

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1339140
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: _____

1339140

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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No 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: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <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> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	DK Operating Inc.
Well Name	VIRGINIA 1-13
Doc ID	1339140

Tops

Name	Top	Datum
Heebner	3652'	-1429'
Lansing	3700'	-1477'
Stark	3964'	-1741'
Pawnee	4147'	-1924'
Ft. Scott	4216'	-1993'
Cherokee	4240'	-2017'
Mississippi Warsaw	4302'	-2079'
Osage	4324'	-2101'

Conservation Division
266 N. Main St., Ste. 220
Wichita, KS 67202-1513



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Pat Apple, Chairman
Shari Feist Albrecht, Commissioner
Jay Scott Emler, Commissioner

Sam Brownback, Governor

February 23, 2017

Daniel L King
DK Operating Inc.
621 BENTON ST.
JETMORE, KS 67854

Re: ACO-1
API 15-135-25923-00-00
VIRGINIA 1-13
NW/4 Sec.13-20S-23W
Ness County, Kansas

Dear Daniel L King:

K.A.R. 82-3-107 provides for all completion information to be filed within 120 days of the spud date. Subsection(e)(2) of that regulation states "All rights to confidentiality shall be lost if the filings are not timely."

The above referenced well was spudded on 10/21/2016 and the ACO-1 was received on February 23, 2017 (not within the 120 days timely requirement).

Therefore, your request for confidential treatment of data contained within the ACO-1 filing cannot be granted at this time.

If you should have any questions, please do not hesitate to contact me at (316)337-6200.

Sincerely,

Production Department



Engineer	DENNIS RECTOR	
E-Mail	drector.tuffmudder@gmail.com	
Phone	785-625-3531 Office	785-656-3039 Cell

DRILLING MUD REPORT

REPORT NO.	4	DATE	10/28/2016	DEPTH	4342
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OPERATOR	DK OPERATING INC.	CONTRACTOR	PICKRELL DRLG	RIG NO.	# 10
ADDRESS	Company	ADDRESS	Rig	SPUD DATE	10/20/2016
REPORT FOR	AARON YOUNG(GEO)316-772-8744	REPORT FOR	MIKE KERN	SEC,TWN,RNG	13-20S-23W
WELL NAME AND NO.	VIRGINIA # 1-13	COUNTY AREA	NESS	STATE	Kansas

DRILLING ASSEMBLY				CASING				MUD VOLUME (BBL)					
Bit Size	7 7/8	No. Bits	2	Surface		Hole	323.5	Pits	400				
Drill Pipe Size	4 1/2	Weight on Bit	30,000	8 5/8 @	210 ft.	Total Circulating Volume	723.5						
Type	XH	Flowing Temp.		Intermediate		Mud Up Depth	3500						
Drill Collar Size	6 1/4			@	ft.	Mud Type	Chemical-Pac						
Bit RPM	60			Production		Activity	DST # 2						
Sample from flowline	X	Pit		@	ft.	Pits Used	3						

MUD PROPERTIES				CIRCULATION DATA								
Time Sample Taken	10AM			Pump Size	6X14			Annular Vel (Ft/Min)				
Depth (ft.)	4342			Pump Model		Assumed Eff.	90%	DP	197	DC	356	
Weight (ppg)	9.4			Bbl/Stroke	0.139	Stroke/Min.	60	Circulation Pressure (PSI)				800
Mud Gradient (psi/ft.)	0.4888			Bbl/Min	8.34	Gal/Min.	350	Bottoms Up (Min.)				38.8
Funnel Viscosity (sec/qt.)	44			Elevation	2216 EST.			Total Circ Time (Min.)				86.8
Plastic Viscosity	12											
Yield Point (lb./100 sq. ft.)	20			Daily Cost	\$698.35			Total		\$10,805.15		
Gel Strength (lb./100 sq. ft.) 10 sec./10 min.	11/18			Product	On Hand			Add Del.	Used	Cost		
pH (Strip)	8.5			Premium Gel	13			22				
Filtrate API (ml./30 min.)	10.4			Hulls	21			2				
API HP-HT Filtrate (ml/30 min.)	XXX			Soda Ash	19			4				
Cake Thickness 32nd in. API	1/32			Caustic	10			1				
Alkalinity, Mud (Pm)	1.2			Lignite	4			1				
Alkalinity, Filtrate (Pf/Mf)	.8/---			Lime	2			0				
Chlorides (ppm)	3600			Drispac	3			0				
Calcium (ppm)	10			Desco	2			0				
Sand Content (% by Vol.)	TR			PHPA	1			0				
Solids Content (% by Vol.)	7.6			Barite	124			0				
Oil Content (% by Vol.)	XXX			Cedar Fiber								
Water Content (% by Vol.)	92.4			Pol-E-Flake								
LCM, #/bbl	3/4#											
Methylene Blue Capacity	XXX											

REMARKS	MUD PROPERTIES SPECIFICATIONS					
	Weight	< 9.4	Viscosity	48-50	Filtrate	8-10 cc
" THANK YOU "	RECOMMENDED TOUR TREATMENT					
" KEEP HOLE FULL "						
SHORT TRIP PRIOR TO DST AND LOG TO CLEAN & CONDITION HOLE	MAINTAIN VISCOSITY 48-50 SEC/QT WHILE DRLG, DST & LOG LCM AS NEEDED FOR 2 #/BBL RUN STREAM WATER @ FLOWLINE AS NEEDED TO CONTROL WT. 9.5#/GAL OR LESS SHORT TRIP PRIOR TO PULLING OUT FOR DST THEN CIRCULATE FOR 1 1/2 HOURS. KEEP HOLE FULL ON TRIPS ALWAYS NO FURTHER TREATMENT NEEDED IF TD AFTER DST # 2, GO BACK TO BOTTOM & IF DRILL TO TD, CIRCULATE TO CONDITION HOLE PRIOR TO RUNNING CASING. THANK YOU!					

Reserve Pit Chlorides=	72,000ppm.	Calcium=	810ppm.	Volume=	600bbls.
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The recommendations made hereon shall not be construed as authorizing the infringement of any valid patent, and are made without assumption of any liability by Andy's Mud & Chemical Co., or its agents, and are statements of opinion only.

SWIFT Services, Inc.

DATE 7-15-16 PAGE NO. 1

OPERATION PERMITS WELL NO. 1-13 LEASE VERLINA JOB TYPE ACIDIZE TICKET NO. 30113

TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
			T	C	TUBING	CASING	
4:28							ON LOCATION D.K. RUN NEW TUBING, TAN 4050' PERFS. 4325'-32' FED HT. 282' SPOT 4332' 2 7/8 x 5 1/2 TREAT 4280' + TAIL 4316' CS. 16' 3808 BBL T 164316 24,98964 BBL TOTAL 25,37044 BBL
15:58	3-0	3.25	✓		VAC		SPOTTED ACID
16:19	2	3.50	✓		0		PUMP FOR REST OF ACID
16:21	2-3	6	✓		0		ON KCL FLUSH
16:28	2-0	24	✓		VAC		SHUT DOWN & LET LOAD ON TANK FLUSH
16:30	0	26	✓		0		LOADED
16:32	.33-0	26	✓		200		NOT GOING ANYWHERE STAGING.
16:49	"	26.25	✓		500		STAGING
16:59	"	27	✓		500		"
17:08	.33-0	28	✓		500		STAGING GOOD DROP
17:10	.33	28.50	✓		475		FEEDING
17:12	.33-0	29	✓		475		PSI DROP SEE IF GOES ON VACUUM VERY SLOW PUMP ON WELL ACID
17:15	.33	29.25	✓		400		TREATING
	.33	29.75	✓		425		"
	.33	30	✓		450		"
	.33	31	✓		475		TREATING
17:23	.33-0	31.33	✓		475		ISEP INSTANT FALL ON PSI, 30 SEC VACUUM REL DOWN TRICKS
17:45							Job Complete
							THANK YOU JUSTY! RUSSELL

SWIFT Services, Inc.

DATE 10-21-16 PAGE NO.

OPERATING WELL NO. 1-13 LEASE VIRGINIA JOB TYPE SHALLOW SUREAC TICKET NO. 29480

TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
			T	C	TUBING	CASING	
200							On location
							8 5/8 CSG
							RTD- 210
							SET PIPE @ 210
400							Run CSG
430							CIRCULATE ON BOTTOM
445	4	5				200	PUMP WTR SPACER
	4	36				250	PUMP CMT- 150 SKS @ 14.7 ppq
500	4	12				350	DISPLACE CMT
505							SHOT IN
							* CIRCULATED 50 SKS CMT TO PIT
							Thanks
							DAVID, JON H. & AUSTIN

SWIFT Services, Inc.

DATE 10-28-16 PAGE NO. _____

OPERATING		WELL NO.	LEASE	JOB TYPE	TICKET NO.			
		1-13	VIRGINIA	2 STAGE	29486			
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	2000							ON LOCATION
								RTD - 4342
								SHOE - 34.62
								SET PIPE @ 4344
								CENTRALIZERS - 1, 2, 3, 4, 5, 6, 69
								BACKETS - 67, 68
								D.V. TOOL - 68 @ 1451
	2215							START CSG
	100							Break Core
	200	5	12			300		PUMP MUDFLUSH - 500 GAL
		5	20			300		PUMP KEL SPACER
	215	5	42			200		PUMP CMT - 175 SKS EA-2 @ 15.5F
								Drop Plug - WASH P&L
	230							DISPLACE CMT
	250	4.5	100			1500		LAND PLUG LIFT - 800 PSI
								LAND - 1500 PSI
	255							Drop BUMP
		2	11			Ø		PLUG RAT - 30 SKS SMD @ 12.5F
	305					1400		Open D.V. TOOL
		6	99			400		PUMP CMT
								Drop PLUG
	325							DISPLACE CMT
	335		33			1600		LAND PLUG - LIFT 600 PSI
								LAND 1600 PSI
								* Circulate 20 BBL CMT TO PIT
								Thanks
								David, Flint, ISAAC

SWIFT Services, Inc.

DATE 10-28-16 PAGE NO.

OPERATING

WELL NO. 1-13

LEASE VIRGINIA

JOB TYPE 2 STAGE

TICKET NO. 29486

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	2000							ON LOCATION
								RTD - 4342
								SHOE - 34.62
								SET PIPE @ 4344
								CENTRALIZERS - 12, 34, 56, 69
								BASKETS - 67, 68
								D.V. TOOL - 68 @ 1451
	2215							START CSG
	100							Break Core
	200	5	12			300		PUMP MUDFLUSH - 500 GAL
		5	20			300		PUMP KEL SPACER
	215	5	42			200		PUMP CMT - 175 SKS EA-2 @ 15.5P
								DROP PLUG - WASH P&L
	230							DISPLACE CMT
	250	4.5	100			1500		LAND PLUG LIFT - 800 PSI
								LAND - 1500 PSI
	255							DROP BUMP
		2	11					PLUG RAT - 30 SKS SMD @ 12.5P
	305					1400		Open D.V. TOOL
		6	99			400		PUMP CMT
								DROP PLUG
	325							DISPLACE CMT
	335		33			1600		LAND PLUG - LIFT 600 PSI
								LAND 1600 PSI
								* Circulate 20 BBL CMT TO PIT
								Thanks
								David, Flint, ISAAC

SWIFT Services, Inc.

OPERATING WELL NO. 1-13 LEASE VIRGINIA JOB TYPE SHALLOW SUREAC TICKET NO. 29480

TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
			T	C	TUBING	CASING	
200							On location
							8 5/8 CSG
							RTD- 210
							SET PIPE @ 210
400							Run CSG
430							CIRCULATE ON BOTTOM
445	4	5			200		PUMP WTR SPACER
	4	36			250		PUMP CMT- 150 SKS @ 14.7 ppg
500	4	12			350		DISPLACE CMT
505							SHUT IN
							* CIRCULATED 50 SKS CMT TO PIT
							Thanks
							DAVID, JON H. & AUSTIN

SWIFT Services, Inc.

DATE 10-21-16 PAGE NO.

OPERATING WELL NO. 1-13 LEASE VIRGINIA JOB TYPE SHALLOW SUREAC TICKET NO. 29480

TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
			T	C	TUBING	CASING	
200							On location
							8 5/8 CSG
							RTD- 210
							SET PIPE @ 210
400							Run CSG
430							CIRCULATE ON BOTTOM
445	4	5			200		PUMP WTR SPACER
	4	36			250		PUMP CMT- 150 SKS @ 14.7 ppg
500	4	12			350		DISPLACE CMT
505							SHUT IN
							* CIRCULATED 50 SKS CMT TO PIT
							Thanks
							DAVID, JON H. & AUSTIN

Geologic Report
Aaron L Young
Drilling Time and Sample Log
Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Virginia #1-13
API: 15-135-25923
Location: Section 13 - T20S - R23W
License Number: 32331
Spud Date: 10 / 20 / 2016
Surface Coordinates: 627' FSL and 406' FWL
Approx. S2 - SE - SE - NW
Region: Ness Co., KS
Drilling Completed: 10 / 28 / 2016

Bottom Hole Coordinates:
Ground Elevation (ft): 2216' **K.B. Elevation (ft):** 2223'
Logged Interval (ft): 3500' **To:** 4342' **Total Depth (ft):** 4342'
Formation: Mississippian
Type of Drilling Fluid: Chemical - Andy's Mud & Chemical Co.

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: DK Operating Inc.
Address: 621 Benton St.
Jetmore, KS 67854

GEOLOGIST

Name: Aaron L. Young, M. S.
Company: Young Consulting LLC
Address: 100 S. Main, Suite 505
Wichita, Kansas 67202

General Info

CONTRACTOR: Pickrell Drilling, Rig #10

BIT RECORD:

No.	Size	Make	Jets	Out	Feet	Hours
1	12-1/4	RR	15-15-15	210	203	3.00
2	7-7/8	HA20QJ	15-15-15	4336	4133	114.75
3	7-7/8	HA33	14-14-15	4342	6	0.25

SURVEYS: 210'-.25, 710'-.75, 1210'-.75, 1718'-.75, 2249'-1, 2750'-.75, 4336'-1

GENERAL DRILLING AND PUMP INFORMATION:

Drilling with 38,000 - 42,000 lbs. on bit and approx 65-70 RPM.
Running 8 stands of collars; 458'
Pumping approx 875-900 psi at standpipe.

Daily Status

10/20/16 - Spud, ran 5 jts. new 8 5/8" 28# surface pipe set @ 205' and cemented w/ 150 sx Standard Cement 2% gel, 3% CC
 10/21/16 - WOC
 10/22/16 - Drilling @ 1092'
 10/23/16 - Drilling @ 2130'
 10/24/16 - Drilling @ 2770'
 10/25/16 - Drilling @ 3437'
 10/26/16 - Drilling @ 3949'
 10/27/16 - DST #1 4302'-4336'
 10/28/16 - RTD @ 4342', No log, ran 103 jts used 5 1/2" 17# production casing set @ 4341'. Cement bottom side with 175 sx EA2. Cement top side with 170 sx SMD. DV tool @ 1451'

2

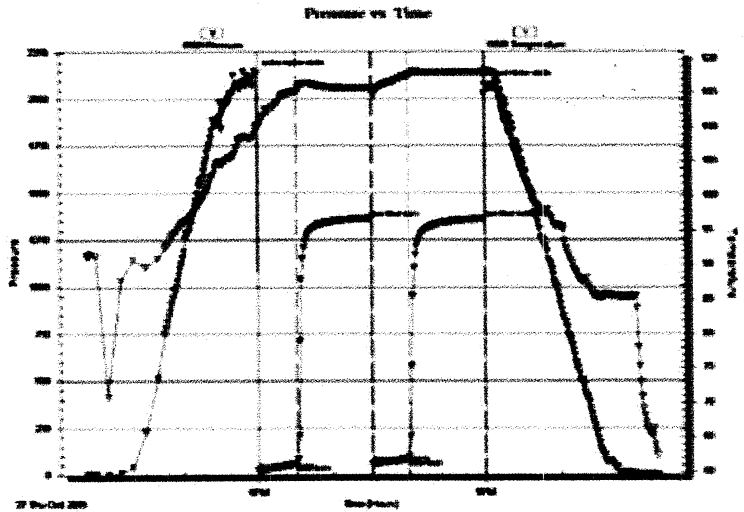
DST #1 Mississippian
 4302' - 4336' 30"-60"-30"-60"

IF: Blow built to 8.5"
 ISI: No blow back
 FF: Blow built to 1/4" and held throughout
 FSI: No blow back

Rec'd: 60' CO (100% O), 105' OCM (5% O, 95% M)

Gravity 38 BHT 118

SIP: 1363-1360#, FP: 22-58# 58-83#, HP 2132-2076#



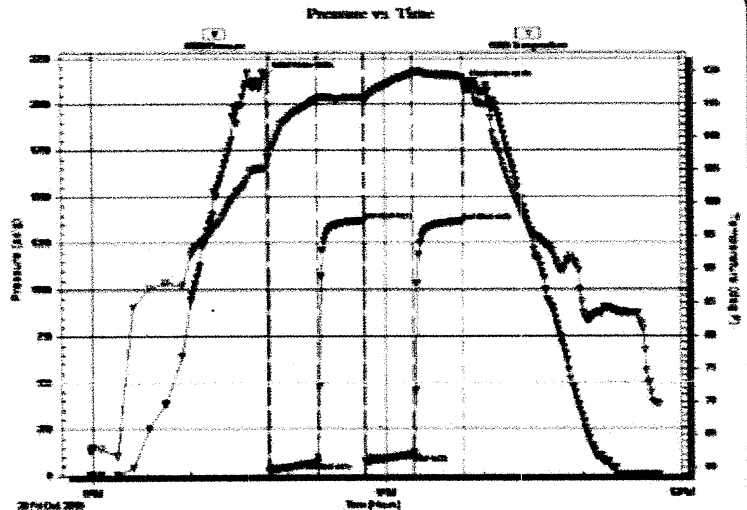
DST #2 Mississippian
 4322' - 4342' 30"-30"-30"-30"

IF: Built to BOB in 27min
 ISI: Light surface blow back
 FF: Blow built to 11"
 FSI: Blow back built to 1/2" the died to 1/4"

Rec'd: 45' CO (100% O), 186' OCMW (20% O, 55% W, 25% M)

Gravity 39 BHT 119 Chlorides 13,000 ppm

SIP: 1369-1367#, FP: 22-68# 73-111#, HP: 2151-2099#



ROCK TYPES

Anhy	Gyp	Shgy	Sandylms
Bent	Igne	Sltst	Shale
Brec	Lmst	Ss	Sltstn
Cht	Meta	Till	Shlyslts
Clyst	Mrlst	Carb sh	Sltys sh
Coal	Salt	Dol	Lms
Congl	Shale	Dtd	
Dol	Shcol	Gry sh	

ACCESSORIES

3

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclrag
- Calc
- Carb
- Chtdk
- Chtl
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr

- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Slt

FOSSIL

- Algae
- Amph
- Beim
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram

- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh

- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

POROSITY TYPE

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

SORTING

- Well
- Moderate
- Poor

ROUNDING

- Rounded
- Subrnd
- Subang
- Angular

OIL SHOWS

- Even
- Spotted
- Ques
- Dead
- Gas show

INTERVALS

- Core
- Dst

Dst

EVENTS

- Rft
- Sidewall
- Conn

<p>Curve Track 1</p> <p>ROP (min/ft) </p>	<p>Depth</p>	<p>Porosity</p> <p>%</p> <p>%</p> <p>%</p>	<p>Lithology</p> <p><small>Oil Shows</small></p>	<p>Geological Descriptions</p>	<p>New Track</p>
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4

Curve Track 1

ROP (min/ft)

Depth

Porosity

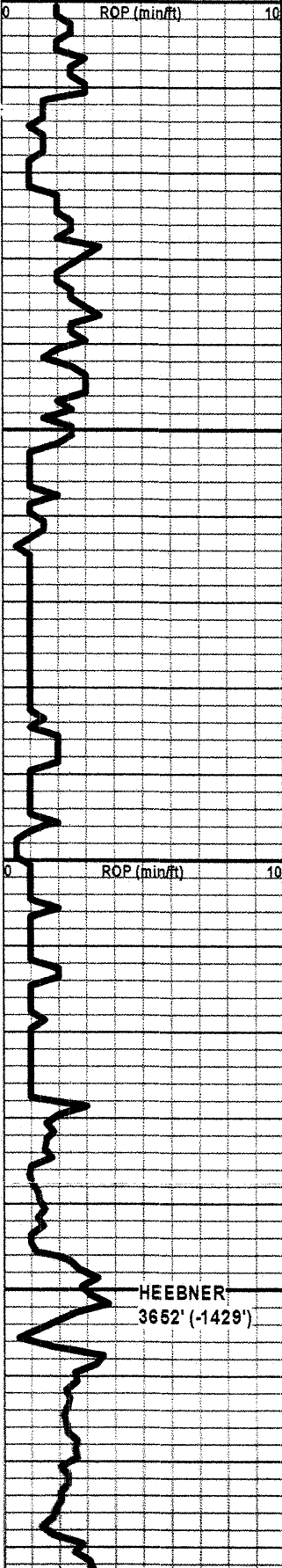
Lithology

Oil Shows

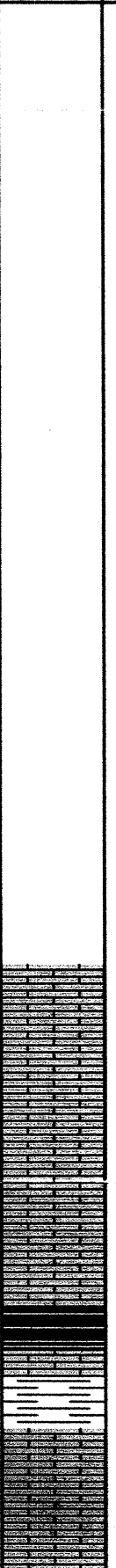
Geological Descriptions

New Track

24%
18%
12%
6%



35
3550
3600
3650



Anhydrite Top
1416' (+807')

Anhydrite Base
1452' (+771')

WT 8.6
VIS 71
LCM 1#

LS - CRM / TAN, VF / F XLN, MOD DNS, FOSS IN PT

LS - CRM, F XLN, MOD DNS, ABUND OF FOSS

LS - TAN / GY, F XLN, MOD DNS / DNS

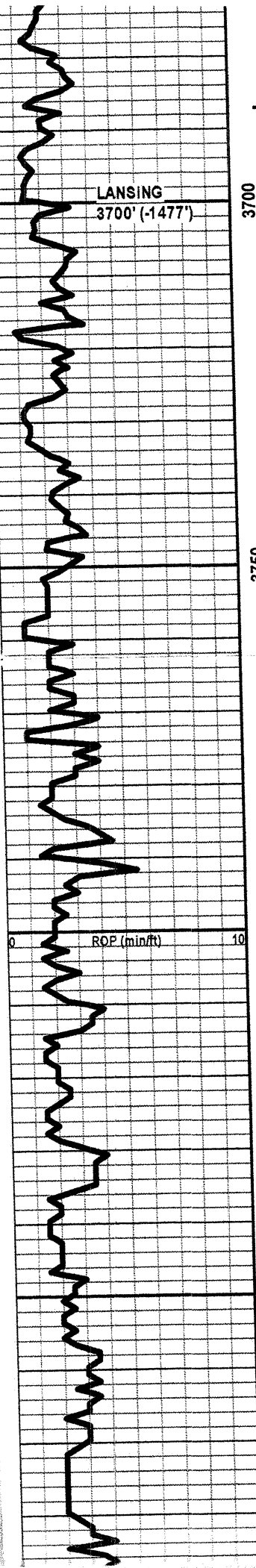
SH - BLK, CARB

SH - GY, W/ LS - CRM / TAN, F XLN, MOD DNS, FOSS IN PT

LS - CRM, F XLN, MOD DNS, FOSS

WT 8.6
VIS 56

S



3700

3750

3800

3850

LS - CRM, F XLN, MOD DNS, FOSS

SH - RD / GRN / GY

LS - CRM / TAN, VF / F XLN, SUBCHKY / MOD DNS. ABUND FOSS

SH - MAR / RD / GRN / GY

LS - CRM, VF / F XLN, SUBCHKY / CHKY IN PT, FOSS IN PT

LS - TAN / GY, F XLN, DNS, FOSS, W/ SH - LT GRN / GY

LS - CRM / TAN, VF / F XLN, SUBCHKY / MOD DNS, FOSS

SH - BLK, SLI CARB, W/ LS - CRM / TAN, VF / F XLN, SUBCHKY / MOD DNS, FOSS, STYLOLITIZED IN PT

LS - TAN, F XLN, MOD DNS, FOSS

SH - MAR / GRN / GY, W/ LS - CRM / TAN, VF / F XLN, SUBCHKY / MOD DNS, FOSS I N PT

LS - DK TAN / GY, F / M XLN, V DNS, FOSS IN PT

SH - GRN / RD / MAR, W/ LS - CRM / TAN, VF / F XLN, SUBCHKY, FOSS IN PT, W/ CHT IN PT - GY / OFF WHT, PRED TRANSLCNT

LS - CRM / TAN, VF / F XLN, SUBCHKY / MOD DNS, CHKY IN PT, FOSS, STYLOLITIZED IN PT

SH - LT GRN, W/ LS - DK TAN / DK GY, F XLN, DNS, FOSS IN PT

LS - CRM / TAN, F XLN, MOD DNS / DNS, FOSS, FRACT FILLED WITH CALCTE, OOLITIC IN PT

LS - CRM, VF / F XLN, PRED MOD DNS, SUBCHKY IN PT, OOLITIC IN PT, FOSS

SH - BLK, CARB, W/ LS - TAN / GY, F XLN, DNS, FOSS

LS - TAN / GY, F XLN, MOD DNS / DNS, FOSS, ABUND FUSILIMIDS

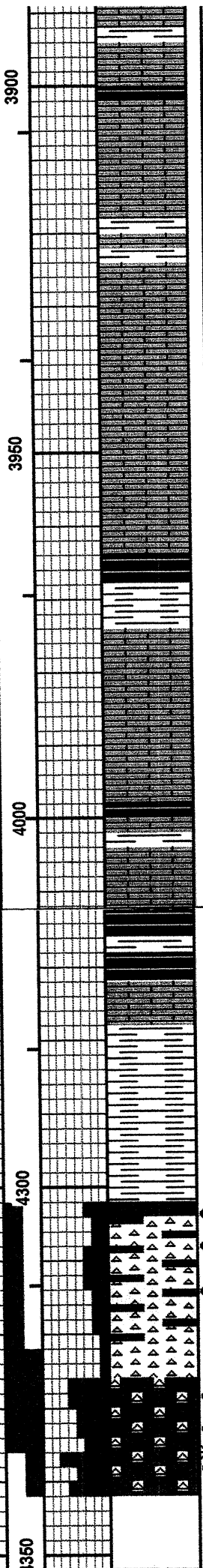
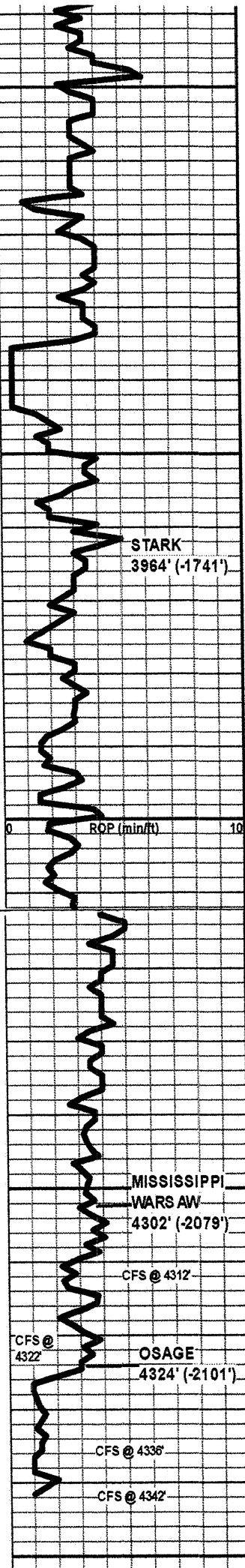
WT 8.7
VIS 54

WT 8.7
VIS 54

WT 8.8
VIS 53
LCM 1#

WT 8.9
VIS 54
LCM 1#

6



LS - OFF-WHT / CRM, VF XLN, PRED SUBCHKY, CHKY IN PT

SH - BLK, CARB, W/ SH - RD / GRN / MAR / GY

LS - CRM / TAN, VF / F XLN, SUBCHKY / MOD DNS, FRACT FILLED W CALCITE

SH - RD / GRN / GY, W/ LS - CRM, VF XLN, SUBCHKY / CHKY

LS - CRM / TAN, F XLN, MOD DNS / DNS, FOSS, PYRITIC IN PT

LS - CRM, VF / F XLN, PRED SUBCHKY, CHKY IN PT

LS - CRM, F XLN, G OOLMOLDIC POR, NS, NO ODOR, NO FLUOR, ABUND FOSS

SH - BLK, CARB, W/ SH - MAR / GRN / GY

LS - CRM, F XLN, P / F OOMOLDIC POR, NS, NO ODOR, NO FLUOR

LS - CRM, VF / F XLN, PRED MOD DNS, SUBCHKY IN PT

SH - BLK, CARB, W/ SH - MAR / GRN / GY

LS - CRM, VF / F XLN, MOD DNS / DNS, FOSS IN PT

SH - BLK, CARB, W/ SH - GY, W/ LS - CRM, VF / F XLN, SUBCHKY, ABUND FOSS

SH - BLK, CARB, W/ SH - GRN / RD / MAR, W/ LS - TAN / LT BRN, F / M XLN, DNS

SH - GY / GRN / RD

SH - RD / GRN / LT GRN

SH - LT GY / DK GY / BLK, SLI CARB IN PT

DOLO - GY, VF / F XLN, P / F INTXN POR, FSFO, W/ CHT - GY, MOSTLY FRESH, WEATH IN PT, SLI DOLOMITIC, P / F INTXN + VUG POR, FSFO, BLK OIL, DEAD IN PT, OIL SHEEN, G ODOR, V SLI YEL-GRN FLUOR

CHT - GY, EQUAL WEATH & FRESH, DOLOMITIC, F INTXN + VUG POR, FSFO, OILSHEEN, G ODOR, G YEL-GRN FLUOR, W/ CHT - GY, SLI TRANSLCNT, FRESH

DOLO - VF / F XLN, OFF-WHT / LT BRN, SUCROSIC, G INTXN POR, VUG POR IN PT, GSFO, G ODOR, BRI YEL-GRN FLUOR, W/ CHT - GY, PRED OPAQUE, TRANSLCNT IN PT, PRED FRSH, WEATH IN PT, P INTXN + VUG POR, GSFO, BRI YEL-GRN FLUOR

DOLO - VF / F XLN, OFF-WHT / LT BRN, SUCROSIC, G INTXN POR, GSFO, MORE FREE OIL THAN ABOVE, LIGHTER BROWN OIL THAN ABOVE, SLI SHO GAS BUBBLES, G ODOR, BRI YEL-GRN FLUOR, W/ CHT - GY, PRED FRSH, WEATH IN PT, EDGE OIL STN,

WT 9.0
VIS 55
LCM 1#

WT 9.2
VIS 48
LCM 1#

WT 9.3
VIS 49
LCM 1#

DST #2 Mississippian
4322' - 4342' 30"-30"-30"-30"

IF: Built to BOB in 27min
IS: Light surface blow back
FF: Blow built to 11"
FSI: Bllow back built to 1/2" the died to 1/4"

Rec'd: 45' CO (100% O), 186' OCMW (20% O, 55% W, 25% M)

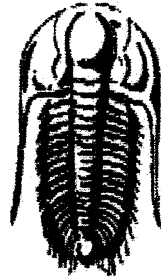
Gravity 39
BHT 119
Chlorides 13,000 ppm

IH: 2151#
IF: 22-68#
IS: 1369#
FF: 73-111#
FSI: 1367#
FH: 2099#

Strap 0.92' short to board

WT 9.4
VIS 45
LCM 1#

RTD 4342'



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **DK Operating Incorporated**

621 Benton Street
Jetmore, KS 67554

ATTN: Aaron Young

Virginia #1-13

13-20s-23w Ness,KS

Start Date: 2016.10.27 @ 15:42:00

End Date: 2016.10.27 @ 23:16:00

Job Ticket #: 61943 DST #: 1

Trilobite Testing, Inc

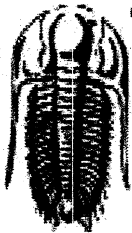
PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.10.31 @ 10:11:16

DK Operating Incorporated 13-20s-23w Ness,KS Virginia #1-13 DST # 1 Mississippian 2016.10.27

2



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

DK Operating Incorporated

13-20s-23w Ness, KS

621 Benton Street
Jetmore, KS 67554

Virginia #1-13

Job Ticket: 61943 **DST#: 1**

ATTN: Aaron Young

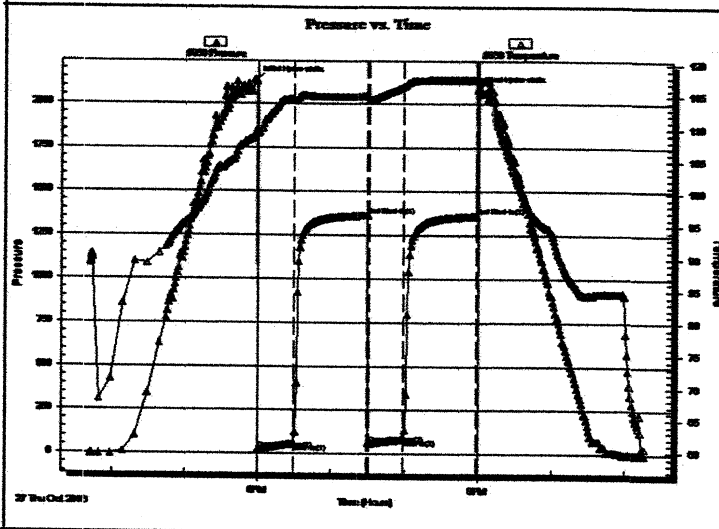
Test Start: 2016.10.27 @ 15:42:00

GENERAL INFORMATION:

Formation: **Mississippian**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:59:30
 Time Test Ended: 23:16:00
 Interval: **4302.00 ft (KB) To 4336.00 ft (KB) (TVD)**
 Total Depth: 4336.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 2223.00 ft (KB)
 2216.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8960 Outside
 Press@RunDepth: 1359.14 psig @ 4333.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.10.27 End Date: 2016.10.27 Last Calib.: 2016.10.27
 Start Time: 15:42:05 End Time: 23:15:29 Time On Btm: 2016.10.27 @ 17:58:00
 Time Off Btm: 2016.10.27 @ 20:59:30

TEST COMMENT: I.F. 30 minutes Blow built to 8 1/2"
 I.S.I. 60 minutes No blow back
 F.F. 30 minutes Blow built to 1/4" and held throughout
 F.S.I. 60 minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2130.88	109.72	Initial Hydro-static
2	21.28	109.27	Open To Flow (1)
31	57.42	114.56	Shut-In(1)
91	1361.97	114.98	End Shut-In(1)
92	57.15	114.63	Open To Flow (2)
121	82.62	116.52	Shut-In(2)
181	1359.14	117.55	End Shut-In(2)
182	2076.09	117.65	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
105.00	Oil cut Mud/ Oil 5% Mud 95%	1.47
60.00	Clean Oil 100%	0.84

Gas Rates

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

3



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

DK Operating Incorporated

13-20s-23w Ness, KS

621 Benton Street
Jetmore, KS 67554

Virginia #1-13

Job Ticket: 61943

DST#: 1

ATTN: Aaron Young

Test Start: 2016.10.27 @ 15:42:00

GENERAL INFORMATION:

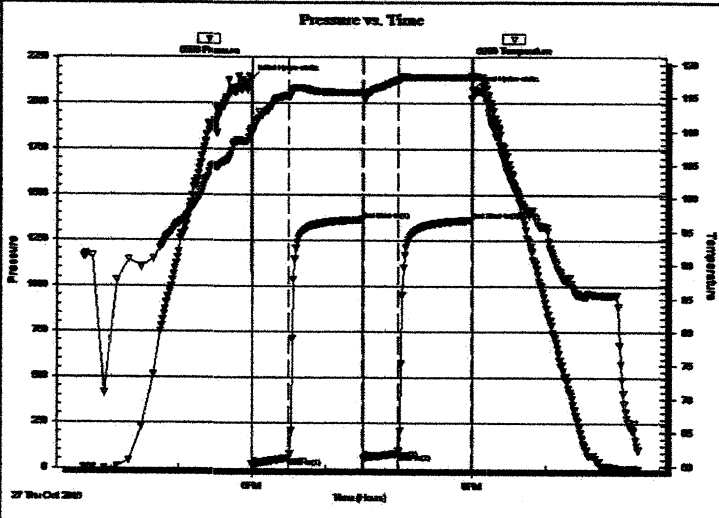
Formation: **Mississippian**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:59:30
 Time Test Ended: 23:16:00
 Interval: **4302.00 ft (KB) To 4336.00 ft (KB) (TVD)**
 Total Depth: 4336.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 2223.00 ft (KB)
 2216.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 6999

Inside

Press@RunDepth: 83.77 psig @ 4332.00 ft (KB)
 Start Date: 2016.10.27 End Date: 2016.10.27
 Start Time: 15:42:05 End Time: 23:15:59
 Capacity: 8000.00 psig
 Last Calib.: 2016.10.27
 Time On Btm: 2016.10.27 @ 17:59:00
 Time Off Btm: 2016.10.27 @ 21:00:00

TEST COMMENT: I.F. 30 minutes Blow built to 8 1/2"
 I.S.I. 60 minutes No blow back
 F.F. 30 minutes Blow built to 1/4" and held throughout
 F.S.I. 60 minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2132.96	110.29	Initial Hydro-static
1	22.25	109.89	Open To Flow (1)
31	58.47	115.13	Shut-In(1)
91	1363.88	115.76	End Shut-In(1)
92	58.64	114.94	Open To Flow (2)
120	83.77	117.68	Shut-In(2)
180	1360.87	118.10	End Shut-In(2)
181	2076.76	117.88	Final Hydro-static


Recovery

Length (ft)	Description	Volume (bbl)
105.00	Oil cut Mud/ Oil 5% Mud 95%	1.47
60.00	Clean Oil 100%	0.84

Gas Rates

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

4

 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT		TOOL DIAGRAM
	DK Operating Incorporated 621 Benton Street Jetmore, KS 67554 ATTN: Aaron Young	13-20s-23w Ness, KS Virginia #1-13 Job Ticket: 61943 Test Start: 2016.10.27 @ 15:42:00	

Tool Information

Drill Pipe: Length: 4283.00 ft	Diameter: 3.80 inches	Volume: 60.08 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: 60000.00 lb
	Total Volume: 60.08 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB: 8.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer: 4302.00 ft			Final 54000.00 lb
Depth to Bottom Packer: ft			
Interval between Packers: 34.00 ft			
Tool Length: 61.00 ft			
Number of Packers: 2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut-In Tool	5.00			4280.00		
Hydraulic tool	5.00			4285.00		
Jars	5.00			4290.00		
Safety Joint	2.00			4292.00		
Top Packer	5.00			4297.00		
Packer	5.00			4302.00	27.00	Bottom Of Top Packer
Anchor	29.00			4331.00		
Recorder	1.00	6999	Inside	4332.00		
Recorder	1.00	8960	Outside	4333.00		
Bullnose	3.00			4336.00	34.00	Anchor Tool
Total Tool Length:	61.00					



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

DK Operating Incorporated

13-20s-23w Ness, KS

621 Benton Street
Jetmore, KS 67554

Virginia #1-13

Job Ticket: 61943

DST#: 1

ATTN: Aaron Young

Test Start: 2016.10.27 @ 15:42:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	38 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 45.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.77 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4000.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
105.00	Oil cut Mud/ Oil 5% Mud 95%	1.473
60.00	Clean Oil 100%	0.842

Total Length: 165.00 ft Total Volume: 2.315 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:

6

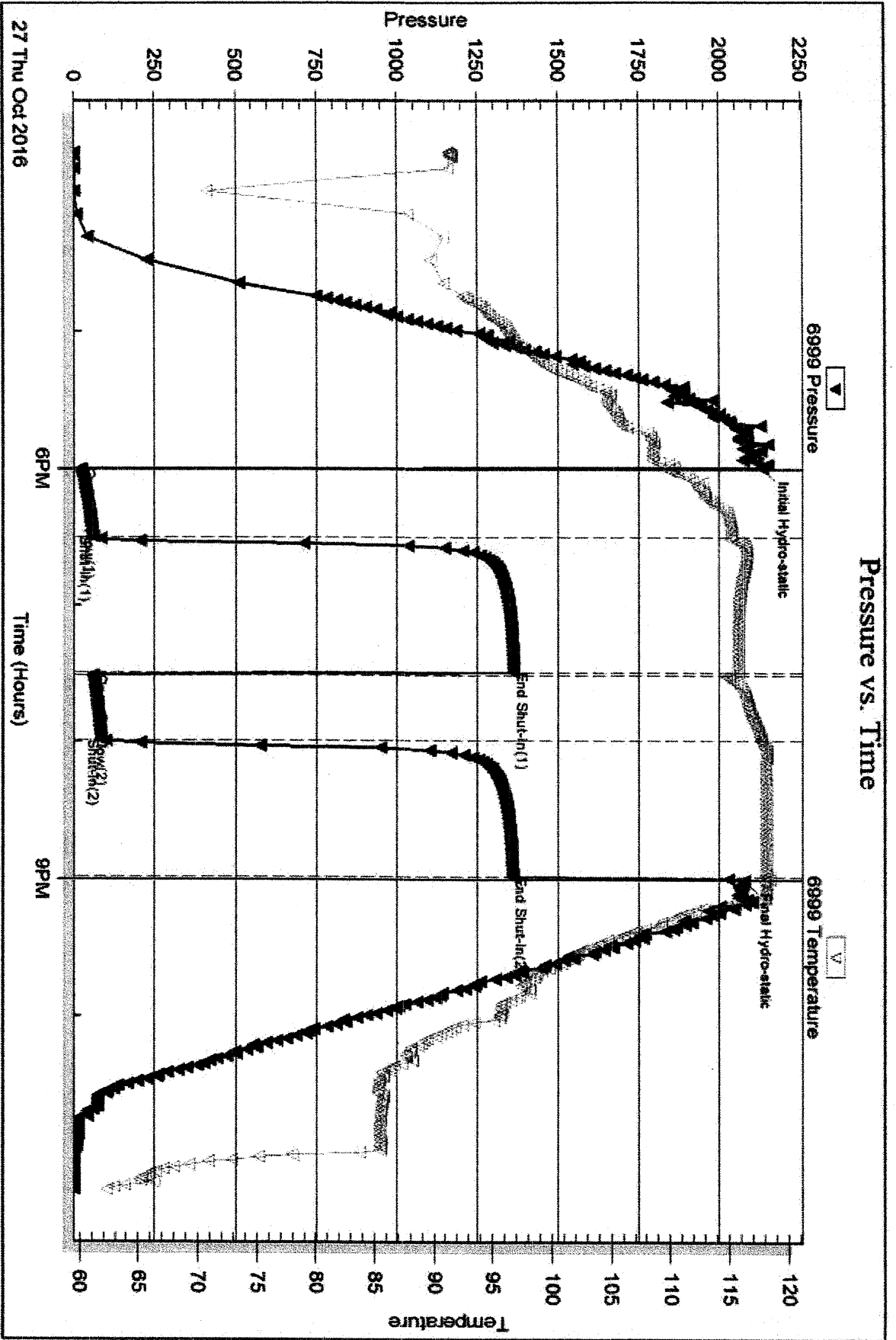
Serial #: 6999

Inside

DK Operating Incorporated

Virginia #1-13

DST Test Number: 1



Trebble Testing, Inc

Ref. No: 61943

Printed: 2016.10.31 @ 10:11:17

Serial #: 8960

Outside

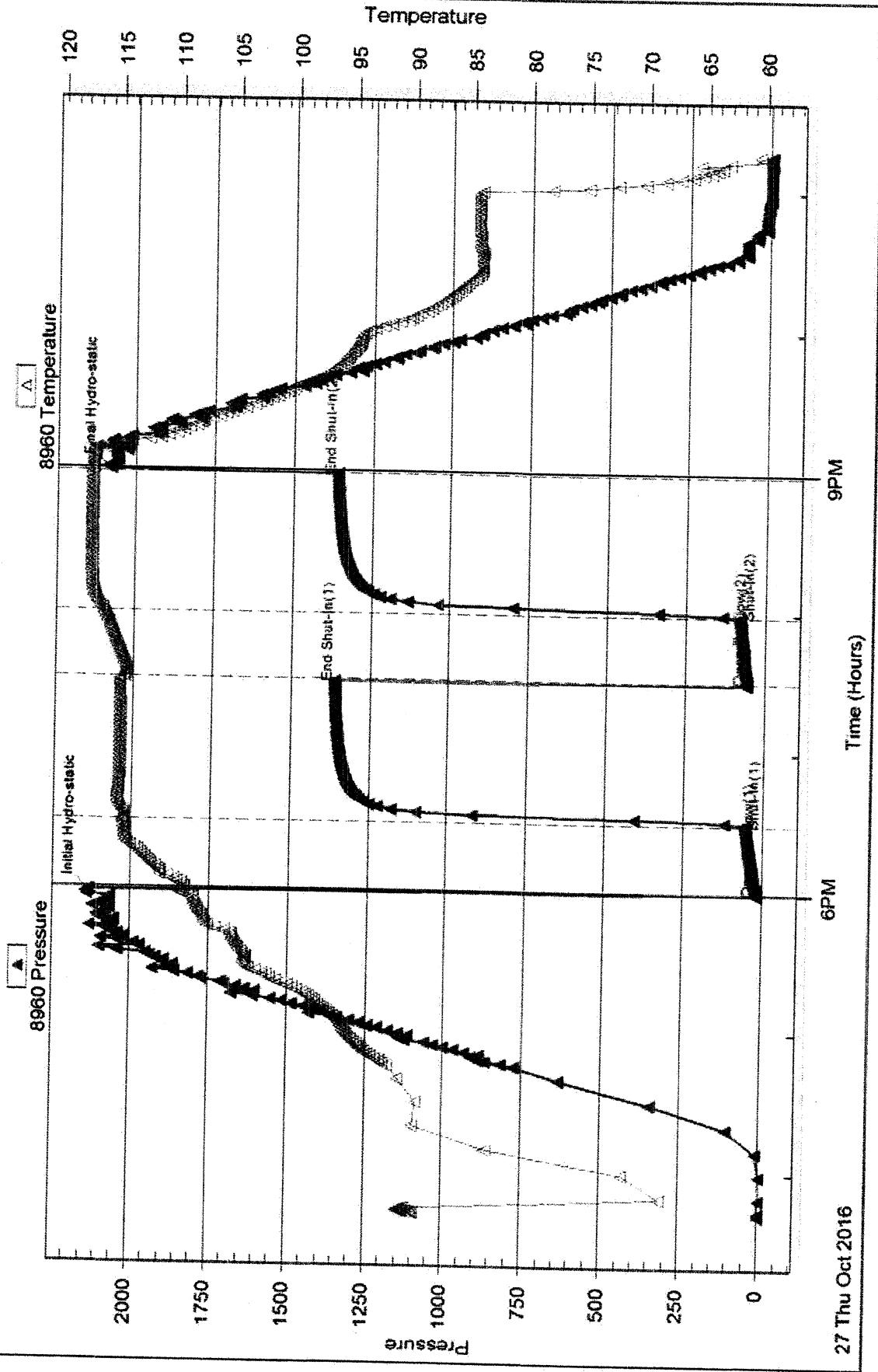
DK Operating Incorporated

Virginia #1-13

DST Test Number: 1

7

Pressure vs. Time

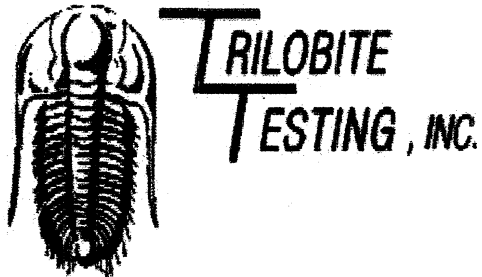


Tribble Testing, Inc

Ref. No: 61943

Printed: 2016 10 31 @ 10:11:17

4



DRILL STEM TEST REPORT

Prepared For: **DK Operating Incorporated**

621 Benton Street
Jetmore, KS 67554

ATTN: Aaron Young

Virginia #1-13

13-20s-23w Ness,KS

Start Date: 2016.10.28 @ 05:58:00

End Date: 2016.10.28 @ 11:47:00

Job Ticket #: 61944 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

DK Operating Incorporated
621 Benton Street
Jetmore, KS 67554
ATTN: Aaron Young

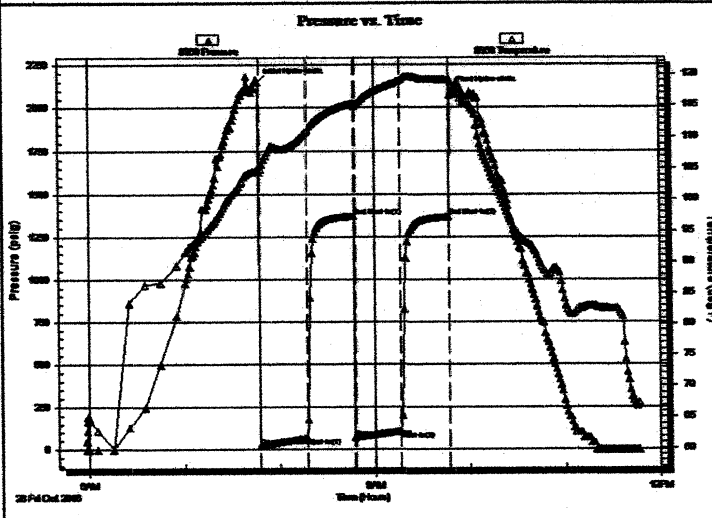
13-20s-23w Ness, KS
Virginia #1-13
Job Ticket: 61944 **DST#: 2**
Test Start: 2016.10.28 @ 05:58:00

GENERAL INFORMATION:

Formation: **Mississippian**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:48:30
Time Test Ended: 11:47:00
Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 72
Interval: **4322.00 ft (KB) To 4342.00 ft (KB) (TVD)**
Reference Elevations: 2223.00 ft (KB)
Total Depth: 4342.00 ft (KB) (TVD) 2216.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

Serial #: 8960 **Outside**
Press@RunDepth: 1365.25 psig @ 4339.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2016.10.28 End Date: 2016.10.28 Last Calib.: 2016.10.28
Start Time: 05:58:05 End Time: 11:46:59 Time On Btm: 2016.10.28 @ 07:47:00
Time Off Btm: 2016.10.28 @ 09:48:30

TEST COMMENT: I.F. 30 minutes BOB in 27 minutes
I.S.I 30 minutes Light surface blow back
F.F. 30 minutes Blow built to 11"
F.S.I. 30 minutes Blow back built to 1/2" then died to 1/4"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2149.66	104.89	Initial Hydro-static
1	20.39	104.40	Open To Flow (1)
31	67.65	110.86	Shut-In(1)
60	1368.05	115.31	End Shut-In(1)
61	71.79	115.12	Open To Flow (2)
90	110.39	118.99	Shut-In(2)
120	1365.25	119.06	End Shut-In(2)
122	2098.08	118.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	OCMW Oil 20% Mud 25% Water 55%	2.61
45.00	Clean Oil 100%	0.63

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

DK Operating Incorporated

13-20s-23w Ness, KS

621 Benton Street
Jetmore, KS 67554

Virginia #1-13

Job Ticket: 61944

DST#: 2

ATTN: Aaron Young

Test Start: 2016.10.28 @ 05:58:00

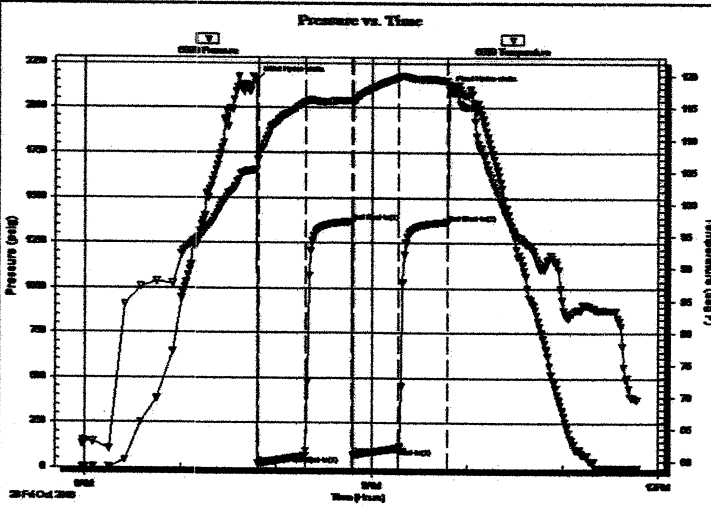
GENERAL INFORMATION:

Formation: **Mississippian**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 07:48:30 Tester: Ken Swinney
 Time Test Ended: 11:47:00 Unit No: 72

Interval: **4322.00 ft (KB) To 4342.00 ft (KB) (TVD)** Reference Elevations: 2223.00 ft (KB)
 Total Depth: 4342.00 ft (KB) (TVD) 2216.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

Serial #: 6999 Inside
 Press@RunDepth: 111.93 psig @ 4338.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.10.28 End Date: 2016.10.28 Last Calib.: 2016.10.28
 Start Time: 05:58:05 End Time: 11:46:59 Time On Btm: 2016.10.28 @ 07:47:30
 Time Off Btm: 2016.10.28 @ 09:49:00

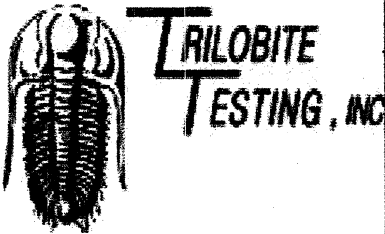
TEST COMMENT: I.F. 30 minutes BOB in 27 minutes
 I.S.I. 30 minutes Light surface blow back
 F.F. 30 minutes Blow built to 11"
 F.S.I. 30 minutes Blow back built to 1/2" then died to 1/4"



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2151.42	105.36	Initial Hydro-static
1	22.40	106.92	Open To Flow (1)
31	68.60	115.78	Shut-In(1)
60	1369.99	116.10	End Shut-In(1)
61	73.62	115.83	Open To Flow (2)
90	111.93	119.71	Shut-In(2)
120	1367.08	119.23	End Shut-In(2)
122	2099.15	118.54	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
186.00	OCIMW Oil 20% Mud 25% Water 55%	2.61
45.00	Clean Oil 100%	0.63

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

	DRILL STEM TEST REPORT		TOOL DIAGRAM
	DK Operating Incorporated 621 Benton Street Jetmore, KS 67554 ATTN: Aaron Young	13-20s-23w Ness,KS Virginia #1-13 Job Ticket: 61944	DST#: 2 Test Start: 2016.10.28 @ 05:58:00

Tool Information

Drill Pipe:	Length: 4313.00 ft	Diameter: 3.80 inches	Volume: 60.50 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
			Total Volume: 60.50 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4322.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	20.00 ft			
Tool Length:	47.00 ft			
Number of Packers:	2	Diameter: 6.57 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut-in Tool	5.00			4300.00		
Hydraulic tool	5.00			4305.00		
Jars	5.00			4310.00		
Safety Joint	2.00			4312.00		
Top Packer	5.00			4317.00		
Packer	5.00			4322.00	27.00	Bottom Of Top Packer
Anchor	15.00			4337.00		
Recorder	1.00	6999	Inside	4338.00		
Recorder	1.00	8960	Outside	4339.00		
Bullnose	3.00			4342.00	20.00	Anchor Tool
Total Tool Length:	47.00					

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TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

DK Operating Incorporated

13-20s-23w Ness, KS

621 Benton Street
Jetmore, KS 67554

Virginia #1-13

Job Ticket: 61944

DST#: 2

ATTN: Aaron Young

Test Start: 2016.10.28 @ 05:58:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 45.00 sec/qt
Water Loss: 10.78 in³
Resistivity: ohm.m
Salinity: 4000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 39 deg API
Water Salinity: 13000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	OCMW Oil 20% Mud 25% Water 55%	2.609
45.00	Clean Oil 100%	0.631

Total Length: 231.00 ft Total Volume: 3.240 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Recovery Resistivity .460 ohms @ 77 degrees

DST Test Number: 2

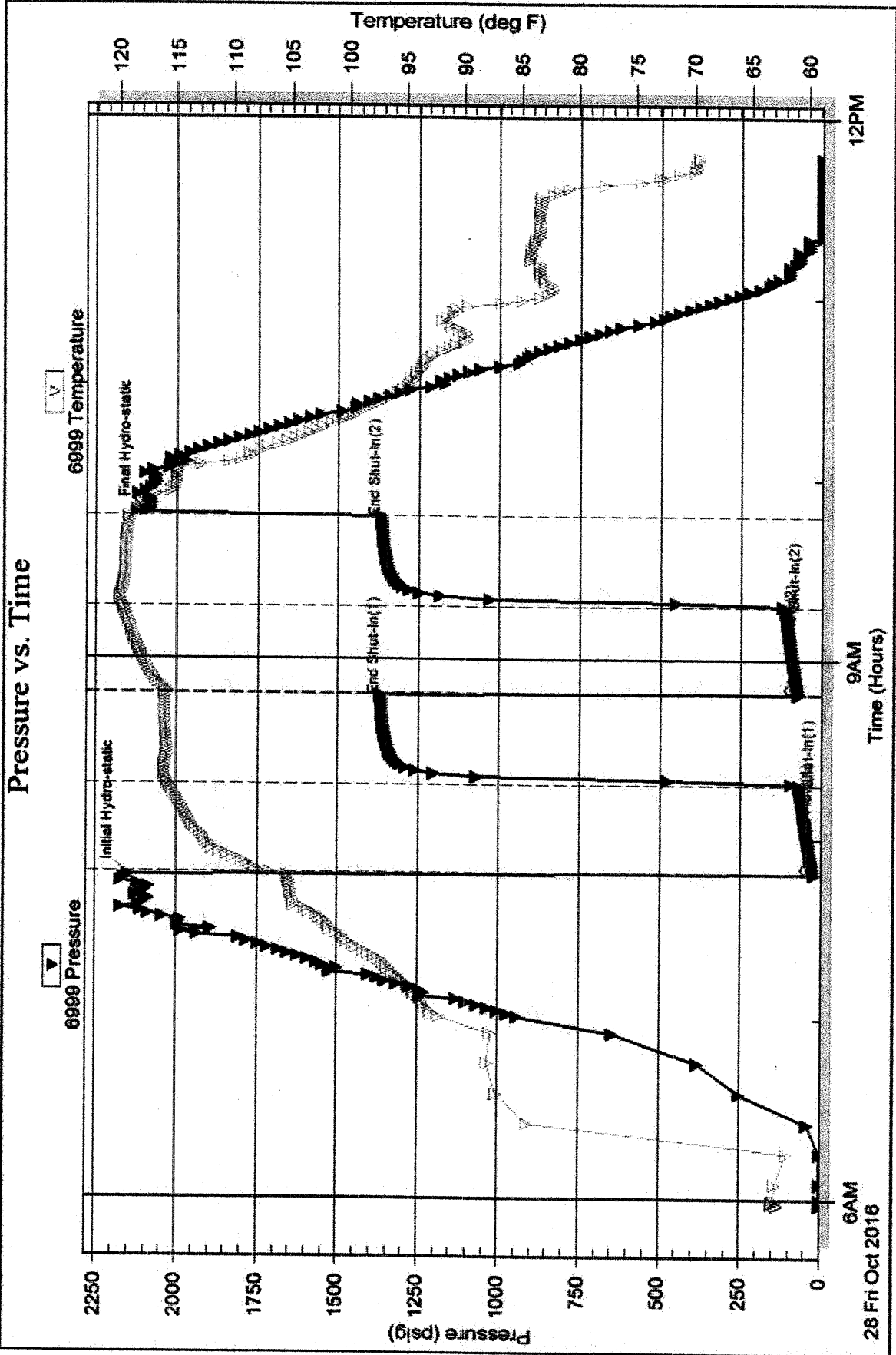
Virginia #1-13

DK Operating Incorporated

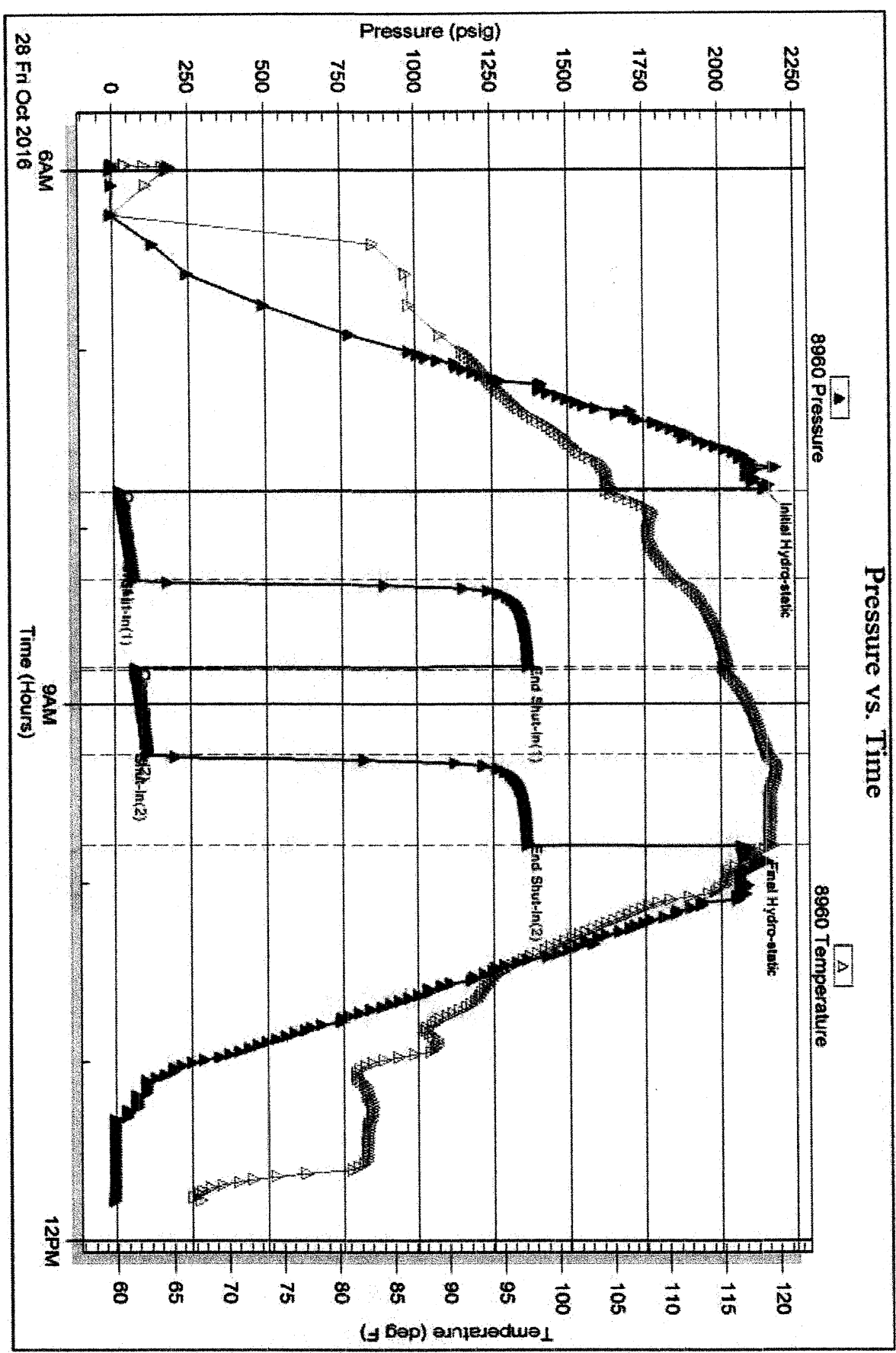
Inside

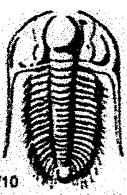
Serial #: 6999

Pressure vs. Time



14





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61943

14

Well Name & No. Virginia 1-13 Test No. 1 Date 27 OCT 16
 Company DK Operating Incorporated Elevation 2223 KB 2216 GL
 Address 621 Benton Street Jetmore KS 67854
 Co. Rep / Geo. Aaron Young Rig Pickrel Rig 10
 Location: Sec. 13 Twp. 20S Rge. 23W Co. Ness State KS

Interval Tested 4302-4336 Zone Tested MISSISSIPPI
 Anchor Length 34 Drill Pipe Run 4783 Mud Wt. 9.4
 Top Packer Depth 4297 Drill Collars Run - Vis 45
 Bottom Packer Depth 4302 Wt. Pipe Run - WL 10.8
 Total Depth 4336 Chlorides 4000 ppm System LCM 3/4

Blow Description I.F. Blow built to 8 1/2 inches
E.S.I. No blow back
F.F. Blow built to 1/4 inch and held throughout
E.S.I. No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>105</u>	<u>0.1 Cut Mud</u>	<u>5</u>	<u>5</u>	<u>85</u>	<u>5</u>
<u>60</u>	<u>clean 0.1</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>

Rec Total 165 BHT 118 Gravity 38 API RW @ °F Chlorides ppm

- (A) Initial Hydrostatic 2132
- (B) First Initial Flow 22
- (C) First Final Flow 58
- (D) Initial Shut-In 1363
- (E) Second Initial Flow 58
- (F) Second Final Flow 83
- (G) Final Shut-In 1360
- (H) Final Hydrostatic 2076

- Test 1150
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 134 100.50
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility

T-On Location 1:02 pm
 T-Started 3:42 pm
 T-Open 5:58 pm
 T-Pulled 8:58 pm
 T-Out 11:15 pm

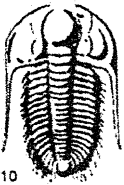
Comments _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60

Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1575.50
 MP/DST Disc't _____
 Sub Total 1575.50

Approved By [Signature] 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

13

Test Ticket

NO. 61944

Well Name & No. Virginia 1-13 Test No. 2 Date 28 OCT 16
 Company DK Operating Incorporated Elevation 2223 KB 7-216 GL
 Address 621 Benton Street Jetmore Kansas 67854
 Co. Rep / Geo. Aaron Young Rig Pickwell Rig 10
 Location: Sec. 13 Twp. 20S Rge. 23W Co. KANS State KS

Interval Tested 4322' - 4347' Zone Tested Mississippian
 Anchor Length 20 Drill Pipe Run 4313 Mud Wt. 9.4
 Top Packer Depth 4317 Drill Collars Run — Vis 45
 Bottom Packer Depth 4322 Wt. Pipe Run — WL 10.8
 Total Depth 4347 Chlorides 4000 ppm System LCM 3/4

Blow Description IF Blow built to bottom of bucket in 27 minutes
I.S.I. light surface blow back
E.F. Blow built to 11 inches
E.S.I. Blow back built to 1/2 inch then died to 1/4 inch

Rec	Feet of	%gas	%oil	%water	%mud
<u>186</u>	<u>Oil cut muddy water</u>	<u>20</u>	<u>55</u>	<u>25</u>	<u>—</u>
<u>45</u>	<u>clean oil</u>	<u>100</u>	<u>—</u>	<u>—</u>	<u>—</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 231 BHT 119 Gravity 39 API RW 46 @ 77 °F Chlorides 13,000 ppm

(A) Initial Hydrostatic 2151 Test 1150 T-On Location _____
 (B) First Initial Flow 22 Jars 250 T-Started 5:58 am
 (C) First Final Flow 68 Safety Joint 75 T-Open 7:47 am
 (D) Initial Shut-In 1369 Circ Sub _____ T-Pulled 9:47 am
 (E) Second Initial Flow 73 Hourly Standby _____ T-Out 11:47 am
 (F) Second Final Flow 111 Mileage 154 100.50
 (G) Final Shut-In 1367 Sampler _____
 (H) Final Hydrostatic 2099 Straddle _____

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Extra Packer _____
 Initial Shut-In 30 Extra Recorder _____
 Final Flow 30 Day Standby _____
 Final Shut-In 30 Accessibility _____
 Sub Total 1575.50

Approved By _____ Our Representative [Signature]

Tribolite 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.



Services, Inc.

CHARGE TO: **DR OPERATING**

TICKET 29486

ADDRESS
CITY, STATE, ZIP CODE

PAGE 1 OF

SERVICE LOCATION 1. Ness City, KS	WELL/PROJECT NO. 1-13	LEASE Virginia	COUNTY/PARISH Ness	STATE KS	CITY	DATE 10-28-16	OWNER
TICKET TYPE <input type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR P. L. VRELL	RIG NAME/NO. RIG 10	JOB PURPOSE Development	WELL CATEGORY Development	DELIVERED TO LOCATION	WELL PERMIT NO.	WELL LOCATION
WELL TYPE D-1	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE TRAIL #	20	MI			5.00	100.00
579					PUMP CHARGE - TWO STAGE	1	EA			1700.00	1700.00
290					D-Air	5	GM			42.00	210.00
221					Fluid Gel	4	GM			25.00	100.00
281					MUDFLUSH	500	GM			1.25	625.00
403					CEMENT BASSET	2	EA			250.00	500.00
407					FUSER FIBER SHOE w/ AUTO FILL	1	EA			300.00	300.00
408					DV Tool & Plug Set	1	EA			3250.00	3250.00
409					TOOLBOX	7	EA			75.00	525.00
412					D.V. CATCH DOWN Plug & Baffle	1	EA			200.00	200.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY** provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

SIGNED: *Hubby Fopp* TIME SIGNED: A.M. P.M.

REMIT PAYMENT TO:

SWIFT SERVICES, INC.
P.O. BOX 466
NESS CITY, KS 67560
785-798-2300

SURVEY	OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?	WE UNDERSTOOD AND MET YOUR NEEDS?	OUR SERVICE WAS PERFORMED WITHOUT DELAY?	WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?	ARE YOU SATISFIED WITH OUR SERVICE?	AGREE	UN-DECIDED	DIS-AGREE	PAGE #	PAGE TOTAL	TOTAL
					<input type="checkbox"/> YES <input type="checkbox"/> NO				1	7510.00	15898.09

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

APPROVAL: *W.D. Edgerton*

Thank You!



PO Box 466
Ness City, KS 67560
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. 29486

CUSTOMER DL OPERATIONS

WELL V. AQUINA 1-13

DATE 10-28-16 PAGE 2 OF 2

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	WELL				UNIT PRICE	AMOUNT	
		LOC	ACCT	DF			QTY	UM	QTY	UM			
330						SWIFT MULT DENSITY	200	SLS			15.75	3150.00	
325						STANDARD CEMENT	175	SLS			12.75	2143.75	
284						GREASE	8	SXS			30.00	240.00	
283						SALT	990	LBS			20	198.00	
292						HEAD - 322	100	LBS			8.00	800.00	
276						FLOCEL	95	LBS			2.25	213.75	
SERVICE CHARGE CEMENT MILEAGE CHARGE TOTAL WEIGHT 37195 LOADED MILES 20 CUBIC FEET 375 SXS TON MILES 372												1.50	562.50

CONTINUATION TOTAL
 299.00
 1581.25
 1599.00

JOB LOG

SWIFT Services, Inc.

DATE 12-28-11 PAGE NO.

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.	
D.V. DOCUMENTING		1-13		Virginia		2 STAGE		29496	
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS	
				T	C	TUBING	CASING		
	2000							On location	
								RTD - 4342	
								SLOG - 34.62	
								Set pipe @ 4344	
								CEMENTING @ 17, 34, 51, 69	
								BRACKET - 67, 68	
								D.V. TOOL - 68 @ 1451	
	2215							START CEG	
	100							Break Circ	
	200	5	12			300		PUMP MUD FLUSH - 500 GAL	
		5	30			300		PUMP KEL SPACER	
	215	5	42			200		PUMP CMT - 175 SKS EA - 2 @ 1551	
								DEEP PLUG - WREN P/L	
	230							DISPLACE CMT	
	250	4.5	100			1500		LAND PLUG - LIFT - 800 PSI	
								LAND - 1500 PSI	
	255							DEEP BUMP	
		2	11					PLUG CAT - 30 SKS SMD @ 12.5	
	305					1400		Open D.V. TOOL	
		6	99			1400		PUMP CMT (170 SKS SMD @ 11.2 PPG) WEN	
								DEEP PLUG	
	325							DISPLACE CMT	
	335		33			1600		LAND PLUG - LIFT - 600 PSI	
								LAND - 1600 PSI	
								* Circulate 20 BBL CMT @ 11	
								Thanks 35 SKS CEMENT → WEN	
								DAVID FLINT, ISMAC	