BAKER HUGHES

MAGNETIC RESONANCE EXPLORER LOG GAMMA RAY LOG

FILE NO:	
API NO:	
COMPANY	HUSKY OIL OPERATIONS LIMITED
WELL	LITTLE BEAR H-64
FIELD	SLATER RIVER
PROVINCE	NORTHWEST TERRITORIES

Ver. 3.87
UID:
300H645001260000
LICENSE:
462

LOCATION:
SURF LOC:
LAT 64 53' 28.5"N LONG 126 11' 20.3"W
BH LOC. LSD:
LAT 64 53' 28.5"N LONG 126 11' 20.3"W

OTHER SERVICES
ZDL-CN-GR-CAL
HDIL-GR-CAL, CVL
XMAC-GR, FLEX-DSL
DSL, EI-CBIL-GR
DIRSUR, CBL

PERMANENT DATUM	G.L.	ELEVATION	178.0 M
LOG MEASURED FROM	K.B.	5.2 M	ABOVE P.D.
DRILL. MEAS. FROM	KELLY BUSHING		

ELEVATIONS:
KB 183.2 M
DF
GL 178.0 M

DATE		06-MAR-2012			
RUN	TRIP	1	3		
SERVICE ORDER		CA212311			
DEPTH DRILLER		1341.0 M			
DEPTH LOGGER		DID NOT TAG			
BOTTOM LOGGED INTERVAL		1337.4 M			
TOP LOGGED INTERVAL		650.0 M			
CASING DRILLER		244.5 MM	@ 510.0 M	@	
CASING LOGGER		510.0 M			
BIT SIZE		222.0 MM			
TYPE OF FLUID IN HOLE		INVERT			
DENSITY	VISCOSITY	1240.0 G/L	47.0 S		
PH	FLUID LOSS	NA	NA		
SOURCE OF SAMPLE		NO SAMPLE			
RM AT MEAS. TEMP.		NA	@ NA	@	
RMF AT MEAS. TEMP.		NA	@ NA	@	
RMC AT MEAS. TEMP.		NA	@ NA	@	
SOURCE OF RMF	RMC	NO SAMPLE	NO SAMPLE		
RM AT BHT		NA	@ NA	@	
TIME SINCE CIRCULATION		23.8 HOURS			
MAX. RECORDED TEMP.		64.1 DEGC			
EQUIP. NO.	LOCATION	Z008672	CH CANADA		
RECORDED BY		J.COLLIER/D.DOUCETT			
WITNESSED BY		H.PAPENHOVEN			

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.

CASING RECORD

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

BOREHOLE RECORD

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

REMARKS

RUN 1 TRIP 3: TIME STOPPED CIRCULATION: 06-MAR-2012 02:30 PM

MREX RECORDED USING PORO PERM+LIGHT OIL ACQUISITION WITH SUB 0 TIME OF 12.0 SEC AND TW = 11.111 SEC
T2 CUTOFFS USED CBW: 3.4 AND BVI 32.0 MSEC
PERMEABILITY INDEX IS BASED ON TIMUR-COATES RELATIONSHIP WITH DEFAULT SETTINGS OF C=10, M=4, N=2

MREX RECORDED USING PORO PERM+HEAVY OIL ACQUISITION WITH SUB 0 TIME OF 8.0 SEC AND TW = 4.3 SEC
T2 CUTOFFS USED CBW: 3.4 AND BVI 32.0 MSEC
PERMEABILITY INDEX IS BASED ON TIMUR-COATES RELATIONSHIP WITH DEFAULT SETTINGS OF C=10, M=4, N=2

MREX RECORDED USING PORO PERM ACQUISITION WITH SUB 0 TIME OF 8.0 SEC

AND TW = 8.434 SEC
T2 CUTOFFS USED CBW: 3.4 AND BVI 32.0 MSEC
PERMEABILITY INDEX IS BASED ON TIMUR-COATES RELATIONSHIP WITH DEFAULT
SETTINGS OF C=10, M=4, N=2

CNC AND PORZ PRESENTED IN LIMESTONE MATRIX 2.71G/CM3.

PORO PERM + LIGHT OIL: TD - 1100.0M
PORO PERM + HEAVY OIL: TD - 1100.0M
PORO PERM: 815.0M - 650.0M
RPT IN PORO PERM + LIGHT OIL: TD - 1270.0M

RIG: NABORS 23

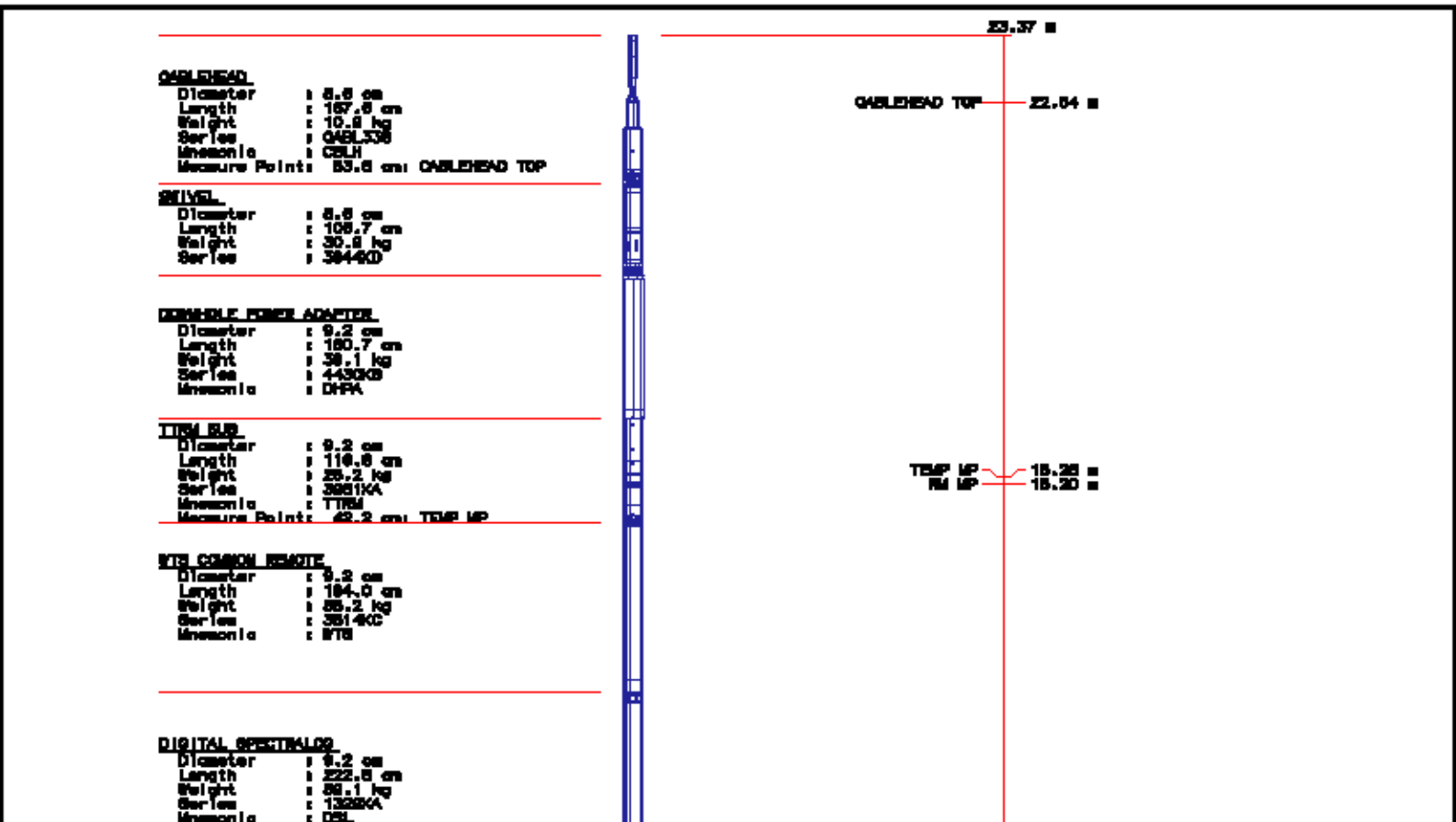
CREW: J.COLLIER, D.DOUCETT, D.KIRMAN, D.SCHNEIDER, N.MCDERMID, P.ARENBURG

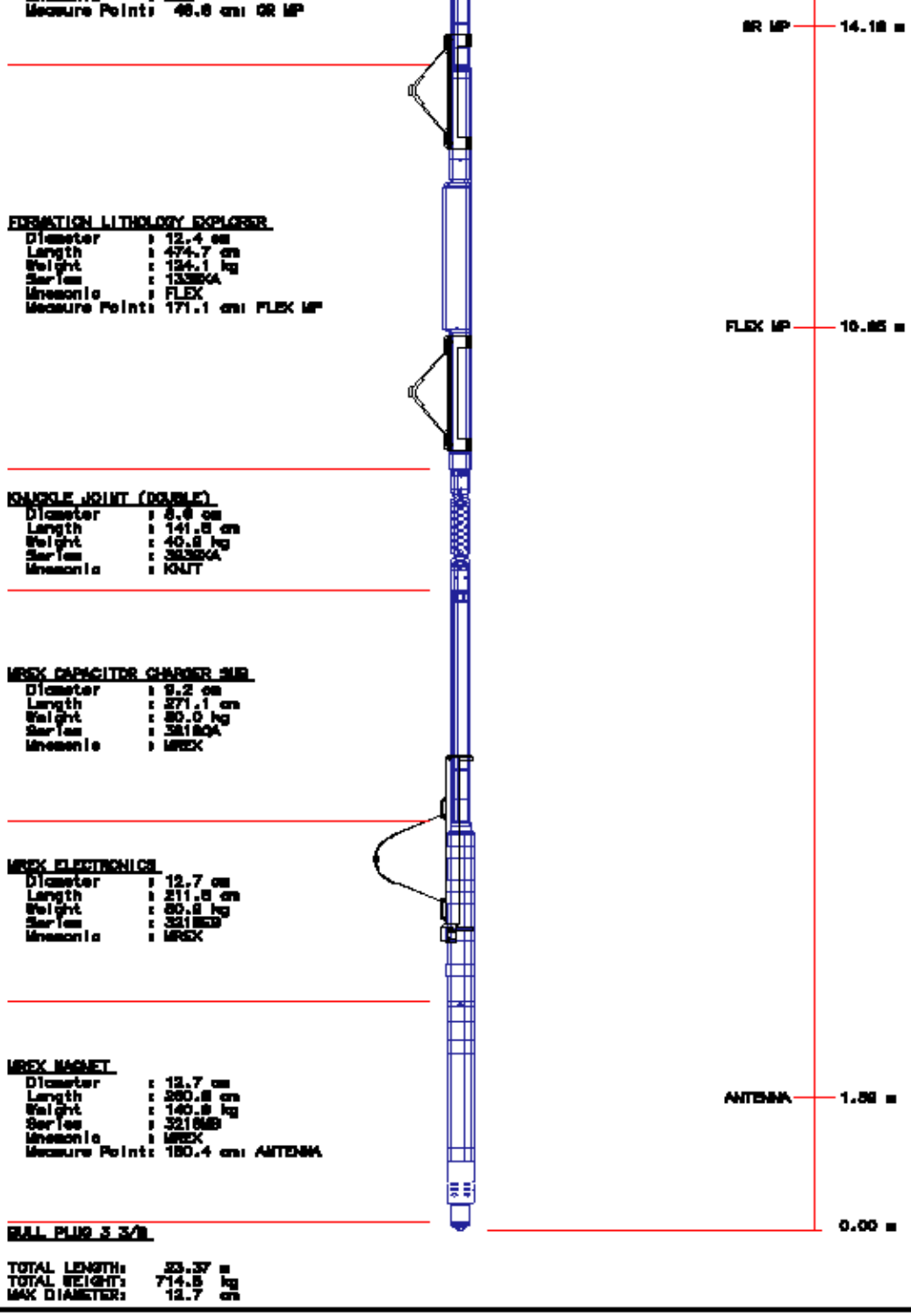
EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	3	SWIVEL	3844XD	11848158	FREE
1	3	DHPA	4430XB	12088588	FREE
1	3	TTRM SUB	3981XB	Z173348	FREE
1	3	COMM	3514XC	12079085	FREE
1	3	MTS DGR/SLI	1329XB	11756874	FREE
1	3	FLEX	1338DA	10474275	DECENTRALIZED
1	3	FLEX	1338EA	10436785	DECENTRALIZED
1	3	DSLKNUCK	3959XA	168295	FREE
1	3	MREX CAPAC	3218DA	10148380	DECENTRALIZED
1	3	MTMR ELECT	3218EB	403511	DECENTRALIZED
1	3	MTMR MANDRE	3218MB	402475	DECENTRALIZED

INSTRUMENT CONFIGURATION

Source File: /dat1a/hunky_CA212311/run3-tdg





LIGHT OIL - MAIN LOG - SANDSTONE MATRIX

ECLIPS 6.1I Aug 06, 2010
Updates: 1 Patches: 1

Wed Mar 7 22:24:34 2012

Perplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.51

PARAMETER AND FILTER SUMMARY REPORT

FILE: /data/husky_CA212311/light_oil_main01.prm
LOGGING MODE: DEPTH DIRECTION: UP

TOP DEPTH: 1092.767 m BOTTOM DEPTH: 1338.194 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
TTRM	FILTER (.td)	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
MREX - POROSITY	FILTER ()	medium (1)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
BIT SIZE	BIT SIZE	222.000	mm	TOP	BOTTOM

MREX GENERAL

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
MREX TOC	ACM NAME	PeroPerm + Light Oil		TOP	BOTTOM

MREX ACQUISITION PARAMETERS

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
MREX TOC	SUBSET 0 INTERVAL	12.000	s	TOP	BOTTOM
	NUM FREQ GROUPS	1		"	"
	1ST FREQ	INDEX 12, 971.5 kHz		"	"
	2ND FREQ	INDEX 10, 884.0 kHz		"	"
	3RD FREQ	INDEX 8, 774.2 kHz		"	"
	4TH FREQ	INDEX 6, 693.4 kHz		"	"
	5TH FREQ	INDEX 4, 620.9 kHz		"	"
	6TH FREQ	INDEX 2, 560.6 kHz		"	"
	NOMINAL TIP ANG (B)	135	deg	"	"
	PULSE SHAPE	SOFT		"	"
	1ST T2 TE	0.40	ms	"	"
	2ND T2 TE	2.70	ms	"	"
	3RD T2 TE	2.70	ms	"	"
	1ST T2 ECHOES	1000		"	"
	2ND T2 ECHOES	148		"	"
	3RD T2 ECHOES	148		"	"
	1ST T2 TW	9.224	s	"	"
	2ND T2 TW	5.292	s	"	"
	3RD T2 TW	1.011	s	"	"
	1ST T2 TRAIN LENGTH	400	ms	"	"
	2ND T2 TRAIN LENGTH	399	ms	"	"
	3RD T2 TRAIN LENGTH	399	ms	"	"
	CBW TE	0.40	ms	"	"
	CBW ECHOES/PACKET	25		"	"
	CBW TRAIN LENGTH	10	ms	"	"
	1ST CBW PACKETS	16		"	"
	CBW TW	0.020	s	"	"

MREX PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
NOISE & CAL PULSE SELECTION	FREQ DISPLAY SELECT	FREQUENCY A		TOP	BOTTOM
POROSITY	MBVI/MBVM BOUNDARY	CLASTIC (33 ms)		"	"
	USER MBVI/MBVM	33	ms	"	"
	CBW CUTOFF	3.4	ms	"	"
PERMEABILITY	Coates M exponent	4.000		"	"
	Coates N exponent	2.000		"	"
	Coates Constant	10.000		"	"
AVERAGING LENGTH (SAMPLES)	ET Averaging Length	6 samples		"	"
INVERSION (FITTING) PARAMETERS	T2 FIRST BIN	4.00	ms	"	"
	T2 LAST BIN	2048.00	ms	"	"
	T2 BINS USED	19		"	"
	BVI FIRST BIN	4.00	ms	"	"
	BVI LAST BIN	1024.00	ms	"	"
	BVI BINS USED	13		"	"
	CBW FIRST BIN	0.35	ms	"	"
	CBW LAST BIN	1024.00	ms	"	"
	CBW BINS USED	16		"	"
	TPOR FIRST BIN	0.35	ms	"	"
	TPOR LAST BIN	2048.00	ms	"	"
	TPOR BINS USED	26		"	"

RESET PHASE ROTATION ANGLE	RESET ACCUM. PHASE		"	"
MREX FORMATION/BOREHOLE TEMP	BOREHOLE TEMP SRC	MEASURED (3961/3960)	"	"

PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/husky_CA212311/w77evh_xc03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 487.566 m BOTTOM DEPTH: 1340.929 m

SYMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
Y AXIS CALIPER	FILTER ()	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.1)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
ZDL HIGH RES	FILTER (hrd1*)	light		"	"
	FILTER (hrd1s*)	light		"	"
	FILTER (hrd2*)	light		"	"
	FILTER (hrd2s*)	light		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	177.800	mm	TOP	BOTTOM
	CASING THICKNESS	8.000	mm	"	"
BIT SIZE	BIT SIZE	222.000	mm	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	222.000	mm	"	"
	FIXED DIAMETER (mbh*)	222.000	mm	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	OIL BASE MUD		"	"

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	0	ppm	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	311.000	mm	"	"

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
DENSITY POROSITY	RHOmatrix	2.710	g/cm3	TOP	BOTTOM
	RHOfluid	1.000	g/cm3	"	"
	RHOmatrix (sand)	2.650	g/cm3	"	"
ZDL	DENC TRACKING	ON		"	"

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	STANDOFF		"	"
	STANDOFF	38.10	mm	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

CURVE DESCRIPTION REPORT

CURVE NAME CREATION DATE CURVE DESCRIPTION

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Mar 7 22:15:30 2012	BIT SIZE
F1:CHI	Mar 7 22:15:30 2012	GOODNESS OF FIT OF EACH ECHO DATA PACKET
F2:CNCSS	Mar 6 22:18:03 2012	BOREHOLE SIZE CORRECTED SANDSTONE COMPENSATED NEU POROSITY
F1:GR	Mar 7 22:15:30 2012	GAMMA RAY
F2:M2R1	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F2:M2R3	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F2:M2RX	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:MBVI	Mar 7 22:15:30 2012	MR IRREDUCIBLE FLUIDS
F1:MPHE	Mar 7 22:15:30 2012	MR EFFECTIVE POROSITY
F1:MPHS	Mar 7 22:15:30 2012	MR TOTAL POROSITY
F1:MPRM	Mar 7 22:15:30 2012	MR PERMEABILITY
F2:PZSS	Mar 6 22:18:03 2012	POROSITY FOR SANDSTONE MATRIX
F1:QSHFA	Mar 7 22:15:30 2012	QUALITY OF SHIFTED DATA OF 1ST T2
F1:SPD	Mar 7 22:15:30 2012	SPEED
F1:TEN	Mar 7 22:15:30 2012	DIFFERENTIAL TENSION
F1:TPOR	Mar 7 22:15:30 2012	TOTAL POROSITY (CBW + T2 BIN ARRAY)

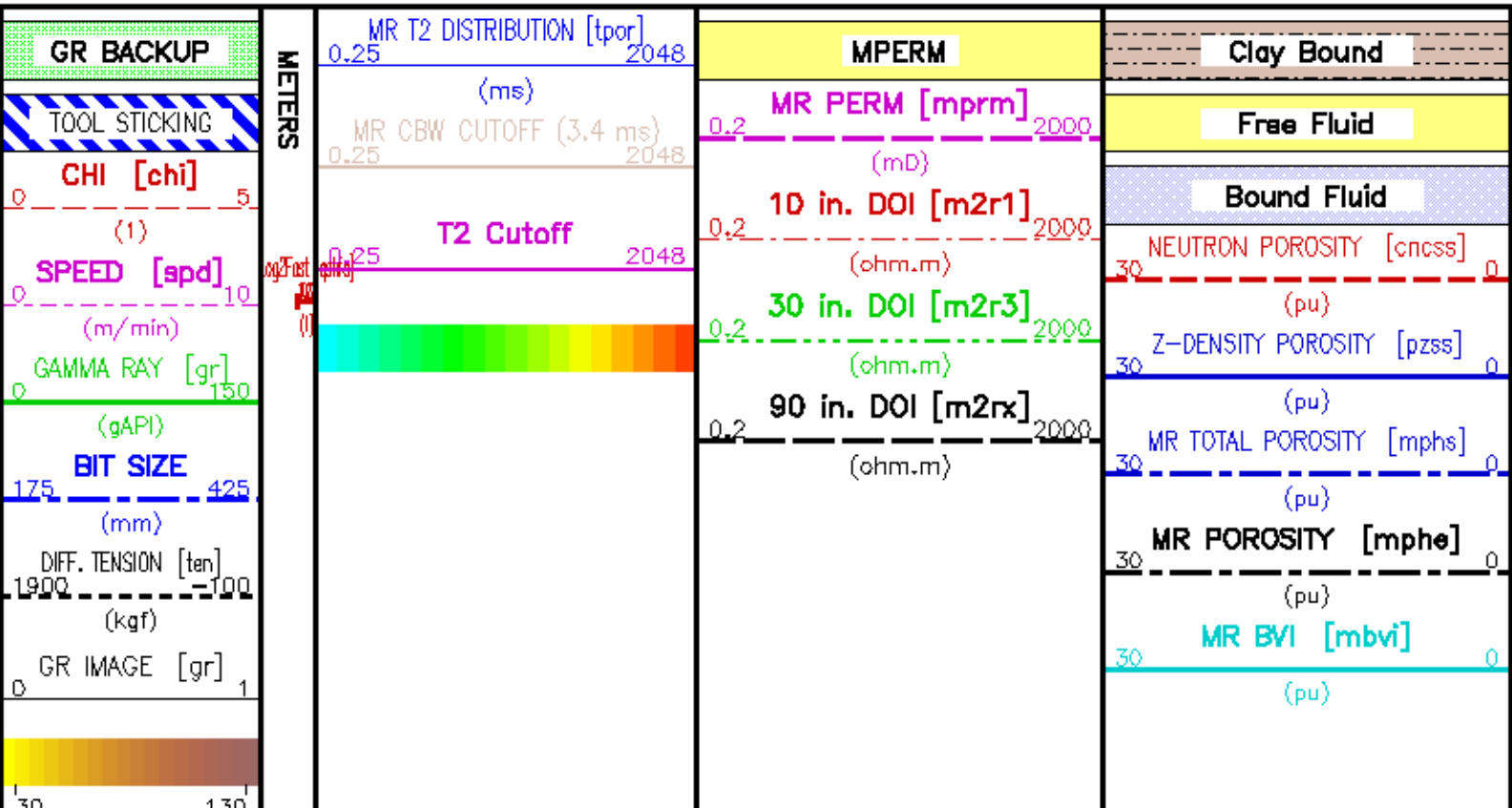
CURVE MEASURE POINT OFFSET

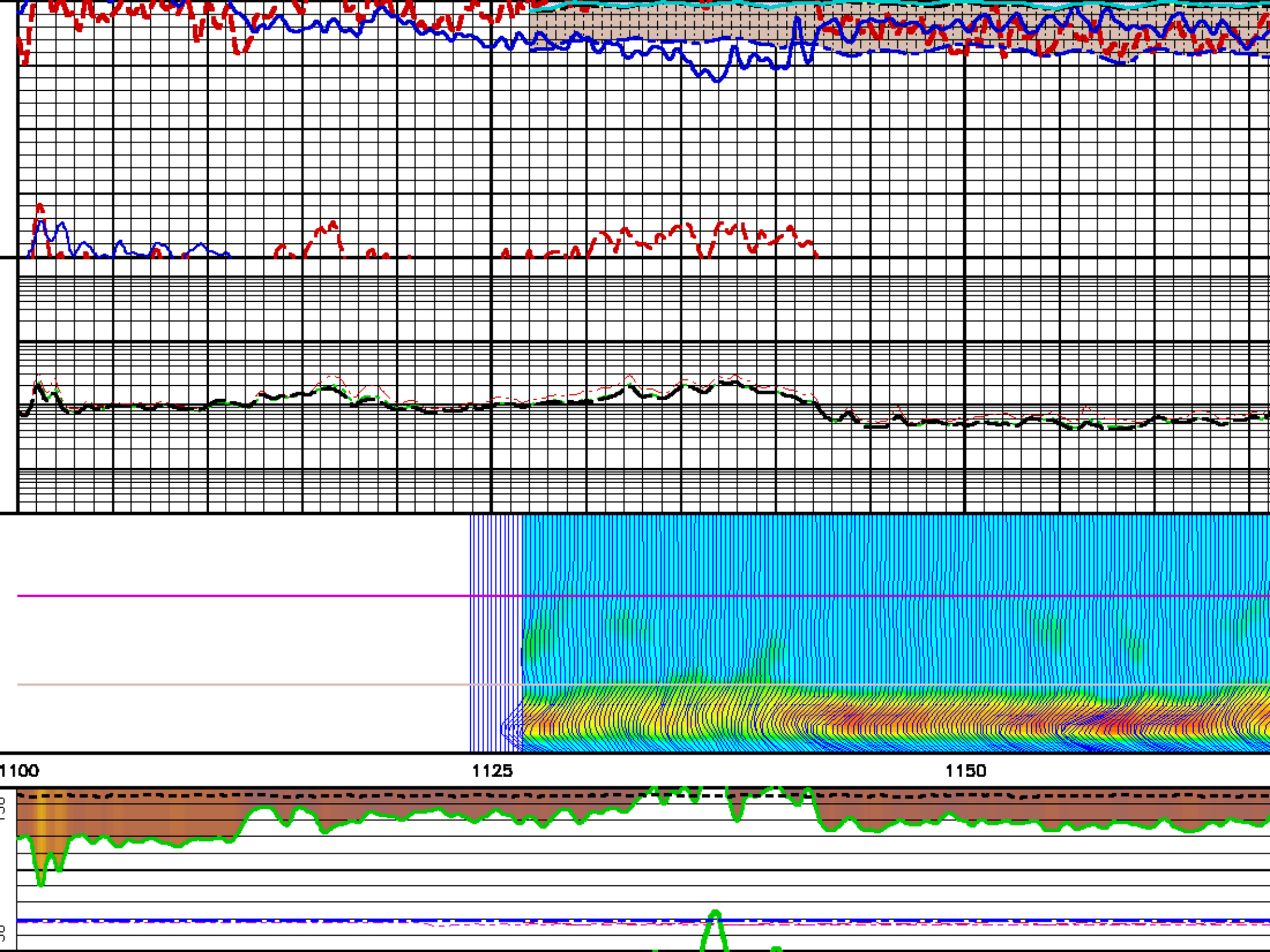
CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
BIT	0.00	M2R1	3.66	MPHE	1.52	QSHFA	1.52
CHI	1.52	M2R3	3.66	MPHS	1.52	SPD	0.00
CNCSS	29.30	M2RX	3.66	MPRM	1.52	TEN	0.00
GR	14.10	MBVI	1.52	PZSS	25.95	TPOR	1.52

Presentation : opuc:/dat1a/husky_CA212311/mrex_main_light.pdf [1:240 Scale]
Plot Interval : 1100 - 1338.15 Meters

Data File 1 : F1 : opuc:/dat1a/husky_CA212311/light_oil_main01.atf
Created On : Mar 7 22:15:30 2012
Company : HUSKY OIL OPERATIONS LIMITED
Well : LITTLE BEAR H-64
Field : SLATER RIVER
File Interval : 1074.88 - 1338.15 Meters
Dat : m876gf_X

Data File 2 : F2 : opuc:/dat1a/husky_CA212311/m77erh_x03.atf
Created On : Mar 6 22:18:03 2012
Company : HUSKY OIL OPERATIONS LIMITED
Well : LITTLE BEAR H-64
Field : SLATER RIVER
File Interval : 452.247 - 1340.95 Meters
Dat : m77erh_x

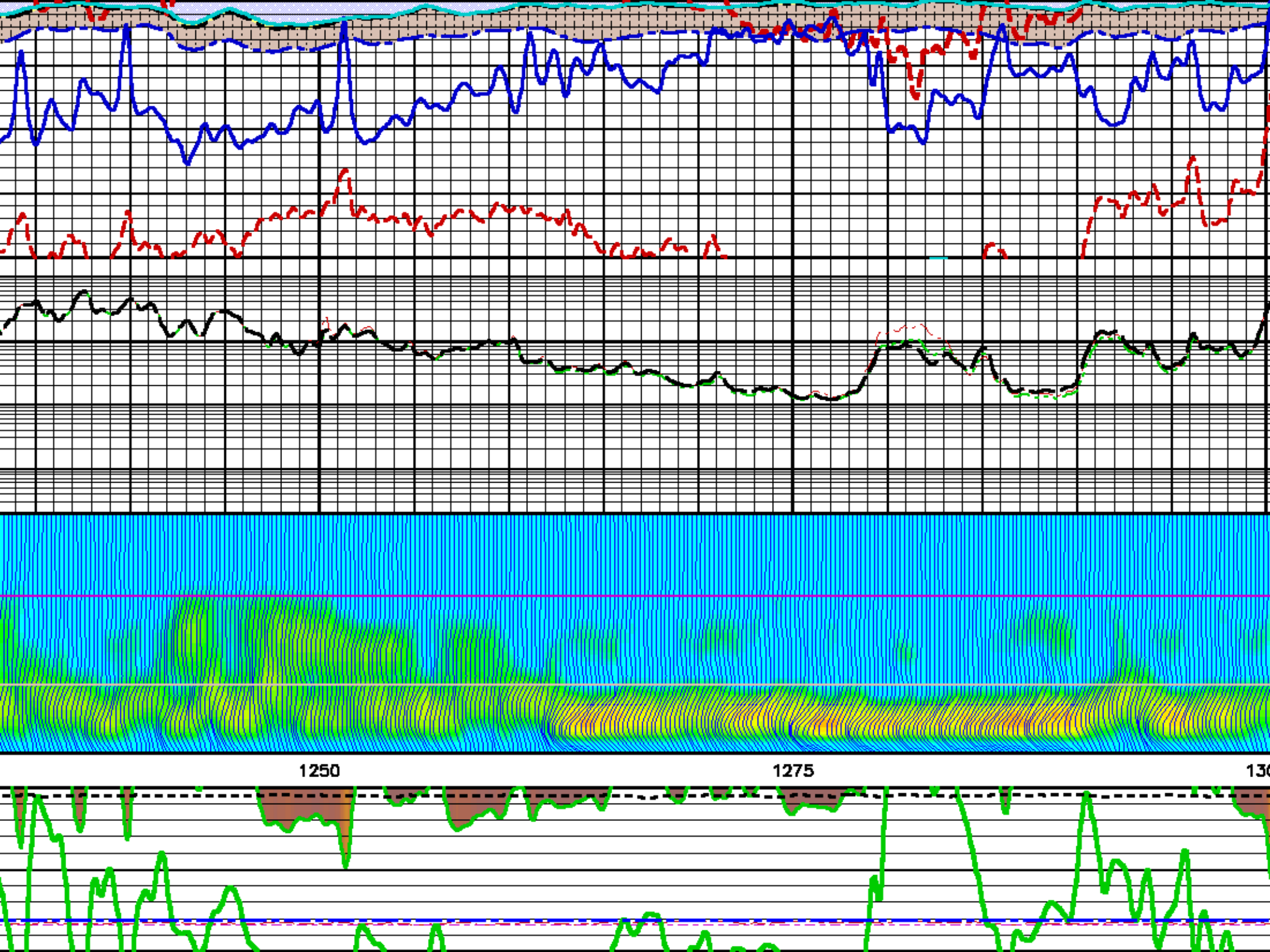


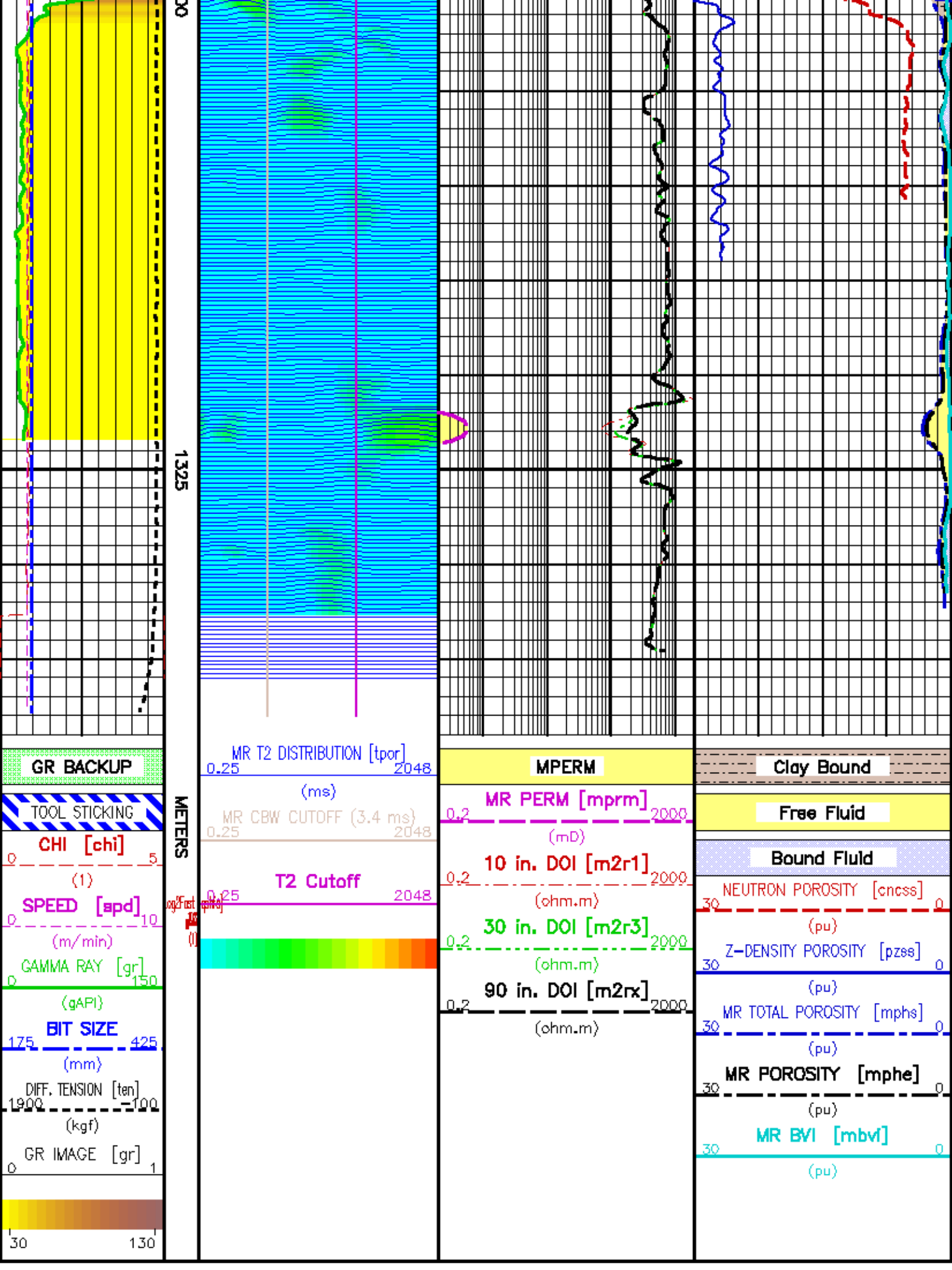

1100
1125
1150

1175

1200

1225


1250
1275


1325
METERS
GR BACKUP
TOOL STICKING
CHI [chi]
0
5
(1)
SPEED [spd]
0
10
(m/min)
GAMMA RAY [gr]
0
150
(gAPI)
BIT SIZE
175
425
(mm)
DIFF. TENSION [ten]
1900
-100
(kgf)
GR IMAGE [gr]
0
1
30
130
MR T2 DISTRIBUTION [tpor]
0.25
2048
(ms)
MR CBW CUTOFF (3.4 ms)
0.25
2048
T2 Cutoff
0.25
2048
MPERM
MR PERM [mprm]
0.2
2000
(mD)
10 in. DOI [m2r1]
0.2
2000
(ohm.m)
30 in. DOI [m2r3]
0.2
2000
(ohm.m)
90 in. DOI [m2rx]
0.2
2000
(ohm.m)
Clay Bound
Free Fluid
Bound Fluid
NEUTRON POROSITY [cncss]
30
0
(pu)
Z-DENSITY POROSITY [pzss]
30
0
(pu)
MR TOTAL POROSITY [mphs]
30
0
(pu)
MR POROSITY [mphe]
30
0
(pu)
MR BVI [mbvi]
30
0
(pu)

LIGHT OIL - REPEAT LOG - SANDSTONE MATRIX

ECLIPS 6.1I Aug 06, 2010
Updates: 1 Patches: 1

Wed Mar 7 22:14:51 2012

Perpit /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.51

PARAMETER AND FILTER SUMMARY REPORT

FILE: /data/husky_CA212311/light_oil_rpt02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 1254.375 m BOTTOM DEPTH: 1357.620 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
TTRM	FILTER (.td)	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
MREX - POROSITY	FILTER ()	medium (1)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
BIT SIZE	BIT SIZE	222.000	mm	TOP	BOTTOM

MREX GENERAL

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
MREX TCC	ACM NAME	PoroPerm + Light Oil		TOP	1341.562

MREX ACQUISITION PARAMETERS

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
MREX TCC	SUBSET 0 INTERVAL	12.000	s	TOP	0.005
	NUM FREQ GROUPS	1		"	"
	1ST FREQ	INDEX 12, 971.5 kHz		TOP	1341.562
	2ND FREQ	INDEX 10, 864.0 kHz		"	"
	3RD FREQ	INDEX 8, 774.2 kHz		"	"
	4TH FREQ	INDEX 6, 693.4 kHz		"	"
	5TH FREQ	INDEX 4, 620.9 kHz		"	"
	6TH FREQ	INDEX 2, 560.6 kHz		"	"
	1ST T2 TW	9.224	s	"	"
	1ST T2 TE	0.40	ms	TOP	-0.115
	1ST T2 TRAIN LENGTH	400	ms	TOP	1341.562
	1ST T2 ECHOES	1000		"	"
	2ND T2 TW	5.292	s	"	"
	2ND T2 TE	2.70	ms	TOP	-0.115
	2ND T2 TRAIN LENGTH	399	ms	TOP	1341.562
	2ND T2 ECHOES	148		"	"
	3RD T2 TW	1.011	s	"	"
	3RD T2 TE	2.70	ms	TOP	-0.115
	3RD T2 TRAIN LENGTH	399	ms	TOP	1341.562
	3RD T2 ECHOES	148		"	"
	CBW TW	0.020	s	TOP	-0.115
	CBW TE	0.40	ms	"	"
	CBW TRAIN LENGTH	10	ms	TOP	1341.562
	CBW ECHOES/PACKET	25		"	"
	1ST CBW PACKETS	16		"	"
	PULSE SHAPE	SOFT		"	"

MREX PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
NOISE & CAL PULSE SELECTION	FREQ DISPLAY SELECT	FREQUENCY A		TOP	BOTTOM
POROSITY	MBVI/MBVM BOUNDARY	CLASTIC (33 ms)		"	"
	USER MBVI/MBVM	33	ms	"	"
	CBW CUTOFF	3.4	ms	"	"
PERMEABILITY	Coates M exponent	4.000		"	"
	Coates N exponent	2.000		"	"
	Coates Constant	10.000		"	"
AVERAGING LENGTH (SAMPLES)	ET Averaging Length	6 samples		"	"
RESET PHASE ROTATION ANGLE	RESET ACCUM. PHASE	RESET ACCUM PHASE		"	"
MREX FORMATION/BOREHOLE TEMP	BOREHOLE TEMP SRC	MEASURED (3981/3980)		"	"
INVERSION (FITTING) PARAMETERS	T2 BINS USED	19		TOP	1341.582
	TPOR BINS USED	26		"	"
	T2 LAST BIN	2048.00	ms	"	"
	TPOR LAST BIN	2048.00	ms	"	"

PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/husky_CA212311/a77evh_xc05.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 487.586 m BOTTOM DEPTH: 1340.929 m

SYMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
Y AXIS CALIPER	FILTER ()	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.l)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
ZDL HIGH RES	FILTER (hrd1*)	light		"	"
	FILTER (hrd1s*)	light		"	"
	FILTER (hrd2*)	light		"	"
	FILTER (hrd2s*)	light		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	177.800	mm	TOP	BOTTOM
	CASING THICKNESS	8.000	mm	"	"
BIT SIZE	BIT SIZE	222.000	mm	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	222.000	mm	"	"
	FIXED DIAMETER (mbh*)	222.000	mm	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	OIL BASE MUD		"	"

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	0	ppm	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	311.000	mm	"	"

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
DENSITY POROSITY	RHOmatrix	2.710	g/cm3	TOP	BOTTOM
	RHOfluid	1.000	g/cm3	"	"
	RHOmatrix (sand)	2.650	g/cm3	"	"
ZDL	DENX TRACKING	ON		"	"

HDIL PROCESSING

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	INTERVAL (m) BOTTOM
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RCTEMP		''	''
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		''	''
	ABC to CALCULATE	STANDOFF		''	''
	STANDOFF	38.10	mm	''	''
	TOOL POSITION	ECCENTERED		''	''
	Raad MULTIPLIER	1.000		''	''

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Mar 7 22:09:34 2012	BIT SIZE
F1:CHI	Mar 7 22:09:34 2012	GOODNESS OF FIT OF EACH ECHO DATA PACKET
F2:CNCSS	Mar 6 22:18:03 2012	BOREHOLE SIZE CORRECTED SANDSTONE COMPENSATED NEU POROSITY
F1:GR	Mar 7 22:09:34 2012	GAMMA RAY
F2:M2R1	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F2:M2R3	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F2:M2RX	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:MBVI	Mar 7 22:09:34 2012	MR IRREDUCIBLE FLUIDS
F1:MPHE	Mar 7 22:09:34 2012	MR EFFECTIVE POROSITY
F1:MPHS	Mar 7 22:09:34 2012	MR TOTAL POROSITY
F1:MPRM	Mar 7 22:09:34 2012	MR PERMEABILITY
F2:PZSS	Mar 6 22:18:03 2012	POROSITY FOR SANDSTONE MATRIX
F1:QSHFA	Mar 7 22:09:34 2012	QUALITY OF SHIFTED DATA OF 1ST T2
F1:SPD	Mar 7 22:09:34 2012	SPEED
F1:TEN	Mar 7 22:09:34 2012	DIFFERENTIAL TENSION
F1:TPOR	Mar 7 22:09:34 2012	TOTAL POROSITY (CBW + T2 BIN ARRAY)

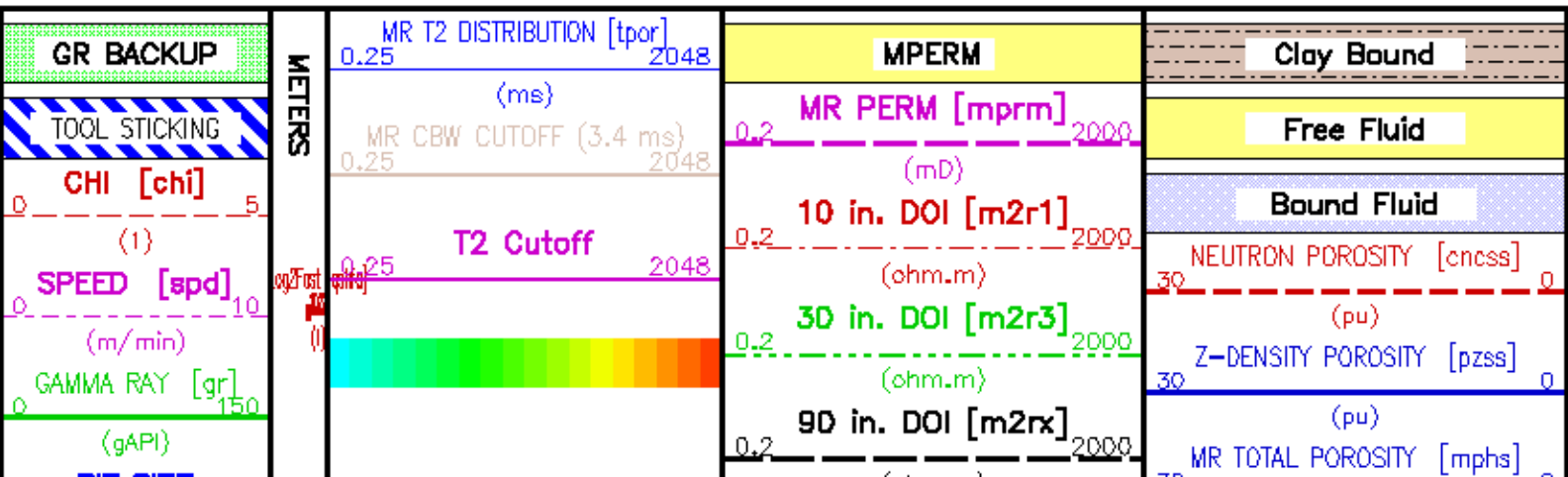
CURVE MEASURE POINT OFFSET

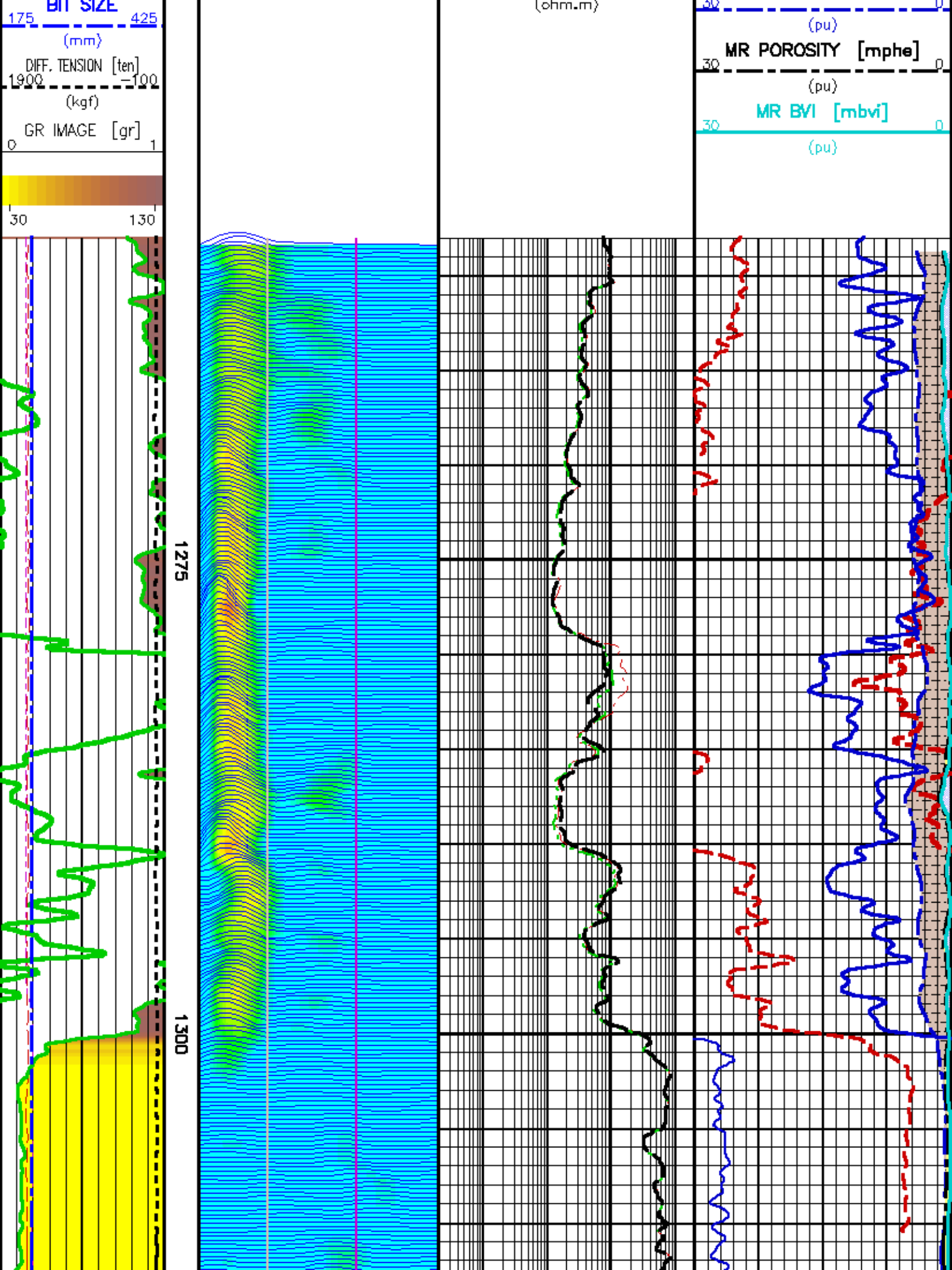
CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
BIT	0.00	M2R1	3.66	MPHE	1.52	QSHFA	1.52
CHI	1.52	M2R3	3.66	MPHS	1.52	SPD	0.00
CNCSS	29.30	M2RX	3.66	MPRM	1.52	TEN	0.00
GR	14.10	MBVI	1.52	PZSS	25.85	TPOR	1.52

Presentation : epuax/dat1a/husky_CA212311/mrex_rpt.pdf [1:240 Scale]
Plot Interval : 1258 - 1337.23 Metere

Data File 1 : F1 : epuax/dat1a/husky_CA212311/light_oil_rpt02.dfs
Created On : Mar 7 22:09:34 2012
Company : HUSKY OIL OPERATIONS LIMITED
Well : LITTLE BEAR H-64
Field : SLATER RIVER
File Interval : 1236.5 - 1337.23 Metere
Dct : m876gf_X

Data File 2 : F2 : epuax/dat1a/husky_CA212311/m77erh_xc03.dfs
Created On : Mar 6 22:18:03 2012
Company : HUSKY OIL OPERATIONS LIMITED
Well : LITTLE BEAR H-64
Field : SLATER RIVER
File Interval : 452.247 - 1340.93 Metere
Dct : m77erh_x

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425
(mm)
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1900
-100
(kgf)
GR IMAGE [gr]
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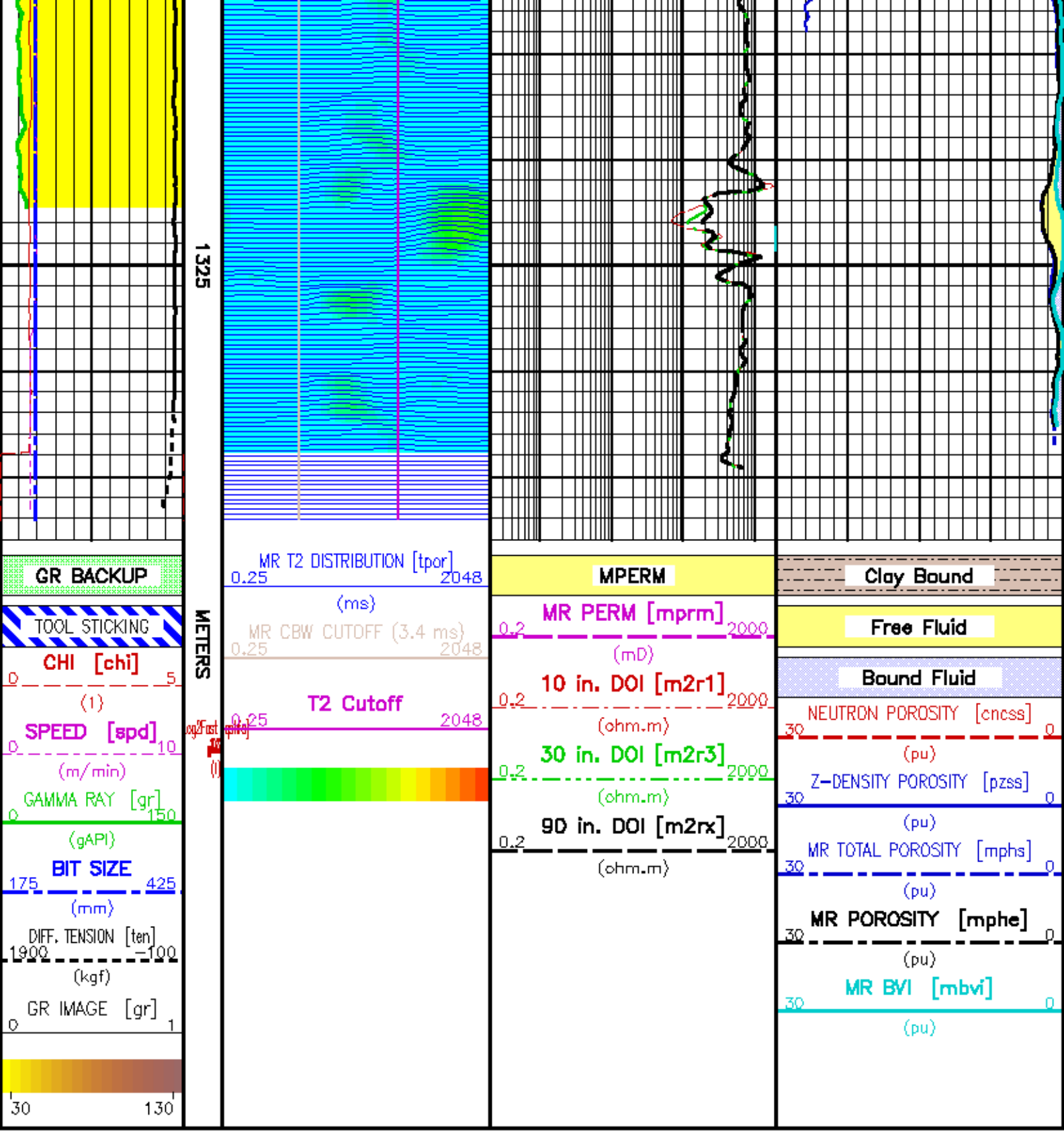
1
30
130
(ohm.m)
(pu)
MR POROSITY [mphe]
30
0
(pu)
MR BVI [mbvi]
30
0
(pu)
1275
1300



UPPER REPEAT LOG - SANDSTONE MATRIX

PARAMETER AND FILTER SUMMARY REPORT

FILE: /data/husky_CA212311/light_oil_rpt2nd00.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 1091.641 m BOTTOM DEPTH: 1174.061 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
TTRM	FILTER (.td)	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
MREX - POROSITY	FILTER ()	medium (1)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
BIT SIZE	BIT SIZE	222.000	mm	TOP	BOTTOM

MREX GENERAL

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
MREX TCC	ACM NAME	PorePerm + Heavy Oil		TOP	BOTTOM

MREX ACQUISITION PARAMETERS

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
MREX TCC	SUBSET 0 INTERVAL	12.000	s	TOP	0.225
		8.000	s	0.225	BOTTOM
	NUM FREQ GROUPS	1		TOP	BOTTOM
	1ST FREQ	INDEX 12, 971.5 kHz		"	"
	2ND FREQ	INDEX 8, 774.2 kHz		"	"
	3RD FREQ	INDEX 10, 864.0 kHz		"	"
	4TH FREQ	INDEX 6, 695.4 kHz		"	"
	5TH FREQ	INDEX 4, 620.9 kHz		"	"
	6TH FREQ	INDEX 2, 560.6 kHz		"	"
	NOMINAL TIP ANG (B)	135	deg	"	"
	PULSE SHAPE	SOFT		"	"
	1ST T2 TE	0.40	ms	"	"
	2ND T2 TE	2.70	ms	"	"
	3RD T2 TE	2.70	ms	"	"
	1ST T2 ECHOES	1000		TOP	1177.687
		750		1177.687	BOTTOM
	2ND T2 ECHOES	148		TOP	BOTTOM
	3RD T2 ECHOES	148		"	"
	1ST T2 TW	9.224	s	TOP	1177.687
		4.301	s	1177.687	BOTTOM
	2ND T2 TW	5.292	s	TOP	BOTTOM
	3RD T2 TW	1.011	s	"	"
	1ST T2 TRAIN LENGTH	400	ms	TOP	1177.687
		300	ms	1177.687	BOTTOM
	2ND T2 TRAIN LENGTH	399	ms	TOP	BOTTOM
	3RD T2 TRAIN LENGTH	399	ms	"	"
	CBW TE	0.40	ms	"	"
	CBW ECHOES/PACKET	25		"	"
	CBW TRAIN LENGTH	10	ms	"	"
	1ST CBW PACKETS	16		"	"
	CBW TW	0.020	s	"	"

MREX PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
NOISE & CAL PULSE SELECTION	FREQ DISPLAY SELECT	FREQUENCY A		TOP	BOTTOM
POROSITY	MBVI/MBVM BOUNDARY	CLASTIC (33 ms)		"	"
	USER MBVI/MBVM	33	ms	"	"
	CBW CUTOFF	3.4	ms	"	"
PERMEABILITY	Coates M exponent	4.000		"	"
	Coates N exponent	2.000		"	"
	Coates Constant	10.000		"	"
AVERAGING LENGTH (SAMPLES)	ET Averaging Length	5 samples		"	"
INVERSION (FITTING) PARAMETERS	T2 FIRST BIN	4.00	ms	"	"

	T2 LAST BIN	2048.00	ms	"	"
	T2 BINS USED	19		"	"
	BVI FIRST BIN	4.00	ms	"	"
	BVI LAST BIN	1024.00	ms	"	"
	BVI BINS USED	13		"	"
	CBW FIRST BIN	0.35	ms	"	"
	CBW LAST BIN	1024.00	ms	"	"
	CBW BINS USED	16		"	"
	TPOR FIRST BIN	0.35	ms	"	"
	TPOR LAST BIN	2048.00	ms	"	"
	TPOR BINS USED	26		"	"
RESET PHASE ROTATION ANGLE	RESET ACCUM. PHASE			"	"
MREX FORMATION/BOREHOLE TEMP	BOREHOLE TEMP SRC	MEASURED (3981/3980)		"	"

PARAMETER AND FILTER SUMMARY REPORT

File: /data/husky_CA212311/m77evh_xc05.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 487.566 m BOTTOM DEPTH: 1340.929 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
Y AXIS CALIPER	FILTER ()	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.1)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
ZDL HIGH RES	FILTER (hrd1*)	light		"	"
	FILTER (hrd1s*)	light		"	"
	FILTER (hrd2*)	light		"	"
	FILTER (hrd2s*)	light		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	177.800	mm	TOP	BOTTOM
	CASING THICKNESS	8.000	mm	"	"
BIT SIZE	BIT SIZE	222.000	mm	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	222.000	mm	"	"
	FIXED DIAMETER (mbh*)	222.000	mm	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	OIL BASE MUD		"	"

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	0	ppm	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	311.000	mm	"	"

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
DENSITY POROSITY	RHOmatrix	2.710	g/cm3	TOP	BOTTOM
	RHOfluid	1.000	g/cm3	"	"
	RHOmatrix (sand)	2.650	g/cm3	"	"
ZDL	DENC TRACKING	ON		"	"

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE INTEMP		TOP	BOTTOM

ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	STANDOFF		"	"
	STANDOFF	38.10	mm	"	"
	TOOL POSITION	ECCENTERED		"	"
	Raud MULTIPLIER	1.000		"	"

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Mar 7 22:36:20 2012	BIT SIZE
F1:CHI	Mar 7 22:36:20 2012	GOODNESS OF FIT OF EACH ECHO DATA PACKET
F2:CNCSS	Mar 6 22:18:03 2012	BOREHOLE SIZE CORRECTED SANDSTONE COMPENSATED NEU POROSITY
F1:GR	Mar 7 22:36:20 2012	GAMMA RAY
F2:M2R1	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F2:M2R3	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F2:M2RX	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:MBVI	Mar 7 22:36:20 2012	MR IRREDUCIBLE FLUIDS
F1:MPHE	Mar 7 22:36:20 2012	MR EFFECTIVE POROSITY
F1:MPHS	Mar 7 22:36:20 2012	MR TOTAL POROSITY
F1:MPRM	Mar 7 22:36:20 2012	MR PERMEABILITY
F2:PZSS	Mar 6 22:18:03 2012	POROSITY FOR SANDSTONE MATRIX
F1:QSHFA	Mar 7 22:36:20 2012	QUALITY OF SHIFTED DATA OF 1ST T2
F1:SPD	Mar 7 22:36:20 2012	SPEED
F1:TEN	Mar 7 22:36:20 2012	DIFFERENTIAL TENSION
F1:TPOR	Mar 7 22:36:20 2012	TOTAL POROSITY (CBW + T2 BIN ARRAY)

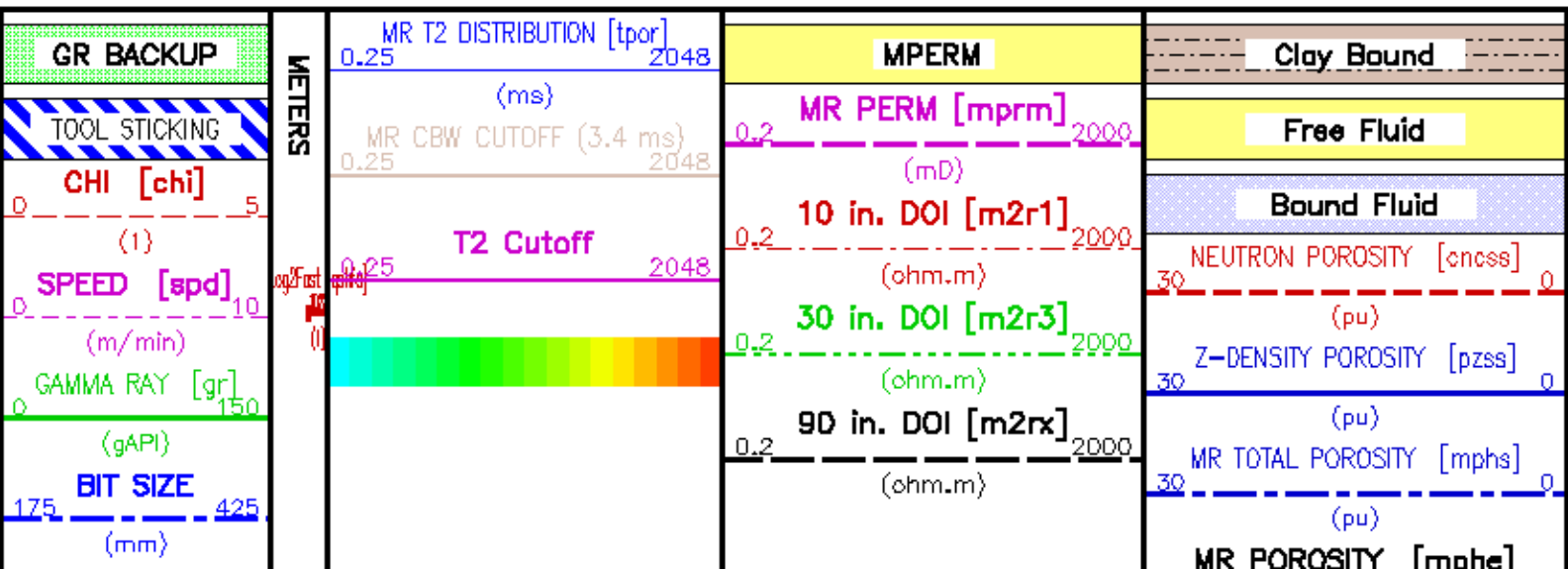
CURVE MEASURE POINT OFFSET

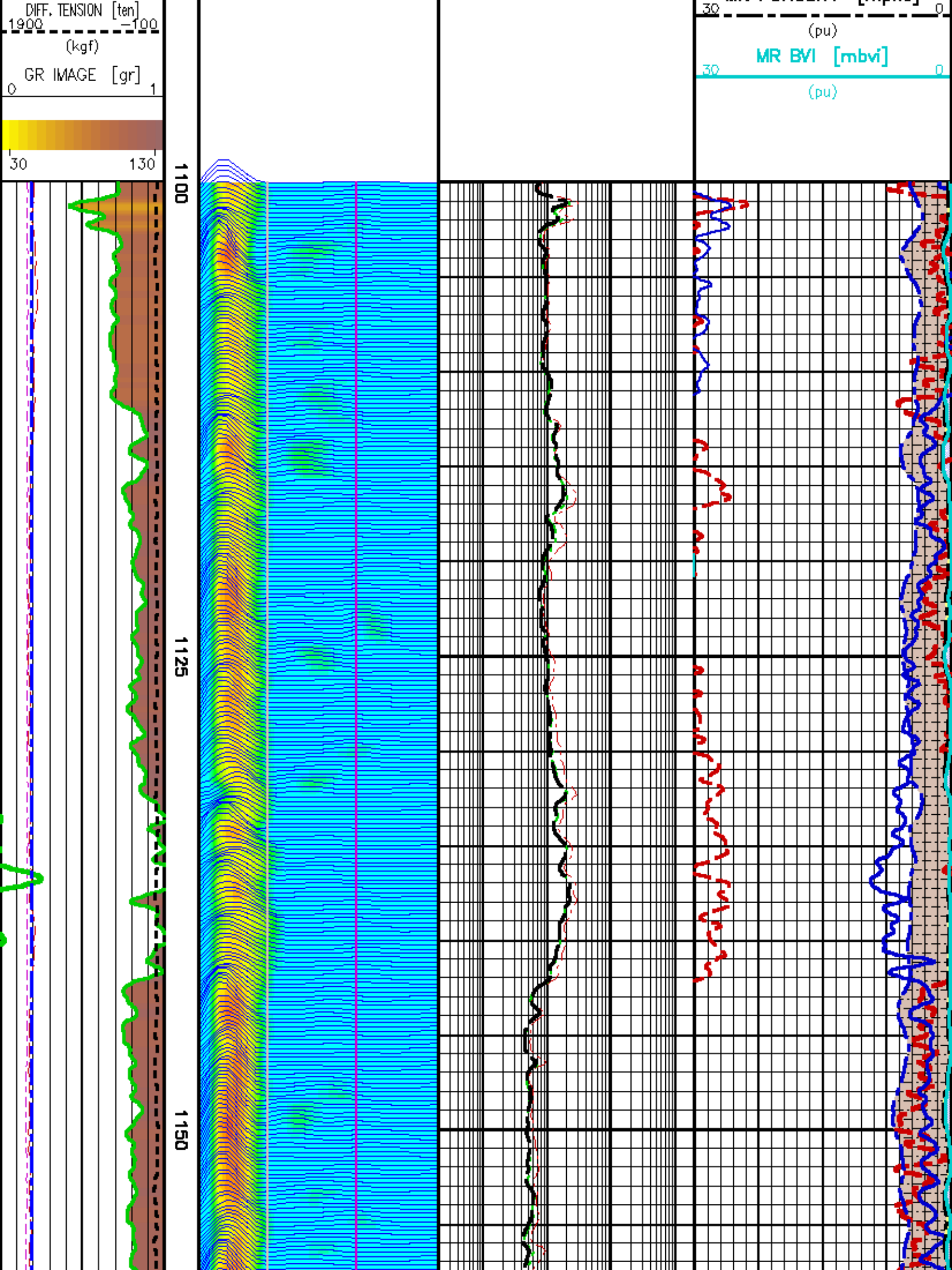
CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
BIT	0.00	M2R1	3.66	MPHE	1.52	QSHFA	1.52
CHI	1.52	M2R3	3.66	MPHS	1.52	SPD	0.00
CNCSS	29.30	M2RX	3.66	MPRM	1.52	TEN	0.00
GR	14.10	MBVI	1.52	PZSS	25.85	TPOR	1.52

Presentation : epuoz/dat1a/husky_CA212311/light_OIL_repeat_2.pdf [1:240 Scale]
Plot Interval : 1100 - 1170 Meters

Data File 1 : F1 : epuoz/dat1a/husky_CA212311/light_oil_rpt2nd00.aff
Created On : Mar 7 22:36:20 2012
Company : HUSKY OIL OPERATIONS LIMITED
Well : LITTLE BEAR H-64
Field : SLATER RIVER
File Interval : 1073.73 - 1174.01 Meters
Dct : m876gf_X

Data File 2 : F2 : epuoz/dat1a/husky_CA212311/m77erh_xc03.xtf
Created On : Mar 6 22:18:03 2012
Company : HUSKY OIL OPERATIONS LIMITED
Well : LITTLE BEAR H-64
Field : SLATER RIVER
File Interval : 452.247 - 1340.93 Meters
Dct : m77erh_x

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1100
1125
1150
30
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(pu)
MR BVI [mbvi]
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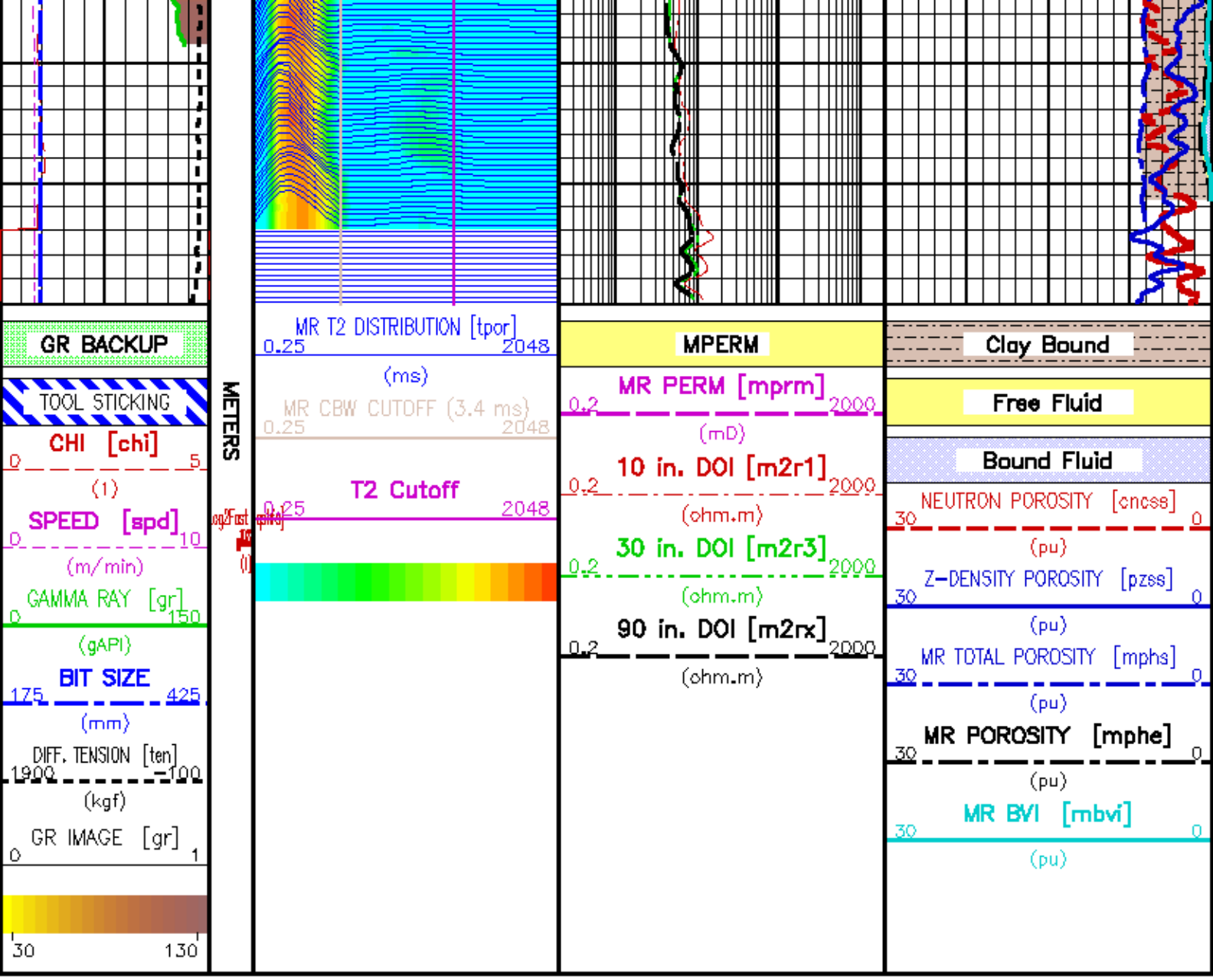
(pu)



HEAVY OIL - MAIN LOG - SANDSTONE MATRIX

ECLIPS 6.1I Aug 06, 2010
Updates: 1 Patches: 1

Wed Mar 7 22:35:17 2012

Perplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.51

PARAMETER AND FILTER SUMMARY REPORT

FILE: /data1c/husky_CA212311/heavy_oil_main01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 1057.755 m BOTTOM DEPTH: 1539.305 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
TTRM	FILTER (.td)	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"

TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
MREX - POROSITY	FILTER ()	medium (1)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
BIT SIZE	BIT SIZE	222.000	mm	TOP	BOTTOM

MREX GENERAL

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
MREX TCC	ACM NAME	PoroPerm + Light Oil		TOP	BOTTOM

MREX ACQUISITION PARAMETERS

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
MREX TCC	SUBSET 0 INTERVAL	8.000 12.000	s s	TOP 0.350	0.350 BOTTOM
	NUM FREQ GROUPS	1		TOP	BOTTOM
	1ST FREQ	INDEX 12, 971.5 kHz		"	"
	2ND FREQ	INDEX 10, 864.0 kHz		"	"
	3RD FREQ	INDEX 8, 774.2 kHz		"	"
	4TH FREQ	INDEX 6, 695.4 kHz		"	"
	5TH FREQ	INDEX 4, 620.9 kHz		"	"
	6TH FREQ	INDEX 2, 560.6 kHz		"	"
	NOMINAL TIP ANG (B)	135	deg	"	"
	PULSE SHAPE	SOFT		"	"
	1ST T2 TE	0.40	ms	"	"
	2ND T2 TE	2.70	ms	"	"
	3RD T2 TE	2.70	ms	"	"
	1ST T2 ECHOES	750 1000		TOP 1343.267	1343.267 BOTTOM
	2ND T2 ECHOES	148		TOP	BOTTOM
	3RD T2 ECHOES	148		"	"
	1ST T2 TW	4.301 9.224	s s	TOP 1343.267	1343.267 BOTTOM
	2ND T2 TW	8.292	s	TOP	BOTTOM
	3RD T2 TW	1.011	s	"	"
	1ST T2 TRAIN LENGTH	300 400	ms ms	TOP 1343.267	1343.267 BOTTOM
	2ND T2 TRAIN LENGTH	399	ms	TOP	BOTTOM
	3RD T2 TRAIN LENGTH	399	ms	"	"
	CBW TE	0.40	ms	"	"
	CBW ECHOES/PACKET	25		"	"
	CBW TRAIN LENGTH	10	ms	"	"
	1ST CBW PACKETS	16		"	"
	CBW TW	0.020	s	"	"

MREX PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
NOISE & CAL PULSE SELECTION	FREQ DISPLAY SELECT	FREQUENCY A		TOP	BOTTOM
POROSITY	MBVI/MBVM BOUNDARY	CLASTIC (33 ms)		"	"
	USER MBVI/MBVM	33	ms	"	"
	CBW CUTOFF	3.4	ms	"	"
PERMEABILITY	Coates M exponent	4.000		"	"
	Coates N exponent	2.000		"	"
	Coates Constant	10.000		"	"
AVERAGING LENGTH (SAMPLES)	ET Averaging Length	5 samples		"	"
INVERSION (FITTING) PARAMETERS	T2 FIRST BIN	4.00	ms	"	"
	T2 LAST BIN	2048.00	ms	"	"
	T2 BINS USED	19		"	"
	BVI FIRST BIN	4.00	ms	"	"
	BVI LAST BIN	1024.00	ms	"	"
	BVI BINS USED	13		"	"
	CBW FIRST BIN	0.35	ms	"	"
	CBW LAST BIN	1024.00	ms	"	"
	CBW BINS USED	16		"	"
	TPOR FIRST BIN	0.35	ms	"	"
	TPOR LAST BIN	2048.00	ms	"	"
	TPOR BINS USED	26		"	"
RESET PHASE ROTATION ANGLE	RESET ACCUM. PHASE			"	"
MREX FORMATION/BOREHOLE TEMP	BOREHOLE TEMP SRC	MEASURED (3961/3980)		"	"

PARAMETER AND FILTER SUMMARY REPORT

PARAMETER AND FILTER SUMMARY REPORT

File: /data1a/husky_CA212311/w77evh_xc05.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 487.566 m BOTTOM DEPTH: 1340.929 m

SYMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
Y AXIS CALIPER	FILTER ()	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.1)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
ZDL HIGH RES	FILTER (hrd1*)	light		"	"
	FILTER (hrd1s*)	light		"	"
	FILTER (hrd2*)	light		"	"
	FILTER (hrd2s*)	light		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	177.800	mm	TOP	BOTTOM
	CASING THICKNESS	8.000	mm	"	"
BIT SIZE	BIT SIZE	222.000	mm	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	222.000	mm	"	"
	FIXED DIAMETER (mbh*)	222.000	mm	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	OIL BASE MUD		"	"

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	0	ppm	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	311.000	mm	"	"

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
DENSITY POROSITY	RHOmatrix	2.710	g/cm3	TOP	BOTTOM
	RHOfluid	1.000	g/cm3	"	"
	RHOmatrix (cemd)	2.650	g/cm3	"	"
ZDL	DENC TRACKING	ON		"	"

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	STANDOFF		"	"
	STANDOFF	38.10	mm	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Mar 7 22:25:45 2012	BIT SIZE
F1:CHI	Mar 7 22:25:45 2012	GOODNESS OF FIT OF EACH ECHO DATA PACKET
F2:CNCSS	Mar 6 22:18:03 2012	BOREHOLE SIZE CORRECTED SANDSTONE COMPENSATED NEU POROSITY
F1:GR	Mar 7 22:25:45 2012	GAMMA RAY

F2:M2R1	Mar	6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F2:M2R3	Mar	6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F2:M2RX	Mar	6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:MBVI	Mar	7 22:25:45 2012	MR IRREDUCIBLE FLUIDS
F1:MPHE	Mar	7 22:25:45 2012	MR EFFECTIVE POROSITY
F1:MPHS	Mar	7 22:25:45 2012	MR TOTAL POROSITY
F1:MPRM	Mar	7 22:25:45 2012	MR PERMEABILITY
F2:PZSS	Mar	6 22:18:03 2012	POROSITY FOR SANDSTONE MATRIX
F1:QSHFA	Mar	7 22:25:45 2012	QUALITY OF SHIFTED DATA OF 1ST T2
F1:SPD	Mar	7 22:25:45 2012	SPEED
F1:TEN	Mar	7 22:25:45 2012	DIFFERENTIAL TENSION
F1:TPOR	Mar	7 22:25:45 2012	TOTAL POROSITY (CBW + T2 BIN ARRAY)

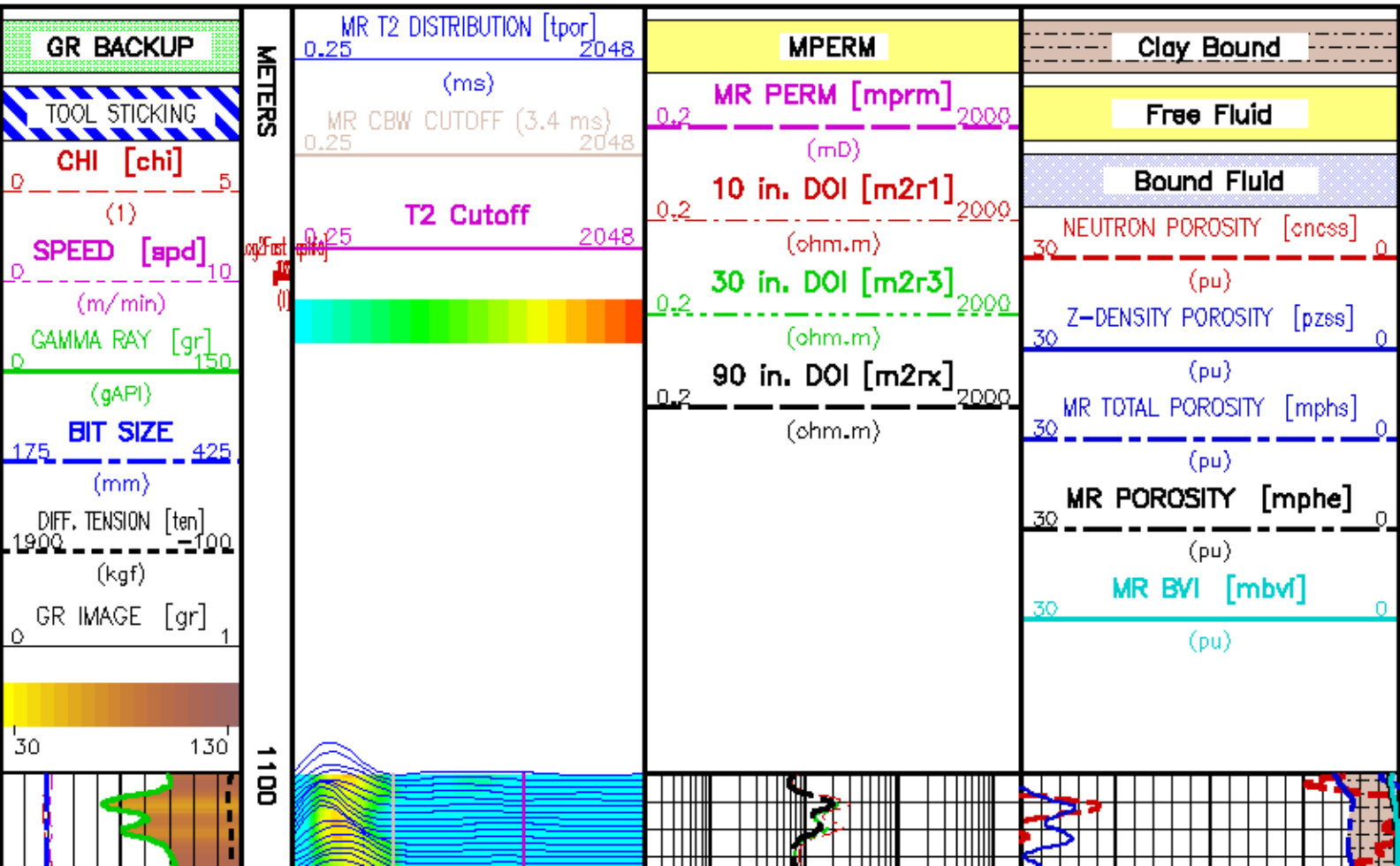
CURVE MEASURE POINT OFFSET

CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
BIT	0.00	M2R1	3.66	MPHE	1.52	QSHFA	1.52
CHI	1.52	M2R3	3.66	MPHS	1.52	SPD	0.00
CNCSS	29.30	M2RX	3.66	MPRM	1.52	TEN	0.00
GR	14.10	MBVI	1.52	PZSS	25.95	TPOR	1.52

Presentation : epacc/dat1a/husky_CA212311/mrex_main_heavy.pdf [1:240 Scale]
Plot Interval : 1100 - 1339.29 Meters

Data File 1 : F1 : epacc/dat1a/husky_CA212311/heavy_all_main01.aff
Created On : Mar 7 22:25:45 2012
Company : HUSKY OIL OPERATIONS LIMITED
Well : LITTLE BEAR H-64
Field : SLATER RIVER
File Interval : 1069.85 - 1339.29 Meters
Dct : m876gf_X

Data File 2 : F2 : epacc/dat1a/husky_CA212311/m77erh_xc03.xtf
Created On : Mar 6 22:18:03 2012
Company : HUSKY OIL OPERATIONS LIMITED
Well : LITTLE BEAR H-64
Field : SLATER RIVER
File Interval : 452.247 - 1340.93 Meters
Dct : m77erh_x



1125

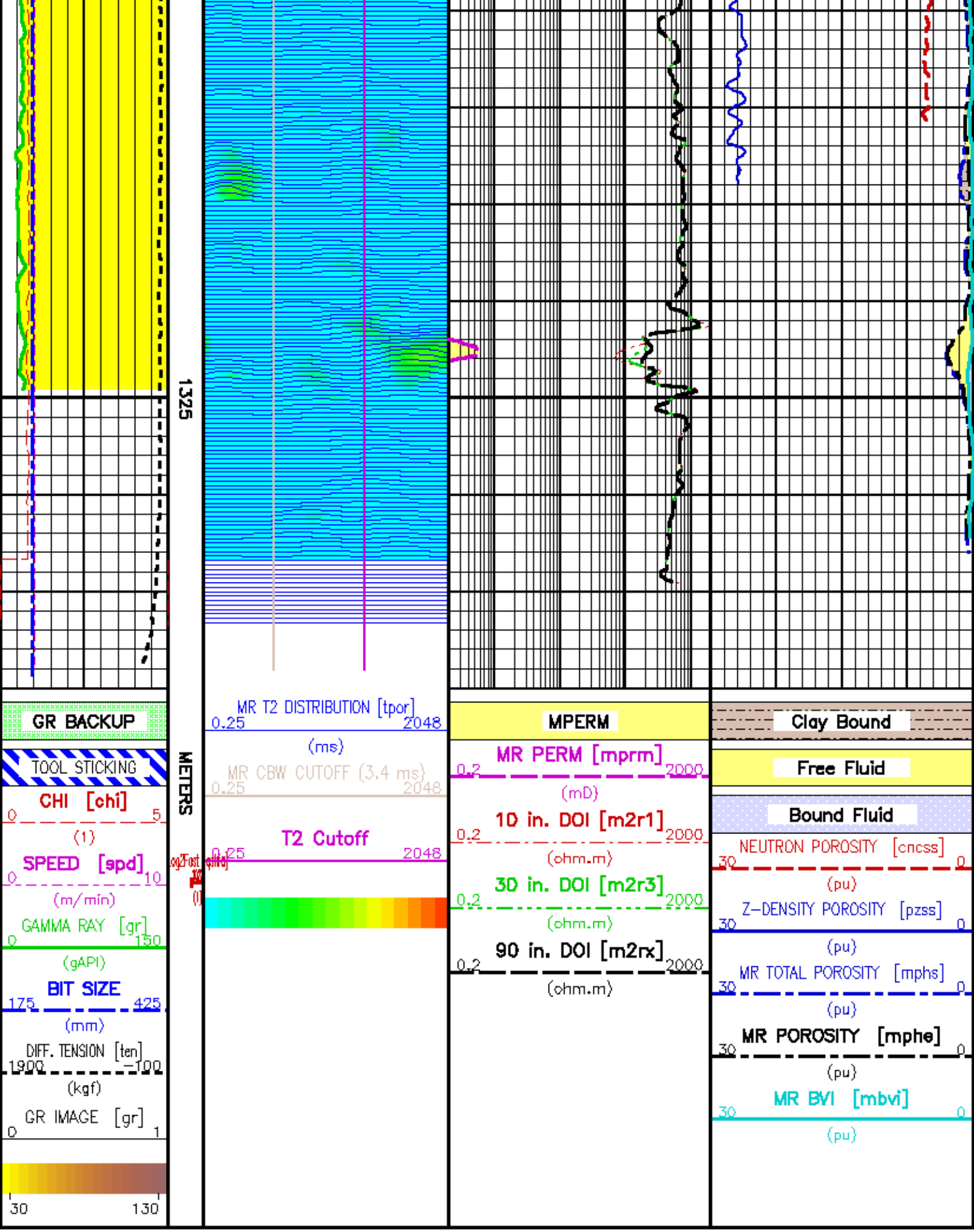
1150

1175

1200

1225

1250
1275
1300


1325
METERS
GR BACKUP
TOOL STICKING
CHI [chi]
0
5
(1)
SPEED [spd]
0
10
(m/min)
GAMMA RAY [gr]
0
150
(gAPI)
BIT SIZE
175
425
(mm)
DIFF. TENSION [ten]
1900
-100
(kgf)
GR IMAGE [gr]
0
1
30
130
MR T2 DISTRIBUTION [tpor]
0.25
2048
(ms)
MR CBW CUTOFF (3.4 ms)
0.25
2048
T2 Cutoff
0.25
2048
MPERM
MR PERM [mprm]
0.2
2000
(mD)
10 in. DOI [m2r1]
0.2
2000
(ohm.m)
30 in. DOI [m2r3]
0.2
2000
(ohm.m)
90 in. DOI [m2rx]
0.2
2000
(ohm.m)
Clay Bound
Free Fluid
Bound Fluid
NEUTRON POROSITY [cncss]
30
0
(pu)
Z-DENSITY POROSITY [pzss]
30
0
(pu)
MR TOTAL POROSITY [mphs]
30
0
(pu)
MR POROSITY [mphe]
30
0
(pu)
MR BVI [mbvi]
30
0
(pu)

PORO PERM - MAIN LOG - SANDSTONE MATRIX

ECLIPS 6.1I Aug 06, 2010
Updates: 1 Patches: 1

Wed Mar 7 22:29:06 2012

Perplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.51

PARAMETER AND FILTER SUMMARY REPORT

FILE: /data1a/husky_CA212511/a876gf_XC09.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 839.166 m BOTTOM DEPTH: 841.979 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
TTRM	FILTER (.td)	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
MREX - POROSITY	FILTER ()	medium (1)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
BIT SIZE	BIT SIZE	222.000	mm	TOP	BOTTOM

MREX GENERAL

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
MREX TOC	ACQ NAME	PoroPerm		TOP	BOTTOM

MREX ACQUISITION PARAMETERS

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
MREX TOC	SUBSET 0 INTERVAL	8.000	s	TOP	BOTTOM
	NUM FREQ GROUPS	2		"	"
	1ST FREQ	INDEX 12, 971.5 kHz		"	"
	2ND FREQ	INDEX 4, 620.9 kHz		"	"
	3RD FREQ	INDEX 8, 774.2 kHz		"	"
	4TH FREQ	INDEX 10, 864.0 kHz		"	"
	5TH FREQ	INDEX 2, 560.6 kHz		"	"
	6TH FREQ	INDEX 6, 693.4 kHz		"	"
	NOMINAL TIP ANG (B)	135	deg	"	"
	PULSE SHAPE	SOFT		"	"
	1ST T2 TE	0.60	ms	"	"
	2ND T2 TE	2.70	ms	"	"
	3RD T2 TE	2.70	ms	"	"
	1ST T2 ECHOES	833		"	"
	2ND T2 ECHOES	148		"	"
	3RD T2 ECHOES	148		"	"
	1ST T2 TW	6.434	s	"	"
	2ND T2 TW	8.292	s	"	"
	3RD T2 TW	1.011	s	"	"
	1ST T2 TRAIN LENGTH	500	ms	"	"
	2ND T2 TRAIN LENGTH	399	ms	"	"
	3RD T2 TRAIN LENGTH	399	ms	"	"
	1ST BVI TE	0.60	ms	"	"
	1ST BVI ECHOES	50		"	"
	1ST BVI TW	0.100		"	"
	1ST BVI TRAIN LEN	30	ms	"	"
	CBW TE	0.40	ms	"	"
	CBW ECHOES/PACKET	24		"	"
	CBW TRAIN LENGTH	10	ms	"	"
	1ST CBW PACKETS	68		"	"
	CBW TW	0.020	s	"	"

MREX PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
NOISE & CAL PULSE SELECTION	FREQ DISPLAY SELECT	FREQUENCY A		TOP	BOTTOM
POROSITY	MBVI/MBVM BOUNDARY	CLASTIC (33 ms)		"	"
	USER MBVI/MBVM	33	ms	"	"
	CBW CUTOFF	3.4	ms	"	"
PERMEABILITY	Coates M exponent	4.000		"	"
	Coates N exponent	2.000		"	"
	Coates Constant	10.000		"	"
AVERAGING LENGTH (SAMPLES)	ET Averaging Length	5 samples		TOP	52.090
		10 samples		52.090	51.730
		8 samples		51.730	51.690
		5 samples		51.690	BOTTOM
INVERSION (FITTING) PARAMETERS	T2 FIRST BIN	4.00	ms	TOP	BOTTOM
	T2 LAST BIN	2048.00	ms	"	"
	T2 BINS USED	19		"	"
	BVI FIRST BIN	4.00	ms	"	"
	BVI LAST BIN	1024.00	ms	"	"
	BVI BINS USED	13		"	"
	CBW FIRST BIN	0.35	ms	"	"
	CBW LAST BIN	1024.00	ms	"	"
	CBW BINS USED	16		"	"
	TPOR FIRST BIN	0.35	ms	"	"
	TPOR LAST BIN	2048.00	ms	"	"
	TPOR BINS USED	26		"	"
RESET PHASE ROTATION ANGLE	RESET ACCUM. PHASE			"	"
MREX FORMATION/BOREHOLE TEMP	BOREHOLE TEMP SRC	MEASURED (3961/3980)		"	"

PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/husky_CA212311/a77evh_xc03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 487.566 m BOTTOM DEPTH: 1340.929 m

SYMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
Y AXIS CALIPER	FILTER ()	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.1)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
ZDL HIGH RES	FILTER (hrd1*)	light		"	"
	FILTER (hrd1s*)	light		"	"
	FILTER (hrd2*)	light		"	"
	FILTER (hrd2s*)	light		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	177.800	mm	TOP	BOTTOM
	CASING THICKNESS	8.000	mm	"	"
BIT SIZE	BIT SIZE	222.000	mm	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	222.000	mm	"	"
	FIXED DIAMETER (mbh*)	222.000	mm	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	OIL BASE MUD		"	"

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	0	ppm	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"

	BIT SIZE BEHIND CSNG	311.000	mm	"	"

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
DENSITY POROSITY	RHOmatrix	2.710	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"
	RHOmatrix (sand)	2.650	g/cm3	"	"
ZDL	DENC TRACKING	ON		"	"

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RCTEMP		"	"
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	STANDOFF		"	"
	STANDOFF	38.10	mm	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Mar 7 20:10:08 2012	BIT SIZE
F2:CAL	Mar 6 22:18:03 2012	CALIPER
F1:CHI	Mar 7 20:10:08 2012	GOODNESS OF FIT OF EACH ECHO DATA PACKET
F2:CNCSS	Mar 6 22:18:03 2012	BOREHOLE SIZE CORRECTED SANDSTONE COMPENSATED NEU POROSITY
F1:GR	Mar 7 20:10:08 2012	GAMMA RAY
F2:M2R1	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F2:M2R3	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F2:M2R9	Mar 6 22:18:03 2012	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:MBVI	Mar 7 20:10:08 2012	MR IRREDUCIBLE FLUIDS
F1:MPHE	Mar 7 20:10:08 2012	MR EFFECTIVE POROSITY
F1:MPHS	Mar 7 20:10:08 2012	MR TOTAL POROSITY
F1:MPRM	Mar 7 20:10:08 2012	MR PERMEABILITY
F2:PZSS	Mar 6 22:18:03 2012	POROSITY FOR SANDSTONE MATRIX
F1:QSHFA	Mar 7 20:10:08 2012	QUALITY OF SHIFTED DATA OF 1ST T2
F1:SPD	Mar 7 20:10:08 2012	SPEED
F1:TEN	Mar 7 20:10:08 2012	DIFFERENTIAL TENSION
F1:TPOR	Mar 7 20:10:08 2012	TOTAL POROSITY (CBW + T2 BIN ARRAY)

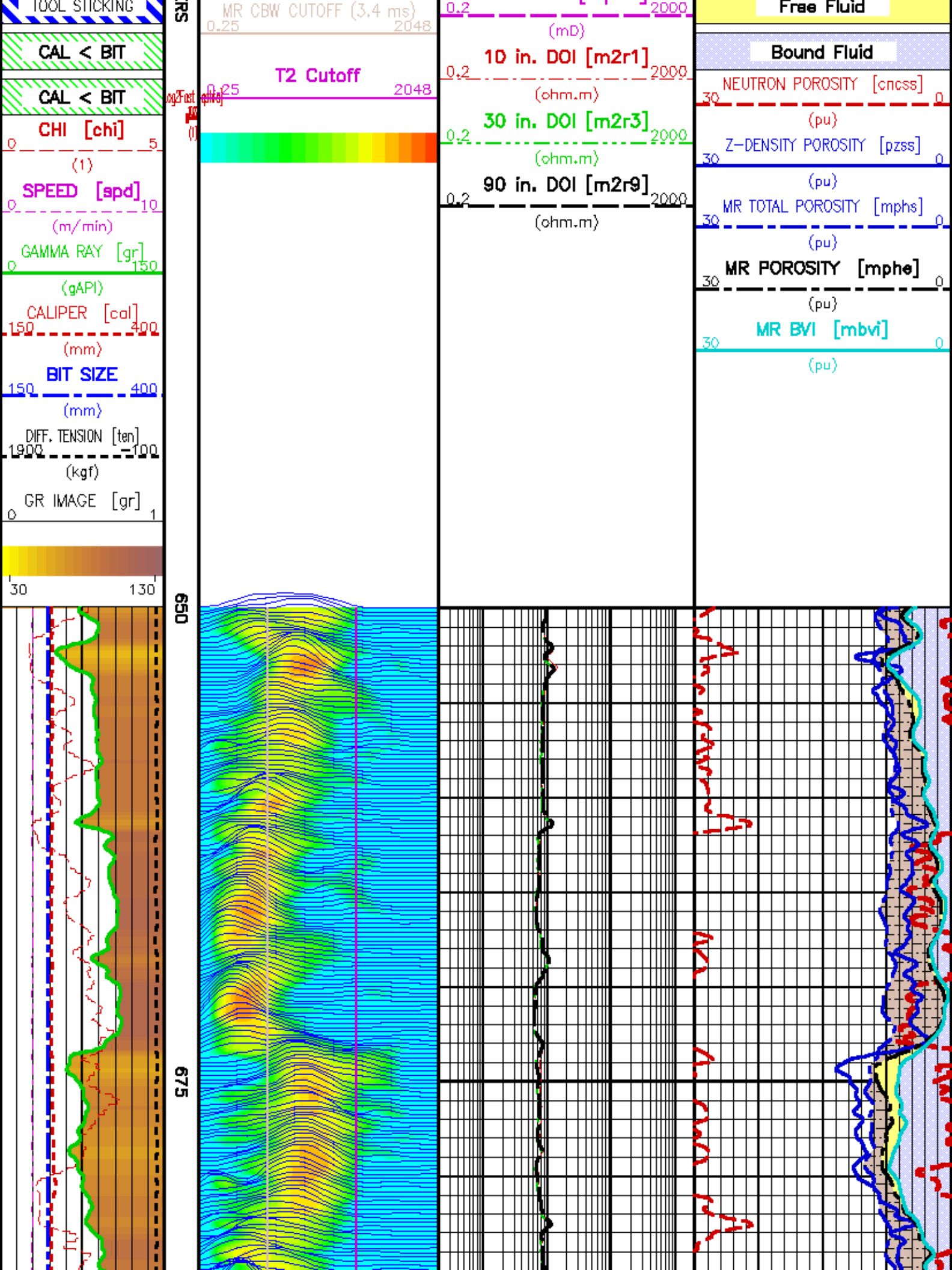
CURVE MEASURE POINT OFFSET

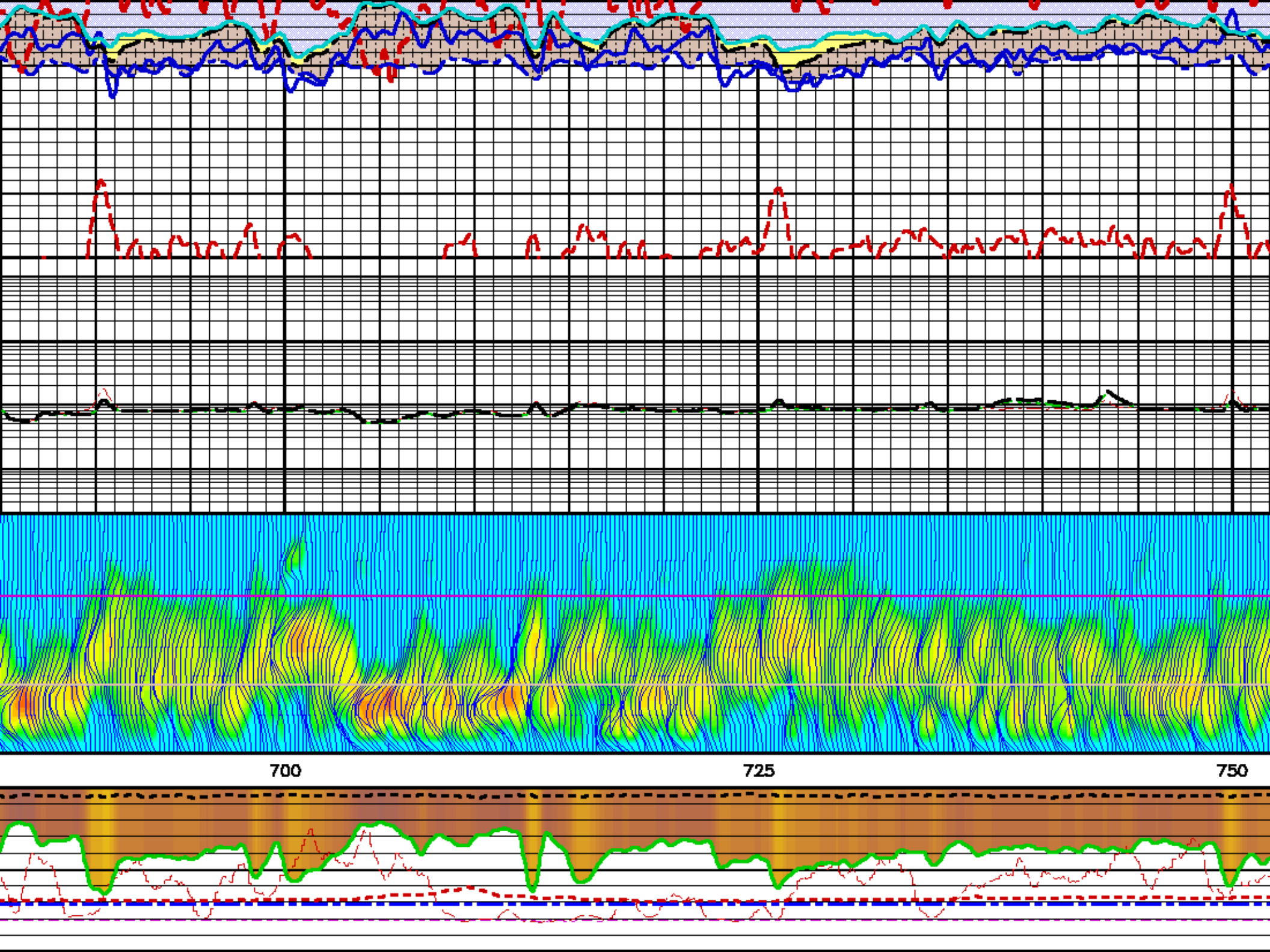
CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
BIT	0.00	M2R1	3.66	MPHS	1.52	TEN	0.00
CAL	26.06	M2R3	3.66	MPRM	1.52	TPOR	1.52
CHI	1.52	M2R9	3.66	PZSS	25.95		
CNCSS	29.30	MBVI	1.52	QSHFA	1.52		
GR	14.10	MPHE	1.52	SPD	0.00		

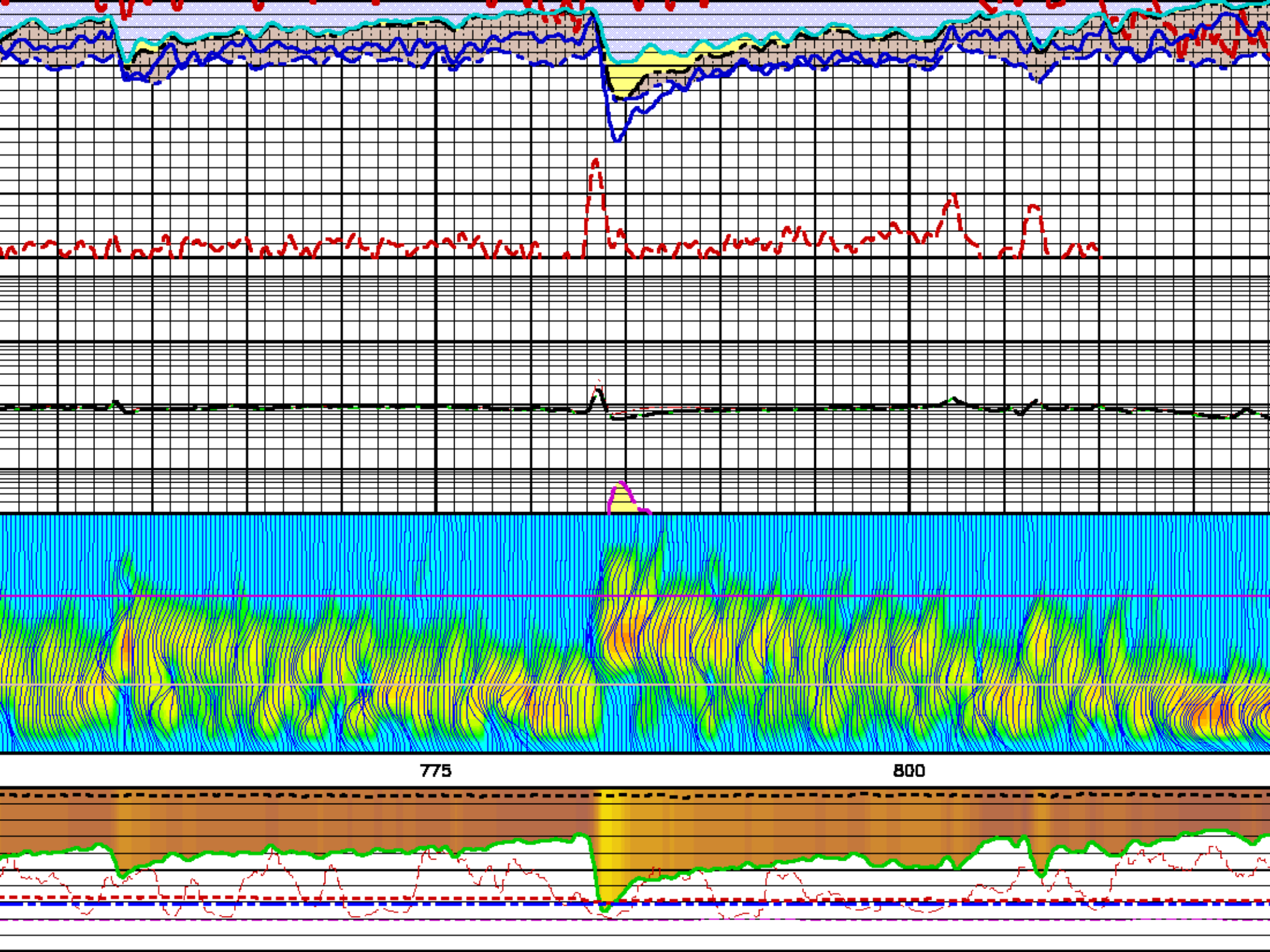
Presentation : opuc:/dat1a/husky_CA212311/poroperm.pdf [1:240 Scale]
Plot Interval : 850 - 840 Meters

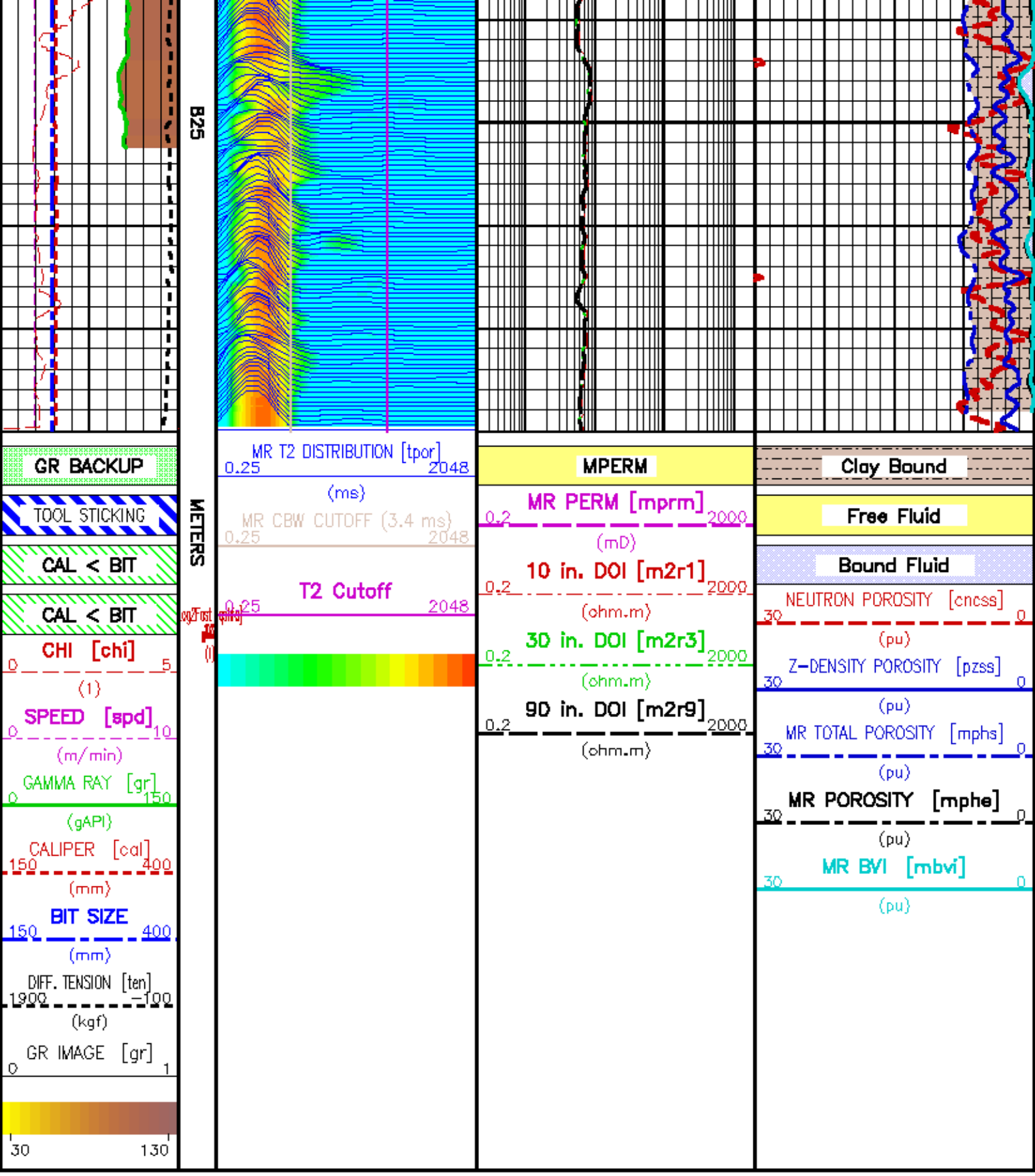
Data File 1 : F1 : opuc:/dat1a/husky_CA212311/m876gf_XC09.dfs
Created On : Mar 7 20:10:08 2012
Company : HUSKY OIL OPERATIONS LIMITED
Well : LITTLE BEAR H-64
Field : SLATER RIVER
File Interval : 821.259 - 843.61 Meters
Dat : m876gf_X

Data File 2 : F2 : opuc:/dat1a/husky_CA212311/m77erh_xc03.dfs
Created On : Mar 6 22:18:03 2012
Company : HUSKY OIL OPERATIONS LIMITED
Well : LITTLE BEAR H-64
Field : SLATER RIVER
File Interval : 452.247 - 1340.95 Meters
Dat : m77erh_x


TOOL STICKING
CAL < BIT
CAL < BIT
CHI [chi]
0 5
(1)
SPEED [spd]
0 10
(m/min)
GAMMA RAY [gr]
0 150
(gAPI)
CALIPER [cal]
150 400
(mm)
BIT SIZE
150 400
(mm)
DIFF. TENSION [ten]
1900 -100
(kgf)
GR IMAGE [gr]
0 1
30 130
RS
MR CBW CUTOFF (3.4 ms)
0.25 2048
T2 Cutoff
0.25 2048
650
675
0.2 2000
(mD)
10 in. DOI [m2r1]
0.2 2000
(ohm.m)
30 in. DOI [m2r3]
0.2 2000
(ohm.m)
90 in. DOI [m2r9]
0.2 2000
(ohm.m)
Free Fluid
Bound Fluid
NEUTRON POROSITY [cncss]
30 0
(pu)
Z-DENSITY POROSITY [pzss]
30 0
(pu)
MR TOTAL POROSITY [mphs]
30 0
(pu)
MR POROSITY [mphe]
30 0
(pu)
MR BVI [mbvi]
30 0
(pu)


700
725
750


775
800



CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/husky_CA212311/m878gf_XC.fp1

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 (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	147.84	1025.36	877.5 (830.0 – 960.0)	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 (140.46 – 160.46)

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)

SL_II PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XA 11756674 DATE/TIME PERFORMED: Mon Feb 27 20:18:03 2012

UNIT #: 5753XB 10108816 CALIBRATOR ID: 4702NA DA-554

	Bkgnd (cts/s)	Cal ON (cts/s)	Mult (gAPI/(cts/s))	Bkgnd (gAPI)	Cal ON (gAPI)	Cal Value (gAPI)
GR-SL (.06-3.5)	143.40	1024.60	0.171	24.40	174.40	150

	Std Rate (cts/s)	Meas Rate (cts/s)	Tool Norm	Std Mult	Log Mult	App Con (pct ppm)
E (.25-3.0)	554	545.6	1.015 (0.900 1.100)			
K				0.01602	0.01627	8.900
U				0.03851	0.03910	21.300
TH				0.10135	0.10290	56.100

	Mult chnl/MeV	Add chnls	QSA	QCAL	GAIN	U Pk Res %
SPECTRUM	72.260	0.704	0.954 (0.000 1.000)	1.007 (0.980 1.020)	3012 (2950 3060)	8.81 (10.00)

	P1 .352 MeV	P2 .609 MeV	P3 1.120 MeV	P4 1.765 MeV	P5 2.204 MeV
Std Pk	25.80	44.20	81.00	127.40	159.00
Meas Pk	25.33 (22.80 28.80)	44.84 (40.20 48.20)	82.78 (76.00 86.00)	128.34 (121.40 133.40)	159.39 (152.00 166.00)
Fit Pk	26.14	44.71	81.63	128.24	159.96

SL_II PRIMARY VERIFICATION SUMMARY

TOOL #: 1329XA 11756674 DATE/TIME PERFORMED: Mon Feb 27 20:23:09 2012

UNIT #: 5753XB 10108816 CALIBRATOR ID: 4702NA DA-554

	Bkgnd (cts/s)	Cal ON (cts/s)	Mult (gAPI/(cts/s))	Bkgnd (gAPI)	Cal ON (gAPI)	Cal Value (gAPI)
GR-SL (.06-3.5)	141.18	1013.32	0.171	24.01	172.47	148 (135 165)

	Std rate (cts/s)	Meas rate (cts/s)	Tool norm	Std Mult	Log Mult	App Con (pct ppm)
E (.25-3.0)	554	538.1	1.015			
K				0.01602	0.01627	8.753 (8.010 9.790)
U				0.03851	0.03910	21.040 (19.170 23.430)

TH			0.01602	0.10290	55.373 50.490 61.710	

	Mult chnl/MeV	Add chnls	QSA	QCAL	GAIN	U Pk Res %
SPECTRUM	72.483	0.721	0.928 0.000 1.000	1.010 0.980 1.020	3012	9.75

	P1 .352 MeV	P2 .609 MeV	P3 1.120 MeV	P4 1.765 MeV	P5 2.204 MeV
Std Pk	25.80	44.20	81.00	127.40	159.00
Meas Pk	25.43 22.80 28.80	45.01 40.20 48.20	82.98 76.00 86.00	128.87 121.40 133.40	159.84 152.00 166.00
Fit Pk	26.24	44.86	81.90	128.65	160.47

SL_II BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1329XA 11756674 DATE/TIME PERFORMED: Mon Mar 5 17:59:14 2012 DAYS SINCE CAL: 6

UNIT #: 3854SA 008672 CALIBRATOR ID: 4702NA DA-554

	Bkgnd (cts/s)	Cal ON (cts/s)	Mult (gAPI/(cts/s))	Bkgnd (gAPI)	Cal ON (gAPI)	Cal Value (gAPI)
GR-SL (.06-3.5)	45.13	953.37	0.171	7.65	161.99	154 135 165

	Std rate (cts/s)	Meas rate (cts/s)	Tool norm	Std Mult	Log Mult	App Con (pct ppm)
E (.25-3.0)	554	550.4	1.015			
K				0.01602	0.01627	8.952 8.010 9.790
U				0.03851	0.03910	21.521 19.170 23.430
TH				0.01602	0.10290	56.638 50.490 61.710

	Mult chnl/MeV	Add chnls	QSA	QCAL	GAIN	U Pk Res %
SPECTRUM	71.306	1.017	0.940 0.000 1.000	0.996 0.980 1.020	3027	9.43

	P1 .352 MeV	P2 .609 MeV	P3 1.120 MeV	P4 1.765 MeV	P5 2.204 MeV
Std Pk	25.80	44.20	81.00	127.40	159.00
Meas Pk	25.27 22.80 28.80	44.65 40.20 48.20	81.93 76.00 86.00	127.10 121.40 133.40	157.54 152.00 166.00
Fit Pk	26.12	44.44	80.88	126.87	158.17

SL_II AFTER LOG VERIFICATION SUMMARY

SL_FP AFTER LOG VERIFICATION SUMMARY

TOOL #: 1329XA 11756674 DATE/TIME PERFORMED: Wed Mar 7 02:42:26 2012 DAYS SINCE CAL: 8

UNIT #: 3854SA 008672 CALIBRATOR ID: 4702NA DA-554

	Bkgnd (cts/s)	Cal ON (cts/s)	Mult (gAPI/(cts/s))	Bkgnd (gAPI)	Cal ON (gAPI)	Cal Value (gAPI)
GR-SL (.06-3.5)	57.50	922.37	0.171	9.80	157.32	148 (135 – 165)

	Std rate (cts/s)	Meas rate (cts/s)	Tool norm	Std Mult	Log Mult	App Con (pct ppm)
E (.25-3.0)	554	536.1	1.015			
K				0.01602	0.01627	8.719 (8.010 – 9.790)
U				0.03851	0.03910	20.960 (19.170 – 23.430)
TH				0.01602	0.10290	55.162 (50.490 – 61.710)

	Mult chnl/MeV	Add chnls	QSA	QCAL	GAIN	U Pk Res %
SPECTRUM	71.805	0.402	0.978 (0.000 – 1.000)	0.998 (0.980 – 1.020)	3001	9.93

	P1 .352 MeV	P2 .609 MeV	P3 1.120 MeV	P4 1.765 MeV	P5 2.204 MeV
Std Pk	25.80	44.20	81.00	127.40	159.00
Meas Pk	24.87 (22.80 – 28.80)	44.26 (40.20 – 48.20)	81.87 (75.00 – 86.00)	127.48 (121.40 – 133.40)	157.94 (152.00 – 166.00)
Fit Pk	25.68	44.13	80.82	127.14	158.66

MREX_1FSWP PRIMARY CALIBRATION SUMMARY

TOOL #: 3218MB 24753511 DATE/TIME PERFORMED: Mon Feb 27 12:23:57 2012

UNIT #: 5753XB 10108816

FREQ No.	1	2	3	4	5	6	7	8	9	10	11	12
PRIMARY kHz	502 (491 – 505)	561 (550 – 566)	589 (576 – 593)	622 (609 – 628)	653 (640 – 659)	694 (683 – 701)	733 (721 – 738)	775 (760 – 781)	824 (806 – 828)	865 (852 – 874)	920 (904 – 928)	973 (955 – 980)
Q ANT.	46.5 (31.0 – 61.0)	53.1 (34.0 – 64.0)	54.2 (36.0 – 66.0)	56.6 (38.0 – 68.0)	57.7 (40.0 – 70.0)	57.9 (42.0 – 72.0)	57.1 (44.0 – 74.0)	58.5 (46.0 – 76.0)	61.2 (47.0 – 78.0)	64.4 (49.0 – 80.0)	63.8 (50.0 – 82.0)	61.3 (51.0 – 84.0)
NOISE mV	3.5 (0.0 – 10.0)	4.0 (0.0 – 10.0)	4.0 (0.0 – 10.0)	5.2 (0.0 – 10.0)	4.5 (0.0 – 10.0)	4.3 (0.0 – 10.0)	4.9 (0.0 – 10.0)	3.7 (0.0 – 10.0)	4.2 (0.0 – 10.0)	5.4 (0.0 – 10.0)	7.3 (0.0 – 10.0)	5.4 (0.0 – 10.0)
CAL mV	341 (200 – 540)	412 (240 – 640)	445 (260 – 690)	477 (290 – 740)	510 (310 – 800)	546 (340 – 870)	576 (370 – 940)	615 (400 – 1010)	689 (440 – 1080)	763 (480 – 1170)	834 (450 – 1250)	820 (420 – 1340)

MREX_1FSWP BEFORE LOG VERIFICATION SUMMARY

TOOL #: 3218MB 24753511 DATE/TIME PERFORMED: Wed Mar 7 13:00:18 2012 DAYS SINCE CAL: 9

UNIT #: 3854SA 008672

FREQ No.	1	2	3	4	5	6	7	8	9	10	11	12
BEFORE kHz	501	561	589	621	652	693	732	774	823	864	919	972
	486 505	544 566	570 593	599 628	633 659	676 701	714 738	752 781	796 826	843 874	895 928	946 980
Q	43.6	46.2	49.5	48.8	49.1	48.4	47.4	48.6	50.9	53.2	53.6	49.3
	8.0 61.0	8.0 64.0	8.0 66.0	8.0 68.0	8.0 70.0	8.0 72.0	8.0 74.0	8.0 76.0	8.0 78.0	8.0 80.0	8.0 82.0	8.0 84.0
NOISE mV	3.2	4.0	4.6	5.1	4.8	5.3	5.7	5.4	5.8	7.7	7.5	7.7
	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0
CAL mV	323	381	409	429	453	482	511	540	603	672	739	733

MREX_1FSWP AFTER LOG VERIFICATION SUMMARY

TOOL #: 3218MB 24753511 DATE/TIME PERFORMED: Wed Mar 7 22:00:48 2012 DAYS SINCE CAL: 9

UNIT #: 3854SA 008672

FREQ No.	1	2	3	4	5	6	7	8	9	10	11	12
AFTER kHz	501	560	588	620	652	693	732	774	823	863	918	971
	486 505	544 566	570 593	599 628	633 659	676 701	714 738	752 781	796 826	843 874	895 928	946 980
DELTA F %	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
	-1.0 1.0	-1.0 1.0	-1.0 1.0	-1.0 1.0	-1.0 1.0	-1.0 1.0	-1.0 1.0	-1.0 1.0	-1.0 1.0	-1.0 1.0	-1.0 1.0	-1.0 1.0
Q	44.5	44.7	48.1	47.3	46.9	46.5	46.2	47.6	48.7	51.0	49.4	47.8
	8.0 61.0	8.0 64.0	8.0 66.0	8.0 68.0	8.0 70.0	8.0 72.0	8.0 74.0	8.0 76.0	8.0 78.0	8.0 80.0	8.0 82.0	8.0 84.0
NOISE mV	4.0	4.6	5.2	5.0	5.5	5.2	5.8	6.4	6.3	7.1	9.5	9.0
	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0	0.0 15.0
CAL mV	295	342	367	386	403	432	461	483	541	599	650	656

MREX_2TGN PRIMARY CALIBRATION SUMMARY

TOOL #: 3218MB 24753511 DATE/TIME PERFORMED: Mon Feb 27 12:31:03 2012

UNIT #: 5753XB 10108816

FREQ No.	1	2	3	4	5	6	7	8	9	10	11	12
TX FREQ kHz	502	561	589	622	653	694	733	775	824	865	920	973
Vtx kV	1.13	1.23	1.23	1.26	1.31	1.29	1.30	1.30	1.32	1.27	1.33	1.27
	0.80 1.60	0.90 1.60	0.90 1.60	1.00 1.60	1.00 1.60	1.00 1.60	1.00 1.60	1.00 1.60	1.00 1.60	1.00 1.60	0.90 1.60	0.90 1.60
TAU 90 us	49.3	44.5	44.4	42.1	41.2	39.9	39.0	38.4	37.4	38.3	36.8	36.0
	43.0 59.0	39.0 54.0	38.0 53.0	36.0 50.0	35.0 49.0	34.0 48.0	33.0 47.0	32.0 46.0	32.0 46.0	32.0 46.0	31.0 46.0	30.0 44.0

MREX_3RGN PRIMARY CALIBRATION SUMMARY

TOOL #: 3218MB 24753511

DATE/TIME PERFORMED: Mon Feb 27 12:33:56 2012

UNIT #: 5753XB 10108816

CAL TEMP (degC): 22.3

FREQ No.	1	2	3	4	5	6	7	8	9	10	11	12
Gr	1.61	1.85	1.85	1.96	2.01	2.12	2.21	2.31	2.41	2.42	2.49	2.62
T2LM ms	164 (100 200)	164 (100 200)	164 (100 200)	163 (100 200)	163 (100 200)	163 (100 200)	162 (100 200)	161 (100 200)	158 (100 200)	159 (100 200)	154 (100 200)	156 (100 200)

MREX_3RGN PRIMARY VERIFICATION SUMMARY

TOOL #: 3218MB 24753511

DATE/TIME PERFORMED: Mon Feb 27 12:39:01 2012

UNIT #: 5753XB 10108816

CAL TEMP (degC): 22.3

FREQ No.		1	2	3	4	5	6	7	8	9	10	11	12
TE	ms	0.40											
POROSITY	pu	99.9 (97.0 103.0)	99.3 (97.0 103.0)	100.5 (97.0 103.0)	100.1 (97.0 103.0)	99.9 (97.0 103.0)	100.0 (97.0 103.0)	100.0 (97.0 103.0)	100.6 (97.0 103.0)	100.0 (97.0 103.0)	100.3 (97.0 103.0)	100.4 (97.0 103.0)	100.3 (97.0 103.0)
NOISE	pu	4.70 (0.00 8.40)	3.92 (0.00 7.00)	3.74 (0.00 6.50)	3.57 (0.00 6.40)	3.35 (0.00 6.20)	3.28 (0.00 5.80)	3.12 (0.00 5.60)	2.86 (0.00 5.10)	2.57 (0.00 4.80)	2.38 (0.00 4.50)	2.64 (0.00 4.50)	2.26 (0.00 4.30)
RINGING	pu	4.1 (0.0 30.0)	1.7 (0.0 30.0)	2.5 (0.0 30.0)	1.9 (0.0 30.0)	2.2 (0.0 30.0)	2.4 (0.0 30.0)	1.6 (0.0 30.0)	1.5 (0.0 30.0)	2.0 (0.0 30.0)	1.1 (0.0 30.0)	1.5 (0.0 30.0)	2.8 (0.0 30.0)
TE	ms	0.30											
POR2	pu	101.8	96.3	97.1	97.1	93.4	80.1	88.4	99.0	99.8	95.7	99.7	99.3
NOISE	pu	5.54	3.91	3.86	3.66	3.03	2.64	2.71	2.79	2.48	2.31	2.59	2.25
RINGING	pu	17.2	5.4	3.9	2.7	1.2	2.8	1.7	1.8	1.6	1.7	1.0	4.4

BAKER HUGHES

ECLIPS

COMPANY	HUSKY OIL OPERATIONS LIMITED
WELL	LITTLE BEAR H-64
FIELD	SLATER RIVER
PROVINCE	NORTHWEST TERRITORIES

FILE NO:

API NO:

LOCATION:

SURF LOC:
LAT 64 53' 28.5"N LONG 126 11' 20.3"W
BH LOC. LSD:
LAT 64 53' 28.5"N LONG 126 11' 20.3"W

ELEVATIONS:
KB 183.2 M
DF
GL 176.0 M

UID:
300H645001260000
LICENSE:
462

DATE 06-MAR-2012

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