



DUAL INDUCTION LOG

PIONEER
Pioneer Energy Services

Company **H2 OIL OPCO, LLC**
Well **WAGNER UNIT WSW NO.1**
Field **OTIS-ALBERT**
County **RUSH**
State **KANSAS**

Company **H2 OIL OPCO, LLC**
Well **WAGNER UNIT WSW NO.1**
Field **OTIS-ALBERT**
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Location: API #: 15-165-22152-00-00

860' FNL & 1256' FEL
SEC 29 TWP 18S RGE 16W

Permanent Datum **GROUND LEVEL** Elevation **2056'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Other Services
CNL/CDL
Elevation
K.B. 2064'
D.F. N/A
G.L. 2056'

Date **9/28/2017**

Run Number	ONE		
Depth Driller	930'		
Depth Logger	930'		
Bottom Logged Interval	929'		
Top Log Interval	00		
Casing Driller	13.375" @ 479'		
Casing Logger	479'		
Bit Size	12.25"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	1,300		
Density / Viscosity	10.2 48		
pH / Fluid Loss	7.0 8.0		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.95 @ 68		
Rimf @ Meas. Temp	.71 @ 68		
Rmc @ Meas. Temp	1.28 @ 68		
Source of Rimf / Rmc	CHARTS		
Rim @ BHT	.76 @ 85		
Operating Rig Time	1 HOUR		
Max Rec. Temp. F	85 DEG/F		
Equipment Number	108		
Location	HAYS		
Recorded By	J. HENRICKSON		
Witnessed By	DAN PYZIAK		

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.
TIMKEN KANSAS
EAST TO 360 ROAD, 50 YARDS SOUTH, WEST INTO

Log Measured From: **KELLY BUSHING** 8 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew

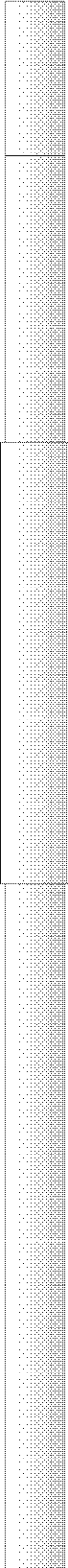
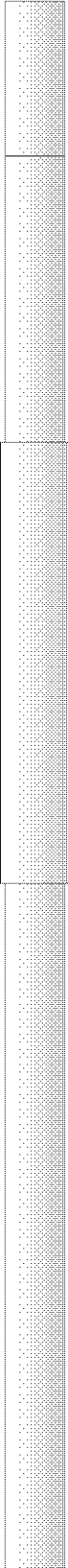
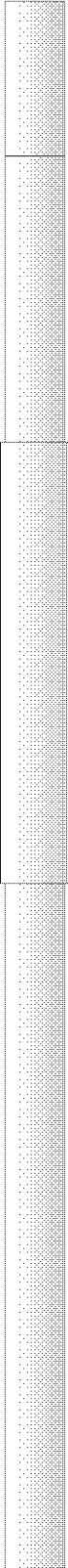
Engineer: **J. HENRICKSON**
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: **DAN PYZIAK**
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 12.25	degF 100	in 9.625	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 0	mmho/m 0	mV -230	degF 83	Off	ft 930

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	33.00		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC	29.90		CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	29.15					
LSD	20.85		CDL-M&W (168-986)	8.50	4.00	250.00
DCAL	20.83					
SSD	20.35					
RLL3	15.80					
RLL3F	15.79					
			DIL-M&W (1987)	18.50	3.50	220.00
CILD	8.00					

CILM	4.70								
SP	0.20								
Dataset: h2_oil_wagner_unit_wsw_1.db: field/well/stack/pass2.1 Total length: 35.50 ft Total weight: 620.00 lb O.D.: 4.00 in									

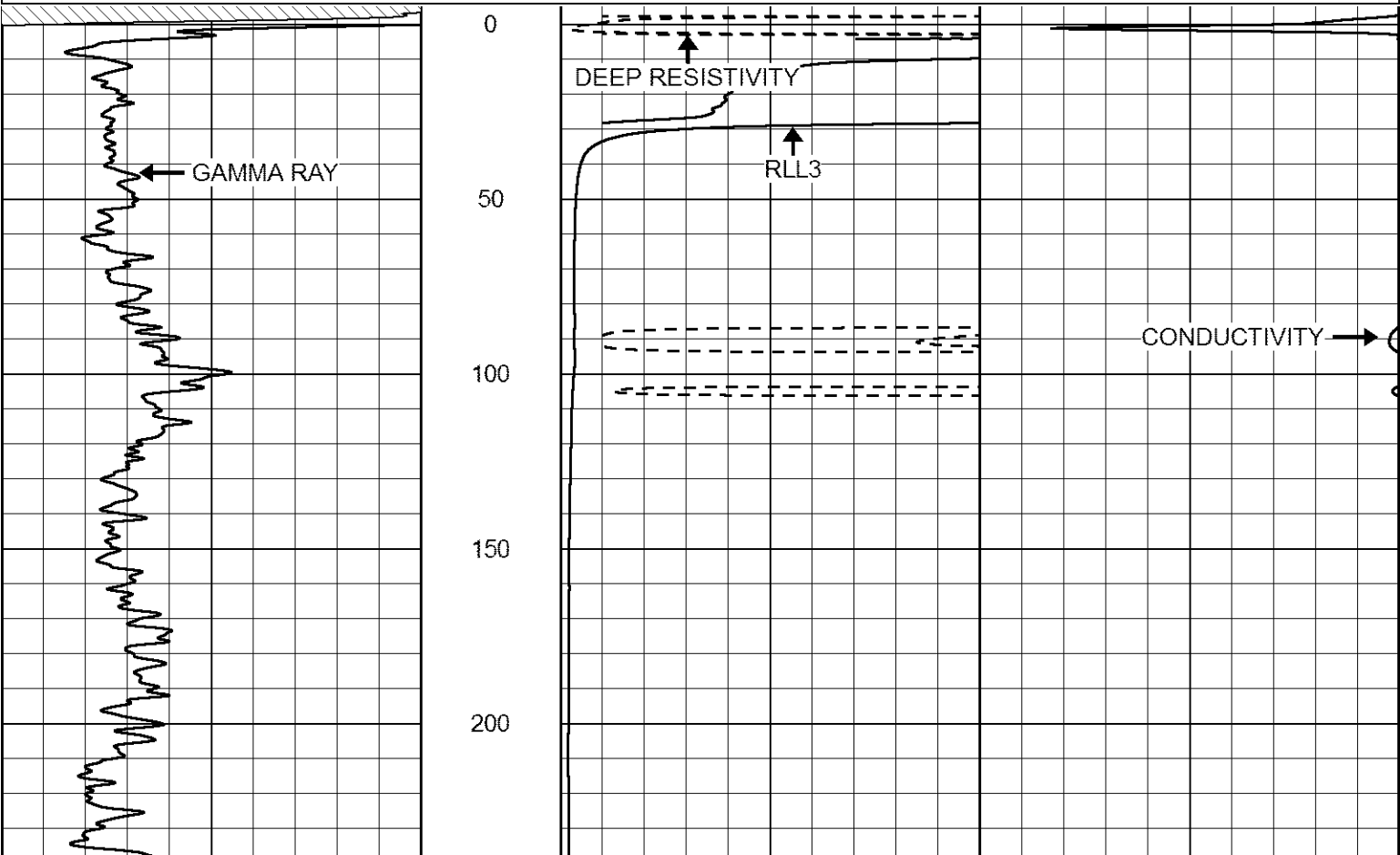


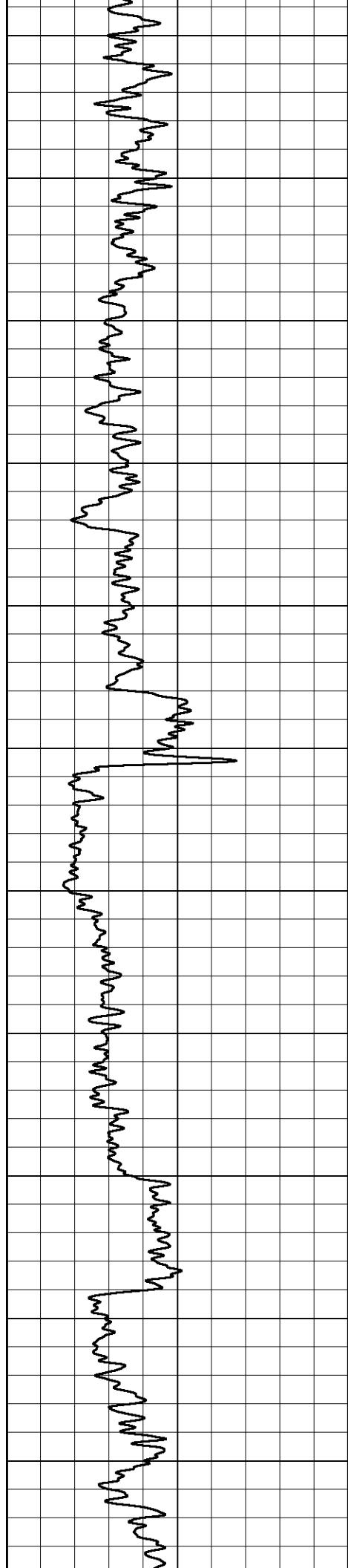
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MAIN PASS

Database File	h2_oil_wagner_unit_wsw_1.db
Dataset Pathname	stack/pass2.1
Presentation Format	dil2in
Dataset Creation	Thu Sep 28 14:53:35 2017
Charted by	Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150	2000	CONDUCTIVITY (mmho/m)	0
			0	RLL3 (Ohm-m)	50
			0	DEEP RESISTIVITY (Ohm-m)	50
			50	RLL3 (Ohm-m)	500
				DEEP RESISTIVITY	
			50	(Ohm-m)	500





250

300

350

400

450

500

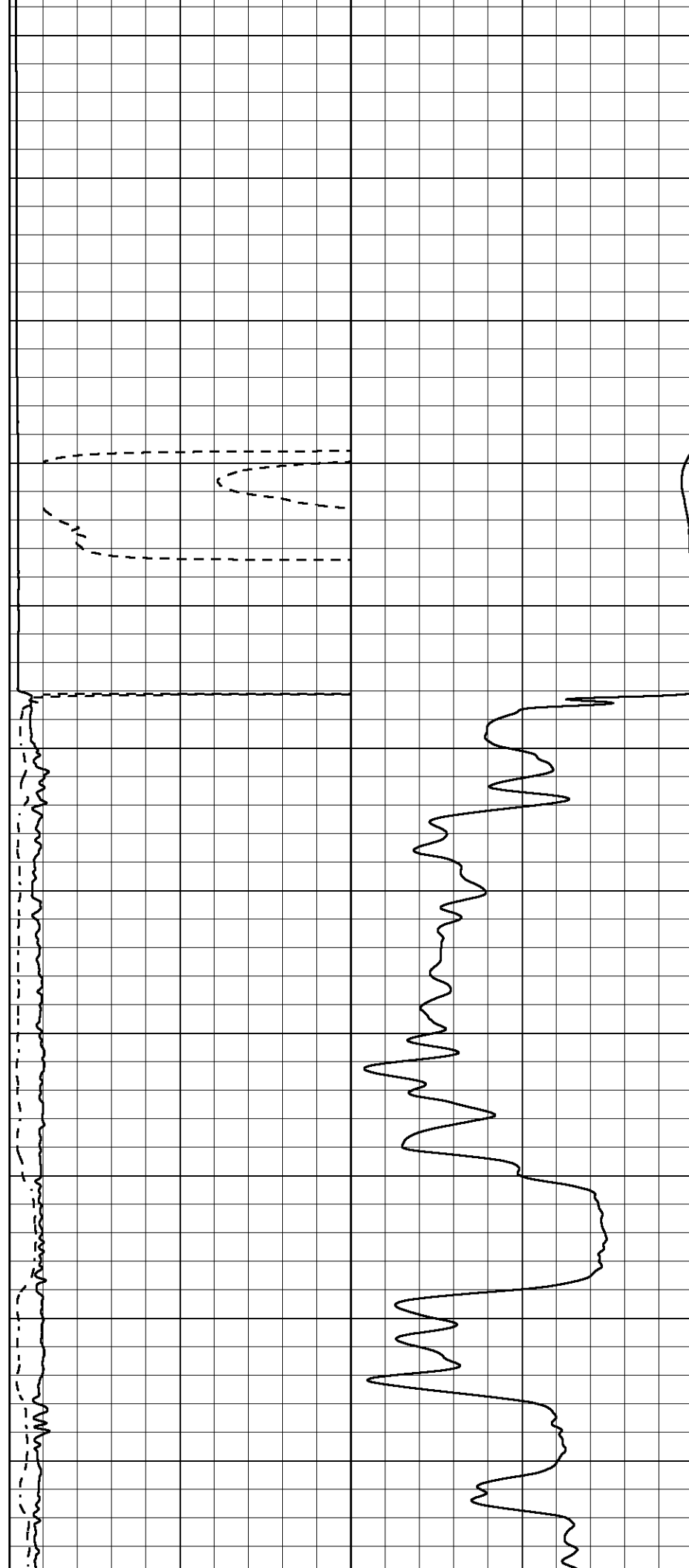
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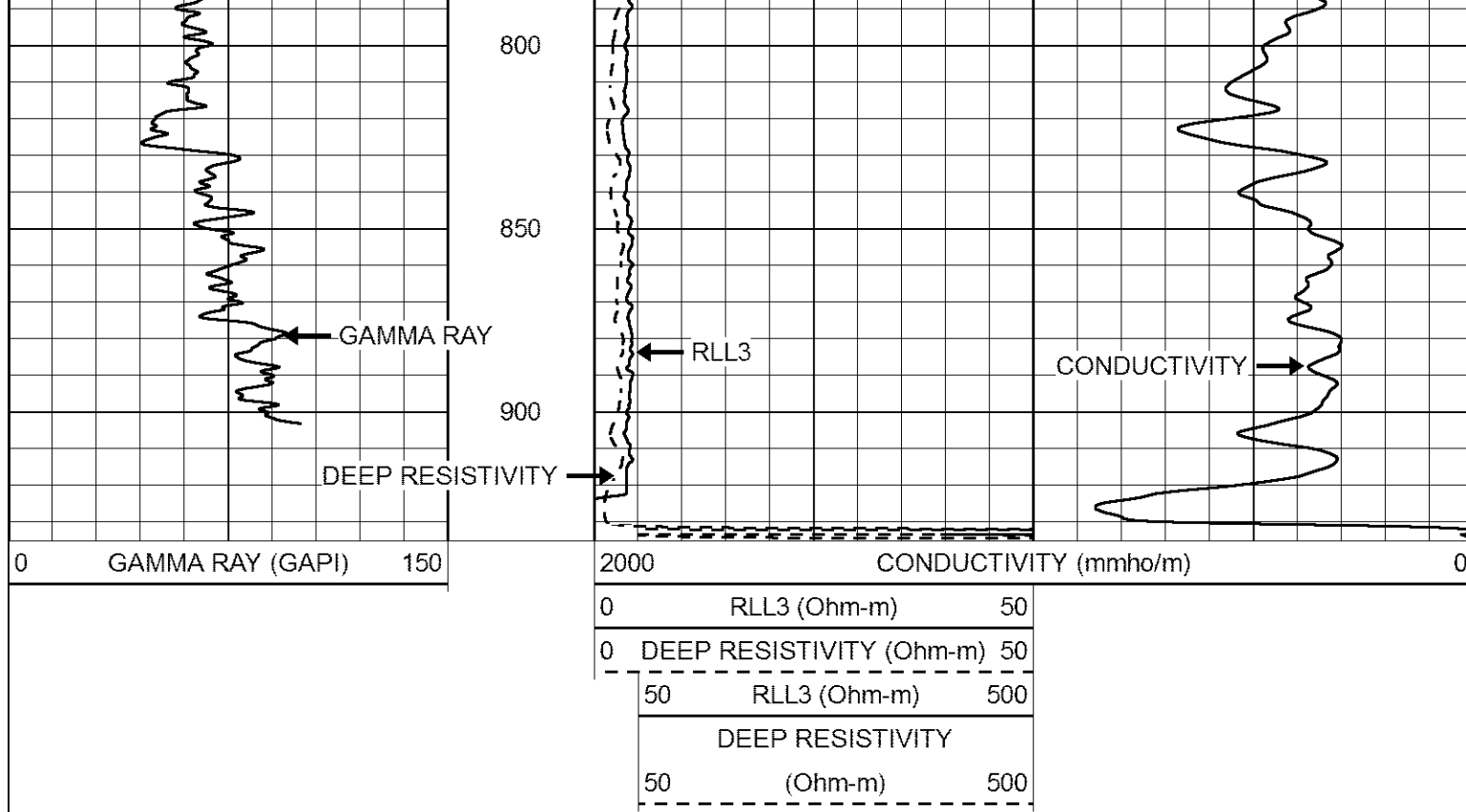
600

650

700

750

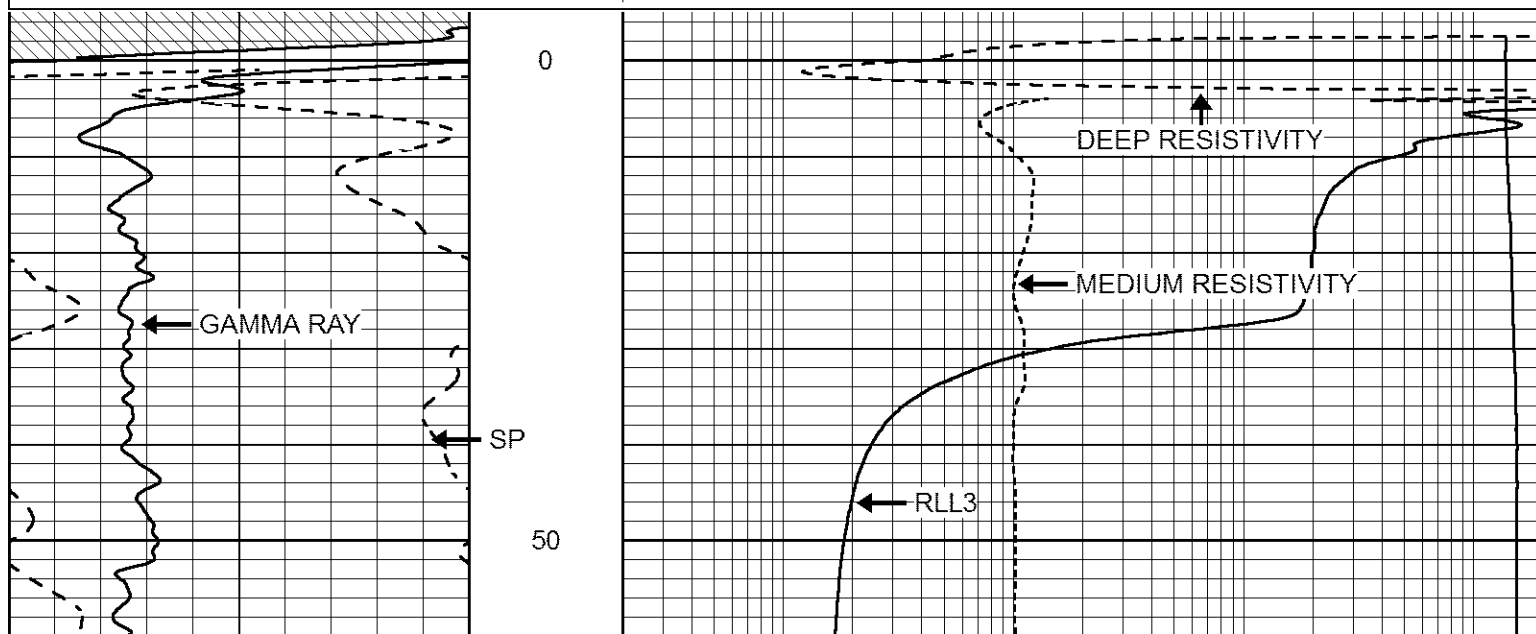


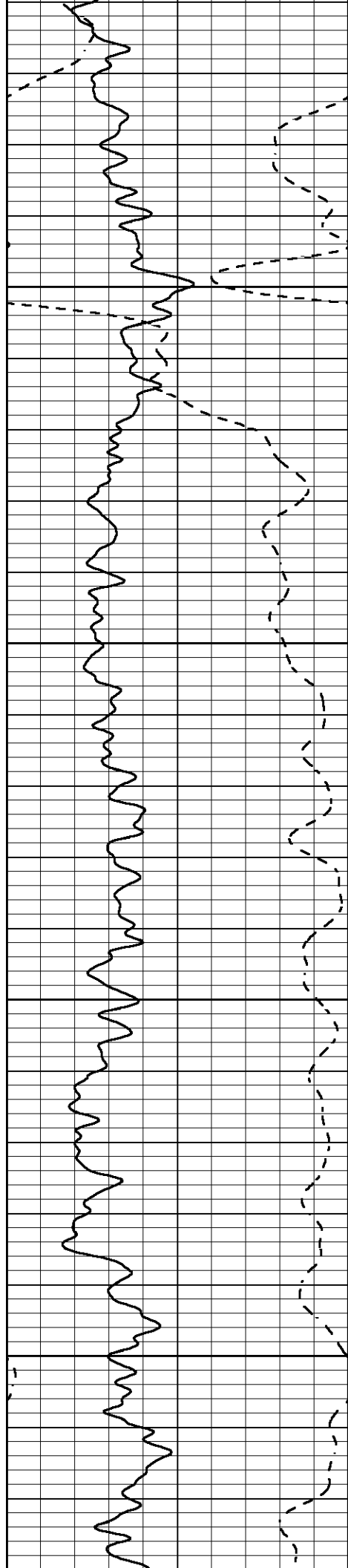


MAIN PASS

Database File h2_oil_wagner_unit_wsw_1.db
 Dataset Pathname stack/pass2.1
 Presentation Format dil
 Dataset Creation Thu Sep 28 14:53:35 2017
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-200	SP (mV)	0
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0



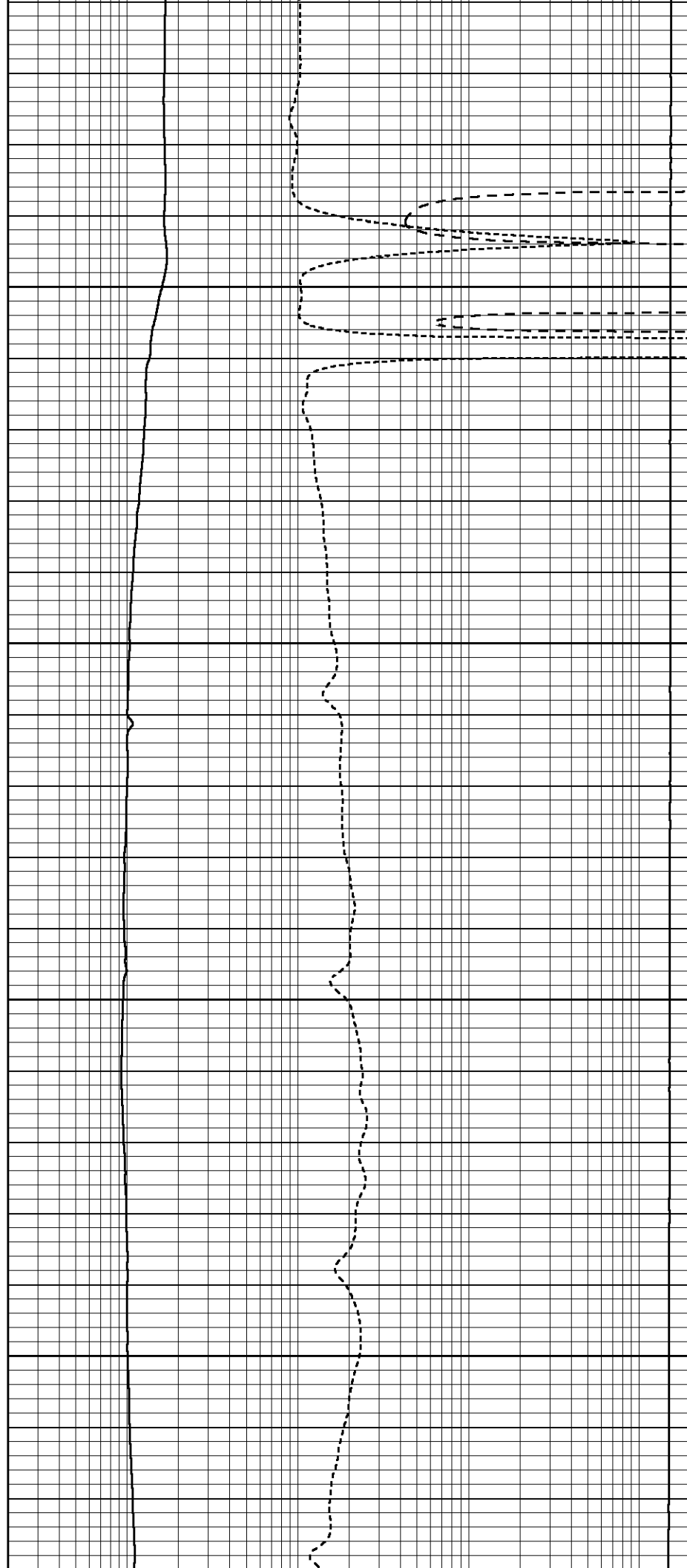


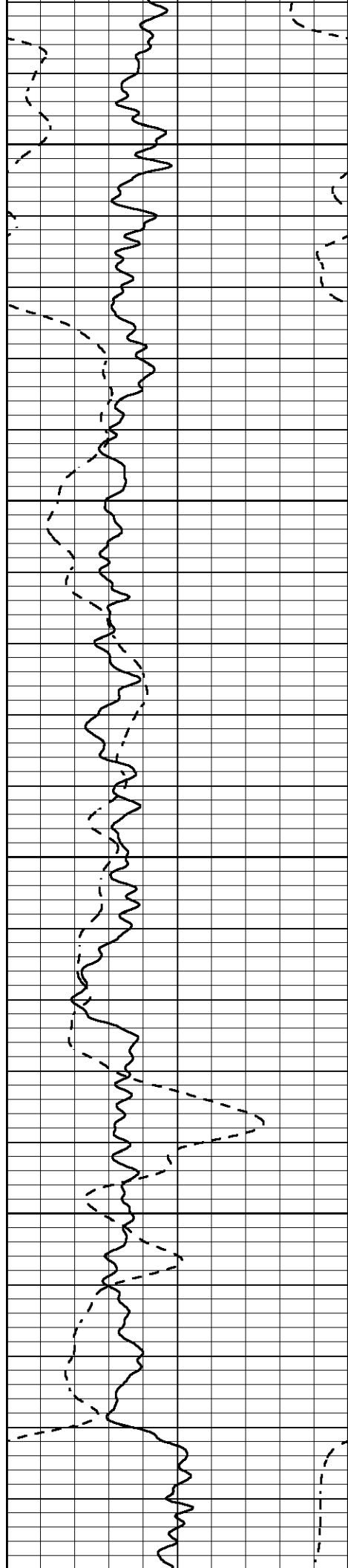
100

150

200

250





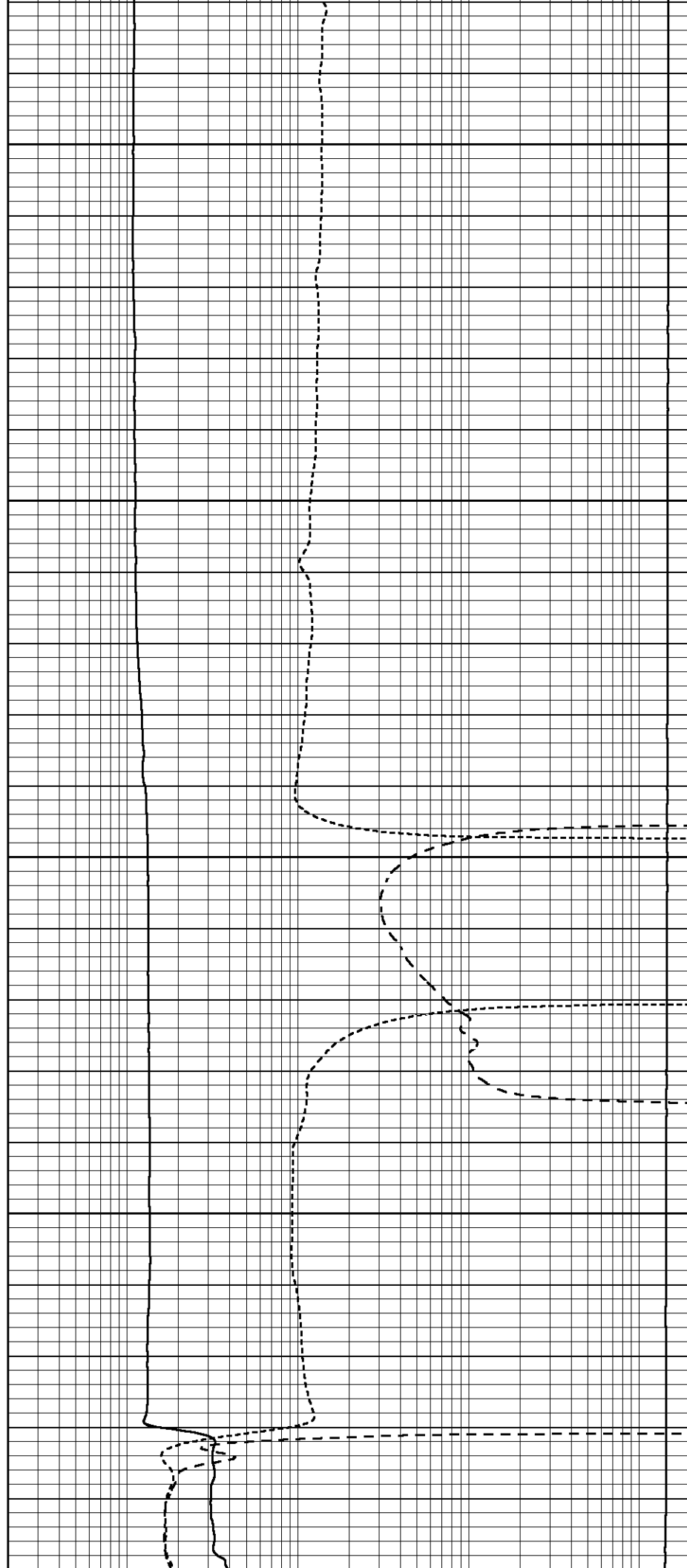
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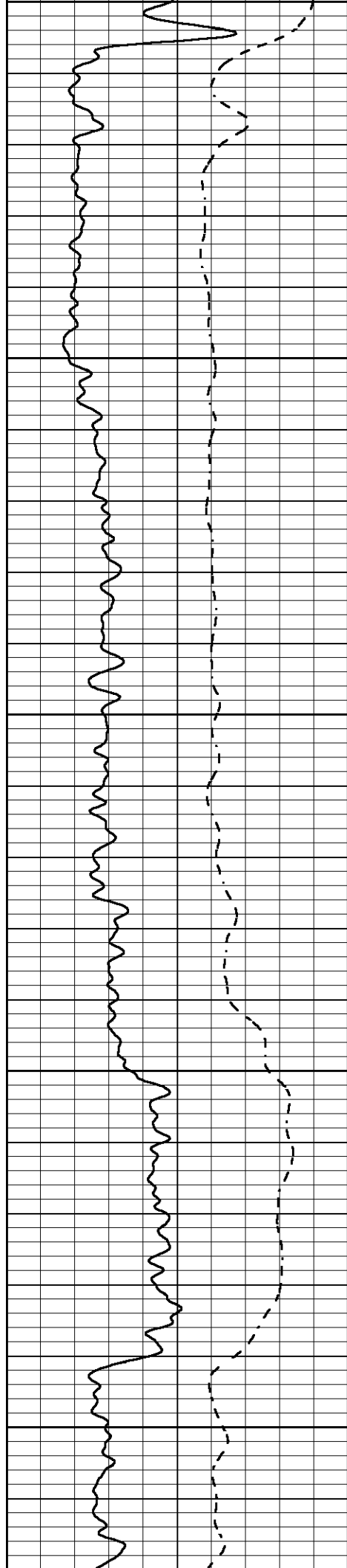
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400

450

500





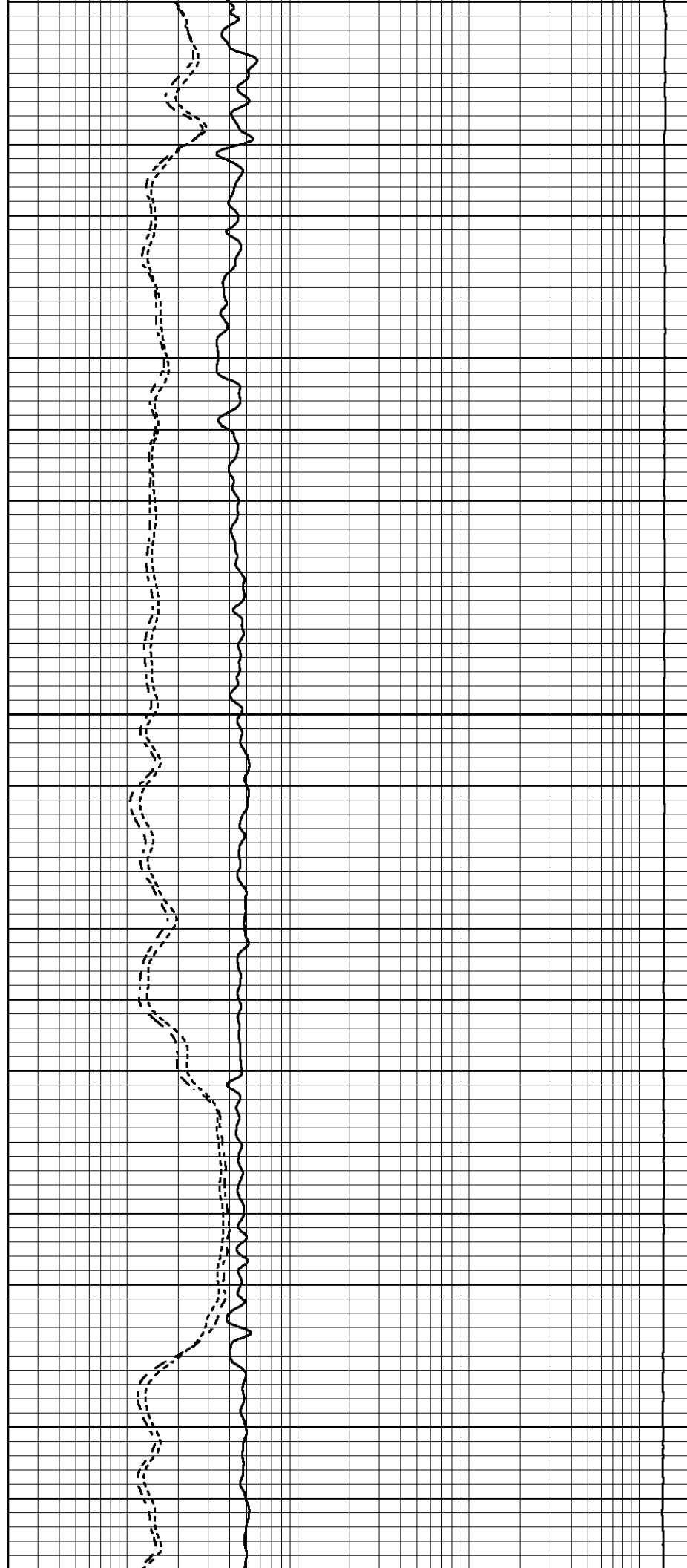
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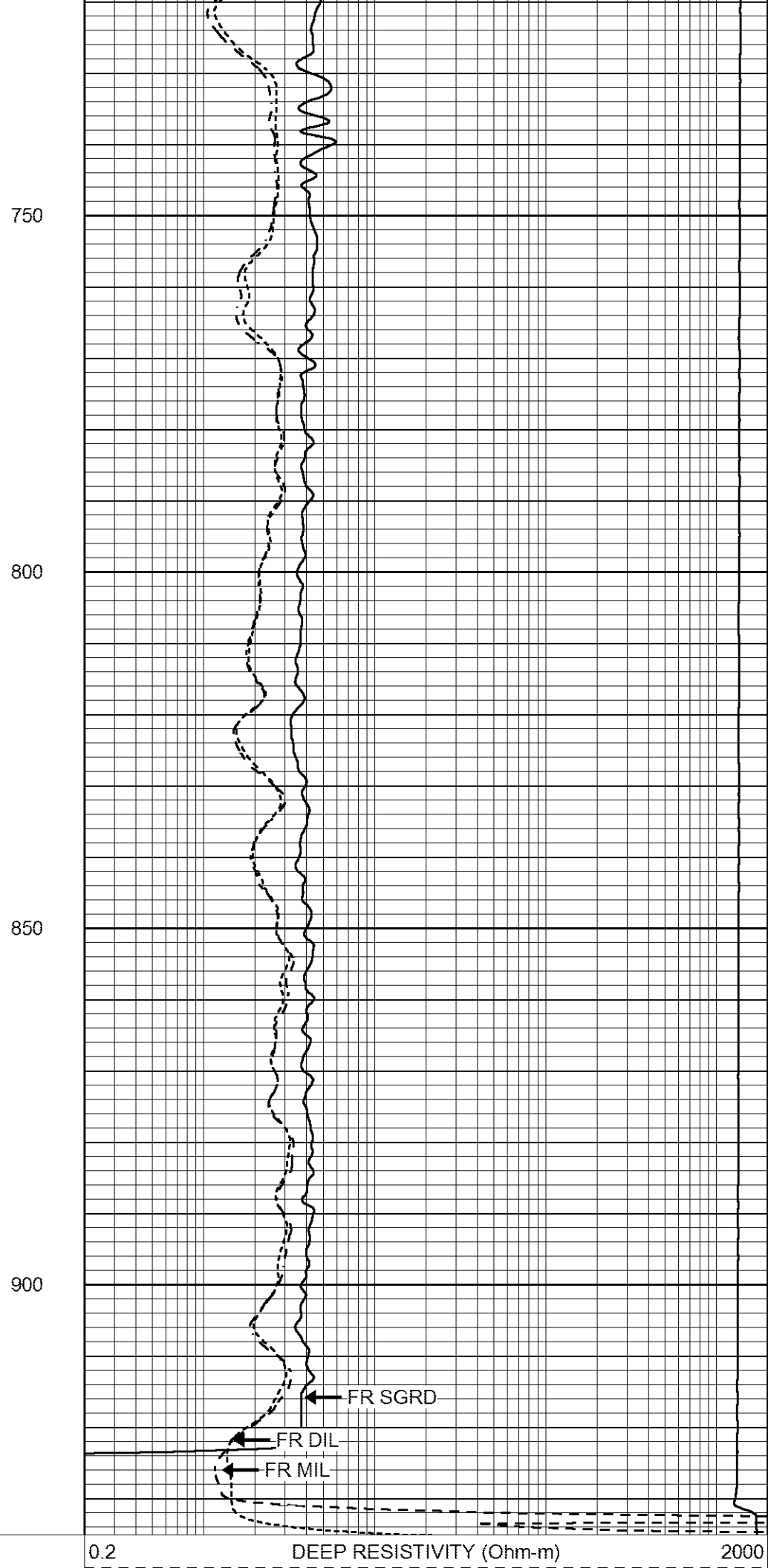
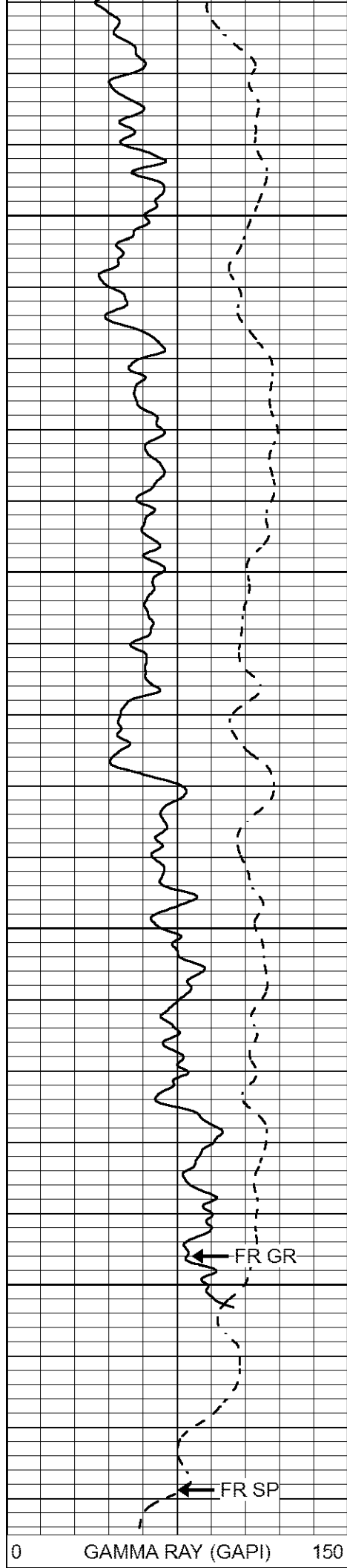
550

600

650

700





-200	SP (mV)	0	0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
			0.2	RLL3 (Ohm-m)	2000
			15000	LINE TENSION (lb)	0

Calibration Report		
Database File	h2_oil_wagner_unit_wsw_1.db	
Dataset Pathname	stack/pass2.1	
Dataset Creation	Thu Sep 28 14:53:35 2017	

Dual Induction Calibration Report		
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Serial-Model:	1987-M&W
Calibration Performed:	Tue Apr 11 16:07:38 2017

		Readings		References		Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

Compensated Density Calibration Report		
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Serial-Model:	168-986-M&W
Source / Verifier:	/
Master Calibration Performed:	Tue Apr 11 16:07:47 2017

Master Calibration					
	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.523		
	Size		Reading		
Small Ring	4.00	in	1.03		
Large Ring	14.00	in	1.23		

Compensated Neutron Calibration Report		
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Serial Number:	tk10-MW
Tool Model:	M&W
Calibration Performed:	Wed Nov 16 11:21:36 2016

Detector	Readings		Target	Normalization
Short Space	6240.00	cps	1000.00 cps	1.6025
Long Space	460.00	cps	1000.00 cps	1.9500

Gamma Ray Calibration Report		
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Serial Number:	89-M&W
Tool Model:	M&W
Calibration Performed:	Tue Apr 11 16:08:01 2017
Calibrator Value:	1000.0
	GAPI

Background Reading:

0.0

cps

Calibrator Reading:

6.2

cps

Sensitivity:

0.5200

GAPI/cps



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Company

H2 OIL OPCO, LLC

Well

WAGNER UNIT WSW NO. 1

Field

OTIS-ALBERT

County

RUSH

State

KANSAS