

Supplement to
APPLICATION FOR CLASSIFICATION AS
HARDSHIP GAS WELL
Kimbell Oil Company of Texas
Salazar Well No. 4-E
N $\frac{1}{2}$ section 34, T.25N., R.6W., N.M.P.M.
Rio Arriba County, New Mexico
Basin Dakota Pool

1. The applicant expects that total restriction of gas production from this well over an extended period of time will result in "underground waste" (as defined by the General Information Applicable to Hardship Gas Well Classification). This expectation is based on two points discussed below.

First, this well has produced a regular amount of water, which means that suppression of the gas flow will also suppress removal of this water from the wellbore. As shown in the Report prepared on 8-15-85, this could cause permanent "skin" damage to the formation face. The water production averaged 4.5 bbls/day or an average gas/water ratio of 2.17 bbls/MMCF. Regular production, which will prevent this water from accumulating in the wellbore, is indicated as the only preventative action against permanent formation damage.

Secondly, the wells in the surrounding area indicate that formation damage due to water accumulation may have occurred. Two of these wells have been abandoned and may have not produced their true potential due to water damage. These wells are the Farming E No. 3-E in D-2-24N-6W and the Salazar No. 4 in H-34-25N-6W. There are two wells in the south half of section 34 which may have suffered damage due to shut-in periods in the last 5 years. These wells are the Federal Wells No. 3 and 3-E. We will attempt to prove that these wells experienced lost productivity and potential recoverable reserves in the hearing. Their performance is documented on the enclosed Production Tables.

As discussed in the Engineering Report dated 8-15-85 (which calculated a minimum flow rate to prevent damage to this well), unless sufficient gas production and incumbent water production is allowed this water cannot be removed from the wellbore. The exposure to accumulated water could cause permanent formation damage and this would result in loss of gas reserves due to the reduction in permeability. Prolonged shut-in of this well could produce this result and it has already been shut-in since June 1985.

2. The well had not been damaged as of June based on the deliverability test. The potential problem of damage to this well cannot be solved by completion practices because it is just that--a "potential" problem and not an actual problem at this

time. Therefore, no mechanical operations are appropriate until such time as damage has actually occurred. The historical attempt to prevent the problem was full production of this well initially to remove excess frac water and formation water. This led to the overproduced status of the well. Also, El Paso Natural Gas Co. (the purchaser) was contacted when the well was shut-in to determine what preventative steps could be taken to alleviate the overproduction problem and also prevent the possibility of long-term damage to the formation by water accumulation due to lack of production. The result of those contacts was our Administrative Request in August, and upon subsequent discussions with the NMOCD staff in Santa Fe, the scheduling of the hearing and this application for temporary relief. Our motivation is to prevent damage, as being the best cure for formation damage. We seek a minimum flow rate to prevent damage and potential loss of reserves.

3. As illustrated by the attached production table and graph, initial production of this well was on May 12, 1984 and water production has varied from essentially 3.3 to 8.9 bbls/day with water ratios between 1.75 bbls/MMCF and 12.33 bbls/MMCF, with an average of 2.17 bbls/MMCF. This performance indicates that the water influx is a regular occurrence and only regular production of the gas will prevent any water accumulation. The Report dated 8-15-85 shows that gas production of about 13,550 MCF/month is required to prevent the pressure drop which would occur if the well were damaged.

4. Gas Reserves Lost:

Estimated Original Gas-In-Place:

Volumetric Calculation = 3.95 BCF

BHP/Z vs. Cumulative plot = 4.45 BCF

Recoverable Reserves (assume 85% recovery)

3.35 to 3.78 BCF

Preliminary decline curve projection:

1.8 BCF

Cumulative Recovered as of 6-85:

586,993 MCF

Both the materials balance and decline curve analysis are subject to error at this point, due to the limited production history and pressure tests available.

Lost reserves are not possible to determine at this point because the well has not suffered the pressure drop and erratic productivity loss resulting from damage. However using the radial flow equation developed in the 8-15-85 Engineering Report and setting the parameters to 1 (indicating no change) except

for q (flow-rate) and pressure drop, one can see that a pressure drop of 50 psi will result in a 75% drop in flowrate. If the portion of this drop due to skin damage equals 10 psi, the reduced flow due to damage would be 20%. Also, according to Allen and Roberts in Production Operations, Vol. 2, a loss of 50% of the producibility will occur with a 5-fold decrease in permeability at the well face due to damage. Thus the resultant loss of reserves could be large with formation and pressure alterations as outlined above. During the hearing we will attempt to show the amount of loss the adjacent wells may have experienced due to water accumulation.

5. The producibility of this well is shown by the attached deliverability tests of 1984 and 1985 and the Production Table and plot. The well has had an average production rate to date of 1947 MCF/day. At present we believe that production is necessary to maintain this potential flow rate and prevent irreversible loss due to damage. But currently available tests show that abnormal producibility decline has not yet occurred.
6. A plat of the area is attached and list of adjacent wells.
7. See attached Production Tables of adjacent wells.
8. This well is overproduced by 317,158 MCF, which is 11 times over its allowable.

**UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**

(See other instructions on reverse side)

Budget Bureau No. 42-RJ55L5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other _____

2. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. REVEN. ☐ Other _____

3. NAME OF OPERATOR Curtis J. Little

4. ADDRESS OF OPERATOR P.O. Box 1258
Farmington, NM 87499

5. LOCATION OF WELL (Report location clearly and in accordance with any State requirements):

At surface 1630' FNL & 1460' FWL

At top prod. interval reported below

At total depth Same

API # - 30-039-23368

14. PERMIT NO. _____ **DATE ISSUED** _____

6. DATE SPUDDED 1-16-84 **16. DATE T.D. REACHED** 1/27/84 **17. DATE COMPL. (Ready to prod.)** 2/21/84 **18. ELEVATIONS (OF, REB, RT, OR, ETC.)** 6378' GR

TOTAL DEPTH, MD & TVD 6753' **21. PLUG BACK T.D., MD & TVD** 6717' **22. IF MULTIPLE COMPL., HOW MANY** _____ **23. INTERVALS DRILLED BY** _____

PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)

6422-6672 KB Dakota

TYPE ELECTRIC AND OTHER LOGS RUN

IES, GR-CNL-Density

CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8"	28	222 KB	12-1/4"	145' sx. (171 cuft. slurry)	none
4-1/2"	11.6	6759	7-7/8"	DV Tool 4574, 600' sx. Poz	(774 cuft.) Bond
				top 5458 KB. 2nd Stage w/	875' sx. & 75' sx.
				Class B (1891 cuft.) Top cnt.	1300 KB

LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	BACKS CEMENT	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2-3/8	6548	

TUBING RECORD

PERFORATION RECORD (Interval, size and number)

6632-72 KB, 21 holes, 0.33" dia. 24" apart.
6548-76 KB, 6514-28, 6432-36, 6422-26, 29 holes, 0.33" dia. 24" apart.

22. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6632-72 Acidize	1200 gals. HCL; 41500 lbs. sd.,
62930 gals. gel,	BDP 2450 psi; ATP 3200 psi, AIR
28 BPM, ISIP 2100 psi.	6576-6422 Acidize 1700 gal.
HCL, 60000-lbs. sd.,	93780 gals. gel, BDP 1900 psi

PRODUCTION ATP 3400 psi, AIR 31 BPM, ISIP 2550 psi

2. FIRST PRODUCTION 2/21/84 **PRODUCTION METHOD (Flowing, gas lift, pumping—also and type of pump)** Flowing **WELL STATUS (Producing or shut-in)** Producing

3. DATE OF TEST 2/21/84 **HOURS TESTED** 3 **CHOKER SIZE** 3/4" **PROD'N. FOR TEST PERIOD** _____ **OIL—BBL.** Trace **GAS—MCF.** 623 **WATER—BBL.** Trace (Frac) **GAS-OIL RATIO** _____

W. TUBING PRESS. 391 **CASING PRESSURE** 787 **CALCULATED 24-HOUR RATE** _____ **OIL—BBL.** Trace **GAS—MCF.** 4984 **WATER—BBL.** 0 **OIL GRAVITY-API (CORR.)** _____

DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) To be sold **TEST WITNESSED BY** Joe Elledge

LIST OF ATTACHMENTS None

I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED *Curtis J. Little* **TITLE** Operator **DATE** 2/22/84

* (See Instructions and Spaces for Additional Data on Reverse Side)

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency. It is to be submitted, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either as shown below or will be issued by, or may be obtained from, the local Federal land/ or State office. See instructions on items 22 and 24, and 33; below regarding separate reports for separate completions. If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.) formations and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35. If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. (Consult local State or Federal office for specific instructions.) Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments. Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s), and name(s); (If any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval. Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool. Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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FORMATION		TOP	SUMMARY OF POROUS ZONES:		DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURE, AND RECOVERIES		DESCRIPTION, CONTENTS, ETC.		GEOLOGIC MARKERS		TRUE DEPTH		SUBJECT DEPTH	
			SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING						NAME		MEAS. DEPTH		TOP	
Ojo Alamo		1450	Probably Water						Ojo Alamo		1450	Same	Same	
									Kirtland		1522	Same	Same	
									Fruitland		2033	Same	Same	
									Pictured Cliffs		2158	Same	Same	
									Lewis		2252	Same	Same	
									Cliff House		3713	Same	Same	
									Menefee		3761	Same	Same	
									Point Lookout		4368	Same	Same	
									Mancos		4508	Same	Same	
									Gallup		5502	Same	Same	
									Greenhorn		6310	Same	Same	
									Graneros Shale		6371	Same	Same	
									Graneros Sand		6411	Same	Same	
									Dakota		6512	Same	Same	

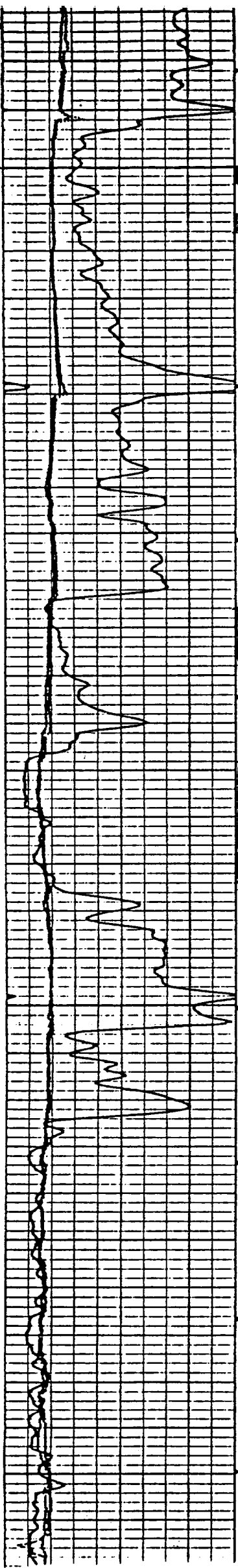
GEARHART

COMPENSATED DENSITY COMPENSATED NEUTRON LOG

FILING NO		COMPANY <u>CURTIS J. LITTLE</u>					
		WELL <u>SALAZAR NO. 4-F</u>					
		FIELD <u>BASIN DAKOTA</u>					
		COUNTY <u>RIO ARRIBA</u> STATE <u>N.M.</u> <u>MEXICO</u>					
		LOCATION <u>1630' ENL x 1460' FW.</u>				Other Services <u>L/GP</u>	
		SEC <u>34</u> TWP <u>25N</u> RGE <u>6W</u>					
Permanent Datum <u>GROUND LEVEL</u>		Elev. <u>6378</u>				K.B. <u>6391</u>	
Log Measured from <u>K.B.</u>		<u>13</u> ft Above Perm. Dat.				D.F. <u>6390</u>	
Drilling Measured from <u>K.B.</u>						G.L. <u>6378</u>	
Date <u>1-27-84</u>							
Run No <u>ONE</u>							
Depth - Driller <u>6753</u>							
Depth - Logger <u>6753</u>							
Bottom logged interval <u>6752</u>							
Top logged interval <u>6150</u>							
Type fluid in hole <u>GEL</u>							
Density <u>9.0</u> Visc. <u>60</u>							
pH <u>7.5</u> Fluid Loss <u>7</u>							
Max rec. temp. deg F <u>180</u>		°F °F °F °F					
Source of Samples <u>Mud Pit</u>							
Rm @ Meas. Temp. <u>1.8 @ 74</u>		°F °F °F °F					
Rm @ Meas. Temp. <u>1.4 @ 69</u>		°F °F °F °F					
Rm @ Meas. Temp. <u>1.2 @ 68</u>		°F °F °F °F					
Source Rm <u>M</u> Source Rm <u>M</u>							
End Circulation <u>20:00</u>							
Logger on Bottom <u>02:45</u>							
Recorded By <u>Mease</u>							
Witnessed By <u>Mr. Curtis Little</u>							
Run No		Bore-Hole Record				Casing Record	
		Bit	From	To	Size	Log	From To
<u>One</u>		<u>12 1/2</u>	<u>Surface</u>	<u>222</u>	<u>8 5/8</u>	<u>---</u>	<u>Surface</u> <u>222</u>
<u>One</u>		<u>7 7/8</u>	<u>222</u>	<u>6753</u>			

GEARHARTINDUCTION
ELECTRICAL LOG

FILING NO.	COMPANY CURTIS J. LITTLE	
	WELL SALAZAR NO. 4-R	
	FIELD BASIN DAKOTA	
	COUNTY RIO ARriba STATE NEW MEXICO	
	LOCATION 1630 FNL x 1460' FW	Other Services
	SEC 34 TWP 25N RGE 3E	CDL A NL/OR
Permanent Datum GROUND LEVEL Elev. 5378		Excavations
Log Measured from K.B. 13 Ft. Above Permanent Datum		KB 5 21
Drilling Measured from K.B.		DF 5 30
		SL 5 28
Date	1-27-61	
Run No.	ONE	
Depth-Driller	6753	
Depth-Logger	6753	
Bottom Logged Interval	6752	
Top Logged Interval	211	
Casing-Driller	8 5/8 @ 222	@ @ @
Casing-Logger	211	
Bit Size	7 7/8	
Type Fluid in Hole	GEL	
Density and Viscosity	9.0 0	
pH and Fluid Loss	7.5	
Source of Sample	Mud pit	
Rm @ Meas. Temp	1.8 @ 4 °F	@ @ @
Rm @ Meas. Temp	1.4 @ 9 °F	@ @ @
Rm @ Meas. Temp	1.2 @ 8 °F	@ @ @
Source at Rm and Rms	M M	
Rm @ BHT	110 °F	@ @ @
End Circulation	20:00	
Log on Bottom	02:40	
Max. Rec. Temp. Deg. F	180	
Equip. No. and Location	7607 25-062	
Recorded By	Meas.	
Witnessed By	Mr. Curtis Little	

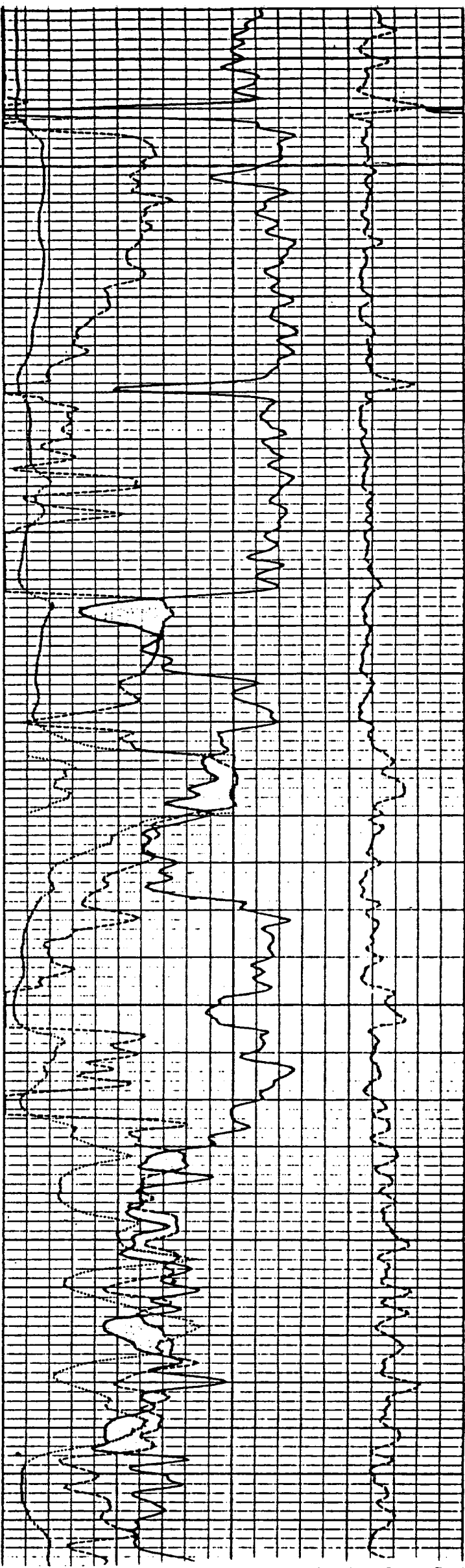


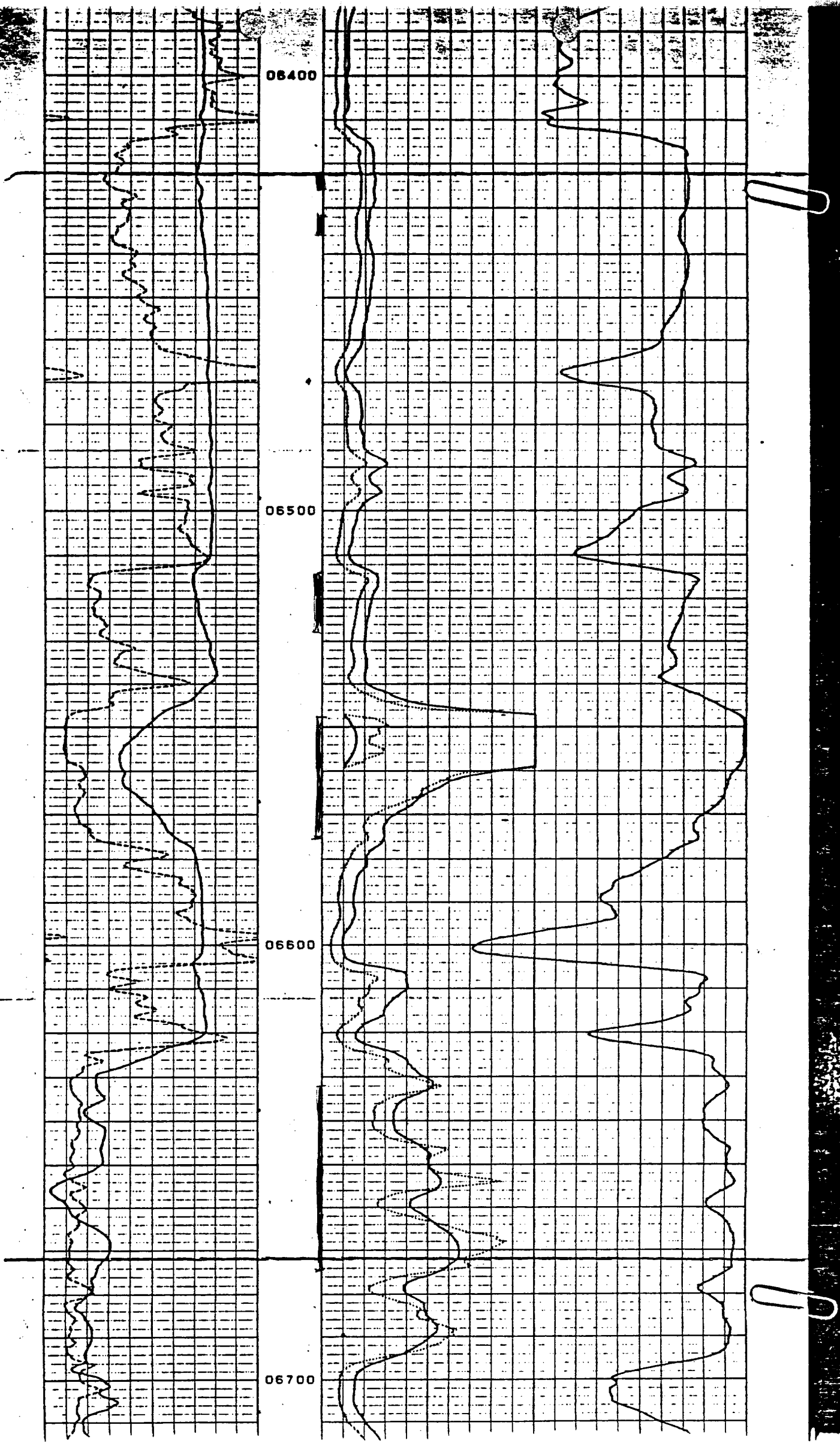
06400

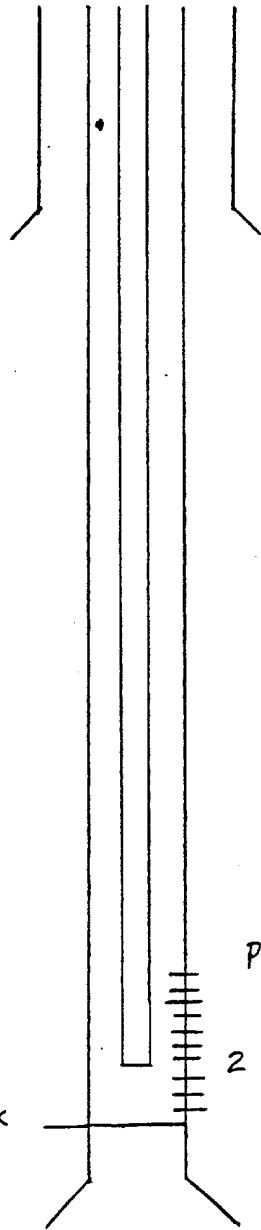
06500

06600

06700







8 5/8" set at 222'
Cement 145 sacks

perforations 21 holes 6632-72 24" apart
29 holes 6422-26, 6432-36,
6514-28, 6548-74
24" apart

2 3/8" Tubing set at 6548'

Plug back
6717'

4 1/2" set at 6759'
Cement 1475 sacks

WELL NAME Salazar Federal 4-E

Completion Date 2-21-84

Initial Potential 4984 MCF/day

Initial Pressure CP= 787

Initial GOR/Gravity _____

[illegible]

Basin Dakota
 Kinell Oil Co. of TX
 Salazar Federal Well No. 4-E
 F-34-25N-6W
 Rio Arriba, New Mexico
 Date Production began: May 1984

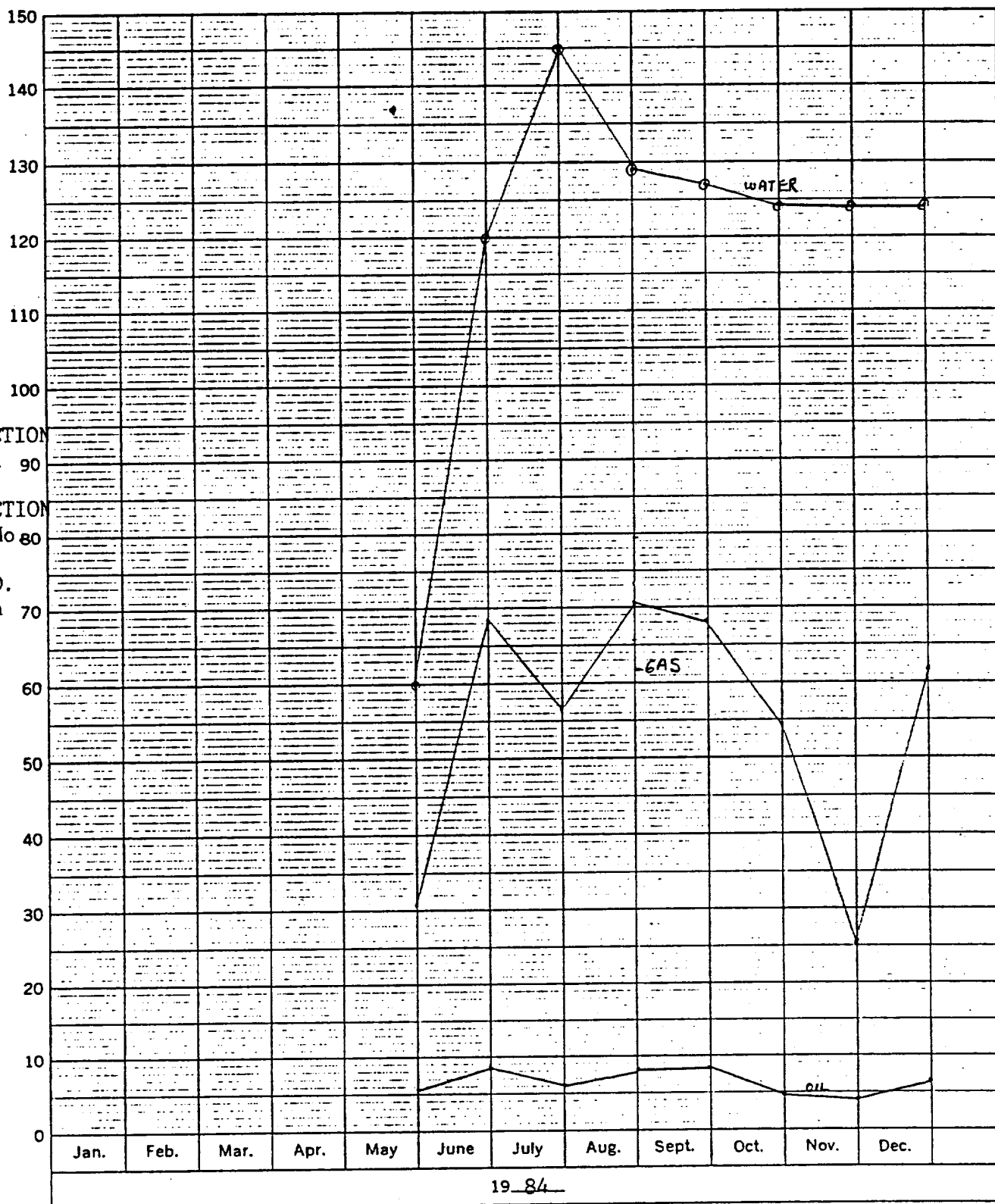
46 3090

PRODUCTION
bbls/Month 90

PRODUCTION
BBLs/Mo 80

ER PROD.
bbls/Month 70

KEUFFEL & ESSER CO. MADE IN U.S.A.



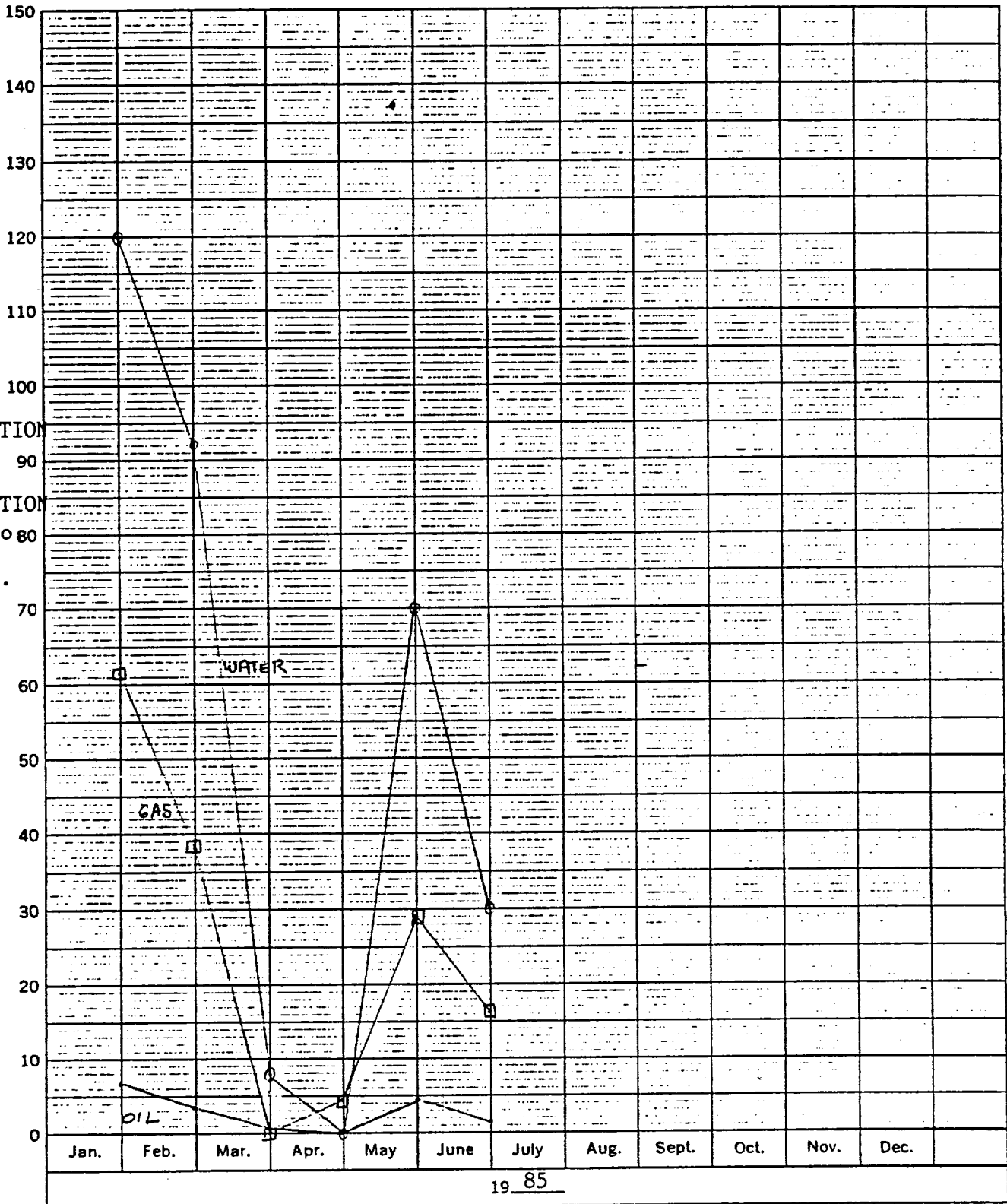
46 3090

PRODUCTION
BBL/Mo

PRODUCTION
BBL/Mo

PROD.
BBL/Mo

KEUFFEL & ESSER CO. MADE IN U.S.A.



NEW MEXICO OIL CONSERVATION COMMISSION
WELL DELIVERABILITY TEST REPORT FOR 19 84

Form CI22-A
 Revised 1-1-66

POOL NAME Basin Dakota	POOL SLOPE n = .75	FORMATION Dakota	COUNTY Rio Arriba
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COMPANY Sims Oil Company, Inc.			WELL NAME AND NUMBER Salazar 4E		
UNIT LETTER F	SECTION 34	TOWNSHIP 25N	RANGE 6H	PURCHASING PIPELINE El Paso Natural Gas Co.	
CASING O.D. - INCHES 4.500	CASING I.D. - INCHES 4.000	SET AT DEPTH - FEET 6759	TUBING O.D. - INCHES 2.375	TUBING I.D. - INCHES 1.995	TOP - TUBING PERF. - FEET 6422
GAS PAY ZONE FROM 6422 TO 6672		WELL PRODUCING THRU CASING TUBING I		GAS GRAVITY .661	GRAVITY X LENGTH 4245
DATE OF FLOW TEST FROM 7-12-84 TO 7-20-84			DATE SHUT-IN PRESSURE MEASURED 7-27-84		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWI) 812	(b) Flowing Tubing Pressure (DWI) 637	(c) Flowing Meter Pressure (DWI) 322	(d) Flow Chart Static Reading 317	(e) Meter Error (Item c - Item d) +5	(f) Friction Loss (a - c) or (b - c) 315	(g) Average Meter Pressure (Integr.) 311
(h) Corrected Meter Pressure (g + e) 316	(i) Avg. Wellhead Press. $P_t = (h + f)$ 637	(j) Shut-in Casing Pressure (DWI) 1337	(k) Shut-in Tubing Pressure (DWI) 1337	(l) $P_c =$ higher value of (j) or (k) 1337	(m) Del. Pressure $P_d = \frac{50}{669} \% P_c$ 669	(n) Separator or Dehydrator Pr. (DWI) for critical flow only 635

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D 2295	Quotient of $\frac{\text{Item c}}{\text{Item d}}$ 1.0158	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$ 1.0079	Corrected Volume Q = 2313 MCF/D
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WORKING PRESSURE CALCULATION

$(1 - e^{-a})$.266	$(F_c Q_m)^2 (1000)$ 472,923	$R^2 = (1 - e^{-a}) (F_c Q_m)^2 (1000)$ 125,798	P_t^2 405,769	$P_w^2 = P_t^2 + R^2$ 531,567	$P_w = \sqrt{P_w^2}$ 729
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DELIVERABILITY CALCULATION

$D = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n =$	2313	$\left[\frac{1,340,008}{1,256,128} \right]^n \left(\frac{1.0667}{1.0496} \right)^n =$	2428	MCF/D
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REMARKS:

This well has critical flow -
 Use FTP (b) for P_t (i).

SUMMARY

Item h	316	Psia
P_c	1337	Psia
Q	2313	MCF/D
P_w	729	Psia
P_d	669	Psia
D	2428	MCF/D

Company **SIMS OIL COMPANY, INC.**
 By **E. A. Clement**
 Title **Prod. Supt.**
 Witnessed By _____
 Company _____

NEW MEXICO OIL CONSERVATION COMMISSION
WELL DELIVERABILITY TEST REPORT FOR 19 85

Form CI22-A
 Revised 1-1-86

POOL NAME Basin Dakota	POOL SLOPE n = .75	FORMATION Dakota	COUNTY Rio Arriba
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Meter No. **94-932**

COMPANY Kimbell Oil Company of Texas			WELL NAME AND NUMBER Salazar No. 45		
UNIT LETTER F	SECTION 34	TOWNSHIP 25N	RANGE 6W	PURCHASING PIPELINE El Paso Natural Gas Co.	
CASING O.D. - INCHES 4.500	CASING I.D. - INCHES 4.000	SET AT DEPTH - FEET 6759	TUBING O.D. - INCHES 2.375	TUBING I.D. - INCHES 1.995	TOP - TUBING PERF. - FEET 6422
GAS PAY ZONE FROM 6422 TO 6672		WELL PRODUCING THRU CASING TUBING X		GAS GRAVITY .704	GRAVITY X LENGTH 4521
DATE OF FLOW TEST FROM 5/27/85 TO 6/4/85			DATE SHUT-IN PRESSURE MEASURED 6/12/85		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWt)	(b) Flowing Tubing Pressure (DWt)	(c) Flowing Meter Pressure (DWt)	(d) Flow Chart Static Reading	(e) Meter Error (Item c - Item d)	(f) Friction Loss (a - c) or (b - c)	(g) Average Meter Pressure (Integr.)
932	787	262	256	46	525	259
(h) Corrected Meter Pressure (g + e)	(i) Avg. Wellhead Press. $P_i = (h + f)$	(j) Shut-in Casing Pressure (DWt)	(k) Shut-in Tubing Pressure (DWt)	(l) P_c = higher value of (j) or (k)	(m) Del. Pressure $P_d = \frac{40}{529} \% P_c$	(n) Separator or Dehydrator Pr. (DWt) for critical flow only
265	787	1322	1322	1322	529	784

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D	Quotient of $\frac{\text{Item c}}{\text{Item d}}$	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$	Corrected Volume
2035	1.0234	1.0116	2059 MCF/D

WORKING PRESSURE CALCULATION

$(1 - e^{-R})$	$(F_c Q_m)^2 (1000)$	$R^2 = (1 - e^{-R}) (F_c Q_m)^2 (1000)$	P_t^2	$P_w^2 = P_t^2 + R^2$	$P_w = \sqrt{P_w^2}$
.280	374,759	104,933	619,369	724,302	851

DELIVERABILITY CALCULATION

$$D = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n = \underline{\quad 2059 \quad} \left[\frac{1,467,843}{1,028,483} \right]^n = \frac{1.4341}{1.3105} = \underline{\quad 2698 \quad} \text{MCF/D}$$

REMARKS:

**This well has critical flow -
 Use FIP (b) for P_t (i)**

SUMMARY

Item h 265 Psia
 P_c 1322 Psia
 Q 2059 MCF/D
 P_w 851 Psia
 P_d 529 Psia
 D 2692 MCF/D

Company Kimbell Oil Company of Texas
 By E. A. Clement
 Title Prod. Supt.
 Witnessed By _____
 Company _____

$$G = 43560 (\phi)(1-S_w) \frac{(BHP/z)}{T_R} (35.3) (A) (h)$$

G = original gas in place, cf

ϕ = porosity

S_w = water saturation

BHP/z = initial Bottom Hole Pressure / z , psi

T_R = temperature Reservoir, $^{\circ}R$

A = Area of drainage, acres

h = thickness, feet

Given:

$$BHP/z_{est} = 1900 \text{ psi}$$

$$T_R = 640^{\circ}R$$

$$h = 90 \text{ ft}$$

Assume:

$$\phi = 10\% \text{ (field avg)}$$

$$S_w = 40\% \text{ (" ")}$$

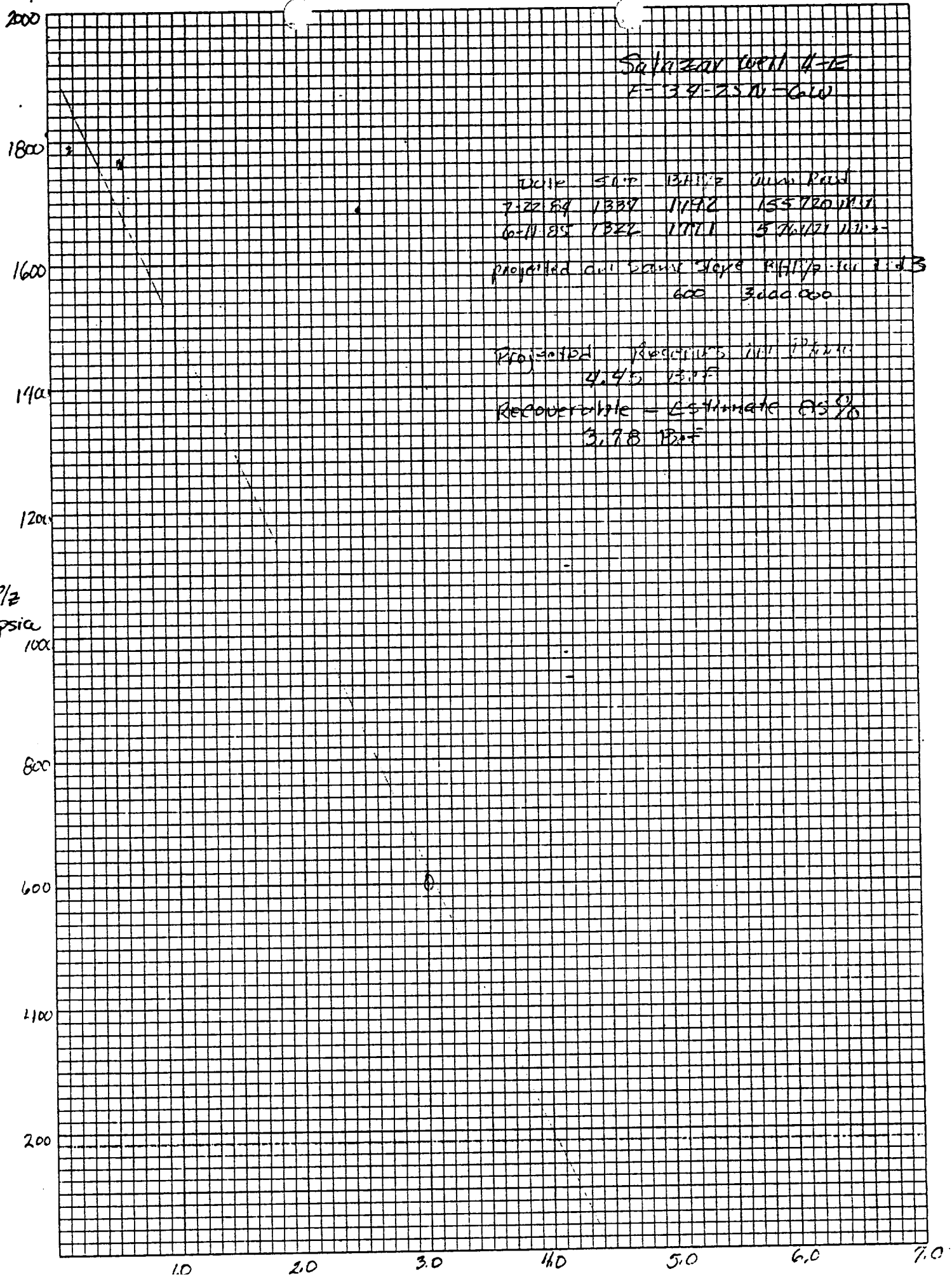
$$A = 160 \text{ acres}$$

Solution:

$$G = 43560 (.10) (1-.40) \frac{(1900)}{640} (35.3) (160) (90)$$

$$= 3,944,188,420 \text{ cf}$$

$$\text{or } 3.95 \text{ Bcf}$$



Salazar Well 4-E
F-134-25N-GW

Date	SLP	BHP/2	Flow Rate
7-22-89	1334	1170	155700 M3
6-11-85	1322	1171	576171 M3

projected oil base slope BHP/p. for 1.3
600 3000000

Projected Reserves in place
4.45 Bcf

Recoverable - Estimate 65%
3.98 Bcf

PRODUCTION TABLE

WELL NAME Farming E No. 3-E

WELL LOCATION D-2-24N-6W

Perfs

Completion Date 1981

Initial Potential

Initial Pressure

Initial GOR/Gravity

[illegible]

PRODUCTION TABLE

WELL NAME Salazar Well No. 4

WELL LOCATION H-34-25N-6W

Perfs _____

Completion Date _____

Initial Potential _____

Initial Pressure _____

Initial GOR/Gravity _____

[illegible]

PRODUCTION TABLE

WELL NAME Federal Well No. 3

WELL LOCATION L-34-25N-6W

Perfs 6518-6662

Completion Date 11-1-63

Initial Potential 6152 MCF/Day

Initial Pressure SICP = 2322

Initial GOR/Gravity

[illegible]

PRODUCTION TABLE

WELL NAME Federal Well No. 3-E

WELL LOCATION I-34-2N-6W

Perfs 6509-6720

Completion Date 6-9-80

Initial Potential 2227 MCF/Day

Initial Pressure CP= 385

Initial GOR/Gravity

[illegible]

LIST OF ADJACENT WELLS/OPERATORS

Operator	Well Name	Well Location	Proration Unit
Merrion (abd)	Sal. G. Com 26 1	m-26-25N-6W	W $\frac{1}{2}$ section 26
Kimbell	Sal. Fed. 3	h-27-25N-6W	E $\frac{1}{2}$ section 27
Kimbell	Coral 2	m-27-25N-6W	W $\frac{1}{2}$ section 27
Merrion	Old Rock Com 2	p-28-25N-6W	E $\frac{1}{2}$ section 28
El Paso	Can. Largo Ut 135	h-33-25N-6W	E $\frac{1}{2}$ section 33
Kimbell	Federal 3	1-34-25N-6W	S $\frac{1}{2}$ section 34
	Federal 3-E	i-34-25N-6W	
Kimbell	Federal A 3	m-35-25N-6W	W $\frac{1}{2}$ section 25
	Federal A 3-E	e-35-25N-6W	

1630N 1460W Section 34

Meridian,

Dakota Wells

Notes

[illegible]

24M-644

D-2 Farming 3-5 Abd Getty

Cum gas: 134456 Mcf water = 20,000 bbl/s

oil = 1142 bbls

25N-604)

M-26 341 E. 10m 26 #1 M-26

Alhd Num 995: 809.86 mcf water = 299 bbl
 oil = 730 bbls

oil = 730 bbl/s

M-28 Canyon Largo 319 Abd Mexico

205241 mcf Cumwater 22 bbls

$$0.1 \div 23169 \text{ kb/s}$$

H-34 Salazar 4 DK Abd Morriay.

Run gas: 1316154 Mcf Run water: 2905

oil = 10408 bbls

Esprit of K.

A-35 Warren Fed / Abbe Kimmel

Hum gas: 33302 mmF Hum water = D

Quem oil = 104 bbl/s.
