

Volumetric Calculations:

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State ETA #2 (Avance, American Exploration)

Pi: 6354 psi (7/69 DST)	2/97 Cum: 11.251 BCF
Pa: 1000 psi	Ult Decl: 12.700 BCF
T: 650 R Z: .97	Ult P/Z: 12.700 BCF
h: 17'	
Por: 13%	Avg EUR: 12.700 BCF
Sw: 12%	

1/Bg Calc: $1/Bg = 35.5 (P) / TZ$

$$1/Bgi: 35.5(6354) / 650(.97) = 358$$

$$1/Bga: 35.5(1000) / 650(.97) = 56$$

$$1/Bgi - 1/Bga = 358 - 56 = 302$$

Ultimate Drainage Area: $DA = \text{Ult Recovery} / .043560h(\text{por})(1 - Sw)(1/Bg)$

$$DA = 12,700 / .043560(17)(.13)(1 - .12)(302)$$

$$\underline{DA = 496 \text{ acres}}$$

$$\underline{\text{Radius} = 2622'}$$

Humble Townsend (V-F Petroleum)

Pi: 5622 psi (8/71 BHP)	3/97 Cum: 10.279 BCF
Pa: 1000 psi	Ult Decl: 11.800 BCF
T: 628 R Z: .997	Ult P/Z: 12.500 BCF
h: 36'	
Por: 10%	Avg EUR: 12.100 BCF
Sw: 17%	

1/Bg Calc: $1/Bg = 35.5 (P) / TZ$

$$1/Bgi: 35.5(5622) / 628(.997) = 318$$

$$1/Bga: 35.5(1000) / 628(.997) = 57$$

$$1/Bgi - 1/Bga = 318 - 57 = 261$$

Ultimate Drainage Area: $DA = \text{Ult Recovery} / .043560h(\text{por})(1 - Sw)(1/Bg)$

$$DA = 12,100 / .043560(36)(.12)(1 - .17)(261)$$

$$\underline{DA = 297 \text{ acres}}$$

$$\underline{\text{Radius} = 2029'}$$

Lowe State (Great Western)

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Pi: 5988 psi (4/72 BHP)

Pa: 1000 psi

T: 635 R Z: .97

h: 24'

Por: 13%

Sw: 12%

2/97 Cum: 8.200 BCF

Ult Decl: 9.980 BCF

Ult P/Z: 10.900 BCF

Avg EUR: 10.500 BCF

Bg Calc: $1/Bg = 35.5 (P) / TZ$

$$1/Bgi: 35.5(5988) / 635(.997) = 336$$

$$1/Bga: 35.5(1000) / 635(.997) = 56$$

$$1/Bgi - 1/Bga = 336 - 56 = 280$$

Drainage Area Calc: $DA = \text{Ult Recovery} / .043560h(\text{por})(1 - Sw)(1/Bg)$

$$DA = 10,500 / .043560(24)(.13)(1 - .12)(280)$$

$$DA = \underline{\underline{313 \text{ acres}}}$$

$$\underline{\underline{Radius = 2083'}}$$

Humble State A (Tom Brown)

Pi: 4505 psi (6/72 DST)

Pa: 1000 psi

T: 635 R Z: .97

h: 10'

Por: 8%

Sw: 30%

2/97 Cum: 2.5 BCF

Ult Decl: 3.100 BCF

Ult P/Z: 3.500 BCF

Avg EUR: 3.300 BCF

Bg Calc: $1/Bg = 35.5 (P) / TZ$

$$1/Bgi: 35.5(4505) / 635(.97) = 260$$

$$1/Bga: 35.5(1000) / 635(.97) = 58$$

$$1/Bgi - 1/Bga = 260 - 58 = 202$$

Drainage Area Calc: $DA = \text{Ult Recovery} / .043560h(\text{por})(1 - Sw)(1/Bg)$

$$DA = 3,500 / .043560(12)(.10)(1 - .25)(202)$$

$$DA = \underline{\underline{442 \text{ acres}}}$$

$$\underline{\underline{Radius = 2475'}}$$

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TOWNSEND FIELD
LEA COUNTY, NEW MEXICO

ISOPACH MAP:
NET SAND THICKNESS IN LOWER
ATOKA "SHOE BAR" SANDSTONE
(Porosity cutoff = 6%)
C.I. = 10 feet

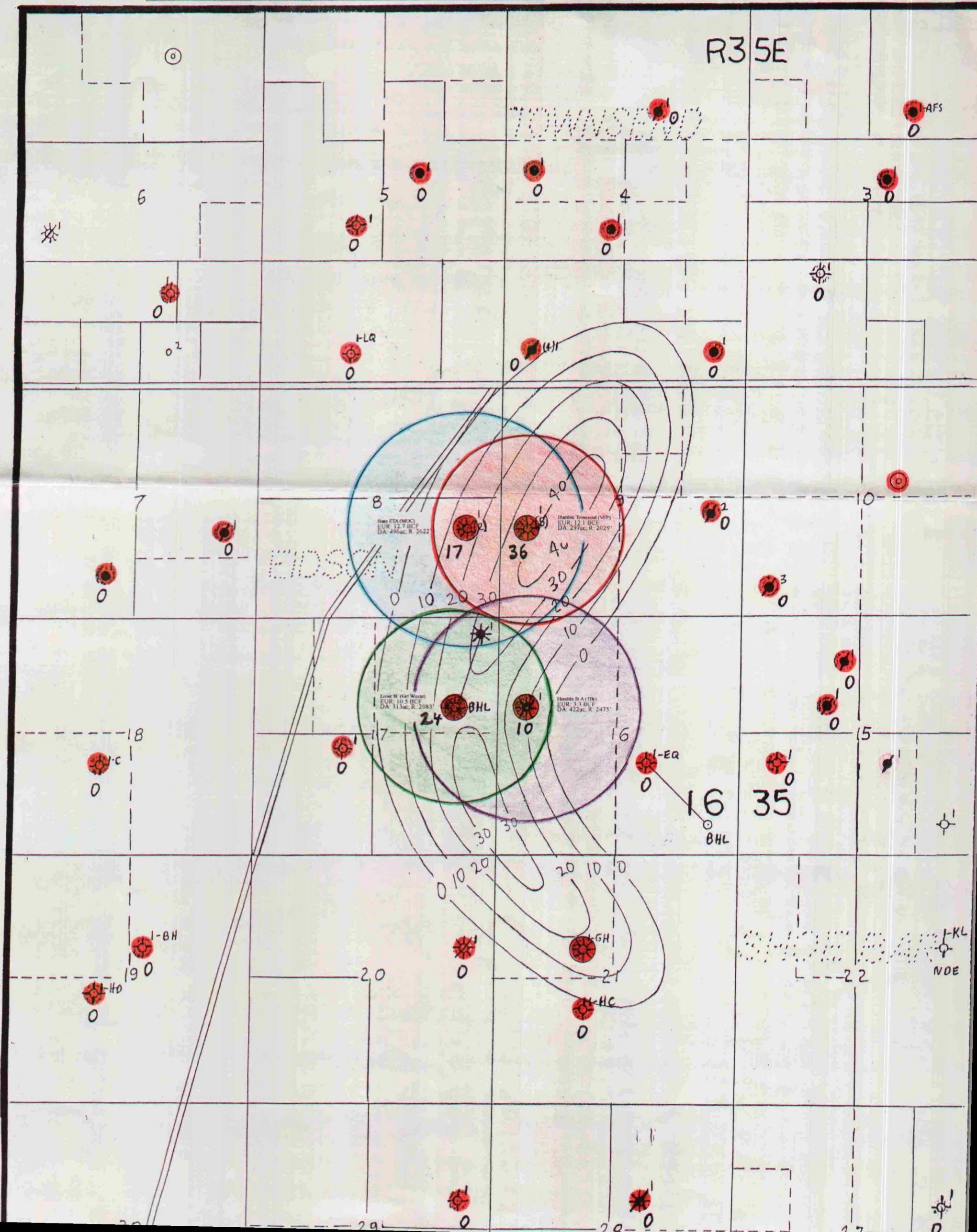
 = "SHOE BAR" sand producer

Scale: 1"=2000'

9/97 GMK

**BEFORE THE
OIL CONSERVATION DIVISION**
Santa Fe, New Mexico

Case No. 11842 Exhibit No. 14B

Submitted by: V-F Petroleum Inc.Hearing Date: November 6, 1997

Case: _____
EXHIBIT NO: _____

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