

## 2015 oil and natural gas wastewater management update

Wastewater management remains a significant challenge for conventional and unconventional oil and natural gas producers in the Commonwealth. The recent slow-down in the pace of new drilling is reducing opportunities for beneficial reuse of produced fluid from operating wells. According to the Pennsylvania Department of Environmental Protection's oil and gas reporting website, exploration and production companies reported producing 45 million barrels of flowback and produced fluid in 2014, an increase of nearly 5 million barrels from the amount reported in 2013. The increase in wastewater created by extraction highlights the importance of several state and federal regulatory efforts that could affect the handling and disposal of such material in 2016.

### EPA proposed amendment to 40 CFR Part 435

The U.S. Environmental Protection Agency regulates the treatment of oil and natural gas wastewater at treatment facilities under 40 CFR Parts 435 and 437. Historically, operators have delivered brine and other wastewaters for treatment either to publicly owned treatment works (POTW) or to privately owned centralized wastewater treatment (CWT) facilities. In 2011, DEP requested that all Marcellus well operators in the Commonwealth stop sending brine and other oil and natural gas wastewaters to POTWs. In April 2015, EPA proposed a rulemaking that would amend 40 CFR Part 435 to formally prohibit the discharge of unconventional oil and natural gas wastewater to POTWs.<sup>1</sup> Part 435 sets effluent limitations and guidelines for the oil and natural gas extraction point source category under the Clean Water Act.

The proposed rulemaking applies to unconventional oil and natural gas wastewater generated through production, field exploration, drilling, well completion and well treatment operations. It would not affect oil and natural gas wastewater generated by conventional operations. In the preamble to the proposed rule, EPA states that it has not identified any unconventional oil and natural gas operators that currently discharge wastewater to POTWs—meaning that the proposed rulemaking reflects current industry practice and will not affect unconventional operators.

### EPA CWT study forthcoming

In the *Final 2014 Effluent Guidelines Program Plan* of July 2015, EPA announced the agency will be undertaking a detailed study of oil and natural gas wastewater, including all CWT facilities accepting such wastewater. There are federal effluent limitations guidelines in 40 CFR Part 437 that apply to CWTs generally. CWT facilities that accept oil and natural gas wastewaters can be regulated under different subparts of this regulation, including Subparts B (Oils Treatment and Recovery) and D (Multiple Wastestreams).

The proposed study might prove controversial because EPA has indicated it may gather data from oil and natural gas waste streams not currently regulated by Part 437—including both operators that do not utilize CWT facilities as well as CWT facilities that do not discharge treated effluent to determine if Part 437 should be expanded to be more comprehensive. For example, in the *Response to Comments* document accompanying the *Final 2014 Effluent Guidelines Program Plan*, EPA specified that the study may encompass conventional and unconventional operators, zero-discharge facilities, CWT facilities regulated by Part 437, and CWT facilities not regulated by Part 437.

### Underground injection control updates

In late 2014, EPA announced it is collecting information from both Class IID Underground Injection Control (UIC) well operators and primacy states. EPA has indicated that it intends to use the collected information in decisions regarding UIC well regulations, compliance and enforcement actions, funding determinations for state, tribal, and regional UIC programs, and examining strategic and policy issues.

Several state and federal agencies have begun or continued efforts to respond to allegations that injection wells can induce seismic events under certain conditions. In February 2015, EPA released "Minimizing and Managing Potential Impacts of Injection-Induced Seismicity from Class II Disposal Wells: Practical Approaches." EPA notes in the report that Class IID

### Authors:



Kevin J. Garber



Michael K. Reer

**Babst Calland**  
Attorneys at Law

wells “have been used to dispose of oil and gas related wastes for decades with very few associated seismic events” and that disposal wells “are one of a number of historic causes” of induced seismicity, along with the construction of dams and water reservoirs, mining activities, oil and gas production, and geothermal energy production. The report states that injection well operators can reduce a risk of seismic events through injection site assessment, well testing and well pressure monitoring.<sup>2</sup>

In April 2015, the U.S. Geological Survey released “New Insight on Ground Shaking from Man-Made Earthquakes,” which identifies 17 “induced seismicity zones”—including Ashtabula and Youngstown, Ohio.<sup>3</sup> The report also suggests preliminary models for forecasting the frequency and severity of induced seismic events up to one year in advance.

Most recently, in September 2015, the Induced Seismicity Work Group of States First released “Potential Injection-Induced Seismicity Associated with Oil & Gas Development: A Primer on Technical and Regulatory Considerations Informing Risk Management and Mitigation.”<sup>4</sup> The primer included contributing authors from both the Ohio Department of Natural Resources and the West Virginia Department of Environmental Protection and assessed how regulatory authorities might evaluate suspected causation, conduct risk management and risk mitigation, and manage permit conditions to reduce a risk of induced seismicity from injection wells.

### Chapter 78/78a draft final rulemaking

DEP’s August 2015 draft final rulemaking containing proposed amendments to Chapter 78 (regulating conventional wells) and the proposed creation of Chapter 78a (regulating unconventional wells) as proposed would impose significant additional regulatory burdens for managing produced fluids. The Environmental Quality Board is expected to meet to vote on the proposed rulemaking on February 3, 2016. If promulgated, the following proposed subsections will likely have a significant impact on how operators manage and dispose of oil and natural gas wastewater.

Proposed §§ 78.56 and 78a.56 would prohibit the use of pits in unconventional operations. Conventional operators would be required to seek DEP approval before commencing construction of a pit with a footprint greater than 300 square feet if the pit is to be used during the servicing, plugging or recompleting of a well.

Proposed §§ 78.57 and 78a.57 would require operators to register the location of new underground storage tanks before installation. A monthly inspection requirement would apply to unconventional facilities and a quarterly inspection requirement would apply to conventional facilities.

Proposed §§ 78.58 and 78a.58 would require operators to conduct mixing, aerating and filtering operations within secondary containment systems. Additionally, the proposed regulations would require that operators processing fluids or drill cuttings generated by the development, drilling, stimulation, alteration, operation or plugging of oil and natural gas wells develop action plans specifying procedures for monitoring for and responding to radioactive material produced

by the treatment process.

Proposed §§ 78.59(b) and 78a.59(b) would rename “freshwater impoundments” as “well development impoundments.” DEP has indicated that the amendment will more clearly apply the regulations to both freshwater and mine-influenced water used in oil and natural gas operations. The proposed amendments would require that operators either upgrade or close well development impoundments that do not comply with the new regulations within one year of their effective date.

Finally, proposed §§ 78.59(c) and 78a.59(c) would prohibit the construction of new centralized impoundments and require the closure of existing centralized impoundments within three years of the effective date of the rulemaking. Alternatively, operators would be allowed to re-permit existing centralized impoundments as residual waste disposal impoundments (through 25 Pa. Code § 289) upon approval of a closure plan and completion of all of the regulatory requirements that apply to such facilities. Those requirements may include one year of groundwater data (necessitating a subsurface investigation, well installation, and one year of monitoring, evaluation and reporting), minimum setback requirements, leak detection mechanisms, a dual liner system, fugitive air containment control measures, and an evaluation of the soils to be used for intermediate and final disposal cover.

### Conclusion

These regulatory developments will continue into 2016. The proposed amendments to Part 435 will not affect operators who utilize CWT facilities to treat waste streams in the Commonwealth. However, operators and CWT facilities should follow EPA’s study of the scope of Part 437 because it may spur additional federal regulations that could directly affect the conventional and unconventional industries. Likewise, state and federal efforts to study induced seismicity may have implications for both producers and the disposal industry. Finally, DEP’s significant modifications to the Commonwealth’s oil and natural gas well regulations will undoubtedly have a significant effect on how oil and natural gas wastewater is stored and treated, particularly regarding the use of centralized impoundments.

1 80 Fed. Reg. 18557 (Apr. 7, 2015).

2 *Minimizing and Managing Potential Impacts of Inject-Induced Seismicity from Class II Disposal Wells: Practical Approaches*, U.S. Env’tl Prot. Agency (2015).

3 *New Insight on Ground Shaking from Man-Made Earthquakes*, U.S. Geological Survey (2015) available at [www.usgs.gov/newsroom/article.asp?ID=4202&from=rss#.ViTQ936rRpg](http://www.usgs.gov/newsroom/article.asp?ID=4202&from=rss#.ViTQ936rRpg).

4 *Potential Injection-Induced Seismicity Associated with Oil & Gas Development: A Primer on Technical and Regulatory Considerations Informing Risk Management and Mitigation*, Groundwater Prot. Council (2015) available at [www.gwpc.org/sites/default/files/finalprimerweb.pdf](http://www.gwpc.org/sites/default/files/finalprimerweb.pdf).