**From:** director@fracdallas.org
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**Subject:** Definition of Flowback for Oil and Gas operations
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# What is flowback, and how does it differ from produced water?

Flowback is a water based solution that flows back to the surface during and after the completion of hydraulic fracturing. It consists of the fluid used to fracture the Marcellus shale. The fluid contains clays, chemical additives, dissolved metal ions and total dissolved solids (TDS). The water has a murky appearance from high levels of suspended particles. Most of the flowback occurs in the first seven to ten days while the rest can occur over a three to four week time period. The volume of recovery is anywhere between 20% and 40% of the volume that was initially injected into the well[1]. The rest of the fluid remains absorbed in the Marcellus shale formation.

In contrast, produced water is naturally occurring water found in shale formations that flows to the surface throughout the entire lifespan of the gas well. This water has high levels of TDS and leaches out minerals from the shale including barium, calcium, iron and magnesium. It also contains dissolved hydrocarbons such as methane, ethane and propane along with naturally occurring radioactive materials (NORM) such as radium isotopes.

At some point, the water that is recovered from a gas well makes a transition from flowback water to produced water. This transition point can be hard to discern, but it sometimes identified according to the rate of return measured in barrels per day (bpd) and by looking at the chemical composition. Flowback water produces higher flowrate over a shorter period of time, greater than 50 bpd. Produced water produces lower flow over a much longer period of time, typically from 2 to 40 bpd[2]. The chemical composition of flowback and produced water is very similar so a detailed chemical analysis is recommended to distinguish between flowback and produced water.

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For additional information, see:

1. Marcellus-Shale. US. 2011. Flowback and Brine Treatment in Pennsylvania. Retrieved March 21, 2011 from http://www.marcellusshale.us/drilling_wastewater.htm
2. Vidic, R.D. 2010. Sustainable Water Management for Marcellus Shale Development. Retrieved March 21, 2011 from http://www.temple.edu/environment/NRDP_pics/shale/presentations_TUsummit/Vidic-Temple-2010.pdf

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Please make sure this e-mailed information is included in the official record of public documents submitted to IDL regarding Proposed Rules for Oil and Gas Conservation, Docket No. 20-0702-1601, as required by federal and state laws.

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***"We only have one environment. When we destroy it we will become as extinct as the dinosaurs!"***