



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

OIL CONSERVATION DIVISION
BOX 2088
SANTA FE, NEW MEXICO 87501

DATE Sept. 27, 1985

RE: Proposed MC _____
Proposed DHC ☒ _____
Proposed NSL _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated Sept. 6, 1985
for the Tanner State Con #1 M-32-30N-9W
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Obel for hearing

Yours truly,

Frank J. Long

Tenneco Oil
Exploration and Production
A Tenneco Company

6162 South Willow Drive
P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800



Western Rocky Mountain Division

July 31, 1985

RECEIVED
SEP 06 1985
OIL CON. DIV.
DIST. 3

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Gilbert Quintana

RE: State Com 1
990' FSL, 990' FWL
Sec. 32, T30N, R9W
San Juan County, New Mexico

Gentlemen:

We have enclosed all necessary data for administrative approval to commingle production in the referenced well.

Questions concerning this request can be directed to Mr. Frank Weiss (303) 740-4836.

Very truly yours,

TENNECO OIL COMPANY

Paul Doyle

Paul Doyle
Division Production Engineer

SMc:st

Enclosures

cc: Mr. Jerry Hertzler
Mr. Frank Weiss

mv + Dh signature
NM De
" mv or

Tenneco Oil
Exploration and Production
A Tenneco Company

6162 South Willow Drive
P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800



Western Rocky Mountain Division

August 1, 1985

RECEIVED
SEP 06 1985
OIL CON. DIV.
DIST. 3

Amoco Production
1670 Broadway
Denver, CO 80202

Attention: R. C. Burke, Jr.

RE: State Com 1
990' FSL, 990' FWL
Sec. 32, T30N, R9W
San Juan County, New Mexico

Gentlemen:

Tenneco has applied for administrative approval to commingle production from the Mesaverde and Dakota zones in the above referenced well. If you as an offset operator have no objection to the proposed commingling, please sign the waiver at the bottom of this page and forward to:

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501
Attention: Gilbert Quintana

We would appreciate your returning one copy to the undersigned.

Very truly yours,

TENNECO OIL COMPANY

Paul Doyle
Division Production Engineer

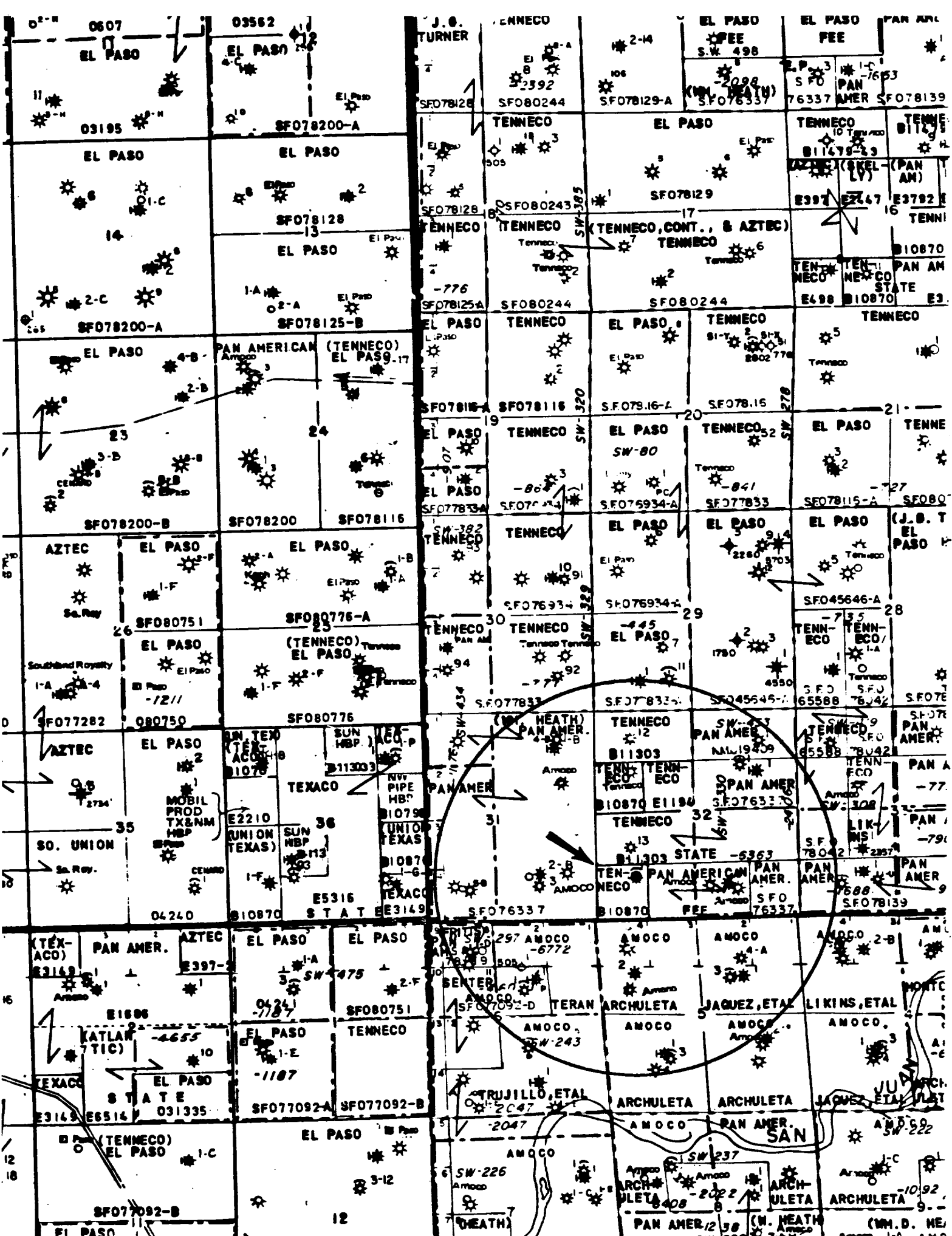
SMc:st

WAIVER

We hereby waive any objections to Tenneco Oil Company's application to commingle production as set forth above.

Name: _____ Title: _____

Date: _____



Tenneco Oil
Exploration and Production
A Tenneco Company

6162 South Willow Drive
P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800



Western Rocky Mountain Division

The State Com 1 was completed as a Mesaverde-Dakota dual in July of 1965 with 4-1/2" casing and one string of 2-3/8" tubing. The Dakota produces up the tubing and the Mesaverde flows up the casing-tubing annulus. Because of the large flow area in the annulus, the Mesaverde is experiencing liquid loading problems which are restricting the production from that zone.

Enclosed are decline curves for both the Mesaverde and Dakota zones.

The bottom-hole pressure of the Dakota was measured with a pressure bomb and found to be 949 psig at 6575' after 8 days of shut in. This Dakota pressure corrected to a datum of 5000' was 916 psig. A pressure bomb could not be run for the Mesaverde since this zone produces up the annulus.


A dead weight surface pressure of 537 psig was recorded for the Mesaverde after 8 days of shut in. A fluid level could not be established. The bottom-hole pressure for the Mesaverde was calculated to be 616 psig at a datum of 5000'. The requirement that the lower pressured zone have a pressure that is greater than 50% of the pressure of the higher pressured zone corrected to a common datum is; therefore, satisfied.

A Dakota water sample from the State Com 1 and a Mesaverde water sample from the offset State Com 1A were tested for compatibility. The testing indicates that no scale or precipitate problems should result from the commingling of produced waters from these formations. In addition, the salinities of the two zones are similar enough that no formation damage should occur in either zone.

The intent of commingling these two zones is to increase the total production from the well. This will be accomplished by increasing the flow velocity, flowing both zones up the tubing. The cross-sectional area of the tubing is 3.13 square inches, as opposed to 11.27 square inches for the tubing and annulus. Even if no production increase were realized, a 3.6 fold increase in average flow velocity would result from this commingling. This velocity increase will enable the well to unload produced fluids resulting in increased gas production from each zone. This greater production rate will increase the velocity in the tubing, yielding even more liquid lifting capacity.

Based upon the decline curves and reserve estimates for these zones, I recommend that the production be allocated on a strict percentage basis with 27% assigned to the Mesaverde and 73% assigned to the Dakota.

If you need any additional information, feel free to call me at (303) 740-4836.


Frank G. Weiss III
Senior Production Engineer - WRMD

FGW/0363

MESAVERDE

STATE COM 1 MV/DK
MESAVERDE DAKOTA COMMINGLING
2-3/8X4-1/2 ANNULUS

DATE: 07/10/85
FILE: FILE102
PROJ: 0

G A S W E L L P R E S S U R E S

MEASURED DEPTH, FEET	5000.	FLOW STREAM ID, INCHES	2.375
TRUE VERTICAL DEPTH, FEET	5000.	FLOW STREAM OD, INCHES	6.456
GAS GRAVITY	0.720	CRITICAL TEMPERATURE	396.
BOTTOM HOLE TEMPERATURE	150.	CRITICAL PRESSURE	666.
NITROGEN, MDL %	0.	CONDENSATE GRAVITY, DEG API	50.0
CARBON DIOXIDE, MDL %	0.	WATER GRAVITY	1.047
HYDROGEN SULFIDE, MDL %	0.	PIPE ROUGHNESS, INCHES	0.00060

GAS RATE	WH TEMP	WELLHEAD	BOTTOMHOLE	P Z	CONDENSATE	WATER
M/D-----	DEG F--	PSIG-----	PSIG-----	PSIG-----	STB/MMCF--	BM/MMCF--
0.	60.	537.	616.♦	AT 5000. FEET (MEAS)	FLUID LEVEL	
			616.♦	AT 5000. FEET (MEAS)	(WTR)	

B & R SERVICE, INC.

P. O. Box 1048
Farmington, New Mexico 87401
(505) 325-2393

Company TENNECO OIL COMPANY Lease STATE COM. Well #1
County SAN JUAN State NEW MEXICO Date 5-15-85
Shut-In _____ Zero Point G.L. Tbg. Pressure 810
Casing Pressure PACKER Tbg. Depth _____ Casing Perf. _____
Max. Temp. _____ Fluid Level _____

<u>DEPTH</u>	<u>PSIG</u>	<u>GRADIENT</u>
0	810	----
1000	833	.023
2000	853	.020
3000	875	.022
4000	895	.020
5000	916	.021
6000	938	.022
6475	947	.019
6575	949	.020

MESAVERDE

8 Day Shut in Pressure Test

Dead Weight Surface Pressure 537 PSIG

SOUTHERN UNION GATHERING COMPANY
REPORT OF BTU TEST RESULTS

TO: TENNECO OIL CO (B46)

REF: STATE COM 1
4185
NORTHWEST NEW MEXICO (70)

DATE OF THIS TEST: 12/26/84
DATE OF LAST TEST: 4/26/82
TEST FREQUENCY: NOT SPECIFIED

RESULTS: SPECIFIC GRAVITY: 0.7201
BTU/CF @ 14.73/60F/DRY: 1248.4

	MOL %	G. P. M.
CARBON DIOXIDE	0.668	0.0000
NITROGEN	0.327	0.0000
METHANE	79.710	0.0000
ETHANE	11.040	2.9550
PROPANE	4.571	1.3710
ISOBUTANE	0.752	0.2460
N-BUTANE	1.379	0.4350
ISOPENTANE	0.422	0.1540
N-PENTANE	0.353	0.1270
HEXANE +	0.330	0.1350
	-----	-----
TOTAL	100.012	5.4230

SMITH ENERGY SERVICES

Division of Smith International, Inc.

2198 East Bloomfield Highway
Farmington, New Mexico 87401
Phone (505) 327-7281

June 5, 1985

Tenneco Oil Co.
Western Rocky Mtn. Div.
P.O. Box 3249
Englewood, Co. 80155
ATTN: Frank Weiss

Dear Mr. Weiss:

Water analysis and compatibility studies were conducted using the following formation water samples:

1. Dawson A#1 Mesa Verde formation water
 Dawson A#1 Dakota formation water
 (Mesa Verde sample may show scaling tendency, but no incompatibility was
 seen between the two samples.)
2. Florance #19A Mesa Verde formation water
 Florance #19 Dakota formation water
3. Riddle A #1 Mesa Verde formation water
 Riddle A #1 Dakota formation water
4. Moore #1A Mesa Verde formation water
 Moore #6E Dakota formation water
5. State Com #1A Mesa Verde formation water
 State Com #1 Dakota formation water
6. Florance #31 Mesa Verde formation water
 Florance #31 Dakota formation water
7. Florance #7A Mesa Verde formation water
 Florance #6 Dakota formation water
8. Florance #36 Mesa Verde formation water
 Florance #36 Dakota formation water

A small amount of reddish orange precipitate formed but this is to be expected when oxygen is admitted to a water sample containing even a trace of iron.

Tenneco, water analysis con't June 5, 1985

This precipitate should pose no problems in a closed system. No solid precipitates of any other types were noted and these samples should be considered to be compatible for mixing as per the listing above.

Sincerely,

SMITH ENERGY SERVICES

A handwritten signature in cursive script, appearing to read "Loren L. Biede", written over the printed name.

Loren L. Biede
District Engineer

LLD/kr

Figure 1. The effect of the number of trials on the number of correct responses. The number of correct responses was significantly higher than the number of incorrect responses in all cases. The number of correct responses was significantly higher than the number of incorrect responses in all cases. The number of correct responses was significantly higher than the number of incorrect responses in all cases.

INDECIBLE

[illegible][illegible]

Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group (n = 10) and the experimental group (n = 10). The control group received a placebo (P) and the experimental group received a 10% solution of the active ingredient (A). The subjects were divided into two groups: the control group (n = 10) and the experimental group (n = 10). The control group received a placebo (P) and the experimental group received a 10% solution of the active ingredient (A). The subjects were divided into two groups: the control group (n = 10) and the experimental group (n = 10). The control group received a placebo (P) and the experimental group received a 10% solution of the active ingredient (A).

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

2. Next, it is important to gather relevant information and data. This can be done through research, consultation with experts, or by analyzing existing data sets.

3. Once the information is gathered, the next step is to analyze it. This involves identifying patterns, trends, and relationships that can help in understanding the problem.

4. After analysis, the next step is to develop a solution or plan. This involves identifying the most effective and efficient way to address the problem.

5. Finally, the solution is implemented and monitored. This involves putting the plan into action and tracking its progress to ensure it is effective and efficient.

[illegible][illegible]

UNRECORDED

- TENNECO WELL HISTORY -

2591/21

Well Name State Com #1 Unit M Sec 32 T 30N R 9W
 TD 6941 PBDT 6911 County San Juan State NM WI .5000 RI 329609375
 Drlg Cost _____ Comp Cost _____ Comp Date 8-27-51 Trn On Date 1-4-52
 MV:5/51 IP _____ BOPD 1860 MCFD _____ BWPD 24 Hours 870 SIWHP
 DK:10/65 IP _____ BOPD 5218 MCFD _____ BWPD 3 Hours 2149 SIWHP

- TUBULAR RECORD -

Size	Weight	Grade	Depth	Cement	Top Cement	Hole Size	Remarks
10-3/4	32.75	SS	260	150 sx	Surface	13-1/2	
7	20	J-55/H40	3,933	200	2585(TS)	8-3/4	
4-1/2	19.5	J-55	6,941	300/225		6-1/8	DV @ 3488
2-3/8	4.7	J-55	6590				F/N

Packer? Yes X No _____ Type _____ Model "D" Depth 6590
 Anchor? Yes _____ No _____ Type _____ Depth _____
 Pump Type _____

- COMPLETION & WORKOVER RECORD -

Zone #1 - Formation MV Date 8-26-51 Perfs w/JSPF Open hole
3933-4827

Press Tstd _____ PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
 Acid: Vol. & Type _____, # balls _____, Rate _____ BPM, Press. _____ PSI
 Frac: Fluid Volume & Type _____, Sand: _____ # _____ Mesh
 Frac Rate _____ BPM Frac Pressure _____ PSI ISIP _____ PSI
 Comments OH 3933-4827 shot w/2060 qts SNG 2" 4.7# @ 4016

Zone # 2 - Formation Dakota Date 7-27-65 Perfs w/JSPF 2 JSPF @
6795-97, 6803-05, 6827-29, 6832-34, 6848-50, 6880-84, 6898-6908

Press Tstd _____ PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
 Acid: Vol. & Type _____, # balls _____, Rate _____ BPM, Press. _____ PSI
 Frac: Fluid Volume & Type 30,000 g KCl SW, Sand: 28,000 # 20/40 Mesh
 Frac Rate 34.5 BPM Frac Pressure 3500 PSI ISIP _____ PSI
 Comments Stage 1/3

Zone # 3 - Formation Dakota Date 7/27/65 Perfs w/JSPF 2 JSPF @
6738-44, 6748-55, 6760-62

Press Tstd 4000 PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
 Acid: Vol. & Type _____, # balls _____, Rate _____ BPM, Press. _____ PSI
 Frac: Fluid Volume & Type 40,000 g SW, Sand: 35,000 # 20/40 Mesh
 Frac Rate 43 BPM Frac Pressure 3300 PSI ISIP _____ PSI
 Comments Stage 2/3

- CASING REPAIR RECORD -

Depth of Leak _____, # of squeezes required _____, # of sx used _____
 Cathodic Protection? Yes _____ No _____ Date Installed _____

Comments 1. 7/65: Well sidetracked and deepened to 6941. OH sqzd off
w/550 sxs. Sdtrk @ 3957. TC = \$77,170

2. Turned on 12-29-65 LOC: 990' FSL, 990 FWL

Prepared By: _____ Date: _____ Verified By: _____ Date: _____

S.M. Struna

PA8

- TENNECO WELL HISTORY -

2591/22

-2-

Well Name State Com #1 Unit M Sec 22 T 30N R 9W

- COMPLETION & WORKOVER RECORD -

Zone #4 - Formation Dakota Date 7-27-65 Perfs w/JSPF 2 JSPF @ 6648-61, 6686-90

Press Tstd _____ PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
 Acid: Vol. & Type _____, # balls _____, Rate _____ BPM, Press. _____ PSI
 Frac: Fluid Volume & Type 30,000 g SW, Sand: 28,000 # 20/40 Mesh
 Frac Rate 42 BPM Frac Pressure 3400 PSI ISIP _____ PSI
 Comments Stage 3/3

Zone # 5 - Formation Pt. LO Date 7/28/65 Perfs w/JSPF 2 JSPF @ 4247, 52, 58, 71, 4302, 05, 66, 68, 70, 4432; 34, 69, 72, 4523, 44, 51, 53, 59, 63, 4610, 1, 14

Press Tstd _____ PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
 Acid: Vol. & Type _____, # balls _____, Rate _____ BPM, Press. _____ PSI
 Frac: Fluid Volume & Type 108,000 g SW, Sand: 20,000 # 8/12 Mesh
 Frac Rate 48.5 BPM Frac Pressure 2600 PSI ISIP 400 PSI
 Comments _____

Zone # 6 - Formation CH & MV Date 7/28/65 Perfs w/JSPF 2 JSPF @ 3922, 28, 36, 64, 67, 73, 76, 80, 82, 89, 98, 4016, 24, 44, 47, 54, 61, 67, 72, 74, 83

Press Tstd _____ PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
 Acid: Vol. & Type 1000 g 15% HCl, # balls _____, Rate _____ BPM, Press. _____ PSI
 Frac: Fluid Volume & Type 71,000 g SW, Sand: 15,000 # 8/12 Mesh
 Frac Rate 38 BPM Frac Pressure 3700 PSI ISIP 1000 PSI
 Comments _____

Comments _____

Prepared By: _____ Date: _____ Verified By: _____ Date: _____

S.M. Struna

C-116
Revised 1-1-65

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

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

Julie Buckner
Signature
Administrative Supervisor
(Title)

(Date)

C-116
Revised 1-1-65

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Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

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

Marjula Subheda
(Signature)

Administrative Supervisor

(Page)

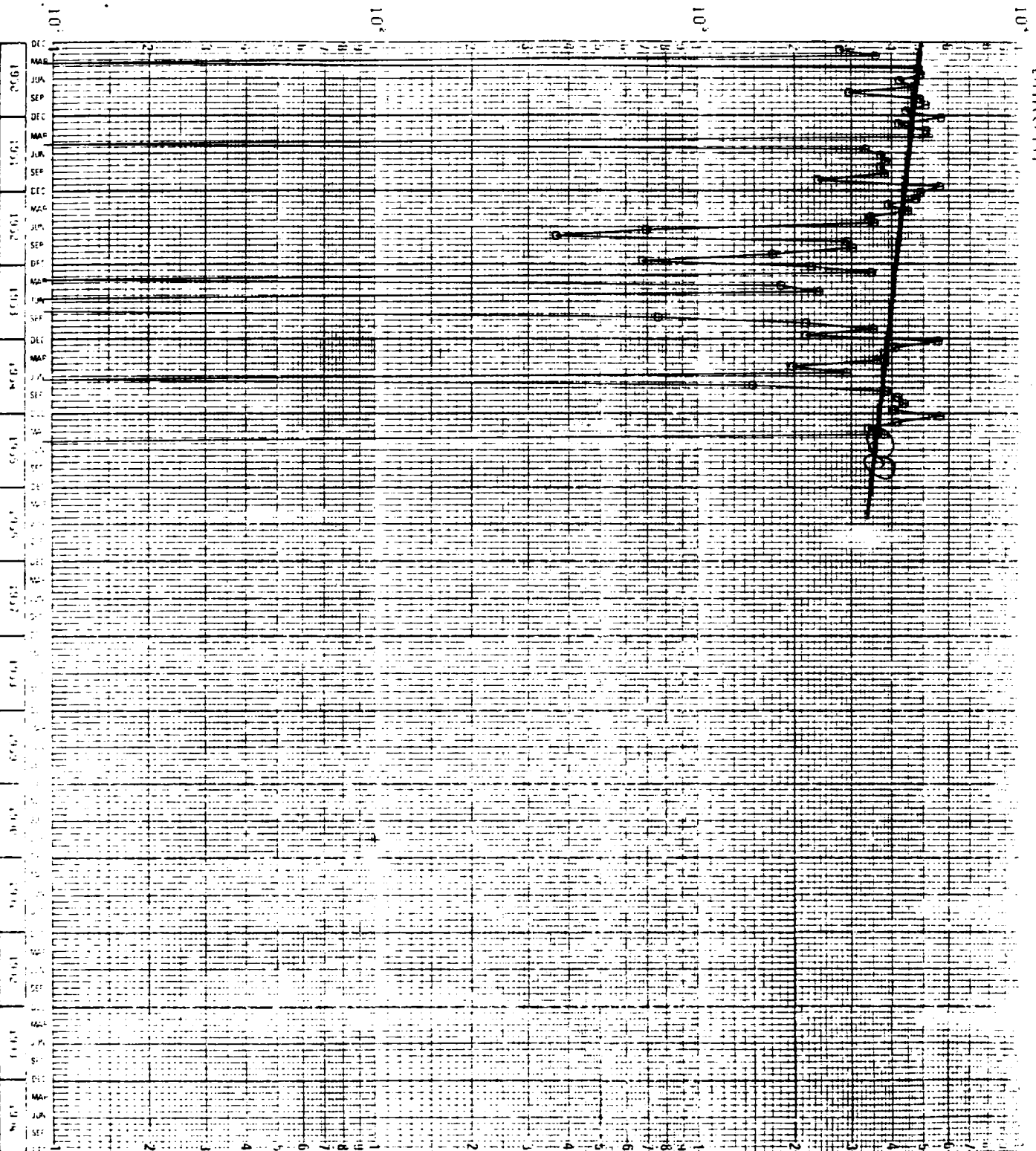
STATE COM 1

DETERMINATION OF ALLOCATION PERCENTAGES

The decline rates and reserve estimate for the Mesaverde and Dakota are indicated below:

	<u>DECLINE PERCENTAGE</u>	<u>REMAINING RESERVES</u>
MESAVERDE	10%	183 MMCF
DAKOTA	6%	484 MMCF

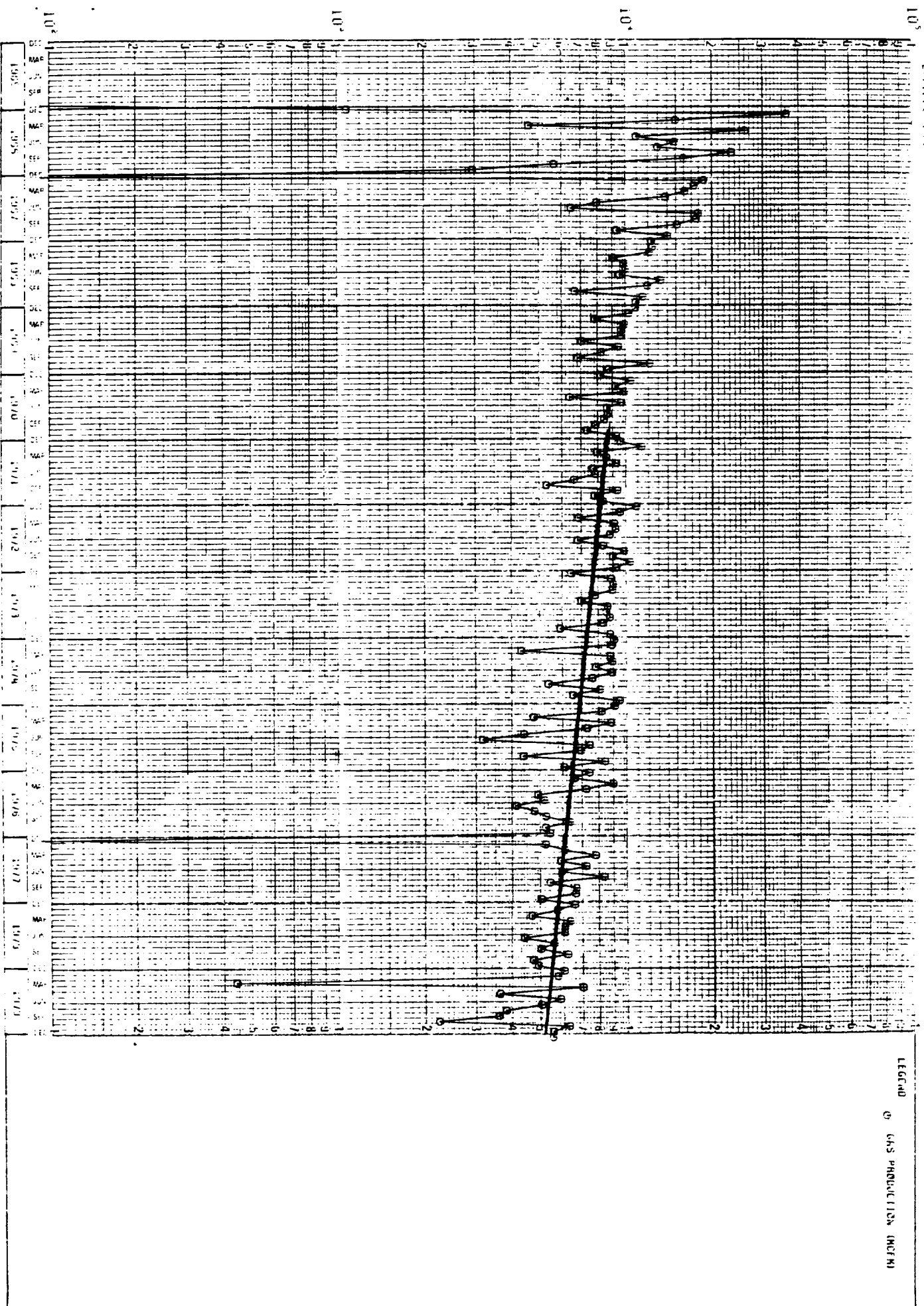
STAFF COM 1
0300009W32M
08K014



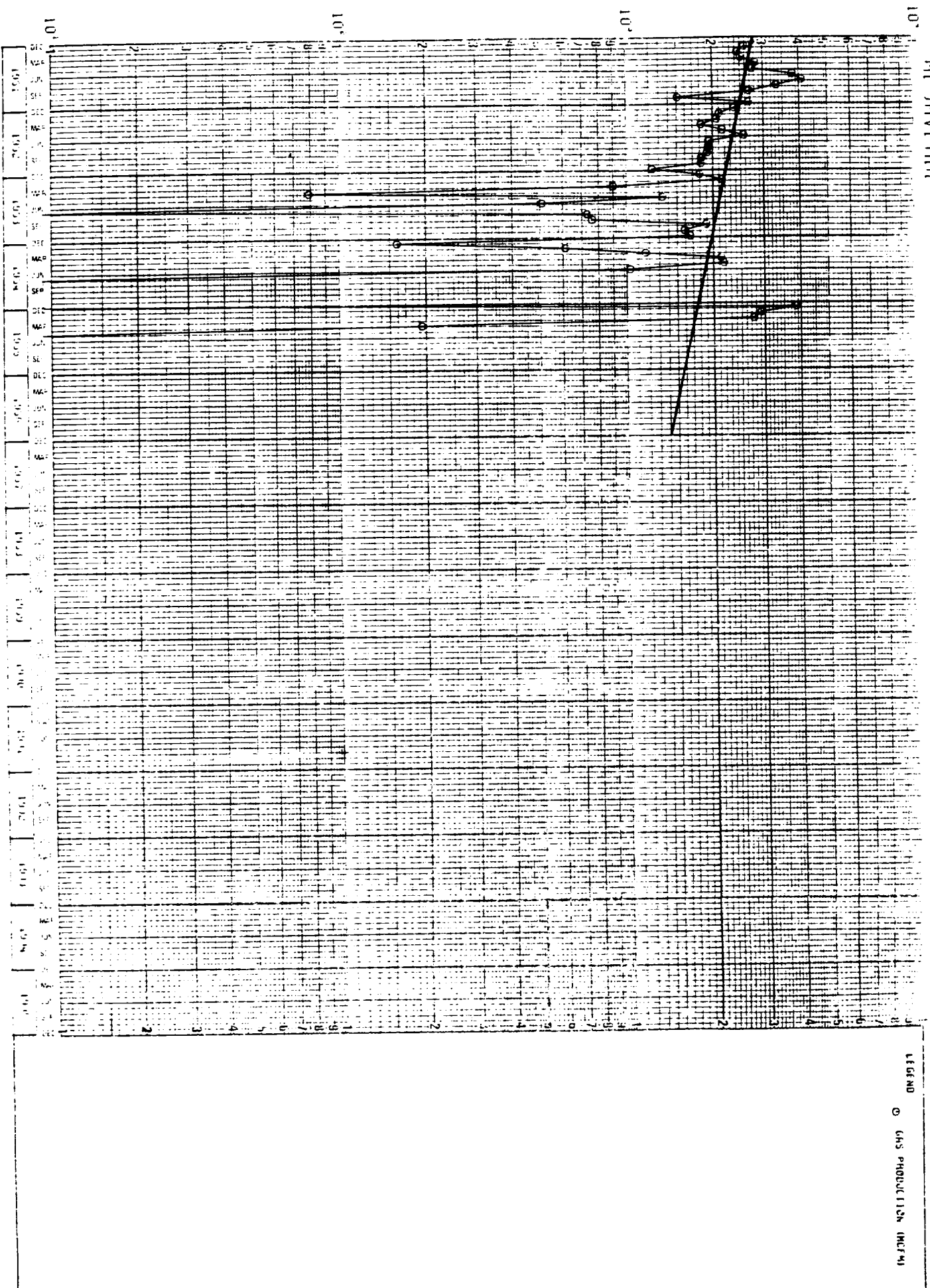
LEGEND
GAS PRODUCTION (MCFM)

STATE COM 1
0300009W32M

04K0111



STATE COM 1
030N009W32M
MESHAVE H11



SHEET 100M 1
 0300009W32M
 ME SHAVE ROE

