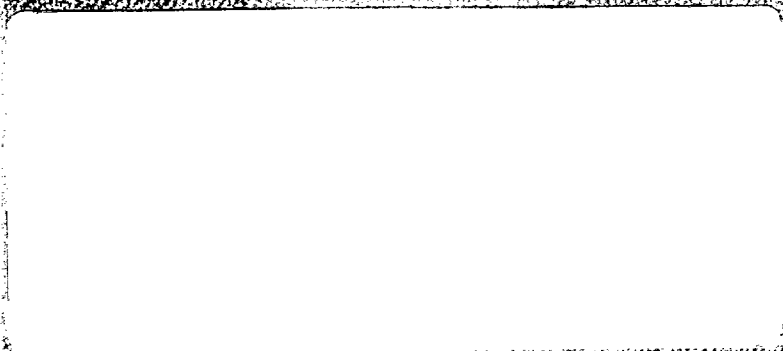
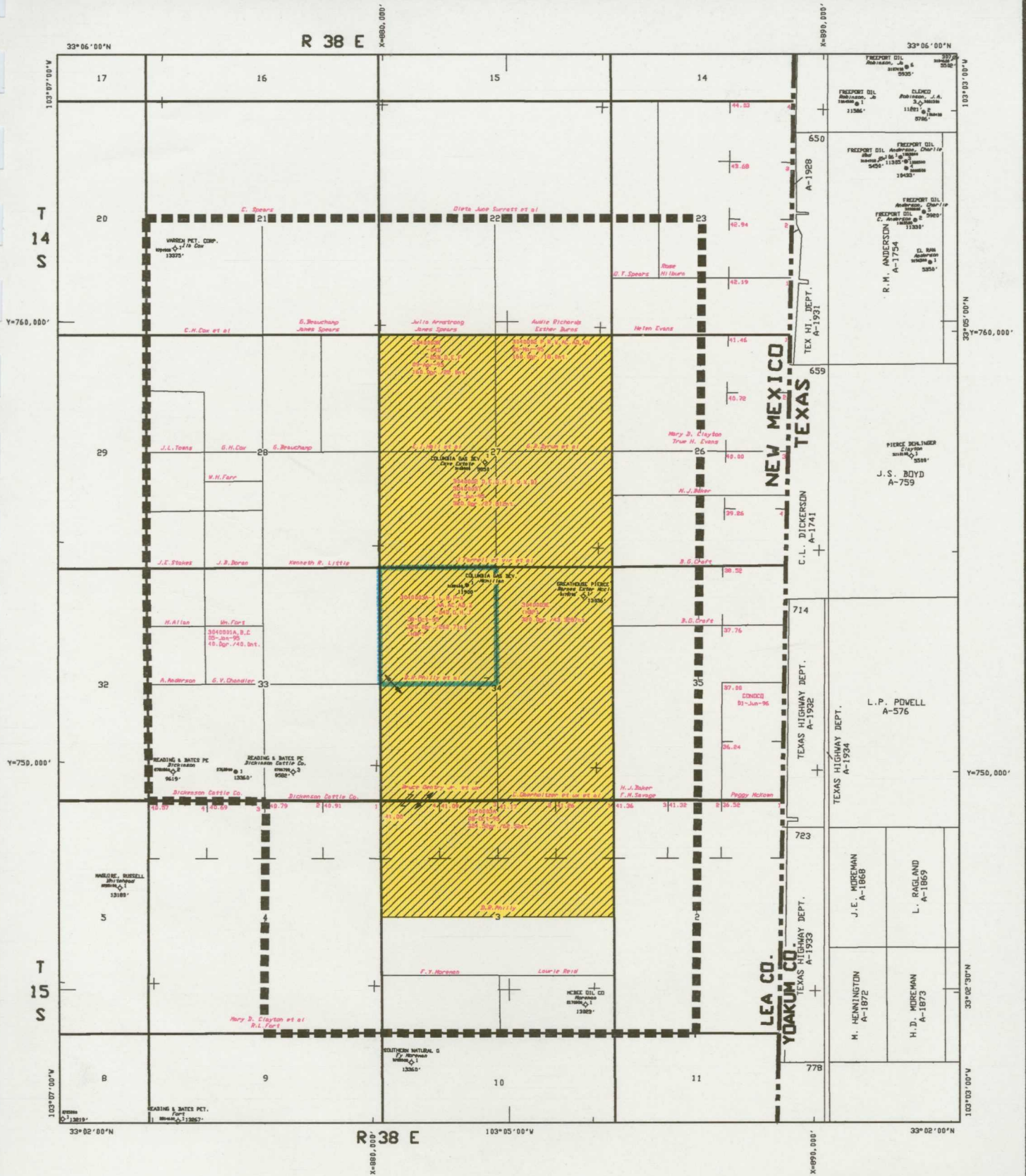




COLUMBIACAS
Development

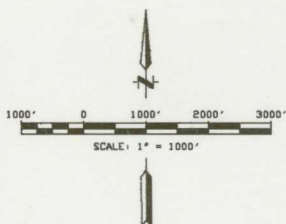


**DOCKET #29-94
CASE #10669
OIL CONSERVATION DIVISION
DEPARTMENT OF ENERGY, MINERALS,
AND NATURAL RESOURCES
Application of Columbia Gas Development Corporation
to Establish Permanent Units for the Northeast Pollack-
Wolfcamp Pool
Lea County, New Mexico
McMillan #34-1 Well
October 13, 1994**



LEGEND

- ■ ■ AREA OF MUTUAL INTEREST
- OIL UNIT OUTLINE
- C.G.D.C. FULL INTEREST ACREAGE
- C.G.D.C. PARTIAL INTEREST ACREAGE



REVISIONS

SEISMIC DATED: 08-Sep-94
WELLS DATED: 04-Aug-94
DRIG. DATE: 08-Sep-94
LEASES DATED: 08-Sep-94

COLUMBIA GAS
Development

EAST DENTON
LEA COUNTY, NEW MEXICO
Case No. 10669
Exhibit No. 1

LANDMAN: M. Mendenhall DATE: 08-Sep-94
DRAFTED BY: S.M.F. CADFILE: dentonBx11_e_id
ACCT: wu1 NLXFILE: denton1_e ROT: D.68216

R 38 E

Exhibit No.2

T
14
S

21

22

23

14
S

WARREN PET. CORP.
11a Cox
1 - 5713'
13,375'

28

27

26

CGDC
Cave Est.
1 - 5607'
9850'

CGDC
Mc Millan
34-1
11,900' - 5564'

GREATHOUSE, PIERCE & DAVIS
Ester McClure Barnes
1 - 5638'
13,036'

READING & BATES PET.
Dickenson Cattle
1 - 5608'
13,360'
2 - 5632'
9619'
3 - 5675'
9582'

34

35

MC BEE OIL CO.
Moreman
1 - 5604'
13,023'

R 38 E

LEA COUNTY, NEW MEXICO
YOAKUM COUNTY, TEXAS

COLUMBIA GAS
Development

EAST DENTON
LEA COUNTY, NEW MEXICO

Structure
TOP U. WOLFCAMP POROSITY

..... SEISMIC CONTROL

1000' 500' 0' 500' 1000'

INTERP BY SPRAIN, MEIZ
C.L. 25'

DATE 10-92
DRAFTED BY: SMS



ATLAS
WIRELINE
SERVICES

COMPENSATED 2-DENS LOG
COMPENSATED NEUTRON
GAMMA RAY X-Y CALIPER

FILE NO.

COMPANY COLUMBIA GAS DEVELOPMENT CORP.

PI NO.

WELL MCMILLAN NO. 34-1

FIELD WILDCAT

COUNTY LEA

STATE NEW MEXICO

Final

LOCATION:

400' FNL & 1980' FNL

OTHER SERVICES

DIFL-GR-CAL
LS BHC/AL-GR
ML-GR-CAL
DIPLOG, DEL2

SEC 34 TWP 14 S RGE 38 E

PERMANENT DATUM

GROUND LEVEL

ELEVATION 3768 FT.

ELEVATIONS

LOG MEASURED FROM KELLY BUSHING 19.8 FT. ABOVE PERMANENT DATUM
DRILL. MEAS. FROM KELLY BUSHING

KB 3779.8
DF 3778.8
GL 3760.0

DATE 11 FEBRUARY 1992

SUN ONE

SERVICE ORDER 94924

COLUMBIA GAS DEVELOPMENT CORP.

DEPTH DRILLER 11900

EXPLORATION DEPARTMENT

DEPTH LOGGER NOT LOGGED

BOTTOM LOGGED INTERVAL

11876

TOP LOGGED INTERVAL

TOP LOGGED INTERVAL

SURFACE

CASING - DRILLER

8 5/8"

@4900

CASING LOGGER

4895

BIT SIZE

7 7/8"

TYPE FLUID IN HOLE

LSND

DENSITY / VISCOSITY

9.0

45

PH / FLUID LOSS

9.5

8.2

SOURCE OF SAMPLE

CIRCULATION TANK

RM AT MEAS. TEMP.

@.56

@71 DEG.F

RMF AT MEAS. TEMP.

@.32

@81 DEG.F

RMC AT MEAS. TEMP.

@.53

@79 DEG.F

SOURCE OF RMC / RMC

MEASURED

@

RM AT BHT

@.275

@151 DEG.F

TIME SINCE CIRCULATION

14 HOURS

MAX. REC. TEMP. DEG. F

151 DEG.F

EQUIP. NO. / LOCATION

HL 6364

HOBBS, NM

RECORDED BY

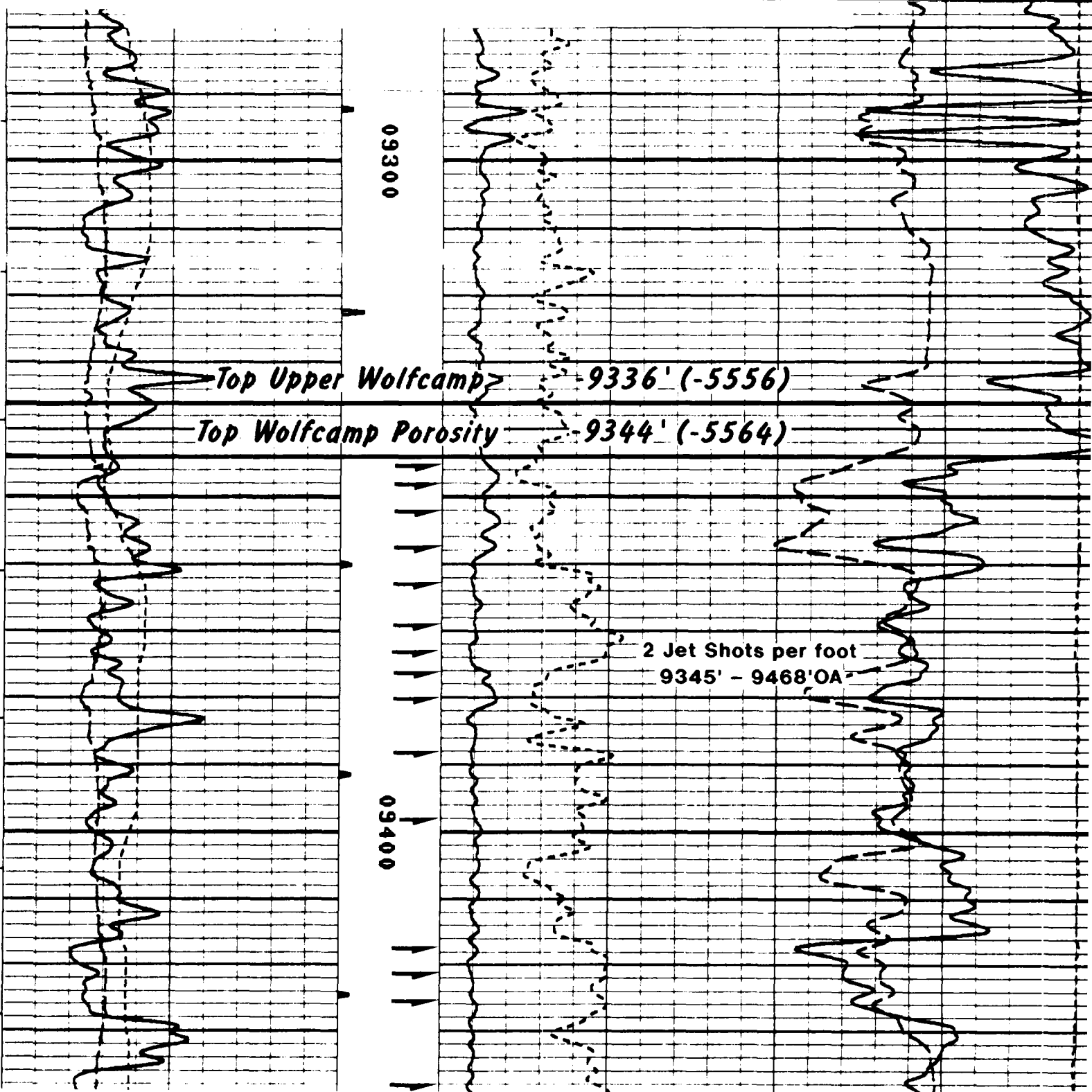
RAIL / LOKES

WITNESSED BY

ROGER ALLEN

759

Case No. 10669



ENGINEERING EXHIBIT
McMILLAN #34-1
WOLFCAMP FORMATION

Gas Composition

<u>Component</u>	<u>Mol %</u>
C ₁ - Methane	54.94
C ₂ - Ethane	13.08
C ₃ - Propane	13.27
iC ₄ - Isobutane	2.75
nC ₄ - n-Butane	6.70
iC ₅ - i-Pentane	2.07
nC ₅ - n-Pentane	2.00
C ₆ + - n-Hexanes	2.68
CO ₂ - Carbon Dioxide	0.00
N ₂ - Nitrogen	2.51
H ₂ S - Hydrogen Sulfide	<u>0.00</u>
Total	100.00

Calculated Specific Gravity = 1.037 (Air = 1.0)

Calculated Gross BTU/Cu.Ft. = 1,726 (saturated) 1,757 Dry @ 15.025 psi, 60° F

Case No. 10669
Exhibit No. 4

ENGINEERING EXHIBIT

McMILLAN #34-1 WOLFCAMP FORMATION

Reservoir Properties

Initial reservoir pressure (DST)	3,808 psi
Bubble point pressure (correl.)	716 psi
Reservoir temperature	140° F
Reservoir drive mechanism (assumed)	Pressure Depletion
Average water saturation (logs)	33 %
Average porosity (logs)	6 %
Net pay (logs)	31 ft.
Average pay	22 ft.
Effective permeability (DST Horner plot)	7.9 Md
Formation volume factor (correl.)	1.15
Oil gravity	40° API
Gas gravity	1.037
Gas-oil ratio	10 CF/BO
Current 24-hour rate - oil (08/94)	44 BOPD
Current 24-hour rate - gas (08/94)	0.5 MCFPD
Current 24-hour rate - water (08/94)	0.5 BWPD
Cumulative oil production through (08/94)	64.2 MBO
Fluid disposition - oil	Sold to Koch
Fluid disposition - gas	Flared
Fluid disposition - water	Trucked
Estimated effective drainage (decline)	160 acres
Estimated recoverable reserves (decline)	124 MBO

ENGINEERING EXHIBIT

McMILLAN #34-1 WOLFCAMP FORMATION

Volumetric Reserves and Recovery Estimates

Volumetric Reserve Estimate (OOIP)

$$N = \frac{7758 \times \phi \times (1 - S_w) \times h}{B_o} \text{ (Barrels per ac.)}$$

Where: Porosity, $\phi = 6\%$
Water saturation, $S_w = 33\%$
Average Net Pay (h) = 22 ft.
Area, A = 160 acres
Oil formation volume factor, $B_o = 1.15$

$$N = 5,966 \frac{B_o}{ac}$$

$$OOIP = \frac{B_o}{ac} \times ac$$

$$OOIP = 5,966 \times 160$$
$$OOIP = 954,598 \text{ BO}$$

Estimated Ultimate Oil Recovery (EUR)

EUR = Cumulative Production + Remaining Reserves

$$\text{Remaining Reserves} = \frac{(q - q_{el}) 365}{\ln(1 - dy)} \text{ (Exponential Decline Curve)}$$

Where: Production Rate (q) = 44 BOPD
Economic Limit (q_{el}) = 13 BOPD
Decline Rate (dy) = 17.2%
Cumulative Production (08/94) = 64,200 BO

$$\text{Remaining Reserves} = \frac{(44 - 13) 365}{\ln(1 - 0.172)} = \overset{59}{\cancel{60}},800 \text{ BO}$$

$$EUR = 64,200 + 59,800 = 124,000 \text{ BO}$$

Recovery Factor (RF)

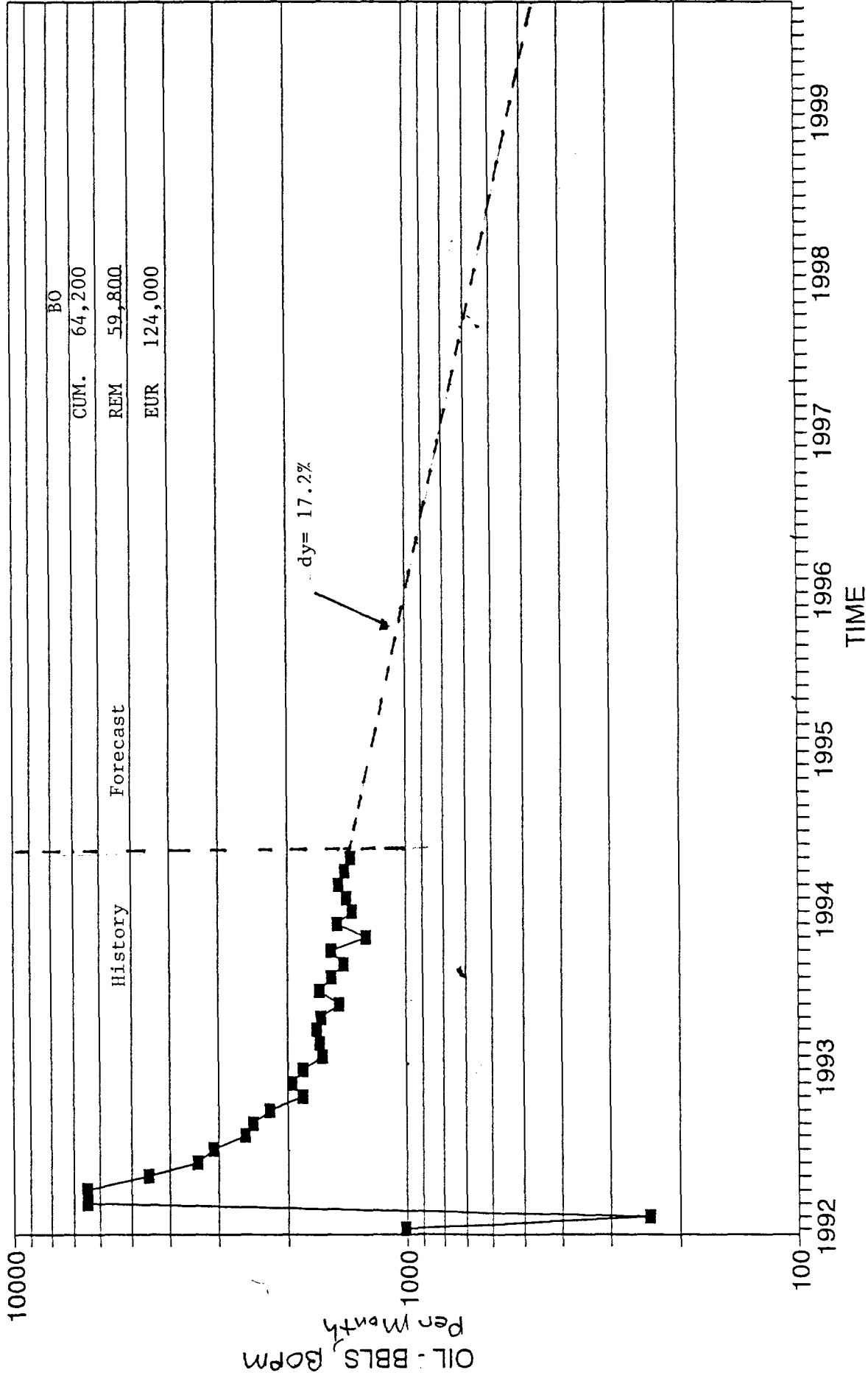
$$RF = \frac{EUR}{OOIP} = \frac{124,000}{954,598}$$

$$RF = 13\% \text{ (160 acres)}$$

COMPLETION DATE: 5-29-92
IP: 227 BOPD

MCMILLAN 34 #1 LEA COUNTY, NEW MEXICO

DATE SPUDDED: 12-30-93
DATE TD REACHED: 2-10-92



Case No. 10669
Exhibit No.7

—■— OIL

P 176 013 122



**Receipt for
Certified Mail**

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

PS Form 3800, June 1991

Sent to	
Columbia Gas Develop. Corp.	
Street and No.	
P. O. Box 1350	
P.O., State and Zip	
Houston, Texas 77251-1350	
Postage	\$
Certified	
Special Delivery	
Restricted Delivery	
Return Receipt Requested	
Return Receipt to Whom	
Return Receipt Date, and Address	
TOTAL Postage & Fees	\$
Postmark or Date	

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:		4a. Article Number	
Columbia Gas Development Corp.		P 176 013 122	
P. O. Box 1350		4b. Service Type	
Houston, Texas 77251-1350		☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise	
5. Signature (Addressee)		7. Date of Delivery	
6. Signature (Agent) <i>C. X. Kable</i>		SEP - 21 1994	
		8. Addressee's Address (Only if requested and fee is paid)	

Thank you for using Return Receipt Service.

PS Form 3811, December 1991

U.S. GPO: 1992-323-402

DOMESTIC RETURN RECEIPT



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

August 30, 1994

Columbia Gas Development Corporation
P. O. Box 1350
Houston, Texas 77251-1350

Gentlemen:

In accordance with the provisions of Division Orders Nos. R-9875 and R-9875-A, both entered on April 15, 1993, the Oil Conservation Division is reopening Case No. 10669 in order to give all operators in the Northeast Pollock-Wolfcamp Pool in Lea County, New Mexico, the opportunity to appear and show cause why the Temporary Special Rules and Regulations for said Northeast Pollock-Wolfcamp Pool should not be rescinded.

This case will be heard before an examiner on September 15, 1994, in Morgan Hall, State Land Office Building, Santa Fe, New Mexico, at 8:15 a.m. A copy of the advertisement for this hearing is enclosed.

Sincerely,

A handwritten signature in cursive script that reads "Florene Davidson".

Florene Davidson
OC Staff Specialist

enc.