

APT.# 15-065-23963-00-00

**GEOLOGICAL REPORT**  
DRILLING TIME AND SAMPLE LOG

COMPANY RI Investment, L.L.C.  
 LEASE Bollig A #1  
 FIELD Gurk East  
 LOCATION 1304' FN6 + 1000' FWL  
 SEC 17 TWSP 10S RGE 25W  
 COUNTY Graham STATE Kansas

ELEVATION  
 KB 2519'  
 DF 2517'  
 GL 2514'  
 Depths Measured From  
 Log KB Drilling KB

CONTRACTOR WW Drilling Rig #6  
 SPUD 8-2-13 COMP 8-10-13  
 SAMPLES SAVED FROM 3500' TO R.T.D.

CASING  
 Surface 8 7/8" @ 218'  
 Production 5 1/2"

ELECTRIC LOGS  
Nabors

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE	E. LOG	DATUM <i>E. log</i>	A	B	C	D
Anhydrite	2140	2137	+ 382	+ 391	+ 382		
Base Anhydrite	2179	2174	+ 345	+ 352	+ 347		
Topeka	3523	3523	-1004	-1002			
Heebner	3737	3737	-1218	-1217	-1216		
Toronto	3758	3758	-1239	-1240	-1240		
Lansing	3775	3775	-1256	-1256	-1256		
Base Kansas City	4012	4012	-1493	-1492	-1487		
Total Depth	4065	4066	-1547	-1823	-1508		

REFERENCE WELLS

- A American Energies Corp., Bollig #1, NW-SW-NW, Sec. 17-10S-25W
- B J.O. Farmer Inc., McGuire #1, NE-SW-SW Sec. 8-10S-25W
- C
- D



REMARKS

This well ran flat on the Lansing top with the reference wells. Encouraging D.S.T. results warranted cementing production casing to further test the well. The following zones should be tested: 3956'-3960', 3814'-3819' and 3804'-3807'.

7502

Richard B. Ball  
8/10/13

LEGEND

- 

Anhydrite
- 

Salt
- 

Sandstone
- 

Shale
- 

Carb sh
- 

Limestone
- 

Ool. Lime
- 

Chert
- 

Dolomite

DRILLING TIME IN MINUTES  
PER FOOT

Rate of Penetration Decreases

5" 10" 15" 20" 25"



LOG 7710

LITHOLOGY

SAMPLE DESCRIPTIONS

OIL SHOWS

REMARKS



# SCHIPPER'S OIL FIELD SERVICES, L.L.C.

1076

REMIT TO 18048 170RD  
RUSSELL, KS 67665

SERVICE POINT:  
Russell, KS - Dixie CCS

DATE <u>8-2-13</u>	SEC. <u>17</u>	TWP. <u>10</u>	RANGE <u>25</u>	CALLED OUT	ON LOCATION	JOB START <u>6:45am</u>	JOB FINISH <u>7:15pm</u>
LEASE <u>Bolling A</u>	WELL #. <u>1</u>	LOCATION <u>St Peter, KS 3W Sinto</u>			COUNTY <u>Seaton</u>	STATE <u>KS</u>	
OLD OR NEW (CIRCLE ONE)							

CONTRACTOR WJW Drilling #6

TYPE OF JOB Surface

HOLE SIZE 1 1/4 T.D. 219

CASING SIZE 8 7/8 DEPTH 211.23

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG.

PERFS

DISPLACEMENT 12 1/2 bbl

EQUIPMENT

PUMP TRUCK CEMENTER 116th

# 1 HELPER Cody

BULK TRUCK

# 1 DRIVER Jay

BULK TRUCK

# DRIVER

OWNER

CEMENT AMOUNT ORDERED 150sr com 3%acc

COMMON @

POZMIX @

GEL @

CHLORIDE @

ASC @

HANDLING @

MILEAGE

TOTAL

REMARKS:

Run 5 1/2 of 8 7/8 casing and cement

116th

116th

116th

116th

116th

116th

CHARGE TO: RT Investment

STREET

CITY STATE ZIP

SERVICE

DEPTH OF JOB

PUMP TRUCK CHARGE

EXTRA FOOTAGE @

MILEAGE @

MANIFOLD @

TOTAL

PLUG & FLOAT EQUIPMENT

@

@

@

@

TOTAL

Schippers Oil Field Services, L.L.C.,  
You are hereby requested to rent cementing equipment and furnish cement and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

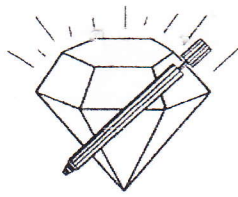
PRINTED NAME Jason R. ...

SIGNATURE [Signature]

SALES TAX (If Any)

TOTAL CHARGES

DISCOUNT IF PAID IN 30 DAYS



**DIAMOND TESTING, LLC**  
 P.O. Box 157  
**HOISINGTON, KANSAS 67544**  
 (620) 653-7550 • (800) 542-7313  
 BolligA1DST1

Company R. L. Investment, LLC Lease & Well No. Bollig "A" No. 1  
 Elevation 2519 KB Formation Toronto Effective Pay \_\_\_\_\_ Ft. Ticket No. T243  
 Date 8-6-13 Sec. 17 Twp. 10S Range 25W County Graham State Kansas  
 Test Approved By Richard B. Bell Diamond Representative \_\_\_\_\_ Tim Venters

Formation Test No. 1 Interval Tested from 3,734 ft. to 3,768 ft. Total Depth 3,768 ft.  
 Packer Depth 3,729 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.  
 Packer Depth 3,734 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.  
 Depth of Selective Zone Set \_\_\_\_\_ ft.

Top Recorder Depth (Inside) 3,715 ft. Recorder Number 8457 Cap. 10,000 psi.  
 Bottom Recorder Depth (Outside) 3,765 ft. Recorder Number 11030 Cap. 5,025 psi.  
 Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ psi.

Drilling Contractor WW Drilling, LLC - Rig 6 Drill Collar Length 122 ft I.D. 2 1/4 in.  
 Mud Type Chemical Viscosity 64 Weight Pipe Length \_\_\_\_\_ ft I.D. \_\_\_\_\_ in.  
 Weight 8.8 Water Loss 7.2 cc. Drill Pipe Length 3,579 ft I.D. 3 1/2 in.  
 Chlorides 1,800 P.P.M. Test Tool Length 33 ft Tool Size 3 1/2-IF in.  
 Jars: Make Sterling Serial Number 4 Anchor Length 34 ft. Size 4 1/2-FH in.  
 Did Well Flow? No Reversed Out No Surface Choke Size 1 in. Bottom Choke Size 5/8 in.  
 Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2-XH in.

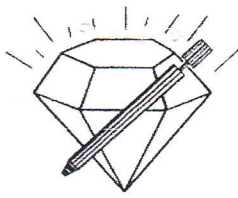
Blow: 1st Open: Weak, surface blow increasing to 1 1/2 ins. No blow back during shut-in.  
 2nd Open: Very weak, surface blow lasting 12 mins. No blow back during shut-in.

Recovered 60 ft. of mud w/ a trace of oil = .295200 bbls. (Grind out: Trace-oil; 100%-mud)  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks Tool Sample Grind Out: 1%-oil; 99%-mud

Time Set Packer(s) 7:41 A.M. Time Started off Bottom 10:26 A.M. Maximum Temperature 117°  
 Initial Hydrostatic Pressure.....(A) 1799 P.S.I.  
 Initial Flow Period.....Minutes 45 (B) 5 P.S.I. to (C) 23 P.S.I.  
 Initial Closed In Period.....Minutes 45 (D) 711 P.S.I.  
 Final Flow Period.....Minutes 30 (E) 25 P.S.I. to (F) 37 P.S.I.  
 Final Closed In Period.....Minutes 45 (G) 689 P.S.I.  
 Final Hydrostatic Pressure.....(H) 1799 P.S.I.





**DIAMOND TESTING, LLC**  
 P.O. Box 157  
**HOISINGTON, KANSAS 67544**  
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 BolligA1DST2

Company R. L. Investment, LLC Lease & Well No. Bollig "A" No. 1  
 Elevation 2519 KB Formation Lansing/Kansas City "C" Effective Pay \_\_\_\_\_ Ft. Ticket No. T244  
 Date 8-6-13 Sec. 17 Twp. 10S Range 25W County Graham State Kansas  
 Test Approved By Richard B. Bell Diamond Representative Tim Venters

Formation Test No. 2 Interval Tested from 3,793 ft. to 3,810 ft. Total Depth 3,810 ft.  
 Packer Depth 3,788 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.  
 Packer Depth 3,793 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.  
 Depth of Selective Zone Set \_\_\_\_\_ ft.

Top Recorder Depth (Inside) 3,781 ft. Recorder Number 8457 Cap. 10,000 psi.  
 Bottom Recorder Depth (Outside) 3,807 ft. Recorder Number 11030 Cap. 5,025 psi.  
 Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ psi.

Drilling Contractor VW Drilling, LLC - Rig 6 Drill Collar Length 122 ft I.D. 2 1/4 in.  
 Mud Type Chemical Viscosity 48 Weight Pipe Length \_\_\_\_\_ ft I.D. \_\_\_\_\_ in.  
 Weight 9.2 Water Loss 8.0 cc. Drill Pipe Length 3,645 ft I.D. 3 1/2 in.  
 Chlorides 2,000 P.P.M. Test Tool Length 26 ft Tool Size 3 1/2-IF in.  
 Jars: Make Sterling Serial Number Not Run Anchor Length 17 ft. Size 4 1/2-FH in.  
 Did Well Flow? No Reversed Out No Surface Choke Size 1 in. Bottom Choke Size 5/8 in.  
 Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2-XH in.

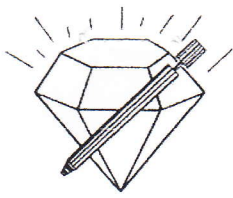
Blow: 1st Open: Good, 2 in. blow increasing. Off bottom of bucket in 1 1/2 mins. Bottom of bucket blow back during shut-in.  
 2nd Open: Weak, 1/2 in. blow increasing. Off bottom of bucket in 4 1/2 mins. Bottom of bucket blow back during shut-in.

Recovered 2,890 ft. of gas in pipe  
 Recovered 570 ft. of gassy oil = 8.111100 bbls. (Grind out: 7%-gas; 93%-oil) Gravity: 38  
 Recovered 250 ft. of gassy, slightly mud cut oil = 2.980280 bbls. (Grind out: 2%-gas; 95%-oil; 3%-mud)  
 Recovered 60 ft. of gassy, mud cut oil = .295200 bbls. (Grind out: 12%-gas; 58%-oil; 30%-mud)  
 Recovered 880 ft. of TOTAL FLUID = 11.386580 bbls.

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Remarks Tool Sample Grind Out: 3%-gas; 97%-oil  
Gas to surface during final shut-in.

Time Set Packer(s) 9:46 P.M. Time Started off Bottom 12:01 A.M. Maximum Temperature 127°  
 Initial Hydrostatic Pressure.....(A) 1811 P.S.I.  
 Initial Flow Period.....Minutes 15 (B) 57 P.S.I. to (C) 140 P.S.I.  
 Initial Closed In Period.....Minutes 45 (D) 657 P.S.I.  
 Final Flow Period.....Minutes 30 (E) 161 P.S.I. to (F) 288 P.S.I.  
 Final Closed In Period.....Minutes 45 (G) 643 P.S.I.  
 Final Hydrostatic Pressure.....(H) 1809 P.S.I.





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 BolligA1DST3

Company R. L. Investment, LLC Lease & Well No. Bollig "A" No. 1  
 Elevation 2519 KB Formation Lansing/Kansas City "D" Effective Pay \_\_\_\_\_ Ft. Ticket No. T245  
 Date 8-7-13 Sec. 17 Twp. 10S Range 25W County Graham State Kansas  
 Test Approved By Richard B. Bell Diamond Representative Tim Venters

Formation Test No. 3 Interval Tested from 3,809 ft. to 3,830 ft. Total Depth 3,830 ft.  
 Packer Depth 3,804 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.  
 Packer Depth 3,809 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.  
 Depth of Selective Zone Set \_\_\_\_\_ ft.

Top Recorder Depth (Inside) 3,797 ft. Recorder Number 8457 Cap. 10,000 psi.  
 Bottom Recorder Depth (Outside) 3,827 ft. Recorder Number 11030 Cap. 5,025 psi.  
 Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ psi.

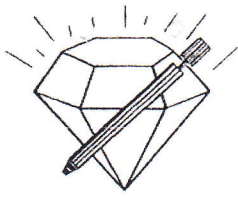
Drilling Contractor WW Drilling, LLC - Rig 6 Drill Collar Length 122 ft I.D. 2 1/4 in.  
 Mud Type Chemical Viscosity 47 Weight Pipe Length \_\_\_\_\_ ft I.D. \_\_\_\_\_ in.  
 Weight 9.2 Water Loss 7.6 cc. Drill Pipe Length 3,661 ft I.D. 3 1/2 in.  
 Chlorides 2,000 P.P.M. Test Tool Length 26 ft Tool Size 3 1/2-IF in.  
 Jars: Make Sterling Serial Number Not Run Anchor Length 21 ft. Size 4 1/2-FH in.  
 Did Well Flow? No Reversed Out No Surface Choke Size 1 in. Bottom Choke Size 5/8 in.  
 Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2-XH in.

Blow: 1st Open: Good, 2 in. blow increasing. Off bottom of bucket in 1 min. Bottom of bucket blow back during shut-in.  
 2nd Open: Weak, 1/2 in. blow increasing. Off bottom of bucket in 7 mins. Bottom of bucket blow back during shut-in.

Recovered 2,485 ft. of gas in pipe  
 Recovered 605 ft. of gassy oil = 8.609150 bbls. (Grind out: 9%-gas; 91%-oil) Gravity: 38  
 Recovered 185 ft. of gassy, mud cut oil = 1.496730 bbls. (Grind out: 16%-gas; 64%-oil; 20%-mud)  
 Recovered 790 ft. of TOTAL FLUID = 10.105880 bbls.  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Remarks Tool Sample Grind Out: 5%-gas; 45%-oil; 50%-mud

Time Set Packer(s) 11:15 A.M. Time Started off Bottom 1:32 P.M. Maximum Temperature 126°  
 Initial Hydrostatic Pressure.....(A) 1818 P.S.I.  
 Initial Flow Period.....Minutes 15 (B) 69 P.S.I. to (C) 152 P.S.I.  
 Initial Closed In Period.....Minutes 45 (D) 480 P.S.I.  
 Final Flow Period.....Minutes 30 (E) 172 P.S.I. to (F) 281 P.S.I.  
 Final Closed In Period.....Minutes 47 (G) 477 P.S.I.  
 Final Hydrostatic Pressure.....(H) 1815 P.S.I.





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BolligA1DST4

Company R. L. Investment, LLC Lease & Well No. Bollig "A" No. 1  
Elevation 2519 KB Formation Lansing/Kansas City "E-F" Effective Pay \_\_\_\_\_ Ft. Ticket No. T246  
Date 8-8-13 Sec. 17 Twp. 10S Range 25W County Graham State Kansas  
Test Approved By Richard B. Bell Diamond Representative Tim Venters

Formation Test No. 4 Interval Tested from 3,838 ft. to 3,863 ft. Total Depth 3,863 ft.  
Packer Depth 3,833 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.  
Packer Depth 3,838 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.  
Depth of Selective Zone Set \_\_\_\_\_ ft.

Top Recorder Depth (Inside) 3,826 ft. Recorder Number 8457 Cap. 10,000 psi.  
Bottom Recorder Depth (Outside) 3,860 ft. Recorder Number 11030 Cap. 5,025 psi.  
Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ psi.

Drilling Contractor VW Drilling, LLC - Rig 6 Drill Collar Length 122 ft I.D. 2 1/4 in.  
Mud Type Chemical Viscosity 47 Weight Pipe Length \_\_\_\_\_ ft I.D. \_\_\_\_\_ in.  
Weight 9.2 Water Loss 7.6 cc. Drill Pipe Length 3,690 ft I.D. 3 1/2 in.  
Chlorides 2,000 P.P.M. Test Tool Length 26 ft Tool Size 3 1/2-IF in.  
Jars: Make Sterling Serial Number Not Run Anchor Length 25 ft. Size 4 1/2-FH in.  
Did Well Flow? No Reversed Out No Surface Choke Size 1 in. Bottom Choke Size 5/8 in.  
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2-XH in.

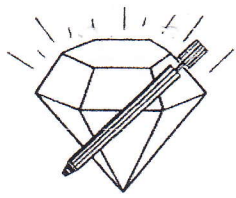
Blow: 1st Open: Weak, 1/4 in. blow increasing to 4 1/2 ins. No blow back during shut-in.  
2nd Open: Weak, surface blow increasing to 3 ins. No blow back during shut-in.

Recovered 1 ft. of clean oil = .014230 bbls.  
Recovered 45 ft. of water cut mud w/ a trace of oil = .621730 bbls. (Grind out: Trace-oil; 31%-water; 69%-mud)  
Recovered 60 ft. of slightly oil and mud cut water = .295200 bbls. (Grind out: 7%-oil; 54%-water; 39%-mud)  
Recovered 60 ft. of mud cut water w/ a trace of oil = .295200 bbls. (Grind out: Trace-oil; 81%-water; 19%-mud) Chlorides: 59,000 Ppm PH: 7.5 RW: .20 @ 79°  
Recovered 166 ft. of TOTAL FLUID = 1.226360 bbls.

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
Remarks Tool Sample Grind Out: Trace-oil; 90%-water; 10%-mud

Time Set Packer(s) 2:05 A.M. Time Started off Bottom 5:05 A.M. Maximum Temperature 119°  
Initial Hydrostatic Pressure.....(A) 1814 P.S.I.  
Initial Flow Period.....Minutes 45 (B) 6 P.S.I. to (C) 62 P.S.I.  
Initial Closed In Period.....Minutes 45 (D) 760 P.S.I.  
Final Flow Period.....Minutes 45 (E) 65 P.S.I. to (F) 81 P.S.I.  
Final Closed In Period.....Minutes 45 (G) 747 P.S.I.  
Final Hydrostatic Pressure.....(H) 1812 P.S.I.





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BolligA1DST5

Company R. L. Investment, LLC Lease & Well No. Bollig "A" No. 1  
Elevation 2519 KB Formation Lansing/Kansas City "J" Effective Pay \_\_\_\_\_ Ft. Ticket No. T247  
Date 8-8-13 Sec. 17 Twp. 10S Range 25W County Graham State Kansas  
Test Approved By Richard B. Bell Diamond Representative Tim Venters

Formation Test No. 5 Interval Tested from 3,944 ft. to 3,970 ft. Total Depth 3,970 ft.  
Packer Depth 3,939 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.  
Packer Depth 3,944 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.  
Depth of Selective Zone Set \_\_\_\_\_ ft.

Top Recorder Depth (Inside) 3,932 ft. Recorder Number 8457 Cap. 10,000 psi.  
Bottom Recorder Depth (Outside) 3,967 ft. Recorder Number 11030 Cap. 5,025 psi.  
Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ psi.

Drilling Contractor WW Drilling, LLC - Rig 6 Drill Collar Length 122 ft I.D. 2 1/4 in.  
Mud Type Chemical Viscosity 57 Weight Pipe Length \_\_\_\_\_ ft I.D. \_\_\_\_\_ in.  
Weight 8.9 Water Loss 7.6 cc. Drill Pipe Length 3,796 ft I.D. 3 1/2 in.  
Chlorides 2,200 P.P.M. Test Tool Length 26 ft Tool Size 3 1/2-IF in.  
Jars: Make Sterling Serial Number Not Run Anchor Length 26 ft. Size 4 1/2-FH in.  
Did Well Flow? No Reversed Out No Surface Choke Size 1 in. Bottom Choke Size 5/8 in.  
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2-XH in.

Blow: 1st Open: Weak, 1 in. blow increasing. Off bottom of bucket in 3 mins. Fair, 5 in. blow back during shut-in.  
2nd Open: Weak, 1/4 in. blow increasing. Off bottom of bucket in 5 1/2 mins. Good, 8 in. blow back during shut-in.

Recovered 2,195 ft. of gas in pipe  
Recovered 310 ft. of gassy oil = 4.411300 bbls. (Grind out: 2%-gas; 98%-oil) Gravity: 37  
Recovered 140 ft. of gassy, very heavy mud cut oil = .856380 bbls. (Grind out: 10%-gas; 46%-oil; 44%-mud)  
Recovered 450 ft. of TOTAL FLUID = 5.267680 bbls.  
Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
Remarks Tool Sample Grind Out: 6%-gas; 94%-oil

Time Set Packer(s) 8:02 P.M. Time Started off Bottom 10:17 P.M. Maximum Temperature 129°  
Initial Hydrostatic Pressure.....(A) 1883 P.S.I.  
Initial Flow Period.....Minutes 15 (B) 26 P.S.I. to (C) 78 P.S.I.  
Initial Closed In Period.....Minutes 45 (D) 975 P.S.I.  
Final Flow Period.....Minutes 30 (E) 94 P.S.I. to (F) 162 P.S.I.  
Final Closed In Period.....Minutes 45 (G) 933 P.S.I.  
Final Hydrostatic Pressure.....(H) 1883 P.S.I.