223246468 DHC NA

marbob
energy corporation

August 15, 2002

AUG 19 2002

New Mexico Oil Conservation Division
1220 S. St. Francis Dr.
Santa Fe, NM 87505-4000

Attn: Mr. Will Jones

Re: C-107A Downhole Commingling Application
New Mexico DC State #1
H-18-19S-29E
Eddy County, NM

Dear Mr. Jones:

Attached for your review is a downhole commingling application for the New Mexico DC #1. We made a mistake and sent the application to the Artesia District Office and forgot to mail the application to you. The State Land Office has already approved the application.

Please call me at 505-748-3303 if you have any questions.

Sincerely,

Brian Collins
Petroleum Engineer

BC/dlw
enclosures

P.O. Box 227 • Artesia, New Mexico 88211-0227 • (505) 748-3303 • Fax (505) 746-2523

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

MAY 17 2002

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
X Single Well
___ Establish Pre-Approved Pools
EXISTING WELLBORE
X Yes ___ No

APPLICATION FOR DOWNHOLE COMMINGLING

MARBOB ENERGY CORPORATION — Operator
P O BOX 227, ARTESIA, NM 88211-0277 — Address

NEW MEXICO DC ST #1 — Lease
H-18-19S-29E — Well No. / Unit Letter-Section-Township-Range
EDDY — County

OGRID No. 14049 Property Code 6528 API No. 30-015-23942 Lease Type: ___Federal X State ___Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	PALMILLO, WOLFCAMP (West)		PALMILLO, UPPER PENN
Pool Code			49565
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	8941-9494'		9558-9962'
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)	ORIGINAL PRESSURE 3800 PSI EST. (8PPG PORE PRESSURE)		EST. CURRENT BHP = 1000 PSI
Oil Gravity or Gas BTU (Degree API or Gas BTU)	EST. 46°		46°
Producing, Shut-In or New Zone	PRODUCING		SI-BENEATH PLUG
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: MAY 2002 Rates: 5 BOPD 61 MCFD	Date: Rates:	Date: FEBRUARY 2002 Rates: 6.7 BOPD 31 MCFD
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil 22 % Gas 59 %	Oil % Gas %	Oil 78 % Gas 41 %

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 [signature] TITLE ENGINEER DATE 9 May02

TYPE OR PRINT NAME BRIAN COLLINS TELEPHONE NO. (505) 748-3303

Engineering Summary
Downhole Commingling Application
New Mexico DC St. #1
Unit H, Section 18, T19S-R29E
Eddy County, New Mexico

Marbob Energy seeks approval to downhole commingle a marginal (6.7 bopd/31 mcfd) Upper Penn oil zone with a newly completed Wolfcamp oil zone (5 bopd/61 mcfd). When the well is producing, there will be no cross flow because it is being rod-pumped and will operate in a pumped down condition. The Upper Penn and Wolfcamp oils are very similar, so there won't be loss of value or compatibility problems.

The estimated remaining reserves for the Upper Penn are calculated as follows:

Decline = 11%/yr. exponential
Qi = 6.7 bopd/31 mcfd
Qel = 2 bopd/9 mcfd (would be 4 bopd/18 mcfd if not commingled with Wolfcamp)

$$\text{RUR oil} = \frac{-365\,(6.7-2)}{\ln(1-.11)} = 14.7 \text{ MBO}$$

$$\text{RUR gas} = \frac{-365\,(31-9)}{\ln(1-.11)} = 68.9 \text{ MMCF}$$

The estimated remaining reserves for the Wolfcamp are calculated as follows:

Decline = Best engineering estimate is 30%/yr. exponential first 2 years, then 11%/yr. exponential thereafter.
Qi = 5 bopd/61 mcfd
Q2yr = 2.5 bopd/30 mcfd
Qel = 2 bopd/9mcfd

$$\text{RUR oil} = \frac{-365\,(5-2.5)}{\ln(1-.3)} + \frac{-365\,(2.5-2)}{\ln(1-.11)} = 4.1 \text{ MBO}$$

$$\text{RUR gas} = \frac{-365\,(61-30)}{\ln(1-.3)} + \frac{-365\,(30-9)}{\ln(1-.11)} = 97.5 \text{ MMCF}$$

The proposed allocation between zones is:

Oil: Upper Penn = $\frac{14.7 \text{ MBO}}{14.7+4.1 \text{ MBO}} = .78$ Wolfcamp = 1-.78 = .22

Gas: Upper Penn = $\frac{68.9 \text{ MMCF}}{68.9+97.5 \text{ MMCF}} = .41$ Wolfcamp = 1-.41 = .59

If well production deviates significantly from forecast behavior, a new allocation factor will be calculated and submitted to you. Our intent is to extend the economic life of the Upper Penn and Wolfcamp to maximize the economic benefit to Marbob Energy and the State of New Mexico.

MARBOB ENERGY CORPORATION

2002 YEARLY PRODUCTION REPORT

LEASE NAME	PROD O/G	JAN 31	FEB 28	MAR 31	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	SEP 30	OCT 31	NOV 30	DEC 31	TOTAL	PROD O/G
LUSK DEEP UT #21	O	520	654	0	0	0	0	0	0	0	0	0	0	1,174	O
	G	56,362	47,567	0	0	0	0	0	0	0	0	0	0	103,929	G
M.C. STATE	O	23	28	0	0	0	0	0	0	0	0	0	0	51	O
	G	235	216	0	0	0	0	0	0	0	0	0	0	451	G
M.J. STATE	O	2,604	1,486	0	0	0	0	0	0	0	0	0	0	4,090	
	G	4,460	3,104	0	0	0	0	0	0	0	0	0	0	7,564	G
MONCRIEF STATE	O	463	356	0	0	0	0	0	0	0	0	0	0	819	O
	G	1,184	819	0	0	0	0	0	0	0	0	0	0	2,003	G
MOORE STATE	O	93	99	0	0	0	0	0	0	0	0	0	0	192	O
	G	260	226	0	0	0	0	0	0	0	0	0	0	486	G
MUSKEGON STATE	O	7,144	4,958	0	0	0	0	0	0	0	0	0	0	12,102	O
	G	11,229	8,147	0	0	0	0	0	0	0	0	0	0	19,376	G
NEW MEXICO DC STATE BATTERY	O	302	298	0	0	0	0	0	0	0	0	0	0	600	
	G	1,757	1,873	0	0	0	0	0	0	0	0	0	0	3,630	G
NEW MEXICO DC STATE #1	O	199	201	6.7 BOPD	* 0	0	0	0	0	0	0	0	0	400	O
	G	920	932	31 MCFD	0	0	0	0	0	0	0	0	0	1,852	G
OSCA STATE	O	83	18	0	0	0	0	0	0	0	0	0	0	101	O
	G	14,365	12,652	0	0	0	0	0	0	0	0	0	0	27,017	G

* Production Nos Taken off C-115

Upper Penn Production

S LEASES

MONTH: May

DC #1

	LP	mcf	Oil	wtr	
1	41.3	109	3	8	1
2	45.3	76	0	0	2
3	26.8	28	0	1	3
4		50	0	66	4
5	51.7	85	8	2	5
6	45.0	71	5	1	6
7	43.0	74	2	2	7
8	43.0	61	5	1	8
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					30
					31

Wolfcamp Production

Lease Name: NEW MEXICO DC STATE
County, State: EDDY, NM
Operator: MARBOB ENERGY CORPORATION
Field: PALMILLO
Reservoir: UPPER PENNSYLVANIAN
Location: 18 19S 29E SE NE