

BAKER HUGHES

COMPENSATED Z-DENSITOCSM
GAMMA RAY LOG
CALIPER LOG
(BULK DENSITY PRESENTATION)

Baker Atlas

FILE NO: _____ COMPANY: SIERRA GEOTHERMAL POWER, INC.
WELL: ALUM 25-29
APN NO: _____ FIELD: ALUM
27-008-80074 COUNTY: ESMERALDA STATE: NEVADA

Ver. 3.87 LOCATION: SHEL: 2235.18' FSL & 938.11' FWL
TIGHT HOLE SEC 29 TWP 1N RGE 28.5 E
HDL OTHER SERVICES
CN CH
XMAC
STAR/CBIL

PERMANENT DATUM G.L. _____ ELEVATION 4803.57 FT
LOG MEASURED FROM K.B. _____ 18.0 FT ABOVE P.D.
DRILL MEAS. FROM K.B. _____ ELEVATIONS:
KB 4919.57 FT
DF
OL 4803.57 FT

DATE	25-NOV-2008		
RUN	TRIP	2	3
SERVICE ORDER	575896		
DEPTH DRILLER	3314 FT		
DEPTH LOGGER	3312 FT		
BOTTOM LOGGED INTERVAL	3308 FT		
TOP LOGGED INTERVAL	2100 FT		
CASING DRILLER	10.75 IN	2250 FT	
CASING LOGGER	2280 FT		
BIT SIZE	9.875 IN		
TYPE OF FLUID IN HOLE	LSND		
DENSITY	8.8 LB/G	40 S	
PH	9.7	6 G3	
SOURCE OF SAMPLE	FLOWLINE		
RM AT MEAS. TEMP.	0.885 G/HM	67.72 DEGF	
RM AT MEAS. TEMP.	0.826 G/HM	67.54 DEGF	
RM AT MEAS. TEMP.	1.018 G/HM	68.90 DEGF	
SOURCE OF RMF	MEASURED	MEASURED	
RM AT BHT	0.288 G/HM	222 DEGF	
TIME SINCE CIRCULATION	18.75 HOURS		
MAX. RECORDED TEMP.	222 DEGF		
EQUIP. NO.	IN-4232	FALLON, NV	
RECORDED BY	C. PEAVEY		
WITNESSED BY	J. HANBLIN		

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

REMARKS

RUN 2 TRIP 3: CVOL AND BVOL ARE PRESENTED IN CUBIC FEET
CVOL WAS COMPUTED USING 8.825" CASING
CALIPER WAS VERIFIED IN CASING

MATRIX = SANDSTONE
RHO M: 2.85 G/CC AND RHO F: 1.0 G/CC

A MAXIMUM READING THERMOMETER WAS RUN AS WELL AND THE MAXIMUM TEMPERATURE IT REACHED WAS: DEGF

THANK YOU FOR CHOOSING BAKER ATLAS!
CREW: R. DANKLEFSEN AND J. HAYCOCK
RIG: ENSIGN 561

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	3	SRV	38440	10165644	FBT

2	3	WELL	SECTION	10217216	FREE
2	3	TRM	3681XA	10217216	FREE
2	3	WTS	3514XB	10200359	FREE
2	3	DSL	1328XA	10203000	DE-CENTRALIZED
2	3	CN	2446XA	178881	DE-CENTRALIZED
2	3	ZDL	2234XA	10334813	RWD-DEVICE

MAIN LOG 5"/100FT SCALE (BULK DENSITY)

ECLIPS 6.01 Feb 21, 2008
Updates: 1,43

Wed Nov 25 11:22:40 2009

Perplf /main/62

Cplot

Pdf_Cpp /main/16

Fileview 5.42

PARAMETER AND FILTER SUMMARY REPORT

File: /data/575996/k771110.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 1852.500 ft BOTTOM DEPTH: 3320.250 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
Y AXIS CALIPER	FILTER ()	medium (1)		TOP	BOTTOM
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.l)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1a*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2a*)	medium		"	"
	FILTER (sof1*)	medium		"	"
ZDL HIGH RES	FILTER (hrd1*)	light		"	"
	FILTER (hrd1a*)	light		"	"
	FILTER (hrd2*)	light		"	"
	FILTER (hrd2a*)	light		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	8.625	1n	TOP	BOTTOM
BIT SIZE	BIT SIZE	9.875	1n	"	"

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ZDL	DENK TRACKING	ON		TOP	BOTTOM

CURVE DESCRIPTION REPORT

CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:BIT	BIT	Nov 25 09:46:46 2009	BIT SIZE
F1:BYOL	BYOL	Nov 25 09:46:46 2009	BOREHOLE VOLUME
F1:CAL	CAL	Nov 25 09:46:46 2009	CALIPER
F1:CYOL	CYOL	Nov 25 09:46:46 2009	CEMENT VOLUME
F1:GR	GR	Nov 25 09:46:46 2009	GAMMA RAY
F1:PE	PE	Nov 25 09:46:46 2009	PHOTO ELECTRIC CROSS-SECTION
F1:TEN	TEN	Nov 25 09:46:46 2009	DIFFERENTIAL TENSION
F1:ZCOR	ZCOR	Nov 25 09:46:46 2009	DENSITY CORRECTION
F1:ZDEN	ZDEN	Nov 25 09:46:46 2009	FORMATION BULK DENSITY

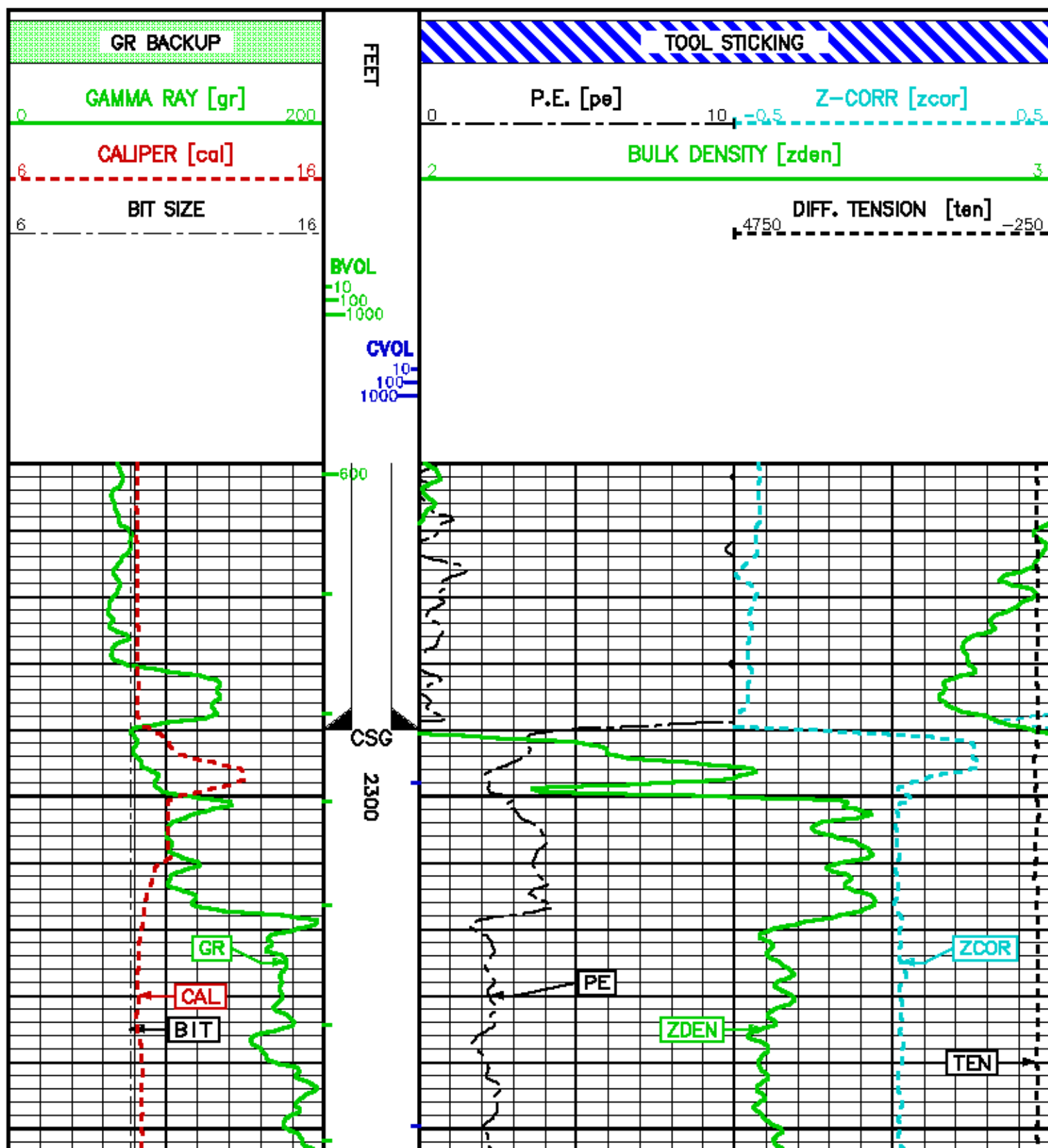
CURVE MEASURE POINT OFFSET

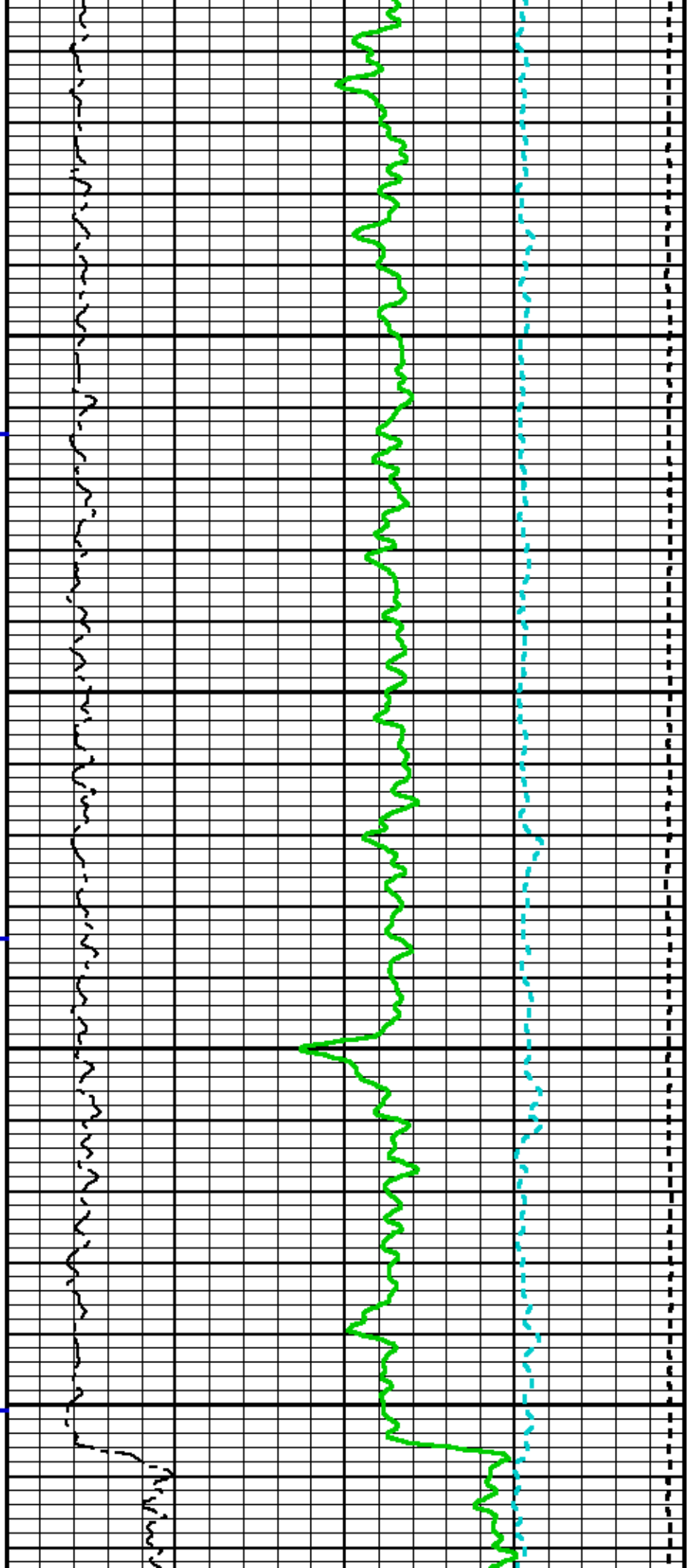
CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	21.38	TEN	0.00	ZDEN	3.50
CAL	4.00	PE	3.50	ZCOR	3.50		

Presentation : opul:/dat/a/575996/ZDLCN_BULK_MAIN.pdf [5"/100' Scale]
 Plot Interval : 2250 - 3319.5 Feet

Data File 1 : F1 : opul:/dat/a/575996/9_ZDL-CN_MAIN.rtf
 Created On : Nov 25 09:46:46 2009
 Company : SIERRA GEOTHERMAL POWER, INC.
 Well : ALUM 25-29
 Field : ALUM
 File Interval : 1818 - 3319.5 Feet
 Out : k7711

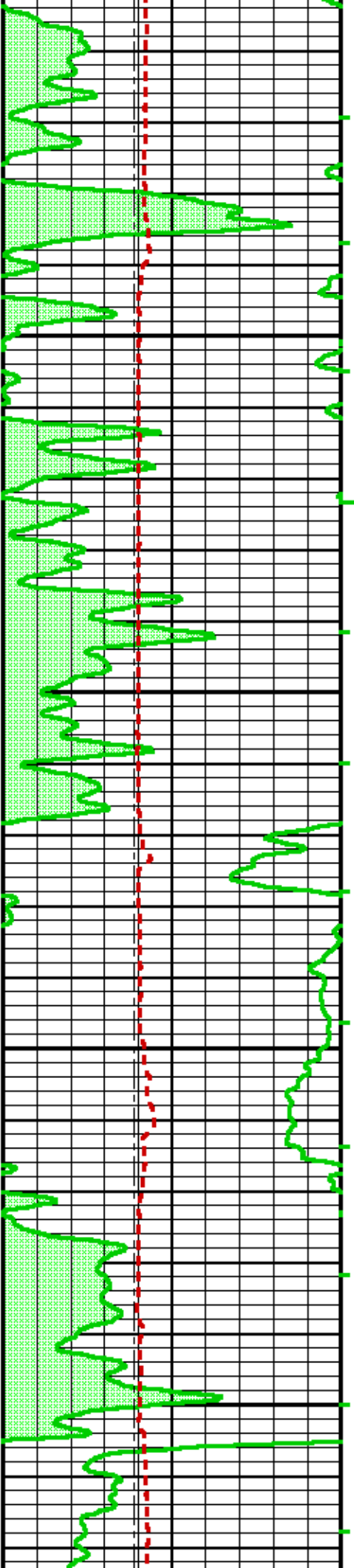


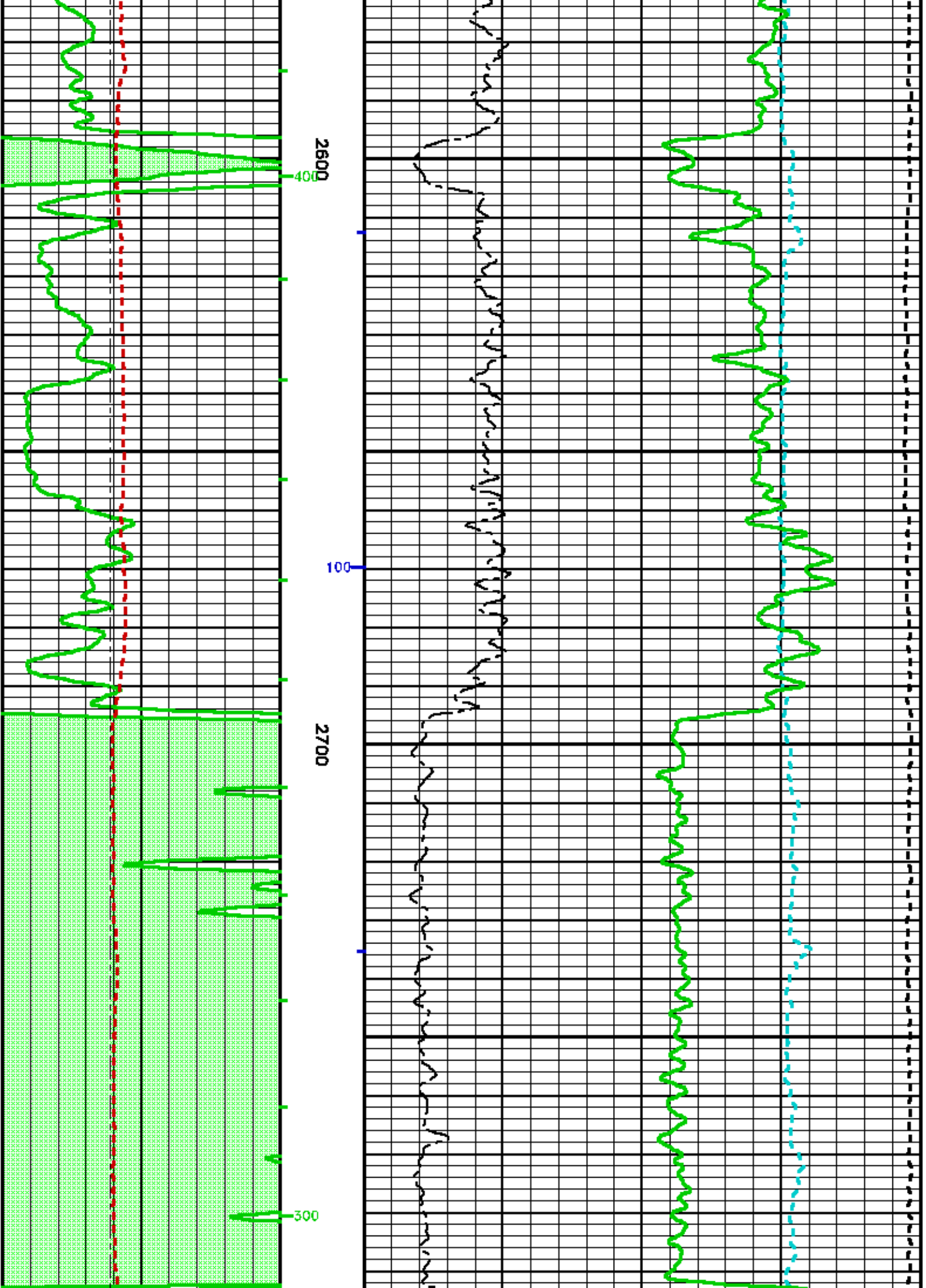


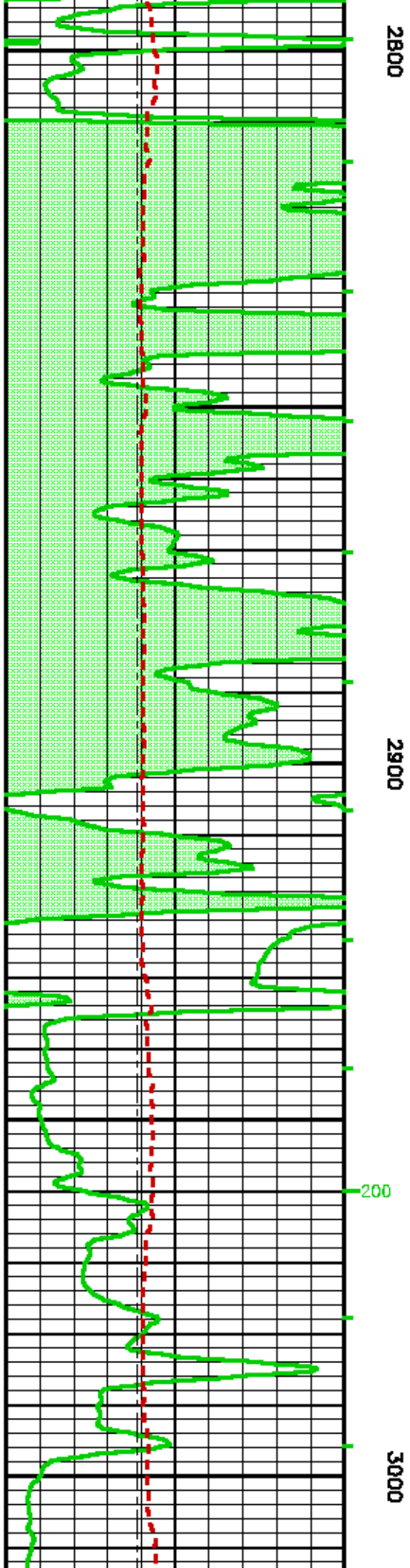
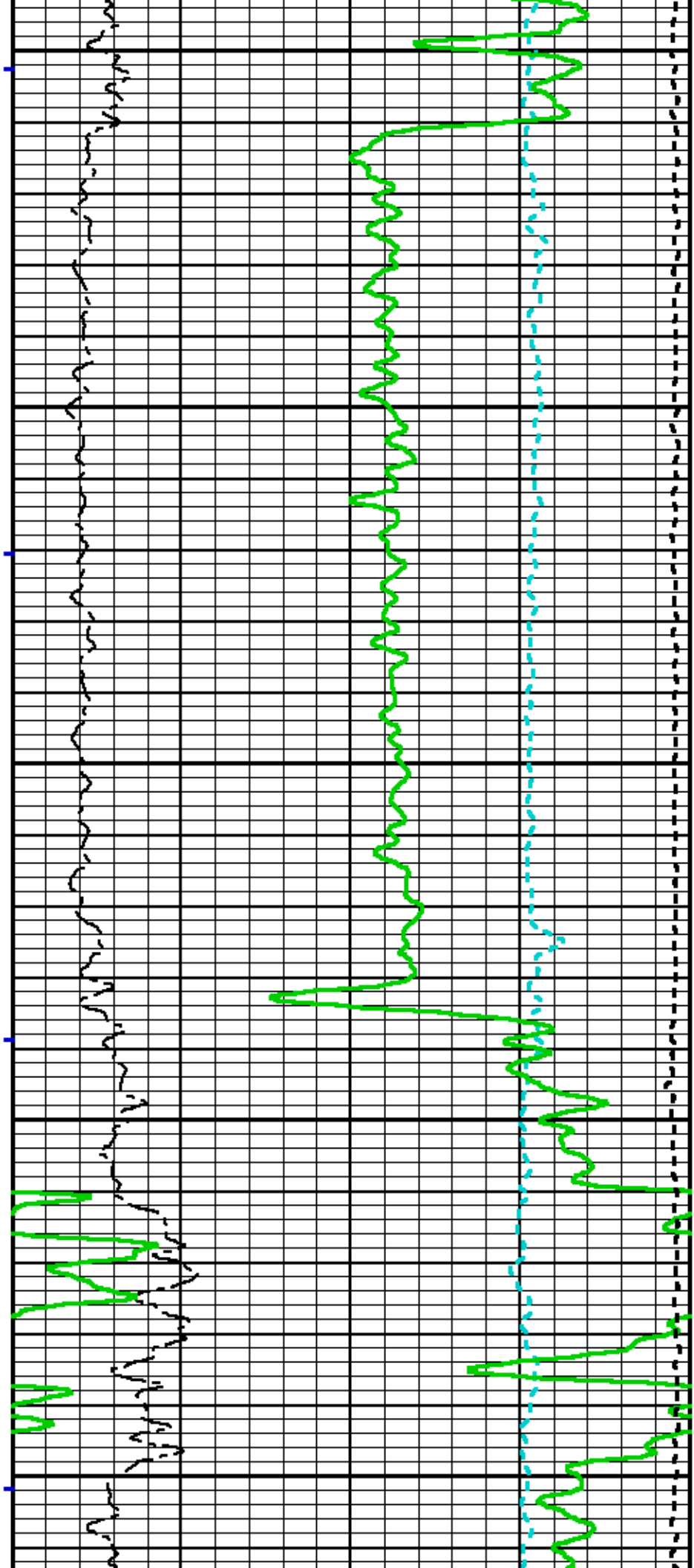
2400

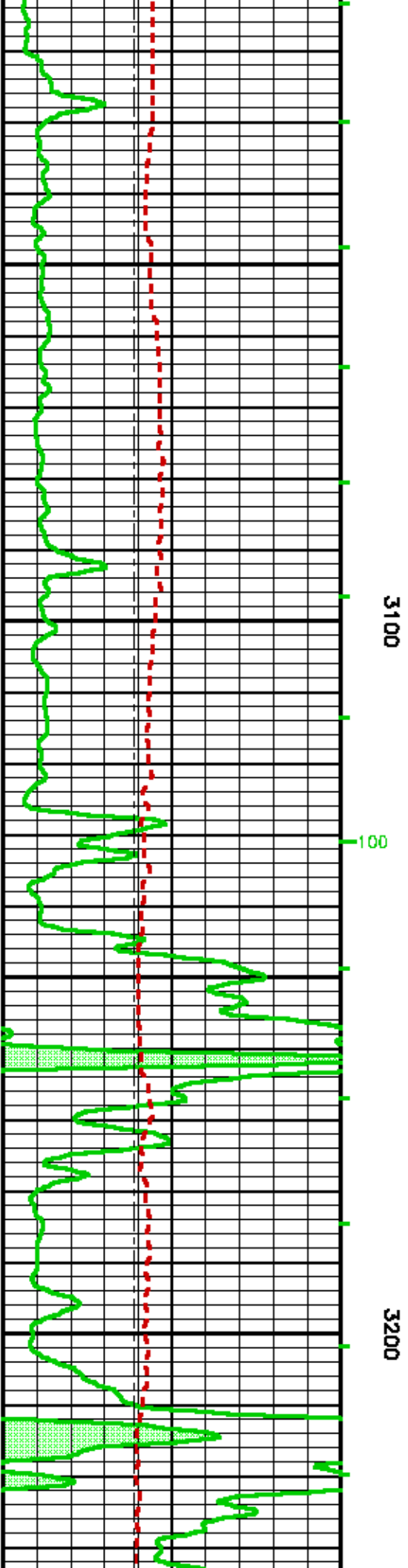
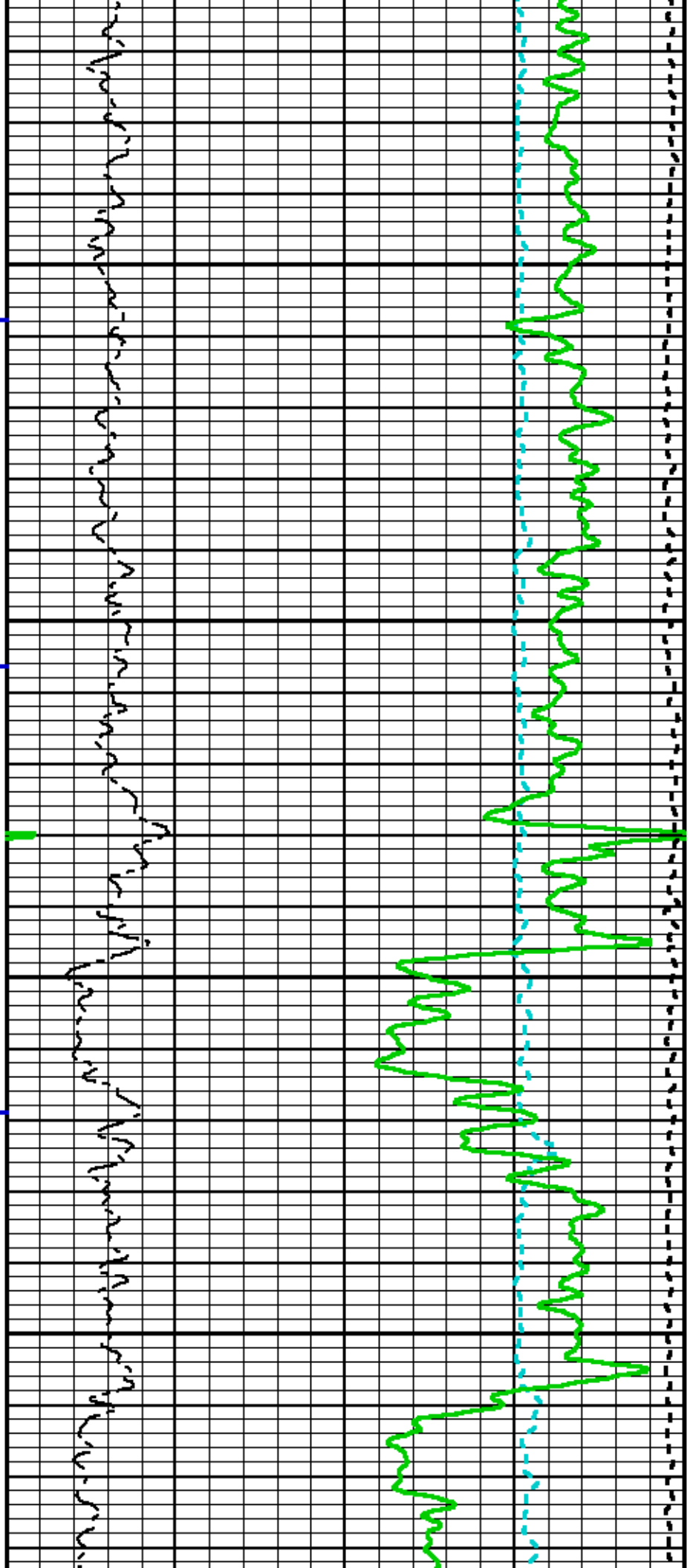
2500

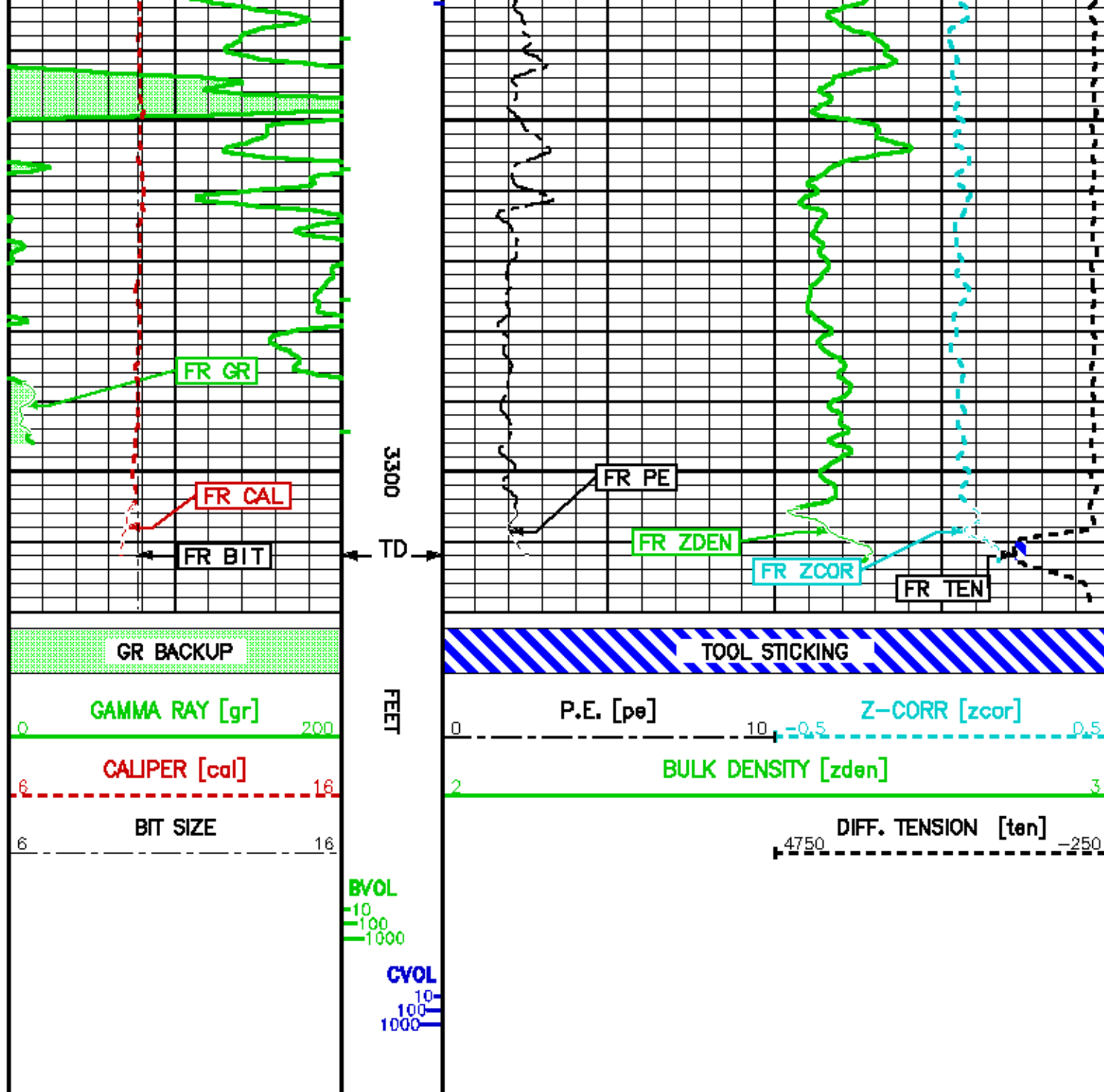
500











CALIBRATION / VERIFICATION SUMMARY

Source File: /data/575898/k7711a1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XA 10203000

DATE/TIME PERFORMED: Sun Oct 25 14:28:31 2009

UNIT #: 3885TD ML4232

CALB JIG #: 4702NK DA-321

	BACKGROUND	CALBRTR ON	GR DIFF	MULT	BACKGROUND	CALBRTR ON	CALBRTR
	(cts/s)	(cts/s)	(cts/s)		(gAPI)	(gAPI)	(gAPI)
GR	269.02	1162.96	893.9	0.168	45.14	195.14	150
			890.0				

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1329XA 10203000

DATE/TIME PERFORMED: Sun Oct 25 14:33:28 2009

UNIT #: 3885TD ML4232

VERI JIG #: 4702NK DA-321

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	269.44	1191.73	0.168	45.21	199.97	154.76
						140.00 160.00

GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1329XA 10203000

DATE/TIME PERFORMED: Tue Nov 24 23:50:39 2009

DAYS SINCE CAL: 30

UNIT #: 3885TD ML4232

VERI JIG #: 4702NK DA-321

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	255.24	1118.22	0.168	42.83	187.64	144.81
						144.78 184.78

GR AFTER LOG VERIFICATION SUMMARY

TOOL #: 1329XA 10203000

DATE/TIME PERFORMED: Wed Nov 25 02:09:11 2009

DAYS SINCE CAL: 30

UNIT #: 3885TD ML4232

VERI JIG #: 4702NK DA-321

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	303.09	1132.69	0.168	50.86	190.06	139.21
						134.81 154.81

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2234XA 10334913

DATE/TIME PERFORMED: Sun Oct 25 11:23:52 2009

UNIT #: 3885TD ML4232

	SMALL RING (in)	LARGE RING (in)	MULT	ADD	SMALL RING (in)	LARGE RING (in)
CALIPER	1746.0	2563.6	0.00749	-5.20505	7.875	14.000

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10334913

DATE/TIME PERFORMED: Wed Nov 25 09:15:37 2009

DAYS SINCE CAL: 30

UNIT #: 3885TD ML4232

	I.D. (in)	MULT	ADD	I.D. (in)
CALIPER	2089.2	0.00749	-5.60111	10.060

CAL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10334913

DATE/TIME PERFORMED: Wed Nov 25 10:23:05 2009

DAYS SINCE CAL: 30

UNIT #: 3885TD ML4232

	I.D. (in)	MULT	ADD	I.D. (in)
CALIPER	2090.8	0.00749	-5.60111	10.062
				9.590 10.000

ZDL PRIMARY CALIBRATION SUMMARY

TOOL: 2234XA 10334913

DATE/TIME PERFORMED: Sun Oct 25 11:51:34 2009

UNIT: 3885TD ML4232

CALB BLKS: 2225XA 094299

CS SRC: 4705XA 27781B

	SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS BKGD (cps)		
	225.3	225.1	1363.3	1697.9		
	220.0 230.0	220.0 230.0				
	SS (cps)	LS (cps)	SHR	DEN (g/cm3)	CORR (g/cm3)	PE (b/e)
MG (LO PE)	27679.6	14416.8	0.615	1.699	0.003	2.150
			0.265 0.683			
AL	16156.7	1444.9		2.695	-0.009	
AL + SHIM	22362.0	2545.6		2.613	0.157	
MG + SHIM (HI PE)	13486.0	6894.9	0.248			8.700
			0.210 0.270			
RATIO AL + SHIM/AL	1.38	1.76				
	1.32 1.42	1.64 1.84				
RATIO MG/AL	1.71	9.98				
	1.66 1.78	9.40 10.20				

ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10334913

DATE/TIME PERFORMED: Wed Nov 25 06:16:23 2009

DAYS SINCE CAL: 30

UNIT #: 3885TD ML4232

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	1695.0	226.3	1270.7
	1597.9 1797.9	220.0 230.0	1100.0 1550.0
SS	1351.6	228.2	1303.7
	1283.3 1463.3	220.0 230.0	1100.0 1550.0
	LV (V)	PAD CURRENT (mA)	
	5.0	72.9	
	4.8 5.2	60.0 120.0	

ZDL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10334913

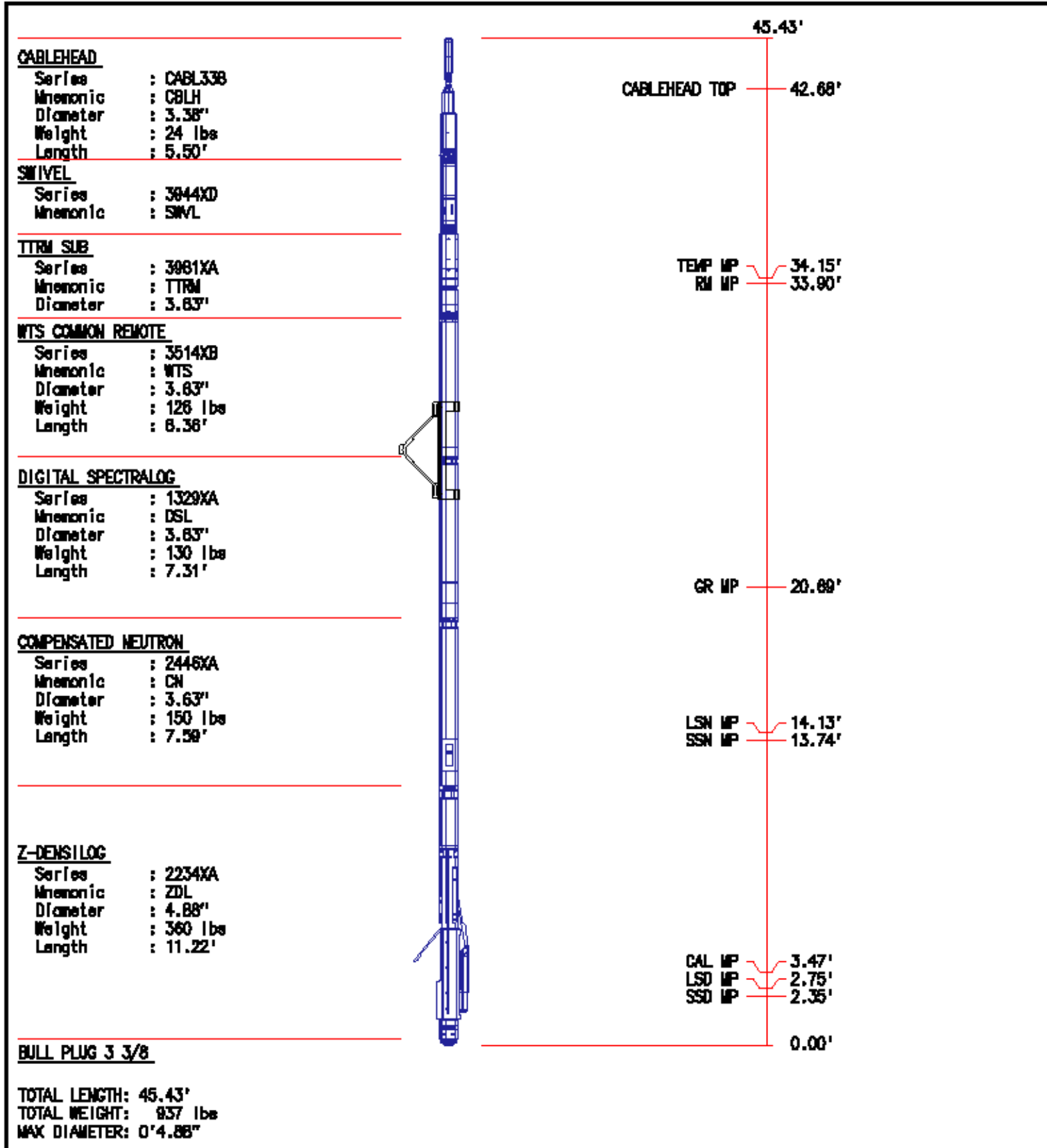
DATE/TIME PERFORMED: Wed Nov 25 10:54:03 2009



DAYS SINCE CAL: 31

UNIT #: 3885TD ML4232

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	1686.5	224.0	1269.2
	1597.9 1797.9	220.0 230.0	1100.0 1550.0
SS	1349.5	223.1	1294.1
	1283.3 1463.3	220.0 230.0	1100.0 1550.0
	LV (V)	PAD CURRENT (mA)	
	5.0	66.0	
	4.8 5.2	60.0 120.0	

INSTRUMENT CONFIGURATION



 Baker Atlas 	COMPANY <u>SIERRA GEOTHERMAL POWER, INC.</u> WELL <u>ALUM 25-29</u> FIELD <u>ALUM</u> COUNTY <u>ESMERALDA</u> STATE <u>NEVADA</u>	FILE NO: _____ API NO: <u>27-009-80074</u>
	LOCATION: SHL: 2235.18' FSL & 938.11' FWL SW/C	ELEVATIONS: KB 4819.57 FT DF GL 4803.57 FT



SEC 29 TWP 1N RGE 38.5 E

DATE 25-NOV-2009