

ORIGINAL OIL IN PLACE CALCULATIONS

CROSSROADS, SOUTH FIELD

DATA:

PRODUCTIVE ACREAGE (A) =	600 ACRES
AVERAGE POROSITY (ϕ) =	10 %
AVG. WATER SATURATION (S_w) =	25 %
NET PAY THICKNESS (H) =	25 FT
OIL FORMATION VOLUME FACTOR (B_o) =	1.27 RB/STB

$$OOIP = (7758 * H * A * \phi * (1 - S_w)) / B_o$$

$$OOIP = \underline{\underline{6,872,244 \text{ STB}}}$$

$$\text{TOTAL FIELD RECOVERY} = \underline{\underline{3,051,000 \text{ STB}}}$$

$$\text{RECOVERY FACTOR} = \underline{\underline{44.40\%}}$$

BOUGH FIELD

DATA:

PRODUCTIVE ACREAGE (A) =	300 ACRES
AVERAGE POROSITY (ϕ) =	6 %
AVG. WATER SATURATION (S_w) =	26 %
NET PAY THICKNESS (H) =	118 FT
OIL FORMATION VOLUME FACTOR (B_o) =	1.25 RB/STB

$$OOIP = (7758 * H * A * \phi * (1 - S_w)) / B_o$$

$$OOIP = \underline{\underline{9,754,971 \text{ STB}}}$$

$$\text{TOTAL FIELD RECOVERY} = \underline{\underline{3,758,000 \text{ STB}}}$$

$$\text{RECOVERY FACTOR} = \underline{\underline{38.52\%}}$$

DATE	APR 11 1970
TIME	10:00 AM
NAME	MAHALD
NO.	6
REMARKS	10670

ORIGINAL OIL IN PLACE CALCULATIONS

BARNES AREA FIELD

DATA:

PRODUCTIVE ACREAGE (A) =	288 ACRES
AVERAGE POROSITY (ϕ) =	6 %
AVG. WATER SATURATION (S_w) =	25 %
NET PAY THICKNESS (H) =	28 FT
OIL FORMATION VOLUME FACTOR (B_o) =	1.25 RB/STB

$$OOIP = (7758 * H * A * \phi * (1 - S_w)) / B_o$$

$$OOIP = \underline{\underline{2,252,178 \text{ STB}}}$$

$$EST. \text{ ULT. FIELD RECOVERY} = \underline{\underline{945,915 \text{ STB}}}$$

$$RECOVERY \text{ FACTOR} = \underline{\underline{42.00\%}}$$

ORIGINAL OIL IN PLACE CALCULATIONS

BARNES "20" #1 PRORATION UNIT

DATA:

PRODUCTIVE ACREAGE (A) =	40 ACRES
AVERAGE POROSITY (ϕ) =	6 %
AVG. WATER SATURATION (S_w) =	25 %
NET PAY THICKNESS (H) =	10 FT
OIL FORMATION VOLUME FACTOR (B_o) =	1.25 RB/STB

$$OOIP = (7758 * H * A * \phi * (1 - S_w)) / B_o$$

$$OOIP = \underline{\underline{111,715 \text{ STB}}}$$

$$EST. \text{ ULT. RECOVERY} = \underline{\underline{46,920 \text{ STB}}}$$

$$RECOVERY \text{ FACTOR} = \underline{\underline{42.00\%}}$$

BARNES "20" #1 PRORATION UNIT

DATA:

PRODUCTIVE ACREAGE (A) =	80 ACRES
AVERAGE POROSITY (ϕ) =	6 %
AVG. WATER SATURATION (S_w) =	25 %
NET PAY THICKNESS (H) =	13 FT
OIL FORMATION VOLUME FACTOR (B_o) =	1.25 RB/STB

$$OOIP = (7758 * H * A * \phi * (1 - S_w)) / B_o$$

$$OOIP = \underline{\underline{290,460 \text{ STB}}}$$

$$EST. \text{ ULT. RECOVERY} = \underline{\underline{121,993 \text{ STB}}}$$

$$RECOVERY \text{ FACTOR} = \underline{\underline{42.00\%}}$$

Date: 02/03/93
Time: 15:21.31

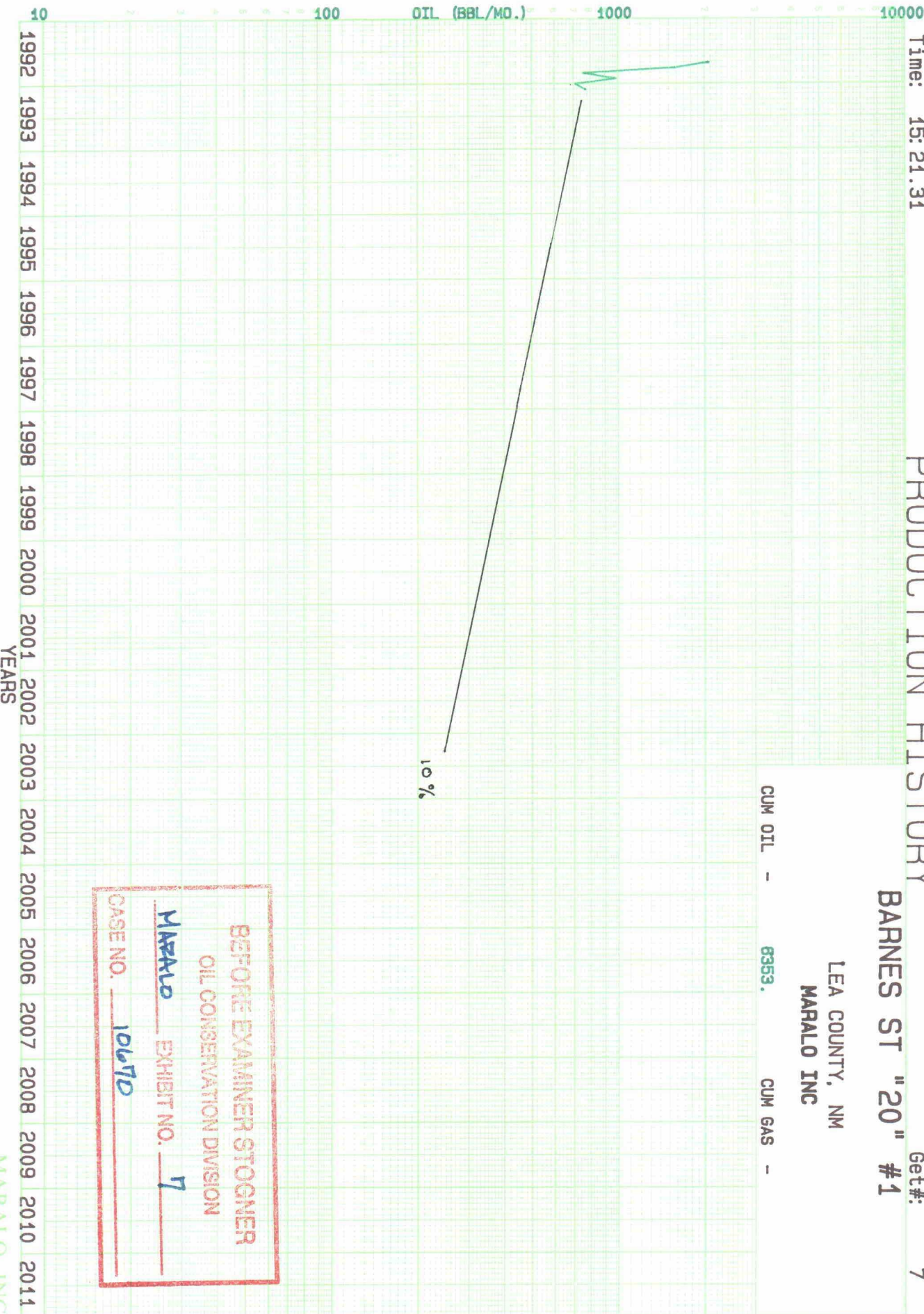
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PRODUCTION HISTORY

BARNES ST "20" #1

LEA COUNTY, NM
MARALO INC

CUM OIL - 8353. CUM GAS -



BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
MARALO EXHIBIT NO. 7
CASE NO. 10670

DECLINE CURVE ANALYSIS
BARNES "20" #1

REMAINING RECOVERY(N) = (INITIAL RATE - FINAL RATE)365/-LN(1-AY)

WHERE AY IS THE EXPONENTIAL DECLINE RATE

$$N = (28 - 5)365/-\ln(1-.10)$$

$$N = 79,679 \text{ STB}$$

$$\text{ULTIMATE RECOVERY} = 79,679 + 6,353$$

$$\text{ULTIMATE RECOVERY} = \underline{\underline{86,032 \text{ STB}}}$$