



WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET No 8098

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

Elevation 1475 KB Formation Miss-Osage Eff. Pay Ft.

RO40 District Augusta Date 4-21-85 Customer Order No.
COMPANY NAME Range Oil Co Inc.
ADDRESS 240 Page Ct 220 W Douglas Wichita, KS 67202
LEASE AND WELL NO. Zerger #1 COUNTY RENO STATE KS Sec. 2 Twp. 23S Rge. 4W
Mail Invoice To #1 Zerger SAME No. Copies Requested 1
Co. Name Address
Mail Charts To SAME No. Copies Requested 5
Address

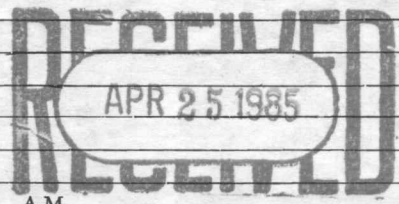
Formation Test No. 1 Interval Tested From 3315 ft. to 3335 ft. Total Depth 3335 ft.
Packer Depth 3310 ft. Size 6.75 in. Packer Depth - ft. Size - in.
Packer Depth 3315 ft. Size 6.75 in. Packer Depth - ft. Size - in.
Depth of Selective Zone Set

Top Recorder Depth (Inside) 3326 ft. Recorder Number 3351 Cap. 4000
Bottom Recorder Depth (Outside) 3330 ft. Recorder Number 5666 Cap. 3950
Below Saddle Recorder Depth ft. Recorder Number Cap.

Drilling Contractor Range #1 Drill Collar Length 147 I. D. 2.25 in.
Mud Type CHEM Viscosity 45 Weight Pipe Length I. D. in.
Weight 9.8 Water Loss 12.0 cc. Drill Pipe Length 3148 I. D. 3.8 in.
Chlorides 2200 P.P.M. Test Tool Length 20 ft. Tool Size 5.5 in.
Jars: Make - Serial Number Anchor Length 20 ft. Size 5.5 in.
Did Well Flow? NO Reversed Out NO Surface Choke Size 1.75 in. Bottom Choke Size .75 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 x 4 in.

Blow: VERY WEAK 60 MIN TO INTERMITTENT THRU REST OF FINAL

Recovered 10 ft. of Drill Mud with 2 SMALL oil spots on top
Recovered ft. of
Recovered ft. of
Recovered ft. of
Recovered ft. of
Chlorides P.P.M. Sample Jars used 1 Remarks:



Time On Location 6:30 A.M. Time Pick Up Tool 7:15 A.M. Time Off Location A.M.
Time Set Packer(s) 8:45 A.M. Time Started Off Bottom 11:45 A.M. Maximum Temperature 108°
Initial Hydrostatic Pressure (A) 1780 P.S.I.
Initial Flow Period Minutes 30 (B) 50 P.S.I. to (C) 40 P.S.I.
Initial Closed In Period Minutes 30 (D) 60 P.S.I.
Final Flow Period Minutes 60 (E) 40 P.S.I. to (F) 40 P.S.I.
Final Closed In Period Minutes 60 (G) 60 P.S.I.
Final Hydrostatic Pressure (H) 1750 P.S.I. 3351

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] OLSEN
Signature of Customer or his authorized representative
Western Representative Allen Edgington 0525

FIELD INVOICE
Open Hole Test \$ 550.00
Miscrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
Telecopier \$
TOTAL \$ 550.00

WESTERN TESTING CO., INC.

Pressure Data

Date 4-21-85

Test Ticket No. 8098

Recorder No. 3351

Capacity 4000

Location _____ Ft

Clock No. _____ Elevation _____

Well Temperature _____ °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1780</u>	P.S.I.		
B First Initial Flow Pressure	<u>35</u>	P.S.I.	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>36</u>	P.S.I.	<u>30</u> Mins.	<u>33</u> Mins.
D Initial Closed-in Pressure	<u>50</u>	P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>36</u>	P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
F Second Final Flow Pressure	<u>37</u>	P.S.I.		
G Final Closed-in Pressure	<u>52</u>	P.S.I.		
H Final Hydrostatic Mud	<u>1736</u>	P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 7 Inc.
of 5 mins. and a
final inc. of 0 Min.

Initial Shut-In
Breakdown: 12 Inc.
of 3 mins. and a
final inc. of 0 Min.

Second Flow Pressure
Breakdown: 13 Inc.
of 5 mins. and a
final inc. of 0 Min.

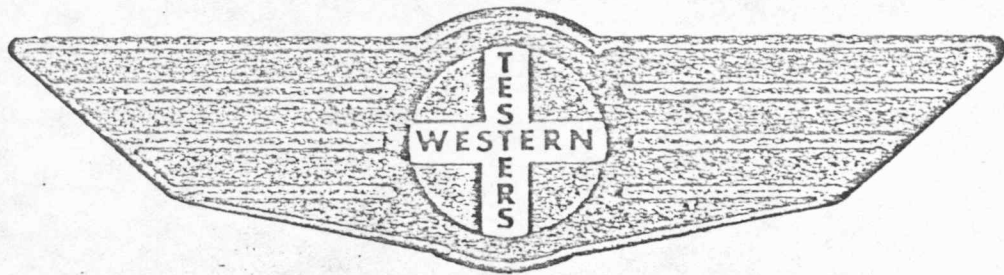
Final Shut-In
Breakdown: 21 Inc.
of 3 mins. and a
final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	<u>35</u>	0	<u>36</u>	0	<u>36</u>	0	<u>37</u>
P 2 5	<u>↓</u>	3	<u>37</u>	5	<u>↓</u>	3	<u>38</u>
P 3 10	<u>↓</u>	6	<u>38</u>	10	<u>↓</u>	6	<u>39</u>
P 4 15	<u>35</u>	9	<u>39</u>	15	<u>↓</u>	9	<u>40</u>
P 5 20	<u>35</u>	12	<u>40</u>	20	<u>↓</u>	12	<u>41</u>
P 6 25	<u>36</u>	15	<u>41</u>	25	<u>↓</u>	15	<u>42</u>
P 7 30	<u>36</u>	18	<u>42</u>	30	<u>↓</u>	18	<u>43</u>
P 8 35		21	<u>43</u>	35	<u>↓</u>	21	<u>44</u>
P 9 40		24	<u>44</u>	40	<u>↓</u>	24	<u>45</u>
P10 45		27	<u>46</u>	45	<u>36</u>	27	<u>46</u>
P11 50		30	<u>48</u>	50	<u>37</u>	30	<u>47</u>
P12 55		33	<u>50</u>	55	<u>37</u>	33	<u>48</u>
P13 60		36		60	<u>37</u>	36	<u>48</u>
P14 65		39		65		39	<u>49</u>
P15 70		42		70		42	<u>49</u>
P16 75		45		75		45	<u>50</u>
P17 80		48		80		48	<u>50</u>
P18 85		51		85		51	<u>51</u>
P19 90		54		90		54	<u>51</u>
P20 95		57		95		57	<u>52</u>
100		60		100		60	<u>52</u>

FORMATION

TEST

REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 4-21-85
CUSTOMER: RANGE OIL CO. INC.
WELL: 1 TEST: 1
ELEVATION (KB): 1475 FORMATION: MISSISSIPPI/OSAGE
SECTION: 2 TOWNSHIP: 23S
RANGE: 4W COUNTY: RENO STATE: KANSAS
GAUGE SN #3351 RANGE: 4000 CLOCK: 12

INTERVAL TEST FROM: 3315 FT TO: 3335 FT TOTAL DEPTH: 3335 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 3310 FT SIZE: 6 3/4 IN PACKER DEPTH: 3315 FT SIZE: 6 3/4 IN
PACKER DEPTH: FT SIZE: IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RANGE DRLG. RIG #1
MUD TYPE: CHEMICAL VISCOSITY: 45
WEIGHT: 9.8 WATER LOSS (CC): 12.0
CHLORIDES (P.P.M.): 2200
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 147 FT I.D.: 2.25 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 3148 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 20 FT TOOL SIZE: 5 1/2 OD IN
ANCHOR LENGTH: 20 FT SIZE: 5 1/2 OD 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 XH IN

BLOW: VERY WEAK BLOW 60 MINUTES TO INTERMITTENT
THRU FINAL FLOW PERIOD.

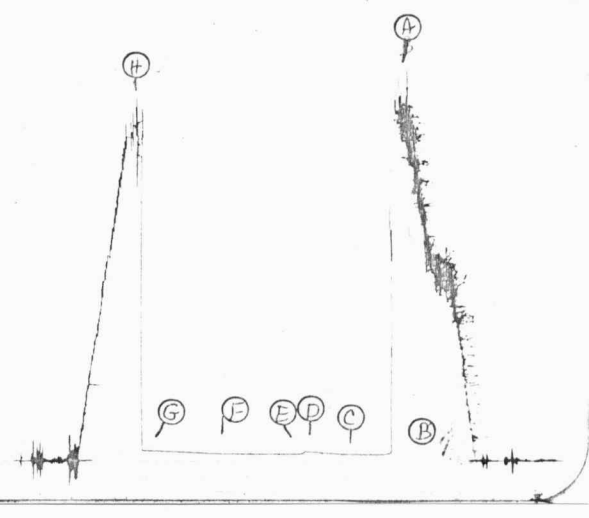
RECOVERED: 10 FT OF: DRILLING MUD WITH 2 SMALL OIL SPOTS ON TOP.
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 8:45 AM TIME STARTED OFF BOTTOM: 11:45 AM
WELL TEMPERATURE: 108 °F
INITIAL HYDROSTATIC PRESSURE: (A) 1780 PSI
INITIAL FLOW PERIOD MIN: 30 (B) 35 PSI TO (C) 36 PSI
INITIAL CLOSED IN PERIOD MIN: 33 (D) 50 PSI
FINAL FLOW PERIOD MIN: 60 (E) 36 PSI TO (F) 37 PSI
FINAL CLOSED IN PERIOD MIN: 60 (G) 52 PSI
FINAL HYDROSTATIC PRESSURE (H) 1736 PSI

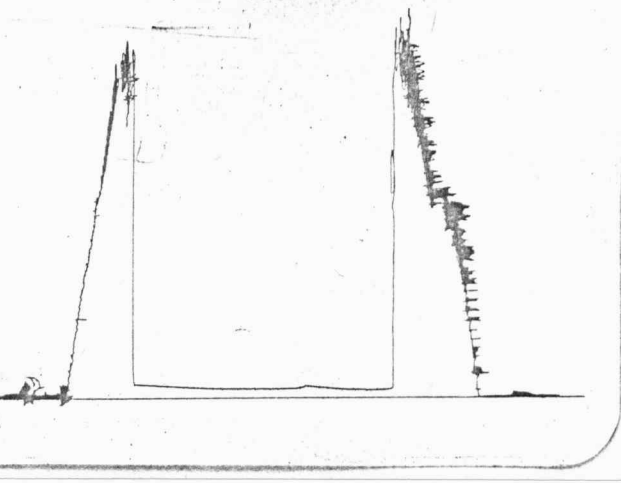
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DATA |
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TKT # 8098
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8098
DATA |
5366

TKT # 8098
O





WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET No 8099

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

Elevation 1475 KB Formation Miss-Osage Eff. Pay Ft.

RO40 District 13 Augusta Date 4-21-85 Customer Order No.
COMPANY NAME Range Oil Co Inc.
ADDRESS 240 Page Ct. Wichita, Ks 67202
LEASE AND WELL NO Zerger #1 COUNTY Reno STATE KS Sec. 2 Twp 23S Rge 4W
Mail Invoice To #1 Zerger Same No. Copies Requested 1
Co. Name Same Address No. Copies Requested 5
Mail Charts To Same Address

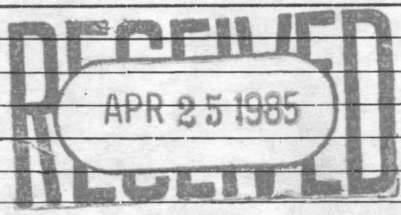
Formation Test No. 2 Interval Tested From 3335 ft. to 3345 ft. Total Depth 3345 ft.
Packer Depth 3330 ft. Size 6.75 in. Packer Depth - ft. Size - in.
Packer Depth 3335 ft. Size 6.75 in. Packer Depth - ft. Size - in.
Depth of Selective Zone Set

Top Recorder Depth (Inside) AP 3332 ft. Recorder Number 3351 Cap. 4000
Bottom Recorder Depth (Outside) 3340 ft. Recorder Number 5666 Cap. 3950
Below Saddle Recorder Depth ft. Recorder Number Cap.

Drilling Contractor RANGE 1 Drill Collar Length 147 I. D. 2.25 in.
Mud Type Chem Viscosity 43 Weight Pipe Length I. D. in.
Weight 9.9 Water Loss 12 cc Drill Pipe Length 3163 I. D. 3.8 in.
Chlorides 2100 P.P.M. Test Tool Length 25 ft. Tool Size 5.5 in.
Jars: Make - Serial Number Anchor Length 10 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: Weak thru out

Recovered 20 ft. of Watery Mud
Recovered ft. of
Recovered ft. of
Recovered ft. of
Recovered ft. of
Chlorides 5,000 P.P.M. Sample Jars used 1 Remarks:



Time On Location SIDBY A.M. Time Pick Up Tool 6:45 P.M. Time Off Location P.M.
Time Set Packer(s) 8:15 P.M. Time Started Off Bottom 11:15 P.M. Maximum Temperature 108
Initial Hydrostatic Pressure (A) 1760 P.S.I.
Initial Flow Period Minutes 30 (B) 30 P.S.I. to (C) 30 P.S.I.
Initial Closed In Period Minutes 30 (D) 90 P.S.I.
Final Flow Period Minutes 60 (E) 30 P.S.I. to (F) 30 P.S.I.
Final Closed In Period Minutes 60 (G) 110 P.S.I.
Final Hydrostatic Pressure (H) 1750 P.S.I. # 3351

COMPANY TERMS

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Test Approved By Robert Olsen OLSEN
Signature of Customer or his authorized representative
Western Representative Allen Edgington 0525

FIELD INVOICE

Open Hole Test \$ 550.00
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
Telecopier \$
TOTAL \$ 550.00

WESTERN TESTING CO., INC.

Pressure Data

Date 4-21-85

Test Ticket No. 8099

Recorder No. 3351

Capacity 4000

Location _____ Ft

Clock No. _____ Elevation _____ Well Temperature _____ °F

Point	Pressure	P.S.I.	Open Tool	Time Given	Time Computed
A. Initial Hydrostatic Mud	<u>1737</u>	P.S.I.	Open Tool		
B. First Initial Flow Pressure	<u>22</u>	P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C. First Final Flow Pressure	<u>22</u>	P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>33</u> Mins.
D. Initial Closed-in Pressure	<u>90</u>	P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>65</u> Mins.
E. Second Initial Flow Pressure	<u>30</u>	P.S.I.	Final Closed-in Pressure	<u>40</u> Mins.	<u>63</u> Mins.
F. Second Final Flow Pressure	<u>32</u>	P.S.I.			
G. Final Closed-in Pressure	<u>114</u>	P.S.I.			
H. Final Hydrostatic Mud	<u>1718</u>	P.S.I.			

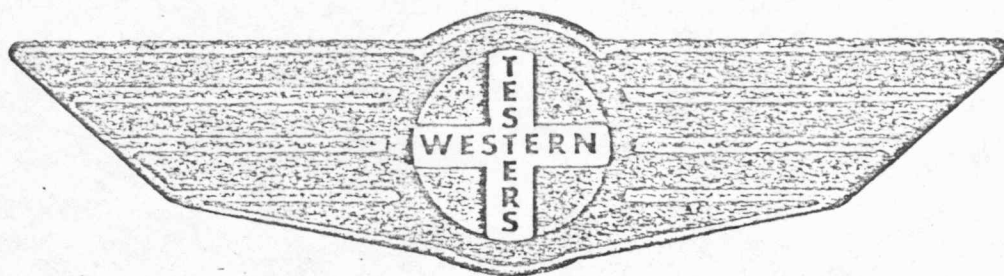
PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>7</u> Inc.		Breakdown: <u>12</u> Inc.		Breakdown: <u>14</u> Inc.		Breakdown: <u>22</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>22</u>	0	<u>22</u>	0	<u>30</u>	0	<u>32</u>
P 2 5	<u>↓</u>	3	<u>24</u>	5	<u>↓</u>	3	<u>34</u>
P 3 10	<u>↓</u>	6	<u>28</u>	10	<u>↓</u>	6	<u>37</u>
P 4 15	<u>22</u>	9	<u>34</u>	15	<u>30</u>	9	<u>41</u>
P 5 20	<u>↓</u>	12	<u>41</u>	20	<u>↓</u>	12	<u>44</u>
P 6 25	<u>↓</u>	15	<u>48</u>	25	<u>↓</u>	15	<u>48</u>
P 7 30	<u>22</u>	18	<u>55</u>	30	<u>30</u>	18	<u>52</u>
P 8 35		21	<u>62</u>	35	<u>31</u>	21	<u>56</u>
P 9 40		24	<u>68</u>	40	<u>31</u>	24	<u>61</u>
P10 45		27	<u>76</u>	45	<u>31</u>	27	<u>66</u>
P11 50		30	<u>83</u>	50	<u>32</u>	30	<u>70</u>
P12 55		33	<u>90</u>	55	<u>32</u>	33	<u>74</u>
P13 60		36		60	<u>32</u>	36	<u>78</u>
P14 65		39		65	<u>32</u>	39	<u>83</u>
P15 70		42		70		42	<u>88</u>
P16 75		45		75		45	<u>93</u>
P17 80		48		80		48	<u>98</u>
P18 85		51		85		51	<u>103</u>
P19 90		54		90		54	<u>107</u>
P20 95		57		95		57	<u>100</u>
100		60		100		60	<u>112</u>
						63	<u>114</u>

FORMATION

TEST

REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 4-21-85 TICKET #8099
CUSTOMER: RANGE OIL CO. INC. LEASE: ZERGER
WELL: 1 TEST: 2 GEOLOGIST: R. OLSEN
ELEVATION (KB): 1475 FORMATION: MISSISSIPPI/OSAGE
SECTION: 2 TOWNSHIP: 23S
RANGE: 4W COUNTY: RENO STATE: KANSAS
GAUGE SN #3351 RANGE: 4000 CLOCK: 12

INTERVAL TEST FROM: 3335 FT TO: 3345 FT TOTAL DEPTH: 3345 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 3330 FT SIZE: 6 3/4 IN PACKER DEPTH: 3335 FT SIZE: 6 3/4 IN
PACKER DEPTH: FT SIZE: IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RANGE DRLG. RIG #1
MUD TYPE: CHEMICAL VISCOSITY: 43
WEIGHT: 9.9 WATER LOSS (CC): 12.0
CHLORIDES (P.P.M.): 2100
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 147 FT I.D.: 2.25 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 3163 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 25 FT TOOL SIZE: 5 1/2 OD IN
ANCHOR LENGTH: 10 FT SIZE: 5 1/2 OD 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 XH IN

BLOW: WEAK BLOW THROUGHOUT TEST.

RECOVERED: 20 FT OF: WATERY MUD.
RECOVERED: FT OF: CHLORIDES 5000 PPM.
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

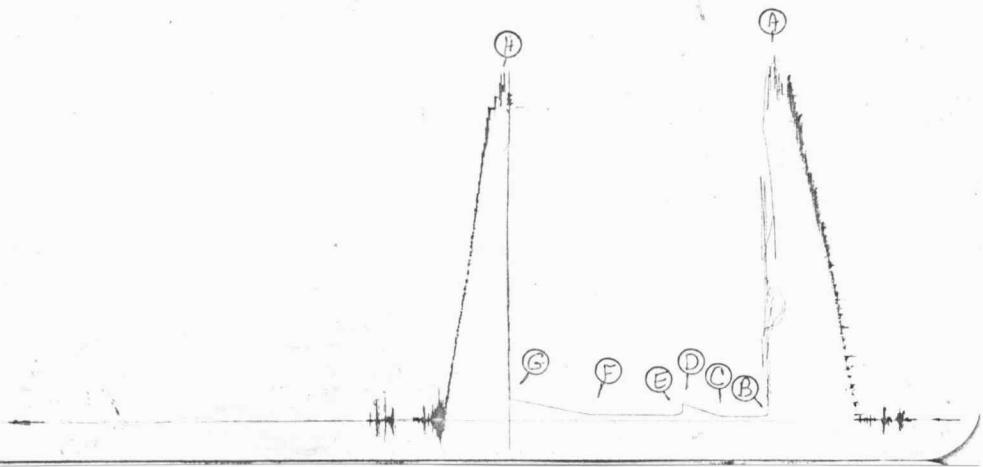
REMARKS:

TIME SET PACKER(S): 8:15 PM TIME STARTED OFF BOTTOM: 11:15 PM
WELL TEMPERATURE: 108 °F
INITIAL HYDROSTATIC PRESSURE: (A) 1737 PSI
INITIAL FLOW PERIOD MIN: 30 (B) 22 PSI TO (C) 22 PSI
INITIAL CLOSED IN PERIOD MIN: 33 (D) 90 PSI
FINAL FLOW PERIOD MIN: 65 (E) 30 PSI TO (F) 32 PSI
FINAL CLOSED IN PERIOD MIN: 63 (G) 114 PSI
FINAL HYDROSTATIC PRESSURE (H) 1718 PSI

8099
AST#2

TKT # 8099

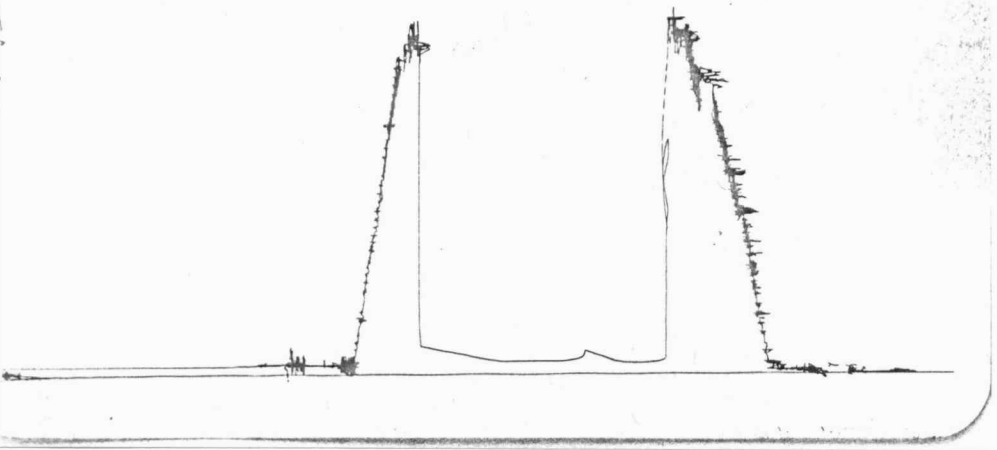
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8099
AST#2

TKT # 8099

O





WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET NO 8100

P. O. BOX 1599 WICHITA, KANSAS 67201

Elevation 1475 KB Formation Miss Eff. Pay Ft.

RO40 District Augusta Date 4-22-85 Customer Order No.
COMPANY NAME Range Oil Co Inc
ADDRESS 240 Page Ct. Wichita, Ks 67202
LEASE AND WELL NO. Zerger #1 COUNTY Reno STATE KS Sec. 2 Twp. 23S Rge. 4W
Mail Invoice To #1 Zerger Same No. Copies Requested 1
Co. Name Address
Mail Charts To Same No. Copies Requested 5
Address

Formation Test No. 3 Interval Tested From 3347 ft. to 3370 ft. Total Depth 3370 ft.
Packer Depth 3342 ft. Size 6.75 in. Packer Depth ft. Size in.
Packer Depth 3347 ft. Size 6.75 in. Packer Depth ft. Size in.
Depth of Selective Zone Set
Top Recorder Depth (Inside) 3361 ft. Recorder Number 3351 Cap. 4000
Bottom Recorder Depth (Outside) 3365 ft. Recorder Number 5666 Cap. 3950
Below Saddle Recorder Depth ft. Recorder Number Cap.
Drilling Contractor Range #1 Drill Collar Length 147 I. D. 2.25 in.
Mud Type Chem Viscosity 43 Weight Pipe Length I. D.
Weight 9.9 Water Loss 12.0 cc. Drill Pipe Length 3180 I. D. 3.8 in.
Chlorides 2100 P.P.M. Test Tool Length 20 ft. Tool Size 5.5 in.
Jars: Make Serial Number Anchor Length 23 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 2330 ft. of Gas in Pipe
Recovered 10 ft. of Slightly oil cut Mud 2% oil
Recovered 180 ft. of VERY Heavy Gas cut, oil cut (FROGGY) Mud 50% Gas 20% oil
Recovered 60 ft. of Salt Water
Chlorides 87,000 P.P.M. Sample Jars used 4 Remarks:

Time On Location STDBY A.M. Time Pick Up Tool 8:15 A.M. Time Off Location STDBY A.M.
Time Set Packer(s) 10:00 P.M. Time Started Off Bottom 1:00 P.M. Maximum Temperature 108
Initial Hydrostatic Pressure (A) 1780 P.S.I.
Initial Flow Period Minutes 30 (B) 50 P.S.I. to (C) 70 P.S.I.
Initial Closed In Period Minutes 30 (D) 330 P.S.I.
Final Flow Period Minutes 60 (E) 80 P.S.I. to (F) 90 P.S.I.
Final Closed In Period Minutes 60 (G) 340 P.S.I.
Final Hydrostatic Pressure (H) 1780 P.S.I. #3351

COMPANY TERMS
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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 Robert Olsen OLSEN
Signature of Customer or his authorized representative
Western Representative Allen Edgington 0525

FIELD INVOICE
Open Hole Test \$ 550.00
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
Telecopier \$
TOTAL \$ 550.00

WESTERN TESTING CO., INC.
Pressure Data

Date: 4-22-85 Test Ticket No. 8100
 Recorder No. 3351 Capacity 4000 Location _____ Ft
 Clock No. _____ Elevation _____ Well Temperature _____ °F

Point	Pressure		Time Given	Time Computed
A. Initial Hydrostatic Mud	<u>1759</u> P.S.I.	Open Tool		M
B. First Initial Flow Pressure	<u>44</u> P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C. First Final Flow Pressure	<u>60</u> P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>33</u> Mins.
D. Initial Closed-in Pressure	<u>324</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>65</u> Mins.
E. Second Initial Flow Pressure	<u>71</u> P.S.I.	Final Closed-in Pressure	<u>60</u> Mins.	<u>62</u> Mins.
F. Second Final Flow Pressure	<u>90</u> P.S.I.			
G. Final Closed-in Pressure	<u>332</u> P.S.I.			
H. Final Hydrostatic Mud	<u>1759</u> P.S.I.			

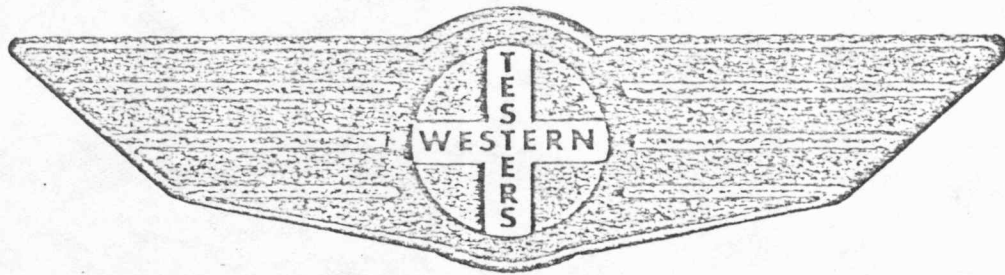
PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>7</u> Inc.		Breakdown: <u>12</u> Inc.		Breakdown: <u>14</u> Inc.		Breakdown: <u>22</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>44</u>	0	<u>60</u>	0	<u>71</u>	0	<u>90</u>
P 2 5	<u>46</u>	3	<u>118</u>	5	<u>72</u>	3	<u>157</u>
P 3 10	<u>51</u>	6	<u>165</u>	10	<u>73</u>	6	<u>206</u>
P 4 15	<u>57</u>	9	<u>205</u>	15	<u>74</u>	9	<u>238</u>
P 5 20	<u>58</u>	12	<u>237</u>	20	<u>76</u>	12	<u>258</u>
P 6 25	<u>59</u>	15	<u>263</u>	25	<u>78</u>	15	<u>272</u>
P 7 30	<u>60</u>	18	<u>281</u>	30	<u>80</u>	18	<u>285</u>
P 8 35		21	<u>294</u>	35	<u>82</u>	21	<u>292</u>
P 9 40		24	<u>306</u>	40	<u>84</u>	24	<u>297</u>
P10 45		27	<u>314</u>	45	<u>86</u>	27	<u>303</u>
P11 50		30	<u>321</u>	50	<u>87</u>	30	<u>308</u>
P12 55		33	<u>324</u>	55	<u>88</u>	33	<u>312</u>
P13 60		36		60	<u>89</u>	36	<u>315</u>
P14 65		39		65	<u>90</u>	39	<u>318</u>
P15 70		42		70		42	<u>320</u>
P16 75		45		75		45	<u>322</u>
P17 80		48		80		48	<u>324</u>
P18 85		51		85		51	<u>326</u>
P19 90		54		90		54	<u>328</u>
P20 95		57		95		57	<u>330</u>
100		60		100		60	<u>331</u>
						63	<u>332</u>

FORMATION

TEST

REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

Company RANGE OIL COMPANY, INC. Lease & Well No. #1 ZERGER Sec. 2 Twp. 23s Rge. 4w Test No. 3 Date 4/22/85

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 4-22-85
CUSTOMER: RANGE OIL CO. INC.
WELL: 1
ELEVATION (KB): 1475
SECTION: 2
RANGE: 4W
GAUGE SN #3351

TEST: 3
FORMATION: MISSISSIPPI
TOWNSHIP: 23S
COUNTY: RENO
RANGE: 4000

TICKET #8100
LEASE: ZERGER
GEOLOGIST: R. OLSEN
STATE: KANSAS
CLOCK: 12

INTERVAL TEST FROM: 3347 FT TO: 3370 FT TOTAL DEPTH: 3370 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 3342 FT SIZE: 6 3/4 IN PAKER DEPTH: 3347 FT SIZE: 6 3/4 IN
PACKER DEPTH: FT SIZE: IN PAKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RANGE DRLG. RIG #1
MUD TYPE: CHEMICAL VISCOSITY: 43
WEIGHT: 9.9 WATER LOSS (CC): 12.0
CHLORIDES (P.P.M.): 2100
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 147 FT I.D.: 2.25 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 3180 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 20 FT TOOL SIZE: 5 1/2 OD IN
ANCHOR LENGTH: 23 FT SIZE: 5 1/2 OD 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 XH IN

BLOW: STRONG BLOW THROUGHOUT TEST.

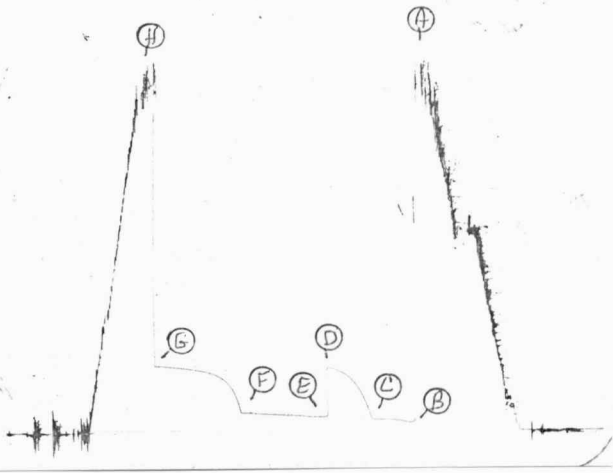
RECOVERED: 2330 FT OF: GAS ABOVE FLUID.
RECOVERED: 10 FT OF: SLIGHTLY OIL CUT MUD (2% OIL).
RECOVERED: 180 FT OF: VERY HEAVY GAS CUT OIL CUT (FROGGY) MUD
RECOVERED: FT OF: (50% GAS; 20% OIL).
RECOVERED: 60 FT OF: SALT WATER.
RECOVERED: FT OF: CHLORIDES 87000 PPM.
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 10:00 AM TIME STARTED OFF BOTTOM: 1:00 PM
WELL TEMPERATURE: 108 °F
INITIAL HYDROSTATIC PRESSURE: (A) 1759 PSI
INITIAL FLOW PERIOD MIN: 30 (B) 44 PSI TO (C) 60 PSI
INITIAL CLOSED IN PERIOD MIN: 33 (D) 324 PSI
FINAL FLOW PERIOD MIN: 65 (E) 71 PSI TO (F) 90 PSI
FINAL CLOSED IN PERIOD MIN: 63 (G) 332 PSI
FINAL HYDROSTATIC PRESSURE (H) 1759 PSI

TKT #8100

I

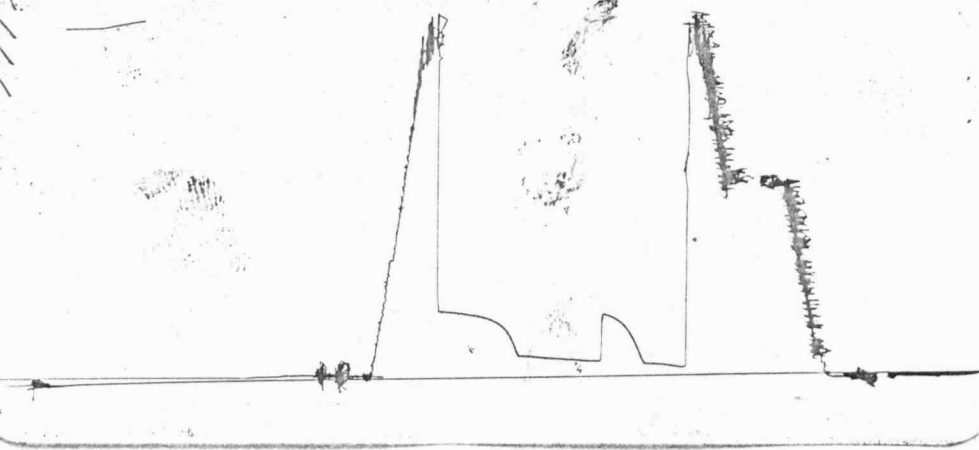


01111
DST#3

3851

TKT #8100

0



8100
DST#3

5666



WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET

No. 8126

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

Elevation 1475 KB Formation MISS Eff. Pay Ft.

WICHITA, KANSAS 67201

13

R040 District Augusta Date 4-22-85 Customer Order No.

COMPANY NAME Range Oil Co. Inc.

ADDRESS 240 Page Ct. Wichita, Ks 67202

LEASE AND WELL NO. Zarger #1 COUNTY Reno STATE Ks Sec. 2 Twp. 23S Rge. 4W

Mail Invoice To #1 Zarger Same No. Copies Requested 1

Co. Name Address

Mail Charts To Same No. Copies Requested 5

Formation Test No. 4 Interval Tested From 3390 ft. to 3402 ft. Total Depth 3402 ft.

Packer Depth 3385 ft. Size 6.75 in. Packer Depth ft. Size in.

Packer Depth 3390 ft. Size 6.75 in. Packer Depth ft. Size in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3393 ft. Recorder Number 3351 Cap. 4000

Bottom Recorder Depth (Outside) 3397 ft. * Recorder Number 5666 Cap. 3950

Below Saddle Recorder Depth ft. Recorder Number Cap.

Drilling Contractor Range #1 Drill Collar Length 147 I. D. 2.25 in.

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

Weight 10. Water Loss 12. cc. Drill Pipe Length 3223 I. D. 3.8 in.

Chlorides 2,000 P.P.M. Test Tool Length 20 ft. Tool Size 5.5 in.

Jars: Make Serial Number Anchor Length 12 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 KH in.

Blow: Strong thru out

Recovered 90 ft. of Muddy water with a skum of oil on top

Recovered 180 ft. of Salt water

Recovered ft. of

Recovered ft. of

Recovered ft. of

Chlorides 130,000 P.P.M. Sample Jars used 2 Remarks: read outside chart

RECEIVED APR 25 1985

Time On Location STDBY A.M. P.M. Time Pick Up Tool 9:15 A.M. P.M. Time Off Location STDBY A.M. P.M.

Time Set Packer(s) 10:45 A.M. P.M. Time Started Off Bottom 1:45 A.M. P.M. Maximum Temperature 110 F

Initial Hydrostatic Pressure (A) 1805 P.S.I.

Initial Flow Period Minutes 30 (B) 50 P.S.I. to (C) 90 P.S.I.

Initial Closed In Period Minutes 30 (D) 415 P.S.I.

Final Flow Period Minutes 60 (E) 100 P.S.I. to (F) 140 P.S.I.

Final Closed In Period Minutes 60 (G) 415 P.S.I.

Final Hydrostatic Pressure (H) 1755 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 Robert Olsen Signature of Customer or his authorized representative

Western Representative Allen Edgington 0525

FIELD INVOICE

Open Hole Test \$ 550.00
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
Telecopier \$
TOTAL \$ 550.00

WESTERN TESTING CO., INC.

Pressure Data

Date 4-22-85

Test Ticket No. 8126

Recorder No. 5666

Capacity 3950

Location _____ Ft.

Clock No. _____ Elevation _____

Well Temperature _____ °F

Point	Pressure	P.S.I.	Open Tool	Time Given	Time Computed
A. Initial Hydrostatic Mud	<u>1799</u>	P.S.I.			
B. First Initial Flow Pressure	<u>52</u>	P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>35</u> Mins.
C. First Final Flow Pressure	<u>85</u>	P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>30</u> Mins.
D. Initial Closed-in Pressure	<u>422</u>	P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>65</u> Mins.
E. Second Initial Flow Pressure	<u>106</u>	P.S.I.	Final Closed-in Pressure	<u>60</u> Mins.	<u>63</u> Mins.
F. Second Final Flow Pressure	<u>142</u>	P.S.I.			
G. Final Closed-in Pressure	<u>431</u>	P.S.I.			
H. Final Hydrostatic Mud	<u>1769</u>	P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 8 Inc.
of 5 mins. and a
final inc. of 0 Min.

Initial Shut-In
Breakdown: 11 Inc.
of 3 mins. and a
final inc. of 0 Min.

Second Flow Pressure
Breakdown: 14 Inc.
of 5 mins. and a
final inc. of 0 Min.

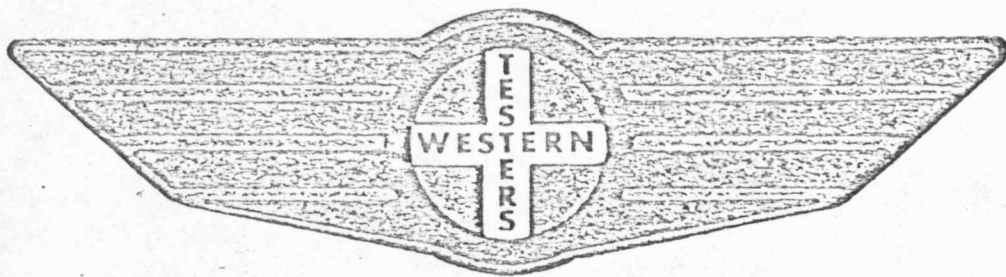
Final Shut-In
Breakdown: 22 Inc.
of 3 mins. and a
final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	<u>52</u>	0	<u>85</u>	0	<u>106</u>	0	<u>142</u>
P 2 5	<u>53</u>	3	<u>188</u>	5	<u>107</u>	3	<u>222</u>
P 3 10	<u>59</u>	6	<u>305</u>	10	<u>110</u>	6	<u>312</u>
P 4 15	<u>65</u>	9	<u>354</u>	15	<u>113</u>	9	<u>354</u>
P 5 20	<u>71</u>	12	<u>382</u>	20	<u>115</u>	12	<u>373</u>
P 6 25	<u>76</u>	15	<u>396</u>	25	<u>119</u>	15	<u>387</u>
P 7 30	<u>80</u>	18	<u>405</u>	30	<u>122</u>	18	<u>396</u>
P 8 35	<u>85</u>	21	<u>412</u>	35	<u>125</u>	21	<u>403</u>
P 9 40		24	<u>416</u>	40	<u>129</u>	24	<u>408</u>
P10 45		27	<u>420</u>	45	<u>131</u>	27	<u>412</u>
P11 50		30	<u>422</u>	50	<u>136</u>	30	<u>416</u>
P12 55		33		55	<u>139</u>	33	<u>419</u>
P13 60		36		60	<u>141</u>	36	<u>421</u>
P14 65		39		65	<u>142</u>	39	<u>423</u>
P15 70		42		70		42	<u>424</u>
P16 75		45		75		45	<u>425</u>
P17 80		48		80		48	<u>426</u>
P18 85		51		85		51	<u>427</u>
P19 90		54		90		54	<u>428</u>
P20 95		57		95		57	<u>429</u>
100		60		100		60	<u>430</u>
						63	<u>431</u>

FORMATION

TEST

REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

Company RANGE OIL COMPANY, INC. Lease & Well No. #1 ZERGER Sec. 2 Twp. 23s Rge. 4w Test No. 4 Date 4/22/85

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 4-22-85
CUSTOMER: RANGE OIL CO. INC.
WELL: 1 TEST: 4
ELEVATION (KB): 1475 FORMATION: MISSISSIPPI
SECTION: 2 TOWNSHIP: 23S
RANGE: 4W COUNTY: RENO STATE: KANSAS
GAUGE SN #5666 RANGE: 3950 CLOCK: 12

TICKET #8126
LEASE: ZERGER
GEOLOGIST: R. OLSEN

INTERVAL TEST FROM: 3390 FT TO: 3402 FT TOTAL DEPTH: 3402 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 3385 FT SIZE: 6 3/4 IN PACKER DEPTH: 3390 FT SIZE: 6 3/4 IN
PACKER DEPTH: FT SIZE: IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RANGE DRLG. RIG #1
MUD TYPE: CHEMICAL VISCOSITY: 43
WEIGHT: 10.1 WATER LOSS (CC): 12.0
CHLORIDES (P.P.M.): 2000
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 147 FT I.D.: 2.25 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 3223 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 20 FT TOOL SIZE: 5 1/2 OD IN
ANCHOR LENGTH: 12 FT SIZE: 5 1/2 OD 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 XH IN

BLOW: STRONG BLOW THROUGHOUT TEST.

RECOVERED: 90 FT OF: MUDDY WATER WITH A SCUM OF OIL ON TOP.
RECOVERED: 180 FT OF: SALT WATER.
RECOVERED: FT OF: CHLORIDES 130000 PPM.
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS: DID NOT RECEIVE INSIDE CHART #3351.
READ OUTSIDE CHART #5666.

TIME SET PACKER(S): 10:45 PM TIME STARTED OFF BOTTOM: 1:45 AM
WELL TEMPERATURE: 110 °F
INITIAL HYDROSTATIC PRESSURE: (A) 1799 PSI
INITIAL FLOW PERIOD MIN: 35 (B) 52 PSI TO (C) 85 PSI
INITIAL CLOSED IN PERIOD MIN: 30 (D) 422 PSI
FINAL FLOW PERIOD MIN: 65 (E) 106 PSI TO (F) 142 PSI
FINAL CLOSED IN PERIOD MIN: 63 (G) 431 PSI
FINAL HYDROSTATIC PRESSURE (H) 1769 PSI

0126
DST 44

TKT #8126

0

