DRILLING AND COMPLETION HISTORY
CONSOLIDATED OIL & GAS, INC.
GOVERNMENT LEEDS NO. 1-8
San Juan County, New Mexico

September 23, 1960

Location: 1650' F/SL, 990' F/WL of Section 8 - T31N - R12W, N.M.P.M.

Elevation: 6009' Ground
6021' K.B. - all measurements from K.B.

Spud: August 5, 1960

Drilling Completed: August 30, 1960
Well Completed: September 10, 1960

Total Depth: 7090' Drilled
7050' Plug Back

Casing:

Surface - 9-5/8", 32# H-40 cemented at 190' w/150 sx 2% $CaCl_2$ cement

Production - 5-1/2", 14# & 15.5# J-55 cemented at 7089' w/225 sx 6% gel cement thru shoe, and 180 sx 50% Pozmix, 12% Gilsonite cement thru stage collar at 5016'.

Tubing - 1-1/2" EUE CW hung at 6931'

Logs: B-J Gamma Ray-Neutron & Cement

Cores and Drillstem Tests: None

Formation Tops: (Log)

Pictured Cliffs	2411'	(+ 3610')
Mesa Verde	3940'	(+ 2081')
Cliffhouse	4018'	(+ 2003')
Menefee	4157'	(+ 1864')
Pt. Lookout	4731'	(+ 1290')
Mancos	5055'	(+ 966')
Greenhorn	6795'	(- 774')
Dakota	6921'	(- 900')

Producing Perforations:

6923' - 6957'	7020' - 7027'
6962' - 6967'	7032' - 7040'
6996' - 7007'	

Treatment: Sand-water frac w/110,000 # (40-60) mesh sand, 129,000 gal. water, 500 gal. Acid

Initial Potential: Flow volume thru 3/4" choke, 2800 MCFD; Calculated Absolute Open Flow Potential 3360 MCFD.

WELL: GOVERNMENT LEEDS NO. 1-8 (1650' F/SL & 990' F/WL of Section 8 - T31N - R12W, N.M.P.M.)

FIELD: Undesignated Dakota

COUNTY: San Juan STATE: New Mexico

ELEVATIONS: 6009' GD

6021' KB

8/5/60

Rigging up.

8/6/60

Drilled 195' of 13-3/4" hole. Ran 178' of 9-5/8" casing set at 190' KB. Cemented with 150 sacks regular cement, 2% CaCl. Circulated to surface. Plug down 10:15 p.m. Returns good. Presently WOC and nippling up.

8/7/60

Drilling at 1425' with Bit No. 2, using water. Drilled 1230', shale. Deviation 1/4 degree at 400' and 1/2 degree at 1200'.

8/8/60

Drilling at 2525' with Bit No. 3. Drilled 1100', shale. Mud 9 - 48 - 9.2. Deviation 3/4 degree at 1800', 1-1/4 degrees at 2410'.

8/9/60

Drilling at 3045' with Bit No. 5. Drilled 520', shale and sand. Mud 9.1 - 48 - 9.2. Deviation 1 degree at 3020'.

8/10/60

Total Depth 3541'. Drilled 496', sand and shale. Presently on bottom with Bit No. 6 working on pump motor. Mud 9 - 55 - 6.2.

WELL: GOVERNMENT LEEDS NO. 1-8

8/11/60

Drilling at 3,695' with Bit No. 7. Drilled 154', sand and shale. Mud 9.1 - 58 - 7. Deviation 1-1/2 degree at 3602'.

8/12/60

Drilling at 3896' with Bit No. 8. Drilled 200', sand and shale. Mud 9.1 - 58 - 5.6 - 4% oil.

8/13/60

Drilling at 4026' with Bit No. 10. Drilled 130' of sand. Mud 9.2 - 55 - 6.2 - 4% Oil.

8/14/60

Total Depth 4162'. Drilled 136', sand. Presently tripping for Bit No. 13. Mud 9.3 - 56 - 2/32nds - 5% oil.

8/15/60

Drilling at 4338' with Bit No. 14. Drilled 170', sand and shale. Mud 9.3 - 56 - 8.4 - 2/32nds - 5% oil.

8/16/60

Drilling at 4647' with Bit No. 15. Drilled 309', shale and sand. Mud 9.3 - 58 - 8 - 2/32nds - 9.5 - 6% oil. Deviation 1-1/4 degrees at 4545'.

8/17/60

Total Depth 4792'. Drilled 145' of shale and sand with Bit No. 16. Present operation: Lost circulation and mixing mud. Lost circulation at 4767' and lost approximately 1200 barrels. Circulation has been lost for 10-1/2 hours to this time. Mud weight when circulation lost: 9.3 - 56 - 9 - 9.5 - 2/32nds.

8/18/60

Drilling at 4924' with Bit No. 17. Drilled 128', sand and shale. Mud 9 - 55 - 8 - 2/32nds - 8.5. Lost returns at 4875', approximately 200 barrels. Circulation lost 8-1/2 hours.

WELL: GOVERNMENT LEEDS NO. 1-8

8/19/60

Drilling at 5098' with Bit No. 18. Drilled 172', sand and shale. Lost circulation for 4-1/2 hours at 5072', approximately 300 barrels. Presently have full returns. Mud 9 - 54 - 6 - 2/32nds, 8.5.

8/20/60

Drilling at 5360' with Bit No. 19. Drilled 264', shale and sand. Mud 9.2 - 59 - 6 - 2/32nds - 8 - 3% oil. Deviation 1-1/2 degrees at 5300'. Bit No. 18 drilled 149' in 11-1/2 hours.

8/21/60

Drilling at 5645' with Bit No. 20. Drilled 285', shale and sand. Mud 9.1 - 60 - 8.8 - 2/32nds - 5.

8/22/60

Drilling at 5970' with Bit No. 22. Drilled 375', shale and sand. Mud 9.3 - 70 - 8 - 2/32nds - 8.5 - 3% oil.

8/23/60

Total Depth 6305'. Drilled 335', shale and sand. Presently tripping for Bit No. 23. Mud 9.1 - 75 - 8 - 2/32nds - 9 - 3% oil. Lost circulation of 450 barrels for 5-1/2 hours at 6109'.

8/24/60

Drilling at 6450' with Bit No. 23. Drilled 145', shale and sand. Mud 9.1 - 69 - 8.2 - 2/32nds - 9 - 4% oil. Made extra trip for plugged bit. Lost circulation at 6420', 4" out of pits.

8/25/60

Drilling at 6775' with Bit No. 24. Drilled 325', shale and sand. Mud 9.1 - 90 - 6 - 2/32nds - 8 - 3%oil. Deviation 1-1/4 degrees at 6410'.

8/26/60

Total Depth 6961'. Drilled 186', sand and shale. Presently tripping for Bit No. 26. Mud 9.1 - 103 - 74 - 2/32nds - 8 - 5% oil.

WELL: GOVERNMENT LEEDS NO. 1-8

8/27/60

Drilling at 7014' with Bit No. 27. Drilled 53', sand. Mud 9.1 - 105 - 7.6 - 2/32nds - 8 - 5% oil. Lost 18" mud out of pit at 6980'. Washed 200' to bottom on last trip.

8/28/60

Drilling at 7077' with Bit No. 28. Drilled 63', sand and shale. Mud 9.2 - 115 - 6.1 - 2/32nds - 8 - 3% oil.

8/29/60

Total Depth 7088'. Presently logging. Drilled 11' of sand. Mud 9.2 - 129 - 5 - 2/32nds - 8.2.

8/30/60

WOC. Total Depth 7090'. Laid down drillpipe. Ran radioactivity log to 7090' - total depth. Good Dakota sand logged from top at 6925' to total depth.

Ran 233 joints (7108') of 5-1/2" casing - landed at 7089' KB. String consists of 5-1/2", 15.5# J-55 ST&C from surface to 979' - 5-1/2", 14# J-55 ST&C from 979' to 4275' (3296' of casing - 104 joints) - 5-1/2", 15.5# J-55 ST&C 1275' to total depth. Stage cementing collar at 5016'. Centralizers at 7070', 7005', 6981', 6949', 5044', 5989', 4858', 4669'. Umbrellas at 5044' and 4989'.

Had 100% returns throughout all cementing operations.

Cemented lower stage with 225 sacks regular cement with 6% gel. Bumped plugs at 3,000 psig - floats did not hold - repressured to 3,000 psig and held for 3-1/4 hours.

Cemented second stage through stage collar with 180 sacks (50% regular cement, 50% Pozmix) with 25 lbs. Gilsonite per sack and with 4% gel.

WOC as of 5:30 a.m. Released rig at 6:00 a.m.

WELL: GOVERNMENT LEEDS NO. 1-8

9/2/60

Shut in, waiting on completion rig. Log indicates good Dakota gas sand throughout the interval 6920' to 7040'. Will perforate and sand-water frac some 75' of Dakota pay sand.

9/4/60

Picking up workover tubing. Moved in and rigged up completion rig.

9/5/60

Drilling on stage collar at 5016'.

9/6/60

Going in hole to retrieve fish described below.

Drilled out stage collar and cleaned out to 7050' PBTD. Displaced 500 gallons 15% HCl - pulled workover tubing and bit - perforated and sand-water fraced lower Dakota as follows:

Perforated (2 jets and 2 bullets per foot) 7032' to 7040', 7020' to 7027', 6996' to 7007'.

Sand-Water fraced as follows: Displaced acid in three soaking stages at 800 to 200 psig. Started injecting at 44 bpm at 1600 psig with 1/2 lb. sand per gallon, rapidly increasing to 1 lb. per gallon. After 20,000 lbs. sand injected at 44 bpm at 1600 to 1700 psig, dropped 15 balls with slight pressure increase. After 30,000 lbs. sand injected, dropped 10 balls with pressure increase from 1750' to 1800'. After 40,000 lbs. sand injected, flushed with clear water at 1900 psig - overflushed with about 50 barrels.

Job Summary:

40,000 lbs.	(40-60 mesh) sand
49,000 gal.	Water
500 gal.	15% HCl
25	Balls
43-1/2	BPM
1600 - 1800 psig	

All sand-laden water included Fluid Loss Additive. Standing pressure 1100 psig immediately and 700 psig in 30 minutes.

WELL: GOVERNMENT LEEDS NO. 1-8

9/6/60 - (Continued)

Started lubricating in bridge plug, which set prematurely at approximately 3200'. In attempting to get loose, pulled wire line out of rope socket. Left bridge plug and setting tool in hole.

9/7/60

Preparing to perforate and sand-water frac upper Dakota stage. Retrieved setting tool fish and drilled and pushed bridge plug to 7003' where it apparently set down solidly on sand fillup. Left this as a medium for isolating lower Dakota perforations while performing upper stage frac. Pulled workover tubing and bit and prepared to proceed with 2nd stage.

9/8/60

Preparing to pull workover tubing and bit after cleaning out to PBTD. Cleaned out 300' of sand and bridge plug junk. Lost several hundred barrels water to Dakota while cleaning out.

Perforated (2 bullets and 2 jets per foot) 6962' - 6967', 6923'-6957'.

Sand-Water fraced as follows: Began injecting at 1800 psig at 42 bpm. Continued these conditions for first 15,000 lbs. sand - dropped 15 balls with no response. After 25,000 lbs. sand, dropped 25 balls with pressure increase to 1850 psig, gradually building to 1900 psig. After 36,000 lbs. sand injected, dropped 25 balls with pressure to 2100 psig - after 50,000 lbs. sand injected, dropped 25 balls with pressure increase to 2150 psig. After 60,000 lbs. sand, dropped 25 balls - after 65,000 lbs. sand injected, dropped 25 balls - after 70,000 lbs. sand was injected, pressure was up to 2200 psig. Flushed with clear water at 2250 psig. Standing pressure was 1500 psig immediately and 900 psig in 15 minutes.

Job Summary:

70,000 lbs.	(40-60 mesh) sand
80,000 gal.	Water
140	Balls
37-1/2	BPM
1800-2200 psig	

WELL: GOVERNMENT LEEDS NO. 1-8

9/9/60

Blowing with supply gas at 6,000'. Estimate have recovered 600 to 800 barrels frac water - total of 3500 barrels water injected into formation.

9/10/60

Blowing and cleaning up frac water. Landed completion tubing as follows: 219 joints of 1-1/2" EUE-CW plus 1 joint 2" EUE (31 ft.) at 6931' K.B. (Total tubing 6925'). Jet collars at 6331', 5827', and 5328'. Released rig at 4:00 p.m.

9/13/60

Well shut in for initial 7-day pressure buildup and official potential testing. Blew and cleaned well throughout past three days with surface flow rates measured of 1.25 to 2 MMCFD.

9/21/60

Well shut in awaiting hookup. Conducted official Initial Potential Test through 3/4" choke yesterday, following 7 days shut in, with the following results:

Shut-in surface pressures: 1897 psig tubing
1901 psig casing

After three hours flowing through 3/4" choke: 197 psig tubing
879 psig casing

with a flowing temperature of 64 degrees. The actual flow rate after three hours was 28 00 MCFD.

OPEN FLOW TEST DATA

DATE September 20, 1960

Operator: CONSOLIDATED OIL & GAS, INC.		Lease: GOVERNMENT LEEDS NO. 1-8	
Location: 1650' F/SL & 990' F/WL Sec. 8-T31N-R12W		County: San Juan	State: New Mexico
Formation: Dakota		Pool: Undesignated	
Casing: Diameter: 5-1/2"	Set At: Feet: 7089'	Tubing: Diameter: 1-1/2" EUE	Set At: Feet: 6931'
Pay Zone: From: 6923'	To: 7040'	Total Depth: 7050' P.B.	
Stimulation Method: Sand-Water Frac		Flow Through Casing:	Flow Through Tubing: X

Choke Size, Inches: 0.750		Choke Constant: C: 14.1605			
Shut-In Pressure, Casing, PSIG: 1901	+ 12 = PSIA: 1913	Days Shut-In: 7	Shut-In Pressure, Tubing PSIG: 1897	+ 12 = PSIA: 1909	
Flowing Pressure: P PSIG: 197	+ 12 = PSIA: 209		Working Pressure: P_w PSIG: 879	+ 12 = PSIA: 891	
Temperature: T °F: 64	n = .75		Fpv (From Tables): 1.025	Gravity: 0.70	

CHOKE VOLUME = Q = C x P_t x F_t x F_g x F_{pv}

Q = 14.1605 x 209 x .9962 x .9258 x 1.025 = 2300 MCF D

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

Aof = $\left(\frac{3644281}{2850400} \right)^n$

Aof 3360 MCF D

TESTED BY _____

WITNESSED BY _____