

MILLER TESTING COMPANY

Box 547

Best Scanned Copies

GREAT BEND, KANSAS

Company CITIES SERVICE OIL COMPANY

Lease and Well No. E. MOORE # 1

County NESS State KANSAS Date AUGUST 20, 1963

Formation Test No. 1 Total Depth 4325

Interval Tested 4813 To 4325 Anchor Length 12'

Size Hole 7 7/8 Size Drill Pipe 4 1/2 ACME Size Packer 6 3/4

Mud Weight 10.4 Viscosity 51 Bottom Hole Temp 119 ° F

Chokes: Top 1/2 Bottom 1/2 Ticket No. 6629

RECOVERY

GOOD BLOW THROUGHOUT TEST

2302 FEET GAS
178 FEET EMULSIFIED MUDDY OIL
124 FEET VERY HEAVY OIL CUT MUD

Lease and Well No. E. MOORE # 1 30 19 63
SE SE
Formation Test No. 1



P. O. BOX 547 GLADSTONE 3-3370
GREAT BEND, KANSAS

DATE 8-20-63 SEC. 30 TWN. 19S RG. 21W LEGAL DESCRIPTION C-SE-S-E
COMPANY Cities Service Oil Company ELEV. 2288K1
ADDRESS Box 308 Great Bend, Kansas
LEASE E. J. J. J. WELL NO. 1 COUNTY Scott
INVOICES SENT TO: Same
CHARTS SENT TO: 11

TOOL JT. 4 1/2 Acme SIZE HOLE 7 3/4 SIZE PACKER 6 3/4 TEST NO. 1
INITIAL CIP HR 30 MIN: TOOL OPEN. 1ST FLOW HR 10 MIN: 2ND FLOW 1 HR MIN: FINAL CIP HR 30 MIN:
DEPTH 4325 TESTED FROM 4313 TO 4325 SUCCESSFUL NO. 1
INITIAL HYD. 2465 (2423) FINAL HYD. 2430 (2408) MISRUN NO.
INITIAL SHUT-IN PRESSURE 255 (253) INITIAL FLOW PRESSURE 30 (25) FINAL FLOW PRESSURE 105 (94)
FINAL SHUT-IN PRESSURE 190 (171) BOTTOM HOLE TEMP 119° FIELD ORDER NO. 143756
MUD WEIGHT 10 1/2 VISCOSITY 51 WATER LOSS 7 1/2 C.C.
SP. GRAVITY OIL 29 @ 60° I.D. DRILL COLLARS AMT. OF FLEXWEIGHT 8 Jumps

BLOW: Initial opening 10 min. Last Blow. 10 min. Last.

RECOVERY: See in file 2302-63

178' sandstone muddy oil
124' Very Heavy oil Cut mud

EXTRA EQUIPMENT None
FORMATION TESTED Foot Scott
APPROVED BY: Hubert P. McCallum
OUR REPRESENTATIVE: Ray Buehl

OPERATOR TIME 14 PRICE OF JOB 210.00

MILLER TESTING COMPANY

SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND TO THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

TICKET N° 6629

COMPANY CITIES SERVICE OIL COMPANYDATE AUGUST 20, 1963LEASE E. MOOREWELL NO. # 1TEST NO. # 1TICKET NO. 6629

	TIME	PSI
INITIAL HYDRO MUD PRESSURE	—	2423
INITIAL CLOSED IN PRESSURE	30 MINUTES	255
INITIAL FLOW	—	25
FINAL FLOW	70 MINUTES	92
FINAL CLOSED IN PRESSURE	30 MINUTES	177
FINAL HYDRO MUD PRESSURE	—	2408

TOTAL DEPTH 4325PACKER DEPTH 4313BT. NO. 905 DEPTH 4320

	1ST FLOW PRESSURE		INITIAL CIP		2ND FLOW PRESSURE		FINAL CIP	
	TIME DEFL. ".000"	PSI TEMP. CORR.	TIME DEFL. ".000"	PSI TEMP. CORR.	TIME DEFL. ".000"	PSI TEMP. CORR.	TIME DEFL. ".000"	PSI TEMP. CORR.
P0	.000	25	.000	25	.000	70	.000	92
P1	.042	25	.042	85	.083	70	.042	110
P2	.083	25	.083	185	.167	70	.083	127
P3			.125	220	.250	77	.125	142
P4			.167	235	.333	85	.167	160
P5			.209	245	.416	85	.209	170
P6			.250	255	.500	92	.250	177
P7								
P8								
P9								
P10								
	5	MINUTE INTERVAL	5	MINUTE INTERVAL	10	MINUTE INTERVAL	5	MINUTE INTERVAL

REMARKS _____

SPECIAL PRESSURE DATA



P. O. BOX 547 GLADSTONE 3-3370
GREAT BEND, KANSAS

DATE 8-21-63 SEC 30 TWN. 19S RG 21W LEGAL DESCRIP
COMPANY Citizen Service Oil Company
ADDRESS Box 308 Great Bend Ks.
LEASE E. Marie. WELL NO. 1 COUNTY Neosho
INVOICES SENT TO Paul
CHARTS SENT TO 11

TOOL JT. 4 1/2 gauge SIZE HOLE 7 7/8 SIZE PACKER 6 3/4 TEST NO. _____
INITIAL CIP HR 30 MIN: TOOL OPEN, 1ST FLOW HR 10 MIN: 2ND FLOW 1 HR _____ MIN: FINAL C
DEPTH 4396 TESTED FROM 4380 TO 4396 SUCCESSFUL _____
INITIAL HYD. 2500 (2500) FINAL HYD. 3400 (2450) MISRUN NO. _____
INITIAL SHUT-IN PRESSURE 40 (60) INITIAL FLOW PRESSURE 30 (42) FINAL FLOW PRESSURE _____
FINAL SHUT-IN PRESSURE same (54) BOTTOM HOLE TEMP. 116 FIELD ORDER NO. _____
MUD WEIGHT 103 VISCOSITY 50 WATER LOSS 6
SP. GRAVITY OIL _____ I.D. DRILL COLLARS _____ AMT. OF FLEXWEIGHT 8

BLOW: Initial opening 10 min) break blow 2 min) Follow
in 15 min.
RECOVERY: 5 ft drilling mud

EXTRA EQUIPMENT None
FORMATION TESTED Miss
APPROVED BY Frank J. H. [Signature]
OUR REPRESENTATIVE: Ray Buckner

OPERATOR TIME 12 PRICE OF JOB 2

MILLER TESTING COMPANY

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PERSONNEL OF THE ONE FOR WHOM A TEST IS
SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY,
EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERN
TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL
THE PARTY FOR WHOM THE TEST IS MADE.

TICKET NO

HILLER TESTING COMPANY

Box 547

GREAT BEND, KANSAS

Company HILLER TESTING OIL COMPANY

Lease and Well No. E. MOORE # 1

Country USA State KANSAS Date AUGUST 21, 1963

Formation Test No. 2 Total Depth 4396
 Interval Tested 4330 To 4396 Anchor Length 16'
 Size Hole 7 7/8 Size Drill Pipe 4 1/2 ADX3 Size Packer 6 3/4
 Mud Weight 10.2 Viscosity 50 Bottom Hole Temp 116 ° F
 Chokes: Top 1/2 Bottom 1/2 Ticket No. 6630

RECOVERY

PEAK FLOW FOR 2 MINUTES
 FINISHED TOOL AFTER 15 MINUTES

5 FEET SPILLING MUD

Lease and Well No. E. MOORE # 1 30 19 21 C SE SE Formation Test No. 2

COMPANY AMERICAN OIL COMPANY

DATE APRIL 21, 1960

LEASE 10-10-10-10

WELL NO. 4-1

TEST NO. 4-2

TICKET NO. 6612

	TIME	PSI
INITIAL HYDRO MUD PRESSURE	-----	2500
INITIAL CLOSED IN PRESSURE	30 MINUTES	50
INITIAL FLOW	-----	42
FINAL FLOW	70 MINUTES	42
FINAL CLOSED IN PRESSURE	30 MINUTES	54
FINAL HYDRO MUD PRESSURE	-----	2125

TOTAL DEPTH 1200

PACKED DEPTH 433

ST. NO. 407 DEPTH 4292

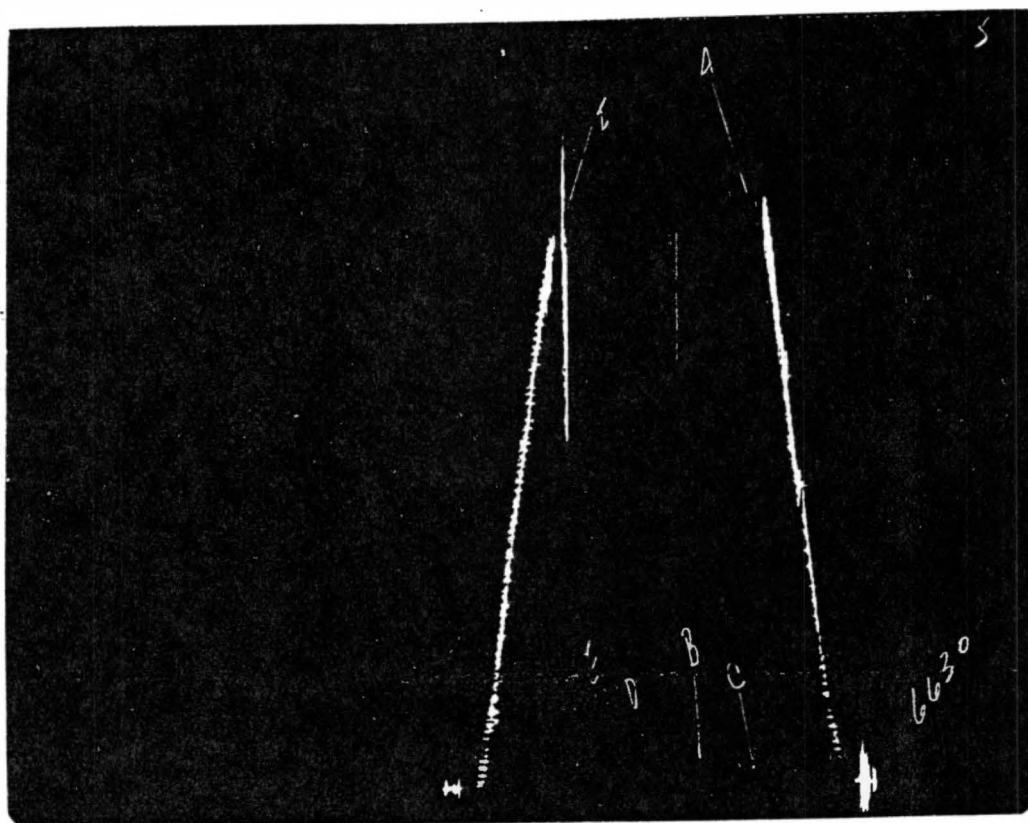
	1ST FLOW PRESSURE		INITIAL CIP		2ND FLOW PRESSURE		FINAL CIP	
	TIME DEFL. 000"	PSI TEMP. CORR.	TIME DEFL. 000"	PSI TEMP. CORR.	TIME DEFL. 000"	PSI TEMP. CORR.	TIME DEFL. 000"	PSI TEMP. CORR.
P0	.000	42	.000	42	.000	42	.000	42
P1	.042	42	.042	42	.083	42	.042	42
P2	.082	42	.082	42	.167	42	.082	44
P3			.125	42	.250	42	.125	50
P4			.257	47	.333	42	.267	50
P5			.408	50	.413	44	.408	54
P6			.529	50	.500	42	.550	44
P7								
P8								
P9								
P10								
	5	MINUTE INTERVAL	5	MINUTE INTERVAL	10	MINUTE INTERVAL	5	MINUTE INTERVAL

REMARKS _____

SPECIAL 20-10-10-10-10

Time: Each Square _____ minutes

Pressure: Each Square _____ psi



Tool: Open _____ hr. _____ mins. Shut-in: Initial _____ hr. 30 mins. Final _____ hr. 30 mins.

	Field Reading	Corrected
(A) Initial Hydrostatic Pressure	2500	500
(B) Initial Shut-in Pressure	40	40
(C) Initial Flow Pressure	30	2
(D) Final Flow Pressure	20	2
(E) Final Shut-in Pressure	none	54
(F) Final Hydrostatic Pressure	70	54

MILLER

TESTING COMPANY

P. O. BOX 547

GLADSTONE 3-3370

GREAT BEND, KANSAS

DATE 8-22-63SEC 30TWN. 19SRG 21WLEGAL DESCRIPTION P. SE-SK

COMPANY

Citizens Oil CompanyELEV 2288' 5"

ADDRESS

Box 08. Shedd Bend Ks.

LEASE

E - MooreWELL NO. 1

COUNTY

Shedd

INVOICES SENT TO:

Same

CHARTS SENT TO:

11

TOOL JT. 4 1/2 case SIZE HOLE 7 7/8 SIZE PACKER 6 3/4 TEST NO. # 3
INITIAL CIP HR 30 MIN: TOOL OPEN. 1ST FLOW HR 10 MIN: 2ND FLOW 1 HR 30 MIN: FINAL CIP HR 45 MIN:
DEPTH 4410 TESTED FROM 4396 TO 4410 SUCCESSFUL NO.
INITIAL HYD. 2460# (2490) FINAL HYD. 2450# (2470) MISRUN NO.
INITIAL SHUT-IN PRESSURE (247) 1255# INITIAL FLOW PRESSURE (195) 185# FINAL FLOW PRESSURE (405) 250#
FINAL SHUT-IN PRESSURE (660) 675# BOTTOM HOLE TEMP 120 FIELD ORDER NO. 142756
M ID WEIGHT 103 VISCOSITY 51 WATER LOSS 1 C.C.
SP. GRAVITY OIL 42.6 I.D. DRILL COLLARS AMT. OF FLEXWEIGHT 8 Stands

BLOW: Initial opening 10 min Lead Blow through 2nd
Clean Gassy

RECOVERY: 484' Gas above 766' Free oil
514' Very heavy med cut oil
gassy

No water

EXTRA EQUIPMENT

None

OPERATOR TIME

12

PRICE OF JOB

\$ 210.00

FORMATION TESTED

Miss

APPROVED BY:

Ray T. Byrd

OUR REPRESENTATIVE:

Ray Byrd

MILLER TESTING COMPANY

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TICKET N^o 6631

MILLER TESTING COMPANY

Box 547

GREAT BEND, KANSAS

Company CITIES SERVICE OIL COMPANY

Lease and Well No. E. MOORE # 1

County NESS State KANSAS Date AUGUST 22, 1963

Formation Test No.	<u>3</u>	Total Depth	<u>4410</u>
Interval Tested	<u>4396</u>	To	<u>4410</u>
		Anchor Length	<u>14'</u>
Size Hole	<u>7 7/8</u>	Size Drill Pipe	<u>4 1/2 ACME</u>
		Size Packer	<u>6 3/4</u>
Mud Weight	<u>10.3</u>	Viscosity	<u>51</u>
		Bottom Hole Temp	<u>120</u> ° F
Chokes: Top	<u>1/2</u>	Bottom	<u>1/2</u>
		Ticket No.	<u>6631</u>

RECOVERY

GOOD FLOW THROUGHOUT TEST

484 FEET GAS

766 FEET CLEAN GASSY OIL

514 FEET VERY HEAVY MUD CUT GASSY OIL

NO WATER

Lease and Well No. E. MOORE # 1 30 19 21 C SE SE

Formation Test No. 3

COMPANY CITIES SERVICE OIL COMPANY DATE AUGUST 22, 1963

LEASE B. MOORE WELL NO. # 1 TEST NO. # 3 TICKET NO. 6631

	TIME	PSI
INITIAL HYDRO MUD PRESSURE	-----	2490
INITIAL CLOSED IN PRESSURE	30 MINUTES	1247
INITIAL FLOW	-----	185
FINAL FLOW	100 MINUTES	405
FINAL CLOSED IN PRESSURE	45 MINUTES	660
FINAL HYDRO MUD PRESSURE	-----	2472

TOTAL DEPTH 4410

PACKER DEPTH 4396

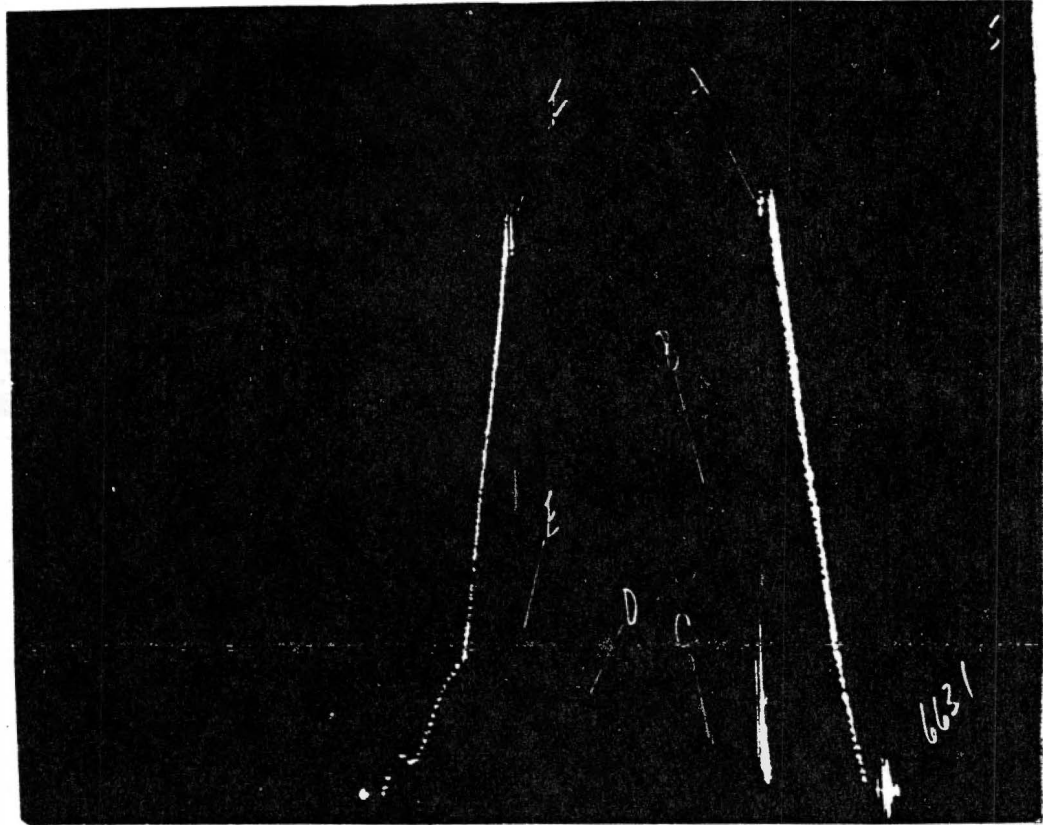
BT. NO. 905 DEPTH 4405

	1ST FLOW PRESSURE		INITIAL CIP		2ND FLOW PRESSURE		FINAL CIP	
	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.
P0	.000	85	.000	150	.000	185	.000	405
P1	.042	110	.042	1070	.125	220	.042	515
P2	.083	150	.083	1155	.250	262	.083	547
P3			.125	1197	.375	305	.125	555
P4			.167	1220	.500	340	.167	575
P5			.209	1240	.625	370	.209	585
P6			.250	1247	.750	405	.250	602
P7							.292	635
P8							.333	645
P9							.375	660
P10								
	5	MINUTE INTERVAL	5	MINUTE INTERVAL	15	MINUTE INTERVAL	5	MINUTE INTERVAL

REMARKS _____

SPECIAL PRESSURE DATA

Pressure: Each Square _____ psi



Tool Open 1 hr. 40 mins: Shut-in: Initial 30 mins: Final 45

	Field Reading	Corrected Reading
(A) Initial Hydrostatic Pressure	<u>2460</u>	<u>2490</u>
(B) Initial Shut-in Pressure	<u>1255</u>	<u>1247</u>
(C) Initial Flow Pressure	<u>185</u>	<u>185</u>
(D) Final Flow Pressure	<u>390</u>	<u>405</u>
(E) Final Shut-in Pressure	<u>675</u>	<u>660</u>
(F) Final Hydrostatic Pressure	<u>2450</u>	<u>2472</u>

- 1) Q - PRODUCING RATE, BPD, 133 - 0 H₂O
- 2) U - VISCOSITY, CENT, 2.5
- 3) B - FVF 1.20
- 4) M - SLOPE OF B-U CURVE, PSI/CYCLE 112
- 5) H - THICKNESS OF PRODUCING ZONE, FEET, 5'
- 6) K - PERM., MD. = $162.5 Q U B / M H$ 115
- 7) P₁ - PRESSURE ON SLOPE @ 1 HOUR, PSI, 618
- 8) P₂ - PRESSURE @ 1 SEC. = (P₁ - 3.56 M) 216
- 9) P_F - FLOWING PRESSURE, PSI, 405
- 10) $2.302(P_2 - P_F) / M$ -3.85
- 11) R_w - RADIUS OF DRILLED HOLE, INCHES, 3.94 $R_w^2 = 15.51$
- 12) F - POROSITY, FRACTION, (ESTIMATE)15
- 13) C - COMPRESS., VOL/VOL/PSI X 10⁶ 12
- 14) $2.30 \log_{10} \left\{ \frac{10.5 K}{F C U R_w R_w} \right\} + 0.8$ 14.08
- 15) S - SKIN, DIMENSIONLESS, = $[(10) - (14)] / 2$ -3.96
- 16) ΔP_s - PRESS. DROP DUE TO SKIN = (.868 M S) -388
- 17) P_F^{*} - FLOWING PRESS. W/NO SKIN = (P_F + ΔP_s) 17
- 18) P_E - FINAL PRESSURE, PSI, 665
- 19) (P_E - P₁) 692
- 20) ΔP̄ = $1.151(P_E - P_1) / M$ 479
- 21) T̄ - DIMENSIONLESS TIME @ 1 HOUR (FIG.1)180
- 22) FR_E² = $264 K / U C T̄$ 5530
- 23) (P_E - P_F^{*}) 642
- 24) LOG₁₀ T̄ = (23) / 2 M 3.02
- 25) R̄ - DRAINAGE RADIUS/RADIUS DRILLED HOLE 1045'
- 26) R_E - DRAINAGE RADIUS, FT. = (25) X R_w/12 343 $t_e = 117 \text{ Sec}$
- 27) F - POROSITY, FRACTION, = (22)/(26)(26)041
- 28) PI - PRODUCTIVITY INDEX = $Q / (P_E - P_F)$
- 29) PI^{*} - PI W/NO SKIN = $Q / (P_E - P_F^*)$
- 30) E - COMPLETION EFFICIENCY = $100 \times (28)/(29)$

FIELD SCHAEFF WELL E. MOORE "B" #1

FORMATION MISS PRODUCING INTERVAL 4396 - 4440

Tool Applied
to well on
FSIP.
8-22-63

PRESSURE BUILDUP CALCULATIONS

MILLER TESTING COMPANY

Box 547

GREAT BEND, KANSAS

Company CITIES SERVICE OIL COMPANY

Lease and Well No. E. MOORE # 1

County NESS State KANSAS Date AUGUST 23, 1963

Formation Test No.	<u>4</u>	Total Depth	<u>4420</u>
Interval Tested	<u>4410</u>	To	<u>4420</u>
		Anchor Length	<u>10'</u>
Size Hole	<u>7 7/8</u>	Size Drill Pipe	<u>4 1/2 ACME</u>
		Size Packer	<u>6 3/4</u>
Mud Weight	<u>10.3</u>	Viscosity	<u>51</u>
		Bottom Hole Temp	<u>119</u> ° F
Chokes: Top	<u>1/2</u>	Bottom	<u>1/2</u>
		Ticket No.	<u>6633</u>

RECOVERY

FAIR BLOW THROUGHOUT TEST

249 FEET GAS

176 FEET FREE OIL

381 FEET HEAVY OIL AND GAS CUT MUD

Lease and Well No. E. MOORE # 1 30.19.21 C. S. S. S. Formation Test No. 4

960²

MILLER

TESTING COMPANY

P. O. BOX 547

GLADSTONE 3-3370

GREAT BEND, KANSAS

DATE 8-23-63 SEC 30 TWN 195 RG 21W LEGAL DESCRIPTION C-SF-SF

COMPANY Cities Service Oil Company ELEV 2288 KB

ADDRESS Box 308 Great Bend Kansas

LEASE E-More WELL NO. 1 COUNTY Stess

INVOICES SENT TO: Same

CHARTS SENT TO: 11

TOOL JT. <u>4 1/2 cone</u>	SIZE HOLE <u>7 7/8</u>	SIZE PACKER <u>6 3/4</u>	TEST NO. <u>4</u>
INITIAL CIP <u>HR 30</u>	MIN: TOOL OPEN. 1ST FLOW <u>HR 10</u>	MIN: 2ND FLOW <u>2 HR</u>	MIN: FINAL CIP <u>1 HR</u>
DEPTH <u>4420</u>	TESTED FROM <u>4410</u>	TO <u>4420</u>	SUCCESSFUL NO. <u>4</u>
INITIAL HYD. <u>2440 (2507)</u>	FINAL HYD. <u>2420 (2430)</u>	MISRUN NO. <u></u>	
INITIAL SHUT-IN PRESSURE <u>1350 (1325)</u>	INITIAL FLOW PRESSURE <u>90 (50)</u>	FINAL FLOW PRESSURE <u>200 (195)</u>	
FINAL SHUT-IN PRESSURE <u>1350</u>	BOTTOM HOLE TEMP <u>119</u>	FIELD ORDER NO. <u>143752</u>	
MUD WEIGHT <u>10.3</u>	VISCOSITY <u>51</u>	WATER LOSS <u>7</u>	C.C. <u></u>
SP. GRAVITY OIL <u></u>	I.D. DRILL COLLARS <u></u>	AMT. OF FLEXWEIGHT <u>85 lbs</u>	

BLOW: Initial opening 10 min) 17 min Blow through Feb.

RECOVERY: 349 lb of fluid in pipe 557 lb total fluid
176' free oil 381 lb H.O. + H.C. mud

EXTRA EQUIPMENT None OPERATOR TIME 12 PRICE OF JOB 210.00

FORMATION TESTED Miss

APPROVED BY: Larry T. Byrd

OUR REPRESENTATIVE: Ray Buckler

MILLER TESTING COMPANY

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TICKET No 6633

COMPANY CITIES SERVICE OIL COMPANY DATE AUGUST 23, 1963

LEASE E. MOORE WELL NO. # 1 TEST NO. # 4 TICKET NO. 6633

	TIME	PSI
INITIAL HYDRO MUD PRESSURE	_____	2507
INITIAL CLOSED IN PRESSURE	30 MINUTES	1325
INITIAL FLOW	_____	50
FINAL FLOW	130 MINUTES	195
FINAL CLOSED IN PRESSURE	30 50 MINUTES	1306
FINAL HYDRO MUD PRESSURE	_____	2430

TOTAL DEPTH 4420

PACKER DEPTH 4410

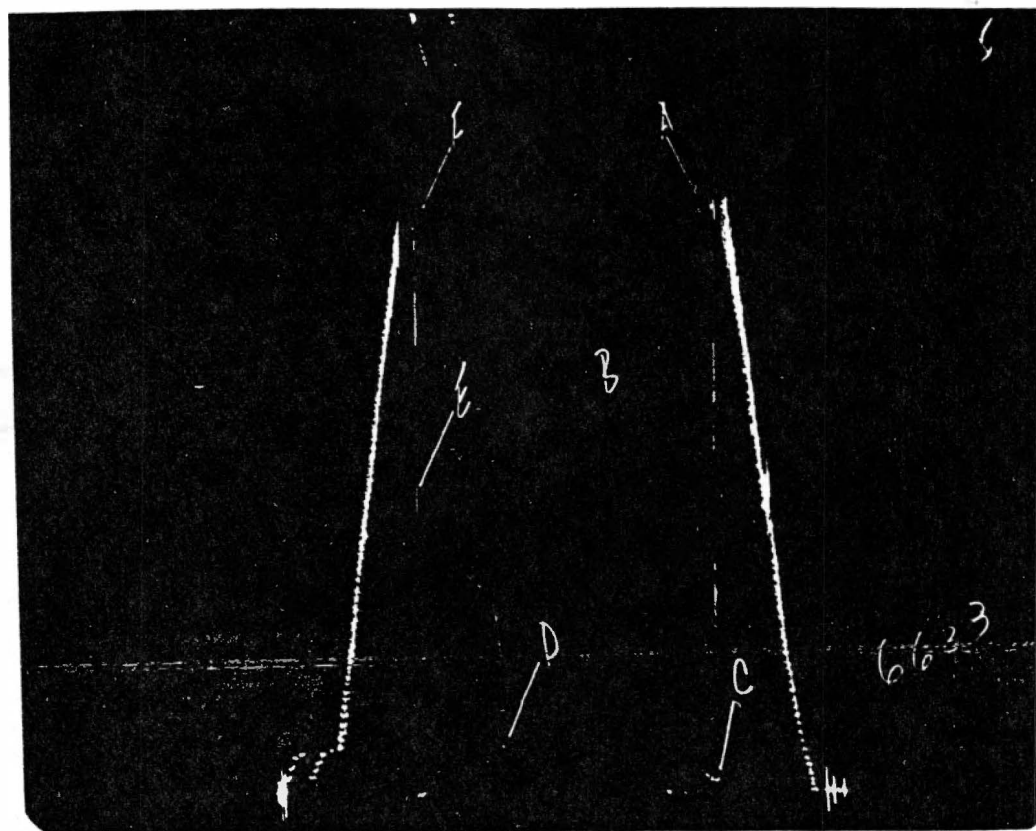
BT. NO. 905 DEPTH 4415

	1ST FLOW PRESSURE		INITIAL CIP		2ND FLOW PRESSURE		FINAL CIP	
	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.
P0	.000	50	.000	70	.000	78	.000	195
P1	.042	50	.042	1265	.167	85	.083	865
P2	.083	70	.083	1310	.333	100	.167	920
P3			.125	1318	.500	120	.250	960
P4			.167	1325	.666	150	.333	1247
P5			.209	1325	.833	177	.416	1300
P6			.250	1325	.999	195	.500	1310
P7								
P8								
P9								
P10								
	5	MINUTE INTERVAL	5	MINUTE INTERVAL	20	MINUTE INTERVAL	10	MINUTE INTERVAL

REMARKS _____

SPECIAL PRESSURE DATA

Pressure: Each Square psi

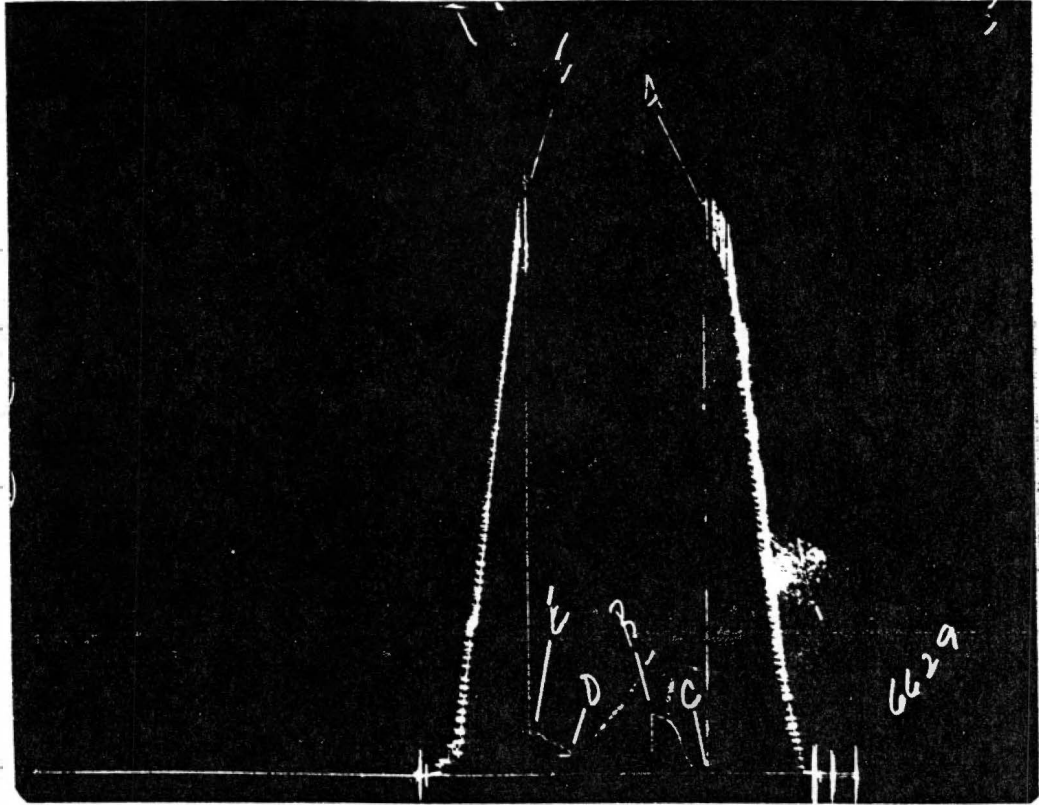


Tool Open 2 hr 10 mins: Shut-in: Initial hr 30 mins: Final 1 hr min

	Field Reading	Corrected Reading
(A) Initial Hydrostatic Pressure	2440	2507
(B) Initial Shut-in Pressure	1350	1325
(C) Initial Flow Pressure	70	50
(D) Final Flow Pressure	200	195
(E) Final Shut-in Pressure	1360	1310
(F) Final Hydrostatic Pressure	2420	2430

Time: Each Square _____ n tes

Picture of Square



8-23-63
ELEV. -
G.D. - 4415

- (1) Q - PRODUCING RATE, BPD, 5
- (2) U - VISCOSITY, CENT, 2.5
- (3) B - FVF 1.2
- (4) M - SLOPE OF B-U CURVE, PSI/CYCLE 184
- (5) H - THICKNESS OF PRODUCING ZONE, FEET, 10
- (6) K - PERM., MD. = $162.5 Q U B / M H$ 13.65
- (7) P_1 - PRESSURE ON SLOPE @ 1 HOUR, PSI, 1310
- (8) P_2 - PRESSURE @ 1 SEC. = $(P_1 - 3.56 M)$ 655
- (9) P_F - FLOWING PRESSURE, PSI, 195
- (10) $2.302(P_2 - P_F) / M$ 45.75
- (11) R_W - RADIUS OF DRILLED HOLE, INCHES, 3.94 $R_W^2 = 15.52$
- (12) F - POROSITY, FRACTION, (ESTIMATE) 15
- (13) C - COMPRESS., VOL/VOL/PSI X 10^6 10
- (14) $2.30 \log_{10} \left\{ \frac{10.5 K}{F C U R_W R_W} \right\} + 0.8$ +1.702
- (15) S - SKIN, DIMENSIONLESS, = $[(10) - (14)] / 2$ +2.02
- (16) ΔP_S - PRESS. DROP DUE TO SKIN = $(.868 M S)$ +323
- (17) P_F^* - FLOWING PRESS. W/NO SKIN = $(P_F + \Delta P_S)$ 518
- (18) P_E - FINAL PRESSURE, PSI, 1397
- (19) $(P_E - P_1)$ 77
- (20) $\Delta \bar{P} = 1.151(P_E - P_1) / M$ 544
- (21) $\bar{T}$ - DIMENSIONLESS TIME @ 1 HOUR (FIG.1) 153
- (22) $FR_E^2 = 254 K / U C \bar{T}$ 3.13
- (23) $(P_E - P_F^*)$ 879
- (24) $\log_{10} \bar{R} = (23) / 2 M$ 3.22
- (25) $\bar{R}$ - DRAINAGE RADIUS/RADIUS DRILLED HOLE 245
- (26) R_E - DRAINAGE RADIUS, FT. = $(25) \times R_W / 12$ 90.5 $R_E^2 = 8190$
- (27) F - POROSITY, FRACTION, = $(22) / (26) (26)$ 457
- (28) PI - PRODUCTIVITY INDEX = $Q / (P_E - P_F)$ 0427
- (29) PI^* - PI W/NO SKIN = $Q / (P_E - P_F^*)$ 0586
- (30) E - COMPLETION EFFICIENCY = $100 \times (28) / (29)$ 72.8

PRESSURE BUILDUP CALCULATIONS

FIELD SEABEND WELL MOORE B 111

FORMATION 11155 PRODUCING INTERVAL 4410-4430

$Q_{max} = 59.58$
 $Q_{max} = 59.58$

MILLER TESTING COMPANY

Box 547

GREAT BEND, KANSAS

Company CITIES SERVICE OIL COMPANY

Lease and Well No. E. MOORE # 1

County NESS

State KANSAS

Date AUGUST 23, 1963

Formation Test No.	<u>5</u>	Total Depth	<u>4430</u>
Interval Tested	<u>4420</u>	To	<u>4430</u>
		Anchor Length	<u>10'</u>
Size Hole	<u>7 7/8</u>	Size Drill Pipe	<u>4 1/2 ACME</u>
		Size Packer	<u>6 3/4</u>
Mud Weight	<u>10.3</u>	Viscosity	<u>50</u>
		Bottom Hole Temp.	<u>120</u> ° F
Chokes: Top	<u>1/2</u>	Bottom	<u>1/2</u>
		Ticket No.	<u>6634</u>

RECOVERY

GOOD BLOW THROUGHOUT TEST

557 FEET GAS

693 FEET FREE OIL

451 FEET VERY HEAVY MUD AND GAS CUT OIL

Lease and Well No. E. MOORE # 1 30 19 21 C SE SE

Formation Test No. 5

MILLER

TESTING COMPANY

P. O. BOX 547

GLADSTONE 3-3370

GREAT BEND, KANSAS

DATE 8-23-63SEC 30TWN. 19 SRG 21 WLEGAL DESCRIPTION C-S&SE

COMPANY

Cities Service Oil CompanyELEV 2288' 15"

ADDRESS

Box 308 Great Bend Mo.

LEASE

E. MooreWELL NO. 1

COUNTY

Wes

INVOICES SENT TO:

Same

CHARTS SENT TO:

11

TOOL JT. <u>4 1/2 acme</u>	SIZE HOLE <u>7 7/8</u>	SIZE PACKER <u>6 3/4</u>	TEST NO. <u>5</u>
INITIAL CIP <u>HR. 30</u> MIN: TOOL OPEN. 1ST FLOW <u>HR. 5</u> MIN: 2ND FLOW <u>1 HR.</u> MIN: FINAL CIP <u>HR. 30</u> MIN:			
DEPTH <u>4430</u>	TESTED FROM <u>4420</u>	TO <u>4430</u>	SUCCESSFUL NO. <u>5</u>
INITIAL HYD. <u>2470 (2515)</u>	FINAL HYD. <u>2440 (2465)</u>	MISRUN NO. <u></u>	
INITIAL SHUT-IN PRESSURE <u>1290 (1332)</u>	INITIAL FLOW PRESSURE <u>170 (92)</u>	FINAL FLOW PRESSURE <u>400 (405)</u>	
FINAL SHUT-IN PRESSURE <u>1200 (1212)</u>	BOTTOM HOLE TEMP. <u>120</u>	FIELD ORDER NO. <u>143756</u>	
MUD WEIGHT <u>103</u>	VISCOSITY <u>50</u>	WATER LOSS <u>8</u>	C.C. <u></u>
SP. GRAVITY OIL <u></u>	I.D. DRILL COLLARS <u></u>	AMT. OF FLEXWEIGHT <u>8 Stands</u>	

BLOW:

Initial opening 9 min

RECOVERY:

Good Blow throughout TestRec'd 557' GAS over FLUIDTOTAL 1144' FLUID693' Free oil451' VERY HEAVY MUD & GAS CUT OIL.

EXTRA EQUIPMENT

NoneOPERATOR TIME 12

PRICE OF JOB

\$210.00

FORMATION TESTED

Spur

APPROVED BY:

Larry T. Byrd

OUR REPRESENTATIVE

Ray Buckner**MILLER TESTING COMPANY**

SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND TO THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE. OR FOR ANY LOSS SUFFERED OR SUSTAINED. DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

TICKET NO. **6634**

COMPANY CITIES SERVICE OIL COMPANY DATE AUGUST 23, 1963

LEASE E. MOORE WELL NO. # 1 TEST NO. # 5 TICKET NO. 6634

	TIME	PSI
INITIAL HYDRO MUD PRESSURE	—	2515
INITIAL CLOSED IN PRESSURE	30 MINUTES	1332
INITIAL FLOW	—	92
FINAL FLOW	65 MINUTES	405
FINAL CLOSED IN PRESSURE	30 MINUTES	1212
FINAL HYDRO MUD PRESSURE	—	2465

TOTAL DEPTH 4430

PACER DEPTH 4420

ST. NO. 905 DEPTH 4425

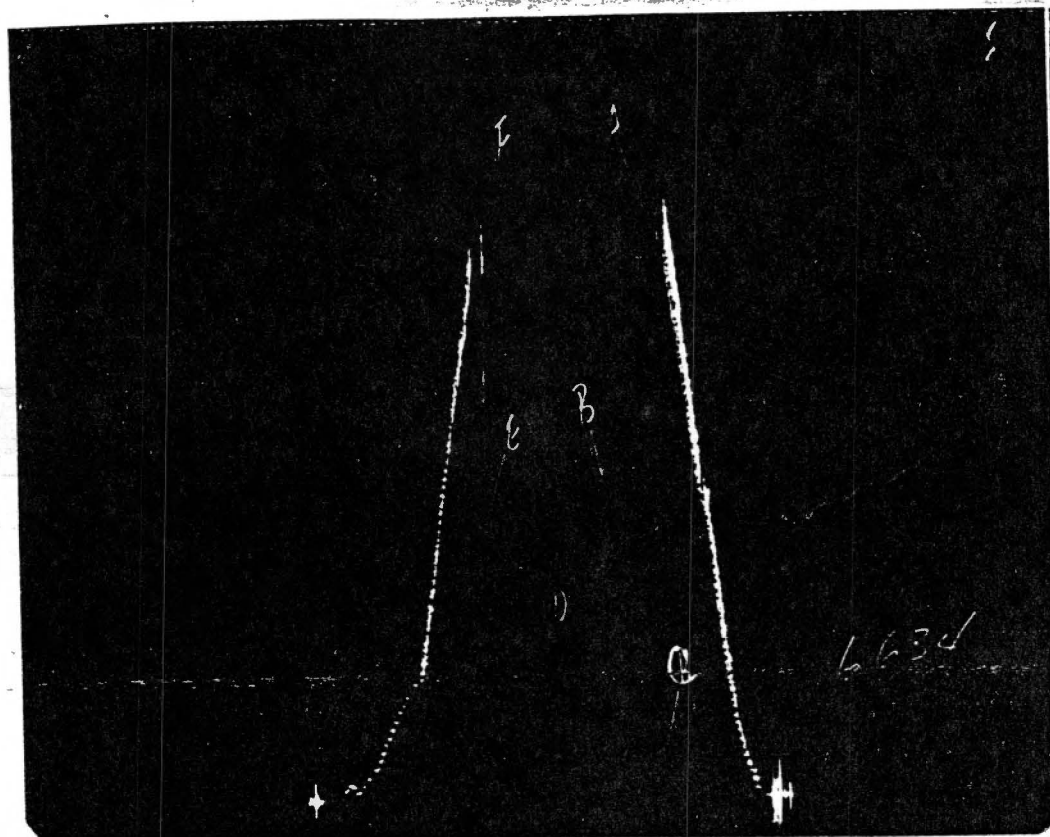
	1ST FLOW PRESSURE		INITIAL CIP		2ND FLOW PRESSURE		FINAL CIP	
	TIME DEFL. ".000"	PSI TEMP. CORR.	TIME DEFL. ".000"	PSI TEMP. CORR.	TIME DEFL. ".000"	PSI TEMP. CORR.	TIME DEFL. ".000"	PSI TEMP. CORR.
P0	.000	92	.000	100	.000	170	.000	405
P1	.042	100	.042	1190	.083	205	.042	985
P2			.083	1275	.167	255	.083	1092
P3			.125	1300	.250	295	.125	1145
P4			.167	1317	.333	340	.167	1180
P5			.209	1325	.416	380	.209	1205
P6			.250	1332	.500	405	.250	1212
P7								
P8								
P9								
P10								
	5	MINUTE INTERVAL	5	MINUTE INTERVAL	10	MINUTE INTERVAL	5	MINUTE INTERVAL

REMARKS _____

SPECIAL PRESSURE DATA

Time: Each Square

Pressure: Each Square psi



Tool Open 1 hr 5 mins: Shut-in: Initial 30 mins: Final 30 mins

	Field Reading	Corrected Reading
(A) Initial Hydrostatic Pressure	<u>2470</u>	<u>2515</u>
(B) Initial Shut-in Pressure	<u>1290</u>	<u>1332</u>
(C) Initial Flow Pressure	<u>170</u>	<u>92</u>
(D) Final Flow Pressure	<u>400</u>	<u>405</u>
(E) Final Shut-in Pressure	<u>1200</u>	<u>1212</u>
(F) Final Hydrostatic Pressure	<u>2440</u>	<u>2465</u>

6634

DST #5
8-23-63

- (1) Q - PRODUCING RATE, BPD, 126
- (2) U - VISCOSITY, CENT, 2.5
- (3) B - FVF 1.20
- (4) M - SLOPE OF B-U CURVE, PSI/CYCLE 353
- (5) H - THICKNESS OF PRODUCING ZONE, FEET, 2'
- (6) K - PERM., MD. = $162.5 Q U B / M H$ 87
- (7) P_1 - PRESSURE ON SLOPE @ 1 HOUR, PSI, 1289
- (8) P_2 - PRESSURE @ 1 SEC. = $(P_1 - 3.56 M)$ 31
- (9) P_F - FLOWING PRESSURE, PSI, 405
- (10) $2.302(P_2 - P_F) / M$ 2.44
- (11) R_W - RADIUS OF DRILLED HOLE, INCHES, 3.94 $k_w^2 = 15.51$
- (12) F - POROSITY, FRACTION, (ESTIMATE)15
- (13) C - COMPRESS., VOL/VOL/PSI X 10^6 12
- (14) $2.30 \log_{10} \left\{ \frac{10.5 K}{F C U R_W R_W} \right\} + 0.8$ 3.38
- (15) S - SKIN, DIMENSIONLESS, = $[(10) - (14)] / 2$ -2.91
- (16) ΔP_s - PRESS. DROP DUE TO SKIN = $(.868 M S)$ -5.94
- (17) P_F^* - FLOWING PRESS. W/NO SKIN = $(P_F + \Delta P_s)$ -489
- (18) P_E - FINAL PRESSURE, PSI, 10.3
- (19) $(P_E - P_1)$ 114
- (20) $\Delta \bar{P} = 1.151(P_E - P_1) / M$ 372
- (21) $\bar{T}$ - DIMENSIONLESS TIME @ 1 HOUR (FIG.1)220
- (22) $FR_E^2 = 264 K / U C \bar{T}$ 3480
- (23) $(P_E - P_F^*)$ 1892
- (24) $\log_{10} \bar{R} = (23) / 2 M$ 2.68
- (25) $\bar{R}$ - DRAINAGE RADIUS/RADIUS DRILLED HOLE 475
- (26) R_E - DRAINAGE RADIUS, FT. = $(25) \times R_W / 12$ 156 $k_o^2 = 2440$
- (27) F - POROSITY, FRACTION, = $(22) / (25)(26)$ 143
- (28) PI - PRODUCTIVITY INDEX = $Q / (P_E - P_F)$ 126
- (29) $PI^* - PI$ W/NO SKIN = $Q / (P_E - P_F^*)$ 0665
- (30) E - COMPLETION EFFICIENCY = $100 \times (28) / (29)$ 18.6

FIELD SEMIWELL WELL F. MOORE B-11
FORMATION MISS. PRODUCING INTERVAL 4430-4430
PRESSURE BUILDUP CALCULATIONS

DST #5

MILLER TESTING COMPANY

Box 547

GREAT BEND, KANSAS

Company CITIES SERVICE OIL COMPANY

Lease and Well No. E. MOORE # 1

County NESS

State KANSAS

Date AUGUST 24, 1963

Formation Test No. 6 Total Depth 4440
Interval Tested 4430 To 4440 Anchor Length 10'
Size Hole 7 7/8 Size Drill Pipe 4 1/2 ACME Size Packer 6 3/4
Mud Weight 10.2 Viscosity 51 Bottom Hole Temp. 118 ° F
Choke: Top 1/2 Bottom 12' Ticket No. 6635

RECOVERY

GOOD FLOW DECREASING TO FAIR FLOW

290 FEET GAS
996 FEET FREE GASSY OIL SLIGHTLY MUD CUT
130 FEET FREE WATER

Lease and Well No. E. MOORE # 1 30 19 21 G S S S S

Formation Test No. 6

COMPANY CITIES SERVICE OIL COMPANY DATE AUGUST 24, 1963

LEASE E. MOORE WELL NO. # 1 TEST NO. #6 TICKET NO. 6635

	TIME	PSI
INITIAL HYDRO MUD PRESSURE	-----	2445
INITIAL CLOSED IN PRESSURE	30 MINUTES	1382
INITIAL FLOW	-----	70
FINAL FLOW	65 MINUTES	415
FINAL CLOSED IN PRESSURE	30 MINUTES	1350
FINAL HYDRO MUD PRESSURE	-----	2310

TOTAL DEPTH 4440

PACKER DEPTH 4430

BT. NO. 905 DEPTH 4435

	1ST FLOW PRESSURE		INITIAL CIP		2ND FLOW PRESSURE		FINAL CIP	
	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.	TIME DEFL. .000"	PSI TEMP. CORR.
P0	.000	70	.000	85	.000	127	.000	415
P1	.042	85	.042	1310	.083	160	.042	1240
P2			.083	1360	.167	235	.083	1300
P3			.125	1375	.250	285	.125	1317
P4			.167	1382	.333	320	.167	1332
P5			.209	1382	.416	370	.209	1340
P6			.250	1382	.500	415	.250	1350
P7								
P8								
P9								
P10								
	5	MINUTE INTERVAL	5	MINUTE INTERVAL	10	MINUTE INTERVAL	5	MINUTE INTERVAL

REMARKS _____

SPECIAL PRESSURE DATA

MILLER

TESTING COMPANY

P. O. BOX 547

GLADSTONE 3-3370

GREAT BEND, KANSAS

DATE 8-24-63 SEC 30 TWN 19S RG 21W LEGAL DESCRIPTION Q-SE-SECOMPANY Cities Service Oil Company ELEV 22887.5ADDRESS Box 308 Great Bend KansasLEASE E. Moore WELL NO. 1 COUNTY SmithINVOICES SENT TO: ShawCHARTS SENT TO: 11

TOOL JT. 4 1/2 acme SIZE HOLE 7 7/8 SIZE PACKER 6 3/4 TEST NO. 6
INITIAL CIP HR. 30 MIN: TOOL OPEN. 1ST FLOW HR. 5 MIN: 2ND FLOW 1 HR. MIN: FINAL CIP HR. 30 MIN:
DEPTH 4440 TESTED FROM 4430 TO 4440 SUCCESSFUL NO. 6
INITIAL HYD. 2300 (2445) FINAL HYD. 2280 (2310) MISRUN NO. 6
INITIAL SHUT-IN PRESSURE 1370 (1382) INITIAL FLOW PRESSURE 120 (70) FINAL FLOW PRESSURE 410 (45)
FINAL SHUT-IN PRESSURE 1330 (1350) BOTTOM HOLE TEMP. 118 FIELD ORDER NO. 143756
MUD WEIGHT 102 VISCOSITY 51 WATER LOSS 8 C.C.
SP. GRAVITY OIL I.D. DRILL COLLARS AMT. OF FLEXWEIGHT 8 stands

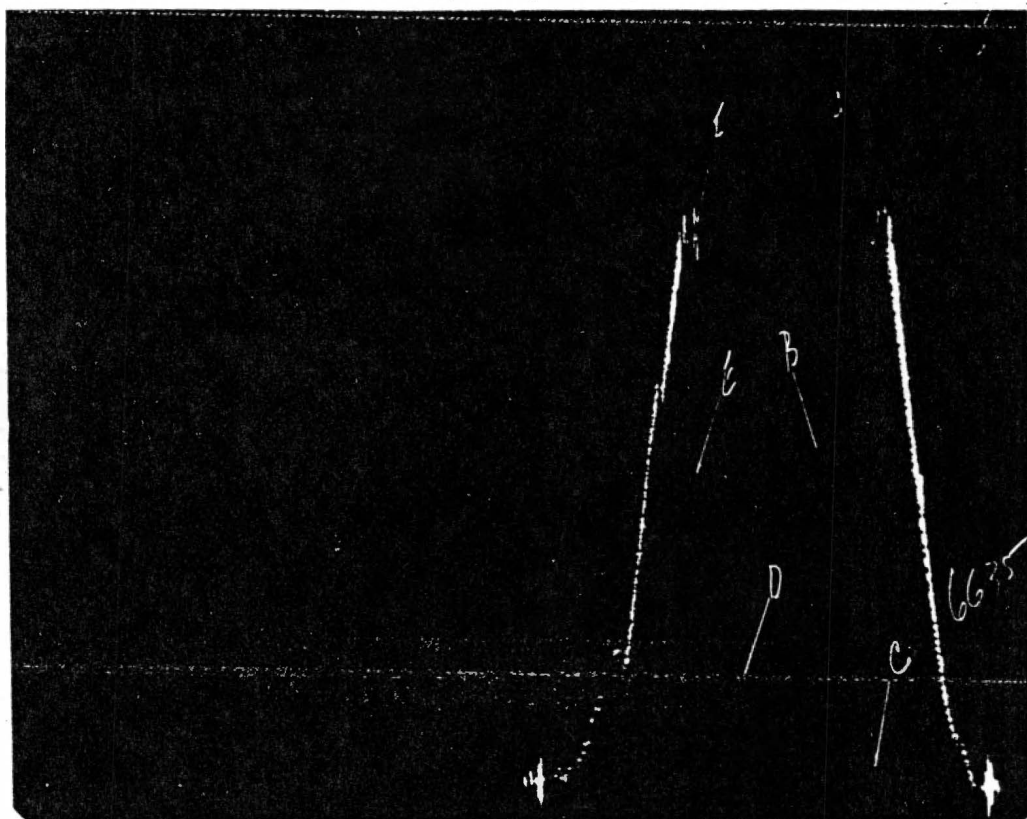
BLOW: Initial cleaning 5 min Hard Blow Recirculating to 10 min.RECOVERY: Rec: 290 lb GAS
1126 total fluid
996 free gassy oil sl. mud cut
130 free waterEXTRA EQUIPMENT None OPERATOR TIME 14 PRICE OF JOB \$210.00FORMATION TESTED APPROVED BY: Larry T ByrdOUR REPRESENTATIVE:

MILLER TESTING COMPANY

SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND TO THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

TICKET No 6635

Pressure: Each Square _____ psi



Tool Open — 1 hr. 5 mins: Shut-in: Initial _____ hr. 30 mins: Final _____ hr. 30 mins.

	Field Reading	Corrected Reading
(A) Initial Hydrostatic Pressure	<u>2300</u>	<u>2445</u>
(B) Initial Shut-in Pressure	<u>1370</u>	<u>1382</u>
(C) Initial Flow Pressure	<u>120</u>	<u>70</u>
(D) Final Flow Pressure	<u>410</u>	<u>415</u>
(E) Final Shut-in Pressure	<u>1330</u>	<u>1350</u>
(F) Final Hydrostatic Pressure	<u>2360</u>	<u>2310</u>