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COGCC

Energen Resources Corporation  
Duell 32-6 #5-2  
SEW 5 32N 6W  
05-067-08899

### MECHANICAL INTEGRITY ASSESSMENT

A well head seal leak is likely because of similar shut in pressures between the production and the surface casings. The COGCC would like to obtain copies of production and BrH gas compositional analyses. An explanation or further investigation of the high surface casing instantaneous shut in pressures following the blow down is required. One of the five Braden head tests reported a two second water shot; so, be prepared to grab a water sample on the surface casing during subsequent Braden head tests and obtain a lab analysis.

This well was drilled & completed in 2004 as a CBM well. Surface csg was set @ 437' & cemented to surface. Production csg was set @ 2738' and cemented to surface with an uncemented slotted liner run from 2715'-2946' in open hole. The BrHT's indicate a likely wellhead seal leak because both initial surface & production casing pressure readings were equal or close to equal. Similar gas analyses results between surf & production casings would be a second confirmation of a seal leak. Gas samples are reported to have been taken but not submitted to the COGCC. In some tests the ISI BrHP at the conclusion of the BrH blow down are 50-75% of pressures reported at the beginning of the test which are contradictory to the reported blow down to a whisper or zero pressure and will require further investigation or explanation.

The adjacent well drilled on the same pad in late 2007, Duell 32-6 #5-4, encountered gas bubbles flowing outside the surface casing. There are nearby CBM wells drilled in the same approximate time frame, Flagg #6-3 (API 067-09387) and Schalles #3 (067-09586) also showed gas outside the surface casing following drilling. All of four wells are located in the area where previously P&A'd wells, the A. O. Martin #1 (API 067-05174) and the J. Fred Hill #1 (API 067-05169), were re-plugged in 1998 by the COGCC because of gas leaks found at the surface. The J. Fred Hill #1 is known to have contaminated fresh water aquifers from a depth of 200'-1000' with CBM gas.

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Discussion with Energen personnel to get a well head services company out to inject liquid plastic into the seals and perform another BrHT; also look further in the question about BrH ISP following the test