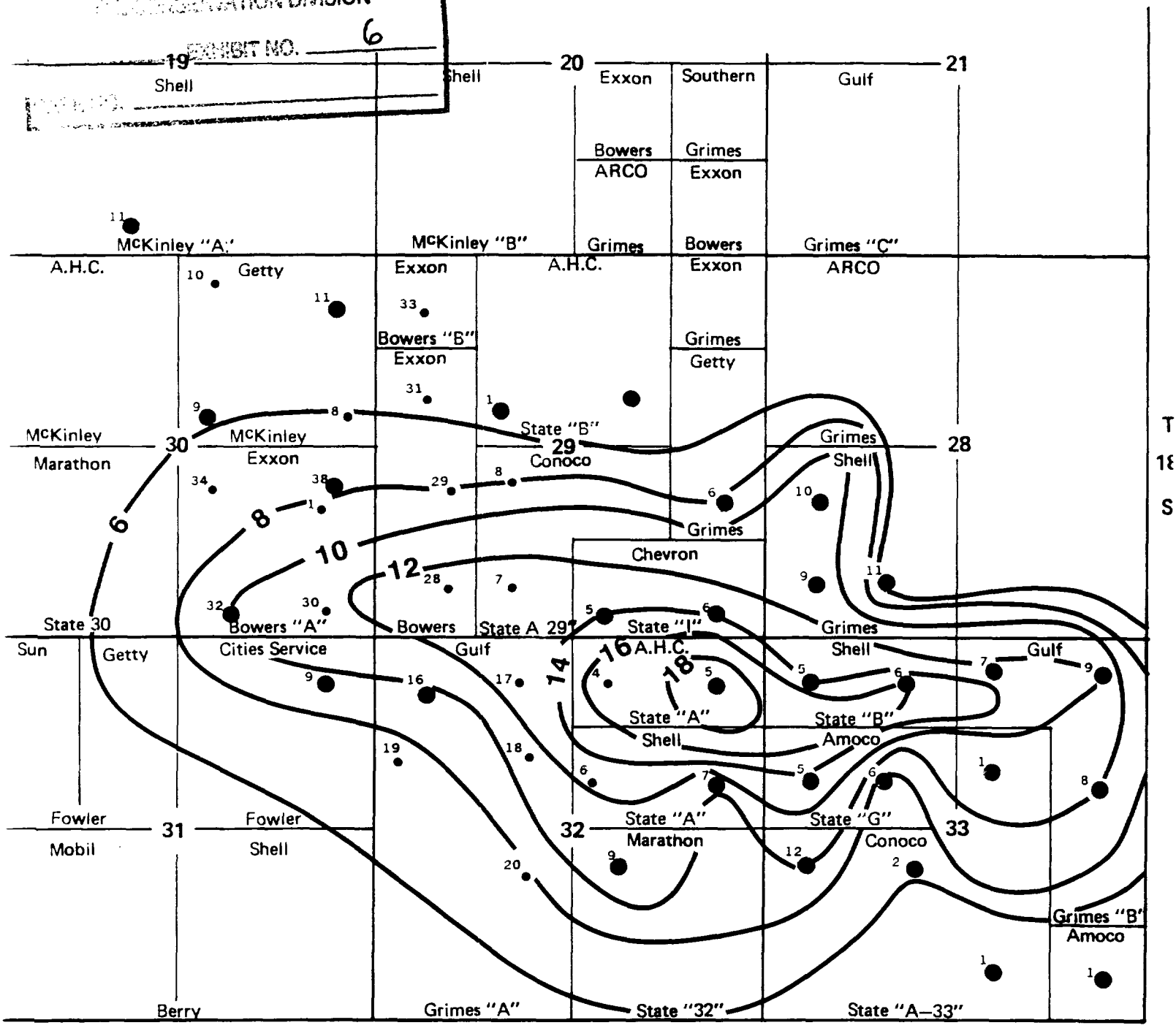
R–38–E



Location Map	LEGEND		SOUTHWEST PRODUCTION REGION HOBBS FIELD Lea County, New Mexico
	Oil Gas Dry & Abn Injection Salt Wtr. Disposal	WELLS PENETRATING LOWER BLINEBRY Isopach of net pay in feet (h) for Lower Blinebry CI = 2'	AMERADA HESS **BLINEBRY FORMATION**
			Date: FEBRUARY, 1992 — Page:
			Originator: E. HAAS

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

VOLUMETRIC ANALYSIS

HOBBS FIELD

LOWER BLINEBRY

(NET VOLUME OF PAY FROM ISOPACH MAP)

INTERVAL	PLANIMETER AREA (sq. inch.)	PLANIMETER VOLUME (acres)	RATIO OF AREA	SOLUTION METHOD	H (ft.)	VOLUME (acre-ft.)
A0	9.50	1985				
A1	6.30	1317	.66	[a]TRAP	2	3302
A2	4.10	857	.65	TRAP	2	2174
A3	2.10	439	.51	TRAP	2	1296
A4	.90	188	.43	[b]PYR	2	610
A5	.47	98	.52	TRAP	2	286
A6	.14	29	.30	PYR	2	120
A7	.00	0	.00	PYR	1	10

TOTAL VOLUME

AH= 7798 ACRE-FT

[a]TRAPAZOIDAL FORMULA $\Delta V_b = H/2 \ (A_N + A_{N+1})$

[b]PYRAMIDAL FORMULA $\Delta V_b = H/3 \ (A_N + A_{N+1}) + \sqrt{A_N \cdot A_{N+1}}$

VOLUMETRIC ANALYSIS

HOBBS FIELD

LOWER BLINEBRY

γ_g	= .7305	γ_o	= .7822
P*	= 2455 PSIA	ϕ	= .09
Z	= 0.746	Sw	= .25
GOR	= 32,000 SCF/BBL.		

TOTAL INITIAL GAS IN-PLACE/ACRE-FT. OF BULK RESERVOIR ROCK

$$G_i = \frac{379.4\ P\ Vb}{Z\ RT} = \frac{379.4\ (2455)(43{,}560)(.090)(1-.25)}{(.746)(10.73)(573)}$$

G_i = 597.1 MCF/AC-FT.

MOLE FRACTION EQUALS VOLUME FRACTION THEREFORE,

$$f_g = \frac{N_g}{N_g + N_o} = \frac{GOR/379.4}{GOR/379.4 + 350\ \gamma_o/M_o}$$

$$f_g = \frac{32{,}000/379.4}{32{,}000/379.4 + 350\ (.7822)/139.9}$$

f_g = .9773

THEN,

INITIAL GAS IN-PLACE/ACRE-FT.

INITIAL GAS IN-PLACE = fg.G = (.9773)(597,100 SCF/acre-ft.)

INITIAL GAS IN-PLACE = 583.5 MCF/ACRE-FT.

INITIAL OIL IN-PLACE/ACRE-FT.

$$\text{INITIAL OIL IN-PLACE} = \frac{\text{INITIAL GAS IN PLACE}}{\text{GOR}} = \frac{583{,}500}{32{,}000}$$

INITIAL OIL IN-PLACE = 18.24 BBLS./ACRE-FT.

INITIAL GAS IN-PLACE (BCF)

INITIAL GAS IN-PLACE = (583,500 SCF/acre-ft.)(7798 acre-ft.)

INITIAL GAS IN-PLACE = 4.55×10^9 SCF OR 4.55 BCF ←

INITIAL OIL IN-PLACE (BBLS.)

INITIAL OIL IN-PLACE = (18.24 Bbls./acre-ft.)(.7798 acre-ft.)

INITIAL OIL IN-PLACE = 142,200 BBLS. ←

BASED ON AN ANTICIPATED RECOVERY RATE OF 85% OF OOIP & OGIP FOR A GAS-CONDENSATE RESERVOIR.

RECOVERABLE OIL = 120,900 BBLS. ←

RECOVERABLE GAS = 3.86×10^9 SCF ←

BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
EXHIBIT NO. 8
CASE NO. _____

VOLUMETRIC ANALYSIS
FOR
STATE "A" #5

ϕ = .13

h = 18 Ft.

A = 80 Acre

Ah = 1440 Acre-Ft.

Initial GOR = 32,000 SCF/BBL.

SW = .25

γ_g = .7305 (From gas analysis 3/1/85)

Initial API Gravity = 49.4°

P* = 2455 psia (From build-up analysis 3/11/85)

T = 573° R

T_c = 392° R

$T_r = T/T_c$

T_r = 573/392 = 1.46

P_c = 664 psia

$P_r = P/P_c$

P_r = 2455/664 = 3.69

Z = .746

SPECIFIC GRAVITY OF OIL (CONDENSATE)

$$\gamma_o = \frac{141.5}{°API + 131.5} = \frac{141.5}{49.4 + 131.5}$$

γ_o = 0.7822

MOLECULAR WEIGHT OF OIL (CONDENSATE)

$$M_o = \frac{6084}{°API-5.9} = \frac{6084}{49.4-5.9}$$

M_o = 139.9

TOTAL INITIAL GAS IN-PLACE/ACRE-FT. OF BULK RESEVOIR ROCK

$$G_i = \frac{379.4\ P\ V_b}{z\ RT}$$

$$G_i = \frac{(379.4)(2455)(43{,}560)(.13)(1-.25)}{(.746)(10.73)(573)}$$

$G_i = 862.5$ MCF/Acre-Ft.

Mole fraction equals volume fraction therefore,

$$fg = \frac{Ng}{Ng + No} = \frac{GOR/379.4}{GOR/379.4 + 350\ \gamma o/Mo}$$

$$f_g = \frac{32{,}000/379.4}{32{,}000/379.4 + 350\ (.7822)/139.9)}$$

$fg = 0.9773$

Then,

INITIAL GAS IN PLACE/ACRE-FT.

Initial Gas In-Place = fg · G = (.9773)(862,500 SCF/acre ft.)

Initial Gas In-Place = 842.9 MCF/Acre-Ft.

INITIAL OIL IN-PLACE/ACRE-FT.

$$\text{Initial Oil In-Place} = \frac{\text{Initial Gas In-Place}}{\text{GOR}}$$

$$\text{Initial Oil In-Place} = \frac{842{,}900}{32{,}000}$$

Initial Oil In-Place = 26.34 Bbls/Acre-Ft.

INITIAL GAS IN-PLACE (BCF)

Initial Gas In-Place = (842,900 SCF/acre-ft.)(1440 acre-ft.)

Initial Gas In-Place = 1.21×10^{9} SCF or 1.21 BCF ←

INITIAL OIL IN-PLACE (BBLS.)

Initial Oil In-Place = (26.34 bbls./acre-ft.)(1440 acre-ft.)

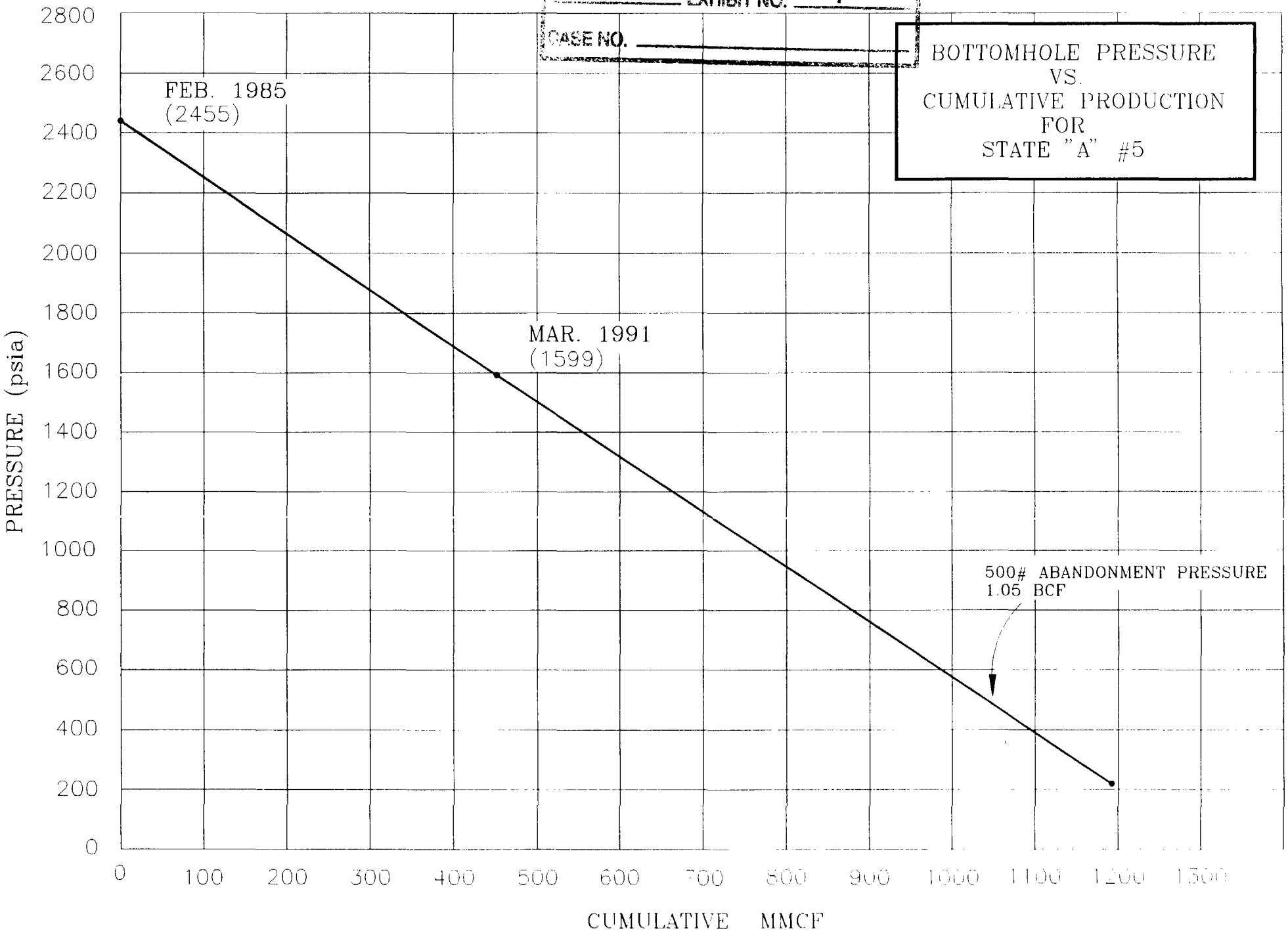
Initial Oil In-Place = 37,900 Bbls. ←

BASED ON ANTICIPATED RECOVERY RATE OF 85% OF OOIP & OGIP FOR A GAS-CONDENSATE RESERVOIR

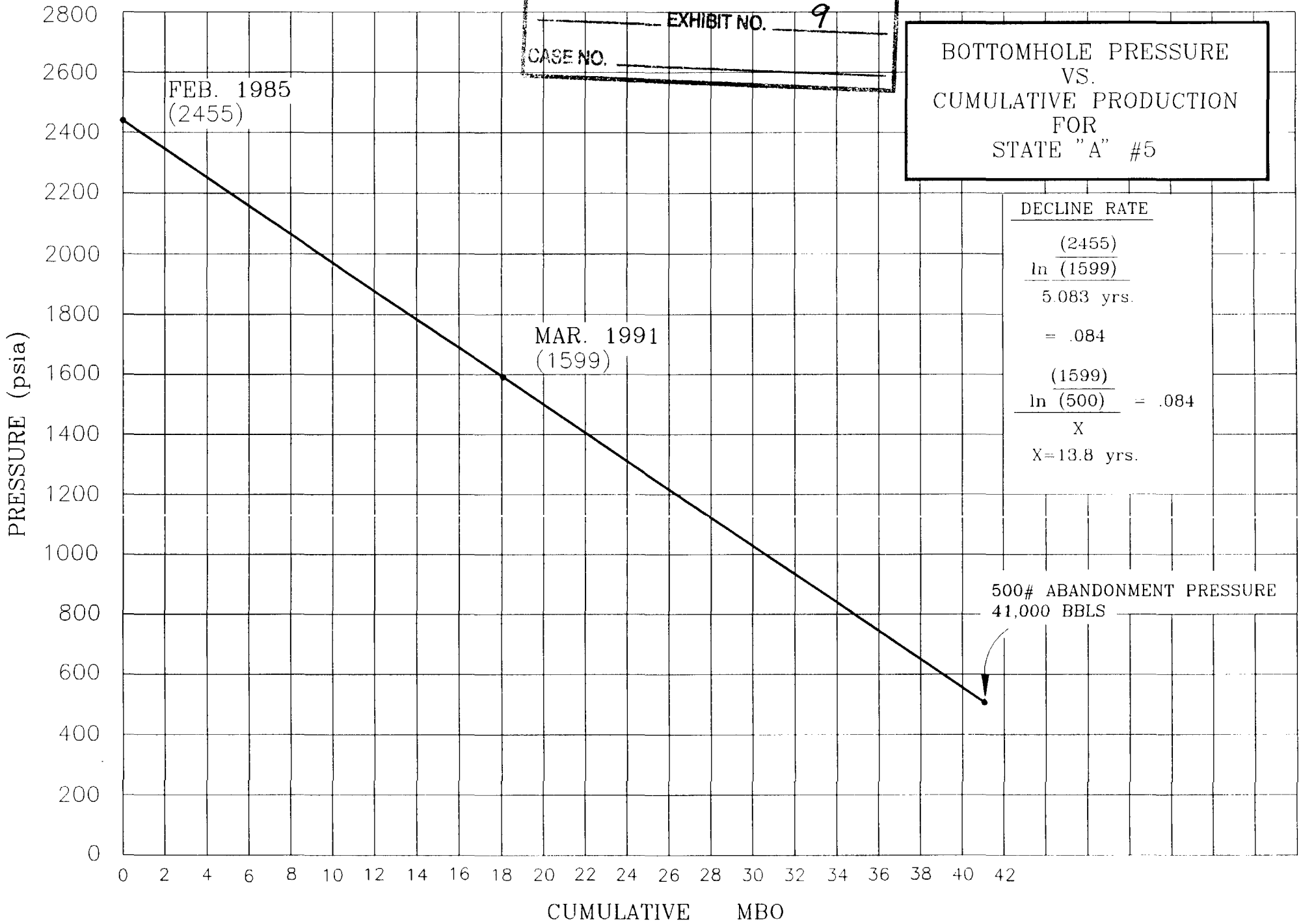
Recoverable Oil = 32,200 Bbls. ←

Recoverable Gas = 1.03×10^{9} SCF or 1.03 BCF ←

BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
EXHIBIT NO. 9
CASE NO.



BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
EXHIBIT NO. 9
CASE NO.



AMERADA HESS CORPORATION

P. O. DRAWER "D"
MONUMENT, NEW MEXICO 88265

January 30, 1992

TO ALL OWNERS OF INTEREST IN THE HOBBS-BLINEBRY POOL AREA

Re: Application of Amerada Hess Corporation for Contraction of the Vertical Limits of the Hobbs-Blinebry, Creation of a New Pool in the Lower Blinebry Within the Current Horizontal Limits of the Hobbs-Blinebry Pool and the Promulgation of Special Pool Rules and Regulations, Lea County, New Mexico

Gentlemen:

This letter is to advise you that Amerada Hess Corporation has filed an application with the New Mexico Conservation Division seeking an Order contracting the vertical limits of the Hobbs-Blinebry Pool and creation of a new pool in the Lower Blinebry formation within the current horizontal limits of the Hobbs-Blinebry Pool located in portions of Sections 19 and 28 through 34 of Township 18 South, Range 38 East; and Section 3 of Township 19 South, Range 38 East, N.M.P.M., Lea County, New Mexico. Amerada Hess Corporation also seeks the promulgation of Special Pool Rules and Regulations for the new Lower Blinebry Pool including 80-acre spacing with a special gas/oil ratio of 10,000 to 1.

This application has been set for hearing before a Division Examiner on February 20, 1992. You are not required to attend this hearing, but as the owner of an interest that may be affected by this application, you may appear and present testimony. Failure to appear at that time or otherwise become a party of record will preclude you from challenging the matter at a later date.

Parties appearing in cases have been requested by the Division (Memorandum 2-90) to file a Prehearing Statement substantially in the form prescribed by the Division. Prehearing statements should be filed by 4:00 o'clock p.m. on the Friday before a scheduled hearing.

Very truly yours,

Denise Wann

DENISE WANN
Petroleum Engineer
Amerada Hess Corporation

BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
EXHIBIT NO. 10

Shell E & P
P.O. Box 576
Houston, Texas 77001

Bravo Operating Co.
P.O. Box 2160
Hobbs, New Mexico 88241

Carr Well Service, Inc.
P.O. Box 69090
Odessa, Texas 79769

Chevron
P.O. Box 670
Hobbs, New Mexico 88240

Conoco
10 Desta Drive West
Midland, Texas 79705

Exxon
P.O. Box 1600
Midland, Texas 79702

Pontotoc Oil Corp.
Box 3699
Midland, Texas 79702

Texaco
P.O. Box 730
Hobbs, New Mexico 88240

Penroc
P.O. Box 5970
Hobbs, New Mexico 88240

Charles E. Seed
Huston Ranch
Lovington Highway
Hobbs, New Mexico 88240

Shirey-Steinberg
c/o Oil Report & Gas Services Inc.
P.O. Box 755
Hobbs, New Mexico 88240

Bliss Petroleum Corp.
P.O. Box 1817
Hobbs, New Mexico 88240

Marathon
P.O. Box 2409
Hobbs, New Mexico 88240

Amoco
P.O. Box 3092
Houston, Texas 77253

Brothers Production Company
P.O. Box 7515
Midland, Texas 79707

Zia Energy
P.O. Box 2219
HObbs, New Mexico 88240

Baber
P.O. Box 1772
Hobbs, New Mexico 88240

Cross Timbers Oper. Co.
P.O. Box 50847
Midland, Texas 79710

Oxy
Box 50250
Midland, Texas 79710

Sun (Orxy)
Box 1861
Midland, Texas 79703

Rice Engineering
122 W. Taylor
Hobbs, New Mexico 88241

Unichem
Box 1499
Hobbs, New Mexico 88240

Meril Energy Co
12221 Merit Dr.
Ste. #1040
Dallas, Texas 75251

Marbob Energy Corp.
P.O. Drawer 217
Artesia, NM 88210

Petroleum Development Corp.
9720 B. Candelaria N.E.
Albuquerque, NM 87112

Snow Oil & Gas Inc.
P.O. Box 1294
Andrews, Texas 79714

Damson Oil Corp.
3300 N "A"
Building 8 Suite 100
Midland, Texas 79705

Fina Oil & Chemical Co.
Box 2990
Midland, TX 79702-2990

C & K Petroleum Inc.
P.O. Box Drawer 3546
Midland, Texas 79702

Pioneer Enterprises
Box 2181
Midland, Texas 79702

Kincaid & Watson Drilling Co.
Box 498
Artesia, NM 88211-0498

FI-RO Corp.
P.O. Box 8148
Roswell, NM 88202

Dorothy Runnels
Box 937
Lovington, NM 88260

BEFORE THE

OIL CONSERVATION DIVISION

NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES

IN THE MATTER OF THE APPLICATION
OF AMERADA HESS CORPORATION FOR
POOL CONTRACTION, POOL CREATION,
AND PROMULGATION OF SPECIAL POOL RULES,
LEA COUNTY, NEW MEXICO.

CASE NO. 10444

AFFIDAVIT

BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
AMERADA HESS EXHIBIT NO. 10 A
CASE NO. 10444

STATE OF NEW MEXICO)
)ss.
COUNTY OF SANTA FE)

DENISE WANN, authorized representative of Amerada Hess Corporation, the Applicant herein, being first duly sworn, upon oath, states that the notice provisions of Rule 1207 of the New Mexico Oil Conservation Division have been complied with, that Applicant has caused to be conducted a good faith diligent effort to find the correct addresses of all interested persons entitled to receive notice as shown by Exhibit "A" attached hereto, and that pursuant to Rule 1207, notice has been given at the correct addresses provided by such rule.

Denise Wann
DENISE WANN

SUBSCRIBED AND SWORN to before me this 19th day of February, 1992.

Notary Public

My Commission Expires:

August 19, 1995

Shell E & P
P.O. Box 576
Houston, Texas 77001

Bravo Operating Co.
P.O. Box 2160
Hobbs, New Mexico 88241

Carr Well Service, Inc.
P.O. Box 69090
Odessa, Texas 79769

Chevron
P.O. Box 670
Hobbs, New Mexico 88240

Conoco
10 Desta Drive West
Midland, Texas 79705

Exxon
P.O. Box 1600
Midland, Texas 79702

Pontotoc Oil Corp.
Box 3699
Midland, Texas 79702

Texaco
P.O. Box 730
Hobbs, New Mexico 88240

Penroc
P.O. Box 5970
Hobbs, New Mexico 88240

Charles E. Seed
Huston Ranch
Lovington Highway
Hobbs, New Mexico 88240

Shirey-Steinberg
c/o Oil Report & Gas Services Inc.
P.O. Box 755
Hobbs, New Mexico 8824C

Bliss Petroleum Corp.
P.O. Box 1817
Hobbs, New Mexico 88240

Marathon
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Hobbs, New Mexico 88240

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Hobbs, New Mexico 88241

Unichem
Box 1499
Hobbs, New Mexico 88240

Exhibit "A"

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12221 Merit Dr.
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Dallas, Texas 75251

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9720 B. Candelaria N.E.
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Box 498
Artesia, NM 88211-0498

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P.O. Box 8148
Roswell, NM 88202

Dorothy Runnels
Box 937
Lovington, NM 88260

AMERADA HESS CORPORATION

P. O. DRAWER "D"
MONUMENT, NEW MEXICO 88265

January 30, 1992

TO ALL OWNERS OF INTEREST IN THE HOBBS-BLINEBRY POOL AREA

Re: Application of Amerada Hess Corporation for Contraction of the Vertical Limits of the Hobbs-Blinebry, Creation of a New Pool in the Lower Blinebry Within the Current Horizontal Limits of the Hobbs-Blinebry Pool and the Promulgation of Special Pool Rules and Regulations, Lea County, New Mexico

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Very truly yours,

DENISE WANN
Petroleum Engineer
Amerada Hess Corporation

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

MEMORANDUM

TO: Jerry Sexton

FROM: Paul Kautz

SUBJECT: Amerada Hess - Hobbs Blinebry Pool

DATE: February 10, 1992

Amerada Hess Corporation has placed on the docket for February 20th, 1992 a request to subdivide the Hobbs Blinebry Pool into an upper and lower Blinebry pools. They are also requesting special pool rules for the lower pool. These rules allow for a GOR limit of 10,000 to 1.

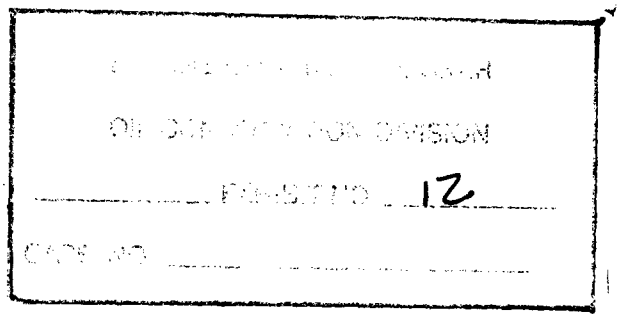
I have reviewed the data presented by Amerada Hess and I support their proposed pool changes and pool rules. I also believe that these changes will encourage additional development and will increase production in the area.

BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
EXHIBIT NO. 11
CASE NO. _____

AMERADA HESS CORPORATION

P. O. DRAWER "D"
MONUMENT, NEW MEXICO 88265

February 18, 1992



New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

ATTN: William L. Lemay

Re: Application for a New Pool designation within the Hobbs Field for the Lower Blinebry zone with a GOR limit of 10,000 cuft./bbl on 80 acre spacing.

Dear Sir:

AHC is seeking approval of a New Pool designation in the Hobbs Field for the Lower Blinebry zone. The State A #5, located in Unit A of Section 32, Township 18 South, Range 38 East, was selectively perforated from 6204'-6275' on February 8, 1985. A production test of March 2, 1985 showed 35 BOPD, 0 BWPD and 1125 MCFPD on a 16/64" choke at a FTP of 960 psi. The API gravity was measured at 49.4°. The shut-in bottomhole pressure at -2600' S.S. depth and reservoir permeability, acquired from pressure buildup analysis, were 2455 psia and 2.4 md, respectively. A recent production test from the Blinebry zone of February 12, 1992 shows 13 BO, 2 BW and 780 MCFPD on a 27/64" choke at FTP of 360 psi.

Prior to perforating the Lower Blinebry, the State A #5 was completed in the Upper Blinebry from 5905'-5957'. The Upper Blinebry produced an average of 5 BO, 3 BW and 10 MCFPD with an oil gravity of 36.4° API and required artificial lift to produce. Due to the differential pressure between the two intervals, the Upper interval was cement squeezed to prevent crossflowing.

The Upper Blinebry from 5905' - 5957' was selectively perforated June 19, 1969. After a 3000 gal. 15% acid job the well was tested pumping 113 BO, 25 BW, and 51 MCFPD for a GOR of 451 and an API gravity of 36.6°. On July 8, 1969, a shut-in bottomhole pressure at -2256' S.S. depth was found to be 1733 psia.

At present, in accordance with the State description of the Blinebry Oil pool, the Lower Blinebry zone is contained within the Blinebry Oil Pool and is subject to the maximum allowable of 107 BOPD and 214 MCFPD, with a GOR limit of 2000 cuft/bbl. Since the current allowable inhibits AHC from adequately producing the Lower Blinebry, AHC seeks adoption of a new designation with a GOR limit of 10,000 cuft/bbl on 80 acre spacing for the Lower Blinebry Pool. By establishing the New Pool designation more oil and gas could be recovered than is presently allowed. This new designation would result in justifying further development of the zone throughout the field.

Sincerely,

Denise Wann
Senior Petroleum Engineer

LOWER BLINEBRY

LOWER BLINEBRY TESTS IN THE HOBBS FIELD

The Lower Blinebry zone has been tested in three other wells in the Hobbs Field, Shell's State A #7, Grimes #10, and McKinley A #11.

The Shell State A #7, located one location south of AHC State A #5 in Section 32, was DST'd in June 1969 from 6185' to 6226'. The zone produced 326 MCFPD and 120 ft. of heavy gas and slightly oil cut mud. The flowing pressure was 362 psia and the final shut-in pressure was 2424 psia.

The Shell Grimes #10, located to the northeast of the AHC State A #5 in Section 28, flowed 7 BOPD, 320 BWPD and 500 MCFPD (est.) on a 30/64" choke after a 3000 gal. acid treatment, from the perforations 6284' - 6324', in October 1969. After testing, the perforations were cement squeezed.

The Shell Mckinley A #11, located in Section 19, produced 360 BWPD from perforations 6375' - 6377' in April 1970. After testing, the perforations were cement squeezed.

The water production in the Grimes #10 and McKinley A #11 indicates the presence of and oil-water contract.

LOWER BLINEBRY RESERVE ESTIMATES BASED ON ISOPACH MAP

A isopach map of net pay in feet for the Lower Blinebry was constructed using a combination of a 6% porosity cut off and clean footage on the gamma ray. The Lower Blinebry reserve estimates for the field derived from this map were found to be 142.2 MSTB of initial oil in place and 4.55×10^9 SCF of initial gas in place. Cross-sections were constructed detailing the Lower Blinebry thickness and extent as well as position with respect to the Upper Blinebry and Tubb formations.

LOWER BLINEBRY RESERVE ESTIMATE FOR STATE A #5

The shut-in bottomhole pressure at- 2600' S.S. depth acquired from a pressure survey run March 12, 1991 was 1599 psia. Based on bottomhole pressure versus cumulative production plot, the well is capable of draining 80 acres and producing 41,000 barrels of oil and 1.05 BCF to an abandonment pressure of 500#. Based on the decline rate, it will take an additional 14 years to deplete AHC's 80 acre lease.

Volumetric calculations for reserves for the State A #5 based on 80 acres yielded recoverable reserves of 32,200 BO and 1.03 BCF. These two methods of determining reserves show good agreement.

SUMMARY

By increasing the GOR limit, the State A #5 could go from producing 8 days/month to 30 days/month with an estimated increase in production of 390 bopm and 17,160 MCFPM. By shortening the production life of the reservior and obtaining the reserves in a reduced time frame, further development of the Lower Blinebry Pool throughout the field could be justified.

Based on the pressure depletion seen in the State A #5, it is believed that one well can effectively drain 80 acres to an abandonment pressure of 500#.