

Company: ENI U & TS

Well: Naomi4 Dir

Field: Naomi-Pandora

Log: FSMT-E

Country: Italy

FSMT-E RUN # 10
Formation Subsidence Monitoring Tool
Interval 3150-3060m

Log: FSMT-E
 Field: Naomi-Pandora
 Location: Offshore Adriatic Sea
 Well: Naomi4 Dir
 Company: ENI U & TS

LOCATION	
Offshore Adriatic Sea	Elev.: K.B. 33.00 m G.L. -36.00 m D.F. 33.00 m
Permanent Datum: MSL	Elev.: above Perm. Datum
Log Measured From: OLD RT	
Drilling Measured From: OLD RT	

Rig: RIGLESS	Max. Well Deviation 40.8 deg	Longitude 12° 50'51.477" E	Latitude 44° 41' 18.308" N
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Logging Date	11-Dec-2018		
Run Number	2A		
Depth Driller	3200 m		
Schlumberger Depth	3165 m		
Bottom Log Interval	3150 m		
Top Log Interval	3060 m		
Casing Fluid Type	Brine Cacl2		
Salinity			
Density	1.25 g/cm3		
Fluid Level			
BIT/CASING/TUBING STRING			
Bit Size	8.500 in		
From	1763 m		
To	3200 m		
Casing/Tubing Size	7.000 in		
Weight	23.5 lbm/ft		
Grade	P105		
From	0 m		
To	3196 m		
Maximum Recorded Temperatures			
Logger On Bottom	11-Dec-2018	Time	11:50
Unit Number	729	Location	ITPE
Recorded By	R.Chibzui		
Witnessed By	F.Carta		

		Run 1	Run 2	Run 3
PVT DATA				
Oil Density				
Water Salinity				
Gas Gravity				
Bo				
Bw				
1/Bq				
Bubble Point Pressure				
Bubble Point Temperature				
Solution GOR				
Maximum Deviation	40.8 deg			
CEMENTING DATA				
Primary/Squeeze		Primary		
Casing String No				
Lead Cement Type				
Volume				
Density				
Water Loss				
Additives				
Tail Cement Type				
Volume				
Density				
Water Loss				
Additives				
Expected Cement Top				
Logging Date	11-Dec-2018			
Run Number	2A			
Depth Driller	3200 m			
Schlumberger Depth	3165 m			
Bottom Log Interval	3150 m			
Top Log Interval	3060 m			
Casing Fluid Type	Brine Cacl2			
Salinity				
Density	1.25 g/cm3			
Fluid Level				
BIT/CASING/TUBING STRING				
Bit Size	8.500 in			
From	1763 m			
To	3200 m			
Casing/Tubing Size	7.000 in			
Weight	23.5 lbm/ft			
Grade	P105			
From	0 m			
To	3196 m			
Maximum Recorded Temperatures				
Logger On Bottom	11-Dec-2018	Time	11:50	
Unit Number	729	Location	ITPE	
Recorded By	R.Chibzui			
Witnessed By	F.Carta			

DEPTH SUMMARY LISTING

Date Created: 7-DEC-2018 15:42:03

Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B Serial Number: 6743 Calibration Date: 22-Sep-2018 Calibrator Serial Number: 15 Calibration Cable Type: 2-23ZT Wheel Correction 1: -3 Wheel Correction 2: 0	Type: CMTD-B/A Serial Number: 1739 Calibration Date: 07-Sep-2018 Calibrator Serial Number: 1080 Number of Calibration Points: 10 Calibration RMS: 9 Calibration Peak Error: 17	Type: 2-23ZT Serial Number: 26349 Length: 5000 M Conveyance Method: Wireline Rig Type: Rigless

Depth Control Parameters

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	FSMT-E
Reference Log Run Number:	1
Reference Log Date:	31-Dec-2017
Subsequent Trip Down Log Correction:	

Depth Control Remarks

1. All Schlumberger depth control policy followed
2. IDW used as primary depth control
3. Z-Chart used as secondary depth control
4.
5.
6.

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.






OTHER SERVICES1 OS1: PNX OS2: OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Log Objective: Monitoring Formation Subsidence by Time Laps Technique	
Log correlated with FSMT-E Run performed on 31-Dec-2017 by Schlumberger	
First and second pass recorded at 300 ft/h, third pass recorded at 150ft/h	
Toolstring run as per toolsketch	
Interval recorded 3150-3060m	
Before Calibration performed on 17-Oct-2018	

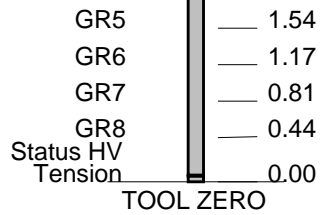
After Calibration performed on 14-Jan-2018					
OLD RT to Tubing Hanger 13.4m taken as depth reference					
WHE configuration: 2 9/16in 5kpsi Flange, Dual Stuffing Box					
WHP=0bar					
Max. deviation of 40.8m @ 1590m					
Log performed in the 7in csg					

RUN 1			RUN 2		
SERVICE ORDER #:		DXO6-00070	SERVICE ORDER #:		
PROGRAM VERSION:		19C2-270	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1	RUN 2
SURFACE EQUIPMENT	
WITM-A PSC_13MHZ	

DOWNHOLE EQUIPMENT			
MH-22 PEH MH-22		16.49	
AH-38		15.69	
ERS ERS-E 1328	 Detail MT TelStatus CTEM	15.61	
PSPT 1705	 — 15.23	15.23	
PSC-A PSPT-B PSTC-A PBMS-B	GR — 14.10		
CQG_F_Mano RTD_Thermometer	Well_Temp — 13.17		
GR CCL PBMS	CQG Manom — 13.06 CCL — 12.93 PBMS PSTC — 12.71		
FSMT-E FSMD-B 701 FSMX-A 701 FSMX-A 702 FSMX-A 705 FSMD-C 701 BN	 — 12.71	12.71	
	Acc, GR1 — 11.52		
	GR2 — 11.15		
	GR3 — 10.79		
	GR4 — 10.42		



MAXIMUM STRING DIAMETER 1.69 IN
 MEASUREMENTS RELATIVE TO TOOL ZERO
 ALL LENGTHS IN METERS



JOB EVENT SUMMARY

MAXIS Field Log

Schlumberger Job Event Summary

	Time	Elapsed Time	Depth (M)	File
Rig Up Started	7-Dec-2018 11:00			
Descent 1: FSMT-E/PSPT/ERS				
Begin Descent	11-Dec-2018 9:00			
Log Pass (up) PASS #1 @300ft/h	11-Dec-2018 10:48	001:11	3164.9 - 3058.1	FSMT_PSP_004LUP
Log Pass (up) PASS #2 @300ft/h	11-Dec-2018 12:03	001:12	3165.5 - 3057.1	FSMT_PSP_006LUP
Log Pass (up) PASS #3 @150ft/h	11-Dec-2018 13:26	002:18	3164.9 - 3058.4	FSMT_PSP_011LUP



FINAL RESULTS

MAXIS Field Log

Well Name: Naomi4 Dir
Run Date : 11-Dec-2018
Zone Name:
Tool String: FSMT-E S/N 701
Reference Detector: DET1
File 0: FSMT_43.fsf
File 1: FSMT_42.fsf (Reference File)
File 2: FSMT_41.fsf

17-Oct-2018 : Calibrated Detector Spacings at 22.0°C (m):

D12 = 0.369289
D23 = 0.368878
D34 = 0.368393
D45 = 8.895258
D56 = 0.368495
D67 = 0.366835
D78 = 0.370220

Marker spacings for each pass :

Distance in m between a marker and the adjacent marker below
Standard Deviation always in mm

Results on all 3 passes in m :

#	Depth	Spacing Avg. (~21 Meas.)	Std Dev (3 passes)
- 0	3140.69		
1	3135.59		
2	3130.53	10.14830	3.50963
3	3125.50	10.07305	2.51033
4	3120.37	10.10746	0.35081
5	3115.27	10.20492	2.03584
6	3109.24	11.11040	10.96034
7	3104.28	10.96922	6.34936
8	3099.10	10.13693	2.10894
9	3094.02	10.25389	4.18271
10	3088.89	10.21037	2.15679
- 11	3083.83	10.16713	1.01335

All Peaks were automatically detected with the following parameters:

FSMT_FIT = GAUSSIAN
FSMT_FILTER = 200
FSMT_THRESHOLD = 120

Company: ENI U & TS Well: Naomi4 Dir

Input DLIS Files

DEFAULT	FSMT_PSP_004LUP	FN:3	PRODUCER	11-Dec-2018 18:27	3164.9 M	3058.1 M
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Output DLIS Files

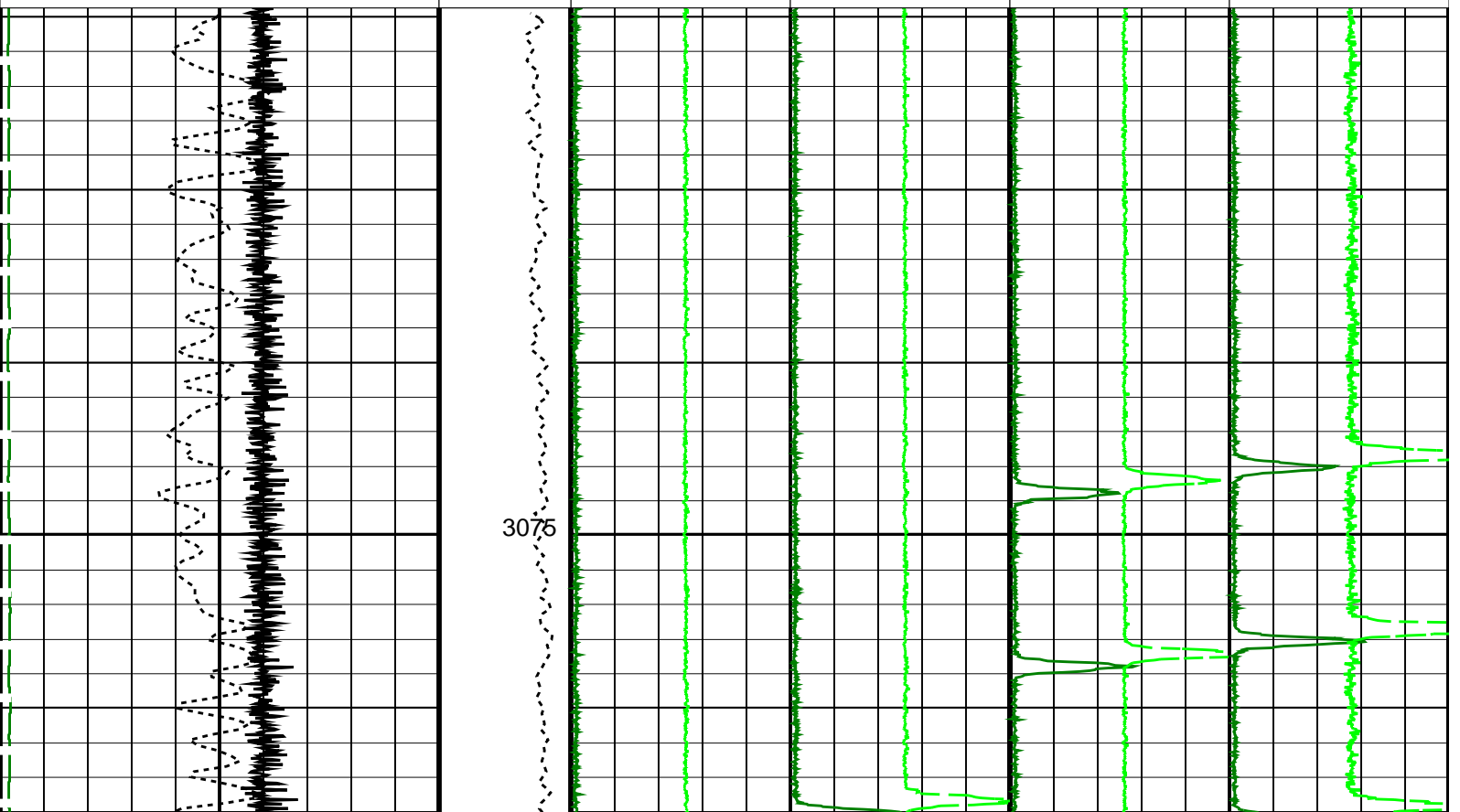
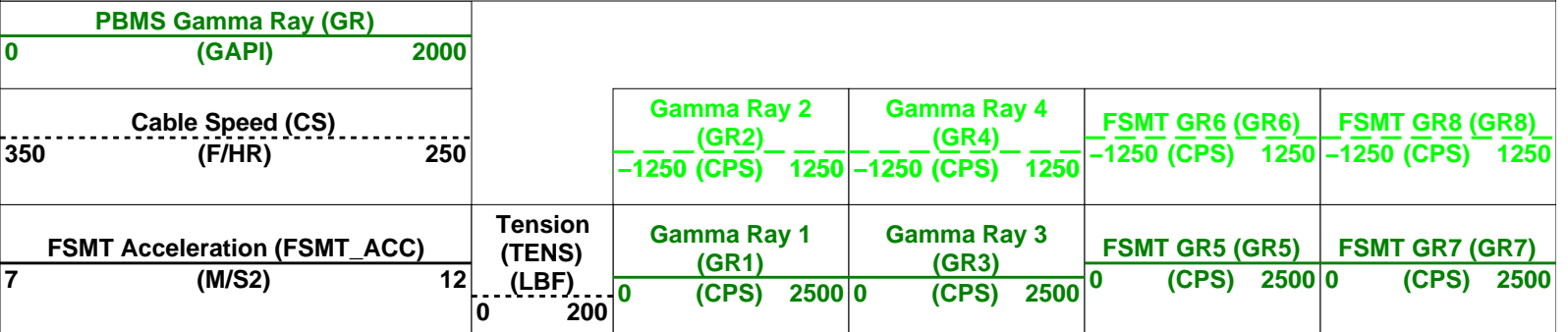
DEFAULT	FSMT_PSP_043PUP	FN:40	PRODUCER	20-Feb-2019 11:36	3166.6 M	3059.7 M
CUSTOMER	FSMT_PSP_043PUC	FN:41	CUSTOMER	20-Feb-2019 11:36	3166.6 M	3059.7 M

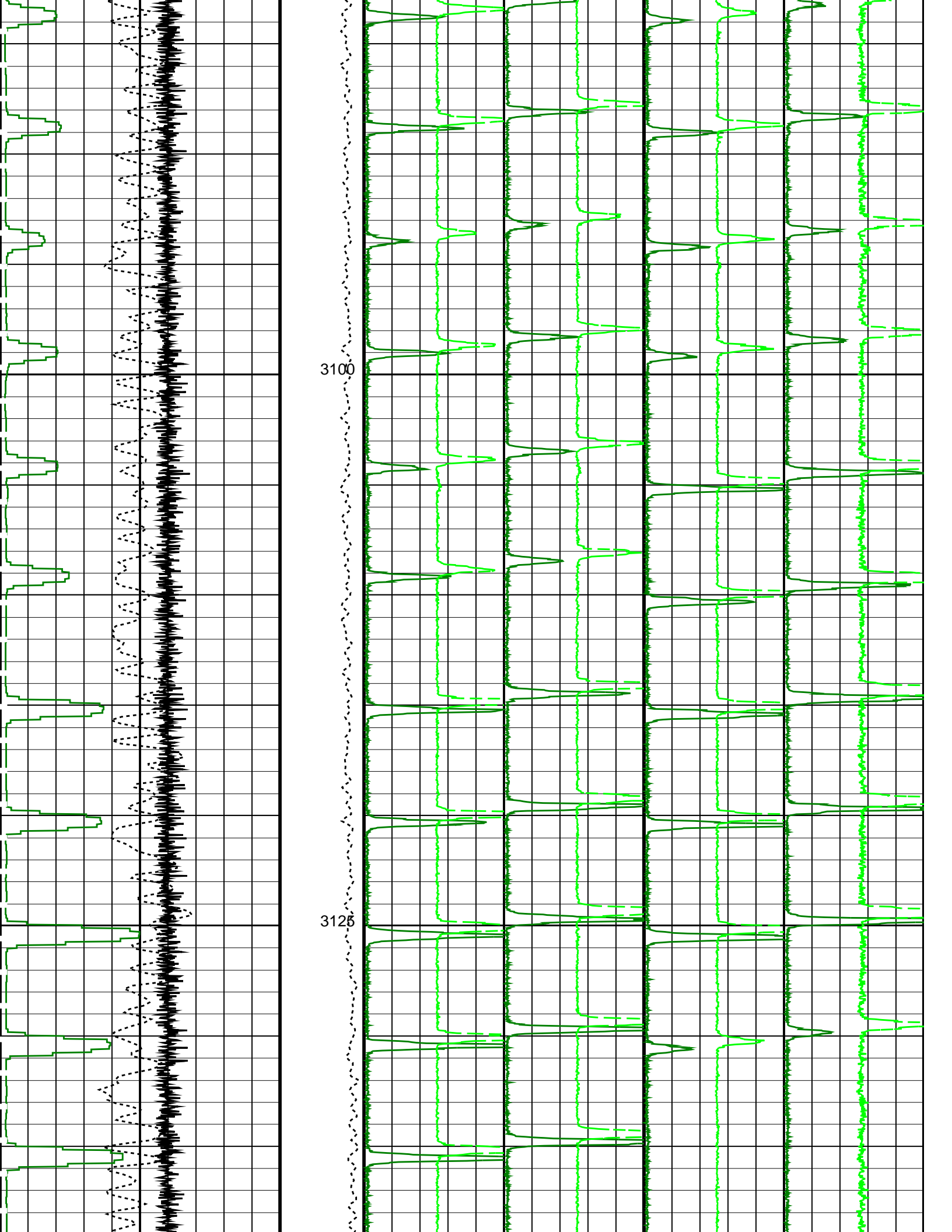
OP System Version: 19C2-270

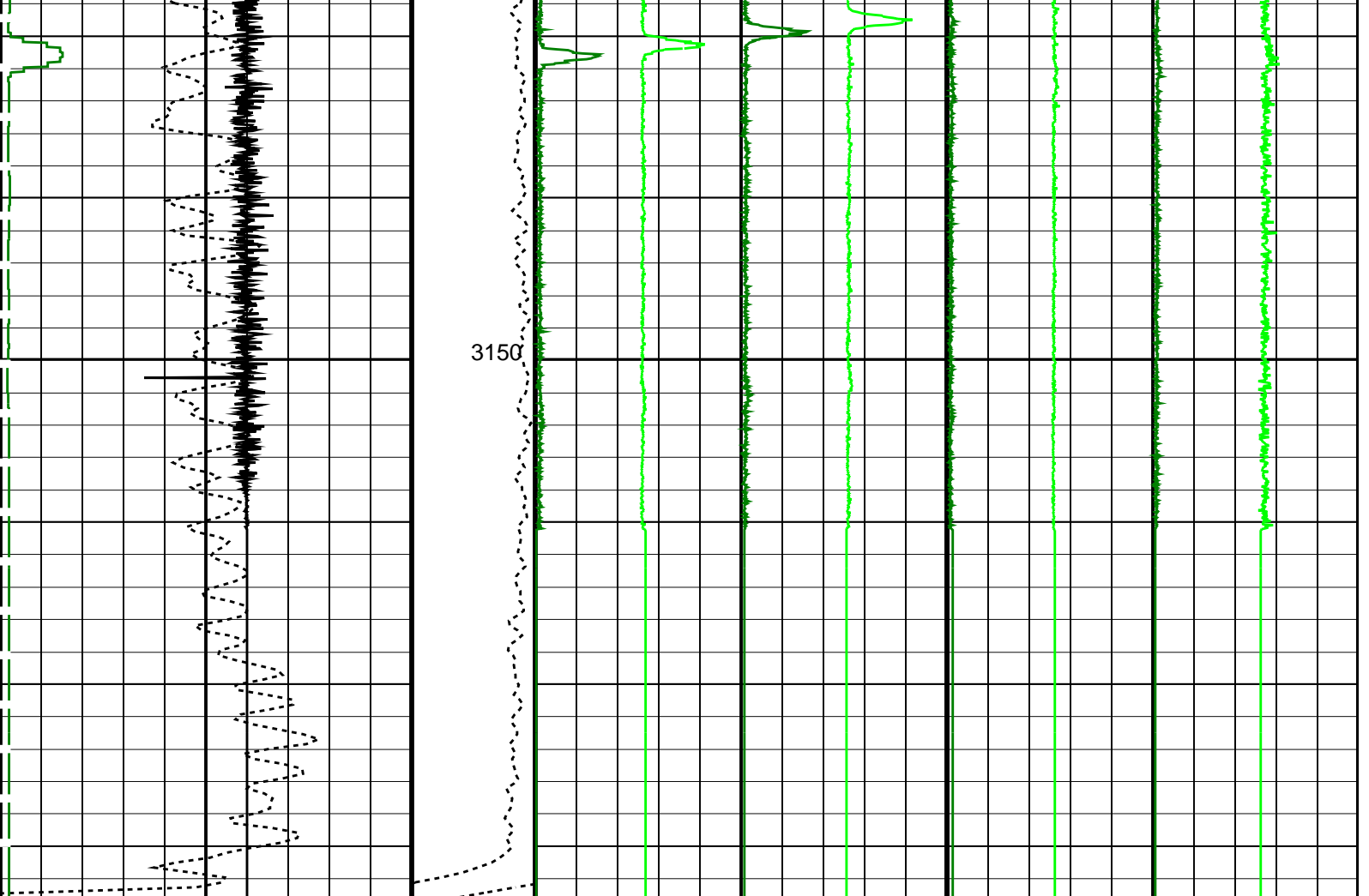
FSMT-E ERS	SRPC-FSMTE-JUNE_2013_OP19C2H1_b 19C2-270	PSPT	19C2-270
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PIP SUMMARY

Time Mark Every 60 S







FSMT Acceleration (FSMT_ACC) (M/S2)	7	12	Tension (TENS) (LBF)	0	200	Gamma Ray 1 (GR1) (CPS)	0	2500	Gamma Ray 3 (GR3) (CPS)	0	2500	FSMT GR5 (GR5) (CPS)	0	2500	FSMT GR7 (GR7) (CPS)	0	2500
Cable Speed (CS) (F/HR)	350	250				Gamma Ray 2 (GR2) (CPS)	-1250	1250	Gamma Ray 4 (GR4) (CPS)	-1250	1250	FSMT GR6 (GR6) (CPS)	-1250	1250	FSMT GR8 (GR8) (CPS)	-1250	1250
PBMS Gamma Ray (GR) (GAPI)	0	2000															

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DO	System and Miscellaneous	
PP	Depth Offset for Playback Processing	1.7 M
		RECOMPUTE

Format: FSMT_Basic Vertical Scale: 1:200 Graphics File Created: 20-Feb-2019 11:36

OP System Version: 19C2-270

FSMT-E SRPC-FSMTE-JUNE_2013_OP19C2H1_b PSPT 19C2-270
ERS 19C2-270

Input DLIS Files

DEFAULT FSMT_PSP_004LUP FN:3 PRODUCER 11-Dec-2018 18:27 3164.9 M 3058.1 M

Output DLIS Files



PASS #2
Interval 3150-3060m

MAXIS Field Log

Company: ENI U & TS Well: Naomi4 Dir

Input DLIS Files

DEFAULT	FSMT_PSP_006LUP	FN:9	PRODUCER	11-Dec-2018 18:27	3165.5 M	3057.1 M
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Output DLIS Files

DEFAULT	FSMT_PSP_042PUP	FN:38	PRODUCER	20-Feb-2019 11:35	3167.3 M	3059.0 M
CUSTOMER	FSMT_PSP_042PUC	FN:39	CUSTOMER	20-Feb-2019 11:35	3167.3 M	3059.0 M

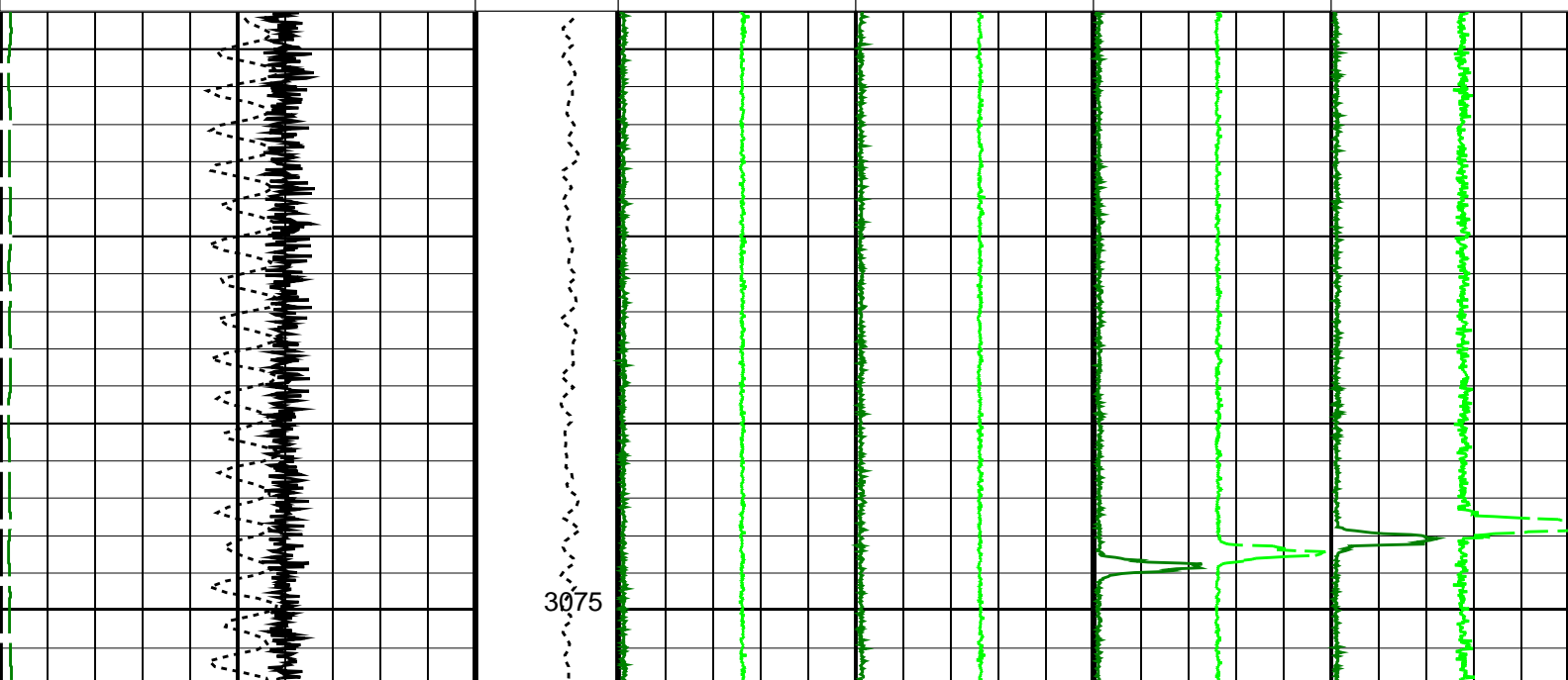
OP System Version: 19C2-270

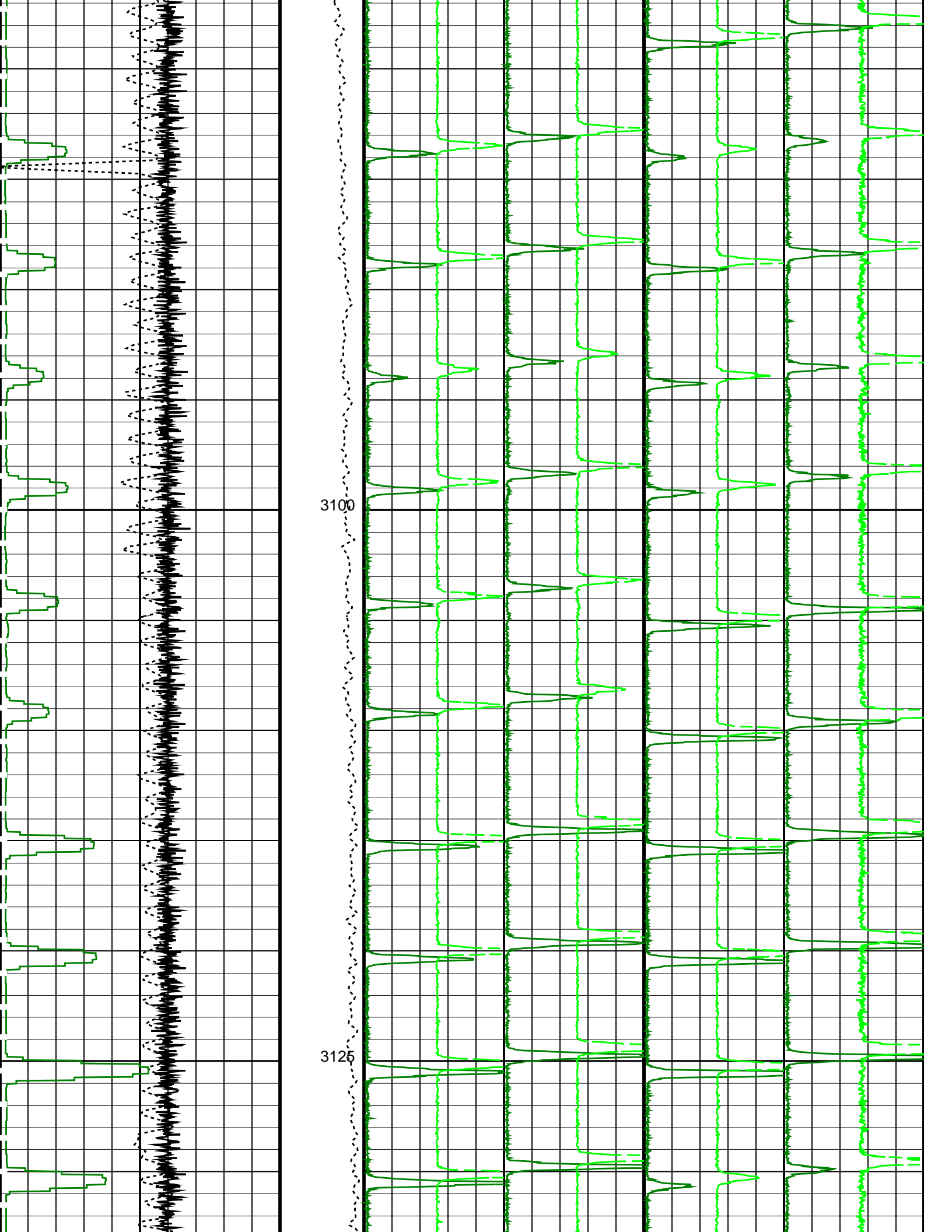
FSMT-E	SRPC-FSMTE-JUNE_2013_OP19C2H1_b	PSPT	19C2-270
ERS	19C2-270		

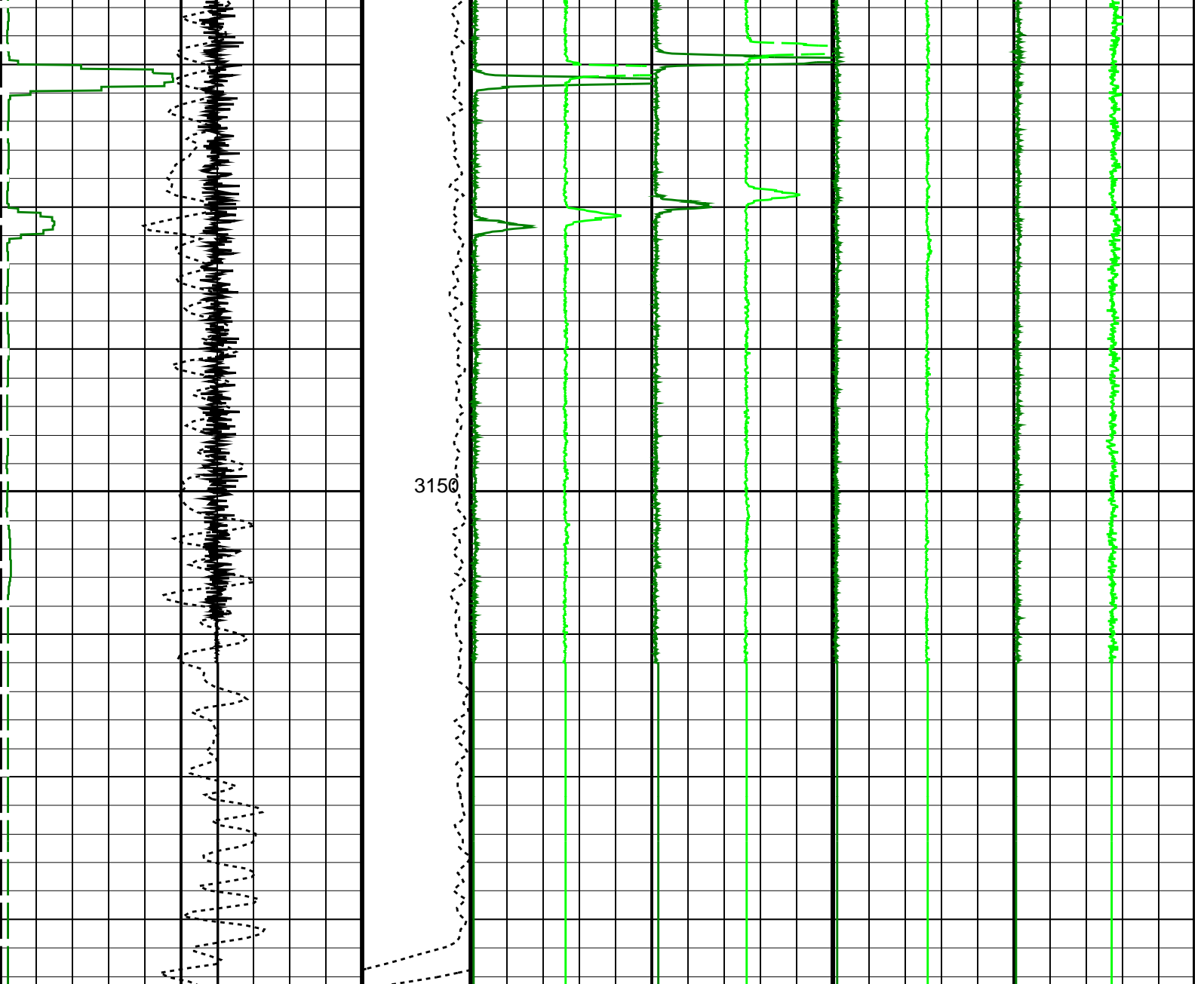
PIP SUMMARY

Time Mark Every 60 S

PBMS Gamma Ray (GR) (GAPI)		Gamma Ray 2 (GR2)		Gamma Ray 4 (GR4)		FSMT GR6 (GR6)		FSMT GR8 (GR8)	
0 2000		-1250 (CPS) 1250		-1250 (CPS) 1250		-1250 (CPS) 1250		-1250 (CPS) 1250	
Cable Speed (CS) (F/HR)		Gamma Ray 1 (GR1)		Gamma Ray 3 (GR3)		FSMT GR5 (GR5)		FSMT GR7 (GR7)	
350 250		0 2500 (CPS)		0 2500 (CPS)		0 2500 (CPS)		0 2500 (CPS)	
FSMT Acceleration (FSMT_ACC) (M/S2)		Tension (TENS) (LBF)							
7 12		0 200							







FSMT Acceleration (FSMT_ACC) (M/S ²)	Tension (TENS) (LBF)	Gamma Ray 1 (GR1) (CPS)	Gamma Ray 3 (GR3) (CPS)	FSMT GR5 (GR5) (CPS)	FSMT GR7 (GR7) (CPS)
7 12	0 200	0 2500	0 2500	0 2500	0 2500
Cable Speed (CS) (F/HR)		Gamma Ray 2 (GR2) (CPS)	Gamma Ray 4 (GR4) (CPS)	FSMT GR6 (GR6) (CPS)	FSMT GR8 (GR8) (CPS)
350 250		-1250 1250	-1250 1250	-1250 1250	-1250 1250
PBMS Gamma Ray (GR) (GAPI)					
0 2000					

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DO	System and Miscellaneous	
PP	Depth Offset for Playback Playback Processing	1.9 M RECOMPUTE

Format: FSMT_Basic Vertical Scale: 1:200 Graphics File Created: 20-Feb-2019 11:35

OP System Version: 19C2-270

Input DLIS Files

DEFAULT FSMT_PSP_006LUP FN:9 PRODUCER 11-Dec-2018 18:27 3165.5 M 3057.1 M

Output DLIS Files

DEFAULT FSMT_PSP_042PUP FN:38 PRODUCER 20-Feb-2019 11:35
 CUSTOMER FSMT_PSP_042PUC FN:39 CUSTOMER 20-Feb-2019 11:35



PASS #1
Interval 3150-3060m

MAXIS Field Log

Company: ENI U & TS Well: Naomi4 Dir

Input DLIS Files

DEFAULT FSMT_PSP_011LUP FN:20 PRODUCER 11-Dec-2018 18:27 3164.9 M 3058.4 M

Output DLIS Files

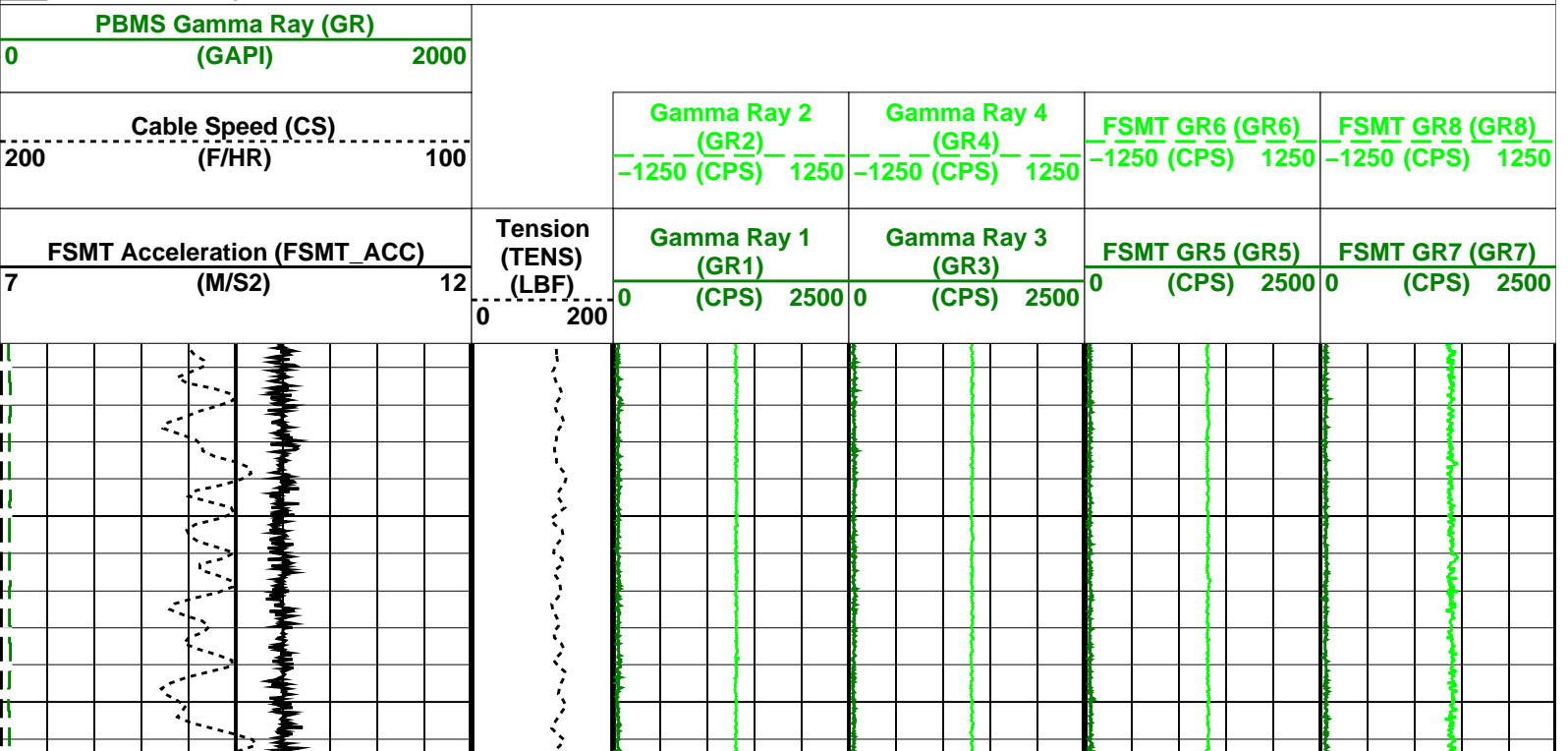
DEFAULT FSMT_PSP_041PUP FN:36 PRODUCER 20-Feb-2019 11:33 3166.9 M 3060.3 M
 CUSTOMER FSMT_PSP_041PUC FN:37 CUSTOMER 20-Feb-2019 11:33 3166.9 M 3060.3 M

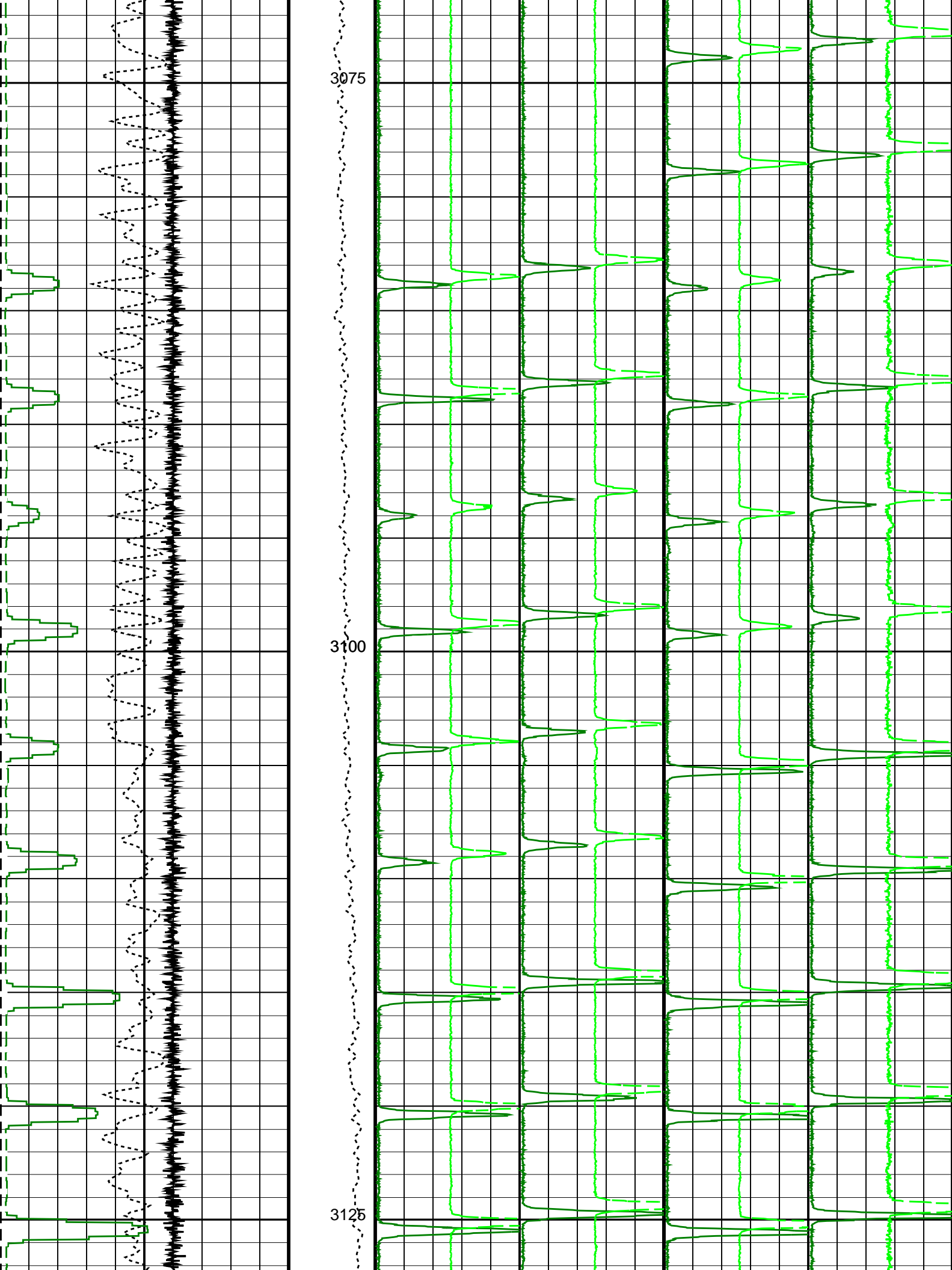
OP System Version: 19C2-270

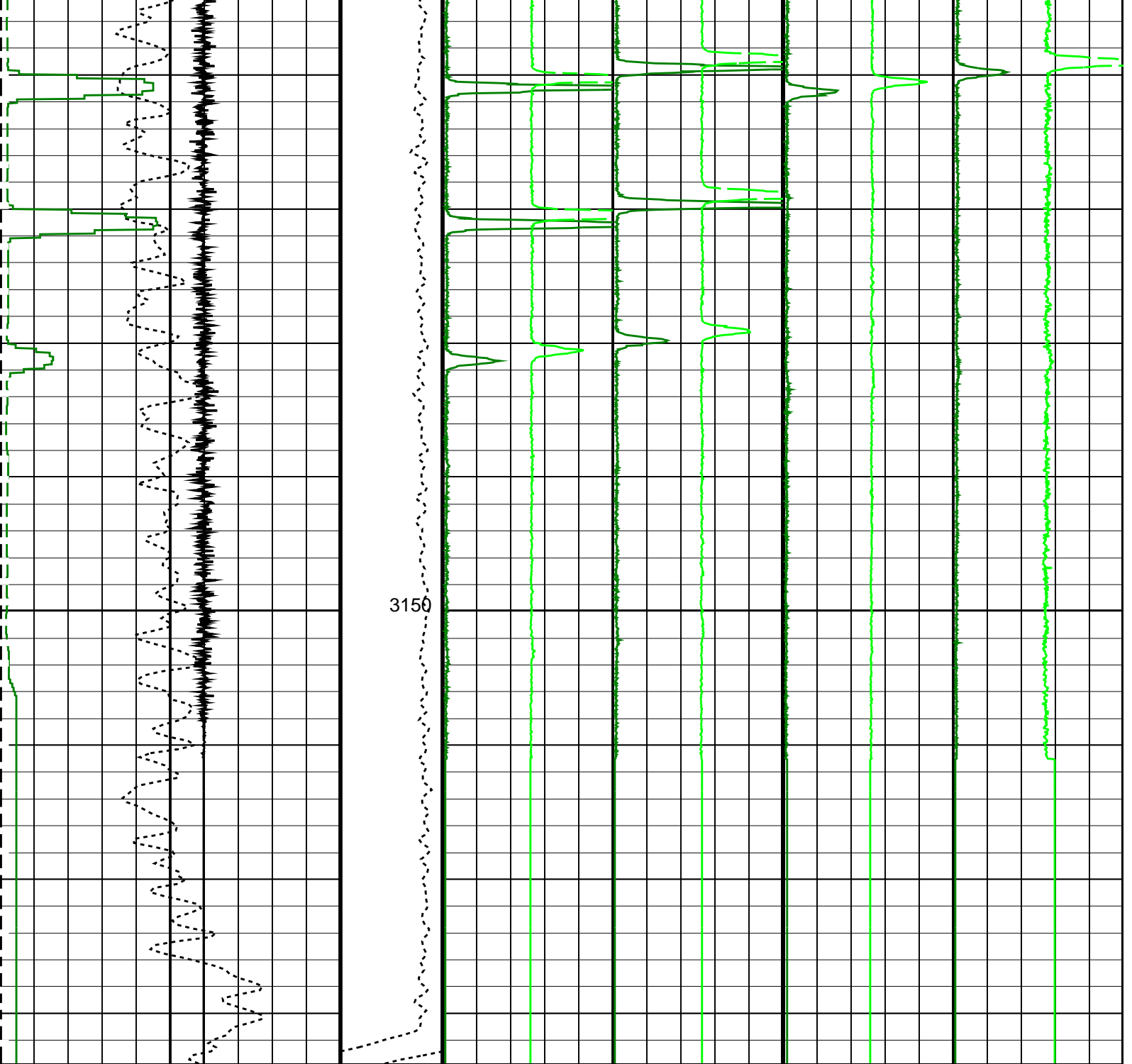
FSMT-E SRPC-FSMTE-JUNE_2013_OP19C2H1_b PSPT 19C2-270
 ERS 19C2-270

PIP SUMMARY

Time Mark Every 60 S







3150

FSMT Acceleration (FSMT_ACC) (M/S ²)	7	12	Tension (TENS) (LBF)	0	200	Gamma Ray 1 (GR1) (CPS)	0	2500	Gamma Ray 3 (GR3) (CPS)	0	2500	FSMT GR5 (GR5) (CPS)	0	2500	FSMT GR7 (GR7) (CPS)	0	2500
Cable Speed (CS) (F/HR)	200	100				Gamma Ray 2 (GR2) (CPS)	-1250	1250	Gamma Ray 4 (GR4) (CPS)	-1250	1250	FSMT GR6 (GR6) (CPS)	-1250	1250	FSMT GR8 (GR8) (CPS)	-1250	1250
PBMS Gamma Ray (GR) (GAPI)	0	2000															

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DO	System and Miscellaneous Depth Offset for Playback	2.0 M

OP System Version: 19C2-270

FSMT-E SRPC-FSMT-E-JUNE_2013_OP19C2H1_b PSPT 19C2-270
 ERS 19C2-270

Input DLIS Files

DEFAULT FSMT_PSP_011LUP FN:20 PRODUCER 11-Dec-2018 18:27 3164.9 M 3058.4 M

Output DLIS Files

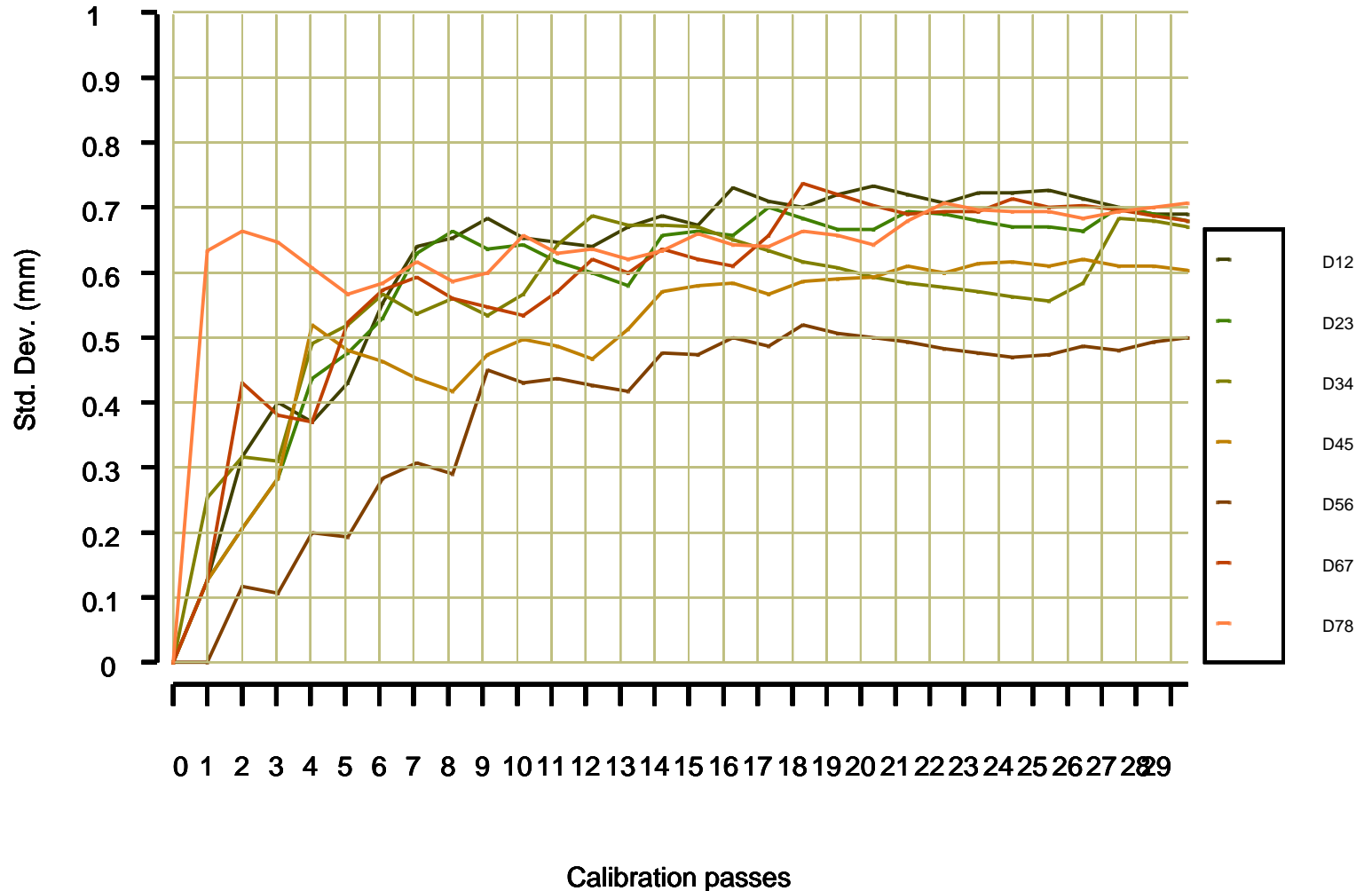
DEFAULT FSMT_PSP_041PUP FN:36 PRODUCER 20-Feb-2019 11:33
 CUSTOMER FSMT_PSP_041PUC FN:37 CUSTOMER 20-Feb-2019 11:33



BEFORE CALIBRATION

MAXIS Field Log

17-Oct-2018 – FSMT-E SN 701 – Cumulative Standard Deviation (at -1.3°C)



DET12 = 0.369289 m (± 0.69 mm)
DET23 = 0.368878 m (± 0.68 mm)
DET34 = 0.368393 m (± 0.67 mm)
DET45 = 8.895258 m (± 0.61 mm)
DET56 = 0.368495 m (± 0.50 mm)
DET67 = 0.366835 m (± 0.68 mm)
DET78 = 0.370220 m (± 0.71 mm)

Client: ENI U & TS
Field: Naomi-Pandora
Well: Naomi4 Dir
Run date: 9-Dec-2018

Tool: PSP
Sub Type: PBMS
Sensor: GR

PBMS Gamma Ray

Sonde Serial NB RESISTORS FOR GR SENSOR N.33348, TOOL PBMS-BA1705. SENSOR S/N:
Sensor Serial NB 33348
Calib Date ddmmyy 010801
Matrix Size 12
Coeff CRC 0A05

GR HV Rt

	Rt**0	Rt**1
Rt**0	+ .221000000000e+04	+ .332000000000e+04

Client: ENI U & TS
Field: Naomi-Pandora
Well: Naomi4 Dir
Run date: 9-Dec-2018

Tool: PSP
Sub Type: PBMS
Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB COEFFICIENTS FOR RTD THERMOMETER PBMS-B.1705 S/N:
Sensor Serial NB 1705

Sensor Serial NB 1705
 Calib Date ddmmyy 060309
 Matrix Size 16
 Coeff CRC F2E6

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	-.306754431095E+03	+.708857543802E+02	+.129096138976E+02
	Tt**3	Tt**4	Tt**5
Tt**0	-.182485003084E+01	+.110168111002E+00	0.0

Client: ENI U & TS	Tool: PSP
Field: Naomi-Pandora	Sub Type: PBMS
Well: Naomi4 Dir	Sensor: CQG
Run date: 9-Dec-2018	

PBMS Quartz Gauge type F

Sonde Serial NB COEFFICIENTS FOR CQG PBMS-B.1705 S/N:
 Sensor Serial NB 1705
 Calib Date ddmmyy 060309
 Matrix Size 66
 Coeff CRC D41F

Pres Coeff

	Fb**0	Fb**1	Fb**2
Fc**0	+.716420225758E+04	+.186847468149E-01	-.128054752285E-07
Fc**1	-.103168609082E+01	-.124232544472E-04	-.977528028682E-10
Fc**2	+.982300140659E-06	+.467142878196E-10	+.115714998338E-14
Fc**3	+.218365570951E-11	+.231135748283E-15	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

	Fb**3	Fb**4	Fb**5
Fc**0	-.728630780082E-10	-.126762060815E-14	-.300476176382E-19
Fc**1	-.408889520260E-15	+.554852831177E-19	0.0
Fc**2	0.0	0.0	0.0
Fc**3	0.0	0.0	0.0

Fc**3	0.0	0.0	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

PBMS Quartz Gauge type F

Sonde Serial NB :
 Sensor Serial NB 1705
 Calib Date ddmmyy 060309
 Matrix Size 66
 Coeff CRC 6611

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+1.119194920216E+03	-.315603856899E-03	+666013975516E-08
Fb**1	-.582394264852E-02	+1.167255572123E-07	+3.75365147702E-12
Fb**2	-.360975956944E-07	+2.255145966298E-12	+2.267564305930E-17
Fb**3	-.359537276924E-12	+1.195440932164E-16	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

	Fc**3	Fc**4	Fc**5
Fb**0	+1.149714953143E-12	-.286889637884E-17	-.151552973738E-20
Fb**1	-.714997510063E-17	-.502428368890E-20	0.0
Fb**2	0.0	0.0	0.0
Fb**3	0.0	0.0	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

PBMS Quartz Gauge type F

Sonde Serial NB :
 Sensor Serial NB 1705
 Calib Date ddmmyy 060309
 Matrix Size 16
 Coeff CRC 4CF6

Clock Freq Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+3.09991819963E+05	+3.387725960717E-02	+5.563290966309E-06
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-.666923772731E-10	-.792367657151E-15	+2.220306122274E-19

PBMS Quartz Gauge type F

Sonde Serial NB :
 Sensor Serial NB 1705
 Calib Date ddmmyy 060309
 Matrix Size 16
 Coeff CRC 4520

Clock Temp Coeff

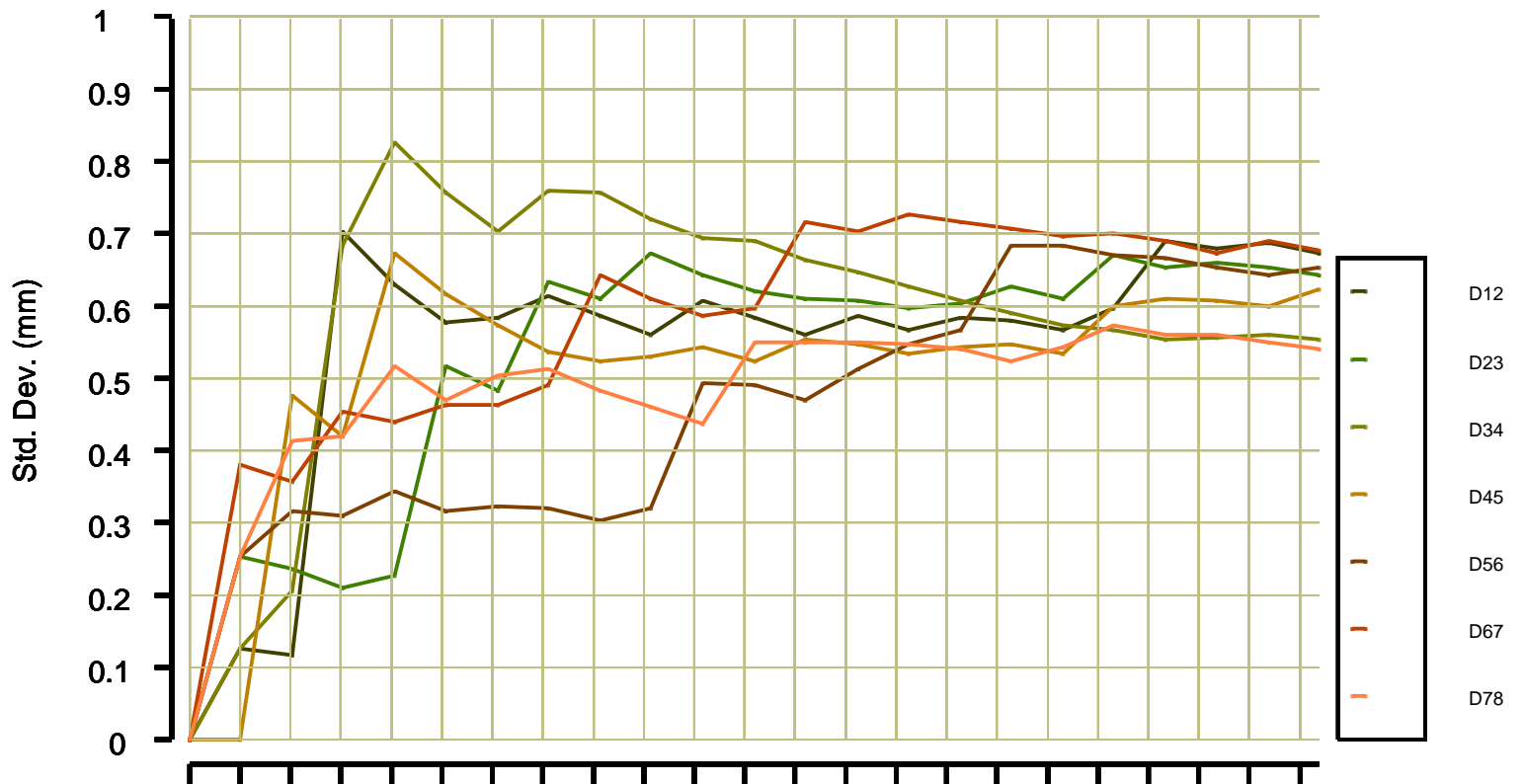
	$(Fb'-Fc')^{**0}$	$(Fb'-Fc')^{**1}$	$(Fb'-Fc')^{**2}$
$(Fb'-Fc')^{**0}$	+1.110960181251E+03	-.560874008573E-02	-.330859715453E-07
	$(Fb'-Fc')^{**3}$	$(Fb'-Fc')^{**4}$	$(Fb'-Fc')^{**5}$
$(Fb'-Fc')^{**0}$	+.255582378687E-12	-.153428135716E-16	-.188861503505E-21



AFTER CALIBRATION

MAXIS Field Log

14-Jan-2019 – FSMT-E SN 701 – Cumulative Standard Deviation (at 1.5°C)



Calibration passes

DET12 = 0.369369 m (± 0.67 mm)

DET23 = 0.368321 m (± 0.64 mm)

DET34 = 0.368410 m (± 0.55 mm)

DET45 = 8.895102 m (± 0.63 mm)

DET56 = 0.368399 m (± 0.66 mm)

DET67 = 0.366334 m (± 0.68 mm)

DET78 = 0.370619 m (± 0.54 mm)

Company: ENI U & TS

Schlumberger

Well: Naomi4 Dir

Field: Naomi-Pandora

Log: FSMT-E

Country: Italy

FSMT-E RUN # 10

Formation Subsidence Monitoring Tool

Interval 3150-3060m