NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

RECEIVED

NOV 25 1981

O. C. D.
ARTESIA OFFICE

Type Test: [X] Initial [ ] Annual [ ] Special		Test Date: 11-17-81	
Company: BELCO PETROLEUM CO.	Connection: EL PASO NATURAL GAS		
Pool: CINTA ROJA	Formation: MORROW		
Completion Date: 10-24-81	Total Depth: 14,552	Plug Back TD: 14,509	Elevation: 3418 K.B.
Farm or Lease Name: Fed. "CR" 8			

Csg. Size	Wt.	d	Set At	Perforations	Well No.
7 5/8"	29.32#	6.875	12,150	From 14,003 To 14,012	1
5" Liner	18#	4.276	11724-14552		

Tbg. Size	Wt.	d	Set At	Perforations	Unit	Sec.	Twp.	Rge.
2 3/8"	4.7#	1.995	13,945	From OPEN ENDED To	J	8	24S	35E

Type Well – Single – Bradenhead – G.G. or G.O. Multiple	Packer Set At	County
SINGLE	13,945	LEA

Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a	State
TUBING	205 @ 13,745	60°	13.2	New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
13,745	13,745	.5825	.531	.387			4"	Flange

NO.	Prover Line Size	x	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA Press. p.s.i.g.	TUBING DATA Temp. °F	CASING DATA Press. p.s.i.g.	CASING DATA Temp. °F	Duration of Flow
SI							4830		PKR	CHOKE	24 Hrs.
1.	4"	x	1 3/4	400	2.25"	86°	3636	76°		5/64	1 Hr.
2.	4"	x	1 3/4	410	5.80"	77°	3277	77°		7.5/64	45 Min.
3.	4"	x	1 3/4	422	14.5"	75°	2897	77°		10/64	1 Hr.
4.	4"	x	1 3/4	422	25"	73°	2522	77°		11.5/64	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	14.93	30.49	413.2	.9759	1.310	1.028	598
2.	14.93	49.54	423.2	.9840	1.310	1.030	982
3.	14.93	79.44	435.2	.9859	1.310	1.031	1579
4.	14.93	104.31	435.2	.9877	1.310	1.032	2080
5.							

NO.	P_r	Temp. °R	T_r	Z
1.	.616	546	1.57	.947
2.	.632	537	1.54	.942
3.	.650	535	1.54	.941
4.	.650	535	1.53	.939
5.				

Gas Liquid Hydrocarbon Ratio TSTM Mcf/bbl.

A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.

Specific Gravity Separator Gas .5825 XXXXXXXXX

Specific Gravity Flowing Fluid XXXXX

Critical Pressure 670 P.S.I.A. _____ P.S.I.A.

Critical Temperature 348 R _____ R

P_c 4864.6 P_c^2 23,664

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		3777.9	14272.5	9391.5
2		3403	11580.4	12083.6
3		3073	9443.31	14220.7
4		2714.1	7366.3	16297.7
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.45198$

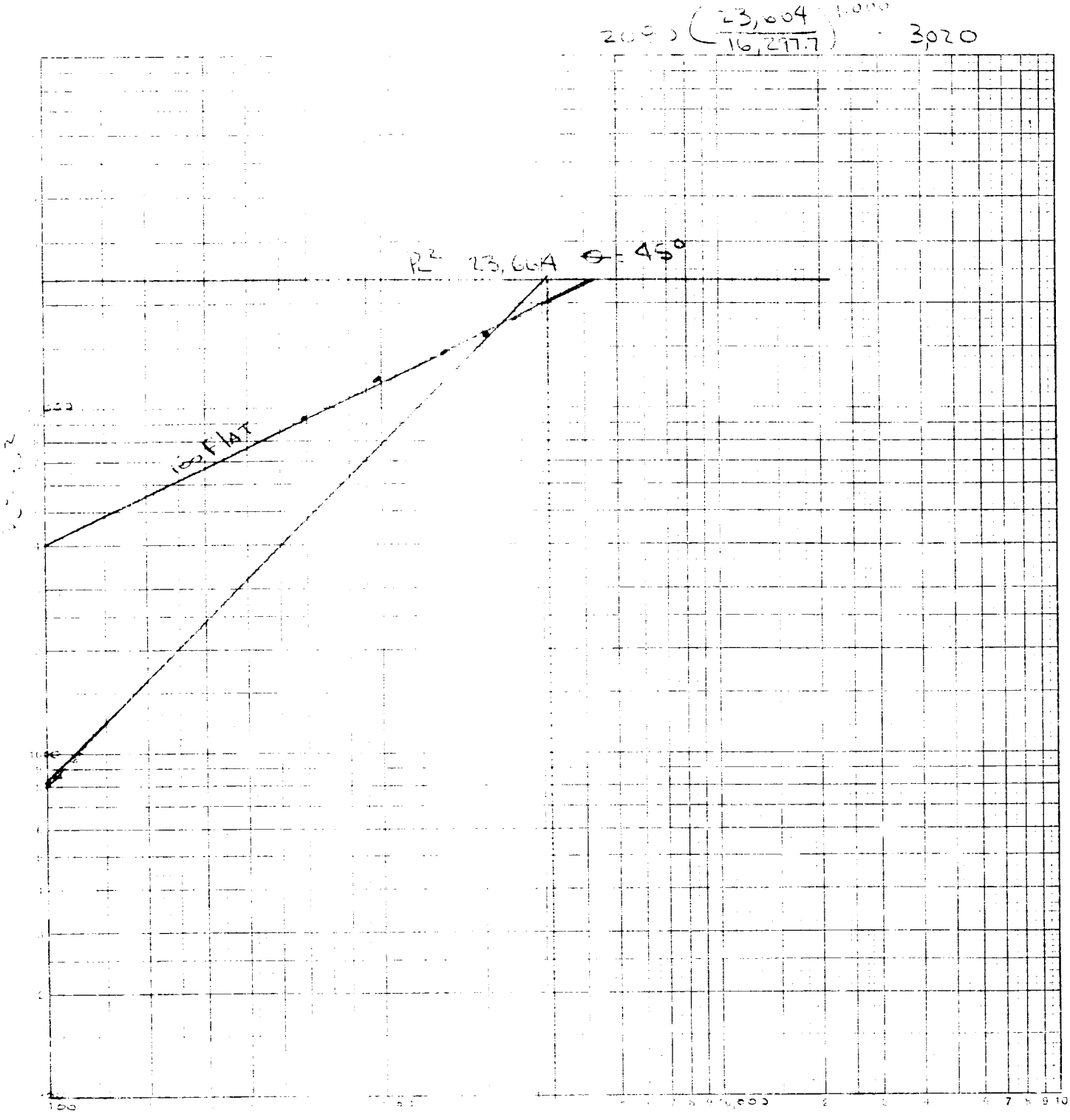
(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.45198$

$\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3020$

Absolute Open Flow 3,020 Mcfd @ 15.025 | Angle of Slope θ 45° | Slope, n 1.000

Remarks: Use 45° Thru High Rate.

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	M.R.	M.K.	M.K.


2000 (23,004 / 16,297.7)^1.000 = 3020
R² 23,604 θ = 45°
100 FLAT
100
1,000
2
3
4
5
6
7
8
9
10

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

COMPANY [illegible] LEASE Fed. "CP" 3 WELL NO. 1 DATE 11-17-3[illegible]

LOCATION: Unit J Section 6 Township 27S Range 3[illegible]E

L 13,745 H 13,745 L/H 1.000 G .5825 % CO_2 .531 % N_2 .337 % H_2S –

d 1.995 F_t ____ Q_m ____ M^2 ____ $(L/H)(F_tQ_m)^2$ ____ P_{cr} 610 (TABLE IX & X) T_{cr} 348 (TABLE IX & X)

S. I.

LINE	ITEM	FORMULA	1	2	3	4	5	6	7	8	9	10
1	[illegible]		13,745	68725	0							
2	[illegible]		9006.5	46032	0							
3	[illegible]		3003923	150,121	0							
4			[illegible]	5555.2	4806.4							
5			[illegible]	[illegible]	7.25							
6			[illegible]	600.5	53[illegible]							
7			[illegible]	1.73	1.54							
8			1.105	1.037	.9404	F.S.T.P.						
9			56141	32[illegible]	5135.6							
10			845024	5125.6	4534.1	4504.6						
11	[illegible]	[illegible]	–	–	–							
12	[illegible]		–	–	–							
13		[illegible]	–	–	–							
14	[illegible]	[illegible]	118.34	112.04	104.4							
15	[illegible]		–	652.27	694.5							
16	[illegible]		–	230.38	216.41							
17	M x N	15x16	–	150,121								
18	Σ(M x N)	Σ17	–									

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

COMPANY [illegible] LEASE Fed CF 2 WELL NO. 1 DATE 11-17-[illegible]

LOCATION: Unit [illegible] Section 2 Township [illegible] Range [illegible] E

[illegible] 13,745 [illegible] 13,745 [illegible] 1.000 G .5825 [illegible] .531 [illegible] .387 [illegible] -07

[illegible] .1995 [illegible] .01823/0 [illegible] 0 [illegible] 0 [illegible] 672 [illegible] 348

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1			13,745	6877.5	0			13,745	6877.5	0		
2	[illegible]		8006.5	4003.6	0			8006.5	4003.6	0		
3			300.2423	150.121	0			300.2423	150.121	0		
4			4916.2	4359.9	3775.8			4477.2	3954.7	3400.4		
5			7.34	6.51	5.64			6.68	5.90	5.09		
6			[illegible]	[illegible]	[illegible]			[illegible]	601	537		
7			1.91	1.74	1.57			1.91	1.73	1.54		
8			1.0000	.951	.864			.9137	.926	.8214		
9			4917.1	4594.6	4368.12			4505.6	4360.7	4109.7	[illegible] 3452	
10			7.2449	7.57.51	[illegible]	[illegible]	3779	6.7753	7.1314	6.531		
11			–	–	–			–	–	–		
12			–	–	–			–	–	–		
13			–	–	–			–	–	–		
14			139.03	132.07	124.99			147.59	140.07	130.67		
15	[illegible]			556.29	594.11				572.47	554.85		
16	[illegible]			210.1	257.01				[illegible]	270.71		
17	M x N	15x16		150.121					150.121			
18	Σ M x N	Σ P										

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

COMPANY [illegible] LEASE [illegible] CR 3 WELL NO. 1 DATE [illegible]

LOCATION: Unit [illegible] Section 3 Township 15 Range 3[illegible] E

13,745 | 13,745 | 1.020 | .5825 | .5825 | .387 | —

.1335 | .01823 | 0 | 0 | 670 | 348

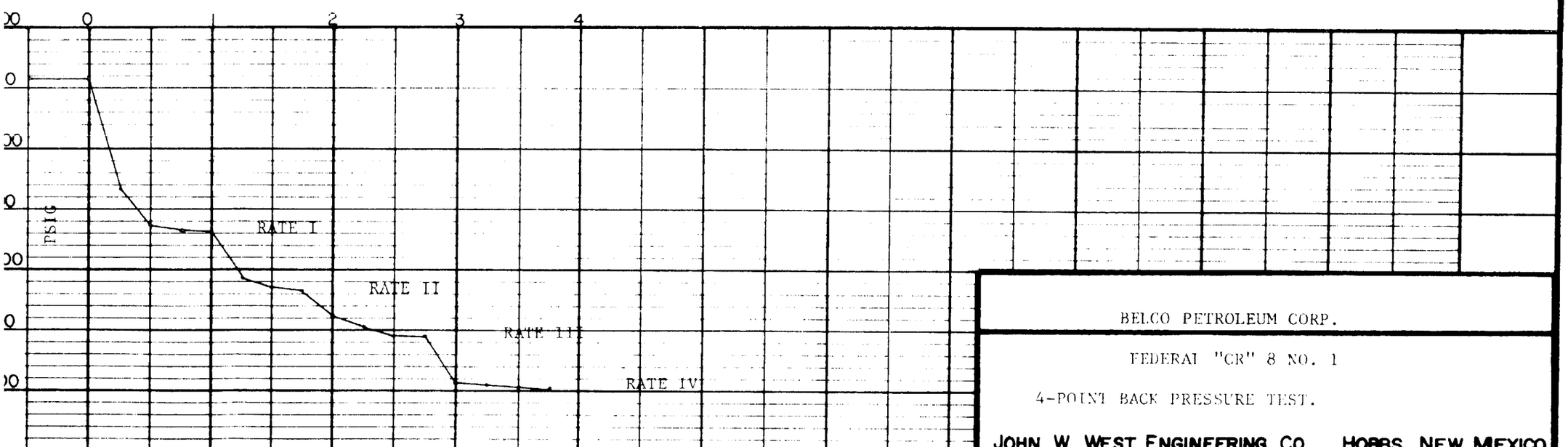
LINE			RATE III 1	2	3	4	5	RATE IV 1	2	3	4	5
1			13,745	6872.5	0			13,745	6872.5	0		
2			9006.5	4003.2	0			9006.5	4003.2	0		
			300,2423	50,121	0			300,2423	[illegible]	0		
			4074.2	3551.1	3571.2			3629.2	3150.[illegible]	2712.4		
			[illegible]	725	458			[illegible]	[illegible]	415		
			[illegible]	[illegible]	532			[illegible]	[illegible]	523		
			[illegible]	1.172	1.524	F.R = 3073.0		[illegible]	1.172	1.53	F.R = 3114.1	
			.971	.897	.8[illegible]			.143	.871	.7846		
			4140.3	3177.2	[illegible]			[illegible]	[illegible]	3425.17		
			[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	6.4449		
			—	—				—	—			
			—	—	—			—	—	—		
			—	—	—			—	—	—		
14			153.5	150.1	140.5			173.95	165.5	155.16		
15				487.12	515.9				493.3	468.5		
16				308.6	[illegible]				339.1	[illegible]		
17	MAN											
18	ΣMAN	ΣP										

EST DATE: NOVEMBER 17, 1981
EST DEPTH: 13,745 FEET

LEMENT NO: 20203
ANGE: 0-10,000
LOCK NO: E-794
ANGE: 0-72 Hour

EST CONDUCTED BY: JOHN WEST ENGINEERING CO.

DATE	TIME	CUM HRS.	/ MIN.	PSIG @ 13,745 FEET
11-17-81	10:00 A.M.			6194 Gauge reached 13,745'
	10:30 A.M.	00 Hrs.	00 Min.	6194 Open Choke, Begin Test 5/64
	10:45 A.M.	00	15	5291
	11:00 A.M.	00	30	4980
	11:15 A.M.	00	45	4913
	11:30 A.M.	01	00	4903 End Rate I
	11:45 A.M.	01	15	4520 7.5/64
	12:00 Noon	01	30	4469
	12:15 P.M.	01	45	4464 End Rate II
	12:30 P.M.	02	00	4204 10/64
	12:45 P.M.	02	15	4117
	1:00 P.M.	02	30	4082
	1:15 P.M.	02	45	4061 End Rate III
	1:30 P.M.	03	00	3682 11.5/64 choke
	1:45 P.M.	03	15	3657
	2:00 P.M.	03	30	3616
	2:15 P.M.	03	45	3611 End Rate IV



BELCO PETROLEUM CORP.

FEDERAL "CR" 8 NO. 1

4-POINT BACK PRESSURE TEST.

JOHN W. WEST ENGINEERING CO. HOBBS, NEW MEXICO

Date: 11-18-81 Drawn by: bsm Scale: as shown

JOHN W. WEST ENGINEERING COMPANY
412 NORTH DAL PASO, HOBBS, NEW MEXICO

TELEPHONES 393-3942
393-3117

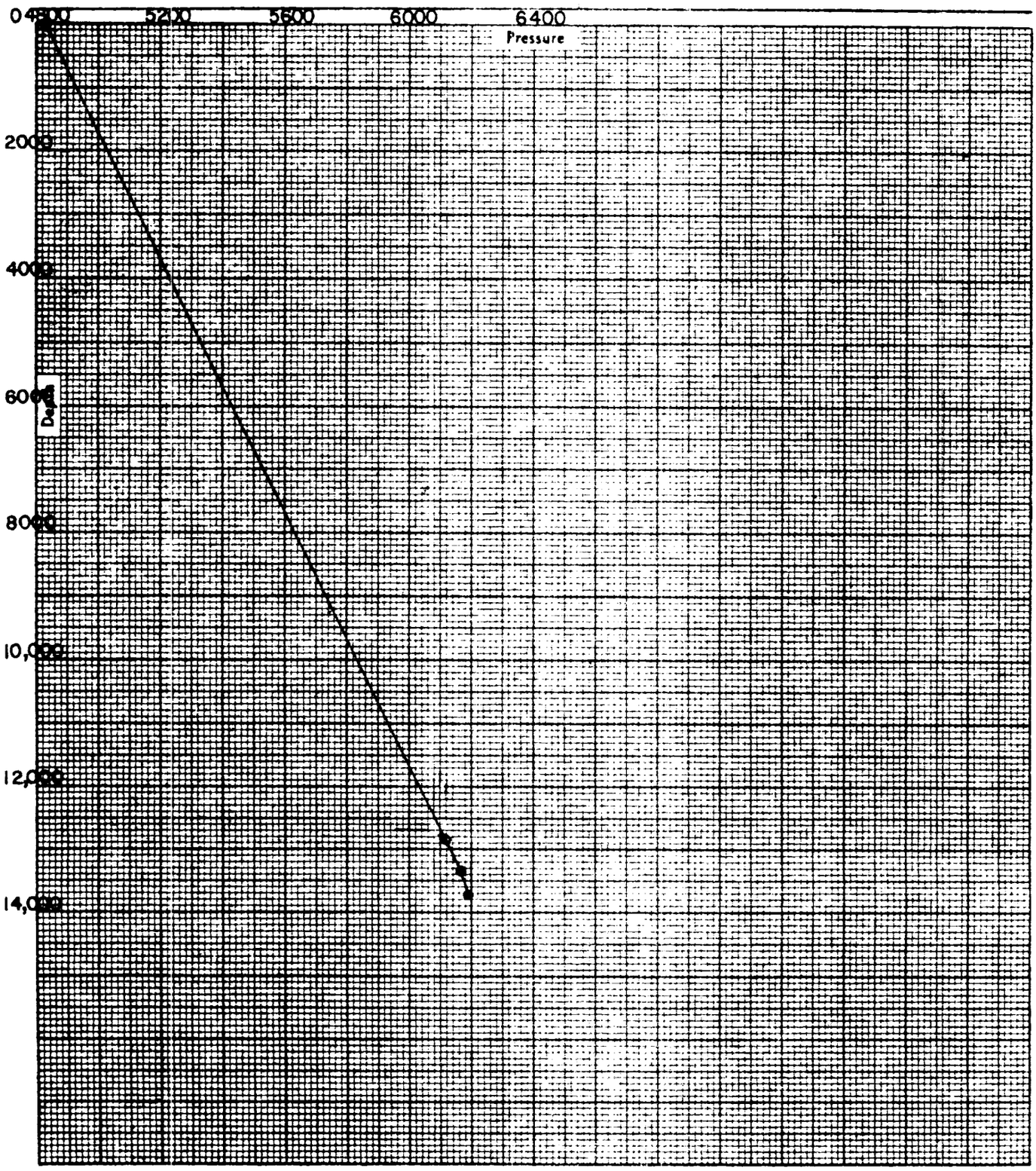
BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR BELCO PETROLEUM CORP.
LEASE FEDERAL "CR" 8
WELL NO. 1
FIELD
DATE 11-17-81 TIME 2:15 P.M.

STATUS
TIME S.I.
CAS. PRES.
TUB. PRES. 4830 psi
ELEV.
DATUM
TEMP
CLOCK NO. E-794
ELEMENT NO. 20203 (0-10,000 psi)

TEST DEPTH 13,745'
LAST TEST DATE
BHP LAST TEST
BHP CHANGE
FLUID TOP
WATER TOP
RUN BY M.F.
GAUGE NO. 19389

DEPTH	PRESSURE	GRADIENT
000	4830	
12845	6119	.100
13345	6164	.090
13745	6194	.075



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

ANALYSIS NUMBER: 6054
DATE OF RUN: 11/18/81
DATE SECURED: 11/17/81

ANALYSIS CERTIFICATE

SAMPLE IDENT: [illegible] - FEDERAL "CR"8 #1

CLIENT: JOHN WEST ENGINEERING
ADDRESS: [illegible] BAL [illegible]
CITY, STATE: HOBBS NM 88240

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

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

	MOLE PERCENT	GAL/ MCF
NITROGEN	0.3866902	
CARBON DIOXIDE	0.5309085	
METHANE	95.5440445	
ETHANE	2.8183317	0.7516490
PROPANE	0.5395041	0.1481022
ISO-BUTANE	0.0572113	0.0186682
NORMAL BUTANE	0.0791919	0.0248979
ISO-PENTANE	0.0161425	0.0058936
NORMAL PENTANE	0.0124298	0.0044921
HEXANES	0.0155146	0.0063641
HEPTANES PLUS	0.0000000	0.0000000
TOTAL	100.0000000	0.9602670

PROPANE GPM: 0.15 BUTANES GPM: 0.04
ETHANE GPM: 0.75 PENTANES PLUS GPM: 0.02

SPECIFIC GRAV (CALC): .5906
MOLE WEIGHT: 18.37

HV-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
	14.696	1017	1035
	14.650	101[illegible]	1032
	14.730	1019	1037
	14.735	1019	1037

ANALYZED BY:

APPROVED BY: Dean Simpson
by [illegible]