

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator Santa Fe Snyder Corporation					Lease or Unit Name Outland State Unit				
Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 5/25/00		Well No. 1-Y		
Completion Date 5/5/00		Total Depth 12,955		Plug Back TD 12,910		Elevation 3701' KB		Unit Ltr. - Sec. - TWP - Rge. M-D 12 21s 34e	
Csg. Size 4 1/2	Wt. 13.5#	d 3.920	Set At 12,943	Perforations: From: 12,569 To: 12,722			County Lea		
Tbg. Size 2 3/8	Wt. 4.7#	d 1.995	Set At 12,539	Perforations: From: OPEN To: ENDED			Pool Wilson Morrow		
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 12,478			Formation Morrow		
Producing Thru Tbg		Reservoir Temp. °F 175 @ 12646		Mean Annual Temp. °F 60		Baro. Press - P 13.2		Connection LG&E	
L * 12,646	H 12,646	Gg 0.618	% CO ₂ 0.302	% N ₂ 0.369	% H ₂ S	Prover	Meter Run 3.068	Taps FLG	

FLOW DATA

NO.	Prover Line Size	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						4072		PACKER		24 Hrs
1.	3.068 x	1.375	676	14.7	83	4015		"		1.0 Hrs
2.	3.068 x	1.375	680	57.0	82	3945		"		1.0 Hrs
3.	3.068 x	1.375	682	121.5	82	3830		"		1.0 Hrs
4.	3.068 x	1.375	681	203.0	82	3695		"		1.0 Hrs
5.										

RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)	$h_w P_m$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg.	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	9.249	100.65	689.2	.9786	1.272	1.055	1,223
2.	9.249	198.78	693.2	.9795	1.272	1.055	2,417
3.	9.249	290.63	695.2	.9795	1.272	1.055	3,533
4.	9.249	375.40	694.2	.9795	1.272	1.055	4,564
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	1.02	543	1.50	.899	28.767	1.055	1,223
2.	1.03	542	1.49	.898	54.0	1.055	2,417
3.	1.03	542	1.49	.898	.618	1.055	3,533
4.	1.03	542	1.49	.898	XXXXXX	1.055	4,564
5.							

P _c 4194.6		P _c ² 17594.7		1) $\frac{P_c^2}{P_c^2 - P_w^2} = 8.113$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 5.733$	
NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²			
1.		4140.6	17144.6	450.1			
2.		4075.4	16608.9	985.8			
3.		3999.3	15994.4	1600.3			
4.		3927.6	15426.0	2168.7			
5.							

AOF = Q

$$\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 26.165$$

Absolute Open Flow **26,165** Mcfd @ 15.025 Angle of Slope θ **50.16** Slope, n **.8341**

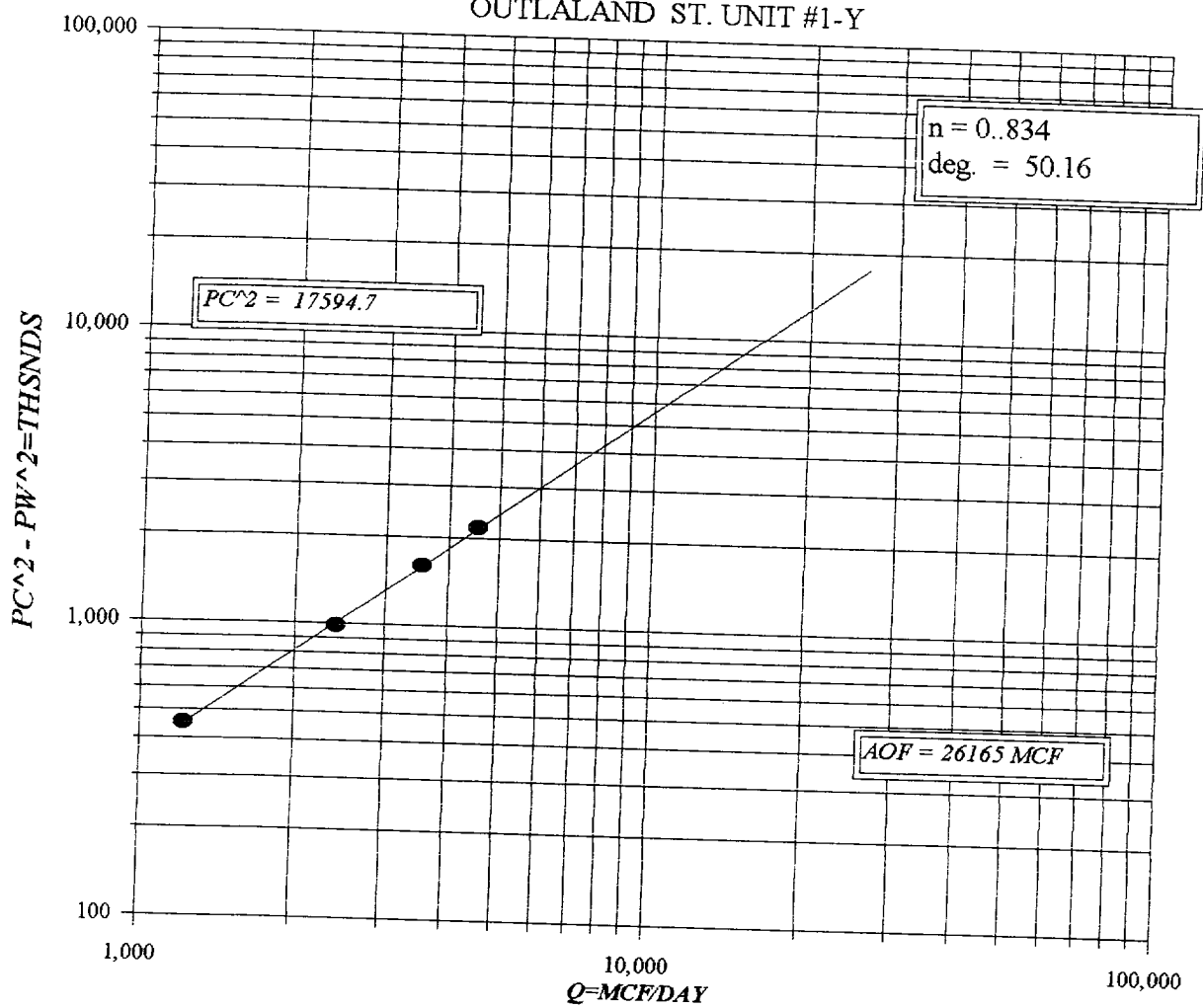
Remarks: **Well produced 17 BBLs condensate**

* BHP Instrument set @ this depth

Approved By Division	Conducted By: Jarrel Services, Inc.	Calculated By: Bob Murray	Checked By: Bob Murray
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SANTA Fe SNYDER CORPORATION
OUTLALAND ST. UNIT #1-Y



WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURE (~~Pc or Ps~~) *Pc*
FROM KNOWN BOTTOM HOLE PRESSURE (Pf or Ps)

FORM C-122F

COMPANY SANTA FE SNYDER CORP.

UNIT L 12646

LEASE : O S UNIT

WELL NO. : 1-Y

DATE

SECTION : 12

TWNSHP : 21

RANGE :

H : 12646

L/H : 1

G/GMIX : 0.6180

CO2 : 0.302

N2 : 0.369

H2S :

GH : 7815.2

PCR : 671

TCR : 362

LINE

1 2 3 4 5 6 7 8

1	TW(W.H. R)	534	534	534	534	534	534	534	534
2	Ts(B.H. R)	660.5	660.5	660.5	660.5	660.5	660.5	660.5	660.5
3	T=(Tw+Ts/2)	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2
4	Z (EST.)	1.064	0.947	ERR	ERR	ERR	ERR	ERR	ERR
5	TZ	635	565	ERR	ERR	ERR	ERR	ERR	ERR
6	GH/TZ	12.298	13.824	ERR	ERR	ERR	ERR	ERR	ERR
7	eS(TABLE XIV)	1.586	1.679	ERR	ERR	ERR	ERR	ERR	ERR
8	Pf or Ps	5435.8	5435.8	0	0	0	0	0	0
9	Pf2 or Ps2	29547.9	29547.9	0.0	0.0	0.0	0.0	0.0	0.0
10	Pc2=Pf/eS or Pw2=Ps2/eS	18631.0	17594.7	ERR	ERR	ERR	ERR	ERR	ERR
11	Pc or Pw	4316	4195	ERR	ERR	ERR	ERR	ERR	ERR
12	P=(Pw+Ps/2)or(Pc+Pf/2)	4876	4815	ERR	ERR	ERR	ERR	ERR	ERR
13	Pr=(P/Pcr)	7.27	7.18	ERR	ERR	ERR	ERR	ERR	ERR
14	Tr(T/Tcr)	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
15	Z (TABLE XI)	0.947	0.942	ERR	ERR	ERR	ERR	ERR	ERR

Pc ~~Pw~~ 1 : 4194.6 PW 2 : ERR PW 3 : ERR PW 4 : ERR

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURE (~~P_w or P_s~~) *P_w*
FROM KNOWN BOTTOM HOLE PRESSURE (Pf or Ps)

FORM C-122F

COMPANY SANTA FE SNYDER CORP.

UNIT
L

12646

LEASE : O S UNIT

SECTION : 12

H : 12646

CO2 : 0.302

GH : 7815.2

WELL NO. : 1-Y

TWNSHP : 21

L/H : 1

N2 : 0.369

PCR : 671

DATE

RANGE :

G/GMIX : 0.6180

H2S :

TCR : 362

LINE

1 2 3 4 5 6 7 8

1	TW(W.H. R)	534	534	534	534	534	534	534	534
2	Ts(B.H. R)	660.5	660.5	660.5	660.5	660.5	660.5	660.5	660.5
3	T=(Tw+Ts/2)	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2
4	Z (EST.)	1.058	0.942	0.980	0.934	0.973	0.928	0.966	0.922
5	TZ	632	563	585	558	581	554	577	551
6	GH/TZ	12.363	13.891	13.350	14.009	13.450	14.103	13.545	14.192
7	eS(TABLE XIV)	1.590	1.684	1.650	1.691	1.656	1.697	1.662	1.703
8	Pf or Ps	5372.6	5372.6	5299.6	5299.6	5209.8	5209.8	5125	5125
9	Pf2 or Ps2	28864.8	28864.8	28085.8	28085.8	27142.0	27142.0	26265.6	26265.6
10	Pc2=Pf/eS or Pw2=Ps2/eS	18156.1	17144.9	17024.2	16609.0	16390.6	15994.2	15805.2	15426.4
11	Pc or Pw	4261	4141	4126	4075	4049	3999	3976	3928
12	P=(Pw+Ps/2)or(Pc+Pf/2)	4817	4757	4713	4688	4629	4605	4550	4526
13	Pr=(P/Pcr)	7.18	7.09	7.02	6.99	6.90	6.86	6.78	6.75
14	Tr(T/Tcr)	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
15	Z (TABLE XI)	0.942	0.937	0.934	0.932	0.928	0.926	0.922	0.920

PW 1 : 4140.6 PW 2 : 4075.4 PW 3 : 3999.3 PW 4 : 3927.6

NEW MEXICO G.O.R./G. MIX

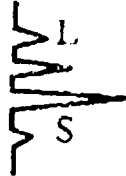
NO. OF BBLS PRODUCED = 17.0
API GRAVITY @ 60 DEG. = 54.0

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SPECIFIC GRAVITY OF GAS = 0.6180

XX
TOTAL GAS PRODUCED = 489

G.O.R. = 28.767

G.MIX = 0.721



Laboratory Services, Inc

4016 Fiesta Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Jarrel Services Inc.
Attention: Mr. Donnie Dickerson
P. O. Box 1230
Hobbs, New Mexico 82340

SAMPLE:
IDENTIFICATION: Outland State Unit #1-Y
COMPANY: Santa Fe Snyder
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 5/24/00
ANALYSIS DATE: 5/24/00
PRESSURE - PSIG
SAMPLE TEMP. °F
ATMOS. TEMP. °F

GAS (XX) LIQUID ()
SAMPLED BY: Donnie Dickerson
ANALYSIS BY: Vickie Walker

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	0.369	
Carbon Dioxide (CO2)	0.302	
Methane (C1)	92.086	
Ethane (C2)	4.395	1.173
Propane (C3)	1.581	0.435
I-Butane (IC4)	0.199	0.066
N-Butane (NC4)	0.418	0.132
I-Pentane (IC5)	0.122	0.045
N-Pentane (NC5)	0.134	0.048
Hexane Plus (C6+)	<u>0.394</u>	<u>0.162</u>
	100.000	2.060

BTU/CU.FT. - DRY 1097
AT 14.650 DRY 1093
AT 14.650 WET 1074
AT 14.73 DRY 1099
AT 14.73 WET 1080

MOLECULAR WT. 17.9085

SPECIFIC GRAVITY -
CALCULATED 0.618
MEASURED



REFERENCE SHEET FOR UNDESIGNATED WELLS

DATE 6/29/00
OIL/GAS Gas
COUNTY Lea

OPERATOR Santa Fe Snyder Corp

ADDRESS 550 W Texas Suite 1330 Midland Tx 79701

LEASE NAME, WELL NO. Outland State Unit #1-1

FOOTAGE LOCATION 638 FROM THE S LINE AND 739 FROM THE W LINE

SECTION 12 TOWNSHIP 21S RANGE 34E

COMPLETION DATE _____

NAME OF PRODUCING FORMATION Morrow

TOP OF PERFORATIONS ^{Bottom} 12569 - 12722

DEPTH TO CASING SHOE _____

C-123 FILED _____

NAME OF POOL FOR WHICH EXTENSION WAS ASKED _____

ADVERTISED FOR _____ HEARING _____ CASE NO. _____

NAME OF POOL FOR WHICH EXTENSION WAS ADVERTISED _____

PLACED IN _____ BY ORDER NO. R- _____

REMARKS Wilson Morrow <87460>

320 ac W/2

CDEF KLmn
