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Type Test ☒ Initial 4 POINT ☐ Annual ☐ Special		Test Date 5-18-82		1980 FWL	
Company STEVENS OPERATING CORP. ✓		Connection AIR NEW WELL		1980 FNL	
Well UNDESIGNATED <i>Pecos Strip 1160</i>		Formation ABO		Unit 8F	
Completion Date 5-14-82		Total Depth 4500		Plug Back TD 4,200	
Elevation 3716 KB		ARTESIA, OFFICE		Form or Lease Name SUN FEDERAL	
Log Size 4.50	Wt. 10.5	d 4.052	Set At 4200	Perforations: From 4079.5 To 4111	Well No. 3
Log Size 2.375	Wt. 4.7	d 1.995	Set At 4142	Perforations: From OPEN To ENDED	Unit Sec. Twp. R. 8F 28 7S 26
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE				Packer Set At NONE	
Producing Thru TUBING				State NEW MEXICO	
Reservoir Temp. °F 92 @ 4095		Mean Annual Temp. °F 60°		Baro. Press. - P _a 13.2	
L 4095	H 4095	Cg .765	% CO ₂ 12.836	% N ₂ 6.736	% H ₂ S Prover 2 ¹¹
Meter Run		Flange			

FLOW DATA						TUBING DATA		B.H.P. DATA		Duration of Flow	
NO	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. in. H ₂ O	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		CHOKE
1	2.000	X	1/8	744	.00	83	785	94	929	48/64	90-1/2
2	2.000	X	3/16	542	.00	80	744	80	877	10/64	1 HR.
3	2.000	X	1/4	315	.00	69	642	80	760	10/64	1 HR.
4	2.000	X	1/4	375	.00	66	569	69	680	10/64	1 HR.
5							452	72	552	13/64	1 HR.

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	.2716	.00	757.2	.9786	1.1433	1.0618	244
2	.6237	.00	542.2	.9813	1.1433	1.0460	406
3	1.1150	.00	328.2	.9915	1.1433	1.0292	429
4	1.1150	.00	388.2	.9943	1.1433	1.0353	509
5							

NO	P _h	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	1.07	543	1.47	1.887			.7650		711	370
2	.78	540	1.46	.914						
3	.46	529	1.43	.944						
4	.55	526	1.42	.933						
5										

NO	P _h	P _w	P _h ²	P _w ²	P _h ² - P _w ²
1	942.2	887.7			
1		890.2		792.5	95.0
2		773.2		597.8	290.0
3		693.2		480.5	407.0
4		565.2		319.5	568.0
5					

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.5629$

ADP = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 636.3$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.2502$

Restored 6-25-82

Absolute Open Flow	636.3	Mcfd @ 15.025	Angle of Slope @	63.4	Slope, n	.5000
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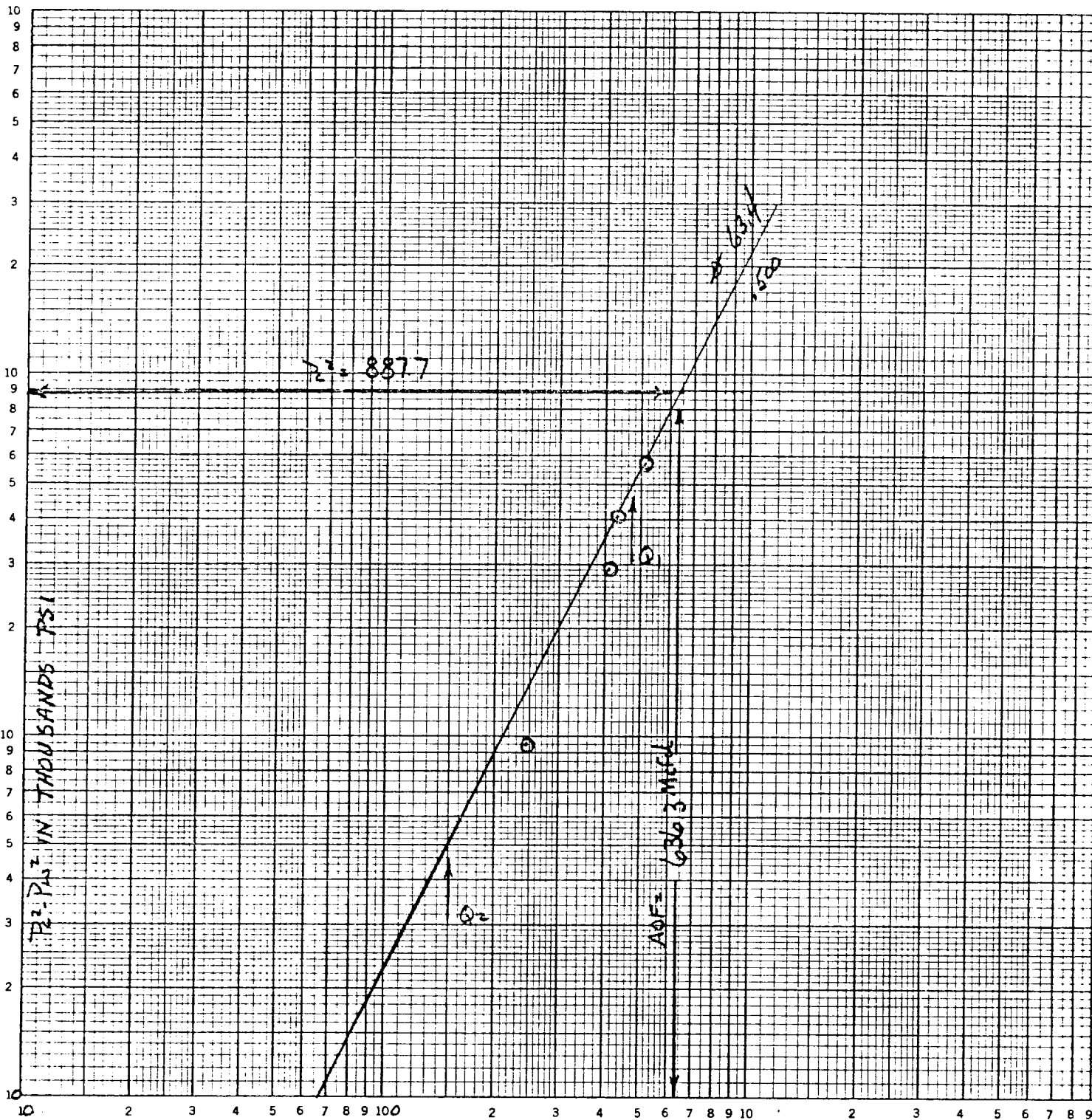
Remarks: BOTTOM HOLE PRESSURE MEASURED WITH AMARDA PRESSURE ELEMENTS.

Approved By Commission:	Conducted By: BENNETT - CATHEY	Calculated By: WOLFORD & JENKINS	Checked By:
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SUN FEDERAL #3
UNITG SEC.28 WP75 RGE 26E
CHAVES COUNTY
5-18-82

46 7400

KOE LOGARITHMIC 3 X 3 CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.



$$\Delta P_1^2 P_c^2 - P_w^2 = 500$$

$$\Delta P_2^2 P_c^2 - P_w^2 = 50$$

$$Q_1 = 474.3$$

$$Q_2 = 150$$

$$Q, \text{Mcfd}$$

$$\log Q_1 = 2.67609$$

$$\log Q_2 = 2.17609$$

$$n = .5000$$

NEW-TEX LAB

PHONE 505/393-3561

P. O. BOX 1161

611 W. SNYDER

HOBBS, NEW MEXICO 88240

ANALYSIS CERTIFICATE

CLIENT: BENNETT & CATHEY INC.
ADDRESS: BOX 787
CITY, STATE: ARTESIA NM 88210

ANALYSIS NUMBER : 7456
DATE OF RUN : 5 19 82
DATE SECURED : 5 15 82

SAMPLE IDENT: STEVENS OPERATING - SUN FEDERAL #3
SAMPLING PRESS: SAMPLING TEMP:

REMARKS: S 28 T75 R26E

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

	MOLE PERCENT	GAL/ MCF
NITROGEN	6.736	
CARBON DIOXIDE	12.836	
METHANE	73.408	
ETHANE	4.088	1.090
PROPANE	1.606	0.441
ISO-BUTANE	0.257	0.084
NORMAL BUTANE	0.476	0.150
ISO-PENTANE	0.151	0.055
NORMAL PENTANE	0.163	0.059
HEXANES	0.124	0.051
HEPTANES PLUS	0.155	0.071
TOTAL	100.000	2.001

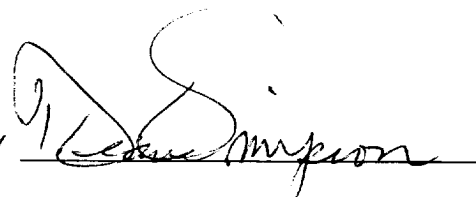
PROPANE GPM:	0.44	BUTANES GPM:	0.23
ETHANE GPM:	1.09	PENTANES PLUS GPM:	0.24

SPECIFIC GRAV (CALC): 0.7649
MOLE WEIGHT: 22.17

HHV-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
14.696		889	905
14.650		887	902
14.730		892	907
14.735		892	908

ANALYZED BY: R H HAMILTON

APPROVED BY



BENNETT - CATHEY
Artesia, New Mexico 88210
SUBSURFACE PRESSURE MEASUREMENTS

COMPANY STEVENS OPERATING WELL NAME SUN FEDERAL WELL NO. 3
DATE OF TEST 5-18-82 FORMATION ABO PAGE 1 OF 1
FOUR POINT BACK PRESSURE TEST

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER	RPG3#22749	RANGE	0-5,150 LBS.
CLOCK NUMBER	B 3443	RANGE	12 HRS.
TIME WELL SHUT IN	1650 HRS.		
TIME CLOCK STARTED	1633 HRS.		
DEAD WEIGHT ELEMENT ON SURFACE	533		LBS.
TIME ELEMENT REACHED BOTTOM	1644 HRS.		
DEAD WEIGHT ELEMENT ON BOTTOM	565		LBS.
ELEMENT SET AT	4,095		FEET.
TEMPERATURE	4,095	FT.	92 °F.
DEAD WEIGHT AT THE END OF		HOURS	MINUTES

[illegible]

BENNETT - CATHEY

Artesia, New Mexico 88210

SUBSURFACE PRESSURE MEASUREMENTS**MIKE VOWELL**

COMPANY STEVENS OPERATING WELL NAME SUN FEDERAL WELL NO. 3
 DATE OF TEST 5-18-82 TO 5-21-82 FORMATION ABO PAGE 1 OF 1

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3# 22749 RANGE 0-5,150 LBS.
 CLOCK NUMBER 19040 RANGE 72 HRS.
 TIME WELL SHUT IN 1650 HRS. 5-18-82
 TIME CLOCK STARTED 1633 HRS.
 DEAD WEIGHT ELEMENT ON SURFACE 533 FLOWING LBS.
 TIME ELEMENT REACHED BOTTOM 1644 HRS.
 DEAD WEIGHT ELEMENT ON BOTTOM 465 FLOWING LBS.
 ELEMENT SET AT 4,095 FEET.
 819 TEMPERATURE 4,095 FT. 92 °F.
 PSIA DEAD WEIGHT AT THE END OF 72 HOURS 17 MINUTES.

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psia	PRESSURE AT MID-POINT OF PERFORATIONS psia
5-18-82	0	1650		577	13.2		590
	1/4	1705		617	13.2		630
	1/2	1720		657	13.2		670
	3/4	1735		673	13.2		686
	1	1750		686	13.2		699
	1 1/4	1805		696	13.2		709
	1 1/2	1820		711	13.2		724
	1 3/4	1835		724	13.2		737
	2	1850		732	13.2		745
	2 1/2	1920		750	13.2		763
	3	1950		765	13.2		778
	3 1/2	2020		777	13.2		790
	4	2050		787	13.2		800
	4 1/2	2120		796	13.2		809
	5	2150		804	13.2		817
	6	2250		815	13.2		828
	7	2350		830	13.2		843
	8	2450		838	13.2		851
5-19-82	9	0150		845	13.2		858
	10	0250		853	13.2		866
	11	0350		858	13.2		871
	12	0450		864	13.2		877
	13	0550		869	13.2		882
	14	0650		872	13.2		885
	15	0750		876	13.2		889
	20	1250		893	13.2		906
	25	1750		907	13.2		920
	30	2250		915	13.2		928
5-20-82	35	0350		918	13.2		931
	40	0850		923	13.2		936
	45	1350		930	13.2		943
	50	1850		933	13.2		946
	55	2350		938	13.2		951
5-21-82	60	0450		941	13.2		954
	65	0950		948	13.2		961
	70	1450		954	13.2		967
	70 3/4	1435		956	13.2		969