

OPERATOR

Company: TDI, INC
Address: 1310 BISON ROAD
HAYS, KS 67601

Contact Geologist: TOM DENNING
Contact Phone Nbr: 785-259-3141
Well Name: KOHL # 1
Location: E2 NW NW NW
Pool: INFIELD
State:

API: 15-051-26,274-00-00
Field: ELLIS SOUTHEAST
Country: KANSAS



**1310 BISON ROAD
HAYS, KANSAS 67601
(785) 628-2593**

Scale 1:240 Imperial

Well Name:	KOHL # 1	
Surface Location:	E2 NW NW NW	
Bottom Location:		
API:	15-051-26,274-00-00	
License Number:	4787	
Spud Date:	4/4/2012	Time: 8:00 AM
Region:	ELLIS COUNTY	
Drilling Completed:	4/10/2012	Time: 7:51 AM
Surface Coordinates:	330' FNL & 625 'FWL	
Bottom Hole Coordinates:		
Ground Elevation:	2142.00ft	
K.B. Elevation:	2151.00ft	
Logged Interval:	3100.00ft	To: 3950.00ft
Total Depth:	3950.00ft	
Formation:	LKC	
Drilling Fluid Type:	CHEMICAL/FRESH WATER GEL	

SURFACE CO-ORDINATES

Well Type:	Vertical	
Longitude:		Latitude:
N/S Co-ord:	330' FNL	
E/W Co-ord:	625 'FWL	

LOGGED BY



Company: SOLUTIONS CONSULTING
Address: 108 W 35TH
HAYS, KS 67602

Phone Nbr: (785) 639-1337

CONTRACTOR

Contractor: SOUTHWIND DRILLING INC
 Rig #: 2
 Rig Type: MUD ROTARY
 Spud Date: 4/4/2012
 TD Date: 4/10/2012
 Rig Release: 4/11/2012
 Time: 8:00 AM
 Time: 7:51 AM
 Time: 2:00 PM

ELEVATIONS

K.B. Elevation: 2151.00ft
 K.B. to Ground: 9.00ft
 Ground Elevation: 2142.00ft

NOTES

RECOMMENDATION TO RUN 5 1/2" PRODUCTION CASING. OIL SHOWS WERE NOTED IN THE UPPER TOPEKA, TORONTO AND NUMEROUS LKC LIMESTONE BENCHES WITH GOOD STRUCTURE FOUND IN THE ARBUCKLE WITH OIL SHOWS, POROSITY AND PERMEABILITY DEVELOPMENT IN THE UPPER ARBUCKLE.


FORMATION TOPS AND DAILY ACTIVITY SUMMARY

KOHL # 1
 E2 NW NW NW SEC.8-13s-20w
 ELLIS COUNTY, KANSAS
 GL ELEVATION=2142' KB ELEVATION=2151'

<u>FORMATION</u>	<u>SAMPLE TOP</u>	<u>LOG TOP</u>
Anhydrite top	1495+ 656	1493 +658
Anhydrite base	1535+ 616	1531 +620
Topeka	3173-1022	3171-1020
Heebner Shale	3403-1252	3400-1249
Toronto	3426-1275	3421-1270
LKC	3442-1291	3438-1287
BKC	3688-1537	3684-1533
Marmaton	3735-1584	3740-1589
Arbuckle	3794-1643	3796-1645
RTD	3950-1799	
LTD		3950-1799

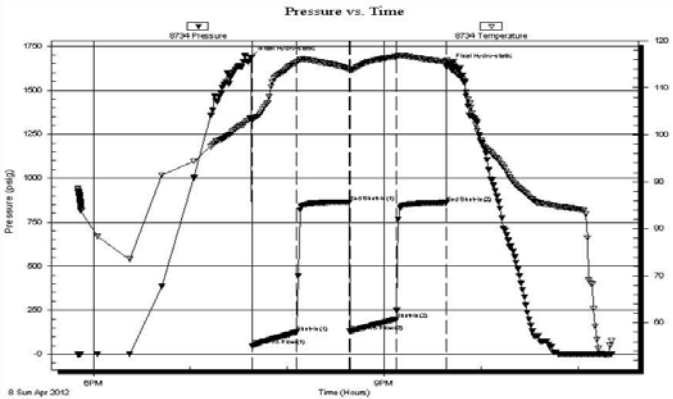
4-02-2012	RU
4-03-2012	Spud, set surface casing to 211' with 150 sacks common, 2% gel, 3%CC, Plug down 3:45PM, WOC 8 hrs, slope survey ¼ degree.
4-04-2012	431', drilling
4-05-2012	1528', drilling
4-06-2012	2380', drilling
4-07-2012	2934' Displaced 2808'
4-08-2012	3408', drilling, DST #1 (3400-3485), slope survey 1 degree
4-09-2012	3571', drilling
4-10-2012	3933', RTD, Logs, Straddle test (3766-3822) slope 1 degree
4-11-2012	3950' lay down drill pipe, run 5 ½" casing with DV, cement

DST # 1

	DRILL STEM TEST REPORT	
	TDI 1310 Bison Rd Hays, Ks 67601 ATTN: Herb Deined	8-13-20 Ellis, Ks Kohl #1 Job Ticket: 45708 Test Start: 2012.04.08 @ 17:50:19
GENERAL INFORMATION:		
Formation: Toronto - LKC "C" Deviated: No Whipstock: ft (KB) Time Tool Opened: 19:38:19 Time Test Ended: 23:21:19	Test Type: Conventional Bottom Hole (Initial) Tester: Brian Fairbank Unit No: 41	Reference Elevations: 2154.00 ft (KB) 2146.00 ft (CF)
Interval: 3400.00 ft (KB) To 3485.00 ft (KB) (TVD) Total Depth: 3485.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Good	KB to GR/CF: 8.00 ft	

Serial #: 8734 Outside
 Press@RunDepth: 198.25 psig @ 3403.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.04.08 End Date: 2012.04.08 Last Calib.: 2012.04.08
 Start Time: 17:50:20 End Time: 23:21:19 Time On Btm: 2012.04.08 @ 19:37:19
 Time Off Btm: 2012.04.08 @ 21:40:19

TEST COMMENT: IFP - BOB 12 min
 ISI - no blow back
 FFP - BOB 13 min
 FSI - sur blow back - died 9 min




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1688.65	103.60	Initial Hydro-static
1	46.96	103.04	Open To Flow (1)
29	125.57	115.42	Shut-In(1)
61	864.60	113.95	End Shut-In(1)
62	129.47	113.69	Open To Flow (2)
90	198.25	116.60	Shut-In(2)
121	860.67	115.55	End Shut-In(2)
123	1645.28	115.51	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
185.00	MWV 90%W, 5%M	2.60
60.00	VM 20%W, 80%M	0.84
70.00	SO & WCM 5%O, 5%W, 90%M	0.98
10.00	FREE OIL 95%O, 5%M	0.14
0.00	60' GIP	0.00

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

Trilobite Testing, Inc Ref. No: 45708 Printed: 2012.04.09 @ 08:12:02

DST #2 ARBUCKLE STRADDLE TEST



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI
 1310 Bison Rd
 Hays, Ks 67601
 ATTN: Herb Deines

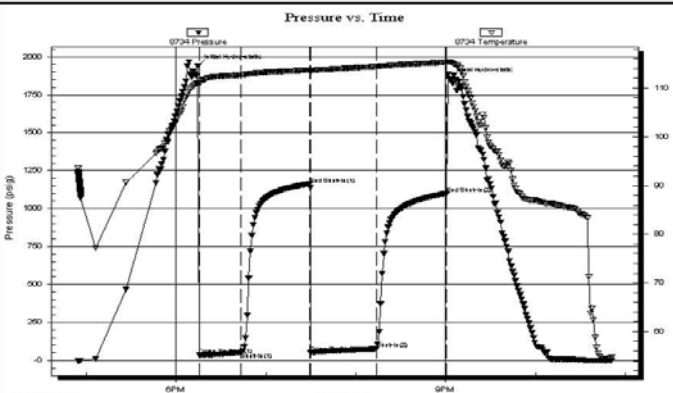
8-13-20 Ellis, Ks

Kohl #1
 Job Ticket: 45709 **DST#: 2**
 Test Start: 2012.04.10 @ 16:54:31

GENERAL INFORMATION:
 Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:15:31
 Time Test Ended: 22:50:31
 Test Type: Conventional Straddle (Reset)
 Tester: Brian Fairbank
 Unit No: 41
 Interval: **3766.00 ft (KB) To 3822.00 ft (KB) (TVD)**
 Total Depth: 3950.00 ft (KB) (TVD)
 Reference Elevations: 2154.00 ft (KB)
 2146.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good
 KB to GR/CF: 8.00 ft

Serial #: 8734 Outside
 Press@RunDepth: 74.99 psig @ 3769.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.04.10 End Date: 2012.04.10 Last Calib.: 2012.04.10
 Start Time: 16:54:32 End Time: 22:50:31 Time On Btm: 2012.04.10 @ 18:14:31
 Time Off Btm: 2012.04.10 @ 21:02:31

TEST COMMENT: IFP - weak to good blow 1/4" - 7 1/2"
 ISI - no blow back
 FFP - BOB 32 min
 FSI - sur blow back - died 3 min



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1943.33	111.06	Initial Hydro-static
1	33.50	110.88	Open To Flow (1)
29	49.82	112.68	Shut-In(1)
75	1162.59	113.69	End Shut-In(1)
76	52.01	113.48	Open To Flow (2)
119	74.99	114.40	Shut-In(2)
166	1099.10	115.26	End Shut-In(2)
168	1852.82	115.36	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
70.00	GMCO 5%G, 60%O, 45%M	0.98
50.00	FREE OIL 95%O, 5%M	0.70
0.00	90' GIP	0.00

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

Trilobite Testing, Inc Ref. No: 45709 Printed: 2012.04.11 @ 07:40:34

ROCK TYPES

Cht vari	Lmst fw<7	Meta	Carbon Sh	shale, red
Congl	Lmst fw7>	Lscongl	shale, grn	Ss
Dolprim	Dol Lime	Shgy	shale, gry	

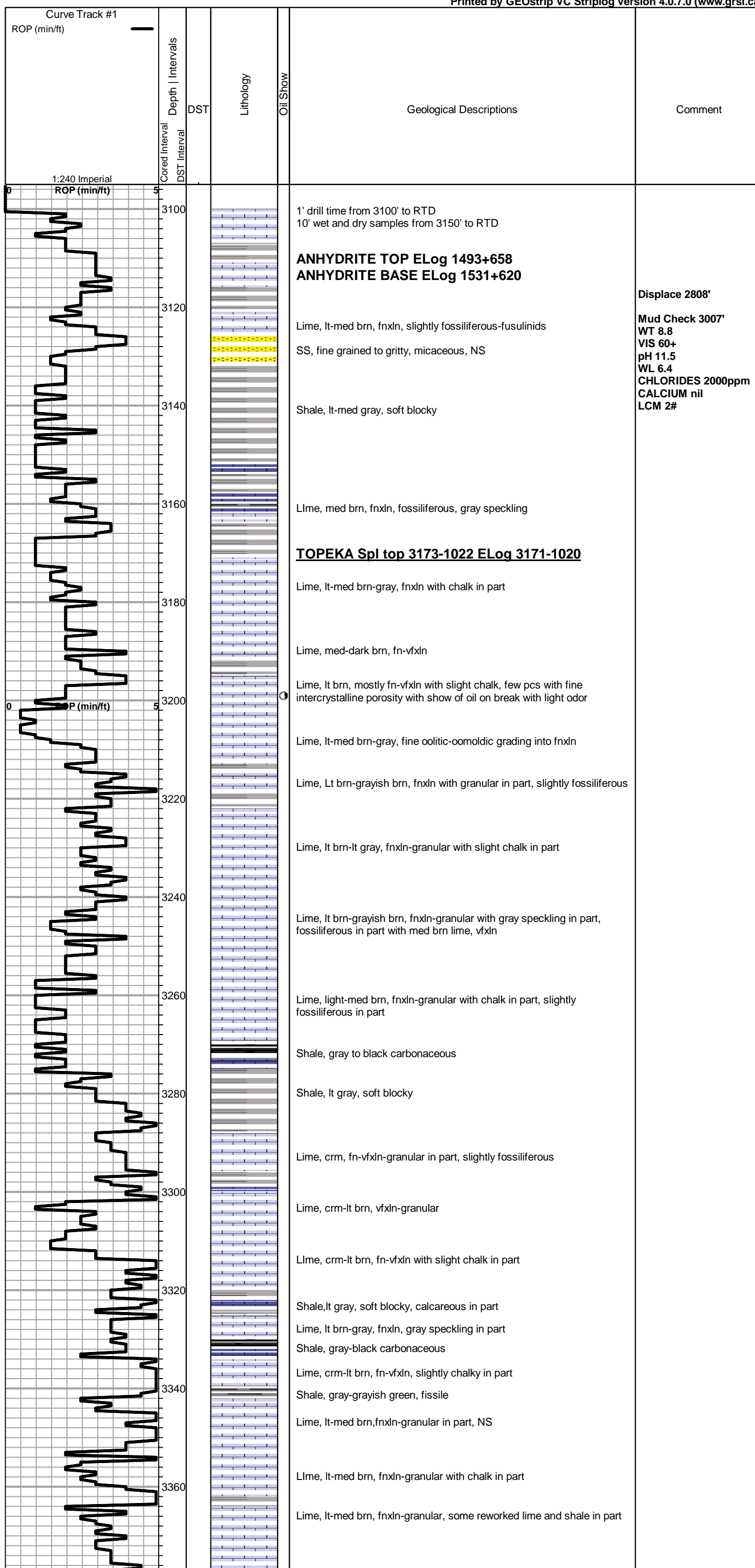
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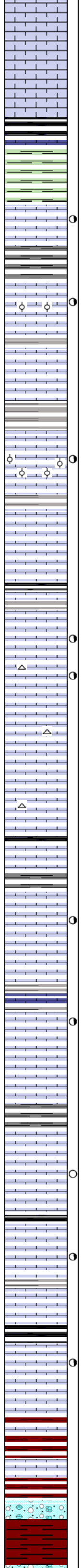
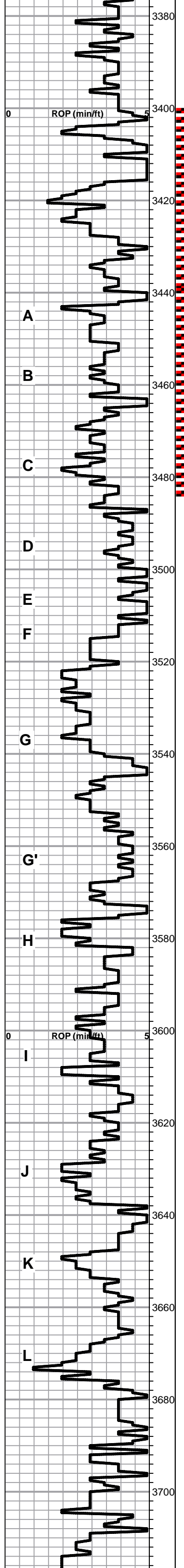
MINERAL	FOSSIL
Chert White	Oolite

OTHER SYMBOLS

DST
■ DST Int
■ DST alt

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





Lime, med-dark brn, fnxn-granular, slightly fossiliferous, slight chalk in part

Lime, lt-med brn, fnxn-granular in part, slightly fossiliferous

HEEBNER SHALE Spl top 3403-1252 ELog 3400-3410
 Shale, black carbonaceous
 Lime, med brn, fnxn, fossiliferous

Shale, lime green-light gray, soft

TORONTO Spl top 3426-1275 ELog 3421-1270
 Lime, crm, dolomitic in part, fnxn, scattered vugs with scattered stain with very light odor on break

LKC Spl top 3442-1291 ELog 3438-1287
 Lime, wht-crm, oolitic in part, scattered stain with gilsonite, NFO, very light to no detectable odor

Lime, crm-tan, fnxn-granular in part

Lime, crm-tan, fn-vfxln, fossiliferous chert, slightly chalky in part

Lime, crm-lt brn, mostly fnxn, scattered oolitic with scattered staining with very light odor, pieces very small.

Lime, lt brn, fnxn-granular in part, slightly fossiliferous, NS

Lime, crm-lt brn, fnxn. bedded chalk in part, NS, No odor

Shale, gray-black carbonaceous

Lime, crm-lt brn, fnxn-granular, NFO, No odor, scattered lt stain

Lime, crm, fnxn-granular with chalk, show of lt, gassy oil from very top of zone, most of interval granular and chalky

Lime, crm, granular-fnxln, chalky

Lime, crm-tan, fnxn, chalky

Shale, med-dark gray -black carbonaceous

Lime, crm-tan, mostly fnxn with chalk

Lime, crm, fnxn with vugs in part with light scattered staining and light odor

Lime, crm-tan, fnxn with chalk

Lime, crm-tan, fine grained sucrosic in part with scattered stain, NFO, with very light wet cut, No odor

Lime, crm-tan, fnxn with chalk in part

Shale, lt-med gray, blocky

Lime, crm-tan, fn-vfxln, brittle on break, possible fractured zone, no staining noted in interval but should be perforated and tested.

Lime, crm-tan, fnxn with chalk

Lime, crm-tan, oolitic in part, NFO, No odor, scattered light stain

Lime, offwht-crm-lt brn, fn-vfxln, chalky in part

Shale, med-dark gray - black carbonaceous

Lime, offwht-crm-brn, mostly fnxn with few pieces with vuggy porosity with SFO on break, No odor, scattered stain

BKC 3688-1537 ELog 3684-1533
 Shale, reddish brn-dove gray, soft blocky

Lime, crm-tan, fnxn

Lime, clastic mix with red shale

Shale, reddish brn, soft blocky with small chert nodules

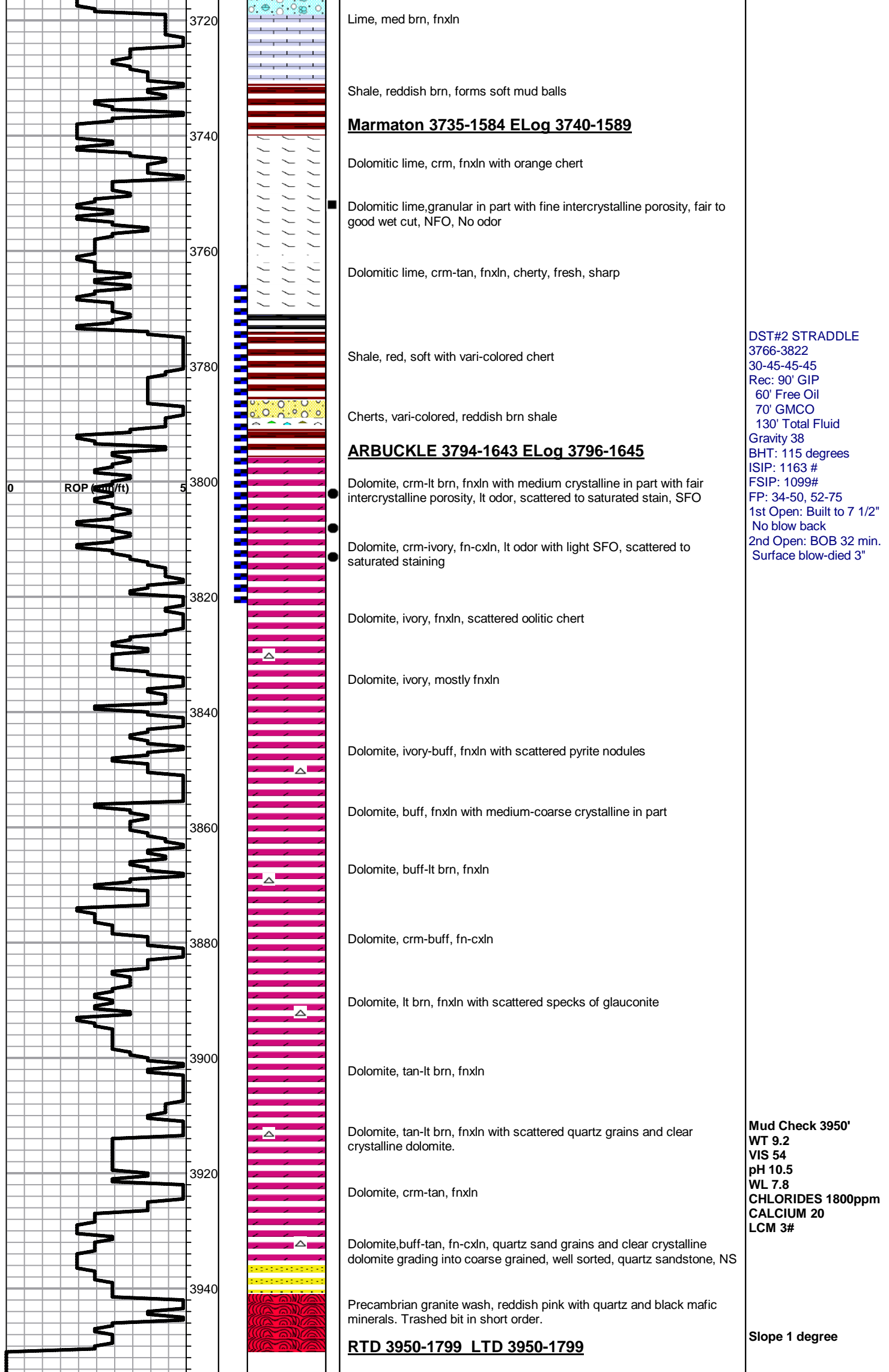
Mud Check 3411'
 WT 8.9
 VIS 50
 pH 11.0
 WL 6.4
 CHLORIDE 2000ppm
 CALCIUM nil
 LCM 2#

CFS 3433', SHORT TRIP-15 STDS, CCH

DST #1 3400-3485
 30-30-30-30
 Rec: 60' GIP
 10' Free Oil
 70' SO&WCM
 60' WM
 185' MW
 325' Total Fluid
 Gravity 42
 Rw .121 @54deg
 Chlorides:90,000ppm
 ISIP: 865#
 FSIP: 861#
 FP: 47-126, 129-198
 1st Open: BOB 12 min
 No blow back
 2nd Open: BOB 13 min
 Surface blow-died 9"

Pipe strap 3485' .17 lg
 Slope 1 degree

Mud Check 3574'
 WT 9.2
 VIS 43
 pH 10.5
 WL 7.2
 CHLORIDES 1800 ppm
 CALCIUM Trace
 LCM 2#



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. 315

Date	4-3-12	Sec.	8	Twp.	13	Range	20	County	Ellis	State	KS	On Location		Finish	3:45pm		
Lease	Kohl		Well No.		1		Location									Ellis S 6th Street W-Sinter	
Contractor	Southwind #2							Owner									To Quality Oilwell Cementing, Inc.
Type Job	Surface							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.		211		Charge To									TDT	
Csg.	8 5/8		Depth		211		Street										
Tbg. Size			Depth				City									State	
Tool			Depth				City									State	
Cement Left in Csg.	15'		Shoe Joint				The above was done to satisfaction and supervision of owner agent or contractor.										
Meas Line			Displace		12 1/2 BCL		Cement Amount Ordered									1500m 30% pcc 2% pcc 1	

EQUIPMENT

Pumptrk	5	No.	Cementer	Craig	Common	150
			Helper			
Bulktrk		No.	Driver	Hebert	Poz. Mix	
			Driver			
Bulktrk	8	No.	Driver	Levy	Gel.	3
			Driver			
JOB SERVICES & REMARKS					Calcium	5

Remarks:	Hulls	
Rat Hole	Salt	
Mouse Hole	Flowseal	
Centralizers	Kol-Seal	
Baskets	Mud CLR 48	
D/V or Port Collar	CFL-117 or CD110 CAF 38	
8 5/8 on bottom F3 + Circulation.	Sand	
Mix 150SK + Displace.	Handling	158
	Mileage	

Cement Circulated:

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	8 5/8 Surge
AFU Inserts	
Float Shoe	
Latch Down	

Pumptrk Charge	Surface
Mileage	16

X Signature <i>William Sanders</i>	Tax
	Discount
	Total Charge

JOB LOG

SWIFT Services, Inc.

DATE 11 APR 12 PAGE NO.

CUSTOMER TDI WELL NO. #1 LEASE Kohl JOB TYPE 2 stage cement long string TICKET NO. 22050

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								150sk EA-2 180sk SMD 5 1/2" x 14" casing TD 3950' total pipe. 3952' DV #58 1505' Cont 1,35, 8, 10, 12, 57 Bracket 2, 14, mid 58, 84 limit deep set
	0800							on loc TRK 114
	0810							start 5 1/2" x 14" casing in well
	1005							Drop ball - circulate - ROTATE
	1110	43 1/4	12				200	Pump 50 gal mud flush
		43 3/4	15 20				200	Pump 15 20 bbl KCL flush
	1120	43 3/4	36				250	Mix EA-2 cement @ 15.3 ppg 150 sks Drop 1st stage plug
	1130							wash out Pump & line
	1132	6 3/4	60					Displace plug - H ₂ O Pump mud
	1145	6 3/4	95 1/2				1500	Land plug w/ KCL flush Release pressure to truck - dried up
								Drop bomb
	1200							Plug RH - MH 30 sks 20 sks
	1204	4 3/4	20				900	Pump KCL flush - open DV tool
	1207	6 3/4	10 1/2				300	Mix SMD cement @ 11.2 ppg 130 sks Drop 2nd stage plug
	1220	6 3/4					400	Displace plug {130 sks mixed}
		6 3/4	25				400	— cement to surface {20 sks to pit}
	1235	6 3/4	36				2000	Land plug - close DV tool Release pressure to truck - dried up
	1245							wash truck
	1250							Back up
	1315							Job complete
								Thanks Isaac, Blain, Dave & Shane