

WELL COMPLETIONS
WELL WORKOVERS
EQUIPMENT DESIGN AND
INSTALLATION

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PROPERTY EVALUATIONS
PROPERTY MANAGEMENT
SECONDARY RECOVERY

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29 OBER
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Released
Kee 6-25-93

ZPC Petroleum, Inc.
Dubbs # 2-32 31
Sec 31-16-24w
Ness County, KS.

12-22-89 Got caught in Kansas City with sub zero weather and couldn't get car started. Called Halliburton Services and set up the cement and float equipment on Dubbs # 2-32 for the 4 $\frac{1}{2}$ " casing. Don Noland with Halliburton agreed to oversee the running and cementing of the casing. Ran used casing as follows:

1 - 4 $\frac{1}{2}$ " guide shoe, Halliburton	.85'
114 joints of 4 $\frac{1}{2}$ " 10.5 #/ft 8 rd thrd casing	4,542.15'
rotary space	8.00'
casing set at	4,551.00'
top of insert float at	4,538.45'

Left out 2 joints of casing and cut off joint of 15'. Tagged total depth at 4,552' with the casing and picked up 1' to set casing. Ran 7 centralizers at 4,540', 4,501', 4,461', 4,419', 4,254', 4,135', and 1,990'. Ran a cement basket at 1,910'. Ran 7 vertical wall scratchers from 4,545'-4,445'. Circulated casing and scratched hole for 45 minutes. Pumped 500 gallons of salt flush followed by 500 gallons of super flush. Pumped 75 sacks of 60-40 pozmix cement with 2 % gel and 10 % salt followed by 50 sacks of EA-2 cement with .75 % Halad 322. Washed out lines and flushed cement from casing. Pumped flush at 6 BPM to remove mud cake. Landed plug at 9:25 p.m. with 1,100 psig. Float valve held.

12-29-89 Had Halliburton run a steel line measurement on Dubbs # 2-32 to check total depth. The line stopped at 4,501' KB depth. Will need to drill out casing to reach target zones.

1-18-90 Moved in and rigged up Leon's cable tool unit to the east of the well. Rigged up drill bit and ran to 4,514'. Spudded and drilled through cement, wiper plug, and insert float to 4,539'. Bailed hole clean. Moved in swab tank and put 120 barrels of salt water in it. Rigged up L-K Wireline and had a short in the collar locator. Lost 1 $\frac{1}{2}$ hours. Ran gamma-ray-collar log-cement bondlog from 3,950'-4,539'. Found fluid level in the casing at 240' from the surface, top of cement behind the casing at 4,048' and total depth at 4,539'. The cement bonding was excellent through the Cherokee and Mississippi zones and mostly good throughout the rest. Started swabbing down the casing.

1-19-90 Had 6" 8" of snow with some wind in Western Kansas. Leon's crew made it to the well and swabbed the casing down to 4,200'. Zeb Stewart decided to shut-down because of additional snow forecast for this afternoon.

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1-20-90 Chained up L-K Wireline pickup and got to the well. Snow drifted on road and well site. Perforated the Mississippi dolomite formation from 4,526'-4,530' with 4 jet holes per foot. Fluid level in the casing at 4,170' and total depth at 4,539. Shut-down. Did not have rig crew. Moved out L-K Wireline. The reason for perforating was to release the perforating truck and move it off the location.

1-22-90 Fluid level at 2,600' from the surface. Swabbed 4 $\frac{1}{2}$ " casing down and recovered 29.74 barrels of water with no show of oil. Tested as follows:

1 2 1 2 1 2 1 2 1 2	hour	.58 bbls water, no oil show, 1 run
1 2 1 2 1 2 1 2 1 2	hour	.58 bbls water, no oil show, 1 run
1 2 1 2 1 2 1 2 1 2	hour	.58 bbls water, no oil show, 1 run
1 2 1 2 1 2 1 2 1 2	hour	.58 bbls water, no oil show, 1 run
1 2 1 2 1 2 1 2 1 2	hour	.58 bbls water, no oil show, 1 run

Rigged up L-K Wireline and perforated the Cherokee formation from 4,500'-4,510' with 4 jet holes per foot. Checked fluid level in the casing at 4,400' and total depth at 4,539'. Set Baker model 'T' bridge plug at 4,520. Swabbed casing down to 4,520' and recovered 2.91 barrels of water. Waited 30 minutes, ran swab and had no fillup. Set up stimulation treatment for the Cherokee formation.

1-23-90 Ran swab and had 40' of liquid in the casing, 30' of oil and 10' of water. Tested as follows:

1 hour	no recovery	1 swab run
1 hour	no recovery	1 swab run

Connected Halliburton pump to the 4 $\frac{1}{2}$ " casing and treated Cherokee perforations 4,500'-4,510' with 500 gallons of 15 % double FE acid with Pen 88 followed by 2,000 gallons of Clayfix as follows:

75 gal acid	1,250- 950 psig	1 4 1 2 1 2 1 2 1 2	BPM
175 gal acid	1,050-1,100 psig	1 4 1 2 1 2 1 2 1 2	BPM
250 gal acid	1,150-1,150 psig	1 4 1 2 1 2 1 2 1 2	BPM
500 gal acid			

Staged acid for 1 hour and 40 minutes before the formation broke at 1,250 psig. Overflushed acid with 5 barrels of Clayfix. Instant shut-in pressure was 1,100 psig, and pressure declined to 950 psig in 15 minutes. Total load to recover is 89 barrels. Released pressure and backflowed 4 barrels of flush water. Swabbed casing down and recovered 70.87 barrels of load water with a show of oil. Waited 30 minutes, ran swab, and recovered .29 barrels, 18 % oil. Total load recovered is 75 barrels.

1-24-90 Ran swab and had 100' of fillup in the casing, 70 % of oil and 30' of water. Swab casing down and recovered 1.58 barrels. Tested as follows:

1 2 1 2 1 2 1 2 1 2	hours	.29 bbls, 15 % oil, 1 swab run
1 2 1 2 1 2 1 2 1 2	hour	.58 bbls, 10 % oil, 1 swab run
1 2 1 2 1 2 1 2 1 2	hour	no recovery , 1 swab run

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Total load recovery since acid treatment is 78 barrels. Drove to Hays and talked with Halliburton Services about another treatment to open up the Cherokee formation.

1-25-90 Ran swab and had 50' of fillup in the casing, 60 % oil. Swabbed down and recovered .87 barrels. Waited 1 hour, ran swab, and had no recovery. Connected Halliburton pump to the 4 $\frac{1}{2}$ " casing and retreated perforations 4,500'-4,510' with 1,000 gallons of 10 % FE acid followed by 1,000 gallons of diesel fuel with 10 gallons of Hyflo followed by 750 gallons of Clayfix as follows:

1,000 gal acid	1,200-1,175 psig	4 BPM
1,000 gal diesel	1,175-1,100 psig	4 BPM

Overflushed diesel with 3 barrels. Instant shut-in pressure was 950 psig, and pressure declined to 540 psig in twenty minutes. Total load to recover is 124 barrels. Opened casing and backflowed 3 barrels of flush water. Swabbed casing down and recovered 78 barrels of load water. Tested making 1 swab run every 30 minutes as follows:

$\frac{1}{2}$ hr	.87 bbls, 16 % oil
$\frac{1}{2}$ hr	.87 bbls, 16 % oil
$\frac{1}{2}$ hr	.87 bbls, 19 % oil
$\frac{1}{2}$ hr	.87 bbls, 14 % oil

Total recovery since retreatment is 85 barrels.

1-26-90 Ran swab and had 1,300' of fillup in the casing with 200' of oil on top. Swabbed casing down and recovered 21.88 barrels. Tested making 1 swab run per hour as follows:

1 hr	1.16 bbls, show of oil
1 hr	1.16 bbls, show of oil
1 hr	1.16 bbls, show of oil

Total recovery since retreatment is 110 barrels. Connected Halliburton equipment to the 4 $\frac{1}{2}$ " casing and treated Cherokee perforations 4,500'-4,510' with 9,200 gallons of My-T-Gel and 5,500 # 6f 20-40 sand as follows:

3,200 gal pad, no sand	1,370-1,260 psig	7.9 BPM
2,000 gal gel, 1,000 # 20/40 sand	1,260-1,220 psig	7.8 BPM
2,000 gal gel, 2,000 # 20/40 sand	1,220-1,230 psig	7.7 BPM
2,000 gal gel, 2,500 # 20/40 sand	1,230-1,380 psig	7.6 BPM
480 gal gel flush	1,380 psig	7.6 BPM
3,070 gal salt water flush	1,380 psig	7.6 BPM
12,750 gal		

Overflushed sand with 10 barrels of salt water. Instant shut-in pressure was 1,175 psig, and pressure declined to 450 psig in 15 minutes. Total load to recover is 304 barrels. Job complete at 1:30 p.m..

1-27-90 Casing pressure 0 psig. Ran swab and found fluid level at 600'

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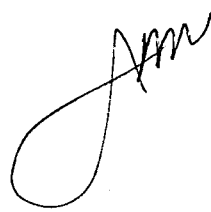
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from the surface. Swabbed down and recovered 67.28 barrels of water and no show of oil. Tested as follows:

$\frac{1}{2}$ hr	2.32 bbls, 5 % oil, 1 swab run
$\frac{1}{2}$ hr	2.32 bbls, 5 % oil, 1 swab run
$\frac{1}{2}$ hr	1.16 bbls, 8 % oil, 1 swab run

Total recovery since fracture treatment is 73 barrels. Checked total depth at 4,515' (5' sand fillup).

1-29-90 Had 2,250' of fillup in the casing with 50' of oil on top. Swabbed casing down and recovered 36 barrels. Waited 30 minutes, ran swab, and recovered 1.74 barrels of fluid, 20 % oil. Total load recovered since fracture treatment is 111 barrels. Lack 227 barrels total of recovering liquid used in the three stimulation treatments of the Cherokee formation. Decided to temporarily abandon Dubbs # 2-32. Installed a $4\frac{1}{2}$ " x 2" swage and 2" valve on the casing and shut-in the well. Rigged down and moved out Leon's cable tool unit.



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