



**CEMENT VOLUME LOG
FOR 222.0 MM BOREHOLE
AND 177.8MM CASING**

FILE NO:	COMPANY	HUSKY OIL OPERATIONS LIMITED
API NO:	WELL	LITTLE BEAR H-64
	FIELD	SLATER RIVER
	PROVINCE	NORTHWEST TERRITORIES
Ver. 3.87	LOCATION:	OTHER SERVICES
UID:	SURF LOC:	ZDL-CR-CAL
300H6500126000	LAT 64 53' 28.5"N LONG 126 11' 20.3"W	HDIL-CR-CAL, DSL
LICENSE:	BH LOC, LSD:	XUAC-CR, FLEX-DSL
482	LAT 64 53' 28.5"N LONG 126 11' 20.3"W	EI-CRIL-CR, WREX
		DIRSUR, CBL
PERMANENT DATUM	G.L.	ELEVATION
LOG MEASURED FROM	K.B.	178.0 M
DRILL MEAS. FROM	5.2 M	ABOVE P.D.
	KELLY BUSHING	
		ELEVATIONS:
		KB 183.2 M
		DF
		GL 178.0 M

DATE	06-MAR-2012			
RUN	TRIP	1	1	
SERVICE ORDER	CA212311			
DEPTH DRILLER	1341.0 M			
DEPTH LOGGER	1340.2 M			
BOTTOM LOGGED INTERVAL	1314.0 M			
TOP LOGGED INTERVAL	510.0 M			
CASING DRILLER	244.5 MM	510.0 M		0
CASING LOGGER	510.0 M			
BIT SIZE	222.0 MM			
TYPE OF FLUID IN HOLE	INVERT			
DENSITY	1240.0 G/L	47.0 S		
PH	NA	NA		
SOURCE OF SAMPLE	NO SAMPLE			
RM AT MEAS. TEMP.	NA	0 NA		0
RMF AT MEAS. TEMP.	NA	0 NA		0
RMC AT MEAS. TEMP.	NA	0 NA		0
SOURCE OF RMF	RMC	NO SAMPLE		
RM AT BHT	NA	0 NA		0
TIME SINCE CIRCULATION	8.0 HOURS			
MAX. RECORDED TEMP.	53.2 DEGC			
EDUP. NO.	Z008672	OH CANADA		
RECORDED BY	J. COLLIER/D. DOUCETT			
WITNESSED BY	H. BARENHOVEN			

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BOREHOLE RECORD		
BIT SIZE	FROM	TO
311.0 MM	0.0 M	510.0 M
222.0 MM	510.0 M	1341.0 M

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
244.5 MM	53.6 KG/M	NA	0.0 M	510.0 M

REMARKS

RUN 1 TRIP 1: TIME STOPPED CIRCULATION: 06-MAR-2012 02:30 PM

HOLE VOLUMES OBTAINED FROM ZDL CALIPER.
 INTEGRATED BOREHOLE VOLUME TICS EVERY: 0.1, 1.0 & 10.0 M3.
 INTEGRATED CEMENT VOLUME TICS EVERY: 0.1, 1.0, & 10.0 M3.

BVOL: 34.1 M3
 CVOL: 13.5 M3

RIG: NABORS 23

CREW: J. COLLIER, D. DOUCETT, D. KIRWAN, D. SCHNEIDER, N. WOODRIDGE, P. ARENBURG

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	SWIVEL	3844XD	11908288	FREE
1	1	DHPA	4430XB	12111382	FREE
1	1	TTRM SUB	3881XB	11760038	FREE
1	1	COMM	3514XC	12079095	FREE
1	1	WTS DGR/SU	1329XB	11756874	FREE
1	1	CH	2448XA	12068884	DECENTRALIZED
1	1	ZDEN	2234XA	168004	POD DEVICE
1	1	WTS DBL KWI	3838XA	10283200	FREE
1	1	ORT	4401XB	Z168978	FREE
1	1	ACOUSTIC FL	1677FA	12045828	CENTRALIZED
1	1	XMAC RX MDR	1678MC	12002082	CENTRALIZED
1	1	XMAC ISO	1678PB	12083102	FREE
1	1	XMAC TX FLC	1678FA	12083108	CENTRALIZED
1	1	XMAC TX FLC	1678FA	12111386	CENTRALIZED
1	1	HDIL FLCNS	1515FA	12032417	STANDOFF
1	1	HDIL MANDRI	1515MA	11987988	STANDOFF
1	1	SWIVEL	3844XD	11848158	FREE
1	1	DHPA	4430XB	12088588	FREE
1	1	TTRM SUB	3881XA	Z173348	FREE
1	1	COMM	3514XB	Z186132	FREE
1	1	WTS DGR/SU	1329XB	Z179402	FREE
1	1	CH	2448XA	12068881	DECENTRALIZED
1	1	ZDEN	2234XA	Z172840	POD DEVICE
1	1	WTS DBL KWI	3838XA	167184	FREE
1	1	ORT	4401XB	12039483	FREE
1	1	ACOUSTIC FL	1677FA	11881885	CENTRALIZED
1	1	XMAC RX MDR	1678MC	12138283	CENTRALIZED
1	1	XMAC ISO	1678PB	11870838	FREE
1	1	XMAC TX FLC	1678FA	12103884	CENTRALIZED
1	1	XMAC TX FLC	1678FA	12111385	CENTRALIZED
1	1	HDIL FLCNS	1515FA	11988830	STANDOFF
1	1	HDIL MANDRI	1515MA	12022611	STANDOFF
1	1	CENTRALIZER	4341XA	Z173361	CENTRALIZED

INSTRUMENT CONFIGURATION

Source File: /dat1a/humky_CA212311/run1-tdg

CABLEHEAD

Diameter : 8.8 cm
 Length : 187.8 cm
 Weight : 10.8 kg
 Series : CABLE338
 Insonia : CBLH
 Measure Point: 83.8 cm: CABLEHEAD TOP

SWIVEL

Diameter : 8.8 cm
 Length : 108.7 cm
 Weight : 30.8 kg
 Series : 3844XD

KEMBLE FIBER ADAPTER

Diameter : 9.2 cm
 Length : 180.7 cm
 Weight : 38.1 kg
 Series : 4430XB
 Insonia : DHPA

TTRM SUB

Diameter : 9.2 cm
 Length : 118.8 cm
 Weight : 25.2 kg
 Series : 3881XA
 Insonia : TTRM
 Measure Point: 42.2 cm: TEMP MP

WTS COMMON REMOTE

Diameter : 9.2 cm
 Length : 184.0 cm
 Weight : 35.2 kg
 Series : 3814XC
 Insonia : WTS



40.70 m

CABLEHEAD TOP 38.88 m

TEMP MP 35.80 m
RM MP 35.83 m

DIGITAL SPECTRALOG

Diameter : 9.2 cm
 Length : 222.8 cm
 Weight : 88.1 kg
 Series : 13280A
 Inesonix : DSI
 Measure Points : 48.8 cm OR MP

COMPENSATED NEUTRON

Diameter : 9.2 cm
 Length : 231.4 cm
 Weight : 86.2 kg
 Series : 24480A
 Inesonix : CN
 Measure Points : 80.3 cm LSN MP
 Measure Points : 88.2 cm SSN MP

Z-DETECTLOG

Diameter : 12.4 cm
 Length : 341.0 cm
 Weight : 163.8 kg
 Series : 22380A
 Inesonix : ZDL
 Measure Points : 87.3 cm CAL MP
 Measure Points : 78.4 cm LSO MP
 Measure Points : 63.2 cm SSO MP

KNICKLE JOINT (DOUBLE)

Diameter : 8.8 cm
 Length : 141.8 cm
 Weight : 40.8 kg
 Series : 38380A
 Inesonix : KJNT

DIGITAL ORIENTATION

Diameter : 8.8 cm
 Length : 328.4 cm
 Weight : 50.0 kg
 Series : 4401KB
 Inesonix : ORIT
 Measure Points : 0.0 cm ORIENT MP

ARMY ACQUISILOR ELECTRONICS, 8 CHANNEL

Diameter : 8.8 cm
 Length : 238.3 cm
 Weight : 48.4 kg
 Series : 18780A
 Inesonix : KMAC

CROSS MULTIPOLE ARMY ACQUISILOR

Diameter : 9.8 cm
 Length : 332.4 cm
 Weight : 101.8 kg
 Series : 18780C
 Inesonix : KMP1
 Measure Points : 187.8 cm R8
 Measure Points : 182.4 cm R7
 Measure Points : 137.2 cm R6
 Measure Points : 121.0 cm R5
 Measure Points : 109.7 cm R4
 Measure Points : 81.4 cm R3
 Measure Points : 79.2 cm R2
 Measure Points : 61.0 cm R1

SHEAR WAVE ACQUISILOR

Diameter : 9.2 cm
 Length : 188.4 cm
 Weight : 81.4 kg
 Series : 18780B
 Inesonix : KMAC

MULTI-POLE ARMY ACQUISILOR

Diameter : 9.8 cm
 Length : 241.3 cm
 Weight : 77.3 kg
 Series : 18780A
 Inesonix : KMAC
 Measure Points : 188.8 cm QUADRUPOLE T5
 Measure Points : 188.8 cm MONOPOLE T2
 Measure Points : 142.2 cm Y-DIPOLE T4
 Measure Points : 142.2 cm X-DIPOLE T3

OR MP : 31.80 m

LSN MP : 28.83 m
 SSN MP : 28.36 m

CAL MP : 28.25 m
 LSO MP : 28.04 m
 SSO MP : 27.81 m

ORIENT MP : 20.87 m

R8 : 18.84 m
 R7 : 18.36 m
 R6 : 18.23 m
 R5 : 18.08 m
 R4 : 18.83 m
 R3 : 18.78 m
 R2 : 18.63 m
 R1 : 18.47 m

MONOPOLE T2 : 12.88 m
 QUADRUPOLE T5 : 12.88 m

X-DIPOLE T3 : 12.38 m
 Y-DIPOLE T4 : 12.38 m

MONOPOLE T1 : 11.82 m

Measure Points: 88.8 cm: MONOPOLE T1
MULTI-POLE ARMY ACQUATIC
 Diameter : 8.6 cm
 Length : 131.8 cm
 Weight : 38.4 kg
 Series : 167BFA
 Memoirs : M40

HIGH DEFINITION INDUCTION TOOL
 Diameter : 9.2 cm
 Length : 827.0 cm
 Weight : 189.8 kg
 Series : 181BKA
 Memoirs : HDIL
 Measure Points: 483.8 cm: SP MP
 Measure Points: 328.8 cm: KMTB MP

4 ARM BOW SPRING CENTRALIZER
 Diameter : 8.6 cm
 Length : 128.8 cm
 Weight : 32.7 kg
 Series : 4341KA
 Memoirs : CENT

BULL PLUG 3 3/8

TOTAL LENGTH: 40.70 m
 TOTAL WEIGHT: 1100.8 kg
 MAX DIAMETER: 12.4 cm



SP MP 483.8 cm

KMTB MP 328.8 cm

0.00 m

CEMENT VOLUME LOG - 177.8 MM CASING

ECLIPS 6.11 Aug 06, 2010
 Updates: 1 Patches: 1

Wed Mar 7 03:14:47 2012

Perfl /main/62

Cplot

Pdf_Cpp /main/16

Fileview 5.51

PARAMETER AND FILTER SUMMARY REPORT

File: /data/husky_CA212311/m77evh_xc03.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 487.566 m BOTTOM DEPTH: 1340.828 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
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 (.i)	medium (1)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	177.800	mm	TOP	BOTTOM
BIT SIZE	BIT SIZE	222.000	mm	"	"

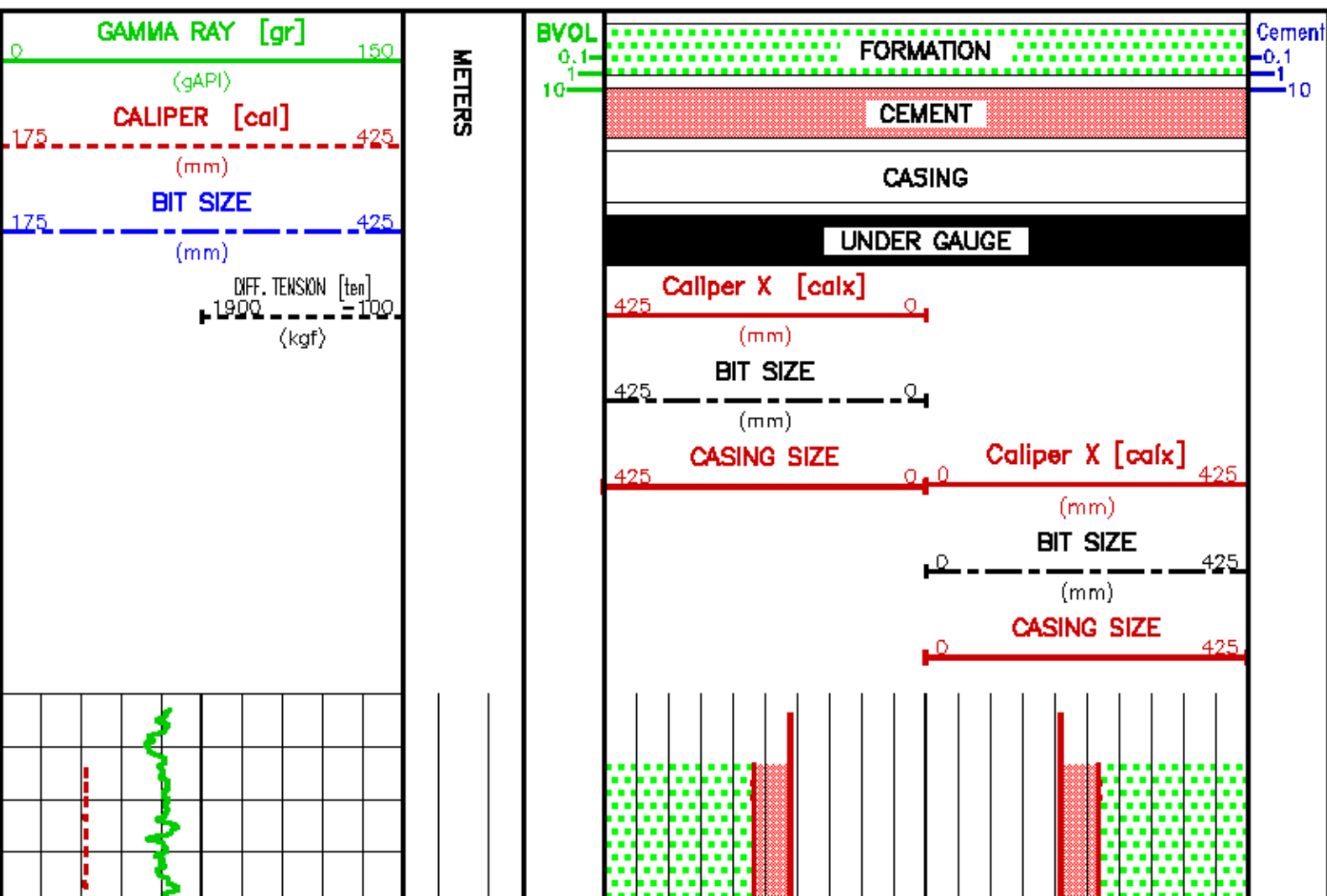
CURVE DESCRIPTION REPORT

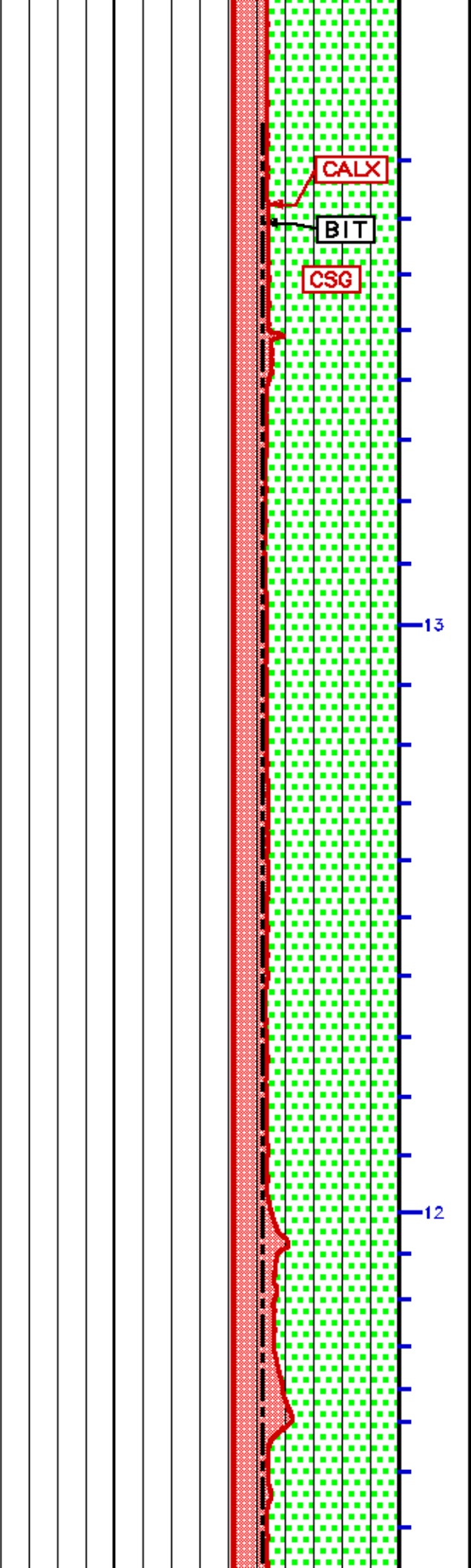
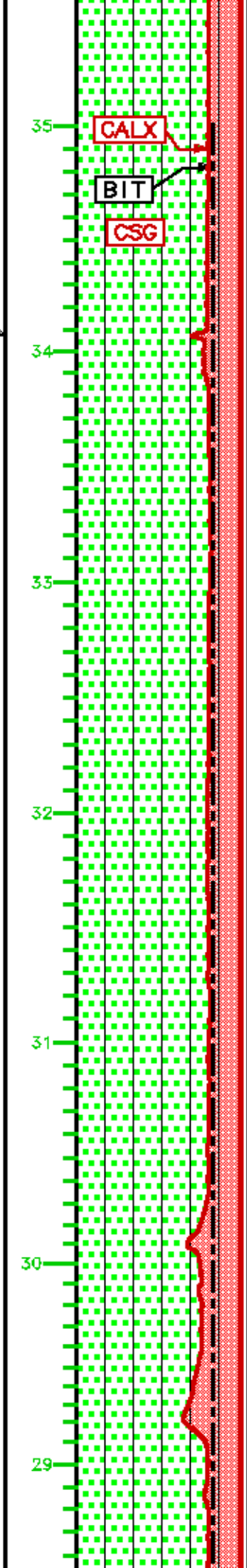
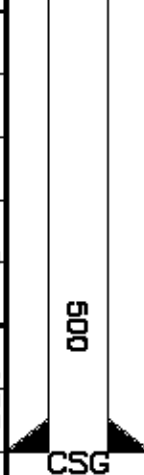
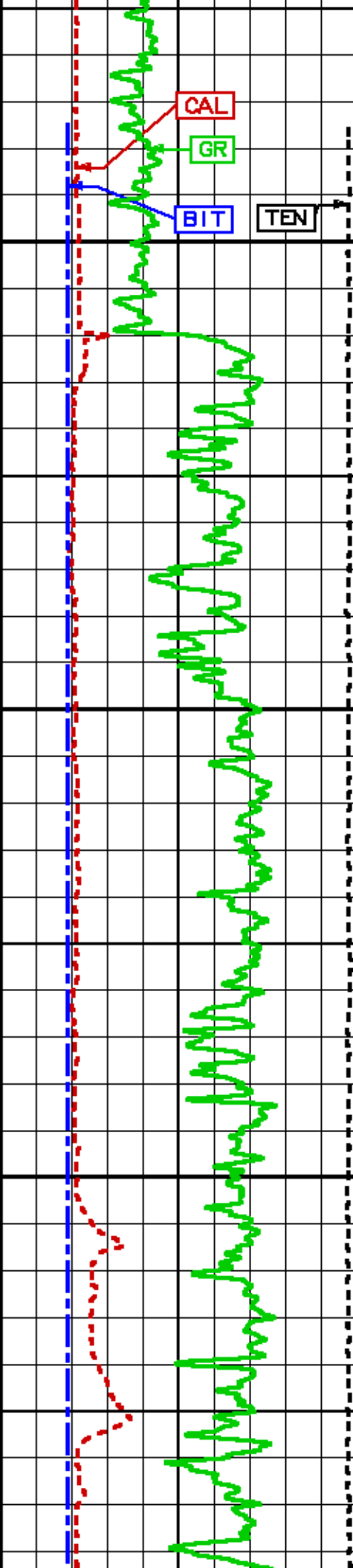
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Mar 8 22:18:03 2012	BIT SIZE
F1:BVOL	Mar 8 22:18:03 2012	BOREHOLE VOLUME
F1:CAL	Mar 8 22:18:03 2012	CALIPER
F1:CALX	Mar 8 22:18:03 2012	CALIPER FROM X-AXIS OF XY CALIPER(S)
F1:CVOL	Mar 8 22:18:03 2012	CEMENT VOLUME
F1:GR	Mar 8 22:18:03 2012	GAMMA RAY
F1:TEN	Mar 8 22:18:03 2012	DIFFERENTIAL TENSION

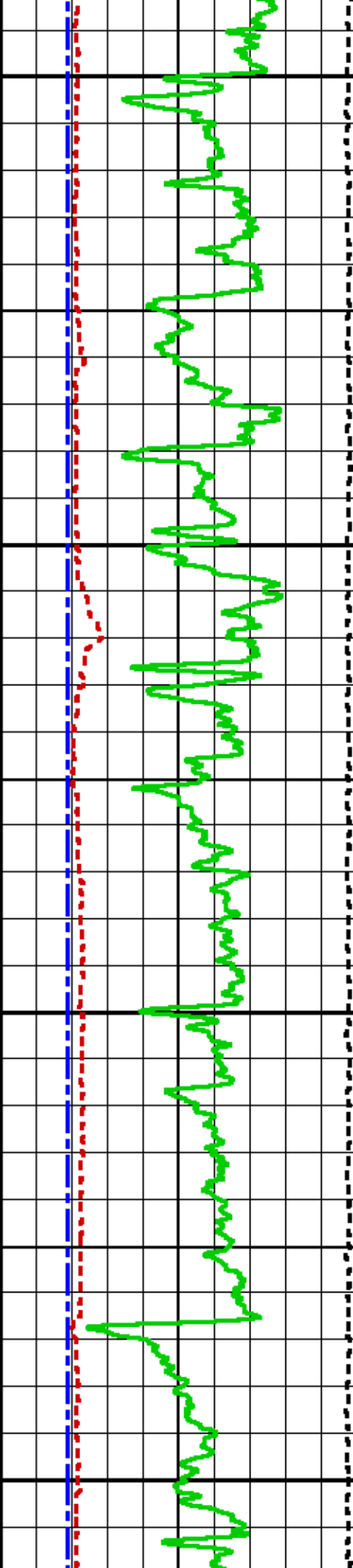
CURVE MEASURE POINT OFFSET

CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
BIT	0.00	CALX	26.17	TEN	0.00		
CAL	26.06	GR	31.59				

Presentation	: opuz/datta/husky_CA212311/bhpcoal_177.B.pdf [1:800 Scale]
Plot Interval	: 458.514 - 1350 Meters
Data File 1	: F1 : opuz/datta/husky_CA212311/m77erh_xe03.xtf
Created On	: Mar 8 22:18:03 2012
Company	: HUSKY OIL OPERATIONS LIMITED
Well	: LITTLE BEAR H-04
Field	: SLATER RIVER
File Interval	: 452.247 - 1340.95 Meters
Out	: m77erh_x





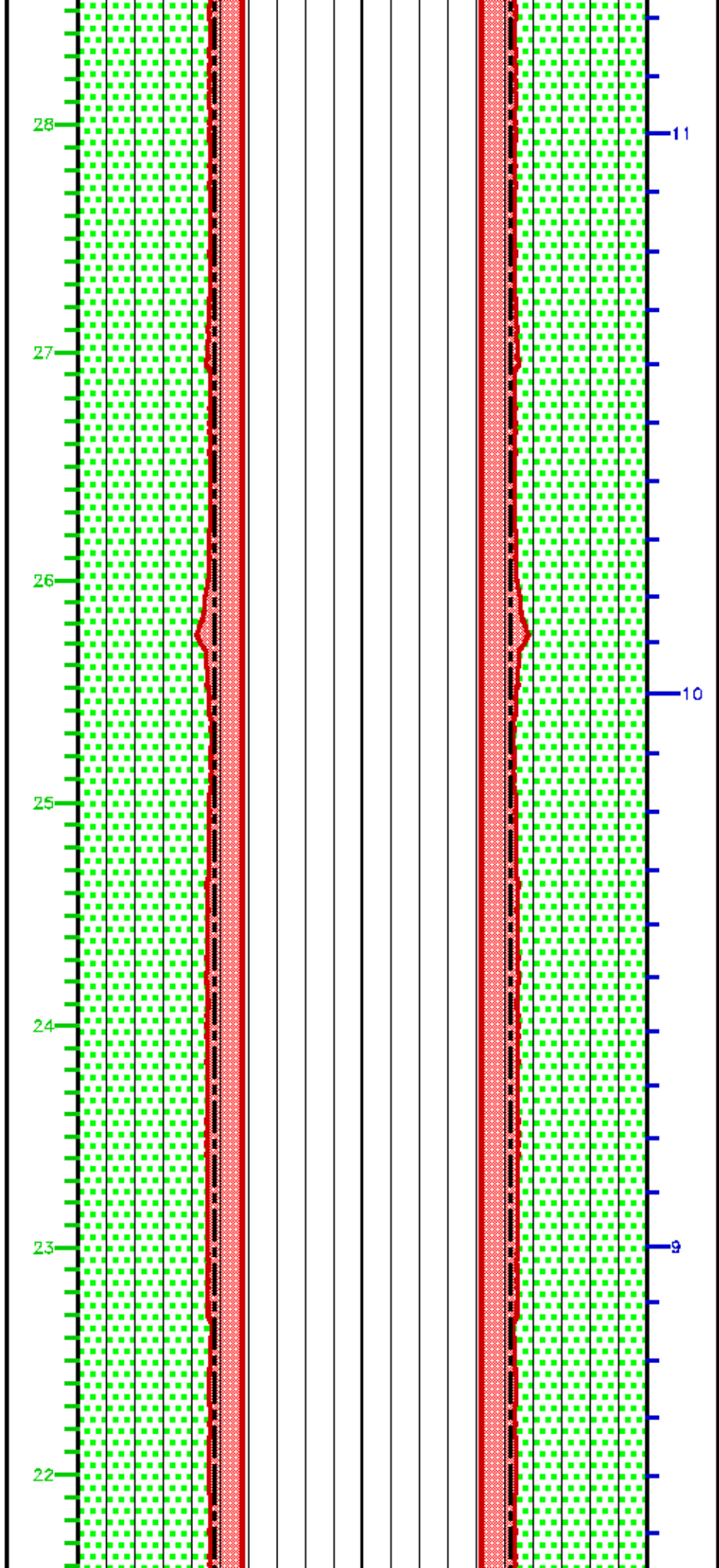


650

700

750

800



22

23

24

25

26

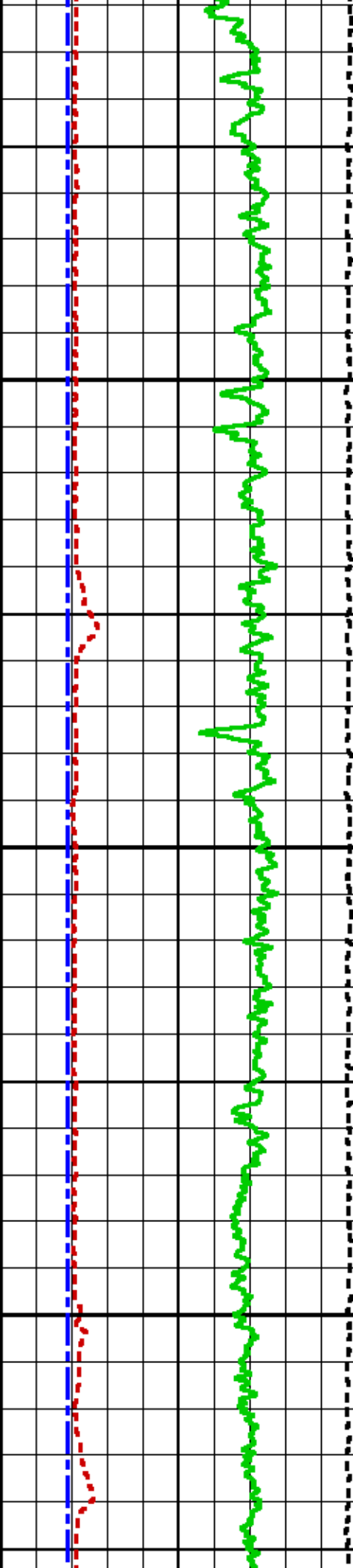
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28

9

10

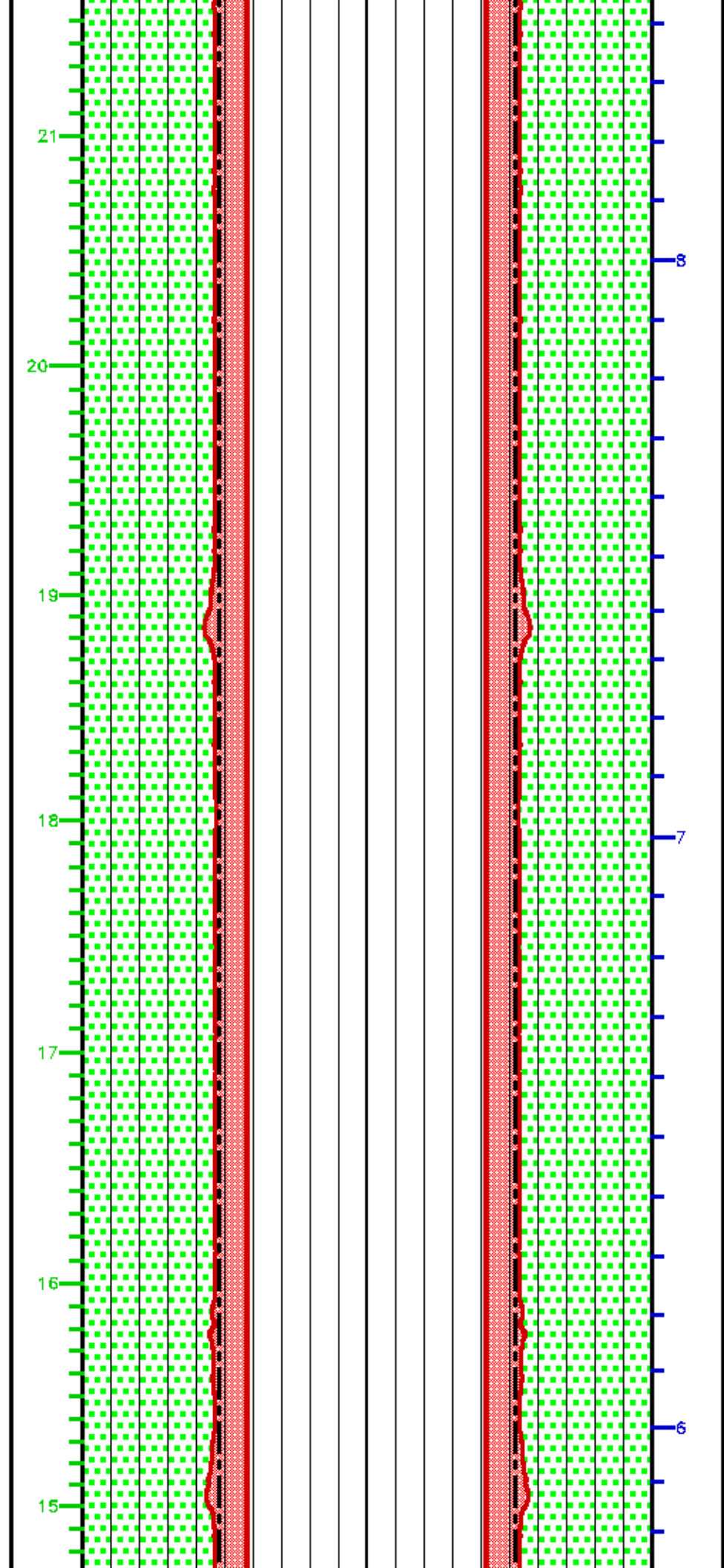
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850

900

950



15

16

17

18

19

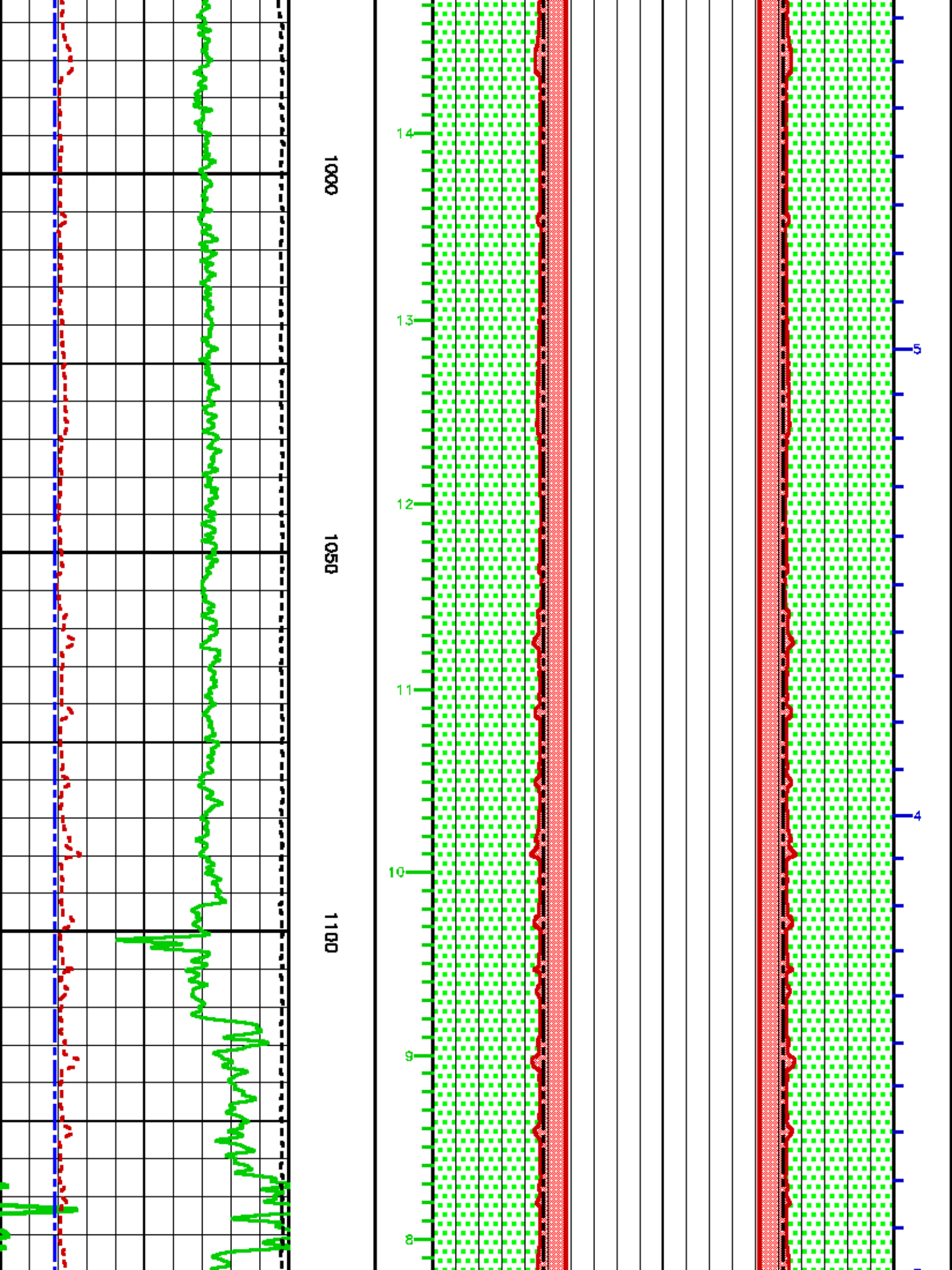
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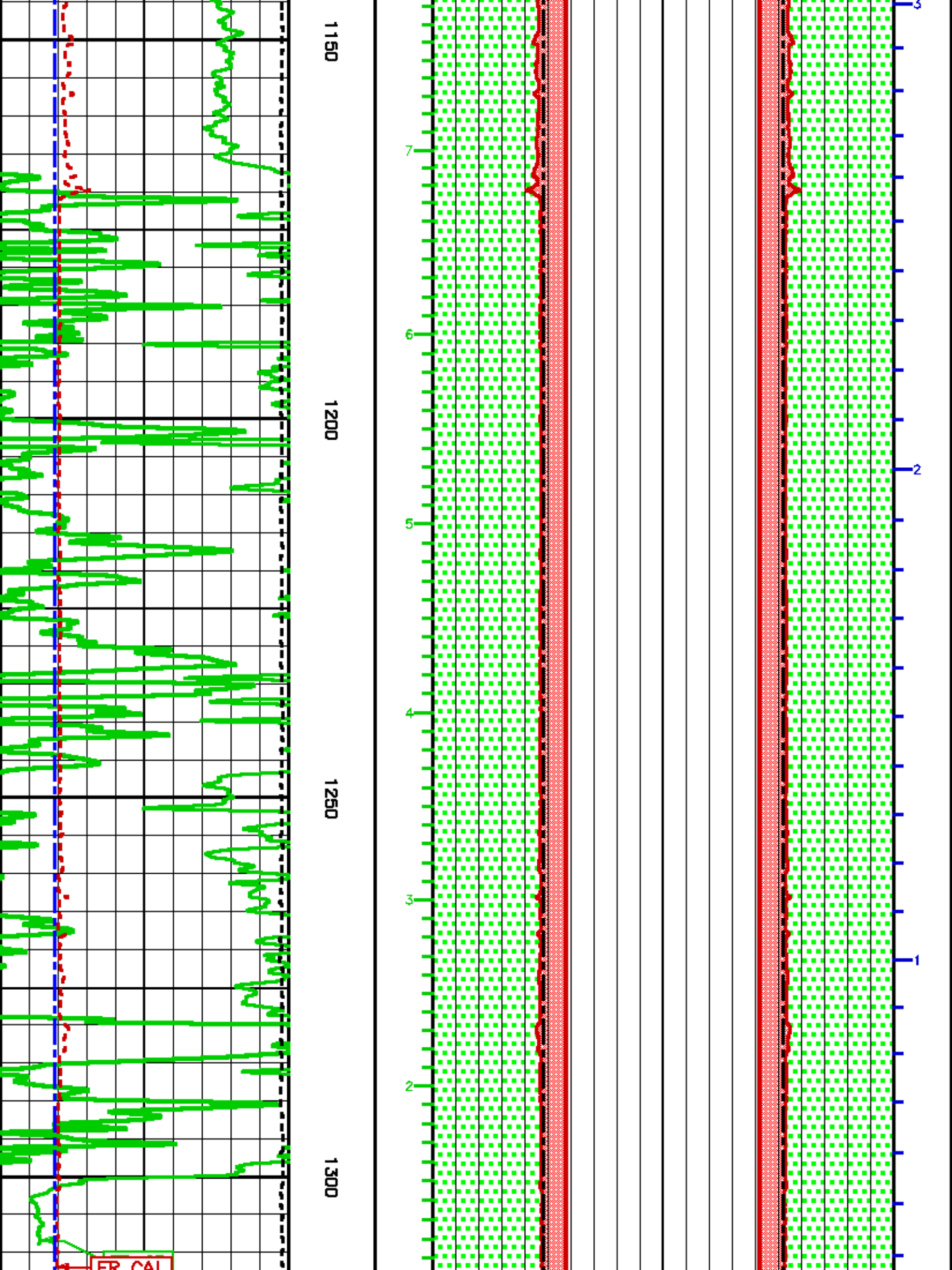
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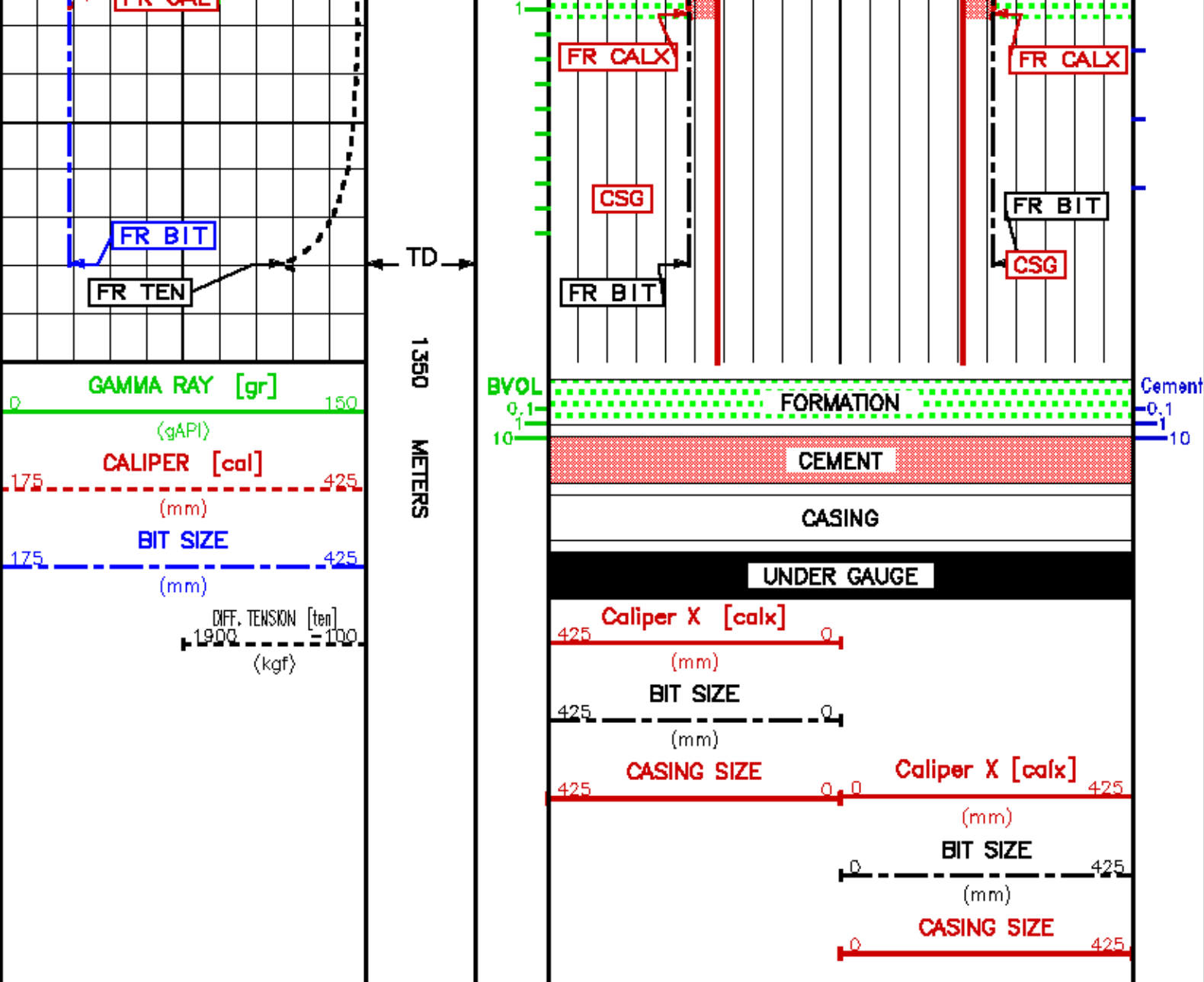
6

7

8







CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/humky_CA212511/m77wh_xs.jp2

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XA 11756674

DATE/TIME PERFORMED: Mon Feb 27 20:16:08 2012

UNIT #: 5753XB 10108816

CALB JIG #: 4702NK DA-554

	BACKGROUND	CALBTR ON	GR DIFF	MULT	BACKGROUND	CALBTR ON	CALBTR
	(cts/s)	(cts/s)	(cts/s)		(gAPI)	(gAPI)	(gAPI)
GR	147.84	1025.36	877.5	0.171	25.27	175.27	150

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1329XA 11756674

DATE/TIME PERFORMED: Mon Feb 27 20:21:47 2012

UNIT #: 5753XB 10108816 VERI JIG #: 4702NK DA-554

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	147.64	1027.87	0.171	25.24	175.70	150.46
						140.00 160.00

GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1329XA 11756674 DATE/TIME PERFORMED: Mon Mar 5 17:29:14 2012 DAYS SINCE CAL: 6

UNIT #: 3854SA 008672 VERI JIG #: 4702NK DA-554

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	44.80	951.49	0.171	7.66	162.65	154.99
						140.48 160.48

GR AFTER LOG VERIFICATION SUMMARY

TOOL #: 1329XA 11756674 DATE/TIME PERFORMED: Wed Mar 7 02:34:48 2012 DAYS SINCE CAL: 8

UNIT #: 3854SA 008672 VERI JIG #: 4702NK DA-554

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	59.27	927.44	0.171	10.13	158.54	148.40
						144.99 164.99

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2234XA 168004

DATE/TIME PERFORMED: Sat Feb 25 11:34:06 2012

UNIT #: 5753XB 10108816

	SMALL RING	LARGE RING	MULT	ADD	SMALL RING (mm)	LARGE RING (mm)
CALIPER	882.0	1550.0	0.19461	3.35328	175.000	305.000

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA 168004 DATE/TIME PERFORMED: Tue Mar 6 21:09:56 2012 DAYS SINCE CAL: 10

UNIT #: 3854SA 008672

	I.D.	MULT	ADD	I.D. (mm)
CALIPER	1155.6	0.19461	3.35328	228.246

CAL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2234XA 168004 DATE/TIME PERFORMED: Wed Mar 7 01:02:41 2012 DAYS SINCE CAL: 10

UNIT #: 3854SA 008672

	I.D.	MULT	ADD	I.D. (mm)
CALIPER	1154.4	0.19461	3.35328	228.012
				215.546 240.946

	COMPANY	HUSKY OIL OPERATIONS LIMITED	FILE NO:
	WELL	LITTLE BEAR H-84	
	FIELD	SLATER RIVER	API NO:
	PROVINCE	NORTHWEST TERRITORIES	
	LOCATION:		ELEVATIONS:
	SURF LOC:		KB 183.2 M
	LAT 64 53' 28.5"N LONG 126 11' 20.3"W		DF
	BH LOC. LSD:		GL 178.0 M
LAT 64 53' 28.5"N LONG 126 11' 20.3"W		DATE	06-MAR-2012
			UID:
			300H64500126000
			LICENSE:
			462