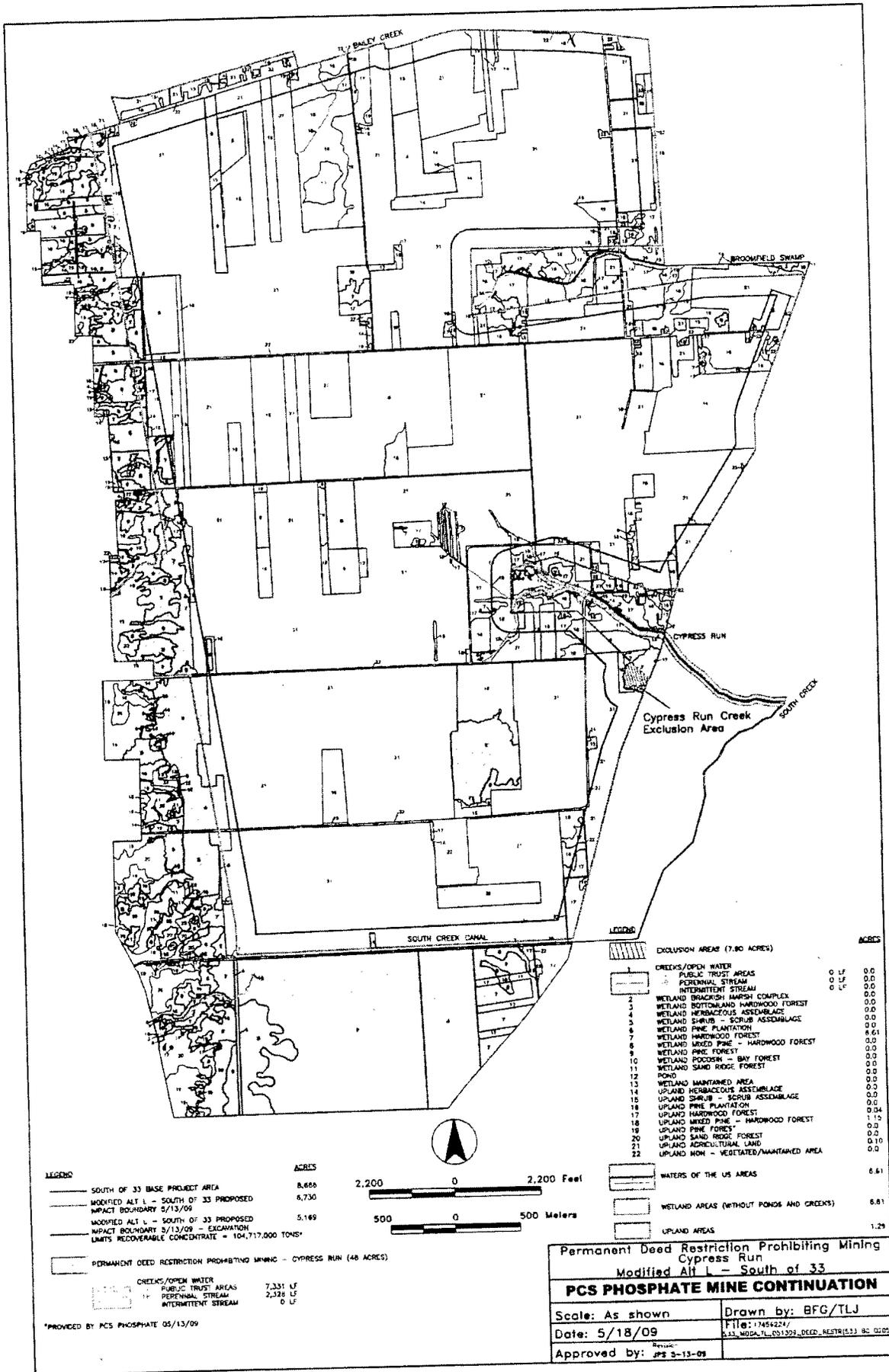
	ACRES
— BONNERTON BASE PROJECT AREA	2,806
— MODIFIED ALT L - BONNERTON PROPOSED IMPACT BOUNDARY 5/13/09	2,526
— MODIFIED ALT L - BONNERTON PROPOSED IMPACT BOUNDARY 5/13/09 - EXCAVATION LIMITS RECOVERABLE CONCENTRATE = 33,478,000 TONS*	1,698
▨ EXCLUSION AREA (33.79 ACRES)	
CREEKS/OPEN WATER	
▭ PUBLIC TRUST AREAS	0 LF 0.00
▭ PERENNIAL STREAM	517 LF 0.06
▭ INTERMITTENT STREAM	683 LF 0.08
2 WETLAND BRACKISH MARSH COMPLEX	0.00
3 WETLAND BOTTOMLAND HARDWOOD FOREST	0.00
4 WETLAND HERBACEOUS ASSEMBLAGE	2.68
5 WETLAND SHRUB - SCRUB ASSEMBLAGE	0.00
6 WETLAND PINE PLANTATION	0.00
7 WETLAND HARDWOOD FOREST	9.04
8 WETLAND MIXED PINE - HARDWOOD FOREST	3.22
9 WETLAND PINE FOREST	3.33
10 WETLAND POCOSIN - BAY FOREST	0.00
11 WETLAND SAND RIDGE FOREST	0.00
12 POND	0.00
13 WETLAND MAINTAINED AREA	0.00
14 UPLAND HERBACEOUS ASSEMBLAGE	6.00
15 UPLAND SHRUB - SCRUB ASSEMBLAGE	0.00
16 UPLAND PINE PLANTATION	3.93
17 UPLAND HARDWOOD FOREST	3.16
18 UPLAND MIXED PINE - HARDWOOD FOREST	0.63
19 UPLAND PINE FOREST	0.21
20 UPLAND SAND RIDGE FOREST	1.46
21 UPLAND AGRICULTURAL LAND	0.00
22 UPLAND NON - VEGETATED/MAINTAINED AREA	1.96
	6.03

▭ WATERS OF THE US AREAS	16.41
▭ WETLAND AREAS (WITHOUT PONDS AND CREEKS)	16.27
▭ UPLAND AREAS	17.38
▭ CONSERVATION EASEMENT - PORTER CREEK (228 ACRES)	
CREEKS/OPEN WATER	
▭ PUBLIC TRUST AREAS	16,314 LF
▭ PERENNIAL STREAM	5,661 LF
▭ INTERMITTENT STREAM	1,633 LF

*PROVIDED BY PCS PHOSPHATE 5/13/09
NOTE: BOUNDARY AS SHOWN INCLUDES DCM/CAMA AVOIDANCE



Conservation Easement - Porter Creek Modified Alt L - Bonnerton	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG
Date: 5/18/09	File: 17484224/Porter_Creek_Alt_L_05-18-09
Approved by: JPS 8-13-08	Checked: [Signature]





"Jolly, Samuel K SAW"
<Samuel.K.Jolly@usace.army.mil>

06/04/2009 06:02 PM

To Stan Meiburg/R4/USEPA/US@EPA
cc Rebecca Fox/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA,
"Welborn.Tom@epamail.epa.gov"
bcc

Subject Revised conditions and graphics

History:  This message has been forwarded.

Attached find the corrected permit conditions and graphics, provided to PCS this afternoon to be used in place <<conditions and graphics6_4_09.pdf>> of the the version included in the proffered permit.

Ken Jolly
Chief, Regulatory Division
Wilmington District

SPECIAL CONDITION
Action ID No. 200110096

MINING

- A) This permit authorizes mining and mine related impacts as described fully in the FEIS within the boundary depicted in the attached maps labeled "Modified Alt L – NCPC" dated May 28, 2009 and "Modified Alt L – Bonnerton" and "Modified Alt L – South of 33", as presented May 18, 2009. All work authorized by this permit must be performed in strict compliance with these attached plans, which are a part of this permit. Any modification to these plans must be approved by the U.S. Army Corps of Engineers (USACE) prior to implementation.
- B) Within 1 year of the issuance date of this permit, the Permittee shall demarcate the outer limits of disturbance on the NCPC tract by establishing a cleared line at least 10 feet wide and not to exceed 40 feet wide along the Impact Boundary as identified in the attached map labeled "Modified Alt L – NCPC" as presented May 28, 2009. Additionally, the Permittee shall, within 1 year of the issuance of this permit work with the Corps to identify locations and establish permanent monuments identified with GPS coordinates to further demarcate this boundary on the NCPC Tract. No less than 1 year prior to relocating any mine related activity to the Bonnerton or S33 Tracts, the Permittee shall undertake identical actions within these tracts utilizing the information provided on the "Modified Alt L – Bonnerton" and "Modified Alt L – South of 33", as presented May 18, 2009, respectively. This will facilitate compliance monitoring by establishing long-term reference points.
- C) Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.
- D) Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters or wetlands.
- E) Figure 2 of the Record of Decision (ROD) included and incorporated here by reference depicts approximate timing of the requirement for major pre- mining, land manipulation and clearing impacts and is incorporated here by reference. Table 3 of the ROD included and incorporated here by reference lists those impacts and the years in which they will occur. These yearly figures are estimates. Actual timing and area may be in part determined by several factors including but not limited to site and equipment constraints, weather, and economics. However, to ensure that temporal

losses are minimized to the extent practicable, the Permittee shall not undertake major land-clearing and/or land manipulating activities within any area sooner than 1 year prior to the dates indicated on this figure. For example, major land clearing and manipulation activities within the block labeled 2012-2013 may not begin any sooner than January 1, 2011.

RECLAMATION

- F) The Permittee shall undertake full reclamation of all areas mined under this authorization as described in Section 4.3 of the EIS. This includes reestablishment of varied topography and drainage ways. Figure 3 of the ROD included and incorporated here by reference indicates the required completion date for the capping and successful vegetation of mine reclamation areas. To demonstrate adherence to this schedule, the Permittee shall submit to the Corps an annual summary detailing all reclamation efforts complete within the previous year and indicating the degree of completeness of each reclamation area. Any deviation from the reclamation schedule will be addressed in these reports and the report shall include an explanation for the deviation and proposed remedial action.
- G) The Permittee shall cap all mined areas that are reclaimed with the gypsum-clay blend process materials. The goal of the cap will be a minimum 3-foot thick cap of overburden material (similar to background soils from the region) over 100% of the blend areas. Minimal acceptable performance standards in achieving this cap are as follows: 70% of the total surface area with a minimum of 3-foot cap; 25% of the total surface area with a minimum of 2-foot cap; 5% of the total surface area unspecified.
- H) Following successful completion of the capping requirements within each reclamation area, the Permittee shall submit an as-built report including final topographical surveys for the reclamation areas. This report shall contain final cap depth and coverage information. This report shall further include an explanation of site development that will minimize erosion, eliminate contaminant transportation from the clay/gypsum blend through any waterway or drainage area, and facilitate the development of a mature vegetated riparian buffer. Finally, this report shall include information on surface water retention within the reclamation area and flows within and from the reclamation area.
- I) To minimize temporal impacts and accelerate the return of watershed functions within the reclamation areas, the Permittee shall to the extent appropriate and practicable apply an average of 1-foot of topsoil cover to the reclaimed areas utilizing the topsoil removed prior to site mining. This topsoil addition should be concentrated within and around areas of surface water flow and/or retention.
- J) To the extent appropriate and practicable, upland portions of the reclamation area shall be replanted, in longleaf pine (*Pinus palustris*) and wetland areas shall be replanted in bald cypress (*Taxodium distichum*) and/or Atlantic white cedar (*Chamaecyparis thyoides*) if Atlantic white cedar is shown to do well on the

reclamation sites. It is suggested that the Permittee work with the Corps, the USFWS and any other interested parties to determine growth and survivability of these and other species utilizing areas currently being reclaimed under the previous permit action.

- K) Within 2 years of the issuance of this permit, the Permittee shall work with the Corps and NCDWQ to develop a plan to monitor the quality of water discharged from the reclamation areas into the surrounding watersheds. The Permittee shall seek input from all appropriate and interested agencies including but not limited to EPA, USFWS, NFMS, NCWRC, NCDMF, NCDCM and NCDLR in developing this monitoring plan. This plan shall include monitoring of radionuclides, total and dissolved phosphorus, nitrate nitrogen, ammonia nitrogen, particulate nitrogen, dissolved Kjeldahl nitrogen, and dissolved and particulate organic carbon. Data collected will be used to manage water within the reclamation areas to optimize both the amount and quality of those waters being released. It is suggested that the applicant initiate pilot studies in the areas currently being reclaimed.

MITIGATION

- L) Compensatory mitigation identified in the document entitled "Compensatory Section 404/401 Mitigation Plan: Comprehensive Approach" as presented in Appendix I of the FEIS shall be accomplished pursuant to that Plan and/or any subsequent Corps approved modification or amendment. Construction and monitoring of each site shall be conducted according to each site-specific mitigation plan and the schedule presented in Table 3 of the ROD included and incorporated here by reference.
- M) Within one year of the issuance of this permit, the Permittee shall cause to be recorded, a preservation mechanism acceptable to the Corps for the permanent protection of the area identified for preservation in the "South Creek Corridor" plan.
- N) Table 3 of the ROD lists the impacts as they would occur during 2-year timeframes and is included by reference in Condition "E" above. By November 1st of the year preceding the permitted impact, the Permittee shall submit to the Corps and NCDWQ, a mitigation ledger demonstrating that all mitigation work is complete as described in the mitigation plan and pursuant to the identified timetable. This ledger will be used to determine whether sufficient mitigation is available for impacts occurring over the next 2-year timeframe. For Example, by November 1st 2009, the Permittee shall submit a ledger demonstrating that sufficient mitigation for impacts occurring during the 2010 – 2011 timeframe (526.56 ac) is completed. Should the ledger indicate that insufficient mitigation exists to compensate for the next 2-year timeframe, the Permittee shall work with the Corps to develop a strategy to ensure that the mitigation requirement is satisfactorily met prior to those impacts occurring.

- O) The Permittee shall submit yearly monitoring reports for each mitigation site. Monitoring reports will be submitted by the dates specified within each site-specific mitigation plan. Monitoring will continue until such time as the Corps deems the mitigation site successful and confirms in writing that monitoring may be discontinued.
- P) Once compensatory mitigation sites have been deemed successful and the Corps has agreed in writing that monitoring may cease, the Permittee shall, within one year of the date of that correspondence, cause to be recorded an acceptable preservation mechanism ensuring the permanent protection of all mitigation sites.

MONITORING

- Q) As required by the State Water Quality Certification, the Permittee shall work with the Corps and the N.C. Division of Water Quality to establish a monitoring plan for groundwater in and around mine and reclamation areas. At a minimum, this plan shall include sufficient monitoring within and surrounding the reclamation areas to ensure that heavy metal/toxic pollutants including cadmium and radionuclides are not entering the groundwater. The monitoring plan shall also include nitrate nitrogen, sulfate, chloride, total phosphorus, sodium, TDS, and pH. It is suggested that this monitoring commence with monthly samples until such time as the NCDWQ and the Corps in consultation with all interested and appropriate agencies determines sufficient baseline information exists. After such time, samples will be collected and analyzed every 3 months until blend material is introduced to the reclamation area. Following introduction of the blend material to the reclamation site, monthly sampling will recommence until such time as the NCDWQ and the Corps in consultation with all interested and appropriate agencies determines another sampling timeframe is appropriate. Yearly results of this monitoring shall be reported to the Corps and NCDWQ no later than January 31 of the year following data collection. The permittee and/or the Corps will make these reports available in whole or in summary to any interested party. If increases in the levels of any sampled substance are observed for more than 1 sampling occurrence in any given year, or for more than 1 year, the permittee shall include in the yearly report, a plan for mitigating the effect or satisfactory justification as to why no action is necessary. If the Corps, in consultation with other agencies, including but not limited to NCDWQ, NCDLR and EPA, determines that the current reclamation practices are causing an unacceptable adverse impact to groundwater, the DE may modify, suspend or revoke the permit.
- R) Prior to introducing the gypsum/clay blend in the reclamation of any mined area covered by this permit, the Permittee shall submit to the Corps and NCDWQ a remediation strategy in anticipation of the possibility of heavy

metal or radionuclide contamination of groundwater or surface tributaries that drain or are adjacent to mined areas. That strategy will be made available for public review.

- S) In concert with the monitoring requirements contained in the Water Quality Certification, the Permittee shall develop a Plan of Study to address the effects of the reduction in headwater wetlands on the utilization of Porters Creek, Tooley Creek, Jacobs Creek, Drinkwater Creek, and Jacks Creek as nursery areas by resident fish and appropriate invertebrate species. This plan shall be submitted to the Corps and NCDWQ for approval within 1 year of the issuance of this permit. At a minimum, the plan shall address the following issues:
- 1) Has mining altered the amount or timing of water flows within the creeks?
Data collection may include:
 - i) Continuous water level recorders to measure flow
 - ii) Rain gauges to measure local water input
 - iii) Groundwater wells to measure input to the creeks
 - iv) Semi-continuous salinity monitoring
 - v) Periodic DO monitoring (continuously monitored for several days at strategic times of year)
 - 2) Has mining altered the geomorphic or vegetative character of the creeks?
Data collection may include:
 - i) Annual aerial photography to determine creek position, length, width, sinuosity
 - ii) Annual cross sectional surveys of each creek at established locations
 - iii) Annual sediment characterization
 - iv) Annual vegetation surveys along creeks
 - v) Spring and fall sediment surface chlorophylls or organic content in vegetation zone.
 - vi) Spring and fall location of flocculation zones with each creek.
 - 3) Has mining altered the forage base of the creeks? Data collection may include:
 - i) Spring and fall benthic cores to sample macroinfauna.
 - ii) Spring and fall benthic grabs focused upon bivalves, such as *Rangia* sp.
 - iii) Periodic sampling for pelagic species such as grass shrimp, blue crabs, and small forage fish. Sampling gears would be chosen to reflect ontogenetic shifts in creek usage.
 - 4) Has mining altered the use of the creeks by managed fish? Data collection may include periodic sampling for species managed under the Magnuson-Stevens Fishery Conservation Management Act. Sampling would occur

during appropriate times of year and gears would be chosen to reflect ontogenetic shifts in creek usage.

- 5) Has mining increased contaminate levels within creek sediments to levels that could impact fish or invertebrates? Data collection may include annual sediment and water column sampling for metals, including cadmium, mercury, silver, copper, and arsenic. If elevated levels are detected, the availability and uptake by appropriate aquatic species (e.g., *Rangia* sp., blue crabs) should be measured using appropriate bioassay techniques.
 - 6) Has mining altered overall water quality within creeks? Water quality parameters analyzed will include: Salinity, Temperature, Dissolved Oxygen, pH, Secchi depth, Turbidity, Chlorophyll a, Dissolved orthophosphate phosphorus, Total dissolved phosphorus, Particulate phosphorus, Nitrate nitrogen, Ammonia nitrogen, particulate nitrogen, and Dissolved Kjeldahl nitrogen.
- T) Monitoring under the Plan of Study referenced in condition "S" above shall commence immediately upon the Plan's approval by the Corps and NCDWQ. Monitoring shall continue for 10 years following the completion of all reclamation work within the headwaters of the subject creeks unless the Corps, in consultation with the appropriate resource agencies agrees that monitoring can be discontinued.

REPORTING AND ADAPTIVE MANAGEMENT

- U) The Permittee shall within 6 months of the issuance date of this permit, work with the Corps and NCDWQ to establish an independent multidisciplinary panel of researchers qualified in the subject matter to be examined (Science Panel). In identifying potential participants for this Panel, the Permittee shall seek input from all interested and appropriate resource agencies including but not limited to EPA, NMFS, USFWS, NCWRC, NCDMF, and the appropriate permitting agencies including NCDCM, NCDLR. The panel shall be comprised of between 2 and 5 members. The members of this panel shall be given opportunity to provide input and recommendations on the monitoring required by conditions "K" and "S" above including research design, reference site selection, sampling stations, schedules, and methods; laboratory methods; data management and analysis; and quality control and quality assurance. Any input supplied by members of this panel will be presented to the Corps and NCDWQ and will be incorporated as appropriate into the preparation of the Plan of Study referenced in condition "S". Members of this panel will also be given the opportunity to oversee all research conducted toward fulfillment of conditions "K" and "S".

- V) The Permittee shall be responsible for fully implementing the approved Plan of Study referenced in conditions "S", "T" and "U" above. Annual summaries of all data collected in compliance with conditions "K" and "S" shall be presented to the Corps, NCDWQ and all members of the Science Panel on or before May 1 of the year following collection. The Permittee and/or the Corps will make these reports available in whole or in summary to any interested party.
- W) The Permittee shall coordinate and facilitate an annual meeting of the Science Panel, the Corps, NCDWQ, and all other interested state and federal agencies including but not limited to EPA, NMFS, USFWS, NCWRC, NCDMF, NCDCM, NCDLR. This meeting shall occur no later than July 30 of each year. The purpose of this meeting will be to allow the members of the Science Panel to provide input to the agencies on any observed trends in parameters measured and general discussions on whether direct and indirect impacts from mining and benefits from the compensatory mitigation appear to be in accordance with expectations at the time of permitting. Members of the Science Panel shall also be given the opportunity to provide any recommendations for management or further study. The proceedings of this meeting including data summaries, reports, presentations and any conclusions of the group will be made available in whole or in summary to any interested party. The Corps will fully consider all information presented by the Science Panel as well as comments from state and federal agencies and all other parties supplying input to determine if corrective actions or permit modifications are needed. If substantive changes to the mine plan, compensatory mitigation plan or monitoring plan are made, the Corps will announce such change by Public Notice and allow for public comment.
- X) At appropriate intervals to be decided by the Corps after input from the Science Panel (eg. 3 to 5 years) beginning from the date of permit issuance, members of the panel shall be given the opportunity to review the monitoring methods, sampling locations, parameters analyzed, and other elements of monitoring protocol to determine if modifications to the plan are appropriate. All data reviewed by the panel shall be made available to the public.

MISCELLANEOUS

- Y) The Permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.
- Z) The Permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A

copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project.

- AA) The Permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).
- BB) The Permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to an acceptable condition.
- CC) Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the Permittee's discovery of the violation.
- DD) Wetland Avoidance/Minimization Areas: The Permittee shall avoid the remaining 2,455 acres of waters of the United States within the 15,100 acre project area. These natural wetland areas were avoided as part of the permit application review process and therefore will not be disturbed by any dredging, filling, mechanized land clearing, agricultural activities, or other construction work whatsoever. The Corps reserves the right to deny review of any requests for future impacts to these natural wetland areas.
- EE) The Permittee shall not begin work authorized by this permit until 10 days following the date I provide the record of decision to EPA. I expect to provide the ROD to EPA on June 4, 2009; however, the Permittee shall verify that date prior to beginning work.
- FF) Within one year of the date of this permit, the Permittee shall cause to be recorded a conservation instrument acceptable to the Corps for the permanent preservation of the areas identified as conservation easements on maps entitled "Conservation Easement – Tooley Creek Modified Alternative L – NCPC;" "Conservation Easement – Jacobs Creek Modified Alternative L – NCPC;" "Conservation Easement – Drinkwater Creek Modified Alternative L – NCPC and "Conservation Easement – Porter Creek Modified Alt L – Bonnerton" all dated May 18, 2009 and the map entitled "Conservation Easement – Jacks Creek Modified Alternative L – NCPC;" dated May 28,

2009. In addition the Permittee shall place a permanent mining restriction over the area shown in the map entitled "Permanent Deed Restriction Prohibiting Mining Cypress Run Modified Alt L- South of 33" dated May 18, 2009. The referenced maps are attached hereto.

Alternative	Total Area	Waters of the US	Stream	% Total Area	% Total Waters of the US	% Total Stream
Single Tract Alternatives						
Base (NCPC)	3,608	2,549	55,528			
AP (NCPC only)	3,412	2,408	38,558	95	94	69
Base (S33 only)	8,686	1,701	43,209			
S33AP (S33 only)	7,743	1,130	33,486	89	66	77
Holistic Alternatives						
Base (holistic)	15,100	6,380	115,843			
EAPAB	13,961	5,668	89,150	92	89	77
SJAAB	12,892	5,030	2,508	85	79	2
Alt. M	12,572	4,592	36,999	83	72	32
Alt. L (mod)	11,343	3,927	22,435	75	62	19
SCRA/B	10,659	3,506	14,360	71	55	12
DL1B	9,033	2,285	13,845	60	36	12
No Action	5,745	0	0	38	0	0

Table 1. Comparison of impacts for each alternative. Impacts associated with single tract alternatives are compared only to the base area within that single tract. Impacts associated with holistic alternatives are compared to the total base area of the three tracts combined.

Site	Wetland (acres)			Stream (linear feet)		
	Restoration	Enhancement	Preservation	Restoration	Enhancement	Preservation
Bay city	565.0	0.0	119.0	3000.0		
Hell Swamp	885.0	46.0	41.0	19783.0		
Gum Run	27.0	0.0	0.0			
Parker Farm	245.0	162.0	196.0			
SC Corridor			1143.0			3960
P Lands	2075.0	381.0	135.0			26736
U Lands	608.0		117.0			
Upper Back Creek	116.0	38.0	18.0	7066.0		
Rutman	3342.0	129.0	701.0	8793.0	7994.0	1149.0
Sage Gut	105.0		2.0	5401		1006
totals	7968.0	756.0	2472.0	44043.0	7994.0	32851.0

Table 2. Wetland and stream mitigation by site and type.

By year	Impact	Site Complete	Available Credits*	Acre Credit Balance	Impact**	Available Credits***	Linear Feet Credit Balance
	Acres		Acres	Available - Impacted	Linear Feet	Linear Feet	Available - Impacted
2009	312.39	Gum Run, Parker Farm, Bay City, Upper Back Creek	576.5	264.08	4544	11087.8	7115.8
2010	506.56	Sage Gut, Hell Swamp	1666.0	1403.53	148	30794.8	37762.6
2011		Rutman	828.1	2231.63		11990.6	49753.2
2012	304.81		0.0	1917.82	1108.5		48910.2
2013		P Lands, U Lands	1493.7	3411.52			48910.2
2014	303.53		0.0	3087.99	4677		45104.2
2015			0.0	3087.99			45104.2
2016	203.58		0.0	2884.41	1358		43746.2
2017			0.0	2884.41			43746.2
2018	458.74			2425.67	10620.5		34562.2
2019				2425.67			34562.2
2020	528.79			1896.88	0		34562.2
2021				1896.88			34562.2
2022	592.38			1304.50	0		34562.2
2023				1304.50			34562.2
2024	476.17			828.33	11974.5		24467.2
2025				828.33			24467.2
2026	30.34			797.99	3862.5		21892.2
2027				797.99			21892.2
2028	45.19			752.80	763.5		21383.2
2029				752.80			21383.2
2030	2.1			750.70	0		21383.2
2031				750.70			21383.2
2032	0			750.70	0		21383.2
2033				750.70			21383.2
2034	5.86			744.84	0		21383.2
2035				744.84			21383.2
2036	15.76			729.08	1239		20557.2
2037				729.08			20557.2
2038	31.42			697.66	4366.5		17646.2
2039				697.66			17646.2
2040	26.39			671.27	0		17646.2
2041				671.27			17646.2
2042	75.11			596.16	832.5		17091.2
2043				596.16			17091.2
2044	6.61			589.55	0		17091.2
2045				589.55			17091.2
2046	2.06			587.49	0		17091.2
2047				587.49			17091.2
2048	0			587.49	0		17091.2

Table 3. Mitigation completion date and impact dates

* an acre credit of wetland is comprised of 2:1 restoration, 3:1 enhancement or 8-10:1 preservation

** This column reflects total mitigation linear feet needed after adjustments to stream quality (1:1 for poor, 2:1 for Fair and 3:1 for excellent)

*** A linear foot credit is comprised of 1:1 restoration, 2.5:1 enhancement or 5:1 preservation

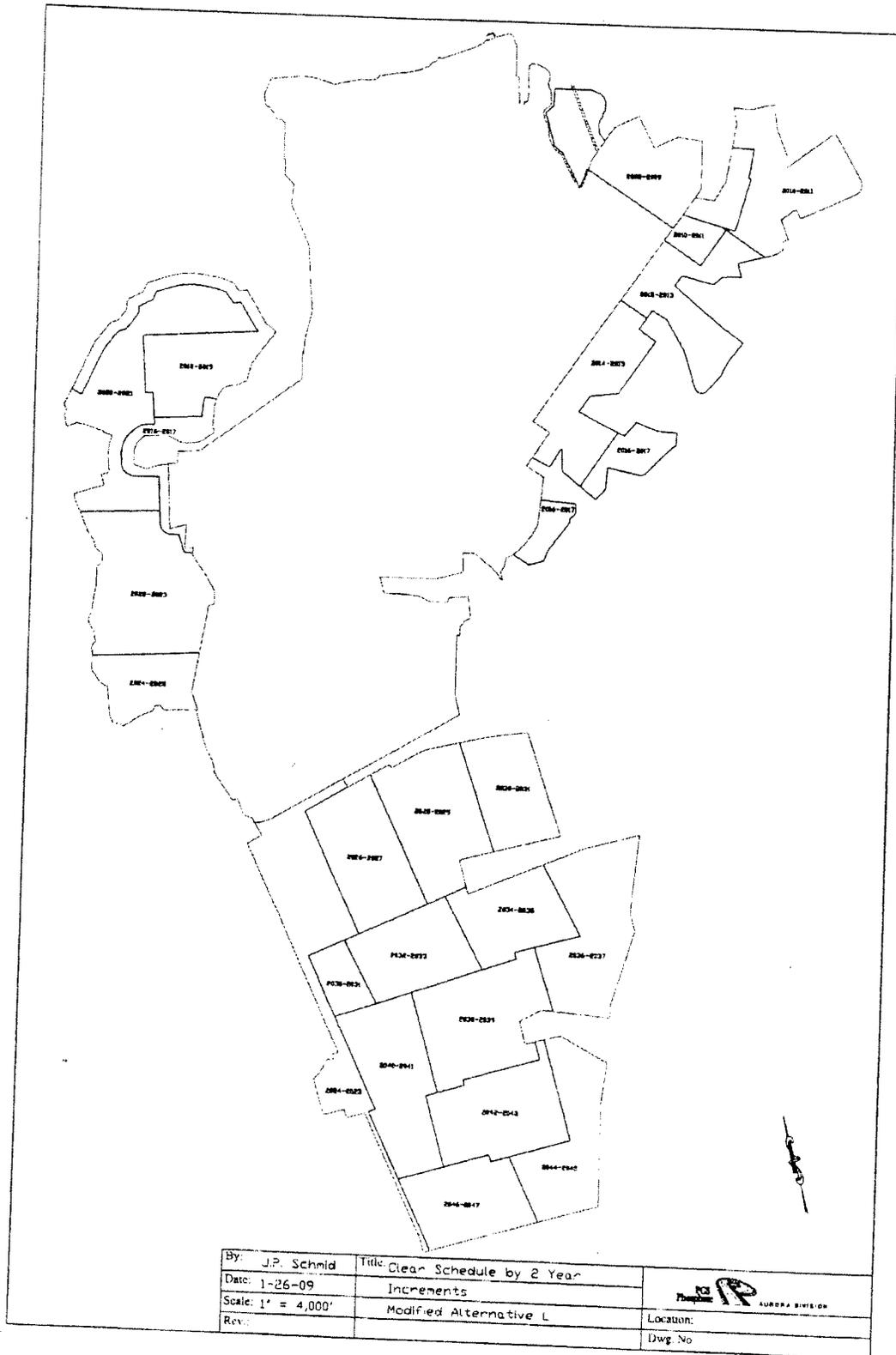
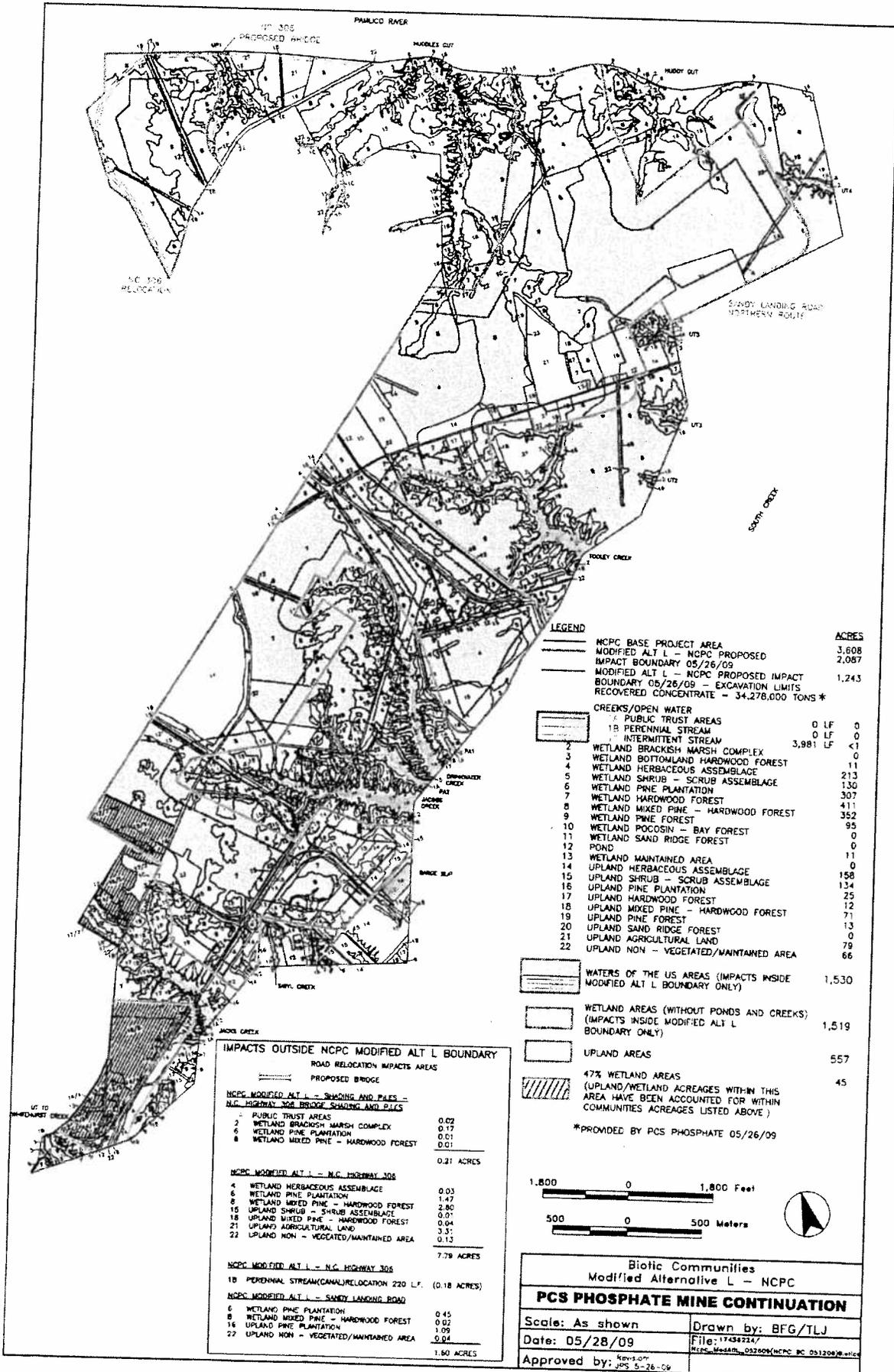


Figure 2. Initial impact schedule. This reflects dates when mechanized land clearing will be necessary in order to prepare for mine advance.



LEGEND

	ACRES
NCPC BASE PROJECT AREA	3,608
MODIFIED ALT L - NCPC PROPOSED	2,087
IMPACT BOUNDARY 05/26/09	
MODIFIED ALT L - NCPC PROPOSED IMPACT BOUNDARY 05/26/09 - EXCAVATION LIMITS	1,243
RECOVERED CONCENTRATE - 34,278,000 TONS *	
CREEKS/OPEN WATER	
16 PUBLIC TRUST AREAS	0 LF 0
18 PERENNIAL STREAM	0 LF 0
INTERMITTENT STREAM	3,981 LF <1
2 WETLAND BRACKISH MARSH COMPLEX	0
3 WETLAND BOTTONLAND HARDWOOD FOREST	11
4 WETLAND HERBACEOUS ASSEMBLAGE	213
5 WETLAND SHRUB - SCRUB ASSEMBLAGE	307
6 WETLAND PINE PLANTATION	411
7 WETLAND HARDWOOD FOREST	352
8 WETLAND MIXED PINE - HARDWOOD FOREST	95
9 WETLAND PINE FOREST	0
10 WETLAND POCOSIN - BAY FOREST	11
11 WETLAND SAND RIDGE FOREST	0
12 POND	111
13 WETLAND MAINTAINED AREA	0
14 UPLAND HERBACEOUS ASSEMBLAGE	158
15 UPLAND SHRUB - SCRUB ASSEMBLAGE	134
16 UPLAND PINE PLANTATION	25
17 UPLAND HARDWOOD FOREST	12
18 UPLAND MIXED PINE - HARDWOOD FOREST	71
19 UPLAND PINE FOREST	13
20 UPLAND SAND RIDGE FOREST	0
21 UPLAND AGRICULTURAL LAND	79
22 UPLAND NON - VEGETATED/MAINTAINED AREA	66

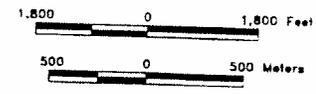
WATERS OF THE US AREAS (IMPACTS INSIDE MODIFIED ALT L BOUNDARY ONLY) 1,530

WETLAND AREAS (WITHOUT PONDS AND CREEKS) (IMPACTS INSIDE MODIFIED ALT L BOUNDARY ONLY) 1,519

UPLAND AREAS 557

47% WETLAND AREAS (UPLAND/WETLAND ACRES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACRES LISTED ABOVE) 45

*PROVIDED BY PCS PHOSPHATE 05/26/09



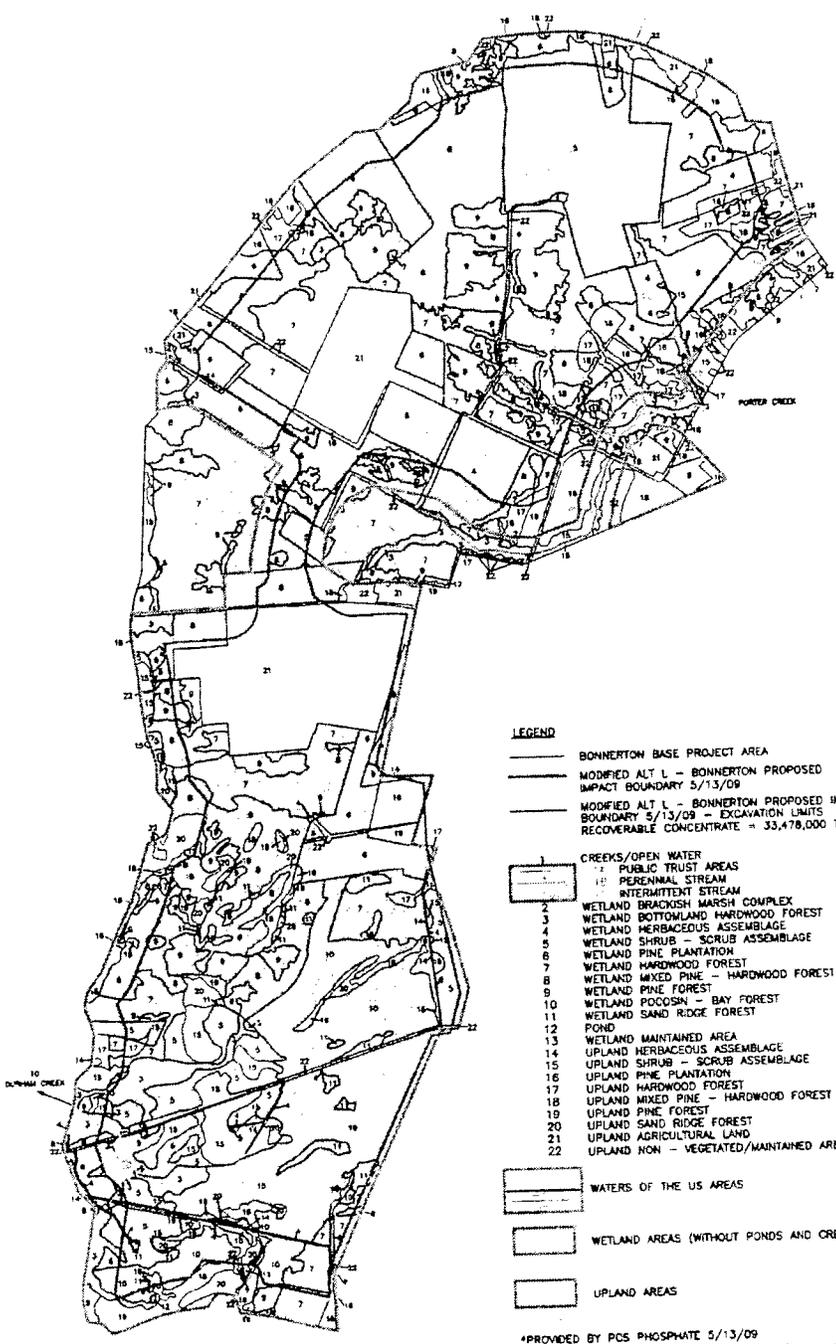
IMPACTS OUTSIDE NCPC MODIFIED ALT L BOUNDARY

ROAD RELOCATION IMPACTS AREAS	
PROPOSED BRIDGE	
NCPC MODIFIED ALT L - SHADING AND PAES - N.C. HIGHWAY 306 BRIDGE SHADING AND PAES	
16 PUBLIC TRUST AREAS	0.02
2 WETLAND BRACKISH MARSH COMPLEX	0.17
6 WETLAND PINE PLANTATION	0.01
8 WETLAND MIXED PINE - HARDWOOD FOREST	0.01
	0.21 ACRES
NCPC MODIFIED ALT L - N.C. HIGHWAY 306	
4 WETLAND HERBACEOUS ASSEMBLAGE	0.03
6 WETLAND PINE PLANTATION	1.47
8 WETLAND MIXED PINE - HARDWOOD FOREST	2.80
15 UPLAND SHRUB - SCRUB ASSEMBLAGE	0.07
18 UPLAND MIXED PINE - HARDWOOD FOREST	0.04
21 UPLAND AGRICULTURAL LAND	3.31
22 UPLAND NON - VEGETATED/MAINTAINED AREA	0.12
	7.79 ACRES
NCPC MODIFIED ALT L - N.C. HIGHWAY 306	
18 PERENNIAL STREAM(CANAL)RELOCATION 220 LF.	(0.18 ACRES)
NCPC MODIFIED ALT L - SANDY LANDING ROAD	
6 WETLAND PINE PLANTATION	0.45
8 WETLAND MIXED PINE - HARDWOOD FOREST	0.02
16 UPLAND PINE PLANTATION	1.09
22 UPLAND NON - VEGETATED/MAINTAINED AREA	0.04
	1.60 ACRES

Biotic Communities
Modified Alternative L - NCPC

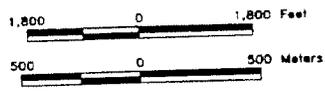
PCS PHOSPHATE MINE CONTINUATION

Scale: As shown	Drawn by: BFG/TLJ
Date: 05/28/09	File: 1748224/
Approved by: <small>Revised</small> JPS 5-28-09	FILE: M:\041M_052809\NCPC BC 051208\...

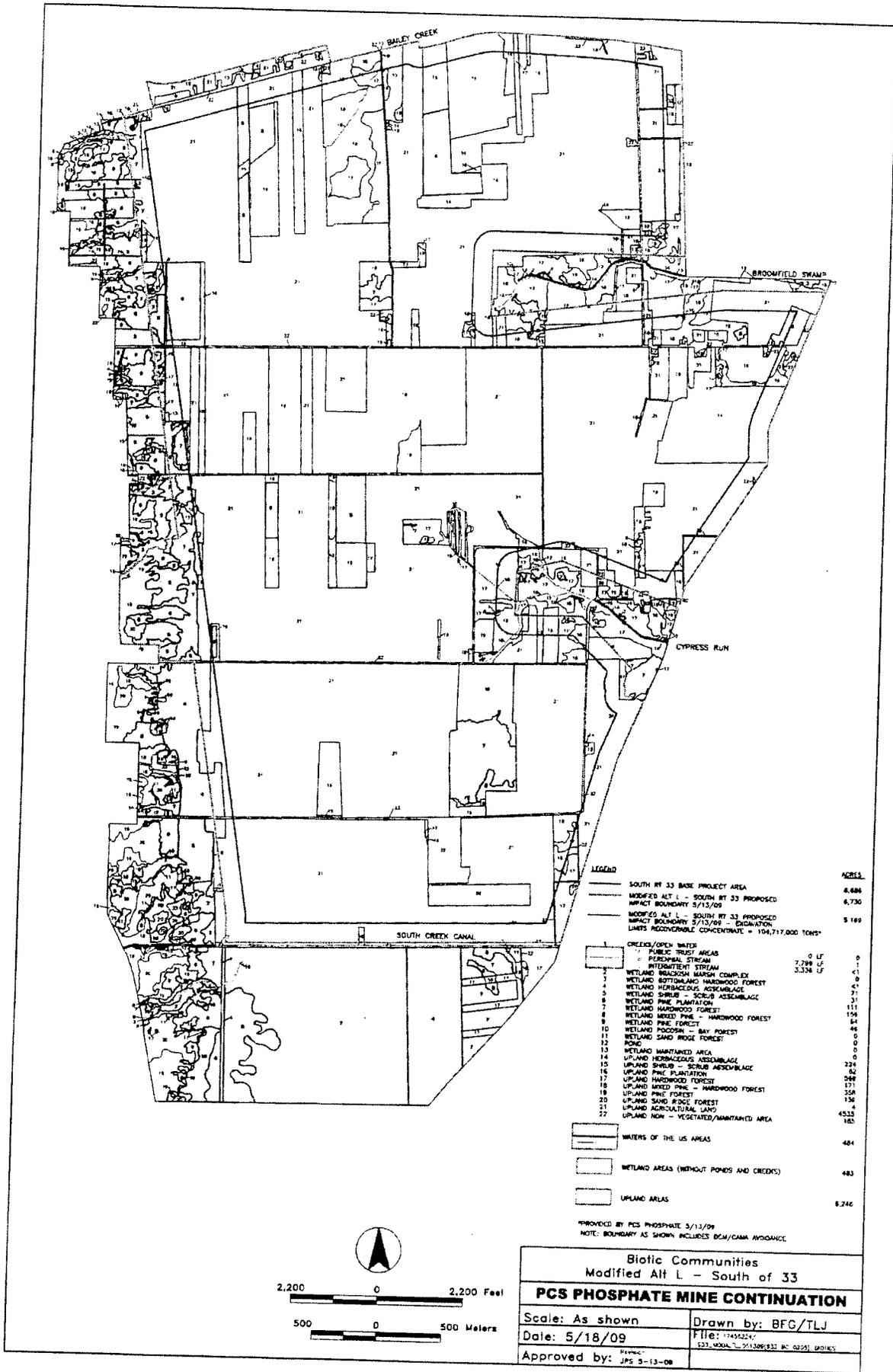


LEGEND		ACRES
BONNERTHON BASE PROJECT AREA		2,808
MODIFIED ALT L - BONNERTHON PROPOSED IMPACT BOUNDARY 5/13/09		2,526
MODIFIED ALT L - BONNERTHON PROPOSED IMPACT BOUNDARY 5/13/09 - EXCAVATION LIMITS		1,698
RECOVERABLE CONCENTRATE = 33,478,000 TONS*		
1	CREEKS/OPEN WATER	0 LF
2	PUBLIC TRUST AREAS	2,533 LF
3	PERENNIAL STREAM	4,786 LF
4	INTERMITTENT STREAM	0
5	WETLAND BRACKISH MARSH COMPLEX	51
6	WETLAND BOTTOMLAND HARDWOOD FOREST	45
7	WETLAND HERBACEOUS ASSEMBLAGE	274
8	WETLAND SHRUB - SCRUB ASSEMBLAGE	206
9	WETLAND PINE PLANTATION	369
10	WETLAND HARDWOOD FOREST	463
11	WETLAND MIXED PINE - HARDWOOD FOREST	208
12	WETLAND PINE FOREST	264
13	WETLAND POCCOSIN - BAY FOREST	22
14	WETLAND SAND RIDGE FOREST	<1
15	POND	0
16	WETLAND MAINTAINED AREA	5
17	UPLAND HERBACEOUS ASSEMBLAGE	84
18	UPLAND SHRUB - SCRUB ASSEMBLAGE	58
19	UPLAND PINE PLANTATION	39
20	UPLAND HARDWOOD FOREST	117
21	UPLAND MIXED PINE - HARDWOOD FOREST	13
22	UPLAND PINE FOREST	42
	UPLAND SAND RIDGE FOREST	243
	UPLAND AGRICULTURAL LAND	39
	UPLAND NON - VEGETATED/MAINTAINED AREA	39
WATERS OF THE US AREAS		1,906
WETLAND AREAS (WITHOUT PONDS AND CREEKS)		1,902
UPLAND AREAS		620

*PROVIDED BY PCS PHOSPHATE 5/13/09
NOTE BOUNDARY AS SHOWN INCLUDES DCM/CAMA AVOIDANCE



Biotic Communities Modified Alternative L - Bonnerthon	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 1745R224/
Approved by: JPS 5-18-09	BDN, MCOL, TL, DL, SOR (EON, MC, 020026), BFC/CS



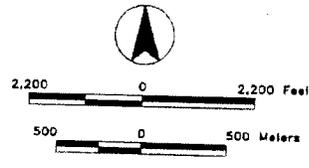
LEGEND		ACRES
SOUTH RT 33 BASE PROJECT AREA		8,688
MODIFIED ALL L - SOUTH RT 33 PROPOSED		6,730
IMPACT BOUNDARY 5/13/09		
MODIFIED ALL L - SOUTH RT 33 PROPOSED		5,189
IMPACT BOUNDARY 5/13/09 - (EQUATION)		
LIMITS RECOVERABLE CONCENTRATE = 104,717,800 TONS*		
1	CREEKS/OPEN WATER	
2	PUBLIC TRUST AREAS	0 LF
3	PERENNIAL STREAM	7,798 LF
4	INTERMITTENT STREAM	3,338 LF
5	WETLAND BRACKISH MARSH COMPLEX	41
6	WETLAND BOTTOMLAND HARDWOOD FOREST	0
7	WETLAND HERBACEOUS SCRUB/BLAZE	21
8	WETLAND SHRUB - SCRUB ASSEMBLAGE	31
9	WETLAND PINE PLANTATION	111
10	WETLAND HARDWOOD FOREST	159
11	WETLAND MIXED PINE - HARDWOOD FOREST	84
12	WETLAND PINE FOREST	46
13	WETLAND POODON - BAY FOREST	0
14	WETLAND SAND RIDGE FOREST	0
15	WETLAND MAINTAINED AREA	0
16	UPLAND HERBACEOUS ASSEMBLAGE	228
17	UPLAND SHRUB - SCRUB ASSEMBLAGE	62
18	UPLAND PINE PLANTATION	388
19	UPLAND HARDWOOD FOREST	171
20	UPLAND MIXED PINE - HARDWOOD FOREST	358
21	UPLAND PINE FOREST	136
22	UPLAND SAND PINE FOREST	4
23	UPLAND AGRICULTURAL LAND	4533
24	UPLAND NON - VEGETATED/MAINTAINED AREA	185
WATERS OF THE US AREAS		484
WETLAND AREAS (WITHOUT PONDS AND CREEKS)		483
UPLAND AREAS		8,246

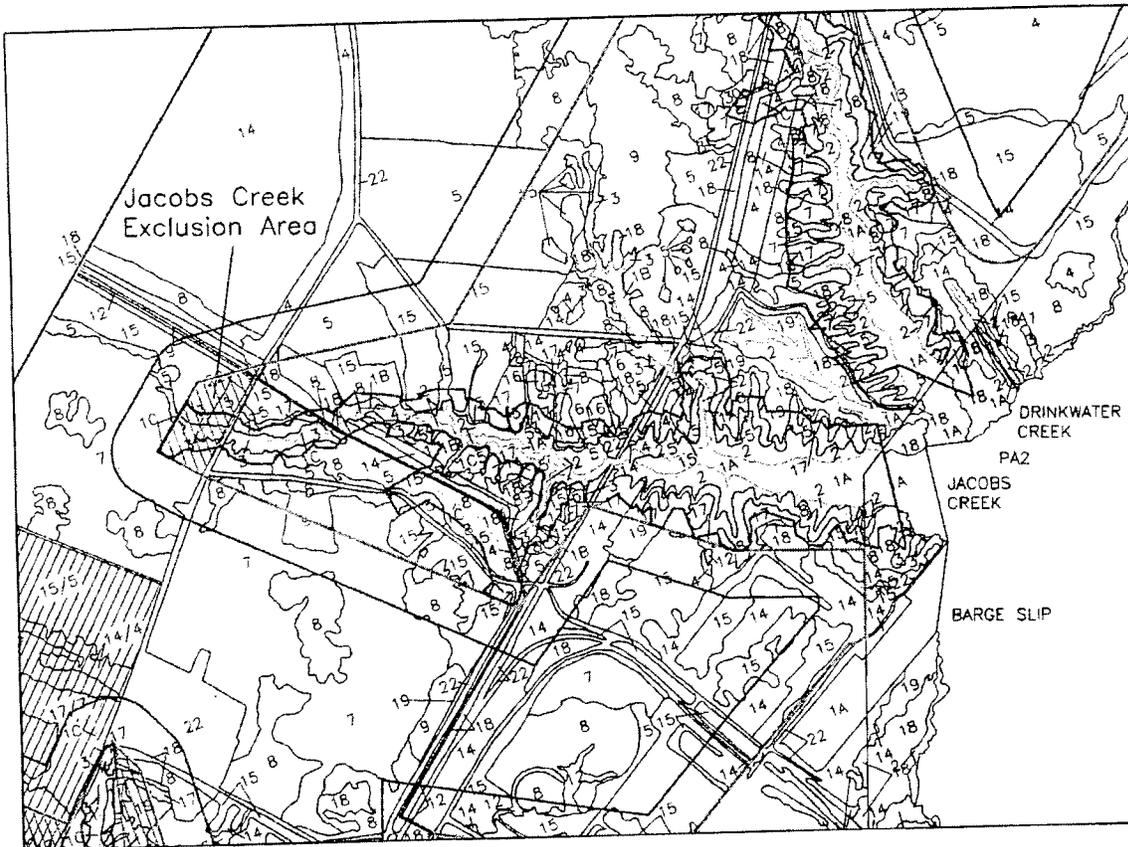
PROVIDED BY PCS PHOSPHATE 5/13/09
 NOTE: BOUNDARY AS SHOWN INCLUDES DCM/CAMA AVOIDANCE

Biotic Communities
 Modified All L - South of 33

PCS PHOSPHATE MINE CONTINUATION

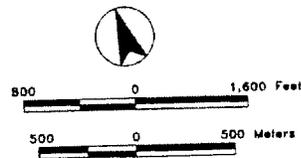
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17452217
Approved by: JPS 5-13-08	531-MOBL-2-211309(83) BC 0205 (0101)



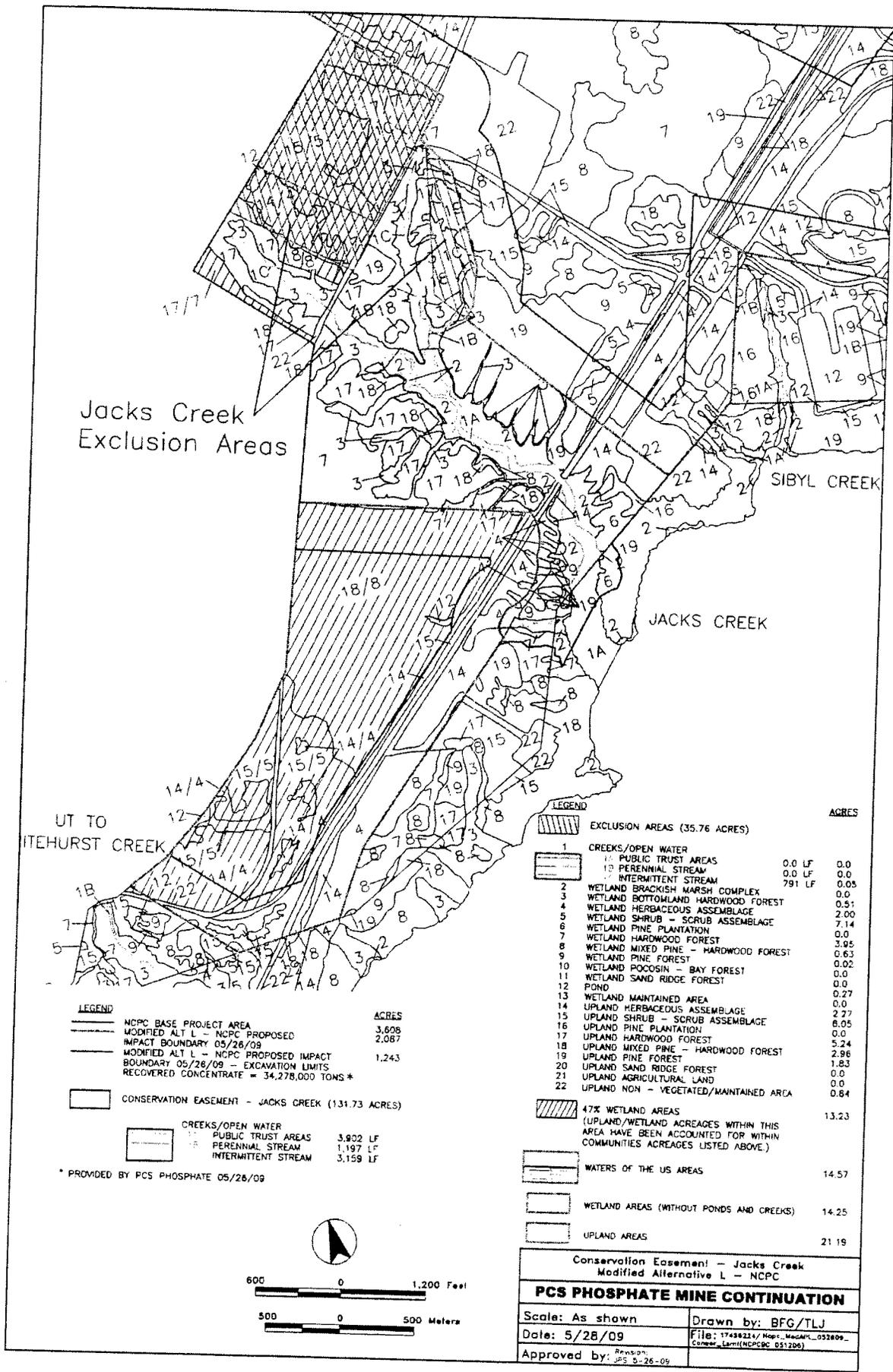


LEGEND		ACRES	
NCPG BASE PROJECT AREA		3,608	
MODIFIED ALT L - NCPG PROPOSED		2,109	
IMPACT BOUNDARY 05/13/09			
MODIFIED ALT L - NCPG PROPOSED IMPACT		1,284	
BOUNDARY 05/13/09 - EXCAVATION LIMITS			
RECOVERED CONCENTRATE = 34,878,000 TONS *			
EXCLUSION AREAS (5.98 ACRES)			
CREEKS/OPEN WATER			
1	7 PUBLIC TRUST AREAS	0.0 LF	0.0
2	8 PERENNIAL STREAM	0.0 LF	0.0
3	9 INTERMITTENT STREAM	830 LF	0.0
4	10 WETLAND BRACKISH MARSH COMPLEX		0.56
5	11 WETLAND BOTTOMLAND HARDWOOD FOREST		0.0
6	12 WETLAND HERBACEOUS ASSEMBLAGE		1.28
7	13 WETLAND SHRUB - SCRUB ASSEMBLAGE		0.0
8	14 WETLAND PINE PLANTATION		1.82
9	15 WETLAND HARDWOOD FOREST		0.0
10	16 WETLAND MIXED PINE - HARDWOOD FOREST		0.09
11	17 WETLAND PINE FOREST		0.0
12	18 WETLAND POODSIN - BAY FOREST		0.0
13	19 WETLAND SAND RIDGE FOREST		0.04
14	20 POND		0.0
15	21 WETLAND MAINTAINED AREA		0.0
16	22 UPLAND HERBACEOUS ASSEMBLAGE		1.64
17	23 UPLAND SHRUB - SCRUB ASSEMBLAGE		0.0
18	24 UPLAND PINE PLANTATION		0.0
19	25 UPLAND HARDWOOD FOREST		0.01
20	26 UPLAND MIXED PINE - HARDWOOD FOREST		0.0
21	27 UPLAND PINE FOREST		0.0
22	28 UPLAND SAND RIDGE FOREST		0.0
23	29 UPLAND AGRICULTURAL LAND		0.0
24	30 UPLAND NON - VEGETATED/MAINTAINED AREA		0.35
47% WETLAND AREAS (UPLAND/WETLAND ACRES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACRES LISTED ABOVE.)			
WATERS OF THE US AREAS		3.98	
WETLAND AREAS (WITHOUT PONDS AND CREEKS)		3.75	
UPLAND AREAS		2.00	
CONSERVATION EASEMENT - JACOBS CREEK (78 ACRES)			
CREEKS/OPEN WATER			
7	8 PUBLIC TRUST AREAS	5.194 LF	
9	10 PERENNIAL STREAM	565 LF	
11	12 INTERMITTENT STREAM	3,590 LF	

* PROVIDED BY PCS PHOSPHATE 05/13/09



Conservation Easement - Jacobs Creek Modified Alternative L - NCPG	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17458224/Mopc_ModAltL_051309_Consev_Eas(NCPG MC 061205)
Approved by: ^{Revision} JPS 9-13-09	



Jacks Creek
Exclusion Areas

SIBYL CREEK

JACKS CREEK

UT TO
ITEHURST CREEK

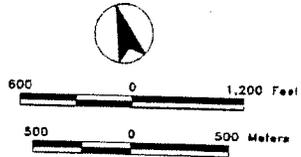
LEGEND

	ACRES
NCPC BASE PROJECT AREA	3,608
MODIFIED ALT L - NCPC PROPOSED	2,087
IMPACT BOUNDARY 05/26/09	
MODIFIED ALT L - NCPC PROPOSED IMPACT BOUNDARY 05/26/09 - EXCAVATION LIMITS	1,243
RECOVERED CONCENTRATE = 34,278,000 TONS *	
CONSERVATION EASEMENT - JACKS CREEK	131.73 ACRES
CREEKS/OPEN WATER	
PUBLIC TRUST AREAS	3,902 LF
PERENNIAL STREAM	1,197 LF
INTERMITTENT STREAM	3,159 LF

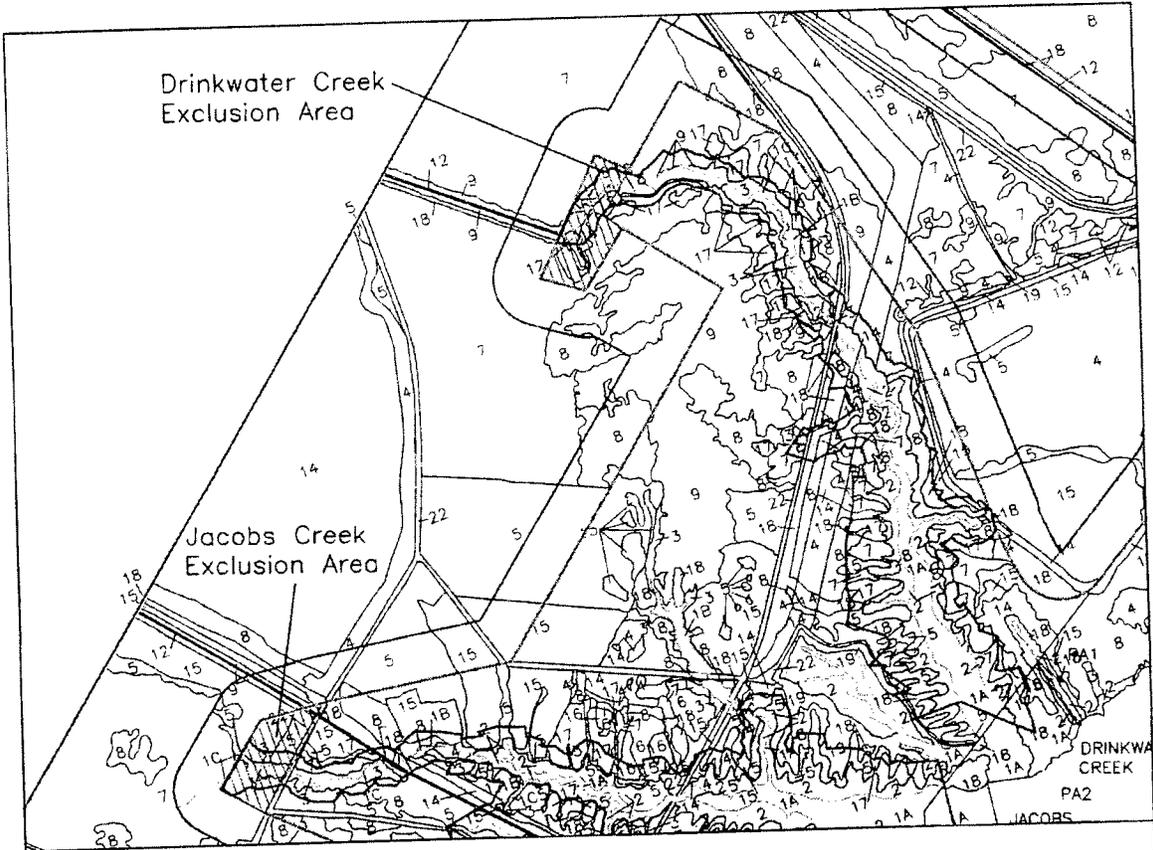
* PROVIDED BY PCS PHOSPHATE 05/26/09

LEGEND

	ACRES
EXCLUSION AREAS (35.76 ACRES)	
1 CREEKS/OPEN WATER	
1 PUBLIC TRUST AREAS	0.0 LF 0.0
13 PERENNIAL STREAM	0.0 LF 0.0
17 INTERMITTENT STREAM	791 LF 0.05
2 WETLAND BRACKISH MARSH COMPLEX	0.0
3 WETLAND BOTTOMLAND HARDWOOD FOREST	0.51
4 WETLAND HERBACEOUS ASSEMBLAGE	2.00
5 WETLAND SHRUB - SCRUB ASSEMBLAGE	7.14
6 WETLAND PINE PLANTATION	0.0
7 WETLAND HARDWOOD FOREST	3.95
8 WETLAND MIXED PINE - HARDWOOD FOREST	0.02
9 WETLAND PINE FOREST	0.0
10 WETLAND POCOSIN - BAY FOREST	0.0
11 WETLAND SAND RIDGE FOREST	0.0
12 POND	0.27
13 WETLAND MAINTAINED AREA	0.0
14 UPLAND HERBACEOUS ASSEMBLAGE	2.27
15 UPLAND SHRUB - SCRUB ASSEMBLAGE	8.05
16 UPLAND PINE PLANTATION	0.0
17 UPLAND HARDWOOD FOREST	5.24
18 UPLAND MIXED PINE - HARDWOOD FOREST	2.96
19 UPLAND PINE FOREST	1.83
20 UPLAND SAND RIDGE FOREST	0.0
21 UPLAND AGRICULTURAL LAND	0.0
22 UPLAND NON - VEGETATED/MAINTAINED AREA	0.84
47% WETLAND AREAS (UPLAND/WETLAND ACRES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACRES LISTED ABOVE)	13.23
WATERS OF THE US AREAS	14.57
WETLAND AREAS (WITHOUT PONDS AND CREEKS)	14.25
UPLAND AREAS	21.19



Conservation Easement - Jacks Creek Modified Alternative L - NCPC	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/28/09	File: 17498214/Map_MaintL_052809 - Consent_Lett(NCPC051208)
Approved by:	Revision: 05-26-09



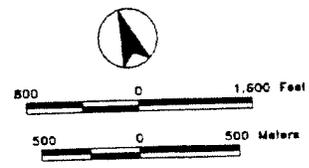
LEGEND	ACRES
NCPC BASE PROJECT AREA	3,608
MODIFIED ALT L - NCPC PROPOSED	2,109
IMPACT BOUNDARY 05/13/09	
MODIFIED ALT L - NCPC PROPOSED IMPACT BOUNDARY 05/13/09 - EXCAVATION LIMITS	1,264
RECOVERED CONCENTRATE = 34,878,000 TONS *	

EXCLUSION AREAS (6.65 ACRES)			
1	CREEKS/OPEN WATER	0.0 LF	0.0
	PUBLIC TRUST AREAS	0.0 LF	0.0
	PERENNIAL STREAM	0.0 LF	0.04
	INTERMITTENT STREAM	492 LF	0.0
2	WETLAND BRACKISH MARSH COMPLEX	0.0	0.0
3	WETLAND BOTTOMLAND HARDWOOD FOREST	0.0	0.0
4	WETLAND HERBACEOUS ASSEMBLAGE	0.0	0.0
5	WETLAND SHRUB - SCRUB ASSEMBLAGE	0.0	0.0
6	WETLAND PINE PLANTATION	0.0	3.87
7	WETLAND HARDWOOD FOREST	0.0	0.0
8	WETLAND MIXED PINE - HARDWOOD FOREST	0.0	1.06
9	WETLAND PINE FOREST	0.0	0.0
10	WETLAND POCOSIN - BAY FOREST	0.0	0.0
11	WETLAND SAND RIDGE FOREST	0.0	0.32
12	POND	0.0	0.0
13	WETLAND MAINTAINED AREA	0.0	0.0
14	UPLAND HERBACEOUS ASSEMBLAGE	0.0	0.0
15	UPLAND SHRUB - SCRUB ASSEMBLAGE	0.0	0.0
16	UPLAND PINE PLANTATION	0.0	0.0
17	UPLAND HARDWOOD FOREST	0.0	0.0
18	UPLAND MIXED PINE - HARDWOOD FOREST	0.0	1.36
19	UPLAND PINE FOREST	0.0	0.0
20	UPLAND SAND RIDGE FOREST	0.0	0.0
21	UPLAND AGRICULTURAL LAND	0.0	0.0
22	UPLAND NON - VEGETATED/MAINTAINED AREA	0.0	0.0

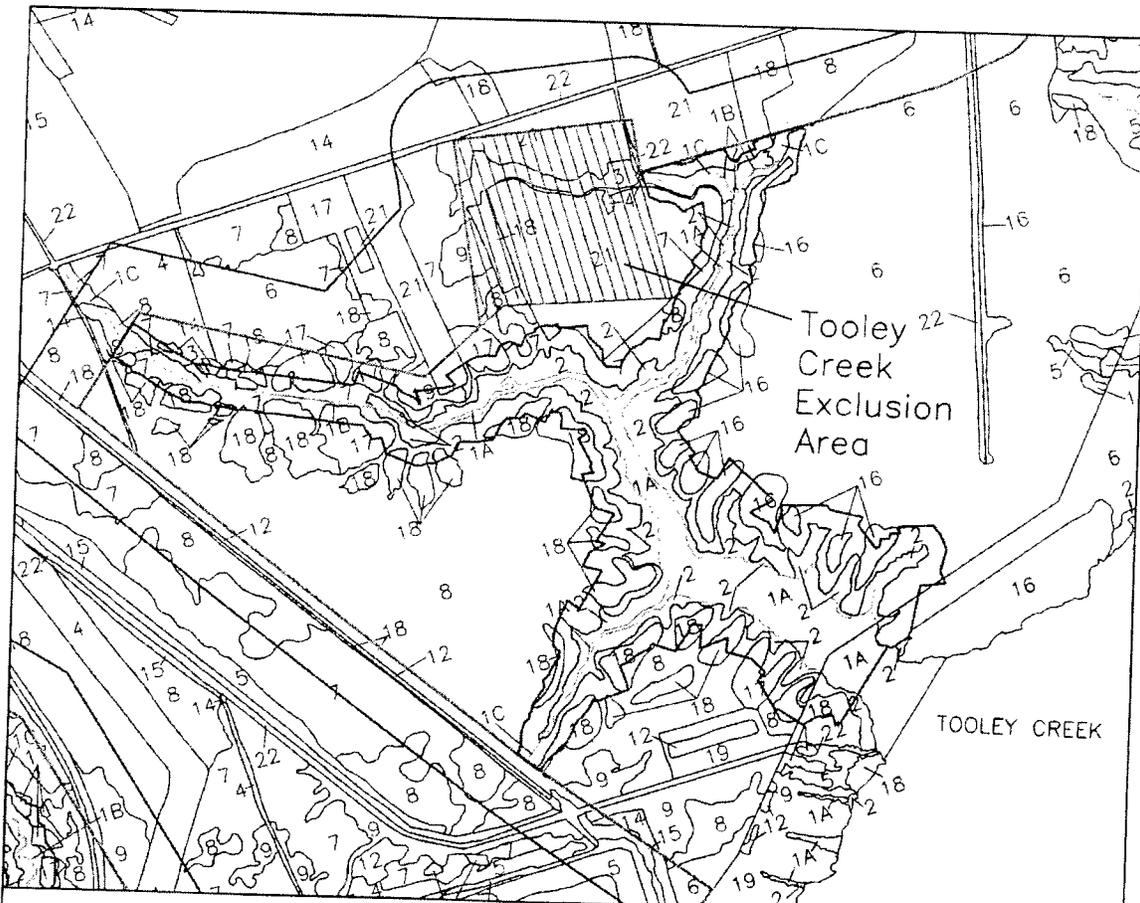
47% WETLAND AREAS (UPLAND/WETLAND ACREAGES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACREAGES LISTED ABOVE.)		0.0
WATERS OF THE US AREAS		5.29
WETLAND AREAS (WITHOUT PONDS AND CREEKS)		4.93
UPLAND AREAS		1.36
CONSERVATION EASEMENT - DRINKWATER CREEK (63 ACRES)		

CREEKS/OPEN WATER	5,318 LF
PUBLIC TRUST AREAS	508 LF
PERENNIAL STREAM	2,113 LF
INTERMITTENT STREAM	

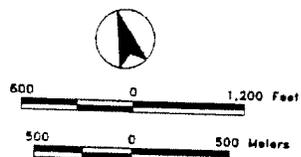
* PROVIDED BY PCS PHOSPHATE 05/13/09



Conservation Easement - Drinkwater Creek Modified Alternative L - NCPC	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17458224/ncpc_ModAltL_051309 Conserv. Easement(NCPC BC 051205)
Approved by: JPS S 13-09	Revision

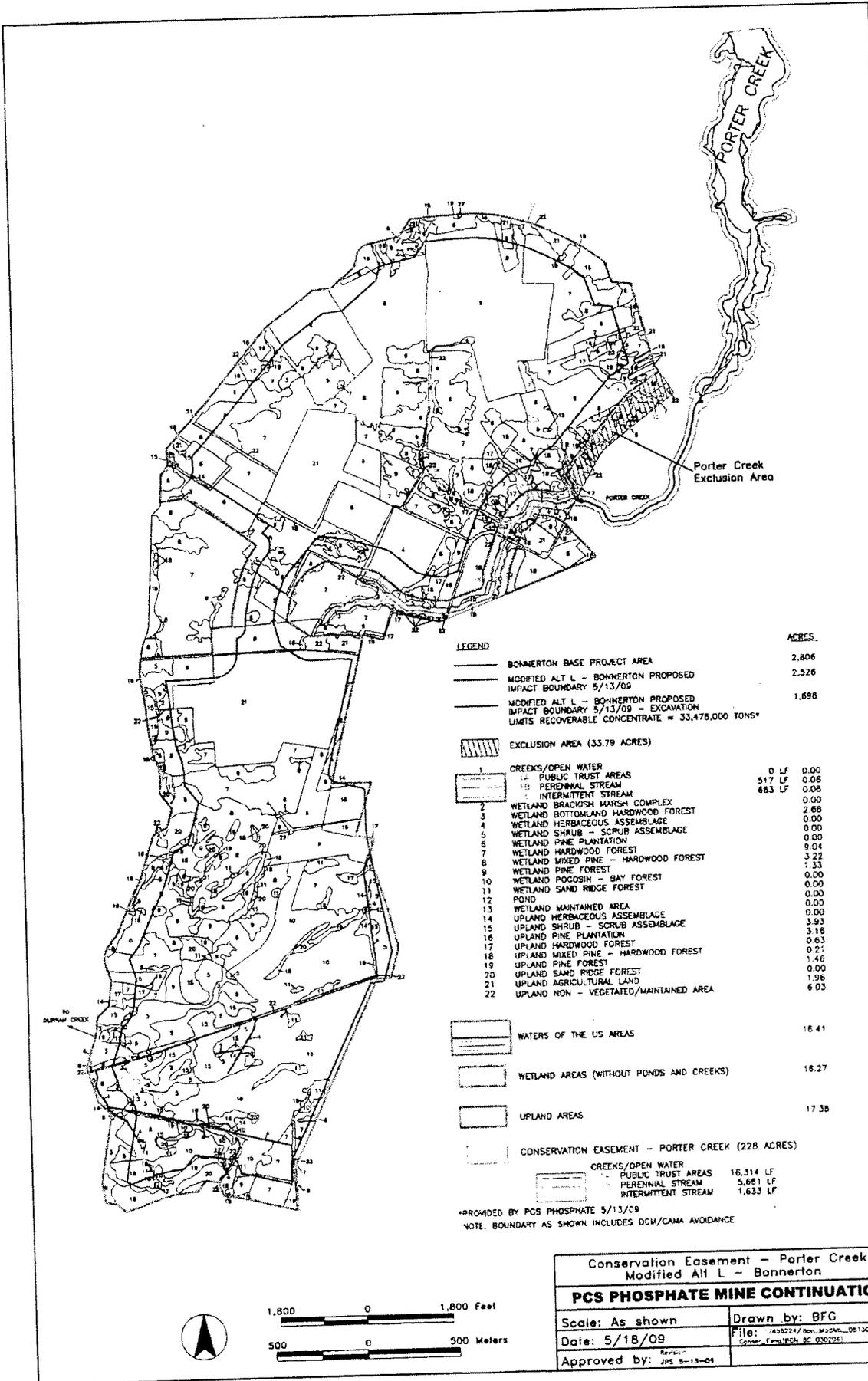


LEGEND		ACRES
	NCPC BASE PROJECT AREA	
	MODIFIED ALT L - NCPC PROPOSED	3,608
	IMPACT BOUNDARY 05/13/09	2,109
	MODIFIED ALT L - NCPC PROPOSED IMPACT BOUNDARY 05/13/09 - EXCAVATION LIMITS	1,264
	RECOVERED CONCENTRATE = 34,878,000 TONS*	
	EXCLUSION AREAS	21.19
	CREEKS/OPEN WATER	
	1 PUBLIC TRUST AREAS	0.0 LF
	2 PERENNIAL STREAM	0.0 LF
	3 INTERMITTENT STREAM	0.0 LF
	4 WETLAND BRACKISH MARSH COMPLEX	0.0
	5 WETLAND BOTTOMLAND HARDWOOD FOREST	2.33
	6 WETLAND HERBACEOUS ASSEMBLAGE	0.40
	7 WETLAND SHRUB - SCRUB ASSEMBLAGE	0.0
	8 WETLAND PINE PLANTATION	0.0
	9 WETLAND HARDWOOD FOREST	0.48
	10 WETLAND MIXED PINE - HARDWOOD FOREST	0.54
	11 WETLAND PINE FOREST	0.54
	12 WETLAND POCOSIN - BAY FOREST	0.0
	13 WETLAND SAND RIDGE FOREST	0.0
	14 POND	0.0
	15 WETLAND MAINTAINED AREA	0.0
	16 WETLAND HERBACEOUS ASSEMBLAGE	0.0
	17 WETLAND SHRUB - SCRUB ASSEMBLAGE	0.0
	18 WETLAND PINE PLANTATION	0.0
	19 WETLAND HARDWOOD FOREST	0.0
	20 WETLAND MIXED PINE - HARDWOOD FOREST	1.30
	21 WETLAND PINE FOREST	0.0
	22 WETLAND SAND RIDGE FOREST	0.0
	23 UPLAND AGRICULTURAL LAND	15.44
	24 UPLAND NON - VEGETATED/MAINTAINED AREA	0.16
	47% WETLAND AREAS (UPLAND/WETLAND ACRES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACRES LISTED ABOVE.)	0.0
	WATERS OF THE US AREAS	4.29
	WETLAND AREAS (WITHOUT PONDS AND CREEKS)	4.29
	UPLAND AREAS	16.90
	CONSERVATION EASEMENT - TOOLEY CREEK (81 ACRES)	
	CREEKS/OPEN WATER	
	1 PUBLIC TRUST AREAS	6.54 LF
	2 PERENNIAL STREAM	918 LF
	3 INTERMITTENT STREAM	1,494 LF



Conservation Easement - Tooley Creek Modified Alternative L - NCPC	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17458224/ncpc_modaltl_031309_ Conserv_Easmt(NCPC BC 051208)
Approved by:	Revision: 1 JPS 5 13 09

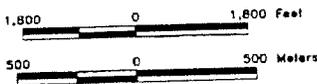
* PROVIDED BY PCS PHOSPHATE 05/13/09

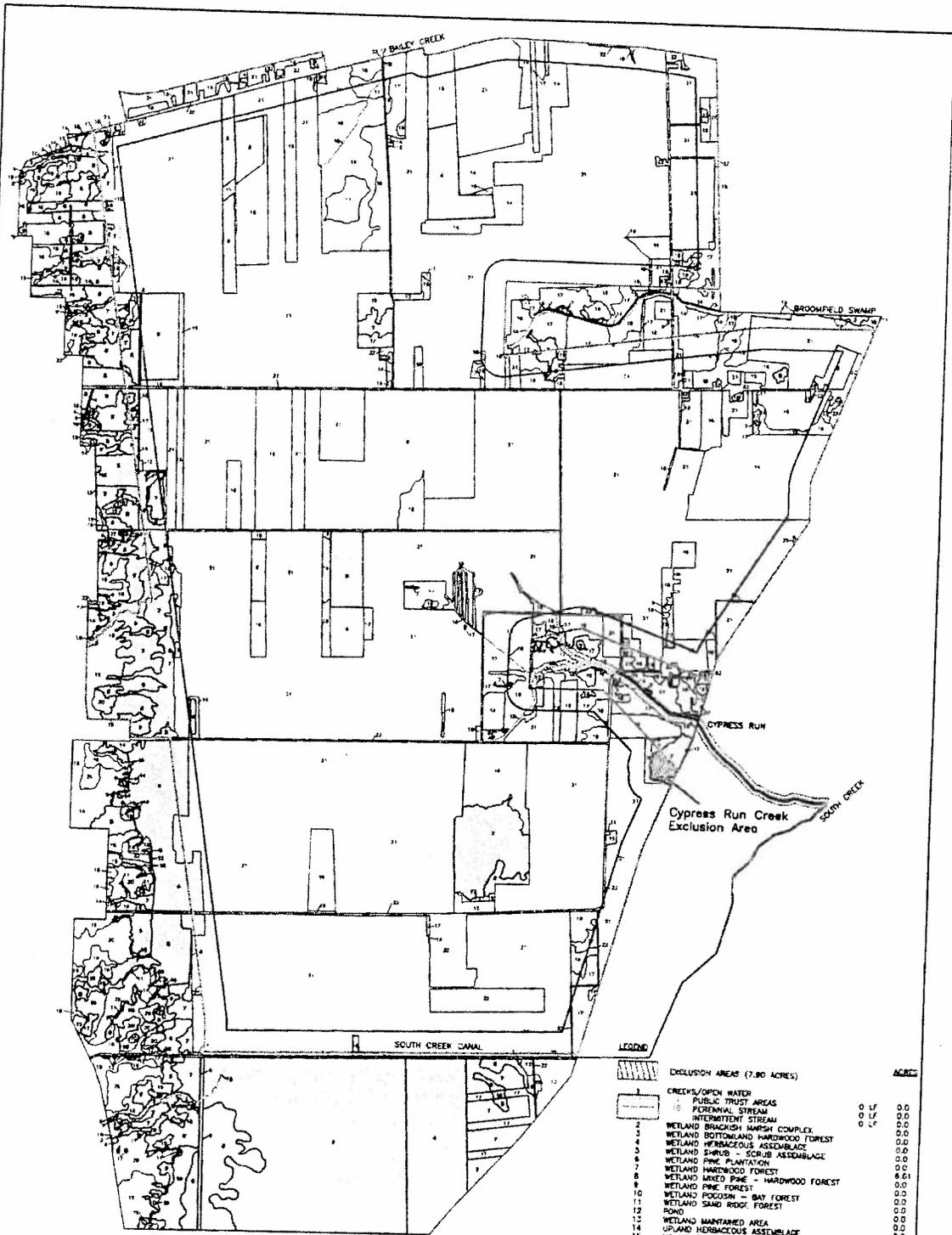


LEGEND		ACRES
BONNHERTON BASE PROJECT AREA		2,806
MODIFIED ALT L - BONNHERTON PROPOSED IMPACT BOUNDARY 5/13/09		2,526
MODIFIED ALT L - BONNHERTON PROPOSED IMPACT BOUNDARY 5/13/09 - EXCAVATION LIMITS RECOVERABLE CONCENTRATE = 33,478,000 TONS*		1,898
EXCLUSION AREA (33.79 ACRES)		
CREEKS/OPEN WATER		
1	PUBLIC TRUST AREAS	0 LF 0.00
15	PERENNIAL STREAM	517 LF 0.06
16	INTERMITTENT STREAM	863 LF 0.08
2	WETLAND BRACKISH MARSH COMPLEX	0.00
3	WETLAND BOTTOMLAND HARDWOOD FOREST	2.68
4	WETLAND HERBACEOUS ASSEMBLAGE	0.00
5	WETLAND SHRUB - SCRUB ASSEMBLAGE	0.00
6	WETLAND PINE PLANTATION	0.04
7	WETLAND HARDWOOD FOREST	3.22
8	WETLAND MIXED PINE - HARDWOOD FOREST	1.33
9	WETLAND PINE FOREST	0.00
10	WETLAND POCOSIM - BAY FOREST	0.00
11	WETLAND SAND RIDGE FOREST	0.00
12	POND	0.00
13	WETLAND MAINTAINED AREA	0.00
14	UPLAND HERBACEOUS ASSEMBLAGE	3.53
15	UPLAND SHRUB - SCRUB ASSEMBLAGE	3.16
16	UPLAND PINE PLANTATION	0.63
17	UPLAND HARDWOOD FOREST	0.21
18	UPLAND MIXED PINE - HARDWOOD FOREST	1.46
19	UPLAND PINE FOREST	0.00
20	UPLAND SAND RIDGE FOREST	1.96
21	UPLAND AGRICULTURAL LAND	6.03
22	UPLAND NON - VEGETATED/MAINTAINED AREA	
WATERS OF THE US AREAS		16.41
WETLAND AREAS (WITHOUT PONDS AND CREEKS)		16.27
UPLAND AREAS		17.38
CONSERVATION EASEMENT - PORTER CREEK (228 ACRES)		
CREEKS/OPEN WATER		
1	PUBLIC TRUST AREAS	16,314 LF
15	PERENNIAL STREAM	5,681 LF
16	INTERMITTENT STREAM	1,633 LF

*PROVIDED BY PCS PHOSPHATE 5/13/09
 NOTE: BOUNDARY AS SHOWN INCLUDES DCW/CAMA AVOIDANCE

Conservation Easement - Porter Creek Modified Alt L - Bonnherton	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG
Date: 5/18/09	File: 7493224/BONNHERTON_051309 Copy: 1/24/09, EC 0307261
Approved by: JPS 5-13-09	

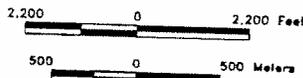




LEGEND

—	SOUTH OF 33 BASE PROJECT AREA	ACRES
—	MODIFIED Alt L - SOUTH OF 33 PROPOSED IMPACT BOUNDARY 5/13/09	8,656
—	MODIFIED Alt L - SOUTH OF 33 PROPOSED IMPACT BOUNDARY 5/13/09 - EXCAVATION LIMITS RECOVERABLE CONCENTRATE = 104,117,000 TONS*	8,730
—	PERMANENT DEED RESTRICTION PROHIBITING MINING - CYPRESS RUN (48 ACRES)	5,149

—	CREEKS/OPEN WATER	7,331 LF
—	PUBLIC TRUST AREAS	2,328 LF
—	PERENNIAL STREAM	0 LF
—	INTERMITTENT STREAM	0 LF



LEGEND

EXCLUSION AREAS (7,80 ACRES)	ACRES
1 CREEKS/OPEN WATER	0.0
2 PUBLIC TRUST AREAS	0.0
3 PERENNIAL STREAM	0.0
4 INTERMITTENT STREAM	0.0
5 WETLAND BRACKISH MARSH COMPLEX	0.0
6 WETLAND BOTTOMLAND HARDWOOD FOREST	0.0
7 WETLAND HERBACEOUS ASSEMBLAGE	0.0
8 WETLAND SHRUB - SCRUB ASSEMBLAGE	0.0
9 WETLAND PINE PLANTATION	0.0
10 WETLAND HARDWOOD FOREST	8.61
11 WETLAND MIXED PINE - HARDWOOD FOREST	0.0
12 WETLAND PINE FOREST - BAY FOREST	0.0
13 WETLAND POCCOSH - BAY FOREST	0.0
14 WETLAND SAND RIDGE FOREST	0.0
15 ROAD	0.0
16 WETLAND MAINTAINED AREA	0.0
17 UPLAND HERBACEOUS ASSEMBLAGE	0.0
18 UPLAND SHRUB - SCRUB ASSEMBLAGE	0.0
19 UPLAND PINE PLANTATION	0.0
20 UPLAND HARDWOOD FOREST	0.34
21 UPLAND MIXED PINE - HARDWOOD FOREST	1.15
22 UPLAND PINE FOREST	0.0
23 UPLAND SAND RIDGE FOREST	0.0
24 UPLAND AGRICULTURAL LAND	0.10
25 UPLAND NON - VEGETATED/MAINTAINED AREA	0.0
WATERS OF THE US AREAS	6.61
WETLAND AREAS (WITHOUT PONDS AND CREEKS)	5.81
UPLAND AREAS	1.29

Permanent Deed Restriction Prohibiting Mining
Cypress Run
Modified Alt L - South of 33

PCS PHOSPHATE MINE CONTINUATION

Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 1745224
Approved by: JPS 5-13-09	Path: \\S:\MGA\TL\031309_DEED_RESTRI(533) BY (020)

* PROVIDED BY PCS PHOSPHATE 05/13/06

Stan Meiburg/R4/USEPA/US
06/04/2009 06:15 PM

To Philip Mancusi-Ungaro/R4/USEPA/US@EPA,
gordon.scott@epa.gov
cc
bcc
Subject Fw: Revised conditions and graphics

FYI. A good catch by Palmer.

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

--- Forwarded by Stan Meiburg/R4/USEPA/US on 06/04/2009 06:15 PM ---



"Jolly, Samuel K SAW"
<Samuel.K.Jolly@usace.army.mil>
06/04/2009 06:02 PM

To Stan Meiburg/R4/USEPA/US@EPA
cc Rebecca Fox/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA,
"Welborn.Tom@epamail.epa.gov"
<Welborn.Tom@epamail.epa.gov>, Palmer
Hough/DC/USEPA/US@EPA, "Moyer, Jennifer A HQ02"
<Jennifer.A.Moyer@usace.army.mil>, "Gaffney-Smith,
Margaret E" <Meg.E.Gaffney-Smith@usace.army.mil>,
"Smith, Chip R HQDA" <SmithCR@HQDA.Army.Mil>,
"Ryscavage, Jefferson COL SAW"
<Jefferson.Ryscavage@us.army.mil>, "Walker, William T
SAW" <William.T.Walker@usace.army.mil>, "Lekson, David
M SAW" <David.M.Lekson@usace.army.mil>, "Lamson,
Brooke SAW" <Brooke.Lamson@usace.army.mil>
Subject Revised conditions and graphics

Attached find the corrected permit conditions and graphics, provided to PCS
this afternoon to be used in place <<conditions and graphics6_4_09.pdf>> of
the the version included in the proffered permit.

Ken Jolly
Chief, Regulatory Division
Wilmington District



conditions and graphics6_4_09.pdf

SPECIAL CONDITION
Action ID No. 200110096

MINING

- A) This permit authorizes mining and mine related impacts as described fully in the FEIS within the boundary depicted in the attached maps labeled “Modified Alt L – NCPC ” dated May 28, 2009 and “Modified Alt L – Bonnerton ” and “Modified Alt L – South of 33”, as presented May 18, 2009. All work authorized by this permit must be performed in strict compliance with these attached plans, which are a part of this permit. Any modification to these plans must be approved by the U.S. Army Corps of Engineers (USACE) prior to implementation.
- B) Within 1 year of the issuance date of this permit, the Permittee shall demarcate the outer limits of disturbance on the NCPC tract by establishing a cleared line at least 10 feet wide and not to exceed 40 feet wide along the Impact Boundary as identified in the attached map labeled “Modified Alt L – NCPC ” as presented May 28, 2009. Additionally, the Permittee shall, within 1 year of the issuance of this permit work with the Corps to identify locations and establish permanent monuments identified with GPS coordinates to further demarcate this boundary on the NCPC Tract. No less than 1 year prior to relocating any mine related activity to the Bonnerton or S33 Tracts, the Permittee shall undertake identical actions within these tracts utilizing the information provided on the “Modified Alt L – Bonnerton” and “Modified Alt L – South of 33”, as presented May 18, 2009, respectively. This will facilitate compliance monitoring by establishing long-term reference points.
- C) Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.
- D) Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters or wetlands.
- E) Figure 2 of the Record of Decision (ROD) included and incorporated here by reference depicts approximate timing of the requirement for major pre- mining, land manipulation and clearing impacts and is incorporated here by reference. Table 3 of the ROD included and incorporated here by reference lists those impacts and the years in which they will occur. These yearly figures are estimates. Actual timing and area may be in part determined by several factors including but not limited to site and equipment constraints, weather, and economics. However, to ensure that temporal

losses are minimized to the extent practicable, the Permittee shall not undertake major land-clearing and/or land manipulating activities within any area sooner than 1 year prior to the dates indicated on this figure. For example, major land clearing and manipulation activities within the block labeled 2012-2013 may not begin any sooner than January 1, 2011.

RECLAMATION

- F) The Permittee shall undertake full reclamation of all areas mined under this authorization as described in Section 4.3 of the EIS. This includes reestablishment of varied topography and drainage ways. Figure 3 of the ROD included and incorporated here by reference indicates the required completion date for the capping and successful vegetation of mine reclamation areas. To demonstrate adherence to this schedule, the Permittee shall submit to the Corps an annual summary detailing all reclamation efforts complete within the previous year and indicating the degree of completeness of each reclamation area. Any deviation from the reclamation schedule will be addressed in these reports and the report shall include an explanation for the deviation and proposed remedial action.
- G) The Permittee shall cap all mined areas that are reclaimed with the gypsum-clay blend process materials. The goal of the cap will be a minimum 3-foot thick cap of overburden material (similar to background soils from the region) over 100% of the blend areas. Minimal acceptable performance standards in achieving this cap are as follows: 70% of the total surface area with a minimum of 3-foot cap; 25% of the total surface area with a minimum of 2-foot cap; 5% of the total surface area unspecified.
- H) Following successful completion of the capping requirements within each reclamation area, the Permittee shall submit an as-built report including final topographical surveys for the reclamation areas. This report shall contain final cap depth and coverage information. This report shall further include an explanation of site development that will minimize erosion, eliminate contaminant transportation from the clay/gypsum blend through any waterway or drainage area, and facilitate the development of a mature vegetated riparian buffer. Finally, this report shall include information on surface water retention within the reclamation area and flows within and from the reclamation area.
- I) To minimize temporal impacts and accelerate the return of watershed functions within the reclamation areas, the Permittee shall to the extent appropriate and practicable apply an average of 1-foot of topsoil cover to the reclaimed areas utilizing the topsoil removed prior to site mining. This topsoil addition should be concentrated within and around areas of surface water flow and/or retention.
- J) To the extent appropriate and practicable, upland portions of the reclamation area shall be replanted, in longleaf pine (*Pinus palustris*) and wetland areas shall be replanted in bald cypress (*Taxodium distichum*) and/or Atlantic white cedar (*Chamaecyparis thyoides*) if Atlantic white cedar is shown to do well on the

reclamation sites. It is suggested that the Permittee work with the Corps, the USFWS and any other interested parties to determine growth and survivability of these and other species utilizing areas currently being reclaimed under the previous permit action.

- K) Within 2 years of the issuance of this permit, the Permittee shall work with the Corps and NCDWQ to develop a plan to monitor the quality of water discharged from the reclamation areas into the surrounding watersheds. The Permittee shall seek input from all appropriate and interested agencies including but not limited to EPA, USFWS, NFMS, NCWRC, NCDMF, NCDCM and NCDLR in developing this monitoring plan. This plan shall include monitoring of radionuclides, total and dissolved phosphorus, nitrate nitrogen, ammonia nitrogen, particulate nitrogen, dissolved Kjeldahl nitrogen, and dissolved and particulate organic carbon. Data collected will be used to manage water within the reclamation areas to optimize both the amount and quality of those waters being released. It is suggested that the applicant initiate pilot studies in the areas currently being reclaimed.

MITIGATION

- L) Compensatory mitigation identified in the document entitled "Compensatory Section 404/401 Mitigation Plan: Comprehensive Approach" as presented in Appendix I of the FEIS shall be accomplished pursuant to that Plan and/or any subsequent Corps approved modification or amendment. Construction and monitoring of each site shall be conducted according to each site-specific mitigation plan and the schedule presented in Table 3 of the ROD included and incorporated here by reference.
- M) Within one year of the issuance of this permit, the Permittee shall cause to be recorded, a preservation mechanism acceptable to the Corps for the permanent protection of the area identified for preservation in the "South Creek Corridor" plan.
- N) Table 3 of the ROD lists the impacts as they would occur during 2-year timeframes and is included by reference in Condition "E" above. By November 1st of the year preceding the permitted impact, the Permittee shall submit to the Corps and NCDWQ, a mitigation ledger demonstrating that all mitigation work is complete as described in the mitigation plan and pursuant to the identified timetable. This ledger will be used to determine whether sufficient mitigation is available for impacts occurring over the next 2-year timeframe. For Example, by November 1st 2009, the Permittee shall submit a ledger demonstrating that sufficient mitigation for impacts occurring during the 2010 – 2011 timeframe (526.56 ac) is completed. Should the ledger indicate that insufficient mitigation exists to compensate for the next 2-year timeframe, the Permittee shall work with the Corps to develop a strategy to ensure that the mitigation requirement is satisfactorily met prior to those impacts occurring.

- O) The Permittee shall submit yearly monitoring reports for each mitigation site. Monitoring reports will be submitted by the dates specified within each site-specific mitigation plan. Monitoring will continue until such time as the Corps deems the mitigation site successful and confirms in writing that monitoring may be discontinued.
- P) Once compensatory mitigation sites have been deemed successful and the Corps has agreed in writing that monitoring may cease, the Permittee shall, within one year of the date of that correspondence, cause to be recorded an acceptable preservation mechanism ensuring the permanent protection of all mitigation sites.

MONITORING

- Q) As required by the State Water Quality Certification, the Permittee shall work with the Corps and the N.C. Division of Water Quality to establish a monitoring plan for groundwater in and around mine and reclamation areas. At a minimum, this plan shall include sufficient monitoring within and surrounding the reclamation areas to ensure that heavy metal/toxic pollutants including cadmium and radionuclides are not entering the groundwater. The monitoring plan shall also include nitrate nitrogen, sulfate, chloride, total phosphorus, sodium, TDS, and pH. It is suggested that this monitoring commence with monthly samples until such time as the NCDWQ and the Corps in consultation with all interested and appropriate agencies determines sufficient baseline information exists. After such time, samples will be collected and analyzed every 3 months until blend material is introduced to the reclamation area. Following introduction of the blend material to the reclamation site, monthly sampling will recommence until such time as the NCDWQ and the Corps in consultation with all interested and appropriate agencies determines another sampling timeframe is appropriate. Yearly results of this monitoring shall be reported to the Corps and NCDWQ no later than January 31 of the year following data collection. The permittee and/or the Corps will make these reports available in whole or in summary to any interested party. If increases in the levels of any sampled substance are observed for more than 1 sampling occurrence in any given year, or for more than 1 year, the permittee shall include in the yearly report, a plan for mitigating the effect or satisfactory justification as to why no action is necessary. If the Corps, in consultation with other agencies, including but not limited to NCDWQ, NCDLR and EPA, determines that the current reclamation practices are causing an unacceptable adverse impact to groundwater, the DE may modify, suspend or revoke the permit.
- R) Prior to introducing the gypsum/clay blend in the reclamation of any mined area covered by this permit, the Permittee shall submit to the Corps and NCDWQ a remediation strategy in anticipation of the possibility of heavy

metal or radionuclide contamination of groundwater or surface tributaries that drain or are adjacent to mined areas. That strategy will be made available for public review.

- S) In concert with the monitoring requirements contained in the Water Quality Certification, the Permittee shall develop a Plan of Study to address the effects of the reduction in headwater wetlands on the utilization of Porters Creek, Tooley Creek, Jacobs Creek, Drinkwater Creek, and Jacks Creek as nursery areas by resident fish and appropriate invertebrate species. This plan shall be submitted to the Corps and NCDWQ for approval within 1 year of the issuance of this permit. At a minimum, the plan shall address the following issues:
- 1) Has mining altered the amount or timing of water flows within the creeks?
Data collection may include:
 - i) Continuous water level recorders to measure flow
 - ii) Rain gauges to measure local water input
 - iii) Groundwater wells to measure input to the creeks
 - iv) Semi-continuous salinity monitoring
 - v) Periodic DO monitoring (continuously monitored for several days at strategic times of year)
 - 2) Has mining altered the geomorphic or vegetative character of the creeks?
Data collection may include:
 - i) Annual aerial photography to determine creek position, length, width, sinuosity
 - ii) Annual cross sectional surveys of each creek at established locations
 - iii) Annual sediment characterization
 - iv) Annual vegetation surveys along creeks
 - v) Spring and fall sediment surface chlorophylls or organic content in vegetation zone.
 - vi) Spring and fall location of flocculation zones with each creek.
 - 3) Has mining altered the forage base of the creeks? Data collection may include:
 - i) Spring and fall benthic cores to sample macroinfauna.
 - ii) Spring and fall benthic grabs focused upon bivalves, such as *Rangia* sp.
 - iii) Periodic sampling for pelagic species such as grass shrimp, blue crabs, and small forage fish. Sampling gears would be chosen to reflect ontogenetic shifts in creek usage.
 - 4) Has mining altered the use of the creeks by managed fish? Data collection may include periodic sampling for species managed under the Magnuson-Stevens Fishery Conservation Management Act. Sampling would occur

during appropriate times of year and gears would be chosen to reflect ontogenetic shifts in creek usage.

- 5) Has mining increased contaminate levels within creek sediments to levels that could impact fish or invertebrates? Data collection may include annual sediment and water column sampling for metals, including cadmium, mercury, silver, copper, and arsenic. If elevated levels are detected, the availability and uptake by appropriate aquatic species (e.g., *Rangia* sp., blue crabs) should be measured using appropriate bioassay techniques.
 - 6) Has mining altered overall water quality within creeks? Water quality parameters analyzed will include: Salinity, Temperature, Dissolved Oxygen, pH, Secchi depth, Turbidity, Chlorophyll a, Dissolved orthophosphate phosphorus, Total dissolved phosphorus, Particulate phosphorus, Nitrate nitrogen, Ammonia nitrogen, particulate nitrogen, and Dissolved Kjeldahl nitrogen.
- T) Monitoring under the Plan of Study referenced in condition "S" above shall commence immediately upon the Plan's approval by the Corps and NCDWQ. Monitoring shall continue for 10 years following the completion of all reclamation work within the headwaters of the subject creeks unless the Corps, in consultation with the appropriate resource agencies agrees that monitoring can be discontinued.

REPORTING AND ADAPTIVE MANAGEMENT

- U) The Permittee shall within 6 months of the issuance date of this permit, work with the Corps and NCDWQ to establish an independent multidisciplinary panel of researchers qualified in the subject matter to be examined (Science Panel). In identifying potential participants for this Panel, the Permittee shall seek input from all interested and appropriate resource agencies including but not limited to EPA, NMFS, USFWS, NCWRC, NCDMF, and the appropriate permitting agencies including NCDCM, NCDLR. The panel shall be comprised of between 2 and 5 members. The members of this panel shall be given opportunity to provide input and recommendations on the monitoring required by conditions "K" and "S" above including research design, reference site selection, sampling stations, schedules, and methods; laboratory methods; data management and analysis; and quality control and quality assurance. Any input supplied by members of this panel will be presented to the Corps and NCDWQ and will be incorporated as appropriate into the preparation of the Plan of Study referenced in condition "S". Members of this panel will also be given the opportunity to oversee all research conducted toward fulfillment of conditions "K" and "S".

- V) The Permittee shall be responsible for fully implementing the approved Plan of Study referenced in conditions "S", "T" and "U" above. Annual summaries of all data collected in compliance with conditions "K" and "S" shall be presented to the Corps, NCDWQ and all members of the Science Panel on or before May 1 of the year following collection. The Permittee and/or the Corps will make these reports available in whole or in summary to any interested party.
- W) The Permittee shall coordinate and facilitate an annual meeting of the Science Panel, the Corps, NCDWQ, and all other interested state and federal agencies including but not limited to EPA, NMFS, USFWS, NCWRC, NCDMF, NCDCM, NCDLR. This meeting shall occur no later than July 30 of each year. The purpose of this meeting will be to allow the members of the Science Panel to provide input to the agencies on any observed trends in parameters measured and general discussions on whether direct and indirect impacts from mining and benefits from the compensatory mitigation appear to be in accordance with expectations at the time of permitting. Members of the Science Panel shall also be given the opportunity to provide any recommendations for management or further study. The proceedings of this meeting including data summaries, reports, presentations and any conclusions of the group will be made available in whole or in summary to any interested party. The Corps will fully consider all information presented by the Science Panel as well as comments from state and federal agencies and all other parties supplying input to determine if corrective actions or permit modifications are needed. If substantive changes to the mine plan, compensatory mitigation plan or monitoring plan are made, the Corps will announce such change by Public Notice and allow for public comment.
- X) At appropriate intervals to be decided by the Corps after input from the Science Panel (eg. 3 to 5 years) beginning from the date of permit issuance, members of the panel shall be given the opportunity to review the monitoring methods, sampling locations, parameters analyzed, and other elements of monitoring protocol to determine if modifications to the plan are appropriate. All data reviewed by the panel shall be made available to the public.

MISCELLANEOUS

- Y) The Permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.
- Z) The Permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A

copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project.

- AA) The Permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).
- BB) The Permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to an acceptable condition.
- CC) Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the Permittee's discovery of the violation.
- DD) Wetland Avoidance/Minimization Areas: The Permittee shall avoid the remaining 2,455 acres of waters of the United States within the 15,100 acre project area. These natural wetland areas were avoided as part of the permit application review process and therefore will not be disturbed by any dredging, filling, mechanized land clearing, agricultural activities, or other construction work whatsoever. The Corps reserves the right to deny review of any requests for future impacts to these natural wetland areas.
- EE) The Permittee shall not begin work authorized by this permit until 10 days following the date I provide the record of decision to EPA. I expect to provide the ROD to EPA on June 4, 2009; however, the Permittee shall verify that date prior to beginning work.
- FF) Within one year of the date of this permit, the Permittee shall cause to be recorded a conservation instrument acceptable to the Corps for the permanent preservation of the areas identified as conservation easements on maps entitled "Conservation Easement – Tooley Creek Modified Alternative L – NCPC;" "Conservation Easement – Jacobs Creek Modified Alternative L – NCPC;" "Conservation Easement – Drinkwater Creek Modified Alternative L – NCPC and "Conservation Easement – Porter Creek Modified Alt L – Bonnerton" all dated May 18, 2009 and the map entitled "Conservation Easement – Jacks Creek Modified Alternative L – NCPC;" dated May 28,

2009. In addition the Permittee shall place a permanent mining restriction over the area shown in the map entitled "Permanent Deed Restriction Prohibiting Mining Cypress Run Modified Alt L- South of 33" dated May 18, 2009. The referenced maps are attached hereto.

Alternative	Total Area	Waters of the US	Stream	% Total Area	% Total Waters of the US	% Total Stream
Single Tract Alternatives						
Base (NCPC)	3,608	2,549	55,528			
AP (NCPC only)	3,412	2,408	38,558	95	94	69
Base (S33 only)	8,686	1,701	43,209			
S33AP (S33 only)	7,743	1,130	33,486	89	66	77
Holistic Alternatives						
Base (holistic)	15,100	6,380	115,843			
EAPA/B	13,961	5,668	89,150	92	89	77
SJAA/B	12,892	5,030	2,508	85	79	2
Alt. M	12,572	4,592	36,999	83	72	32
Alt. L (mod)	11,343	3,927	22,435	75	62	19
SCRA/B	10,659	3,506	14,360	71	55	12
DL1B	9,033	2,285	13,845	60	36	12
No Action	5,745	0	0	38	0	0

Table 1. Comparison of impacts for each alternative. Impacts associated with single tract alternatives are compared only to the base area within that single tract. Impacts associated with holistic alternatives are compared to the total base area of the three tracts combined.

Site	Wetland (acres)			Stream (linear feet)		
	Restoration	Enhancement	Preservation	Restoration	Enhancement	Preservation
Bay city	565.0	0.0	119.0	3000.0		
Hell Swamp	885.0	46.0	41.0	19783.0		
Gum Run	27.0	0.0	0.0			
Parker Farm	245.0	162.0	196.0			3960
SC Corridor			1143.0			26736
P Lands	2075.0	381.0	135.0			
U Lands	608.0		117.0			
Upper Back Creek	116.0	38.0	18.0	7066.0		1149.0
Rutman	3342.0	129.0	701.0	8793.0	7994.0	
Sage Gut	105.0		2.0	5401		1006
totals	7968.0	756.0	2472.0	44043.0	7994.0	32851.0

Table 2. Wetland and stream mitigation by site and type.

By year	Impact	Site Complete	Available Credits*	Acre Credit Balance		Impact**	Available Credits***	Linear Feet Credit Balance
	Acres		Acres	Available - Impacted		Linear Feet	Linear Feet	Available - Impacted
2009	312.39	Gum Run, Parker Farm, Bay City, Upper Back Creek	576.5	264.08		4544	11087.8	7115.8
2010	506.56	Sage Gut. Hell Swamp	1666.0	1403.53		148	30794.8	37762.6
2011		Rutman	828.1	2231.63			11990.6	49753.2
2012	304.81		0.0	1917.82		1108.5		48910.2
2013		P Lands, U Lands	1493.7	3411.52				48910.2
2014	303.53		0.0	3087.99		4677		45104.2
2015			0.0	3087.99				45104.2
2016	203.58		0.0	2884.41		1358		43746.2
2017			0.0	2884.41				43746.2
2018	458.74			2425.67		10620.5		34562.2
2019				2425.67				34562.2
2020	528.79			1896.88		0		34562.2
2021				1896.88				34562.2
2022	592.38			1304.50		0		34562.2
2023				1304.50				34562.2
2024	476.17			828.33		11974.5		24467.2
2025				828.33				24467.2
2026	30.34			797.99		3862.5		21892.2
2027				797.99				21892.2
2028	45.19			752.80		763.5		21383.2
2029				752.80				21383.2
2030	2.1			750.70		0		21383.2
2031				750.70				21383.2
2032	0			750.70		0		21383.2
2033				750.70				21383.2
2034	5.86			744.84		0		21383.2
2035				744.84				21383.2
2036	15.76			729.08		1239		20557.2
2037				729.08				20557.2
2038	31.42			697.66		4366.5		17646.2
2039				697.66				17646.2
2040	26.39			671.27		0		17646.2
2041				671.27				17646.2
2042	75.11			596.16		832.5		17091.2
2043				596.16				17091.2
2044	6.61			589.55		0		17091.2
2045				589.55				17091.2
2046	2.06			587.49		0		17091.2
2047				587.49				17091.2
2048	0			587.49		0		17091.2

Table 3. Mitigation completion date and impact dates

* an acre credit of wetland is comprised of 2:1 restoration, 3:1 enhancement or 8-10:1 preservation

** This column reflects total mitigation linear feet needed after adjustments to stream quality

(1:1 for poor, 2:1 for Fair and 3:1 for excellent)

*** A linear foot credit is comprised of 1:1 restoration, 2.5:1 enhancement or 5:1 preservation

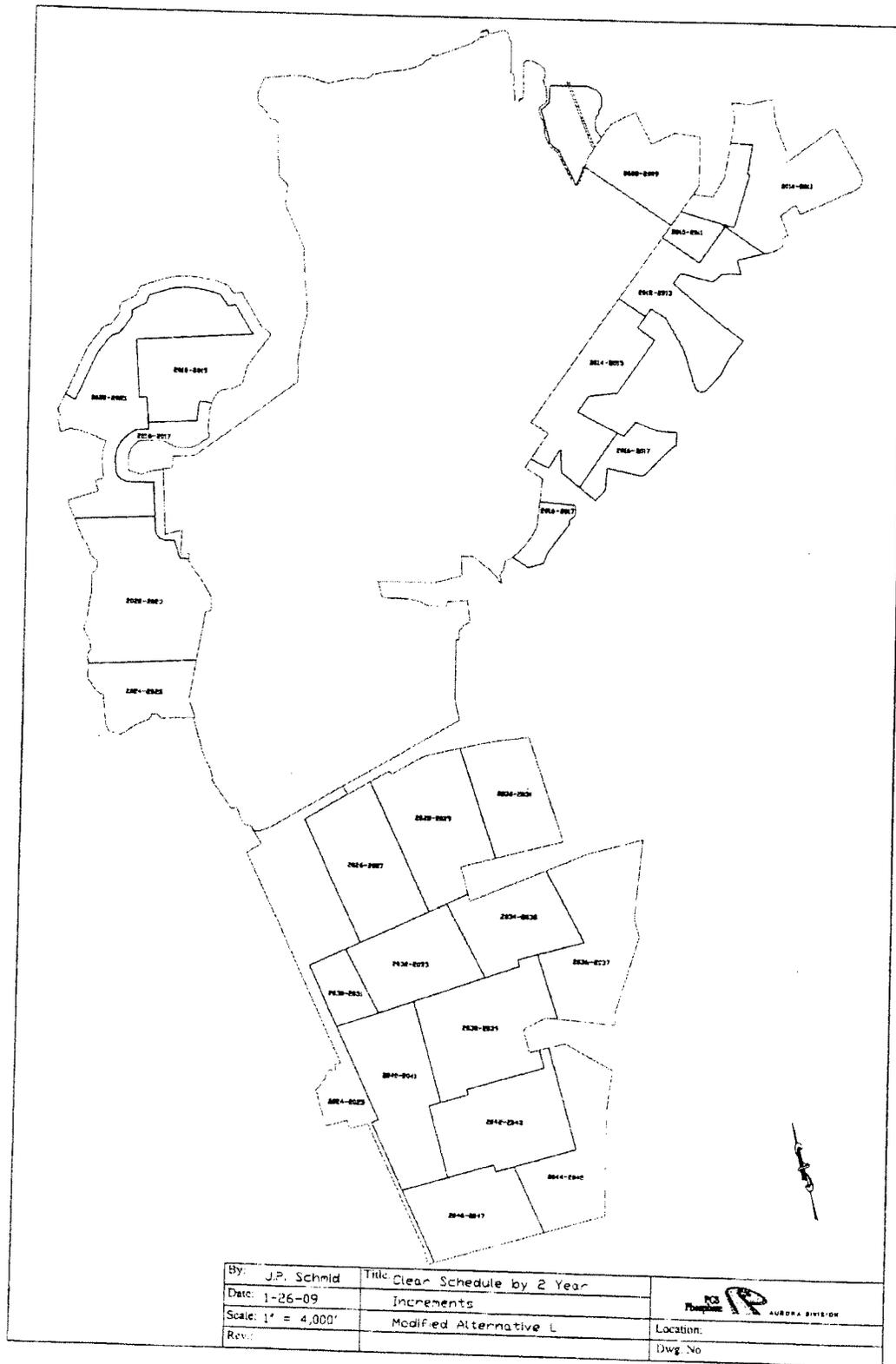
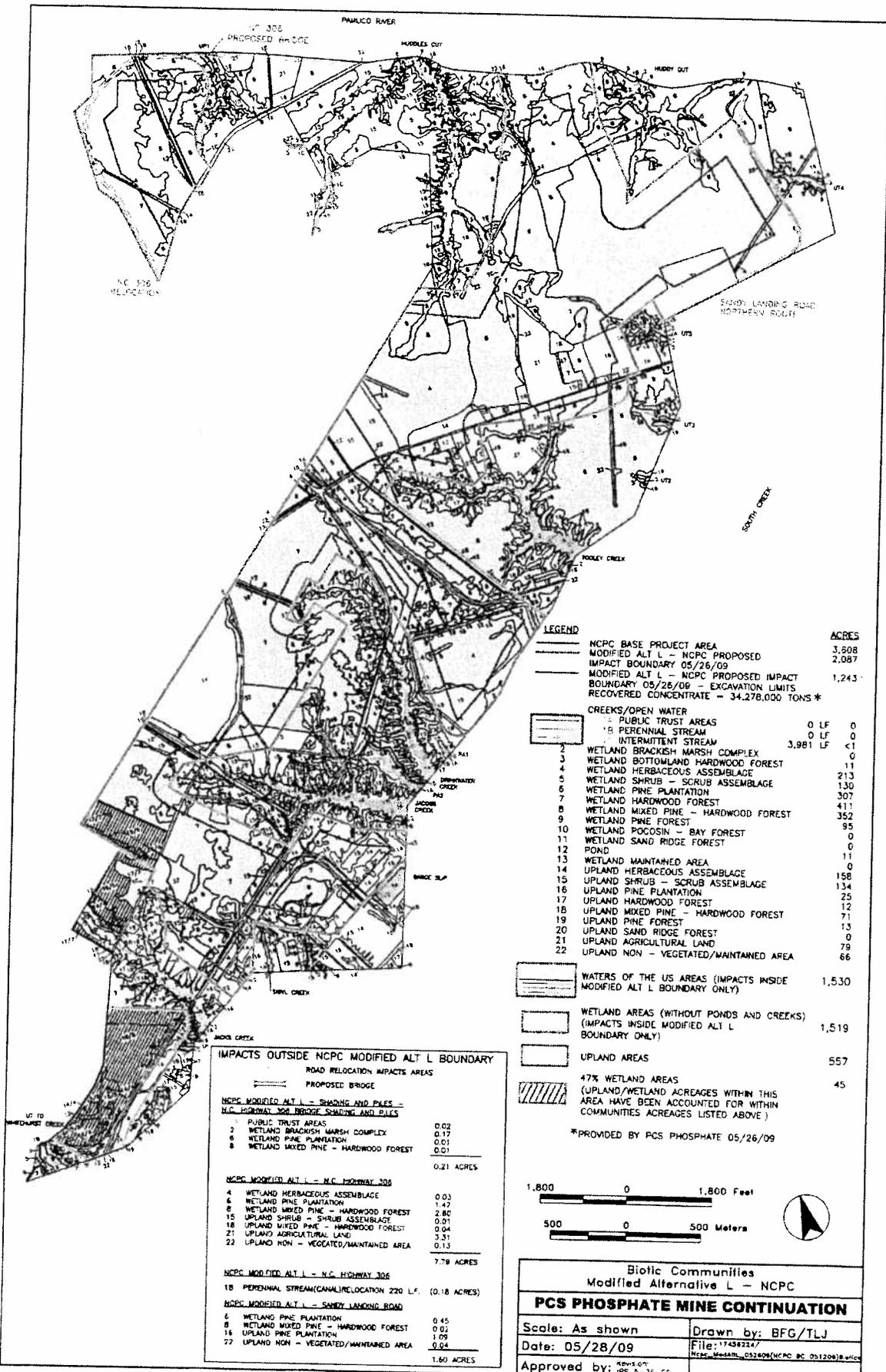


Figure 2. Initial impact schedule. This reflects dates when mechanized land clearing will be necessary in order to prepare for mine advance.



LEGEND

NCPC BASE PROJECT AREA	ACRES
MODIFIED ALT L - NCPC PROPOSED	3,808
IMPACT BOUNDARY 05/26/09	2,087
MODIFIED ALT L - NCPC PROPOSED IMPACT BOUNDARY 05/26/09 - EXCAVATION LIMITS	1,243
RECOVERED CONCENTRATE - 34,278,000 TONS*	

CREEKS/OPEN WATER		
1 PUBLIC TRUST AREAS	0 LF	0
2 PERENNIAL STREAM	0 LF	0
3 INTERMITTENT STREAM	3,981 LF	<1
4 WETLAND BRACKISH MARSH COMPLEX		11
5 WETLAND BOTTOMLAND HARDWOOD FOREST		213
6 WETLAND HERBACEOUS ASSEMBLAGE		130
7 WETLAND SHRUB - SCRUB ASSEMBLAGE		307
8 WETLAND PINE PLANTATION		411
9 WETLAND HARDWOOD FOREST		352
10 WETLAND MIXED PINE - HARDWOOD FOREST		95
11 WETLAND PINE FOREST		0
12 WETLAND POGOSIN - BAY FOREST		0
13 WETLAND SAND RIDGE FOREST		0
14 POND		11
15 WETLAND MAINTAINED AREA		0
16 UPLAND HERBACEOUS ASSEMBLAGE		158
17 UPLAND SHRUB - SCRUB ASSEMBLAGE		134
18 UPLAND PINE PLANTATION		25
19 UPLAND HARDWOOD FOREST		12
20 UPLAND MIXED PINE - HARDWOOD FOREST		71
21 UPLAND PINE FOREST		13
22 UPLAND SAND RIDGE FOREST		79
23 UPLAND AGRICULTURAL LAND		66
24 UPLAND NON - VEGETATED/MAINTAINED AREA		66

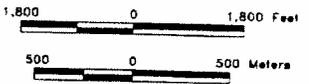
WATERS OF THE US AREAS (IMPACTS INSIDE MODIFIED ALT L BOUNDARY ONLY) 1,530

WETLAND AREAS (WITHOUT PONDS AND CREEKS) (IMPACTS INSIDE MODIFIED ALT L BOUNDARY ONLY) 1,519

UPLAND AREAS 557

47% WETLAND AREAS (UPLAND/WETLAND ACRES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACRES LISTED ABOVE) 45

*PROVIDED BY PCS PHOSPHATE 05/26/09



IMPACTS OUTSIDE NCPC MODIFIED ALT L BOUNDARY

ROAD RELOCATION IMPACTS AREAS

PROPOSED BRIDGE

NCPC MODIFIED ALT L - SANDY LANDING PILES - N.C. HIGHWAY 306 BRIDGE SHADING AND PILES

1 PUBLIC TRUST AREAS	0.02
2 WETLAND BRACKISH MARSH COMPLEX	0.17
6 WETLAND PINE PLANTATION	0.01
8 WETLAND MIXED PINE - HARDWOOD FOREST	0.01
TOTAL	0.21 ACRES

NCPC MODIFIED ALT L - N.C. HIGHWAY 306

4 WETLAND HERBACEOUS ASSEMBLAGE	0.03
5 WETLAND PINE PLANTATION	1.47
6 WETLAND MIXED PINE - HARDWOOD FOREST	2.86
15 UPLAND SHRUB - SCRUB ASSEMBLAGE	0.01
18 UPLAND MIXED PINE - HARDWOOD FOREST	0.04
21 UPLAND AGRICULTURAL LAND	3.31
22 UPLAND NON - VEGETATED/MAINTAINED AREA	0.13
TOTAL	7.79 ACRES

NCPC MODIFIED ALT L - N.C. HIGHWAY 306

18 PERENNIAL STREAM(CANAL/RELOCATION) 220 LF.	(0.18 ACRES)
---	--------------

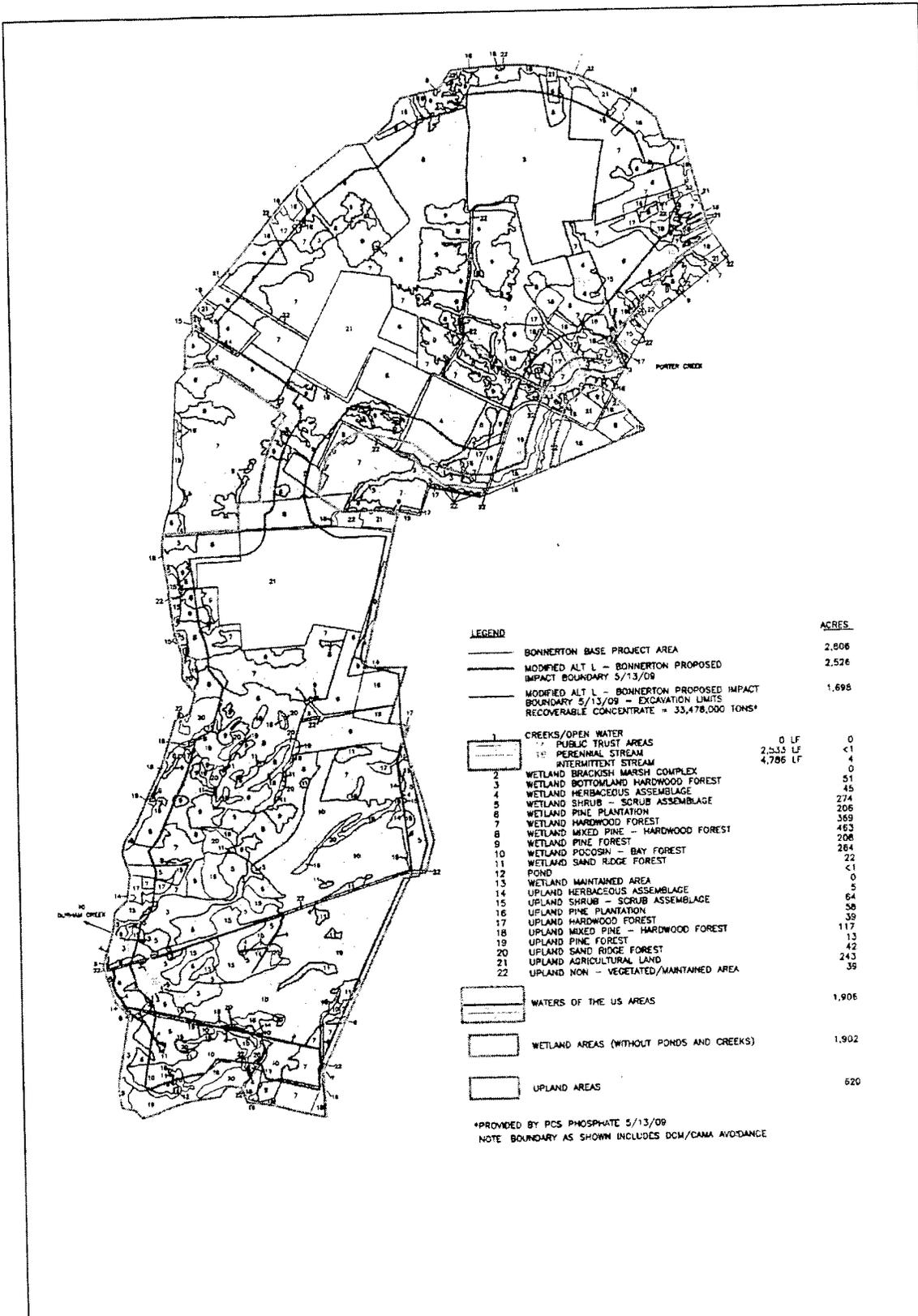
NCPC MODIFIED ALT L - SANDY LANDING ROAD

6 WETLAND PINE PLANTATION	0.45
8 WETLAND MIXED PINE - HARDWOOD FOREST	0.02
16 UPLAND PINE PLANTATION	1.09
22 UPLAND NON - VEGETATED/MAINTAINED AREA	0.04
TOTAL	1.60 ACRES

Biotic Communities
Modified Alternative L - NCPC

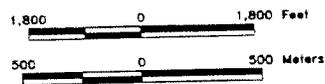
PCS PHOSPHATE MINE CONTINUATION

Scale: As shown	Drawn by: BFG/TLJ
Date: 05/28/09	File: 17438234/
Approved by: JPS 5-26-09	File: Hrcp_ModAltL_052809\NCPC_PC_05120818.dwg

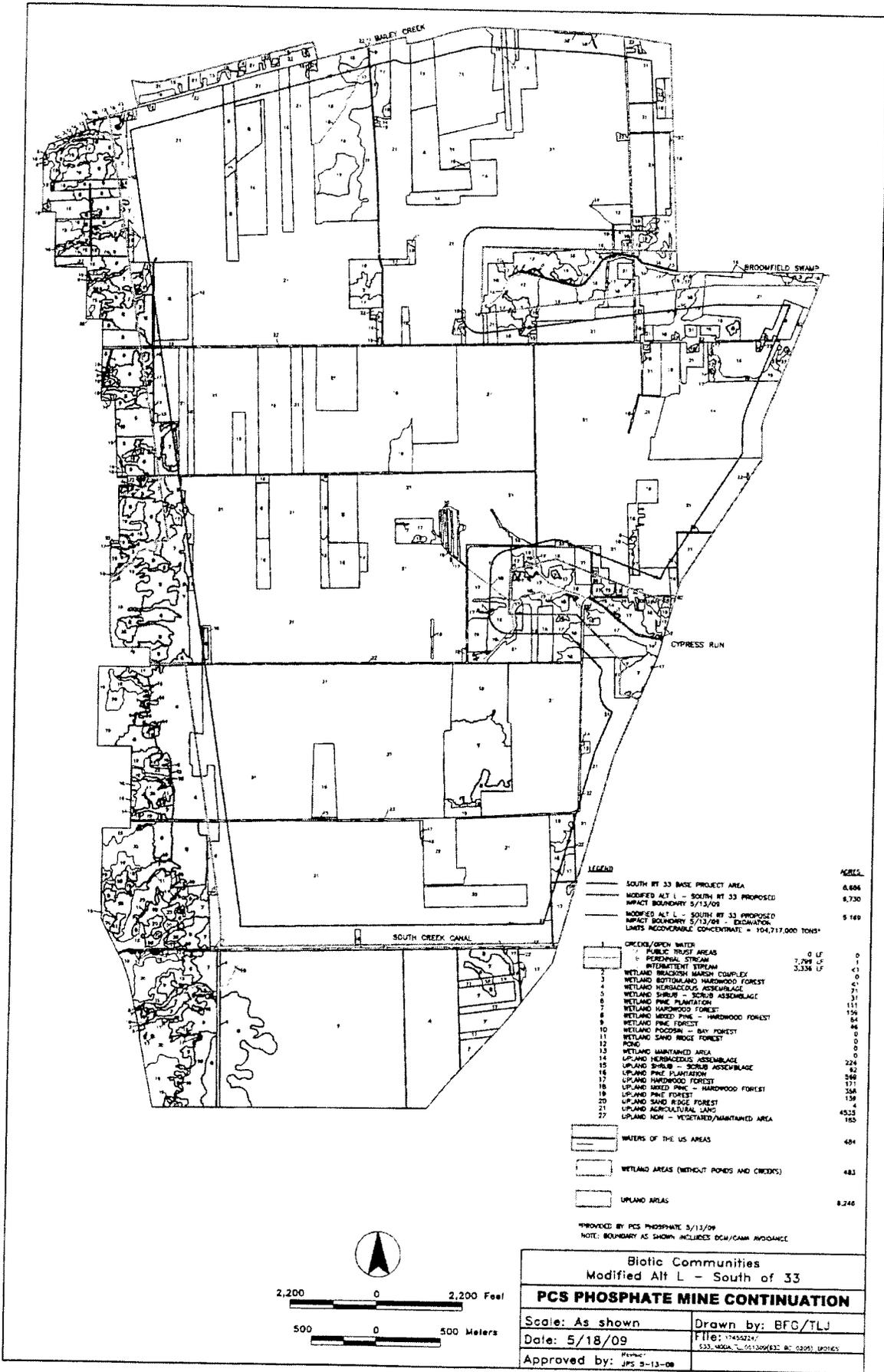


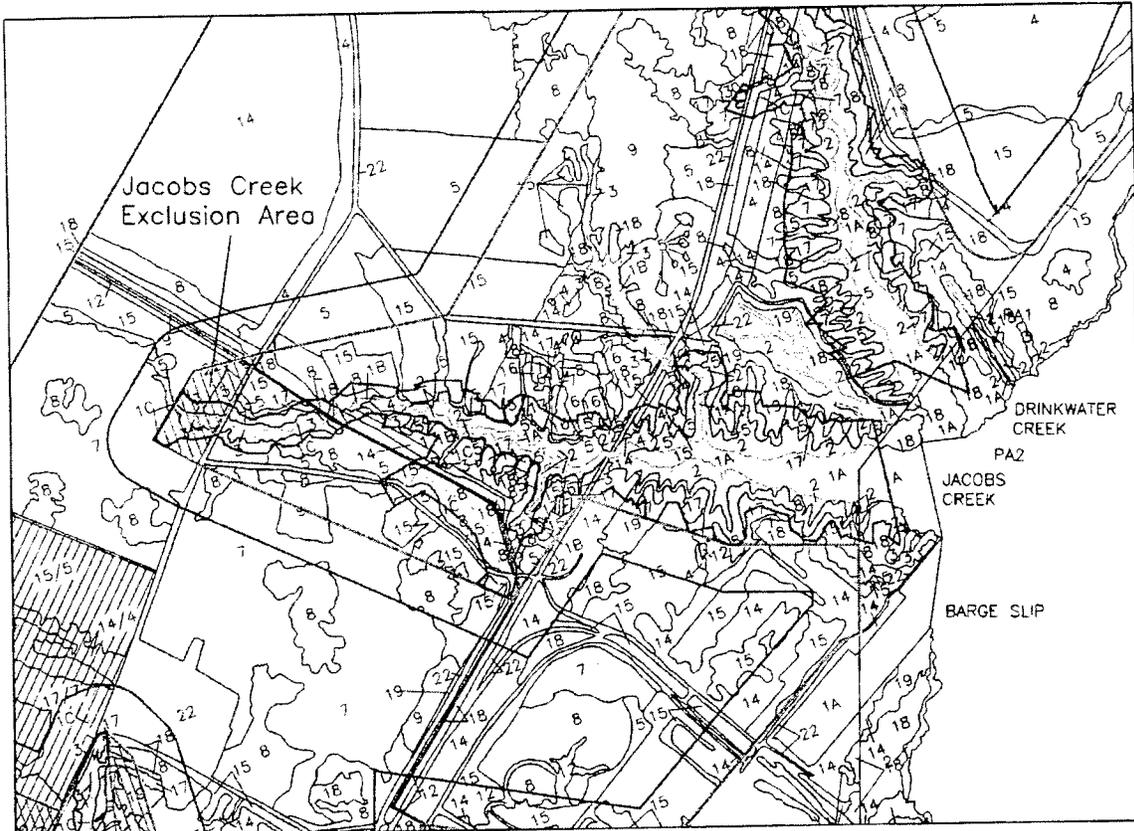
LEGEND		ACRES
BONNERTON BASE PROJECT AREA		2,808
MODIFIED ALT L - BONNERTON PROPOSED IMPACT BOUNDARY 5/13/09		2,526
MODIFIED ALT L - BONNERTON PROPOSED IMPACT BOUNDARY 5/13/09 - EXCAVATION LIMITS RECOVERABLE CONCENTRATE = 33,478,000 TONS*		1,698
1	CREEKS/OPEN WATER	
2	PUBLIC TRUST AREAS	0 LF 0
3	PERENNIAL STREAM	2,233 LF 4
4	INTERMITTENT STREAM	4,786 LF 0
5	WETLAND BRACKISH MARSH COMPLEX	51
6	WETLAND BOTTOMLAND HARDWOOD FOREST	45
7	WETLAND HERBACEOUS ASSEMBLAGE	274
8	WETLAND SHRUB - SCRUB ASSEMBLAGE	206
9	WETLAND PINE PLANTATION	369
10	WETLAND HARDWOOD FOREST	463
11	WETLAND MIXED PINE - HARDWOOD FOREST	208
12	WETLAND PINE FOREST	264
13	WETLAND POCOSIN - BAY FOREST	22
14	WETLAND SAND RIDGE FOREST	<1
15	POND	0
16	WETLAND MAINTAINED AREA	5
17	UPLAND HERBACEOUS ASSEMBLAGE	64
18	UPLAND SHRUB - SCRUB ASSEMBLAGE	38
19	UPLAND PINE PLANTATION	39
20	UPLAND HARDWOOD FOREST	117
21	UPLAND MIXED PINE - HARDWOOD FOREST	13
22	UPLAND PINE FOREST	42
	UPLAND SAND RIDGE FOREST	243
	UPLAND AGRICULTURAL LAND	39
	UPLAND NON - VEGETATED/MAINTAINED AREA	520
WATERS OF THE US AREAS		1,906
WETLAND AREAS (WITHOUT PONDS AND CREEKS)		1,902
UPLAND AREAS		520

*PROVIDED BY PCS PHOSPHATE 5/13/09
NOTE BOUNDARY AS SHOWN INCLUDES DCM/CAMA AVOIDANCE



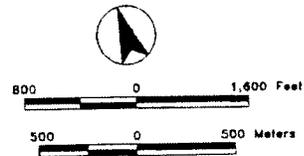
Biotic Communities Modified Alternative L - Bonneron	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 145824/ BEN_M00A/L_051309(BCN_BC_030206)_e0003
Approved by: [Signature]	Rev. 5-13-09



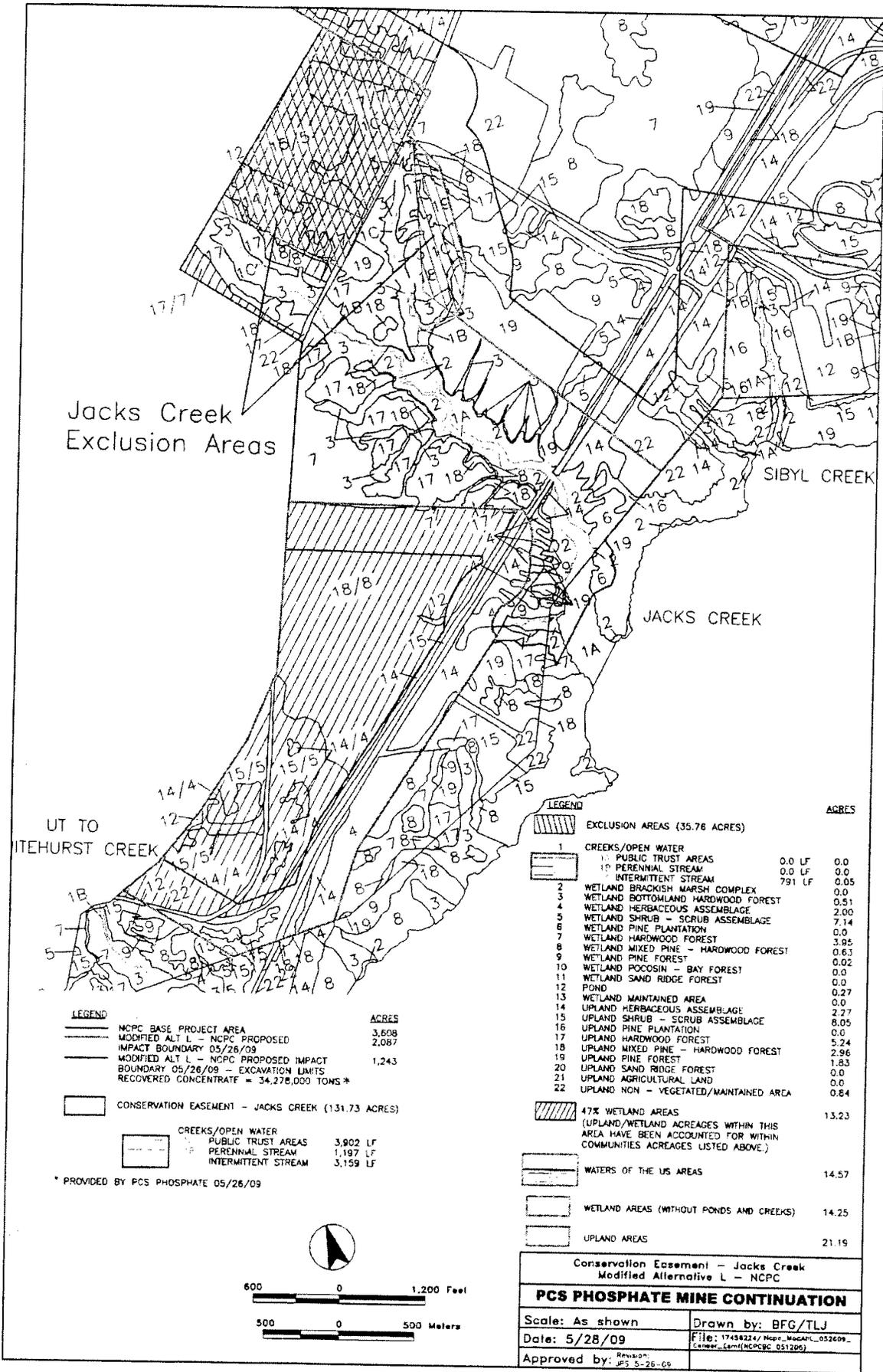


LEGEND		ACRES	
	NCPC BASE PROJECT AREA		3,608
	MODIFIED ALT L - NCPC PROPOSED		2,109
	IMPACT BOUNDARY 05/13/09		
	MODIFIED ALT L - NCPC PROPOSED IMPACT		1,264
	BOUNDARY 05/13/09 - EXCAVATION LIMITS		
	RECOVERED CONCENTRATE = 34,878,000 TONS *		
	EXCLUSION AREAS (5.98 ACRES)		
	1 CREEKS/OPEN WATER		
	1: PUBLIC TRUST AREAS	0.0 LF	0.0
	12 PERENNIAL STREAM	0.0 LF	0.0
	INTERMITTENT STREAM	830 LF	0.0
	2 WETLAND BRACKISH MARSH COMPLEX		0.56
	3 WETLAND BOTTOMLAND HARDWOOD FOREST		0.0
	4 WETLAND HERBACEOUS ASSEMBLAGE		1.28
	5 WETLAND SHRUB - SCRUB ASSEMBLAGE		0.0
	6 WETLAND PINE PLANTATION		1.82
	7 WETLAND HARDWOOD FOREST		0.0
	8 WETLAND MIXED PINE - HARDWOOD FOREST		0.09
	9 WETLAND PINE FOREST		0.0
	10 WETLAND POCOSIN - BAY FOREST		0.0
	11 WETLAND SAND RIDGE FOREST		0.04
	12 POND		0.0
	13 WETLAND MAINTAINED AREA		0.0
	14 UPLAND HERBACEOUS ASSEMBLAGE		1.64
	15 UPLAND SHRUB - SCRUB ASSEMBLAGE		0.0
	16 UPLAND PINE PLANTATION		0.0
	17 UPLAND HARDWOOD FOREST		0.0
	18 UPLAND MIXED PINE - HARDWOOD FOREST		0.01
	19 UPLAND PINE FOREST		0.0
	20 UPLAND SAND RIDGE FOREST		0.0
	21 UPLAND AGRICULTURAL LAND		0.0
	22 UPLAND NON - VEGETATED/MAINTAINED AREA		0.35
	47% WETLAND AREAS (UPLAND/WETLAND ACREAGES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACREAGES LISTED ABOVE.)		0.0
	WATERS OF THE US AREAS		3.98
	WETLAND AREAS (WITHOUT PONDS AND CREEKS)		3.75
	UPLAND AREAS		2.00
	CONSERVATION EASEMENT - JACOBS CREEK (78 ACRES)		
	CREEKS/OPEN WATER		5,194 LF
	PUBLIC TRUST AREAS		565 LF
	PERENNIAL STREAM		3,590 LF
	INTERMITTENT STREAM		

* PROVIDED BY PCS PHOSPHATE 05/13/09



Conservation Easement - Jacobs Creek Modified Alternative L - NCPC	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17424234/Mopc_ModAltL_051309_Conser_Esm(NCPC 051204)
Approved by:	Revision: 05-13-09



Jacks Creek Exclusion Areas

SIBYL CREEK

JACKS CREEK

UT TO ITHURST CREEK

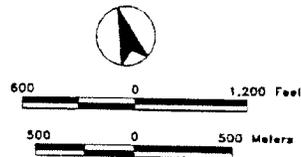
LEGEND

	ACRES
NCPC BASE PROJECT AREA	3,608
MODIFIED ALT L - NCPC PROPOSED	2,087
IMPACT BOUNDARY 05/26/09	
MODIFIED ALT L - NCPC PROPOSED IMPACT BOUNDARY 05/26/09 - EXCAVATION LIMITS	1,243
RECOVERED CONCENTRATE = 34,276,000 TONS*	
CONSERVATION EASEMENT - JACKS CREEK (131.73 ACRES)	
CREEKS/OPEN WATER	
PUBLIC TRUST AREAS	3,902 LF
PERENNIAL STREAM	1,197 LF
INTERMITTENT STREAM	3,159 LF

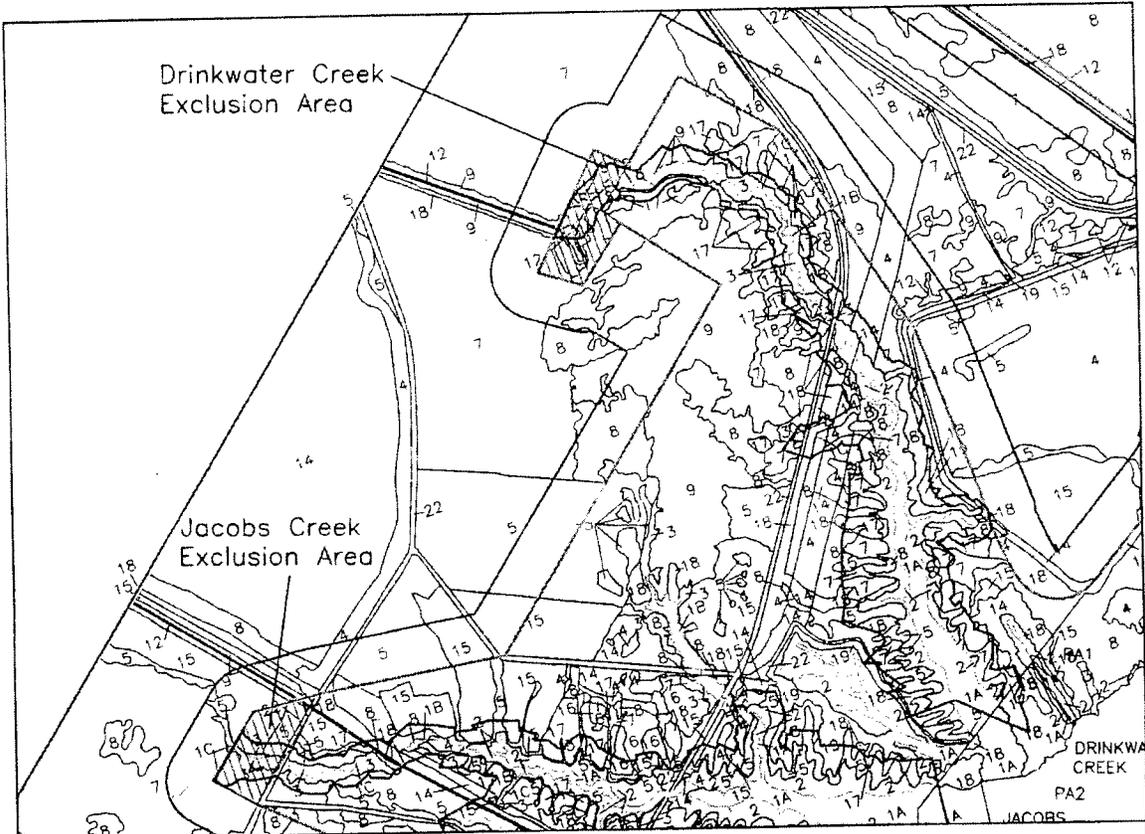
* PROVIDED BY PCS PHOSPHATE 05/26/09

LEGEND

	ACRES
EXCLUSION AREAS (35.76 ACRES)	
1 CREEKS/OPEN WATER	
1 PUBLIC TRUST AREAS	0.0 LF
1 PERENNIAL STREAM	0.0 LF
1 INTERMITTENT STREAM	791 LF
2 WETLAND BRACKISH MARSH COMPLEX	0.0
3 WETLAND BOTTOMLAND HARDWOOD FOREST	0.51
4 WETLAND HERBACEOUS ASSEMBLAGE	2.00
5 WETLAND SHRUB - SCRUB ASSEMBLAGE	7.14
6 WETLAND PINE PLANTATION	0.0
7 WETLAND HARDWOOD FOREST	3.95
8 WETLAND MIXED PINE - HARDWOOD FOREST	0.63
9 WETLAND PINE FOREST	0.02
10 WETLAND POCOSIN - BAY FOREST	0.0
11 WETLAND SAND RIDGE FOREST	0.0
12 POND	0.27
13 WETLAND MAINTAINED AREA	0.0
14 UPLAND HERBACEOUS ASSEMBLAGE	2.27
15 UPLAND SHRUB - SCRUB ASSEMBLAGE	8.05
16 UPLAND PINE PLANTATION	0.0
17 UPLAND HARDWOOD FOREST	5.24
18 UPLAND MIXED PINE - HARDWOOD FOREST	2.96
19 UPLAND PINE FOREST	1.85
20 UPLAND SAND RIDGE FOREST	0.0
21 UPLAND AGRICULTURAL LAND	0.0
22 UPLAND NON - VEGETATED/MAINTAINED AREA	0.84
47% WETLAND AREAS (UPLAND/WETLAND ACRES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACRES LISTED ABOVE.)	13.23
WATERS OF THE US AREAS	14.57
WETLAND AREAS (WITHOUT PONDS AND CREEKS)	14.25
UPLAND AREAS	21.19

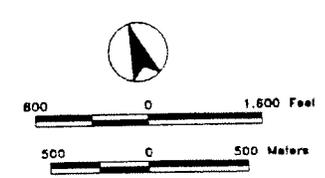


Conservation Easement - Jacks Creek Modified Alternative L - NCPC	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/28/09	File: 17434224/ncpc_mocapl_052609
Approved by: JFS 5-28-09	Consent: (am)(NCPC 051206)

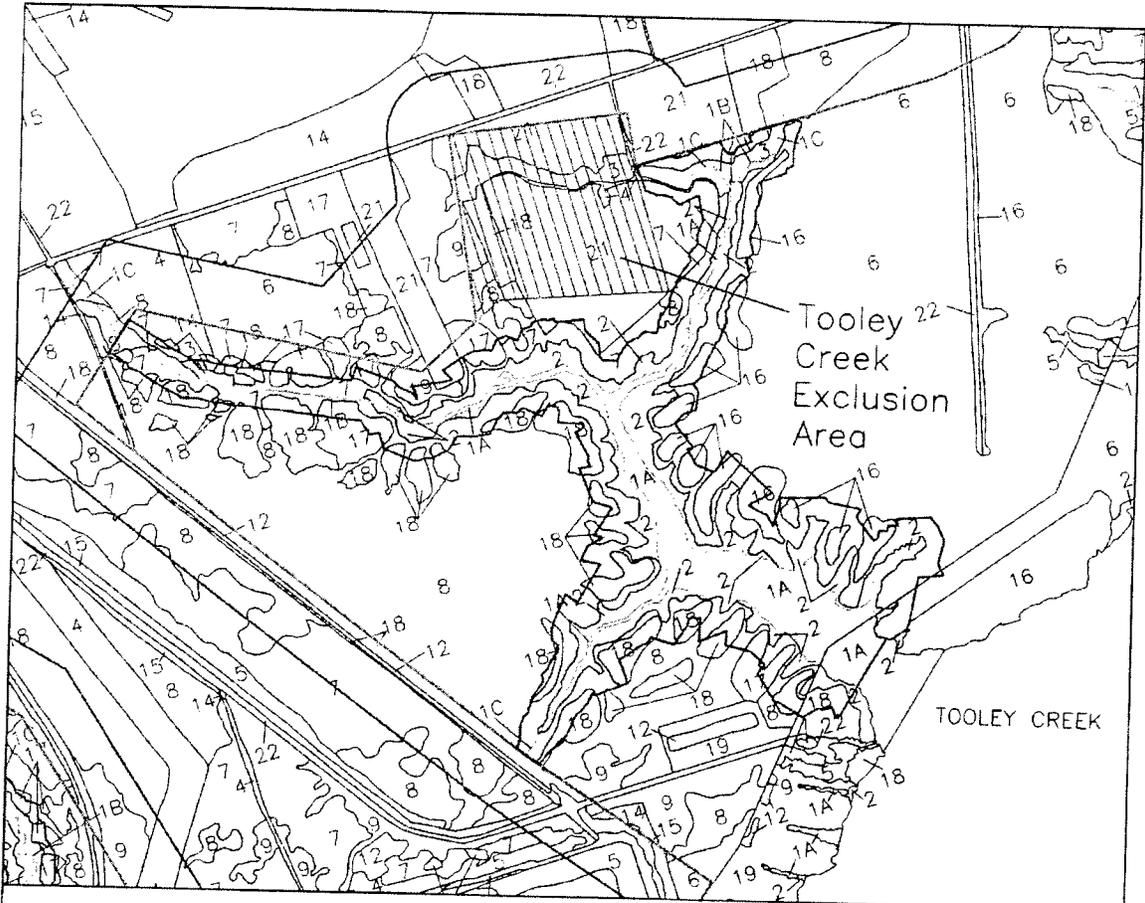


LEGEND		ACRES
NCPG BASE PROJECT AREA		3,608
MODIFIED ALT L - NCPG PROPOSED		2,109
IMPACT BOUNDARY 05/13/09		
MODIFIED ALT L - NCPG PROPOSED IMPACT BOUNDARY 05/13/09 - EXCAVATION LIMITS		1,264
RECOVERED CONCENTRATE = 34,878,000 TONS *		
EXCLUSION AREAS (6.65 ACRES)		
1	CREEKS/OPEN WATER	
	PUBLIC TRUST AREAS	0.0 LF 0.0
	PERENNIAL STREAM	0.0 LF 0.04
	INTERMITTENT STREAM	492 LF 0.0
2	WETLAND BRACKISH MARSH COMPLEX	0.0
3	WETLAND BOTTCALAND HARDWOOD FOREST	0.0
4	WETLAND HERBACEOUS ASSEMBLAGE	0.0
5	WETLAND SHRUB - SCRUB ASSEMBLAGE	0.0
6	WETLAND PINE PLANTATION	0.0
7	WETLAND HARDWOOD FOREST	3.87
8	WETLAND MIXED PINE - HARDWOOD FOREST	0.0
9	WETLAND PINE FOREST	1.06
10	WETLAND POCCOSIN - BAY FOREST	0.0
11	WETLAND SAND RIDGE FOREST	0.0
12	POND	0.32
13	WETLAND MAINTAINED AREA	0.0
14	UPLAND HERBACEOUS ASSEMBLAGE	0.0
15	UPLAND SHRUB - SCRUB ASSEMBLAGE	0.0
16	UPLAND PINE PLANTATION	0.0
17	UPLAND HARDWOOD FOREST	0.0
18	UPLAND MIXED PINE - HARDWOOD FOREST	1.36
19	UPLAND PINE FOREST	0.0
20	UPLAND SAND RIDGE FOREST	0.0
21	UPLAND AGRICULTURAL LAND	0.0
22	UPLAND NON - VEGETATED/MAINTAINED AREA	0.0
47% WETLAND AREAS (UPLAND/WETLAND ACREAGES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACREAGES LISTED ABOVE.)		
WATERS OF THE US AREAS		5.29
WETLAND AREAS (WITHOUT PONDS AND CREEKS)		4.93
UPLAND AREAS		1.36
CONSERVATION EASEMENT - DRINKWATER CREEK (63 ACRES)		
CREEKS/OPEN WATER		
	PUBLIC TRUST AREAS	5,318 LF
	PERENNIAL STREAM	508 LF
	INTERMITTENT STREAM	2,113 LF

* PROVIDED BY PCS PHOSPHATE 05/13/09

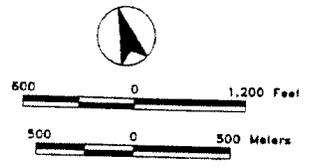


Conservation Easement - Drinkwater Creek Modified Alternative L - NCPG	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17498224/npcp_Modaltl_051309_Contar... (containing NCPG 051309)
Approved by: JPS 5-13-09	Revision: N/A

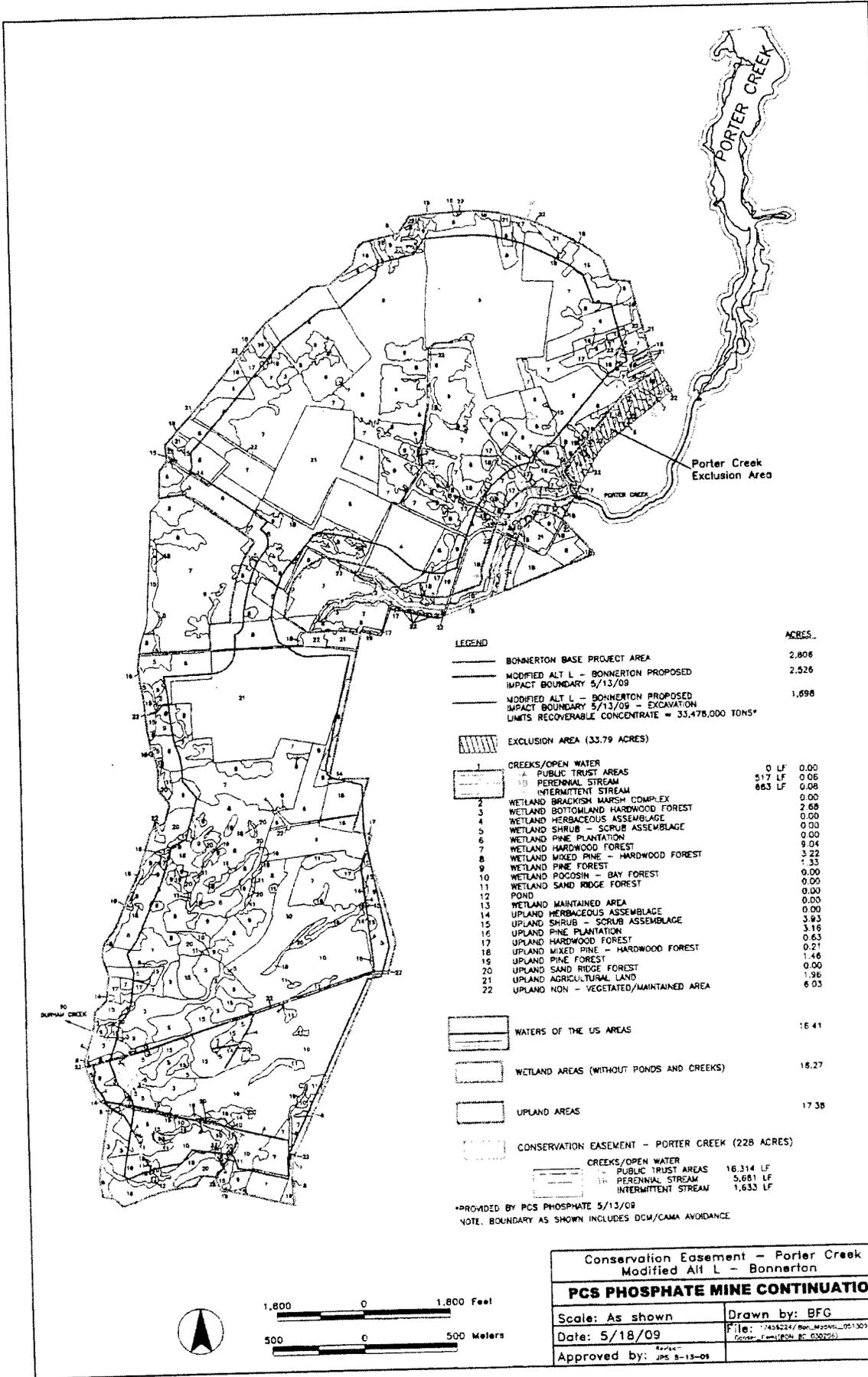


LEGEND		ACRES
NCPG BASE PROJECT AREA		3,608
MODIFIED ALT L - NCPG PROPOSED		2,109
IMPACT BOUNDARY 05/13/09		
MODIFIED ALT L - NCPG PROPOSED IMPACT BOUNDARY 05/13/09 - EXCAVATION LIMITS		1,264
RECOVERED CONCENTRATE = 34,878,000 TONS *		
EXCLUSION AREAS		21.19
1 CREEKS/OPEN WATER		
PUBLIC TRUST AREAS		0.0 LF
PERENNIAL STREAM		0.0 LF
INTERMITTENT STREAM		0.0 LF
2 WETLAND BRACKISH MARSH COMPLEX		0.0
3 WETLAND BOTTOMLAND HARDWOOD FOREST		2.33
4 WETLAND HERBACEOUS ASSEMBLAGE		0.40
5 WETLAND SHRUB - SCRUB ASSEMBLAGE		0.0
6 WETLAND PINE PLANTATION		0.0
7 WETLAND HARDWOOD FOREST		0.48
8 WETLAND MIXED PINE - HARDWOOD FOREST		0.54
9 WETLAND PINE FOREST		0.54
10 WETLAND POCCOSIN - BAY FOREST		0.0
11 WETLAND SAND RIDGE FOREST		0.0
12 POND		0.0
13 WETLAND MAINTAINED AREA		0.0
14 UPLAND HERBACEOUS ASSEMBLAGE		0.0
15 UPLAND SHRUB - SCRUB ASSEMBLAGE		0.0
16 UPLAND PINE PLANTATION		0.0
17 UPLAND HARDWOOD FOREST		0.0
18 UPLAND MIXED PINE - HARDWOOD FOREST		1.30
19 UPLAND PINE FOREST		0.0
20 UPLAND SAND RIDGE FOREST		0.0
21 UPLAND AGRICULTURAL LAND		15.44
22 UPLAND NON - VEGETATED/MAINTAINED AREA		0.16
47% WETLAND AREAS (UPLAND/WETLAND ACRES WITHIN THIS AREA HAVE BEEN ACCOUNTED FOR WITHIN COMMUNITIES ACRES LISTED ABOVE.)		0.0
WATERS OF THE US AREAS		4.29
WETLAND AREAS (WITHOUT PONDS AND CREEKS)		4.29
UPLAND AREAS		16.90
CONSERVATION EASEMENT - TOOLEY CREEK (81 ACRES)		
CREEKS/OPEN WATER		
PUBLIC TRUST AREAS		6.54 LF
PERENNIAL STREAM		918 LF
INTERMITTENT STREAM		1,494 LF

* PROVIDED BY PCS PHOSPHATE 05/13/09



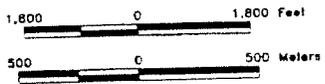
Conservation Easement - Tooley Creek Modified Alternative L - NCPG	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17456224/NCPG_MIGA-L_051309_Conser_Eas(NCPG BC 051206)
Approved by: [Signature]	Revision: 05 5 13 09

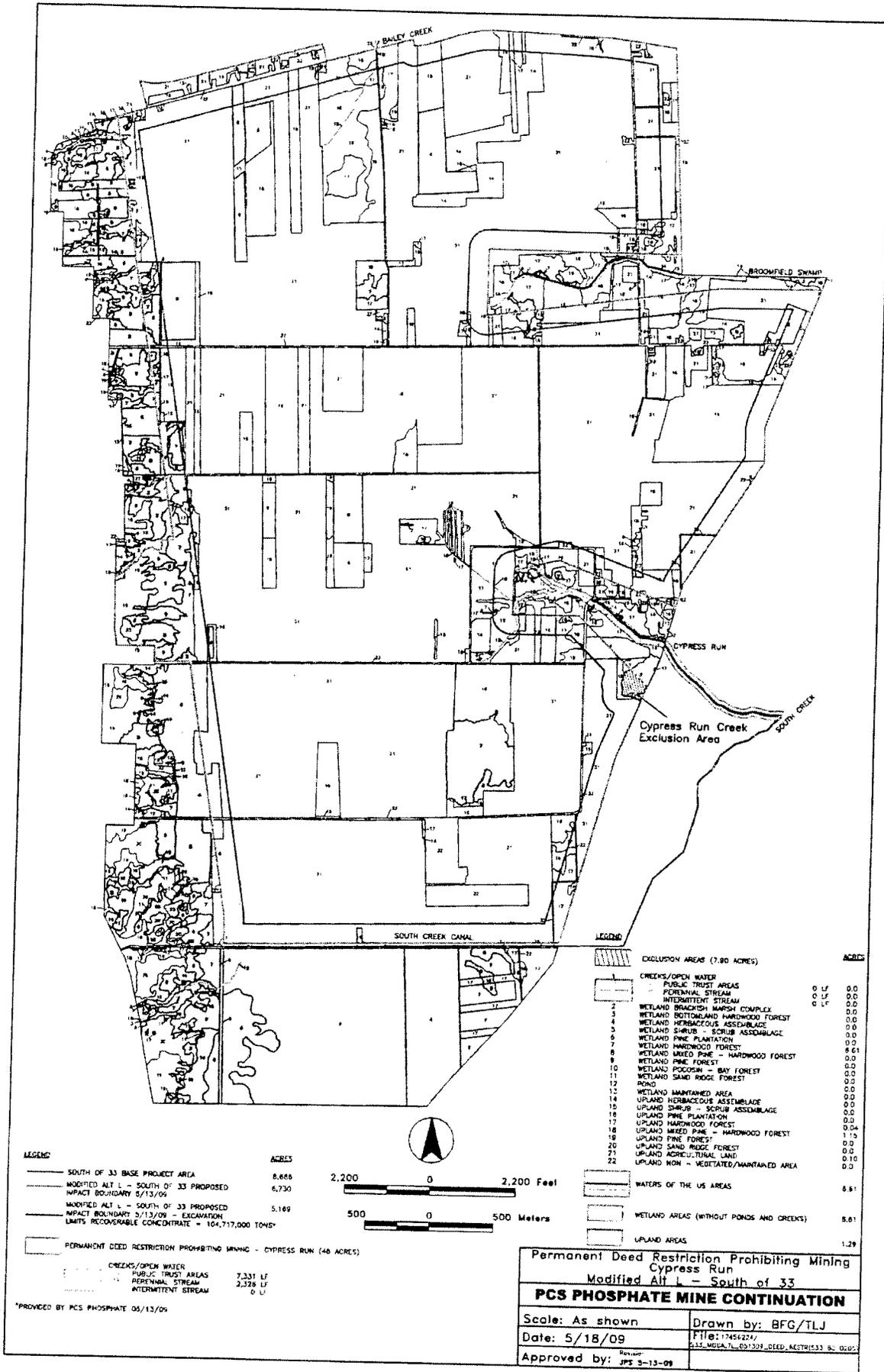


LEGEND		ACRES
—	BONNERON BASE PROJECT AREA	2,806
—	MODIFIED ALT L - BONNERON PROPOSED IMPACT BOUNDARY 5/13/09	2,526
—	MODIFIED ALT L - BONNERON PROPOSED IMPACT BOUNDARY 5/13/09 - EXCAVATION LIMITS RECOVERABLE CONCENTRATE = 33,478,000 TONS*	1,698
[Hatched Box]	EXCLUSION AREA (33.79 ACRES)	
[Numbered Box]	CREEKS/OPEN WATER	
[Symbol]	PUBLIC TRUST AREAS	0 LF 0.00
[Symbol]	PERENNIAL STREAM	517 LF 0.06
[Symbol]	INTERMITTENT STREAM	663 LF 0.08
[Numbered Box]	WETLAND BRACKISH MARSH COMPLEX	0.00
[Numbered Box]	WETLAND BOTTOMLAND HARDWOOD FOREST	2.68
[Numbered Box]	WETLAND HERBACEOUS ASSEMBLAGE	0.00
[Numbered Box]	WETLAND SHRUB - SCRUB ASSEMBLAGE	0.00
[Numbered Box]	WETLAND PINE PLANTATION	0.00
[Numbered Box]	WETLAND MIXED PINE - HARDWOOD FOREST	9.04
[Numbered Box]	WETLAND POGOSIN - BAY FOREST	3.22
[Numbered Box]	WETLAND SAND RIDGE FOREST	1.33
[Numbered Box]	WETLAND PINE FOREST	0.00
[Numbered Box]	WETLAND MIXED PINE - HARDWOOD FOREST	0.00
[Numbered Box]	WETLAND SAND RIDGE FOREST	0.00
[Numbered Box]	WETLAND MAINTAINED AREA	0.00
[Numbered Box]	WETLAND HERBACEOUS ASSEMBLAGE	0.00
[Numbered Box]	WETLAND SHRUB - SCRUB ASSEMBLAGE	3.93
[Numbered Box]	WETLAND PINE PLANTATION	3.16
[Numbered Box]	WETLAND MIXED PINE - HARDWOOD FOREST	0.63
[Numbered Box]	WETLAND PINE FOREST	0.21
[Numbered Box]	WETLAND SAND RIDGE FOREST	1.46
[Numbered Box]	WETLAND AGRICULTURAL LAND	0.00
[Numbered Box]	WETLAND NON - VEGETATED/MAINTAINED AREA	1.96
[Numbered Box]	WETLAND MAINTAINED AREA	6.03
[Symbol]	WATERS OF THE US AREAS	16.41
[Symbol]	WETLAND AREAS (WITHOUT PONDS AND CREEKS)	18.27
[Symbol]	UPLAND AREAS	17.38
[Symbol]	CONSERVATION EASEMENT - PORTER CREEK (228 ACRES)	
[Symbol]	CREEKS/OPEN WATER	
[Symbol]	PUBLIC TRUST AREAS	16,314 LF
[Symbol]	PERENNIAL STREAM	5,681 LF
[Symbol]	INTERMITTENT STREAM	1,633 LF

*PROVIDED BY PCS PHOSPHATE 5/13/09
NOTE: BOUNDARY AS SHOWN INCLUDES DCM/CAMA AVOIDANCE

Conservation Easement - Porter Creek Modified Alt L - Bonneron	
PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG
Date: 5/18/09	File: 17454224/Bon_Mine_051309 Contour: 1=100, 20=200
Approved by: JPS 5-13-09	Revised:

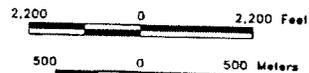




	ACRES
SOUTH OF 33 BASE PROJECT AREA	8,666
MODIFIED ALT I - SOUTH OF 33 PROPOSED	6,730
IMPACT BOUNDARY 5/13/09	
MODIFIED ALT I - SOUTH OF 33 PROPOSED	5,169
IMPACT BOUNDARY 5/13/09 - EXCAVATION	
LIMITS RECOVERABLE CONCENTRATE = 104,717,000 TONS*	
PERMANENT DEED RESTRICTION PROHIBITING MINING - CYPRESS RUN (46 ACRES)	

CREEKS/OPEN WATER	7,331 LF
PUBLIC TRUST AREAS	2,328 LF
PERENNIAL STREAM	0 LF
INTERMITTENT STREAM	0 LF

*PROVIDED BY PCS PHOSPHATE 05/13/09



EXCLUSION AREAS (7.90 ACRES)		ACRES
1	CREEKS/OPEN WATER	
2	PUBLIC TRUST AREAS	0 LF
3	PERENNIAL STREAM	0 LF
4	INTERMITTENT STREAM	0 LF
5	WETLAND BRACKISH MARSH COMPLEX	0.0
6	WETLAND BOTTOMLAND HARDWOOD FOREST	0.0
7	WETLAND HERBACEOUS ASSEMBLAGE	0.0
8	WETLAND SHRUB - SCRUB ASSEMBLAGE	0.0
9	WETLAND PINE PLANTATION	0.0
10	WETLAND HARDWOOD FOREST	8.61
11	WETLAND MIXED PINE - HARDWOOD FOREST	0.0
12	WETLAND PINE FOREST	0.0
13	WETLAND PINE FOREST - BAY FOREST	0.0
14	WETLAND SAND RIDGE FOREST	0.0
15	ROAD	0.0
16	WETLAND MAINTAINED AREA	0.0
17	UPLAND HERBACEOUS ASSEMBLAGE	0.0
18	UPLAND SHRUB - SCRUB ASSEMBLAGE	0.0
19	UPLAND PINE PLANTATION	0.0
20	UPLAND HARDWOOD FOREST	0.04
21	UPLAND MIXED PINE - HARDWOOD FOREST	1.15
22	UPLAND PINE FOREST	0.0
23	UPLAND SAND RIDGE FOREST	0.0
24	UPLAND AGRICULTURAL LAND	0.10
25	UPLAND NON - VEGETATED/MAINTAINED AREA	0.2
26	WATERS OF THE US AREAS	8.61
27	WETLAND AREAS (WITHOUT PONDS AND CREEKS)	8.61
28	UPLAND AREAS	1.29

Permanent Deed Restriction Prohibiting Mining Cypress Run Modified Alt I - South of 33 PCS PHOSPHATE MINE CONTINUATION	
Scale: As shown	Drawn by: BFG/TLJ
Date: 5/18/09	File: 17454217
Approved by: JPS 3-13-09	532_MBA_TLJ_031309_DEED_RESTRICTIONS_02.DWG



"Walker, William T SAW"
<William.T.Walker@usace.army.mil>

06/05/2009 11:55 AM

To Palmer Hough/DC/USEPA/US@EPA

cc "Lamson, Brooke SAW" <Brooke.Lamson@usace.army.mil>,
"Lekson, David M SAW"

<David.M.Lekson@usace.army.mil>, "Ryscavage, Jefferson"

bcc

Subject RE: PCS ROD

Palmer,

As indicated in our 2/24/09 letter, discussions between the Corps, DWQ and the applicant had resulted in further minimizing impacts of Alternative L from 4,140 acres of Waters of the US to 3,972 acres of Water of the US. At that time total avoidance of waters of the US within the project area was 2,408 acres (1,696 acres further reduced from the EAP boundary, 168 acres further reduced from Alternative L as presented in the FEIS). Through its 401 certification NCDWQ required that all of the avoided area of the SNHA in Bonnerton be put in conservation easement (approximately 174 ac.) along with the area of the "mining corridor" once it is satisfactorily reclaimed. All of that 174 acres is wetland.

Through and after the elevation process, PCS agreed to avoid an additional approximately 111 acres including approximately 51 acres of waters of the US. PCS further agreed to place conservation easements or deed restrictions on an additional 456 acres (630 acres total) in the watersheds of several creeks. The majority but not all of the acreage included in these additional easements was wetland. The proffered permit authorizes impacts to 3,927 acres of Water of the US (3,922 acres within the mining footprint and 5 acres associated with the NC 306 road relocation) including 3,909 acres of wetlands.

We have not broken out acreages of uplands vs. wetlands within these conservation easement areas since the goal of the minimization efforts was to further protect total watershed area and minimize secondary effects on downstream waters. Additionally, we have not broken out acreage inside vs. outside the actual project area boundary since again, minimization of future impacts to these same watersheds was the intent of the easements.

CZR can likely generate these numbers. If you would like us to make this request of them, please let me know. Also, if you have any further questions, feel free to give me a call.

Thanks
Tom Walker
(910) 251-4631

-----Original Message-----

From: Hough.Palmer@epamail.epa.gov [mailto:Hough.Palmer@epamail.epa.gov]
Sent: Thursday, June 04, 2009 3:49 PM
To: Walker, William T SAW
Cc: Lamson, Brooke SAW; Lekson, David M SAW; Ryscavage, Jefferson COL SAW; Moyer, Jennifer A HQ02; Giattina.Jim@epamail.epa.gov; Gaffney-Smith, Margaret E; Fox.Rebecca@epamail.epa.gov; Jolly, Samuel K SAW; Meiburg.Stan@epamail.epa.gov; Welborn.Tom@epamail.epa.gov; Messier.Dawn@epamail.epa.gov; Mancusi-Ungaro.Philip@epamail.epa.gov
Subject: RE: PCS ROD

Tom:

Thanks this is very helpful.

We have also been struggling with one other issue, namely how to accurately characterize just how much acreage on the project site is being preserved via conservation easement and how that compares to what was already preserved on the project site by the State 401 cert before the elevation started. We have not been able to find this data in the ROD. Here is what we have cobbled together based on BPJ. Is there any way to come up with a more definitive estimate of this? Again, we just want to make sure that we are on the same page with the Corps.

-- As of the 2-24-09 proposed permit approximately 174 out of 2333 acres of avoided wetlands were protected via conservation easement
-- As of the 6-3-09 proffered permit approximately 606 out of 2384 acres of avoided wetlands will be protected via conservation easement

Explanation for the 174: this number reflects the areas protected by the State 401 (SNHA on Bonnerton) according to the ROD.

Explanation for the 606: this number reflects the 174 acres 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, 54 acres on the Bonnerton Tract, and 24 acres on the S33 Tract. The Bonnerton and S33 values are an estimate because the Applicant's June 2, 2009, offer includes 1) 228 acres of proposed easement protection along Porter Creek, but the majority of this proposed acreage is not on the Bonnerton Tract and 2) of the 48 acres of proposed easement protection along Cypress Run Creek (S33 Tract), only approximately half of this acreage is on the S33 Tract.

Thanks, Palmer

Palmer F. Hough
US Environmental Protection Agency
Wetlands Division
Room 7231, Mail Code 4502T
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Office: 202-566-1374
Cell: 202-657-3114
FAX: 202-566-1375
E-mail: hough.palmer@epa.gov

Street/Courier Address
USEPA
Palmer Hough
EPA West -- Room 7231-L
Mail Code 4502T
1301 Constitution Avenue, NW
Washington, DC 20460

From: "Walker, William T SAW" <William.T.Walker@usace.army.mil>

To: Palmer Hough/DC/USEPA/US@EPA, "Jolly, Samuel K SAW"

<Samuel.K.Jolly@usace.army.mil>

Cc: "Lamson, Brooke SAW" <Brooke.Lamson@usace.army.mil>, "Lekson,
David M SAW" <David.M.Lekson@usace.army.mil>, "Ryscavage, Jefferson COL SAW"
<Jefferson.Ryscavage@us.army.mil>, "Moyer, Jennifer A HQ02"
<Jennifer.A.Moyer@usace.army.mil>, Jim
Giattina/R4/USEPA/US@EPA, "Gaffney-Smith,
Margaret E" <Meg.E.Gaffney-Smith@usace.army.mil>, Rebecca
Fox/R4/USEPA/US@EPA,
Stan Meiburg/R4/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA

Date: 06/04/2009 03:16 PM

Subject: RE: PCS ROD

Palmer,

Thanks, we have corrected the map date of the "Conservation
Easement - Jacks Creek - Modified Alternative L _ NCPC" to 5/28/09 (see attached) and
included the Cypress Run reference. The 22,435 linear feet of stream impact
is correct and includes the most recent avoidance efforts. We will send the
corrected conditions to everyone shortly.

Thanks
Tom

-----Original Message-----

From: Hough.Palmer@epamail.epa.gov [mailto:Hough.Palmer@epamail.epa.gov]

Sent: Thursday, June 04, 2009 1:29 PM

To: Jolly, Samuel K SAW

Cc: Lamson, Brooke SAW; Lekson, David M SAW; Ryscavage, Jefferson COL SAW;
Moyer, Jennifer A HQ02; Giattina.Jim@epamail.epa.gov; Gaffney-Smith, Margaret
E; Fox.Rebecca@epamail.epa.gov; Meiburg.Stan@epamail.epa.gov;
Welborn.Tom@epamail.epa.gov; Walker, William T SAW

Subject: Re: PCS ROD

Ken:

Thanks for sharing this so quickly. We are reviewing the ROD and have a few
quick questions to make sure we are on the same page.

1) Condition "DD" in the ROD and proffered permit appears to have omitted

reference to the conservation easement for Cypress Run promised by the company in its 6-2-09 proposal. Has this been included somewhere else?

2) Condition "DD" also refers to maps "all dated May 18, 2009". Didn't the company's 6-2-09 proposal increase the amount of acreage protected in the Jacks Creek watershed by 82 acres, necessitating an updated map for that creek?

3) Condition "DD" also noted that the conservation easement maps have been attached. However, we have not been able to locate them in the ROD package.

4) Also the ROD estimates total remaining stream impacts to be 22,435 linear feet which is consistent with the number EPA came up with based on the company's 6-2-09 proposal, however, the Corps' Press Release yesterday reported total remaining stream impacts at 22,082 linear feet. Which is the correct number according to the Corps?

Thanks, Palmer

Palmer F. Hough
US Environmental Protection Agency
Wetlands Division
Room 7231, Mail Code 4502T
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Office: 202-566-1374
Cell: 202-657-3114
FAX: 202-566-1375
E-mail: hough.palmer@epa.gov

Street/Courier Address
USEPA
Palmer Hough
EPA West -- Room 7231-L
Mail Code 4502T
1301 Constitution Avenue, NW
Washington, DC 20460

From: "Jolly, Samuel K SAW" <Samuel.K.Jolly@usace.army.mil>

To: Stan Meiburg/R4/USEPA/US@EPA

Cc: Rebecca Fox/R4/USEPA/US@EPA, Jim Giattina/R4/USEPA/US@EPA,
Tom
Welborn/R4/USEPA/US@EPA, Palmer Hough/DC/USEPA/US@EPA, "Moyer,
Jennifer A HQ02"
<Jennifer.A.Moyer@usace.army.mil>, "Gaffney-Smith, Margaret E"
<Meg.E.Gaffney-Smith@usace.army.mil>, "Smith, Chip R HQDA"
<SmithCR@HQDA.Army.Mil>, "Ryscavage, Jefferson COL SAW"

<Jefferson.Ryscavage@us.army.mil>, "Walker, William T SAW"
<William.T.Walker@usace.army.mil>, "Lekson, David M SAW"
<David.M.Lekson@usace.army.mil>, "Lamson, Brooke SAW"
<Brooke.Lamson@usace.army.mil>

Date: 06/04/2009 10:53 AM

Subject: PCS ROD

<<PCS ROD.pdf>>
Mr. Meiburg,

Attached find a copy of the signed, proffered permit and ROD for PCS Phosphate. PCS has requested we remove condition "EE" which states no work authorized by the permit may begin until 10 days after the ROD is provided to EPA. We will not remove that condition unless you provide written concurrence with such an action.

Ken Jolly
Chief, Regulatory Division
Wilmington District
910-251-4630

[attachment "Proffered Permit.pdf" deleted by Palmer Hough/DC/USEPA/US]
[attachment "PCS ROD.pdf" deleted by Palmer Hough/DC/USEPA/US]

[attachment "EPA-ASA Modified Alt L 06-02-09 Exclusion Easement graphics.pdf" deleted by Palmer Hough/DC/USEPA/US]



William Schlesinger
 <schlesingerw@caryinstitute.org>
 Sent by: Deb Fargione
 <fargioned@caryinstitute.org>

To: Mike Shapiro/DC/USEPA/US@EPA
 cc: Stan Meiburg/R4/USEPA/US@EPA, Jim
 Giattina/R4/USEPA/US@EPA, Gregory
 Peck/DC/USEPA/US@EPA, Suzanne

06/05/2009 03:59 PM

Subject

History: This message has been forwarded.

Dear Mr. Shapiro,

Attached please find my letter relative to the U.S. Army Corps of Engineers' Record of Decision authorizing PCS Phosphate Inc. to expand its surface mine adjacent to the Pamlico River estuary in North Carolina and EPA's consideration of whether to act under its authority in 404(c) of the Clean Water Act to require avoidance of sensitive environmental areas. Hard copies of these document will reach you shortly via U.S. Mail.

Sincerely,

Bill Schlesinger



Cary Institute
 of Ecosystem Studies

Dr. William H. Schlesinger
 President
 Cary Institute of Ecosystem Studies
 PO Box AB; 2801 Sharon Turnpike
 Millbrook NY 12545

P 845-677-5343

F 845-677-5976

Email schlesingerw@caryinstitute.org

Web http://www.caryinstitute.org/people_sci_schlesinger.html



Cary Institute
of Ecosystem Studies

President

William H. Schlesinger

2 June 2009

Mr. Michael Shapiro
Acting Assistant Administrator
U.S. Environmental Protection Agency
Office of Water (4101M)
1200 Pennsylvania Avenue, N.W.
Washington DC 20460

Dear Mr. Shapiro:

Please accept these comments related to the U.S. Army Corps of Engineers' Record of Decision authorizing PCS Phosphate Inc. to expand its surface mine adjacent to the Pamlico River estuary in North Carolina and EPA's consideration of whether to act under its authority in 404(c) of the Clean Water Act to require avoidance of sensitive environmental areas. These comments focus specifically on the Entrix report "Potential Effects of Watershed Reduction on Tidal Creeks – An Assessment" and my concern with the use of this report to justify elimination of headwater streams and adjacent wetlands within the proposed mine expansion.

As a former Dean and professor at the Nicholas School of the Environment at Duke University, I have been aware for many years of the situation with PCS Phosphate's application to expand its mine. Even following the minor changes included in the Corps's record of decision, the current expansion would include mining in 11,343 acres over approximately 35 years and would destroy 3,927 acres of wetlands and 22,435 linear feet of streams, including the headwaters of 4 primary nursery areas. Because of these substantial impacts, EPA, USFWS, NMFS, the South Atlantic Fishery Management Council, NC Wildlife Resources Commission, NC Division of Marine Fisheries, and many environmental groups have raised concerns regarding the scope of the impacts and the expansion into environmentally sensitive areas during the permitting process.

These concerns regarding elimination of watersheds and headwater streams are well-founded; headwater streams, adjacent wetlands, and healthy watersheds are scientifically accepted as fundamental to healthy aquatic ecosystems. The scientific literature is replete with studies recognizing the importance of headwater streams and wetlands in maintaining aquatic ecosystem functions. Based on this scientific understanding of the importance of the very ecological systems PCS's expansion would impact, the mine plan as proposed would have long-term adverse impacts on the Pamlico River estuary.

It is my understanding that the Corps has relied extensively on the Entrix watershed reduction report to support the proposed drainage basin reduction (DBR) for those coastal streams within the project area. Entrix compared Jack's Creek (the most southern watershed in the proposed mine plan) with two "controls." In both cases, Entrix finds that current data from Jack's Creek

does not differ significantly from that of the controls.

The basic premises of these comparisons are fundamentally flawed, rendering the Entrix study essentially useless for its stated purposes in two ways.

First, measurable changes between the current state of a watershed reduced by 51% as compared to the state of the same watershed when it was reduced by only 17% measured 26 years ago are in no way analogous to the changes that can be expected if the watershed is further reduced to only 16% of its original extent. Ecosystem functions have thresholds, and it is very likely that somewhere between the present state of the watershed and its state after reduction to 16%, thresholds will be crossed. Less likely, but nonetheless plausible, some threshold(s) may have been crossed when the basin was reduced by 17% before 26 years ago. Therefore, Jack's Creek 26 years ago cannot be used as a control for a study projecting the state of Jack's Creek after reduction by 84%. If we were to assume that there was a valid analogue here, then we would have to assume that further extrapolation from 16% to zero would be equally harmless, and that coastal streams are simply indentations in the coast, unaffected by inputs of freshwater, DO, and nutrients—a position I cannot imagine any ecologist taking.

Second, because we cannot isolate environmental factors beyond the scope of the Entrix study (e.g. non-DBR land-uses, water pollution – including that from atmospheric deposition, harvesting pressures), we have no way of knowing if other variables have differentially driven the two systems (Jack's Creek and Muddy Creek) toward similarity for the variables Entrix did choose. Similarity resulting from different causes is a common characteristic of disturbed systems. For example, many different kinds of disturbances can stimulate dominance by the same highly adaptable or invasive species. So, the present conditions of Muddy Creek and Jack's Creek are probably not similar to original conditions and may be similar to each other for reasons other than or in addition to DBR. Therefore Muddy Creek cannot reasonably be used as a control for Jack's Creek as modified by DBR over the decades.

Even if one accepted the flawed premises of the Entrix study design, the choice of variables results in severe limitations that prevent this report from overcoming the general understanding of the scientific community regarding the importance of these systems to continued viability of aquatic systems. The report first errs in omitting an age or size distribution for species sampled. Four of the creeks affected are designated primary nursery areas – waters identified by the State of North Carolina as providing essential habitat for juvenile finfish and shellfish – yet the report does not identify how this particularly vulnerable subset of the overall aquatic community has been affected by previous reductions. To demonstrate that the primary nursery functions of these areas will continue, the report must address the reproductive success of species in impacted streams and the development of juveniles in those streams. Otherwise, the report cannot ensure that species presence is not due to immigration by adult fish from elsewhere within the estuary.

The report's benthic sampling also presents an incomplete picture. Although it confirms that certain species are present, it does not include appropriate abundance data. Therefore, the report cannot provide a basis for concluding that the stream system has not been affected because species that are present, but at significantly reduced levels, may not perform the same function

within the system leading to imbalances that will ultimately affect higher trophic levels. This shortcoming is not ameliorated by the abundance data in figures 2-4b and 2-5b, since the report itself acknowledges the limitations of those data preclude statistical analysis.

Finally, the water quality parameters are too limited to overcome the expectation that the substantial watershed alterations proposed will not affect water quality. Given the nature of PCS's mining process, water quality sampling should include analyses of dissolved phosphorus, sulfate, cadmium, and other trace metals and fluorine that may be concentrated through PCS's mining and ore beneficiation processes.

The Pamlico River is an integral part of the nationally renowned Albemarle-Pamlico Estuary. The decision made by the Army Corps of Engineers threatens to upset the balance of the system and will ensure long-term harm to the river. The impacts proposed – substantial elimination of headwater streams and riparian wetlands – go against basic scientific understanding regarding the protection of aquatic ecosystems. It is my understanding that the Corps has relied on the Entrix watershed reduction report to overcome this body of scientific knowledge and the unanimous objection to this project from resource agencies. For the reasons I describe above, this report is fundamentally flawed in both its conception and in its execution, and it does not merit the weight given to it in this important permitting decision. I therefore urge the EPA to exercise its full authority under the Clean Water Act to protect the headwater streams and riparian wetlands that are essential to the continued vitality of the Pamlico River.

Sincerely,



William H. Schlesinger
President

WILLIAM H. SCHLESINGER
PRESIDENT

CARY INSTITUTE OF ECOSYSTEM STUDIES • MILLBROOK • NEW YORK

On 1 June 2007, William H. Schlesinger was named President of the Cary Institute of Ecosystem Studies, a private ecological research institute on the grounds of the Cary Arboretum in Millbrook, NY. He assumed this position after 27 years on the faculty of Duke University. Completing his A.B. at Dartmouth (1972), and Ph.D. at Cornell (1976), he moved to Duke in 1980, where he retired in spring 2007 as Dean of the Nicholas School of the Environment and Earth Sciences and as James B. Duke Professor of Biogeochemistry.

He is the author or coauthor of over 200 scientific papers on subjects of environmental chemistry and global change and the widely-adopted textbook *Biogeochemistry: An analysis of global change* (Academic Press, 2nd ed. 1997). He has published editorials and columns in the *Charlotte Observer*, *Chicago Tribune*, *Los Angeles Times*, *Philadelphia Inquirer*, and the *Raleigh News and Observer*.

Schlesinger was among the first to quantify the amount of carbon held in soil organic matter globally, providing subsequent estimates of the role of soils and human impacts on forests and soils in global climate change. He was elected a member of The National Academy of Sciences in 2003, and was President of the Ecological Society of America for 2003-2004. He is also a fellow in the American Academy of Arts and Sciences, the American Geophysical Union, and the Soil Science Society of America.

His past work has taken him to diverse habitats, ranging from Okefenokee Swamp in southern Georgia to the Mojave Desert of California, and three times as a Duke alumni tour guide to Antarctica. His research has been featured on NOVA, CNN, NPR, and on the pages of *Discover*, *National Geographic*, the *New York Times*, and *Scientific American*. Schlesinger has testified before U.S. House and Senate Committees on a variety of environmental issues, including preservation of desert habitats, global climate change and carbon sequestration.

Schlesinger currently serves on the Board of Trustees for the Doris Duke Charitable Foundation (New York) and the Southern Environmental Law Center (Charlottesville) and on the Board of Scientific Advisors for Terrapass LLC (San Francisco).

He and his wife, Lisa, live in Millbrook, where they enjoy birdwatching, gourmet cooking, and collecting southwestern art.



Geoff Gisler
<ggisler@senc.org>
06/05/2009 04:11 PM

To LisaP Jackson/DC/USEPA/US@EPA
cc Mike Shapiro/DC/USEPA/US@EPA, Stan
Meiburg/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Gregory
bcc

Subject PCS Phosphate - Largest destruction of wetlands in NC
under Clean Water Act

History: This message has been forwarded.

Administrator, Jackson,

I write to bring to your attention a permit issued by the Wilmington District of the U.S. Army Corps of Engineers on Wednesday, June 3, authorizing the largest permitted wetland destruction in North Carolina history, totaling nearly 4,000 acres. The wetlands that would be destroyed by the approved strip mine are on the banks of the Pamlico River, a central part of the Albemarle-Pamlico Estuary. The wetlands surround and support tidal creeks that are primary fishery nursery areas and include one of the five best remaining examples of a globally rare wetland community type. In April, EPA Region IV elevated this permit decision to the U.S. Army Corps of Engineers Headquarters stating that the permit violated the Clean Water Act 404(b)(1) Guidelines and made specific recommendations to mend those violations. The permit issued Wednesday almost completely ignored those recommendations, avoiding only 44 additional acres of wetlands. On behalf of the Pamlico-Tar River Foundation, Environmental Defense Fund, Sierra Club, and North Carolina Coastal Federation, we respectfully request that EPA initiate veto proceedings under Section 404(c) of the Clean Water Act.

Sincerely,

Geoff Gisler
Staff Attorney
Southern Environmental Law Center
200 W. Franklin St. Suite 330
Chapel Hill, NC 27516
Ph: (919) 967-1450
Fax: (919) 929-9421
www.southernenvironment.org

This electronic message and any attached files are confidential and are intended solely for the use of the addressee(s) named above. This communication may contain material protected by attorney-client, work product or other privileges. If you are not the intended recipient or person responsible for delivering this confidential communication to the intended recipient(s), and/or you have received this communication in error, then any review, use, dissemination, forwarding, printing, copying or other distribution of this email message and any attached files is strictly prohibited. If you have received this confidential communication in error, please notify the sender immediately by reply email message and permanently delete the original message

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450
Facsimile 919-929-9421
selcnc@selcnc.org

200 WEST FRANKLIN STREET, SUITE 330
CHAPEL HILL, NC 27516-2559

Charlottesville, VA
Chapel Hill, NC
Atlanta, GA
Asheville, NC
Charleston, SC
Richmond, VA
Washington, DC

June 5, 2009

Honorable Lisa Jackson
Administrator
Environmental Protection Agency
Washington, DC

Re: EPA veto of PCS Phosphate Permit in North Carolina

Dear Administrator Jackson:

The Acting Regional Administrator of EPA Region IV has elevated to EPA Headquarters a proposed permit under Section 404 of the Clean Water Act that, if issued, would authorize the largest wetland destruction in the history of the permitting program in North Carolina. The wetlands that would be destroyed are adjacent to the Pamlico Sound estuary and provide critical functions in maintaining the water quality and fisheries in this estuary which has been designated by Congress and EPA as an estuary of national importance. We appreciate your commitment to protection of our nation's wetlands and the important economic and environmental values they provide. Last month, you wrote to Senator Boxer that "as we work to meet goals for wetlands protection nationwide, we need to identify opportunities to expand protection of wetlands and other aquatic resources that are especially vulnerable or critical to sustaining the health of [aquatic] systems." On behalf of the Environmental Defense Fund, Sierra Club, North Carolina Coastal Federation, and Pamlico Tar River Foundation, we respectfully request that you exercise your authority to veto the permit in order to protect the nation's waters and wetlands from significant degradation. EPA's veto would allow uninterrupted mining to continue for at least 29 years without unacceptable adverse impacts to wetlands, water quality, and fisheries.

On April 3, 2009, EPA determined that, unless specified actions are taken to avoid particularly critical wetlands, the permit the Corps of Engineers proposed to issue to PCS Phosphate would violate EPA's 404(b) Guidelines for wetland permits and result in "unacceptable adverse impacts to aquatic resources of national significance." Specifically, EPA concluded the proposed permit "would result in substantial and unacceptable impacts to waters of the United States, including wetlands, in the Albemarle Pamlico River estuary system." This violation of EPA's Guidelines would trigger EPA's duty to veto the permit under Section 404(c). EPA's letter to the Corps clearly identified the unacceptable adverse impacts that would occur if the permit issued and EPA equally clearly identified the actions required to avoid these impacts and prevent significant degradation of waters and wetlands.

On June 3, 2009, the Wilmington District of the Corps issued the permit, inadequately responding to all of EPA's requested actions to avoid significant degradation of waters and completely failing to respond to some. To avoid unacceptable adverse impacts:

- EPA requested no further drainage basin reductions of primary fishery nursery areas; the permit will allow substantial additional drainage basin reductions of all primary nursery areas.
- EPA requested avoidance of an additional 1,166 acres of wetlands to reduce impacts to acceptable levels; the permit only avoids an additional 44 acres.
- EPA requested complete avoidance of the identified rare wetlands of national ecological significance; the permit will allow destruction of these wetlands.
- EPA concluded that the proposed compensatory mitigation would not reduce impacts to an acceptable level; the permit includes no additional restoration of wetlands to compensate for impacts.

The proposed permit includes monitoring provisions to attempt to document water quality impacts of the mining. EPA's Guidelines require *prevention* of significant degradation of waters, not documentation of its occurrence. In sum, the Corps's proposed permit almost completely ignores EPA's concerns and specific requested actions to ensure the project will not result in unacceptable adverse impacts to the nation's waters and wetlands.

Since the Corps failed to respond to EPA's concerns and failed to incorporate the actions required to reduce these impacts to acceptable levels, EPA has a duty to veto the permit under Section 404(c).

Sincerely yours,



Derb S. Carter, Jr.
Senior Attorney
Director NC/SC Office

cc Environmental Defense Fund
Sierra Club
North Carolina Coastal Federation
Pamlico Tar River Foundation

Stan Meiburg /R4/USEPA/US
06/05/2009 05:31 PM

To Jefferson.Ryscavage@us.army.mil
cc giattina.jim@epa.gov
bcc gordon.scott@epa.gov
Subject

Jeff, since I don't think he cc'd you on this, just wanted to pass this on.

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

----- Forwarded by Stan Meiburg/R4/USEPA/US on 06/05/2009 05:30 PM -----



William Schlesinger
<schlesingerw@caryinstitute.org>
Sent by: Deb Fargione
<fargioned@caryinstitute.org>

06/05/2009 03:59 PM

To Mike Shapiro/DC/USEPA/US@EPA
cc Stan Meiburg/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Gregory
Peck/DC/USEPA/US@EPA, Suzanne
Schwartz/DC/USEPA/US@EPA, Palmer
Hough/DC/USEPA/US@EPA, Tom
Welborn/R4/USEPA/US@EPA, David
Evans/DC/USEPA/US@EPA, Robert
Wood/DC/USEPA/US@EPA, Dawn
Messier/DC/USEPA/US@EPA, Jennifer
Derby/R4/USEPA/US@EPA, Rebecca
Fox/R4/USEPA/US@EPA

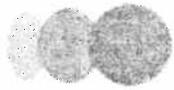
Subject

Dear Mr. Shapiro,

Attached please find my letter relative to the U.S. Army Corps of Engineers' Record of Decision authorizing PCS Phosphate Inc. to expand its surface mine adjacent to the Pamlico River estuary in North Carolina and EPA's consideration of whether to act under its authority in 404(c) of the Clean Water Act to require avoidance of sensitive environmental areas. Hard copies of these document will reach you shortly via U.S. Mail.

Sincerely,

Bill Schlesinger



Cary Institute
of Ecosystem Studies

Dr. William H. Schlesinger
President
Cary Institute of Ecosystem Studies
PO Box AB; 2801 Sharon Turnpike
Millbrook NY 12545

P 845-677-5343

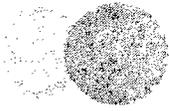
F 845-677-5976

Email schlesingerw@caryinstitute.org

Web http://www.caryinstitute.org/people_sci_schlesinger.html



Shapiro_Entrix_2Jun09.pdf Shortbio_WHS_2Jun09.DOC



Cary Institute
of Ecosystem Studies

President

William H. Schlesinger

2 June 2009

Mr. Michael Shapiro
Acting Assistant Administrator
U.S. Environmental Protection Agency
Office of Water (4101M)
1200 Pennsylvania Avenue, N.W.
Washington DC 20460

Dear Mr. Shapiro:

Please accept these comments related to the U.S. Army Corps of Engineers' Record of Decision authorizing PCS Phosphate Inc. to expand its surface mine adjacent to the Pamlico River estuary in North Carolina and EPA's consideration of whether to act under its authority in 404(c) of the Clean Water Act to require avoidance of sensitive environmental areas. These comments focus specifically on the Entrix report "Potential Effects of Watershed Reduction on Tidal Creeks – An Assessment" and my concern with the use of this report to justify elimination of headwater streams and adjacent wetlands within the proposed mine expansion.

As a former Dean and professor at the Nicholas School of the Environment at Duke University, I have been aware for many years of the situation with PCS Phosphate's application to expand its mine. Even following the minor changes included in the Corps's record of decision, the current expansion would include mining in 11,343 acres over approximately 35 years and would destroy 3,927 acres of wetlands and 22,435 linear feet of streams, including the headwaters of 4 primary nursery areas. Because of these substantial impacts, EPA, USFWS, NMFS, the South Atlantic Fishery Management Council, NC Wildlife Resources Commission, NC Division of Marine Fisheries, and many environmental groups have raised concerns regarding the scope of the impacts and the expansion into environmentally sensitive areas during the permitting process.

These concerns regarding elimination of watersheds and headwater streams are well-founded; headwater streams, adjacent wetlands, and healthy watersheds are scientifically accepted as fundamental to healthy aquatic ecosystems. The scientific literature is replete with studies recognizing the importance of headwater streams and wetlands in maintaining aquatic ecosystem functions. Based on this scientific understanding of the importance of the very ecological systems PCS's expansion would impact, the mine plan as proposed would have long-term adverse impacts on the Pamlico River estuary.

It is my understanding that the Corps has relied extensively on the Entrix watershed reduction report to support the proposed drainage basin reduction (DBR) for those coastal streams within the project area. Entrix compared Jack's Creek (the most southern watershed in the proposed mine plan) with two "controls." In both cases, Entrix finds that current data from Jack's Creek

does not differ significantly from that of the controls.

The basic premises of these comparisons are fundamentally flawed, rendering the Entrix study essentially useless for its stated purposes in two ways.

First, measurable changes between the current state of a watershed reduced by 51% as compared to the state of the same watershed when it was reduced by only 17% measured 26 years ago are in no way analogous to the changes that can be expected if the watershed is further reduced to only 16% of its original extent. Ecosystem functions have thresholds, and it is very likely that somewhere between the present state of the watershed and its state after reduction to 16%, thresholds will be crossed. Less likely, but nonetheless plausible, some threshold(s) may have been crossed when the basin was reduced by 17% before 26 years ago. Therefore, Jack's Creek 26 years ago cannot be used as a control for a study projecting the state of Jack's Creek after reduction by 84%. If we were to assume that there was a valid analogue here, then we would have to assume that further extrapolation from 16% to zero would be equally harmless, and that coastal streams are simply indentations in the coast, unaffected by inputs of freshwater, DO, and nutrients—a position I cannot imagine any ecologist taking.

Second, because we cannot isolate environmental factors beyond the scope of the Entrix study (e.g. non-DBR land-uses, water pollution – including that from atmospheric deposition, harvesting pressures), we have no way of knowing if other variables have differentially driven the two systems (Jack's Creek and Muddy Creek) toward similarity for the variables Entrix did choose. Similarity resulting from different causes is a common characteristic of disturbed systems. For example, many different kinds of disturbances can stimulate dominance by the same highly adaptable or invasive species. So, the present conditions of Muddy Creek and Jack's Creek are probably not similar to original conditions and may be similar to each other for reasons other than or in addition to DBR. Therefore Muddy Creek cannot reasonably be used as a control for Jack's Creek as modified by DBR over the decades.

Even if one accepted the flawed premises of the Entrix study design, the choice of variables results in severe limitations that prevent this report from overcoming the general understanding of the scientific community regarding the importance of these systems to continued viability of aquatic systems. The report first errs in omitting an age or size distribution for species sampled. Four of the creeks affected are designated primary nursery areas – waters identified by the State of North Carolina as providing essential habitat for juvenile finfish and shellfish – yet the report does not identify how this particularly vulnerable subset of the overall aquatic community has been affected by previous reductions. To demonstrate that the primary nursery functions of these areas will continue, the report must address the reproductive success of species in impacted streams and the development of juveniles in those streams. Otherwise, the report cannot ensure that species presence is not due to immigration by adult fish from elsewhere within the estuary.

The report's benthic sampling also presents an incomplete picture. Although it confirms that certain species are present, it does not include appropriate abundance data. Therefore, the report cannot provide a basis for concluding that the stream system has not been affected because species that are present, but at significantly reduced levels, may not perform the same function

within the system leading to imbalances that will ultimately affect higher trophic levels. This shortcoming is not ameliorated by the abundance data in figures 2-4b and 2-5b, since the report itself acknowledges the limitations of those data preclude statistical analysis.

Finally, the water quality parameters are too limited to overcome the expectation that the substantial watershed alterations proposed will not affect water quality. Given the nature of PCS's mining process, water quality sampling should include analyses of dissolved phosphorus, sulfate, cadmium, and other trace metals and fluorine that may be concentrated through PCS's mining and ore beneficiation processes.

The Pamlico River is an integral part of the nationally renowned Albemarle-Pamlico Estuary. The decision made by the Army Corps of Engineers threatens to upset the balance of the system and will ensure long-term harm to the river. The impacts proposed – substantial elimination of headwater streams and riparian wetlands – go against basic scientific understanding regarding the protection of aquatic ecosystems. It is my understanding that the Corps has relied on the Entrix watershed reduction report to overcome this body of scientific knowledge and the unanimous objection to this project from resource agencies. For the reasons I describe above, this report is fundamentally flawed in both its conception and in its execution, and it does not merit the weight given to it in this important permitting decision. I therefore urge the EPA to exercise its full authority under the Clean Water Act to protect the headwater streams and riparian wetlands that are essential to the continued vitality of the Pamlico River.

Sincerely,



William H. Schlesinger
President

WILLIAM H. SCHLESINGER
PRESIDENT

CARY INSTITUTE OF ECOSYSTEM STUDIES • MILLBROOK • NEW YORK

On 1 June 2007, William H. Schlesinger was named President of the Cary Institute of Ecosystem Studies, a private ecological research institute on the grounds of the Cary Arboretum in Millbrook, NY. He assumed this position after 27 years on the faculty of Duke University. Completing his A.B. at Dartmouth (1972), and Ph.D. at Cornell (1976), he moved to Duke in 1980, where he retired in spring 2007 as Dean of the Nicholas School of the Environment and Earth Sciences and as James B. Duke Professor of Biogeochemistry.

He is the author or coauthor of over 200 scientific papers on subjects of environmental chemistry and global change and the widely-adopted textbook *Biogeochemistry: An analysis of global change* (Academic Press, 2nd ed. 1997). He has published editorials and columns in the *Charlotte Observer*, *Chicago Tribune*, *Los Angeles Times*, *Philadelphia Inquirer*, and the *Raleigh News and Observer*.

Schlesinger was among the first to quantify the amount of carbon held in soil organic matter globally, providing subsequent estimates of the role of soils and human impacts on forests and soils in global climate change. He was elected a member of The National Academy of Sciences in 2003, and was President of the Ecological Society of America for 2003-2004. He is also a fellow in the American Academy of Arts and Sciences, the American Geophysical Union, and the Soil Science Society of America.

His past work has taken him to diverse habitats, ranging from Okefenokee Swamp in southern Georgia to the Mojave Desert of California, and three times as a Duke alumni tour guide to Antarctica. His research has been featured on NOVA, CNN, NPR, and on the pages of *Discover*, *National Geographic*, the *New York Times*, and *Scientific American*. Schlesinger has testified before U.S. House and Senate Committees on a variety of environmental issues, including preservation of desert habitats, global climate change and carbon sequestration.

Schlesinger currently serves on the Board of Trustees for the Doris Duke Charitable Foundation (New York) and the Southern Environmental Law Center (Charlottesville) and on the Board of Scientific Advisors for Terrapass LLC (San Francisco).

He and his wife, Lisa, live in Millbrook, where they enjoy birdwatching, gourmet cooking, and collecting southwestern art.

Stan Meiburg /R4/USEPA/US
06/05/2009 05:46 PM

To Jefferson.Ryscavage@us.army.mil, giattina.jim@epa.gov,
Tom Welborn
cc
bcc sam_hamilton@fws.gov
Subject Fw: PCS Phosphate - Largest destruction of wetlands in NC
under Clean Water Act

Another incoming letter.

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

----- Forwarded by Stan Meiburg/R4/USEPA/US on 06/05/2009 05:45 PM -----



Geoff Gisler
<ggisler@selcnc.org>
06/05/2009 04:11 PM

To LisaP Jackson/DC/USEPA/US@EPA
cc Mike Shapiro/DC/USEPA/US@EPA, Stan
Meiburg/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Gregory
Peck/DC/USEPA/US@EPA, Suzanne
Schwartz/DC/USEPA/US@EPA, Palmer
Hough/DC/USEPA/US@EPA, Tom
Welborn/R4/USEPA/US@EPA, David
Evans/DC/USEPA/US@EPA, Robert
Wood/DC/USEPA/US@EPA, Dawn
Messier/DC/USEPA/US@EPA, Jennifer
Derby/R4/USEPA/US@EPA, Rebecca
Fox/R4/USEPA/US@EPA, "Pete_Benjamin@fws.gov"
<Pete_Benjamin@fws.gov>, "Mike_Wicker@fws.gov"
<Mike_Wicker@fws.gov>, Derb Carter <derbc@selcnc.org>
Subject PCS Phosphate - Largest destruction of wetlands in NC
under Clean Water Act

Administrator Jackson,

I write to bring to your attention a permit issued by the Wilmington District of the U.S. Army Corps of Engineers on Wednesday, June 3, authorizing the largest permitted wetland destruction in North Carolina history, totaling nearly 4,000 acres. The wetlands that would be destroyed by the approved strip mine are on the banks of the Pamlico River, a central part of the Albemarle-Pamlico Estuary. The wetlands surround and support tidal creeks that are primary fishery nursery areas and include one of the five best remaining examples of a globally

rare wetland community type. In April, EPA Region IV elevated this permit decision to the U.S. Army Corps of Engineers Headquarters stating that the permit violated the Clean Water Act 404(b)(1) Guidelines and made specific recommendations to mend those violations. The permit issued Wednesday almost completely ignored those recommendations, avoiding only 44 additional acres of wetlands. On behalf of the Pamlico-Tar River Foundation, Environmental Defense Fund, Sierra Club, and North Carolina Coastal Federation, we respectfully request that EPA initiate veto proceedings under Section 404(c) of the Clean Water Act.

Sincerely,

Geoff Gisler
Staff Attorney
Southern Environmental Law Center
200 W. Franklin St. Suite 330
Chapel Hill, NC 27516
Ph: (919) 967-1450
Fax: (919) 929-9421
www.southernenvironment.org

This electronic message and any attached files are confidential and are intended solely for the use of the addressee(s) named above. This communication may contain material protected by attorney-client, work product or other privileges. If you are not the intended recipient or person responsible for delivering this confidential communication to the intended recipient(s), and/or you have received this communication in error, then any review, use, dissemination, forwarding, printing, copying or other distribution of this email message and any attached files is strictly prohibited. If you have received this confidential communication in error, please notify the sender immediately by reply email message and permanently delete the original message.



06-05-09 PCS Phosphate veto request.pdf

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450
Facsimile 919-929-9421
selcnc@selcnc.org

200 WEST FRANKLIN STREET, SUITE 330
CHAPEL HILL, NC 27516-2559

Charlottesville, VA
Chapel Hill, NC
Atlanta, GA
Asheville, NC
Charleston, SC
Richmond, VA
Washington, DC

June 5, 2009

Honorable Lisa Jackson
Administrator
Environmental Protection Agency
Washington, DC

Re: EPA veto of PCS Phosphate Permit in North Carolina

Dear Administrator Jackson:

The Acting Regional Administrator of EPA Region IV has elevated to EPA Headquarters a proposed permit under Section 404 of the Clean Water Act that, if issued, would authorize the largest wetland destruction in the history of the permitting program in North Carolina. The wetlands that would be destroyed are adjacent to the Pamlico Sound estuary and provide critical functions in maintaining the water quality and fisheries in this estuary which has been designated by Congress and EPA as an estuary of national importance. We appreciate your commitment to protection of our nation's wetlands and the important economic and environmental values they provide. Last month, you wrote to Senator Boxer that "as we work to meet goals for wetlands protection nationwide, we need to identify opportunities to expand protection of wetlands and other aquatic resources that are especially vulnerable or critical to sustaining the health of [aquatic] systems." On behalf of the Environmental Defense Fund, Sierra Club, North Carolina Coastal Federation, and Pamlico Tar River Foundation, we respectfully request that you exercise your authority to veto the permit in order to protect the nation's waters and wetlands from significant degradation. EPA's veto would allow uninterrupted mining to continue for at least 29 years without unacceptable adverse impacts to wetlands, water quality, and fisheries.

On April 3, 2009, EPA determined that, unless specified actions are taken to avoid particularly critical wetlands, the permit the Corps of Engineers proposed to issue to PCS Phosphate would violate EPA's 404(b) Guidelines for wetland permits and result in "unacceptable adverse impacts to aquatic resources of national significance." Specifically, EPA concluded the proposed permit "would result in substantial and unacceptable impacts to waters of the United States, including wetlands, in the Albemarle Pamlico River estuary system." This violation of EPA's Guidelines would trigger EPA's duty to veto the permit under Section 404(c). EPA's letter to the Corps clearly identified the unacceptable adverse impacts that would occur if the permit issued and EPA equally clearly identified the actions required to avoid these impacts and prevent significant degradation of waters and wetlands.

On June 3, 2009, the Wilmington District of the Corps issued the permit, inadequately responding to all of EPA's requested actions to avoid significant degradation of waters and completely failing to respond to some. To avoid unacceptable adverse impacts:

- EPA requested no further drainage basin reductions of primary fishery nursery areas; the permit will allow substantial additional drainage basin reductions of all primary nursery areas.
- EPA requested avoidance of an additional 1,166 acres of wetlands to reduce impacts to acceptable levels; the permit only avoids an additional 44 acres.
- EPA requested complete avoidance of the identified rare wetlands of national ecological significance; the permit will allow destruction of these wetlands.
- EPA concluded that the proposed compensatory mitigation would not reduce impacts to an acceptable level; the permit includes no additional restoration of wetlands to compensate for impacts.

The proposed permit includes monitoring provisions to attempt to document water quality impacts of the mining. EPA's Guidelines require *prevention* of significant degradation of waters, not documentation of its occurrence. In sum, the Corps's proposed permit almost completely ignores EPA's concerns and specific requested actions to ensure the project will not result in unacceptable adverse impacts to the nation's waters and wetlands.

Since the Corps failed to respond to EPA's concerns and failed to incorporate the actions required to reduce these impacts to acceptable levels, EPA has a duty to veto the permit under Section 404(c).

Sincerely yours,



Derb S. Carter, Jr.
Senior Attorney
Director NC/SC Office

cc Environmental Defense Fund
Sierra Club
North Carolina Coastal Federation
Pamlico Tar River Foundation

Stan Meiburg /R4/USEPA/US
06/05/2009 05:47 PM

To sam_hamilton@fws.gov
cc
bcc
Subject PCS

Thought you'd find this interesting--noted that you weren't cc'd.

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

----- Forwarded by Stan Meiburg/R4/USEPA/US on 06/05/2009 05:46 PM -----



William Schlesinger
<schlesingerw@caryinstitute.org>
Sent by: Deb Fargione
<fargioned@caryinstitute.org>

06/05/2009 03:59 PM

To Mike Shapiro/DC/USEPA/US@EPA
cc Stan Meiburg/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Gregory
Peck/DC/USEPA/US@EPA, Suzanne
Schwartz/DC/USEPA/US@EPA, Palmer
Hough/DC/USEPA/US@EPA, Tom
Welborn/R4/USEPA/US@EPA, David
Evans/DC/USEPA/US@EPA, Robert
Wood/DC/USEPA/US@EPA, Dawn
Messier/DC/USEPA/US@EPA, Jennifer
Derby/R4/USEPA/US@EPA, Rebecca
Fox/R4/USEPA/US@EPA

Subject

Dear Mr. Shapiro,

Attached please find my letter relative to the U.S. Army Corps of Engineers' Record of Decision authorizing PCS Phosphate Inc. to expand its surface mine adjacent to the Pamlico River estuary in North Carolina and EPA's consideration of whether to act under its authority in 404(c) of the Clean Water Act to require avoidance of sensitive environmental areas. Hard copies of these document will reach you shortly via U.S. Mail.

Sincerely,

Bill Schlesinger



Cary Institute
of Ecosystem Studies

Dr. William H. Schlesinger
President
Cary Institute of Ecosystem Studies
PO Box AB; 2801 Sharon Turnpike
Millbrook NY 12545

P 845-677-5343

F 845-677-5976

Email schlesingerw@caryinstitute.org

Web http://www.caryinstitute.org/people_sci_schlesinger.html



Shapiro_Entrix_2Jun09.pdf Shortbio_WHS_2Jun09.DOC



Cary Institute
of Ecosystem Studies

President

William H. Schlesinger

2 June 2009

Mr. Michael Shapiro
Acting Assistant Administrator
U.S. Environmental Protection Agency
Office of Water (4101M)
1200 Pennsylvania Avenue, N.W.
Washington DC 20460

Dear Mr. Shapiro:

Please accept these comments related to the U.S. Army Corps of Engineers' Record of Decision authorizing PCS Phosphate Inc. to expand its surface mine adjacent to the Pamlico River estuary in North Carolina and EPA's consideration of whether to act under its authority in 404(c) of the Clean Water Act to require avoidance of sensitive environmental areas. These comments focus specifically on the Entrix report "Potential Effects of Watershed Reduction on Tidal Creeks – An Assessment" and my concern with the use of this report to justify elimination of headwater streams and adjacent wetlands within the proposed mine expansion.

As a former Dean and professor at the Nicholas School of the Environment at Duke University, I have been aware for many years of the situation with PCS Phosphate's application to expand its mine. Even following the minor changes included in the Corps's record of decision, the current expansion would include mining in 11,343 acres over approximately 35 years and would destroy 3,927 acres of wetlands and 22,435 linear feet of streams, including the headwaters of 4 primary nursery areas. Because of these substantial impacts, EPA, USFWS, NMFS, the South Atlantic Fishery Management Council, NC Wildlife Resources Commission, NC Division of Marine Fisheries, and many environmental groups have raised concerns regarding the scope of the impacts and the expansion into environmentally sensitive areas during the permitting process.

These concerns regarding elimination of watersheds and headwater streams are well-founded; headwater streams, adjacent wetlands, and healthy watersheds are scientifically accepted as fundamental to healthy aquatic ecosystems. The scientific literature is replete with studies recognizing the importance of headwater streams and wetlands in maintaining aquatic ecosystem functions. Based on this scientific understanding of the importance of the very ecological systems PCS's expansion would impact, the mine plan as proposed would have long-term adverse impacts on the Pamlico River estuary.

It is my understanding that the Corps has relied extensively on the Entrix watershed reduction report to support the proposed drainage basin reduction (DBR) for those coastal streams within the project area. Entrix compared Jack's Creek (the most southern watershed in the proposed mine plan) with two "controls." In both cases, Entrix finds that current data from Jack's Creek

does not differ significantly from that of the controls.

The basic premises of these comparisons are fundamentally flawed, rendering the Entrix study essentially useless for its stated purposes in two ways.

First, measurable changes between the current state of a watershed reduced by 51% as compared to the state of the same watershed when it was reduced by only 17% measured 26 years ago are in no way analogous to the changes that can be expected if the watershed is further reduced to only 16% of its original extent. Ecosystem functions have thresholds, and it is very likely that somewhere between the present state of the watershed and its state after reduction to 16%, thresholds will be crossed. Less likely, but nonetheless plausible, some threshold(s) may have been crossed when the basin was reduced by 17% before 26 years ago. Therefore, Jack's Creek 26 years ago cannot be used as a control for a study projecting the state of Jack's Creek after reduction by 84%. If we were to assume that there was a valid analogue here, then we would have to assume that further extrapolation from 16% to zero would be equally harmless, and that coastal streams are simply indentations in the coast, unaffected by inputs of freshwater, DO, and nutrients—a position I cannot imagine any ecologist taking.

Second, because we cannot isolate environmental factors beyond the scope of the Entrix study (e.g. non-DBR land-uses, water pollution – including that from atmospheric deposition, harvesting pressures), we have no way of knowing if other variables have differentially driven the two systems (Jack's Creek and Muddy Creek) toward similarity for the variables Entrix did choose. Similarity resulting from different causes is a common characteristic of disturbed systems. For example, many different kinds of disturbances can stimulate dominance by the same highly adaptable or invasive species. So, the present conditions of Muddy Creek and Jack's Creek are probably not similar to original conditions and may be similar to each other for reasons other than or in addition to DBR. Therefore Muddy Creek cannot reasonably be used as a control for Jack's Creek as modified by DBR over the decades.

Even if one accepted the flawed premises of the Entrix study design, the choice of variables results in severe limitations that prevent this report from overcoming the general understanding of the scientific community regarding the importance of these systems to continued viability of aquatic systems. The report first errs in omitting an age or size distribution for species sampled. Four of the creeks affected are designated primary nursery areas – waters identified by the State of North Carolina as providing essential habitat for juvenile finfish and shellfish – yet the report does not identify how this particularly vulnerable subset of the overall aquatic community has been affected by previous reductions. To demonstrate that the primary nursery functions of these areas will continue, the report must address the reproductive success of species in impacted streams and the development of juveniles in those streams. Otherwise, the report cannot ensure that species presence is not due to immigration by adult fish from elsewhere within the estuary.

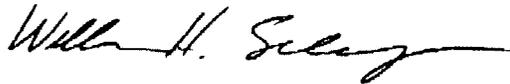
The report's benthic sampling also presents an incomplete picture. Although it confirms that certain species are present, it does not include appropriate abundance data. Therefore, the report cannot provide a basis for concluding that the stream system has not been affected because species that are present, but at significantly reduced levels, may not perform the same function

within the system leading to imbalances that will ultimately affect higher trophic levels. This shortcoming is not ameliorated by the abundance data in figures 2-4b and 2-5b, since the report itself acknowledges the limitations of those data preclude statistical analysis.

Finally, the water quality parameters are too limited to overcome the expectation that the substantial watershed alterations proposed will not affect water quality. Given the nature of PCS's mining process, water quality sampling should include analyses of dissolved phosphorus, sulfate, cadmium, and other trace metals and fluorine that may be concentrated through PCS's mining and ore beneficiation processes.

The Pamlico River is an integral part of the nationally renowned Albemarle-Pamlico Estuary. The decision made by the Army Corps of Engineers threatens to upset the balance of the system and will ensure long-term harm to the river. The impacts proposed – substantial elimination of headwater streams and riparian wetlands – go against basic scientific understanding regarding the protection of aquatic ecosystems. It is my understanding that the Corps has relied on the Entrix watershed reduction report to overcome this body of scientific knowledge and the unanimous objection to this project from resource agencies. For the reasons I describe above, this report is fundamentally flawed in both its conception and in its execution, and it does not merit the weight given to it in this important permitting decision. I therefore urge the EPA to exercise its full authority under the Clean Water Act to protect the headwater streams and riparian wetlands that are essential to the continued vitality of the Pamlico River.

Sincerely,



William H. Schlesinger
President

WILLIAM H. SCHLESINGER
PRESIDENT

CARY INSTITUTE OF ECOSYSTEM STUDIES • MILLBROOK • NEW YORK

On 1 June 2007, William H. Schlesinger was named President of the Cary Institute of Ecosystem Studies, a private ecological research institute on the grounds of the Cary Arboretum in Millbrook, NY. He assumed this position after 27 years on the faculty of Duke University. Completing his A.B. at Dartmouth (1972), and Ph.D. at Cornell (1976), he moved to Duke in 1980, where he retired in spring 2007 as Dean of the Nicholas School of the Environment and Earth Sciences and as James B. Duke Professor of Biogeochemistry.

He is the author or coauthor of over 200 scientific papers on subjects of environmental chemistry and global change and the widely-adopted textbook *Biogeochemistry: An analysis of global change* (Academic Press, 2nd ed. 1997). He has published editorials and columns in the *Charlotte Observer*, *Chicago Tribune*, *Los Angeles Times*, *Philadelphia Inquirer*, and the *Raleigh News and Observer*.

Schlesinger was among the first to quantify the amount of carbon held in soil organic matter globally, providing subsequent estimates of the role of soils and human impacts on forests and soils in global climate change. He was elected a member of The National Academy of Sciences in 2003, and was President of the Ecological Society of America for 2003-2004. He is also a fellow in the American Academy of Arts and Sciences, the American Geophysical Union, and the Soil Science Society of America.

His past work has taken him to diverse habitats, ranging from Okefenokee Swamp in southern Georgia to the Mojave Desert of California, and three times as a Duke alumni tour guide to Antarctica. His research has been featured on NOVA, CNN, NPR, and on the pages of *Discover*, *National Geographic*, the *New York Times*, and *Scientific American*. Schlesinger has testified before U.S. House and Senate Committees on a variety of environmental issues, including preservation of desert habitats, global climate change and carbon sequestration.

Schlesinger currently serves on the Board of Trustees for the Doris Duke Charitable Foundation (New York) and the Southern Environmental Law Center (Charlottesville) and on the Board of Scientific Advisors for Terrapass LLC (San Francisco).

He and his wife, Lisa, live in Millbrook, where they enjoy birdwatching, gourmet cooking, and collecting southwestern art.



"Ryscavage, Jefferson COL
SAW"
<Jefferson.Ryscavage@us.army.mil>

06/05/2009 10:45 PM

To Stan Meiburg/R4/USEPA/US@EPA
cc Jim Giattina/R4/USEPA/US@EPA
bcc
Subject RE:

Sir,
Thanks for passing on. Have a good weekend.

v/r,
Jeff

Jefferson M. Ryscavage
Colonel, Corps of Engineers
Commander, Wilmington District
910-251-4501
<http://www.saw.usace.army.mil/>

-----Original Message-----

From: Meiburg.Stan@epamail.epa.gov [mailto:Meiburg.Stan@epamail.epa.gov]
Sent: Friday, June 05, 2009 5:32 PM
To: Ryscavage, Jefferson COL SAW
Cc: giattina.jim@epa.gov
Subject:

Jeff, since I don't think he cc'd you on this, just wanted to pass this on.

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

----- Forwarded by Stan Meiburg/R4/USEPA/US on 06/05/2009 05:30 PM -----

William
Schlesinger
<schlesingerw@ca
ryinstitute.org>
Sent by: Deb
Fargione
<fargioned@caryi
nstitute.org>

06/05/2009 03:59
PM

To
Mike Shapiro/DC/USEPA/US@EPA
cc
Stan Meiburg/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Gregory
Peck/DC/USEPA/US@EPA, Suzanne
Schwartz/DC/USEPA/US@EPA, Palmer
Hough/DC/USEPA/US@EPA, Tom
Welborn/R4/USEPA/US@EPA, David
Evans/DC/USEPA/US@EPA, Robert

Wood/DC/USEPA/US@EPA, Dawn
Messier/DC/USEPA/US@EPA, Jennifer
Derby/R4/USEPA/US@EPA, Rebecca
Fox/R4/USEPA/US@EPA
Subject

Dear Mr. Shapiro,

Attached please find my letter relative to the U.S. Army Corps of Engineers' Record of Decision authorizing PCS Phosphate Inc. to expand its surface mine adjacent to the Pamlico River estuary in North Carolina and EPA's consideration of whether to act under its authority in 404(c) of the Clean Water Act to require avoidance of sensitive environmental areas. Hard copies of these document will reach you shortly via U.S. Mail.

Sincerely,

Bill Schlesinger

(Embedded image moved to file: pic25903.jpg)Cary_Institute_logo (2).jpg

Dr. William H. Schlesinger
President
Cary Institute of Ecosystem Studies
PO Box AB; 2801 Sharon Turnpike
Millbrook NY 12545

P 845-677-5343
F 845-677-5976

Email schlesingerw@caryinstitute.org
Web http://www.caryinstitute.org/people_sci_schlesinger.html

(See attached file: Shapiro_Entrix_2Jun09.pdf) (See attached file:
Shortbio_WHS_2Jun09.DOC)



"Ryscavage, Jefferson COL
SAW"
<Jefferson.Ryscavage@us.ar
my.mil>

06/05/2009 10:54 PM

To Stan Meiburg/R4/USEPA/US@EPA

cc

bcc

Subject RE: PCS Phosphate - Largest destruction of wetlands in NC
under Clean Water Act

History:  This message has been replied to.

Sir,
Thanks again. While I have your ear, I would like to let you know that Jim
has been wonderful to deal with. While our discussions have sometimes not
been easy ones, he has always bent over backwards to keep our communications
open and frank. I appreciate his being a part of the process and his
willingness to continue to share info.

Have a great weekend!

v/r,
Jeff

Jefferson M. Ryscavage
Colonel, Corps of Engineers
Commander, Wilmington District
910-251-4501
<http://www.saw.usace.army.mil/>

-----Original Message-----

From: Meiburg.Stan@epamail.epa.gov [mailto:Meiburg.Stan@epamail.epa.gov]
Sent: Friday, June 05, 2009 5:46 PM
To: Ryscavage, Jefferson COL SAW; giattina.jim@epa.gov;
Welborn.Tom@epamail.epa.gov
Subject: Fw: PCS Phosphate - Largest destruction of wetlands in NC under
Clean Water Act

Another incoming letter.

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

----- Forwarded by Stan Meiburg/R4/USEPA/US on 06/05/2009 05:45 PM -----

Geoff Gisler
<ggisler@selcnc.
org>

To

06/05/2009 04:11
PM

LisaP Jackson/DC/USEPA/US@EPA

cc

Mike Shapiro/DC/USEPA/US@EPA,
Stan Meiburg/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Gregory
Peck/DC/USEPA/US@EPA, Suzanne
Schwartz/DC/USEPA/US@EPA, Palmer
Hough/DC/USEPA/US@EPA, Tom
Welborn/R4/USEPA/US@EPA, David
Evans/DC/USEPA/US@EPA, Robert
Wood/DC/USEPA/US@EPA, Dawn
Messier/DC/USEPA/US@EPA, Jennifer
Derby/R4/USEPA/US@EPA, Rebecca
Fox/R4/USEPA/US@EPA,
"Pete_Benjamin@fws.gov"
<Pete_Benjamin@fws.gov>,
"Mike_Wicker@fws.gov"
<Mike_Wicker@fws.gov>, Derb
Carter <derbc@selcnc.org>

Subject

PCS Phosphate - Largest
destruction of wetlands in NC
under Clean Water Act

Administrator Jackson,

I write to bring to your attention a permit issued by the Wilmington District of the U.S. Army Corps of Engineers on Wednesday, June 3, authorizing the largest permitted wetland destruction in North Carolina history, totaling nearly 4,000 acres. The wetlands that would be destroyed by the approved strip mine are on the banks of the Pamlico River, a central part of the Albemarle-Pamlico Estuary. The wetlands surround and support tidal creeks that are primary fishery nursery areas and include one of the five best remaining examples of a globally rare wetland community type. In April, EPA Region IV elevated this permit decision to the U.S. Army Corps of Engineers Headquarters stating that the permit violated the Clean Water Act 404(b)(1) Guidelines and made specific recommendations to mend those violations. The permit issued Wednesday almost completely ignored those recommendations, avoiding only 44 additional acres of wetlands. On behalf of the Pamlico-Tar River Foundation, Environmental Defense Fund, Sierra Club, and North Carolina Coastal Federation, we respectfully request that EPA initiate veto proceedings under Section 404(c) of the Clean Water Act.

Sincerely,

Geoff Gisler
Staff Attorney
Southern Environmental Law Center
200 W. Franklin St. Suite 330
Chapel Hill, NC 27516
Ph: (919) 967-1450

Fax: (919) 929-9421
www.southernenvironment.org

This electronic message and any attached files are confidential and are intended solely for the use of the addressee(s) named above. This communication may contain material protected by attorney-client, work product or other privileges. If you are not the intended recipient or person responsible for delivering this confidential communication to the intended recipient(s), and/or you have received this communication in error, then any review, use, dissemination, forwarding, printing, copying or other distribution of this email message and any attached files is strictly prohibited. If you have received this confidential communication in error, please notify the sender immediately by reply email message and permanently delete the original message.

(See attached file: 06-05-09 PCS Phosphate veto request.pdf)



"Ryscavage, Jefferson COL
SAW"
<Jefferson.Ryscavage@us.ar
my.mil>

06/07/2009 08:41 PM

To Stan Meiburg/R4/USEPA/US@EPA

cc

bcc

Subject Re: PCS Phosphate - Largest destruction of wetlands in NC
under Clean Water Act

Thanks, I look forward to working with you, your team and Jim again. We always have the beach here in
Wilmington, let us know if you are in-town!

Vr,
Jeff

Message sent via my BlackBerry Wireless Device

----- Original Message -----

From: Meiburg.Stan@epamail.epa.gov <Meiburg.Stan@epamail.epa.gov>

To: Ryscavage, Jefferson COL SAW

Cc: Gen. Todd Semonite <todd.semonite@us.army.mil>

Sent: Sat Jun 06 22:22:00 2009

Subject: Re: PCS Phosphate - Largest destruction of wetlands in NC under Clean Water Act

That's great feedback, Jeff--thank you! He has said the same about you. As hard as this case has been, we really
admire your professionalism and collegiality. We look forward to working together with you on matters that are
perhaps a little more fun!

Stan

A. Stanley Meiburg

Acting Regional Administrator

EPA Region 4

Sam Nunn Atlanta Federal Center

61 Forsyth Street, SW

Atlanta, GA. 30303

Office: (404) 562-8357

Fax: (404) 562-9961

Cell: (404) 435-4234

Email: meiburg.stan@epa.gov

Sent using Blackberry

----- Original Message -----

From: "Ryscavage, Jefferson COL SAW" [Jefferson.Ryscavage@us.army.mil]

Sent: 06/05/2009 10:54 PM AST

To: Stan Meiburg

Subject: RE: PCS Phosphate - Largest destruction of wetlands in NC under Clean Water Act

Sir,

Thanks again. While I have your ear, I would like to let you know that Jim has been wonderful to deal with. While our discussions have sometimes not been easy ones, he has always bent over backwards to keep our communications open and frank. I appreciate his being a part of the process and his willingness to continue to share info.

Have a great weekend!

v/r,
Jeff

Jefferson M. Ryscavage
Colonel, Corps of Engineers
Commander, Wilmington District
910-251-4501
<http://www.saw.usace.army.mil/>

-----Original Message-----

From: Meiburg.Stan@epamail.epa.gov [<mailto:Meiburg.Stan@epamail.epa.gov>]
Sent: Friday, June 05, 2009 5:46 PM
To: Ryscavage, Jefferson COL SAW; giattina.jim@epa.gov;
Welborn.Tom@epamail.epa.gov
Subject: Fw: PCS Phosphate - Largest destruction of wetlands in NC under
Clean Water Act

Another incoming letter.

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

----- Forwarded by Stan Meiburg/R4/USEPA/US on 06/05/2009 05:45 PM -----

Geoff Gisler
<ggisler@selcnc.org>

06/05/2009 04:11
PM

To
LisaP Jackson/DC/USEPA/US@EPA
cc
Mike Shapiro/DC/USEPA/US@EPA,
Stan Meiburg/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Gregory
Peck/DC/USEPA/US@EPA, Suzanne

Schwartz/DC/USEPA/US@EPA, Palmer
Hough/DC/USEPA/US@EPA, Tom
Welborn/R4/USEPA/US@EPA, David
Evans/DC/USEPA/US@EPA, Robert
Wood/DC/USEPA/US@EPA, Dawn
Messier/DC/USEPA/US@EPA, Jennifer
Derby/R4/USEPA/US@EPA, Rebecca
Fox/R4/USEPA/US@EPA,
"Pete_Benjamin@fws.gov"
<Pete_Benjamin@fws.gov>,
"Mike_Wicker@fws.gov"
<Mike_Wicker@fws.gov>, Derb
Carter <derbc@selcnc.org>

Subject

PCS Phosphate - Largest
destruction of wetlands in NC
under Clean Water Act

Administrator Jackson,

I write to bring to your attention a permit issued by the Wilmington District of the U.S. Army Corps of Engineers on Wednesday, June 3, authorizing the largest permitted wetland destruction in North Carolina history, totaling nearly 4,000 acres. The wetlands that would be destroyed by the approved strip mine are on the banks of the Pamlico River, a central part of the Albemarle-Pamlico Estuary. The wetlands surround and support tidal creeks that are primary fishery nursery areas and include one of the five best remaining examples of a globally rare wetland community type. In April, EPA Region IV elevated this permit decision to the U.S. Army Corps of Engineers Headquarters stating that the permit violated the Clean Water Act 404(b)(1) Guidelines and made specific recommendations to mend those violations. The permit issued Wednesday almost completely ignored those recommendations, avoiding only

44 additional acres of wetlands. On behalf of the Pamlico-Tar River Foundation, Environmental Defense Fund, Sierra Club, and North Carolina Coastal Federation, we respectfully request that EPA initiate veto proceedings under Section 404(c) of the Clean Water Act.

Sincerely,

Geoff Gisler
Staff Attorney
Southern Environmental Law Center
200 W. Franklin St. Suite 330
Chapel Hill, NC 27516
Ph: (919) 967-1450

Fax: (919) 929-9421
www.southernenvironment.org

This electronic message and any attached files are confidential and are intended solely for the use of the addressee(s) named above. This communication may contain material protected by attorney-client, work product or other privileges. If you are not the intended recipient or person responsible for delivering this confidential communication to the intended recipient(s), and/or you have received this communication in error, then any review, use, dissemination, forwarding, printing, copying or other distribution of this email message and any attached files is strictly prohibited. If you have received this confidential communication in error, please notify the sender immediately by reply email message and permanently delete the original message.

(See attached file: 06-05-09 PCS Phosphate veto request.pdf)



Geoff Gisler
<ggisler@selcnc.org>
06/08/2009 02:01 PM

To Stan Meiburg/R4/USEPA/US@EPA
cc Mike Shapiro/DC/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Gregory
Peck/DC/USEPA/US@EPA, Suzanne
bcc

Subject Response to Corps's PCS Permit decision

History: This message has been forwarded.

Stan,
We have had the opportunity to review the Corps's ROD and permit issued to PCS Phosphate last week. As described in the attached letter, we do not believe the Corps has adequately responded to EPA's previous determination that Modified Alt. L would result in unacceptable adverse effects to aquatic resources of national importance. The minimal reduction in wetland impacts, approximately 1%, does little to address the concerns identified in EPA's elevation package regarding the scale and intensity of direct and indirect impacts. The monitoring provisions, though improved, will document, rather than avoid, the significant degradation EPA's analysis identified and were presented in the elevation package as part of an overall program centered on additional avoidance. We do not believe that the information presented in the ROD or the conditions in the permit support any decision other than initiation of veto proceedings under Section 404(c). Thank you for considering this letter and we look forward to further discussing these issues with you.

Sincerely,
Geoff

Geoff Gisler
Staff Attorney
Southern Environmental Law Center
200 W. Franklin St. Suite 330
Chapel Hill, NC 27516
Ph: (919) 967-1450
Fax: (919) 929-9421
www.southernenvironment.org

This electronic message and any attached files are confidential and are intended solely for the use of the addressee(s) named above. This communication may contain material protected by attorney-client, work product or other privileges. If you are not the intended recipient or person responsible for delivering this confidential communication to the intended recipient(s), and/or you have received this communication in error, then any review, use, dissemination, forwarding, printing, copying or other distribution of this email message and any attached files is strictly prohibited. If you have received this confidential communication in error, please notify the sender immediately by reply email message and permanently delete the original message.

SOUTHERN ENVIRONMENTAL LAW CENTER

200 WEST FRANKLIN STREET, SUITE 330
CHAPEL HILL, NC 27516-2559

Telephone 919-967-1450
Facsimile 919-929-9421
selcnc@selcnc.org

Charlottesville, VA
Chapel Hill, NC
Atlanta, GA
Asheville, NC
Sewanee, TN

June 8, 2009

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Re: PCS Phosphate – June 3, 2009 permit approving Modified Alt. L

Dear Mr. Meiburg:

We submit this letter on behalf of the Pamlico-Tar River Foundation, Environmental Defense Fund, Sierra Club, and North Carolina Coastal Federation and in response to the U.S. Army Corps of Engineers issuance of a permit to PCS Phosphate on June 3, authorizing the company to expand its mining operation near Aurora, North Carolina. That permit approves impacts to 3,927 acres of wetlands and 22,435 linear feet of streams essentially mirroring the proposed expansion that EPA elevated on April 3, 2009. At that time, EPA concluded that because of the scale of the project and the sensitivity of the wetlands and waters that would be impacted, that the expansion “would fail to comply with the [404(b)(1)] Guidelines” and result in unacceptable adverse impacts to aquatic resources of national importance. We continue to believe that the permit, which varies little from the elevated mine expansion, would violate the 404(b)(1) Guidelines. In fact, the additional avoidance of wetlands is so far short of what EPA determined to be necessary to have an acceptable level of impacts, we see no justification for any decision except for a veto. We therefore respectfully request that EPA initiate proceedings under 404(c) of the Clean Water Act to veto the proposed mine expansion.

We urge this action in the shadow of Administrator Jackson’s recent letter to Sen. Boxer reaffirming that EPA and other federal agencies “need to identify opportunities to expand protection of wetlands and other aquatic resources that are especially vulnerable or critical to sustaining the health of these systems.” This is not only an opportunity to protect critical wetland resources; EPA has a duty protect these wetlands. The key concerns raised by EPA in elevating the previous permit proposal – extensive wetland impacts, drainage basin reduction around tidal creeks and primary fishery nursery areas, direct impacts to rare wetlands, and inadequate mitigation – have not been satisfactorily addressed in the permit. EPA can partially veto the project by designating specific areas unsuitable for discharge of dredge and fill material, allowing 29 years of uninterrupted

mining while preserving those wetlands and waters that are essential to the health of the Pamlico River.

EPA has already determined that impacts under Modified Alternative L will result in “unacceptable adverse effects.”

On February 24, 2009, the U.S. Army Corps of Engineers issued a Notice of Intent to issue a Section 404 permit to PCS Phosphate authorizing a mine expansion plan that would impact 11,454 acres along the Pamlico River, including 3,953 acres of wetlands and 25,727 linear feet of streams.¹ EPA elevated that permit decision under Section 404(q) of the Clean Water Act on the grounds that it “would result in substantial and unacceptable impacts to waters of the United States, including wetlands, in the Albemarle Pamlico River estuary system.”² That objection was based on findings by the EPA that the proposed permit would violate the 404(b)(1) guidelines because the project’s direct and indirect impacts would result in significant degradation of waters of the U.S., less environmentally damaging practicable alternatives exist, and appropriate steps to minimize and compensate for impacts have not been taken.

In concluding that mining 3,953 acres of wetlands and 25,727 linear feet of streams would cause “unacceptable adverse effects” to waters of the United States, EPA made the following findings:

- “it is EPA’s determination that the direct impacts of mining the 271 acre Significant Natural Heritage Area on the Bonnerton tract does not comply with Subparts C-F of the Guidelines, specifically Subpart C – Impacts on physical characteristics of the aquatic ecosystem, Subpart D – Impacts on the biological characteristic of the aquatic ecosystem, Subpart E – Impacts to special aquatic sites and Subpart F – Effects on human use characteristics (SNHA designation).”³
- “We believe the potential effect of Drainage Basin Reduction (DBR) on the production of marine fisheries resources is significant.”⁴ “EPA believes the data presented do not overcome the large body of scientific information showing that mining through the headwaters of estuarine streams and their riverine habitat will have a significant negative impact on the functioning and structure of the creeks impacted by the proposed mining activities. There is, however, a large amount of scientific data supporting the importance of headwater streams and wetlands on downstream water quality.”⁵

¹ EPA Detailed Comments at 1.

² *Id.*

³ *Id.* at 12.

⁴ *Id.* at 13.

⁵ *Id.* at 15.

- “EPA believes that impacts to these ecological functions at the scale associated with this project would cause or contribute to significant degradation . . . of the Nation’s waters. Further, as discussed below, we do not believe the proposed compensatory mitigation would reduce these adverse impacts to an acceptable level.”⁶

To further illustrate the basis of its rejection of Elevated Alternative L, EPA made clear that even “SCRA and SCRB alternatives [evaluated in the FEIS] would allow an unacceptable level of 1) direct impacts to the site’s Nationally Significant Natural Heritage Area and 2) indirect impacts to the site’s tidal and creeks,” even though those alternatives would reduce the mine’s impacts to 3,506 acres of wetlands and 14,360 linear feet of streams.⁷ Based on these analyses together, EPA determined that any alternative must include fewer impacts than either Elevated Modified Alt. L or the SCR alternatives to avoid unacceptable adverse effects that require a veto.

In an effort to identify an alternative that would not result in significant degradation of waters of the U.S., and would not have unacceptable adverse effects, EPA introduced an alternative that would allow 29 years of uninterrupted mining while allowing 2,787 acres of wetland impacts.⁸ The agency found that even that impact “continues to be extraordinarily large . . . amplifying the need to pay very close attention to the execution, monitoring and adaptive management of the project’s compensatory mitigation so that the Nation’s waters are not significantly degraded.”⁹

The permit issued to PCS Phosphate on June 3, 2009 authorizes impacts to 3,927 acres of wetlands and 22,435 linear feet of streams. Thus, it represents only a 1% reduction in wetland impacts from the Elevated Modified Alt. L that EPA determined to have unacceptable adverse effects. It represents a 12% increase in wetland impacts and a 56% increase in stream impacts from the SCR alternatives that EPA has determined would have unacceptable adverse effects. Finally, the permit authorizes an additional 1,140 acres of wetland impact compared to the EPA alternative that EPA’s elevation package describes as an “extraordinarily large” impact that must be closely monitored and carefully carried out to avoid significant degradation.

EPA has evaluated three alternatives to determine whether they would have unacceptable adverse effects on waters and wetlands of the U.S. For the Modified Alt. L that EPA elevated and the SCR alternatives, the agency determined that the scale and location of impacts would cause unacceptable adverse effects. EPA concluded that its avoidance alternative offered initially in January 2007 and formalized in the elevation proceedings would not. The chart below summarizes the effects of those mine expansion plans and compares them to the issued permit.

⁶ *Id.* at 16.

⁷ *Id.* at 21.

⁸ *Id.* at 21.

⁹ *Id.* at 21.

Summary of EPA Evaluation of Alternatives

Mine Plan Alternative	Wetland Loss (ac)	Wetland Loss Above EPA Alternative	Loss of Wetlands of National Ecological Significance	Elimination of Tidal Creeks Watersheds	EPA Determination
Elevated Alt. L	3,953	1,166	Yes	~ 70% ¹⁰	Unacceptable adverse effects
Permitted Alt. L	3,927	1,140	Yes	~ 70% ¹¹	
SCR Alts.	3,506	719	Yes	~ 70% ¹²	Unacceptable adverse effects
EPA Alt.	2,787	N/A	No	No permitted drainage basin reduction in Jacks, Jacobs, Drinkwater Creeks watersheds ¹³	Avoids significant degradation

The Corps approved impacts that are nearly identical to impacts allowed by the previously rejected mine expansion and therefore EPA must conclude that Permitted Alt. L will have unacceptable adverse effects on waters of the U.S.

The impacts approved in the June 3 permit are nearly identical to the earlier proposed expansion that EPA found would have unacceptable adverse effects – and substantially more damaging than either of the SCR alternatives or the EPA alternative – leaving EPA no choice but to find that the permitted expansion will result in unacceptable adverse effects. EPA based its earlier elevation and rejection of the proposed permit on four points, none of which can be satisfied by this permit:

¹⁰ EPA Detailed Comments at 1, 13, 15, 16.

¹¹ Calculations are based on cumulative impacts to Porter Creek, Jacks Creek, Jacobs Creek, Drinkwater Creek, Tooley Creek, and Huddles Cut as described in the Corps's Record of Decision at 11. Porter Creek, Jacks Creek, Jacobs Creek, and Tooley Creek are designated as Primary Nursery Areas by the State of North Carolina.

¹² Calculations are based on cumulative impacts to Porter Creek, Jacks Creek, Jacobs Creek, Drinkwater Creek, Tooley Creek, and Huddles Cut as described on page 6-60 of the Final Environmental Impact Statement.

¹³ The EPA Alternative would not allow any additional drainage basin reductions in Jacks, Jacobs, and Drinkwater Creeks. It would allow some drainage basin reduction in Tooley and Porter Creeks, but would require additional avoidance compared to Elevated Modified Alt. L or the permitted mine expansion.

- The Elevated Modified Alt. L would have authorized 3,953 acres of wetland impacts and, according to EPA's evaluation, would cause significant degradation of waters of the U.S. Further, EPA held that the SCR alternatives, which would impact 3,506 acres of wetlands, would result in unacceptable adverse effects. The June 3 permit authorizes destruction of 3,927 acres of wetlands, a reduction of just 1% of wetland impacts from Elevated Modified Alt. L and 421 acres of wetland impacts more than the SCR alternatives.
- The Elevated Modified Alt. L included an approximate 70% drainage basin reduction to the watersheds of tidal creeks and primary nursery areas. EPA requested additional avoidance in the watersheds of Porter, Jacks, Jacobs, Drinkwater, and Tooley Creek. The June 3 permit authorizes an approximate 70% drainage basin reduction to the watersheds of these same creeks.
- The Elevated Modified Alt. L would have resulted in direct impacts to the Nationally Significant Natural Heritage Area in the Bonnerton tract that would cause significant degradation of waters of the U.S. EPA required avoidance in these wetlands of national ecological significance. The June 3 permit does not reduce the direct impacts to the Nationally Significant Natural Heritage Area that EPA found violated the 404(b)(1) guidelines.
- The Elevated Modified Alt. L relied on a practicability analysis that "effectively obscure[s] identification of the least environmentally damaging practicable alternative (LEDPA) as required by the Guidelines."¹⁴ The June 3 permit does not alter the practicability analysis that EPA found to violate the 404(b)(1) guidelines.
- The Elevated Modified Alt. L included mitigation that "will not adequately offset impacts"¹⁵ in violation of the Guidelines. PCS has not proposed any additional mitigation to offset the impacts approved in the June 3 permit.

In light of EPA's recent evaluations of the Elevated Modified Alt. L, SCRA, SCRB, and the proposed EPA alternative, EPA must conclude that PCS's permit authorizing the destruction of 3,927 acres of wetlands and 22,435 linear feet of streams will cause unacceptable adverse effects and significant degradation of waters of the U.S., thereby violating the 404(b)(1) Guidelines. The changes to impacts made by the Corps in this permit are minimal, fail to address entirely or do not address adequately the concerns EPA identified in its elevation package, and cannot alter the EPA's previous determination that "impacts to these ecological functions at the scale associated with this project would cause or contribute to significant degradation . . . of the Nation's waters."¹⁶

¹⁴ EPA Detailed Comments at 16.

¹⁵ *Id.* at 20.

¹⁶ *Id.* at 16.

The EPA Alternative will allow for continued mining while preventing significant degradation of waters of the U.S.

EPA has presented an alternative that will allow PCS to profitably mine for approximately 29 years while substantially reducing wetland impacts, maintaining critical watersheds around sensitive fishery nursery areas, and protect the nationally significant nonriverine wet hardwood swamps in the Bonnerton tract. PCS has not demonstrated that this alternative is not practicable. Instead, the Corps relied on a practicable alternatives analysis that EPA found to “effectively obscure identification of the least environmentally damaging practicable alternative (LEDPA) as required by the Guidelines.”

The June 3 permit’s monitoring and management provisions do not offset the direct and indirect impacts approved or replace the need for significant additional wetland avoidance included in the EPA Alternative. EPA must prevent, rather than monitor, significant degradation of aquatic resources of national importance and assure compliance with the 404(b)(1) Guidelines. The permit includes monitoring and “adaptive management” provisions to document the environmental and water quality degradation that will result from the authorized activities. These provisions cannot substitute for EPA’s duty to prevent that degradation. Since the tidal creek wetlands will be mined within the first few years of the permit, adaptive management is of no value as a substitute for avoidance. The damage will have been done, and the impacts largely irreversible.

Moreover, EPA recognized that even with monitoring and adaptive management, substantial additional wetland avoidance was necessary to avoid significant degradation. Even the EPA Alternative, which avoided 1,140 more acres of wetlands than the Permitted Alt. L was “extraordinarily large” and would, by EPA’s evaluation, require intense monitoring and adaptive management to avoid significant degradation.¹⁷

The Corps has failed in its responsibility to protect the Nation’s waters. By vetoing the most damaging parts of the permit to correspond with EPA’s proposed alternative, EPA can protect the most sensitive areas within the project area without preventing less damaging mining. The health of the Pamlico River depends on EPA exercising its authority to veto the most destructive aspects of the permit – aspects it has already determined will cause unacceptable adverse effects.

EPA’s discretion under 404(c) is limited to determining whether a project would have unacceptable adverse effects.

Under the Clean Water Act the EPA is a critical backstop in the protection of wetlands and waters of the United States when the U.S. Army Corps of Engineers issues a permit that would cause unacceptable adverse effects. The Act provides that when the U.S. Army Corps of Engineers authorizes impacts that will “have an unacceptable

¹⁷ *Id.* at 21.

adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas,” the EPA has the responsibility to limit those impacts.¹⁸ The regulations implementing that section empower the Administrator of the EPA “to prohibit or otherwise restrict a site whenever he determines that the discharge of dredged or fill material is having or will have an ‘unacceptable adverse effect’” or violate the 404(b)(1) Guidelines.¹⁹

When making that determination whether to initiate 404(c) proceedings, the Administrator’s discretion is limited to evaluating whether a project will have unacceptable adverse effects. Although EPA has discretion in the 404(c) process, “it is not a roving license to ignore the statutory text . . . but a direction to exercise discretion within defined statutory limits.”²⁰ Here, those statutory limits require that “the Administrator must base his decision of whether or not to make a determination that issuance of a permit has unacceptable adverse effects, and therefore veto the permit, on whether he believes the issuance of the permit is likely to have unacceptable adverse effects.”²¹ If it finds that unacceptable adverse effects will occur, EPA cannot refuse to veto a permit based on “factors Congress has not intended it to consider.”²² EPA’s determination must be based on “whether or not the [Project] complied with the Guidelines promulgated by EPA pursuant to section 404(b) of the Clean Water Act.”²³

After the EPA finds that a project will have “unacceptable adverse effects,” its duty under Section 404(c) of the Clean Water Act to prevent discharges to wetlands that is non-discretionary.²⁴ EPA’s determination that a project will have unacceptable adverse effects requires the agency to exercise its non-discretionary duty to initiate 404(c) proceedings.

EPA previously determined that the impacts approved by the June 3 permit will have unacceptable adverse effects and must act under 404(c).

In its elevation package, EPA correctly determined that Modified Alt. L as presented at that time would result in significant degradation of the aquatic environment, was based on a biased practicability analysis, and could not be mitigated through the proposed mitigation package. That mine plan would have had unacceptable adverse effects. In response, the Corps issued a permit that reduces wetland impacts by a meager 1%, relies on the same biased practicability analysis, and depends on the same inadequate mitigation to offset those nearly identical impacts. Rather than altering the impacts that EPA has determined will have unacceptable adverse effects, the Corps has required PCS

¹⁸ 33 U.S.C. § 1344(c).

¹⁹ 40 C.F.R. §§ 231.1(b), 231.2(e).

²⁰ *Massachusetts v. EPA*, 549 U.S. 497, 533 (2007).

²¹ *Alliance to Save the Mattaponi v. U.S. Army Corps of Engineers*, 1:06-cv-01268-HHK at 33 (D.D.C. 2009).

²² *Motor Vehicle Manufacturer's Ass'n v. State Farm*, 463 U.S. 29, 43 (1983).

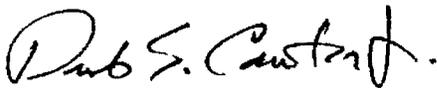
²³ *Alliance to Save the Mattaponi v. U.S. Army Corps of Engineers*, 1:06-cv-01268-HHK at 32 (D.D.C. 2009).

²⁴ See *Environmental Defense Fund v. Tidwell*, 837 F. Supp. 1344 (E.D.N.C. 1992).

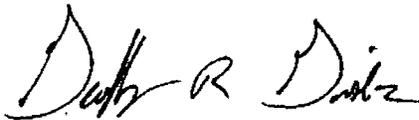
to monitor the significant degradation of waters of the U.S and restated the violations of the 404(b)(1) Guidelines EPA identified in its elevation package. Those unaltered violations of the 404(b)(1) Guidelines and the unacceptable adverse effects of Permitted Alt. L that EPA has identified demand initiation of veto proceedings under Section 404(c).

We appreciate your consideration of these comments. We look forward to discussing these issues further.

Sincerely,



Derb S. Carter, Jr.
Director, NC/SC Office



Geoffrey R. Gisler
Staff Attorney



"Walker, William T SAW"
 <William.T.Walker@usace.army.mil>
 06/08/2009 02:38 PM

To Rebecca Fox/R4/USEPA/US@EPA
 cc Jim Giattina/R4/USEPA/US@EPA, "Moyer, Jennifer A HQ02"
 <Jennifer.A.Moyer@usace.army.mil>, Stan
 Meiburg/R4/USEPA/US@EPA, Palmer
 bcc
 Subject RE: PCS ROD

Becky,

As stated in the Modified Alternative L description found in the
 ROD (Section 5.b.5), the current boundary will provide for approximately 14 years
 of minning north of NC 33.

Thanks
 Tom

-----Original Message-----

From: Fox.Rebecca@epamail.epa.gov [mailto:Fox.Rebecca@epamail.epa.gov]
 Sent: Monday, June 08, 2009 8:24 AM
 To: Walker, William T SAW
 Cc: Giattina.Jim@epamail.epa.gov; Moyer, Jennifer A HQ02;
 Meiburg.Stan@epamail.epa.gov; Hough.Palmer@epamail.epa.gov;
 Mancusi-Ungaro.Philip@epamail.epa.gov; Jolly, Samuel K SAW;
 Welborn.Tom@epamail.epa.gov; Derby.Jennifer@epamail.epa.gov;
 Frazer.Brian@epamail.epa.gov; Evans.David@epamail.epa.gov;
 Campbell.Ann@epamail.epa.gov
 Subject: RE: PCS ROD

Thanks Tom for the additional information. We have one more information
 request. The June 3 document with the proposed additional avoidance
 statistics states that the additional avoidance results in an additional loss
 of 0.64 years of mining. Could you provide us with what the exact years of
 mining North of 33 will now be with the proffered permit?

Thanks,

Becky

Becky Fox
 Wetland Regulatory Section
 USEPA
 Phone: 828-497-3531
 Email: fox.rebecca@epa.gov

"Walker, William
 T SAW"
 <William.T.Walker@usace.army.mil>

06/05/2009 04:54
 PM

Palmer Hough/DC/USEPA/US@EPA To
 cc
 "Lamson, Brooke SAW"
 <Brooke.Lamson@usace.army.mil>,
 "Lekson, David M SAW"
 <David.M.Lekson@usace.army.mil>,
 Dawn Messier/DC/USEPA/US@EPA,
 "Ryscavage, Jefferson COL SAW"

<Jefferson.Ryscavage@us.army.mil>
, "Moyer, Jennifer A HQ02"
<Jennifer.A.Moyer@usace.army.mil>
, Jim Giattina/R4/USEPA/US@EPA,
"Gaffney-Smith, Margaret E"
<Meg.E.Gaffney-Smith@usace.army.mil>, Philip
Mancusi-Ungaro/R4/USEPA/US@EPA,
Rebecca Fox/R4/USEPA/US@EPA,
"Jolly, Samuel K SAW"
<Samuel.K.Jolly@usace.army.mil>,
Stan Meiburg/R4/USEPA/US@EPA, Tom
Welborn/R4/USEPA/US@EPA

Subject

RE: PCS ROD

Palmer,

I asked CZR put together graphics for the portions of Cypress Run and Porter Creek outside the actual project area (see attached). There is a couple hundred feet at the mouth of the NCPC Tract Creeks (all totaled probably 5 ac.) that is technically outside the project area as well. According to PCS, they own all the acreage to be placed under conservation easement inside the project area and over 90% of the area outside. Again,
feel free to call with any further questions.

Thanks

Tom
910-251-4631

-----Original Message-----

From: Hough.Palmer@epamail.epa.gov [mailto:Hough.Palmer@epamail.epa.gov]

Sent: Friday, June 05, 2009 1:11 PM

To: Walker, William T SAW
Cc: Lamson, Brooke SAW; Lekson, David M SAW; Messier.Dawn@epamail.epa.gov; Ryscavage, Jefferson COL SAW; Moyer, Jennifer A HQ02; Giattina.Jim@epamail.epa.gov; Gaffney-Smith, Margaret E; Mancusi-Ungaro.Philip@epamail.epa.gov; Fox.Rebecca@epamail.epa.gov; Jolly, Samuel K SAW; Meiburg.Stan@epamail.epa.gov; Welborn.Tom@epamail.epa.gov
Subject: RE: PCS ROD

Tom:

Thank you again, this is very helpful. We are attempting to answer the four questions below. Your email indicates that the answer to #1 is: 174 acres all of which is on the Bonnerton tract. We agree with you that it is not necessary to do the wetland/upland breakout for the new easement areas but we would like to have the on-site/off-site acreage estimates broken out so that we can answer questions #2 and #3. Question #4 is more challenging. As you know, there is a caveat in the

6-2-09 PCS offer that appears to apply only to some portion of the 228 acres to be protected in the Porter Creek watershed. Question #4 is designed to get some clarity on that caveat.

We greatly appreciate anything you can do to help us expeditiously answer questions 2-4.

Thanks, Palmer

- 1) In the February 24, 2009, Proposed Permit (i.e., the project described in the Corps' 2-24-09 NOI letter to R4), what amount of the avoided acreage on each of the site's three tracts (i.e., on the project site) was required to be protected via conservation easement?
- 2) In the June 3, 2009, Proffered Permit, what amount of the avoided acreage on each of the site's three tracts (i.e., on the project site) is required to be protected via conservation easement?
- 3) In the June 3, 2009, Proffered Permit, what amount of acreage adjacent to each of the site's three tracts (i.e., off the project site) is required to be protected via conservation easement?
- 4) In the June 3, 2009, Proffered Permit, how much of this "on-site" and "off-site" protection is unlikely to happen due to PCS's "inability to place restrictions on non-owned properties"?

Palmer F. Hough
US Environmental Protection Agency
Wetlands Division
Room 7231, Mail Code 4502T
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Office: 202-566-1374
Cell: 202-657-3114
FAX: 202-566-1375
E-mail: hough.palmer@epa.gov

Street/Courier Address
USEPA
Palmer Hough
EPA West -- Room 7231-L
Mail Code 4502T
1301 Constitution Avenue, NW
Washington, DC 20460

From: "Walker, William T SAW" <William.T.Walker@usace.army.mil>

To: Palmer Hough/DC/USEPA/US@EPA

Cc: "Lamson, Brooke SAW" <Brooke.Lamson@usace.army.mil>,
"Lekson,

David M SAW" <David.M.Lekson@usace.army.mil>, "Ryscavage, Jefferson COL SAW"
<Jefferson.Ryscavage@us.army.mil>, "Moyer, Jennifer A HQ02"
<Jennifer.A.Moyer@usace.army.mil>, Jim
Giattina/R4/USEPA/US@EPA, "Gaffney-Smith,
Margaret E" <Meg.E.Gaffney-Smith@usace.army.mil>, Rebecca
Fox/R4/USEPA/US@EPA,
"Jolly, Samuel K SAW" <Samuel.K.Jolly@usace.army.mil>, Stan
Meiburg/R4/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA, Dawn
Messier/DC/USEPA/US@EPA, Philip Mancusi-Ungaro/R4/USEPA/US@EPA

Date: 06/05/2009 11:55 AM

Subject: RE: PCS ROD

Palmer,

As indicated in our 2/24/09 letter, discussions between the Corps, DWQ and the applicant had resulted in further minimizing impacts of Alternative L from 4,140 acres of Waters of the US to 3,972 acres of Water of the US. At that time total avoidance of waters of the US within the project area was 2,408 acres (1,696 acres further reduced from the EAP boundary, 168 acres further reduced from Alternative L as presented in the FEIS). Through its 401 certification NCDWQ required that all of the avoided area of the SNHA in Bonneron be put in conservation easement (approximately 174 ac.) along with the area of the "mining corridor" once it is satisfactorily reclaimed. All of that 174 acres is wetland.

Through and after the elevation process, PCS agreed to avoid an additional approximately 111 acres including approximately 51 acres of waters of the US. PCS further agreed to place conservation easements or deed restrictions on an additional 456 acres (630 acres total) in the watersheds of several creeks. The majority but not all of the acreage included in these additional easements was wetland. The proffered permit authorizes impacts to 3,927 acres of Water of the US (3,922 acres within the mining footprint and 5 acres associated with the NC 306 road relocation) including 3,909 acres of wetlands.

We have not broken out acreages of uplands vs. wetlands within these conservation easement areas since the goal of the minimization efforts was to further protect total watershed area and minimize secondary effects on downstream waters. Additionally, we have not broken out acreage inside vs. outside the actual project area boundary since again, minimization of future impacts to these same watersheds was the intent of the easements.

CZR can likely generate these numbers. If you would like us to make this request of them, please let me know. Also, if you have any further questions, feel free to give me a call.

Thanks
Tom Walker
(910) 251-4631

-----Original Message-----

From: Hough.Palmer@epamail.epa.gov [mailto:Hough.Palmer@epamail.epa.gov]

Sent: Thursday, June 04, 2009 3:49 PM
To: Walker, William T SAW
Cc: Lamson, Brooke SAW; Lekson, David M SAW; Ryscavage, Jefferson COL SAW; Moyer, Jennifer A HQ02; Giattina.Jim@epamail.epa.gov; Gaffney-Smith, Margaret E; Fox.Rebecca@epamail.epa.gov; Jolly, Samuel K SAW; Meiburg.Stan@epamail.epa.gov; Welborn.Tom@epamail.epa.gov; Messier.Dawn@epamail.epa.gov; Mancusi-Ungaro.Philip@epamail.epa.gov
Subject: RE: PCS ROD

Tom:

Thanks this is very helpful.

We have also been struggling with one other issue, namely how to accurately characterize just how much acreage on the project site is being preserved via conservation easement and how that compares to what was already preserved on the project site by the State 401 cert before the elevation started. We have not been able to find this data in the ROD. Here is what we have cobbled together based on BPJ. Is there any way to come up with a more definitive estimate of this? Again, we just want to make sure that we are on the same page with the Corps.

-- As of the 2-24-09 proposed permit approximately 174 out of 2333 acres of avoided wetlands were protected via conservation easement
-- As of the 6-3-09 proffered permit approximately 606 out of 2384 acres of avoided wetlands will be protected via conservation easement

Explanation for the 174: this number reflects the areas protected by the State 401 (SNHA on Bonnerton) according to the ROD.

Explanation for the 606: this number reflects the 174 acres 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, 54 acres on the Bonnerton Tract, and 24 acres on the S33 Tract. The Bonnerton and S33 values are an estimate because the Applicant's June 2, 2009, offer includes 1) 228 acres of proposed easement protection along Porter Creek, but the majority of this proposed acreage is not on the Bonnerton Tract and 2) of the 48 acres of proposed easement protection along Cypress Run Creek (S33 Tract), only approximately half of this acreage is on the S33 Tract.

Thanks, Palmer

Palmer F. Hough
US Environmental Protection Agency
Wetlands Division
Room 7231, Mail Code 4502T
1200 Pennsylvania Avenue, NW

Washington, DC 20460
Office: 202-566-1374
Cell: 202-657-3114
FAX: 202-566-1375
E-mail: hough.palmer@epa.gov

Street/Courier Address
USEPA
Palmer Hough
EPA West -- Room 7231-L
Mail Code 4502T
1301 Constitution Avenue, NW
Washington, DC 20460

From: "Walker, William T SAW" <William.T.Walker@usace.army.mil>

To: Palmer Hough/DC/USEPA/US@EPA, "Jolly, Samuel K SAW"
<Samuel.K.Jolly@usace.army.mil>

Cc: "Lamson, Brooke SAW" <Brooke.Lamson@usace.army.mil>,
"Lekson,
David M SAW" <David.M.Lekson@usace.army.mil>, "Ryscavage, Jefferson COL SAW"
<Jefferson.Ryscavage@us.army.mil>, "Moyer, Jennifer A HQ02"
<Jennifer.A.Moyer@usace.army.mil>, Jim
Giattina/R4/USEPA/US@EPA, "Gaffney-Smith,
Margaret E" <Meg.E.Gaffney-Smith@usace.army.mil>, Rebecca
Fox/R4/USEPA/US@EPA,
Stan Meiburg/R4/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA

Date: 06/04/2009 03:16 PM

Subject: RE: PCS ROD

Palmer,

Thanks, we have corrected the map date of the "Conservation
Easement
- Jacks Creek - Modified Alternative L _ NCPC" to 5/28/09 (see attached) and
included the Cypress Run reference. The 22,435 linear feet of stream impact

is correct and includes the most recent avoidance efforts. We will send the corrected conditions to everyone shortly.

Thanks
Tom

-----Original Message-----

From: Hough.Palmer@epamail.epa.gov [mailto:Hough.Palmer@epamail.epa.gov]

Sent: Thursday, June 04, 2009 1:29 PM

To: Jolly, Samuel K SAW

Cc: Lamson, Brooke SAW; Lekson, David M SAW; Ryscavage, Jefferson COL SAW; Moyer, Jennifer A HQ02; Giattina.Jim@epamail.epa.gov; Gaffney-Smith, Margaret E; Fox.Rebecca@epamail.epa.gov; Meiburg.Stan@epamail.epa.gov; Welborn.Tom@epamail.epa.gov; Walker, William T SAW

Subject: Re: PCS ROD

Ken:

Thanks for sharing this so quickly. We are reviewing the ROD and have a few quick questions to make sure we are on the same page.

- 1) Condition "DD" in the ROD and proffered permit appears to have omitted reference to the conservation easement for Cypress Run promised by the company in its 6-2-09 proposal. Has this been included somewhere else?
- 2) Condition "DD" also refers to maps "all dated May 18, 2009". Didn't the company's 6-2-09 proposal increase the amount of acreage protected in the Jacks Creek watershed by 82 acres, necessitating an updated map for that creek?
- 3) Condition "DD" also noted that the conservation easement maps have been attached. However, we have not been able to locate them in the ROD package.
- 4) Also the ROD estimates total remaining stream impacts to be 22,435 linear feet which is consistent with the number EPA came up with based on the company's 6-2-09 proposal, however, the Corps' Press Release yesterday reported total remaining stream impacts at 22,082 linear feet. Which is the correct number according to the Corps?

Thanks, Palmer

Palmer F. Hough
US Environmental Protection Agency
Wetlands Division
Room 7231, Mail Code 4502T
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Office: 202-566-1374
Cell: 202-657-3114
FAX: 202-566-1375
E-mail: hough.palmer@epa.gov

Street/Courier Address
USEPA
Palmer Hough
EPA West -- Room 7231-L
Mail Code 4502T
1301 Constitution Avenue, NW
Washington, DC 20460

From: "Jolly, Samuel K SAW" <Samuel.K.Jolly@usace.army.mil>

To: Stan Meiburg/R4/USEPA/US@EPA

Cc: Rebecca Fox/R4/USEPA/US@EPA, Jim Giattina/R4/USEPA/US@EPA,
Tom

Welborn/R4/USEPA/US@EPA, Palmer Hough/DC/USEPA/US@EPA, "Moyer,
Jennifer A HQ02"
<Jennifer.A.Moyer@usace.army.mil>, "Gaffney-Smith, Margaret E"
<Meg.E.Gaffney-Smith@usace.army.mil>, "Smith, Chip R HQDA"
<SmithCR@HQDA.Army.Mil>, "Ryscavage, Jefferson COL SAW"
<Jefferson.Ryscavage@us.army.mil>, "Walker, William T SAW"
<William.T.Walker@usace.army.mil>, "Lekson, David M SAW"
<David.M.Lekson@usace.army.mil>, "Lamson, Brooke SAW"
<Brooke.Lamson@usace.army.mil>

Date: 06/04/2009 10:53 AM

Subject: PCS ROD

<<PCS ROD.pdf>>
Mr. Meiburg,

Attached find a copy of the signed, proffered permit and ROD for PCS Phosphate. PCS has requested we remove condition "EE" which states no work authorized by the permit may begin until 10 days after the ROD is provided to EPA. We will not remove that condition unless you provide written concurrence with such an action.

Ken Jolly
Chief, Regulatory Division
Wilmington District
910-251-4630

[attachment "Proffered Permit.pdf" deleted by Palmer Hough/DC/USEPA/US]

[attachment "PCS ROD.pdf" deleted by Palmer Hough/DC/USEPA/US]

[attachment "EPA-ASA Modified Alt L 06-02-09 Exclusion Easement graphics.pdf" deleted by Palmer Hough/DC/USEPA/US]

(See attached file: BON PORTER CRK CONSERV EASE OUTSIDE BASE.pdf) (See attached file: S33 CYPRESS RUN CONSERV EASE OUTSIDE BASE.pdf)



Derb Carter
<derbc@selcnc.org>
06/09/2009 11:35 AM

To Stan Meiburg/R4/USEPA/US@EPA
cc 'Sam Pearsall' <SPearsall@edf.org>, 'Heather Main'
<ergotrack@netpath.net>, 'David Emmerling'
<david.emmerling@ptrf.org>, 'Molly Diggins'
bcc

Subject meeting re PCS

History:  This message has been replied to.

Stan,

We have received no response from EPA regarding our acceptance of your offer of a meeting to discuss the Corps's ROD and permit for PCS. We asked that to be meaningful the meeting occur before EPA responds to the Corps's ROD, if EPA plans to respond. We can meet in NC, Atlanta, or Washington. You suggested Washington and said you planned to be there Monday through Wednesday. Can you give us an update?

Derb Carter
Derb S. Carter, Jr.
Director, Carolinas Office
Southern Environmental Law Center
200 W. Franklin Street, Suite 330
Chapel Hill, NC 27516
(919)967-1450 Phone
(919)929-9421 Fax
derbc@selcnc.org
www.SouthernEnvironment.org

Confidentiality Notice:

This communication constitutes an electronic communication within the meaning of the Electronic Communications Privacy Act, 18 U.S.C. Section 2510, and its disclosure is strictly limited to the recipient intended by the sender of this message. This transmission, and any attachments, may contain confidential attorney-client privileged information and attorney work product. If you are not the intended recipient, any disclosure, copying, distribution or use of any of the information contained in or attached to this transmission is STRICTLY PROHIBITED. Please contact us immediately by return e-mail or at 919 967 1450, and destroy the original transmission and its attachments without reading or saving in any manner.

Stan Meiburg /R4/USEPA/US
06/09/2009 11:50 AM

To "Derb Carter" <derbc@selcnc.org>
cc
bcc Bob Sussman/DC/USEPA/US@EPA
Subject Re: meeting re PCS

Derb, thanks for your note, because it shows a flaw in my assumptions. There is a meeting set up for 1:00 on Thursday, here in Washington, which I believe EDF set up in response to Bob Sussman's same offer. I had assumed--and here's my error--that you and they had been in communication about this.

I am going to stay over in DC for that meeting. Jim Giattina will be on the phone

Could you check with EDF to be sure I have my facts straight? If you cannot make that meeting in person, I'm sure we could tie you in by phone. If that doesn't work, let's talk.

Best regards,

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA. 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

Sent using Blackberry

From: Derb Carter [derbc@selcnc.org]
Sent: 06/09/2009 11:35 AM AST
To: Stan Meiburg
Cc: 'Sam Pearsall' <SPearsall@edf.org>; 'Heather Main' <ergotrack@netpath.net>; 'David Emmerling' <david.emmerling@ptrf.org>; 'Molly Diggins' <Molly.Diggins@sierraclub.org>; 'Todd Miller' <toddm@nccoast.org>; Geoff Gisler <ggisler@selcnc.org>
Subject: meeting re PCS

Stan,

We have received no response from EPA regarding our acceptance of your offer of a meeting to discuss the Corps's ROD and permit for PCS. We asked that to be meaningful the meeting occur before EPA responds to the Corps's ROD, if EPA plans to respond. We can meet in NC, Atlanta, or Washington. You suggested Washington and said you planned to be there Monday through Wednesday. Can you give us an update?

Derb Carter
Derb S. Carter, Jr.

Director, Carolinas Office
Southern Environmental Law Center
200 W. Franklin Street, Suite 330
Chapel Hill, NC 27516
(919)967-1450 Phone
(919)929-9421 Fax
derbc@selcnc.org
www.SouthernEnvironment.org

Confidentiality Notice:
This communication constitutes an electronic communication within the meaning of the Electronic Communications Privacy Act, 18 U.S.C. Section 2510, and its disclosure is strictly limited to the recipient intended by the sender of this message. This transmission, and any attachments, may contain confidential attorney-client privileged information and attorney work product. If you are not the intended recipient, any disclosure, copying, distribution or use of any of the information contained in or attached to this transmission is STRICTLY PROHIBITED. Please contact us immediately by return e-mail or at 919 967 1450, and destroy the original transmission and its attachments without reading or saving in any manner.



"Elgie Holstein"
<eholstein@edf.org>
06/09/2009 01:17 PM

To Gregory Peck/DC/USEPA/US@EPA, Bob
Sussman/DC/USEPA/US@EPA
cc Georgia Bednar/DC/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Mike
Shapiro/DC/USEPA/US@EPA, Stan
bcc

Subject RE: Mtg on PCS Permit Early Next Week?

Greg,

What is the status of our request? I'm hearing that there is a mtg
scheduled for Thursday -- did I miss an email?

Thanks,

Elgie Holstein
VP Land, Water and Wildlife
Environmental Defense Fund

-----Original Message-----

From: Peck.Gregory@epamail.epa.gov [mailto:Peck.Gregory@epamail.epa.gov]

Sent: Friday, June 05, 2009 6:15 PM

To: Sussman.Bob@epamail.epa.gov

Cc: Elgie Holstein; Bednar.Georgia@epamail.epa.gov;

Giattina.Jim@epamail.epa.gov; Shapiro.Mike@epamail.epa.gov;

Meiburg.Stan@epamail.epa.gov

Subject: Re: Mtg on PCS Permit Early Next Week?

Bob:

I'll work with Elgie and Georgia to get this meeting scheduled for early
next week.

Best,
Greg

Gregory E. Peck
Chief of Staff
Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

202-564-5778

|----->
| From: |
|----->

>-----
Bob Sussman/DC/USEPA/US
>-----
|----->

To:

"Elgie Holstein" <eholstein@edf.org>

Cc:

Gregory Peck/DC/USEPA/US@EPA, Stan Meiburg/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Mike Shapiro/DC/USEPA/US@EPA, Georgia
Bednar/DC/USEPA/US@EPA

Date:

06/05/2009 05:38 PM

Subject:

Re: Mtg on PCS Permit Early Next Week?

Elgie -- thanks for getting back in touch. Monday may be a bit difficult but Tuesday may be workable. I'll try to join but the key thing is to get the key EPA players at the meeting, who are copied on this e-mail. Greg -- could you coordinate with Elgie on arrangements for the meeting (perhaps with Georgia's assistance)?

Robert M. Sussman
Senior Policy Counsel to the Administrator Office of the Administrator
US Environmental Protection Agency

>
>----->
| From: |
>----->

>
>----->
| "Elgie Holstein" <eholstein@edf.org> |
>----->

>
>----->
| To: |
>----->

>
>----->
| Bob Sussman/DC/USEPA/US@EPA |
>----->

>
>----->
| Date: |
>----->

>
>----->
| 06/05/2009 05:33 PM |
>----->

>
>----->
| Subject: |
>----->

>
>----->
| Mtg on PCS Permit Early Next Week? |
>----->
>
>----->

Hi Bob,

Do you think we could meet on Monday or Tuesday afternoon sometime?

Elgie

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

Stan Meiburg /R4/USEPA/US
06/09/2009 02:48 PM

To Georgia Bednar/DC/USEPA/US@EPA
cc
bcc
Subject Re: Mtg on PCS Permit Early Next Week?☐

Thanks, Georgia. I had assumed that the Thursday meeting was the one with the environmental groups--is that correct?

Stan
A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA. 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

Sent using Blackberry
Georgia Bednar

----- Original Message -----

From: Georgia Bednar
Sent: 06/09/2009 01:35 PM EDT
To: "Elgie Holstein" <eholstein@edf.org>
Cc: Bob Sussman; Gregory Peck; Jim Giattina; Mike Shapiro; Stan Meiburg
Subject: RE: Mtg on PCS Permit Early Next Week?

Oh no... I apologize Elgie. I didn't realize you were to be involved in this meeting. I thought it was another one down the line. I will send out the invite to you shortly. Please advise once getting it that this will work for your schedule as well.

Much thanks for your patience,
Ga-

Georgia Lynn Bednar
Office of the Administrator
U.S. Environmental Protection Agency
(202) 564-9816
(202) 251-8468 Cell

"It takes courage to grow up and turn out to be who you really are." - e.e. cummings

"Elgie Holstein" Greg. What is the status of our request? I'm he... 06/09/2009 01:17:35 PM

From: "Elgie Holstein" <eholstein@edf.org>
To: Gregory Peck/DC/USEPA/US@EPA, Bob Sussman/DC/USEPA/US@EPA
Cc: Georgia Bednar/DC/USEPA/US@EPA, Jim Giattina/R4/USEPA/US@EPA, Mike Shapiro/DC/USEPA/US@EPA, Stan Meiburg/R4/USEPA/US@EPA
Date: 06/09/2009 01:17 PM

Subject: RE: Mtg on PCS Permit Early Next Week?

Greg,

What is the status of our request? I'm hearing that there is a mtg scheduled for Thursday -- did I miss an email?

Thanks,

Elgie Holstein
VP Land, Water and Wildlife
Environmental Defense Fund

-----Original Message-----

From: Peck.Gregory@epamail.epa.gov [mailto:Peck.Gregory@epamail.epa.gov]

Sent: Friday, June 05, 2009 6:15 PM

To: Sussman.Bob@epamail.epa.gov

Cc: Elgie Holstein; Bednar.Georgia@epamail.epa.gov;

Giattina.Jim@epamail.epa.gov; Shapiro.Mike@epamail.epa.gov;

Meiburg.Stan@epamail.epa.gov

Subject: Re: Mtg on PCS Permit Early Next Week?

Bob:

I'll work with Elgie and Georgia to get this meeting scheduled for early next week.

Best,
Greg

Gregory E. Peck
Chief of Staff
Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

202-564-5778

|----->
| From: |
|----->

>----->
|----->
| Bob Sussman/DC/USEPA/US
|

>----->
|----->
|----->
| To: |
|----->

>----->
|----->
| "Elgie Holstein" <eholstein@edf.org>

>

| Cc: |
----->

>

| Gregory Peck/DC/USEPA/US@EPA, Stan Meiburg/R4/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Mike Shapiro/DC/USEPA/US@EPA, Georgia
| Bednar/DC/USEPA/US@EPA
|
----->

>

| Date: |
----->

>

| 06/05/2009 05:38 PM
|
----->

>

| Subject: |
----->

>

| Re: Mtg on PCS Permit Early Next Week?
|
----->

Elgie -- thanks for getting back in touch. Monday may be a bit difficult but Tuesday may be workable. I'll try to join but the key thing is to get the key EPA players at the meeting, who are copied on this e-mail. Greg -- could you coordinate with Elgie on arrangements for the meeting (perhaps with Georgia's assistance)?

Robert M. Sussman
Senior Policy Counsel to the Administrator Office of the Administrator
US Environmental Protection Agency

>

| From: |
----->

| "Elgie Holstein" <eholstein@edf.org>
|

|----->
| To: |
|----->

| Bob Sussman/DC/USEPA/US@EPA
|

|----->
| Date: |
|----->

| 06/05/2009 05:33 PM
|

|----->
| Subject: |
|----->

| Mtg on PCS Permit Early Next Week?
|

Hi Bob,

Do you think we could meet on Monday or Tuesday afternoon sometime?

Elgie

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any

copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

Stan Meiburg /R4/USEPA/US
06/09/2009 03:14 PM

To "Derb Carter" <derbc@selcnc.org>
cc
bcc
Subject Re: meeting re PCS

I think Elgie Holstein has heard back this afternoon. I think there was some confusion up here. Thanks for asking!

Stan
A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA. 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

Sent using Blackberry

From: Derb Carter [derbc@selcnc.org]
Sent: 06/09/2009 11:35 AM AST
To: Stan Meiburg
Cc: 'Sam Pearsall' <SPearsall@edf.org>; 'Heather Main' <ergotrack@netpath.net>; 'David Emmérling' <david.emmerling@ptrf.org>; 'Molly Diggins' <Molly.Diggins@sierraclub.org>; 'Todd Miller' <toddm@nccoast.org>; Geoff Gisler <ggisler@selcnc.org>
Subject: meeting re PCS

Stan,

We have received no response from EPA regarding our acceptance of your offer of a meeting to discuss the Corps's ROD and permit for PCS. We asked that to be meaningful the meeting occur before EPA responds to the Corps's ROD, if EPA plans to respond. We can meet in NC, Atlanta, or Washington. You suggested Washington and said you planned to be there Monday through Wednesday. Can you give us an update?

Derb Carter
Derb S. Carter, Jr.
Director, Carolinas Office
Southern Environmental Law Center
200 W. Franklin Street, Suite 330
Chapel Hill, NC 27516
(919)967-1450 Phone
(919)929-9421 Fax
derbc@selcnc.org
www.SouthernEnvironment.org

Confidentiality Notice:

This communication constitutes an electronic communication within the meaning of the Electronic Communications Privacy Act, 18 U.S.C. Section 2510, and its disclosure is strictly limited to the recipient intended by the sender of this message. This transmission, and any attachments, may contain

confidential attorney-client privileged information and attorney work product. If you are not the intended recipient, any disclosure, copying, distribution or use of any of the information contained in or attached to this transmission is STRICTLY PROHIBITED. Please contact us immediately by return e-mail or at 919 967 1450, and destroy the original transmission and its attachments without reading or saving in any manner.



Derb Carter
<derbc@selcnc.org>
06/12/2009 06:06 PM

To Stan Meiburg/R4/USEPA/US@EPA
cc
bcc
Subject PCS elevation

History:  This message has been replied to.

Stan,

On our call yesterday you said EPA is drafting a letter to the Corps responding the PCS permit and ROD. Could you please send me a copy of that letter when it is transmitted. I expect to have several inquiries about EPA's decision and it would be helpful to have the letter to better understand the decision.

Derb

Derb S. Carter, Jr.
Director, Carolinas Office
Southern Environmental Law Center
200 W. Franklin Street, Suite 330
Chapel Hill, NC 27516
(919)967-1450 Phone
(919)929-9421 Fax
derbc@selcnc.org
www.SouthernEnvironment.org

Confidentiality Notice:

This communication constitutes an electronic communication within the meaning of the Electronic Communications Privacy Act, 18 U.S.C. Section 2510, and its disclosure is strictly limited to the recipient intended by the sender of this message. This transmission, and any attachments, may contain confidential attorney-client privileged information and attorney work product. If you are not the intended recipient, any disclosure, copying, distribution or use of any of the information contained in or attached to this transmission is STRICTLY PROHIBITED. Please contact us immediately by return e-mail or at 919 967 1450, and destroy the original transmission and its attachments without reading or saving in any manner.

Stan Meiburg /R4/USEPA/US
06/12/2009 06:11 PM

To: Derb Carter <derbc@selcnc.org>
cc
bcc
Subject: Re: PCS elevation

Derb, I'll be happy to. It's not done yet--I expect, or at least hope, it will be Monday or Tuesday of next week.

Thanks again for being on the call yesterday, and I look forward to seeing you again soon.

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

Derb Carter <derbc@selcnc.org>



Derb Carter
<derbc@selcnc.org>
06/12/2009 06:06 PM

To: Stan Meiburg/R4/USEPA/US@EPA
cc
Subject: PCS elevation

Stan,

On our call yesterday you said EPA is drafting a letter to the Corps responding the PCS permit and ROD. Could you please send me a copy of that letter when it is transmitted. I expect to have several inquires about EPA's decision and it would be helpful to have the letter to better understand the decision.

Derb

Derb S. Carter, Jr.
Director, Carolinas Office
Southern Environmental Law Center
200 W. Franklin Street, Suite 330
Chapel Hill, NC 27516
(919)967-1450 Phone
(919)929-9421 Fax
derbc@selcnc.org
www.SouthernEnvironment.org

Confidentiality Notice:

This communication constitutes an electronic communication within the meaning of the Electronic Communications Privacy Act, 18 U.S.C. Section 2510, and its disclosure is strictly limited to the recipient intended by the sender of this message. This transmission, and any attachments, may contain confidential attorney-client privileged information and attorney work product. If you are not the intended recipient, any disclosure, copying, distribution or use of any of the information contained in or attached to this transmission is **STRICTLY PROHIBITED**. Please contact us immediately by return e-mail or at 919 967 1450, and destroy the original transmission and its attachments without reading or saving in any manner.



Wilson_Laney@fws.gov
06/13/2009 08:00 AM

To Thomas_Sinclair@fws.gov, Linda_Kelsey@fws.gov,
Cynthia_Dohner@fws.gov, Sam_Hamilton@fws.gov,
Jon_Andrew@fws.gov, Jeff_Weller@fws.gov,
cc Pete_Benjamin@fws.gov, Mike_Wicker@fws.gov,
Tom_Augspurger@fws.gov, John_Ellis@fws.gov,
Howard_Phillips@fws.gov, Mike_Bryant@fws.gov,
bcc

Subject Fw: SAFMC Comment Letter on PCS Phosphate Permit

History: This message has been forwarded.

All:

FYI. The PCS permit issue was raised during the meeting of the South Atlantic Fishery Management Council's Ecosystem-Based Management Committee meeting in Hutchinson Island (Stuart), FL, on Thursday, June 10. After explanation to the Council of the issue, NC Marine Fisheries Commission chairman Mac Currin, who also sits on the South Atlantic Fishery Management Council as the recreational representative from NC, made the motion that the council send a letter to EPA, recommending EPA veto the issued permit. The motion was seconded by Council Chairman Duane Harris (GA). There was no opposition to the motion. The letter was approved for transmittal by the full Council during their meeting June 11. There was no further discussion and no opposition to the wording of the letter.

My understanding is that EPA, as of Friday afternoon, appears to have made a decision not to veto the issued permit. So, the letter may have no effect, but we shall see.

Many thanks are due to the South Atlantic Fishery Management Council for forthrightly expressing their long-standing commitment to the conservation and sustainability of our coastal habitats, especially those designated Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC).

/s/ Wilson

R. Wilson Laney, Ph.D., Coordinator
South Atlantic Fisheries Coordination Office
U.S. Fish and Wildlife Service
P.O. Box 33683
Raleigh, North Carolina 27636-3683
Voice: 919-515-5019
Fax: 919-515-4454
e-mail: Wilson_Laney@fws.gov

----- Forwarded by Wilson Laney/R4/FWS/DOI on 06/13/2009 07:14 AM -----

"Roger Pugliese"
<roger.pugliese@safmc
.net>

To<Shapiro.mike@epa.gov>

cc<wilson_laney@fws.gov>

06/12/2009 10:37 PM

Subject SAFMC Comment Letter on PCS Phosphate
Permit

Attn: Michael H. Shapiro
Acting Assistant Administrator for Water
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4101M
Washington, DC 20460

The South Atlantic Fishery Management Council at their meeting on June 11 in Hutchinson Island, Florida approved sending the attached letter providing comments on the proposed expansion of mining operations by the Potash Company of

Saskatchewan, Inc. (PCS). Thank you for your consideration of these comments.

Roger Pugliese

Roger Pugliese
Senior Fishery Biologist
South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
North Charleston, SC 29405
Tel: 843-571-4366
Fax: 843-769-4520
Email: Roger.Pugliese@safmc.net
(See attached file: *SAFMCCommPCStoEPAJune1109.pdf*)



SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

4055 FABER PLACE DRIVE, SUITE 201
NORTH CHARLESTON, SOUTH CAROLINA 29405
TEL 843/571-4366 FAX 843/769-4520
Toll Free 1-866-SAFMC-10
email: safmc@safmc.net web page: www.safmc.net

Duane Harris, Chairman
David Cupka, Vice Chairman

Robert K. Mahood, Executive Director
Gregg T. Waugh, Deputy Executive Director

June 11, 2009

Michael H. Shapiro
Acting Assistant Administrator for Water
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4101M
Washington, DC 20460

Dear Mr. Shapiro:

The South Atlantic Fishery Management Council (SAFMC) previously provided (2007) comments on the proposed expansion of mining operations by the Potash Company of Saskatchewan, Inc. (PCS) in response to the Environmental Impact Statement and presented under Action ID 200110096. Subsequent to the provision of the Council's comments, the U.S. Army Corps of Engineers, Wilmington District, recently issued a permit (effective June 13, 2009) for a modification of the originally proposed mine expansion.

The expansion of mining operations, as proposed in the issued permit, will impact areas identified as Essential Fish Habitat (EFH) and EFH Habitat Areas of Particular Concern (HAPCs) in the SAFMC's Comprehensive Habitat Amendment to Fishery Management Plans (coral, coral reef and live bottom habitat, red drum, shrimp, spiny lobster, coastal migratory pelagic species, and the snapper-grouper complex). Specifically in North Carolina, the Council has designated state established Primary Nursery Areas as HAPCs.

Besides impacting habitats used by managed species under the SAFMC's jurisdiction, the proposed activities would also impact habitats that support other living marine resources of critical importance to the SAFMC. The SAFMC is committed to applying an ecosystem-based approach to the management of resources within its jurisdiction; hence the SAFMC supports the protection of species which serve as prey for federally managed fishery species (including king mackerel, Spanish mackerel, cobia, and highly migratory species). The proposed project poses a significant risk to the coastal ecosystem as a whole through alteration of food web dynamics, diminished water quality, and altered estuarine productivity.

The SAFMC concurs with the conclusions of multiple federal and state natural resource management agencies (NC Division of Marine Fisheries, NC Marine Fisheries Commission, NC Wildlife Resources Commission, National Marine Fisheries Service and U.S. Fish and Wildlife Service) that the proposed project will result in significant and unacceptable impacts to EFH and

aquatic resources that depend on those habitats. Therefore, the SAFMC recommends that the U.S. Environmental Protection Agency veto the issued permit for this project.

Thank you for the opportunity to provide comments on this project. Please direct questions or comments to Roger Pugliese (Roger.Pugliese@safmc.net) or Myra Brouwer (Myra.Brouwer@safmc.net) at the SAFMC office, (843) 571-4366.

Sincerely,



Duane Harris

SAFMC Chair

Cc: (via electronic mail)
Council members and staff
Habitat AP

Stan Meiburg /R4/USEPA/US
06/13/2009 08:58 AM

To "Sam Hamilton" <sam_hamilton@fws.gov>
cc
bcc
Subject Fw: SAFMC Comment Letter on PCS Phosphate Permit

I gather this letter does not reflect the official position of FWS.

We're working on our final letter to the Corps and we're using the language you supplied last week. The letter will be from Mike Shapiro to Rock Salt. Also, just FYI, we had a conference call with EDF and SELC last Thursday and told them we were not going to proceed under 404(c).

Stan
A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA. 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

Sent using Blackberry

From: Wilson_Laney
Sent: 06/13/2009 08:00 AM AST
To: Thomas_Sinclair@fws.gov; Linda_Kelsey@fws.gov; Cynthia_Dohner@fws.gov; Sam_Hamilton@fws.gov; Jon_Andrew@fws.gov; Jeff_Weller@fws.gov; Roy.Crabtree@noaa.gov; Miles.Croom@noaa.gov
Cc: Pete_Benjamin@fws.gov; Mike_Wicker@fws.gov; Tom_Augspurger@fws.gov; John_Ellis@fws.gov; Howard_Phillips@fws.gov; Mike_Bryant@fws.gov; Pete_Campbell@fws.gov; Scott_Lanier@fws.gov; Dennis_Stewart@fws.gov; Jean_Richter@fws.gov; John_Stanton@fws.gov; Ron.Sechler@noaa.gov; Fritz.Rohde@noaa.gov; Pace.Wilber@noaa.gov; Prescott.Brownell@noaa.gov; Stephania.Bolden@noaa.gov; KornegayJW@mchsi.com; Sara.Winslow@ncdenr.gov; Katy.West@ncdenr.gov; Louis.Daniel@ncdenr.gov; Anne.Deaton@ncdenr.gov; Gordon.Myers@ncwildlife.org; Mallory.Martin@ncwildlife.org; Robert.Curry@ncwildlife.org; David.Cobb@ncwildlife.org; Perry.Sumner@ncwildlife.org; Shannon.Deaton@ncwildlife.org; Carol.Price@ncwildlife.org; Linda.Pearsall@ncdenr.gov; SPearsall@edf.org; DRader@edf.org; WCole1976@triad.rr.com; JBoreman@nc.rr.com; MGantt2@nc.rr.com; MCurrin1@bellsouth.net; seageorg@bellsouth.net; palmettobooks@bellsouth.net; brian.cheuvront@ncdenr.gov; miridon@ec.rr.com; boylesr@dnr.sc.gov; GeorgeJGeiger@bellsouth.net; VOShea@asmfc.org; JThomas@asmfc.org; RBeal@asmfc.org; T Berger@asmfc.org; Mark.Robson@myfwc.com; SShipman@dnr.state.ga.us; Brian.A.Sullivan@uscg.mil; Tom@capticks.com; Ga_shrimp@darientel.net; Chuck_Hunter@fws.gov; Susan_Cielinski@fws.gov; Laura_Brandt@fws.gov; Cynthia_Bohn@fws.gov; ENickens@nc.rr.com; Patty_Matteson@fws.gov; Stan Meiburg; Jim Giattina; Gregory Peck; Suzanne Schwartz; Palmer Hough; Tom Welborn; David Evans; wood.robert@edf.gov; Dawn Messier; Jennifer Derby; Rebecca Fox; rock.salt@us.army.mil; todd.semonite@us.army.mil; Jefferson.Ryscavage@us.army.mil; ggisler@selcnc.org; derbc@selc.org; jtripp@edf.org; mkelly@edf.org; eholstein@edf.org
Subject: Fw: SAFMC Comment Letter on PCS Phosphate Permit

All:

FYI. The PCS permit issue was raised during the meeting of the South Atlantic Fishery Management Council's Ecosystem-Based Management Committee meeting in Hutchinson Island (Stuart), FL, on Thursday, June 10. After explanation to the Council of the issue, NC Marine Fisheries Commission chairman Mac Currin, who also sits on the South Atlantic Fishery Management Council as the recreational representative from NC, made the motion that the council send a letter to EPA, recommending EPA veto the issued permit. The motion was seconded by Council Chairman Duane Harris (GA). There was no opposition to the motion. The letter was approved for transmittal by the full Council during their meeting June 11. There was no further discussion and no opposition to the wording of the letter.

My understanding is that EPA, as of Friday afternoon, appears to have made a decision not to veto the issued permit. So, the letter may have no effect, but we shall see.

Many thanks are due to the South Atlantic Fishery Management Council for forthrightly expressing their long-standing commitment to the conservation and sustainability of our coastal habitats, especially those designated Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC).

/s/ Wilson

R. Wilson Laney, Ph.D., Coordinator
South Atlantic Fisheries Coordination Office
U.S. Fish and Wildlife Service
P.O. Box 33683
Raleigh, North Carolina 27636-3683
Voice: 919-515-5019
Fax: 919-515-4454
e-mail: Wilson_Laney@fws.gov

----- Forwarded by Wilson Laney/R4/FWS/DOI on 06/13/2009 07:14 AM -----

"Roger Pugliese"
<roger.pugliese@safmc.net>

To<Shapiro.mike@epa.gov>

cc<wilson_laney@fws.gov>

06/12/2009 10:37 PM

SubjectSAFMC Comment Letter on PCS Phosphate Permit

Attn: Michael H. Shapiro
Acting Assistant Administrator for Water
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.

Mail Code: 4101M
Washington, DC 20460

The South Atlantic Fishery Management Council at their meeting on June 11 in Hutchinson Island, Florida approved sending the attached letter providing comments on the proposed expansion of mining operations by the Potash Company of

Saskatchewan, Inc. (PCS). Thank you for your consideration of these comments.

Roger Pugliese

Roger Pugliese
Senior Fishery Biologist
South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
North Charleston, SC 29405
Tel: 843-571-4366
Fax: 843-769-4520
Email: Roger.Pugliese@safmc.net

(See attached file: SAFMCCommPCStoEPAJune1109.pdf)



SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

4055 FABER PLACE DRIVE, SUITE 201
NORTH CHARLESTON, SOUTH CAROLINA 29405
TEL 843/571-4366 FAX 843/769-4520
Toll Free 1-866-SAFMC-10
email: safmc@safmc.net web page: www.safmc.net

Duane Harris, Chairman
David Cupka, Vice Chairman

Robert K. Mahood, Executive Director
Gregg T. Waugh, Deputy Executive Director

June 11, 2009

Michael H. Shapiro
Acting Assistant Administrator for Water
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4101M
Washington, DC 20460

Dear Mr. Shapiro:

The South Atlantic Fishery Management Council (SAFMC) previously provided (2007) comments on the proposed expansion of mining operations by the Potash Company of Saskatchewan, Inc. (PCS) in response to the Environmental Impact Statement and presented under Action ID 200110096. Subsequent to the provision of the Council's comments, the U.S. Army Corps of Engineers, Wilmington District, recently issued a permit (effective June 13, 2009) for a modification of the originally proposed mine expansion.

The expansion of mining operations, as proposed in the issued permit, will impact areas identified as Essential Fish Habitat (EFH) and EFH Habitat Areas of Particular Concern (HAPCs) in the SAFMC's Comprehensive Habitat Amendment to Fishery Management Plans (coral, coral reef and live bottom habitat, red drum, shrimp, spiny lobster, coastal migratory pelagic species, and the snapper-grouper complex). Specifically in North Carolina, the Council has designated state established Primary Nursery Areas as HAPCs.

Besides impacting habitats used by managed species under the SAFMC's jurisdiction, the proposed activities would also impact habitats that support other living marine resources of critical importance to the SAFMC. The SAFMC is committed to applying an ecosystem-based approach to the management of resources within its jurisdiction; hence the SAFMC supports the protection of species which serve as prey for federally managed fishery species (including king mackerel, Spanish mackerel, cobia, and highly migratory species). The proposed project poses a significant risk to the coastal ecosystem as a whole through alteration of food web dynamics, diminished water quality, and altered estuarine productivity.

The SAFMC concurs with the conclusions of multiple federal and state natural resource management agencies (NC Division of Marine Fisheries, NC Marine Fisheries Commission, NC Wildlife Resources Commission, National Marine Fisheries Service and U.S. Fish and Wildlife Service) that the proposed project will result in significant and unacceptable impacts to EFH and

aquatic resources that depend on those habitats. Therefore, the SAFMC recommends that the U.S. Environmental Protection Agency veto the issued permit for this project.

Thank you for the opportunity to provide comments on this project. Please direct questions or comments to Roger Pugliese (Roger.Pugliese@safmc.net) or Myra Brouwer (Myra.Brouwer@safmc.net) at the SAFMC office, (843) 571-4366.

Sincerely,



Duane Harris

SAFMC Chair

Cc: (via electronic mail)
Council members and staff
Habitat AP



Geoff Gisler
<ggisler@selcnc.org>
06/15/2009 11:28 AM

To Stan Meiburg/R4/USEPA/US@EPA
cc Mike Shapiro/DC/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Gregory
Peck/DC/USEPA/US@EPA, Suzanne
bcc

Subject SAFMC Comment Letter on PCS Phosphate Permit

Stan,

Attached is a June 11, 2009 letter from the South Atlantic Fisheries Management Council restating its concerns about the impacts of the PCS permit on fisheries and essential fish habitats. The SAFMC was established by the Magnuson Stevens Act to coordinate fisheries management and conservation on the southern Atlantic coast. Regional Fishery Management Councils are established "to exercise sound judgment in the stewardship of fishery resources." The Regional Councils are charged by Congress with developing fishery management plans "necessary and appropriate for the conservation and management of the fishery to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term health and stability of the fishery." The South Atlantic Council has identified primary nursery areas that will be affected by the PCS mine expansion as Essential Fish Habitat (EFH) and EFH Habitat Areas of Particular Concern in the Council's Comprehensive Habitat Amendment to Fishery Management Plans.

The South Atlantic Council submitted comments earlier in the PCS permit process, stating the permit will result in unacceptable adverse impacts to EFH. The Council stated that the project "poses a significant risk to the coastal ecosystem as a whole through alteration of food web dynamics and severely diminished water quality. Areas adjacent to the project area serve as habitat for a large portion of the shellfish and fish that North Carolina commercial and recreational fishermen harvest." The Council concluded that the expansion "will result in significant and unacceptable impacts to EFH and aquatic resources that depend on those habitats."

The letter adopted by the Council last week states the permit authorizing the PCS mine expansion, as modified by the Corps June 3, "will result in significant and unacceptable impacts to essential fish habitat and aquatic resources that depend on those habitats." The Council requests that EPA exercise its 404(c) authority to veto the permit. Our understanding is the decision to send the letter was a unanimous decision of the Council, which includes by statute the regional director of the National Marine Fisheries Service or his designee.

Derb Carter

Geoff Gisler

Geoff Gisler
Staff Attorney
Southern Environmental Law Center
200 W. Franklin St. Suite 330
Chapel Hill, NC 27516
Ph: (919) 967-1450
Fax: (919) 929-9421

www.southernenvironment.org

This electronic message and any attached files are confidential and are intended solely for the use of the addressee(s) named above. This communication may contain material protected by attorney-client, work product or other privileges. If you are not the intended recipient or person responsible for delivering this confidential communication to the intended recipient(s), and/or you have received this communication in error, then any review, use, dissemination, forwarding, printing, copying or other distribution of this email message and any attached files is strictly prohibited. If you have received this confidential communication in error, please notify the sender immediately by reply email message and permanently delete the original message.



SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

4055 FABER PLACE DRIVE, SUITE 201
NORTH CHARLESTON, SOUTH CAROLINA 29405
TEL 843/571-4366 FAX 843/769-4520
Toll Free 1-866-SAFMC-10
email: safmc@safmc.net web page: www.safmc.net

Duane Harris, Chairman
David Cupka, Vice Chairman

Robert K. Mahood, Executive Director
Gregg T. Waugh, Deputy Executive Director

June 11, 2009

Michael H. Shapiro
Acting Assistant Administrator for Water
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4101M
Washington, DC 20460

Dear Mr. Shapiro:

The South Atlantic Fishery Management Council (SAFMC) previously provided (2007) comments on the proposed expansion of mining operations by the Potash Company of Saskatchewan, Inc. (PCS) in response to the Environmental Impact Statement and presented under Action ID 200110096. Subsequent to the provision of the Council's comments, the U.S. Army Corps of Engineers, Wilmington District, recently issued a permit (effective June 13, 2009) for a modification of the originally proposed mine expansion.

The expansion of mining operations, as proposed in the issued permit, will impact areas identified as Essential Fish Habitat (EFH) and EFH Habitat Areas of Particular Concern (HAPCs) in the SAFMC's Comprehensive Habitat Amendment to Fishery Management Plans (coral, coral reef and live bottom habitat, red drum, shrimp, spiny lobster, coastal migratory pelagic species, and the snapper-grouper complex). Specifically in North Carolina, the Council has designated state established Primary Nursery Areas as HAPCs.

Besides impacting habitats used by managed species under the SAFMC's jurisdiction, the proposed activities would also impact habitats that support other living marine resources of critical importance to the SAFMC. The SAFMC is committed to applying an ecosystem-based approach to the management of resources within its jurisdiction; hence the SAFMC supports the protection of species which serve as prey for federally managed fishery species (including king mackerel, Spanish mackerel, cobia, and highly migratory species). The proposed project poses a significant risk to the coastal ecosystem as a whole through alteration of food web dynamics, diminished water quality, and altered estuarine productivity.

The SAFMC concurs with the conclusions of multiple federal and state natural resource management agencies (NC Division of Marine Fisheries, NC Marine Fisheries Commission, NC Wildlife Resources Commission, National Marine Fisheries Service and U.S. Fish and Wildlife Service) that the proposed project will result in significant and unacceptable impacts to EFH and

aquatic resources that depend on those habitats. Therefore, the SAFMC recommends that the U.S. Environmental Protection Agency veto the issued permit for this project.

Thank you for the opportunity to provide comments on this project. Please direct questions or comments to Roger Pugliese (Roger.Pugliese@safmc.net) or Myra Brouwer (Myra.Brouwer@safmc.net) at the SAFMC office, (843) 571-4366.

Sincerely,

A handwritten signature in black ink, appearing to read "Duane Harris", written in a cursive style.

Duane Harris

SAFMC Chair

Cc: (via electronic mail)
Council members and staff
Habitat AP

Stan Meiburg /R4/USEPA/US
06/17/2009 05:11 PM

To: Derb Carter <derbc@selcnc.org>
cc
bcc
Subject: Re: PCS elevation

Derb, just so you'll know that we're not holding out on you, the letter hasn't been signed yet, to the best of my knowledge, as of 5:10 p.m. today. I am expecting it very soon. It will be a letter from Mike Shapiro to Rock Salt. Once we make sure the Corps actually has it, we'll get you a copy.

Best regards,

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

Stan Meiburg /R4/USEPA/US
06/17/2009 06:20 PM

To terry.carl@epa.gov, wise.allison@epa.gov,
giattina.jim@epa.gov, Tom Welborn, Philip
Mancusi-Ungaro/R4/USEPA/US@EPA,
cc cover.rebecca@epa.gov
bcc

Subject Fw: PCS Closeout Letter

OK--here is the letter. I will forward it on tonight to Col. Ryscavage, Gen. Semonite, and Les Dixon at SAD, as well as Sam Hamilton at FWS and Roy Crabtree at NMFS.

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

----- Forwarded by Stan Meiburg/R4/USEPA/US on 06/17/2009 06:11 PM -----

Gregory Peck /DC/USEPA/US

06/17/2009 06:02 PM

To Arvin Ganesan/DC/USEPA/US@EPA, Stan
Meiburg/R4/USEPA/US@EPA, Suzanne
Schwartz/DC/USEPA/US@EPA
cc Mike Shapiro/DC/USEPA/US@EPA, Adora
Andy/DC/USEPA/US@EPA, Eneasta
Jones/DC/USEPA/US@EPA, Jim
Giattina/R4/USEPA/US@EPA, Christina
Moody/DC/USEPA/US@EPA, David
Evans/DC/USEPA/US@EPA, Steven
Neugeboren/DC/USEPA/US@EPA
Subject PCS Closeout Letter

Here's the final letter that Mike signed this afternoon.

1. I'll send a copy this evening to Rock on behalf of Mike.
2. Arvin - will OCIR ensure the right Hill people, including the NC delegation folks, receive this as soon as possible.
3. Region 4 will send to the District and Division also this evening ?

If we can take each of these steps this evening then we'll be in a position to release the letter more broadly tomorrow. Anything we're forgetting?

Thanks everyone!

Greg



Final PCS Mine Closeout Letter.pdf

Gregory E. Peck
Chief of Staff
Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

202-564-5778



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.

Internet Address (URL) • <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Postconsumer, Process Chlorine Free Recycled Paper

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 598¹ 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
Dee Freeman, NC Department of Environment and Natural Resources
Coleen H. Sullins, NC Department of Environment and Natural Resources, Division of Water Quality
Jim Giattina, EPA Region 4

Stan Meiburg /R4/USEPA/US
06/17/2009 06:31 PM

To Jefferson.Ryscavage@us.army.mil,
todd.semonite@us.army.mil,
Lester.S.Dixon@usace.army.mil, Roy.Crabtree@noaa.gov,
cc shapiro.mike@epa.gov, peck.gregory@epa.gov, Suzanne
Schwartz/DC/USEPA/US@EPA, giattina.jim@epa.gov,
cox.williaml@epa.gov, Tom Welborn
bcc cover.rebecca@epa.gov; gordon.scott@epa.gov;
banister.beverly@epa.gov
Subject Final EPA closeout letter on PCS

Dear Colleagues,

We have just received the attached copy of a letter signed late this afternoon from Acting Assistant Administrator Michael Shapiro to Acting ASA Salt which closes out EPA's elevation of the 404 permit for PCS Phosphates in North Carolina. We are anticipating a more widespread release of this letter in the morning, so I wanted you to have it right away as I am sure it will be of interest.

Thank you to you and your staff for your collaboration on this challenging project.

With best regards,

Stan Meiburg



Final PCS Mine Closeout Letter.pdf

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov



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, Bonneron, 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.

Internet Address (URL) • <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Postconsumer, Process Chlorine Free Recycled Paper

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 598¹ 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
Dee Freeman, NC Department of Environment and Natural Resources
Coleen H. Sullins, NC Department of Environment and Natural Resources, Division of Water Quality
Jim Giattina, EPA Region 4

Stan Meiburg /R4/USEPA/US
06/17/2009 06:43 PM

To derbc@selcnc.org
cc
bcc
Subject PCS letter

Well, sure enough, not an hour after I sent my earlier email HQ sent us a copy of the letter. I cannot confirm that ASA Salt has received it, so I am going to wait until tomorrow to release it, but we'll get it to you as soon as I know he's seen it. Thanks for your patience!

Stan

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov



"Ryscavage, Jefferson COL
SAW"
<Jefferson.Ryscavage@us.ar
my.mil>

06/17/2009 06:46 PM

To Stan Meiburg/R4/USEPA/US@EPA

cc "Semonite, Todd T BG SAD"
<Todd.T.Semonite@usace.army.mil>, "Dixon, Lester S SAD"
<Lester.S.Dixon@usace.army.mil>, Jim

bcc

Subject Re: Final EPA closeout letter on PCS

History:

➡ This message has been forwarded.

Sir,

Thanks for the memo. We appreciate the heads-up and your coordination and communication throughout this process.

V/r,
COL Jeff Ryscavage

Message sent via my BlackBerry Wireless Device

----- Original Message -----

From: Meiburg.Stan@epamail.epa.gov <Meiburg.Stan@epamail.epa.gov>
To: Ryscavage, Jefferson COL SAW; todd.semonite@us.army.mil <todd.semonite@us.army.mil>; Dixon, Lester S
SAD; Roy.Crabtree@noaa.gov <Roy.Crabtree@noaa.gov>; sam_hamilton@fws.gov <sam_hamilton@fws.gov>
Cc: shapiro.mike@epa.gov <shapiro.mike@epa.gov>; peck.gregory@epa.gov <peck.gregory@epa.gov>;
Schwartz.Suzanne@epamail.epa.gov <Schwartz.Suzanne@epamail.epa.gov>; giattina.jim@epa.gov
<giattina.jim@epa.gov>; cox.williaml@epa.gov <cox.williaml@epa.gov>; Welborn.Tom@epamail.epa.gov
<Welborn.Tom@epamail.epa.gov>
Sent: Wed Jun 17 17:31:07 2009
Subject: Final EPA closeout letter on PCS

Dear Colleagues,

We have just received the attached copy of a letter signed late this afternoon from Acting Assistant Administrator Michael Shapiro to Acting ASA Salt which closes out EPA's elevation of the 404 permit for PCS Phosphates in North Carolina. We are anticipating a more widespread release of this letter in the morning, so I wanted you to have it right away as I am sure it will be of interest.

Thank you to you and your staff for your collaboration on this challenging project.

With best regards,

Stan Meiburg

(See attached file: Final PCS Mine Closeout Letter.pdf)

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center

61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov



"Dixon, Lester S SAD"
<Lester.S.Dixon@usace.army
.mil>

06/17/2009 07:05 PM

To Stan Meiburg/R4/USEPA/US@EPA

cc

bcc

Subject Re: Final EPA closeout letter on PCS

History:

☞ This message has been replied to.

Stan

Thx for your help and leadership on this one.

Les

----- Original Message -----

From: Meiburg.Stan@epamail.epa.gov <Meiburg.Stan@epamail.epa.gov>
To: Ryscavage, Jefferson COL SAW; todd.semonite@us.army.mil <todd.semonite@us.army.mil>; Dixon, Lester S
SAD; Roy.Crabtree@noaa.gov <Roy.Crabtree@noaa.gov>; sam_hamilton@fws.gov <sam_hamilton@fws.gov>
Cc: shapiro.mike@epa.gov <shapiro.mike@epa.gov>; peck.gregory@epa.gov <peck.gregory@epa.gov>;
Schwartz.Suzanne@epamail.epa.gov <Schwartz.Suzanne@epamail.epa.gov>; giattina.jim@epa.gov
<giattina.jim@epa.gov>; cox.williaml@epa.gov <cox.williaml@epa.gov>; Welborn.Tom@epamail.epa.gov
<Welborn.Tom@epamail.epa.gov>
Sent: Wed Jun 17 17:31:07 2009
Subject: Final EPA closeout letter on PCS

Dear Colleagues,

We have just received the attached copy of a letter signed late this afternoon from Acting Assistant Administrator Michael Shapiro to Acting ASA Salt which closes out EPA's elevation of the 404 permit for PCS Phosphates in North Carolina. We are anticipating a more widespread release of this letter in the morning, so I wanted you to have it right away as I am sure it will be of interest.

Thank you to you and your staff for your collaboration on this challenging project.

With best regards,

Stan Meiburg

(See attached file: Final PCS Mine Closeout Letter.pdf)

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961

Cell: (404) 435-4234
Email: meiburg.stan@epa.gov



Tom Welborn /R4/USEPA/US

06/17/2009 08:38 PM

To Jennifer Derby/R4/USEPA/US@EPA, Rebecca
Fox/R4/USEPA/US@EPA, Philip
Mancusi-Ungaro/R4/USEPA/US@EPA, "Jeff Weller"

cc

bcc

Subject Fw: Final EPA closeout letter on PCS

[1 Attachment]

Sent by EPA Wireless E-Mail Services
Stan Meiburg

----- Original Message -----

From: Stan Meiburg

Sent: 06/17/2009 06:31 PM EDT

To: Jefferson.Ryscavage@us.army.mil; todd.semonite@us.army.mil;
Lester.S.Dixon@usace.army.mil; Roy.Crabtree@noaa.gov; sam_hamilton@fws.gov

Cc: shapiro.mike@epa.gov; peck.gregory@epa.gov; Suzanne Schwartz;
giattina.jim@epa.gov; cox.williaml@epa.gov; Tom Welborn

Subject: Final EPA closeout letter on PCS

Dear Colleagues,

We have just received the attached copy of a letter signed late this afternoon from Acting Assistant Administrator Michael Shapiro to Acting ASA Salt which closes out EPA's elevation of the 404 permit for PCS Phosphates in North Carolina. We are anticipating a more widespread release of this letter in the morning, so I wanted you to have it right away as I am sure it will be of interest.

Thank you to you and your staff for your collaboration on this challenging project.

With best regards,

Stan Meiburg



Final PCS Mine Closeout Letter.pdf

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357

Fax: (404) 562-9961

Cell: (404) 435-4234

Email: meiburg.stan@epa.gov



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, Bonneron, 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.

Internet Address (URL) • <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Postconsumer, Process Chlorine Free Recycled Paper

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 598¹ 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
Dee Freeman, NC Department of Environment and Natural Resources
Coleen H. Sullins, NC Department of Environment and Natural Resources, Division of Water Quality
Jim Giattina, EPA Region 4

Stan Meiburg /R4/USEPA/US
06/18/2009 09:49 AM

To derbc@selcnc.org
cc
bcc
Subject PCS letter



Final PCS Mine Closeout Letter.pdf

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov



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 598¹ 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
Dee Freeman, NC Department of Environment and Natural Resources
Coleen H. Sullins, NC Department of Environment and Natural Resources,
Division of Water Quality
Jim Giattina, EPA Region 4

Stan Meiburg /R4/USEPA/US
06/18/2009 09:58 AM

To dee.freeman@ncdenr.gov
cc
bcc wise.allison@epa.gov; gordon.scott@epa.gov;
terry.carl@epa.gov
Subject PCS letter

Dee, here is the final "closeout" letter on PCS which Mike Shapiro sent to Rock Salt late yesterday. We have sent this letter to the 4 NC Congressional offices which had written in earlier (Senators Burr and Hagan, and Congressmen Jones and Butterworth). We've also sent it to Col. Ryscavage.

EPA is not issuing a press release, and we in Region 4 are referring press questions to HQ. We have a desk statement, which is below, but for most inquiries we are simply going to send them the letter, which speaks for itself.

Thank you for your continued help and support on this project.

Stan



Final PCS Mine Closeout Letter.pdf

EPA Desk Statement:

"EPA will not seek additional review of the Corps of Engineers permit to the Potash Corporation of Saskatchewan Phosphate Division to expand an existing phosphate mining operation. EPA concluded that the revised permit, which includes additional environmental protections required by EPA, complies with the requirements of the Clean Water Act, and if properly implemented, would not cause unacceptable adverse impacts to aquatic resources."

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov



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, Bonneron, 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 598¹ 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
Dee Freeman, NC Department of Environment and Natural Resources
Coleen H. Sullins, NC Department of Environment and Natural Resources, Division of Water Quality
Jim Giattina, EPA Region 4



"Freeman, Dee"
<dee.freeman@ncdenr.gov>
06/18/2009 10:30 AM

To Stan Meiburg/R4/USEPA/US@EPA
cc
bcc
Subject RE: PCS letter

Thanks Stan. I appreciate your follow up. - Dee

Dee Freeman, Secretary
N.C. Dept. of Environment and Natural Resources
1601 MSC, Raleigh, NC 27699-1601
(919) 715-4102; fax (919) 715-3060

Please note: my e-mail address has changed to dee.freeman@ncdenr.gov .

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.

-----Original Message-----

From: Meiburg.Stan@epamail.epa.gov [mailto:Meiburg.Stan@epamail.epa.gov]
Sent: Thursday, June 18, 2009 9:58 AM
To: Freeman, Dee
Subject: PCS letter

Dee, here is the final "closeout" letter on PCS which Mike Shapiro sent to Rock Salt late yesterday. We have sent this letter to the 4 NC Congressional offices which had written in earlier (Senators Burr and Hagan, and Congressmen Jones and Butterworth). We've also sent it to Col. Ryscavage.

EPA is not issuing a press release, and we in Region 4 are referring press questions to HQ. We have a desk statement, which is below, but for most inquiries we are simply going to send them the letter, which speaks for itself.

Thank you for your continued help and support on this project.

Stan

(See attached file: Final PCS Mine Closeout Letter.pdf)

EPA Desk Statement:

"EPA will not seek additional review of the Corps of Engineers permit to the Potash Corporation of Saskatchewan Phosphate Division to expand an existing phosphate mining operation. EPA concluded that the revised permit, which includes additional environmental protections required by EPA, complies with the requirements of the Clean Water Act, and if properly implemented, would not cause unacceptable adverse impacts to aquatic resources."

A. Stanley Meiburg
Acting Regional Administrator
EPA Region 4

Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Office: (404) 562-8357
Fax: (404) 562-9961
Cell: (404) 435-4234
Email: meiburg.stan@epa.gov

Email correspondence to and from this sender is subject to the N.C. Public
Records Law and may be disclosed to third parties.