Coal Ash Constituents in Groundwater and Regulation Under the Clean Water Act

George M. Huddleston III

SynTerra Corporation, 148 River Street, Ste. 220, Greenville, SC 29601

CONFERENCE: 2019 World of Coal Ash – (www.worldofcoalash.org)

KEYWORDS: coal combustion residual, groundwater, seep, permitting

ABSTRACT

Background/Objectives. Should the Clean Water Act (CWA) regulate discharges to groundwater? It’s a matter of significant debate. According to the U.S. Environmental Protection Agency (EPA), CWA permits for discharges to groundwater may be required if pollutants from point sources to jurisdictional surface waters that occur via groundwater or other subsurface flow have a direct hydrologic connection to the surface water. As such, EPA has stated that determinations are fact-specific, leading courts to rule on both sides of the issue. On February 20, 2018, EPA issued a request for comment on the technical elements of the matter and whether the agency should consider clarification or revision of previous statements. As administrators of the CWA’s National Pollutant Discharge Elimination System (NPDES) program, some states oppose permitting groundwater discharges under the CWA. Officials from those states contend that such permitting contorts the law, creates unnecessary challenges, and could undermine states’ abilities to regulate groundwater contamination through other programs already in place. Historic disposal of coal ash in unlined earthen impoundments or landfills presents a situation in which permitting discharges to groundwater could apply.

Approach/Activities. When impounded surface water overlying coal ash infiltrates the subsurface and encounters natural groundwater, coal ash constituents can migrate to jurisdictional surface water bodies, sometimes “daylighting” as a seep on a stream or river bank or upwelling through sediments. Coal ash constituents dissolved in groundwater can be conservative (unreactive with soil or native groundwater) or reactive, which means migration and attenuation are influenced by adsorption-desorption, cation exchange, precipitation-dissolution, or oxidation-reduction processes, often making transient or seasonal seeps challenging to characterize. Coal ash impoundments are subject to cleanup under the 2015 federal Coal Combustion Residuals (CCR) rule.

Results/Lessons Learned. Mandated closure of coal ash impoundments includes removal of ash and overlying water and capping ash in place. It is anticipated that those activities will substantially reduce or eliminate seeps. In the interim, an option may be to permit constructed seeps, such as toe drains, as NPDES outfalls. Non-
constructed seeps, by contrast, are challenging if not inappropriate to permit because of inconsistent flows and characteristics. Non-constructed seeps are seasonal and transient in nature, and may or may not have direct hydrologic connection to surface water. In those cases, non-constructed seeps may be addressed outside of NPDES through consent agreements, compliance monitoring, and corrective action.

INTRODUCTION

Some theorize that if a discharge into the ground can eventually reach surface water by migrating through groundwater, that discharge falls under CWA jurisdiction and should be regulated. There has been a recent wave of litigation from environmental groups targeting electric utilities and mining companies based on a groundwater conduit theory.

Wastewater treated at coal-fired electric stations includes water mixed with ash produced through the combustion of coal to generate steam. Ash is controlled and collected by mixing with water to create a slurry, which is conveyed to impoundments or basins (historically unlined) with earthen dike walls. In the basin, solids separate from the liquid, and the supernatant is discharged under an NPDES permit. Coal ash constituents can leach into underlying or adjacent groundwater.

EXAMPLE RULINGS ON THE GROUNDWATER CONDUIT ISSUE

Fourth Circuit Case

- Case involved a leak of several hundred thousand gallons of gasoline spilled from a rupture in a pipeline owned by a subsidiary of Kinder Morgan.
- Plaintiff conservation groups argued that the gasoline spilled into the surrounding soil and groundwater, ultimately seeping into nearby streams.
- District court held it lacked jurisdiction and that the plaintiffs failed to state a claim because the pipe was no longer releasing gasoline, so there was no ongoing CWA violation.
- The 4th Circuit overturned the district court and held that plaintiffs had sufficiently alleged an ongoing CWA violation because the spilled gasoline continued to migrate through groundwater into nearby creeks.
- The CWA does not require that a release be “ongoing.”
- “Abatement of a pollutant requires more than the repair of a pipeline, and the need for such abatement continues so long as the contaminant continues to flow into navigable waters.”
- The Court concluded that the CWA only requires that a point source be “the starting point or cause of a discharge,” a point source does not have to directly deliver pollutants to surface water.
- However, the Court held that the release from a point source must be “sufficiently connected” to a navigable water in order to be regulated by the CWA.
• “A plaintiff must allege a direct hydrological connection between ground water and navigable waters in order to state a claim under the CWA for a discharge that passes through ground water.”

**Sixth Circuit Cases**

- Oral arguments were just held on August 2, 2018 in two groundwater discharge cases.
  - Tennessee Clean Water Network v. Tennessee Valley Authority, M.D. Tenn., No. 3:15-cv-00424
  - Kentucky Waterways Alliance v. Kentucky Utilities Co., E.D. Ky., Civil Action No. 5: 17-292-DCR
- The Middle District of Tennessee ruled against TVA and held that leaks to groundwater from an ash pond were regulated by the CWA. The court ordered TVA excavate all ash from the site and move it to a more secure facility.
- The Eastern District of Kentucky ruled in favor of Kentucky Utilities.
  - The Court held that leaks to groundwater are not regulated under the CWA.
  - Also involved an issue on whether environmental groups can sue a facility under the Resource Conservation and Recovery Act even though the facility already has a corrective action plan in place with the state.
  - The Court agreed with Kentucky Utilities and held that the plaintiffs lacked standing.
- September 24, 2018, the Sixth Circuit ruled in favor of the utilities. The case has been appealed to the Supreme Court.

**RESPONSES TO EPA’S CALL FOR COMMENTS**

- The American Petroleum Institute et al. “support EPA’s current review of the scope of the NPDES permitting program. We believe that prior interpretations of the scope of the NPDES permitting program, such as the Agency’s “direct hydrological connection” theory, have improperly expanded the scope of the NPDES program beyond what the text of the CWA allows, and beyond what Congress intended.” (https://www.ipaa.org/wp-content/uploads/2018/05/Industry-Comments-EPA-CWA-Hydrologic-Connectivity.pdf)
- Waterkeeper Alliance stated, “there is no reason or justification for EPA to reconsider or revise its longstanding interpretation that point source discharges of pollutants that pass through groundwater to a jurisdictional surface water meet the Clean Water Act’s discharge prohibition and thus require NPDES permits if there is a direct hydrological connection between the groundwater and the surface water. Nor should EPA attempt to meddle with the rational, workable, fact-specific inquiry the agency has relied upon for decades to determine whether a discharge meets the “direct hydrological connection” standard. Amending its interpretation to categorically remove oversight and regulation of such point source discharges of pollutants to jurisdictional waters via groundwater would harm public health, water quality, and wildlife, and would be arbitrary and
capricious, an abuse of discretion, and unlawful.”

The Edison Electric Institute commented that “it would be appropriate for EPA to take this opportunity to clarify that the strict, and potentially criminal, liability of the CWA does not apply to groundwater seepage and other diffuse means of pollutant transport.”

The Association of Clean Water Administrators assert that, “As the primary entities responsible for carrying out CWA programs, states are uniquely positioned to provide input on the coverage of “discharges of pollutants” via direct hydrologic connection to surface water. Discharges to groundwater are often site-specific and complex, and defining a “direct” hydrologic connection can be challenging. Due to this complexity, as well as varying state legal frameworks, there is great diversity of state approaches on the appropriate manner of regulating and managing discharges of pollutants to groundwater. However, states are consistent in their desire to retain their current flexibilities to regulate and manage these discharges using their discretion to determine which laws and regulatory schemes apply …”

The U.S. Chamber of Commerce insists that other statutes contain mechanisms to prevent the releases that might otherwise reach surface waters via groundwater. These statutes include the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Safe Drinking Water Act (SDWA).

Agricultural Associations point out that “it would be impracticable, if not impossible, to apply NPDES requirements to the types of pollution that could be subject to regulation under the “direct hydrological connection” theory or any similar approach that would extend NPDES requirements to discharges via groundwater migration. The permitting process would become even more burdensome and expensive for permit writers and applicants than it already is.”

A SOLUTION FOR COAL ASH SEEPS

While states, industry, and advocacy groups await EPA’s ruling, several states are using consent agreements with utilities to regulate coal ash seeps. The following is an example.

- Seeps are identified through field reconnaissance and categorized as:
• “Constructed seep” – constructed features on or within the dam earthen dam structure (such as toe drains or filter baskets) to collect seepage. Wastewater is conveyed via a pipe or constructed channel directly to a receiving water body. These identifiable point sources are or will be regulated by NPDES and designated as outfalls.
• “Non-constructed seep” – low flow seepage that may be transient and seasonal in nature, may manifest as wet areas that do not flow to surface waters, a point of origin of a stream, or may flow to an existing stream. Some may flow to an NPDES permitted system. Non-engineered seeps that contribute pollution the waters of the state are therefore regulated under the consent agreement.

• Consent agreement terms:
  • Upfront monetary penalty for seeps identified before a specified date.
  • Stipulated monetary penalties according to:
    • Meeting a compliance schedule
    • Not exceeding water quality action levels
    • Not violating monitoring frequency requirements
    • Meeting reporting requirements

EPA is yet to rule on the CWA coverage of “discharges of pollutants” via a direct hydrologic connection to surface water.