

DEVIATION TESTS

<u>DEPTH</u>	<u>DEGREES</u>
130'	1
327'	1
1000'	1-1/4
1277'	1
1338'	1
1985'	1
2708'	1
4987'	1
5988'	3/4
6680'	3/4
7580'	3/4

AFFIDAVIT

This is to certify that to the best of my knowledge the above tabulation details the deviation tests taken on ARCO Oil and Gas Company's, Division of Atlantic Richfield Company, Tonkin Well No. 1, West Lindrith Gallup-Dakota Pool, 800' F/South & 2300' F/East Lines of Section 18-24N-3W, Rio Arriba County, New Mexico.

February 28, 1979

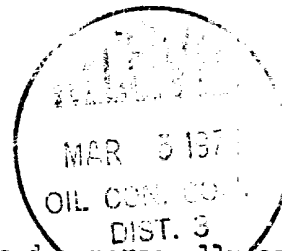
Date

B. R. Still

B. R. Still

Operations Information Assistant

State of Colorado)
County of Denver) ss.



Before me, the undersigned authority, on this day personally appeared B. R. Still, known to me to be the Operations Information Assistant for ARCO Oil and Gas Company, Division of Atlantic Richfield Company, and to be the person whose name is subscribed to the above statement, who, being by me duly sworn on oath, states that he has knowledge of the facts stated herein, and that said statement is true and correct.

Subscribed and sworn to before me, a Notary Public in and for said County and State this 28th day of February, 1979.

Kathleen H. J. Wilson
Notary Public

My commission expires:

October 9, 1981

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE*

(See other in-
structions on
reverse side)Form approved.
Budget: Bureau No. 42-R335.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL:		OIL WELL ☒	GAS WELL ☐	DRY ☐	Other _____		
b. TYPE OF COMPLETION:		NEW WELL ☒	WORK OVER ☐	DEEP-EN ☐	PLUG BACK ☐	DIFF. RESVR. ☐	Other _____
2. NAME OF OPERATOR						ARCO Oil and Gas Company, Division of Atlantic Richfield Company	
3. ADDRESS OF OPERATOR						Suite 501, 1860 Lincoln Street, Denver, Colorado 80295	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*						At surface S. SE 800' FSI & 2300' FEL Section 18 At top prod. interval reported below Approx. same At total depth Approx. same	
14. PERMIT NO.						DATE ISSUED	
Mr. Schmidt						10-2-78	
15. DATE SPUDDED		16. DATE T.D. REACHED		17. DATE COMPL. (Ready to prod.)		18. ELEVATIONS (DF, REB, RT, GR, ETC.)*	
11-2-78		11-19-78		2-21-79		6889' GR; 6903' KB	
20. TOTAL DEPTH, MD & TVD		21. PLUG, BACK T.D., MD & TVD		22. IF MULTIPLE COMPL., HOW MANY*		23. INTERVALS DRILLED BY	
7593'		7450'		1		0 - 7593'	
24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*						25. WAS DIRECTIONAL SURVEY MADE	
Gallup - 6261-6432' OA ; Dakota A - 7254-64' OA; Dakota B - 7329-40' OA. (Commingled)						No	
26. TYPE ELECTRIC AND OTHER LOGS RUN						27. WAS WELL CORED	
FDC/CNL-GR;DIL; CBL						No	
28. CASING RECORD (Report all strings set in well)							
CASING SIZE		WEIGHT, LB./FT.		DEPTH SET (MD)		HOLE SIZE	
8-5/8"		24#		328'		12-1/4"	
5-1/2"		15.5# & 17#		7593'		7-7/8"	
29. LINER RECORD							
SIZE		TOP (MD)		BOTTOM (MD)		SACKS CEMENT*	
None							
30. TUBING RECORD							
SIZE		DEPTH SET (MD)		PACKER SET (MD)			
2-3/8"		7317' KB		-			
31. PERFORATION RECORD (Interval, size and number)							
Dakota "B" - 7340-7329' w/2 jet shots/ft. (total of 23 holes).							
Dakota "A" - 7204-54', 7244-21', 7216-10' w/1 jet shot/ft.(total of 80 holes).							
Gallup - 6432-6261 OA (23 shots) w/Select- ive fire gun.							
32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.							
DEPTH INTERVAL (MD)				AMOUNT AND KIND OF MATERIAL USED			
7345'				250 gal 15% MCA			
7340-7329'				32630 gals wtr w/38500# sd.			
7204-7254';7244- 7221';7216-7210'.				250 gal 15% MCA			
(Contd-back side)							
33. PRODUCTION							
DATE FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)				WELL STATUS (Producing or shut-in)	
2-16-79		Flowing				Producing	
DATE OF TEST		HOURS TESTED		CHOKE SIZE		PROD'N. FOR TEST PERIOD	
2-20-79		24 hrs.		Adjustable		205 BOPD	
FLOW. TUBING PRESS.		CASING PRESSURE		CALCULATED 24-HOUR RATE		OIL—BBL. GAS—MCF. WATER—BBL. GR. GRAVITY API (CORR.)	
300#		1500#		205 BOPD		258 MCFGD	
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)							
To be sold.							
35. LIST OF ATTACHMENTS							
2 each of #26 above; Daily Well History.							
36. I hereby certify that the foregoing and attached information is complete and correct as determined by all available records							
SIGNED		W. A. Walther, Jr.		TITLE		Operations Manager	
						DATE 2-27-79.	

* (See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on Items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see Item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in Item 22, and in Item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in Item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for Items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES: SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF: CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES			38. GEOLOGIC MARKERS			
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	MEAS. DEPTH	TRUE VERT. DEPTH
No Cores and No Drill Stem Tests.				Pictured Cliffs	2981'	
				Mesaville	4630'	
				Gallup	6236'	
				Greenhorn	7129'	
				Graneros	7193'	
				Dakota "A"	7203'	
				Dakota "B"	7325'	
				Dakota Silt	7375'	
				Dakota "C"	7407'	
				Burro Canyon	7485'	
				Morrison	7580'	
				(all measurements from RCB)		
32. (Cont'd from front side)						
7204-7254'; 7244-7221'; 7216-7210			64,080 gals wtr w/80,000 # sd.			
6432-6261'			2000 gals 15% HCl			
" "			135,750 gals trtd wtr w/146,500# sd.			

2/18/79	7450	PB - Prep to SD a/c Sunday. Flwg thru prod equip f/tst. Roads terrible.
2/19/79	7450	PB - Well opn thru prod equip, swb unit still on, crew did not go out a/c weather. 8 a.m. 2/18, well dead on tbg, TP 0#, CP 1700#. Opnd to pit & strtd flwg. Flwd to pit 1 hr & turned thru prod unit. Well had prod 28 BO & 12 BW before dying. Pmpr had to wade Medio Wash waist deep in wtr.
2/20/79	7450	PB - No report. Swbg unit SD Monday, crew did not go out a/c weather.
2/21/79	7450	PB - Prep to haul oil out of tks when high wtr subsides. Flwd 205 BO in 24 hrs, gas in wtr not measured. SI @ 5 p.m. 2/20, tks full.
2/22/79	7450	PB - COMPLETED OIL WELL, 2/21/79, Gallup & Dakota "A" & "B" fm. On 24 hr tst 2/20/79, flwd 205 BOPD, 41.9° API Gvty @ 60°F, 258 MCFGD f/Gallup perfs 6261-6432'OA, Dakota "A" perfs 7254-64', 7221-44' & 7210-16'OA, Dakota "B" perfs 7329-40'OA. FCP 1500#, FTP 300#, adjustable choke, GOR 1259:1. LPP 7340'. (tks full - SI).

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2/1/79	7550	PB - Prep to cont tstg. Swbg Gallup fm. 12 noon 1/31, FL 2850', swbg f/6200', CP 550#. 6 p.m. 1/31, FL @ 2800', swbg f/6200', CP 590#. 6 a.m. 2/1, FL @ 2900', swbg f/6200', CP 580#. Swbd total 188 BF, 1914 bbls yet to recover. Gas kicking 2 to 3 min after ea swb run. Making tr oil (est 1/2 of 1% or less).
2/2/79	7550	PB - Prep to cont tstg. 12 noon, FL @ 2800', plg swbg f/6200', CP 570#. At 6 p.m., FL @ 2900', swbg f/6200', CP 580#. 6 a.m. 2/2, FL @ 2900', swbg f/6200', CP 575#. Swbd 194 BFF, gas flw after swb pull has incr'd to 3-5 min. Oil show has incr'd some (1-1/2 to 2% oil). 1720 BLW to recover.
2/2/79 cont'd.		
2/3/79	7550	PB - Swbg Gallup perfs. 12 noon, FL @ 3000', swbg f/6200', CP 570#. 6 p.m. FL @ 3500', swbg f/6200', CP 560#. 6 a.m. 2/3, FL @ 3400', swbg f/6200', CP 580#. Flwg gas 2-3 min after each run - est 4-5% oil in recovery. Rec'd 170 bbls, lack 1550. Sli improvement on oil - gas about same.
2/4/79	7550	PB - Swbg Gallup. 8 a.m., FL @ 3400', swbg f/6200', CP 600#. 9 a.m., FL @ 3500', swbg f/6200', CP 625#. 10 a.m., flwd gas f/30 min w/some fld. 12 noon, FL @ 3500', swbg f/6200', CP 425#. 2 p.m., FL @ 3500', swbg f/6200', CP 550# & flwd for 1/2 hr. 6 p.m., FL @ 3500', swbg f/6200', CP 600#. 12 MN to 1:40 a.m., well flwd. 6 a.m., FL 3500', swbg f/6200', CP 530#. Total rec'd, swbd & flwd 156 bbls, lack 1394 bbls.
2/5/79	7550	PB - Swbg Gallup fm. 12 noon 2/4, FL @ 3700', swbg f/6200', CP 520#. 6 p.m. 2/4, FL @ 4000', swbg f/6200', CP 500#. 6 a.m. 2/5, FL @ 4800', swbg f/6200', CP 300#. Total swbd & flwd f/24 hrs - 154 BF. FF yet to rec - 1240 bbls (well swbg dn, but no incr in gas).
2/6/79	7550	PB - Swbg Gallup fm. 12 noon, FL 5200', swbg f/6200', CP 350#. 6 p.m., FL 5500', swbg f/6200', CP 200#. 6 a.m., FL 5400', swbg f/6200', CP 225#. Well blws 5 to 10 min after ea swb pull, est 10-15% oil. Rec'd 90 BF in 24 hrs (est 9 BO & 81 BW). 1150 BFW to recover.
2/7/79	7550	PB - Prep to COH w/tbg & PU bit to drl out BP. 12 noon 2/6, FL @ 5500', plg swb f/6200', CP 225#. 6 p.m. 2/6, FL @ 5400', plg swb f/6200', CP 230#. 6 a.m. 2/7, FL @ 5500', plg swb f/6200', CP 225#. Swbd & flwd 84 BF last 24 hrs (10 BO & 74 BW). Well flws approx 5 min after ea swb. Oil cut est 10-15%. No gas incr. 1066 BFW yet to recover.
2/8/79	7550	PB - Circ'g & CO f/7450'. Swbd Gallup until 9 a.m. 2/7/79. Blew dn CP. Removed xmas tree. POH w/tbg. RIH w/ 4-3/4" bit & jk bskt, tagged sd @ 6760'. (Gallup perfs 6261-6432'OA). Mixed 1% KCl wtr. Loaded hole, CO sd f/6760-7160'. Drld CIBP @ 7160', chased plug to 7450'. Circ'g & CO @ 7450'. Prep to round trip tbg f/final installation.
2/9/79	7450	PB - To cont to swb & flw. Circ'd & cleaned hole to 7450'. POH w/bit & jk bskt. RIH w/ 2-3/8" EUE prod string. Notched clr on btm. 2-3/8" EUE API SN 1 jt off btm. Ran total 234 jts 2-3/8" EUE 4.7# J-55 tbg (7307.82') landed @ 7317'KB. Removed BOP. Instl'd xmas tree. Tried to pmp out expendable plug w/rig pmp, went to 2000#, plug failed to go. Halliburton pmpd out plug @ 2200#. Strtd swbg @ 10:30 a.m. 2/8/79. Well began kicking @ 12 noon 2/8/79. Flwd by heads f/2 hrs, CP 510# (well died). Swbd & well would flw by heads & die. (At 6 a.m. 2/9/79 swbg w/525# CP. At 7:30 a.m. flwg w/750# CP).
2/10/79	7450	PB - Prep to RD & move out completion rig. Swbd & flwd Dakota & Gallup f/24 hrs. 12 noon FL pockets not established, swb f/SN @ 7300', CP 950#. At 6 p.m. unable to est FL, swb f/7300', CP 700#. At 6 a.m. 2/10, CP 1275#, no flwg. Swb line frayed. Rel compl rig 6 a.m. to move to Tonkin #2.
2/11/79	7450	PB - Well SI. SI @ 7:30 a.m., TP dead & CP 1325#.
2/12/79	7450	PB - Well SI. Prep to attempt to kick off, may be nec to move in swbg unit. TP 0#, CP 1625#.
2/13/79	7450	PB - WO swb unit. Should be on loc a.m. 2/14/79.
2/14/79	7450	PB - WO swb unit. Swb unit being repaired, possibly in by a.m.
2/15/79	7450	PB - WO swb unit.
2/16/79	7450	PB - Prep to pull swb unit onto loc w/dozer. (moved swb unit f/Farmington to Lindrith).
2/17/79	7450	PB - Flwg well thru prod unit. MI & RU swb unit using dozer. TP 0#, CP 1600#. Swbd to reserve pit & well K0, flwd to pit 1 hr & turned thru prod unit. Flwd thru prod unit 13 hrs. At 7 a.m 2/17, CP 1400#, TP 250#. Prod 140 BO & 20 BW in 13 hrs, flwg by heads. Swb unit is still rigged up. Not much gas.

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1/20/79	7550	PB - RIH w/ 4-3/4" bit & jk sub to CO to PBTD 7450'. Sptd 250 gals 15% MCA @ 7345'. POH w/tbg. Perf'd Dakota "B" zone 7340-29' w/2 JSPF. Frac'd as foll w/1% KCl wtr, 2# fric reducer/1000 gals, 15# fld loss add/1000 gals & 40/60 sd: Pad 10,560 gals, 32,630 gals wtr, 38,500# sd, 7,850 gals flush. Brk dn 3200#. Avg trtg press 3000#, max trtg press 3800#, AIR 45 BPM, HHP 3309#, ISIP 1500#, 5 min SIP 1300#, 10 min SIP 1250#, 15 min SIP 1200#. Set Halliburton speedy drl CIPB @ 7280'. Tstd BP to 4000#, held OK. Perf'd Dakota "A" zone 7204-54' 7244-21' & 7216-10' w/1 JSPF. Frac'd as foll w/1% KCl wtr, 2# fric reducer/1000 gals, 15# fld loss add/1000 gals, 20/40 sd: Spearheaded w/250 gals 15% MCA, 18,250 gals pad, 64,080 gals wtr, 80,000# sd, 7760 gals flush. Brk dn 2600#. Avg trtg press 2400#, max trtg press 2550#, AIR 50 BPM, HHP 2940, ISIP 1700#, 5 min SIP 1400#, 10 min SIP 1350#, 15 min SIP 1330#. Dropped 10 ball sealers w/40,000 gals in. 0# press incr. Dropped 10 ball sealers w/60,000 gals in. 50# press incr. Well SI f/4 hrs. Bled press off.
1/21/79	7550	PB - Flw tstg Dakota before moving up to tst Gallup interval. Fin'd RIH w/bit & jk bskt. Drld BP @ 7280' & CO to 7450'. Circ'd hole clean & POH. RIH w/ 2-3/8" tbg, pmp out plug & SN & landed @ 7130'. Pmpd out plug & well kicked off flwg to pits. Flwd 4 hrs to pit & hooking up well to separator & tks for flw tst.
1/22/79	7550	PB - Prep to set CIPB & perf & tst Gallup fm. Tstd Dakota "A" & "B" zones after frac to pit & then to tanks. Well would load up & die w/back press. For short tst, approx 2 hrs, flwd @ rate of 120 BOPD, 86 BWPD, 181 MCFGD. Killed well w/1% KCl wtr. POH w/tbg. RU D-A. RIH w/CIBP.
1/23/79	7550	PB - Prep to cont tstg. Set CIBP @ 7160'. Tstd to 4000#, held OK. Perf'd Gallup fm w/ 3-1/2" selective fire gun, 6432-6261' (23 shots). POH w/gun. RIH w/ RTTS pkr, set @ 6010'. Brk fm @ 3200#. Pmpd 2000 gals 15% HCl. Dropped 46 ball sealers, evenly spaced. Gd ball action. Well balled off w/450 gals acid left in tbg. Rel press, let balls drop off. Displ'd remaining 450 gals
1/23/79	Cont'd	into fm. Rel pkr. Lowered pkr to chase balls to 6500'. PU & re-set pkr @ 6188 RU & swbd approx 14 hrs. FL approx 600' above pkr. Pld swb approx 1 hr, rec'd 1-3/4 - 2 bbls acid wtr cut, approx 8% oil, sml gas heads w/ea swb pull.
1/24/79	7550	PB - Prep to frac Gallup fm. Swbd dry @ 1 p.m. Gallup fm, rec'd sml amt of brown oil. Took smpl - no gas show. Rel pkr. POH w/tbg. RU frac lines. WO frac crew. Mix frac fld. WO sd truck.
1/25/79	7550	PB - Prep to swb tst Gallup fm after frac. WO sd trucks. Thawed frac tk valves. Frac fld contained 2# fric reducer/1000 gals, 30# fld loss add/1000 gals, 20/40 sd. Brk Gallup fm w/3200#. Strtd frac. After 230 sx sd away, ice plg tank valves. Strtd flush & flushed csg. Built fires & thawed tanks. Hauled 10 more loads wtr. Re-strtd & frac'd as foll: 18,000 gals pad, 135,750 gals trtd wtr, 146,500# 20/40 sd, 6,260 gals flush. Brk dn press 3200#, avg trtg press 2900#, max trtg press 4000#, avg inj rate 45 BPM, HHP 3199, ISIP 900#, 5 min 650#, 10 min 630#, 15 min 600#, 1 hr 450#, 2 hrs 400#, 3 hrs 350#, 4 hrs 300#. JC @ 8 pm 1/24/79. SI 4 hrs. Bled press off well f/2 hrs. RIH w/tbg to 6500'. Circ'd clean. PU tbg to 6200'. Instl'd X-mas tree. RU & strtd swbg @ 5 am 1/25/79.
1/26/79	7550	PB - Prep to cont swbg. 24 hrs swbd f/6 a.m. (1/25) to 6 a.m. (1/26). FL @ 6 am 2000'. Plg swb f/6200'. Rec'd approx 500 bbls sli gas cut frac fld, CP 0#.
1/27/79	7550	PB - Swbg, Gallup zone. Swbd 8 hrs. 16 hrs repair (splice), then replace swb line. In 8 hrs swbd 280 BF - frac wtr w/sli tr gas - no show oil. FL 1800' fairly constant. Have rec'd total 780 bbls - lack 3030 bbls load.
1/28/79	7550	PB - Swbg, Gallup zone. Cont'd swbg. In 24 hrs rec'd 280 BF, fld is frac wtr sli gas cut w/tr oil. At 6 am 1/28, FL 2800' swbg to 6200', w/CP 150#. Have rec'd 1060 bbls - lack 2750 bbls.
1/29/79	7550	PB - Swbg Gallup fm. At 2 pm 1/28, FL @ 2400', plg swb f/6200', CP 240#. At 6 pm, FL @ 2500', plg swb f/6200', CP 285#. At 6 am 1/29, FL @ 2800', plg swb f/6200', CP 330#. Swbd total of 205 bbls frac fld/24 hrs. 2545 bbls yet to recover. (Sli show gas w/tr oil).
1/30/79	7550	PB - Swbg. 12 noon 1/29/79, FL @ 2600'. Swbg f/6200', CP 390#. 6 p.m., FL @ 2600', swbg f/6200', CP 410#. 6 a.m., 1/30/79, FL @ 2700', swbg f/6200', CP 510#. Swbd total 232 BFF in 24 hrs, tr oil & gas. Frac fld yet to recover - 2313 bbls.
1/31/79	7550	PB - Cont to swb. Swbg Gallup fm. At 12 noon 1/30, FL @ 2800', swbg f/6200', CP 500#. 6 p.m., FL 2800', swbg f/6200', CP 500#. 6 a.m. 1/31, FL @ 2750', swbg f/6200', CP 600#. Swbd total of 211 BF/24 hrs. CP chgs 8-10# ea swb pull. Gas probably tripled, will blw approx 2 min after ea swb pull, then dies. 2102 BFF yet to recover.

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11/3/78	328	RU to cmt 8-5/8" csg. Spud 5 pm 11/2/78. Ran 8 jts 8-5/8" 24# K-55 8rd ST&C Rge 3 new csg (312'), set @ 328' KB. Cmt'd w/300 sx Cl 1" 8" & 3% CaCl ₂ 1/4# Flocele/sx. PD 7 am 11/3/78. Circ'd 10 bbls cmt. 1° @ 130' & 327'. 60 RPM, all wt. Mud: 8.7#, vis 55. Elev 6889' GL (ungraded).
11/4/78	630	Drlg. Tstd BOP & manifold 1000#, OK. Drlg w/1 motor. 65 RPM, 15M#. Mud: 8.8#, vis 39, WL 6.4, FC 1/32, Ph 8.8, oil 6%. (B#2).
11/5/78	1445	Drlg. 1-1/4" @ 1000', 1° @ 1277' & 1338'. 65 RPM, 20M#. Mud: 8.9#, vis 39, WL 7.2, Ph 9.0, Pv 7, Yld 7, Gels 5/12, oil 6%. B#2, 7-7/8", HTC, OSC3, made 1011' in 23-1/2 hrs. (B#3).
11/6/78	2570	Drlg. 1° @ 1985'. 65 RPM, 25M#. Mud: 8.9#, vis 41, WL 9.4, FC 1/32, Sd 1/2%, Ph 9.0, Pv 19, Yld 12, Gels 4/21, oil 6%, solids 4%. (B#3).
11/7/78	3300	Drlg. 1° @ 2708'. 65 RPM, 25M#. Mud: 9.0#, vis 41, WL 6.4, FC 1/32, Sd 1/2%, Ph 9.0, Pv 16, Yld 13, Gels 5/10, oil 5%, solids 5%. B#3, 7-7/8", Sm., SDGH, made 1370' in 28 hrs. (B#4).
11/8/78	3850	Drlg. 65 RPM, 40M#. Mud: 9.0#, vis 42, WL 5.2, FC 1/32, Ph 9.0, Pv 11, Yld 9, Gels 6/17, oil 5%, solids 4%. (B#4).
11/9/78	4350	Drlg. 60 RPM, 40M#. Mud: 9.0#, vis 42, WL 6.4, FC 1/32, Sd 1/2%, Ph 8.5, Pv 12, Yld 9, Gels 7/26, oil & mud 5%, solids 4%. (B#4).
11/10/78	4810	Drlg. 60 RPM, 40M#. Mud: 8.9#, vis 42, WL 4.8, FC 1/32, Sd 1/2%, Ph 8.5, Pv 13, Yld 11, Gels 8/23, solids 4.0%, oil 5%. (B#4).
11/11/78	4987	Mix mud & LCM, wsh'g to btm. 1° @ 4987'. 60 RPM, 30M#. Mud: 8.9#, vis 44, WL 6.1, FC 1/32, Sd 3/4%, Ph 8.5, Pv 13, Yld 9, Gels 9/22, solids 4%, oil 5%. B#4, 7-7/8", HTC, J-22, made 2279' in 95-3/4 hrs. (B#5).
11/12/78	5380	Drlg. 55 RPM, 40M#. Mud: 9.1#, vis 43, WL 4.8, FC 1/32, Sd 1/2%, Ph 9.0, Pv 14, Yld 10, Gels 8/24, solids 5%, oil 5%. (B#5).
11/13/78	5896	Drlg. 55 RPM, 40M#. Mud: 9.0#, vis 44, WL 4.0, FC 1/32, Sd 1/2%, Ph 9.0, Pv 17, Yld 7, Gels 1/2, oil 5.5%, solids 5%. (B#5).
11/14/78	6150	Drlg. 3/4" @ 5988'. 55 RPM, 40M#. Mud: 9.0#, vis 51, WL 4.1, FC 1/32, Sd 4/10%, Ph 9.0, Pv 21, Yld 10, Gels 1/2, oil 4.5%, solids 5%. B#5, 7-7/8", Sm., F-2, made 1001' in 51 hrs. (B#6).
11/15/78	6600	Drlg. 55 RPM, 40M#. Mud: 9.0#, vis 46, WL 4, FC 1/32, Sd 1%, Ph 9.0, Pv 17, Yld 8, Gels 1/2, oil 5%, solids 4.5%. (B#6).
11/16/78	6910	Drlg. 3/4" @ 6680'. 55 RPM, 40M#. Mud: 8.9#, vis 60, WL 6.4, FC 1/32, Sd 3/4%, Ph 8.5, Pv 22, Yld 11, Gels 3/2, oil 4.5%, solids 4.3%. B#6, 7-7/8", Sm., F-2, made 692' in 39-1/2 hrs. (B#7).
11/17/78	7200	Drlg. 52 RPM, 40M#. Mud: 9.0#, vis 53, WL 6, FC 1/32, Sd 3/4%, Ph 8.5, Pv 32, Yld 12, Gels 3/10, oil 5%, solids 4.4%. B#7, 7-7/8", Sm., F-3, made 327' in 17-3/4 hrs. (B#8).
11/18/78	7391	WO butane. 46 RPM, 40M#. Mud: 9.0#, vis 48, WL 5.6, FC 1/32, Ph 8.5, Pv 22, Yld 7, Gels 2/4, oil 6%, solids 5%. (B#8).
11/19/78	7585	Drlg sd & sh (will drl to 7590' TD). 46 RPM, 40M#. Mud: 9.1#, vis 100, WL 4.8, FC 1/32, Sd 1/2%, Ph 9.0, Pv 21, Yld 7, Gels 3/6, oil 8%, solids 4.0%. (B#8).
11/20/78	7593	TD - LD DP. Strapped DP, made correction f/7590-7593'. Ran Sch logs DIL 7591-329', & CNL FDC @ 7600-2650'. 3/4" @ 7580'. 46 RPM, 40M#. Mud: 9.1#, vis 100, WL 5.2, FC 1/32, Sd 1/2%, Ph 8.5, Pv 26, Yld 11, Gels 11/21, oil 7.5%, solids 4%. B#8, 7-7/8", Sm., F-5, made 586' in 57-1/2 hrs.
11/21/78	7593	TD - Releasing rig, rig idle. Ran 186 jts 5-1/2" 17# & 15.5# N-80 K-55 8rd Rge 3 new csg: Csg tally - 35 jts 17# N-80 (1438.06'); 151 jts K-55 15.5# ST&C (6171.15') + 6' DV tool & FC (7609.0'). Set @ 7593' KB. (KB to GL 14'). Cmt'd 1st stage w/250 sx 50/50 Poz w/4% gel, 6-1/2# gilsonite/sx, 3/4% CFR-2, 2/10% HR-4 foll by 150 sx Cl 1" B". PD 6:30 pm 11/20/78. 2nd stage cmt'd w/130 sx 50/50 Poz w/4% gel, 6-1/2# gilsonite/sx, 3/4% CFR-2 & 120 sx Cl 1" B" neat. PD 10 pm 11/20. Spearheaded ea cmt job w/500 gals mud flush. DV tool @ 3107', FC @ 7550', Cent @ 7580' & top of jts #2, 4, 6, 8, 10, 12, 14, 16, 108, 110 & 113. Rig rel 12:01 am. 11/21/78.
11/22/78	7593	TD - Prep to clean loc & MORT.
11/23-1/17	7593	TD - WO completion.
1/18/79	7593	TD - Prep to CO to PBTD ±7550', POH & run cased hole logs. MI & RU Aztec Unit #157. Unloaded 245 jts 2-3/8" EUE 8rd tbg (7652.02' WO thds). Instl'd tbg spool & BOPs. RIH w/ 4-3/4" bit & 5-1/2" csg scraper. Drl'd DV tool @ 3107' & cont'd in hole cleaning out cmt stringers strtg @ 7434'.
1/19/79	7550	PB - Prep to spt MCA acid, perf Dakota "B" zone & frac. CO to 7459'. POH w/bit & csg scraper. RU D-A & ran CBL w/var desn & GR clr correl log f/7444-6000' & 3200-2850'. CB vy gd, 95% + thruout. RIH w/tbg opn-ended to 7345'. RU frac tstr & tstd csg to 4000#, held OK. Now displ'g hole w/1 1/2 KCl wtr.

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DEVIATION TESTS

<u>DEPTH</u>	<u>DEGREES</u>
130'	1
327'	1
1000'	1-1/4
1277'	1
1338'	1
1985'	1
2708'	1
4987'	1
5988'	3/4
6680'	3/4
7580'	3/4

AFFIDAVIT

This is to certify that to the best of my knowledge the above tabulation details the deviation tests taken on ARCO Oil and Gas Company's, Division of Atlantic Richfield Company, Tonkin Well No. 1, West Lindrith Gallup-Dakota Pool, 800' F/South & 2300' F/East Lines of Section 18-24N-3W, Rio Arriba County, New Mexico.

February 28, 1979

Date

B. R. Still
B. R. Still

Operations Information Assistant

State of Colorado)
) ss.
County of Denver)

Before me, the undersigned authority, on this day personally appeared B. R. Still, known to me to be the Operations Information Assistant for ARCO Oil and Gas Company, Division of Atlantic Richfield Company, and to be the person whose name is subscribed to the above statement, who, being by me duly sworn on oath, states that he has knowledge of the facts stated herein, and that said statement is true and correct.

Subscribed and sworn to before me, a Notary Public in and for said County and State this 28th day of February, 1979.

Kathleen H. Wilson
Notary Public

My commission expires:

October 9, 1981

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U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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NEW MEXICO OIL CONSERVATION COMMISSION
REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Form C-104
Supersedes Old C-104 and C-110
Effective 1-1-65

API 30-039-21847

Atlantic Richfield Company
~~and Gas Company, Division of Atlantic Richfield Company~~

Address Suite 501, 1860 Lincoln Street, Denver, Colorado 80295	
Reason for filing (Check proper box)	
New Well ☒	Change in Transporter of:
Recompletion ☐	Oil ☐ Dry Gas ☐
Change in Ownership ☐	Casinghead Gas ☐ Condensate ☐
Other (Please explain)	

If change of ownership give name
and address of previous owner

II. DESCRIPTION OF WELL AND LEASE

Lease Name Tonkin	Well No. 1	Pool Name, including Formation West Lindrith Gallup-Dakota	Kind of Lease State, Federal or Fee Federal	Lease No. SF-080472-A
Location				
Unit Letter 0	800	Feet From The South	Line and 2300	Feet From The East
Line of Section 18	Township 24N	Range 3W	NMPM, Rio Arriba	County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil ☒ or Condensate ☐	Address (Give address to which approved copy of this form is to be sent)					
Permian Corporation	P. O. Box 1702, Farmington, New Mexico 87401					
Name of Authorized Transporter of Casinghead Gas ☒ or Dry Gas ☐	Address (Give address to which approved copy of this form is to be sent)					
El Paso Natural Gas Company	P. O. Box 990, Farmington, New Mexico 87401					
If well produces oil or liquids, give location of tanks.	Unit 0	Sec. 18	Twp. 24N	Rge. 3W	Is gas actually connected? Not as of this date	When ---

If this production is commingled with that from any other lease or pool, give commingling order number:

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well ☒	Gas Well ☐	New Well ☒	Workover ☐	Deepen ☐	Plug Back ☐	Same Res'v. ☐	Diff. Res'v. ☐
Date Spudded 11-2-78	Date Compl. Ready to Prod. 2-21-79		Total Depth 7593'		P.B.T.D. 7450'			
Elevations (DE, RKB, RT, GR, etc.) 6889' GR; 6903' KB	Name of Producing Formation Gallup; Dakota A&B Zones		Top Oil/Gas Pay 7204'		Taking Depth 7317'			
Perforations Dakota "B", 7340-7329' w/2 jet shots/ft, 23 holes; Dakota "A", 7204-54', 7244-21', 7216-10' (OA), 80 holes; Gallup, 6432-6261', 23 shots, w/1 jet shot/ft/TUBING, CASING, AND CEMENTING RECORD w/select fire gun.					Depth Casing Shoe 7593'			
HOLE SIZE	CASING & TUBING SIZE		DEPTH SET		SACKS CEMENT			
12-1/4"	8-5/8" OD 24# K-55		328' RKB		300 sx			
7-7/8"	5-1/2" OD 15.5# & 17#, K-55 & N-80		7593' RKB		1st stage: 400 sx 2nd stage: 250 sx			

V. TEST DATA AND REQUEST FOR ALLOWABLE (Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

Date First New Oil Run To Tanks 2-16-79	Date of Test 2-20-79	Producing Method (Flow, pump, gas lift, etc.) Flowing	
Length of Test 24 hrs	Tubing Pressure 300#	Casing Pressure 1500#	Choke Size Adjustable choke
Actual Prod. During Test 205	Oil-Bbls. 205	Water-Bbls. -	Gas-MCF 258

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method (pilot, back pr.)	Tubing Pressure (Shut-in)	Casing Pressure (Shut-in)	OIL CON. COM. DIST. 3

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Commission have been complied with and that the information given herein is true and complete to the best of my knowledge and belief.

B. F. Still
B. F. Still (Signature)
Operations Information Assistant

February 27, 1979
(Date)

OIL CONSERVATION COMMISSION

APPROVED MAR 3 1979, 19

BY Original Signed A. A. Hendrick

TITLE

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.

