

PROSPECT Howland YEAR 1974  
 LEASE Howland WELL NO. 2 WELL LOCATION C NE NW COUNTY Seward STATE K  
 WELL SITE LEASE DESCRIPTION Sec. 11-35-33 CODE \_\_\_\_\_  
 OPERATOR Beren Corporation ELEVATION: GR \_\_\_\_\_  
 CONTRACTOR Zenith Drilling DF \_\_\_\_\_  
 GEOLOGIST KB \_\_\_\_\_  
 DEVELOPMENT WELL XX PROSPECT TEST WELL \_\_\_\_\_  
 OWNERSHIP 1974 Program NOTIFY Oklahoma City Office  
 IDENTIFICATION Development well

TOPS:

MOVING IN & RIGGING UP August 30, 1978 SPUD August 30, 1978  
 SET 8-5/8 @ 1505' w/ 650 sx Halliburton light, 2% CC + 150 sx Class H, 3% CC. P.I.  
6:45 PM 8-31-78.

DATE	DEPTH	DST
3/31/78	Drill 12¼ hole to 1254'. Total mud cost \$217.90.	
9/1/78	2515 Drilling. Drill plug at 7 AM, new hole at 10 AM. Total mud cost \$477	
9/2/78	3200 Drilling. Bit #1, F-2, 1694 in 39½ hours. Vis 33, Wt 8.9, Filler 4# Chlorides 4400. Daily mud cost \$1127 Total mud cost \$1605	
9/3/78	3845 Drilling. Bit #1, F-2, 2339 in 62 hours. Vis 35, Wt 9.1, Filler 6#, Chlorides 8000. Daily mud cost \$1346 Total mud cost \$2951	
9/5/78	4240 Drilling. Bit #1 made 2519' in 71-3/4 hours, out at 4025. Bit #2, F-3, made 215' in 9-3/4 hours. Vis 34, Wt 8.9, Filler 6#, Chlorides 2200. Daily mud cost \$1481 Total mud cost \$4432	
9/6/78	4775 Bit #2 made 750' in 32 hours. Vis 38, Wt 9, Filler 8#, Chlorides 3000 WL 36. Drill 22¼ hours, Rig and jet 1-3/4 hours. Daily mud cost \$1386 Total mud cost \$5819	
9/11/78	5210 Drilling. Bit #2 made 1185' in 51-3/4 hours. Vis 39, Wt 8.9, Filler 8#, Chlorides 2800, WL 12.8. 21 hours drilling, 3 hours work on rig. Daily mud cost \$1319 Total mud cost \$7935	



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9/8/78 5540 Drilling. Bit #2 out 5210,  $\frac{1}{2}$ °. Bit #3, F-3, 330' in 17 $\frac{1}{4}$  hours. Vis 47, Wt 9, WL 8.4, Chlorides 2210.  
Daily mud cost \$ 894  
Total mud cost \$8828

9/9/78 5630 Drilling. Bit #3 420' in 23 hours. Vis 48, Wt 9, Filler 6#, Chlorides 2550, WL 8.9.  
Daily mud cost \$ 198 DST #1 5513 - 5540  
Total mud cost \$9027 Rec 15' drilling mud (no pressures)

9/10/78 6090 Circulate for samples. Bit #3 880' in 44 $\frac{1}{2}$  hours. Vis 48, Wt 9, Filler 6# Chlorides 2210, WL 9.4.  
Daily mud cost 1,071  
Total mud cost \$10,098

9/11/78 6165 Drilling. Bit #3 955' in 50 hours. Vis 60, Wt 9, Filler 6#, Chlorides 2140, WL 9.8.  
Daily mud cost 469 DST #2 6075 - 6090  
Total mud cost \$10,938 Rec 20' drilling mud  
Initial hydrostat 2876  
Initial flow 28-28  
Initial shut in 316  
Final flow 28-28  
Final shut in 1722  
Final hydrostat 2876

9/12/78 6215 Trip in hole with bit. Bit #3 out at 6215, 1005' in 53 $\frac{1}{4}$  hours. Go in hole with Bit #4. Wt 9, Vis 50, Filler 6#, WL 9.6, Chlorides 2200.  
Total mud cost \$10,938 DST #3 6137 - 6215  
Rec 20' drilling mud  
Initial hydrostat 2894  
Initial flow 32-32  
Initial shut in 256  
Final flow 32-32  
Final shut in 638

9/13/78 6495 Wt 9.1, Vis 65, Filler 7#, WL 9.6, Chlorides 2000.  
Total mud cost \$11,629

9/14/78 6525 T.D. at 9:45 AM on 13th. Trip in hole to circulate and condition hole for casing. Bit #4 out of hole at 6525, cut 310' 24 $\frac{1}{4}$  hours. Wt 9.1, Vis 65, Filler 7#, WL 9.6, Chlorides 2000.  
Total mud cost \$11,629

9/15/78 Tearing down. Ran 163 joints new 4 $\frac{1}{2}$ " 10.5# casing. Tally 6559.74. Set at 6521 K.B. Cement with 50 sx 50-50 poz with 10% salt, 12% gel, .5% CFR-2 + 200 sx 50-50 poz with 18% salt, 12 $\frac{1}{2}$ # gilsonite/sx, .5% CFR-2 + 150 sx 50-50 poz 18% salt, .75% CFR-2. P.D. 12:15 AM 9-15-78.



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- 10/11/78 Move in completion rig. Install well head. Ran 3-3/4" bit and 4-1/2" casing scraper on 2-3/8" tubing to 6312'. Circulate hole with 2% KCl water. Pressured casing to 2500# for 30 minutes. Held tight. Pull tubing and bit.
- 10/12/78 Ran 193 joints 2-3/8" tubing, seating nipple, and Model "R" packer. Set packer at 6003'. Swab tubing down to 4000'. Perf with tubing gun 6074-6082, 16 hole total. Swab tubing dry. Gas flowing to surface TSTM with well remaining dry. Shut in at 5 PM 10-11.
- 10/13/78 SITP 980# 7 AM 10-12-78. Bled down. Ran swab. Recovered 1/2 bbl fluid, trace of oil. Acidize down tubing with 1000 gallons 15% MCA acid with 16 ball sealers and 600 SCF Nitrogen per bbl in acid and flush. Formation broke 2900-2200#. Ball action to 2400#. Maximum treating pressure 2900#, average treating pressure 2300#, initial shut in 1500#, to 1350# in 1 minute. Average rate 5 BPM with nitrogen. 48 bbls load to recover. Blew back to pit with gas to surface in 10 minutes. Continue to swab and flow balance of day. At 7 AM 10-13 gauged 159 MCFD on 48/64" choke. FTP 80#. Specific gravity 1.084, pH 4.8, chlorides 61,100.
- 10/14/78 Continue flowing and testing. Stabilized at 159 MCFD. Pull 2-3/8 and Model "R" packer out of hole and ready to frac at 5 PM. Shut in for night.
- 10/15/78 Frac down casing with 20,000 gallons 70 quality foam and 15,000# 20-40 sand. Maximum treating pressure 2850#, average treating pressure 2700#, ISIP 2200#, 5 minute shut in pressure 1800#, 10 minute shut in pressure 1600#, 15 minute shut in pressure 1500#, average injection rate 20 BPM. Used 480,000 SCF Nitrogen. 175 bbls load to recover. Left shut in 2 hours. Open to pit, gas to surface 14 minutes. After 3 hours install orifice tester. Gauge 1064 MCFD with 325# on casing, 48/64" choke. Flow to pit remainder of day and night. At 7 AM 10-15 making 754 MCFD, 180# on casing, 32/64" choke.
- 10/16/78 Flow 9 hours. Shut in at 4 PM. Flow rate 700 MCFD, 190# on casing, 32/64" choke 10-15-78.
- 10/17/78 SICP at 7 AM 10-16 was 400# after 15 1/2 hours. Blew well down, killed well with KCl water. Started running tubing. Ran 196 joints 2-3/8" EUE tubing with Baker tension anchor-catcher, seating nipple, perf nipple, and mud anchor. Total length of string 6092.69', set at 6100'. Remove blowout preventer. Install tree. Run swab. Found fluid level at 4600'. Made 1 run with swab. Well kicked off. Flowed to pit. Install orifice tester at 4 PM. Flowed until 7 AM 10-17, rate 542 MCFD, 32/64 choke, FCP 260#, FTP 120#. Making light mist.
- 10/18/78 24 hour SIP at 8 AM 10-18 was 375# on casing and 400# on tubing.