

Confidentiality Requested:

Yes No

Kansas Corporation Commission Oil & Gas Conservation Division

1097019

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 #			API No. 15		
Name:			Spot Description:		
Address 1:			Sec	TwpS. R	East West
Address 2:			F6	eet from North /	South Line of Section
City:	State: Z	ip:+	Fe	eet from East /	West Line of Section
Contact Person:			Footages Calculated from I	Nearest Outside Section C	Corner:
Phone: ()			□ NE □ NW	V □SE □SW	
CONTRACTOR: License #			GPS Location: Lat:	, Long: _	
Name:				(e.g. xx.xxxxx)	(e.gxxx.xxxxx)
Wellsite Geologist:			Datum: NAD27	NAD83 WGS84	
Purchaser:			County:		
Designate Type of Completion:			Lease Name:	W	/ell #:
	e-Entry	Workover	Field Name:		
	_		Producing Formation:		
☐ Oil ☐ WSW ☐ D&A	☐ SWD	∐ SIOW □ SIGW	Elevation: Ground:	Kelly Bushing:	:
	GSW	Temp. Abd.	Total Vertical Depth:	Plug Back Total C	Depth:
CM (Coal Bed Methane)	dow	Temp. Abd.	Amount of Surface Pipe Se	et and Cemented at:	Feet
☐ Cathodic ☐ Other (Co	ore, Expl., etc.):		Multiple Stage Cementing	Collar Used? Yes	No
If Workover/Re-entry: Old Well I			If yes, show depth set:		Feet
Operator:			If Alternate II completion, c	cement circulated from:	
Well Name:			feet depth to:	w/	sx cmt.
Original Comp. Date:					
Deepening Re-perf	•	NHR Conv. to SWD	Drilling Fluid Managemer	nt Plan	
☐ Plug Back	Conv. to G		(Data must be collected from the		
Commingled	Pormit #:		Chloride content:	ppm Fluid volume	e: bbls
Dual Completion			Dewatering method used: _		
SWD			Location of fluid disposal if	hauled offsite	
☐ ENHR			1		
GSW	Permit #:		Operator Name:		
_ _			Lease Name:	License #:_	
Spud Date or Date R	eached TD	Completion Date or	Quarter Sec	TwpS. R	East _ West
Recompletion Date		Recompletion Date	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:	

Page Two



Operator Name:				_ Lease I	Name: _			Well #:	
Sec Twp	S. R	East	West	County	:				
INSTRUCTIONS: Shopen and closed, flow and flow rates if gas to	ring and shut-in press o surface test, along v	ures, whe	ther shut-in pre chart(s). Attach	ssure reac extra shee	hed stati	c level, hydrosta space is neede	tic pressures, b d.	ottom hole temp	erature, fluid recov
Final Radioactivity Lo files must be submitte						ogs must be ema	alled to kcc-well-	logs@kcc.ks.go	v. Digital electronic
Drill Stem Tests Taker (Attach Additional		Y	es No			J	on (Top), Depth		Sample
Samples Sent to Geo	logical Survey	Y	es No		Nam	е		Тор	Datum
Cores Taken Electric Log Run			es No						
List All E. Logs Run:									
				RECORD	Ne				
	0: 11.1					ermediate, product		" 0 1	T 15
Purpose of String	Size Hole Drilled		ze Casing t (In O.D.)	Weig Lbs.		Setting Depth	Type of Cement	# Sacks Used	Type and Percer Additives
			ADDITIONAL	CEMENTI	NG / SQL	JEEZE RECORD			
Purpose:	Depth Top Bottom	Туре	of Cement	# Sacks	Used		Type and	Percent Additives	
Perforate Protect Casing	Top Dottom								
Plug Back TD Plug Off Zone									
1 lug 0 li 20 lio									
Did you perform a hydrau	ulic fracturing treatment	on this well	?			Yes	No (If No, s	skip questions 2 a	nd 3)
Does the volume of the t			-		-			skip question 3)	
Was the hydraulic fractur	ing treatment informatio	n submitted	to the chemical of	disclosure re	gistry?	Yes	No (If No, i	ill out Page Three	of the ACO-1)
Shots Per Foot			RD - Bridge Plug Each Interval Perl				cture, Shot, Ceme	nt Squeeze Recor	rd Depth
						(* *			200
TUBING RECORD:	Size:	Set At:		Packer A	t·	Liner Run:			
		0017111				[Yes N	o	
Date of First, Resumed	Production, SWD or EN	HR.	Producing Meth	nod:	g 🗌	Gas Lift (Other (Explain)		
Estimated Production Per 24 Hours	Oil	Bbls.	Gas	Mcf	Wat	er B	bls.	Gas-Oil Ratio	Gravity
DIODOCITI	01.05.040			4ETUOD 05	. 00145/	TION:		DDOD! ICT!	
DISPOSITION Solo	ON OF GAS: Used on Lease		N Open Hole	∥ETHOD OF Perf.			mmingled	PRODUCTION	ON INTERVAL:
	bmit ACO-18.)		Other (Specify)		(Submit		mit ACO-4)		

Contractor/Rig: Patterson-UTI 421 Well Name: Hoffman Family Trust 1-18H State: KS **County: Comanche** As Run SHL: 200 FSL & 660 FEL Township: 33S GL Elev: 1938 KB: 23 KB Elev: 1961 BHL: 330' FNL & 660' FEL AFE: 12-0121 Permit/API Number: 15-033-21621-01-00 **Tubular Details** 20" Conductor 26" @ 80' 20" 9 5/8" 7" 4-1/2" Weight 94 lb/ft 36 lb/ft 26 lb/ft 15.10 lb/ft P-110 Grade X-42 J-55 N-80 9 5/8" 36# J55 STC 12-1/4" 3590 psi 3520 psi 9960 psi 10480 psi Burst @ 794' Top out job 6230 psi NA Collapse 11080 psi 2020 psi Wall Thickness 0.438" 0.352" 0.337" 0.724" HOLE SIZE ID 19.124" 8.921" 6.276" 3.826" 6000' Setting Depth 80' 794' 10068' 8-¾" **Cement Details** Est. Vol Interval Company **Excess** Surface Intermediate Production Est. TOC @ 4425' Lead Production Tail See attachments for slurry details 11.6# N80 Liner Top **KOP** 8-¾" 5000' **EOB** 4 ½" 11.6# N80 LTC at 10068'



Tug Hill Operating LLC

Comanche County, Kansas Sec 18, T34S, R18W Hoffman Family Trust #1-18H

Original Wellbore

Design: Original Wellbore

Survey Report - Geographic

20 August, 2012







Company:

Tug Hill Operating LLC

Project:

Comanche County, Kansas

Site: Well: Sec 18, T34S, R18W Hoffman Family Trust #1-18H

Wellbore:

Original Wellbore

Design:

Original Wellbore

Survey Calculation Method:

Local Co-ordinate Reference:

TVD Reference: MD Reference:

North Reference:

Database:

Site Sec 18, T34S, R18W

Well @ 1961.0usft

Well @ 1961.0usft Grid

Minimum Curvature

EDM 5000.1 Single User Db

Project

Comanche County, Kansas

Map System: Geo Datum:

US State Plane 1927 (Exact solution)

NAD 1927 (NADCON CONUS)

System Datum:

Mean Sea Level

Map Zone:

Kansas South 1502

Site

Well

Sec 18, T34S, R18W

Site Position: From:

Мар

Northing:

150,552.88 usft

Latitude:

37° 4' 38.374 N

Position Uncertainty:

Easting: Slot Radius: 1,764,027.77 usft 13-3/16 "

Longitude:

Grid Convergence:

99° 18' 31.716 W

0.0 usft

-0.50°

Hoffman Family Trust #1-18H

Well Position +N/-S

+F/-W

0.0 usft 0.0 usft Northing: Easting:

150,552.88 usft 1,764,027.77 usft Latitude: Longitude:

37° 4' 38.374 N 99° 18' 31.716 W

51,739

Position Uncertainty

0.0 usft

Wellhead Elevation:

07/20/12

0.0

0.0 usft

Ground Level:

1,938.0 usft

Wellbore

Original Wellbore

Magnetics

Model Name

Sample Date

Declination (°)

Dip Angle (°)

Field Strength

(nT)

261.14

Original Wellbore

Audit Notes:

Version:

Design

1.0

Phase:

ACTUAL

5.39

Tie On Depth:

0.0

0.0

Vertical Section:

Depth From (TVD)

IGRF2010

(usft)

+N/-S (usft)

0.0

+E/-W (usft)

Direction

65.08

(°)

Survey Program

08/20/12

From (usft)

To (usft)

Survey (Wellbore)

Tool Name

Description

100.0

4,863.0 Gyro Surveys (Original Wellbore)

NS-GYRO-SS

NS Gyro single shots

4,922.0

10,070.0 MWD Surveys (Original Wellbore)

MWD

MWD - Standard

vey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	150,552.88	1,764,027.77	37° 4' 38.374 N	99° 18' 31.716 V
Hoffma	n F T #1								
100.0	0.56	285.23	100.0	0.1	-0.5	150,553.01	1,764,027.30	37° 4' 38.375 N	99° 18' 31.722 V
First Gy	ro Survey								
200.0	0.39	296.05	200.0	0.4	-1.2	150,553.29	1,764,026.52	37° 4' 38.377 N	99° 18' 31.731 V
300.0	0.36	266.09	300.0	0.5	-1.9	150,553.42	1,764,025.90	37° 4' 38.379 N	99° 18' 31.739 V
400.0	0.42	340.74	400.0	0.9	-2.3	150,553.74	1,764,025.47	37° 4' 38.382 N	99° 18' 31.744 V
500.0	0.11	318.09	500.0	1.3	-2.5	150,554.16	1,764,025.28	37° 4' 38.386 N	99° 18' 31.747 V
600.0	0.52	281.62	600.0	1.4	-3.0	150,554.32	1,764,024.77	37° 4' 38.388 N	99° 18' 31.753 W
700.0	0.37	327.58	700.0	1.8	-3.6	150,554.69	1,764,024.16	37° 4' 38.391 N	99° 18' 31.761 W
800.0	0.36	307.01	800.0	2.3	-4.0	150,555.15	1,764,023.73	37° 4' 38.396 N	99° 18' 31.766 W





Company:

Tug Hill Operating LLC

Project: Site: Comanche County, Kansas Sec 18, T34S, R18W

Well: Wellbore:

Design:

Hoffman Family Trust #1-18H Original Wellbore Original Wellbore Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference: Survey Calculation Method:

Database:

Site Sec 18, T34S, R18W

Well @ 1961.0usft

Well @ 1961.0usft

Grid

Minimum Curvature

EDM 5000.1 Single User Db

Measured			Vertical			Map	Map		
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting		
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	Latitude	Longitude
900.0	0.38	305.92	900.0	2.6	-4.6	150,555.53	1,764,023.21	37° 4' 38.399 N	99° 18' 31.773
1,000.0	0.40	300.48	1,000.0	3.0	-5.1	150,555.90	1,764,022.64	37° 4' 38.403 N	99° 18' 31.780
1,100.0	0.54	278.45	1,100.0	3.3	-5.9	150,556.15	1,764,021.88	37° 4' 38.405 N	99° 18' 31.78
1,200.0	0.53	309.89	1,200.0	3.6	-6.7	150,556.52	1,764,021.06	37° 4' 38.409 N	99° 18' 31.79
1,300.0	0.51	294.04	1,300.0	4.1	-7.5	150,556.99	1,764,020.29	37° 4' 38.414 N	99° 18' 31.80
1,400.0	0.63	283.39	1,400.0	4.4	-8.4	150,557.30	1,764,019.35	37° 4' 38.417 N	99° 18' 31.82
1,500.0	0.71	280.70	1,500.0	4.7	-9.6	150,557.55	1,764,018.21	37° 4' 38.419 N	99° 18' 31.83
1,600.0	0.73	279.19	1,599.9	4.9	-10.8	150,557.76	1,764,016.97	37° 4' 38.421 N	99° 18' 31.85
1,700.0	0.85	263.27	1,699.9	4.9	-12.2	150,557.78	1,764,015.61	37° 4' 38.421 N	99° 18' 31.86
1,800.0	0.88	252.41	1,799.9	4.6	-13.6	150,557.46	1,764,014.14	37° 4' 38.418 N	99° 18' 31.88
1,900.0	0.91	252.30	1,899.9	4.1	-15.1	150,556.98	1,764,012.65	37° 4' 38.413 N	99° 18' 31.90
2,000.0	0.98	249.97	1,999.9	3.6	-16.7	150,556.45	1,764,011.09	37° 4' 38.407 N	99° 18' 31.92
2,100.0	1.30	246.69	2,099.9	2.8	-18.5	150,555.71	1,764,009.24	37° 4' 38.400 N	99° 18' 31.94
2,200.0	1.57	246.03	2,199.9	1.8	-20.8	150,554.70	1,764,006.95	37° 4' 38.390 N	99° 18' 31.97
2,300.0	2.00	243.87	2,299.8	0.5	-23.6	150,553.38	1,764,004.13	37° 4' 38.376 N	99° 18' 32.00
2,400.0	2.13	246.15	2,399.7	-1.0	-26.9	150,551.86	1,764,000.87	37° 4' 38.361 N	99° 18' 32.04
2,500.0	2.30	247.94	2,499.7	-2.5	-30.5	150,550.35	1,763,997.31	37° 4' 38.346 N	99° 18' 32.09
2,600.0	2.19	252.71	2,599.6	-3.9	-34.1	150,549.03	1,763,993.62	37° 4' 38.333 N	99° 18' 32.13
2,700.0	1.99	256.72	2,699.5	-4.8	-37.7	150,548.06	1,763,990.11	37° 4' 38.323 N	99° 18' 32.18
2,800.0	1.69	258.48	2,799.5	-5.5	-40.8	150,547.37	1,763,986.97	37° 4' 38.316 N	99° 18' 32.21
2,900.0	1.65	257.09	2,899.4	-6.1	-43.6	150,546.76	1,763,984.13	37° 4' 38.309 N	99° 18' 32.25
3,000.0	1.67	258.79	2,999.4	-6.7	-46.5	150,546.15	1,763,981.29	37° 4' 38.303 N	99° 18' 32.28
3,100.0	1.77	259.36	3,099.3	-7.3	-49.4	150,545.58	1,763,978.35	37° 4' 38.297 N	99° 18' 32.32
3,200.0	1.90	259.23	3,199.3	-7.9	-52.6	150,544.99	1,763,975.20	37° 4' 38.291 N	99° 18' 32.36
3,300.0	1.94	258.41	3,299.2	-8.5	-55.9	150,544.34	1,763,971.91	37° 4' 38.284 N	99° 18' 32.40
3,400.0	1.74	250.23	3,399.2	-9.4	-58.9	150,543.48	1,763,968.83	37° 4' 38.276 N	99° 18' 32.44
3,500.0	1.85	246.19	3,499.1	-10.6	-61.8	150,542.32	1,763,965.92	37° 4' 38.264 N	99° 18' 32.47
3,600.0	1.97	248.52	3,599.1	-11.8	-64.9	150,541.04	1,763,962.84	37° 4' 38.251 N	99° 18' 32.51
3,700.0 3,800.0	2.11 2.23	255.18 259.56	3,699.0	-12.9	-68.3	150,539.94	1,763,959.47	37° 4′ 38.240 N	99° 18' 32.55
3,900.0		267.37	3,798.9	-13.8	-72.0	150,539.11	1,763,955.77	37° 4' 38.231 N	99° 18' 32.60
	2.29 2.04	272.99	3,898.9	-14.2	-75.9	150,538.67	1,763,951.86	37° 4' 38.226 N	99° 18' 32.65
4,000.0 4,100.0	1.32	286.51	3,998.8	-14.2 -13.8	-79.7 -82.6	150,538.67	1,763,948.09	37° 4' 38.226 N	99° 18' 32.69
4,200.0	0.78	295.38	4,098.7 4,198.7	-13.0		150,539.09	1,763,945.21	37° 4' 38.230 N	99° 18' 32.73
4,200.0	0.78	315.94	4,196.7	-13.2	-84.3 -85.1	150,539.71	1,763,943.49	37° 4' 38.236 N	99° 18' 32.75
4,400.0	0.41	16.68	4,298.7	-12.6	-65.1 -85.3	150,540.26	1,763,942.63	37° 4' 38.241 N	99° 18' 32.76
4,500.0	0.45	72.55	4,498.7	-12.1	-84.8	150,540.83 150,541.27	1,763,942.47 1,763,942.94	37° 4' 38.247 N	99° 18' 32.76 99° 18' 32.76
4,600.0	1.14	106.57	4,598.7	-11.8	-83.5	150,541.10		37° 4' 38.251 N	
4,700.0	1.14	88.89	4,698.7	-11.0	-81.5	150,540.84	1,763,944.27 1,763,946.30	37° 4' 38.250 N 37° 4' 38.247 N	99° 18' 32.74 99° 18' 32.72
4,800.0	1.59	85.70	4,098.7	-12.0	-79.0	150,540.97	1,763,948.77	37° 4' 38.247 N	99° 18' 32.72 99° 18' 32.68
4,863.0	1.68	101.35	4,796.7	-11.9	-79.0 -77.2	150,540.85	1,763,948.77	37° 4' 38.249 N	99° 18' 32.68
		101.00	4,001.0	-12.0	-11.2	150,540.65	1,700,900.00	31 4 30.240 N	99 18 3∠.66
Last Gyre	-	124.00	4 000 6	40.7	75.0	150 540 45	4 762 050 45	279 41 20 044 11	000 401 00 04
4,922.0	1.80	124.90	4,920.6	-12.7	-75.6	150,540.15	1,763,952.15	37° 4' 38.241 N	99° 18' 32.64
First MW		44.00	40546	107	75.0	450 540 4 :	4 700 650 00	070 4100 0444	000 121 22
4,953.0	1.40	44.00	4,951.6	-12.7	-75.0	150,540.14	1,763,952.82	37° 4' 38.241 N	99° 18' 32.63
4,985.0	4.70	13.10	4,983.5	-11.2	-74.4	150,541.70	1,763,953.39	37° 4' 38.257 N	99° 18' 32.63
5,017.0	8.10	4.10	5,015.3	-7.7	-73.9	150,545.23	1,763,953.84	37° 4' 38.292 N	99° 18' 32.62
5,048.0	10.90	358.10	5,045.9	-2.5	-73.9	150,550.34	1,763,953.90	37° 4' 38.342 N	99° 18' 32.62
5,079.0	13.70	356.20	5,076.2	4.0	-74.2	150,556.93	1,763,953.56	37° 4' 38.407 N	99° 18' 32.63
5,111.0	17.10	356.60	5,107.1	12.5	-74.7	150,565.41	1,763,953.03	37° 4' 38.491 N	99° 18' 32.63
5,143.0	20.60	353.60	5,137.3	22.8	-75.6	150,575.70	1,763,952.13	37° 4' 38.593 N	99° 18' 32.65
5,174.0	23.20	355.00	5,166.1	34.3	-76.8	150,587.21	1,763,950.99	37° 4' 38.706 N	99° 18' 32.66
5,206.0	26.20	355.50	5,195.2	47.6	-77.9	150,600.53	1,763,949.88	37° 4' 38.838 N	99° 18' 32.68
5,238.0	30.40	356.70	5,223.3	62.8	-78.9	150,615.67	1,763,948.86	37° 4' 38.987 N	99° 18' 32.69
5,270.0	35.30	355.00	5,250.2	80.1	-80.2	150,632.97	1,763,947.59	37° 4' 39.158 N	99° 18' 32.71





Company:

Tug Hill Operating LLC

Project:

Comanche County, Kansas Sec 18, T34S, R18W

Site: Well:

Hoffman Family Trust #1-18H

Wellbore: Design: Original Wellbore Original Wellbore Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method: Database:

Site Sec 18, T34S, R18W

Well @ 1961.0usft

Well @ 1961.0usft

Grid

Minimum Curvature

EDM 5000.1 Single User Db

'ey									
Vieasured			Vertical			Map	Map		
Depth (usft)	Inclination (°)	Azimuth	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
5,301.0	40.10	355.30	5,274.7	99.0	-81.8	150,651.85	1,763,945.99	37° 4' 39.345 N	99° 18' 32.736
5,332.0	44.90	356.20	5,297.6	119.8	-83.3	150,672.73	1,763,944.44	37° 4' 39.551 N	99° 18' 32.757
5,364.0	49.20	358.70	5,319.4	143.2	-84.3	150,696.12	1,763,943.42	37° 4' 39.782 N	99° 18' 32.772
5,396.0	53.90	1.50	5,339.3	168.3	-84.3	150,721.17	1,763,943.48	37° 4' 40.030 N	99° 18' 32.774
5,428.0	58.90	2.50	5,357.0	194.9	-83.3	150,747.80	1,763,944.42	37° 4' 40.293 N	99° 18' 32.765
5,459.0	61.30	3.40	5,372.4	221.8	-82.0	150,774.64	1,763,945.81	37° 4' 40.559 N	99° 18' 32.751
5,491.0	62.20	4.50	5,387.6	249.9	-80.0	150,802.76	1,763,947.75	37° 4' 40.837 N	99° 18' 32.730
5,523.0	62.20	3.80	5,402.5	278.1	-78.0	150,830.99	1,763,949.80	37° 4' 41.116 N	99° 18' 32.708
5,554.0	62.30	3.90	5,416.9	305.5	-76.1	150,858.36	1,763,951.64	37° 4' 41.387 N	99° 18' 32.688
5,586.0	66.30	3.80	5,430.8	334.2	-74.2	150,887.13	1,763,953.58	37° 4' 41.672 N	99° 18' 32.667
5,617.0	70.10	3.10	5,442.3	363.0	-72.5	150,915.85	1,763,955.30	37° 4' 41.956 N	99° 18' 32.649
5,649.0	73.50	1.70	5,452.3	393.3	-71.2	150,946.22	1,763,956.57	37° 4' 42.256 N	99° 18' 32.637
5,680.0	75.70	1.10	5,460.5	423.2	-70.5	150,976.10	1,763,957.30	37° 4' 42.552 N	99° 18' 32.631
5,712.0	76.70	1.70	5,468.2	454.3	-69.7	151,007.16	1,763,958.06	37° 4' 42.859 N	99° 18' 32.625
5,743.0	75.90	3.10	5,475.5	484.4	-68.4	151,037.25	1,763,959.32	37° 4' 43.156 N	99° 18' 32.612
5,777.0	72.00	2.40	5,484.9	517.0	-66.9	151,069.88	1,763,960.89	37° 4' 43.479 N	99° 18' 32.597
5,808.0	65.80	354.50	5,496.1	545.9	-67.6	151,098.75	1,763,960.15	37° 4' 43.765 N	99° 18' 32.609
5,839.0	70.80	352.70	5,507.5	574.5	-70.8	151,127.36	1,763,956.94	37° 4' 44.047 N	99° 18' 32.652
5,871.0	77.40	352.00	5,516.3	605.0	-74.9	151,157.85	1,763,952.84	37° 4' 44.348 N	99° 18' 32.70
5,902.0	83.40	351.60	5,521.5	635.2	-79.3	151,188.09	1,763,948.48	37° 4' 44.647 N	99° 18' 32.762
5,934.0	87.80	353.60	5,523.9	666.8	-83.4	151,219.72	1,763,944.37	37° 4' 44.959 N	99° 18' 32.810
5,966.0	88.50	354.50	5,525.0	698.6	-86.7	151,251.53	1,763,941.06	37° 4' 45.273 N	99° 18' 32.86
6,005.0	88.90	354.60	5,525.8	737.5	-90.4	151,290.34	1,763,937.35	37° 4' 45.657 N	99° 18' 32.91
6,087.0	90.20	354.40	5,526.5	819.1	-98.3	151,371.96	1,763,929.50	37° 4' 46.463 N	99° 18' 33.016
6,179.0	94.20	354.90	5,523.0	910.6	-106.8	151,463.47	1,763,920.93	37° 4' 47.367 N	99° 18' 33.132
6,271.0	92.20	354.80	5,517.8	1,002.1	-115.1	151,554.95	1,763,912.68	37° 4' 48.271 N	99° 18' 33.243
6,363.0	94.40	356.00	5,512.5	1,093.6	-122.5	151,646.50	1,763,905.31	37° 4' 49.175 N	99° 18' 33.344
6,456.0	94.70	357.30	5,505.1	1,186.2	-127.9	151,739.05	1,763,899.90	37° 4' 50.090 N	99° 18' 33.421
6,548.0	96.70	357.40	5,496.0	1,277.6	-132.1	151,830.49	1,763,895.66	37° 4′ 50.994 N	99° 18' 33.483
6,640.0	92.70	355.60	5,488.5	1,369.1	-137.7	151,921.99	1,763,890.06	37° 4' 51.898 N	99° 18' 33.562
6,732.0	93.00	354.30	5,483.9	1,460.6	-145.8	152,013.51	1,763,881.98	37° 4' 52.802 N	99° 18' 33.67'
6,824.0	91.60	353.90	5,480.2	1,552.1	-155.2	152,104.95	1,763,872.53	37° 4' 53.705 N	99° 18' 33.798
6,916.0	91.80	355.20	5,477.5	1,643.6	-164.0	152,196.49	1,763,863.79	37° 4' 54.609 N	99° 18' 33.915
7,008.0	88.80	357.90	5,477.0	1,735.4	-169.5	152,288.30	1,763,858.26	37° 4' 55.517 N	99° 18' 33.993
7,100.0	90.90	0.20	5,477.2	1,827.4	-171.0	152,380.28	1,763,856.73	37° 4′ 56.426 N	99° 18' 34.022
7,195.0	92.20	0.30	5,474.7	1,922.4	-170.6	152,475.24	1,763,857.15	37° 4' 57.365 N	99° 18' 34.027
7,291.0	91.30	1.80	5,471.7	2,018.3	-168.9	152,571.18	1,763,858.91	37° 4′ 58.313 N	99° 18' 34.016
7,386.0	91.80	3.90	5,469.2	2,113.1	-164.1	152,666.02	1,763,863.63	37° 4' 59.251 N	99° 18' 33.968
7,480.0	91.90	4.90	5,466.1	2,206.8	-156.9	152,759.69	1,763,870.83	37° 5′ 0.178 N	99° 18' 33.889
7,575.0	90.60	4.10	5,464.1	2,301.5	-149.5	152,854.37	1,763,878.29	37° 5' 1.115 N	99° 18' 33.807
7,670.0	91.20	4.60	5,462.6	2,396.2	-142.3	152,949.09	1,763,885.49	37° 5' 2.052 N	99° 18' 33.728
7,765.0	90.20	3.90	5,461.4	2,490.9	-135.2	153,043.82	1,763,892.53	37° 5′ 2.989 N	99° 18' 33.65°
7,860.0	89.10	5.20	5,462.0	2,585.6	-127.7	153,138.51	1,763,900.07	37° 5' 3.926 N	99° 18' 33.569
7,955.0	90.30	5.40	5,462.5	2,680.2	-118.9	153,233.10	1,763,908.84	37° 5' 4.862 N	99° 18' 33.470
8,050.0	89.40	5.80	5,462.7	2,774.8	-109.7	153,327.65	1,763,918.11	37° 5' 5.797 N	99° 18' 33.366
8,144.0	89.80	5.50	5,463.4	2,868.3	-100.4	153,421.19	1,763,927.37	37° 5' 6.723 N	99° 18' 33.262
8,239.0	91.10	5.00	5,462.6	2,962.9	-91.7	153,515.79	1,763,936.06	37° 5' 7.659 N	99° 18' 33.16
8,334.0	92.00	4.80	5,460.1	3,057.5	-83.6	153,610.40	1,763,944.17	37° 5' 8.595 N	99° 18' 33.075
8,427.0	91.00	4.70	5,457.6	3,150.2	-75.9	153,703.05	1,763,951.87	37° 5′ 9.512 N	99° 18' 32.990
8,522.0	90.30	4.80	5,456.6	3,244.8	-68.0	153,797.72	1,763,959.73	37° 5' 10.448 N	99° 18' 32.90
8,617.0	91.00	5.00	5,455.5	3,339.5	-59.9	153,892.36	1,763,967.85	37° 5' 11.385 N	99° 18' 32.813
8,712.0	91.80	5.40	5,453.2	3,434.1	-51.3	153,986.94	1,763,976.46	37° 5' 12.321 N	99° 18' 32.717
8,806.0	89.90	3.90	5,451.8	3,527.7	-43.7	154,080.62	1,763,984.07	37° 5' 13.248 N	99° 18' 32.633
8,901.0	88.30	3.60	5,453.3	3,622.5	-37.5	154,175.40	1,763,990.29	37° 5′ 14.185 N	99° 18' 32.566
8,997.0	90.80	5.10	5,454.0	3,718.2	-30.2	154,271.11	1,763,997.57	37° 5' 15.132 N	99° 18' 32.487





Company:

Tug Hill Operating LLC

Project: Site: Comanche County, Kansas

Well:

Hoffman Family Trust #1-18H Original Wellbore

Wellbore: Original Wellbore
Design: Original Wellbore

Sec 18, T34S, R18W

Local Co-ordinate Reference:

TVD Reference:

MD Reference: North Reference:

Survey Calculation Method:

Database:

Site Sec 18, T34S, R18W

Well @ 1961.0usft

Well @ 1961.0usft

Grid

Minimum Curvature

EDM 5000.1 Single User Db

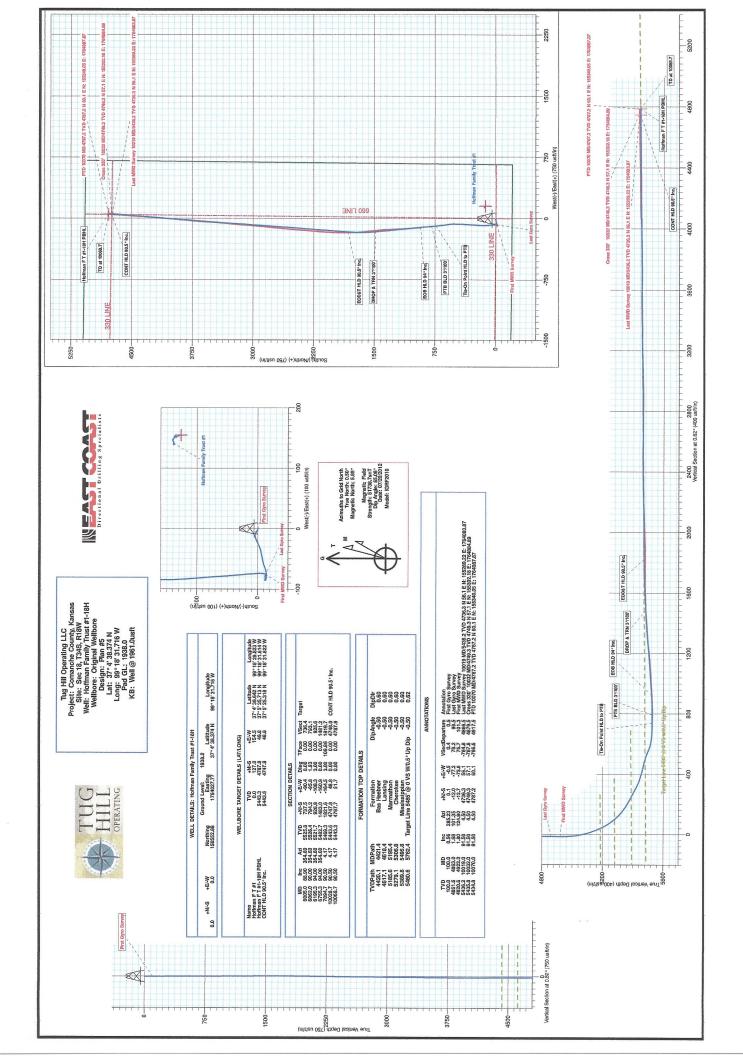
leasured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,092.0	90.70	4.80	5,452.8	3,812.9	-22.0	154,365.75	1,764,005.76	37° 5' 16.068 N	99° 18' 32.396
9,187.0	90.70	4.80	5,451.6	3,907.5	-14.1	154,460.41	1,764,013.71	37° 5' 17.005 N	99° 18' 32.308
9,282.0	91.60	5.00	5,449.7	4,002.2	-5.9	154,555.04	1,764,021.83	37° 5' 17.941 N	99° 18' 32.218
9,376.0	92.70	5.40	5,446.2	4,095.7	2.6	154,648.58	1,764,030.34	37° 5' 18.867 N	99° 18' 32.12
9,470.0	90.40	4.60	5,443.6	4,189.3	10.8	154,742.19	1,764,038.53	37° 5' 19.793 N	99° 18' 32.03
9,566.0	90.20	4.40	5,443.1	4,285.0	18.3	154,837.89	1,764,046.06	37° 5' 20.740 N	99° 18' 31.94
9,660.0	90.60	4.40	5,442.5	4,378.7	25.5	154,931.61	1,764,053.27	37° 5' 21.667 N	99° 18' 31.87
9,756.0	91.90	5.50	5,440.4	4,474.3	33.8	155,027.22	1,764,061.55	37° 5' 22.613 N	99° 18' 31.77
9,851.0	90.40	5.20	5,438.5	4,568.9	42.6	155,121.79	1,764,070.41	37° 5′ 23.549 N	99° 18' 31.67
9,945.0	90.70	4.30	5,437.6	4,662.6	50.4	155,215.46	1,764,078.19	37° 5′ 24.476 N	99° 18' 31.59
10,019.0	91.50	4.50	5,436.2	4,736.3	56.1	155,289.23	1,764,083.87	37° 5' 25.205 N	99° 18' 31.53
Last MW	D Survey 100	19 MD/5436.2	TVD 4736.3 N	56.1 E N: 155	289.22 E: 1764	1083.87			
10,029.6	91.50	4.50	5,435.9	4,746.9	56.9	155,299.80	1,764,084.70	37° 5' 25.310 N	99° 18' 31.52
CONT HL	D 90.5° Inc.								
10,032.0	91.50	4.50	5,435.8	4,749.3	57.1	155,302.18	1,764,084.89	37° 5' 25.333 N	99° 18' 31.52
Cross 33	0' 10032 MD/	4749.3 TVD 4	749.3 N 57.1 E	N: 155302.18	E: 1764084.89				
10,069.5	91.50	4.50	5,434.8	4,786.7	60.1	155,339.61	1,764,087.83	37° 5' 25.704 N	99° 18' 31.48
Hoffman	F T #1-18H P	BHL							
10,070.0	91.50	4.50	5,434.8	4,787.2	60.1	155,340.05	1,764,087.87	37° 5' 25.708 N	99° 18' 31.48

Design Ann	otations				
	Measured	Vertical	Local Coo	rdinates	
	Depth (usft)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
	100.0	100.0	0.1	-0.5	First Gyro Survey
	4,863.0	4,861.6	-12.0	-77.2	Last Gyro Survey
	4,922.0	4,920.6	-12.7	-75.6	First MWD Survey
	10,019.0	5,436.2	4,736.3	56.1	Last MWD Survey 10019 MD/5436.2 TVD 4736.3 N 56.1 E N: 155289.22 E: 170
	10,032.0	5,435.8	4,749.3	57.1	Cross 330' 10032 MD/4749.3 TVD 4749.3 N 57.1 E N: 155302.18 E: 1764084.
	10,070.0	5,434.8	4,787.2	60.1	PTD 10070 MD/4787.2 TVD 4787.2 N 60.1 E N: 155340.05 E: 1764087.87

01 1 10	4 15	_		
Checked By:	Approved By:	D)ate:	
,		_		

	LAT LONG 37° 5' 25.205 N 99° 18' 31.531 W 1764084.89 37° 5' 25.333 N 99° 18' 31.520 W 1764087.87 37° 5' 25.708 N 99° 18' 31.487 W
	Ä
	MAPN 155289.2 155302.1
	VS -784.8 -787.8 -796.6
#1-18H	DLS 1.11 0.00 0.00
Family Trust #1-18	al wellbore NS EW 4736.3 56.1 4749.3 57.1 4787.2 60.1
n Famil	al well NS 4736. 4749. 4787.
Hoffman	Original TVD 5436.2 5435.8 5434.8
••	AZI 4.50 4.50
Well Name	wellbore Name MD INC 10019.0 91.50 10032.0 91.50 10070.0 91.50

Page 1



ALLIED OIL & GAS SERVICES, LLC 053838 Federel Tex 1.D.@ 20-5975804

RUSSELL, KANSAS 67665	Adianaloge KS
-	07/26/2017
DATE 07/29/ml 18 345 184	LED OUT ON LOCATION JOB START JOB FINISH
LEASE FAIL TENT WELL 1-18H LOCATION BATTER OF	KKS, 2 South to Rd Composed KS
OLD OR NEW (Circle one) V, 12 East, No	
CONTRACTOR Patterson 421	OWNER Tag Hill Operation
TYPE OF JOB Surface	•
HOLE SIZE 124 T.D. SIO CASING SIZE 954 DEPTH 791.27	AMOUNT ORDERED 2002 Class At 3%ce +
CASING SIZE 95 DEPTH 744.27 TUBING SIZE DEPTH	2 % sms + 2% Gyesca + 2# Flosa 450 SK
DRILL PIPE DEPTH	Chis A+2% cc
TOOL DEPTH	\.
PRES. MAX MINIMUM MEAS. LINE SHOE JOINT 42.65	COMMON 650 5x @ 16.28 10.562.50
MEAS. LINE SHOE JOINT 42.65 CEMENT LEFT IN CSO. 42.65	POZMIX @
PERFS.	CHLORIDE @
DISPLACEMENT 58/2 4/ feesh H20	ASC @ · ·
EQUIPMENT	Gypseal 4 sx @34.20 136.80
P.	5ms 376 @3.90 //28.00
PUMPTRUCK CEMENTER Seen This each	
#548/545 HELPER Eddie Piper/Durafraktil	@
BULK TRUCK	
#471/ _ DRIVER Scott Priddy & 2	
#381/250 DRIVER Troy Lenz 3	HANDLING 686 @2.10 1440.60
	HANDLING 686 02.10 1440.60 MILEAGE 31.46/35/235 2604.03
REMARKS:	5 P MA 11 MARINE
Did not sire cenent	1:108,09 TOTAL 15,000.15
DIU FIBI CIIC ESPIENT	SERVICE
Usel lin to top off w/ 300 x Chu	
A+2%cc	DEPTH OF JOB
	PUMP TRUCK CHARGE 1/25.00 EXTRA FOOTAGE 497 @ 95 474-05
	MILEAGE 35 @ 7.00 345.60
	MANIFOLD Head Dental @ 200.00
	dight vehicle 35. @ 4.00 /40.00
1.11	18 HRS WATTING TITINE @900.00 N/C
CHARGE TO: The Hill Operation	TOTAL \$2,184.05
CITYSTATEZIP	PLUG & FLOAT EQUIPMENT 95/8-
	1- Tool Rubber plug @ 158.00
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	TOTAL 158.00
done to satisfaction and supervision of owner agent or	
contractor. I have read and understand the "GENERAL	SALES TAX (If Any) 763,57
TERMS AND CONDITIONS" listed on the reverse side.	TOTAL CHARGES\$18.348.98
Tim Onecashian	
PRINTED NAME Jim Quesey busy	DISCOUNT 35 7 1 H32.14 IF PAID IN 30 DAYS
DIGNATURE O' LAS APE-12-0108	net \$ 11,926.84 (NR)
SIGNATURE APE: 12-DIOB	1100 11400.07 (DE)
and the state of t	
EFFECTION AND ADDRESS OF THE PROPERTY OF THE P	المستخدم ومناه والمناه المراجع والمراجع والمراع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع

ALLIED CEMENTING CO., LLC. 32692 Federal Tax 1.D.# 20-5975804

REMIT TO P.O. BOX 31	SERVICE POINT:
RUSSELL, KANSAS 67665	Medicine Ladge
leco Imin Invier to	ALLED OUT ON LOCATION JOB START JOB FINISH
DATE 8-12-12 18 34s RANGE C	ALLED OUT ON LOCATION JOB START JOB FINISH 2:00 PM (2:30 PM 9:30 10:30
	COUNTY CTATE
OLD OR NEW Circle one)	
OLD OR NEW (Circle one)	1.08
CONTRACTOR Patherson	OWNER Tug Hill Operating
TYPE OF JOB Intermediate	, 2
HOLE SIZE 83/4" T.D. 6060	CEMENT AMOUNT ORDERED 225 Class A"+5% Soult 12%
CASING SIZE 7" DEPTH 5988.37 TUBING SIZE DEPTH	gel t.3 % FI-160 t5 Kalseal + De Comer
DRILL PIPE DEPTH	Survive Contract the Contract t
TOOL DEPTH	1
PRES, MAX MINIMUM	COMMON 225@ 16.25 3656.25
MEAS. LINE SHOE JOINT 82.13	POZMIX @ 21:25 - 85:00 -
CEMENT LEFT IN CSO: \$2.13	GEL - 4:00 - 21:25 - 85:00 -
PERFS. DISPLACEMENT Jalo	CHLORIDE @
EQUIPMENT	Salt 600 @ 23.95 143.70
EQUIPMENT	F1-140 63@ 17.20 1,083.60
PUMPTRUCK CEMENTER Ron Gilley	500 gal ASF @ 1,27 635.00
#548-545 HELPERIVEddie Piper Ryber C.	Deformer 31@ 8.90 275.90
BULK TRUCK	(
#364 DRIVER Brandon Boar 3	·@
BULK TRUCK	@
# DRIVER	HANDLING 243,00 x 2.10@ 510.30
	MILEAGE 388,50 X 2.95 912.98
REMARKS:	TOTAE 7302.73
See Cement Log	
	SERVICE
	DEPTH OF JOB
	PUMP TRUCK CHARGE #2. (25.00
	EXTRA FOOTAGE @
	MILEAGE 35@ 7.00 245.00
	MANIFOLD & Head @ 200 00
	Light Veh. 250 4,00 140.00
CHARGE TO: Tug Hill Operating	mon to a page
STREET	101AL" 280
CITYSTATEZIP	
V4.0 2	7" PLUG & FLOAT EQUIPMENT
. *	
and the second second	1- Bubber Flug @ 185.00
To Allied Cementing Co., LLC.	
You are hereby requested to rent cementing equipment	
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or	
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	
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or	TOTAL \$2500
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	TOTAL SALES TAX (If Any) 375,79
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.	TOTAL \$2500
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.	TOTAL \$2500 SALES TAX (If Any) 375.79 TOTAL CHARGES \$10667.73
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.	TOTAL \$2500 SALES TAX (If Any) 3.75.79 TOTAL CHARGES \$10.667.73 DISCOUNT 3.33.7/ IF PAID IN 30 DAYS
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.	TOTAL \$2500 SALES TAX (If Any) 3.75.79 TOTAL CHARGES \$10.667.73 DISCOUNT 3.33.7/ IF PAID IN 30 DAYS
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	TOTAL \$2500 SALES TAX (If Any) 375.79 TOTAL CHARGES \$10667.73

ALLIED OIL & GAS SERVICES, LLC 053878 BOX 31

	REMIT TO P.O. BOX 31	SERVICE POINT: L' DONAL, L'
	RUSSELL, KANSAS 67665	Modicine belacks
		mon. Mon. tues tues
•	ISEC TWP RANGE CA	LLED OUT ON LOCATION JOB START JOB FINISH
1	DATE 08-20-12 18 345 18 W	10:00 Am
	Co. S. I arrive and the second second	mile KS 25 1/4 E N/E COUNTY STATE
		m1/E, C), 25, 1/4 & N/5 Commode (E)
1	OLD OR NEW (Circle one)	2/2
		7/1/06
	CONTRACTOR Patterson UTI #	OWNER TUG HILL
	TYPE OF JOB Linea (freduction)	
	HOLE SIZE 1/4 T.D. 10070	CEMENT
	CASING SIZE 4/4 DEPTH (20070)	AMOUNT ORDERED 450sxclassH + 3 # Kalson
	TUBING SIZE DEPTH	+1%.FL-160+. 25% SASI- +.1% (K-20)
	DRILL PIPE 4" DEPTH (572)	\$ Do Garrer
	TOOL DEPTH	4 Total
	PRES. MAX 3100 +6+ 4000 MINIMUM	COMMON CLSSH 45050 19.25 8662.50)
	PRES. MAX 5105 TEST TEST VINNINGWY	
	MEAS. LINE SHOE JOINT 4/,6/	POZMIX
	CEMENT LEFT IN CSG. HQ'	GEL
	PERFS.	CHLORIDE@
	DISPLACEMENT /19 Bhli Fresh HD.	ASC
	EQUIPMENT	SA51 105# @ 15.9 16.74.77.75
		CR-20 42#@ 4100 172:20
		EL-160 425#@17.20 7310.00
	PUMPTRUCK CEMENTER D. F. G. J.	Parked De Lander 63 # @ 848.45 560.701/0
	#530-484 HELPER L. Baeza / Libery	Kalcal 1350# @ 189 1201.50
	BULKTRUCK	0
	# 562-554 DRIVER Vincete 3 Liberal	@
	BULK TRUCK	@ 1034.48
	# DRIVER .	210
	REMARKS:	TOTAL 22 437/36
	See Job Log.	
		SERVICE
	Sot Phis- belowed hall	ODATICE
	Levented w/ Ris 39 Bb 15 Corners	
	Revented W/ Wa 31 Dall Johney	DEPTH OF JOB 10070.
		PUMPTRUCK CHARGE 4950 0
	Tilia i	EXTRA FOOTAGE @@
		MILEAGE 3.5 @ 7 245.00
		MANIFOLD
		Lightlehide 35 @ 4. 1400
	.1	Waittime 14her-45/10/10 4000 4000
	CHARGE TO: Tuglil	
	CHARGE IO. 100 AFTI	TOTAL 5335.00
	STREET	IOIAL * 27
	CITYSTATEZIP	PLUG & FLOAT EQUIPMENT
		Thog at road recontinents
		@
	To: Allied Oil & Gas Services, LLC.	N'/ @
	You are hereby requested to rent cementing equipment	
	and furnish cementer and helper(s) to assist owner or	The state of the s
	contractor to do work as is listed. The above work was	
	done to satisfaction and supervision of owner agent or	TOTAL
	contractor. I have read and understand the "GENERAL	CALECTAN (SALES) 1233.64
	TERMS AND CONDITIONS" listed on the reverse side.	SALES TAX (II Any)
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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/

Sam Brownback, Governor

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

October 11, 2012

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

Re: ACO1 API 15-033-21621-01-00 Hoffman Family Trust 1-18H SE/4 Sec.18-34S-18W Comanche 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