

DRILLING AND COMPLETION HISTORY

CONSOLIDATED OIL & GAS, INC.

HOYT NO. 1-5

Rio Arriba County, New Mexico
February 26, 1964



LOCATION:	1720' FNL, 850' FEL, Section 5 T26N-R4W, NMPM																			
ELEVATIONS:	7287' GL 7299' KB																			
SPUD:	January 2, 1964																			
DRILLING COMPLETED:	January 19, 1964																			
WELL COMPLETED:	February 6, 1964																			
TOTAL DEPTH:	8518' Drilled (Logger's TD 8524')																			
CASING:																				
Surface:	13 3/8" set at 300', cemented with 270 sx. regular 2% CaCl ₂																			
Intermediate:	8 5/8" set at 4314' KB, cemented with 295 sx. 50/50 Pozmix with 4% gel, fol- lowed with 90 sx. regular 2% CaCl ₂																			
Production:	5 1/2" 15.5# casing set at 8522'. Liner top at 4220', cemented with 385 sx. Class "C" with 20% Diacel D, 100 sx. Class "A" with 4% gel																			
TUBING: Dakota	1 1/2" EUE set at 8201'. Baker Model "D" packer set at 7950'																			
Gallup	1 1/4" IJ and 1 1/2" EUE set at 7784'. Changeover at 4187'.																			
LOGS:	Welex Gamma Ray/Neutron																			
CORES & DRILL STEM TESTS:	None																			
FORMATION TOPS: (Log)	<table border="0"> <tr> <td>Pictured Cliffs</td> <td>4048'</td> <td>(+3251')</td> </tr> <tr> <td>Cliffhouse</td> <td>5720'</td> <td>(+1579')</td> </tr> <tr> <td>Point Lookout</td> <td>6194'</td> <td>(+1105')</td> </tr> <tr> <td>Tocito (member of Gallup)</td> <td>7760'</td> <td>(- 461')</td> </tr> <tr> <td>Graneros Sand</td> <td>8268'</td> <td>(- 969')</td> </tr> <tr> <td>Dakota</td> <td>8424'</td> <td>(-1125')</td> </tr> </table>		Pictured Cliffs	4048'	(+3251')	Cliffhouse	5720'	(+1579')	Point Lookout	6194'	(+1105')	Tocito (member of Gallup)	7760'	(- 461')	Graneros Sand	8268'	(- 969')	Dakota	8424'	(-1125')
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TREATMENT:	Gallup	Sand oil frac with 23,200 gal. oil and 25,000 lb. sand.																		
	Dakota	Sand water frac with 106,000 gal. water and 96,000 lb. sand.																		
INITIAL POTENTIAL:	Gallup	Flow volume thru 3/4" choke: 4614 MCFD Calculated Absolute Open Flow 12,365 MCFD																		
	Dakota	Flow volume thru 3/4" choke: 5545 MCFD																		

WELL: HOYT NO. 1-5
1720' FNL, 850' FEL, Sec. 5-T26N-R4W
 FIELD: Blanco Mesaverde, Basin Dakota
 COUNTY: Rio Arriba STATE: New Mexico
 ELEVATIONS: 7287' GL
 7299' KB

12/30/63

Loffland Brothers moving in today.

12/31/63

Moving in rotary rig.

1/2/64

Spudded and drilled 360', reamed 17" hole. Mud 9.2. Vis. 40. Dev. 1/2° at 120', 1 1/2° at 360'.

1/3/64

Set 301.80' of 13 3/8", 10 joints, set at 300' and cemented with 270 sx. regular 2% CaCl₂. Circulated back to surface, plug down at 11 a.m. Vis. 30. Mud 8.5. Water loss 22. Dev. 1 1/4° at 765'. Present operation, drilling at 1000'.

1/4/64

Drilling at 2500'. Dev. 1/2° at 2070', 1 1/4° at 2393'. Mud. 9.2. Vis. 32. Water loss 16. Cake 1/32.

1/5/64

Drilling at 3180'. Dev. 2 3/4° at 2780'. Mud 9.4. Vis. 38. Water loss 18. Mud cake 2/32.

1/6/64

Drilling at 3650'. Mud 9.4. Vis. 42. Water loss 18. 2/32 mud cake. Dev. 1 1/2° at 3224'.

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WELL: HOYT NO. 1-5

1/7/64

Drilling at 3900'. Mud 9.3. Vis. 40. Water loss 18. Mud cake 2/32. Dev. 2 3/4° at 3668', 2 3/4° at 3762'.

1/8/64

Drilling at 4200'. Mud 9.3. Vis. 43. Water loss 21. Mud cake 2/32. Dev. 2 3/4° at 4148'. Lost circulation at 4068' - 75 bbls. mud.

1/9/64

TD 4315' at 4:30, made three short trips. Finished laying down drill pipe at 5:30 a.m. Preparing to run pipe. Mud 9.7. Vis. 57. Water loss 12.4. Mud cake 2/32.

1/10/64

Ran 137 joints 8 5/8" 32# casing 4318'. Less above KB -4', pipe set at 4314' KB, float collar at 4280' KB. Pretreated with 300 bbls. mud with 18 gal. of 35% solution Hydrazine. Cemented with 295 sx. 50/50 Pozmix with 4% gel, tailed in with 90 sx. regular with 2% CaCl₂. Plug down at 4:40 p.m. Bumped plug with 2000 psi. Note: lost circulation on last 18 bbls. of displacement, hole standing full.

1/11/64

Drilling with gas at 4500'. Well dusting good.

1/12/64

Depth 5700'. Drilled 1200'. Gas pressure falling and trying to freeze off.

1/13/64

Depth 6450'. Dev. 1° at 5860', 3/4° at 6221'. Having trouble with gas.

1/14/64

Depth 7500'. 150# gas pressure. Dev. 3/4° at 6469', 3/4° at 6714', 3/4° at 7103', 5° at 7382', 5 1/2° at 7484'. Encountered moisture after running Totco at 7482'. Made 30'. Well trying to dust.

WELL: HOYT NO. 1-5

1/15/64

Depth 7796'. Twisted off at 9:30 p.m. Pulled 750' of drillpipe, recovered fish and going back in hole at 7:00 a.m. Well dusting good at 7796'. Dev. 7° at 7572', 9 1/2° at 7715'. Making estimated 1000 MCFD natural, 50% of this encountered from 7700' to 7796'.

1/16/64

Drilling at 8160'. 150# gas pressure, dusting good. Twisted off at 4:15 a.m. while drilling at 8126'. Top of fish at 5146'. Recovered fish, back on bottom. Dev. 9 1/2° at 7816', 8 1/2° at 7906', 11 1/2° at 8025', 14° at 8148'. Running 8,000 to 10,000# weight.

1/17/64

Drilling at 8417'. Dev. 21°+ at 8250'. Maximum reading 21° on Totco. Distillate at 8260'. Increase in gas at 8260' and 8330'. Gauged two million at 8343'.

1/18/64

Depth 8518'. Present operation, pulling out of hole to log. Dev. 22 1/4° at 8418'. Well making 1 1/2 million natural.

1/19/64

Rigged up Welox. Ran Gamma Ray/Neutron log. Logged TD 8524'. Drillers TD 8518'. 22' of hole below base of Dakota. Gauged 1250 MCFD after logging. Ran 133 joints of 5 1/2" 15.5# pipe for total of 4301.99', set at 8522.58' KB. Float collar at 8491.74' KB. Liner top at 4220.51' KB. Cemented with 385 sx. of Class "C" with 20% Diacel D. 100 sx. Class "A" with 4% gel. Bumped plug at 11:45 with 500 psi. Set lead seal but failed to reverse out any cement.

1/20/64

Ran temperature survey to top of cement at 6250'.

1/21/64

Completion rig will move in this p.m.

1/22/64

Pumping in 100 bbls. at 8 BPM, 800#. Checked leak with flag on wire line. Pumped in 175 sx. Class C with 12% gel plus 4/10% of HR-7. Well pressured to 150# psi static pressure with back flow. Cut displacement short 4 bbl.

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WELL: HOYT NO. 1-5

(62' above top of liner). Job completed at 3 a.m.

1/23/64

Rigged up work over rig. Went in hole 7 7/8" bit. Found top of cement at 3876'. Drilled 50' soft cement. Drilling at 4071' in firm cement.

1/24/64

Drilled cement to top of liner at 4220'. Came out of hole, picked up 4 3/4" Bit. Went in hole to top of cement at 8365', pressured to 2500#, held OK. Drilled soft cement from 8365' to 8440', pumped cement from 8440' to 8490' (float collar), pulled out of hole. Rigged up PGAC, had 30' of fillup on top of float collar. Wire line TD 8460'. Present operation, running bond logs.

1/25/64

Ran cement log and correlation log, blew well down to 8475', came out of hole, rigged up PGAC, perforated four jets per foot from 8280'-8320', 8438'-8452', well started making gas after first run, gas increasing each run, after 3 runs making 1700 MCFD, preparing to frac.

1/26/64

Gauged at 1500 MCFD, loaded hole with 18,000 gallon water, pumped in at 2200 psi. Started sand at 1/2 lb. per gallon, 55 BPM, 2700 psi - pumped 4850 gallons at 1/2 lb. per gallon, pressure dropped to 1700 psi. Pumped 3400 gallons at 1000 psi and 80 BPM, SIP 400 psi, bled back - recovered some sand before well died. Ran in tubing to 3000', kicked off, unloaded well and cleaned up sand, killed well, set 8 5/8" packer at 50', pressure to 2000 psi on backside, ran 5 1/2" packer, set at 4370', pressured to 2000 psi on backside, held OK, pumped in tubing 6 BPM at 1200 psi, started down hole, packer set down at 5400', picked up 4', set packer, held 2000 psi on backside. Ran 4 5/8" lead impression block, pipe appears parted with pin end looking up, ran casing roller for 15 1/2 lb. casing, set down at 5400', rolled and worked through, roller hung up when picking up, worked roller back through, worked until could run through fairly free, still not completely free, pulled roller, preparing to set bridge plug in 5 1/2" casing below 5400'.

1/27/64

Ran 3 3/4" gun and collar locator to TD 8475'. Ran 4,625" bridge plug, set down at 5400' KB. Ran 4,375" bridge plug. Tight spot from 5409' to 5411', set bridge plug at 5700'. Set Baker retrievable at 5188' KB. Pressured to 2000 psi on backside, pumping in 10 BPM at 1500 psi. Pumped 125 sx.

1/27/64 Cont'd.

regular Class A with 2% CaCl₂. Displaced cement to 5230', pumping in in four stages. Fourth stage instant shut in pressure 2100 psi, 10 min. 2100 psi. Released packer at 11 P.M. Estimated top of cement at 5348'.

1/28/64

Waited on cement 12 hours, went in hole with 4 3/4" bit. Top of cement at 5305', drilled firm cement to 5400'. Bit stopped at this depth. Pressured up to 3500#, held OK. Pulled out of hole, put on 3 7/8" bit, finished drilling cement from 5400' to 5407', fell through cement at this depth. Pulled out and put on 4 3/4" tapered mill, worked out bad place in casing from 5400' to 5407'. Pressured to 3000#, pressure dropped to 1400#, hole taking fluid at 2 BPM at 3200#. Preparing to squeeze.

1/29/64

Ran Baker retrievematic, set at 5337'. Pressured up to test tubing, would not hold pressure. Spent 12 hours testing tubing. Pressured up to 3500# bled off to 1700# in 9 minutes, 1500# in 15 minutes. Could not establish injection rate. Ran tubing in open ended to 5425', spotted 25 ex. regular with 0.75% HalAd 9, pulled 20 stands. Cemented from 5425' back to 5200', pressured up to 3500#, pumped in 7 ex., held 3500# for 12 minutes, released pressure, pressured up to 3500#, held OK. Job completed at 9:45 p.m. Present operation, WOC.

1/30/64

Waited on cement for 16 hours. Going in hole with 4 3/4" bit. Bit topped cement at 5235', drilled 175' of cement. Pressured up to 3000#, held OK. Drilled bridge plug loose at 5700', pushed to 8475'. Rigged up Halliburton four HG 400's. Loaded hole, treated perforated intervals from 8280'-8320' and 8438'-8452' (216 holes) with 96,000 lb. sand and 106,000 gal. water with 4 lb./1000 gal. FR4. Balled off with 4000# sand left in liner. Job completed at 5:45 a.m., preparing to blow down.

Pumped in	1600#	Initial injection rate	33 BPM
All pumps	2700#	Sand on formation	61 BPM
Sand on formation	2500#	Max. injection rate	61 BPM
Max. treat. press.	3200#	Final injection rate	0 BPM
Min. treat. press.	2500#	Avg. injection rate	56.4 BPM
Avg. treat. press.	2788#	Sand	20,000# 40-60, 76,000# 20-40
Final treat. press.	3200#	Water	106,000 gal.
Instant shut in	Balled off	Balls	175 RB75's
Hydraulic HP	3854	Additives	480# FR4
Job completed at 5:45 a.m.		Over flush	None
		Sand density	0.95# per gal.

1/30/64 Cont'd.

Pumped in 16,000 gal. at 1/2 lb. per gal.; 10,400 gal. at 3/4 lb. per gal.; 79,600 gal. at 1 lb. per gal.

1/31/64

Well kicked off after blowing down to 2175'. Blew down to TD, well making 1/2" stream of water with heavy spray of water and oil. Well still making sand, gauged at 3000 MCFD.

2/1/64

Blew and cleaned well to 4 p.m., pulled out of hole (well gauged 3300 MCFD). Rigged up Welex, set Model "D" packer with expendable plug at 7950'. Perforated 2 per foot from 7772'-7779', 7782'-7787', 7793'-7805'. After all perforations open, well gauged 250 MCFD. Decreased to 50 MCFD in 30 minutes. Went in with tub to 7950' to blow down, well would not unload, pulled up to 7650', well would not unload. Present depth 7030', trying to unload well.

2/2/64

Rigged up Halliburton. 3 HT-400's. Treated with 25,000 lb. 20-40 sand with 23,200 gal. of oil. Job complete at 9:40 a.m.

Loaded hole			
Break with 1 pump	1300#	Initial injection rate	26 BPM
All pumps	2600#	Final injection rate	42 BPM
Initial Treat. press.	2600#	Max. injection rate	42 BPM
Final treat. press.	2650#	Min. injection rate	26 BPM
Max. treat. press.	2700#	Avg. injection rate	39.6 BPM
Min. treat. press.	2600#	Sand	25,000# 20-40
Avg. treat. press.	2615#	Load	13,724 gal.
Instant shut in press.	1950#	Break	566 gal.
10 min. shut in press.	1900#	Treat.	23,200 gal.
15 min. shut in press.	1850#	Flush	13,520 gal.
Job complete at 9:40 a.m.		Additives	1350 # Mark II Adomite
		Sand density	1.08 lb./gal.
		Load to recover	1215 bbls.

2/3/64

Well flowing back. Started running 1 1/2" EUE, had 2848' of tubing in hole when hole unloaded. Shut in to haul oil. Finished running 1 1/2" to 7750', recovered 700 bbls. oil - 515 bbls. oil left to recover. Gauged well 9500 MCFD after blowing for 20 minutes.

2/4/64

Waited on Cats to build pits to hold oil. Gauged Tocito at 9500 MCFD, 90' of fillup on top of packer. Cleaned out down to packer. Broke off Baker check valve on bottom of tubing, blew part of check valve and expendable plug out of hole. Rigged up B & R and set tubing plug at 7530'. Pulling 1 1/2" tubing. Present operation, half of tubing out of hole.

2/5/64

Ran 259 joint 1 1/2" tubing, (8117.99'). Ran three Baker blast joints (6046'), 11' subs, total tubing overall 8189.45' - set at 8201.45' KB. Seal assembly at 7942.70', blast joints from 7754.37' to 7814.83'. Tubing set with 8000# of compression in packer. Ran 111 joints 1 1/4" IJ tubing and 133 joints of 1 1/2" for total of 7772.89', set at 7783.84' KB. Change over at 4187.06' KB. Seating nipple in DK string at 8178.98' KB.

2/6/64

Rigged up B & R wire line truck. Knocked out tubing disk in upper tubing string. Shut well in, will start setting production unit today for testing of well.

2/7/64

Preparing to test Tocito through production unit and clean up Dakota.

2/8/64

Three hour test. Shut in casing pressure 1625#, shut in tubing pressure 1493#. Final flowing casing pressure 1389#, tubing pressure 318#. 3 hour rate, 4614 MCF, calculated absolute open flow 12,365 MCFD.

2/9/64

3720 MCFD, 57 BO, 14 hours, 600# tubing pressure, 1430# casing pressure, DK shut in to pressure up.

2/10/64

Flowed Tocito 39 hours, made 62 BO last 24 hours, flowing casing pressure 1405#, tubing pressure 735#, 260# at 3/4" choke.

2/11/64

Both zones shut in. Will swab Dakota today. Gallup 1640/1640. Dakota 320# tubing pressure.

2/12/64

Rigged up wire line truck, went in hole, found plug - was not pumped out of Dakota tubing. Tried to spud plug out with no results. Will try to pump plug out today.

2/13/64

Opened DK, well started flowing. After 3 hours flow, well gauged 7000 MCFD. After 19 hours well gauged 6640 MCFD. Shut in both sides for 7 day test.

2/14/64

Shut in for seven-day test.

2/15/64

Oil 65°, API at 60° F.

2/16/64

Shut in for test.

2/17/64

Shut in for test.

2/18/64

Shut in for test.

2/19/64

Ran three hour test on DK. Final tubing pressure through 3/4" choke - 390#.