EPA Issues Proposed Rule Prohibiting Disposal of Shale Wastewater at Public Treatment Facilities

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The U.S. Environmental Protection Agency (EPA) published a proposed rule on April 7, 2015, that will prohibit the disposal of unconventional oil and natural gas extraction wastewater (shale wastewater) at publicly owned treatment works (POTWs). The proposed rule is part of EPA’s broader effort to regulate hydraulic fracturing and specifically responds to concerns that POTWs are ill-equipped to treat the salts, minerals, and radionuclides sometimes found in shale wastewater.

Background

The Clean Water Act (CWA) regulates discharges of pollutants from point sources into waters of the United States through National Pollutant Discharge Elimination System (NPDES) permits or delegated state permits. Except in limited circumstances, CWA regulations prohibit discharges of wastewater from onshore oil and gas extraction facilities. This “zero discharge” requirement means that a NPDES permit (or state delegated permit) may not be issued to authorize the discharge of oil and gas wastewater to waters of the United States.

Since NPDES permits are difficult to obtain, operators have turned to other techniques to manage shale wastewater, most commonly by injection into underground formations that do not contain potable water. However, in locations such as Pennsylvania, where geological constraints limit the number of underground disposal wells, operators have occasionally sent shale wastewater to centralized wastewater treatment facilities (CWTs) or POTWs. Oil and gas operators are not required to obtain a NPDES permit to send wastewaters to these facilities. Rather, these “indirect discharges” are subject to the CWA’s general pretreatment standards, including a general requirement not to introduce pollutants that would “pass through” or “cause interference” with the facilities’ operations.

Currently, the CWA does not include pretreatment standards for indirect discharges of shale wastewater, and regulation has largely been left to the States. In 2011, however, incidents in

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2 EPA proposes to define unconventional oil and gas extraction wastewater to include the following sources: produced water (including flowback and long-term produced water), drilling wastewater (including pollutants from drill cuttings and drilling muds), and produced sands.

3 Centralized wastewater treatment facilities that accept shale wastewater may either: (1) return treated water to an operator for reuse to fracture another well (“zero discharge”); (2) directly discharge treated water to surface waters (pursuant to an NPDES permit); or (3) indirectly discharge treated water to POTWs. According to data surveyed by EPA, there are 73 commercial CWT facilities that accept shale wastewater. EPA found that the number of CWT facilities available to operators in the Marcellus and Utica Shale formations has increased with the number of wells drilled, and observed a similar trend in the Fayette Shale formation in Arkansas.
Pennsylvania revealed that some POTWs had failed to adequately treat shale wastewater before discharging it into streams. In response to an EPA inquiry, Pennsylvania sought a voluntary commitment from industry that it would no longer send wastewater from the Marcellus Shale region to POTWs. EPA then issued a memorandum to state and federal permitting authorities that identified potential constituents of concern present in wastewater produced from the Marcellus Shale. EPA noted that most conventional POTWs were not equipped to remove the total dissolved solids (salts), metals, and radionuclides that are sometimes found in shale wastewater. The agency also observed that some POTWs reported experiencing operational difficulties while processing wastewater that contained high concentrations of these constituents.

In October 2011, EPA announced its intention to develop new pretreatment standards for shale wastewater deliveries to POTWs. EPA indicated that the pretreatment standards would require operators to follow national technology-based regulations, rather than simply meeting local limits applicable to POTWs. EPA also stated that the pretreatment standards would not apply to re-injection or re-use of flowback water, the two most common techniques for handling hydraulic fracturing wastewater.

**EPA’s Proposed Rule**

EPA proposes to establish a zero discharge requirement for new and existing unconventional oil and natural gas extraction facilities\(^4\) that will prohibit operators from discharging shale wastewater through POTWs. In practical terms, this means that shale wastewater that is discharged to POTWs will be regulated as if the wastewater were discharged directly into waters of the United States. According to EPA, this prohibition reflects the current industry practice of not sending wastewater to POTWs for treatment and disposal. EPA states that it is unaware of any facilities that are currently sending wastewater to POTWs. Nonetheless, EPA believes the proposed rule is necessary because shale wastewater has been discharged to POTWs in the past and operators could request that POTWs treat their wastewater in the future. EPA claims this rulemaking will provide regulatory clarity and relieve the burden on POTWs to evaluate any future requests.

The proposed zero discharge requirements apply only to wastewater sent to POTWs from onshore unconventional oil and gas extraction; EPA is not proposing pretreatment standards for wastewater pollutants associated with conventional oil and gas extraction facilities at this time, reserving such standards for a future rulemaking, if appropriate. Nor do the requirements address deliveries of produced water from coalbed methane formations; EPA previously stated that it would issue concurrent pretreatment standards for the coalbed methane sector, but those plans have been postponed indefinitely. Finally, the proposed rule does not prohibit deliveries to CWTs, although EPA says that it will consider whether to revise existing regulations for wastewater deliveries to those plants in a future rulemaking effort.

\(^4\) EPA proposes to define “unconventional oil and gas” (UOG) as “crude oil and natural gas [including natural gas liquids] produced by a well drilled into a low porosity, low permeability formation (including, but not limited to, shale gas, shale oil, tight gas, tight oil).”
Although EPA’s proposed rule would prohibit industry from using POTW capacity to handle shale wastewater, it may present opportunities for equipment and service companies that offer flowback treatment or recycling equipment and services. The proposed rule could also boost CWTs that are capable of treating shale gas wastewater to levels that achieve receiving water standards. That said, the proposed rule’s impact on U.S. shale development overall may be limited because the POTW issue is generally confined to the Marcellus Shale region. As mentioned previously, in 2011, Pennsylvania moved to stop shale wastewater discharges to POTWs. In Ohio, the Division of Natural Resources has regulatory authority over the disposal of oil and gas wastewater (including flowback). However, the agency has interpreted Ohio Revised Code § 1509.22(C)(1), which regulates storage of wastewater from oil and gas operations, to strictly limit disposal options, going so far as to say that it will not authorize discharges of gas well wastewater through POTWs.\(^5\)

Due in part to these restrictions, as well as advances in treatment technologies, the Marcellus Shale region has seen a rapid rise in wastewater recycling (either by treatment at the wellhead or via deliveries to a CWT). Since 2010, oil and gas wastewater recycling in Pennsylvania has grown from 4.6 to over 7.8 million bbl per year, while wastewater reuse has increased from 2.6 to over 22 million bbl per year.\(^5\) It remains to be seen what effect EPA’s proposed pretreatment standards may have on the cost of disposing shale wastewater in other regions of the U.S.

Comments on this proposed rule must be received on or before June 8, 2015. EPA will also hold a public hearing on the rule on May 29, 2015, at agency headquarters in Washington, D.C. Operators who are concerned about the potential impacts of these new requirements are encouraged to participate in public hearings and the public comment process.

For further information, please contact Vinson & Elkins lawyers Larry Nettles, Sue Snyder, Jordan Rodriguez, or Jay Rothrock.

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