

Company: LAMONT DOHERTY EARTH OBSERVATORY

Well: TW #3

Field: WILDCAT

County: ROCKLAND State: NEW YORK

PLATFORM EXPRESS  
ARRAY INDUCTION  
GAMMA RAY

County:		ROCKLAND	
Field:		WILDCAT	
Location:		LAT: 41.00398	
Well:		TW #3	
Company:		LAMONT DOHERTY EARTH OBSERVATORY	
GAMMA RAY			
ARRAY INDUCTION			
PLATFORM EXPRESS			
Location:			
LAT: 41.00398		Elev. K.B.	
LONG: -73.91268		G.L. 380.00 ft	
		D.F. 380.00 ft	
Permanent Datum:		Elev.: 380.00 ft	
Log Measured From:		above Perm.Datum	
Drilling Measured From:			
API Serial No.	Section:	Township:	Quadrangle
31-087-27015-00-00	1	ORANGETOWN	NYACK

Logging Date	02-Oct-2013			
Run Number	1A			
Depth Driller	1500.00 ft			
Schlumberger Depth	1500.00 ft			
Bottom Log Interval	1492.00 ft			
Top Log Interval	20.00 ft			
Casing Driller Size @ Depth	7 in @ 23.00 ft			
Casing Schlumberger	20 ft			
Bit Size	6.25 in			
Type Fluid In Hole	Air			
Density	0.01 lbm/gal			
Fluid Loss	PH			
Source of Sample	Active Tank			
RM @ Meas Temp	500 ohm.m @		68 degF	
RMF @ Meas Temp	NaN ohm.m @		68 degF	
RMC @ Meas Temp				
Source RMF	RMC	Calculated	Calculated	
RM @ BHT	RMF @ BHT	553.28 @ 60.8	NaN @ 60.8	
Max Recorded Temperatures		60.8 degF		
Circulation Stopped		Time		
Logger on Bottom		Time		
Unit Number	Location:	377	BRADFORD	
Recorded By	TIMOTHY ZOTARA			
Witnessed By	NICK MALKIEWICZ / DAN COLLINS			

Disclaimer

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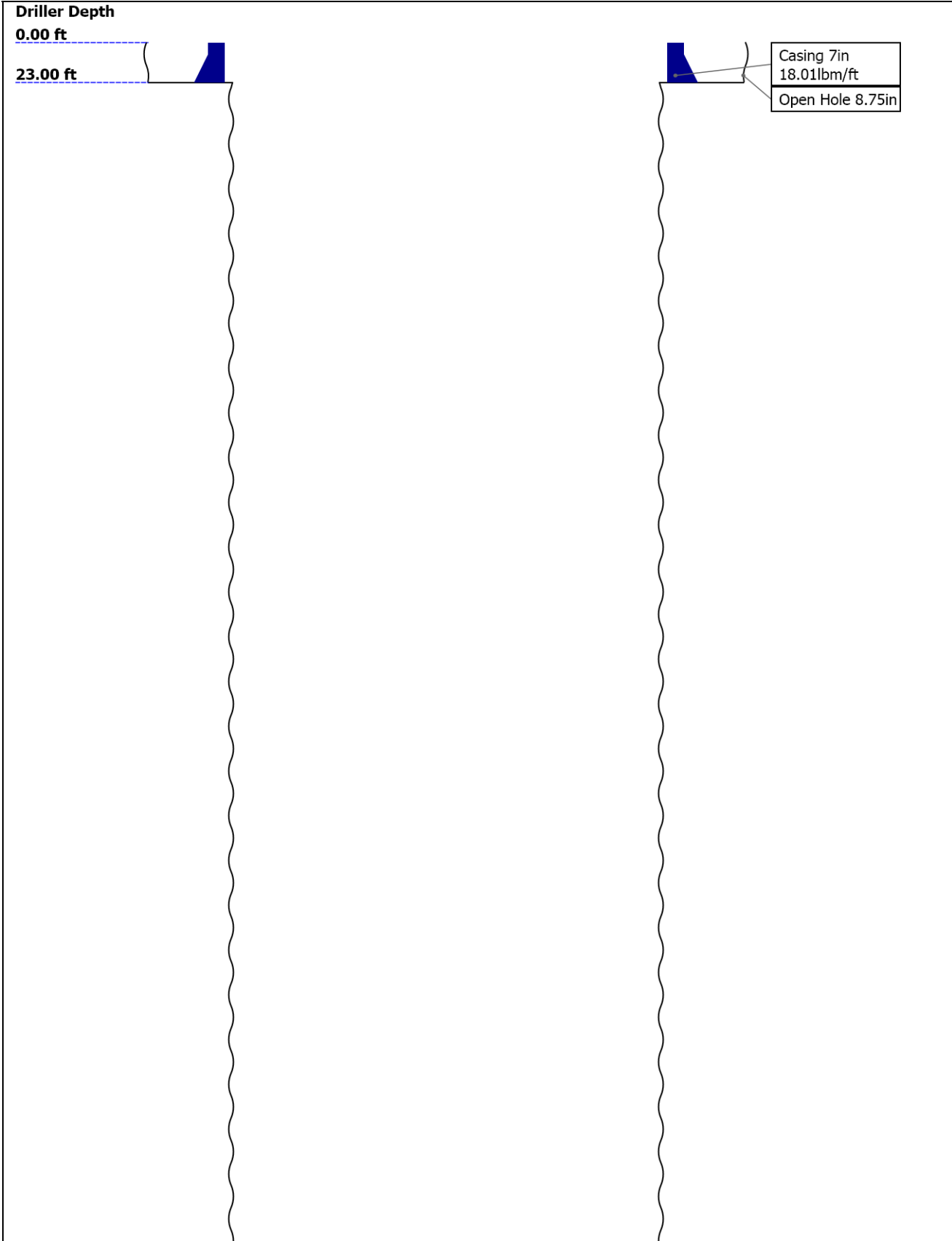
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Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	8.75	6.25				
Top Driller ( ft )	0	23				
Top Logger ( ft )	0	23				
Bottom Driller ( ft )	23	1500				
Bottom Logger ( ft )	23	1500				
Casing						
Size ( in )	7					
Weight ( lbm/ft )	18.01					
Inner Diameter ( in )	6.512					
Top Driller ( ft )	0					
Top Logger ( ft )	0					
Bottom Driller ( ft )	23					
Bottom Logger ( ft )	20					

Operational Run Summary

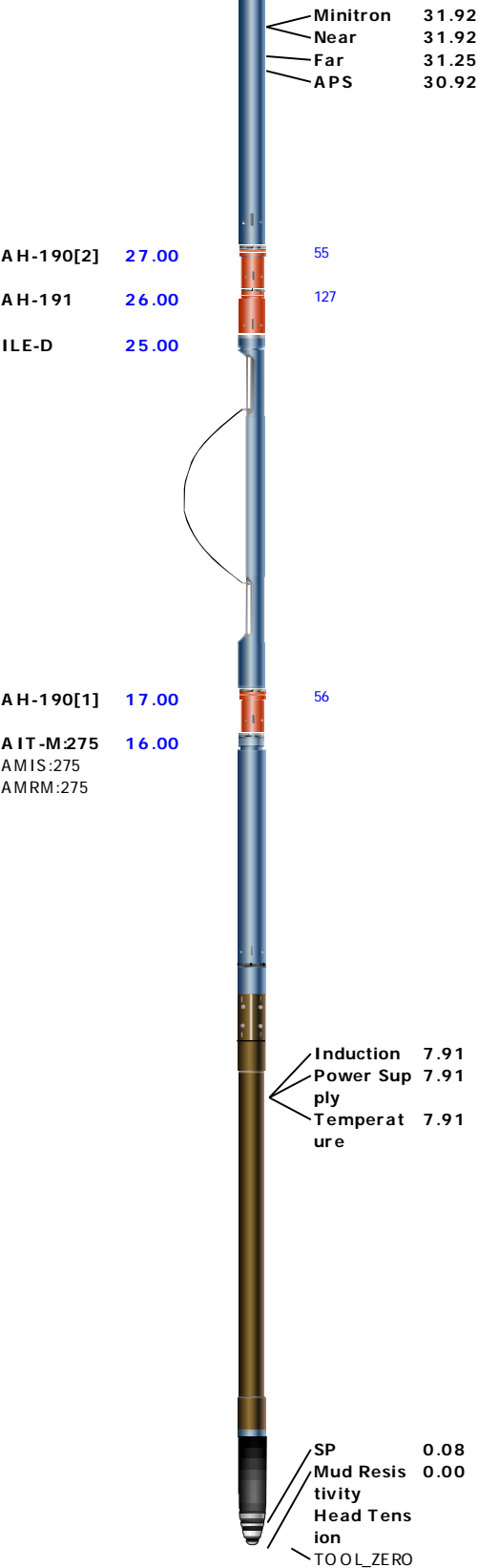
Parameter ( unit )	1A					
Date Log Started	02-Oct-2013					
Time Log Started	11:05:45					
Date Log Finished	02-Oct-2013					
Time Log Finished	13:04:42					
Top Log Interval ( ft )	20.00					
Bottom Log Interval ( ft )	1492.00					
Total Depth ( ft )	1500.00					
Max Hole Deviation ( deg )	4.99					
Azimuth of Max Deviation ( deg )	98.73					
Bit Size ( in )	6.250					
Logging Unit Number	377					
Logging Unit Location	BRADFORD					
Recorded By	TIMOTHY ZOTARA					
Witnessed By	NICK MALKIEWICZ / DAN COLLINS					

Service Order Number	BXW0-00330					
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Borehole Fluids						
Parameter( unit )	1A					
Fluid Type	Zoned					
Max Recorded Temperatures ( degF )	60.8					
Source of Sample	Active Tank					
Salinity ( ppm )	0					
Density ( lbm/gal )	Zoned					
Funnel Viscosity ( s )						
Fluid Loss ( cm3 )						
PH						
Date/Time Circulation Stopped	NaN					
Date Logger on Bottom	02-Oct-2013					
Time Logger on Bottom	11:46:48					
Source RMF	Calculated					
RMC	Calculated					
RM @ Meas Temp ( ohm.m@degF )	N/A					
RMF @ Meas Temp ( ohm.m@degF )	N/A					
RMC @ Meas Temp ( ohm.m@degF )	N/A					
RM @ BHT ( ohm.m@degF )	N/A					
RMF @ BHT ( ohm.m@degF )	N/A					
RMC @ BHT ( ohm.m@degF )	N/A					
Total Solid ( % )						
High Gravity Solids ( % )						

Zoned Borehole Fluids						
1A						
Parameter	Value	Start				
Fluid Type	Gas - Air	34.28				
Fluid Type	Water - Fresh Water	350				
Density	0.01	34.28				
Density	8.4	350				

Remarks and Equipment Summary						
1A: Toolstring				1A: Remarks		
Equip name	Length	MP name	Offset	THANK YOU FOR CHOOSING SCHLUMBERGER		
LEH-QT	50.36			TOOLS RUN AS PER TOOLSKETCH, W/ILE BOWSPRING		
LEH-QT				ALL WELLSITE DATA AS PER SLB CARBON SERVICES REP		
EDTC-B:859	47.44			TOOLS ZEROED @ HEAD @ GL		
2				NO MUD SAMPLE AVAILABLE, FLEV @ 350', 8.4LBS/GAL FRESH WATER. PARAMETERS ZONED @ 350', WATER BEL		
EDTH-B:8586				NO MUD REPORT AVAILABLE, FRESH WATER		
EDTG-A				WELL FLUID NOT CIRCULATED. HEADER SHOWS AIR HOLE, DUE TO AIR @ TOP OF WELL, MW HEADER LIMITATION, NO SAMPLE TAKEN OF FLUID		
EDTC-B:8592						
		CTEM	43.94			
		ACCZ	0.00			
		HV	0.00			
		Gamma Ra	42.07			
		y				
		TeIStatus	40.94			
AH-178	40.94					
APS-C:70	39.94					
APLAC:66						



Lengths are in ft  
Maximum Outer Diameter = 5.000 in  
Line: Sensor Location, Value: Gating Offset  
All measurements are relative to TOOL\_ZERO

MINTRON RUN TO NEAR SURFACE
AIT-COMPUTE BOREHOLE SIZE
AIT RUN W/O STANDOFFS
MINTRON AUTO OFF @ 50', SHUTDOWN SET TO 10'
FLUID LEVEL IDENTIFIED @ 350', TENS / SONIC, PARAMETERS FD & FLUID TYPE ZONED
MRT FROM EDTC CTEM
MATRIX = SANDSTONE / MDEN = 2.65G/C3, SONIC MD = 55.5US/FT
LOGS AQUIRED @ 1800'/HR
APS POROSITY CHANNELS PRESENTED IN FLUID / AIR
TOOLS RUN ECCENTERED W/ILE

Depth Control Parameters	1A		
Conveyance Type	Wireline		
Log Sequence	SUBSEQUENT LOG IN WELL		
Stretch Correction ( ft )	1.00		
Tool Zero Reference Check at Surface ( ft )	0.50		
Reference Log Date	30-Aug-2010		
Reference Log Name	USGS MFT		
Reference Log Run Number	4		
Rig Type	MAST		
Depth Remark Parameters	1A		
Depth Remark 1	ALL DEPTH CONTROL POLICIES FOLLOWED		
Depth Remark 2	IDW USED AS PRIMARY DEPTH CONTROL		
Depth Remark 3	DRUM COUNTER USED AS SECONDARY DEPTH CONTROL		
Depth Remark 4	TOOLS ZEROED @ HEAD @ GL		
Depth Remark 5	RUN1A-C REFERENCED TO		
Depth Remark 6	CLIENT REQUEST CORRELATION TO USGS LAS DATA, NOT LDP		
Depth Measuring Device	1A		
Type	IDW-B		
Serial Number	6204		
Calibration Date	27-JUN-2013		
Calibrator Serial Number	33		
Calibration Cable Type	7-39P-LXS		
Wheel Correction 1	1		
Wheel Correction 2	0		
Tension Device	1A		
Type	CMTD-B/A		
Serial Number	2013		
Calibration Date	03-SEP-2013		
Calibrator Serial Number	412906		
Calibration Points	10		
Calibration RMS	7		
Calibration Peak Error	16		
Logging Cable	1A		
Type	7-39P-LXS		
Serial Number	710017		
Logging Cable Length ( ft )	5500.00		

Survey Record					
Survey Calculation					
Method :		Minimum Radius of Curvature		DLS Method :	
North Reference :		True North		Lubinski	
				Total Correction Formula :	
				Magnetic Dec	
Rig Location					
Latitude :		41.003980 degrees		Longitude :	
				-73.912680 degrees	
Tie In Point					
Measured Depth:		20.00 ft	Inclination:	0.00 deg	Azimuth:
					0.00 deg
True Vertical Depth:		20.00 ft	North Displacement:	0.00 ft	East Displacement:
					0.00 ft
Survey Quality Index					
9 : Manual		28 : Tie-In Point			

#### Survey Correction Index

0 : No correction															
Survey Description Index															
0 : Not Flagged Survey															
Seq	MD (ft)	Incl (deg)	Azim (deg)	Course (ft)	TVD (ft)	V Sec (ft)	N/ -S (ft)	E/ -W (ft)	Closure (ft)	at Azim (deg)	DLS deg/100ft	Tool Type	QI	CI	DI
1	20.00	0.00	0.00	- - - -	20.00	0.00	0.00	0.00	0.00	90.00	0.00	TIP	28	0	0
2	64.00	0.17	348.57	44.00	64.00	0.07	0.07	-0.01	0.07	348.57	0.40	GPIT-F	9	0	0
3	94.00	0.09	44.83	30.00	94.00	0.13	0.13	-0.01	0.13	357.50	0.48	GPIT-F	9	0	0
4	124.00	0.34	99.41	30.00	124.00	0.13	0.13	0.10	0.16	37.60	1.00	GPIT-F	9	0	0
5	154.00	0.24	135.02	30.00	154.00	0.07	0.07	0.23	0.23	73.03	0.68	GPIT-F	9	0	0
6	184.00	0.23	88.47	30.00	184.00	0.03	0.03	0.34	0.33	85.15	0.61	GPIT-F	9	0	0
7	214.00	0.16	123.30	30.00	214.00	0.01	0.01	0.43	0.43	89.15	0.44	GPIT-F	9	0	0
8	244.00	0.32	86.41	30.00	244.00	-0.01	-0.01	0.55	0.56	91.24	0.72	GPIT-F	9	0	0
9	274.00	0.51	106.53	30.00	274.00	-0.04	-0.04	0.76	0.75	93.36	0.79	GPIT-F	9	0	0
10	304.00	0.62	107.85	30.00	304.00	-0.13	-0.13	1.05	1.05	97.23	0.37	GPIT-F	9	0	0
11	334.00	0.84	108.18	30.00	333.99	-0.25	-0.25	1.41	1.44	100.11	0.73	GPIT-F	9	0	0
12	364.00	0.78	104.73	30.00	363.99	-0.37	-0.37	1.82	1.87	101.57	0.26	GPIT-F	9	0	0
13	394.00	0.95	105.98	30.00	393.99	-0.49	-0.49	2.26	2.30	102.33	0.55	GPIT-F	9	0	0
14	424.00	1.03	104.83	30.00	423.98	-0.63	-0.63	2.76	2.82	102.88	0.28	GPIT-F	9	0	0
15	454.00	1.19	98.16	30.00	453.98	-0.74	-0.74	3.32	3.41	102.61	0.68	GPIT-F	9	0	0
16	484.00	1.37	98.39	30.00	483.97	-0.84	-0.84	3.99	4.07	101.90	0.61	GPIT-F	9	0	0
17	514.00	1.11	104.62	30.00	513.96	-0.97	-0.97	4.62	4.72	101.80	0.97	GPIT-F	9	0	0
18	544.00	1.61	101.35	30.00	543.95	-1.12	-1.12	5.32	5.45	101.92	1.67	GPIT-F	9	0	0
19	574.00	1.42	98.30	30.00	573.94	-1.26	-1.26	6.10	6.23	101.66	0.67	GPIT-F	9	0	0
20	604.00	1.75	98.56	30.00	603.93	-1.38	-1.38	6.92	7.05	101.28	1.10	GPIT-F	9	0	0
21	634.00	1.79	90.65	30.00	633.92	-1.45	-1.45	7.84	7.97	100.50	0.83	GPIT-F	9	0	0
22	664.00	1.79	98.29	30.00	663.90	-1.53	-1.53	8.78	8.89	99.87	0.79	GPIT-F	9	0	0
23	694.00	1.84	95.04	30.00	693.89	-1.64	-1.64	9.72	9.84	99.56	0.39	GPIT-F	9	0	0
24	724.00	1.72	98.30	30.00	723.87	-1.74	-1.74	10.64	10.79	99.31	0.53	GPIT-F	9	0	0
25	754.00	2.02	102.49	30.00	753.86	-1.92	-1.92	11.61	11.78	99.41	1.09	GPIT-F	9	0	0
26	784.00	2.26	112.58	30.00	783.84	-2.26	-2.26	12.67	12.86	100.14	1.48	GPIT-F	9	0	0
27	814.00	2.43	105.96	30.00	813.81	-2.67	-2.67	13.82	14.07	100.92	1.08	GPIT-F	9	0	0
28	844.00	2.54	97.72	30.00	843.78	-2.93	-2.93	15.10	15.39	100.99	1.24	GPIT-F	9	0	0
29	874.00	2.56	93.22	30.00	873.75	-3.06	-3.06	16.42	16.70	100.55	0.67	GPIT-F	9	0	0
30	904.00	2.70	98.40	30.00	903.72	-3.20	-3.20	17.79	18.08	100.19	0.92	GPIT-F	9	0	0
31	934.00	3.30	97.42	30.00	933.68	-3.41	-3.41	19.35	19.65	100.01	2.01	GPIT-F	9	0	0
32	964.00	3.30	97.95	30.00	963.63	-3.65	-3.65	21.07	21.39	99.82	0.10	GPIT-F	9	0	0
33	994.00	3.79	97.67	30.00	993.57	-3.90	-3.90	22.90	23.23	99.66	1.63	GPIT-F	9	0	0
34	1024.00	4.33	95.66	30.00	1023.50	-4.14	-4.14	25.01	25.36	99.40	1.85	GPIT-F	9	0	0
35	1054.00	4.23	96.79	30.00	1053.41	-4.38	-4.38	27.24	27.59	99.14	0.43	GPIT-F	9	0	0
36	1084.00	4.32	100.31	30.00	1083.33	-4.72	-4.72	29.45	29.82	99.10	0.92	GPIT-F	9	0	0
37	1114.00	4.57	99.94	30.00	1113.24	-5.12	-5.12	31.74	32.15	99.17	0.83	GPIT-F	9	0	0
38	1144.00	4.87	98.51	30.00	1143.14	-5.52	-5.52	34.17	34.61	99.18	1.09	GPIT-F	9	0	0
39	1174.00	4.99	98.73	30.00	1173.03	-5.91	-5.91	36.72	37.20	99.14	0.40	GPIT-F	9	0	0
40	1204.00	4.70	101.63	30.00	1202.92	-6.35	-6.35	39.21	39.73	99.20	1.27	GPIT-F	9	0	0
41	1234.00	4.68	103.36	30.00	1232.82	-6.88	-6.88	41.60	42.16	99.39	0.47	GPIT-F	9	0	0
42	1264.00	4.54	103.74	30.00	1262.72	-7.45	-7.45	43.95	44.59	99.62	0.50	GPIT-F	9	0	0
43	1294.00	4.68	106.84	30.00	1292.63	-8.08	-8.08	46.27	46.98	99.91	0.96	GPIT-F	9	0	0
44	1324.00	4.83	108.15	30.00	1322.52	-8.83	-8.83	48.64	49.44	100.29	0.63	GPIT-F	9	0	0
45	1354.00	4.72	109.54	30.00	1352.42	-9.64	-9.64	51.01	51.90	100.70	0.54	GPIT-F	9	0	0
46	1384.00	4.62	111.28	30.00	1382.32	-10.49	-10.49	53.30	54.33	101.13	0.59	GPIT-F	9	0	0
47	1414.00	4.53	114.14	30.00	1412.22	-11.41	-11.41	55.50	56.66	101.62	0.81	GPIT-F	9	0	0
48	1444.00	4.46	113.40	30.00	1442.13	-12.36	-12.36	57.66	58.96	102.10	0.31	GPIT-F	9	0	0
49	1474.00	4.46	114.23	30.00	1472.04	-13.30	-13.30	59.79	61.25	102.54	0.22	GPIT-F	9	0	0

50

1504.00

4.46

114.03

30.00

1501.95

-14.26

-14.26

61.92

63.55

102.96

0.05

GPIT-F

9

0

0

1A

MAIN PASS 1"

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
Software Version				
Acquisition System			Version	
MaxWell			3.1.9755.0	
Application Patch			SP-20130325-3.1.9755.1799	
Tool Elements	Description	Software Version	Firmware Version	
AMIS	Array Induction Sonde - M	3.1.9755.1799	1	
EDTC-B	Enhanced Digital Telemetry Cartridge - B	3.1.9755.0		

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
1A	Log[3]:Up	Up	33.77 ft	1509.48 ft	02-Oct-2013 12:09:27 PM	02-Oct-2013 1:00:37 PM	-0.52 ft	true

All depths are referenced to toolstring zero

Log

1A: Log[3]:Up

Description: Triple Combo standard resolution template for Platform Express    Format: Log ( STANDARD AIT 2IN )    Index Scale: 1 in per 100 ft    Index Unit: ft  
Index Type: Measured Depth    Creation Date: 03-Oct-2013 18:46:45

Channel	Source	Sampling
AT10	AIT-M:AMIS:AMIS	3in
AT20	AIT-M:AMIS:AMIS	3in
AT30	AIT-M:AMIS:AMIS	3in
AT60	AIT-M:AMIS:AMIS	3in
AT90	AIT-M:AMIS:AMIS	3in
CTEM	EDTC-B:EDTC-B:EDTC-B	6in
GR	EDTC-B:EDTC-B:EDTC-B	6in
SP	AIT-M:AMIS:AMIS	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

TIME\_1900 - Time Marked every 60.00 (s)

GR > 200 GAPI

GR > 400 GAPI

Spontaneous Potential (SP) AIT-M

-100mV100

Cable Tension (TENS)

6000lbf0

Gamma Ray (GR) EDTC-B

0gAPI200

Cartridge Temperature (CTEM) EDTC-B

50degF150

0CD

Array Induction Two Foot Resistivity A10 (AT10) AIT-M

0.2ohm.m2000

Array Induction Two Foot Resistivity A20 (AT20) AIT-M

0.2ohm.m2000

Array Induction Two Foot Resistivity A30 (AT30) AIT-M

0.2ohm.m2000

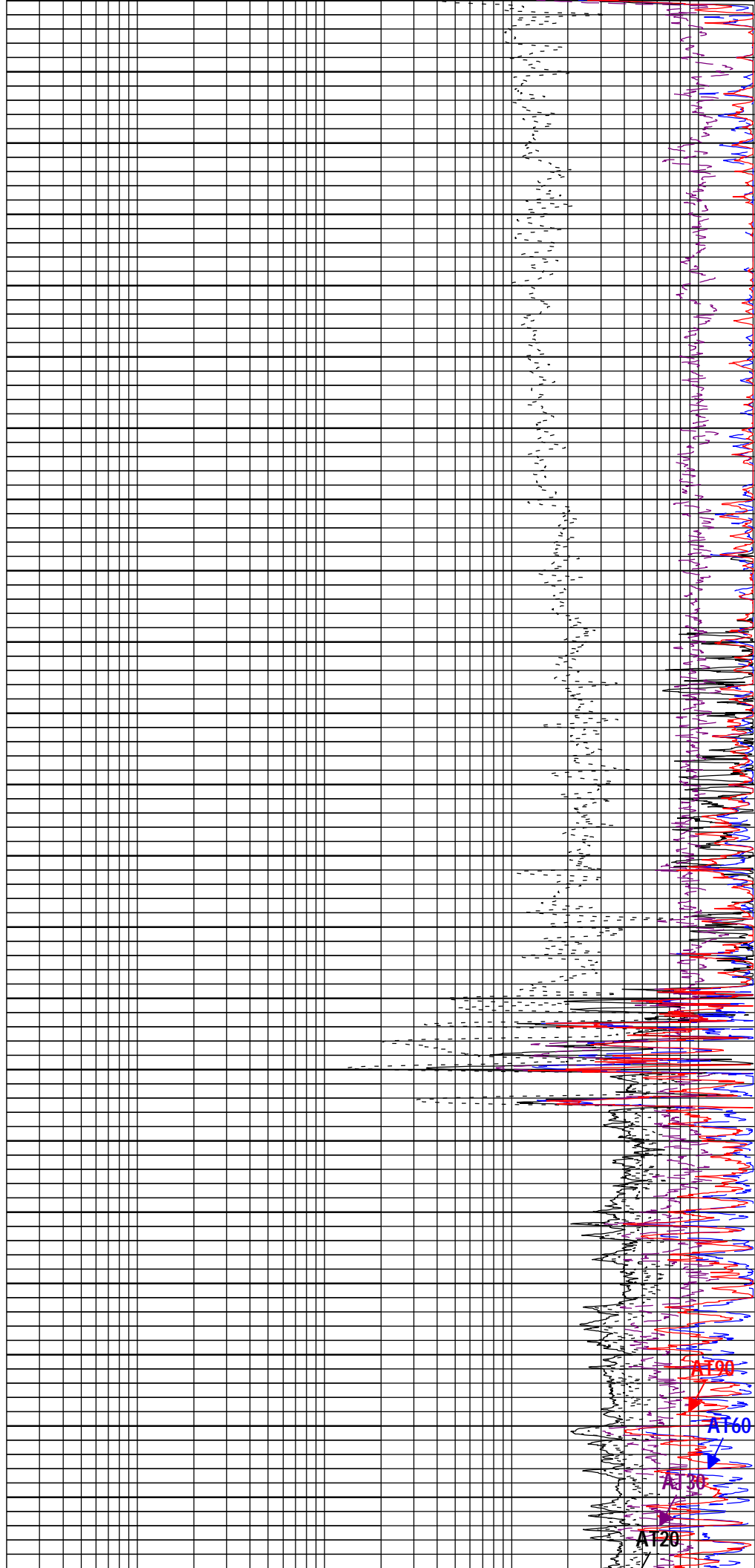
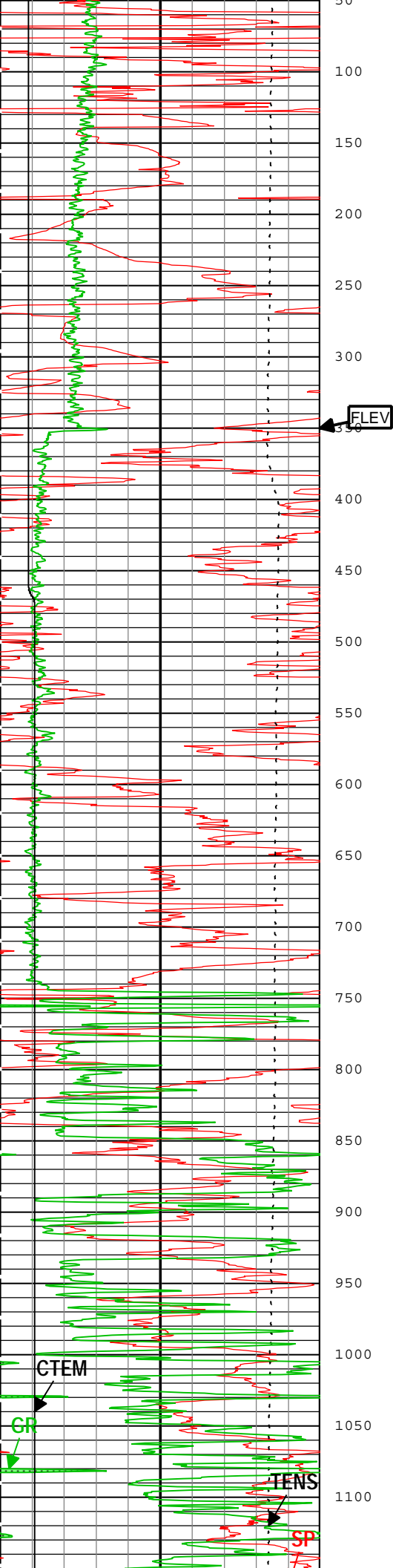
Array Induction Two Foot Resistivity A60 (AT60) AIT-M

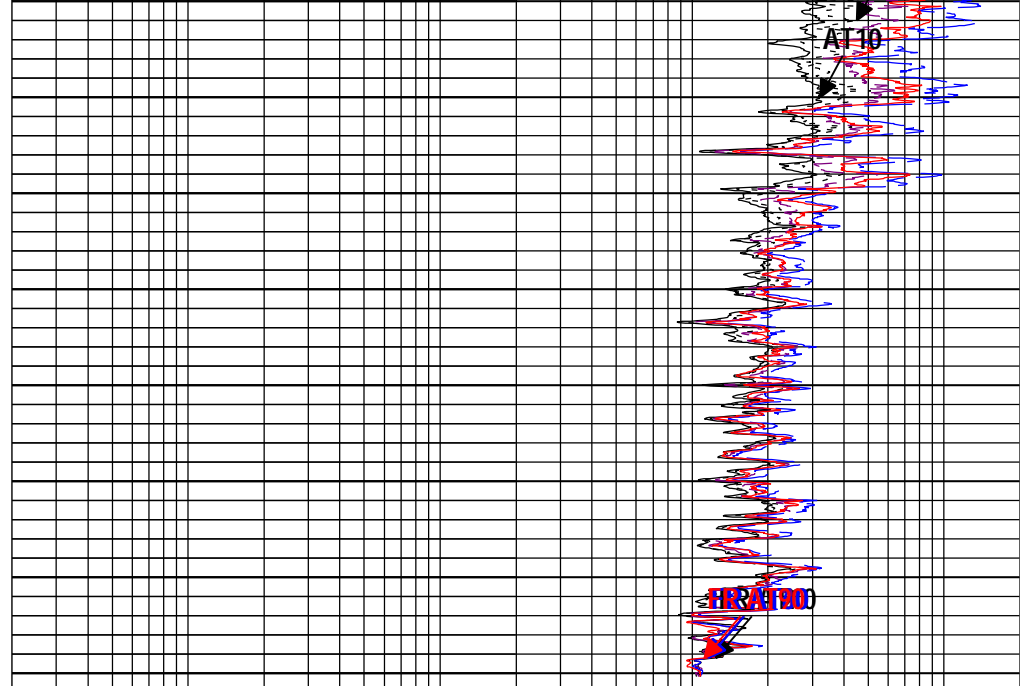
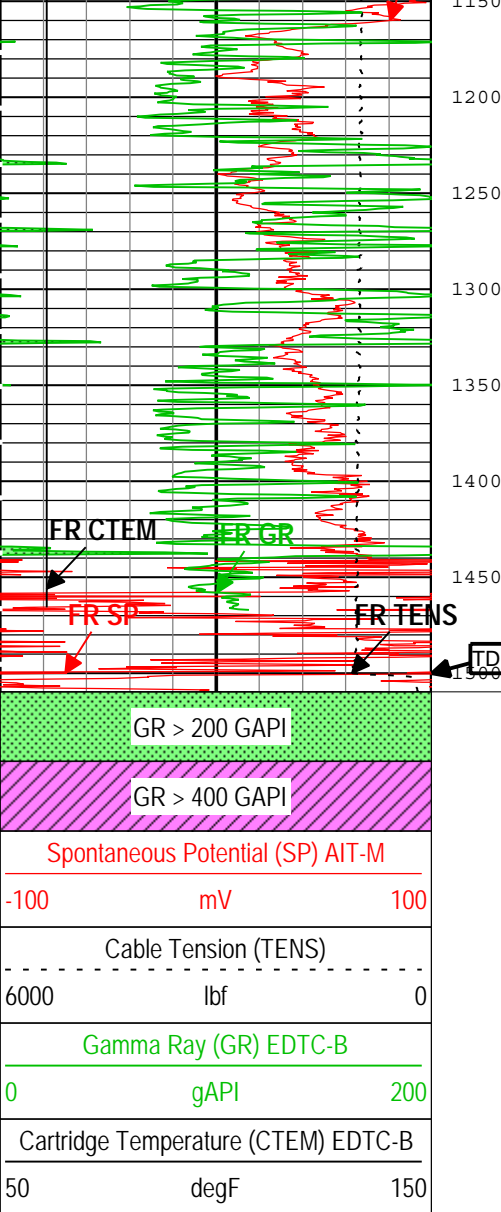
0.2ohm.m2000

Array Induction Two Foot Resistivity A90 (AT90) AIT-M

0.2ohm.m2000







Array Induction Two Foot Resistivity A10 (AT10) AIT-M		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A20 (AT20) AIT-M		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A30 (AT30) AIT-M		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A60 (AT60) AIT-M		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A90 (AT90) AIT-M		
0.2	ohm.m	2000

TIME\_1900 - Time Marked every 60.00 (s)

Description: Triple Combo standard resolution template for Platform Express Format: Log ( STANDARD AIT 2IN ) Index Scale: 1 in per 100 ft Index Unit: ft  
Index Type: Measured Depth Creation Date: 03-Oct-2013 18:46:45

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Electrical Diameter	
ABLM	Array Induction Basic Logs Mode	AIT-M	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-M	No	
ASTA	Array Induction Tool Standoff	AIT-M	0.12	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	60.8	degF
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	20	ft
CDEN	Cement Density	EDTC-B	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	Depth Zoned	lbm/gal
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	0	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	380	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	

GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST	
MST	Mud Sample Temperature	Borehole	68	degF
PDAT	Permanent Datum	WLSESSION	GL	
RMS	Resistivity of Mud Sample	Borehole	500	ohm.m
SHT	Surface Hole Temperature	Borehole	68	degF
SP_SHIFT	SP Shift	AIT-M	100	mV
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	1500	ft

### Depth Zone Parameters

Parameter	Value	Start ( ft )	Stop ( ft )
BS	8.75	-9.5	23
BS	6.25	23	1509.5
DFD	0.01	-9.5	350
DFD	8.4	350	1509.5

All depth are actual.

Tool Control Parameters	
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Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

1A

MAIN PASS 2"

Integration Summary	
1. <b>Integration of the First Term:</b>	$\int \frac{1}{x^2} dx = -\frac{1}{x} + C_1$
2. <b>Integration of the Second Term:</b>	$\int \frac{1}{x^3} dx = -\frac{1}{2x^2} + C_2$
3. <b>Integration of the Third Term:</b>	$\int \frac{1}{x^4} dx = -\frac{1}{3x^3} + C_3$
4. <b>Integration of the Fourth Term:</b>	$\int \frac{1}{x^5} dx = -\frac{1}{4x^4} + C_4$
5. <b>Integration of the Fifth Term:</b>	$\int \frac{1}{x^6} dx = -\frac{1}{5x^5} + C_5$
6. <b>Integration of the Sixth Term:</b>	$\int \frac{1}{x^7} dx = -\frac{1}{6x^6} + C_6$
7. <b>Integration of the Seventh Term:</b>	$\int \frac{1}{x^8} dx = -\frac{1}{7x^7} + C_7$
8. <b>Integration of the Eighth Term:</b>	$\int \frac{1}{x^9} dx = -\frac{1}{8x^8} + C_8$
9. <b>Integration of the Ninth Term:</b>	$\int \frac{1}{x^{10}} dx = -\frac{1}{9x^9} + C_9$
10. <b>Integration of the Tenth Term:</b>	$\int \frac{1}{x^{11}} dx = -\frac{1}{10x^{10}} + C_{10}$
11. <b>Integration of the Eleventh Term:</b>	$\int \frac{1}{x^{12}} dx = -\frac{1}{11x^{11}} + C_{11}$
12. <b>Integration of the Twelfth Term:</b>	$\int \frac{1}{x^{13}} dx = -\frac{1}{12x^{12}} + C_{12}$
13. <b>Integration of the Thirteenth Term:</b>	$\int \frac{1}{x^{14}} dx = -\frac{1}{13x^{13}} + C_{13}$
14. <b>Integration of the Fourteenth Term:</b>	$\int \frac{1}{x^{15}} dx = -\frac{1}{14x^{14}} + C_{14}$
15. <b>Integration of the Fifteenth Term:</b>	$\int \frac{1}{x^{16}} dx = -\frac{1}{15x^{15}} + C_{15}$
16. <b>Integration of the Sixteenth Term:</b>	$\int \frac{1}{x^{17}} dx = -\frac{1}{16x^{16}} + C_{16}$
17. <b>Integration of the Seventeenth Term:</b>	$\int \frac{1}{x^{18}} dx = -\frac{1}{17x^{17}} + C_{17}$
18. <b>Integration of the Eighteenth Term:</b>	$\int \frac{1}{x^{19}} dx = -\frac{1}{18x^{18}} + C_{18}$
19. <b>Integration of the Nineteenth Term:</b>	$\int \frac{1}{x^{20}} dx = -\frac{1}{19x^{19}} + C_{19}$
20. <b>Integration of the Twentieth Term:</b>	$\int \frac{1}{x^{21}} dx = -\frac{1}{20x^{20}} + C_{20}$
21. <b>Integration of the Twenty-First Term:</b>	$\int \frac{1}{x^{22}} dx = -\frac{1}{21x^{21}} + C_{21}$
22. <b>Integration of the Twenty-Second Term:</b>	$\int \frac{1}{x^{23}} dx = -\frac{1}{22x^{22}} + C_{22}$
23. <b>Integration of the Twenty-Third Term:</b>	$\int \frac{1}{x^{24}} dx = -\frac{1}{23x^{23}} + C_{23}$
24. <b>Integration of the Twenty-Fourth Term:</b>	$\int \frac{1}{x^{25}} dx = -\frac{1}{24x^{24}} + C_{24}$
25. <b>Integration of the Twenty-Fifth Term:</b>	$\int \frac{1}{x^{26}} dx = -\frac{1}{25x^{25}} + C_{25}$
26. <b>Integration of the Twenty-Sixth Term:</b>	$\int \frac{1}{x^{27}} dx = -\frac{1}{26x^{26}} + C_{26}$
27. <b>Integration of the Twenty-Seven Term:</b>	$\int \frac{1}{x^{28}} dx = -\frac{1}{27x^{27}} + C_{27}$
28. <b>Integration of the Twenty-Eighth Term:</b>	$\int \frac{1}{x^{29}} dx = -\frac{1}{28x^{28}} + C_{28}$
29. <b>Integration of the Twenty-Ninth Term:</b>	$\int \frac{1}{x^{30}} dx = -\frac{1}{29x^{29}} + C_{29}$
30. <b>Integration of the Thirtieth Term:</b>	$\int \frac{1}{x^{31}} dx = -\frac{1}{30x^{30}} + C_{30}$
31. <b>Integration of the Thirty-First Term:</b>	$\int \frac{1}{x^{32}} dx = -\frac{1}{31x^{31}} + C_{31}$
32. <b>Integration of the Thirty-Second Term:</b>	$\int \frac{1}{x^{33}} dx = -\frac{1}{32x^{32}} + C_{32}$
33. <b>Integration of the Thirty-Third Term:</b>	$\int \frac{1}{x^{34}} dx = -\frac{1}{33x^{33}} + C_{33}$
34. <b>Integration of the Thirty-Fourth Term:</b>	$\int \frac{1}{x^{35}} dx = -\frac{1}{34x^{34}} + C_{34}$
35. <b>Integration of the Thirty-Fifth Term:</b>	$\int \frac{1}{x^{36}} dx = -\frac{1}{35x^{35}} + C_{35}$
36. <b>Integration of the Thirty-Sixth Term:</b>	$\int \frac{1}{x^{37}} dx = -\frac{1}{36x^{36}} + C_{36}$
37. <b>Integration of the Thirty-Seven Term:</b>	$\int \frac{1}{x^{38}} dx = -\frac{1}{37x^{37}} + C_{37}$
38. <b>Integration of the Thirty-Eighth Term:</b>	$\int \frac{1}{x^{39}} dx = -\frac{1}{38x^{38}} + C_{38}$
39. <b>Integration of the Thirty-Ninth Term:</b>	$\int \frac{1}{x^{40}} dx = -\frac{1}{39x^{39}} + C_{39}$
40. <b>Integration of the Fortieth Term:</b>	$\int \frac{1}{x^{41}} dx = -\frac{1}{40x^{40}} + C_{40}$
41. <b>Integration of the Forty-First Term:</b>	$\int \frac{1}{x^{42}} dx = -\frac{1}{41x^{41}} + C_{41}$
42. <b>Integration of the Forty-Second Term:</b>	$\int \frac{1}{x^{43}} dx = -\frac{1}{42x^{42}} + C_{42}$
43. <b>Integration of the Forty-Third Term:</b>	$\int \frac{1}{x^{44}} dx = -\frac{1}{43x^{43}} + C_{43}$
44. <b>Integration of the Forty-Fourth Term:</b>	$\int \frac{1}{x^{45}} dx = -\frac{1}{44x^{44}} + C_{44}$
45. <b>Integration of the Forty-Fifth Term:</b>	$\int \frac{1}{x^{46}} dx = -\frac{1}{45x^{45}} + C_{45}$
46. <b>Integration of the Forty-Sixth Term:</b>	$\int \frac{1}{x^{47}} dx = -\frac{1}{46x^{46}} + C_{46}$
47. <b>Integration of the Forty-Seven Term:</b>	$\int \frac{1}{x^{48}} dx = -\frac{1}{47x^{47}} + C_{47}$
48. <b>Integration of the Forty-Eighth Term:</b>	$\int \frac{1}{x^{49}} dx = -\frac{1}{48x^{48}} + C_{48}$
49. <b>Integration of the Forty-Ninth Term:</b>	$\int \frac{1}{x^{50}} dx = -\frac{1}{49x^{49}} + C_{49}$
50. <b>Integration of the Fiftieth Term:</b>	$\int \frac{1}{x^{51}} dx = -\frac{1}{50x^{50}} + C_{50}$
51. <b>Integration of the Fifty-First Term:</b>	$\int \frac{1}{x^{52}} dx = -\frac{1}{51x^{51}} + C_{51}$
52. <b>Integration of the Fifty-Second Term:</b>	$\int \frac{1}{x^{53}} dx = -\frac{1}{52x^{52}} + C_{52}$
53. <b>Integration of the Fifty-Third Term:</b>	$\int \frac{1}{x^{54}} dx = -\frac{1}{53x^{53}} + C_{53}$
54. <b>Integration of the Fifty-Fourth Term:</b>	$\int \frac{1}{x^{55}} dx = -\frac{1}{54x^{54}} + C_{54}$
55. <b>Integration of the Fifty-Fifth Term:</b>	

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
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Software Version	
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Acquisition System	Version
MaxWell	3.1.9755.0
Application Patch	SP-20130325-3.1.9755.1799

Tool Elements	Description	Software Version	Firmware Version
AMIS	Array Induction Sonde - M	3.1.9755.1799	1
EDTC-B	Enhanced Digital Telemetry Cartridge - B	3.1.9755.0	

Pass Summary					
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7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
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385	386	387	388	389	390
391	392	393	394	395	396
397	398	399	400	401	402
403	404	405	406	407	408

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
1A	Log[3]:Up	Up	33.77 ft	1509.48 ft	02-Oct-2013 12:09:27 PM	02-Oct-2013 1:00:37 PM	-0.52 ft	true

All depths are referenced to toolstring zero

Log

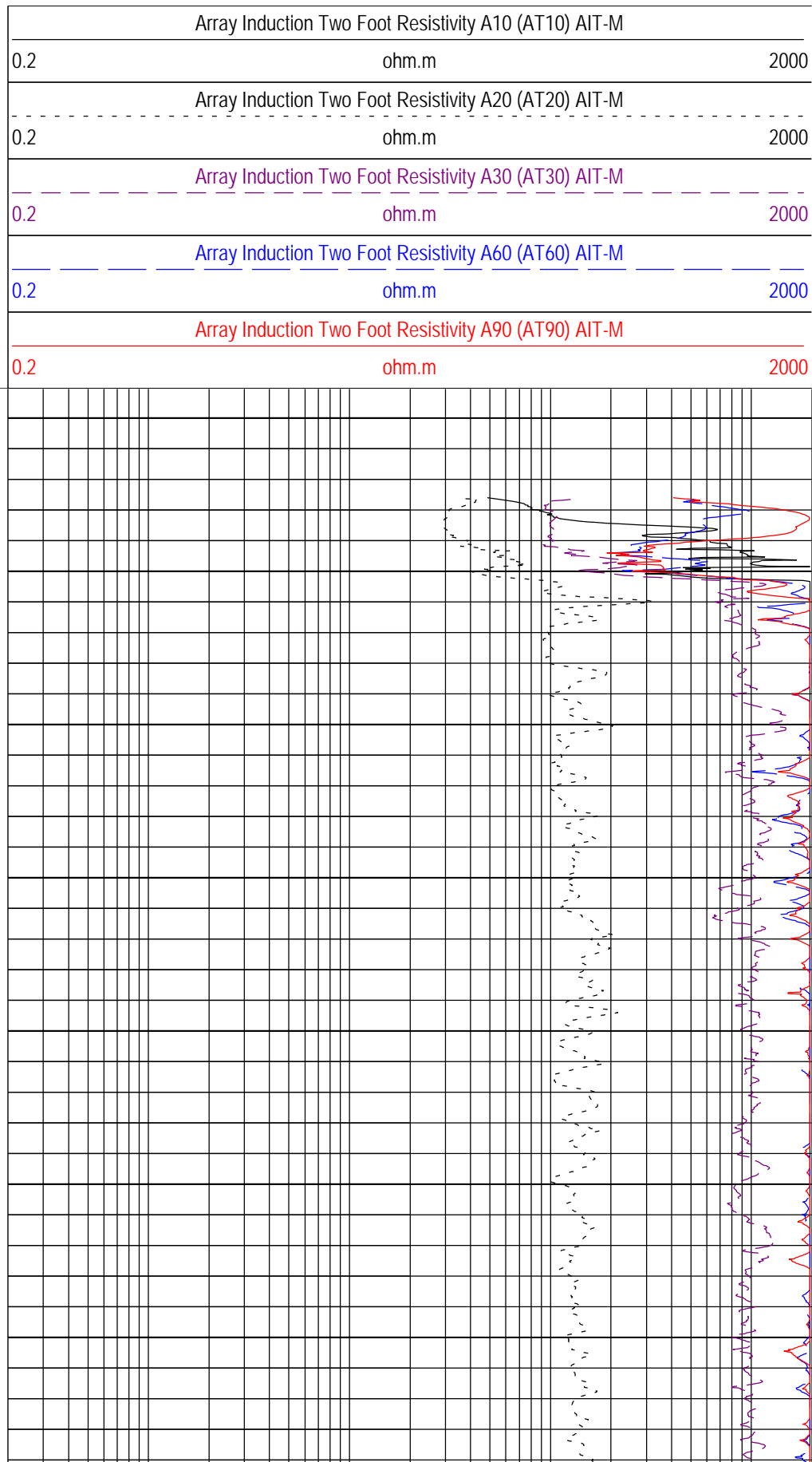
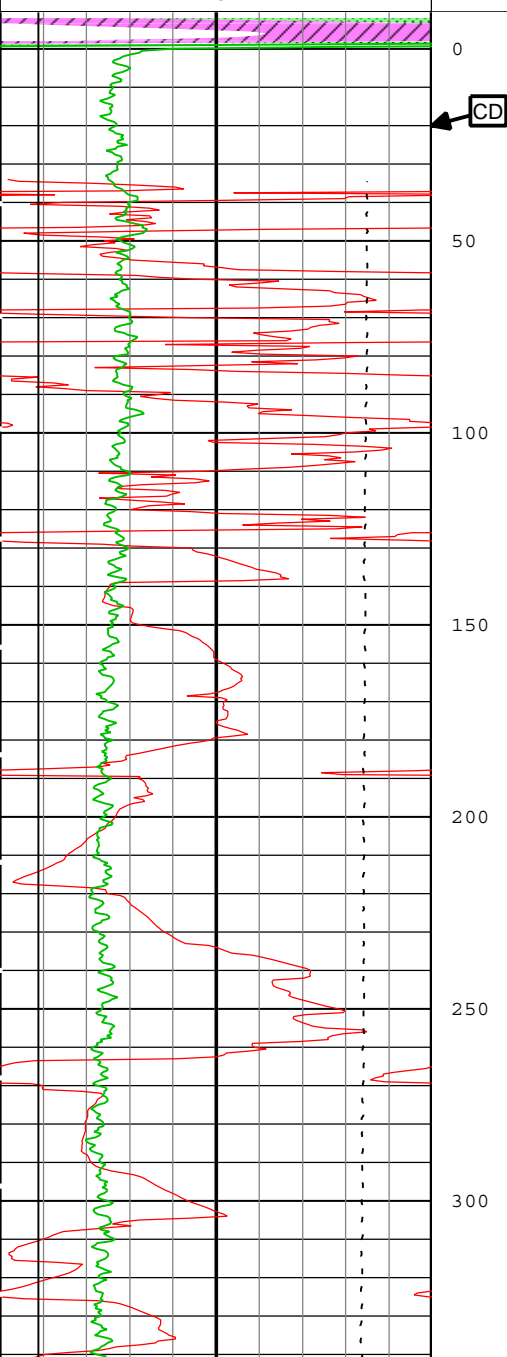
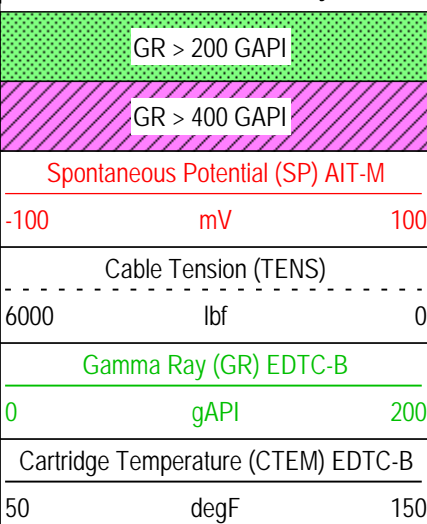
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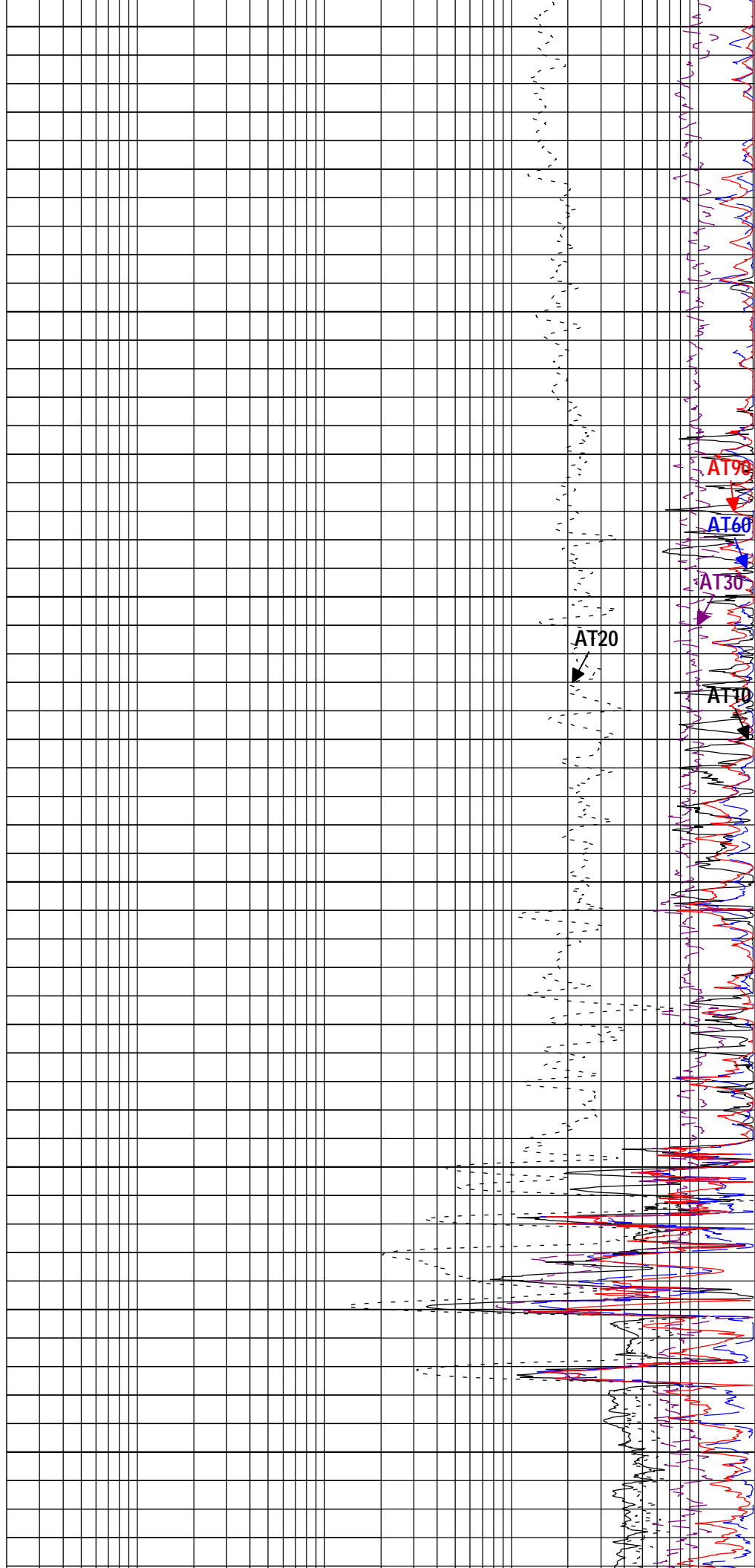
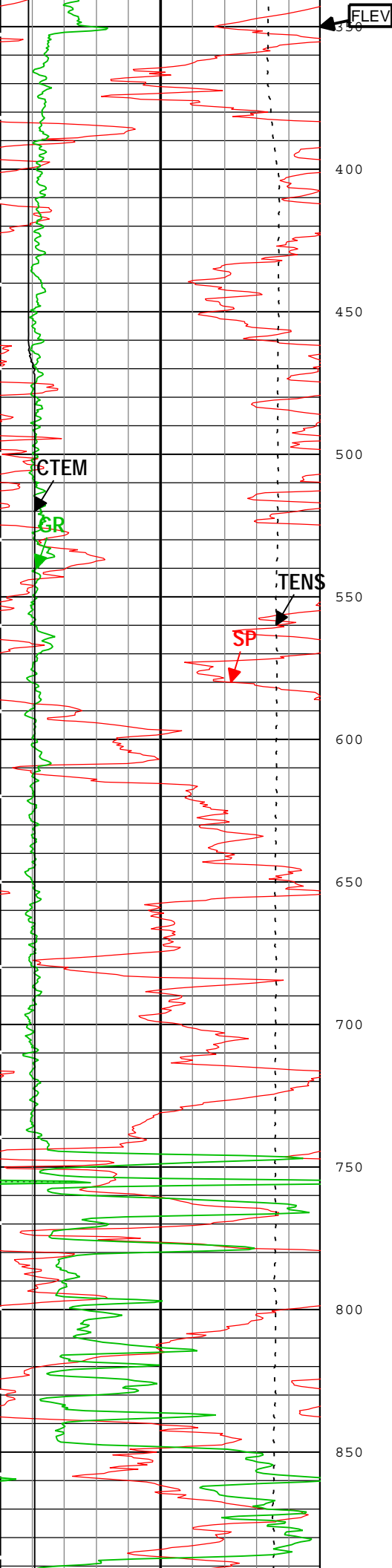
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Index Type: Measured Depth    Creation Date: 03-Oct-2013 18:46:48

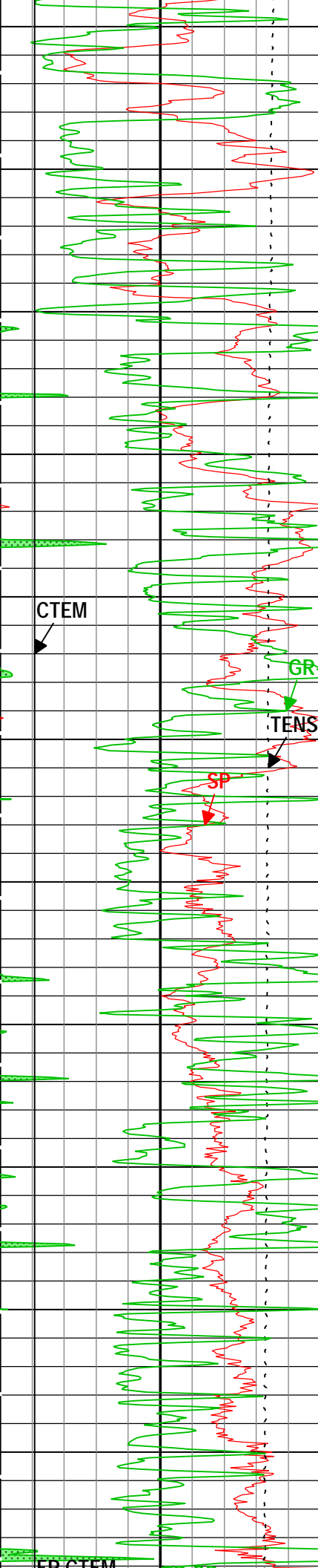
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AT10	AIT-M:AMIS:AMIS	3in
AT20	AIT-M:AMIS:AMIS	3in
AT30	AIT-M:AMIS:AMIS	3in
AT60	AIT-M:AMIS:AMIS	3in
AT90	AIT-M:AMIS:AMIS	3in
CTEM	EDTC B:EDTC B:EDTC B	4in

ITEM: EDTC-B:EDTC-B:EDTC-B 6in  
GR: EDTC-B:EDTC-B:EDTC-B 6in  
SP: AIT-M:AMIS:AMIS 6in  
TENS: WLWorkflow 6in  
TIME\_1900: WLWorkflow 0.1in

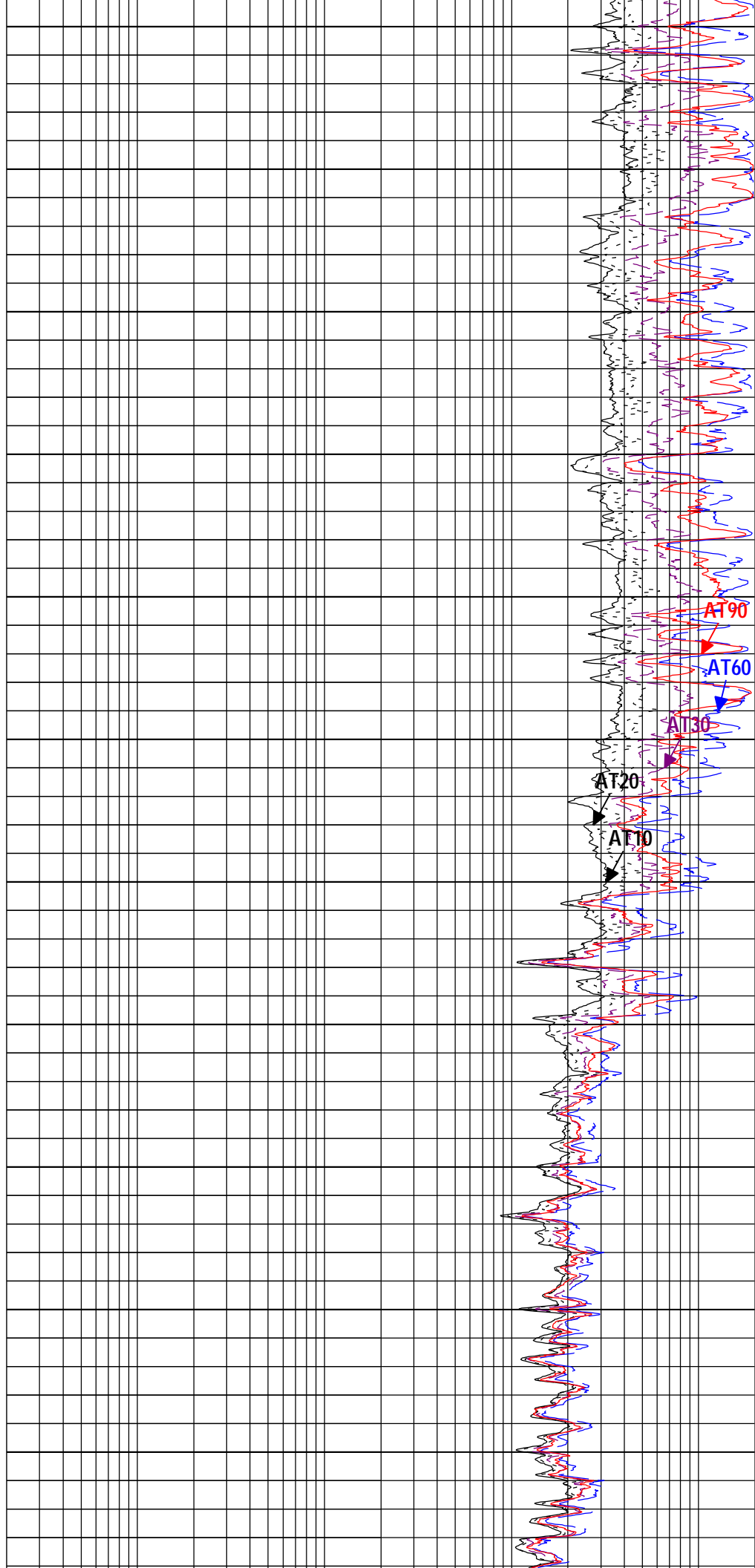
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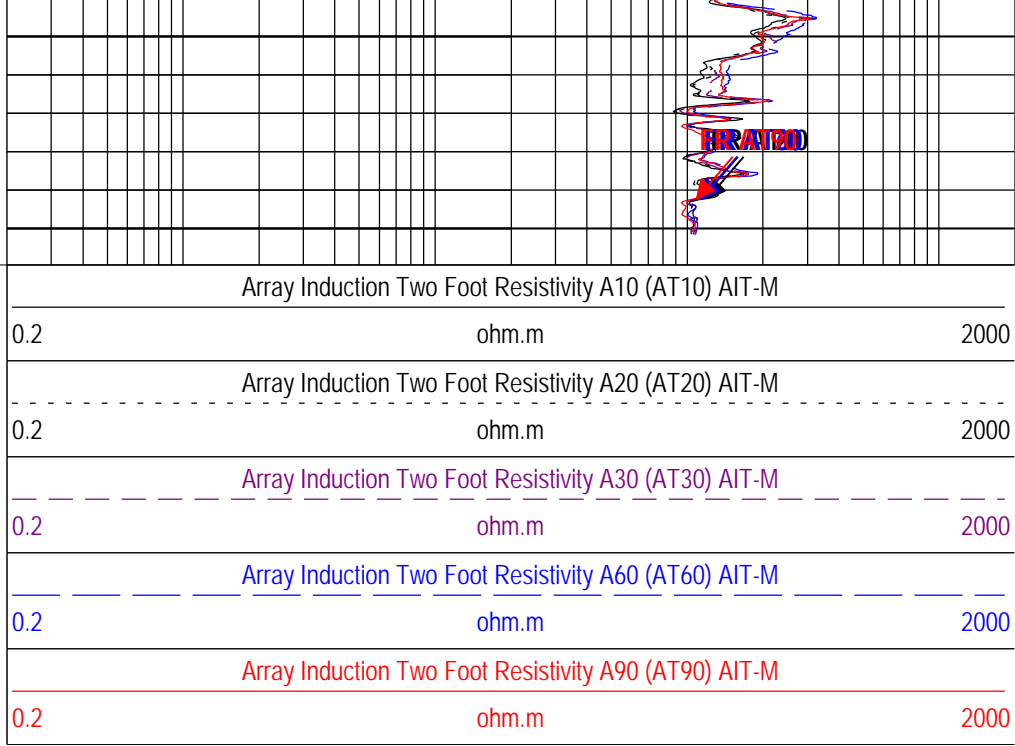
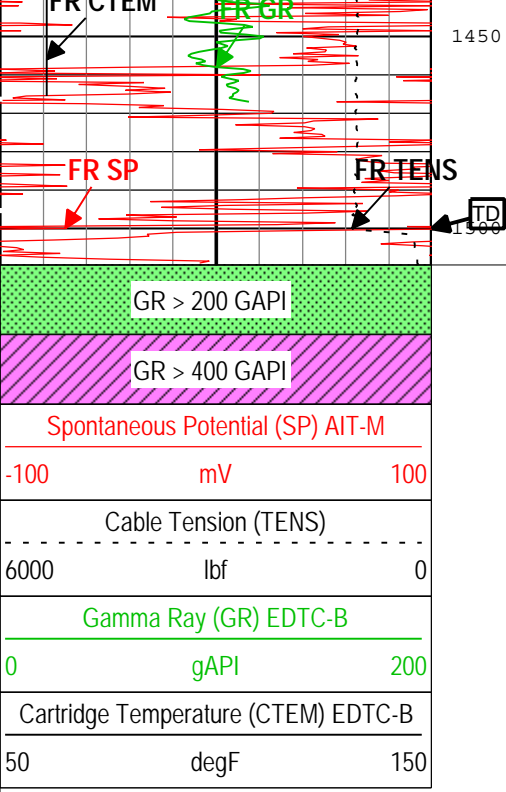






900  
950  
1000  
1050  
1100  
1150  
1200  
1250  
1300  
1350  
1400





Description: Triple Combo standard resolution template for Platform Express    Format: Log ( STANDARD AIT 2IN )    Index Scale: 2 in per 100 ft    Index Unit: ft  
 Index Type: Measured Depth    Creation Date: 03-Oct-2013 18:46:48

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Electrical Diameter	
ABLM	Array Induction Basic Logs Mode	AIT-M	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-M	No	
ASTA	Array Induction Tool Standoff	AIT-M	0.12	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	60.8	degF
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	20	ft
CDEN	Cement Density	EDTC-B	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	Depth Zoned	lbm/gal
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	0	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	380	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST	
MST	Mud Sample Temperature	Borehole	68	degF
PDAT	Permanent Datum	WLSESSION	GL	
RMS	Resistivity of Mud Sample	Borehole	500	ohm.m
SHT	Surface Hole Temperature	Borehole	68	degF
SP_SHIFT	SP Shift	AIT-M	100	mV
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	1500	ft

Depth Zone Parameters			
Parameter	Value	Start ( ft )	Stop ( ft )
BS	8.75	-9.5	23
BS	6.25	23	1509.5
DFD	0.01	-9.5	350
DFD	8.4	350	1509.5
All depth are actual.			

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

1A
MAIN PASS 5"

Integration Summary				
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit

Software Version			
Acquisition System		Version	
MaxWell		3.1.9755.0	
Application Patch		SP-20130325-3.1.9755.1799	
SoftwareVersion_Tool	SoftwareVersion_Run Version	SoftwareVersion_Build Version	
WAFE-SEC	Synergy SV451EC version 8.10	Synergy SV451EC version 9.10	
WAFE-FEC	Synergy SV451EC version 8.10	Synergy SV451EC version 9.10	
WAFE-TMDI	Synergy SV451EC version 42.19	Synergy SV451EC version 44.19	
Tool Elements	Description	Software Version	Firmware Version
AMIS	Array Induction Sonde - M	3.1.9755.1799	1
EDTC-B	Enhanced Digital Telemetry Cartridge - B	3.1.9755.0	

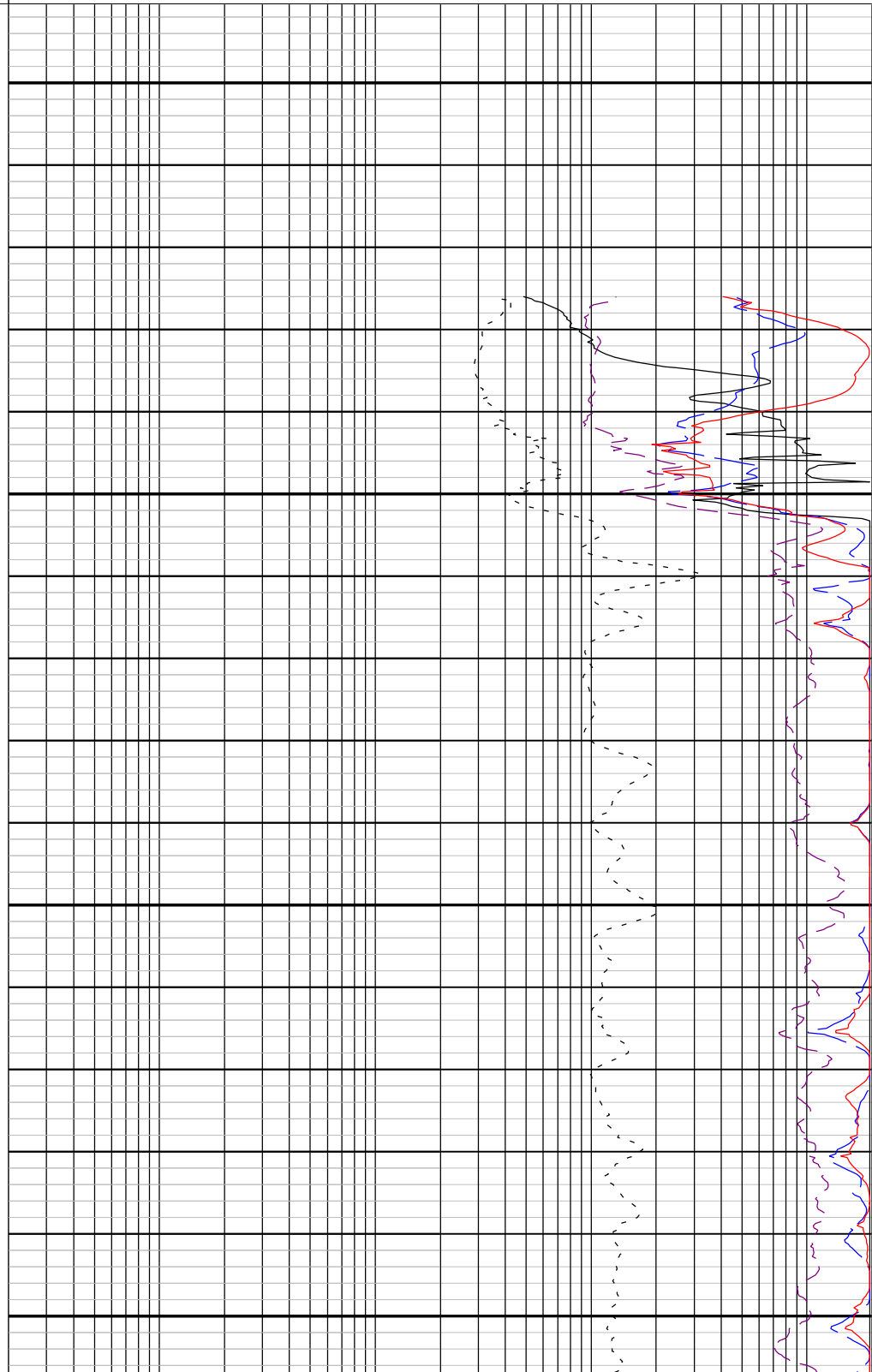
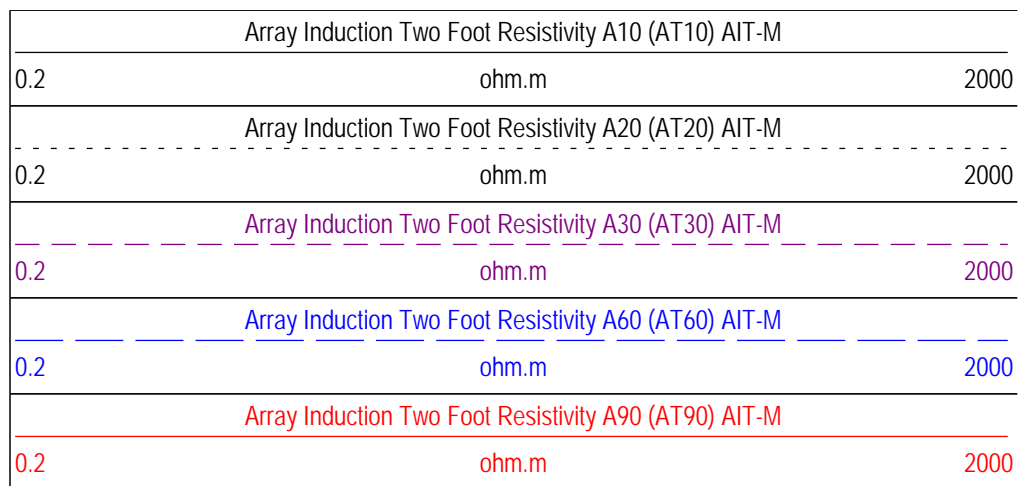
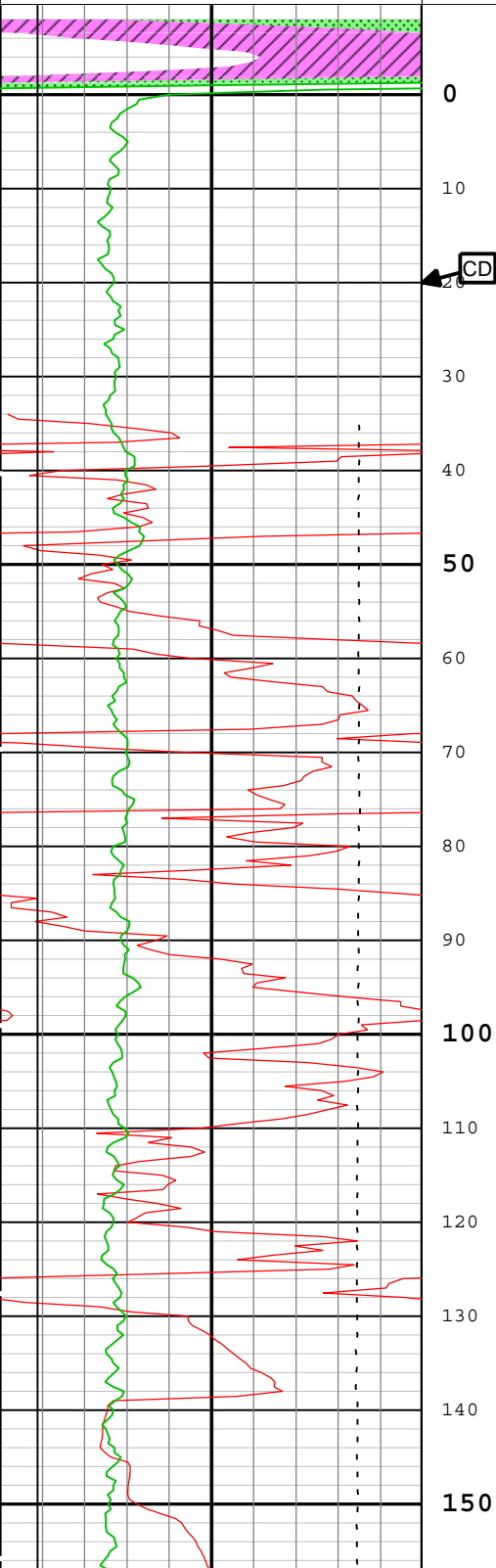
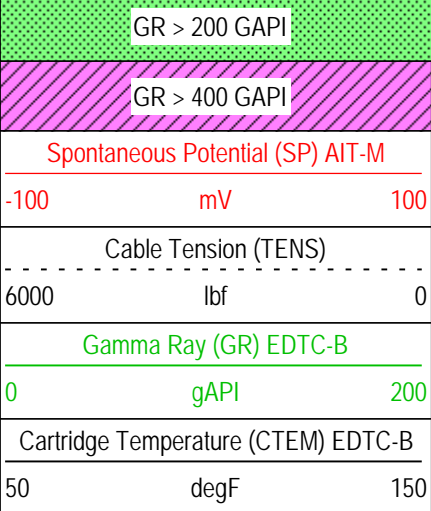
Pass Summary								
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
1A	Log[3]:Up	Up	33.77 ft	1509.48 ft	02-Oct-2013 12:09:27 PM	02-Oct-2013 1:00:37 PM	-0.52 ft	true
All depths are referenced to toolstring zero								

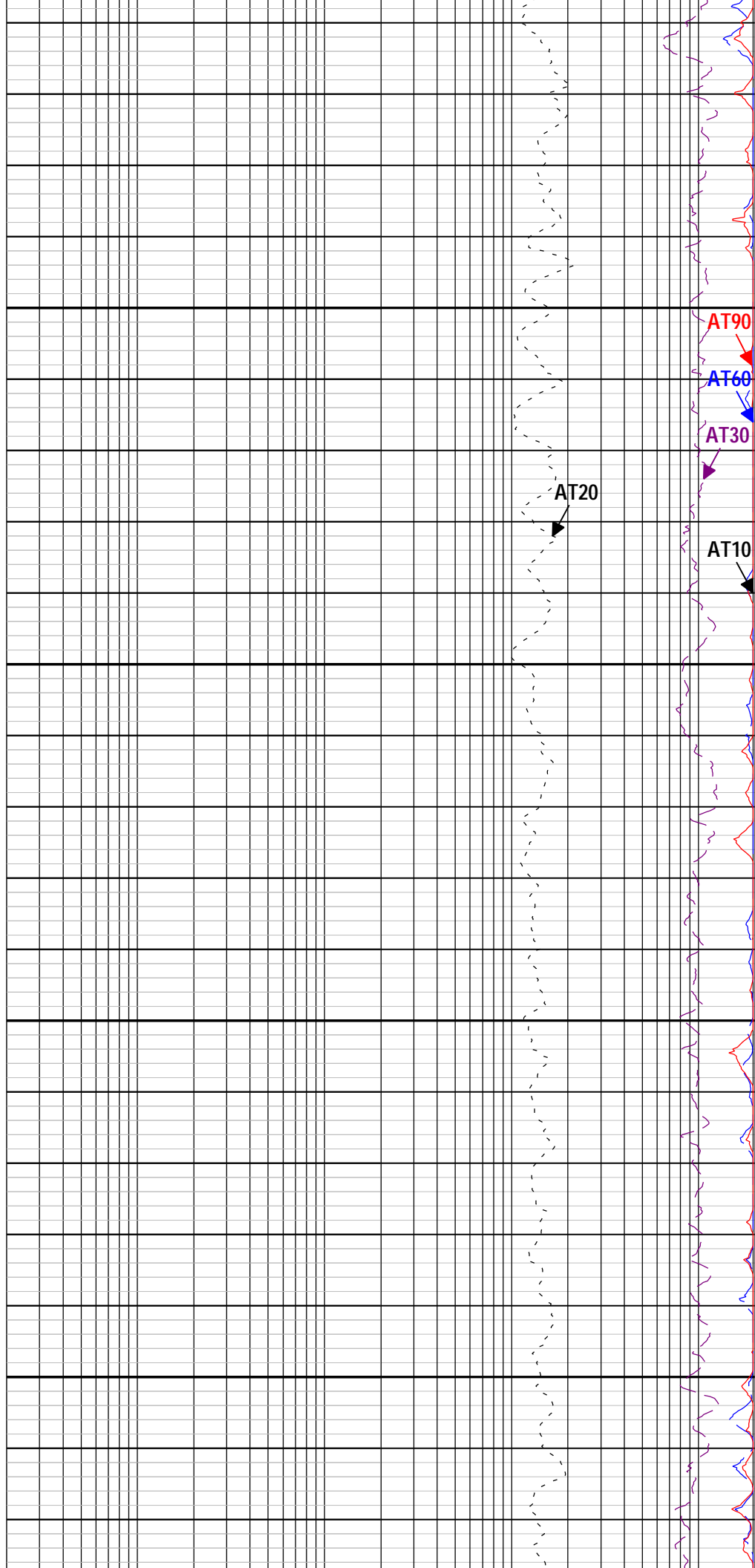
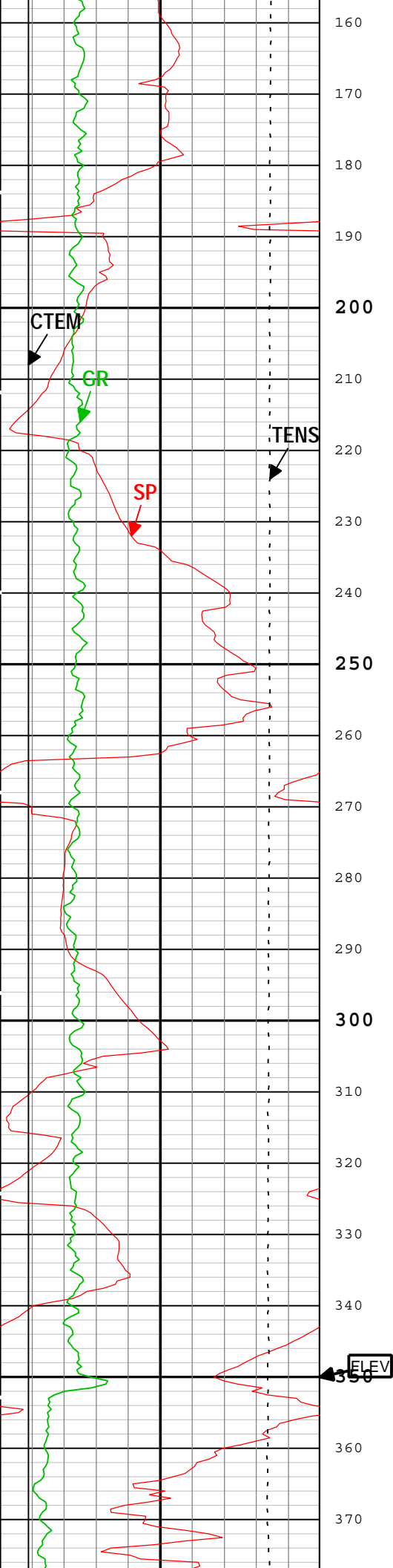
Log	1A: Log[3]:Up
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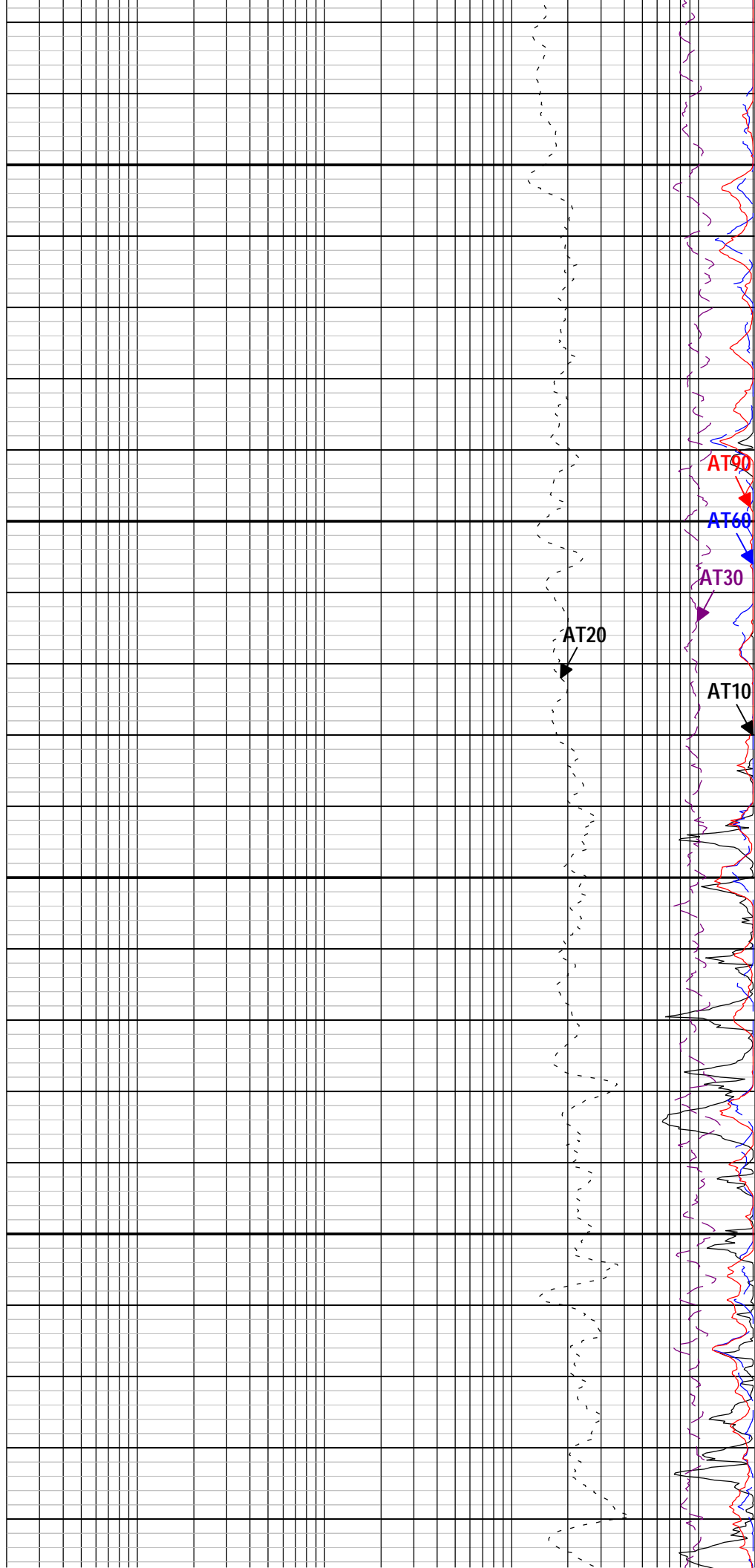
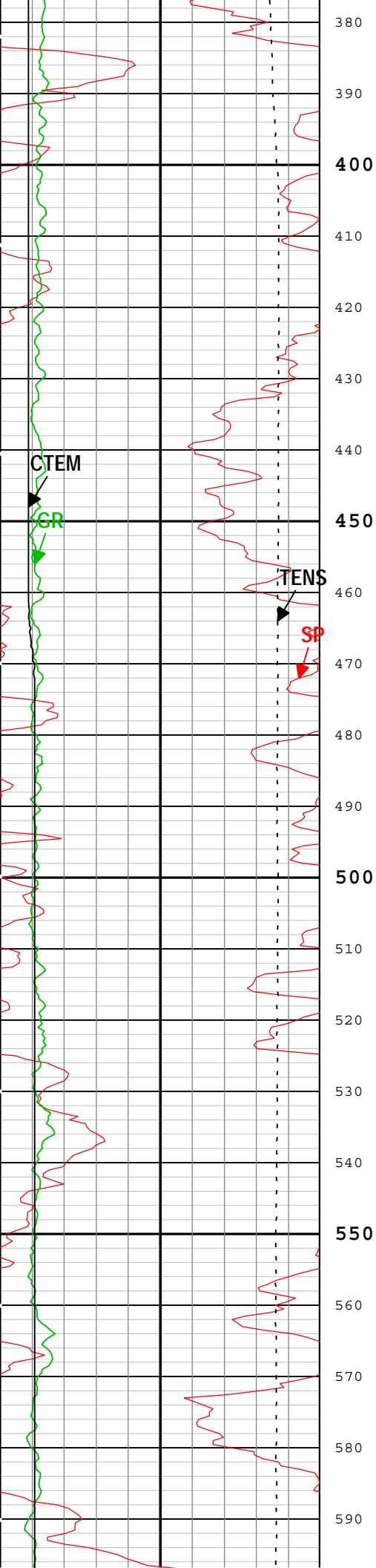
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Index Type: Measured Depth    Creation Date: 03-Oct-2013 18:46:52

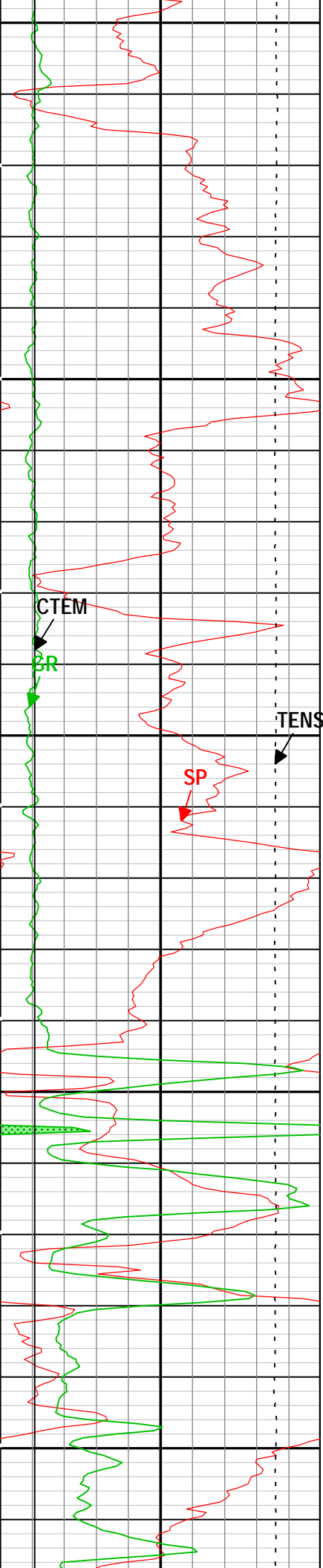
Channel	Source	Sampling
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AT20	AIT-M:AMIS:AMIS	3in
AT30	AIT-M:AMIS:AMIS	3in
AT60	AIT-M:AMIS:AMIS	3in
AT90	AIT-M:AMIS:AMIS	3in
CTEM	EDTC-B:EDTC-B:EDTC-B	6in
GR	EDTC-B:EDTC-B:EDTC-B	6in
SP	AIT-M:AMIS:AMIS	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in
TIME_1900 - Time Marked every 60.00 (s)		



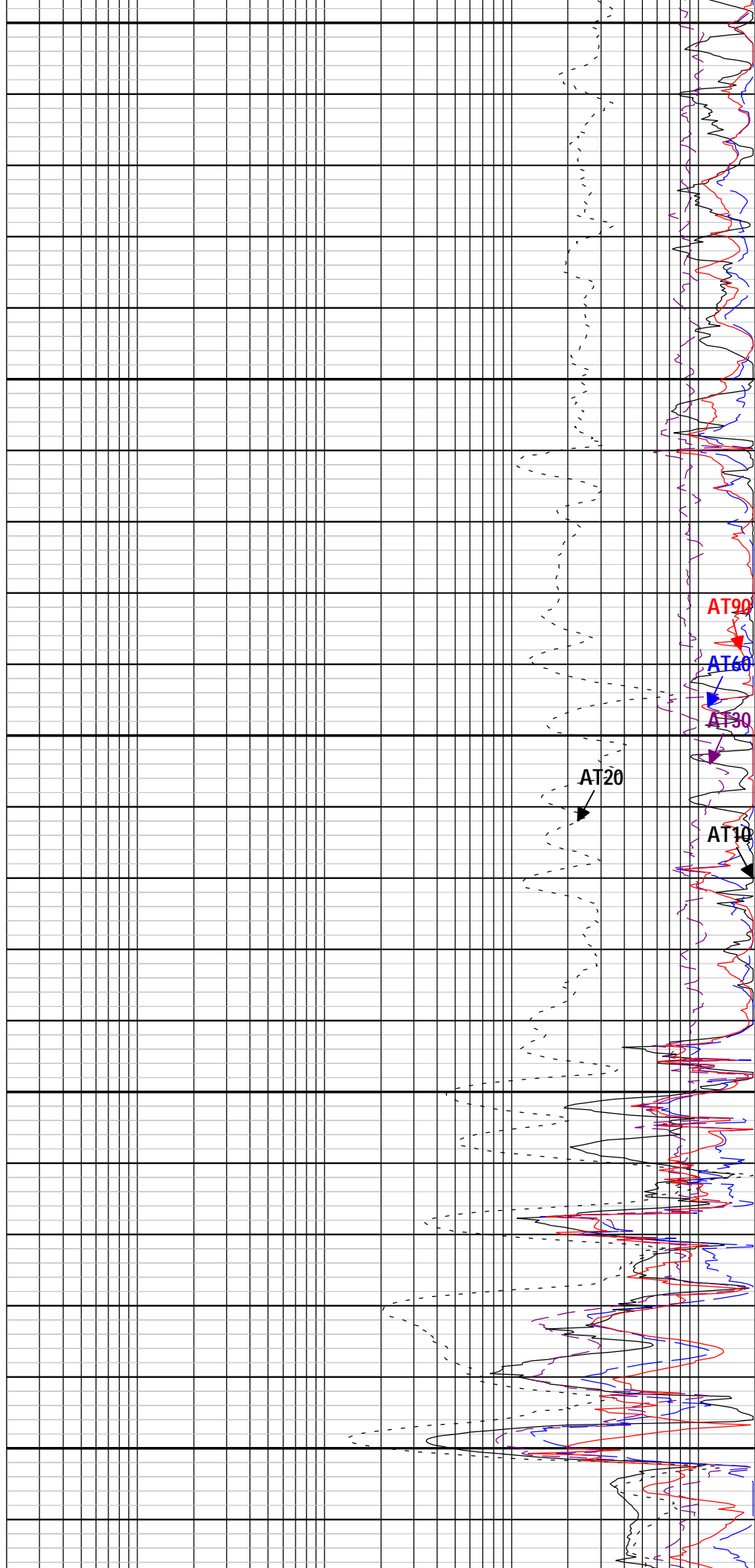




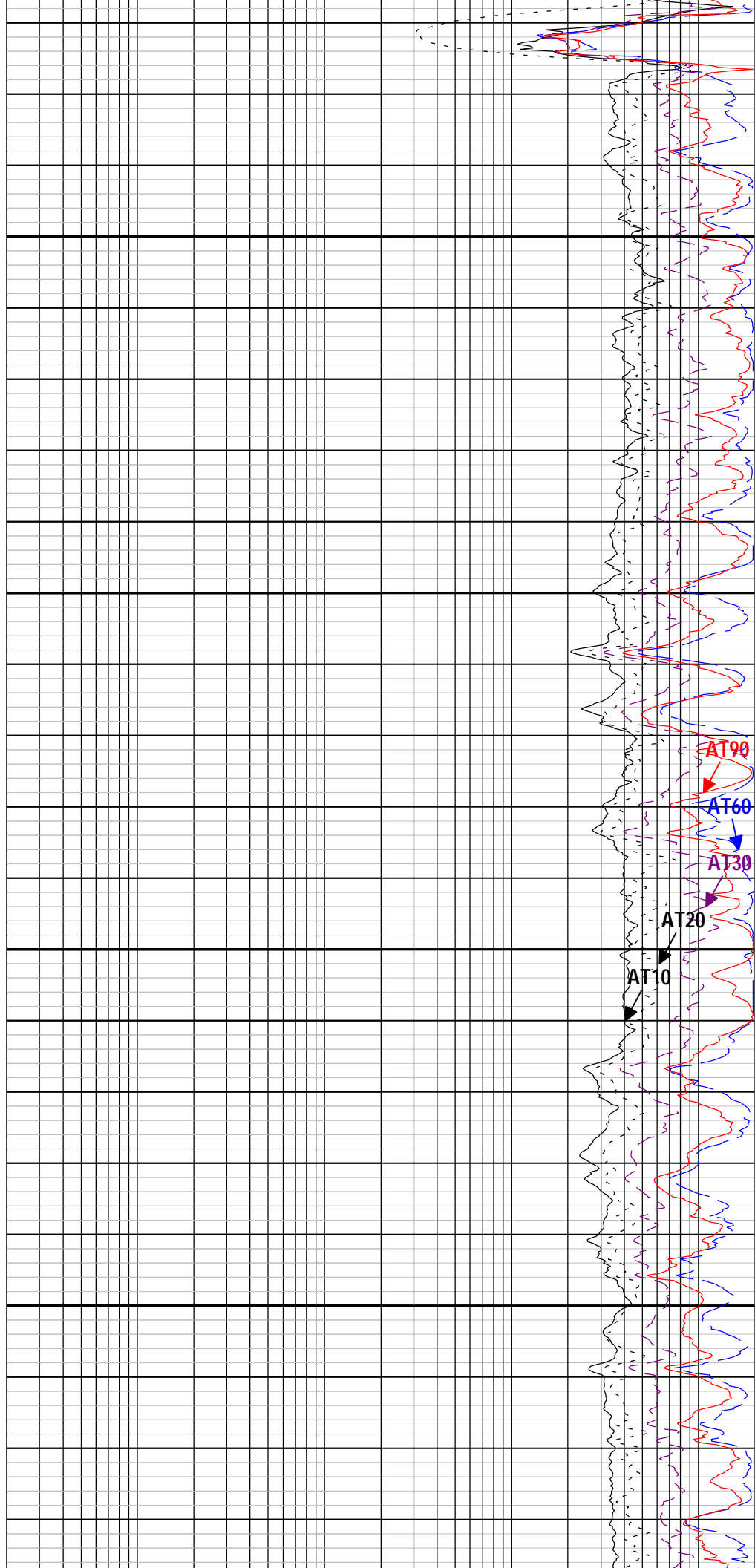
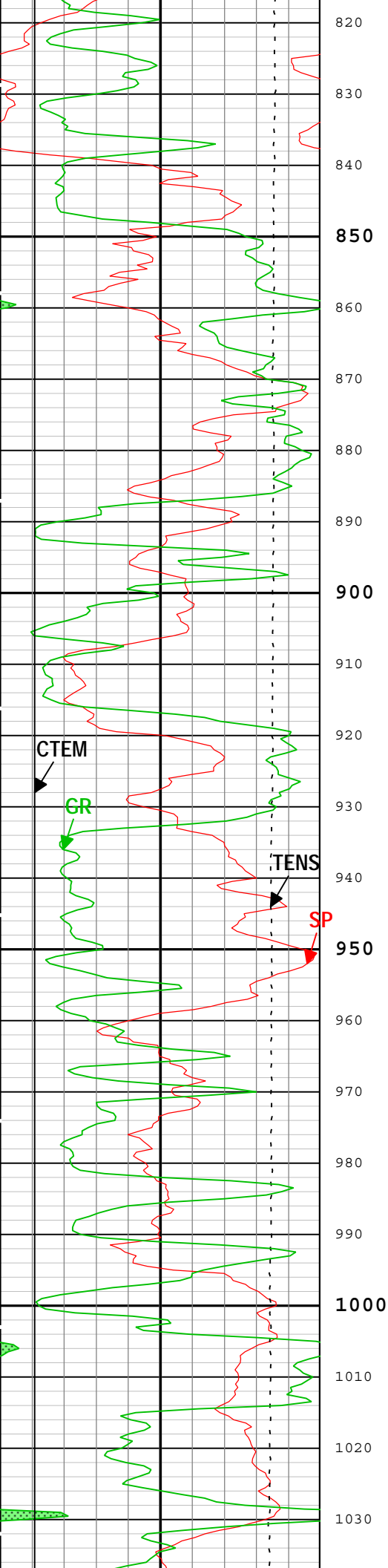


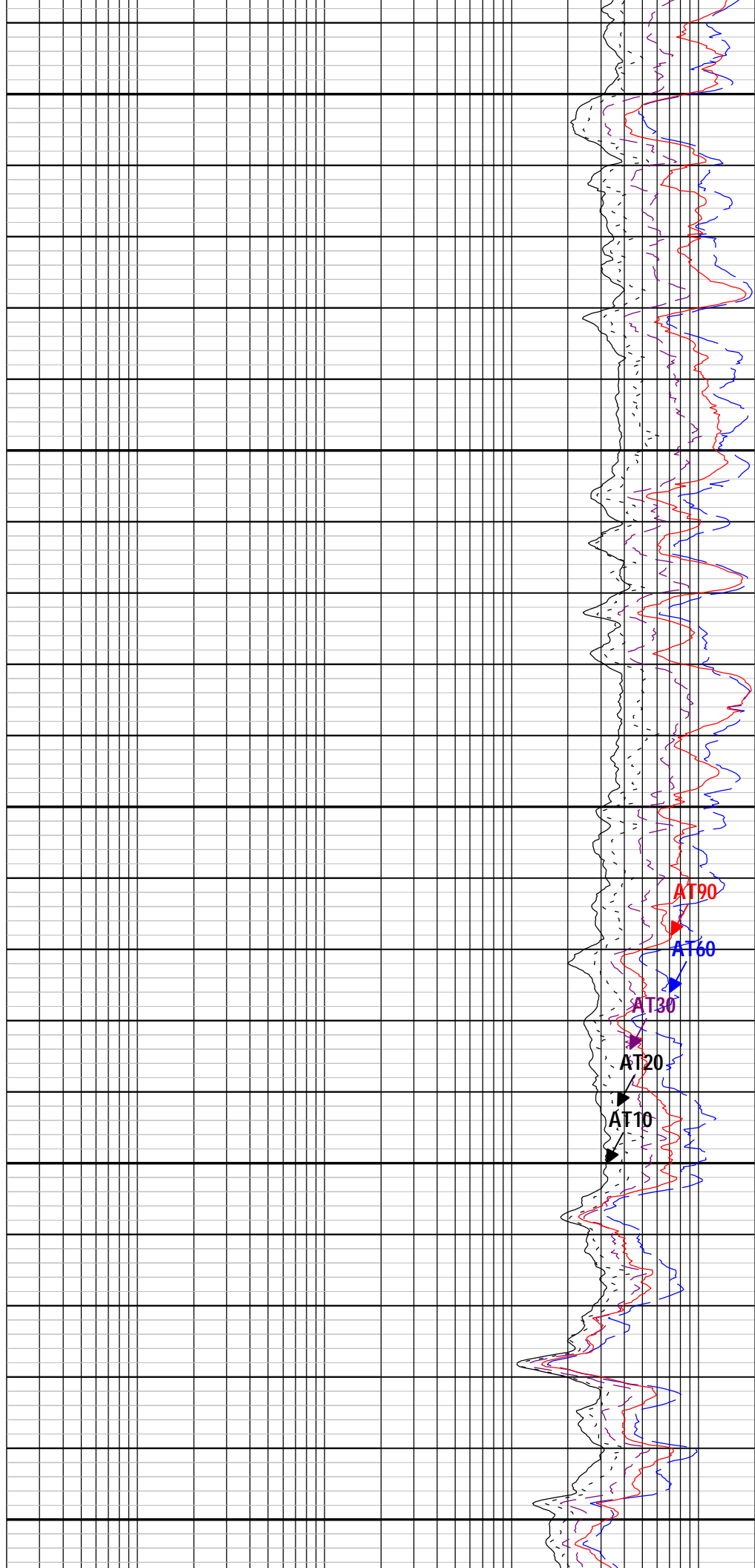
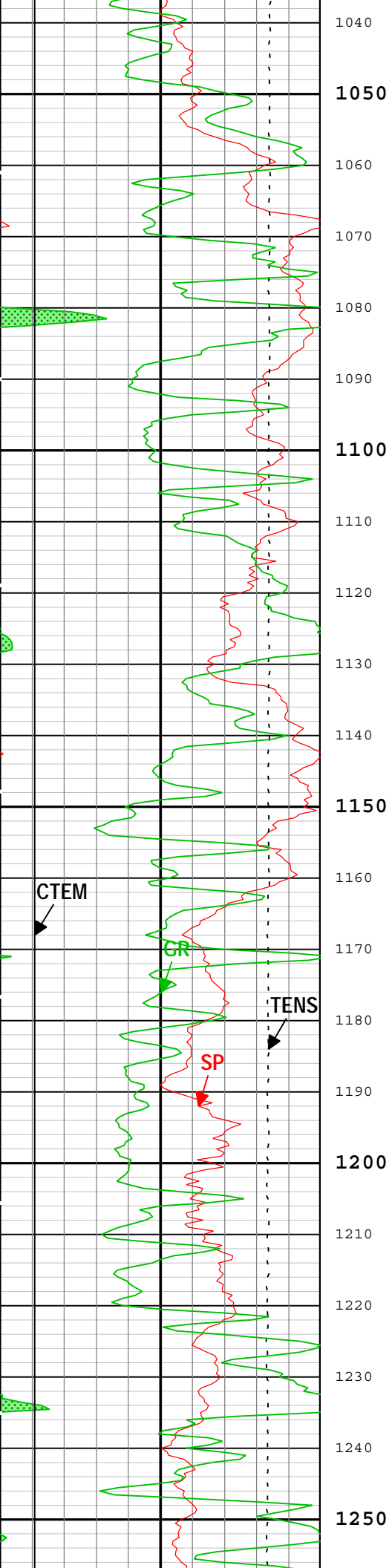


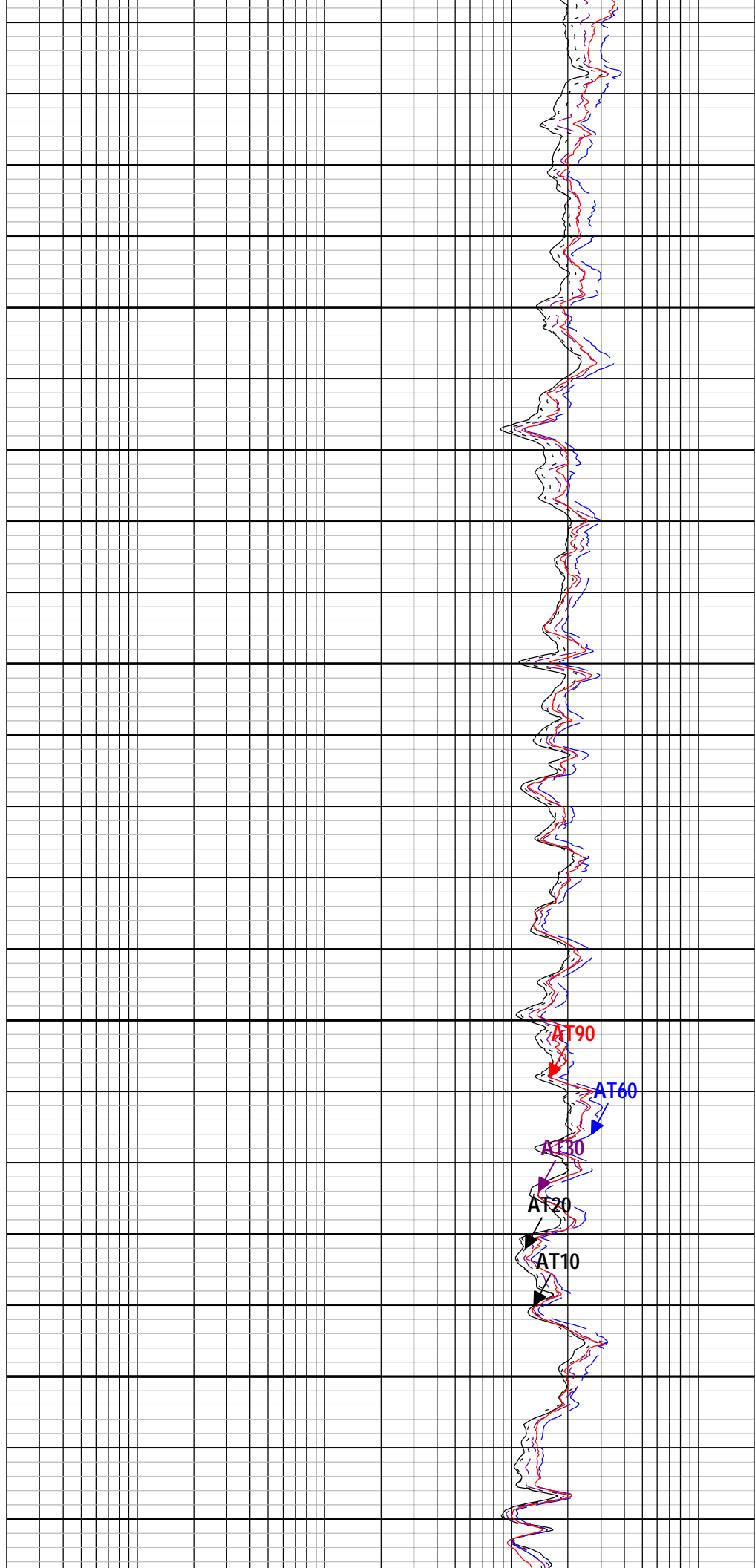
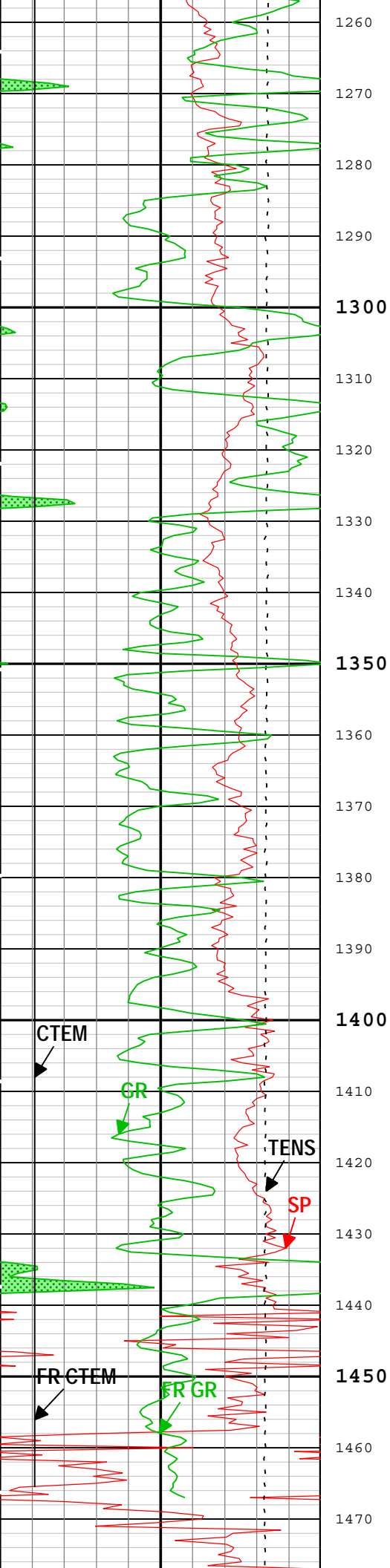
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640  
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750  
760  
770  
780  
790  
800  
810

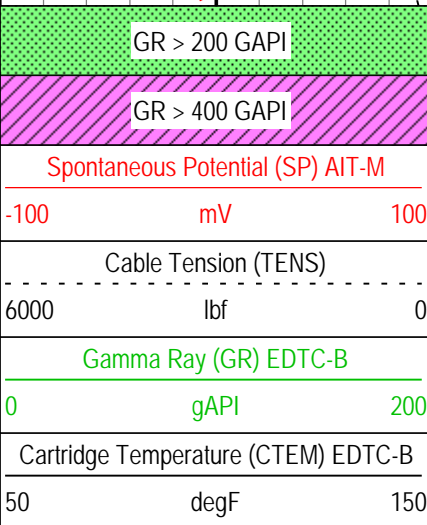
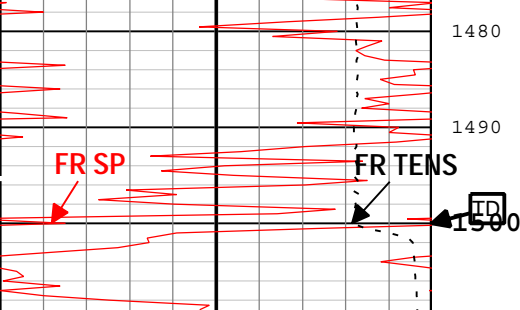


AT90  
AT60  
AT30  
AT20  
AT10









TIME\_1900 - Time Marked every 60.00 (s)

Description: Triple Combo standard resolution template for Platform Express    Format: Log ( STANDARD AIT 2IN )    Index Scale: 5 in per 100 ft    Index Unit: ft  
Index Type: Measured Depth    Creation Date: 03-Oct-2013 18:46:52

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
AAPL	Array Induction Answer Product Level(Depth Log/View only)	AIT-M	Radial	
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Electrical Diameter	
ABLM	Array Induction Basic Logs Mode	AIT-M	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-M	No	
ACEN	Array Induction Tool Centering Flag (in Borehole)	AIT-M	Eccentered	
AMRF	Array Induction Mud Resistivity Factor	AIT-M	1	
ASTA	Array Induction Tool Standoff	AIT-M	0.12	in
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	AIT-M	Internal	
AZ_ENABLE	Z-Axis Acceleration Channel Enabled for Real-Time Depth Correction	DepthCorrection	No	
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	60.8	degF
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	20	ft
CDEN	Cement Density	EDTC-B	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DC_RT_ENABLE	Depth Correction Real-Time Enabled	DepthCorrection	No	
DFD	Drilling Fluid Density	Borehole	Depth Zoned	lbm/gal
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	0	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	380	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
GRSE	Generalized Mud Resistivity Selection, from Measured or	Borehole	PEMS	



GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST	
MST	Mud Sample Temperature	Borehole	68	degF
PDAT	Permanent Datum	WLSESSION	GL	
RMS	Resistivity of Mud Sample	Borehole	500	ohm.m
SHT	Surface Hole Temperature	Borehole	68	degF
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
SP_SHIFT	SP Shift	AIT-M	100	mV
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	1500	ft
TPOS	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	

Depth Zone Parameters			
Parameter	Value	Start ( ft )	Stop ( ft )
BS	8.75	-9.5	23
BS	6.25	23	1509.5
DFD	0.01	-9.5	350
DFD	8.4	350	1509.5
All depth are actual.			

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h
1A				
REPEAT PASS 5"				

Integration Summary				
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
Software Version				
Acquisition System		Version		
MaxWell		3.1.9755.0		
Application Patch		SP-20130325-3.1.9755.1799		
SoftwareVersion_Tool	SoftwareVersion_Run	Version		
WAFE-SEC	Synergy SV451EC version 8.10	Synergy SV451EC version 9.10		
WAFE-FEC	Synergy SV451EC version 8.10	Synergy SV451EC version 9.10		
WAFE-TMDI	Synergy SV451EC version 42.19	Synergy SV451EC version 44.19		
Tool Elements	Description	Software Version		Firmware Version
AMIS	Array Induction Sonde - M	3.1.9755.1799		1
EDTC-B	Enhanced Digital Telemetry Cartridge - B	3.1.9755.0		

Pass Summary								
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
1A	Log[2]:Up	Up	789.87 ft	1508.82 ft	02-Oct-2013 11:33:57 AM	02-Oct-2013 11:58:11 AM	-0.52 ft	true
All depths are referenced to toolstring zero								

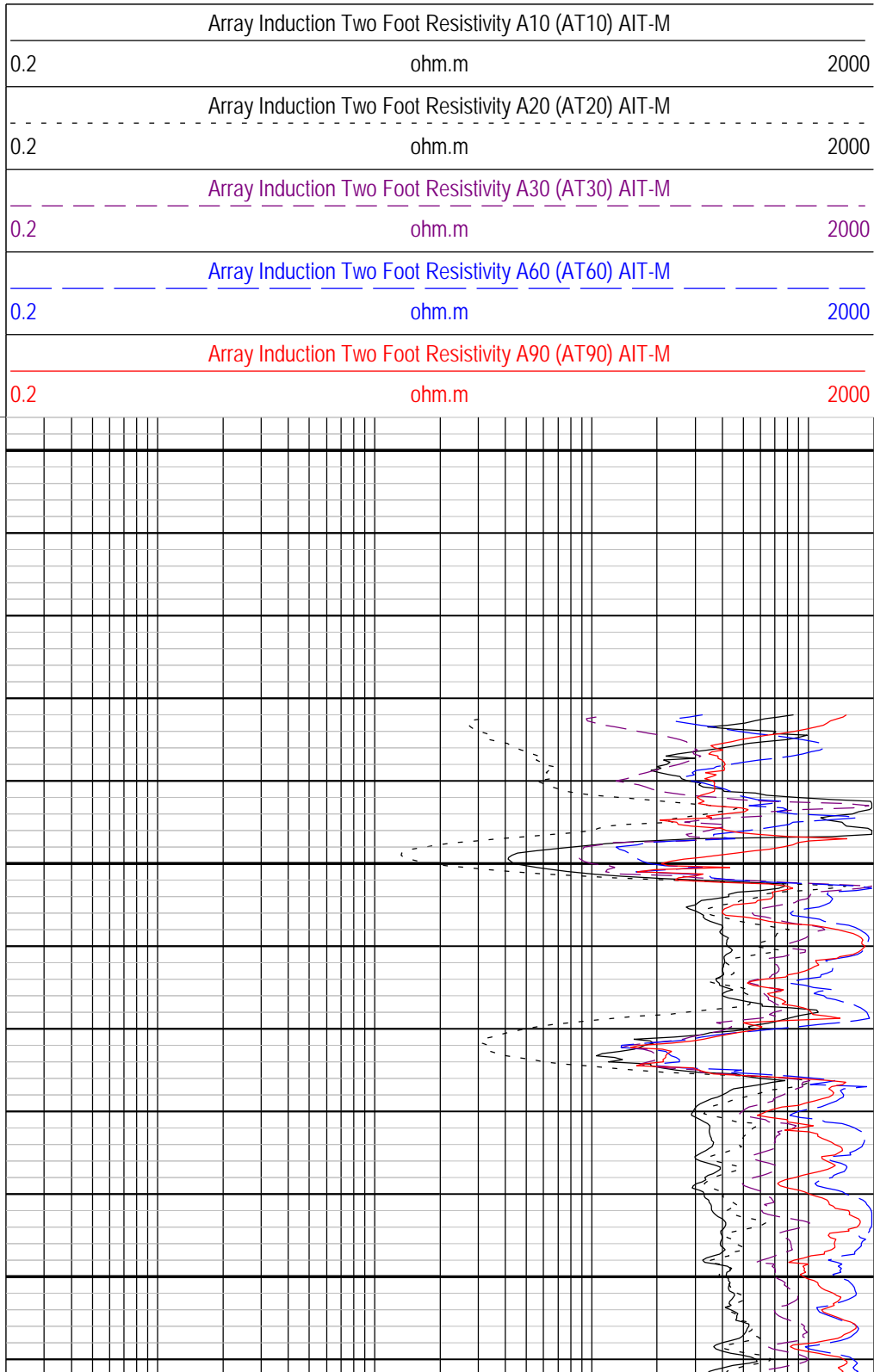
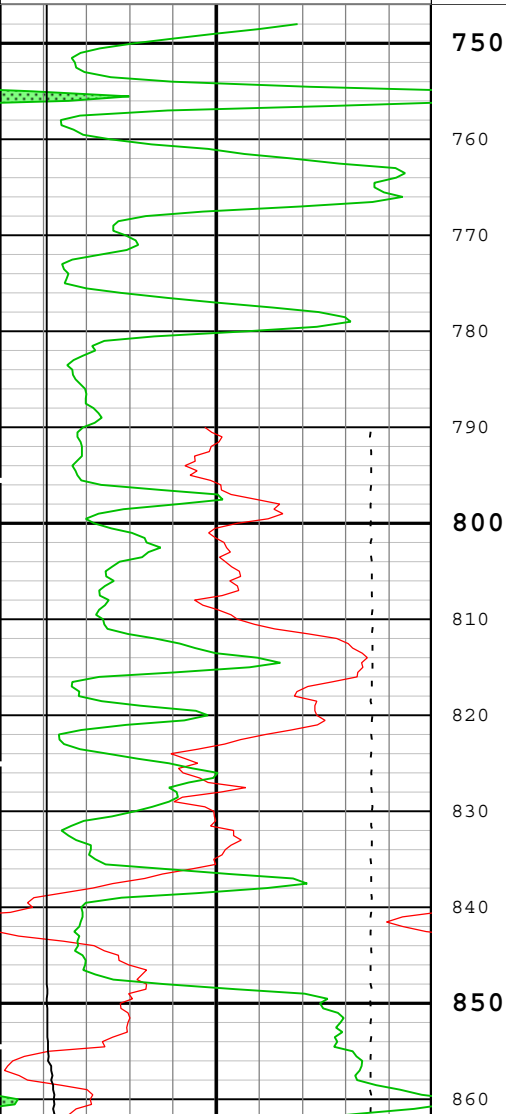
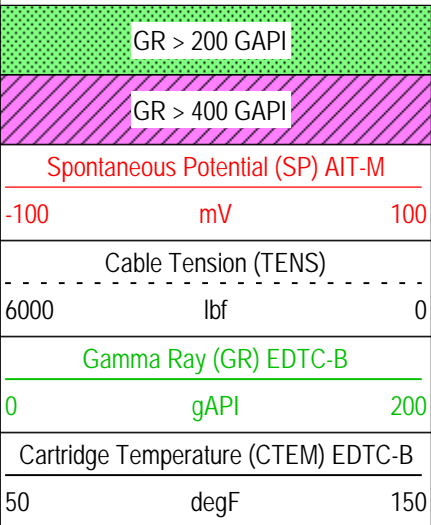
Log	1A: Log[2]:Up
-----	---------------

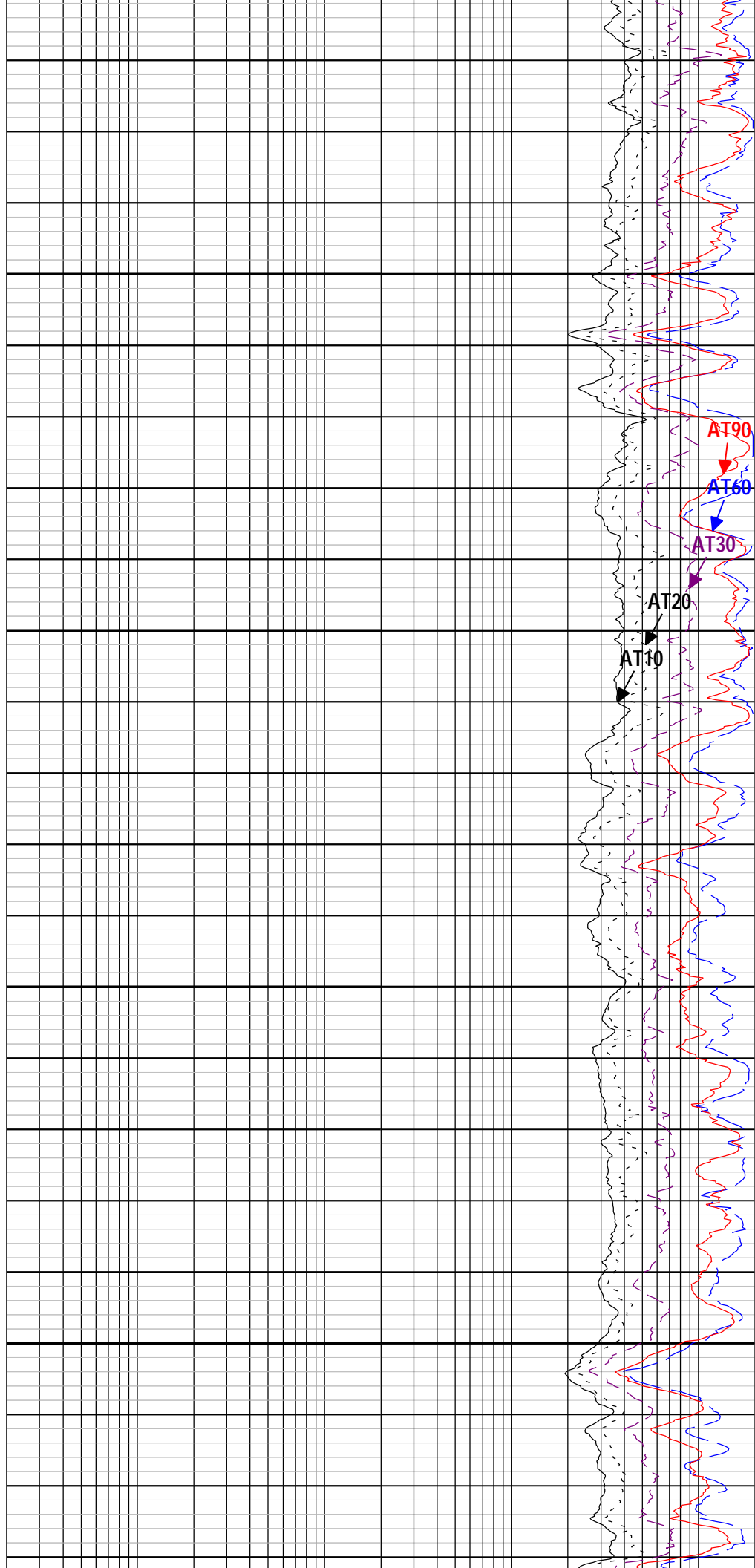
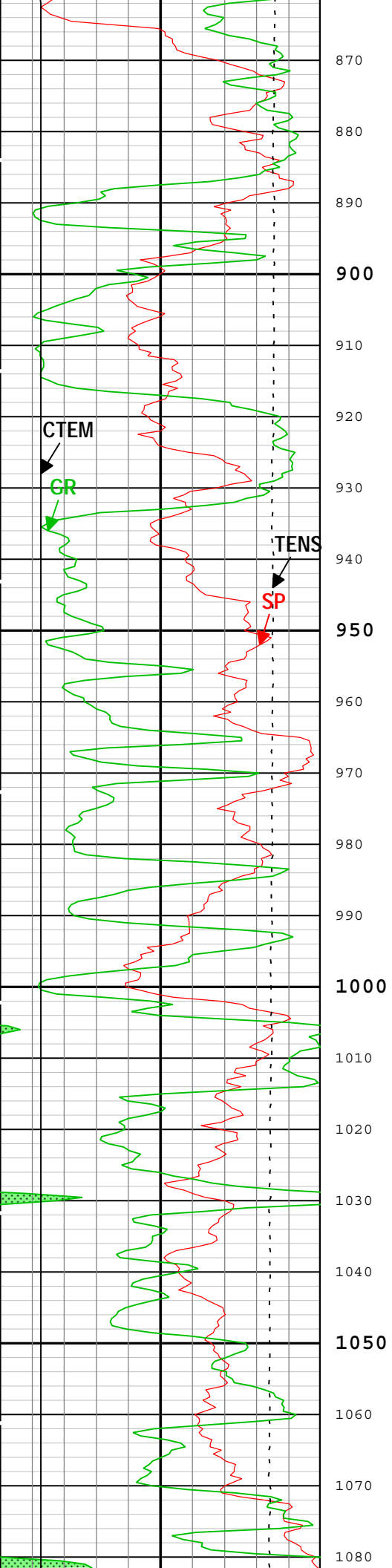
Description: Triple Combo standard resolution template for Platform Express    Format: Log ( STANDARD AIT 2IN )    Index Scale: 5 in per 100 ft    Index Unit: ft  
Index Type: Measured Depth    Creation Date: 03-Oct-2013 18:46:56

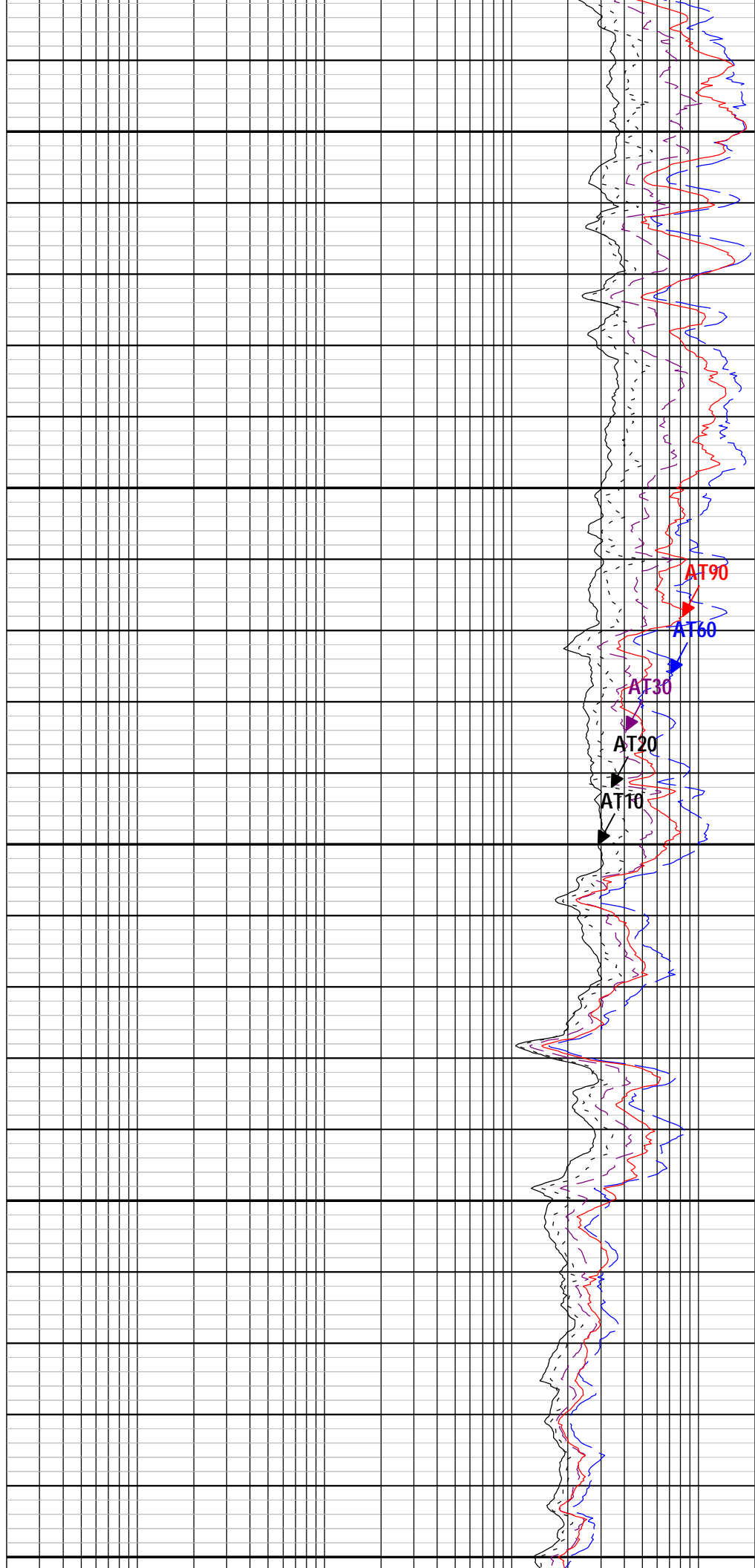
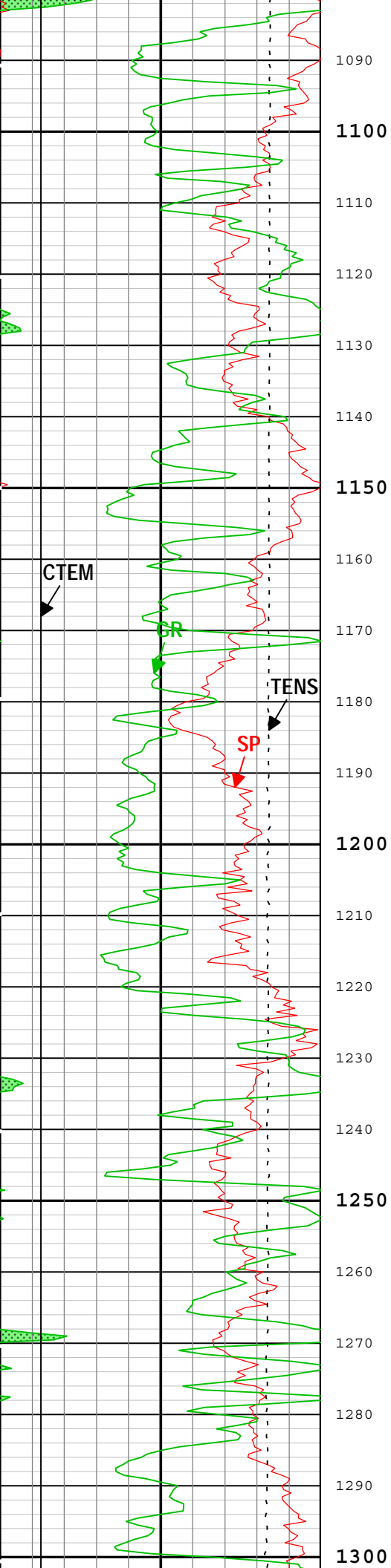
Channel      Source                      Sampling

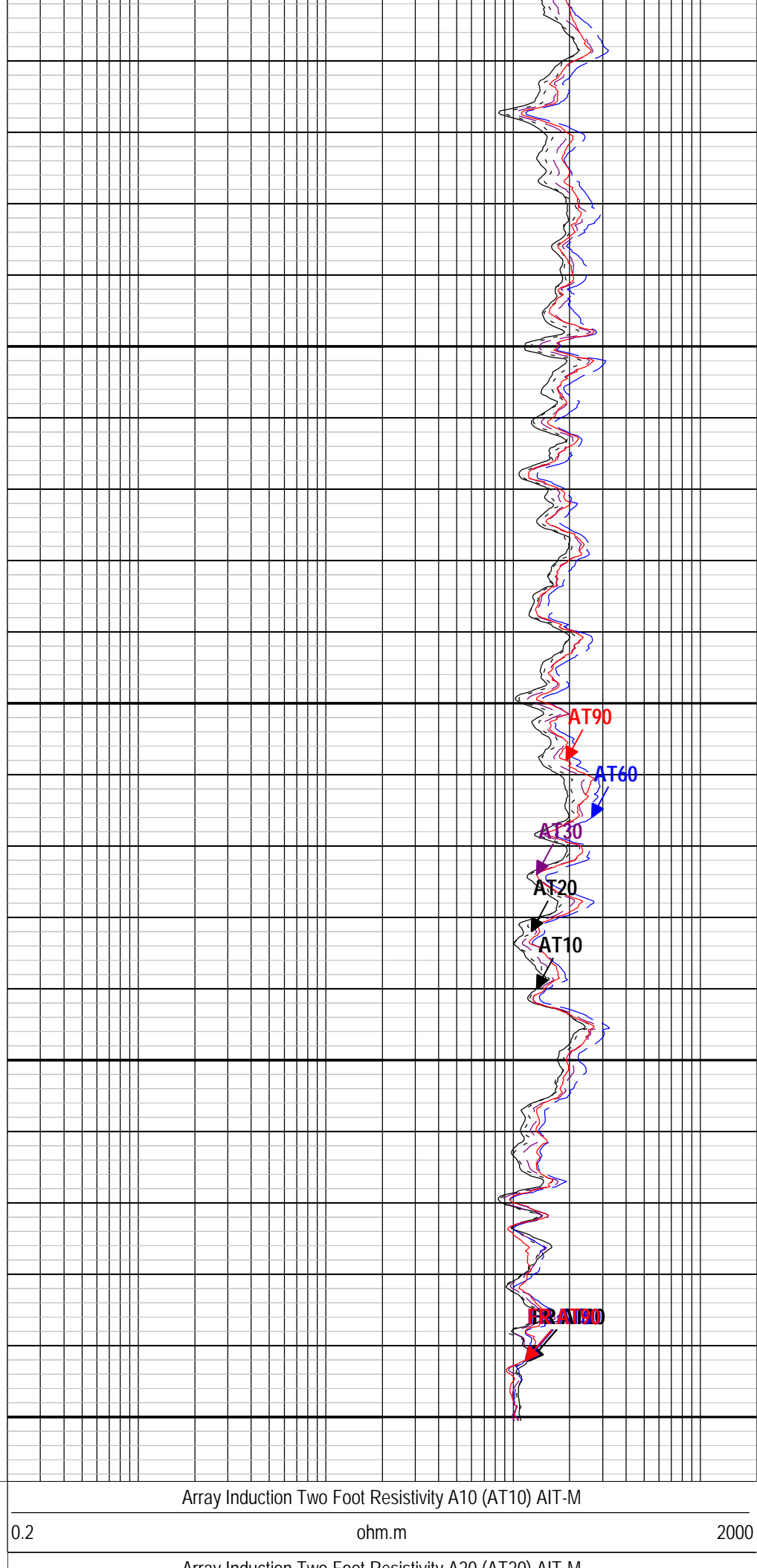
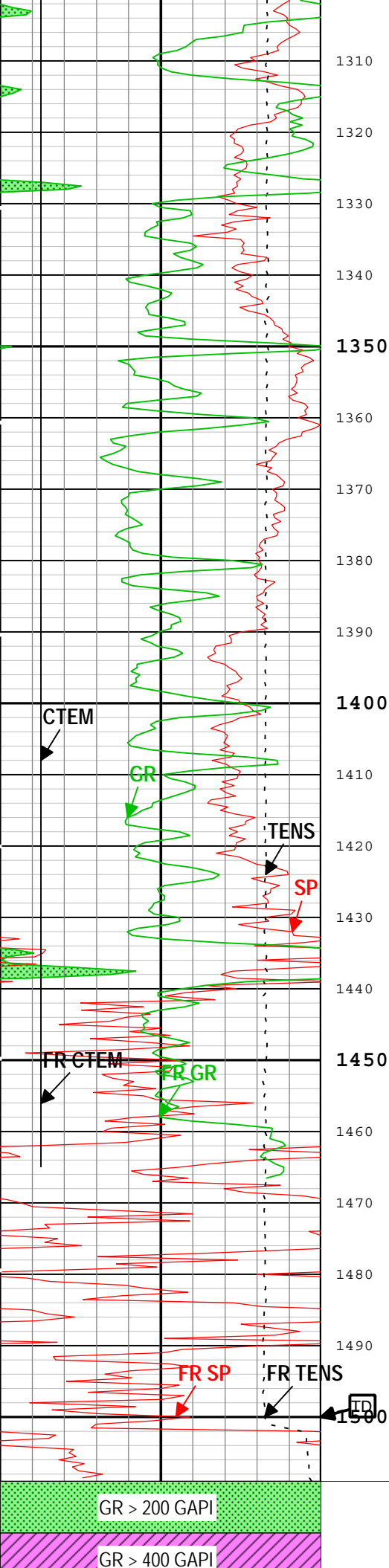
AT10	AIT-M:AMIS:AMIS	3in
AT20	AIT-M:AMIS:AMIS	3in
AT30	AIT-M:AMIS:AMIS	3in
AT60	AIT-M:AMIS:AMIS	3in
AT90	AIT-M:AMIS:AMIS	3in
CTEM	EDTC-B:EDTC-B:EDTC-B	6in
GR	EDTC-B:EDTC-B:EDTC-B	6in
SP	AIT-M:AMIS:AMIS	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

TIME\_1900 - Time Marked every 60.00 (s)









Spontaneous Potential (SP) AIT-M		
-100	mV	100
Cable Tension (TENS)		
6000	lbf	0
Gamma Ray (GR) EDTC-B		
0	gAPI	200
Cartridge Temperature (CTEM) EDTC-B		
50	degF	150

TIME\_1900 - Time Marked every 60.00 (s)

Description: Triple Combo standard resolution template for Platform Express    Format: Log ( STANDARD AIT 2IN )    Index Scale: 5 in per 100 ft    Index Unit: ft  
Index Type: Measured Depth    Creation Date: 03-Oct-2013 18:46:56

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
AAPL	Array Induction Answer Product Level(Depth Log/View only)	AIT-M	Radial	
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Electrical Diameter	
ABLM	Array Induction Basic Logs Mode	AIT-M	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-M	No	
ACEN	Array Induction Tool Centering Flag (in Borehole)	AIT-M	Eccentered	
AMRF	Array Induction Mud Resistivity Factor	AIT-M	1	
ASTA	Array Induction Tool Standoff	AIT-M	0.12	in
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	AIT-M	Internal	
AZ_ENABLE	Z-Axis Acceleration Channel Enabled for Real-Time Depth Correction	DepthCorrection	No	
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	60.8	degF
BS	Bit Size	WLSESSION	6.25	in
CBLO	Casing Bottom (Logger)	WLSESSION	20	ft
CDEN	Cement Density	EDTC-B	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DC_RT_ENABLE	Depth Correction Real-Time Enabled	DepthCorrection	No	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	0	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	380	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST	
MST	Mud Sample Temperature	Borehole	68	degF
PDAT	Permanent Datum	WLSESSION	GL	
RMS	Resistivity of Mud Sample	Borehole	500	ohm.m
SHT	Surface Hole Temperature	Borehole	68	degF
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
SP_SHIFT	SP Shift	AIT-M	100	mV
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Time Marked Depth	Depth	1500	s

Array Induction Two Foot Resistivity A20 (AT20) AIT-M		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A30 (AT30) AIT-M		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A60 (AT60) AIT-M		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A90 (AT90) AIT-M		
0.2	ohm.m	2000

Total Measured Depth	Borehole	1500	ft
TPOS	Tool Position: Centered or Eccentered	EDTC-B	Eccentered

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

Calibration Report			
AIT-M (Array Induction Tool - M) Calibration - Run 1A			
Primary Equipment :			
Array Induction Sonde - M	AMIS	275	
Auxiliary Equipment :			
AITM Rm/SP Bottom Nose	AMRM	275	

AIT Sonde Calibration - Test Loop Gain							
Master (EEPROM):		10:28:41 24-Sep-2013					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Test Loop Gain - 0		Master	1.000	0.950	1.012	1.050	
Test Loop Phase - 0	deg	Master	0	-3.000	0.556	3.000	
Test Loop Gain - 1		Master	1.000	0.950	1.014	1.050	
Test Loop Phase - 1	deg	Master	0	-3.000	0.718	3.000	
Test Loop Gain - 2		Master	1.000	0.950	1.018	1.050	
Test Loop Phase - 2	deg	Master	0	-3.000	0.047	3.000	
Test Loop Gain - 3		Master	1.000	0.950	1.014	1.050	
Test Loop Phase - 3	deg	Master	0	-3.000	0.104	3.000	
Test Loop Gain - 4		Master	1.000	0.950	0.995	1.050	
Test Loop Phase - 4	deg	Master	0	-3.000	0.090	3.000	
Test Loop Gain - 5		Master	1.000	0.950	0.990	1.050	
Test Loop Phase - 5	deg	Master	0	-3.000	0.055	3.000	
Test Loop Gain - 6		Master	1.000	0.950	0.999	1.050	
Test Loop Phase - 6	deg	Master	0	-3.000	0.408	3.000	
Test Loop Gain - 7		Master	1.000	0.950	1.012	1.050	
Test Loop Phase - 7	deg	Master	0	-3.000	0.067	3.000	

AIT Sonde Calibration - Sonde Error Correction							
Master (EEPROM):		10:28:41 24-Sep-2013					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-68.816	119.000	
Sonde Error Correction Quad - 0		Master	-----	-2250.000	-146.352	2250.000	
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	164.080	204.000	
Sonde Error Correction Quad - 1		Master	-----	-625.000	-187.698	625.000	
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	109.514	156.000	
Sonde Error Correction Quad - 2		Master	-----	-350.000	-176.242	350.000	
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	60.910	89.000	
Sonde Error Correction Quad - 3		Master	-----	-250.000	-82.183	250.000	
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	28.868	35.000	
Sonde Error Correction Quad - 4		Master	-----	-63.000	-15.107	63.000	
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	14.703	24.000	
Sonde Error Correction Quad - 5		Master	-----	-50.000	3.110	50.000	
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	9.695	15.000	
Sonde Error Correction Quad - 6		Master	-----	-30.000	-7.004	30.000	
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.521	5.000	
Sonde Error Correction Quad - 7		Master	-----	-30.000	8.836	30.000	

AIT Mud Calibration - Mud Calibration Gain							
Master (EEPROM):		10:28:41 24-Sep-2013					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Coarse Gain		Master	1.000	0.800	1.112	1.200	
Fine Gain		Master	1.000	0.800	1.113	1.200	

AIT Electronics Check - Thru Calibration Check							
Master (EEPROM):		10:28:41 24-Sep-2013	Before (Measured):	11:11:17 02-Oct-2013	After:		
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Thru Cal Mag - 0	V	Master	-----	0.366	0.617	0.854	
		Before	-----	0.366	0.617	0.854	

		After Before-Master After-Before	----- ----- -----	----- ----- -----	----- 0.000 -----	----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Phase - 0	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	137.000 137.000 ----- ----- -----	-170.814 -170.891 ----- -0.077 -----	-103.000 -103.000 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Mag - 1	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	0.762 0.762 ----- ----- -----	1.264 1.264 ----- 0.000 -----	1.778 1.778 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Phase - 1	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	136.000 136.000 ----- ----- -----	-171.887 -171.966 ----- -0.079 -----	-104.000 -104.000 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Mag - 2	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	0.372 0.372 ----- ----- -----	0.627 0.627 ----- 0.000 -----	0.868 0.868 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Phase - 2	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	132.000 132.000 ----- ----- -----	-175.473 -175.552 ----- -0.079 -----	-108.000 -108.000 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Mag - 3	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	0.420 0.420 ----- ----- -----	0.708 0.707 ----- -0.001 -----	0.980 0.980 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Phase - 3	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	131.000 131.000 ----- ----- -----	-176.231 -176.309 ----- -0.078 -----	-109.000 -109.000 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Mag - 4	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	0.804 0.804 ----- ----- -----	1.324 1.324 ----- 0.000 -----	1.876 1.876 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Phase - 4	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	125.000 125.000 ----- ----- -----	177.589 177.506 ----- -0.083 -----	-115.000 -115.000 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Mag - 5	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	1.176 1.176 ----- ----- -----	1.927 1.927 ----- 0.000 -----	2.744 2.744 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Phase - 5	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	122.000 122.000 ----- ----- -----	175.963 175.875 ----- -0.088 -----	-118.000 -118.000 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Mag - 6	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	1.176 1.176 ----- ----- -----	1.926 1.926 ----- 0.000 -----	2.744 2.744 ----- ----- -----	<div><div></div><div></div><div></div></div>
Thru Cal Phase - 6	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	121.000 121.000 ----- ----- -----	175.976 175.888 ----- -0.088 -----	-119.000 -119.000 ----- ----- -----	<div><div></div><div></div><div></div></div>



Thru Cal Mag - 7	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	0.846 0.846 ----- ----- -----	1.387 1.387 ----- 0.000 -----	1.974 1.974 ----- ----- -----	<div><div></div><div></div><div></div><div></div><div></div></div>
Thru Cal Phase - 7	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	115.000 115.000 ----- ----- -----	175.281 175.163 ----- -0.118 -----	-125.000 -125.000 ----- ----- -----	<div><div></div><div></div><div></div><div></div><div></div></div>
SPA Zero	mV	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	-50.000 -50.000 ----- ----- -----	-0.155 -0.139 ----- 0.016 -----	50.000 50.000 ----- ----- -----	<div><div></div><div></div><div></div><div></div><div></div></div>
SPA Plus	mV	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	941.000 941.000 ----- ----- -----	986.227 986.424 ----- 0.197 -----	1040.000 1040.000 ----- ----- -----	<div><div></div><div></div><div></div><div></div><div></div></div>
Temperature Zero	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	-0.050 -0.050 ----- ----- -----	0.000 0.000 ----- 0.000 -----	0.050 0.050 ----- ----- -----	<div><div></div><div></div><div></div><div></div><div></div></div>
Temperature Plus	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	0.870 0.870 ----- ----- -----	0.914 0.914 ----- 0.000 -----	0.960 0.960 ----- ----- -----	<div><div></div><div></div><div></div><div></div><div></div></div>

## APS-C (Accelerator Porosity Sonde - Version C) Calibration - Run 1A

Primary Equipment :	Accelerator Porosity Sonde element - Version C	APS-C	70
Auxiliary Equipment :	Minitron	MNTR	50081

## APS Minitron Yield Calibration - Minitron Beam Setpoint

Master (EEPROM):		16:53:42 23-Aug-2013						
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div></div>	
Minitron Beam Current Set Point	uA	Master	85.000	30.000	69.766	120.000	<div><div></div><div></div><div></div><div></div><div></div></div>	

## APS Plateau Setting - Detector HV Setpoints

Master (EEPROM):								16:53:42 23-Aug-2013							
Measurement		Unit	Phase	Nominal	Low Limit	Actual	High Limit								
Near HV - Plateau Setting		V	Master	1650.000	1400.000	1698.611	1900.000								
Far HV - Plateau Setting		V	Master	2000.000	1750.000	2039.525	2250.000								
Array HV - Plateau Setting		V	Master	2000.000	1750.000	1937.186	2250.000								

## APS Ratio Porosity Calibration - Calibration Ratio

Master (EEPROM):								16:53:42 23-Aug-2013							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div><div></div></div>								
Near Far Calibration Ratio	-	Master	0.925	0.800	0.967	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>								
Near Array Calibration Ratio	-	Master	1.030	0.900	1.064	1.170	<div><div></div><div></div><div></div><div></div><div></div></div>								
Near Far Calibration Ratio Up/Down Ratio	-	Master	1.000	0.970	0.999	1.030	<div><div></div><div></div><div></div><div></div><div></div></div>								
Near Array Calibration Ratio Up/Down Ratio	-	Master	1.000	0.970	0.996	1.030	<div><div></div><div></div><div></div><div></div><div></div></div>								

## APS Ratio Porosity Calibration - Slowing Down

Master (EEPROM):		16:53:42 23-Aug-2013					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div><div></div></div>
Array 1 Porosity- Down Measurement	ft3/ft3	Master	0.118	0.099	0.120	0.136	<div><div></div><div></div><div></div><div></div><div></div></div>
Array 2 Porosity- Down Measurement	ft3/ft3	Master	0.118	0.099	0.118	0.136	<div><div></div><div></div><div></div><div></div><div></div></div>
Average Slowing Down Time	us	Master	6.000	5.500	5.747	6.250	<div><div></div><div></div><div></div><div></div><div></div></div>
Array 1 Slowing Down Time Up/Down Ratio	-	Master	1.000	0.950	0.978	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>
Array 2 Slowing Down Time Up/Down Ratio	-	Master	1.000	0.950	0.972	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>

## APS Ratio Porosity Calibration - Sigma

Master (EEPROM):		16:53:42 23-Aug-2013					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Sigma - Down Measurement	cu	Master	27.50	20.00	27.44	35.00	
APS Ratio Porosity Calibration - Detector Background Count Rates							
Master (EEPROM):		16:53:42 23-Aug-2013		Before (Measured):		20:04:36 30-Sep-2013	
						After:	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Detector Count Rate	1/s	Master	30.000	1.000	32.830	50.000	
		Before	30.000	1.000	33.851	50.000	
		After	----	----	----	----	
		Before-Master	----	----	1.021	----	
		After-Before	----	----	----	----	
Far Detector Count Rate	1/s	Master	30.000	1.000	30.141	50.000	
		Before	30.000	1.000	30.529	50.000	
		After	----	----	----	----	
		Before-Master	----	----	0.388	----	
		After-Before	----	----	----	----	
Array-1 Detector Count Rate	1/s	Master	30.000	1.000	28.564	50.000	
		Before	30.000	1.000	29.471	50.000	
		After	----	----	----	----	
		Before-Master	----	----	0.907	----	
		After-Before	----	----	----	----	
Array-2 Detector Count Rate	1/s	Master	30.000	1.000	28.797	50.000	
		Before	30.000	1.000	29.587	50.000	
		After	----	----	----	----	
		Before-Master	----	----	0.790	----	
		After-Before	----	----	----	----	
Thermal Detector Count Rate	uA	Master	30.000	1.000	28.952	50.000	
		Before	30.000	1.000	31.754	50.000	
		After	----	----	----	----	
		Before-Master	----	----	2.802	----	
		After-Before	----	----	----	----	

EDTC-B (Enhanced Digital Telemetry Cartridge - Version B) Calibration - Run 1A							
Primary Equipment :							
Enhanced Digital Telemetry Cartridge - B			EDTC-B		8592		
Calibration Parameter :							
Plus Reference (Jig minus background reference)			165				
EDTC-B Accelerometer Calibration - EDTC-B Accelerometer Calibration							
Before (Measured):		11:10:42 02-Oct-2013					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement	ft/s2	Before	32.19	31.53	32.06	32.84	
EDTC-B Memory Data - EDTC-B Memory Data							
Master (EEPROM):		11:06:26 02-Oct-2013					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Initial PMT HV	V	Master			1618.000		
Accelerometer Serial Number		Master			660		
Accelerometer Coefficients - 0		Master	----	----	2.950	----	
Accelerometer Coefficients - 1		Master	----	----	0.000	----	
Accelerometer Coefficients - 2		Master	----	----	0.000	----	
Accelerometer Coefficients - 3		Master	----	----	0.000	----	
Accelerometer Coefficients - 4		Master	----	----	0.000	----	
Accelerometer Coefficients - 5		Master	----	----	0.000	----	
Accelerometer Coefficients - 6		Master	----	----	0.000	----	
Accelerometer Coefficients - 7		Master	----	----	-0.010	----	
Accelerometer Coefficients - 8		Master	----	----	0.000	----	
Accelerometer Coefficients - 9		Master	----	----	0.000	----	
Accelerometer Coefficients - 10		Master	----	----	0.000	----	
Accelerometer Coefficients - 11		Master	----	----	0.000	----	
Gamma-Ray Detector Serial Number		Master			7755		
EDTC-B Gamma-Ray Calibration - Gamma Ray Coefficients							
Before (Measured):		17:25:33 25-Nov-2013		After:			

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Gamma Ray Gain		Before	1.000	0.900	1.052	1.100	
		After	----	----	----	----	
		After-Before	----	----	----	----	

## EDTC-B Gamma-Ray Calibration - Gamma Ray Accumulations

Before (Measured):		17:25:33 25-Nov-2013		After:			
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before		0	51.222	120.000	
		After	----	----	----	----	
		After-Before	----	----	----	----	
RGR Plus Measurement	gAPI	Before	165.000	150.000	156.886	180.000	
		After			NOT DONE		
		After-Before	----	----	----	----	

## LEH-QT (Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor) Calibration - Run 1A

Primary Equipment :							
Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor				LEH-QT			

## HTEN Master Calibration - HTEN Master Calibration

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HTEN Shop Gain		Master	1.000	0.800	NOT DONE	4.500	
HTEN Shop Offset	lbf	Master	0	-1000.000	NOT DONE	1000.000	

## HTEN Before Calibration - HTEN Before Calibration

Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RHTE Zero Measurement - 0	lbf	Before	----	----	----	----	
RHTE Plus Measurement - 0	lbf	Before	----	----	----	----	
HTEN Gain - 0		Before	----	----	----	----	
HTEN Offset - 0	lbf	Before	----	----	----	----	

Company:	LAMONT DOHERTY EARTH OBSERVATORY	Schlumberger
Well:	TW #3	
Field:	WILDCAT	
County:	ROCKLAND	
State:	NEW YORK	

PLATFORM EXPRESS  
ARRAY INDUCTION  
GAMMA RAY