

KANSAS CORPORATION COMMISSION

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

Type Test:

- Open Flow
 Deliverability

Test Date: 5/10 to 5/11/12

API No. 15
185-23692-00-00

Company Northern Lights Oil Co.		Lease Munz		Well Number 2	
County Stafford	Location N/2NWSE	Section 02	TWP 24S	RNG (E/W) 15W	Acres Attributed
Field Macksville		Reservoir Viola		Gas Gathering Connection Lumen	
Completion Date 8/01/11		Plug Back Total Depth		Packer Set at none	
Casing Size 4.5	Weight	Internal Diameter	Set at 4179	Perforations 4086	To 4132
Tubing Size 2.375	Weight	Internal Diameter	Set at 4160	Perforations	To
Type Completion (Describe) single		Type Fluid Production Oil/SW		Pump Unit or Traveling Plunger? Yes / No yes-pump unit	
Producing Thru (Annulus / Tubing) annulus		% Carbon Dioxide .4576		% Nitrogen 3.9977	
Vertical Depth(H)		Pressure Taps flange		(Meter Run) (Prover) Size 2"	
Pressure Buildup: Shut in 5/07		20 12 at 9:00 am (AM) (PM)		Taken 5/10 20 12 at 9:00 am (AM) (PM)	
Well on Line: Started 5/10		20 12 at 9:15 am (AM) (PM)		Taken 5/11 20 12 at 9:15 am (AM) (PM)	

OBSERVED SURFACE DATA

Duration of Shut-in 72 Hours

Static / Dynamic Property	Orifice Size (inches)	Circle one: Meter Prover Pressure psig (Pm)	Pressure Differential in Inches H ₂ O	Flowing Temperature t	Well Head Temperature t	Casing Wellhead Pressure (P _w) or (P _i) or (P _c)		Tubing Wellhead Pressure (P _w) or (P _i) or (P _c)		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In						163	177.4			72	
Flow	.500	38	23	65		128	142.4			24	

FLOW STREAM ATTRIBUTES

Plate Coefficient (F _b) (F _p) Mcfd	Circle one: Meter or Prover Pressure psia	Press Extension $\sqrt{P_m \times h}$	Gravity Factor F _v	Flowing Temperature Factor F _{tt}	Deviation Factor F _{pv}	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G _m
1.219	52.4	34.71	1.205	.9952	-----	51		.689

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_e)² = 31.470 ; (P_w)² = 20.277 ; P_a = _____ % (P_c - 14.4) + 14.4 = _____ ; (P_a)² = 0.207 ; (P_o)² = _____

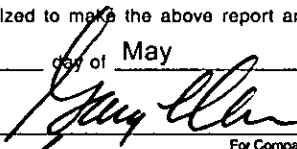
(P _e) ² - (P _a) ² or (P _e) ² - (P _o) ²	(P _e) ² - (P _w) ²	Choose formula 1 or 2: 1. P _e ² - P _a ² 2. P _e ² - P _o ² divided by: P _e ² - P _w ²	LOG of formula 1, or 2, and divide by: $\frac{P_e^2 - P_a^2}{P_e^2 - P_w^2}$	Backpressure Curve Slope = "n" ----- or ----- Assigned Standard Slope	n x LOG []	Antilog	Open Flow Deliverability Equals R x Antilog (Mcfd)
31.263	11.193	2.793	.4460	.752	.3354	2.16	110

Open Flow 110 Mcfd @ 14.65 psia X .50 = Deliverability 55 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 21st day of May, 20 12.

Witness (if any)

For Commission


For Company
Leah, Inc.
Checked by

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MAY 23 2012

KCC WICHITA

STATE OF KANSAS - CORPORATION COMMISSION
MULTIPOINT BACK PRESSURE TEST

FORM CG-1 Rev.

TYPE TEST: Initial Annual Special TEST DATE: 5/10/12

COMPANY: Northern Lights Oil Co LEASE: Munz WELL NO: 2

COUNTY: Stafford LOCATION: N/2NWSE SECTION: 02 TWP: 24S RNG (E/W): 15W ACRES: 15W

API WELL NUMBER: 15-185-23692-00-00 RESERVOIR: Viola PIPELINE CONNECTION: Lumen

COMPLETION DATE: 8/01/11 PLUG BACK TOTAL DEPTH: none PACKER SET AT: none

CASING SIZE: 4.5 WT. ID. SET AT: 4179 PERF. TO: 4086

TUBING SIZE: 2.375 WT. ID. SET AT: 4160 PERF. TO: 4132

TYPE COMPLETION (Describe): single TYPE FLUID PRODUCTION: Oil/SW

PRODUCING THRU: casing RESERVOIR TEMPERATURE °F: BAR PRESS -P: 14.4 Psia

GAS GRAVITY -G_g: .689 % CARBON DIOXIDE: 4576 % NITROGEN: 3.9977 API GRAVITY OF LIQUID: 14.4 Psia

VERTICAL DEPTH (H): TYPE METER CONNECTION: flange (METER RUN) (PROVER) SIZE: 2"

REMARKS

Tested into Lumen pipeline (100" chart recorder)

RATE NO.	ORIFICE SIZE in.	(METER) (PROVER) PRESSURE Psig	DIFF. (h _w) (h _v)	FLOWING TEMP t	WELL-HEAD TEMP. t	CSG WELLHEAD PRESS. Psig		TBG WELLHEAD PRESS. Psig		FLOW DURATION (HOURS)	LIQUID PROD. Bbls.
						(P ₁)(P ₂) Psia	(P ₁)(P ₂) Psia				
SHUT IN						163	177.4			72	
1	.500	33	16	73		155	169.4			.75	
2	"	35	40	73		147	161.4			.75	
3	"	36	76	72		138	152.4			.75	
4	"	38	98	72		130	144.4			.75	
5											

RATE OF FLOW CALCULATIONS

RATE NO.	COEFFICIENT (F ₁)(F ₂) Mcfd	(METER) (PROVER) PRESSURE Psia	PRESS EXTENSION $\sqrt{P_{12} \cdot h_w}$	GRAVITY FACTOR F _g	FLOWING TEMP FACTOR F _t	DEVIATION FACTOR F _w	RATE OF FLOW Q Mcfd	GOR (n ³ /Bbl)	G _g
1	1.219	47.4	27.53	1.205	.9877	---	40		
2	"	49.4	44.45	"	.9877	---	64		
3	"	50.4	61.89	"	.9887	---	90		
4	"	52.4	71.66	"	.9887	---	104		
5									

PRESSURE CALCULATIONS

RATE NO.	P ₁ Psia	P _c Psia	P _w Psia	(P ₁) ² THOUSANDS	(P _c) ² THOUSANDS	PLOTTING POINTS		% SHUT-IN 100 (P _w - P ₁) / (P _c - P ₁)
						(P ₁) ² - (P _w) ² THOUSANDS	Q Mcfd	
1		177.4	169.4	31.5	28.7	2.8	40	95.4
2		"	161.4	"	26.0	5.5	64	90.9
3		"	152.4	"	23.2	8.3	90	85.9
4		"	144.4	"	20.8	10.7	104	81.3
5								

INDICATED WELLHEAD OPEN FLOW 240

Mcf @ 14.65 Psia

"n" = .752

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 21st day of May, 2012

Witness (if any)

For Commission

[Signature]
For Company

COLM, INC.

Checked By

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(Rev. 10/96) MAY 23 2012

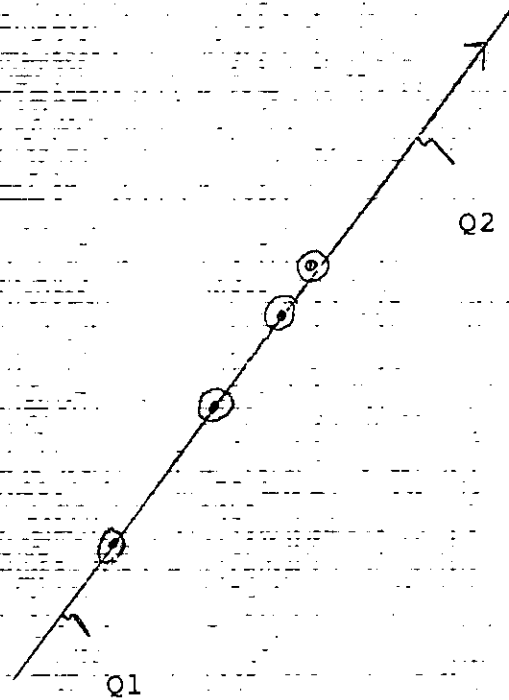
KCC WICHITA

Northern Lights Oil Co - Munz #2
N/2 NW SE 02-24S-15W
Stafford County
Tested 5/10/12

100

Pc2
1000

10



10

10

Q2 - 175 - Log: 2.243
Q1 - 31 - Log: 1.491

"n" = .752

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MEASUREMENT SOLUTIONS INC.

6705 East 81st Street Suite 155 Tulsa, OK 74133
 Telephone 918-493-2700 Fax 918-493-2704

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 3/9/2012

GAS ANALYSIS REPORT

METER NUMBER :	2634	SAMPLE TYPE :	SPOT
METER NAME :	MUNZ # 2	SAMPLE DATE :	02/27/2012
METER ID :	PRATT	SAMPLE PRES / TEMP :	34 / 40
PRODUCER :	LUMEN ENERGY	SAMPLED BY :	GM
COMPANY :	LUMEN ENERGY	EFFECTIVE DATE :	03/01/2012

<u>COMPONENT</u>	<u>PERCENT</u>	<u>BTU VALUES @ 14.65</u>		<u>BTU VALUES @ 14.73</u>	
Helium He	0.4777	REAL DRY	1136.79	REAL DRY	1143.00
Oxygen O2	0.0000	REAL WET	1116.89	REAL WET	1122.99
Hydrogen Sulfide H2S	0.0060				
Carbon Dioxide CO2	0.4576				
Nitrogen N2	3.9977				
Methane C1	83.5155	<u>GPM VALUES @ 14.65</u>		<u>GPM VALUES @ 14.73</u>	
Ethane C2	5.4914	C2	1.4598	C2	1.4678
Propane C3	2.9080	C3	0.7963	C3	0.8007
I-Butane iC4	0.5079	iC4	0.1652	iC4	0.1661
N-Butane nC4	1.0876	nC4	0.3410	nC4	0.3429
I-Pentane iC5	0.3153	iC5	0.1148	iC5	0.1154
N-Pentane nC5	0.4223	nC5	0.1521	nC5	0.1530
Hexane Plus C6+	0.8130	C6+	0.3528	C6+	0.3547
TOTALS	100.0000		3.3820		3.4006

SPECIFIC GRAVITY

REAL DRY 0.6887
 REAL WET 0.6876

COMPRESSIBILITY FACTOR

Z FACTOR DRY 0.9972
 Z FACTOR WET 0.9972

GALLONS PER THOUSAND

GPM TOTALS @ 14.65

C2 + GPM 3.3820
 C3 + PGM 1.9222
 C4 + GPM 1.1259
 C5 + GPM 0.6197

GPM TOTALS @ 14.73

C2 + GPM 3.4006
 C3 + PGM 1.9328
 C4 + GPM 1.1321
 C5 + GPM 0.6231

COMMENTS :

0.9971
 0.9967

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FIELD DATA SHEET

Pumper: **STEVE KJELLBERG**
 Phone#: **620-408-5635**

Type Test: Initial Annual Special Test Date: **5/10/12**

Company: **NORTHERN LIGHTS OIL CO.** Connection: **LUMEN**

Field: **VIOLA** Reservoir: **VIOLA** Location: **2310 PSL 1980 TEL**

Completion Date: _____ Total Depth: _____ Plug Back TD: _____ Elevation: _____ Form or Lease Name: **MUNZ**

Csg. Size: **4.5** Wt. _____ d _____ Set At: **4175** Perforations: From _____ To _____ Well No.: **2**

Tbg. Size _____ Wt. _____ d _____ Set At _____ Perforations: From _____ To _____ Sec. **02** Twp - Blk **245** Rge - Swr **15W**

Type Completion (Describe): **SINGLE** Packer Set At: **NONE** County or Parish: **STAFFORD**

Producing Thru: **CASING** Reservoir Temp. F: _____ Mean Annual Temp. F: **60** Dava. Press. - P: **14.4** State: _____

G_v **.689** % CO₂ **.4576** % N₂ **3.9977** % H₂S _____ Prover Motor Run Taps **2" FL6**

DATE	ELAP. TIME	WELLHEAD WORKING PRESSURE			METER OR PROVER				REMARKS
		Tbg. Psig	Csg. Psig	ΔP	Pressure Psig	Diff.	Temp. F	Ort. Hct	
9:00	72		143						
9:15								1500	COMMENCE TEST
9:30			141		-	-	-		FILLING 1/2 mile of LEAD LINE
9:45			158		32	10	76		NO CHANGE - CONTROLLING FLOW
10:00			155		33	16	73		WITH PINCHED BALL VALVE ON HEAT GAS SEP. INLET
10:15			153		34	38	73		
10:30			150		35	40	73		
10:45			147		35	40	73		2.5090 159
11:00			142		35	77	73		5.0090 155
11:15			140		36	75	72		7.5090 151
11:30			138		36	76	72		10.0090 147
11:45			135						12.5090 143
12:00			135		37	96	72		15.0090 138
12:05			132		37	97	72		17.5090 134
12:15			130		38	98	72		20.0090 130
									25.0090 122
12:30			144		34	30	78	>	SET FLOW RATE FOR IPT TEST
9:30			128		38	23	65	>	5/10/12
	0.0								
	0.5								Begin 30 minute wellhead buildup
	1.0								
	1.5								
	2.0								
	3.0								
	4.0								
	5.0								
	6.0								
	7.0								
	8.0								
	9.0								
	10.0								
	15.0								
	20.0								
	25.0								
	30.0								

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