

## Conditions of Approval

RKI Exploration & Production

Big Eddy 117 SWD

April 14, 2011

30-015-27241

1. Submit a Cement Bond Log for the 5 ½" casing covering the depths from 2950 to 1000 feet, minimum span. Remedial cementing could be required, based upon the CBL.
2. Set a cast iron bridge plug at 4836 with a minimum cement cap of 35 feet.
3. Submit simulation details showing the fracture of the perforations 4281-4475 will not extend below the top of the Brushy Canyon formation at 4836 prior to that operation.
4. Conduct a Mechanical Integrity Test of the tubing/casing annulus when the packer or tubing is pulled and any time more than five barrels of packer fluid is replaced.
  - a. The test pressure should be 500 psig, with 200 psig differentials between tubing and casing pressure (at test time) but no more than 70% of casing burst pressure as described by Onshore Order 2.III.B.1.h. (The tubing or reservoir pressure may need to be reduced). Trap that pressure and record it on a chart for 30 minutes. Document the MIT on a calibrated recorder chart within 25 to 85 per cent of its full range.
  - b. Notify Paul R. Swartz at 575-234-5985 and/or 575-200-7902 at least 24 hours before the test. If there is no response, notify the BLM on call drilling phone, 575-361-2822.
  - c. Less than a 10% leakoff may not restrict injection approval. Any leak-off will be evaluated.
  - d. Submit the recorded MIT chart with a subsequent Sundry Form 3160-5 relating the MIT activity. List the name of the BLM witness, or the notified person and date of notification.
  - e. Descriptions of tubing, on/off equipment, profile nipple installation, and packer setting depth are required. List (by date) descriptions of daily activity of any previously unreported wellbore work.
  - f. **Include the original and three copies of the recorded chart and Sundry** (the original will be returned to the operator).
5. Submit the NMOCD permit number and its approved maximum tubing injection pressure.
  - a. Approved injection pressure compliance is required.
  - b. Display real time tubing pressure values onsite. A bourdon tube gauge registering 25% to 85% of its full range is acceptable.
  - c. If injection pressure exceeds the approved pressure you are required to reduce that pressure and notify the BLM within 24 hours.
  - d. When injection pressure is within 50 psig of the maximum pressure, install automation equipment that will prevent exceeding that maximum.
  - i. Submit a subsequent report (Sundry Form 3160-5) describing the installed automation equipment.

- e. Other unexplained significant variations of rate or pressure to be reported within 5 days of notice.
6. The casing/tubing annulus is required to be monitored for communication with injection fluid or loss of casing integrity.
- a. The annulus is to be maintained full of packer fluid at atmosphere pressure. Installation of equipment that will display on site, open to the air fluid level is required. A BLM inspector may request verification of this fluid level at any time.
  - b. Loss of packer fluid above five barrels per month requires notification of the BLM authorized officer within 5 days.
  - c. Gain of annular fluid requires notification within 24 hours. Cease injection and maintain a production casing pressure of Opsig. Notify the BLMs authorized officer (Paul R. Swartz at 575-200-7902). If there is no response, notify the BLM on call drilling phone, 575-361-2822.
  - d. The use of automation equipment that will monitor and alarm is required when a well's packer, tubing, or casing competence is questionable.
  - e. Also submit to this office a (Sundry Form 3160-5) Notice of Intent (NOI) for approval by BLM and NMOCD a plan for correction and the anticipated date of correction. The lack of records documenting a continuous fluid packed casing will require rapid correction. Verbal approval for the plan may be given from a BLM authorized officer, with the NOI filed soon after.
  - f. After the repairs submit a (Sundry Form 3160-5) Subsequent report, describing the repair(s) and Mechanical Integrity Test as per item 1 above.