



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1121320  
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: \_\_\_\_\_



1121320

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: <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> _____ <i>(Submit ACO-4)</i>	<b>PRODUCTION INTERVAL:</b> _____ _____
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Well Name: Donovan 1-11H

Contractor/Rig: Patterson-UTI 421

State: KS

County: Barber

**As Run**

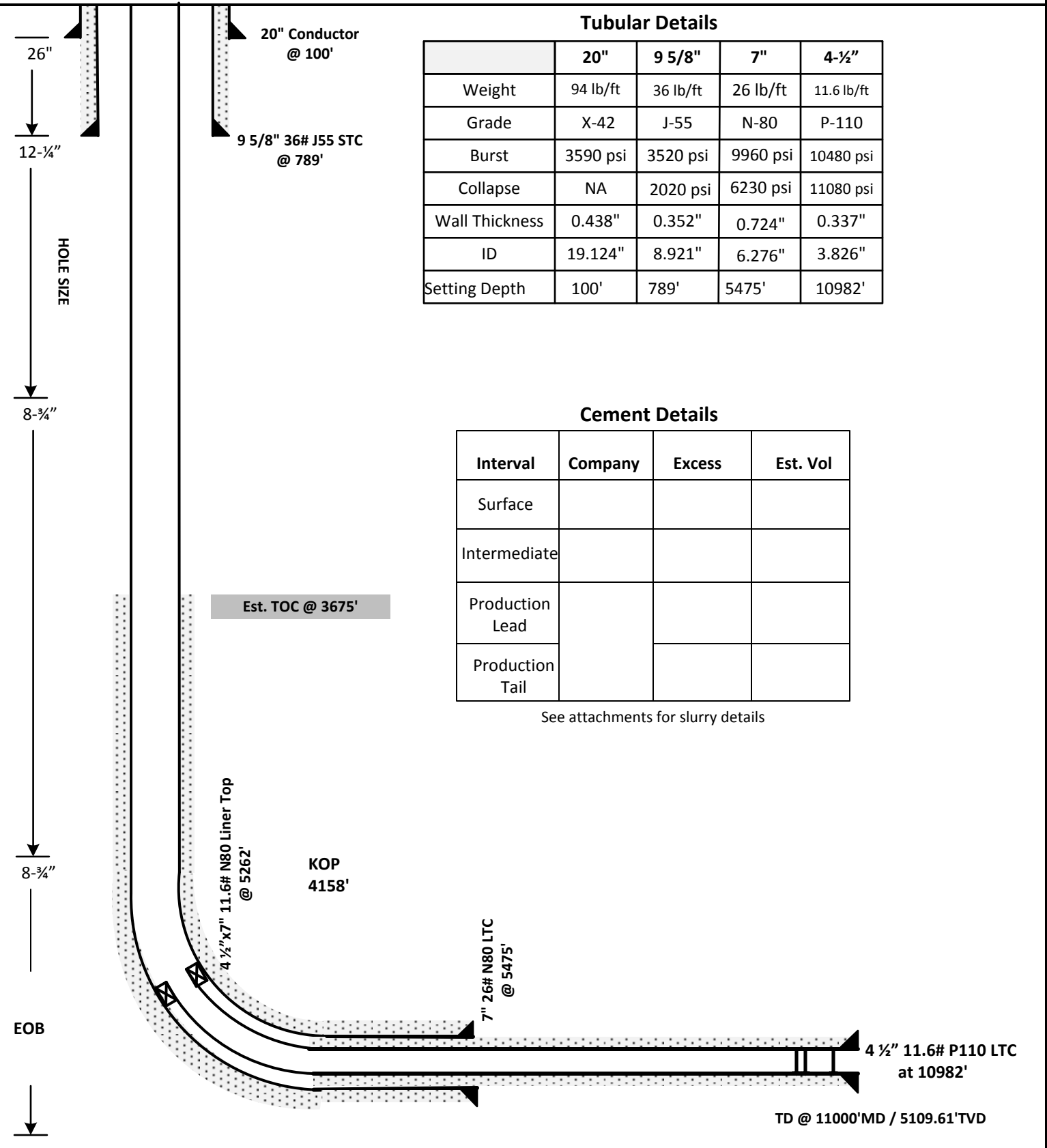
SHL: 115 FNL & 676 FWL

GL Elev: 1655 KB: 23 KB Elev:

BHL: 2310' FNL & 660' FWL Sec14-T34-R13W

AFE: 12-0124

Permit/API Number: 15-007-23935-01-00



**Tubular Details**

	20"	9 5/8"	7"	4-1/2"
Weight	94 lb/ft	36 lb/ft	26 lb/ft	11.6 lb/ft
Grade	X-42	J-55	N-80	P-110
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'	789'	5475'	10982'

**Cement Details**

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

See attachments for slurry details

**Elite Drilling, LLC.**  
 3105 Bent Creek Drive  
 Woodward, OK 73801  
 Phone: 580-571-5602  
 Fax: 580-256-1868

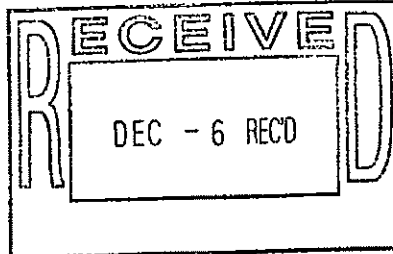


**INVOICE**

**ELITE DRILLING**

Bill To

Tug Hill Operating, LLC.  
 550 Bailey Avenue  
 Suite 510  
 Fort Worth, TX 76107



Date	Invoice #
11/28/2012	5411

Ordered By	Terms	Due Date	Lease	Legals & County Info
J. Lewis	Net 30	12/28/2012	Donovan 1-11H	
Description				Amount
Drilled rathole, mousehole, and conductor hole on the Donovan 1-11H - Patterson UTI Rig #421 on 11/15/2012				10,000.00
Materials (including discount)				13,000.00
Drilled 100' of 32" Conductor Hole				
Furnished 100' of 20" Conductor Pipe				
Drilled 78' of 22" mouse hole				
Furnished 78' of 16" pipe				
Dirt Removal				
Furnished Welder & Materials				
Furnished 15 yds of grout				
Furnished mud truck				
Sales Tax				0.00
<b>THANK YOU FOR YOUR BUSINESS!!!</b>			<b>Total</b>	<b>\$23,000.00</b>

*Handwritten notes and signature:*  
 AFE # 12-0124  
 City 840.05  
 [Signature]

# ALLIED OIL & GAS SERVICES, LLC 059647

Federal Tax I.D.# 20-6976804

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

SERVICE POINT:  
Medicine Lodge, KS

DATE <u>12-9-2012</u>	SEC. <u>10</u>	TWP. <u>34s</u>	RANGE <u>13W</u>	CALLED OUT <u>8:30 AM</u>	ON LOCATION <u>11:30 AM</u>	JOB START <u>5:00 PM</u>	JOB FINISH <u>6:00 PM</u>
LEASE <u>Danvers</u>	WELL # <u>1-11 H</u>	LOCATION <u>Medicine Lodge, KS</u>	<u>4 W. 20</u>	COUNTY <u>Barber</u>	STATE <u>KS</u>		
OLD OR NEW (Circle one) <u>NEW</u>		<u>Cynth. Rd, 12 S, W. 20</u>		<u>1.08</u>	<u>7.3</u>		

CONTRACTOR <u>Peterson #4121</u>	OWNER <u>TUS H. II</u>
TYPE OF JOB <u>Intermixer</u>	
HOLE SIZE <u>8 3/4</u>	T.D. <u>5549'</u>
CASINO SIZE <u>7" 26A</u>	DEPTH <u>5474'</u>
TUDING SIZE _____	DEPTH _____
DRILL PIPE _____	DEPTH _____
TOOL _____	DEPTH _____
PRES. MAX _____	MINIMUM _____
MEAS. LINE _____	SHOE JOINT <u>40'</u>
CEMENT LEFT IN CSG. _____	
PERFS. _____	
DISPLACEMENT <u>209 bbls of Freshwater</u>	

CEMENT AMOUNT ORDERED <u>2255c class A &amp; 5255sr</u>	
<u>2% G-1 &amp; 3% Flika &amp; Debsner</u>	
COMMON <u>C1955b 225sr @ 17.90</u>	<u>4,027.50</u>
POZMIX _____ @ _____	
GEL <u>45x @ 23.40</u>	<u>93.60</u>
CHLORIDE _____ @ _____	
ASC _____ @ _____	
<u>SS12 11.3x @ 26.35</u>	<u>289.85</u>
<u>FL16 63A @ 18.90</u>	<u>1,190.70</u>
<u>Debsner 32# @ 9.80</u>	<u>313.60</u>
<u>ASE 1000 #1 @ 52.70</u>	<u>804.00</u>
_____ @ _____	
_____ @ _____	
_____ @ _____	
_____ @ _____	
HANDLING <u>245 m ft @ 2.44</u>	<u>607.60</u>
MILEAGE <u>11.12 x 35 @ 2.60</u>	<u>1,011.92</u>
TOTAL	<u>8,239.17</u>

PUMP TRUCK # <u>354-555</u>	CEMENTER <u>Darin B</u>	1
BULK TRUCK # <u>471-252</u>	HELPER <u>Scott P.</u>	2
BULK TRUCK # _____	DRIVER <u>Brsnden P.</u>	3
BULK TRUCK # _____	DRIVER _____	

REMARKS:  
Pipe on bottom & break circulation  
test line to 100psi, pump 3 bbls water, success  
ASE, 3 bbls water, mix 225sr cement, shut down  
27th pump & line, replace plus, 5474' & cement  
60% pressure at 170 bbls slow rate to 300  
at 198 bbls, bump plus at 209 bbls 1000  
1500 psi, plot & hold

389.20	SERVICE
DEPTH OF JOB <u>5474'</u>	
PUMP TRUCK CHARGE _____	<u>3,099.25</u>
EXTRA FOOTAGE _____ @ _____	
MILEAGE <u>35 @ 7.70</u>	<u>269.50</u>
MANIFOLD Headrental _____ @ _____	<u>275.00</u>
Light vehicle <u>30 @ 4.40</u>	<u>132.00</u>
Waiting Time <u>1.5 hr @</u>	<u>N/C</u>
Additional hours <u>3 @ 440.00</u>	<u>1320.00</u>
TOTAL	<u>5117.75</u>

CHARGE TO: TUS H. II  
 STREET \_\_\_\_\_ Well Name Danvers #1-11 H  
 CITY \_\_\_\_\_ AFE No. 12-0124  
 STATE 2117  
 ACCNT No. 830.18  
 Name Joe Trevino  
 Signature Joe Trevino

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.

PLUG & FLOAT EQUIPMENT	
<u>7"</u>	
<u>1-Rubber plus @ 99.45</u>	<u>99.45</u>
_____ @ _____	
_____ @ _____	
_____ @ _____	
_____ @ _____	
TOTAL	<u>99.45</u>
SALES TAX (if Any) <u>490.19</u>	
TOTAL CHARGES <u>13,456.86</u>	<u>37</u>
DISCOUNT <u>3590</u>	<u>4709.73</u>
	IF PAID IN 30 DAYS

PRINTED NAME Joe Trevino  
 SIGNATURE Joe Trevino  
Thank you!!!

Net. 8746.68

# ALLIED OIL & GAS SERVICES, LLC 059647

Federal Tax I.D.# 20-6976804

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

SERVICE POINT:  
Medicine Lodge, KS

DATE <u>12-9-2012</u>	SEC. <u>10</u>	TWP. <u>34s</u>	RANGE <u>13W</u>	CALLED OUT <u>8:30 AM</u>	ON LOCATION <u>11:30 AM</u>	JOB START <u>5:00 PM</u>	JOB FINISH <u>6:00 PM</u>
LEASE <u>Danvers</u>	WELL # <u>1-11 H</u>	LOCATION <u>Medicine Lodge, KS 4W20</u>		COUNTY <u>Barber</u>	STATE <u>KS</u>		
OLD OR NEW (Circle one) <u>NEW</u>		CYPH. <u>12.5' w/hm</u>		<u>1.08</u>	<u>7.3</u>		

CONTRACTOR <u>Peterson #4121</u>	OWNER <u>TUS H'II</u>
TYPE OF JOB <u>Intermixer</u>	
HOLE SIZE <u>8 3/4</u>	T.D. <u>5549'</u>
CASINO SIZE <u>7" 26A</u>	DEPTH <u>5474'</u>
TUDING SIZE	DEPTH
DRILL PIPE	DEPTH
TOOL	DEPTH
PRES. MAX	MINIMUM
MEAS. LINE	SHOE JOINT <u>40'</u>
CEMENT LEFT IN CSG.	
PERFS.	
DISPLACEMENT <u>209 bbls of Freshwater</u>	
EQUIPMENT	
PUMP TRUCK CEMENTER <u>Darin B. 1</u>	
# <u>354-555</u> HELPER <u>Scot P. 2</u>	
BULK TRUCK	
# <u>471-252</u> DRIVER <u>Brsnden P. 3</u>	
BULK TRUCK	
#	DRIVER

CEMENT	
AMOUNT ORDERED <u>225sr c/155sr &amp; 525sr</u>	
<u>2% G-1 &amp; 3% F-16 &amp; Debsner</u>	
COMMON <u>c/155sr &amp; 225sr @ 17.90</u>	<u>4,027.50</u>
POZMIX	@
GEL <u>45x</u>	@ <u>23.40</u> <u>93.60</u>
CHLORIDE	@
ASC	@
SS12 <u>11.3x</u>	@ <u>26.35</u> <u>289.85</u>
FL16 <u>63A</u>	@ <u>18.90</u> <u>1,190.70</u>
Debsner <u>32#</u>	@ <u>9.80</u> <u>313.60</u>
ASE <u>initial 1000</u>	@ <u>52.70</u> <u>804.00</u>
	@
	@
	@
	@
HANDLING <u>245 m ft</u>	@ <u>2.44</u> <u>607.60</u>
MILEAGE <u>11.12 x 35</u>	@ <u>2.60</u> <u>1,011.92</u>
TOTAL	<u>8,239.17</u>

REMARKS:  
Pipe on bottom & break circulation  
test line to 100psi, pump 3 bbls w/c. success  
ASE, 3 bbls w/c, mix 225sr cement, shut down  
27th pump & line, replace plus, 5474' & cement  
60+ pressure at 170 bbls slow rate to 300  
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DEPTH OF JOB <u>5474'</u>	
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EXTRA FOOTAGE	@
MILEAGE <u>35</u>	@ <u>7.70</u> <u>269.50</u>
MANIFOLD Headrental	@ <u>275.00</u>
Light vehicle <u>30</u>	@ <u>4.40</u> <u>134.00</u>
Waiting Time <u>15 hr</u>	@ <u>N/C</u>
Additional hours <u>3</u>	@ <u>440.00</u> <u>1320.00</u>
TOTAL	<u>5117.75</u>

CHARGE TO: TUS H'II  
 STREET Well Name Danvers #1-11 H  
 CITY AFE No. 12-0124  
STATE 2117  
 ACCNT No. 830.18  
 Name Joe Trevino  
 Signature Joe Trevino

To: Allied Oil & Gas Services, LLC.  
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PLUG & FLOAT EQUIPMENT	
<u>7"</u>	
1-Rubber plus	@ <u>99.45</u>
	@
	@
	@
	@
TOTAL	<u>99.45</u>
SALES TAX (if Any) <u>490.19</u>	
TOTAL CHARGES <u>13,456.86</u>	<u>37</u>
DISCOUNT <u>3590</u>	<u>4709.73</u>
	IF PAID IN 30 DAYS

PRINTED NAME Joe Trevino  
 SIGNATURE Joe Trevino  
Thank you!!!

Net. 8746.68

# ALLIED OIL & GAS SERVICES, LLC 059676

Federal Tax I.D.# 20-5975804

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

SERVICE POINT:  
Medicine Lodge, KS

DATE: 12-29-2012	SEC: 34	TWP: 34S	RANGE: 13W	CALLED OUT: 12-26	ON LOCATION: 12-27	JOB START: 7:30 AM	JOB FINISH: 9:30 AM
LEASE: DONOVAN	WELL: # 1-11 H	LOCATION: 160 S GVP Hill Rd, 12 South	COUNTY: Barber	STATE: KS	1.06 7.3		
OLD OR <u>NEW</u> (Circle one)				West ind			

CONTRACTOR: Pederson #421  
 TYPE OF JOB: 4 1/2 Liner  
 HOLE SIZE: 6 1/8 TD: 11,000'  
 CASING SIZE: 4 1/2 DEPTH: 5719'  
 TUBING SIZE: 4" Drill pipe DEPTH: 2219'  
 DRILL PIPE: 1 1/2" Drill pipe DEPTH: 2135'  
 TOOL: Drill collars DEPTH: 927'  
 PRES. MAX \_\_\_\_\_ MINIMUM \_\_\_\_\_  
 MEAS. LINE \_\_\_\_\_ SHOE JOINT 47'  
 CEMENT LEFT IN CSG. \_\_\_\_\_  
 PERFS. \_\_\_\_\_  
 DISPLACEMENT: 130 bbls of fresh water

OWNER: TUG Hill  
 CEMENT AMOUNT ORDERED: 525 sk C1955 H 50-50 P02  
5% SS1 + 3# Kalsol + 2% GVI + 6% FL16  
1% SAST + 1% CD-31 + 1/4# Depositor  
 COMMON: C1955 H 263 sk @ 16.85 4,431.50  
 POZMIX: 262 sk @ 9.35 2,448.70  
 GBL: 9 sk @ 23.40 210.60  
 CHLORIDE \_\_\_\_\_ @ \_\_\_\_\_  
 ASC \_\_\_\_\_ @ \_\_\_\_\_  
FL16 265 # @ 18.90 5,008.50  
Depositor 131 # @ 5.80 769.80  
SS1 14 sk @ 26.35 368.90  
SA 51 50 # @ 17.55 877.50  
CD-31 50 # @ 10.30 515.00  
Gilsonite 1275 # @ 0.98 1249.50  
Super Flush 12 bbls @ 58.70 704.40  
 HANDLING: 606.90 @ 2.48 1503.87  
 MILEAGE: 484.00 @ 2.60 1258.40

EQUIPMENT  
 PUMP TRUCK: Cementor Dgrin F. 1  
 #358-555 HELPER: Scott P. 2  
 BULK TRUCK: #421-252 DRIVER James, David 3  
 BULK TRUCK: Driver Bowen, Dale 3

REMARKS:  
See Cement Log  
 Well Name: DONOVAN #1-11H  
 AFE No.: 12-0124  
 AGENT No.: \_\_\_\_\_  
 Name: Joe Fraying  
 Signature: [Signature]

TOTAL: 19,843.80  
 SERVICE  
 DEPTH OF JOB: 11,000'  
 PUMP TRUCK CHARGE: 7,104.24  
 EXTRA FOOTAGE: \_\_\_\_\_ @ \_\_\_\_\_  
 MILEAGE: 20 @ 7.70 154.00  
 MANIFOLD: \_\_\_\_\_ @ \_\_\_\_\_  
Light Vehicle 20 @ 4.40 88.00  
Standby hours 4.5 @ 440.00 N/C  
(9 hours total) 4.5 @ 440.00 1980.00  
 TOTAL: 9326.24

CHARGE TO: TUG Hill  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

To: Allied Oil & Gas Services, LLC.  
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PRINTED NAME: \_\_\_\_\_  
 SIGNATURE: [Signature]

PLUG & FLOAT EQUIPMENT  
None  
 RECEIVED  
 JAN - 7 - 2013  
 TOTAL \_\_\_\_\_  
 SALES TAX (If Any): 1248.29  
 TOTAL CHARGES: 29,190.24  
 DISCOUNT: 35% 10216.02 IF PAID IN 30 DAYS

Net 5 18,973.52

Thank You!!!





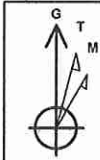
Company: Tug Hill Operating, LLC  
 Site: Donovan  
 Well: 1-11H  
 Project: Barber County, Kansas (NAD 83)  
 Rig Name: Patterson 421



Planning: 936.442.2510 Fax: 936.442.2515  
 Operations: 936.442.2500 Fax: 936.442.2599

ANNOTATIONS

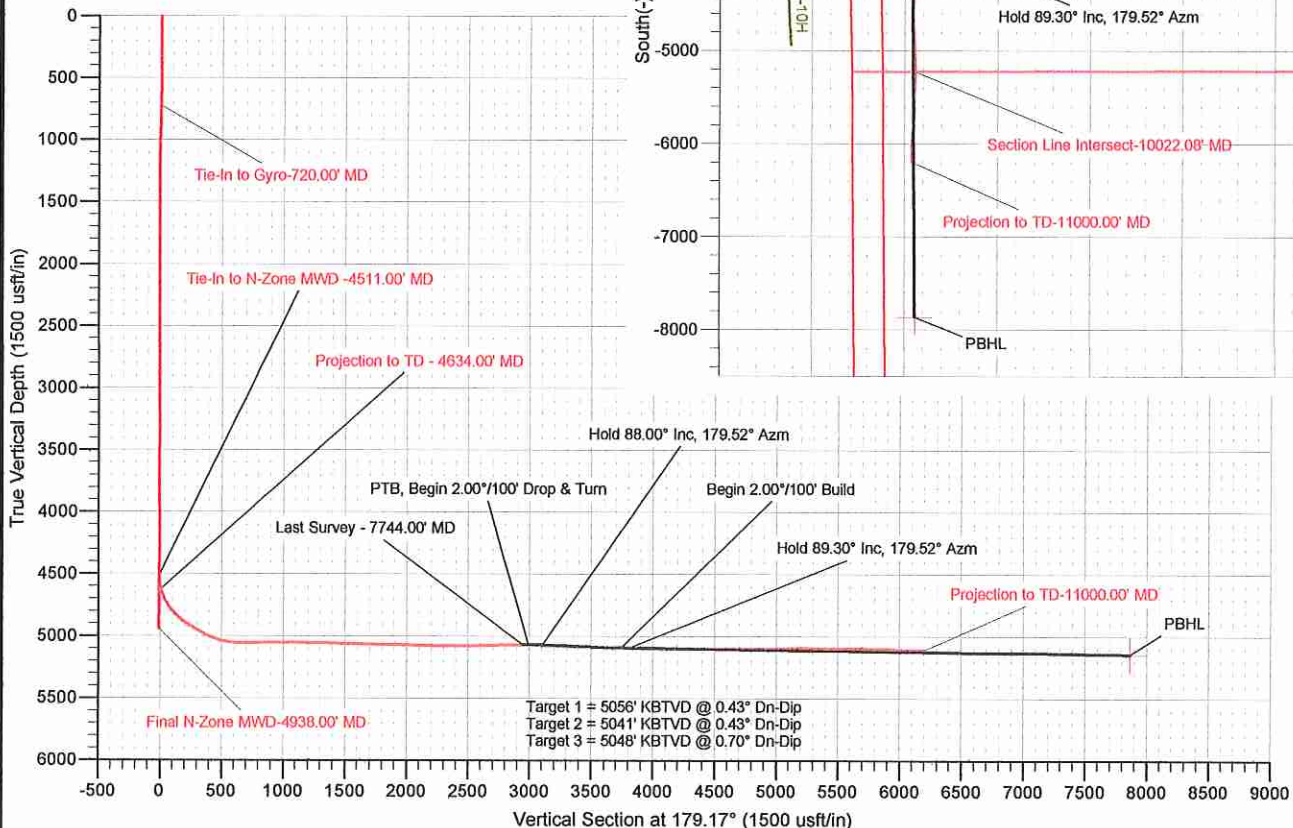
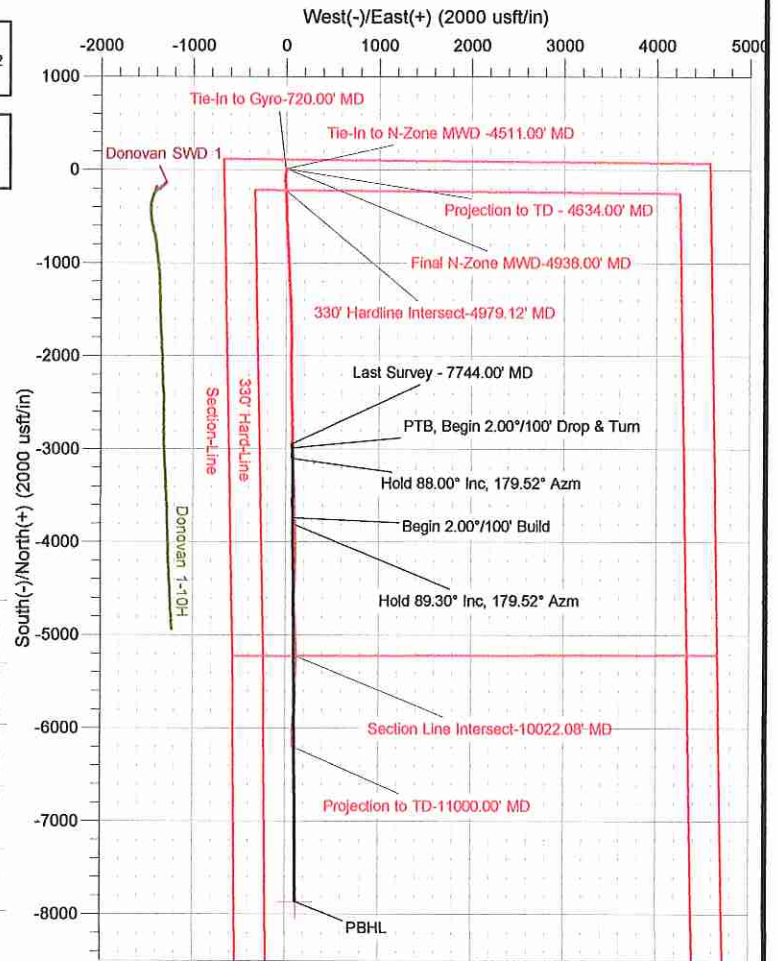
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
7744.00	90.10	178.70	5068.89	-2943.63	70.83	2944.35	0.00	Last Survey - 7744.00' MD
7791.00	90.10	178.70	5068.81	-2990.62	71.90	2991.35	47.00	PTB, Begin 2.00°/100' Drop & Turn
7903.93	88.00	179.52	5070.69	-3103.61	73.65	3104.25	159.91	Hold 88.00° Inc, 179.52° Azm
8541.22	88.00	179.52	5092.97	-3740.39	78.95	3741.14	786.81	Begin 2.00°/100' Build
8606.39	89.30	179.52	5094.50	-3805.54	79.49	3806.29	861.95	Hold 89.30° Inc, 179.52° Azm
12661.39	89.30	179.52	5144.04	-7860.09	113.28	7860.91	4916.65	PBHL



Azimuths to Grid North  
 True North: 0.13°  
 Magnetic North: 5.10°  
 Magnetic Field  
 Strength: 51759.2nT  
 Dip Angle: 65.16°  
 Date: 11/30/2012  
 Model: WMM\_2010

Created By: HLH  
 Date: 10:43, December 26 2012  
 Plan: Design #12

US State Plane 1983  
 Kansas Southern Zone



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by MS Energy are at the sole risk and responsibility of the customer. MS Energy is not responsible for the accuracy of this schematic or the information contained herein.





**MS Energy Services**  
Survey Report



<b>Company:</b>	Tug Hill Operating, LLC	<b>Local Co-ordinate Reference:</b>	Well 1-11H
<b>Project:</b>	Barber County, Kansas (NAD 83)	<b>TVD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Site:</b>	Donovan	<b>MD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Well:</b>	1-11H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Pilot Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Southern Region

<b>Project</b>	Barber County, Kansas (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Kansas Southern Zone		

<b>Well</b>	1-11H				
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,473,293.82 usft	<b>Latitude:</b> 37° 6' 30.6675 N
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	1,250,763.47 usft	<b>Longitude:</b> 98° 42' 40.052 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b> 1,654.50 usft

<b>Wellbore</b>	Pilot Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	WMM_2010	11/30/12	4.97	65.16	51,759

<b>Design</b>	Surveys				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00		179.17

<b>Survey Program</b>	<b>Date</b>	12/26/12			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
100.00	720.00	N-Zone Gyro (Pilot Hole)	NS-GYRO-SS	NS Gyro single shots	
889.00	4,938.00	N-Zone MWD (Pilot Hole)	MWD	MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
720.00	0.74	331.68	719.97	3.59	-4.46	-3.65	0.00	0.00	0.00	
<b>Tie-In to Gyro-720.00' MD</b>										
889.00	1.10	35.10	888.95	5.88	-4.04	-5.94	0.60	0.21	37.53	
985.00	1.00	42.20	984.94	7.25	-2.95	-7.29	0.17	-0.10	7.40	
1,081.00	0.60	14.00	1,080.93	8.36	-2.27	-8.39	0.57	-0.42	-29.38	
1,176.00	1.00	48.70	1,175.92	9.39	-1.52	-9.41	0.64	0.42	36.53	
1,272.00	0.40	65.90	1,271.91	10.08	-0.59	-10.09	0.66	-0.63	17.92	
1,368.00	0.10	262.80	1,367.91	10.21	-0.37	-10.21	0.52	-0.31	-169.90	
1,463.00	0.50	37.90	1,462.91	10.52	-0.19	-10.53	0.61	0.42	142.21	
1,557.00	0.30	141.80	1,556.91	10.65	0.21	-10.65	0.68	-0.21	110.53	
1,653.00	0.30	163.40	1,652.91	10.22	0.44	-10.21	0.12	0.00	22.50	
1,748.00	0.70	256.40	1,747.90	9.84	-0.06	-9.84	0.82	0.42	97.89	
1,844.00	0.20	193.00	1,843.90	9.54	-0.66	-9.55	0.66	-0.52	-66.04	
1,940.00	0.50	284.00	1,939.90	9.48	-1.11	-9.49	0.56	0.31	94.79	
2,035.00	0.30	98.80	2,034.90	9.54	-1.26	-9.56	0.84	-0.21	184.00	



**MS Energy Services**  
Survey Report



<b>Company:</b>	Tug Hill Operating, LLC	<b>Local Co-ordinate Reference:</b>	Well 1-11H
<b>Project:</b>	Barber County, Kansas (NAD 83)	<b>TVD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Site:</b>	Donovan	<b>MD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Well:</b>	1-11H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Pilot Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Southern Region

**Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,131.00	0.40	72.90	2,130.90	9.60	-0.70	-9.61	0.19	0.10	-26.98
2,226.00	0.60	91.40	2,225.89	9.68	0.12	-9.68	0.27	0.21	19.47
2,321.00	0.10	356.30	2,320.89	9.76	0.61	-9.75	0.65	-0.53	-100.11
2,417.00	0.60	50.80	2,416.89	10.16	0.99	-10.14	0.57	0.52	56.77
2,513.00	0.40	124.80	2,512.89	10.28	1.66	-10.26	0.65	-0.21	77.08
2,608.00	0.50	66.20	2,607.88	10.26	2.31	-10.23	0.47	0.11	-61.68
2,701.00	0.70	76.40	2,700.88	10.56	3.23	-10.51	0.24	0.22	10.97
2,797.00	0.30	114.40	2,796.88	10.59	4.03	-10.53	0.52	-0.42	39.58
2,892.00	0.40	183.70	2,891.87	10.16	4.24	-10.10	0.43	0.11	72.95
2,987.00	0.60	170.30	2,986.87	9.34	4.30	-9.27	0.24	0.21	-14.11
3,082.00	0.40	208.30	3,081.87	8.56	4.23	-8.49	0.40	-0.21	40.00
3,178.00	0.40	239.20	3,177.87	8.09	3.78	-8.03	0.22	0.00	32.19
3,272.00	0.30	123.00	3,271.86	7.79	3.71	-7.73	0.63	-0.11	-123.62
3,367.00	0.40	308.10	3,366.86	7.86	3.65	-7.80	0.74	0.11	-184.11
3,462.00	0.40	15.10	3,461.86	8.38	3.48	-8.33	0.46	0.00	70.53
3,558.00	0.50	83.30	3,557.86	8.75	3.98	-8.69	0.53	0.10	71.04
3,654.00	0.40	109.80	3,653.86	8.69	4.71	-8.62	0.24	-0.10	27.60
3,750.00	0.20	248.00	3,749.86	8.51	4.87	-8.44	0.59	-0.21	143.96
3,845.00	0.40	321.80	3,844.85	8.71	4.51	-8.64	0.41	0.21	77.68
3,939.00	0.70	253.40	3,938.85	8.80	3.76	-8.75	0.71	0.32	-72.77
4,033.00	1.10	223.40	4,032.84	7.98	2.59	-7.95	0.64	0.43	-31.91
4,128.00	1.10	283.30	4,127.83	7.53	1.08	-7.52	1.16	0.00	63.05
4,224.00	0.60	259.40	4,223.81	7.65	-0.31	-7.66	0.63	-0.52	-24.90
4,320.00	0.80	304.40	4,319.81	7.94	-1.36	-7.96	0.59	0.21	46.88
4,416.00	0.80	293.20	4,415.80	8.58	-2.53	-8.62	0.16	0.00	-11.67
4,511.00	0.50	279.60	4,510.79	8.91	-3.55	-8.96	0.35	-0.32	-14.32
4,606.00	0.30	285.30	4,605.79	9.05	-4.20	-9.11	0.21	-0.21	6.00
4,700.00	0.80	310.40	4,699.79	9.54	-4.93	-9.61	0.58	0.53	26.70
4,732.00	0.50	309.70	4,731.78	9.77	-5.21	-9.84	0.94	-0.94	-2.19
4,764.00	1.00	336.10	4,763.78	10.11	-5.43	-10.19	1.86	1.56	82.50
4,795.00	0.80	3.80	4,794.78	10.58	-5.53	-10.66	1.52	-0.65	89.35
4,827.00	0.60	357.30	4,826.77	10.97	-5.52	-11.05	0.67	-0.63	-20.31
4,858.00	0.70	4.40	4,857.77	11.32	-5.51	-11.40	0.41	0.32	22.90
4,890.00	1.10	349.40	4,889.77	11.82	-5.56	-11.89	1.44	1.25	-46.88
4,921.00	0.70	342.70	4,920.76	12.29	-5.67	-12.37	1.33	-1.29	-21.61
4,938.00	1.10	342.70	4,937.76	12.54	-5.75	-12.63	2.35	2.35	0.00

Final N-Zone MWD-4938.00' MD



<b>Company:</b>	Tug Hill Operating, LLC	<b>Local Co-ordinate Reference:</b>	Well 1-11H
<b>Project:</b>	Barber County, Kansas (NAD 83)	<b>TVD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Site:</b>	Donovan	<b>MD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Well:</b>	1-11H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Pilot Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Southern Region

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
720.00	719.97	3.59	-4.46	Tie-In to Gyro-720.00' MD
4,938.00	4,937.76	12.54	-5.75	Final N-Zone MWD-4938.00' MD





**MS Energy Services**  
Survey Report



<b>Company:</b>	Tug Hill Operating, LLC	<b>Local Co-ordinate Reference:</b>	Well 1-11H
<b>Project:</b>	Barber County, Kansas (NAD 83)	<b>TVD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Site:</b>	Donovan	<b>MD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Well:</b>	1-11H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Southern Region

<b>Project</b>	Barber County, Kansas (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Kansas Southern Zone		

<b>Well</b>	1-11H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,473,293.82 usft	<b>Latitude:</b>	37° 6' 30.6675 N
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	1,250,763.47 usft	<b>Longitude:</b>	98° 42' 40.052 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,654.50 usft

<b>Wellbore</b>	Wellbore #3				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	WMM_2010	11/30/12	4.97	65.16	51,759

<b>Design</b>	Surveys				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	4,511.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	179.17	

<b>Survey Program</b>	<b>Date</b>	12/26/12			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
100.00	720.00	N-Zone Gyro (Pilot Hole)	NS-GYRO-SS	NS Gyro single shots	
889.00	4,511.00	N-Zone MWD (Pilot Hole)	MWD	MWD - Standard	
4,511.00	11,000.00	MS MWD (Wellbore #3)	MWD	MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,511.00	0.50	279.60	4,510.78	8.91	-3.55	-8.96	0.00	0.00	0.00
<b>Tie-In to N-Zone MWD -4511.00' MD</b>									
4,521.00	1.00	199.30	4,520.78	8.84	-3.62	-8.89	10.40	5.00	-803.00
4,553.00	4.00	195.30	4,552.75	7.50	-4.01	-7.55	9.39	9.38	-12.50
4,584.00	8.80	190.10	4,583.54	4.12	-4.71	-4.18	15.58	15.48	-16.77
4,616.00	14.00	189.40	4,614.90	-2.12	-5.77	2.03	16.26	16.25	-2.19
4,647.00	18.70	189.10	4,644.64	-10.73	-7.17	10.62	15.16	15.16	-0.97
4,679.00	23.30	188.60	4,674.51	-22.06	-8.93	21.93	14.39	14.38	-1.56
4,711.00	27.50	188.50	4,703.41	-35.63	-10.97	35.46	13.13	13.13	-0.31
4,742.00	31.20	184.70	4,730.42	-50.71	-12.68	50.53	13.36	11.94	-12.26
4,774.00	35.00	184.10	4,757.23	-68.14	-14.02	67.93	11.92	11.88	-1.88
4,806.00	37.60	180.30	4,783.02	-87.06	-14.73	86.83	10.74	8.13	-11.88
4,838.00	41.80	176.70	4,807.64	-107.48	-14.17	107.26	14.96	13.13	-11.25
4,869.00	45.50	176.50	4,830.06	-128.83	-12.89	128.63	11.94	11.94	-0.65



**MS Energy Services**  
Survey Report



<b>Company:</b>	Tug Hill Operating, LLC	<b>Local Co-ordinate Reference:</b>	Well 1-11H
<b>Project:</b>	Barber County, Kansas (NAD 83)	<b>TVD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Site:</b>	Donovan	<b>MD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Well:</b>	1-11H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Southern Region

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,899.00	48.80	176.80	4,850.46	-150.79	-11.61	150.60	11.02	11.00	1.00
4,929.00	52.40	177.20	4,869.50	-173.93	-10.40	173.77	12.04	12.00	1.33
4,961.00	56.00	177.70	4,888.22	-199.86	-9.25	199.70	11.32	11.25	1.56
4,979.12	56.76	177.82	4,898.25	-214.94	-8.66	214.79	4.23	4.19	0.65
<b>330' Hardline Intersect-4979.12' MD</b>									
4,992.00	57.30	177.90	4,905.26	-225.73	-8.25	225.59	4.23	4.19	0.64
5,025.00	59.50	177.50	4,922.55	-253.82	-7.13	253.69	6.75	6.67	-1.21
5,056.00	60.80	177.50	4,937.98	-280.68	-5.95	280.56	4.19	4.19	0.00
5,089.00	60.50	177.70	4,954.15	-309.42	-4.75	309.32	1.05	-0.91	0.61
5,120.00	60.50	177.90	4,969.42	-336.38	-3.71	336.29	0.56	0.00	0.65
5,151.00	62.30	178.10	4,984.26	-363.58	-2.76	363.50	5.83	5.81	0.65
5,182.00	66.50	178.40	4,997.65	-391.51	-1.91	391.45	13.58	13.55	0.97
5,214.00	70.50	179.00	5,009.38	-421.27	-1.24	421.21	12.62	12.50	1.88
5,245.00	71.30	178.80	5,019.52	-450.56	-0.68	450.51	2.65	2.58	-0.65
5,276.00	73.60	178.80	5,028.87	-480.11	-0.06	480.06	7.42	7.42	0.00
5,307.00	76.30	178.20	5,036.91	-510.03	0.73	509.99	8.91	8.71	-1.94
5,339.00	79.40	178.20	5,043.65	-541.30	1.71	541.27	9.69	9.69	0.00
5,371.00	82.80	177.80	5,048.60	-572.89	2.81	572.87	10.70	10.63	-1.25
5,401.00	84.80	177.40	5,051.84	-602.69	4.06	602.68	6.80	6.67	-1.33
5,433.00	85.50	177.30	5,054.54	-634.54	5.54	634.55	2.21	2.19	-0.31
5,464.00	89.30	176.90	5,055.95	-665.46	7.10	665.49	12.33	12.26	-1.29
5,496.00	91.50	176.90	5,055.73	-697.41	8.83	697.46	6.88	6.88	0.00
5,526.00	92.00	177.70	5,054.81	-727.36	10.25	727.43	3.14	1.67	2.67
5,618.00	91.50	177.00	5,052.00	-819.22	14.50	819.34	0.93	-0.54	-0.76
5,711.00	89.80	177.00	5,050.95	-912.08	19.37	912.27	1.83	-1.83	0.00
5,803.00	89.10	177.70	5,051.83	-1,003.98	23.62	1,004.22	1.08	-0.76	0.76
5,895.00	90.10	177.50	5,052.47	-1,095.90	27.47	1,096.18	1.11	1.09	-0.22
5,987.00	89.30	177.40	5,052.95	-1,187.80	31.56	1,188.14	0.88	-0.87	-0.11
6,079.00	89.00	175.50	5,054.32	-1,279.61	37.26	1,280.02	2.09	-0.33	-2.07
6,171.00	88.70	177.50	5,056.16	-1,371.42	42.88	1,371.89	2.20	-0.33	2.17
6,263.00	88.30	177.90	5,058.57	-1,463.31	46.57	1,463.83	0.61	-0.43	0.43
6,355.00	88.50	178.60	5,061.14	-1,555.23	49.37	1,555.78	0.79	0.22	0.76
6,447.00	88.70	179.00	5,063.39	-1,647.18	51.30	1,647.75	0.49	0.22	0.43
6,540.00	89.20	178.50	5,065.09	-1,740.15	53.33	1,740.74	0.76	0.54	-0.54
6,632.00	88.90	180.10	5,066.62	-1,832.12	54.45	1,832.72	1.77	-0.33	1.74
6,724.00	89.70	180.70	5,067.74	-1,924.11	53.81	1,924.69	1.09	0.87	0.65
6,816.00	87.40	180.30	5,070.07	-2,016.07	53.01	2,016.63	2.54	-2.50	-0.43
6,908.00	88.10	179.90	5,073.68	-2,108.00	52.85	2,108.55	0.88	0.76	-0.43
7,000.00	89.10	179.80	5,075.93	-2,199.97	53.09	2,200.51	1.09	1.09	-0.11
7,092.00	88.90	178.90	5,077.54	-2,291.95	54.13	2,292.49	1.00	-0.22	-0.98
7,183.00	90.40	178.50	5,078.09	-2,382.92	56.20	2,383.49	1.71	1.65	-0.44
7,275.00	90.90	178.00	5,077.05	-2,474.87	59.01	2,475.47	0.77	0.54	-0.54
7,367.00	91.40	178.20	5,075.20	-2,566.80	62.06	2,567.43	0.59	0.54	0.22





<b>Company:</b>	Tug Hill Operating, LLC	<b>Local Co-ordinate Reference:</b>	Well 1-11H
<b>Project:</b>	Barber County, Kansas (NAD 83)	<b>TVD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Site:</b>	Donovan	<b>MD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Well:</b>	1-11H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Southern Region

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,459.00	91.50	178.20	5,072.87	-2,658.73	64.94	2,659.39	0.11	0.11	0.00
7,554.00	90.40	178.90	5,071.30	-2,753.68	67.35	2,754.37	1.37	-1.16	0.74
7,649.00	91.20	179.10	5,069.97	-2,848.66	69.01	2,849.36	0.87	0.84	0.21
7,744.00	90.10	178.70	5,068.90	-2,943.63	70.83	2,944.35	1.23	-1.16	-0.42
7,839.00	88.30	178.90	5,070.22	-3,038.60	72.82	3,039.34	1.91	-1.89	0.21
7,933.00	86.80	179.20	5,074.24	-3,132.50	74.38	3,133.25	1.63	-1.60	0.32
8,024.00	87.50	178.30	5,078.76	-3,223.36	76.36	3,224.13	1.25	0.77	-0.99
8,117.00	89.10	178.00	5,081.52	-3,316.27	79.36	3,317.07	1.75	1.72	-0.32
8,209.00	88.10	178.60	5,083.77	-3,408.20	82.09	3,409.03	1.27	-1.09	0.65
8,301.00	89.50	178.50	5,085.70	-3,500.15	84.42	3,501.00	1.53	1.52	-0.11
8,393.00	87.90	178.30	5,087.78	-3,592.09	86.98	3,592.97	1.75	-1.74	-0.22
8,485.00	88.50	178.20	5,090.67	-3,684.00	89.79	3,684.91	0.66	0.65	-0.11
8,577.00	89.40	178.20	5,092.36	-3,775.94	92.68	3,776.88	0.98	0.98	0.00
8,669.00	87.40	179.10	5,094.93	-3,867.87	94.85	3,868.84	2.38	-2.17	0.98
8,761.00	88.00	177.70	5,098.62	-3,959.76	97.41	3,960.75	1.65	0.65	-1.52
8,853.00	88.70	179.60	5,101.27	-4,051.69	99.58	4,052.71	2.20	0.76	2.07
8,945.00	90.00	181.20	5,102.31	-4,143.67	98.94	4,144.67	2.24	1.41	1.74
9,037.00	91.00	181.70	5,101.51	-4,235.64	96.61	4,236.60	1.22	1.09	0.54
9,129.00	92.00	181.20	5,099.10	-4,327.58	94.28	4,328.49	1.22	1.09	-0.54
9,222.00	89.70	180.90	5,097.72	-4,420.55	92.58	4,421.42	2.49	-2.47	-0.32
9,319.00	90.70	181.20	5,097.39	-4,517.53	90.80	4,518.37	1.08	1.03	0.31
9,411.00	90.50	179.70	5,096.42	-4,609.52	90.08	4,610.34	1.64	-0.22	-1.63
9,503.00	88.60	178.90	5,097.14	-4,701.50	91.20	4,702.33	2.24	-2.07	-0.87
9,595.00	89.60	178.00	5,098.59	-4,793.45	93.69	4,794.31	1.46	1.09	-0.98
9,687.00	89.90	178.00	5,098.99	-4,885.40	96.90	4,886.29	0.33	0.33	0.00
9,779.00	92.00	177.80	5,097.47	-4,977.32	100.27	4,978.25	2.29	2.28	-0.22
9,871.00	91.40	178.10	5,094.74	-5,069.22	103.56	5,070.19	0.73	-0.65	0.33
9,963.00	90.50	179.90	5,093.21	-5,161.19	105.17	5,162.17	2.19	-0.98	1.96
10,022.08	89.60	180.86	5,093.16	-5,220.26	104.77	5,221.23	2.23	-1.52	1.63
<b>Section Line Intersect-10022.08' MD</b>									
10,055.00	89.10	181.40	5,093.53	-5,253.18	104.12	5,254.13	2.23	-1.52	1.63
10,147.00	87.90	181.00	5,095.94	-5,345.12	102.20	5,346.04	1.37	-1.30	-0.43
10,240.00	89.70	180.40	5,097.89	-5,438.09	101.06	5,438.98	2.04	1.94	-0.65
10,349.00	92.00	179.50	5,096.27	-5,547.07	101.16	5,547.95	2.27	2.11	-0.83
10,441.00	90.20	182.50	5,094.50	-5,639.02	99.55	5,639.88	3.80	-1.96	3.26
10,534.00	88.40	183.80	5,095.64	-5,731.87	94.44	5,732.64	2.39	-1.94	1.40
10,627.00	88.00	183.30	5,098.56	-5,824.65	88.69	5,825.32	0.69	-0.43	-0.54
10,720.00	88.50	183.50	5,101.40	-5,917.44	83.17	5,918.02	0.58	0.54	0.22
10,813.00	86.60	181.90	5,105.38	-6,010.24	78.80	6,010.75	2.67	-2.04	-1.72
10,906.00	89.40	179.50	5,108.62	-6,103.16	77.66	6,103.65	3.96	3.01	-2.58
11,000.00	89.40	179.50	5,109.61	-6,197.16	78.48	6,197.64	0.00	0.00	0.00
<b>Projection to TD-11000.00' MD</b>									



<b>Company:</b>	Tug Hill Operating, LLC	<b>Local Co-ordinate Reference:</b>	Well 1-11H
<b>Project:</b>	Barber County, Kansas (NAD 83)	<b>TVD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Site:</b>	Donovan	<b>MD Reference:</b>	WELL @ 1678.00usft (Patterson 421)
<b>Well:</b>	1-11H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Southern Region

**Survey Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,511.00	4,510.78	8.91	-3.55	Tie-In to N-Zone MWD -4511.00' MD
4,979.12	4,898.25	-214.94	-8.66	330' Hardline Intersect-4979.12' MD
10,022.08	5,093.16	-5,220.26	104.77	Section Line Intersect-10022.08' MD
11,000.00	5,109.61	-6,197.16	78.48	Projection to TD-11000.00' MD



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

March 05, 2013

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

Re: ACO1  
API 15-007-23935-01-00  
Donovan 1-11H  
NW/4 Sec.11-34S-13W  
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