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RADIAL BOND LOG WITH GAMMA RAY

Comp.	Kerr_McGee Oil and Gas Onshore LP
Well	State 13-16
Field	Wattenberg
Co.	Weld
State	Colorado

Company	**Kerr_McGee Oil and Gas Onshore LP**
Well	**State 13-16**
Field	**Wattenberg**
County	**Weld** State **Colorado**
Location:	API # : 05123290200000
	NE SW 1903' FSL & 1894' FWL
	SEC 16 TWP 1N RGE 68W
Other Services	none

			Elevation
Permanent Datum	GL	Elevation 5191'	K.B. 5206'
Log Measured From	KB	15' Above Perm. Datum	D.F.
Drilling Measured From	KB		G.L. 5191'

Date of Service	7-25-2013
Run Number	1
Depth Driller or PBTD	8397'
Depth Logger	3700'
Bottom Log Interval	3687'
Top Log Interval	surface
Open Hole Size	7.875"
Type Fluid	Water
Fluid Level	surface
Fluid Density	na
Max. Recorded Temperature	121
Max. Wellhead Pressure	0
Wellhead Connection	5k BOP
Estimated Cement Top	420'
Unit Number	53
Wireline Size	9/32"
Location	Ft.Morgan
Recorded By	N.Bivens
Witnessed By	Nick Lang

	Size	Wt/Ft	Top	Bottom
Tubing Record				
Surface Casing				
Production Casing	4.5"	11.6#	surface	8397'
Liner Record				

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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.
S.O. # 2-220208

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew	Tool Data - Services	Serial Number
Engineer: N.Bivens Operator: W.Brigante Operator: C.March Operator:		

Log Variables

DatabaseC:\ProgramData\Warrior\Data\kerr-mcgee oil and gas onshore_state 13-16_2016
Dataset field/well/run1/pass5/_vars_

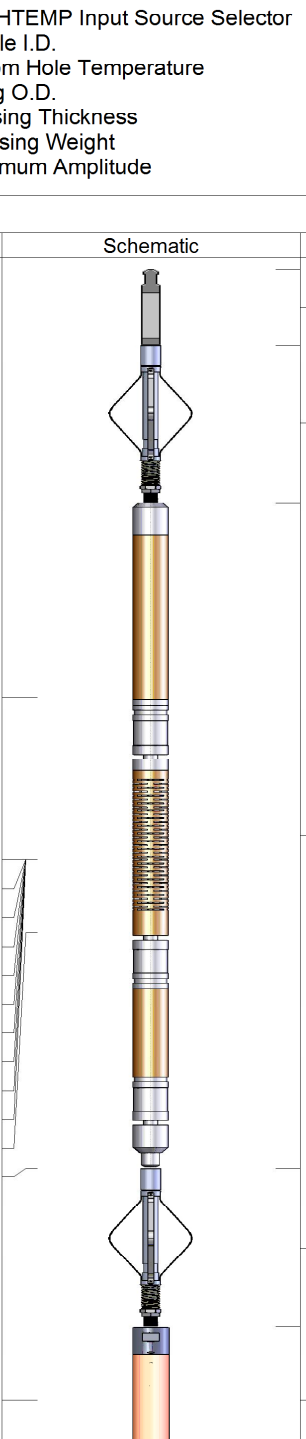
Top - Bottom

BHTEMP_Src	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MAXAMPL mV
TEMP	7.875	100	4.5	0	17	0

MINAMPL mV	MINATTN db/ft	PERFS	PPT usec	SRFTEMP degF	TDEPTH ft
1	0.07	0	0	0	0

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
CASEWGHT : Casing Weight
MAXAMPL : Maximum Amplitude
MINAMPL : Minimum Amplitude
MINATTN : Minimum Attenuation
PERFS : Perforation Flag
PPT : Predicted Pipe Time
SRFTEMP : Surface Temperature
TDEPTH : Total Depth



Sensor	Offset (ft)
TEMP	14.28
WVFS8	12.05
WVFS7	12.05
WVFS6	12.05
WVFS5	12.05
WVFS4	12.05
WVFS3	12.05
WVFS2	12.05
WVFS1	12.05
WVFCAL	12.05
WVF3FT	12.05
WVF5FT	11.05
HEADVOLT	7.80
CCL	4.63
GR	1.08

Description	Length (ft)	O.D. (in)	Weight (lb
Cable Head-Titan 143 1 7/16" Titan Cable Head (1" Fish Top)	1.03	1.43	2.00
Centralizer-169 Titan Non-ADJ Titan 1 11/16" Non Adjustable Centralizer	2.17	2.88	22.00
SCBL-275 Probe w Temp New Mod (1411 Probe Radii Bond Tool with Temperature	9.17	2.75	95.00
Centralizer-169 Titan Non-ADJ Titan 1 11/16" Non Adjustable Centralizer	2.17	2.88	22.00
CCL_Logging-275 Probe (080633) Probe 2 3/4" Logging CCL	2.00	2.75	25.00
GR-275 Probe (070155) Probe 2.75" Gamma Ray Analog	3.36	2.75	40.00
Bullnose-Titan GO Pin Pressure Cap	0.27	1.38	1.00

Dataset: kerr-mcgee oil and gas onshore_state 13-16_20160725_rbl.db: field/well/run1/pass5
Total length: 20.16 ft
Total weight: 207.00 lb
O.D.: 2.88 in

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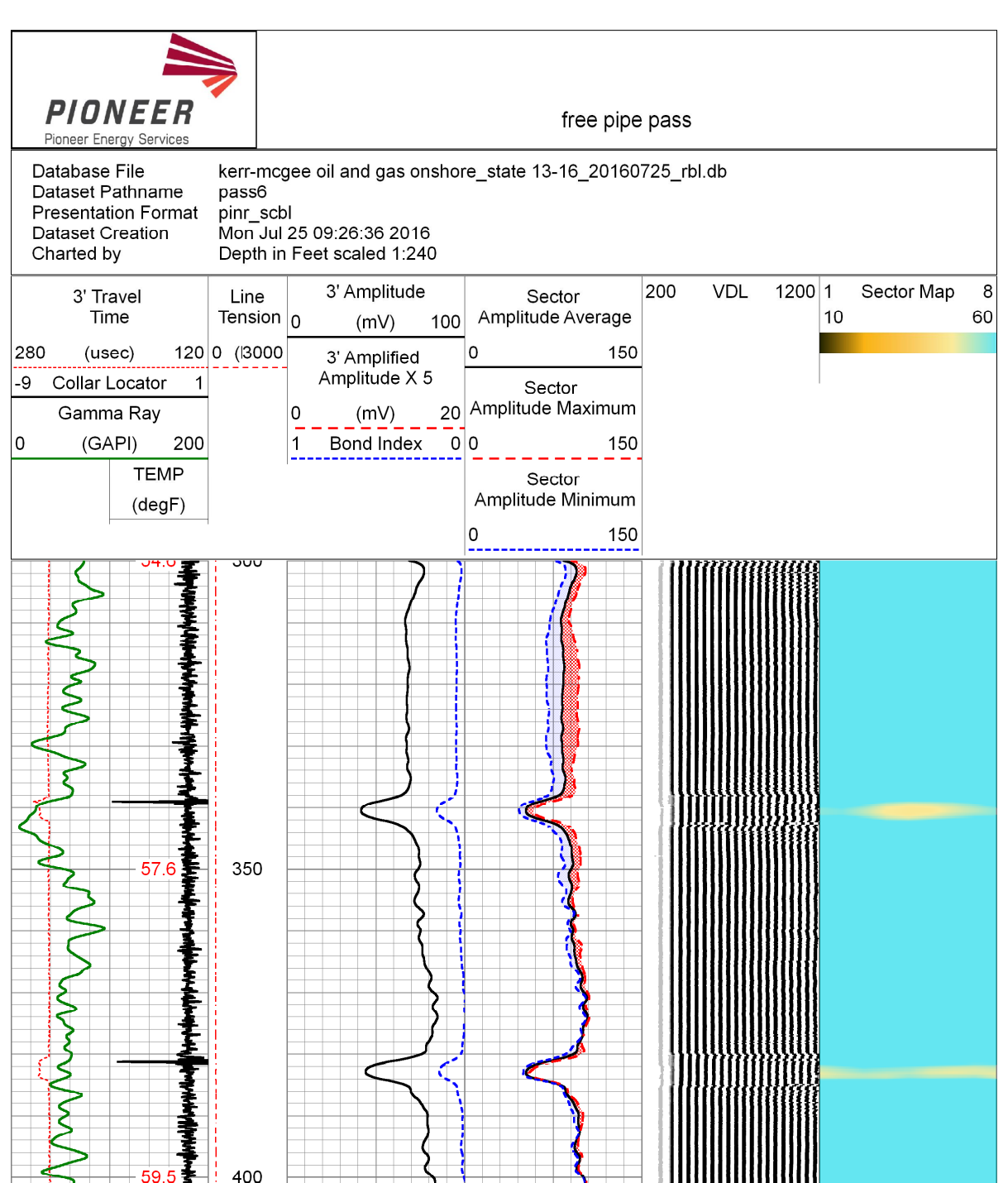
Database File kerr-mcgee oil and gas onshore_state 13-16_20160725_rbl.db
Dataset Pathname pass6
Presentation Format pinr_scbl
Dataset Creation Mon Jul 25 09:26:36 2016
Charted by Depth in Feet scaled 1:240

3' Travel Time 280 (usec) 120 -9 Collar Locator 1 Gamma Ray 0 (GAPI) 200 TEMP (degF)	Line Tension 0 (3000	3' Amplitude 0 (mV) 100 3' Amplified Amplitude X 5 0 (mV) 20 1 Bond Index 0	Sector Amplitude Average 0 150 Sector Amplitude Maximum 0 150 Sector Amplitude Minimum 0 150	200 VDL 1200	1 Sector Map 8 10 60



3' Travel Time 280 (usec) 120 -9 Collar Locator 1 Gamma Ray 0 (GAPI) 200 TEMP (degF)	Line Tension 0 (3000	3' Amplitude 0 (mV) 100 3' Amplified Amplitude X 5 0 (mV) 20 1 Bond Index 0	Sector Amplitude Average 0 150 Sector Amplitude Maximum 0 150 Sector Amplitude Minimum 0 150	200 VDL 1200	1 Sector Map 8 10 60

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Main Pass

Database File kerr-mcgee oil and gas onshore_state 13-16_20160725_rbl.db
Dataset Pathname pass5
Presentation Format pinr_scbl
Dataset Creation Mon Jul 25 08:30:30 2016
Charted by Depth in Feet scaled 1:240

3' Travel Time 280 (usec) 120 -9 Collar Locator 1 Gamma Ray 0 (GAPI) 200 TEMP (degF)	Line Tension 0 (3000	3' Amplitude 0 (mV) 100 3' Amplified Amplitude X 5 0 (mV) 20 1 Bond Index 0	Sector Amplitude Average 0 150 Sector Amplitude Maximum 0 150 Sector Amplitude Minimum 0 150	200 VDL 1200	1 Sector Map 8 10 60

3' Travel Time 280 (usec) 120
-9 Collar Locator 1
Gamma Ray 0 (GAPI) 200
TEMP (degF)
Line Tension 0 (3000
3' Amplitude 0 (mV) 100
3' Amplified Amplitude X 5 0 (mV) 20
1 Bond Index 0
Sector Amplitude Average 0 150
Sector Amplitude Maximum 0 150
Sector Amplitude Minimum 0 150
200 VDL 1200
1 Sector Map 8
10 60

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Main Pass

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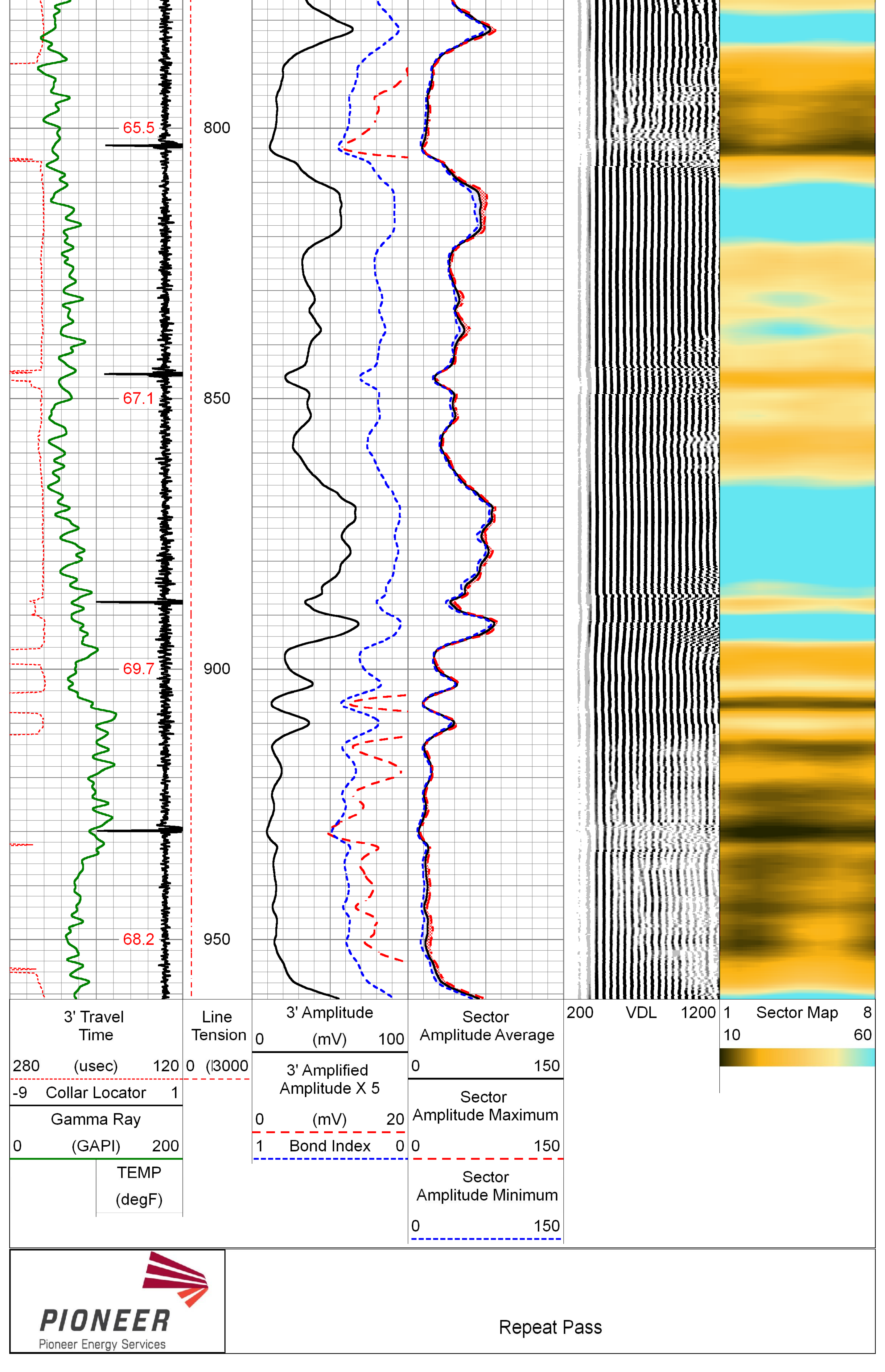
Repeat Pass

Database File	kerr-mcgee oil and gas onshore_state 13-16_20160725_rbl.db
Dataset Pathname	pass7
Presentation Format	pinr_scbl
Dataset Creation	Mon Jul 25 09:28:00 2016
Charted by	Depth in Feet scaled 1:240

3' Travel Time 280 (usec) 120
-9 Collar Locator 1
Gamma Ray 0 (GAPI) 200
TEMP (degF)
Line Tension 0 (3000
3' Amplitude 0 (mV) 100
3' Amplified Amplitude X 5 0 (mV) 20
1 Bond Index 0
Sector Amplitude Average 0 150
Sector Amplitude Maximum 0 150
Sector Amplitude Minimum 0 150
200 VDL 1200
1 Sector Map 8
10 60



3' Travel Time 280 (usec) 120
-9 Collar Locator 1
Gamma Ray 0 (GAPI) 200
TEMP (degF)
Line Tension 0 (3000
3' Amplitude 0 (mV) 100
3' Amplified Amplitude X 5 0 (mV) 20
1 Bond Index 0
Sector Amplitude Average 0 150
Sector Amplitude Maximum 0 150
Sector Amplitude Minimum 0 150
200 VDL 1200
1 Sector Map 8
10 60

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Repeat Pass

Calibration Report

Database File	kerr-mcgee oil and gas onshore_state 13-16_20160725_rbl.db
Dataset Pathname	pass5
Dataset Creation	Mon Jul 25 08:30:30 2016

Gamma Ray Calibration Report

Serial Number:	070155	
Tool Model:	275 Probe	
Performed:	Thu Jul 21 09:15:42 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.9000	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	1411-67	
Tool Model:	275 Probe w Temp New Mod	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	380.000	ft

Master Calibration, performed Mon Jul 25 08:23:22 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.003	1.441	1.000	81.196	55.787	0.830
CAL	0.001	1.613				
5'	0.002	1.290	1.000	81.196	62.291	0.849
SUM						
S1	-0.008	1.540	0.000	100.000	64.593	0.546
S2	0.002	1.589	0.000	100.000	62.996	-0.123
S3	0.002	1.541	0.000	100.000	64.972	-0.110
S4	0.001	1.475	0.000	100.000	67.844	-0.078
S5	0.001	1.421	0.000	100.000	70.429	-0.101
S6	0.002	1.399	0.000	100.000	71.593	-0.143
S7	0.002	1.400	0.000	100.000	71.495	-0.114
S8	0.002	1.466	0.000	100.000	68.336	-0.159

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.001	1.613	1.000	0.000

Air Zero Calibration, performed Mon Jul 25 07:39:18 2016:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000

Temperature Calibration Report

Serial Number:	1411-67	
Tool Model:	275 Probe w Temp New Mod	
Performed:	Thu Jul 21 09:15:00 2016	
	Reference	Reading
Low Reference:	0.00 degF	0.00 degF
High Reference:	1.00 degF	1.00 degF
Gain:	0.80	
Offset:	0.00	
Delta Spacing	1	

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