KANSAS CORPORATION COMMISSION
ONE POINT STABLIZED OPEN FLOW OR DELIVERABILITY TEST

FORM G-2
(Rev.8/98)

TYPE TEST:
☒ Open Flow
☒ Deliverability

TEST DATE: 10/24/06 API No.

Company	Lease	Well Number
John O. Farmer	Patterson	1-33

County	Location	Section	TWP	RNG(E/W)	Acres Attributed
Haskell	33 30s 31w				

Field	Reservoir	Gas Gathering Connection
	Morrow	

Completion Date	Plug Back Total Depth	Packer Set at
9/23/99	5525	

Casing Size	Weight	Internal Diameter	Set at	Perforations	To
4.500	10.500	4.052	5569	5405	5411

Tubing Size	Weight	Internal Diameter	Set at	Perforations	To
2.375	4.700	1.901	5400		

Type Completion (Describe)	Type Fluid Production	Pump Unit or Traveling Plunger?
Single	Trace Condensate	no

Producing Thru(Annulus/Tubing)	% Carbon Dioxide	% Nitrogen	Gas Gravity- Gg
tubing	0.320	9.120	0.692

Vertical Depth (H)	Pressure Taps	Meter Run Size
5407	Flange	3.071

Pressure Buildup: Shut in	10-16-05 @ 12:00	TAKEN	10-19-05 @ 15:55
Well on Line: Started	10-19-05 @ 15:55	TAKEN	10-20-05 @ 16:15

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 WellHead Press. psia	Tubing WellHead Press. (P_w) (P_t) (P_c) psig	Tubing WellHead Press. psia	Duration (Hours)	Liquid Prod. Barrels
Shut-in						629	643	629	643	72.0	
Flow	1.250	49.2	6.90	67		531	545	529	543	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
7.771	63.6	20.95	1.2021	0.9933	1.0054	195		0.692

(OPEN FLOW)(DELIVERABILITY) CALCULATIONS

$(Pc)^2$ = 414.0 $(Pw)^2$ = 297.5 Pd = 6.1 % (Pc - 14.4) + 14.4 = $(Pa)^2$ = 0.207 $(Pd)^2$ = 1.52

$(P_c)^2 - (P_a)^2$ or $(P_c)^2 - (P_d)^2$	$(P_c)^2 - (P_w)^2$	$\left[\frac{(P_c)^2 - (P_a)^2 \text{ or } (P_c)^2 - (P_d)^2}{(P_c)^2 - (P_w)^2}\right]$	LOG [ ]	Backpressure Curve Slope"n" ---- or ---- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability = R x Antilog Mcfd
413.76	116.50	3.551	0.5504	0.699	0.3847	2.425	473
412.44	116.50	3.540	0.5490	0.699	0.3838	2.420	472

OPEN FLOW 473 Mcfd @ 14.65 psia DELIVERABILITY 472 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 8 day of Nov, 20 06

Witness (if any)

For Company

For Commission

Checked by

Company: John O. Farmer

Address:

Wellname: Patterson 1-33

Legal: Sec: 33 Twp: 30S Rge: 31W

Formation: Morrow | Field/Pool: | County: | St:

Casing size: 4.5 | Feet of: | Wt: | Meter run size: 3.071 | SI: 629

Tubing Size: 2.375 | Feet of: | Wt: | Orif (in): 1.25 | 95%

TD: | Pluged back depth: | Packer depth: | 90%

Type Test: | Tap Type: | Gravity: | 85% 535

Type Completion: | Producing through: | 80%

Date	Clk Tim	Tbg Pres	Csg Pres	Diff	Temp	Static/Prover	Wat Vol1	Oil Vol	Comment
mm/dd	clock	psi	psi	in of H20	F	PSI	inch	inch	
10/23/06	11:30	629	629	9.38		48.63			on location
"	12:00			9.38	59.53	48.63	226.38	Flow	
10/24/06	12:50	529	531	6.93	67.22	49.22	192.78	Flow	1 pt.
								8	
								125	mileage
								250	1 pt.
								125	mileage
								$500	

Date	Miles	Name	Date	Miles	Name	Date	Miles	Name
10/23	100	CH						
10/24	100	CH						

Form G-2
(Rev 8/98)

KANSAS CORPORATION COMMISSION
ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

(See Instructions on Reverse Side)

Test:
[X] Open Flow
[ ] Deliverability

Test Date: 11-7-99 API No. 15 15-

Company	Lease	Well Number
JOHN O. FARMER, INC.	PATTERSON	1-33

County	Location	Section	TWP	RNG (E/W)	Acres Attributed
HASKELL		33	30S	31W	

Field	Reservoir	Gas Gathering Connection
	MORROW	KN ENERGY

Completion Date	Plug Back Total Depth	Packer Set at
9-23-99	5525	NONE

Casing Size	Weight	Internal Diameter	Set at	Perforations	To
4.5	10.5	4.052	5569	5405	5411

Tubing Size	Weight	Internal Diameter	Set at	Perforations	To
2.375	4.7	1.995	5400		

Type Completion (Describe)	Type Fluid Production	Pump Unit or Traveling Plunger? Yes / No
SINGLE GAS	CONDINSATES	

Producing Thru (Annulus / Tubing)	% Carbon Dioxide	% Nitrogen	Gas Gravity - G_g
TUBING			.692

Vertical Depth(H)	Pressure Taps	(Meter Run) (Prover) Size
5408	FLANGE	3.068"

Pressure Buildup: Shut in 11-3 19 99 at 0800 (AM) (PM) Taken 11-6 19 99 at 0800 (AM) (PM)

Well on Line: Started 11-6 19 99 at 0800 (AM) (PM) Taken 11-7 19 99 at 0800 (AM) (PM)

Duration of Shut-in 72.0 Hours

OBSERVED SURFACE DATA

Static / Dynamic Property	Orifice Size inches	Circle one: Meter or Prover Pressure psig	Pressure Differential in (h) inches H_2O	Flowing Temperature t	Well Head Temperature t	Casing Wellhead Pressure (P_w) or (P_t) or (P_c) psig	Casing Wellhead Pressure psia	Tubing Wellhead Pressure (P_w) or (P_t) or (P_c) psig	Tubing Wellhead Pressure psia	Duration (Hours)	Liquid Produced (Barrels)
Shut-In						1376.8	1391.2	1365.1	1379.5	72.0	
Flow	1.125	72.7	142.6	55.5	74.0	632.8	647.2	603.0	617.4	24.0	0

FLOW STREAM ATTRIBUTES

Plate Coefficient (F_b) (F_p) Mcfd	Circle one: Meter or Prover Pressure psia	Press Extension $\sqrt{P_m \times h_w}$	Gravity Factor F_g	Flowing Temperature Factor F_{tt}	Deviation Factor F_{pv}	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G_m
6.2507	87.10	111.45	1.2021	1.0044	1.0099	349.4	NONE	0.692

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

$(P_c)^2$ = 1,935.4 $(P_w)^2$ = 418.9 P_d = ____ % $(P_c - 14.4) + 14.4$ = 1,391.2 $(P_d)^2$ = 0.207 $(P_d)^2$ = ____

$(P_c)^2 - (P_a)^2$ or $(P_c)^2 - (P_d)^2$	$(P_w)^2 - (P_w)^2$	Choose formula 1 or 2: 1. $P_c^2 - P_a^2$ 2. $P_c^2 - P_d^2$ divided by: $P_c^2 - P_w^2$	LOG of formula 1. or 2. and divide by: $\frac{P_c^2 - P_w^2}{\quad}$	Backpressure Curve Slope = "n" or Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability Equals R x Antilog Mcfd
1,935.23	1,516.57	1.276	0.1059	0.699	0.0740	1.1858	1,007.20

Open Flow 1,007 Mcfd @ 14.65 psia Deliverability 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 therein, and that said report is true and correct. Executed this the 7TH day of NOVEMBER, 1999.

COPY TO KCC WICHITA
Witness (if any)

PRECISION WIRELINE & TESTING
For Company

KANSAS CORPORATION COMMISSION
ONE POINT ABLIZED OPEN FLOW OR DELIVE BILITY TEST

FORM G-2
(Rev.8/98)

TYPE TEST:
☒ Open Flow
☒ Deliverability

TEST DATE: 11-6-00 API No.

Company	Lease	Well Number
John O. Farmer	Patterson	1-33

County	Location	Section	TWP	RNG(E/W)	Acres Attributed
Haskell	33 30s 31w				

Field	Reservoir	Gas Gathering Connection
	Morrow	2"

Completion Date	Plug Back Total Depth	Packer Set at
9/23/99	5525	

Casing Size	Weight	Internal Diameter	Set at	Perforations	To
4.500	10.500	4.052	5569	5405	5411

Tubing Size	Weight	Internal Diameter	Set at	Perforations	To
2.375	4.700	1.901	5400		

Type Completion (Describe)	Type Fluid Production	Pump Unit or Traveling Plunger?
Single	Trace Condensate	

Producing Thru(Annulus/Tubing)	% Carbon Dioxide	% Nitrogen	Gas Gravity- Gg
Tubing	.320	9.120	.692

Vertical Depth (H)	Pressure Taps	Meter Run Size
5407		2"

Pressure Buildup: Shut in	11/3/00 @ 8:00am	TAKEN	11/6/00 @ 9:45 am
Well on Line: Started	11/6/00 @ 9:45am	TAKEN	11/7/00 @ 10:30 am

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 WellHead Press. psia	Tubing WellHead Press. (P_w) (P_t) (P_c) psig	Tubing WellHead Press. psia	Duration (Hours)	Liquid Prod. Barrels
Shut-in						1105	1119	1100	1114	73.8	
Flow		68.0	31.00	68		410	424	400	414	24.8	

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
16.010	82.4	50.54	1.2021	.9924	1.0070	972		.692

(OPEN FLOW)(DELIVERABILITY) CALCULATIONS

$(Pc)^2$ = 1253.1 $(Pw)^2$ = 180.1 7.1 % (Pc - 14.4) + 14.4 = $(Pa)^2$ = 0.207 $(Pd)^2$ 6.40

$(P_c)^2 - (P_a)^2$ 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 $\frac{(P_c)^2 - (P_d)^2}{(P_a)^2 - (P_w)^2}$	LOG [ ]	Backpressure Curve Slope "n" ---- or ---- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability = R x Antilog Mcfd
1252.85	1072.94	1.168	.0673	.699	.0471	1.114	1083
1246.66	1072.94	1.162	.0652	.699	.0456	1.111	1079

OPEN FLOW 1083 Mcfd @ 14.65 psia DELIVERABILITY 1079 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 8 day of Nov, 2000.

Witness (if any)

For Company

KANSAS CORPORATION COMMISSION
ONE POINT STABLIZED OPEN FLOW OR DELIVERABILITY TEST

FORM G-2
(Rev.8/98)

TYPE TEST:
☒ Open Flow
☒ Deliverability

TEST DATE: 10-23-01

API No.

Company	Lease	Well Number
John O. Farmer	Patterson	1-33

County	Location	Section	TWP	RNG(E/W)	Acres Attributed
Haskell	33 30s 31w				

Field	Reservoir	Gas Gathering Connection
	Morrow	2"

Completion Date	Plug Back Total Depth	Packer Set at
9/23/99	5525	

Casing Size	Weight	Internal Diameter	Set at	Perforations	To
4.500	10.500	4.052	5569	5405	5411

Tubing Size	Weight	Internal Diameter	Set at	Perforations	To
2.375	4.700	1.901	5400		

Type Completion (Describe)	Type Fluid Production	Pump Unit or Traveling Plunger?
Single	Trace Condensate	no

Producing Thru(Annulus/Tubing)	% Carbon Dioxide	% Nitrogen	Gas Gravity- Gg
tubing	.320	9.120	.692

Vertical Depth (H)	Pressure Taps	Meter Run Size
5407	flange	3.068

Pressure Buildup: Shut in	10/19/01 @ 0900	TAKEN	10/22/01 @ 0930
Well on Line: Started	10/22/01 @ 0930	TAKEN	10/23/01 @ 0815

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 WellHead Press. psia	Tubing WellHead Press. (P_w) (P_t) (P_c) psig	Tubing WellHead Press. psia	Duration (Hours)	Liquid Prod. Barrels
Shut-in						880	894	875	889		
Flow	1.750	52.0	10.00	63		710	724	672	686		

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
16.010	66.4	25.77	1.2021	.9971	1.0058	497		.692

(OPEN FLOW)(DELIVERABILITY) CALCULATIONS

$(Pc)^2$ = 800.0 $(Pw)^2$ = 524.8 Pd = 8.9 % (Pc - 14.4) + 14.4 = $(Pa)^2$ = 0.207 $(Pd)^2$ = 6.40

$(P_c)^2 - (P_a)^2$ 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
799.74	275.20	2.906	.4633	.699	.3239	2.108	1048
793.55	275.20	2.884	.4599	.699	.3215	2.096	1042

OPEN FLOW 1048 Mcfd @ 14.65 psia DELIVERABILITY 1042 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 24 day of Oct, 20 01

Witness (if any)

For Company

For Commission

Checked by

Form G-2
Rev.8/98

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 John O. Farmer 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 Patterson 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.

WELL TEST DATA SHEET

WELL NAME: Patterson 1-33
LOCATION: Sec 33 - T30S - R31W
COUNTY/ST: Haskell Co. Ks

FORMATION: Morrow
FIELD:
TEST DATE: 9-29-99
SHUT-IN PRESSURE: 1465 (72 HR)

	TIME (HR)	ORFICE* (INCHES)	COEF.	STATIC Psig	Calc. FLOW RATE	TEMP.	CASING** PRESS.	TUBING PRESS.	LIQUID PROD.
	12:00 noon	0.50	101.8	Shut In			1465	1483	—
	12:15	0.50	"	44		30°	1438	1410	—
1st flow	12:30	0.50	"	43		30°	1425	1401	—
	12:45	0.50	"	45		30°	1417	1389	—
	1:00	0.50	"	45		30°	1408	1370	—
	1:15	0.50	"	45	527	30°	1404	1370	—
	1:15	0.50	"	121		28°	1404	1370	—
2nd flow	1:30	0.50	"	120		27°	1333	1260	—
	1:45	0.50	"	119		28°	1314	1245	—
	2:00	0.50	"	121		30°	1291	1215	—
	2:15	0.50	"	120		30°	—		—
	2:30	0.50	"	120	739	32°	1263	1199	—
	2:30	0.75	224.9	63		30	1263		
3rd flow	3:00	0.75	"	63		24°	1207		
	3:30	0.75	"	60		25°	1171		
	3:45	0.75	"	60	903	28°	1165		
	3:45	0.75	"	80		30°	1165		
4th flow	4:30	0.75	"	80		30°	1072	1015	± 1/2 bbl
	4:45	0.75	"	80		35°	1042	1006	± 1/4 bbl
	5:00	0.75	"	80	1146	35°	1017	995	Trace

* 2" Critical Flow Prover
** measured by calibrated dead wt tester.

FieldNotes

Company: John O Farmer	Address:				95%
Wellname: Patterson 1-33					90%
Location: 33-30S-31W	County: Haskell	St: Kansas			85%
Formation: Morrow	Field/Pool:				80%
TD:	Casing size: 4.5	Tubing size: 2.375	Plug back depth: 5525'		
	Feet of: 5569'	Feet of: 5400'	Packer depth: None		
Meter run size: 3.068"	Orif (in) 1.75	Type meter connection:			
Gravity of Liquid:	Orif (in)	Producing through: Tubing			
Type of completion: Single Gas		Mileage: 52			

Date	Clk Tim	Tbg Pres	Csg Pres	Diff	Temp	Static/Prover	Wat Vol1	Oil Vol	Comment
yy/mm/dd	clock	psi	psi	in of H2O	F	Line PSI	inch	bbl	
10-22-01	9:30	954	957				3' 10"		
11	10:45	875	880	17	61	54			
10-23-01	8:15	672	710	10	63	52	3' 10"		

Shut in 10-18-01