



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1085856  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1085856

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

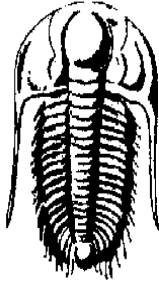
Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd  
Hays KS 67601

ATTN: Herb Deines

**Willie # 1**

**9-15s-19w Ellis,KS**

Start Date: 2012.05.08 @ 15:00:00

End Date: 2012.05.08 @ 20:40:00

Job Ticket #: 45722                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.05.10 @ 10:18:44

TDI Inc. 9-15s-19w Ellis,KS Willie # 1 DST # 1 LKC " C " 2012.05.08



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc.  
1310 Bison Rd  
Hays KS 67601  
ATTN: Herb Deines

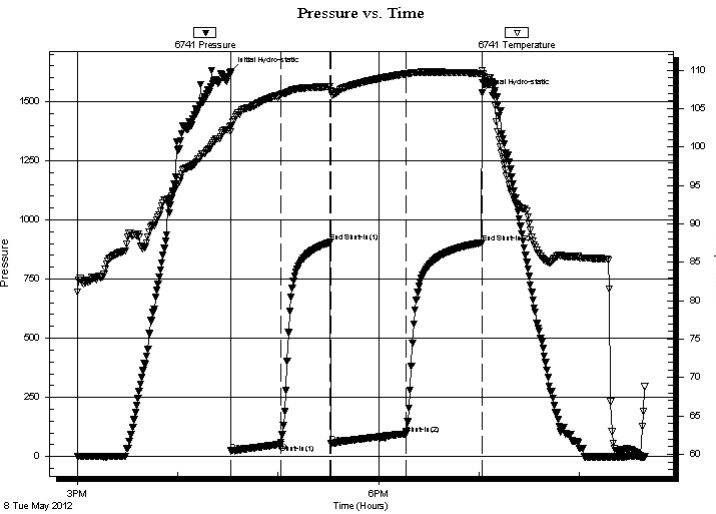
**9-15s-19w Ellis,KS**  
**Willie # 1**  
Job Ticket: 45722      **DST#: 1**  
Test Start: 2012.05.08 @ 15:00:00

## GENERAL INFORMATION:

Formation: **LKC " C "**  
Deviated: No Whipstock: 2043.00 ft (KB)  
Time Tool Opened: 16:31:45  
Time Test Ended: 20:40:00  
Interval: **3349.00 ft (KB) To 3370.00 ft (KB) (TVD)**  
Total Depth: 3370.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Jim Svaty  
Unit No: 41  
Reference Elevations: 2043.00 ft (KB)  
2033.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 6741      Inside**  
Press @ Run Depth: 95.35 psig @ 3350.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2012.05.08      End Date: 2012.05.08      Last Calib.: 2012.05.08  
Start Time: 15:00:05      End Time: 20:39:10      Time On Btm: 2012.05.08 @ 16:31:40  
Time Off Btm: 2012.05.08 @ 19:01:55

**TEST COMMENT:** 30-IFP- BOB in 4 min  
30-ISIP- Surface Blow Building to 3"  
45-FFP- BOB in 1 1/4 min  
45-FSIP-Surface Blow Building to 7 1/2" in 30 min



## PRESSURE SUMMARY

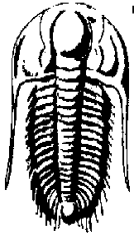
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1625.27	102.81	Initial Hydro-static
1	23.44	101.99	Open To Flow (1)
30	50.75	106.80	Shut-In(1)
60	905.14	107.84	End Shut-In(1)
60	56.43	107.37	Open To Flow (2)
105	95.35	109.56	Shut-In(2)
150	903.98	109.61	End Shut-In(2)
151	1535.82	109.99	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
35.00	GO 55%g 45%o	0.21
62.00	GMCO 25%g 5%o 70%w	0.87
62.00	GMMCO 30%g 2%o 18%w 50%o	0.87
62.00	MOCW 5%o 10%w 85%w	0.87
0.00	GIP 1575	0.00

## Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

TDI Inc.  
1310 Bison Rd  
Hays KS 67601  
ATTN: Herb Deines

**9-15s-19w Ellis, KS**  
**Willie # 1**  
Job Ticket: 45722      **DST#: 1**  
Test Start: 2012.05.08 @ 15:00:00

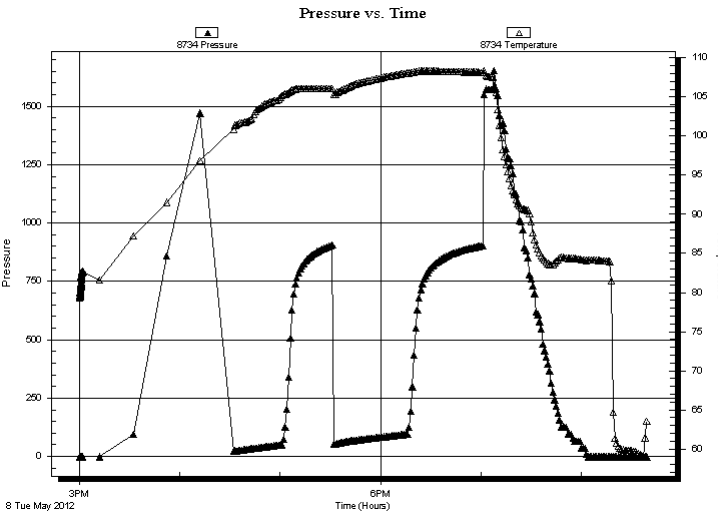
### GENERAL INFORMATION:

Formation: **LKC " C "**  
Deviated: No      Whipstock: 2043.00 ft (KB)  
Time Tool Opened: 16:31:45  
Time Test Ended: 20:40:00  
**Interval: 3349.00 ft (KB) To 3370.00 ft (KB) (TVD)**  
Total Depth: 3370.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches      Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Jim Svaty  
Unit No: 41  
Reference Elevations: 2043.00 ft (KB)  
2033.00 ft (CF)  
KB to GR/CF: 10.00 ft

### Serial #: 8734      Outside

Press@RunDepth:                  psig @ 3350.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2012.05.08      End Date: 2012.05.08      Last Calib.: 2012.05.08  
Start Time: 15:00:01      End Time: 20:39:00      Time On Btm:  
Time Off Btm:

TEST COMMENT: 30-IFP- BOB in 4 min  
30-ISIP- Surface Blow Building to 3"  
45-FFP- BOB in 1 1/4 min  
45-FSIP-Surface Blow Building to 7 1/2" in 30 min



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
35.00	GO 55%g 45%o	0.21
62.00	GMCO 25%g 5%m 70%o	0.87
62.00	GMMCO 30%g 2%m 18%w 50%o	0.87
62.00	MOCW 5%m 10%o 85%w	0.87
0.00	GIP 1575	0.00

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI Inc.  
1310 Bison Rd  
Hays KS 67601  
ATTN: Herb Deines

**9-15s-19w Ellis,KS**  
**Willie # 1**  
Job Ticket: 45722      **DST#: 1**  
Test Start: 2012.05.08 @ 15:00:00

### Tool Information

Drill Pipe:	Length: 3326.00 ft	Diameter: 3.80 inches	Volume: 46.66 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 40000.00 lb
			<u>Total Volume: 46.81 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3349.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	41.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3334.00	
Hydraulic tool	5.00			3339.00	
Packer	5.00			3344.00	20.00      Bottom Of Top Packer
Packer	5.00			3349.00	
Stubb	1.00			3350.00	
Recorder	0.00	6741	Inside	3350.00	
Recorder	0.00	8734	Outside	3350.00	
Perforations	17.00			3367.00	
Bullnose	3.00			3370.00	21.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>41.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

TDI Inc. **9-15s-19w Ellis,KS**  
 1310 Bison Rd **Willie # 1**  
 Hays KS 67601 Job Ticket: 45722 **DST#: 1**  
 ATTN: Herb Deines Test Start: 2012.05.08 @ 15:00:00

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 39 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 30000 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.78 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1900.00 ppm		
Filter Cake: inches		

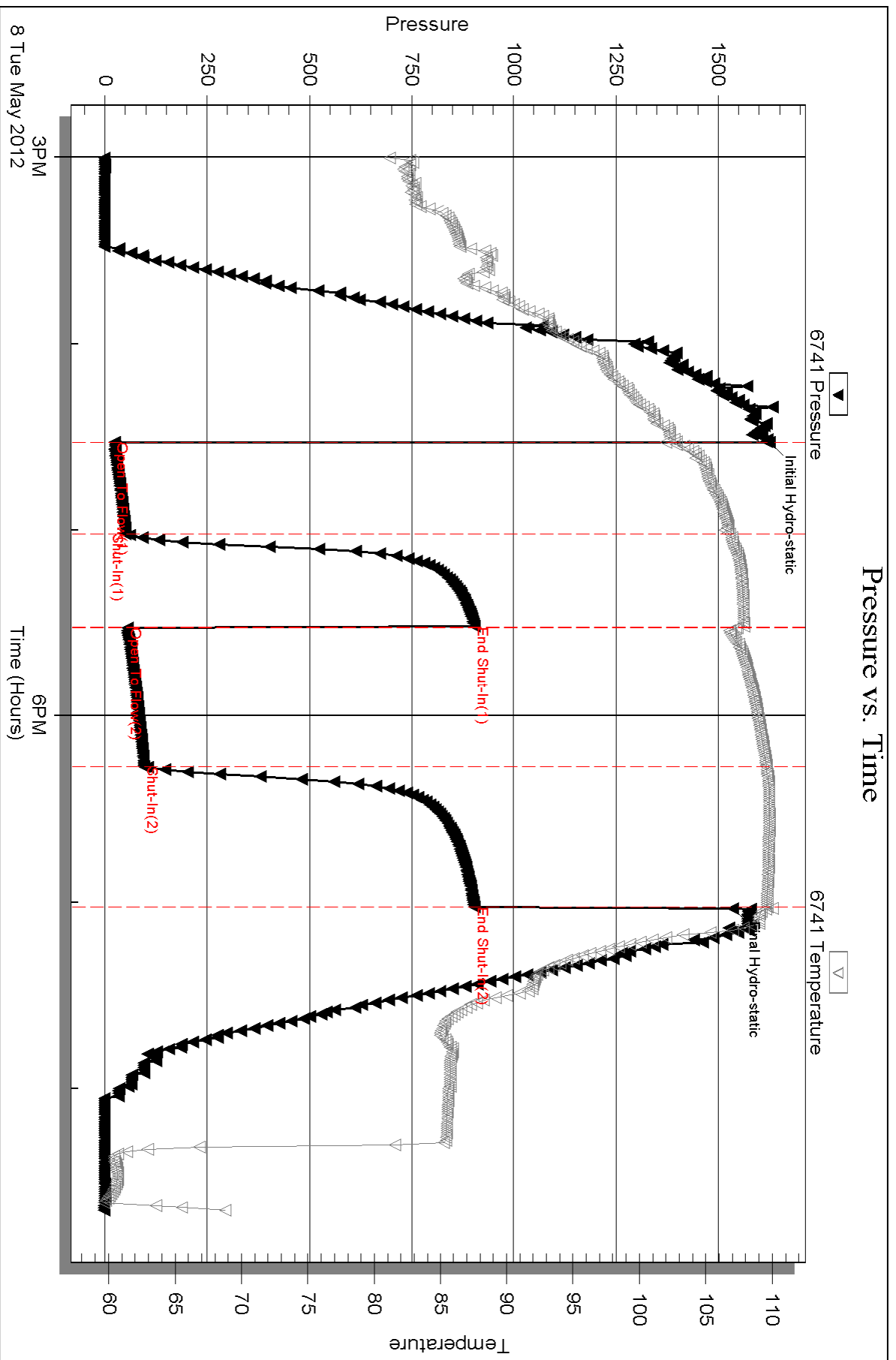
### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
35.00	GO 55%g 45%o	0.209
62.00	GMCO 25%g 5%m 70%o	0.870
62.00	GMWCO 30%g 2%m 18%w 50%o	0.870
62.00	MOCW 5%m 10%o 85%w	0.870
0.00	GIP 1575	0.000

Total Length: 221.00 ft Total Volume: 2.819 bbl  
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:  
 Laboratory Name: Laboratory Location:  
 Recovery Comments: .203 @ 71

### Pressure vs. Time



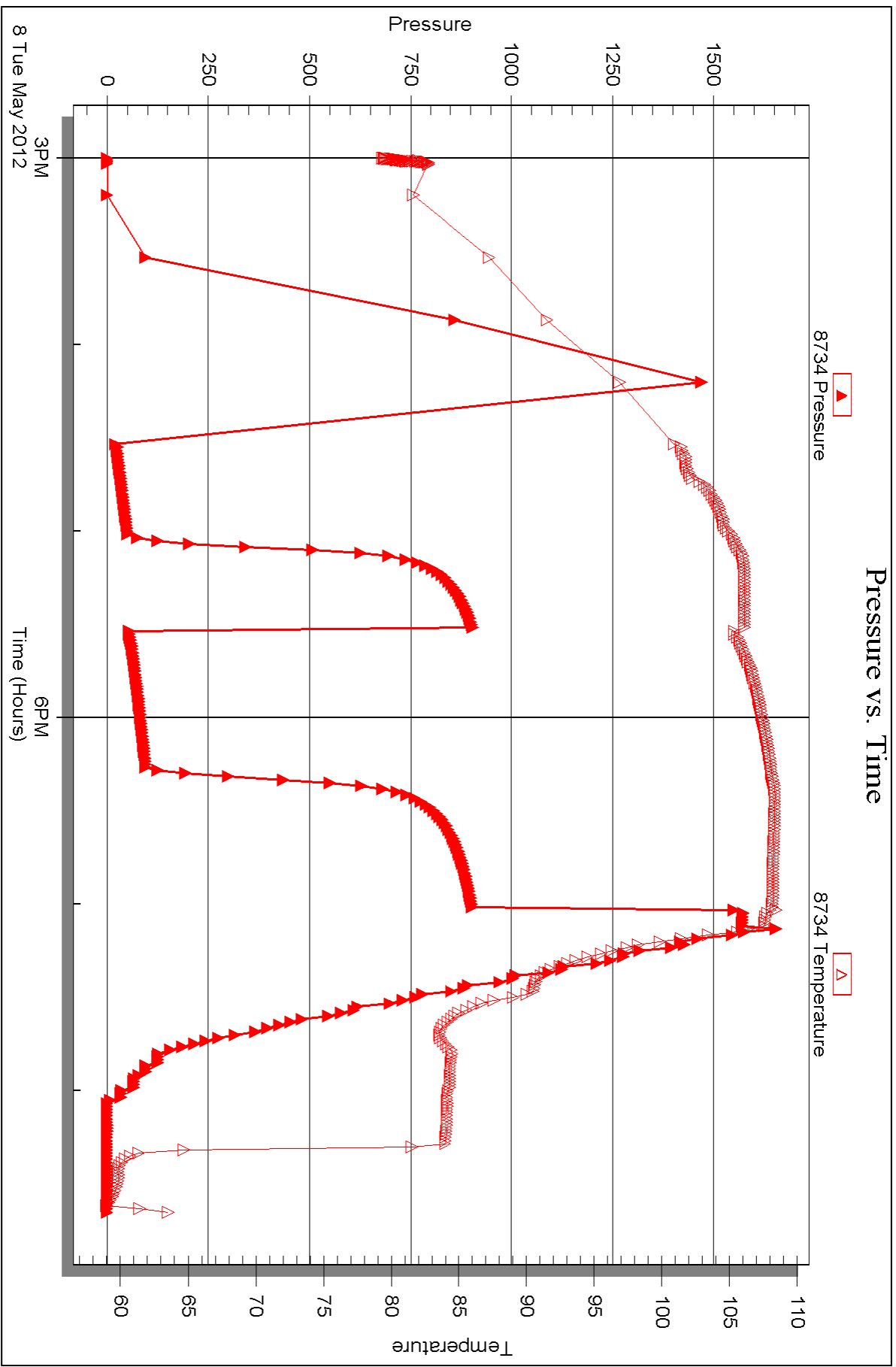


Serial #: 8734

Outside TDI Inc.

Wille # 1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 45722

Printed: 2012.05.10 @ 10:18:47



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd  
Hays KS 67601

ATTN: Herb Deines

**Willie # 1**

**9-15s-19w Ellis,KS**

Start Date: 2012.05.09 @ 12:15:00

End Date: 2012.05.09 @ 17:30:00

Job Ticket #: 45723                      DST #: 2

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.05.10 @ 10:17:44



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc.  
1310 Bison Rd  
Hays KS 67601  
ATTN: Herb Deines

**9-15s-19w Ellis,KS**  
**Willie # 1**  
Job Ticket: 45723      **DST#: 2**  
Test Start: 2012.05.09 @ 12:15:00

## GENERAL INFORMATION:

Formation: **LKC "HI & J"**  
Deviated: No      Whipstock: 2043.00 ft (KB)  
Time Tool Opened: 13:48:25  
Time Test Ended: 17:30:00  
Interval: **3448.00 ft (KB) To 3535.00 ft (KB) (TVD)**  
Total Depth: 3535.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches      Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Jim Svaty  
Unit No: 41  
Reference Elevations: 2043.00 ft (KB)  
2033.00 ft (CF)  
KB to GR/CF: 10.00 ft

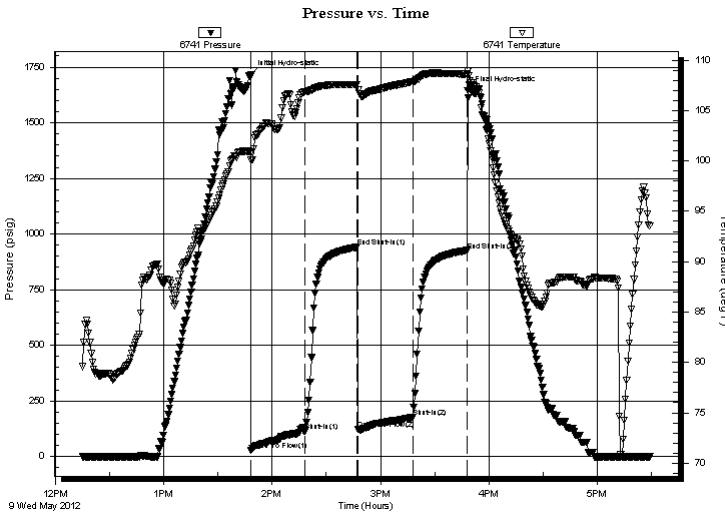
## Serial #: 6741

Inside

Press @ Run Depth: 178.34 psig @ 3449.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2012.05.09      End Date: 2012.05.09      Last Calib.: 2012.05.09  
Start Time: 12:15:05      End Time: 17:29:29      Time On Btm: 2012.05.09 @ 13:48:20  
Time Off Btm: 2012.05.09 @ 15:48:20

TEST COMMENT: 30-IFP- BOB in 5 min  
30-ISIP- 1 1/2" Blow in 5 min Died in 12 min  
30-FFP- BOB in 2 min  
30-FSIP- 8" Blow in 14 min Died in 24 min

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1715.14	100.87	Initial Hydro-static
1	27.26	100.07	Open To Flow (1)
30	113.68	106.84	Shut-In(1)
59	941.50	107.54	End Shut-In(1)
60	122.70	107.03	Open To Flow (2)
90	178.34	107.86	Shut-In(2)
120	926.38	108.63	End Shut-In(2)
120	1646.01	108.98	Final Hydro-static

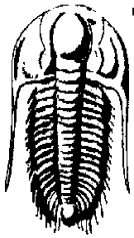
## Recovery

Length (ft)	Description	Volume (bbl)
30.00	MUD	0.15
62.00	GOM 50%g 25%o 25%m	0.86
62.00	OM 20%o 80%m	0.87
248.00	GMWCO 25%g 5%m 10%w 60%o	3.48
0.00	1332 GIP	0.00

\* Recovery from multiple tests

## Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

TDI Inc.  
 1310 Bison Rd  
 Hays KS 67601  
 ATTN: Herb Deines

**9-15s-19w Ellis, KS**  
**Willie # 1**  
 Job Ticket: 45723      **DST#: 2**  
 Test Start: 2012.05.09 @ 12:15:00

### GENERAL INFORMATION:

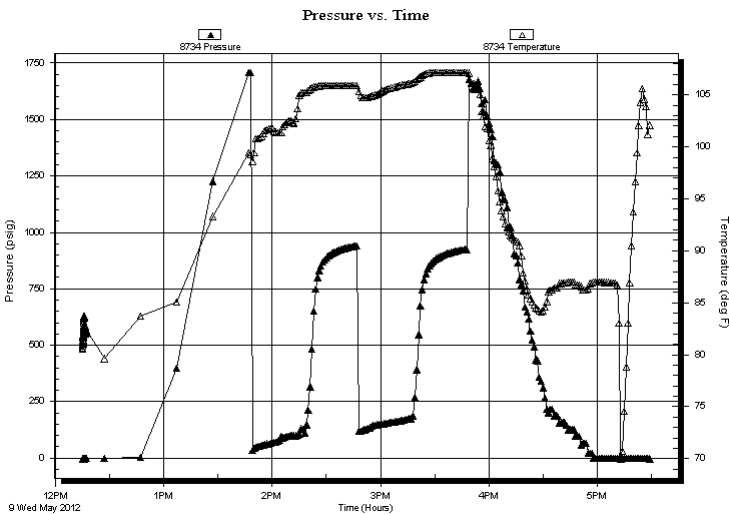
Formation: **LKC " HI & J "**  
 Deviated: No Whipstock: 2043.00 ft (KB)      Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 13:48:25      Tester: Jim Svaty  
 Time Test Ended: 17:30:00      Unit No: 41  
**Interval: 3448.00 ft (KB) To 3535.00 ft (KB) (TVD)**      Reference Elevations: 2043.00 ft (KB)  
 Total Depth: 3535.00 ft (KB) (TVD)      2033.00 ft (CF)  
 Hole Diameter: 7.88 inches      Hole Condition: Fair      KB to GR/CF: 10.00 ft

### Serial #: 8734      Outside

Press @ Run Depth:	psig @ 3449.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2012.05.09      End Date: 2012.05.09	Last Calib.:	2012.05.09
Start Time:	12:15:01      End Time: 17:29:30	Time On Btm:	
		Time Off Btm:	

**TEST COMMENT:** 30-IFP- BOB in 5 min  
 30-ISIP- 1 1/2" Blow in 5 min Died in 12 min  
 30-FFP- BOB in 2 min  
 30-FSIP- 8" Blow in 14 min Died in 24 min

### PRESSURE SUMMARY



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

### Recovery

Length (ft)	Description	Volume (bbl)
30.00	MUD	0.15
62.00	GOM 50%g 25%o 25%m	0.86
62.00	OM 20%o 80%m	0.87
248.00	GMWCO 25%g 5%m 10%w 60%o	3.48
0.00	1332 GIP	0.00

\* Recovery from multiple tests

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI Inc.  
1310 Bison Rd  
Hays KS 67601  
ATTN: Herb Deines

**9-15s-19w Ellis, KS**  
**Willie # 1**  
Job Ticket: 45723      **DST#: 2**  
Test Start: 2012.05.09 @ 12:15:00

**Tool Information**

Drill Pipe:	Length: 3422.00 ft	Diameter: 3.80 inches	Volume: 48.00 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	45000.00 lb
			<u>Total Volume: 48.15 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3448.00 ft			Final	43000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	87.00 ft				
Tool Length:	107.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3433.00	
Hydraulic tool	5.00			3438.00	
Packer	5.00			3443.00	20.00      Bottom Of Top Packer
Packer	5.00			3448.00	
Stubb	1.00			3449.00	
Recorder	0.00	6741	Inside	3449.00	
Recorder	0.00	8734	Outside	3449.00	
Perforations	18.00			3467.00	
Change Over Sub	1.00			3468.00	
Blank Spacing	63.00			3531.00	
Change Over Sub	1.00			3532.00	
Bullnose	3.00			3535.00	87.00      Bottom Packers & Anchor

**Total Tool Length: 107.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc. **9-15s-19w Ellis,KS**  
 1310 Bison Rd **Willie # 1**  
 Hays KS 67601 Job Ticket: 45723 **DST#: 2**  
 ATTN: Herb Deines Test Start: 2012.05.09 @ 12:15:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 49.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.38 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2100.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	MUD	0.148
62.00	GOM 50%g 25%o 25%m	0.861
62.00	OM 20%o 80%m	0.870
248.00	GMWCO 25%g 5%m 10%w 60%o	3.479
0.00	1332 GIP	0.000

Total Length: 402.00 ft      Total Volume: 5.358 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

Serial #: 6741

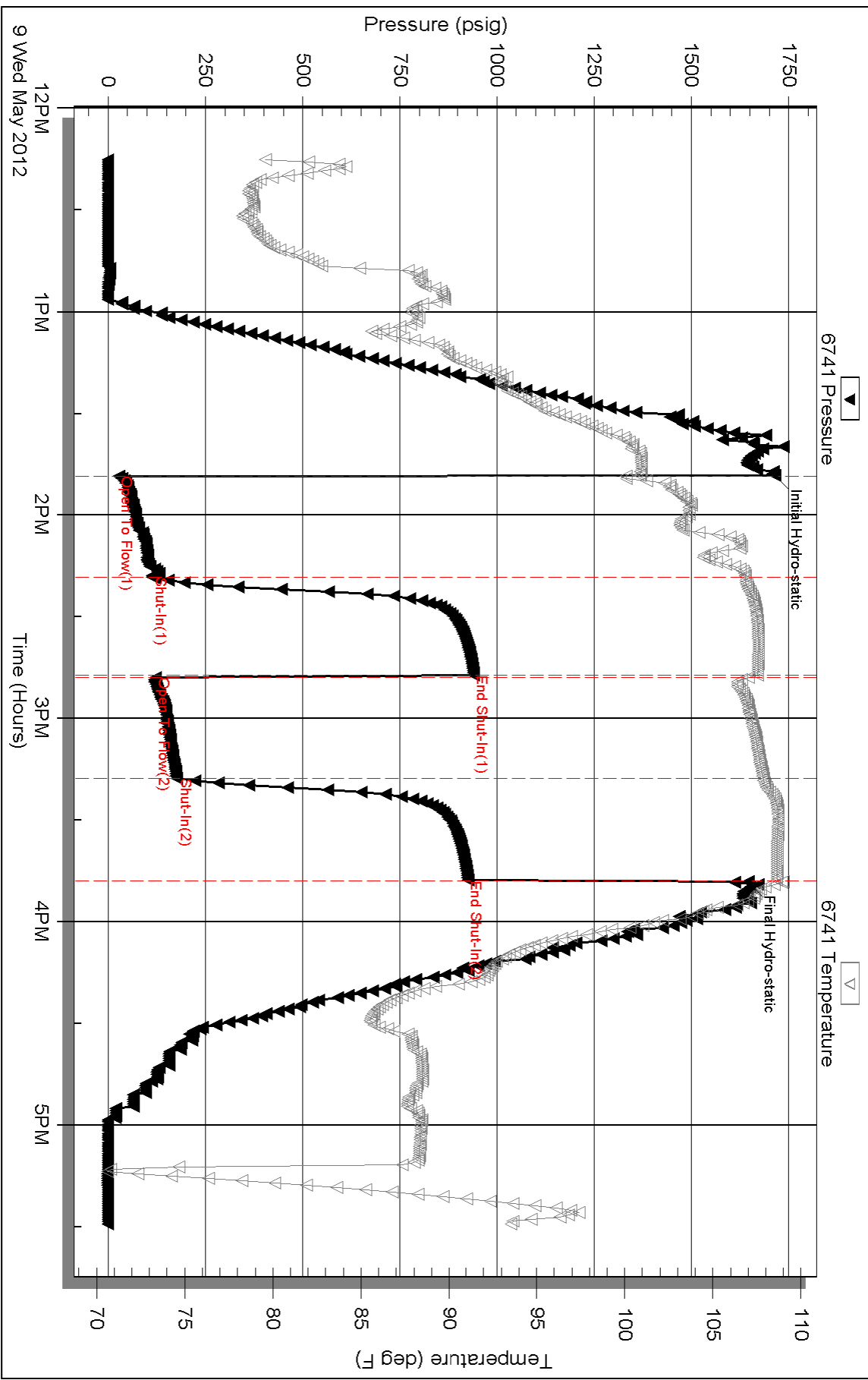
Inside

TDI Inc.

Well # 1

DST Test Number: 2

### Pressure vs. Time

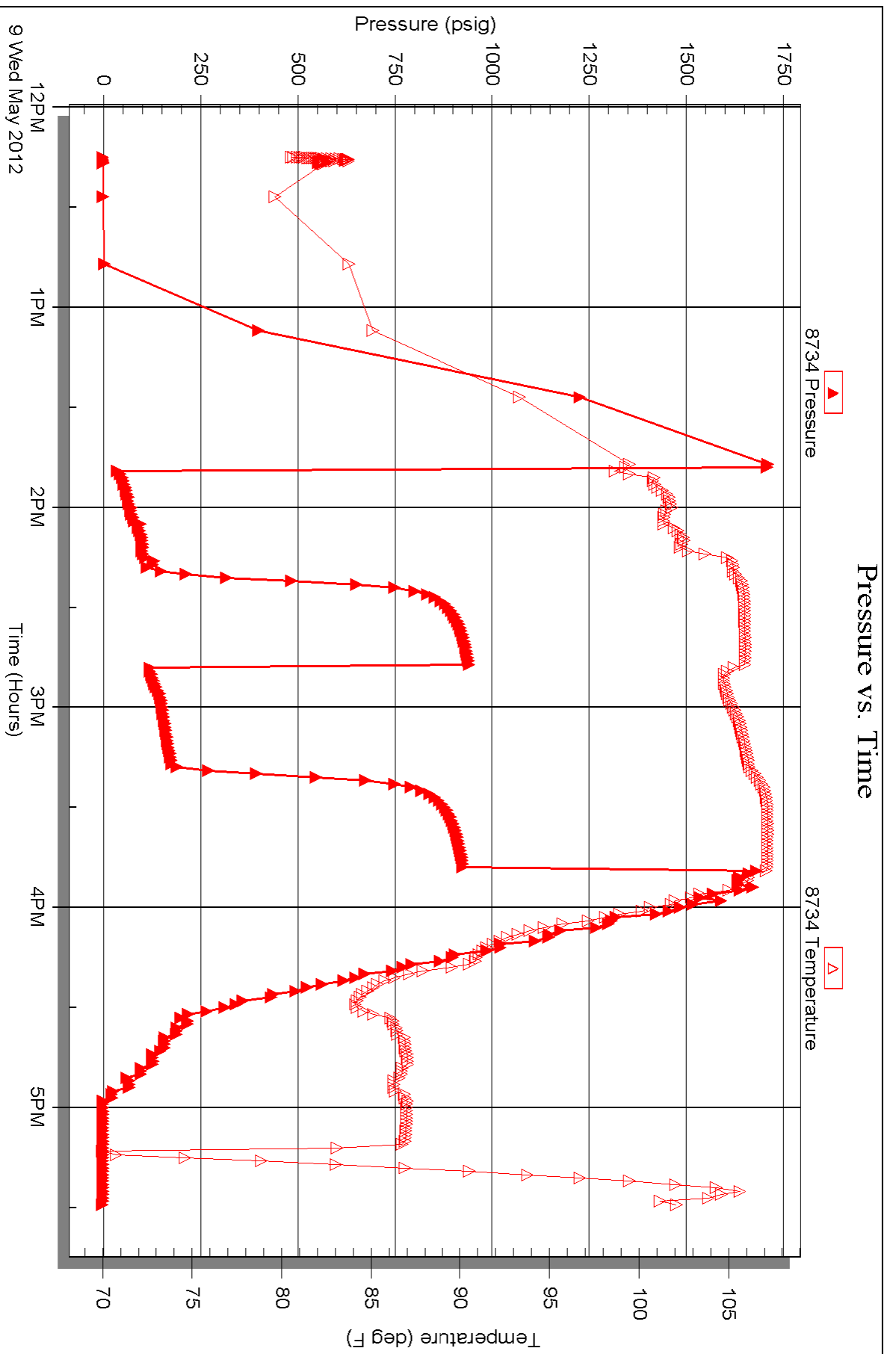


Serial #: 8734

Outside TDI Inc.

Wille # 1

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 45723

Printed: 2012.05.10 @ 10:17:47





# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 45722

Well Name & No. Willie #1 Test No. 1 Date 5-8-12  
 Company TPI Inc Elevation 2043 KB 2033 GL  
 Address 1310 Bison Rd. Hays Ks. 67601  
 Co. Rep / Geo. Herb Reines Rig Southward #1  
 Location: Sec. 9 Twp. 15<sup>s</sup> Rge. 19<sup>w</sup> Co. Ellis State Ks.

Interval Tested 3349-3370 Zone Tested LKC v. 2 C"  
 Anchor Length 21 Drill Pipe Run 3326 Mud Wt. 9.0  
 Top Packer Depth 3344 Drill Collars Run 31 Vis 55  
 Bottom Packer Depth 3349 Wt. Pipe Run 0 WL 6.8  
 Total Depth 3370 Chlorides 1900 ppm System LCM 1  
 Blow Description IFP- BOB in 4min  
ISIP- Surface Blow Building to 3in.  
FFP- BOB 1.25min  
FSIP-

Rec	Feet of	%gas	%oil	%water	%mud
35	210	55	45		
62	2 MCO	25	70	5	
62	2 MWCO	30	50	18	2
62	MOCW		10	85	5
1575	SIP				

Rec Total 221 BHT 109 Gravity 39 API RW 203 @ 71 °F Chlorides 30000 ppm  
 (A) Initial Hydrostatic 1625  Test 1150 T-On Location 14:00  
 (B) First Initial Flow 23  Jars T-Started 15:00  
 (C) First Final Flow 50  Safety Joint T-Open 16:32  
 (D) Initial Shut-In 905  Circ Sub T-Pulled 19:02  
 (E) Second Initial Flow 56  Hourly Standby T-Out 20:40  
 (F) Second Final Flow 95  Mileage 32 RT 49.60 Comments \_\_\_\_\_  
 (G) Final Shut-In 903  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1535  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 30  Day Standby \_\_\_\_\_ Total 1199.60  
 Final Flow 45  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 45 Sub Total 1199.60

Approved By \_\_\_\_\_ Our Representative [Signature] 639 5864  
 TriLOBITE TESTING Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 45723

Well Name & No. Nollie #1 Test No. 2 Date 5-9-12  
 Company TDI Inc. Elevation 2042 KB 2033 GL  
 Address 1310 Bison Rd Hays Ks. 67601  
 Co. Rep / Geo. Herb Deines Rig Southwind #1  
 Location: Sec. 9 Twp. 15<sup>s</sup> Rge. 19<sup>w</sup> Co. Ellis State KS

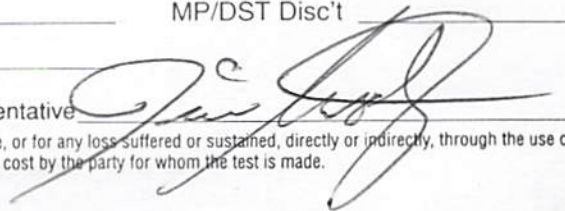
Interval Tested 3448-2535 Zone Tested LKC "HI & J"  
 Anchor Length 87 Drill Pipe Run 3422 Mud Wt. 9.1  
 Top Packer Depth 3443 Drill Collars Run 31 Vis 49  
 Bottom Packer Depth 3448 Wt. Pipe Run 0 WL 6.4  
 Total Depth 3535 Chlorides 2100 ppm System LCM 1

Blow Description IFP - BOB in 5min  
FSIP - 1/2 in Blow in 5min Died in 12min  
FFP - BOB in 2min  
FSIP - 8" Blow in 14min Died in 24min

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>MUD</u>			<u>100</u>	
<u>62</u>	<u>GOM</u>	<u>50</u>	<u>25</u>	<u>25</u>	
<u>62</u>	<u>OM</u>		<u>20</u>	<u>80</u>	
<u>248</u>	<u>GMWCO</u>	<u>25</u>	<u>60</u>	<u>10</u>	<u>5</u>
<u>1332</u>	<u>GIP</u>				

Rec Total 402 BHT 108 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1715  Test 1150 T-On Location 10:53  
 (B) First Initial Flow 27  Jars \_\_\_\_\_ T-Started 12:15  
 (C) First Final Flow 113  Safety Joint \_\_\_\_\_ T-Open 13:48  
 (D) Initial Shut-In 941  Circ Sub \_\_\_\_\_ T-Pulled 15:48  
 (E) Second Initial Flow 122  Hourly Standby \_\_\_\_\_ T-Out 17:30  
 (F) Second Final Flow 128  Mileage 49.60 Comments \_\_\_\_\_  
 (G) Final Shut-In 926  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1646  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 30  Day Standby \_\_\_\_\_ Total 1199.60  
 Final Flow 30  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 30 Sub Total 1199.60

Approved By \_\_\_\_\_ Our Representative 

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

**OPERATOR**

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

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

API: 15-051-26,287-00-00  
 Field: REICHERT  
 Country: USA



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

Scale 1:240 Imperial

Well Name: WILLIE # 1  
 Surface Location: NW SE SE SE  
 Bottom Location:  
 API: 15-051-26,287-00-00  
 License Number: 4787  
 Spud Date: 5/4/2012 Time: 3:00 PM  
 Region: ELLIS COUNTY Time: 7:00 AM  
 Drilling Completed: 5/10/2012  
 Surface Coordinates: 500' FSL & 415' FEL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2033.00ft  
 K.B. Elevation: 2043.00ft  
 Logged Interval: 2900.00ft To: 3753.00ft  
 Total Depth: 3750.00ft  
 Formation: LANSING-KANSAS CITY  
 Drilling Fluid Type: Chemical/Fresh Water Gel

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: Latitude:  
 N/S Co-ord: 500' FSL  
 E/W Co-ord: 415' FEL

**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  
 Spud Date: 5/4/2012 Time: 3:00 PM  
 TD Date: 5/10/2012 Time: 7:00 AM  
 Rig Release: 5/11/2012 Time: 3:00 AM

**ELEVATIONS**

K.B. Elevation: 2043.00ft Ground Elevation: 2033.00ft  
 K.B. to Ground: 10.00ft

**NOTES**

RECOMMENDATION TO RUN PRODUCTION CASING BASED ON FAVORABLE STRUCTURE AND POSITIVE RESULTS OF TWO DSTS.


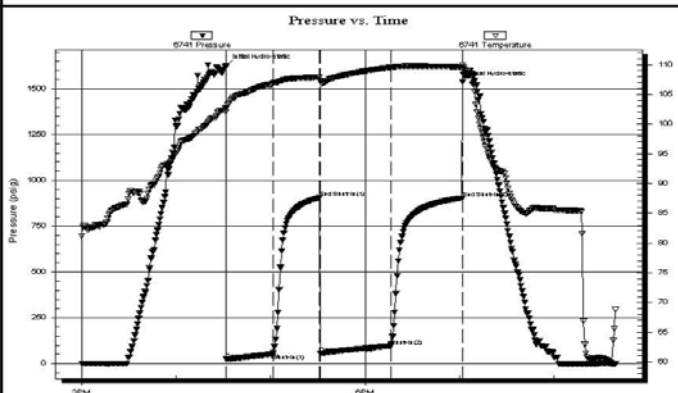
**FORMATION TOPS SUMMARY AND DAILY PROGRESS AND ACTIVITY SUMMARY**

**WILLIE #1**  
**NW SE SE SE**  
**Sec.9-15s-19w**

FORMATION	SAMPLE TOP	LOG TOP
Anhydrite	1257+ 786	1258+ 785
B-Anhydrite	1293+ 750	1294+ 749
Topeka	3011- 968	3012- 969
Heebner Shale	3289-1246	3289-1246
Toronto	3309-1266	3311-1268
LKC	3333-1290	3336-1293
BKC	3580-1537	3583-1540
Conglomerate	3618-1575	3626-1583
Arbuckle	3660-1617	3663-1620
Reagan Sand	3738-1695	Not Called
RTD	3750-1707	
LTD		3753-1710

- 5-04-12 RU, Spud, set surface casing to 213.73' w/150 sxs. Common, 2%gel, 3%CC, Slope survey 0 degree, WOC 8 hrs. Plug down 9:00PM.
- 5-05-12 350' drilling
- 5-06-12 1720' drilling
- 5-07-12 2640' drilling, displaced mud system 2861'-2891'
- 5-08-12 3305' drilling, DST # 1 ("C" zone")
- 5-09-12 3498' drilling, DST #2 ("H", "I", "J")
- 5-10-12 3750' drilling, RTD 3750', short trip, logs, run 5 1/2" production casing
- 5-11-12 3750' finish cementing top stage through DV, RD

**DST #1 SUMMARY PAGE**

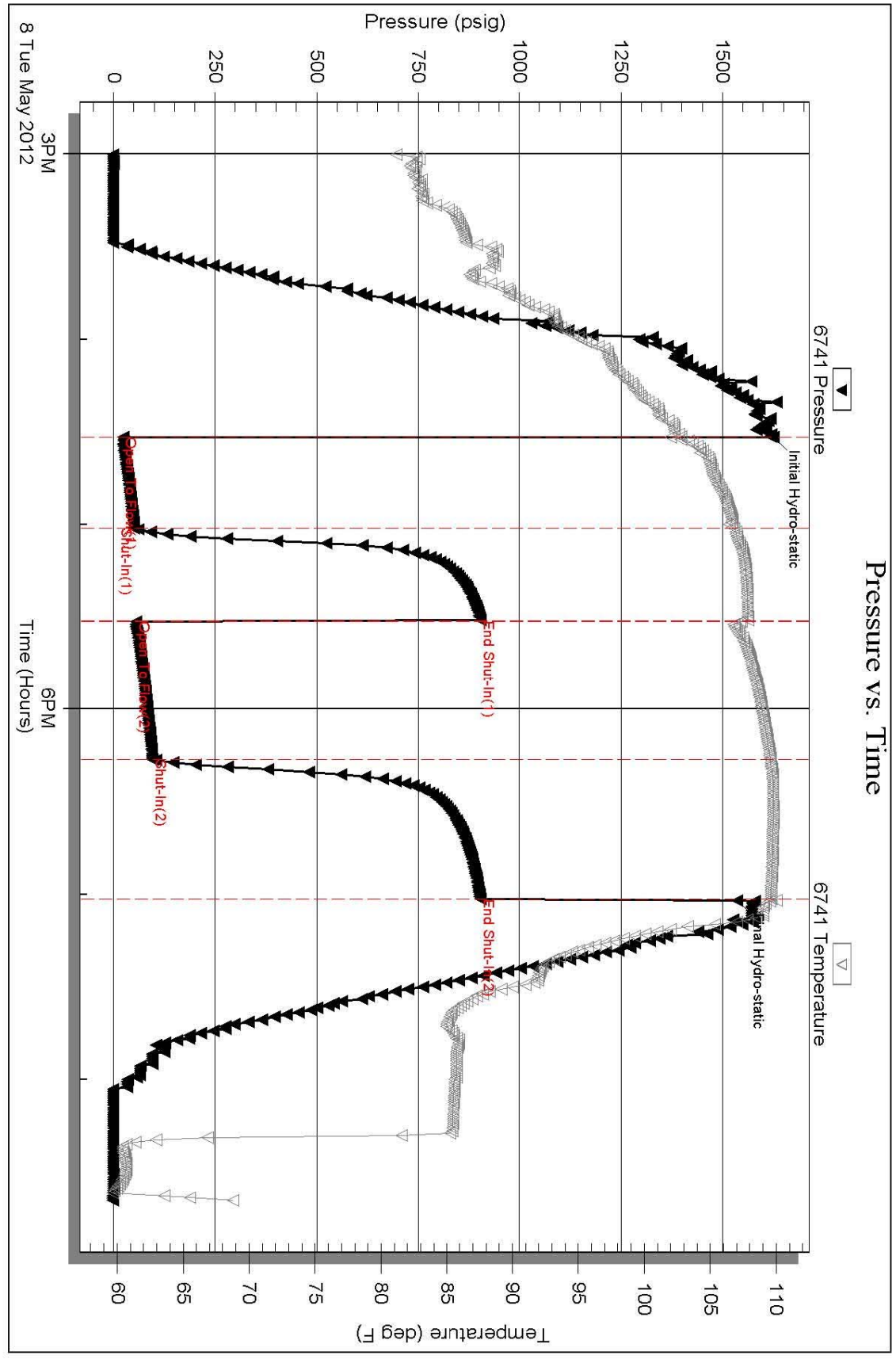
 <p><b>TRILOBITE TESTING, INC.</b></p>	<p><b>DRILL STEM TEST REPORT</b></p>																																										
<p>TDI Inc. 1310 Bison Rd Hays Ks 67601 ATTN: Herb Deines</p>	<p><b>9 15s 19w Ellis</b> <b>Willie # 1</b> Job Ticket: 45722      <b>DST#: 1</b> Test Start: 2012.05.08 @ 15:00:00</p>																																										
<p><b>GENERAL INFORMATION:</b></p> <p>Formation: <b>LKC "C"</b>                  Deviated: No      Whipstock: 2043.00 ft (KB)                  Time Tool Opened: 16:31:45                  Time Test Ended: 20:40:00</p> <p>Test Type: Conventional Bottom Hole (Initial)                  Tester: Jim Svaty                  Unit No: 41</p> <p>Interval: <b>3349.00 ft (KB) To 3370.00 ft (KB) (TVD)</b>                  Total Depth: 3370.00 ft (KB) (TVD)                  Hole Diameter: 7.88 inches      Hole Condition: Fair</p> <p>Reference Elevations: 2043.00 ft (KB)                  2033.00 ft (CF)                  KB to GR/CF: 10.00 ft</p>																																											
<p><b>Serial #: 6741      Inside</b></p> <p>Press@RunDepth: 95.35 psig @ 3350.00 ft (KB)                  Start Date: 2012.05.08      End Date: 2012.05.08                  Start Time: 15:00:05      End Time: 20:39:09</p> <p>Capacity: 8000.00 psig                  Last Calib.: 2012.05.08                  Time On Btm: 2012.05.08 @ 16:31:40                  Time Off Btm: 2012.05.08 @ 19:01:55</p>																																											
<p><b>TEST COMMENT:</b> 30-IFP- BOB in 4min                  30-ISIP- Surface Blow Building to 3in                  45-FFP- BOB in 1 1/4min                  45-FSP-Surface Blow Building to 7 1/2in in 30min</p>																																											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">PRESSURE SUMMARY</th> </tr> <tr> <th>Time (Min.)</th> <th>Pressure (psig)</th> <th>Temp (deg F)</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1625.27</td> <td>102.81</td> <td>Initial Hydro-static</td> </tr> <tr> <td>1</td> <td>23.44</td> <td>101.99</td> <td>Open To Flow (1)</td> </tr> <tr> <td>30</td> <td>50.75</td> <td>106.80</td> <td>Shut-In(1)</td> </tr> <tr> <td>60</td> <td>905.14</td> <td>107.84</td> <td>End Shut-In(1)</td> </tr> <tr> <td>60</td> <td>56.43</td> <td>107.37</td> <td>Open To Flow (2)</td> </tr> <tr> <td>105</td> <td>95.35</td> <td>109.56</td> <td>Shut-In(2)</td> </tr> <tr> <td>150</td> <td>903.98</td> <td>109.61</td> <td>End Shut-In(2)</td> </tr> <tr> <td>151</td> <td>1535.82</td> <td>109.99</td> <td>Final Hydro-static</td> </tr> </tbody> </table>			PRESSURE SUMMARY				Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation	0	1625.27	102.81	Initial Hydro-static	1	23.44	101.99	Open To Flow (1)	30	50.75	106.80	Shut-In(1)	60	905.14	107.84	End Shut-In(1)	60	56.43	107.37	Open To Flow (2)	105	95.35	109.56	Shut-In(2)	150	903.98	109.61	End Shut-In(2)	151	1535.82	109.99	Final Hydro-static
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DST # 1 EXPANDED CHART

Trilobite Testing, Inc

Ref. No: 45722

Printed: 2012.05.09 @ 08:13:31




Serial #: 6741

Inside TDI Inc.

Willie # 1

DST Test Number: 1

DST # 2 SUMMARY PAGE



**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

TDI Inc. **9 15s 19w Ellis**

1310 Bison Rd **Willie # 1**  
Hays Ks 67601

ATTN: Herb Deines **Job Ticket: 45723** **DST#: 2**

Test Start: 2012.05.09 @ 12:15:00

**GENERAL INFORMATION:**

Formation: **LKC "H I & J"**  
 Deviated: No Whipstock: 2043.00 ft (KB)  
 Time Tool Opened: 13:48:25  
 Time Test Ended: 17:30:00

Test Type: Conventional Bottom Hole (Reset)  
 Tester: Jim Svaty  
 Unit No: 41

Interval: **3448.00 ft (KB) To 3535.00 ft (KB) (TVD)**  
 Total Depth: 3535.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair

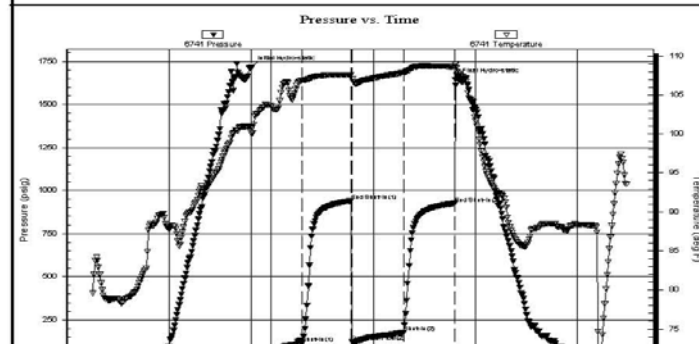
Reference Elevations: 2043.00 ft (KB)  
 2033.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 6741** **Inside**

Press@RunDepth: 178.34 psig @ 3449.00 ft (KB)  
 Start Date: 2012.05.09  
 Start Time: 12:15:05  
 End Date: 2012.05.09  
 End Time: 17:29:29

Capacity: 8000.00 psig  
 Last Calib.: 2012.05.09  
 Time On Btm: 2012.05.09 @ 13:48:20  
 Time Off Btm: 2012.05.09 @ 15:48:20

**TEST COMMENT:** 30-IFP- BOB in 5min  
 30-ISIP- 1 1/2in Blow in 5min Died in 12min  
 30-FFP- BOB in 2min  
 30-FSP- 8in Blow in 14min Died in 24min



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1715.14	100.87	Initial Hydro-static
1	27.26	100.07	Open To Flow (1)
30	113.68	106.84	Shut-In(1)
59	941.50	107.54	End Shut-In(1)
60	122.70	107.03	Open To Flow (2)
90	178.34	107.86	Shut-In(2)
120	926.38	108.63	End Shut-In(2)
120	1646.01	108.98	Final Hydro-static

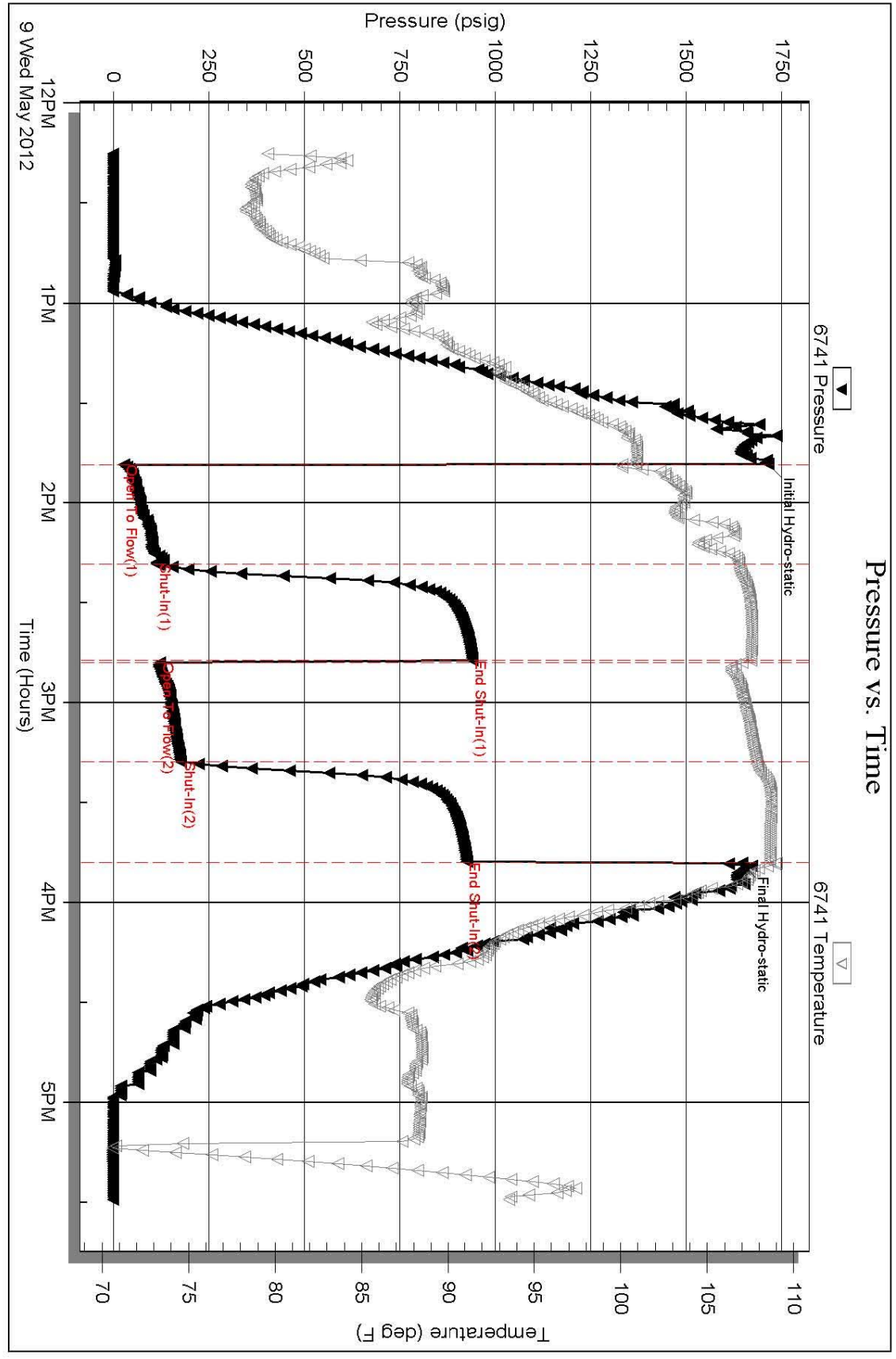


Recovery		
Length (ft)	Description	Volume (bbl)
30.00	MUD	0.15
62.00	GOM 50%g 25%o 25%m	0.86
62.00	OM 20%o 80%m	0.87
248.00	GMVCO 25%g 5%m 10%w 60%o	3.48
0.00	1332 GIP	0.00

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

Recovery from multiple tests  
 Trilobite Testing, Inc Ref. No: 45723 Printed: 2012.05.10 @ 07:54:11

### DST # 2 EXPANDED CHART



9 Wed May 2012 12PM 1PM 2PM 3PM 4PM 5PM  
 Trilobite Testing, Inc Ref. No: 45723 Printed: 2012.05.10 @ 07:54:12

Serial #: 6741 Inside TDI Inc. Well # 1 DST Test Number: 2

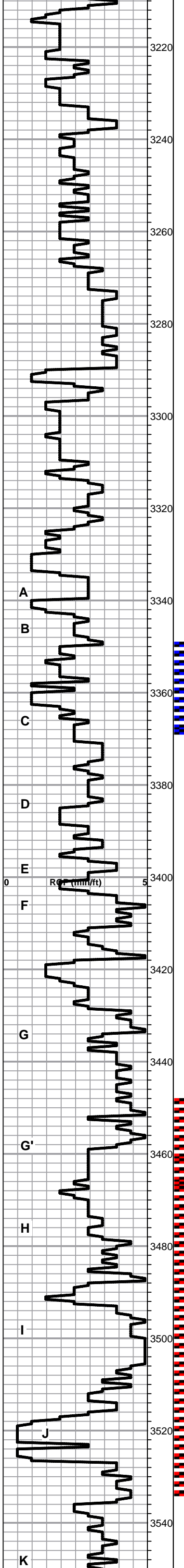
ROCK TYPES			
Cht vari	Lmst fw7>	shale, gry	Ss
Dolprim	Shgy	Carbon Sh	
Dol Lime	shale, grn	shale, red	

ACCESSORIES	
<b>MINERAL</b>	<b>FOSSIL</b>
Chert, dark	Oolite
Varicolored chert	
Chert White	

OTHER SYMBOLS	
<b>DST</b>	
DST Int	
DST alt	

Curve Track #1	Curve Track #3
ROP (min/ft)	

Cored Interval DST Interval	Depth   Interval DST	Lithology	Oil Show	Geological Descriptions	1:240 Imperial
<p>1:240 Imperial ROP (min/ft)</p>	2900 2920 2940 2960 2980 3000			<p><b><u>ANHYDRITE Spl top 1257+786 ELog 1258+785</u></b>  <b><u>ANHYDRITE BASE Spl top 1293+750 ELog 1294+749</u></b></p> <p><b>1' drill time from 2900' to RTD</b>  <b>10' wet and dry samples 3000' to RTD</b></p> <p>Lime, brn-gray, fnxn, fossiliferous in part</p> <p>Shale, lt-med gray, soft sticky to soft blocky</p>	<p>Slope 214' 0 Deg  Displaced 2861'-2891'</p>
<p>ROP (min/ft)</p>	3000 3020 3040 3060 3080 3100 3120 3140 3160 3180 3200			<p><b><u>TOPEKA Spl top 3011-968 ELog 3012-969</u></b></p> <p>Lime, lt-med brn, fnxn-granular, fossiliferous in part</p> <p>Lime, crm-brn, fnxn, chalk in part</p> <p>Lime, crm-lt brn, fnxn, slightly fossiliferous, crinoids, fusulinids</p> <p>Lime, med brn-grayish brn, fnxn</p> <p>Lime, lt-med brn, frnfxn-granular, slightly chalky, NS</p> <p>Shale, med gray</p> <p>Lime, lt-dark brn, fnxn-vfxln in part</p> <p>Shale, med gray, calcareous</p> <p>Lime, med to dark brn, fn-vfxln, slightly fossiliferous</p> <p>Lime, lt-med brn, gray mottling in part, fnxn-granular, chalky</p> <p>Lime, lt-med brn, fnxn-granular, chalk, slightly fossiliferous</p> <p>Lime, med brn, granular, fossiliferous, fusulinids</p> <p>Shale, black carbonaceous</p> <p>Lime, med brn-grayish brn, fnxn-granular in part</p> <p>Lime, crm-lt brn, fnxn-granular, slightly fossiliferous, NS</p> <p>Lime, lt-med brn, fnxn-granular, slightly chalky in part</p> <p>Lime, lt brn-lt gray, fnxn-granular in part, slightly chalky</p> <p>Lime, lt-med brn, fnxn</p> <p>Shale, black carbonaceous</p>	



Lime, lt-med brn, fn-vfxln

Lime, lt-med brn, fnxln-granular, few pieces cxln with intercrystalline porosity, scattered to saturated stain with very light odor, NFO

Lime, lt-med brn, fnxln-granular, chalky

Lime, off wht-lt brn, fnxln-granular, slightly fossiliferous

Lime, lt brn-grayish brn, fnxln-granular in part, slightly chalky

Lime, crm-lt brn, fnxln, slightly chalky

**HEEBNER SHALE Spl top 3289-1246 ELog 3289**

Shale, black carbonaceous  
Lime, med brn, vfxln  
Lime, lime green to lt gray, soft forming soft mudballs in part

**TORONTO Spl top 3309-1266 ELog 3311-1268**

Lime, crm-lt brn, fnxln, some bedded chalk in part, NS

Shale, soft, red wash grading into light soft gray shale

**LKC Spl top 3333-1290 ELog 3336-1293**

Lime, lt brn-lt gray, fn-vfxln

Lime, crm-lt brn, fn-vfxln, slightly chalky

Shale, mix of reds, browns and grays, forms soft mud balls

Lime, crm-lt brn, fnxln with oolitic-fossil fragment chips in part, lt scattered stain, NFO, no detectable odor. Tested to confirm economic potential.

Lime, lt brn-lt grayish brn, mostly fnxln with few chips with oomoldic and vuggy porosity, scattered staining, NFO, no detectable odor. Zone should be perforated and tested.

Shale, black carbonaceous  
Lime, lt gray, fn-vfxln

Lime, crm-lt brn, fnxln with scattered stain in a lime with scattered vuggy porosity. NFO, No odor, Microlog shows no reservoir development

Lime, crm, fnxln, chalky

Lime, crm-tan, fnxln-granular with bedded chalk, NS

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

Lime, crm. cryptocrystalline, slightly chalky in part

Shale, grayish green, soft blocky, calcareous in part

Lime, tan-lt brn, fn-cryptocrystalline with bedded chalk in part NS

Lime, crm, fnxln, oolitic-fossil fragment mix with lt staining, NFO, No odor. Appears poorly developed in samples but microlog shows some permeability on top of zone and should be perforated and tested.

Lime, crm, fn-vfxln

Lime, crm-lt brn, oolitic-oomoldic, scattered to saturated staining, VMSFO on break, very light odor, barren clean oomoldic near bottom of zone. Tested to confirm economic potential.

Lime, crm-lt brn, fn-vfxln, slightly chalky, NS

Mud Check 3281'  
WT 9.0  
VIS 55  
pH 11.0  
WL 6.8  
CHLORIDES 1900 ppm  
CALCIUM Nil  
LCM 1 #

DST #1 3349'-3370'  
30-30-45-45  
REC: 1575' GIP  
35' GO  
62' GMCO  
62' GMWCO  
62' MOCW  
221' TOTAL FLUID

GRAVITY 39  
rW .203@ 71 DEGREES  
CHLORIDES 30,000ppm  
ISIP: 905#  
FSIP: 903 #  
FP: 23-50, 56-95  
1st OPEN: BOB 4 MIN.  
BLOW BACK BUILT TO 3"  
2nd OPEN: BOB 1.25 MIN  
BLOW BACK BUILT TO 7"

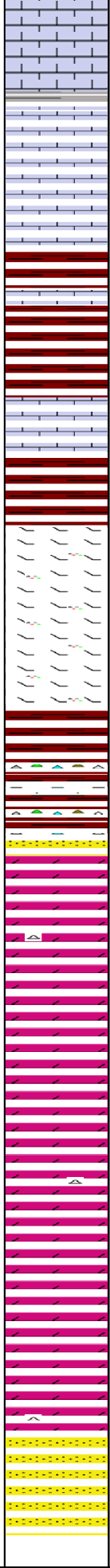
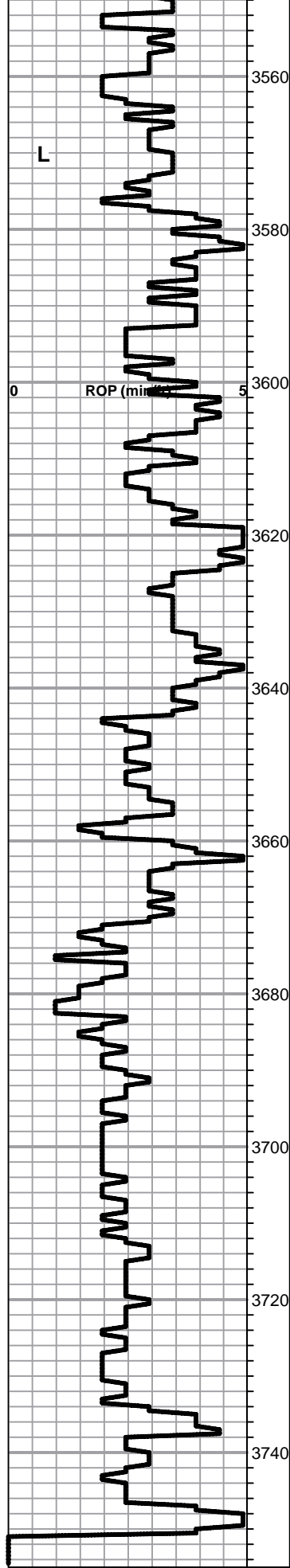
Slope 3370' 1 degree

Mud Check 3481'  
WT 9.1  
VIS 49  
pH 11.0  
WL 6.4  
CHLORIDES 2100 ppm  
CALCIUM Trace  
LCM 1#

DST #2 3448'-3535'  
30-30-30-30  
REC: 1332' GIP  
30' MUD  
62' GOM  
62' OM  
248' GMWCO  
402' TOTAL FLUID

BHT: 108 DEGREES  
ISIP: 941#  
FSIP: 926#  
FP: 27-113, 122-178  
1st OPEN: BOB 5 MIN  
BLOW BACK 1.5" DIED 12"  
2nd OPEN: BOB 2 MIN  
BLOW BACK 8" DIED 24"





Lime, crm-lt brn, fn-vfxln

Lime, crm-lt brn, fn-vfxln, bedded chalk in part NS

**BKC Spl top 3580-1537 ELog 3583-1540**

Shale, reddish brn, gray mix.

Shale, red - reddish brn, soft, blocky

Lime, offwht-lt brn, fn-vfxln, slightly chalky

Shale, reddish brn, blocky with clastic lime mix stained red

Dolomitic lime, offwht-lt gray, fn-vfxln, chert, fresh, sharp

Dolomitic lime, lt brn, fnxln, orange chert, fresh, sharp, NS

Shales, vari color, soft, blocky

Shales, varicolor mixed with vari color cherts  
Sandstone, qtz, well sorted, lt even stain, NFO, very thin bed

**ARBUCKLE Spl top 3660-1617 ELog 3663-1620**

Dolomite, ivory, fn-cxln, gilsonian deposits in interxln porosity, no odor, NFO

Dolomite, fn-cxln, gilsonian deposits in intercrystalline porosity

Dolomite, crm-ivory, fn-cxln, scattered gilsonian in part

Dolomite, crm-ivory, fn-cxln

Dolomite, crm, fn-cxln

**REAGAN SAND Spl top 3738-1695**

Sandstone, qtz, well, sorted, clear, fused in part, NS

**RTD 3750-1707 LTD 3753-1710**

Mud Check 3717'  
WT 9.2  
VIS 45  
pH 10.5  
WL 7.6  
CHLORIDES 2900 ppm  
CALCIUM Trace  
LCM 2#

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

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

No. 345

Cell 785-324-1041

Date	5-4-12	Sec.	9	Twp.	15	Range	19	County	Ellis	State	KS	On Location		Finish	9:00 p.m.
Lease	Willie	Well No.	1		Location # Antonino Jw 2s Winto										

Contractor	Southwind #1	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.	215
Csg.	8 5/8	Depth	215
Tbg. Size		Depth	
Tool		Depth	
Cement Left in Csg.	15'	Shoe Joint	The above was done to satisfaction and supervision of owner agent or contractor.
Meas Line		Displace	17 1/2 BCL
		Cement Amount Ordered	150 ccm 30% per 2% per 1

**EQUIPMENT**

Pumptrk	15	No.	Cementer	150	Common	150
			Helper			
Bulktrk		No.	Driver		Poz. Mix	
			Driver			
Bulktrk	8	No.	Driver	3	Gel.	3
			Driver			

**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
8 5/8 on bottom. Est. Circulation.	Sand
Mix 150 SIC4 Displace.	Handling
Cement Circulated	Mileage

**FLOAT EQUIPMENT**

Guide Shoe	
Centralizer	
Baskets	8 5/8 Swage
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Surface
Mileage	13

Signature	<i>[Signature]</i>	Tax	
		Discount	
		Total Charge	

JOB LOG

SWIFT Services, Inc.

DATE 05-10-12 PAGE NO. 7

CUSTOMER T.D.I. WELL NO. 1 LEASE WILLIE JOB TYPE 2-STAGE TICKET NO. 21363

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	2030							ONLOCATION CMT: Bottom 175 SWS EA 2 Top 175 SWS SMD RVD 3750, SET PIPE 3718, SJ 42.35, TMSM 3706 5 1/2 14 1/4 D.V. ON TOP # 59, 1250 FT CMT 1, 3, 5, 7, 9, 11, 13, 58, BARVOT 2, 12, 59, 81 OUT 61, 82, 85
	2150							START CLASSIFICATION THRU BOTTOM - DROP BALL
	2315							BREAK CIRC & ROTATE PIPE
	0000	5.5	12				200	500 GM MUD FLUSH
		5	20					20 bbl. WCL FLUSH
			42.5					175 SWS EA 2
								DROP PLUG, WASHHOLE
		6.0	0				200	START DISP 1/2 A20
			60				200	" " 1/2 MUD
			75				600	" " 1/2 WCL FLUSH
			85				700	
	0030	4.5	90.4				1400	LAND PLUG RELEASE D.V., DROP D.V. OPENING PLUG PLUG RH 30, MH 15
			7.5					
	0045	5.0	5				200	OPEN D.V. 1/2 WCL
			0					START SMD CMT 130 SWS
			75					END
								DROP D.V. CLOSING PLUG
		5.0	0				200	START DISP
							500	CIRC CMT 20 SWS
	0115		30.5				1300	LAND & CLOSE D.V.
	0200							JOB COMPLETE  THANK YOU! DAVE JOHNS, TS



DIGITAL LOG (785) 625-3858

Dual Induction Log

15-051-26,287-00-00

API No.

Company TDI, Inc.

Well Willie No.1

Field Reichert

County Eljis State

Kansas

Location 500' FSL & 465' FEL

Sec: 9 Twp: 15S Rge: 19W

Permanent Datum Ground Level Elevation 2033

Log Measured From Kelly Bushing 10 Ft. Above Perm. Datum

Drilling Measured From Kelly Bushing

Other Services

CNL/CDL  
MEL

Elevation  
K.B. 2043  
D.F. 2033  
G.L. 2033

Date 5/10/2012

Run Number One

Depth Driller 3750

Depth Logger 3753

Bottom Logged Interval 3752

Top Log Interval 200

Casing Driller 8.625 @ 214

Casing Logger 214

Bit Size 7.875

Type Fluid in Hole Chemical

Salinity,ppm CL 2,900

Density / Viscosity 9.2 45

pH / Fluid Loss 10.5 7.6

Source of Sample Flowline

Rm @ Meas. Temp 1.45 @ 70

Rmf @ Meas. Temp 1.09 @ 70

Rmc @ Meas. Temp 1.96 @ 70

Source of Rmf / Rmc Charts

Rm @ BHT .89 @ 114

Operating Rig Time 3 1/2 Hours

Max Rec. Temp. F 114

Equipment Number 17

Location Hays

Recorded By C. Desaire

Witnessed By Tom Denning

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Thank you for using Log-Tech, Inc.  
(785) 625-3858

Antonino KS, 2 W, 2 S, W Into

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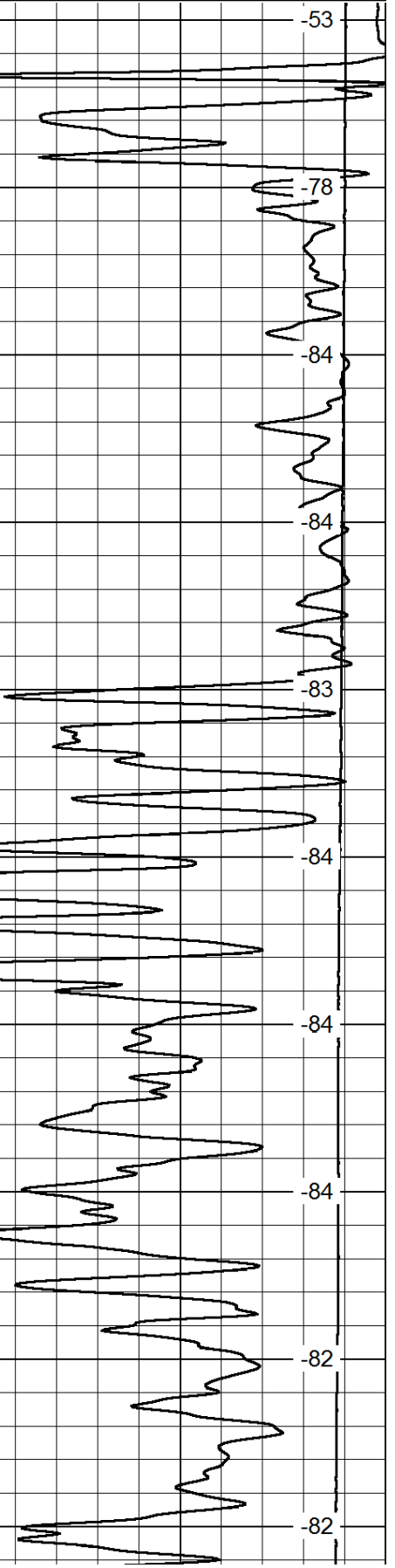
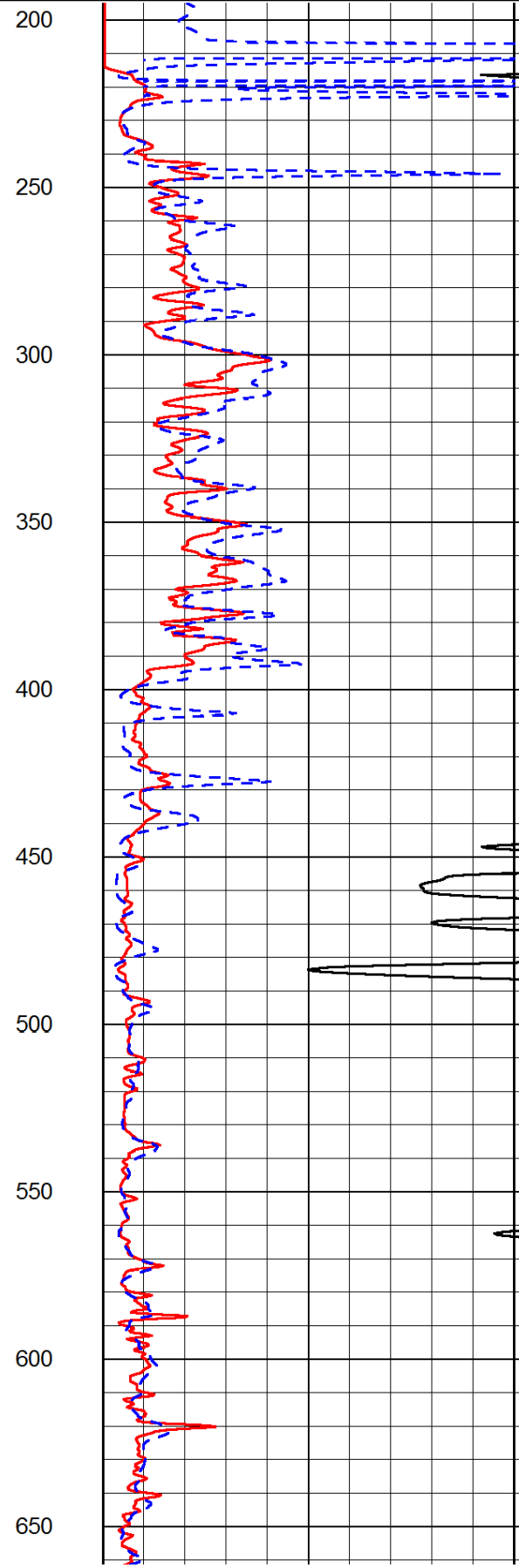
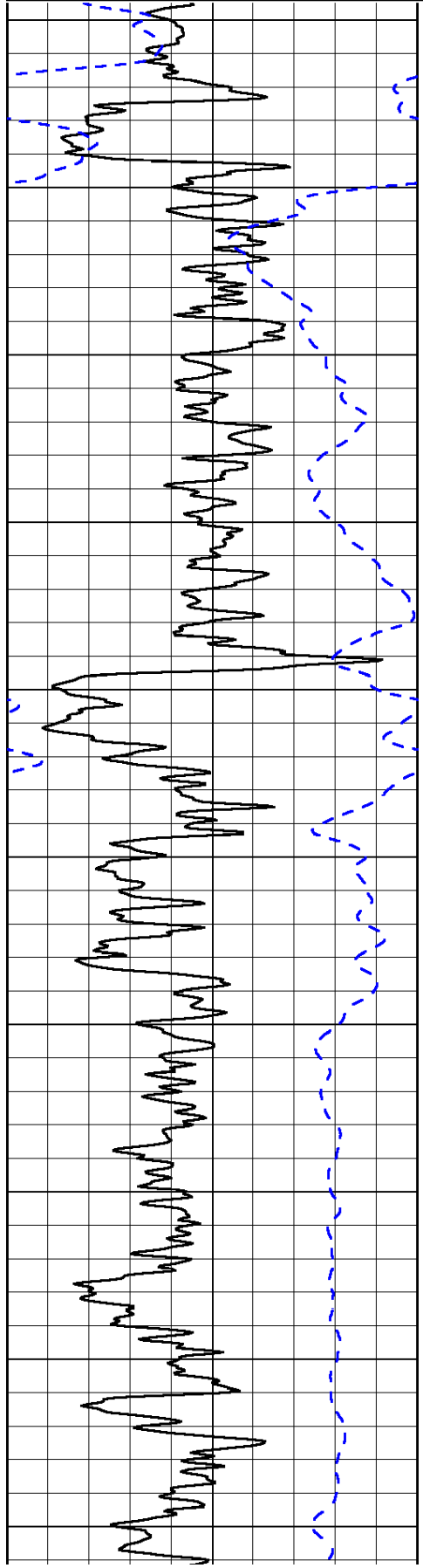
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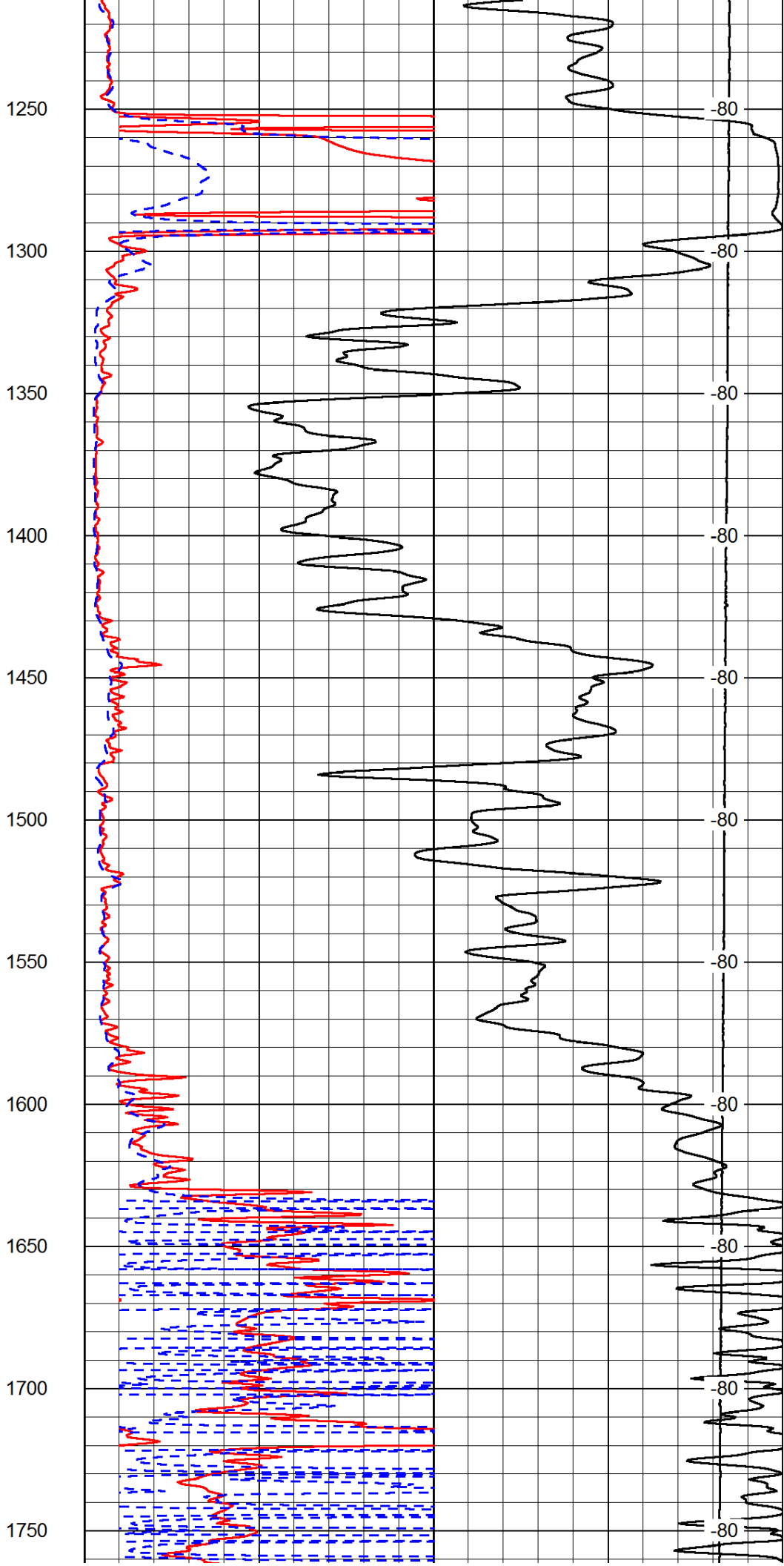
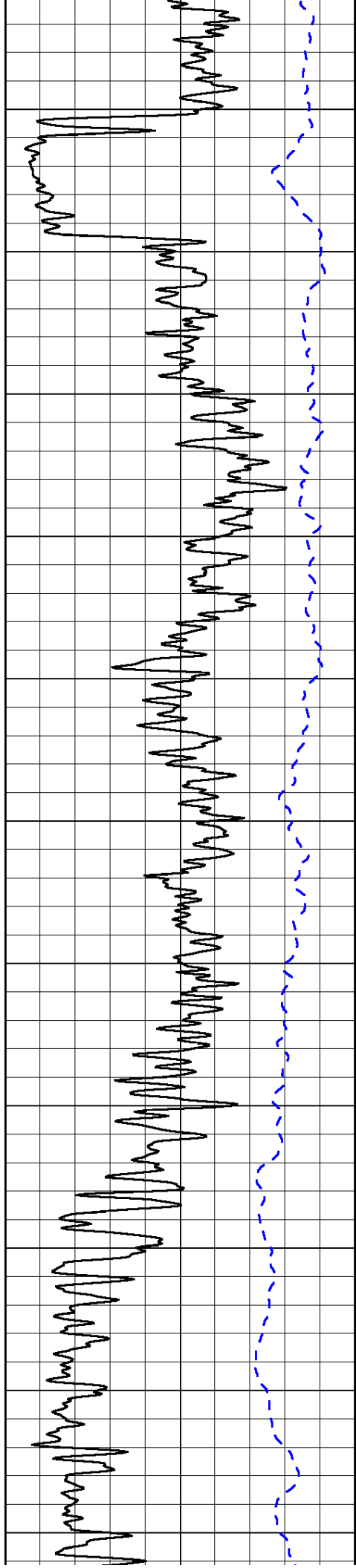
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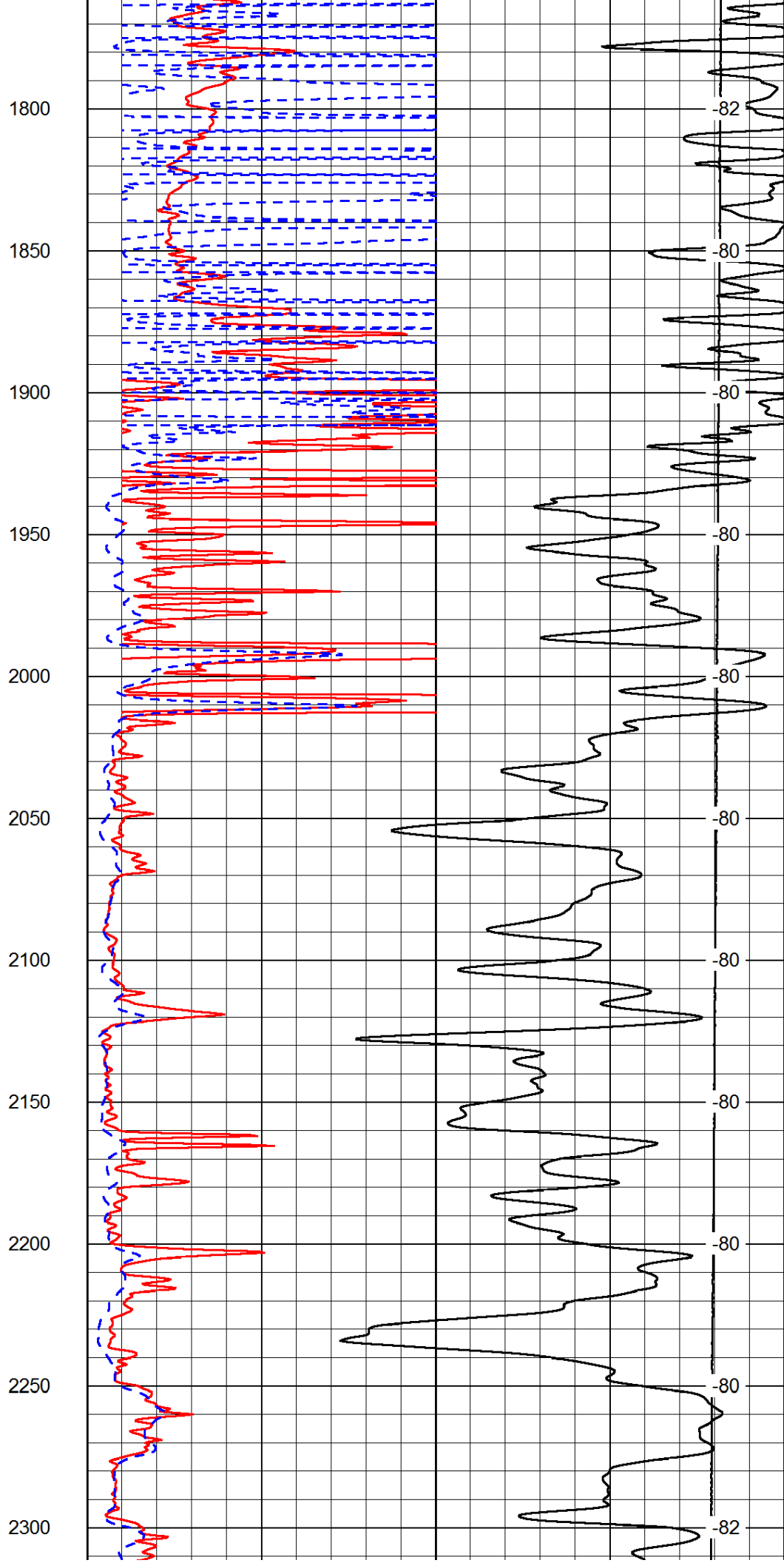
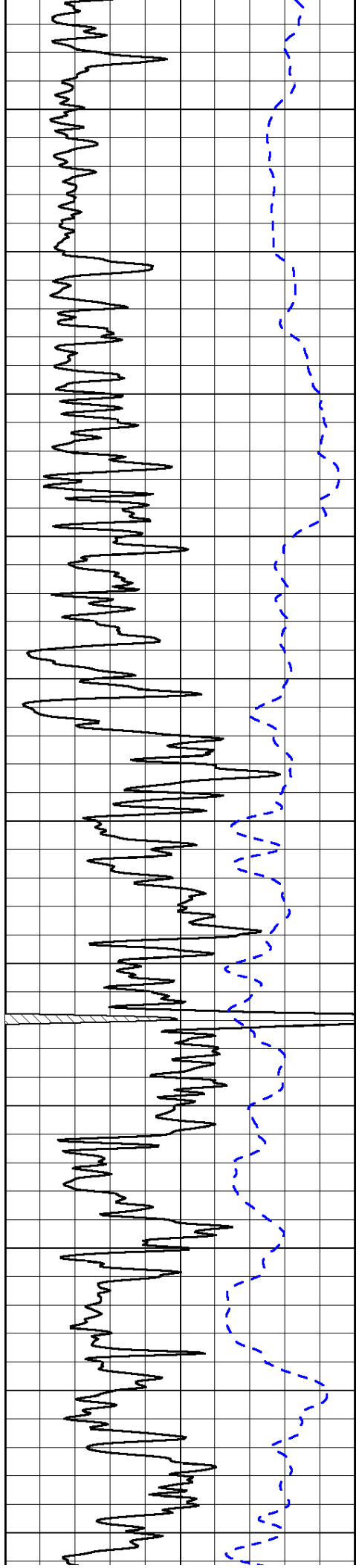
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50	Deep Resistivity	500

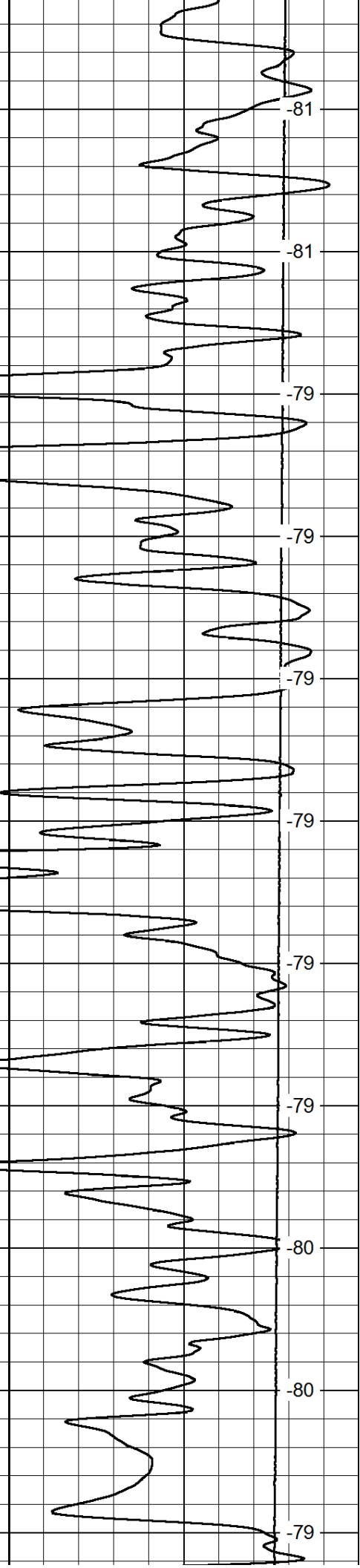
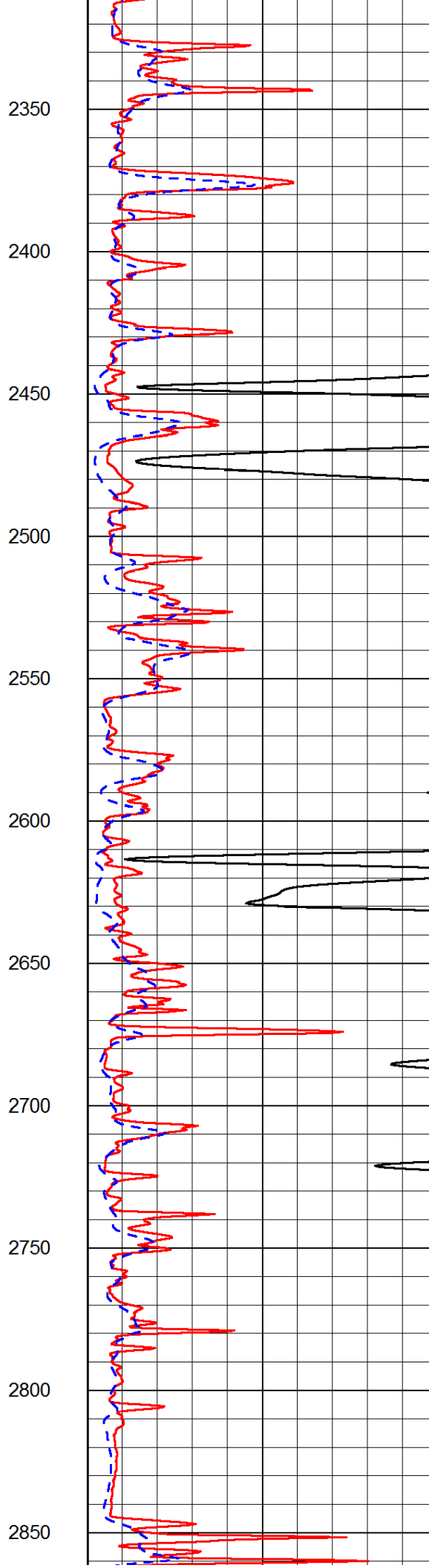
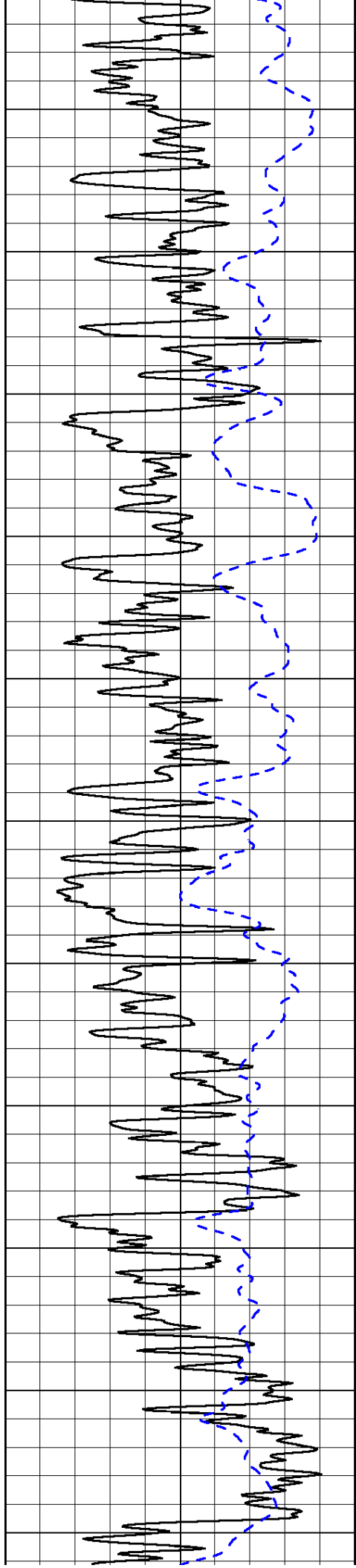


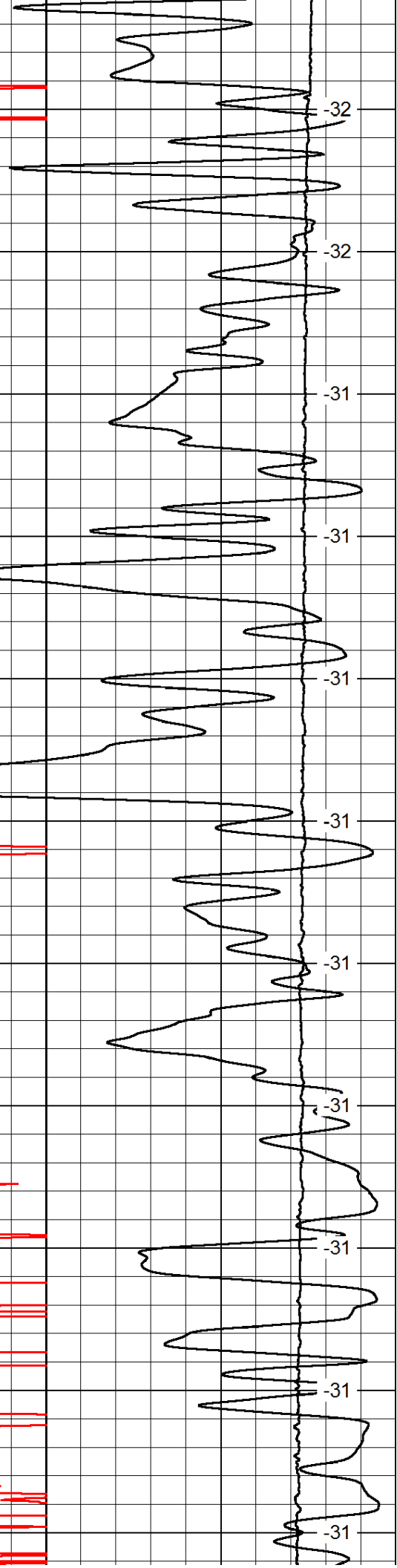
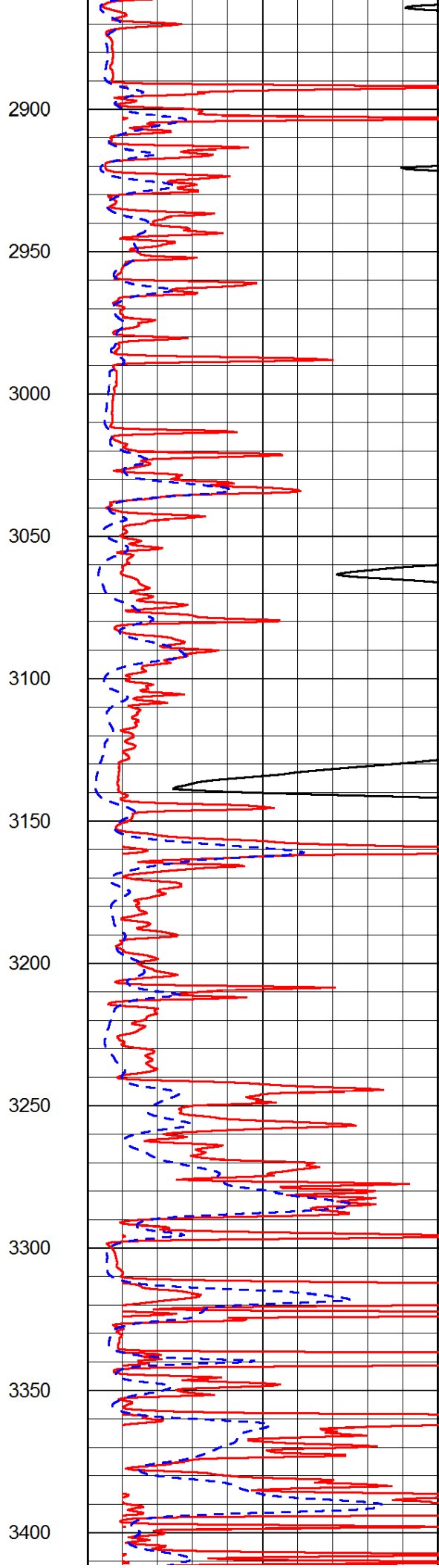
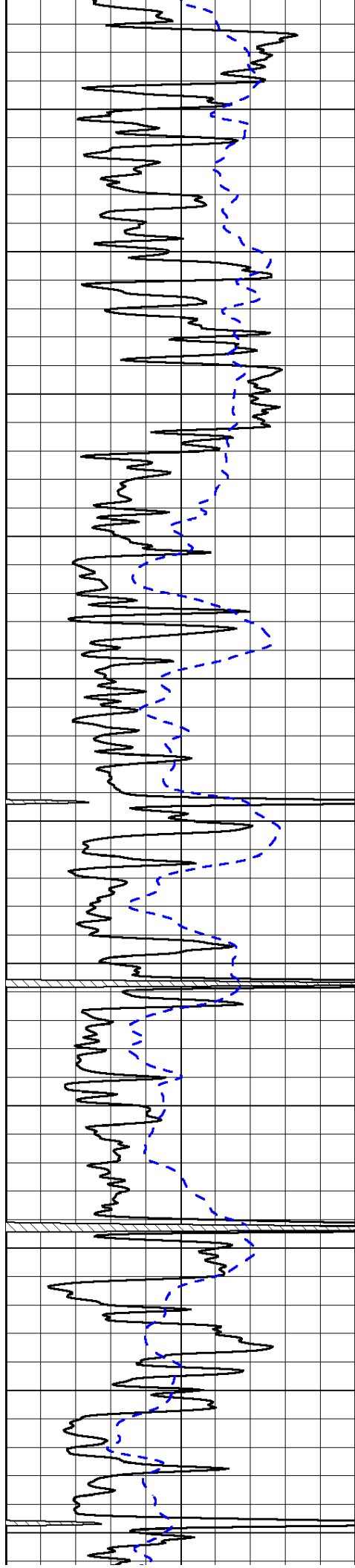


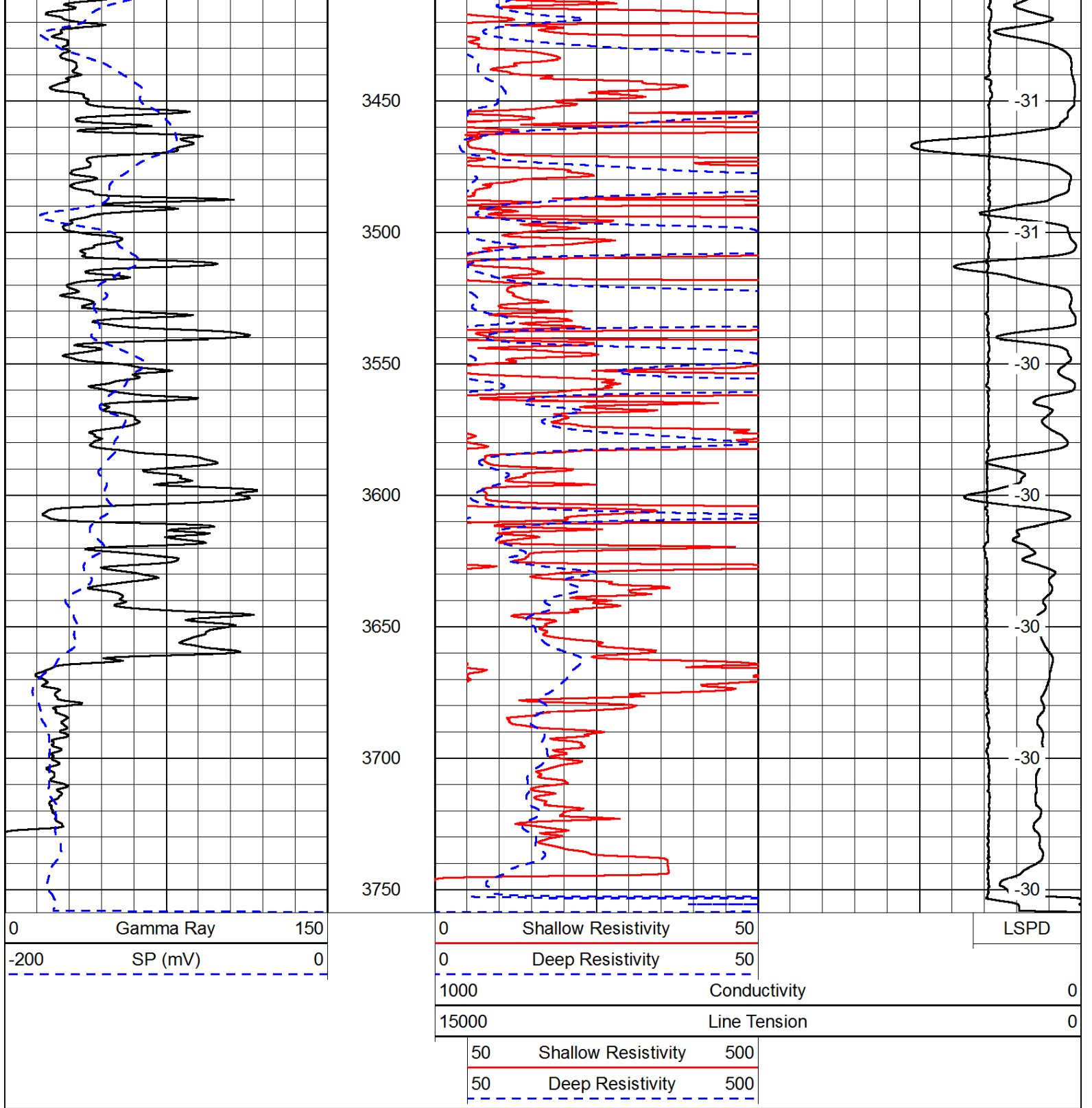




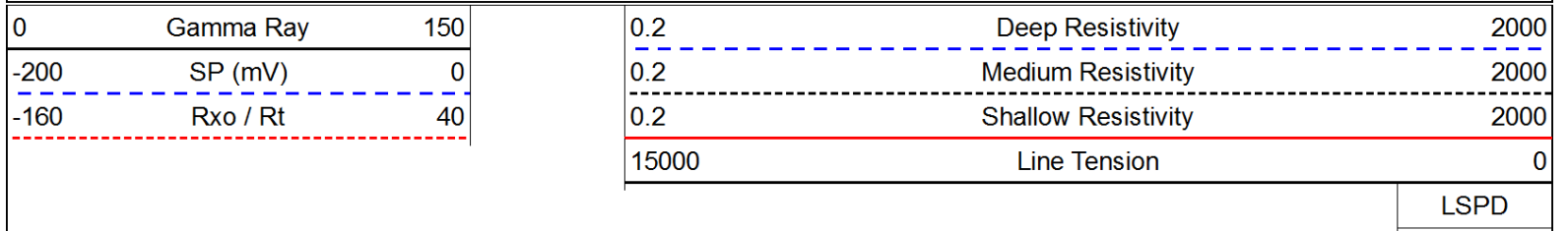


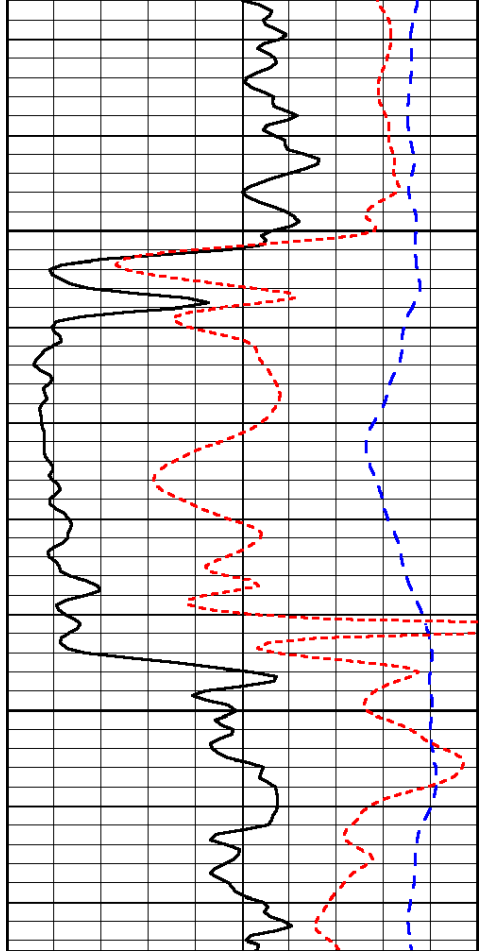






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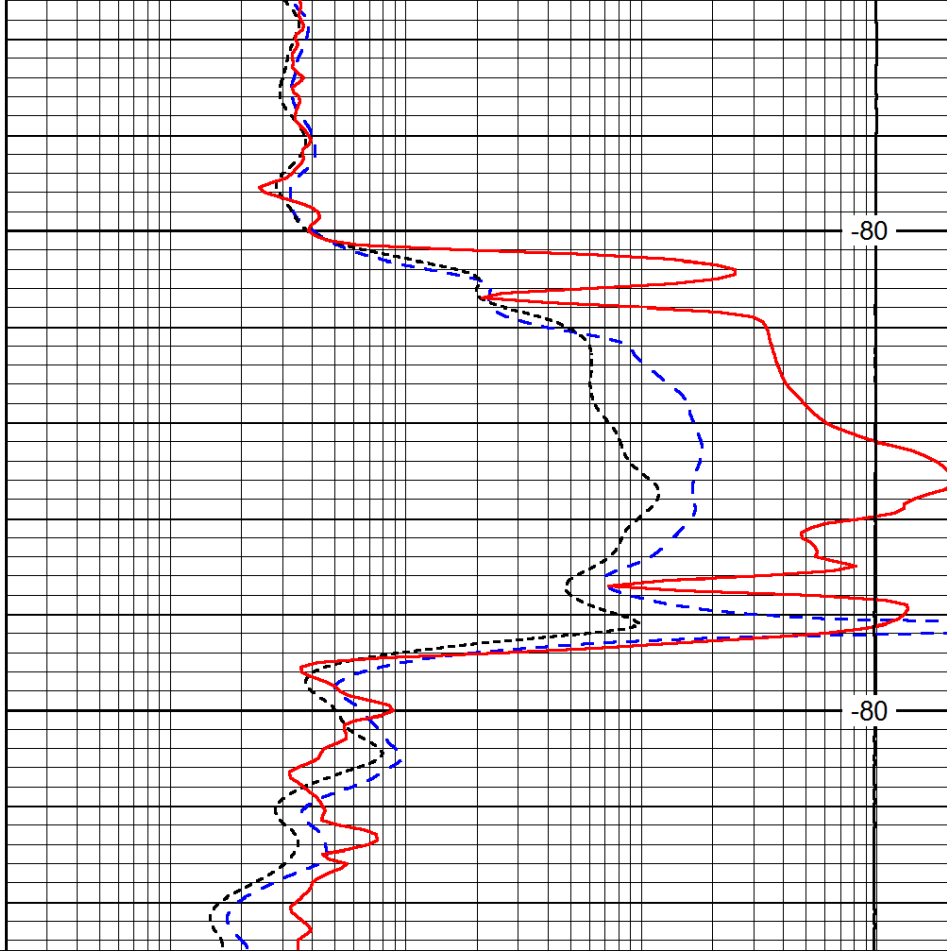




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-200	SP (mV)	0
-160	Rxo / Rt	40

1250

1300



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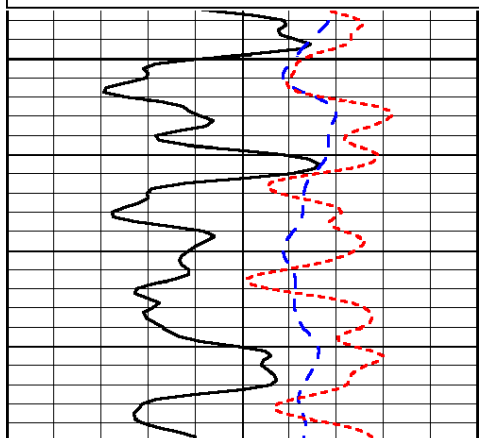
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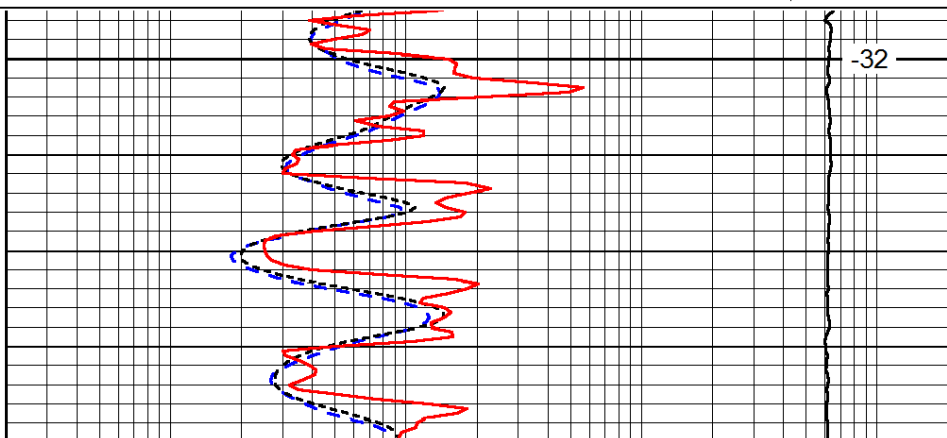
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0.2	Medium Resistivity	2000
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15000	Line Tension	0

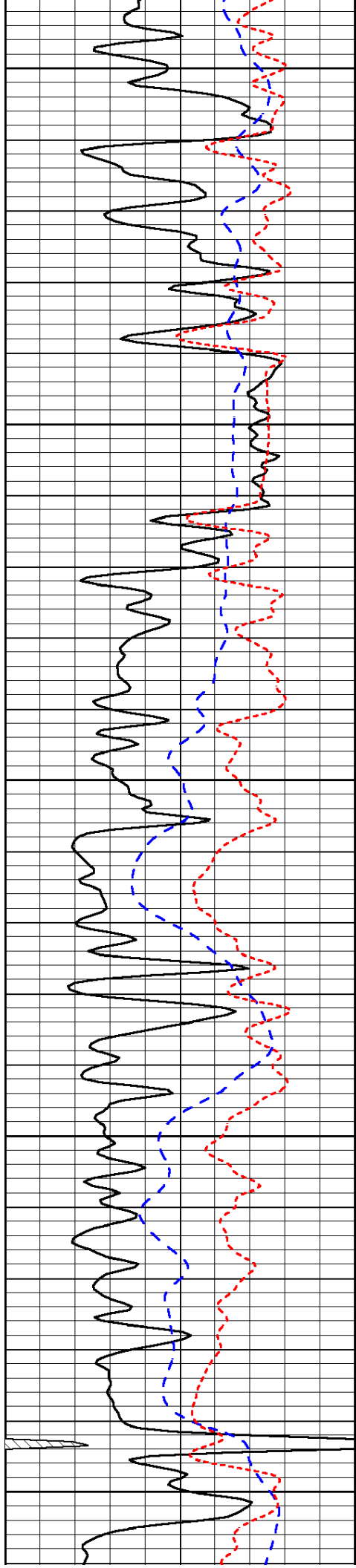
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2900



-32



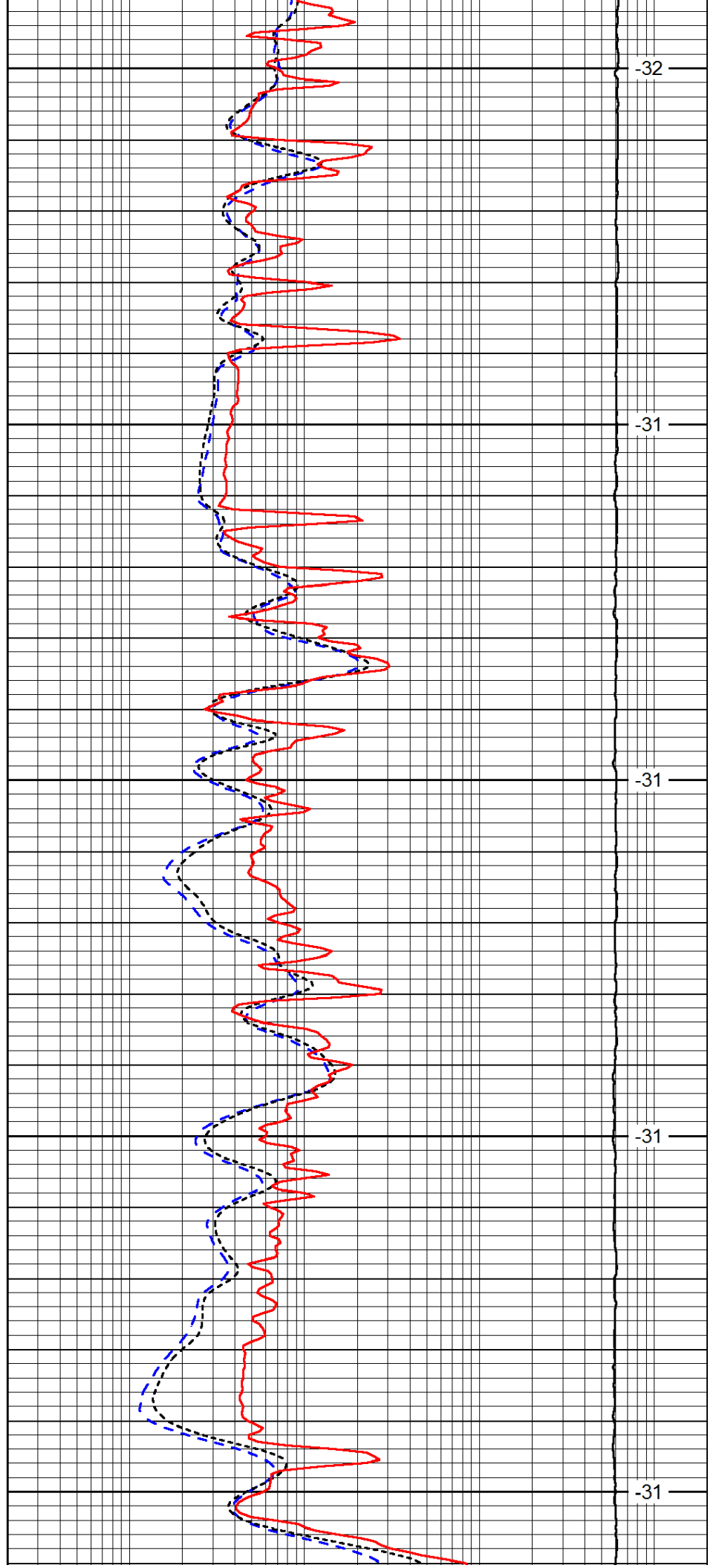
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3000

3050

3100

3150



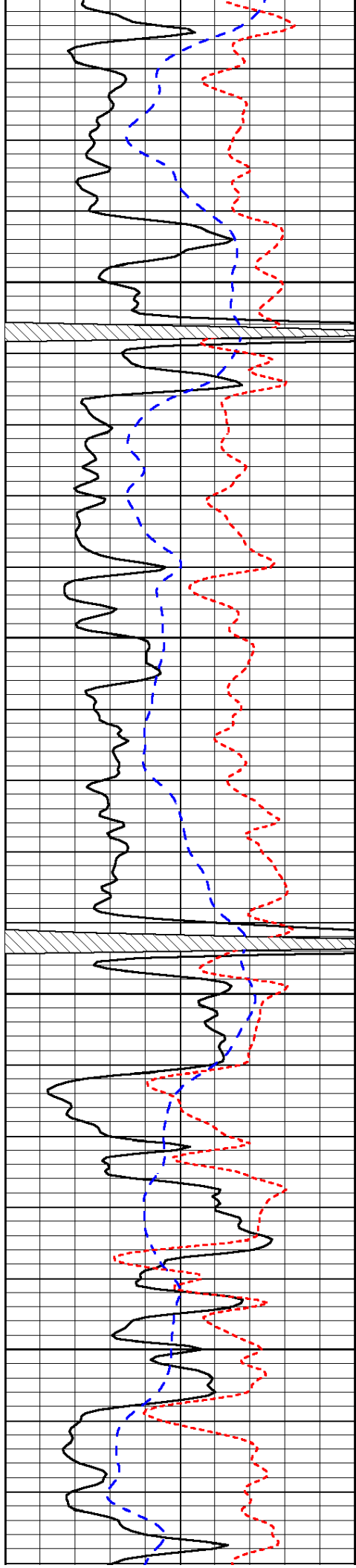
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-31

-31

-31

-31

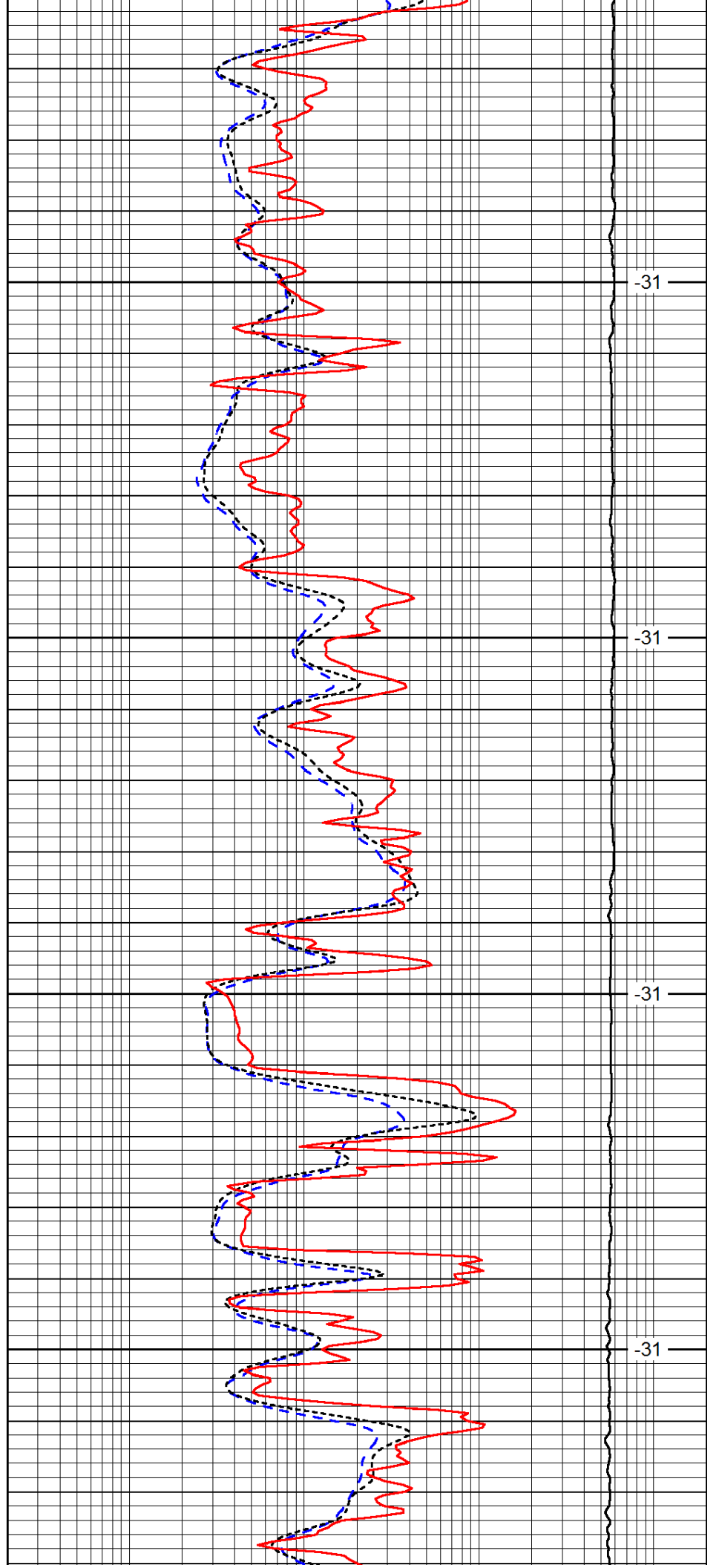


3200

3250

3300

3350

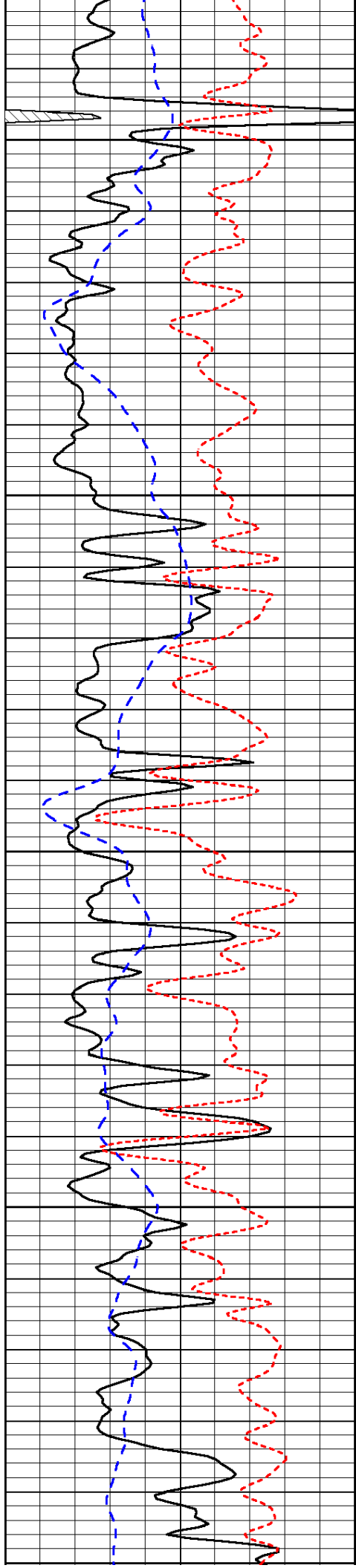


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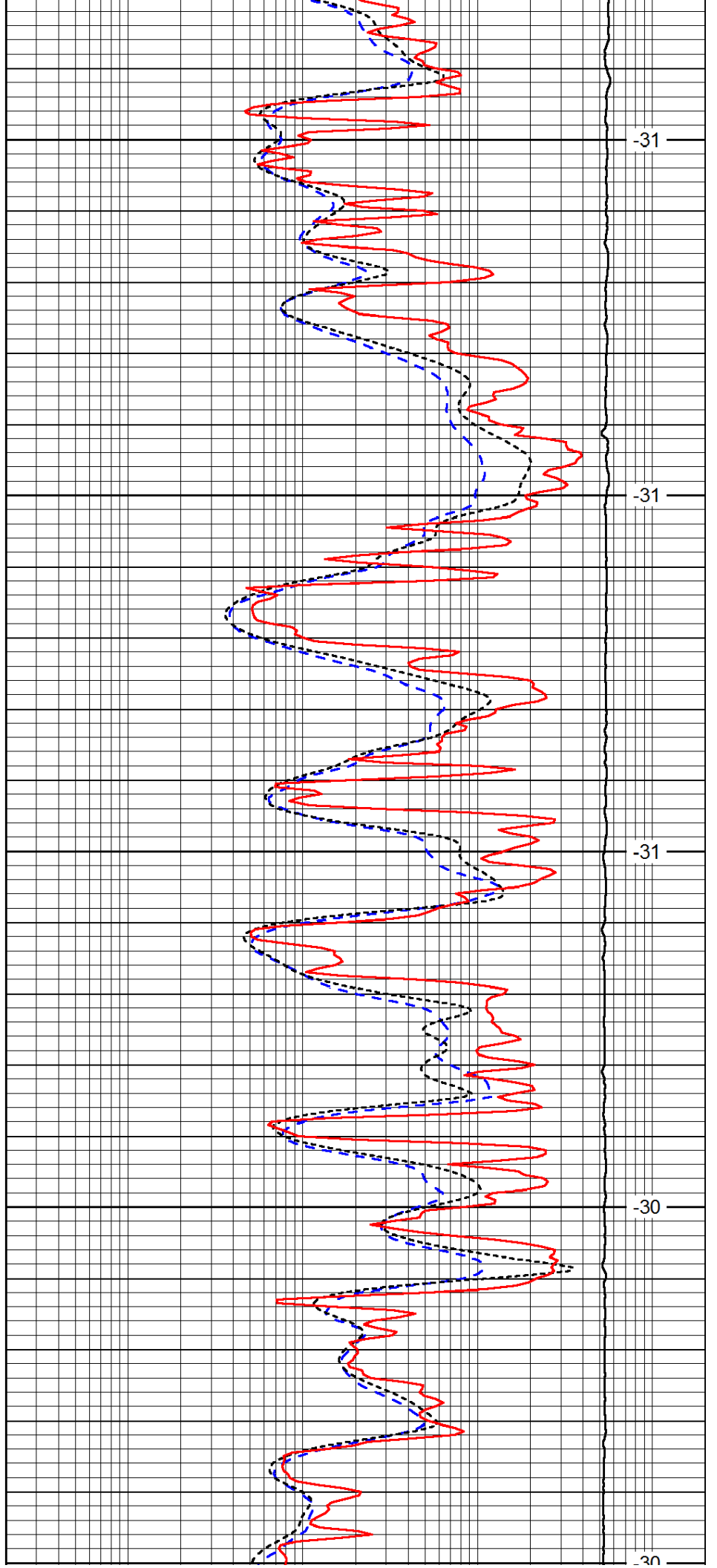
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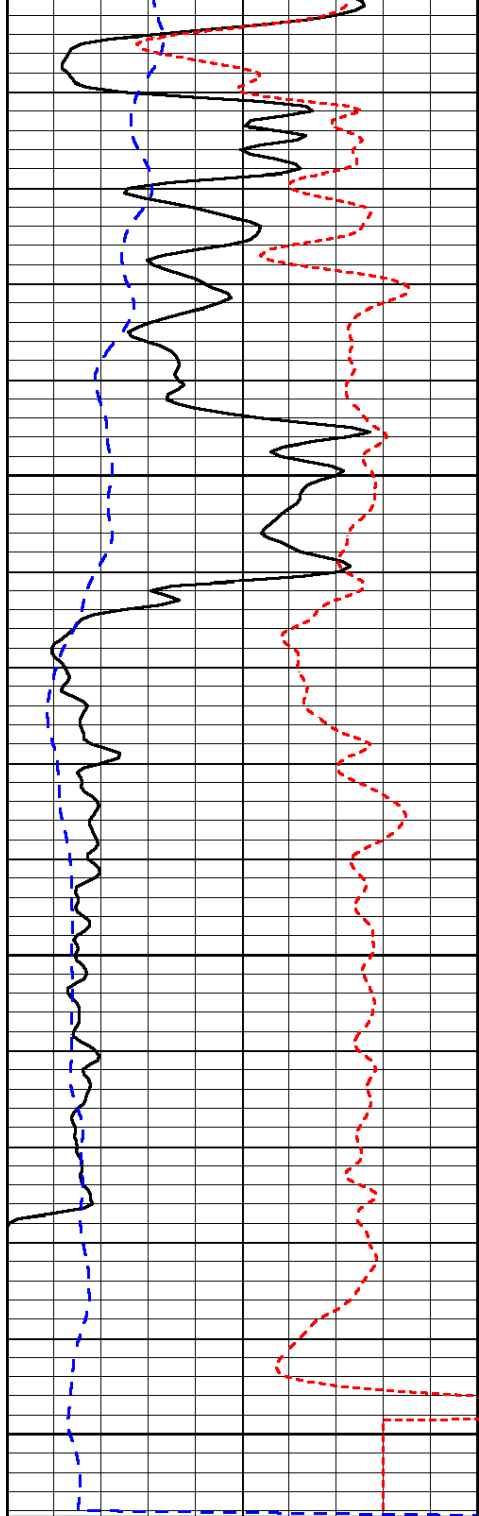
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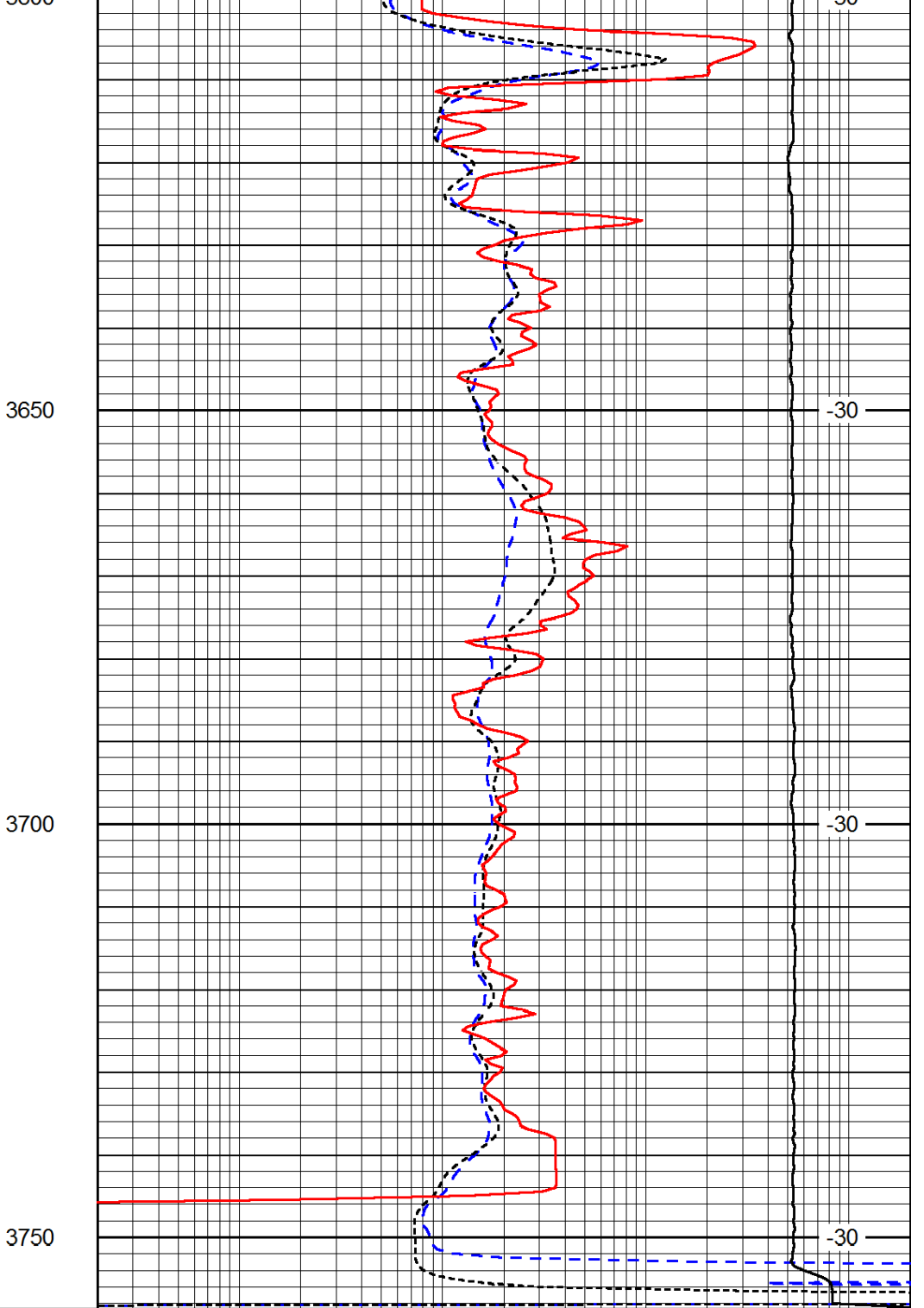
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3500  
3550  
3600



-31  
-31  
-31  
-30  
-30



0	Gamma Ray	150
-200	SP (mV)	0
-160	Rxo / Rt	40



0.2	Deep Resistivity	2000
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
15000	Line Tension	0

LSPD





DIGITAL LOG (785) 625-3858

Dual Compensated Porosity Log

15-051-26,287-00-00

API No. 15-051-26,287-00-00  
 Company TDI, Inc.  
 Well Willie No.1  
 Field Reichert  
 County Ellis  
 State Kansas  
 Location 500' FSL & 465' FEL  
 Sec: 9 Twp: 15S Rge: 19W  
 Permanent Datum Ground Level Elevation 2033  
 Log Measured From Kelly Bushing 10 Ft. Above Perm. Datum  
 Drilling Measured From Kelly Bushing  
 Date 5/10/2012  
 Run Number One  
 Type Log CNL / CDL  
 Depth Driller 3750  
 Depth Logger 3753  
 Bottom Logged Interval 3732  
 Top Logged Interval 2900  
 Type Fluid In Hole Chemical  
 Salinity, PPM CL 2,900  
 Density 9.2  
 Level Full  
 Max. Rec. Temp. F 114  
 Operating Rig Time 3 1/2 Hours  
 Equipment -- Location 17 Hays  
 Recorded By C. Desaire  
 Witnessed By Tom Denning  
 Other Services  
 DIL  
 MEL  
 Elevation  
 K.B. 2043  
 D.F.  
 G.L. 2033

Borehole Record				Casing Record			
Run No.	Bit	From	To	Size	Wgt.	From	To
1	12.25	00	214	8.625	24#	00	214
2	7.875	214	3750				

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

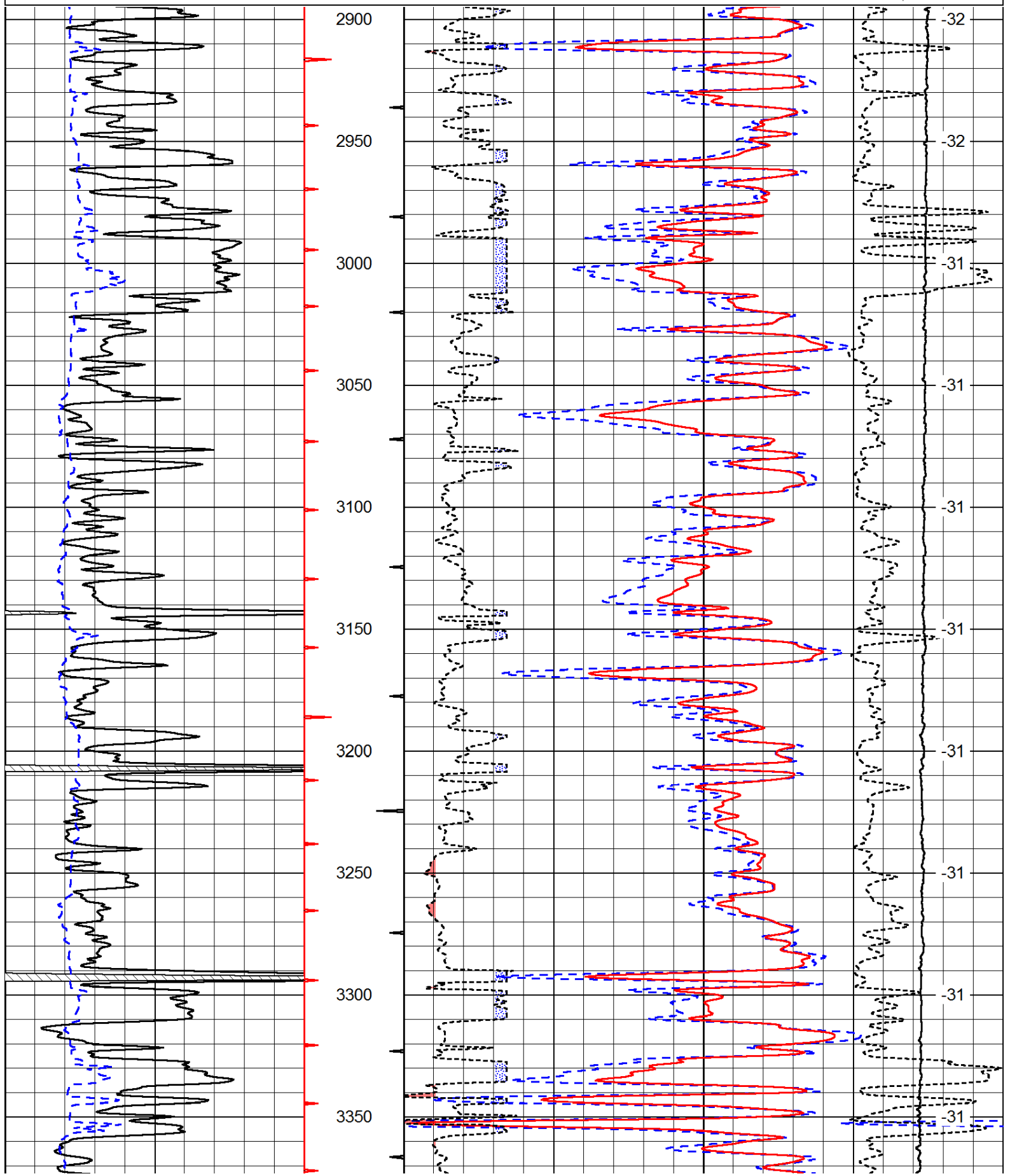
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 (785) 625-3858

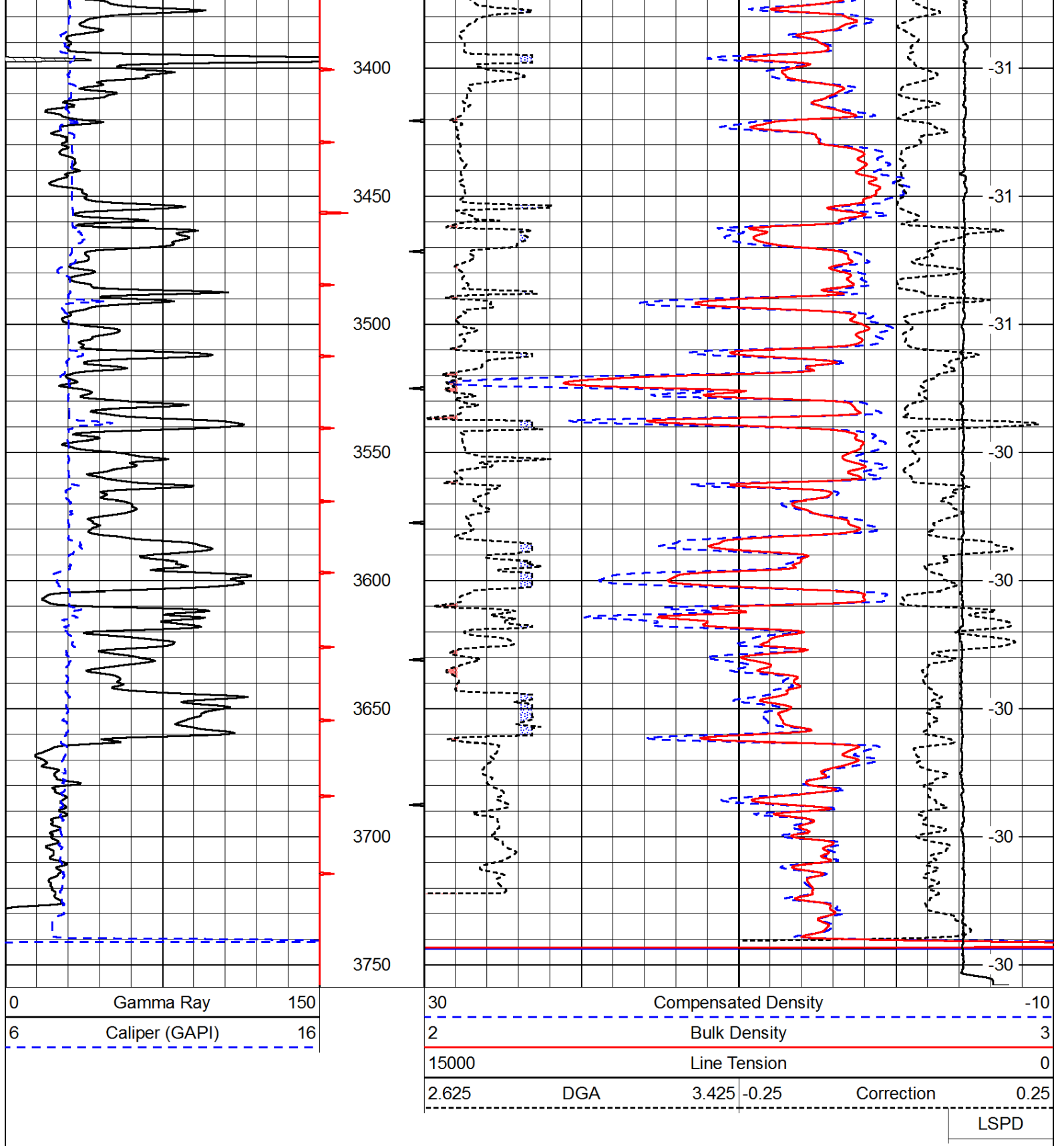
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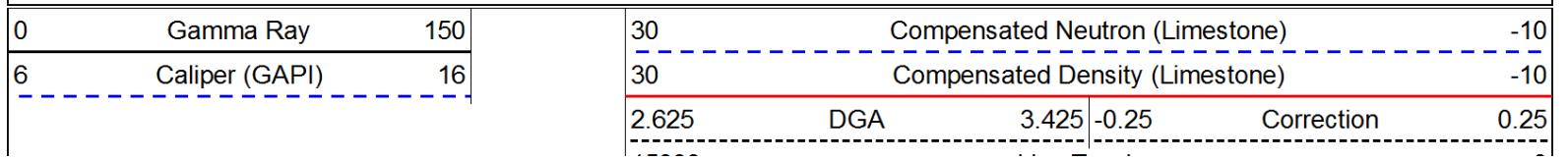
0	Gamma Ray	150
6	Caliper (GAPI)	16

30	Compensated Density		-10
2	Bulk Density		3
15000	Line Tension		0
2.625	DGA	3.425	-0.25
			Correction
			LSPD

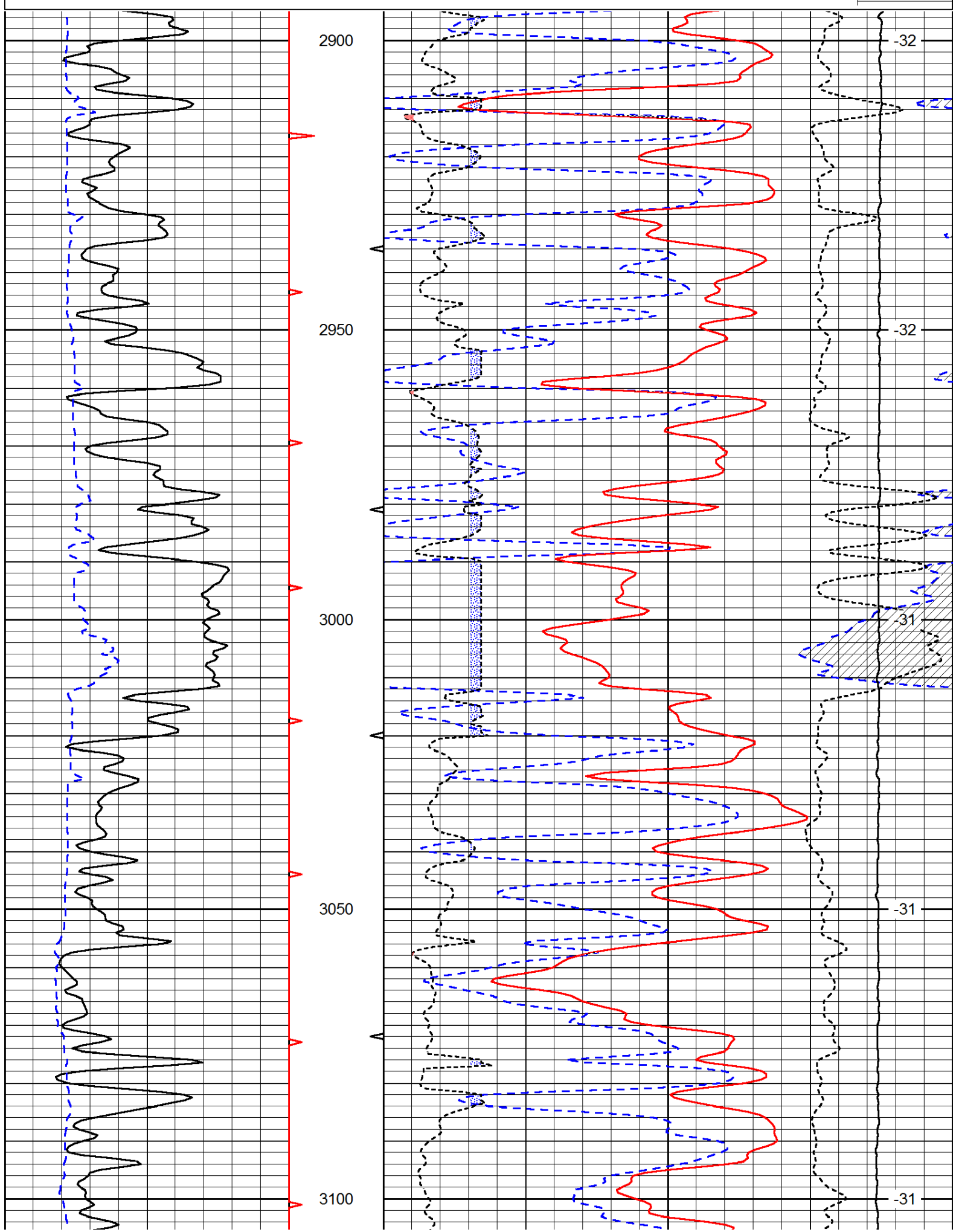


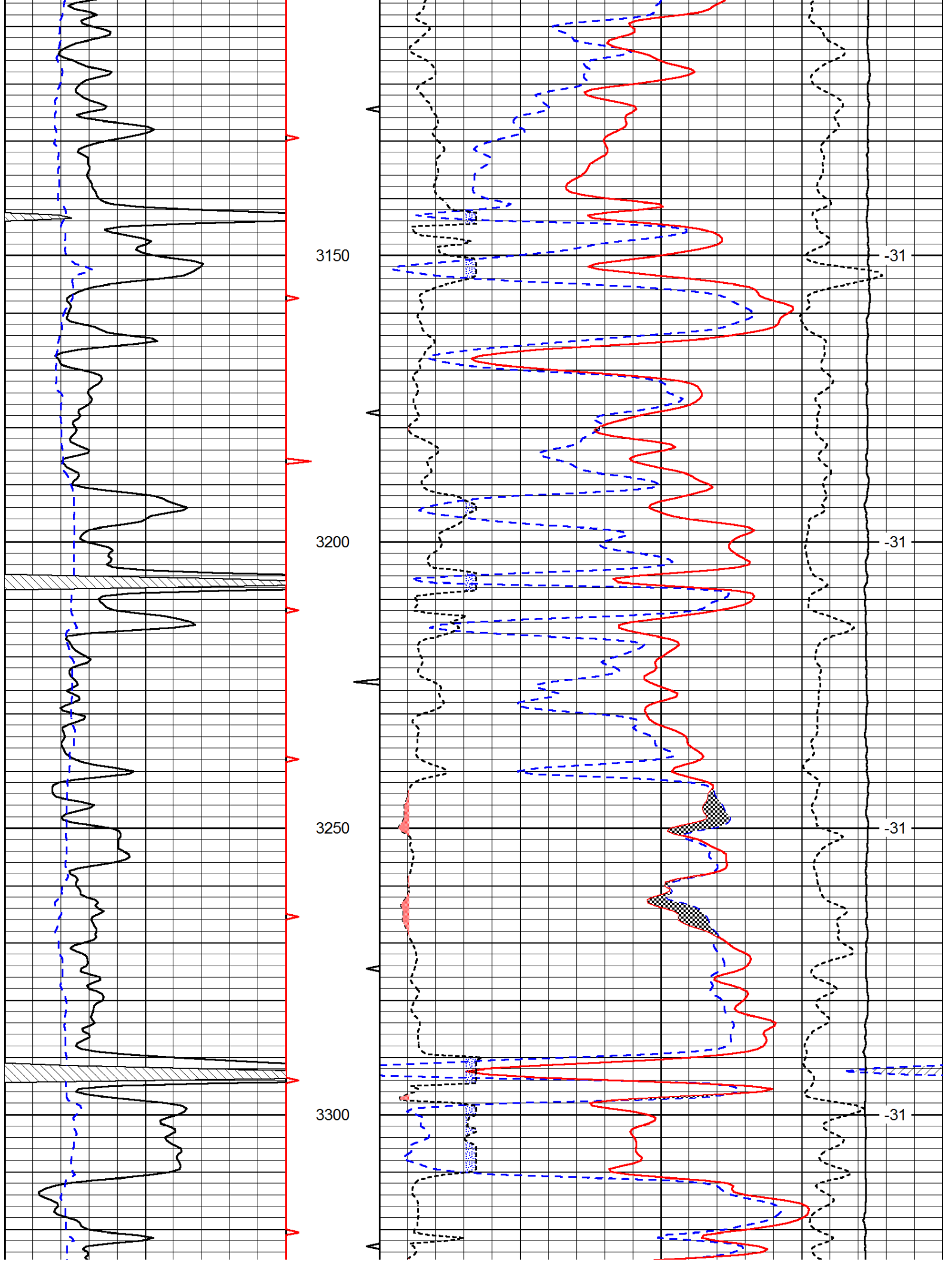


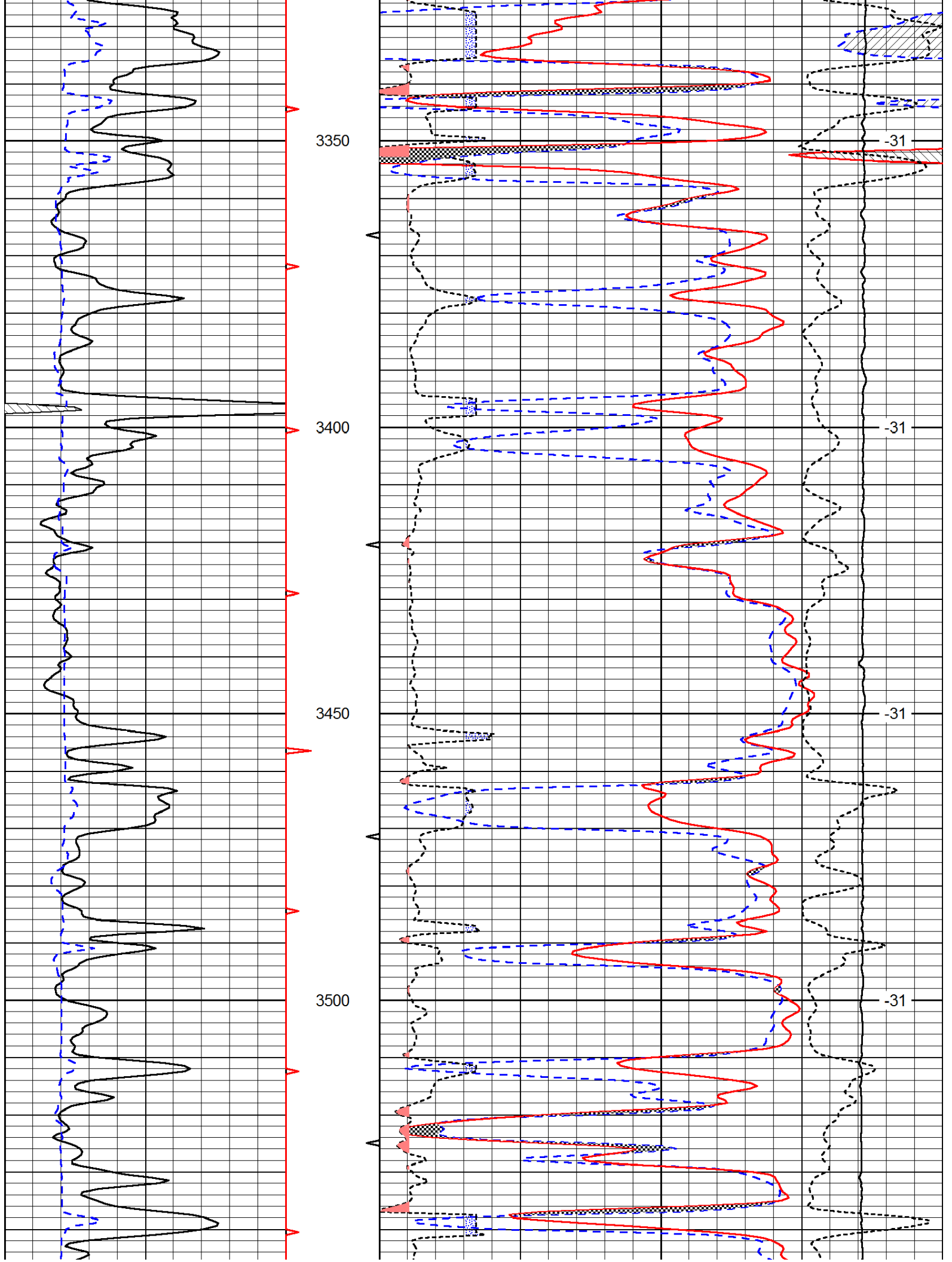
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 Charted by: Depth in Feet scaled 1:240

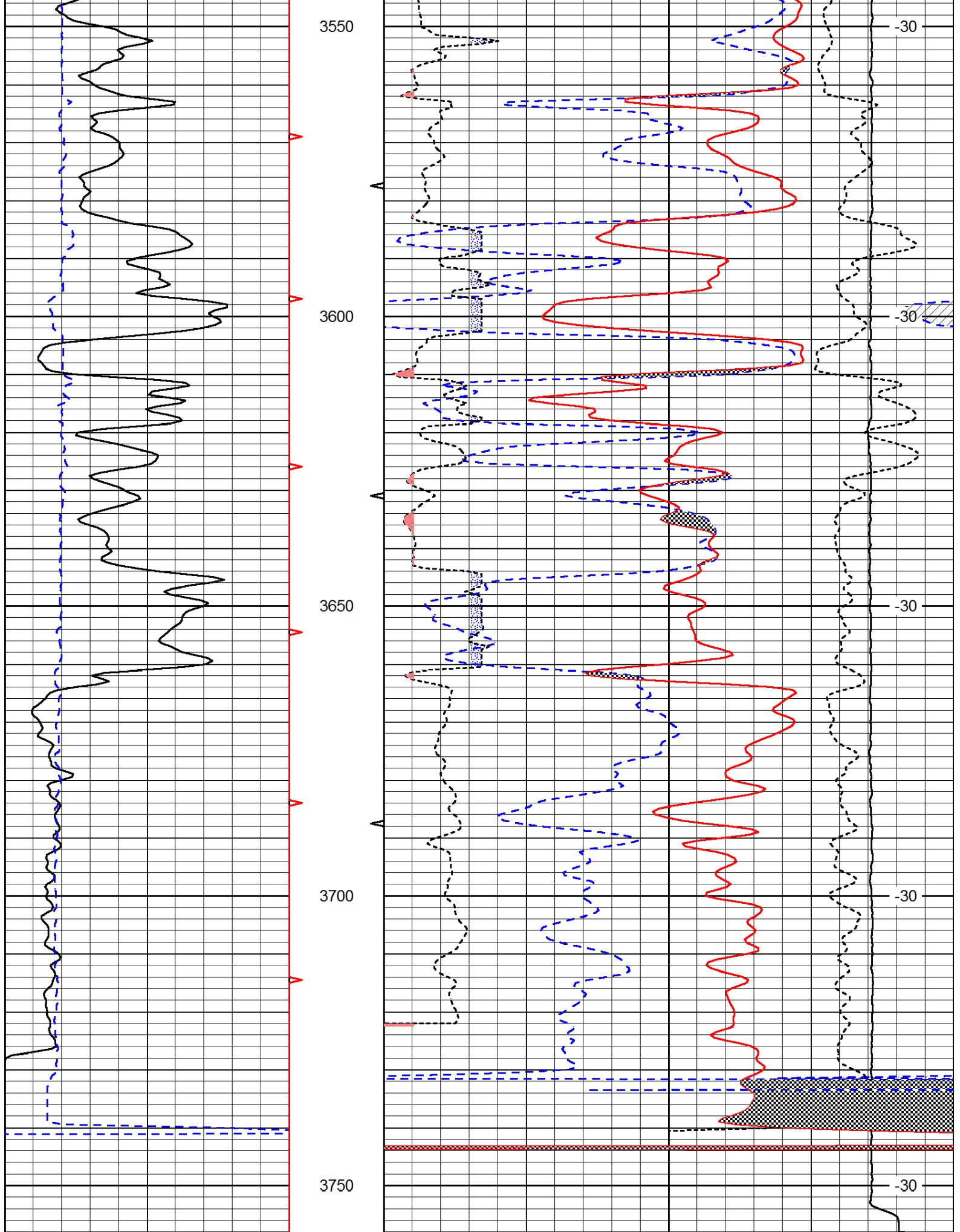


LSPD









0 Gamma Ray 150  
 0 Caliper (CAD) 10

30 Compensated Neutron (Limestone) 10  
 20 Compensated Density (Limestone) 40

6 Caliper (GAPI) 16

30	Compensated Density (Limestone)			-10	
2.625	DGA	3.425	-0.25	Correction	0.25
15000	Line Tension				0

LSPD





DIGITAL LOG (785) 625-3858

Microresistivity Log

15-051-26,287-00-00

API No.

Company TDI, Inc.

Well Willie No.1

Field Reichert

County Eljis State

Kansas

Location 500' FSL & 465' FEL

Other Services  
CNL/CDL  
DIL

Sec: 9 Twp: 15S Rge: 19W

Permanent Datum Ground Level Elevation 2033  
Log Measured From Kelly Bushing 10 Ft. Above Perm. Datum  
Drilling Measured From Kelly Bushing

Elevation

K.B. 2043  
D.F.  
G.L. 2033

Date	5/10/2012	
Run Number	Two	
Depth Driller	3750	
Depth Logger	3753	
Bottom Logged Interval	3752	
Top Log Interval	2900	
Casing Driller	8.625 @ 214	
Casing Logger	214	
Bit Size	7.875	
Type Fluid in Hole	Chemical	
Salinity, ppm CL	2,900	
Density / Viscosity	9.2 45	
pH / Fluid Loss	10.5 7.6	
Source of Sample	Flowline	
Rm @ Meas. Temp	1.45 @ 70	
Rmf @ Meas. Temp	1.09 @ 70	
Rmc @ Meas. Temp	1.96 @ 70	
Source of Rmf / Rmc	Charts	
Rm @ BHT	.89 @ 114	
Operating Rig Time	3 1/2 Hours	
Max Rec. Temp. F	114	
Equipment Number	17	
Location	Hays	
Recorded By	C. Desaire	
Witnessed By	Tom Denning	Herb Deines

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Thank you for using Log-Tech, Inc.  
(785) 625-3858

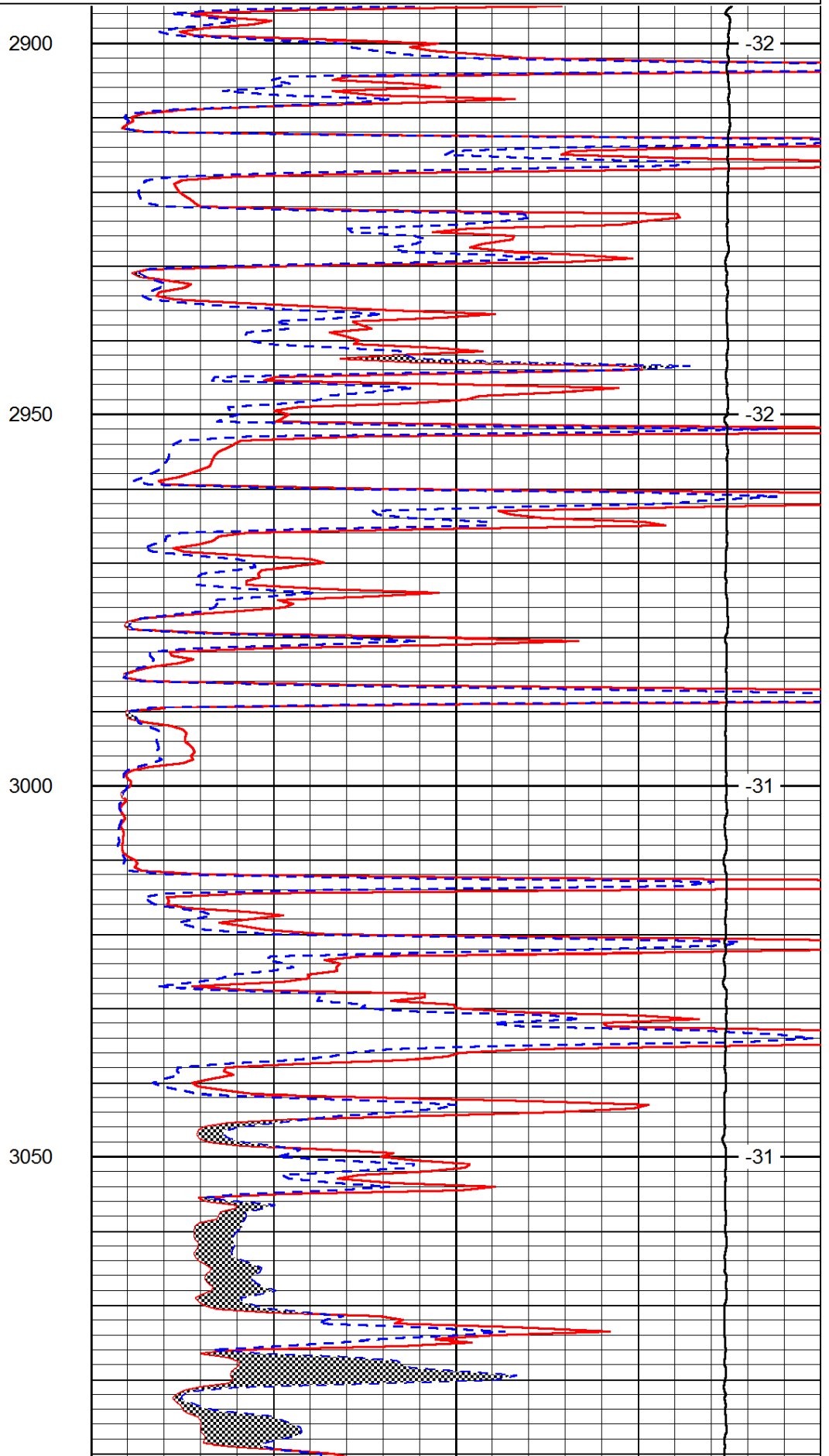
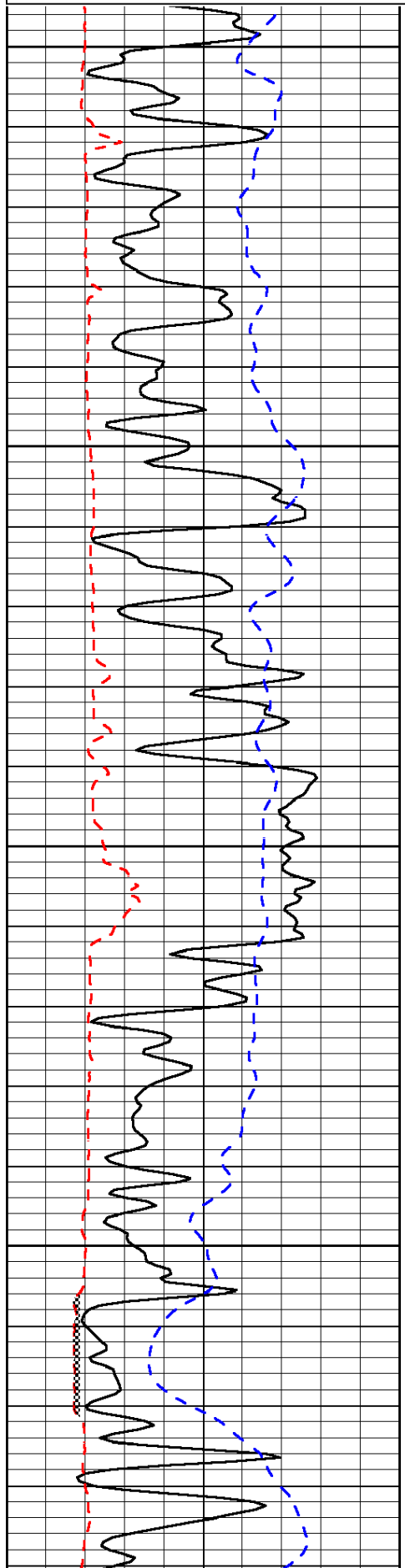
Antonino KS, 2 W, 2 S, W Into

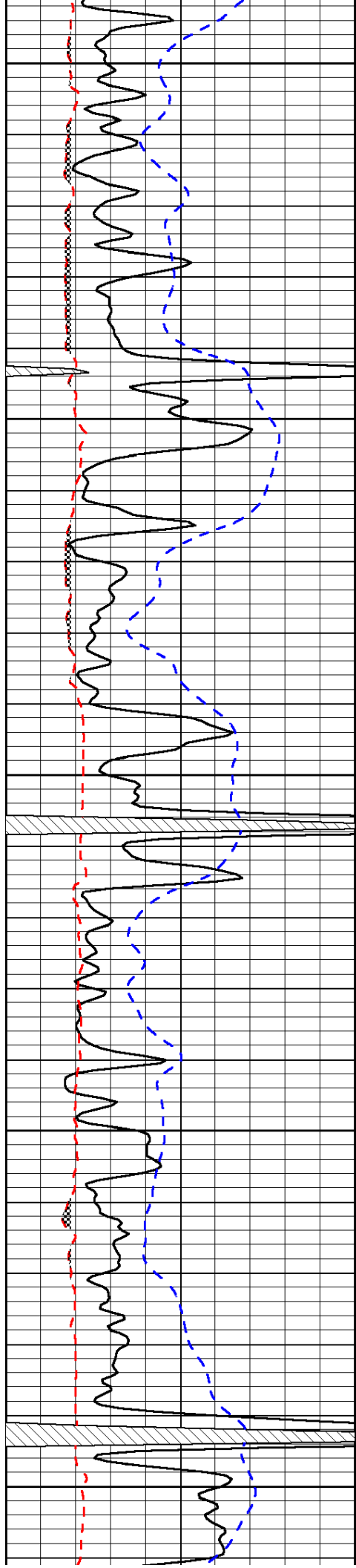
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 Dataset Pathname: dil\tdistk  
 Presentation Format: micro  
 Dataset Creation: Thu May 10 13:59:57 2012  
 Charted by: Depth in Feet scaled 1:240

0	Gamma Ray	150
6	Micro Log Caliper (GAPI)	16
-200	SP (mV)	0

0	Micro Inverse 1 X 1	40
0	Micro Normal 2"	40
15000	Line Weight	0

LSPD





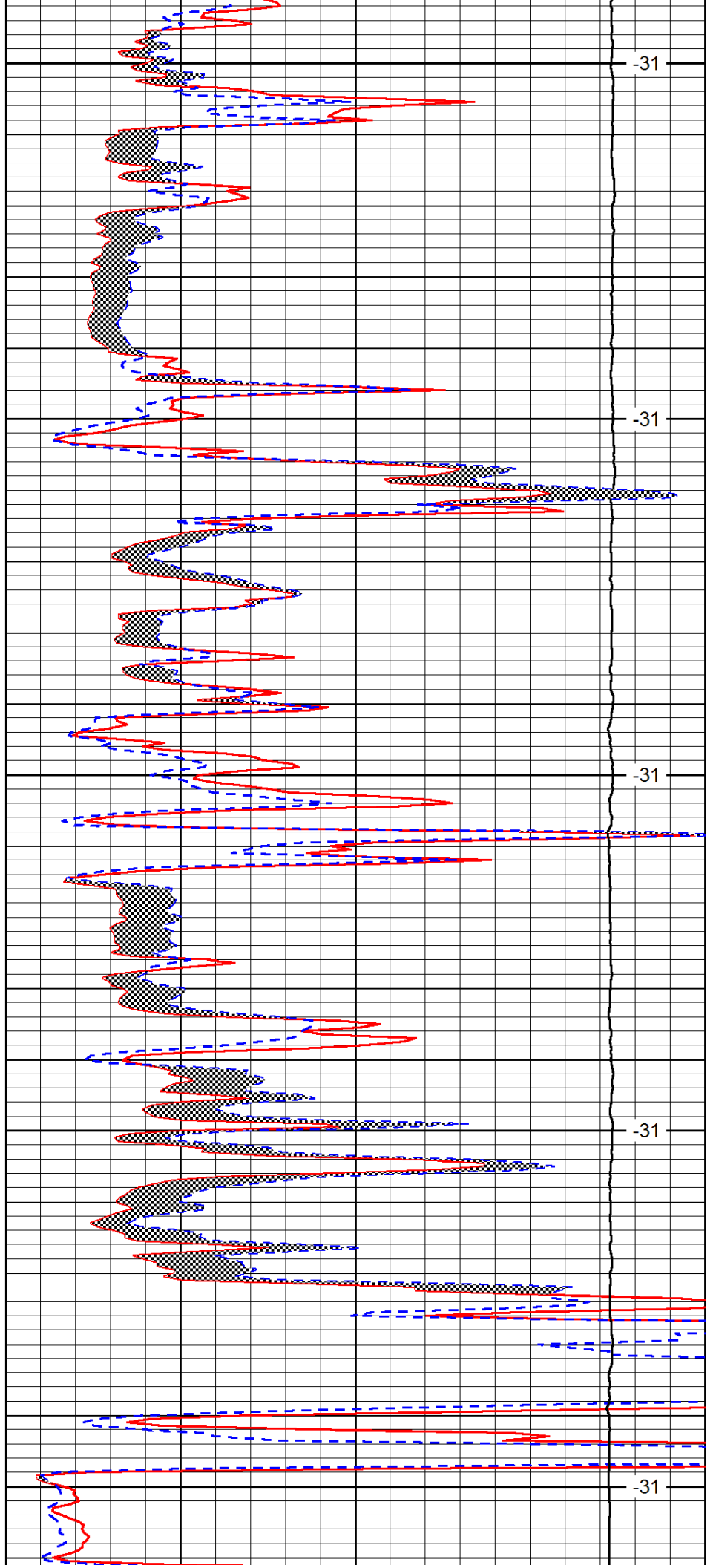
3100

3150

3200

3250

3300



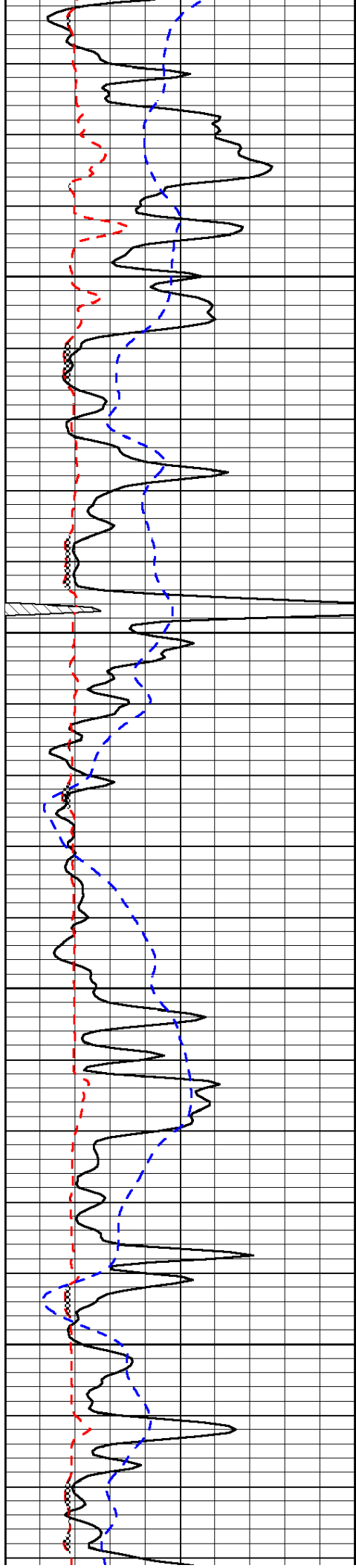
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-31

-31

-31

-31

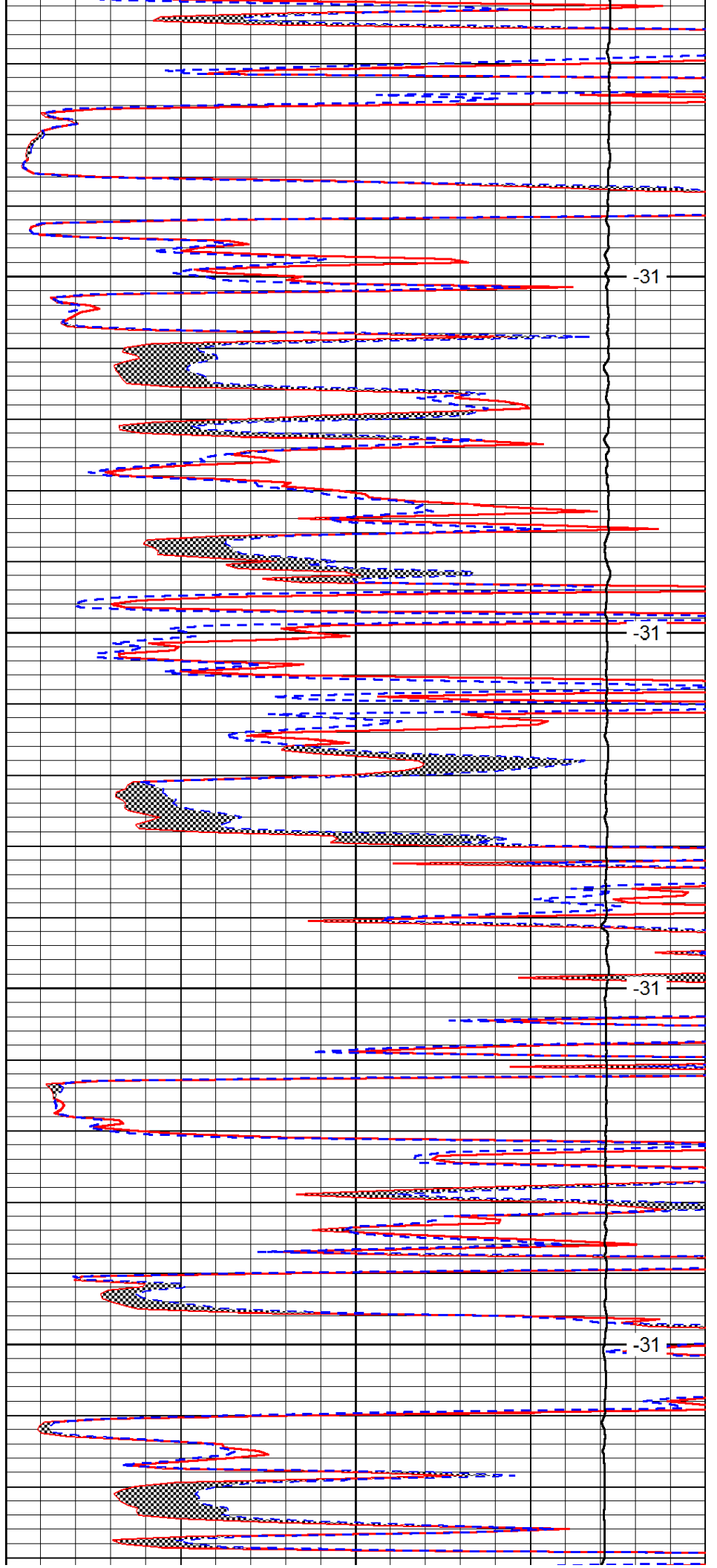


3350

3400

3450

3500

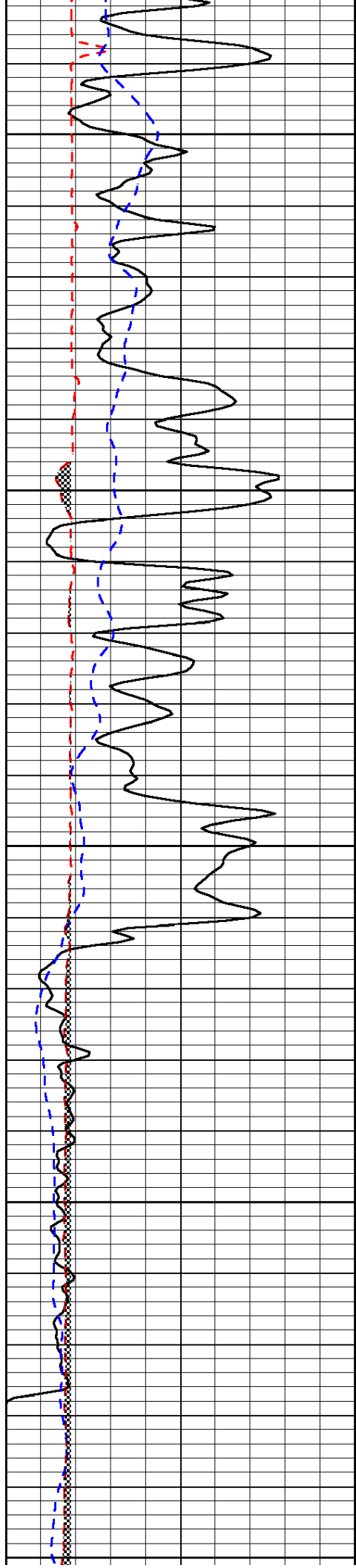


-31

-31

-31

-31



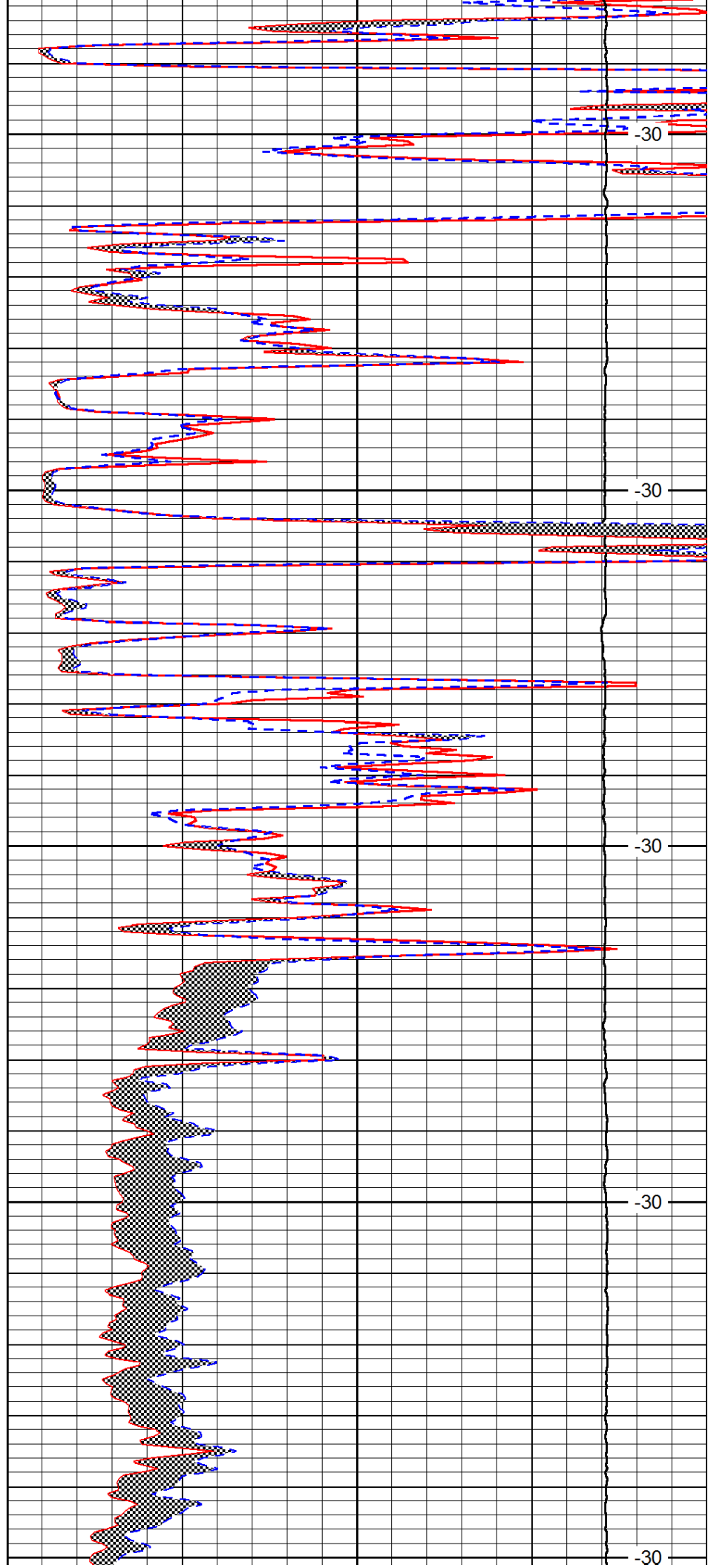
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3600

3650

3700

3750



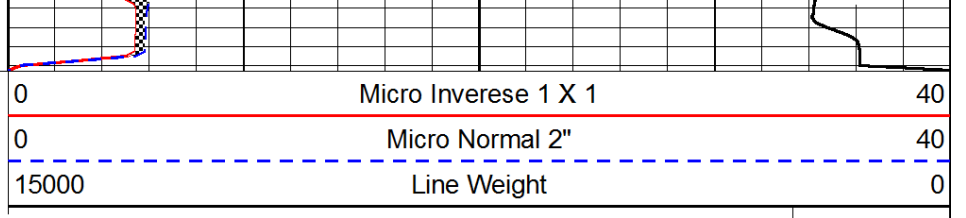
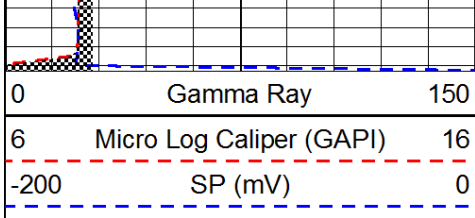
-30

-30

-30

-30

-30



LSPD

Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Ward Loyd, Commissioner  
Thomas E. Wright, Commissioner

Sam Brownback, Governor

June 27, 2012

Tom Denning  
TDI, Inc.  
1310 BISON RD  
HAYS, KS 67601-9696

Re: ACO1  
API 15-051-26287-00-00  
Willie 1  
SE/4 Sec.09-15S-19W  
Ellis County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Tom Denning