

OPERATOR

Company: TDI INC.
 Address: 1310 BISON ROAD
 HAYS, KANSAS 67601

Contact Geologist: TOM DENNING
 Contact Phone Nbr: 785-628-2593
 Well Name: GR # 1
 Location: NE SW SW NW Sec.14-15s-19w
 Pool: WILDCAT
 State: KANSAS
 API: 15-051-26,429-00-00
 Field: UNNAMED
 Country: USA



TDI, Inc.
 1310 BISON ROAD
 HAYS, KANSAS 67601
 (785) 628-2593

Scale 1:240 Imperial

Well Name: GR # 1
 Surface Location: NE SW SW NW Sec.14-15s-19w
 Bottom Location:
 API: 15-051-26,429-00-00
 License Number: 4787
 Spud Date: 11/30/2012
 Region: ELLIS COUNTY
 Drilling Completed: 12/6/2012
 Surface Coordinates: 2060' FNL & 570' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 2011.00ft
 K.B. Elevation: 2021.00ft
 Logged Interval: 2900.00ft
 Total Depth: 3750.00ft
 Formation: LANSING-KANSAS CITY
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

Time: 2:00 PM
 Time: 3:19 PM
 To: 3750.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: 2060' FNL
 E/W Co-ord: 570' FWL

LOGGED BY

Company: SOLUTIONS CONSULTING
 Address: 108 W 35TH
 HAYS, KS 67601

Phone Nbr: (785) 639-1337
 Logged By: Geologist
 Name: HERB DEINES

CONTRACTOR

Contractor: SOUTHWIND DRILLING INC
 Rig #: 1
 Rig Type: MUD ROTARY

Rig Type: MUD ROTARY
Spud Date: 11/30/2012
TD Date: 12/6/2012
Rig Release: 12/7/2012

Time: 2:00 PM
Time: 3:19 PM
Time: 11:00 AM

ELEVATIONS

K.B. Elevation: 2021.00ft
K.B. to Ground: 10.00ft

Ground Elevation: 2011.00ft

NOTES

RECOMMENDATION TO RUN PRODUCTION CASING BASED ON RESULTS OF DST # 2

OPEN HOLE LOGGING BY PIONEER ENERGY SERVICES: DUAL INDUCTION LOG, DUAL COMPENSATED POROSITY LOG, MICRORESISTIVITY LOG

DRILL STEM TESTING BY TRILOBITE TESTING INC: TWO (2) CONVENTIONAL TESTS

FORMATION TOPS SUMMARY AND CHRONOLOGY OF DAILY ACTIVITY

GR # 1

2060' FNL & 570' FWL, NW/4

Sec. 14-15s-19w

2011' GL 2021' KB

<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1213+ 808	1215+ 806
B-Anhydrite		1253+ 768
Topeka	2991- 970	2991- 970
Heebner Shale	3264-1243	3262-1241
Toronto	3284-1263	3286-1265
LKC	3311-1290	3309-1288
BKC	3556-1535	3551-1530
Conglomerate Sand		3642-1621
Arbuckle		3660-1639
RTD	3750-1688	
LTD		3747-1726

SUMMARY OF DAILY ACTIVITY

11-30-12 RU, spud 2:00pm

12-01-12 1223', set 8 5/8" to 1221' w/ 375 sxs SMD, plug down 9:00AM,
slope 1 1/2 degrees, WOC 12 hours

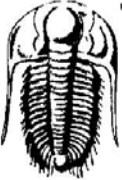
12-02-12 1500', drilling

12-03-12 2480', drilling, displaced mud system @ 2796'-2827'

12-04-12 3125', drilling, DST # 1 3204' to 3240' "A" LKC

12-04-12 3155', drilling, DST # 1 3294' to 3549' "A-C" LKC
 12-05-12 3390', drilling, DST # 2 3430'-3510' "H-J" LKC
 12-06-12 3574', RTD 3750' @ 3:19PM, short trip, CCH 1 ½ hours, TOWB, logs
 10-07-12 3750', lay down drill pipe, run 5 ½" production casing, cement with
 plug down at 11:00 am, RD

DST # 1 "A-C" LKC TEST SUMMARY

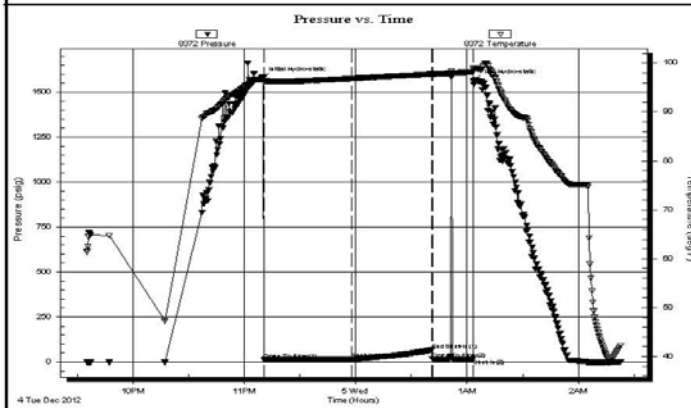
 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	TDI inc 1310 Bison Rd Hays Ks. 67601 ATTN: Herb Deines	14-15-19 Ellis GR #1 Job Ticket: 50766 DST#: 1 Test Start: 2012.12.04 @ 21:35:05

GENERAL INFORMATION:

Formation: LKC"C"	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Andy Carreira
Time Tool Opened: 23:10:40	Unit No: 39
Time Test Ended: 02:22:50	Reference Elevations: 2021.00 ft (KB)
Interval: 3294.00 ft (KB) To 3349.00 ft (KB) (TVD)	2011.00 ft (CF)
Total Depth: 3349.00 ft (KB) (TVD)	KB to GR/CF: 10.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Poor

Serial #: 8372	Outside		
Press@RunDepth: 16.91 psig @ 3301.00 ft (KB)	Capacity: 8000.00 psig		
Start Date: 2012.12.04	End Date: 2012.12.05	Last Calib.: 2012.12.05	
Start Time: 21:35:05	End Time: 02:22:50	Time On Btm: 2012.12.04 @ 23:09:20	
		Time Off Btm: 2012.12.05 @ 01:03:20	

TEST COMMENT: IF:(45min) Blow died in 19 min.
 ISl:(45min) No Return
 FF:(20min) No Blow, Flushed, Surged, No Blow. Pulled Tool.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1577.76	96.61	Initial Hydro-static
2	14.88	96.15	Open To Flow (1)
49	16.91	96.84	Shut-in(1)
92	66.92	97.74	End Shut-in(1)
92	16.46	97.72	Open To Flow (2)
114	17.32	98.15	Shut-in(2)
114	1564.72	98.93	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud	0.07

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (MMcft/d)

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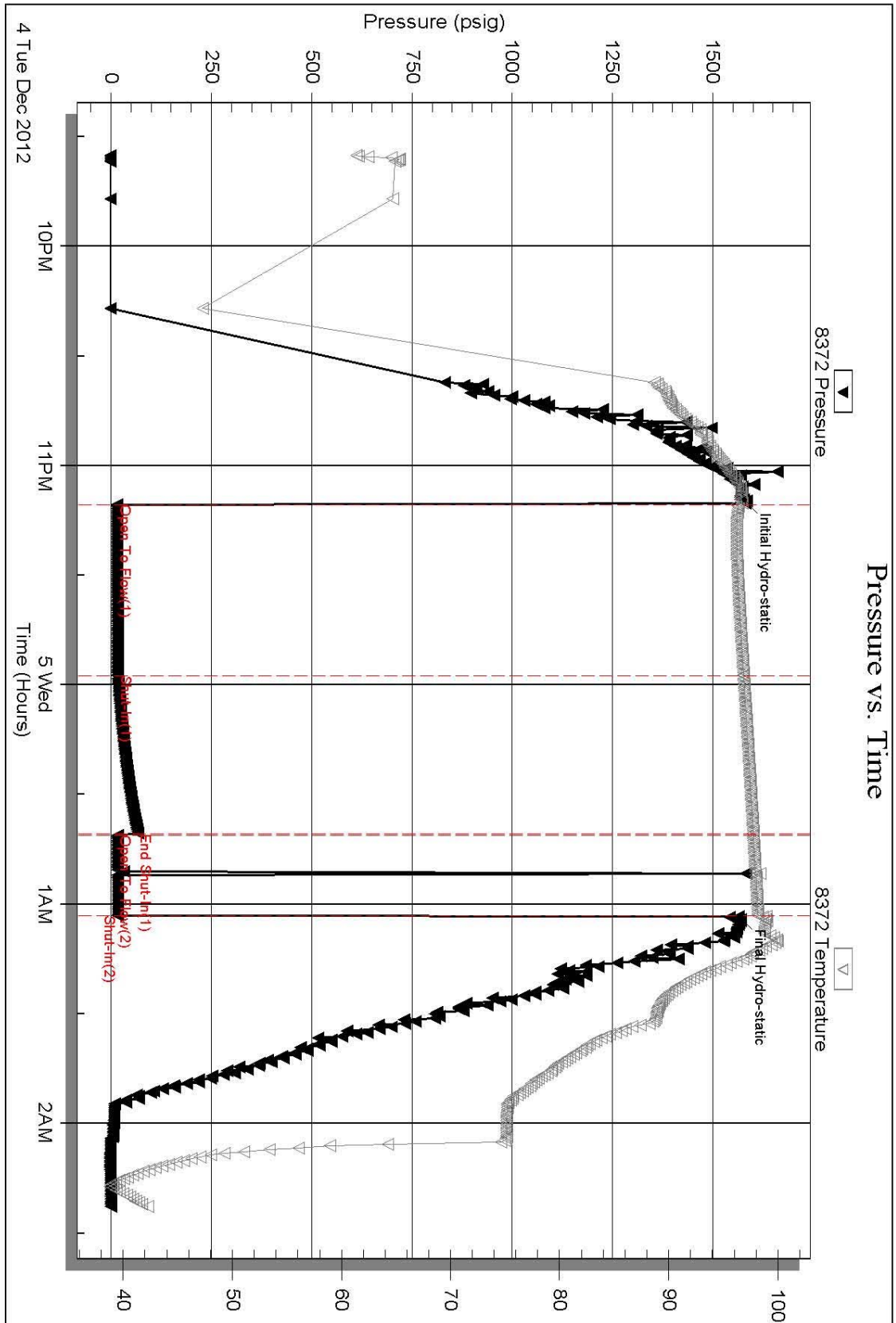
DST # 1 "A-C" EXPANDED CHART

Serial #: 8372


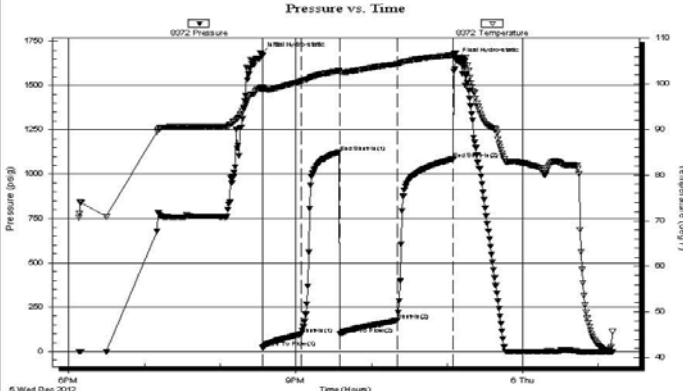
Outside TDI inc

GR #1

DST Test Number: 1

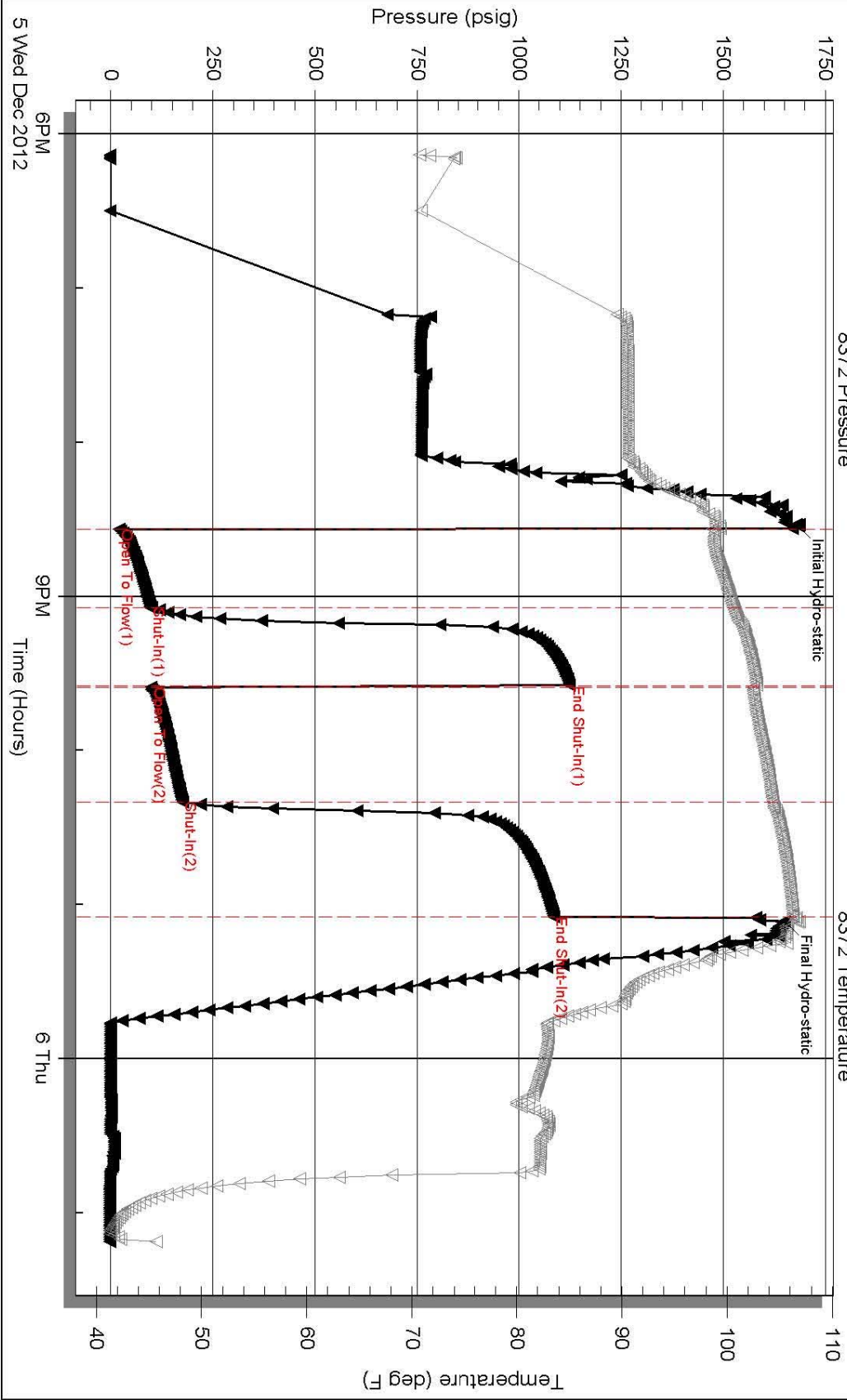


DST # 2 "H - J" LKC TEST SUMMARY

	DRILL STEM TEST REPORT																																						
	TDI inc 1310 Bison Rd Hays Ks. 67601 ATTN: Herb Deines	14-15-19 Ellis GR#1 Job Ticket: 50767 DST#: 2 Test Start: 2012.12.05 @ 18:08:05																																					
GENERAL INFORMATION:																																							
Formation: LKC"H,I,J" Deviated: No Whipstock: ft (KB) Time Tool Opened: 20:33:40 Time Test Ended: 01:10:59		Test Type: Conventional Bottom Hole (Reset) Tester: Andy Carreira Unit No: 39																																					
Interval: 3430.00 ft (KB) To 3510.00 ft (KB) (TVD) Total Depth: 3510.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Poor		Reference Elevations: 2021.00 ft (KB) 2011.00 ft (CF) KB to GR/CF: 10.00 ft																																					
Serial #: 8372 Outside Press@RunDepth: 175.35 psig @ 3437.00 ft (KB) Capacity: 8000.00 psig Start Date: 2012.12.05 End Date: 2012.12.06 Last Calib.: 2012.12.06 Start Time: 18:08:05 End Time: 01:10:59 Time On Btm: 2012.12.05 @ 20:32:00 Time Off Btm: 2012.12.05 @ 23:06:29																																							
TEST COMMENT: IF:(30min) BOB in 5 min. ISl:(30min) Return Blow built to 2" FF:(45min) BOB in 2 min. FSl:(45min) Return Blow built to 4"																																							
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DST # 2 "H - J" LKC EXPANDED CHART

Pressure vs. Time



ROCK TYPES

- | | | | | | | | | | |
|--|-----------|--|---------------------|--|------------|--|------|--|----------|
| | Clystgy | | Lmst fw> shale, grn | | Carbon Sh | | Ss | | Lsongl |
| | Dolprim | | shale, gry | | shale, red | | Slst | | Dol Lime |
| | Lmst fw<7 | | | | Shcol | | | | |

ACCESSORIES

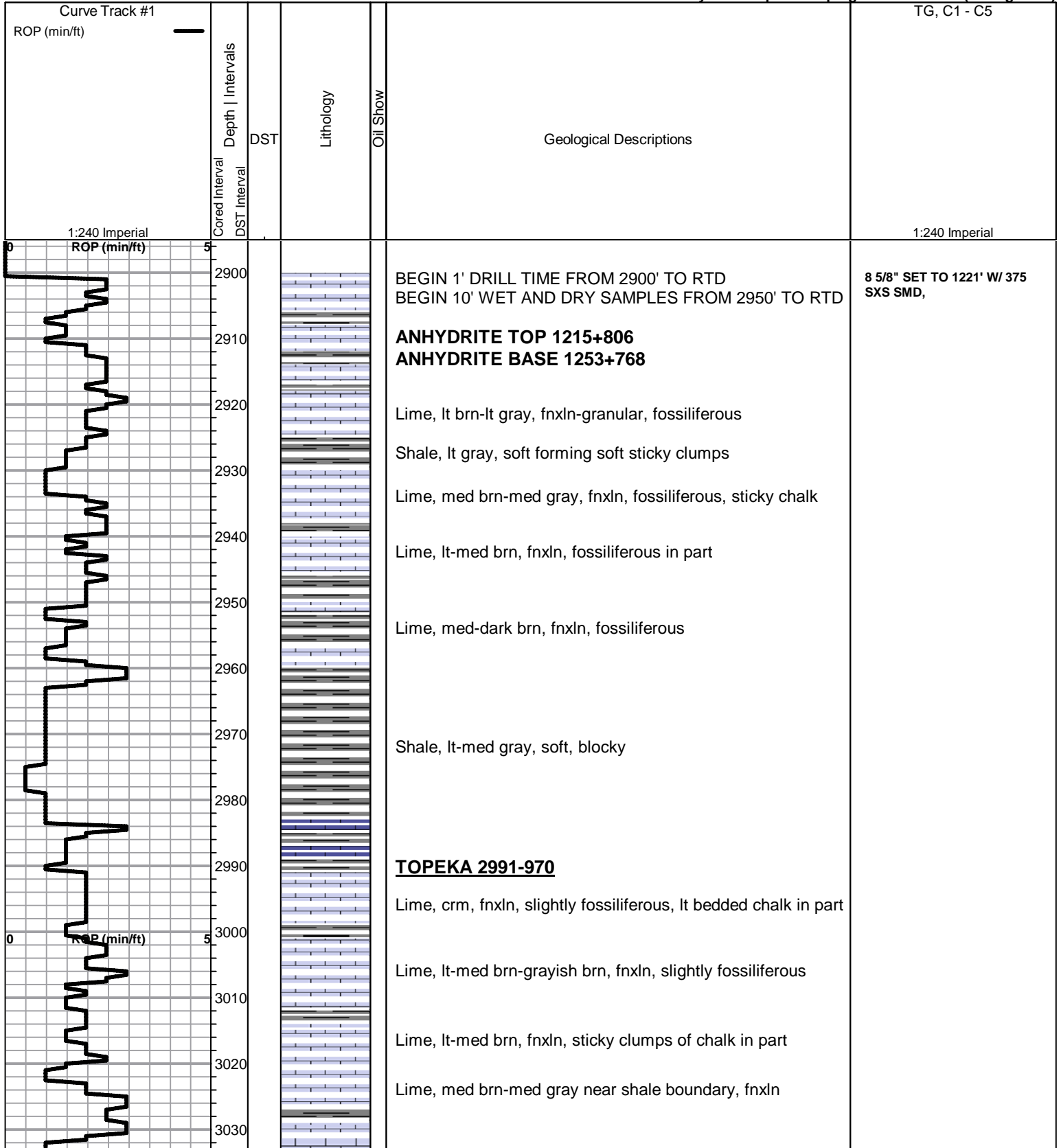
- MINERAL**
- ▲ Chert, dark
 - ⊞ Nodules
 - P Pyrite
 - Sandy
 - ◌ Varicolored chert
 - △ Chert White

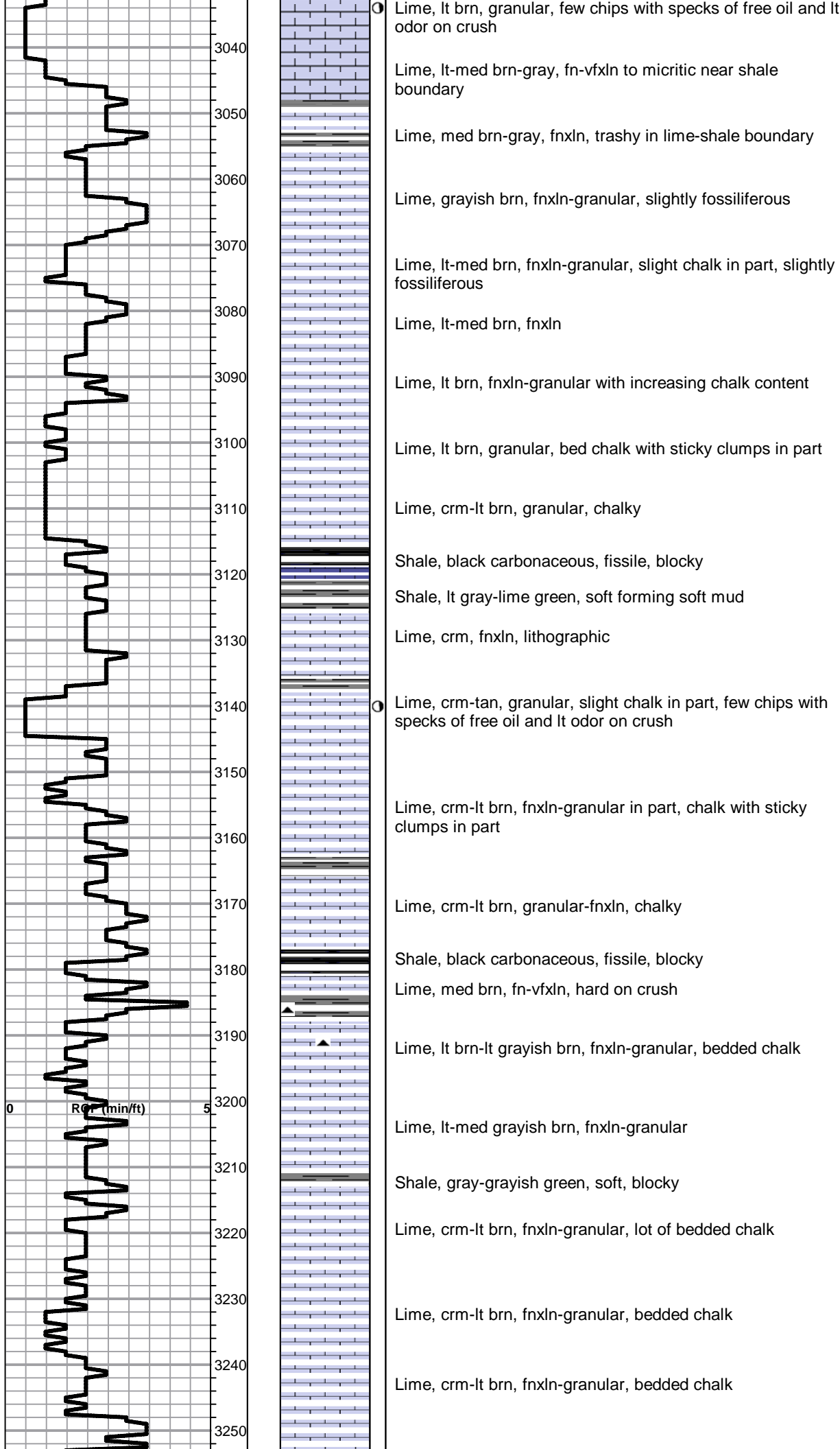
- FOSSIL**
- Oolite
 - ⊞ Oomoldic

OTHER SYMBOLS

- DST**
- DST Int
 - DST alt
 - Core

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





Lime, lt-med brn, fnxln-granular, bedded chalk

HEEBNER SHALE SPL 3264-1243 ELOG 3262-

Shale, black carbonaceous, fissile, blocky
Lime, lt grayish brn, fnxln, hard on crush
Shale, reddish brn-lt gray grading into lime green, soft, blocky shale forming soft mud clumps in part

TORONTO 3286-1265

Lime, crm-lt brn, fn-vfxln, bed chalk in part, NS
Lime, crm-lt brn, fn-vfxln, no visible porosity in section

LKC 3309-1288

Lime, pale gray-crm, fnxln, bedded chalk, NS
Lime, pale gray-crm, fnxln
Shale, med gray, soft forming soft mud clumps in part
Lime, crm, granular, lot of chalk, NS
Lime, crm, fnxln-granular, chalk in part

Lime, crm-lt brn, fnxln-granular, few chips with fnxln, scattered pinpoint vuggy porosity, lt scattered staining with very lite odor

Shale, black carbonaceous, fissile, blocky
Lime, lt brn, fnxln, hard on crush

Lime, crm, fnxln with bed of oolitic/oolmoldic lime, trace of fresh oil staining, very lite odor, NFO, mixed with granular lime with interxln porosity and lite staining

Shale, med gray-grayish green, soft, blocky
Lime, crm-tan, fn-vfxln

Lime crm-tan, fn-vfxln, glassy appearance with white chert

Lime, crm-tan,fn-vfxln with increase in brn-lt gray lime

Lime, brn-gray, vfxln

Lime, brn-gray, fn-vfxln

Lime, crm-tan, fnxln, dead oil stain, very lite odor, NFO

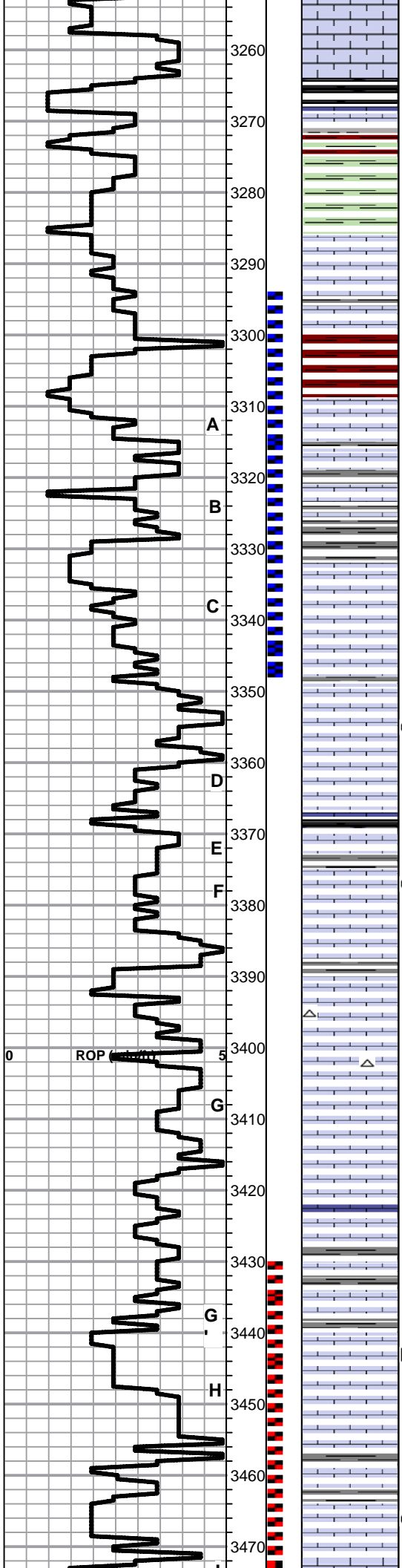
Lime, crm, fn-vfxln

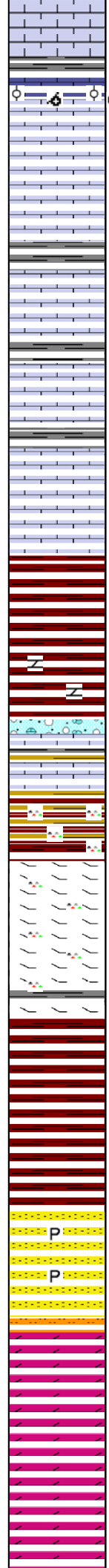
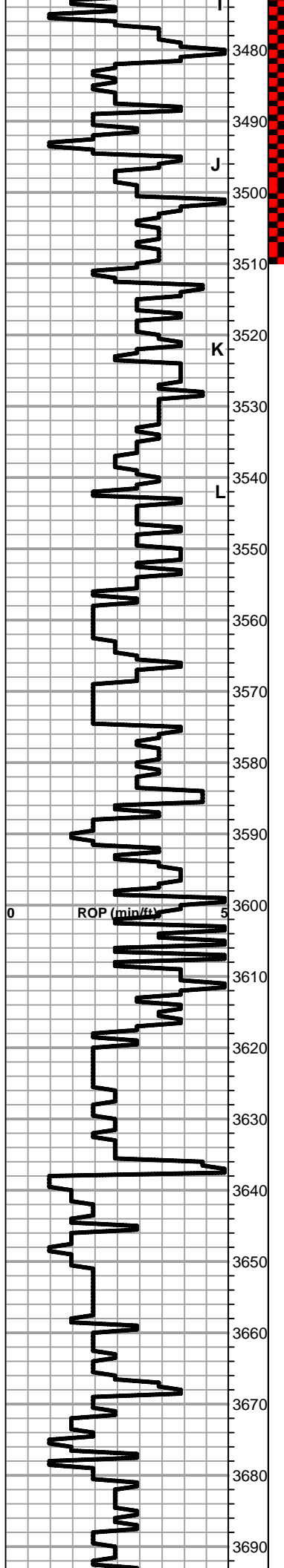
Lime, crm-tan, fn-vfxln

Lime, lt tan-lt brn, fnxln-granular, scattered staining in fine interxln porosity with pinpoint vuggy porosity

DST # 1 3294' TO 3349' SEE HEADER FOR TEST SUMMARY

DST # 2 3430' TO 3510' SEE HEADER FOR TEST SUMMARY





Lime, crm-tan, fnxln

Lime, crm, oolitic/oolmoldic with fossil fragments, scattered stain, lt oil sheen on chips

Lime, crm-lt brn, fnxln, slight chalk in part

Lime, crm, fnxln, bedded chalk

Lime, crm-tan, fnxln, bedded chalk in part

Shale, lt-med gray, soft
Lime, crm-tan, fnxln

Lime, crm-tan, fn-vfxln, bedded chalk in part

Lime, crm-tan, fnxln, bedded chalk

Lime, crm-tan, fn-vfxln, bedded chalk

BKC 3551-1530

Shale, reddish brn, soft with lt red wash

Shale, reddish brn, soft blocky, chert nodules

Lime, clastic mix with red staining in part
Shale, vari colored, soft, blocky

Shale, vari colored mixed with vari colored cherts

MARMATON 3594-1573

Lime, crm-tan, fnxln, dolomitic, hard on crush,
Chert, tan, orange, fresh, sharp

Lime, crm-tan, fnxln, dolomitic, hard on crush

Shale, med-dark brn, soft, blocky

Shale, red- deep red grading into soft shale with red wash near sand boundary

CONGLOMERATE SAND 3642-1621

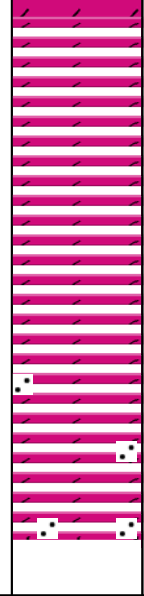
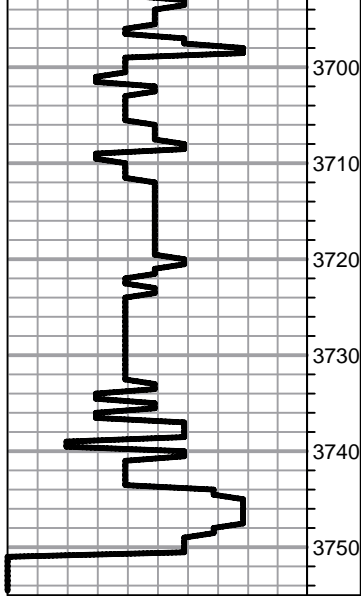
Sandstone, quartz, fn-coarse grained, well sorted, pyritic clusters with quartz inclusions, NS

ARBUCKLE 3660-1639

Dolomite, crm-tan, fn-cxln, sucrosic in part, NS

Dolomite, crm, fnxln-granular with fn-cxln sucrosic in part NS

Dolomite, crm, fnxln-granular, fn-cxln, sucrosic in part



Dolomite, crm, fnxln-granular, sucrosic in part

Dolomite, ivory-crm, fn-cxln, sucrosic in part

Dolomite, ivory-crm, fn-cxln, sucrosic in part

Dolomite, crm, fn-cxln with increasing content of quartz inclusions

RTD 3750-1729 LTD 3747-1726

RAN 5 1/2" PRODUCTION CASING SET TO 3739' WITH 150 SXS EA2

SLOPE @ 3750' 2 DEGREES

JOB LOG

SWIFT Services, Inc.

DATE 1 Dec 12 PAGE NO. 1

CUSTOMER TDI WELL NO. #1 LEASE GR JOB TYPE Cement deep surface TICKET NO. 23560

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								375 sk SMD w/ 1/4" floccs 8 5/8" 23" casing 29 joints TD = 1223' pipe = 1221. plug back 1209' Control valves, 1, 3, 15
	0500							on loc TRK 113
	0525							start 8 5/8" 23" casing in well
	0725							circulate well
	0758	4	12				250	pump 500 gal mud flush
		4	20				250	pump 20 bbl KCL flush
	0807	5 1/2	45				350	MIX SMD cement @ 11.8 ppg 100 sks
		5 1/2	41				350	MIX SMD cement @ 12.2 ppg 100 sks
		5	31				350	MIX SMD cement @ 13.5 ppg 100 sks
		4 1/2	20				400	MIX SMD cement @ 14.2 ppg 75 sks
	0825							Release plug
	0827	5					350	Displace plug
		5	50				350	— cement to surface —
	0845	3 1/2	80				800	Land ply shot in casing { 138 sk mixed } 40 top pt
	0855							wash truck
								Rack up
	0920							job complete Thanks Don Russ & Blaine

