NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-(

C/SF
C-122

RECEIVED
MAR 24 1982
O. C. D.
ARTESIA, OFFICE

Type Test: [X] Initial [ ] Annual [ ] Special — Test Date: 3-5-82

Company: T X O PRODUCTION CO. ✓	Connection: E.P.N.G CO.		Unit
Pool: UNDESIGNATED		ATOKA	
Completion Date: June 17, 1978	Total Depth: 12,275	Plug Back TD: 11,759	Elevation: 3685 K.B.
Farm or Lease Name: KEOHANE FEDERAL Com.			
Csg. Size: 7 5/8" Liner	Wt.: 29.7	d: 6,875	Set At:
Perforations: From [illegible] To 11,318			Well No.: 1
Tbg. Size: 2 3/8	Wt.: 4.6	d: 1.995	Set At: 11,248
Perforations: From OPENENDED To			Unit: H — Sec.: 33 — Twp.: 18S — Rge.: 31E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: SINGLE		Packer Set At: 11,182	County: Eddy
Producing Thru: Tubing	Reservoir Temp. °F: 178° @ 11,314	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
11,314	11,314	.6782	.583	.970			3"	Flange

FLOW DATA / TUBING DATA / CASING DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	Casing Temp. °F	Duration of Flow
SI							1502		PKR	CHOKE	72 HOURS
1.	3	x	1.00	230	4	68°	1455	55		8/64	1 HR.
2.	3	x	1.00	230	16	70	1345	59		11/64	1 HR.
3.	3	x	1.00	230	37.2	71	1240	60		10/64	1 HR.
4.	3	x	1.00	230	65.61	71	1005	60		11/64	1 HR.
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	4.789	31.19	243.2	.9924	1.214	1.025	184
2.	4.789	62.38	243.2	.9905	1.214	1.024	368
3.	4.789	95.12	243.2	.9896	1.214	1.024	560
4.	4.789	126.32	243.2	.9896	1.214	1.024	744
5.							

NO.	P_t	Temp. °R	T_f	Z
1.	.36	528	1.38	.952
2.	.36	530	1.39	.954
3.	.36	531	1.39	.954
4.	.36	531	1.39	.954
5.				

Gas Liquid Hydrocarbon Ratio: TSTM Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: ____ Deg.
Specific Gravity Separator Gas: ____ XXXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX ____
Critical Pressure: 670 P.S.I.A. ____ P.S.I.A.
Critical Temperature: 382 R ____ R

P_c 1634 P_c^2 2670

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		1593	2538	132
2		1482	2196	474
3		1364	1860	810
4		1194	1426	1244
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.14630$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.70373$

Absolute Open Flow $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1,268$

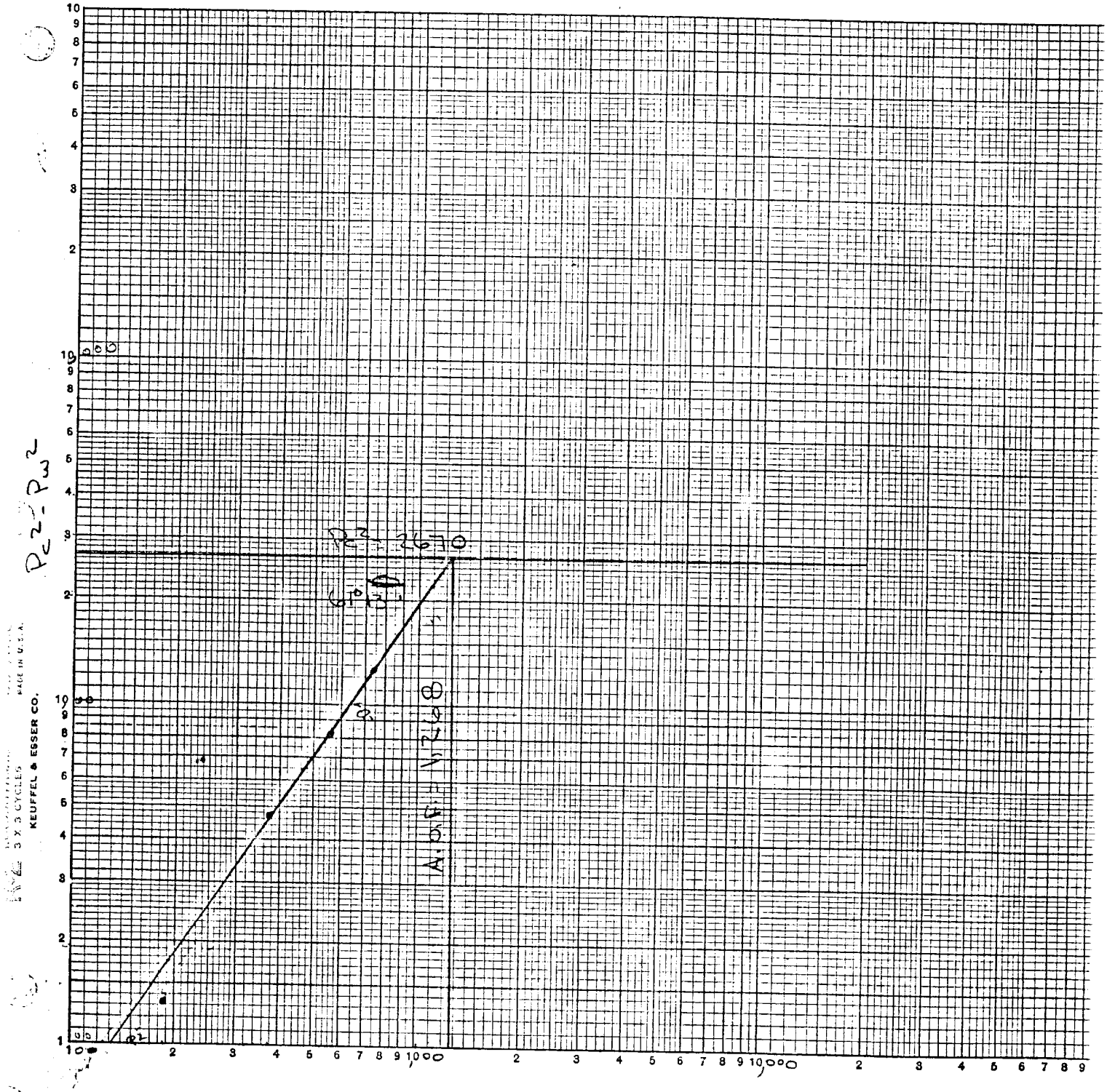
Absolute Open Flow 1,268 Mcfd @ 15.025 — Angle of Slope θ 61° 13' — Slope, n .69764

Remarks: Caculated from known Bottom Hole Pressures

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	B.T.	M.K.	M.K.

T X O PRODUCTION CO. KEOHANE FEDERAL NO. 1 MARCH 5, 1982

$744\left(\frac{2670}{1244}\right)^{.69764} = 1268$



LOG. Q_1 = 2.81158
LOG Q_2 = 2.11394

.69764 = COT. θ

$\theta = 61°13'$

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_w)

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

Form C-122F
Adopted 9-1-65

COMPANY TXO Prod. Co. LEASE Keohane GSU WELL NO. 1 DATE 3-5-82

LOCATION: Unit H Section 33 Township 18S Range 31E

L 11,314 H 11,314 L/H 1.000 G .6782 % CO_2 .583 % N_2 .970 % H_2S -0-

GH _____ P_{CT} 670 (TABLE IX B X) T_{CT} 382. (TABLE IX A X)

S.I.

LINE		1	#1	#3	#4	#2	6	7	8
1	T_w(W.H. °R)	528	528	531	531	530			
2	T_s(B.H. °R)	638	638	638	638	638			
3	$T=(\frac{T_w+T_s}{2})$	583	583	584.5	584.5	584			
4	Z (Est.)	.795	.797	.813	.813	.804			
5	TZ	463.485	464.651	475.198	475.198	469.536			
6	GH/TZ	16.5553	16.5138	16.1472	16.147	16.341			
7	e^s(Table XIV)	1.8604	1.8575	1.8322	1.8322	1.8456			
9	P_f or P_s	2228.2	2171.2	1846.2	1616.2	2013.2			
9	P_f^2 or P_s^2	4964.87	4714.109	3408.45	2612.10	4052.97			
10	$P_c^2 - P_f^2/e^s$ or $P_w^2 = P_s^2/e^s$	2668.62	2537.78	1860.29	1425.65	2195.97			
11	P_c or P_w	1633.59	1593.04	1363.93	1194.00	1481.88			
12	$P=(\frac{P_w+P_s}{2})$ or $(\frac{P_c+P_f}{2})$	1931	1882	1605	1405	1748			
13	$P_r = (P/P_{CT})$	2.881	2.81	2.395	2.097	2.608			
14	$T_r = (T/T_{CT})$	1.53	1.53	1.53	1.53	1.53			
15	Z (Table XI)								

NEW-TEX LAB
P.O.BOX 1161
HOBBS NM 88241-1161
505-393-3561

ANALYSIS NUMBER: 6829
DATE OF RUN: 3/08/82
DATE SECURED: 3/06/82

ANALYSIS CERTIFICATE

SAMPLE IDENT: TXO PRODUCTION CORPORATION - KEOHANE FEDERAL #1

CLIENT: WEST ENGINEERING
ADDRESS: 412 NORTH DAL PASO STREET
CITY, STATE: HOBBS NM 88240

SAMPLING PRESS: 0 PSIG SAMPLING TEMP: 0 DEG F
STATION NUMBER:

********* GAS ANALYSIS *********

	MOLE PERCENT	GAL/ MCF
NITROGEN	0.9697807	
CARBON DIOXIDE	0.5831603	
METHANE	85.1957779	
ETHANE	7.4955554	1.9990600
PROPANE	3.4188106	0.9384640
ISO-BUTANE	0.3345499	0.1091640
NORMAL BUTANE	0.7156412	0.2249980
ISO-PENTANE	0.2252950	0.0822552
NORMAL PENTANE	0.2365006	0.0854713
HEXANES	0.2045787	0.0839152
HEPTANES PLUS	0.6203496	0.2854850
TOTAL	100.0000000	3.8068200

PROPANE GPM: 0.94 BUTANES GPM: 0.33
ETHANE GPM: 2.00 PENTANES PLUS GPM: 0.54

SPECIFIC GRAV (CALC): .6781
MOLE WEIGHT: 19.70

HHV-BTU/CU FT PRESSURE (PSIA)	WET	DRY
14.696	1156	1176
14.650	1152	1172
14.730	1156	1179
14.735	1159	1179

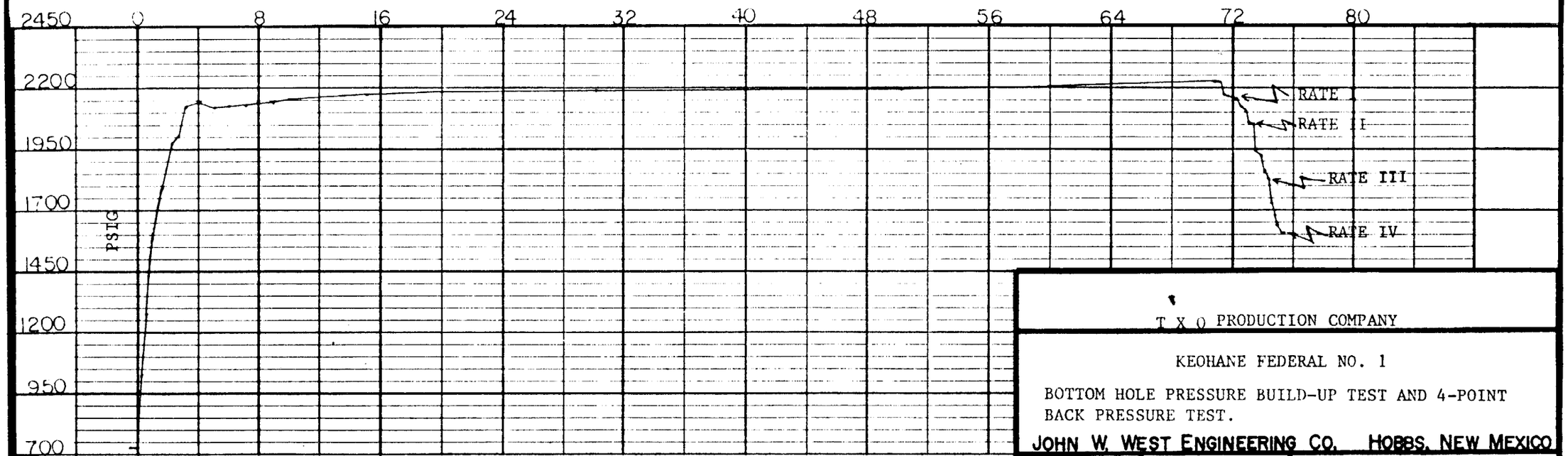
ANALYZED BY: APPROVED BY: Wesley Thompson

TEST DATE: MARCH 3 to MARCH 6, 1982
TEST DEPTH: 11,314 FEET

ELEMENT NO: 23057
RANGE: 0-5100 psi
CLOCK NO: E-1919
RANGE: 0-72 Hours

NOTE: See tabulation of Times and Pressures on attached sheet.

TIME IN HOURS



T X O PRODUCTION COMPANY

KEOHANE FEDERAL NO. 1

BOTTOM HOLE PRESSURE BUILD-UP TEST AND 4-POINT BACK PRESSURE TEST.

JOHN W. WEST ENGINEERING CO. HOBBS, NEW MEXICO

Date: 3-8-82 Drawn by: bsm Scale: as shown

T X O PRODUCTION COMPANY
KEOHANE FEDERAL NO. 1
BOTTOM HOLE PRESSURE BUILD-UP AND
4-POINT BACK PRESSURE TEST.
TABULATION OF TIMES AND PRESSURES

TEST CONDUCTED BY:
JOHN WEST ENGINEERING COMPANY

TEST DATE: MARCH 3 to MARCH 6, 1982
TEST DEPTH: 11,314 FEET
ELEMENT NO: 23057 (0-5100 psi)
OPERATOR: Bobby Thomason

DATE	TIME	CUM HRS. / MIN.	PSIG @ 11,314 FEET
3-3-82	10:15 A.M.		728 gauge reached 11,314'
	10:45 A.M.	00 Hrs. 00 Min.	728 Shut-In, Begin Test.
	11:00 A.M.	00 15	1025
	11:15 A.M.	00 30	1270
	11:30 A.M.	00 45	1424
	11:45 A.M.	01 00	1586
	12:15 P.M.	01 30	1799
	12:45 P.M.	02 00	1984
	1:15 P.M.	02 30	2053
	1:45 P.M.	03 00	2122
	2:45 P.M.	04 00	2147
	3:45 P.M.	05 00	2122
	4:45 P.M.	06 00	2127
	5:45 P.M.	07 00	2134
	6:45 P.M.	08 00	2137
	7:45 P.M.	09 00	2137
3-3-82	8:45 P.M.	10 00	2154
3-4-82	1:45 A.M.	15 00	2167
	6:45 A.M.	20 00	2170
3-4-82	4:45 P.M.	30 00	2180
3-5-82	2:45 A.M.	40 00	2185
	12:45 P.M.	50 00	2195
3-5-82	10:45 P.M.	60 00	2205
3-6-82	9:45 A.M.	71 00	2215
3-6-82	11:00 A.M.	00 Hrs. 00 Min.	2215 Gauge back to 11,314'
	11:15 A.M.	00 15	2215 8/64
	11:30 A.M.	00 30	2179
	11:45 A.M.	00 45	2164
	12:00 Noon	01 00	2162
	12:15 P.M.	01 15	2157 End Rate I
	12:30 P.M.	01 30	2121 11/64
	12:45 P.M.	01 45	2101
	1:00 P.M.	02 00	2008
	1:15 P.M.	02 15	2000 End Rate II
	1:30 P.M.	02 30	1949 10/64
	1:45 P.M.	02 45	1921
	2:00 P.M.	03 00	1856
	2:15 P.M.	03 15	1833 End Rate III
	2:30 P.M.	03 30	1731 11/64
	2:45 P.M.	03 45	1672
	3:00 P.M.	04 00	1646
	3:15 P.M.	04 15	1603 End Rate IV