

HERB DEINES

CONSULTING GEOLOGIST

108 W. 35th ST.

PH. 785-625-3380

HAYS, KS 67601

COMPANY T.D.I. Inc.

WELL Hiatt #1

FIELD Wildcat

COUNTY Ellis STATE KS

LOCATION:

1320 FSL 3 1855 FWL

Elevations

KB 2161

DF _____

GL 2151

Logging by:

Log-Tech

SEC 7 TWP 14 RGE 18

- | | |
|-------------------------------------|----------|
| 1. <u>Dual Compensated Porosity</u> | 4. _____ |
| 2. <u>Dual Induction</u> | 5. _____ |
| 3. <u>micro resistivity</u> | 6. _____ |

Contractor Southwind Drilling Inc Rig #1

Commenced 5-13-11 Completed 5-21-11

RTD 3900' LTD 3899'

Surface Casing 8 5/8 @ 234.11' w/ 150 gxs Common 2 7/8 Gal 3% cc

Production Casing

Drilling Time 1400' - 1475' Samples 3100' - TD
3100' - TD 3100' - TD

Daily Penetration Rate

Date	Depth	Activity	Date	Depth	Activity
5-13	-	Rig up, Spud			
5-14		WOC			
5-15	1605'	Drilling			
5-16	2490'	Drilling			
5-17	3100'	Drilling			
5-18	3455'	Drlg. DST 1 & 2			
5-19	3583'	DST 3 Drlg			
5-20	3658'	DST 4 Drlg			
5-21	3900'	TD Log DST 5			

Bit Record

REMARKS: It is recommended to set production casing. Perforate zones in the Arbuckle & examine the KC, D.F., H.I., & K.

Respectively Submitted
[Signature]

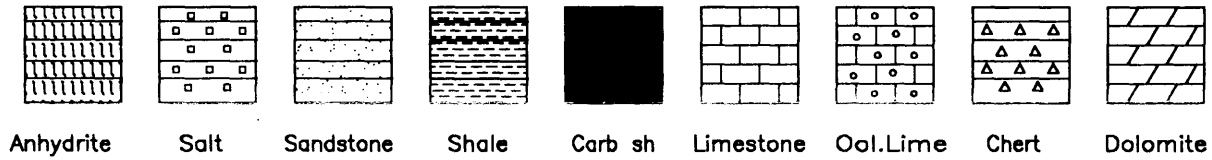
Make & Type Serial No. Nozzles Depth In Depth Out Hours

Formation	Sample	Log	Datum	Formation	Sample	Log	Datum
Anhydrite Top		1430	+ 731				
Anhydrite Base		1443	+ 698				
Topoka	3168	3167	- 1006				
Harbor Shale	3418	3417	- 1286				
Toronto	3435	3437	- 1276				
LKC	3466	3465	- 1304				
BKC	3694	3690	- 1529				
Arbuckle	3774	3770	- 1616				
	RTD	3900					
	LTD	3899	- 1738				

Formation Sample Log Datum Formation Sample Log Datum

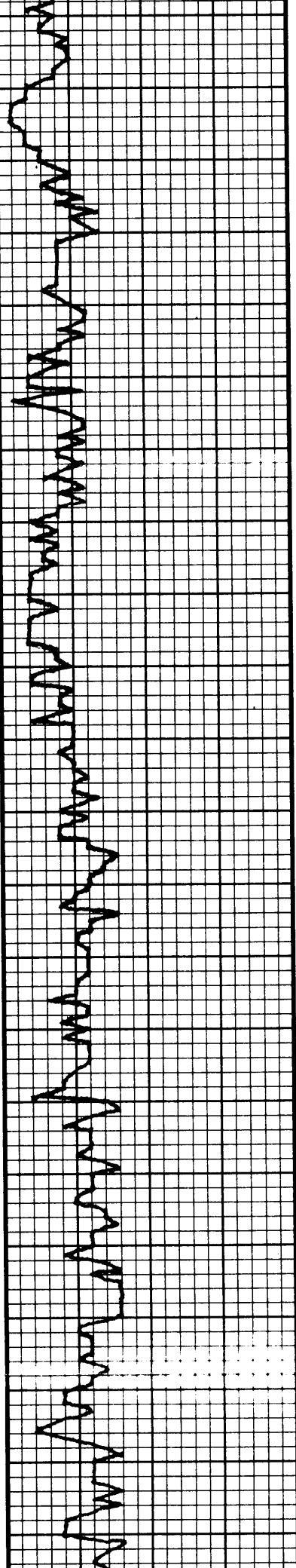
* Structural Position to: **Verna Hill #1**
N2 SW SE SE Sec 12-14-19

LEGEND



SCALE " = 100'

log	Drilling time in minutes										DEPTH	Sample Description	Remarks, drill stem tests, etc.	
	1	2	3	4	5	6	7	8	9	10				
											1420			
											30	Top E-log 1420		
											40			
											50			
											60			
											70	Base E-log 1463		
											3100			
													Lm - Dk & Lt Gray Trachy Bio-elastic mix Crinoids	
											20		Sh - Gray Lm Grn White Sticky slick lime Chalky wh	
													Lm - Lt Brown Gray Fossiliferous Trachy and granular Crinoids mod calciferous	
													Lm - A/A	
											40		Sh - Gray Red Brown Dove Gray Sand w/ glauconite	
													Lime - Tan Lt Gray uncon. elastic mix Sh fossil	
											60		Sh - Lm Grn Slimy Sticky to granular	
													Top of E-log 1567 -1006	
											80		Lm - Tan Grn Granular Crinoid & Elera fossils Coral mod dense, no vis. φ	



3200

Lm - Lt Brown Grm Co. & Fus.
Rnd Grm. Qtz clusters
Cl & Ben few chips A

20

Lm - Drk Brwn Tan Fine-Gr YLW
uncancel. das dolomitic A

40

Lm - Tan Brown Gray Grm FXLN
Bio-clastic trashy mix
Inner YLW & some mud base
no vis. &

60

Lm - Grm Tan FOSL
Bio-clastic mix w/ mica

Lm - P/A w/ Gray weathered dol.

Lm - Tan
same chalky w/ matrix
granular w/ FOSL PPT &
NSO NO ODR

80

Sh - Blk Gray Wht chalky matrix
Fizzle Carb

Lm - Tan Grm
Dense no vis. & Cl & Ben

3300

Lm - Lt Brown Tan Grm
some granular w/ FNT, ODR
PPT & w/ Inner YLW &

20

Sh - Gray Blk Wht
Chalky Sticky lime
FSL Sh

Lm - Lt Brown Grm
ool dense VFXLN FOSL
no vis. &

DST #1 3362-3455
Hit bridges 1005' off bottom
pulled tool

40

Sh - Blk Gray Wht Lm Grm
Abundant Chalky Matrix

Lm - Gray Tan Weathered Bio-clastic
mix FOSL dense
NSO throughout no vis &

60

Lm - Drk Brown Tan
Dolomitic ls weathered
Some

DST #2 3362-3455
45-45-45-45
I.F. BOB 21 min
NBB
F.F. BOB 32 min
NBB

80

Lm - Tan Grm NSO NO ODR
XLN PPT

IFD - 29-112 #
FFD - 120-189 #
SIP - 1081-1052

3400

Lm - off wh Tan Uq. & FNT ODR
Scnd Sat Sta FO crush
lt Gray Odor

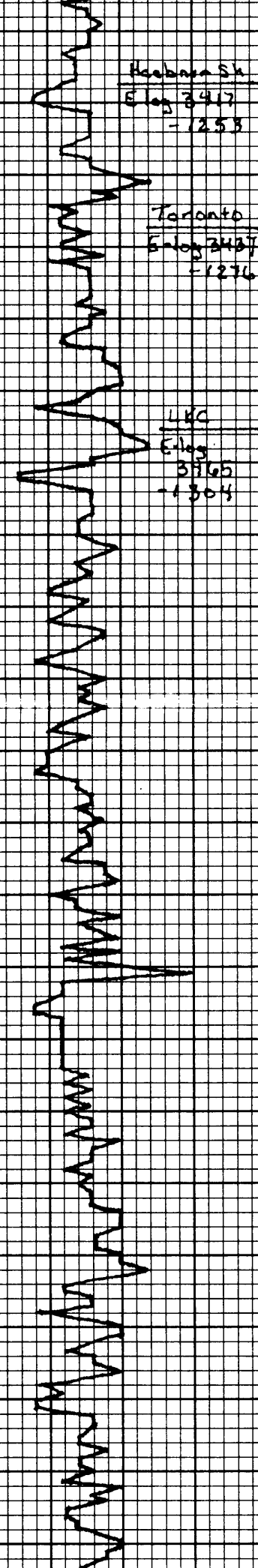
Recovery 385
107 mw 50/50
124' mw 20/80
124' mw 51/95
TBHT 110

ch- 48.000
 Mod wt 9.9
 Vis 67
 WL 6.7

Acabasa Sh
 E log 3417
 -1253

Toronto
 E log 3427
 -1276

LKC
 E log 3765
 -1304



20 Sh- Blk Abundant Carb. F.T.S.L.
 Lm- Tan Grm Speckled Grs XLN
 PPT φ
 Sh- Lm Grm Wh Sticky Mtrx

40 Lm- Grm Tan mottled few chips
 DO Sta sparsely Sat Sta
 XLN mod dense poorly dev.

CFS
 60 Sh- Blk Gray Red Abundant Sticky
 lime

A Lm- Off wh Tan Dense
 no vis. φ
 Clin & Brn

80 B

● Lm- Tan Grm Crac- Med XLN
 micro XLN in part Lt. Gray STA
 Fat ODR
 1 chip small Vugs

3500 Sh- Blk Gray Red
 Carb. chips Sticky lime

D ● Lm- Tan Grm ool- normal, Tang st. φ
 Fat ODR FO on crush Vug φ
 Few chips PPT φ Lt. Gray Sta.

20 Lm- Tan Off wh Tan micro-med XLN
 PPT φ Instit φ ODR FO on crush
 Sected Sat. Sta.

E Sh- Blk
 F: calc

CFS
 F 40 Sh- Blk Gray Red
 Abundant Chalky Mtrx

● Lm- Tan Grm Some mod dense to
 PPT φ Sat. Sparsely STA ODR
 Some DO w/ Lt Gray ODR

60 Lm- off wh Tan Gr Dom some w/ no vis
 Few chips Sparsely Lt Gray Sta NEQ
 Gilsenitic Featw- Instit. φ Fat ODR
 C-5 XLN

G Lm- Tan Off wh Dns micro-no vis
 Clin & Brn

80 Lm- Off wh Tan Few chips Grs XLN
 mod φ Sected Sta w/ DO Gilsenitic
 NEQ some Lt Gray Sta Very Fat ODR

● Lm- Off wh Lt Gray Tan Grs XLN
 Sected Sta Instit. φ NO ODR
 until crush Lt Gray ODR

3600 H Lm- Off wh Tan micro-no vis φ
 Dns Few chips Gilsenitic residue
 Very Fat ODR
 few chips Tan A

20 Lm- Off wh Lt Vug φ Gilsenitic
 ODR Sat Sta Sh FOSL

DST #3 3443-3534
 45-45-45-45

I.F. BOB 22 min
 NBB
 F.F. BOB 41 min
 IFP 29-106[#]
 FFP 114-159[#]
 SIP 513-508[#]

Recovery 293'
 20' V50cm 2% O 98% m
 87' m
 196' w m 15% w 85% m

BHT-

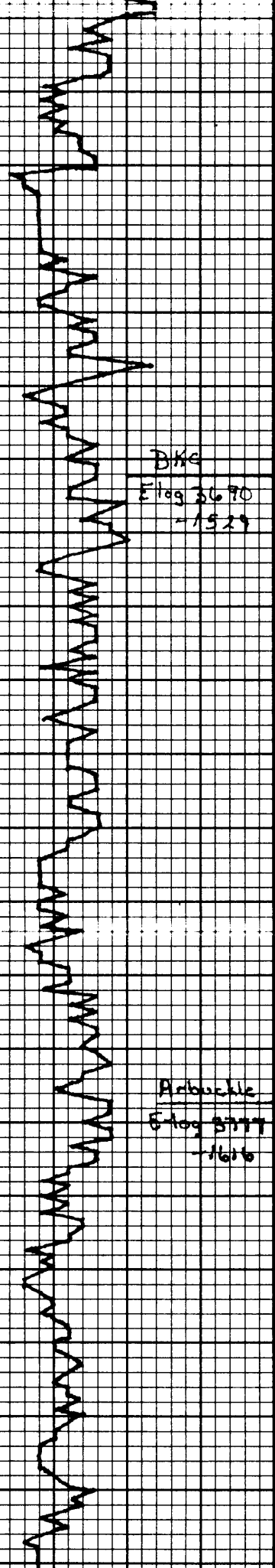
mod wt 9.0
 Vis 63
 WL 6.4

DST #4 3568-3650
 45-45-45-45

I.F. BOB 37 min
 NBB
 F.F. Wk building 8"
 NBB
 IFP 30-82[#]
 FFP 91-129[#]
 SIP 608-579[#]

Recovery 238'
 114' m
 124' m w 40% m 60% w

BHT III° Chlorides 62.500
 mod wt 9.1
 Vis 54
 WL 7.2



40 J
 Lm - Grm Tan Fine - Grs XLN
 Sctd Sat Stn Lt Gray ODR
 mostly PPT & SLFLOR

60 CFS
 Lm - Tan Grm Cal - amold. Vuggy w/
 Taner XLN & Sctd Sat Stn FIP ODR
 1 chp FO on crush Recrystallization
 & Solutioning

60 K
 Lm - Off wht Tan Chalky in Ppt
 mod was USO NO ODR

80 L
 Lm - Tan Grm Fine - Med XLN
 few chps partial Stn. Vry FAT ODR
 USO PPT & 1 chp granular
 w/ few spks FO on
 crush

3700
 Sh - Red Wash
 Sticky Slimy Lim

20
 Lm - Off wht Dense cal.
 Sh - Red Abundant Red Wash
 Lm - Lt Brown Trashy

40
 Lm - Maroon Mottled Tan off wht
 micro - XLN Granular
 Lm - Tan Cla Bedded cal chrt

60
 Sh - Abundant Red Sticky Lime
 Chrt - Sh Cong. mix var. color Δ
 w/ organic matter Dense
 few chps Ca Cemented Sand Clusters

80
 Dol - Sucrosic Fresh bdd Sat Stn
 Strong ODR Comcs XLN to
 filter Vuggy & FO

3800
 Dol - Sucrosic mostly more fresh
 bedded dense Sat Stn ODR
 FO on crush

20
 Dol - 60% Sucrosic Vuggy & FO on
 crush Sat Lt Gray Stn Fr. ODR
 40% Cla bedded Prestine Wht
 Cla & Br

40
 Dol - Wht Cla & Brn NO STN
 mod - grs gained few chps w/
 Pyrite PPT - Vuggy &

40
 Dol - Wht Tan Cla & Brn more
 dense w/ larger grains PPT &
 NO STN Cubic - rounded grains

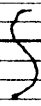
DST # 5 3718-3802
 45-45-45-45
 I.F. weak bldg 5"
 weak surface return disc @ 7 min
 FF weak bldg 4"
 NDB
 IFF 32-36#
 FFP 40-55#
 SIP 904-820#
 Recovery 95'
 45' FO
 50' Hocm 30% 70% m
 Grav. 29 BHT 112°
 mud wt 9.4
 V's 59
 WL 8.4
 LCM 3#

DD - P/A few chips Lm Gen Lim
Sh stragen

60 • Dol Off Wht Crs Yld Suc. Veg. #
Lt Set Sta Fr ODR Fr on crush

Dol - Suc Fr Yld Duggy # PPT
mod dense in pct. fewer Set
Sta Vry Ent ODR

80 70 = H/A few chips weathered
rounded mature grains
Sh unconsolidate



3900 TD @ 3:03 AM May 21, 2011

LTD 3899

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 4909

Date	5-13-11	Sec.	7	Twp.	14	Range	18	County	Ellis	State	Ks	On Location		Finish	9:00 AM	
Lease	Hiatt	Well No.	#1	Location		Hays, Ks - 1830 W Hwy 30, IS										
Contractor	Southwind #1							Owner	310 N+E is well							
Type Job	Surface							To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.								
Hole Size	12 1/4"		T.D.	236'												
Csg.	8 3/8" 20#		Depth	234'												
Tbg. Size			Depth													
Tool			Depth													
Cement Left in Csg.	15'		Shoe Joint	15'												
Meas Line			Displace	14 BIS												
Cement Amount Ordered													150 common 3% gel 2% gel			

EQUIPMENT

Pumptrk	1	No.	Cementer Helper	Cisco	Common	150
Bulktrk	8	No.	Driver	Corey	Poz. Mix	
Bulktrk	p.u.	No.	Driver	Rick	Gel.	3

JOB SERVICES & REMARKS

Remarks:	Cement did Circulate					
Rat Hole	Hulls					
Mouse Hole	Salt					
Centralizers	Flowseal					
Baskets	Kol-Seal					
D/V or Port Collar	Mud CLR 48					
	CFL-117 or CD110 CAF 38					
	Sand					
	Handling 158					
	Mileage					

FLOAT EQUIPMENT

	Guide Shoe
	Centralizer
	Baskets
	AFU Inserts
	Float Shoe
	Latch Down

Pumptrk Charge Surface
Mileage 4

Tax
Discount
Total Charge

X Signature

Frank Rouse

JOB LOG

SWIFT Services, Inc.

DATE 5-22-11 PAGE NO. 1

CUSTOMER **T D I** WELL NO. **#1** LEASE **Hiatt** JOB TYPE **Cement Transporting** TICKET NO. **19751**

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0145							TO 3900'
	0320							DN location W/E.E. Rig LDD.C. Start 5 1/2" 14 #/ft casing to 3900'
								Insert Float Shoe w/ Auto-Pull D.V. L.D. Baffle - S.S. - 4 3/4" @ 3957.5' (94 Displ)
								Cent Collars 1-3-5-7-9-12-58-73 Curt Baskets Riv end #2-13-95-74 D.V. #95 JT between 58 & 59 @ 1442'
								Drop fill up ball bits and Rig for run casing
	0530							Start circ / Rotate - 1st stage
	0600							Fin circ - Take on 1 Tank of Mud
		6	12				530	Pump 500 GAL Mud Flush
		5 1/2	32				500	Pump 201731 KCL Flush
		5					450	Start (150 SKS IFA-2 Curt) @ 15.5 #/gal
	0630	5	36				300	Fin Curt - Wash out Pump & Lines
	0633	9					350	Drop D.V. L.D. Plug - Start Displ (94)
		8	40				300	Slow rate - @ 65 Hrd - Start 20 mud
		7	70				400	Caught pass - Slow rate @ 85
		6	80				500	Slow rate @ 85 BBL - Start KCL Flush
	0645		94				200 / 1500	Plug down - Hold - Release & Hold Drop D.V. opening Device -
		9 / 5						Plug RH / MH 30/15 mud Curt
		5 1/2	11				1100 / 400	Open D.V. - KCL Flush
							400	Fin Flush 2nd Stage
		6					200	Start (200 SKS SUD) @ 11.2 #/gal
		6	86				350	Fin Curt - Release D.V. Closing Plug
		6					200	Start Displ (35 BBL)
		6	25				300	Curt circ - (20 SKS to PIT)
	0745		35				400 / 1600	Plug Down - D.V. Closed - Release & Hold
	0800							Job Complete
								Thanks Dan, Doug & David