In Lieu of
Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir. Use "APPLICATION FOR PERMIT–" for such proposals

5. Lease Designation and Serial No.
SF-078766

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation
ROSA UNIT

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
#100E

2. Name of Operator
WILLIAMS PRODUCTION COMPANY

9. API Well No.
30-039-25135

3. Address and Telephone No.
P. O. BOX 58900 MS 10317 SALT LAKE CITY, UTAH 84158-0900 (801)584-6981

10. Field and Pool, or Exploratory Area
BASIN DAKOTA

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1570' FSL, 870' FEL, SEC. 21, T-31N, R6W

11. County or Parish, State
RIO ARRIBA, NEW MEXICO

CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☒ Abandonment	☐ Change of Plans
	☒ Recompletion	☐ New Construction
☐ Subsequent Report	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
☐ Final Abandonment	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water
		(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Estimated start date 08/03/94.

P&A Dakota formation and recomplete the Mesaverde and Pictured Cliffs formations as per attached procedure.

SEE ATTACHED PROCEDURE

RECEIVED
AUG - 5 1994
OIL CON. DIV.
DIST. 3

94 AUG -1 AM 10:14
070 FARMINGTON, NM

RECEIVED
BLM

14. I hereby certify that the foregoing is true and correct

Signed KATHY BARNEY Title SR. OFFICE ASSISTANT Date 07/29/94

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

APPROVED
AUG 1994
DISTRICT MANAGER

NMOCD

2-16-94

RECOMPLETION PROCEDURE
ROSA UNIT #100E

1. "NOTIFY BLM 24 HOURS PRIOR TO WORK".

2. Locate and test anchors. Set new anchors if necessary. Dig circulation pit. Set and fill frac tanks. Fence all pits during workover operations.

3. MIRUSU.

4. Blow down well. Kill tubing with water if necessary. ND wellhead and NU BOP.

5. Pull tubing hanger and TOH with 2-3/4" tubing. Visually inspect and remove any bad joints. TIH with gauge ring to 7750'. TOH.

P & A DAKOTA

6. Load hole with fresh water.

7. With tubing set 4-1/2" cement retainer at 7736' (50' above Graneros top). Establish circulation and pump 50 sx (59 ft3) class "G" cement below retainer. Displace to retainer. Pull out of retainer and spot 10 sx (11.8 ft3,135') cement plug on retainer. Reverse out any cement with one casing volume with fresh water.

8. On wireline run CBL/CCL from 6000' to 4800, 3700' to TOC (DV tool @ 1814') and from 1814' to TOC. Run Blue Jet Gas Spectrum Log (GSL), or equivalent, across Mesaverde from 5800' to 5000' and Pictured Cliffs from 3700' to 2900'. Correlate to Schlumberger open hole logs of 11-12-91 &11-29-91.

Confirm TOC and review GSL logs with engineering. If completion zones are not covered with cement review with engineering and squeeze as necessary.

9. TIH with 2-3/8" work string with 4-1/2" packer and retrievable BP. Set RBP in casing at 6000'. Pressure test RBP and casing separately to 3100 psig. Roll hole with 1% KCL water. TOH.

If pressure test does not hold isolate leak with packer. Review location of leak and revise procedure.

RECOMPLETION

10. With 2-3/8" tubing spot 350 gals 15% HCL acid across Mesaverde from 5785' to 5304'. Acid to be inhibited for 24 hours at 150°F and contain clay and iron control. Flush with 1% KCl water. TOH.

11. Using Schlumberger open hole logs and previously run neutron/GR-CCL log to correlate perforate the Mesaverde formation in 4-1/" casing with 20 - 0.32" entry holes using Blue Jets 3-1/8" select fire steel carrier (or equivalent) at the following depths, from top down: 5304', 5449', 94', 5516', 72', 95', 5602', 03', 04', 15', 17', 19', 21', 23', 25', 27', 29', 86', 5765', 85'.

12. TIH with 2-3/8" tubing and 4-1/2" packer to 5200'. Spot 15% HCL acid to packer. Set packer and acidize down tubing with 1,000 gals 15% HCL acid container 100% excess RCN, 1.3 S.G. ball sealers. Break down formation to maximum pressure of 3,000 psig or to complete displacement of acid. Acid to contain surfactant, clay and iron control and be inhibited for minimum of 24 hours at 145°F.

13. Release packer and RIH with tubing to 5900' to knock ball sealers off perforations. TOH.

14. Rig up pump trucks and fracture stimulate the Mesaverde formation with 100,000# 20/40 Brady sand in 111,666 gals slick water at 35 BPM injection rate down casing as follows:

STAGE	FLUID	SAND
Pad	25,000 gals	-
0.5 ppg	20,000 gals	10,000 sand
1.0 ppg	30,000 gals	30,000 sand
1.5 ppg	26,666 gals	40,000 sand
2.0 ppg	10,000 gals	20,000 sand
Flush	(7,244 gals)	-
	111,666 gals	
	(118,910 gals required)	100,000# 20/40 sand

Required amount of usable water = 2,831 bbls (118,910 gals), 8-400 bbl tanks.
Maximum injection rate = 40 BPM. Max surface treating pressure = 3100 psi.

All frac fluid to contain 0.5 gal/1000 gals FR-30 friction reducer, 1 gal/1000 gals surfactant (aquaflow), and 1% KCl.

15. TIH with tubing and notched collar and cleanout. Obtain pitot gauge when possible. Evaluate Mesaverde completion.
Plug Mesaverde if non commercial.

16 On wireline set 7" RBP @ 3700' and pressure test BP and casing separately to 3100 psi. Dump 10' of sand on top of plug with bailer.
If mesaverde is abandoned, no plug is necessary.

17. TIH with 2-3/8" tubing TO 3434'. Spot 450 gals 7-1/2% HCL acid across the Pictured Cliffs interval (3434'-3162'). Acid to contin clay and iron control and be inhibited for 24 hours at 140°F. Flush with 1% KCl water. TOH.

18. Using Schlumberger open hole logs and previously run neutron/GR-CCL log to correlate perforate the Pictured Cliffs formation in 7" casing with 20 - 0.32" entry holes using Blue Jets 3-1/8" select fire steel carrier (or equivalent) at the following depths, **from top down:** 3162', 64', 66', 68', 70', 72', 74', 76', 78', 80', 82', 84', 3214', 16', 3316', 18', 94', 3402', 28', 34'.

19. TIH with 2-3/8" tubing and 7" packer to 3050'. Spot 7-1/2% HCL acid to packer. Set packer and acidize down tubing with 1,000 gals 7-1/2% HCL acid container 100% excess RCN, 1.3 S.G. ball sealers. Break down formation to maximum pressure of 3,000 psig or to complete displacement of acid. Acid to contain surfactant, clay and iron control and be inhibited for minimum of 24 hours at 140°F.

20. Release packer and RIH with tubing and packer to BP @ 3700' to knock ball sealers off perforations. TOH.

21. Rig up pump trucks and fracture stimulate the Picture Cliffs formation with 60,000# 20/40 Brady sand in 44,000 gals 70 quality N2 foam at 35 BPM total injection rate down 7" casing as follows:

STAGE	FLUID		SAND
Pad	12,600	gals	-
1.0 ppg	7,000	gals	7,000 sand
2.0 ppg	11,000	gals	22,000 sand
2.5 ppg	6,400	gals	16,000 sand
3.0 ppg	5,000	gals	15,000 sand
Flush	2,000	gals	-
	44,000	gals foam	60,000# 20/40 sand

Estimate max. H2O rate = 10.5 BPM. Estimated max. N2 rate = 18,500 SCF/min Estimated total N2 = 527,000 SCF. Total H2O = 15,600 gals, 2-400 bbl tanks.
Anticipated STP = 2,500 psig. Maximum STP = 3,000 psig. Estimated ISIP = 1,600 psig.

All frac fluid to contain 20#/1,000gals HPG gel, 1% KCl water, foaming agent, bacteriacide, and necessary gel breakers.

All acid to contain corrosion inhibitor, iron control, and clay control.

22. Shut well in for 2-3 hours. Flow back through 1/4" choke initially until no longer making sand. TIH with 2-3/8" tubing and notched collar and cleanout. Obtain pitot tube measurement. TOH.

23. TIH with retrieving head and retrieve RBP. TOH.

24. TIH with 3-7/8" bit and tubing and cleanout to lowest Mesaverde perf. TOH.

25. ND BOP. NU dual tubing head. NU BOP.

26. TIH with 2-3/8", 4.7#, J-55, 8rd, EUE tubing with a notched collar on bottom and standard SN one joint up. Land at ± 5780'. Production packer set 200' below lowest Pictured Cliffs perf.

27. TIH with 1-1/2", 2.9#, J-55, EUE tubing with bull plug on bottom, perfed joint, and SN one joint off bottom. Land @ ±3420'.

28. ND BOP and NU wellhead. Shut well in for buildup.

29. Cleanup location and release rig. Turn over to Production. Fill in pit. Set production equipment. Request pipeline tie-in.

Stergie Katirgis

Stergie Katirgis
Sr. Production Engineer

PERTINENT DATA SHEET

WELLNAME: Rosa 100E FIELD: Basin Dakota

LOCATION: 1570' FSL, 870' FEL, sec 21, T31N,R6W ELEVATION: 6268' GR TD: 8000'
6281'KB PBTD: 7970'

COUNTY: Rio Arriba STATE: New Mexico

DATE COMPLETED: 10-92 ID DATE: not tied in

CASING TYPE	CASING SIZE	HOLE SIZE	WEIGHT & GRADE	DEPTH	CEMENT	TOP
Surface	9-5/8"	12-1/4"	36#,K-55	440'	285sx(336 ft3)	surface (circ)
Intermediate	7"	8-3/4"	23#,K-55	4185'	960 sx	1814'-surface(circ)
Production Liner	4-1/2"	6-1/4"	11.6#,N-80	3848'-8000'	960 sx	returns to TOL

TUBING EQUIPMENT
2-3/8", 4.7#, 8rd, EUE, J-55. Landed @ 7870' KB.
Dowco cmt terainer @ 7898'.

WELLHEAD: Casing Head - Spool -
Tubing Head - Bonnet -

FORMATION TOPS:

Ojo Alamo	2449'	Cliff House Transition	
Kirtland	2500'	Cliff House	4968'
Fruitland	2930'	Menefee	5323'
Pictured Cliffs	3158'	Point Lookout	5570'
Lewis	3600'	Graneros	7656'
		Dakota	7786'

LOGGING RECORD: CNL-CDL-GR-SP-DIL

PERFORATIONS: & STIMULATIONS 7788-7878, 7912-7938
Fraced w/ 18,800# 100 mesh & 270,000# 20/40 sd in 1467 bbls gelled water.

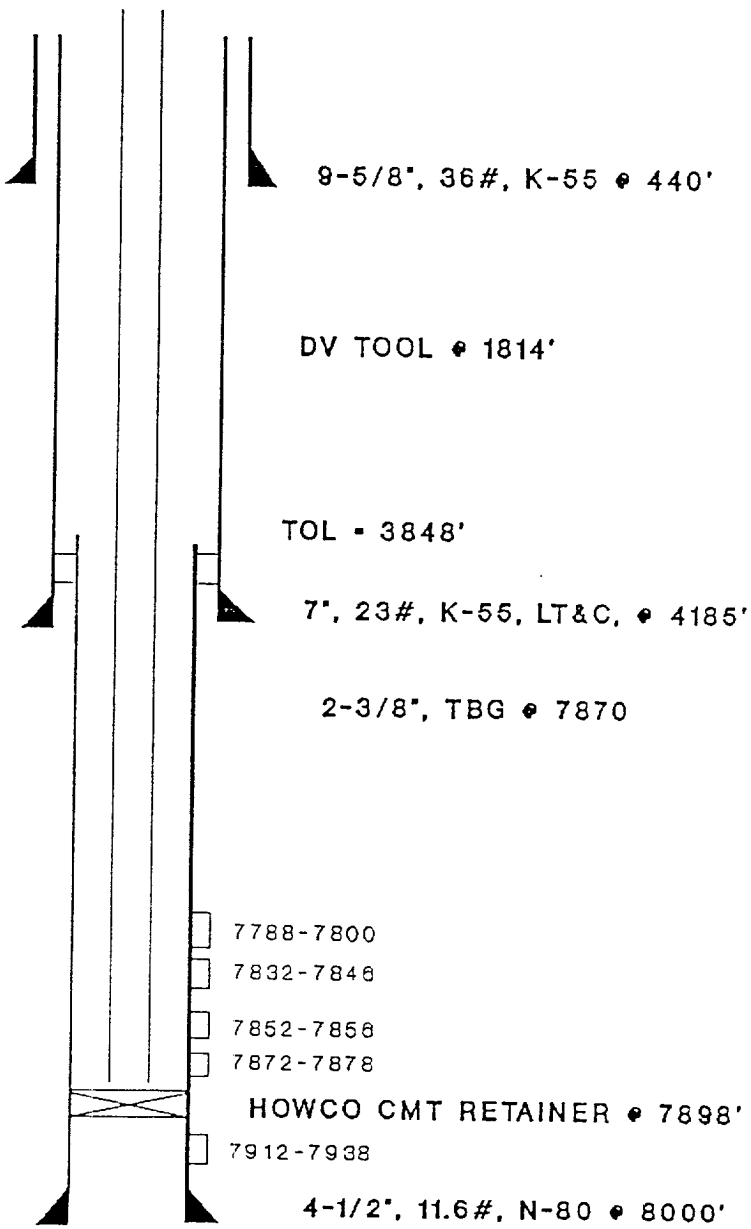
PRODUCTION HISTORY: Cement Retainer @ 7898'.
Temporary 4" welded line on surface from well to Rosa 79 dogleg.

WELLBORE DIAGRAM

ROSA #100E

1-25-94

1570' FSL & 870' FEL
NE/4 SE/4 21-31N-6W
RIO ARRIBA COUNTY, NM
ELEVATION - 6281' KB



Ojo Alamo	2449
Kirtland	2500
Fruitland	2930
Pictured Cliffs	3158
Lewis	3600
Cliff House	4968
Menefee	5323
Point Lookout	5570
Gallup	6310
Mancos	7263
Greenhorn	7606
Graneros	7656
Dakota	7786

TD - 8000'
PBTD - 7970'

CASING	HOLE SIZE	CASING SIZE	SACKS CEMENT	CEMENT VOLUME	TOC
SURFACE	12-1/4"	9-5/8",K-55,36#	285	336 FT3	SURFACE
INTERMEDIATE	8-3/4"	7",K-55,23#	960		DV TOOL TO SURFACE
LINER	6-1/4"	4-1/2",N-80,11.6#	670		FULL RETURNS