

IT

BUZZARD CREEK FIELD TYPE LOG 077-08753

COGCC Document Number 2056078

04-18-2016

**DUAL INDUCTION
GUARD LOG**

COMPANY ME SA HYDROCARBONS, INC
WELL BUZZARD CREEK 14 8
COUNTY ME SA STATE COLORADO
Sect 4 Twp 9S Rge 9SW

GROUND LEVEL Elev 7407 K B 7422
Log measured from K B '5 ft above param datum D F 742
Drilling measured from KELLY BUSHING G L 7407

DATE 04-17-2002

Run No ONE

Depth - Driller 8840

Depth - Logger 8836

Bottom - Logged Interval 8833

Top - Logged Interval 8833

Casing - Driller 8 625 @ 75 F

Casing - Logger 8 625 @ 75 F

Bit Size 7 875

Type Fluid in Hole PHIPA

Dens | Visc 9.5 | 40

Ph | Fluid Loss 9.5 | 9.2

Source of Sample MUD PIT

Rm @ Meas Temp 0.50 @ 83 F

Rmf @ Meas Temp 0.57 @ 75 F

Rmc @ Meas Temp 0.52 @ 77 F

Source Rmf | Rmc MEAS | MEAS

Rm @ BHT 0.200 @ 218 F

Time Since Circ 0700 4:7

Time on Bottom 1:345 4:17

Max Rec Temp 2:9 F @ TD

Equip | Location 5081 | GJ

Recorded By S GOODNOUGH

Witnessed By K COLONY

Other Services SD/DSN

COUNTY ME SA FIELD BUZZARD CREEK UNIT STATE COLORADO

WELL BUZZARD CREEK 14-8

COMPANY ME SA HYDROCARBONS, INC

077-8753

SURFACE LOCATION
689 FNL & 660 FEL
BOTTOM HOLE LOCATION
945 FNL & 658 FEL

OIL & GAS COMMISSION

Service Ticket No	1803730	API Serial No	05-077-0875300	PGM Version	XL v4 63		
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLES			RESISTIVITY SCALE CHANGES				
Date Sample No		Type Log	Depth	Scale Up Hole	Scale Down Hole		
Depth - Driller							
Type Fluid							
in Hole							
Dens Visc							
Ph Fluid Loss							
Source of Sample							
			RESISTIVITY EQUIPMENT DATA				
Rm @ Meas Temp	⊗	⊗	Run No	Tool Type & No	Pad Type	Tool Pos	Other
Rmf @ Meas Temp	⊗	⊗	ONE	DILT #109481	N/A	1.5 SO	
Rmc @ Meas Temp	⊗	⊗	ONE	SGRD #Y109481	N/A	1.5" SO	
Source Rmf Rmc	CALC	CALC					
Rm @ BHT	0.200	⊗ 218 F	⊗				
Rmf @ BHT	0.228	⊗ 218 F	⊗				
Rmc @ BHT	0.208	⊗ 218 F	⊗				
EQUIPMENT DATA							
GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No	ONE	Run No		Run No	ONE	Run No	ONE
Serial No	108617	Serial No		Serial No	IY65PG27	Serial No	108736
Model No	NGRT	Model No		Model No	SDL	Model No	DSN-II
Diameter	3 625"	No of Cant		Diameter	4.5	Diameter	3 625"
Detector Model No	102A	Spacing		Log Type	GAMMA	Log Type	THERMAL
Type	SCINT			Source Type	CS137	Source Type	AM241BE
Length	4	LSA [Y/N]		Serial No	2189 GW	Serial No	DSN-80
Distance to Source	10	FWDA [Y/N]		Strength	1.5 CI	Strength	19.5 CI
LOGGING DATA							

GENERAL			GAMMA			ACOUSTIC			DENSITY			NEUTRON			
Run	Depth		Speed	Scale		Scale			Scale			Scale			
No	From	To	Ft/Min	L	R	L	R	Matrix	L	R	Matrix	L	R	Matrix	
ONE	TD	CSG	REC	0	150				30%	-10%	2.68	30%	-10%	SAND	
											GM/CC				
BUZZARD CREEK FIELD TYPE LOG 077-08753															
DIRECTIONAL INFORMATION															
Maximum Deviation		20	deg @		KOP										
Remarks															
DIND-SDL-DSN-GR WERE RUN IN COMBINATION															
A H V CALCULATED FOR 4 5" CASING															
CHLORIDES REPORTED 5300 PPM															
HOLE RUGOSITY AND TENSION PULLS AFFECT THE TOOLS RESPONSE															
GAMMA API OF 213 WAS USED AS REQUESTED															
AHVT = 2388 250 FT^3 BHVT = 3198 372 FT^3 (CALCULATED FROM T.D TO SURFACE CASING)															
MAXIMUM HOLE DEVIATION = 20 DEGREES															
YOUR CREW TODAY: S. MILLER, A CARR RIG: TRUE #19															
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, GRAND JUNCTION (970)523-3600															
<p>HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA CONVERSION OF LOG DATA TO PHYSICAL TOOL PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS OR RECOMMENDATIONS AGREE THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT FOR ANY LOSS, DAMAGES OR EXPENSE RESULTING FROM THE USE THEREOF.</p> <p style="text-align: right;">HALLIBURTON</p>															

Current EXCELL-2000 Parameter Values

Depth: 419.417

Date: 17-Apr-2002 15:50

Service Number: 2100

Software Version: 4.64

Mnemonic	Tool	Parameter Description	Value	Units
PERF	DITSHD	PERFORATED INTERVAL	NO	
TD	DITSHD	TOTAL DEPTH	8836	FT
CS_ANT	DITSHD	CASING DEPTH (FOR ANNOTATION)	1513.	FT
GR_OK	GAMMA	DO GAMMA CALCULATIONS?	YES	
CASED	SHARED	CASED HOLE?	NO	
CASEOD	SHARED	CASING DIAMETER (OD)	4.5	Inches
MUDWT	SHARED	BOREHOLE FLUID WEIGHT	9.5	Pounds/Gal
GRSO	GAMMA	GAMMA RAY STANDOFF	0	Inches
BS	SHARED	BIT SIZE	7.875	Inches
DSN_OK	DSN_II	DO DSN II CALCULATIONS?	YES	
DRILL	DSN_II	TPL - NEUTRON IN SLEEVE?	NO	
BADHOL	DSN_II	DSN BAD HOLE CORRECTION	NO	
NLITH	DSN_II	NEUTRON LITHOLOGY	SAND	
DSNSO	DSN_II	DSN STANDOFF	0	Inches
DSNTMP	DSN_II	DSN II TEMPERATURE CORRECTION	NONE	
DSNPRS	DSN_II	DSN II PRESSURE CORRECTION	NONE	
RHOFLU	SHARED	FLUID DENSITY	1.	Grams/CC
XPHLOC	XP_RWA	CROSSPLOT SELECTION FOR XPHI	XPLT	
ARCHA	XP_RWA	ARCHIE A	0.62	
ARCHM	XP_RWA	ARCHIE M	2.15	
FSEL	XP_RWA	POROSITY SELECTION FOR F (RWA)	DEN	
SDL_OK	SDL	DO SDL CALCULATIONS?	YES	
BARITE	SDL	ANY BARITE IN MUD?	YES	
AIR	SDL	AIR FILLED BOREHOLE?	NO	
RHOMAT	SDL	MATRIX DENSITY	2.68	Grams/CC
CAL_OK	CALSDL	DO CALIPER CALCULATIONS?	YES	
AHVOK	CALSDL	DO ANNULAR VOLUME CALCULATION?	YES	
DI_OK	DIND	DO DUAL INDUCTION CALCULATION?	YES	
SG_OK	SGRD	DO SHORT GUARD CALCULATIONS?	YES	

MAIN CONDUCTIVITY PASS



Version No 4 64 | hc 3 0

Date File mesa_bcu14-8trp 3 cis

Format File /field_data/data2/mesa_bcu14-8trp/DIL2IN.spc

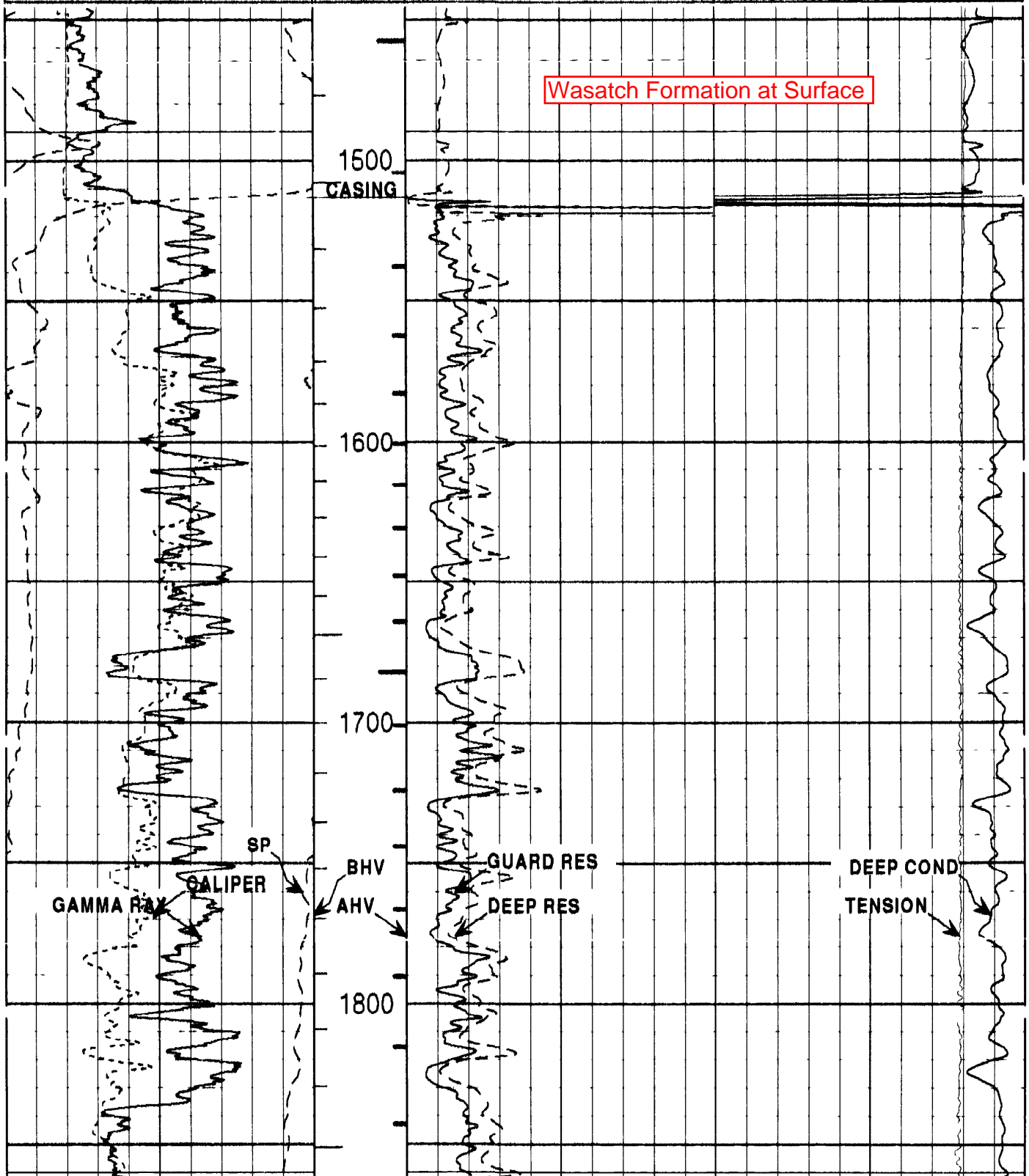
Plot Time 2002-04-17 16 25 38

Log Time 2002-04-17 13 47 54

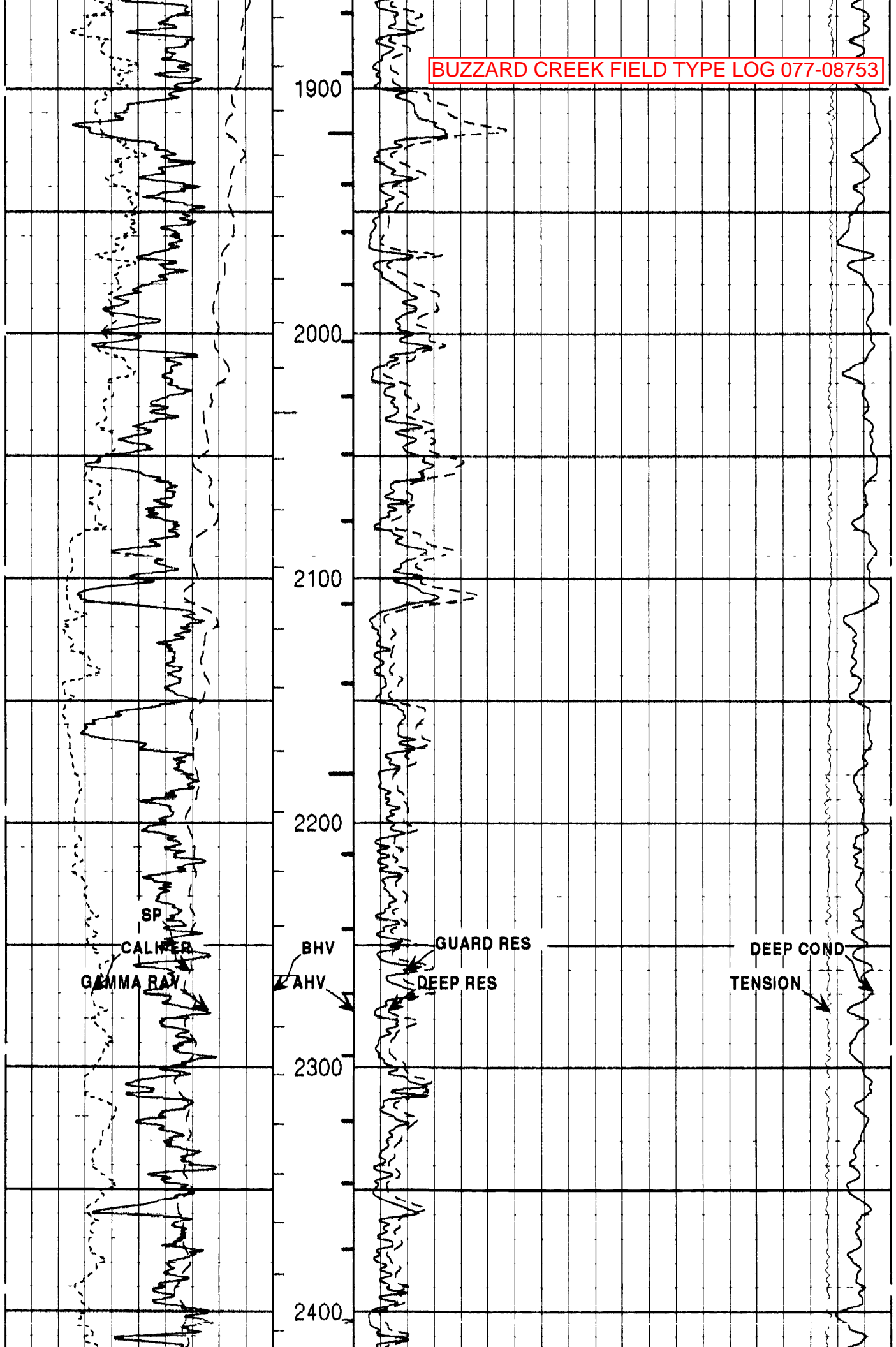
Top Depth 1444 83

Bottom Depth 8847 50

GAMMA RAY APICOUNTS CALIPER INCHES SP -ITD+	AHV FT BHV FT 1600 FT	DEEP OHM-M GUARD RES OHM-M	TENSION POUNDS DEEP COND MMHO
0 16	180 50 160 50	100 10000 100 500	0 0



BUZZARD CREEK FIELD TYPE LOG 077-08753

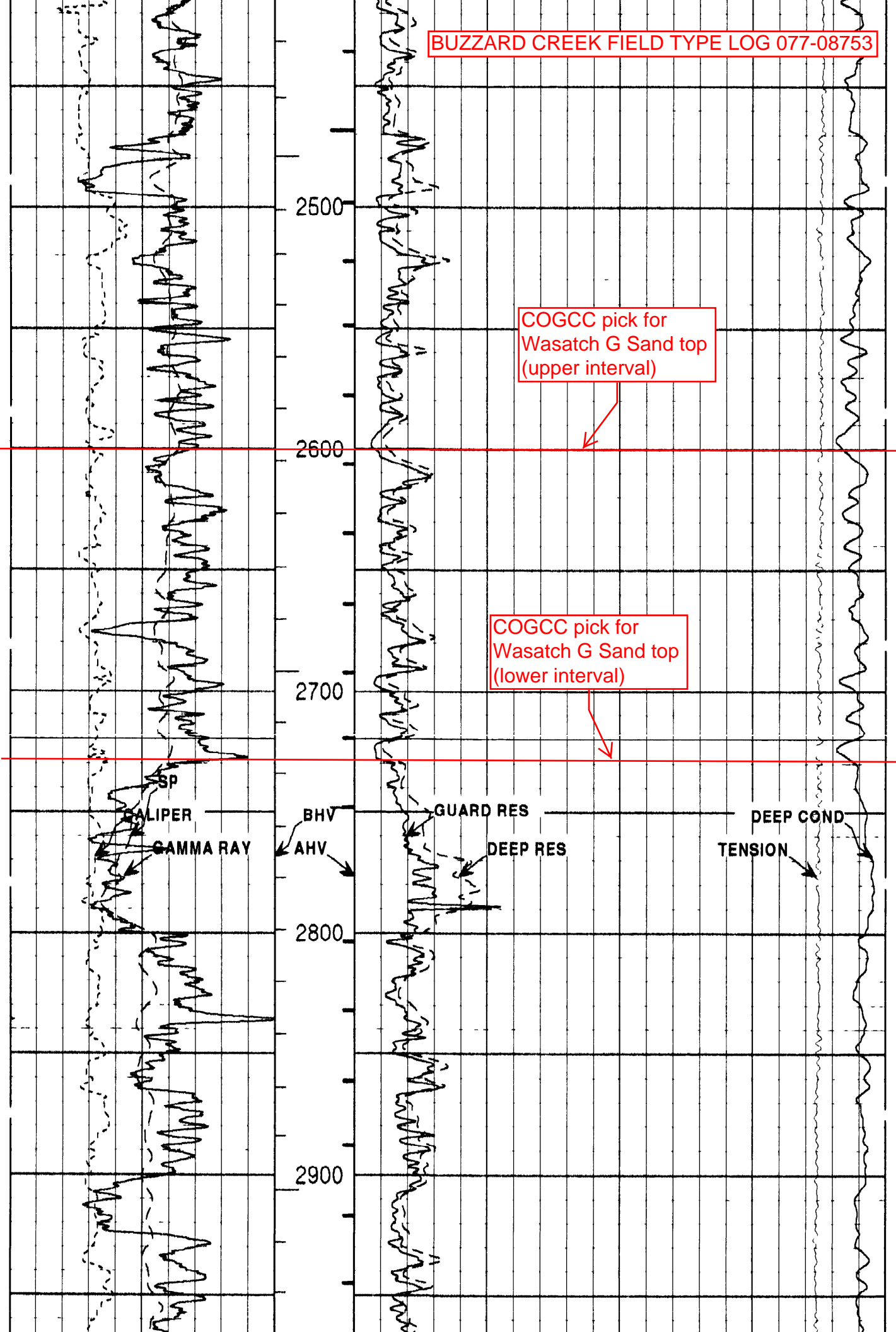


SP
CALIBER
GAMMA RAY

BHV
AHV

GUARD RES
DEEP RES

DEEP COND
TENSION



COGCC pick for
Wasatch G Sand top
(upper interval)

COGCC pick for
Wasatch G Sand top
(lower interval)

SP
CALIPER

GAMMA RAY

BHV

AHV

GUARD RES

DEEP RES

DEEP COND

TENSION

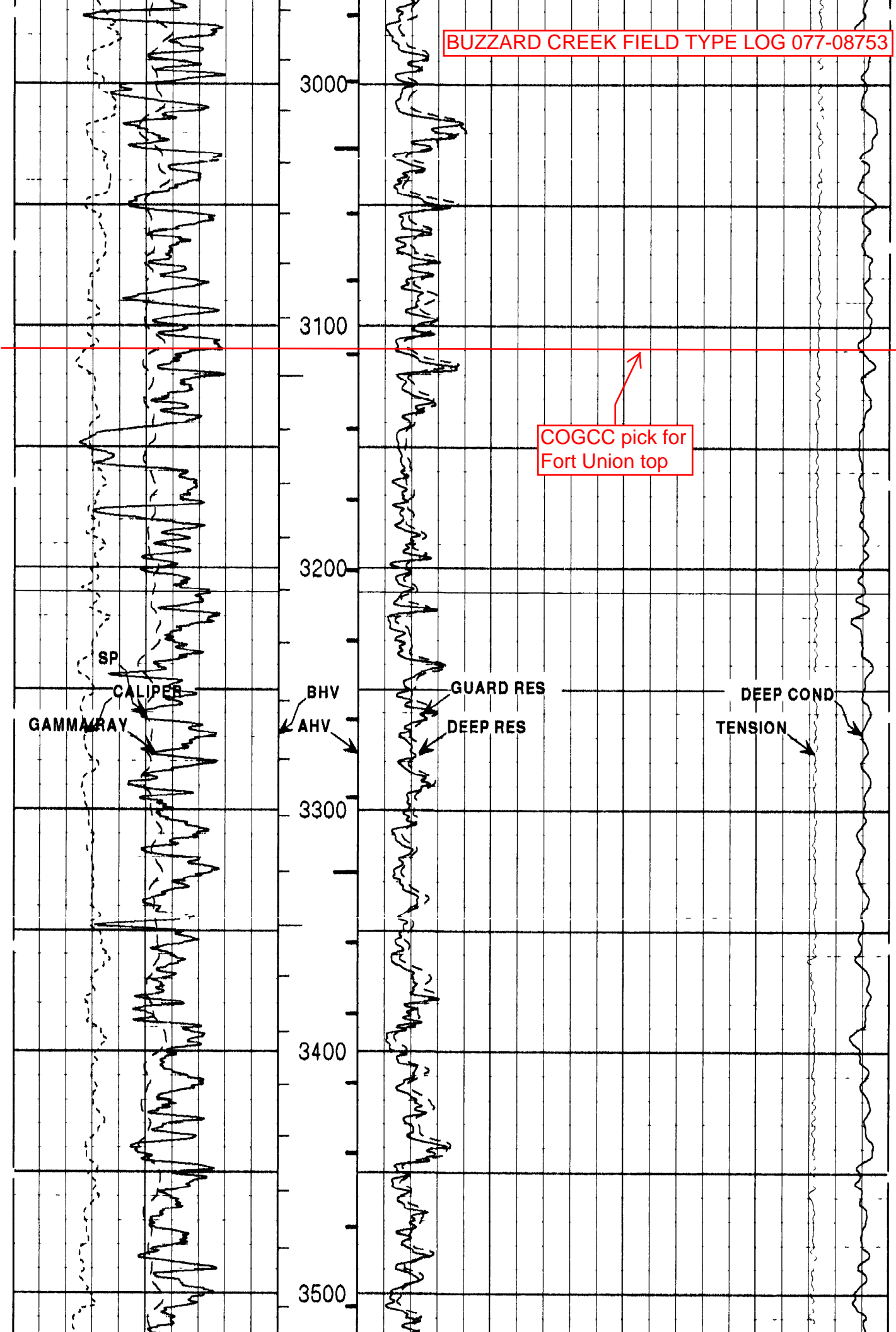
2500

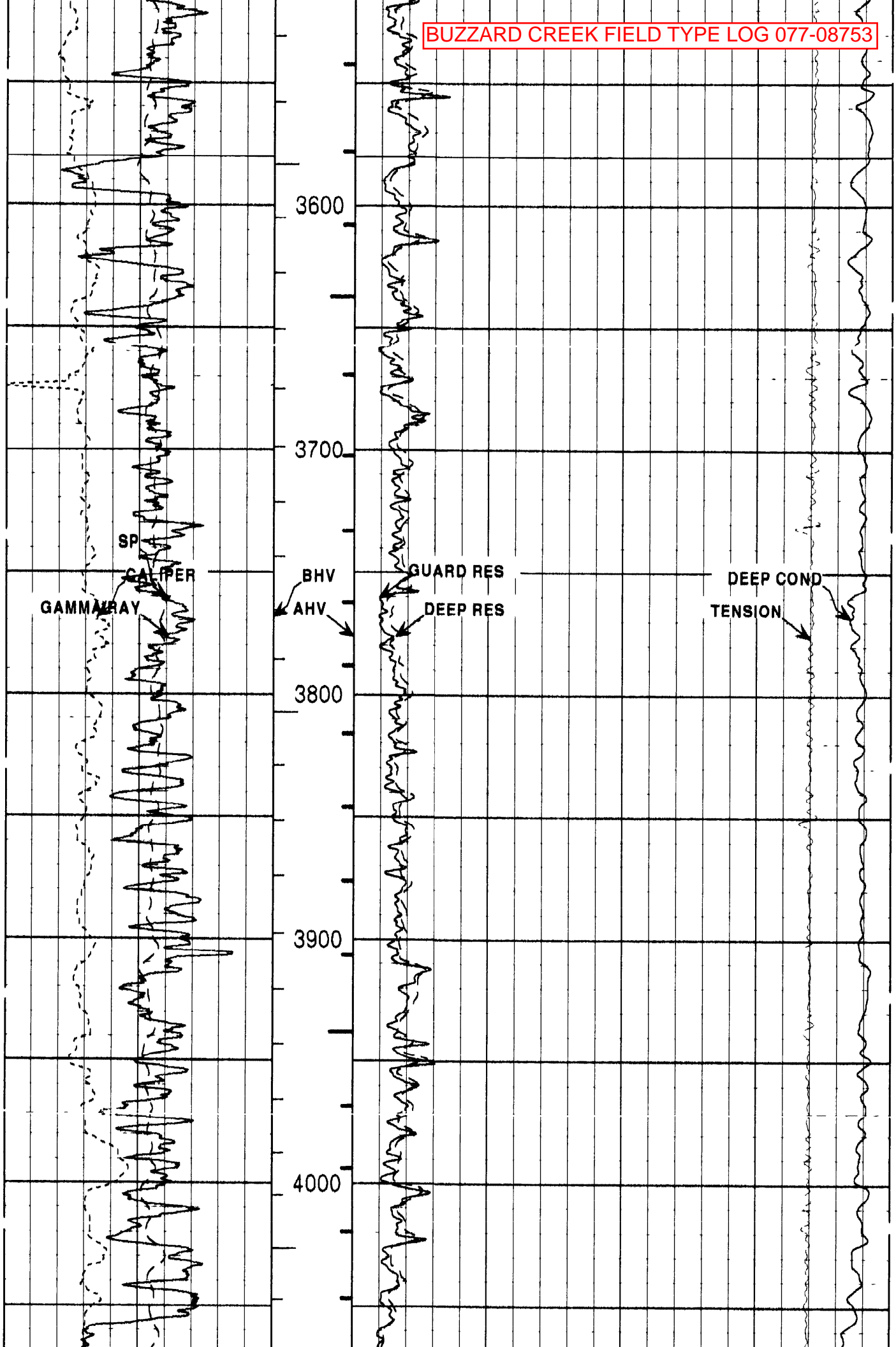
2600

2700

2800

2900





BUZZARD CREEK FIELD TYPE LOG 077-08753

4100

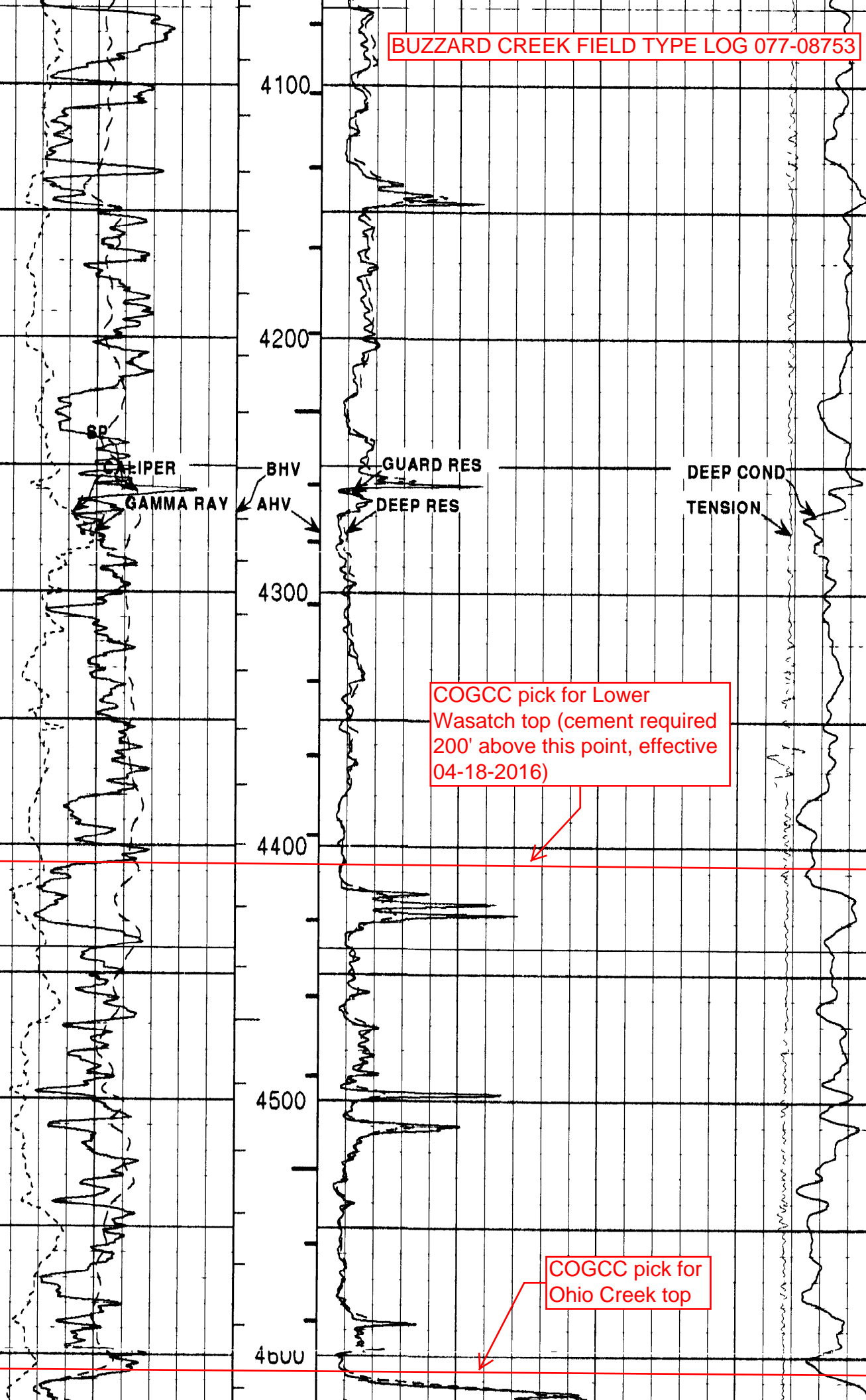
4200

4300

4400

4500

4600



SP
GRIPER
GAMMA RAY

BHV
AHV

GUARD RES
DEEP RES

DEEP COND
TENSION

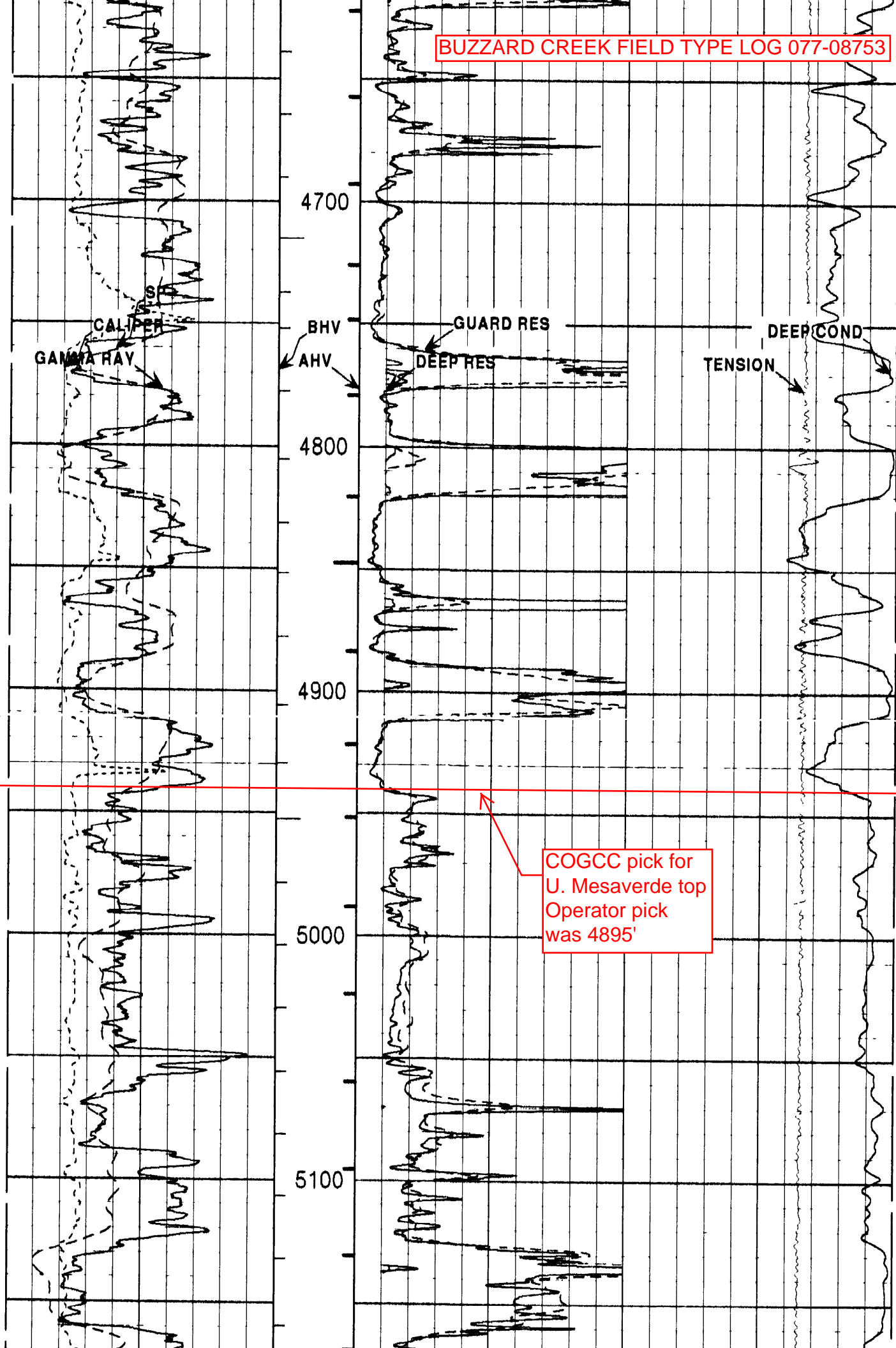
COGCC pick for Lower
Wasatch top (cement required
200' above this point, effective
04-18-2016)

COGCC pick for
Ohio Creek top

Red horizontal line at approximately 4405 feet depth.

Red horizontal line at approximately 4600 feet depth.

BUZZARD CREEK FIELD TYPE LOG 077-08753



COGCC pick for U. Mesaverde top Operator pick was 4895'

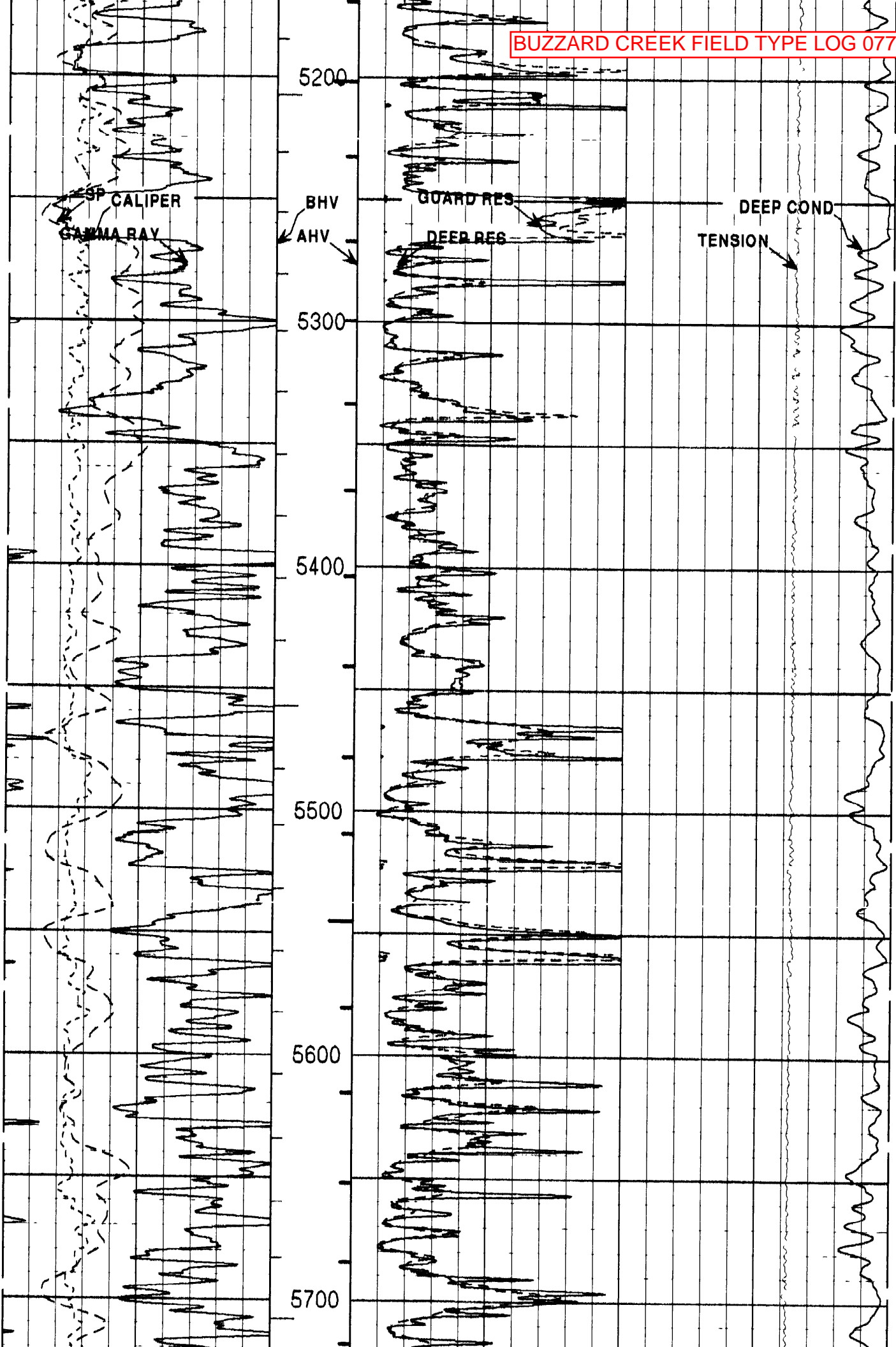
5200
5300
5400
5500
5600
5700

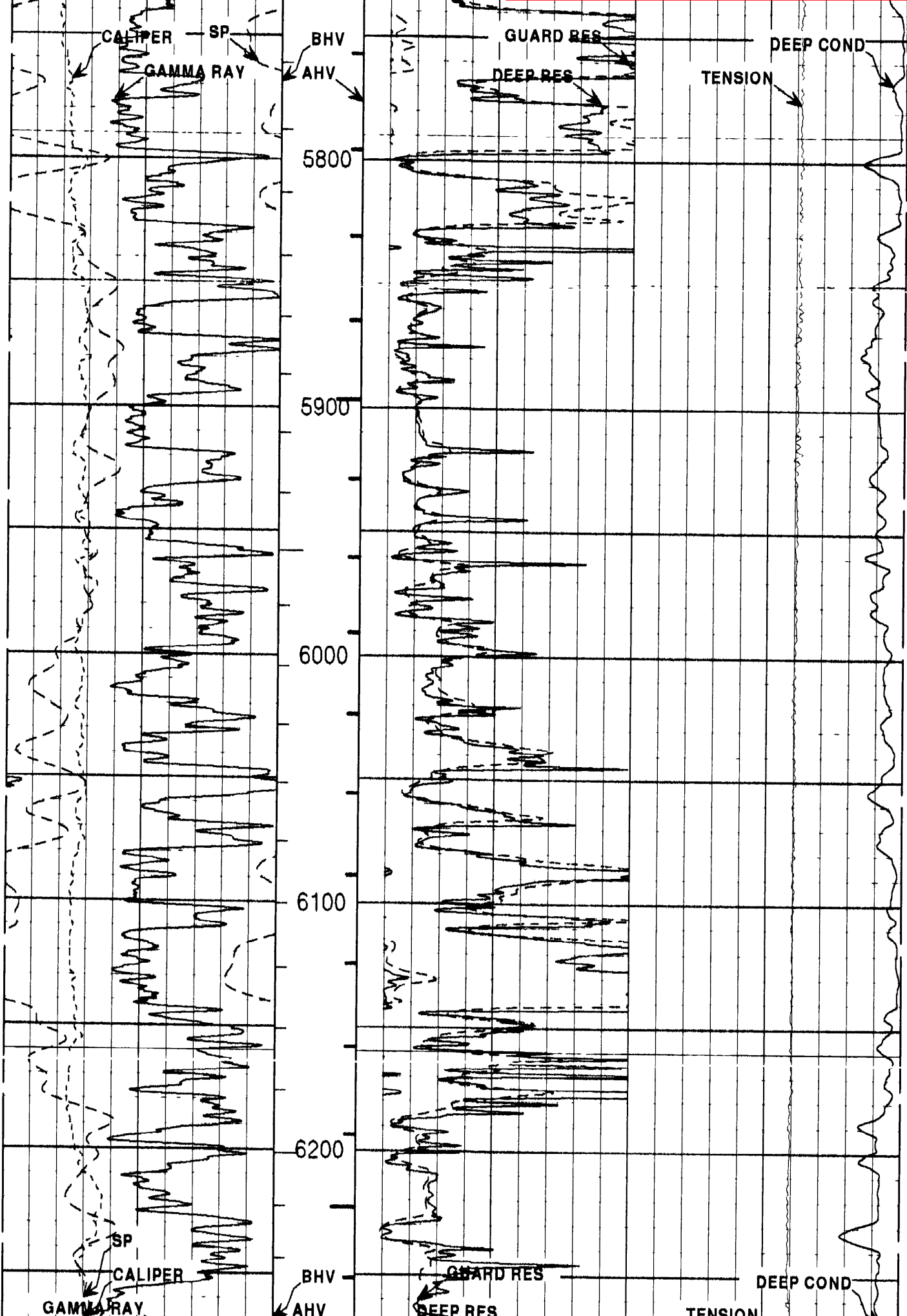
ESP CALIPER
GAMMA RAY

BHV
AHV

GAARD RES
DEEP RES

DEEP COND
TENSION





CALIPER SP

GAMMA RAY

BHV

AHV

GUARD RES

DEEP RES

DEEP COND

TENSION

5800

5900

6000

6100

6200

SP

CALIPER

GAMMA RAY

BHV

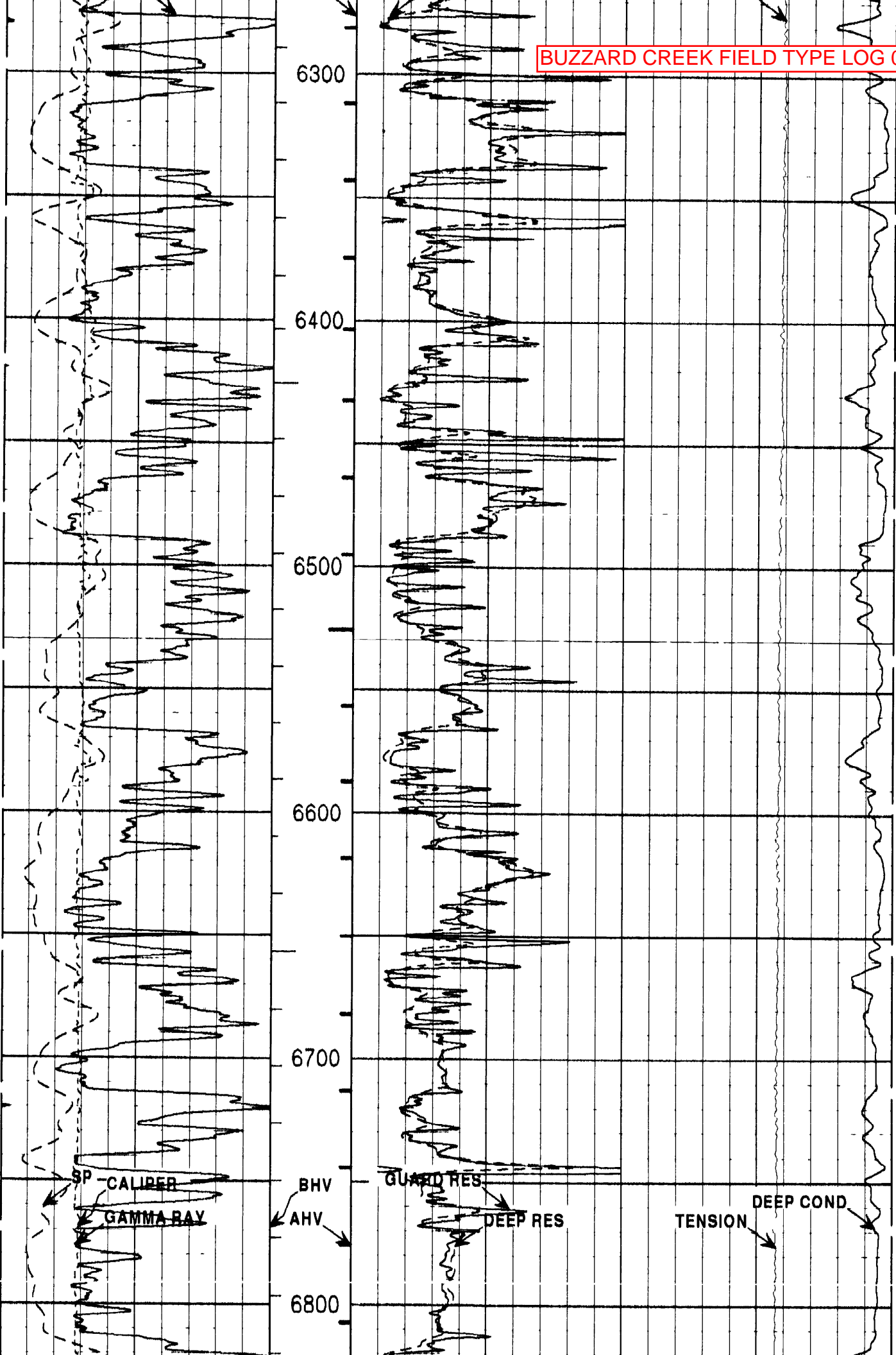
AHV

GUARD RES

DEEP RES

DEEP COND

TENSION



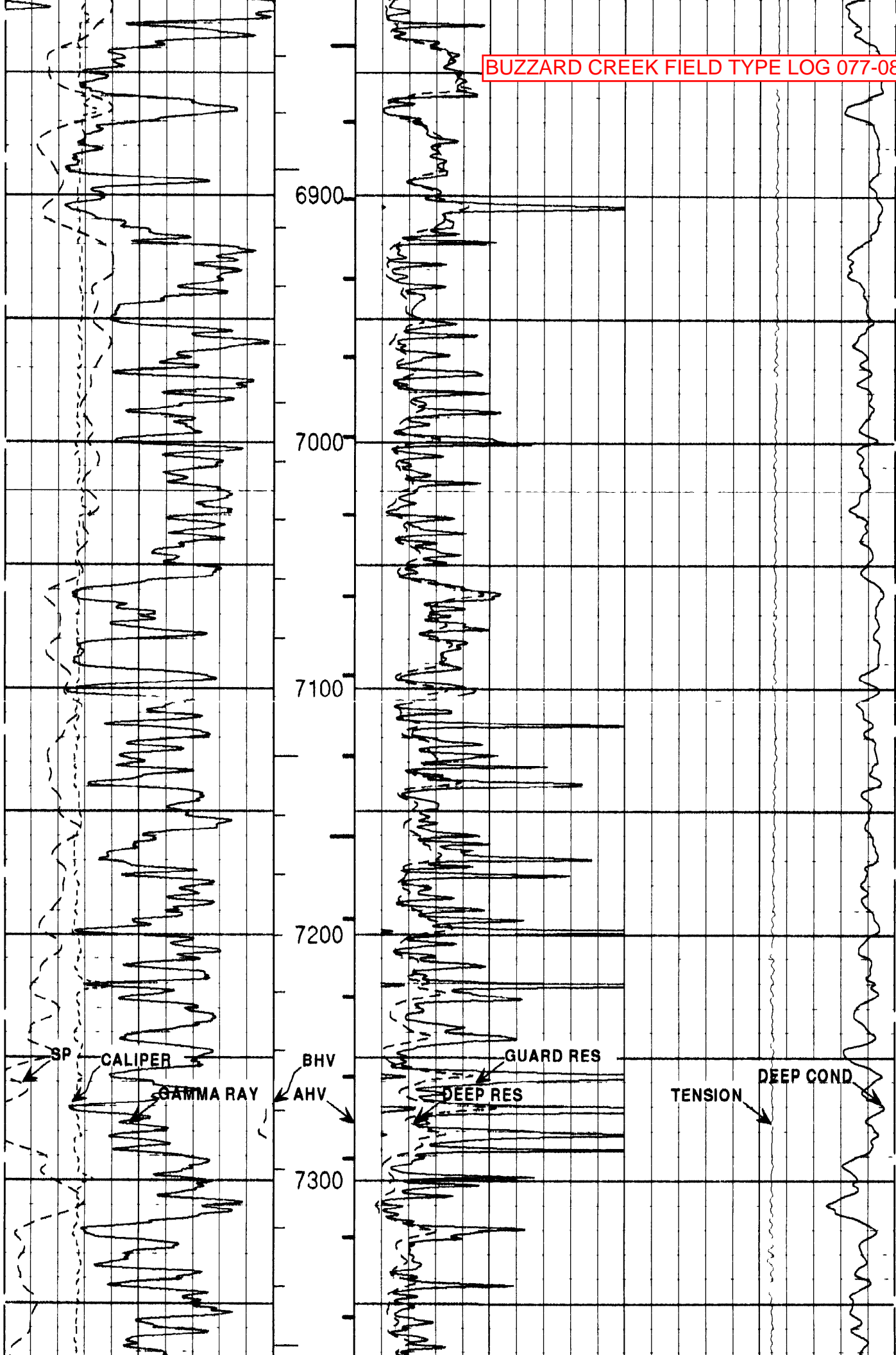
SP CALIBER
GAMMA RAY

BHV
AHV

GUARD RES
DEEP RES

TENSION
DEEP COND

BUZZARD CREEK FIELD TYPE LOG 077-08753



SP

CALIPER

GAMMA RAY

BHV

AHV

GUARD RES

DEEP RES

TENSION

DEEP COND

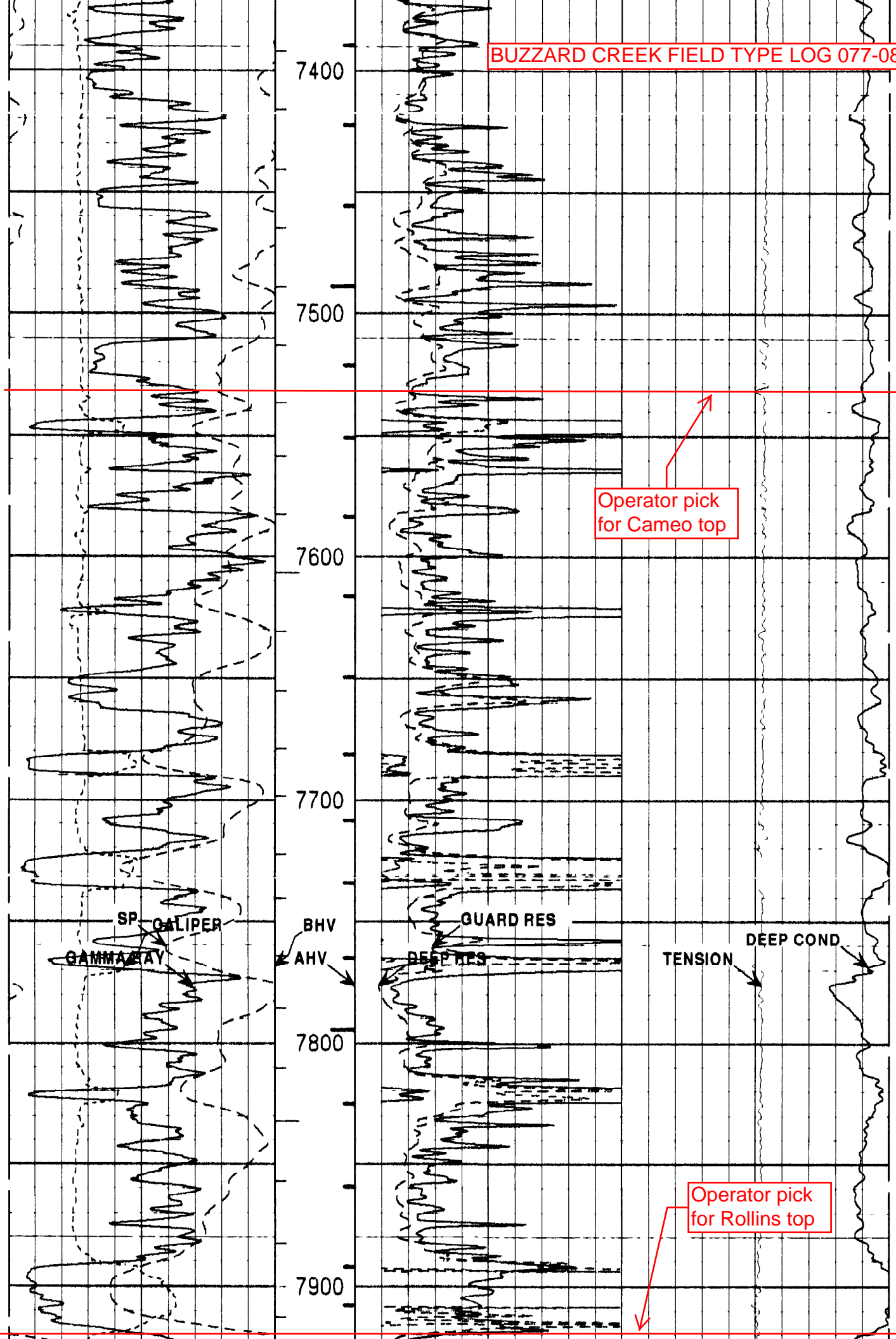
6900

7000

7100

7200

7300



Operator pick
for Cameo top

Operator pick
for Rollins top

SP CALIPER

GAMMA RAY

BHV

AHV

GUARD RES

DEEP RES

TENSION

DEEP COND

7400

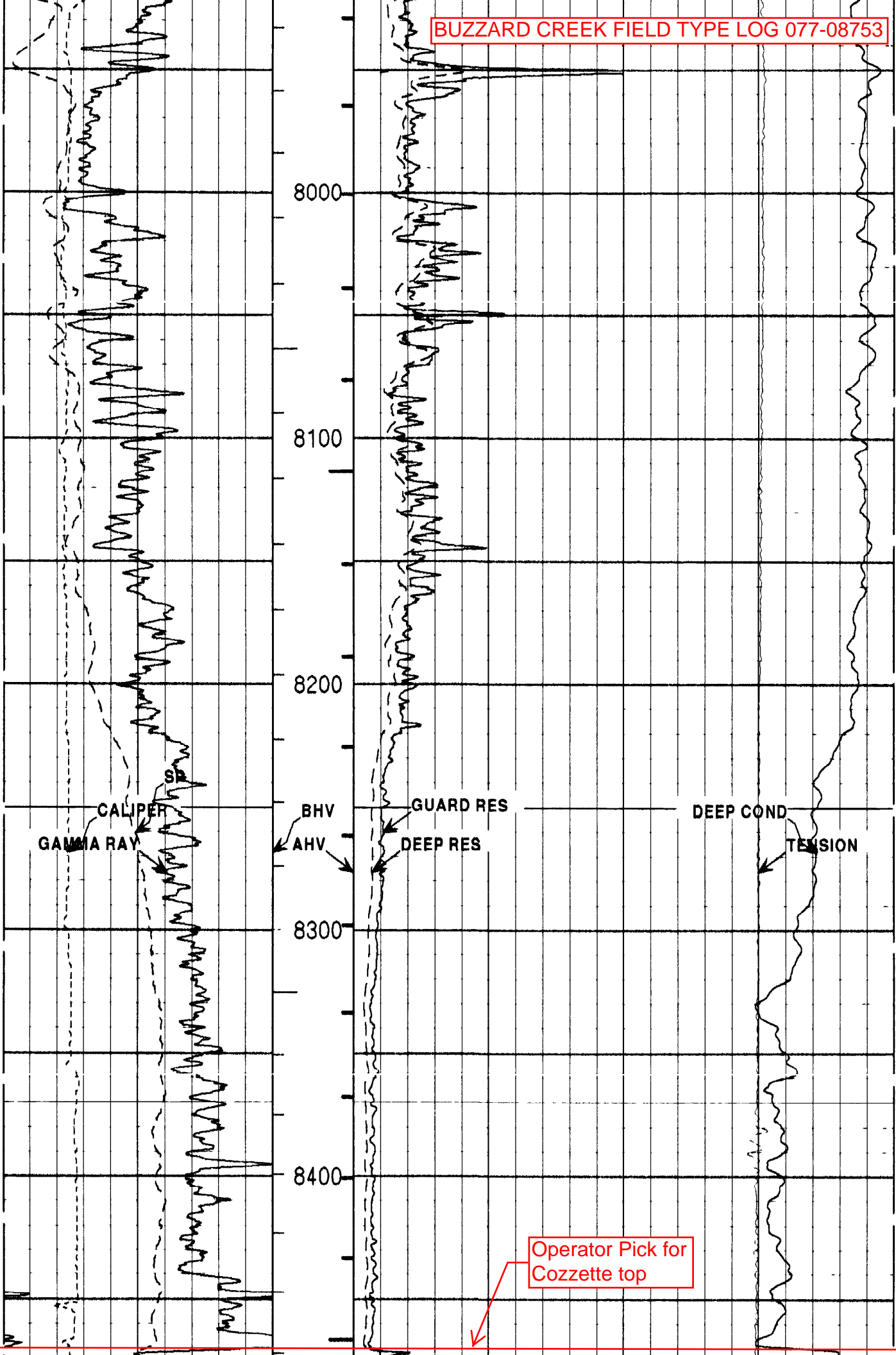
7500

7600

7700

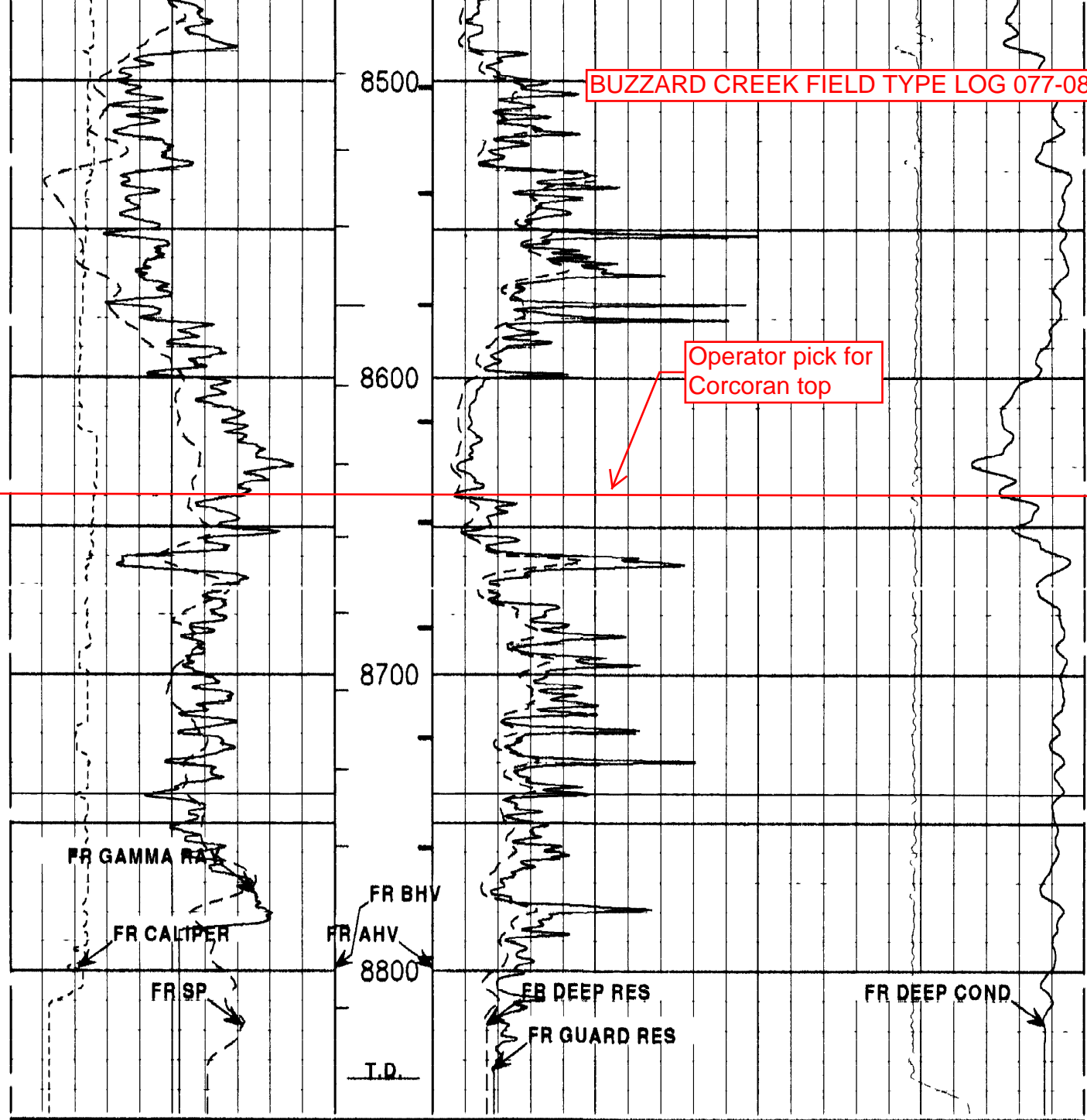
7800

7900



Operator Pick for Cozzette top

BUZZARD CREEK FIELD TYPE LOG 077-08753



Operator pick for Corcoran top

FR GAMMA RAY

FR CALIPER

FR SP

FR BHV

FR AHV

8800

FB DEEP RES

FR GUARD RES

FR DEEP COND

T.D.

SP -101+	1 600			
CALIPER INCHES	FT BHV	GUARD RES		DEEP COND
GAMMA RAY	FTS AHV	OHM-M	100 500	MMHO
APICOUNTS	FTS	DEEP	100 10000	TENSION
		OHM-M		POUNDS



Version No 4 64 | hc 3 0
 Date File mesa_bcu14-8trp 3 cts
 Format File /field_data/data2/mesa_bcu14-8trp/DIL2IN.spc
 Plot Time 2002-04-17 16 18 26
 Log Time 2002-04-17 13 47 54

Top Depth 1444 83
 Bottom Depth 8847 50