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Wetlands Regulations Affecting Coal Mining and Oil and Gas Operations

ANTHONY P. TOKARZ* & BETSY ENNIS DULIN**

Although the total acreage of wetlands in Appalachia is relatively small, the impact of wetlands on coal mining and oil and gas operations can be significant. Wetlands are strongly protected from degradation and diminution under both federal and state regulatory programs, and both environmental protection groups and the public are concerned about the disturbance of natural wetlands. The conflict over wetlands development is further exacerbated in areas such as Appalachia where the small acreage of wetlands comprises much of the flat bottomland in the region that is suitable for development. Consequently, the uninformed energy developer may find himself confronted with a morass of problems in connection with proposed operations in delineated wetland areas.

If the owner or operator of a site is unable to obtain an appropriate permit, the presence of wetlands may completely preclude energy development. Even where a permit allowing wetlands development may be obtained, long delays in the permitting process may be encountered and bad publicity may arouse citizens' groups and frighten potential lenders. In addition, even if a disturbance to wetlands is permitted, damage to wetlands must be mitigated and wetlands that are destroyed or damaged usually must be replaced at significant costs. Finally, inadvertent filling of wetlands can expose developers to significant civil liability because lack of knowledge is no defense to the strict liability offense of failure to obtain a required permit under the Clean Water Act.¹ On the other hand,

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¹ See generally Federal Water Pollution Control (Clean Water) Act, 33 U.S.C. §§ 1251-1387 (1994) [hereinafter CWA].

knowingly filling a wetland area can result in the imposition of onerous criminal fines and penalties.²

These potential difficulties need not present total impediments to development. However, the presence of wetlands should present a "red flag" to informed energy developers. If developers recognize in advance the potential problems, they can implement procedures that allow them to conduct energy operations in wetlands without incurring civil or criminal liability. Accordingly, this article strives to provide an insight into the regulatory scheme surrounding wetlands so that energy developers can approach any such situations in an informed manner by recognizing the regulatory parameters and thereby minimize the risks associated with wetlands development. Part I reviews the regulatory scheme that affects wetlands development. Parts II and III examine the impacts of wetlands regulation on coal and oil and gas.

I. OVERVIEW OF WETLANDS REGULATORY PROGRAM

The first step involved in the process of wetlands development is the determination of whether or not the area involved is indeed a wetland subject to regulation and control by state and federal agencies. In general, wetlands are defined as those areas where the water table is at, near, or above the land surface for a significant part of the time. In fact, water creates wetlands systems by saturating the soils, and limiting plant life to those that can grow with their roots unexposed to atmospheric oxygen.³ In the Appalachian region,

² As is the case for all permitting requirements under the CWA, failure to properly obtain a section 404 permit before depositing dredged or fill material into wetlands can subject the site developer to significant civil or criminal penalties. Civil orders or fines may be imposed even upon persons who are unaware of the presence of wetlands or permitting requirements. 33 U.S.C. § 1319(a)-(b). Negligently failing to obtain a section 404 permit can result in criminal penalties of \$25,000 per day of violation and up to one year in prison, while a knowing violation is punishable by penalties of \$50,000 per day of violation and up to three years in prison. 33 U.S.C. § 1319(c).

³ See 33 C.F.R. § 328.3(b)(1994) (definition of "wetlands" developed by Army Corps of Engineers). The Corps defines "wetlands" as areas "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." *Id.* See Also U.S. ARMY CORPS OF ENGINEERS, U.S. ENVIRONMENTAL PROTECTION AGENCY, U.S. FISH AND WILDLIFE SERVICE, AND U.S.D.A. SOIL CONSERVATION SERVICE, FEDERAL INTERAGENCY COMMITTEE FOR WETLAND DELINEATION, FEDERAL MANUAL FOR IDENTIFYING AND DELINEATING JURISDICTIONAL WETLANDS (1989) [hereinafter 1989 WETLANDS MANUAL]. The manual developed by these agencies actually

wetlands are most commonly found on floodplains along rivers and streams, in isolated depressions surrounded by dry land, and along the margins of lakes and ponds. Wetlands can appear as marshes, open water, wet meadows, mires, or swamps.⁴

Once an area has been delineated as a wetland, its development is regulated under section 404 of the Federal Water Pollution Control Act, more commonly known as the Clean Water Act (CWA).⁵ The United States Environmental Protection Agency (EPA) retains general permitting authority under the CWA for the discharge of pollutants into the navigable waters of the United States, which include wetlands.⁶ However, section 404 carves out of this general authority a special authority for the United States Army Corps of Engineers (Corps) to issue permits for two particular types of pollutants: dredged material and fill material.⁷

The Corps has the primary responsibility for issuing section 404 dredge and fill permits. However, permitting decisions must be made in accordance with guidelines developed by the EPA in conjunction with the Corps, and EPA retains veto authority over all permitting decisions.⁸ In reality, however, EPA seldom uses its ultimate veto and determination authority, choosing instead to control the process through its guidelines and general enforcement

bases wetlands determinations on an analysis of water, soil, and vegetation present in a particular area.

⁴ Although the Corps' definition of wetlands states that the area must support wetlands vegetation under normal circumstances, wetlands do not have to be created by natural circumstances to be considered wetlands subject to control by federal and state agencies. See *Leslie Salt Co. v. United States*, 896 F.2d 354 (9th Cir. 1990), *cert denied* 498 U.S. 1126 (1991) (holding that Corps of Engineers jurisdiction extends to man-made wetlands, which includes property that has flooded and taken on aquatic characteristics in part as the result of the failure of the Corps to take any action).

⁵ 33 U.S.C. §§ 1251-1387.

⁶ Section 301 of the Clean Water Act prohibits the discharge of any pollutant without a permit, while section 402 authorizes the EPA to issue permits for such discharges. 33 U.S.C. §§ 1311, 1342. These permits, NPDES permits, are issued under the National Pollution Discharge Elimination System. *Id.* See also 33 C.F.R. §328.3(a)(2) (including wetlands in definition of "waters of the United States.").

⁷ Section 404 of the CWA mandates that a permit must be obtained from the Corps in order to discharge dredged or fill materials into the navigable waters of the United States. 33 U.S.C. § 1344. "'Dredged material' means material that is excavated or dredged from the waters of the United States." "'Fill material' means any material used for the primary purpose of replacing an aquatic area with dry land or changing the bottom elevation of a waterbody". 33 C.F.R. § 323.2(c) and (e).

⁸ 33 U.S.C. § 1344(b) (authorizing EPA to develop guidelines for § 404 dredge and fill permitting program); 33 U.S.C. § 1344(c) (authorizing EPA to deny or restrict the use of any area as a disposal site).

authority under the CWA.⁹ Another federal agency that is heavily involved in the section 404 permitting process is the Fish and Wildlife Service, which has statutory authority to submit comments to the Corps on all permit applications.¹⁰

The permitting process under section 404 also can be affected by state agencies exercising their certification authority under section 401 of the CWA. Under this statutory provision, all permit applicants for projects that may result in any discharge into the navigable waters must obtain a certification from the affected state that the discharge will not cause a violation of applicable effluent limitations or state water quality standards.¹¹ Indeed, many states that have no formal independent wetlands permitting program use their certification power under section 401 to strongly control or restrict development in wetland areas.

II. COAL MINING

A. Applicability of Section 404 Permitting to Mining Activities

Because section 404 authorizes the Corps to issue permits only for the *discharge* of dredged or fill material into the navigable waters, the Corps theoretically has no regulatory authority over the excavation of a wetland if dredged or fill materials are not deposited or redeposited into the wetland as part of the excavation.¹² Thus, the operation of a surface mine during which a wetland is removed but not in any manner filled may not be subject to permitting requirements under section 404. Additionally, the Corps' prior definition of "discharge of dredged material" expressly did not include *de minimis* incidental soil movement that occurs during normal dredging operations.¹³

In practice, Corps districts have adopted widely varied approaches in the exercise of their discretion to regulate excavation activity under section 404 where excavated materials have been

⁹ See *supra*, note 2.

¹⁰ 33 U.S.C. § 1344(m).

¹¹ 33 U.S.C. § 1341(a). See generally PUD No. 1 of Jefferson County v. Washington Dept. of Ecology, 114 S.Ct. 1900 (1994).

¹² 33 U.S.C. § 1344(a).

¹³ See 51 Fed.Reg. 41,232 (1986). The current regulation does include the *de minimis* exception. 33 C.F.R. § 323.2(d)(5) (1994).

almost completely removed to upland areas for disposal.¹⁴ However, based on their joint experience in implementing the section 404 permitting program, the Corps and EPA recently have come to the conclusion that it is not possible to completely remove all excavated material to upland areas when excavating a wetland area. Consequently, the Corps and EPA have modified the definition of "discharge of dredged materials" to delete the *de minimis* exemption from the definition.¹⁵ Instead, the more recent regulations provide that section 404 permitting is not required for "any incidental addition [to wetlands], *including redeposit, of dredged material associated with any activity that does not have or would not have the effect of destroying or degrading any area of the waters of the United States . . .*"¹⁶ However, any person proposing "to undertake mechanized landclearing, ditching, channelization, and other excavation activity" bears the burden of demonstrating that such activity will not destroy or degrade any area of the waters of the United States.¹⁷

The most recent regulations implementing section 404 also contain a grandfathering provision for "those discharges of dredged materials associated with . . . excavation activities in . . . wetlands for which § 404 authorization was not previously required" by the relevant Corps district, *provided* that the excavation activity commenced or was under contract to commence prior to August 25, 1993, and that the activity was completed no later than August 25, 1994.¹⁸ Moreover, the Corps retains the authority to grant an extension of this twelve-month grandfathering provision on a case-by-case basis to continuous or periodic on-going excavation activities, such as mining operations.¹⁹ To obtain the benefit of this grandfathering provision, the discharger must have submitted an individual permit application seeking section 404 authorization for such excavation activity to the Corps within the relevant twelve-month period.²⁰ However, in no event can the Corps extend the grandfather period beyond August 25, 1996.²¹ Accordingly, as a

¹⁴ See 57 Fed.Reg. 26,894 (1992).

¹⁵ 57 Fed. Reg. 26,895 (1992).

¹⁶ 33 C.F.R. § 323.2(d)(3)(i) (1994) (emphasis added).

¹⁷ *Id.*

¹⁸ 33 C.F.R. § 323.2(d)(3)(iii) (1994).

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*

result of this rule change, even surface mining activities resulting in a negligible amount of deposition of dredged or fill material now fall within the Corps' section 404 wetlands jurisdiction unless the activity is covered by the grandfathering provision or unless the surface mining operator can prove to the Corps' satisfaction that the mining operation will not destroy or degrade wetland areas.²²

Notably, the CWA itself exempts from section 404 permitting requirements the discharge of dredged or fill material

for the purpose of construction or maintenance of . . . temporary roads for moving mine equipment, where such roads are constructed and maintained, in accordance with best management practices, to assure that flow and circulation patterns and chemical and biological characteristics of the navigable waters are not impaired, that the reach of the navigable waters is not reduced, and that any adverse effect on the aquatic environment will be otherwise minimized.²³

Significantly, the term "temporary" is not defined in either the CWA or its implementing regulations. However, the Corps' regulations prescribe baseline provisions for best management practices (BMPs) with respect to the size, number and location of temporary mining roads and provide requirements for prevention of disruption to wetlands.²⁴ However, the regulations do not place any restrictions on vehicular traffic in wetlands.²⁵

B. Nationwide Permits

Since coal mining operations are within the Corps' section 404 jurisdiction, in order to conduct an operation in a wetland the coal mining operator must either obtain an individual permit or qualify for a state, regional, or nationwide "general permit." Individual permits are issued on a case-by-case basis for specific activities following review of individual applications, while general permits provide broad coverage for a listed category or categories of activities. Coverage under a general permit can be extremely advantageous, since the requirements for obtaining an individual permit can be quite cumbersome. In addition, the individual permitting process

²² 33 C.F.R. § 323.2(d)(3)(i) (1994).

²³ 33 U.S.C. § 1344(f).

²⁴ 33 C.F.R. §323.4(a)(6).

²⁵ See generally 33 C.F.R. § 323. See also 57 Fed. Reg. 26,896 (1992).

can be very time-consuming and may involve the mitigation of wetlands damages through either payment or replacement.²⁶

General permits are provided for the purpose of allowing, with little or no involvement by the Corps, certain activities that will involve only minimal impact to the aquatic resources. General permits may be issued by the Corps for categories of activities in specific regions, districts, states, or nationwide.²⁷ If a general permit has been granted for a particular type of activity, it is not necessary to apply for section 404 permits for individual activities of that type. This can result in significant time and cost savings because, unlike the individual section 404 permitting process, application procedures for coverage under a general permit do not require lengthy individual public notice or comment periods, individual practical alternative assessment, or compliance with the National Environmental Policy Act for each application.²⁸ However, an activity is authorized under a general permit only if the activity and the permittee satisfy all the terms and conditions of the applicable general permit.²⁹ All general permits remain valid for five years and then must be modified or reissued by the Corps or they become null and void.³⁰ If the Corps were to decide not to renew a particular general permit, then persons otherwise covered under the general permit would be required to file individual permit

²⁶ Under a memorandum of agreement between the Corps and EPA, section 404 permittees often may be required to "mitigate" harm to wetlands by replacing lost ecological resources and lessening adverse environmental impacts of development. However, in order to issue a permit, the Corps first must determine that environmental impacts have been avoided to the maximum extent practicable by taking steps to minimize impacts and to compensate for lost aquatic resources. Upon issuing a section 404 permit, the Corps normally will require one for one functional acreage replacement of wetlands in order to ensure no net loss of wetlands. However, mitigation will not be required where mitigation measures would not be feasible, practicable, or useful in reducing impacts on wetlands. See generally Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines (November 15, 1989). See also William L. Want, *The Army-EPA Agreement on Wetlands Mitigation*, 20 ENVTL. L. REP. 10,209 (1990).

²⁷ See 33 U.S.C. § 1344(e)(1) (authorizing the Corps to issue, after notice and opportunity for a public hearing, general permits on a state, regional or nationwide basis). The Corps may issue such general permits "if the Secretary determines that the activities in such category are similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment. *Id.*

²⁸ *Id.* See also National Environmental Policy Act, 42 U.S.C. §§ 4321-4370 (1994).

²⁹ 33 U.S.C. § 1344(e)(1).

³⁰ 33 U.S.C. § 1344(e)(2). See also 33 C.F.R. § 330.6(b) (1994).

applications in order to continue or commence dredging and filling activities.³¹

Pursuant to its authority under section 404(e), the Corps has issued a general permit covering surface coal mining activities nationwide.³² The relevant nationwide permit (NWP) No. 21 permits discharges of dredged or fill material associated with the following activities:

Activities associated with surface coal mining activities provided they are authorized by the Department of Interior, Office of Surface Mining, or by States with approved programs under Title V of the Surface Mining Control and Reclamation Act of 1977 and provided the permittee notifies the district engineer in accordance with the "Notification" general condition [of all nationwide permits]. For discharges in special aquatic sites, including wetlands, the notification must also include a delineation of affected special aquatic sites, including wetlands.³³

The Corps retains authority in all situations to object to any activity otherwise permitted under the Surface Mining Act under the notification and delineation provisions of the permit. The notification provision also provides a means for asserting federal jurisdiction over all surface coal mine operations in wetlands.

As with all general permits, the NWP may be modified or affected by individual states through the CWA's section 401 certification process.³⁴ If a general permit has not been issued a water quality certification from the state in which the covered discharge is to occur, applicants must apply to the relevant state agency individually to obtain the certification. As discussed below, the certification processes of the Commonwealth of Kentucky³⁵ and the State of West Virginia³⁶ in connection with NWP No. 21 illustrate

³¹ 33 U.S.C. § 1344(e)(2).

³² To date, the Corps has issued 37 nationwide permits covering various types of dredge and fill activities. 33 C.F.R. § 330.6(b) (1994).

³³ U.S. ARMY CORPS OF ENGINEERS, NATIONWIDE PERMIT NO. 21, SURFACE MINING ACTIVITIES. See also Nationwide Permits and Conditions, 33 C.F.R. Part 330, App. A (emphasis added).

³⁴ 33 U.S.C. § 1341. See also *supra*, note 11 and accompanying text (general discussion of § 401 certification requirements).

³⁵ Kentucky's section 401 certification conditions for NWPs under section 404 of the Clean Water Act are delineated by statute. KY. REV. STAT. ANN. § 224.16-070 (Baldwin 1994). See also U.S. ARMY CORPS OF ENGINEERS, HUNTINGTON DISTRICT OF WEST VIRGINIA, PUBLIC NOTICE NUMBER 92-11 (February 10, 1992).

³⁶ U.S. ARMY CORPS OF ENGINEERS, HUNTINGTON DISTRICT OF WEST VIRGINIA,

the diverse manner in which section 401 certification process is implemented.

In this regard, Kentucky has denied section 401 certification for NWP No. 21 for the following activities: "(a) discharges into, and causing or resulting in the loss of or adverse impact (impoundment, excavation or drainage) to, one acre or more of wetlands; [and] (b) discharges into two hundred linear feet or more of any stream or stream bank (below ordinary high water) depicted as an intermittent or solid blue line on a U.S.G.S. 7.5 minute (1:24,000) topographic map."³⁷ However, Kentucky does provide for individual water quality certification or waivers for applicants desiring to conduct such discharges.³⁸

Unlike Kentucky, West Virginia has granted general certification for NWP No. 21 with certain conditions, including a provision "that fill material will not be placed in any wetland with an areal extent greater than one (1) acre, in any isolated water or in any trout stream."³⁹ Native trout streams have not yet been surveyed in all counties of the State. Therefore, to ensure protection of this resource, certification was not granted for work under NWP No. 21 in 19 counties.⁴⁰ In addition, West Virginia has withheld certification for coal loading/unloading and mooring facilities on navigable waters otherwise covered under NWP No. 21.⁴¹

As part of its certification process for federal permits, a state may impose conditions on the certification. Accordingly, West Virginia has granted certification for mining-related fill placements in connection with NWP No. 21 only where the combined watershed of the proposed fill plus the watershed upstream of the proposed activity is 250 acres or less "and/or does not exceed one-half acre of headwater stream or river."⁴² Yet another West Virginia section 401 certification condition provides that land disturbances of three acres or greater must comply with DEP's general permit requirements and NPDES storm water regulations.⁴³

West Virginia also has withheld certification under NWP No.

PUBLIC NOTICE NUMBER 92-63 (September 4, 1992) (setting forth West Virginia's section 401 certification conditions for NWPs under section 404 of the Clean Water Act).

³⁷ U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-11, at 12.

³⁸ KY. REV. STAT. ANN. § 224.16-070 (Baldwin 1994).

³⁹ U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-63, at 15.

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.*

⁴³ *Id.*

21 for surface coal mining operations proposed on certain rivers and streams listed under item number 16 of the State's general conditions for certification.⁴⁴ These are classified as natural resource waters with "unique character, ecological or recreational value or pristine nature" which include, but are not limited to: all federally designated rivers under the Wild and Scenic Rivers Act;⁴⁵ all naturally reproducing trout streams; and all streams and other bodies of water in State and National Forest and Recreation Areas.⁴⁶ In addition, discharges into streams listed under the West Virginia Natural Stream Preservation Act⁴⁷ are not certified if the activities would impound, divert, or flood the body of water.⁴⁸

Finally, West Virginia has set forth a number of general conditions applicable to *all* NWPs.⁴⁹ As such, these conditions must be incorporated into any activity authorized under the nationwide permit program. Among the conditions is the requirement that the permittee must comply with the State's water quality standards.⁵⁰ Additionally, West Virginia's conditions require that a permit be obtained from the State's Public Lands Corporation at least fifteen days prior to the start of the work on any activities affecting stream beds. Such application also provides notice to the relevant state agency of the planned wetland operations.⁵¹

C. Mining Regulations

NWP No. 21 and the applicable state's section 401 certification conditions provide general authorization for surface coal mining operations in wetlands. Nevertheless, coal mining operations in wetlands are subject to further regulation by the United States Department of the Interior, Office of Surface Mining, and equivalent state mining regulatory agencies.

Regulations promulgated by the Office of Surface Mining

⁴⁴ *Id.*

⁴⁵ 16 U.S.C. § 1271 (1994).

⁴⁶ U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-63, at 15.

⁴⁷ W.VA. CODE §§ 22-13-1 through 22-13-15 (1994).

⁴⁸ See 46 W.VA. C.S.R. 1-2.6, 7.3 (listing streams protected under the Natural Stream Preservation Act).

⁴⁹ See U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-63, at 30-33. Unlike West Virginia, Kentucky has not imposed general conditions on its certification of activities covered by NWPs.

⁵⁰ *Id.* at 32.

⁵¹ *Id.*

(OSM) pursuant to its authority under the Surface Mining Control and Reclamation Act (SMCRA) require that surface mining operations be conducted in such a manner as to protect wetlands.⁵² As part of its fish and wildlife information, each permit application must include site specific resource information on wetlands as habitats of unusually high value for fish and wildlife.⁵³ Each application also must include a description of how, using the best technology currently available, the operator will minimize disturbance and adverse impacts on fish and wildlife and related environmental values and how enhancements of these resources will be achieved where practicable. These provisions are specifically applicable to wetlands.⁵⁴ In addition, protective measures applicable to wetlands must be used during the active mining phase of operations. They may include the following: the establishment of buffer zones, the selective location and special design of haulroads and power lines, the monitoring of surface water quality and quantity, and development of enhancement measures that will be used during the reclamation and post-mining phase of the operations, which may include restoration of wetlands.⁵⁵ Where the reclamation plan submitted with the mining permit application does not include enhancement measures, an explanation must be given as to why enhancement is not practicable. OSM's minimum environmental protection performance standards also contain general provisions for the protection of fish, wildlife and related environmental values.⁵⁶ In general, the operator, to the extent possible using the best technology currently available, must "minimize disturbances and adverse impacts on fish, wildlife and related environmental values and must achieve enhancement of such resources where practicable."⁵⁷ Specifically, the operator conducting surface mining activities must "avoid disturbances to, enhance where practicable, [and] restore, or replace, wetlands and riparian vegetation along rivers and streams and bordering ponds and lakes." In addition, persons conducting surface mining activities must avoid any "disturbances to, enhance where prac-

⁵² See generally 30 U.S.C. §§ 1201-1328 (1994) (Surface Mining Control and Reclamation Act, which broadly regulates surface mining and the surface effects of underground mining).

⁵³ 30 C.F.R. § 780.16(a)(2) (1994).

⁵⁴ 30 C.F.R. § 780.16(b) (1994).

⁵⁵ 30 C.F.R. § 780.16(b)(3) (1994).

⁵⁶ See generally 30 C.F.R. § 816 (1994).

⁵⁷ 30 C.F.R. § 816.97(a) (1994).

ticable, or restore, habitats of unusually high value" for supporting fish and wildlife.⁵⁸

Requirements of Kentucky and West Virginia regulations pertaining to surface coal mining permit application information and enhancement of wetlands essentially mirror those contained in the OSM regulations discussed above. Kentucky and West Virginia regulations provide that the operator must avoid disturbances to, enhance where practicable, and restore or replace wetlands and any vegetation along rivers and streams and bordering ponds and lakes.⁵⁹ Surface mining activities also must not disturb and must enhance where practicable, or restore, habitats of unusually high value for fish and wildlife.⁶⁰

West Virginia's Surface Mining Reclamation regulations, like OSM's regulations, do not contain a definition of wetlands.⁶¹ However, Kentucky's surface mining regulations define wetlands as "land that has a predominance of hydric soils and that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions."⁶² "Hydric soil" is further defined to mean soil that "in its undrained condition, is saturated, flooded, or ponded long enough during a growing season to develop an anaerobic condition that supports the growth and regeneration of hydrophytic vegetation."⁶³ Finally, the Kentucky regulations define "hydrophytic vegetation" as a plant growing in water or in a substrate "that is at least periodically deficient in oxygen during a growing season as a result of excessive water content."⁶⁴

⁵⁸ 30 C.F.R. § 816.97(f) (1994). Significantly, OSM regulations do not define "wetlands."

⁵⁹ 405 KY. ADMIN. REGS. 16:180 (1992); 38 W.VA. C.S.R. 2-8.2.1 (1993).

⁶⁰ 405 KY. ADMIN. REGS. 16:180 (1992); 38 W.VA. C.S.R. 2-8.2.1 (1993).

⁶¹ See generally 38 W.VA. C.S.R. 2 (1993).

⁶² 405 KY. ADMIN. REGS. 16:001 (126) (1992).

⁶³ *Id.*

⁶⁴ 405 KY. ADMIN. REGS. 16:001 (126) (1992).

D. Unsuitability

Another potential concern for coal operators is the possibility that regulatory authorities or private parties opposed to surface mining operations in a wetland area could attempt to have the area designated as one unsuitable for surface mining operations under § 522 of SMCRA.⁶⁵

One of the criteria for designating lands as unsuitable under this statutory program is whether or not the coal mining operation will "affect fragile or historic lands in which such operations could result in significant damage to important historic, cultural, scientific, or aesthetic values and natural systems."⁶⁶ OSM describes fragile lands as those areas "containing natural, ecologic, scientific, and aesthetic resources that could be significantly damaged by surface coal mining operations. Examples of fragile lands include valuable habitats for fish or wildlife . . . or . . . areas where mining may result in flooding. . . ."⁶⁷

E. Wetlands Treatment of Acid Mine Drainage

Regulations related to wetlands also may have relevance for coal operators that choose to utilize wetlands as a means of treating acid mine drainage (AMD).⁶⁸ Treatment of AMD usually is an issue of extreme importance to coal operators, since AMD can cause serious violations of the CWA and can delay release of reclamation

⁶⁵ Section 522 of SMCRA provides guidelines for state regulatory authorities in determining which areas of the state are unsuitable for all or certain types of surface coal mining operations. 30 U.S.C. § 1272. Any person with an interest which may be adversely affected may petition the relevant state agency to designate an area as unsuitable. 30 U.S.C. § 1272(c). See also 30 C.F.R. § 762 (1994).

⁶⁶ 30 U.S.C. § 1272(a)(3)(B) (1994). Generally, states may designate lands as unsuitable if the coal mining operations would be incompatible with state or local land use plans, affect fragile or historic lands, affect renewable resource lands, or affect natural hazard lands. 30 U.S.C. § 1272(a)(3). See also 30 C.F.R. § 762.11(b)(2) (1994).

⁶⁷ 30 C.F.R. § 762.5 (1994).

⁶⁸ Acid mine drainage is the substance produced when coal is exposed to surface water runoff or groundwater, oxidizing the pyrite in the coal to iron hydroxides and sulfuric acid, which causes the drainage to have a very low pH. When the mine drainage reaches a stream, the oxidized iron precipitates out in the form of hydrated iron oxides, producing a yellow substance that can coat receiving stream beds. AMD also may contain metals such as aluminum, copper, zinc, magnesium, and manganese. See Daniel E. Rogers, *Acid Coal Mine Drainage — The Perpetual Treatment Problem*, EASTERN MINERAL LAW FOUNDATION, 6-1, 6-3, 6-4 (Eastern Mineral Law Foundation 1st Annual Institute, 1980).

bonds after coal mining activity is completed.⁶⁹

AMD can be treated by various methods, but the most common treatment method is the addition of alkaline chemicals, such as lime and soda ash, to the water, followed by aeration that oxidizes the metals in the water. Because of the continual requirement for chemical addition, operation and maintenance costs associated with this conventional treatment method often are quite high.⁷⁰ In addition, chemical treatment of AMD produces enormous volumes of sludge contaminated with metals, which can result in a considerable disposal expense.⁷¹

Given the expense associated with conventional treatment of AMD, wetlands treatment systems represent a low-cost alternative that has begun to receive more attention in the last several years. Although scientists are still not completely certain about the dynamics involved in wetland treatment systems, various natural processes are involved. First, it is believed that wetland plants, such as cattails, remove metals from AMD by adsorption (ion exchange), consumption and uptake, and filtration. In addition, bacteria in wetlands assimilate and oxidize the metals in AMD.⁷²

Because not all mines happen to be located near natural wetlands, and because of the strict environmental controls involving discharge of materials into wetlands, as discussed above, wetlands treatment systems often must be constructed. However, because wetlands remove contaminants from AMD through biological action and assimilation, after the initial construction expense, operation and maintenance costs may be negligible when compared to conven-

⁶⁹ For example, surface mining and reclamation regulations in West Virginia require that, before the reclamation bond may be released, the quality of *untreated* water being discharged from the mined area must be equal to or better than the quality of the water discharged from the site prior to mining. 38 W.VA. C.S.R. 2-5 (1993). Since acid mine drainage can continue for decades after a mining operation is complete, this requirement is sometimes referred to as a "perpetual treatment" requirement.

⁷⁰ "Chemical treatment of AMD is estimated to cost America's mining industry more than \$1 million a day." Robert L. P. Kleinmann and Robert S. Herdin, *Treat Mine Water Using Passive Methods*, POLLUTION ENGINEERING, August 1993, at 20.

⁷¹ UNITED STATES DEPARTMENT OF INTERIOR AND BUREAU OF MINES, INFORMATION CIRCULAR NO. 8905, ACID MINE DRAINAGE: CONTROL AND ABATEMENT RESEARCH (1982).

⁷² See generally Heden and Nain, *Designing and Sizing Passive Mine Drainage Treatment Systems*, Proceedings of the 13th West Virginia Surface Mine Drainage Task Force Symposium, Morgantown, West Virginia (1992); Chironis, *Mine-Built Ponds Economically Clear Acid Mine Waters*, COAL AGE, January, 1987; Dvorchak, *Plants Curative Powers: Cattails May Heal Damage from Coal Mining*, LOS ANGELES TIMES, Aug. 10, 1986, at 5.

tional treatment systems.⁷³

As with any treatment system, wetland treatment systems are not perfect. Researchers currently are uncertain about the long-range treatment effectiveness of wetlands, since most of the 300 to 400 systems now in use in the coal fields were only built in the last decade. In addition, some species of wetland plants have proved relatively ineffective in treating AMD. Finally, the primary problems with wetlands treatment of AMD in Appalachia is lack of sufficient land area. As AMD flows grow larger, and metal concentrations increase, the land area required for an effective wetland treatment system to assimilate the waste increases. In the steep terrain of the Appalachians, an adequate land area in which to construct a wetland near a mining operation is sometimes difficult to find.⁷⁴

Construction of a wetland for the purpose of removing pollutants from water raises several important regulatory issues. First, the Corps has expressly excluded from its definition of "waters of the United States" waste treatment systems, including ponds and lagoons, designed to meet CWA discharge limitations and requirements.⁷⁵ Therefore, a section 404 permit is not required if a wetland is constructed for the purpose of treating AMD or other wastewaters.⁷⁶ On the other hand, the discharge of effluent from the wetlands treatment system into another water body or receiving stream generally should be permitted under the National Pollutant Discharge Elimination System (NPDES).⁷⁷ In addition, if a constructed wetland is not used for treatment purposes then it may later become subject to permitting requirements under section 404.

Another important regulatory issue with respect to wetlands treatment of AMD is whether or not wetlands treatment should be considered as a "treatment process." There is room for argument on this point, because a wetland, even if man-made, is a natural system that achieves water treatment through processes involving plant and microbiological activity. Classification as a "treatment process" is important because, as discussed above, reclamation bonds may not

⁷³ See *supra* note 67.

⁷⁴ UNITED STATES BUREAU OF MINES, TREATMENT OF ACID MINE DRAINAGE WITH CONSTRUCTED WETLANDS.

⁷⁵ 33 C.F.R. § 328.3(a)(8) (1994).

⁷⁶ Use of a pre-existing wetland for treatment purposes may require a section 404 permit, depending upon whether or not dredging or filling activities occur as part of the process. 33 U.S.C. § 1344. See also *supra* notes 5-10 and accompanying text.

⁷⁷ See *supra*, note 6 and accompanying text.

be released until the quality of the *untreated* water meets the quality of the *pre-mining* water in the area.⁷⁸ Therefore, if the relevant regulatory authority does not consider wetlands as a treatment process, the water discharged from the wetland would be "untreated" water. If this water meets ambient water quality standards when mining operations cease, the mine operator can claim that the untreated water requirement for bond release has been met, and can obtain release of his reclamation bond much earlier than possible with a conventional treatment system. Therefore, the approach of the relevant state regulatory authority with respect to classification of wetlands treatment of AMD should be ascertained before undertaking construction of such a system.

III. OIL AND GAS

Oil and gas operations are subject to the same general wetlands permitting requirements as discussed above in connection with coal mining activities. Therefore, in the absence of a general or nationwide permit, a section 404 permit must be obtained from the Corps before performing any oil and gas related activities that will cause the discharge or dredged or fill material into wetlands.⁷⁹

Oil and gas operations do not have the benefit of coverage under a specific nationwide wetlands permit such as that provided for coal mining operations under NWP No. 21. Although NWP No. 8 permits discharges from structures for the exploration, production and transportation of oil, gas and minerals, its coverage is limited to oil and gas structures on the outer continental shelf within areas leased for such purposes by the Department of the Interior.⁸⁰ Therefore, with certain exceptions as discussed below, oil and gas developers must apply for individual section 404 permits if operations are planned in wetland areas.

Even though there is no nationwide permit that provides comprehensive coverage for oil and gas operations, several NWPs cover various components of oil and gas exploration activity. NWP No. 6 covers discharges from survey activities associated with oil and gas exploration, including core-sampling, seismic exploratory operations, and plugging of seismic shotholes and other exploratory-type

⁷⁸ See *supra*, note 69 and accompanying text.

⁷⁹ 33 U.S.C. § 1344. See also notes 3-25 and accompanying text.

⁸⁰ See Nationwide Permits and Conditions, 33 C.F.R. § 330, app. A(8) (1994).

boreholes. However, this nationwide permit specifically states that discharges resulting from drilling and the discharge of excavated material from test wells for oil and gas exploration are not authorized by the permit even though the plugging of such wells is authorized.⁸¹

Pursuant to its authority under section 401 of the CWA, Kentucky has provided water quality certification for NWP No. 6 without attaching any specific conditions.⁸² However, West Virginia has placed the following conditions on its certification of NWP No. 6:

- (1) All test holes which penetrate solid rock must be abandoned in such a manner that prevents the lateral and vertical movement of fluids, provided that the test hole need not be plugged if subsequent excavation will remove the full depth of the test hole.
- (2) Survey activities proposed for rivers listed under item 16 of West Virginia's general conditions for certification are not certified.⁸³

NWP No. 12, which covers discharges associated with utility line backfill and bedding, also is applicable to certain components of oil and gas operations. Under this permit, a "utility line" is defined as "any pipe or pipeline for the transportation of any gaseous, liquid, liquefiable, or slurry substance, for any purpose." The permit provides that material resulting from trench excavation may be temporarily side-cast (for up to three months) into the waters of the United States, including wetlands, provided that the material is not placed so that it can be dispersed by currents or other forces. In addition, to obtain coverage under the permit, the developer must limit the disturbed area to the minimum area necessary to construct the utility line. In wetland areas, the top 6 to 12 inches of the trench should generally be backfilled with topsoil from the trench and the excess material removed to upland areas immediately upon completion of construction.⁸⁴

Just as it did for NWP No. 21, Kentucky has denied section 401 certification for discharges under NWP No. 12 that would impact upon one or more acres of wetlands.⁸⁵ As discussed above, in

⁸¹ Nationwide Permits and Conditions, 33 C.F.R. § 330, app. A(6) (1994).

⁸² U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-11, at 5 (1992).

⁸³ U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-63, at 6 (1992).

⁸⁴ See Nationwide Permits and Conditions, 33 C.F.R. § 330, app. A(12) (1994).

⁸⁵ U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-11, at 7 (1992).

such a case the developer must apply for individual certification from the state in order to be covered under the nationwide permit.⁸⁶ However, West Virginia has certified NWP No. 12, with several conditions. Among the most notable are the following:

(a) Nationwide Permit applications will be limited to lines 36 inches or less in diameter. Crossing of a given stream more than three times within one stream mile will not be authorized under this permit. Individual stream crossings, except for exempted streams, must be completed in a continuous progressive manner and within 72 hours under normal conditions

(b) Shoreline restoration must be completed within 72 hours of the conclusion of pipeline installation across the watercourse.

. . . .

(d) Dredging for backfill material is not allowed.

(e) Pipelines will be buried a minimum of three (3) feet below the stream bottom.

. . . .

(g) The pipeline (submarine crossing) will be designed and constructed to prevent floatation and the possibility of leakage or rupture. If oil or gas is to be transported in the pipeline, shut-off valves shall be installed on both sides of the waterway so that the crossing can be isolated in the event of a pipe failure.

. . . .

(j) All utility line stream crossings require a [West Virginia] Public Lands Corporation Permit.⁸⁷

Another NWP applicable to certain components of oil and gas operations is NWP No. 3, which authorizes the "repair, rehabilitation, or replacement of any previously authorized and currently serviceable structure or fill. . . ."⁸⁸ In other words, this NWP authorizes limited maintenance activities in wetland areas provided that the structure or fill is not to be put to uses different from those specified or contemplated in the original permit or the most recently authorized modification.⁸⁹

Kentucky has certified NWP No. 3 without any specific conditions.⁹⁰ West Virginia has placed the following conditions on its certification of NWP No. 3:

⁸⁶ See *supra* notes 11, 30 and accompanying text.

⁸⁷ U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-63, at 8-9 (1992).

⁸⁸ *Id.* at 4.

⁸⁹ Nationwide Permits and Conditions, 33 C.F.R. § 330, App. A(3) (1994).

⁹⁰ U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-11, at 4-5 (1992).

- (a) The maximum amount of material to be discharged as part of a single and complete project shall not exceed 2,500 cubic yards.
- (b) Repair of damaged fills is limited to reconstruction of the original, "as built," structure.
- (c) Maintenance activities proposed for rivers listed under Item No. 16 of the general conditions for certification are not certified.⁹¹

Finally, oil and gas activities conducted in wetlands not adjacent to streams and less than 10 acres in size may be covered by NWP No. 26. This nationwide permit covers discharges of dredged and fill material into headwaters and isolated waters, provided the discharge does not cause the loss of more than 10 acres of wetlands, and provided the permittee notifies the Corps of any discharge that would cause the loss of greater than one acre of wetlands.⁹²

However, West Virginia has denied certification for all work in wetlands under NWP No. 26. Therefore, developers in West Virginia must obtain individual water quality certification for discharges to wetlands of any size.⁹³ Kentucky has denied certification under NWP No. 26 for discharges that would result in the loss of one acre or more of wetlands and discharges into 200 linear feet or more of any stream or stream bank depicted as an intermittent or solid blue line on a U.S.C.5.7.5 minute (1:24,000) topographic map.⁹⁴

As is the case with all other nationwide permits, in addition to these specific conditions for the nationwide permits applicable to oil and gas, West Virginia's general conditions for all NWPs must be satisfied. In addition, as noted above, an individual section 404 permit must be obtained for any component of oil and gas operations not covered by the general permits, if the applications will result in the discharge of dredged or fill material into wetland areas.

⁹¹ U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-63, at 5 (1992). See *also supra*, notes 44-45 and accompanying text (describing streams listed under Item No. 16 of the general conditions).

⁹² Nationwide Permits and Conditions, 33 C.F.R. § 330, App. A(26) (1994). This permit also would be applicable to mining activities conducted in isolated wetland areas.

⁹³ U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-63, at 18 (1992).

⁹⁴ U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE NO. 92-11, at 15 (1992).

CONCLUSION

The recognition of the presence of wetlands and an understanding of the regulatory boundaries protecting them should be a major concern for any energy development project. Failure to do so could not only result in severe disruption or cancellation of a planned project but also could subject the operator of the site to substantial civil and criminal penalties. Therefore, a determination of the existence of wetlands and establishment of the appropriate procedures to accomplish energy development within them should be essential items in the overall acquisition and operation plan for any energy project.