

# DRILLING AND COMPLETION HISTORY

## CONSOLIDATED OIL & GAS, INC.

### TEMPLETON NO. 1-27

San Juan County, New Mexico  
December 29, 1961

Location: 810' F/NL, 1760' F/WL, Section 27  
T31N-R13W, N.M.P.M.

Elevation: 5690' GD  
5702' KB - all measurements from KB

Spud: October 25, 1961

Drilling Completed: November 15, 1961  
Well Completed: November 29, 1961

Total Depth: 6543' Drilled  
6524' Plug Back

Casing:

Surface: 9 5/8" 32.30# H-40 cemented at 265'  
w/200 sx. 2% HA5 cement.

Production: 5 1/2" 15# J-55 cemented at 6543'  
w/115 sx. with 4% gel cement thru  
stage collar at 4519' with 165 sx.  
50/50 Pozmix with 4% gel cement.

Tubing: 1 1/2" IJ hung at 6366'

Logs: BJ Service Simultaneous Nuclear Log

Cores & Drillstem Tests: None

Formation Tops: Log

Pictured Cliffs	1858'	(+3844)
Cliffhouse	3426'	(+2276)
Menefee	3572'	(+2130)
Pt. Lookout	4212'	(+1490)
Mancos	4552'	(-1150)
Greenhorn	6277'	(- 575)
Dakota	6394'	(- 692)

Producing Perforations: 6410' - 6422'  
6430' - 6436'  
6442' - 6449'  
6466' - 6476'  
6494' - 6498'  
6504' - 6508'  
6514' - 6518'

Treatment: Sand-water frac in two stages with  
123,000# 20-40 & 10-20 mesh sand,  
125,500 gal. water treated with J-100  
gel, 1,000 gal. acid.

Initial Potential: Flow volume thru 3/4" choke: 2960 MCFD  
Calculated Absolute Open Flow Potential:  
3910 MCFD

WELL: TEMPLETON NO. 1-27  
810 F/NL & 1760' F/WL, Sec. 27, T31N-R13W  
 FIELD: Basin Dakota  
 COUNTY: San Juan STATE: New Mexico  
 ELEVATIONS: 5690' CD  
5702' KB

10/18/61

Running water and gas line, preparing location for Huron to move on tomorrow.

10/19/61

Building location, rig to move on Saturday.

10/20/61

Water line laid, gas line will be completed this noon, location is built. Waiting on rig.

10/21/61

Waiting on rotary rig.

10/22/61

Waiting on rotary rig.

10/23/61

Moving on, rigging up rotary rig.

10/24/61

Moving on, rigging up rotary rig.

10/25/61

Drilling boulders on surface hole, depth 35'.

10/26/61

Depth 252'. Boulders and sand. Drilled 217'. Tripping for Bit 2. Hit bridge at 190'. Dev. 1/2° at 90', 3/4° at 135'. Vis. 200.

10/27/61

Depth 265'. Repairing draw works on rig. Drilled 9' 13 3/4' hole. Ran 9 joints 9 5/8" casing (252' set at 265' KB). Cemented with 200 mx. regular 27 HAS. Plug down 11:30 a.m., good returns through-out job.

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11/1/61

Coming out of hole.

11/2/61

Depth 448'. Drilling with Bit 1. Drilled 345' of sand and shale. Dev. 1° at 290'. Drilling with water.

11/3/61

Depth 460'. Drilling with Bit 2. Drilled 1160' of sand and shale. Dev. 1 1/4° at 1000', 1 1/2° at 1725'. Drilling with water.

11/3/61

Depth 2690'. Tripping for Bit 4. Drilled 530' of sand and shale. Mud 8.9. Vis. 29. Dev. 1 1/4° at 2565'.

11/1/61

Depth 3216'. Tripping for Bit 6. Drilled 526' of sand and shale. Mud 8.5. Vis. 29. Water loss 60. Dev. 1° at 2989'.

11/2/61

Depth 3551'. Tripping for Bit 7. Drilled 135' of sand and shale. Mud 8.5. Vis. 30. Water loss 60. Mud cake 2/32.

11/3/61

Depth 3645'. Tripping for Bit 9. Drilled 294' of sand and shale. Dev. 1° at 3465'. Mud 9.0. Vis. 30. Water loss 42. Mud cake 2/32.

11/4/61

Depth 3965'. Drilling with Bit 10. Drilled 320' of sand and shale. Dev. 1° at 3965'. Mud 8.9. Vis. 30. Water loss 42. Mud cake 2/32. PH 8.

11/5/61

Depth 4310'. Drilling with Bit 12. Dev. 3/4° at 4100'. Drilled 350' of sand and shale. Mud 9.1. Vis. 30. Water loss 40. Mud cake 2/32. PH 8.1. Trace of sand.

11/6/61

Depth 4576'. Going in with overshot to fish for 10 drill collars. Drilled 266' of sand and shale. Twisted off at 4576', while drilling with Bit 13. Mud 9.2. Vis. 29. Water loss 40. Mud cake 2/32. PH 8.1.

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11/7/61

Depth 4855'. Tripping for Bit 15. Went in hole with overshot, washed 60' on top of fish. Latched on fish, broke circulation, came out of hole with fish. Drilled 279'. Sand and shale. Mud wt. 8.9. Vis. 30. Water loss 54. Mud cake 2/32. PH 8.2.

11/8/61

Depth 5075'. Drilled 222' of sand and shale. Drilling with Bit 16. Mud 9.2. Vis. 37. Mud cake 2/32.

11/9/61

Depth 5450'. Drilling with Bit 17. Drilled 355' of sand and shale. Mud 9.2. Vis. 34. Water loss 17.

11/10/61

Drilling at 5755' with Bit No. 18. Drilled 305'. Mud 9.2. Vis. 37. Water loss 18.2.

11/11/61

Depth 5857'. Going in hole and tubescoping drill collars after twisting off and recovering fish. Drilled 102' of sand and shale in 5 1/2 hours. 18 1/2 hours of fishing and trips after twisting off in drill collars at 5857'.

11/12/61

Depth 6182'. Tripping for Bit 20. Drilled 325' of sand and shale. Mud 9.2. Vis. 37. Water loss 21. Mud cake 2/32. 5 1/2% oil. PH 8.

11/13/61

Depth 6396'. Drilled 215' of sand and shale. Tripping for Bit 21. Mud 9.4. Vis. 43. Water loss 12. Mud cake 2/32. 4% oil. PH 9.

11/14/61

Depth 6488'. Drilling with Bit 22. Drilled 92' of sand. Mud 9.6. Vis. 52. Water loss 16. Mud cake 2/32. 5% oil.

11/15/61

Depth 6540'. Making second short trip conditioning hole to log. Drilled 25' of sand and shale. Mud 9.6. Vis. 90. Water loss 9. Mud cake 2/32. 3% oil.

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11/16/61

Depth 6540'. Coming out of hole with overshot and possible fish. Fished for BJ logging tool stuck at 5890' while logging the well. Chased tool to bottom with drill pipe. Top of Graceros by log 6393'.

11/17/61

Washing down to fish. Depth 6460'. After fishing with 7" skirt and 3" overshot came out of hole, found skirt marked on OD indicating we had been down beside the fish. Top of fish at approximately 6526'. Ran 7 1/2" OD offset skirt and 4 11/16" overshot. Found 22' fill up on top of fish. Washed 13' tool, started torqueing up and would not go further. Came out of hole, ran 7 5/8" OD saw tooth skirt and 7 3/8" overshot dressed to catch 3 5/8" OD of fish. Found 270' fill up on top of fish. Washed down to within 66' of fish, torqueing up, will not go further.

11/18/61

Going in hole with 7" OD globe basket on bottom of 3/8" wash over pipe to attempt recovery of fish. Mixed mud and conditioned hole for 2 hours. Came out of hole, ran 7 7/8" bit. Cleaned out to 6576'.

11/19/61

Going in hole with drill pipe and bit to clean out to TD. Ran wash over pipe and globe basket to 6526'. Washed 11' to 6537', would not go further. Came out of hole, no fish. Found catchers on globe basket knocked off of wash pipe indicating we had been completely over fish. Came out of hole ran 6 3/8" overshot to 6526', milled for 5 minutes, dropped over fish, picked up 250# pump pressure, came out of hole with fish. No damage to fish but scratches on collar locator.

11/20/61

WOC before running second stage. Ran 204 joints 5 1/2" 15# casing, total 6546.80'. Will cut off 19' leaving a total of 6532.8' set at 6542.8' KB. Float shoe at 6541.1', float collar at 6525.9', Baker stage collar at 4519.1'. Cemented with 115 mx. regular cement with 4% gel. Bumped plug with 2000 PSIG - released pressure - float held OK. Pipe cemented at 4 a.m.

11/21/61

Moving in work over rig. After 8 hours of waiting on cement, began second stage. Turned casing three turns to right to open stage collar. Opened stage collar, cemented with 165 mx. regular cement with 4% gel and 50/50 Formix. Displaced 1 1/2 bbls. to clear casing. Turned casing five rounds to close TC collar. Released pressure, bled back

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11/21/61 Cont'd

3/4 bbls., pumped in 1 1/2 bbls., did not pressure up. Released pressure, flowed back 2 1/2 bbls., stopped pumping, turned casing two more rounds. Pumped in three bbls., did not pressure up. Released pressure, flowed back three bbls. Stopped flowing back, pumped in 4 1/2 bbls. Noticed small amount of circulation at surface, turned casing one round, pumped in 1 1/2 bbls., pressure to 2000 PSIG, released pressure - held OK. Re-pressured to 2000 PSIG - held OK. Released pressure, finished job at 1:45 and set slips, released rig. Rigged up BJ to log. Went in hole with log, unable to get below 4378', green cement on top of tool.

11/22/61

Waiting on completion rig.

11/23/61

Waiting on completion rig.

11/24/61

Rigging up completion rig.

11/25/61

Rigging up to log. Finished rigging up work-over rig, ran 2 1/2" tubing and bit to 4576'. Found top of cement at 4375', cement stringers from 4375' to 4520'. Circulated hole clean, pressured up on casing to 2000 PSIG, held OK for 10 minutes, released pressure, came out of hole with 2 1/2" tubing.

11/26/61

Flowing back well after frac before going in to clean out. Logged well with BJ, perforated lower DK as follows: 6466'-76', 6494'-98', 6504'-08', 6514'-18' with 4 jets and 2 bullets per foot, injected 1000 gal. acid in 3 stages 20 minutes apart. First stage injection pressure 2300 PSIG, 2nd stage 2100 PSIG and 3rd stage 1600 PSIG.

Lower Stage Dakota Frac:

All trucks on line, 2700 PSIG, 39 BPM. Started sand at 1/2# per gal. for 1 minute, then went to 1# per gal. Sand on perfs, 2500 PSIG, 41 BPM. At 10,000# sand in, pressure 2400 PSIG, rate 42 BPM. At 20,000# sand in, 2500 PSIG, 41 BPM, at 25,000# sand in, 2550 PSIG, dropped 15 frac balls. At 30,000# sand in, 2600 PSIG, 38 BPM. First stage balls on perfs, pressure rise to 2700 PSIG, rate 36 BPM. At 35,000# sand in, pressure 2700 PSIG, dropped 15 more balls. Second stage balls on perfs, pressure rise to 2900 PSIG, 34 BPM. At approximately 42,000# sand in, broke back to 2800 PSIG, dropped 5 frac balls. Third stage balls on perfs, pressure rise to 3000 PSIG, 31 BPM, dropped

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11/26/61 Cont'd.

5 more balls. At 55,000# sand in, pressure 3100 PSIG, rate 31 BPM. Fourth stage balls on perfs, pressure rise to 3400 PSIG, rate 29 BPM. At 60,000# sand in, started flush, pressure 3400 PSIG, rate 29 BPM, at end of flush, pressure 3500 PSIG, rate 28 BPM. Instant shut-in pressure 2300 PSIG, 15 minute shut-in pressure 1500 PSIG.

Frac Summary:

60,000# 20-40 mesh sand  
60,500 gal. water treated with 100# of J-100 gel per 1,000 gal. water  
40 balls in 4 stages  
Average rate, 34 BPM  
Minimum pressure 2400 PSIG  
Maximum pressure 3500 PSIG

Set Guiberson magnesium bridge plug at 6458'. Perforated from 6410'-6422' (had communication), 6430'-36', 6442'-49' with 2 jets and 2 bullets per foot.

Upper Stage Dakota Frac:

All trucks on line, 2300 PSIG, 44 BPM. Started sand at 1# per gal., 2400 PSIG, 42 BPM. Sand on perfs, 2500 PSIG, 40 BPM. 10,000 # sand in, 2500 PSIG, 40 BPM. Pressure decreased to 2200 PSIG, 42 BPM (1 Allison back firing). At 20,000# sand in, 2200 PSIG, 42 BPM. At 30,000# sand in, 2300 PSIG, 39 BPM, dropped 10 balls. First stage balls on, no pressure rise, dropped 10 more balls. At 40,000# sand in, pressure 2300 PSIG, 39 BPM. Second stage balls on, 2350 PSIG, 39 BPM, dropped 10 more balls. At 50,000# sand in, 2350 PSIG, 39 BPM. Third stage balls on, pressure rise 2500 PSIG, 37 BPM. Broke back to 2400 PSIG, dropped 10 more balls. At 55,000# sand in started 10-20 mesh sand. Fourth stage balls on, pressure to 2700 PSIG, 36 BPM, lost 1 Allison, pressure and rate decreased to 2200 PSIG and 30 BPM. At 63,000# sand in, started flush, pressure 2300 PSIG. At end of flush pressure 2400 PSIG, 29 BPM. Instant shut-in 1800 PSIG, 15 Minute shut-in 1300 PSIG. Last 8,000# sand was 10-20 mesh.

Frac Summary:

63,000# 20-40 and 10-20 mesh sand  
65,000 gal. water treated with 100# of J-100 gel per 1,000 gal. water  
40 balls in 4 stages  
Average rate 39 BPM  
Minimum pressure 2200 PSIG  
Maximum pressure 2700 PSIG

11/27/61

Running on plug at 6500'. Opened well after shut-in 1 hour, flowed back 180 bbls. water, gasing good and making frac sand. Ran bit, found sand at 6435' (23' on top of plug). Circulated out sand, drilled on plug for 1.5 hours. came loose and fell to 6500'. Bit shutoff and

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11/27/61 Cont'd.

pump breaking down. Lost approximately 500 bbls. water to DK.

11/28/61

Laying down work-over string. Tripped tubing to change bits, found one cone locked, drilled on bridge plug at 6500' pushed to 6514' and drilled up plug. Circulated hole clean.

11/29/61

Running sinker bar to break tubing disc. Well blowing through casing making 1020 MCFD after 14 hours open. Laid down 2 7/8" tubing, started running 1 1/2" tubing, ran 35 joints well kicked off. Put tubing disc in 44th joint and stripped tubing to bottom. Ran 202 joints (6343.39') plus 13' of subs and Mandril (total of 6356.39') set at 6366.39' KB. One jet collar at 5173' KB.

11/30/61

Flowing back frac water. 1191 MCFD plus light spray of liquids. Broke tubing disc, rigged down completion rig. After 10 hours open through tubing producing at rate of 1875 MCFD plus heavy spray of liquids.

12/1/61

Presently shut-in to pressure up. After 44 hours open making 1043 MCFD, fairly dry.

12/2/61

24 hour shut-in pressure 1440 PSIG, opened to atmosphere.

12/3/61

Flowing back frac water. After 6 1/2 hours open, making 1020 MCFD, plus heavy spray of water, casing pressure 620 PSIG.

12/4/61

Shut-in. After 30 hours open making 875 MCFD, plus heavy spray of water, casing pressure 450 PSIG. Shut-in to pressure up.

12/5/61

Shut-in. After 14 hours shut-in casing pressure 1240 PSIG.

12/6/61

Shut-in. After 38 hours shut-in, casing pressure 1450 PSIG. Opened to atmosphere for 6 hours. After 6 hours, making 1350 MCFD plus light spray of water, casing pressure 600 PSIG.

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12/7/61

Shut-in for 7-day test. After 24 hours shut-in casing pressure 1450 PSIG. Opened to atmosphere, after 1.5 hours open making 1700 MCFD, 200 PSIG casing pressure, fairly dry.

12/8/61

Shut-in.

12/14/61

Ran 3 hour test.

Time After Opening Minutes	Tubing Pressure PSIG	Casing Pressure PSIG	Temp. ° F.
0	1729	1740	
15	594	1695	39
30	550	1589	40
45	547	1444	40
60	580	1203	41
120	220	1000	42
180	204	966	42

\* Approximately 2900 MCFD

Well slugging water last two hours of test.

# OPEN FLOW TEST DATA

DATE December 14, 1961

Operator <b>Consolidated Oil &amp; Gas, Inc.</b>		Lease <b>Templeton</b>	
Location <b>810' F/NL, 1760' F/WL, Sec. 27-31N-13W</b>		County <b>San Juan</b>	State <b>New Mexico</b>
Formation <b>Dakota</b>		Pool <b>Basin</b>	
Casing: Diameter <b>5 1/2</b>	Set At: Feet <b>6543</b>	Tubing: Diameter <b>1 1/2</b>	Set At: Feet <b>6366</b>
Pay Zone: From <b>6410</b>	To <b>6518</b>	Total Depth: <b>6524</b>	
Stimulation Method <b>Sand-water frac.</b>		Flow Through Casing	Flow Through Tubing <b>X</b>

Choke Size, Inches <b>0.750</b>		Choke Constant: C <b>14.1605</b>			
Shut-In Pressure, Casing, PSIG <b>1740</b>	+ 12 = PSIA <b>1752</b>	Days Shut-In <b>7</b>	Shut-In Pressure, Tubing PSIG <b>1729</b>	+ 12 = PSIA <b>1741</b>	
Flowing Pressure: P PSIG <b>204</b>	+ 12 = PSIA <b>216</b>		Working Pressure: P <sub>w</sub> PSIG <b>968</b>	+ 12 = PSIA <b>980</b>	
Temperature: T °F <b>42</b>	n = <b>.75</b>		F <sub>pv</sub> (From Tables) <b>1.029</b>	Gravity <b>.70</b>	

CHOKE VOLUME = Q = C x P<sub>i</sub> x F<sub>i</sub> x F<sub>g</sub> x F<sub>pv</sub>

$$Q = 14.1605 \times 216 \times 1.0178 \times .9258 \times 1.029 = \underline{2960} \text{ MCF/D}$$

$$\text{OPEN FLOW} = Aof = Q \left( \frac{P_c^2}{P_c^2 - P_w^2} \right)^n$$

$$Aof = \left( \frac{3,080,000}{2,120,000} \right)^n = 1.322 Q$$

$$Aof = \underline{3910} \text{ MCF/D}$$

TESTED BY Clyde Phillips

WITNESSED BY \_\_\_\_\_

*[Handwritten Signature]*