

NEW MEXICO OIL CONSERVATION DIVISION
 - Engineering Bureau -

2944

ADMINISTRATIVE APPLICATION COVER SHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
 [DD-Directional Drilling] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION - Check Those Which Apply for [A]**

[A] Location - Spacing Unit - Directional Drilling
☐ NSL ☐ NSP ☐ DD ☐ SD

Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[2] **NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☒ Does Not Apply**

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners
 [B] ☐ Offset Operators, Leaseholders or Surface Owner
 [C] ☐ Application is One Which Requires Published Legal Notice
 [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
 [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
 [F] ☐ Waivers are Attached

[3] **INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding**

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data (including API numbers, pool codes, etc.), pertinent information and any required notification is cause to have the application package returned with no action taken.

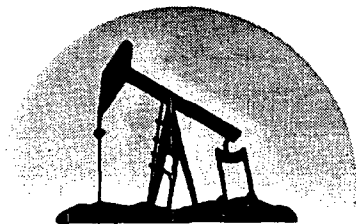
Note: Statement must be completed by an individual with supervisory capacity.

Brian Collins
 Print or Type Name

Brian Collins
 Signature

Engr.
 Title

19 July 01
 Date



marbob
energy corporation

July 19, 2001

New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Attention: Engineering Bureau

RE: Application for Downhole Commingling

Gentlemen:

Marbob Energy Corporation respectfully requests approval to downhole commingle production in our "D" State number 7, 8, 9, and 10 wells. Enclosed, in triplicate, is the applications and supporting documentation. The ownership is identical as to the zones being commingled. We hope we have submitted all the information needed to reach a decision. However, if you are in need of further data, please do not hesitate to contact us.

Thank you for reviewing these applications.

Sincerely,

Dean Chumbley
Land Department

DC/mm
Enclosures

OIL CONSERVATION DIV.
01 JUL 23 PM 1:13

District I
1625 N. French Drive, Hobbs, NM 88240

District II
811 South First Street, Artesia, NM 88210

District III
1000 Rio Brazos Road, Aztec, NM 87410

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-107A
Revised May 15, 2000

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

APPLICATION TYPE
☒ Single Well
☐ Establish Pre-Approved Pools
EXISTING WELLBORE
☒ Yes ☐ No

APPLICATION FOR DOWNHOLE COMMINGLING

Marbob Energy Corporation P. O. Box 227 Artesia, NM 88211-0227
Operator Address
"D" State 10 D-36-17S-28E Eddy
Lease Well No. Unit Letter-Section-Township-Range County
OGRID No. 14049 Property Code 25375 API No. 30-015-31165 Lease Type: ☒ Federal ☐ State ☐ Fee

| DATA ELEMENT | UPPER ZONE | INTERMEDIATE ZONE | LOWER ZONE |
|--|--------------------------------------|---------------------|---|
| Pool Name | Artesia Queen Grayburg San Andres | | Artesia Glorieta Yeso |
| Pool Code | Oil - 3230 | | Oil - 96830 |
| Top and Bottom of Pay Section (Perforated or Open-Hole Interval) | | | 4011' - 4276' |
| Method of Production (Flowing or Artificial Lift) | Artificial Lift | | Artificial Lift |
| Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone) | 1300 psi est. | | 1700 psi est. |
| Oil Gravity or Gas BTU (Degree API or Gas BTU) | 36° API | | 39° API |
| Producing, Shut-In or New Zone | Not Tested Yet | | Producing |
| Date and Oil/Gas/Water Rates of Last Production. (Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data.) | Date: Rates: N/A | Date: Rates: | Date: May, 2001 Rates: 38 bopd, 344 bwpd 62 mcf/d |
| Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.) | Oil Gas 26 % 40 % | Oil Gas % % | Oil Gas 74 % 60 % |

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes ☒ No ☐
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail? Yes ☐ No ☐

Are all produced fluids from all commingled zones compatible with each other? Yes ☒ No ☐

Will commingling decrease the value of production? Yes ☐ No ☒

If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands
or the United States Bureau of Land Management been notified in writing of this application? Yes ☒ No ☐

NMOCD Reference Case No. applicable to this well: Administrative Order DHC-2906

Attachments:

- C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- Production curve for each zone for at least one year. (If not available, attach explanation.)
- For zones with no production history, estimated production rates and supporting data.
- Data to support allocation method or formula.
- Notification list of working, royalty and overriding royalty interests for uncommon interest cases.
- Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

- List of other orders approving downhole commingling within the proposed Pre-Approved Pools
- List of all operators within the proposed Pre-Approved Pools
- Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.
- Bottomhole pressure data.

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

SIGNATURE Ben Lollar TITLE Engr DATE 19 July 01

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

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

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

DISTRICT IV
P.O. BOX 2088, SANTA FE, N.M. 87504-2088

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|------------------------|--|-------------------------------------|
| API Number | Pool Code 96830 | Pool Name ARTESIA GLORIETTA YESO |
| Property Code 25375 | Property Name D STATE | Well Number 10 |
| OGRID No. 14049 | Operator Name MARBOB ENERGY CORPORATION | Elevation 3679 |

Surface Location

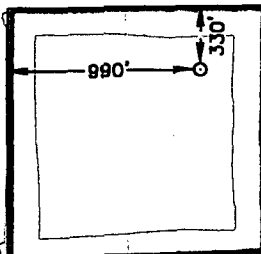
| | | | | | | | | | |
|--------------------|---------------|------------------|---------------|---------|----------------------|---------------------------|----------------------|------------------------|----------------|
| UL or lot No. D | Section 36 | Township 17 S | Range 28 E | Lot Idn | Feet from the 330 | North/South line NORTH | Feet from the 990 | East/West line WEST | County EDDY |
|--------------------|---------------|------------------|---------------|---------|----------------------|---------------------------|----------------------|------------------------|----------------|

Bottom Hole Location If Different From Surface

| | | | | | | | | | |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|

| | | | |
|-----------------------|-----------------|--------------------|-----------|
| Dedicated Acres 40 | Joint or Infill | Consolidation Code | Order No. |
|-----------------------|-----------------|--------------------|-----------|

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

| | | | | | | | | | |
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OPERATOR CERTIFICATION

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

Robin Cockrum
Signature

ROBIN COCKRUM
Printed Name

PRODUCTION ANALYST
Title

5/23/00
Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

MAY 13, 2000
Date Surveyed

LMP
Signature & Seal of Professional Surveyor

Ronald J. Kisson
Professional Surveyor

600-11-0602
Certificate No.

RONALD J. KISSON
GARY KISSON
MACON McDONALD

3239
12841
12185

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

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

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

DISTRICT IV
P.O. Box 2088, Santa Fe, N.M. 87504-2088

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|------------------------|--|---|
| API Number | Pool Code 3230 | Pool Name Artesia Queen Grayburg, San Andres |
| Property Code 25375 | Property Name D STATE | Well Number 10 |
| OGRID No. 14049 | Operator Name MARBOB ENERGY CORPORATION | Elevation 3679 |

Surface Location

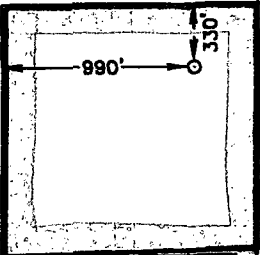
| | | | | | | | | | |
|--------------------|---------------|------------------|---------------|---------|----------------------|---------------------------|----------------------|------------------------|----------------|
| UL or lot No. D | Section 36 | Township 17 S | Range 28 E | Lot Idn | Feet from the 330 | North/South line NORTH | Feet from the 990 | East/West line WEST | County EDDY |
|--------------------|---------------|------------------|---------------|---------|----------------------|---------------------------|----------------------|------------------------|----------------|

Bottom Hole Location If Different From Surface

| | | | | | | | | | |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|

| | | | |
|-----------------------|-----------------|--------------------|-----------|
| Dedicated Acres 40 | Joint or Infill | Consolidation Code | Order No. |
|-----------------------|-----------------|--------------------|-----------|

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

| | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|
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OPERATOR CERTIFICATION

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

Robin Cockrum
Signature

ROBIN COCKRUM
Printed Name

PRODUCTION ANALYST
Title

5/23/00
Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

MAY 13, 2000

Date Surveyed _____ LMP

Signature & Seal of Professional Surveyor
Ronald L. Kidson 5/16/00
60-11-0602

Certificate No. RONALD L. KIDSON 3239
GARY KIDSON 12641
MACON McDONALD 12185

APPLICATION FOR DOWNHOLE COMMINGLING
 MARBOB ENERGY CORPORATION
 "D" STATE NO. 1
 M-25-17S-28E, EDDY COUNTY

DATA SUPPORTING OIL AND GAS ALLOCATION FOR EACH ZONE

FOR THE SAN ANDRES, 33 AREA WELLS WERE USED TO DERIVE AN AVERAGE EUR = 33.9 MBO, 101.7 MMCF (SEE ATTACHED PRODUCTION PLOT)
 FOR THE YESO, 10 AREA WELLS WERE USED TO DERIVE AN AVERAGE EUR = 97.8 MBO, 150.3 MMCF (SEE ATTACHED PRODUCTION PLOTS)
 PRODUCTION TO DATE ON THE "D" STATE LEASE INDICATES THAT THE ABOVE AVERAGE EUR IS REASONABLE IN THE YESO

YESO WELL DATA:

| LEASE | EUR OIL (MBO) | EUR GAS (MMCF) | # WELLS |
|----------|------------------|-------------------|---------|
| B440 | 100.2 | 135.3 | 5 |
| BR549 | 93.5 | 187 | 3 |
| MUSKEGON | 98.4 | 132.8 | 2 |

WEIGHTED 97.8 150.3
 AVG. EUR

SAN ANDRES WELL DATA:

| | EUR OIL (MBO) | EUR GAS (MMCF) |
|-----------------|------------------|-------------------|
| 33 MARBOB WELLS | 33.9 | 101.7 |

ALLOCATION SUMMARY:

OIL—YESO = 97.8 MBO/(97.8 MBO + 33.9 MBO) = 0.74

OIL—SAN ANDRES = 33.9 MBO/(97.8 MBO + 33.9 MBO) = 0.26

GAS—YESO = 150.3 MMCF/(150.3 MMCF + 101.7 MMCF) = 0.60

GAS—SAN ANDRES = 101.7 MMCF/(150.3 MMCF + 101.7 MMCF) = 0.40

Note:

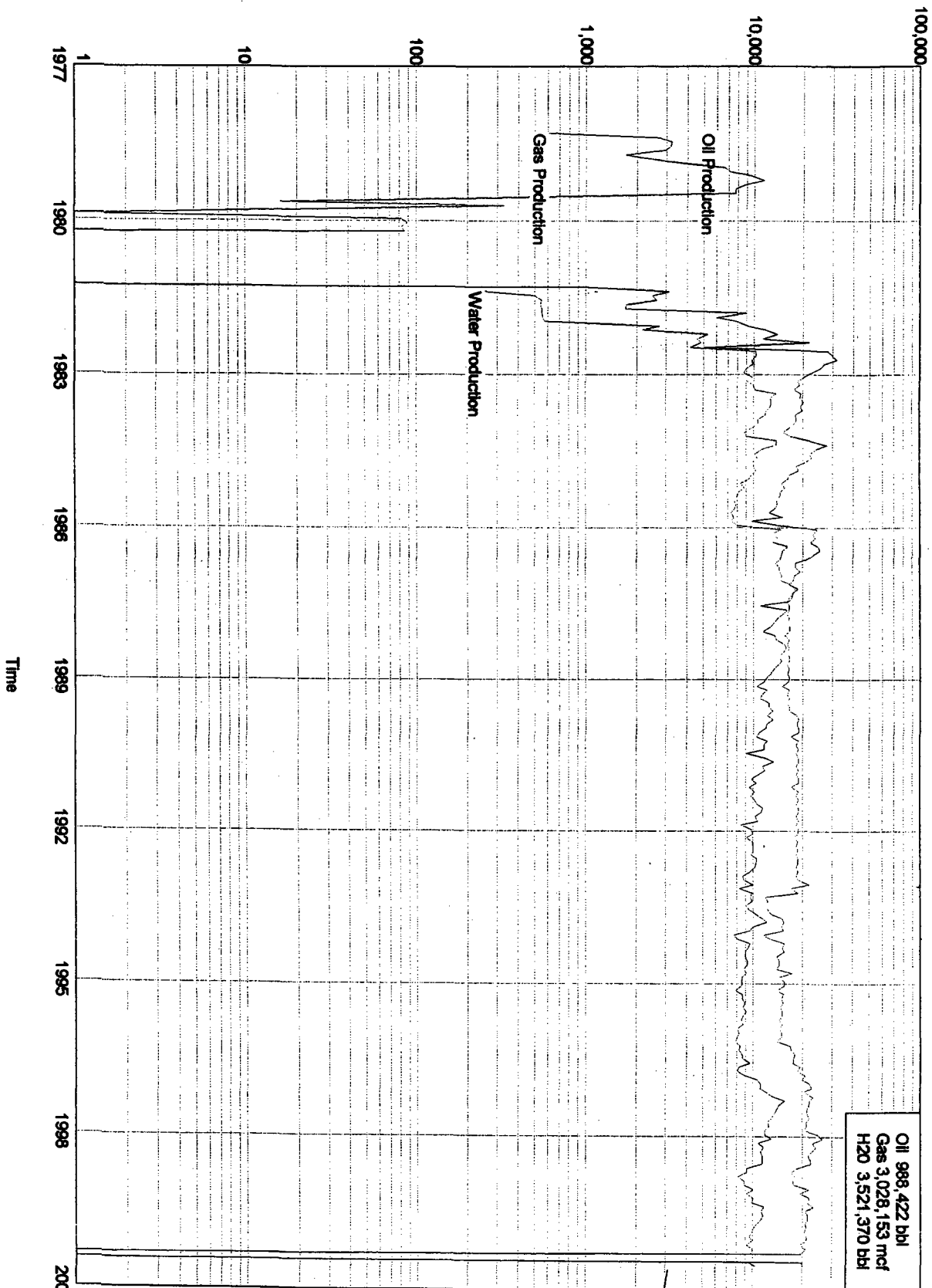
The "D" state Yeso wells have not been producing long enough to establish an accurate decline curve. Nearby Yeso wells are used as analogs for estimating reserves. Attached

25 SAN ANDRES Well
Sec. 26, 27, 34 - 17s-28e
Eddy, NM

Lease Name: MULTIPLE
County, State: EDDY, Unknown
Operator: MARBOB ENERGY CORPORATION
Field: MULTIPLE
Reservoir: QUEEN-GRAYBURG-SAN A
Location:

Aug. EUR per well = 33.9 MBO
San Andres
Aug. GOR = 3000 (Aug 101.7 MMTcf/w)

MULTIPLE - MULTIPLE



degr = 13%/yr.

Oil Production
Gas Production
Water Production

$$RUR = \frac{-365 (Q_1 - Q_2)}{\ln (1-d)}$$

$$Q_1 = 110 \text{ bopd}$$

$$Q_2 = 60 \text{ bopd (33\% w)}$$

$$d = 13\%/yr$$

$$RUR = \frac{-365 (110 - 60)}{\ln (1-13)}$$

$$= 131,048 \text{ bo}$$

$$EUR = 988,422$$

$$+ 131,048$$

$$1,119,470 \text{ BO}$$

$$EUR/well =$$

$$\frac{1,119,470 \text{ BO}}{33}$$

$$= 33.923 \text{ BO}$$

Yeso Wells

These wells are used as an analog to the "D" State Yeso wells because the "D" State doesn't have enough production history.

Lease Name: B 440 FEDERAL
County, State: EDDY, Unknown
Operator: MARBOB ENERGY CORPORATION
Field: EMPIRE EAST
Reservoir: YESO
Location:

B 440 FEDERAL - EMPIRE EAST

$$\text{Avg. EUR per well} = 100.2 \text{ MBO}$$

Yeso

$$\text{Avg. GOR} = 1350 \text{ (Avg. } 135.3 \text{ MMBF/well)}$$

$$RUR = \frac{-365(Q_1 - Q_2)}{\ln(1-d)}$$

$$Q_1 = 230 \text{ bopd}$$

$$Q_2 = 10 \text{ bopd}$$

$$d = 20\%/yr$$

$$RUR = \frac{-365(230 - 10)}{\ln(1 - .20)}$$

$$= 359,858 \text{ BO}$$

$$EUR = 141,004$$

$$+ 359,858$$

$$500,862 \text{ BO}$$

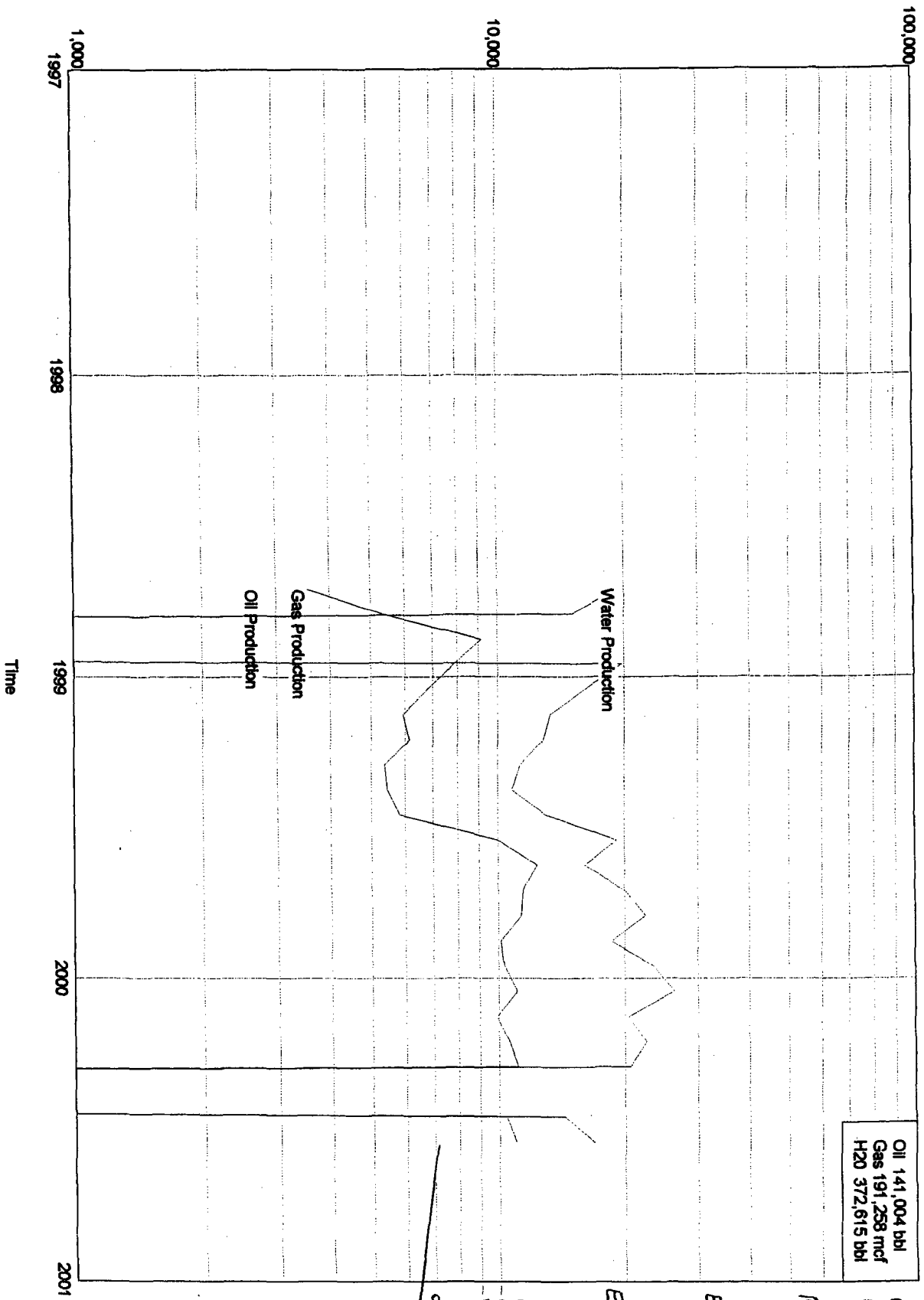
$$EUR/well = 500,862$$

$$5$$

$$= 100,172 \text{ BF}$$

Oil Production
Gas Production
Water Production

$$d_{exp} = 20\%/yr.$$



Oil 141,004 bbl
Gas 191,258 mcf
H2O 372,615 bbl

1000 wells

3 wells currently producing an average of 50 bopd per well (GOR = 2000)
 Cumulative production to date (through Jan 01) = 45,000 BO (Avg. 15,000 BO per well)
 Production analog to "D" state.

Lease Name: BR-549 STATE
 County, State: EDDY, Unknown
 Operator: MARBOB ENERGY CORPORATION
 Field: EMPIRE EAST
 Reservoir:
 Location:

BR-549 STATE - EMPIRE EAST

Avg. EUR per well = 73.0 mbo

Yeso

Avg. GOR = 2000 (Avg. 187 MMCF/well)

$$FUR = \frac{-365(Q_1 - Q_{21})}{\ln(1-d)}$$

Oil 4,994 bbl
 Gas 8,096 mcf
 H2O 6,962 bbl

$Q_1 = 50 \text{ bopd}$
 $Q_{21} = 2 \text{ bopd}$

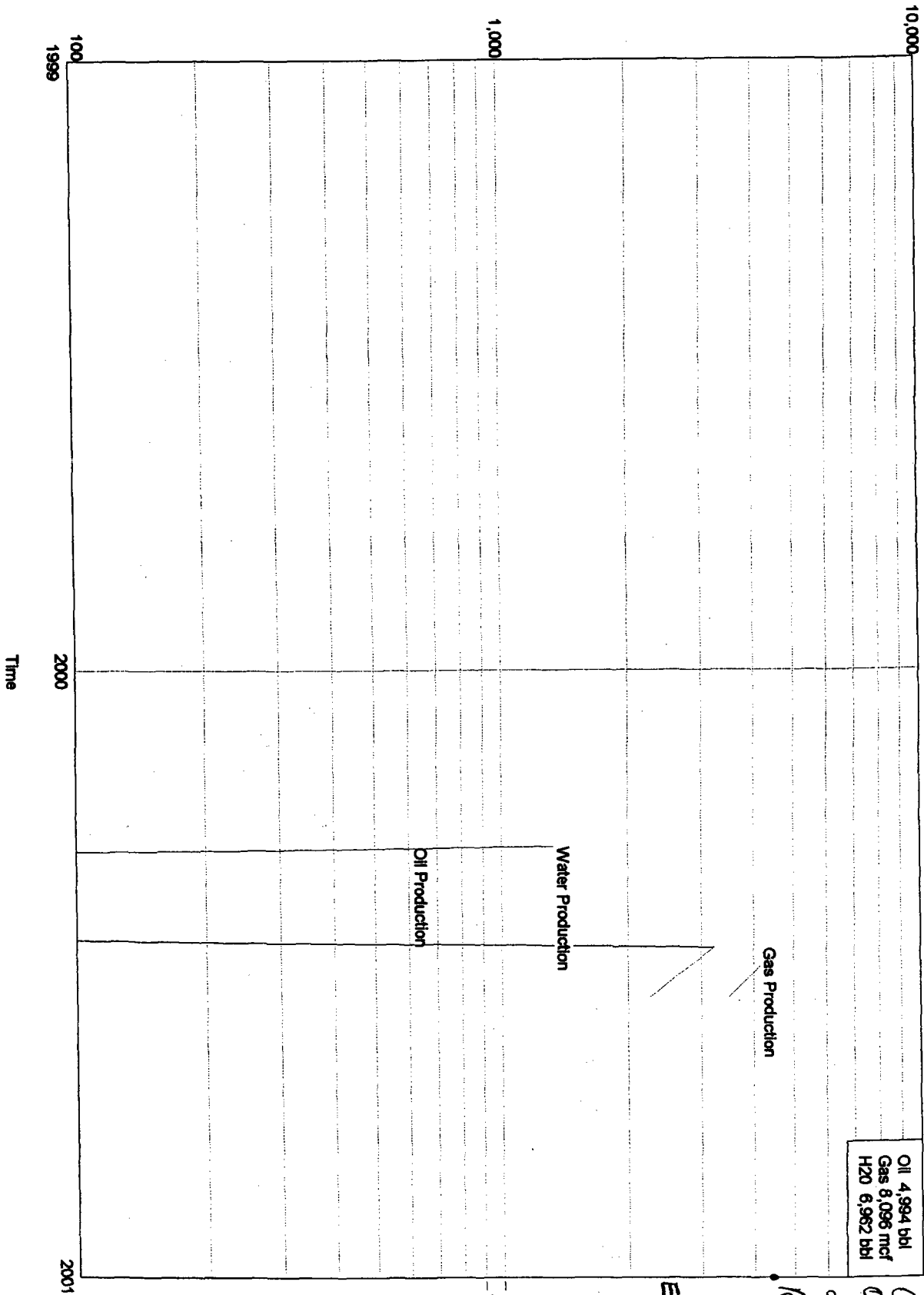
$d = \text{Assume } 20\%/yr$

$$FUR = \frac{-365(50-2)}{\ln(1-.2)} = 78,515 \text{ BO}$$

$$EUR = 15,000 \text{ BO} + 78,515 \text{ BO} = 93,515 \text{ BO}$$

Oil Production
 - Gas Production
 - Water Production

Production Rates



2 1250 wells
Production analog to "D" State.

Lease Name: MUSKEGON SOUTH STATE
County, State: EDDY, Unknown
Operator: MARBOB ENERGY CORPORATION
Field: EMPIRE EAST
Reservoir: MULTIPLE
Location:

MUSKEGON SOUTH STATE - EMPIRE EAST

Avg. EUR per well = 98.4 MBO

Yeso

Avg. GOR: 1350 (Avg. 132.8 mmpf/w)

$$RUR = -365 (Q_1 - Q_2) / \ln (1-d)$$

$$Q_1 = 110 \text{ bopd}$$

$$Q_2 = 5 \text{ bopd}$$

$$d = 20\% / \text{yr.}$$

$$RUR = -365 (110 - 5) / \ln (1 - 0.2)$$

$$= 171,750 \text{ BO}$$

$$EUR = 25,042$$

$$+ 171,750$$

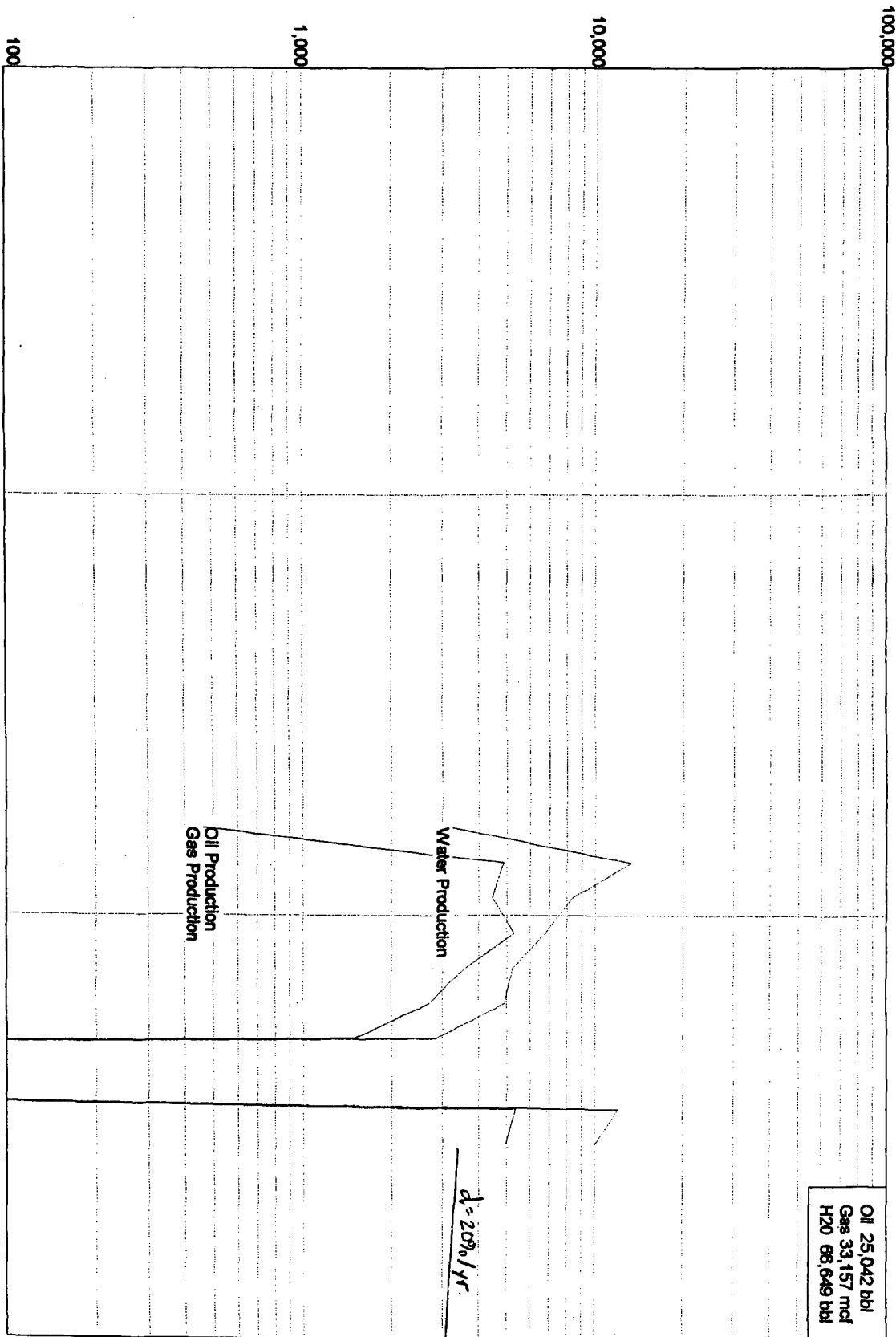
$$196,792 \text{ BO}$$

$$EUR / \text{well} = 196,792$$

$$= 98,396 \text{ BO}$$

Oil Production
Gas Production
Water Production

$$d = 20\% / \text{yr.}$$



Oil 25,042 bbl
Gas 33,157 mcf
H2O 66,649 bbl

Production Rates

1998

1999

2000

2001

Time

Oil Production
Gas Production
Water Production

[illegible]

New Mexico Oil Conservation Division---Enginnering Bureau
Administrative Application Process Documentation

Date Application Received:

7/23/01

Date of Preliminary Review:

(Note: Must be within 10-days of received date)

7/25/01

Results:

X

Application Complete

Application Incomplete

Date Incomplete Letter Sent:

Deadline to Submit Requested Information:

Phone Call Date:

(Note: Only applies if requested data is not submitted within the 7-day deadline)

Phone Log Completed?

 Yes

 No

Date Application Processed:

7/25/01

Date Application Returned:

(Note: Only as a last resort & only after repeated attempts by the Division to obtain the necessary information to process the application)