

**WESTERN TESTING CO., INC.**

P.O. BOX 1599 — WICHITA, KANSAS 67201

DATE 07/14/84

ROBINSON OIL COMPANY
300 W. DOUGLAS SUITE 737
WICHITA, KANSAS 67202

WELL REPORT NO. 5470

UNIT NO.

DISTRICT

13

FOR CUSTOMER'S USE ONLY

REGISTER NO.

VOUCHER NO.

TERMS APPROVED

PRICE APPROVED

CALCULATIONS CHECKED

ADJUSTMENTS

ACCOUNTING DISTRIBUTION

AUDITED

FINAL APPROVAL

YOUR ORDER NO.

OWNER

CONTRACTOR

WELL NO.

FARM

"A" WOHLSCHEGEL

HARPER

KS

SECTION

5

TWP.

31S

RANGE

5W

DRILL STEM TEST FROM 3510' TO 3532' TOTAL DEPTH 3532' (TEST 1) \$ 550.00

TOTAL \$ 550.00

DISCOUNT

\$ 5.50

1% DISCOUNT ALLOWED ON THIS INVOICE IF PAID
BY THE 20TH OF THE FOLLOWING MONTH.PLEASE INCLUDE OUR INVOICE NUMBER
WITH YOUR REMITTANCE

INVOICE NUMBER

5470

SEND ALL REMITTANCES TO POST OFFICE BOX 1599, WICHITA, KANSAS 67201



WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET N^o 5470

P. O. BOX 1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201

Elevation 1346 KB Formation K.C. A Zone Eff. Pay Ft.

District Augusta Date 7-14-84 Customer Order No.
COMPANY NAME Robinson Oil Co. 300 W Douglas
ADDRESS 737 R.H. GARVEY BLDG. Wichita KS. 67202-2992
LEASE AND WELL NO. Wohlschlegel A#1 COUNTY HP STATE KS Sec. 5 Twp. 31S Rge. 5W
Mail Invoice To #1 "A" Wohlschlegel Same No. Copies Requested 1
Co. Name Address
Mail Charts To Same No. Copies Requested 5
Address

Formation Test No. 1 Interval Tested From 3510 ft. to 3532 ft. Total Depth 3532 ft.
Packer Depth 3505 ft. Size 6.75 in. Packer Depth - ft. Size in.
Packer Depth 3510 ft. Size 6.75 in. Packer Depth - ft. Size in.

Depth of Selective Zone Set
Top Recorder Depth (Inside) 3519 ft. Recorder Number 5666 Cap. 3950
Bottom Recorder Depth (Outside) 3523 ft. Recorder Number 13265 Cap. 3975
Below Saddle Recorder Depth - ft. Recorder Number - Cap.
Drilling Contractor Sweetman #1 Drill Collar Length 280 I. D. 2.25 in.
Mud Type Starch Viscosity 44 Weight Pipe Length - I. D. in.
Weight 9.4 Water Loss NA cc. Drill Pipe Length 3208-3210 I. D. 3.8 in.
Chlorides NA P.P.M. Test Tool Length 20 ft. Tool Size 5.5 in.
Jars: Make - Serial Number - Anchor Length 22 ft. Size 5.5 in.
Did Well Flow? NO Reversed Out NO Surface Choke Size .75 in. Bottom Choke Size .75 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 x 4 in.

Blow: Strong thru out

Recovered 25 ft. of Very slight oil show Drill Mud
Recovered 90 ft. of Gas cut Slight oil cut Mud 50% gas 10% oil
Recovered 90 ft. of Gas cut, oil cut mud 50% gas 30% oil
Recovered 120 ft. of Gas + oil cut mud 45% gas 50% oil
Recovered ft. of
Chlorides P.P.M. Sample Jars used 5 Remarks: Slid 4' to Bottom
Extrapolate press. on final Report

Time On Location 5:45 A.M. Time Pick Up Tool 6:10 A.M. Time Off Location 2:30 A.M.
Time Set Packer(s) 7:45 P.M. Time Started Off Bottom 11:45 P.M. Maximum Temperature 135 °F
Initial Hydrostatic Pressure (A) 1885 P.S.I.
Initial Flow Period Minutes 30 (B) 90 P.S.I. to (C) 100 P.S.I.
Initial Closed In Period Minutes 60 (D) 1305 P.S.I.
Final Flow Period Minutes 60 (E) 100 P.S.I. to (F) 135 P.S.I.
Final Closed In Period Minutes 90 (G) 1305 P.S.I.
Final Hydrostatic Pressure (H) 1885 P.S.I. #5666

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By [Signature] Signature of Customer or his authorized representative

Western Representative Allen Edgington DSJS

FIELD INVOICE

Open Hole Test \$ 550-
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
Telecopier \$
TOTAL \$

WESTERN TESTING CO., INC.

Pressure Data

Date 7-14 Test Ticket No. 5470
 Recorder No. 5666 Capacity _____ Location _____ Ft.
 Clock No. _____ Elevation _____ Well Temperature _____ °F

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1853</u> P.S.I.		
B First Initial Flow Pressure	<u>86</u> P.S.I.	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>101</u> P.S.I.	<u>60</u> Mins.	<u>57</u> Mins.
D Initial Closed-in Pressure	<u>1310</u> P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>93</u> P.S.I.	<u>90</u> Mins.	<u>90</u> Mins.
F Second Final Flow Pressure	<u>118</u> P.S.I.		
G Final Closed-in Pressure	<u>1309</u> P.S.I.		
H Final Hydrostatic Mud	<u>1853</u> P.S.I.		

Plugging action on the
initial flow period.

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>7</u> Inc.		Breakdown: <u>20</u> Inc.		Breakdown: <u>13</u> Inc.		Breakdown: <u>31</u> Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	<u>86</u>	0	<u>101</u>	0	<u>93</u>	0	<u>118</u>
P 2 5	<u>128</u>	3	<u>220</u>	5		3	<u>265</u>
P 3 10	<u>160</u>	6	<u>351</u>	10		6	<u>494</u>
P 4 15	<u>282</u>	9	<u>524</u>	15		9	<u>770</u>
P 5 20	<u>133</u>	12	<u>737</u>	20		12	<u>1078</u>
P 6 25	<u>102</u>	15	<u>966</u>	25	<u>93</u>	15	<u>1199</u>
P 7 30	<u>101</u>	18	<u>1124</u>	30	<u>94</u>	18	<u>1249</u>
P 8 35		21	<u>1213</u>	35	<u>97</u>	21	<u>1266</u>
P 9 40		24	<u>1255</u>	40	<u>101</u>	24	<u>1276</u>
P10 45		27	<u>1277</u>	45	<u>107</u>	27	<u>1282</u>
P11 50		30	<u>1288</u>	50	<u>113</u>	30	<u>1287</u>
P12 55		33	<u>1295</u>	55	<u>118</u>	33	<u>1290</u>
P13 60		36	<u>1300</u>	60	<u>118</u>	36	<u>1292</u>
P14		39	<u>1303</u>	65		39	<u>1294</u>
P15		42	<u>1305</u>	70		42	<u>1296</u>
P16		45	<u>1306</u>	75		45	<u>1297</u>
P17		48	<u>1307</u>	80		48	<u>1298</u>
P18		51	<u>1308</u>	85		51	<u>1299</u>
P19		54	<u>1309</u>	90		54	<u>1300</u>
P20		57	<u>1310</u>			57	<u>1301</u>
		60				60	<u>1302</u>

WESTERN TESTING CO., INC.

Pressure Data

Date _____

Test Ticket No. 5470

Recorder No. _____ Capacity _____ Location _____ Ft.

Clock No. _____ Elevation _____ Well Temperature _____ °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud _____	P.S.I.	Open Tool _____	M _____	
B First Initial Flow Pressure _____	P.S.I.	First Flow Pressure _____	Mins. _____	Mins. _____
C First Final Flow Pressure _____	P.S.I.	Initial Closed-in Pressure _____	Mins. _____	Mins. _____
D Initial Closed-in Pressure _____	P.S.I.	Second Flow Pressure _____	Mins. _____	Mins. _____
E Second Initial Flow Pressure _____	P.S.I.	Final Closed-in Pressure _____	Mins. _____	Mins. _____
F Second Final Flow Pressure _____	P.S.I.			
G Final Closed-in Pressure _____	P.S.I.			
H Final Hydrostatic Mud _____	P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 _____	_____	63 _____	_____	_____	_____	63 _____	1303
P 2 _____	_____	66 _____	_____	_____	_____	66 _____	1304
P 3 _____	_____	69 _____	_____	_____	_____	69 _____	1305
P 4 _____	_____	72 _____	_____	_____	_____	72 _____	1306
P 5 _____	_____	75 _____	_____	_____	_____	75 _____	1307
P 6 _____	_____	78 _____	_____	_____	_____	78 _____	1308
P 7 _____	_____	81 _____	_____	_____	_____	81 _____	1309
P 8 _____	_____	84 _____	_____	_____	_____	84 _____	5
P 9 _____	_____	87 _____	_____	_____	_____	87 _____	1309
P10 _____	_____	90 _____	_____	_____	_____	90 _____	1309
P11 _____	_____	93 _____	_____	_____	_____	93 _____	_____
P12 _____	_____	96 _____	_____	_____	_____	96 _____	_____
P13 _____	_____	99 _____	_____	_____	_____	99 _____	_____
P14 _____	_____	102 _____	_____	_____	_____	102 _____	_____
P15 _____	_____	105 _____	_____	_____	_____	105 _____	_____
P16 _____	_____	108 _____	_____	_____	_____	108 _____	_____
P17 _____	_____	111 _____	_____	_____	_____	111 _____	_____
P18 _____	_____	114 _____	_____	_____	_____	114 _____	_____
P19 _____	_____	117 _____	_____	_____	_____	117 _____	_____
P20 _____	_____	120 _____	_____	_____	_____	120 _____	_____

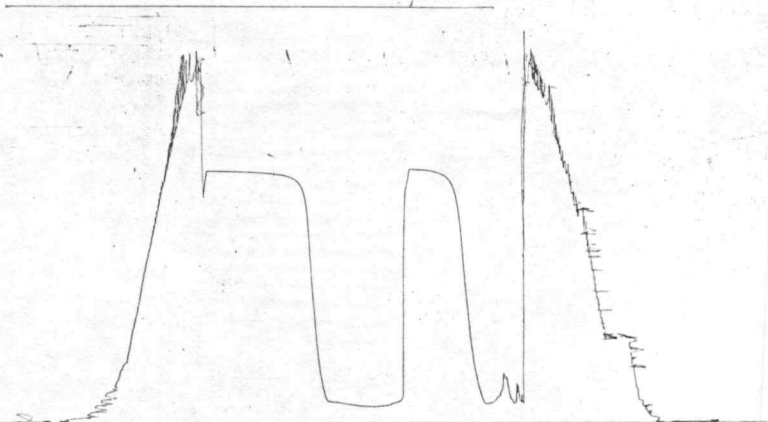
TKT # 5470

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TKT # 5470

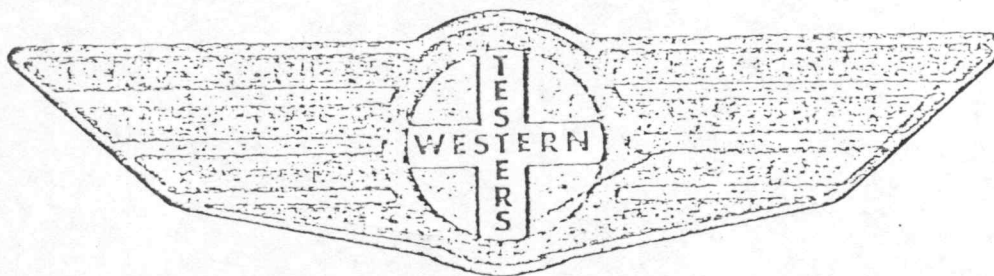
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FORMATION

TEST

REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

Company ROBINSON OIL COMPANY Lease and Well No. #1 "H" WOHLSCHEGEL Sec. 5 Twp. 31S Rge. 5W Test No. 1 Date 7/14/8

WESTERN TESTING COMPANY INC.
SUBSURFACE PRESSURE SURVEY

DATE: 7/14/84 TICKET #5470
CUSTOMER: ROBINSON OIL COMPANY LEASE: "A" WOHLSCHEGEL
WELL: 1 TEST: 1 GEOLOGIST: SMITH
ELEVATION (KB): 1346 FORMATION: KANSAS CITY "A" ZONE
SECTION: 5 TOWNSHIP: 31S
RANGE: 5W COUNTY: HARPER STATE: KANSAS
GAUGE SN #5666 RANGE: 3950 CLOCK: 12

INTERVAL TEST FROM: 3510 FT TO: 3532 FT TOTAL DEPTH: 3532 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 3505 FT SIZE: 6 3/4 IN Packer DEPTH: 3510 FT SIZE: 6 3/4 IN
PACKER DEPTH: FT SIZE: IN Packer DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: SWEETMAN
MUD TYPE: STARCH VISCOSITY: 44
WEIGHT: 9.4 WATER LOSS (CC):
CHLORIDES (P.P.M.):
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 280 FT I.D.: 2.25 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 3210 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 20 FT TOOL SIZE: 5 1/2 O.D. IN
ANCHOR LENGTH: 22 FT SIZE: 5 1/2 O.D. IN
SURFACE CHOKE SIZE: 3/4 IN BOTTOM CHOKE SIZE: 3/4 IN
MAIN HOLE SIZE: 7 7/8 IN TOOL JOINT SIZE: 4 1/2 X.H. IN

BLOW: STRONG BLOW THROUGHOUT TEST.

RECOVERED: 25	FT	OF: DRILL MUD; VERY SLIGHT OIL SHOW.
RECOVERED: 90	FT	OF: GAS CUT SLIGHT OIL CUT MUD; 50% GAS; 10% OIL
RECOVERED: 90	FT	OF: GAS CUT OIL CUT MUD; 50% GAS; 30% OIL
RECOVERED: 120	FT	OF: GAS & OIL CUT MUD; 45% GAS; 50% OIL
RECOVERED:	FT	OF:
RECOVERED:	FT	OF:
RECOVERED:	FT	OF:
RECOVERED:	FT	OF:
RECOVERED:	FT	OF:

REMARKS: SLID 4 FEET TO BOTTOM. PLUGGING ACTION ON THE
INITIAL FLOW PERIOD.

TIME SET PACKER(S): 7:45 P.M.	TIME STARTED OFF BOTTOM: 11:45 P.M.
WELL TEMPERATURE: 135 °F	
INITIAL HYDROSTATIC PRESSURE:	(A) 1853 PSI
INITIAL FLOW PERIOD MIN: 30	(B) 86 PSI TO (C) 101 PSI
INITIAL CLOSED IN PERIOD MIN: 57	(D) 1310 PSI
FINAL FLOW PERIOD MIN: 60	(E) 93 PSI TO (F) 118 PSI
FINAL CLOSED IN PERIOD MIN: 90	(G) 1309 PSI
FINAL HYDROSTATIC PRESSURE	(H) 1853 PSI

WESTERN TESTING COMPANY INC.
PRESSURE DATA

DATE: 7/14/84	TICKET #5470
CUSTOMER: ROBINSON OIL COMPANY	LEASE: "A" WOHLSCHEGEL
WELL: 1	GEOLOGIST: SMITH
TEST: 1	FORMATION: KANSAS CITY "A" ZONE
ELEVATION (KB): 1346	TOWNSHIP: 31S
SECTION: 5	
RANGE: 5W	COUNTY: HARPER
STATE: KANSAS	
GAUGE SN #5666	RANGE: 3950
CLOCK: 12	

(A)	INITIAL HYDROSTATIC PRESSURE:	1853	PSI
(B)	FIRST INITIAL FLOW PRESSURE:	86	PSI
(C)	FIRST FINAL FLOW PRESSURE:	101	PSI
(D)	INITIAL CLOSED-IN PRESSURE:	1310	PSI
(E)	SECOND INITIAL FLOW PRESSURE:	93	PSI
(F)	SECOND FINAL FLOW PRESSURE:	118	PSI
(G)	FINAL CLOSED-IN PRESSURE:	1309	PSI
(H)	FINAL HYDROSTATIC PRESSURE:	1853	PSI
WELL TEMPERATURE:		135	'F
OPEN TOOL: 7:45 P.M.			

	TIME - GIVEN	TIME - ACTUAL
FIRST FLOW PRESSURE:	30 MIN	30 MIN
INITIAL CLOSED-IN PRESSURE:	60 MIN	57 MIN
SECOND FLOW PRESSURE:	60 MIN	60 MIN
FINAL CLOSED-IN PRESSURE:	90 MIN	90 MIN

PRESSURE BREAKDOWN

[illegible]

Liquid Production

B.T. Gauge Numbers			5666	Ticket Number	5470
Initial Hydrostatic			1853	Elevation	ft.
Final Hydrostatic			1853	Indicated Production	1st Flow .762 bbls. day
1st Flow	Initial	Time	86	Total Flow .836 bbls. day	
	Final	30	101	Drill Collar Length 280 ft.	
Initial Closed In Pressure			57	1310	Drill Collar I.D. 2.25 in.
2nd Flow	Initial	Time	93	Drill Pipe Factor	.0142 bbls. ft.
	Final	60	118	Hole Size	7.875 in.
Final Closed In Pressure			90	1309	Footage Tested 22 ft.
Extrapolated Static Pressure			Initial	1328 - 1224	Mud Weight 9.4 lbs. gal.
			Final	1326 - 1248	Viscosity, Oil or Water cp
Slope psi/cycle			Initial	104.061	Oil API Gravity —
			Final	78.440	Water Specific Gravity —

Remarks: _____

SUMMARY		Gauge No.	Depth		
Product	Equation	INITIAL	FINAL	Units	
Production	$Q = \frac{1440 R}{t}$	36.618	20.081	bbls. day	
Transmissability	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$	57.251	41.861	md. ft. cp	
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	229.007	167.446	md. ft.	
Average Effective	$K = \frac{Kh}{h}$	16.357	11.960	md.	
Permeability	$K_i = \frac{Kh}{h_i}$	—		md.	
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$	2.159	2.834	—	
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$	79.061	56.913	bbls. day	
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$	22.152	26.788	ft.	
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$			ft.	
Potentiometric Surface *	$Pot. = EI - GD + 2.319 Ps$			ft.	

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and elevations based thereon, Western Testing Co., Inc. is merely expressing its opinion. You agree that Western Testing Co., Inc. makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Western Testing Co., Inc. shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

INTERPRETATIONS AND CALCULATIONS

Liquid Production

B.T. Gauge Numbers			5666	Ticket Number		5470
Initial Hydrostatic			1853	Elevation		ft.
Final Hydrostatic			1853	Indicated 1st Flow		762 bbls. day
1st Flow	Initial	---	86	Total Flow		836 bbls. day
	Final	30	101	Drill Collar Length		280 ft.
Initial Closed In Pressure			57	Drill Collar I.D.		2.25 in.
2nd Flow	Initial	---	93	Drill Pipe Factor		.0142 bbls. ft.
	Final	60	118	Hole Size		7.875 in.
Final Closed In Pressure			90	Footage Tested		22 ft.
Extrapolated Static Pressure	Initial	1328 - 1224		Mud Weight		9.4 lbs. gal.
	Final	1326 - 1248		Viscosity, Oil or Water		cp
Slope psi/cycle	Initial	104.061		Oil API Gravity		—
	Final	78.440		Water Specific Gravity		—

Remarks:

3.5	30	325
90 325	3.5	105 7 155
270	150	220 7 170
550	90	
	105.0	

SUMMARY

Gauge
No.
Depth

Product	Equation	INITIAL	FINAL	Units
Production	$Q = \frac{1440 R}{t}$	36.618	20.081	bbls. day.
Transmissability	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$	57.251	41.861	md. ft. cp.
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	229.007	167.446	md. ft.
Average Effective	$K = \frac{Kh}{h}$	16.357	11.960	md.
Permeability	$K_i = \frac{Kh}{h_i}$	—	—	md.
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$	2.159	2.834	—
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$	79.061	56.913	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt} \text{ or } \sqrt{Kt_0}$	22.152	26.788	ft.
	$b_1 \approx \sqrt{K_1 t} \text{ or } \sqrt{K_1 t_0}$			ft.
Potentiometric Surface *	$Pot. = EI - CD + 2.319 P_s$			ft.

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INTERPRETATIONS AND CALCULATIONS

**WESTERN TESTING CO., INC.**

P.O. BOX 1599 — WICHITA, KANSAS 67201

DATE 07/15/84

ROBINSON OIL COMPANY
300 W. DOUGLAS SUITE 737
WICHITA, KANSAS 67202

WELL REPORT NO. 5471
UNIT NO.
DISTRICT 13

FOR CUSTOMER'S USE ONLY

REGISTER NO.

VOUCHER NO.

TERMS APPROVED

PRICE APPROVED

CALCULATIONS CHECKED

ADJUSTMENTS

ACCOUNTING DISTRIBUTION

AUDITED

FINAL APPROVAL

YOUR ORDER NO.

OWNER

CONTRACTOR

WELL NO.

FARM

"A" WOHLSCHEGEL

HARPER

KS

SECTION

5

TWP.

31S

RANGE

5W

DRILL STEM TEST FROM 3626' TO 3646' TOTAL DEPTH 3646' (TEST 2) \$ 550.00

TOTAL \$ 550.00

DISCOUNT

\$ 5.50

1% DISCOUNT ALLOWED ON THIS INVOICE IF PAID
BY THE 20TH OF THE FOLLOWING MONTH.PLEASE INCLUDE OUR INVOICE NUMBER
WITH YOUR REMITTANCE

INVOICE NUMBER

5471

SEND ALL REMITTANCES TO POST OFFICE BOX 1599, WICHITA, KANSAS 67201



WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET

Nº

5471

P. O. BOX 1599 PHONE (316) 262-5861

WICHITA, KANSAS 67201

Elevation 1346 KB

Formation Swope

Eff. Pay Ft.

District 13 Augusta Date 7-15-84 Customer Order No.

COMPANY NAME Robinson Oil Co.

ADDRESS 737 R.H. Garvey Bldg. Wichita, Ks. 67202-2992

LEASE AND WELL NO. Wohlschlagel A#1 COUNTY HP STATE KS Sec. 5 Twp. 31S Rge. 5W

Mail Invoice To #1 "A" Wohlschlagel Co. Name Address No. Copies Requested 1

Mail Charts To Same Address No. Copies Requested 5

Formation Test No. 2 Interval Tested From 3626 ft. to 3646 ft. Total Depth 3646 ft.

Packer Depth 3621 ft. Size 6.75 in. Packer Depth ft. Size in.

Packer Depth 3626 ft. Size 6.75 in. Packer Depth ft. Size in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3637 ft. Recorder Number 5666 Cap. 3950

Bottom Recorder Depth (Outside) 3641 ft. Recorder Number 13265 Cap. 3975

Below Straddle Recorder Depth ft. Recorder Number Cap.

Drilling Contractor Sweetman Drill Collar Length 280 I. D. 2.25 in.

Mud Type Starch Viscosity 43 Weight Pipe Length I. D. in.

Weight 92 Water Loss NA cc. Drill Pipe Length 3326 I. D. 3.8 in.

Chlorides NA P.P.M. Test Tool Length 20 ft. Tool Size 5.5 in.

Jars: Make NO Serial Number Anchor Length 20 ft. Size 5.5 in.

Did Well Flow? NO Reversed Out NO Surface Choke Size .75 in. Bottom Choke Size .75 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 in.

Blow: Strong thru out

Recovered 780 ft. of GAS in Pipe

Recovered 50 ft. of Very slight oil + gas cut mud (show of oil)

Recovered 120 ft. of Oil + Gas cut mud 10% gas 20% oil

Recovered 180 ft. of Oil + Gas cut muddy water 40% Gas 20% oil 40% water

Recovered 60 ft. of Salt water

Chlorides 174,000 P.P.M. Sample Jars used 7 Remarks: Extrapolate press. on final

report

Time On Location 4:30 P.M. Time Pick Up Tool 5:35 P.M. Time Off Location 12:30 P.M.

Time Set Packer(s) 6:45 P.M. Time Started Off Bottom 10:00 P.M. Maximum Temperature 134

Initial Hydrostatic Pressure (A) 1815 P.S.I.

Initial Flow Period Minutes 30 (B) 70 P.S.I. to (C) 120 P.S.I.

Initial Closed In Period Minutes 45 (D) 1405 P.S.I.

Final Flow Period Minutes 60 (E) 155 P.S.I. to (F) 175 P.S.I.

Final Closed In Period Minutes 60 (G) 1415 P.S.I.

Final Hydrostatic Pressure (H) 1815 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By Signature of Customer or his authorized representative

Western Representative Allen Edgington

FIELD INVOICE

Open Hole Test \$ 550

Misrun \$

Straddle Test \$

Jars \$

Selective Zone \$

Safety Joint \$

Standby \$

Evaluation \$

Extra Packer \$

Circ. Sub. \$

Mileage \$

Fluid Sampler \$

Extra Charts \$

Insurance \$

Telecopier \$

TOTAL \$

WESTERN TESTING CO., INC.

Pressure Data

Date 7-15 Test Ticket No. 5471
 Recorder No. 5666 Capacity _____ Location _____ Ft. _____
 Clock No. _____ Elevation _____ Well Temperature _____ °F _____

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud <u>1837</u>	P.S.I.		M
B First Initial Flow Pressure <u>80</u>	P.S.I.	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure <u>127</u>	P.S.I.	<u>45</u> Mins.	<u>42</u> Mins.
D Initial Closed-in Pressure <u>1415</u>	P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure <u>159</u>	P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
F Second Final Flow Pressure <u>177</u>	P.S.I.		
G Final Closed-in Pressure <u>1418</u>	P.S.I.		
H Final Hydrostatic Mud <u>1837</u>	P.S.I.		

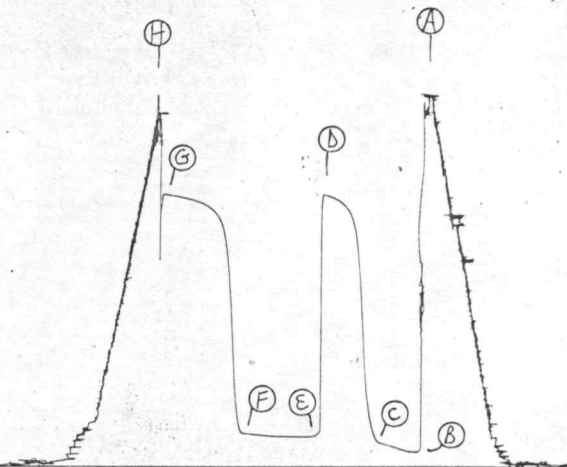
PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>7</u> Inc.		Breakdown: <u>15</u> Inc.		Breakdown: <u>13</u> Inc.		Breakdown: <u>21</u> Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>80</u>	<u>0</u>	<u>127</u>	<u>0</u>	<u>159</u>	<u>0</u>	<u>177</u>
P 2 <u>5</u>	<u>80</u>	<u>3</u>	<u>144</u>	<u>5</u>	<u>(</u>	<u>3</u>	<u>249</u>
P 3 <u>10</u>	<u>84</u>	<u>6</u>	<u>198</u>	<u>10</u>	<u>(</u>	<u>6</u>	<u>532</u>
P 4 <u>15</u>	<u>95</u>	<u>9</u>	<u>308</u>	<u>15</u>	<u>(</u>	<u>9</u>	<u>1001</u>
P 5 <u>20</u>	<u>106</u>	<u>12</u>	<u>526</u>	<u>20</u>	<u>(</u>	<u>12</u>	<u>1208</u>
P 6 <u>25</u>	<u>117</u>	<u>15</u>	<u>1018</u>	<u>25</u>	<u>1</u>	<u>15</u>	<u>1284</u>
P 7 <u>30</u>	<u>127</u>	<u>18</u>	<u>1251</u>	<u>30</u>	<u>159</u>	<u>18</u>	<u>1318</u>
P 8 <u>35</u>		<u>21</u>	<u>1316</u>	<u>35</u>	<u>162</u>	<u>21</u>	<u>1340</u>
P 9 <u>40</u>		<u>24</u>	<u>1350</u>	<u>40</u>	<u>165</u>	<u>24</u>	<u>1355</u>
P10 <u>45</u>		<u>27</u>	<u>1373</u>	<u>45</u>	<u>168</u>	<u>27</u>	<u>1368</u>
P11 <u>50</u>		<u>30</u>	<u>1387</u>	<u>50</u>	<u>171</u>	<u>30</u>	<u>1376</u>
P12 <u>55</u>		<u>33</u>	<u>1397</u>	<u>55</u>	<u>174</u>	<u>33</u>	<u>1384</u>
P13 <u>60</u>		<u>36</u>	<u>1405</u>	<u>60</u>	<u>177</u>	<u>36</u>	<u>1390</u>
P14		<u>39</u>	<u>1412</u>	<u>65</u>		<u>39</u>	<u>1396</u>
P15		<u>42</u>	<u>1415</u>	<u>70</u>		<u>42</u>	<u>1401</u>
P16		<u>45</u>		<u>75</u>		<u>45</u>	<u>1405</u>
P17		<u>48</u>		<u>80</u>		<u>48</u>	<u>1408</u>
P18		<u>51</u>		<u>85</u>		<u>51</u>	<u>1411</u>
P19		<u>54</u>		<u>90</u>		<u>54</u>	<u>1414</u>
P20		<u>57</u>				<u>57</u>	<u>1416</u>
		<u>60</u>				<u>60</u>	<u>1418</u>

5471

TKT # 5471

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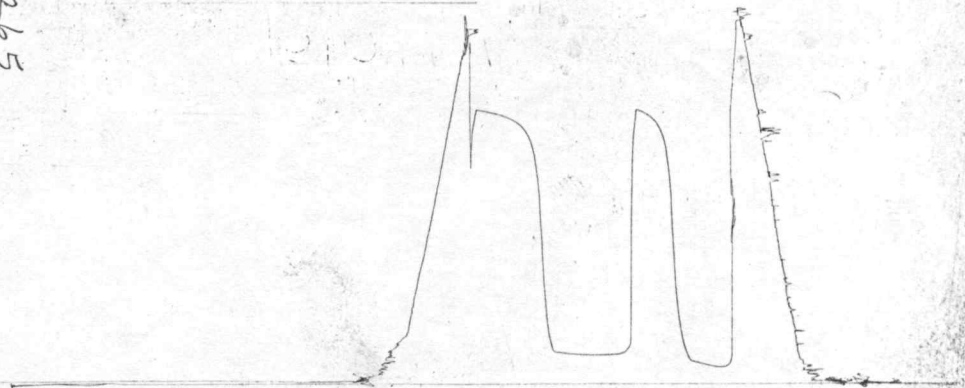


TKT # 5471

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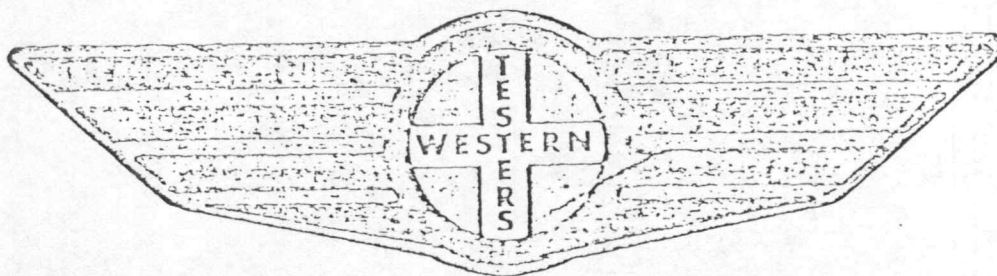
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FORMATION

TEST

REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

WESTERN TESTING COMPANY INC.
SUBSURFACE PRESSURE SURVEY

DATE: 7/15/84
CUSTOMER: ROBINSON OIL COMPANY
WELL: 1 TEST: 2
ELEVATION (KB): 1346 FORMATION: SWOPE
SECTION: 5 TOWNSHIP: 31S
RANGE: 5W COUNTY: HARPER STATE: KANSAS
GAUGE SN #5666 RANGE: 3950 CLOCK: 12

INTERVAL TEST FROM: 3626 FT TO: 3646 FT TOTAL DEPTH: 3646 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 3621 FT SIZE: 6 3/4 IN Packer DEPTH: 3626 FT SIZE: 6 3/4 IN
PACKER DEPTH: FT SIZE: IN Packer DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: SWEETMAN
MUD TYPE: STARCH VISCOSITY: 43
WEIGHT: 9.2 WATER LOSS (CC):
CHLORIDES (P.P.M.):
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 280 FT I.D.: 2.25 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 3326 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 20 FT TOOL SIZE: 5 1/2 O.D. IN
ANCHOR LENGTH: 20 FT SIZE: 5 1/2 O.D. IN
SURFACE CHOKE SIZE: 3/4 IN BOTTOM CHOKE SIZE: 3/4 IN
MAIN HOLE SIZE: 7 7/8 IN TOOL JOINT SIZE: 4 1/2 X.H. IN

BLOW: STRONG BLOW THROUGHOUT TEST.

RECOVERED: 780	FT	OF: GAS ABOVE FLUID
RECOVERED: 50	FT	OF: VERY SLIGHT OIL & GAS CUT MUD; SHOW OF OIL
RECOVERED: 120	FT	OF: OIL & GAS CUT MUD; 10% GAS; 20% OIL
RECOVERED: 180	FT	OF: OIL & GAS CUT MUDDY WATER; 40% GAS; 20% OIL;
RECOVERED:	FT	OF: 40% WATER
RECOVERED: 60	FT	OF: SALT WATER
RECOVERED:	FT	OF: CHLORIDES 74000 PPM
RECOVERED:	FT	OF:
RECOVERED:	FT	OF:

REMARKS:

TIME SET PACKER(S): 6:45 P.M.	TIME STARTED OFF BOTTOM: 10:00 P.M.
WELL TEMPERATURE: 134 °F	
INITIAL HYDROSTATIC PRESSURE:	(A) 1837 PSI
INITIAL FLOW PERIOD MIN: 30	(B) 80 PSI TO (C) 127 PSI
INITIAL CLOSED IN PERIOD MIN: 42	(D) 1415 PSI
FINAL FLOW PERIOD MIN: 60	(E) 159 PSI TO (F) 177 PSI
FINAL CLOSED IN PERIOD MIN: 60	(G) 1418 PSI
FINAL HYDROSTATIC PRESSURE	(H) 1837 PSI

Liquid Production

B. T. Gauge Numbers		5666	Ticket Number	5471
Initial Hydrostatic		PRESSURE 1837	Elevation	1346 KB ft.
Final Hydrostatic		1837	Indicated Production	1st Flow .885 bbls. day
1st Flow	Initial	80	Total Flow	.635 bbls. day
	Final	127		
Initial Closed In Pressure		42	Drill Collar Length	280 ft.
2nd Flow		1415	Drill Collar I.D.	2.25 in.
Initial	Initial	159	Drill Pipe Factor	.0142 bbls. ft.
	Final	177	Hole Size	7.875 in.
Final Closed In Pressure		60	Footage Tested	20 ft.
Extrapolated Static Pressure	Initial	1508 - 1110	Mud Weight	9.2 lbs. gal.
	Final	1477 - 1280	Viscosity, Oil or Water	cp
Slope psi/cycle	Initial	398.550	Oil API Gravity	—
	Final	197.094	Water Specific Gravity	—

Remarks:

SUMMARY

Gauge
No.
Depth

Product	Equation	INITIAL	FINAL	Units
Production	$Q = \frac{1440 R}{t}$	42.524	15.356	bbls. day
Transmissibility	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$	17.373	12.674	md. ft. cp
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	69.492	50.698	md. ft.
Average Effective Permeability	$K = \frac{Kh}{h}$	5.791	4.224	md.
	$K_i = \frac{Kh}{h_i}$			md.
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$	.634	1.207	—
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$	DR Less Than One	18.544	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$	13.180	15.921	ft.
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$			ft.
Potentiometric Surface	$Pot. = EI - CD + 2.319 P_s$			ft.

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and elevations based thereon, Western Testing Co., Inc. is merely expressing its opinion. You agree that Western Testing Co., Inc. makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Western Testing Co., Inc. shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

INTERPRETATIONS AND CALCULATIONS

Liquid Production

B.T. Gauge Numbers			5666	Ticket Number	5471
Initial Hydrostatic			1837	Elevation	1346 K.B. ft.
Final Hydrostatic			1837	Indicated Production	1st Flow 885 bbls. day
1st Flow	Initial	---	80	Total Flow	635 bbls. day
	Final	30	127		
Initial Closed In Pressure			42	1415	Drill Collar Length 280 ft.
2nd Flow	Initial	---	159	Drill Collar I.D.	2.25 in.
	Final	60	177	Drill Pipe Factor	.0142 bbls. ft.
Final Closed In Pressure			60	1418	Hole Size 7.875 in.
Extrapolated Static Pressure	Initial	1508-1110		Footage Tested	20 ft.
	Final	1477-1280		Mud Weight	9.2 lbs. gal.
Slope psi/cycle	Initial	398.550		Viscosity, Oil or Water	cp
	Final	197.094		Oil API Gravity	—
				Water Specific Gravity	—

Remarks:

50
120
180
60
410

4.5
901410
360
500

100
280

SUMMARY		Gauge No. Depth		
Product	Equation	INITIAL	FINAL	Units
Production	$Q = \frac{1440 R}{t}$	42.524	15.356	bbls. day
Transmissability	$\frac{K_h}{\mu} = \frac{162.6 Q}{m}$	17.373	12.674	md. ft. cp
Indicated Flow Capacity	$K_h = \frac{K_h}{\mu} \mu$	69.492	50.698	md. ft.
Average Effective	$K = \frac{K_h}{h}$	5.791	4.224	md.
Permeability	$K_i = \frac{K_h}{h_i}$			md.
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$	-634	1.207	—
Theoretical Potential w/Damage Removed	$Q_i = Q DR$	DR less than one	18.544	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$	13.180	15.921	ft.
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$			ft.
Potentiometric Surface *	$Pot. = EI - GD + 2.319 P_s$			ft.

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and elevations based thereon, Western Testing Co., Inc. is merely expressing its opinion. You agree that Western Testing Co., Inc. makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Western Testing Co., Inc. shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

INTERPRETATIONS AND CALCULATIONS