

INITIAL TEST INFORMATION

NNG TESTER Don Gray DATE OF TEST 9-26-73
 TYPE TEST CONDUCTED Four-point & One-point CONDUCTED BY Gray
 OPERATOR Glen Rupe WELL NAME Andrews NO. 1
 LOCATION: Sec. 4-17S-8W County Ellsworth State Kansas
 FIELD PLOTTED WHOFP 1-pt: 36 MCF/D. POT. @ 80% S.I. 1-pt: 17
4-pt: 190 MCF/D. 4-pt: 82 MCF/D.
 NNG LINE PRESS. 590 PSIG. APPRX. DISTANCE 5 miles INITIAL SIP 300.5
 LINE PRESS. & APPROX. DISTANCE OF OTHER COMPANIES: ?

TYPE OF CROSSINGS: County road
 TYPE OF TERRAIN: Hilly range and farmland
 STABILIZATION CHARACTERISTICS: Poor

LIQUIDS PRODUCED: - Bbls Oil; - Bbls Water; - Hrs. API GR. -
 BOTTOM HOLE PRESS. TEST CONDUCTED BY: None

TYPE OF COMPLETION: SINGLE-GAS, () DUAL GAS-GAS, () DUAL GAS-OIL.
 CASING SIZE: 5½ ", O.D. - #/FT., SET @ 1590 ', TD OR PBTD - FT.
 TUBING SIZE: 2-3/8 ", O.D. 4.7 #/FT., SET @ 1340 '; PACKER SET @ None '

FORMATION - SYSTEM Kanopolis FIELD -
 PERFORATIONS: FROM - FT. TO - FT., FROM - FT. TO - FT.
 FROM - FT. TO - FT., FROM - FT. TO - FT.

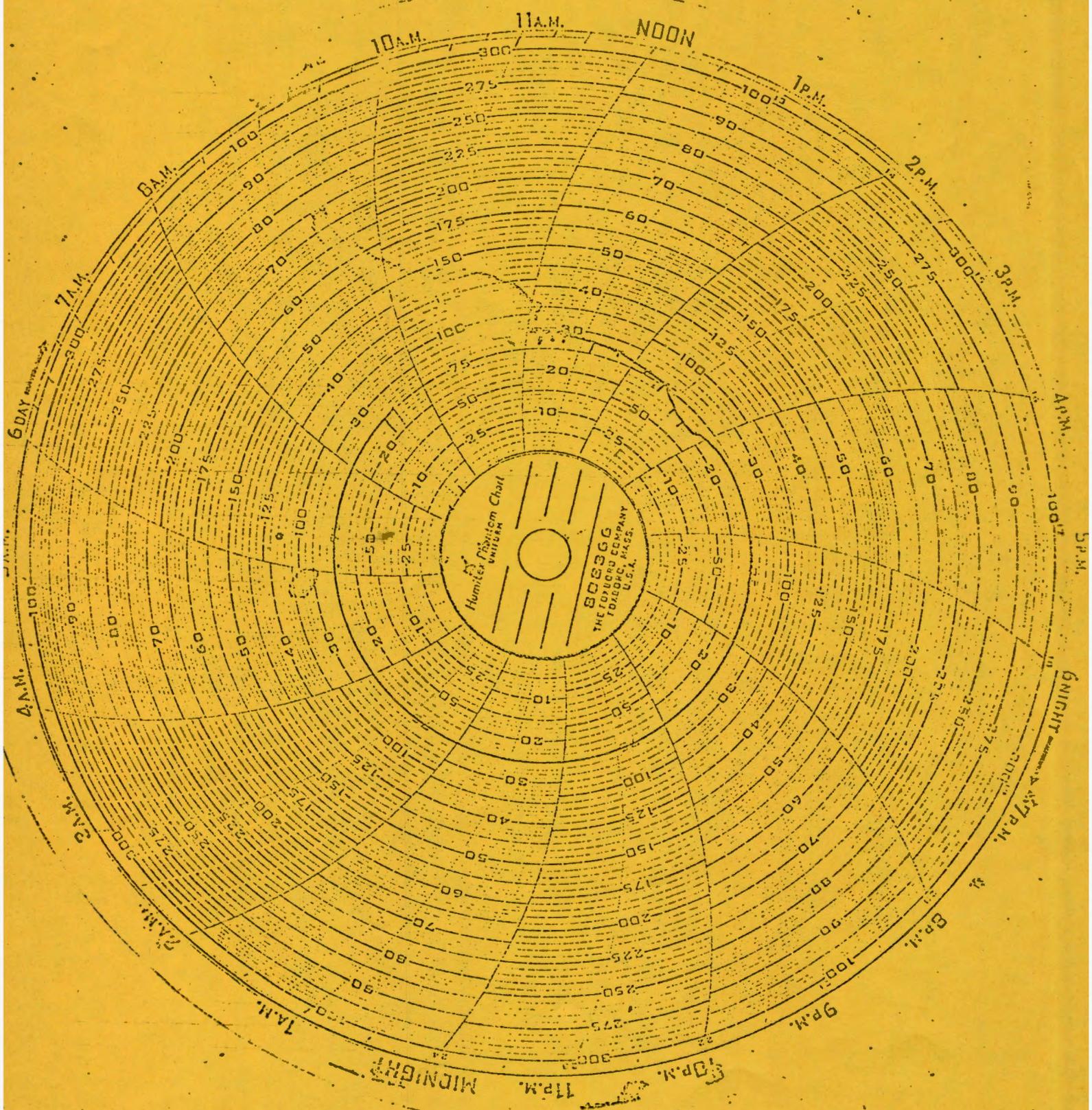
STIMULATION DATA:

TREATED WITH - GAL. OF - % - ACID.
- GAL. OF - % - ACID.
 FRAC'D WITH - GAL. OF - % - ACID.
- GAL. OF - % - ACID.

- # OF - SAND, - # OF GLASS BEADS, - # OF COTTON HULLS.

REMARKS:

A very small well; this kind of well in this area will probably produce for quite sometime
behind a compressor at about 75,000 per day. During this test, pressure indicated a water
problem, although none was produced during the test.



BACK PRESSURE CURVE

Operator Rose Oil Co Lease ADDRESS Well No. 1
 County Garfield Field Field Location 4-17-8
 Date of Test 9-25-23 Slope "n" 1.000 W.H. 1.00 Abs.
 Calc. W.H. Potential 243 MCF/D Calc. Abs. Potential 229 MCF/D



Q in MCF/Dcy

(P₂ - P₁) Q (P₂ - P_w) in Thousands

NORTHERN NATURAL GAS
OBSERVED SURFACE DATA WORKSHEET
SHEET 1

OCT 26 1973
TEST DATE: 9-26-73

TEST: INITIAL ANNUAL RETEST SPECIAL

OPERATOR: Glen Rupe LEASE: Andrews WELL NO. 1

TWP. BLK. RING. SUR. COUNTY STA. NO. PIPELINE CONN.

SYSTEM FIELD RESERVOIR

G. WT. TBG. SIZE WT. PERFS. TO

PIPE COMPLETION: SINGLE () GAS-GAS () GAS-OIL () PACKER @ ft. FLOW STRING @

TIME ON DATE LENGTH AVG. PREFL
CFLOW TIME SHUT IN TIME OF PREFLOW RATE

TIME SHUT IN LENGTH OF SHUT IN SHUT IN
CESS. TAKEN TIME SHUT IN CSG. PRESS. psig TBG. PRESS. psig

DENSITY GRAVITY (Gm) API GRAVITY PROVER METER ORIFICE TYPE
(Gg) OF LIQUID @ 60°F SIZE RUN SIZE SIZE TAPS

DATE TIME OF READING	ELAP TIME HRS.	W.H. PRESSURE DATA				WELL HEAD TEMP	METER OR PROVER DATA			LIQUID HYDRO- CARBONS BBLs.	WATER PRODUCED BBLs.	REMARKS PERTINENT TO TEST DATA QUALITY
		CASING psig	Δ P CSG.	TUBING psig	Δ P TBG.		PRESS psig	DIFF.	TEMP.			
9-25-73												
1030		300.5		299.0								S.I.P.
1045		Well on 1st rate with 3/32" plate										
1100		288.5		288.5		288.5		67				Changed to 1/16" plate
1115		287.5		287.5		287.5		67				
1130		286.5		286.5		286.5		65				
1145		285.5		285.5		285.5		64				No liquid
		Well on 2nd rate with 3/32" plate										
1200		278.5		278.0		278.0		65				
1215		276.0		276.0		276.0		65				
1230		273.7		273.5		273.5		66				
1245		272.0		272.0		272.0		66				No liquid
		Well on 3rd rate with 1/8" plate										
1300		264.0		263.5		263.5		66				
1315		259.2		259.2		259.2		66				No H ₂ S with sniffer
1330		257.0		256.7		256.7		66				
1345		254.5		254.5		254.5		66				No liquid
		Well on 4th rate with 3/16" plate										
1400		232.5		231.5		231.5		70				
1415		218.7		217.2		217.2		72				
1430		210.7		191.5		191.5		76				Took gas sample
1445		209.5		182.0		182.0		78				
		Terminate four-point; on one-point with 3/32" plate										
9-26-73												
0815		246.0		150.0		150.0		59				
0830		246.0		150.0		150.0		60				
0835		Shut in										
thru		Raining hard										
0845												
0900		277.0		243.5								

TESTED BY: Don Gray - NNG WITNESSED BY: None

NO. 731
2-701

NORTHERN NATURAL GAS CO.
NATURAL GAS ANALYSIS REPORT FORM

SAMPLE NO 1672

DATE RECEIVED _____ SECURED BY _____ TANK NUMBER 349 DATE ANALYZED OCT 2 1973

ANALYST _____ OPERATOR NAME Glen Rupe OUTSIDE LAB _____

WELL NAME OR SOURCE ANDREWS #1 Sec. 4 Twp. 19 Rgs. 8 COUNTY ELLSWORTH STATE K.

RECORD IDENTIFIER	CARD NO.	DATE SAMPLE TAKEN			LAB	GAS ANALYSIS DATA - MOLE FRACTION														
		MO.	DAY	YR.		HE	O ₂	CO ₂	N ₂	H ₂	H ₂ S	C ₁	C ₂	C ₃	I-C ₄	N-C ₄	I-C ₅	N-C ₅	C ₆	C ₇
	60	09	25	73	L	0178		00034424			5285	96	12	1	1					

RECORD IDENTIFIER	CARD NO.	DATE OF GRAVITY			MEASURED SPECIFIC GRAVITY	DATE SAMPLE TAKEN			CALGRIM-ETER BTU (SAT'D)	SULFUR TEST		
		MO.	DAY	YR.		MO.	DAY	YR.		TEST DATE	H ₂ S	PSH
	61											

RECORD IDENTIFIER	CARD NO.	DATE SAMPLE TAKEN			LAB	LIQUID ANALYSIS DATA - MOLE FRACTION												
		MO.	DAY	YR.		C ₁	C ₂	C ₃	I-C ₄	N-C ₄	I-C ₅	N-C ₅	C ₆	C ₇	C ₈	C ₉		
	62																	

* MUST TOTAL 1.0000
+ INCLUDES OTHER SULFUR (SEE ITEM DESCRIPTION)

CODES: CARD 60 & 62
COL. 18 (LAB) LAB CODE
H = HOBBS
L = LIBERAL
B = B. OF MINES
I = INDEPENDENT

CODES: CARD 61
COL. 52-53 (TYPE):
01 = SNIFFER TEST
02 = ELECTROLYTIC TITRATION
03 = ABSORPTION (TUTWILER OR CADMIUM SALT)

GPM BY CHROMATOGRAPH _____

CALC. BTU (SAT'D) 547

CALC. BTU (DRY) _____

CALC. SP. GR. 0.7382

DISTRIBUTION LIST:

Gas Supply, Liberal

REMARKS:

NEW WELL: UNCONNECTED

Analysis Results Summary

Location O.C. 266

Run No. 771
Date Run 12-3-73
Date Secured 11-28-73
Time _____
Sampler's Ident. P.B.

A Sample of: Gas Vol. MCFD _____
Oil Vol. BOPD _____
Secured from _____
Location _____ Net Gas, MCFD _____
County _____ State _____
Purpose _____ Secured by _____
Sampling Conditions: Atmos. Temp. _____ °F; Pressure on Bomb _____ lbs./sq. in.; Bbls oil/day _____
Volume/day _____ ; Weather conditions at time of sampling _____
Field Gas Pressure _____ PSIG; Line Pressure _____ PSIG.

Chroma Analysis 14.65 PSI at 60°F

	Mol. %	Liq. %	G.P.M.		Calc. G.P.M.
Carbon Dioxide	.03			Propane	
Oxygen				Iso-Butane	
Nitrogen	43.37			Nor-Butane	
Hydrogen Sulfide				Pentane+	
				Propane +	
Methane	55.35			Test Car (Date)	
Ethane	1.05			B.T.U./_____ cu. ft. W.B.	571
Propane	.15		.041	Calc. Specific Gravity	.741
Iso-Butane	.01		.003	Calc. A.P.I. @ 60°F	
Nor-Butane	.01		.003	Observed A.P.I. Av.	
Iso-Pentane	.01		.004	H ₂ S + CO ₂ by orsat	
Nor-Pentane	T		-	H ₂ S grains/100 cu. ft.	
Hexanes	T		-	Mercaptans gr/100 cu. ft.	
Heptanes Plus	.02		.009	Calc. Vap. Press. #/sq. in.	
Total	100.00	100.00	.060	Reid Vap. Press. #/sq. in.	

Run by Hall Calculated by Hall
Checked by _____ Approved by _____
26-70 Gasoline 0.
Excess Butane 0.
Excess Propane 0.
Excess Ethane & Lighter 0.
1.0000

Additional Data and Remarks:
Date 11-28-73
Type Gas GAS WELL
State KANSAS
County ELLSWORTH
Field _____
Formation TOWANDA
Company GLEN RUPE
Wells 1
Lease #1 ANDREWS
W-SE 4-175-8W
Operator P.B.
GPM _____
Atmos. Temp 54
Trap Press 26
Gas Temp 57
Heater Temp _____
H₂ NEG
H₂ + CO₂ _____
Choke 23/64
Flo. Tub. Press 67

Distribution:
C. L. Sites
A. P. Lowrey, Jr. (2)
Argo/Burton
J. F. Thornton
D. N. Mooney
E. S. Miles
Lab. File