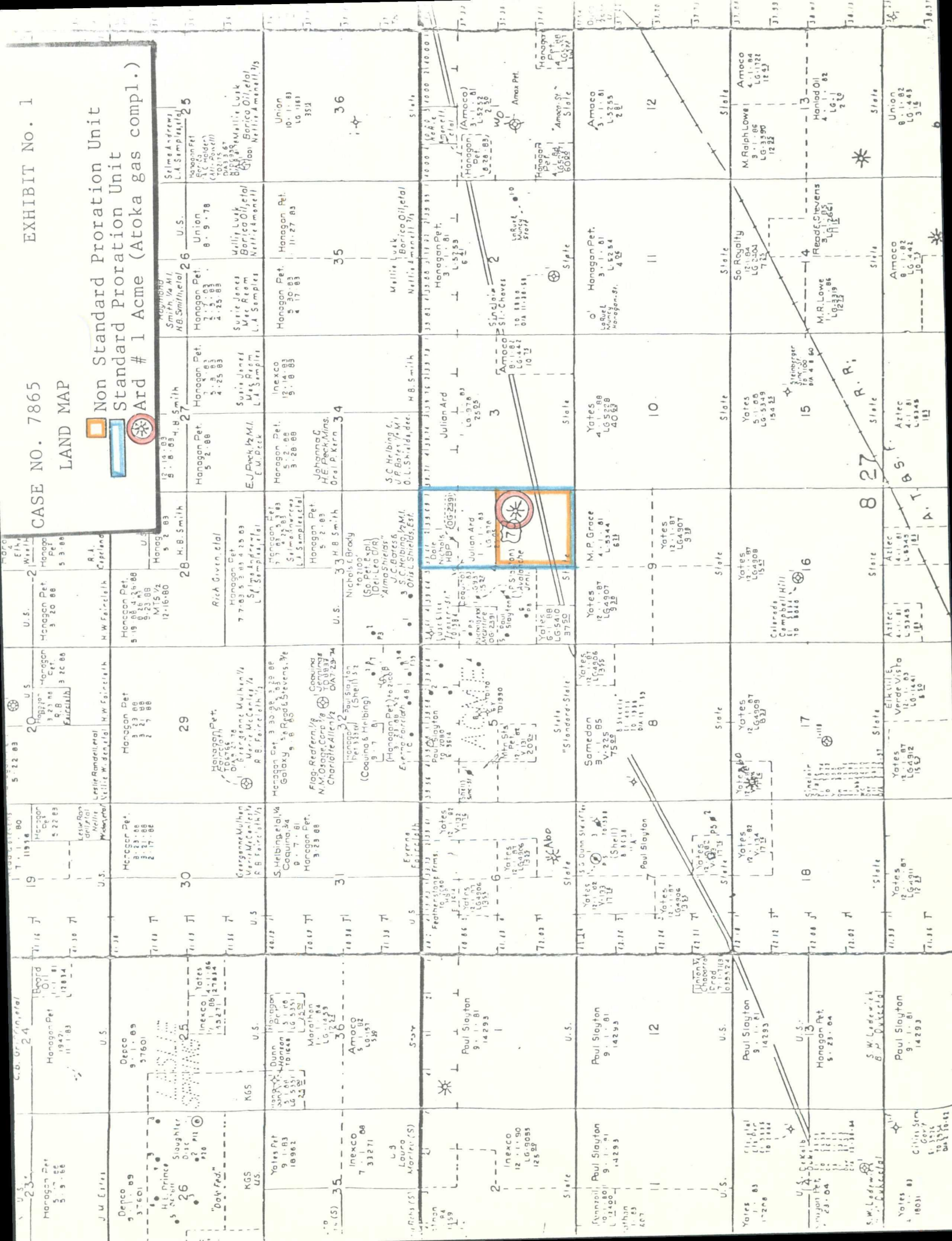


Non Standard Proration Unit
Standard Proration Unit
Ard # 1 Acme (Atoka gas compl.)



CASE NO. 7865

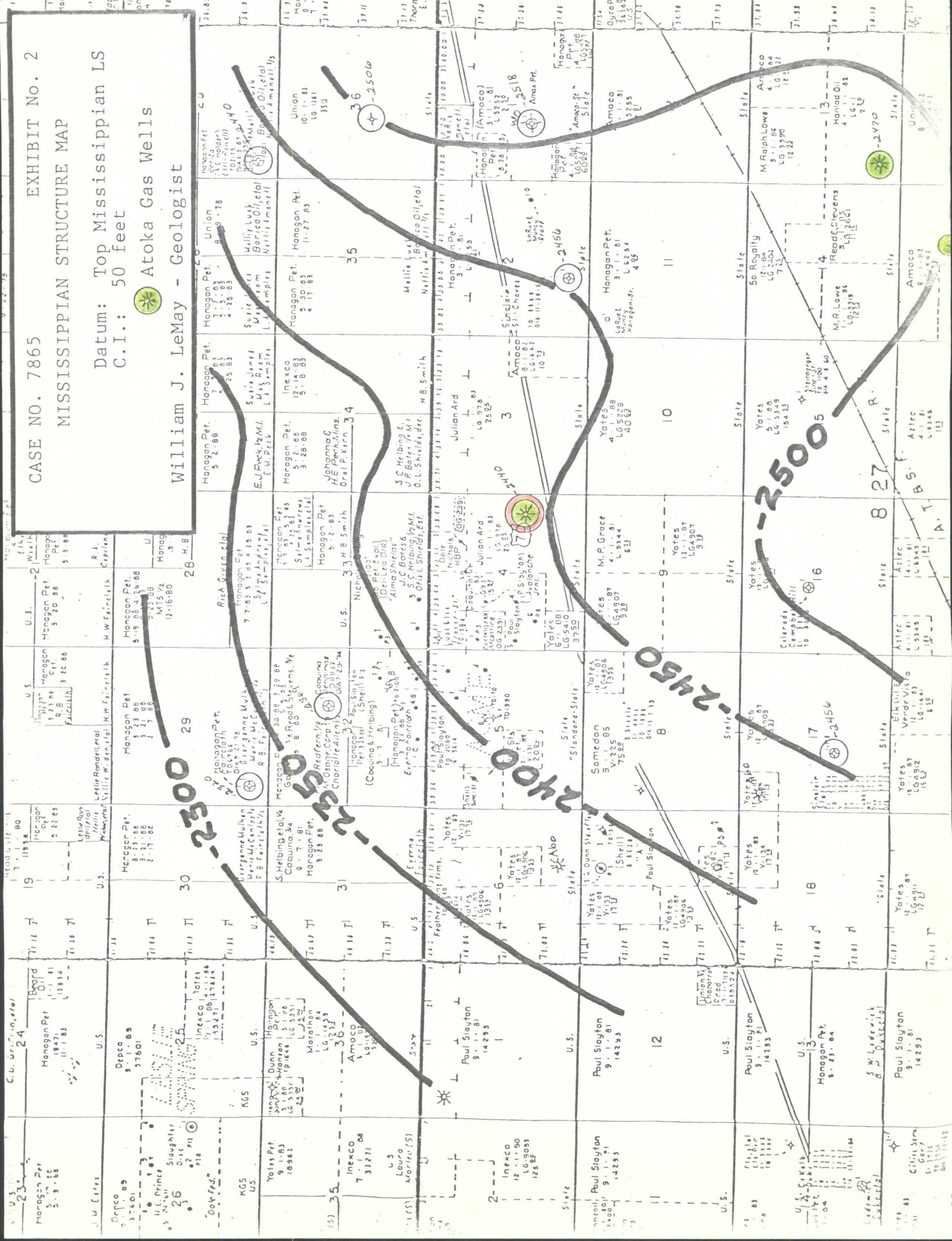
EXHIBIT NO. 2

MISSISSIPPIAN STRUCTURE MAP

Datum: Top Mississippian LS
C.I.: 50 feet

Atoka Gas Wells

William J. LeMay - Geologist



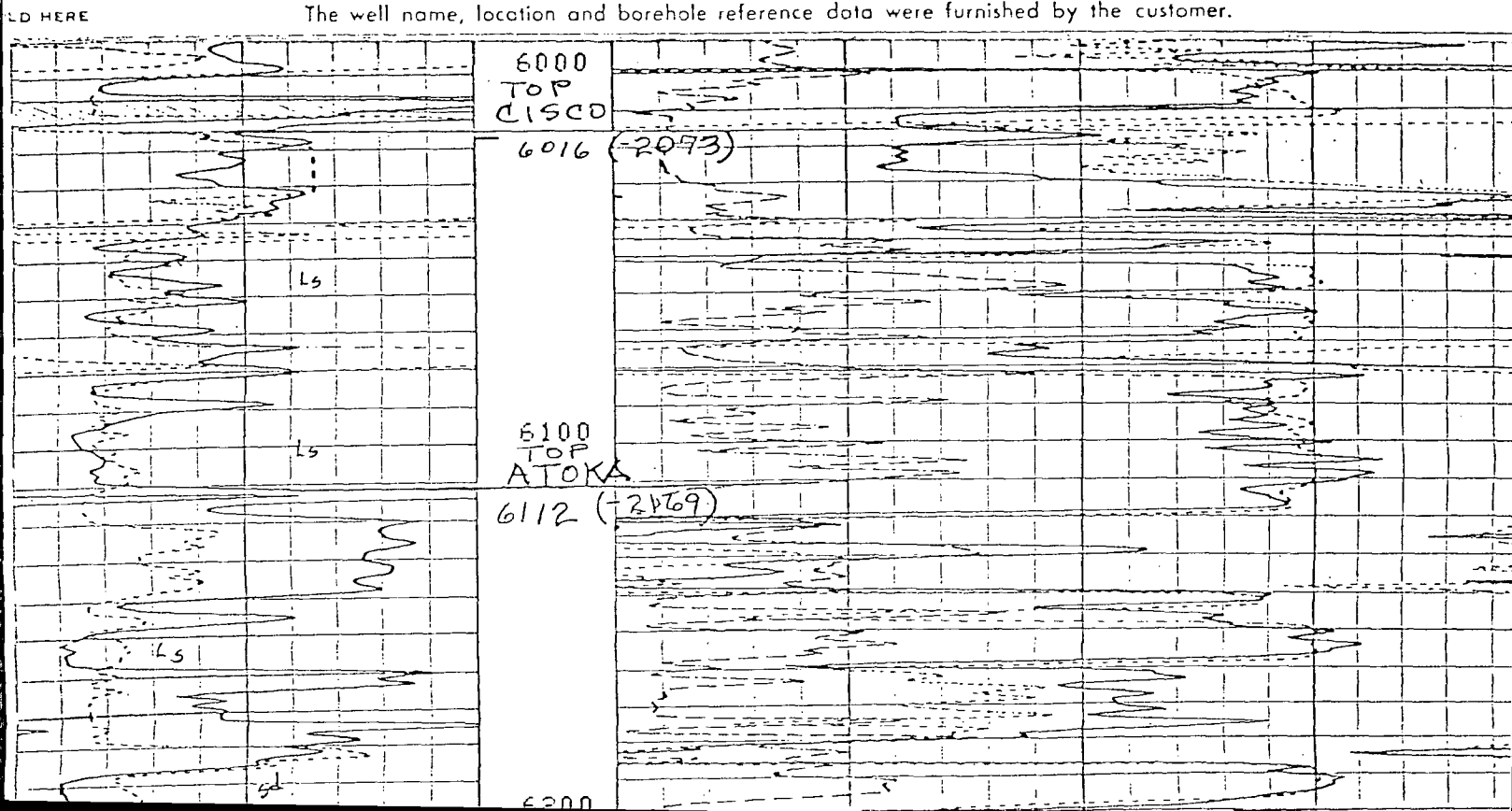
Schlumberger

COMPENSATED NEUTRON
LOG DENSITYFIELD
LOCATION
WELL
COMPANYCOMPANY Julian ArcWELL A-cme #1FIELD WildcatCOUNTY Chaves STATE New MexicoLOCATION
API SERIAL NO. SEC. TWP. RANGE
980 FSLT 660 FEL
4 8-5 27-EOther Services:
DLR/Rxo
DipmeterPermanent Datum: Ground level; Elev: 3931'Log Measured From K.B. 12 Ft. Above Perm. Datum
Logging Measured From K.B.Elev: K.B. 3943'
D.F. 3931'
G.L. 3931'

No.	<u>Jan 30/83</u>
Driller	<u>ONE</u>
Logger	<u>6890</u>
Log Interval	<u>6888</u>
Log Interval	<u>6885</u>
Log Driller	<u>Surface</u>
Log Logger	<u>133/8 @ 813</u>
Log Logger	<u>811</u>
Log Logger	<u>37/8</u>
Fluid in Hole	<u>SAH Gel/S</u>
Visc.	<u>10.3 90</u>
Fluid Loss	<u>9.5 10.4 ml</u>
Rate of Sample	<u>PIT</u>
(a) Meas. Temp.	<u>133 @ 62 F</u>
(b) Meas. Temp.	<u>- @ - F</u>
(c) Meas. Temp.	<u>- @ - F</u>
Source: Rmf Rmc	<u>- @ -</u>
(d) BHT	<u>0.99 @ 113 F</u>
Regulation Stopped	<u>1845</u>
Logger on Bottom	<u>0330</u>
Rec. Temp.	<u>113 F</u>
Location	<u>8185 Row 1</u>

CASE NO. 7865

EXHIBIT 3

LOG SHOWING COMPLETION ATTEMPTS
IN MONTOYA AND MISSISSIPPIAN
AND COMPLETION INTERVAL IN ATOKA.

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	✓

RE

CASE NO. 7865 EXHIBIT 4
COMPLETION REPORT / FORM C-105Form C-105
Revised 10-82

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

RECEIVED

APR 18 1983

O. C. D.
ARTESIA, OFFICE

10. TYPE OF WELL

OIL WELL ☐ GAS WELL ☒ DRY ☐ OTHER ☐

11. TYPE OF COMPLETION

NEW WELL ☒ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☐ DIFF. REVR. ☐ OTHER ☐

12. Name of Operator

Julian Ard

13. Address of Operator

P. O. Box 17360, Fort Worth, TX 76102

14. Location of Well

UNIT LETTER I LOCATED 1980 FEET FROM THE South LINE AND 660 FEET FROM

THE East LINE OF SEC. 4 TWP. 8S RGE. 27E

15. Date Spudded 12-31-82 16. Date T.D. Reached 1-28-83 17. Date Compl. (Ready to Prod.) 3-29-83 18. Elevations (DF, RAB, RT, GR, etc.) 3931.1' GR 19. Elev. Casinghead

20. Total Depth 6890' 21. Plug Back T.D. 6360' 22. If Multiple Compl., How Many 23. Intervals Drilled By Rotary Tools Cable Tools Rotary

24. Producing Interval(s), of this completion - Top, Bottom, Name

6890' to 6275' Atoka Penn

25. Was Directional Survey Made

No

26. Type Electric and Other Logs Run Fracture Identification with Correlation
Dual Laterolog, Comp. Neutron Density, Cement Bond, Cont. Dipmeter,27. Was Well Cored
No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB. FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8"	54.50# J55	813'	17 1/2"	840 sks circulated	
5 1/2"	15.50# K55	6883.66'	7 7/8"	1425 sks circulated	

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
N/A				

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2 3/8"	6205	6200

31. Perforation Record (Interval, size and number)

- 6646' to 6654' 16 shots
- 6394' to 6400' 6 shots
- 6424' to 6434' 10 shots
- 6268' to 6275' 8 shots

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
6646'-6654'	500 gals 15% DS acid
6394'-6400'	500 gals 15% DS acid
6424'-6434'	500 gals 15% DS acid
6268'-6275'	500 gals 15% DS, 2500 gals 7 1/2% MS acid

33. PRODUCTION

Date First Production Production Method (Flowing, gas lift, pumping - Size and type pump) Flowing Well Status (Prod. or Shut-in) Shut-in

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
3-29-83	4 hours	6/64		0	100	0	0
Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API (Corr.)	
1830 to 780	650			141			0

34. Disposition of Gas (Sold, used for fuel, vented, etc.)

Shut-in (no pipeline, waiting for gas market)

Test Witnessed By

A. E. Dennis

35. List of Attachments

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED

Nancy Holley

TITLE Production Agent

DATE April 15, 1983

2/ This form is to be filled with the appropriate Blatter Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radioactivity log on the well and a summary of all special tests conducted, including drill stem tests. All of this reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filled in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico

Northwestern New Mexico

T. Anhy	T. Canyon	T. Ojo Alamo	T. Penn. "B"
T. Salt	T. Strawn	T. Kirtland-Fruitland	T. Penn. "C"
B. Salt	T. Atoka	T. Pictured Cliffs	T. Penn. "D"
T. Yates	T. Miss	T. Cliff House	T. Leadville
T. 7 Rivers	T. Devonian	T. Menefee	T. Madison
T. Queen	T. Silurian 6398'	T. Point Lookout	T. Elbert
T. Grayburg	T. Montoya 6590'	T. Mancos	T. McCracken
T. San Andres 1370'	T. Simpson	T. Gallup	T. Ignacio Qizte
T. Glorieta 2575'	T. McKee	Base Greenhorn	T. Granite
T. Paddock	T. Ellenburger	T. Dakota	T.
T. Blinbry	T. Gr. Wash 6813'	T. Morrison	T.
T. Tubb	T. Granite	T. Todilto	T.
T. Drinkard	T. Delaware Sand	T. Entrada	T.
T. Abo 4758'	T. Bone Springs	T. Wingate	T.
T. Wolfcamp 5428'	T.	T. Chinle	T.
T. Penn.	T.	T. Permian	T.
T. Cisco (Bough C) 6016'	T.	T. Penn. "A"	T.

OIL OR GAS SANDS OR ZONES

No. 1, from 1950' to 2070'	No. 4, from to
No. 2, from 6268' to 6278'	No. 5, from to
No. 3, from to	No. 6, from to

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from to feet
No. 2, from to feet
No. 3, from to feet
No. 4, from to feet

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	1370	1370	Alluvium & Red bed				
1370	2575	1205	Dolomite & limestone				
2575	2685	110	Sand				
2685	4758	2073	Shale with dolomite stringers				
4758	5492	734	Sand & shale				
5492	6198	706	Dolomite & limestone				
6198	6398	200	Sand & shale				
6398	6590	192	Limestone				
6590	6813	223	Dolomite				
6813	6888	75	Granite wash & granite				

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

Form C-122
Revised 9-1-65

CASE NO. 7865 EXHIBIT 5

ATOKA MULTI POINT PRESSURE TEST

FORM C-122

Type Test ☒ Initial		Test Date 3-29-83		1980 ES	
Company JULIAN ARD		AIR NEW WELL		660 FE	
Pool UN DESIGNATED		Formation MORROW		Unit	
Completion Date 3-25-83		Total Depth 6890		Plug Back TD 6360	
				Elevation 3931	
Casing Size 5.500		Set At 6360		Perforations: From 6268 To 6276	
Tub. Size 2.375		Set At 6205		Perforations: From 0 To 0	
Type Well - Single - Prodenhead - G.G. or G.O. Multiple SINGLE		Packer Set At 6200		County CHAVES	
Producing Thru TUBING		Reservoir Temp. °F 135° 6272		Mean Annual Temp. °F 60.0	
				Boro. Press. - P _g 13.2	
L 6272		H 6272		G _g 0.610	
				% CO ₂ 0.35	
				% N ₂ 6.49	
				% H ₂ S 0	
				Prover 0	
				Meter Run 3.1	
				Type FLANGE	

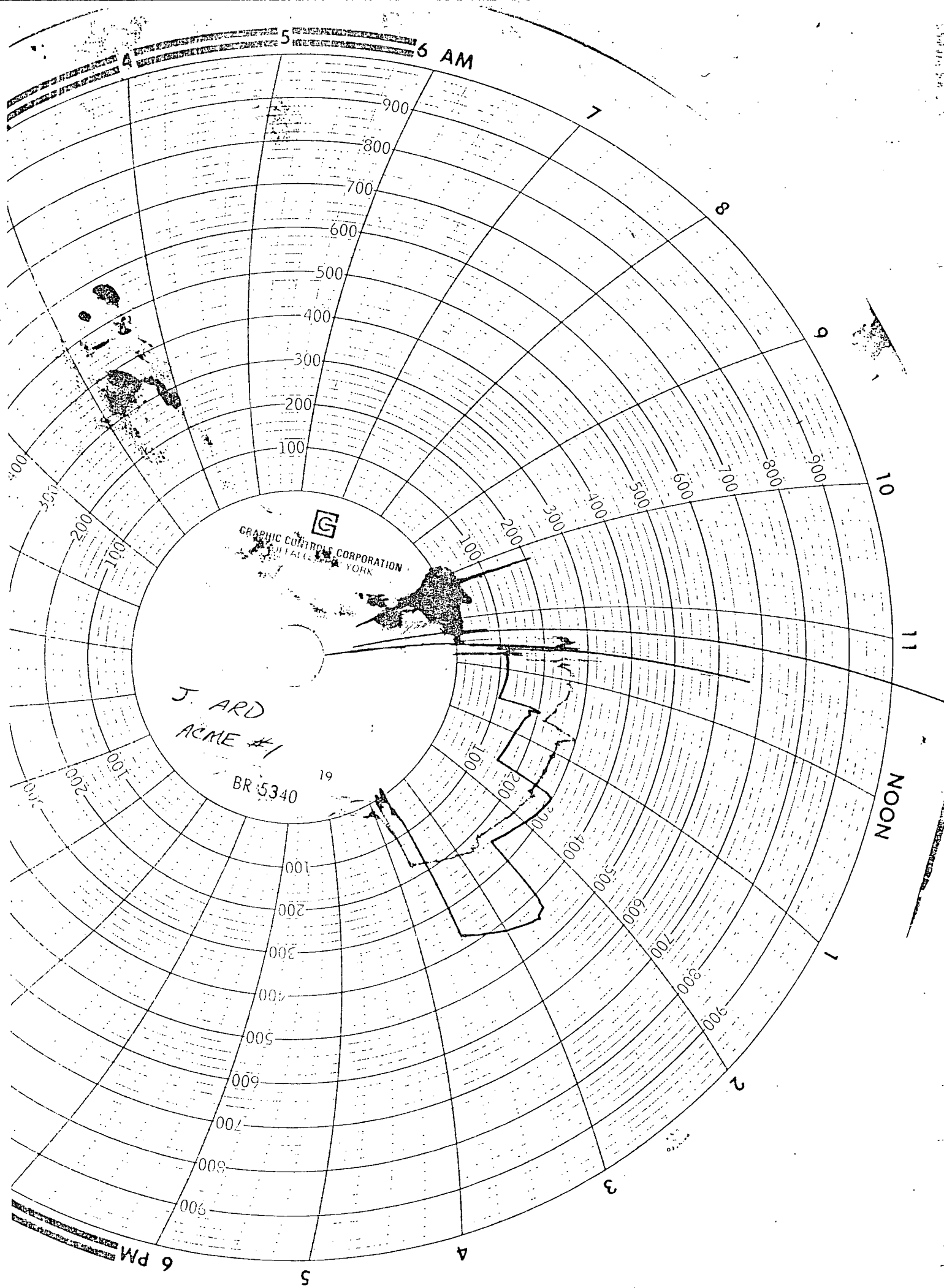
FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		CHOKES
51							1830	64°	650	0	72.0
1.	3.068 X 0.500			220	11.0	79°	1511	64°	650	4/64	1.0
2.	3.068 X 0.500			250	15.5	96°	1315	66°	650	4.5/64	1.0
3.	3.068 X 0.500			215	25.0	95°	1068	68°	650	5/64	1.0
4.	3.068 X 0.500			180	37.5	94°	780	68°	650	6/64	1.0
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _{in}	Flow Temp. Factor Ft.	Gravity Factor F _g	Super. Compress. Factor, F _{pv}	Rate of Flow Q, Mhd
1	1.18	50.65	233.2	0.9822	1.2804	1.0156	77
2	1.18	63.87	263.2	0.9671	1.2804	1.0156	95
3	1.18	75.53	228.2	0.9680	1.2804	1.0135	112
4	1.18	85.12	193.2	0.9688	1.2804	1.0115	126
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	0.35	539	1.57	0.969	0	0	.610	.610	662	343
2	0.40	556	1.62	0.970						
3	0.34	555	1.62	0.973						
4	0.29	554	1.61	0.977						
5										

NO.	P _r ²	P _w ²	P _r ² - P _w ²	(1) $\frac{P_r^2}{P_r^2 - P_w^2} =$	(2) $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n =$
1	2323	1523	2321	1.2271	1.1150
2	1764	1327	1761		
3	1169	1080	1166		
4	629	793	628		
5					

Absolute Open Flow 141 Mhd @ 15.025		Angle of Slope @ 62.0		Slope, n 0.532	
Remarks:					
Approved By: _____		Conducted By: RICHARD TOWNLEY		Calculated By: BENNETT & CATHEY	
				Checked By:	





PRECISION SERVICE INC.

Flow Measurement Engineers

Analysis Results Summary

Casper, WY 82601

Run No. 330-1
Date Run 03/30/83
Date Sampled 03/29/83

Analysis For: BENNETT & CATHEY URLN.

Lease: Acme W1

Producer Julian Ard

Location _____ County Chaves State New Mexico

Purpose Well Test

Sampled By R & C URLN.

Sampling Temp. 83 °F

Atmos Temp. 68 °F

Volume/day 150 MCF

Formation Morrow

Pressure on Bomb 260

PSIG; Line Pressure _____ PSIG

Gas Component

Analysis Press. Base: 14.73

Mol. % Liq. % GPM
Per MCF

Carbon Dioxide CO ₂	.354		
Oxygen O ₂	.043		
Nitrogen N ₂	6.494		
Hydrogen Sulfide H ₂ S			
Methane C ₁	89.592		15.150
Ethane C ₂	2.691		.718
Propane C ₃	.428		.117
Iso-Butane IC ₄	.062		.020
Nor-Butane NC ₄	.134		.042
Iso-Pentane IC ₅	.044		.016
Nor-Pentane NC ₅	.068		.025
Hexanes plus	.090		.039
Hexanes C ₆			
Heptanes			
Heptanes Plus C ₇ +			
Total	100.000		16.128
Pentane + G.P.M.			.080
Propane + GPM			.260
5-lb Gasoline			.315

BTU Dry 983
BTU Wet 966
Calc. Specific Gravity 610

@ Std. Press. 14.696

BTU Dry 980
BTU Wet 963

Calc. Vap. Press. #/Sq.In. _____

Reid Vap. Press. #/Sq.In. _____

Z Factor .9980
N Value 1.3128
Ave Mol Wt 17.6384

Run by JAP

Calculated By JAP

Ethane + GPM .977

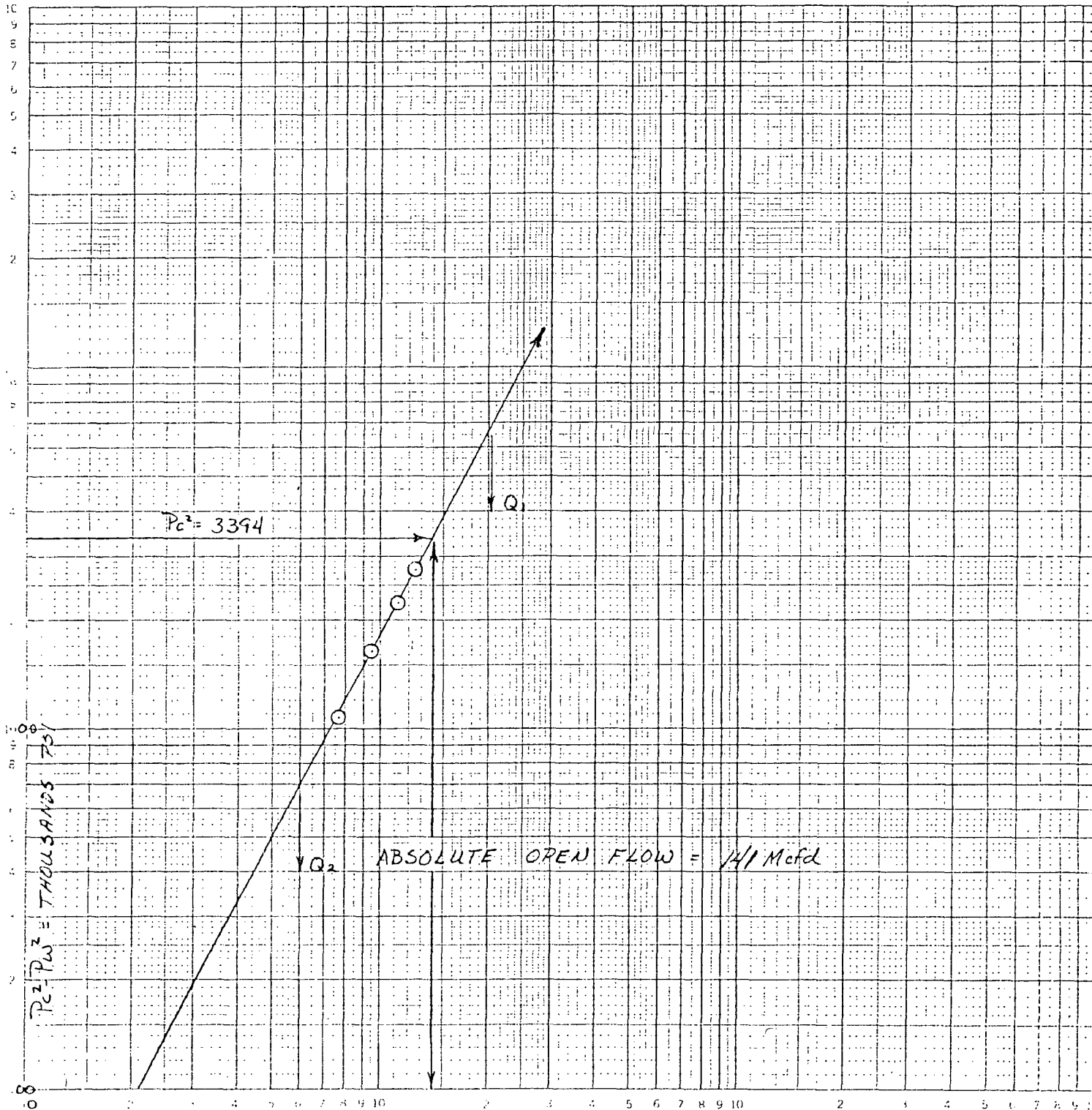
Remarks:

Distribution:

Acme #1
 4 85 27E
 Chaves County
 3-29-83

46 7400

LOGARITHMIC 3 X 3 CYCLES
 REUPPEL & SUTHERLAND



$$\overline{\Delta P}_1^2 \quad P_c^2 - P_w^2 = 7000$$

$$\overline{\Delta P}_2^2 \quad P_c^2 - P_w^2 = 700$$

Q_1 Mcfd

$$\log Q_1 = 2.30963$$

$$\log Q_2 = 1.77815$$

$$Q_1 = 204$$

$$Q_2 = 60$$

$$n = .53148 = .53$$