

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE*

(See other in-
structions on
reverse side)Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other _____		5. LEASE DESIGNATION AND SERIAL NO. SF 078863	
b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other _____		6. IF INDIAN, ALLOTTEE OR TRIBE NAME _____	
2. NAME OF OPERATOR ARCO Oil and Gas Company Division of Atlantic Richfield Company		7. UNIT AGREEMENT NAME _____	
3. ADDRESS OF OPERATOR P. O. Box 5540, Denver, Colorado 80217		8. FARM OR LEASE NAME Krause WN Federal	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 790' FNL & 1520' FWL (NE NW) At top prod. interval reported below <u>1520'</u> Approx the same At total depth <u>6360'</u> API #30-045-24120		9. WELL NO. 1E	
14. PERMIT NO. Mr. Beecher		13. STATE New Mexico	
DATE ISSUED 2-22-80		10. FIELD AND POOL, OR WILDCAT Basin Dakota - Dakota	
15. DATE SPUDDED 4-25-80		11. SEC. T., R., M., OR BLOCK AND SURVEY OR AREA 32-28N-11W	
16. DATE T.D. REACHED 5-11-80		12. COUNTY OR PARISH San Juan	
17. DATE COMPL. (Ready to prod.) 6-27-80		13. STATE New Mexico	
18. ELEVATIONS (DF, REB, RT, GR, ETC.)* 5838' GL; 5852' KB		19. ELEV. CASINGHEAD ---	
20. TOTAL DEPTH, MD & TVD 6360' TD		21. PLUG, BACK T.D., MD & TVD 6330' PB	
22. IF MULTIPLE COMPL., HOW MANY* 1		23. INTERVALS DRILLED BY 0 - 6360'	
24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* Dakota 6177' - 6287' (OA)		25. WAS DIRECTIONAL SURVEY MADE NO	
26. TYPE ELECTRIC AND OTHER LOGS RUN CNL/FDC; DIL		27. WAS WELL CORED NO	
28. CASING RECORD (Report all strings set in well)			
CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE
8-5/8"	24#	726'	12-1/4"
4-1/2"	10.5#	6359'	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"	596'	NONE	
31. PERFORATION RECORD (Interval, size and number)			
Dakota 6257' - 6287' 18 holes			
Dakota 6177' - 6210' 8 holes			
32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.			
DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED		
6280'	100 gals 15% HCL		
6257'-6287'	1500 gals 15% HCL & 32 ball sealers		
6204'	100 gals 15% HCL		
6019'	1000 gals 2% KCL & 24 ball sealers		
33. PRODUCTION (OVER)			
DATE FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	
WO Connection		Flowing	
WELL STATUS (Producing or shut-in) Shut in			
DATE OF TEST	HOURS TESTED	CHOKER SIZE	PROD'N. FOR TEST PERIOD
6-27-80	24	48/64"	199
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL. GAS—MCF. WATER—BBL. OIL GRAVITY-API (CORR.)
395#	630#	199	2076
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) To be sold			
TEST WITNESSED BY Rex Hitchcock			
35. LIST OF ATTACHMENTS 2 of #26 above and Daily Well History			
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available data.			

SIGNED

W. A. Walther, Jr.

TITLE Operations Manager

DATE

July 10, 1980

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

BY

INSTRUCTIONS

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 used 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.

18 and 24: If this wall is completed for construction, indicate depth measurements given in other spaces on this form and in any attachments.

For items 21 and 22, it was well as 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 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	TOP TRUE VERT. DEPTH
NO CORES & NO DST'S				Pictured Cliffs Lewis Shale Mesaverde Upper Mancos Gallup Greenhorn Graneros Dakota	1660' 1816' 3248' 4408' 5280' 6070' 6132' 6241'	
#32.						
6177'-6287'			84,000 gals 2% KCL wtr & 264,000# 20/40 mesh sand			

4/26/80	595	Trip f/bit, sd & sh. SPUD 12-1/4" hole 8 pm 4/25/80. 3/4° @ 349'. 120 RPM, 30M#. Mud: 8.8#, vis 60. B#1, 12-1/4", HTC, OSC3, made 595' in 8-1/2 hrs.
4/27/80	754	Trip to run csg. 2° @ 619', 3° @ 750'. 120 RPM, 40M#. Mud: 9#, vis 60. B#2, 12-1/4", Sm., DT (retip), made 24' in 1 hr. B#3, 12-1/4", Hughes, OSC3, made 135' in 3-1/2 hrs.
4/28/80	754	Npl'g up. Ran 20 jts 8-5/8" 24# J-55 ST&C csg w/GS & insert (730'). Used 4 cntrlzrs. Landed csg @ 726' RKB. Cmt'd w/525 sx Cl "B" w/2% CaCl ₂ & 1/4#/sx FloSeal. Circ'd 20 bbls slurry to surf. PD 12:30 pm 4/27/80. Cmt'd w/ Halliburton, however cmt is slow setting up.
4/29/80	2284	Trip f/bit, sd & sh. 3° @ 968', 2-1/4° @ 1502'. 70 RPM, 35M#. Drlg w/wtr & Benex. B#4, 7-7/8", HTC, OSC3A, made 1530' in 19 hrs.
4/30/80	2877	Drlg, sd & sh. Lost 3 jts off btm of surf pipe - 118'. 1° @ 2284' & 2859'. 65 RPM, 40M#. Drlg w/wtr & Benex (B#5).
5/1/80	3686	Drlg sd & sh. 3/4° @ 3346'. 70 RPM, 45M#. Drlg w/wtr & Benex. (B#5).
5/2/80	4312	Drlg sd & sh. 70 RPM, 45M#. Drlg w/wtr & Benex. (B#5).
5/3/80	4573	Drlg sd & sh. Made TIH @ 4530'. On trip in found top of parted csg at 597'. Worked thru by rotating w/tongs & 2000# wt in about 10 min. Fin in hole - W&R 100' to btm & resumed drlg. 1° @ 4530'. 70 RPM, 45M#. MW: Water & Benex. B#5, 7-7/8", HTC, J-22, made 2246' in 7 1/2 hrs. (B#6).
5/4/80	4890	Drlg sd & sh. On TIH after the TOH to find hole in DP (14 stds from surface), the bit stopped at top of parted surface csg at 597'. Set 2000# & using tongs rolled off okay. 65 RPM, 45,000#. MW: 8.9#, Vis 38, WL 8.8, FC 2/32, Sd-tr, Salt 560, Ph 8.5, Pv 12, Yld 4, solids 4%, Cal 60, Gels 0/1. (B#6)
5/5/80	5247	Drlg sd & sh. 1° @ 5108'. 60 RPM, 45M#. MW: 9.1#, Vis 42, WL 8.2, FC 2/32, Sd-tr, Salt 250, Ph 8.5, Pv 16, Yld 6, Gels 0/1, solids 5, Ca 40 (B#6).
5/6/80	5650	Drlg - sd & sh. Lost 150 bbls mud in Gallup. 65 RPM, 45M#. MW: 9.2#, Vis 40, WL 8, FC 2/32, Sd-tr, Sal 300, Ph 8.5, Pv 18, Yld 6, Gels 1/2, solids 6, Ca 20 (B#6).
5/7/80	5902	Drlg sd & sh. Had 150' fill up. 1/2° @ 5875'. 65 RPM, 45M#. Mud: 9.2#, vis 43, WL 8.4, FC 2/32, Sd tr, salt 300, Ph 8.5, Pv 14, Yld 6, Gels 1/3, solids 6, Ca 40. B#6, 7-7/8", HTC, J-33, made 1345' in 79 hrs. (B#7).
5/8/80	6148	Drlg sd & sh. Lost about 250 bbls mud. Ojo Alamo made about 30 BW after got circ back. Made 34 std trip looking f/hole in DP @ 5924'. Found 1 hole 14 stds out & second 34 stds out. LD 2 jts (have LD 6 jts w/holes this well). Now drlg w/full returns w/5% LCM & shaker bypassed. 65 RPM, 45M#. Mud: 9.2#, vis 45, WL 7.6, FC 2/32, Sd-tr, salt 300, Ph 8.5, Pv 14, Yld 5, Gels 1/3, solids 6, LCM 5%, Ca 40. (B#7).
5/9/80	6336	Trip f/bit, Dakota fm. Barely touched @ 597' on TI w/bit @ 6336'. Went thru slowly, didn't stop. Lack 24' est TD @ 6360'. 1-1/4° @ 6336'. 65 RPM, 45M#. Mud: 9.2#, vis 50, WL 7, FC 2/32, Sd tr, salt 250, Ph 8.5, Pv 20, Yld 10, Gels 3/5, solids 6%, Ca 40. B#7, 7-7/8", Sm., F-3, made 461' in 38 hrs. (B#8).
5/10/80	6360	GIH to Log, Dakota fm. Drld to 6360', circ'd & POR. Sch att to Log - stopped @ 5670'. Ran bit & drld bridge 5670-5682'. Went to btm - no fill. Circ'd & POH. RU Sch & WIH w/DIL log. On TI parted csg OK (WLTD 6360'). 60 RPM, 45M#. Mud: 9.2#, vis 60, WL 8, FC 2/32, Sd 1/4, salt 250, Ph 8.5, Pv 22, Yld 10, Gels 3/7, solids 6, Ca 40. B#8, 7-7/8", Sm., F-5, made 24' in 2-1/2 hrs.
5/11/80	6360	TD - Cmtg 4-1/2" csg 1st stage, Dakota fm. Sch fin in hole & ran DIL 6360' to btm surf & CNL-FDC f/6360-5100' & 4600-3150 & 1950-1500'. Lost about 100 bbls while logging. WIH w/bit, brk circ @ 3000' & LD DP. RU & ran 4-1/2" OD 10.5# K-55 csg. Now cmtg 1st stage w/HOWCO. Note: 8-5/8" parted on log - btm of 8-5/8" @ 580'; opn spt 580-598'; New btm of csg @ 759', old btm was 726'. Tops: Picture Cliffs 1660', Lewis Sh 1816', Mesaverde 3248', Upper Mancos 4408', Gallup 5280', Greenhorn 6070', Graneros 6132', Dakota 6241'.

5/12/80	6360	TD - Prep to move rig to Krause #6E. Ran 144 jts 4-1/2" 10.5# J-55 R-3 ST&C (6374.66 GS & diff fillup clr, DV tool (5.34'), total 6380'; FC @ 6337', DV tool @ 1940', top jt #100, 16 scratchers on jts #2-9 (2/jt); 15 cntrzl's on jts #1,2,3,4,5,6,7,9,11,13,99,101,103,105,107. Cmt bsks on jts #98 & 99, csg landed @ 6359'. Cmt'd 1st stage w/500 gals mud flush & 10 BW, 500 sx Hallib lite, 10# gilsonite/sx, 3/4% CFR-2, mixed @ 12.7#/gal. Tailed out w/300 sx 50/50 Poz, 3/4% CFR-2, 2% gel, mixed @ 14#/gal; 231 bbls slurry. Displ'd w/101 BW. Circ press 1200#. Bmpd plug w/1800#, held OK. PD 6:30 am 5/11/80. 2nd stage: 500 gals mud flush, 10 BW, 350 sx Hallib lite, 3/4% CFR-2, 2% CaCl, mixed @ 13.1#/gal. Tailed out w/200 sx 50/50 Poz, 3/4% CFR-2, 2% CaCl, mixed @ 15.1#/gal; 143 bbls slurry. Displ'd w/131 BW. Circ press 500#, closed DV tool w/2000#, held OK. Hole circ'd full returns thruout both cmt jobs. PD 10:30 am 5/11/80. RR 1:00 pm 5/11/80.
5/13/80	6360	TD - WO completion. Fin MORT.
5/14/80	6360	TD - WO completion.
5/15-28/80	6360	TD - WO completion.
5/29/80	6360	TD - Prep to acidize. MI & RU. Unloaded 215 jts tbg. WIH w/ 3-7/8" bit & csg scraper, drld cmt 1920' & DV @ 1940'. CO to FC @ 6337'. Circ hole w/2% KCl wtr. POH. RU Go Int'l & ran cmt bond var dens & GR correl log, WLPBD 6330'. Bond OK. Top cmt 3500'. Tstd csg 4000# - OK. WIH w/tbg OE to 6280'. Sptd 100 gals 15% HCl. POH. Perf Dakota 6257', 59', 61', 63', 65', 67', 69', 71', 73', 75', 77', 79', 81', 83', 85', 87' w/1hole ea (16 holes); Go CBL log 5/28/80 6257' = 6248' Sch CNL FDC log. WIH w/pkr & set @ 6108'.
5/30/80	6360	TD - Prep to run base temp survey before frac. Loaded hole w/8 bbl 2% KCl wtr. No BD press. Rate 3 BPM @ 800 psi. Displ 100 gals 15% spot acid. Trtd w/150 gal 15% HCl & 32 ball sealers. Trtd @ 5 BPM @ 1900#. Good ball action. Max press of 4000 psi. Did not get complete ball off. Init SI vac. Rel pkr & lowered to 6204'. Sptd 100 gal 15% HCl. POH. Perf'd foll depths: 6177', 79', 81', 83', 85', 6206', 08', 10'. All meas f/GO Int'l CBL Gamma Correl log, dtd 5/28/80. Correl to Schlum CNL-FDC log. TIH w/pkr @ 6019' - Took 12 bbls to load hole 2% KCl. Pmpd 1000 gals 2% KCl afterward, 24 ball sealers, 5 BPM @ 1500 psi, foll'd w/1500 gals 15% HCl & 16 ball sealers. 5 BPM @ 1900 psi. Good ball action, Max press 2800 psi. ISIP 600 psi, no ball off. SI f/1 hr, on vacuum. Swbd 16 hrs. Last hr, FL @ 5400'. Rec'd 2 BPH w/gd show of gas. Total load rec'd = 64 bbls. (Load wtr & spent acid). POH. (NOTE: Elevation corrected to 5838' GL)
5/31/80	6360	TD - Prep to clean out. Logged temp survey. Frac'd Dakota perfs 6177-6287', 40# Versagel, 84,000 gal 2% KCl wtr, 264,000# 20/40 sd: 1100 gals pad, 35 BPM, 2800#; 9,000 gals, 1# sd/gal, 35 BPM, 2600#; 11,000 gals, 2# sd/gal, 35 BPM, 2300#; 11,000 gals, 3# sd/gal, 35 BPM, 2200#; 11,000 gals, 4# sd/gal, 35 BPM, 2300#; 11,000 gals, 5# sd/gal, 35 BPM, 2300#; 11,000 gals, 6# sd/gal, 35 BPM, 2200#; 5,000 gals, 7# sd/gal, 35 BPM, 2000#; 4,000 gals flush, 33 BPM, 2350#. ISIP 1130#, 5 min 1000#, 10 min 930#, 15 min 890#, AIR 35 BPM, avg press 2200#. RU Sch, run temp survey #1 after frac, TD @ 6322'; #2 run 1 hr after frac, TD @ 6312'; #3 run 2 hrs after frac, TD @ 6284'; #4 run 3 hrs after frac, TD @ 6254'; #5 run 4 hrs after frac, TD @ 6196'; #6 run 6 hrs after frac, TD @ 6164'; press decr'd to 0#. WO gel to brk.
6/1/80	6360	TD - Flwg to pit, 3/4" chk, unloading in slugs, TP 100#. RIH w/ 2-3/8" tbg, SN 1 jt off btm. Tagged sd 6108'. Circ sd to 6257', lost returns, could not circ. POH to 5961', instl'd spring flt. RU NOWSCO, set tbg @ 6257'. CO sd to 6327'. Set tbg @ 5961', SN @ 5931'. Loaded tbg w/24 BW. ND BOP, NU tree. Displace tbg w/nitrogen. Flwd to tank on 1/2" chk, TP 475#, CP 900#. Rec'd 84 BW. Opn to 3/4" chk.
6/2/80	6360	TD - Prep to cont to flw to reserve pit. Flwg to reserve pit on 3/4" chk. Unloading wtr & slugs. TP 100-150#. Flwg on 3/4" chk. TP 100#. Unloading solid spray of load wtr w/show of oil. Est flw rate 1.5 MCF.
6/3/80	636	TD - Well SI. 24 hrs flwg to reserve pit on 3/4" chk. CP 525#, TP 125#. Recovering spray of wtr w/show of oil. Flwg @ rate of 1.6 MCFD (Calc on

6/4/80	6360	TD - Well SI, pending test.
6/5-9/80	6360	TD - Well SI, pending test.
6/10-11/80	6360	TD - Well SI, pending tst. (Drop f/report until tested)
6/30/80	6360	TD - COMPLETED SI GAS WELL, 6/27/80, Dakota fm. Tstd on 6/27/80. 24 day SITP 1006#, SICP 1003#. Flwd 3 hrs 3/4" chk; FTP 395#, FCP 630#. Gas rate 2076 MCFD. Calc'd AOF 2622 MCFD. Liquid rate during 3 hr - 199 BOPD (52.2° API @ 60°F). No wtr. 30 min bld up press - TP 837# & CP 843#. Flwd f/ Dakota perfs 6177-6287' (OA).