

8) After 45 min. shut-down, unable to resume dusting. Pulled drill pipe after 4 hours and found slight oil stain with some oil saturated cuttings throughout lower 2000' of drill pipe. Checked drill pipe for leaks with no evidence of such found.

9) Reran drill pipe and attempted to regain dusting operations throughout two days. Drilled to 6695' in several penetration attempts with no success in regaining dust.

10) Pulled drill pipe and prepared to run radioactivity log to define possible oil source and position in geologic section. No definable oil source indicated by log but liquid level found at 6654', or 41' of bore hole fill-up. Logging tool indicated a sticky mucky liquid. Including water injected throughout previous attempts to regain dusting operation and the oil soaked up in cuttings plastered on drill pipe, it is estimated that 1 1/2 bbls. oil entered the well bore during some three days. The oil is believed to have been from a tight fracture or sand-shale bedding plane in the immediately overlying Greenhorn section. A small sample of the oil was obtained which had a light green refined appearance; a pour point of 80° was noted.

11) Decision was made to mud up so that drilling operations could be resumed. A good water base mud system with a low water loss and highly viscous property was built. Circulation was obtained and drilling resumed.

12) Drilled to 6807' (T.D.) with considerable trouble with heaving shales. Also, lost circulation was experienced while drilling at 6782'. (Lost 200 bbls. mud). Full returns regained in two hours. Partial to near-full loss of returns was noted during remainder of drilling operations for brief intervals. No reliable evidence to define the location of the thief zone.

13) Ran DST No. 1 as follows through exposed Dakota Formation.

Interval: 6725'-6807'
Tool Open: 3 hours
Tool Closed: 1 1/2 hour

Received moderately heavy blow throughout. Gas to surface in 25 min. Gas flow remained generally steady throughout at 10 to 15 MCFD.

Recovered 2250' of moderately gas cut whole mud. Estimate 7 bbls. mud volume. No trace of oil, condensate or water cutting.

Initial Flow Pressure: 730 psig
Final Flow Pressure: 1060 psig
Shut-in Pressure: 1905 psig

(Drill stem exposed via 82' of perforated anchor)

14) The mud volume in the open hole below the packer was about 3 bbls. Because of possibility of temporary mudded off condition it was decided to rerun test tool and swab off excess mud to provide complete pressure drawdown and allow maximum formation productivity.

Laid down combination 4"-2-7/8" drill pipe string and picked up 2-3/8" EUE tubing. Set packer at 6720' on 85' of perforated anchor. Swabbed down to 6700'. Recovered 3 bbls. of whole drilling mud, this representing the bore hole volume below the packer. No additional fluid entry noted during 10 hours swabbing. The formation gas flow remained essentially the same throughout the whole operation, namely 10 to 15 MCFD. It was decided to abandon the Dakota Formation and complete in the Point Lookout (Mesa Verde) horizon.

15) In attempting to pull tubing and stuck packer from hole after swabbing, the tubing was parted. Went in with overshot, pumped and pulled packer loose. Pulled tubing and packer. Found about 2000' of crooked tubing.

16) Went in with open ended 2" tubing and displaced 100' (20 sacks) cement plug from 6750'-6650' to seal off Dakota Formation. Pulled up to base of 7" casing and displaced mud with water. Pulled all tubing.

17) Set Baker Cast Iron Bridge Plug on wireline at 4990', just 10' above 7" casing shoe. Dumped 2 sacks cement with wireline dump bailer from 4990' to 4980'. Plug Back Total Depth: 4980'.

18) Perforated Point Lookout (Mesa Verde) with two McCullough regular casing jets per foot as follows: 4576'-4602', 4606'-4616', 4624'-4636', 4660'-4680', 4714'-4726', 4729'-4738', 4781'-4791', 4802'-4816'.

19) Sand-water fraced as follows:

Injected 80,000 lbs. sand (20-40 mesh) in 80,000 gallons water at average injection rate of 77 bbls. per min. Initial breakdown was 500 psig with one pump, 1100 psig with five pumps. Injected 50 balls after 20,000 lbs. sand (caused buildup from 1200 to 1300 psig), 40 balls after 40,000 lbs. sand (caused buildup from 1350 to 1550 psig), 30 balls after 60,000 lbs sand (caused buildup from 1550 to 1800 psig), 30 balls after 75,000 lbs. sand (caused buildup from 1800 to 3300 psig). Flushed with 350 bbls. water. Used total of 2470 bbls. water as follows: 200 bbls. initial breakdown, 1920 bbls. to carry sand, 350 bbls flush. Pressure bled to zero in 15 minutes. Wireline indicated no sand fillup in bore hole.

20) Went in with completion (2-3/8" EUE tubing) string, blowing with supply gas. Blew 2 hours from 13 to 20 stands in. Blew 10 rs from 24 stands in when first sustained natural well life indicated. 4 more hours. Blew generally dry the last hour making 2 million ic feet per day.

21) Inserted tubing disc and stripped tubing to landing depth of 7' KB. Flanged up wellhead, broke disc with 3' x 3/4" bar. Allowed 11 to flow naturally through casing and attempted to instigate tubing for 12 hours.

22) Because of extensive pressure drawdown and high water level tubing, could not establish natural tubing flow. Ran wireline and tubing open all the way. Released rig and shut in well for 24 r buildup.

23) After 24 hour buildup to 1020 psig natural tubing flow was instigated. Blew for 2 hours. Well blowing generally dry with light : last 1/2 hour. Shut well in for 48 hour buildup.

24) After 48 hours wellhead pressure built to 1080 psig. Blew ough tubing for four hours. At end of this period the tubing head ssure was 600 psig and the flow rate was 3.25 million cubic feet per

25) Shut well in for initial 7-day pressure buildup and subsequent ntial test.

SPECIAL NOTES

A) All mentioned depths are Kelly Bushing reference.

B) Tubing string detail:

4666' (149 jts. plus 8' perforated anchor)
landed 11' below Kelly Bushing and 1' above
ground level at 4677' KB.

By J. B. Ladd
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October 22, 1957

DRILLING AND COMPLETION HISTORY

GOVERNMENT-OWEN 1-7

San Juan County, New Mexico

990' from South Line
990' from West Line
Sec. 7-T31N-R12W

1) Drilled 15" hole to 230' and set 202' of 10-3/4" casing at 216'. Circulated cement to surface with 225 sacks with 6% gel and 2% calcium chloride.

2) WOC 20 hours and drilled ahead with 8-3/4" hole to 5001'. Mudded up at about 3400' and began adding 10% to 15% oil at about 3800'. Lost circulation while drilling at 4721'; regained circulation in 12 hours after losing an estimated 600 bbls. (Thief zone believed to be basal Menefee coals.) Retained 100% returns throughout remainder of drilling to 5001'.

3) Ran (227 jts.) 5008' of 7"-23#-J-55 casing and set at 5000'. Cemented with 150 sacks with 6% gel. Hole stayed full while running in with little to no overflow. Attempted to circulate last joint to bottom, but no mud returns were evident. Had slight to no returns throughout cementing operation.

Bumped plugs with 1200 psig . . . purposely bled to 800 psig and shut in.

Centralizers placed at 4985'; 4859'; 4737'; 4617'; 4537' and 4458'.

Scratchers (reciprocating) throughout interval from shoe to 4417'.

4) WOC 12 hours -- released pressure -- ran temperature survey. Found cement top at 3990'.

5) Blew well dry with supply gas and drilled plug (reportedly hard cement) after 36 hours WOC.

6) Began drilling of 6-1/8" hole with gas as circulating medium.

7) Drilled to 6660' (1659' of hole) in three days. Shut down to rest possible natural gas flow before penetrating Dakota. No indication of natural formation flow indicated.