Country	: USA
Field	: Posey 6912
Location	: Lat: 71° 10' 24.06" North Long: 163° 28' 18.67" West
Well	: OCS-Y-2321 BJ001 ST00BP00
Company	: Shell Gulf of Mexico Inc.
Rig	: Polar Pioneer

HALLIBURTON | Sperry Drilling

PROPRIETARY

DGR Dual Gamma Ray
ALD Azimuthal Lithodensity
XCAL Azimuthal Acoustic Caliper

1 : 1200

Company : **Shell Gulf of Mexico Inc.**
Rig : **Polar Pioneer**
Well : **OCS-Y-2321 BJ001 ST00BP00**
Field : **Posey 6912**
Country : **USA**
API Number : **55-352-00004-00**

LOCATION

Latitude : **71° 10' 24.06" North**
Longitude : **163° 28' 18.67" West**

Final UTM Easting = 555,034.550 m
Final UTM Northing = 7,897,425.308 m

Other Services
CTN, ADR, EWR
XBAT, PWD, DDSr
MRIL-WD

Permanent Datum : **Mean Sea Level** Elevation : **0.00 ft**
Log Measured From : **Drill Floor** **76.00 ft** Above Permanent Datum
Drilling Measured From : **Drill Floor**

MD LOG

Elev. KB **N/A**
DF **76.00 ft**
GL **N/A**
WD **146.00 ft**

Depth Logged : **222.00 ft** To **6,800.00 ft**
Date Logged : **30-Jul-15** To **21-Sep-15**
Total Depth MD : **6,800.00 ft** TVD : **6,795.34 ft**
Spud Date : **30-Jul-15**

Unit No. : **1**
Job No. :**AK-XX-0901604700**
Plot Type : **Final**
Plot Date : **01-Nov-15**

Run No.	Borehole Record (MD)			Size	Casing Record (MD)		
	Size	From	To		Weight	From	To
1	8.500 in	222.00 ft	1,512.00 ft	36.000 in	746.00 lbpf	257.00 ft	375.00 ft
5	17.500 in	1,512.00 ft	2,963.00 ft	22.000 in	224.00 lbpf	257.00 ft	1,475.00 ft
6	12.250 in	2,963.00 ft	5,423.00 ft	14.000 in	114.00 lbpf	257.00 ft	2,933.00 ft
7	8.500 in	5,423.00 ft	6,800.00 ft	9.625 in	53.00 lbpf	2,653.00 ft	5,408.00 ft

WELL INFORMATION

MWD Run Number	100	600	700		
Date run completed	01-Aug-15	14-Sep-15	22-Sep-15		
Rig Bit Number	1	6	7		
Bit Size (in)	8.500	12.250	8.500		
Tool Nominal OD (in)	6.75	8.000	6.750		
Log Start Depth (MD, ft)	222.00	2,963.00	5,423.00		
Log End Depth (MD, ft)	1,512.00	5,423.00	6,800.00		
Drill or Wipe	Drill	Drill	Drill		
Drill/Wipe Start Date and Time	30-Jul-15 17:05	12-Sep-15 01:20	20-Sep-15 08:52		
Drill/Wipe End Date and Time	01-Aug-15 11:21	13-Sep-15 16:35	21-Sep-15 23:09		
Min Inc (deg) @ Depth (MD, ft)	0.00 @ 0.00	0.58 @ 3,074.55	3.42 @ 5,980.70		
Max Inc (deg) @ Depth (MD, ft)	0.51 @ 320.88	3.70 @ 5,299.05	3.99 @ 6,745.05		
Bit TFA(in2) / Bit Type	0.71 / Tricone	0.99 / PDC	0.55 / PDC		
Flow Rate (gpm)	449.40	828.00	550.00		
Max AV (fpm) / CV (fpm) @ MWD	774.0 / 984.0	239.0 / 357.0	549.0 / 1,000.0		
Fluid Type	Sea Water	Polymer	Polymer		
Density (ppg) / Viscosity (spqt)	8.55 / 27.00	11.40 / 56.00	12.00 / 79.00		
Filtrate CL (ppm)	35,000.00	100,000.00	135,000.00		
pH / Fluid Loss (mptm)	8.50 / 0	9.10 / 4	9.30 / 6		
PV (cP) / YP (lhf2)	17 / 31.00	20 / 27.00	23 / 33.00		
% Solids / % Sand	.01 / .01	16 / 0.5	18 / 0.5		
% Oil / Oil:Water Ratio	0 / 0:100	0 / 0:84	0 / 0:79		
Rm @ Measured Temp (degF)	0.350 @ 35.60	0.080 @ 88.00	0.070 @ 70.00		
Rmf @ Measured Temp (degF)	N/A @ N/A	0.050 @ 88.00	0.060 @ 70.00		
Rmc @ Measured Temp (degF)	N/A @ N/A	0.120 @ 88.00	0.140 @ 70.00		
Max Tool Temp (degF) / Source	42.60 / HCIM	144.94 / HCIM	152.00 / HCIM		

Rm @ Max Tool Temp (degF)	0.3004 @ 42.60	0.0849 @ 144.94	0.0338 @ 152.00		
Lead MWD Engineer	Nick Weeks	Jack Kleinhans	Jack Kleinhans		
Customer Representative	Doug Sloan	Matt Cazalet	Scott Lapiene		

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM		
Software Version	88.58	88.58	88.58		
Sub Serial Number	12272466	11902800	11320539		
Insert Serial Number	14776659	12136690	11752800		
Date and Time Initialized	30-Jul-15 10:14	11-Sep-15 01:12	19-Sep-15 15:17		
Date and Time Read	01-Aug-15 18:48	18-Sep-15 18:26	25-Sep-15 08:40		
ECMB SW Version	N/A	N/A	generic 1.1.1 Linux 2.6.23.1		

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC		
Distance From Bit (ft)	16.80	56.82	48.80		
Software Version	6.33	6.33	6.33		
Sub Serial Number	12510194	12606713	12460872		
Sonde Serial Number	12059421	12059488	11902192		
Sensor ID Number	N/A	N/A	N/A		
Toolface Offset (deg)	0.00	208.54	301.32		

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR		
Distance From Bit (ft)	6.67	37.22	38.40		
Recorded Sample Period (sec)	14	10	10		
Software Version	N/A	N/A	N/A		
Sub Serial Number	12519619	11651705	12519617		
Insert/Sonde Serial Number	12464236	12351708	12041832		

Density Sensor Information

Tool Type	ALD	ALD	ALD		
Distance From Bit (ft)	79.17	87.77	113.16		
Recorded Sample Period (sec)	14	10	10		
Software Version	3.13	3.12	3.12		
Sub Serial Number	12522518	12279568	10853150		
Insert Serial Number	12541284	10718012	11496392		
Sensor ID Number	32767	32767	2		
Source Serial Number	46836B	39634B	39364b		
Pin Orientation	Down	Down	Down		
Stabilizer Blade O.D. (in)	8.25	11.90	8.20		
DPA Offset	135.00	45.00	135.00		

XBAT Sensor Information

Tool Type	XBAT	XBAT	XBAT		
Dist from Bit	32.85	130.62	64.79		
Recorded Sample Period	20	15	15		
Electronics Insert SN	11215931	12451413	12465296		
Receiver Insert SN	12267657	12405002	12565577		
Transmitter Insert SN	10603805	12277635	12280476		
Collar SN	12323024	12389351	102064794		
CBM SSPROG Version	ssprog 1.0.9-1	ssprog 1.0.9-1	ssprog 1.0.9-1		
CBM Supprt Version	support 1.9.2-1	support 1.9.2-1	support 1.9.2-1		
XBAT Version	xbat 1.2.7-1	xbat 1.2.7-1	xbat 1.2.7-1		

XBAT Caliper ARM Version	122.00	122.00	122.00		
TCM Version	20.08	20.08	20.08		
QXCB DSP Version	52.00	52.00	52.00		
QXDAQ ARM Version	142.00	142.00	121.00		
DAQ DSP Version	53.00	53.00	53.00		
Sequence File Version	120829	131212	131212		
Sequence Selected	13:M9_D5_Q5	8:M9_D9_D4	8:M9_D9_D4		

REMARKS

1. ALL DEPTHS ARE MEASURED DEPTHS (MD), UNLESS OTHERWISE NOTED. THESE DEPTHS ARE BIT DEPTHS AND ARE CALLIBRATED TO THE DRILLERS PIPE TALLY. NO DEPTH CORRECTIONS HAVE BEEN MADE FOR PIPE STRETCH OR COMPRESSION.

2. ALL VERTICAL DEPTHS ARE TRUE VERTICAL DEPTHS (TVD), UNLESS OTHERWISE NOTED. ONLY INVERTED / REVERTED SECTIONS GREATER THAN 30' TVD ARE PRESENTED

3. ALL DATA PRESENTED IS RECORDED DATA UNLESS OTHERWISE STATED.

4. LWD RUN 1 WAS COMPRISED OF DIRECTIONAL, DUAL GAMMA RAY (DGR) UTILIZING GEIGER-MUELLER TUBE TYPE DETECTORS, AZIMUTHAL DEEP ELECTROMAGNETIC WAVE RESISTIVITY (ADR), PRESSURE WHILE DRILLING (PWD) DRILLSTRING DYNAMICS SENSOR (DDSr), AZIMUTHAL LITHODENSITY (ALD), COMPENSATED THERMAL NEUTRON (CTN), MAGNETIC RESONANCE WHILE DRILLING (MRIL-WD), AZIMUTHAL BIMODAL ACOUSTIC TOOL (XBAT), AND THE AZIMUTHAL ACOUSTIC CALIPER TOOL (XCAL).

5. RUN 200 WAS A 36” HOLE OPENING RUN, RUN 300 WAS A 42” HOLE OPENING RUN, RUN 400 WAS A CLEANOUT RUN TO DRILL OUT THE SHOE TRACK AND 30’ OF NEW FORMATION. NO LWD SENSORS WERE UTILIZED. THEREFOR THEY ARE NOT PRESENTED.

6. MWD RUN 500 WAS A 17.5” DRILLING RUN UTILIZING DIRECTIONAL AND PWD. NO LOGGING SENSORS WERE PRESENT, ONLY ROP IS PRESENTED.

7. LWD RUN 6 WAS COMPRISED OF DIRECTIONAL, DUAL GAMMA RAY (DGR) UTILIZING GEIGER-MUELLER TUBE TYPE DETECTORS, ELECTROMAGNETIC WAVE RESISTIVITY PHASE 4 (EWR-P4), PRESSURE WHILE DRILLING (PWD) DRILLSTRING DYNAMICS SENSOR (DDSr), AZIMUTHAL LITHODENSITY (ALD), COMPENSATED THERMAL NEUTRON (CTN), AZIMUTHAL BIMODAL ACOUSTIC TOOL (XBAT), AND THE AZIMUTHAL ACOUSTIC CALIPER TOOL (XCAL).

8. LWD RUN 7 WAS COMPRISED OF DIRECTIONAL, DUAL GAMMA RAY (DGR) UTILIZING GEIGER-MUELLER TUBE TYPE DETECTORS, AZIMUTHAL DEEP ELECTROMAGNETIC WAVE RESISTIVITY (ADR), PRESSURE WHILE DRILLING (PWD) DRILLSTRING DYNAMICS SENSOR (DDSr), AZIMUTHAL LITHODENSITY (ALD), COMPENSATED THERMAL NEUTRON (CTN), MAGNETIC RESONANCE WHILE DRILLING (MRIL-WD), AZIMUTHAL BIMODAL ACOUSTIC TOOL (XBAT), AND THE AZIMUTHAL ACOUSTIC CALIPER TOOL (XCAL).

9. OVER THE COURSE OF THE 12.25” HOLE SECTION THERE ARE SEVERAL INSTANCES WHERE THE BOREHOLE RUGOSITY HAS CREATED “SPIKES” IN THE RESISTIVITY DATA. THIS IS DUE TO ONE RECIEVER READING THE HIGH SALINITY BOREHOLE FLUID (WASHOUT) AND THE OTHER READING THE FORMATION. THERE ARE ALSO AREAS ACROSS THE LOGGED INTERVAL THAT SHOW AN UNDERGAUGE HOLE.

10. LWD RUN 100 XBAT WAS SETUP TO FIRE 3 DIFFERENT ACTIVATIONS. ACTIVATION 1 WAS A 9KHz MONOPOLE FIRING, ACTIVATION 2 WAS A 5KHz DIPOLE FIRING, AND ACTIVATION 3 WAS A 5KHz QUADRAPOLE. THE XCAL WAS SAMPLED BEFORE AND AFTER EACH OF THESE ACTIVATIONS.

11. REGARDING THE LWD RUN 100 XCAL LOG, THIS HOLE SECTION WAS DRILLED RISERLESS, THERE WAS NOT A POINT AT WHICH THE XCAL COULD HAVE BEEN QUANTITATIVLY CALIBRATED. CALIBRATION IS PERFORMED INSIDE CASING PRIOR TO DRILLING AHEAD, AND POST RUN AS A SECONDARY VERIFICATION THAT THE MUD SYSTEM PROPERTIES HAVE NOT CHANGED. AS SUCH, A QUALITATIVE CALIBRATION HAS BEEN MADE OVER SEVERAL SECTIONS OF THE LOG WHERE THERE IS LITTLE CHANGE INFORMATION PROPERTIES. ALD HSI HAS BEEN USED AS A SECONDARY VERIFICATION TO MAKE SURE THE CALIBRATION IS REASONABLE. A FLUID VELOCITY OF 220µSECS/FT HAS BEEN USED IN THE XCAL PROCESSING OF THIS HOLE SECTION.

12. LWD RUN 600 XBAT WAS SETUP TO FIRE 3 DIFFERENT ACTIVATIONS. ACTIVATION 1 WAS A 9KHz MONOPOLE FIRING, ACTIVATION 2 WAS A 9KHz DIPOLE FIRING, AND ACTIVATION 3 WAS A 4KHz DIPOLE. THE XCAL WAS SAMPLED BEFORE

AND AFTER EACH OF THESE ACTIVATIONS. A CASING CALIBRATION WAS PERFORMED AND A FLUID VELOCITY OF 191µSECS/FT HAS BEEN USED IN THE XCAL PROCESSING OF THIS HOLE SECTION.

13. LWD RUN 700 XBAT WAS SETUP TO FIRE 3 DIFFERENT ACTIVATIONS. ACTIVATION 1 WAS A 9KHz MONOPOLE FIRING, ACTIVATION 2 WAS A 9KHz DIPOLE FIRING, AND ACTIVATION 3 WAS A 4KHz DIPOLE. THE XCAL WAS SAMPLED BEFORE AND AFTER EACH OF THESE ACTIVATIONS. A CASING CALIBRATION WAS PERFORMED AND A FLUID VELOCITY OF 209µSECS/FT HAS BEEN USED IN THE XCAL PROCESSING OF THIS HOLE SECTION.

14. ALL XCAL WAVEFORMS WERE SAMPLED AT 0.32µSECS INTERVALS.

15. RUNS 1- 7 REPRESENT THE OCS-Y-2321 BJ001 ST00BP00 WELL WITH AN API# OF 55-352-00004-00. THIS WELL REACHED A TOTAL DEPTH OF 6,800'MD / 6,795'TVD

MNEMONICS	CURVE DESCRIPTION
ROPA	AVERAGE RATE OF PENETRATION
DGRCC	DGR COMBINED GAMMA RAY BC
ARH16PC	ADR AVERAGE 2mhz 16" PHASE RESISTIVITY BC
ARH32PC	ADR AVERAGE 2mhz 32" PHASE RESISTIVITY BC
ARH48PC	ADR AVERAGE 2mhz 48" PHASE RESISTIVITY BC
R09PC	EWR AVERAGE 2mhz 09" PHASE RESISTIVITY BC
R15PC	EWR AVERAGE 2mhz 15" PHASE RESISTIVITY BC
R27PC	EWR AVERAGE 2mhz 27" PHASE RESISTIVITY BC
R39PC	EWR AVERAGE 2mhz 39" PHASE RESISTIVITY BC
ADXT	ADR FORMATION EXPOSURE TIME
EWXT	EWR FORMATION EXPOSURE TIME
TNPS	CTN NEUTRON POROSITY - SANDSTONE
ALCDLC	ALD LOW COUNT RATE BIN DENSITY
ALDCLC	ALD LOW COUNT RATE BIN STAND OFF CORRECTION
ALPELC	ALD LOW COUNT RATE BIN PHOTOELECTRIC FACTOR
XBEDA	XCAL EQUIVALENT HOLE DIAMETER
XBVPVS	XBAT VP/VS RATIO
XBCS	XBAT COMPRESSIONAL SLOWNESS
XBCSS	XBAT COMBINED SHEAR SLOWNESS
XBDFX	XBAT DIPOLE FLEXURAL SLOWNESS
XBSFLAG	XBAT SHEAR FLAG

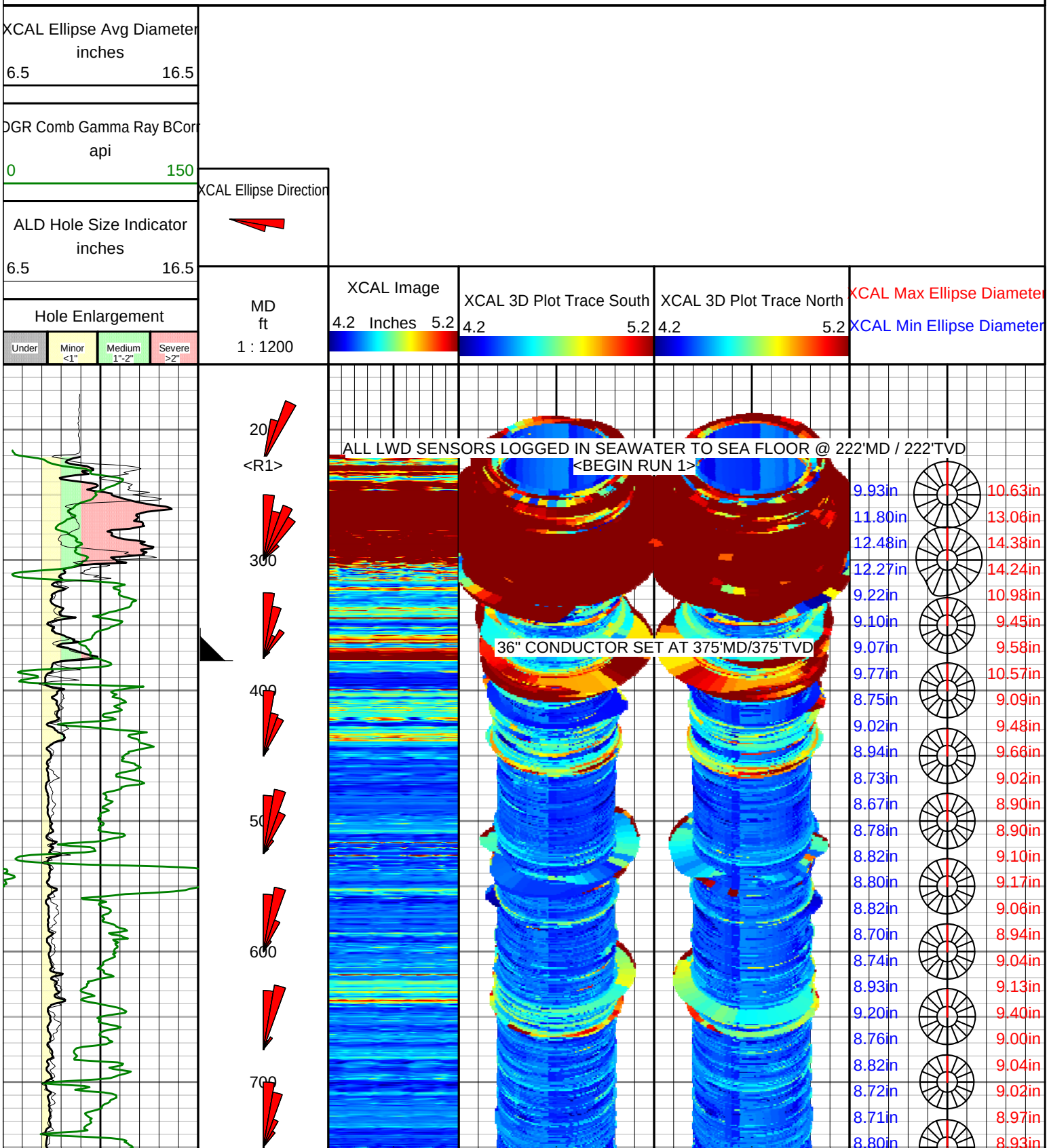
PARAMETERS USED IN LOG PROCESSING:

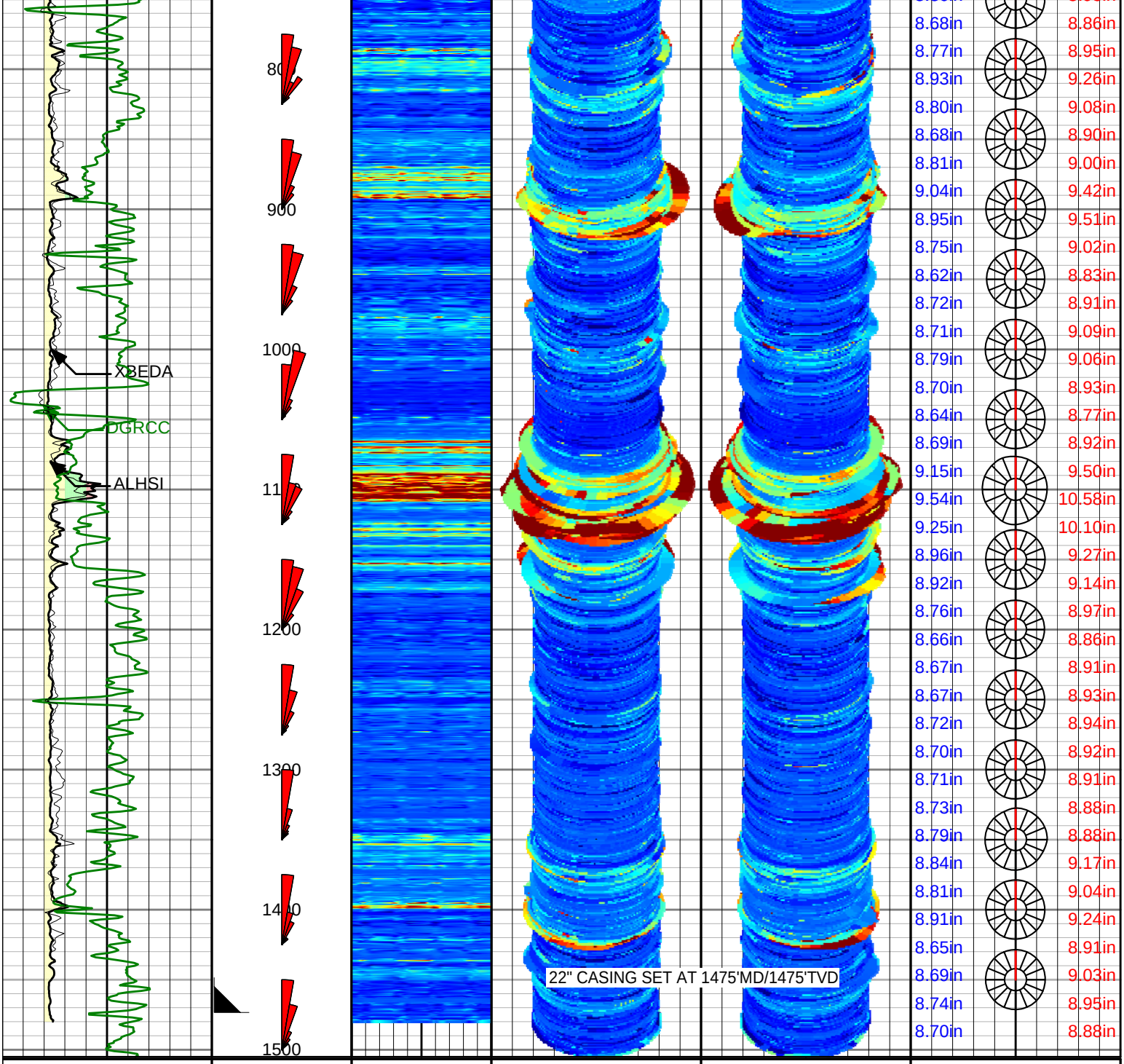
HOLE SIZE:	FIXED @ 8.50” AND 12.25”
MUD WEIGHT:	8.6 – 12.0 PPG
WHOLE MUD CHLORIDES:	18,000 PPM Cl- R100, 100,000-125,000 PPM Cl-
FORMATION WATER SALINITY:	21,200 PPM Cl-
FLUID DENSITY:	1.0 g/cc
MATRIX DENSITY:	2.65 g/cc
LITHOLOGY:	SANDSTONE

ALL 1:1200 DATA CURVES ARE PRESENTED AT A STEP OF 1.0', AND SMOOTHED OVER A 3.0' WINDOW. GAP FILL IS SET TO 5'. ALL 1:240 DATA CURVES ARE PRESENTED AT A STEP OF 0.5 FT, WITH A WINDOW OF 0.6FT EXCEPT THE ACOUSTIC CURVES, THEY ARE SMOOTHED TO A STEP OF 0.5 WITH A 1.2FT WINDOW. GAP FILL IS SET TO 3FT FOR ALL CURVES.

WARRANTY

LWD R100 - 8.50" PILOT HOLE





Hole Enlargement

Under	Minor <1"	Medium 1"-2"	Severe >2"

ALD Hole Size Indicator
inches
6.5 16.5

DGR Comb Gamma Ray BCorr
api
0 150

XCAL Ellipse Avg Diameter
inches
6.5 16.5

MD
ft
1 : 1200

XCAL Ellipse Direction

XCAL Image
4.2 Inches 5.2

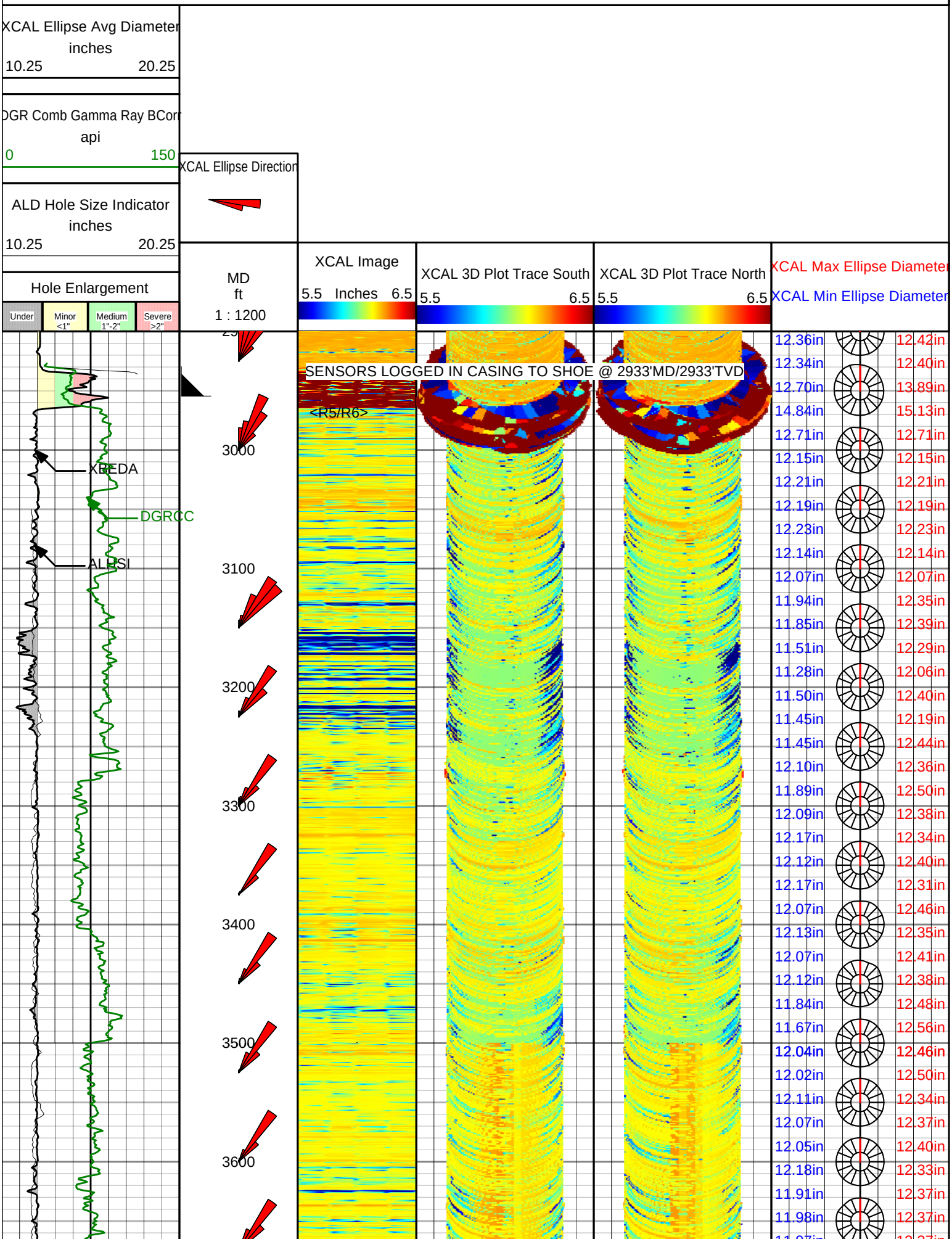
XCAL 3D Plot Trace South
4.2 5.2

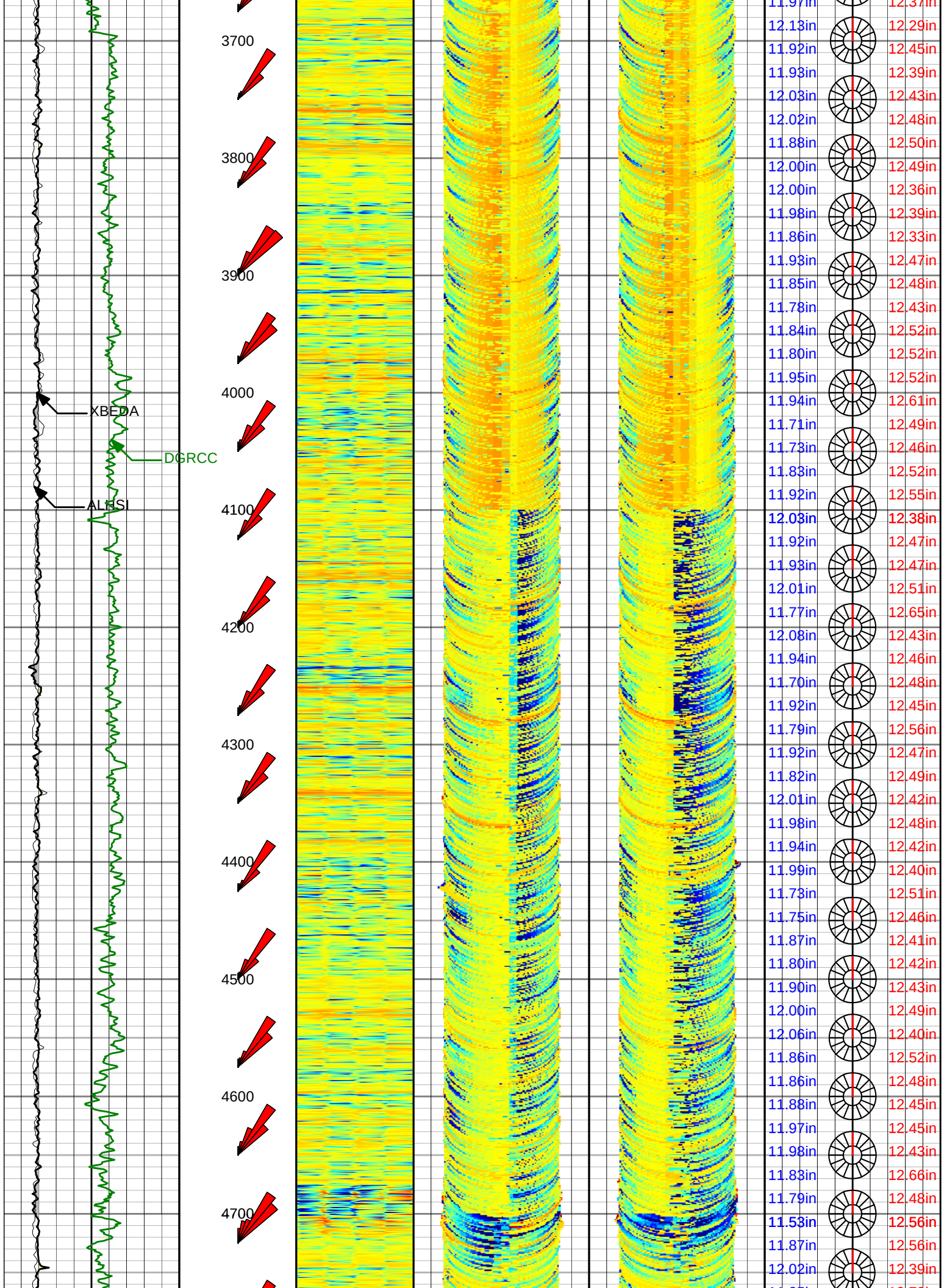
XCAL 3D Plot Trace North
4.2 5.2

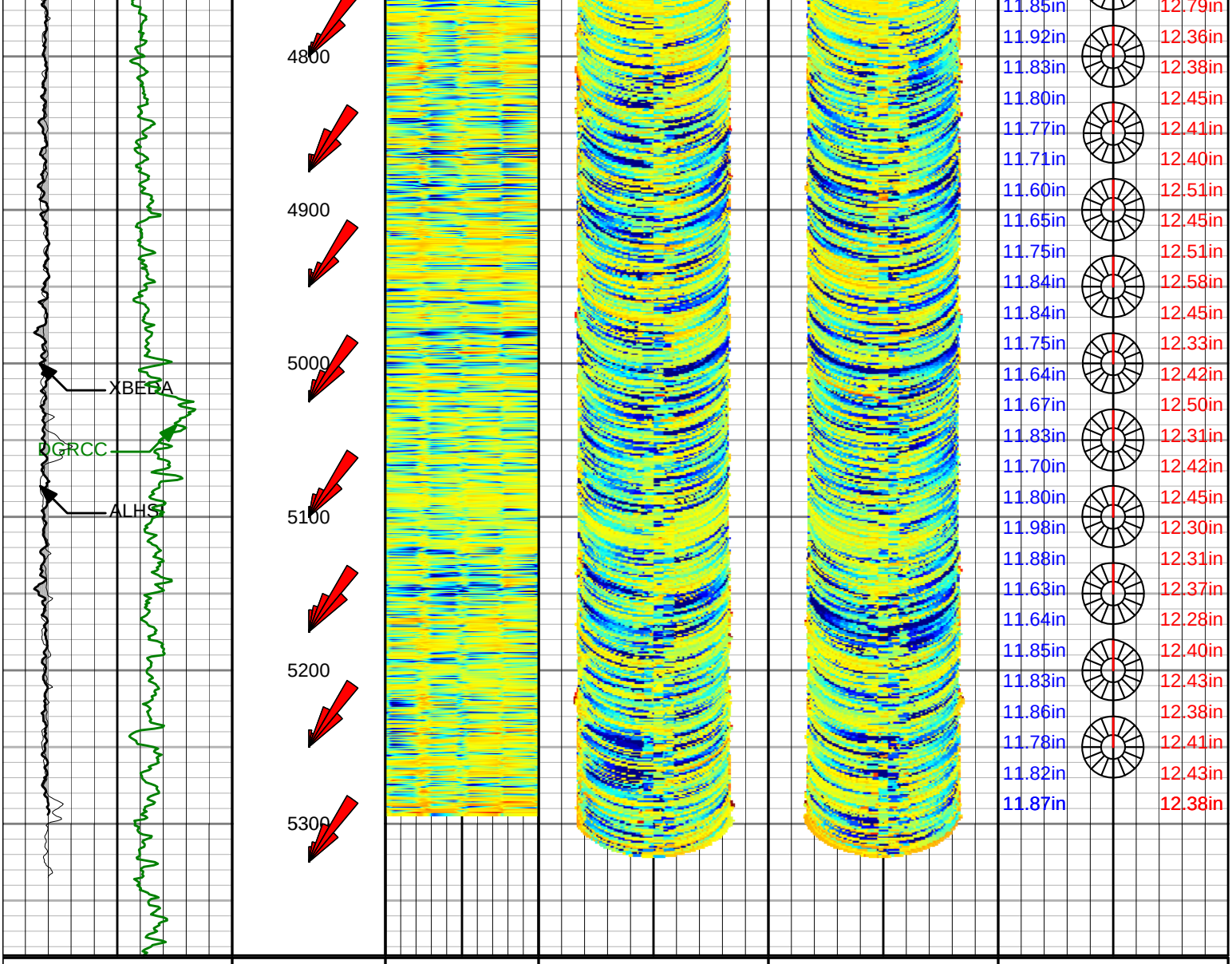
XCAL Max Ellipse Diameter
XCAL Min Ellipse Diameter

LWD P600 - 12.25" HOLE SECTION

LWD R600 - 12.25" HOLE SECTION




XBEDA
DGRCC
ALHSI
3700
3800
3900
4000
4100
4200
4300
4400
4500
4600
4700
12.13in 12.29in
11.92in 12.45in
11.93in 12.39in
12.03in 12.43in
12.02in 12.48in
11.88in 12.50in
12.00in 12.49in
12.00in 12.36in
11.98in 12.39in
11.86in 12.33in
11.93in 12.47in
11.85in 12.48in
11.78in 12.43in
11.84in 12.52in
11.80in 12.52in
11.95in 12.52in
11.94in 12.61in
11.71in 12.49in
11.73in 12.46in
11.83in 12.52in
11.92in 12.55in
12.03in 12.38in
11.92in 12.47in
11.93in 12.47in
12.01in 12.51in
11.77in 12.65in
12.08in 12.43in
11.94in 12.46in
11.70in 12.48in
11.92in 12.45in
11.79in 12.56in
11.92in 12.47in
11.82in 12.49in
12.01in 12.42in
11.98in 12.48in
11.94in 12.42in
11.99in 12.40in
11.73in 12.51in
11.75in 12.46in
11.87in 12.41in
11.80in 12.42in
11.90in 12.43in
12.00in 12.49in
12.06in 12.40in
11.86in 12.52in
11.86in 12.48in
11.88in 12.45in
11.97in 12.45in
11.98in 12.43in
11.83in 12.66in
11.79in 12.48in
11.53in 12.56in
11.87in 12.56in
12.02in 12.39in



Hole Enlargement

Under | Minor <1" | Medium 1"-2" | Severe >2"

ALD Hole Size Indicator
inches
10.25 20.25

DGR Comb Gamma Ray BCorr
api
0 150

XCAL Ellipse Avg Diameter
inches
10.25 20.25

MD
ft
1 : 1200

XCAL Ellipse Direction

XCAL Image
5.5 Inches 6.5

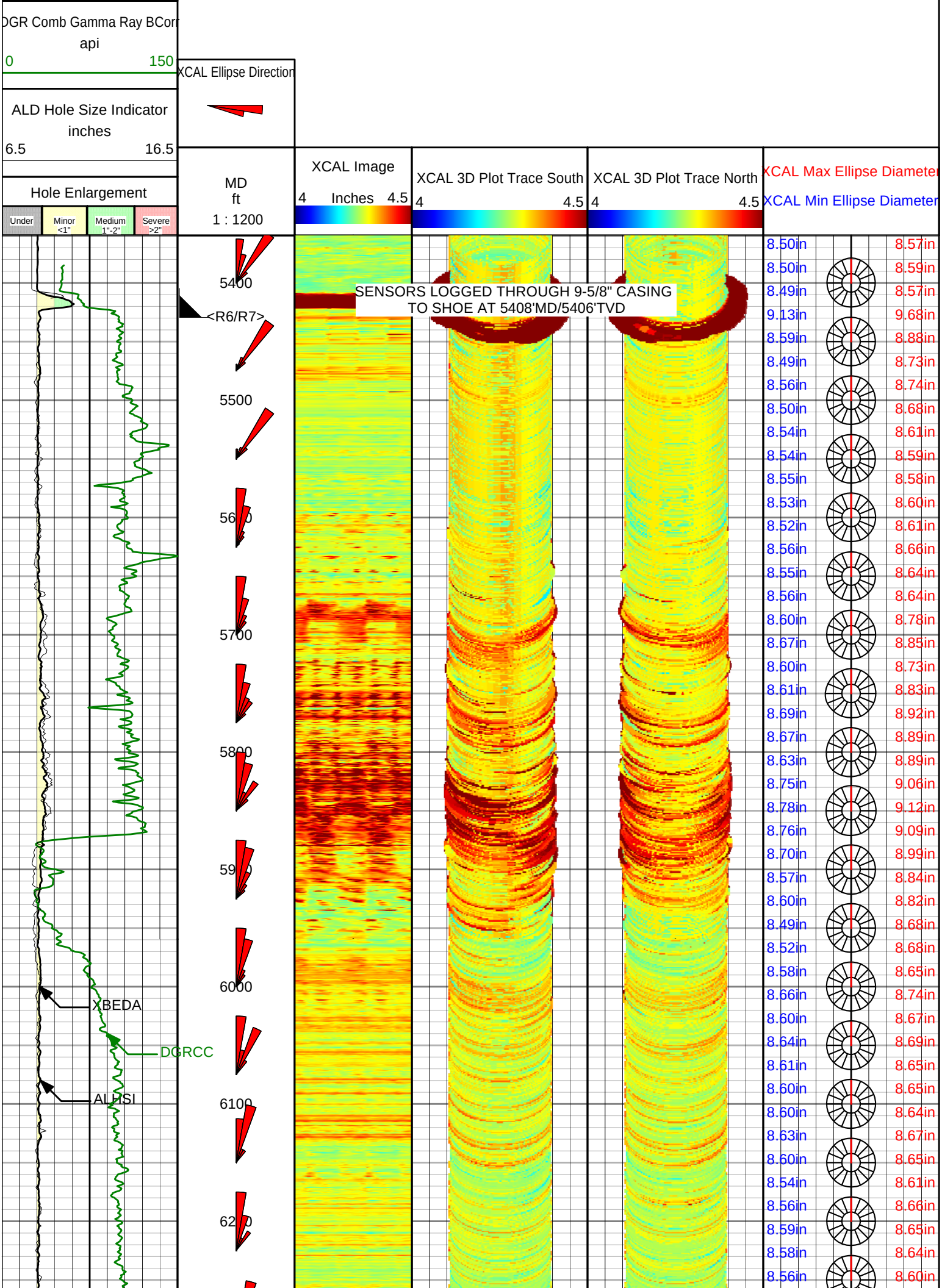
XCAL 3D Plot Trace South
5.5 6.5

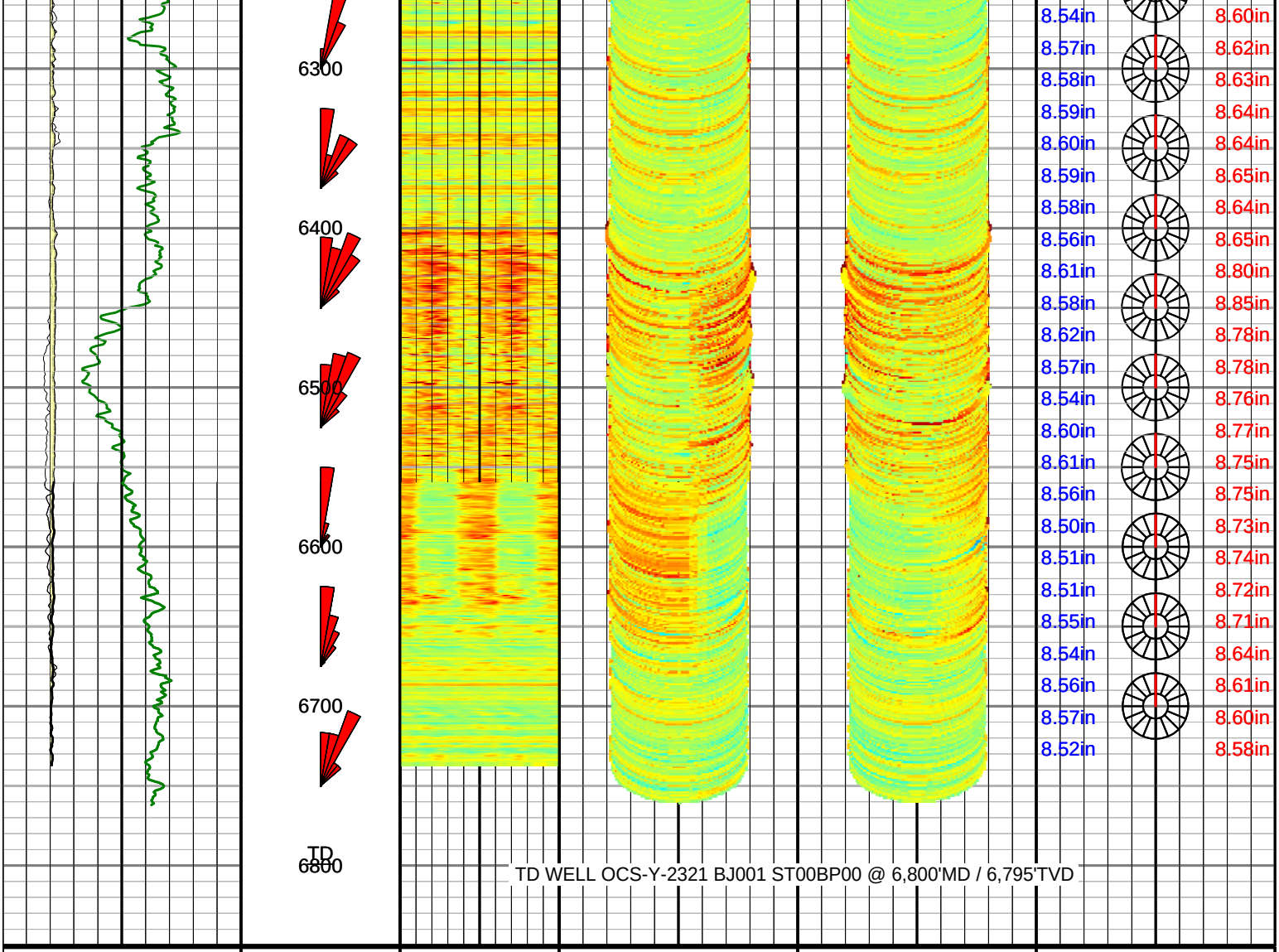
XCAL 3D Plot Trace North
5.5 6.5

XCAL Max Ellipse Diameter
XCAL Min Ellipse Diameter

LWD R700 - 8.50" ZONE OF INTEREST

XCAL Ellipse Avg Diameter
inches
6.5 16.5


DGR Comb Gamma Ray BCorr
api
0
150
ALD Hole Size Indicator
inches
6.5
16.5
Hole Enlargement
Under
Minor
<1"
Medium
1"-2"
Severe
>2"
XCAL Ellipse Direction
MD
ft
1 : 1200
XCAL Image
4
Inches
4.5
XCAL 3D Plot Trace South
4
4.5
XCAL 3D Plot Trace North
4
4.5
XCAL Max Ellipse Diameter
XCAL Min Ellipse Diameter
SENSORS LOGGED THROUGH 9-5/8" CASING
TO SHOE AT 5408'MD/5406'TVD
<R6/R7>
5400
5500
5600
5700
5800
5900
6000
6100
6200
XBEDA
DGRCC
ALHSI
8.50in 8.57in
8.50in 8.59in
8.49in 8.57in
9.13in 9.68in
8.59in 8.88in
8.49in 8.73in
8.56in 8.74in
8.50in 8.68in
8.54in 8.61in
8.54in 8.59in
8.55in 8.58in
8.53in 8.60in
8.52in 8.61in
8.56in 8.66in
8.55in 8.64in
8.56in 8.64in
8.60in 8.78in
8.67in 8.85in
8.60in 8.73in
8.61in 8.83in
8.69in 8.92in
8.67in 8.89in
8.63in 8.89in
8.75in 9.06in
8.78in 9.12in
8.76in 9.09in
8.70in 8.99in
8.57in 8.84in
8.60in 8.82in
8.49in 8.68in
8.52in 8.68in
8.58in 8.65in
8.66in 8.74in
8.60in 8.67in
8.64in 8.69in
8.61in 8.65in
8.60in 8.65in
8.60in 8.64in
8.63in 8.67in
8.60in 8.65in
8.54in 8.61in
8.56in 8.66in
8.59in 8.65in
8.58in 8.64in
8.56in 8.60in



Hole Enlargement

Under | Minor <1" | Medium 1"-2" | Severe >2"

ALD Hole Size Indicator
inches
6.5 16.5

GR Comb Gamma Ray BCor
api
0 150

XCAL Ellipse Avg Diameter
inches
6.5 16.5

MD
ft
1 : 1200

XCAL Ellipse Direction

XCAL Image
4 Inches 4.5

XCAL 3D Plot Trace South
4 4.5

XCAL 3D Plot Trace North
4 4.5

XCAL Max Ellipse Diameter
XCAL Min Ellipse Diameter

HALLIBURTON

DIRECTIONAL SURVEY REPORT

Shell Gulf of Mexico Inc.
OCS-Y-2321 BJ001 ST00BP00
Posey 6912
Alaska
USA
AK-XX-0901604700
Final Survey is projected to well TD

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	TIE-IN
220.00	0.00	0.00	220.00	0.00 N	0.00 E	0.00	0.00
320.88	0.51	129.60	320.88	0.29 S	0.35 E	-0.29	0.50
406.77	0.31	89.93	406.76	0.53 S	0.88 E	-0.53	0.39
495.25	0.99	122.22	495.24	0.93 S	1.76 E	-0.93	0.84
590.43	0.31	82.72	590.41	1.34 S	2.71 E	-1.34	0.81
684.05	0.64	327.24	684.03	0.87 S	2.68 E	-0.87	0.88
866.10	0.28	101.20	866.08	0.09 S	2.55 E	-0.09	0.47
957.99	0.00	269.46	957.97	0.13 S	2.77 E	-0.13	0.30
1051.65	0.14	176.72	1051.63	0.24 S	2.78 E	-0.24	0.15
1144.54	0.26	120.65	1144.52	0.46 S	2.97 E	-0.46	0.23
1235.66	0.41	134.11	1235.63	0.80 S	3.38 E	-0.80	0.19
1328.60	0.51	59.75	1328.58	0.83 S	3.98 E	-0.83	0.61
1378.50	0.25	111.62	1378.48	0.76 S	4.27 E	-0.76	0.81
1540.18	0.12	50.83	1540.15	0.78 S	4.74 E	-0.78	0.14
1723.74	0.39	34.99	1723.71	0.14 S	5.26 E	-0.14	0.15
1818.58	0.58	50.01	1818.55	0.43 N	5.81 E	0.43	0.24
2003.18	1.06	39.81	2003.12	2.35 N	7.62 E	2.35	0.27
2095.93	0.87	35.51	2095.87	3.57 N	8.57 E	3.57	0.22
2186.15	0.69	72.12	2186.07	4.30 N	9.49 E	4.30	0.57
2373.34	0.75	76.36	2373.25	4.93 N	11.76 E	4.93	0.04
2463.93	0.78	75.65	2463.83	5.23 N	12.93 E	5.23	0.03
2555.30	0.79	70.25	2555.19	5.59 N	14.13 E	5.59	0.08
2646.22	0.79	76.51	2646.11	5.95 N	15.33 E	5.95	0.10
2743.03	0.70	74.08	2742.91	6.27 N	16.55 E	6.27	0.10
2837.42	0.74	67.59	2837.29	6.66 N	17.68 E	6.66	0.10
2875.38	0.64	69.95	2875.25	6.83 N	18.10 E	6.83	0.27
2978.31	0.74	64.69	2978.17	7.31 N	19.25 E	7.31	0.11
3074.55	0.58	52.33	3074.40	7.88 N	20.20 E	7.88	0.22
3169.04	0.67	47.05	3168.89	8.55 N	20.99 E	8.55	0.11
3258.93	0.77	27.36	3258.77	9.44 N	21.65 E	9.44	0.30
3351.80	0.94	33.05	3351.63	10.64 N	22.35 E	10.64	0.21
3445.40	0.89	33.34	3445.22	11.90 N	23.18 E	11.90	0.06
3537.90	0.88	39.68	3537.71	13.05 N	24.03 E	13.05	0.11
3630.29	0.86	29.57	3630.09	14.20 N	24.82 E	14.20	0.17
3724.13	1.05	46.97	3723.91	15.40 N	25.80 E	15.40	0.37
3815.47	1.16	37.46	3815.23	16.71 N	26.98 E	16.71	0.24
3909.95	1.11	27.77	3909.70	18.28 N	27.99 E	18.28	0.21
4001.96	1.54	18.87	4001.69	20.24 N	28.80 E	20.24	0.52
4095.18	1.55	21.22	4094.87	22.60 N	29.67 E	22.60	0.07
4189.17	1.52	19.27	4188.83	24.97 N	30.54 E	24.97	0.06
4280.67	1.73	13.84	4280.29	27.46 N	31.27 E	27.46	0.28
4373.26	2.11	22.24	4372.83	30.39 N	32.25 E	30.39	0.51
4465.71	1.69	19.56	4465.23	33.26 N	33.35 E	33.26	0.46
4559.04	2.02	19.56	4558.51	36.11 N	34.37 E	36.11	0.35
4651.17	2.19	23.91	4650.58	39.24 N	35.62 E	39.24	0.25
4743.27	2.64	25.07	4742.59	42.77 N	37.23 E	42.77	0.49
4836.87	3.09	32.03	4836.08	46.87 N	39.49 E	46.87	0.61
4929.20	3.15	34.87	4928.26	51.06 N	42.26 E	51.06	0.18
5021.52	3.28	37.85	5020.45	55.22 N	45.33 E	55.22	0.23
5113.59	3.34	39.69	5112.36	59.37 N	48.66 E	59.37	0.13
5206.14	3.59	47.76	5204.74	63.39 N	52.52 E	63.39	0.59
5299.05	3.70	48.27	5297.46	67.34 N	56.92 E	67.34	0.12
5364.19	3.45	52.11	5362.48	69.95 N	60.04 E	69.95	0.54
5429.81	3.65	46.91	5427.97	72.59 N	63.12 E	72.59	0.58
5518.31	3.73	45.18	5516.29	76.55 N	67.22 E	76.55	0.15
5612.70	3.58	42.26	5610.48	80.90 N	71.39 E	80.90	0.25
5704.09	3.56	42.97	5701.70	85.09 N	75.24 E	85.09	0.06
5795.19	3.47	41.51	5792.62	89.22 N	79.00 E	89.22	0.13
5889.32	3.48	42.48	5886.58	93.46 N	82.82 E	93.46	0.06
5980.70	3.42	42.67	5977.80	97.52 N	86.54 E	97.52	0.07
6075.07	3.43	41.69	6072.00	101.69 N	90.33 E	101.69	0.06
6167.81	3.55	39.12	6164.57	105.99 N	93.98 E	105.99	0.21
6259.59	3.53	39.52	6256.17	110.37 N	97.57 E	110.37	0.03
6346.61	3.75	37.26	6343.02	114.70 N	100.99 E	114.70	0.30
6445.34	3.99	34.54	6441.52	120.10 N	104.89 E	120.10	0.31
6536.48	3.96	35.37	6532.44	125.27 N	108.51 E	125.27	0.07

6628.63	3.92	37.01	6624.37	130.38 N	112.25 E	130.38	0.13
6721.62	3.89	35.41	6717.15	135.49 N	115.99 E	135.49	0.12
6745.05	3.99	35.86	6740.52	136.80 N	116.93 E	136.80	0.46
6800.00	3.99	35.86	6795.34	139.90 N	119.17 E	139.90	0.00

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 0.00 DEGREES (GRID)
A TOTAL CORRECTION OF 10.95 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 6800.00 FEET
IS 183.78 FEET ALONG 40.42 DEGREES (GRID)

Map System: NAD 83 UTM Zones
Geo Datum: North American Datum of 1983
Map Zone: Universal Transverse Mercator Zone 03N

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