

OPERATOR

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

Contact Geologist: TOM DENNING
 Contact Phone Nbr: 785-628-2593
 Well Name: ROHLEDER # 3
 Location: NE SW NW SW Sec.27-14s-16w
 Pool: IN FIELD
 State: KANSAS

API: 15-051-26,410-00-00
 Field: DREILING
 Country: USA



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

Scale 1:240 Imperial

Well Name: ROHLEDER # 3
 Surface Location: NE SW NW SW Sec.27-14s-16w
 Bottom Location:
 API: 15-051-26,410-00-00
 License Number: 4787
 Spud Date: 11/8/2012
 Region: ELLIS COUNTY
 Drilling Completed: 11/13/2012
 Surface Coordinates: 1950' FSL & 465' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 1857.00ft
 K.B. Elevation: 1867.00ft
 Logged Interval: 2500.00ft
 Total Depth: 3500.00ft
 Formation: ARBUCKLE
 Drilling Fluid Type: CHEMICAL/FRESH WATER

Time: 3:15 PM
 Time: 2:51 AM
 To: 3500.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: 1950' FSL
 E/W Co-ord: 465' 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: 11/8/2012
TD Date: 11/13/2012
Rig Release: 11/14/2012

Time: 3:15 PM
Time: 2:51 AM
Time: 10:30 AM

ELEVATIONS

K.B. Elevation: 1867.00ft
K.B. to Ground: 10.00ft

Ground Elevation: 1857.00ft

NOTES

DECISION TO RUN PRODUCTION CASING BASED ON FAVORABLE STRUCTURE AND POSITIVE RESULTS OF DST # 1.

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

DRILL STEM TESTING BY TRILOBITE TESTING INC: ONE (1) STRADDLE TEST

FORMATION TOPS SUMMARY AND CHRONOLOGY OF DAILY ACTIVITY

ROHLEDER # 3

1950' FSL & 465' FWL, SW/4

Sec. 27-14s-16w

1857' GL 1867' KB

<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>LOG TOPS</u>
Anhydrite	967+ 900	972+ 895
B-Anhydrite	1006+ 861	1008+ 859
Topeka	2846- 979	2847- 980
Heebner Shale	3067-1200	3066-1199
Toronto	3088-1221	3086-1219
LKC	3112-1245	3114-1247
BKC	3342-1475	3343-1476
Arbuckle		3358-1491
RTD	3500-1633	
LTD		3501-1634

SUMMARY OF DAILY ACTIVITY

11-08-12 Spud 3:15 PM, set 8 5/8" surface casing to 226' w/ 150 sxs common, 2%Gel, 3%CC, plug down 7:30pm, WOC 8 hrs, slope ½ degree

11-09-12 381', drill plug at 3:30 AM


11-10-12 1560', drilling

11-11-12 2370', drilling, displace 2673'-2691'

11-12-12 3085' drilling, RTD 3496' @ 8:23am, CGU short trip

11-12-12 5085', drilling, RTD 5496 @ 8:55pm, CCH, TOWB, logs, straddle test # 1
 11-13-12 3500', RTD 2:51 am, short trip, CCH, TOWB, logs, straddle test # 1
 3320' – 3396', LDDP
 11-14-12 3500', LDDP, run 5 ½" casing, cementing, plug down 10:30 AM, RD

DST # 1 TEST SUMMARY

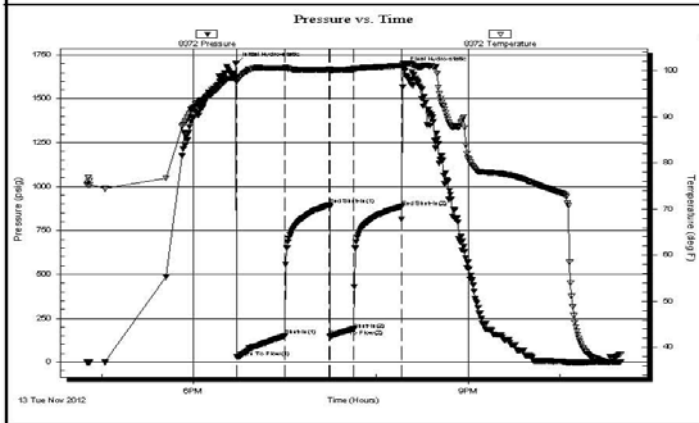
	DRILL STEM TEST REPORT		
	TDI inc 1310 Bison rd Hays Ks. 67601 ATTN: Herb Deines	24-14s-16w Ellis Rohleder #3 Job Ticket: 50754 DST#: 1 Test Start: 2012.11.13 @ 16:50:05	

GENERAL INFORMATION:

Formation: Arbuckle	Test Type: Conventional Straddle (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Andy Carreira
Time Tool Opened: 18:28:20	Unit No: 39
Time Test Ended: 22:40:09	
Interval: 3329.00 ft (KB) To 3396.00 ft (KB) (TVD)	Reference Elevations: 1867.00 ft (KB)
Total Depth: 3500.00 ft (KB) (TVD)	1857.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair	KB to GR/CF: 10.00 ft

Serial #: 8372 Outside	Capacity: 8000.00 psig
Press@RunDepth: 188.18 psig @ 3324.00 ft (KB)	Last Calib.: 2012.11.13
Start Date: 2012.11.13 End Date: 2012.11.13	Time On Btm: 2012.11.13 @ 18:27:30
Start Time: 16:50:05 End Time: 22:40:10	Time Off Btm: 2012.11.13 @ 20:17:50

TEST COMMENT: IF:(30min) 6" blow in 3 min. BOB in 7 min.
 ISl:(30min) No Return
 FF:(15min) 6" blow in 7 min. BOB in 13 min.
 FSl:(30min) No Return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1701.57	98.39	Initial Hydro-static
1	28.77	97.56	Open To Flow (1)
33	149.11	100.51	Shut-In(1)
62	896.06	100.26	End Shut-In(1)
62	147.48	99.94	Open To Flow (2)
78	188.18	100.31	Shut-In(2)
109	885.98	101.07	End Shut-In(2)
111	1675.80	101.56	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
60.00	GOCVM g=10% o=15% w=30% m=45%	0.84
155.00	OCGM g=10% o=40% m=50%	2.17
180.00	MCOGO g=10% m=40% o=50%	2.52

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

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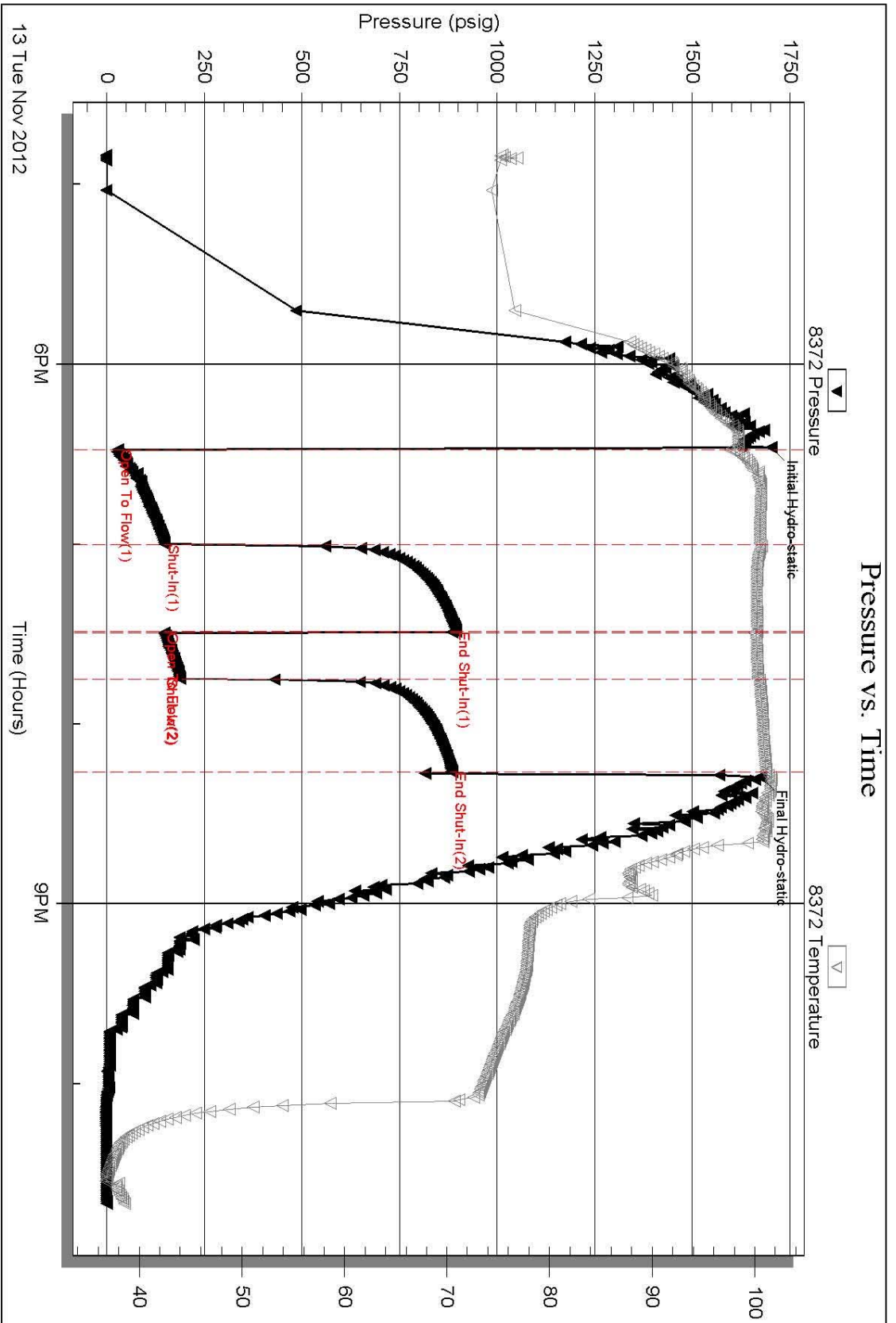
DST # 1 EXPANDED CHART

Serial #: 8372


Outside TDI inc

Rohleder #3

DST Test Number: 1



DST # 1 BOTTOM PACKER CHART

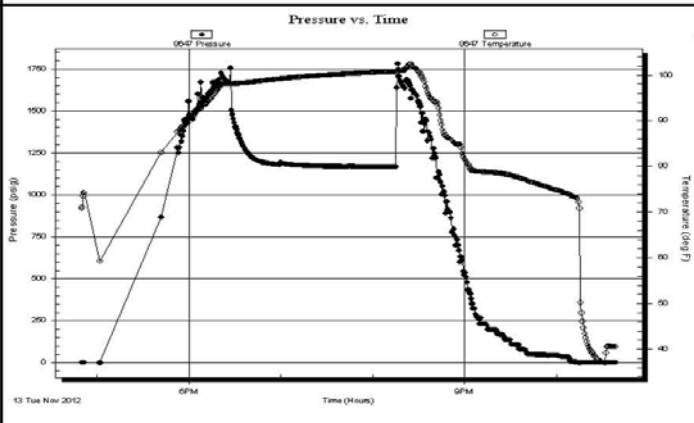
 <p>TRILOBITE TESTING, INC.</p>	DRILL STEM TEST REPORT	
	TDI inc 1310 Bison rd Hays Ks. 67601 ATTN: Herb Deines	24-14s-16w Ellis Rohleder #3 Job Ticket: 50754 DST#: 1 Test Start: 2012.11.13 @ 16:50:05

GENERAL INFORMATION:

Formation: Arbuckle Deviated: No Whipstock: ft (KB) Time Tool Opened: 18:28:20 Time Test Ended: 22:40:09 Interval: 3329.00 ft (KB) To 3396.00 ft (KB) (TVD) Total Depth: 3500.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Fair	Test Type: Conventional Straddle (Initial) Tester: Andy Carreira Unit No: 39 Reference Elevations: 1867.00 ft (KB) 1857.00 ft (CF) KB to GR/CF: 10.00 ft
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Serial #: 8647 Below (Straddle)	
Press@RunDepth: psig @ 3405.00 ft (KB) Start Date: 2012.11.13 End Date: 2012.11.13 Start Time: 16:50:05 End Time: 22:38:39	Capacity: 8000.00 psig Last Calib.: 2012.11.13 Time On Btm: Time Off Btm:

TEST COMMENT: IF:(30min) 6" blow in 3 min. BOB in 7 min.
 ISl:(30min) No Return
 FF:(15min) 6" blow in 7 min. BOB in 13 min.
 FS:(30min) No Return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery		
Length (ft)	Description	Volume (bbl)
60.00	GOCVM g=10% o=15% w=30% m=45%	0.84
155.00	OCGM g=10% o=40% m=50%	2.17
180.00	MCOGO g=10% m=40% o=50%	2.52

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

ROCK TYPES

 Cht vari	 Lmst fw<7	 shale, grn	 Carbon Sh
 Dolprim	 Lmst fw>7	 shale, gry	 shale, red

ACCESSORIES

MINERAL

- ▲ Chert, dark
- ∩ Glauconite
- P Pyrite
- △ Chert White

FOSSIL

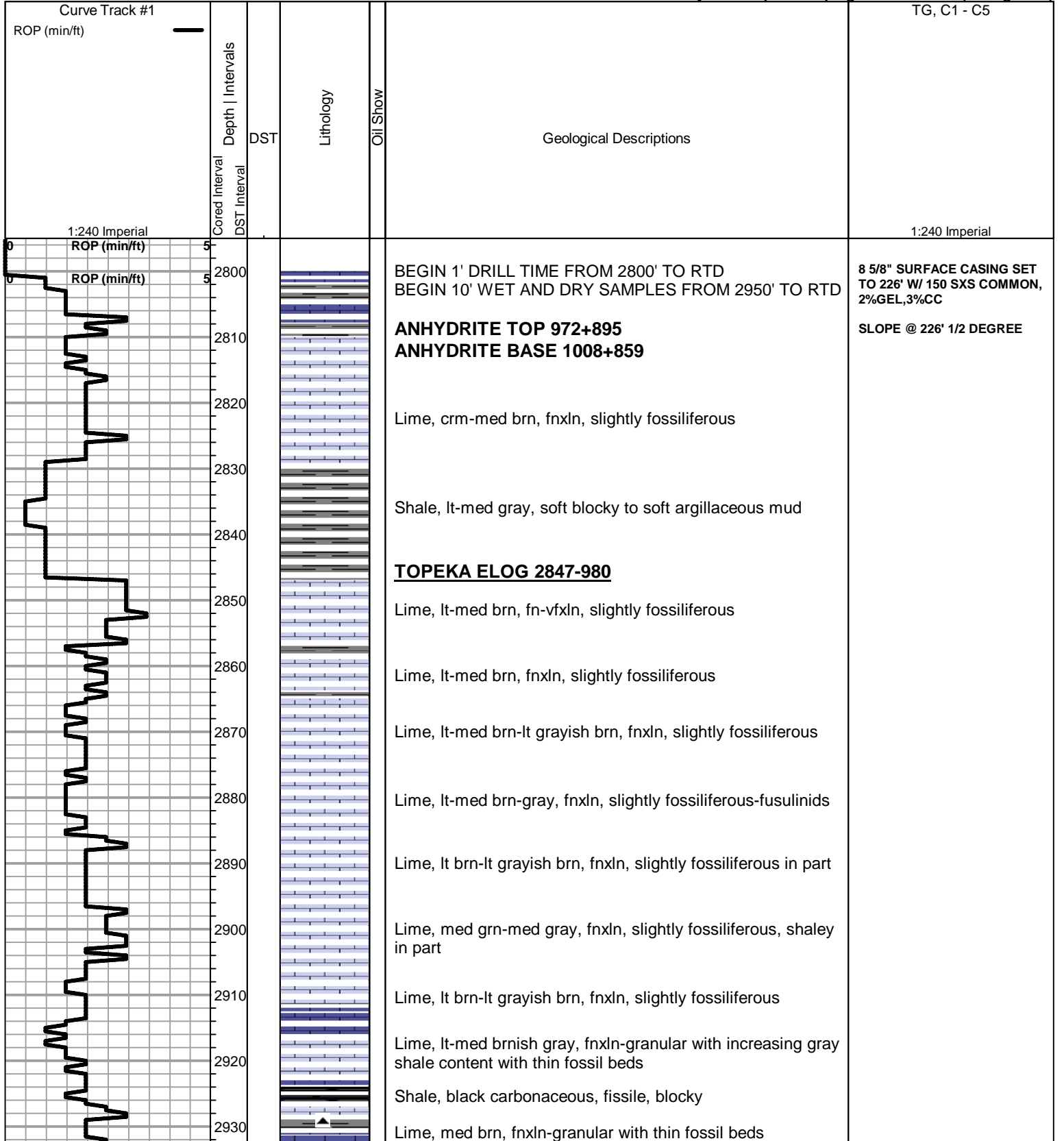
- ⊖ Oolite
- ⊖ Oomoldic

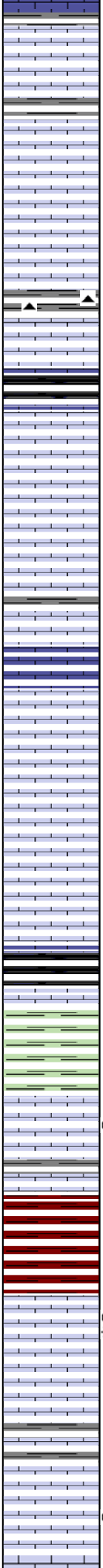
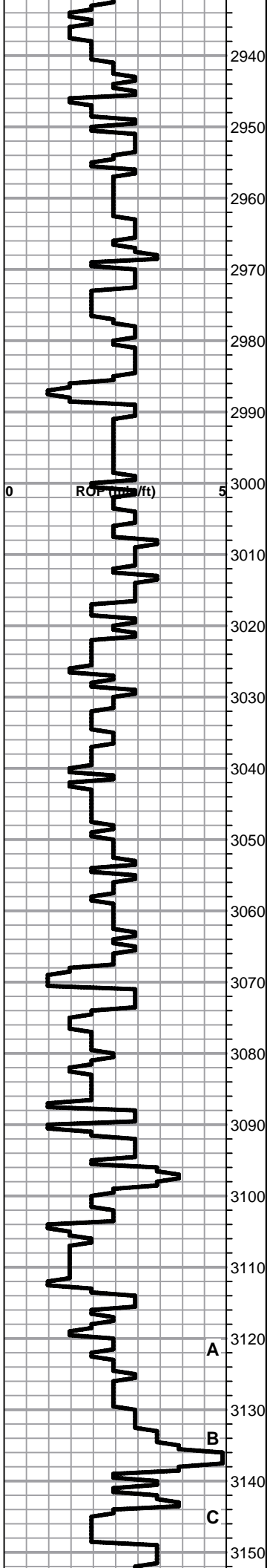
OTHER SYMBOLS

DST

- DST Int
- DST alt
- Core

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





Lime, lt-med brn, fnxln

Lime, crm, fn-vfxln, very clean appearance

Lime, crm-lt brn, fn-vfxln
1 chip with oil show in fossil cast-source ?

Lime, crm-lt gray, fnxln

Lime, lt brn-lt grayish brn, fnxln

Shale, black carbonaceous, fissile, blocky

Lime, lt brn-lt grayish brn, fnxln, slightly fossiliferous

Lime, lt-med brn, fnxln with vfxln in part

Lime, lt-med brn, fnxln with shaley fossil beds in part

Lime, off white-med gray, fnxln, slightly fossiliferous

Lime, crm-tan-lt brn, fnxln, thin chalk beds

Lime, lt-med brn, fnxln

Lime, tan-lt brn, fnxln

Lime, crm-tan, fnxln, soft on crush, lite chalk beds in part

HEEBNER SHALE ELOG 3066-1199
Shale, black carbonaceous, fissile, blocky
Lime, lt-med brn, fnxln, fossiliferous, hard on crush

Shale, lt lime green, soft blocky to soft argillaceous mud

TORONTO ELOG 3086-1219

○ Lime, crm-tan, fnxln, bedded chalk in part, trace of staining, NFO, No Odor

Lime, crm, fnxln, chalk in part, NS

Lt red wash to soft blocky

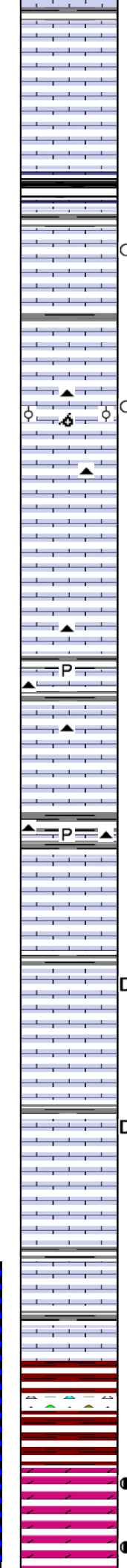
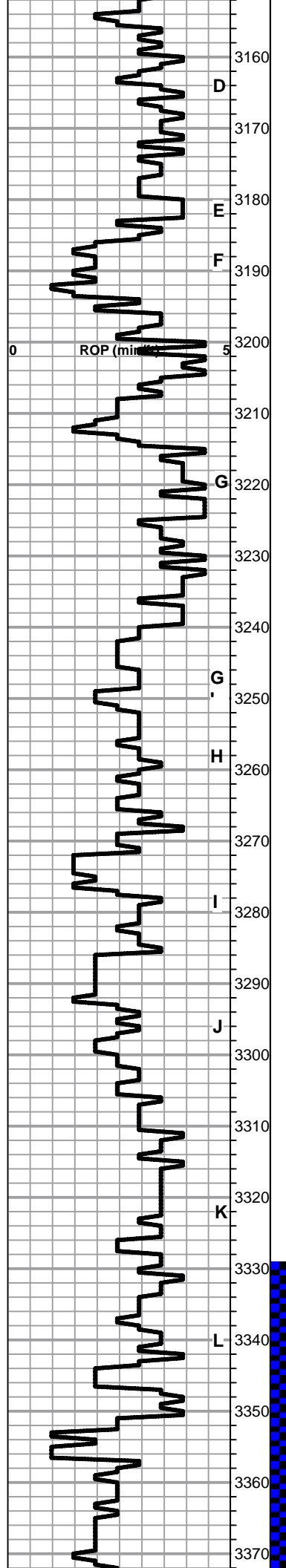
LKC ELOG 3114-1247

○* Lime, lt brn, fnxln-granular, very lite odor with lite scattered staining in fine interxln and ppt vuggy porosity

Lime, crm-lt brn, fnxln

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

○ Lime, crm-lt brn, fnxln, scattered vuggy porosity with very lt staining



Lime, crm, fnxln, bedded chalk, NS

Lime, crm, fnxln, bedded chalk, NS

Shale, gray-black carbonaceous
Lime, pale gray, vfxln

Lime, crm-tan, fnxln-granular , few chips with ppt vug porosity, 1 chip lt gray, dolomitic lime with vug porosity with lt contact staining, NFO, No Odor

Lime, crm, fnxln

Lime, crm, fnxln with oolitic-oolmodlic in part, few chips with lt staining with barren chips in part

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

Lime, crm-lt brn, fn-crypto xln, bedded chalk in part

Lime, crm-pale gray, fnxln-crypto xln, slight bed chalk in part

Lime, crm-lt gray, fn-vfxln with scattered fossiliferous chert, NS, NFO, No Odor

Lime, lt gray, fnxln, NS

Shale, gray-black carbonaceous, black chert , pyritic

Lime, crm-tan, fn-vfxln, brittle in part, NS

Lime, crm-tan, fnxln, scattered dead oil stain in chalky lime

Lime, crm-tan, fnxln, slight bedded chalk, NS

Lime, crm-lt brn, fnxln, gilsonite staining, NFO, No Odor

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

Lime, crm, fnxln

Lime, crm-med brn, fnxln, bedded chalk in part

Lime, crm-lt brn, fnxln

BKC ELOG 3343-1476

Shale, red, soft
Lime, crm-med brn, fnxln, bedded chalk
Shale, red - brn wash, soft

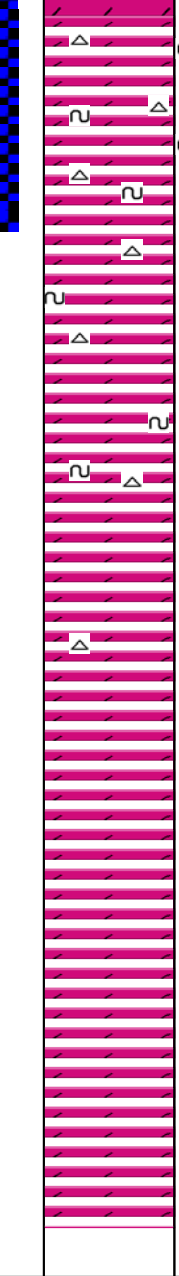
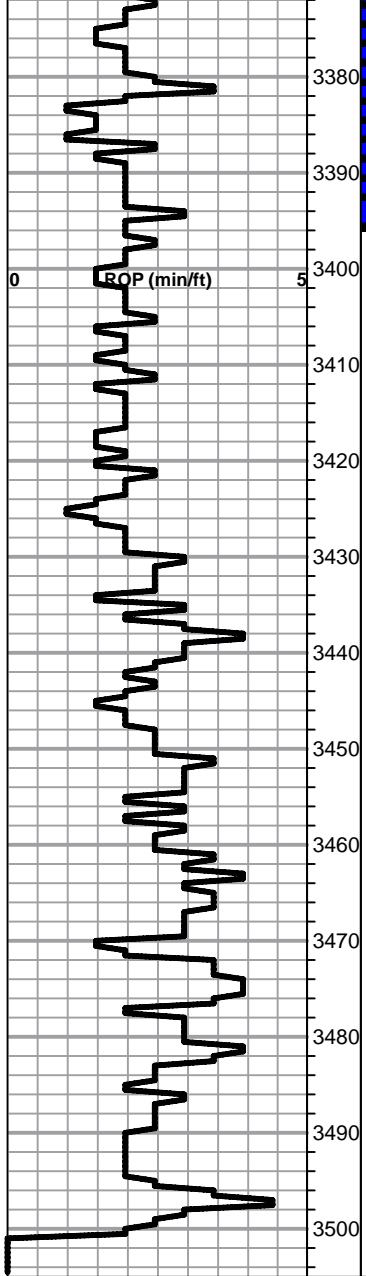
ARBUCKLE ELOG 3358-1491

Dolomite,lt brn, fnxln-granular-sucrosic, fine chips, SFO, Lt odor, lt staining.

Lime, lt-med brn, fnxln-granular-sucrosic, F-G odor, lt sat stain. best samples very fine chips

DST # 1 STRADDLE TEST
3329'-3396' SEE HEADER FOR
TEST SUMMARY

stain, test samples very fine chips



- Dolomite, crm-med brn, oolmoldic in part with white chert, good odor and staining
- Dolomite, ivory-crm, fnxn-granular, specks of green glauconite, lt odor decreasing with depth
- Dolomite, crm-tan, fnxn, hard on crush, few chips of sucrosic material with no odor or staining.
- Dolomite, ivory-crm, fnxn-granular
- Dolomite, ivory-crm, fn-cxn, lt white chalk wash, specks of glauconite.
- Dolomite, ivory-crm, fnxn
- Dolomite, ivory-crm, fnxn with scattered cxln
- Dolomite, ivory-crm, fn-cxn
- Dolomite, ivory-crm, fn-cxn
- Dolomite, ivory, fnxn, hard on crush
- Dolomite, ivory mostly fnxn
- Dolomite, ivory, mostly fnxn with scattered euhedral dev.

RTD 3500-1633 LTD 3501-1634

**RAN 5 1/2" PRODUCTION
CASING SET TO 3499' W/ 150
SXS EA2 FOR BOTTOM STAGE
DV TOOL AT 963' W/ 155 SXS
SMD, 30 SXS IN RATHOLE, 15
SXS IN THE MOUSEHOLE**

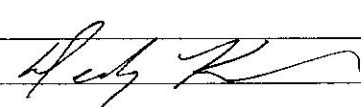
QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 6092

Date	11-8-12	Sec.	27	Twp.	14	Range	16	County	Ellis	State	KS	On Location	5:00pm	Finish	7:30pm	
Lease	Rohleder							Well No.	3	Location Walker 3 1/2 S 1 W 1/2 S E into						
Contractor	Eckhardt I							Owner 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.								
Type Job	Surface							Charge To T D I								
Hole Size	1 1/4							T.D.	227	Street						
Csg.	8 5/8							Depth	226.18	City						
Tbg. Size								Depth		State						
Tool								The above was done to satisfaction and supervision of owner agent or contractor.								
Cement Left in Csg.	20ft							Shoe Joint	20ft	Cement Amount Ordered 150 3% CC 2% Gel						
Meas Line								Displace	13. BIDL							
EQUIPMENT										Common 150						
Pumptrk	5	No.	Cementer	Matt							Poz. Mix 2					
Bulktrk	1	No.	Helper	Brett							Gel. 3					
Bulktrk		No.	Driver								Calcium 5					
JOB SERVICES & REMARKS										Hulls						
Remarks:										Salt						
Rat Hole										Flowseal						
Mouse Hole										Kol-Seal						
Centralizers										Mud CLR 48						
Baskets										CFL-117 or CD110 CAF 38						
D/V or Port Collar										Sand						
										Handling 158						
										Mileage						
FLOAT EQUIPMENT																
Cement did Circulate										Guide Shoe						
										Centralizer						
										Baskets						
										AFU Inserts						
										Float Shoe						
										Latch Down						
										Pumptrk Charge Surface						
										Mileage 18						
										Tax						
										Discount						
										Total Charge						
Signature 																

JOB LOG

SWIFT Services, Inc.

DATE 11-14-12 PAGE NO. 1

CUSTOMER TOI WELL NO. 23 LEASE Rohleder JOB TYPE 2-stage TICKET NO. 21965

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0600							on loc w/FE
								RTD
								5 1/2" x 15.5" x 3499' x 41'
								Cont. 1, 4, 6, 8, 6, 9, 11, 87, 60
								Pusk. 3, 13, 61, 25
								DV 61 @ 963'
	0615							Start FE
	0750							Break Circ
	0900	5	0			200		Start Part. 500 gal Mud Flush
		5	32/0			200		20 bbl KCL Flush
	0913		36					Start EA-2 Cement 150 sks
								End Cement
								Wash P+L
								Drip & D Plug
	0920	6	0			200		Start Displacement
		5	60			250		Catch Cement / Start KCL Flush
	0940		82.5			750 / 200		Land Plug / Release pressure / Hold
								Drop Opening Plug
	0945	2.5	7/4					Plug RH & MH 30/15 sks 3/11
	0954					1100		Open D.V.
	0955	5	0			175		Start SMD Cement 155 sks
	0910		90					End Cement
								Drop Closing Plug
	0915	5	0			150		Start Displacement
		4	15			300		Circ Cement
	0925		23			420		Land Plug
						1500		Close DV
								circ 25 sks to pit
								Thank you
								Nick, David E. & Rob