

TRILOBITE TESTING L.L.C.

COPY

CONFIDENTIAL

OPERATOR: Russell Oil, Inc.
WELL NAME: Duggan #2
LOCATION: 30-21-11 Stafford co KS
INTERVAL: 3490.00 To 3549.00 ft

DATE 7-31-00
KB 1791.00 ft
GR 1786.00 ft
TD 3549.00 ft
TICKET NO: 13281
FORMATION: Arbuckle
TEST TYPE: CONVENTIONAL

RECORDER DATA

Table with columns: Mins, Field, 1, 2, 3, 4, TIME DATA. Rows include PF, SI, SF, FS with various readings and time ranges.

Table with columns: Field, 1, 2, 3, 4, TIME DATA. Rows include A through G with initial and final flow readings and times.

RECOVERY

Tot Fluid 67.00 ft of 0.00 ft in DC and 67.00 ft in DP
303.00 ft of Gas in pipe
5.00 ft of Oil & gas cut mud
0.00 ft of 10% gas 60% oil 30% mud
62.00 ft of Oil & gas cut mud
0.00 ft of 5% gas 25% oil 70% mud
0.00 ft of
0.00 ft of
0.00 ft of
SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

TOOL DATA table with columns: Tool Name, Value. Includes Tool Wt., Wt Set On Packer, Wt Pulled Loose, Initial Str Wt, Unseated Str Wt, Bot Choke, Hole Size, D Col. ID, D. Pipe ID, D.C. Length, D.P. Length, H.W. I.D., H.W. Length.

MUD DATA table with columns: Mud Property, Value. Includes Mud Type, Weight, Vis., W.L., F.C., Mud Drop.

BLOW DESCRIPTION

Initial Flow: Weak building to 2" fair blow.
Final Flow: Weak building to 2" fair blow.

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NOV 21 2000
CONSERVATION DIVISION
WICHITA, KS

SAMPLES:
SENT TO:

Test Successful: Y

Table with columns: Property, Value. Includes Amt. of fill, Btm. H. Temp., Hole Condition, % Porosity, Packer Size, No. of Packers, Cushion Amt., Cushion Type, Reversed Out, Tool Chased, Tester, Co. Rep., Contr., Rig #, Unit #, Pump T.

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COPY

OPERATOR : Russell Oil Inc. DATE 7-31-00  
 WELL NAME: Duggan #2 KB 1791.00 ft TICKET NO: 13282 DST #2  
 LOCATION : 30-21-11 Stafford co KS GR 1786.00 ft FORMATION: Arbuckle  
 INTERVAL : 3550.00 To 3557.00 ft TD 3557.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	13254	13254				PF Fr. 1950 to 2020 hr
SI 60 Range(Psi )	4550.0	4550.0	0.0	0.0	0.0	IS Fr. 2020 to 2120 hr
SF 45 Clock(hrs)	12	12				SF Fr. 2120 to 2205 hr
FS 120 Depth(ft )	3554.0	3554.0	0.0	0.0	0.0	FS Fr. 2205 to 0005 hr

	Field	1	2	3	4	
A. Init Hydro	1822.0	1778.0	0.0	0.0	0.0	T STARTED 1820 hr
B. First Flow	47.0	49.0	0.0	0.0	0.0	T ON BOTM 1945 hr
Bl. Final Flow	47.0	44.0	0.0	0.0	0.0	T OPEN 1950 hr
C. In Shut-in	296.0	299.0	0.0	0.0	0.0	T PULLED 0050 hr
D. Init Flow	82.0	72.0	0.0	0.0	0.0	T OUT 0210 hr
E. Final Flow	94.0	77.0	0.0	0.0	0.0	
F. Fl Shut-in	237.0	222.0	0.0	0.0	0.0	
G. Final Hydro	1764.0	1711.0	0.0	0.0	0.0	
Inside/Outside	0	0				

RECOVERY

Tot Fluid 198.00 ft of 0.00 ft in DC and 198.00 ft in DP  
 620.00 ft of Gas in pipe  
 72.00 ft of Clean oil  
 0.00 ft of 100% oil  
 128.00 ft of Heavy oil & gas cut mud  
 0.00 ft of 20% gas 60% oil 20% mud  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 SALINITY 0.00 P.P.M. A.P.I. Gravity 32.00

TOOL DATA-----  
 Tool Wt. 800.00 lbs  
 Wt Set On Packer 20000.00 lbs  
 Wt Pulled Loose 80000.00 lbs  
 Initial Str Wt 52000.00 lbs  
 Unseated Str Wt 52000.00 lbs  
 Bot Choke 0.75 in  
 Hole Size 7.78 in  
 D Col. ID 2.25 in  
 D. Pipe ID 3.80 in  
 D.C. Length 0.00 ft  
 D.P. Length 3535.00 ft  
 H.W. I.D' 2.70 in  
 H.W. Length 442.00 ft

BLOW DESCRIPTION

Initial Flow:  
 Strong bottom of bucket in 16 minutes.  
 Initial Shut-in:  
 Bled off blow blow came back built to 1/2".  
 Final Flow:  
 Strong bottom of bucket in 16 minutes  
 Final Shut-In:  
 Bled off blow- blow came back- built to 1/2".

MUD DATA-----  
 Mud Type Chemical  
 Weight 9.40 lb/c:  
 Vis. 50.00 S/L  
 W.L. 11.40 in3  
 F.C. 0.00 in  
 Mud Drop  
 Amt. of fill 0.00 ft  
 Btm. H. Temp. 1050.00 F  
 Hole Condition  
 % Porosity 0.00  
 Packer Size 6.75 in  
 No. of Packers 2  
 Cushion Amt. 0.00  
 Cushion Type  
 Reversed Out  
 Tool Chased  
 Tester Dan Bangle  
 Co. Rep. Todd Morgenstern  
 Contr. Shields  
 Rig # 1  
 Unit #  
 Pump T.

SAMPLES:  
SENT TO:

Test Successful: Y

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TRILOBITE TESTING L.L.C.

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OPERATOR : Russell Oil, Inc.  
WELL NAME: Duggan #2  
LOCATION : 30-21-11 Stafford co KS  
INTERVAL : 3559.00 To 3566.00 ft

DATE 8-1-00  
KB 1791.00 ft TICKET NO: 13283 DST #3  
GR 1786.00 ft FORMATION: Arbuckle  
TD 3566.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 45	Rec.	13254	13254			PF Fr. 1015 to 1100 hr
SI 45	Range(Psi)	4550.0	4550.0	0.0	0.0	IS Fr. 1100 to 1145 hr
SF 45	Clock(hrs)	12	12			SF Fr. 1145 to 1230 hr
FS 90	Depth(ft)	3563.0	3563.0	0.0	0.0	FS Fr. 1230 to 1400 hr

	Field	1	2	3	4	
A. Init Hydro	1834.0	1775.0	0.0	0.0	0.0	T STARTED 0835 hr
B. First Flow	35.0	29.0	0.0	0.0	0.0	T ON BOTM 1010 hr
B1. Final Flow	47.0	40.0	0.0	0.0	0.0	T OPEN 1015 hr
C. In Shut-in	485.0	482.0	0.0	0.0	0.0	T PULLED 1400 hr
D. Init Flow	59.0	40.0	0.0	0.0	0.0	T OUT 1540 hr
E. Final Flow	71.0	48.0	0.0	0.0	0.0	
F. Fl Shut-in	651.0	643.0	0.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	1740.0	1703.0	0.0	0.0	0.0	Tool Wt. 800.00 lbs
Inside/Outside	0	0				Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 60000.00 lbs
						Initial Str Wt 52000.00 lbs
						Unseated Str Wt 52000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.78 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 3544.00 ft
						H.W. I.D 2.70 in
						H.W. Length 442.00 ft

RECOVERY

Tot Fluid 72.00 ft of 0.00 ft in DC and 72.00 ft in DP  
 360.00 ft of Gas in pipe  
 10.00 ft of Clean oil  
 0.00 ft of 100% oil  
 62.00 ft of Mud cut gassy oil  
 0.00 ft of 25% gas 55% oil 20% mud  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of

SALINITY 0.00 P.P.M. A.P.I. Gravity 32.00

BLOW DESCRIPTION

Initial Flow:  
Weak building to 2"  
Final Flow:  
Weak building to 4" fair blow.

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WICHITA, KS

MUD DATA-----

Mud Type Chemical  
Weight 9.40 lb/c  
Vis. 42.00 S/L  
W.L. 12.00 in3  
F.C. 0.00 in  
Mud Drop

Amt. of fill 0.00 ft  
Btm. H. Temp. 109.00 F  
Hole Condition  
% Porosity 0.00  
Packer Size 6.75 in  
No. of Packers 2  
Cushion Amt. 0.00  
Cushion Type  
Reversed Out  
Tool Chased  
Tester Dan Bangle  
Co. Rep. Todd Morgenstern  
Contr. Shields  
Rig # 1  
Unit #  
Pump T.

SAMPLES:  
SENT TO:

Test Successful: Y

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COPY

OPERATOR : Russell Oil, Inc.  
WELL NAME: Duggan #2  
LOCATION : 30-21-11 Stafford co KS  
INTERVAL : 3571.00 To 3585.00 ft

DATE 8-2-00  
KB 1791.00 ft TICKET NO: 13284 DST #4  
GR 1786.00 ft FORMATION: Arbuckle  
TD 3585.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30	Rec.	13254	13254	3024		PF Fr. 0005 to 0035 hr
SI 60	Range(Psi )	4550.0	4550.0	4995.0	0.0	0.0 IS Fr. 0035 to 0135 hr
SF 45	Clock(hrs)	12	12	elect		SF Fr. 0135 to 0220 hr
FS 120	Depth(ft )	3582.0	3582.0	3573.0	0.0	0.0 FS Fr. 0220 to 0420 hr

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	Field	1	2	3	4	
A. Init Hydro	1810.0	1778.0	1773.0	0.0	0.0	T STARTED 2206 hr
B. First Flow	47.0	49.0	26.0	0.0	0.0	T ON BOTM 0002 hr
B1. Final Flow	59.0	62.0	64.0	0.0	0.0	T OPEN 0005 hr
C. In Shut-in	827.0	839.0	833.0	0.0	0.0	T PULLED 0420 hr
D. Init Flow	82.0	89.0	69.0	0.0	0.0	T OUT 0625 hr
E. Final Flow	94.0	96.0	94.0	0.0	0.0	
F. Fl Shut-in	863.0	862.0	868.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	1693.0	1689.0	1679.0	0.0	0.0	Tool Wt. 900.00 lbs
Inside/Outside	O	O	I			Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 60000.00 lbs
						Initial Str Wt 52000.00 lbs
						Unseated Str Wt 52000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 0.00 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 3567.00 ft
						H.W. I.D 2.25 in
						H.W. Length 442.00 ft

RECOVERY

Tot Fluid 196.00 ft of 0.00 ft in DC and 196.00 ft in DP  
484.00 ft of Gas in pipe  
134.00 ft of Clean oil  
62.00 ft of Mud & gas cut oil  
0.00 ft of 30% gas 60% oil 10% mud  
0.00 ft of  
0.00 ft of  
0.00 ft of  
0.00 ft of  
SALINITY 0.00 P.P.M. A.P.I. Gravity 28.00

MUD DATA-----

Mud Type Chemical  
Weight 9.40 lb/c  
Vis. 42.00 S/L  
W.L. 12.00 in3  
F.C. 0.00 in  
Mud Drop N  
Amt. of fill 0.00 ft  
Btm. H. Temp. 105.00 F  
Hole Condition Good  
% Porosity 0.00  
Packer Size 6.75 in  
No. of Packers 2  
Cushion Amt. 0.00  
Cushion Type  
Reversed Out N  
Tool Chased N  
Tester Dan Bangle  
Co. Rep. Todd Morgenstern  
Contr. Shields  
Rig # 1  
Unit #  
Pump T.

BLOW DESCRIPTION

Initial Flow:  
Weak-building to 5" fair blow  
Initial Shut-In:  
Bled off blow-blow came back  
weak steady surface.  
Final Flow:  
Weak building to strong bottom of  
bucket in 18 minutes.  
Final Shut-In:  
Bled off blow-blow came back  
weak steady surface

SAMPLES:  
SENT TO:

Test Successful: Y

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TRILOBITE TESTING L.L.C.

COPY

OPERATOR : Russell Oil, Inc.

DATE 8-2-00

WELL NAME: Duggan #2

KB 1791.00 ft

TICKET NO: 13285

DST #5

LOCATION : 30-21-11 Stafford co KS

GR 1786.00 ft

FORMATION: Arbuckle

INTERVAL : 3590.00 To 3597.00 ft

TD 3597.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	3024					PF Fr. 1403 to 1433 hr
SI 45 Range(Psi )	4995.0	0.0	0.0	0.0	0.0	IS Fr. 1433 to 1518 hr
SF 30 Clock(hrs)	elect					SF Fr. 1518 to 1548 hr
FS 45 Depth(ft )	3593.0	0.0	0.0	0.0	0.0	FS Fr. 1548 to 1633 hr

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	Field	1	2	3	4	
A. Init Hydro	1757.0	0.0	0.0	0.0	0.0	T STARTED 1229 hr
B. First Flow	18.0	0.0	0.0	0.0	0.0	T ON BOTM 1400 hr
B1. Final Flow	25.0	0.0	0.0	0.0	0.0	T OPEN 1403 hr
C. In Shut-in	825.0	0.0	0.0	0.0	0.0	T PULLED 1633 hr
D. Init Flow	26.0	0.0	0.0	0.0	0.0	T OUT 1800 hr
E. Final Flow	33.0	0.0	0.0	0.0	0.0	
F. Fl Shut-in	697.0	0.0	0.0	0.0	0.0	
G. Final Hydro	1769.0	0.0	0.0	0.0	0.0	
Inside/Outside	I O	O	O			

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RECOVERY

Tot Fluid 20.00 ft of 0.00 ft in DC and 20.00 ft in DP  
 20.00 ft of Mud cut water  
 0.00 ft of 50% water 50% mud  
 0.00 ft of  
 0.00 ft of

TOOL DATA-----

Tool Wt.	800.00 lbs
Wt Set On Packer	20000.00 lbs
Wt Pulled Loose	60000.00 lbs
Initial Str Wt	52000.00 lbs
Unseated Str Wt	52000.00 lbs
Bot Choke	0.75 in
Hole Size	7.88 in
D Col. ID	0.00 in
D. Pipe ID	3.80 in
D.C. Length	0.00 ft
D.P. Length	3595.00 ft
H.W. I.D	2.25 in
H.W. Length	442.00 ft

SALINITY 23000.00 P.P.M. A.P.I. Gravity 0.00

MUD DATA-----

Mud Type	Chemical
Weight	9.20 lb/c
Vis.	45.00 S/L
W.L.	12.00 in3
F.C.	0.00 in
Mud Drop N	

BLOW DESCRIPTION

Initial Flow:  
Weak died in 27 minutes.

Final Flow:  
No blow.

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CONSERVATION DIVISION  
WICHITA, KS

SAMPLES:  
SENT TO:

Test Successful: Y

Amt. of fill	0.00 ft
Btm. H. Temp.	103.00 F
Hole Condition	Good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Dan Bangle
Co. Rep.	Todd Morgenstern
Contr.	Shields
Rig #	1
Unit #	
Pump T.	

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# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Nº 13281

## Test Ticket

Well Name & No.	<u>Duggan #2</u>	Test No.	<u>1</u>	Date	<u>7-31-00</u>				
Company	<u>Russell Oil, Inc.</u>	Zone Tested	<u>Arbuckle</u>						
Address	<u>P.O. Box 2410, Edmond, OK 73083</u>	Elevation	<u>1791</u>	KB	<u>1786</u> GL				
Co. Rep / Geo.	<u>Todd Mangenstern</u>	Cont.	<u>Shields</u>	Est. Ft. of Pay	<u>    </u> Por. <u>    </u> %				
Location: Sec.	<u>30</u>	Twp.	<u>21</u>	Rge.	<u>11</u>	Co.	<u>Stafford</u>	State	<u>Ks</u>
No. of Copies	<u>    </u>	Distribution Sheet (Y, N)	<u>    </u>	Turnkey (Y, N)	<u>    </u>	Evaluation (Y, N)	<u>    </u>		

Interval Tested	<u>3490 - 3549</u>	Initial Str Wt./Lbs.	<u>52,000</u>	Unseated Str Wt./Lbs.	<u>54,000</u>				
Anchor Length	<u>59</u>	Wt. Set Lbs.	<u>20,000</u>	Wt. Pulled Loose/Lbs.	<u>29,000</u>				
Top Packer Depth	<u>3485</u>	Tool Weight	<u>1000</u>						
Bottom Packer Depth	<u>3490</u>	Hole Size — 7 7/8"	<u>    </u>	Rubber Size — 6 3/4"	<u>    </u>				
Total Depth	<u>3549</u>	Wt. Pipe Run	<u>442 XH</u>	Drill Collar Run	<u>    </u>				
Mud Wt.	<u>9.4</u> LCM	Vis.	<u>45</u>	WL	<u>9.6</u>	Drill Pipe Size	<u>4.5 FH</u>	Ft. Run	<u>3474</u>
Blow Description	<u>F.F. weak - building to 2" fair blow</u>								

F.F. weak - building to 2" fair blow

Recovery — Total Feet	<u>67</u>	GIP	<u>303</u>	Ft. in DC	<u>    </u>	Ft. in DP	<u>67</u>		
Rec.	<u>5</u>	Feet Of	<u>0 + GCM</u>	10% gas	<u>60%</u> oil	% water	<u>30%</u> mud		
Rec.	<u>62</u>	Feet Of	<u>0 + GCM</u>	5% gas	<u>25%</u> oil	% water	<u>70%</u> mud		
Rec.	<u>    </u>	Feet Of	<u>    </u>	% gas	<u>    </u> oil	% water	<u>    </u> mud		
Rec.	<u>    </u>	Feet Of	<u>    </u>	% gas	<u>    </u> oil	% water	<u>    </u> mud		
Rec.	<u>    </u>	Feet Of	<u>    </u>	% gas	<u>    </u> oil	% water	<u>    </u> mud		
BHT	<u>10.3</u>	°F Gravity	<u>    </u>	°API D@	<u>    </u>	°F Corrected Gravity	<u>    </u>	°API	<u>    </u>
RW	<u>    </u>	@	<u>    </u>	°F Chlorides	<u>    </u>	ppm Recovery	<u>    </u>	Chlorides	<u>6,000</u> ppm System

	AK-1	Alpine				
(A) Initial Hydrostatic Mud	<u>1799</u>		PSI Recorder No.	<u>13254</u>	T-On Location	<u>06:10</u>
(B) First Initial Flow Pressure	<u>59</u>		PSI (depth)	<u>3497</u>	T-Started	<u>07:00</u>
(C) First Final Flow Pressure	<u>59</u>		PSI Recorder No.	<u>13248</u>	T-Open	<u>08:42</u>
(D) Initial Shut-In Pressure	<u>402</u>		PSI (depth)	<u>3546</u>	T-Pulled	<u>11:42</u>
(E) Second Initial Flow Pressure	<u>82</u>		PSI Recorder No.	<u>    </u>	T-Out	<u>13:20</u>
(F) Second Final Flow Pressure	<u>82</u>		PSI (depth)	<u>    </u>	T-Off Location	<u>13:40</u>
(G) Final Shut-in Pressure	<u>296</u>		PSI Initial Opening	<u>45</u>	Test	<u>650</u>
(Q) Final Hydrostatic Mud	<u>1705</u>		PSI Initial Shut-in	<u>45</u>	Jars	<u>    </u>
			Final Flow	<u>45</u>	Safety Joint	<u>    </u>
			Final Shut-in	<u>45</u>	Straddle	<u>    </u>

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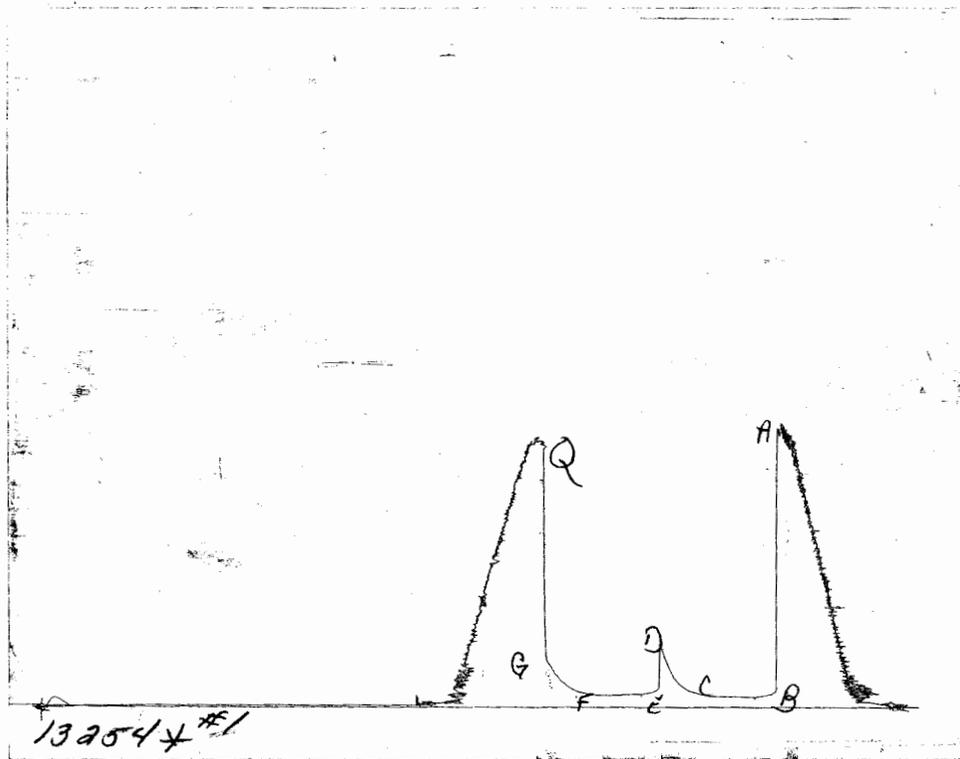
Approved By Todd Mangenstern

Our Representative Dan Bangle

25  
23  
48  
Part of 2500 to Well

Extra Packer	<u>    </u>
Elec. Rec.	<u>    </u>
Mileage	<u>84 48</u>
Other	<u>    </u>
TOTAL PRICE \$	<u>698</u>

CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

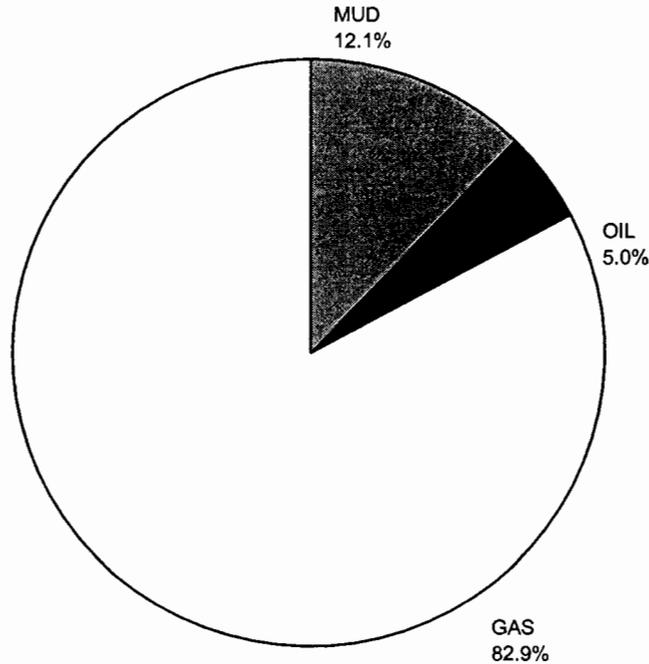
CALCULATED RECOVERY ANALYSIS

DST 1

TICKET 13281

SAMPLE #		TOTAL	GAS		OIL		WATER		MUD	
		FEET	%	FEET	%	FEET	%	FEET	%	FEET
DRILL	1	303	100	303	0	0	0	0	0	0
	PIPE	2	5	10	0.5	60	3	0	0	30
		3	62	5	3.1	25	15.5	0	0	70
		4	0	0	0	0	0	0	0	0
		5	0	0	0	0	0	0	0	0
		6	0	0	0	0	0	0	0	0
WEIGHT	1	0	0	0	0	0	0	0	0	0
	PIPE	2	0	0	0	0	0	0	0	0
		3	0	0	0	0	0	0	0	0
		4	0	0	0	0	0	0	0	0
		5	0	0	0	0	0	0	0	0
DRILL	1	0	0	0	0	0	0	0	0	0
COLLARS	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
TOTAL		370	0	306.6	0	18.5	0	0	0	44.9

BBL OIL=	0.26307	*	HRS OPEN	=	BBL/DAY
BBL WATER=	0	*	1.5	=	4.20912
BBL MUD=	0.638478				0
BBL GAS =	4.359852				



TRILOBITE TESTING L.L.C.

OPERATOR : Russell Oil, Inc.

DATE 7-31-00

WELL NAME: Duggan #2

KB 1791.00 ft

TICKET NO: 13281

DST #1

LOCATION : 30-21-11 Stafford co KS

GR 1786.00 ft

FORMATION: Arbuckle

INTERVAL : 3490.00 To 3549.00 ft

TD 3549.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 45 Rec.	13254	13254	13248			PF Fr. 0842 to 0927 hr
SI 45 Range(Psi )	4550.0	4550.0	4250.0	0.0	0.0	IS Fr. 0927 to 1012 hr
SF 45 Clock(hrs)	12	12	12			SF Fr. 1012 to 1058 hr
FS 45 Depth(ft )	3497.0	3497.0	3546.0	0.0	0.0	FS Fr. 1058 to 1142 hr

	Field	1	2	3	4	
A. Init Hydro	1799.0	1767.0	0.0	0.0	0.0	T STARTED 0700 hr
B. First Flow	59.0	63.0	0.0	0.0	0.0	T ON BOTM 0838 hr
B1. Final Flow	59.0	68.0	0.0	0.0	0.0	T OPEN 0842 hr
C. In Shut-in	402.0	408.0	0.0	0.0	0.0	T PULLED 1142 hr
D. Init Flow	82.0	80.0	0.0	0.0	0.0	T OUT 1320 hr
E. Final Flow	82.0	74.0	0.0	0.0	0.0	
F. Fl Shut-in	296.0	307.0	0.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	1705.0	1653.0	0.0	0.0	0.0	Tool Wt. 1000.00 lbs
Inside/Outside	0	0	i			Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 70000.00 lbs
						Initial Str Wt 52000.00 lbs
						Unseated Str Wt 54000.00 lbs

RECOVERY

Tot Fluid 67.00 ft of 0.00 ft in DC and 67.00 ft in DP  
 303.00 ft of Gas in pipe  
 5.00 ft of Oil & gas cut mud  
 0.00 ft of 10% gas 60% oil 30% mud  
 62.00 ft of Oil & gas cut mud  
 0.00 ft of 5% gas 25% oil 70% mud  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of

Bot Choke 0.75 in  
 Hole Size 7.79 in  
 D Col. ID 2.25 in  
 D. Pipe ID 3.80 in  
 D.C. Length 0.00 ft  
 D.P. Length 3474.00 ft  
 H.W. I.D 2.70 in  
 H.W. Length 442.00 ft

SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

MUD DATA-----

Mud Type Chemical  
 Weight 9.40 lb/  
 Vis. 45.00 S/L  
 W.L. 9.60 in3  
 F.C. 0.00 in  
 Mud Drop

BLOW DESCRIPTION

Initial Flow:  
 Weak building to 2" fair blow.  
 Final Flow:  
 Weak building to 2" fair blow.

Amt. of fill 0.00 ft  
 Btm. H. Temp. 1030.00 F

Hole Condition  
 % Porosity 0.00  
 Packer Size 6.75 in  
 No. of Packers 2  
 Cushion Amt. 0.00  
 Cushion Type  
 Reversed Out  
 Tool Chased

SAMPLES:  
 SENT TO:

Tester Dan Bangle  
 Co. Rep. Todd Morgenstern  
 Contr. Shields  
 Rig # 1  
 Unit #  
 Pump T.

Test Successful: Y

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

No 13282

## Test Ticket

Well Name & No. <u>Duggan #2</u>	Test No. <u>2</u>	Date <u>7-31-00</u>
Company <u>Russell Oil, Inc.</u>	Zone Tested <u>Arbuckle</u>	
Address _____	Elevation <u>1791</u> KB <u>1786</u> GL	
Co. Rep / Geo. <u>Todd Morgenstern</u> Cont. <u>Shields</u>	Est. Ft. of Pay _____	Por. _____ %
Location: Sec. <u>30</u> Twp. <u>21</u> Rge. <u>11</u>	Co. <u>Stafford</u> State <u>Ks</u>	
No. of Copies _____	Distribution Sheet (Y, N) _____	Turnkey (Y, N) _____
	Evaluation (Y, N) _____	

Interval Tested <u>3550 - 3557</u>	Initial Str Wt./Lbs. <u>52,000</u>	Unseated Str Wt./Lbs. <u>52,000</u>
Anchor Length <u>7'</u>	Wt. Set Lbs. <u>20,000</u>	Wt. Pulled Loose/Lbs. <u>80,000</u>
Top Packer Depth <u>3545</u>	Tool Weight <u>800</u>	
Bottom Packer Depth <u>3550</u>	Hole Size — 7 7/8" _____	Rubber Size — 6 3/4" _____
Total Depth <u>3557</u>	Wt. Pipe Run <u>442 KH</u>	Drill Collar Run _____
Mud Wt. <u>9.4</u> LCM _____ Vis. <u>50</u> WL <u>11.4</u>	Drill Pipe Size <u>4.5 FH</u>	Ft. Run <u>3535</u>
Blow Description <u>F.F. Strong - B.O.B. in 16 min.</u>		
<u>ISI - Bled off blow - blow came back - built to 1/2"</u>		
<u>F.F. Strong - B.O.B. in 16 min.</u>		
<u>ESI - Bled off blow - blow came back - built to 1/2"</u>		
Recovery — Total Feet <u>198</u>	GIP <u>620</u>	Ft. in DC _____
		Ft. in DP <u>198</u>
Rec. <u>72</u> Feet Of <u>CO</u>	%gas <u>100</u> %oil _____	%water _____ %mud _____
Rec. <u>128</u> Feet Of <u>HO + GCM</u>	%gas <u>60</u> %oil _____	%water <u>20</u> %mud _____
Rec. _____ Feet Of _____	%gas _____ %oil _____	%water _____ %mud _____
Rec. _____ Feet Of _____	%gas _____ %oil _____	%water _____ %mud _____
Rec. _____ Feet Of _____	%gas _____ %oil _____	%water _____ %mud _____
BHT <u>105</u> °F Gravity _____	°API D@ _____	°F Corrected Gravity <u>32</u> °API _____
RW _____ @ _____ °F	Chlorides _____ ppm Recovery _____	Chlorides <u>4,000</u> ppm System _____

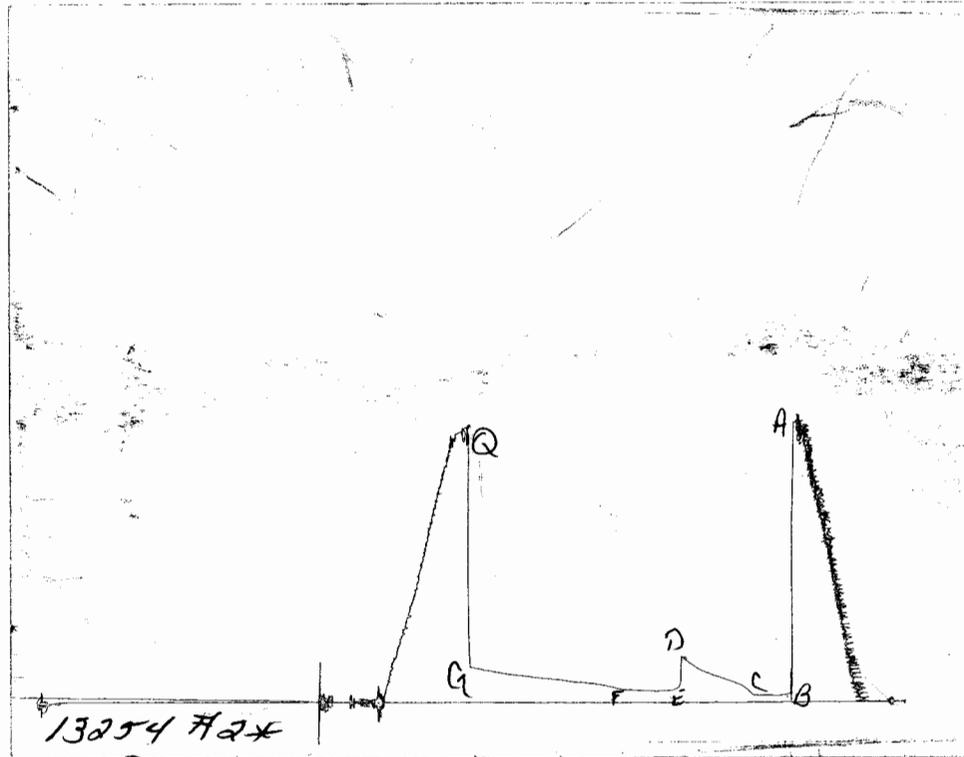
	AK-1	Alpine		
(A) Initial Hydrostatic Mud	<u>1822</u>		PSI Recorder No. <u>12254</u>	T-On Location <u>12:30</u>
(B) First Initial Flow Pressure	<u>47</u>		PSI (depth) <u>3554</u>	T-Started <u>18:20</u>
(C) First Final Flow Pressure	<u>47</u>		PSI Recorder No. <u>13248</u>	T-Open <u>19:50</u>
(D) Initial Shut-In Pressure	<u>296</u>		PSI (depth) _____	T-Pulled <u>00:05</u>
(E) Second Initial Flow Pressure	<u>82</u>		PSI Recorder No. _____	T-Out <u>02:10</u>
(F) Second Final Flow Pressure	<u>94</u>		PSI (depth) _____	T-Off Location <u>02:20</u>
(G) Final Shut-in Pressure	<u>237</u>		PSI Initial Opening <u>30</u>	Test <u>650</u>
(Q) Final Hydrostatic Mud	<u>1764</u>		PSI Initial Shut-in <u>60</u>	Jars _____
			Final Flow <u>45</u>	Safety Joint _____
			Final Shut-in <u>120</u>	Straddle _____

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF 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, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By Todd E. Morgenstern  
Our Representative Dan Rangle

Extra Packer \_\_\_\_\_  
Elec. Rec. \_\_\_\_\_  
Mileage 25 25  
Other el 30  
TOTAL PRICE \$ 705

CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

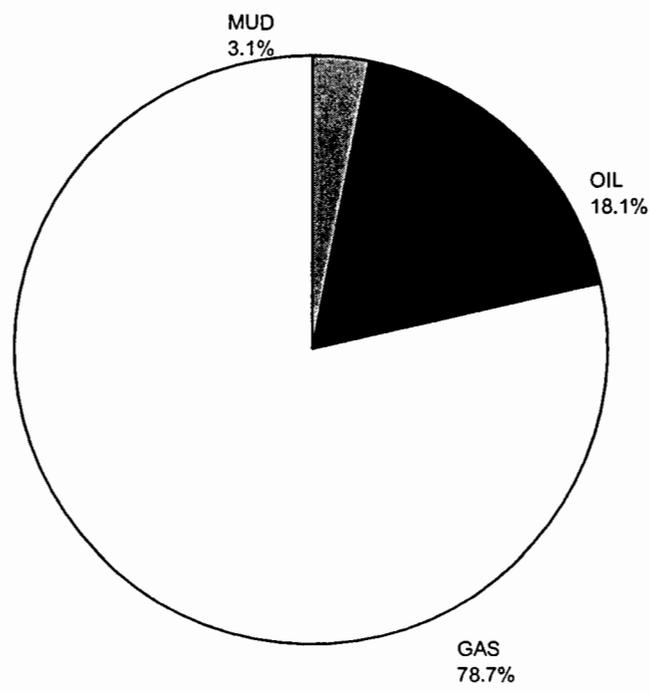
CALCULATED RECOVERY ANALYSIS

DST 2

TICKET 13282

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
DRILL 1	620	100	620	0	0	0	0	0	0
PIPE 2	72	0	0	100	72	0	0	0	0
3	128	20	25.6	60	76.8	0	0	20	25.6
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
WEIGHT 1	0	0	0	0	0	0	0	0	0
PIPE 2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
DRILL 1	0	0	0	0	0	0	0	0	0
COLLARS 2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
TOTAL	820	0	645.6	0	148.8	0	0	0	25.6

BBL OIL= 2.115936 \* HRS OPEN 1.25 = BBL/DAY 40.625971  
 BBL WATER= 0 \* = 0  
 BBL MUD= 0.364032  
 BBL GAS = 9.180432



TRILOBITE TESTING L.L.C.

OPERATOR : Russell Oil Inc.

DATE 7-31-00

WELL NAME: Duggan #2

KB 1791.00 ft

TICKET NO: 13282 DST #2

LOCATION : 30-21-11 Stafford co KS

GR 1786.00 ft

FORMATION: Arbuckle

INTERVAL : 3550.00 To 3557.00 ft

TD 3557.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30	Rec.	13254	13254			PF Fr. 1950 to 2020 hr
SI 60	Range(Psi )	4550.0	4550.0	0.0	0.0	IS Fr. 2020 to 2120 hr
SF 45	Clock(hrs)	12	12			SF Fr. 2120 to 2205 hr
FS 120	Depth(ft )	3554.0	3554.0	0.0	0.0	FS Fr. 2205 to 0005 hr

	Field	1	2	3	4	
A. Init Hydro	1822.0	1778.0	0.0	0.0	0.0	T STARTED 1820 hr
B. First Flow	47.0	49.0	0.0	0.0	0.0	T ON BOTM 1945 hr
B1. Final Flow	47.0	44.0	0.0	0.0	0.0	T OPEN 1950 hr
C. In Shut-in	296.0	299.0	0.0	0.0	0.0	T PULLED 0050 hr
D. Init Flow	82.0	72.0	0.0	0.0	0.0	T OUT 0210 hr
E. Final Flow	94.0	77.0	0.0	0.0	0.0	
F. Fl Shut-in	237.0	222.0	0.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	1764.0	1711.0	0.0	0.0	0.0	Tool Wt. 800.00 lbs
Inside/Outside	0	0				Wt Set On Packer 20000.00 lbs

RECOVERY

Tot Fluid 198.00 ft of 0.00 ft in DC and 198.00 ft in DP  
 620.00 ft of Gas in pipe  
 72.00 ft of Clean oil  
 0.00 ft of 100% oil  
 128.00 ft of Heavy oil & gas cut mud  
 0.00 ft of 20% gas 60% oil 20% mud  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of  
 SALINITY 0.00 P.P.M. A.P.I. Gravity 32.00

TOOL DATA-----  
 Tool Wt. 800.00 lbs  
 Wt Set On Packer 20000.00 lbs  
 Wt Pulled Loose 80000.00 lbs  
 Initial Str Wt 52000.00 lbs  
 Unseated Str Wt 52000.00 lbs  
 Bot Choke 0.75 in  
 Hole Size 7.78 in  
 D Col. ID 2.25 in  
 D. Pipe ID 3.80 in  
 D.C. Length 0.00 ft  
 D.P. Length 3535.00 ft  
 H.W. I.D 2.70 in  
 H.W. Length 442.00 ft

MUD DATA-----

Mud Type Chemical  
 Weight 9.40 lb/l  
 Vis. 50.00 S/L  
 W.L. 11.40 in3  
 F.C. 0.00 in  
 Mud Drop

BLOW DESCRIPTION

Initial Flow:  
 Strong bottom of bucket in 16 minutes.  
 Initial Shut-in:  
 Bled off blow blow came back built to 1/2".  
 Final Flow:  
 Strong bottom of bucket in 16 minutes  
 Final Shut-In:  
 Bled off blow- blow came back- built to 1/2".

Amt. of fill 0.00 ft  
 Btm. H. Temp. 1050.00 F  
 Hole Condition  
 % Porosity 0.00  
 Packer Size 6.75 in  
 No. of Packers 2  
 Cushion Amt. 0.00  
 Cushion Type  
 Reversed Out  
 Tool Chased  
 Tester Dan Bangle  
 Co. Rep. Todd Morgenstern  
 Contr. Shields  
 Rig # 1  
 Unit #  
 Pump T.

SAMPLES:  
 SENT TO:

Test Successful: Y

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Nº 13283

## Test Ticket

Well Name & No. <u>Duggan #2</u>	Test No. <u>3</u>	Date <u>8-1-00</u>
Company <u>Russell Oil, Inc</u>	Zone Tested <u>Arbuckle</u>	
Address _____	Elevation <u>1791</u> KB <u>1786</u> GL	
Co. Rep / Geo. <u>Todd Morgenstern</u> Cont. <u>Shields</u>	Est. Ft. of Pay _____	Por. _____ %
Location: Sec. <u>30</u> Twp. <u>21</u> Rge. <u>11</u>	Co. <u>Stafford</u> State <u>Ks</u>	
No. of Copies _____	Distribution Sheet (Y, N) _____	Turnkey (Y, N) _____
	Evaluation (Y, N) _____	

Interval Tested <u>3559 - 3566</u>	Initial Str Wt./Lbs. <u>52,000</u>	Unseated Str Wt./Lbs. <u>59,000</u>
Anchor Length <u>7</u>	Wt. Set Lbs. <u>80,000</u>	Wt. Pulled Loose/Lbs. <u>69,000</u>
Top Packer Depth <u>3554</u>	Tool Weight <u>800</u>	
Bottom Packer Depth <u>3559</u>	Hole Size — 7 7/8" _____	Rubber Size — 6 3/4" _____
Total Depth <u>3566</u>	Wt. Pipe Run <u>442 XH</u>	Drill Collar Run _____
Mud Wt. <u>9.4</u> LCM _____ Vis. <u>42</u> WL <u>12</u>	Drill Pipe Size <u>4.5 FH</u>	Ft. Run <u>3544</u>
Blow Description <u>I.F. Weak-building TO 2"</u>		

E.F. Weak-building TO 4" Fair blow.

Recovery — Total Feet <u>72</u>	GIP <u>360</u>	Ft. in DC _____	Ft. in DP <u>72</u>
Rec. <u>10</u> Feet Of <u>CO</u>	%gas _____ %oil _____ %water _____ %mud _____		
Rec. <u>62</u> Feet Of <u>MCGSYO</u>	<u>25</u> %gas <u>55</u> %oil _____ %water <u>20</u> %mud		
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____		
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____		
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____		
BHT <u>109</u> °F Gravity _____	°API D@ _____	°F Corrected Gravity <u>32</u>	°API _____
RW _____ @ _____ °F	Chlorides _____ ppm Recovery _____	Chlorides <u>11,500</u> ppm System	

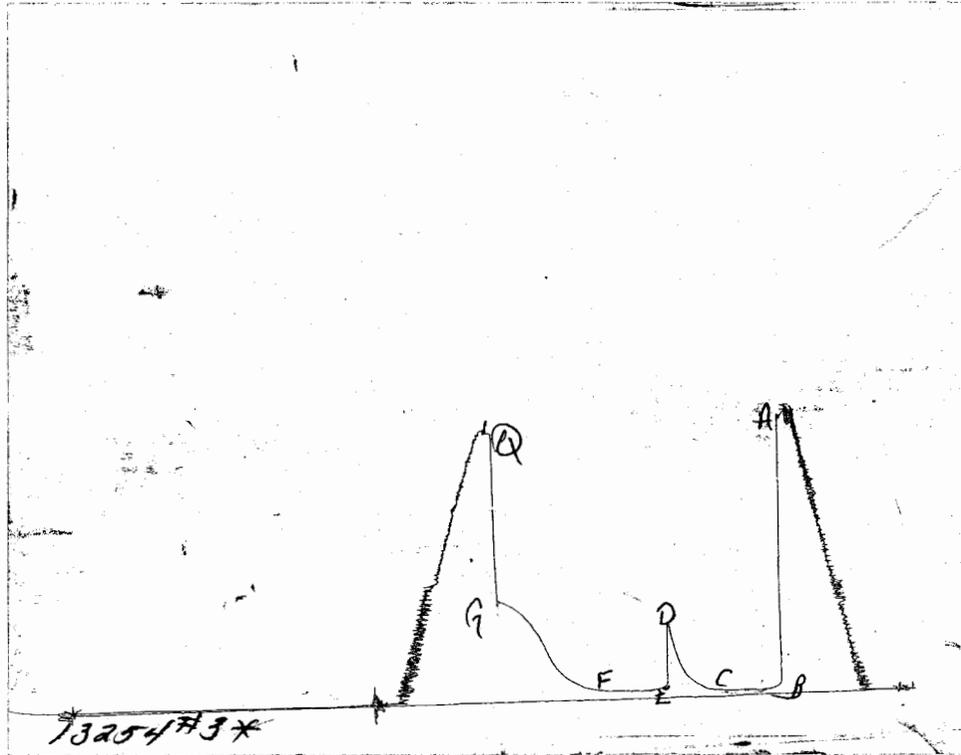
	AK-1	Alpine		
(A) Initial Hydrostatic Mud	<u>1834</u>		PSI Recorder No. <u>13254</u>	T-On Location <u>07:30</u>
(B) First Initial Flow Pressure	<u>35</u>		PSI (depth) <u>3563</u>	T-Started <u>08:35</u>
(C) First Final Flow Pressure	<u>47</u>		PSI Recorder No. _____	T-Open <u>10:15</u>
(D) Initial Shut-In Pressure	<u>485</u>		PSI (depth) _____	T-Pulled <u>14:00</u>
(E) Second Initial Flow Pressure	<u>59</u>		PSI Recorder No. _____	T-Out <u>15:40</u>
(F) Second Final Flow Pressure	<u>71</u>		PSI (depth) _____	T-Off Location <u>15:50</u>
(G) Final Shut-in Pressure	<u>651</u>		PSI Initial Opening <u>45</u>	Test <u>650</u>
(Q) Final Hydrostatic Mud	<u>1740</u>		PSI Initial Shut-in <u>45</u>	Jars _____
			Final Flow <u>45</u>	Safety Joint _____
			Final Shut-in <u>90</u>	Straddle _____

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Approved By Todd S. Morgenstern  
Our Representative Dan Banerje

Mileage 25.25  
Other \_\_\_\_\_  
TOTAL PRICE \$ 675

CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

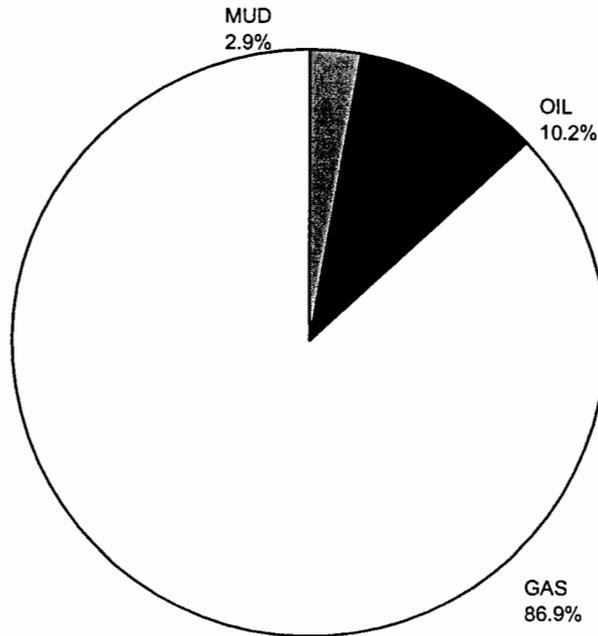
CALCULATED RECOVERY ANALYSIS

DST 3

TICKET 13283

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD		
		%	FEET	%	FEET	%	FEET	%	FEET	
DRILL	1	360	100	360	0	0	0	0	0	0
PIPE	2	10	0	0	100	10	0	0	0	0
	3	62	25	15.5	55	34.1	0	0	20	12.4
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0
WEIGHT	1	0	0	0	0	0	0	0	0	0
PIPE	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
DRILL	1	0	0	0	0	0	0	0	0	0
COLLARS	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
TOTAL		432	0	375.5	0	44.1	0	0	0	12.4

BBL OIL= 0.627102 \* HRS OPEN 1.5 = BBL/DAY 10.033632  
 BBL WATER= 0 \* = 0  
 BBL MUD= 0.176328  
 BBL GAS = 5.33961



TRILOBITE TESTING L.L.C.

OPERATOR : Russell Oil, Inc. DATE 8-1-00  
 WELL NAME: Duggan #2 KB 1791.00 ft TICKET NO: 13283 DST #3  
 LOCATION : 30-21-11 Stafford co KS GR 1786.00 ft FORMATION: Arbuckle  
 INTERVAL : 3559.00 To 3566.00 ft TD 3566.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 45 Rec.	13254	13254				PF Fr. 1015 to 1100 hr
SI 45 Range(Psi )	4550.0	4550.0	0.0	0.0	0.0	IS Fr. 1100 to 1145 hr
SF 45 Clock(hrs)	12	12				SF Fr. 1145 to 1230 hr
FS 90 Depth(ft )	3563.0	3563.0	0.0	0.0	0.0	FS Fr. 1230 to 1400 hr

	Field	1	2	3	4	
A. Init Hydro	1834.0	1775.0	0.0	0.0	0.0	T STARTED 0835 hr
B. First Flow	35.0	29.0	0.0	0.0	0.0	T ON BOTM 1010 hr
B1. Final Flow	47.0	40.0	0.0	0.0	0.0	T OPEN 1015 hr
C. In Shut-in	485.0	482.0	0.0	0.0	0.0	T PULLED 1400 hr
D. Init Flow	59.0	40.0	0.0	0.0	0.0	T OUT 1540 hr
E. Final Flow	71.0	48.0	0.0	0.0	0.0	
F. Fl Shut-in	651.0	643.0	0.0	0.0	0.0	
G. Final Hydro	1740.0	1703.0	0.0	0.0	0.0	

	Field	1	2	3	4	TOOL DATA-----
Inside/Outside	0	0				Tool Wt. 800.00 lbs
						Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 60000.00 lbs
						Initial Str Wt 52000.00 lbs
						Unseated Str Wt 52000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.78 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 3544.00 ft
						H.W. I.D 2.70 in
						H.W. Length 442.00 ft

RECOVERY

Tot Fluid 72.00 ft of 0.00 ft in DC and 72.00 ft in DP  
 360.00 ft of Gas in pipe  
 10.00 ft of Clean oil  
 0.00 ft of 100% oil  
 62.00 ft of Mud cut gassy oil  
 0.00 ft of 25% gas 55% oil 20% mud  
 0.00 ft of  
 0.00 ft of  
 0.00 ft of

SALINITY 0.00 P.P.M. A.P.I. Gravity 32.00

BLOW DESCRIPTION

Initial Flow:  
 Weak building to 2"  
 Final Flow:  
 Weak building to 4" fair blow.

MUD DATA-----

Mud Type	Chemical
Weight	9.40 lb/
Vis.	42.00 S/L
W.L.	12.00 in3
F.C.	0.00 in
Mud Drop	

Amt. of fill	0.00 ft
Btm. H. Temp.	109.00 F
Hole Condition	
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00

SAMPLES:

SENT TO:

Reversed Out  
 Tool Chased  
 Tester Dan Bangle  
 Co. Rep. Todd Morgenstern  
 Contr. Shields  
 Rig # 1  
 Unit #  
 Pump T.

Test Successful: Y

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

No 13284

## Test Ticket

Well Name & No. <u>Duggan #2</u>	Test No. <u>4</u>	Date <u>8-2-00</u>
Company <u>Russell Oil, Inc</u>	Zone Tested <u>Arbuckle</u>	
Address _____	Elevation <u>1791</u> KB <u>1786</u> GL	
Co. Rep / Geo. <u>Todd Mungenster</u>	Cont. <u>Shields</u>	Est. Ft. of Pay _____ Por. _____ %
Location: Sec. <u>30</u>	Twp. <u>21</u>	Rge. <u>11</u> Co. <u>Stafford</u> State <u>Ks</u>
No. of Copies _____	Distribution Sheet (Y, N) _____	Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested <u>3571 - 3585</u>	Initial Str Wt./Lbs. <u>52000</u>	Unseated Str Wt./Lbs. <u>52000</u>
Anchor Length <u>14</u>	Wt. Set Lbs. <u>20000</u>	Wt. Pulled Loose/Lbs. <u>60000</u>
Top Packer Depth <u>3566</u>	Tool Weight <u>900</u>	
Bottom Packer Depth <u>3571</u>	Hole Size — 7 7/8" _____	Rubber Size — 6 3/4" _____
Total Depth <u>3585</u>	Wt. Pipe Run <u>442 XH</u>	Drill Collar Run _____
Mud Wt. <u>9.4</u> LCM _____ Vis. <u>42</u> WL <u>12</u>	Drill Pipe Size <u>4.5 FH</u>	Ft. Run <u>3567</u>
Blow Description <u>IF weak - building to 5" fair blow</u>		
<u>ISI - Bled off blow - blow came back - weak steady surface</u>		
<u>F.F. weak - building to strong - B.O.B in 18 min.</u>		
<u>FSI - Bled off blow - blow came back - weak steady surface.</u>		

Recovery — Total Feet <u>196</u>	GIP <u>484</u>	Ft. in DC _____	Ft. in DP <u>196</u>
Rec. <u>134</u> Feet Of <u>CO</u>	%gas _____	%oil _____	%water _____ %mud _____
Rec. <u>62</u> Feet Of <u>M+G CO</u>	30 %gas <u>80</u>	%oil _____	%water <u>10</u> %mud _____
Rec. _____ Feet Of _____	%gas _____	%oil _____	%water _____ %mud _____
Rec. _____ Feet Of _____	%gas _____	%oil _____	%water _____ %mud _____
Rec. _____ Feet Of _____	%gas _____	%oil _____	%water _____ %mud _____
BHT <u>105</u> °F Gravity _____	°API D@ _____	°F Corrected Gravity <u>28</u>	°API _____
RW _____ @ _____ °F	Chlorides _____ ppm Recovery	Chlorides <u>14,500</u>	ppm System _____

	AK-1	Alpine	PSI	Recorder No.	T-On Location
(A) Initial Hydrostatic Mud	<u>1810</u>	<u>1773</u>		<u>3024</u>	<u>21:50</u>
(B) First Initial Flow Pressure	<u>47</u>	<u>26</u>		(depth) <u>3573</u>	T-Started <u>27:06</u>
(C) First Final Flow Pressure	<u>59</u>	<u>64</u>		Recorder No. <u>13254</u>	T-Open <u>00:05</u>
(D) Initial Shut-In Pressure	<u>827</u>	<u>833</u>		(depth) <u>3582</u>	T-Pulled <u>04:20</u>
(E) Second Initial Flow Pressure	<u>82</u>	<u>69</u>		Recorder No. _____	T-Out <u>06:25</u>
(F) Second Final Flow Pressure	<u>94</u>	<u>94</u>		(depth) _____	T-Off Location <u>06:45</u>
(G) Final Shut-in Pressure	<u>863</u>	<u>868</u>		Initial Opening <u>30</u>	Test <u>650</u>
(Q) Final Hydrostatic Mud	<u>1693</u>	<u>1679</u>		Initial Shut-in <u>60</u>	Jars _____
				Final Flow <u>45</u>	Safety Joint _____
				Final Shut-in <u>100</u>	Straddle _____
					Circ. Sub _____
					Sampler _____
					Extra Packer _____
					Elec. Rec. <u>X</u> <u>150</u>
					Mileage <u>21-25</u>
					Other <u>ext</u> <u>30</u>
					TOTAL PRICE \$ <u>855</u>

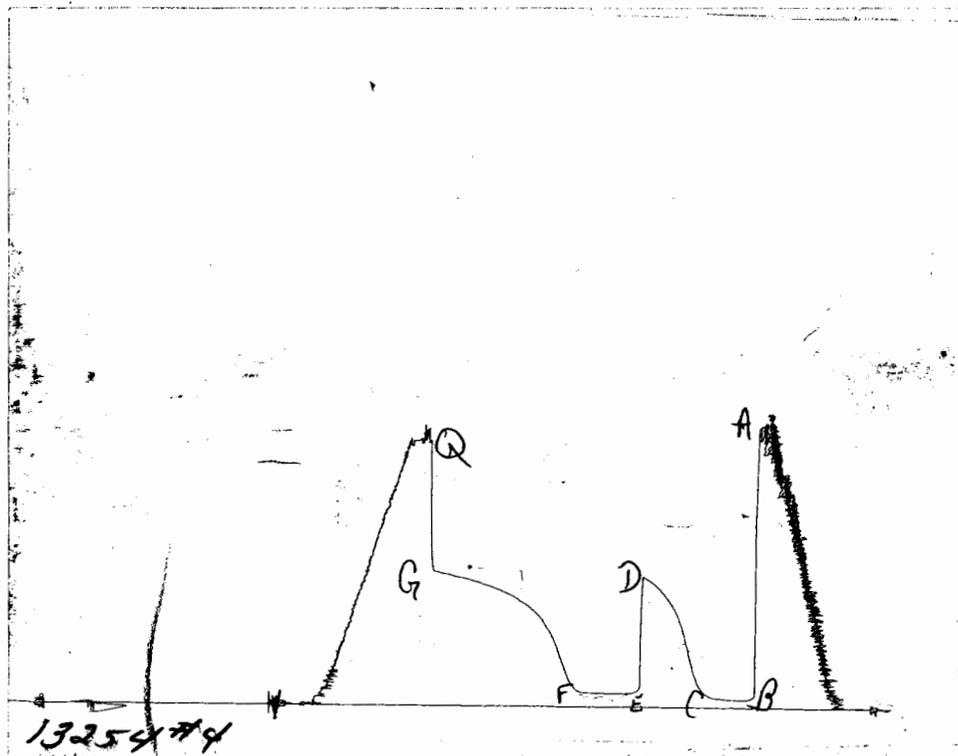
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Approved By [Signature]

Our Representative Dan Rangle

1150  
6-25  
8-19

CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

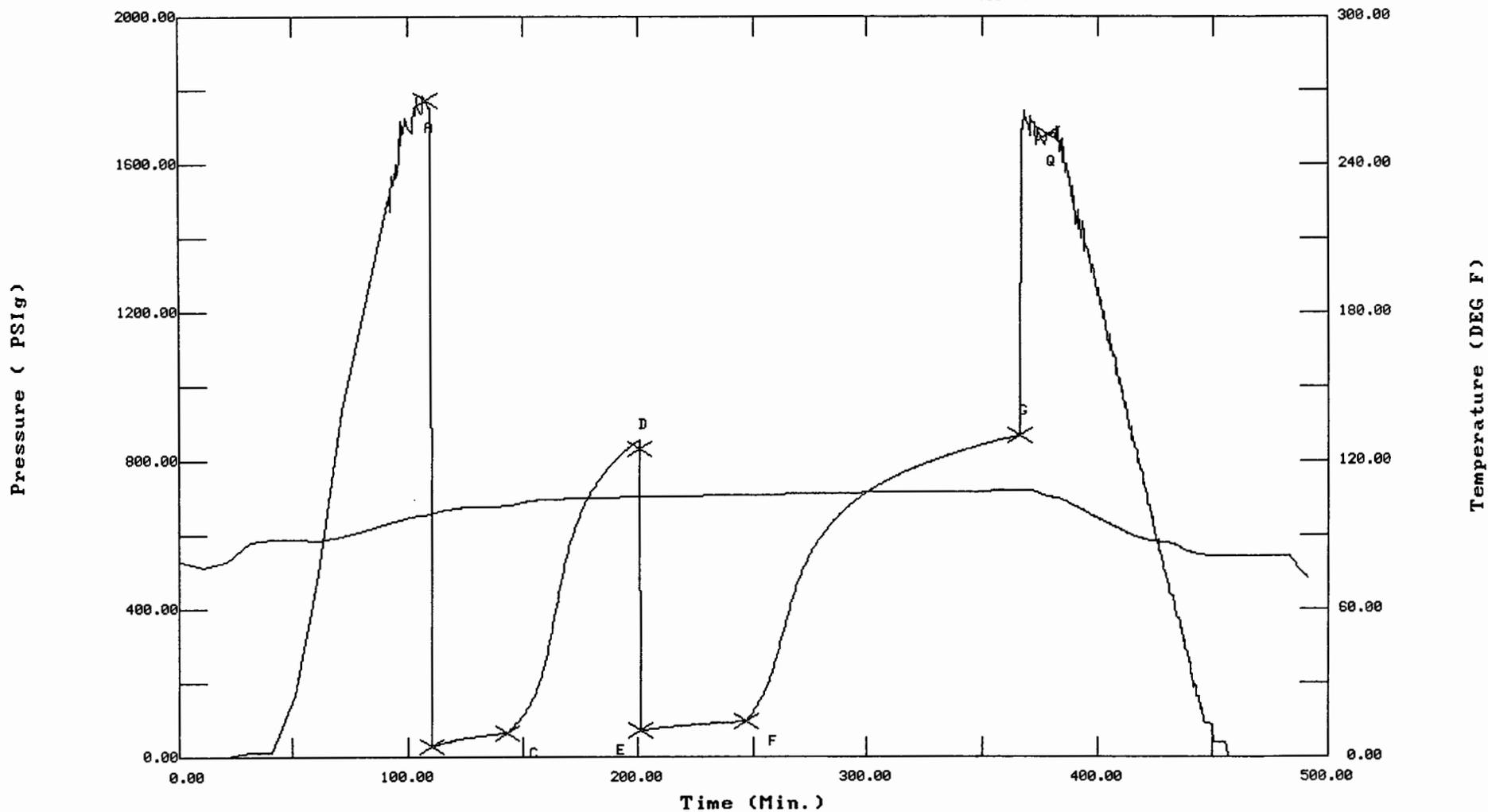
# TEST HISTORY

Tk# 13284 DST# 4 Duggan #2 Russell Oil, Inc.

Flag Points

t(Min.) P(PSIg)

A:	0.00	1773.06
B:	0.00	26.12
C:	33.00	63.53
D:	58.00	833.08
E:	0.00	68.98
F:	45.50	94.33
G:	119.00	868.26
Q:	0.00	1679.61



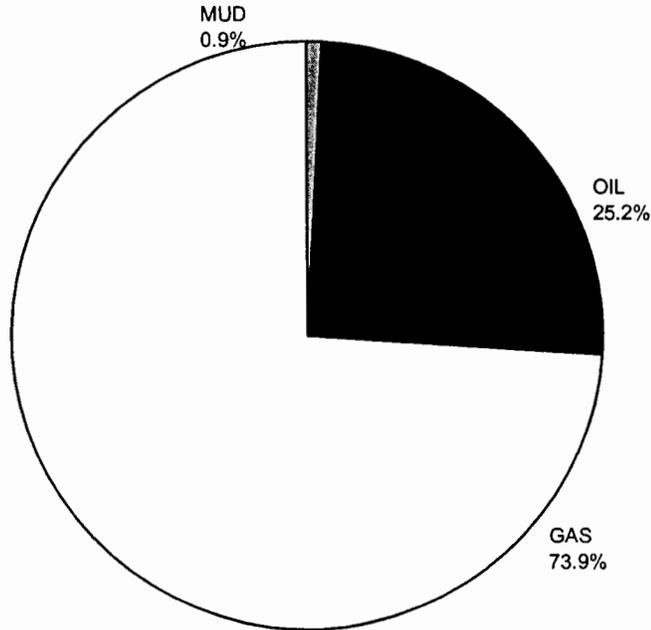
CALCULATED RECOVERY ANALYSIS

DST 4

TICKET 13284

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
DRILL 1	484	100	484	0	0	0	0	0	0
PIPE 2	134	0	0	100	134	0	0	0	0
3	62	30	18.6	60	37.2	0	0	10	6.2
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
WEIGHT 1	0	0	0	0	0	0	0	0	0
PIPE 2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
DRILL 1	0	0	0	0	0	0	0	0	0
COLLARS 2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>680</b>	<b>0</b>	<b>502.6</b>	<b>0</b>	<b>171.2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6.2</b>

BBL OIL= 2.434464 \* HRS OPEN 1.25 = BBL/DAY 46.741709  
 BBL WATER= 0 \* = 0  
 BBL MUD= 0.088164  
 BBL GAS = 7.146972





TRILOBITE TESTING L.L.C.

OPERATOR : Russell Oil, Inc. DATE 8-2-00  
 WELL NAME: Duggan #2 KB 1791.00 ft TICKET NO: 13284 DST #4  
 LOCATION : 30-21-11 Stafford co KS GR 1786.00 ft FORMATION: Arbuckle  
 INTERVAL : 3571.00 To 3585.00 ft TD 3585.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	13254	13254	3024			PF Fr. 0005 to 0035 hr
SI 60 Range(Psi )	4550.0	4550.0	4995.0	0.0	0.0	IS Fr. 0035 to 0135 hr
SF 45 Clock(hrs)	12	12	elect			SF Fr. 0135 to 0220 hr
FS 120 Depth(ft )	3582.0	3582.0	3573.0	0.0	0.0	FS Fr. 0220 to 0420 hr

	Field	1	2	3	4	
A. Init Hydro	1810.0	1778.0	1773.0	0.0	0.0	T STARTED 2206 hr
B. First Flow	47.0	49.0	26.0	0.0	0.0	T ON BOTM 0002 hr
B1. Final Flow	59.0	62.0	64.0	0.0	0.0	T OPEN 0005 hr
C. In Shut-in	827.0	839.0	833.0	0.0	0.0	T PULLED 0420 hr
D. Init Flow	82.0	89.0	69.0	0.0	0.0	T OUT 0625 hr
E. Final Flow	94.0	96.0	94.0	0.0	0.0	
F. Fl Shut-in	863.0	862.0	868.0	0.0	0.0	
G. Final Hydro	1693.0	1689.0	1679.0	0.0	0.0	

	Field	1	2	3	4	TOOL DATA-----
Inside/Outside	0	0	I			Tool Wt. 900.00 lbs
						Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 60000.00 lbs
						Initial Str Wt 52000.00 lbs
						Unseated Str Wt 52000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 0.00 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 3567.00 ft
						H.W. I.D 2.25 in
						H.W. Length 442.00 ft

RECOVERY

Tot Fluid 196.00 ft of 0.00 ft in DC and 196.00 ft in DP  
 484.00 ft of Gas in pipe  
 134.00 ft of Clean oil  
 62.00 ft of Mud & gas cut oil  
 0.00 ft of 30% gas 60% oil 10% mud  
 0.00 ft of  
 SALINITY 0.00 P.P.M. A.P.I. Gravity 28.00

MUD DATA-----

Mud Type	Chemical
Weight	9.40 lb/
Vis.	42.00 S/L
W.L.	12.00 in3
F.C.	0.00 in
Mud Drop N	

BLOW DESCRIPTION

Initial Flow:  
 Weak-building to 5" fair blow  
 Initial Shut-In:  
 Bled off blow-blow came back  
 weak steady surface.  
 Final Flow:  
 Weak building to strong bottom of  
 bucket in 18 minutes.  
 Final Shut-In:  
 Bled off blow-blow came back  
 weak steady surface

Amt. of fill	0.00 ft
Btm. H. Temp.	105.00 F
Hole Condition	Good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Dan Bangle
Co. Rep.	Todd Morgenstern
Contr.	Shields
Rig #	1
Unit #	
Pump T.	

SAMPLES:  
 SENT TO:

Test Successful: Y

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

No 13285

## Test Ticket

Well Name & No. Duggan #2 Test No. 5 Date 8-2-00  
Company Russell Oil, Inc Zone Tested Arbuckle  
Address \_\_\_\_\_ Elevation 1791 KB 1786 GL  
Co. Rep / Geo. Todd Morgenstern Cont. Shields Est. Ft. of Pay \_\_\_\_\_ Por. \_\_\_\_\_ %  
Location: Sec. 30 Twp. 21 Rge. 11 Co. Stafford State Ks  
No. of Copies \_\_\_\_\_ Distribution Sheet (Y, N) \_\_\_\_\_ Turnkey (Y, N) \_\_\_\_\_ Evaluation (Y, N) \_\_\_\_\_

Interval Tested 3590 - 3597 Initial Str Wt./Lbs. 54000 Unseated Str Wt./Lbs. 52200  
Anchor Length 7' Wt. Set Lbs. 20000 Wt. Pulled Loose/Lbs. 60000  
Top Packer Depth 3585 Tool Weight 800  
Bottom Packer Depth 3590 Hole Size — 7 7/8" \_\_\_\_\_ Rubber Size — 6 3/4" \_\_\_\_\_  
Total Depth 3597 Wt. Pipe Run 442 XH Drill Collar Run \_\_\_\_\_  
Mud Wt. 9.2 LCM \_\_\_\_\_ Vis. 45 WL 12 Drill Pipe Size 4.5FH Ft. Run 3595  
Blow Description I.F. Weak - Died in 27 min.

F.F. No blow

Recovery — Total Feet 20 GIP \_\_\_\_\_ Ft. in DC \_\_\_\_\_ Ft. in DP \_\_\_\_\_  
Rec. 20 Feet Of MC WTR %gas \_\_\_\_\_ %oil 50 %water 50 %mud \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet Of \_\_\_\_\_ %gas \_\_\_\_\_ %oil \_\_\_\_\_ %water \_\_\_\_\_ %mud \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet Of \_\_\_\_\_ %gas \_\_\_\_\_ %oil \_\_\_\_\_ %water \_\_\_\_\_ %mud \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet Of \_\_\_\_\_ %gas \_\_\_\_\_ %oil \_\_\_\_\_ %water \_\_\_\_\_ %mud \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet Of \_\_\_\_\_ %gas \_\_\_\_\_ %oil \_\_\_\_\_ %water \_\_\_\_\_ %mud \_\_\_\_\_  
BHT 105 °F Gravity \_\_\_\_\_ °API D@ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API \_\_\_\_\_  
RW 127 @ 80 °F Chlorides 23000 ppm Recovery Chlorides 9000 ppm System

	AK-1	Alpine			
(A) Initial Hydrostatic Mud		<u>1757</u>	PSI	Recorder No. <u>3024</u>	T-On Location <u>11:40</u>
(B) First Initial Flow Pressure		<u>18</u>	PSI	(depth) <u>3593</u>	T-Started <u>12:29</u>
(C) First Final Flow Pressure		<u>25</u>	PSI	Recorder No. _____	T-Open <u>14:03</u>
(D) Initial Shut-In Pressure		<u>825</u>	PSI	(depth) _____	T-Pulled <u>16:33</u>
(E) Second Initial Flow Pressure		<u>26</u>	PSI	Recorder No. _____	T-Out <u>18:00</u>
(F) Second Final Flow Pressure		<u>33</u>	PSI	(depth) _____	T-Off Location <u>19:00</u>
(G) Final Shut-in Pressure		<u>697</u>	PSI	Initial Opening <u>30</u>	Test <u>0.50</u>
(Q) Final Hydrostatic Mud		<u>1769</u>	PSI	Initial Shut-in <u>45</u>	Jars _____
				Final Flow <u>30</u>	Safety Joint _____
				Final Shut-in <u>45</u>	Straddle _____
					Circ. Sub _____
					Sampler _____
					Extra Packer _____
					Elec. Rec. <u>X</u> <u>150</u>
					Mileage <u>25</u>
					Other <u>12.15</u>
					TOTAL PRICE \$ <u>840</u>

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Approved By Todd S. Morgenstern  
Our Representative Dan Rausch

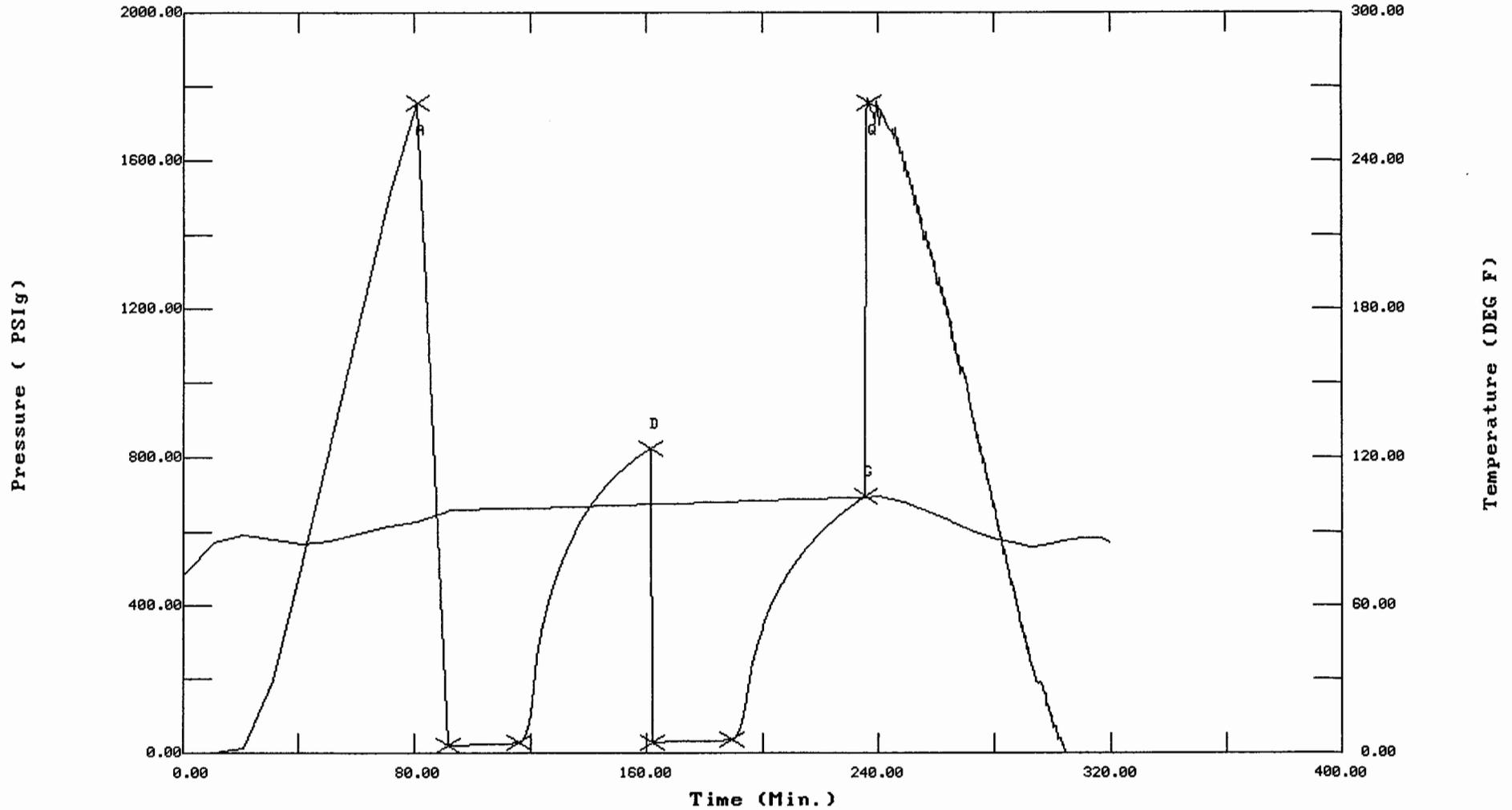
P.O. Box 251  
ELLINWOOD KS  
67526

# TEST HISTORY

Tk# 13285 DST# 5 Duggan #2 Russell Oil, Inc

Flag Points  
t(Min.) P(PSig)

A:	0.00	1757.47
B:	0.00	17.53
C:	24.50	24.98
D:	45.50	825.01
E:	0.00	26.42
F:	27.50	32.89
G:	46.00	697.23
Q:	0.00	1755.11





TRILOBITE TESTING L.L.C.

OPERATOR : Russell Oil, Inc. DATE 8-2-00  
 WELL NAME: Duggan #2 KB 1791.00 ft TICKET NO: 13285 DST #5  
 LOCATION : 30-21-11 Stafford co KS GR 1786.00 ft FORMATION: Arbuckle  
 INTERVAL : 3590.00 To 3597.00 ft TD 3597.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	3024					PF Fr. 1403 to 1433 hr
SI 45 Range(Psi )	4995.0	0.0	0.0	0.0	0.0	IS Fr. 1433 to 1518 hr
SF 30 Clock(hrs)	elect					SF Fr. 1518 to 1548 hr
FS 45 Depth(ft )	3593.0	0.0	0.0	0.0	0.0	FS Fr. 1548 to 1633 hr

	Field	1	2	3	4	
A. Init Hydro	1757.0	0.0	0.0	0.0	0.0	T STARTED 1229 hr
B. First Flow	18.0	0.0	0.0	0.0	0.0	T ON BOTM 1400 hr
B1. Final Flow	25.0	0.0	0.0	0.0	0.0	T OPEN 1403 hr
C. In Shut-in	825.0	0.0	0.0	0.0	0.0	T PULLED 1633 hr
D. Init Flow	26.0	0.0	0.0	0.0	0.0	T OUT 1800 hr
E. Final Flow	33.0	0.0	0.0	0.0	0.0	
F. Fl Shut-in	697.0	0.0	0.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	1769.0	0.0	0.0	0.0	0.0	Tool Wt. 800.00 lbs
Inside/Outside	I O	O	O			Wt Set On Packer 20000.00 lbs

RECOVERY

Tot Fluid	20.00 ft of	0.00 ft in DC and	20.00 ft in DP	Unseated Str Wt	52000.00 lbs
20.00	ft of Mud cut water			Bot Choke	0.75 in
0.00	ft of 50% water 50% mud			Hole Size	7.88 in
0.00	ft of			D Col. ID	0.00 in
0.00	ft of			D. Pipe ID	3.80 in
0.00	ft of			D.C. Length	0.00 ft
0.00	ft of			D.P. Length	3595.00 ft
0.00	ft of			H.W. I.D	2.25 in
0.00	ft of			H.W. Length	442.00 ft
SALINITY	23000.00 P.P.M.	A.P.I. Gravity	0.00		

BLOW DESCRIPTION

Initial Flow:  
 Weak died in 27 minutes.  
 Final Flow:  
 No blow.

MUD DATA-----

Mud Type	Chemical
Weight	9.20 lb/
Vis.	45.00 S/L
W.L.	12.00 in3
F.C.	0.00 in
Mud Drop N	
Amt. of fill	0.00 ft
Btm. H. Temp.	103.00 F
Hole Condition	Good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Dan Bangle
Co. Rep.	Todd Morgenstern
Contr.	Shields
Rig #	1
Unit #	
Pump T.	

SAMPLES:  
 SENT TO:

Test Successful: Y