ANNULAR PRESSURE

MEMORY LOG

Company	Southern California Gas Company
Well	Standard Sesnon 4B ST1
Field	Aliso Canyon
County	Los Angeles
State	California
Country	United States

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Well Location:
Surface Location:
Latitude: 34° 18' 53.236" N
Longitude: 118° 34' 18.564" W

Other Services:
Directional
Annular Pressure
StarTrak Imaging

API Number:	Section:	Township:	Range:
037-30456	29	3N	16W

BOREHOLE RECORD			CASING RECORD		
Hole Diameter	From	To	Casing Size	From	To
17.5 in.	0 ft.	1438 ft.	13.375 in.	Surface	1436 ft.
12.25 in.	1436 ft.	9267 ft.	9.625 in.	Surface	8887 ft.
8.5 in.	8892 ft.	9267 ft.	7 in.	8695 ft.	9270 ft.
6.125 in.	9270 ft.	10338 ft.			

Drilling Contractor: Ensign Drilling Rig: 587

1:1800

TIME BASED DEPTH FINAL PRINT

Company Representative: Kevin Katolas

Field Personnel: Kevin Miller, Rino Risi, Carlos Lopez, Tony Cheng Job#: 7398919

Bit Run Number	3	4	5	6	11	12
INTEQ Data						
Run Number	6	7	8	9	14	15
DHA Serial Number	12848622	12848622	11936813	11936813	12127020	12127020
Surface Gear Serial Number	S2K 11674673	S2K 11674673	S2K 11674673	S2K 11674673	S2K 11674673	S2K 11674673
Tool OD (in) / Type	8.25 OTK	8.25 OTK	8.25 OTK	8.25 OTK	4.75 OTK	4.75 OTK
Run Data						
Bit Diameter (in)	12.25	12.25	12.25	12.25	6.125	6.125
Measured Depth In (ft)	1578	5710	7085	8892	9270	9688
Measured Depth Out (ft)	5710	7085	8892	9267	9688	10338
Top of Interval Logged (ft)	1546	5678	7053	8860	9242	9660
Bottom of Interval Logged (ft)	5678	7053	8860	9235	9660	13010
Min/Max Inclination (deg)	1.6 - 5.0	1.9 - 5.1	5.1 - 64.8	64.8 - 80.1	73.6 - 84.6	82.4 - 84.8
Begin Log (hrs)	07:05	06:38	02:10	03:20	18:33	19:11
Begin Log (date)	28 Aug2015	04 Sep 2015	09 Sep 2015	16 Sep 2015	13 Oct 2015	15 Oct 2015
End Log (hrs)	13:08	14:32	09:25	04:45	05:45	03:34
End Log (date)	03 Sep 2015	08 Sep 2015	14 Sep 2015	18 Sep 2015	15 Oct 2015	17 Oct 2015
Mud Data @ Depth (ft)	5710	5710	7085	8941	9494	10338
Mud Type	Water Based	Water Based	Water Based	Water Based	Water Based	Water Based
Density From - To (ppg)	8.8 - 9.0	8.8 - 9.0	9.0 - 9.1	9.1 - 9.2	8.5 - 8.5	8.5 - 8.6
Mud Chlorides (ppm)	14500	14200	24300	19700	15000	16500
Oil/Water Ratio (%)	0/100	0/100	0/100	0/100	0/100	0/100

Max Circulating Temp (º F)	164	164	179	172	148	159		
Company Representative	K. Katolas	K. Katolas	K. Katolas	K. Katolas	K. Katolas	K. Katolas		
Field Engineer	T. Cheng	T. Cheng	T. Cheng	T. Cheng	C. Lopez	K. Miller		

Equipment Data								
INTEQ Run Number	6	7	8	9	14	15		
Modular Assembly Number	1	1	2	2	3	3		
Drill Collar S/N	12848622	12848622	11936813	11936813	12127020	12127020		
Master S/N	12848622	12848622	11936813	11936813	12127020	12127020		
Drill Collar Converter S/N	N/A	N/A	N/A	N/A	N/A	N/A		
Pressure Sub S/N	12848622	12848622	11936813	11936813	12127020	12127020		
Neutron Sub S/N	N/A	N/A	N/A	N/A	N/A	N/A		
Neutron Source S/N	N/A	N/A	N/A	N/A	N/A	N/A		
Density Sub S/N	N/A	N/A	N/A	N/A	N/A	N/A		
Density Source S/N	N/A	N/A	N/A	N/A	N/A	N/A		
Gamma Sub S/N	12848622	12848622	11936813	11936813	12127020	12127020		
Resistivity Detector S/N	N/A	N/A	N/A	N/A	N/A	N/A		
Resistivity Sub S/N	12848622	12848622	11936813	11936813	12127020	12127020		
Sensor Offsets to Bit (ft) / Acquisition Rates (sec)								
Bottom of INTEQ MWD (ft)	1.45	1.45	1.45	1.45	0.80	0.80		
Resistivity	31.74 / 10	31.74 / 10	31.98 / 10	31.98 / 10	35.09 / 10	35.09 / 10	/	/
Gamma Ray	26.36 / 10	26.36 / 10	26.60 / 10	26.60 / 10	27.90 / 10	27.90 / 10	/	/
Pressure	27.11 / 20	27.11 / 20	27.35 / 20	27.35 / 20	30.53 / 20	30.53 / 20	/	/
Density	N/A / N/A	N/A / N/A	N/A / N/A	N/A / N/A	N/A / N/A	N/A / N/A	/	/
Neutron	N/A / N/A	N/A / N/A	N/A / N/A	N/A / N/A	N/A / N/A	N/A / N/A	/	/
Directional	38.53 / 240	38.53 / 240	38.77 / 240	38.77 / 240	41.06 / 240	41.06 / 240	/	/
Temperature	AT BIT	AT BIT	AT BIT	AT BIT	AT BIT	AT BIT		
Other Tool Information								
Total INTEQ Length (ft)	62.00	62.00	63.12	63.12	66.77	66.77		
Assembly Type	AutoTrak	AutoTrak	AutoTrak	AutoTrak	AutoTrak	AutoTrak		
Stabilizer above Resistivity (ft)	12.10	12.10	12.10	12.10	11.20	11.20		
Stabilizer below Resistivity (ft)	10.03	10.03	10.03	10.03	20.32	20.32		
Run Circulating Time (hrs)	143.0	81.7	127.2	65.4	33.0	40.1		

Calibration Verification								
Post Run	N/A	6	7	N/A	8	9	N/A	14
Pre Run	6	7	N/A	8	9	N/A	14	15
Date	27 Aug 2015	03 Sep 2015	08 Sep 2015	08 Sep 2015	14 Sep 2015	19 Sep 2015	13 Oct 2015	15 Oct 2015
Time (hrs)	22:30	22:00	06:57	10:57	21:58	00:09	11:19	14:00
Resistivity Sub S/N	12848622	12848622	12848622	11936813	11936813	11936813	12127020	12127020
Phase Difference Delta (deg)	0.0150	0.0023	0.0627	0.0045	0.0397	0.0411	-0.0088	0.0059
Base Attenuation Delta (deg)	0.0022	0.0187	-0.0146	-0.0170	0.0266	0.0098	0.0301	0.0388
Average Temperature (º F)	67	100.25	113.97	90.13	110.76	102.62	91.07	96.17
Status	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
Gamma Sub S/N	12598076	12598076	12598076	11936813	11936813	11936813	12127020	12127020
Gamma Verifier S/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
*Verifier Field (cps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
*Verifier Shop (cps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Background Field (cps)	10.40 / 5.56	3.64 / 6.36	5.85 / 5.20	4.99 / 7.39	4.36 / 4.47	6.15 / 5.64	5.16 / 5.12	5.80 / 5.15
Background Shop (cps)	5.02 / 5.18	5.02 / 5.18	5.02 / 5.18	4.23 / 4.30	4.23 / 4.30	4.23 / 4.30	5.44 / 5.51	5.44 / 5.51
Status	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
Neutron Sub S/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Neutron Verifier S/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Near Shop (cps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Near Field (cps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Far Shop (cps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Far Field (cps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Status	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Density Sub S/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Density Verifier S/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SS Shop (cps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SS Field (cps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LS Shop (cps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LS Field (cps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Status	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Background counts have been subtracted from Gamma "Verifier Field (cps)" and "Verifier Shop (cps)"

Calibration Verification

Post Run	15							
Pre Run	N/A							
Date	17 Oct 2015							
Time (hrs)	18:26							
Resistivity Sub S/N	12127020							
Phase Difference Delta (deg)	0.0058							
Base Attenuation Delta (deg)	0.0107							
Average Temperature (º F)	98							
Status	PASS							
Gamma Sub S/N	12127020							
Gamma Verifier S/N	N/A							
*Verifier Field (cps)	N/A							
*Verifier Shop (cps)	N/A							
Background Field (cps)	6.40 / 6.05							
Background Shop (cps)	5.44 / 5.51							
Status	PASS							
Neutron Sub S/N	N/A							
Neutron Verifier S/N	N/A							
Near Shop (cps)	N/A							
Near Field (cps)	N/A							
Far Shop (cps)	N/A							
Far Field (cps)	N/A							
Status	N/A							
Density Sub S/N	N/A							
Density Verifier S/N	N/A							
SS Shop (cps)	N/A							
SS Field (cps)	N/A							
LS Shop (cps)	N/A							
LS Field (cps)	N/A							
Status	N/A							

*Background counts have been subtracted from Gamma "Verifier Field (cps)" and "Verifier Shop (cps)"

Enviromental Parameters

Date & Time	Run No.	Bit Depth	Rm @ BHCT		Mud Weight	K (%)	Rmf @ BHCT	
		(ft)	(ohmm)	(º F)	(ppg)		(ohmm)	(º F)
27 Aug 2015 07:35	6	1438	0.56	N/A	8.9	N/A	N/A	N/A
28 Aug 2015 13:43	6	1755	0.28	N/A	8.9	N/A	N/A	N/A
30 Aug 2015 03:57	6	2970	0.29	142	8.9	N/A	N/A	142
02 Sep 2015 12:31	6	5144	0.28	160	9.0	N/A	N/A	160
08 Sep 2015 14:30	7	7085	0.28	164	9.1	N/A	N/A	164

08 Sep 2015 14:30	7	7085	0.28	164	9.1	N/A	N/A	164
14 Sep 2015 09:00	8	8892	0.58	167	9.1	N/A	N/A	167
18 Sep 2015 04:40	9	9267	0.65	172	9.2	N/A	N/A	172
15 Oct 2015 06:00	14	9688	0.17	147	8.5	N/A	N/A	147
16 Oct 2015 14:20	15	10055	0.20	158	8.6	N/A	N/A	158

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MNEMONICS:

BLOCKCOMP	> Block Height, ft.
PUMP	> Pump Pressure – Standpipe, psi
SSRPMAVM	> Stick Slip RPM Average, RPM
ACTECDM	> Actual ECD, ppg
MWIN	> Mud Weight In, ppg
TCDM	> Downhole Temperature, deg F
BITDEP	> Bit Measured Depth, ft.

COMMENTS:

1. Baker Hughes INTEQ Runs 6 thru 9 utilized 8 1/4 inch OnTrak (Multiple Propagation Resistivity, Annular Pressure, Gamma Ray, and Directional) tool behind a 9 1/2 inch RCLS (Rotary Closed Loop System) and a 12 1/4 inch Kymara bit from 1578 ft to 9267 ft MD (1577 ft to 8540 ft TVD).

2. Baker Hughes INTEQ Runs 15 thru 16 utilized 4 3/4 inch OnTrak (Multiple Propagation Resistivity, Annular Pressure, Gamma Ray, and Directional) tool behind a 4 3/4 inch RCLS (Rotary Closed Loop System) and a 6 1/8 inch Kymara bit from 1578 ft to 9267 ft MD (1577 ft to 8540 ft TVD).

3. Depth measurements were obtained from a depth control system (Totco) not supplied or operated by Baker Hughes INTEQ. Due to the lack of control by Baker Hughes INTEQ logging engineers, depth calibrations and measures could not be independently verified and the unverified depths, as supplied to INTEQ, are being used to present logging data.

4. Well Standard Sesnon 4B ST1 was Sidetracked in open hole from Standard Sesnon 4B at approximately 8870 ft MD.

REMARKS:

1. Drillers Casing Depth : 1436 feet MD (1436 feet TVD).
   Loggers Casing Depth : Not logged due to the inability to circulate inside casing with the Schlumberger reamer.

2. The interval from 5678 ft to 5715 ft MD (5662 ft to 5699 ft TVD) was logged 17.5 hours after being drilled due to a trip for a bit.

3. The interval from 6763 ft to 6797 ft MD (6743 ft to 6777 ft TVD) was logged 7 hours after being drilled due to Rig problems.

4. The interval from 7053 ft to 7085 ft MD (7033 ft to 7066 ft TVD) was logged 11.5 hours after being drilled due to a trip for a tool failure.

5. The interval from 8860 ft to 8892 ft MD (8433 ft to 8445 ft TVD) was logged 42 hours after being drilled due to a trip for a bit.

6. Drillers Liner Depth : 9270 feet MD (8568 feet TVD).
   Loggers Liner Depth : 9275 feet MD (8569 feet TVD).

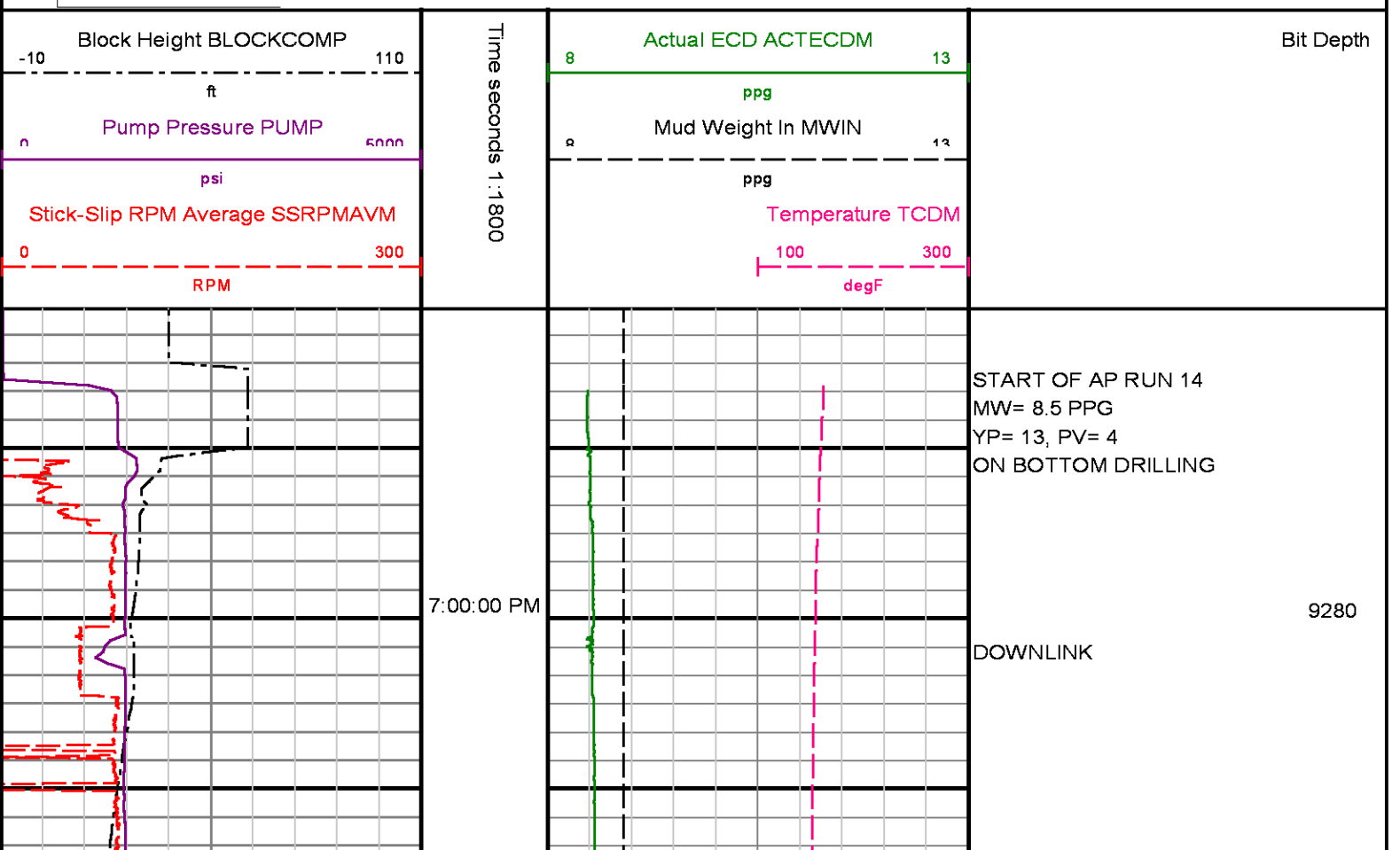
7. The interval from 9653 ft to 9688 ft MD (8626 ft to 8628 ft TVD) was logged 13 hours after being drilled due to a trip for a bit.

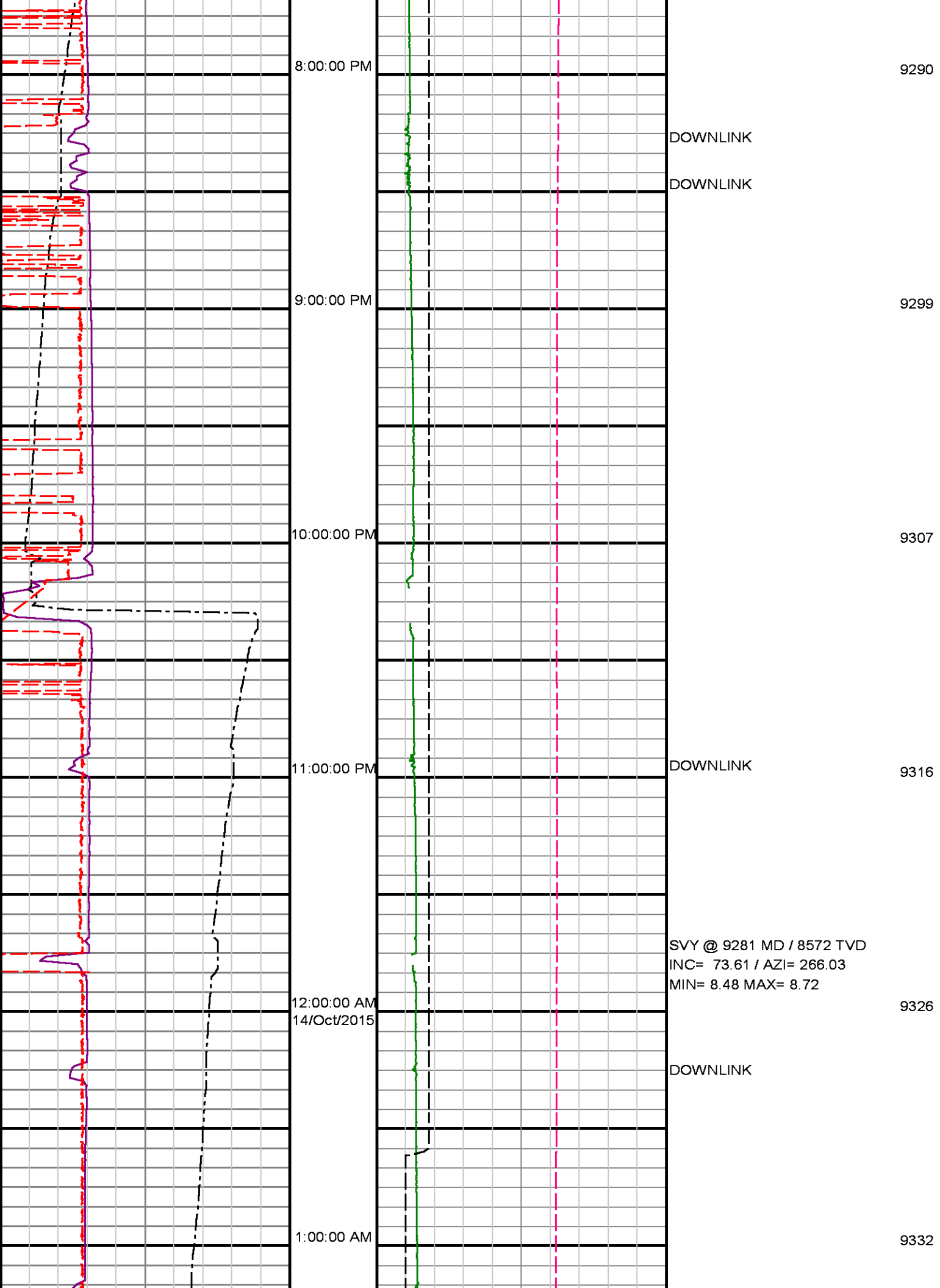
8. The interval from 10310 to 10338 feet MD (8704 to 8708 feet TVD) was not logged due to the sensor to bit offset at TD.

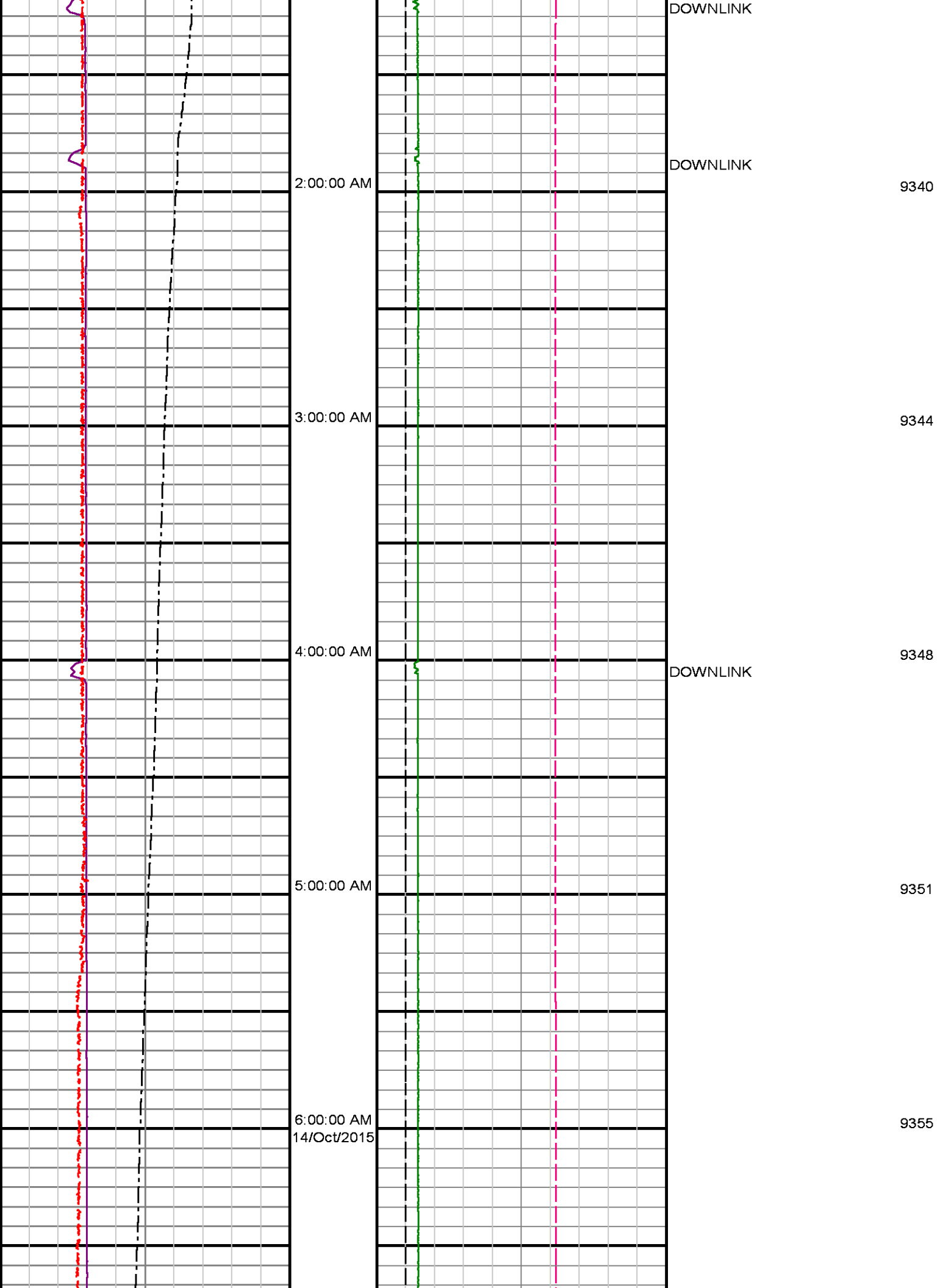
ANNULAR PRESSURE
RUN 14

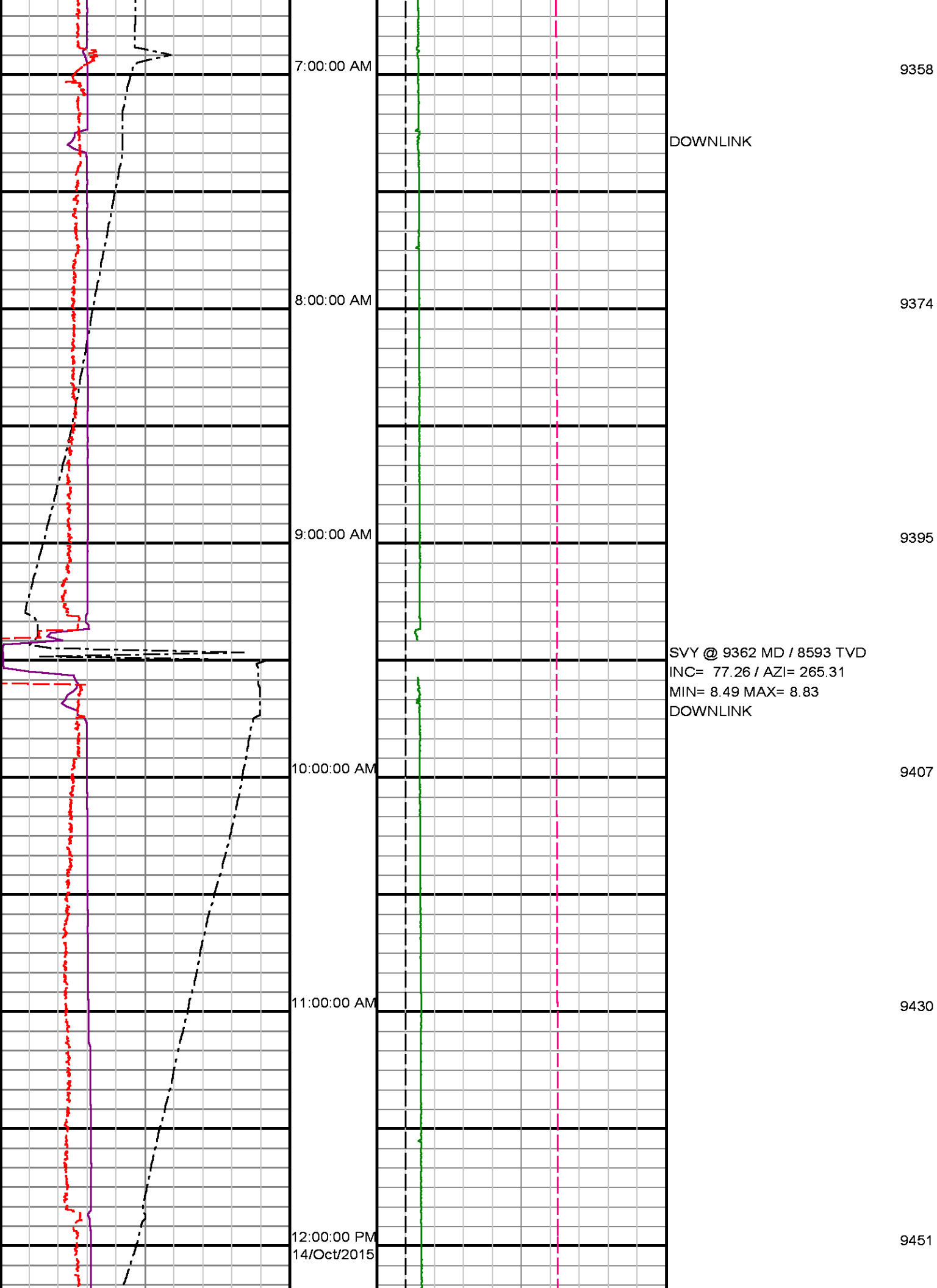
BAKER HUGHES

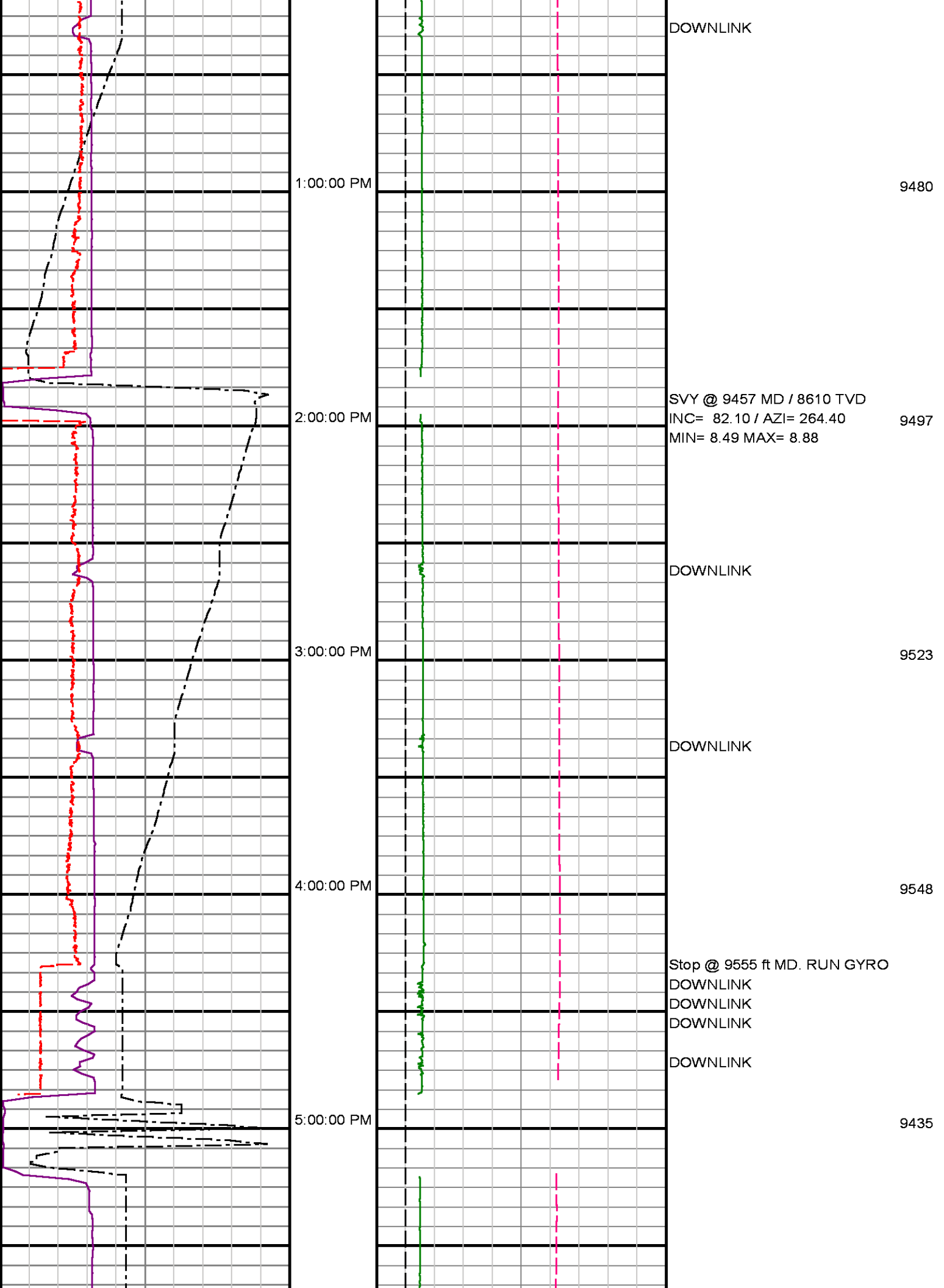
Company : Southern California Gas Company
Well : Standard Sesnon 4B
Interval : 13/Oct/2015 6:05:22 PM to 15/Oct/2015 8:59:53 AM
Created : 17/Oct/2015 1:46:14 PM

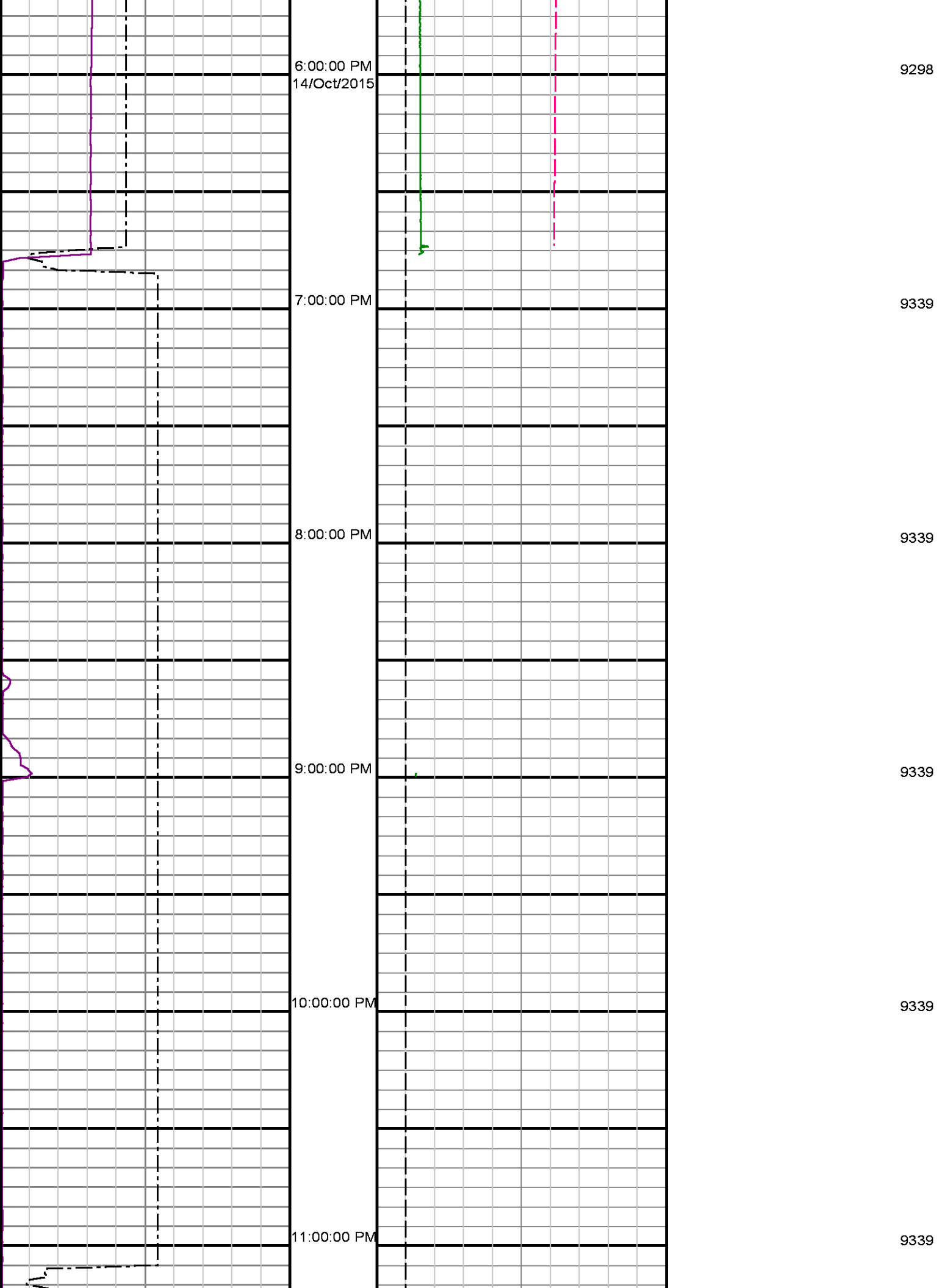


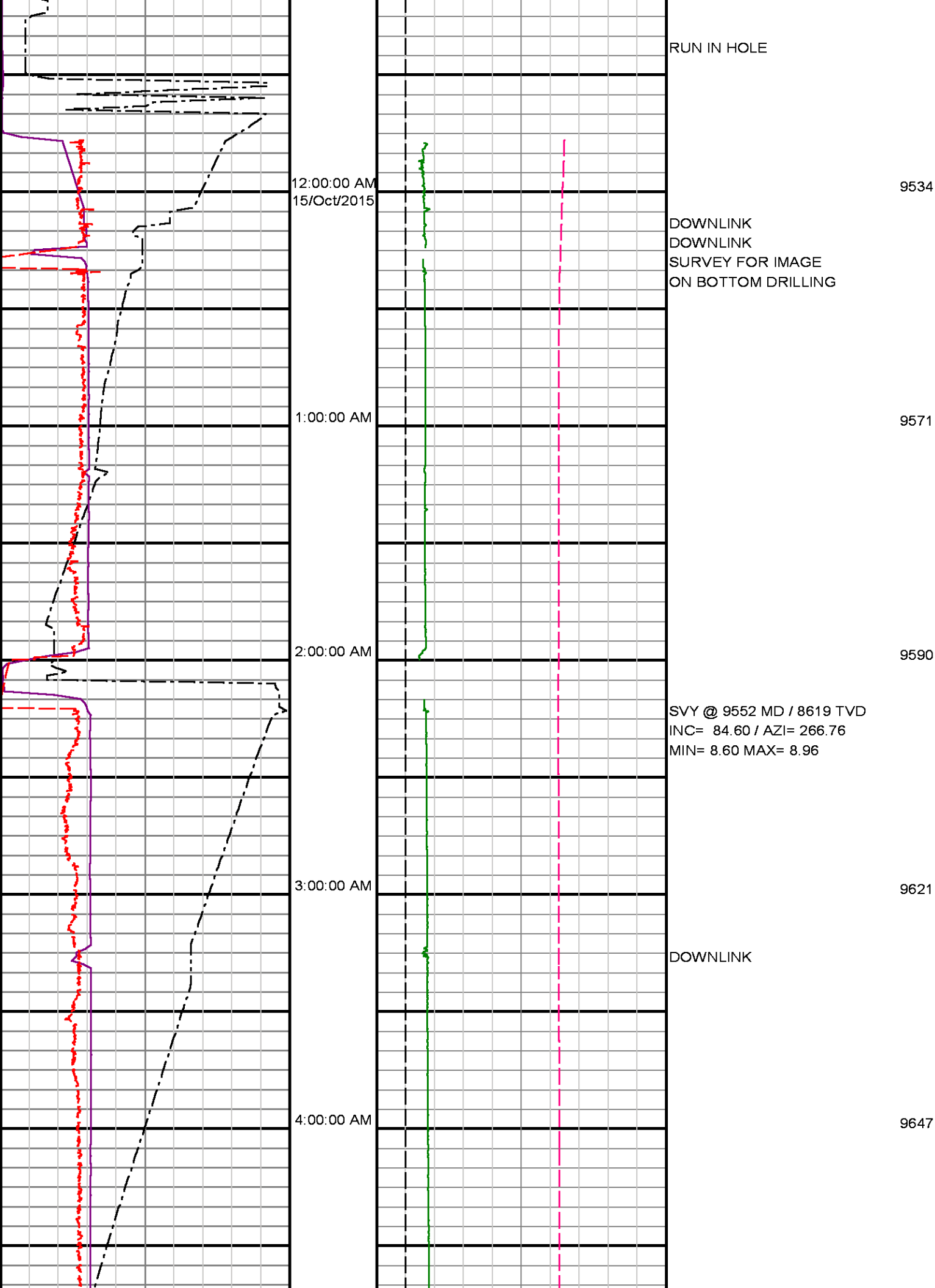

8:00:00 PM
9290
DOWNLINK
DOWNLINK
9:00:00 PM
9299
10:00:00 PM
9307
11:00:00 PM
DOWNLINK
9316
SVY @ 9281 MD / 8572 TVD
INC= 73.61 / AZI= 266.03
MIN= 8.48 MAX= 8.72
12:00:00 AM
14/Oct/2015
9326
DOWNLINK
1:00:00 AM
9332

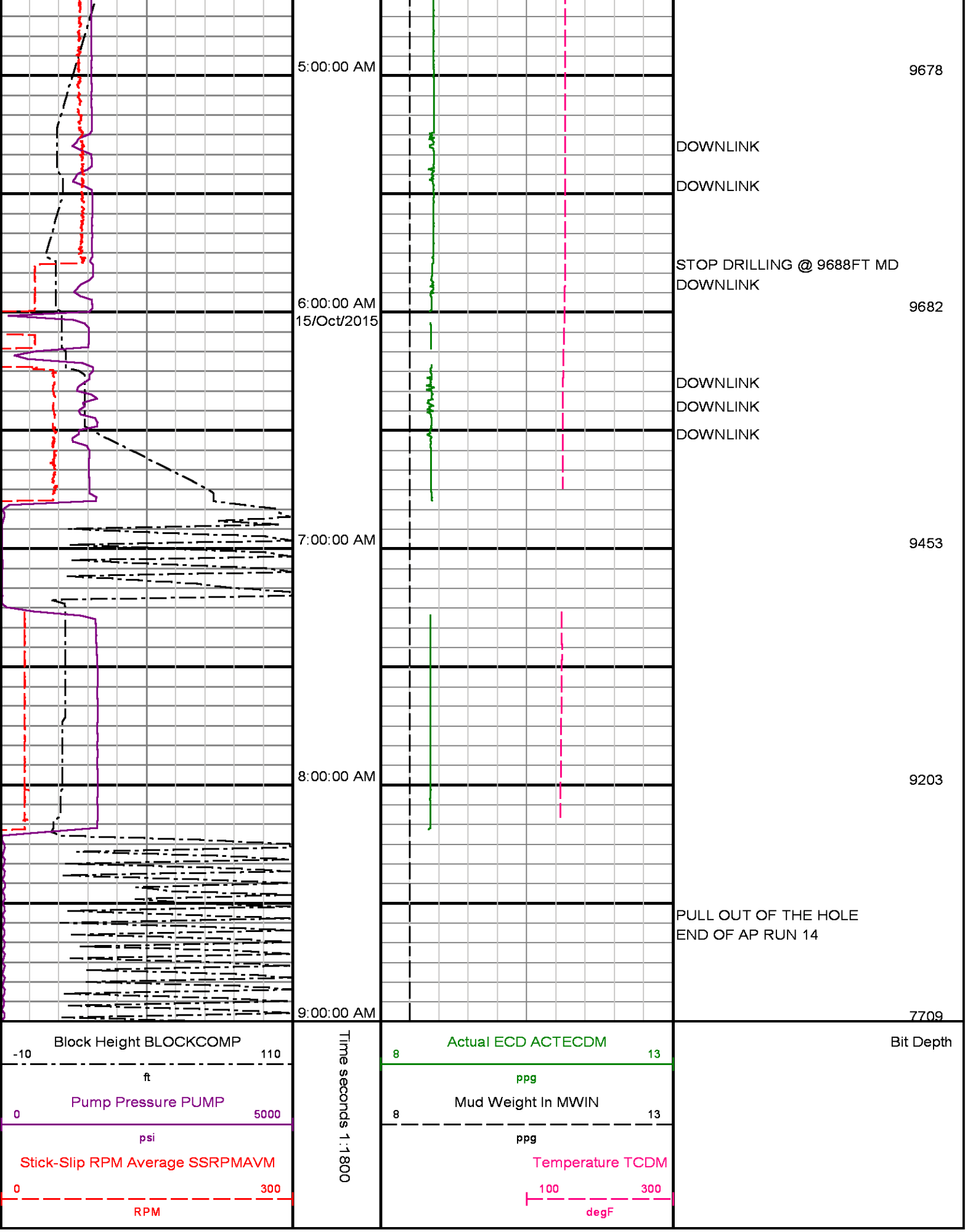

DOWNLINK
DOWNLINK
2:00:00 AM
9340
3:00:00 AM
9344
4:00:00 AM
9348
DOWNLINK
5:00:00 AM
9351
6:00:00 AM
14/Oct/2015
9355


7:00:00 AM
9358
DOWNLINK
8:00:00 AM
9374
9:00:00 AM
9395
SVY @ 9362 MD / 8593 TVD
INC= 77.26 / AZI= 265.31
MIN= 8.49 MAX= 8.83
DOWNLINK
10:00:00 AM
9407
11:00:00 AM
9430
12:00:00 PM
14/Oct/2015
9451


DOWNLINK
1:00:00 PM
9480
SVY @ 9457 MD / 8610 TVD
INC= 82.10 / AZI= 264.40
MIN= 8.49 MAX= 8.88
2:00:00 PM
9497
DOWNLINK
3:00:00 PM
9523
DOWNLINK
4:00:00 PM
9548
Stop @ 9555 ft MD. RUN GYRO
DOWNLINK
DOWNLINK
DOWNLINK
DOWNLINK
5:00:00 PM
9435


6:00:00 PM
14/Oct/2015
9298
7:00:00 PM
9339
8:00:00 PM
9339
9:00:00 PM
9339
10:00:00 PM
9339
11:00:00 PM
9339

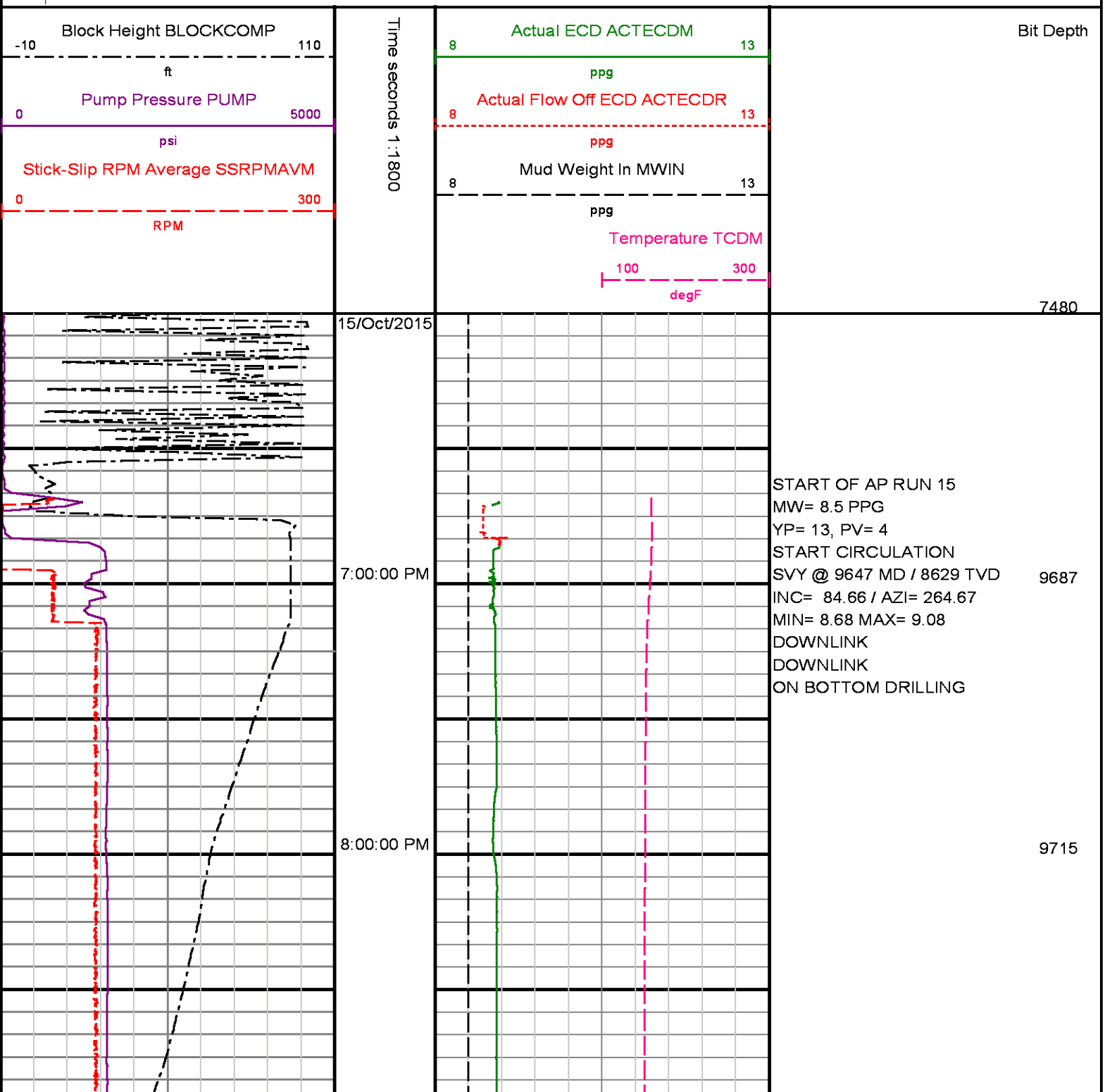

RUN IN HOLE
12:00:00 AM
15/Oct/2015
9534
DOWNLINK
DOWNLINK
SURVEY FOR IMAGE
ON BOTTOM DRILLING
1:00:00 AM
9571
2:00:00 AM
9590
SVY @ 9552 MD / 8619 TVD
INC= 84.60 / AZI= 266.76
MIN= 8.60 MAX= 8.96
3:00:00 AM
9621
DOWNLINK
4:00:00 AM
9647

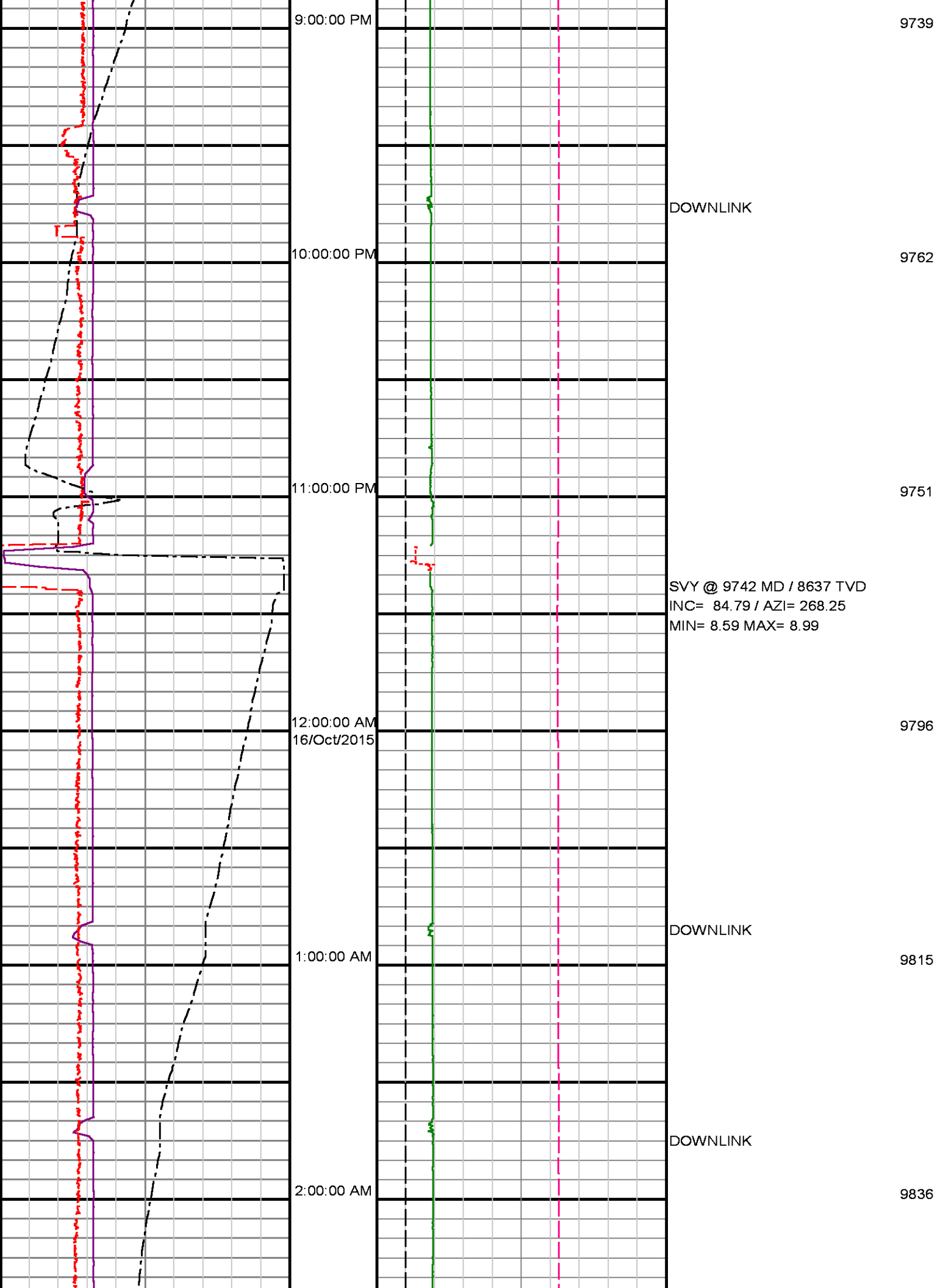

5:00:00 AM
9678
DOWNLINK
DOWNLINK
STOP DRILLING @ 9688FT MD
DOWNLINK
6:00:00 AM
15/Oct/2015
9682
DOWNLINK
DOWNLINK
DOWNLINK
7:00:00 AM
9453
8:00:00 AM
9203
PULL OUT OF THE HOLE
END OF AP RUN 14
9:00:00 AM
7709
Block Height BLOCKCOMP
-10
110
ft
Pump Pressure PUMP
0
5000
psi
Stick-Slip RPM Average SSRPMAVM
0
300
RPM
Time seconds 1:1800
Actual ECD ACTECDM
8
13
ppg
Mud Weight In MWIN
8
13
ppg
Temperature TCDM
100
300
degF
Bit Depth

ANNULAR PRESSURE
RUN 15

BAKER HUGHES

Company : Southern California Gas Company
Well : Standard Sesnon 4B
Interval : 15/Oct/2015 6:00:00 PM to 17/Oct/2015 1:00:04 PM
Created : 17/Oct/2015 1:46:14 PM

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10:00:00 PM
9762
11:00:00 PM
9751
SVY @ 9742 MD / 8637 TVD
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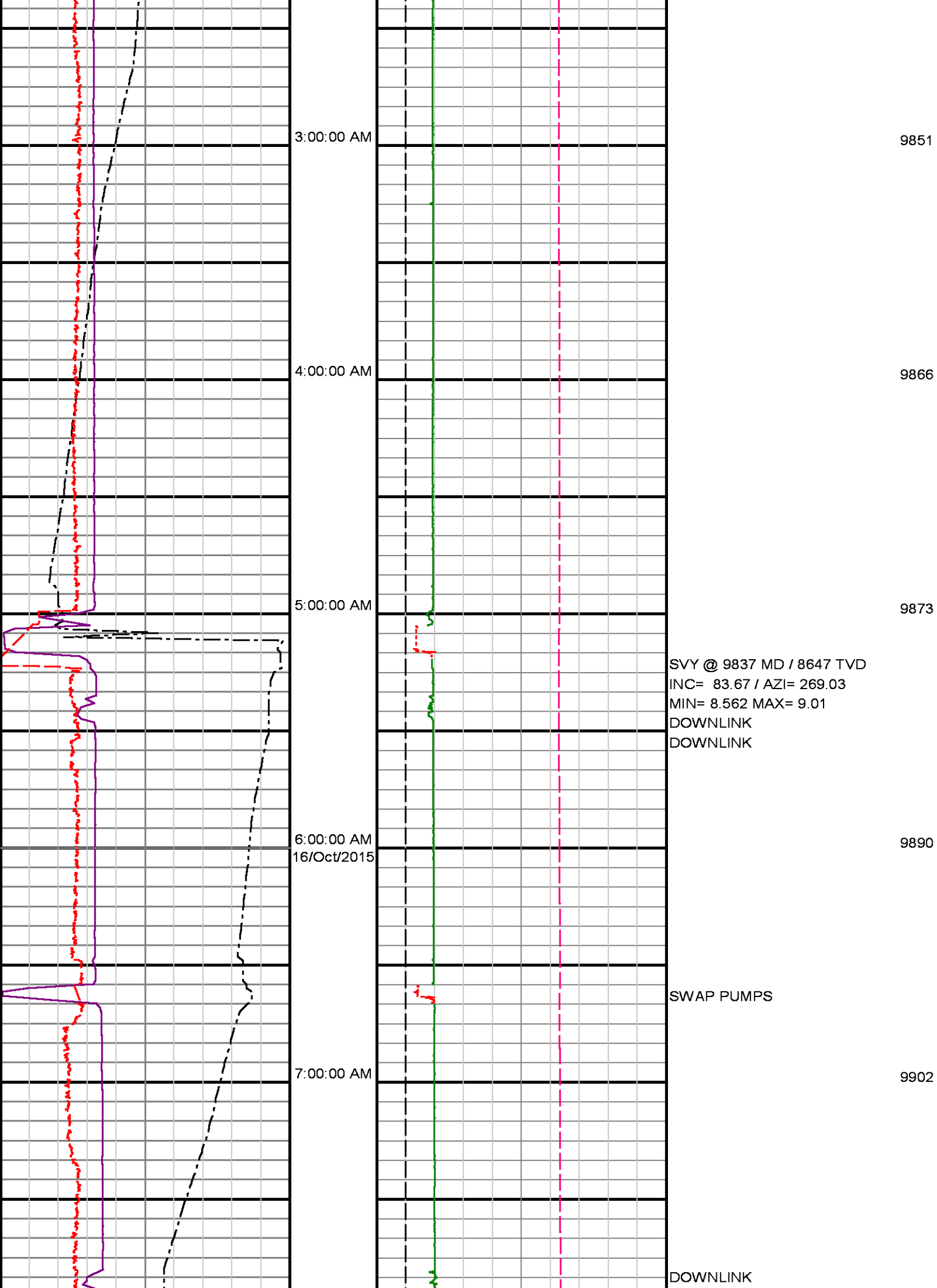
16/Oct/2015
9796
DOWNLINK
1:00:00 AM
9815
DOWNLINK
2:00:00 AM
9836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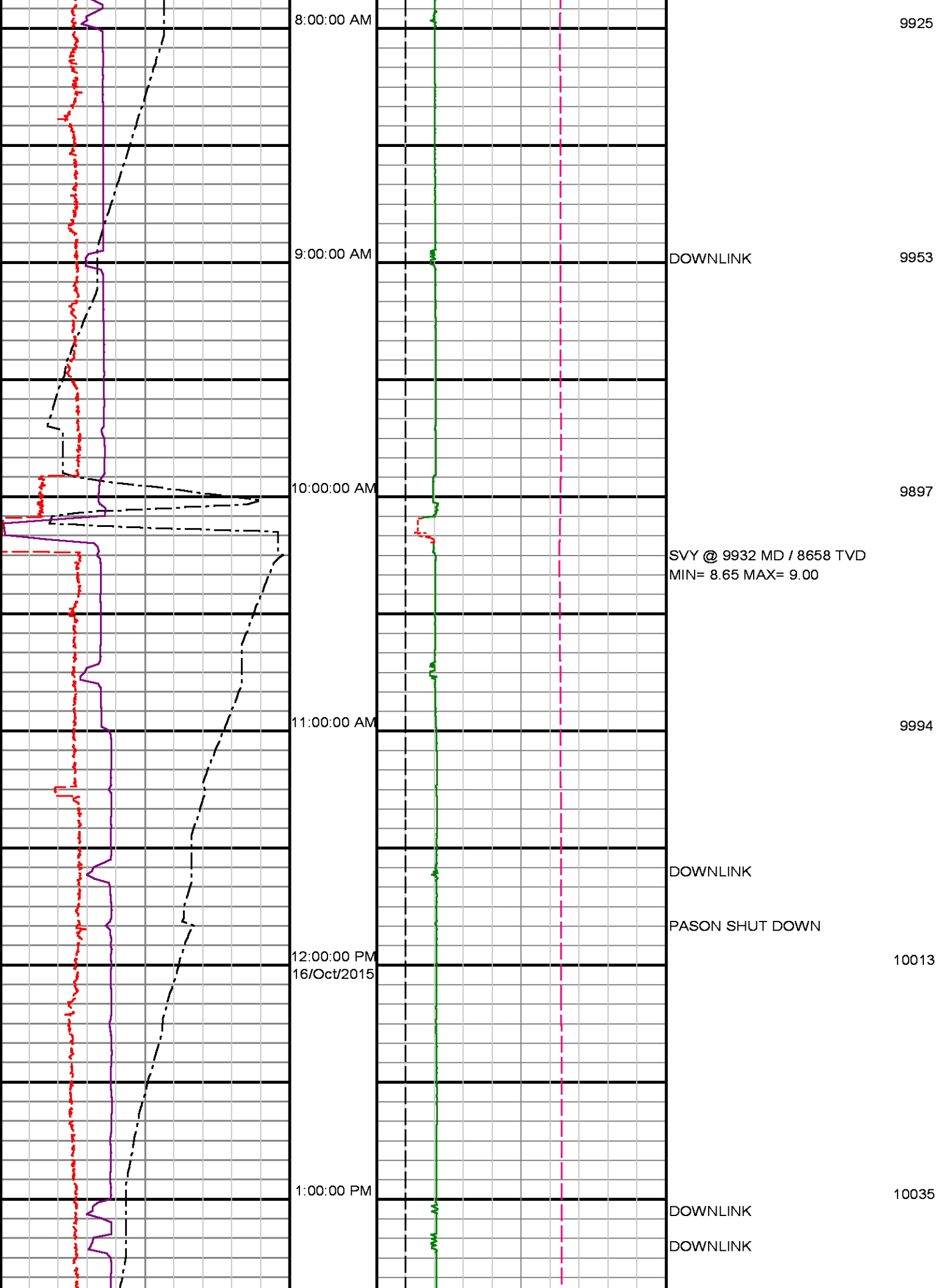
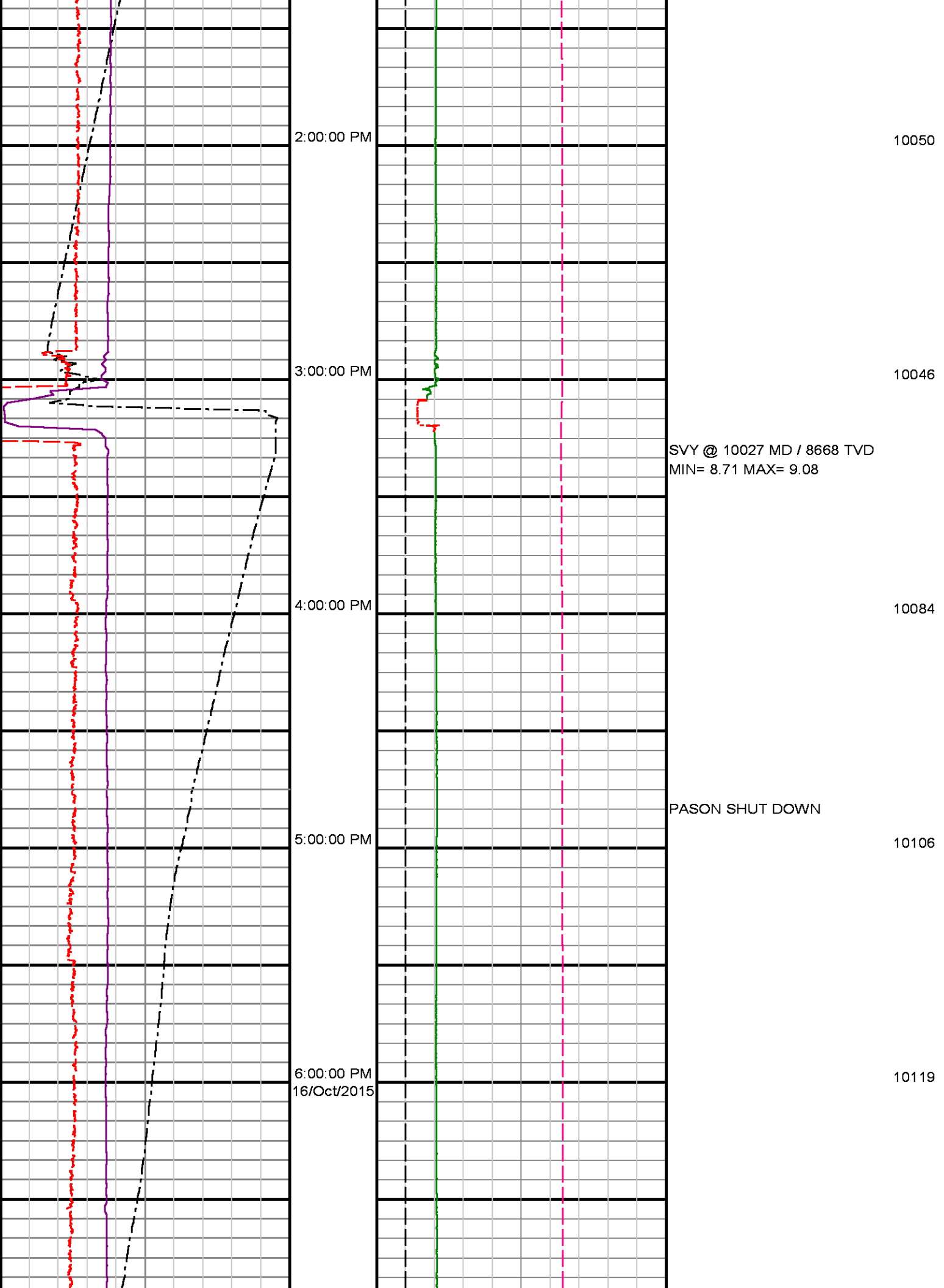
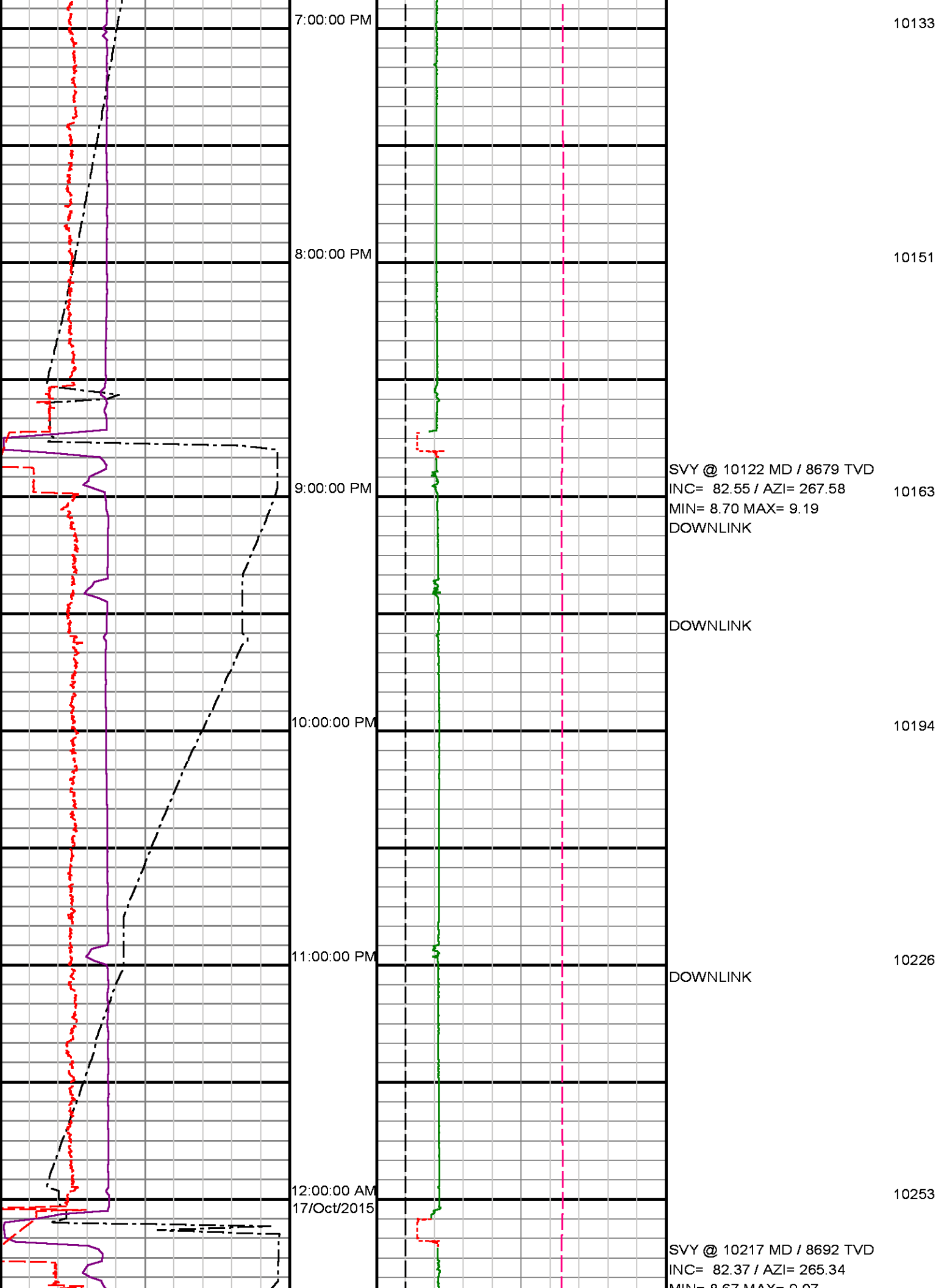
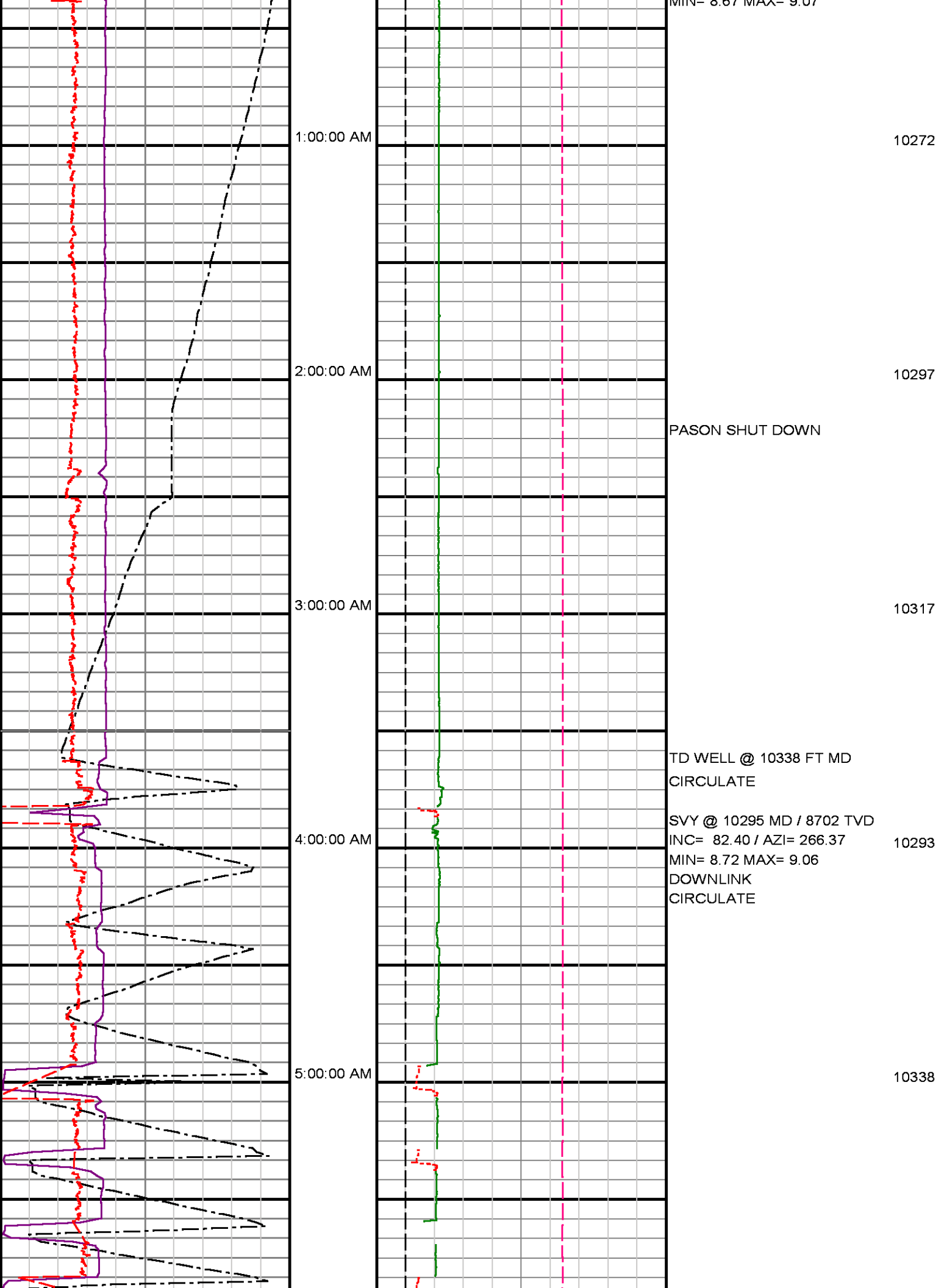
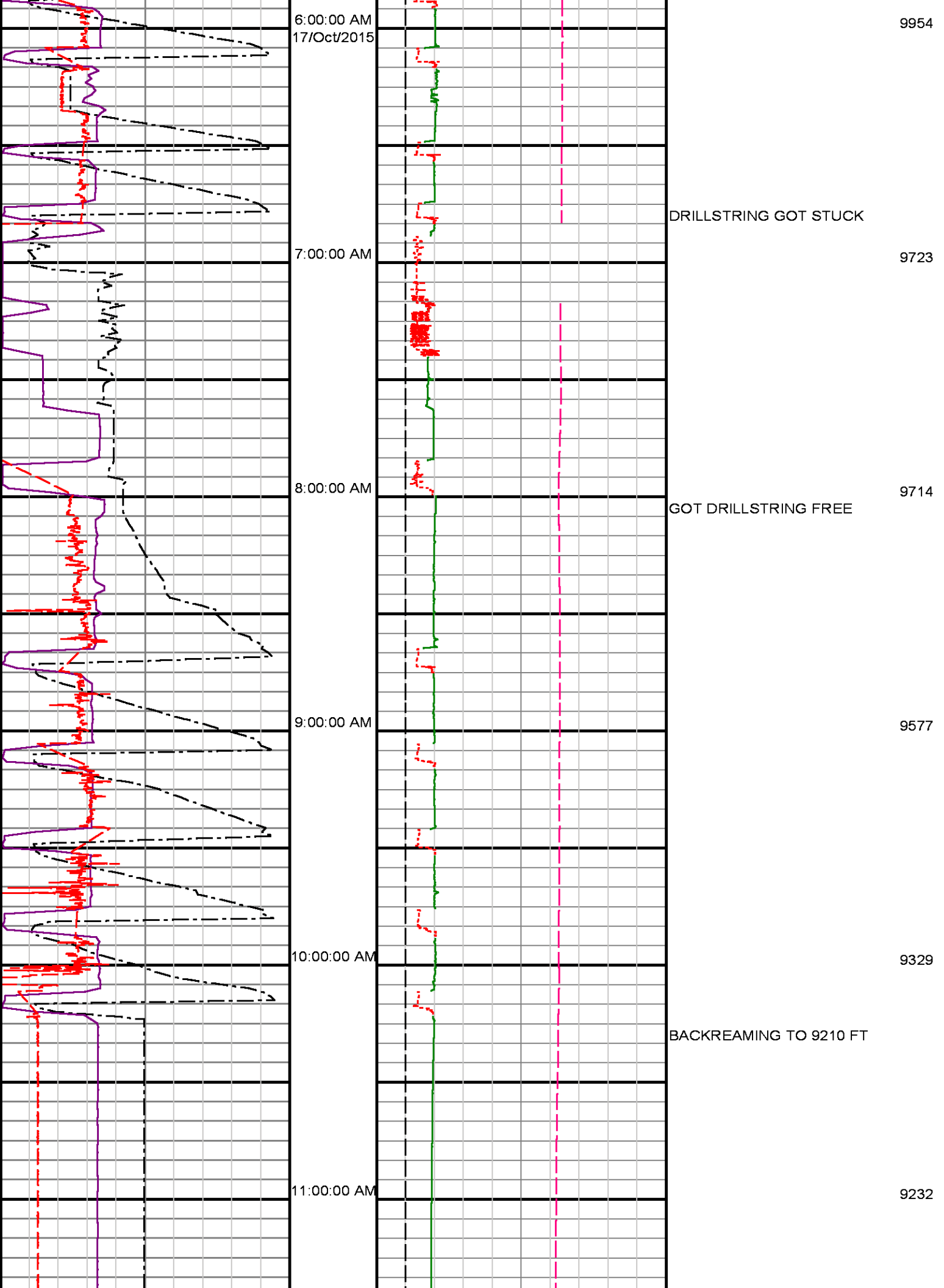
9851
4:00:00 AM
9866
5:00:00 AM
9873
SVY @ 9837 MD / 8647 TVD
INC= 83.67 / AZI= 269.03
MIN= 8.562 MAX= 9.01
DOWNLINK
DOWNLINK
6:00:00 AM
16/Oct/2015
9890
SWAP PUMPS
7:00:00 AM
9902
DOWNLINK

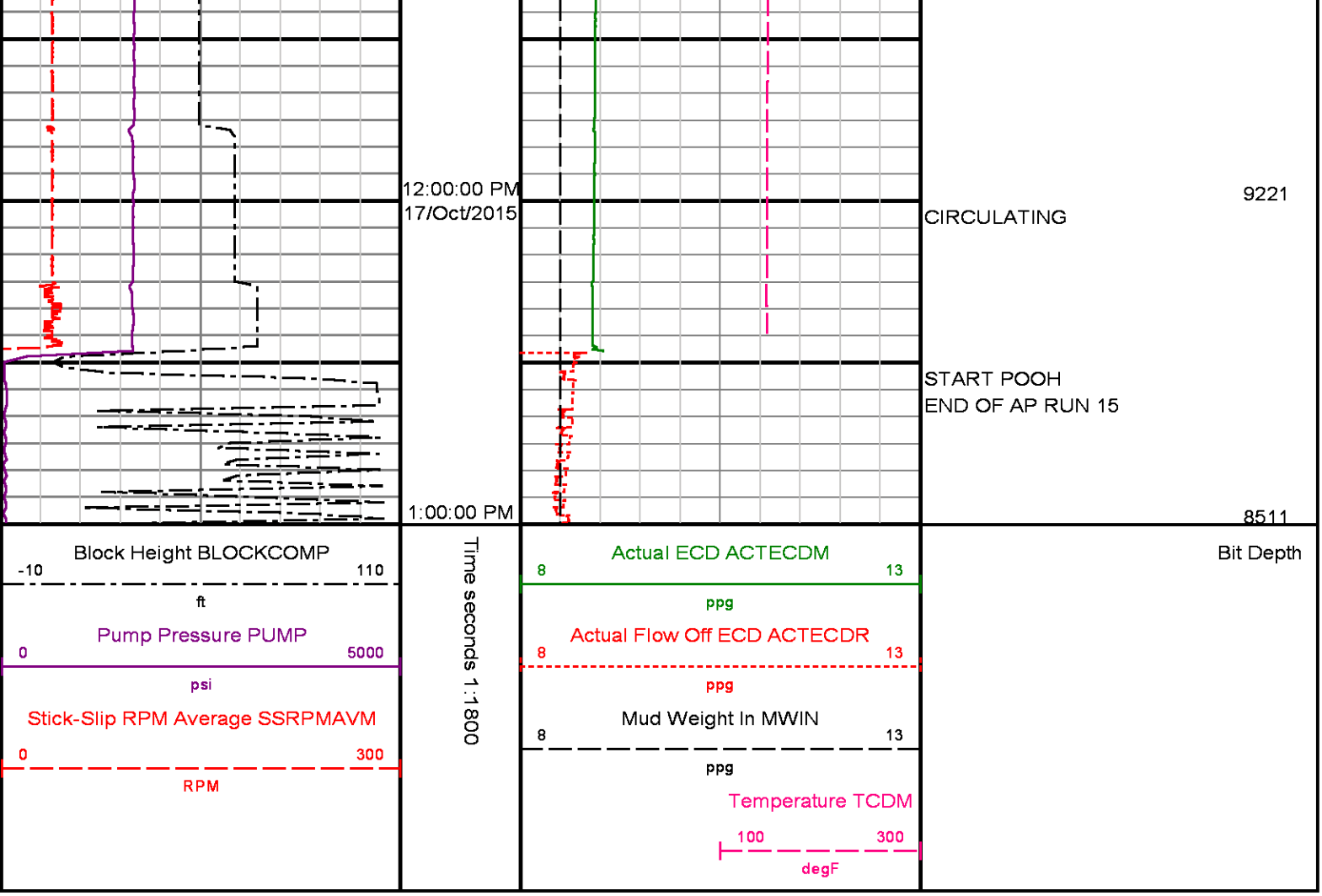

8:00:00 AM
9925
9:00:00 AM
DOWNLINK
9953
10:00:00 AM
9897
SVY @ 9932 MD / 8658 TVD
MIN= 8.65 MAX= 9.00
11:00:00 AM
9994
DOWNLINK
PASON SHUT DOWN
12:00:00 PM
16/Oct/2015
10013
1:00:00 PM
10035
DOWNLINK
DOWNLINK


2:00:00 PM
10050
3:00:00 PM
10046
SVY @ 10027 MD / 8668 TVD
MIN= 8.71 MAX= 9.08
4:00:00 PM
10084
PASON SHUT DOWN
5:00:00 PM
10106
6:00:00 PM
16/Oct/2015
10119


7:00:00 PM
10133
8:00:00 PM
10151
SVY @ 10122 MD / 8679 TVD
INC= 82.55 / AZI= 267.58
MIN= 8.70 MAX= 9.19
DOWNLINK
9:00:00 PM
10163
DOWNLINK
10:00:00 PM
10194
11:00:00 PM
10226
DOWNLINK
12:00:00 AM
17/Oct/2015
10253
SVY @ 10217 MD / 8692 TVD
INC= 82.37 / AZI= 265.34


MIN= 8.67 MAX= 9.07
1:00:00 AM
10272
2:00:00 AM
10297
PASON SHUT DOWN
3:00:00 AM
10317
TD WELL @ 10338 FT MD
CIRCULATE
SVY @ 10295 MD / 8702 TVD
INC= 82.40 / AZI= 266.37
MIN= 8.72 MAX= 9.06
DOWNLINK
CIRCULATE
4:00:00 AM
10293
5:00:00 AM
10338


6:00:00 AM
17/Oct/2015
9954
DRILLSTRING GOT STUCK
7:00:00 AM
9723
8:00:00 AM
9714
GOT DRILLSTRING FREE
9:00:00 AM
9577
10:00:00 AM
9329
BACKREAMING TO 9210 FT
11:00:00 AM
9232


12:00:00 PM
17/Oct/2015
1:00:00 PM
CIRCULATING
9221
START POOH
END OF AP RUN 15
8511
Block Height BLOCKCOMP
-10
110
ft
Pump Pressure PUMP
0
5000
psi
Stick-Slip RPM Average SSRPMAVM
0
300
RPM
Time seconds 1:1800
Actual ECD ACTECDM
8
13
ppg
Actual Flow Off ECD ACTECDR
8
13
ppg
Mud Weight In MWIN
8
13
ppg
Temperature TCDM
100
300
degF
Bit Depth