NEW MEXICO OIL CONSERVATION COMMSSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [XX] Initial [ ] Annual [ ] Special				Test Date: 1-22-88	
Company: Meridian Oil Inc.			Connection: Atomosphere		
Pool: Pitchfork Ranch			Formation: Morrow		Unit
Completion Date: 1-20-88	Total Depth: 15,230		Plug Back TD: 15,121	Elevation: 3353.4' GR	Farm or Lease Name: Pitchfork "4" Federal
Csg. Size: 7" / Wt.: 20&32# / d: 6.094 / Set At: 13,300'			Perforations: From 14,708 To 15,092		Well No.: 1
Tbg. Size: 2 7/8" / Wt.: 8.7# / d: 2.197 / Set At: 12,794			Perforations: From To		Unit: K / Sec.: 4 / Twp.: 25S / Rge.: 34E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 12,794		County: Lea
Producing Thru: Tbg	Reservoir Temp. °F: 205 @ 15,223'	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2"		State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
14,900	14,900	.585	.56%	.24%	0	–	4.026	Flg

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size x Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					3685	–	Pkr	–	24 Hr.
1.	4.026 x 1.875	332	10	60	3600	–	Pkr	–	45 Min.
2.	4.026 x 1.875	331	28	60	3485	–	Pkr	–	60 Min.
3.	4.026 x 1.875	343	50	60	3410	–	Pkr	–	60 Min.
4.	4.026 x 1.875	348	90	55	3295	–	Pkr	–	60 Min.
5.	4.026 x 1.875	500	100	55	3100	–	Pkr	–	60 Min.

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	17.26	58.75	345.2	1.000	1.307	1.027	1361
2.	17.26	98.17	344.2	1.000	1.307	1.027	2274
3.	17.26	133.45	356.2	1.000	1.307	1.028	3094
4.	17.26	180.30	361.2	1.005	1.307	1.031	4214
5.	17.26	226.54	513.2	1.005	1.307	1.043	5357

NO.	P_t	Temp. °R	T_r	Z
1.	.51	520	1.49	.948
2.	.51	520	1.49	.948
3.	.53	520	1.49	.946
4.	.54	515	1.47	.941
5.	.76	515	1.47	.919

Gas Liquid Hydrocarbon Ratio: 332 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 45 @ 60° Deg.
Specific Gravity Separator Gas: .585 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX .8017
Critical Pressure: 672 P.S.I.A. ____ P.S.I.A.
Critical Temperature: 350 R .595 R

P_c 3698.2 P_c^2 13,676.7

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		3620.1	13,105.1	571.6
2		3515.9	12,361.5	1315.2
3		3456.3	11,946.0	1730.7
4		3370.7	11,361.6	2315.1
5		3217.1	10,349.7	3327.0

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 4.11$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3.015$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 16.156$

Absolute Open Flow: 16,156 Mcfd @ 15.025 Angle of Slope θ: 52° Slope, n: .781

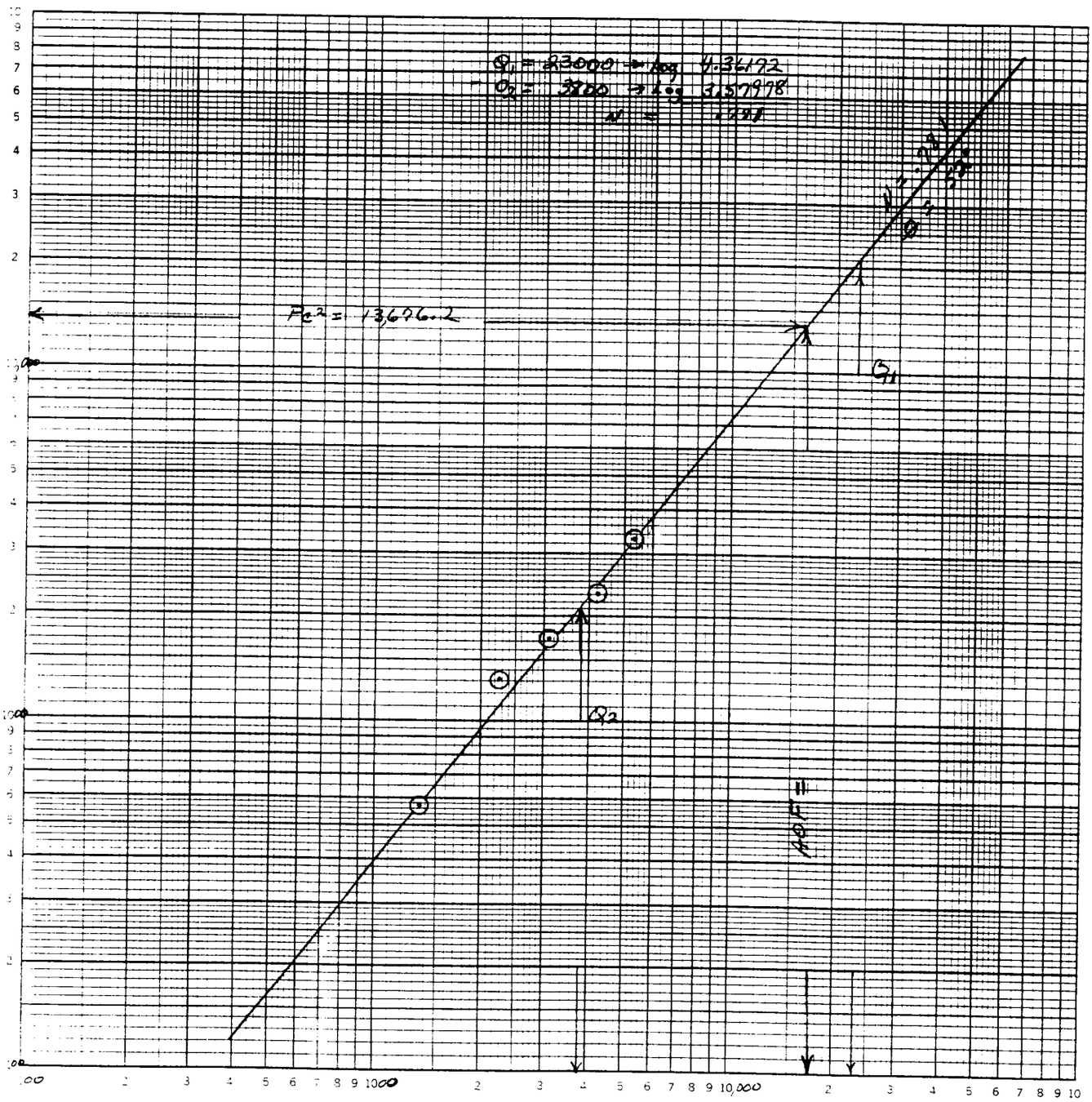
Remarks: Made 2 Bbls condensate during test.

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Bill Rea/Fred Golden	Bill Rea	Bill Rea

Pitchfork "4" Federal No. 1

Lea County, New Mexico

Pitch Fork Ranch Morrow



Q = MCF/D

46 7400

$P_C^2 - P_W^2$

KEUFFEL & ESSER CO LOGARITHMIC 3 X 3 CYCLES

MOBILE ANALYTICAL LABORATORIES, INC.
P.O. BOX 69210
ODESSA, TEXAS 79769-9210
PHONE 915-337-4744
ANALYSIS REPORT

3691

DATE: 01/25/88

COMPANY..... MERIDIAN OIL
LEASE/PLANT.. PITCHFORK FED #4
FIELD.....
COUNTY/STATE.
PRODUCER..... MERIDIAN OIL
LAB..... MOBILE
CYLINDER NO..
H2S..... 0

DISTRICT.....
STATION.....
SAMPLE..... GAS
SAMPLE PR/TEMP 125PSIG 60DEG
LINE PR/TEMP..
GAS VOLUME....
DATE SAMPLED.. 01/22/88
SAMPLED BY.... BR

FRACTIONAL ANALYSIS

COMPONENT	MOL %	GPM C2+	GPM C5+
H2S.....	0.00	0.000	0.000
NITROGEN.....	0.24	0.000	0.000
CARBON DIOXIDE	0.56	0.000	0.000
METHANE.....	95.86	0.000	0.000
ETHANE.....	2.45	0.652	0.000
PROPANE.....	0.53	0.145	0.000
ISO-BUTANE....	0.09	0.029	0.000
N-BUTANE.....	0.09	0.028	0.000
ISO-PENTANE...	0.03	0.011	0.011
N-PENTANE.....	0.02	0.007	0.007
HEXANES +.....	0.13	0.055	0.055
TOTALS	100.00	0.927	0.073

CALC. SP. GRAVITY 0.585

BTU/CU. FT. (14.65 PSIA, 60 DEG. F)

CALC. GROSS WET 1020
CALC. GROSS DRY 1038

DISTRIBUTION :

MR. BILL REA

NOTES :

MORROW

LM

RATE 1

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) (SURFACE) PRESSURE (P_f & P_s) ~~(P_c & P_w)~~

Form C-122D
Adopted 9-1-65

COMPANY MERIDIAN OIL LEASE Pitchfork Fed WELL NO. 4 # 1 DATE 22-JAN-88

LOCATION: Unit K Section 4 Township 25 S Range 34 E

L 14900 H 14900 L/H 1.0 G .595 % CO_2 .56 % N_2 .24 % H_2S 0

d 2.197 F_r .014191 Q_m 1.361 M^2cfd (L/H) $(F_rQ_m)^2$ .000372 P_{cr} 622 (TABLE IX & X) T_{cr} 354 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	7450		14900						
2	GH		0	4432.75		8865.5						
3	37.5GH		0	166228		332456						
4	P_c or P_n		3613.2	4213.1	4293.0	4992.9	4992.9					
5	P_r		5.38	6.39	6.39	7.40	7.40		ΔP =	1359.6		
6	T		534	574.5	574.5	615	615					
7	T_r		1.51	1.62	1.62	1.74	1.74		P_s =	4992.8		
8	Z		.832	.919	.919	.994	.994					
9	P/Z	$\bar{4}\div\bar{8}$	4343.6	4612.8	4612.8	5001.3	5001.3					
10	P/TZ	$\bar{9}\div\bar{6}$	8.1341	8.1326	8.1326	8.1323	8.1323					
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$	.06616	.06616	.06616	.06613	.66506					
12	$L/H(F_rQ_m)^2$		.000372	.000372	.000372	.000372	.000372					
13		$\bar{11}+\bar{12}$	.066535	.066528	.066528	.066506	.066506					
14	I_n	$\bar{10}\div\bar{13}$	122.252	122.259	122.259	122.279	122.279					
15	$M=P_n-P_{n-1}$			680	680	680	680					
16	$N=I_n+I_{n-1}$			244.511	244.511	244.538	244.538					
17	M x N	$\bar{15}\times\bar{16}$			.66228							
18	Σ(M x N)	$\Sigma\bar{17}$										

One copy to be filed in District Office (Work copy acceptable)

Rate 1-

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) (SURFACE) PRESSURE ~~(P_f & P_s)~~ (P_c & P_w)

Form C-122C
Adopted 9-1-65

COMPANY MERIDIAN OIL LEASE Pitchfork Fed WELL NO. 4 #1 DATE 22-JAN-88

LOCATION: Unit K Section 4 Township 25S Range 34E

L 14900 H 14900 L/H 1.0 G .595 % CO_2 .56 % N_2 .24 % H_2S 0

d 2.197 F_r .01417 Q_m ——— M^2cfd (L/H) $(F_rQ_m)^2$ ——— P_{cr} 672 (TABLE IX & X) T_{cr} 354 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		14900	7450		0						
2	GH		8865.5	4432.75		0						
3	37.5GH		332456	166228		0						
4	P_c or P_n		4972.9	4247.0	4236.7	3620.6	3620.0	3620.1				
5	P_r		7.40	6.34	6.34	5.39	5.39	5.39		$\Delta P =$	1352.8	
6	T		615	534.5	534.5	534	534	534				
7	T_r		1.14	1.62	1.62	1.51	1.51	1.51		P_w	3620.1	
8	Z		0.994	.919	.919	.832	.832	.832				
9	P/Z	$\bar{4}\div\bar{8}$	5001.3	4615.6	4605.4	4349.7	4349.2	4349.2				
10	P/TZ	$\bar{9}\div\bar{6}$	8.1323	8.1385	8.1382	8.1454	8.1446	8.1446				
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\bar{11}+\bar{12}$										
14	I_n	$\bar{10}\div\bar{13}$	122.967	122.973	122.878	122.968	122.781	122.780				
15	$M=P_n-P_{n-1}$			674	674	676	677	677				
16	$N=I_n+I_{n-1}$			245.840	245.845	245.846	245.658	245.658				
17	M x N	$\bar{15}\times\bar{16}$			166229			166224				
18	Σ(M x N)	$\Sigma\bar{17}$	332456		166225							

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NATE 4

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) (SURFACE) PRESSURE (P_f & P_s) ~~(P_c & P_w)~~

Form C-122[illegible]
Adopted 9-1-65

COMPANY MERIDIAN Oil LEASE Pitchfork Fed WELL NO. 4 # 1 DATE 22-JAN-88

LOCATION: Unit K Section 4 Township 25 S Range 34 E

L 14900 H 14900 L/H 1.0 G .595 % CO_2 .56 % N_2 .24 % H_2S 0

d 2.197 F_r .014171 Q_m 3.274 M^2cfd $(L/H)(F_rQ_m)^2$ .001038 P_{cr} 622 (TABLE IX & X) T_{cr} 354 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	7450		14900						
2	GH		0	4432.75		8865.5						
3	37.5GH		0	166228		332456						
4	P_c or P_n		3498.2	4170.1	4171.1	4844.0	4844.0					
5	P_r		5.21	6.21	6.21	7.21	7.21		ΔP =	1347.7		
6	T		534	574.5	574.5	615	615					
7	T_r		1.51	1.62	1.62	1.74	1.74		P_s =	4845.9		
8	Z		0.824	0.810	0.910	0.985	0.985					
9	P/Z	$\bar{4}\div\bar{8}$	4246.9	4583.2	4583.2	4917.3	4917.3					
10	P/TZ	$\bar{9}\div\bar{6}$	7.5930	7.9777	7.9790	7.9956	7.9956					
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$	0.06325	0.06364	0.06366	0.06393	0.06393					
12	$L/H(F_rQ_m)^2$		.001038	.001038	.001038	.001038	.001038					
13		$\bar{11}+\bar{12}$	.064289	.064682	.064702	.064968	.064968					
14	I_n	$\bar{10}\div\bar{13}$	123.707	123.371	123.318	123.070	123.070					
15	$M=P_n-P_{n-1}$			672	673	673	673					
16	$N=I_n+I_{n-1}$			247.045	247.055	246.388	246.388					
17	M x N	$\bar{15}\times\bar{16}$			166215		166241					
18	Σ(M x N)	$\Sigma\bar{17}$			166215		332456					

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Kate 2

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) (SURFACE) PRESSURE ~~(P_t & P_s)~~ (P_c & P_w)

Form C-122[illegible]
Adopted 9-1-65

COMPANY MERIDIAN OIL LEASE Ritchfork Fed WELL NO. 4 #1 DATE 22-JAN-88

LOCATION: Unit K Section 4 Township 25S Range 34E

L 14900 H 14900 L/H 1.0 G .545 % CO_2 .56 % N_2 .24 % H_2S 0

d 2.197 F_r .01417 Q_m 1 M^2cfd (L/H) $(F_rQ_m)^2$ _____ P_{cr} 612 (TABLE IX & X) T_{cr} 354 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		14900	7450		0						
2	GH		8865.5	4432.75		0						
3	37.5GH		332456	166228		0						
4	P_c or P_n		4844.0	4179.5	4179.5	3515,4	3516.0	3516.0				
5	P_r		7.21	6.22	6.22	5.23	5.23	5.23		Δ P =	1328.1	
6	T		615	574.5	574.5	534	534	534				
7	T_r		1.74	1.62	1.62	1.51	1.51	1.51		Pw =	3515.9	
8	Z		0.985	0.911	0.911	0.825	0.825	0.825				
9	P/Z	$\bar{4}\div\bar{8}$	4917.3	4590.2	4590.3	4261.6	4262.14	4262.1				
10	P/TZ	$\bar{9}\div\bar{6}$	7.9956	7.9848	7.9901	7.9806	7.9820	7.9815				
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\bar{11}+\bar{12}$										
14	I_n	$\bar{10}\div\bar{13}$	125.069	125,159	125.159	125.304	125,282	125.290				
15	$M=P_n-P_{n-1}$			665	664	664	664	664				
16	$N=I_n+I_{n-1}$			250,228	250,234	250.458	250,436	250.444				
17	M x N	$\bar{15}\times\bar{16}$						166237				
18	Σ(M x N)	$\Sigma\bar{17}$	332456		166231							

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Rate 3

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) (SURFACE) PRESSURE (P_f & P_s) ~~(P_c & P_w)~~

Form C-122[illegible]
Adopted 9-1-65

COMPANY MERIDIAN Oil LEASE Pitchfork Fed WELL NO. 4 # 1 DATE 22-JAN-88

LOCATION: Unit K Section 4 Township 25 S Range 34 E

L 14900 H 14900 L/H 1.0 G .595 % CO_2 .56 % N_2 .24 % H_2S 0

d 2.197 F_r .014191 Q_m 3.094 M^2cfd (L/H) $(F_rQ_m)^2$ 0.001922 P_{cr} 622 (TABLE IX & X) T_{cr} 354 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	7450		14900						
2	GH		0	4432.75		8865.5						
3	37.5GH		0	166228		332456						
4	P_c or P_n		3423.2	4074.4	4096.4	4769.8	4769.8					
5	P_r		5.09	6.09	6.10	7.10	7.10		ΔP =	1350.2		
6	T		534	574.5	574.5	615	615					
7	T_r		1.51	1.62	1.62	1.74	1.74		P_s =	4773.4		
8	Z		.819	.905	.906	.980	.980					
9	P/Z	4÷8	4881.6	4526.5	4538.0	4867.7	4867.7					
10	P/TZ	9÷6	7.8307	7.8790	7.8816	7.9149	7.9149					
11	$(P/TZ)^2/1000$	$(10)^2/1000$	.06132	.06208	.06218	.06265	.06265					
12	$L/H(F_rQ_m)^2$		.001922	.001922	.001922	.001922	.001922					
13		11 + 12	.063242	.064001	.064041	.064528	.064528					
14	I_n	10÷13	123.820	123.107	123.070	122.582	122.582					
15	$M=P_n-P_{n-1}$			671	673	673	671					
16	$N=I_n+I_{n-1}$			246,328	246,890	245,652	245,652					
17	M x N	15 x 16			166203		166253					
18	Σ(M x N)	Σ17			166203		332456					

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Rate 3

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) (SURFACE) PRESSURE ~~(P_f & P_s)~~ (P_c & P_w)

Form C-122E
Adopted 9-1-65

COMPANY MERIDIAN Oil LEASE Pitchfork Fed WELL NO. 4 #1 DATE 22-JAN-88

LOCATION: Unit K Section 4 Township 25S Range 34E

L 14900 H 14900 L/H 1.0 G .595 % CO_2 .56 % N_2 .24 % H_2S 0

d 2.197 F_r .01417 Q_m 1 M^2cfd $(L/H)(F_rQ_m)^2$ ——— P_{cr} 672 (TABLE IX & X) T_{cr} 354 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		14900	7450		0						
2	GH		8865.5	4432.75		0						
3	37.5GH		332456	166228		0						
4	P_c or P_n		4769.8	4111.9	4112.5	3455.1	3456.4	3456.3				
5	P_r		7.10	6.12	6.12	5.14	5.14	5.14		ΔP =	1313.5	
6	T		615	574.5	574.5	534	534	534				
7	T_r		1.74	1.62	1.62	1.51	1.51	1.51		P_w =	3456.3	
8	Z		0.980	0.906	0.906	0.821	0.821	0.821				
9	P/Z	$\bar{4}\div\bar{8}$	4867.7	4539.7	4540.1	4209.6	4210.8	4210.7				
10	P/TZ	$\bar{9}\div\bar{6}$	7.9149	7.9020	7.9027	7.8832	7.8853	7.8852				
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\bar{11}+\bar{12}$										
14	I_n	$\bar{10}\div\bar{13}$	126.344	126.550	126.537	126.853	126.818	126.820				
15	$M=P_n-P_{n-1}$			658	657	657	656	656				
16	$N=I_n+I_{n-1}$			252.894	252.883	253.391	253357	253.359				
17	M x N	$\bar{15}\times\bar{16}$			166221			166237				
18	Σ(M x N)	$\Sigma\bar{17}$	332456		166236							

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Rate 4

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) (SURFACE) PRESSURE (P_f & P_s) ~~(P_c & P_w)~~

Form C-122: Adopted 9-1-65

COMPANY MERIDIAN Oil LEASE Pitchfork Fed WELL NO. 4 # 1 DATE 22-JAN-88

LOCATION: Unit K Section 4 Township 25 S Range 34 E

L 14900 H 14900 L/H 1.0 G .595 % CO_2 .56 % N_2 .24 % H_2S 0

d 2.192 F_r .014191 Q_m 1 M^2cfd (L/H) $(F_rQ_m)^2$ .003566 P_{cr} 622 (TABLE IX & X) T_{cr} 354 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	7450		14900						
2	GH		0	4432.75		8865.5						
3	37.5GH		0	166228		332456						
4	P_c or P_n		3308.2	3981.1	3715.3	4662.7	4662.7					
5	P_r		4.92	5.93	5.53	6.94	6.94		ΔP =	1361.2		
6	T		534	574.5	574.5	615	615					
7	T_r		1.51	1.62	1.62	1.74	1.74		P_s =	4665.4		
8	Z		0.811	0.897	0.897	0.902	0.902					
9	P/Z	$\bar{4}\div\bar{8}$	4077.9	4439.6	4142.1	4794.6	4794.6					
10	P/TZ	$\bar{9}\div\bar{6}$	7.6369	7.7287	7.2127	7.7961	7.7961					
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$	0.05832	0.05972	0.05279	0.06078	0.06078					
12	$L/H(F_rQ_m)^2$		.003566	.003566	.003566	.003566	.003566					
13		$\bar{11}+\bar{12}$	.061881	.063286	.056846	.064345	.064345					
14	I_n	$\bar{10}\div\bar{13}$	123.405	122.110	122.043	121.161	121.161					
15	$M=P_n-P_{n-1}$			674	674	674	684					
16	$N=I_n+I_{n-1}$			245.515	245.447	243.203	243.203					
17	M x N	$\bar{15}\times\bar{16}$			166181		166274					
18	Σ(M x N)	$\Sigma\bar{17}$			166182		332456					

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KATE 4

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) (SURFACE) PRESSURE ~~(P_f & P_s)~~ (P_c & P_w)

Form C-122E
Adopted 9-1-65

COMPANY MERIDIAN Oil LEASE Pitchfork Fed WELL NO. 4 #1 DATE 22-JAN-88

LOCATION: Unit K Section 4 Township 25S Range 34E

L 14900 H 14900 L/H 1.0 G .595 % CO_2 .56 % N_2 .24 % H_2S 0

d 2.197 F_r .01417 Q_m 1 M^2cfd (L/H) $(F_rQ_m)^2$ ——— P_{cr} 672 (TABLE IX & X) T_{cr} 354 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		14900	7450		0						
2	GH		8865.5	4432.75		0						
3	37.5GH		332456	166228		0						
4	P_c or P_n		4662.7	4014.7	4015.1	3371.0	3371.1	3370.7				
5	P_r		6.94	5.97	5.98	5.01	5.02	5.02		ΔP =	1292.0	
6	T		615	514.5	514.5	534	534	534				
7	T_r		1.74	1.62	1.62	1.51	1.51	1.51		P_w =	3370.7	
8	Z		.922	.879	.879	.815	.815	.815				
9	P/Z	$\bar{4}\div\bar{8}$	4794.6	4465.4	4466.1	4132.9	4135.8	4134.8				
10	P/TZ	$\bar{9}\div\bar{6}$	7.7961	7.7726	7.7728	7.7345	7.7449	7.7431				
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\bar{11}+\bar{12}$										
14	I_n	$\bar{10}\div\bar{13}$	128.270	128.657	128.635	129.207	129.117	129.145				
15	$M=P_n-P_{n-1}$			648	647	647	645	645				
16	$N=I_n+I_{n-1}$			256.926	256.905	257.842	257.752	257.782				
17	M x N	$\bar{15}\times\bar{16}$				166214		166262				
18	Σ(M x N)	$\Sigma\bar{17}$	332456			166242						

One copy to be filed in District Office (Work copy acceptable)

Rate 5

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) (SURFACE) PRESSURE (P_f & P_s) ~~(P_c & P_w)~~

Form C-122E
Adopted 9-1-65

COMPANY MERIDIAN Oil LEASE Pitchfork Fed WELL NO. 4 # 1 DATE 22-JAN-88

LOCATION: Unit K Section 4 Township 25 S Range 34 E

L 14900 H 14900 L/H 1.0 G .595 % CO_2 .56 % N_2 .24 % H_2S 0

d 2.192 F_r .014171 Q_m 5,357 M^2cfd (L/H) $(F_rQ_m)^2$ 0.005763 P_{cr} 622 (TABLE IX & X) T_{cr} 354 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	7450		14900						
2	GH		0	4432.75		8865.5						
3	37.5GH		0	166228		332456						
4	P_c or P_n		3113.2	3784.6	3790.7	4468.7	4468.7					
5	P_r		4.63	5.63	5.64	6.65	6.65		ΔP =	1366.9		
6	T		534	574.5	574.5	615	615					
7	T_r		1.51	1.62	1.62	1.74	1.74		P_s =	4480.1		
8	Z		0.800	0.884	0.884	0.955	0.959					
9	P/Z	$\bar{4}\div\bar{8}$	3891.5	4280.8	4285.8	4657.4	4657.4					
10	P/TZ	$\bar{9}\div\bar{6}$	7.2874	7.4514	7.4601	7.5730	7.5730					
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$	0.05311	0.05552	0.005763	0.005763	0.005763					
12	$L/H(F_rQ_m)^2$		0.005763	0.005763	0.005763	0.005763	0.005763					
13		$\bar{11}+\bar{12}$	0.058870	0.061284	0.061416	0.063114	0.063114					
14	I_n	$\bar{10}\div\bar{13}$	123,789	121,583	121,468	119,990	119,990					
15	$M=P_n-P_{n-1}$			671	671	678	689					
16	$N=I_n+I_{n-1}$			245,372	245,251	241,458	241,458					
17	M x N	$\bar{15}\times\bar{16}$			166150		166306					
18	Σ(M x N)	$\Sigma\bar{17}$			166150		332456					

One copy to be filed in District Office (Work copy acceptable)

Kate 5

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) (SURFACE) PRESSURE ~~(P_T & P_S)~~ (P_c & P_w)

Form C-122C
Adopted 9-1-65

COMPANY MERIDIAN Oil LEASE Pitchfork Fed WELL NO. 4 #1 DATE 22-JAN-88

LOCATION: Unit K Section 4 Township 25S Range 34E

L 14900 H 14900 L/H 1.0 G .595 % CO_2 .56 % N_2 .24 % H_2S 0

d 2.197 F_r .01417 Q_m 1 M^2cfd $(L/H)(F_rQ_m)^2$ ——— P_{cr} 672 (TABLE IX & X) T_{cr} 354 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		14900	7450		0						
2	GH		8865.5	4432.75		0						
3	37.5GH		332456	166228		0						
4	P_c or P_n		4468.7	3839.3	3841.1	3213.3	3217.6	3217.3				
5	P_r		6.65	5.71	5.72	4.78	4.79	4.79		ΔP =	1251.7	
6	T		615	574.5	574.5	534	534	534				
7	T_r		1.74	1.62	1.62	1.51	1.51	1.51		P_w =	3217.1	
8	Z		0.959	0.888	0.888	0.806	0.806	0.806				
9	P/Z	4÷8	4659.9	4325.8	4327.3	3988.8	3992.9	3992.6				
10	P/TZ	9÷6	7.5730	7.5299	7.5323	7.4697	7.4774	7.4768				
11	$(P/TZ)^2/1000$	$(10)^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		11 + 12										
14	I_n	10÷13	132.048	132.801	132.762	132.824	132.786	133.247				
15	$M=P_n-P_{n-1}$			621	628	628	624	624				
16	$N=I_n+I_{n-1}$			264.849	264.810	266.636	266.499	266.509				
17	M x N	15 x 16			166200			166263				
18	Σ(M x N)	Σ17	332456		166256							

One copy to be filed in District Office (Work copy acceptable)

SUGGESTED FIELD DATA SHEET (Not Required To File)

Type Test: ☒ Initial ☐ Annual ☐ Special	Test Date: 1-22-88	Lease No. or Serial No.	
Company: Meridian Oil	Connection: To Atmosphere	Allottee	
Field: Pitchfork Ranch	Reservoir: Morrow	Location	Unit
Completion Date: 19-JAN-88	Total Depth: 15230	Plug Back TD: 15121	Elevation
Farm or Lease Name: Pitchfork			
Csg. Size: 7" / Wt. / d / Set At: 13300 / Perforations: From: 14708 / To: 15092			Well No.: 4 Fed #1
Tbg. Size: 2 7/8 / Wt. / d / Set At: 12,754 / Perforations: From / To			Sec. / Twp.-Blk. / Rge.-Sur.
Type Completion (Describe): SI Ng/c		Packer Set At	County or Parish: Lea Co.
Producing Thru: Tbg	Reservoir Temp. F: 205° @ 15223	Mean Annual Temp. F: 60°	Baro. Press. – P_a: 13.2
			State: New Mexico
L: 14900 / H: 14900	G_g: .585	% CO_2: .56%	% N_2: .24% / % H_2S: 0
Prover	Meter Run: 4.026	Taps: F/g	

DATE / Time of Reading	ELAP. TIME Hrs.	Wellhead Working Pressure: Tbg. Psig.	Csg. Psig.	Temp. F	METER OR PROVER: Pressure Psig.	Diff.	Temp. F	Orifice	REMARKS (Include liquid production data: Type–A.P.I. Gravity–Amount)
9:00	24	3685	560					1.875	SIP
10:45		3600	—		330	10	60°	1.875	START FLO
11:00		3600	—		332	10	60°		
11:15		3600	—		332	10	60		5/64 1014 MCF/D (96.7%)
11:30		3520			337	28	60°	1.875	
11:45		3510			337	28	60°		
12:00		3505			337	26	60°		
12:15		3485			331	28	60°		11/64 1694 MCF/D (94.6%)
									Starting to make Flu.
12:30		3430			340	50	60°	1.875	
12:45		3410			340	50	60°		
1:00		3410			343	50	60°		
1:15		3410			343	50	60		13/64 2303 MCF/D (92.5%)
									caught sample
1:30		3295			344	90	60°	1.875	
1:45		3295			346	90	55°		
2:00		3295			347	90	55°		
2:15		3295			348	90	55		14/64 3112 MCF/D 89.4%
2:30		3135			500	100	55°	1.875	
2:45		3110			500	100	55°		
3:00		3105			500	100	55°		
3:15		3100			500	100	55°		14/64
		Built	back To	3620	in 5 min.				
									Liq – 45° @ 60°
									1.9 BBL / inch
									Tank Gauge
									Start 5" Tap 1" H2O
									END 6 Tap 12" H2O

Page ____ of ____ Data By Bill Rea / Fred Golden

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: NM-16139

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL ☐ GAS WELL ☒ XX OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Meridian Oil Inc.

8. FARM OR LEASE NAME: Pitchfork "4" Federal

3. ADDRESS OF OPERATOR: 21 Desta Drive, Midland, Texas 79705

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL & 1980' FWL, Sec. 4, T-25-S, R-34-E

10. FIELD AND POOL, OR WILDCAT: Pitchfork Ranch (Morrow)

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 4, T-25-S, R-34-E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3353.4' GR

12. COUNTY OR PARISH: Lea

13. STATE: N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF ☐	PULL OR ALTER CASING ☐	WATER SHUT-OFF ☐	REPAIRING WELL ☐
FRACTURE TREAT ☐	MULTIPLE COMPLETE ☐	FRACTURE TREATMENT ☐	ALTERING CASING ☐
SHOOT OR ACIDIZE ☐	ABANDON* ☐	SHOOTING OR ACIDIZING ☐	ABANDONMENT* ☐
REPAIR WELL ☐	CHANGE PLANS ☐	(Other) Set 7" csg ☒ XX	
(Other)		(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Set 7" csg @ 13,300'. Circ. Cmt w/1650 sx Cl "H" Lite. Tailed in w/250 sxs Cl "H". PD @ 5:30 AM 12-3-87. WOC 24 hrs. Set slips. cut off & install C section & tested to 1000#. Held OK.

RECEIVED
DEC 7 8 53 AM '87
CARLSBAD, NEW MEXICO
AREA MANAGER

SJS

18. I hereby certify that the foregoing is true and correct

SIGNED Cathy Cooke TITLE Operations Tech III DATE 12/4/87

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side