

**Nearburg Producing Company**

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New Mexico Oil Conservation Division  
2040 S. Pacheco Street  
Santa Fe, New Mexico 87505

Attn: David Catanach

Gentlemen:

Application for Classification as Hardship Gas Well (Rule 409) –  
McKittrick Federal 11 No.1Y, Eddy County, New Mexico

Nearburg Producing Company respectfully requests Hardship Gas Well Classification (Rule 409) for the **McKittrick Federal 11 Well No.1Y**, located in **Unit I, Section 11, T-22S, R-24E, McKittrick Hills Upper Penn (Gas) Pool, Eddy County, New Mexico**. This well is situated at the end of a high pressure gas gathering system and is in jeopardy of being shut-in. The potential for permanent waste of recoverable reserves incurred by shut-in events warrants a Hardship Classification, and is demonstrated by the following evidence:

1. Excessive Cost – Water encroaches towards the wellbore when Upper Penn wells in this area are shut-in. The reservoir is characterized as a fractured carbonate gas pool with a weak water drive/water influx recovery mechanism. The well must be produced at a substantial gas rate to prevent water encroachment. When the well is shut-in, the cost to restore production is substantial because nitrogen and coil tubing are needed to return the well to flowing status. It is estimated that 1,000,000 – 1,500,000 cu.ft. nitrogen is required during a coil tubing treatment of 2 – 3 days to unload encroached water and restore gas production. This costs \$30,000 - \$40,000 per shut-in event.
2. Lost Reserves from Premature Abandonment – Permanent loss of reserves is another concern. Due to the quantity of water produced from the reservoir, water will accumulate in and around the wellbore during shut-in periods. The cost to unload water is substantial and will increase over time as service costs increase. The cost to restore production will eventually become unfeasible after a shut-in event. This may force Nearburg to prematurely abandon the well, and the remaining gas reserves will be lost.
3. Lost Reserves from Shut-in Productivity Damage – The McKittrick Federal 11 No.1Y has cumulative gas recovery of +/- .75 BCF and continues to produce +/-1,000 MCF/day due to the drive mechanism. Nearburg thinks it is likely that the weak water drive/water influx recovery mechanism can cause permanent productivity damage during a shut-in event. The evacuation of water from the fractures is necessary to maintain gas productivity as the water drive/water influx advances. A shut-in event of any length results in water encroachment and causes a new, higher connate water saturation through matrix imbibition during the shut-in event. The higher connate water saturation reduces matrix permeability and causes drainage to occur over a smaller area and bypasses gas reserves (underground waste). Reserves of 2 BCF gas could be lost as a result of a shut-