

**OPERATOR**

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

Contact Geologist: TOM DENNING  
 Contact Phone Nbr: 785-628-2593  
 Well Name: BIELER # 1  
 Location: N2 NE SW SE Sec 9-15s-19w  
 Pool: WILDCAT  
 State: KANSAS

API: 15-051-26,534-00-00  
 Field: UNNAMED  
 Country: USA



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

Scale 1:240 Imperial

Well Name: BIELER # 1  
 Surface Location: N2 NE SW SE Sec 9-15s-19w  
 Bottom Location:  
 API: 15-051-26,534-00-00  
 License Number: 4787  
 Spud Date: 7/12/2013 Time: 5:30 PM  
 Region: ELLIS COUNTY  
 Drilling Completed: 7/19/2013 Time: 2:47 AM  
 Surface Coordinates: 1250' FSL & 1650' FEL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2024.00ft  
 K.B. Elevation: 2034.00ft  
 Logged Interval: 2900.00ft To: 3750.00ft  
 Total Depth: 3750.00ft  
 Formation: LANSING-KANSAS CITY  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.4358218 Latitude: 38.7582459  
 N/S Co-ord: 1250' FSL  
 E/W Co-ord: 1650' FEL

**LOGGED BY**

Company: SOLUTIONS CONSULTING, INC  
 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: 7/12/2013  
 TD Date: 7/19/2013  
 Rig Release: 7/19/2013

Time: 5:30 PM  
 Time: 2:47 AM  
 Time: 11:00 PM

**ELEVATIONS**

K.B. Elevation: 2034.00ft                      Ground Elevation: 2024.00ft  
 K.B. to Ground: 10.00ft

**NOTES**

RECOMMENDATION TO PLUG AND ABANDON WELL BASED ON NEGATIVE RESULTS OF THREE DSTS

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 AND ONE (1) STRADDLE TEST

**FORMATION TOPS SUMMARY AND CHRONOLOGY OF DAILY ACTIVITY**

**BIELER # 1**

1250' FSL & 1650' FEL, SE/4

Sec. 9-15s-19w

2024' GL 2034' KB

**WILLIE # 1**

NW SE SE SE

Sec. 9-15s-19w

Reference Well

<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1253+ 781	1249+ 785	+ 785
B-Anhydrite	1290+ 744	1287+ 747	+ 749
Topeka	3014- 980	3018- 984	- 977
Heebner Shale	3283-1249	3281-1247	-1246
Toronto	3305-1271	3302-1268	-1268
LKC	3330-1296	3328-1294	-1293
BKC	3569-1535	3573-1539	-1540
Arbuckle	3666-1632	3682-1648	-1620
RTD	3750-1716		
LTD		3749-1715	

**SUMMARY OF DAILY ACTIVITY**

7-12-13      spud 5:30 PM, set 8 5/8" surface pipe to 223.03' w/ 150sxs  
 Common 2%gel 3%CC, plug down 10:30 PM, slope 1 degree


7-13-13      226', drill plug at 6:30AM

7-14-13      1635', drilling

7-15-13      2420', drilling, displaced 2648-70

7-16-13 3070', drilling  
 7-17-13 3365', DST # 1 3314'-3365' "A-C" LKC, TIWB, drilling  
 7-18-13 3530', DST # 2 3478'-3530' "I-J" LKC, TIWB, drilling  
 7-19-13 3750', RTD 3750'@2:47AM, CCH, TOWB, logs, DST # 3 straddle test  
 3410'-3430' "G" LKC, P&A

**DST # 1 "A-C" LKC TEST SUMMARY**

	<b>DRILL STEM TEST REPORT</b>	
	TDI INC. 1310 Bison Rd. Hays KS, 67601 ATTN: Tom Denning / Herb D	<b>9-15-19-Eliis Co KS</b>  <b>Bieler #1</b> Job Ticket: 53996 <b>DST#: 1</b> Test Start: 2013.07.17 @ 02:21:01

**GENERAL INFORMATION:**

Formation: "C"  
 Deviated: No Whipstock:                      ft (KB)  
 Time Tool Opened: 04:06:46  
 Time Test Ended: 08:43:01

**Interval: 3314.00 ft (KB) To 3365.00 ft (KB) (TVD)**  
 Total Depth: 3365.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good

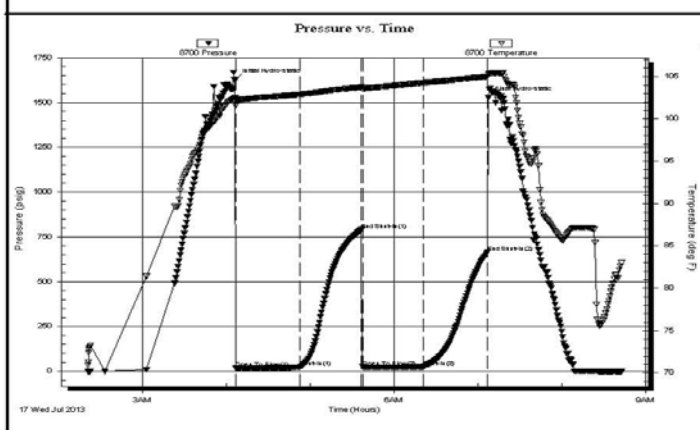
Test Type: Conventional Bottom Hole (Initial)  
 Tester: Tate Lang  
 Unit No: 70

Reference Elevations: 2034.00 ft (KB)  
 2023.00 ft (CF)  
 KB to GR/CF: 11.00 ft

**Serial #: 8700      Outside**

Press@RunDepth: 24.23 psig @ 3318.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2013.07.17      End Date: 2013.07.17	Last Calib.: 2013.07.17
Start Time: 02:21:06      End Time: 08:43:00	Time On Btm: 2013.07.17 @ 04:06:31
	Time Off Btm: 2013.07.17 @ 07:07:31

**TEST COMMENT:** Weak surface blow built to 2 in.  
 Dead no blow back  
 Weak surface blow built to 1 in.  
 Dead no blow back




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1625.61	102.46	Initial Hydro-static
1	16.17	101.49	Open To Flow (1)
46	21.44	102.88	Shut-In(1)
91	789.92	103.73	End Shut-In(1)
91	23.95	103.54	Open To Flow (2)
135	24.23	104.24	Shut-In(2)
181	664.09	104.97	End Shut-In(2)
181	1526.63	105.27	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
30.00	2%O 98%M (Skim of oil on top of tool)	0.42

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


**DST # 2 "I - J" LKC TEST SUMMARY**

 <b>TRILOBITE TESTING, INC.</b>	<b>DRILL STEM TEST REPORT</b>	
	TDI INC. 1310 Bison Rd. Hays KS. 67601 ATTN: Tom Denning / Herb D	<b>9-15-19-Ellis Co KS</b> <b>Bieler #1</b> Job Ticket: 53997 <b>DST#: 2</b> Test Start: 2013.07.18 @ 02:30:39

**GENERAL INFORMATION:**

Formation: **I&F**  
 Deviated: No Whipstock:                      ft (KB)  
 Time Tool Opened: 04:53:39  
 Time Test Ended: 09:57:24

**Interval: 3478.00 ft (KB) To 3530.00 ft (KB) (TVD)**  
 Total Depth: 3530.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good

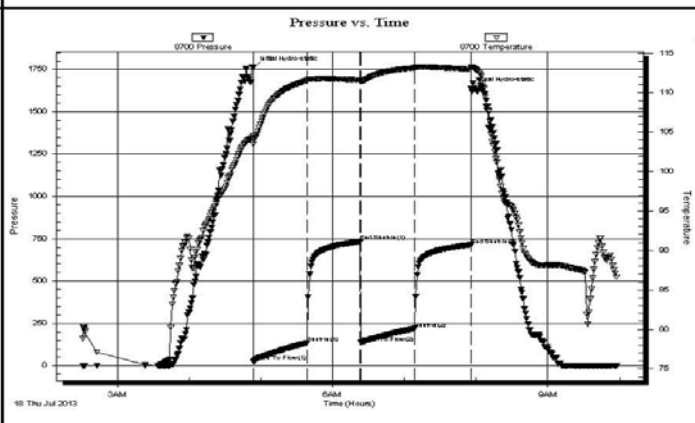
Test Type: Conventional Bottom Hole (Reset)  
 Tester: Tate Lang  
 Unit No: 70

Reference Elevations: 2034.00 ft (KB)  
 2023.00 ft (CF)  
 KB to GR/CF: 11.00 ft

**Serial #: 8700      Outside**

Press@RunDepth: 219.08 psig @ 3483.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2013.07.18	End Date: 2013.07.18
Start Time: 02:30:44	End Time: 09:57:23
	Last Calib.: 2013.07.18
	Time On Btm: 2013.07.18 @ 04:53:24
	Time Off Btm: 2013.07.18 @ 07:55:54

**TEST COMMENT:** B.O.B. in 14 mins.  
 Dead no blow back  
 B.O.B. in 24 mins  
 Dead no blow back



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1760.58	104.47	Initial Hydro-static
1	24.31	103.45	Open To Flow (1)
45	133.87	111.55	Shut-In(1)
90	733.03	111.62	End Shut-In(1)
90	136.13	111.42	Open To Flow (2)
136	219.08	113.15	Shut-In(2)
182	713.84	112.97	End Shut-In(2)
183	1636.43	113.30	Final Hydro-static

Length (ft)	Description	Volume (bbl)
180.00	2% M 98% W	2.52
120.00	15% M 85% W	1.68
115.00	50% M 50% W	1.61
5.00	100% Free Oil	0.07
0.00	60 GIP	0.00

\* Recovery from multiple tests

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

**DST # 3 STRADDLE TEST 3410'-3430' "G" LKC TEST SUMMARY BOTTOM PACKER HELD**



**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

TDI INC.  
1310 Bison Rd.  
Hays KS, 67601

9-15-19-Ellis Co KS

**Bieler #1**

Job Ticket: 53998

**DST#: 3**

ATTN: Tom Denning / Herb D

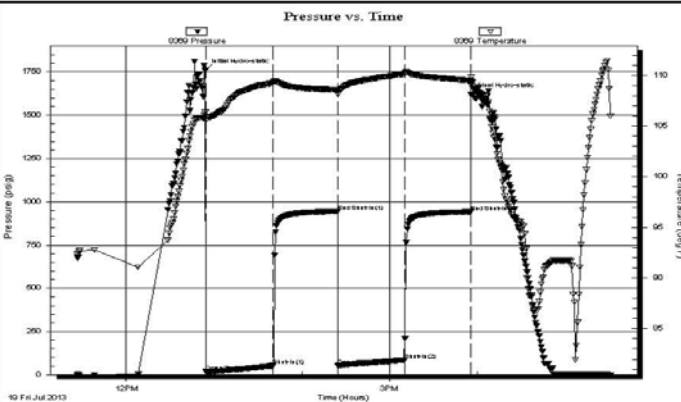
Test Start: 2013.07.19 @ 11:26:12

**GENERAL INFORMATION:**

Formation: **G**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 12:54:12  
 Time Test Ended: 17:30:57  
 Interval: **3410.00 ft (KB) To 3430.00 ft (KB) (TVD)**  
 Total Depth: 3750.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Straddle (Reset)  
 Tester: Tate Lang  
 Unit No: 70  
 Reference Elevations: 2034.00 ft (KB)  
 2023.00 ft (CF)  
 KB to GR/CF: 11.00 ft

**Serial #: 8369 Inside**  
 Press@RunDepth: 85.68 psig @ 3411.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.07.19 End Date: 2013.07.19 Last Calib.: 2013.07.19  
 Start Time: 11:26:17 End Time: 17:30:56 Time On Btm: 2013.07.19 @ 12:53:57  
 Time Off Btm: 2013.07.19 @ 15:55:27

**TEST COMMENT:** Fair surface blow built to 7 in.  
 Dead no blow back  
 Fair surface blow built to 4 in.  
 Dead no blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1762.56	106.37	Initial Hydro-static
1	16.99	105.56	Open To Flow (1)
47	51.10	109.25	Shut-In(1)
91	944.71	108.56	End Shut-In(1)
91	54.39	108.11	Open To Flow (2)
136	85.68	110.13	Shut-In(2)
182	942.52	109.48	End Shut-In(2)
182	1623.39	109.79	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
60.00	2% M 98% W	0.84
80.00	20% M 80% W	1.12

\* Recovery from multiple tests

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

Trilobite Testing, Inc

Ref. No: 53998

Printed: 2013.07.19 @ 23:23:16

**ROCK TYPES**

- |         |            |            |          |
|---------|------------|------------|----------|
| Clystgy | Lmst fw<7  | Carbon Sh  | Dol Lime |
| Chtcong | Lmst fw>7  | shale, red | Lscong   |
| Dolprim | shale, grn | Shcol      | CglSandy |
| Dolsec  | shale, gry | Ss         |          |

**ACCESSORIES**

**MINERAL**

- ▲ Chert, dark
- ⊘ Nodules
- P Pyrite
- Sandy
- Varicolored chert

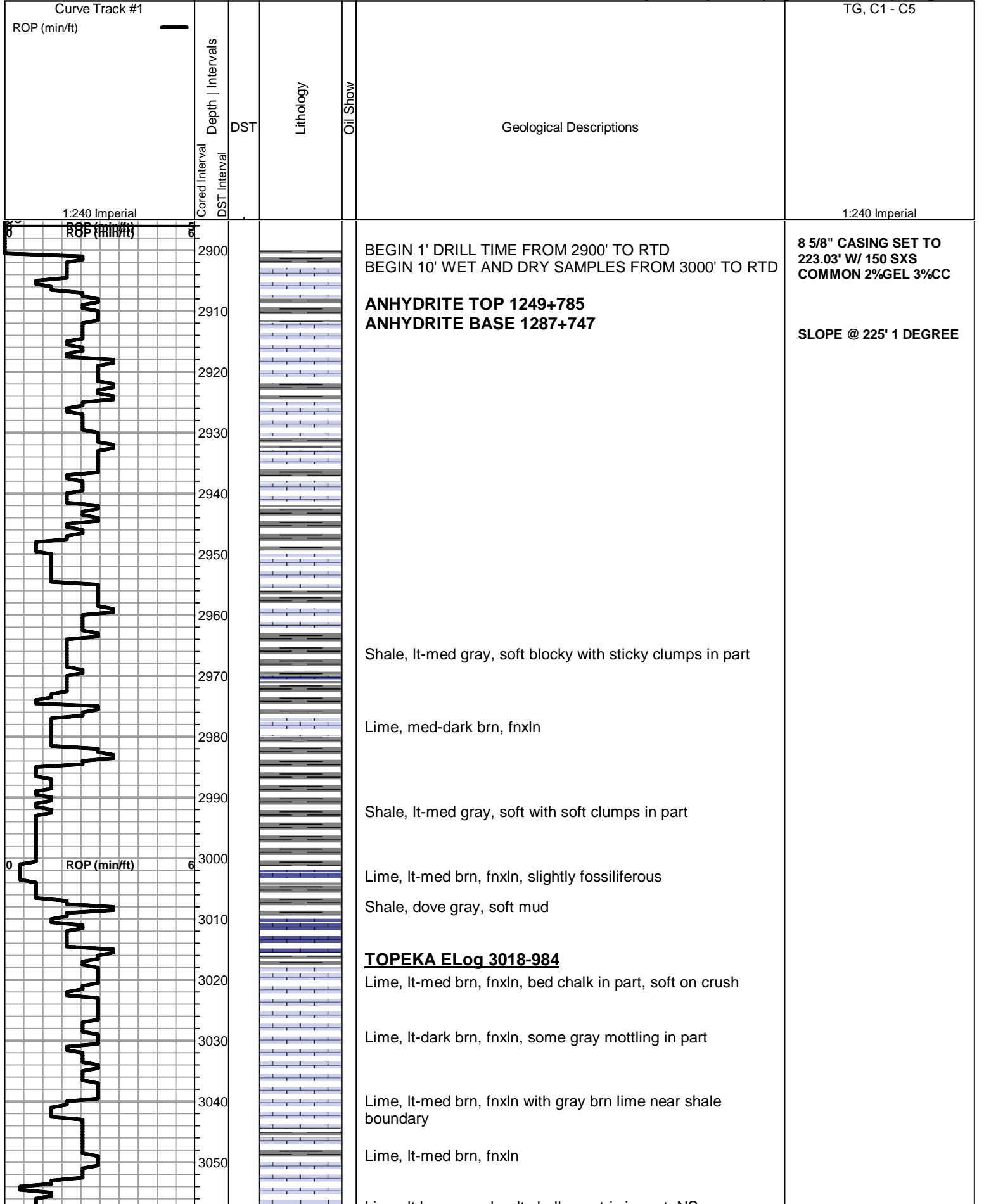
**FOSSIL**

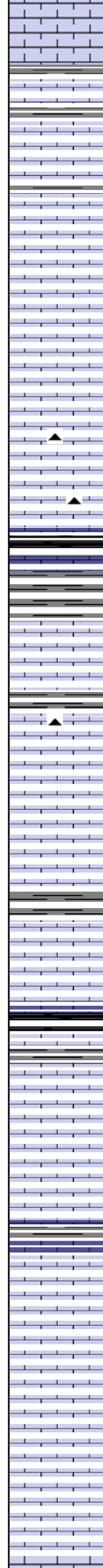
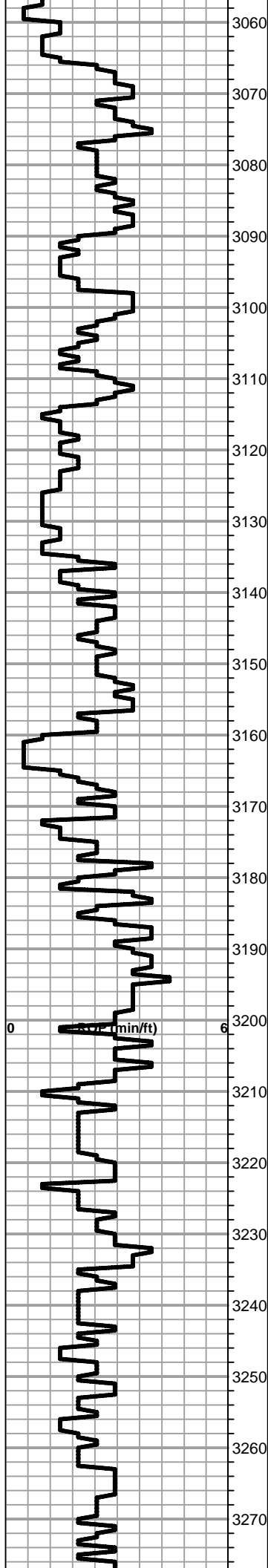
- Oolite
- ⊕ Oomoldic

OTHER SYMBOLS

- DST Int
- DST alt
- Core

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





Lime, lt brn, granular, lt chalky matrix in part, NS

Lime, lt-dark brn, fn-micro xln, hard on crush

Lime, lt-med brn-grayish brn, fnxln, slightly fossiliferous in part

Lime, lt brn-lt grayish brn, fnxln with thin fusulinid beds in part

Lime, lt-med brn, fnxln-granular

Lime, med brn, fnxln-granular, sticky chalk clumps in part

Lime, lt-med brn, granular, chalk clumps in part

Shale, black carbonaceous, fissile, blocky

Lime, tan-lt brn, fn-micro xln

Lime, lt brn-lt grayish brn, fn-micro xln, fossiliferous chert

Lime, lt-med brn, granular grading into fnxln, slightly fossiliferous

Lime, lt brn-lt gray, fnxln, slightly fossiliferous in part

Lime, lt brn, fnxln, slightly fossiliferous

Shale, black carbonaceous, fissile, blocky

Lime, lt brn, fnxln

Lime, lt-med brn, fnxln-granular in part, few chips with spongelike vuggy porosity, specks of free oil with lt odor on break.

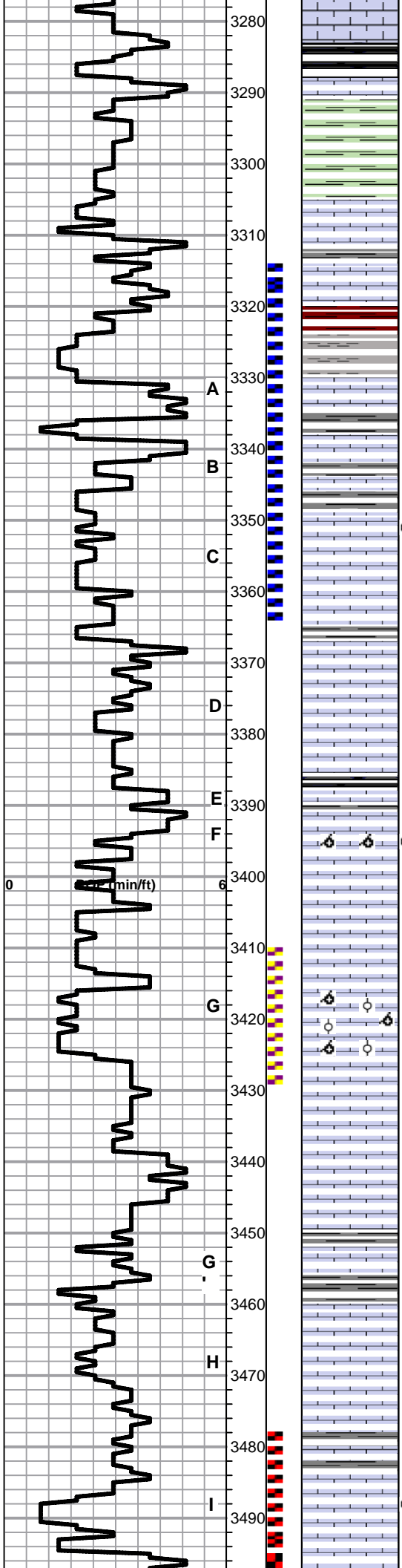
Lime, lt-med brn, fnxln, slightly fossiliferous

Lime, lt brn, granular, increasing bedded chalk with sticky clumps in part

Lime, crm-lt brn, fnxln-granular, decreasing chalk content

Lime, crm-lt brn, fnxln

Lime, lt-med brn, bedded chalk in part



**HEEBNER SHALE SPL 3283-1249**

Shale, black carbonaceous, fissile, blocky  
Lime, med brn, fn-vfxln

Shale, lime green, soft forming soft mud in part

**TORONTO SPL 3305-1271**

Lime, white-crm, fnxln, NS

Lime, crm-tan, fnxln, NS

Shale, reddish brn, soft blocky

**LKC SPL 3330-1296**

Lime, lt-med brn, fnxln

Lime, lt-med brn, fn-vfxln grading into gray lime near shale

Lime, lt-med brn, fnxln, few oolitic chips, lt scattered staining, Very Lt Odor, NFO

Lime, lt-med brn, fnxln

Lime, lt-med brn, fnxln

Lime, lt brn, fnxln, bedded chalk in part, NS

Shale, black carbonaceous  
Lime, lt gray-pale greenish gray, fnxln

Lime, crm-lt brn, fnxln, oomoldic chips in part with trace of spotty staining NFO, very Lt Odor,

Lime, crm-tan, fnxln, lot of bedded chalk

Lime, crm, fnxln

Lime, crm, oolitic/oomoldic, largely barren, NS

Lime, crm-tan, fn-micro xln, bedded chalk in part, some chips of lime with tint of light gray

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

Lime, dark brn-grayish brn, fn-micro xln, slightly fossiliferous

Lime, crm-lt brn, mostly fnxln, few chips with trace of spotty staining, NFO, No Odor

Lime, lt-med brn-grayish brn, fnxln, slight bedded chalk

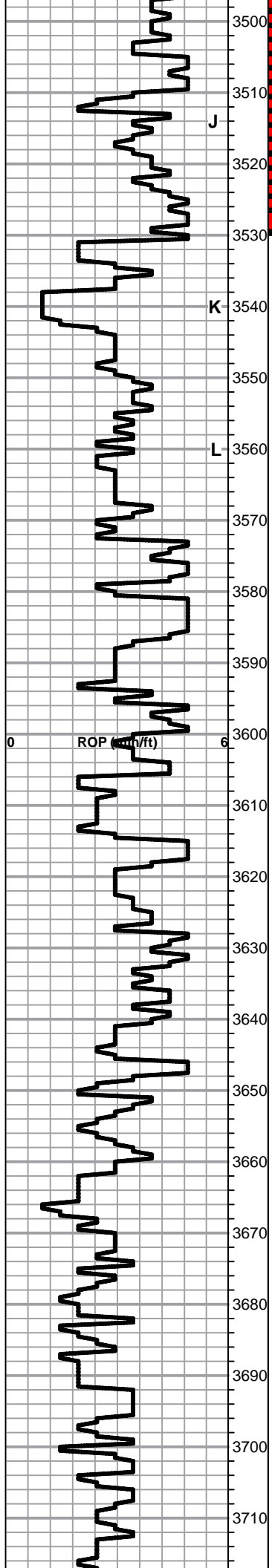
Lime, crm-tan, fnxln-granular, fine interxln porosity, specks of staining, NFO

Lime, crm-tan, fnxln

DST # 1 3314' TO 3365' SEE  
HEADER FOR TEST  
SUMMARY

DST # 3 STRADDLE TEST  
3410' TO 3430' SEE  
HEADER FOR TEST  
SUMMARY





Lime, crm, dolomitic in part, scattered vuggy porosity, spotty staining with very lt odor, NFO

Lime, crm-tan-lt gray, fnxln

Shale, dove gray forming soft mud in part

Lime, white, granular, chalk, NS

Lime, tan, fn-micro xln

Lime, lt brn-lt grayish brn, fn-vfxln

Lime, crm-lt brn, frn-micro xln

**BKC ELog 3573-1539**

Shale, reddish brn-dark brn,

Lime, crm-lt brn, fnxln-micritic, very hard, slight chalk

Shale, grays, reds, brn, maroon, soft blocky

Lime, clastic mix in part with red shale staining

Shale, red wash forming soft red mud in part

Shale, red wash, small chert nodules in part

**MARMATION ELog 3619-1585**

Lime, crm-lt brn, fnxln, dolomitic, hard on crush, orange chert fragments

Shale, vari colored, soft blocky, deep red wash

Shale, vari colored, vari colored cherts

Shales and cherts, vari colored

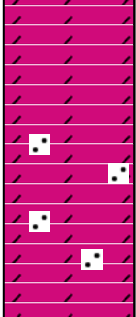
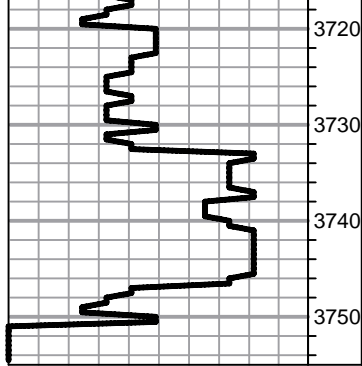
mix of lt brn sucrosic dolomite and cherts, trace of gilsonite

**ARBUCKLE ELog 3682-1648**

Dolomite, crm, fnxln with thin zones of med-cxln, hard on crush

Dolomite, crm, fnxln, hard on crush

Dolomite, crm, fnxln, hard on crush



Dolomite, crm, fn-cxln, granular mix with specks of green glauconite in part

Dolomite, crm, fnxln, increasing quartz grain inclusions with scattered hard clusters and fused quartz

**RTD 3750-1716    LTD 3749-1715**

# 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. 7262

Date	7-12-13	Sec.	9	Twp.	15	Range	19	County	Ellis	State	KS	On Location		Finish	10:30 PM
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Location Antinina 2W 2S 1 1/2 W N Into

Lease	Bieler	Well No.	#1	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.
Contractor	Southwind #1			Charge To	TDE
Type Job	Surface	Hole Size	12 1/4	T.D.	226 ft
Csg.	8 5/8	Depth	225 ft	Street	
Tbg. Size		Depth		City	State
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Cement Left in Csg.	20 ft	Shoe Joint		Cement Amount Ordered	150 3x2

Meas Line Displace 13 bbl

EQUIPMENT				Common
Pumptrk	3	No.	Cement Helper	150
			Matt	Poz. Mix
Bulktrk	3	No.	Driver	Gel. 3
			Doug	Calcium 5
Bulktrk	PU	No.	Driver	
			Brett	

JOB SERVICES & REMARKS	
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
	Sand
	Handling 158
	Mileage

FLOAT EQUIPMENT	
Cement	Guide Shoe
	Centralizer
	Baskets
Circulated!	AFU Inserts
	Float Shoe
	Latch Down

Pumptrk Charge	Surface	Tax
Mileage	14	Discount
Signature <i>[Signature]</i>		Total Charge

# 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. 7424

Date	7-19-13	Sec.	9	Twp.	15	Range	19	County	Ellis	State	KS	On Location		Finish	1:45 AM
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Location **Antinino 2W, 2S, 1/2W, Nn2**

Lease	<b>Bieler</b>	Well No.	1	Owner	
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Contractor	<b>Southwind 1</b>	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.
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Type Job	<b>Plug</b>	Charge To	<b>TDI, Inc.</b>
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Hole Size	<b>7 7/8</b>	T.D.	
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Csg.		Depth		Street	
------	--	-------	--	--------	--

Tbg. Size		Depth		City		State	
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Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.		
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Cement Left in Csg.		Shoe Joint		Cement Amount Ordered	<b>270sx 60/40 4% Gel 1/4 # Flow</b>
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Meas Line		Displace	
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EQUIPMENT				Common	<b>162</b>
Pumptrk	<b>16</b>	No.	Cementer Helper <b>Lonnie W.</b>	Poz. Mix	<b>108</b>
Bulktrk	<b>12</b>	No.	Driver <b>Heath</b>	Gel.	<b>10</b>
Bulktrk	<b>PU</b>	No.	Driver <b>Travis</b>	Calcium	

JOB SERVICES & REMARKS				Hulls
Remarks:				Salt

Rat Hole		Flowseal	<b>67#</b>
----------	--	----------	------------

Mouse Hole		Kol-Seal	
------------	--	----------	--

Centralizers		Mud CLR 48	
--------------	--	------------	--

Baskets		CFL-117 or CD110 CAF 38	
---------	--	-------------------------	--

D/V or Port Collar		Sand	
--------------------	--	------	--

<b>1st Plug at 3662 50sx</b>		Handling	
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<b>2nd Plug at 1271 25sx</b>		Mileage	
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<b>3rd Plug at 523 100sx</b>		FLOAT EQUIPMENT	
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<b>4th Plug at 273 40sx</b>		Guide Shoe	
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<b>5th Plug at 40 10sx</b>		Centralizer	
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<b>Rat hole 30sx</b>		Baskets	
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<b>Mouse hole 15sx</b>		AFU inserts	
------------------------	--	-------------	--

		Float Shoe	
		Latch Down	
		<b>1 wood plug</b>	
		Pumptrk Charge	<b>plug</b>
		Mileage	<b>14</b>

X Signature **[Signature]**

Tax  
Discount  
Total Charge