

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1251779  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well  Re-Entry  Workover
- Oil  WSW  SWD  SIOW
- Gas  D&A  ENHR  SIGW
- OG  GSW  Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic  Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening  Re-perf.  Conv. to ENHR  Conv. to SWD
- Plug Back  Conv. to GSW  Conv. to Producer
- Commingled Permit #: \_\_\_\_\_
- Dual Completion Permit #: \_\_\_\_\_
- SWD Permit #: \_\_\_\_\_
- ENHR Permit #: \_\_\_\_\_
- GSW Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE  NW  SE  SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1251779

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Younger Energy Company
Well Name	Morrison-Luther Unit 2
Doc ID	1251779

All Electric Logs Run

Dual Induction
Compensated Density/Neutron
Micro
Sonic
Computer Processed Interpretation
Geologist Report
Cement Bond Log
Tracer Survey

Form	ACO1 - Well Completion
Operator	Younger Energy Company
Well Name	Morrison-Luther Unit 2
Doc ID	1251779

Tops

Name	Top	Datum
Topeka	2828	-924
Queen Hill	3087	-1183
Heebner	3186	-1282
Toronto	3206	-1302
Douglas	3222	-1318
Brown Lime	3301	-1397
Lansing	3312	-1408
Base of KC	3518	-1614
Arbuckle	3562	-1658





Scale 1:240 (5"=100') Imperial  
Measured Depth Log

Well Name: Morrison-Luther Unit #2  
Location: 4150' FSL & 85' FWL, Sec 05-T21S-R13W, Stafford County, Kansas  
License Number: API: 15-185-23924 Region: Stafford County  
Spud Date: 01/28/2015 Drilling Completed: 02/04/2015  
Surface Coordinates: Lat: 38.2581457  
Long: -98.7841303  
Bottom Hole Vertical hole  
Coordinates:  
Ground Elevation (ft): 1896' K.B. Elevation (ft): 1904'  
Logged Interval (ft): 2700' To: RTD Total Depth (ft): 3730'  
Formation: Arbuckle at RTD  
Type of Drilling Fluid: Chemical

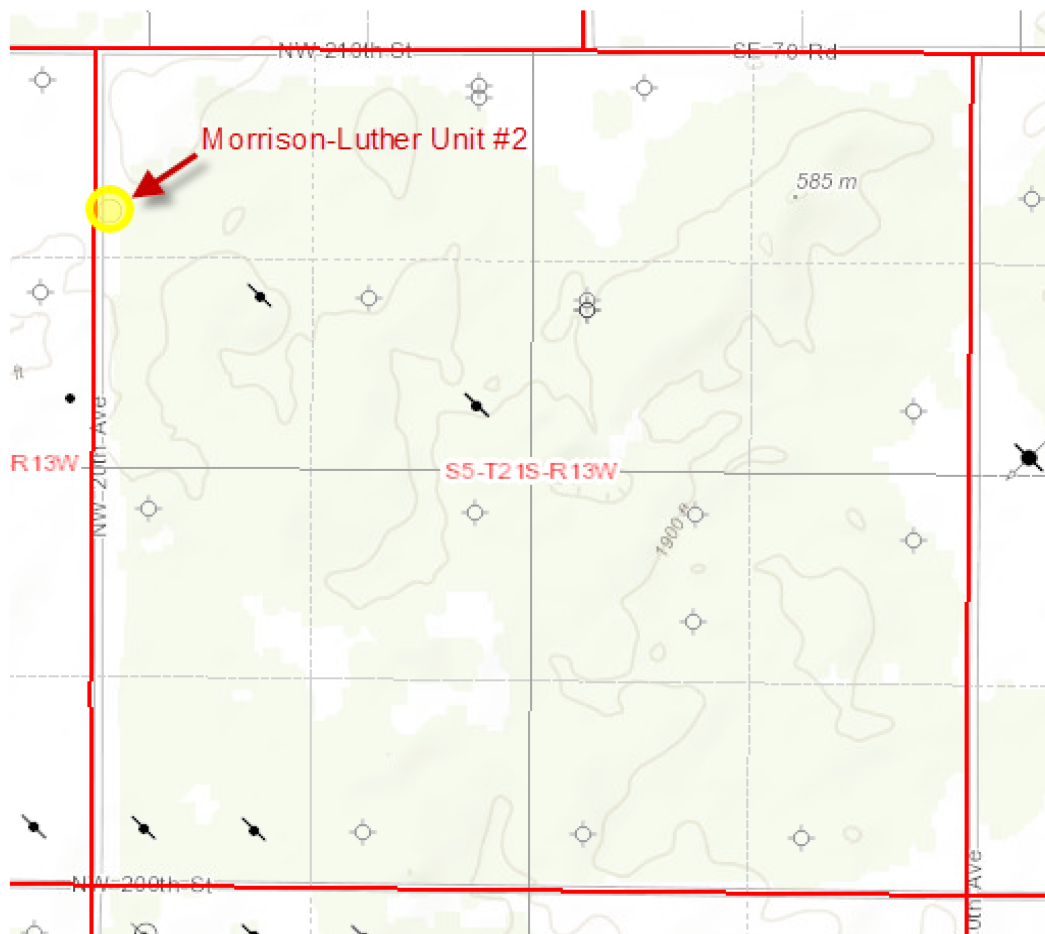
Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

#### OPERATOR

Company: YOUNGER ENERGY COMPANY  
Address: 9415 E. Harry Street, Suite 403, Bldg. 400  
Wichita, KS 67207-5083  
316-681-2542

#### GEOLOGIST

Name: Kent R. Matson  
Company: Matson Geological Services, LLC  
Address: 33300 W. 15th Street S.  
Garden Plain, Kansas 67050  
316-644-1975



### COMMENTS

Prospect/Consulting Geologist: Debra FitzGerald, 316-619-7008.

Drilling Contractor: Duke Drilling Company Rig #2.

Tool Pusher: Dion Vasquez, 620-793-0840.

Surface Casing: 8 5/8" set at 800' (KB) w/275 sx cement.

Production Casing: Based on field observations of drill cuttings, DST results and electric log review, production casing (5.5") was installed to further evaluate potential oil production.

Mud by: Andy's Mud - Dennis Rector, 785-625-3531.

DST's by: Trilobite Testing, Inc. - Ken Swinney, 785-625-4778.

Logs by: Nabors (DIL, CN-CD, Sonic, Micro), Jason Cappellucci, 785-628-6395.

Gas Detector (Bloodhound System) by: Bluestem Environmental - Skip, 620-617-4091.

RTD= 3730', -1826'.

LTD= 3734', -1830'.

## FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Topeka	2826'	-922	2828'	-924
Queen Hill	3086'	-1182	3087'	-1183
Heebner Shale	3183'	-1279	3186'	-1282
Toronto	3204'	-1300	3206'	-1302
Douglas Shale	3221'	-1317	3222'	-1318
Brown LS	3299'	-1395	3301'	-1397
Lansing	3311'	-1407	3312'	-1408
Muncie Creek Shale	3428'	-1524	3431'	-1527
Stark Shale	3482'	-1578	3484'	-1580
Base KC	3516'	-1612	3518'	-1614
Arbuckle	3560'	-1656	3562'	-1658
RTD	3730'	-1826		
LTD			3734'	-1830

## ROCK TYPES

### LITHOLOGY

	Anhy
	Cht
	Coal
	Congl
	Dol
	Gyp
	Lmst
	Salt
	Shale
	Shcol
	Shgy
	Sltst

	Ss
	Carb sh
	Dol
	Dtd
	Gry sh
	Sandylms
	Shale
	Sltstn
	Shlyslts
	Sitysh
	Sdy dolo
	Silty dolo
	Shy dolo

	Shaly ls
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### FOSSIL

	Algae
	Amph
	Belm
	Bioclst
	Brach
	Bryozoa
	Cephal
	Coral
	Crin
	Echin

	Fish
	Foram
	Fossil
	Gastro
	Oolite
	Ostra
	Pelec
	Pellet
	Pisolite
	Plant
	Strom
	Fuss
	Oomold



ACCESSORIES

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel

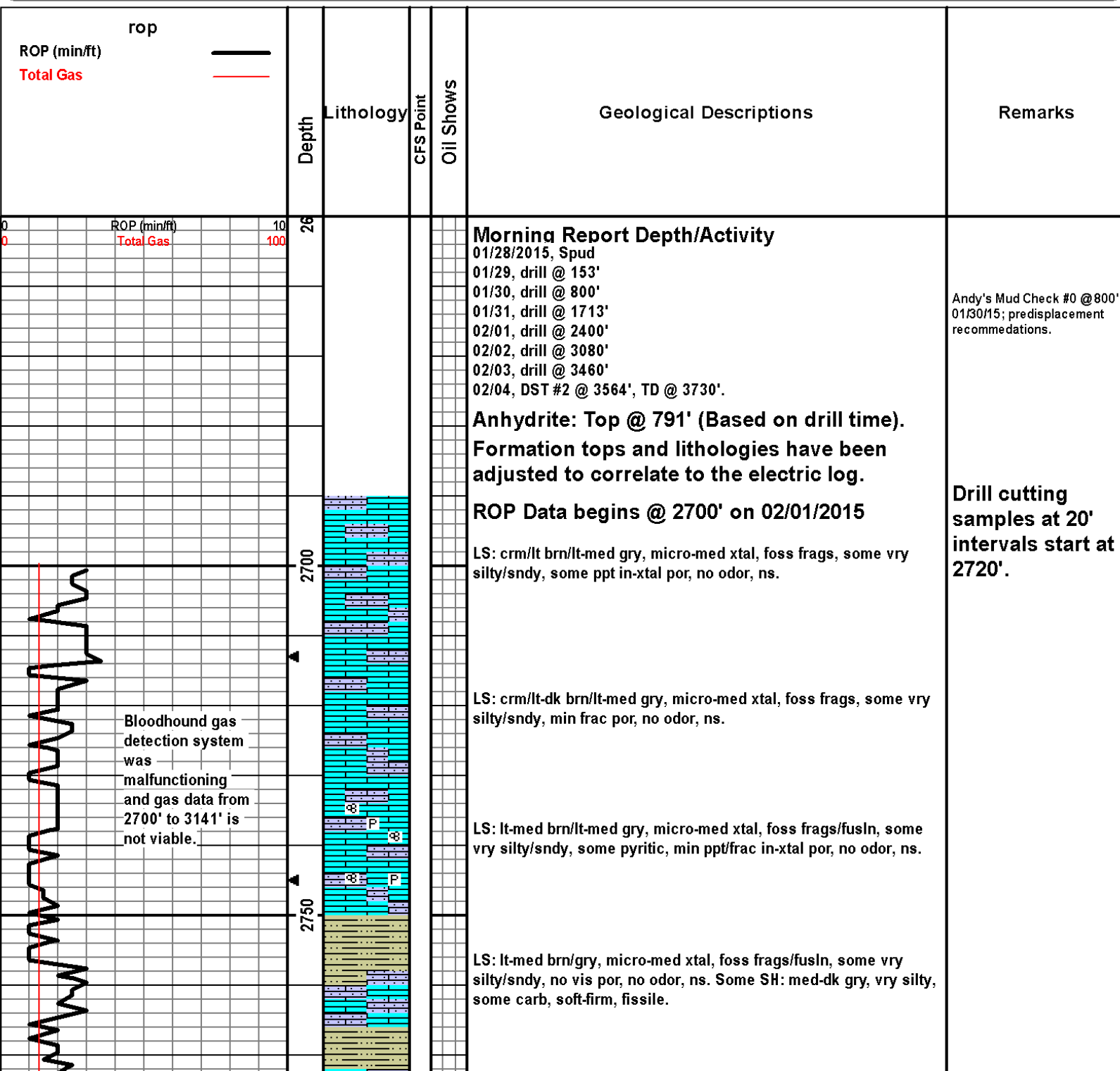
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil

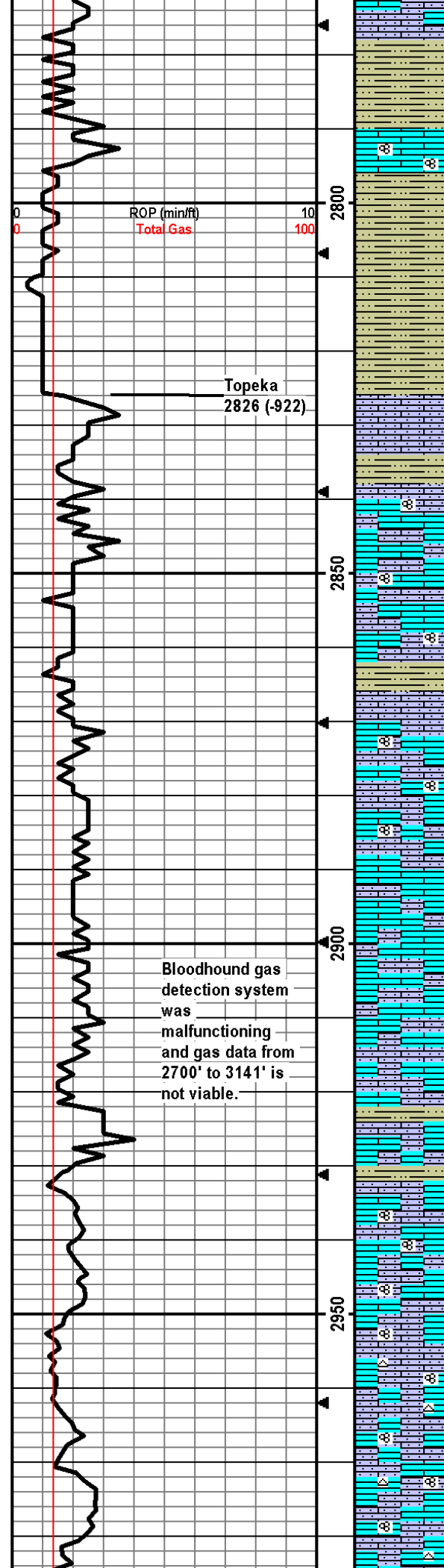
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Sltly

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp

- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn





LS: crm/lt med gry, micro-med xtal, foss frags, some vry silty/sndy, min frac por, no odor, ns. SH: med-dk gry, silty, some carb, soft-firm, fissile.

LS: crm/lt brn/gry, micro-med xtal, foss frags/fusln, silty/sndy, min frac por, no odor, ns. SH: lt-med gry, vry silty, some carb, soft, firm, fissile.

SH: med-dk gry/dk red brn, silty, some carb, firm, fissile.

LS: lt-dk brn/lt-med gry, micro-fn xtal, min foss frags, vry silty/sndy, no vis por, no odor, ns.

SH: lt-med gry, silty, slt carb, soft, fissile.

LS: lt-med brn/lt-med gry, micro-fn xtal w/some 2ndry xtal, foss frags/fusln, some vry silty/sndy, min frac por, no odor, ns.

SH: med gry, vry silty/sndy, firm, fissile.

LS: lt brn/lt-med gry, micro-med xtal, foss frags/fusln, vry silty/sndy, some chalky, min frac por, no odor, ns.

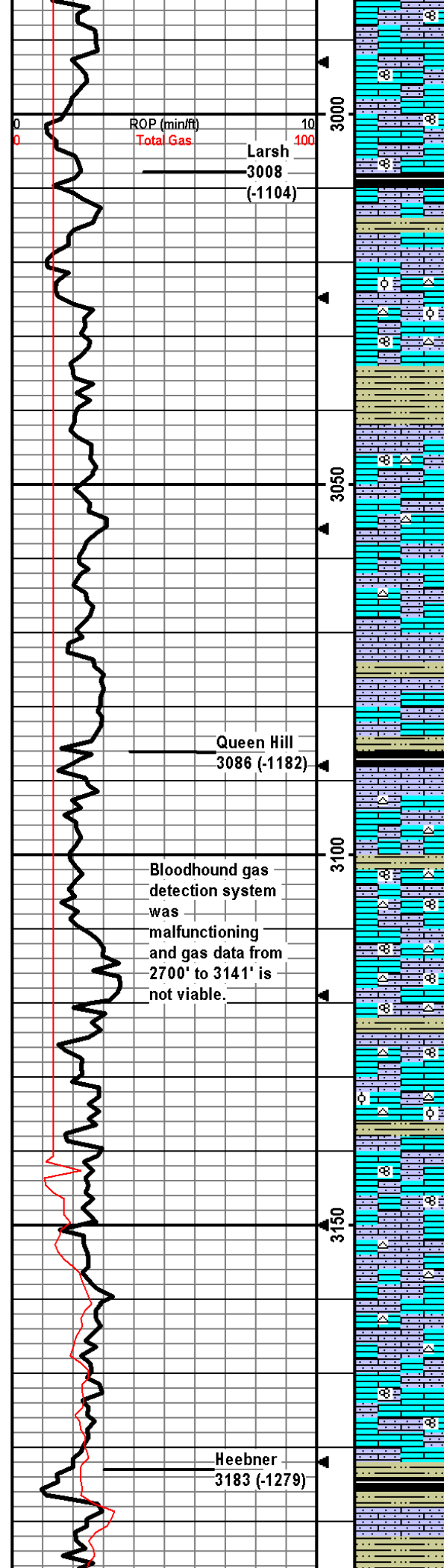
LS: crm/lt-med brn/gry, micro-med xtal, foss frags, vry silty/sndy, some frac por, no odor, ns. Some SH: lt-med gry, silty, soft-firm, fissile.

LS: lt-med brn/lt-med gry, micro-fn xtal, min foss frags, vry silty, some chalky, some frac por, no odor, ns. Some SH: med gry/red brn, vry silty, carb, soft-firm, fissile.

LS: crm/lt brn/lt-med gry, micro-med xtal, foss frags/fusln, vry silty/sndy, some frac por, no odor, ns.

LS: crm/lt-med brn/lt-med gry, micro-med xtal, foss frags/fusln, vry silty/sndy, some chalky, some lt brn chert, min frac por, no odor, ns.

LS: crm/lt brn/gry, micro-med xtal, foss frags/fusln, some vry silty/sndy, some chalky, some lt brn chert, some ppt-fn in-xtal por, no odor, ns.



LS: lt brn/lt gry, micro-fn xtal, foss frags/fusln, vry silty/sndy, min ppt in-xtal/frac por, no odor ns.

SH: med-dk gry, some silty, some slt carb, firm, fissile.

LS: lt brn/lt-med gry, micro-med xtal, foss frags/dense ool, vry silty/sndy, some chalky, some gry/lt brn chert, min ppt in-xtal/frac por, no odor, ns.

LS: crm/lt brn/lt gry, micro-med xtal, foss frags/fusln, some silty/sndy, some chalky, some lt brn/gry chert, min frac por, no odor, ns. SH lt-med gry, silty, carb, soft-firm, fissile.

LS: crm/lt brn/lt gry, micro-fn xtal, vry silty/sndy, foss frags, some chalky, some brn chert, some frac por, no odor, ns.

LS: lt-med brn/lt-med gry, micro-med xtal, foss frags, some vry silty/sndy, some ppt in-xtal por, no odor, ns. Some SH: med gry, silty, firm, fissile.

LS: crm/lt-med brn/gry, micro-med xtal, foss frags, some silty/sndy, some chalky, min frac por, no odor, ns.

SH: med-dk gry/blk, silty, slt carb, firm, fissile.

LS: crm/lt-med brn/lt gry, micro-med xtal, foss frags, some silty/sndy, some chalky, min lt gry chert, min frac por, no odor, ns.

LS: crm/lt-med brn/lt-dk gry, micro-med xtal, foss frags/fusln, some vry silty, some chalky, min pyritic, min lt gry/lt brn chert, min frac por, no odor, ns. Some SH: lt-dk gry, slt silty, soft-firm.

LS: crm/lt-med brn/lt-med gry, micro-med xtal, foss frags/fusln, some silty/sndy, some chalky, some wht/lt gry/lt brn chert, min frac por, no odor, ns.

LS: crm/lt-med brn/lt-med gry, micro-med xtal, foss frags/fusln, some silty/sndy, some chalky, min lt gry chert, min frac por, no odor, ns. Some SH: lt-med gry, soft-firm, slt silty, slt carb.

LS: lt-med brn/gry, micro-med xtal, foss frags/dense ool, some silty/sndy, wht/lt gry chert, min frac por, no odor, ns. Some SH: med gry, slt carb, soft-firm.

LS: lt-med brn/gry, micro-med xtal, foss frags/fusln, vry silty/sndy, some chalky, min ppt-fn in-xtal por, no odor, ns.

LS: lt-med brn/min gry, micro-fn xtal, foss frags, vry silty/sndy, crm chert, min frac por, no odor, ns.

LS: crm/lt-med brn/gry, micro-med xtal, foss frags, some silty/sndy, min crm/lt brn chert, min frac por, no odor, ns.

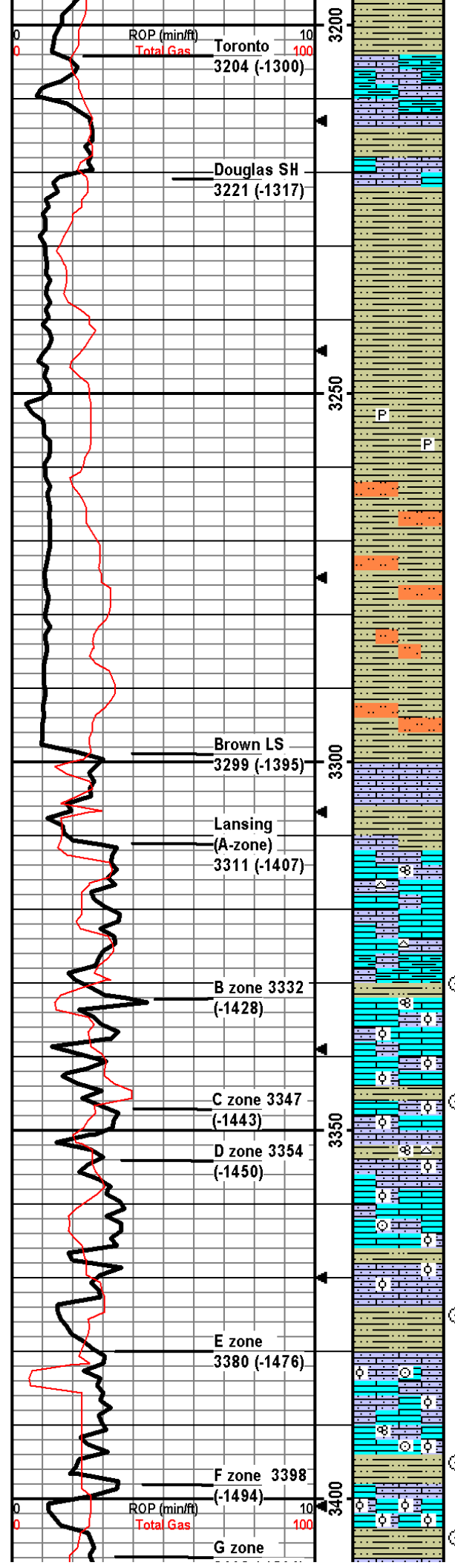
LS: crm/lt-med brn/gry, micro-fn xtal, some foss frags/fusln, silty/sndy, some chalky, some vry arg, min frac por, no odor, ns.

SH: med-dk gry/min blk, slt silty, slt carb, firm, fissile.

LS: crm/lt brn/gry, micro-med xtal, foss frags, some silty/sndy, some chalky, min frac por, no odor, ns.

Andy's Mud Check #1 @  
3093' 02/02/15 07:30am  
wt vis pH chl  
9.0 45 10.5 4000  
Filt LCM  
8.0 1

**Drill cutting samples at 10' intervals start at 3100'.**



SH: med-dk gry/blk, some silty, slt carb, firm, fissile.

LS: crm/lt brn/lt gry, micro-fn xtal, foss frags, vry silty, some arg, min frac por, no odor, ns.

SH: med-dk gry, slt carb, slt silty, firm, fissile.

LS: crm/lt brn/lt brnsh gry, micro-fn xtal, min foss frags/brac, some silty, some chalky, min frac por, no odor, ns.

SH: lt-med gry/min dk gry/red brn, silty, slt carb, soft-firm, fissile.

SH: lt-dk gry/dk brn/red brn, silty, slt carb, soft-firm, fissile.

SH: as above w/some lt green-gry.

SH: as above w/some pyritic.

SH: lt-dk gry/blk/min red brn, slt carb, silty, firm, fissile; some Sltstn: lt gry, arg, slt carb, firm, friable, no odor, ns.

SH: lt-med gry/min dk gry, slt carb, silty, firm, fissile; some Sltstn as above, no odor, ns.

SH: same as above w/min Sltstn as above, no odor, ns.

SH: lt-med gry, silty, slt carb, firm, fissile; some Sltstn: lt gry, arg, slt carb, firm, friable, no odor, ns.

LS: crm/lt-med brn/lt-med gry-brn, micro-fn xtal, min foss frags, vry silty, min frac por, no odor, ns.

SH: lt-med gry, vry silty, slt carb, firm, fissile.

LS: crm/lt-med brn, micro-fn xtal, foss frags/min fusln, some silty, min crm chert, min frac por, no odor, ns.

LS: crm/lt-med brn/lt gry-brn, micro-med xtal, foss frags, some silty, some chalky, some arg, min crm chert, min ppt in-xtal/frac por, no odor, ns.

LS: crm/lt-med brn, micro-fn xtal, foss frags/fusln/ool, some silty, slt chalky, 12 pcs w/ppt-med in-xtal/in-ool por w/lt brn staining and fo, yel flor, no odor, gsfo.

LS: crm/lt-med brn/lt gry, micro-med xtal, foss frags/few ool pcs, some silty, slt chalky, 6 pcs in 30 min and 4 pcs in 60 min smpls w/ppt-med in-xtal/in-ool por, yel flor, no odor, sfo.

LS: crm/lt brn/med gry-brn, micro-med xtal, foss frags/ool, some silty/sndy, some vry chalky, 8 pcs w/ppt-crs in-xtal/in-ool por w/sfo, yel flor, no odor, ssfo; SH: med-dk gry, silty, carb, firm.

LS: crm/lt-med brn/lt gry, micro-med xtal, foss frags/min ool, some silty/sndy, some vry chalky, 4 pcs w/ppt-fn in-xtal por w/sfo, yel flor, no odor, ssfo.

LS: crm/lt-med brn/lt gry, micro-med xtal, foss frags/crin/dense ool, some silty/sndy, 1 pcs w/ppt-fn in-xtal por w/sfo, dull yel flor, no odor, ssfo.

LS: crm/lt-med brn/gry, micro-med xtal, foss frags/ool, silty/sndy, some arg, min ppt-fn in-xtal por, no odor, ns.

SH: lt-med gry, some vry silty, slt carb, soft-firm, fissile.

LS: crm/lt brn/lt gry, micro-med xtal, foss frags/crin/dense ool, some silty/sndy, 3 pcs w/ppt-med in-xtal/in-ool por w/sfo, dul yel flor, no odor, ssfo.

LS: crm/lt brn/lt gry, micro-med xtal, foss frags/fusln/crin/ool, some silty-sndy, min ppt-fn in-xtal por, no odor, ns.

SH: med-dk gry, vry silty, slt carb, firm, fissile.

LS: crm/lt brn, micro-med xtal, foss frags/ool, silty/sndy, ppt-med in-xtal/in-ool por and med-crs oo-castic por, 1 pcs in 30 min and 2 pcs in 60 min smpls w/in-xtal por w/sfo, no odor, ns.

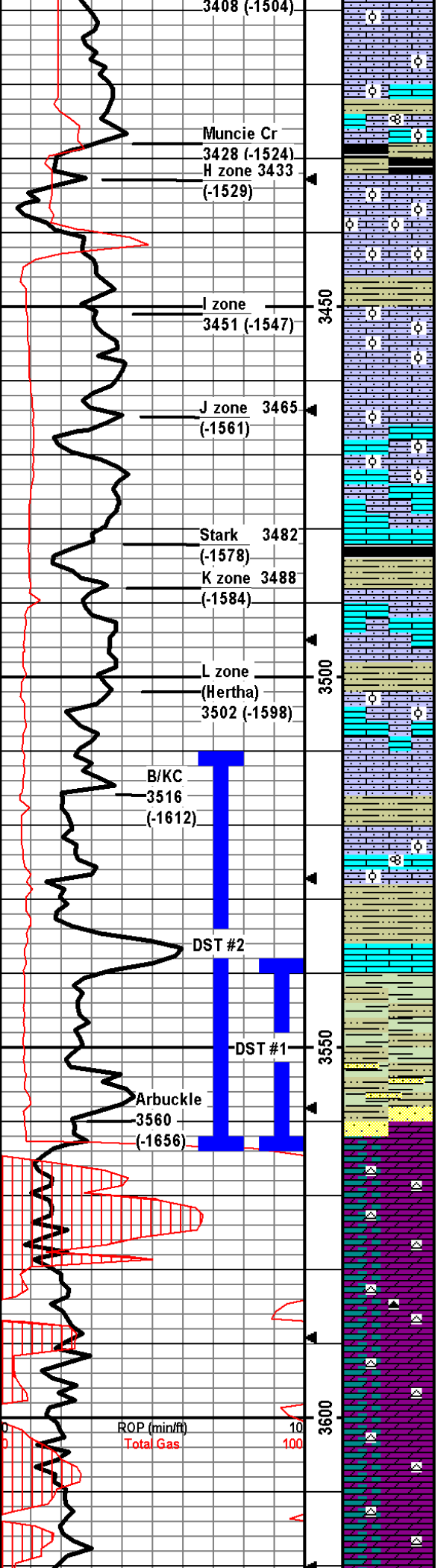
CFS @ 3330' 30"60"

CFS @ 3346' 30"60"

CFS @ 3375' 30"60"

CFS @ 3395' 30"60"

CFS @ 3405' 30"60"



LS: Lt-brn/gry, micro-gry, micro-med xtal, some foss frags/ool, silty/sndy, some chalky, min ppt-fn in-xtal por med-crs oo-castic por, no odor, ns.

LS: crm/lt brn/lt gry, micro-med xtal, some foss frags/fusln/min ool, silty/sndy, some chalky, min ppt-fn in-xtal por, no odor, ns.

SH: med-dk gry, some silty, slt carb, soft-firm, fissile.

LS: crm/lt-med brn/gry, micro-med xtal, foss frags/abund ool, silty/sndy, some chalky, 2 pcs wfn-crs in-xtal/oo-castic por w/sfo, dul yel flor, slt odor, sfo.

LS: crm/lt brn, micro-med xtal, foss frags/ool, silty/sndy, 23 pcs in 30 min and 16 pcs in 60 min smpls w/fn-crs in-xtal/in-ool/oo-castic por, gd odor, yel flor, gsfo.

SH: dk gry/blk, some silty, carb, firm, fissile.

LS: crm/lt brn, micro-med xtal, foss frags/abund ool, silty/sndy, 17 pcs w/fn-crs in-xtal/in-ool/oo-castic por w/sfo, yel flor, cup odor, gsfo.

LS: same as above w/12 pcs w/sfo in 30 min and 10 pcs in 60 min smpls.

LS: crm/lt brn, micro-med xtal, foss frags/ool, some silty/sndy, 11 pcs w/fn-crs in-xtal/in-ool/oo-castic por w/sfo, yel flor, odor, gsfo.

LS: crm/lt brn, micro-fn xtal, no foss frags w/some ool pcs, some silty/sndy, 8 ool pcs w/fn-crs in-ool/oo-castic por, gd odor, dul yel flor, sfo.

SH: lt-dk gry/brn, silty, slt carb, firm, fissile.

LS: crm/lt brn, micro-fn xtal, min foss frags w/some abund ool pcs, some silty/sndy, 5 pcs in 30 min and 3 pcs in 60 min smpls w/fn-crs in-xtal/in-ool/oo-castic por w/sfo, slt cup odor, dul yel flor, sfo.

LS: crm/lt brn/lt brn-gry, micro-med, some foss frags/ool, some silty/sndy, some chalky, min ppt-fn in-xtal/frac por, 2 pcs w/ppt-fn por w/sfo, dul yel flor, no odor, ssfo.

LS: crm/lt-med brn/lt gry, micro-med xtal, min foss frags/ool, silty/sndy, 2 pcs w/fn-med in-ool/oo-castic por w/sfo, dul yel flor, no odor, ssfo.

SH: med-dk gry/min dk red brn, some silty, slt carb, some pyritic, firm, fissile.

LS: crm/lt brn, micro-med xtal, min foss frags/fusln w/dense abund ool pcs, some silty/sndy, some chalky, mostly dense w/17 pcs w/ppt-med por w/s blk tar oil, dul yel flor, no odor, sfo.

SH: med-dk gry/dk red brn, silty, carb, firm, fissile.

LS: crm/lt-med brn, micro-fn xtal, min foss frags, min frac por, no odor, ns.

SH: lt-dk gry/lt gry-green/red brn/mustard yel, some silty, min glau, slt carb, firm, fissile; some LS w/blk tar oil, no odor.

SH as above w/min SS pcs; SS: gry w/blk flakes, v-f, sr-wr, friable, no odor, ns. Some LS pcs w/blk tar oil.

DOLO: crm/lt-med brn, micro-fn xtal, silty/sndy, ppt-fn w/some crs in-xtal por, approx 10-15% of smple w/sfo, yel flor, stg cup odor, vgsfo. 9 SS clusters: lt gry/lt brn, qtz, f-m, sr-wr, hard, friable, sfo, yel flor/cut, stg odor, vgsfo.

DOLO: crm/lt-med brn, micro-fn xtal, grainy/sndy, some lt gry chert, 40-50% of tray w/sfo, mostly ppt-fn w/some fn-crs in-xtal por w/sfo, yel flor, strg odor, vgsfo.

DOLO: crm/lt-med brn, micro-med xtal, grainy/sndy, lt gry/dk brn chert, aprx 40-50% of tray w/sfo, ppt-fn in-xtal por w/min med-crs, yel flor, strg odor, vgsfo.

DOLO: wht/crm/lt brn, micro-med xtal, grainy/sndy, min glau, wht/lt gry chert, aprx 40-50% of tray w/sfo, ppt-fn in-xtal por w/some med-crs, yel flor/cut, strg odor, vgsfo.

DOLO: same as above, w/approx 20-25% of tray w/sfo, good odor, vgsfo.

DOLO: same as above, approx 20-25% of tray w/sfo, oil above is brn, this smpl also has some blk oil, some fluid some tar, good odor, vgsfo.

CFS @ 3430'  
30"60"

CFS @ 3448'  
30"60"

CFS @ 3465'  
30"60"

Andy's Mud Check #2 @  
3482' 02/03/15 09:30am  
wt vis pH chl  
9.3 49 10.0 4000  
Filt LCM  
7.2 1/2

CFS @ 3490'  
30"60"

CFS @ 3500'  
30"60"

CFS @ 3518'  
30"60"

**DST1) 3538-3564  
Arbuckle**

First Arbuckle DST attempt:  
Packer failure. Raised  
packer seat area up hole and  
used a SH packer for 2nd  
DST attempt.

Andy's Mud Check #3 @  
3564' 02/04/15 07:30am  
wt vis pH chl  
9.4 47 9.5 5000  
Filt LCM  
8.0 1

CFS @ 3564'  
30"60"

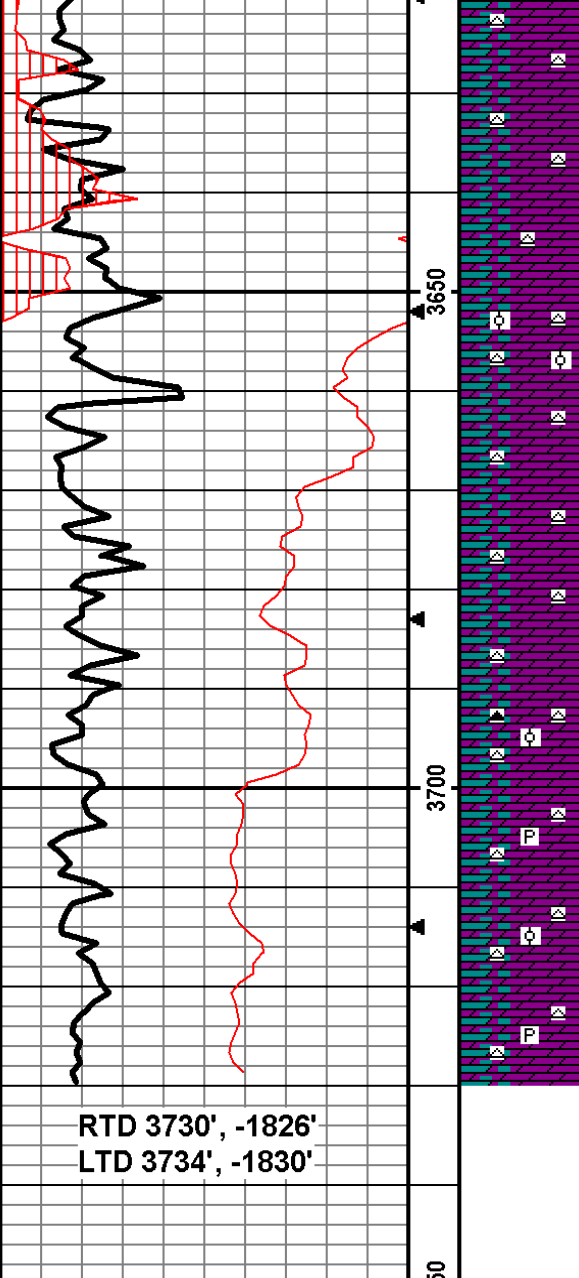
CFS @ 3579'  
30"60"

CFS @ 3592'  
30"60"

**DST2) 3510-3564  
Arbuckle**

05/45/60/90  
1st) weak surface blow built  
to 1", weak surface BB died  
in 15 min.  
2nd) weak surface built to  
2.75", no BB.

IFP 42-45#  
ISIP 1035#  
FFP 47-56#  
FSIP 873#  
HP 1767-1741#  
Recvd: 15' O, 30' OCM  
(5%O).



DOLO: same as above, approx 20-25% sfo, some blk fluid oil  
some blk tar, gd odor, vgsfo.

DOLO: same as above w/some wht fn grained chalky friable Dolo,  
oil show as above, 20-25% w/some brn and blk fluid and tar oil,  
little stronger odor.

DOLO: crm/lt brn, micro-med xtal, grainy/sndy, min wht chert, appr 20-25% of tray  
w/sfo, fluid dk brn w/some blk fluid and blk tar, ppt-fn in-xtal por w/some med-crs,  
good odor, vgsfo.

DOLO: same as above w/wht/lt brn ool Dolo w/wht ool chert, approx 20-25 of tray  
w/sfo, fluid brn/blk w/some blk tar oil, por as above w/med-crs oo-castic por, good  
odor, vgsfo.

DOLO: wht/crm/lt brn, micro-med xtal, grainy/sndy, some wht/lt gry/lt brn chert,  
appr 20-25% of tray w/sfo, oil dk brn and blk w/some blk tar, fn-med in-xtal por  
w/some med-crs, gd odor, vgsfo.

DOLO: same as above, approx 20-25% of tray w/sfo, oil dk brn/blk  
w/blk tar, gd odor, vgsfo.

DOLO: same as above w/approx 10-15% of tray w/sfo, oil show as  
above, gd odor, vgsfo.

DOLO: same as above w/some med-crs oo-castic por, wht/lt  
brn/dk gry chert w/some ool, approx 10-15% of tray w/sfo, gd odor,  
vgsfo.

DOLO: crm/lt brn, micro-med xtal, grainy/sndy, wht/lt gry chert,  
min pyritic, ppt-fn in-xtal por w/some med por, approx 5-10% of  
tray w/sfo, gd odor, gsfo.

DOLO: crm/lt brn, micro-med xtal, grainy/sndy, wht/lt gry ool chert,  
ppt-fn in-xtal por w/some med, 31 pcs w/sfo w/dk brn oil w/blk tar,  
yel flor/cut, gd odor, gsfo.

DOLO: same as above, min pyritic, 29 pcs sfo, dk brn w/blk tar, gd  
odor, gsfo.

TD @ 3730'.

CFS @ 3730'  
30"60"



## DRILL STEM TEST REPORT

Prepared For: **Younger Energy Company**

9415 E Harry Street  
Suite 403 Buiding 400  
Wichita, KS 67207

ATTN: Kent Matson

### **Morrison-Luther #2**

### **5-21s-13w Stafford,KS**

Start Date: 2015.02.03 @ 23:35:00

End Date: 2015.02.04 @ 03:30:30

Job Ticket #: 62044                      DST #: 1

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.02.04 @ 13:13:26



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Younger Energy Company

5-21s-13w Stafford,KS

9415 E Harry Street  
Suite 403 Buiding 400  
Wichita, KS 67207  
ATTN: Kent Matson

**Morrison-Luther #2**

Job Ticket: 62044

**DST#: 1**

Test Start: 2015.02.03 @ 23:35:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:35:00

Time Test Ended: 03:30:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: S1

**Interval: 3538.00 ft (KB) To 3564.00 ft (KB) (TVD)**

Reference Elevations: 1904.00 ft (KB)

Total Depth: 3564.00 ft (KB) (TVD)

1896.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6749 Inside**

Press@RunDepth: psig @ 3558.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.02.03

End Date:

2015.02.04

Last Calib.: 2015.02.04

Start Time: 23:36:00

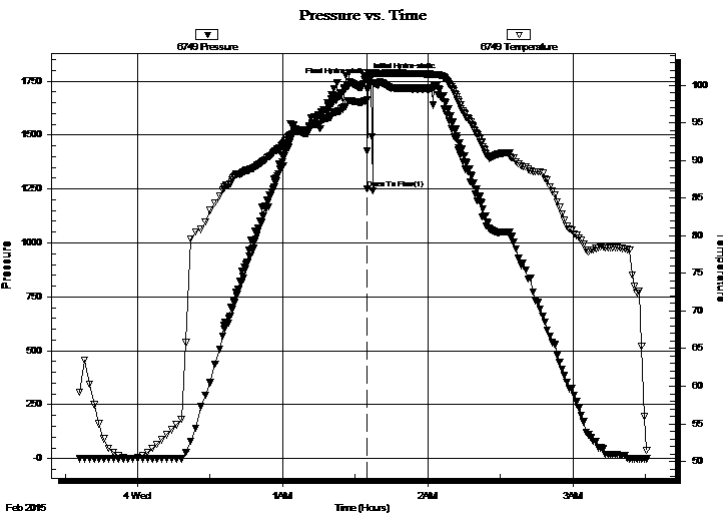
End Time:

03:30:30

Time On Btm: 2015.02.04 @ 01:34:40

Time Off Btm: 2015.02.04 @ 01:37:30

TEST COMMENT: Packer fail at open/ Tried setting tool on bottom second time / Packer fail again / Pull test



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1766.03	97.98	Initial Hydro-static
1	1249.60	99.57	Open To Flow (1)
3	1742.22	101.61	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
135.00	Drilling Mud 100%	1.89

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Younger Energy Company

**5-21s-13w Stafford,KS**

9415 E Harry Street  
Suite 403 Buiding 400  
Wichita, KS 67207  
ATTN: Kent Matson

**Morrison-Luther #2**

Job Ticket: 62044

**DST#: 1**

Test Start: 2015.02.03 @ 23:35:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:35:00

Time Test Ended: 03:30:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: S1

**Interval: 3538.00 ft (KB) To 3564.00 ft (KB) (TVD)**

Reference Elevations: 1904.00 ft (KB)

Total Depth: 3564.00 ft (KB) (TVD)

1896.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6838 Outside**

Press@RunDepth: psig @ 3559.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.02.03

End Date:

2015.02.04

Last Calib.:

2015.02.04

Start Time: 23:36:00

End Time:

03:30:00

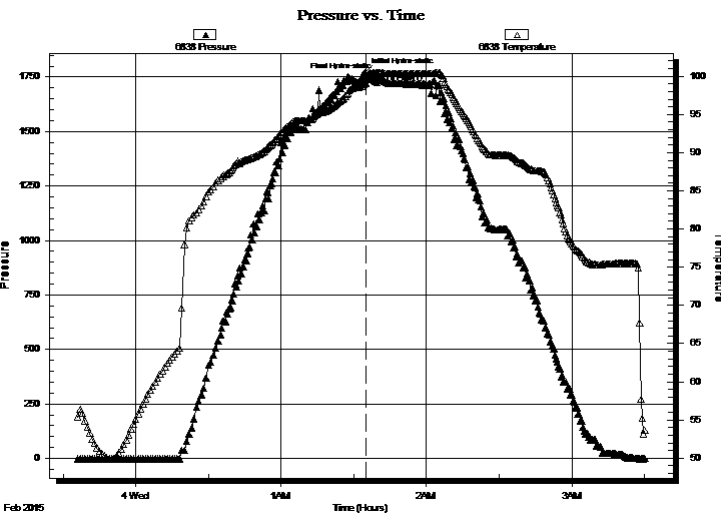
Time On Btm:

2015.02.04 @ 01:34:30

Time Off Btm:

2015.02.04 @ 01:40:00

TEST COMMENT: Packer fail at open/ Tried setting tool on bottom second time / Packer fail again / Pull test



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1769.65	99.00	Initial Hydro-static
1	1724.11	99.04	Open To Flow (1)
6	1745.01	100.42	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
135.00	Drilling Mud 100%	1.89

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Younger Energy Company

**5-21s-13w Stafford,KS**

9415 E Harry Street  
Suite 403 Buiding 400  
Wichita, KS 67207  
ATTN: Kent Matson

**Morrison-Luther #2**

Job Ticket: 62044

**DST#: 1**

Test Start: 2015.02.03 @ 23:35:00

## Tool Information

Drill Pipe:	Length: 3531.00 ft	Diameter: 3.80 inches	Volume: 49.53 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 56000.00 lb
			<u>Total Volume: 49.53 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	3538.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	51.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3516.00	
Hydraulic tool	5.00			3521.00	
Jars	5.00			3526.00	
Safety Joint	2.00			3528.00	
Top Packer	5.00			3533.00	
Packer	5.00			3538.00	27.00 Bottom Of Top Packer
Anchor	19.00			3557.00	
Recorder	1.00	6749	Inside	3558.00	
Recorder	1.00	6838	Outside	3559.00	
Bullnose	3.00			3562.00	24.00 Anchor Tool
<b>Total Tool Length:</b>	<b>51.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Younger Energy Company

**5-21s-13w Stafford,KS**

9415 E Harry Street  
Suite 403 Buiding 400  
Wichita, KS 67207  
ATTN: Kent Matson

**Morrison-Luther #2**

Job Ticket: 62044

**DST#: 1**

Test Start: 2015.02.03 @ 23:35:00

## Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 49.00 sec/qt

Water Loss: 7.19 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 4000.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
135.00	Drilling Mud 100%	1.894

Total Length: 135.00 ft      Total Volume: 1.894 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

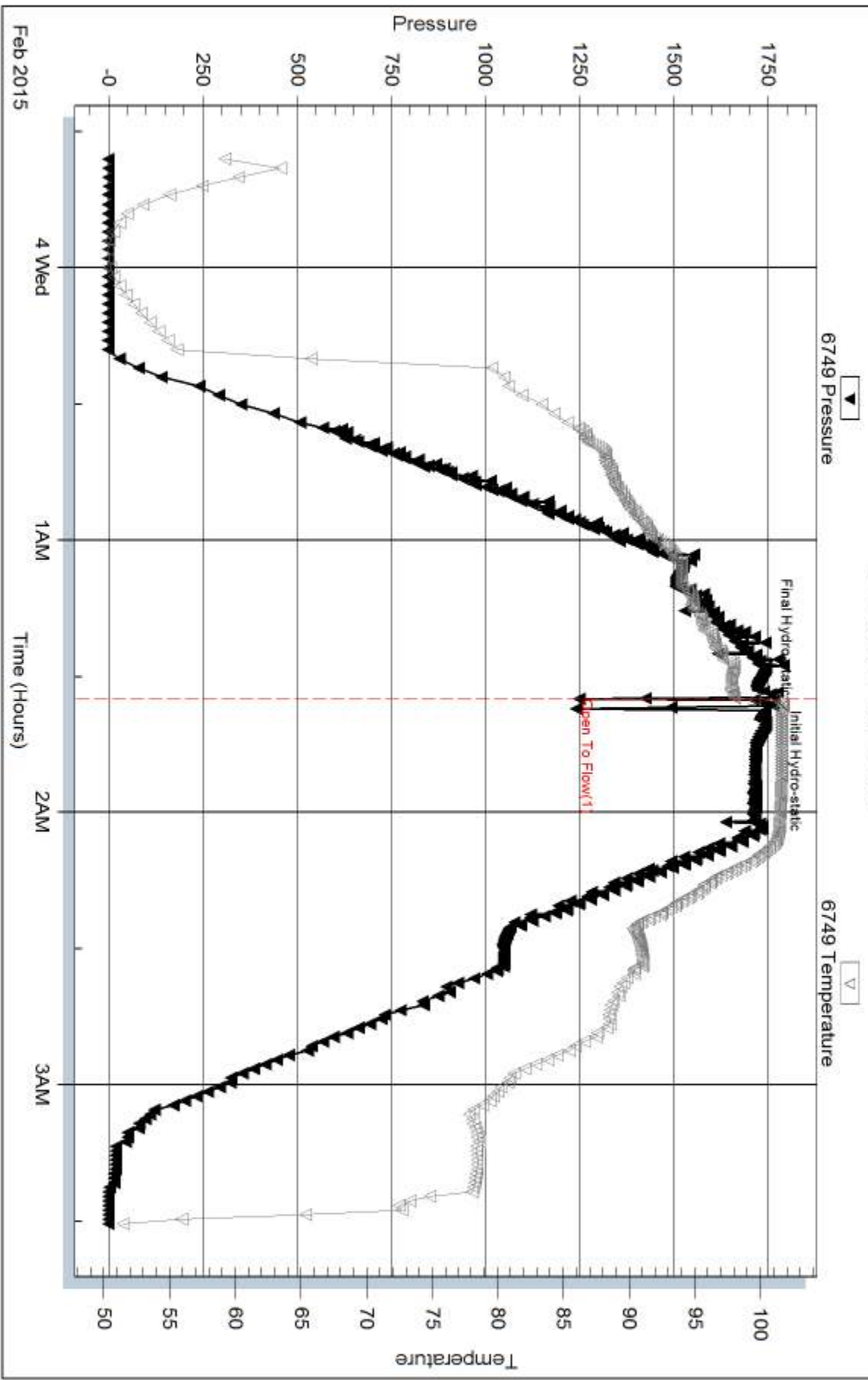
Serial #:

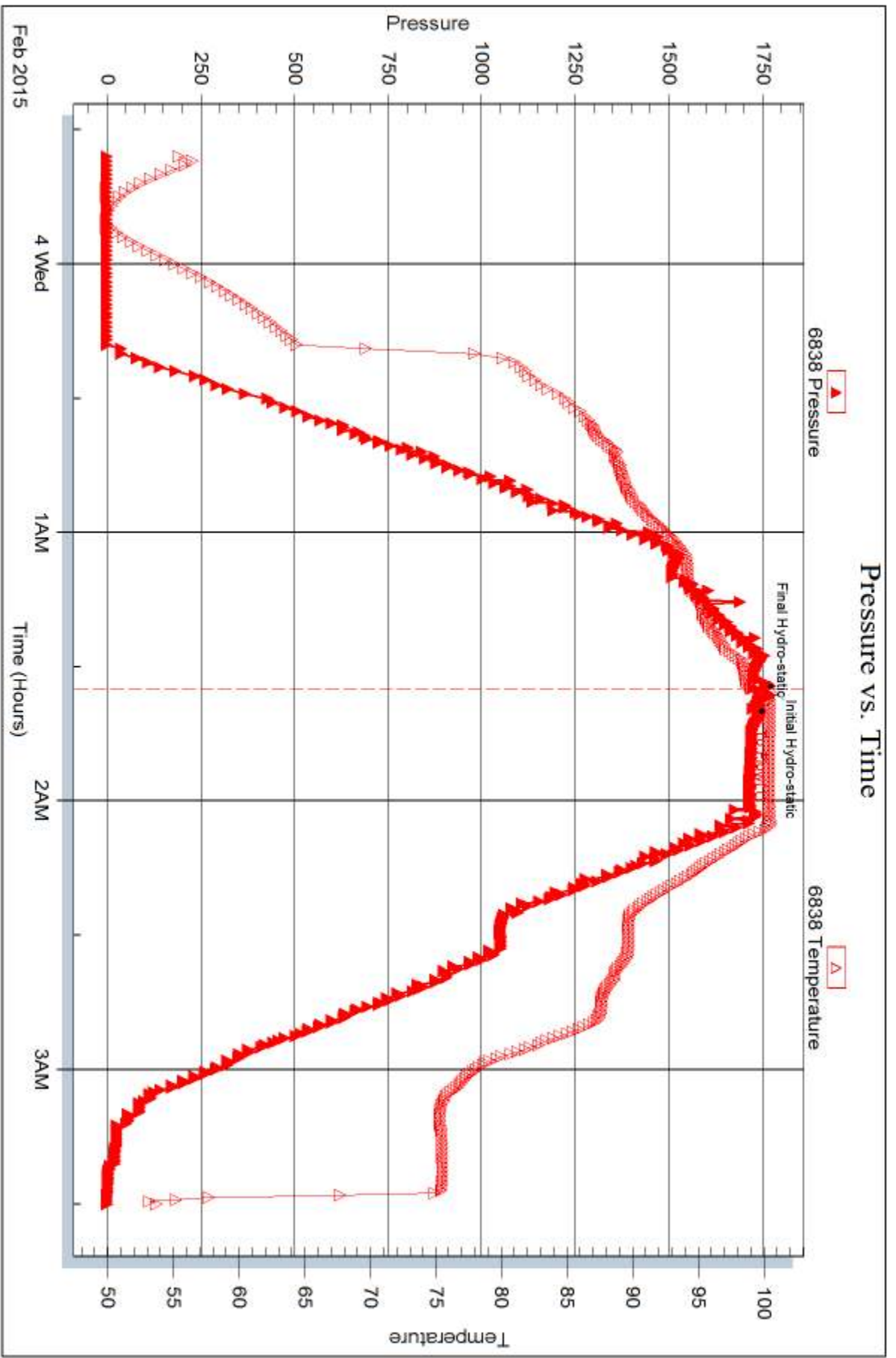
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Younger Energy Company**

9415 E Harry Street  
Suite 403 Buiding 400  
Wichita, KS 67207

ATTN: Kent Matson

### **Morrison-Luther #2**

### **5-21s-13w Stafford,KS**

Start Date: 2015.02.04 @ 03:58:00

End Date: 2015.02.04 @ 10:16:00

Job Ticket #: 62045                      DST #: 2

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.02.04 @ 13:12:52



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Younger Energy Company

**5-21s-13w Stafford,KS**

9415 E Harry Street  
Suite 403 Buiding 400  
Wichita, KS 67207  
ATTN: Kent Matson

**Morrison-Luther #2**

Job Ticket: 62045

**DST#: 2**

Test Start: 2015.02.04 @ 03:58:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:19:00

Time Test Ended: 10:16:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: S1

**Interval: 3510.00 ft (KB) To 3564.00 ft (KB) (TVD)**

Reference Elevations: 1904.00 ft (KB)

Total Depth: 3564.00 ft (KB) (TVD)

1896.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6749 Inside**

Press@RunDepth: 56.30 psig @ 3560.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.02.04 End Date: 2015.02.04

Last Calib.: 2015.02.04

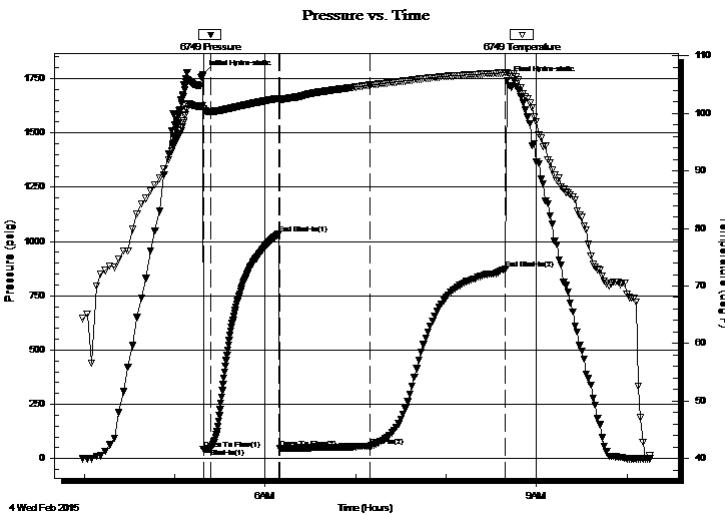
Start Time: 03:59:00 End Time: 10:16:00

Time On Btm: 2015.02.04 @ 05:18:40

Time Off Btm: 2015.02.04 @ 08:40:30

**TEST COMMENT:** IFP 5 Minutes Weak blow built to 1"  
ISI 45 Minutes Weak surface blow back for 15 minutes  
FFP 60 Mintues Weak blow built to 2 3/4"  
FSI 90 Mintues No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1767.25	101.39	Initial Hydro-static
1	42.79	100.78	Open To Flow (1)
6	45.77	100.30	Shut-In(1)
51	1035.80	102.61	End Shut-In(1)
51	47.74	102.34	Open To Flow (2)
111	56.30	104.90	Shut-In(2)
201	873.74	107.04	End Shut-In(2)
202	1741.09	107.11	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	Clean Oil 100%	0.21
30.00	Oil cut Mud/Oil 5% Mud 95%	0.42

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Younger Energy Company

**5-21s-13w Stafford, KS**

9415 E Harry Street  
Suite 403 Buiding 400  
Wichita, KS 67207  
ATTN: Kent Matson

**Morrison-Luther #2**

Job Ticket: 62045

**DST#: 2**

Test Start: 2015.02.04 @ 03:58:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:19:00

Time Test Ended: 10:16:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: S1

**Interval: 3510.00 ft (KB) To 3564.00 ft (KB) (TVD)**

Reference Elevations: 1904.00 ft (KB)

Total Depth: 3564.00 ft (KB) (TVD)

1896.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6838 Outside**

Press@RunDepth: 872.46 psig @ 3561.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.02.04

End Date: 2015.02.04

Last Calib.: 2015.02.04

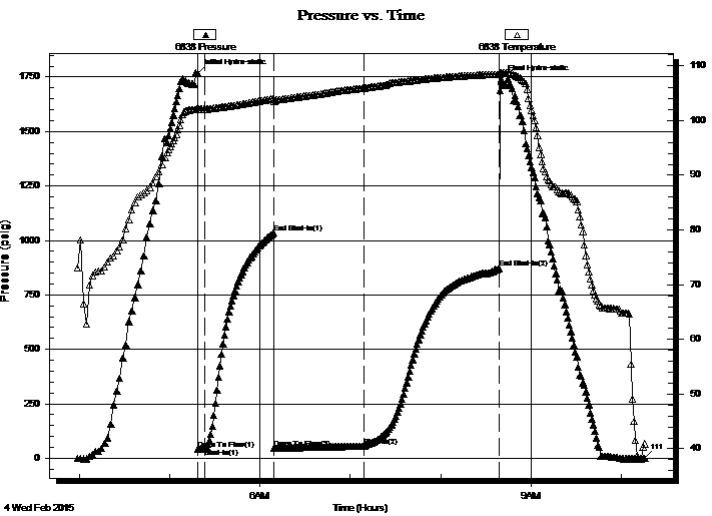
Start Time: 03:59:00

End Time: 10:15:30

Time On Btm: 2015.02.04 @ 05:18:30

Time Off Btm: 2015.02.04 @ 08:40:00

**TEST COMMENT:** IFP 5 Minutes Weak blow built to 1"  
ISI 45 Minutes Weak surface blow back for 15 minutes  
FFP 60 Mintues Weak blow built to 2 3/4"  
FSI 90 Mintues No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1767.76	102.37	Initial Hydro-static
1	42.96	101.99	Open To Flow (1)
5	45.22	102.08	Shut-In(1)
51	1034.92	103.98	End Shut-In(1)
51	47.78	103.56	Open To Flow (2)
111	55.50	105.94	Shut-In(2)
201	872.46	108.49	End Shut-In(2)
202	1740.35	108.80	Final Hydro-static
297	-1.42	40.87	111

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	Clean Oil 100%	0.21
30.00	Oil cut Mud/Oil 5% Mud 95%	0.42

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Younger Energy Company

**5-21s-13w Stafford,KS**

9415 E Harry Street  
Suite 403 Buiding 400  
Wichita, KS 67207  
ATTN: Kent Matson

**Morrison-Luther #2**

Job Ticket: 62045

**DST#: 2**

Test Start: 2015.02.04 @ 03:58:00

## Tool Information

Drill Pipe:	Length: 3500.00 ft	Diameter: 3.80 inches	Volume: 49.10 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 62000.00 lb
			<u>Total Volume: 49.10 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	3510.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	54.00 ft			
Tool Length:	82.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			3487.00	
Hydraulic tool	5.00			3492.00	
Jars	6.00			3498.00	
Safety Joint	2.00			3500.00	
Top Packer	5.00			3505.00	
Packer	5.00			3510.00	28.00 Bottom Of Top Packer
Anchor	6.00			3516.00	
Change Over Sub	0.75			3516.75	
Drill Pipe	31.50			3548.25	
Change Over Sub	0.75			3549.00	
Anchor	10.00			3559.00	
Recorder	1.00	6749	Inside	3560.00	
Recorder	1.00	6838	Outside	3561.00	
Bullnose	3.00			3564.00	54.00 Anchor Tool

**Total Tool Length: 82.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Younger Energy Company

**5-21s-13w Stafford,KS**

9415 E Harry Street  
Suite 403 Buiding 400  
Wichita, KS 67207  
ATTN: Kent Matson

**Morrison-Luther #2**

Job Ticket: 62045

**DST#: 2**

Test Start: 2015.02.04 @ 03:58:00

## Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 49.00 sec/qt

Water Loss: 7.19 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 4000.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Clean Oil 100%	0.210
30.00	Oil cut Mud/Oil 5% Mud 95%	0.421

Total Length: 45.00 ft      Total Volume: 0.631 bbl

Num Fluid Samples: 0

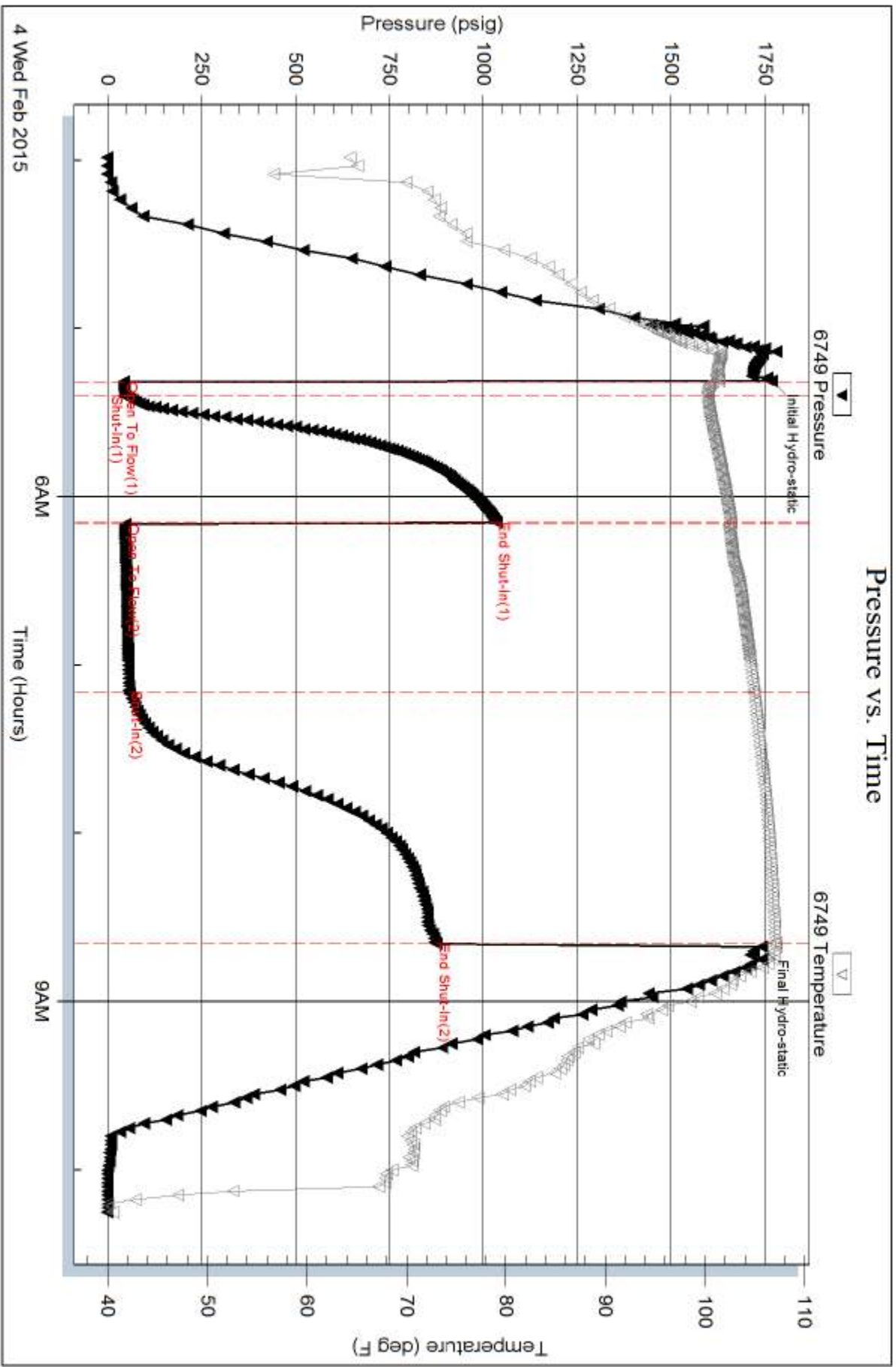
Num Gas Bombs: 0

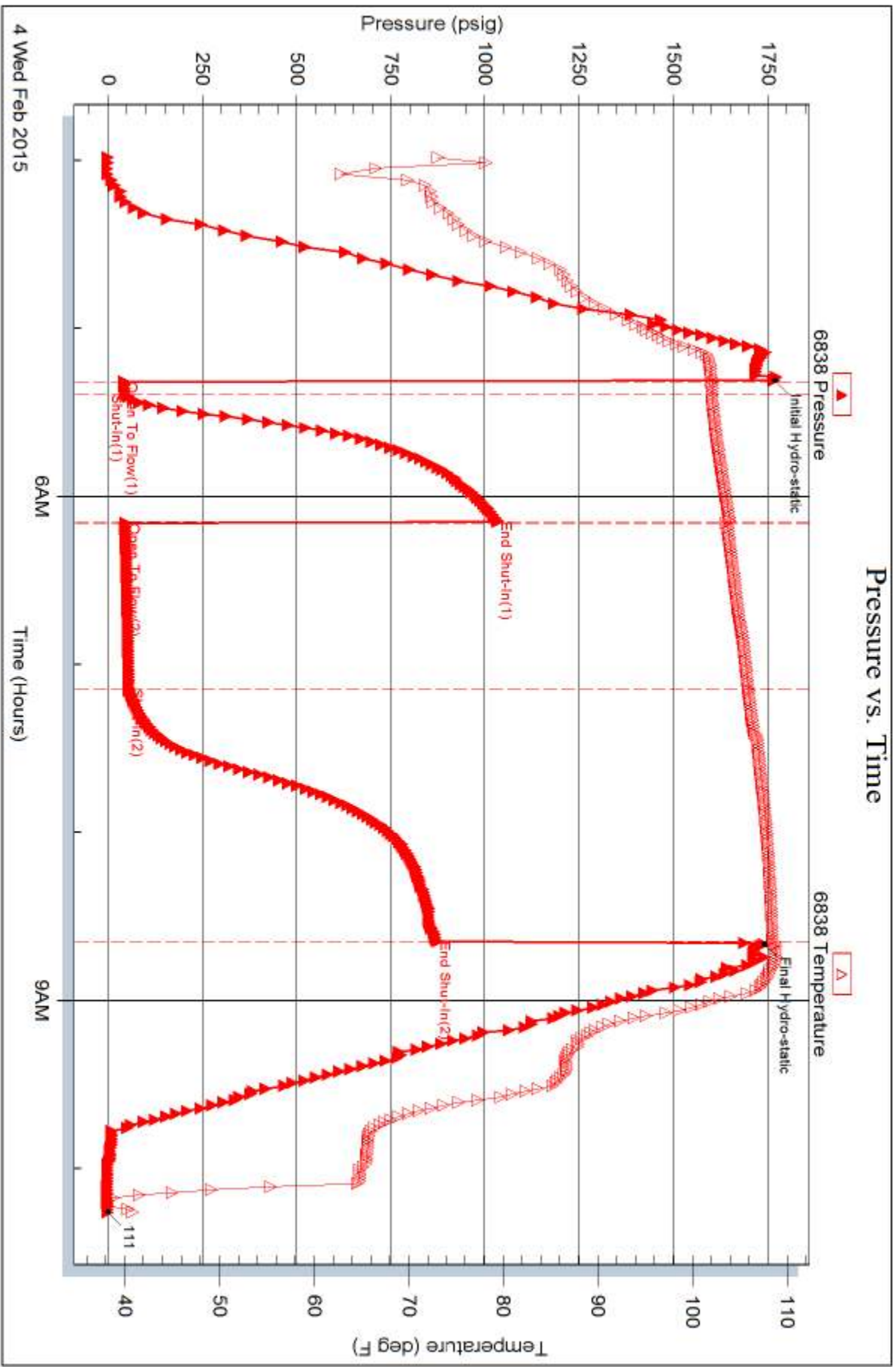
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62044

Well Name & No. Morrison-Luther Unit #2 Test No. 1 Date 3 Feb 15  
 Company Younger Energy Company Elevation 1904 KB \_\_\_\_\_ GL \_\_\_\_\_  
 Address 9415 E Harry Street Suite 403 Building 400 Wichita, Kansas 67207  
 Co. Rep / Geo. Kent Matson Rig Duke Rig #2  
 Location: Sec. 5 Twp. 215 Rge. 13W Co. Stafford State KS

Interval Tested 3538-3564 Zone Tested Arbuckle  
 Anchor Length 26' Drill Pipe Run 3531 Mud Wt. 9.3  
 Top Packer Depth 3533 Drill Collars Run — Vis 49  
 Bottom Packer Depth 3538 Wt. Pipe Run — WL 7.2  
 Total Depth 3564 Chlorides 4000 ppm System LCM 1/2 #  
 Blow Description Set tool on bottom / opened tool / packer fail / second attempt to set tool / packer fail / pull tool

Rec	Feet of	%gas	%oil	%water	%mud
<u>135</u>	<u>Drilling Mud</u>			<u>100</u>	
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

Rec Total 135 BHT 100 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1766  Test 850 T-On Location 10:50 pm  
 (B) First Initial Flow 1249  Jars 250 T-Started 11:36 pm  
 (C) First Final Flow 174  Safety Joint 75 T-Open 1:34 am  
 (D) Initial Shut-In \_\_\_\_\_  Circ Sub \_\_\_\_\_ T-Pulled 1:37 am  
 (E) Second Initial Flow \_\_\_\_\_  Hourly Standby \_\_\_\_\_ T-Out 3:30 am  
 (F) Second Final Flow \_\_\_\_\_  Mileage 18 18 Comments \_\_\_\_\_  
 (G) Final Shut-In \_\_\_\_\_  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1742  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1193  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1193

Approved By \_\_\_\_\_ Our Representative [Signature]  
 TriLOBITE TESTING INC. shall not be liable for damaged 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.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62045

Well Name & No. Morrison-Luther Unit #2 Test No. 2 Date 4 Feb 15  
 Company Younger Energy Company Elevation 1904 KB 1896 GL  
 Address 9415 E Harry Street Suite 403 Building 400, Wichita, Kansas 67207  
 Co. Rep/Geo. Kent Matson Rig Duke Rig #2  
 Location: Sec. 5 Twp. 21S Rge. 13W Co. Stafford State KS

Interval Tested 3510-3564 Zone Tested Arbuckle  
 Anchor Length 54 Drill Pipe Run 3500 Mud Wt. 9.3  
 Top Packer Depth 3505 Drill Collars Run - Vis 49  
 Bottom Packer Depth 3510 Wt. Pipe Run - WL 7.2  
 Total Depth 3564 Chlorides 4000 ppm System LCM 1/2 #  
 Blow Description Weak blow/ Blow built to 1 inch  
weak surface blow back for 15 minutes  
weak blow/ Blow built to 2 3/4 inches  
No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>Clean oil</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>30</u>	<u>Oil cut Mud</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>95</u>
<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>
<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>
<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>

Rec Total      BHT 108 Gravity 39 API RW      @      °F Chlorides      ppm

(A) Initial Hydrostatic <u>1767</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>3:30 am</u>
(B) First Initial Flow <u>47</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>3:58 am</u>
(C) First Final Flow <u>45</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>5:18 am</u>
(D) Initial Shut-In <u>1035</u>	<input type="checkbox"/> Circ Sub <u>    </u>	T-Pulled <u>8:38 am</u>
(E) Second Initial Flow <u>47</u>	<input type="checkbox"/> Hourly Standby <u>    </u>	T-Out <u>10:15 am</u>
(F) Second Final Flow <u>56</u>	<input checked="" type="checkbox"/> Mileage <u>18</u>	Comments <u>    </u>
(G) Final Shut-In <u>873</u>	<input type="checkbox"/> Sampler <u>    </u>	<u>    </u>
(H) Final Hydrostatic <u>1741</u>	<input type="checkbox"/> Straddle <u>    </u>	<input type="checkbox"/> Ruined Shale Packer <u>    </u>
Initial Open <u>5</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Packer <u>    </u>
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer <u>    </u>	<input type="checkbox"/> Extra Copies <u>    </u>
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder <u>    </u>	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby <u>    </u>	Total <u>1625</u>
	<input type="checkbox"/> Accessibility <u>    </u>	MP/DST Disc't <u>    </u>
	Sub Total <u>1625</u>	

Approved By \_\_\_\_\_ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged 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.



# INVOICE

PO Box 93999  
Southlake, TX 76092

Invoice Number: 148411

RECEIVED FEB 9 2015

Invoice Date: Jan 29, 2015

Voice: (817) 546-7282

Page: 1

Fax: (817) 246-3361

Federal Tax I.D.#: 20-8651475

<b>Bill To:</b>
Younger Energy Co. 9415 E. Harry St. STE #403 Wichita, KS 67207-5083

Customer ID	Field Ticket #	Payment Terms	
Youn	63617	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Great Bend	Jan 29, 2015	2/28/15

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Morrison Luther Unit #2		
150.00	CEMENT MATERIALS	Class A Common	17.90	2,685.00
1,140.00	CEMENT MATERIALS	Chloride	1.10	1,254.00
275.00	CEMENT MATERIALS	65/35/6% Gel Blend	19.88	5,467.00
69.00	CEMENT MATERIALS	Flo Seal	2.97	204.93
473.74	CEMENT SERVICE	Cubic Feet Charge	2.48	1,174.88
203.30	CEMENT SERVICE	Ton Mileage Charge	2.75	559.08
1.00	CEMENT SERVICE	Surface	2,058.50	2,058.50
10.00	CEMENT SERVICE	Pump Truck Mileage	7.70	77.00
1.00	CEMENT SERVICE	Manifold Rental	275.00	275.00
10.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	44.00
1.00	EQUIPMENT SALES	8-5/8 Baffle	320.00	320.00
3.00	EQUIPMENT SALES	8-5/8 Centralizer	75.00	225.00
1.00	EQUIPMENT SALES	8-5/8 Basket	560.00	560.00
1.00	EQUIPMENT SALES	8-5/8 Rubber Plug	131.00	131.00
1.00	EQUIPMENT OPERATOR	Dustin Chambers		
1.00	CEMENT SUPERVISOR	Joshua Isaac		
1.00	OPERATOR ASSISTANT	Kevin Weighous		

*180211 Cement 8-5/8" surface Csg  
w/ 275 SXS 65/35, 6% GEL, 390 CC,  
1/4# FLOSEAL PER SX; 150 SXS CLASS  
A, 390 CC, 2% GEL; CEMENT*

Subtotal CIRCULATED TO SURFACE/#2	15,035.39
Sales Tax	775.56
Total Invoice Amount	15,810.95
Payment/Credit Applied	
<b>TOTAL</b>	<b>15,810.95</b>

ALL PRICES ARE NET, PAYABLE  
30 DAYS FOLLOWING DATE OF  
INVOICE. 1 1/2% CHARGED  
THEREAFTER. IF ACCOUNT IS  
CURRENT, TAKE DISCOUNT OF

\$ 5,713.45

ONLY IF PAID ON OR BEFORE

Feb 28, 2015

- 5713.45  
10897.50  
*M. Kirkman*  
- 18

# ALLIED OIL & GAS SERVICES, LLC 063617

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT:  
*Granger Bend, TX*  
*1-30-15*

DATE <i>1-29-15</i>	SEC. <i>5</i>	TWP. <i>215</i>	RANGE <i>13W</i>	CALLED OUT	ON LOCATION <i>10:30pm</i>	JOB START <i>11:30</i>	JOB FINISH <i>1:30</i>
MORNING LEASE <i>W. 1/4 Sec 5</i>		WELL # <i>2</i>	LOCATION <i>Barton &amp; Stafford Line</i>		COUNTY <i>Stafford</i>	STATE <i>TX</i>	
OLD OR <input checked="" type="radio"/> NEW (Circle one)			<i>2W 1/4 S E into</i>				

CONTRACTOR <i>Duke #2</i>	OWNER
TYPE OF JOB <i>Surface</i>	CEMENT
HOLE SIZE <i>12 1/4</i>	T.D.
CASING SIZE <i>8 5/8</i>	DEPTH <i>400</i>
TUBING SIZE	DEPTH
DRILL PIPE <i>4 1/2</i>	DEPTH
TOOL	DEPTH
PRES. MAX	MINIMUM
MEAS. LINE	SHOE JOINT
CEMENT LEFT IN CSG. <i>1/2 ft</i>	
PERFS.	
DISPLACEMENT <i>45 bbls Fresh water</i>	

AMOUNT ORDERED <i>275 5X 65/35 6-7 gal</i>		
<i>7 gal 1/2 flt</i>		
<i>152 5X 65/35 7 gal 2-1 gal</i>		
COMMON <i>150</i>	@ <i>17.90</i>	<i>2,685.00</i>
POZMIX	@	
GEL	@	
CHLORIDE <i>1.190</i>	@ <i>1.10</i>	<i>1,254.00</i>
ASC	@	
<i>275 5X 65/35 76%</i>	@ <i>19.88</i>	<i>5,467.00</i>
<i>+ 3% acc + 2 ft</i>	@	
<i>110 decal 69</i>	@ <i>2.97</i>	<i>204.93</i>
	@	<i>9,610.93</i>
	@ <i>38%</i>	<i>3,653.15</i>
	@	
	@	
HANDLING <i>473.74</i>	@ <i>2.48</i>	<i>1,174.88</i>
MILEAGE <i>20.33 x 10 x</i>	@ <i>2.75</i>	<i>559.08</i>
<b>TOTAL</b>		

PUMP TRUCK # <i>398</i>	CEMENTER <i>Dustin Chambers</i>
BULK TRUCK # <i>609279</i>	HELPER <i>Tosh Isaac</i>
BULK TRUCK #	DRIVER <i>Kevin W. Lyons</i>
BULK TRUCK #	DRIVER

**REMARKS:**

*Break circulation with bit mud  
pump 5 bbls into ahead  
ind. lead & part shot down  
Release plug Displace 45 bbls  
Land plug @ 800 ft  
Cement circulate  
Plug down 1:35 AM  
plug down*

CHARGE TO: *Younger Energy*  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**SERVICE**

DEPTH OF JOB		
PUMP TRUCK CHARGE		<i>2,058.50</i>
EXTRA FOOTAGE	@	
MILEAGE <i>10</i>	@ <i>7.70</i>	<i>77.00</i>
MANIFOLD	@ <i>275.00</i>	<i>2,750.00</i>
<i>lum 10</i>	@ <i>4.40</i>	<i>44.00</i>
	@	
<b>TOTAL</b>		
		<i>4,188.46</i>
	<i>38%</i>	<i>1,591.61</i>

**PLUG & FLOAT EQUIPMENT**

<i>1-5 5/8 Raffle</i>	@ <i>320.00</i>	<i>320.00</i>
<i>2-5 1/4 central tools</i>	@ <i>75.00</i>	<i>225.00</i>
<i>1-5 1/2 Raffle</i>	@ <i>560.00</i>	<i>560.00</i>
<i>1-5 1/4 Rubber plug</i>	@ <i>131.00</i>	<i>131.00</i>
	@	
<b>TOTAL</b>		
		<i>1,236.00</i>
	<i>38%</i>	<i>469.68</i>

To: Allied Oil & Gas Services, LLC.  
You are hereby requested to rent cementing equipment and furnish cementer 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 *John Browning*  
SIGNATURE *John Browning*

SALES TAX (If Any) \_\_\_\_\_  
TOTAL CHARGES *15,035.39*  
*38%* *5,713.43*  
DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS  
**\$ 9,321.94**





# INVOICE

PO Box 93999  
Southlake, TX 76092

RECEIVED FEB 17 2015

Invoice Number: 148503  
Invoice Date: Feb 5, 2015  
Page: 1

Voice: (817) 546-7282  
Fax: (817) 246-3361

Federal Tax I.D.#: 20-8651475

<b>Bill To:</b>
Younger Energy Co. 9415 E. Harry St. STE #403 Wichita, KS 67207-5083

Customer ID	Field Ticket #	Payment Terms	
Youn	63746	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-02	Great Bend	Feb 5, 2015	3/7/15

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Morrison Luther Unit #2		
500.00	CEMENT MATERIALS	DV 1100	1.27	635.00
150.00	CEMENT MATERIALS	ASC	23.50	3,525.00
50.00	CEMENT MATERIALS	60/40/4% Gel Blend	18.92	946.00
21.00	CEMENT MATERIALS	Defoamer	3.50	73.50
43.00	CEMENT MATERIALS	FL-160	18.90	812.70
750.00	CEMENT MATERIALS	Kol Seal	0.98	735.00
250.38	CEMENT SERVICE	Cubic Feet Charge	2.48	620.94
106.71	CEMENT SERVICE	Ton Mileage Charge	2.75	293.45
1.00	CEMENT SERVICE	Production Casing	2,558.75	2,558.75
10.00	CEMENT SERVICE	Pump Truck Mileage	7.70	77.00
1.00	CEMENT SERVICE	Manifold Rental	275.00	275.00
10.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	44.00
1.00	EQUIPMENT SALES	5-1/2 Packer Shoe	3,765.00	3,765.00
1.00	EQUIPMENT SALES	5-1/2 Latch Down Insert	660.00	660.00
2.00	EQUIPMENT SALES	5-1/2 Basket	395.00	790.00
10.00	EQUIPMENT SALES	5-1/2 Turbolizer	95.00	950.00
1.00	CEMENT SUPERVISOR	Kevin Eddy 180311		
1.00	EQUIPMENT OPERATOR	Dustin Chambers <i>Cement 5-1/2" Production cog</i>		
1.00	OPERATOR ASSISTANT	Kevin Weighous <i>w/150 SXS ASC. Plugged rat hole + mouse hole w/50 SXS 60/40 POZ</i>		

DP

or

ALL PRICES ARE NET, PAYABLE 30 DAYS FOLLOWING DATE OF INVOICE. 1 1/2% CHARGED THEREAFTER. IF ACCOUNT IS CURRENT, TAKE DISCOUNT OF

\$ 6,369.31

ONLY IF PAID ON OR BEFORE  
Mar 7, 2015

Subtotal	(2-5-15)/#2	16,761.34
Sales Tax		921.79
Total Invoice Amount		17,683.13
Payment/Credit Applied		
<b>TOTAL</b>		<b>17,683.13</b>

11,313.82

M. Luther #2  
copy to Dan  
GIB

# ALLIED OIL & GAS SERVICES, LLC 063746

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT:  
Great Bend KS

DATE <u>02-05-15</u>	SEC. <u>5</u>	TWP. <u>21</u>	RANGE <u>13</u>	CALLED OUT	ON LOCATION <u>12:30 PM</u>	JOB START <u>5:00 PM</u>	JOB FINISH <u>6:00 PM</u>
LEASE <u>Morrison Luther</u>	WELL # <u>2</u>	LOCATION <u>Barton / Stafford County Line on</u>			COUNTY <u>Stafford</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one)				<u>281 2 West 1/2 South East into</u>			

CONTRACTOR Duke 20  
 TYPE OF JOB Production  
 HOLE SIZE 7 7/8 T.D.  
 CASING SIZE 5 1/2 17 CBS DEPTH 3649  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT  
 CEMENT LEFT IN CSG. 15 FT  
 PERFS.  
 DISPLACEMENT 84.65 BBLS Fresh H2O

OWNER  
 CEMENT  
 AMOUNT ORDERED 150 SXS ASC + 2% GEL + 6% GYR + 10% SALT + #5 Kalseal  
50 SXS 60/40 + 4% GEL + 1/4 F/O  
 COMMON @  
 POZMIX @  
 GEL @  
 CHLORIDE Du 1100 500 @ 1.27 635.00  
 ASC 150 SXS @ 23.50 3,525.00  
50 SXS 60/40 + 4% @ 18.92 946.00  
 DF 21 @ 3.50 73.50  
 F1-100 43 @ 18.90 812.70  
 Kalseal 750 @ .98 735.00  
 @ 6,727.20  
 @ 38% 2,556.34  
 @  
 @  
 HANDLING 250.38 @ 2.48 620.94  
 MILEAGE 106.71 @ 2.75 293.46

EQUIPMENT  
 PUMP TRUCK CEMENTER Kevin Edaly  
 # 366 HELPER Dustin Chambers  
 BULK TRUCK  
 # 544 / 198 DRIVER Kevin Weighouse  
 BULK TRUCK  
 # DRIVER

REMARKS:  
 on location / held safety meeting / Rig up. Rig  
 Ran 3649 ft of 5 1/2 casing / w float equip. Hook  
 to head brake size w/ R. q mud. Drop Ball. Pump  
 5 AHood Fresh H2O. Pump 10 BBLS flush. Pump 5  
 Bellind fresh H2O. Plug Rat + mouse hole. Hook  
 to head mix 150 SXS ASC + 2% GEL + 6% GYR + 10% SALT  
 + #5 Kalseal. Shut Down / Wash up - Hook to Head  
 Displace 84.65 BBLS Fresh H2O. Land Plug O. PSI  
 Release. Plug Hold.

CHARGE TO: Younger Energy  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

To: Allied Oil & Gas Services, LLC.  
 You are hereby requested to rent cementing equipment  
 and furnish cementer 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 Dion Vasquez  
 SIGNATURE Dion Vasquez

TOTAL \_\_\_\_\_  
 SERVICE  
 DEPTH OF JOB 3649  
 PUMP TRUCK CHARGE 2558.75  
 EXTRA FOOTAGE @  
 MILEAGE Hum 10 @ 7.70 77.00  
 MANIFOLD @ 275.00 275.00  
Hum 10 @ 4.40 44.00  
 @  
 TOTAL 3,869.15  
38% 1,470.28

PLUG & FLOAT EQUIPMENT  
1 Packer Shoe @ 3765.00 3765.00  
1 Latch Down Insert @ 660.00 660.00  
2 Baskets @ 395.00 790.00  
10 Tumbolizers @ 95.00 950.00  
 @  
 TOTAL 6,165.00  
38% 2,342.70

SALES TAX (If Any) \_\_\_\_\_  
 TOTAL CHARGES 16,761.35  
 DISCOUNT 6,369.31 IF PAID IN 30 DAYS  
10,392.04