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Subject: Gas Regulation Comment

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To Whom It May Concern:

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I am writing to express my concern for long-term integrity of Marcellus gas wells regarding those drilled in areas where groundwater has been contaminated by prior coal mining activities. It is my understanding that the gas wells are cased with concrete in order to preserve their integrity and prevent migration to adjacent aquifers and porous rock formations. My concern is that previously mined areas often cause groundwater to become very acidic, which pH sometimes ranging in the 2.5 to 3.5 pH scale to neutral. These acidic waters chemically react with concrete and there is a distinct possibility that the cement will completely dissolve the casing over time. This is not only a problem with cement casings but also with steel casings. Evidence of such actions can be readily observed at above ground culverts and other water conveyance devices throughout Pennsylvania's mining regions. Often the bottoms of culverts and pipes in contact with acidic water are completely eaten away over time. In addition, the acidic water that is in contact with the cement and metal culverts is often much less acidic than what could be encountered underground, in some instances, because it mixes with less acidic or net alkaline surface water and yet the destruction of the material still occurs over time. I would like to know what kind of pretesting for acidic groundwater conditions are part of the permit requirements, what is done to assure that drilling/testing, which sometimes contacts alkaline material that could skew the results of groundwater contamination if not done properly, is being conducted with those considerations in mind, and how these concerns are being addressed in the proposed regulations. I am also concerned that gas and drilling companies may not even be aware of this extremely acid contaminated groundwater they might be drilling through to reach the Marcellus shale. What experience do gas companies possess in regarding to drilling in areas where they may encounter very acidic contaminated groundwater aquifers that we have here in the Pennsylvania coal region? Are there measures that can be put in place that guarantees the integrity of wells passing through acidic aquifers over the long term, perhaps hundreds of years? Should there be areas designated as "unsuitable for drilling" based on the chemistry of the groundwater the well may encounter in mined areas. Be advised that acid polluted aquifers may not be directly associated with previously mined lands and may be very long distances away from the actual mined areas.

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