Consolidated Oil & Gas, Inc.

Executive Offices
SUITE 2112 TOWER BLDG
DENVER-U S NATIONAL CENTER
1700 BROADWAY
DENVER 2, COLORADO
PHONE AMHERST 6-1306

November 28, 1960

MEMORANDUM TO PARTICIPANTS -

Re: GOV'T. LANGENDORF NO. 1-34
NE/4 Section 34 - T31N-R13W
San Juan County, New Mexico

Enclosed please find for your permanent records the Drilling and Completion History, including the Radioactivity and Forxo logs, for the captioned well. You will note from the Open Flow Test Data form that this well has a calculated open flow potential of 4600 MCFD. This is one of the highest we have had to date in the Northwest Blanco Area. We feel, therefore, that this well will be an excellent producer.

We anticipate connection with the gathering system within the next forty-five days.

George E. Farmar,
Production Manager

GEF/pd
Enclosures

DRILLING AND COMPLETION HISTORY

CONSOLIDATED OIL & GAS, INC.

GOVERNMENT LANGENDORF NO. 1-34
San Juan County, New Mexico

November 28, 1960

Location:	1750' F/NL & 990' F/EL Section 34 -T31N-R13W, N. M. P. M.
Elevation:	5718' Ground 5730' K. B. - all measurements from K. B.
Spud:	October 18, 1960
Drilling Completed: Well Completed:	November 7, 1960 November 17, 1960
Total Depth:	6557' Drilled 6502' Plug Back
Casing:	
Surface -	9-5/8", 32# H-40 cemented at 195' w/130 sx 2% $CaCl_2$ cement.
Production -	5-1/2", 14# & 15.5# J-55 cemented at 6554' w/275 sx 6% gel cement.
Tubing -	1-1/2" EUE J-55 hung at 6355'.
Logs:	Welex Radioactivity and Forxo
Cores and Drillstem Tests:	None

Formation Tops: (Log)

Pictured Cliffs	1816'	(+ 3914')
Mesaverde	3353'	(+ 2377')
Cliffhouse	3408'	(+ 2322')
Menefee	3546'	(+ 2184')
Pt. Lookout	4218'	(+ 1512')
Mancos	4535'	(+ 1195')
Greenhorn	6230'	(- 500')
Dakota	6359'	(- 629')

Producing Perforations:

6369' - 6414'	6446' - Slot
6421' - 6426'	6467' - Slot

Treatment: Sand-Water frac w/ 112,000 lbs. (20-40 mesh) sand, 102,000 gal. water, 500 gal. acid in two stages.

Initial Potential: Flow volume thru 3/4" choke, 3310 MCFD;
Calculated Absolute Open Flow Potential 4600 MCFD.

WELL: GOVERNMENT LANGENDORF NO. 1-34

1750' F/NL & 990' F/EL of Sec. 34 - T31N - R13W, N. M. P. M.

FIELD: Undesignated Dakota

COUNTY: San Juan STATE: New Mexico

ELEVATIONS: 5718' GD

5730' DF

10/13/60

Moving in and rigging up.

10/14/60

Rigging up.

10/15/60

Rigging up.

10/16/60

Waiting on weather.

10/17/60

Waiting on weather.

10/18/60

Drilling at 50'.

10/19/60

Drilling at 500' with Bit No. 1, using water. Drilled 450', shale and sand. Deviation 1/2 degree at 100'.

Drilled 196' of 13-3/4" surface hole, ran 7 joints (183') of 9-5/8" surface casing set at 195' K.B. Cemented with 130 sacks regular 2% CaCl. Plug down 3:00 p.m. yesterday. Pressured up on surface pipe with 600 psig for 15 minutes - held OK.

WELL: GOVERNMENT LANGENDORF NO. 1-34

10/20/60

Drilling at 1915' with Bit No. 3, using water. Drilled 1415', shale and sand. Deviation 1/2 degree at 550'; 3/4 degree at 1100'; 3/4 degree at 1600'.

10/21/60

Total depth 2715'. Drilled 800', shale and sand. Presently making trip for Bit No. 5. Mud 8.9 - 41 - 9 - 3/4 degree deviation at 2400'.

10/22/60

Drilling at 3055' with Bit No. 6. Drilled 370', sand and shale. Mud 9.3 - 44 - 10 - deviation 1 degree at 3050'.

10/23/60

No report

10/24/60

Total Depth 3443'. Drilled 174', sand and shale. Presently tripping for Bit No. 10. Mud 9.4 - 45 - 8.

10/25/60

Drilling at 3703' with Bit No. 11. Drilled 260', sand and shale. Mud 9.4 - 49 - 8 - 5% oil - deviation 1 degree at 3680'.

10/26/60

Drilling at 3984' with Bit No. 13. Drilled 281', shale and sand. Mud 9.4 - 54 - 8 - 5% oil.

10/27/60

Drilling at 4285' with Bit No. 14. Drilled 201', shale and sand. Mud 9.5 - 55 - 10.8 - 5% oil.

WELL: GOVERNMENT LANGENDORF NO. 1-34

10/28/60

Drilling at 4510' with Bit No. 16. Drilled 226', shale and sand. Mud 9.5 - 54 - 6.4.

10/29/30

Drilling at 4740' with Bit No. 17. Drilled 230', sand and shale. Mud 9.6 - 58 - 6.8 - 5% oil - deviation 1 degree at 4570'.

10/30/60

Total Depth 4994'. Drilled 284', shale and sand. Presently tripping for Bit No. 18. Mud 9.3 - 63 - 8 - 4% oil.

10/31/60

Drilling at 5305' with Bit No. 20. Drilled 311', shale and sand. Mud 9.4 - 60 - 9.2 - 4% oil - deviation 1-1/4 degrees at 5220'.

11/1/60

Total Depth 5705'. Drilled 400'. Mud 9.5 - 70 - 8. Presently changing drawworks engine.

11/2/60

Drilling at 5855' with Bit No. 22. Drilled 150', sand and shale. Mud 9.5 - 63 - 10 - 3% oil.

11/3/60

Drilling at 6218' with Bit No. 23. Drilled 363', sand and shale. Mud 9.5 - 76 - 8.4 - 5% oil. Lost approximately 200 barrels mud at 5910'.

11/4/60

Total Depth 6415'. Drilled 197', sand and shale. Presently tripping for Bit No. 24. Mud 9.5 - 75 - 8.8 - 5% oil.

WELL: GOVERNMENT LANGENDORF NO. 1-34

11/5/60

Drilling at 6476', with Bit No. 25. Drilled 61', sand. Mud 9.5 - 80 - 8.8 - 5% oil. Deviation 1/4 degree at 6260'.

11/6/60

Total Depth 6557'. Drilled 81', sand. Presently coming out of hole to log. Mud 9.4 - 88 - 8.8 - 3% oil.

11/7/60

WOC. Ran Welex Radioactivity and Forxo logs. Good Dakota gas pay sand indicated from Dakota top at 6368' to 6480'.

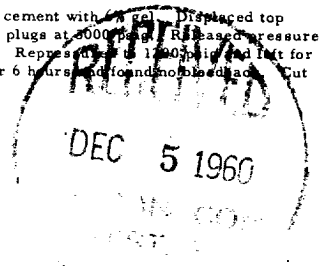
Laid down drillpipe and ran production casing as follows: Ran 201 joints 5-1/2", J-55 new casing in the following sequence from top to bottom:

2 joints	15.5#	(67')
153 joints	14#	(4988')
46 joints	15.5#	(1499')

Total of 6542' left in well. Set at 6554' K.B.

Cemented with 275 sacks regular cement with 4% gel. Displaced top plug with clear water and bumped plugs at 3000 psig. Released pressure and noted floats were not holding. Pressured up to 1200 psig and left for 6 hours. Released pressure after 6 hours and found no bleedback. Cut off casing and nippled up.

Good returns throughout job.



11/8/60

Waiting on completion rig.

11/16/60

Laying down workover tubing after cleaning out frac sand and drilling out bridge plug following second stage Dakota sand-water frac. Chronology

WELL: GOVERNMENT LANGENDORF NO. 1-34

11/16/60 - (Continued)

of events since moving on worover rig November 12th is as follows:

Rigged up workover rig. Ran B J. Gamma Ray Collar Log. Picked up workover tubing and went in hole with sand jet tool to notch casing. Unable to properly orient jet tool depth - ran correlation log thru tubing and notched casing at 6467' and 6446'. Displaced 500 gal. 15% HCl on bottom. Came out of hole with tubing and performed lower stage sand-water frac as follows:

Pumped acid into formation in slow soaking stages. Injected 60, 000 lbs. (20-40 mesh) sand at a generally steady rate of 34 bpm at 2, 000 to 2100 psig, after initial breakdown pressure of 2650 psig. All 60, 000 gal. water were treated with gelling agent J-101. Standing pressure was 1100 psig immediately and 500 psig in one hour.

Lubricated in bridge plug and set on wire line at 6440'. Perforated with 2 bullets and 2 jets per foot 6421' to 6426' and 6369' to 6414'. Performed upper stage sand-water frac as follows:

Started injecting at 2150 psig with 1/2 lb. sand per gal., rapidly increasing to 1 lb. and then to 1-1/4 lbs. per gal. after 6 minutes. Pressure remained at about 2150 psig until 30, 000 lbs. sand were injected, when pressure increased to 2300 psig, and then to 2500 psig after 45, 000 lbs. sand in. Increased sand concentration to 1-1/2 lbs. per gal. and completed job, with a sandout finally occurring at 3500 psig. Standing pressure was 2000 psig immediately and 600 psig in 15 minutes, where it stayed for 45 minutes. Opened well and allowed to backflow frac water for 90 minutes, at which time it died.

JOB SUMMARY -

52, 000 lbs. (20-40 mesh) sand in formation (60, 000 lbs. total injected)
42, 000 gal. water
34 bpm
2100 to 2500 psig, with gradual sandout to 3500 psig during latter portion of job.

Went in hole with workover tubing and bit and cleaned to PBTD 6502' KB.

WELL: GOVERNMENT LANGENDORF NO. 1-34

11/16/60 - (Continued)

Started out of hole laying down workover tubing.

11/17/60

Preparing to break tubing disc and hookup wellhead. Finished laying down workover tubing, picked up completion tubing and went in hole blowing down with supply gas. Blew for 15 minutes at 1, 000' and 15 minutes at 1, 700', at which time well came in naturally. Inserted tubing disc and stripped tubing to bottom. Well now blowing through casing at 3000 MCFD.

Landed 1-1/2" J-55 upset seamless new tubing - 6345' (199 joints) at 6355' K.B. Tubing jet holes at 5400' and 4767' K.B.

11/18/60

Shut in. Preparing to do preliminary potential testing today. Continued to allow well to flow throughout daylight hours yesterday after breaking tubing disc. Well continued to make over 3000 MCFD natural while bringing lots of frac water.

11/19/60

Shut in for initial 7-day pressure buildup. Tested well yesterday for initial indication of potential by flowing for 3 hours through a 3/4" positive choke after being shut in overnight. Wellhead pressure was 1950 psig. The actual flow rate after 3 hours flowing through a 3/4" choke was 2300 MCFD. Flow stream still quite wet with frac water.

11/28/60

Shut in awaiting hookup to sales outlet. Conducted official 3-hour potential test 11/26/60 with the following results: Static surface pressures after 7 days shut-in: Casing - 2000 psig
Tubing - 1980 psig

WELL: GOVERNMENT LANGENDORF NO. 1-34

11/28/60 - (Continued)

Time After Well Opened	Casing Pressure	Tubing Pressure	Flow Temperature
60 Min	1195 psig	310	53 degrees
120	1235	250	56
180	1187	236 *	59

* 3500 MCFD.

Secured reservoir static pressure with subsurface bomb at 6468': 2471 psig - 192 degrees F. After 180 minutes flow, the subsurface bomb measured 1277 psig. Could not read intermediate points.

OPEN FLOW TEST DATA

DATE November 26, 1960

Operator: CONSOLIDATED OIL & GAS, INC.		Lease: GOVERNMENT LANGENDORF	
Location: 1750' F/NL & 990' F/EL Sec. 34-T31N-R13W		County: San Juan	State: New Mexico
Formation: Dakota		Pool: Basin-Dakota	
Casing: Diameter: 5-1/2"	Set At: Feet: 6554'	Tubing: Diameter: 1-1/2" EUE	Set At: Feet: 6355'
Pay Zone: From: 6369'	To: 6467'	Total Depth: 6557'	PB - 6502'
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: 2000	+ 12 = PSIA: 2012	Days Shut-In: 7	Shut-In Pressure, Tubing PSIG: 1980	+ 12 = PSIA: 1992	
Flowing Pressure: P PSIG: 236	+ 12 = PSIA: 248		Working Pressure: P_w PSIG: 1187	+ 12 = PSIA: 1199	
Temperature: T °F: 59	n = 0.75		Fpv (From Tables): 1.033	Gravity: 0.72	

CHOKE VOLUME = $Q = C \times P_t \times F_t \times F_g \times F_{pv}$

$Q = 14.1605 \times 248 \times 1.001 \times .9129 \times 1.033$ = 3310 MCF/D

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

Aof = $Q \left(\frac{4048144}{2610543} \right)^n$ =

Aof = 4600 MCF/D

RECEIVED
DEC 5 1960
OIL CON. COM.
DIST. 3

TESTED BY Robert B. Tenison

WITNESSED BY

Geo. E. Tenison