KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1047732

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 3842
Name: Larson Engineering, Inc. dba Larson Operating Company
Address 1: 562 W STATE RD 4
Address 2:
City: OLMITZ State: KS Zip: 67564 + 8561
Contact Person: Thomas Larson
Phone: (620) 653-7368
CONTRACTOR: License # 33935
Name: H. D. Drilling, LLC
Wellsite Geologist: Robert Lewellyn
Purchaser:

Designate Type of Completion:

- [x] New Well
- [ ] Re-Entry
- [ ] Workover

- [ ] Oil
- [ ] WSW
- [ ] SWD
- [ ] SIOW
- [ ] Gas
- [x] 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
- [ ] Conv. to GSW
- [ ] Plug Back: Plug Back Total Depth
- [ ] Commingled Permit #:
- [ ] Dual Completion Permit #:
- [ ] SWD Permit #:
- [ ] ENHR Permit #:
- [ ] GSW Permit #:

8/9/2010	8/23/2010	8/23/2010
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-101-22248-00-00
Spot Description:
_ - NE - NE - NW Sec. 21 Twp. 17 S. R. 28 [ ] East [x] West
330 Feet from [x] North / [ ] South Line of Section
2310 Feet from [ ] East / [x] West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- [ ] NE
- [x] NW
- [ ] SE
- [ ] SW

County: Lane
Lease Name: Cairns Well #: 1-21
Field Name:
Producing Formation: N/A
Elevation: Ground: 2758 Kelly Bushing: 2765
Total Depth: 4624 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 256 Feet
Multiple Stage Cementing Collar Used? [ ] Yes [x] 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: 18000 ppm Fluid volume: 900 bbls
Dewatering method used: Evaporated

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

- [x] **Letter of Confidentiality Received**
  Date: 12/06/2010
- [x] **Confidential Release Date:** 12/05/2012
- [x] **Wireline Log Received**
- [x] **Geologist Report Received**
- [ ] **UIC Distribution**

ALT [ ] I [x] II [ ] III **Approved by:** NAOMI JAMES **Date:** 12/06/2010

Side Two

1047732

Operator Name: Larson Engineering, Inc. dba Larson Operating Company Lease Name: Cairns Well #: 1-21

Sec. 21 Twp. 17 S. R. 28 ☐ East ☑ West County: Lane

INSTRUCTIONS: Show important tops and base 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. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

Electric Log Submitted Electronically ☑ Yes ☐ No
(If no, Submit Copy)

List All E. Logs Run:

Dual Induction
Dual Comp Porosity
Microresistivity

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Attached	Attached	Attached

CASING RECORD ☐ New ☑ 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
Surface	12.25	8.625	20	256	Class A	175	2% Gel, 3% CC

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:
☐ Perforate
☐ Protect Casing
☐ Plug Back TD
☐ Plug Off Zone

Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
-			
-			

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

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☑ Other *(Specify)* D & A

PRODUCTION INTERVAL:

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Cairns 1-21
Doc ID	1047732

Tops

Name	Top	Datum
Anhydrite	2138	+627
Base Anhydrite	2168	+597
Heebner Shale	3932	-1167
Lansing-KC	3970	-1205
Stark Shale	4227	-1462
Base KC	4304	-1539
Altamont	4355	-1590
Pawnee	4421	-1656
Fort Scott	4477	-1712
Cherokee	4501	-1736
Mississippian	4560	-1795

ALLIED CEMENTING CO., LLC. 041849

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31
RUSSELL, KANSAS 67665

SERVICE POINT: Russell KS

DATE 8-10-10	SEC. 20	TWP. 18	RANGE 30	CALLED OUT	ON LOCATION	JOB START 1:00am	JOB FINISH 2:00pm
LEASE Cairns	WELL # 1-21	LOCATION Dighton KS 5 North 1East				COUNTY Lane	STATE KS
OLD OR NEW (Circle one)		1 North 1½ East into					

CONTRACTOR H-D Rig #3
TYPE OF JOB Surface
HOLE SIZE 12 ¼ T.D. 259'
CASING SIZE 8⅝ DEPTH 259'
TUBING SIZE DEPTH
DRILL PIPE DEPTH
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG. 15'
PERFS.
DISPLACEMENT 15.5 Bbl

OWNER

CEMENT (used 195 com. Total)

AMOUNT ORDERED 175 com 3% cc 2% Gel
20 com 3% cc 2% Gel

COMMON	195	@ 13.50	2632.50
POZMIX		@	
GEL	3	@ 20.25	60.75
CHLORIDE	7	@ 51.50	360.50
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING	195	@ 2.25	438.75
MILEAGE	10/sk/mile		604.50
		TOTAL	4,097.00

EQUIPMENT

PUMP TRUCK CEMENTER John Roberts
398 HELPER Glenn
BULK TRUCK
DRIVER Bob
BULK TRUCK
DRIVER

REMARKS:

Est. Circulation
Mix 175 sk cement
Displace w/ 15.5 Bbl H2O
Cement did not circulate. Ran 1" and tag
Cement 30' down. Mixed 20 sk to bring
cement to surface. Thank You!

SERVICE

DEPTH OF JOB			
PUMP TRUCK CHARGE			991.00
EXTRA FOOTAGE		@	
MILEAGE	31	@ 7.00	217.00
MANIFOLD		@	
		@	
		@	
		TOTAL	1208.00

CHARGE TO: Larson Engineering
STREET
CITY STATE ZIP

PLUG & FLOAT EQUIPMENT

	@
	@
	@
	@
	@
TOTAL	

To Allied Cementing Co., LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any)
TOTAL CHARGES [redacted]
DISCOUNT [redacted] IF PAID IN 30 DAYS

PRINTED NAME DeWayne Tresner
SIGNATURE [signature]

ALLIED CEMENTING CO., LLC. 038981

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31
RUSSELL, KANSAS 67665

SERVICE POINT: Oakley KS

DATE	SEC.	TWP.	RANGE	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
9-23-10	21	17S	28W		9:00am	11:30am	12:00pm
LEASE Carns	WELL # 1-21		LOCATION Brighton 5N-1E			COUNTY Lane	STATE KS
OLD OR (NEW) (Circle one)			1 1/2N-1E-S				

CONTRACTOR H-D #3
TYPE OF JOB PTA
HOLE SIZE 7 7/8 T.D. 4619'
CASING SIZE DEPTH
TUBING SIZE DEPTH
DRILL PIPE 4 1/2 DEPTH 2160'
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG.
PERFS.
DISPLACEMENT

OWNER

CEMENT

AMOUNT ORDERED 280 60/40 4%gel 1/4# Closeal

EQUIPMENT

PUMP TRUCK CEMENTER Tuzzy
431 HELPER Kelly
BULK TRUCK
347 DRIVER Jerry
BULK TRUCK
DRIVER

COMMON	168	@ 13.65	2293.20
POZMIX	112	@ 6.60	85.120
GEL	10	@ 20.40	204.00
CHLORIDE		@	
ASC		@	
		@	
Closeal	70	@ 2.45	171.50
		@	
		@	
		@	
		@	
		@	
		@ 10	
HANDLING	293	@ 2	615.30
MILEAGE	.10 x sk x mile		1172.00
		TOTAL	$3307.30

REMARKS:

50 sk @ 2160'
80 sk @ 1320'
50 sks @ 660'
50 sks @ 270'
20 sks @ 60'
30 sks in RH
Job complete @ 12:00pm
Thanks Tuzzy & crew

SERVICE

DEPTH OF JOB	2160'		
PUMP TRUCK CHARGE			1000.00
EXTRA FOOTAGE		@	
MILEAGE	40	@ 7.00	280.00
MANIFOLD		@	
		@	
		@	
		TOTAL	1280.00

CHARGE TO: Larson Engineering
STREET
CITY STATE ZIP

PLUG & FLOAT EQUIPMENT

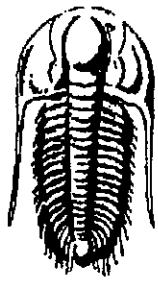
	@	
	@	
	@	
	@	
	@	
	TOTAL	

To Allied Cementing Co., LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any)
TOTAL CHARGES
DISCOUNT IF PAID IN 30 DAYS

PRINTED NAME LEWAYNE TRESNER

SIGNATURE Lewayne Tresner



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

S21-17-28 Lane, KS

Cairns #1-21

Start Date: 2010.08.16 @ 07:25:00
End Date: 2010.08.16 @ 12:39:00
Job Ticket #: 39595 DST #: 1

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39595 **DST#: 1**

Test Start: 2010.08.16 @ 07:25:00

GENERAL INFORMATION:

Formation: **Lansing 'E'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:22:54
Time Test Ended: 12:39:00

Test Type: Conventional Bottom Hole
Tester: Chuck Smith
Unit No: 37

Interval: 4022.00 ft (KB) To 4056.00 ft (KB) (TVD)
Total Depth: 4056.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

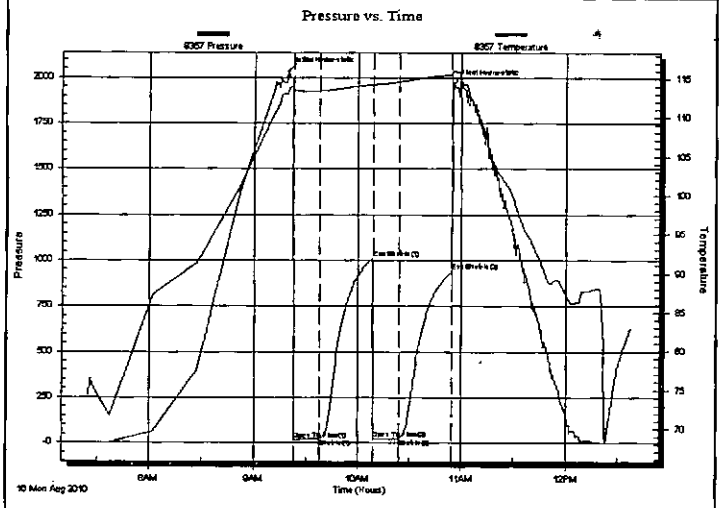
Reference Elevations: 2765.00 ft (KB)
2758.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8357 **Inside**

Press@RunDepth: 23.26 psig @ 4026.00 ft (KB)
Start Date: 2010.08.16 End Date: 2010.08.16
Start Time: 07:25:05 End Time: 12:38:59

Capacity: 8000.00 psig
Last Calib.: 2010.08.16
Time On Btm: 2010.08.16 @ 09:19:48
Time Off Btm: 2010.08.16 @ 10:55:36

TEST COMMENT: IF: 1/2" Blow died @ 14 min.
ISI: No return.
FF: No blow.
FSI: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2035.17	113.38	Initial Hydro-static
4	17.24	113.13	Open To Flow (1)
19	20.51	113.42	Shut-In(1)
49	1010.31	114.26	End Shut-In(1)
50	21.94	114.03	Open To Flow (2)
65	23.26	114.61	Shut-In(2)
95	939.75	115.51	End Shut-In(2)
96	1969.98	115.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OSM 100%M	0.05

Gas Rates

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

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39595 **DST#: 1**

Test Start: 2010.08.16 @ 07:25:00

Tool Information

Drill Pipe:	Length:	3883.00 ft	Diameter:	3.80 inches	Volume:	54.47 bbl	Tool Weight:		2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:		25000.00 lb
Drill Collar:	Length:	125.00 ft	Diameter:	2.25 inches	Volume:	0.61 bbl	Weight to Pull Loose:		70000.00 lb
					Total Volume:	55.08 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		13.50 ft					String Weight:	Initial	50000.00 lb
Depth to Top Packer:		4022.00 ft						Final	50000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		34.00 ft							
Tool Length:		61.50 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3995.50		
Shut In Tool	5.00			4000.50		
Hydraulic tool	5.00			4005.50		
Jars	5.00			4010.50		
Safety Joint	2.50			4013.00		
Packer	5.00			4018.00	27.50	Bottom Of Top Packer
Packer	4.00			4022.00		
Stubb	1.00			4023.00		
Perforations	3.00			4026.00		
Recorder	0.00	8357	Inside	4026.00		
Recorder	0.00	6751	Outside	4026.00		
Perforations	27.00			4053.00		
Bullnose	3.00			4056.00	34.00	Bottom Packers & Anchor
Total Tool Length:	**61.50**					

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39595 **DST#: 1**

Test Start: 2010.08.16 @ 07:25:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	52.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.54 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1900.00 ppm				
Filter Cake:	2.00 inches				

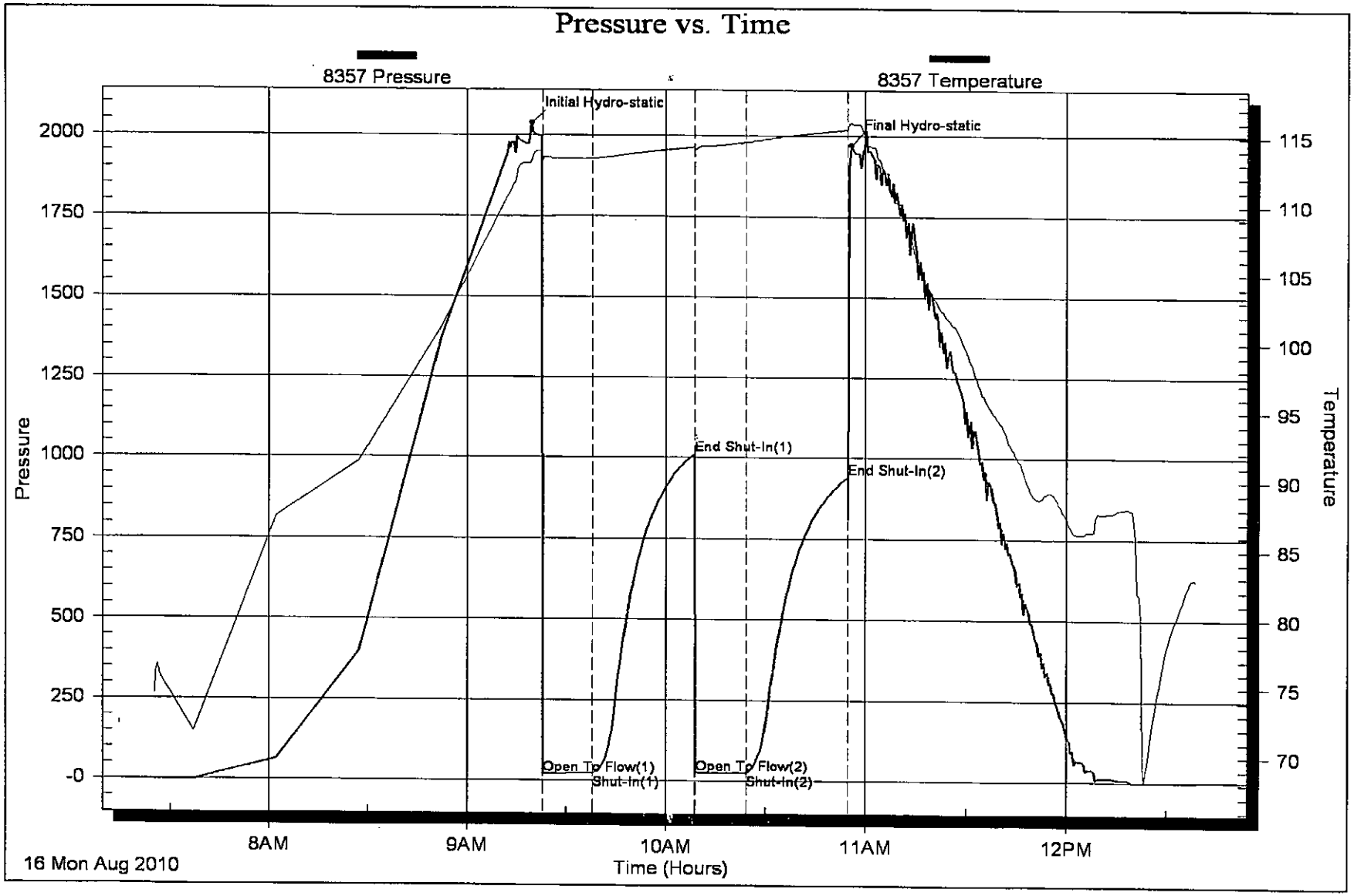
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OSM 100%M	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:


Pressure vs. Time
8357 Pressure
8357 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
2000
1750
1500
1250
1000
750
500
250
-0
115
110
105
100
95
90
85
80
75
70
8AM
9AM
10AM
11AM
12PM
Time (Hours)
16 Mon Aug 2010

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

S21-17-28 Lane, KS

Cairns #1-21

Start Date: 2010.08.17 @ 02:48:00
End Date: 2010.08.17 @ 08:43:06
Job Ticket #: 39596 DST #: 2

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39596 **DST#: 2**

Test Start: 2010.08.17 @ 02:48:00

GENERAL INFORMATION:

Formation: **Lansing 'H'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:58:42
Time Test Ended: 08:43:06

Test Type: Conventional Bottom Hole
Tester: Chuck Smith
Unit No: 37

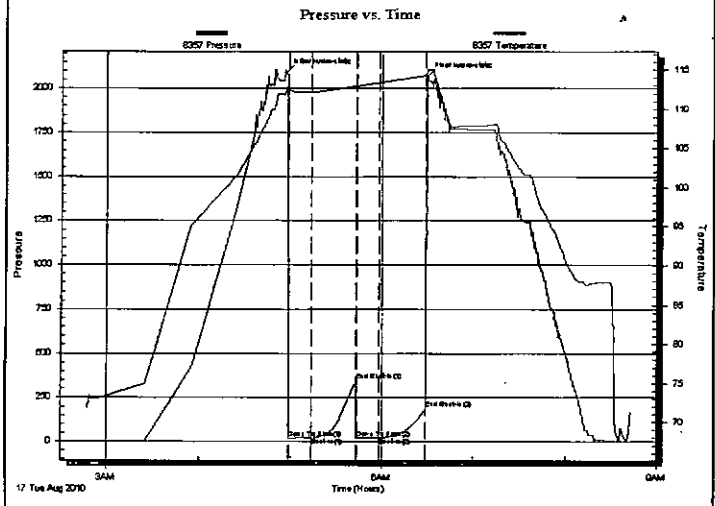
Interval: 4120.00 ft (KB) To 4155.00 ft (KB) (TVD)
Total Depth: 4155.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2765.00 ft (KB)
2758.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8357 **Inside**
Press@RunDepth: 20.62 psig @ 4124.00 ft (KB)
Start Date: 2010.08.17 End Date: 2010.08.17
Start Time: 02:48:05 End Time: 08:43:06

Capacity: 8000.00 psig
Last Calib.: 2010.08.17
Time On Btm: 2010.08.17 @ 04:56:48
Time Off Btm: 2010.08.17 @ 06:29:48

TEST COMMENT: IF: 1/2" Blow died @ 12 min.
ISI: No return.
FF: No blow.
FSI: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2087.44	112.32	Initial Hydro-static
2	18.29	111.91	Open To Flow (1)
17	19.79	112.18	Shut-In(1)
47	345.10	113.00	End Shut-In(1)
47	19.16	112.91	Open To Flow (2)
62	20.62	113.41	Shut-In(2)
93	184.96	114.31	End Shut-In(2)
93	2066.26	115.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M 100%M	0.02

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39596 **DST#: 2**

Test Start: 2010.08.17 @ 02:48:00

Tool Information

Drill Pipe:	Length:	3991.00 ft	Diameter:	3.80 inches	Volume:	55.98 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length:	109.00 ft	Diameter:	2.25 inches	Volume:	0.54 bbl	Weight to Pull Loose:	65000.00 lb
					Total Volume:	56.52 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		7.50 ft					String Weight: Initial	50000.00 lb
Depth to Top Packer:		4120.00 ft					Final	50000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		35.00 ft						
Tool Length:		62.50 ft						
Number of Packers:		2	Diameter:	6.75 inches				

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4093.50		
Shut In Tool	5.00			4098.50		
Hydraulic tool	5.00			4103.50		
Jars	5.00			4108.50		
Safety Joint	2.50			4111.00		
Packer	5.00			4116.00	27.50	Bottom Of Top Packer
Packer	4.00			4120.00		
Stubb	1.00			4121.00		
Perforations	3.00			4124.00		
Recorder	0.00	8357	Inside	4124.00		
Recorder	0.00	6751	Outside	4124.00		
Perforations	28.00			4152.00		
Bullnose	3.00			4155.00	35.00	Bottom Packers & Anchor
Total Tool Length:	**62.50**					

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39596 **DST#: 2**

Test Start: 2010.08.17 @ 02:48:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	10.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	59.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.14 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1900.00 ppm				
Filter Cake:	2.00 inches				

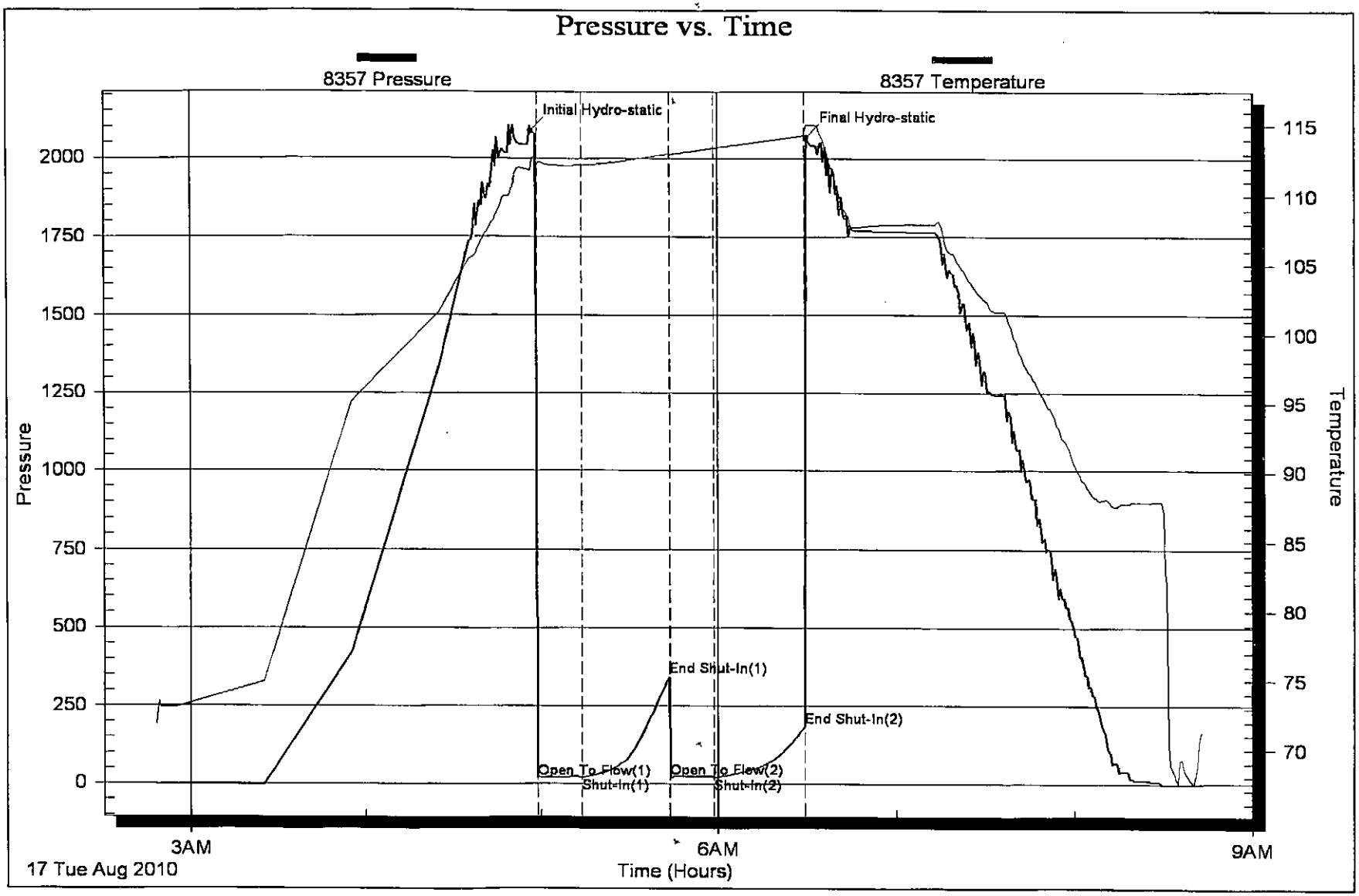
Recovery Information

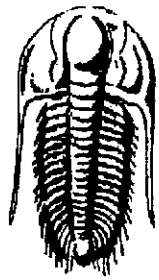
Recovery Table

Length ft	Description	Volume bbl
5.00	M 100%M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:


Pressure vs. Time
8357 Pressure
8357 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
2000
1750
1500
1250
1000
750
500
250
0
115
110
105
100
95
90
85
80
75
70
3AM
6AM
9AM
17 Tue Aug 2010
Time (Hours)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

S21-17-28 Lane, KS

Cairns #1-21

Start Date: 2010.08.17 @ 19:49:00
End Date: 2010.08.18 @ 01:24:54
Job Ticket #: 39597 DST #: 3

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39597 **DST#: 3**

Test Start: 2010.08.17 @ 19:49:00

GENERAL INFORMATION:

Formation: **Lansing 'I'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:58:48
Time Test Ended: 01:24:54

Test Type: Conventional Bottom Hole
Tester: Chuck Smith
Unit No: 37

Interval: 4160.00 ft (KB) To 4188.00 ft (KB) (TVD)
Total Depth: 4188.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

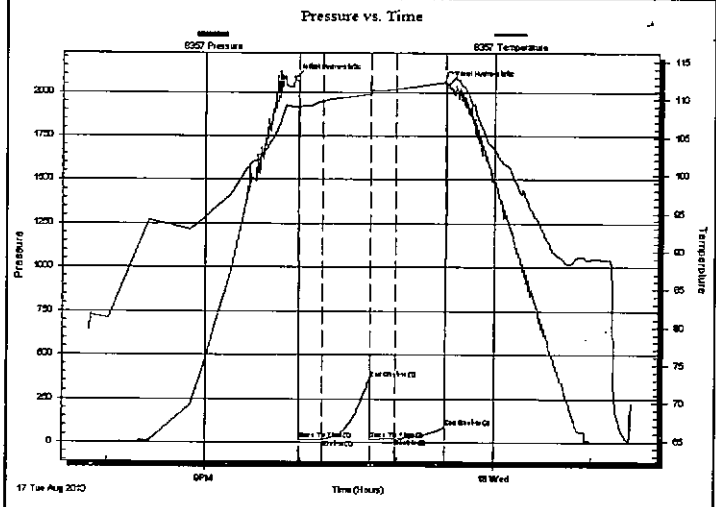
Reference Elevations: 2765.00 ft (KB)
2758.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8357 **Inside**

Press@RunDepth: 19.59 psig @ 4164.00 ft (KB)
Start Date: 2010.08.17 End Date: 2010.08.18
Start Time: 19:49:05 End Time: 01:24:54

Capacity: 8000.00 psig
Last Calib.: 2010.08.18
Time On Btm: 2010.08.17 @ 21:56:12
Time Off Btm: 2010.08.17 @ 23:31:06

TEST COMMENT: IF: 1/4" Blow died @ 14 min.
ISI: No return.
FF: No blow.
FSI: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2082.36	109.05	Initial Hydro-static
3	16.74	108.68	Open To Flow (1)
18	18.59	109.81	Shut-In(1)
48	366.27	110.77	End Shut-In(1)
48	17.96	110.61	Open To Flow (2)
63	19.59	111.37	Shut-In(2)
94	88.12	112.34	End Shut-In(2)
95	2044.06	113.66	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM 100%M	0.02

Gas Rates

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

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39597 **DST#: 3**

Test Start: 2010.08.17 @ 19:49:00

Tool Information

Drill Pipe:	Length:	4054.00 ft	Diameter:	3.80	inches	Volume:	56.87	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	109.00 ft	Diameter:	2.25	inches	Volume:	0.54	bbl	
						Total Volume:	57.41	bbl	

Drill Pipe Above KB:	30.50 ft
Depth to Top Packer:	4160.00 ft
Depth to Bottom Packer:	ft
Interval between Packers:	28.00 ft
Tool Length:	55.50 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:	2500.00 lb
Weight set on Packer:	25000.00 lb
Weight to Pull Loose:	60000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	51000.00 lb
Final	51000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4133.50		
Shut In Tool	5.00			4138.50		
Hydraulic tool	5.00			4143.50		
Jars	5.00			4148.50		
Safety Joint	2.50			4151.00		
Packer	5.00			4156.00	27.50	Bottom Of Top Packer
Packer	4.00			4160.00		
Stubb	1.00			4161.00		
Perforations	3.00			4164.00		
Recorder	0.00	8357	Inside	4164.00		
Recorder	0.00	6751	Outside	4164.00		
Perforations	21.00			4185.00		
Bullnose	3.00			4188.00	28.00	Bottom Packers & Anchor
Total Tool Length:	**55.50**					

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39597 **DST#: 3**

Test Start: 2010.08.17 @ 19:49:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	58.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.16 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1900.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

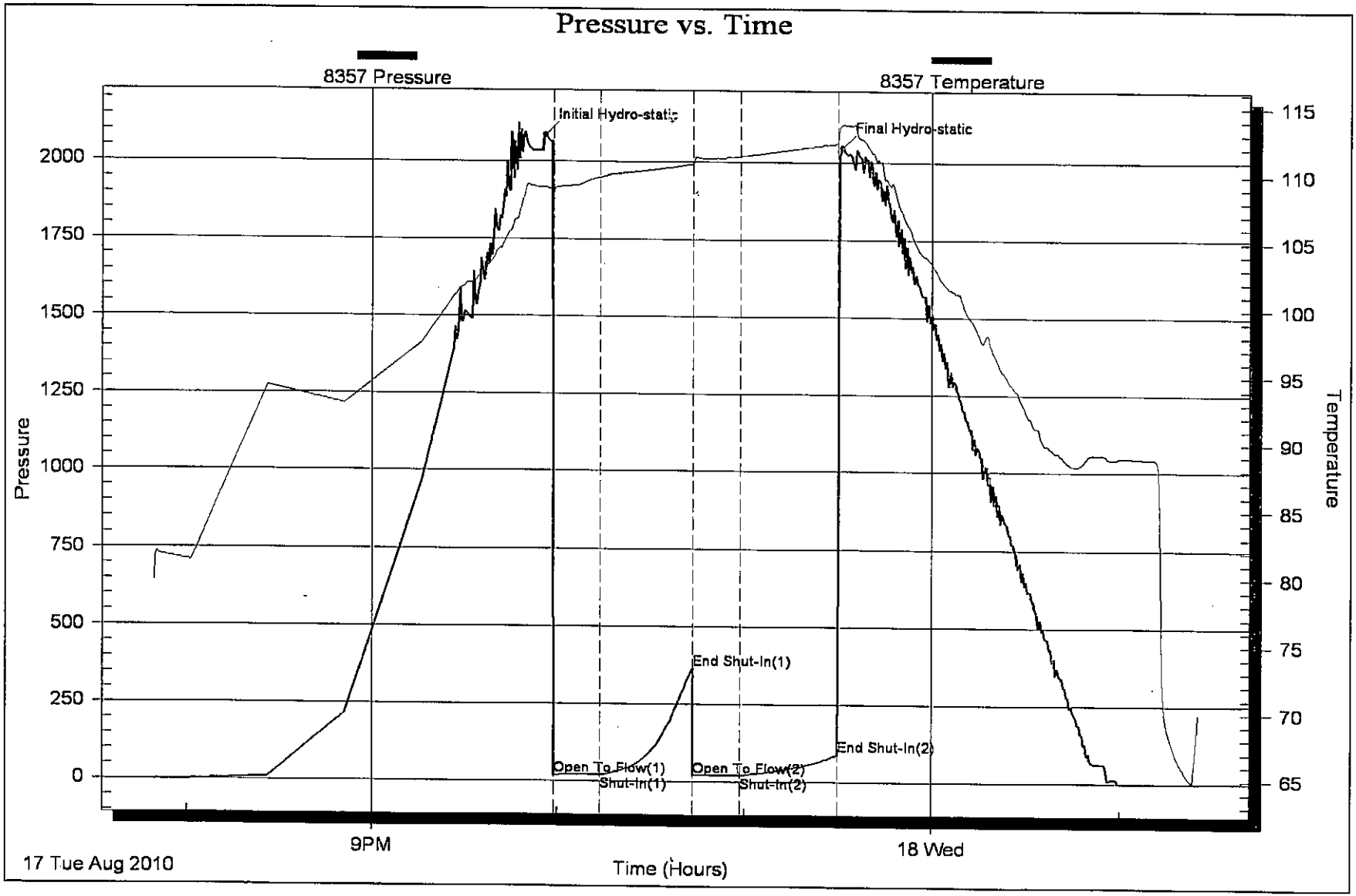
Length ft	Description	Volume bbl
5.00	OSM 100%M	0.025

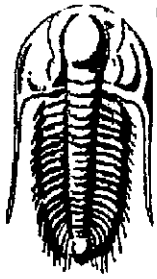
Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
8357 Pressure
8357 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
2000
1750
1500
1250
1000
750
500
250
0
Pressure
115
110
105
100
95
90
85
80
75
70
65
Temperature
9PM
18 Wed
17 Tue Aug 2010
Time (Hours)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

S21-17-28 Lane, KS

Cairns #1-21

Start Date: 2010.08.18 @ 11:07:55
End Date: 2010.08.18 @ 16:24:34
Job Ticket #: 39121 DST #: 4

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39121 **DST#: 4**

Test Start: 2010.08.18 @ 11:07:55

GENERAL INFORMATION:

Formation: **lansing J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 12:53:20
Time Test Ended: 16:24:34

Test Type: Conventional Bottom Hole
Tester: Brandon Turley
Unit No: 35

Interval: 4194.00 ft (KB) To 4219.00 ft (KB) (TVD)
Total Depth: 4219.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

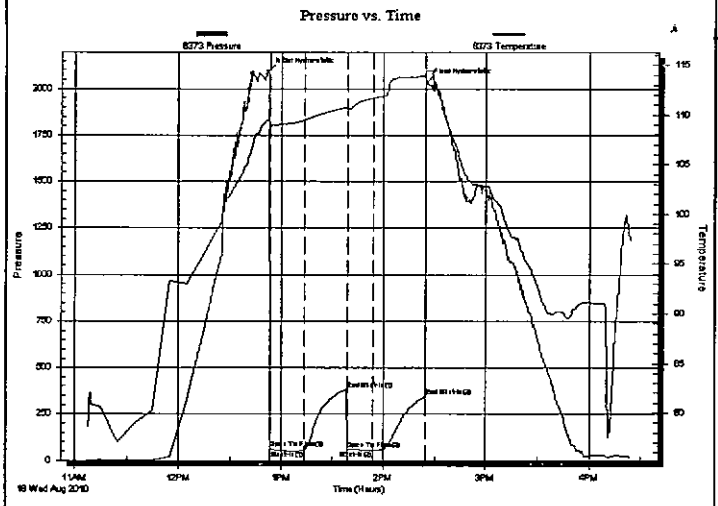
Reference Elevations: 2765.00 ft (KB)
2758.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8373 **Inside**

Press@RunDepth: 55.31 psig @ 4195.00 ft (KB)
Start Date: 2010.08.18 End Date: 2010.08.18
Start Time: 11:07:55 End Time: 16:24:34

Capacity: 8000.00 psig
Last Calib.: 2010.08.18
Time On Btm: 2010.08.18 @ 12:52:05
Time Off Btm: 2010.08.18 @ 14:25:20

TEST COMMENT: IF: 1/4 blow died in nine minutes.
IS: no return.
FF: No blow.
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2092.33	109.49	Initial Hydro-static
2	68.45	108.53	Open To Flow (1)
22	56.85	109.51	Shut-In(1)
47	384.05	110.77	End Shut-In(1)
47	62.51	110.54	Open To Flow (2)
62	55.31	111.69	Shut-In(2)
93	345.23	113.89	End Shut-In(2)
94	2032.02	114.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	ocm 10%o 90%m	0.05

Gas Rates

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

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39121 **DST#: 4**

Test Start: 2010.08.18 @ 11:07:55

Tool Information

Drill Pipe:	Length:	4081.00 ft	Diameter:	3.80 inches	Volume:	57.25 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	111.00 ft	Diameter:	2.25 inches	Volume:	0.55 bbl	Weight to Pull Loose:	70000.00 lb
					Total Volume:	57.80 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		26.00 ft					String Weight: Initial	50000.00 lb
Depth to Top Packer:		4194.00 ft					Final	50000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		25.00 ft						
Tool Length:		53.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Stubb	1.00			4167.00		
Shut In Tool	5.00			4172.00		
Hydraulic tool	5.00			4177.00		
Jars	5.00			4182.00		
Safety Joint	3.00			4185.00		
Packer	5.00			4190.00	28.00	Bottom Of Top Packer
Packer	4.00			4194.00		
Stubb	1.00			4195.00		
Recorder	0.00	8373	Inside	4195.00		
Recorder	0.00	8289	Outside	4195.00		
Perforations	19.00			4214.00		
Bullnose	5.00			4219.00	25.00	Bottom Packers & Anchor
Total Tool Length:	**53.00**					

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39121 **DST#: 4**

Test Start: 2010.08.18 @ 11:07:55

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	10.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	50.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.17 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1900.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

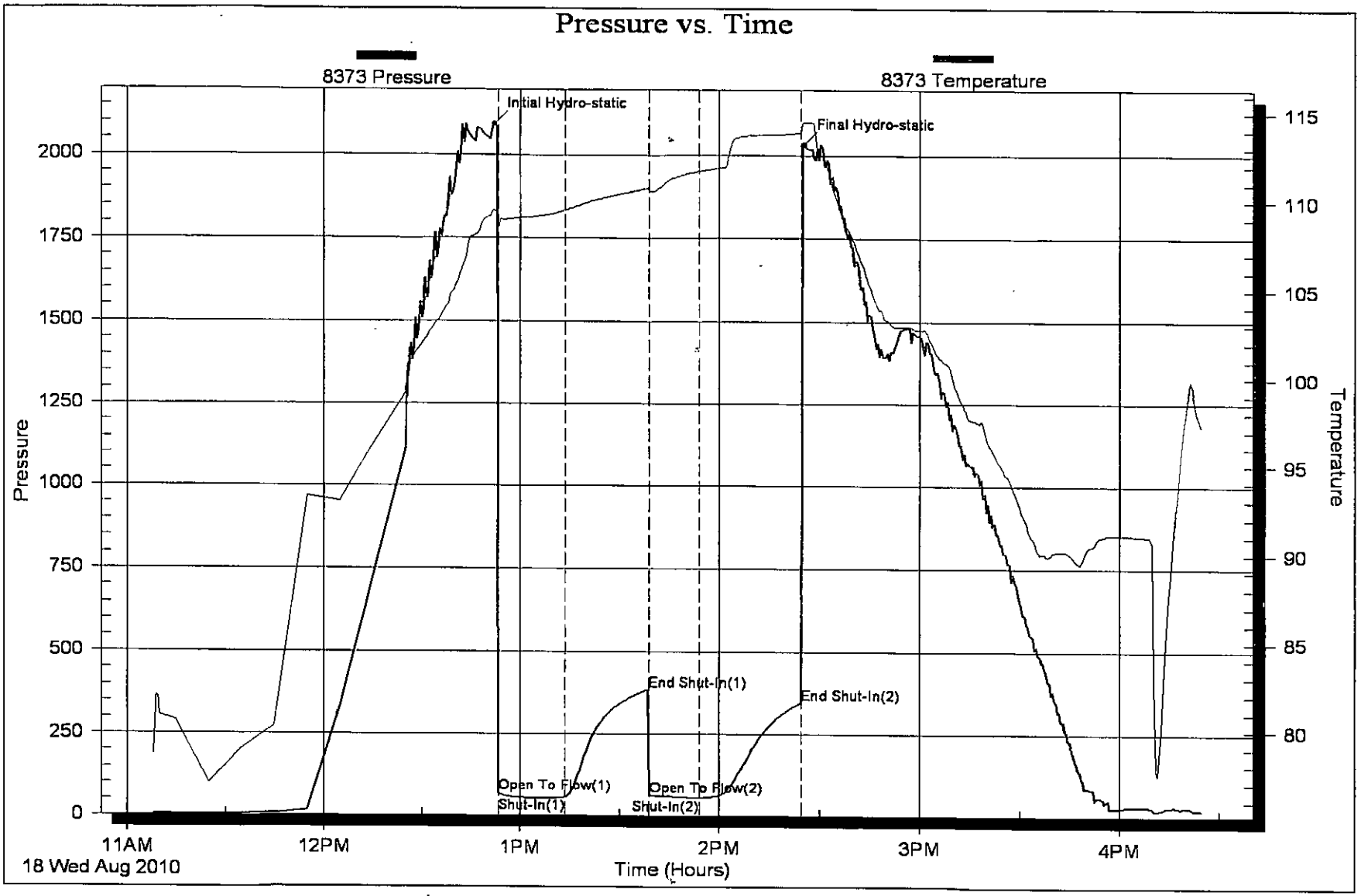
Length ft	Description	Volume bbl
10.00	ocm 10%o 90%m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
8373 Pressure
8373 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
2000
1750
1500
1250
1000
750
500
250
0
115
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18 Wed Aug 2010
12PM
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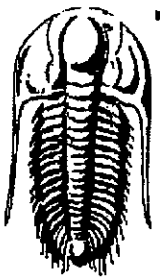
Time (Hours)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

S21-17-28 Lane, KS

Cairns #1-21

Start Date: 2010.08.19 @ 03:12:29
End Date: 2010.08.19 @ 09:31:08
Job Ticket #: 39122 DST #: 5

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39122 **DST#: 5**

Test Start: 2010.08.19 @ 03:12:29

GENERAL INFORMATION:

Formation: **Lansing K**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 05:22:09
Time Test Ended: 09:31:08

Test Type: Conventional Bottom Hole
Tester: Brandon Turley
Unit No: 35

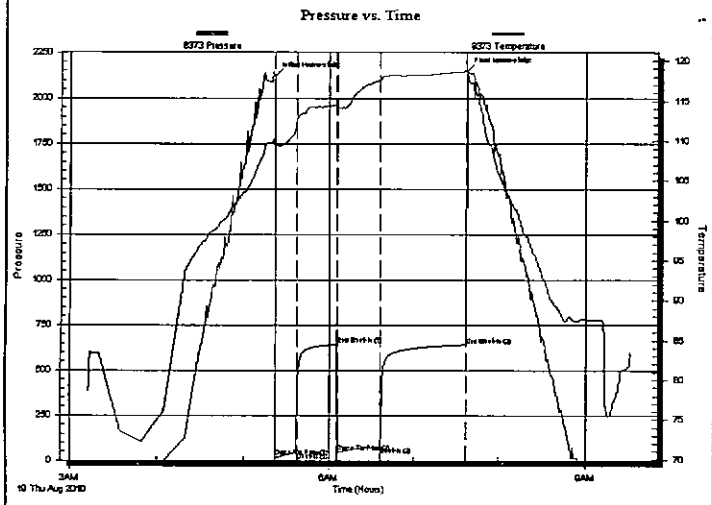
Interval: 4222.00 ft (KB) To 4247.00 ft (KB) (TVD)
Total Depth: 4247.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2765.00 ft (KB)
2758.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8373 Inside
Press@RunDepth: 77.66 psig @ 4227.00 ft (KB)
Start Date: 2010.08.19 End Date: 2010.08.19
Start Time: 03:12:29 End Time: 09:31:08

Capacity: 8000.00 psig
Last Calib.: 2010.08.19
Time On Btm: 2010.08.19 @ 05:21:54
Time Off Btm: 2010.08.19 @ 07:37:08

TEST COMMENT: IF. 1/4 blow to 2 1/2 in 15 minutes
IS. No return.
FF. Surface blow built to 2 in 30 minutes
FS. No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2123.09	110.24	Initial Hydro-static
1	17.96	109.56	Open To Flow (1)
16	47.76	111.90	Shut-In(1)
44	643.75	114.45	End Shut-In(1)
45	49.08	114.16	Open To Flow (2)
75	77.66	117.68	Shut-In(2)
135	639.94	118.66	End Shut-In(2)
136	2148.74	118.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
55.00	mw 50%w 50%m	0.27
81.00	mud some oil spots 100%m	0.50

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39122 **DST#: 5**

Test Start: 2010.08.19 @ 03:12:29

Tool Information

Drill Pipe:	Length:	4102.00 ft	Diameter:	3.80 inches	Volume:	57.54 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	125.00 ft	Diameter:	2.25 inches	Volume:	0.61 bbl	Weight to Pull Loose:	65000.00 lb
					Total Volume:	58.15 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		29.00 ft					String Weight: Initial	50000.00 lb
Depth to Top Packer:		4222.00 ft					Final	50000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		29.00 ft						
Tool Length:		53.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Stubb	1.00			4199.00		
Shut In Tool	5.00			4204.00		
Hydraulic tool	5.00			4209.00		
Jars	5.00			4214.00		
Safety Joint	3.00			4217.00		
Packer	5.00			4222.00	24.00	Bottom Of Top Packer
Packer - Shale	4.00			4226.00		
Stubb	1.00			4227.00		
Recorder	0.00	8373	Inside	4227.00		
Recorder	0.00	8289	Outside	4227.00		
Perforations	19.00			4246.00		
Bullnose	5.00			4251.00	29.00	Anchor Tool
Total Tool Length:	**53.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39122 **DST#: 5**

Test Start: 2010.08.19 @ 03:12:29

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	27000 ppm
Viscosity:	58.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.17 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1900.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

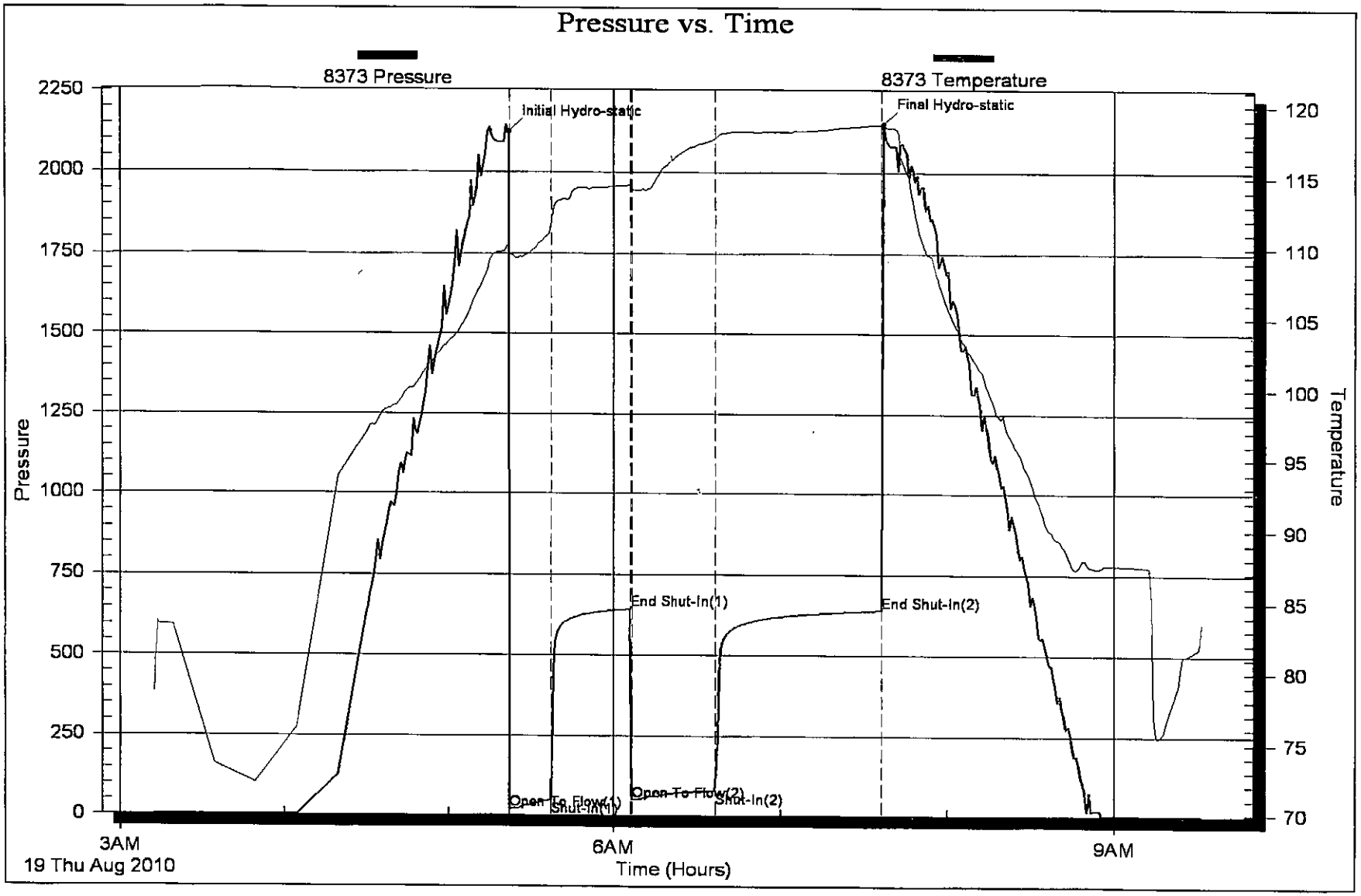
Length ft	Description	Volume bbl
55.00	mw 50%w 50%m	0.270
81.00	mud some oil spots 100%m	0.499

Total Length: 136.00 ft Total Volume: 0.769 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: .22@82=27000


Pressure vs. Time
8373 Pressure
8373 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
2250
2000
1750
1500
1250
1000
750
500
250
0
120
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95
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85
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3AM
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6AM
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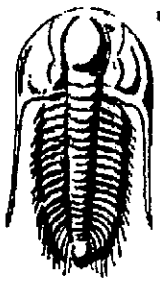
Time (Hours)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

S21-17-28 Lane, KS

Cairns #1-21

Start Date: 2010.08.19 @ 18:52:53
End Date: 2010.08.20 @ 00:33:47
Job Ticket #: 39123 DST #: 6

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39123 **DST#: 6**

Test Start: 2010.08.19 @ 18:52:53

GENERAL INFORMATION:

Formation: **Lansing L**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:05:18
Time Test Ended: 00:33:47

Test Type: Conventional Bottom Hole
Tester: Brandon Turley
Unit No: 35

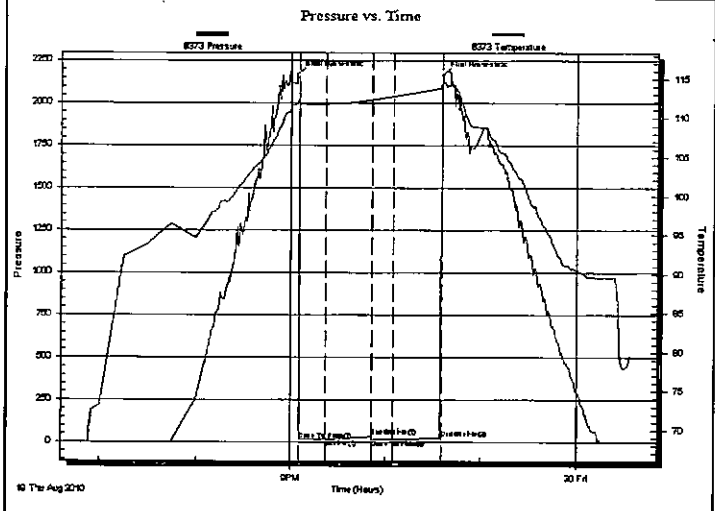
Interval: 4256.00 ft (KB) To 4278.00 ft (KB) (TVD)
Total Depth: 4178.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2765.00 ft (KB)
2758.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8373 **Inside**
Press@RunDepth: 17.64 psig @ 4257.00 ft (KB)
Start Date: 2010.08.19 End Date: 2010.08.20
Start Time: 18:52:53 End Time: 00:33:47

Capacity: 8000.00 psig
Last Calib.: 2010.08.20
Time On Btm: 2010.08.19 @ 21:03:33
Time Off Btm: 2010.08.19 @ 22:35:33

TEST COMMENT: IF: Surface blow died in 2 min.
IS: No return.
FF: No blow.
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2168.27	111.80	Initial Hydro-static
2	15.41	111.32	Open To Flow (1)
19	17.60	111.71	Shut-In(1)
48	33.45	112.32	End Shut-In(1)
48	16.89	112.32	Open To Flow (2)
62	17.64	112.76	Shut-In(2)
92	24.31	113.81	End Shut-In(2)
92	2165.32	114.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%m	0.02

Gas Rates

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

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39123 **DST#: 6**

Test Start: 2010.08.19 @ 18:52:53

Tool Information

Drill Pipe:	Length:	4128.00 ft	Diameter:	3.80	inches	Volume:	57.90	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	125.00 ft	Diameter:	2.25	inches	Volume:	0.61	bbl	
						Total Volume:	58.51	bbl	

Drill Pipe Above KB:	25.00 ft
Depth to Top Packer:	4256.00 ft
Depth to Bottom Packer:	ft
Interval between Packers:	22.00 ft
Tool Length:	50.00 ft
Number of Packers:	2
Diameter:	6.75 inches

Tool Weight:	2500.00 lb
Weight set on Packer:	30000.00 lb
Weight to Pull Loose:	65000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	50000.00 lb
Final	50000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Stubb	1.00			4229.00		
Shut In Tool	5.00			4234.00		
Hydraulic tool	5.00			4239.00		
Jars	5.00			4244.00		
Safety Joint	3.00			4247.00		
Packer	5.00			4252.00	28.00	Bottom Of Top Packer
Packer	4.00			4256.00		
Stubb	1.00			4257.00		
Recorder	0.00	8373	Inside	4257.00		
Recorder	0.00	8289	Outside	4257.00		
Perforations	16.00			4273.00		
Bullnose	5.00			4278.00	22.00	Bottom Packers & Anchor
Total Tool Length:	**50.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39123 **DST#: 6**

Test Start: 2010.08.19 @ 18:52:53

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	54.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.18 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2200.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

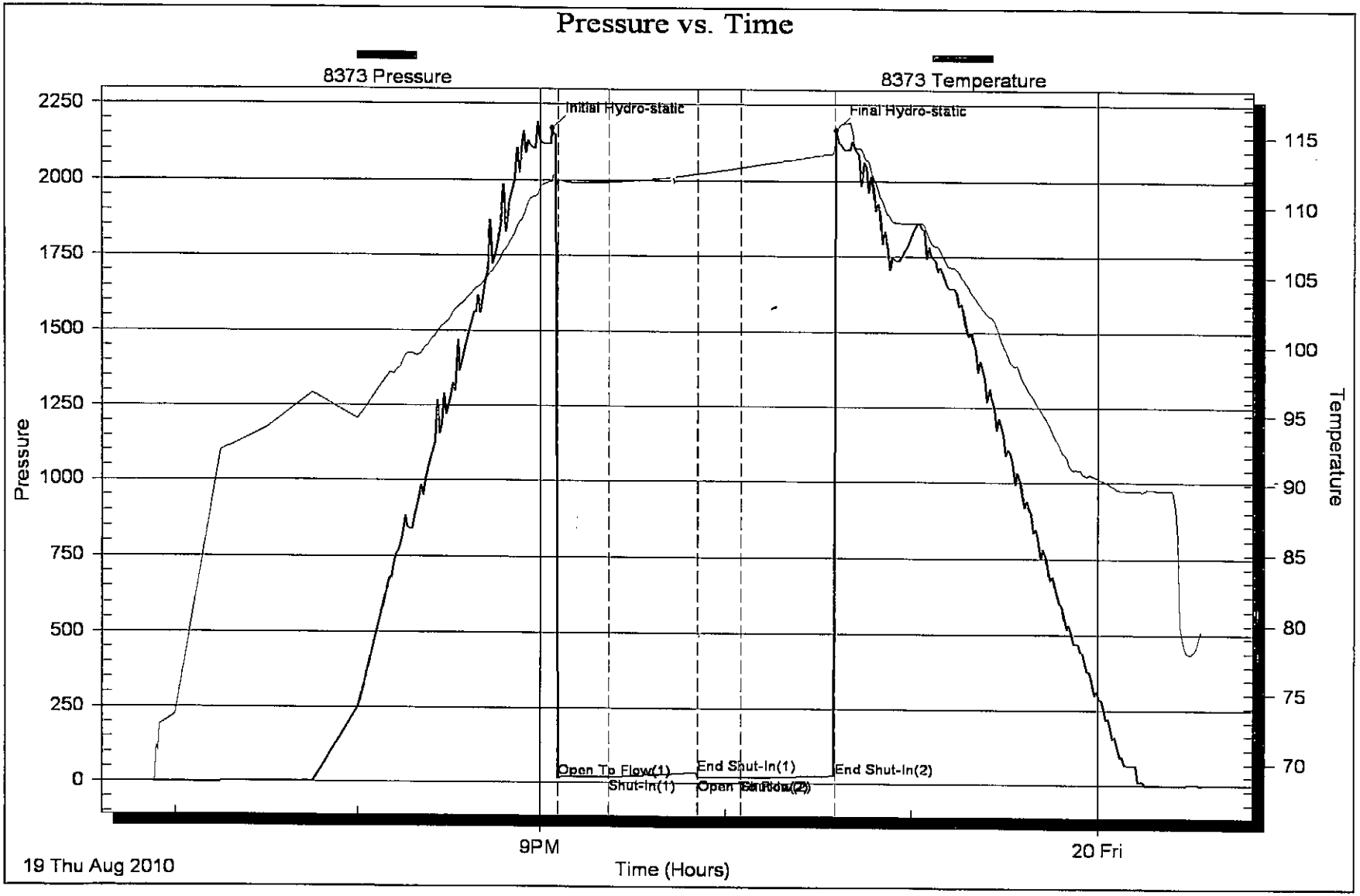
Length ft	Description	Volume bbl
5.00	mud 100%m	0.025

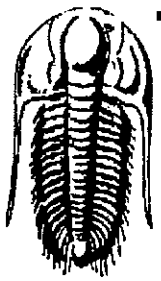
Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
8373 Pressure
8373 Temperature
Initial Hydro-static
Final Hydro-static
Pressure
Temperature
2250
2000
1750
1500
1250
1000
750
500
250
0
115
110
105
100
95
90
85
80
75
70
Open To Flow(1)
Shut-In(1)
End Shut-In(1)
End Shut-In(2)
9PM
20 Fri
19 Thu Aug 2010
Time (Hours)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

S21-17-28 Lane, KS

Cairns #1-21

Start Date: 2010.08.20 @ 21:28:03
End Date: 2010.08.21 @ 02:57:42
Job Ticket #: 39124 DST #: 7

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39124 **DST#: 7**

Test Start: 2010.08.20 @ 21:28:03

GENERAL INFORMATION:

Formation: **Altamont**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:37:58
Time Test Ended: 02:57:42

Test Type: Conventional Bottom Hole
Tester: Brandon Turley
Unit No: 35

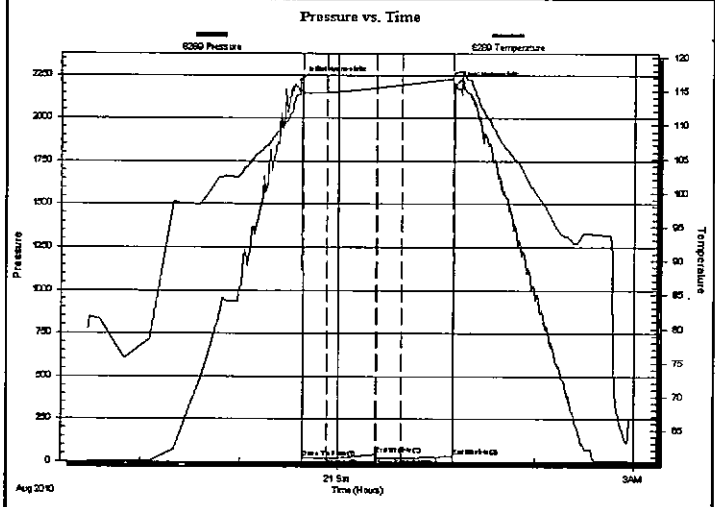
Interval: 4359.00 ft (KB) To 4396.00 ft (KB) (TVD)
Total Depth: 4396.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2765.00 ft (KB)
2758.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8289 **Outside**
Press@RunDepth: 22.14 psig @ 4360.00 ft (KB)
Start Date: 2010.08.20 End Date: 2010.08.21
Start Time: 21:28:03 End Time: 02:57:42

Capacity: 8000.00 psig
Last Calib.: 2010.08.21
Time On Btm: 2010.08.20 @ 23:36:43
Time Off Btm: 2010.08.21 @ 01:11:28

TEST COMMENT: IF: Surface blow died in 8 min.
IS: No return.
FF: No blow.
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2222.03	114.85	Initial Hydro-static
2	20.93	113.72	Open To Flow (1)
17	21.68	114.81	Shut-In(1)
47	43.29	115.49	End Shut-In(1)
47	21.66	115.50	Open To Flow (2)
62	22.14	115.94	Shut-In(2)
94	34.46	116.86	End Shut-In(2)
95	2193.79	117.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%m	0.02

Gas Rates

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

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39124 **DST#: 7**

Test Start: 2010.08.20 @ 21:28:03

Tool Information

Drill Pipe:	Length:	4236.00 ft	Diameter:	3.80	inches	Volume:	59.42	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	111.00 ft	Diameter:	2.25	inches	Volume:	0.55	bbl	
						Total Volume:	59.97	bbl	

Drill Pipe Above KB:	16.00 ft
Depth to Top Packer:	4359.00 ft
Depth to Bottom Packer:	ft
Interval between Packers:	37.00 ft
Tool Length:	65.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:	2500.00 lb
Weight set on Packer:	30000.00 lb
Weight to Pull Loose:	65000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	50000.00 lb
Final	50000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Stubb	1.00			4332.00		
Shut In Tool	5.00			4337.00		
Hydraulic tool	5.00			4342.00		
Jars	5.00			4347.00		
Safety Joint	3.00			4350.00		
Packer	5.00			4355.00	28.00	Bottom Of Top Packer
Packer	4.00			4359.00		
Stubb	1.00			4360.00		
Recorder	0.00	8373	Inside	4360.00		
Recorder	0.00	8289	Outside	4360.00		
Perforations	31.00			4391.00		
Bullnose	5.00			4396.00	37.00	Bottom Packers & Anchor
Total Tool Length:	**65.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39124 **DST#: 7**

Test Start: 2010.08.20 @ 21:28:03

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	43.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.37 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2300.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

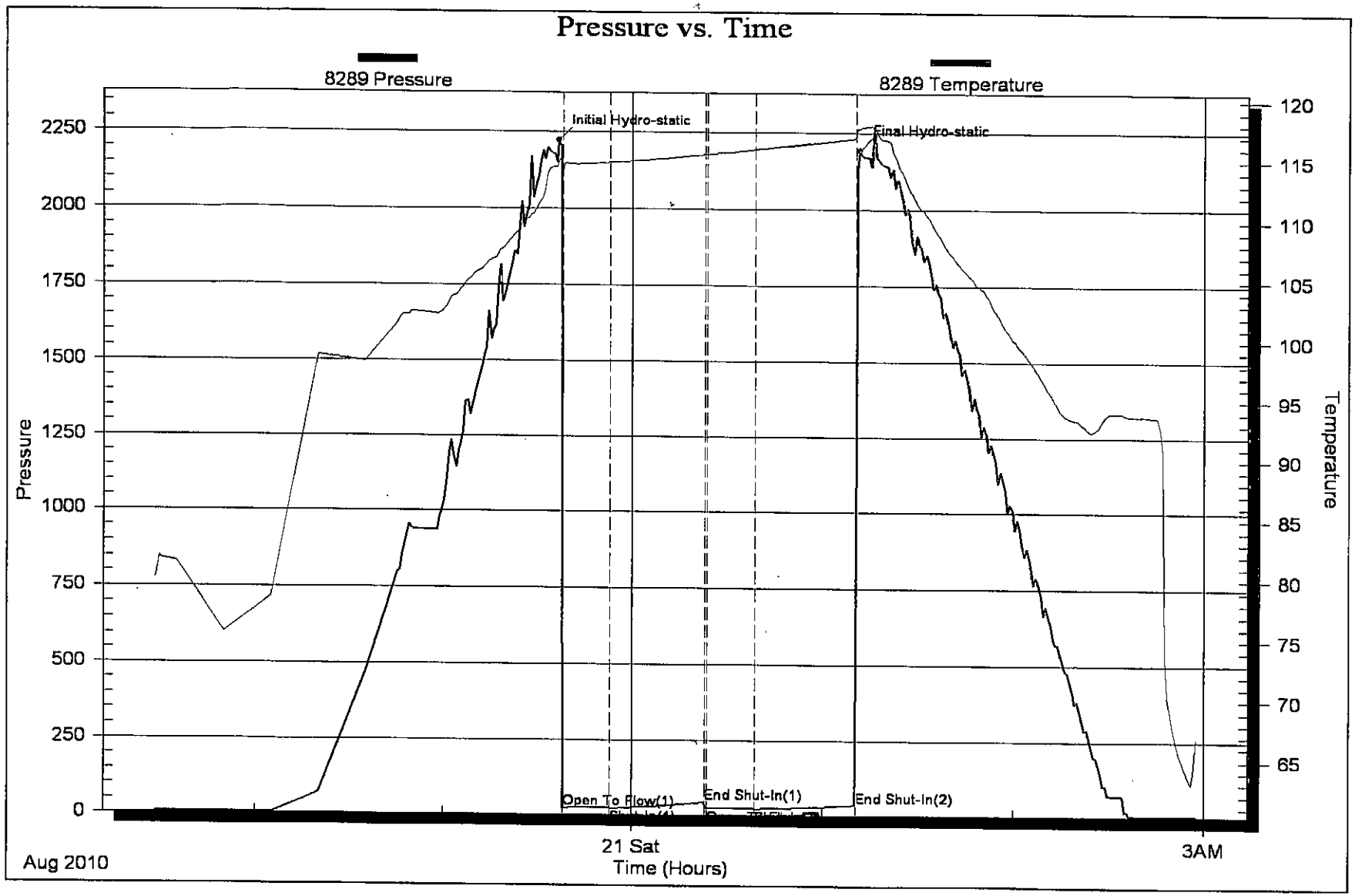
Length ft	Description	Volume bbl
5.00	mud 100%m	0.025

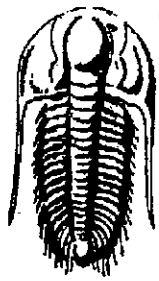
Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
8289 Pressure
8289 Temperature
Initial Hydro-static
Final Hydro-static
Open To Flow(1)
End Shut-In(1)
End Shut-In(2)
Pressure
Temperature
2250
2000
1750
1500
1250
1000
750
500
250
0
120
115
110
105
100
95
90
85
80
75
70
65
Aug 2010
21 Sat
3AM
Time (Hours)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc.**

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

S21-17-28 Lane, KS

Cairns #1-21

Start Date: 2010.08.22 @ 03:20:49
End Date: 2010.08.22 @ 09:59:13
Job Ticket #: 39125 DST #: 8

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39125 **DST#: 8**

Test Start: 2010.08.22 @ 03:20:49

GENERAL INFORMATION:

Formation: **Pawnnee Ft. Scott Jo**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 05:26:14
Time Test Ended: 09:59:13

Test Type: Conventional Bottom Hole
Tester: Brandon Turley
Unit No: 35

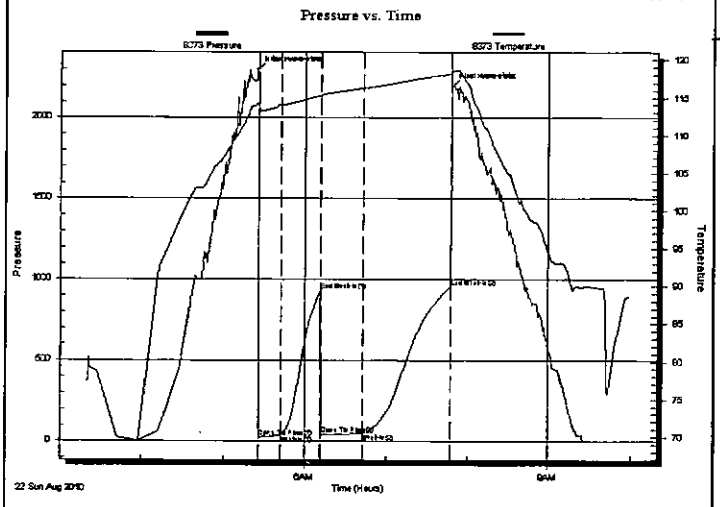
Interval: 4408.00 ft (KB) To 4562.00 ft (KB) (TVD)
Total Depth: 4562.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2765.00 ft (KB)
2758.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8373 Inside
Press@RunDepth: 48.43 psig @ 4409.00 ft (KB)
Start Date: 2010.08.22 End Date: 2010.08.22
Start Time: 03:20:49 End Time: 09:59:13

Capacity: 8000.00 psig
Last Calib.: 2010.08.22
Time On Btm: 2010.08.22 @ 05:24:44
Time Off Btm: 2010.08.22 @ 07:47:58

TEST COMMENT: IF: 1/4 blow built to 1 1/2 in 15 min.
IS: No return.
FF: Surface blow built to 1 1/2 in 30 min.
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2294.84	114.21	Initial Hydro-static
2	28.09	113.51	Open To Flow (1)
17	37.34	114.07	Shut-In(1)
47	932.71	115.28	End Shut-In(1)
47	41.46	115.14	Open To Flow (2)
78	48.43	116.27	Shut-In(2)
143	955.40	118.17	End Shut-In(2)
144	2191.11	118.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	ocm 10%o 90%m	0.30
30.00	ocm 5%o 95%m	0.15

Gas Rates

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

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39125 **DST#: 8**

Test Start: 2010.08.22 @ 03:20:49

Tool Information

Drill Pipe:	Length:	4283.00 ft	Diameter:	3.80 inches	Volume:	60.08 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	125.00 ft	Diameter:	2.25 inches	Volume:	0.61 bbl	Weight to Pull Loose:	60000.00 lb
					Total Volume:	60.69 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		28.00 ft					String Weight: Initial	54000.00 lb
Depth to Top Packer:		4408.00 ft					Final	54000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		154.00 ft						
Tool Length:		182.00 ft						
Number of Packers:		2	Diameter:	6.75 inches				

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Stubb	1.00			4381.00		
Shut In Tool	5.00			4386.00		
Hydraulic tool	5.00			4391.00		
Jars	5.00			4396.00		
Safety Joint	3.00			4399.00		
Packer	5.00			4404.00	28.00	Bottom Of Top Packer
Packer	4.00			4408.00		
Stubb	1.00			4409.00		
Recorder	0.00	8373	Inside	4409.00		
Recorder	0.00	8289	Outside	4409.00		
Perforations	22.00			4431.00		
Change Over Sub	1.00			4432.00		
Drill Pipe	124.00			4556.00		
Change Over Sub	1.00			4557.00		
Bullnose	5.00			4562.00	154.00	Bottom Packers & Anchor
Total Tool Length:	**182.00**					

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

562 W. St. Rd #4
Olmitz, KS 67564

ATTN: Bob Lewellyn

Cairns #1-21

S21-17-28 Lane, KS

Job Ticket: 39125 **DST#: 8**

Test Start: 2010.08.22 @ 03:20:49

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	44.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.78 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2000.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

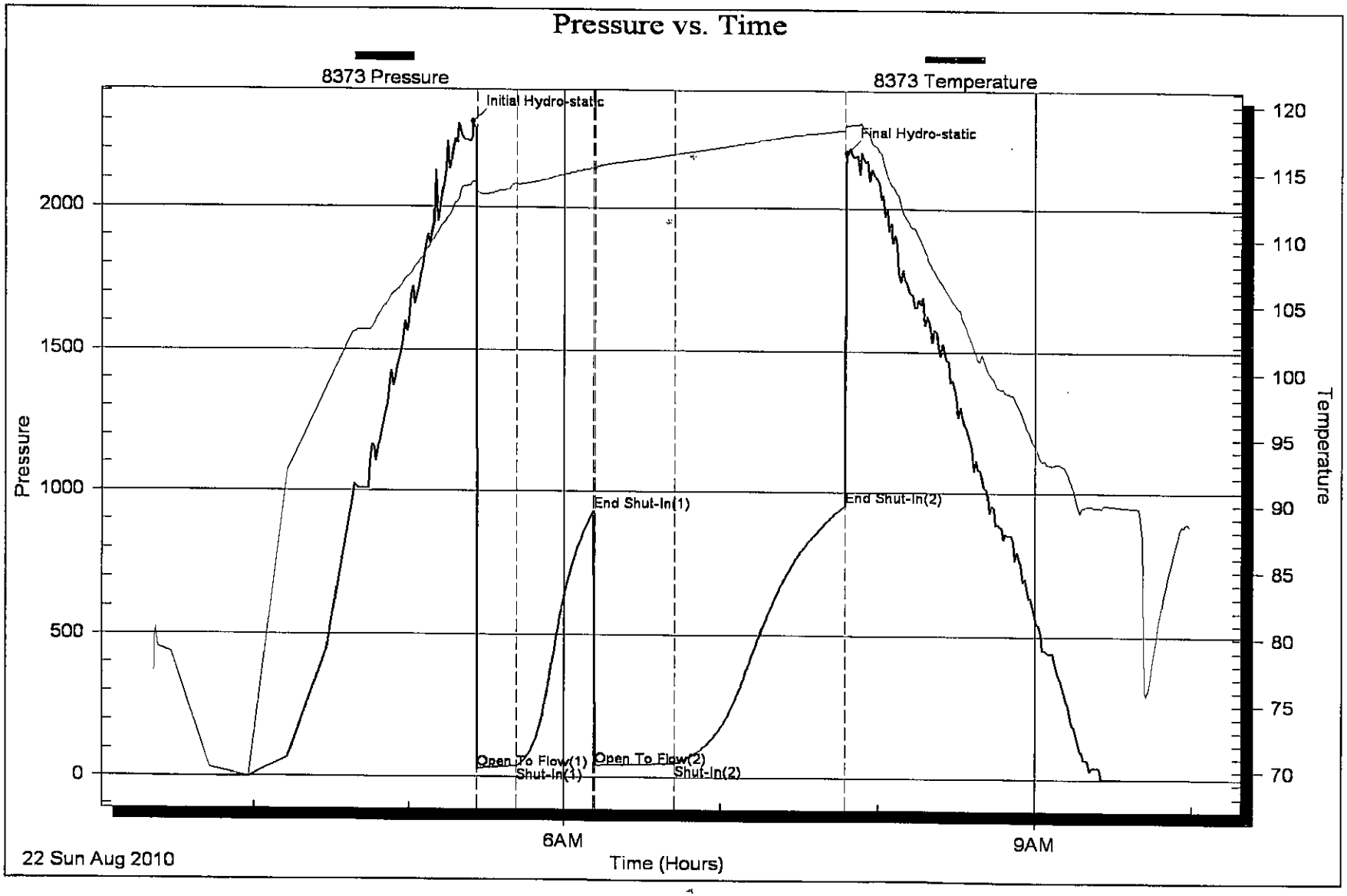
Length ft	Description	Volume bbl
60.00	ocm 10%o 90%m	0.295
30.00	ocm 5%o 95%m	0.148

Total Length: 90.00 ft Total Volume: 0.443 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
8373 Pressure
8373 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
2000
1500
1000
500
0
120
115
110
105
100
95
90
85
80
75
70
6AM
9AM
22 Sun Aug 2010
Time (Hours)

Robert C. Lewellyn

Consulting Petroleum Geologist

P. O. Box 375
Kechi, KS 67067-0375
Office 316-744-2567
Cell 316-518-0495
boblewellyn@yahoo.com

GEOLOGICAL REPORT

Larson Engineering, Inc.
Cairns No. 1-21
330' FNL & 2310' FWL Sec. 21-17S-28W
Lane County, Kansas

CONTRACTOR:	H D Drilling, LLC
SPUDDED:	August 09, 2010
DRILLING COMPLETED:	August 23, 2010
SURFACE CASING:	8 5/8" @ 256 KBM/175 sx,
ELECTRIC LOGS:	Log-Tech DIL CNL/CDL MEL
ELEVATIONS:	2765 KB 2758 GL

FORMATION TOPS (Electric Log):

Anhydrite	2138 (+ 627)
Base Anhydrite	2168 (+ 597)
Heebner Shale	3932 (-1167)
Lansing-Kansas City Group	3970 (-1205)
Muncie Creek Shale	4131 (-1366)
Stark Shale	4227 (-1462)
Hushpuckney shale	4260 (-1495)
Base Kansas City	4304 (-1539)
Altamont	4355 (-1590)
Pawnee	4421 (-1656)
Myrick Station	4445 (-1680)
Fort Scott	4477 (-1712)
Cherokee	4501 (-1736)
Mississippian	4560 (-1795)
Electric Log Total Depth	4624 (-1859)

Samples were examined microscopically from 3800 to Rotary Total Depth. Samples were examined wet and dry and samples from potentially productive zones were viewed under a fluoroscope and checked for oil cut. Following is a description of zones of interest, Drill Stem Tests, etc. For a complete lithologic description of all formations, refer to the sample log in the back pages of this report.

Lansing-Kansas City Zones:

3973-3977 (A Zone)

Limestone, buff, some cream, dense with scattered finely crystalline and chalky, slightly fossiliferous, trace of scattered poor intercrystalline porosity, no show of oil.

4004-4018 (B Zone)

Limestone, buff, some tan, some scattered cream, dense to finely crystalline with considerable chalk, zone is mostly tight, no show of oil.

4022-4048 (C/D Zone)

Limestone, buff, dense with cream chalky, some finely crystalline, trace of "birdseye" dense to sub-lithographic limestone, zone is mostly tight with no shows of oil. Some scattered light gray chert.

4050-4056 (E Zone)

Limestone, buff to tan, finely crystalline and finely oolitic, slightly fossiliferous, fair interoolitic and intercrystalline porosity, scattered poor to fair spotted stain, slight show of free oil, faint odor, poor fluorescence, fair cut.

Drill Stem Test No. 1 4022-4056
15-30-15-30; half-inch blow, died in 14 minutes of first flow period; blow did not return on second flow period; recovered 10 feet of oil spotted mud; ISIP 1010# FSIP 940# IFP 17-21# FFP 22-23# IHP 2035# FHP 1970# BHT 116 degrees.

4066-4072 (F Zone)

Limestone, cream to buff, finely crystalline with considerable cream chalky, scattered traces of dead stain in tight pieces, no free oil, no odor, no fluorescence, no cut.

4074-4087 (G Zone)

Limestone, cream to buff, finely crystalline and oolitic, partly chalky, fair scattered ooliticastic porosity, no show of oil, some scattered white chert.

4146-4154 (H Zone)

Limestone, cream to buff, some tan, dense to finely crystalline with some scattered fossiliferous, poor to fair intercrystalline and interfossil porosity, some small vug porosity, scattered fair spotted stain, slight to fair show of free oil, faint odor, poor fluorescence, fair cut.

Drill Stem Test No. 2 4120-4155
15-30-15-30; half-inch blow, died in 12 minutes of first flow period; blow did not return on second flow period; recovered five feet of mud. ISIP 345# FSIP 185# IFP 18-20# FFP 19-21# IHP 2087# FHP 2066# BHT N/A

4179-4185 (I Zone)

Limestone, buff to tan with scattered brown, finely crystalline, scattered poor to fair intercrystalline porosity, some poor to fair vugular porosity, poor to fair spotted stain, very slight show of free oil, faint odor, poor fluorescence, poor to fair cut.

Drill Stem Test No. 3 4160-4188
15-30-15-30; quarter-inch blow died in 14 minutes of first flow period; blow did not return on second flow period; recovered five feet of oil spotted mud. ISIP 366# FSIP 88# IFP 17-19# FFP 18-20# IHP 2082# FHP 2044# BHT 112 degrees.

4206-4215 (J Zone)

Limestone, cream to buff, finely crystalline and partly oolitic, poor to fair intercrystalline and ooliticastic porosity, poor spotted stain, slight show of free oil, fair to good odor, poor fluorescence, poor to fair cut.

Drill Stem Test No. 4 4194-4219
15-30-15-30; quarter-inch blow, died in nine minutes of first flow; blow did not return on second flow; recovered 10 feet of oil cut mud (10% oil, 90% mud). ISIP 384# FSIP 345# IFP 68-58# FFP 62-55# IHP 2092# FHP 2038# BHT 113 degrees.

4237-4245 (K Zone)

Limestone, cream to buff, finely crystalline and slightly fossiliferous, fair intercrystalline porosity, some fair interfossil and small vug porosity, poor to fair spotted stain, fair show of free oil, fair odor, poor fluorescence, fair cut.

Drill Stem Test No. 5 4222-4247
15-30-30-60; quarter-inch blow built to 2 ½ inch blow in 15 minutes; second flow, surface blow built to two-inch blow in 30 minutes; recovered 81 feet of mud (100% mud), some oil spots, and 55 feet of muddy water (50% mud, 50% water). ISIP 643# FSIP 639# IFP 17-47# FFP 49-77# IHP 2123# FHP 2148# BHT 118 degrees.

4263-4279 (Middle Creek and L Zone)

Limestone, buff to tan, some brown, finely crystalline and slightly oolitic, partly fossiliferous, scattered poor intercrystalline and interfossil porosity with scattered poor spotted stain, trace of fair spotted stain, faint to fair odor, very slight show of free oil, poor fluorescence, poor to fair cut. Zone contains some scattered calcite crystal overgrowth.

Drill Stem Test No. 6 4256-4278
15-30-15-30; surface blow died in two minutes on first flow period; blow did not return on second flow period; recovered five feet of mud. ISIP 33# FSIP 24# IFP 15-17# FFP 16-17# IHP 2168# FHP 2165# BHT 113 degrees.

4304-4326 (Pleasanton Zone)

The Pleasanton section consisted of limestone, buff to tan, some brown, dense to finely crystalline, zone is mostly tight with traces of dead stain in a few pieces, no live oil shows.

4326-4338 (Lenapah Zone)

Limestone, buff to tan, dense to finely crystalline, rare trace of very poor spotted stain in tight limestone, no free oil, no odor, no fluorescence, no cut.

4378-4390 (Altamont Zone)

Limestone, cream to buff, fine to medium crystalline and fossiliferous, slightly chalky, fair intercrystalline and interfossil porosity, poor to fair spotted stain, fair to good show of free oil, faint to fair odor, fair to good cut.

Drill Stem Test No. 7 4359-4396
15-30-15-30; surface blow died in eight minutes of first flow; blow did not return on second flow; recovered five feet of mud. ISIP 43# FSIP 34# IFP 20-21# FFP 21-22# IHP 2222# FHP 2193# BHT 116 degrees.

4408-4411 (Lower Altamont Zone)

Limestone, tan to brown, fine to medium crystalline and fossiliferous, poor intercrystalline and vugular porosity, scattered poor to fair spotted stain, fair show of free oil, faint odor, poor fluorescence, poor cut.

4421-4427 (Pawnee Zone)

Limestone, tan to brown, "resinous" in part, dense to finely crystalline, poor intercrystalline porosity with scattered poor spotted stain, slight show of free oil, faint odor, no fluorescence, poor cut.

4454-4456 (Myrick Station Zone)

Limestone, brown, some tan, dense with scattered finely crystalline, trace of poor intercrystalline porosity with very poor scattered spotted stain, no free oil, questionable odor, no fluorescence, no cut.

4477-4501 (Fort Scott Zone)

The Fort Scott interval consisted of tan, dense to finely crystalline limestone in the upper section, with a trace of scattered poor intercrystalline porosity and poor spotted stain, no free oil, faint fleeting odor, no fluorescence and no cut. The lower portion was tan to brown, finely crystalline, scattered very poor intercrystalline porosity, few pieces with very poor spotted stain, no free oil, no odor, no fluorescence, no cut.

4536-4552 (Johnson Zone)

This interval contained limestone, tan to brown, fine to medium crystalline, slightly fossiliferous, fair intercrystalline and small vug porosity, fair show of free oil, faint to fair odor, poor fluorescence, fair cut.

Drill Stem Test No. 8 4408-4562
15-30-30-60; quarter-inch blow built to 1 ½ inch blow in 15 minutes of first flow period; surface blow built to 1 ½" blow in 30 minutes; recovered 30 feet of oil cut mud (5% oil, 95% mud) and 60 feet of oil cut mud (10% oil, 90% mud). ISIP 932# FSIP 955# IFP 28-37# FFP 41-48# IHP 2294# FHP 2191# BHT 118 degrees.

4560-4624 (Mississippian Zone)

The Mississippian section consisted of limestone, cream to buff, finely crystalline and slightly chalky, brittle, friable, mostly tight with no show of oil, grading downward to tan, finely crystalline dolomite and fresh, opaque chert. No shows of oil were present in this section.

4624 Rotary Total Depth

Conclusions and Recommendations:

Sample examination, drill stem testing, and electric logging revealed no zones of potential commercial production of oil or gas. It was therefore recommended and permission granted for the No. 1-21 Cairns to be plugged and abandoned.

Respectfullty submitted,

Robert C. Lewellyn
Petroleum Geologist

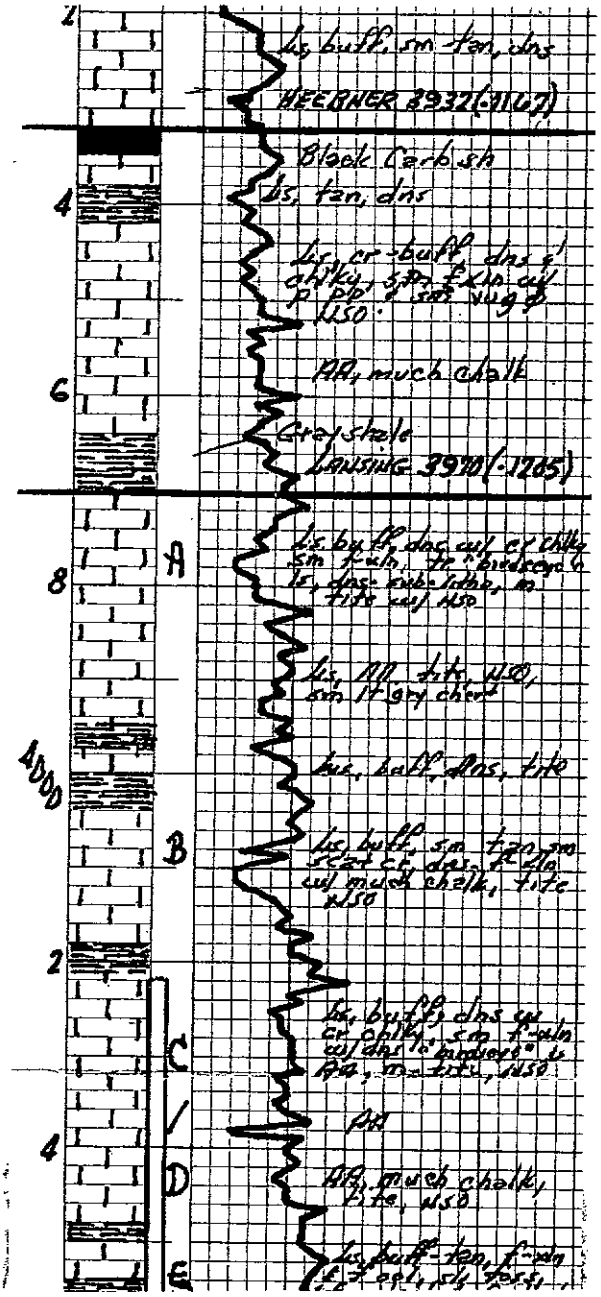
KANSAS
COUNTY
LANE
BLOCK
SEC. 21
T. 17S R. 28W
ALTITUDE 2765 KB
PRODUCTION

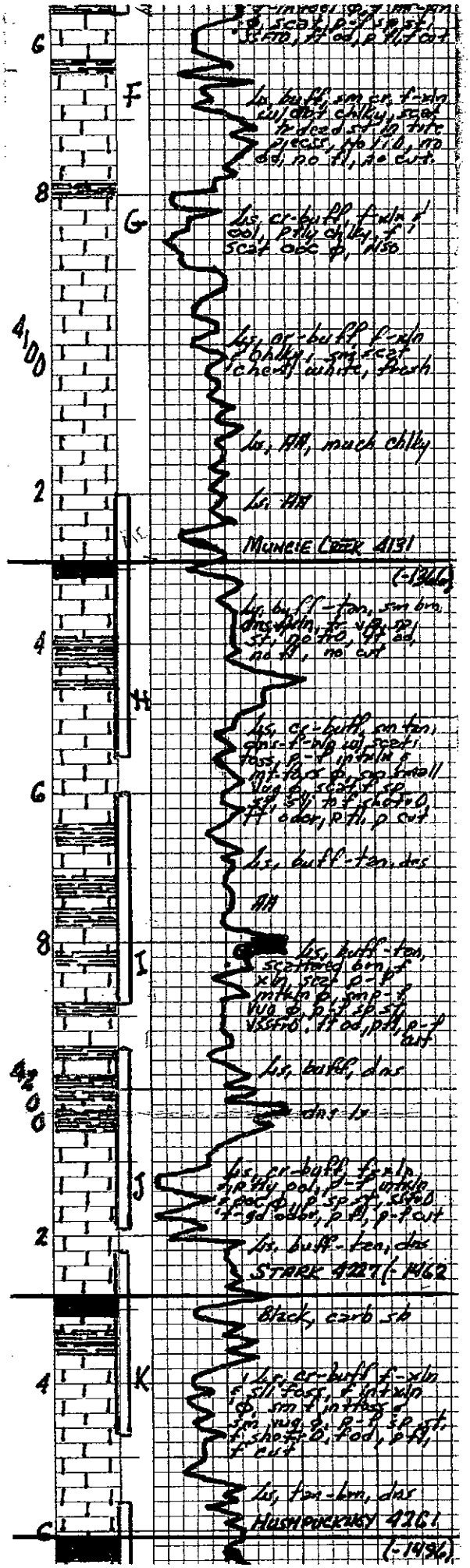
COMPANY LARSON ENGINEERING, INC
FARM CAIRNS
WELL NO. 1-21
SURVEY 330' FNL & 2310' FWL
TOTAL DEPTH 4625
CONTRACTOR HD Drlg, LLC
COMMENCED 08-09-2010
COMPLETED 08-23-2010
REMARKS

Robert C. Llewellyn - Geol.

CASING RECORD
8 5/8" @ 256 KBM/175 ox

SHOT QUARTS BETWEEN

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F
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2
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4
H
6
8
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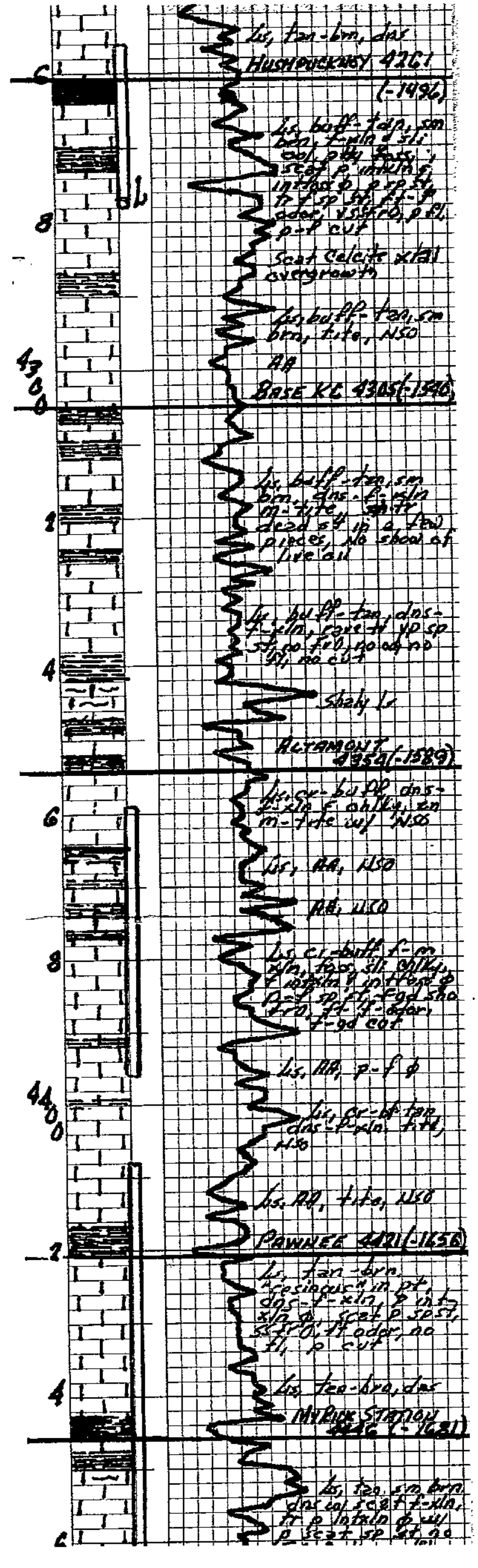
J
2
STARK 4227 (-1462)
4
K
(-1494)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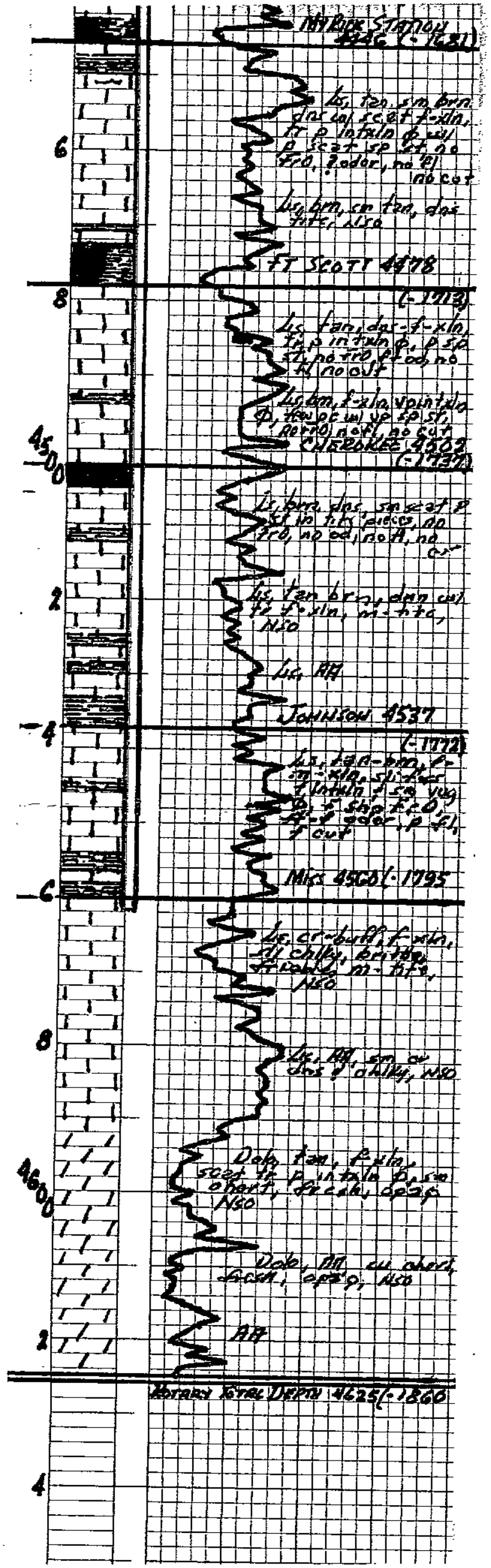
(-1496)
8
Scat calcite xtal overgrowth
4300
AA
BASE KC 4305 (-1540)
2
4
Shaly Ls
ALTAMONT 4354 (-1589)
6
Ls, AA, NSO
AA, NSO
8
Ls, AA, p-f φ
4400
Ls, AA, tite, NSO
PAWNEE 4421 (-1656)
2
4
MYRICK STATION 4446 (-1681)
6



MYRICK STATION
(-1681)
6
FT SCOTT 4478
8
(-1713)
4500
CHEROKEE 4502
(-1737)
2
JOHNSON 4537
4
(-1772)
MISS 4560 (-1795)
6
8
4600
2
ROTARY TOTAL DEPTH 4625 (-1860)
4

LOG-TECH

DIGITAL LOG (785) 625-3858

API No. 15-101-22,248-00-00

Dual Induction Log

Company	Larson Engineering, Inc.
Well	Cairns No. 1-21
Field	Wildcat
County	Lane
State	Kansas
Location	NE NE NW 330' FNL & 2310' FEL
Other Services	CNL/CDL MEL
Sec:	21
Twp:	17S
Rge:	28W

Elevation: K.B. 2765, D.F., G.L. 2758

Permanent Datum: Ground Level, Elevation 2758

Log Measured From: Kelly Bushing, 7 Ft. Above Perm. Datum

Drilling Measured From: Kelly Bushing

Date	8/22/2010		
Run Number	One		
Depth Driller	4625		
Depth Logger	4624		
Bottom Logged Interval	4623		
Top Log Interval	250		
Casing Driller	8.625 @ 256		
Casing Logger	253		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity,ppm CL	1,900		
Density / Viscosity	9.4 / 52		
pH / Fluid Loss	10.0 / 8.0		
Source of Sample	Flowline		
Rm @ Meas. Temp	1.7 @ 83		
Rmf @ Meas. Temp	1.28 @ 83		
Rmc @ Meas. Temp	2.30 @ 83		
Source of Rmf / Rmc	Charts		
Rm @ BHT	1.15 @ 122		
Operating Rig Time	4 Hours		
Max Rec. Temp. F	122		
Equipment Number	15		
Location	Hays		
Recorded By	C. Desaire		
Witnessed By	Bob Lewellyn		

<<< Fold Here >>>

Comments

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

Dighton, 5 N to 200 Rd,
1 E, 1 N, 1 1/2 E Into

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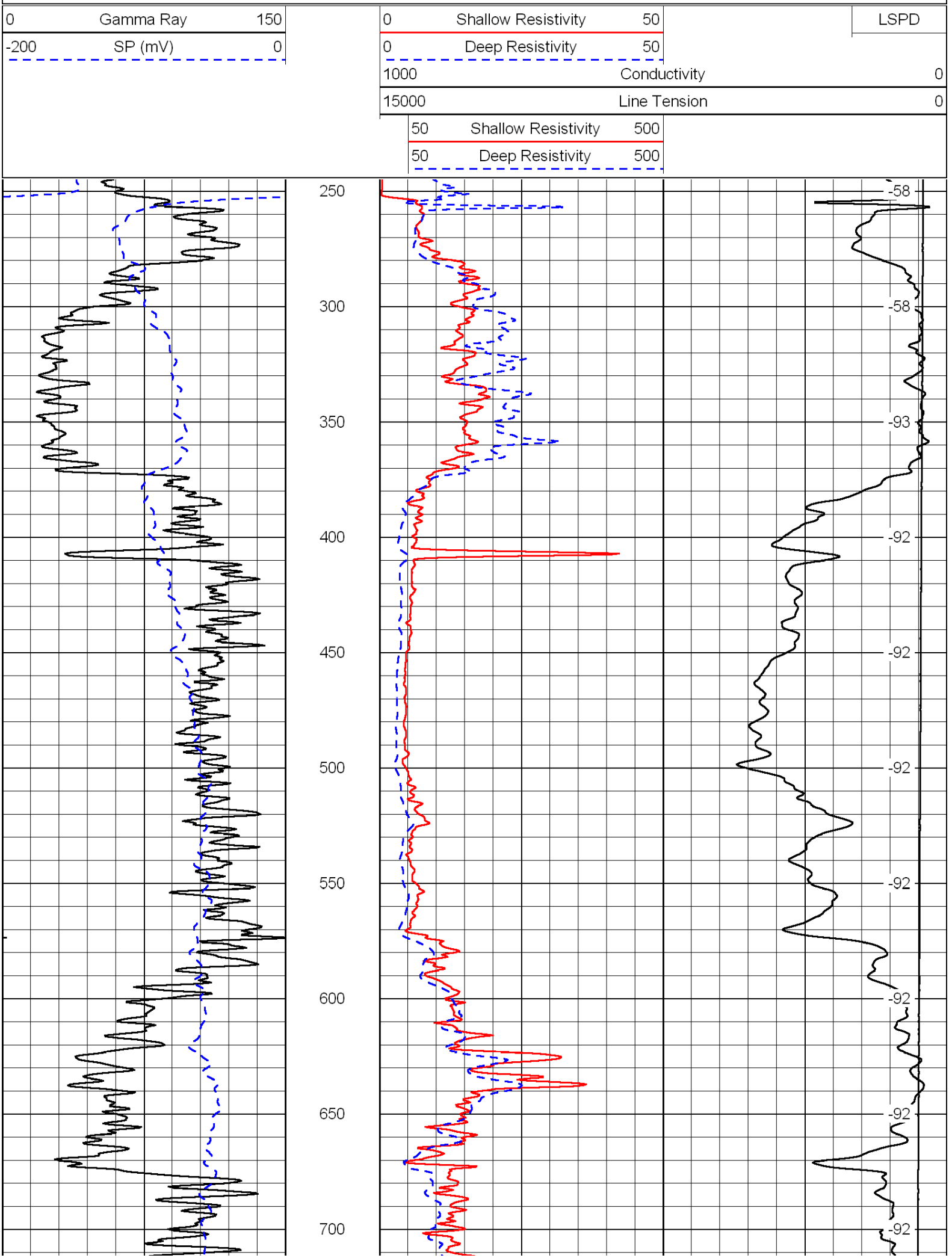
Charted by:	Depth in Feet scaled 1:600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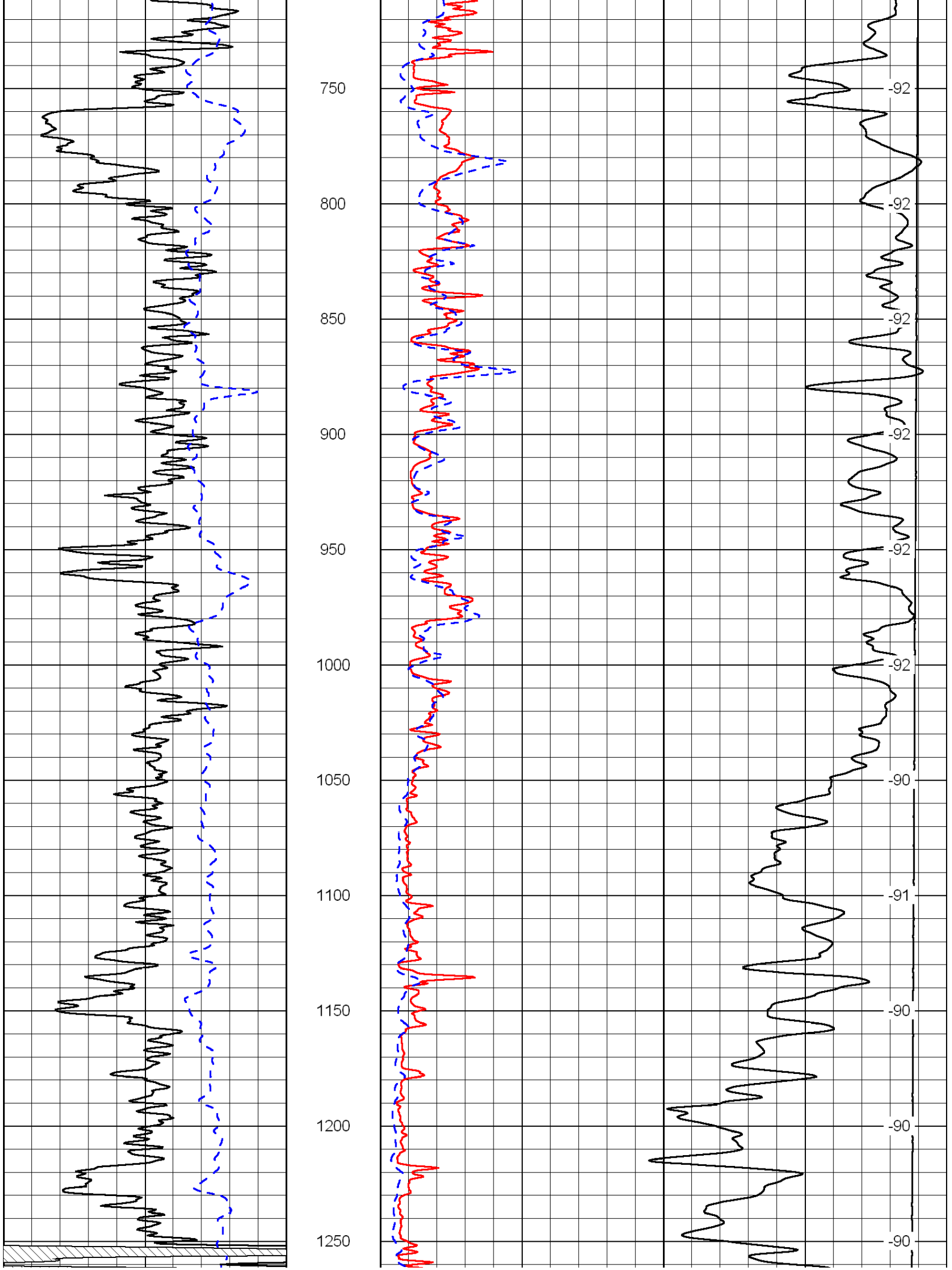
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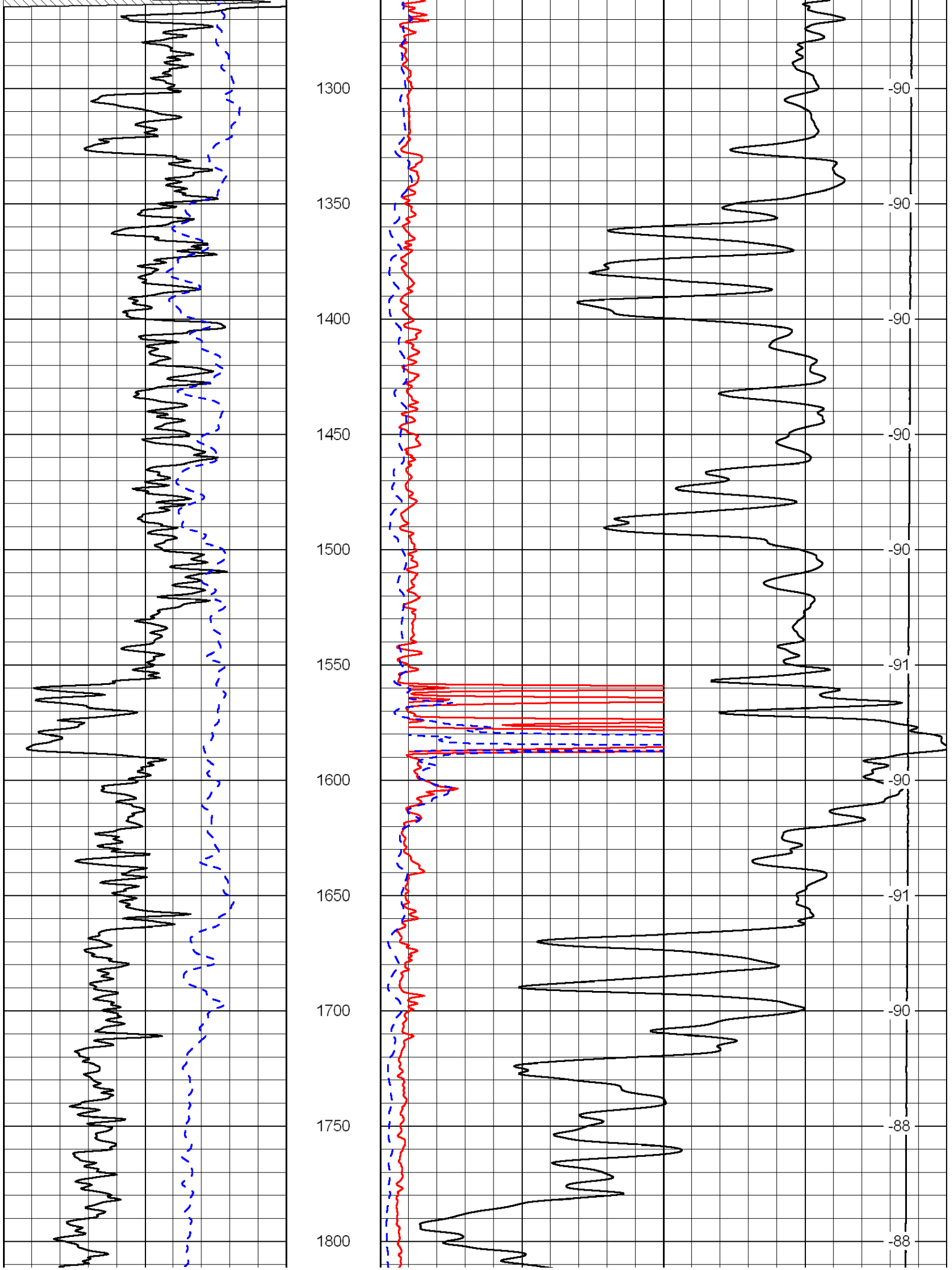
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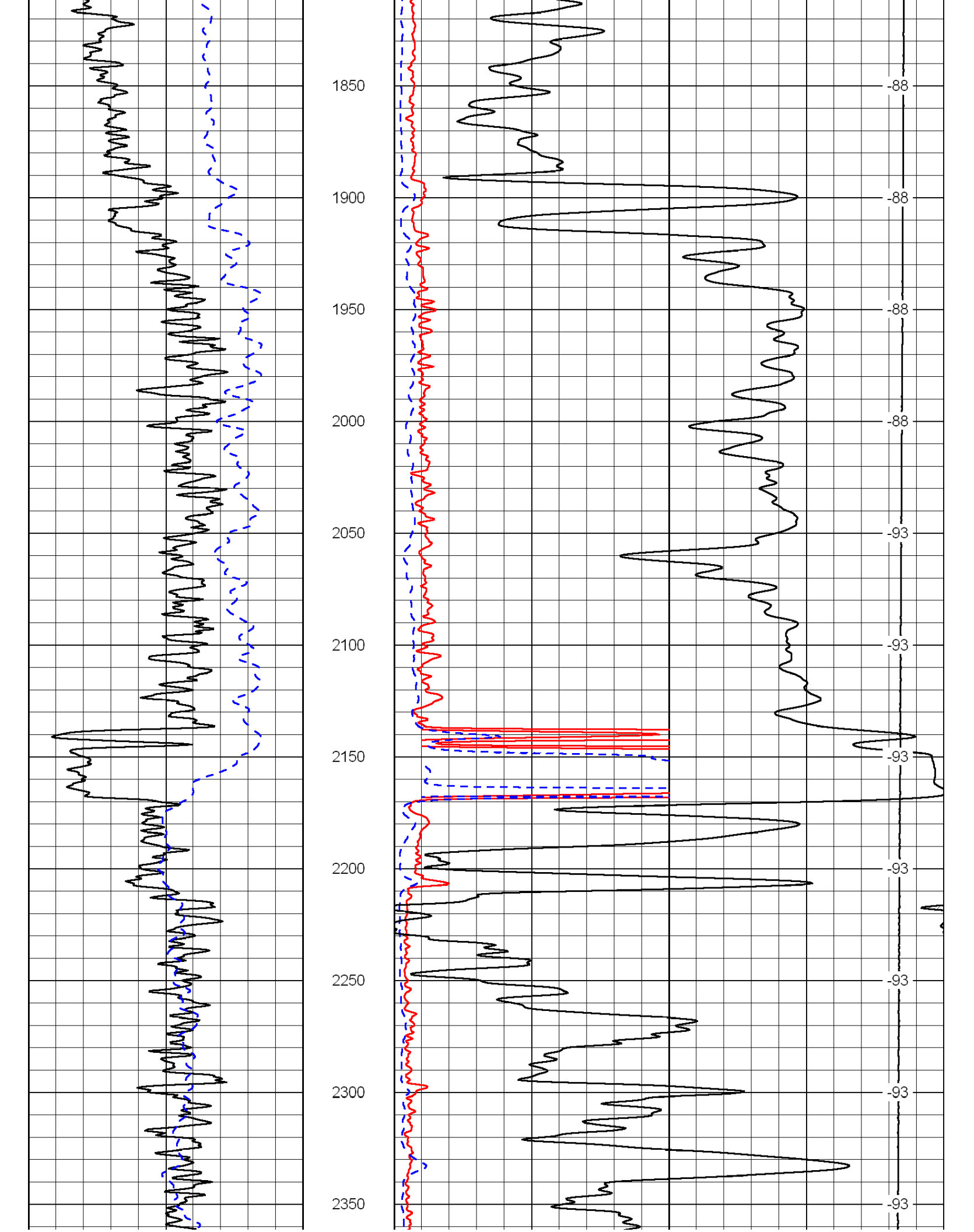
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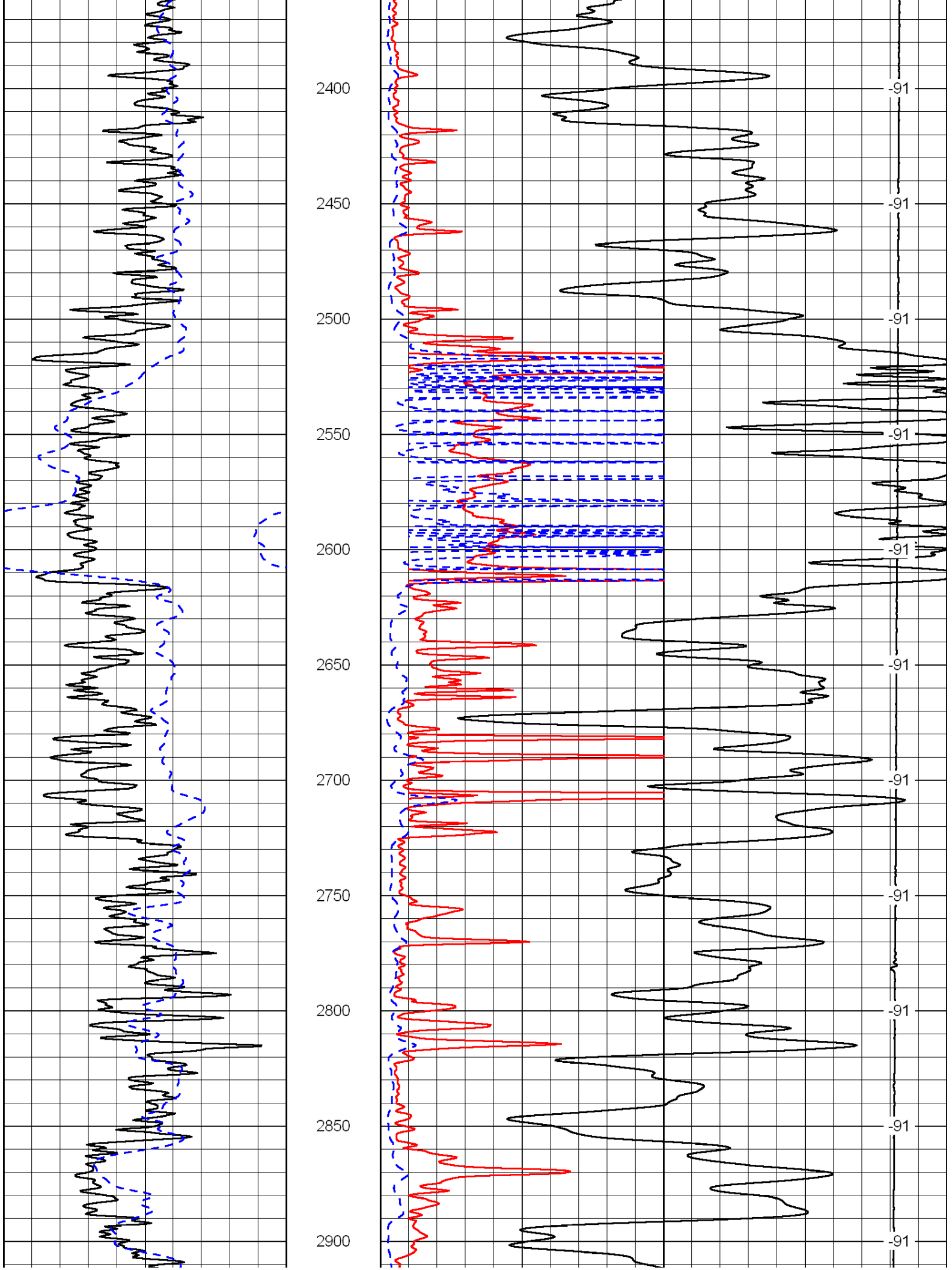
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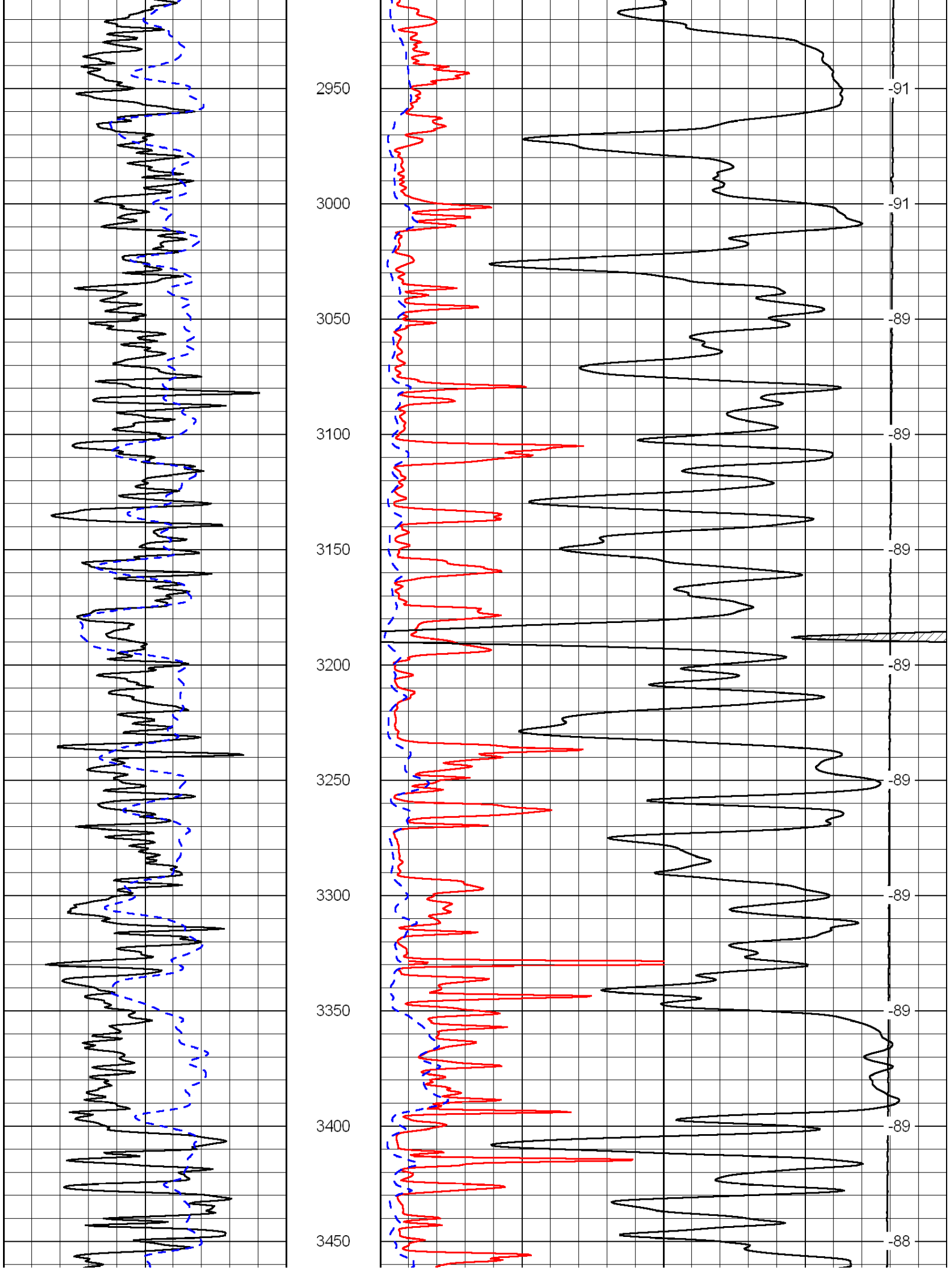
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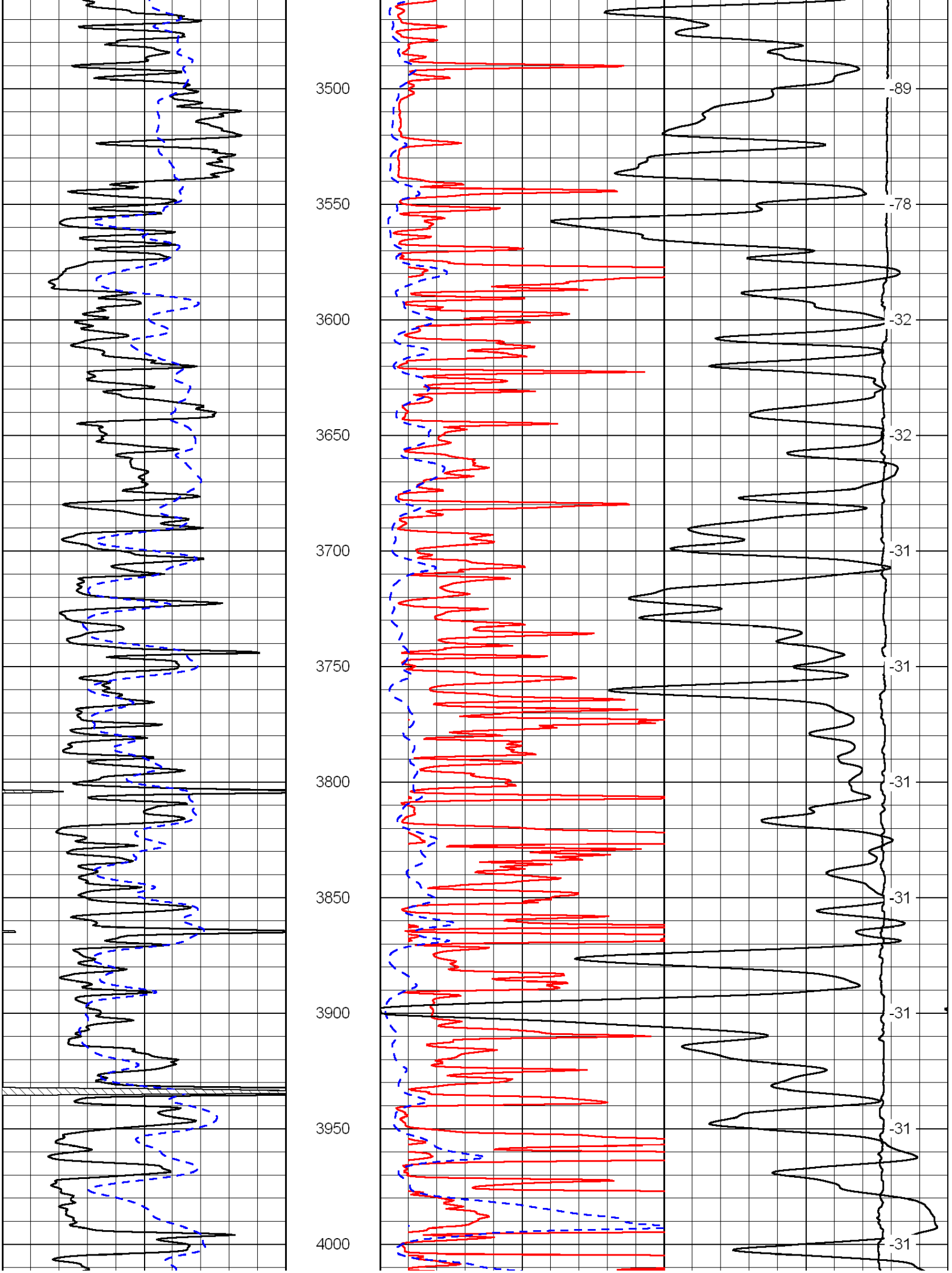
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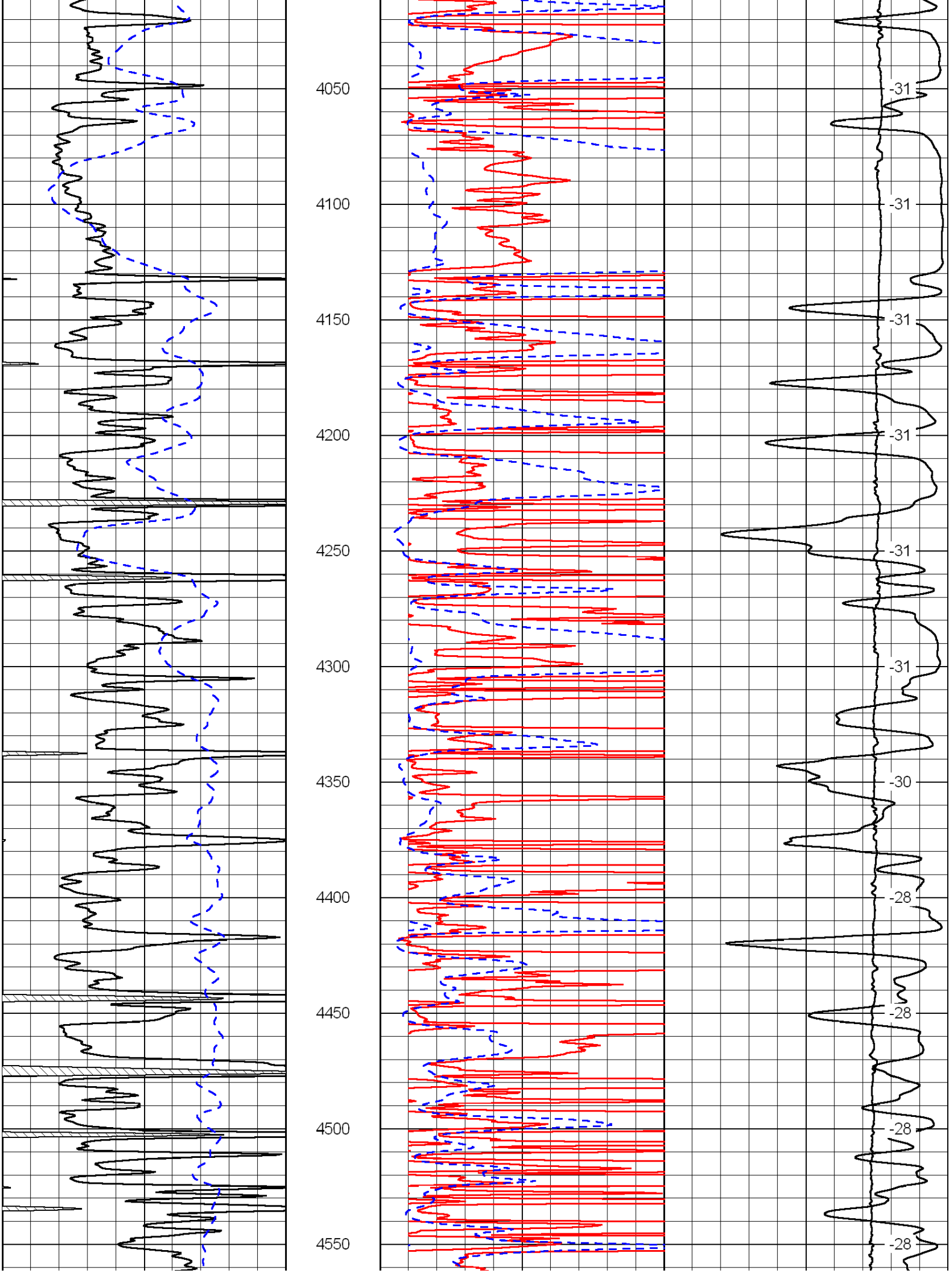
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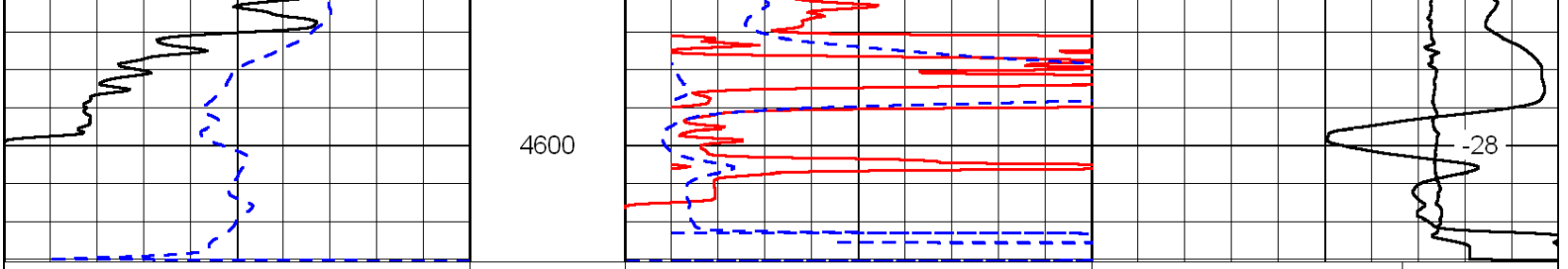

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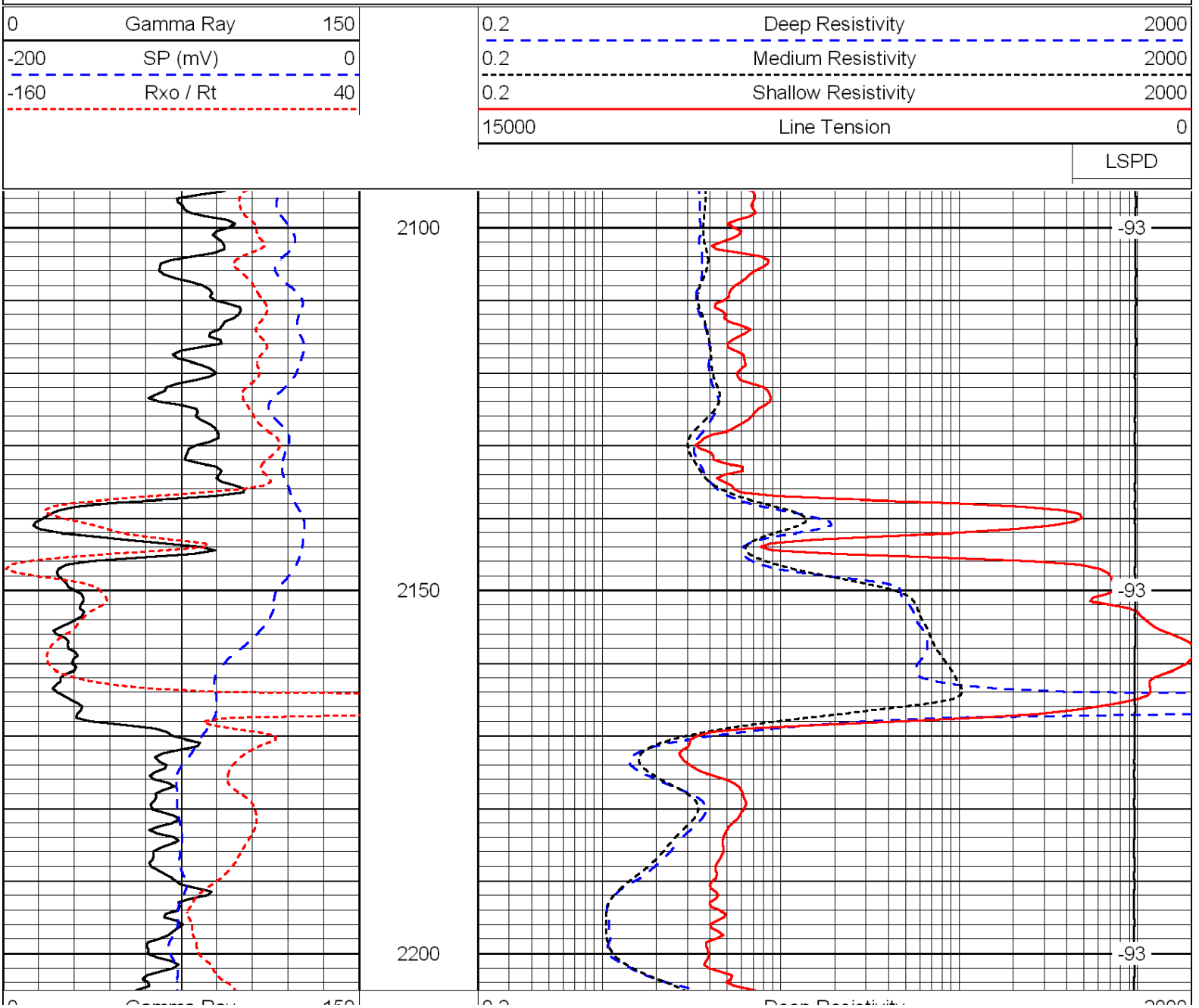

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-160	Rxo / Rt	40

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0.2	Shallow Resistivity	2000
15000	Line Tension	0
	LSPD	

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-160	Rxo / Rt	40

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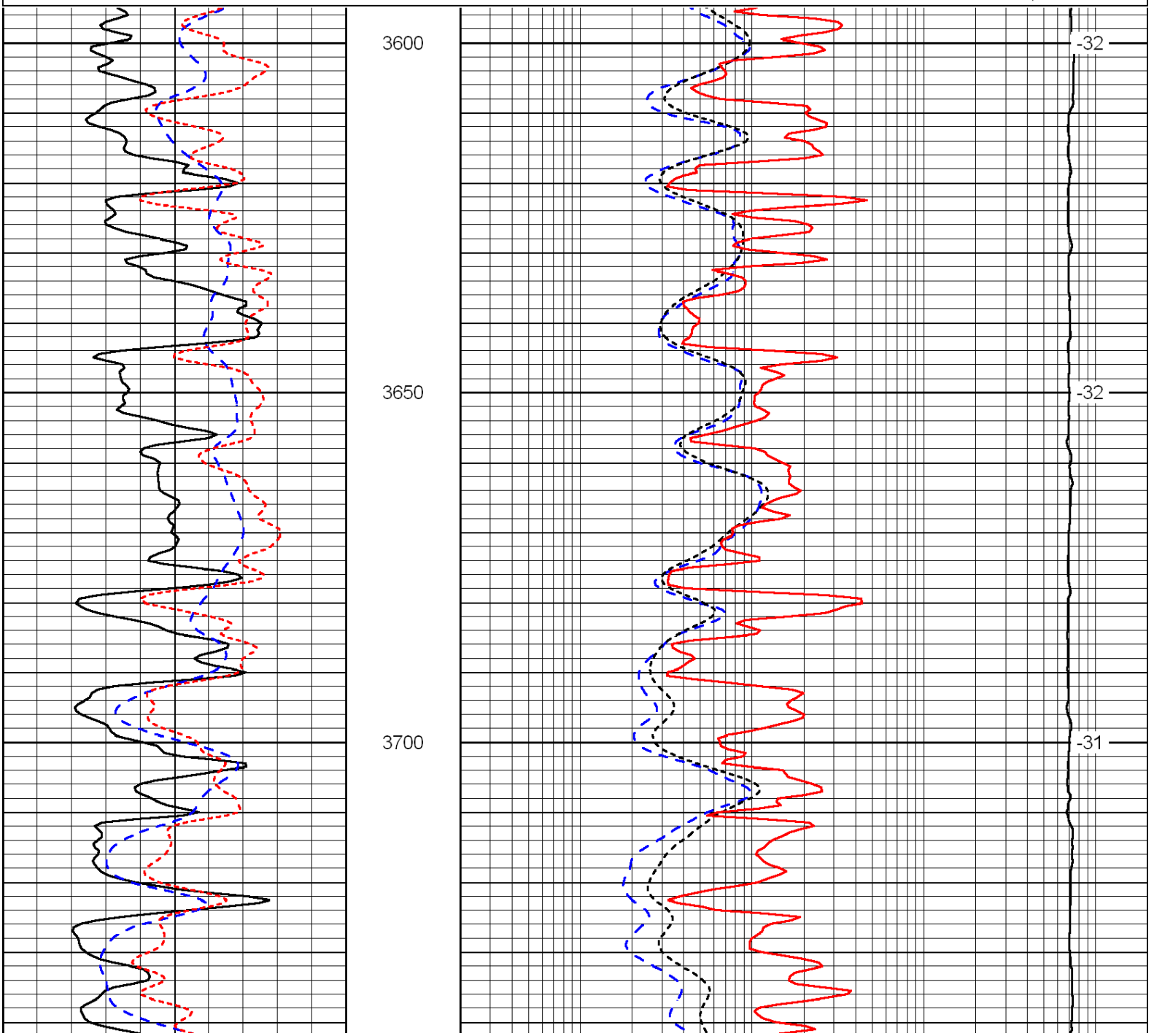
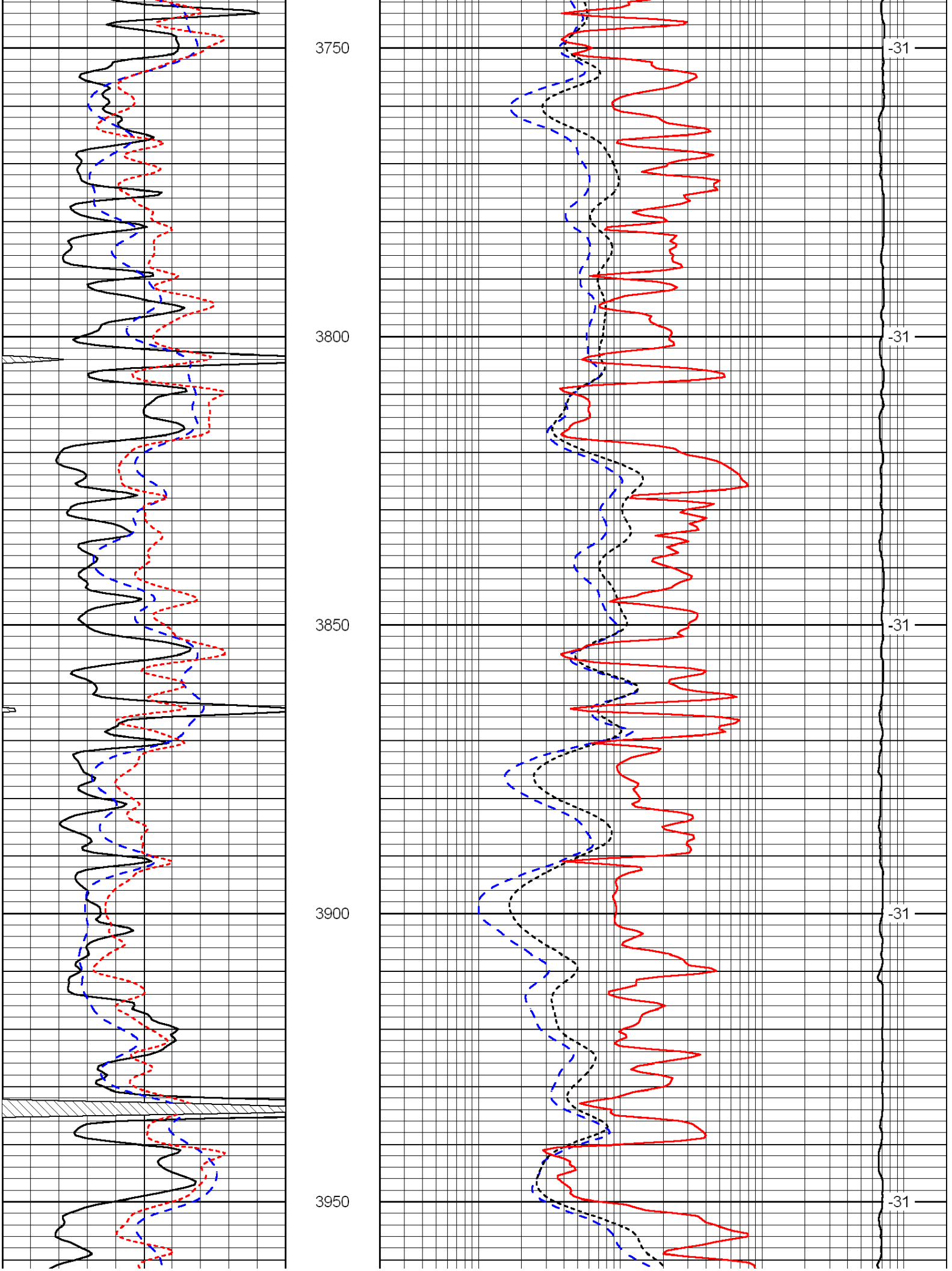
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
15000	Line Tension	0
	LSPD	

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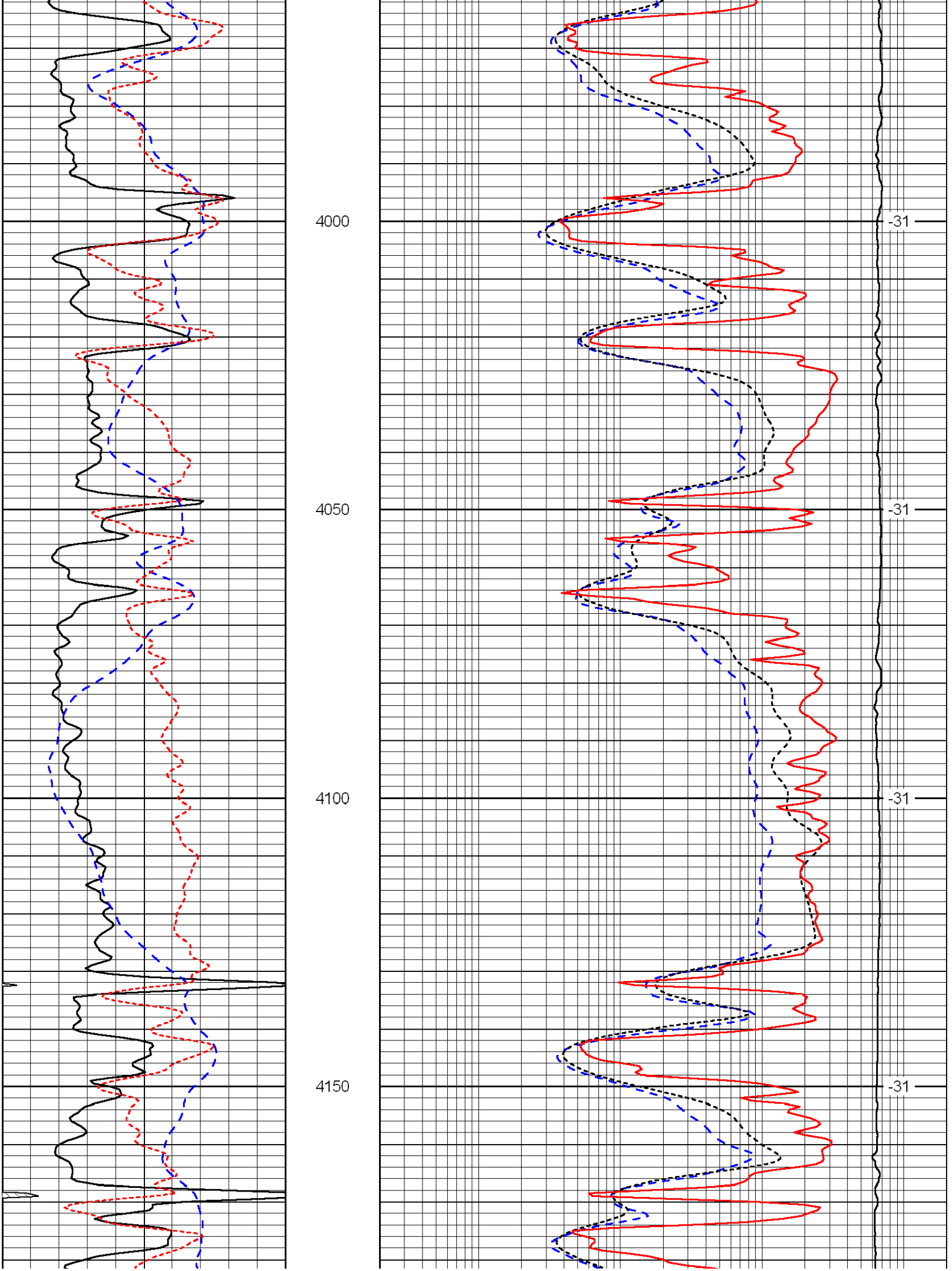
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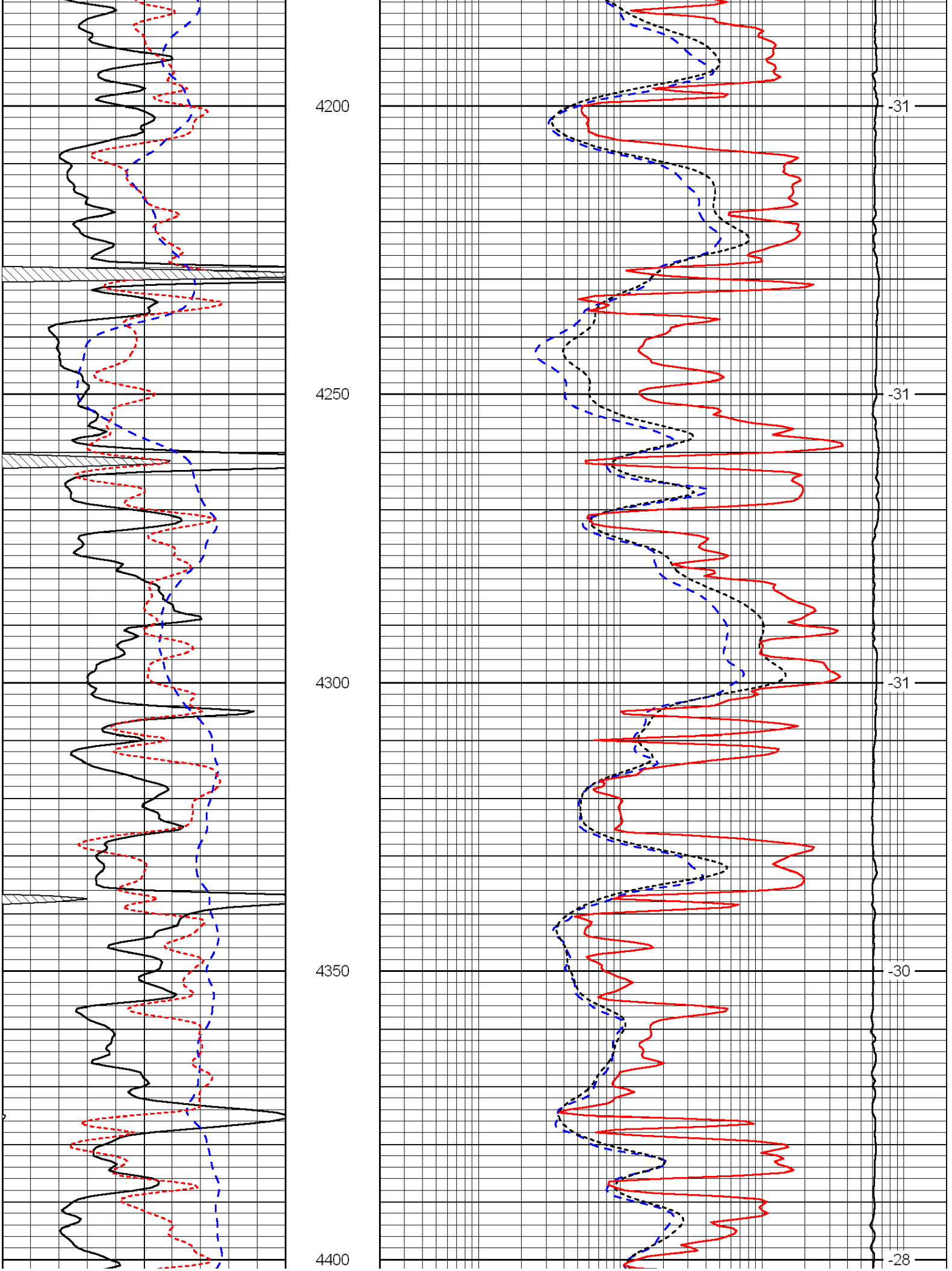
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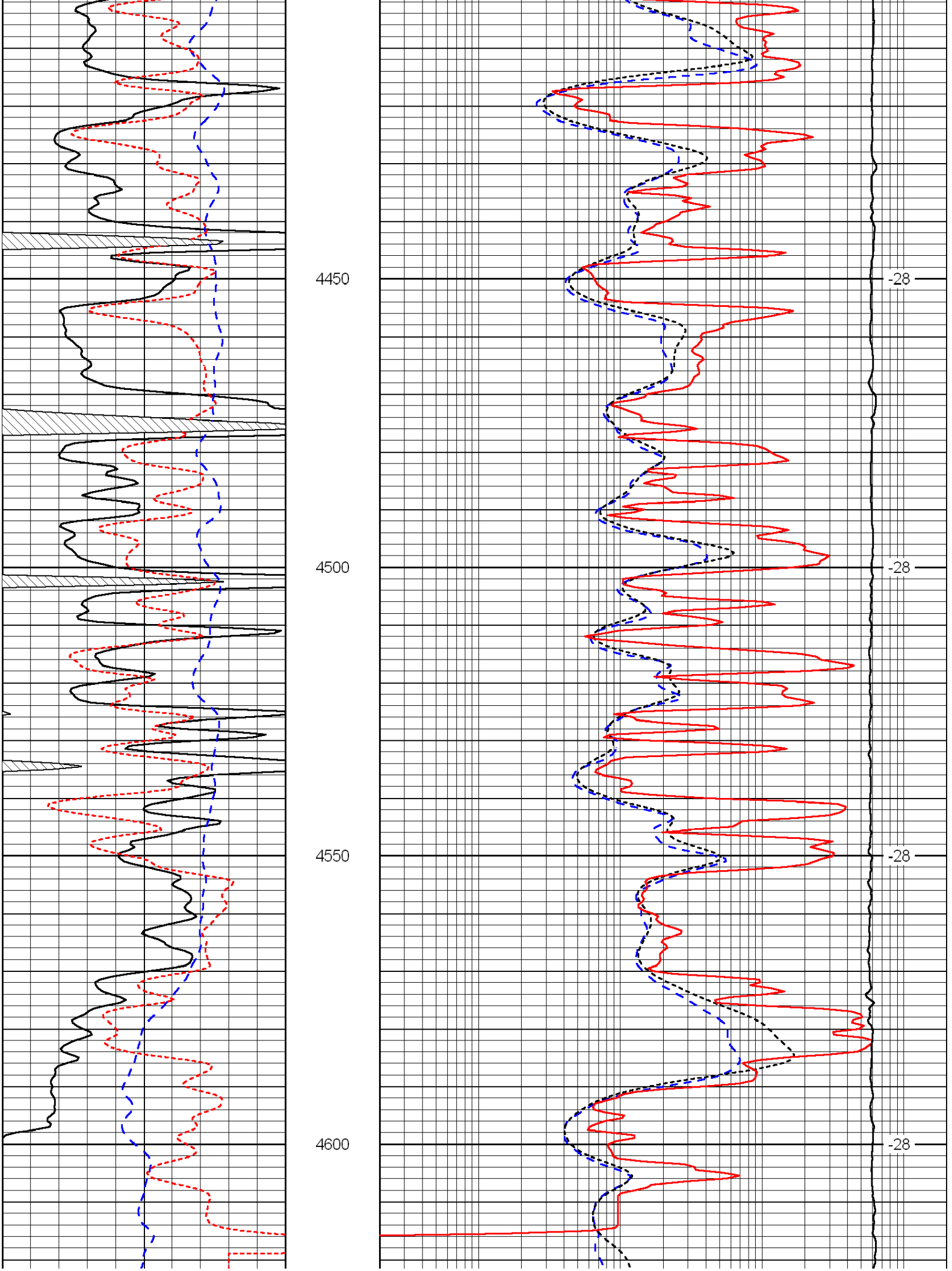
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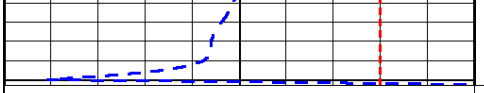

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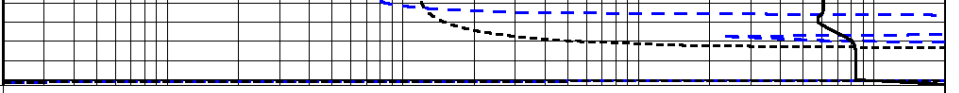

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LSPD

LOG-TECH

DIGITAL LOG (785) 625-3858

Dual Compensated Porosity Log

API No. 15-101-22,248-00-00

Company Larson Engineering, Inc.

Well Cairns No.1-21

Field Wildcat

County Lane State Kansas

Location NE NE NW
330' FNL & 2310' FEL
Sec: 21 Twp: 17S Rge: 28W

Other Services
DIL
MEL

Elevation
K.B. 2765
D.F.
G.L. 2758

Permanent Datum	Ground Level
Log Measured From	Kelly Bushing 7 Ft. Above Perm. Datum
Drilling Measured From	Kelly Bushing
Date	8/22/2010
Run Number	One
Type Log	CNL / CDL
Depth Driller	4625
Depth Logger	4624
Bottom Logged Interval	4603
Top Logged Interval	3600
Type Fluid In Hole	Chemical
Salinity, PPM CL	1,900
Density	9.4
Level	Full
Max. Rec. Temp. F	122
Operating Rig Time	4 Hours
Equipment -- Location	15 Hays
Recorded By	C. Desaire
Witnessed By	Bob Lewellyn

Borehole Record

Run No.	Bit	From	To
1	12.25	00	256
2	7.875	256	4625

Casing Record

Size	Wgt.	From	To
8.625	24#	00	256

<<< Fold Here >>>

Comments

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(785) 625-3858

Dighton, 5 N to 200 Rd,
1 E, 1 N, 1 1/2 E Into

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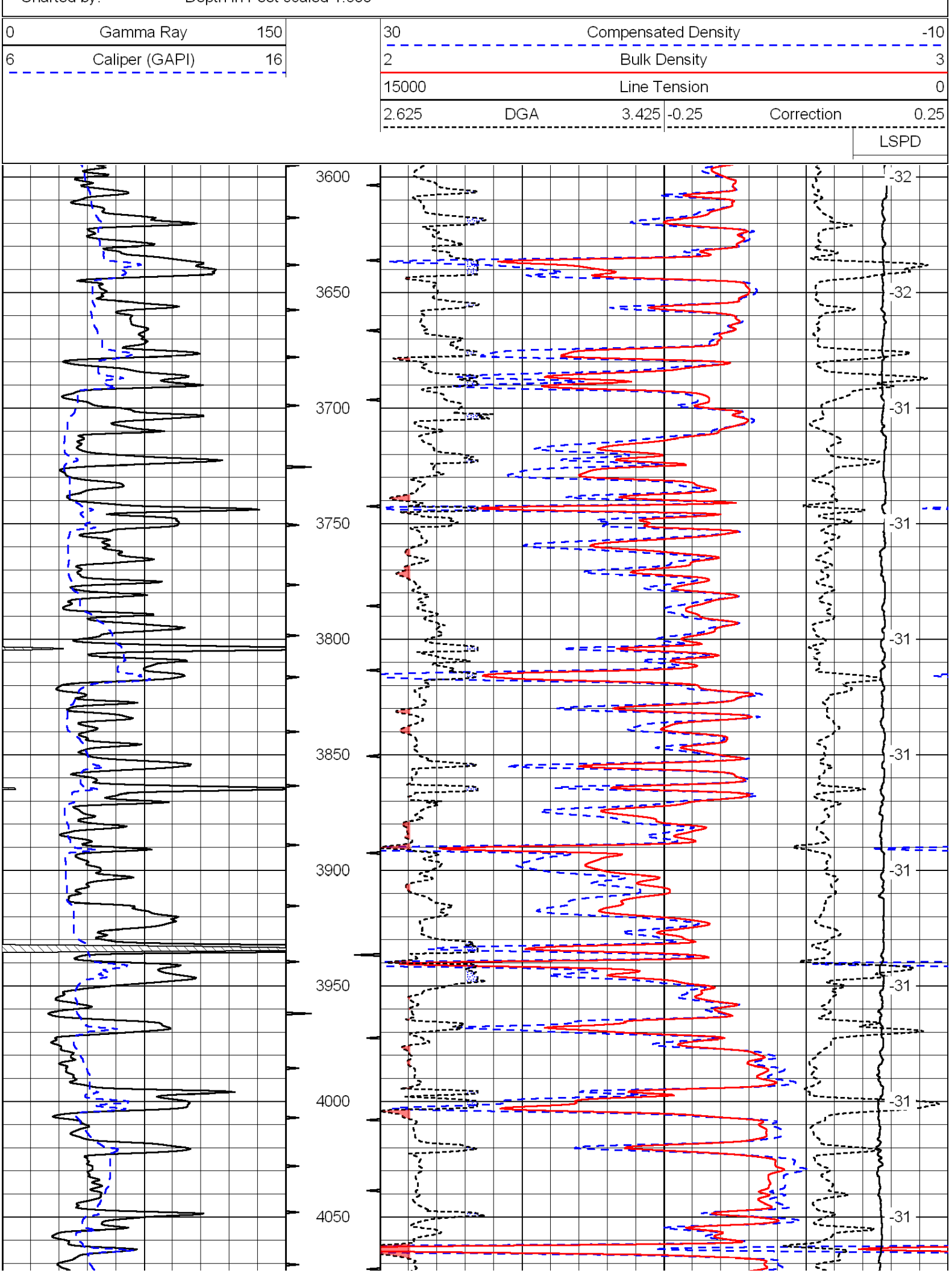
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2 Bulk Density 3
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2.625 DGA 3.425
-0.25 Correction 0.25
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3600
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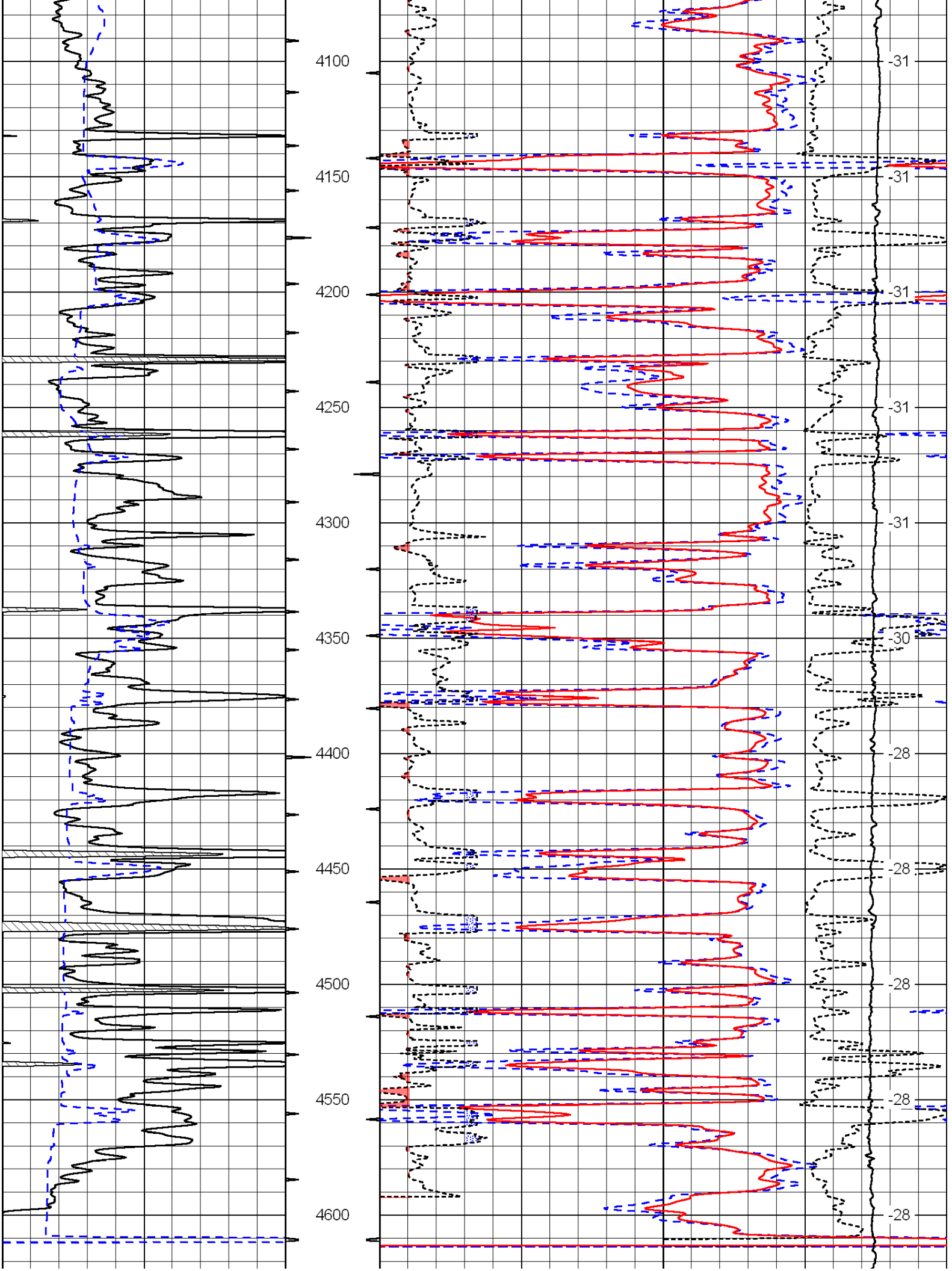
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0	Gamma Ray	150
6	Caliper (GAPI)	16

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

Database File: c:\warrior\data\larson_cairns no.1-21\lrsnhd.db
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Presentation Format: cndlspec
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Charted by: Depth in Feet scaled 1:240

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30	Compensated Neutron (Limestone)				-10
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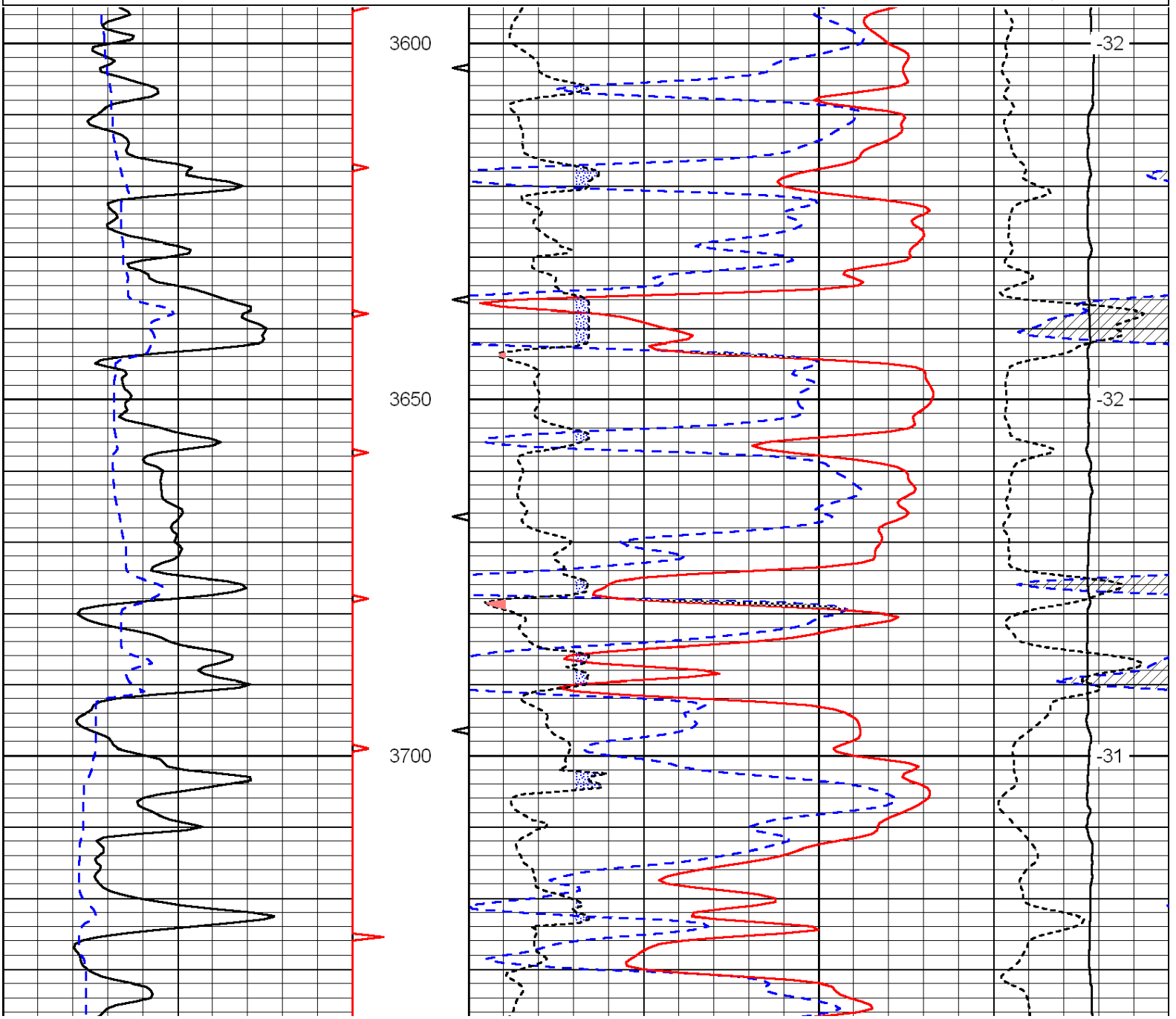

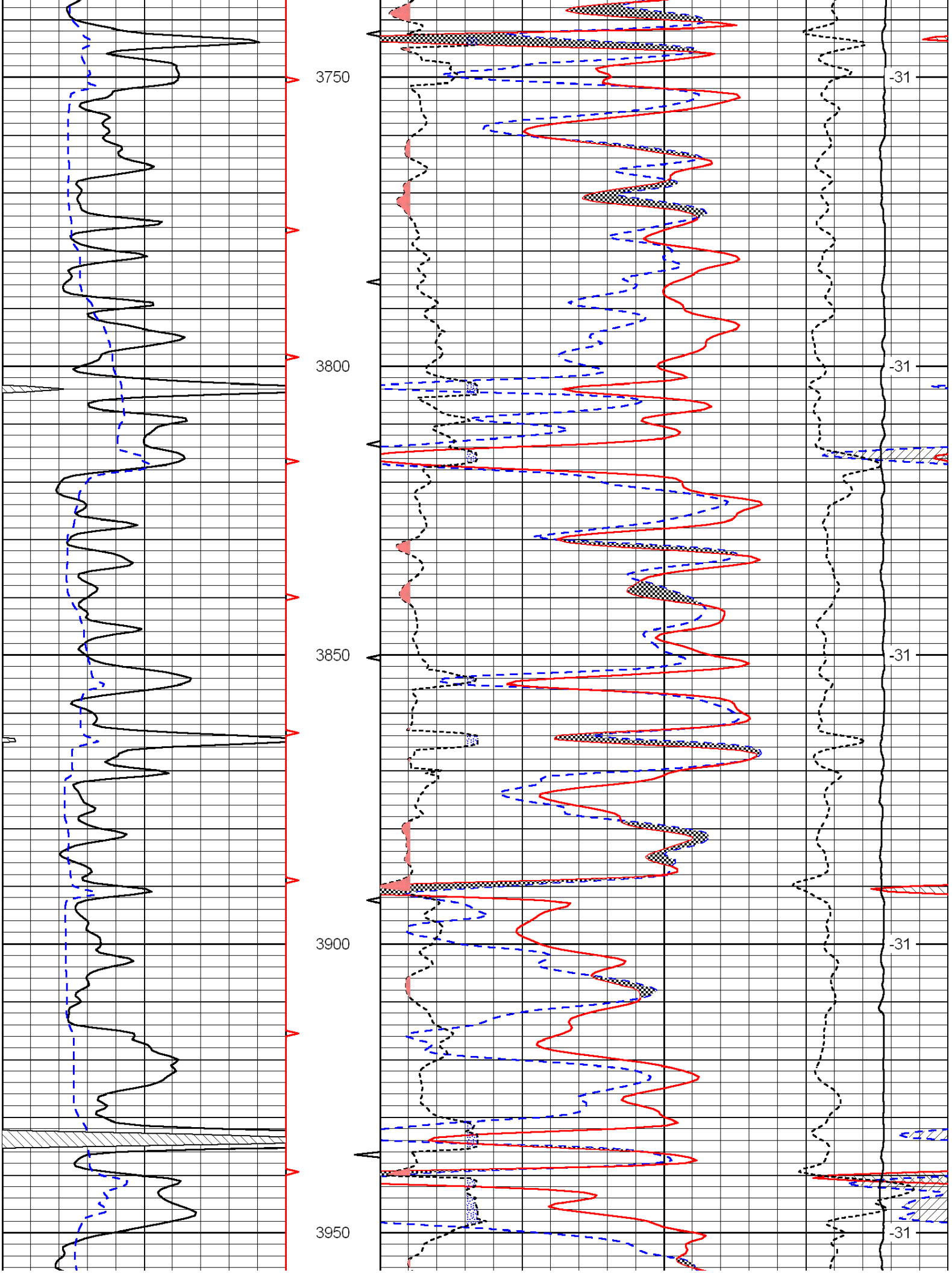
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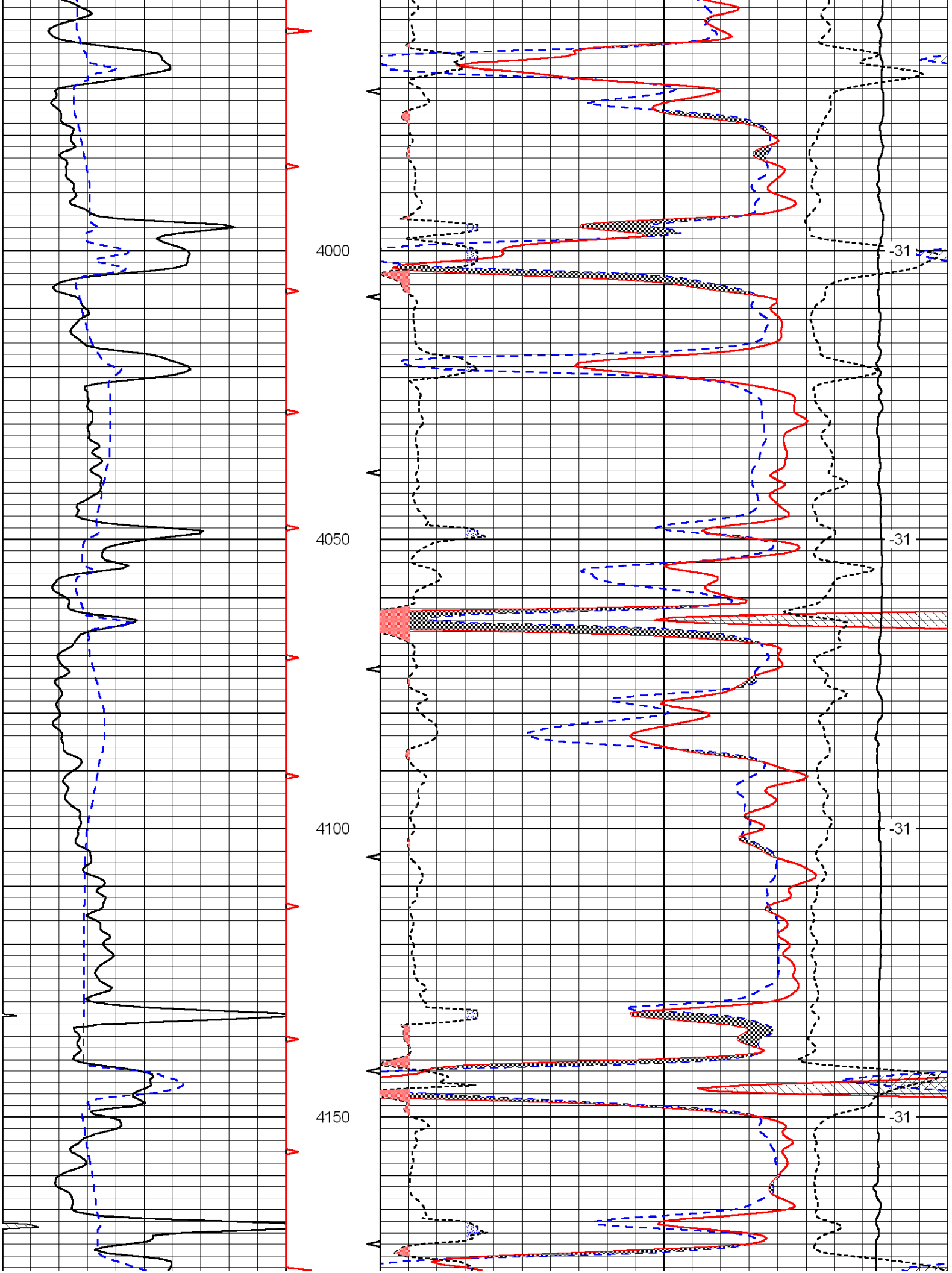
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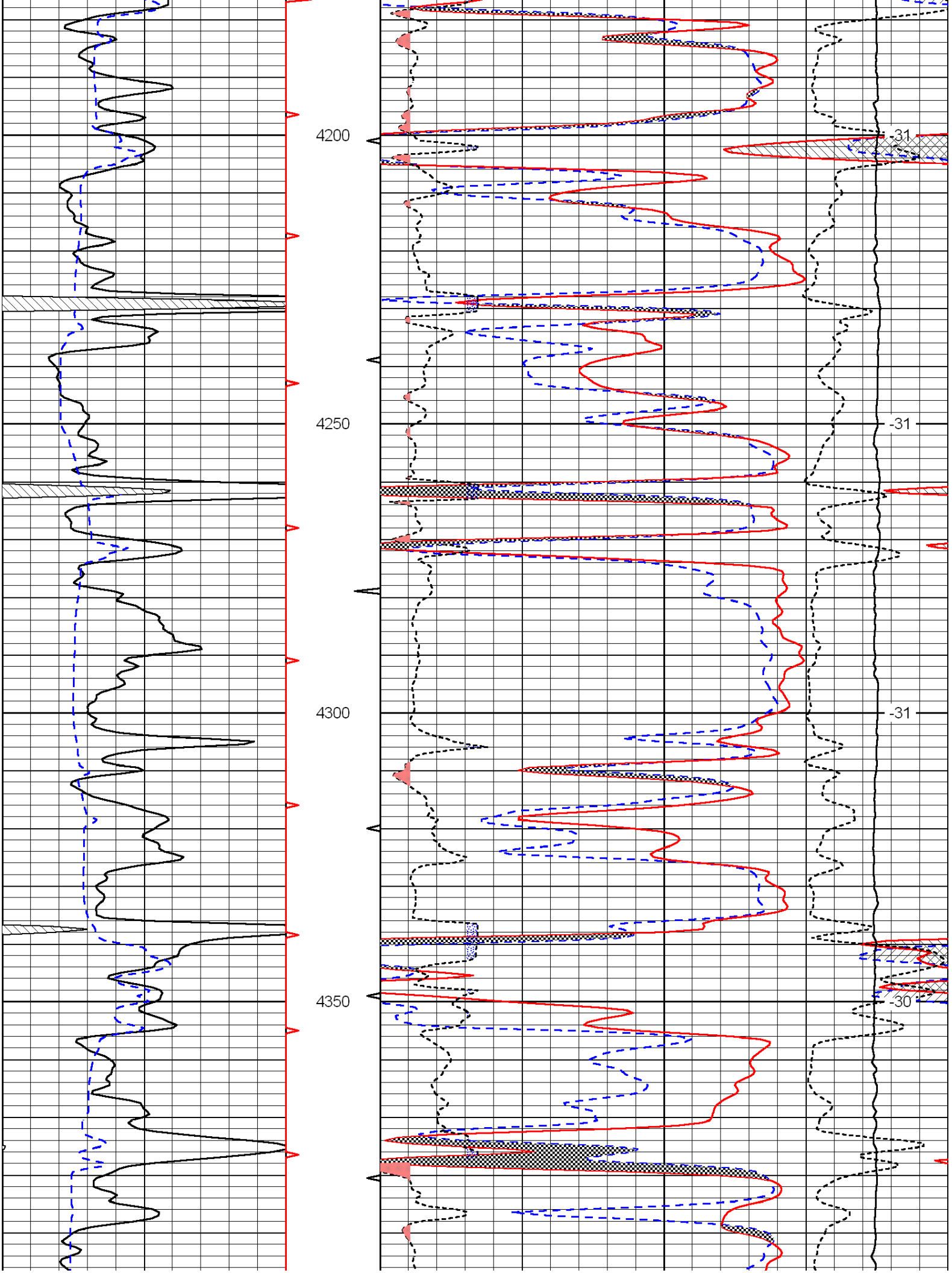
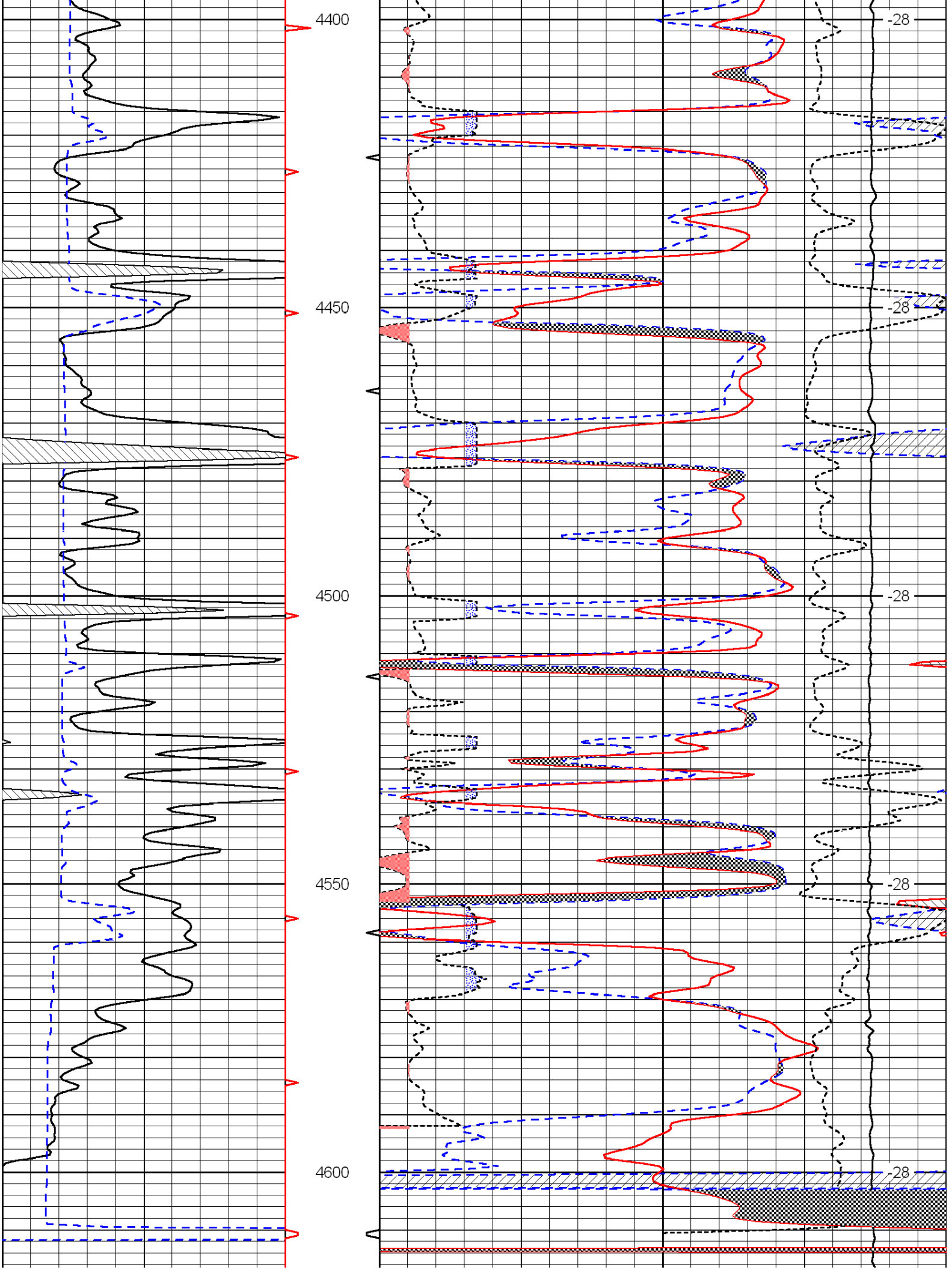

4200
4250
4300
4350
-31
-31
-31
-30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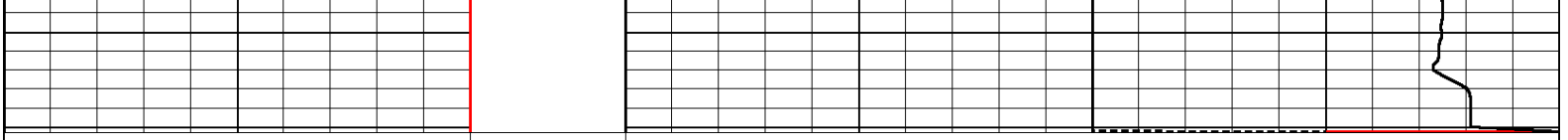
4500
4550
4600
-28
-28
-28
-28
-28



0	Gamma Ray	150
6	Caliper (GAPI)	16

30	Compensated Neutron (Limestone)				-10
30	Compensated Density (2.71 ma)				-10
2.625	DGA	3.425	-0.25	Correction	0.25
15000	Line Tension				0

LSPD

LOG-TECH

DIGITAL LOG (785) 625-3858

Microresistivity Log

API No.	
15-101-22,248-00-00	

Company	Larson Engineering, Inc.
Well	Cairns No.1-21
Field	Wildcat
County	Lane
State	Kansas

Location: NE NE NW
330' FNL & 2310' FEL

Sec: 21 Twp: 17S Rge: 28W

Other Services: CNL/CDL, DIL

Permanent Datum: Ground Level — Elevation 2758
Log Measured From: Kelly Bushing — 7 Ft. Above Perm. Datum
Drilling Measured From: Kelly Bushing

Elevation
K.B. 2765
D.F.
G.L. 2758

Date	8/22/2010		
Run Number	Two		
Depth Driller	4625		
Depth Logger	4624		
Bottom Logged Interval	4623		
Top Log Interval	3600		
Casing Driller	8.625 @ 256		
Casing Logger	253		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity,ppm CL	1,900		
Density / Viscosity	9.4 / 52		
pH / Fluid Loss	10.0 / 8.0		
Source of Sample	Flowline		
Rm @ Meas. Temp	1.7 @ 83		
Rmf @ Meas. Temp	1.28 @ 83		
Rmc @ Meas. Temp	2.30 @ 83		
Source of Rmf / Rmc	Charts		
Rm @ BHT	1.15 @ 122		
Operating Rig Time	4 Hours		
Max Rec. Temp. F	122		
Equipment Number	15		
Location	Hays		
Recorded By	C. Desaire		
Witnessed By	Bob Lewellyn		

<<< Fold Here >>>

Comments

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

Dighton, 5 N to 200 Rd,
1 E, 1 N, 1 1/2 E Into

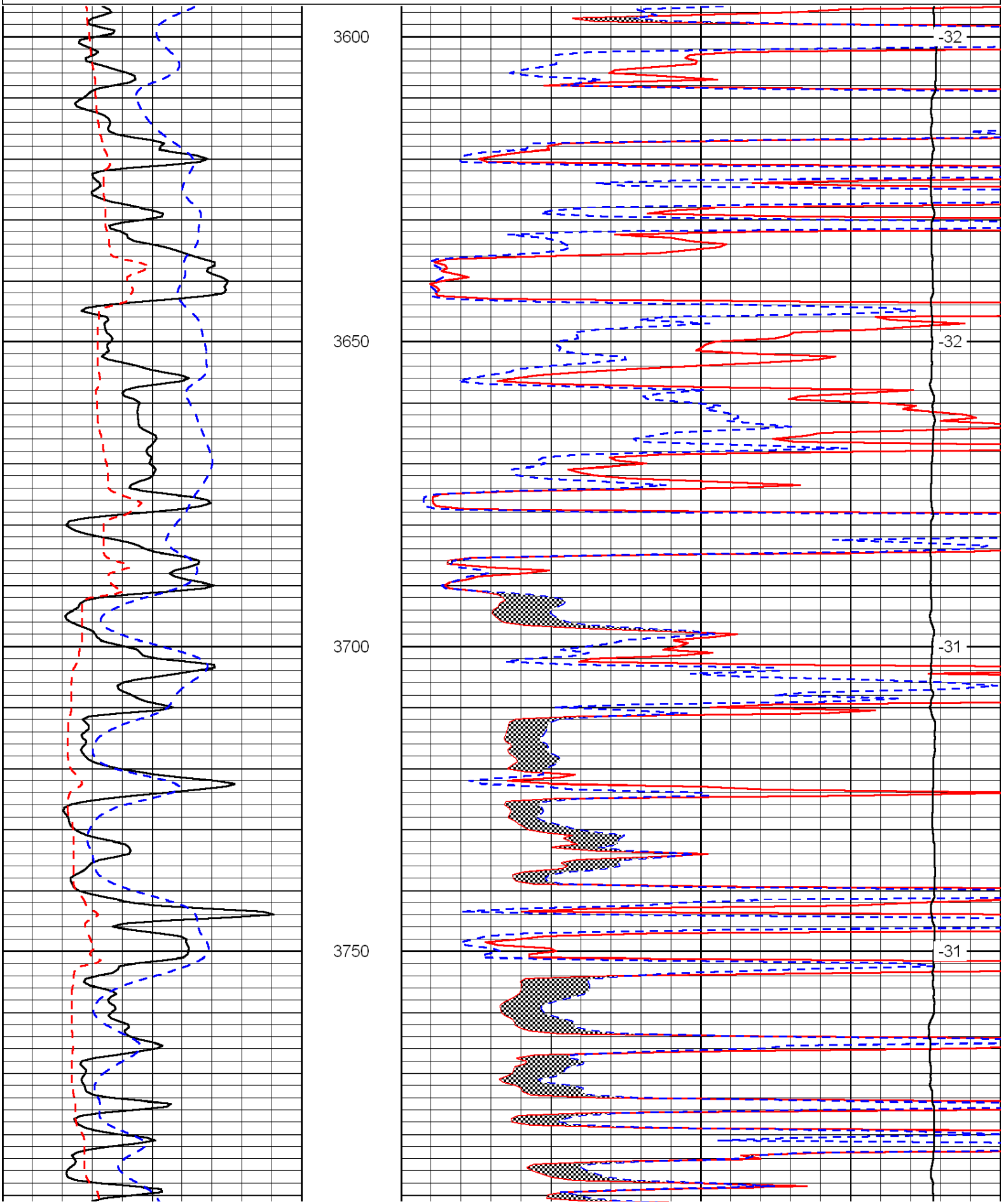
Database File:	c:\warrior\data\larson_cairns no.1-21\lrsnhd.db
Dataset Pathname:	dil/lrsnstk
Presentation Format:	micro
Dataset Creation:	Mon Aug 23 00:58:33 2010
Charted by:	Depth in Feet scaled 1:240

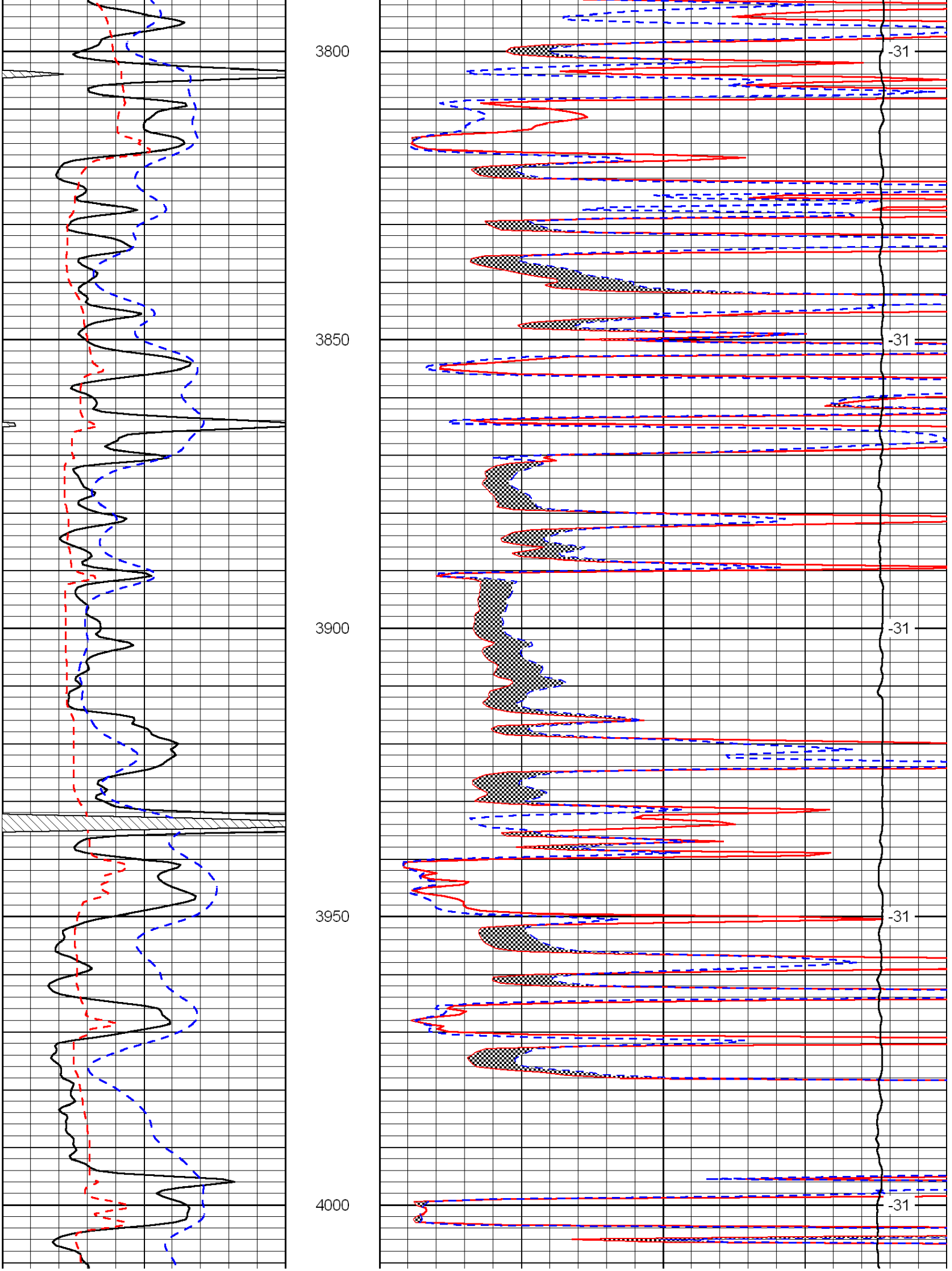
Charted by: Depth in Feet scaled 1:240

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

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

LSPD

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3950
4000
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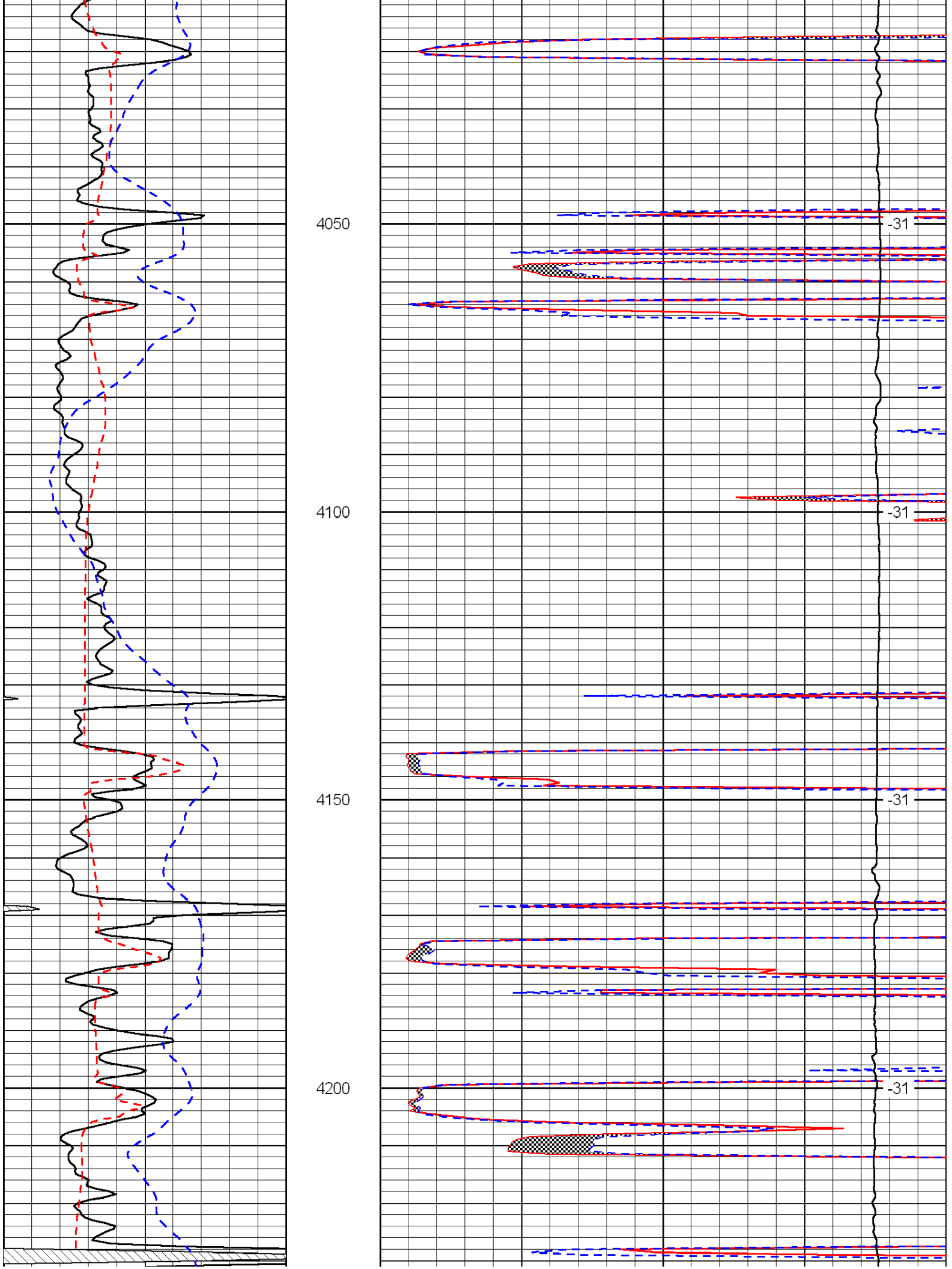
-31
-31
-31
-31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4200
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-31
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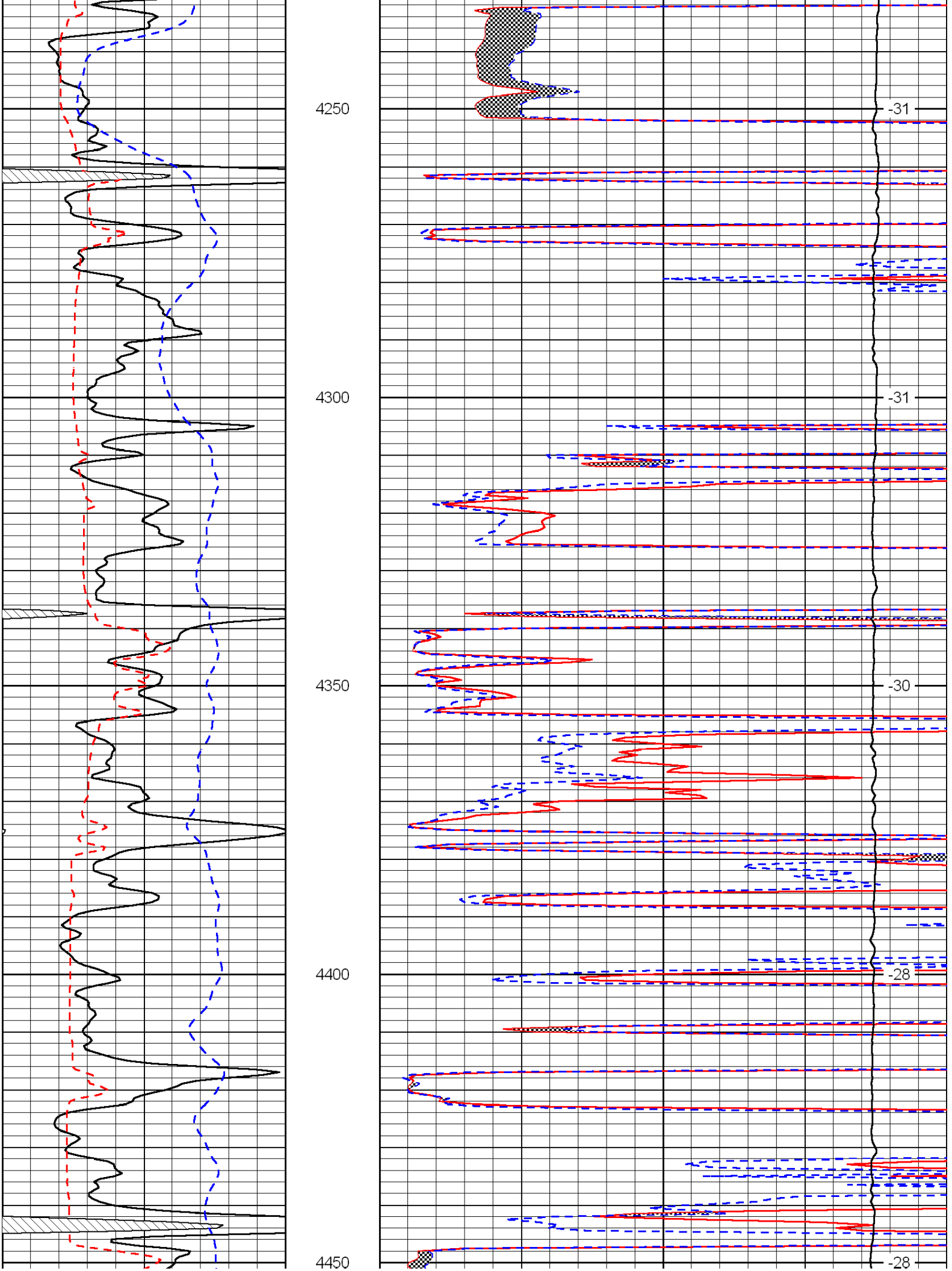
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4450
-31
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-30
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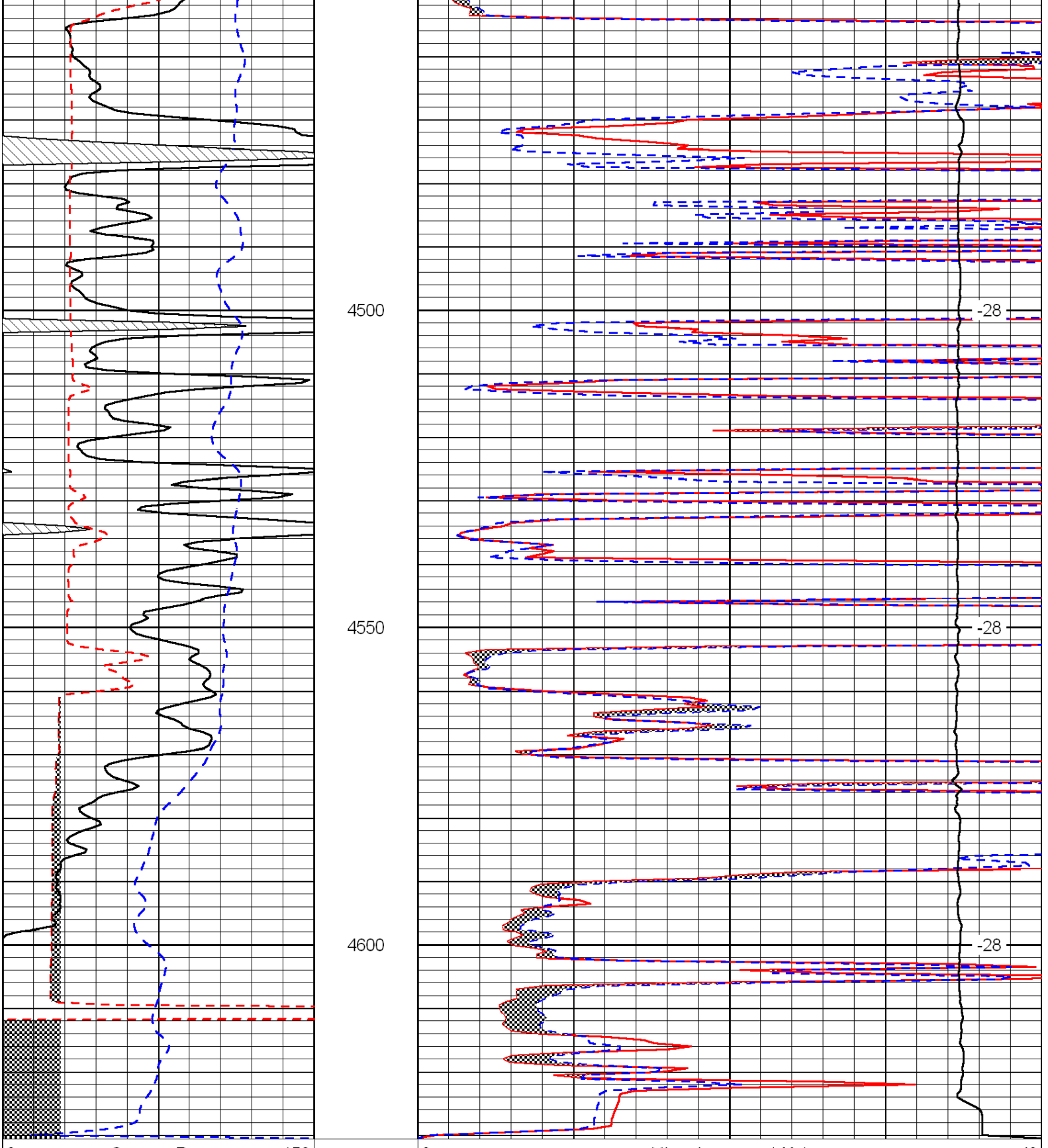
-28



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

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

LSPD

KANSAS
CORPORATION COMMISSION

December 06, 2010

Thomas Larson
Larson Engineering, Inc. dba Larson Operating Company
562 W STATE RD 4
OLMITZ, KS 67564-8561

Re: ACO1
API 15-101-22248-00-00
Cairns 1-21
NW/4 Sec.21-17S-28W
Lane 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,
Thomas Larson