NEW _XICO OIL CONSERVATION COMMSSI(

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 10-23/10-27-72	
Company: Shell Oil Company		Connection: Skelly Oil Company			
Pool: Wildcat		Formation: Drinkard San Andres		Unit: M	
Completion Date: 10-23-72	Total Depth: 7864	Plug Back TD: 4065	Elevation: 3427 DF	Farm or Lease Name: Turner	
Csg. Size: 5-1/2 / Wt.: 15-1/2 / d: 4.950 / Set At: 4065		Perforations: From 4004 To 4038		Well No.: 16	
Tbg. Size: 2-3/8 / Wt.: 4.7 / d: 1995 / Set At: 3938		Perforations: From open To ended		Unit: M / Sec.: 22 / Twp.: T-21-S / Rge.: R-37-E	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single		Packer Set At: 3938		County: Lea	
Producing Thru: TBG	Reservoir Temp. °F: 89 @ 4021	Mean Annual Temp. °F:	Baro. Press. – P_a: 13.2	State: N.M.	

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
4021	4021	.708					4"	X

	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					1146	74			72
1.	4" x 2.000	31	12.00	61	324	71			24
2.	4" x 2.000	35	15.00	61	260	70			24
3.	4" x 2.000	38	17.00	62	273	71			24
4.	4" x 2.000	36	22.00	62	175	76			24
5.									

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	19.81	23.03	44.2	.9990	1.188	Nil	541.5
2	19.81	26.89	48.2	.9990	1.188	Nil	632.2
3	19.81	29.50	51.2	.9981	1.188	Nil	692.9
4	19.81	32.90	49.2	.9981	1.188	Nil	772.8
5							

NO.	P_t	Temp. °R	T_t	Z
1				
2				
3	-------	NIL	----------	
4				
5				

Gas Liquid Hydrocarbon Ratio 79.8 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 36.5 Deg.
Specific Gravity Separator Gas .708 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX 6 mix. 751
Critical Pressure 668 P.S.I.A. 667 P.S.I.A.
Critical Temperature 392 R 408 R

P_c 1156.1 P_c^2 1336.6

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		988.6	977.3	359.3
2		940.1	883.8	452.8
3		907.2	823.0	513.6
4		875.4	766.3	570.3
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.344$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.070$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.600$

Absolute Open Flow 1,600 Mcfd @ 15.025 Angle of Slope θ 49.5 Slope, n .854

Remarks: These calculations based on bottom hole pressure converted to surface pressure or PW.

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	C. S. Roberson by C. S. Hett		

GAS WELL

BACK PRESSURE CURVE

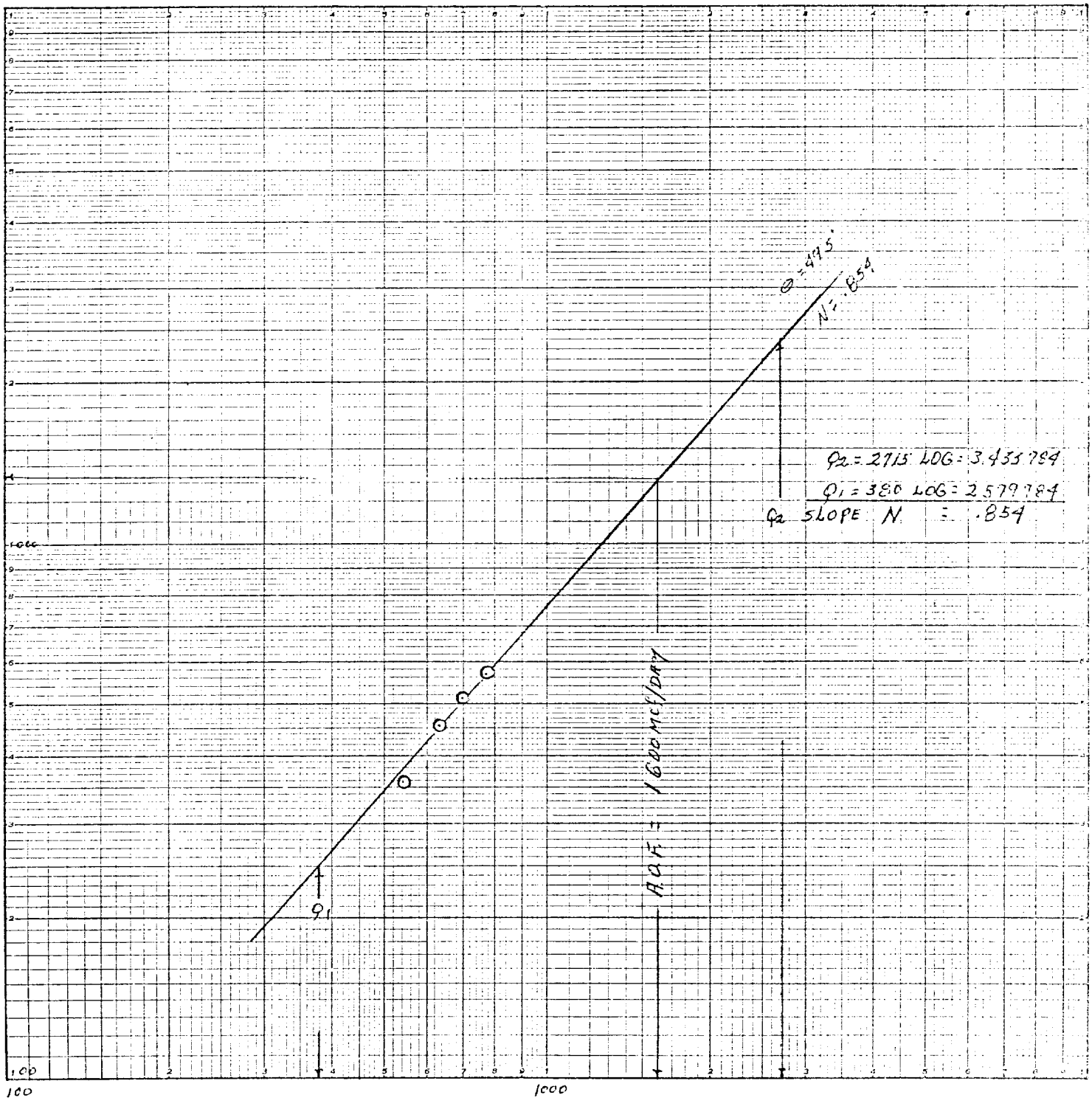
County Lea Field Drinkard San Andres

Operator Shell Oil Company

Lease Turner Well No. 16

Volume 1,600 MCF/24 hr.

Date 10-23-72 - 10-27-72



BHP

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

Form C-122E
Adopted 9-1-65

COMPANY SHELL OIL CO LEASE TURNER WELL NO. 16 DATE 10-23-72

LOCATION: Unit _____ Section _____ Township _____ Range _____

L 4021 H 4021 L/H 1.000 G MIX. .751 % CO_2 _____ % N_2 _____ % H_2S _____

d _____ F_r _____ Q_m _____ M^2cfd (L/H) $(F_rQ_m)^2$ _____ P_{cr} 667 (TABLE IX & X) T_{cr} 408 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		4021	2010		0						
2	GH		3020	1510		0						
3	37.5GH		113,291	56,621		0						
4	P_c or P_n		1339.2	1244.7	1245.7	1152.0	1157.2	1157.0	P_W = 1156.1			
5	P_r		2.01	1.87	1.87	1.73	1.73	1.73				
6	T		549	542	542	534	534	534				
7	T_r		1.35	1.33	1.33	1.31	1.31	1.31				
8	Z		.731	.702	.702	.723	.723	.723				
9	P/Z	$\bar{4}\div\bar{8}$	1832.0	1773.1	1774.5	1593.4	1600.6	1600.3				
10	P/TZ	$\bar{9}\div\bar{6}$	3.337	3.271	3.274	2.984	2.997	2.997				
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\bar{11}+\bar{12}$										
14	I_n	$\bar{10}\div\bar{13}$	299.671	305,676	305,446	335.133	333.635	333.692				
15	$M=P_n-P_{n-1}$			94.5	93.5	93.6	88.5	88.7				
16	$N=I_n+I_{n-1}$			605,347	605,117	604,579	639,081	639,138				
17	M x N	$\bar{15}\times\bar{16}$			56,578			56,682				
18	Σ(M x N)	$\Sigma\bar{17}$			56,663							

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

1A Rate

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

Form C-122E
Adopted 9-1-65

COMPANY SNELL OIL CO. LEASE TURNER WELL NO. 16 DATE 10-23-72

LOCATION: Unit _____ Section _____ Township _____ Range _____

L 4021 H 4021 L/H 1.000 G (Wet. Tst.) % CO_2 _____ % N_2 _____ % H_2S _____

d _____ F_r _____ Q_m _____ M^2cfd (L/H) $(F_rQ_m)^2$ _____ P_{cr} 667 (TABLE IX & X) T_{cr} 408 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		4021	2010		0						
2	GH		3020	1510		0						
3	37.5GH		113,241	56,621		0						
4	P_c or P_n		1136.2	1059.8	1060.8	985.4	988.3	989.2	Pw =	988.6		
5	P_r		1.70	1.59	1.59	1.48	1.48	1.48				
6	T		549	542	542	538	538	538				
7	T_r		1.35	1.33	1.33	1.31	1.31	1.31				
8	Z		.767	.744	.744	.760	.760	.760				
9	P/Z	$\bar{4}\div\bar{8}$	1481.4	1424.5	1424.8	1296.5	1301.7	1301.5				
10	P/TZ	$\bar{9}\div\bar{6}$	2.628	2.628	2.631	2.428	2.438	2.437				
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\bar{11}+\bar{12}$										
14	I_n	$\bar{10}\div\bar{13}$	370.606	380.491	380.130	411.863	410.227	410.288				
15	$M=P_n-P_{n-1}$			76.4	75.9	75.4	71.5	71.6				
16	$N=I_n+I_{n-1}$			757.097	750.736	791.993	780.338	780.418				
17	M x N	$\bar{15}\times\bar{16}$			56,606			56,594				
18	Σ(M x N)	$\Sigma\bar{17}$			56,635							

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≥ 2M

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

Form C-122E
Adopted 9-1-65

COMPANY SHELL OIL CO. LEASE TURNER WELL NO. 16 DATE 10-23-72

LOCATION: Unit _____ Section _____ Township _____ Range _____

L 4021 H 4021 L/H 1.000 G MIX. .75 % CO_2 _____ % N_2 _____ % H_2S _____

d _____ F_r _____ Q_m _____ M^2cfd $(L/H)(F_rQ_m)^2$ _____ P_{cr} 667 (TABLE IX & X) T_{cr} 408 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		4021	2010		0						
2	GH		3020	1510		0						
3	37.5GH		113,241	56,621		0						
4	P_c or P_n		1078.2	1006.6	1007.7	937.0	940.7	940.5	P_W =	940.1		
5	P_r		1.62	1.51	1.51	1.40	1.41	1.41				
6	T		549	542	542	534	534	534				
7	T_r		1.35	1.33	1.33	1.31	1.31	1.31				
8	Z		.777	.756	.756	.772	.771	.771				
9	P/Z	$\bar{4}\div\bar{8}$	1387.6	1331.5	1332.9	1213.7	1220.1	1219.8				
10	P/TZ	$\bar{9}\div\bar{6}$	2.528	2.457	2.459	2.273	2.285	2.284				
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\bar{11}+\bar{12}$										
14	I_n	$\bar{10}\div\bar{13}$	395.634	407.048	406.637	439.961	437.666	437.761				
15	$M=P_n-P_{n-1}$			71.6	70.5	70.7	67.0	67.1				
16	$N=I_n+I_{n-1}$			802.682	802.271	846.598	844.301	844.398				
17	M x N	$\bar{15}\times\bar{16}$			56,560			56,659				
18	Σ(M x N)	$\Sigma\bar{17}$			56,681							

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

3rd

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

Form C–122–E
Adopted 9–1–65

COMPANY SNELL OIL CO LEASE TURNER WELL NO. 16 DATE 10-23-7?

LOCATION: Unit _____ Section _____ Township _____ Range _____

L 4021 H 4021 L/H 1.000 G MIX. DSI % CO_2 _____ % N_2 _____ % H_2S _____

d _____ F_r _____ Q_m _____ M^2cfd (L/H) $(F_rQ_m)^2$ _____ P_{cr} 667 (TABLE IX & X) T_{cr} 408 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		4021	2010		0						
2	GH		3020	1510		0						
3	37.5GH		113,291	56,621		0						
4	P_c or P_n		1039.2	920.8	921.8	914.4	907.8	907.7	P_w =	907.2		
5	P_r		1.56	1.46	1.46	1.36	1.36	1.36				
6	T		529	542	542	539	539	539				
7	T_r		1.35	1.33	1.33	1.31	1.31	1.31				
8	Z		.784	.763	.763	.779	.779	.779				
9	P/Z P/Z	$\bar{4}\div\bar{8}$	1325.5	1272.9	1273.7	1160.9	1165.4	1165.2				
10	P/TZ	$\bar{9}\div\bar{6}$	2.919	2.348	2.350	2.174	2.182	2.182				
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\bar{11}+\bar{12}$										
14	I_n	$\bar{10}\div\bar{13}$	426.150	425.969	425.594	459.983	458.216	458.280				
15	$M=P_n-P_{n-1}$			68.4	67.9	67.5	69.0	64.1				
16	$N=I_n+I_{n-1}$			840.119	851.564	885.577	917.799	883.820				
17	M x N	$\bar{15}\times\bar{16}$			57,797			56,603				
18	Σ(M x N)	$\Sigma\bar{17}$			56,644							

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

4th

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

Form C–122–E
Adopted 9–1–65

COMPANY SNELL O.C. CO. LEASE TURNER WELL NO. 16 DATE 10-23-72

LOCATION: Unit _____ Section _____ Township _____ Range _____

L 4021 H 4021 L/H 1.000 G Comp. .751 % CO_2 _____ % N_2 _____ % H_2S _____

d _____ F_r _____ Q_m _____ M^2cfd (L/H) $(F_rQ_m)^2$ _____ P_{cr} 667 (TABLE IX & X) T_{cr} 408 (TABLE IX & X)

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		4021	2010		0						
2	GH		3020	1510		0						
3	37.5GH		113,241	56,621		0						
4	P_c or P_n		1001.2	935.9	936.9	872.6	875.9	875.8	P_w =	875.9		
5	P_r		1.50	1.40	1.40	1.31	1.31	1.31				
6	T		549	542	542	538	538	538				
7	T_r		1.35	1.33	1.33	1.31	1.31	1.31				
8	Z		.791	.772	.772	.787	.787	.787				
9	P/Z P/Z	$\bar{4}\div\bar{8}$	1265.7	1212.3	1213.6	1108.7	1112.9	1112.8				
10	P/TZ	$\bar{9}\div\bar{6}$	2.306	2.237	2.239	2.076	2.084	2.084				
11	$(P/TZ)^2/1000$	$(\bar{10})^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\bar{11}+\bar{12}$										
14	I_n	$\bar{10}\div\bar{13}$	433.728	447.068	446.597	481.634	479.869	479.875				
15	$M=P_n-P_{n-1}$			65.3	64.3	64.3	61.0	61.1				
16	$N=I_n+I_{n-1}$			880.806	880.335	928.231	926.406	926.4[illegible]				
17	M x N	$\bar{15}\times\bar{16}$			56,606			56,607				
18	Σ(M x N)	$\Sigma\bar{17}$			56,635							

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