

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -

2943

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.

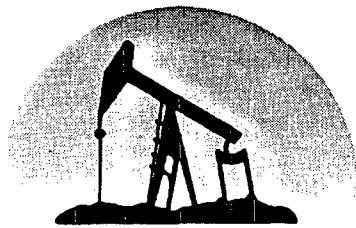
Note: Statement must be completed by an individual with supervisory capacity.

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 9 A-35-17S-28E Eddy
Lease Well No. Unit Letter-Section-Township-Range County
OGRID No. 14049 Property Code 25375 API No. 30-015-31425 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)	2812' - 3018' est.		3954' - 4354'
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: 54 bopd, 120 bwpd, 52 mcf
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 Phil Tedlin TITLE Engvr 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 80, Artesia, NM 88211-0719

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

DISTRICT IV
P.O. Box 2088, Santa Fe, NM 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	Pool Name
	96830	ARTESIA GLORIETTA YESO
Property Code	Property Name	Well Number
25375	D STATE	9
OGED No.	Operator Name	Elevation
14049	MARBOB ENERGY CORPORATION	3668

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	35	17 S	28 E		430	NORTH	330	EAST	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	Joint or Infill	Consolidation Code	Order No.						
40									

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

	OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</i> <u>Robin Cockrum</u> Signature ROBIN COCKRUM Printed Name PRODUCTION ANALYST Title 10/30/00 Date	
	SURVEYOR CERTIFICATION <i>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.</i> OCTOBER 19, 2000 Date Surveyed Signature & Seal for Professional Surveyor <u>Ronald J. Edson</u> W.O. Num. 00-112203 Certificate No. RONALD J. EDSON 3239 GARY D. EDSON 12641	
	JLP	

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

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P.O. Drawer ED, Artesia, NM 86211-0719

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
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State Lease - 4 Copies
Fee Lease - 3 Copies

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 9
OGRID No. 14049	Operator Name MARBOB ENERGY CORPORATION	Elevation 3668

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	35	17 S	28 E		430	NORTH	330	EAST	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

	OPERATOR CERTIFICATION I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief. <u>Robin Cockrum</u> Signature ROBIN COCKRUM Printed Name PRODUCTION ANALYST Title 10/30/00 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. OCTOBER 19, 2000 Date Surveyed Signature & Seal of Professional Surveyor W.O. Num. 00-11-203 Certificate No. RONALD J. EIDSON, 3239 GARY D. EIDSON, 12641	

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 AVG. EUR	97.8	150.3	

SAN ANDRES WELL DATA:

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

ALLOCATION SUMMARY:

OIL—YESO = $97.8 \text{ MBO} / (97.8 \text{ MBO} + 33.9 \text{ MBO}) = 0.74$
 OIL—SAN ANDRES = $33.9 \text{ MBO} / (97.8 \text{ MBO} + 33.9 \text{ MBO}) = 0.26$

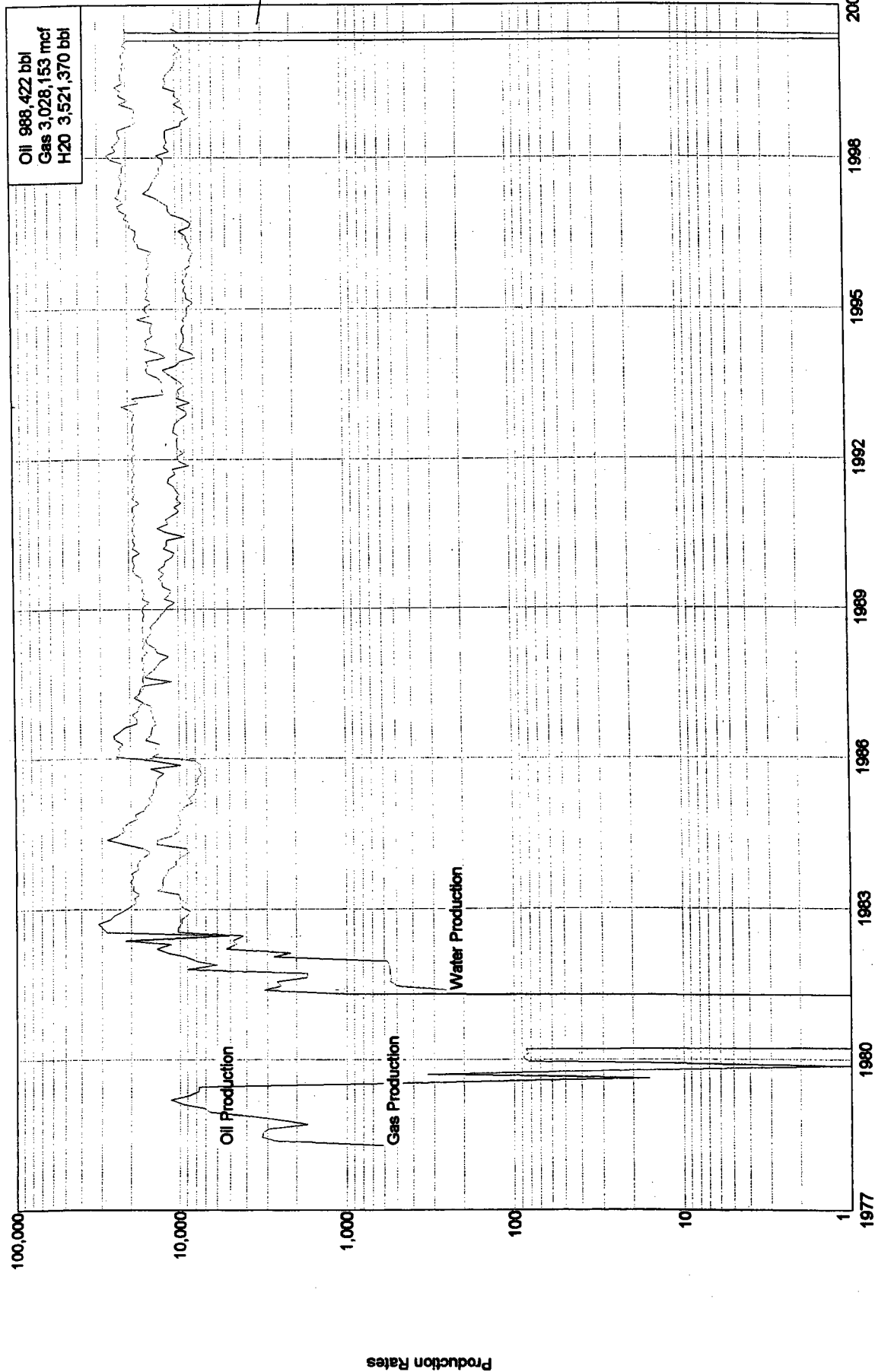
GAS—YESO = $150.3 \text{ MMCF} / (150.3 \text{ MMCF} + 101.7 \text{ MMCF}) = 0.60$
 GAS—SAN ANDRES = $101.7 \text{ MMCF} / (150.3 \text{ MMCF} + 101.7 \text{ MMCF}) = 0.40$

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

55 San Andres Wells
 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:

MULTIPLE - MULTIPLE



$d_{exp} = 13\%/yr.$

Oil Production
 - Gas Production
 - Water Production

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

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

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

$$d = 13\%/yr$$

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

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

$$EUR = 988,422 + 131,048$$

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

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

$$= 33,923 \text{ BO}$$

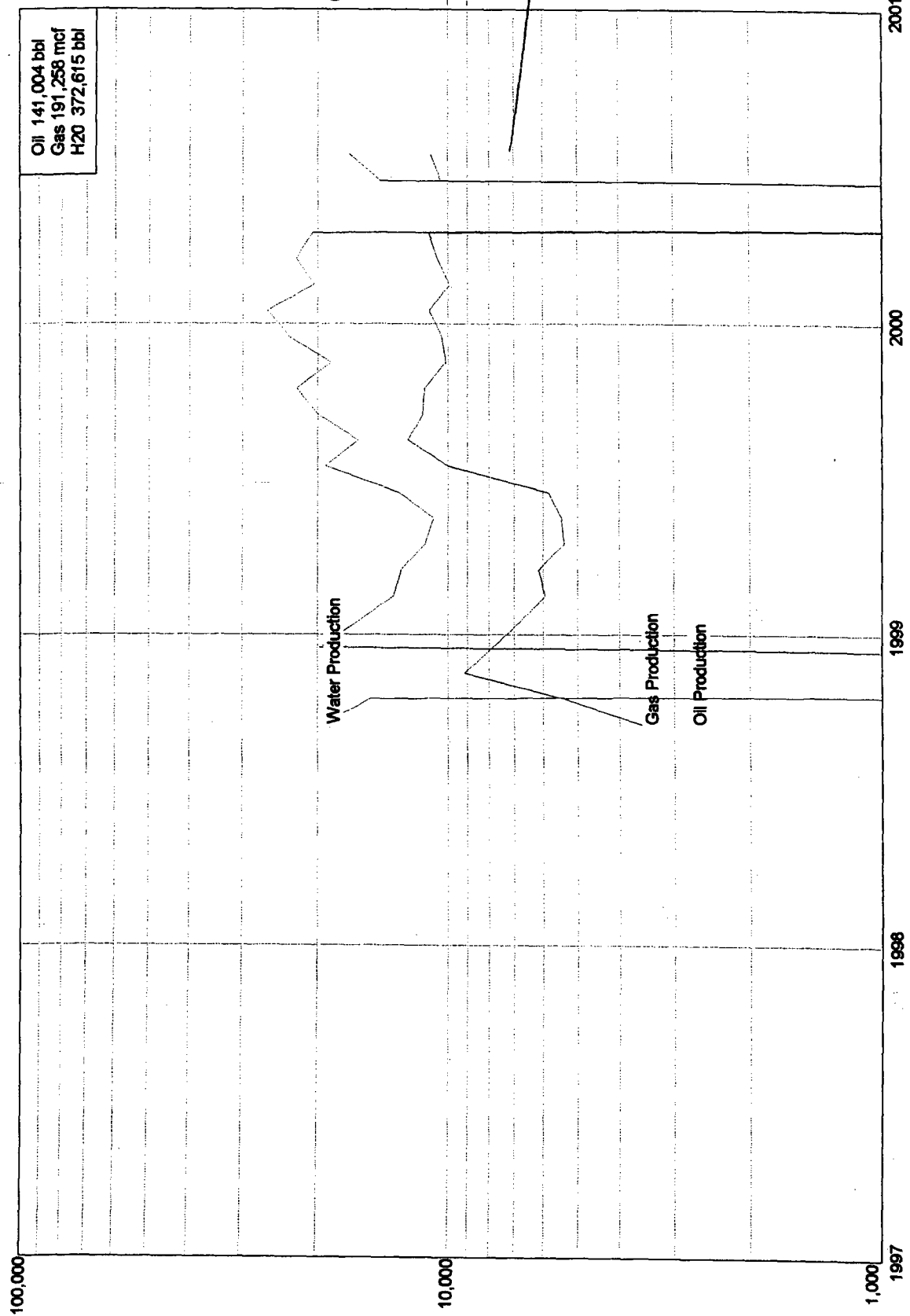
5 Yeso Wells

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:

Avg. EUR per well = 100.2 MBO
Yeso
Avg. GOR = 1350 (Avg 135.3 MMCF/well)

B 440 FEDERAL - EMPIRE EAST



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

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

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

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

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

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

$$EUR = 141,004 + 359,858 = 500,862 \text{ BO}$$

$$EUR/well = \frac{500,862}{5} = 100,172 \text{ BO}$$

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

Oil Production
Gas Production
Water Production

Time

1850 well

3 wells currently producing an average of 50 bopd per well (GOR = 2000)
 Cumulative production to date (through Jan 01) = 45,000 bbl (Avg. 15,000 bbl 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:

Avg. EUR per well = 187 MMCF/well

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

$$RUR = -365 (Q_i Q_{ei}) / \ln(1-d)$$

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

$$Q_i = 50 \text{ bopd}$$

$$Q_{ei} = 2 \text{ bopd}$$

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

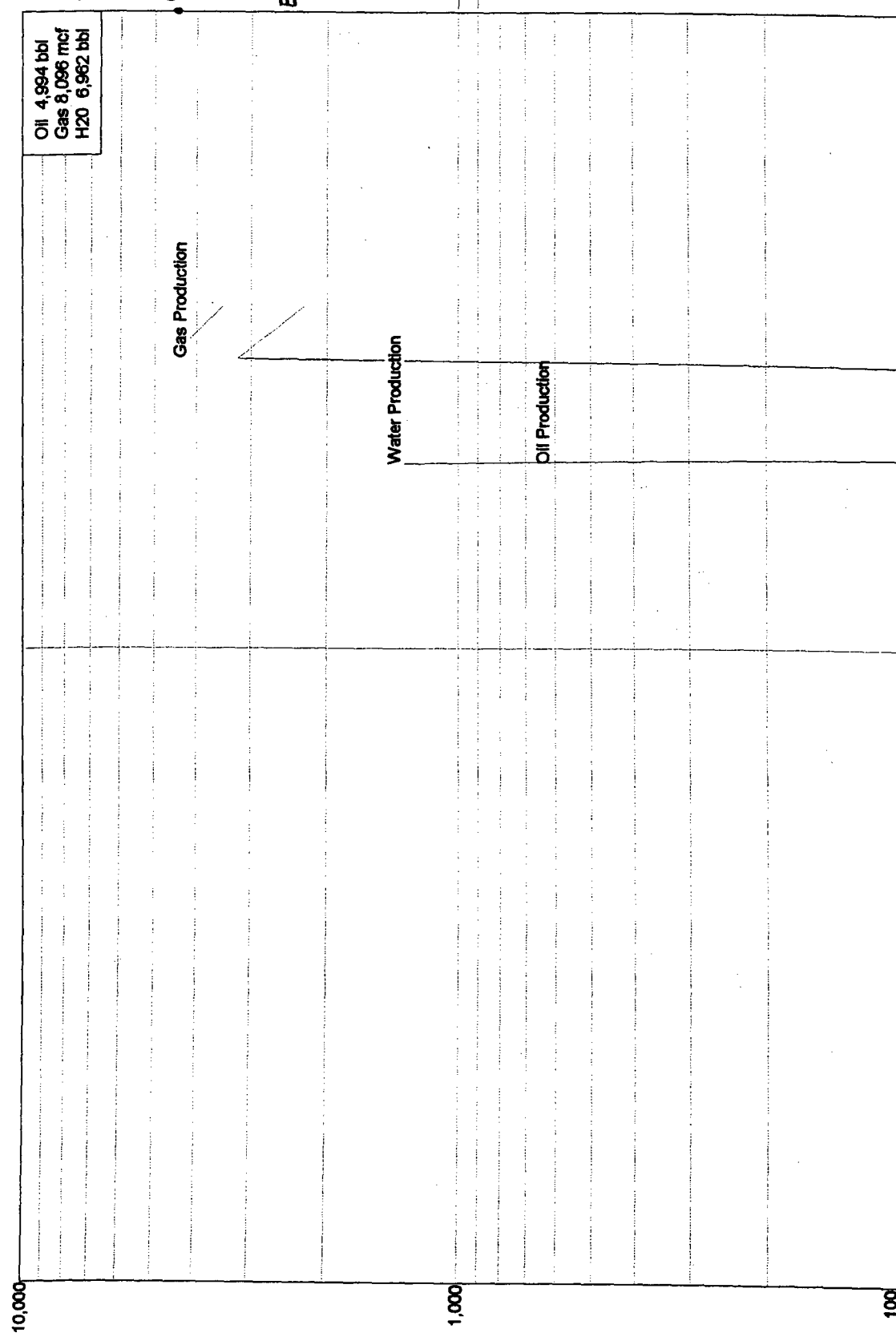
$$RUR = -365 (50-2) / \ln(1-.2)$$

$$= 78,515 \text{ bbl}$$

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

Oil Production
 Gas Production
 Water Production

BR-549 STATE - EMPIRE EAST



2001
 2000
 1999
 Time

✓ Yeso 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:

Avg. EUR per well = 98.4 MBO.
Yeso

Avg. GOR = 1350 (Avg. 132.8 MMCF/well)

$$RUR = \frac{-365 (q_i - q_{ei})}{\ln(1-d)}$$

$Q_i = 110$ bopd
 $Q_{ei} = 5$ bopd
 $d = 20\%/yr.$

$$RUR = \frac{-365 (110-5)}{\ln(1-.2)} = 171,750 \text{ BO}$$

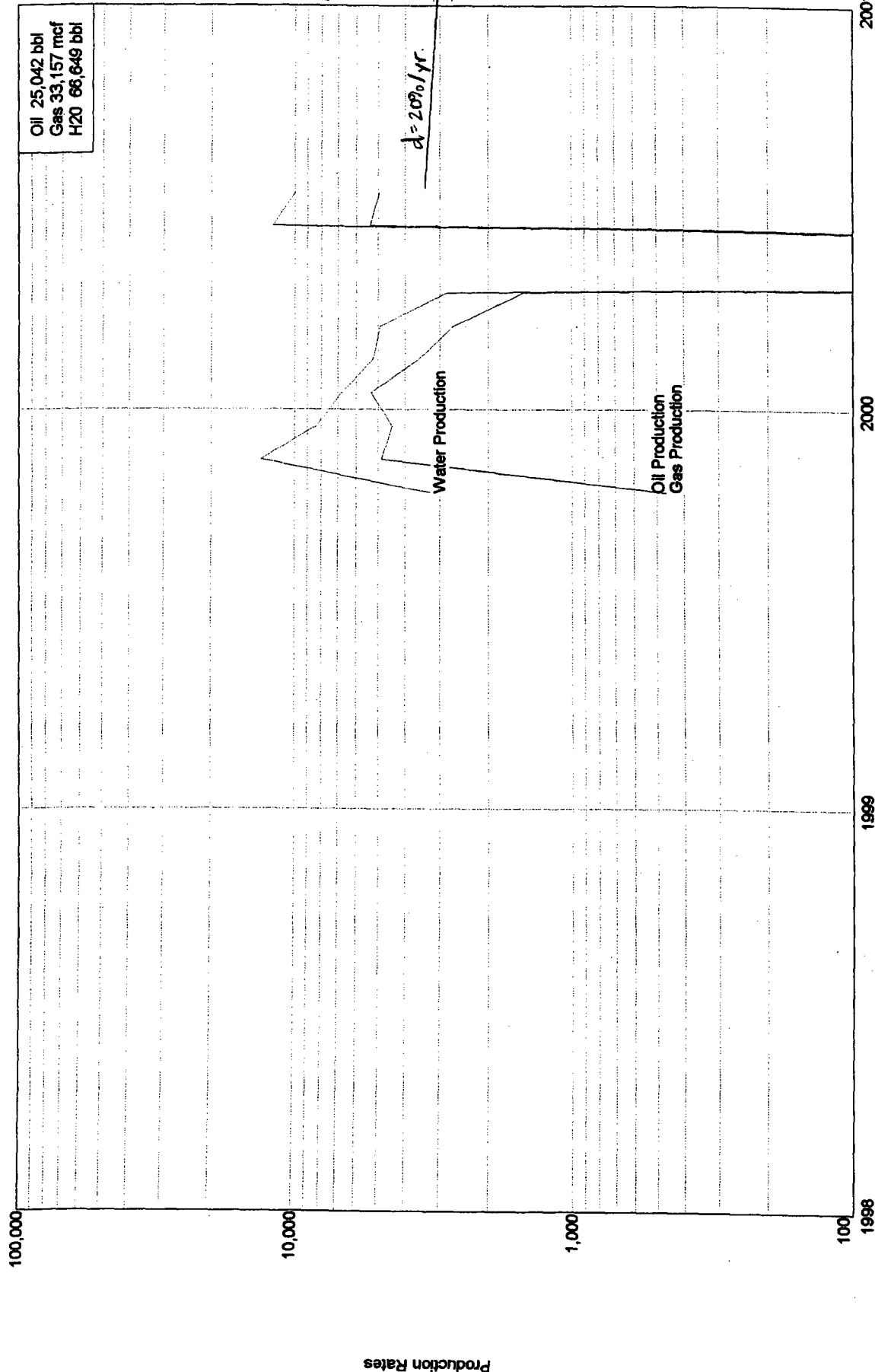
$$EUR = 25,042 + 171,750$$

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

$$EUR_{well} = \frac{196,792}{2} = 98,396 \text{ BO}$$

Oil Production
Gas Production
Water Production

MUSKEGON SOUTH STATE - EMPIRE EAST



Time

"D" Stak #9

FORM C-115- OPERATORS MONTHLY REPORT (CONTINUATION)

OPERATOR: MARBOB ENERGY CORPORATION										OGRID: 014049										MONTH/YEAR 05/01										PAGE 60 OF 65									
										INJECTION										PRODUCTION										DISPOSITION OF OIL, GAS, AND WATER									

OPERATOR: MARBOB ENERGY CORPORATION

OGRID: 014049

MONTH/YEAR 05/01

PAGE 61 OF 65

DISPOSITION OF OIL, GAS, AND WATER

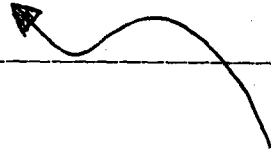
PRODUCTION

INJECTION

7 POOL NO. AND NAME PROPERTY NO. AND NAME WELL NO. AND U-I-S-T-R API NUMBER	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1	C OIL D E 1
008 B-35-178-28E 30-015-31424	P				1054	10182	1735	31								
009 A-35-178-28E 30-015-31425	P				1676	3717	1624	31								
010 D-36-178-28E 30-015-31165	P				1163	10666	1913	31								
017 K-35-178-28E 30-015-31426	P				1379	11350	2314	31								
018 L-35-178-28E 30-015-30977	P				1108	12258	1068	31								
019 J-34-178-28E 30-015-31389	P				1432	3742	1535	31								
021 I-25-178-28E 30-015-30975	P				1082	10331	1246	31								
026 J-25-178-28E 30-015-31586	P				1704	3941	1936	31								
025702 LP STATE																
001 E-05-189-28E 30-015-31086	P				241	2498	565	31								
003 M-06-189-28E 30-015-31087	P				121	2498	141	31								
96831 CEDAR LAKE; YESO 023300 LEE FEDERAL																

#9

51 bopd / 120 bwpd / 52 mcf



16904	015694	18889	001009	80732	416	38.8	1041	2825596	2825597	2826075	34.9	292	357	034019	706	036785	4996	297	354
O	G	W	O	W	O	G	W	O	G	W	O	G	O	O	O	O	O	O	O

New Mexico Oil Conservation Division—Engineering 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)