

KANSAS CORPORATION COMMISSION
ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

FORM G-2
(Rev. 8/98)

TYPE TEST:

- Open Flow
 Deliverability

TEST DATE: 9/14/12

API No. 15-033-21 327-00-00

Company Thoroughbred Associates		Lease HERD			Well Number 4	
County COMANCHE		Location c NW SE		Section TWP RNG(E/W) SEC 15-T32S-R19W		Acres Attributed 160
Field		Reservoir MISSISSIPI/ALTA		Gas Gathering Connection <i>Thoroughbred & Associates</i>		
Completion Date		Plug Back Total Depth 5790		Packer Set at		
Casing Size 5.500	Weight 15.500	Internal Diameter 4.950	Set at 5900	Perforations 4976	To 5178	
Tubing Size 2.375	Weight 4.700	Internal Diameter 1.995	Set at 4965	Perforations	To	
Type Completion (Describe) <i>Commingled (Gas)</i>		Type Fluid Production		Pump Unit or Traveling Plunger? <i>No - Flowing</i>		
Producing Thru (Annulus/Tubing) TUBING		% Carbon Dioxide .121		% Nitrogen 1.063		Gas Gravity- Gg .695
Vertical Depth (ft) 4976		Pressure Taps FLANGE			Meter Run Size 3	
Pressure Buildup: Shut in		9/11/12		TAKEN		11:15 AM
Well on Line: Started		9/14/12		TAKEN		9:15 AM

RECEIVED
OCT 31 2012
KCC WICHITA

OBSERVED SURFACE DATA

Static/Dynamic Property	Orifice Size in.	Meter Pressure psig	Pressure Diff. In. H ₂ O	Flowing Temp. t.	WellHead Temp. t.	Casing WellHead Press. (P _w) (P _t) (P _c)		Tubing WellHead Press. (P _w) (P _t) (P _c)		Duration (Hours)	Liquid Prod. Barrels
						psig	psia	psig	psia		
Shut-in						145	159			69.0	
Flow	1.000	45.0	1.00	60	60	50	64			24.0	

FLOW STREAM ATTRIBUTES

COEFFICIENT (F _b) Mcfd	(METER) PRESSURE psia	EXTENSION $\sqrt{P_m \times H_w}$	GRAVITY FACTOR Fg	FLOWING TEMP FACTOR Ft	DEVIATION FACTOR Fpv	RATE OF FLOW R Mcfd	GOR	G _m
4.912	59.4	7.71	1.1995	1.0000	1.0059	45		.695

(OPEN FLOW)(DELIVERABILITY) CALCULATIONS

(P_c)² = 25.4 (P_w)² = 4.1 P_d = 31.4 % (P_c - 14.4) + 14.4 =

(P_a)² = 0.207
(P_d)² = 2.50

$(P_c)^2 - (P_a)^2$ or $(P_c)^2 - (P_d)^2$	$(P_c)^2 - (P_w)^2$	$\frac{(P_c)^2 - (P_a)^2}{(P_c)^2 - (P_d)^2}$ or $\frac{(P_c)^2 - (P_a)^2}{(P_c)^2 - (P_w)^2}$	LOG	Backpressure Curve Slope "n" ----- or ----- Assigned Standard Slope	n x LOG	Antilog	Open Flow Deliverability = R x Antilog Mcfd
25.20	21.26	1.185	.0738	.850	.0628	1.155	52
22.91	21.26	1.077	.0324	.850	.0275	1.065	48

OPEN FLOW 52 Mcfd @ 14.65 psia DELIVERABILITY 48 Mcfd @ 14.65 psia

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 29th day of October, 2012

Witness (if any)

For Commission

[Signature]
for Company

Checked by