

Repaired 5-1/2" casing leak as follows:

1. Pulled tubing. Ran drillable magnesium bridge plug on wire line set at 3571'. Perforated 5-1/2" casing at 2330' with 2, 1/2" jet holes. Ran HRC tool to 2475'. Pulled tubing and HRC tool.
2. Perforated 5-1/2" casing at 1925' with 2, 1/2" jet holes. Ran tubing with HRC tool at 1900'. Pumped water thru perforations and circulated out bradenhead. Ran 5-1/2" cement retainer set at 1881' and cemented thru perforations with 1000 sacks cement. Maximum Pressure 1200#. Pulled tubing and HRC tool.
3. Ran 2-3/8" tubing with HRC tool and set at 648', tested below with 1000#. No drop in pressure. Perforated 5-1/2" casing at 600' with 2, 1/2" jet holes. Pulled tubing and HRC tool. Set 5-1/2" cement retainer at 587'/ Pumped 1000 sacks cement in 10 stages. Maximum Pressure 2000#. Pumped 250 sacks cement down 5-1/2" casing and circulated out bradenhead. Staged 539 sacks cement down 5-1/2" - 9-5/8" annulus, mixed 20 sack calseal with last 75 sacks cement. 600# on 5-1/2" - 9-5/8" casing. WOC
4. Tested casing with 1000# for 30 minutes. No drop in pressure. Ran tubing and 4-3/4" bit. Drilled cement from 127-378'. Tested 5-1/2" casing with 1000# for 30 minutes. OK. Drilled cement from 378-426'. Cemented hole in casing at 410' with 200 sacks cement. Tested casing and cement with 1000# for 30 minutes, OK. Drilled cement from 298-426'.
5. Squeezed cemented at 410' with 100 sacks cement 4% CC, in 6 stages. Maximum Pressure 1500#. WOC
6. Drilled cement to 314'. Tested casing with 1100# for 30 minutes, OK. Drilled to 587'. Tested casing with 1100# for 30 minutes, OK. Drilled retainer at 587' and cement to 700'. Tested casing with 1200#, went to 0# in 4 minutes. Drilled cement from 700-1108'. Pumped rubber plug to 1380'. Pumped 200 sacks 2% CC cement down 5-1/2" casing. WOC.
7. Drilled cement from 1074-1887'. Tested 5-1/2" casing with 1400#, OK. Drilled retainer at 1887'. Tested casing with 400# for 30 minutes, OK. Drilled cement to 2360', and tested casing with 400#, OK. Drilled plug to 3571' and circulated to 3730'.. Pulled tubing and bit. Ran 119 joints 2-3/8" tubing set at 3693'. Swabbed dry. Would not flow. Well closed in for further study of remedial work.