22803617 DHC NR

District I
1625 N. French Drive, Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

SEP 30 2002

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-107A
Revised May 15, 2000

APPLICATION TYPE
X 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

M DODD "A" FEDERAL #50 — J-22-17S-29E — EDDY
Lease — Well No. — Unit Letter-Section-Township-Range — County

OGRID No. 14049 Property Code 6504 API No. 30-015-~~35015~~-32458 Lease Type: X Federal ___State ___Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	GRAYBURG JACKSON (SR-Q-GRBG-SA)		EMPIRE EAST YESO
Pool Code	28509		96610
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	TO BE PERFORATED 2600' - 3350'		TO BE PERFORATED 4000' - 4300'
Method of Production (Flowing or Artificial Lift)	ARTIFICAL LIFT		ARTIFICAL 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)	BEST ESTIMATE OF ORIGINAL BHP = 500 PSI		BEST ESTIMATE OF ORIGINAL BHP = 1500 PSI
Oil Gravity or Gas BTU (Degree API or Gas BTU)	36.3°		37.1°
Producing, Shut-In or New Zone	NEW		NEW
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: N/A Rates:	Date: Rates:	Date: N/A Rates:
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil 4.2 % Gas 4.6 %	Oil % Gas %	Oil 95.8 % Gas 95.4 %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes X 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 X No ___

Will commingling decrease the value of production? Yes ___ No X

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 X No ___

NMOCD Reference Case No. applicable to this well: ___

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 Brian Collins TITLE ENGINEER DATE 26 Sept 02

TYPE OR PRINT NAME Brian Collins TELEPHONE NO. (505) 748-3303

Engineering Summary
Proposed Downhole Commingling
M Dodd "A" Federal #50
Unit J, Sec. 22-T17S-R29E

The M Dodd "A" Federal #50 hasn't been drilled yet, but is scheduled to be drilled in October of this year. The primary target is the Yeso, the secondary target is the Grayburg-San Andres.

The lion's share of the downhole commingled production will be from the Yeso, which is relatively untapped in this area. The Grayburg-San Andres is expected to be marginally productive due to depletion in this area. The proposed zonal allocation is shown below.

Yeso (See Attachment 1)

The M Dodd "A" Federal #48 is used as the Yeso analog. The cumulative production to date (126.6 MBO, 190.2 MMCF) added to the calculated remaining ultimate recovery (135.6 MBO, 257.7 MMCF) yields an estimated ultimate recovery of 262.2 MBO and 447.9 MMCF. The calculations are shown on Attachment 1.

Grayburg-San Andres (See Attachment 2)

Currently the M Dodd "A" lease averages 2 BOPD per well. Due to depletion, the best engineering estimate of initial stabilized production for the M Dodd "A" Federal #50 is 5 BOPD. The estimated ultimate recovery for the Grayburg-San Andres is 11.4 MBO. Using a cumulative historical GOR of 1900, the EUR for gas is 21.7 MMCF. The calculations are shown on Attachment 2.

Zonal Allocation

$$\text{Yeso Oil} = \frac{262.2 \text{ MBO}}{262.2 + 11.4 \text{ MBO}} = .958 = 95.8\%$$

$$\text{Yeso Gas} = \frac{447.9 \text{ MMCF}}{447.9 + 21.7 \text{ MMCF}} = .954 = 95.4\%$$

Grayburg-San Andres Oil = 1 - .958 = .042 = 4.2%
Grayburg-San Andres Gas = 1 - .954 = .046 = 4.6%

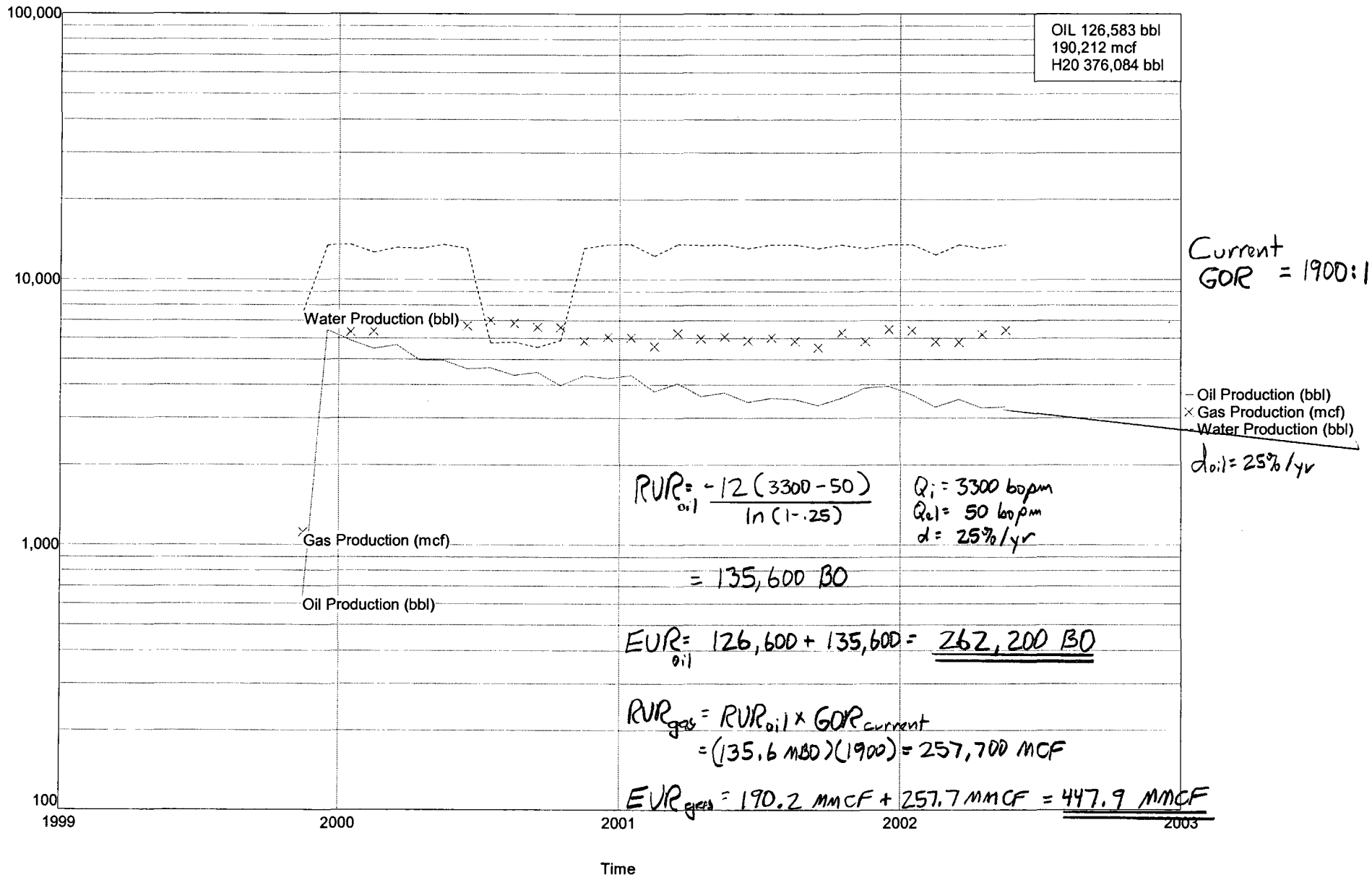
This well will be artificially lifted in a pumped-down state, so no crossflow will occur. There will be no loss of value by downhole commingling.

Yeso analog for the proposed M. Dodd A-50.

Lease Name: M DODD A
County, State: EDDY, NM
Operator: MARBOB ENERGY CORPORATION
Field: EMPIRE EAST
Reservoir: YESO
Location: 22 17S 29E SE SE

(Attachment 1)

M DODD A - [48 YESO



Current GOR = 1900:1

d_{oil} = 25%/yr

$RUR_{oil} = \frac{-12(3300-50)}{\ln(1-.25)}$

Q_i = 3300 bopm
Q_{el} = 50 bopm
d = 25%/yr

= 135,600 BO

EUR_{oil} = 126,600 + 135,600 = 262,200 BO

$RUR_{gas} = RUR_{oil} \times GOR_{current}$
$= (135.6\ MBO)(1900) = 257,700\ MCF$

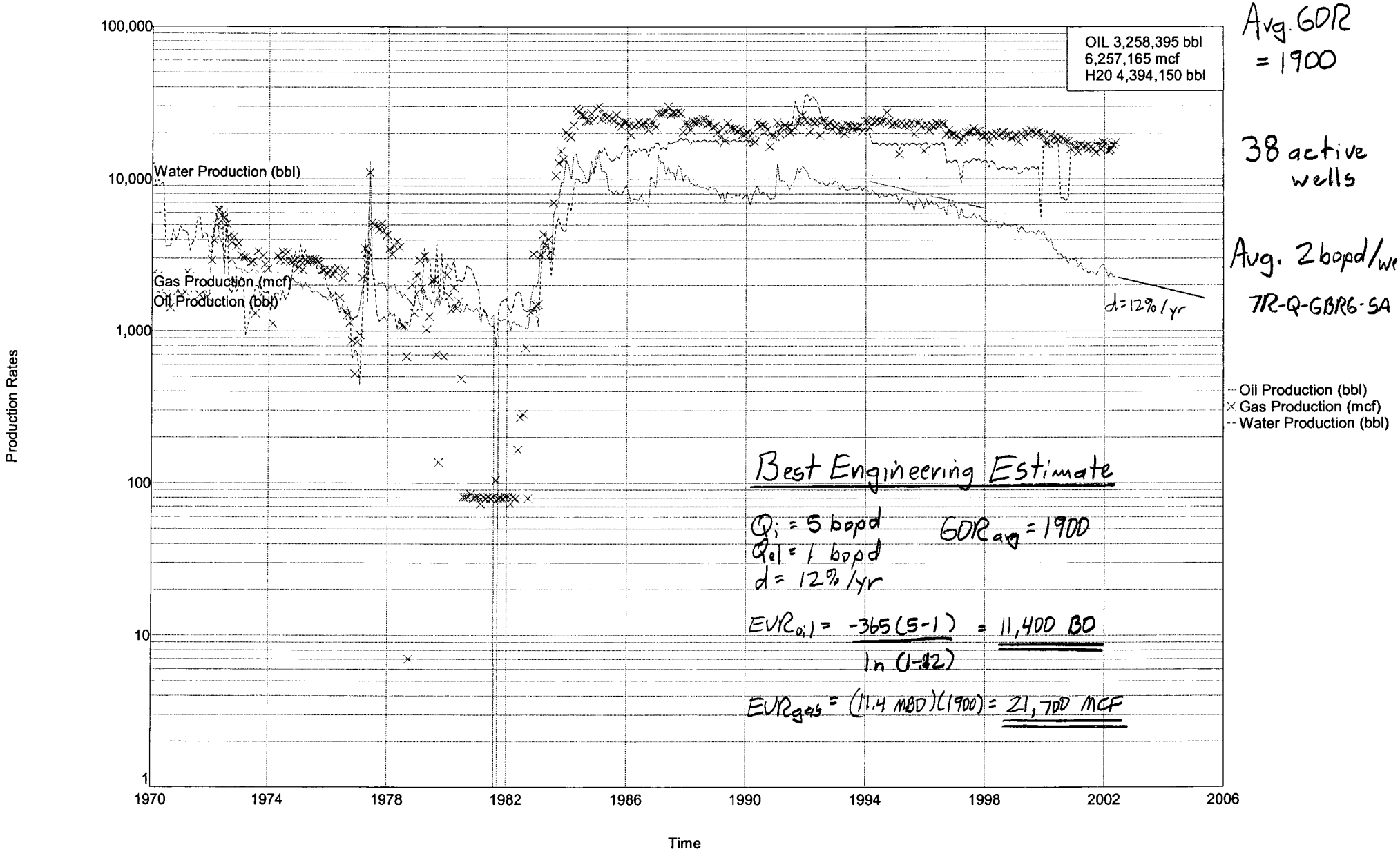
EUR_{gas} = 190.2 MMCF + 257.7 MMCF = 447.9 MMCF

San Andres - Grayburg analog for the proposed M. Dodd A-50.

Lease Name: M DODD A
County, State: EDDY, Unknown
Operator: MULTIPLE
Field: MULTIPLE
Reservoir: SEVEN RIVERS QUEEN-G
Location:

(Attachment 2)

M DODD A - [SEVEN RIVERS QUEEN-G



Avg. GOR = 1900

38 active wells

Avg. 2 bopd/well

TR-Q-GBR6-SA

Best Engineering Estimate

Q_i = 5 bopd
Q_{el} = 1 bopd
d = 12%/yr

GOR_{avg} = 1900

$EUR_{oil} = \frac{-365(5-1)}{\ln(1-.12)} = 11{,}400$ BO

$EUR_{gas} = (11.4\ MBO)(1900) = 21{,}700$ MCF