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O. C. C.
ARTESIA, OFFICE

Working Interest Owners

RE: Red Bluff State #1
Sec. 36-T24S-R27E
Eddy Co., New Mexico

The subject well was drilled to total depth of 13,072' on 3-14-78. A completion attempt at 12,412' - 12,442', has to date, appeared unsuccessful. Additional Morrow intervals were added to the overall perf zone, but have offered little encouragement. One additional attempt to stimulate the Morrow at 12,412' - 12,442', should be made before plugging back and attempting a completion in the Delaware selectively from 2,490' - 3,000'.

A brief chronological summary follows:

While drilling, approximately 60 barrels of drilling fluid were lost to the formation at 12,404'. Mud weight was 11.9 PPG (to hold high pressured-up hole zones). However, circulation was regained while displacing LCM material to the bit. It was apparent that there was good permeability. After reaching total depth, some difficulty was encountered when logging through the interval 12,440' - 12,410'. The caliper indicated that the hole size in this interval was approximately 2" larger in diameter than the hole on either side. It was impossible to obtain a FDC curve from 12,410' - 12,440'; only the CNL registered on the logs.

The 5 1/2" casing was run (with 11.4 PPG mud in hole), then cemented with 1,325 sacks Class H with various water loss and KCL additives. Intent was to lift cement as high as 8800' to cover the low volume, high pressure nuisance zones up hole, and also tie in with the 9 5/8" casing at 9,751'. Subsequent bond logging indicated the top of cement at 11,830', therefore, it was suspected that the major zone broke down and swallowed some of the cement.

Since the perfs at 12,412' - 12,442' did not give up any gas, the zone was acidized with 6,000 gals of 10% Morrow Flow and 100 ball sealers. It was several days before any gas was observed, and then only in very small quantities (2'-3' flares). A radioactive injection tracer survey indicated that approximately 1/2 of the fluid was leaving the perfs at 12,412' - 12,415' and channeling up hole to 12,380' - 12,390' (with a small amount as high as 12,368') before leaving the wellbore area. The remaining half of the fluid exited the wellbore near the bottom of the perf interval from 12,430' - 12,438'. A re-treatment of 6,000 gals of 10% Morrow with 1,000# of blocking agent (50% acid flakes - 50% rock salt) did not prove successful at increasing productivity.

A decision was made to perf and test additional Morrow intervals 12,547'-12,718'. With very little encouragement under natural conditions, the zones were acidized with 2,500 gals of 10% Morrow Flow and ball sealers. There was no communication with the major zone up hole. A 72 hour BHP buildup was run and results indicated the intervals from 12,547'-12,718' exhibited very tight reservoir characteristics.

The packer was reset at 12,327', which combined all perfs from 12,412'-12,718'. The tubing was swabbed and the well kicked off, but was short lived. After several days waiting time, the choke was re-opened but the well would not flow without logging off.

Several additional measures have been explored: (1) abandon zones, plug back to 11,700' ±, and sidetrack hole; (2) abandon zones, plug back to 10,500' - 10,700', pull 5½" casing, and sidetrack hole; (3) notch casing at 12,427' (middle of zone) and restimulate with isolating RBP at 12,470'; (4) or plug back, recover 5½" casing, and attempt completion in Delaware at 2,494'-2,990'.

It was estimated that both alternate (1) & (2) would cost in the vicinity of \$350,000 to execute. Alternate (1) would have an advantage in that lower mud weights could be utilized, but drilling would be very slow with the small hole. Also, displacement from the original we-1bore would be fairly minimal. Alternate (2) provides for much more optimum hole size & casing size, but much more hole would have to be drilled. It would also be possible for both alternates to result in a situation similar to that now existing, and for a fairly large expenditure.

Mesa plans to notch the casing and perform one last stimulation attempt in the Morrow at 12,412'-12,442' before abandoning the zone and attempting a completion in the Delaware. Estimated costs to perform all of the above should approach \$70,000, however, approximately \$40,000 in 5½" casing could be recouped.

This work should commence no earlier than August 24th, based upon present work schedules.

If additional details are required, please contact the undersigned.

Michael P. Houston

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Division Engineer

XC: JWH, JLF, MEC, JWJ, FILE, WI OWNERS