



Confidentiality Requested:

Yes No

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: _____

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
--	---

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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Summary of Changes

Lease Name and Number: Kaup 3407 16-2H

API/Permit #: 15-077-22104-01-00

Doc ID: 1245039

Correction Number: 1

Approved By: NAOMI JAMES

Field Name	Previous Value	New Value
Approved Date	01/06/2015	03/06/2015
Save Link	../../../../kcc/detail/operatorEditDetail.cfm?docID=1235364	../../../../kcc/detail/operatorEditDetail.cfm?docID=1245039
Well Type	CM	OIL



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1235364
OIL & GAS CONSERVATION DIVISION

Form ACO-1
August 2013

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

CONFIDENTIAL 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: _____

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 Geologist Report / Mud Logs <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				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
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> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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The Road to Excellence Starts with Safety

Sold To #: 372073	Ship To #: 2974010	Quote #: 0021943490	Sales Order #: 0901810968
Customer: TAPSTONE ENERGY LLC		Customer Rep: Dale James	
Well Name: KAUP -3407-	Well #: 16-2H	API/UWI #: 15-077-21886-01	
Field: COOPER CREEK	City (SAP): ANTHONY	County/Parish: HARPER	State: KANSAS
Legal Description: W2 SE SW SW-16-34S-7W-330FSL-870FWL			
Contractor: NOMAC		Rig/Platform Name/Num: NOMAC 245	
Job BOM: 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX25353		Srvc Supervisor: Andrew Chambers	
Job			

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type			BHST
Job depth MD	800ft		Job Depth TVD
Water Depth			Wk Ht Above Floor
Perforation Depth (MD)	From		To

Well Data

Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Open Hole Section			12.25				0	800	0	800
Casing	3	9.625	8.921	36	LTC	J-55	0	800	0	800

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	7			5425	Top Plug	7		HES
Float Shoe	7				Bottom Plug	7		HES
Float Collar	7				SSR plug set	7		HES
Insert Float	7				Plug Container	7		HES
Stage Tool	7				Centralizers	7		HES

Miscellaneous Materials

Gelling Agt	Conc	Surfactant	Conc	Acid Type	Qty	Conc
Treatment Fld	Conc	Inhibitor	Conc	Sand Type	Size	Qty

Fluid Data

Stage/Plug #: 1

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Water Spacer	Water Spacer	10	bbl	8.33				

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Lead Cement	EXTENDACEM (TM) SYSTEM	225	sack	12.4	2.132			11.86

0.25 lbm		POLY-E-FLAKE (101216940)							
3 %		CALCIUM CHLORIDE, PELLET, 50 LB (101509387)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Tail Cement	SWIFTCEM (TM) SYSTEM	145	sack	15.6	1.207			5.39
2 %		CALCIUM CHLORIDE, PELLET, 50 LB (101509387)							
0.1250 lbm		POLY-E-FLAKE (101216940)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
4	Displacement	Displacement	58.6	bbl	8.33				
Cement Left In Pipe	Amount	42 ft			Reason			Shoe Joint	
Mix Water:	pH ##	Mix Water Chloride: ## ppm			Mix Water Temperature: ## °F °C				
Cement Temperature:	## °F °C	Plug Displaced by: ## lb/gal kg/m3 XXXX			Disp. Temperature: ## °F °C				
Plug Bumped?	Yes/No	Bump Pressure: ##### psi MPa			Floats Held?			Yes/No	
Cement Returns:	## bbl m3	Returns Density: ## lb/gal kg/m3			Returns Temperature: ## °F °C				
Comment									

1.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Downhole Density (ppg)	Combined Pump Rate (tbb/min)	Driv-Side Pump Pressure (psi)	Comment
Event	1	Call Out	Call Out	11/11/2014	07:35:00	USER				Andrew Chambers, Scott Aplebee, Levi Stoops, Will Nelson requested time on location 13:30
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	11/11/2014	08:15:00	USER				Disssused safe driving
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	11/11/2014	08:30:00	USER				Andrew Chambers, Scott Aplebee, Levi Stoops, Will Nelson Met with customer rep went over where to spot equipment, muster area's, and calculations
Event	4	Arrive At Loc	Arrive At Loc	11/11/2014	11:30:00	USER				Identified trip hazards, red zones overhead hazards, pressurized pumping area's, and red zones
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	11/11/2014	13:00:00	USER				Discussed trip hazards, red zones overhead hazards, pressurized pumping area's, and red zones, all equipment on location
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	11/11/2014	13:30:00	USER				Rigged up ground
Event	7	Rig-Up Equipment	Rig up equipment	11/11/2014	14:00:00	USER				Rig up completed safely
Event	8	Rig-Up Completed	Rig-Up Completed	11/11/2014	14:30:00	USER				Discussed trip hazards, red zones overhead hazards, pressurized pumping area's, and red zones
Event	9	Pre-Job Safety Meeting	Pre-Job Safety Meeting	11/11/2014	15:01:15	USER	1.23	0.00	170.00	Tested lines to 3000 PSI test successful
Event	10	Test Lines	Test Lines	11/11/2014	16:24:42	COM6	8.44	0.00	3000.00	

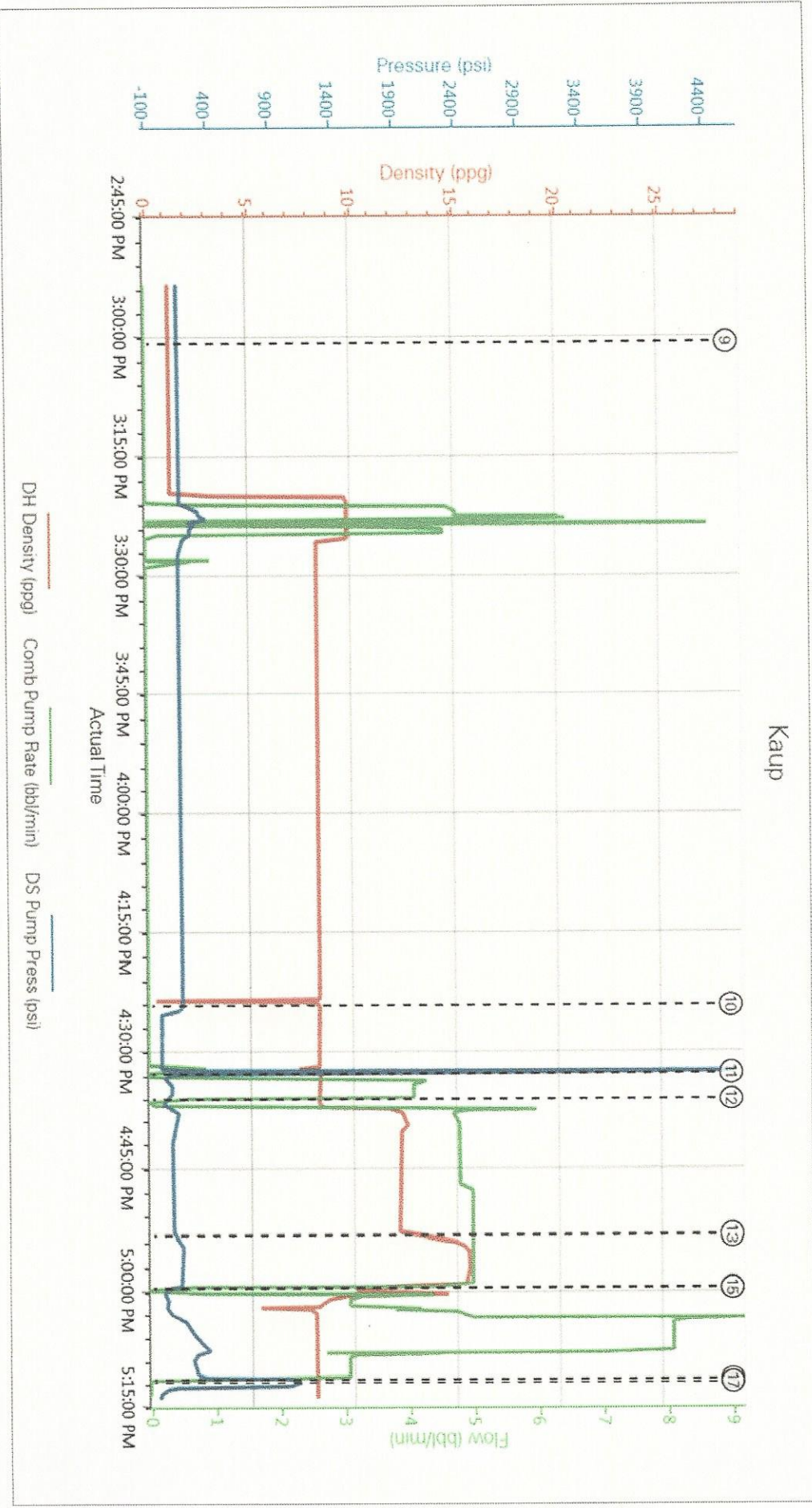
HALLIBURTON

ADVANCED PUMPING UNITS & EQUIP Cement Surface Casing Tapstone Energy

Event 11	Pump Spacer 1	Pump Spacer 1	11/11/2014	16:33:13	COM6	8.37	0.00	21.00	Pumped 10 bbl fresh water spacer
Event 12	Pump Lead Cement	Pump Lead Cement	11/11/2014	16:36:33	COM6	12.31	0.00	19.00	Pumped 85 bbl of Extendacem(12.4lb/gal,2.13cu.ft/sk,11.86lb/gal)
Event 13	Pump Tail Cement	Pump Tail Cement	11/11/2014	16:53:46	COM6	15.51	5.00	144.00	Pumped 31bbl of Swiftcem(15.6lb/gal,1.2cu.ft/sk,5.39 gal/sl)
Event 14	Drop Top Plug	Drop Top Plug	11/11/2014	17:00:00	COM6	10.06	0.00	6.00	Halliburton top plug left cementing head
Event 15	Pump Displacement	Pump Displacement	11/11/2014	17:00:02	COM6	10.02	0.00	5.00	Pumped 58 bbl fresh water displacement
Event 16	Bump Plug	Bump Plug	11/11/2014	17:11:49	COM6	8.19	0.00	1119.00	Bumped plug at calculated displacement
Event 17	Other	Check floats	11/11/2014	17:12:15	COM6	8.15	0.00	1005.00	Floats held 1 bbl bled back,38 bbls cement returns to surface
Event 18	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	11/11/2014	18:00:00	USER				Discussed trip hazards,red zones overhead hazards,pressurized pumping areas,and red zones
Event 19	Rig-Down Equipment	Rig-Down Equipment	11/11/2014	18:30:00	USER				Rigged down ground
Event 20	Rig-Down Completed	Rig-Down Completed	11/11/2014	19:00:00	USER				Rig down completed safely
Event 21	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	11/11/2014	19:30:00	USER				Discussed safe driving
Event 22	Depart Location for Home	Depart Location for Home	11/11/2014	20:00:00	USER				Andrew Chambers,Scott Aplebee,Levi Stoops,Will Nelson

2.0 Custom Graphs

2.1 Custom Graph



Tapstone Kaup

SLURRY	SKS	LB/GAL	YIELD	B.F.	CU.FT.	BBL	GAL/SK	H2O REQ		
WELL FLUID	8.6	LB/GAL		0.8686						
SPACER	8.33	LB/GAL				30		20		
DISPLACEMENT FLUID	8.33	LB/GAL								
Lead Cement	225	SKS	2.13	CU.FT.	479.25	85.35443	11.86	63.53571		
LB/GAL	12.4									
Tail Cement	145	SKS	1.2	CU.FT.	174	30.9894	5.39	18.60833		
LB/GAL	15.6									
WELL INFORMATION	TD	804	FEET	HOLE SIZE	12.25	INCHES				
PREVIOUS CASING INFO	TD	0	FEET	OD	12.715	INCHES	ID	13.375	INCHES	
WEIGHT AND GRADE	SIZE	13.375	LB/FT	48	GRADE	OH FACTOR	ID	0.05578	BBL/FT	
CASING INFORMATION	TD	804	FEET	OD	9.625	INCHES	ID	8.921	INCHES	
WEIGHT AND GRADE	SIZE	9.625	LB/FT	36	GRADE	J-55				
SHOE INFORMATION	TD	45.15	FEET							
WEIGHT AND GRADE	SIZE	9.625	LB/FT	36	GRADE	J-55				
DISPLACEMENT	758.85	FEET	0.077308	BBL/FT	58.66528	BBLs				
SHOE	45.15	FEET	0.077308	BBL/FT	3.490462	BBLs				
HEIGHTS										
OUTSIDE										
TAIL	492.9927	FEET	15.6	LB/GAL	399.5311	PSI				
LEAD	311.0073	FEET	12.4	LB/GAL	200.3447	PSI	OUTSIDE HYDROSTATIC			
								599.8758	PSI	
SPACER	0	FEET	8.33	LB/GAL	0	PSI				
INSIDE										
DISPLACEMENT	758.85	FEET	8.33	LB/GAL	328.3874	PSI	INSIDE HYDROSTATIC	364.9779	PSI	
SHOE	45.15	FEET	15.6	LB/GAL	36.59046	PSI				
PSI TO BUMP PLUG	234.898	PSI								
PSI TO LIFT CASING	345.5302	PSI			Top of Lead		0	Feet		
RESULTING FORCE	8049.595	POUNDS			Top of Tail		311.0073	Feet		
WATER REQUIREMENTS	160.8093	BBLs								
CALC CMT RETURNS	71.49702	BBLs								

HALLIBURTON

iCem[®] Service

TAPSTONE ENERGY

For: Lacey Wright

Date: Wednesday, December 17, 2014

Kaup 3407 16-2H

Intermediate Casing

Job Date: Wednesday, November 19, 2014

Sincerely,
Dan Hildebrand

Legal Notice

Warning Disclaimer

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Table of Contents

1	Job Summary	4
2	Service Supervisor’s Job Log	7
3	Real Time Job Summary	8
3.1	Job Event Log	8
4	Attachments	9
4.1	Complete Job Chart.png	9
4.2	Pump Spacer, Pump Lead Cement, Pump Tail Cement.png	10
4.3	Pump Displacement, Check Floats.png	11

1 Job Summary



Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 372073		Ship To #: 2974010		Quote #: 0021943310		Sales Order #: 0901838827				
Customer: TAPSTONE ENERGY LLC				Customer Rep: DALE						
Well Name: KAUP -3407-		Well #: 16-2H		API/UWI #: 15-077-21886-01						
Field: COOPER CREEK		City (SAP): ANTHONY		County/Parish: HARPER		State: KANSAS				
Legal Description: W2 SE SW SW-16-34S-7W-330FSL-870FWL										
Contractor: NOMAC				Rig/Platform Name/Num: NOMAC 245						
Job BOM: 7522										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX25353				Srv Supervisor: Troy Davis						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		5268ft		Job Depth TVD						
Water Depth				Wk Ht Above Floor						
Perforation Depth (MD)		From		To						
Well Data										
Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing	3	9.625	8.921	36	LTC	J-55	0	800	0	800
Casing	3	7	6.276	26	LTC	P-110	0	5268	0	4759
Open Hole Section			8.75				800	5268	800	4759
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	7			5268	Top Plug	7	1	HES		
Float Shoe	7				Bottom Plug	7	1	HES		
Float Collar	7				SSR plug set	7		HES		
Insert Float	7				Plug Container	7		HES		
Stage Tool	7				Centralizers	7		HES		
Miscellaneous Materials										
Gelling Agt		Conc		Surfactant		Conc	Acid Type	Qty	Conc	
Treatment Fld		Conc		Inhibitor		Conc	Sand Type	Size	Qty	
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Mud Flush III (Liquid)	Mud Flush III	10	bbl	8.4					
41 gal/bbl		FRESH WATER								

HALLIBURTON

Cementing Job Summary

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
2	Lead Cement	ECONOCEM (TM) SYSTEM	135	sack	13.6	1.51		6	7.3	
	0.40 %	HALAD(R)-9, 50 LB (100001617)								
	2 %	BENTONITE, BULK (100003682)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
3	Tail Cement	HALCEM (TM) SYSTEM	90	sack	15.6	1.18		5	5.2	
	0.40 %	HALAD(R)-9, 50 LB (100001617)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
4	Displacement	Displacement	199	bbl	8.33					
Cement Left In Pipe		Amount	42 ft		Reason			Shoe Joint		
Mix Water:pH ##		Mix Water:## ppm Chloride:			Mix Water Temperature:## °F °C					
Cement Temperature:## °F °C		Plug Displaced by:## lb/gal kg/m3 XXXX			Disp. Temperature:## °F °C					
Plug Bumped?Yes		Bump Pressure:1200 psi MPa			Floats Held?Yes					
Cement Returns:## bbl m3		Returns Density:## lb/gal kg/m3			Returns Temperature:## °F °C					
Comment TOP CEMENT 3849 FT										

HALLIBURTON



Summary Report

Crew: _____
Job Start Date: 11/19/2014

Sales Order #: 0901838827
WO #: 0901838827
PO/AFE #: NA

Customer: TAPSTONE ENERGY LLC

Field: COOPER CREEK

Job Type: CMT INTERMEDIATE CASING BOM

UWI / API Number: 15-077-21886-01

County/Parish: HARPER

Service Supervisor: Troy Davis

Well Name: KAUP -3407-

State: KANSAS

Well No: 16-2H

Latitude: 37.080619

Longitude: -98.089826

Cust Rep Name: DALE

Sect / Twn / Rng: 16/34/7

Cust Rep Phone #:

Remarks:		
The Information Stated Herein Is Correct	Customer Representative Signature <i>John K. Walsh</i>	Date 11-19-2014
	Customer Representative Printed Name	

2 Service Supervisor's Job Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Recirc Density (ppg)	Comb Pump Rate (tkl/min)	DS Pump Press (psi)	Comments
Event	1	Other	CALLED OUT	11/18/2014	15:30:00	USER					CALLED OUT
Event	2	Other	PRE-TRIP MEETING	11/18/2014	16:00:00	USER					PRE-TRIP MEETING
Event	3	Other	LEAVE YARD	11/18/2014	16:15:00	USER					LEAVE YARD
Event	4	Other	ARRIVE ON LOC	11/18/2014	22:30:00	USER					ARRIVE ON LOC
Event	5	Other	PRE-RIG UP MEETING	11/19/2014	01:00:00	USER					PRE-RIG UP MEETING
Event	6	Other	RIG UP	11/19/2014	01:15:00	USER					RIG UP
Event	7	Prime Pumps	Prime Pumps	11/19/2014	02:28:27	COM5					
Event	8	Test Lines	Test Lines	11/19/2014	04:20:05	COM5	9.36	0.00	0.40	124.00	
Event	9	Pressure Test	Pressure Test	11/19/2014	04:21:04	USER	8.38	0.00	0.00	6306.00	TEST LINES @ 6000 PSI
Event	10	Pump Spacer 1	Pump Spacer 1	11/19/2014	04:30:15	COM5	8.26	8.24	5.80	635.00	DROP BOTTOM PLUG PUMP 10 BB MUD FLUSH SPACER
Event	11	Pump Lead Cement	Pump Lead Cement	11/19/2014	04:32:38	COM5	8.22	13.51	0.00	64.00	PUMP LEAD CEMENT 36 BB
Event	12	Pump Tail Cement	Pump Tail Cement	11/19/2014	04:37:58	COM5	13.16	12.98	6.80	546.00	PUMP TAIL CEMENT 19 BB
Event	13	Drop Top Plug	Drop Top Plug	11/19/2014	04:46:10	COM5	15.06	8.41	0.00	11.00	DROP TOP PLUG
Event	14	Pump Displacement	Pump Displacement	11/19/2014	04:47:52	COM5	12.88	8.41	3.60	61.00	DISPLACE 199 BB FRESH WATER
Event	15	Bump Plug	Bump Plug	11/19/2014	05:25:00	USER	8.24	8.39	0.00	1200.00	BUMP TOP PLUG @ 600-1200 PSI
Event	16	Check Floats	Check Floats	11/19/2014	05:27:14	USER	8.24	8.39	0.00	7.00	CHECK FLOATS GOT HALF A BARREL BACK
Event	17	End Job	End Job	11/19/2014	05:29:16	COM5	8.21	8.39	0.00	0.00	
Event	18	Other	PRE-RIG DOWN MEETING	11/19/2014	05:45:00	USER	-0.14	0.00	0.00	-2.00	PRE-RIG DOWN MEETING
Event	19	Other	RIG DOWN	11/19/2014	05:50:00	USER	-0.14	0.00	0.00	-2.00	RIG DOWN
Event	20	End Job	End Job	11/19/2014	06:00:22	COM5	-0.11	0.00	0.00	-3.00	
Event	21	Other	PRE-JOURNEY MEETING	11/19/2014	06:50:00	USER					PRE-JOURNEY MEETING
Event	22	Other	LEAVE LOC	11/19/2014	07:00:00	USER					LEAVE LOC

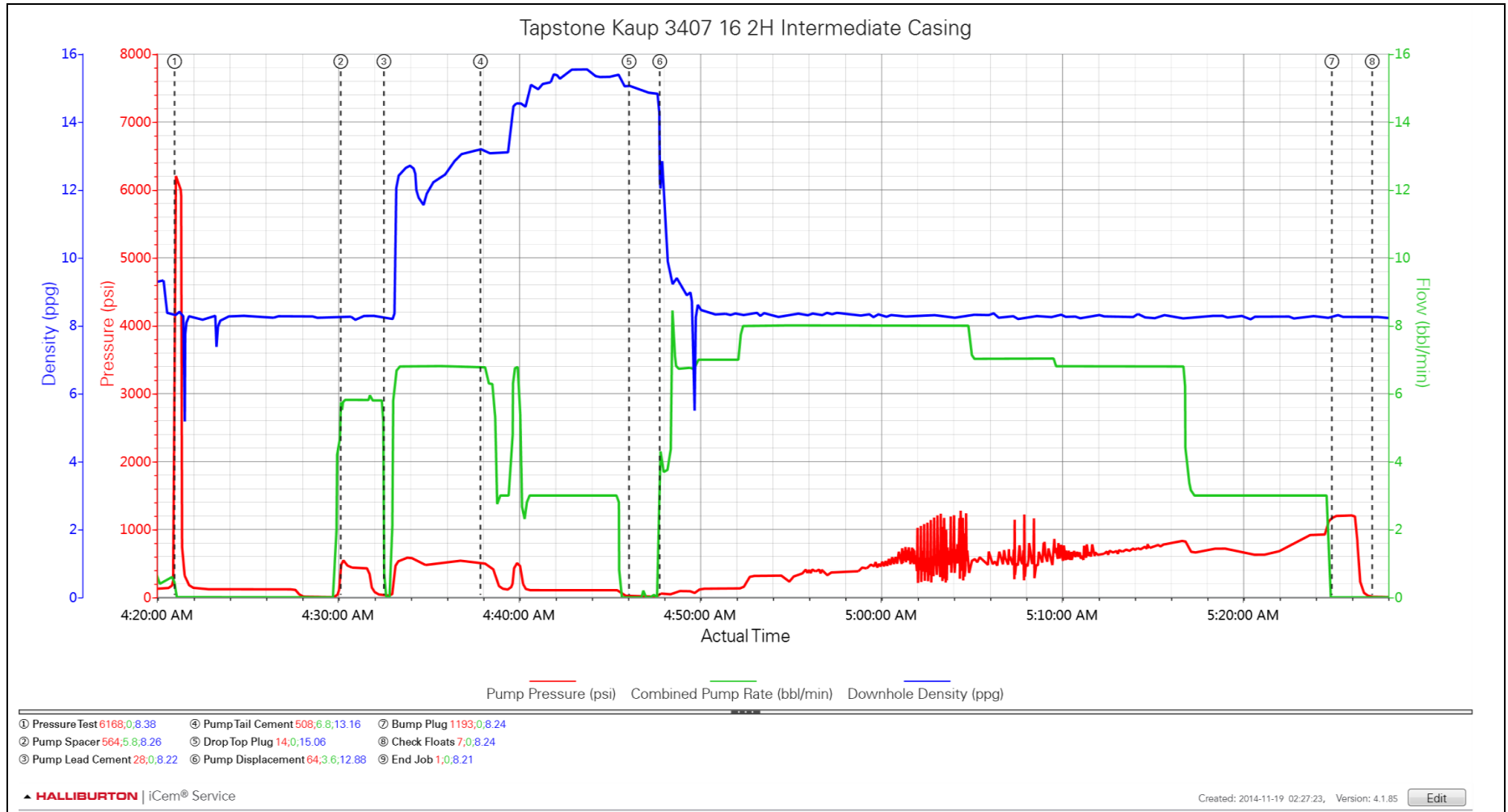
3 Real Time Job Summary

3.1 Job Event Log

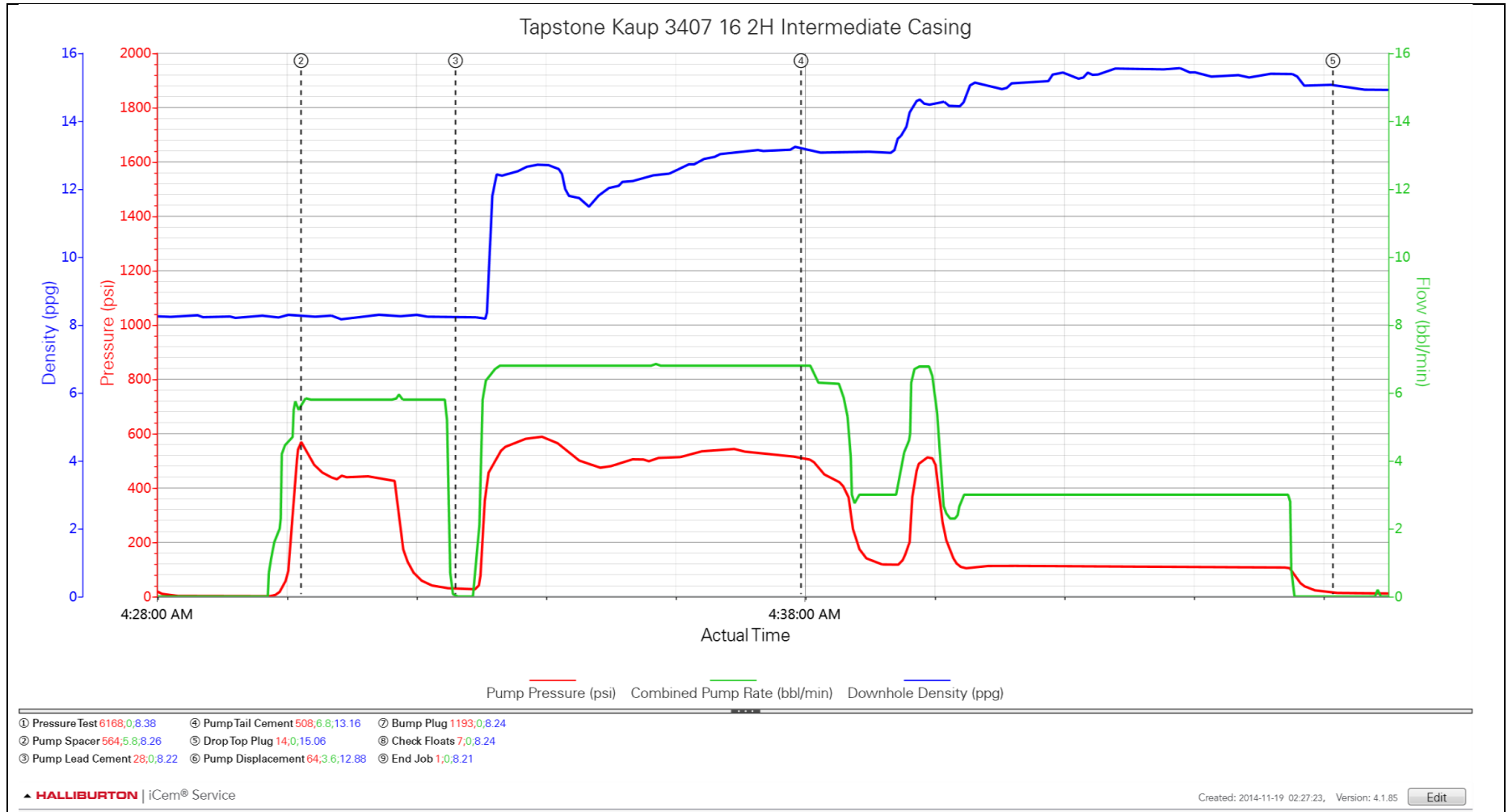
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Pressure Test	Pressure Test	11/19/2014	04:21:04	USER	TEST LINES @ 6000 PSI
Event	2	Pump Spacer 1	Pump Spacer	11/19/2014	04:30:15	COM5	DROP BOTTOM PLUG PUMP 10 BBL MUD FLUSH SPACER
Event	3	Pump Lead Cement	Pump Lead Cement	11/19/2014	04:32:38	COM5	PUMP LEAD CEMENT 36 BBL
Event	4	Pump Tail Cement	Pump Tail Cement	11/19/2014	04:37:58	COM5	PUMP TAIL CEMENT 19 BBL
Event	5	Drop Top Plug	Drop Top Plug	11/19/2014	04:46:10	COM5	DROP TOP PLUG
Event	6	Pump Displacement	Pump Displacement	11/19/2014	04:47:52	COM5	DISPLACE 199 BB FRESH WATER
Event	7	Bump Plug	Bump Plug	11/19/2014	05:24:41	USER	BUMP TOP PLUG @ 600-1200 PSI
Event	8	Check Floats	Check Floats	11/19/2014	05:26:12	USER	CHECK FLOATS GOT HALF A BARREL BACK
Event	9	End Job	End Job	11/19/2014	05:29:16	COM5	

4 Attachments

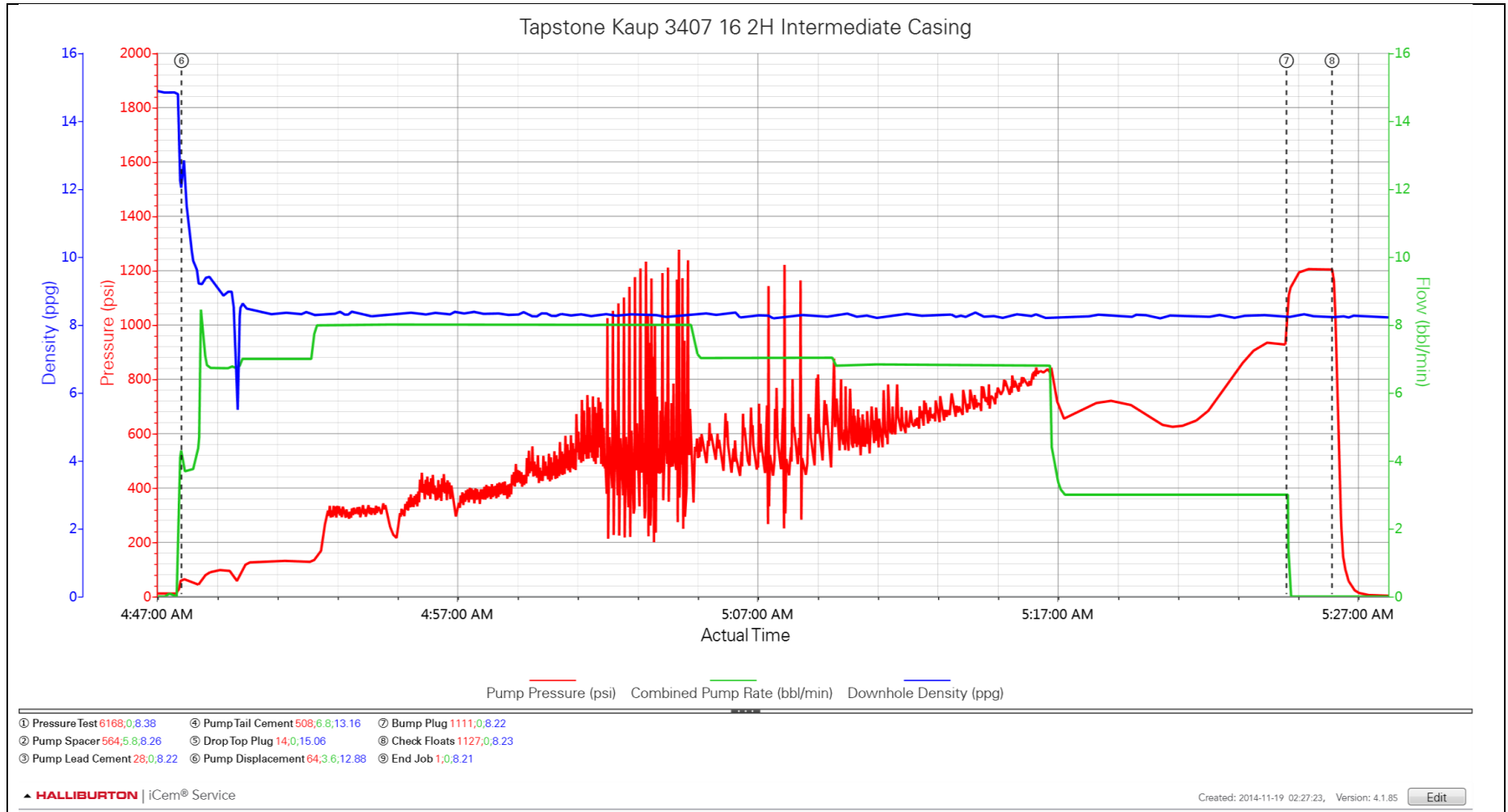
4.1 Complete Job Chart



4.2 Pump Spacer, Pump Lead Cement, Pump Tail Cement



4.3 Pump Displacement, Check Floats.png



MWD SURVEYS

Customer: Tapstone Energy
 Well: Kaup 3407 #16-2H
 Field/Block: Mississippi Lime
 Co./Parish: Harper, Co.
 State: Kansas

PGS Job #: LKS6114914
 MWD Operator: Ronny Golightly
 Directional Driller: Jared Gooch
 Date of First Survey: November 13, 2014
 Date of Last Survey: November 26, 2014



Total Correction: 4.07 East Grid

Vertical Section Plane: 355.80 Nominal Dip Angle: 65.12 Magnetic Field Strength: 0.516

Measured Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	Coordinates		Closure			DLS	Mtr Yield	Temp (°F)	Vib/Shk	Date	Time	Flow Rate
					+N / -S	+E / -W	Dist.	Angle	Color							
Survey's are tied into: MWD													Date Received: 11/13/14			
Company: Professional Directional																
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
1	827.00	0.50	120.00	826.99	-2.03	-1.80	3.13	3.61	120.00	0.06	0.00	78 °F	Green	11/13/14	8:10	622 (gpm)
2	859.00	0.50	143.80	858.99	-2.23	-1.99	3.33	3.88	120.83	0.64	0.00	73 °F	Green	11/13/14	8:40	622 (gpm)
3	890.00	0.80	105.80	889.99	-2.41	-2.15	3.62	4.21	120.79	1.64	0.00	75 °F	Green	11/13/14	9:19	603 (gpm)
4	922.00	2.70	86.60	921.97	-2.50	-2.17	4.58	5.07	115.34	6.13	0.00	77 °F	Green	11/13/14	9:45	603 (gpm)
5	953.00	5.00	78.30	952.90	-2.33	-1.85	6.64	6.89	105.61	7.61	0.00	79 °F	Green	11/13/14	10:07	603 (gpm)
6	985.00	6.10	76.10	984.75	-1.87	-1.16	9.65	9.72	96.87	3.50	0.00	81 °F	Green	11/13/14	10:46	603 (gpm)
7	1016.00	6.50	76.80	1015.56	-1.31	-0.37	12.96	12.96	91.62	1.31	0.00	81 °F	Green	11/13/14	11:08	603 (gpm)
8	1048.00	6.30	76.20	1047.36	-0.74	0.47	16.43	16.43	88.37	0.66	0.00	82 °F	Green	11/13/14	11:25	603 (gpm)
9	1079.00	6.30	75.80	1078.17	-0.16	1.29	19.73	19.77	86.26	0.14	0.00	84 °F	Green	11/13/14	12:10	622 (gpm)
10	1111.00	6.30	76.50	1109.98	0.43	2.13	23.14	23.24	84.74	0.24	0.00	84 °F	Green	11/13/14	12:44	603 (gpm)
11	1142.00	6.30	77.50	1140.79	0.95	2.90	26.45	26.61	83.75	0.35	0.00	84 °F	Green	11/13/14	12:56	603 (gpm)
12	1174.00	6.20	76.50	1172.60	1.48	3.68	29.85	30.07	82.97	0.46	0.00	86 °F	Green	11/13/14	13:31	603 (gpm)
13	1205.00	6.10	77.00	1203.42	2.01	4.44	33.08	33.38	82.36	0.37	0.00	86 °F	Green	11/13/14	13:51	570 (gpm)
14	1237.00	6.00	78.40	1235.25	2.48	5.16	36.37	36.74	81.93	0.56	0.00	88 °F	Green	11/13/14	14:14	570 (gpm)
15	1268.00	6.20	79.40	1266.07	2.88	5.79	39.61	40.03	81.68	0.73	0.00	90 °F	Green	11/13/14	14:58	570 (gpm)
16	1362.00	5.80	77.90	1359.56	4.09	7.72	49.24	49.84	81.09	0.46	0.00	93 °F	Green	11/13/14	16:30	570 (gpm)
17	1457.00	5.30	75.70	1454.11	5.52	9.81	58.19	59.01	80.43	0.57	0.00	99 °F	Green	11/13/14	17:56	570 (gpm)
18	1489.00	5.10	73.40	1485.98	6.09	10.58	60.98	61.89	80.15	0.90	0.00	100 °F	Green	11/13/14	18:35	570 (gpm)
19	1520.00	4.20	65.20	1516.88	6.78	11.45	63.33	64.36	79.75	3.60	0.00	102 °F	Green	11/13/14	19:05	570 (gpm)
20	1552.00	3.30	46.30	1548.81	7.78	12.58	65.06	66.27	79.06	4.74	0.00	104 °F	Green	11/13/14	19:43	570 (gpm)
21	1583.00	3.00	35.60	1579.76	8.97	13.86	66.18	67.61	78.17	2.12	0.00	104 °F	Green	11/13/14	20:18	570 (gpm)
22	1615.00	3.10	33.70	1611.72	10.30	15.26	67.15	68.86	77.20	0.44	0.00	108 °F	Green	11/13/14	20:45	570 (gpm)
23	1646.00	3.10	34.70	1642.67	11.61	16.64	68.09	70.09	76.26	0.17	0.00	106 °F	Green	11/13/14	21:15	570 (gpm)
24	1678.00	2.80	34.00	1674.63	12.90	18.00	69.02	71.33	75.38	0.94	0.00	106 °F	Green	11/13/14	21:42	570 (gpm)
25	1741.00	2.60	32.00	1737.56	15.26	20.49	70.64	73.55	73.82	0.35	0.00	109 °F	Green	11/13/14	23:07	570 (gpm)
26	1772.00	2.50	30.00	1768.53	16.39	21.67	71.35	74.57	73.10	0.43	0.00	109 °F	Green	11/13/14	23:31	570 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
 Well: Kaup 3407 #16-2H
 Field/Block: Mississippi Lime
 Co./Parish: Harper, Co.
 State: Kansas

PGS Job #: LKS6114914
 MWD Operator: Ronny Golightly
 Directional Driller: Jared Gooch
 Date of First Survey: November 13, 2014
 Date of Last Survey: November 26, 2014



Total Correction: 4.07 East Grid

Vertical Section Plane: 355.80 Nominal Dip Angle: 65.12 Magnetic Field Strength: 0.516

	Measured		Coordinates				Closure			Vib/Shk						
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	Mtr Yield	Temp (°F)	Color	Date	Time	Flow Rate
27	1803.00	2.40	28.20	1799.50	17.50	22.83	71.99	75.52	72.40	0.41	0.00	111 °F	Green	11/13/14	23:58	570 (gpm)
28	1834.00	2.30	29.40	1830.47	18.56	23.94	72.60	76.45	71.75	0.36	0.00	111 °F	Green	11/14/14	0:29	570 (gpm)
29	1866.00	2.30	28.80	1862.45	19.64	25.07	73.23	77.40	71.10	0.08	0.00	111 °F	Green	11/14/14	1:04	570 (gpm)
30	1897.00	2.10	26.10	1893.43	20.65	26.12	73.78	78.27	70.50	0.73	0.00	113 °F	Green	11/14/14	1:30	570 (gpm)
31	1928.00	2.00	24.90	1924.41	21.61	27.12	74.25	79.05	69.93	0.35	0.00	113 °F	Green	11/14/14	2:10	570 (gpm)
32	1959.00	2.00	26.00	1955.39	22.55	28.10	74.72	79.83	69.39	0.12	0.00	113 °F	Green	11/14/14	2:39	570 (gpm)
33	1990.00	1.90	22.40	1986.37	23.48	29.06	75.15	80.58	68.86	0.51	0.00	115 °F	Green	11/14/14	3:06	570 (gpm)
34	2022.00	1.70	27.60	2018.35	24.36	29.97	75.57	81.30	68.37	0.81	0.00	115 °F	Green	11/14/14	4:14	570 (gpm)
35	2053.00	1.00	29.50	2049.34	24.97	30.61	75.92	81.86	68.04	2.26	0.00	115 °F	Green	11/14/14	4:41	570 (gpm)
36	2115.00	0.50	35.30	2111.34	25.63	31.31	76.34	82.51	67.70	0.81	0.00	117 °F	Green	11/14/14	5:52	570 (gpm)
37	2209.00	0.70	47.30	2205.33	26.30	32.03	77.00	83.40	67.41	0.25	0.00	117 °F	Green	11/14/14	7:09	570 (gpm)
38	2302.00	0.70	46.30	2298.33	27.02	32.81	77.83	84.46	67.14	0.01	0.00	117 °F	Green	11/14/14	8:30	595 (gpm)
39	2397.00	0.60	23.60	2393.32	27.83	33.66	78.45	85.37	66.77	0.29	0.00	117 °F	Green	11/14/14	9:28	595 (gpm)
40	2492.00	0.60	26.80	2488.32	28.70	34.56	78.87	86.11	66.34	0.04	0.00	117 °F	Green	11/14/14	10:31	565 (gpm)
41	2585.00	0.50	15.70	2581.31	29.49	35.39	79.20	86.75	65.92	0.16	0.00	118 °F	Green	11/14/14	11:38	595 (gpm)
42	2679.00	0.70	9.60	2675.31	30.44	36.35	79.41	87.33	65.40	0.22	0.00	118 °F	Green	11/14/14	12:58	595 (gpm)
43	2773.00	0.70	8.30	2769.30	31.56	37.49	79.59	87.97	64.78	0.02	0.00	124 °F	Green	11/14/14	14:36	595 (gpm)
44	2867.00	0.80	6.40	2863.29	32.76	38.71	79.74	88.64	64.11	0.11	0.00	124 °F	Green	11/14/14	17:06	595 (gpm)
45	2961.00	0.50	11.60	2957.29	33.80	39.76	79.90	89.25	63.54	0.32	0.00	90 °F	Green	11/14/14	17:58	622 (gpm)
46	3055.00	0.30	5.60	3051.28	34.44	40.41	80.01	89.63	63.20	0.22	0.00	99 °F	Green	11/14/14	19:01	622 (gpm)
47	3149.00	0.40	1.40	3145.28	35.01	40.98	80.04	89.92	62.89	0.11	0.00	104 °F	Green	11/14/14	20:00	622 (gpm)
48	3243.00	0.40	350.70	3239.28	35.66	41.63	79.99	90.18	62.51	0.08	0.00	113 °F	Green	11/14/14	21:17	622 (gpm)
49	3337.00	0.40	350.00	3333.28	36.31	42.28	79.88	90.38	62.11	0.01	0.00	120 °F	Green	11/14/14	22:53	622 (gpm)
50	3433.00	0.20	359.60	3429.28	36.81	42.78	79.82	90.56	61.81	0.21	0.00	122 °F	Green	11/14/14	23:47	622 (gpm)
51	3529.00	0.20	333.20	3525.27	37.14	43.09	79.75	90.65	61.61	0.10	0.00	124 °F	Green	11/15/14	0:46	622 (gpm)
52	3625.00	0.00	312.00	3621.27	37.29	43.24	79.67	90.65	61.51	0.21	0.00	126 °F	Green	11/15/14	1:37	622 (gpm)
53	3719.00	0.10	174.30	3715.27	37.21	43.16	79.68	90.62	61.56	0.11	0.00	122 °F	Green	11/15/14	3:50	622 (gpm)
54	3813.00	0.20	297.50	3809.27	37.21	43.15	79.54	90.49	61.52	0.29	0.00	126 °F	Green	11/15/14	4:50	622 (gpm)
55	3882.00	0.10	298.10	3878.27	37.31	43.24	79.38	90.39	61.42	0.14	0.00	127 °F	Green	11/15/14	5:37	475 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
Well: Kaup 3407 #16-2H
Field/Block: Mississippi Lime
Co./Parish: Harper, Co.
State: Kansas

PGS Job #: LKS6114914
MWD Operator: Ronny Golightly
Directional Driller: Jared Gooch
Date of First Survey: November 13, 2014
Date of Last Survey: November 26, 2014



Total Correction: 4.07 East Grid

Vertical Section Plane: 355.80 Nominal Dip Angle: 65.12 Magnetic Field Strength: 0.516

	Measured		Coordinates					Closure			Vib/Shk					
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	Mtr Yield	Temp (°F)	Color	Date	Time	Flow Rate
56	3907.00	0.00	231.70	3903.27	37.32	43.25	79.36	90.38	61.41	0.40	0.00	127 °F	Green	11/15/14	6:36	527 (gpm)
57	3939.00	0.80	345.00	3935.27	37.54	43.46	79.31	90.43	61.27	2.50	10.00	129 °F	Green	11/15/14	7:11	527 (gpm)
58	3970.00	3.50	351.50	3966.25	38.70	44.61	79.11	90.82	60.58	8.73	10.80	129 °F	Green	11/15/14	7:45	527 (gpm)
59	4002.00	7.00	350.60	3998.11	41.61	47.50	78.65	91.88	58.87	10.94	10.90	129 °F	Green	11/15/14	8:29	549 (gpm)
60	4034.00	10.80	352.60	4029.72	46.55	52.40	77.94	93.92	56.09	11.91	11.90	127 °F	Green	11/15/14	9:12	549 (gpm)
61	4065.00	13.90	354.30	4060.00	53.17	58.99	77.20	97.15	52.62	10.07	13.50	129 °F	Green	11/15/14	9:51	549 (gpm)
62	4096.00	16.10	355.70	4089.94	61.20	66.98	76.51	101.68	48.80	7.19	10.10	122 °F	Green	11/15/14	10:54	549 (gpm)
63	4127.00	17.80	355.80	4119.59	70.23	75.99	75.84	107.36	44.94	5.48	9.80	120 °F	Green	11/15/14	12:17	549 (gpm)
64	4158.00	19.50	356.20	4148.96	80.15	85.88	75.15	114.11	41.19	5.50	11.30	120 °F	Green	11/15/14	13:24	549 (gpm)
65	4189.00	21.10	355.90	4178.04	90.90	96.61	74.40	121.94	37.60	5.17	7.20	126 °F	Green	11/15/14	16:08	549 (gpm)
66	4221.00	24.10	357.10	4207.58	103.19	108.88	73.66	131.46	34.08	9.48	12.60	126 °F	Green	11/15/14	17:17	549 (gpm)
67	4252.00	27.30	356.90	4235.51	116.63	122.30	72.96	142.41	30.82	10.33	14.90	127 °F	Green	11/15/14	18:24	549 (gpm)
68	4284.00	29.60	356.10	4263.64	131.88	137.52	72.02	155.24	27.64	7.29	8.90	127 °F	Green	11/15/14	19:40	549 (gpm)
69	4316.00	32.00	355.10	4291.12	148.26	153.85	70.76	169.35	24.70	7.67	11.60	129 °F	Green	11/15/14	21:43	549 (gpm)
70	4348.00	33.70	354.20	4318.01	165.61	171.14	69.14	184.57	22.00	5.53	11.80	129 °F	Green	11/15/14	22:29	549 (gpm)
71	4380.00	35.70	354.40	4344.31	183.82	189.26	67.33	200.88	19.58	6.26	8.70	127 °F	Green	11/16/14	0:49	549 (gpm)
72	4411.00	37.00	355.20	4369.28	202.19	207.56	65.67	217.70	17.56	4.46	7.20	127 °F	Green	11/16/14	2:43	549 (gpm)
73	4442.00	38.70	355.70	4393.76	221.21	226.52	64.16	235.43	15.81	5.57	8.60	127 °F	Green	11/16/14	4:38	549 (gpm)
74	4473.00	41.00	356.20	4417.56	241.08	246.33	62.76	254.20	14.29	7.49	9.20	127 °F	Green	11/16/14	6:32	549 (gpm)
75	4505.00	43.20	357.40	4441.30	262.52	267.75	61.57	274.74	12.95	7.32	9.30	126 °F	Green	11/16/14	9:05	549 (gpm)
76	4537.00	45.20	357.00	4464.24	284.83	290.03	60.47	296.27	11.78	6.31	11.20	127 °F	Green	11/16/14	10:46	549 (gpm)
77	4568.00	47.20	354.70	4485.69	307.20	312.34	58.85	317.84	10.67	8.38	10.70	129 °F	Green	11/16/14	12:13	549 (gpm)
78	4599.00	51.00	353.90	4505.99	330.61	335.66	56.52	340.38	9.56	12.41	14.70	133 °F	Green	11/16/14	13:46	549 (gpm)
79	4631.00	54.10	353.40	4525.44	356.00	360.90	53.71	364.87	8.46	9.77	14.20	135 °F	Green	11/16/14	15:20	549 (gpm)
80	4662.00	56.70	353.50	4543.05	381.49	386.25	50.80	389.57	7.49	8.39	11.80	135 °F	Green	11/16/14	17:00	549 (gpm)
81	4693.00	59.00	353.60	4559.54	407.72	412.33	47.85	415.09	6.62	7.42	15.00	135 °F	Green	11/16/14	17:50	570 (gpm)
82	4725.00	60.50	354.30	4575.66	435.34	439.82	44.94	442.10	5.83	5.05	10.70	136 °F	Green	11/16/14	18:45	570 (gpm)
83	4757.00	61.80	354.60	4591.10	463.36	467.71	42.23	469.61	5.16	4.14	6.16	133 °F	Green	11/16/14	20:45	570 (gpm)
84	4789.00	61.70	354.50	4606.25	491.54	495.77	39.55	497.35	4.56	0.42	0.00	131 °F	Green	11/16/14	22:45	570 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
 Well: Kaup 3407 #16-2H
 Field/Block: Mississippi Lime
 Co./Parish: Harper, Co.
 State: Kansas

PGS Job #: LKS6114914
 MWD Operator: Ronny Golightly
 Directional Driller: Jared Gooch
 Date of First Survey: November 13, 2014
 Date of Last Survey: November 26, 2014



Total Correction: 4.07 East Grid

Vertical Section Plane: 355.80 Nominal Dip Angle: 65.12 Magnetic Field Strength: 0.516

	Measured		Coordinates					Closure			Vib/Shk					
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	Mtr Yield	Temp (°F)	Color	Date	Time	Flow Rate
85	4820.00	61.80	354.70	4620.92	518.85	522.96	36.98	524.26	4.04	0.65	0.00	129 °F	Green	11/16/14	23:54	570 (gpm)
86	4852.00	61.80	354.40	4636.04	547.04	551.03	34.30	552.10	3.56	0.83	0.00	131 °F	Green	11/17/14	0:49	570 (gpm)
87	4886.00	61.50	354.70	4652.19	576.96	580.82	31.46	581.67	3.10	1.18	0.00	131 °F	Green	11/17/14	1:36	570 (gpm)
88	4914.00	61.40	354.60	4665.57	601.55	605.31	29.16	606.01	2.76	0.48	0.00	131 °F	Green	11/17/14	2:55	570 (gpm)
89	4949.00	62.40	354.60	4682.05	632.41	636.04	26.26	636.59	2.36	2.86	0.00	131 °F	Green	11/17/14	4:45	570 (gpm)
90	4977.00	65.00	354.70	4694.46	657.51	661.04	23.92	661.47	2.07	9.29	11.30	131 °F	Green	11/17/14	6:34	570 (gpm)
91	5009.00	67.90	354.40	4707.24	686.83	690.23	21.13	690.56	1.75	9.10	12.70	129 °F	Green	11/17/14	9:42	570 (gpm)
92	5040.00	70.90	355.10	4718.15	715.84	719.13	18.48	719.36	1.47	9.91	13.30	131 °F	Green	11/17/14	12:27	570 (gpm)
93	5071.00	73.00	356.30	4727.76	745.31	748.52	16.27	748.69	1.25	7.71	11.90	133 °F	Green	11/17/14	14:16	570 (gpm)
94	5102.00	75.50	356.30	4736.17	775.15	778.29	14.35	778.42	1.06	8.06	15.50	135 °F	Green	11/17/14	16:36	570 (gpm)
95	5133.00	77.80	356.30	4743.33	805.31	808.38	12.40	808.48	0.88	7.42	14.30	136 °F	Green	11/17/14	19:25	570 (gpm)
96	5165.00	80.80	356.30	4749.27	836.74	839.76	10.37	839.82	0.71	9.38	13.60	136 °F	Green	11/17/14	23:55	570 (gpm)
97	5197.00	82.00	356.90	4754.05	868.38	871.34	8.49	871.38	0.56	4.18	10.20	136 °F	Green	11/18/14	4:47	570 (gpm)
98	5276.00	86.60	357.80	4761.90	946.94	949.85	4.86	949.86	0.29	5.93	0.00	131 °F	Yellow	11/20/14	15:56	230 (gpm)
99	5308.00	90.90	358.30	4762.59	978.90	981.81	3.78	981.82	0.22	13.53	0.00	131 °F	Green	11/20/14	16:36	230 (gpm)
100	5338.00	92.70	358.40	4761.65	1,008.85	1,011.78	2.91	1,011.79	0.16	6.01	0.00	129 °F	Green	11/20/14	17:18	237 (gpm)
101	5368.00	93.50	359.10	4760.03	1,038.77	1,041.73	2.26	1,041.74	0.12	3.54	0.00	129 °F	Green	11/20/14	18:53	237 (gpm)
102	5399.00	93.60	358.20	4758.11	1,069.67	1,072.66	1.53	1,072.67	0.08	2.92	0.00	122 °F	Yellow	11/20/14	20:50	237 (gpm)
103	5429.00	93.10	357.00	4756.36	1,099.61	1,102.59	0.28	1,102.59	0.01	4.33	0.00	126 °F	Green	11/20/14	22:14	237 (gpm)
104	5459.00	92.50	355.90	4754.89	1,129.57	1,132.49	-1.58	1,132.49	359.92	4.17	0.00	127 °F	Green	11/20/14	23:42	237 (gpm)
105	5489.00	92.10	354.80	4753.69	1,159.54	1,162.37	-4.01	1,162.38	359.80	3.90	0.00	122 °F	Green	11/20/14	0:53	237 (gpm)
106	5520.00	91.50	353.90	4752.71	1,190.52	1,193.20	-7.06	1,193.22	359.66	3.49	0.00	122 °F	Green	11/21/14	2:19	237 (gpm)
107	5550.00	90.80	353.30	4752.11	1,220.49	1,223.01	-10.40	1,223.05	359.51	3.07	0.00	120 °F	Green	11/21/14	3:51	237 (gpm)
108	5580.00	89.50	353.20	4752.03	1,250.46	1,252.80	-13.93	1,252.88	359.36	4.35	0.00	120 °F	Green	11/21/14	4:37	237 (gpm)
109	5611.00	89.60	352.90	4752.28	1,281.42	1,283.57	-17.68	1,283.69	359.21	1.02	0.00	120 °F	Green	11/21/14	5:20	237 (gpm)
110	5641.00	90.10	353.00	4752.36	1,311.38	1,313.35	-21.36	1,313.52	359.07	1.70	0.00	120 °F	Green	11/21/14	6:29	237 (gpm)
111	5671.00	90.50	353.40	4752.20	1,341.35	1,343.13	-24.92	1,343.36	358.94	1.89	0.00	120 °F	Green	11/21/14	7:18	237 (gpm)
112	5701.00	91.00	353.90	4751.81	1,371.33	1,372.95	-28.23	1,373.24	358.82	2.36	0.00	120 °F	Yellow	11/21/14	8:34	237 (gpm)
113	5731.00	90.60	353.30	4751.39	1,401.30	1,402.76	-31.58	1,403.11	358.71	2.40	0.00	122 °F	Red	11/21/14	9:32	237 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
 Well: Kaup 3407 #16-2H
 Field/Block: Mississippi Lime
 Co./Parish: Harper, Co.
 State: Kansas

PGS Job #: LKS6114914
 MWD Operator: Ronny Golightly
 Directional Driller: Jared Gooch
 Date of First Survey: November 13, 2014
 Date of Last Survey: November 26, 2014



Total Correction: 4.07 East Grid

Vertical Section Plane: 355.80 Nominal Dip Angle: 65.12 Magnetic Field Strength: 0.516

	Measured			Coordinates				Closure			Vib/Shk					
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS	Mtr Yield	Temp (°F)	Color	Date	Time	Flow Rate
114	5762.00	90.40	353.30	4751.12	1,432.27	1,433.54	-35.19	1,433.98	358.59	0.65	0.00	124 °F	Green	11/21/14	10:20	237 (gpm)
115	5821.00	89.70	353.40	4751.06	1,491.22	1,492.15	-42.03	1,492.74	358.39	1.20	0.00	127 °F	Yellow	11/21/14	11:40	237 (gpm)
116	5881.00	90.90	353.70	4750.75	1,551.17	1,551.76	-48.77	1,552.53	358.20	2.06	0.00	129 °F	Green	11/21/14	13:07	237 (gpm)
117	5943.00	91.30	354.20	4749.56	1,613.12	1,613.41	-55.30	1,614.36	358.04	1.03	0.00	131 °F	Yellow	11/21/14	15:05	237 (gpm)
118	6004.00	90.40	354.30	4748.66	1,674.10	1,674.09	-61.41	1,675.22	357.90	1.48	0.00	131 °F	Green	11/21/14	16:41	237 (gpm)
119	6064.00	89.50	353.80	4748.71	1,734.07	1,733.77	-67.63	1,735.09	357.77	1.72	0.00	133 °F	Green	11/21/14	18:17	237 (gpm)
120	6124.00	89.70	354.20	4749.13	1,794.04	1,793.44	-73.90	1,794.96	357.64	0.75	0.00	131 °F	Green	11/21/14	19:56	237 (gpm)
121	6185.00	91.80	354.80	4748.33	1,855.01	1,854.15	-79.75	1,855.86	357.54	3.58	0.00	136 °F	Green	11/21/14	21:08	237 (gpm)
122	6245.00	91.80	354.80	4746.44	1,914.97	1,913.87	-85.18	1,915.77	357.45	0.00	0.00	140 °F	Green	11/21/14	22:24	237 (gpm)
123	6305.00	91.40	354.70	4744.77	1,974.94	1,973.60	-90.67	1,975.68	357.37	0.69	0.00	144 °F	Green	11/22/14	0:10	237 (gpm)
124	6365.00	91.70	355.10	4743.15	2,034.91	2,033.34	-96.00	2,035.60	357.30	0.83	0.00	145 °F	Green	11/22/14	1:18	237 (gpm)
125	6426.00	91.60	355.00	4741.39	2,095.88	2,094.09	-101.26	2,096.53	357.23	0.23	0.00	147 °F	Green	11/22/14	2:42	237 (gpm)
126	6485.00	92.00	355.30	4739.54	2,154.85	2,152.85	-106.25	2,155.47	357.17	0.85	0.00	149 °F	Green	11/22/14	3:52	237 (gpm)
127	6546.00	91.80	355.50	4737.51	2,215.81	2,213.62	-111.14	2,216.40	357.13	0.46	0.00	151 °F	Green	11/22/14	5:11	237 (gpm)
128	6605.00	90.90	355.30	4736.12	2,274.79	2,272.41	-115.87	2,275.36	357.08	1.56	0.00	151 °F	Green	11/22/14	6:26	237 (gpm)
129	6666.00	90.60	354.50	4735.32	2,335.78	2,333.16	-121.29	2,336.31	357.02	1.40	0.00	153 °F	Yellow	11/22/14	8:10	237 (gpm)
130	6728.00	91.00	354.90	4734.46	2,397.76	2,394.89	-127.02	2,398.26	356.96	0.91	0.00	154 °F	Green	11/22/14	9:04	237 (gpm)
131	6789.00	91.30	355.10	4733.23	2,458.74	2,455.65	-132.33	2,459.21	356.92	0.59	0.00	154 °F	Green	11/22/14	10:21	237 (gpm)
132	6850.00	91.70	355.00	4731.64	2,519.72	2,516.40	-137.59	2,520.16	356.87	0.68	0.00	154 °F	Green	11/22/14	11:47	237 (gpm)
133	6910.00	91.70	354.00	4729.86	2,579.67	2,576.09	-143.34	2,580.08	356.82	1.67	0.00	156 °F	Green	11/22/14	13:29	237 (gpm)
134	6973.00	90.40	353.70	4728.70	2,642.62	2,638.72	-150.09	2,642.98	356.74	2.12	0.00	153 °F	Yellow	11/22/14	16:05	244 (gpm)
135	7036.00	90.20	354.10	4728.37	2,705.59	2,701.36	-156.78	2,705.91	356.68	0.71	0.00	154 °F	Yellow	11/22/14	19:06	244 (gpm)
136	7099.00	90.30	354.20	4728.10	2,768.56	2,764.03	-163.21	2,768.85	356.62	0.22	0.00	156 °F	Green	11/22/14	21:25	244 (gpm)
137	7161.00	91.10	354.10	4727.34	2,830.53	2,825.70	-169.52	2,830.79	356.57	1.30	0.00	156 °F	Green	11/23/14	0:15	244 (gpm)
138	7224.00	91.10	354.80	4726.13	2,893.50	2,888.40	-175.62	2,893.73	356.52	1.11	0.00	160 °F	Green	11/23/14	2:45	244 (gpm)
139	7287.00	90.90	354.80	4725.03	2,956.48	2,951.13	-181.33	2,956.69	356.48	0.32	0.00	160 °F	Yellow	11/23/14	5:08	244 (gpm)
140	7350.00	91.50	355.50	4723.71	3,019.46	3,013.89	-186.65	3,019.66	356.46	1.46	0.00	160 °F	Yellow	11/23/14	7:24	244 (gpm)
141	7413.00	93.00	356.00	4721.24	3,082.41	3,076.66	-191.32	3,082.61	356.44	2.51	0.00	162 °F	Yellow	11/23/14	9:00	244 (gpm)
142	7476.00	91.50	355.40	4718.77	3,145.36	3,139.44	-196.04	3,145.55	356.43	2.56	0.00	162 °F	Yellow	11/23/14	10:31	244 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
 Well: Kaup 3407 #16-2H
 Field/Block: Mississippi Lime
 Co./Parish: Harper, Co.
 State: Kansas

PGS Job #: LKS6114914
 MWD Operator: Ronny Golightly
 Directional Driller: Jared Gooch
 Date of First Survey: November 13, 2014
 Date of Last Survey: November 26, 2014



Total Correction: 4.07 East Grid

Vertical Section Plane: 355.80 Nominal Dip Angle: 65.12 Magnetic Field Strength: 0.516

Measured Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	Coordinates			Closure			DLS	Mtr Yield	Temp (°F)	Vib/Shk		
					+N / -S	+E / -W	Dist.	Angle	Color	Date				Time	Flow Rate	
143	7539.00	90.90	356.30	4717.45	3,208.35	3,202.26	-200.59	3,208.53	356.42	1.72	0.00	162 °F	Yellow	11/23/14	12:02	244 (gpm)
144	7603.00	89.70	354.40	4717.11	3,272.34	3,266.04	-205.78	3,272.52	356.39	3.51	0.00	163 °F	Yellow	11/23/14	13:51	244 (gpm)
145	7664.00	88.70	354.80	4717.96	3,333.32	3,326.76	-211.52	3,333.48	356.36	1.77	0.00	147 °F	Yellow	11/24/14	15:45	244 (gpm)
146	7728.00	89.50	355.40	4718.97	3,397.31	3,390.52	-216.99	3,397.46	356.34	1.56	0.00	147 °F	Yellow	11/24/14	17:45	244 (gpm)
147	7790.00	88.00	355.30	4720.32	3,459.29	3,452.30	-222.01	3,459.43	356.32	2.42	0.00	149 °F	Yellow	11/24/14	19:05	244 (gpm)
148	7853.00	87.60	355.10	4722.74	3,522.24	3,515.03	-227.28	3,522.37	356.30	0.71	0.00	149 °F	Yellow	11/24/14	20:41	244 (gpm)
149	7916.00	88.80	354.70	4724.72	3,585.20	3,577.75	-232.88	3,585.32	356.28	2.01	0.00	151 °F	Yellow	11/24/14	23:05	244 (gpm)
150	7979.00	89.00	354.60	4725.93	3,648.17	3,640.47	-238.75	3,648.29	356.25	0.35	0.00	151 °F	Yellow	11/25/14	2:06	244 (gpm)
151	8042.00	89.30	354.10	4726.86	3,711.15	3,703.15	-244.95	3,711.24	356.22	0.93	0.00	149 °F	Yellow	11/25/14	5:43	244 (gpm)
152	8074.00	89.80	353.90	4727.11	3,743.13	3,734.98	-248.30	3,743.22	356.20	1.68	0.00	149 °F	Yellow	11/25/14	8:07	244 (gpm)
153	8105.00	90.50	353.70	4727.03	3,774.11	3,765.79	-251.65	3,774.19	356.18	2.35	0.00	151 °F	Yellow	11/25/14	9:06	244 (gpm)
154	8137.00	90.60	354.10	4726.73	3,806.09	3,797.61	-255.05	3,806.17	356.16	1.29	0.00	153 °F	Yellow	11/25/14	9:54	244 (gpm)
155	8168.00	90.60	353.90	4726.40	3,837.08	3,828.44	-258.29	3,837.14	356.14	0.65	0.00	154 °F	Yellow	11/25/14	10:28	244 (gpm)
156	8200.00	90.60	354.00	4726.07	3,869.06	3,860.26	-261.66	3,869.12	356.12	0.31	0.00	153 °F	Yellow	11/25/14	11:12	244 (gpm)
157	8231.00	89.50	354.20	4726.04	3,900.04	3,891.10	-264.85	3,900.10	356.11	3.61	0.00	154 °F	Yellow	11/25/14	11:49	244 (gpm)
158	8263.00	89.20	354.80	4726.40	3,932.03	3,922.95	-267.91	3,932.08	356.09	2.10	0.00	153 °F	Yellow	11/25/14	12:37	244 (gpm)
159	8295.00	88.30	355.30	4727.10	3,964.02	3,954.82	-270.67	3,964.07	356.08	3.22	0.00	154 °F	Yellow	11/25/14	13:18	244 (gpm)
160	8326.00	87.80	355.40	4728.15	3,995.00	3,985.70	-273.18	3,995.05	356.08	1.64	0.00	154 °F	Yellow	11/25/14	13:59	244 (gpm)
161	8358.00	87.60	355.60	4729.44	4,026.98	4,017.57	-275.69	4,027.02	356.07	0.88	0.00	154 °F	Yellow	11/25/14	15:18	244 (gpm)
162	8389.00	87.80	354.90	4730.68	4,057.95	4,048.44	-278.26	4,057.99	356.07	2.35	0.00	153 °F	Yellow	11/25/14	16:24	244 (gpm)
163	8421.00	88.20	354.90	4731.80	4,089.93	4,080.30	-281.10	4,089.97	356.06	1.25	0.00	153 °F	Yellow	11/25/14	17:38	244 (gpm)
164	8452.00	88.60	355.60	4732.67	4,120.91	4,111.18	-283.67	4,120.95	356.05	2.60	0.00	154 °F	Yellow	11/25/14	18:37	244 (gpm)
165	8484.00	88.40	355.50	4733.50	4,152.90	4,143.07	-286.15	4,152.94	356.05	0.70	0.00	153 °F	Green	11/25/14	20:04	244 (gpm)
166	8516.00	88.70	355.40	4734.31	4,184.89	4,174.96	-288.69	4,184.93	356.04	0.99	0.00	153 °F	Green	11/25/14	21:31	244 (gpm)
167	8547.00	89.10	355.30	4734.91	4,215.88	4,205.85	-291.20	4,215.92	356.04	1.33	0.00	154 °F	Green	11/25/14	22:51	244 (gpm)
168	8579.00	89.40	355.60	4735.33	4,247.88	4,237.75	-293.74	4,247.92	356.03	1.33	0.00	153 °F	Yellow	11/26/14	0:12	244 (gpm)
169	8610.00	89.50	355.70	4735.62	4,278.88	4,268.66	-296.09	4,278.91	356.03	0.46	0.00	153 °F	Green	11/26/14	1:41	244 (gpm)
170	8642.00	89.80	355.40	4735.82	4,310.88	4,300.56	-298.57	4,310.91	356.03	1.33	0.00	153 °F	Green	11/26/14	3:01	244 (gpm)
171	8673.00	90.20	354.80	4735.82	4,341.87	4,331.45	-301.22	4,341.91	356.02	2.33	0.00	154 °F	Green	11/26/14	3:34	244 (gpm)

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Total Correction: 4.07 East Grid

Vertical Section Plane: 355.80 Nominal Dip Angle: 65.12 Magnetic Field Strength: 0.516

	<i>Measured</i>		<i>Coordinates</i>					<i>Closure</i>			<i>Vib/Shk</i>					
	<i>Depth</i>	<i>Inc.</i>	<i>Azm.</i>	<i>T.V.D.</i>	<i>Ver. Sect.</i>	<i>+N / -S</i>	<i>+E / -W</i>	<i>Dist.</i>	<i>Angle</i>	<i>DLS</i>	<i>Mtr Yield</i>	<i>Temp (°F)</i>	<i>Color</i>	<i>Date</i>	<i>Time</i>	<i>Flow Rate</i>
172	8705.00	90.20	355.30	4735.71	4,373.87	4,363.33	-303.98	4,373.90	356.01	1.56	0.00	156 °F	Green	11/26/14	4:28	244 (gpm)
173	8736.00	90.30	355.10	4735.57	4,404.87	4,394.22	-306.57	4,404.90	356.01	0.72	0.00	156 °F	Green	11/26/14	5:24	244 (gpm)
TD	8787.00	90.30	355.10	4735.31	4,455.87	4,445.03	-310.93	4,455.89	356.00	0.00						

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<i>Measured Depth</i>	<i>Inc.</i>	<i>Azm.</i>	<i>T.V.D.</i>	<i>Ver. Sect.</i>	<i>Coordinates</i>		<i>Closure</i>		<i>DLS</i>	<i>Mtr Yield</i>	<i>Temp (°F)</i>	<i>Vib/Shk Color</i>	<i>Date</i>	<i>Time</i>	<i>Flow Rate</i>
					<i>+N / -S</i>	<i>+E / -W</i>	<i>Dist.</i>	<i>Angle</i>							

MWD SURVEYS

Customer: Tapstone Energy
 Well: Kaup 3407 #16-2H
 Field/Block: Mississippi Lime
 Co./Parish: Harper, Co.
 State: Kansas

PGS Job #: LKS6114914
 MWD Operator: Ronny Golightly
 Directional Driller: Jared Gooch
 Date of First Survey: November 13, 2014
 Date of Last Survey: November 26, 2014



Total Correction: 4.07 East Grid

Vertical Section Plane: 355.80 Nominal Dip Angle: 65.12 Magnetic Field Strength: 0.516

<i>Measured</i>					<i>Coordinates</i>		<i>Closure</i>						<i>Vib/Shk</i>		
<i>Depth</i>	<i>Inc.</i>	<i>Azm.</i>	<i>T.V.D.</i>	<i>Ver. Sect.</i>	<i>+N / -S</i>	<i>+E / -W</i>	<i>Dist.</i>	<i>Angle</i>	<i>DLS</i>	<i>Mtr Yield</i>	<i>Temp (°F)</i>	<i>Color</i>	<i>Date</i>	<i>Time</i>	<i>Flow Rate</i>

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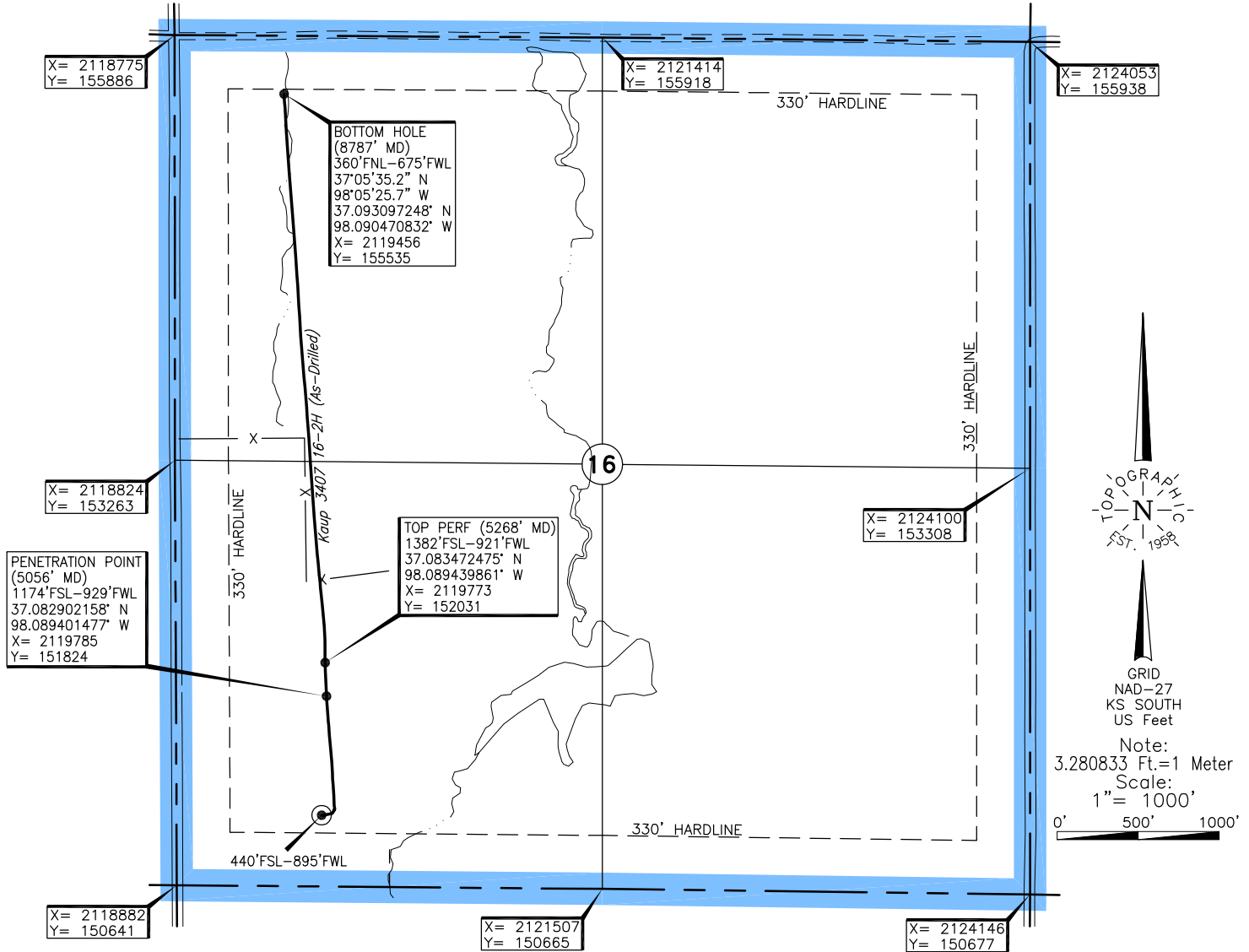
TOPOGRAPHIC LAND SURVEYORS

6709 NORTH CLASSEN BLVD., OKLA. CITY, OKLA. 73116 * LOCAL (405) 843-4847 * OUT OF STATE (800) 654-3219
 Certificate of Authorization No. LS-99, Exp. Dec. 31, 2015

HARPER

County, Kansas

440'FSL - 895'FWL Section 16 Township 34S Range 7W P.M.



Operator: TAPSTONE ENERGY

Lease Name: KAUP 3407

Well No.: 16-2H

ELEVATION:
1360' Gr. at level pad

Topography & Vegetation Loc. fell at level pad, ±175' West of pad edge

Good Drill Site? Yes Reference Stakes or Alternate Location
 Stakes Set None

Best Accessibility to Location From West off lease road

Distance & Direction
 from Hwy Jct or Town From Anthony, KS, go ±3.5 mi. West on St. Hwy. 14, then ±5.0 mi. South
 to the SW Cor. of Sec. 16-T34S-R7W

236921 Date of Drawing: Dec. 02, 2014

Invoice # 230466 Date Staked: Sep. 12, 2014

JP

This information was gathered with a GPS receiver with ±1 foot Horiz./Vert. accuracy

DATUM: NAD-27
 LAT: 37°04'51.2" N
 LONG: 98°05'22.1" W
 LAT: 37.080885701° N
 LONG: 98.089471995° W
 STATE PLANE
 COORDINATES: (US Feet)
 ZONE: KS SOUTH
 X: 2119767
 Y: 151090

FINAL AS-DRILLED PLAT

AS-DRILLED INFORMATION
 FURNISHED BY TAPSTONE ENERGY