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. 24, 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 Donnew Moore #1 N-8-30N-8W
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Docket for hearing

Yours truly,

Brad D. Clay

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: Moore 1
990' FSL, 1650' FWL
Sec. 8, T30N, R8W
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

PAD

Paul Doyle
Division Production Engineer

SMc:st

Enclosures

cc: Mr. Jerry Hertzler
Mr. Frank Weiss

MV NM

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

El Paso Natural Gas
Post Office Box 4990
Farmington, NM 87499

Attention: Don Reed

RE: Moore 1
990' FSL, 1650' FWL
Sec. 8, T30N, R8W
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

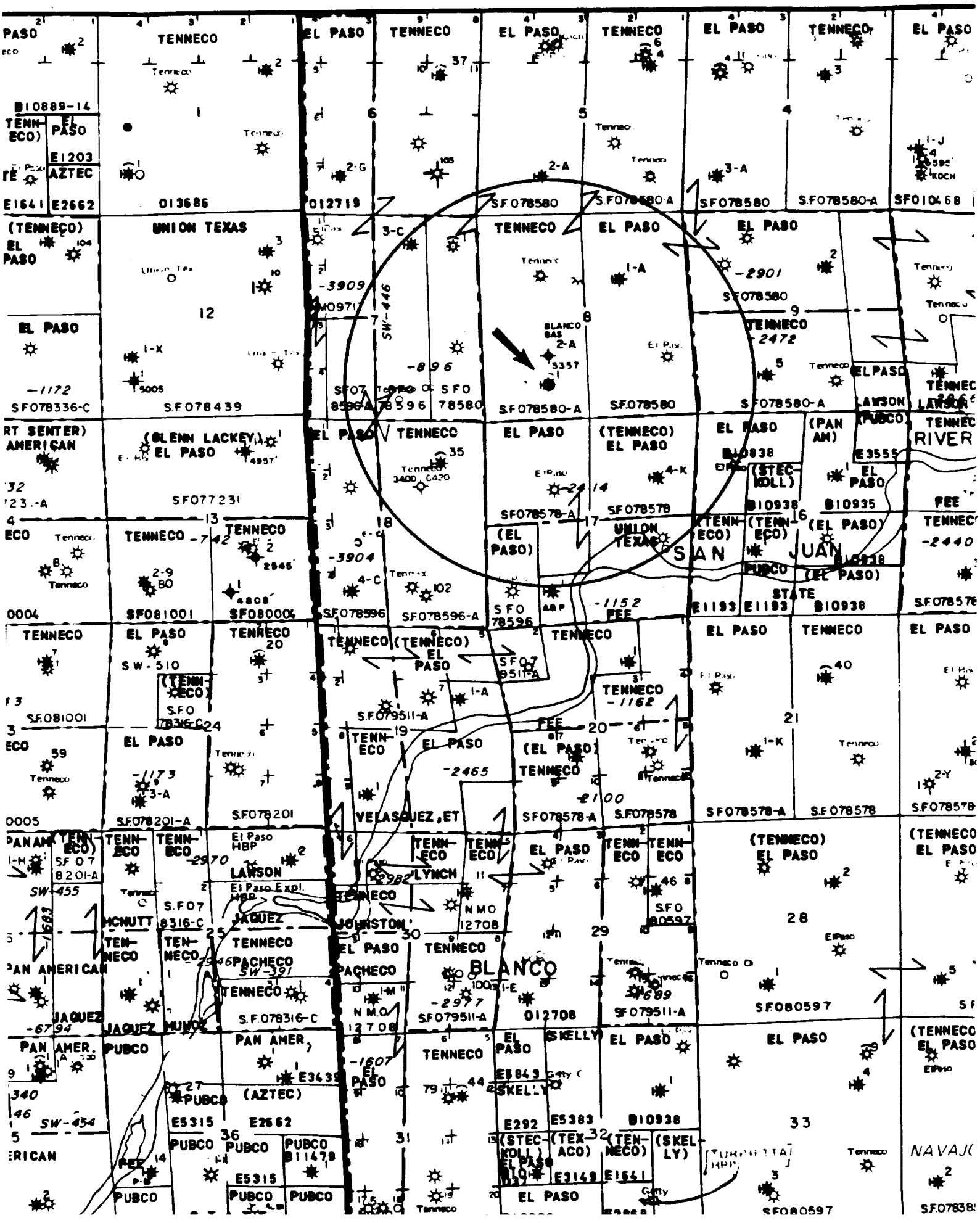
SMc:st

WAIVER

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

Name: _____ Title: _____

Date: _____


TENNECO
EL PASO
UNION TEXAS
(GLENN LACKEY)
(TENNECO) EL PASO
(PAN AM)
(STEC-KOLL)
(TENN-ECO)
(EL PASO)
SAN JUAN
RIVER
STATE
BLANCO
BLANCO GAS
PAN AMERICAN
PAN AMER.
(AZTEC)
LAWSON
LYNCH
JOHNSTON
PACHECO
VELASQUEZ, ET
JAQUEZ
MCNUTT
(SKELLY)
(TEX-ACO)
NAVAJO
SW-446
SW-455
SW-454
SW-391

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 Moore #1 was completed as a Mesaverde-Dakota dual in May 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 838 psig at 7684' after 8 days of shut-in. This Dakota pressure corrected to a datum of 5000' was 773 psig. A pressure bomb could not be run for the Mesaverde since this zone produces up the annulus.

A dead weight surface pressure of 432 psig was recorded for the Mesaverde after 8 days of shut-in. The fluid level was found at 4836'. The bottom-hole pressure for the Mesaverde was then calculated to be 561 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.

Compatibility tests were conducted using Dakota water and Mesaverde water from the offsets Moore #6E and Moore # 1A respectively. 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 by 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 and will result 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 93% assigned to the Mesaverde and 7% assigned to the Dakota.

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

Frank G. Weiss III JMH
Frank G. Weiss III
Senior Production Engineer - WRMD

0365

MESAVERDE

MOORE 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	0.658	CRITICAL TEMPERATURE	377.
BOTTOM HOLE TEMPERATURE	150.	CRITICAL PRESSURE	667.
NITROGEN, MOL %	0.	CONDENSATE GRAVITY, DEG API	50.0
CARBON DIOXIDE, MOL %	0.	WATER GRAVITY	1.047
HYDROGEN SULFIDE, MOL %	0.	PIPE ROUGHNESS, INCHES	0.00060

GAS RATE M/D-----	WH TEMP DEG F--	WELLHEAD PSIG------	BOTTOMHOLE PSIG------	P/Z PSIG------	CONDENSATE STB/MMCF--	WATER BW/MMCF--
0.	60.	432.	486.◆	AT 4836. FEET (MEAS) FLUID LEVEL		
			561.◆	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 MOORE Well #1

County SAN JUAN State NEW MEXICO Date 5-16-85

Shut-In _____ Zero Point G.L. Tbg. Pressure 691

Casing Pressure PACKER Tbg. Depth _____ Casing Perf. _____

Max. Temp. _____ Fluid Level _____

DEPTH	PSIG	GRADIENT
0	691	----
1000	708	.017
2000	725	.017
3000	742	.017
4000	757	.015
5000	773	.016
6000	788	.015
7000	804	.016
7684	838	.050

MESAVERDE

8 DAY SHUT IN PRESSURE TEST
DEAD WEIGHT SURFACE PRESSURE TEST 432 psig
ANNULUS FLUID LEVEL 4836 FT.

SOUTHERN UNION GATHERING COMPANY
REPORT OF BTU TEST RESULTS

TO: TENNECO OIL CO (846)

REF: MOORE 1
4146
NORTHWEST NEW MEXICO (70)

DATE OF THIS TEST: 8/02/84
DATE OF LAST TEST: 7/08/83
TEST FREQUENCY: NOT SPECIFIED

RESULTS: SPECIFIC GRAVITY: 0.6585
BTU/CF @ 14.73/60F/DRY: 1145.8

	MOL %	G.P.M.
CARBON DIOXIDE	1.072	0.0000
NITROGEN	0.157	0.0000
METHANE	87.400	0.0000
ETHANE	6.850	1.8320
PROPANE	2.666	0.7340
ISOBUTANE	0.497	0.1620
N-BUTANE	0.677	0.2130
ISOPENTANE	0.248	0.0900
N-PENTANE	0.176	0.0630
HEXANE +	0.299	0.1220
TOTAL	100.042	3.2160

SMITH ENERGY SERVICES
Divison 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

Loren L. Diede
District Engineer

LLD/kr

ILLEGIBLE

ILLEGIBLE

- T E N N E C O W E L L H I S T O R Y -

2591/5

Well Name Moore #1 (MV/Dak) Unit N Sec 8 T 30 R 8
TD 7780 PBTD 7740 County San Juan State NM WI 50% RI 34.1%
Drlg Cost ? Comp Cost ? Comp Date '51, '65 Trn On Date 12-30-65 (Dak Only)

1965-Dak-AOF IP: BOPD 1236 MCFD BWPD 4 Hours SIWHP
1965-MV-AOF IP: BOPD 967 MCFD BWPD 4 Hours SIWHP

- T U B U L A R R E C O R D -

Size	Weight	Grade	Depth	Cement	Top Cement	Hole Size	Remarks
10-3/4	32.75	?	247	199	surface	12-1/4	
7	20,23	J-55	5400	100/100	Temp sur.	8-3/4	DV @ 4883
					4220		
4-1/2	10.5&11.6	J-55	7755	400/225	?	6-1/4	4-29-65
2-3/8			7541				

Packer? Yes X No Type Model P Depth 7541
Anchor? Yes No X Type Depth
Pump Type

- C O M P L E T I O N & W O R K O V E R R E C O R D -

Zone #1 - Formation MV Date 2-8-51 Perfs w/JSPF open hole, shot w/600 qts Nitro.

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 Nitro frac Tops: CH (4935), Menefee (5040), PL (5435)

Zone # 2 - Formation P.L. Date 1955 Perfs w/JSPF Open hole

Press Tstd PSI, Spot Acid - Type Gallons BDISIP
Acid: Vol. & Type ,# balls , Rate BPM, Press. PSI
Frac: Fluid Volume & Type 25,000 g water , Sand: 22,500 # 20/40 Mesh
Frac Rate 48 BPM Frac Pressure 750 PSI ISIP PSI
Comments

Zone # 3 - Formation ~~B~~ MV Date 1955 Perfs w/JSPF 5301-5392 w/total of 102 shots

Press Tstd PSI, Spot Acid - Type Gallons BDISIP
Acid: Vol. & Type ,# balls , Rate BPM, Press. PSI
Frac: Fluid Volume & Type 20,000 g water , Sand: 20,000 # ? Mesh
Frac Rate 36 BPM Frac Pressure 500 PSI ISIP PSI
Comments

- C A S I N G R E P A I R R E C O R D -

Depth of Leak 1. 3250 2. 1129, # of squeezes required 1.1 2.1, # of sx used 1. 150 2. 150
Cathodic Protection? Yes No Date Installed

Comments Loc: 990' FSL, 1650 FWL
1965: Squeezed all perfs and open hole. Whipstocked well @ 4763'.
Drill deviated hole to 7780' KB.

Prepared By: amm Date: 2-22-84 Verified By: Date:

A.M. McLean
P/A

Well Name Moore #1 (MV/Dak) Unit N Sec 8 T 30 R 8

- COMPLETION & WORKOVER RECORD -

Zone #4 - Formation C.H. Date 1955 Perfs w/JSPF 4920-5020 w/200 bullets

Press Tstd _____ PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
Acid: Vol. & Type _____, # balls ___, Rate ___ BPM, Press. ___ PSI
Frac: Fluid Volume & Type 27,000 G water, Sand: 25,000 # ? Mesh
Frac Rate 54 BPM Frac Pressure 700 PSI ISIP _____ PSI
Comments

Zone # 5 - Formation Dakota Date 5-12-65 Perfs w/JSPF 7601-02, 05-06, 12-13, 15-16, 37-38, 66-67, 72-73, 77-78, 80-81, 7712-15 w/ 2 SPF

Press Tstd _____ PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
Acid: Vol. & Type 900 g acid, # balls 20, Rate 10 BPM, Press. 2000 PSI
Frac: Fluid Volume & Type 74,340 g water, Sand: 55,000 # 20/40 Mesh
Frac Rate 43 BPM Frac Pressure 3500 PSI ISIP 1850 PSI
Comments

Zone # 6 - Formation Pt. LO Date 5-13-65 Perfs w/JSPF 5403-07, 34-64, 86-90, 5501-06, w/ 2 SPF

Press Tstd _____ PSI, Spot Acid - Type Acid Gallons 500 BDISIP _____
Acid: Vol. & Type _____, # balls ___, Rate ___ BPM, Press. ___ PSI
Frac: Fluid Volume & Type 80,000 g water, Sand: 75,000 # 10-20/8-12 Mesh
rac Rate _____ BPM Frac Pressure _____ PSI ISIP _____ PSI
Comments

Comments

Prepared By: AMM Date: 2-22-84 Verified By: Date:

A.M. McLean

- TENNECO WELL HISTORY -

Well Name Moore #1 (MV/Dak) Unit N Sec 8 T 30 R 8

- COMPLETION & WORKOVER RECORD -

Zone # 7 - Formation Clfhse Date 5-13-65 Perfs w/JSPF 4929-45, 4993-95, 5000-10, 18-30, 43-47, 62-68, 5194-5200, 5212-26, 2 SPF, 84 holes

Press Tstd _____ PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
Acid: Vol. & Type _____, # balls ___, Rate ___ BPM, Press. ___ PSI
Frac: Fluid Volume & Type 92,820 g water, Sand: 75,000 # 10-20/8-12 Mesh
Frac Rate 67 BPM Frac Pressure 2200 PSI ISIP -0- PSI
Comments

Zone # - Formation _____ Date _____ Perfs w/JSPF _____

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

Zone # - Formation _____ Date _____ Perfs w/JSPF _____

Press Tstd _____ PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
Acid: Vol. & Type _____, # balls ___, Rate ___ BPM, Press. ___ PSI
Frac: Fluid Volume & Type _____, Sand: _____ # _____ Mesh
rac Rate _____ BPM Frac Pressure _____ PSI ISIP _____ PSI
Comments

Comments

Prepared By: AMM Date: 2-22-84 Verified By: Date:
A. M. McLean

NEW MEXICO OIL CONSERVATION COMMISSION

GAS-OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
Tenneco Oil Company	Mesaverde	San Juan

Address: P.O. Box 3249, Englewood, CO 80155

TYPE OF TEST - (X): Scheduled [X] Completion [ ] Special [ ]

LEASE NAME	WELL NO.	LOCATION U	LOCATION S	LOCATION T	LOCATION R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	PROD. DURING TEST GRAV. OIL	PROD. DURING TEST OIL BBLS.	PROD. DURING TEST GAS M.C.F.	GAS - OIL RATIO CU.FT./BBL
Moore	1	N	8	30	8		S									

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.

Unita Surgook
(Signature)

Administrative Supervisor
(Title)

(Date)

NEW MEXICO OIL CONSERVATION COMMISSION

GAS-OIL RATIO TESTS

C-116
Revised 1-1-65

Operator: Tenneco Oil Company
Pool: Dakota
County: San Juan
Address: P.O. Box 3249, Englewood, CO 80155
TYPE OF TEST - (X): Scheduled [XX] Completion [ ] Special [ ]

LEASE NAME	WELL NO.	LOCATION U	LOCATION S	LOCATION T	LOCATION R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	PROD. DURING TEST GRAV. OIL	PROD. DURING TEST OIL BBLS.	PROD. DURING TEST GAS M.C.F.	GAS - OIL RATIO CU.FT/BBL
Moore	1	N	8	30	8	5/28/85	F	N/A			24	0	62.0	0	7.13	0

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.

Ursula Sullivan
(Signature)

Administrative Supervisor
(Title)

(Date)

MOORE #1

DETERMINATION OF ALLOCATION PERCENTAGES

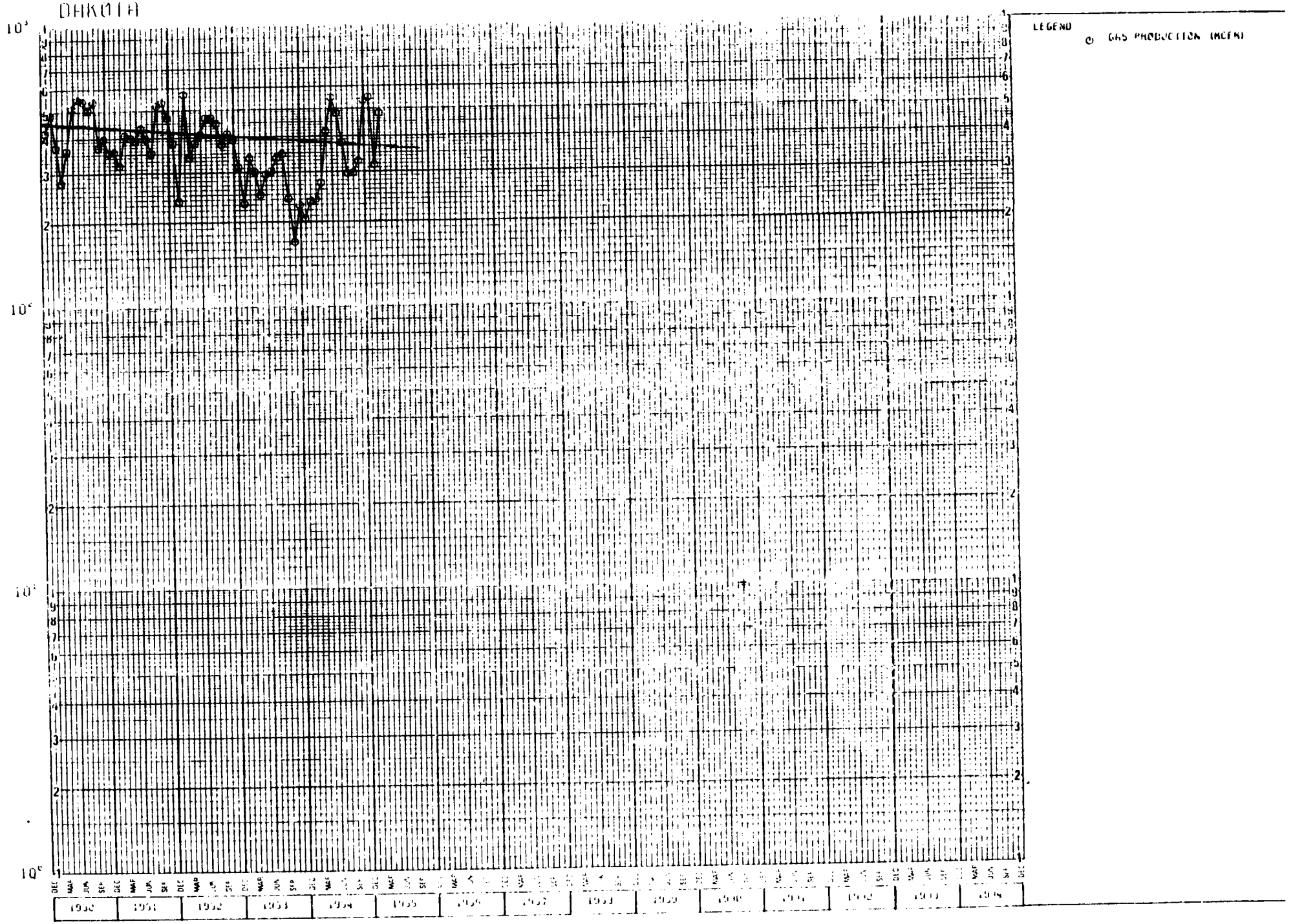
The decline rates and reserve estimate for the Mesaverde and Dakota are indicated below:

	DECLINE PERCENTAGE	REMAINING RESERVES
MESAVERDE	5%	1.32 BCF
DAKOTA	4%	105 MMCF

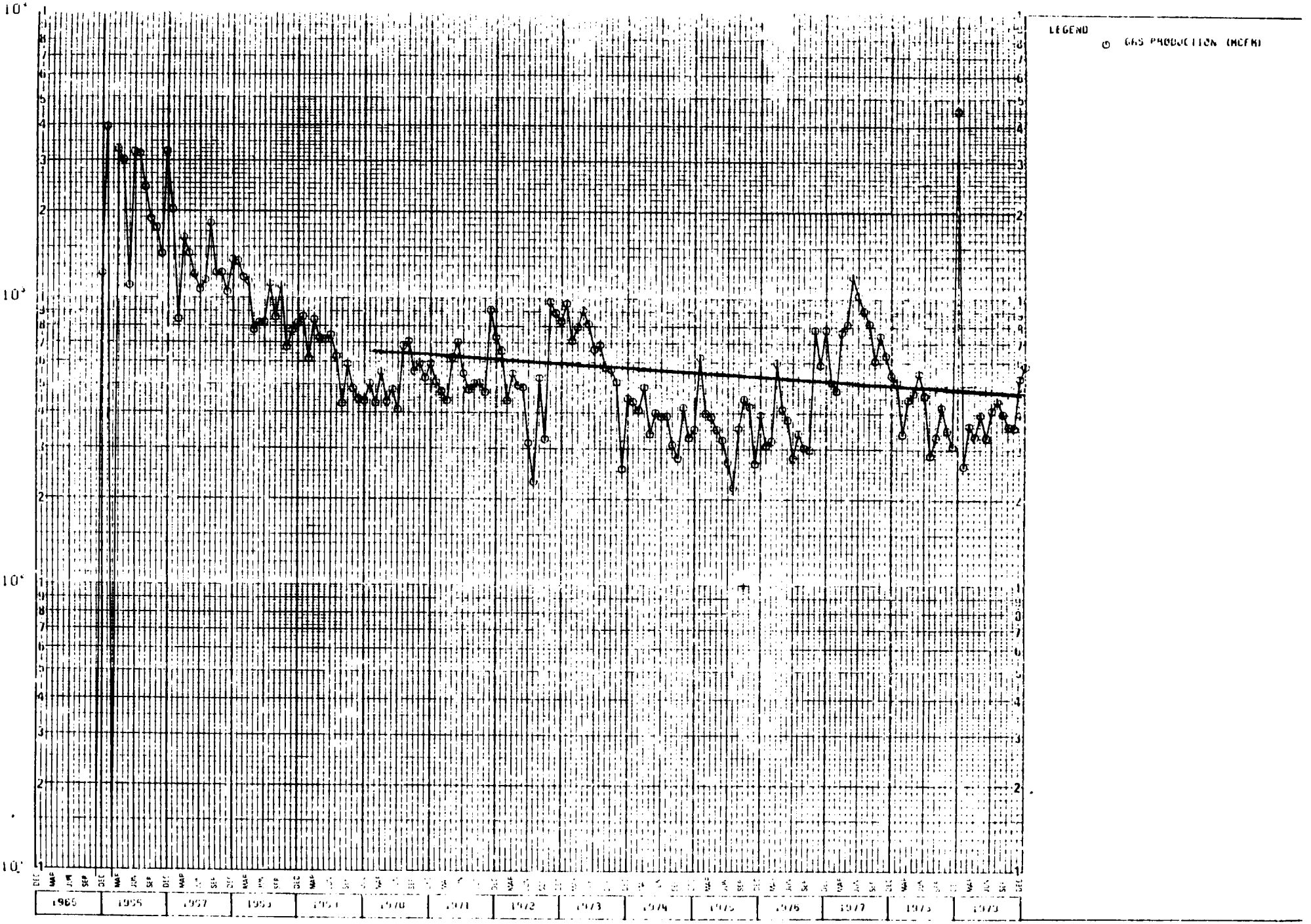
MOORE 1

03SN008W08N

DAKOTA



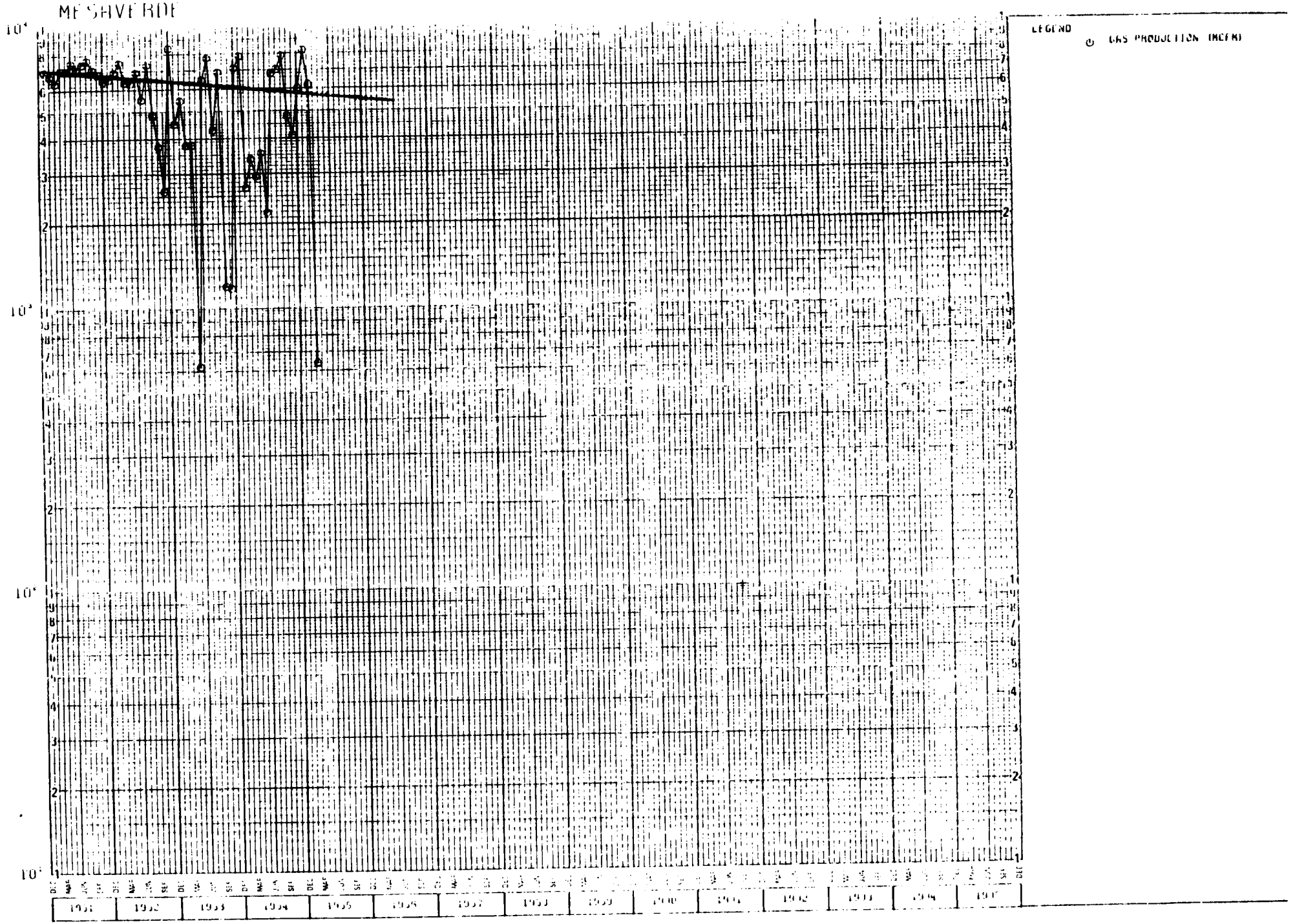
MOORE 1
03S0N0108W08H
DAKOTA



MOORE 1

03S0N008W08N

MESAVERDE



MOORE 1

03S0N00BW08N

MESAVERDE