

DISTRICT I
P.O.Box 1900, Hobbs, NM 88241-1980

DISTRICT II
P.O.Box DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O.Box 2088

Santa Fe, New Mexico 87504-2088

RECEIVED
AUG 18 1994

Form C-107
Revised 4-1-91

OIL CON. DIV.
DIST. 3

Filing Instructions
Bottom of Page

APPLICATION FOR MULTIPLE COMPLETION

NORTHWEST PIPELINE CORPORATION P.O. BOX 58900 SALT LAKE CITY, UTAH 84158-0900

Operator	Address		
ROSA UNIT	#32	H 21 31 06	RIO ARRIBA
Lease	Well No.	Unit Ltr. — Sec — Twp — Rge	County

All applicants for multiple completion must complete Items 1 and 2 below.

1. The following facts are submitted:	Upper Zone	Immediate Zone	Lower Zone
a. Name of Pool and Formation	PICTURED CLIFFS		MESAVERDE
b. Top and Bottom of Pay Section (Perforations)	3202' - 3283'		5349' - 5857'
c. Type of Production (Oil or Gas)	GAS		GAS
d. Method of Production (Flowing or Artificial Lift)			FLOWING
e. Daily Production ☐ Actual ☒ Estimated Oil Bbls. Gas MCF Water Bbls.	IP TEST NO FLOW		IP TEST 3,027 MCF/D

2. The following must be attached:

- Diagrammatic Sketch of the Multiple Completion, showing all casing strings, including diameters and setting depths, centralizers and/or turbolizers and location thereof, quantities used and top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent.
- Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.
- Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed it shall be submitted as provided by Rule 112-A.)

OPERATOR:

I hereby certify above information is true and complete to best of my knowledge, and belief.

Signature Kathy Barney
Printed Name & Title **KATHY BARNEY SR. OFFICE ASSISTANT**

Date **08/16/94** Telephone **(801)584-6981**

OIL CONSERVATION DIVISION

Approved by: **ORIGINAL SIGNED BY ERNIE BUSCH**

Title: **DEPUTY OIL & GAS INSPECTOR, DIST. #3**

Date: **AUG 18 1994**

NOTE: If the proposed multiple completion will result in an unorthodox well location and/or a non-standard proration unit in one or more of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

FILING INSTRUCTIONS:

- District Approval — See rule 112-A-B — Submit 4 copies of Form C-107 with attachments to appropriate district office.
- Division Director Administrative Approval — See Rule 112-C — Submit 2 copies of Form C-107 with attachments to Division office in Santa Fe and 2 copies of Form C-107 with attachments to appropriate district office.
- Multiple completions not qualifying for District or Division Director approval may be set for hearing as outlined in Rule 112-A-E.

WELLBORE DIAGRAM ROSA UNIT #32 PC/MV

LOCATION: 1481'FNL, 1035'FEL
SE/4 NE/4 SEC. 21, T31N, R6W
RIO ARRIBA, Co., NM
ELEVATION: 6316' GR
KB: 12'

TOPS:

NACIMIENTO	N/A
OJO ALAMO	2350'
KIRTLAND	2418'
FRUITLAND	2936'
PICTURED CLIFFS	3200'
LEWIS	3478'
CLIFF HOUSE	5344'
MENEFEE	5380'
POINT LOOKOUT	5618'
MANCOS	5907'

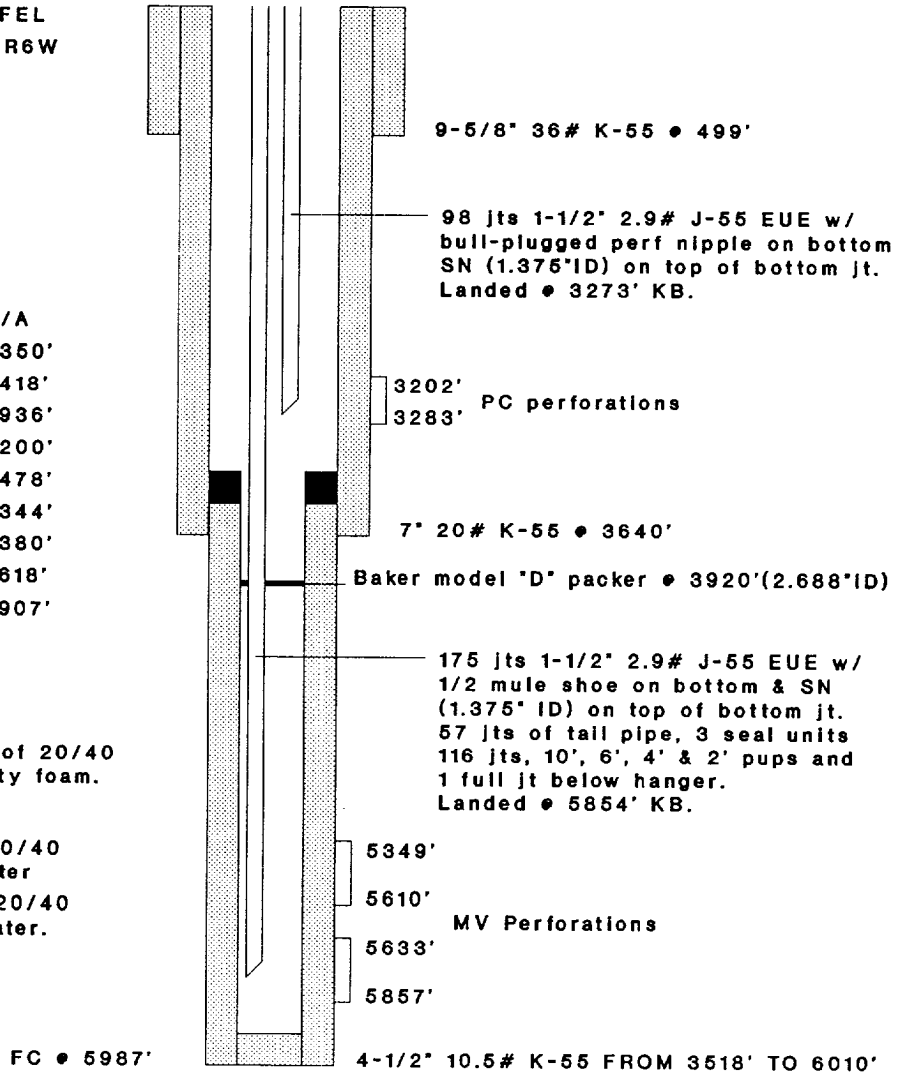
STIMULATION

Pictured Cliffs:

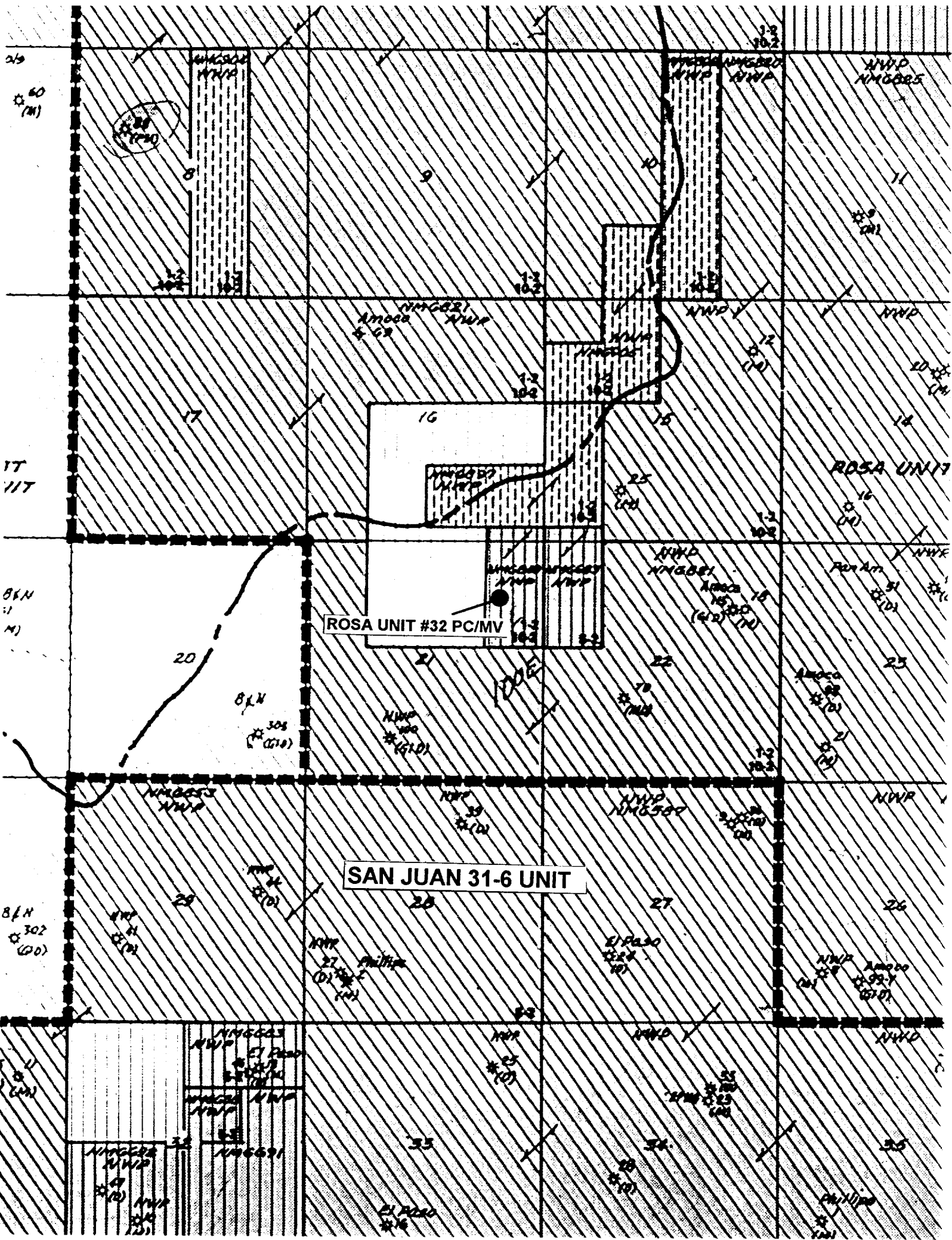
3202' to 3283': 108,000# of 20/40
in 36,100 gals of 70 quality foam.

Mesa Verde

5349' to 5610': 80,000# 20/40
in 82,724 gals of slick water
5633' to 5857': 119,000# 20/40
in 108,182 gals of slick water.



HOLE SIZE	CASING	CEMENT	VOLUME	TOP OF CMT
12-1/4"	9-5/8" 36#	265 SX	313 CU.FT.	SURFACE
8-3/4"	7" 20#	585 SX	1118 CU.FT.	SURFACE
6-1/4"	4-1/2" 10.5#	235 SX	407 CU.FT.	LINER TOP



**OFFSET OPERATORS
ROSA UNIT #32
H-21-31N-6W**

1. LEASE: ROSA UNIT

Operator; Northwest Pipeline Corp, MS-2M3, P.O. Box 58900, Salt Lake City, UT, 84158-0900

2. LEASE: SAN JUAN 31-6 UNIT

Operator: Phillips Petroleum Company, P.O. Box 1967, Houston, TX, 77251-1967

SIMULTANEOUS COMPENSATED NEUTRON- FORMATION DENSITY

ANY Northwest Pipeline Corporation

Rosa Unit No. 32

Wildcat: Rosa PC/Blanco MV

TY Rio Arriba STATE New Mexico

FNL & 1035FEL

Other Services:
DIL/DI
CNL/GR

WELL NO.	SECT.	TWP.	RANGE
1-25389	21	31 N	6W
Ground Level	Elev.	6316.0 F	
Kelly Bushing	12.0 F	Above Perm. Datum	
		Elev.: K.B. 6328.0 F	
		D.F. 6327.0 F	
		G.L. 6316.0 F	

IN-1994

0 F			
0 F			
0 F			
0 F			
0 F			

3 IN @ 500.0 F	(u)		(u)
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0 F			
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IN @ 3640.0 F	(u)		(u)
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0 F			
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LB/G	65.0 S		
	10.0 C3		

0 CHMM	(u)	78.0 DEGF	(u)
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0 CHMM	(u)	78.0 DEGF	(u)
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0 CHMM	(u)	78.0 DEGF	(u)
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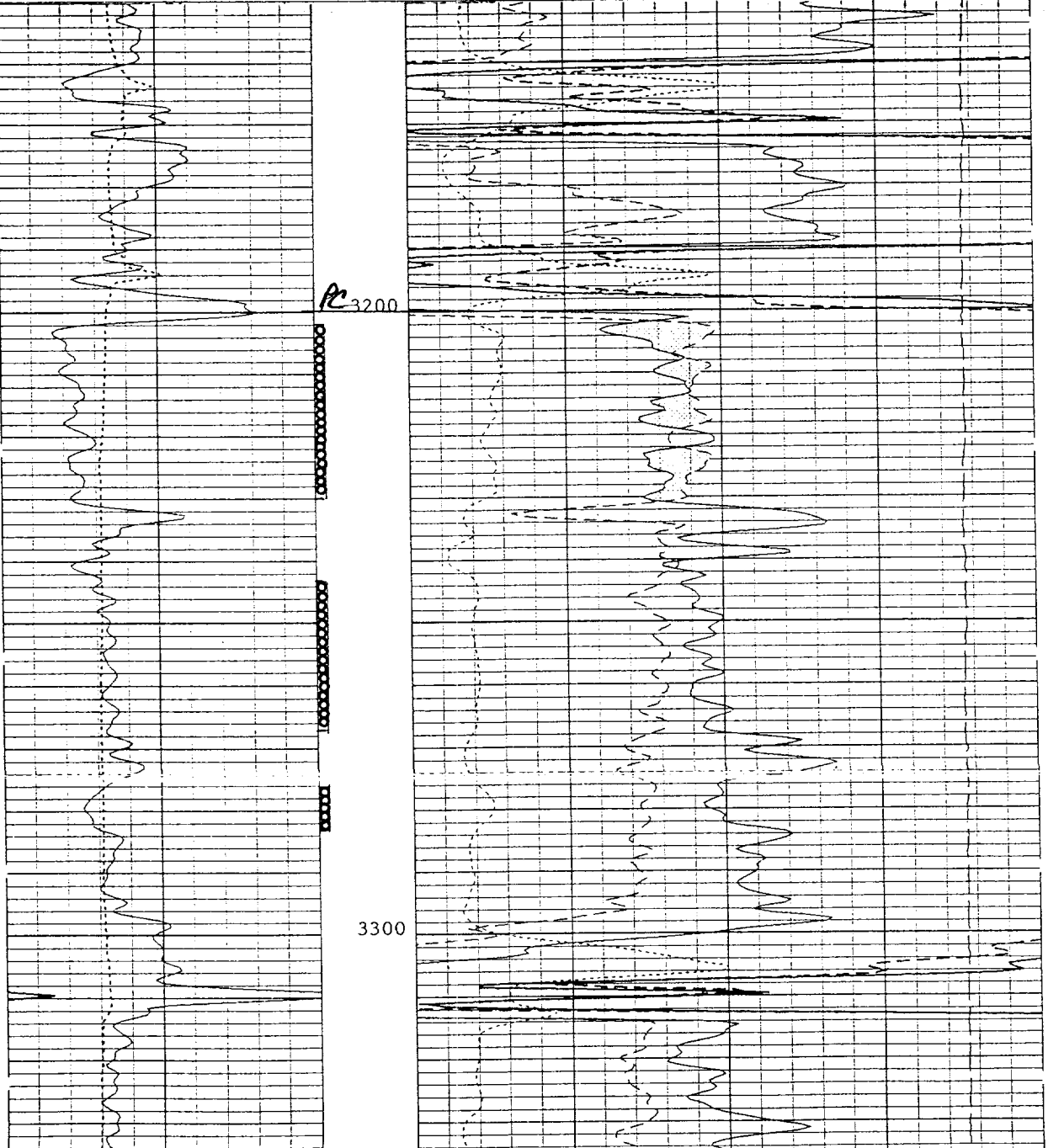
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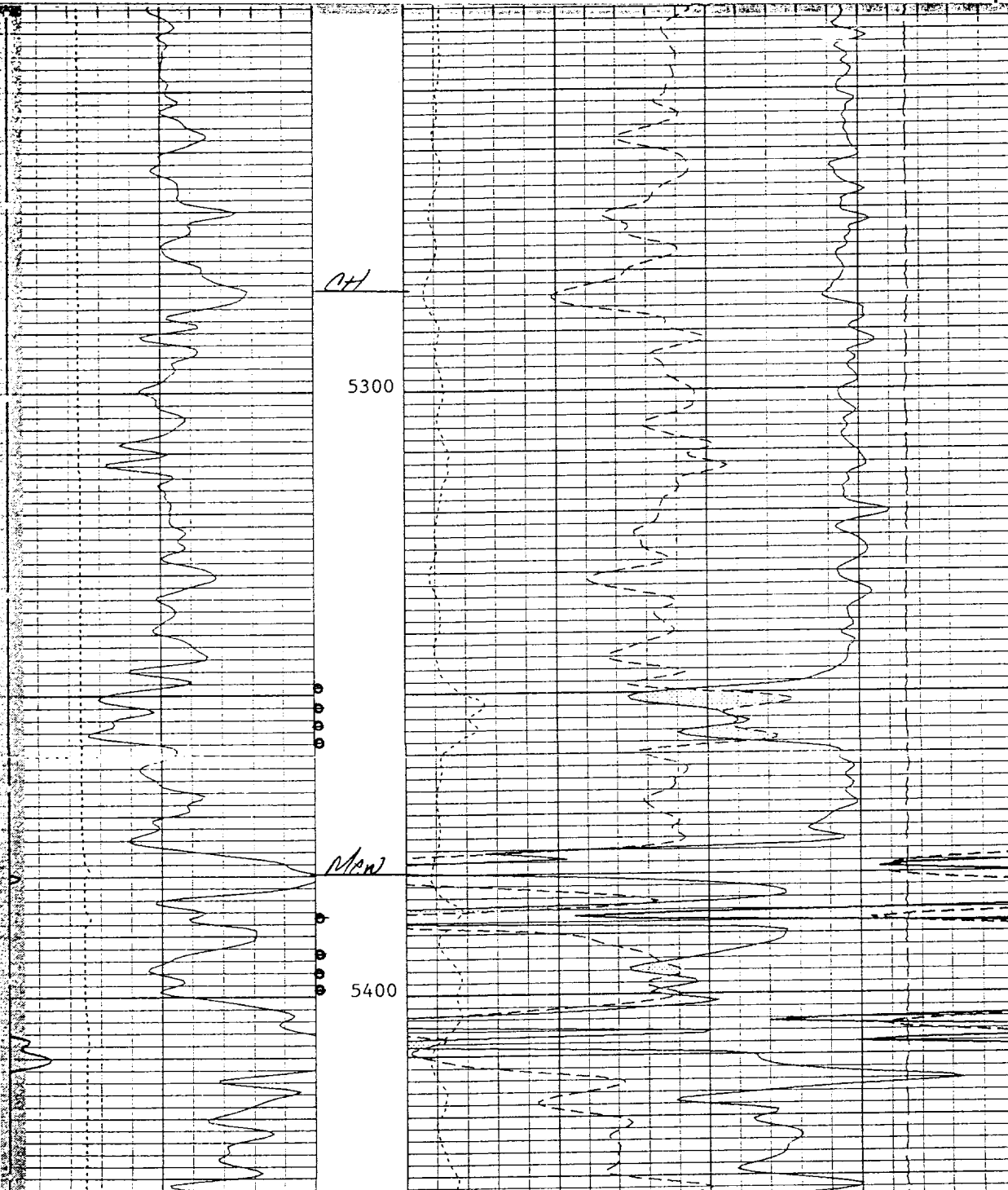
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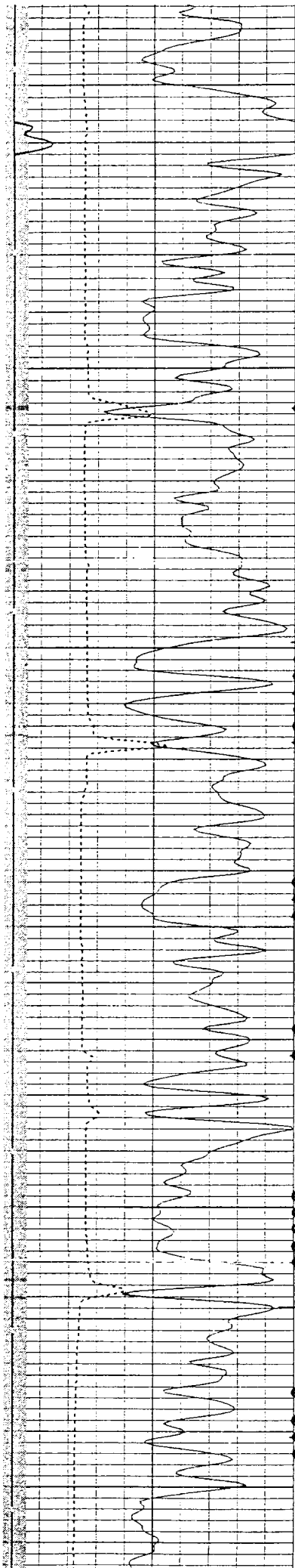
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0 CHMM	(u)	78.0 DEGF	(u)
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The well name, location and borehole reference data were furnished by the customer.





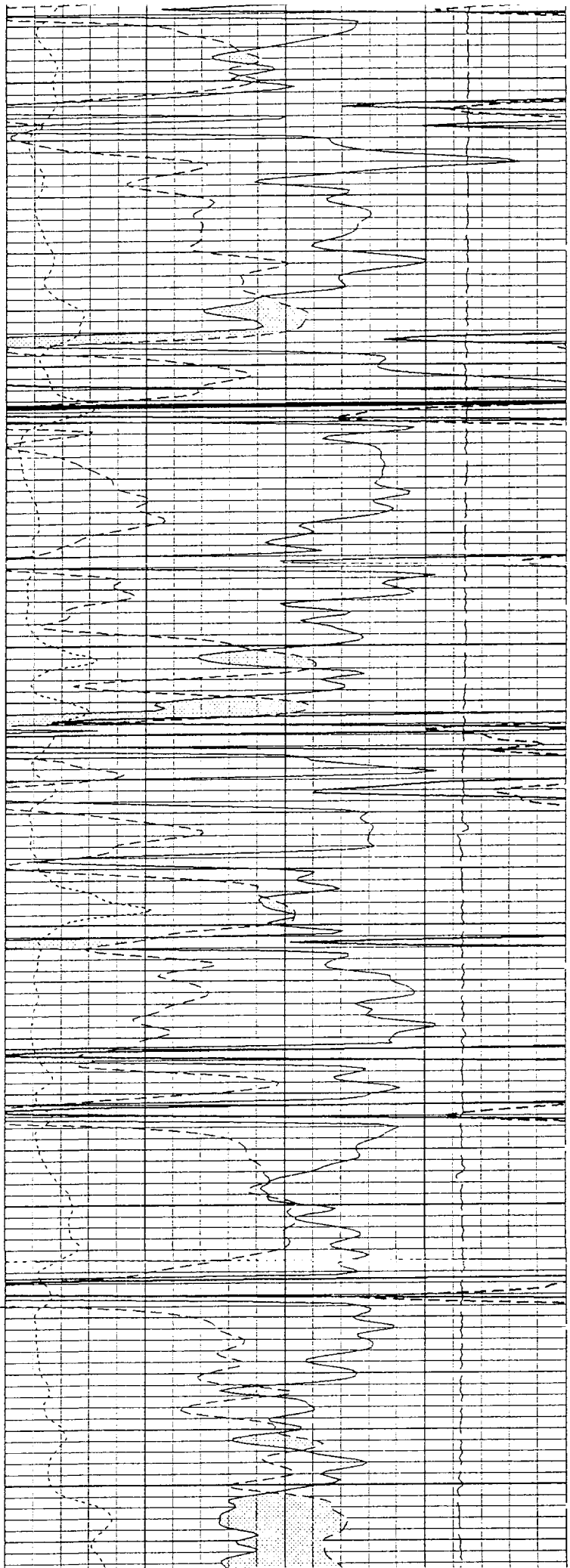


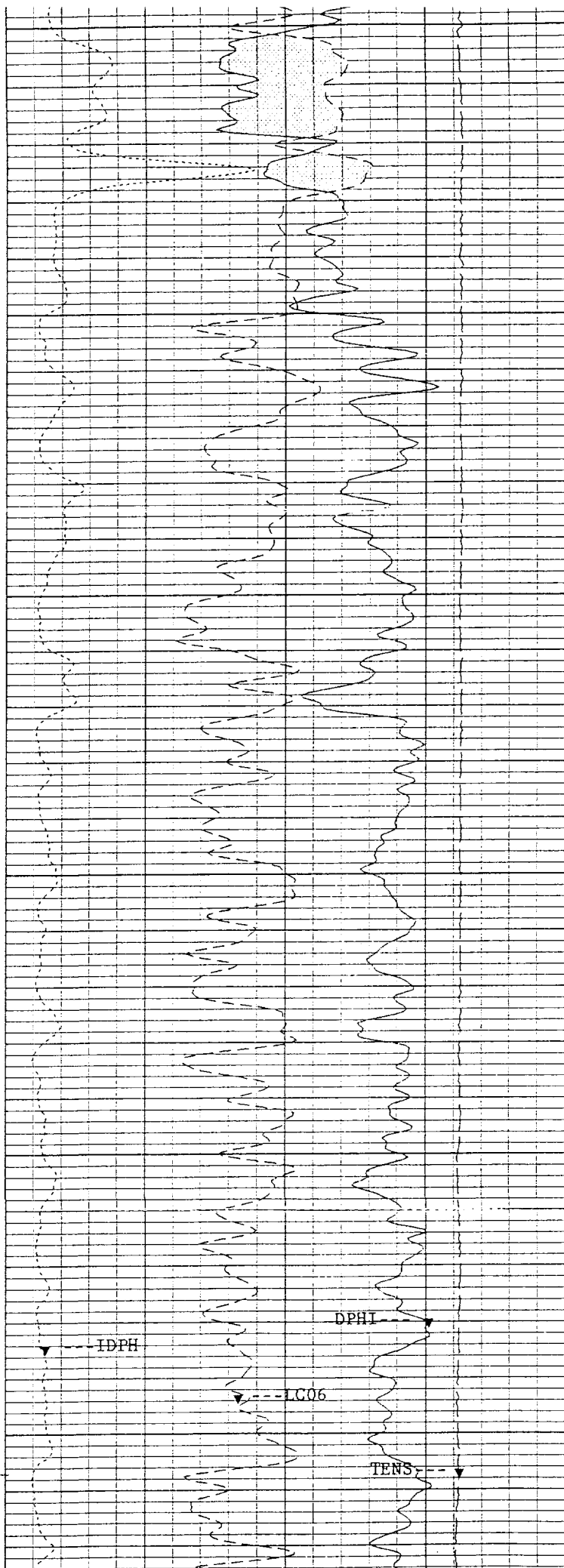
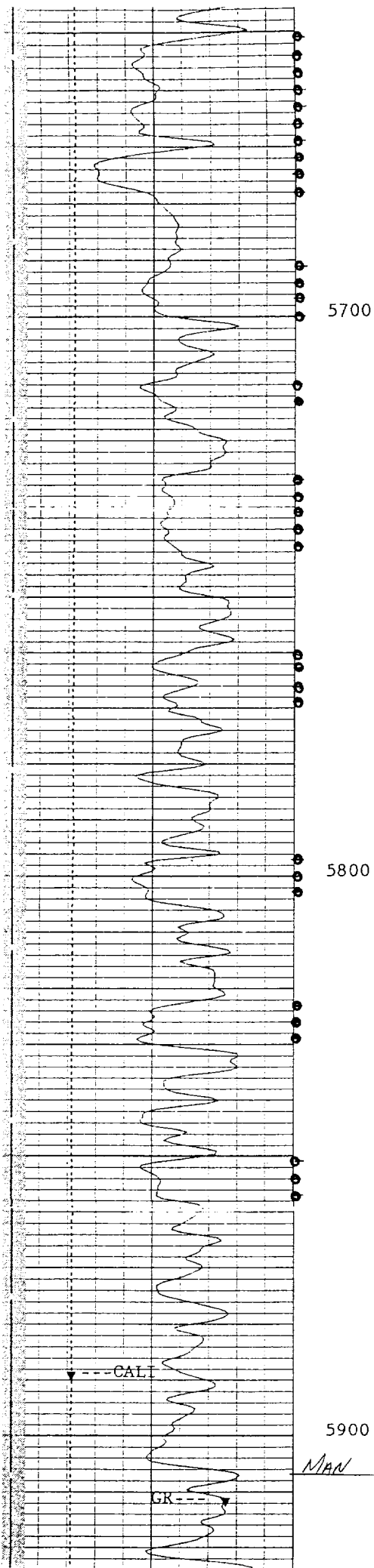
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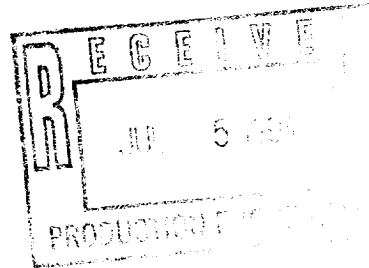


FOUR CORNERS DRILLING CO.

P. O. BOX 1067
5651 U.S. HWY. 64
FARMINGTON, NEW MEXICO 87499

TELEPHONE: (505) 326-3371

FAX: (505) 326-3370



June 27, 1994

Williams Production Company
Mr. Mark McAllister
295 Chipeta Way
Salt Lake City, UT 84108

**RE: Deviation report on the Rosa Unit 32,
Section NE $\frac{1}{4}$ 21, Township 31 N, Range 6 W
Rio Arriba County, New Mexico**

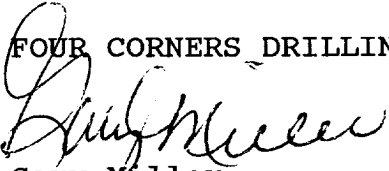
Gentlemen:

Below is the deviation report for your Rosa Unit 32 Well.

123'	$\frac{3}{4}^{\circ}$
359'	1°
479'	$1\frac{1}{4}^{\circ}$
807'	$\frac{1}{2}^{\circ}$
1117'	$1\frac{3}{4}^{\circ}$
1276'	$1\frac{3}{4}^{\circ}$
1526'	$1\frac{1}{2}^{\circ}$
2282'	1°
2778'	$\frac{3}{4}^{\circ}$
3279'	$\frac{1}{2}^{\circ}$
3640'	$\frac{1}{4}^{\circ}$
3885'	$\frac{1}{2}^{\circ}$
4386'	$1\frac{1}{4}^{\circ}$
4916'	$1\frac{1}{2}^{\circ}$
5424'	$1\frac{1}{4}^{\circ}$
6010'	2°

Sincerely,

FOUR CORNERS DRILLING COMPANY


Gary Miller
Drilling Superintendent

GM/tdd

June 27, 1994
Rosa Unit 32
PAGE 2

Acknowledgement

State of New Mexico)
) s.s.
County of San Juan)

The foregoing instrument was acknowledge before me this 27th day
of June, 1994, by Gary Miller.



Notary Public

My Commission Expires : 8-27-94
(seal)

NEW MEXICO OIL CONSERVATION COMMISSION MULTIPOINT AND SINGLE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 07/28/94			
Company WILLIAMS PRODUCTION COMPANY				Connection					
Pool BLANCO				Formation MESAVERDE				Unit ROSA	
Completion Date 07/16/94		Total Depth		Plug Back TD		Elevation 6316' GR		Farm or Lease Name ROSA UNIT	
Casing Size		Weight	d	Set At	Perforations: From To		Well No. #32		
Tubing Size		Weight	d	Set at	Perforations: From To		Unit H	Sec 21	Twp Rng 31N 06W
Type Well - Single - Bradenhead - GG or GO Multiple				Packer Set At 3920'			County RIO ARRIBA		
Producing Thru TUBING		Reservoir Temp. °F		Mean Annual Temp. °F		Barometer Pressure - P _a		State NEW MEXICO	
L	H	Gg	%CO ₂	%N ₂	%H ₂ S	Prover	Meter Run 2"	Taps	

FLOW DATA					TUBING DATA		CASING DATA		
NO.	Prover X Line Size	Orifice Size	Pressure p.s.i.g.	Temperature °F	Pressure p.s.i.g.	Temperature °F	Pressure p.s.i.g.	Temperature °F	Duration of Flow
SI	2" X 3/4"				1092				0
1.					248	58			.05 HR
2.					244	60			1.0 HR
3.					241	60			1.5 HRS
4.					238	61			2.0 HRS
5.					232	63			3.0 HRS

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _i	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	9.604		244	.9971	1.270	1.02	3.027
2.							
3.							
4.							
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ration Mcf/bbl.			
1.					A.P.I. Gravity of Liquid Hydrocarbons Deg.			
2.					Specific Gravity Separator GAS .62 XXXXXXXX			
3.					Specific Gravity Flowing Fluid xxxxx			
4.					Critical Pressure p.s.i.a. p.s.i.a.			
5.					Critical Temperature R R			

P _c 1104		P _c ² 1,218,816		
NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²
1.		244	59,536	1,159,280
2.				
3.				
4.				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{1.0513}{1.0513 - 1.0434} = 1.0434$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3,158$

Absolute Open Flow 3,158 Mcfd @ 15.025

Angle of Slope ° Slope, n 0.85

Remarks:			
Approved By Commission:	Conducted By: C. CHARLEY	Calculated By: STERGIE KATIRGIS	Checked By: