KANSAS CORPORATION COMMISSION
ONE POINT STABLIZED OPEN FLOW OR DELIVERABILITY TEST

FORM G-2
(Rev.8/98)

TYPE TEST:
☒ Open Flow
☒ Deliverability

TEST DATE: 02-02-01 API No. 15-075-207090000

Company	Lease	Well Number
Horsehoe Operating Inc	Mai	#1

County	Location	Section	TWP	RNG(E/W)	Acres Attributed
Hamilton	NE	8	23S	41W	640

Field	Reservoir	Gas Gathering Connection
Bradshaw	Winfield	Oneok

Completion Date	Plug Back Total Depth	Packer Set at
11-20-99	2607	

Casing Size	Weight	Internal Diameter	Set at	Perforations	To
4.500	10.500	4.052	2607	2506	2517

Tubing Size	Weight	Internal Diameter	Set at	Perforations	To
2.375	4.700	1.995	2591		

Type Completion (Describe)	Type Fluid Production	Pump Unit or Traveling Plunger?
New Well	Gas	Pumping Unit

Producing Thru(Annulus/Tubing)	% Carbon Dioxide	% Nitrogen	Gas Gravity- Gg
Casing	.026	35.907	.803

Vertical Depth (H)	Pressure Taps	Meter Run Size
2511	Flange	3.067

Pressure Buildup: Shut in	1-29-01 @ 12:00	TAKEN	2-1-01 @ 14:00
Well on Line: Started	2-1-01 @ 14:00	TAKEN	2-2-01 @ 14:00

OBSERVED SURFACE DATA

Static/ Dynamic Property	Orifice Size in.	Meter Pressure psig	Pressure Diff. In. H_2O	Flowing Temp. t.	WellHead Temp. t.	Casing WellHead Press. (P_w) (P_t) (P_c) psig	Casing psia	Tubing WellHead Press. (P_w) (P_t) (P_c) psig	Tubing psia	Duration (Hours)	Liquid Prod. Barrels
Shut-in						168	182			98.0	
Flow	1.000	57.0	8.00	90		155	169			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
4.910	71.4	23.90	1.1159	.9723	1.0045	127		.803

(OPEN FLOW)(DELIVERABILITY) CALCULATIONS

$(Pc)^2$ = 33.3 $(Pw)^2$ = 28.7 26.3 % (Pc - 14.4) + 14.4 = $(Pa)^2$ = 0.207 $(Pd)^2$ 2.30

$(P_c)^2 - (P_a)^2$ or $(P_c)^2 - (P_d)^2$	$(P_c)^2 - (P_w)^2$	$\frac{(P_c)^2 - (P_a)^2}{(P_c)^2 - (P_w)^2}$ or $\frac{(P_c)^2 - (P_d)^2}{(P_c)^2 - (P_w)^2}$	LOG [ ]	Backpressure Curve Slope"n" ---- or ---- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability = R x Antilog Mcfd
33.06	4.53	7.294	.8630	.720	.6213	4.182	534
30.97	4.53	6.832	.8345	.720	.6009	3.989	510

OPEN FLOW 534 Mcfd @ 14.65 psia DELIVERABILITY 510 Mcfd @ 14.65 psia

The undersigned authority, on behaf 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 13 day of Feb, 2009

Witness (if any)

For Company

For Commission

Checked by

I declare under penelty or perjury under the laws of the state of kansas that I am authorized to request exempt status under rule K.A.R. 82-3-304 on behalf of the operator Horsehoe Operating Inc and that the foregoing information and statements contained on this application form are true and correct to the best of my knowledge and belief based upon gas production records and records of equipment installation and/or of type completion or upon use of the gas well herein named.

I hereby request a permanent exemption from open flow testing for the Mai gas well on the grounds that said well:

(check one)

- ☐ is a coalbed methane producer
- ☐ is cycled on plunger lift due to water
- ☐ is a source of natural gas for injection into an oil reservoir undergoing ER
- ☐ is on vacum at the present time; KCC approval Docket No. _____
- ☐ is incapable of producing at a daily rate in exess of 150 mcf/D

Date: _____

Signature: _____

Title: _____

Instructions:

All active gas wells must have at least an original G-2 form on file with the conservation division. If a gas well meets the eligibility criteria set out in KCC regulation K.A.R. 82-3-304, the operator may complete the statement provided above in order to obtain a testing exemption.

At some point during the succeeding calendar year, wellhead shut-in pressure shall be measured after a minimum of 24 hours shut-in/buildup time and shall be reported on the front side of this form under "observed surface data." Shut-in pressure shall thereafter be reported yearly in the same manner.

The G-2 form conveying the newest shut-in pressure reading shall be filed with the Wichita office no later than thirty (30) days after the taking of the pressure reading. The form must be signed and dated on the front side as though it was a verified report of test results.

KANSAS CORPORATION COMMISSION
ONE POINT STABLIZED OPEN FLOW OR DELIVERABILITY TEST

FORM G-2
(Rev.8/98)

TYPE TEST:
☒ Open Flow
☒ Deliverability

TEST DATE: 01/08/2000 API No. 15-075-207090000

Company	Lease	Well Number
Horsehoe Operating Inc	Mai	#1

County	Location	Section	TWP	RNG(E/W)	Acres Attributed
Hamilton	NE	8	23S	41W	640

Field	Reservoir	Gas Gathering Connection
Bradshaw	Winfield	KN

Completion Date	Plug Back Total Depth	Packer Set at
11-20-99	2607	

Casing Size	Weight	Internal Diameter	Set at	Perforations	To
4.500	10.500	4.052	2607	2506	2517

Tubing Size	Weight	Internal Diameter	Set at	Porforations	To
2.375	4.700	1.995	2591		

Type Completion (Describe)	Type Fluid Production	Pump Unit or Traveling Plunger?
New Well	Gas	

Producing Thru(Annulus/Tubing)	% Carbon Dioxide	% Nitrogen	Gas Gravity- Gg
Casing	.026	35.907	.803

Vertical Depth (H)	Pressure Taps	Meter Run Size
2511	Flange	3"

Pressure Buildup: Shut in	01/05/2000 8:15am	TAKEN	01/08/2000 @ 3:15p
Well on Line: Started	01/08/2000 3:15pm	TAKEN	01/09/2000 @ 9:45a

OBSERVED SURFACE DATA

Static/ Dynamic Property	Orifice Size in.	Meter Pressure psig	Pressure Diff. In. H_2O	Flowing Temp. t.	WellHead Temp. t.	Casing WellHead Press. (P_w) (P_t) (P_c) psig	Casing psia	Tubing WellHead Press. (P_w) (P_t) (P_c) psig	Tubing psia	Duration (Hours)	Liquid Prod. Barrels
Shut-in						200	213			76.3	
Flow	1.000	48.0	41.00	59		160	173			18.5	

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
4.910	61.3	50.13	1.1159	1.0010	1.0047	276		.803

(OPEN FLOW)(DELIVERABILITY) CALCULATIONS

$(Pc)^2$ = 45.5 $(Pw)^2$ = 30.2 Pd 22.5 % (Pc - 14.4) + 14.4 = $(Pa)^2$ = 0.207 $(Pd)^2$ = 2.30

$(P_c)^2 - (P_a)^2$ or $(P_c)^2 - (P_d)^2$	$(P_c)^2 - (P_w)^2$	$\frac{(P_c)^2 - (P_a)^2 \text{ or } (P_c)^2 - (P_d)^2}{(P_c)^2 - (P_w)^2}$	LOG [ ]	Backpressure Curve Slope"n" ---- or ---- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability = R x Antilog Mcfd
45.32	15.29	2.964	.4719	.720	.3399	2.187	604
43.19	15.29	2.825	.4510	.720	.3249	2.113	583

OPEN FLOW 604 Mcfd @ 14.65 psia DELIVERABILITY 583 Mcfd @ 14.65 psia

The undersigned authority, on behaf of the Company, states that he is duly authorized to make the aboveeport and that he has knowledge of the facts stated herein and that said report is true and correctExecuted this the 11 day of Feb, 2000.

Witness (if any)

For Company

For Commission

Checked by

Original - Wichita
Copy - Dodge City
Copy - Horseshoe Operating Co.