

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1240292
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: _____

1240292

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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MWD SURVEYS

Customer: Tapstone Energy
 Well: Schubach 3410 33-2H
 Field/Block: Mississippi Lime
 Co./Parish: Barber Co.
 State: KS

PGS Job #: LKS6116515
 MWD Operator: Ken Mitchell
 Directional Driller: Kyle Underwood
 Date of First Survey: January 8, 2015
 Date of Last Survey: January 19, 2015



Total Correction: 4.42 East Grid

Vertical Section Plane: 0.88 Nominal Dip Angle: 65.06 Magnetic Field Strength: 0.515

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
Survey's are tied into: Assume Vertical at Casing Shoe @ 817'										Date Received: 01/08/15					
Company:															
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
1	841.00	0.40	216.70	840.99	-2.38	-2.35	-1.75	2.94	216.70	0.05	0.00	61 °F	Green	01/08/15	16:08 352 (gpm)
2	872.00	0.10	179.80	871.99	-2.50	-2.47	-1.82	3.07	216.40	1.05	0.00	64 °F	Green	01/08/15	16:51 584 (gpm)
3	904.00	0.70	50.00	903.99	-2.40	-2.37	-1.67	2.90	215.16	2.40	0.00	68 °F	Green	01/08/15	17:26 584 (gpm)
4	935.00	1.50	42.10	934.99	-1.97	-1.95	-1.25	2.31	212.74	2.62	0.00	70 °F	Green	01/08/15	17:55 584 (gpm)
5	967.00	2.50	39.20	966.97	-1.10	-1.10	-0.53	1.22	205.83	3.14	0.00	74 °F	Green	01/08/15	18:25 584 (gpm)
6	998.00	3.30	37.80	997.93	0.14	0.13	0.44	0.46	73.26	2.59	0.00	74 °F	Green	01/08/15	18:50 584 (gpm)
7	1030.00	4.00	36.90	1,029.86	1.78	1.75	1.68	2.43	43.75	2.19	0.00	77 °F	Green	01/08/15	19:20 584 (gpm)
8	1062.00	4.60	37.50	1,061.77	3.71	3.66	3.13	4.82	40.50	1.88	0.00	77 °F	Green	01/08/15	19:40 584 (gpm)
9	1093.00	4.80	34.90	1,092.67	5.78	5.71	4.63	7.35	39.01	0.94	0.00	78 °F	Green	01/08/15	20:00 584 (gpm)
10	1125.00	4.80	34.60	1,124.55	8.01	7.91	6.16	10.03	37.87	0.08	0.00	80 °F	Green	01/08/15	20:20 584 (gpm)
11	1188.00	4.70	32.80	1,187.34	12.39	12.25	9.05	15.23	36.45	0.28	0.00	80 °F	Green	01/08/15	20:55 584 (gpm)
12	1282.00	4.50	33.60	1,281.04	18.76	18.56	13.18	22.76	35.37	0.22	0.00	88 °F	Green	01/08/15	21:50 584 (gpm)
13	1377.00	4.50	31.70	1,375.74	25.10	24.84	17.20	30.21	34.70	0.16	0.00	88 °F	Green	01/08/15	22:25 584 (gpm)
14	1472.00	4.50	33.10	1,470.45	31.45	31.13	21.19	37.66	34.24	0.12	0.00	90 °F	Green	01/08/15	23:30 584 (gpm)
15	1567.00	3.70	25.60	1,565.21	37.39	37.02	24.55	44.42	33.55	1.01	0.00	97 °F	Green	01/09/15	1:20 584 (gpm)
16	1661.00	2.20	7.60	1,659.08	41.94	41.54	26.10	49.06	32.14	1.86	0.00	97 °F	Green	01/09/15	2:45 584 (gpm)
17	1755.00	0.70	300.10	1,753.05	44.01	43.62	25.84	50.70	30.65	2.17	0.00	100 °F	Green	01/09/15	3:45 584 (gpm)
18	1848.00	0.90	301.00	1,846.04	44.65	44.28	24.72	50.71	29.18	0.22	0.00	100 °F	Green	01/09/15	4:35 584 (gpm)
19	1942.00	0.30	193.30	1,940.04	44.78	44.42	24.04	50.50	28.42	1.10	0.00	100 °F	Green	01/09/15	5:50 584 (gpm)
20	2129.00	0.30	154.70	2,127.04	43.87	43.50	24.13	49.75	29.02	0.11	0.00	102 °F	Green	01/09/15	7:36 584 (gpm)
21	2317.00	0.30	187.30	2,315.04	42.93	42.57	24.28	49.00	29.70	0.09	0.00	102 °F	Green	01/09/15	9:19 584 (gpm)
22	2505.00	0.10	358.80	2,503.03	42.61	42.24	24.21	48.69	29.82	0.21	0.00	102 °F	Green	01/09/15	11:16 584 (gpm)
23	2696.00	0.10	228.00	2,694.03	42.66	42.30	24.09	48.67	29.66	0.10	0.00	102 °F	Green	01/09/15	13:00 584 (gpm)
24	2883.00	0.20	131.20	2,881.03	42.34	41.97	24.21	48.46	29.98	0.13	0.00	106 °F	Green	01/09/15	15:02 584 (gpm)
25	3070.00	0.30	174.80	3,068.03	41.64	41.27	24.50	48.00	30.70	0.11	0.00	72 °F	Green	01/09/15	19:50 584 (gpm)
26	3257.00	0.70	171.10	3,255.02	40.03	39.65	24.72	46.73	31.94	0.21	0.00	72 °F	Green	01/09/15	22:10 584 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
Well: Schubach 3410 33-2H
Field/Block: Mississippi Lime
Co./Parish: Barber Co.
State: KS

PGS Job #: LKS6116515
MWD Operator: Ken Mitchell
Directional Driller: Kyle Underwood
Date of First Survey: January 8, 2015
Date of Last Survey: January 19, 2015



Total Correction: 4.42 East Grid

Vertical Section Plane: 0.88 Nominal Dip Angle: 65.06 Magnetic Field Strength: 0.515

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	3352.00	0.60	154.10	3,350.02	39.01	38.63	25.03	46.03	32.94	0.23	0.00	84 °F	Green	01/09/15	23:00	584 (gpm)
28	3447.00	0.40	146.90	3,445.02	38.29	37.91	25.43	45.65	33.85	0.22	0.00	86 °F	Green	01/09/15	23:50	584 (gpm)
29	3541.00	0.40	131.50	3,539.01	37.81	37.42	25.85	45.48	34.64	0.11	0.00	86 °F	Green	01/10/15	0:45	584 (gpm)
30	3636.00	0.20	147.00	3,634.01	37.46	37.06	26.19	45.38	35.25	0.23	0.00	98 °F	Green	01/10/15	1:50	584 (gpm)
31	3731.00	0.00	117.70	3,729.01	37.32	36.92	26.28	45.32	35.45	0.21	0.00	98 °F	Green	01/10/15	3:10	584 (gpm)
32	3824.00	0.10	93.50	3,822.01	37.31	36.91	26.36	45.36	35.53	0.11	0.00	102 °F	Green	01/10/15	4:10	584 (gpm)
33	3918.00	0.10	170.90	3,916.01	37.23	36.83	26.46	45.35	35.69	0.13	0.00	102 °F	Green	01/10/15	6:06	384 (gpm)
34	3979.00	3.70	4.40	3,976.97	39.14	38.74	26.62	47.00	34.49	6.23	15.00	102 °F	Green	01/10/15	7:55	376 (gpm)
35	4010.00	8.60	7.20	4,007.78	42.45	42.04	26.98	49.95	32.70	15.83	15.80	102 °F	Yellow	01/10/15	9:28	376 (gpm)
36	4041.00	12.80	12.10	4,038.24	48.12	47.70	27.99	55.31	30.41	13.85	13.80	104 °F	Red	01/10/15	10:24	443 (gpm)
37	4073.00	14.90	12.10	4,069.30	55.63	55.19	29.60	62.62	28.21	6.56	11.70	104 °F	Green	01/10/15	11:09	443 (gpm)
38	4104.00	16.40	10.50	4,099.15	63.86	63.39	31.23	70.66	26.23	5.03	15.60	106 °F	Green	01/10/15	11:59	443 (gpm)
39	4135.00	17.90	8.60	4,128.78	72.90	72.40	32.74	79.46	24.33	5.16	17.80	106 °F	Green	01/10/15	12:38	489 (gpm)
40	4166.00	19.70	6.30	4,158.12	82.82	82.31	34.03	89.06	22.46	6.28	16.20	108 °F	Green	01/10/15	13:17	496 (gpm)
41	4198.00	21.30	4.80	4,188.09	93.99	93.46	35.11	99.84	20.59	5.26	13.00	108 °F	Green	01/10/15	14:17	496 (gpm)
42	4230.00	23.10	3.10	4,217.72	106.06	105.52	35.93	111.47	18.81	5.97	17.40	109 °F	Green	01/10/15	15:16	496 (gpm)
43	4261.00	25.10	1.90	4,246.02	118.71	118.17	36.48	123.67	17.16	6.64	17.50	111 °F	Green	01/10/15	16:12	496 (gpm)
44	4293.00	27.30	0.50	4,274.73	132.84	132.29	36.77	137.30	15.53	7.14	19.00	111 °F	Green	01/10/15	15:17	496 (gpm)
45	4325.00	29.80	359.90	4,302.83	148.13	147.58	36.82	152.10	14.01	7.86	18.00	113 °F	Green	01/10/15	18:40	496 (gpm)
46	4356.00	32.20	359.80	4,329.41	164.09	163.55	36.78	167.63	12.67	7.74	18.00	113 °F	Green	01/10/15	19:30	496 (gpm)
47	4387.00	34.50	0.20	4,355.30	181.13	180.59	36.78	184.29	11.51	7.45	20.00	115 °F	Green	01/10/15	20:35	496 (gpm)
48	4418.00	36.40	0.60	4,380.55	199.11	198.57	36.91	201.97	10.53	6.17	19.00	115 °F	Green	01/10/15	21:40	496 (gpm)
49	4449.00	38.20	0.40	4,405.21	217.89	217.35	37.07	220.49	9.68	5.82	18.00	115 °F	Green	01/10/15	22:50	496 (gpm)
50	4481.00	40.30	0.60	4,429.99	238.14	237.59	37.25	240.50	8.91	6.57	18.00	117 °F	Green	01/10/15	23:45	496 (gpm)
51	4513.00	42.60	0.60	4,453.97	259.32	258.77	37.47	261.47	8.24	7.19	18.00	118 °F	Green	01/11/15	0:45	496 (gpm)
52	4544.00	45.10	0.60	4,476.33	280.79	280.25	37.69	282.77	7.66	8.06	18.00	118 °F	Green	01/11/15	1:45	496 (gpm)
53	4576.00	47.30	1.40	4,498.47	303.89	303.34	38.10	305.72	7.16	7.11	18.00	120 °F	Green	01/11/15	2:55	496 (gpm)
54	4607.00	49.60	2.30	4,519.03	327.08	326.52	38.85	328.83	6.79	7.73	18.00	122 °F	Green	01/11/15	4:10	496 (gpm)
55	4639.00	52.20	2.80	4,539.21	351.90	351.33	39.96	353.60	6.49	8.21	18.00	122 °F	Green	01/11/15	5:10	496 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
Well: Schubach 3410 33-2H
Field/Block: Mississippi Lime
Co./Parish: Barber Co.
State: KS

PGS Job #: LKS6116515
MWD Operator: Ken Mitchell
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Date of First Survey: January 8, 2015
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Total Correction: 4.42 East Grid

Vertical Section Plane: 0.88 Nominal Dip Angle: 65.06 Magnetic Field Strength: 0.515

	Measured		Coordinates				Closure			Mtr Yield	Temp (°F)	Vib/Shk				
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N/-S	+E/-W	Dist.	Angle			DLS	Color	Date	Time	Flow Rate
56	4671.00	54.90	2.40	4,558.22	377.63	377.04	41.12	379.28	6.22	8.50	17.00	122 °F	Green	01/11/15	6:21	496 (gpm)
57	4703.00	57.50	2.00	4,576.02	404.21	403.61	42.14	405.81	5.96	8.19	17.50	126 °F	Green	01/11/15	7:28	496 (gpm)
58	4735.00	59.90	1.30	4,592.65	431.55	430.94	42.93	433.07	5.69	7.73	20.60	126 °F	Green	01/11/15	8:51	496 (gpm)
59	4767.00	62.30	1.50	4,608.11	459.56	458.95	43.61	461.01	5.43	7.52	20.00	126 °F	Green	01/11/15	10:03	496 (gpm)
60	4798.00	63.20	1.50	4,622.31	487.12	486.49	44.33	488.51	5.21	2.90	0.00	127 °F	Green	01/11/15	11:09	496 (gpm)
61	4830.00	64.00	1.50	4,636.53	515.78	515.15	45.09	517.12	5.00	2.50	0.00	126 °F	Green	01/11/15	12:14	496 (gpm)
62	4861.00	64.50	1.50	4,650.00	543.70	543.06	45.82	544.99	4.82	1.61	0.00	126 °F	Green	01/11/15	13:21	496 (gpm)
63	4893.00	64.90	1.30	4,663.68	572.63	571.98	46.52	573.87	4.65	1.37	0.00	126 °F	Green	01/11/15	14:23	496 (gpm)
64	4924.00	65.40	1.30	4,676.70	600.76	600.10	47.16	601.95	4.49	1.61	0.00	126 °F	Green	01/11/15	15:28	496 (gpm)
65	4956.00	65.30	1.20	4,690.05	629.84	629.18	47.80	630.99	4.34	0.42	0.00	127 °F	Green	01/11/15	16:44	496 (gpm)
66	4987.00	65.30	1.00	4,703.00	658.00	657.34	48.34	659.11	4.21	0.59	0.00	127 °F	Green	01/11/15	17:30	496 (gpm)
67	5019.00	67.90	0.70	4,715.71	687.37	686.70	48.77	688.43	4.06	8.17	18.00	127 °F	Green	01/11/15	19:00	496 (gpm)
68	5050.00	70.90	1.00	4,726.62	716.38	715.71	49.20	717.40	3.93	9.72	18.00	127 °F	Green	01/11/15	20:35	496 (gpm)
69	5082.00	73.80	1.00	4,736.32	746.87	746.20	49.73	747.85	3.81	9.06	18.00	126 °F	Green	01/11/15	21:45	496 (gpm)
70	5113.00	76.50	0.90	4,744.26	776.84	776.16	50.23	777.78	3.70	8.72	18.00	124 °F	Green	01/11/15	23:05	496 (gpm)
71	5145.00	79.00	0.80	4,751.05	808.11	807.42	50.69	809.01	3.59	7.82	20.00	124 °F	Green	01/12/15	0:30	440 (gpm)
72	5176.00	80.90	1.00	4,756.46	838.63	837.94	51.17	839.50	3.49	6.16	20.00	124 °F	Green	01/12/15	2:30	440 (gpm)
73	5207.00	82.30	1.40	4,760.99	869.29	868.60	51.82	870.15	3.41	4.69	15.00	124 °F	Green	01/12/15	4:10	440 (gpm)
74	5239.00	83.80	1.30	4,764.86	901.06	900.36	52.56	901.89	3.34	4.70	15.00	122 °F	Green	01/12/15	6:01	440 (gpm)
75	5304.00	86.60	1.30	4,770.30	965.82	965.11	54.03	966.62	3.20	4.31	0.00	124 °F	Yellow	01/14/15	7:00	218 (gpm)
76	5336.00	87.50	0.60	4,771.95	997.78	997.06	54.56	998.55	3.13	3.56	0.00	124 °F	Green	01/14/15	8:07	249 (gpm)
77	5368.00	87.70	0.60	4,773.29	1,029.75	1,029.03	54.90	1,030.49	3.05	0.63	0.00	124 °F	Green	01/14/15	9:17	249 (gpm)
78	5399.00	88.30	0.40	4,774.37	1,060.73	1,060.01	55.17	1,061.44	2.98	2.04	0.00	126 °F	Yellow	01/14/15	10:21	249 (gpm)
79	5431.00	89.40	359.90	4,775.01	1,092.72	1,092.00	55.25	1,093.40	2.90	3.78	0.00	126 °F	Green	01/14/15	11:20	249 (gpm)
80	5463.00	90.90	358.70	4,774.93	1,124.71	1,124.00	54.86	1,125.33	2.79	6.00	0.00	127 °F	Green	01/14/15	12:22	249 (gpm)
81	5494.00	91.70	358.40	4,774.23	1,155.67	1,154.98	54.08	1,156.24	2.68	2.76	0.00	129 °F	Green	01/14/15	13:14	249 (gpm)
82	5526.00	91.70	358.40	4,773.28	1,187.63	1,186.95	53.18	1,188.14	2.57	0.00	0.00	129 °F	Green	01/14/15	13:45	249 (gpm)
83	5557.00	91.70	358.80	4,772.36	1,218.59	1,217.93	52.43	1,219.06	2.46	1.29	0.00	131 °F	Green	01/14/15	14:38	249 (gpm)
84	5589.00	91.80	359.00	4,771.38	1,250.56	1,249.91	51.81	1,250.98	2.37	0.70	0.00	131 °F	Green	01/14/15	15:23	249 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
 Well: Schubach 3410 33-2H
 Field/Block: Mississippi Lime
 Co./Parish: Barber Co.
 State: KS

PGS Job #: LKS6116515
 MWD Operator: Ken Mitchell
 Directional Driller: Kyle Underwood
 Date of First Survey: January 8, 2015
 Date of Last Survey: January 19, 2015



Total Correction: 4.42 East Grid

Vertical Section Plane: 0.88 Nominal Dip Angle: 65.06 Magnetic Field Strength: 0.515

	Measured		Coordinates				Closure			Mtr Yield	Temp (°F)	Vib/Shk				
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N/-S	+E/-W	Dist.	Angle			DLS	Color	Date	Time	Flow Rate
85	5620.00	91.70	358.80	4,770.43	1,281.52	1,280.89	51.22	1,281.91	2.29	0.72	0.00	131 °F	Green	01/14/15	16:11	249 (gpm)
86	5651.00	91.30	358.80	4,769.62	1,312.49	1,311.87	50.57	1,312.84	2.21	1.29	0.00	131 °F	Green	01/14/15	16:55	249 (gpm)
87	5681.00	91.20	359.70	4,768.97	1,342.47	1,341.86	50.18	1,342.80	2.14	3.02	0.00	133 °F	Green	01/14/15	17:28	249 (gpm)
88	5712.00	90.70	0.90	4,768.45	1,373.47	1,372.86	50.34	1,373.78	2.10	4.19	0.00	133 °F	Green	01/14/15	18:05	249 (gpm)
89	5742.00	90.20	2.10	4,768.22	1,403.46	1,402.84	51.12	1,403.77	2.09	4.33	0.00	135 °F	Green	01/14/15	18:40	249 (gpm)
90	5772.00	89.90	2.00	4,768.19	1,433.46	1,432.82	52.20	1,433.77	2.09	1.05	0.00	135 °F	Green	01/14/15	19:50	249 (gpm)
91	5803.00	89.80	1.70	4,768.27	1,464.45	1,463.81	53.20	1,464.77	2.08	1.02	0.00	135 °F	Green	01/14/15	20:30	249 (gpm)
92	5834.00	89.80	1.60	4,768.38	1,495.45	1,494.79	54.09	1,495.77	2.07	0.32	0.00	135 °F	Green	01/14/15	21:25	249 (gpm)
93	5864.00	90.10	0.80	4,768.41	1,525.45	1,524.79	54.72	1,525.77	2.06	2.85	0.00	135 °F	Green	01/14/15	22:00	249 (gpm)
94	5894.00	89.70	1.20	4,768.46	1,555.45	1,554.78	55.24	1,555.76	2.03	1.89	0.00	136 °F	Green	01/14/15	22:50	249 (gpm)
95	5924.00	90.20	1.40	4,768.48	1,585.45	1,584.78	55.92	1,585.76	2.02	1.80	0.00	136 °F	Green	01/14/15	23:45	249 (gpm)
96	5955.00	91.40	1.00	4,768.05	1,616.44	1,615.76	56.57	1,616.75	2.01	4.08	0.00	133 °F	Green	01/15/15	0:30	249 (gpm)
97	5986.00	91.60	1.10	4,767.24	1,647.43	1,646.75	57.14	1,647.74	1.99	0.72	0.00	130 °F	Green	01/15/15	1:15	249 (gpm)
98	6016.00	91.80	1.00	4,766.35	1,677.42	1,676.73	57.69	1,677.72	1.97	0.75	0.00	133 °F	Green	01/15/15	2:00	249 (gpm)
99	6046.00	91.70	1.80	4,765.43	1,707.40	1,706.71	58.42	1,707.71	1.96	2.69	0.00	133 °F	Green	01/15/15	3:00	249 (gpm)
100	6076.00	91.70	1.80	4,764.54	1,737.39	1,736.68	59.36	1,737.69	1.96	0.00	0.00	133 °F	Green	01/15/15	3:45	249 (gpm)
101	6107.00	91.60	2.00	4,763.65	1,768.37	1,767.65	60.39	1,768.68	1.96	0.72	0.00	133 °F	Green	01/15/15	4:35	249 (gpm)
102	6138.00	90.70	1.70	4,763.03	1,799.36	1,798.63	61.39	1,799.67	1.95	3.06	0.00	136 °F	Green	01/15/15	5:05	249 (gpm)
103	6167.00	90.20	1.70	4,762.80	1,828.35	1,827.61	62.25	1,828.67	1.95	1.72	0.00	136 °F	Green	01/15/15	5:27	249 (gpm)
104	6197.00	89.80	2.20	4,762.80	1,858.35	1,857.60	63.27	1,858.67	1.95	2.13	0.00	135 °F	Green	01/15/15	5:57	249 (gpm)
105	6228.00	89.60	2.50	4,762.96	1,889.34	1,888.57	64.54	1,889.67	1.96	1.16	0.00	135 °F	Green	01/15/15	6:34	249 (gpm)
106	6259.00	90.10	2.20	4,763.05	1,920.33	1,919.54	65.82	1,920.67	1.96	1.88	0.00	136 °F	Green	01/15/15	7:00	249 (gpm)
107	6289.00	89.90	2.10	4,763.05	1,950.32	1,949.52	66.94	1,950.67	1.97	0.75	0.00	136 °F	Yellow	01/15/15	7:43	249 (gpm)
108	6320.00	90.20	1.60	4,763.02	1,981.32	1,980.51	67.94	1,981.67	1.96	1.88	0.00	136 °F	Green	01/15/15	8:23	246 (gpm)
109	6381.00	91.40	1.30	4,762.17	2,042.30	2,041.48	69.49	2,042.66	1.95	2.03	0.00	138 °F	Green	01/15/15	9:26	249 (gpm)
110	6411.00	91.90	1.30	4,761.30	2,072.29	2,071.46	70.17	2,072.65	1.94	1.67	0.00	140 °F	Green	01/15/15	9:55	249 (gpm)
111	6442.00	91.70	1.60	4,760.33	2,103.27	2,102.43	70.95	2,103.63	1.93	1.16	0.00	140 °F	Green	01/15/15	10:22	249 (gpm)
112	6473.00	91.40	1.80	4,759.49	2,134.26	2,133.41	71.87	2,134.62	1.93	1.16	0.00	140 °F	Green	01/15/15	10:51	249 (gpm)
113	6503.00	91.30	2.10	4,758.78	2,164.25	2,163.38	72.89	2,164.61	1.93	1.05	0.00	140 °F	Green	01/15/15	11:16	249 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
 Well: Schubach 3410 33-2H
 Field/Block: Mississippi Lime
 Co./Parish: Barber Co.
 State: KS

PGS Job #: LKS6116515
 MWD Operator: Ken Mitchell
 Directional Driller: Kyle Underwood
 Date of First Survey: January 8, 2015
 Date of Last Survey: January 19, 2015



Total Correction: 4.42 East Grid

Vertical Section Plane: 0.88 Nominal Dip Angle: 65.06 Magnetic Field Strength: 0.515

	Measured		Coordinates				Closure			Vib/Shk			Date	Time	Flow Rate	
	Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N/-S	+E/-W	Dist.	Angle	DLS	Mtr Yield	Temp (°F)				Color
114	6533.00	91.40	2.50	4,758.08	2,194.23	2,193.35	74.09	2,194.60	1.93	1.37	0.00	140 °F	Green	01/15/15	11:46	249 (gpm)
115	6563.00	91.00	2.70	4,757.45	2,224.21	2,223.31	75.45	2,224.59	1.94	1.49	0.00	140 °F	Green	01/15/15	12:35	249 (gpm)
116	6594.00	90.60	2.20	4,757.02	2,255.19	2,254.28	76.78	2,255.59	1.95	2.07	0.00	142 °F	Green	01/15/15	13:22	249 (gpm)
117	6655.00	90.20	1.50	4,756.59	2,316.18	2,315.25	78.75	2,316.59	1.95	1.32	0.00	142 °F	Green	01/15/15	14:59	249 (gpm)
118	6685.00	90.10	1.70	4,756.51	2,346.18	2,345.24	79.59	2,346.59	1.94	0.75	0.00	142 °F	Green	01/15/15	15:35	249 (gpm)
119	6746.00	89.70	1.30	4,756.62	2,407.18	2,406.21	81.18	2,407.58	1.93	0.93	0.00	144 °F	Green	01/15/15	17:03	249 (gpm)
120	6776.00	89.80	1.40	4,756.75	2,437.18	2,436.21	81.89	2,437.58	1.93	0.47	0.00	144 °F	Yellow	01/15/15	17:50	249 (gpm)
121	6806.00	89.40	1.60	4,756.96	2,467.17	2,466.19	82.67	2,467.58	1.92	1.49	0.00	144 °F	Green	01/15/15	18:26	249 (gpm)
122	6836.00	89.10	1.90	4,757.35	2,497.17	2,496.18	83.59	2,497.58	1.92	1.41	0.00	144 °F	Yellow	01/15/15	19:21	249 (gpm)
123	6866.00	89.20	1.30	4,757.80	2,527.16	2,526.16	84.43	2,527.57	1.91	2.03	0.00	144 °F	Yellow	01/15/15	19:56	249 (gpm)
124	6897.00	89.50	1.30	4,758.15	2,558.16	2,557.15	85.13	2,558.57	1.91	0.97	0.00	144 °F	Yellow	01/15/15	20:43	249 (gpm)
125	6926.00	90.20	1.20	4,758.22	2,587.16	2,586.15	85.76	2,587.57	1.90	2.44	0.00	144 °F	Yellow	01/15/15	21:16	249 (gpm)
126	6956.00	90.50	1.30	4,758.04	2,617.16	2,616.14	86.42	2,617.56	1.89	1.05	0.00	144 °F	Yellow	01/15/15	21:47	249 (gpm)
127	6987.00	90.40	1.40	4,757.80	2,648.15	2,647.13	87.15	2,648.56	1.89	0.46	0.00	144 °F	Yellow	01/15/15	22:37	249 (gpm)
128	7016.00	90.80	1.20	4,757.49	2,677.15	2,676.12	87.81	2,677.56	1.88	1.54	0.00	144 °F	Yellow	01/15/15	23:11	249 (gpm)
129	7046.00	91.40	1.00	4,756.92	2,707.15	2,706.11	88.38	2,707.55	1.87	2.11	0.00	144 °F	Yellow	01/16/15	0:09	249 (gpm)
130	7075.00	91.50	0.20	4,756.18	2,736.14	2,735.10	88.69	2,736.53	1.86	2.78	0.00	144 °F	Yellow	01/16/15	0:47	249 (gpm)
131	7106.00	91.60	0.20	4,755.34	2,767.12	2,766.08	88.79	2,767.51	1.84	0.32	0.00	145 °F	Yellow	01/16/15	1:42	249 (gpm)
132	7136.00	91.50	0.20	4,754.53	2,797.11	2,796.07	88.90	2,797.49	1.82	0.33	0.00	145 °F	Yellow	01/16/15	2:28	249 (gpm)
133	7166.00	91.70	0.40	4,753.70	2,827.10	2,826.06	89.06	2,827.46	1.80	0.94	0.00	145 °F	Yellow	01/16/15	3:03	249 (gpm)
134	7197.00	91.80	0.70	4,752.75	2,858.08	2,857.05	89.35	2,858.44	1.79	1.02	0.00	145 °F	Yellow	01/16/15	4:00	249 (gpm)
135	7228.00	91.50	0.20	4,751.86	2,889.07	2,888.03	89.60	2,889.42	1.78	1.88	0.00	145 °F	Yellow	01/16/15	4:37	249 (gpm)
136	7259.00	91.10	359.80	4,751.15	2,920.06	2,919.02	89.60	2,920.40	1.76	1.82	0.00	144 °F	Yellow	01/16/15	5:20	249 (gpm)
137	7289.00	90.60	0.00	4,750.71	2,950.05	2,949.02	89.54	2,950.38	1.74	1.80	0.00	144 °F	Yellow	01/16/15	5:57	249 (gpm)
138	7319.00	90.50	0.30	4,750.42	2,980.04	2,979.02	89.62	2,980.37	1.72	1.05	0.00	145 °F	Yellow	01/16/15	6:41	249 (gpm)
139	7350.00	90.20	0.30	4,750.23	3,011.04	3,010.02	89.79	3,011.36	1.71	0.97	0.00	147 °F	Yellow	01/16/15	7:17	249 (gpm)
140	7380.00	90.00	0.20	4,750.18	3,041.04	3,040.02	89.92	3,041.35	1.69	0.75	0.00	147 °F	Yellow	01/16/15	8:16	249 (gpm)
141	7411.00	90.10	359.90	4,750.15	3,072.04	3,071.02	89.94	3,072.33	1.68	1.02	0.00	147 °F	Yellow	01/16/15	8:59	249 (gpm)
142	7470.00	89.90	359.90	4,750.15	3,131.03	3,130.02	89.84	3,131.31	1.64	0.34	0.00	147 °F	Yellow	01/16/15	10:02	249 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
Well: Schubach 3410 33-2H
Field/Block: Mississippi Lime
Co./Parish: Barber Co.
State: KS

PGS Job #: LKS6116515
MWD Operator: Ken Mitchell
Directional Driller: Kyle Underwood
Date of First Survey: January 8, 2015
Date of Last Survey: January 19, 2015



Total Correction: 4.42 East Grid

Vertical Section Plane: 0.88 Nominal Dip Angle: 65.06 Magnetic Field Strength: 0.515

	<i>Measured</i>		<i>Coordinates</i>				<i>Closure</i>			<i>Mtr Yield</i>	<i>Temp (°F)</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>Color</i>	<i>Date</i>	<i>Time</i>	<i>Flow Rate</i>
143	7534.00	89.30	358.80	4,750.60	3,195.00	3,194.01	89.11	3,195.25	1.60	1.96	0.00	147 °F	Yellow	01/16/15	11:11	249 (gpm)
144	7565.00	89.10	358.40	4,751.03	3,225.97	3,225.00	88.36	3,226.21	1.57	1.44	0.00	147 °F	Yellow	01/16/15	12:22	249 (gpm)
145	7597.00	89.50	357.80	4,751.42	3,257.93	3,256.98	87.30	3,258.15	1.54	2.25	0.00	145 °F	Yellow	01/16/15	13:09	249 (gpm)
146	7628.00	89.50	357.80	4,751.69	3,288.89	3,287.95	86.11	3,289.08	1.50	0.00	0.00	145 °F	Yellow	01/16/15	14:05	249 (gpm)
147	7660.00	90.70	358.20	4,751.64	3,320.85	3,319.93	84.99	3,321.02	1.47	3.95	0.00	144 °F	Yellow	01/17/15	1:00	250 (gpm)
148	7691.00	91.50	358.40	4,751.04	3,351.81	3,350.91	84.07	3,351.97	1.44	2.66	0.00	144 °F	Yellow	01/17/15	1:37	250 (gpm)
149	7723.00	92.30	359.10	4,749.98	3,383.77	3,382.89	83.37	3,383.92	1.41	3.32	0.00	144 °F	Yellow	01/17/15	2:13	250 (gpm)
150	7754.00	92.80	359.30	4,748.60	3,414.73	3,413.85	82.94	3,414.86	1.39	1.74	0.00	145 °F	Yellow	01/17/15	2:58	250 (gpm)
151	7786.00	93.40	359.30	4,746.87	3,446.67	3,445.80	82.55	3,446.79	1.37	1.88	0.00	145 °F	Yellow	01/17/15	4:33	250 (gpm)
152	7817.00	93.30	359.20	4,745.06	3,477.60	3,476.75	82.14	3,477.72	1.35	0.46	0.00	145 °F	Yellow	01/17/15	5:05	250 (gpm)
153	7849.00	93.90	359.40	4,743.05	3,509.53	3,508.68	81.75	3,509.64	1.33	1.98	0.00	145 °F	Yellow	01/17/15	6:15	250 (gpm)
154	7881.00	93.80	359.70	4,740.90	3,541.44	3,540.61	81.50	3,541.55	1.32	0.99	0.00	145 °F	Yellow	01/17/15	7:05	250 (gpm)
155	7912.00	93.50	359.20	4,738.93	3,572.37	3,571.55	81.21	3,572.47	1.30	1.88	0.00	145 °F	Yellow	01/17/15	8:02	250 (gpm)
156	7943.00	92.90	358.90	4,737.20	3,603.31	3,602.49	80.69	3,603.40	1.28	2.16	0.00	145 °F	Yellow	01/17/15	9:25	250 (gpm)
157	7974.00	92.00	358.30	4,735.87	3,634.25	3,633.46	79.94	3,634.33	1.26	3.49	0.00	145 °F	Yellow	01/17/15	10:34	250 (gpm)
158	8006.00	91.40	358.90	4,734.92	3,666.21	3,665.43	79.16	3,666.29	1.24	2.65	0.00	147 °F	Yellow	01/17/15	11:47	250 (gpm)
159	8037.00	90.80	359.20	4,734.33	3,697.19	3,696.42	78.64	3,697.26	1.22	2.16	0.00	147 °F	Yellow	01/17/15	13:18	250 (gpm)
160	8069.00	90.20	359.10	4,734.05	3,729.18	3,728.42	78.17	3,729.24	1.20	1.90	0.00	147 °F	Yellow	01/17/15	14:52	250 (gpm)
161	8101.00	89.60	359.20	4,734.10	3,761.16	3,760.41	77.69	3,761.21	1.18	1.90	0.00	147 °F	Yellow	01/17/15	13:29	250 (gpm)
162	8132.00	90.10	359.10	4,734.19	3,792.15	3,791.41	77.23	3,792.20	1.17	1.64	0.00	149 °F	Yellow	01/17/15	16:06	250 (gpm)
163	8164.00	90.90	359.10	4,733.91	3,824.13	3,823.40	76.73	3,824.17	1.15	2.50	0.00	147 °F	Yellow	01/17/15	17:10	250 (gpm)
164	8196.00	90.70	358.90	4,733.46	3,856.11	3,855.40	76.17	3,856.15	1.13	0.88	0.00	149 °F	Yellow	01/17/15	18:27	250 (gpm)
165	8227.00	90.20	359.00	4,733.22	3,887.09	3,886.39	75.60	3,887.12	1.11	1.64	0.00	149 °F	Yellow	01/17/15	19:48	250 (gpm)
166	8259.00	89.30	358.80	4,733.36	3,919.07	3,918.38	74.99	3,919.10	1.10	2.88	0.00	147 °F	Yellow	01/17/15	20:56	250 (gpm)
167	8291.00	88.60	358.80	4,733.94	3,951.05	3,950.37	74.32	3,951.07	1.08	2.19	0.00	147 °F	Yellow	01/17/15	21:44	250 (gpm)
168	8322.00	88.30	359.00	4,734.78	3,982.02	3,981.35	73.72	3,982.04	1.06	1.16	0.00	149 °F	Yellow	01/17/15	22:30	250 (gpm)
169	8354.00	88.60	359.30	4,735.65	4,013.99	4,013.34	73.25	4,014.01	1.05	1.33	0.00	149 °F	Yellow	01/17/15	23:43	250 (gpm)
170	8385.00	88.80	359.40	4,736.35	4,044.97	4,044.33	72.90	4,044.98	1.03	0.72	0.00	149 °F	Yellow	01/18/15	0:13	250 (gpm)
171	8417.00	88.90	359.80	4,736.99	4,076.96	4,076.32	72.67	4,076.97	1.02	1.29	0.00	149 °F	Yellow	01/18/15	1:17	250 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
Well: Schubach 3410 33-2H
Field/Block: Mississippi Lime
Co./Parish: Barber Co.
State: KS

PGS Job #: LKS6116515
MWD Operator: Ken Mitchell
Directional Driller: Kyle Underwood
Date of First Survey: January 8, 2015
Date of Last Survey: January 19, 2015



Total Correction: 4.42 East Grid

Vertical Section Plane: 0.88 Nominal Dip Angle: 65.06 Magnetic Field Strength: 0.515

<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	8448.00	88.30	0.30	4,737.75	4,107.94	4,107.31	72.70	4,107.95	1.01	2.52	0.00	147 °F	Yellow	01/18/15	1:53	250 (gpm)
173	8480.00	88.90	1.10	4,738.53	4,139.93	4,139.30	73.09	4,139.94	1.01	3.12	0.00	147 °F	Yellow	01/18/15	2:22	250 (gpm)
174	8511.00	88.30	1.00	4,739.29	4,170.92	4,170.28	73.66	4,170.93	1.01	1.96	0.00	147 °F	Yellow	01/18/15	3:38	250 (gpm)
175	8543.00	87.40	1.20	4,740.49	4,202.90	4,202.25	74.27	4,202.91	1.01	2.88	0.00	147 °F	Yellow	01/18/15	5:04	250 (gpm)
176	8574.00	87.90	1.30	4,741.76	4,233.87	4,233.22	74.95	4,233.88	1.01	1.64	0.00	147 °F	Yellow	01/18/15	5:58	250 (gpm)
177	8606.00	88.60	1.70	4,742.74	4,265.86	4,265.20	75.79	4,265.87	1.02	2.52	0.00	149 °F	Yellow	01/18/15	7:23	250 (gpm)
178	8637.00	89.40	2.40	4,743.28	4,296.84	4,296.17	76.90	4,296.86	1.03	3.43	0.00	151 °F	Yellow	01/18/15	8:28	250 (gpm)
179	8669.00	90.30	2.60	4,743.36	4,328.83	4,328.14	78.29	4,328.85	1.04	2.88	0.00	151 °F	Yellow	01/18/15	9:43	250 (gpm)
180	8700.00	90.90	2.90	4,743.04	4,359.81	4,359.10	79.78	4,359.83	1.05	2.16	0.00	153 °F	Yellow	01/18/15	10:29	250 (gpm)
181	8732.00	91.30	2.90	4,742.42	4,391.79	4,391.05	81.40	4,391.81	1.06	1.25	0.00	153 °F	Yellow	01/18/15	11:21	250 (gpm)
182	8763.00	91.30	3.50	4,741.72	4,422.75	4,422.00	83.13	4,422.78	1.08	1.93	0.00	151 °F	Yellow	01/18/15	13:06	250 (gpm)
183	8795.00	91.20	3.60	4,741.02	4,454.71	4,453.93	85.11	4,454.74	1.09	0.44	0.00	153 °F	Yellow	01/18/15	14:11	250 (gpm)
184	8826.00	91.30	4.00	4,740.35	4,485.66	4,484.85	87.16	4,485.70	1.11	1.33	0.00	151 °F	Yellow	01/18/15	16:09	250 (gpm)
185	8858.00	91.10	3.80	4,739.68	4,517.61	4,516.77	89.34	4,517.66	1.13	0.88	0.00	153 °F	Yellow	01/18/15	18:03	250 (gpm)
186	8889.00	90.80	3.50	4,739.16	4,548.57	4,547.71	91.31	4,548.62	1.15	1.37	0.00	149 °F	Yellow	01/19/15	7:34	246 (gpm)
187	8921.00	89.40	2.60	4,739.11	4,580.55	4,579.66	93.01	4,580.60	1.16	5.20	0.00	151 °F	Yellow	01/19/15	8:13	246 (gpm)
188	8953.00	89.80	2.90	4,739.33	4,612.53	4,611.62	94.55	4,612.59	1.17	1.56	0.00	151 °F	Yellow	01/19/15	8:50	246 (gpm)
189	8985.00	90.10	3.50	4,739.36	4,644.50	4,643.57	96.34	4,644.57	1.19	2.10	0.00	153 °F	Yellow	01/19/15	9:43	246 (gpm)
190	9016.00	89.30	2.60	4,739.52	4,675.48	4,674.53	97.99	4,675.55	1.20	3.88	0.00	153 °F	Yellow	01/19/15	10:37	246 (gpm)
191	9048.00	88.20	1.80	4,740.22	4,707.46	4,706.49	99.21	4,707.54	1.21	4.25	0.00	153 °F	Yellow	01/19/15	11:12	246 (gpm)
192	9079.00	88.30	1.70	4,741.16	4,738.44	4,737.47	100.16	4,738.52	1.21	0.46	0.00	153 °F	Yellow	01/19/15	11:54	246 (gpm)
193	9111.00	88.30	2.00	4,742.11	4,770.43	4,769.43	101.19	4,770.51	1.22	0.94	0.00	154 °F	Yellow	01/19/15	12:30	246 (gpm)
194	9142.00	88.30	2.10	4,743.03	4,801.41	4,800.40	102.30	4,801.49	1.22	0.32	0.00	154 °F	Yellow	01/19/15	13:20	246 (gpm)
195	9173.00	89.00	2.20	4,743.76	4,832.39	4,831.37	103.46	4,832.48	1.23	2.28	0.00	154 °F	Yellow	01/19/15	14:27	246 (gpm)
196	9205.00	89.30	1.70	4,744.24	4,864.38	4,863.35	104.55	4,864.47	1.23	1.82	0.00	153 °F	Yellow	01/19/15	15:16	246 (gpm)
197	9236.00	89.60	1.00	4,744.54	4,895.38	4,894.34	105.28	4,895.47	1.23	2.46	0.00	154 °F	Yellow	01/19/15	16:08	246 (gpm)
198	9268.00	90.40	0.90	4,744.54	4,927.38	4,926.33	105.81	4,927.47	1.23	2.52	0.00	154 °F	Yellow	01/19/15	16:45	246 (gpm)
199	9299.00	90.50	0.60	4,744.29	4,958.38	4,957.33	106.22	4,958.47	1.23	1.02	0.00	154 °F	Yellow	01/19/15	17:21	246 (gpm)
200	9331.00	90.10	0.60	4,744.12	4,990.38	4,989.33	106.55	4,990.47	1.22	1.25	0.00	154 °F	Yellow	01/19/15	18:00	246 (gpm)

MWD SURVEYS

Customer: Tapstone Energy
 Well: Schupbach 3410 33-2H
 Field/Block: Mississippi Lime
 Co./Parish: Barber Co.
 State: KS

PGS Job #: LKS6116515
 MWD Operator: Ken Mitchell
 Directional Driller: Kyle Underwood
 Date of First Survey: January 8, 2015
 Date of Last Survey: January 19, 2015



Total Correction: 4.42 East Grid

Vertical Section Plane: 0.88 Nominal Dip Angle: 65.06 Magnetic Field Strength: 0.515

	<i>Measured</i>			<i>Coordinates</i>				<i>Closure</i>			<i>Mtr Yield</i>	<i>Temp (°F)</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>Color</i>	<i>Date</i>	<i>Time</i>	<i>Flow Rate</i>
201	9362.00	90.10	0.40	4,744.07	5,021.37	5,020.33	106.82	5,021.46	1.22	0.65	0.00	156 °F	Yellow	01/19/15	19:07	246 (gpm)
202	9393.00	90.30	0.00	4,743.96	5,052.37	5,051.33	106.93	5,052.46	1.21	1.44	0.00	156 °F	Yellow	01/19/15	19:56	246 (gpm)
203	9425.00	90.30	359.80	4,743.79	5,084.37	5,083.33	106.88	5,084.45	1.20	0.62	0.00	156 °F	Yellow	01/19/15	20:37	246 (gpm)
204	9457.00	90.20	359.70	4,743.65	5,116.36	5,115.32	106.74	5,116.44	1.20	0.44	0.00	156 °F	Yellow	01/19/15	21:32	246 (gpm)
205	9488.00	90.30	359.70	4,743.52	5,147.35	5,146.32	106.57	5,147.43	1.19	0.32	0.00	156 °F	Yellow	01/19/15	22:19	246 (gpm)
206	9519.00	90.60	359.60	4,743.28	5,178.35	5,177.32	106.39	5,178.42	1.18	1.02	0.00	156 °F	Yellow	01/19/15	23:13	246 (gpm)
207	9532.00	90.90	359.60	4,743.11	5,191.34	5,190.32	106.29	5,191.41	1.17	2.31	0.00	156 °F	Yellow	01/19/15	23:51	246 (gpm)
TD	9582.00	90.90	359.60	4,742.32	5,241.32	5,240.31	105.95	5,241.38	1.16	0.00						

MWD SURVEYS

Customer: Tapstone Energy
 Well: Schupbach 3410 33-2H
 Field/Block: Mississippi Lime
 Co./Parish: Barber Co.
 State: KS

PGS Job #: LKS6116515
 MWD Operator: Ken Mitchell
 Directional Driller: Kyle Underwood
 Date of First Survey: January 8, 2015
 Date of Last Survey: January 19, 2015



Total Correction: 4.42 East Grid

Vertical Section Plane: 0.88

Nominal Dip Angle: 65.06

Magnetic Field Strength: 0.515

<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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<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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<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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<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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<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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<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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<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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<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>

MWD SURVEYS

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<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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<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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<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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<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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Nominal Dip Angle: 65.06

Magnetic Field Strength: 0.515

<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>

MWD SURVEYS

Customer: Tapstone Energy
 Well: Schupbach 3410 33-2H
 Field/Block: Mississippi Lime
 Co./Parish: Barber Co.
 State: KS

PGS Job #: LKS6116515
 MWD Operator: Ken Mitchell
 Directional Driller: Kyle Underwood
 Date of First Survey: January 8, 2015
 Date of Last Survey: January 19, 2015



Total Correction: 4.42 East Grid

Vertical Section Plane: 0.88

Nominal Dip Angle: 65.06

Magnetic Field Strength: 0.515

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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

BARBER County, Kansas

220' FNL - 850' FEL Section 4 Township 35S Range 10W P.M.

X= 2028516
Y= 139751

X= 2023125
Y= 139665

X= 2025821
Y= 139708



GRID
NAD-27
KS SOUTH
US Feet

Note:
3.280833 Ft.=1 Meter
Scale:
1" = 1000'
0' 500' 1000'

X= 2023202
Y= 137004

BOTTOM HOLE
(9582' MD)
332' FNL - 651' FEL
37°02'58.2" N
98°24'16.2" W
37.049490898" N
98.404503944" W
X= 2027871
Y= 139409

TOP PERF (5294' MD)
734' FSL - 783' FEL
37.037722261" N
98.404697617" W
X= 2027819
Y= 135124

PENETRATION POINT (5075' MD)
519' FSL - 791' FEL (SEC 33)
37.037130076" N
98.404712725" W
X= 2027815
Y= 134908

X= 2023278
Y= 134342

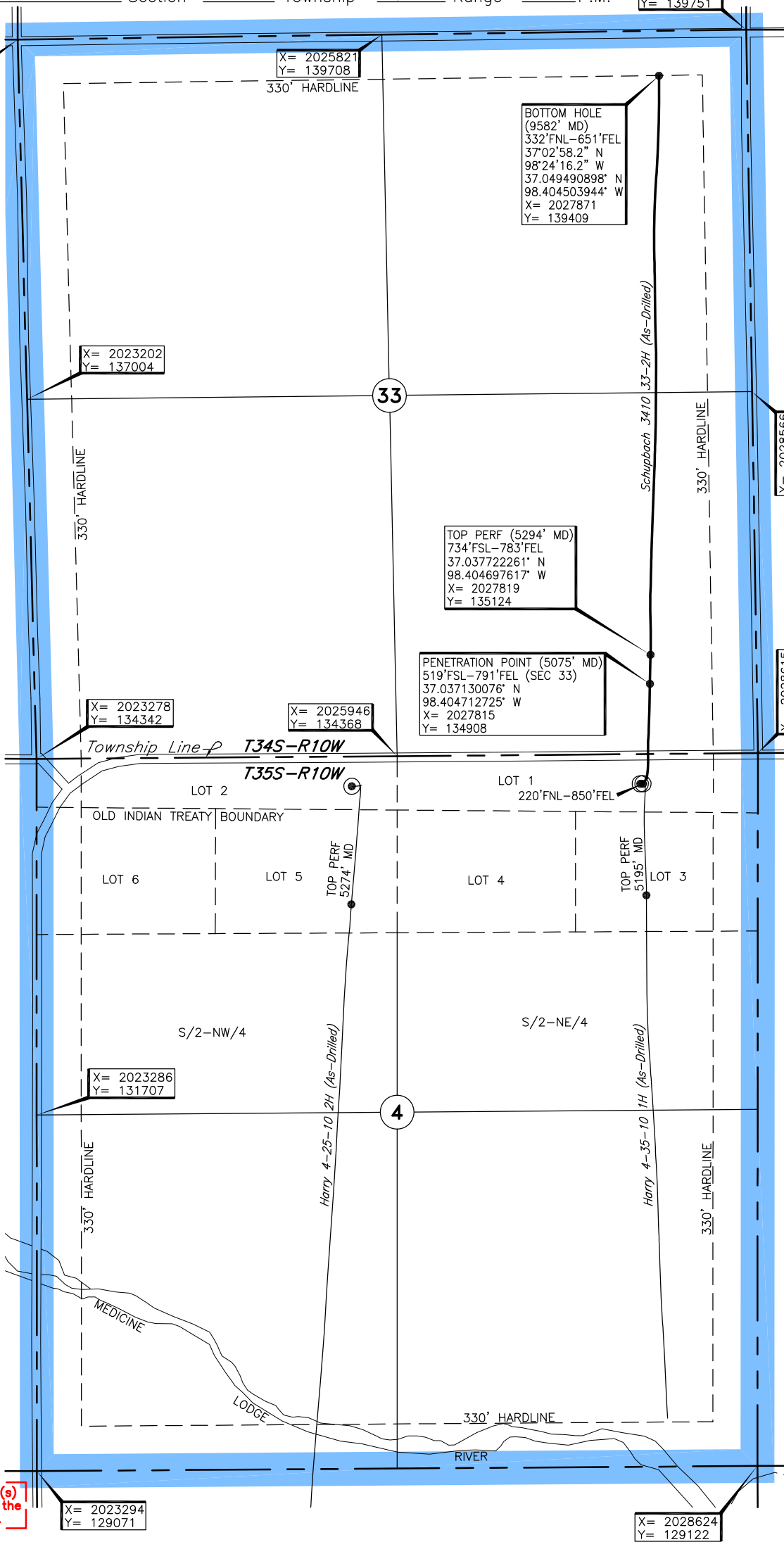
X= 2025946
Y= 134368

X= 2028566
Y= 137072

X= 2028615
Y= 134398

Operator: TAPSTONE ENERGY
 Lease Name: SCHUPBACH 3410
 Topography & Vegetation: Loc. fell in level wheat field, ±240' West of N-S fence
 Good Drill Site? Yes
 Reference Stakes or Alternate Location: Stakes Set None
 Best Accessibility to Location: From North off county road
 Distance & Direction: From Kiowa, KS, go ±3.5 mi. East, then ±1.25 mi. North,
then ±1.0 mi. East to the NE Cor. of Sec. 4-T35S-R10W

ELEVATION:
1296' Gr. at Stake



X= 2023286
Y= 131707

4

X= 2023294
Y= 129071

X= 2028624
Y= 129122

A boundary survey of the said section(s) shown hereon was not performed per the request of the operator shown hereon.

This information was gathered with a GPS receiver with ±1 foot Horiz./vert. accuracy.
 DATUM: NAD-27
 LAT: 37°02'06.4"N
 LONG: 98°24'17.6"W
 LAT: 37.035099177° N
 LONG: 98.404885271° W
 STATE PLANE
 COORDINATES: (US Feet)
 ZONE: KS SOUTH
 X: 2027765
 Y: 134169

239514 Date of Drawing: Jan. 23, 2015
 Invoice # 227934 Date Staked: Jul. 24, 2014 JP

FINAL AS-DRILLED PLAT

AS-DRILLED INFORMATION
 FURNISHED BY TAPSTONE ENERGY

The Road to Excellence Starts with Safety

Sold To #: 372073	Ship To #: 3607707	Quote #: 0021981213	Sales Order #: 0902012287
Customer: TAPSTONE ENERGY LLC		Customer Rep:	
Well Name: SCHUPBACH 3410	Well #: 33-2H	API/UWI #: 15-007-24242-01	
Field: HAZELTON	City (SAP): KIOWA	County/Parish: BARBER	State: KANSAS
Legal Description: NE NW NE NE-4-35S-10W-220FNL-850FEL			
Contractor: NOMAC		Rig/Platform Name/Num: NOMAC 07	
Job BOM: 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX25353		Srcv Supervisor: Brian Dobbs	

Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	822ft 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	822		0
Casing	3	9.625	8.921	36	LTC	J-55	0	822		0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	9.625			822	Top Plug	9.625		HES
Float Shoe	9.625				Bottom Plug	9.625		HES
Float Collar	9.625				SSR plug set	9.625		HES
Insert Float	9.625				Plug Container	9.625		HES
Stage Tool	9.625				Centralizers	9.625		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 ft3/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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	Tail Cement	SWIFTCM (TM) SYSTEM	490	sack	15	1.319		4	6.25	

94 lbm		CMT - STANDARD - CLASS A REG OR TYPE I, BULK (100003684)							
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 ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Displacement	Displacement	60.0	bbl	8.34				
Cement Left In Pipe	Amount	42 ft			Reason			Shoe Joint	
Mix Water:	pH 7	Mix Water Chloride: ## ppm			Mix Water Temperature:			51 °F °C	
Cement Temperature:	54 °F °C	Plug Displaced by: ## lb/gal kg/m ³ XXXX			Disp. Temperature:			## °F °C	
Plug Bumped?	Yes	Bump Pressure: 880 psi MPa			Floats Held?			Yes	
Cement Returns:	40 bbl m ³	Returns Density: ## lb/gal kg/m ³			Returns Temperature:			## °F °C	
Comment									

HALLIBURTON

iCem[®] Service

TAPSTONE ENERGY LLC

For:

Date: Wednesday, January 07, 2015

Schupbach 33-2h

Case 1

Sincerely,

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Table of Contents

To Generate a Table of Contents, right click here. Click "Update Field." If prompted, select "Entire Table."

1.0 Job Design

1.1 Time of Stages

Graph Label	Time (min)	Stage Starts Pumping	Stage Enters Annulus
①	0	Pre-Rig Down Safety Meeting	
②	0	Rig-Down Completed	
③	0	Depart Location	
④	0	Pre-Convoy Safety Meeting	
⑤	0	Other	

2.0 Hydraulics Summary

3.0 Temperature Modeling

4.0 Real-Time Job Summary

4.1 Stage Summary - Liquid Volume, Density, & Design Shutdown

4.2 Stage Summary - Pump Pressure & ECD

4.3 Stage Summary - Pump Rate & Nitrogen Rate

4.4 Shutdown Summary

4.5 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	1/7/2015	02:00:00	USER				
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/7/2015	03:30:00	USER				use smith driving skills stay on route know your route
Event	3	Arrive At Loc	Arrive At Loc	1/7/2015	06:30:00	USER				
Event	4	Other	Other	1/7/2015	08:00:00	USER				wait on rig to run casing
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/7/2015	14:30:00	USER				watch slips falls line of fire stay hydrated
Event	6	Rig-Up Completed	Rig-Up Completed	1/7/2015	15:15:00	USER				
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	1/7/2015	15:30:00	USER				dont step over psi iron watch out for each other stay hydrated
Event	8	Test Lines	Test Lines	1/7/2015	15:51:08	COM5	3000.00	8.34	0.00	test lines 500psi low 3000psi high good test
Event	9	Pump Spacer 1	Pump Spacer 1	1/7/2015	15:53:49	COM5	76.00	8.34	3.00	pumped 10bbbls water ahead good returns
Event	10	Pump Cement	Pump Cement	1/7/2015	15:57:08	COM5	162.00	15.00	5.00	pump 115bbbls (490sks) at 15# good returns
Event	11	Shutdown	Shutdown	1/7/2015	16:22:00	USER				
Event	12	Drop Top Plug	Drop Top Plug	1/7/2015	16:26:00	USER				
Event	13	Pump Displacement	Pump Displacement	1/7/2015	16:26:09	COM5	323.00	8.34	6.00	pump 60bbbls of water good returns
Event	14	Other	Other	1/7/2015	16:35:00	USER				40bbbls cement back to surface
Event	15	Bump Plug	Bump Plug	1/7/2015	16:47:46	COM5	882.00	8.34	0.00	Bumped plug 330 to 880 psi
Event	16	Check Floats	Check Floats	1/7/2015	16:50:45	USER				floats holding 1/2 bbl back
Event	17	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/7/2015	16:55:00	USER				watch slips falls line of fire stay hydrated
Event	18	Rig-Down Completed	Rig-Down Completed	1/7/2015	17:15:00	USER				

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	19	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/7/2015	17:20:00	USER				use smith driving skills stay on route know your route
Event	20	Depart Location	Depart Location	1/7/2015	17:45:00	USER				

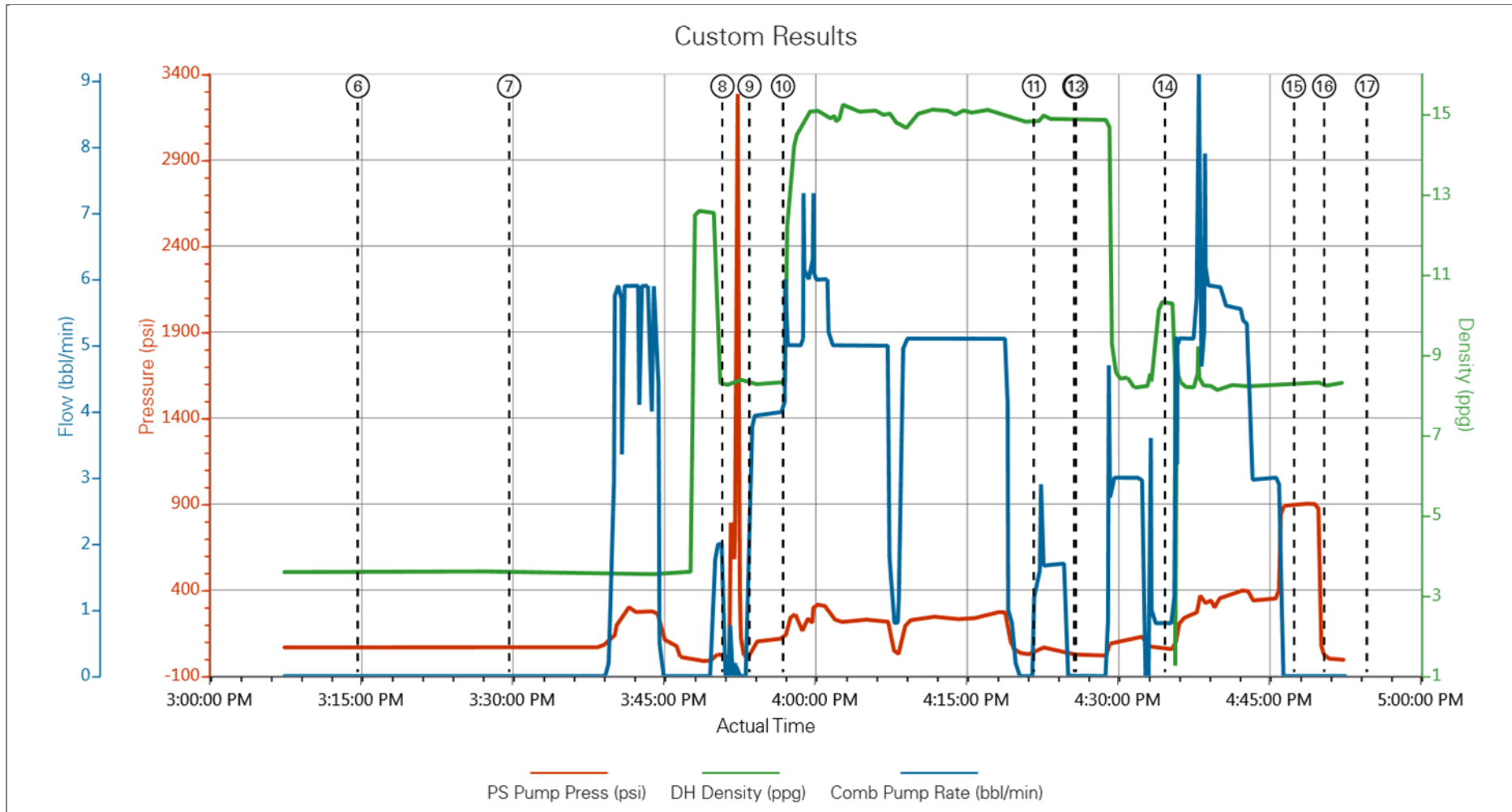
5.0 Attachments

5.1 Case 1-Custom Results.png



6.0 Custom Graphs

6.1 Custom Graph



7.0 Appendix

7.1 One-Minutes Real-Time Data Listing

HALLIBURTON

iCem[®] Service

TAPSTONE ENERGY LLC

For:

Date: Tuesday, January 13, 2015

schupbach 33-2h

Case 1

Sincerely,

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To Generate a Table of Contents, right click here. Click "Update Field." If prompted, select "Entire Table."

1.0 Job Design

1.1 Time of Stages

Graph Label	Time (min)	Stage Starts Pumping	Stage Enters Annulus
①	0	Bump Plug	

2.0 Hydraulics Summary

3.0 Temperature Modeling

4.0 Real-Time Job Summary

4.1 Stage Summary - Liquid Volume, Density, & Design Shutdown

4.2 Stage Summary - Pump Pressure & ECD

4.3 Stage Summary - Pump Rate & Nitrogen Rate

4.4 Shutdown Summary

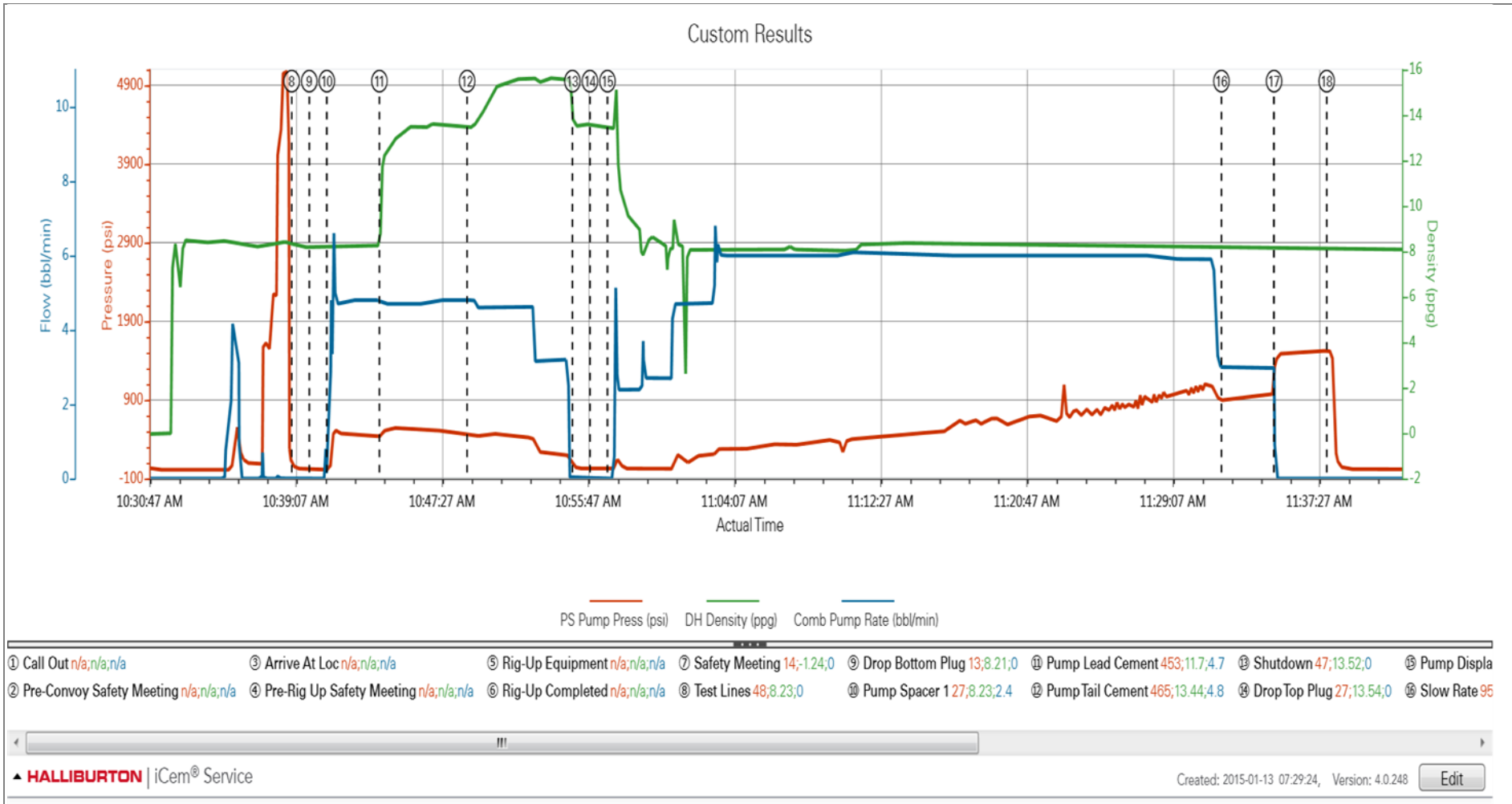
4.5 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	1/12/2015	22:00:00	USER				requested 03:30
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/13/2015	00:15:00	USER				stay on route and in convoy, use smith driving skills
Event	3	Arrive At Loc	Arrive At Loc	1/13/2015	02:00:00	USER				casing is still being run, test water, wait on casing crew to finish
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/13/2015	06:20:00	USER				pipe racks out of area, watch icy spots, stay clear of line of fire, watch hand placement
Event	5	Rig-Up Equipment	Rig-Up Equipment	1/13/2015	06:30:00	USER				
Event	6	Rig-Up Completed	Rig-Up Completed	1/13/2015	07:30:00	USER				
Event	7	Safety Meeting	Safety Meeting	1/13/2015	10:15:00	USER				go over meeting place, job design, stay clear of red zone, don't hammer on pressurized iron
Event	8	Test Lines	Test Lines	1/13/2015	10:39:00	COM5	5000.00	8.34	0.00	test lines 500 psi low/5000 psi high
Event	9	Drop Bottom Plug	Drop Bottom Plug	1/13/2015	10:40:00	USER				drop bottom plug
Event	10	Pump Spacer 1	Pump Spacer 1	1/13/2015	10:41:00	COM5	440.00	8.34	3.50	pump 10 bbls mudflush ahead...good returns
Event	11	Pump Lead Cement	Pump Lead Cement	1/13/2015	10:44:00	COM5	453.00	13.60	5.00	pump 34.5 bbls (130 sks) lead cement at 13.6#...good returns
Event	12	Pump Tail Cement	Pump Tail Cement	1/13/2015	10:49:00	COM5	465.00	15.60	4.80	pump 19 bbls (90 sks) tail cement at 15.6#...good returns
Event	13	Shutdown	Shutdown	1/13/2015	10:55:00	USER	0.00		0.00	
Event	14	Drop Top Plug	Drop Top Plug	1/13/2015	10:56:00	COM5	0.00		0.00	drop top plug
Event	15	Pump Displacement	Pump Displacement	1/13/2015	10:57:00	COM5	290.00	8.34	6.00	pump 199.5 bbls water

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
										displacement...good returns
Event	16	Slow Rate	Slow Rate	1/13/2015	11:32:00	USER	950.00	8.34	3.00	slow rate to 3 bbls min last 15 bbls... good returns
Event	17	Bump Plug	Bump Plug	1/13/2015	11:35:00	USER	1500.00	8.34	0.00	land plug from 980-1500 psi
Event	18	Check Floats	Check Floats	1/13/2015	11:38:00	USER	0.00	8.34	0.00	floats holding 1 bbl back
Event	19	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/13/2015	11:45:00	USER				watch over head loads, watch footing and hand placement, use tag lines,
Event	20	Rig-Down Equipment	Rig-Down Equipment	1/13/2015	11:50:00	USER				
Event	21	Rig-Down Completed	Rig-Down Completed	1/13/2015	12:30:00	USER				
Event	22	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/13/2015	12:35:00	USER				stay on route

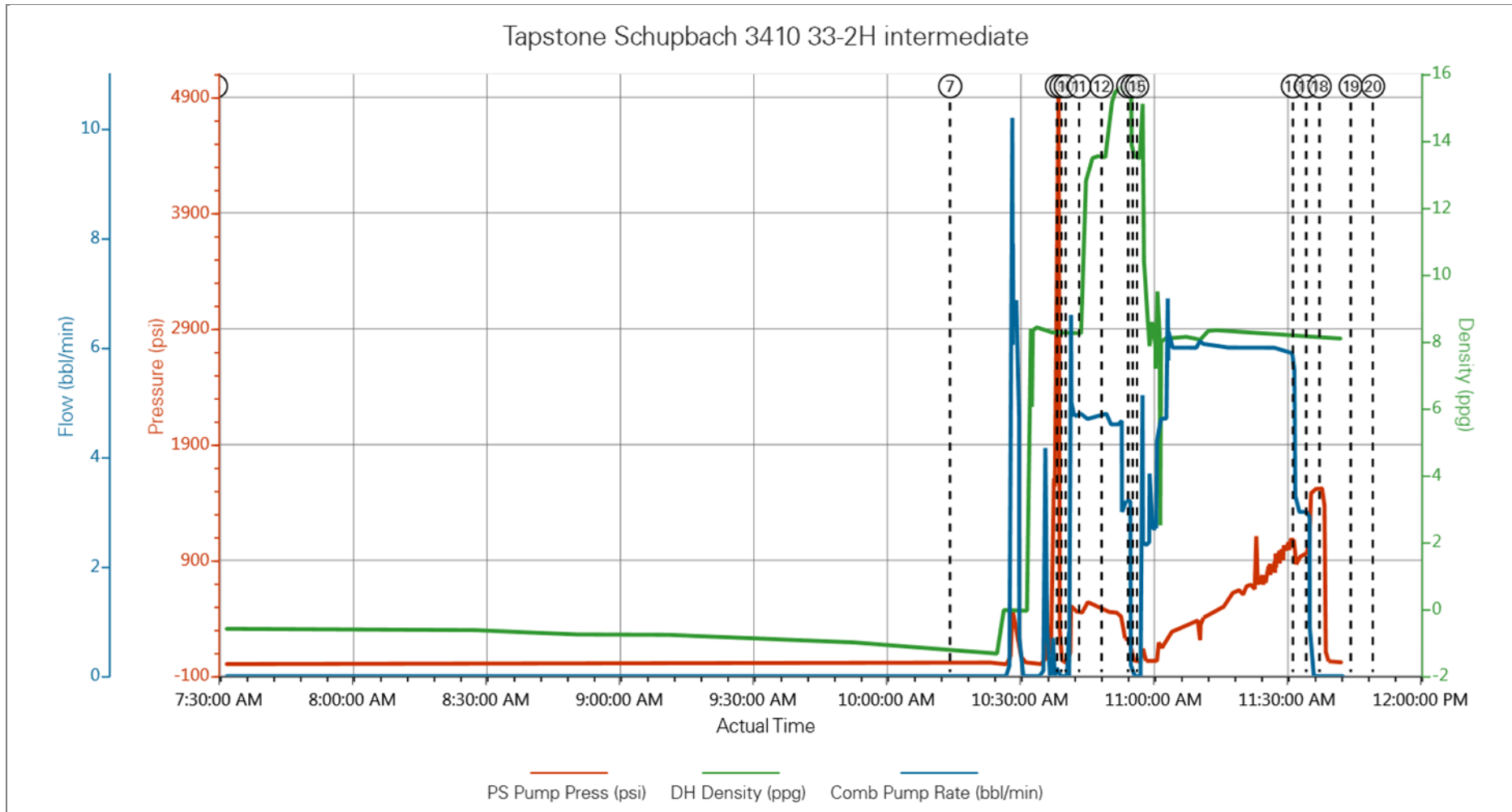
5.0 Attachments

5.1 Case 1-Custom Results.png



6.0 Custom Graphs

6.1 Custom Graph



7.0 Appendix

7.1 One-Minutes Real-Time Data Listing

The Road to Excellence Starts with Safety

Sold To #: 372073	Ship To #: 3607707	Quote #: 0021982020	Sales Order #: 0902014828
Customer: TAPSTONE ENERGY LLC		Customer Rep:	
Well Name: SCHUPBACH 3410	Well #: 33-2H	API/UWI #: 15-007-24242-01	
Field: HAZELTON	City (SAP): KIOWA	County/Parish: BARBER	State: KANSAS
Legal Description: NE NW NE NE-4-35S-10W-220FNL-850FEL			
Contractor: NOMAC		Rig/Platform Name/Num: NOMAC 07	
Job BOM: 7522			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA/HX25353		Srcv Supervisor:	

Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	5296ft Job Depth TVD
Water Depth	Wk Ht Above Floor 5
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		
Casing	3	7	6.276	26	LTC	P-110	0	5296	0	4730
Open Hole Section			8.75				800	5296	800	4730

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	7	1		5296	Top Plug	7	1	HES
Float Shoe	7				Bottom Plug	7	1	HES
Float Collar	7	1			SSR plug set	7		HES
Insert Float	7				Plug Container	7	1	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							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
2	Lead Cement	ECONOCEM (TM) SYSTEM	130	sack	13.6	1.506		5	7.3
	0.40 %	HALAD(R)-9, 50 LB (100001617)							
	47 lbm	CMT - STANDARD - CLASS A REG OR TYPE I, BULK (100003684)							
	41.50 lbm	POZMIX A FLYASH (100003690)							
	4 %	HALLIBURTON GEL, 50 LB SK (100064040)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Tail Cement	HALCEM (TM) SYSTEM	90	sack	15.6	1.184		5	5.26
	0.40 %	HALAD(R)-9, 50 LB (100001617)							
	94 lbm	CMT - PREMIUM - CLASS H REG OR TYPE V, BULK (100003687)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /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 7	Mix Water Chloride: 1200 ppm		Mix Water Temperature: 34 °F °C				
	Cement Temperature:	## °F °C	Plug Displaced by: ## lb/gal kg/m ³ XXXX		Disp. Temperature: ## °F °C				
	Plug Bumped?	Yes	Bump Pressure: 680 psi MPa		Floats Held? Yes				
	Cement Returns:	## bbl m ³	Returns Density: ## lb/gal kg/m ³		Returns Temperature: ## °F °C				
Comment									