

TYPE TEST: ☒ Initial ☐ Annual ☐ Special		TEST DATE: 11/1/1999	
COMPANY Horsehoe Operating Inc		LEASE Johnson	
COUNTY Hamilton		WELL NO. 1A	
LOCATION E/2 SW	SECTION 12 24s 41	TWP 41	RNG ACRES
FIELD Bradshaw	RESERVOIR Winfield	PIPELINE CONNECTION	
COMPLETION DATE 6/30/1999	PLUG BACK DEPTH 2361	PACKER SET AT	
CASING SIZE 4.500	WT. 10.500	ID 4.052	SET AT 2360
TUBING SIZE 2.375	WT. 4.700	ID 1.995	SET AT 2333
TYPE COMPLETION (Describe) Single Gas		TYPE FLUID PRODUCTION water	
PRODUCING THRU (Annulus/Tubing) casing		RESERVOIR TEMPERATURE F 90	
GAS GRAVITY - G _g .813		% CARBON DIOXIDE .023	
VERTICAL DEPTH (H) 2050		% NITROGEN 41.187	
REMARKS casing also perforated 2320-2323		BAR PRESS - Pa 14.4 psia	
API GRAVITY OF LIQUID		METER RUN SIZE 2.067	

OBSERVED SURFACE DATA

RATE NO.	ORIFICE SIZE in.	(METER) PRESSURE psig	DIFF. (h _w) (h _t)	FLOWING TEMP. t.	WELLHEAD TEMP. t.	CASING WELLHEAD PRESS.		TUBING WELLHEAD PRESS.		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P _w) (P _t) (P _c) psia	psig	(P _w) (P _t) (P _c) psia		
SHUT-IN						114	127			96.00	
1.	.750	60.00	10.00	53		106	119			.50	
2.	.750	60.00	22.00	60		104	117			.50	
3.	.750	60.00	37.00	61		98	111			.50	
4.	.750	61.00	64.00	62		92	105			.50	

FLOW STREAM ATTRIBUTES

RATE NO.	COEFFICIENT (F _b) Mcfd	(METER) PRESSURE psia	EXTENSION $\sqrt{P_m \times E_w}$	GRAVITY FACTOR F _g	FLOWING TEMP FACTOR F _t	DEVIATION FACTOR F _{pv}	RATE OF FLOW Q Mcfd	GOR	G _m
1.	2.780	73.3	27.07	1.1091	1.0068	1.0055	84		.813
2.	2.779	73.3	40.16	1.1091	1.0000	1.0052	124		.813
3.	2.780	73.3	52.08	1.1091	.9990	1.0052	161		.813
4.	2.779	74.3	68.96	1.1091	.9981	1.0052	213		.813

PRESSURE CALCULATION

RATE NO.	P _t psia	P _c psia	P _w psia	(P _c) ² Thousands	(P _w) ² Thousands	PLOTING POINTS		% SHUT-IN 100 $\left[\frac{P_w - P_a}{P_c - P_a} \right]$
						(P _c) ² - (P _w) ² Thousands	Q Mcfd	
1.	119.3	127.3	119.4	16.2	14.2	2.0	84.5	93.0
2.	117.3	127.3	117.4	16.2	13.8	2.4	124.4	91.3
3.	111.3	127.3	111.5	16.2	12.4	3.8	161.2	86.2
4.	105.3	127.3	105.7	16.2	11.2	5.0	213.2	81.1

INDICATED WELLHEAD OPEN FLOW

665

Mcfd @ 14.65 psia

"n" =

The undersigned authority, on behalf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated herein and that said report is true and correct. Executed this the 22 day of NOV, 19 95

Witness (if any)

For Company

For Commission

Checked by

GAS WELL BACK PRESSURE CURVE

WELL TESTER:

TEST DATE: 11/1/1999

Horsehoe Operating Inc
Johnson 1A
12 24s 41
Hamilton ,KS.
Exponent n: 0.9818
AOF: 665.

