

PHILLIPS CASING AND TUBING, INC.

CASING DESIGN FOR: Pogo Producing Company
Federal 23 No. 1

SIZE 13-3/8 - 5-1/2

DEPTH

LOCATION

MUD WEIGHT 10.0

#/gal .519

psi/ft.

DESIGN FACTORS: COLLAPSE 1.125

BURST 1.1

TENSION 1.7

DESCRIPTION			SETTING DEPTH	SECTION LENGTH	TENSION (1)			COLLAPSE (2)			BURST			COST	
					CUMULATIVE WEIGHT	STRENGTH 1000	DESIGN FACTOR	FORCE	STRENGTH	DESIGN FACTOR	FORCE	STRENGTH	DESIGN FACTOR		
13-3/8	54.5	K-55	ST&C	840'	840	45,780	547	HI	436	1130	2.60	436	2730	HI	
8-5/8	32	J-55	ST&C			132,800	402	3.02	519	2530	HI	519	3930	HI	
8-5/8	24	J-55	ST&C	2300'	1300	100,800	263	2.60	1193	1370	1.14	1193	2950	2.47	
8-5/8	32	J-55	ST&C	4300'	2000	69,600	402	HI	2231	2530	1.13	2231	3930	1.76	
8-5/8	28	S-80	ST&C	4500'	200	5,600	414	HI	2335	3390	1.45	2335	2680	1.14	
5-1/2	17	K-55	LT&C	1000'	1000	137,000	272	1.98	--	4910	HI	--	5320	HI	
5-1/2	15.5	K-55	ST&C	6000'	5000	120,000	222	1.85	3114	4040	1.29	3114	4810	1.54	
5-1/2	17	N-80	LT&C	8500'	2500	42,500	348	HI	4411	6280	1.42	4411	7740	1.75	
2-7/8	6.5	N-80	FUE	8500'	8500	55,250	145	2.62	5000	11,160	2.23	5000	10,570	2.11	overpull, 89,710

DESIGN CONDITIONS

(1) BOUYANCY ~~IS~~ IS NOT CONSIDERED.

(2) TENSION EFFECT ON COLLAPSE
RESISTANCE ~~CONSIDERED~~ IS NOT CONSIDERED

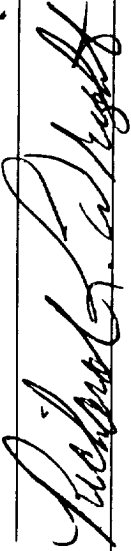
(3) FREIGHT ESTIMATED USING
THEORETICAL WEIGHT AND
APPROXIMATE MILEAGE

TOTAL COST FOB

FREIGHT (3)

NOTE: The above design is furnished
for informational purposes only.

TOTAL COST

Prepared by:  Date 5-2-90