



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1138438  
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: \_\_\_\_\_



1138438

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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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# ALLIED OIL & GAS SERVICES, LLC 059720

Federal Tax I.D.# 20-5975804

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

SERVICE POINT:  
Medicine Lodge KS

DATE 02/01/12	SEC. 23	TWP. 10S	RANGE 8W	CALLED OUT	ON LOCATION	JOB START	JOB FINISH 9:45 PM
LEASE Matthews	WELL # 1	LOCATION Sharon KS, South on West Edge to			COUNTY Barber	STATE KS	
OLD OR NEW (Circle one)	Tog Rd, West, South into					1.08	11.3

CONTRACTOR Patterson #172  
TYPE OF JOB Inter mediate  
HOLE SIZE 8 7/8 T.D. 5098  
CASING SIZE 7 DEPTH 5062  
TUBING SIZE DEPTH  
DRILL PIPE DEPTH  
TOOL DEPTH  
PRES. MAX 1500 MINIMUM  
MEAS. LINE SHOE JOINT 36  
CEMENT LEFT IN CSG. 36  
PERFS.  
DISPLACEMENT 193 BBLs Fresh H<sub>2</sub>O

OWNER Tog Hill  
CEMENT  
AMOUNT ORDERED 225 sq Class A + 5%  
Salt + 2% Gel + 3% FL-160 + Defoamer,  
12 BBL ASF  
COMMON Class A 225 sq @ 17.90 4027.50  
POZMIX @  
GEL 4 sq @ 23.90 93.60  
CHLORIDE @  
ASC @  
Salt 6 sq @ 26.35 158.10  
FL-160 63 lbs @ 18.90 1190.70  
Defoamer 31 lbs @ 9.80 303.80  
Super Flush (ASF) 12 BBL @ 58.70 704.40  
HANDLING 243 cu ft @ 2.48 602.64  
MILEAGE 388.50 hr/mi @ 2.60 1010.10  
TOTAL 8090.84

EQUIPMENT  
PUMP TRUCK CEMENTER Jason Thimarch 1  
# 548/545 HELPER Jake Heard 3  
BULK TRUCK  
# 421/252 DRIVER Brandon Bear 3  
BULK TRUCK  
# DRIVER

REMARKS:

Well Name Matthews 1-8H  
AFE No. 12-0188  
AGENT No. 832-18  
Name John Johnston  
Signature [Signature]

CHARGE TO: Tog Hill  
STREET  
CITY STATE ZIP

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

PRINTED NAME  
SIGNATURE

SERVICE  
DEPTH OF JOB 5062  
PUMP TRUCK CHARGE 3099.25  
EXTRA FOOTAGE @  
MILEAGE 35 mi @ 7.70 269.50  
MANIFOLD + Head @ 275  
LV 35 mi @ 4.40 154  
TOTAL 3,797.75

PLUG & FLOAT EQUIPMENT  
7"  
Tap Rubber Plug @ 99.45  
TOTAL 99.45

SALES TAX (If Any) 480.16  
TOTAL CHARGES 11988.04  
DISCOUNT 35% 4195.81 IF PAID IN 30 DAYS  
Net 7792.23

# ALLIED OIL & GAS SERVICES, LLC 059724

Federal Tax I.D.# 20-5975804

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

SERVICE POINT:  
Medicine Lodge KS

DATE <u>02/12/13</u>	SEC. <u>8</u>	TWP. <u>33s</u>	RANGE <u>10w</u>	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
LEASE <u>Mathews</u> WELL # <u>1-8H</u> LOCATION <u>Sharon KS; West edge, South</u>						COUNTY <u>Barber</u>	STATE <u>KS</u>
OLD OR (NEW) (Circle one) <u>NEW</u>						<u>1.06</u> <u>11.3</u>	
LOCATION <u>to Jog Rd, 1/2 west, South into</u>							

CONTRACTOR Patterson OWNER Tug Hill

TYPE OF JOB <u>Production Liner</u>	CEMENT
HOLE SIZE <u>T.D. 9698</u>	AMOUNT ORDERED <u>485.5x 50:50 H + 2%</u>
CASING SIZE <u>4 1/2</u>	<u>Gal + 10% Salt + 1.6% FL-160 + 1% CD-31 +</u>
TUBING SIZE	<u>1% SASI + 25% De Primer 2# Kalcial + 1/2# Flow</u>
DRILL PIPE	COMMON _____ @ _____
TOOL	POZMIX _____ @ _____
PRES. MAX <u>3100</u>	GEL _____ @ _____
MEAS. LINE	CHLORIDE _____ @ _____
CEMENT LEFT IN CSG. <u>45</u>	ASC _____ @ _____
PERFS.	<u>50:50 Blend H 485.5x @ 16.85 8172.25</u>
DISPLACEMENT <u>119 BBLs Fresh H2O</u>	<u>SA-51 42 lbs @ 17.55 737.10</u>

**EQUIPMENT**

PUMP TRUCK # <u>548/545</u>	CEMENTER <u>Jason Thimmesch</u>	# <u>3</u>
BULK TRUCK # <u>561/553</u>	HELPER <u>Jake Heard</u>	# <u>3</u>
BULK TRUCK # _____	DRIVER <u>Jason Otto</u>	# <u>3</u>
BULK TRUCK # _____	DRIVER _____	# _____

<u>EL-160 244 lbs @ 18.90 4611.60</u>	<u>CD-31 42 lbs @ 10.30 432.60</u>
<u>Salt 13.5x @ 26.35 342.55</u>	<u>Kalcial 1455 lbs @ 0.98 1425.90</u>
<u>De Primer 121 lbs @ 9.80 1185.80</u>	<u>Fluical 130 lbs @ 2.97 386.10</u>
<u>HANDLING 566.2 cft @ 2.48 1404.18</u>	<u>MILEAGE 22.9 mi @ 7.5 mi/k 2.60 2038.40</u>
<b>TOTAL 20706.78</b>	

REMARKS:  
APP # 12-0188  
Code # 830.18

**SERVICE**

DEPTH OF JOB <u>9697</u>	
PUMP TRUCK CHARGE	<u>5920.20</u>
EXTRA FOOTAGE	@ _____
MILEAGE <u>35.5x @ 7.70</u>	<u>269.50</u>
MANIFOLD	@ _____
LV <u>35.5x @ 4.40</u>	<u>154</u>
<b>TOTAL 6343.70</b>	

CHARGE TO: Tug Hill

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

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

PRINTED NAME Curtis Turner

SIGNATURE Curtis Turner

**PLUG & FLOAT EQUIPMENT**

<u>NA</u>	@ _____
_____	@ _____
_____	@ _____
_____	@ _____
_____	@ _____
<b>TOTAL _____</b>	
SALES TAX (If Any) <u>1260.28</u>	
TOTAL CHARGES <u>27050.48</u>	
DISCOUNT <u>55% 9/16/2012</u>	IF PAID IN 30 DAYS
<u>Net 17582.81</u>	

Tug Hill  
 Mathews 1-8H Rev. 3  
 Barber County, Kansas  
 As Drilled



Minimum of Curvature  
 Slot Location: 1501263.36', 1333108.69'  
 Plane of Vertical Section: 182.13°

Measured Depth Feet	BORE Inc Degrees	HOLE Direction Degrees	True Vert. Depth Up Dip In Well Path	RECTANGULAR COORDINATES		LAMBERT COORDINATES		Vertical Section Feet	CLOSURES		Dogleg Severity Deg/100'
				North(-South) Feet	East(-West) Feet	Y Feet	X Feet		Distance Feet	Direction Deg	
0.00	0.00	0.00	0.00	0.00	0.00	1501263.4	1333108.7	0.00	0.00	0.00	0.00
100.00	0.50	298.60	100.00	0.21	-0.38	1501263.6	1333108.3	-0.19	0.44	298.60	0.50
200.00	1.50	295.10	199.98	0.97	-1.95	1501264.3	1333106.7	-0.90	2.18	296.50	1.00
300.00	1.20	302.80	299.95	2.10	-4.02	1501265.5	1333104.7	-1.94	4.53	297.55	0.35
400.00	1.00	282.00	399.94	2.84	-5.75	1501266.2	1333102.9	-2.63	6.42	296.32	0.44
500.00	0.80	251.60	499.92	2.81	-7.27	1501266.2	1333101.4	-2.53	7.79	291.11	0.51
600.00	1.00	233.80	599.91	2.07	-8.63	1501265.4	1333100.1	-1.75	8.88	283.48	0.34
700.00	1.60	232.60	699.89	0.71	-10.45	1501264.1	1333098.2	-0.32	10.47	273.87	0.60
800.00	1.70	231.70	799.84	-1.06	-12.72	1501262.3	1333096.0	1.53	12.76	265.23	0.10
900.00	1.50	227.50	899.81	-2.86	-14.85	1501260.5	1333093.8	3.41	15.12	259.08	0.23
935.00	1.20	226.00	934.80	-3.43	-15.45	1501259.9	1333093.2	4.00	15.83	257.49	0.86
967.00	1.10	235.50	966.79	-3.84	-15.94	1501259.5	1333092.7	4.42	16.40	256.47	0.67
1060.00	1.00	242.50	1059.77	-4.72	-17.40	1501258.6	1333091.3	5.36	18.03	254.84	0.17
1151.00	0.40	283.20	1150.77	-5.01	-18.41	1501258.3	1333090.3	5.69	19.08	254.78	0.82
1243.00	0.40	284.60	1242.76	-4.86	-19.04	1501258.5	1333089.7	5.56	19.65	255.69	0.01
1336.00	0.30	323.00	1335.76	-4.58	-19.50	1501258.8	1333089.2	5.30	20.03	256.78	0.27
1427.00	0.40	265.40	1426.76	-4.41	-19.96	1501258.9	1333088.7	5.15	20.44	257.53	0.38
1519.00	0.50	231.10	1518.76	-4.69	-20.59	1501258.7	1333088.1	5.45	21.12	257.16	0.31
1611.00	0.50	252.20	1610.76	-5.07	-21.28	1501258.3	1333087.4	5.85	21.88	256.61	0.20
1703.00	0.20	326.60	1702.75	-5.06	-21.76	1501258.3	1333086.9	5.86	22.33	256.92	0.53
1795.00	0.20	254.00	1794.75	-4.97	-22.00	1501258.4	1333086.7	5.78	22.55	257.28	0.26
1887.00	0.20	262.30	1886.75	-5.03	-22.31	1501258.3	1333086.4	5.86	22.87	257.29	0.03
1979.00	0.10	236.40	1978.75	-5.10	-22.54	1501258.3	1333086.2	5.93	23.11	257.25	0.13
2070.00	0.40	272.20	2069.75	-5.13	-22.92	1501258.2	1333085.8	5.98	23.49	257.39	0.36
2163.00	0.10	288.50	2162.75	-5.09	-23.32	1501258.3	1333085.4	5.95	23.87	257.69	0.33
2254.00	0.20	311.40	2253.75	-4.96	-23.52	1501258.4	1333085.2	5.83	24.03	258.09	0.13
2346.00	0.20	316.80	2345.75	-4.74	-23.75	1501258.6	1333084.9	5.62	24.22	258.72	0.02

Tug Hill  
 Mathews 1-8H Rev. 3  
 Barber County, Kansas  
 As Drilled



Minimum of Curvature  
 Slot Location: 1501263.36', 1333108.69'  
 Plane of Vertical Section: 182.13°

Measured Depth Feet	BORE Inc Degrees	HOLE Direction Degrees	True Vert. Depth Up Dip In Well Path	RECTANGULAR COORDINATES		LAMBERT COORDINATES		Vertical Section Feet	CLOSURES		Dogleg Severity Deg/100'
				North(-South) Feet	East(-West) Feet	Y Feet	X Feet		Distance Feet	Direction Deg	
2438.00	0.10	11.20	2437.75	-4.54	-23.84	1501258.8	1333084.8	5.42	24.27	259.21	0.18
2530.00	0.10	0.40	2529.75	-4.38	-23.83	1501259.0	1333084.9	5.26	24.23	259.58	0.02
2622.00	0.30	193.40	2621.75	-4.54	-23.88	1501258.8	1333084.8	5.42	24.31	259.24	0.43
2713.00	0.30	138.30	2712.75	-4.95	-23.78	1501258.4	1333084.9	5.83	24.29	258.25	0.30
2805.00	0.30	195.00	2804.75	-5.36	-23.68	1501258.0	1333085.0	6.23	24.28	257.25	0.31
2897.00	0.00	228.30	2896.75	-5.59	-23.74	1501257.8	1333084.9	6.47	24.39	256.75	0.33
2988.00	0.40	189.80	2987.75	-5.90	-23.80	1501257.5	1333084.9	6.78	24.52	256.06	0.44
3080.00	0.50	22.10	3079.75	-5.85	-23.70	1501257.5	1333085.0	6.73	24.41	256.14	0.97
3174.00	0.50	63.30	3173.74	-5.29	-23.18	1501258.1	1333085.5	6.14	23.77	257.16	0.37
3269.00	0.50	38.10	3268.74	-4.77	-22.55	1501258.6	1333086.1	5.61	23.05	258.05	0.23
3364.00	0.40	80.20	3363.74	-4.39	-21.97	1501259.0	1333086.7	5.20	22.40	258.70	0.35
3459.00	0.70	82.90	3458.73	-4.26	-21.07	1501259.1	1333087.6	5.04	21.49	258.56	0.32
3553.00	0.70	98.30	3552.72	-4.27	-19.93	1501259.1	1333088.8	5.01	20.38	257.90	0.20
3648.00	0.80	113.20	3647.72	-4.62	-18.75	1501258.7	1333089.9	5.31	19.31	256.16	0.23
3742.00	0.80	157.90	3741.71	-5.49	-17.90	1501257.9	1333090.8	6.15	18.72	252.96	0.65
3837.00	0.20	140.90	3836.70	-6.23	-17.54	1501257.1	1333091.1	6.88	18.61	250.45	0.64
3932.00	0.10	62.00	3931.70	-6.32	-17.36	1501257.0	1333091.3	6.96	18.48	250.00	0.22
4026.00	0.30	116.20	4025.70	-6.39	-17.07	1501257.0	1333091.6	7.02	18.23	249.48	0.27
4086.50	0.10	110.80	4086.20	-6.48	-16.88	1501256.9	1333091.8	7.10	18.08	249.01	0.33
4119.00	5.10	162.20	4118.66	-7.86	-16.41	1501255.5	1333092.3	8.47	18.20	244.40	15.50
4150.00	7.60	167.50	4149.47	-11.18	-15.55	1501252.2	1333093.1	11.75	19.15	234.28	8.27
4181.00	11.70	171.50	4180.02	-16.29	-14.64	1501247.1	1333094.1	16.82	21.90	221.94	13.39
4212.00	15.70	173.40	4210.13	-23.57	-13.69	1501239.8	1333095.0	24.06	27.26	210.15	12.98
4242.00	19.00	178.90	4238.77	-32.49	-13.13	1501230.9	1333095.6	32.95	35.04	202.01	12.27
4273.00	24.00	175.30	4267.60	-43.82	-12.52	1501219.5	1333096.2	44.26	45.57	195.94	16.67
4304.00	27.80	175.50	4295.48	-57.32	-11.43	1501206.0	1333097.3	57.70	58.45	191.28	12.26
4334.00	31.50	180.10	4321.55	-72.14	-10.90	1501191.2	1333097.8	72.49	72.95	188.59	14.47

Tug Hill  
Mathews 1-8H Rev. 3  
Barber County, Kansas  
As Drilled



Minimum of Curvature  
Slot Location: 1501263.36', 1333108.69'  
Plane of Vertical Section: 182.13°

Measured Depth Feet	BORE Inc Degrees	HOLE Direction Degrees	True Vert. Depth Up Dip In Well Path	RECTANGULAR COORDINATES		LAMBERT COORDINATES		Vertical Section Feet	CLOSURES		Dogleg Severity Deg/100'
				North(-South) Feet	East(-West) Feet	Y Feet	X Feet		Distance Feet	Direction Deg	
4365.00	35.80	183.80	4347.36	-89.29	-11.51	1501174.1	1333097.2	89.66	90.03	187.35	15.36
4395.00	39.00	186.40	4371.19	-107.43	-13.15	1501155.9	1333095.5	107.85	108.23	186.98	11.89
4426.00	41.60	187.40	4394.83	-127.34	-15.56	1501136.0	1333093.1	127.83	128.28	186.97	8.64
4456.00	44.00	187.00	4416.84	-147.56	-18.11	1501115.8	1333090.6	148.13	148.66	187.00	8.05
4487.00	46.40	186.80	4438.68	-169.39	-20.75	1501094.0	1333087.9	170.05	170.66	186.98	7.76
4518.00	48.80	186.70	4459.58	-192.12	-23.44	1501071.2	1333085.2	192.86	193.55	186.96	7.75
4548.00	52.40	185.00	4478.62	-215.18	-25.80	1501048.2	1333082.9	215.99	216.72	186.84	12.77
4579.00	56.20	182.50	4496.71	-240.29	-27.43	1501023.1	1333081.3	241.15	241.86	186.51	13.90
4610.00	59.40	180.90	4513.23	-266.51	-28.20	1500996.8	1333080.5	267.37	268.00	186.04	11.21
4640.00	60.00	180.30	4528.36	-292.41	-28.47	1500970.9	1333080.2	293.27	293.79	185.56	2.64
4671.00	60.20	181.30	4543.82	-319.28	-28.85	1500944.1	1333079.8	320.13	320.58	185.16	2.87
4701.00	60.60	181.30	4558.64	-345.36	-29.44	1500918.0	1333079.3	346.21	346.61	184.87	1.33
4732.00	61.40	181.40	4573.66	-372.46	-30.08	1500890.9	1333078.6	373.32	373.68	184.62	2.60
4762.00	65.20	181.40	4587.14	-399.25	-30.73	1500864.1	1333078.0	400.12	400.43	184.40	12.67
4793.00	69.50	181.30	4599.08	-427.85	-31.41	1500835.5	1333077.3	428.72	429.00	184.20	13.87
4824.00	74.10	180.90	4608.76	-457.28	-31.97	1500806.1	1333076.7	458.15	458.40	184.00	14.89
4855.00	78.50	180.50	4616.10	-487.39	-32.34	1500776.0	1333076.4	488.26	488.46	183.80	14.25
4885.00	82.80	179.70	4620.97	-516.99	-32.39	1500746.4	1333076.3	517.83	518.00	183.58	14.57
4915.00	87.60	177.30	4623.48	-546.86	-31.60	1500716.5	1333077.1	547.66	547.77	183.31	17.87
4946.00	91.60	176.80	4623.70	-577.81	-30.01	1500685.5	1333078.7	578.53	578.59	182.97	13.00
4977.00	92.50	177.00	4622.59	-608.75	-28.33	1500654.6	1333080.4	609.38	609.40	182.66	2.97
5007.00	92.90	176.60	4621.17	-638.67	-26.66	1500624.7	1333082.0	639.21	639.22	182.39	1.88
5085.00	93.20	176.80	4617.02	-716.43	-22.18	1500546.9	1333086.5	716.76	716.77	181.77	0.46
5147.00	91.80	179.20	4614.32	-778.32	-20.02	1500485.0	1333088.7	778.53	778.58	181.47	4.48
5239.00	89.50	180.20	4613.28	-870.31	-19.53	1500393.1	1333089.2	870.43	870.53	181.29	2.73
5331.00	88.30	178.80	4615.04	-962.28	-18.73	1500301.1	1333090.0	962.32	962.47	181.12	2.00
5423.00	88.40	182.70	4617.69	-1054.22	-19.94	1500209.1	1333088.8	1054.23	1054.41	181.08	4.24

Tug Hill  
 Mathews 1-8H Rev. 3  
 Barber County, Kansas  
 As Drilled



Minimum of Curvature  
 Slot Location: 1501263.36', 1333108.69'  
 Plane of Vertical Section: 182.13°

Measured Depth Feet	BORE Inc Degrees	HOLE Direction Degrees	True Vert. Depth Up Dip In Well Path	RECTANGULAR COORDINATES		LAMBERT COORDINATES		Vertical Section Feet	CLOSURES		Dogleg Severity Deg/100'
				North(-South) Feet	East(-West) Feet	Y Feet	X Feet		Distance Feet	Direction Deg	
5515.00	90.70	182.80	4618.41	-1146.11	-24.35	1500117.3	1333084.3	1146.22	1146.36	181.22	2.50
5606.00	89.90	182.70	4617.94	-1237.00	-28.71	1500026.4	1333080.0	1237.21	1237.33	181.33	0.89
5699.00	90.00	182.30	4618.02	-1329.91	-32.77	1499933.5	1333075.9	1330.21	1330.31	181.41	0.44
5791.00	87.70	182.90	4619.87	-1421.79	-36.94	1499841.6	1333071.7	1422.18	1422.27	181.49	2.58
5882.00	88.70	182.10	4622.72	-1512.66	-40.91	1499750.7	1333067.8	1513.13	1513.21	181.55	1.41
5974.00	88.30	181.90	4625.13	-1604.57	-44.12	1499658.8	1333064.6	1605.10	1605.18	181.58	0.49
6066.00	88.00	181.00	4628.10	-1696.49	-46.45	1499566.9	1333062.2	1697.05	1697.13	181.57	1.03
6158.00	88.20	180.10	4631.15	-1788.43	-47.33	1499474.9	1333061.4	1788.96	1789.06	181.52	1.00
6250.00	88.80	179.90	4633.56	-1880.40	-47.33	1499383.0	1333061.4	1880.86	1881.00	181.44	0.69
6342.00	90.80	181.60	4633.88	-1972.39	-48.53	1499291.0	1333060.2	1972.83	1972.98	181.41	2.85
6434.00	89.90	182.50	4633.32	-2064.32	-51.82	1499199.0	1333056.9	2064.82	2064.97	181.44	1.38
6526.00	88.90	182.70	4634.28	-2156.22	-56.00	1499107.1	1333052.7	2156.82	2156.95	181.49	1.11
6618.00	88.70	184.10	4636.21	-2248.04	-61.45	1499015.3	1333047.2	2248.77	2248.88	181.57	1.54
6709.00	89.10	184.50	4637.96	-2338.76	-68.27	1498924.6	1333040.4	2339.69	2339.76	181.67	0.62
6801.00	90.30	183.80	4638.44	-2430.52	-74.93	1498832.8	1333033.8	2431.63	2431.67	181.77	1.51
6893.00	91.20	183.60	4637.23	-2522.32	-80.87	1498741.0	1333027.8	2523.58	2523.62	181.84	1.00
6984.00	90.20	183.50	4636.12	-2613.14	-86.50	1498650.2	1333022.2	2614.55	2614.57	181.90	1.10
7076.00	90.90	180.90	4635.24	-2705.06	-90.03	1498558.3	1333018.7	2706.53	2706.55	181.91	2.93
7168.00	89.30	179.50	4635.08	-2797.05	-90.35	1498466.3	1333018.3	2798.48	2798.51	181.85	2.31
7262.00	90.10	179.80	4635.57	-2891.05	-89.78	1498372.3	1333018.9	2892.39	2892.44	181.78	0.91
7357.00	88.40	178.90	4636.81	-2986.03	-88.70	1498277.3	1333020.0	2987.26	2987.35	181.70	2.02
7451.00	88.60	180.30	4639.28	-3079.99	-88.05	1498183.4	1333020.6	3081.14	3081.25	181.64	1.50
7546.00	87.70	179.70	4642.34	-3174.94	-88.05	1498088.4	1333020.6	3176.02	3176.16	181.59	1.14
7640.00	89.70	179.10	4644.47	-3268.91	-87.06	1497994.5	1333021.6	3269.88	3270.06	181.53	2.22
7735.00	90.90	179.00	4643.98	-3363.89	-85.49	1497899.5	1333023.2	3364.74	3364.98	181.46	1.27
7770.00	88.70	181.10	4644.10	-3398.89	-85.52	1497864.5	1333023.2	3399.72	3399.96	181.44	8.69
7862.00	87.70	181.10	4646.99	-3490.82	-87.28	1497772.5	1333021.4	3491.66	3491.91	181.43	1.09



Tug Hill  
 Mathews 1-8H Rev. 3  
 Barber County, Kansas  
 As Drilled



Minimum of Curvature  
 Slot Location: 1501263.36', 1333108.69'  
 Plane of Vertical Section: 182.13°

Measured Depth Feet	BORE Inc Degrees	HOLE Direction Degrees	True Vert. Depth Up Dip In Well Path	RECTANGULAR COORDINATES		LAMBERT COORDINATES		Vertical Section Feet	CLOSURES		Dogleg Severity Deg/100'
				North(-South) Feet	East(-West) Feet	Y Feet	X Feet		Distance Feet	Direction Deg	
7954.00	88.50	183.10	4650.04	-3582.70	-90.65	1497680.7	1333018.0	3583.60	3583.85	181.45	2.34
8046.00	88.70	183.10	4652.29	-3674.54	-95.63	1497588.8	1333013.1	3675.56	3675.79	181.49	0.22
8138.00	88.60	182.80	4654.46	-3766.39	-100.36	1497497.0	1333008.3	3767.52	3767.73	181.53	0.34
8230.00	89.70	182.10	4655.82	-3858.30	-104.29	1497405.1	1333004.4	3859.51	3859.71	181.55	1.42
8322.00	89.50	182.40	4656.46	-3950.22	-107.90	1497313.1	1333000.8	3951.51	3951.70	181.56	0.39
8414.00	90.00	181.50	4656.86	-4042.17	-111.04	1497221.2	1332997.7	4043.51	4043.69	181.57	1.12
8505.00	89.40	182.60	4657.34	-4133.11	-114.29	1497130.3	1332994.4	4134.50	4134.69	181.58	1.38
8689.00	91.50	181.80	4655.90	-4316.95	-121.35	1496946.4	1332987.3	4318.48	4318.66	181.61	1.22
8780.00	91.90	182.20	4653.20	-4407.86	-124.53	1496855.5	1332984.2	4409.44	4409.62	181.62	0.62
8872.00	90.70	181.80	4651.11	-4499.78	-127.74	1496763.6	1332981.0	4501.42	4501.59	181.63	1.37
8964.00	88.20	181.40	4651.99	-4591.73	-130.31	1496671.6	1332978.4	4593.40	4593.58	181.63	2.75
9058.00	89.00	181.00	4654.29	-4685.68	-132.27	1496577.7	1332976.4	4687.36	4687.55	181.62	0.95
9152.00	89.00	181.00	4655.93	-4779.65	-133.91	1496483.7	1332974.8	4781.33	4781.53	181.60	0.00
9246.00	89.00	180.40	4657.57	-4873.63	-135.06	1496389.7	1332973.6	4875.28	4875.50	181.59	0.64
9340.00	87.20	180.80	4660.69	-4967.57	-136.05	1496295.8	1332972.6	4969.20	4969.43	181.57	1.96
9435.00	89.00	180.70	4663.84	-5062.50	-137.29	1496200.9	1332971.4	5064.11	5064.37	181.55	1.90
9529.00	90.70	181.30	4664.08	-5156.49	-138.93	1496106.9	1332969.8	5158.09	5158.36	181.54	1.92
9624.00	91.40	181.40	4662.34	-5251.44	-141.17	1496011.9	1332967.5	5253.06	5253.34	181.54	0.74
9651.00	91.40	181.50	4661.68	-5278.43	-141.85	1495984.9	1332966.8	5280.05	5280.33	181.54	0.37
9698.00	91.40	181.50	4660.53	-5325.40	-143.08	1495938.0	1332965.6	5327.04	5327.32	181.54	0.00

Final Station Closure Distance: 5327.32' Direction: 181.54°

# Tug Hill

Mathews 1-8H  
Barber County, Kansas  
Rev. #3

As Drilled Update #7  
New Target Line 4618'KBTVD



**Horizontal Plan**  
1" = 2000'

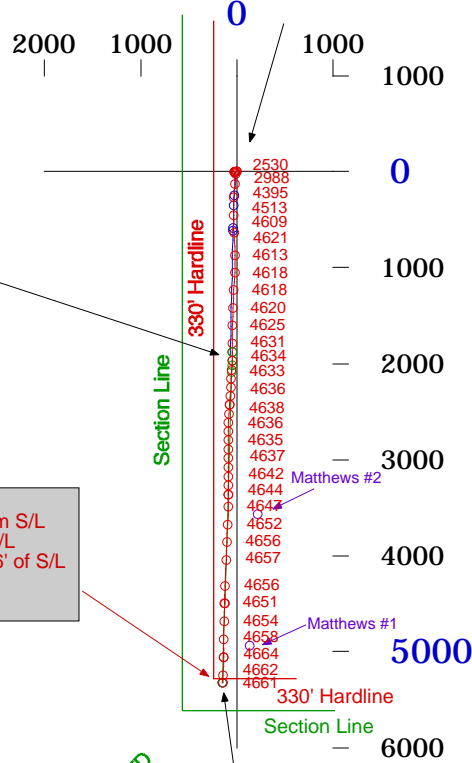
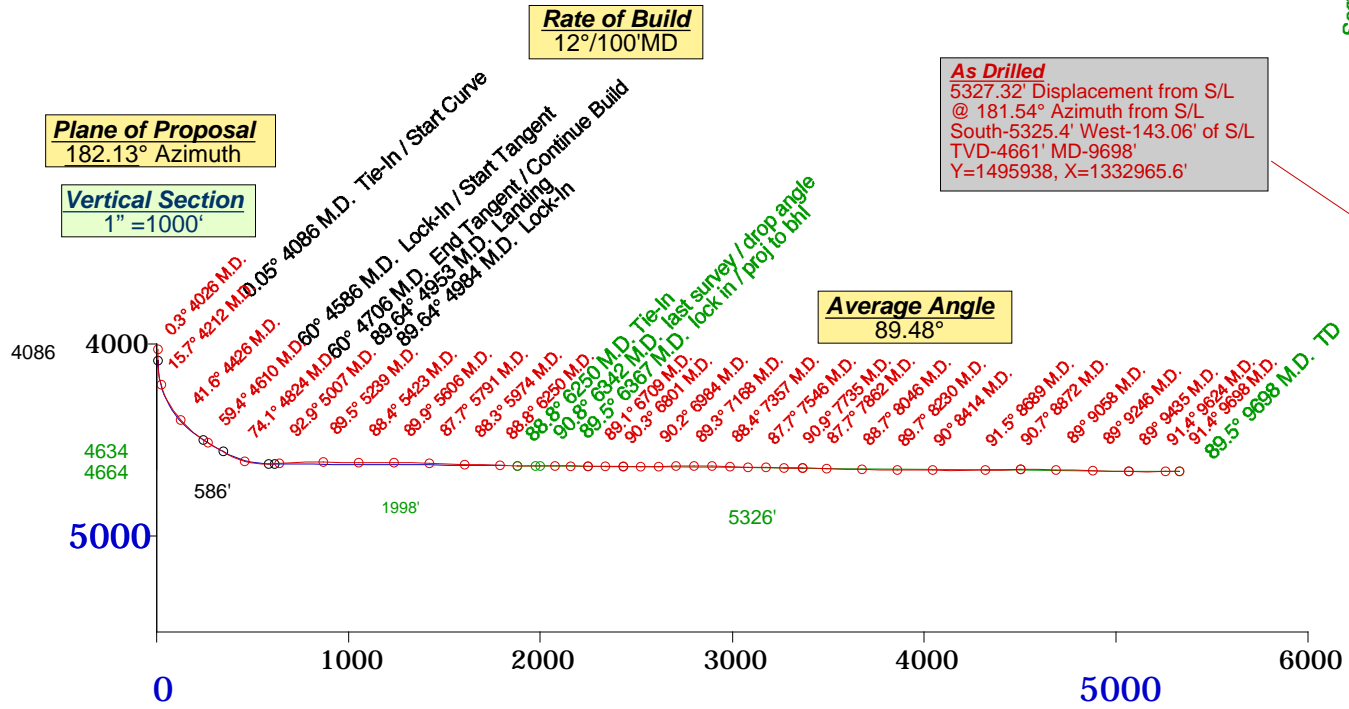


**Surface Location**  
Y=1501263.36'  
X=1333108.69'  
NAD 83

**Proposed Tie-In**  
1972.98' Displacement from S/L  
@ 181.41° Azimuth from S/L  
Hole Direction / 181.6° Azimuth  
South-1972.38' West-48.53' of S/L  
TVD-4634' MD-6342'  
Y=1499291.0', X=1333060.1'

**As Drilled**  
5327.32' Displacement from S/L  
@ 181.54° Azimuth from S/L  
South-5325.4' West-143.06' of S/L  
TVD-4661' MD-9698'  
Y=1495938, X=1332965.6'

**Proposed BHL**  
5329.39' Displacement from S/L  
@ 181.60° Azimuth from S/L  
South-5327.32' West-148.37' of S/L  
TVD-4664' MD-9699'  
Y=1495936', X=1332960'



Well Name: Mathews 1-8H

Contractor/Rig: Patterson-UTI 421

State: KS

County: Barber

SHL: 1630 FSL & 2084 FEL

Township: 34S

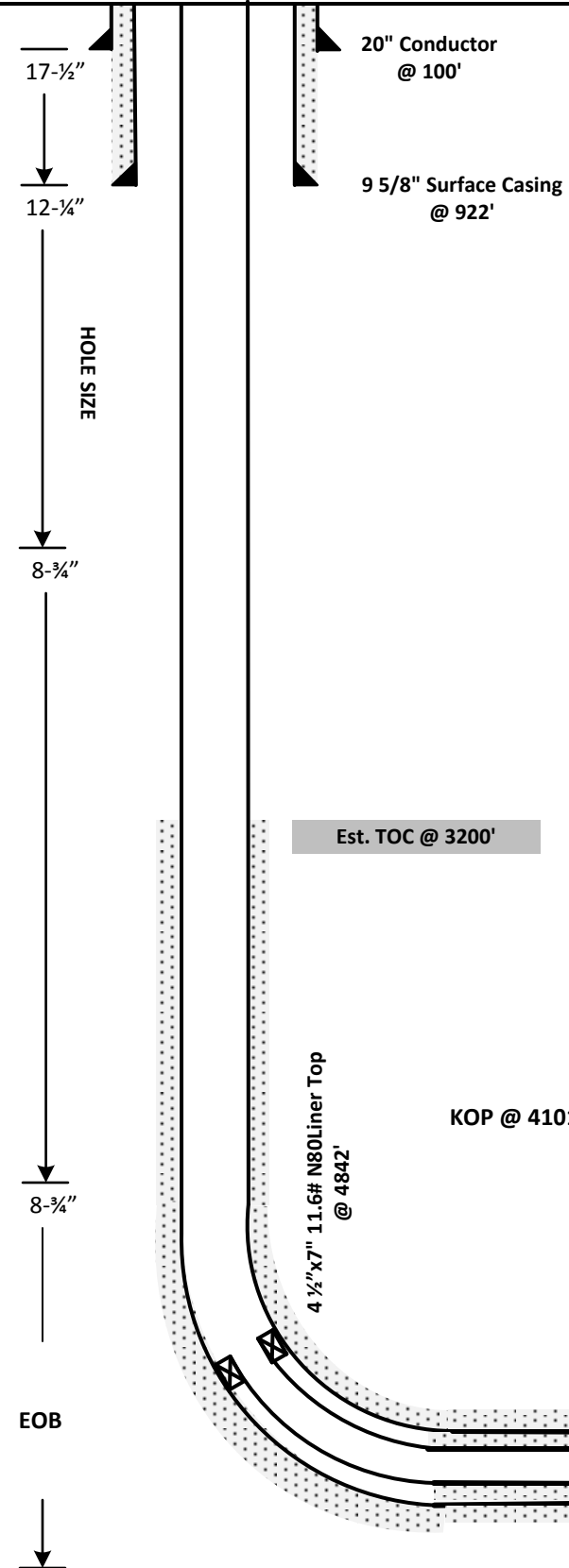
As Run

GL Elev: KB: KB Elev:

BHL: 1610 FSL & 2110 FEL S17-T33S-R10W

AFE: 12-0188

Permit/API Number: 15-007-23979-01-00



Tubular Details

	20"	9 5/8"	7"	4-1/2"
Weight	94 lb/ft	36 lb/ft	26 lb/ft	15.10 lb/ft
Grade	X-42	J-55	P-110	N-80
Burst	3590 psi	3520 psi	9960 psi	10480 psi
Collapse	NA	2020 psi	6230 psi	11080 psi
Wall Thickness	0.438"	0.352"	0.724"	0.337"
ID	19.124"	8.921"	6.276"	3.826"
Setting Depth	100'	922'	5063'	9698'

Cement Details

Interval	Company	Excess	Est. Vol
Surface			
Intermediate			
Production Lead			
Production Tail			

See attachments for slurry details

4 1/2" 11.6# P110 LTC @ 9698'

TD at 9698' MD / 4659.8' TVD

Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



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

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

May 08, 2013

Winnie Scott  
Tug Hill Operating, LLC  
550 BAILEY AVE, STE 510  
FT. WORTH, TX 76107

Re: ACO1  
API 15-007-23979-00-00  
Mathews 1-8H  
SE/4 Sec.08-33S-10W  
Barber County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Winnie Scott