STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Form C-104
Revised 10-1-78

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

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U.S.G.S.		
LAND OFFICE		
TRANSPORTER	OIL	
	GAS	
OPERATOR		
PRORATION OFFICE		

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I. Operator
HNG OIL COMPANY

Address
P. O. Box 2267, Midland, Texas 79702

Reason(s) for filing (Check proper box)
New Well [ ]
Recompletion [ ]
Change in Ownership [ ]
Change in Transporter of: Oil [ ] Dry Gas [ ] Casinghead Gas [ ] Condensate [X]

Other (Please explain)
Effective 2/1/86

If change of ownership give name and address of previous owner ____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
Warren 3	1	Pitchfork Ranch Morrow	State, Federal or Fee Fee	

Location
Unit Letter 0 : 660 Feet From The south Line and 1980 Feet From The east
Line of Section 3 Township 25S Range 34E , NMPM, Lea County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [ ] or Condensate [X]	Address (Give address to which approved copy of this form is to be sent)
UPG Falco, A Division of UPG, Inc.	P. O. Box 20108, Shreveport, Louisiana 71120
Name of Authorized Transporter of Casinghead Gas [ ] or Dry Gas [X]	Address (Give address to which approved copy of this form is to be sent)
Transwestern Pipeline Company	P. O. Box 2521, Houston, Texas 77001

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	0	3	25	34	Yes	2-4-85

If this production is commingled with that from any other lease or pool, give commingling order number: ____

IV. COMPLETION DATA

Designate Type of Completion — (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Resv.	Diff. Res.

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
Elevations (DF, RKB, RT, GR, etc.)	Name of Producing Formation	Top Oil/Gas Pay	Tubing Depth
Perforations			Depth Casing Shoe

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT

V. TEST DATA AND REQUEST FOR ALLOWABLE (Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

OIL WELL

Date First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	Tubing Pressure	Casing Pressure	Choke Size
Actual Prod. During Test	Oil-Bbls.	Water-Bbls.	Gas-MCF

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method (pitot, back pr.)	Tubing Pressure (Shut-in)	Casing Pressure (Shut-in)	Choke Size

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Betty Gildon (Signature)
Regulatory Analyst (Title)
1/20/86 (Date)

OIL CONSERVATION DIVISION
APPROVED JAN 24 1986, 19 ____
BY ~~ORIGINAL SIGNED BY JERRY SEXTON~~
DISTRICT I SUPERVISOR
TITLE ____

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.

INCLINATION REPORT

(One Copy Must Be Filed With Each Completion Report.)

5. District: 1

1. FIELD NAME: Und. Pitchfork Ranch /Morrow/

2. LEASE NAME: Warren 3

3. Well Number: 1

OPERATOR: HNG OIL COMPANY

9. Identification Number (Gas completions o: Fee

ADDRESS: P. O. Box 2267, Midland, Texas 79702

10. County: Lea, NM

LOCATION: Unit Letter O, 660' FSL & 1980' FEL, Sec. 3, T25S, R34E

RECORD OF INCLINATION

Measured Depth (feet)	12. Course Length (Hundreds of feet)	*13. Angle of Inclination (Degrees)	14. Displacement per Hundred Feet (Sine of Angle X100)	15. Course Displacement (feet)	16. Accumulative Displacement (feet)
260	260	1/2	.87	2.26	2.26
620	360	1/2	.87	3.13	5.39
±100	480	1/2	.87	4.18	9.57
2610	1510	1	1.75	26.43	36.00
3627	1017	1-3/4	3.05	31.02	67.02
4200	573	1-3/4	3.05	17.48	84.50
5005	805	3	5.23	42.10	126.60
5190	185	3	5.23	9.68	136.28
6360	1170	2-3/4	4.80	56.16	192.44
7675	1315	1	1.75	23.01	215.45
8570	895	1	1.75	15.66	231.11
9190	620	1	1.75	10.85	241.96
10394	1204	2	3.49	42.02	283.98
11450	1056	2	3.49	36.05	320.03
12216	766	6-1/2	11.32	86.71	406.74
12375	159	5-1/2	9.58	15.23	421.97

If additional space is needed, use the reverse side of this form.

Is any information shown on the reverse side of this form? ☒ yes ☐ no

Accumulative total displacement of well bore at total depth of 15412 feet a 575.35 feet.

Inclination measurements were made in ☐ Tubing ☐ Casing ☐ Open hole ☒ Drill Pipe

Distance from surface location of well to the nearest lease line 660 feet.

Minimum distance to lease line as prescribed by field rules _____ feet.

Was the subject well at any time intentionally deviated from the vertical in any manner whatsoever? No

(If the answer to the above question is "yes", attach written explanation of the circumstances.)

INCLINATION DATA CERTIFICATION

Signature of Authorized Representative: H. L. Jennings

Harold L. Jennings - Administrative Manager

Name of Person and Title (Type or print)

PARKER DRILLING COMPANY

Name of Company

Telephone: _____ Area Code

OPERATOR CERTIFICATION

Signature of Authorized Representative: Betty Gildon

Betty Gildon, Regulatory Analyst

Name of Person and Title (Type or print)

HNG OIL COMPANY

Operator

Telephone: 915/686-3714 Area Code

Subscribed and Sworn Before Me This 24th day of October, 1984.

Tony B. Whitley

Notary Public

TONY B. WHITLEY
Notary Public, State of Texas
My Commission Expires June 27, 1988

RECORD OF INCLINATION (Continued from reverse side)

Measured Depth (feet)	12. Course Length (Hundreds of feet)	*13. Angle of Inclination (Degrees)	14. Displacement per Hundred Feet (Sine of Angle X100)	15. Course Displacement (feet)	16. Accumulative Displacement (feet)
12525	150	4-1/2	7.85	11.78	433.75
12678	153	4-1/4	7.41	11.34	445.09
12900	222	4	6.98	15.50	460.59
13250	350	2-3/4	4.80	16.80	477.39
13750	500	2-1/2	4.36	21.80	499.19
14006	256	2-3/4	4.80	12.29	511.48
14830	824	3	5.23	35.93	547.41
15412	582	2-3/4	4.80	27.94	575.35

f additional space is needed, attach separate sheet and check here. ☐

RKS: _____

– INSTRUCTIONS –

clination survey made by persons or concerns approved by the Commission shall be filed on a form prescribed by the ission for each well drilled or deepened with rotary tools or when, as a result of any operation, the course of the well is ed. No inclination survey is required on wells that are drilled and completed as dry holes that are plugged and abandone: ation surveys are required on re-entry of abandoned wells.) Inclination surveys must be made in accordance with the ions of Statewide Rule

eport shall be filed in the District Office of the Commission for the district in which the well is drilled, by attaching one o each appropriate completion for the well. (except Plugging Report)

ommission may require the submittal of the o nal charts, graphs, or discs, resulting m the surveys.

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 2/16/85	
Company: HNG Oil Company			Connection: Transwestern		
Pool: Pitchfork Ranch			Formation: Morrow		Unit
Completion Date: 10/11/84	Total Depth: 15420'		Plug Back TD: 15355'	Elevation: 3346'GL	Farm or Lease Name: Warren 3
Csg. Size: 3½" / Wt.: 10.3 / d: 3.476 / Set At: 15418			Perforations: From 15233' To 15291'		Well No.: 1
Tbg. Size: 2 7/8" / Wt.: 7.9# / d: 2.323 / Set At: 14400'			Perforations: From Open To Ended		Unit: O / Sec.: 3 / Twp.: 25s / Rge.: 34e
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 14400'		County: Lea
Producing Thru: Tubing	Reservoir Temp. °F: 218 @ 14400'	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2		State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
14400'	14400'	0.572	0.438	0.331	–	–	4.026	Flg

	FLOW DATA					TUBING DATA		CASING DATA		
NO.	Prover Line Size	X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g DWT	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI						8229		PACKER		120.0 hrs
1.	4.026	1.375	860	20	78	8120	63			1.0 hr
2.	4.026	1.375	860	30	80	8071	63			1.0 hr
3.	4.026	1.375	860	46	80	7977	63			1.0 hr
4.	4.026	1.375	860	82	81	7754	64			1.0 hr
5.										

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	9.071	132.15	873.2	0.9831	1.322	1.061	1653
2	9.071	161.85	873.2	0.9813	1.322	1.059	2017
3	9.071	200.42	873.2	0.9813	1.322	1.059	2498
4	9.071	267.59	873.2	0.9804	1.322	1.059	3332
5							

NO.	P_r	Temp. °R	T_r	Z
1	1.30	538	1.55	0.889
2	1.30	540	1.56	0.891
3	1.30	540	1.56	0.891
4	1.30	541	1.56	0.891
5				

Gas Liquid Hydrocarbon Ratio: Dry Gas Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: – Deg.
Specific Gravity Separator Gas: 0.5716 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: 672 P.S.I.A. – P.S.I.A.
Critical Temperature: 346 R – R

P_c 8242.2 P_c^2 67933.9

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		8138.9	66241.7	1692.2
2		8092.5	65488.6	2445.3
3		8002.7	64043.2	3890.7
4		7789.4	60674.8	7259.1
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 40.145$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 6.336$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 10473$

Absolute Open Flow: 10473 Mcfd @ 15.025 | Angle of Slope θ: 63.5° | Slope, n: 0.500

Remarks: EQUIVALENT LENGTH ID AND Fr FACTOR WERE CALCULATED FOR USE OF THIS TEST
UNABLE TO DRAW PRESSURES DOWN FURTHER DUE TO ORIFICE SIZE

Approved By Division	Conducted By:	Calculated By:	Checked By:
	JARREL SERVICES, INC.	Reggie Reston	D. Dickerson

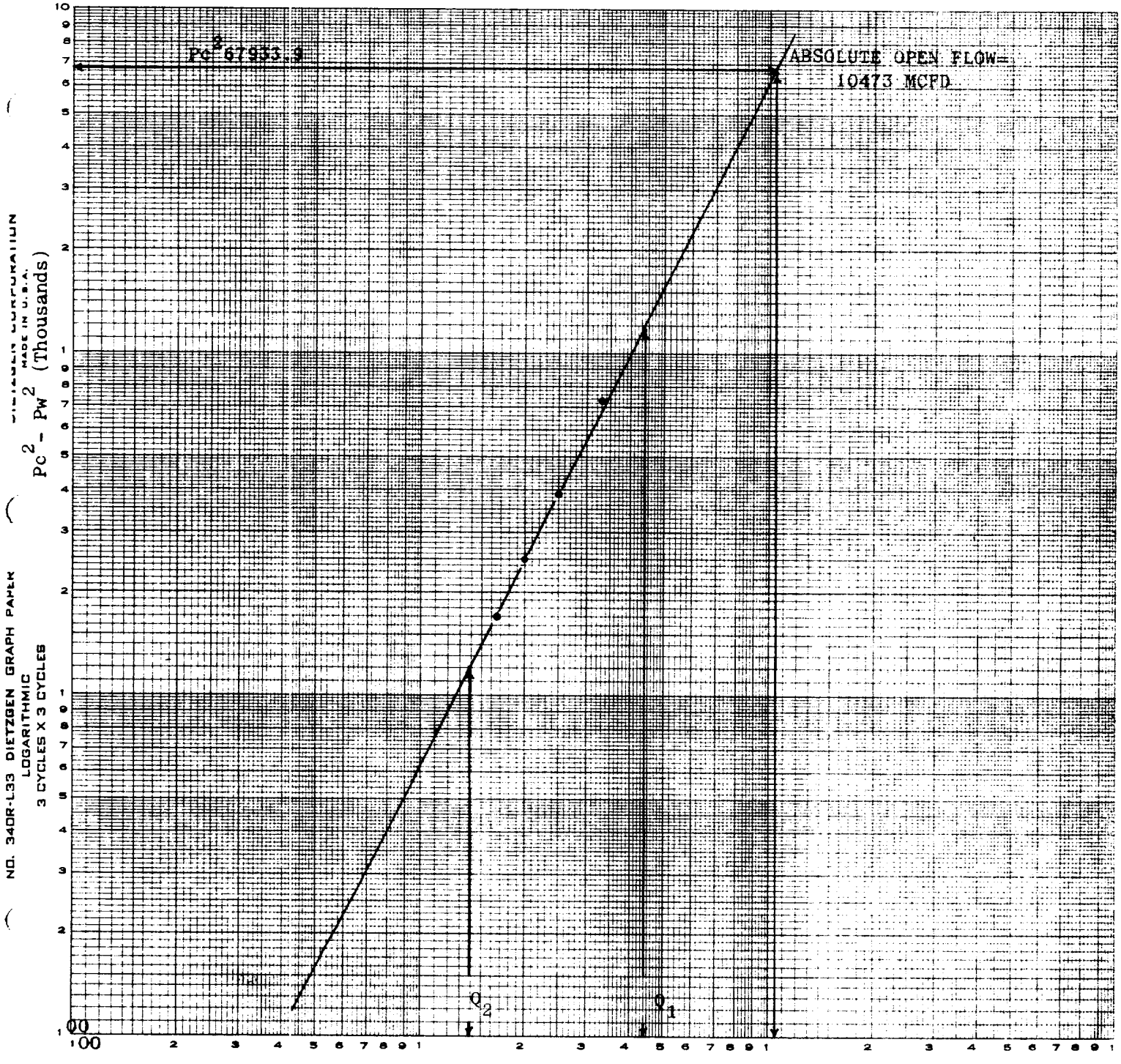
COMPANY: HNG Oil Company

WELL: Warren 3, No. 1

LOCATION: O 3 25s 34e

COUNTY: Lea

DATE: February 16, 1985



Q = MCFD

Q_1 = 4400 MCFD; Log Q_1 = 3.643453

Q_2 = 1391 MCFD; Log Q_2 = 3.143327

n = $\overline{0.500126}$ = 0.500