Schlumberger

DRILLING AND MEASUREMENTS

END OF WELL REPORT

FOR

STATOIL

WELL NUMBER

15/9-F-12

Compiled by :	MWD & DD Crew	Date : Aug 2007
Verified by :	Colin Cockburn	Date : Aug 2007
Approved by:	Colin Cockburn	Date: Aug 2007

CONTENTS

1.0 Introduction

COMPANY	STATOIL
WELL	15/9-F-12
FIELD	Volve
AREA	NORWEGIAN NORTH SEA
COUNTRY	NORWAY
RIG	Maersk Inspirer
CONTRACTOR	Maersk
SPUD DATE	14th June 2007
TD DATE	24th Aug 2007
TOTAL DEPTH	3520m
RKB-MSL	54.9m
MSL-SEABED	91.0m
RKB-SEABED	145.9m

2.0 Schlumberger D & M Personnel

2.1 MWD Engineers

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3.0 Hole and Casing Depth Record

HOLE RECORD

HOLE SIZE	FROM	TO
36”	145.9m	261.0m
26”	261.0m	1369.0m
17 ½”	1369.0m	2572.5m
12 ¼”	2572.5m	3114m
8 ½”	3114m	3520m

CASING RECORD	FROM	TO
30”	145.0m	251.0m
20”	145.0m	1357.0 m
14”	140.0 m	2506.0m
9 5/8”	2404.4m	3113.0m

4.0 MWD and DD Observations and Recommendations

Measurement While Drilling (MWD) - Observations and Recommendations

36” - Section - MWD:

MWD Run #1: Observations

- The BHA included a 9” PowerPulse MWD tool along with a 26" x 36" HD Hole Opener and 17 1/2 " TCI Bit. Stationary surveys with continuous D&I, shocks, downhole D&I temperature measurements and Gamma ray.

- The PowerPulse was programmed at 12 Hz frequency, QPSK at 3 bps. Signal demodulation was of good quality, with high bit confidence throughout the run and no significant noise was detected within the bandwidth.

- Before running in hole the Drawworks sensor was calibrated and the surface system set up, but still there were some depth tracking issues which were fixed during the run.

- The first survey at 141m showed an inclination of 0.35 deg. Continued drilling and took surveys every single, the wellbore inclination was kept within the limitation (0.75 deg). A max. DLS of 0.28 deg/10m was at 166m. Continue drilling to TD 258m. Some moderate stickslip was seen but overall the tool was operating at nominal conditions with a status word of zero throughout the run.

Recommendations:

- Using 12 Hz and 6 bps is good for this kind of top hole sections and a good update of realtime data.

26" – Drill out:

MWD Run #3: Observations

- A 26 in. rotary assembly was used to drill out from 258.0 mMD to 261.4 mMD. No Schlumberger equipment was used for this run.

8 ½" – Pilot hole - MWD:

MWD Run #3: Observations

- In taking precautions concerning shallow gas, a vertical 8 ½" pilot hole was drilled through the zones of interest down to 1365mMD.

- The BHA consisted of an 6 3/4"Vision Resistivity tool (ARC), 6 ¾'' TeleScope MWD, ISONIC and a 6 3/4" Vision Density Neutron (ADN) tool.

- The TeleScope was programmed with 12 Hz frequency, QPSK, at 6 bps. Signal demodulation was of good quality, with high bit confidence throughout the run and no significant noise was detected within the bandwidth.

- No significant gas levels were detected, and the hole was cemented back in order to kick off with a 26" BHA just a few meters under the conductor shoe.

Recommendations:

26” - Section - MWD:

MWD Run #4: Observations

- The BHA was made up of an 11 1/4” PowerPak mud motor, 9 ½” PowerPulse MWD, and a 9” ARC tool.

- The PowerPulse was programmed at 12 Hz frequency, QPSK at 6 bps. Signal was running on on SPTs and was good quality with high bit confidence all over the run. Some bad signal was seen after TD, when back reaming tight Skade formation.

Recommendations:

- Surveys were taken before connections, and we got good surveys all the time by just turning the flow down to turn off the MWD, instead of turning the pumps all the way off. This gives a smoother start up of the MWD when having a motor in the hole.

17 ½” - Section - MWD:

MWD Run #5: Observations

- The BHA consisted of a 9” PowerDrive, 8 1/4” ARC, 8 ¼” TeleScope, 8 ¼” ISONIC and 8 ¼” ADN tools. Included in the BHA were a 6 5/8” IL Flex Joint and a 17 ¼” Stabilizer between the PowerDrive and ARC. A 12” String Stab between the ISONIC and TeleScope.
- Note that 8” tools and collars had to be used in this 17 ½” hole section because of the request to run AND tool (not produced in 9” collar size).
- The Telescope was programmed at 12 Hz frequency, QPSK at 6 bps and gave continuous D&I, stationary surveys, shocks, stickslip and downhole D&I temperature measurements.
- In realtime, the ARC provided 2 MHZ Phase Resistivity, 28 + 40 in spacings, as well as 400KHz Phase Resistivity, 28in spacing. Gamma Ray and APWD measurements were also transmitted.
- A shallow hole test was done @ ~ 1000mMD. The tools were not responding properly in the SHT, which was re-taken 3 times, and we got some status word error

codes from the PowerDrive and TeleScope. After a while our tools started to come back to life and there was no need to POOH. Although the PD GR and Vision Res were struggled throughout the run with maxed out values, usually after connections.

- A DWE depth calibration was made at 1471.99 as it was observed that the calibration was way off, although a calibration should have been done after a Slip and Cut in the previous section.

- Drilling of the 17 ½" section for this run started from a depth of 1369 mMD and stopped at 2513mMD. The mud was displaced to Performadrill WBM at the beginning of the run, with a MW of 1.35 g/cm³. During the run, some trouble with the pumps was experienced together with failing mud conveyor belt etc. which led to a delay of the run. A concern of the tool-battery life became an issue. The circulation was attempted to be maintained in order to save battery life
- At 2513mMD it was decided to POOH and replace the bit due to the slow ROP rate. All LWD tools where also changed for this run, ARC, ISONIC and ADN. The memory of the LWD tools was dumped successfully. The ARC and ADN seemed to have run out of battery power. But the ISONIC still had some life in it.
- A extended Leak of Test (XLOT) was performed at a depth of 1357 mMD, and an ESD reading of 1.73 sg was received from the ARC tool. The official LOT was set to 1.70 sg.
- The BHA was POOH due to low ROP.

MWD Run #6: Observations

- Since there had been some problems with the previous BHA, it was decided to run with the backup LWD tools (kept the PD and the MWD). The run started at 2512.6 mMD and ended 2572.5 mMD. The drilling procedure and parameters remained the same as the previous run. Some stick/slip was experienced when POOH. We also seemed to lose communication with the PD at times, especially at the end when the demodulation values were maxed out and locking up at times, but the MWD was giving good readings and expected values for azimuth and inclination. A mud sample was taken, and shipped to shore due to the PD problems.

- As mentioned earlier, the MWD was kept, with the same programming as the previous run: 6bps, 12Hz.

Recommendations:

- We experienced no problems with the signals, so the 12Hz 6bps, works very well.

12 ¼ - Section - MWD:

MWD Run #7: Observations

- The BHA was made up with a 9" PowerDrive, 8 ¼" TeleScope, 8 ¼" StethoScope, 8 ¼" ISONIC, 8 1/4" ARC tool and an 8 ¼" ADN tool. The ISONIC was run in, memory-only mode.

- The TeleScope was programmed at 12 Hz frequency, QPSK at 6 bps. The TeleScope gave continuous D&I, stationary surveys, shocks and vibrations, and downhole D&I temperature measurements.

- A toolbox meeting was performed prior to picking up BHA for safe handling of the radioactive source and the BHA in general, especially the StethoScope.

- The BHA was RIH to 1000m. When filling the pipe, displacement indicated a leak in the drill string. A faulty float valve was suspected. So POOH to replace PowerDrive and float valve.

MWD Run #8: Observations

- BHA was RIH to 1000m. Filled pipe and perform SHT. Pipe only required 100 strokes to fill it, not 400 strokes as expected. This again indicated a leak in the drill string. POOH to investigate. A leak was found in the accelerator.

MWD Run #9: Observations

- Due to the tripping times required for the previous two runs, it was necessary to change the ISONIC, ARC tools due to battery depletion. There had been some problems with the ADN battery assemblies, with the jam-nut battery being damaged, so the same ADN tool was used, but with the battery assembly from the backup tool.
- A good SHT was performed @1000m. The shoe and 3m of new formation was drilled out using WBM, and then the BHA weas pulled back inside the shoe to perform an FIT. The ARC tool measured an Equivalent Static Density (ESD), of 1.486 sg. No signal problems were present.
- The mud was displaced to OBM prior to drilling of the 12 ¼ in. section, and from this point onwards it became very difficult to maintain tool sync. Various combinations of gain and delay and other demodulation settings were used to try and improve the decoding of the MWD signal. The pulsation dampeners on the pumps were checked, and various combinations of pump stroke rates tried. Downlinking to the tool was utilised to change the bitrate from 6 bps to 3 bps. This narrows the band width of the tool signal frequency, and can help to exclude interfering frequencies. The downlink rate used was 36 seconds and proved to be easy to perform.
- After approx. 10 hours of poor signal, things improved, and demodulation was fairly problem free, and was so good, that the tool was downlinked again to set the tool to 6 bps again.
- Three formation pressure tests were performed.
- There was a second period of very bad signal quality, maybe coinciding with correction of mud weight and bleeding of drill water into the active system, and again the tool had to be downlinked to 3 bps.
- Apart from a few intervals at the start of the section, the realtime log was of good quality.
- Throughout this run, there were frequent changing of pumps, and it could easily be seen from the noise harmonics being produced, that the condition of the pumps had a detrimental effect on the signal quality. The mud may also have partly contributed to the signal problems, an inhomogeneous mud at the start of the run, and subsequent adding of varying density fluids would not help the situation.
- Extremely high stickslip was experienced for most of this section, due to the nature of the limestone formation being drilled with the ROP being quite low. Several attempts to alleviate the stickslip were attempted, but these resulted in unacceptably low ROP’s and had to be abandoned. The Statoil company representative was made aware

of the problem.

Recommendations:

The same MWD tools were used for both the 17 ½ in. and 12 ¼ in. sections as a result of the requirement for ADN8 in the 17 ½" hole section. The gap was within acceptable range but could be optimised further. Possible noise from external sources should be investigated to avoid more problems.

8 ½" - Section - MWD:

MWD Run #10: Observations

- The BHA consisted of a 6 ¾'' PowerDrive, 6 ¾'' TeleScope, 6 ¾'' StethoScope, 6 ¾'' ISONIC, and a 6 ¾'' EcoScope tool containing the radioactive source.
- The ISONIC was again run in memory only mode.
- The shoe was drilled out, and 3 m of new formation. An FIT was performed, but due to the prolonged time it took for the mud pressure to stabilise, the utility MWD data frame which contains the ESD data, did not get decoded on surface.
- As in the 12 ¼ in. section, there were some intervals of extremely bad signal quality, especially at the start of the section. Signal strength was weak to begin with, but improved after some time.
- The 6 bps data rate was again chosen due to the amount of formation evaluation data required for the section.
- Signal was reasonable, with occasional "bad" dpoints, but the realtime log quality was rarely affected by this.
- There were no stickslip issues in this run.

Recommendations:

There were again problems with signal quality in this run. When strong pump harmonic frequencies are being produced as seen on Maersk Inspirer, it would be recommended to investigate this more closely, before drilling of the next well. The option to try other signal frequencies must also be evaluated.

36” Directional Drilling Recommendations

- Verticality was the key requirement in this hole section and the BHA as run provided good response.
- No DD onboard for this hole section.

8 ½”Pilot Directional Drilling Recommendations

- Vertical pilot hole with no DD onboard.

26” Directional Drilling Recommendations

- Firm enough formation for kickoff was not encountered until 420m
- TFA should be increased beyond 1.298 in order to get better directional response, ie not washing away formation around the bit.
- Consider a larger bend setting than the 1.15 used, although this needs to be evaluated against rpm limitations on a long run.
- 35m slides gave 2deg/30m dogleg
- Utsira drilled on high side toolface, reduced flow (3000 – 3200lpm). No directional control and BHA dropped 2 deg/30m.
- Skade sands caused strong drop tendency

17 1/2” Directional Drilling Recommendations

- BHA had to deliver a complex 3-D turn almost through vertical to line up on the target.
- Section drilled with 8” collars and measurements tools, due to the requirement to run ADN tool which is not available in 9” collar.
- No detrimental effects seen by using 8” collar size.
- Complex BHA gave good reliability over a long interval
- A longer flex above the PowerDrive would be useful for highly directional 17 ½” hole sections.
- Bit design needs to be reviewed to drill section in one run.

12 1/4” Directional Drilling Recommendations

- In the event of incorrect displacement of mud, the individual string components should be tested to prove where the problem lies, so that there is no risk of running back in hole with a washed out component.
- Slow ROP observed with this BHA/Bit combination in Tor / Hod.
- Stick slip was experienced which reduced steering effectiveness.

8 1/2” Directional Drilling Recommendations

- PowerDrive inclination hold worked well.
- ROP was controlled as per Statoil instructions for cutting sampling.
- NMDC tooljoint length should be less than 1 meter, in order for elevators to be used, if available from suppliers.

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STATOIL VOLVE

MOTOR BHA REPORT

RIG:	Maersk Inspirer	**Well Name:**	15/9-F-12	**PHASE:**	26"
RUN No:	1	**BHA no:**	4	**BIT No:**	1
MD In:	251m	**MD out:**	1369m	**INTERVAL:**	1118m
				Job No:	07SCA0021

OBJECTIVE:

General:	Drill 26" hole from 251m to 1365m MD. KO well at 284m. Build inc from 0.13deg to 8 deg by 524m with 1deg DLS/30m Azimuth 45 deg. Then turn Azimuth to 255 and build to 21 deg with 2deg
Inclination:	Build from 0.13 deg to 21 deg.
Azimuth:	KO with 45 deg azimuth then turn to 255 deg azimuth.

BIT No. 1

	#1	#2	#3	#4
Nozzles:	22	22	18	20

Size	*Cone*	*Fixed cutter*	*IADC*	*Make*	*Type*	*Ser. No*	*TFA*	*Gauge length*
26	Insert	-	415M	Smith	MG04BC	MY8397	1.298	-

Features:	Tooth shaped inserts, double sealed roller bearings, shirttail protected with hardfacing and tungsten carbide inserts							
Condition in:	New							
Hydraulics:	With a MW of	**1.03 SG**	at	**5000 lpm**	bit dp =	**52 bar**	and H.S.I =	**1.09**
Dull Grading:	1-1-WT-A-E-IN-NO-TD							
Selection Criteria:	Durability and Steerability							
Performance:	Good Performance.							
Recommendations:	Consider milltooth for similar sections							

BHA No. 4 * With none ported float

Component	*Serial No*	*Size/OD*	*ID*	*Con dn*	*Con up*	*Length*	*Acc length*	*Comments*	*Stab Gauge Out*
Bit	MY8397	26"	3 3/4"	-	7 5/8 REG P	0.64	0.64		
Motor A1125M	002	11 1/4"	-	7 5/8 REG B	7 5/8 REG B	8.45	9.09	25 3/4"	
Float Sub	FLX11-025	9 1/2"	3"	7 5/8 REG B	7 5/8 REG P	1.52	10.61	w/Float SLB-308	
22 1/2" NM Stab	MWS 1217	25 3/4"	3"	7 5/8 REG P	7 5/8 REG B	3.02	13.63	midpoint = 12.11m	
ARC 9	0401	9 1/8"	3"	7 5/8 REG B	7 5/8 REG B	5.94	19.57		
PowerPulse HF	MDC HE VA 97	9 5/32	-	7 5/8 REG P	7 5/8 REG B	8.46	28.03	D&I = 23.71m	
17 1/4" NM Stab.	OWS-1184	17 1/4"	3"	7 5/8 REG P	7 5/8 REG B	2.43	30.46	midpoint = 29.33m	
3 x 9 1/2" NMDC	25002/25003/25004	9 1/2"	3"	7 5/8 REG P	7 5/8 REG B	23.36	53.82		
X/O-Sub	tally	9"	3"	7 5/8 REG P	6 5/8 REG B	1.15	54.97		
3 x 8 1/4" DC	tally	8 1/4"	2 13/16"	6 5/8 REG P	6 5/8 REG B	28.57	83.54		
Jar	1018	8 1/4"	2 13/16"	6 5/8 REG P	6 5/8 REG B	10.43	93.97		
3 x 8 1/4" DC	tally	8 1/4"	2 13/16"	6 5/8 REG P	6 5/8 REG B	28.71	122.68		
Energiser	1051	8 1/4"	2 13/16"	6 5/8 REG P	6 5/8 REG B	10.30	132.98		
1 x 8 1/4" DC	tally	8 1/4"	2 13/16"	6 5/8 REG P	6 5/8 REG B	9.48	142.46		
X/O-Sub	tally	8 1/4"	3"	7 5/8 REG P	6 5/8 REG B	1.12	143.58		
12 x 5 1/2" HWDP	tally	5 1/2"	3"	5 1/2" HT55 P	5 1/2" HT55 B	120.00	263.58		
5 1/2" DP	tally	5 1/2"	4.78"	5 1/2" HT55 P	5 1/2" HT55 B		263.58		

Motor Spec:	*Stab*	*Bend*	*Rotor Nozzle*	*rev/litre*	*Optimum dp*	*Stator*	*R/S gap*	*Bearing In /Out*	*Stab Out*
A1125M	25 3/4	1.15	No	0.03	28	Standard	0.059	29-30 / 27-31	25 3/4"

OPERATIONS: *Comments:*

	Date & Time	*MD*	*Cumulative Run Hours*					
			Pump	*Drill*	*Ream*	*Circ*	*Other*	*TOTAL*
Bit BRT:	17:30; 05/Jul/07	251m						
Bit above Wellhead	18:00; 08/Jul/07	1369m	97.0	34.2	0.0	62.8	-24.5	72.5
	ROP:	**1118m**	**in**	**34.2hrs**	**=**	**32.7**	**m/hr**	
	Rotary Drilling	261m				% Rotated:	23%	
	Sliding	857m				% Sliding:	77%	

Cement/Shoetrack:			**Size**	**Depth**
No	Drilled:	Cmt Hours:	30"	251m

PARAMETERS: *Comments:*

	FLW	*SPP*	*RPM*	*WOB*	*TRQ*		*STRING WEIGHTS*		*Depth*
	(lpm)	*(bar)*	*(string)*	*(kdaN)*	*(KN.m)*	*ROT*	*UP*	*DN*	
Min:	3000	62	0	3.8	0	*(kdaN)*	*(kdaN)*	*(kdaN)*	*m*
Max:	5011	193	70	11	15	108	110	106	310m
						149	139	127	1344m

SURVEY DATA: *Comments:* VS Azimuth 215.05

	MD	*Inc*	*Azm*	*TVD*	*VS*	*N/-S*	*E/-W*	*Max DLS*
First survey:	242.74	0.13	137.00	137.00	-0.34	2.39	-0.24	
Last survey:	1344.74	15.54	249.52	1321.05	-142.69	9.07	-145.45	3.20

FORMATION:

Age	*Group*	*Formation*	*MD / TVD Top*	*Lithology*
		Utsira	887 / 882	
		Skade		

MUD: *Comments:*

Type	*Water / Oil Base*	*Weight*	*FV*	*PV*	*YP*	*Solids*	*Oil/Water Ratio*	*Temp*
Seawater	-	1.03	-	-	-	-	-	-

RESULTS:

The BHA was made up and RIH. Started to washdown from 218m. TOC was found to be at 257m. Rotated / washed down to 284m where the TF of the motor was lined up to initiate the kick off. As the drilling progressed in sliding mode with no or little differential at low flow of 3700 lpm we were not able to kick off and following the pilothole initially (confirmed by MWD surveys) due to no evidence of firm formation / cement. From 370m the flow was reduced to 3000 lpm to reduce the jetting effect . At +-420m the formation firmed up (confirmed by logs later on) and made it possible to positively continue the KO. Looking at the surveys between 392m and 432m we had a DLS of 1.5 so the KO was started earlier than we thought when looking at the WOB and diff pressure. Luckily we had set a deeper cut off depth of approximately 450m due to constraints with slots and anti collision. Slides of up to 35m was necessarry in order to get the required dogles of 2 DLS. At 887m we found top Utsira. The Utsira was drilled with the TF high side and low flow of 3000-3300 lpm and ROP up to 200 m/hr but needed to slow down due to "hard" spots were the motor stalled. Erratic to no directional control were seen. In the start of Utsira the BHA dropped 2 deg/30m, and in the middle / bottom the BHA turned up to 5.74 deg/30m and dropped again in the bottom after managing to rebuild some of the lost inclination. After Utsira 1075m "normal" drilling was continued and we slid to get back to well plan. Slides of up to 27m were performed with short intervals of rotating, achieving a one of DLS up to 3.2 deg/30m. Generally the maximum DLS achieved was 2.2 to 2.4, but more often less than 2 DLS even if there was good steady toolfaces. At 1200m the well path were lined up to converge with the plan and we started to drill the tangent to TD. The BHA was holding/buliding inclination whilst rotating for the first 10m, but at at 1210m the continuous inclination started to drop alarmingly (Bit depth 1235m) of 4-5 DLS even though we had 10-12 tons WOB and an ROP of 60 m/hr. From 1240m orientated TF to high side and slid to try build the inclination back up again. Again the wellpath was on its way to be lined up, from 1278m all WOB and differential pressure on the motor were were lost till we regained both from 1333m. This interval from 1278m to 1333m dropped even though we were sliding with up to 150 m/hr and reduced flow. After Skade "normal" drilling was continued and we slid down to TD@1369m to get back to well plan as much as possible. Circulated hole clean and displaced hole to 1.35sg mud. During the trip to POOH out of hole massive hole problems were encountered at varies intervals up to the final severe one at 524m to 511m. The hole was eventually displace to 1.4 sg in two stages (TD to above Utsira and above Utsira to seabed) after wiper trip to 994m in order to minimize mud waste in case of further problems and having to pump with seawater again, which was used during the drilling and working the worst tight spots.

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STATOIL VOLVE

PowerDrive X5 RSS BHA Report

RIG:	Maersk Inspirer	**Well Name:**	15/9-F-12	**PHASE:**	17.5"
RUN No:	5	**BHA no:**	5	**BIT No:**	5
MD In:	1369m	**MD out:**	2513m	**INTERVAL:**	1144m
				Job No:	07SCA0021

OBJECTIVE:

General:	Drill 17 1/2" section. Build and turn with a planned dogleg of 2f30m
Inclination:	Build inclination from 20.6 deg to 26.3 deg
Azimuth:	Turn azimuth from 254.5 deg to 116.0 deg

BIT No. 5

	#1	#2	#3	#4	#5	#6	#7	#8
Nozzles:	15	15	15	15	15	16	16	16

Size	*Cone*	*Fixed cutter*	*IADC*	*Make*	*Type*	*Ser. No*	*TFA*	*Gauge length*
17 1/2		PDC	M322	Hycalog	RSX616M	215765	1.452	-

Features:	Diamond trucut gauge with ear resistant diamond Semi Round Top inserts and impact resistant tungsten carbide relieved off-gauge inserts, twin seal, V flow technology
Condition in:	New
Hydraulics:	With a MW of **1.35 SG** at **4550 lpm** bit dp = **45 bar** and H.S.I = **1.89**
Dull Grading:	4-4-BT-A-X-I-CT-PR
Selection Criteria:	Previous experience
Performance:	Good performance to Brygger Formation. Unable to drill through claystone/siltstone
Recommendations:	Try a rock bit

BHA No. 5 * With none ported float

Component	*Serial No*	*Size/OD*	*ID*	*Con dn*	*Con up*	*Length*	*Acc length*	*Comments*	*Stab Gauge Out*
Bit	215765	17 1/2"	3 3/4"	-	7 5/8 REG P	0.45	0.45		
PowerDrive PD1100	44215	9.75"	3 3/16"	7 5/8 REG B	7 5/8 REG B	4.30	4.75		
17 5/16" Control Stab *		9 1/2"	3"	7 5/8 H90 B	7 5/8 REG P	1.71	6.46		
6 5/8" Flex Joint	26754	5 1/2"	2 13/16"	7 5/8 H90 P	6 5/8 FH B	2.79	9.25		
V825R	2704	8 5/8"	2 13/16"	6 5/8 FH P	6 5/8 FH B	6.20	15.45		
ISONIC	SWD8	8 1/2"	4 3/16"	6 5/8 FH P	6 5/8 FH B	7.07	22.52		
12" NM InLine Stab	35901	8 1/2"	4 3/16"	6 5/8 FH P	6 5/8 FH B	0.95	23.47		
Telescope MWD	FU86	8 3/8"	5 1/9"	6 5/8 FH P	6 5/8 FH B	7.91	31.38		
ADN 8	FF09	8 3/8"	5"	6 5/8 FH P	6 5/8 REG B	6.76	38.14		
2 x 8 1/4" NMDC	26080/2731	8 1/8"	2 13/16"	6 5/8 REG P	6 5/8 REG B	17.76	55.90		
3 x 8 1/4" DC	tally	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	28.57	84.47		
Hydraulic Jar	HDL-100	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	10.43	94.90		
3 x 8 1/4" DC	tally	8"	3"	6 5/8 REG P	6 5/8 REG B	28.71	123.61		
Energizer	S1051	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	10.30	133.91		
3 x 8 1/4" DC	Tally	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	19.08	152.99		
X/O Sub	Tally	8"	3"	6 5/8 REG P	5 1/2" FH B	1.12	154.11		
12 x 5 1/2" HWDP	tally	5 1/2"	3"	5 1/2" FH P	5 1/2" FH B	112.69	266.80		
5 1/2" DP	tally	5 1/2"	4.78"	5 1/2" FH P	5 1/2" FH B	2455.00	2721.80		
BU number	*CU number*	*Comms Softw.*	*Sensor Softw.*	*Impeller size*	*Map*			*Flow (min)*	*Flow (max)*
53608	447	CMF523H9	SMV507RN	Medium	FAST			2195	4920

OPERATIONS: *Comments:*

	Date & Time	*MD*	*Cumulative Run Hours*					
			Pump	*Drill*	*Ream*	*Circ*	*Other*	*TOTAL*
Bit BRT:	18:30; 19/Jul/07	1369m						
Bit ART:	00:00; 29/Jul/07	2513m	141.9	53.8	0.0	88.1	79.6	221.5
	ROP:	**1144m**	**in**	**53.8hrs**	**=**	**21.3**	**m/hr**	
	Rotary Drilling	1144m	in	0.0hrs	#DIV/0!	% Rotated:	100%	
	Sliding	0m	in	53.8hrs	0m/hr	% Sliding:	0%	

	Cement/Shoetrack:						**Size**	**Depth**
		Yes	Drilled:	12m	Cmt Hours:	7.0hrs	20"	1357.0 m

PARAMETERS: *Comments:*

	FLW	*SPP*	*RPM*	*WOB*	*TRQ*		*STRING WEIGHTS*		*Depth*
	(lpm)	*(bar)*	*(string)*	*(kdaN)*	*(KN.m)*	*ROT*	*UP*	*DN*	
Min:	4000	130	20	1	10	*(kdaN)*	*(kdaN)*	*(kdaN)*	*m*
Max:	4554	310	180	24	23.5	162	187	144	2400m

SURVEY DATA: *Comments:* VS Azimuth 104.32

	MD	*Inc*	*Azm*	*TVD*	*VS*	*N/-S*	*E/-W*	*Max DLS*
First survey:	1393.63	16.99	246.96	1367.98	-153.75	3.99	-158.16	2.46
Last survey:	2536.07	20.86	125.56	2447.53	-335.04	-155.94	-386.09	

FORMATION:

Age	*Group*	*Formation*	*MD Top*	*Lithology*
54-5 mya	Hordaland	Grid	2155m	Sandstone
65-38 mya	Rogaland	Balder	2345m	Claystone
65-38 mya	Rogaland	Sele	2400m	Claystone

MUD: *Comments:*

Type	*Water / Oil Base*	*Weight*	*FV*	*PV*	*YP*	*Solids*	*Oil/Water Ratio*	*Temp*
PERFORMADRIL	WBM	1.35	75.00	34.00	11.50	9.90	-	15.00

RESULTS:

Bha unable to match planned turn, drop and build due to short length of the flex joint. ROP was 50m/hr until the Brygger formation. Slowed to 1m/hr when drilled into claystone/siltstone. POOH for a rock bit. ROP could be increased to 80m/hr on next well if ECD tolerance level is raised.

Schlumberger

STATOIL VOLVE

PowerDrive X5 RSS BHA Report

RIG:	Maersk Inspirer	**Well Name:**	15/9-F-12	**PHASE:**	17.5"
RUN No:	6	**BHA no:**	6	**BIT No:**	6
MD In:	2513m	**MD out:**	2573m	**INTERVAL:**	60m
				Job No:	07SCA0021

OBJECTIVE:

General:	Drill 17 1/2" section to TD, continue build and turn from last run, planned dogleg is 2°/30m.
Inclination:	Build inclination.
Azimuth:	Turn azimuth left towards 116 deg

BIT No. 6

	#1	#2	#3	#4	#5	#6	#7	#8
Nozzles:	22	22	22	20				

Size	*Cone*	*Fixed cutter*	*IADC*	*Make*	*Type*	*Ser. No*	*TFA*	*Gauge length*
17 1/2	Milled Tooth		135	Smith		MZ0185	1.421	-

Features:	Milled Tooth bit							
Condition in:	New							
Hydraulics:	With a MW of	**1.35 SG**	at	**4550 lpm**	bit dp =	**48 bar**	and H.S.I =	**1.96**
Dull Grading:	1-1-WT-A-E-I-WT-TD							
Selection Criteria:	Previous experience							
Performance:								
Recommendations:	Try a rock bit							

BHA No. 6 * With none ported float

Component	*Serial No*	*Size/OD*	*ID*	*Con dn*	*Con up*	*Length*	*Acc length*	*Comments*	*Stab Gauge Out*
Bit	MZ0185	17 1/2"	3 3/4"	-	7 5/8 REG P	0.41	0.41		
PowerDrive PD1100	44215	9.75"	3 3/16"	7 5/8 REG B	7 5/8 REG B	4.30	4.71		
17 5/16" Control Stab *		9 1/2"	3"	7 5/8 H90 B	7 5/8 REG P	1.71	6.42		
6 5/8" Flex Joint	26754	5 1/2"	2 13/16"	7 5/8 H90 P	6 5/8 FH B	2.79	9.21		
V825R	1536	8 5/8"	2 13/16"	6 5/8 FH P	6 5/8 FH B	6.26	15.47		
ISONIC	42780	8 1/2"	4 3/16"	6 5/8 FH P	6 5/8 FH B	7.14	22.61		
12" NM InLine Stab	35901	8 1/2"	4 3/16"	6 5/8 FH P	6 5/8 FH B	0.95	23.56		
Telescope MWD	FU86	8 3/8"	5 1/9"	6 5/8 FH P	6 5/8 FH B	7.91	31.47		
ADN 8	51	8 3/8"	5"	6 5/8 FH P	6 5/8 REG B	6.84	38.31		
2 x 8 1/4" NMDC	26080/2731	8 1/8"	2 13/16"	6 5/8 REG P	6 5/8 REG B	17.76	56.07		
3 x 8 1/4" DC	tally	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	28.57	84.64		
Hydraulic Jar	HDL-100	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	10.43	95.07		
3 x 8 1/4" DC	tally	8"	3"	6 5/8 REG P	6 5/8 REG B	28.71	123.78		
Energizer	S1051	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	10.30	134.08		
3 x 8 1/4" DC	Tally	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	19.08	153.16		
X/O Sub	Tally	8"	3"	6 5/8 REG P	5 1/2" FH B	1.12	154.28		
12 x 5 1/2" HWDP	tally	5 1/2"	3"	5 1/2" FH P	5 1/2" FH B	112.69	266.97		
5 1/2" DP	tally	5 1/2"	4.78"	5 1/2" FH P	5 1/2" FH B	2455.00	2721.97		
BU number	*CU number*	*Comms Softw.*	*Sensor Softw.*	*Impeller size*	*Map*			*Flow (min)*	*Flow (max)*
53608	447	CMF523H9	SMV507RN	Medium	FAST			2195	4590

OPERATIONS: *Comments:*

	Date & Time	*MD*	*Cumulative Run Hours*					
			Pump	*Drill*	*Ream*	*Circ*	*Other*	*TOTAL*
Bit BRT:	18:30; 19/Jul/07	2513m						
Bit ART:	00:00; 29/Jul/07	2573m	28.3	11.6	0.0	16.7	193.2	221.5

ROP:	**60m**	**in**	**11.6hrs**	**=**	**5.1**	**m/hr**	
Rotary Drilling	60m	in	0.0hrs	#DIV/0!	% Rotated:	100%	
Sliding	0m	in	11.6hrs	0m/hr	% Sliding:	0%	

Cement/Shoetrack:				**Size**	**Depth**
No	Drilled:		Cmt Hours:	20"	1357.0 m

PARAMETERS: *Comments:*

	FLW	*SPP*	*RPM*	*WOB*	*TRQ*		*STRING WEIGHTS*		*Depth*
	(lpm)	*(bar)*	*(string)*	*(kdaN)*	*(KN.m)*	*ROT*	*UP*	*DN*	
Min:	4450	283	150	12	11	*(kdaN)*	*(kdaN)*	*(kdaN)*	*m*
Max:	4475	286	180	19	21	165	191	150	2530m

SURVEY DATA: *Comments:* VS Azimuth 104.32

	MD	*Inc*	*Azm*	*TVD*	*VS*	*N/-S*	*E/-W*	*Max DLS*
First survey:	2493.74	19.27	129.52	2407.77	-348.39	-147.11	-397.61	2.19
Last survey:	2536.07	20.86	125.56	2447.53	-335.04	-155.94	-386.09	

FORMATION:

Age	*Group*	*Formation*	*MD Top*	*Lithology*
54-5 mya	Hordaland	Grid	2155m	Sandstone
65-38 mya	Rogaland	Balder	2345m	Claystone
65-38 mya	Rogaland	Sele	2400m	Claystone

MUD: *Comments:*

Type	*Water / Oil Base*	*Weight*	*FV*	*PV*	*YP*	*Solids*	*Oil/Water Ratio*	*Temp*
PERFORMADRIL	WBM	1.35	75.00	34.00	11.50	9.90	-	15.00

RESULTS:

Drilled this last part of the 17 1/2" Section with a rock bit and this gave us a Rop of approximately 5 m/h.

Directional performance with rock bit was very poor. Despite setting the PowerDrive to 100%/288deg the maximum dogleg achieved was less than 1deg/30m.
In future I would not recommend using a rock bit with PowerDrive in this section.

Td was set by geologist while drilling and was set 20m into the Ty formation.

Schlumberger

STATOIL VOLVE

PowerDrive X5 RSS BHA Report

RIG:	Maersk Inspirer	**Well Name:**	15/9-F-12	**PHASE:**	12.25"
RUN No:	7	**BHA no:**	7	**BIT No:**	7
MD In:	2573m	**MD out:**	2573m	**INTERVAL:**	0m
				Job No:	07SCA0021

OBJECTIVE:

General:	Drill 12 1/4" section to TD, continue build and turn from last run, planned dogleg is 2°/30m. Pressure points according to geologist.
Inclination:	Build inclination.
Azimuth:	Turn azimuth left towards 116 deg

BIT No. 7

	#1	#2	#3	#4	#5	#6	#7	#8
Nozzles:	15	15	15	16	16	16		

Size	*Cone*	*Fixed cutter*	*IADC*	*Make*	*Type*	*Ser. No*	*TFA*	*Gauge length*
12 1/4		PDC	M422	Hycalog	RSR616M-A12	215220	1.107	5.715 cm

Features:	PDC bit							
Condition in:	New							
Hydraulics:	With a MW of	**1.40 SG**	at	**3500 lpm**	bit dp =	**48 bar**	and H.S.I =	**1.96**
Dull Grading:	New							
Selection Criteria:	Previous experience							
Performance:	Did not drill any formation							
Recommendations:								

BHA No. 7 * With none ported float

Component	*Serial No*	*Size/OD*	*ID*	*Con dn*	*Con up*	*Length*	*Acc length*	*Comments*	*Stab Gauge Out*
12 1/4 " Bit	215220	12 1/4"	3 3/4"	-	6 5/8 REG P	0.26	0.26		
PD 900	49497	9 3/16"	3 3/16"	6 5/8 REG B	6 5/8 REG B	4.21	4.47		
12 1/16" Control Stab	48984	8 5/16"	3"	6 5/8 REG P	6 5/8 FH B	1.88	6.35		
6 5/8" Flex Joint	51751	6 7/16"	4 1/2"	6 5/8 FH P	6 5/8 FH B	2.94	9.29		
SonicVision	42780	8 5/8"	2 13/16"	6 5/8 FH P	6 5/8 FH B	7.14	16.43		
StethoScope	AD83	8 1/2"	4 3/16"	6 5/8 FH P	6 5/8 FH B	10.16	26.59		
12" NM InLine Stab	35904	8 1/2"	4 3/16"	6 5/8 FH P	6 5/8 FH B	0.94	27.53		
Telescope MWD	DB133	8 3/8"	5 1/9"	6 5/8 FH P	6 5/8 FH B	7.15	34.68		
ARC 8	1536	8 3/8"	5"	6 5/8 FH P	6 5/8 REG B	5.80	40.48		
ADN 8	51	8 3/8"	5"	6 5/8 FH P	6 5/8 REG B	6.84	47.32		
2 x 8 1/4" NMDC	26080/2731	8 1/8"	2 13/16"	6 5/8 REG P	6 5/8 REG B	17.76	65.08		
3 x 8 1/4" DC	tally	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	28.57	93.65		
Hydraulic Jar	HDL-100	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	10.43	104.08		
3 x 8 1/4" DC	tally	8"	3"	6 5/8 REG P	6 5/8 REG B	28.71	132.79		
Energizer	S1051	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	10.30	143.09		
3 x 8 1/4" DC	Tally	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	19.08	162.17		
X/O Sub	Tally	8"	3"	6 5/8 REG P	5 1/2" FH B	1.12	163.29		
4 x 5 1/2" HWDP	tally	5 1/2"	3"	5 1/2" FH P	5 1/2" FH B	37.66	200.95		
5 1/2" DP	tally	5 1/2"	4.78"	5 1/2" FH P	5 1/2" FH B	2901.05	3102.00		
BU number	*CU number*	*Comms Softw.*	*Sensor Softw.*	*Impeller size*	*Map*			*Flow (min)*	*Flow (max)*
48793	909	CMF523H9	SMV507RN	Medium	FAST			1915	5068

OPERATIONS: *Comments:*

	Date & Time	*MD*	*Cumulative Run Hours*					
			Pump	*Drill*	*Ream*	*Circ*	*Other*	*TOTAL*
Bit BRT:	00:00; 08/Aug/07	2573m	0.0	0.0	0.0	0.0	19.5	19.5
Bit ART:	19:30; 08/Aug/07	2573m						

	ROP:	**0m**	**in**	**0.0hrs**	**=**	**0.0**	**m/hr**
	Rotary Drilling	0m	in	0.0hrs	#DIV/0!	% Rotated:	#DIV/0!
	Sliding	0m	in	0.0hrs	#DIV/0!	% Sliding:	#DIV/0!

	Cement/Shoetrack:				**Size**	**Depth**
		Yes	Drilled:	Cmt Hours:	14"	2506.0 m

PARAMETERS: *Comments:*

	FLW	*SPP*	*RPM*	*WOB*	*TRQ*		*STRING WEIGHTS*		*Depth*
	(lpm)	*(bar)*	*(string)*	*(kdaN)*	*(KN.m)*	*ROT*	*UP*	*DN*	
Min:						*(kdaN)*	*(kdaN)*	*(kdaN)*	*m*
Max:									

SURVEY DATA: *Comments:* VS Azimuth 104.32

	MD	*Inc*	*Azm*	*TVD*	*VS*	*N/-S*	*E/-W*	*Max DLS*
First survey:								
Last survey:								

FORMATION:

Age	*Group*	*Formation*	*MD Top*	*Lithology*

MUD: *Comments:*

Type	*Water / Oil Base*	*Weight*	*FV*	*PV*	*YP*	*Solids*	*Oil/Water Ratio*	*Temp*
PERFORMADRIL	WBM	1.35	75.00	34.00	11.50	9.90	-	15.00

RESULTS:

RIH to 1000m. Fill pipe and perform SHT. Pipe only required 80 strokes to fill it, not 400 strokes as expected. This indicated leak in drill string. A few more stands were run to see if problem still there. Displacement still indicated a leak. A faulty float valve was suspected. So POOH to replace PowerDrive and float valve.

I suggested breaking PowerDrive to check the float valve. This was discounted to save time.

Schlumberger

STATOIL VOLVE

PowerDrive X5 RSS BHA Report

RIG:	Maersk Inspirer	**Well Name:**	15/9-F-12	**PHASE:**	12.25"
RUN No:	8	**BHA no:**	8	**BIT No:**	7RR1
MD In:	2573m	**MD out:**	2573m	**INTERVAL:**	0m
				Job No:	07SCA0021

OBJECTIVE:

General:	Drill 12 1/4" section to TD, continue build and turn from last run, planned dogleg is 2°/30m. Pressure points according to geologist.
Inclination:	Build inclination.
Azimuth:	Turn azimuth left towards 116 deg

7RR1	*#1*	*#2*	*#3*	*#4*	*#5*	*#6*	*#7*	*#8*
Nozzles:	15	15	15	16	16	16		

Size	*Cone*	*Fixed cutter*	*IADC*	*Make*	*Type*	*Ser. No*	*TFA*	*Gauge length*
12 1/4		PDC	M422	Hycalog	RSR616M-A12	215220	1.107	5.715 cm

Features:	PDC bit							
Condition in:	New							
Hydraulics:	With a MW of	**1.40 SG**	at	**3500 lpm**	bit dp =	**48 bar**	and H.S.I =	**1.96**
Dull Grading:	New							
Selection Criteria:	Previous experience							
Performance:	Did not drill any formation							
Recommendations:								

BHA No. 8 * With none ported float

Component	*Serial No*	*Size/OD*	*ID*	*Con dn*	*Con up*	*Length*	*Acc length*	*Comments*	*Stab Gauge Out*
12 1/4 " Bit	215220	12 1/4"	3 3/4"	-	6 5/8 REG P	0.26	0.26		
PD 900	48229	9.125"	3 3/16"	6 5/8 REG B	6 5/8 REG B	4.23	4.49		
12 1/16" Control Stab	45137	8 7/16"	3"	6 5/8 REG P	6 5/8 FH B	1.87	6.36		
6 5/8" Flex Joint	48270	6 1/2"	4 1/2"	6 5/8 FH P	6 5/8 FH B	2.91	9.27		
SonicVision	42780	8 5/8"	2 13/16"	6 5/8 FH P	6 5/8 FH B	7.14	16.41		
StethoScope	AD49	8 1/2"	4 3/16"	6 5/8 FH P	6 5/8 FH B	10.38	26.79		
12" NM InLine Stab	35904	8 1/2"	4 3/16"	6 5/8 FH P	6 5/8 FH B	0.94	27.73		
Telescope MWD	DB133	8 3/8"	5 1/9"	6 5/8 FH P	6 5/8 FH B	7.15	34.88		
ARC 8	1536	8 3/8"	5"	6 5/8 FH P	6 5/8 REG B	5.80	40.68		
ADN 8	51	8 3/8"	5"	6 5/8 FH P	6 5/8 REG B	6.84	47.52		
2 x 8 1/4" NMDC	26080/2731	8 1/8"	2 13/16"	6 5/8 REG P	6 5/8 REG B	17.76	65.28		
3 x 8 1/4" DC	tally	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	28.57	93.85		
Hydraulic Jar	HDL-100	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	10.43	104.28		
3 x 8 1/4" DC	tally	8"	3"	6 5/8 REG P	6 5/8 REG B	28.71	132.99		
Energizer	S1051	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	10.30	143.29		
3 x 8 1/4" DC	Tally	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	19.08	162.37		
X/O Sub	Tally	8"	3"	6 5/8 REG P	5 1/2" FH B	1.12	163.49		
4 x 5 1/2" HWDP	tally	5 1/2"	3"	5 1/2" FH P	5 1/2" FH B	37.66	201.15		
5 1/2" DP	tally	5 1/2"	4.78"	5 1/2" FH P	5 1/2" FH B	2900.85	3102.00		
BU number	*CU number*	*Comms Softw.*	*Sensor Softw.*	*Impeller size*	*Map*			*Flow (min)*	*Flow (max)*
54910	157	CMF523H9	SMV507RN	Medium	FAST			2070	4815

OPERATIONS: *Comments:*

	Date & Time	*MD*	*Cumulative Run Hours*					
			Pump	*Drill*	*Ream*	*Circ*	*Other*	*TOTAL*
Bit BRT:	22:00; 08/Aug/07	2573m	0.0	0.0	0.0	0.0	22.0	22
Bit ART:	20:00; 09/Aug/07	2573m						

	ROP:	**0m**	**in**	**0.0hrs**	**=**	**0.0**	**m/hr**	
	Rotary Drilling	0m	in	0.0hrs	#DIV/0!	% Rotated:	#DIV/0!	
	Sliding	0m	in	0.0hrs	#DIV/0!	% Sliding:	#DIV/0!	

	Cement/Shoetrack:						**Size**	**Depth**
		Yes	Drilled:		Cmt Hours:		14"	2506.0 m

PARAMETERS: *Comments:*

	FLW	*SPP*	*RPM*	*WOB*	*TRQ*		*STRING WEIGHTS*		*Depth*
	(lpm)	*(bar)*	*(string)*	*(kdaN)*	*(KN.m)*	*ROT*	*UP*	*DN*	
Min:	3270	193	70	1	28	*(kdaN)*	*(kdaN)*	*(kdaN)*	*m*
Max:						157	180	145	2649m

SURVEY DATA: *Comments:* VS Azimuth 104.32

	MD	*Inc*	*Azm*	*TVD*	*VS*	*N/-S*	*E/-W*	*Max DLS*
First survey:								
Last survey:								

FORMATION:

Age	*Group*	*Formation*	*MD Top*	*Lithology*

MUD: *Comments:*

Type	*Water / Oil Base*	*Weight*	*FV*	*PV*	*YP*	*Solids*	*Oil/Water Ratio*	*Temp*
PERFORMADRIL	WBM	1.35	75.00	34.00	11.50	9.90	-	15.00

RESULTS:

RIH to 1000m. Fill pipe and perform SHT. Pipe only required 100 strokes to fill it, not 400 strokes as expected. This indicated leak in drill string. A few more stands were run to see if problem still there. Displacement still indicated a leak. POOH to investigate.

In the meantime we checked the float valve in the previous PowerDrive, which was found to be in perfectly good condition. so a leak in another component was indicated. On reaching the top of the HWDP, the BHA was pressure tested. It was still leaking, so there was no leak in the drill pipe. As each stand was racked back, the BHA was pressure tested. It continued to leak until the stand with the Energiser was racked back. Each component in that stand was isolated and checked. The Energiser was found to be at fault. On closing the Annular Preventer below the Energiser and pumping down the BHA mud could be seen leaking from between the mandrel and the body of the Energiser.

Schlumberger

STATOIL VOLVE

PowerDrive X5 RSS BHA Report

RIG:	Maersk Inspirer	**Well Name:**	15/9-F-12	**PHASE:**	12.25"
RUN No:	9	**BHA no:**	9	**BIT No:**	7RR2
MD In:	2573m	**MD out:**	3114m	**INTERVAL:**	541m
				Job No:	07SCA0021

OBJECTIVE:

General:	Drill 12 1/4" section to TD, continue build and turn from last run, planned dogleg is 2°/30m. Pressure points according to geologist.
Inclination:	Build inclination.
Azimuth:	Turn azimuth left towards 116 deg

7RR2	*#1*	*#2*	*#3*	*#4*	*#5*	*#6*	*#7*	*#8*
Nozzles:	15	15	15	16	16	16		

Size	*Cone*	*Fixed cutter*	*IADC*	*Make*	*Type*	*Ser. No*	*TFA*	*Gauge length*
12 1/4		PDC	M422	Hycalog	RSR616M-A12	215220	1.107	5.715 cm

Features:	PDC bit							
Condition in:	New							
Hydraulics:	With a MW of	**1.40 SG**	at	**3500 lpm**	bit dp =	**48 bar**	and H.S.I =	**1.96**
Dull Grading:	1-1-CT-A-X-IN-WT-TD. One blade has a cracked body, possibly due to stickslip.							
Selection Criteria:	Previous experience							
Performance:	ROP good in Ty Fm. In Ekofisk down to Draupne ROP 2 - 10 m/hr. Good steering response but there was a TF offset of upto 70 deg.							
Recommendations:	As most of this section is limestone, perhaps the bit should be optimised for this type of lithology.							

BHA No. 9 * With none ported float

Component	*Serial No*	*Size/OD*	*ID*	*Con dn*	*Con up*	*Length*	*Acc length*	*Comments*	*Stab Gauge Out*
12 1/4 " Bit	215220	12 1/4"	3 3/4"	-	6 5/8 REG P	0.26	0.26		
PD 900	48229	9.125"	3 3/16"	6 5/8 REG B	6 5/8 REG B	4.23	4.49		
12 1/16" Control Stab	45137	8 7/16"	3"	6 5/8 REG P	6 5/8 FH B	1.87	6.36		11 15/16""
6 5/8" Flex Joint	48270	6 1/2"	4 1/2"	6 5/8 FH P	6 5/8 FH B	2.91	9.27		
SonicVision	FJ-01	8 5/8"	2 13/16"	6 5/8 FH P	6 5/8 FH B	7.07	16.34		
StethoScope	AD49	8 1/2"	4 3/16"	6 5/8 FH P	6 5/8 FH B	10.38	26.72		11 13/16"
12" NM InLine Stab	35904	8 1/2"	4 3/16"	6 5/8 FH P	6 5/8 FH B	0.94	27.66		12"
Telescope MWD	DB133	8 3/8"	5 1/9"	6 5/8 FH P	6 5/8 FH B	7.15	34.81		
ARC 8	709	8 3/8"	5"	6 5/8 FH P	6 5/8 REG B	5.78	40.59		
ADN 8	51	8 3/8"	5"	6 5/8 FH P	6 5/8 REG B	6.84	47.43		
2 x 8 1/4" NMDC	26080/2731	8 1/8"	2 13/16"	6 5/8 REG P	6 5/8 REG B	17.76	65.19		
3 x 8 1/4" DC	tally	8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	28.57	93.76		
Hydraulic Jar		8 1/4"	3"	6 5/8 REG P	6 5/8 REG B	10.45	104.21		
5 x 8 1/4" DC	tally	8"	3"	6 5/8 REG P	6 5/8 REG B	47.79	152.00		
X/O Sub	Tally	8"	3"	6 5/8 REG P	5 1/2" FH B	1.12	153.12		
4 x 5 1/2" HWDP	tally	5 1/2"	3"	5 1/2" FH P	5 1/2" FH B	37.66	190.78		
5 1/2" DP	tally	5 1/2"	4.78"	5 1/2" FH P	5 1/2" FH B	2911.22	3102.00		
BU number	*CU number*	*Comms Softw.*	*Sensor Softw.*	*Impeller size*	*Map*			*Flow (min)*	*Flow (max)*
54910	157	CMF523H9	SMV507RN	Medium	FAST			2070	4815

OPERATIONS: *Comments:*

	Date & Time	*MD*	*Cumulative Run Hours*					
			Pump	*Drill*	*Ream*	*Circ*	*Other*	*TOTAL*
Bit BRT:	03:00; 10/Aug/07	2573m						
Bit ART:	05:30; 18/Aug/07	3114m	138.1	96.6	0.0	41.5	56.4	194.5

	ROP:	**542m**	**in**	**96.6hrs**	**=**	**5.6**	**m/hr**
	Rotary Drilling	542m	in	96.6hrs	6m/hr	% Rotated:	100%
	Sliding	0m	in	0.0hrs	0m/hr	% Sliding:	0%

	Cement/Shoetrack:					**Size**	**Depth**
		Yes	Drilled:	29m	Cmt Hours:	8.7hrs	14"	2506.0 m

PARAMETERS: *Comments:*

	FLW	*SPP*	*RPM*	*WOB*	*TRQ*		*STRING WEIGHTS*		*Depth*
	(lpm)	*(bar)*	*(string)*	*(kdaN)*	*(KN.m)*	*ROT*	*UP*	*DN*	*m*
						(kdaN)	*(kdaN)*	*(kdaN)*	
Min:	3270	189	140	1	28	157	180	145	2649m
Max:	3565	243	180	10	40	165	197	141	2850m

SURVEY DATA: *Comments:* VS Azimuth 104.32

	MD	*Inc*	*Azm*	*TVD*	*VS*	*N/-S*	*E/-W*	*Max DLS*
First survey:	2576.99	22.00	125.92	2485.96	-319.35	-169.94	-373.47	3.63
Last survey:	3081.25	54.36	97.21	2844.50	18.26	-283.12	-53.92	

FORMATION:

Age	*Group*	*Formation*	*MD Top*	*Lithology*
Cretaceous	Shetland	Ekofisk	2691m	Limestone
Cretaceous	Shetland	Tor	2704m	Limestone
Cretaceous	Shetland	Hod	2885m	Limestone
Cretaceous	Shetland	Blodoeks	2984m	Marl
Jurassic	Viking	Draupne	3103m	Claystone

MUD: *Comments:*

Type	*Water / Oil Base*	*Weight*	*FV*	*PV*	*YP*	*Solids*	*Oil/Water Ratio*	*Temp*
Enviromul OBM	OBM	1.40		28.00	8.60	14.50	71.3/28.7	57.00

RESULTS:

The BHA was RIH. This time there was no problems with displacement. So after filling the pipe and testing the MWD/LWD tools at 1000m we continued to the top of the cement. The plugs, float, shoe track and shoe were drilled out without any problems. The rathole was cleaned out. There was some resistance at 2520m, but this was ok after reaming through it a couple of times.

After drilling 3m new formation a good FIT was performed. The hole was then displaced to 1.35 sg Enviromul OBM. Initially there was a problem demodulating the MWD signal. Once this was sorted out drilling in the Ty Formation continued at 20 - 30 m/hr. PowerDrive was set to turn left and build. The first setting 60%/324 deg was found to be producing mostly build. There was a 30 deg offset between set T/F and actual T/F. Once we reached the top of the Ekofisk formation at 2695m the ROP dropped to less than 10 m/hr. Also the offset between set T/F and actual T/F increased to 56 deg. In the Hod formation this increased to 70 deg.

At 2740m drilling was interrupted to take 3 pressure points in the Ty formation with Stethoscope. Drilling then continued at 3 -10 m/hr through the Tor and Hod formations. At 2920m the PowerDrive was set to Inclination Hold. By this time we were back on line in section and some 25 m right of the line in Plan. Due to stick/slip IH setting struggled to hold inclination, which crept up from 53 deg to 55.25 deg. From 3065m to 3114m stick/slip was absent and PD900 was able to steer effectively. So in IH nudge down setting the effective TF was -110 deg due to the 70 deg TF offset, which had been observed since drilling into the Hod Formation, so the hole turned sharply left for the last 50m.

TD was set at 3114m in the Draupne Formation.

Schlumberger

STATOIL Volve

PowerDrive X5 RSS BHA Report

RIG:	Maersk Inspirer	**Well Name:**	15/9-F-12	**PHASE:**	8 1/2"
RUN No:	10	**BHA no:**	10	**BIT No:**	8
MD In:	3114m	**MD out:**	3520m	**INTERVAL:**	406m
				Job No:	07SCA0021

OBJECTIVE:

General:	Drill 8 1/2" section to TD, Slightly drop inclination and turn right from last section to start with then hold inclination and azimuth. Pressure points according to geologist.
Inclination:	Hold inclination out of shoe
Azimuth:	Turn azimuth right towards 104 deg

BIT No. 8	*#1*	*#2*	*#3*	*#4*	*#5*	*#6*	*#7*	*#8*
Nozzles:	15	15	15	16	16	16		
Size	*Cone*	*Fixed cutter*	*IADC*	*Make*	*Type*	*Ser. No*	*TFA*	*Gauge length*
8 1/2"		PDC	M222	Smith	MDI616LPX	SCC001	0.663	2"

Features:	PDC bit							
Condition in:	New							
Hydraulics:	With a MW of	**1.40 SG**	at	**2215 lpm**	bit dp =	**54 bar**	and H.S.I =	**4.60**
Dull Grading:	0-1-WT-S-X-IN-NO-TD							
Selection Criteria:	Previous experience							
Performance:	Good ROP with low WOB and no stick-slip or shocks through reservoir. Good DLS capability and only +/- 5deg TF offset with PD							
Recommendations:	Good bit and BHA combination, recommend for future wells.							

BHA No. 10 * With none ported float

Component	*Serial No*	*Size/OD*	*ID*	*Con dn*	*Con up*	*Length*	*Acc length*	*Comments*	*Stab Gauge Out*
8 1/2 " Bit	SCC001	8 1/2"	3 3/4"	-	4 1/2 REG	0.26	0.26		
PD675 X5	60126	6 3/4"	3 3/16"	4 1/2 REG P	4 1/2 IF B (NC50)	4.09	4.35		
8 3/16" Control Stab	53836	6 3/4"	3"	4 1/2 IF P (NC50)	5 1/2 FH B	1.74	6.09	8 3/16" Stabilizer	8 3/16"
5 1/8" Flex Joint	60006	5 1/8"	4 1/2"	5 1/2 FH P	5 1/2 FH B	2.73	8.82		
EcoScope	816	6 3/4"	3 15/16"	5 1/2 FH P	5 1/2 FH B	7.92	16.74	8 1/4" Stabilizer	8 3/16"
Telescope MWD	AE-FN 15	6 3/4"	3 15/16"	5 1/2 FH P	5 1/2 FH B	8.38	25.12		
StethoScope	AC34	6 3/4"	3 15/16"	5 1/2 FH P	5 1/2 FH B	10.10	35.22	8 1/4" Stabilizer	8 1/8"
ISONIC	34640	6 3/4"	3 15/16"	5 1/2 FH P	4 1/2 IF B (NC50)	7.89	43.11		
8 3/8" NM Stabilizer	25640	6 13/16"	2 13/16"	4 1/2 IF P (NC50)	4 1/2 IF B (NC50)	1.73	44.84	8 3/8" Stabilizer	8 11/32"
2 x 6 3/4" NM HWDP	31606,4035	6 3/4"	2 13/16"	4 1/2 IF P (NC50)	4 1/2 IF B (NC50)	18.61	63.45		
2 x 5" HWDP	tally	6 5/8"	2"	4 1/2 IF P (NC50)	4 1/2 IF B (NC50)	18.88	82.33		
Hydraulic Jar	PD 400 001	6 13/16"	2 3/4"	4 1/2 IF P (NC50)	4 1/2 IF B (NC50)	10.28	92.61		
3 x 5" HWDP		6 5/8"	2"	4 1/2 IF P (NC50)	4 1/2 IF B (NC50)	28.16	120.77		
5" DP	Tally	5"	4 1/4"	4 1/2 IF P (NC50)	4 1/2 IF B (NC50)	1464.48	1585.25		
X/O Sub	tally	7 1/4"	2 13/16"	4 1/2 IF P (NC50)	5 1/2" FH B	1.11	1586.36		
5 1/2" DP	tally	5 1/2"		5 1/2" FH P	5 1/2" FH B	1858.64	3443.89		
BU number	*CU number*	*Comms Softw.*	*Sensor Softw.*	*Impeller size*	*Map*			*Flow (min)*	*Flow (max)*
53647	1038	CMF523H9	SMV507RN	Medium	FAST			1298 lpm	2240 lpm

OPERATIONS: *Comments:*

	Date & Time	*MD*	*Cumulative Run Hours*					
Bit BRT:	07:15; 18/Aug/07	3114m	*Pump*	*Drill*	*Ream*	*Circ*	*Other*	*TOTAL*
Bit ART:	00:00; 26/Aug/07	3520m	56.3	30.1	0.0	26.2	128.5	184.75
	ROP:	**406m**	**in**	**30.1hrs**	**=**	**13.5**	**m/hr**	
	Rotary Drilling	406m	in	30.1hrs	14m/hr	% Rotated:	100%	
	Sliding	0m	in	0.0hrs	0m/hr	% Sliding:	0%	
	Cement/Shoetrack:						**Size**	**Depth**
		Yes	Drilled:	27m	Cmt Hours:	2.9hrs	9 5/8"	3087.0 m

PARAMETERS: *Comments:*

	FLW	*SPP*	*RPM*	*WOB*	*TRQ*		*STRING WEIGHTS*		*Depth*
	(lpm)	*(bar)*	*(string)*	*(kdaN)*	*(KN.m)*	*ROT*	*UP*	*DN*	
Min:	2220	203	60	2	13	*(kdaN)*	*(kdaN)*	*(kdaN)*	*m*
Max:	2227	210	140	8	24	147	166	134	3330m
						154	180	135	3453m

SURVEY DATA: *Comments:* VS Azimuth 104.32

	MD	*Inc*	*Azm*	*TVD*	*VS*	*N/-S*	*E/-W*	*Max DLS*
First survey:	3136.6	53.7	95.71	2877.01	62.63	-288.16	-9.42	1.74
Last survey:	3495.52	52.73	105.59	3091.77	349.69	-357.98	269.02	

FORMATION:

Age	*Group*	*Formation*	*MD Top*	*Lithology*
Cretaceous	Shetland	Ekofisk	2691m	Limestone
Cretaceous	Shetland	Tor	2704m	Limestone
Cretaceous	Shetland	Hod	2885m	Limestone
Cretaceous	Shetland	Blodoeks	2984m	Marl
Jurassic	Viking	Draupne	3103m	Claystone
Jurassic	Viking	Heather	3117m	Marl
Jurassic	Viking	Hugin	3126m	Sandstone
Jurassic	Viking	Sleipner	3280m	Sandstone/Siltstone
Jurassic	Viking	Skagerrak	3338m	Claystone

MUD: *Comments:*

Type	*Water / Oil Base*	*Weight*	*FV*	*PV*	*YP*	*Solids*	*Oil/Water Ratio*	*Temp*
Enviromul OBM	OBM	1.40		29.00	10.50	15.30	73.5/26.5	40.00

The BHA was RIH and SHT at 934m with all tools working. Continued to RIH and washed down from 3053m and tagged top cement at 3087m as per plan. The plugs, float, shoe track and shoe were drilled out without any problems. The rathole was cleaned out and 2 meters new formation was drilled. The BHA was reamed through the shoe track several times with no indication of hanging up or tight spots. Then a successfull FIT to 1.60 sg was performed. Initially there was a problem demodulating the MWD signal and there was continued noise in the signal even after conditioning the mud. Drilled out 5m to get the PowerDrive short-hop signal clear of casing and then set the tool to Inclination Hold 24% right. The Traget inclination was 53.2 deg. The first 45m was drilled using limited parameters until the stabilizers/BHA cleared the shoe. These were 2-5 WOB, 10 ROP, 60 rpm, maximum 20 kdaN torque. When stabilizers were out of the casing shoe, RPM was increased gradually up to 140. ROP was controlled to 10 m/hr for cuttings collection with 2-6 ton WOB. The torque was more unstable using 120 RPM than RPM's below or above this. At 3220 m PDINCL was holding at 53.7 deg so nudged -0.50 deg to set target to 52.7 deg. Increased ROP limitation to 15 m/hr as per Statoil instructions from 3220 m. PD responded quickly and dropped to 53.2 deg (appears to be slight offset from BT_b target and actual PD inc). Increased ROP limitation to 28 m/hr as per Statoil instructions from 3270 m. At 3275 set PD to IH 0/0% setting as azimuth had turned to 104 deg, which is planned tangent azimuth. Azimuth kept turning until 107 deg before it stopped turning. At 3480m the washpipe started leaking and had to be replaced. After drilling resumed, at 3489m, PD was set to IH at reference 52.7 deg and 25% left turn to come back to planned azimuth of 104.53 deg. TD was set at 3520m MD and the well was circulated clean. Performed StethoScope pressure points according to geologist while washing out of open hole.

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Parameter Sheet

BHA 1 : 26" A1125M3436SP Motor

STATOIL

Client: Statoil
Field: Volve
Structure: 15/9-F-12

Well: 15/9-F-12
Borehole: 15/9-F-12

Directional Driller: Ronny Fossberg
Directional Driller: Geir Bjørløw

Depth In: 251.0
Inclination In: 0.13
Azimuth In: 137.00

Depth Out: 1369.0
Inclination Out: 15.54
Azimuth Out: 249.52

Tot Distance: 1118.0m
SLIDE: 857.0m 76.7 %
ROTATE: 261.0m 23.3 %

Bit Hrs: 34.24
Pump Hrs:
ROP:

Job #: 07SCA0021

BHA / Comments: 26" Insert Bit - 11 1/4" PDM 1.15 deg bend - 22 1/4" NM stab - 9" ARC - 9" PP MWD - 3 x 9 1/2" NMDC -

Orienting Method	Md From (m)	Md To (m)	Course (m)	TF (°)	Flow (lpm)	SPP On B (bar)	SPP Off B (bar)	RPM (rpm)	Torq On B (kNm)	Torq Off B (kNm)	WOB (1000 kgf)	ROP (m/hr)	ROT Wt (1000 kgf)	P/U Wt (1000 kgf)	S/O Wt (1000 kgf)	ECD (sg)	Svy Md (m)	Incl (°)	Azmth (°)	Svy Tvd (m)	TF (°)	DLS (°/30m)	BR (°/30m)	TR (°/30m)	Comments
																	242.74	0.13	137.00	242.74					Wash down to TOC at 257m
Rotate	251	289	38		3800	91	86	40	4	2	2	30				1.080									
Slide	310	310	0	M50	3680	90	86				0	50				1.130	311.15	0.26	88.83	311.15	88.83	0.09	0.06	-21.12	
Rotate	310	320	10		3680	89	87	40	4	2	1	60	108	110	106	1.176									
Slide	320	335	15	M40	3680	91	87				1	50				1.172									
Rotate	335	341	6		3680	92	87	40	4	2	2	50	109	113	109	1.146									
Slide	341	364	23	M30	3680	91	87				0-5	+-45					351.13	0.35	79.19	351.13	79.19	0.08	0.07	-7.23	Following the 8 1/2" Pilot hole. Unable to sidetrack as plan
Rotate	364	370	6		3680	90	87	40	5	2	3	50	110	113	109	1.084									Lost diff pressure some time
Slide	370	417	47	M30	3000	60	59		5	2	0-3	50				1.090	392.29	0.54	75.84	392.29	75.84	0.14	0.14	-2.44	Lost diff pressure some time
Slide	417	456	39	M30	3000	68	60		5	2	3-5	50	110	115	108	1.100	432.64	2.27	26.32	432.62	26.32	1.46	1.29	-36.82	Good slide. Mange to sidetrack from ~420m. Formation ?
Rotate	456	476	20		4503	135	129	40	6	2	3-5	37				1.100									
Slide	476	497	21	M47	3000	68-70	60				3-5	19				1.090	473.15	4.79	25.02	473.05	25.05	1.87	1.87	-0.94	
Rotate	497	512	15		4458	135	130	40	8	3	5-6	30				1.090									
Slide	512	525	13	45R	3478	88	80				5-6	13				1.100	512.07	7.53	28.00	511.75	28.00	2.13	2.11	2.27	
Rotate	525	550	25		4505	137	130	40	7	3	6-7	26	114	117	110	1.090									
Slide	550	562	12	LS	4500	140	129				10	35				1.099	553.45	7.94	34.53	552.75	68.00	0.70	0.30	4.73	
Slide	562	570	8	150L	4500	142	129				12	40				1.102									
Rotate	570	582	12		4500	143	130	70	9	4	9	50	115	119	114	1.110									
Slide	582	602	20	150L	4500	144	130				10	45				1.108	594.11	5.58	33.81	593.12	-178.00	1.74	-1.74	-0.53	
Rotate	602	613	11		4500	143	130	70	10	4	9	50	116	122	114	1.116									
Slide	613	620	7	140L																					
Slide	620	634	14	90L	4500	149	131					35				1.109									
Rotate	634	643	9		4500	150	131	70	13	4	14	48	117	125	115	1.114									
Slide	643	670	27	90L	4500	151	132				16	35													
Rotate	670	675	5		4500	150	132	70	13	4.5	14	50	118	125	115	1.108	672.48	6.10	349.45	671.15	-82.00	2.20	0.83	-22.00	
Slide	675	695	20	30L-130L	4500	143-152	132				8-16	50				1.116									
Slide	695	710	15	90L	4500	149	132				15	45				1.110									
Rotate	710	717	7		4500	151	132	70	13	5	15	45				1.108	714.23	6.77	323.10	712.65	-90.00	2.16	0.48	-19	
Slide	717	728	11	130L	4500	151	132				15	30													
Slide	728	739	11	90L	4500	153	132				16	35				1.111									
Rotate	739	745	6		4500	148	132	70	13	5	13	45	119	125	117	1.097									
Slide	745	772	27	120L-40L	4500	152	132				15	37					754.65	7.12	296.52	752.78	-97.09	2.38	0.26	-19.73	
Rotate	772	777	5		4500	149	133	70	13	5	14	45				1.104									
Slide	777	807	30	50L-20L	4500	147-154	133				13-17	45	120	128	118	1.088	794.73	10.77	281.94	792.37	-39.19	3.20	2.73	-10.91	
Rotate	807	812	5		4500	148	133	70	13	5	13-17	50				1.091									
Slide	812	837	25	110L-50L	4500	154	135				13-17	30	121	130	120	1.100	836.21	12.86	276.21	832.97	-32.13	1.73	1.51	-4.14	
Rotate	837	845	8		4542	153	135	70	13	5	13-17	40				1.088									
Slide	845	873	28	70L-40L	5011	189	170				13-17	35				1.090									
Slide	873	880	7	70L-450L	5011	189	170	70	13	5	16-17	40				1.060	875.13	16.24	267.05	870.64	-38.74	3.15	2.61	-7.06	
Slide	880	900	20	70L-45L	5010	185	170		13	5	16-17	22	125	130	121	1.087									Top Utsira approxinmately 887m
Slide	900	941	41	30L-HS	3337	110 - 82	82				0-17	200-44				1.140	917.39	13.76	262.01	911.46	-154.67	1.99	-1.76	-3.58	Dropped in Utsira
Slide	941	982	41	30L-HS	2977	92-82	80			6	0-17	12-80				1.150	957.61	13.33	260.23	950.56	-136.75	0.45	-0.32	-1.33	
Slide	982	1022	40	30L-HS	2981	93-80	80			7	0-15	74	125	136	121	1.160	998.18	15.73	267.99	989.84	42.85	2.28	1.77	5.74	Turned right in Utsira
Slide	1022	1063	41	30L-HS	2982	78	78				0-5	122				1.200	1036.88	15.09	271.67	1027.15	124.97	0.91	-0.50	2.85	Hole packed off after ECD peaking at 1.2 Circulate clean
Slide	1063	1075	12	30L-HS	3367	90	82				0-3	170	125	136	121	1.120									
Slide	1075	1102	27	60L	5011	201	180				14	22-35				1.110	1078.16	13.50	270.12	1067.15	-167.22	1.19	-1.16	-1.13	Base Utsira approximately 1075m.
Rotate	1102	1108	6					70	16	8	12	24	128	140	125	1.082									
Slide	1108	1113	5	80L	5000	188	176									1.075									Difficult sliding lots of stringers 1108,1110, 1113
Rotate	1113	1115	2													1.072									Rotate to clear stringers
Slide	1115	1142	27	50L												1.080	1118.11	14.37	259.76	1105.93	-75.85	1.98	0.65	-7.78	Sliding with varied results due to formation response
Rotate	1142	1147	5		5000	200	178	50	14.5	8	15	50				1.078									
Slide	1147	1174	27	20L	4540	166	148				14	40				1.088	1156.95	17.92	253.24	1143.23	-30.22	3.07	2.74	-5.04	Reduce flow to aid sliding response
Rotate	1174	1183	9		5000	194	178	50	15	8	14	45				1.087									
Slide	1183	1200	17	20L	5000	193	179				13	45				1.085	1198.16	21.46	248.19	1182.06	-28.00	2.85	2.58	-3.67	Finish sliding for the section. Start tangent to TD
Rotate	1200	1239	39		5350	220	202	100	14	8.5	11	60	133	145	127	1.097	1238.84	18.15	254.98	1220.30	148.36	2.97	-2.44	5.01	MWD cont. incl. started to show decreasing incl. Check
Slide	1239	1278	39	30L												1.090	1274.81	20.29	249.90	1254.27	-40.42	2.26	1.78	-4.24	
Rotate	1278	1289	11													1.088									
Slide	1289	1320	31	+- HS	4000		124									1.088	1314.50	16.18	250.56	1291.96	177.44	3.11	-3.11	0.50	
Slide	1320	1333	13	+- HS	3000	81	?									1.106									Sliding with varied results due to formation response
Slide	1333	1349	16	40L-HS	4008	145	136				11	25				1.120	1344.74	15.54	249.52	1321.05	-156.55	0.69	-0.63	-1.03	Bottom skade 1350m
Rotate	1349	1350	1		5011	193	186	40	13	9	9	15	139	149	127	1.090									Rotate to clear stringers
Slide	1350	1369	19	20L-HS	5011	192	186				10	17				1.080									Good slide. TD@1369 mMD

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Parameter Sheet

BHA 1 : 26" A1125M3436SP Motor

STATOIL

Client: Statoil
Field: Volve
Structure: 15/9-F-12

Well: 15/9-F-12
Borehole: 15/9-F-12

Directional Driller: Ronny Fossberg
Directional Driller: Geir Bjørløw

Depth In: 251.0
Inclination In: 0.13
Azimuth In: 137.00

Depth Out: 1369.0
Inclination Out: 15.54
Azimuth Out: 249.52

Tot Distance: 1118.0m
SLIDE: 857.0m 76.7 %
ROTATE: 261.0m 23.3 %

Bit Hrs: 34.24
Pump Hrs:
ROP:

Job #: 07SCA0021

BHA / Comments:	26" Insert Bit - 11 1/4" PDM 1.15 deg bend - 22 1/4" NM stab - 9" ARC - 9" PP MWD - 3 x 9 1/2" NMDC -

Orienting Method	Md From (m)	Md To (m)	Course (m)	TF (°)	Flow (lpm)	SPP On B (bar)	SPP Off B (bar)	RPM (rpm)	Torq On B (kNm)	Torq Off B (kNm)	WOB (1000 kgf)	ROP (m/hr)	ROT Wt (1000 kgf)	P/U Wt (1000 kgf)	S/O Wt (1000 kgf)	ECD (sg)	Svy Md (m)	Incl (°)	Azmth (°)	Svy Tvd (m)	TF (°)	DLS (°/30m)	BR (°/30m)	TR (°/30m)	Comments

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Slide Sheet

BHA: 17 1/2" PowerDrive X5

STATOIL

Client: Statoil ASA
Field: Volve
Structure: 15/9-F-12

Well: 15/9-F-12
Borehole: 15/9-F-12

Directional Driller: David Collier
Directional Driller: Christian Gjedebo
Directional Driller: Stig Johansen

Depth In: 1369
Inclination In: 15.54
Azimuth In: 249.52

Depth Out: 2513
Inclination Out: 17.21
Azimuth Out: 135.97

Tot Distance: 1144
SLIDE: 0m **% SLID** 0.0
ROTATE: 1144 **% ROT** 100.0

BHA # 5: 17 1/2" Bit-PD1100X5-17 5/16" NM Control Stab-NM Flexjoint-8 1/4" V825R-8 1/4" ISONIC-8 1/4" -12" NM InLine Stab-MWD--8 1/4" ADN- 2 x 8"NMDC

Mwt:1.35sg Performadrill

Orienting Method	Md From (m)	Md To (m)	Course (m)	Toolface (°)	Power %	Flow (L/min)	SPP On Bot (bar)	RPM (c/min)	Torque off Btm (kN.m)	Torque on Btm (kN.m)	WOB (1000 kgf)	Inp ROP (m/h)	Rot Weight (1000 kgf)	Up Weight (1000 kgf)	Down Weight (1000 kgf)	ECD (s.g.)	Svy Md (m)	Incl (°)	Azmth (°)	DLS (° / 30 m)	BUR (° / 30 m)	TUR (° / 30 m)	T/F Deg	Comments
Rotate	1317	1330	13	0	0	4000	130	50-90	14	14-20	1-5	1-10	134	150	122									TOC 1317m
Rotate	1330	1367	37	0	0	4000	130	50-90	14	15-17	1-3	12-10												Float @ 1330m
Rotate	1367	1372	5	0	0	4000	130	70	14	15	0-1	10												Shoe @1357m
Rotate	1372	1380	8	342	75	4545	234	120	9	12	3	10												
Rotate	1380	1422	42	342	75	4545	236	120	9	15	2-4	40					1393.63	16.99	246.96	0.99	0.89	-1.57	-27.55	
																	1407.32	17.83	245.60	2.05	1.84	-2.97	-26.50	
Rotate	1422	1430	8	342	100	4554	233	130	9	18-19	6-7	41												Cuttings sytem down
Rotate	1430	1440	10	342	100	4554	240	130	12	15-16	2-4	20												Hold Back ROP
Rotate	1440	1450	10	342	100	4544	237	130	12	17	2-4	25												
Rotate	1450	1467	17	342	100	4544	239	130	12	17	4-5	30												
Rotate	1467	1475	8	342	100	4544	239																	
Rotate	1475	1513	38	25R	IH	4544	240	180	14	19	4	50				1.374	1446.77	21.46	241.13	2.99	2.76	-3.4	-24.61	
Rotate	1513	1546	33	54	75	4545	240	180	15	20	4	50	136	150	124		1485.49	22.31	238.98	0.91	0.66	-1.67	-44.32	
Rotate	1546	1596	50	54	75	4550		180				25	136	156	119	1.377								Pump 1 leaking pumps 2&3 @ 200spm
Rotate	1596	1636	40	324	50		238	180		20-25	4-5	35	138	160	121		1525.76	20.46	242.79	1.72	-1.38	2.84	144.86	
Rotate	1636	1676	40	0	25	4457	238	179		20	4.5	45					1568.16	21.47	250.59	2.1	0.71	5.52	73.78	Set PD to 0/25%
																	1608.09	22.43	254.31	1.27	0.72	2.79	57.11	
Rotate	1676	1690	14	0	25	4455	238.6	180		20	5.4	45					1648.42	23.37	253.44	0.74	0.70	0.65	-20.11	
Rotate	1690	1700	10	0	25	4455	235.8	182		21	6	42				1.810	1689.09	23.69	253.02	0.27	0.24	0.31	-27.85	
Rotate	1700	1710	10	0	25	4455	234.4	176		20	5.6	42												
Rotate	1710	1750	40	0	25	4455	240	180		18-20	5-6	50					1728.49	23.77	253.50	0.16	0.06	0.37	67.72	
Rotate	1750	1790	40	0	25	4455	240	180	15	20	6-7	50	142	167	127	1.374	1770.63	23.62	253.27	0.17	-0.11	-0.16	-148.46	
Rotate	1790	1820	30	0	25	4455	244	180		22	5.5	48					1810.08	23.39	252.75	0.24	-0.17	-0.40	-138.20	
Rotate	1820	1830	10	0	25	4455	246	180		22	5	52												Pump 2 down, only 1 pump up, off btm
Rotate	1830	1860	30	0	25	4458	244	180		21	5	49	144	168	136	1.375	1850.66	23.31	252.9	0.07	-0.06	0.11	143.45	
Rotate	1860	1875	15	0	25	4457	248	180		22	4	47												
Rotate	1875	1918	43														1891.56	23.54	253.34	0.21	0.17	0.32	37.46	
Rotate	1918	1959	41	0	25	4400	253	180		19	6	50	147	172	130	1.370	1932.20	23.60	253.84	0.15	0.04	0.37	73.52	Repair TDS
Rotate	1959	1969	10	0	25	4450	252	180		22	5	50												
Rotate	1969	1985	16	180	100	4454	253	180		22	5	50					1970.3	22.92	254.39	0.56	-0.54	0.43	162.54	
Rotate	1985	1998	13	198	75	4454	253	180		22	5	50												
Rotate	1998	2022	24	210	75	4455	253	180		22	2	10					2011.03	20.07	251.86	2.21	-2.10	-1.86	-163.15	
Rotate	2022	2040	18	216	100	4455	253	180		20	5	40												
Rotate	2040	2086	46	180	100	4456	254	180		22	5	40				1.380	2051.07	17.43	248.19	2.17	-1.98	-2.75	-157.65	
Rotate	2086	2120	34	192	100	4455	256	180		20	4.6	40				1.380	2091.5	14.36	246.64	2.3	2.28	-1.15	-172.87	
Rotate	2120	2160	40	204	100	4455	258	180		20	6	35				1.380	2132.11	11.5	243.38	2.18	-137.81	-2.11	-167.28	
Rotate	2160	2201	41	252	100	4455		180		20						1.380	2172.8	9.85	233.9	1.77	-110.06	-1.22	-137.81	Stringers limiting ROP
Rotate	2201	2241	40	252	100	4455	264	180		20	9	36				1.370	2213.41	9.25	215.05	2.34	-102.34	-0.44	-110.06	
Rotate	2241	2281	40	270	100	4455	263	180		20	10	39				1.370	2253.1	9.12	194.63	2.45	-82.72	-0.1	-102.34	
Rotate	2281	2321	40	288	100	4455	262	180		20	15	38				1.370	2292.61	10.02	176.30	2.40	-60.26	0.68	-82.72	
Rotate	2321	2361	40	306	75	4455	266	180		20	13	17				1.373	2333.71	11.11	160.73	2.22	0.8	-11.36	-76.88	
Rotate	2361	2381	20	306	75	4454	271	180		23	14	13												
Rotate	2381	2395	14	306	75	4450	272	185		23	19	5-10				1.372	2372.24	12.74	151.46	1.95	1.27	-7.22	-54.20	
Rotate	2395	2410	15	306	75	4478	277	180		23	14	5-7	162	187	144									ROP Slowed down
Rotate	2410	2420	10	306	85	4477	276	180		23	18	7					2412.61	15.33	142.93	2.46	1.92	-6.34	-42.81	Drill Break@2430m
Rotate	2420	2435	15	306	85	4451	277	180		23	18	9												
Rotate	2435	2485	50	306	85	4451	280	180		24							2454.34	17.21	135.97	1.95	1.35	-5.00		
Rotate	2485	2490	5	306	85	4434	287	180		23	8	10	163											
Rotate	2490	2500	10	288	100	4434	282	180		24	15	4												
Rotate	2500																							
Rotate																								
Rotate																								

Orienting Method	Md From (m)	Md To (m)	Course (m)	Toolface (°)	Power %	Flow (L/min)	SPP On Bot (bar)	RPM (c/min)	Torque off Btm (kN.m)	Torque on Btm (kN.m)	WOB (1000 kgf)	Inp ROP (m/h)	Rot Weight (1000 kgf)	Up Weight (1000 kgf)	Down Weight (1000 kgf)	ECD (s.g.)	Svy Md (m)	Incl (°)	Azmth (°)	DLS (° / 30 m)	BUR (° / 30 m)	TUR (° / 30 m)	T/F Deg	Comments
Rotate																								
Rotate																								
Rotate																								
Rotate																								
Rotate																								

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Slide Sheet

BHA: 17 1/2" PowerDrive X5

STATOIL

Client: Statoil ASA
Field: Volve
Structure: 15/9-F-12

Well: 15/9-F-12
Borehole: 15/9-F-12

Directional Driller: David Collier
Directional Driller: Stig Johansen

Depth In: 2513
Inclination In: 17.21
Azimuth In: 135.97

Depth Out: 2572.5
Inclination Out: 20.86
Azimuth Out: 125.56

Tot Distance: 59.5
SLIDE: 0m **% SLID** 0.0
ROTATE: 59.5 **% ROT** 100.0

BHA # 6: 17 1/2" Bit-PD1100X5-17 5/16" NM Control Stab-NM Flexjoint-8 1/4" V825R-8 1/4" ISONIC-8 1/4" -12" NM InLine Stab-MWD--8 1/4" ADN- 2 x 8"NMDC

Mwt:1.35sg Performadrill

Orienting Method	Md From (m)	Md To (m)	Course (m)	Toolface (°)	Power %	Flow (L/min)	SPP On Bot (bar)	RPM (c/min)	Torque off Btm (kN.m)	Torque on Btm (kN.m)	WOB (1000 kgf)	Inp ROP (m/h)	Rot Weight (1000 kgf)	Up Weight (1000 kgf)	Down Weight (1000 kgf)	ECD (s.g.)	Svy Md (m)	Incl (°)	Azmth (°)	DLS (° / 30 m)	BUR (° / 30 m)	TUR (° / 30 m)	T/F Deg	Comments
Rotate	2513	2572.5	59.5	288	100	4463	286	180		24	18	4	165	191	150	1.372	2536.07	20.86	125.56	2447.53	1.13	-2.81		TD 17 1/2in Section

Rotate
Rotate

Orienting Method	Md From (m)	Md To (m)	Course (m)	Toolface (°)	Power %	Flow (L/min)	SPP On Bot (bar)	RPM (c/min)	Torque off Btm (kN.m)	Torque on Btm (kN.m)	WOB (1000 kgf)	Inp ROP (m/h)	Rot Weight (1000 kgf)	Up Weight (1000 kgf)	Down Weight (1000 kgf)	ECD (s.g.)	Svy Md (m)	Incl (°)	Azmth (°)	DLS (° / 30 m)	BUR (° / 30 m)	TUR (° / 30 m)	T/F Deg	Comments
Rotate																								
Rotate																								
Rotate																								
Rotate																								
Rotate																								

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Slide Sheet

BHA: 12 1/4" PowerDrive X5

STATOIL

Client: Statoil ASA
Field: Volve
Structure: 15/9-F-12

Well: 15/9-F-12
Borehole: 15/9-F-12

Directional Driller: Charles Weatherley
Directional Driller: Stig Johansen
Directional Driller: Åge Fjerstad

Depth In: 2572
Inclination In: 20.86
Azimuth In: 125.56

Depth Out: 3114
Inclination Out: 54.36
Azimuth Out: 97.21

Tot Distance: 542
SLIDE: 0m **% SLID** 0.0
ROTATE: 542 **% ROT** 100.0

BHA # 9: 12 1/4" Bit - PD900X5 - 12 1/16" NM Control Stab - NM Flexjoint - 8 1/4" ISONIC-8 1/4" - 8 1/4" Stethoscope12" NM InLine Stab-MWD- 8 1/4" ARC - 8 1/4" ADN - 2 x 8"NMDC

Mwt:1.35sg Performadrill

Orienting Method	Md From (m)	Md To (m)	Course (m)	Toolface (°)	Power %	Flow (L/min)	SPP On Bot (bar)	RPM (c/min)	Torque off Btm (kN.m)	Torque on Btm (kN.m)	WOB (1000 kgf)	Inp ROP (m/h)	Rot Weight (1000 kgf)	Up Weight (1000 kgf)	Down Weight (1000 kgf)	ECD (s.g.)	Svy Md (m)	Incl (°)	Azmth (°)	DLS (° / 30 m)	BUR (° / 30 m)	TUR (° / 30 m)	T/F Deg	Comments
Rotate	2572.5	2576	3.5	0	0	3342	202	140	27	34	5	17	158	180	145	1.390								
Rotate	2576	2610	34	324	60	3338	194	180	27	30	3	20	160	192	141	1.368	2576.99	22.00	125.92	0.84	0.84	0.26	6.75	
Rotate	2610	2650	40	324	60	3270	196	180	27	32	2	20	157	180	145	1.369	2617.92	26.64	124.65	3.42	3.40	-0.93	-7.01	29 deg offset
Rotate	2650	2690	40	288	50	3269	198	140	27	31	4	26				1.375	2658.30	30.86	121.61	3.32	3.14	-2.26	-20.45	
Rotate	2690	2710	20	288	50	3270	200	140	27	34	8	13	162	190	145	1.375	2699.07	33.41	117.41	2.49	1.88	-3.09	-43.02	29 deg offset, Top Ekofisk @ 2695m
Rotate	2710	2731	21	288	50	3270	200	150	28	36	7	10				1.373								
Rotate	2731	2740	9	288	50	3560	230	150	28	34	7	10	163	184	143	1.375	2738.83	36.82	115.77	2.67	2.57	-1.24	-16.14	56 deg offset
Rotate	2740	2770	30	306	80	3426	208	150	28	34	7	8	163	193	145	1.381								
Rotate	2770	2790	20	294	70	3492	224	150	28	35	9	7				1.383	2279.26	41.55	113.83	3.63	3.51	-1.44	-15.29	39 deg offset
Rotate	2790	2811	21	282	70	3492	225	150	28	32	8	7	163	193	145	1.381								
Rotate	2811	2852	41	270	70	3559	231	150	28	33	8	6	165	197	145	1.381	2820.02	45.63	112.36	3.09	3.00	-1.08	-14.49	
Rotate	2852	2862	10	270	70	3565	230	150	28	34	10	6				1.381	2860.02	49.50	108.88	3.48	2.90	-2.61	-34.76	55 deg offset
Rotate	2862	2892	30	234	80	3565	229	150	28	34	9	9				1.384								
Rotate	2892	2920	28	234	70	3565	231	150	28	36	8	10				1.387	2900.45	52.08	104.36	3.23	1.91	-3.35	-55.07	71 deg offset
Rotate	2920	2933	13	IH	IH	3565	232	150	28	33	8	10												
Rotate	2933	2960	27	IH	IH	3560	235	150	28	33	8	10					2939.72	53.78	102.53	1.71	1.30	-1.40	-41.21	Demodulation problems.
Rotate	2960	2966	6	IH	IH	3404	215	150	24	23	9	3												Drill with reduced flow due to signal problen
Rotate	2966	2973	7	IH	IH	3427	216	150	24	25-40	9	1-5				1.390								
Rotate	2973	3010	37	IH	IH	3543	233	140	23	28-37	8-9	1-5				1.393	2980.29	54.65	103.04	0.71	0.64	0.38	25.58	Increase mudweight from 2966m up to 1.38
Rotate	3010	3013	3	IH/ Nudge down	IH	3543	235	140	24	28-37	8-9	1-5				1.393	3008.61	55.25	103.40	0.71	0.64	0.38	26.26	
Rotate	3013	3053	40	IH	IH	3543	237	140	23	23-39	9 -11	2-12				1.418								Increase mudweight to 1.40sg
Rotate	3053	3068	15	IH	IH	3546	243	140	24	30-38	9	6				1.412	3060.63	54.85	99.95	1.65	-0.23	-1.99	-99.04	
Rotate	3068	3093	25	IH/ Nudge down	IH	3542	233	140	24	23-33	9	3-6				1.416	3081.25	54.36	97.21	3.33	-0.71	-3.99	-103.16	
Rotate	3093	3106	13	IH	IH	3543	235	140	23	26-35	8-9	9-10				1.423								
Rotate	3106	3114	8	IH / 25% R	IH	3543	235	140	24	26-35	8	10				1.421								

Rotate

Orienting Method	Md From (m)	Md To (m)	Course (m)	Toolface (°)	Power %	Flow (L/min)	SPP On Bot (bar)	RPM (c/min)	Torque off Btm (kN.m)	Torque on Btm (kN.m)	WOB (1000 kgf)	Inp ROP (m/h)	Rot Weight (1000 kgf)	Up Weight (1000 kgf)	Down Weight (1000 kgf)	ECD (s.g.)	Svy Md (m)	Incl (°)	Azmth (°)	DLS (° / 30 m)	BUR (° / 30 m)	TUR (° / 30 m)	T/F Deg	Comments
Rotate																								
Rotate																								
Rotate																								
Rotate																								
Rotate																								
Rotate																								

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Slide Sheet

BHA: 12 1/4" PowerDrive X5

STATOIL

Client: Statoil ASA
Field: Volve
Structure: 15/9-F-12

Well: 15/9-F-12
Borehole: 15/9-F-12

Directional Driller: Ryan Kelly
Directional Driller: Åge Fjerstad

Depth In: 3114 **Depth Out:** 3520 **Tot Distance:** 406
Inclination In: 54.36 **Inclination Out:** 52.73 **SLIDE:** 0m **% SLID** 0.0
Azimuth In: 97.21 **Azimuth Out:** 105.59 **ROTATE:** 406 **% ROT** 100.0

BHA # 10: 8 1/2" Bit - PD675X5 - 8 3/16" NM Control Stab - NM Flexjoint - EcoScope675 - TeleScope675 MWD - Stethoscope675 - ISONIC - 8 3/8" NM Stab - 2 x 5"NMDC

Mwt:1.40sg Performadrill

Orienting Method	Md From (m)	Md To (m)	Course (m)	Toolface (°)	Power %	Flow (L/min)	SPP On Bot (bar)	RPM (c/min)	Torque off Btm (kN.m)	Torque on Btm (kN.m)	WOB (1000 kgf)	Inp ROP (m/h)	Rot Weight (1000 kgf)	Up Weight (1000 kgf)	Down Weight (1000 kgf)	ECD (s.g.)	Svy Md (m)	Incl (°)	Azmth (°)	DLS (° / 30 m)	BUR (° / 30 m)	TUR (° / 30 m)	T/F Deg	Comments
																	3081.25	54.36	97.21	3.33	-0.71	-3.99	-103.16	Tie in point 3081.25 (12 1/4" MWD)
Rotate	3086.0	3113.5	27.5	0	0	2000	173	50-60	14	13-18	0-4	15-20		167	135	1.445								Tag float at 3086m 05:05, Drilled Shoe at 3113.5 08:30
Rotate	3113.5	3116.0	2.5	0	0	2000	171	60	14	16	2	15												Drill 2 m new formation (3114-3116) and take FIT
Rotate	3116.0	3120.0	4.0	0	0	2220	217	60	13	15-18	2-3	15												
Rotate	3120.0	3159.0	39.0	IH - 25%R	IH	2220	215	60	13	15-20	3-5	2-8				1.451	3136.60	53.70	95.71	0.75	-0.36	-0.81	-118.97	**SET PD to IH/25%R, BT_b = 1064 / 53.20deg target inc**
Rotate	3159.0	3167.0	8.0	IH - 25%R	IH	2230	203	100	13	19-20	5	10	145	166	134	1.455								Hold ROP to 10m/hr per Statoil instruction for 3m sample catching
Rotate	3167.0	3181.0	14.0	IH - 25%R	IH	2230	203	110	13	19-20	5	10				1.455	3172.51	53.76	98.14	1.64	0.05	2.03	88.96	
Rotate	3181.0	3188.0	7.0	IH - 25%R	IH	2227	201	120	16	16-21	5	10				1.454								
Rotate	3188.0	3199.0	11.0	IH - 25%R	IH	2227	202	130	17	19-20	5	10	145	166	134	1.456								
Rotate	3199.0	3222.0	23.0	IH - 25%R	IH	2227	202	140	17	20	4-5	10				1.450	3216.39	53.72	101.30	1.74	-0.03	2.16	91.88	Increse ROP limit to 15m/hr per Statoil instruction
Rotate	3222.0	3240.0	18.0	IH - 25%R	-0.5 nudge	2225	202	141	17	19-21	3-5	15				1.457								**SET PD to Nudge -0.50, BT_b = 1054 / 52.70deg target inc**
Rotate	3240.0	3276.0	36.0	IH - 25%R	IH	2225	202	141	17	19-21	3-5	15	147	166	134	1.456	3257.05	53.20	103.39	1.30	-0.80	1.54	108.00	Increse ROP limit to 28 m/hr as per Statoil instruction
Rotate	3276.0	3279.0	3.0	IH	IH	2227	202	140	17	20-23	5-7	28				1.465								**SET PD to IH 0/0%, BT_b = 1054 / 52.70deg target inc**
Rotate	3279.0	3320.0	41.0	IH	IH	2226	206	140	18	21-24	2-5	28				1.469	3297.38	53.67	105.77	1.46	0.35	1.77	77.00	
Rotate	3320.0	3361.0	41.0	IH	IH	2227	205	140		22-24	2-6	28				1.469								
Rotate	3361.0	3401.0	40.0	IH	IH	2227	206	140		22-24	4-8	28	150	175	134	1.473	3375.41	52.87	106.59	0.29	-0.07	-0.35	-104.51	
Rotate	3401.0	3441.0	40.0	IH	IH	2227	207	140		20-22	3-7	28				1.470	3416.55	53.00	107.02	0.27	0.09	0.31	69.38	
Rotate	3441.0	3481.0	40.0	IH	IH	2227	206	140		20-22	3-7	28				1.469	3456.15	52.83	106.74	0.21	-0.13	-0.21	-127.36	Repair washpipe
Rotate	3481.0	3489.0	8.0	IH	IH	2227	210	140		20-22	3-7	28	154	180	135	1.468								**SET PD to IH/25%L, BT_b = 1054 / 52.70deg target inc**
Rotate	3489.0	3520.0	31.0	IH - 25%L	IH	2227	209	140		20-23	3-7	28				1.474	3495.52	52.73	105.59	0.70	-0.08	-0.88	-96.58	TD at 3520m

Rotate

Orienting Method	Md From (m)	Md To (m)	Course (m)	Toolface (°)	Power %	Flow (L/min)	SPP On Bot (bar)	RPM (c/min)	Torque off Btm (kN.m)	Torque on Btm (kN.m)	WOB (1000 kgf)	Inp ROP (m/h)	Rot Weight (1000 kgf)	Up Weight (1000 kgf)	Down Weight (1000 kgf)	ECD (s.g.)	Svy Md (m)	Incl (°)	Azmth (°)	DLS (° / 30 m)	BUR (° / 30 m)	TUR (° / 30 m)	T/F Deg	Comments
Rotate																								
Rotate																								
Rotate																								
Rotate																								
Rotate																								
Rotate																								

Schlumberger

STATOIL - VOLVE PROJECT

STATOIL

BIT RECORD

WELL: 15/9-F-12

Job nr: 07SCA0021

BIT INFORMATION							MD		TOTAL				DULL CONDITION								
Bit No.	BHA No.	Size	Make	Type	Ser. No.	Jets / TFA	In	Out	m	Bit hrs	ROP	Pmp hrs	IR	OR	D	L	B	G	O	R	Comments
1	4	26"	Smith	MG04BC	MY8397	2x22,1x18, 1x20	251	1369	1118	34.24	32.7	97.0	1	1	WT	A	E	IN	NO	TD	TD 26" Section
5	5	17.5"	Hycalog	RSX616M	215765	5x15, 3x16	1369	2513	1144	53.8	21.3	141.9	4	4	BT	A	X	IN	CT	PR	Due to low PR,POOH to change bit
6	6	17.5"	Smith	135 / MGGH+C	MZ0185	3x22, 1x20	2513	2573	59.5	11.6	5.1	28.3	1	1	WT	A	E	IN	WT	TD	TD 17 1/2" Section
7	7	12.25"	Hycalog	M422	RSR616M-A12	3x16, 3x15	2573	2573	0	0	0.0	0.0	0	0	No	A	X	IN	NO	DSF	Unknown leak in drillstring/BHA
7rr1	8	12.25"	Hycalog	M422	RSR616M-A12	3x16, 3x15	2573	2573	0	0	0.0	0.0	0	0	No	A	X	IN	NO	DSF	Leaking Energizer in BHA determined
7rr2	9	12.25"	Hycalog	M422	RSR616M-A12	3x16, 3x15	2573	3114	541	96.6	5.6	138.1	1	1	CT	A	X	IN	WT	TD	TD 12 1/4" Section
8	10	8 1/2"	Smith	M222	MDI616LPX	6x12, 0.663	3114	3520	406	30.06	13.5										TD 8 1/2" Section

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15/9-F-12 MWD RECORD (MWD Runs 1-)

HOLE SIZE		12.25" 15/9-F-12		12.25" 15/9-F-12		12.25" 15/9-F-12		8.5" 15/9-F-12	
MWD RUN #		7		8		9		10	
BHA #	LWD RUN #	7	7	8	8	9	9	10	10
DRILLING PARAMETERS									
DEPTH IN (m)	DEPTH OUT (m)	2572.50	2572.50	2572.50	2572.50	2572.50	3114.00	3114.00	3520.00
DATE IN	DATE OUT	7-Aug-07	8-Aug-07	N/A	N/A	10-Aug-07	18-Aug-07	18-Aug-07	24-Aug-07
DRILLING HOURS	PUMP HOURS	0.00	0.50	0.00	1.00	96.62	138.10	30.10	56.30
ROP (m/hr)	WOB (kkg)	0.00	0.00	0.00	0.00	5.35	6.50	13.50	6.50
RPM (surface/total)	TORQUE (kNm)	0.00	0.00	0.00	0.00	137.00	29.01	137.00	29.01
FLOW (lpm)	PRESSURE (bar)	0.00	0.00	0.00	0.00	3462.00	214.00	2215.00	214.00
BIT MAKE	BIT TYPE	Hycalog	PDC	Hycalog	PDC	Hycalog	PDC	Smith	PDC
MOTOR MAKE	MOTOR TYPE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SURVEY PARAMETERS									
INCL START	INCL FINAL	20.86	20.86	20.86	20.86	20.86	54.00	53.70	52.73
AZIM START	AZIM FINAL	125.56	125.56	125.56	125.56	125.56	93.00	95.71	105.59
MWD OPERATIONAL PARAMETERS									
COLLAR #	TOOL #	133	72	133	72	133	72	FN15	95
Stethoscope	ADN	AD83	051	AD49	051	AD49	051	AC34	N/A
CDR/ARC/EcoScope	ISONIC/GVR	1536	42780	1536	42780	709	FJ01	816	34640
TURBINE RANGE (gpm)		800-1450		800-1450		800-1450		400-800	
Tur RPM @ lpm	Bit - D&I (m)	3464 @ 4000	30.54	N/A	30.74	3164 @ 2240	30.67	3164 @ 2240	20.23
Bit - Res. (m)	Bit - Gamma (m)	37.04	37.09	37.24	37.29	37.17	2.24/37.22	13.58	10.53/20.23
Bit - DT (m)	Bit - APWD (m)	13.82	36.33	13.80	36.53	13.73	36.46	39.61	10.70
Bit - Porosity (m)	Bit - Density (m)	45.17	44.22	45.37	44.42	45.28	44.33	14.02	11.79

INDIVIDUAL SENSOR PERFORMANCES

SENSOR	OP HOURS	METERS	OP HOURS	METERS	OP HOURS	METERS	OP HOURS	METERS
TRANSMISSION	0.50	0.00	1.00	0.00	138.10	541.50	56.30	406.00
INCLINATION	0.50	0.00	1.00	0.00	138.10	541.50	56.30	406.00
AZIMUTH	0.50	0.00	1.00	0.00	138.10	541.50	56.30	406.00
DWOB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DTORQ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ann Press & Temp	0.50	0.00	1.00	0.00	138.10	541.50	56.30	406.00
MWD Gamma Ray	0.50	0.00	1.00	0.00	138.10	541.50	56.30	406.00
CDR/ARC/ImPulse (RT)	0.50	0.00	1.00	0.00	138.10	541.50	N/A	N/A
CDR/ARC/ImPulse (MEMORY)	N/A	N/A	N/A	N/A	186.30	541.50	N/A	N/A
ADN /Eco (RT)	0.50	0.00	1.00	0.00	138.10	541.50	56.30	406.00
ADN (MEMORY)	N/A	N/A	N/A	N/A	186.30	541.50	N/A	N/A
SON (RT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SON (MEMORY)	N/A	N/A	N/A	N/A	186.30	541.50		

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TOOL CONFIGURATION

Rig: Maersk Inspirer
Hole Size: 36'', 8.5" pilot, 26", 17.5",12.25"and 8.5"
Job Type: D&I, VisionR, VDN, ISONIC, StethoScope, EcoScope

WELL NUMBER : 15/9-F-12
FIRST RUN DATE : 9th June 2007
LAST RUN DATE 26th Aug 2007
MUD TYPE : Seawater (1,3), WaterBased Mud (GEM) (2), OBM (9,10)

RUN	BHA	MWD	VisionR	RAB	ADN	ISONIC	TST	MWD Flowrate	CDR/VisionR	ADN Flowrate	Bit-Survey	Bit-GR	Bit-RES	Bit-Poros	Bit-Dens	Bit-Pressure	Bitrate	Comments
		PP	CDR		CDN			PowerPulse	Flowrate									
NO	NO	YES	NO	NO	YES	NO	NO	lpm	lpm	lpm	m	m	m	m	m	m	bps	
1	1	VB-01	-	-	-	-	-	3028-5489	-	-	13.42	12.77	-	-	-	-	6	36in. Section, POOHdue to TD
2	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26in. Drill out
3	3	BB-42651	1176	-	AD02	-	-	1514-3028	3028	3028	13.71	4.74	4.69	30.25	29.04	3.98	6	8.5in. Pilot hole, POOH due to TD
4	4	VA-97	0401	-	-	-	-	3028-5489	5300	-	23.65	16.35	16.30	-	-	15.59	6	26in. Section, POOHdue to TD
5	5	FU86	2704	-	FF09	FJ01	-	3028-5489	5292	6056	27.12	12.06	12.01	36.085	35.14	11.3	6	17.5in Section, POOH @ 2513mMD due to low ROP
6	6	FU87	1536	-	051	42780	-	3028-5490	5292	6056	27.22	12.02	11.97	36.19	35.24	11.26	6	17.5in Section, POOH due to TD @2572mMD
7	7	133	1536	-	051	42780	AD83	3028-5491	5292	6056	30.54	37.09	37.04	45.17	44.22	36.33	6	12.25in Section,POOH due to loss of standpipe pressure
8	8	133	1536	-	051	42780	AD49	3028-5491	5292	6056	30.74	37.29	37.24	45.37	44.42	36.53	6	12.25in Section,POOH due to washout detection
9	9	133	709	-	051	FJ01	AD49	3028-5491	5292	6056	30.74	37.29	37.24	45.37	44.42	36.53	6 / 3	12.25in Section,drill to TD
10	10			-	-												6	8.5in Section,drill to TD

TOOL PERFORMANCE

RUN	BHA	CIRC	TRAN	D&I	GR	GR	RES	RES	ECD	ECD	Density	Density	Porosity	Porosity	FPWD	FPWD	LOGGED	Comments.
NO	NO	HRS	HRS	HRS	HRS	Lost(m)	HRS	Lost(m)	HRS	Lost(m)	HRS	Lost(m)	HRS	Lost(m)	HRS	Lost(m)	(m)	
1	1	20	20	20	20	0	20	0	0	0	-	-	-	-	-	-	113.0	D&I
2	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	3	90.8	91.0	91.0	91.0	0	91.0	0	91.0	0	91.0	-	91.0	-	-	-	1095.0	D&I, Vision, ADN, ISONIC
4	4	97.0	97.0	97.0	97.0	0	97.0	0	97.0	0	-	-	-	-	-	-	1118.0	D&I, Vision
5	5	141.4	141.4	141.4	141.4	10	141.4	10	141.4	0	141.4		141.4				1144.0	D&I, Vision, ADN, ISONIC
6	6	28.3	28.3	28.3	28.3	0	28.3	0	23.0	0	23.0	0	23.0	0	N/A	N/A	59.8	D&I, Vision, ADN, ISONIC
7	7	0.5	0.5	0.5	0.5	0	0.5	0	0.5	0	0.5	0	0.5	0	0.5	0	0.0	D&I, Vision Services, ISONIC,StethoScope
8	8	1.0	1.0	1.0	1.0	0	1.0	0	1.0	0	1.0	0	1.0	0	1.0	0	0.0	D&I, Vision Services, ISONIC,StethoScope
9	9	138.1	138.1	138.1	138.1	0	138.1	0	138.1	0	138.1	0	138.1	0	138.1	0	541.5	D&I, Vision Services, ISONIC,StethoScope
10	10					0		0		0		0		0		0	406.0	D&I, Vision Services, ISONIC,StethoScope

Equivalent Static Density Calculations

NUMBERS in blue is calculated automatically.

Well Name	**15/9-18-A**			
Hole Size	**8.5 in. Pilot hole _MWD run 02**			
ARC Pressure Offset	0 bar		**Depth**	**FIT/LOT**
APWD Bit to Sensor Distance	3.98 m			
Elevation Hydraulic Head	1.87 m			

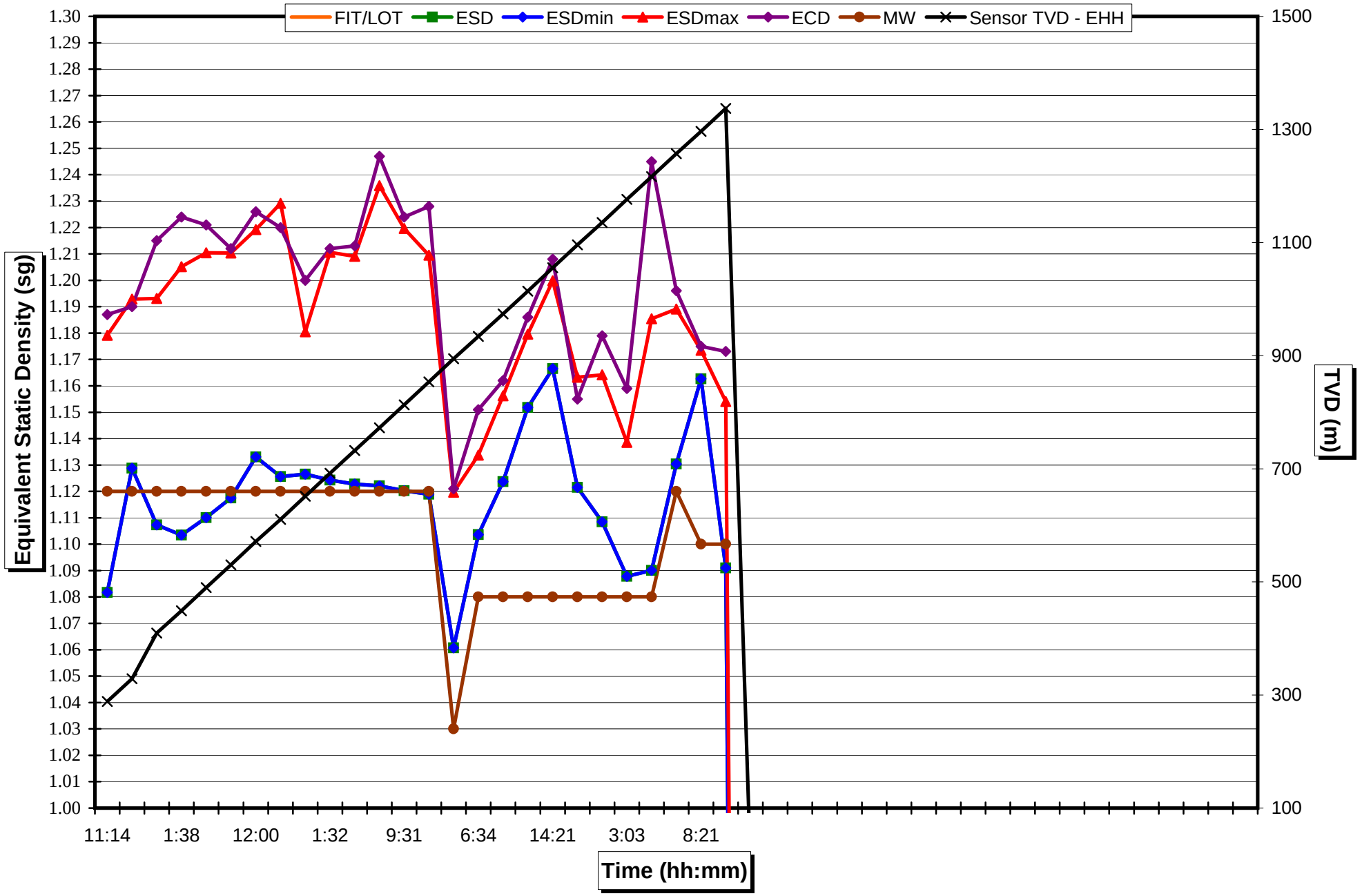
		m					RAW VALUES FROM HSPM						CALCULATED VALUES (bar)						sg						degC
Date	**Time**	**Hole Depth**	**Bit Depth**	**Sensor Depth**	**Sensor TVD**	**Sensor TVD - EHH**	**PESD**	**ESDT**	**PMIN**	**PMIT**	**PMAX**	**PMAT**	**PESD**	**ESDT**	**PMIN**	**PMIT**	**PMAX**	**PMAT**	**ESD**	**ESD_{min}**	**ESD_{max}**	**MW**	**ECD**	**FIT/LOT**	**ATMP**
25-Jun-07	11:14	294.54	294.34	290.36	290.36	288.49	148	29	0	30	8	5	30.61	19.99	30.61	20.68	33.37	3	**1.082**	**1.082**	**1.179**	1.12	1.187	1.70	27
25-Jun-07	17:27	334.89	334.61	330.63	330.63	328.76	176	28	0	28	6	0	36.40	19.31	36.40	19.31	38.47	0	**1.129**	**1.129**	**1.193**	1.12	1.190	1.70	27
26-Jun-07	0:02	415.55	415.26	411.28	411.28	409.41	215	86	0	86	10	6	44.47	59.29	44.47	59.29	47.92	4	**1.107**	**1.107**	**1.193**	1.12	1.215	1.70	30
26-Jun-07	1:38	455.61	454.90	450.92	450.92	449.05	235	21	0	21	13	4	48.61	14.48	48.61	14.48	53.09	3	**1.103**	**1.103**	**1.205**	1.12	1.224	1.70	30
26-Jun-07	4:54	496.10	495.90	491.92	491.92	490.05	258	26	0	26	14	4	53.37	17.93	53.37	17.93	58.19	3	**1.110**	**1.110**	**1.210**	1.12	1.221	1.70	30
26-Jun-07	8:22	536.75	536.02	532.04	532.04	530.17	281	26	0	26	14	5	58.12	17.93	58.12	17.93	62.95	3	**1.118**	**1.118**	**1.210**	1.12	1.212	1.70	30
26-Jun-07	12:00	577.31	577.14	573.16	573.16	571.29	307	26	0	27	14	4	63.50	17.93	63.50	18.62	68.33	3	**1.133**	**1.133**	**1.219**	1.12	1.226	1.70	30
27-Jun-07	20:43	617.99	616.52	612.54	612.54	610.67	326	20	0	21	18	4	67.43	13.79	67.43	14.48	73.64	3	**1.126**	**1.126**	**1.229**	1.12	1.220	1.70	24
27-Jun-07	23:01	657.46	657.17	653.19	653.19	651.32	348	28	0	28	10	4	71.98	19.31	71.98	19.31	75.43	3	**1.127**	**1.127**	**1.181**	1.12	1.200	1.70	27
28-Jun-07	1:32	698.02	697.90	693.92	693.92	692.05	369	19	0	20	17	4	76.32	13.10	76.32	13.79	82.19	3	**1.124**	**1.124**	**1.211**	1.12	1.212	1.70	28
28-Jun-07	3:54	738.65	738.25	734.27	734.27	732.40	390	22	0	23	18	4	80.67	15.17	80.67	15.86	86.87	3	**1.123**	**1.123**	**1.209**	1.12	1.213	1.70	30
28-Jun-07	6:20	779.21	778.16	774.18	774.18	772.31	411	16	0	17	25	4	85.01	11.03	85.01	11.72	93.63	3	**1.122**	**1.122**	**1.236**	1.12	1.247	1.70	32
28-Jun-07	9:31	819.73	818.97	814.99	814.97	813.10	432	24	0	24	23	4	89.36	16.55	89.36	16.55	97.29	3	**1.120**	**1.120**	**1.220**	1.12	1.224	1.70	33
28-Jun-07	12:37	860.39	859.50	855.52	855.50	853.63	453	26	0	27	22	5	93.70	17.93	93.70	18.62	101.28	3	**1.119**	**1.119**	**1.209**	1.12	1.228	1.70	35
28-Jun-07	19:53	900.76	900.37	896.39	896.36	894.49	450	34	0	34	15	4	93.08	23.44	93.08	23.44	98.25	3	**1.061**	**1.061**	**1.120**	1.03	1.121	1.70	24
29-Jun-07	6:34	940.73	940.10	936.12	936.09	934.22	489	21	0	22	8	4	101.15	14.48	101.15	15.17	103.90	3	**1.104**	**1.104**	**1.134**	1.08	1.151	1.70	27
29-Jun-07	8:48	980.97	979.70	975.72	975.68	973.81	519	65	0	65	9	5	107.35	44.82	107.35	44.82	110.45	3	**1.124**	**1.124**	**1.156**	1.08	1.162	1.70	27
29-Jun-07	11:36	1021.73	1020.02	1016.04	1016.00	1014.13	554	49	0	49	8	5	114.59	33.78	114.59	33.78	117.35	3	**1.152**	**1.152**	**1.180**	1.08	1.186	1.70	28
29-Jun-07	14:21	1062.41	1061.50	1057.52	1057.48	1055.61	584	49	0	50	10	4	120.80	33.78	120.80	34.47	124.24	3	**1.166**	**1.166**	**1.200**	1.08	1.208	1.70	28
29-Jun-07	16:45	1103.16	1101.92	1097.94	1097.90	1096.03	583	22	0	22	13	5	120.59	15.17	120.59	15.17	125.07	3	**1.122**	**1.122**	**1.163**	1.08	1.155	1.70	29
29-Jun-07	18:42	1142.65	1141.50	1137.52	1137.48	1135.61	597	25	0	25	18	4	123.49	17.24	123.49	17.24	129.69	3	**1.108**	**1.108**	**1.164**	1.08	1.179	1.70	28
30-Jun-07	3:03	1182.75	1182.44	1178.46	1178.41	1176.54	607	31	0	31	17	21	125.55	21.37	125.55	21.37	131.41	14	**1.088**	**1.088**	**1.139**	1.08	1.159	1.70	30
30-Jun-07	4:45	1222.85	1222.52	1218.54	1218.49	1216.62	629	21	0	21	33	4	130.10	14.48	130.10	14.48	141.48	3	**1.090**	**1.090**	**1.185**	1.08	1.245	1.70	30
30-Jun-07	6:16	1263.45	1263.06	1259.08	1259.03	1257.16	674	34	0	35	21	4	139.41	23.44	139.41	24.13	146.65	3	**1.130**	**1.130**	**1.189**	1.12	1.196	1.70	31
30-Jun-07	8:21	1304.03	1302.56	1298.58	1298.54	1296.67	715	8	0	8	4	3	147.89	5.52	147.89	5.52	149.27	2	**1.163**	**1.163**	**1.173**	1.10	1.175	1.70	30
30-Jun-07	11:07	1344.73	1343.26	1339.28	1339.24	1337.37	692	24	0	25	24	4	143.14	16.55	143.14	17.24	151.41	3	**1.091**	**1.091**	**1.154**	1.10	1.173	1.70	30

Schlumberger

Equivalent Static Density vs. Time

15/9-18-A

8.5 in. Pilot hole MWD run 02

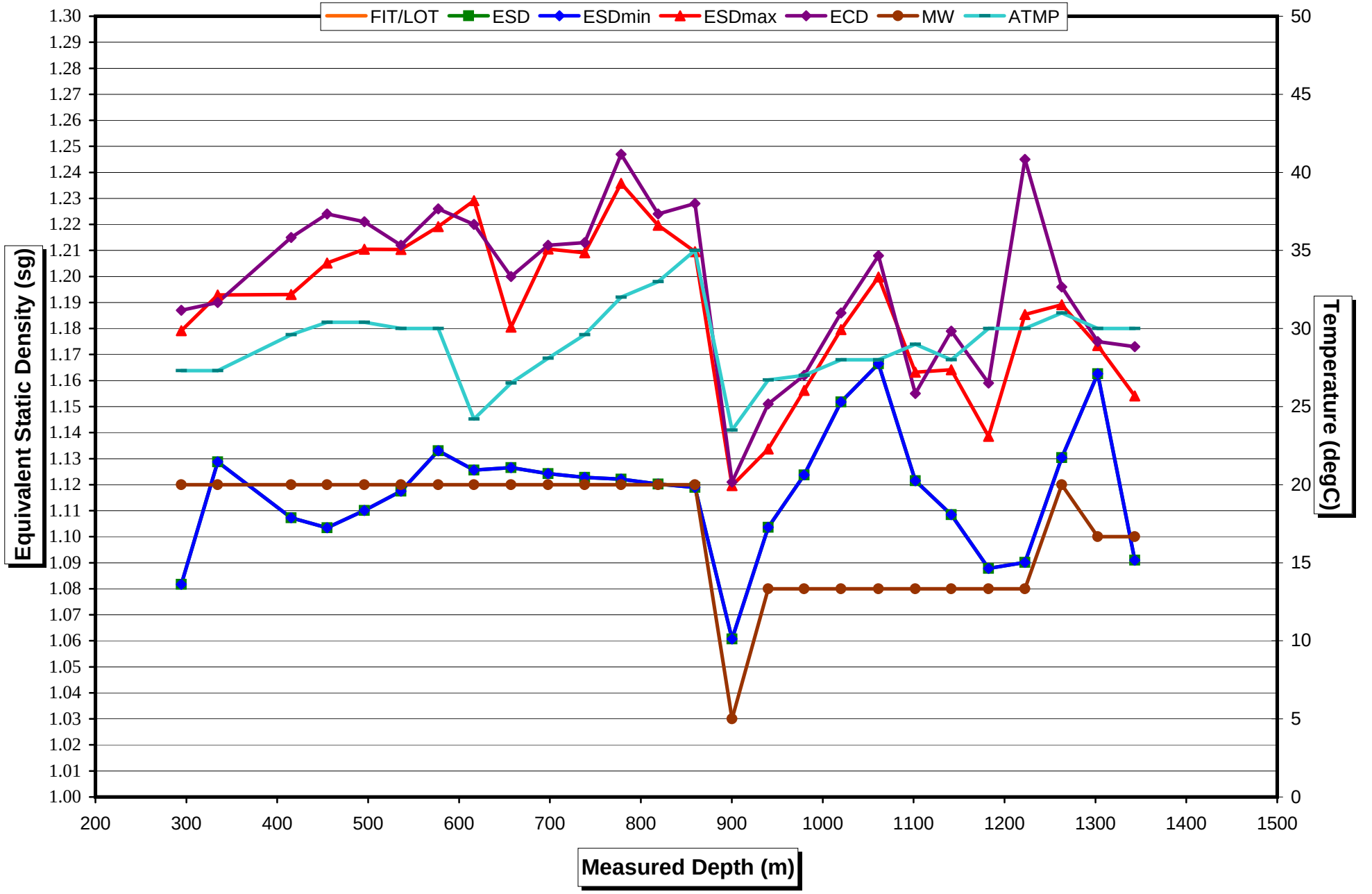


Schlumberger

Equivalent Static Density vs Depth

15/9-18-A

8.5 in. Pilot hole MWD run 02

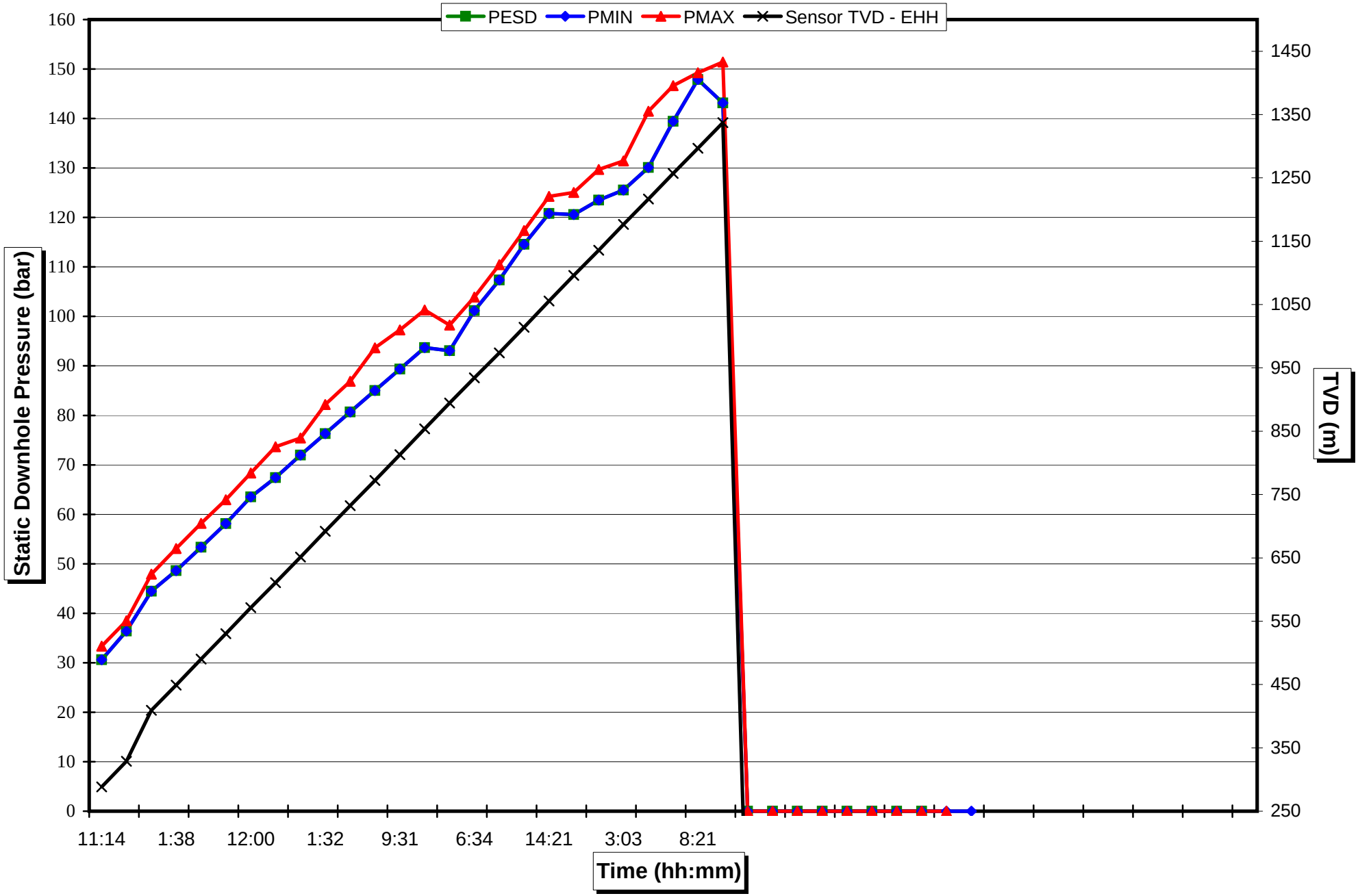


Schlumberger

Static Downhole Pressure vs. Time

15/9-18-A

8.5 in. Pilot hole MWD run 02

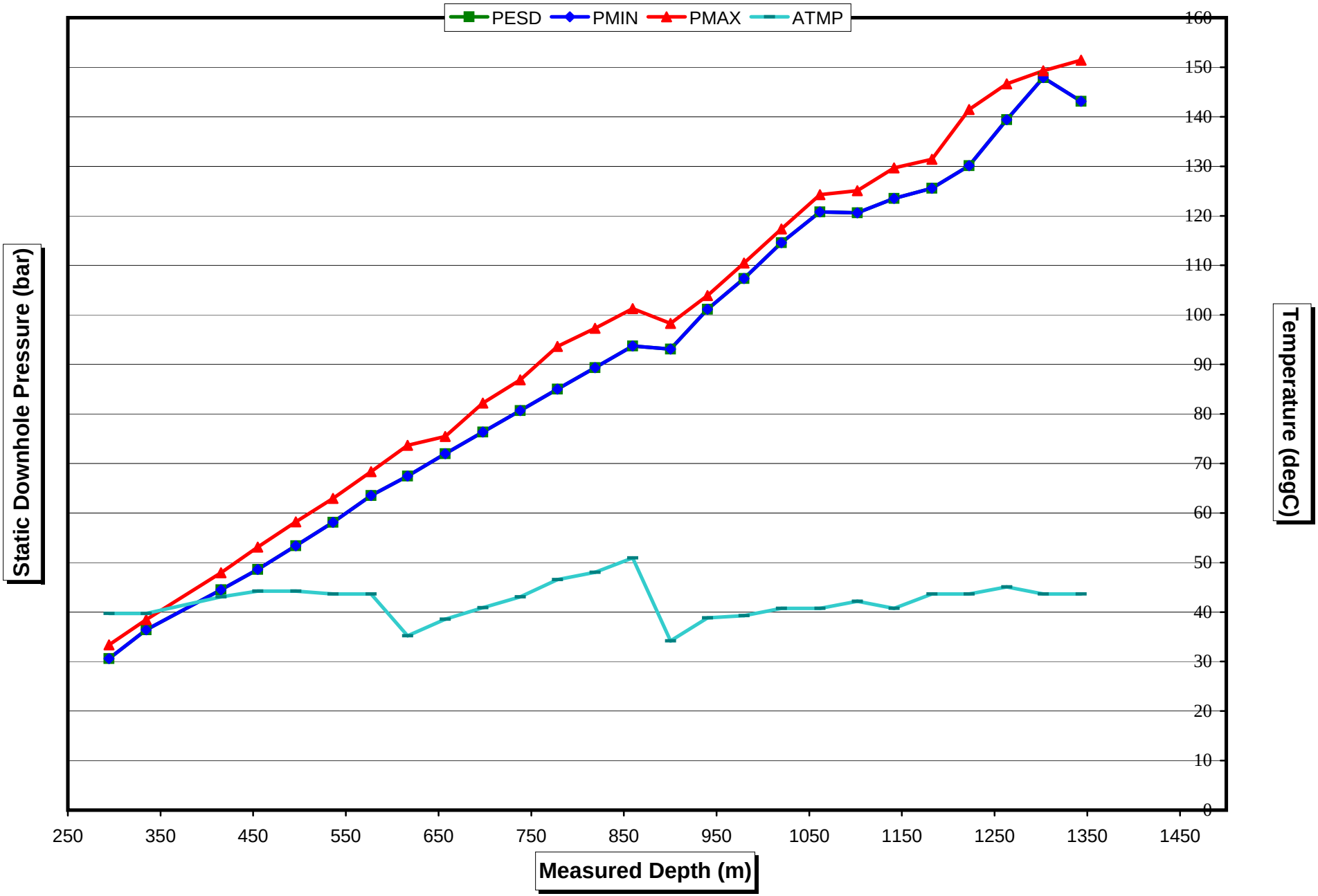


Schlumberger

Static Downhole Pressure vs Depth

15/9-18-A

8.5 in. Pilot hole _MWD run 02



Equivalent Static Density Calculations

NUMBERS in blue is calculated automatically.

Well Name	15/9-F-12		
Hole Size	26in_MWD run 03		
ARC Pressure Offset	0 bar	Depth	FIT/LOT
APWD Bit to Sensor Distance	16.3 m		
Elevation Hydraulic Head	54 m		

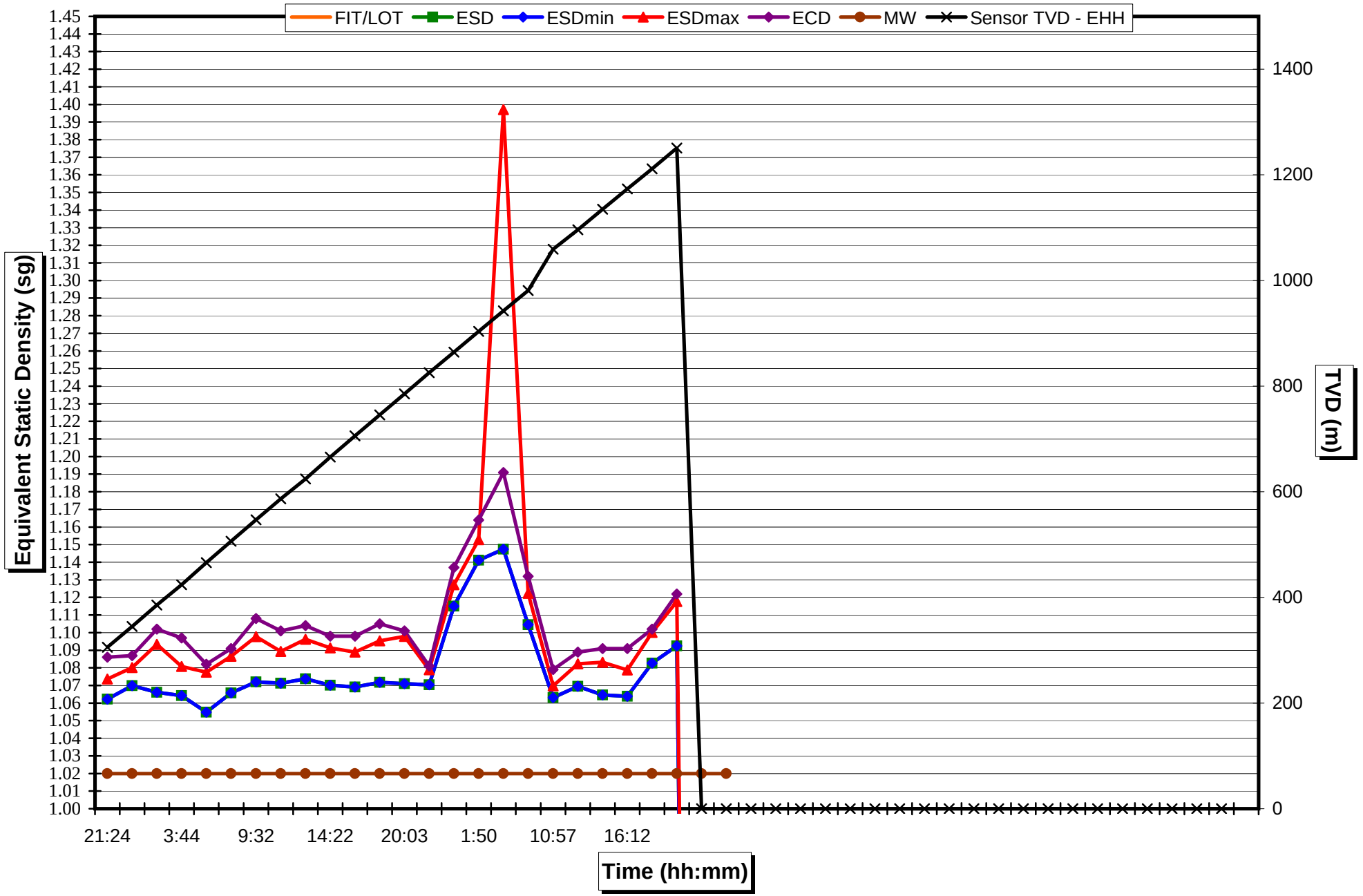
		m					RAW VALUES FROM HSPM						CALCULATED VALUES (bar)						sg						degC
Date	Time	Hole Depth	Bit Depth	Sensor Depth	Sensor TVD	Sensor TVD - EHH	PESD	ESDT	PMIN	PMIT	PMAX	PMAT	PESD	ESDT	PMIN	PMIT	PMAX	PMAT	ESD	ESD_{min}	ESD_{max}	MW	ECD	FIT/LOT	ATMP
06-Jul-07	21:24	376.00	376.00	359.70	359.70	305.70	154	11	0	11	1	5	31.85	7.58	31.85	7.58	32.20	0	**1.062**	**1.062**	**1.074**	1.02	1.086	1.70	14
06-Jul-07	23:30	416.19	415.17	398.87	398.87	344.87	175	10	0	10	1	40	36.20	6.89	36.20	6.89	36.54	0	**1.070**	**1.070**	**1.080**	1.02	1.087	1.70	14
07-Jul-07	1:31	456.52	456.00	439.70	439.68	385.68	195	16	0	16	3	4	40.33	11.03	40.33	11.03	41.37	3	**1.066**	**1.066**	**1.093**	1.02	1.102	1.70	15
07-Jul-07	3:44	797.09	494.41	478.11	478.00	424.00	214	34	0	35	2	10	44.26	23.44	44.26	24.13	44.95	7	**1.064**	**1.064**	**1.081**	1.02	1.097	1.70	16
07-Jul-07	6:24	537.01	536.43	520.13	519.74	465.74	233	44	0	45	3	4	48.19	30.34	48.19	31.03	49.23	3	**1.055**	**1.055**	**1.077**	1.02	1.082	1.70	16
07-Jul-07	8:10	577.87	577.56	561.26	560.48	506.48	256	18	0	18	3	4	52.95	12.41	52.95	12.41	53.99	3	**1.066**	**1.066**	**1.087**	1.02	1.091	1.70	17
07-Jul-07	9:32	618.34	618.11	601.81	600.79	546.79	278	17	0	17	4	6	57.50	11.72	57.50	11.72	58.88	4	**1.072**	**1.072**	**1.098**	1.02	1.108	1.70	16
07-Jul-07	11:05	658.29	657.99	641.69	640.51	586.51	298	28	0	28	3	3	61.64	19.31	61.64	19.31	62.67	2	**1.071**	**1.071**	**1.089**	1.02	1.101	1.70	17
07-Jul-07	12:36	698.42	696.13	679.83	678.46	624.46	318	19	0	20	4	4	65.78	13.10	65.78	13.79	67.15	3	**1.074**	**1.074**	**1.096**	1.02	1.104	1.70	17
07-Jul-07	14:22	738.91	737.88	721.58	719.94	665.94	338	24	0	25	4	9	69.91	16.55	69.91	17.24	71.29	6	**1.070**	**1.070**	**1.091**	1.02	1.098	1.70	17
07-Jul-07	16:01	779.25	778.30	762.00	760.07	706.07	358	13	0	13	4	4	74.05	8.96	74.05	8.96	75.43	3	**1.069**	**1.069**	**1.089**	1.02	1.098	1.70	17
07-Jul-07	17:38	819.64	818.38	802.08	799.59	745.59	379	14	0	15	5	7	78.39	9.65	78.39	10.34	80.12	5	**1.072**	**1.072**	**1.095**	1.02	1.105	1.70	18
07-Jul-07	20:03	860.19	859.28	842.98	839.54	785.54	399	13	0	13	6	13	82.53	8.96	82.53	8.96	84.60	9	**1.071**	**1.071**	**1.098**	1.02	1.101	1.70	18
08-Jul-07	0:13	900.79	900.50	884.20	879.32	825.32	419	17	0	17	2	4	86.67	11.72	86.67	11.72	87.36	3	**1.070**	**1.070**	**1.079**	1.02	1.081	1.70	18
08-Jul-07	1:02	941.32	940.60	924.30	918.17	864.17	457	12	0	13	3	4	94.53	8.27	94.53	8.96	95.56	3	**1.115**	**1.115**	**1.127**	1.02	1.137	1.70	18
08-Jul-07	1:50	981.53	981.00	964.70	957.50	903.50	489	15	0	15	3	4	101.15	10.34	101.15	10.34	102.18	3	**1.141**	**1.141**	**1.153**	1.02	1.164	1.70	18
08-Jul-07	2:43	1022.00	1021.56	1005.26	996.73	942.73	513	11	0	11	67	3	106.11	7.58	106.11	7.58	129.21	2	**1.147**	**1.147**	**1.397**	1.02	1.191	1.70	18
08-Jul-07	5:17	1062.19	1061.45	1045.15	1035.25	981.25	514	15	0	16	5	6	106.32	10.34	106.32	11.03	108.04	4	**1.104**	**1.104**	**1.122**	1.02	1.132	1.70	18
08-Jul-07	10:57	1142.53	1141.76	1125.46	1113.04	1059.04	534	14	0	14	2	7	110.45	9.65	110.45	9.65	111.14	5	**1.063**	**1.063**	**1.070**	1.02	1.079	1.70	19
08-Jul-07	12:21	1182.87	1180.60	1164.30	1150.20	1096.20	556	15	0	16	4	5	115.00	10.34	115.00	11.03	116.38	3	**1.069**	**1.069**	**1.082**	1.02	1.089	1.70	19
08-Jul-07	13:50	1223.02	1221.76	1205.46	1188.80	1134.80	573	18	0	19	6	8	118.52	12.41	118.52	13.10	120.59	6	**1.065**	**1.065**	**1.083**	1.02	1.091	1.70	20
08-Jul-07	16:12	1263.47	1262.49	1246.19	1227.35	1173.35	592	13	0	13	5	8	122.45	8.96	122.45	8.96	124.17	6	**1.064**	**1.064**	**1.079**	1.02	1.091	1.70	19
08-Jul-07	17:39	1304.11	1302.70	1286.40	1265.27	1211.27	622	11	0	12	6	4	128.66	7.58	128.66	8.27	130.72	3	**1.083**	**1.083**	**1.100**	1.02	1.102	1.70	19
08-Jul-07	19:21	1344.46	1344.05	1327.75	1304.73	1250.73	648	16	0	16	9	4	134.03	11.03	134.03	11.03	137.14	3	**1.092**	**1.092**	**1.118**	1.02	1.122	1.70	20

Schlumberger

Equivalent Static Density vs. Time

15/9-F-12

26in MWD run 03

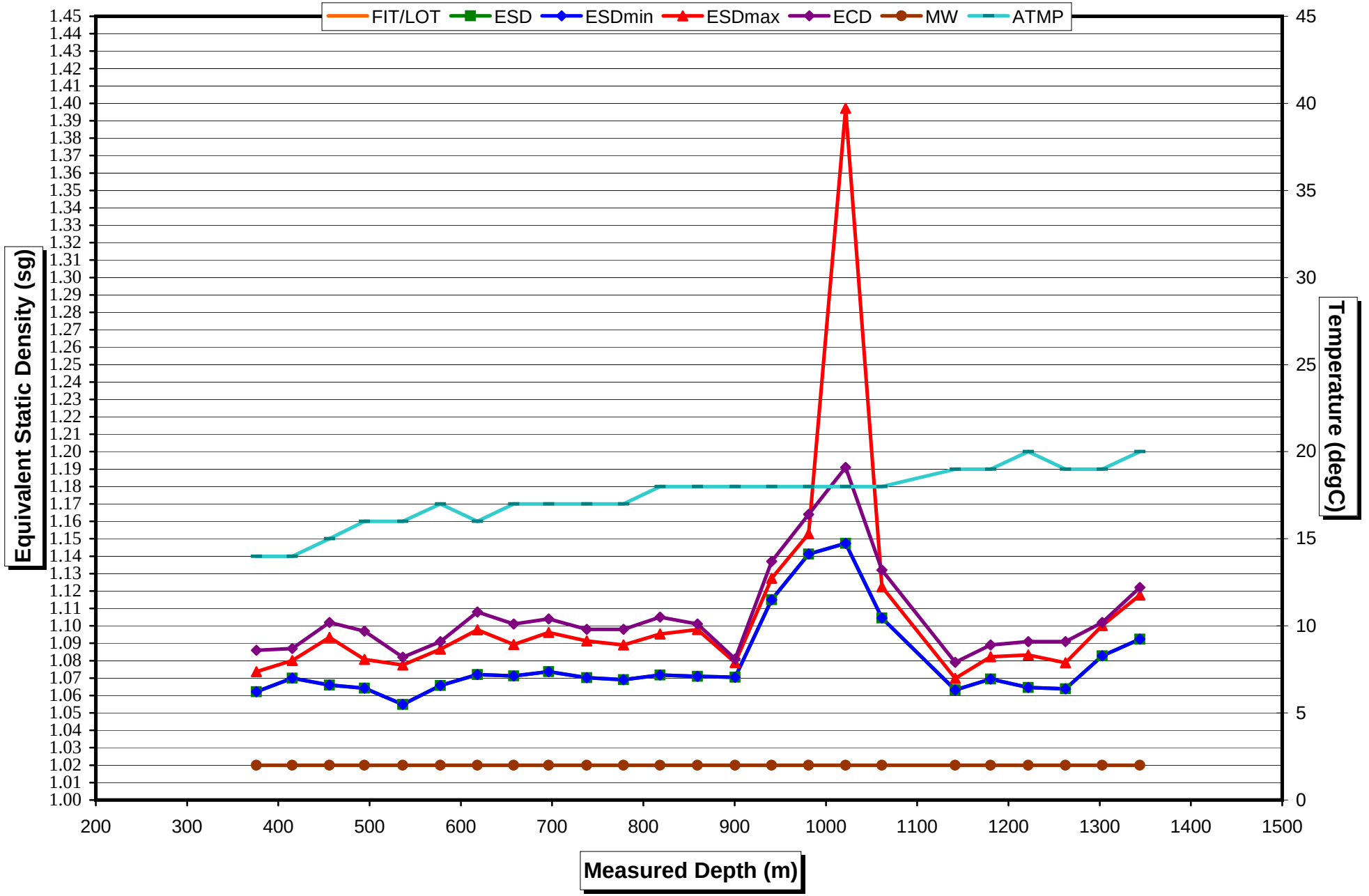


Schlumberger

Equivalent Static Density vs Depth

15/9-F-12

26in MWD run 03

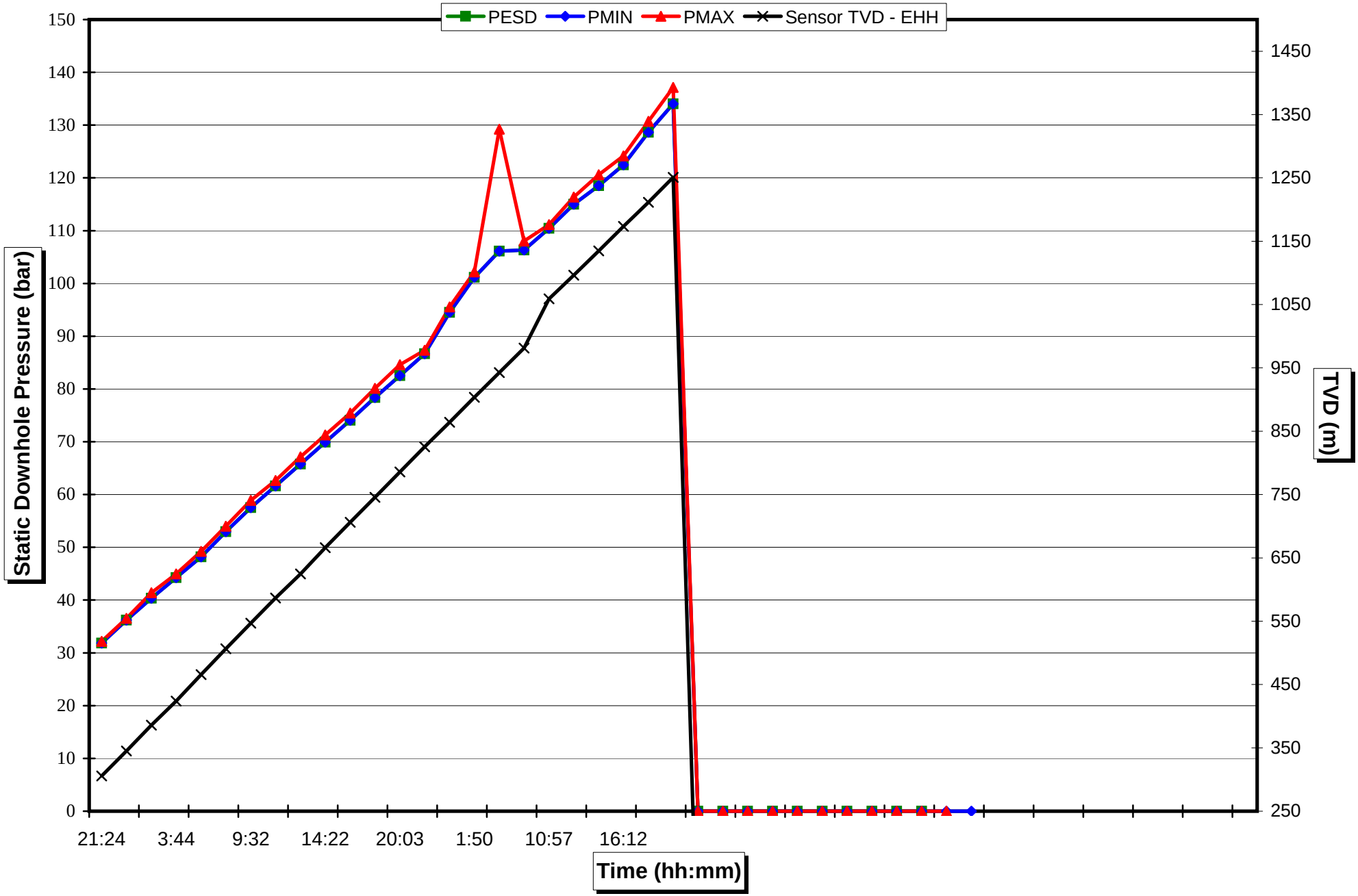


Schlumberger

Static Downhole Pressure vs. Time

15/9-F-12

26in MWD run 03

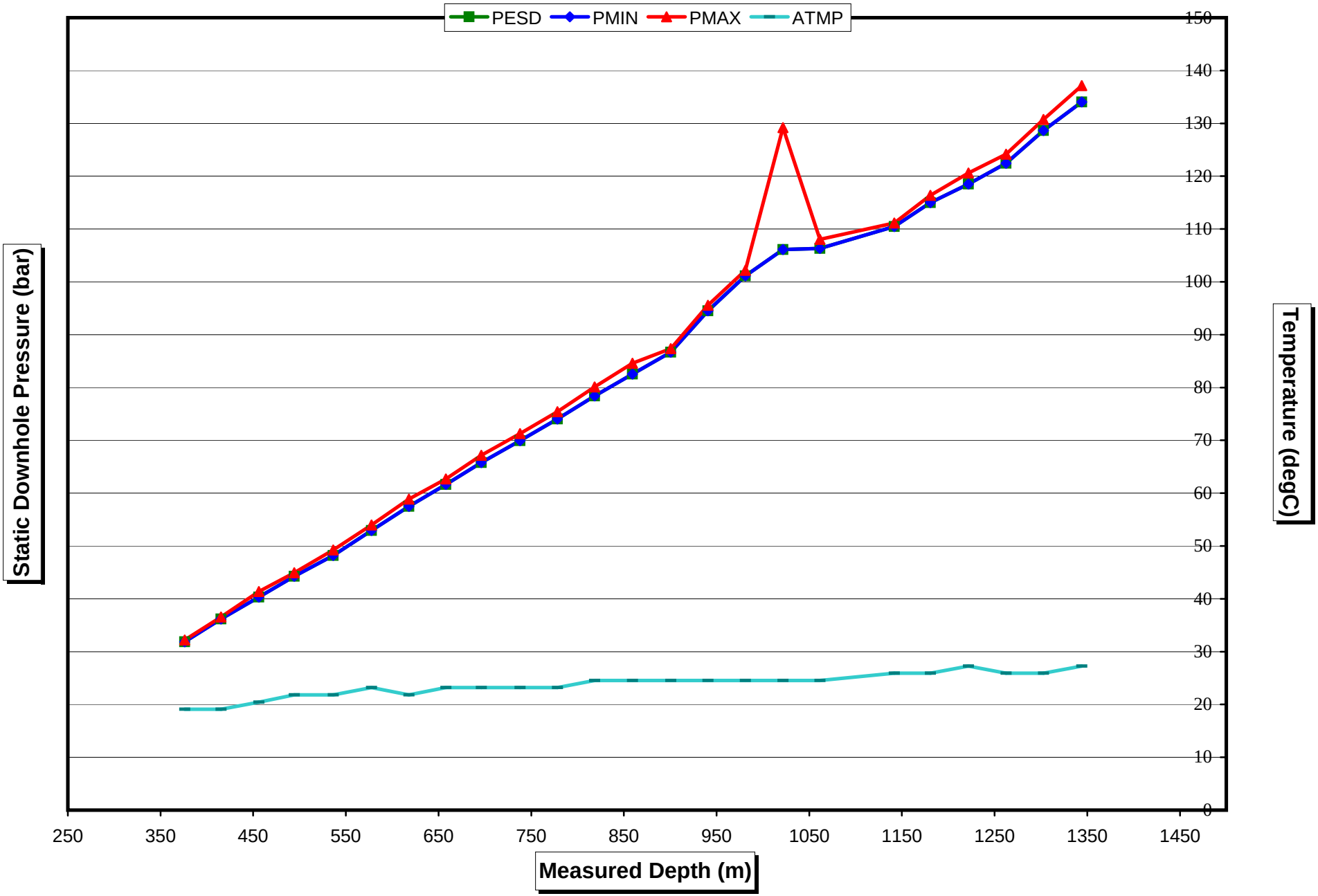


Schlumberger

Static Downhole Pressure vs Depth

15/9-F-12

26in_MWD run 03



Equivalent Static Density Calculations

NUMBERS in blue is calculated automatically.

Well Name	15/9-F-12		
Hole Size	17.5in_MWD run 05		
ARC Pressure Offset	0 bar	Depth	FIT/LOT
APWD Bit to Sensor Distance	11.3 m		
Elevation Hydraulic Head	2.5 m		

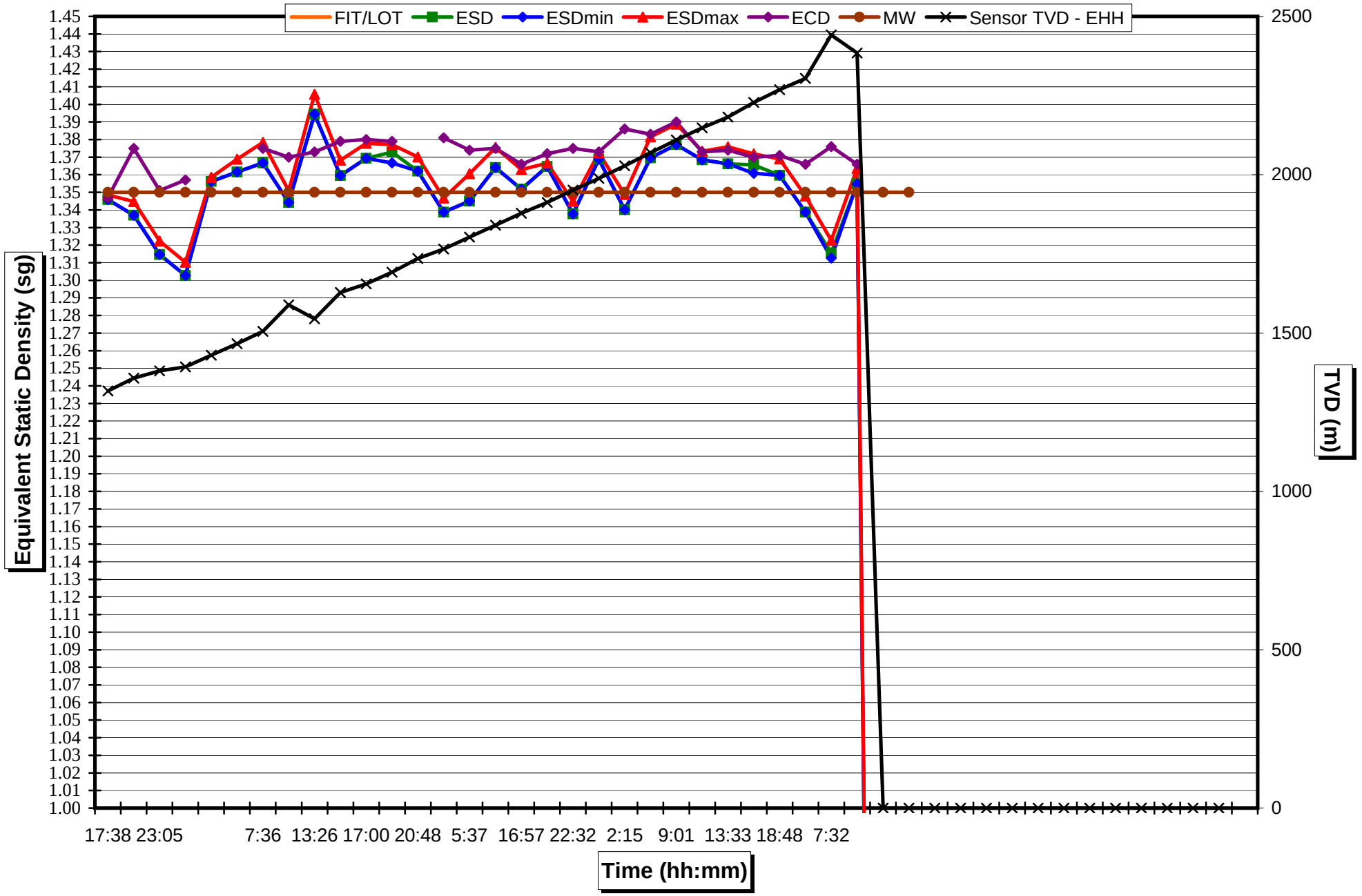
		m					RAW VALUES FROM HSPM						CALCULATED VALUES (bar)						sg						degC
Date	Time	Hole Depth	Bit Depth	Sensor Depth	Sensor TVD	Sensor TVD - EHH	PESD	ESDT	PMIN	PMIT	PMAX	PMAT	PESD	ESDT	PMIN	PMIT	PMAX	PMAT	ESD	ESD_{min}	ESD_{max}	MW	ECD	FIT/LOT	ATMP
21-Jul-07	17:38	1372.04	1355.02	1343.72	1320.09	1317.59	841	4	0	4	1	7	173.95	2.76	173.95	2.76	174.30	5	**1.346**	**1.346**	**1.348**	1.35	1.347		31
21-Jul-07	22:04	1396.81	1396.80	1385.50	1360.31	1357.81	861	122	0	123	3	7	178.09	84.12	178.09	84.81	179.13	5	**1.337**	**1.337**	**1.345**	1.35	1.375		39
21-Jul-07	23:05	1421.56	1420.75	1409.45	1383.39	1380.89	861	861	0	539	3	423	178.09	593.64	178.09	371.63	179.13	292	**1.315**	**1.315**	**1.322**	1.35	1.351		40
22-Jul-07	0:25	1436.07	1434.44	1423.14	1396.04	1393.54	861	988	0	989	3	872	178.09	681.20	178.09	681.89	179.13	601	**1.303**	**1.303**	**1.310**	1.35	1.357		42
22-Jul-07		1475.67	1473.90	1462.60	1432.91	1430.41	920	18	0	19	1	6	190.30	12.41	190.30	13.10	190.64	4	**1.356**	**1.356**	**1.359**	1.35			
23-Jul-07	1:30	1513.09	1512.62	1501.32	1468.96	1466.46	947	19	0	19	3	6	195.88	13.10	195.88	13.10	196.91	4	**1.362**	**1.362**	**1.369**	1.35			
23-Jul-07	7:36	1555.37	1554.75	1543.45	1508.19	1505.69	976	115	0	115	5	6	201.88	79.29	201.88	79.29	203.60	4	**1.367**	**1.367**	**1.378**	1.35	1.375		43
23-Jul-07	13:06	1636.29	1635.22	1623.92	1591.39	1588.89	1013	139	0	0	3	134	209.53	95.84	209.53		210.57	92	**1.344**	**1.344**	**1.351**	1.35	1.370		48
23-Jul-07	13:26		1597.39	1586.09	1547.88	1545.38	1022	60	0	61	5	7	211.39	41.37	211.39	42.06	213.12	5	**1.394**	**1.394**	**1.406**	1.35	1.373		49
23-Jul-07	15:18	1676.76	1676.24	1664.94	1630.94	1628.44	1050	69	0	72	4	6	217.18	47.57	217.18	49.64	218.56	4	**1.360**	**1.360**	**1.368**	1.35	1.379		50
23-Jul-07	17:00	1716.89	1716.88	1705.58	1657.79	1655.29	1075	35	0	36	4	7	222.36	24.13	222.36	24.82	223.73	5	**1.369**	**1.369**	**1.378**	1.35	1.38		53
23-Jul-07	19:15	1759.00	1757.47	1746.17	1694.94	1692.44	1102	23	3	85	2	4	227.94	15.86	226.91	58.61	228.63	3	**1.373**	**1.367**	**1.377**	1.35	1.379		52
23-Jul-07	20:48	1798.53	1797.75	1786.45	1737.85	1735.35	1121	84	0	85	4	5	231.87	57.92	231.87	58.61	233.25	3	**1.362**	**1.362**	**1.370**	1.35			53
23-Jul-07	22:15	1838.80	1837.20	1825.90	1768.05	1765.55	1121	605	0	606	4	526	231.87	417.13	231.87	417.82	233.25	363	**1.339**	**1.339**	**1.347**	1.35	1.381		54
24-Jul-07	5:37	1879.27	1877.78	1866.48	1805.29	1802.79	1150	233	0	234	8	218	237.87	160.65	237.87	161.34	240.63	150	**1.345**	**1.345**	**1.361**	1.35	1.374		49
24-Jul-07	8:03	1920.04	1919.44	1908.14	1843.51	1841.01	1191	33	0	33	6	7	246.35	22.75	246.35	22.75	248.42	5	**1.364**	**1.364**	**1.375**	1.35	1.375		54
24-Jul-07	16:57	1960.30	1959.80	1948.50	1880.50	1878.00	1204	121	0	122	6	6	249.04	83.43	249.04	84.12	251.11	4	**1.352**	**1.352**	**1.363**	1.35	1.366		50
24-Jul-07	19:45	1999.61	1997.73	1986.43	1915.26	1912.76	1238	9	0	9	1	8	256.07	6.21	256.07	6.21	256.42	6	**1.365**	**1.365**	**1.367**	1.35	1.372		51
24-Jul-07	22:32	2039.87	2038.70	2027.40	1953.84	1951.34	1238	917	0	918	4	898	256.07	632.25	256.07	632.94	257.45	619	**1.338**	**1.338**	**1.345**	1.35	1.375		55
25-Jul-07	0:18	2080.15	2079.71	2068.41	1991.01	1988.51	1291	8	0	8	2	7	267.03	5.52	267.03	5.52	267.72	5	**1.369**	**1.369**	**1.372**	1.35	1.373		57
25-Jul-07	2:15	2120.51	2118.62	2107.32	2030.58	2028.08	1289	673	0	674	5	654	266.62	464.02	266.62	464.71	268.34	451	**1.340**	**1.340**	**1.349**	1.35	1.386		60
25-Jul-07	7:21	2161.61	2160.45	2149.15	2071.53	2069.03	1344	90	0	91	7	6	278.00	62.05	278.00	62.74	280.41	4	**1.370**	**1.370**	**1.382**	1.35	1.383		59
25-Jul-07	9:01	2202.60	2201.86	2190.56	2112.32	2109.82	1378	90	0	91	7	7	285.03	62.05	285.03	62.74	287.44	5	**1.377**	**1.377**	**1.389**	1.35	1.390		60
25-Jul-07	10:55	2241.48	2240.33	2229.03	2150.29	2147.79	1394	60	0	62	3	25	288.34	41.37	288.34	42.75	289.37	17	**1.368**	**1.368**	**1.373**	1.35	1.373		60
25-Jul-07	13:33	2281.80	2281.25	2269.95	2184.78	2182.28	1414	108	0	109	6	4	292.48	74.46	292.48	75.15	294.54	3	**1.366**	**1.366**	**1.376**	1.35	1.374		64
25-Jul-07	15:48	2322.08	2321.87	2310.57	2230.57	2228.07	1443	311	3	19	4	10	298.47	214.43	297.44	13.10	299.85	7	**1.366**	**1.361**	**1.372**	1.35	1.370		67
25-Jul-07	18:48	2363.41	2363.13	2351.83	2271.23	2268.73	1463	23	0	23	6	4	302.61	15.86	302.61	15.86	304.68	3	**1.360**	**1.360**	**1.369**	1.35	1.371		66
25-Jul-07	23:51	2402.73	2399.37	2388.07	2306.79	2304.29	1463	1832	0	1823	6	1813	302.61	1263.12	302.61	1256.91	304.68	1250	**1.339**	**1.339**	**1.348**	1.35	1.366		69
26-Jul-07	7:32	2443.15	2437.73	2426.43	2443.63	2441.13	1523	10	2	57	5	11	315.02	6.89	314.33	39.30	316.75	8	**1.315**	**1.313**	**1.323**	1.35	1.376		72
26-Jul-07	14:16	2483.43	2482.92	2471.62	2386.88	2384.38	1532	16	0	16	6	4	316.88	11.03	316.88	11.03	318.95	3	**1.355**	**1.355**	**1.364**	1.35	1.366		72

Schlumberger

Equivalent Static Density vs. Time

15/9-F-12

17.5in MWD run 05

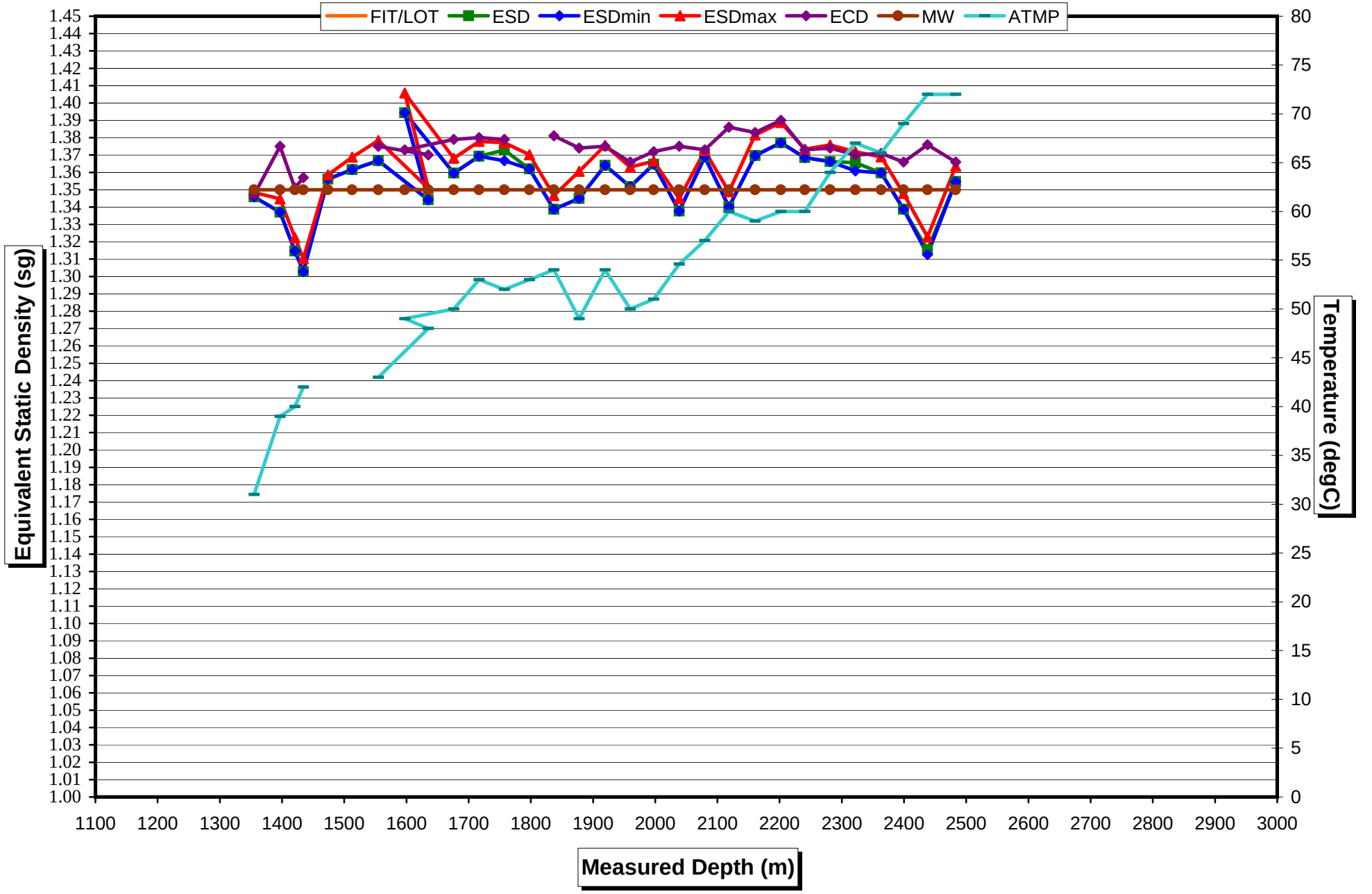


Schlumberger

Equivalent Static Density vs Depth

15/9-F-12

17.5in MWD run 05

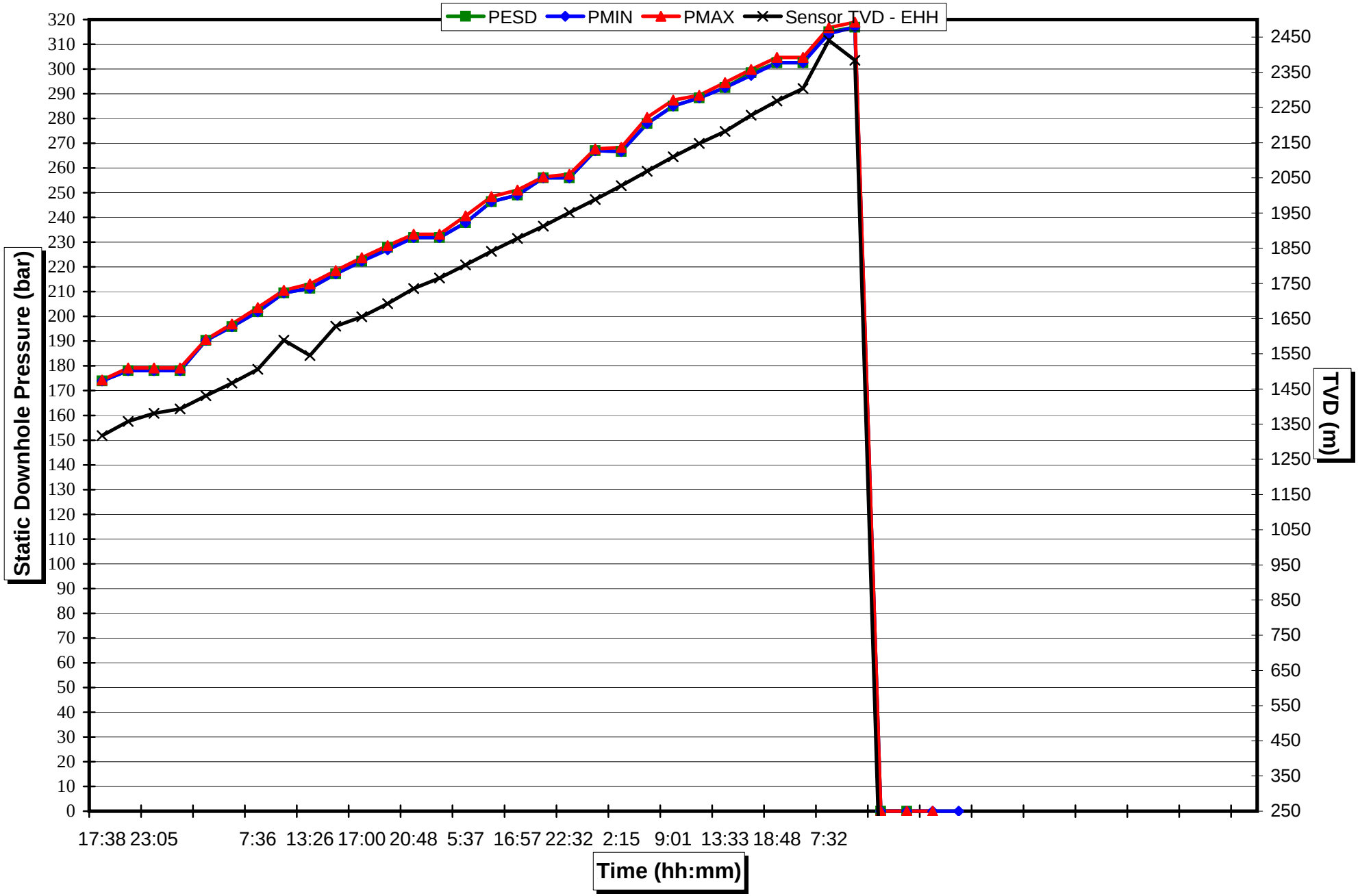


Schlumberger

Static Downhole Pressure vs. Time

15/9-F-12

17.5in MWD run 05



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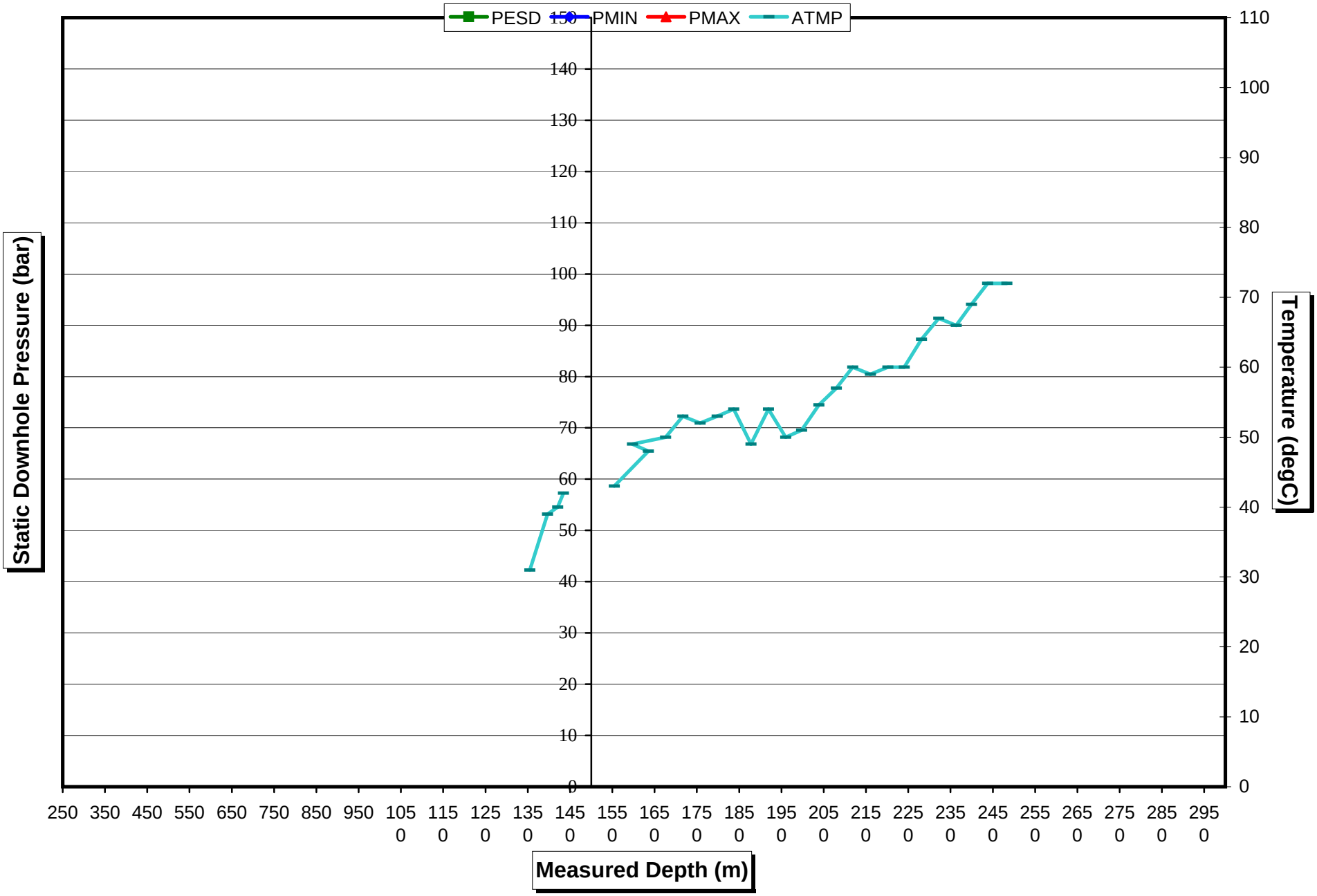
Static Downhole Pressure vs Depth

15/9-F-12

17.5in_MWD run 05



Equivalent Static Density Calculations

Data in blue is calculated automatically.

Well Name	**15/9-F-12**			
Hole Size	**12.25 in. Hole Section Run009**			
ARC Pressure Offset		**bar**	**Depth**	**FIT/LOT**
APWD Bit to Sensor Distance	**36.46**	**m**		
Elevation Hydraulic Head	**2.5**	**m**		

		m					RAW VALUES FROM HSPM						CALCULATED VALUES (bar)						sg						degC
Date	**Time**	**Hole Depth**	**Bit Depth**	**Sensor Depth**	**Sensor TVD**	**Sensor TVD - EHH**	**PESD**	**ESDT**	**PMIN**	**PMIT**	**PMAX**	**PMAT**	**PESD**	**ESDT**	**PMIN**	**PMIT**	**PMAX**	**PMAT**	**ESD**	**ESD_{min}**	**ESD_{max}**	**MW**	**ECD**	**FIT/LOT**	**ATMP**
11-Aug	0:00	2542.82	2541.73	2505.27	2451.78	2449.28	1571	96	0	96	8	7	324.95	66.19	324.95	66.19	327.71	5	**1.352**	**1.352**	**1.364**	1.35	1.360	1.486	60
11-Aug		2576.75	2486.73	2450.27	2366.80	2364.30	1540	115	0	115	76	174	318.54	79	319	79	345	120	**1.373**	**1.373**	**1.486**	1.35	1.360	1.486	65
12-Aug	3:23	2609.00	2607.66	2571.20	2480.59	2478.09	1590	14	0	15	4	11	328.88	10	329	10	330	8	**1.353**	**1.353**	**1.359**	1.34	1.360	1.486	67
12-Aug	9:47	2649.97	2649.68	2613.22	2519.03	2516.53	1602	64	0	64	4	258	331.36	44	331	44	333	178	**1.342**	**1.342**	**1.348**				
12-Aug	12:13	2690.46	2688.97	2652.51	2553.65	2551.15	1702	38	0	39	11	10	352.05	26	352	27	356	7	**1.407**	**1.407**	**1.422**				
13-Aug	12:43	2771.16	2770.51	2734.05	2621.85	2619.35	1669	161	0	161	24	6	345.22	111	345	111	353	4	**1.343**	**1.343**	**1.376**				
13-Aug	19:58	2811.59	2811.00	2774.54	2680.77	2678.27	1704	60	0	58	16	4	352.46	41	352	40	358	3	**1.341**	**1.341**	**1.362**	1.36	1.360	1.486	79
14-Aug	1:52	2852.07	2850.69	2814.23	2682.46	2679.96	1721	20	0	20	19	4	355.98	14	356	14	363	3	**1.354**	**1.354**	**1.379**	1.36	1.379	1.486	83
14-Aug	9:43	2892.42	2892.02	2855.56	2710.60	2708.10	1750	23	0	15	0	5	361.97	16	362	10	362	3	**1.363**	**1.363**	**1.363**	1.36	1.387	1.486	88
14-Aug	6:15	2972.86	2972.24	2935.78	2760.43	2757.93	1784	25	0	25	17	9	369.01	17	369	17	375	6	**1.364**	**1.364**	**1.386**	1.36	1.391	1.486	78
15-Aug	22:18	3012.98	3011.99	2975.53	2783.72	2781.22	1803	77	0	78	23	9	372.94	53	373	54	381	6	**1.367**	**1.367**	**1.396**	1.37	1.397	1.486	85
16-Aug	17:19	3053.17	3039.28	3002.82	2799.44	2796.94	1844	39	0	40	14	13	381.42	27	381	28	386	9	**1.390**	**1.390**	**1.408**				
17-Aug	3:51	3093.43	3092.55	3056.09	2829.94	2827.44	1872	41	0	41	15	10	387.21	28	387	28	392	7	**1.396**	**1.396**	**1.415**	1.4	1.419	1.486	89
17-Aug	06:38	3113.25	3111.92	3075.46	2841.13	2838.63	1898	15	0	15	5	12	392.59	10	393	10	394	8	**1.410**	**1.410**	**1.416**	1.4	1.424	1.486	91

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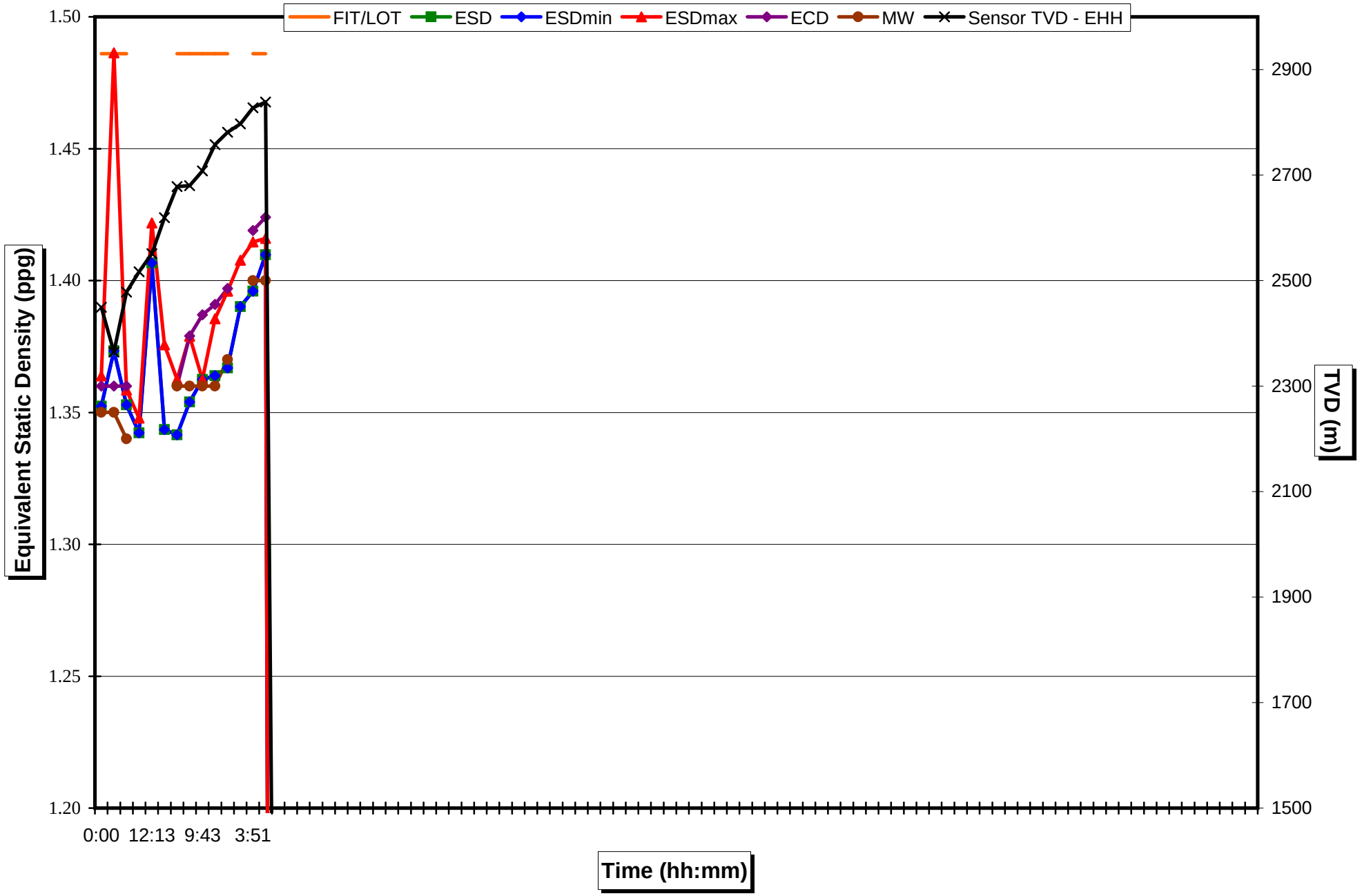
Equivalent Static Density vs. Time

15/9-F-12

12.25 in. Hole Section Run009



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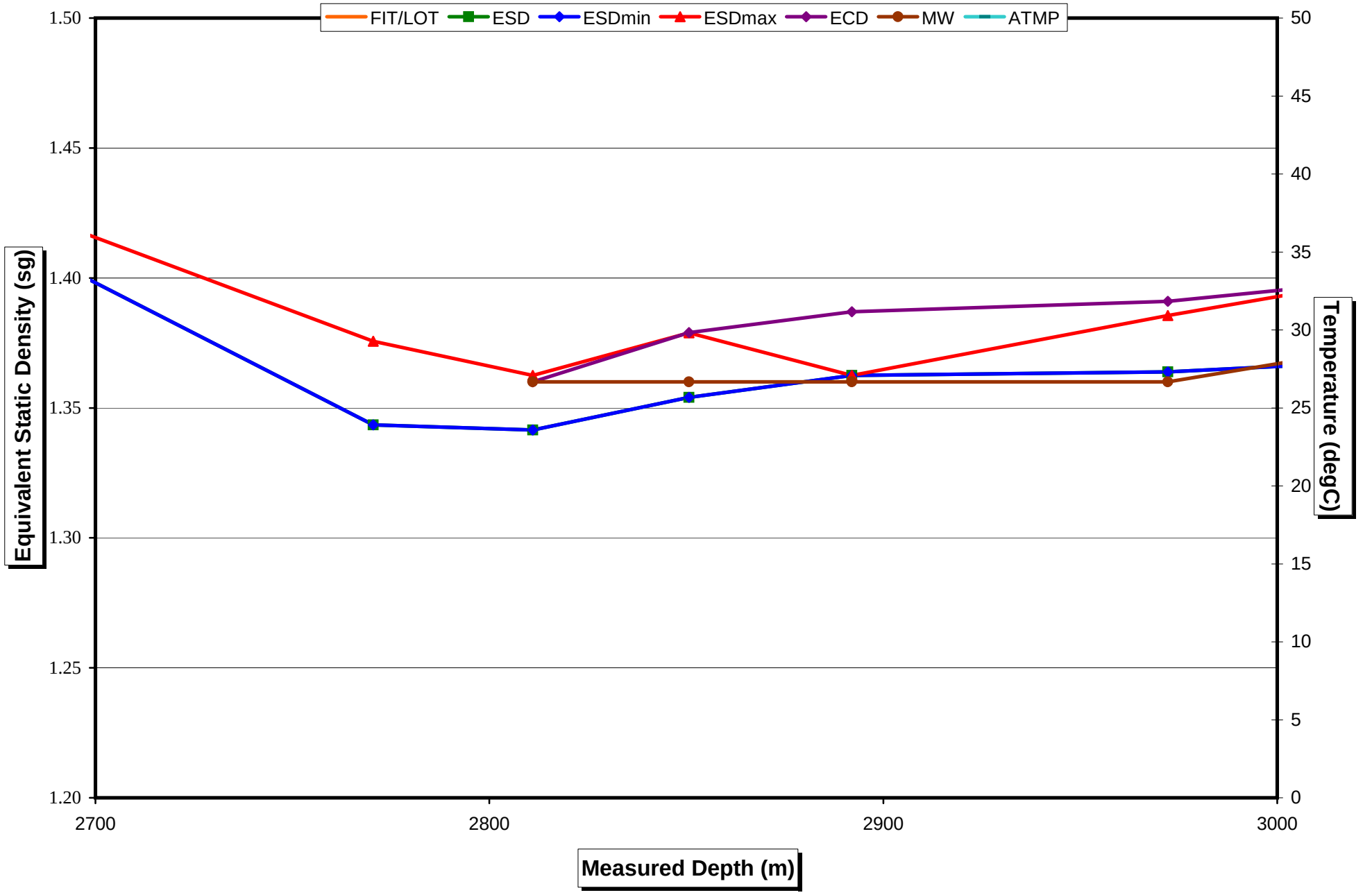
Equivalent Static Density vs Depth

15/9-F-12

12.25 in. Hole Section Run009



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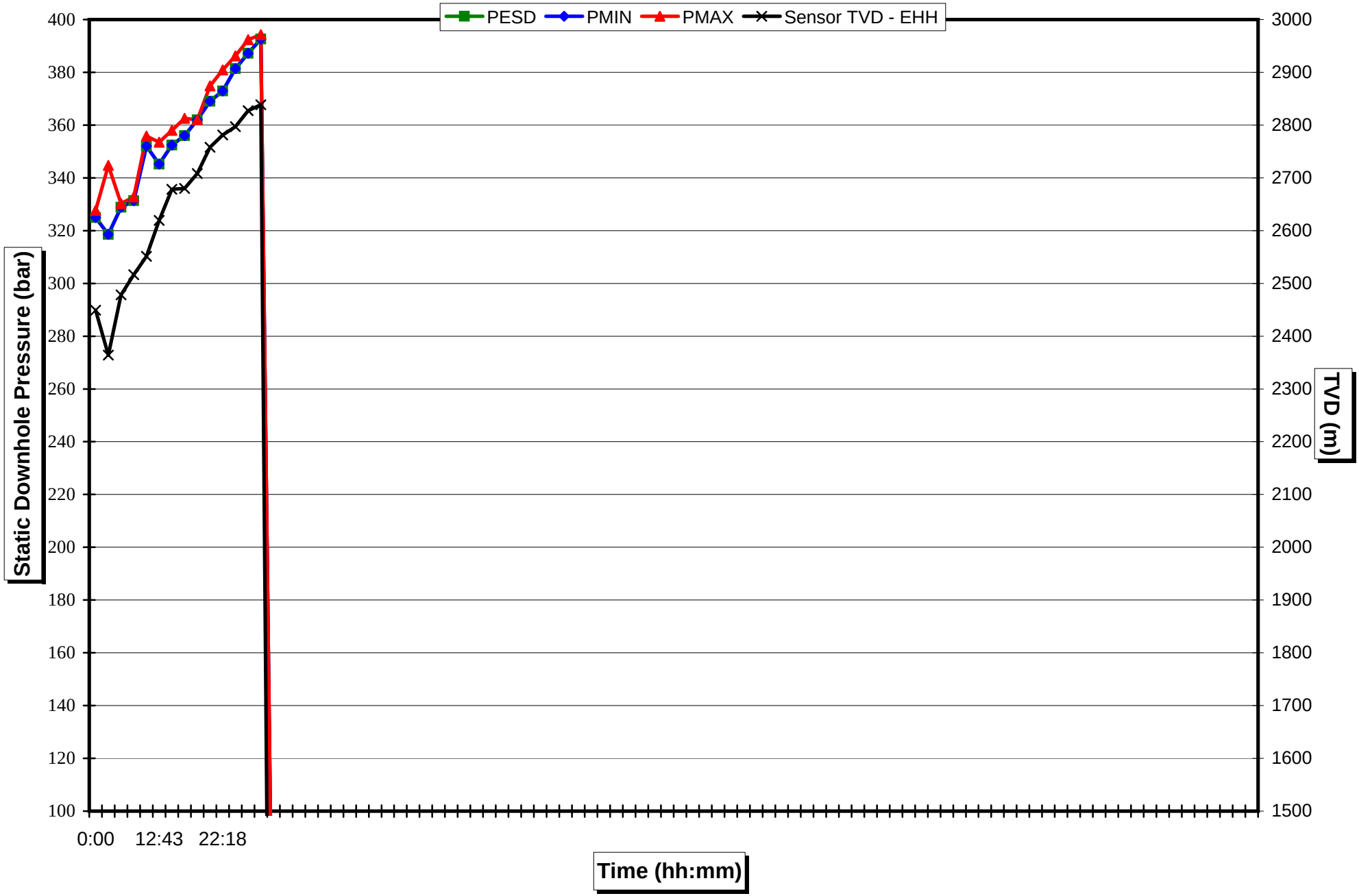
Static Downhole Pressure vs. Time

15/9-F-12

12.25 in. Hole Section Run009



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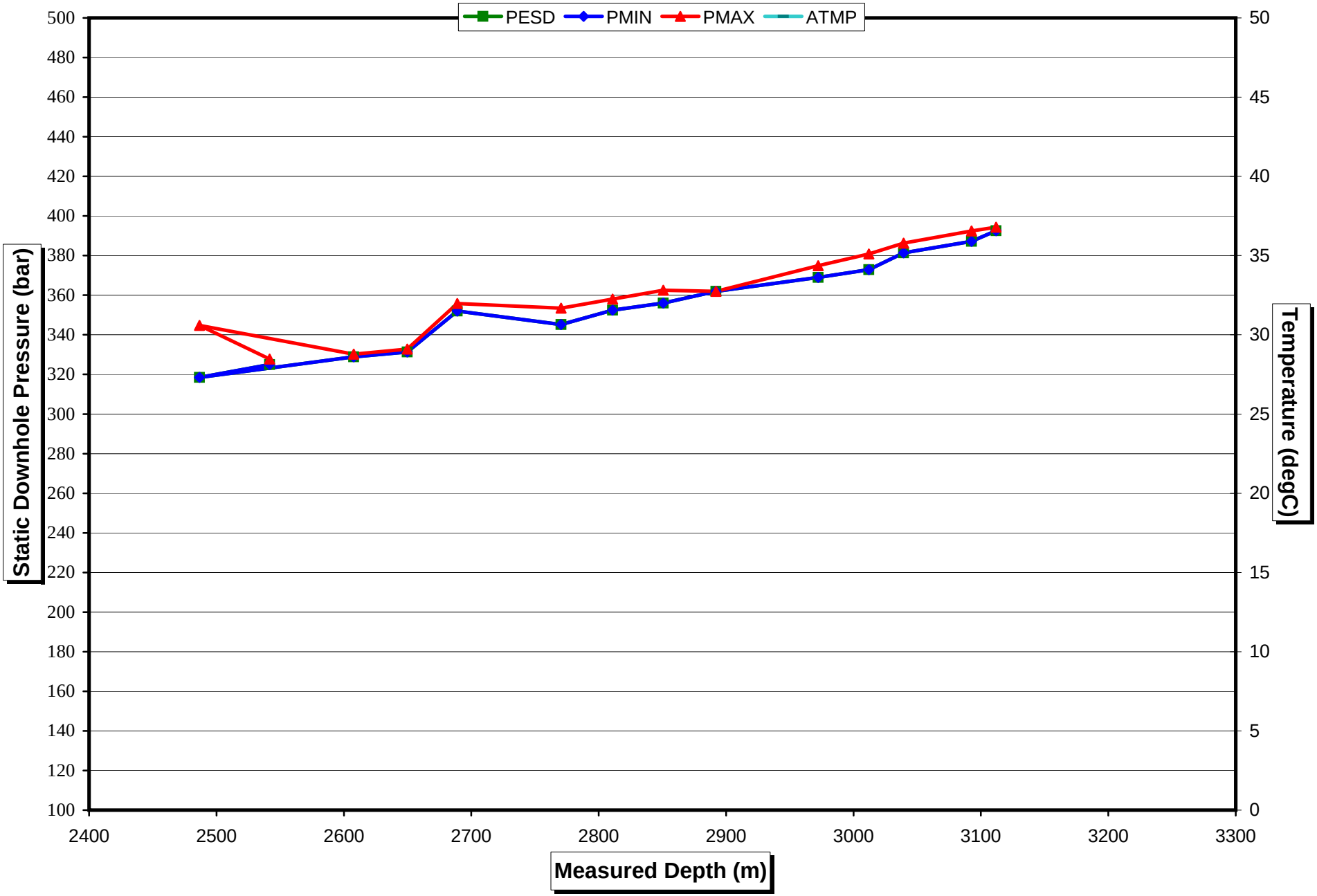
Static Downhole Pressure vs Depth

15/9-F-12

12.25 in. Hole Section Run009



Equivalent Static Density Calculations

Data in blue is calculated automatically.

Well Name	**15/9-F-12**			
Hole Size	**8.5 in. Hole Section Run010**			
ARC Pressure Offset		**bar**	**Depth**	**FIT/LOT**
APWD Bit to Sensor Distance	**10.7**	**m**		**1.6**
Elevation Hydraulic Head	**2.5**	**m**		

		m					RAW VALUES FROM HSPM						CALCULATED VALUES (bar)						sg						degC
Date	**Time**	**Hole Depth**	**Bit Depth**	**Sensor Depth**	**Sensor TVD**	**Sensor TVD - EHH**	**PESD**	**ESDT**	**PMIN**	**PMIT**	**PMAX**	**PMAT**	**PESD**	**ESDT**	**PMIN**	**PMIT**	**PMAX**	**PMAT**	**ESD**	**ESD_{min}**	**ESD_{max}**	**MW**	**ECD**	**FIT/LOT**	**ATMP**
22-Aug	15:58	3118.33	3117.00	3106.30	2859.09	2856.59	1915	23	0	23	18	3	396.10	15.86	396.10	15.86	402.31	2	**1.413**	**1.413**	**1.436**	1.40	1.458	1.600	65
23-Aug	0:50	3158.83	3158.30	3147.60	2883.52	2881.02	1922	20	0	20	16	3	397.55	14	398	14	403	2	**1.407**	**1.407**	**1.426**	1.40	1.453	1.600	70
23-Aug	6:11	3199.07	3198.31	3187.61	2907.18	2904.68	1926	15	0	15	16	71	398.38	10	398	10	404	49	**1.398**	**1.398**	**1.417**	1.40	1.451	1.600	73
23-Aug	3:36	3239.46	3238.51	3227.81	2930.98	2928.48	1971	12	3	20	17	8	407.69	8	407	14	414	6	**1.419**	**1.416**	**1.440**	1.40	1.461	1.600	85
23-Aug	16:30	3320.10	3319.84	3309.14	2979.42	2976.92	2047	23	0	23	14	3	423.41	16	423	16	428	2	**1.450**	**1.450**	**1.466**	1.40		1.600	
23-Aug	18:32	3360.44	3359.63	3348.93	3003.30	3000.80	2014	11	0	11	20	3	416.58	8	417	8	423	2	**1.415**	**1.415**	**1.439**	1.40		1.600	

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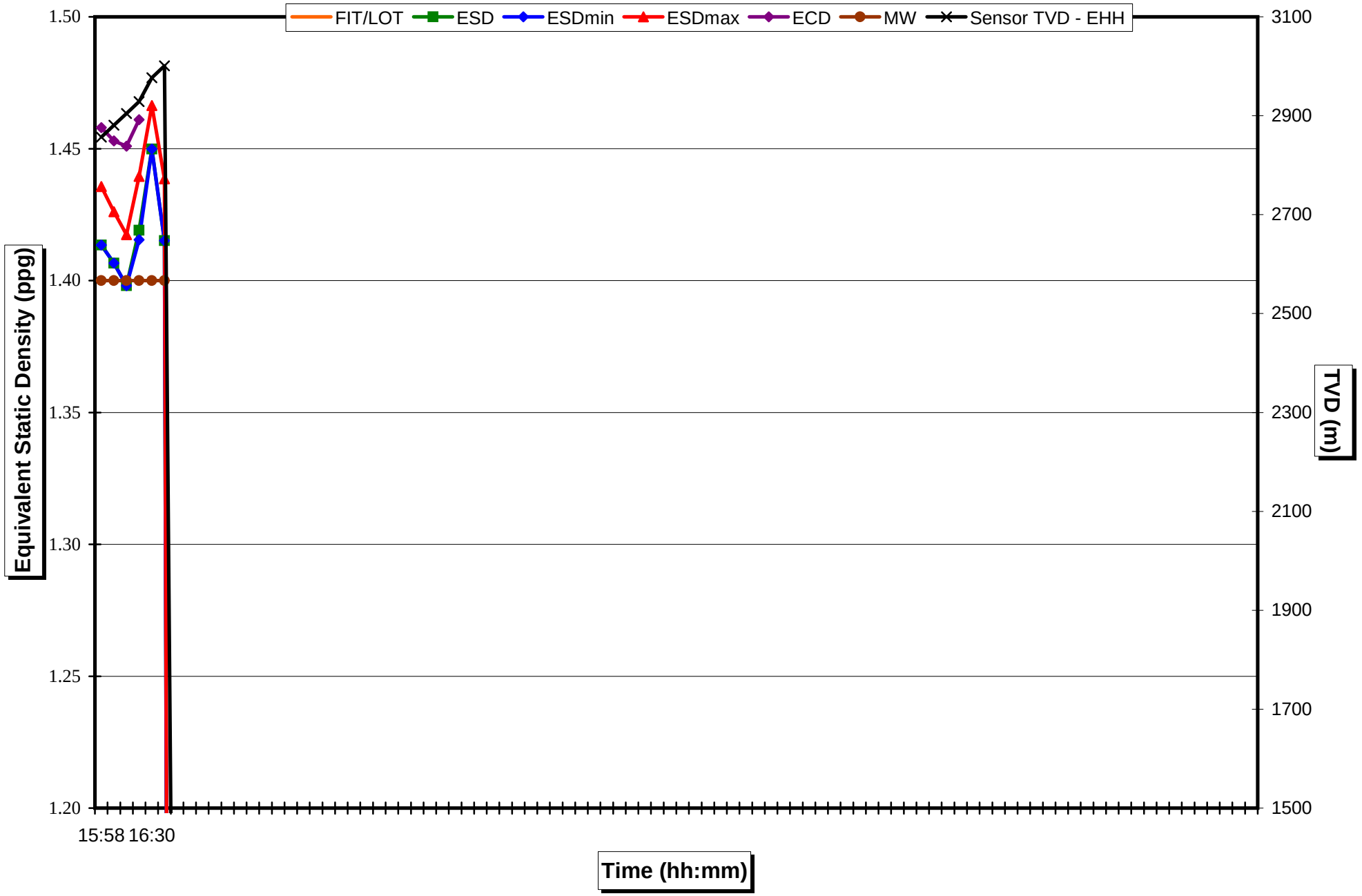
Equivalent Static Density vs. Time

15/9-F-12

8.5 in. Hole Section Run010



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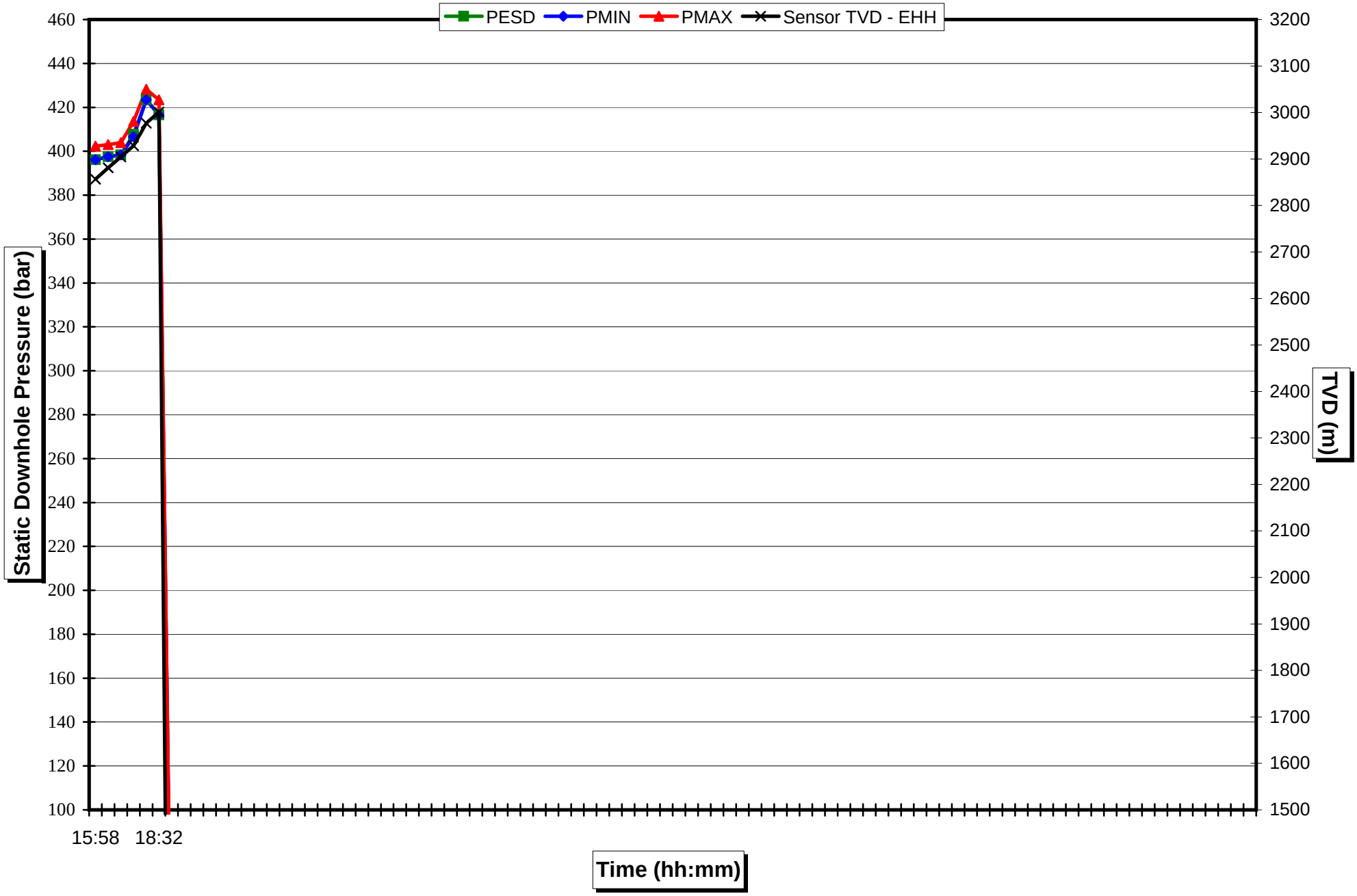
Static Downhole Pressure vs. Time

15/9-F-12

8.5 in. Hole Section Run010



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DEPTH TRACKING SHEET

Procedure Document: **D&M Depth Tracking Standard V1 30-Jan-04**

Rig:	Maersk Inspirer	**Depth System:**	DWE	22-Jun-07
Rig Type	Jack up	**Heave Comp System:**	N/A	
Well:	15/9-F-12	**Hookload System:**	CLT	Last Cal:
Run No:	3	**PDA Serial No:**	N/A	Last Cal:
		GTE Serial No:	N/A	Last Cal:
		CLT Serial No:	N/A	Last Cal:
		DWC Serial No:	N/A	

Note: Driller depths are to be taken at tool joints NOT at kelly down depths!

Date	Time	Tally Depth	ACQ Depth	Difference	New ACQ Depth	Change	Comments
						0	
25-Jun-07	11:22	296.06	295.93	0.13	295.93	0	Checked @ TJ.
25-Jun-07	16:18	323.006	322.79	0.216	322.79	0	Checked @ TJ.
25-Jun-07	17:35	336.45	336.39	0.06	336.39	0	Checked @ TJ.
25-Jun-07	18:52	363.34	363.12	0.22	363.12	0	Checked @ TJ.
25-Jun-07	19:55	377	377.8	-0.8	377.8	0	Change calibration counts to 730
26-Jun-07	0:10	417.13	416.97	0.16	416.97	0	Checked @ TJ.
26-Jun-07	1:40	457.49	456.9	0.59	457.49	0	Checked @ TJ.
26-Jun-07	4:16	484.4	483.73	0.67	416.97	0	Change bloc position +20
26-Jun-07	13:40	497.85	497.21	0.64	497.21	0	Change calibration counts to 700
26-Jun-07	17:25	511.3	511.19	0.11	511.19	0	Change calibration countsback to 720
26-Jun-07	17:55	524.75	524.52	0.23	524.52	0	Checked @ TJ.
27-Jun-07	8:25	538.212	538.18	0.032	538.18	0	Checked @ TJ.
27-Jun-07	8:54	551.66	551.48	0.18	551.48	0	Changed calibration counts to 727.5 and 717.5
27-Jun-07	10:45	578.56	578.67	-0.11	578.67	0	Changed calibration counts to 727 and 717
27-Jun-07	11:14	592.01	591.99	0.02	591.99	0	Changed calibration counts to 727.2 and 717.2
27-Jun-07	21:20	632.35	632.1	0.25	632.1	0	Checked @ TJ.
27-Jun-07	23:40	672.69	672.54	0.15	672.54	0	Checked @ TJ.
28-Jun-07	1:40	699.59	699.5	0.09	699.5	0	Checked @ TJ.
28-Jun-07	2:35	726.49	726.41	0.08	726.41	0	Checked @ TJ.
28-Jun-07	4:30	753.39	753.29	0.1	753.29	0	Checked @ TJ.
28-Jun-07	5:03	766.84	766.93	-0.09	766.93	0	Checked @ TJ.
28-Jun-07	8:02	807.22	807.81	-0.59	807.81	0	Checked @ TJ. - Block position +0.20
28-Jun-07	9:35	820.68	821.19	-0.51	821.19	0	Checked @ TJ. - Block position +0.20
28-Jun-07	10:15	834.17	834.51	-0.34	834.51	0	Checked @ TJ.
28-Jun-07	11:35	847.62	848.08	-0.46	848.08	0	Checked @ TJ.
28-Jun-07	12:40	861.07	861.77	-0.7	861.77	0	Checked @ TJ. - Block position +0.50
28-Jun-07	14:24	874.53	875.1	-0.57	875.1	0	Checked @ TJ.
28-Jun-07	19:34	901.43	901.96	-0.53	901.96	0	Checked @ TJ.
28-Jun-07	21:00	914.87	915.54	-0.67	914.87	-0.67	Checked @ TJ. - Block position -0.20
29-Jun-07	6:45	941.79	942.27	-0.48	941.8	-0.47	Checked @ TJ. - Block position -0.50
29-Jun-07	7:41	968.68	968.65	0.03	968.65	0	Checked @ TJ.

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DEPTH TRACKING SHEET

Procedure Document: **D&M Depth Tracking Standard V1 30-Jan-04**

Rig:	Maersk Inspirer	**Depth System:**	DWE	6-Jul-07
Rig Type	Jack up	**Heave Comp System:**	N/A	
Well:	15/9-F-12	**Hookload System:**	CLT	Last Cal:
Run No:	4	**PDA Serial No:**	N/A	Last Cal:
		GTE Serial No:	N/A	Last Cal:
		CLT Serial No:	N/A	Last Cal:
		DWC Serial No:	N/A	

Note: Driller depths are to be taken at tool joints NOT at kelly down depths!

Date	Time	Tally Depth	ACQ Depth	Difference	New ACQ Depth	Change	Comments
06-Jul-07	7:52	296.53	296.3	0.23	296.3	0	Checked @ TJ.
06-Jul-07	14:20	296.53	296.9	-0.37	296.9	0	Checked @ TJ.Adjusted pulses from 720 to 723
06-Jul-07	14:44	336.93	337.19	-0.26	337.19	0	Checked @ TJ. New calib
06-Jul-07	21:29	377.27	377.3	-0.03	377.3	0	Checked @ TJ.
06-Jul-07	23:34	417.61	417.79	-0.18	417.61	0.18	Checked @ TJ.
07-Jul-07	1:36	457.97	457.99	-0.02	457.99	0	Checked @ TJ.
07-Jul-07	4:00	498.33	498.39	-0.06	498.39	0	Checked @ TJ.
07-Jul-07	4:35	511.78	509.9	1.88	511.78	-1.88	Checked @ TJ.
07-Jul-07	6:29	538.69	538.49	0.2	538.69	-0.2	Checked @ TJ. Rise bp 2m
07-Jul-07	7:02	552.13	552.19	-0.06	552.19	0	Checked @ TJ.
07-Jul-07	8:12	579.03	579.24	-0.21	579.24	0	Checked @ TJ. Lower bp 1m
07-Jul-07	8:35	592.48	592.83	-0.35	592.83	0	Checked @ TJ. Rise bp 2m
07-Jul-07	9:36	619.38	619.78	-0.4	619.78	0	Checked @ TJ. New calib
07-Jul-07	9:58	632.82	633.16	-0.34	633.16	0	Checked @ TJ.
07-Jul-07	10:23	646.27	646.36	-0.09	646.36	0	Checked @ TJ. New calib
07-Jul-07	11:08	659.72	659.72	0	659.72	0	Checked @ TJ.
07-Jul-07	12:42	700.06	699.82	0.24	699.82	0	Checked @ TJ. New calib
07-Jul-07	13:35	726.97	726.9	0.07	726.9	0	Checked @ TJ. New calib
07-Jul-07	14:25	740.41	740.34	0.07	740.34	0	Checked @ TJ.
07-Jul-07	14:52	753.86	753.82	0.04	753.82	0	Checked @ TJ.
07-Jul-07	15:14	767.31	767.25	0.06	767.25	0	Checked @ TJ.
07-Jul-07	16:29	794.24	794.16	0.08	794.16	0	Checked @ TJ.
07-Jul-07	16:49	807.7	807.58	0.12	807.58	0	Checked @ TJ. New calib
07-Jul-07	17:51	821.15	821.08	0.07	821.08	0	Checked @ TJ.
07-Jul-07	18:31	834.64	834.49	0.15	834.49	0	Checked @ TJ. New calib
07-Jul-07	20:10	861.55	861.48	0.07	861.48	0	Checked @ TJ.
08-Jul-07	0:31	901.91	901.87	0.04	901.87	0	Checked @ TJ.
08-Jul-07	1:53	982.62	982.58	0.04	982.58	0	Checked @ TJ.
08-Jul-07	7:25	1103.67	1104.05	-0.38	1104.05	0	Checked @ TJ. New calib
08-Jul-07	9:05	1117.12	1117.38	-0.26	1117.38	0	Checked @ TJ.
08-Jul-07	10:40	1130.57	1130.62	-0.05	1130.62	0	Checked @ TJ.
08-Jul-07	11:00	1144.02	1144	0.02	1144	0	Checked @ TJ. New calib

Schlumberger **DEPTH TRACKING SHEET**

Procedure Document: **D&M Depth Tracking Standard V1 30-Jan-04**

Rig:	Maersk Inspirer	**Depth System:**	DWE		22-Jun-07
Rig Type	Jack up	**Heave Comp System:**	N/A		
Well:	15/9-F-12	**Hookload System:**	CLT	Last Cal:	
Run No:	5	**PDA Serial No:**	N/A	Last Cal:	
		GTE Serial No:	N/A	Last Cal:	
		CLT Serial No:	N/A	Last Cal:	21-Jul-07
		DWC Serial No:	N/A		

Note: Driller depths are to be taken at tool joints NOT at kelly down depths!

Date	Time	Tally Depth	ACQ Depth	Difference	New ACQ Depth	Change	Comments
21-Jul-07	2:00	1367.4	1367.4	0	1367.4	0	Set Depth
21-Jul-07	20:45	1382.4	1381.4	-1	1382.4	1	Hole depth set to 1382.4 --> on bottom
21-Jul-07	22:09	1394.19	1391.82	-2.37	1394.19	2.37	Change depth: 1391,82--> on bottom (1394,19m)
22-Jul-07	0:10	1434.26	1436.07	1.81	1436.07	0	Block position lowered 6m
22-Jul-07	4:30		1441.95	1441.95	1441.95	0	Counts increased from 710-->730
22-Jul-07	5:36	1449.507	1450.85	1.343	1450.85	0	Check @ Tool joint
22-Jul-07	6:00	1471.9	1475.67	3.77	1475.67	0	too fast --> counts increased from 740-->790, low
22-Jul-07	9:59	N/A	1474.88	2.89	1471.99	-2.89	Change to depth made after calibration
22-Jul-07	11:16		1486.9		1489.8	2.9	First connection after calibration
22-Jul-07	13:22	1516.752	1514.75	-2	1516.75	2	Check @ Tool joint
23-Jul-07	4:55	1530.17	1530.17	0	1530.17	0	Bit Depth set according to tally, before cont. drilling
23-Jul-07	5:30	1543.62	1543.52	-0.1	1543.52	0	Check @ Tool joint
23-Jul-07	11:07	1597.421	1597.01	-0.411	1597.01		Check @ Tool joint --> reduced 6 pulses pr. Wrap
23-Jul-07	13:26	1637.769	1637.57	-0.199	1637.57	0	Check @ Tool joint
23-Jul-07	17:04	1718.454	1718.78	0.326	1718.78	0	Check @ Tool joint
23-Jul-07		1758.779	1758.804	0.025	1758.804	0	Check @ Tool joint
23-Jul-07		1799.175	1799.66	0.485	1799.66	0	Check @ Tool joint
23-Jul-07	22:33	1839.516	1840	0.484	1840	0	Check @ Tool joint
24-Jul-07	6:00	1879.855	1880.56	0.705	1880.56	0	Check @ Tool joint --> block pos reduced 0.3m
24-Jul-07	8:08	1920.212	1921.11	0.898	1920.204	-0.906	Check @ Tool joint --> block pos reduced 0.4m
24-Jul-07	17:02	1960.573	1961.44	0.867		-0.886	Change depth from 1963.91 to 1963,02
24-Jul-07		1974.019	1973.8	-0.219	1973.8	0	Check @ Tool joint --> block pos increased 0.1
24-Jul-07	20:10	2000.931	2000.7	-0.231	2000.7	0	Check @ Tool joint
24-Jul-07	22:40	2041.282	2041.02	-0.262	2041.02	0	Check @ Tool joint
25-Jul-07	0:03	2081.628	2081.5	-0.128	2081.5	0	Check @ Tool joint
25-Jul-07		2121.964	2121.72	-0.244	2121.72	0	Check @ Tool joint
25-Jul-07	9:01	2202.66	2202.39	-0.27	2202.39	0	Check @ Tool joint
25-Jul-07	11:08	2243.017	2242.68	-0.337	2242.68	0	Check @ Tool joint
25-Jul-07	13:39	2283.402	2282.98	-0.422	2282.98	0	Check @ Tool joint
25-Jul-07	18:54	2364.15	2363.61	-0.54	2363.61	0	Check @ Tool joint

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DEPTH TRACKING SHEET

Procedure Document: **D&M Depth Tracking Standard V1 30-Jan-04**

Rig:	Maersk Inspirer	**Depth System:**	DWE		22-Jun-07
Rig Type	Jack up	**Heave Comp System:**	N/A		
Well:	15/9-F-12	**Hookload System:**	CLT	Last Cal:	
Run No:	6	**PDA Serial No:**	N/A	Last Cal:	
		GTE Serial No:	N/A	Last Cal:	
		CLT Serial No:	N/A	Last Cal:	21-Jul-07
		DWC Serial No:	N/A		

Note: Driller depths are to be taken at tool joints NOT at kelly down depths!

Date	Time	Tally Depth	ACQ Depth	Difference	New ACQ Depth	Change	Comments
29-Jul-07	16:01	182.5	267.97	85.47	-97.03	-365	t depth set according to BHA before running HWD
29-Jul-07	17:33	628.52	581.08	-47.44	628.52	47.44	Set Bit depth
29-Jul-07	2:45	2485.372	2484.6	-0.772	2485.37	0.77	Set Depth @ too joint
29-Jul-07		2498.824	2498.7	-0.124	2498.7	0	Check @ tool joint
30-Jul-07	3:04	2512.284	2512	-0.284	2512	0	subtract 4 counts from counts at top wrap
30-Jul-07		2525.738	2525.59	-0.148	2525.59	0	
30-Jul-07		2539.187	2539	-0.187	2539	0	subtract 4 counts from counts at top wrap
30-Jul-07		2552.629	2552.6	-0.029	2552.6	0	Check @ tool joint
30-Jul-07	19:43	2566.081	2565.83	-0.251	2565.83	0	Check @ tool joint

Schlumberger

DEPTH TRACKING SHEET

Procedure Document: **D&M Depth Tracking Standard V1 30-Jan-04**

Rig:	Maersk Inspirer	**Depth System:**	DWE		22-Jun-07
Rig Type	Jack up	**Heave Comp System:**	N/A		
Well:	15/9-F-12	**Hookload System:**	CLT	Last Cal:	
Run No:	9	**PDA Serial No:**	N/A	Last Cal:	
		GTE Serial No:	N/A	Last Cal:	
		CLT Serial No:	N/A	Last Cal:	21-Jul-07
		DWC Serial No:	N/A		

Note: Driller depths are to be taken at tool joints NOT at kelly down depths!

Date	Time	Tally Depth	ACQ Depth	Difference	New ACQ Depth	Change	Comments
10-Aug-07	20:24	2476.345	2476.67	0.325		0	Checked at tool joint
11-Aug-07	2:55	2489.797	2490	0.203		0	Checked at tool joint
11-Aug-07		2543.6	2544.13	0.53		0	Checked at tool joint, on bottom
12-Aug-07	1:47	2583.954	2583.85	-0.104		0	Checked at tool joint, on bottom
12-Aug-07	2:30	2597.404	2597.24	-0.164		0	Checked at tool joint, on bottom
12-Aug-07	4:13	2610.855	2610.82	-0.035		0	Checked at tool joint, on bottom
12-Aug-07	6:00	2637.767	2637.84	0.073		0	Checked at tool joint, on bottom
12-Aug-07	10:50	2664.67	2664.86	0.19		0	Checked at tool joint, on bottom
12-Aug-07	12:16	2691.56	2691.68	0.12		0	Checked at tool joint, on bottom
12-Aug-07	13:04	2705.02	2705.42	0.4		0	Checked at tool joint, on bottom
12-Aug-07	16:45	2731.92	2732.27	0.35		0	Checked at tool joint, on bottom
12-Aug-07	19:19	2731.916	2731.96	0.044		0	Checked at tool joint, on bottom
13-Aug-07	2:43	2745.365	2745.47	0.105		0	Checked at tool joint, on bottom
13-Aug-07	13:15	2772.272	2772.27	-0.002		0	Checked at tool joint, on bottom
13-Aug-07	17:24	2799.176	2799.47	0.294		0	Checked at tool joint, on bottom
13-Aug-07	21:19	2826.078	2826.36	0.282		0	Checked at tool joint, on bottom
14-Aug-07	5:01	2866.411	2866.89	0.479		0	Checked at tool joint, on bottom
14-Aug-07	7:20	2879.85	2880.53	0.68		-0.1	Checked at tool joint, on bottom
14-Aug-07	9:51	2893.294	2893.74	0.446		-0.1	Checked at tool joint, on bottom
14-Aug-07	15:11	2933.618	2934.15	0.532		0	Checked at tool joint, on bottom
14-Aug-07	17:22	2947.06	2947.61	0.55		-0.1	Checked at tool joint, on bottom
15-Aug-07	2:40	2960.476	2960.476	0		0	Set bit depth,
15-Aug-07	3:06	2947.06	2947.31	0.25		0	Checked at tool joint
15-Aug-07	3:22		2966.51	2966.51	2966.86	0.35	Set bit depth to on bottom,System shut down
15-Aug-07	7:07	2973.919	2974.26	0.341		0	Checked at tool joint, on bottom
15-Aug-07	12:52	2987.369	2987.67	0.301		-0.1	Checked at tool joint, on bottom
15-Aug-07	22:41	3014.264	3014.39	0.126		0	Checked at tool joint, on bottom
16-Aug-07	17:34	3055	3054.7	-0.3		0	Checked at tool joint, on bottom
16-Aug-07	23:11	3081.492	3081.42	-0.072		0	Checked at tool joint, on bottom
17-Aug-07	4:15	3094.94	3094.84	-0.1		0	Checked at tool joint, on bottom
17-Aug-07				0		0	

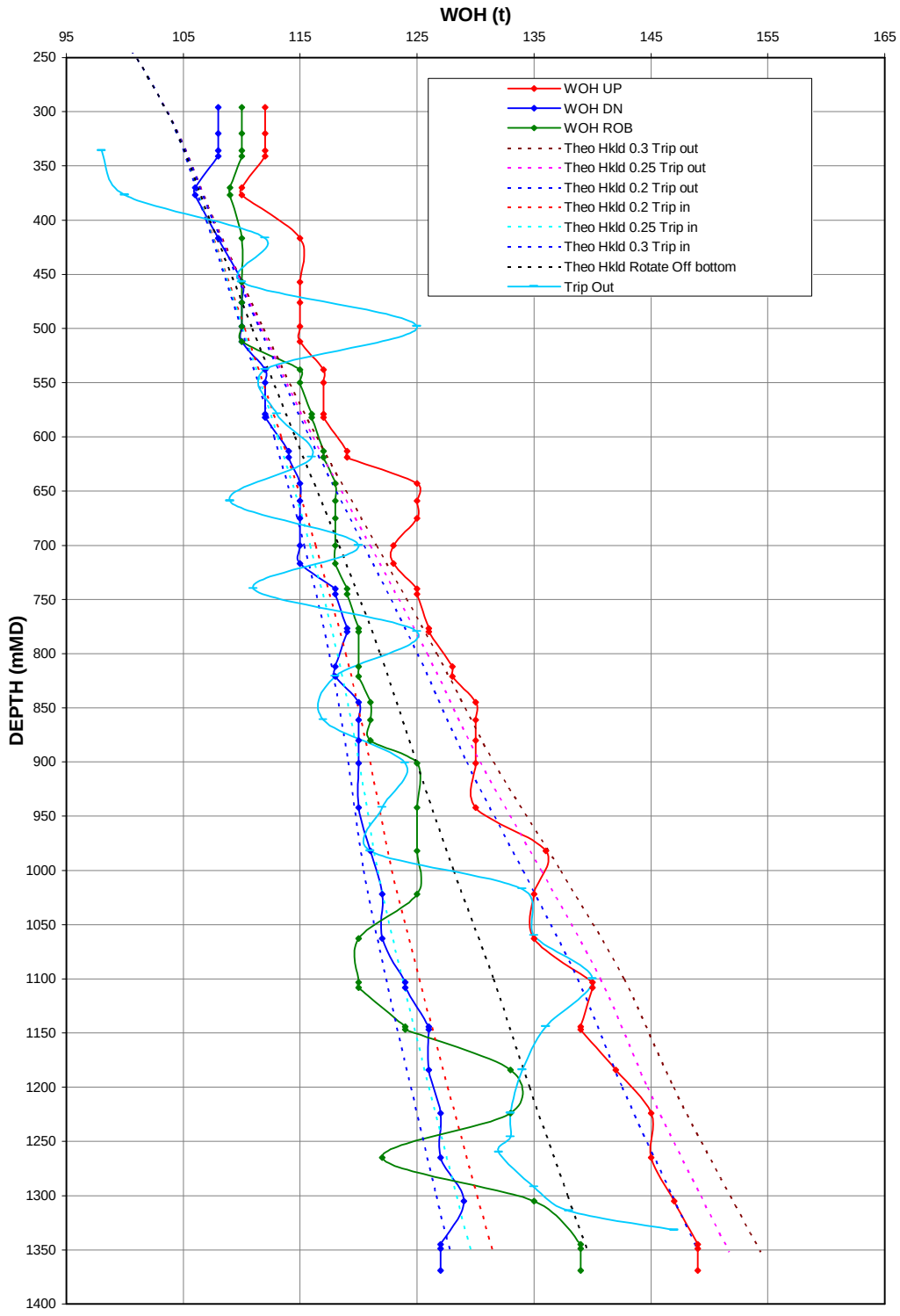
Schlumberger **DEPTH TRACKING SHEET**

Procedure Document: **D&M Depth Tracking Standard V1 30-Jan-04**

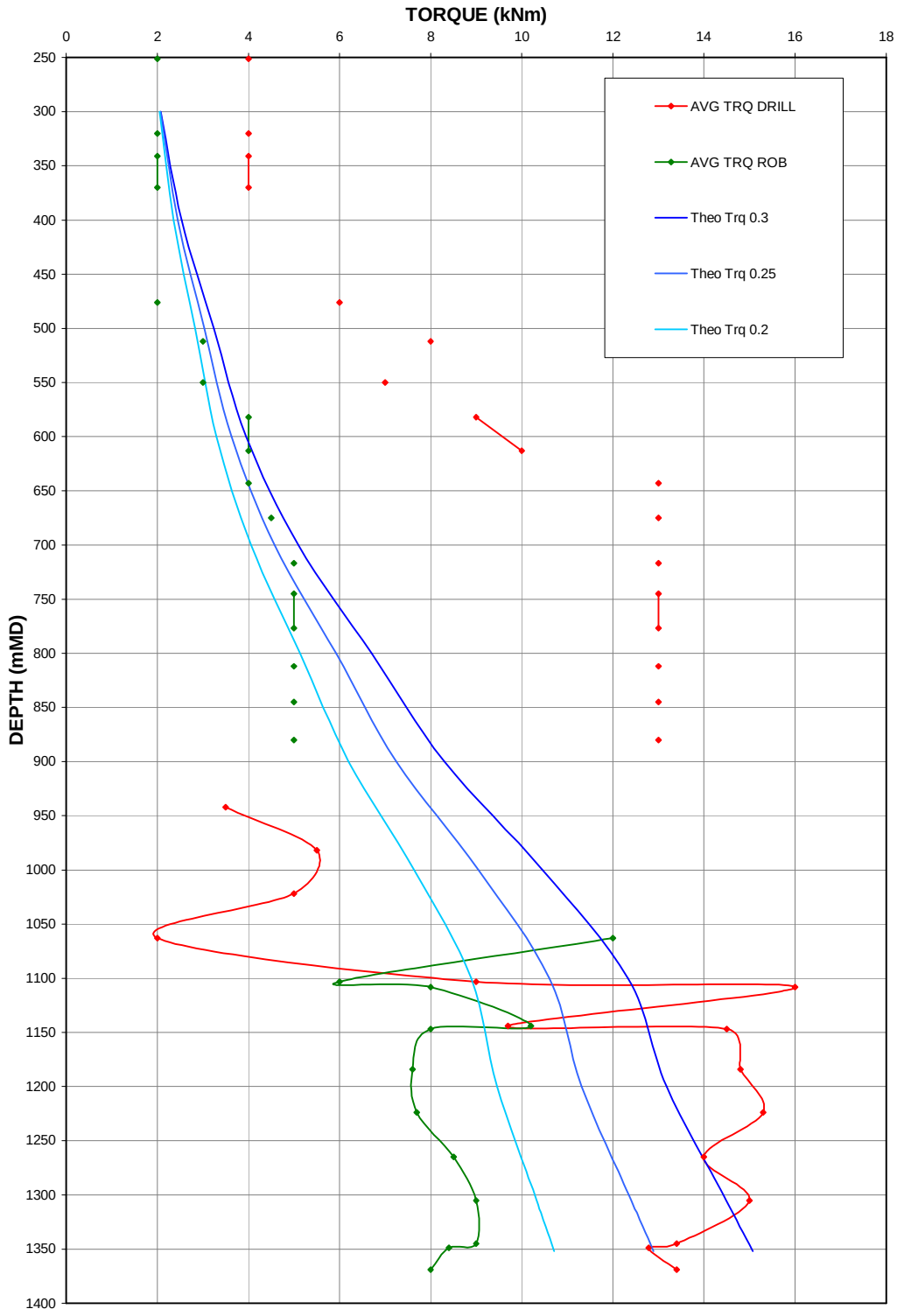
Rig:	Maersk Inspirer	**Depth System:**	DWE		10-Aug-07
Rig Type	Jack up	**Heave Comp System:**	N/A		
Well:	15/9-F-12	**Hookload System:**	CLT	Last Cal:	
Run No:	10	**PDA Serial No:**	N/A	Last Cal:	
		GTE Serial No:	N/A	Last Cal:	
		CLT Serial No:	N/A	Last Cal:	10-Aug-07
		DWC Serial No:	N/A		

Note: Driller depths are to be taken at tool joints NOT at kelly down depths!

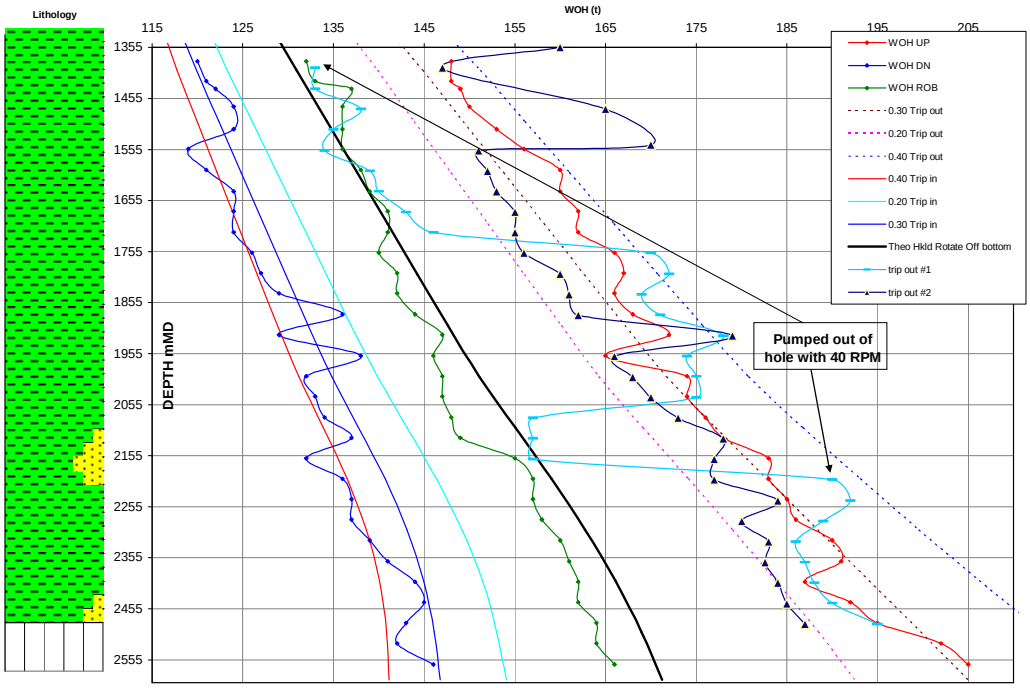
Date	Time	Tally Depth	ACQ Depth	Difference	New ACQ Depth	Change	Comments
22-Aug-07	8:09	3106.06	3106.26	0.2		0	Checked at tool joint
22-Aug-07	16:13	3119.51	3119.73	0.22		0	Checked at tool joint, on bottom
23-Aug-07	1:03	3159.862	3160.07	0.208		0	Checked at tool joint, on bottom
23-Aug-07	6:35	3200.197	3200.73	0.533		0	Checked at tool joint, on bottom
23-Aug-07	11:00	3240.547	3240.71	0.163		0	Checked at tool joint, on bottom
23-Aug-07	16:33	3321.268	3321.39	0.122		0	Checked at tool joint, on bottom
23-Aug-07	18:37	3361.609	3361.66	0.051		0	Checked at tool joint, on bottom
23-Aug-07	20:46	3401.948	3401.97	0.022		0	Checked at tool joint, on bottom
24-Aug-07	3:59	3483	3482.68	-0.32		0	Checked at tool joint, on bottom



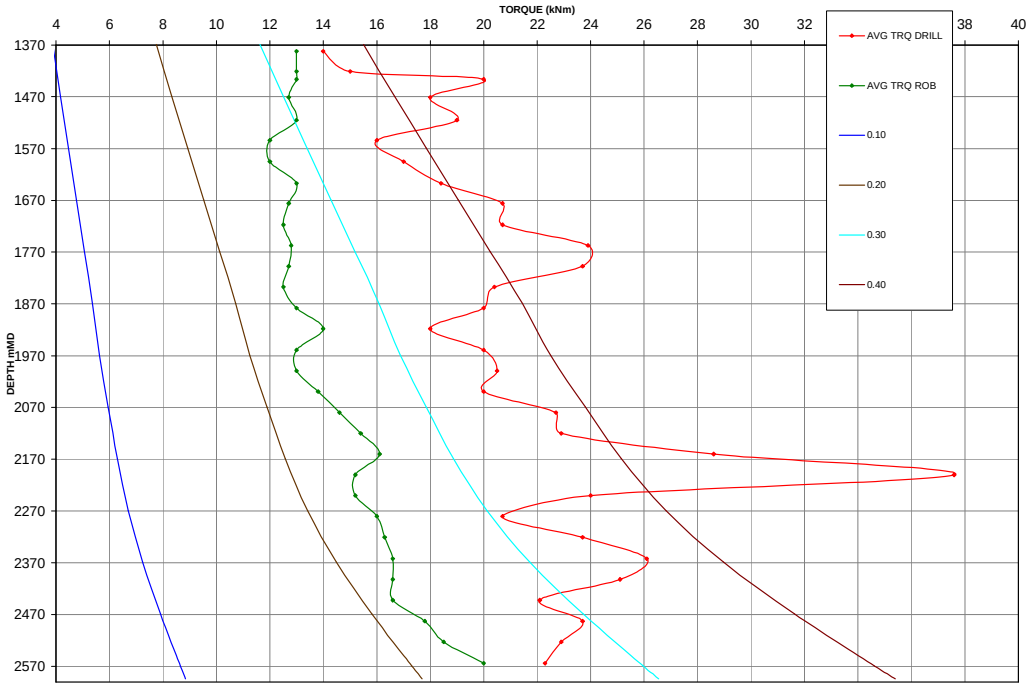
26” Hole Section – Drag Analysis



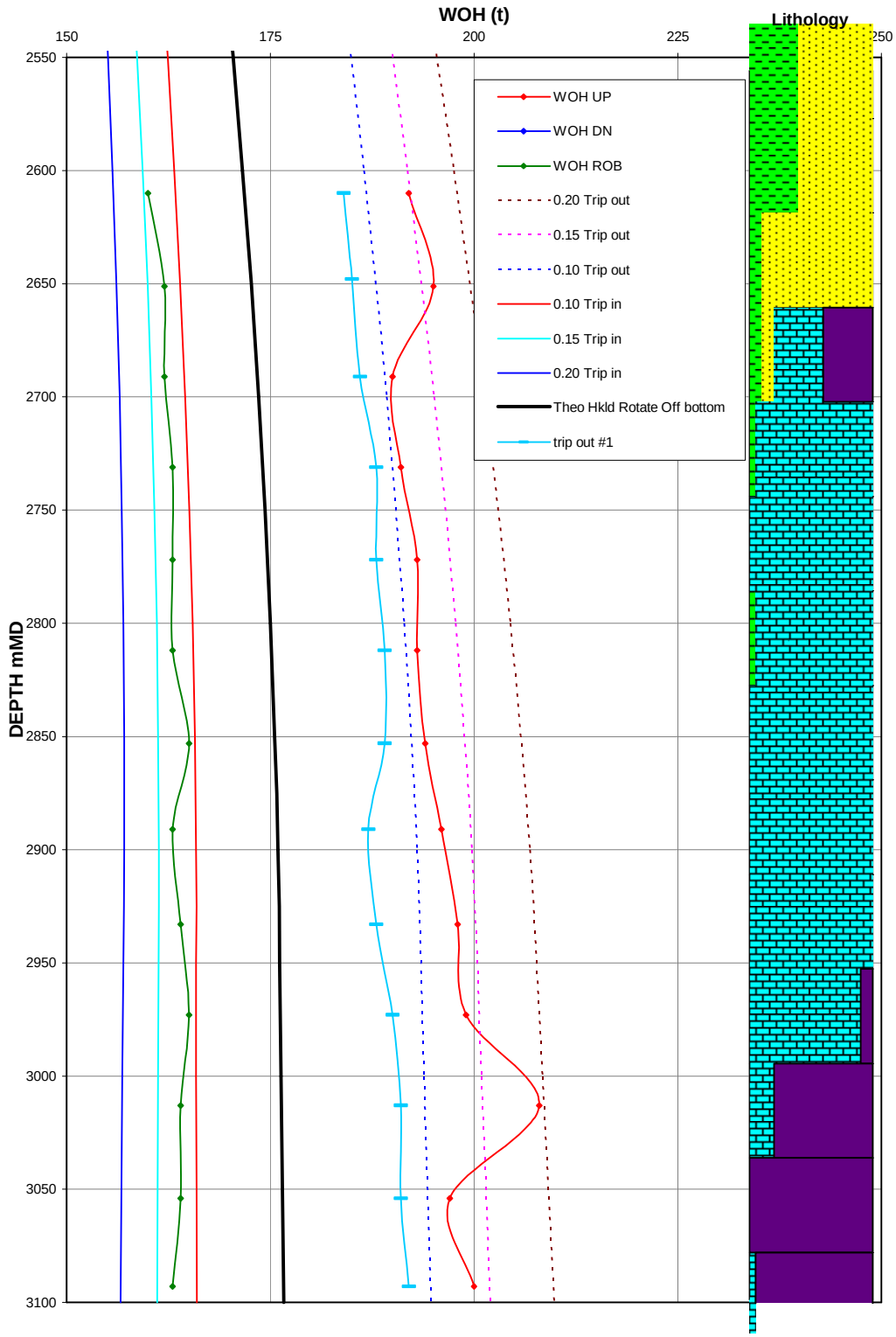
26” Section – Torque Analysis



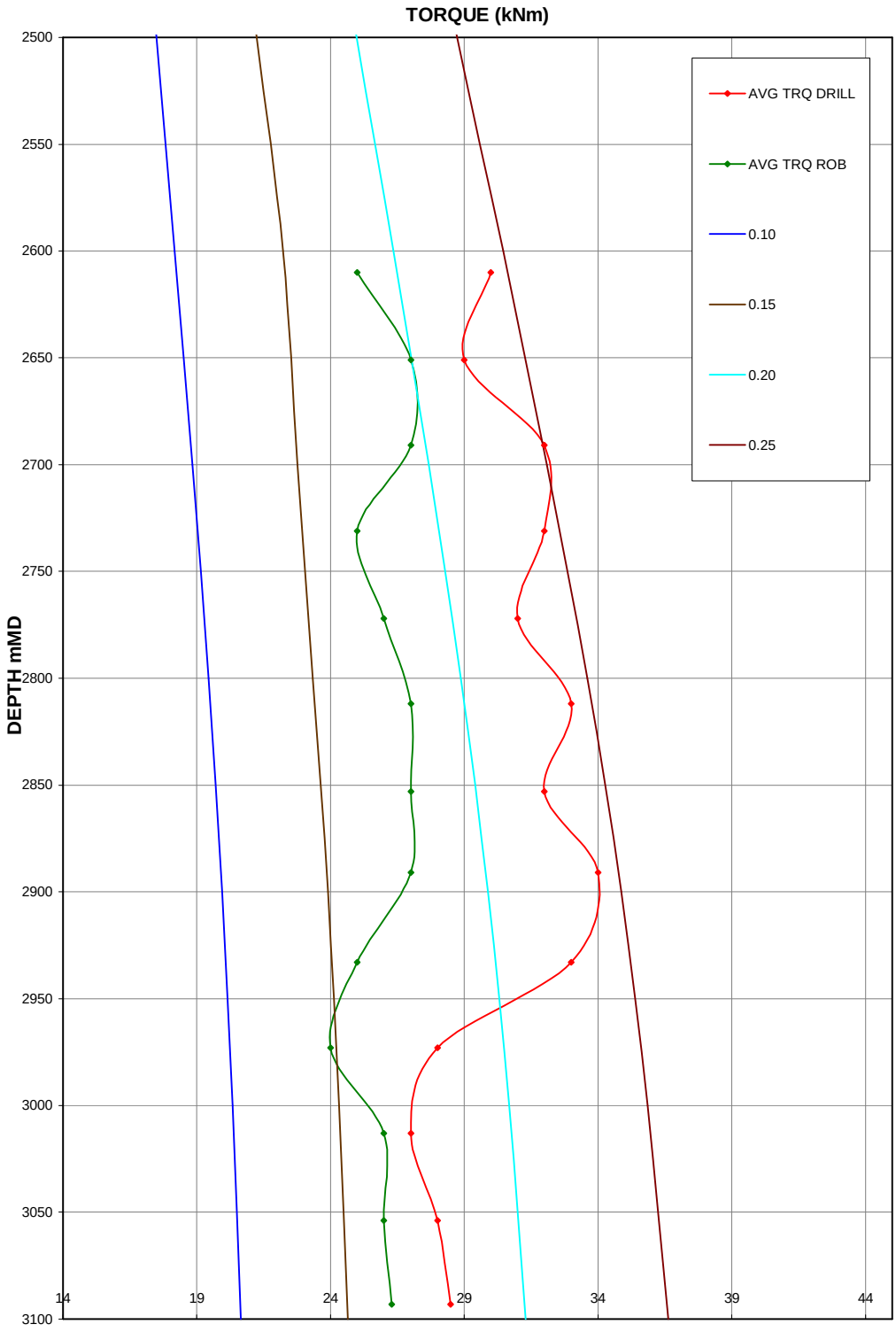
17 ½” Drag Analysis



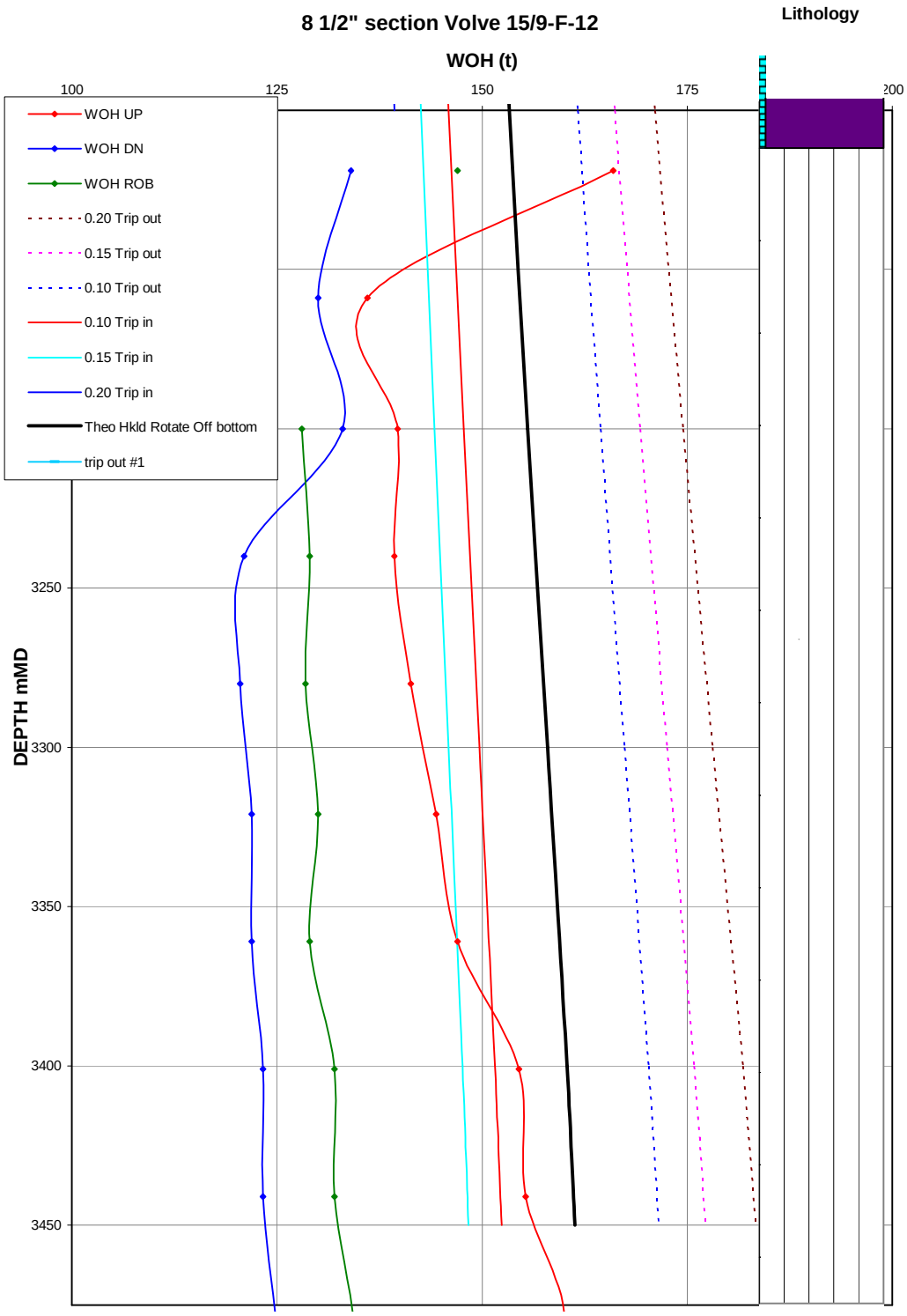
17 ½” Torque Analysis



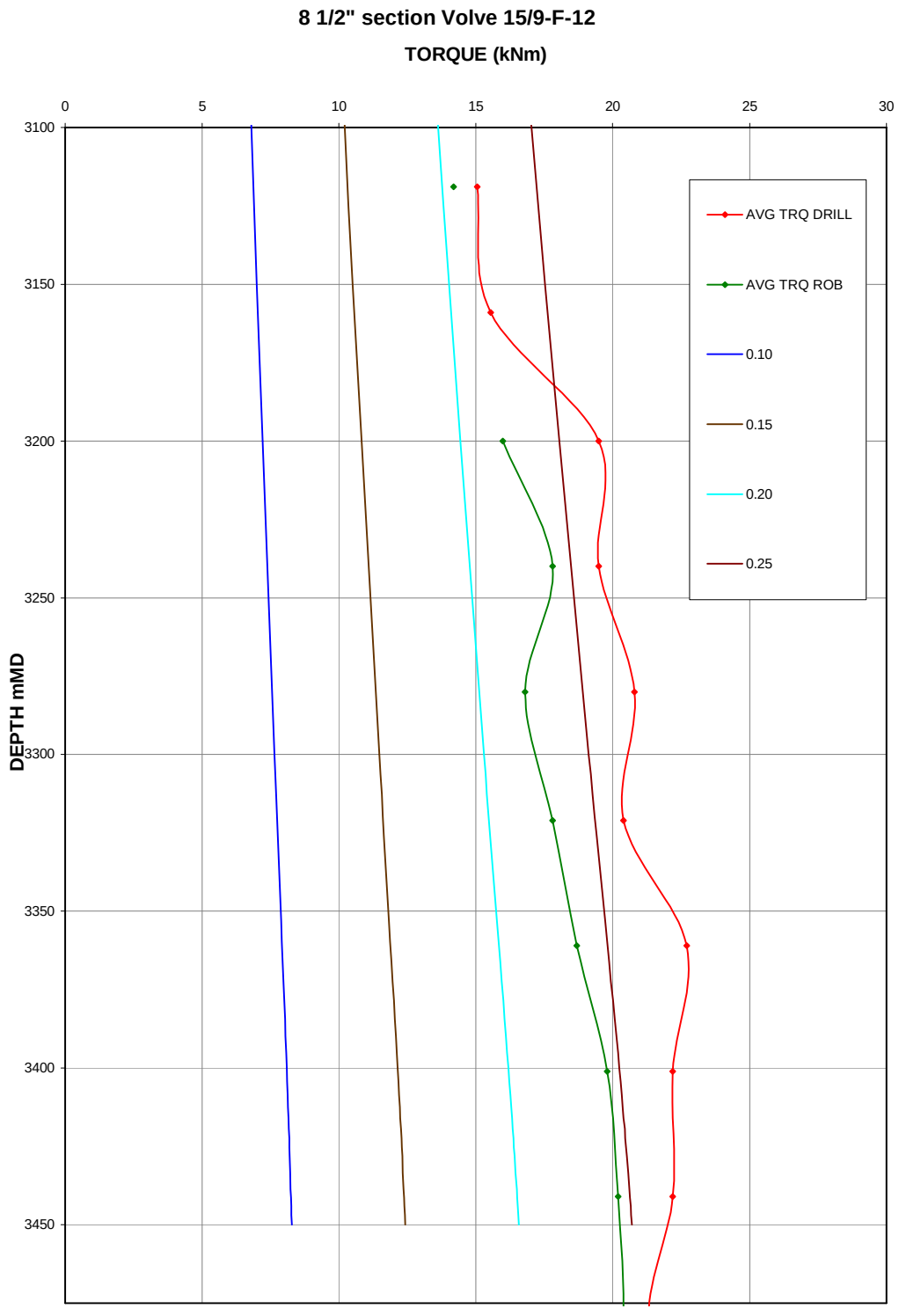
12 ¼” Drag Analysis



12 ¼” Torque Analysis



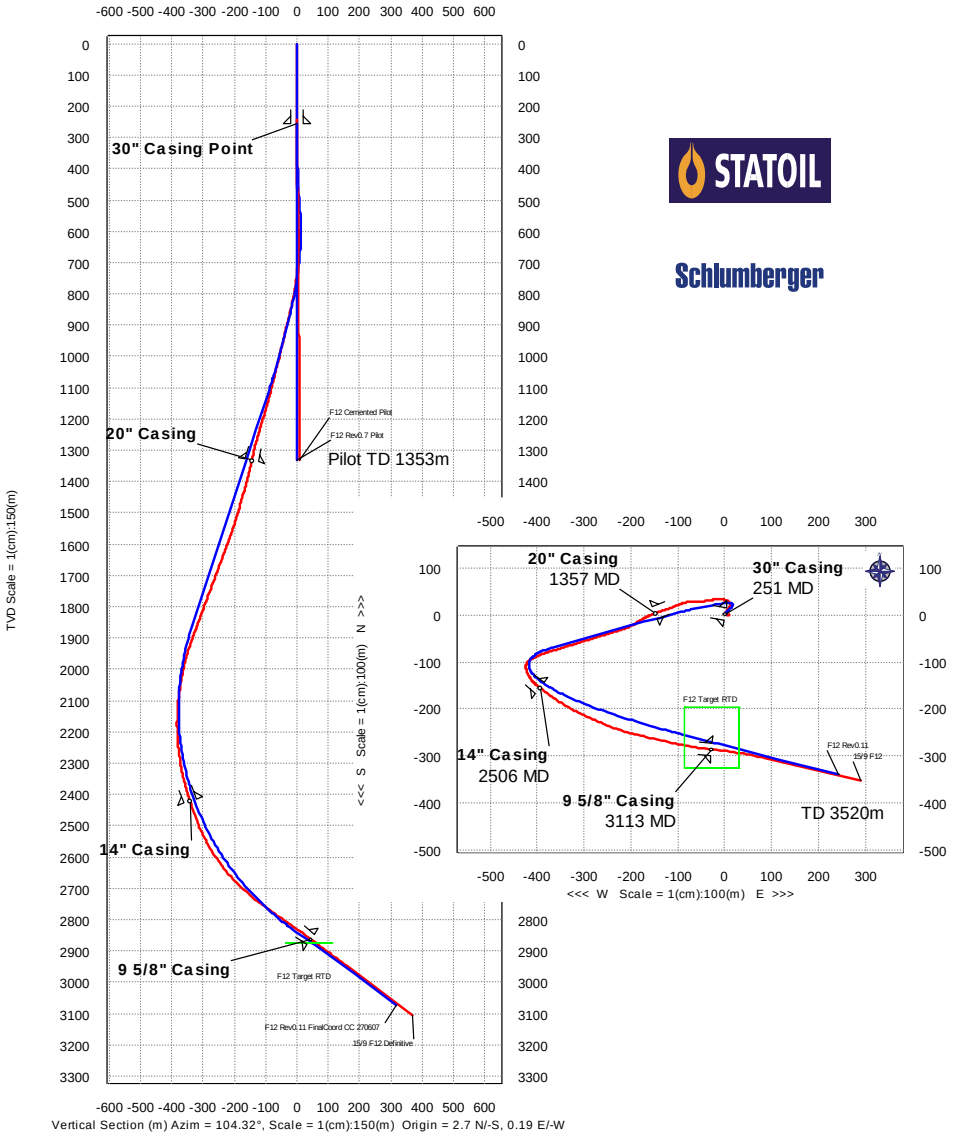
8 ½” Drag Analysis



8 ½” Torque Analysis

7.0 Survey Details

WELL	FIELD	STRUCTURE
15/9-F-12	Volve F	Volve F



Drilling rig: Maersk Inspirer
License number: PL 046BS
Well name: 15/9-F-12
Slot: 12
Water depth /air gap: 91 mMSL / 54.9 mRT

Depth reference:

Unless otherwise stated, all depths are referred to RT (Rotary Table).

Structure center coordinates (at wellhead level)(Slot 8 is structure center):

Geographic:	Lat. 58° 26' 29.807" N	Long. 01° 53' 14.929" E
UTM:	6 478 563.523 m N	435 050.021 m E

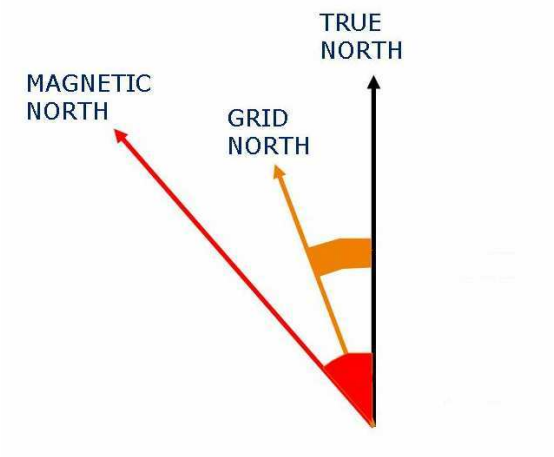
Slot center coordinates (at wellhead level):

Geographic:	Lat. 58° 26' 29.894" N	Long. 01° 53' 14.937" E
UTM:	6 478 566.22 m N	435 050.21 m E
Rectangular:	2.7 m N	0.19 m E (from structure center)

Depth from	Depth to	Survey Instrument	Survey frequency	Vendor	Comments
145.9	251	MWD	30m	Schlumberger	Inclination only due to external magnetic interference from F4 conductor
251	1353	MWD	45m	Schlumberger	Shallow Gas Pilot Hole (Cemented Back)
251	1357	MWD	45m	Schlumberger	SUCOP Corrected (Motor BHA)
1357	2506	MWD	45m	Schlumberger	
145.9	2465	Casing Gyro	30m	GyroData	GyroData job number BN0707GW060
2506	3520	MWD	45m	Schlumberger	

Magnetic Parameters by Hole Section

Interval	Declination	HTotal	Magnetic Dip	Date
36”, 8 ½” Pilot, 26” Hole Sections	-2.339	50339.5	71.64	1st July 2007
17 ½” Hole Section	-2.338	50363.0	71.643	1st July 2007
12 ¼” Hole Section	-2.337	50388.2	71.644	1st July 2007
8 ½” Hole Section	-2.251	50398.0	71.627	1st September 2007



STATOIL - Norway

SLEIPNER
Volve F
15/9-F-12
F-12

Design: F-12

Standard Survey Report

11 October, 2007

Statoil

Survey Report

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Project SLEIPNER, Norway

Map System:	Universal Transverse Mercator	**System Datum:**	Mean Sea Level
Geo Datum:	European 1950 - Mean		Using Well Reference Point
Map Zone:	Zone 31N (0 E to 6 E)		Using geodetic scale factor

Site Volve F, 15/9

Site Position:		**Northing:**	6,478,563.52 m	**Latitude:**	58° 26' 29.807 N
From:	Map	**Easting:**	435,050.02 m	**Longitude:**	1° 53' 14.929 E
Position Uncertainty:	0.00 m	**Slot Radius:**	in	**Grid Convergence:**	-0.95 °

Well 15/9-F-12

Well Position	**+N/-S**	2.70 m	**Northing:**	6,478,566.22 m	**Latitude:**	58° 26' 29.894 N
	+E/-W	0.19 m	**Easting:**	435,050.21 m	**Longitude:**	1° 53' 14.937 E
Position Uncertainty		0.00 m	**Wellhead Depth:**	91.00 m	**Water Depth:**	91.00 m

Wellbore F-12

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	GNETICREFERENCE	3/1/2007	-2.34	71.63	50,321

Design F-12

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	145.90

Vertical Section:	Depth From (TVD) (m)	+N/-S (m)	+E/-W (m)	Direction (°)
	145.90	2.70	0.19	104.32

Survey Program **Date** 10/9/2007

From (m)	To (m)	Survey (Wellbore)	Tool Name	Description
174.00	2,464.55	14" Casing Gyro Survey (F-12)	Wellbore Surveyor, cont	Gyro Tool from GD
2,464.55	2,536.07	17.5" Section MWD Survey (F-12)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)
2,536.07	3,081.25	12.25" Section MWD Survey (F-12)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)
3,081.25	3,520.00	8.5" Section MWD Survey (F-12)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
145.90	0.00	0.00	145.90	2.70	0.19	0.00	0.000	0.00	0.00
174.00	0.12	166.21	174.00	2.67	0.20	0.01	0.132	0.13	0.00
204.00	0.08	159.79	204.00	2.62	0.21	0.04	0.045	-0.04	-6.42
234.00	0.15	113.27	234.00	2.58	0.25	0.09	0.109	0.07	-46.52
264.00	0.25	94.15	264.00	2.56	0.36	0.20	0.125	0.11	-19.12
294.00	0.34	83.77	294.00	2.57	0.51	0.34	0.101	0.09	-10.38
324.00	0.36	81.51	324.00	2.59	0.70	0.52	0.027	0.02	-2.26
354.00	0.46	79.36	354.00	2.63	0.91	0.71	0.101	0.10	-2.15
384.00	0.65	66.92	384.00	2.72	1.19	0.96	0.224	0.19	-12.44
414.00	1.09	38.86	413.99	3.01	1.52	1.22	0.597	0.43	-28.06

Statoil

Survey Report

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
444.00	2.91	27.73	443.97	3.90	2.06	1.51	1.856	1.82	-11.13
474.00	4.85	26.01	473.90	5.72	2.97	1.94	1.937	1.93	-1.72
504.00	6.49	27.94	503.76	8.35	4.32	2.60	1.657	1.65	1.93
534.00	7.69	30.42	533.53	11.58	6.13	3.56	1.234	1.20	2.47
564.00	6.95	32.03	563.28	14.85	8.11	4.66	0.771	-0.74	1.62
594.00	5.54	30.06	593.10	17.64	9.79	5.61	1.419	-1.40	-1.98
624.00	4.90	17.77	622.98	20.12	10.91	6.08	1.286	-0.64	-12.28
654.00	5.08	0.38	652.87	22.66	11.31	5.84	1.518	0.18	-17.40
684.00	5.95	334.67	682.73	25.40	10.65	4.52	2.596	0.87	-25.71
714.00	6.39	320.18	712.56	28.09	8.92	2.18	1.611	0.43	-14.48
744.00	6.80	303.74	742.36	30.36	6.37	-0.85	1.924	0.41	-16.45
774.00	8.44	288.20	772.10	32.03	2.80	-4.72	2.621	1.64	-15.53
804.00	11.14	278.45	801.66	33.14	-2.15	-9.80	3.159	2.70	-9.76
834.00	13.14	272.24	830.99	33.70	-8.43	-16.02	2.388	2.00	-6.21
864.00	14.81	266.26	860.11	33.59	-15.66	-23.00	2.204	1.67	-5.98
893.00	14.99	264.04	888.13	32.95	-23.09	-30.04	0.620	0.19	-2.30
903.00	14.51	263.13	897.80	32.67	-25.62	-32.42	1.599	-1.44	-2.72
913.00	14.08	262.05	907.49	32.35	-28.07	-34.72	1.513	-1.28	-3.25
923.00	13.81	261.01	917.20	32.00	-30.45	-36.94	1.096	-0.80	-3.11
933.00	13.78	260.55	926.91	31.62	-32.81	-39.13	0.347	-0.11	-1.38
943.00	13.86	260.53	936.62	31.22	-35.16	-41.31	0.251	0.25	-0.06
953.00	13.96	260.58	946.33	30.83	-37.54	-43.51	0.301	0.30	0.14
963.00	14.13	261.38	956.03	30.45	-39.93	-45.74	0.771	0.50	2.40
973.00	14.43	263.23	965.72	30.12	-42.38	-48.03	1.649	0.91	5.56
983.00	14.70	264.88	975.40	29.86	-44.88	-50.39	1.475	0.79	4.94
993.00	14.91	265.80	985.06	29.65	-47.43	-52.80	0.956	0.64	2.78
1,003.00	15.04	266.46	994.72	29.48	-50.00	-55.26	0.625	0.37	1.95
1,013.00	15.13	267.49	1,004.38	29.34	-52.60	-57.74	0.855	0.27	3.11
1,023.00	15.14	268.09	1,014.03	29.24	-55.21	-60.24	0.468	0.05	1.78
1,033.00	15.07	268.61	1,023.69	29.16	-57.82	-62.75	0.470	-0.23	1.57
1,043.00	14.54	269.28	1,033.36	29.12	-60.37	-65.21	1.664	-1.58	2.00
1,053.00	14.23	269.64	1,043.04	29.09	-62.85	-67.61	0.972	-0.93	1.09
1,063.00	14.15	269.65	1,052.74	29.08	-65.30	-69.98	0.232	-0.23	0.01
1,073.00	14.22	269.22	1,062.43	29.05	-67.75	-72.35	0.385	0.22	-1.29
1,083.00	14.38	267.93	1,072.12	28.99	-70.22	-74.73	1.061	0.47	-3.86
1,093.00	14.59	265.82	1,081.81	28.85	-72.72	-77.11	1.712	0.65	-6.33
1,103.00	14.67	263.48	1,091.48	28.62	-75.24	-79.49	1.787	0.24	-7.01
1,113.00	14.82	260.96	1,101.15	28.27	-77.76	-81.85	1.977	0.43	-7.58
1,123.00	15.14	258.59	1,110.81	27.81	-80.30	-84.20	2.077	0.98	-7.09
1,133.00	15.71	256.39	1,120.45	27.24	-82.90	-86.57	2.443	1.70	-6.61
1,143.00	16.43	254.47	1,130.06	26.54	-85.57	-89.00	2.685	2.16	-5.75
1,153.00	17.58	252.27	1,139.62	25.70	-88.38	-91.50	3.945	3.44	-6.60
1,163.00	18.82	250.54	1,149.12	24.71	-91.33	-94.12	4.059	3.72	-5.18
1,173.00	19.84	248.95	1,158.56	23.56	-94.44	-96.85	3.456	3.07	-4.78
1,183.00	20.52	248.22	1,167.95	22.30	-97.65	-99.65	2.169	2.03	-2.19
1,193.00	20.78	248.08	1,177.30	20.99	-100.92	-102.50	0.797	0.78	-0.42
1,203.00	20.87	248.00	1,186.65	19.66	-104.22	-105.36	0.295	0.28	-0.25
1,213.00	20.57	248.50	1,196.00	18.34	-107.51	-108.22	1.047	-0.90	1.52
1,223.00	19.87	249.42	1,205.39	17.10	-110.73	-111.04	2.308	-2.10	2.75
1,233.00	19.22	250.72	1,214.81	15.96	-113.88	-113.81	2.349	-1.95	3.89
1,243.00	18.88	251.85	1,224.26	14.91	-116.97	-116.54	1.507	-1.02	3.40
1,253.00	18.83	252.46	1,233.73	13.92	-120.05	-119.28	0.608	-0.15	1.82
1,263.00	19.07	252.60	1,243.18	12.95	-123.15	-122.04	0.736	0.72	0.41
1,273.00	19.35	252.60	1,252.63	11.96	-126.29	-124.84	0.842	0.84	0.02
1,283.00	19.47	252.47	1,262.06	10.97	-129.46	-127.66	0.385	0.36	-0.41

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
1,293.00	19.09	252.04	1,271.50	9.96	-132.60	-130.46	1.223	-1.15	-1.27
1,303.00	17.98	251.23	1,280.98	8.96	-135.62	-133.14	3.404	-3.32	-2.43
1,313.00	16.56	250.46	1,290.53	7.99	-138.42	-135.61	4.329	-4.27	-2.32
1,323.00	15.24	250.09	1,300.14	7.06	-141.00	-137.88	3.970	-3.96	-1.12
1,333.00	14.36	250.04	1,309.81	6.19	-143.40	-140.00	2.658	-2.66	-0.13
1,343.00	14.09	249.89	1,319.51	5.35	-145.71	-142.02	0.791	-0.78	-0.48
1,353.00	14.20	248.89	1,329.20	4.49	-148.00	-144.03	0.796	0.32	-2.99
1,363.00	14.61	247.86	1,338.89	3.57	-150.31	-146.04	1.450	1.23	-3.09
1,373.00	15.35	247.18	1,348.55	2.58	-152.70	-148.11	2.271	2.21	-2.03
1,383.00	16.31	246.75	1,358.17	1.52	-155.21	-150.28	2.925	2.90	-1.30
1,393.00	17.11	246.17	1,367.75	0.37	-157.85	-152.55	2.429	2.38	-1.74
1,403.00	17.79	245.40	1,377.29	-0.86	-160.58	-154.89	2.168	2.06	-2.30
1,413.00	18.50	244.47	1,386.79	-2.18	-163.40	-157.30	2.294	2.12	-2.82
1,423.00	19.40	243.27	1,396.25	-3.61	-166.32	-159.77	2.945	2.70	-3.59
1,433.00	20.36	242.01	1,405.65	-5.18	-169.34	-162.31	3.154	2.88	-3.78
1,443.00	21.22	240.96	1,415.00	-6.87	-172.45	-164.91	2.809	2.58	-3.14
1,453.00	22.14	239.94	1,424.29	-8.69	-175.67	-167.58	2.979	2.75	-3.08
1,463.00	22.83	239.04	1,433.53	-10.64	-178.96	-170.29	2.307	2.07	-2.68
1,473.00	22.85	238.62	1,442.75	-12.64	-182.28	-173.01	0.500	0.07	-1.28
1,483.00	22.44	238.58	1,451.98	-14.65	-185.57	-175.70	1.242	-1.24	-0.11
1,493.00	21.71	239.22	1,461.24	-16.59	-188.79	-178.33	2.303	-2.18	1.93
1,503.00	21.01	240.26	1,470.56	-18.43	-191.93	-180.93	2.370	-2.08	3.12
1,513.00	20.67	241.23	1,479.90	-20.17	-195.04	-183.50	1.452	-1.02	2.90
1,523.00	20.66	242.19	1,489.26	-21.84	-198.14	-186.10	1.013	-0.05	2.87
1,533.00	20.83	243.57	1,498.61	-23.45	-201.30	-188.76	1.554	0.52	4.14
1,543.00	20.97	245.58	1,507.95	-24.98	-204.52	-191.50	2.202	0.43	6.05
1,553.00	21.13	247.64	1,517.29	-26.41	-207.81	-194.34	2.269	0.48	6.18
1,563.00	21.38	249.38	1,526.61	-27.74	-211.19	-197.28	2.028	0.73	5.22
1,573.00	21.64	251.07	1,535.91	-28.98	-214.64	-200.32	2.027	0.80	5.07
1,583.00	21.87	252.47	1,545.20	-30.14	-218.16	-203.44	1.689	0.66	4.19
1,593.00	22.08	253.27	1,554.47	-31.24	-221.73	-206.63	1.110	0.65	2.40
1,603.00	22.29	253.50	1,563.73	-32.32	-225.35	-209.87	0.675	0.62	0.70
1,613.00	22.47	253.52	1,572.98	-33.40	-229.00	-213.14	0.555	0.55	0.06
1,623.00	22.66	253.41	1,582.21	-34.49	-232.68	-216.44	0.576	0.56	-0.34
1,633.00	22.93	253.25	1,591.43	-35.60	-236.39	-219.76	0.820	0.80	-0.47
1,643.00	23.20	253.11	1,600.63	-36.74	-240.14	-223.11	0.832	0.82	-0.42
1,653.00	23.40	252.96	1,609.82	-37.89	-243.93	-226.49	0.616	0.59	-0.45
1,663.00	23.53	252.89	1,618.99	-39.06	-247.73	-229.89	0.415	0.41	-0.23
1,673.00	23.59	252.88	1,628.16	-40.24	-251.55	-233.30	0.179	0.18	-0.02
1,683.00	23.66	252.91	1,637.32	-41.41	-255.38	-236.72	0.199	0.20	0.10
1,693.00	23.70	252.85	1,646.48	-42.60	-259.22	-240.15	0.141	0.12	-0.19
1,703.00	23.73	252.87	1,655.63	-43.78	-263.06	-243.58	0.102	0.10	0.07
1,713.00	23.78	252.93	1,664.78	-44.97	-266.91	-247.01	0.164	0.15	0.18
1,723.00	23.76	252.96	1,673.94	-46.15	-270.77	-250.46	0.057	-0.04	0.09
1,733.00	23.71	252.97	1,683.09	-47.33	-274.62	-253.89	0.145	-0.14	0.02
1,743.00	23.70	253.01	1,692.25	-48.50	-278.46	-257.33	0.070	-0.05	0.13
1,753.00	23.68	253.05	1,701.40	-49.68	-282.30	-260.76	0.065	-0.04	0.13
1,763.00	23.63	252.90	1,710.56	-50.85	-286.14	-264.19	0.252	-0.17	-0.47
1,773.00	23.56	252.97	1,719.73	-52.03	-289.97	-267.60	0.221	-0.20	0.22
1,783.00	23.50	252.85	1,728.90	-53.20	-293.78	-271.01	0.235	-0.19	-0.35
1,793.00	23.40	252.68	1,738.07	-54.38	-297.58	-274.40	0.358	-0.30	-0.51
1,803.00	23.37	252.68	1,747.25	-55.56	-301.37	-277.78	0.100	-0.10	0.00
1,813.00	23.36	252.63	1,756.43	-56.74	-305.16	-281.16	0.063	-0.01	-0.16
1,823.00	23.39	252.65	1,765.61	-57.93	-308.94	-284.53	0.094	0.09	0.06

Statoil

Survey Report

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
1,833.00	23.45	252.52	1,774.78	-59.12	-312.74	-287.91	0.241	0.19	-0.38
1,843.00	23.48	252.56	1,783.96	-60.31	-316.54	-291.30	0.089	0.08	0.12
1,853.00	23.41	252.72	1,793.13	-61.50	-320.33	-294.69	0.294	-0.22	0.49
1,863.00	23.39	252.72	1,802.31	-62.68	-324.12	-298.07	0.062	-0.06	-0.02
1,873.00	23.47	252.78	1,811.48	-63.86	-327.92	-301.45	0.258	0.25	0.19
1,883.00	23.51	252.91	1,820.66	-65.03	-331.73	-304.85	0.195	0.12	0.38
1,893.00	23.49	253.11	1,829.83	-66.20	-335.54	-308.26	0.247	-0.06	0.60
1,903.00	23.50	253.09	1,839.00	-67.36	-339.36	-311.67	0.033	0.02	-0.05
1,913.00	23.55	253.15	1,848.17	-68.51	-343.18	-315.08	0.162	0.14	0.19
1,923.00	23.58	253.33	1,857.33	-69.67	-347.00	-318.51	0.232	0.09	0.53
1,933.00	23.56	253.55	1,866.50	-70.81	-350.84	-321.94	0.271	-0.04	0.67
1,943.00	23.58	253.60	1,875.66	-71.94	-354.67	-325.38	0.077	0.05	0.15
1,953.00	23.57	253.53	1,884.83	-73.07	-358.51	-328.81	0.086	-0.02	-0.21
1,963.00	23.19	253.55	1,894.01	-74.19	-362.32	-332.22	1.155	-1.15	0.05
1,973.00	22.48	253.50	1,903.22	-75.29	-366.04	-335.56	2.121	-2.12	-0.16
1,983.00	21.77	253.27	1,912.49	-76.37	-369.65	-338.79	2.143	-2.13	-0.67
1,993.00	21.15	252.84	1,921.79	-77.44	-373.15	-341.92	1.931	-1.87	-1.30
2,003.00	20.52	252.07	1,931.14	-78.51	-376.54	-344.94	2.049	-1.87	-2.32
2,013.00	19.83	251.05	1,940.53	-79.60	-379.81	-347.84	2.324	-2.07	-3.04
2,023.00	19.24	249.89	1,949.95	-80.72	-382.96	-350.62	2.120	-1.77	-3.49
2,033.00	18.67	248.97	1,959.41	-81.86	-386.00	-353.28	1.940	-1.72	-2.75
2,043.00	18.09	248.27	1,968.90	-83.01	-388.94	-355.84	1.867	-1.74	-2.12
2,053.00	17.42	247.76	1,978.42	-84.15	-391.77	-358.30	2.062	-2.01	-1.52
2,063.00	16.64	247.57	1,987.98	-85.26	-394.48	-360.65	2.329	-2.32	-0.58
2,073.00	15.74	247.32	1,997.59	-86.33	-397.05	-362.88	2.730	-2.72	-0.73
2,083.00	14.82	246.86	2,007.23	-87.36	-399.48	-364.98	2.786	-2.76	-1.40
2,093.00	14.11	246.33	2,016.92	-88.35	-401.77	-366.95	2.142	-2.11	-1.59
2,103.00	13.55	245.78	2,026.63	-89.32	-403.96	-368.83	1.739	-1.69	-1.63
2,113.00	12.56	245.14	2,036.37	-90.26	-406.01	-370.59	3.005	-2.97	-1.93
2,123.00	11.76	244.30	2,046.14	-91.15	-407.92	-372.21	2.462	-2.40	-2.53
2,133.00	11.30	243.19	2,055.94	-92.04	-409.71	-373.73	1.514	-1.36	-3.32
2,143.00	10.90	242.00	2,065.75	-92.92	-411.42	-375.17	1.382	-1.20	-3.57
2,153.00	10.37	240.37	2,075.58	-93.81	-413.04	-376.52	1.841	-1.60	-4.89
2,163.00	9.96	237.45	2,085.43	-94.72	-414.55	-377.75	1.978	-1.23	-8.77
2,173.00	9.68	233.80	2,095.28	-95.69	-415.95	-378.88	2.040	-0.83	-10.92
2,183.00	9.51	229.85	2,105.14	-96.72	-417.26	-379.89	2.044	-0.51	-11.88
2,193.00	9.30	225.13	2,115.00	-97.82	-418.47	-380.79	2.398	-0.64	-14.14
2,203.00	9.20	220.24	2,124.87	-99.00	-419.56	-381.55	2.375	-0.29	-14.67
2,213.00	9.10	215.05	2,134.75	-100.25	-420.53	-382.18	2.491	-0.30	-15.56
2,223.00	9.02	209.82	2,144.62	-101.58	-421.37	-382.67	2.481	-0.24	-15.69
2,233.00	8.95	204.57	2,154.50	-102.97	-422.08	-383.02	2.471	-0.20	-15.78
2,243.00	8.91	199.61	2,164.38	-104.41	-422.67	-383.23	2.309	-0.11	-14.86
2,253.00	8.98	195.16	2,174.26	-105.89	-423.13	-383.31	2.088	0.19	-13.37
2,263.00	9.11	189.99	2,184.13	-107.42	-423.47	-383.26	2.472	0.41	-15.51
2,273.00	9.31	184.67	2,194.01	-109.01	-423.68	-383.07	2.617	0.59	-15.93
2,283.00	9.55	179.31	2,203.87	-110.65	-423.73	-382.72	2.739	0.73	-16.11
2,293.00	9.88	174.47	2,213.73	-112.33	-423.64	-382.21	2.638	0.99	-14.50
2,303.00	10.25	171.03	2,223.57	-114.06	-423.42	-381.57	2.116	1.10	-10.33
2,313.00	10.48	167.42	2,233.41	-115.83	-423.08	-380.80	2.062	0.68	-10.82
2,323.00	10.69	163.89	2,243.24	-117.61	-422.63	-379.92	2.052	0.64	-10.61
2,333.00	10.99	161.52	2,253.06	-119.40	-422.07	-378.94	1.612	0.90	-7.10
2,343.00	11.41	158.88	2,262.87	-121.23	-421.41	-377.85	1.974	1.24	-7.92
2,353.00	11.77	156.24	2,272.67	-123.09	-420.64	-376.64	1.934	1.10	-7.91
2,363.00	12.25	153.98	2,282.45	-124.97	-419.76	-375.33	2.011	1.43	-6.79

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
2,373.00	12.79	151.93	2,292.21	-126.90	-418.78	-373.89	2.098	1.62	-6.15
2,383.00	13.35	149.87	2,301.95	-128.88	-417.68	-372.34	2.184	1.68	-6.17
2,393.00	14.04	147.61	2,311.67	-130.90	-416.45	-370.65	2.614	2.07	-6.77
2,403.00	14.66	145.72	2,321.35	-132.97	-415.08	-368.82	2.328	1.86	-5.68
2,413.00	15.34	143.81	2,331.01	-135.09	-413.59	-366.85	2.524	2.04	-5.74
2,423.00	15.89	141.95	2,340.65	-137.23	-411.97	-364.74	2.237	1.66	-5.59
2,433.00	16.32	140.28	2,350.25	-139.39	-410.22	-362.52	1.886	1.28	-5.00
2,443.00	16.72	138.81	2,359.84	-141.55	-408.38	-360.20	1.741	1.21	-4.40
2,453.00	17.17	136.78	2,369.41	-143.71	-406.42	-357.77	2.223	1.34	-6.08
2,463.00	17.67	134.92	2,378.95	-145.86	-404.34	-355.21	2.261	1.52	-5.59
2,464.55	17.75	134.64	2,380.42	-146.19	-404.00	-354.81	2.271	1.55	-5.46
2,493.74	18.80	129.52	2,408.14	-152.31	-397.21	-346.71	1.970	1.08	-5.26
2,536.07	20.39	125.56	2,448.02	-160.94	-385.94	-333.66	1.467	1.13	-2.81
2,576.99	21.70	125.92	2,486.21	-169.52	-374.02	-319.98	0.965	0.96	0.26
2,617.92	26.34	124.65	2,523.59	-179.13	-360.41	-304.42	3.422	3.40	-0.93
2,658.30	30.56	121.61	2,559.08	-189.61	-344.29	-286.21	3.314	3.14	-2.26
2,699.07	33.11	117.41	2,593.72	-200.17	-325.57	-265.47	2.485	1.88	-3.09
2,738.83	35.52	115.77	2,626.56	-210.20	-305.53	-243.56	1.947	1.82	-1.24
2,779.26	41.25	113.83	2,658.24	-220.70	-282.74	-218.89	4.344	4.25	-1.44
2,820.02	45.33	112.36	2,687.90	-231.64	-257.03	-191.27	3.093	3.00	-1.08
2,860.02	49.20	108.88	2,715.05	-241.96	-229.54	-162.08	3.478	2.90	-2.61
2,900.45	51.78	104.36	2,740.77	-250.85	-199.66	-130.93	3.218	1.91	-3.35
2,939.72	53.48	102.53	2,764.61	-258.10	-169.31	-99.73	1.709	1.30	-1.40
2,980.29	54.35	103.04	2,788.51	-265.36	-137.34	-66.95	0.712	0.64	0.38
3,008.61	54.95	103.40	2,804.89	-270.64	-114.85	-43.86	0.708	0.64	0.38
3,060.63	54.55	99.95	2,834.92	-279.24	-73.26	-1.43	1.641	-0.23	-1.99
3,081.25	54.06	97.21	2,846.95	-281.74	-56.70	15.23	3.315	-0.71	-3.99
3,136.60	53.84	95.71	2,879.53	-286.77	-12.24	59.56	0.668	-0.12	-0.81
3,172.51	53.90	98.14	2,900.70	-290.27	16.55	88.32	1.640	0.05	2.03
3,216.39	53.86	101.30	2,926.57	-296.25	51.48	123.64	1.745	-0.03	2.16
3,257.05	53.34	103.39	2,950.70	-303.25	83.45	156.34	1.299	-0.38	1.54
3,297.38	53.81	105.77	2,974.65	-311.42	114.85	188.79	1.467	0.35	1.77
3,337.63	53.10	107.03	2,998.62	-320.55	145.87	221.10	0.922	-0.53	0.94
3,375.41	53.01	106.59	3,021.33	-329.28	174.77	251.27	0.288	-0.07	-0.35
3,416.55	53.14	107.02	3,046.04	-338.79	206.26	284.13	0.268	0.09	0.31
3,456.15	52.97	106.74	3,069.84	-347.98	236.54	315.74	0.213	-0.13	-0.21
3,495.52	52.87	105.59	3,093.58	-356.72	266.71	347.14	0.703	-0.08	-0.88
3,520.00	52.87	105.59	3,108.36	-361.97	285.51	366.65	0.000	0.00	0.00

Casing Points

Measured Depth (m)	Vertical Depth (m)	Name	Casing Diameter (in)	Hole Diameter (in)
251.00	251.00	30"	30.000	36.000
1,357.00	1,333.08	20"	20.000	26.000
2,506.00	2,419.73	14"	14.000	17.500
3,113.00	2,865.62	9 5/8"	9.625	12.250

Checked By: _____ Approved By: _____ Date: _____

STATOIL - Norway

SLEIPNER
Volve F
15/9-F-12
F-12

Design: F-12

Error Ellipse Survey Report

11 October, 2007

Statoil

Error Ellipse Report

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Output errors are at**	2.45 sigma
		Database:	EDM Oracle

Project	SLEIPNER, Norway		
Map System:	Universal Transverse Mercator	**System Datum:**	Mean Sea Level
Geo Datum:	European 1950 - Mean		Using Well Reference Point
Map Zone:	Zone 31N (0 E to 6 E)		Using geodetic scale factor

Site	Volve F, 15/9				
Site Position:		**Northing:**	6,478,563.52 m	**Latitude:**	58° 26' 29.807 N
From:	Map	**Easting:**	435,050.02 m	**Longitude:**	1° 53' 14.929 E
Position Uncertainty:	0.00 m	**Slot Radius:**	in	**Grid Convergence:**	-0.95 °

Well	15/9-F-12					
Well Position	**+N/-S**	2.70 m	**Northing:**	6,478,566.22 m	**Latitude:**	58° 26' 29.894 N
	+E/-W	0.19 m	**Easting:**	435,050.21 m	**Longitude:**	1° 53' 14.937 E
Position Uncertainty		0.00 m	**Wellhead Depth:**	91.00 m	**Water Depth:**	91.00 m

Wellbore	F-12				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	GNETICREFERENCE	3/1/2007	-2.34	71.63	50,321

Design	F-12				
Audit Notes:					
Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	145.90

Vertical Section:	**Depth From (TVD) (m)**	**+N/-S (m)**	**+E/-W (m)**	**Direction (°)**
	145.90	2.70	0.19	104.32

Survey Program **Date** 10/9/2007

From (m)	To (m)	Survey (Wellbore)	Tool Name	Description
174.00	2,464.55	14" Casing Gyro Survey (F-12)	Wellbore Surveyor, cont	Gyro Tool from GD
2,464.55	2,536.07	17.5" Section MWD Survey (F-12)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)
2,536.07	3,081.25	12.25" Section MWD Survey (F-12)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)
3,081.25	3,520.00	8.5" Section MWD Survey (F-12)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)

Position uncertainty and bias at survey station

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Highside Error (m)	Highside Bias (m)	Lateral Error (m)	Lateral Bias (m)	Vertical Error (m)	Vertical Bias (m)	Magnitude of Bias (m)	Semi-major Error (m)	Semi-minor Error (m)	Semi-minor Azimuth (°)	Tool
145.90	0.00	0.00	145.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	UNDEFINED
174.00	0.12	166.21	174.00	0.06	0.00	0.06	0.00	0.86	0.00	0.00	0.06	0.06	45.00	Wellbore Surveyor, cont (1)
204.00	0.08	159.79	204.00	0.19	0.00	0.19	0.00	0.86	0.00	0.00	0.19	0.19	74.02	Wellbore Surveyor, cont (1)
234.00	0.15	113.27	234.00	0.32	0.00	0.32	0.00	0.87	0.00	0.00	0.32	0.32	63.47	Wellbore Surveyor, cont (1)
264.00	0.25	94.15	264.00	0.45	0.00	0.45	0.00	0.87	0.00	0.00	0.45	0.44	45.00	Wellbore Surveyor, cont (1)
294.00	0.34	83.77	294.00	0.58	0.00	0.58	0.00	0.88	0.00	0.00	0.58	0.57	37.41	Wellbore Surveyor, cont (1)
324.00	0.36	81.51	324.00	0.70	0.00	0.70	0.00	0.90	0.00	0.00	0.71	0.70	28.50	Wellbore Surveyor, cont (1)
354.00	0.46	79.36	354.00	0.83	0.00	0.83	0.00	0.91	0.00	0.00	0.84	0.83	21.92	Wellbore Surveyor, cont (1)

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Output errors are at**	2.45 sigma
		Database:	EDM Oracle

Position uncertainty and bias at survey station

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Highside Error (m)	Highside Bias (m)	Lateral Error (m)	Lateral Bias (m)	Vertical Error (m)	Vertical Bias (m)	Magnitude of Bias (m)	Semi-major Error (m)	Semi-minor Error (m)	Semi-minor Azimuth (°)	Tool
384.00	0.65	66.92	384.00	0.96	0.00	0.96	0.00	0.93	0.00	0.00	0.97	0.96	16.12	Wellbore Surveyor, cont (1)
414.00	1.09	38.86	413.99	1.09	0.00	1.09	0.00	0.94	0.00	0.00	1.09	1.09	9.53	Wellbore Surveyor, cont (1)
444.00	2.91	27.73	443.97	1.21	0.00	1.22	0.00	0.96	0.00	0.00	1.22	1.21	1.93	Wellbore Surveyor, cont (1)
474.00	4.85	26.01	473.90	1.34	0.00	1.35	0.00	0.98	0.00	0.00	1.35	1.34	174.12	Wellbore Surveyor, cont (1)
504.00	6.49	27.94	503.76	1.47	0.00	1.48	0.00	1.01	0.00	0.00	1.48	1.47	169.11	Wellbore Surveyor, cont (1)
534.00	7.69	30.42	533.53	1.59	0.00	1.60	0.00	1.03	0.00	0.00	1.61	1.60	168.60	Wellbore Surveyor, cont (1)
564.00	6.95	32.03	563.28	1.72	0.00	1.73	0.00	1.06	0.00	0.00	1.74	1.73	172.33	Wellbore Surveyor, cont (1)
594.00	5.54	30.06	593.10	1.85	0.00	1.86	0.00	1.09	0.00	0.00	1.87	1.85	176.25	Wellbore Surveyor, cont (1)
624.00	4.90	17.77	622.98	1.98	0.00	1.99	0.00	1.12	0.00	0.00	1.99	1.98	177.59	Wellbore Surveyor, cont (1)
654.00	5.08	0.38	652.87	2.11	0.00	2.12	0.00	1.15	0.00	0.00	2.12	2.11	177.28	Wellbore Surveyor, cont (1)
684.00	5.95	334.67	682.73	2.23	0.00	2.25	0.00	1.18	0.00	0.00	2.25	2.24	176.47	Wellbore Surveyor, cont (1)
714.00	6.39	320.18	712.56	2.36	0.00	2.37	0.00	1.21	0.00	0.00	2.38	2.37	174.35	Wellbore Surveyor, cont (1)
744.00	6.80	303.74	742.36	2.49	0.00	2.50	0.00	1.25	0.00	0.00	2.50	2.49	170.39	Wellbore Surveyor, cont (1)
774.00	8.44	288.20	772.10	2.60	0.00	2.62	0.00	1.28	0.00	0.00	2.63	2.62	165.32	Wellbore Surveyor, cont (1)
804.00	11.14	278.45	801.66	2.71	0.00	2.75	0.00	1.31	0.00	0.00	2.76	2.75	157.24	Wellbore Surveyor, cont (1)
834.00	13.14	272.24	830.99	2.82	0.00	2.88	0.00	1.35	0.00	0.00	2.88	2.88	136.41	Wellbore Surveyor, cont (1)
864.00	14.81	266.26	860.11	2.92	0.00	3.01	0.00	1.38	0.00	0.00	3.01	3.00	107.67	Wellbore Surveyor, cont (1)
893.00	14.99	264.04	888.13	3.04	0.00	3.13	0.00	1.42	0.00	0.00	3.13	3.12	95.56	Wellbore Surveyor, cont (1)
903.00	14.51	263.13	897.80	3.08	0.00	3.18	0.00	1.43	0.00	0.00	3.18	3.16	93.62	Wellbore Surveyor, cont (1)
913.00	14.08	262.05	907.49	3.13	0.00	3.22	0.00	1.45	0.00	0.00	3.22	3.19	91.85	Wellbore Surveyor, cont (1)
923.00	13.81	261.01	917.20	3.17	0.00	3.26	0.00	1.46	0.00	0.00	3.26	3.23	90.46	Wellbore Surveyor, cont (1)
933.00	13.78	260.55	926.91	3.21	0.00	3.31	0.00	1.48	0.00	0.00	3.31	3.27	89.28	Wellbore Surveyor, cont (1)
943.00	13.86	260.53	936.62	3.25	0.00	3.35	0.00	1.49	0.00	0.00	3.35	3.32	88.24	Wellbore Surveyor, cont (1)
953.00	13.96	260.58	946.33	3.29	0.00	3.39	0.00	1.51	0.00	0.00	3.39	3.36	87.33	Wellbore Surveyor, cont (1)
963.00	14.13	261.38	956.03	3.33	0.00	3.44	0.00	1.52	0.00	0.00	3.44	3.40	86.52	Wellbore Surveyor, cont (1)
973.00	14.43	263.23	965.72	3.37	0.00	3.48	0.00	1.53	0.00	0.00	3.48	3.44	85.78	Wellbore Surveyor, cont (1)
983.00	14.70	264.88	975.40	3.41	0.00	3.52	0.00	1.55	0.00	0.00	3.52	3.48	85.19	Wellbore Surveyor, cont (1)
993.00	14.91	265.80	985.06	3.45	0.00	3.57	0.00	1.56	0.00	0.00	3.57	3.52	84.82	Wellbore Surveyor, cont (1)
1,003.00	15.04	266.46	994.72	3.49	0.00	3.61	0.00	1.58	0.00	0.00	3.61	3.56	84.57	Wellbore Surveyor, cont (1)
1,013.00	15.13	267.49	1,004.38	3.53	0.00	3.65	0.00	1.59	0.00	0.00	3.65	3.60	84.33	Wellbore Surveyor, cont (1)
1,023.00	15.14	268.09	1,014.03	3.57	0.00	3.69	0.00	1.61	0.00	0.00	3.69	3.64	84.16	Wellbore Surveyor, cont (1)
1,033.00	15.07	268.61	1,023.69	3.61	0.00	3.73	0.00	1.63	0.00	0.00	3.73	3.68	84.06	Wellbore Surveyor, cont (1)
1,043.00	14.54	269.28	1,033.36	3.66	0.00	3.77	0.00	1.64	0.00	0.00	3.77	3.72	83.99	Wellbore Surveyor, cont (1)
1,053.00	14.23	269.64	1,043.04	3.71	0.00	3.82	0.00	1.66	0.00	0.00	3.82	3.76	83.95	Wellbore Surveyor, cont (1)
1,063.00	14.15	269.65	1,052.74	3.75	0.00	3.86	0.00	1.68	0.00	0.00	3.86	3.80	83.94	Wellbore Surveyor, cont (1)
1,073.00	14.22	269.22	1,062.43	3.79	0.00	3.90	0.00	1.69	0.00	0.00	3.90	3.84	83.95	Wellbore Surveyor, cont (1)
1,083.00	14.38	267.93	1,072.12	3.83	0.00	3.94	0.00	1.71	0.00	0.00	3.94	3.88	84.00	Wellbore Surveyor, cont (1)
1,093.00	14.59	265.82	1,081.81	3.87	0.00	3.98	0.00	1.72	0.00	0.00	3.98	3.92	84.10	Wellbore Surveyor, cont (1)
1,103.00	14.67	263.48	1,091.48	3.91	0.00	4.03	0.00	1.74	0.00	0.00	4.03	3.96	84.19	Wellbore Surveyor, cont (1)
1,113.00	14.82	260.96	1,101.15	3.95	0.00	4.07	0.00	1.76	0.00	0.00	4.07	4.00	84.23	Wellbore Surveyor, cont (1)
1,123.00	15.14	258.59	1,110.81	3.98	0.00	4.11	0.00	1.77	0.00	0.00	4.11	4.04	84.23	Wellbore Surveyor, cont (1)
1,133.00	15.71	256.39	1,120.45	4.02	0.00	4.15	0.00	1.79	0.00	0.00	4.15	4.08	84.19	Wellbore Surveyor, cont (1)
1,143.00	16.43	254.47	1,130.06	4.05	0.00	4.19	0.00	1.81	0.00	0.00	4.19	4.12	84.10	Wellbore Surveyor, cont (1)
1,153.00	17.58	252.27	1,139.62	4.07	0.00	4.23	0.00	1.82	0.00	0.00	4.23	4.16	83.98	Wellbore Surveyor, cont (1)
1,163.00	18.82	250.54	1,149.12	4.09	0.00	4.27	0.00	1.84	0.00	0.00	4.27	4.20	83.82	Wellbore Surveyor, cont (1)
1,173.00	19.84	248.95	1,158.56	4.12	0.00	4.31	0.00	1.85	0.00	0.00	4.31	4.24	83.52	Wellbore Surveyor, cont (1)
1,183.00	20.52	248.22	1,167.95	4.15	0.00	4.35	0.00	1.87	0.00	0.00	4.36	4.28	83.05	Wellbore Surveyor, cont (1)
1,193.00	20.78	248.08	1,177.30	4.18	0.00	4.39	0.00	1.88	0.00	0.00	4.40	4.32	82.39	Wellbore Surveyor, cont (1)
1,203.00	20.87	248.00	1,186.65	4.22	0.00	4.43	0.00	1.90	0.00	0.00	4.44	4.36	81.65	Wellbore Surveyor, cont (1)
1,213.00	20.57	248.50	1,196.00	4.27	0.00	4.48	0.00	1.92	0.00	0.00	4.48	4.39	80.86	Wellbore Surveyor, cont (1)
1,223.00	19.87	249.42	1,205.39	4.32	0.00	4.52	0.00	1.94	0.00	0.00	4.52	4.43	80.06	Wellbore Surveyor, cont (1)
1,233.00	19.22	250.72	1,214.81	4.37	0.00	4.56	0.00	1.96	0.00	0.00	4.57	4.47	79.33	Wellbore Surveyor, cont (1)
1,243.00	18.88	251.85	1,224.26	4.42	0.00	4.61	0.00	1.98	0.00	0.00	4.61	4.51	78.71	Wellbore Surveyor, cont (1)
1,253.00	18.83	252.46	1,233.73	4.46	0.00	4.65	0.00	2.00	0.00	0.00	4.65	4.55	78.23	Wellbore Surveyor, cont (1)

Statoil

Error Ellipse Report

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Output errors are at**	2.45 sigma
		Database:	EDM Oracle

Position uncertainty and bias at survey station

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Highside Error (m)	Highside Bias (m)	Lateral Error (m)	Lateral Bias (m)	Vertical Error (m)	Vertical Bias (m)	Magnitude of Bias (m)	Semi-major Error (m)	Semi-minor Error (m)	Semi-minor Azimuth (°)	Tool
1,263.00	19.07	252.60	1,243.18	4.50	0.00	4.69	0.00	2.02	0.00	0.00	4.70	4.59	77.83	Wellbore Surveyor, cont (1)
1,273.00	19.35	252.60	1,252.63	4.53	0.00	4.74	0.00	2.04	0.00	0.00	4.74	4.63	77.49	Wellbore Surveyor, cont (1)
1,283.00	19.47	252.47	1,262.06	4.57	0.00	4.78	0.00	2.05	0.00	0.00	4.78	4.67	77.16	Wellbore Surveyor, cont (1)
1,293.00	19.09	252.04	1,271.50	4.62	0.00	4.83	0.00	2.07	0.00	0.00	4.83	4.70	76.86	Wellbore Surveyor, cont (1)
1,303.00	17.98	251.23	1,280.98	4.67	0.00	4.87	0.00	2.09	0.00	0.00	4.87	4.74	76.57	Wellbore Surveyor, cont (1)
1,313.00	16.56	250.46	1,290.53	4.73	0.00	4.91	0.00	2.12	0.00	0.00	4.92	4.78	76.28	Wellbore Surveyor, cont (1)
1,323.00	15.24	250.09	1,300.14	4.79	0.00	4.96	0.00	2.14	0.00	0.00	4.96	4.82	76.00	Wellbore Surveyor, cont (1)
1,333.00	14.36	250.04	1,309.81	4.84	0.00	5.00	0.00	2.16	0.00	0.00	5.00	4.86	75.81	Wellbore Surveyor, cont (1)
1,343.00	14.09	249.89	1,319.51	4.89	0.00	5.04	0.00	2.18	0.00	0.00	5.04	4.90	75.71	Wellbore Surveyor, cont (1)
1,353.00	14.20	248.89	1,329.20	4.93	0.00	5.08	0.00	2.20	0.00	0.00	5.09	4.94	75.62	Wellbore Surveyor, cont (1)
1,363.00	14.61	247.86	1,338.89	4.97	0.00	5.13	0.00	2.22	0.00	0.00	5.13	4.98	75.55	Wellbore Surveyor, cont (1)
1,373.00	15.35	247.18	1,348.55	5.00	0.00	5.17	0.00	2.24	0.00	0.00	5.17	5.02	75.48	Wellbore Surveyor, cont (1)
1,383.00	16.31	246.75	1,358.17	5.03	0.00	5.21	0.00	2.25	0.00	0.00	5.21	5.06	75.40	Wellbore Surveyor, cont (1)
1,393.00	17.11	246.17	1,367.75	5.06	0.00	5.25	0.00	2.27	0.00	0.00	5.25	5.10	75.30	Wellbore Surveyor, cont (1)
1,403.00	17.79	245.40	1,377.29	5.09	0.00	5.29	0.00	2.29	0.00	0.00	5.29	5.15	75.18	Wellbore Surveyor, cont (1)
1,413.00	18.50	244.47	1,386.79	5.12	0.00	5.33	0.00	2.31	0.00	0.00	5.33	5.19	75.03	Wellbore Surveyor, cont (1)
1,423.00	19.40	243.27	1,396.25	5.15	0.00	5.37	0.00	2.33	0.00	0.00	5.37	5.23	74.86	Wellbore Surveyor, cont (1)
1,433.00	20.36	242.01	1,405.65	5.17	0.00	5.41	0.00	2.35	0.00	0.00	5.42	5.26	74.66	Wellbore Surveyor, cont (1)
1,443.00	21.22	240.96	1,415.00	5.19	0.00	5.45	0.00	2.37	0.00	0.00	5.46	5.30	74.40	Wellbore Surveyor, cont (1)
1,453.00	22.14	239.94	1,424.29	5.22	0.00	5.49	0.00	2.39	0.00	0.00	5.50	5.34	74.10	Wellbore Surveyor, cont (1)
1,463.00	22.83	239.04	1,433.53	5.24	0.00	5.53	0.00	2.41	0.00	0.00	5.54	5.38	73.73	Wellbore Surveyor, cont (1)
1,473.00	22.85	238.62	1,442.75	5.28	0.00	5.57	0.00	2.43	0.00	0.00	5.58	5.42	73.28	Wellbore Surveyor, cont (1)
1,483.00	22.44	238.58	1,451.98	5.33	0.00	5.62	0.00	2.45	0.00	0.00	5.63	5.46	72.77	Wellbore Surveyor, cont (1)
1,493.00	21.71	239.22	1,461.24	5.38	0.00	5.66	0.00	2.47	0.00	0.00	5.67	5.49	72.24	Wellbore Surveyor, cont (1)
1,503.00	21.01	240.26	1,470.56	5.44	0.00	5.71	0.00	2.49	0.00	0.00	5.71	5.53	71.73	Wellbore Surveyor, cont (1)
1,513.00	20.67	241.23	1,479.90	5.49	0.00	5.75	0.00	2.52	0.00	0.00	5.76	5.57	71.27	Wellbore Surveyor, cont (1)
1,523.00	20.66	242.19	1,489.26	5.53	0.00	5.80	0.00	2.54	0.00	0.00	5.80	5.61	70.86	Wellbore Surveyor, cont (1)
1,533.00	20.83	243.57	1,498.61	5.57	0.00	5.84	0.00	2.56	0.00	0.00	5.84	5.65	70.49	Wellbore Surveyor, cont (1)
1,543.00	20.97	245.58	1,507.95	5.61	0.00	5.89	0.00	2.58	0.00	0.00	5.89	5.69	70.15	Wellbore Surveyor, cont (1)
1,553.00	21.13	247.64	1,517.29	5.65	0.00	5.93	0.00	2.60	0.00	0.00	5.93	5.73	69.86	Wellbore Surveyor, cont (1)
1,563.00	21.38	249.38	1,526.61	5.68	0.00	5.98	0.00	2.63	0.00	0.00	5.98	5.76	69.63	Wellbore Surveyor, cont (1)
1,573.00	21.64	251.07	1,535.91	5.72	0.00	6.03	0.00	2.65	0.00	0.00	6.03	5.80	69.46	Wellbore Surveyor, cont (1)
1,583.00	21.87	252.47	1,545.20	5.76	0.00	6.07	0.00	2.67	0.00	0.00	6.07	5.84	69.35	Wellbore Surveyor, cont (1)
1,593.00	22.08	253.27	1,554.47	5.80	0.00	6.12	0.00	2.69	0.00	0.00	6.12	5.88	69.29	Wellbore Surveyor, cont (1)
1,603.00	22.29	253.50	1,563.73	5.83	0.00	6.16	0.00	2.72	0.00	0.00	6.17	5.92	69.27	Wellbore Surveyor, cont (1)
1,613.00	22.47	253.52	1,572.98	5.87	0.00	6.21	0.00	2.74	0.00	0.00	6.21	5.96	69.28	Wellbore Surveyor, cont (1)
1,623.00	22.66	253.41	1,582.21	5.91	0.00	6.26	0.00	2.76	0.00	0.00	6.26	5.99	69.30	Wellbore Surveyor, cont (1)
1,633.00	22.93	253.25	1,591.43	5.94	0.00	6.31	0.00	2.78	0.00	0.00	6.31	6.03	69.32	Wellbore Surveyor, cont (1)
1,643.00	23.20	253.11	1,600.63	5.98	0.00	6.35	0.00	2.81	0.00	0.00	6.36	6.07	69.35	Wellbore Surveyor, cont (1)
1,653.00	23.40	252.96	1,609.82	6.01	0.00	6.40	0.00	2.83	0.00	0.00	6.40	6.11	69.37	Wellbore Surveyor, cont (1)
1,663.00	23.53	252.89	1,618.99	6.05	0.00	6.45	0.00	2.85	0.00	0.00	6.45	6.14	69.40	Wellbore Surveyor, cont (1)
1,673.00	23.59	252.88	1,628.16	6.09	0.00	6.50	0.00	2.88	0.00	0.00	6.50	6.18	69.42	Wellbore Surveyor, cont (1)
1,683.00	23.66	252.91	1,637.32	6.13	0.00	6.55	0.00	2.90	0.00	0.00	6.55	6.22	69.45	Wellbore Surveyor, cont (1)
1,693.00	23.70	252.85	1,646.48	6.17	0.00	6.60	0.00	2.92	0.00	0.00	6.60	6.26	69.48	Wellbore Surveyor, cont (1)
1,703.00	23.73	252.87	1,655.63	6.20	0.00	6.65	0.00	2.95	0.00	0.00	6.65	6.30	69.51	Wellbore Surveyor, cont (1)
1,713.00	23.78	252.93	1,664.78	6.24	0.00	6.70	0.00	2.97	0.00	0.00	6.70	6.33	69.55	Wellbore Surveyor, cont (1)
1,723.00	23.76	252.96	1,673.94	6.28	0.00	6.75	0.00	3.00	0.00	0.00	6.75	6.37	69.58	Wellbore Surveyor, cont (1)
1,733.00	23.71	252.97	1,683.09	6.33	0.00	6.80	0.00	3.02	0.00	0.00	6.80	6.41	69.62	Wellbore Surveyor, cont (1)
1,743.00	23.70	253.01	1,692.25	6.37	0.00	6.85	0.00	3.05	0.00	0.00	6.85	6.45	69.66	Wellbore Surveyor, cont (1)
1,753.00	23.68	253.05	1,701.40	6.41	0.00	6.90	0.00	3.07	0.00	0.00	6.90	6.48	69.70	Wellbore Surveyor, cont (1)
1,763.00	23.63	252.90	1,710.56	6.45	0.00	6.96	0.00	3.09	0.00	0.00	6.96	6.52	69.74	Wellbore Surveyor, cont (1)
1,773.00	23.56	252.97	1,719.73	6.49	0.00	7.01	0.00	3.12	0.00	0.00	7.01	6.56	69.78	Wellbore Surveyor, cont (1)
1,783.00	23.50	252.85	1,728.90	6.53	0.00	7.06	0.00	3.14	0.00	0.00	7.06	6.60	69.82	Wellbore Surveyor, cont (1)
1,793.00	23.40	252.68	1,738.07	6.57	0.00	7.11	0.00	3.17	0.00	0.00	7.11	6.63	69.85	Wellbore Surveyor, cont (1)

Statoil

Error Ellipse Report

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Output errors are at**	2.45 sigma
		Database:	EDM Oracle

Position uncertainty and bias at survey station

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Highside Error (m)	Highside Bias (m)	Lateral Error (m)	Lateral Bias (m)	Vertical Error (m)	Vertical Bias (m)	Magnitude of Bias (m)	Semi-major Error (m)	Semi-minor Error (m)	Semi-minor Azimuth (°)	Tool
1,803.00	23.37	252.68	1,747.25	6.62	0.00	7.17	0.00	3.19	0.00	0.00	7.17	6.67	69.89	Wellbore Surveyor, cont (1)
1,813.00	23.36	252.63	1,756.43	6.66	0.00	7.22	0.00	3.22	0.00	0.00	7.22	6.71	69.92	Wellbore Surveyor, cont (1)
1,823.00	23.39	252.65	1,765.61	6.70	0.00	7.27	0.00	3.24	0.00	0.00	7.27	6.75	69.95	Wellbore Surveyor, cont (1)
1,833.00	23.45	252.52	1,774.78	6.73	0.00	7.33	0.00	3.27	0.00	0.00	7.33	6.78	69.98	Wellbore Surveyor, cont (1)
1,843.00	23.48	252.56	1,783.96	6.77	0.00	7.38	0.00	3.29	0.00	0.00	7.38	6.82	70.01	Wellbore Surveyor, cont (1)
1,853.00	23.41	252.72	1,793.13	6.82	0.00	7.43	0.00	3.32	0.00	0.00	7.44	6.86	70.05	Wellbore Surveyor, cont (1)
1,863.00	23.39	252.72	1,802.31	6.86	0.00	7.49	0.00	3.35	0.00	0.00	7.49	6.90	70.08	Wellbore Surveyor, cont (1)
1,873.00	23.47	252.78	1,811.48	6.90	0.00	7.54	0.00	3.37	0.00	0.00	7.54	6.94	70.11	Wellbore Surveyor, cont (1)
1,883.00	23.51	252.91	1,820.66	6.94	0.00	7.60	0.00	3.40	0.00	0.00	7.60	6.97	70.14	Wellbore Surveyor, cont (1)
1,893.00	23.49	253.11	1,829.83	6.98	0.00	7.65	0.00	3.42	0.00	0.00	7.66	7.01	70.18	Wellbore Surveyor, cont (1)
1,903.00	23.50	253.09	1,839.00	7.02	0.00	7.71	0.00	3.45	0.00	0.00	7.71	7.05	70.22	Wellbore Surveyor, cont (1)
1,913.00	23.55	253.15	1,848.17	7.06	0.00	7.77	0.00	3.47	0.00	0.00	7.77	7.09	70.25	Wellbore Surveyor, cont (1)
1,923.00	23.58	253.33	1,857.33	7.10	0.00	7.82	0.00	3.50	0.00	0.00	7.82	7.13	70.29	Wellbore Surveyor, cont (1)
1,933.00	23.56	253.55	1,866.50	7.14	0.00	7.88	0.00	3.53	0.00	0.00	7.88	7.16	70.33	Wellbore Surveyor, cont (1)
1,943.00	23.58	253.60	1,875.66	7.18	0.00	7.93	0.00	3.55	0.00	0.00	7.94	7.20	70.38	Wellbore Surveyor, cont (1)
1,953.00	23.57	253.53	1,884.83	7.22	0.00	7.99	0.00	3.58	0.00	0.00	7.99	7.24	70.42	Wellbore Surveyor, cont (1)
1,963.00	23.19	253.55	1,894.01	7.27	0.00	8.05	0.00	3.60	0.00	0.00	8.05	7.28	70.46	Wellbore Surveyor, cont (1)
1,973.00	22.48	253.50	1,903.22	7.32	0.00	8.11	0.00	3.63	0.00	0.00	8.11	7.32	70.51	Wellbore Surveyor, cont (1)
1,983.00	21.77	253.27	1,912.49	7.38	0.00	8.16	0.00	3.66	0.00	0.00	8.17	7.35	70.54	Wellbore Surveyor, cont (1)
1,993.00	21.15	252.84	1,921.79	7.43	0.00	8.22	0.00	3.69	0.00	0.00	8.22	7.39	70.58	Wellbore Surveyor, cont (1)
2,003.00	20.52	252.07	1,931.14	7.48	0.00	8.28	0.00	3.71	0.00	0.00	8.28	7.43	70.60	Wellbore Surveyor, cont (1)
2,013.00	19.83	251.05	1,940.53	7.53	0.00	8.34	0.00	3.74	0.00	0.00	8.34	7.47	70.61	Wellbore Surveyor, cont (1)
2,023.00	19.24	249.89	1,949.95	7.58	0.00	8.39	0.00	3.77	0.00	0.00	8.39	7.51	70.61	Wellbore Surveyor, cont (1)
2,033.00	18.67	248.97	1,959.41	7.63	0.00	8.45	0.00	3.79	0.00	0.00	8.45	7.55	70.60	Wellbore Surveyor, cont (1)
2,043.00	18.09	248.27	1,968.90	7.68	0.00	8.51	0.00	3.82	0.00	0.00	8.51	7.59	70.57	Wellbore Surveyor, cont (1)
2,053.00	17.42	247.76	1,978.42	7.73	0.00	8.56	0.00	3.85	0.00	0.00	8.56	7.63	70.53	Wellbore Surveyor, cont (1)
2,063.00	16.64	247.57	1,987.98	7.78	0.00	8.62	0.00	3.88	0.00	0.00	8.62	7.67	70.50	Wellbore Surveyor, cont (1)
2,073.00	15.74	247.32	1,997.59	7.83	0.00	8.67	0.00	3.90	0.00	0.00	8.68	7.71	70.46	Wellbore Surveyor, cont (1)
2,083.00	14.82	246.86	2,007.23	7.87	0.00	8.72	0.00	3.93	0.00	0.00	8.72	7.75	70.44	Wellbore Surveyor, cont (1)
2,093.00	14.11	246.33	2,016.92	7.92	0.00	8.76	0.00	3.96	0.00	0.00	8.76	7.79	70.43	Wellbore Surveyor, cont (1)
2,103.00	13.55	245.78	2,026.63	7.97	0.00	8.79	0.00	3.98	0.00	0.00	8.80	7.83	70.42	Wellbore Surveyor, cont (1)
2,113.00	12.56	245.14	2,036.37	8.01	0.00	8.83	0.00	4.01	0.00	0.00	8.84	7.87	70.42	Wellbore Surveyor, cont (1)
2,123.00	11.76	244.30	2,046.14	8.06	0.00	8.87	0.00	4.04	0.00	0.00	8.88	7.92	70.41	Wellbore Surveyor, cont (1)
2,133.00	11.30	243.19	2,055.94	8.10	0.00	8.90	0.00	4.06	0.00	0.00	8.92	7.96	70.41	Wellbore Surveyor, cont (1)
2,143.00	10.90	242.00	2,065.75	8.15	0.00	8.93	0.00	4.09	0.00	0.00	8.95	8.00	70.40	Wellbore Surveyor, cont (1)
2,153.00	10.37	240.37	2,075.58	8.20	0.00	8.97	0.00	4.12	0.00	0.00	8.99	8.04	70.40	Wellbore Surveyor, cont (1)
2,163.00	9.96	237.45	2,085.43	8.25	0.00	8.99	0.00	4.14	0.00	0.00	9.03	8.08	70.39	Wellbore Surveyor, cont (1)
2,173.00	9.68	233.80	2,095.28	8.32	0.00	9.00	0.00	4.17	0.00	0.00	9.07	8.13	70.39	Wellbore Surveyor, cont (1)
2,183.00	9.51	229.85	2,105.14	8.39	0.00	9.00	0.00	4.19	0.00	0.00	9.11	8.17	70.39	Wellbore Surveyor, cont (1)
2,193.00	9.30	225.13	2,115.00	8.48	0.00	8.99	0.00	4.22	0.00	0.00	9.15	8.21	70.38	Wellbore Surveyor, cont (1)
2,203.00	9.20	220.24	2,124.87	8.58	0.00	8.96	0.00	4.25	0.00	0.00	9.19	8.25	70.38	Wellbore Surveyor, cont (1)
2,213.00	9.10	215.05	2,134.75	8.68	0.00	8.93	0.00	4.27	0.00	0.00	9.23	8.30	70.38	Wellbore Surveyor, cont (1)
2,223.00	9.02	209.82	2,144.62	8.79	0.00	8.89	0.00	4.30	0.00	0.00	9.27	8.34	70.38	Wellbore Surveyor, cont (1)
2,233.00	8.95	204.57	2,154.50	8.90	0.00	8.84	0.00	4.32	0.00	0.00	9.30	8.38	70.38	Wellbore Surveyor, cont (1)
2,243.00	8.91	199.61	2,164.38	9.01	0.00	8.80	0.00	4.35	0.00	0.00	9.34	8.42	70.38	Wellbore Surveyor, cont (1)
2,253.00	8.98	195.16	2,174.26	9.10	0.00	8.77	0.00	4.37	0.00	0.00	9.38	8.46	70.38	Wellbore Surveyor, cont (1)
2,263.00	9.11	189.99	2,184.13	9.19	0.00	8.74	0.00	4.40	0.00	0.00	9.42	8.51	70.38	Wellbore Surveyor, cont (1)
2,273.00	9.31	184.67	2,194.01	9.28	0.00	8.71	0.00	4.42	0.00	0.00	9.46	8.55	70.39	Wellbore Surveyor, cont (1)
2,283.00	9.55	179.31	2,203.87	9.35	0.00	8.69	0.00	4.45	0.00	0.00	9.50	8.59	70.40	Wellbore Surveyor, cont (1)
2,293.00	9.88	174.47	2,213.73	9.40	0.00	8.69	0.00	4.47	0.00	0.00	9.54	8.63	70.41	Wellbore Surveyor, cont (1)
2,303.00	10.25	171.03	2,223.57	9.44	0.00	8.71	0.00	4.50	0.00	0.00	9.57	8.67	70.42	Wellbore Surveyor, cont (1)
2,313.00	10.48	167.42	2,233.41	9.48	0.00	8.73	0.00	4.52	0.00	0.00	9.61	8.72	70.44	Wellbore Surveyor, cont (1)
2,323.00	10.69	163.89	2,243.24	9.51	0.00	8.76	0.00	4.55	0.00	0.00	9.65	8.76	70.47	Wellbore Surveyor, cont (1)
2,333.00	10.99	161.52	2,253.06	9.53	0.00	8.80	0.00	4.57	0.00	0.00	9.69	8.80	70.49	Wellbore Surveyor, cont (1)

Statoil

Error Ellipse Report

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Output errors are at**	2.45 sigma
		Database:	EDM Oracle

Position uncertainty and bias at survey station

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Highside Error (m)	Highside Bias (m)	Lateral Error (m)	Lateral Bias (m)	Vertical Error (m)	Vertical Bias (m)	Magnitude of Bias (m)	Semi-major Error (m)	Semi-minor Error (m)	Semi-minor Azimuth (°)	Tool
2,343.00	11.41	158.88	2,262.87	9.55	0.00	8.84	0.00	4.60	0.00	0.00	9.73	8.84	70.52	Wellbore Surveyor, cont (1)
2,353.00	11.77	156.24	2,272.67	9.56	0.00	8.89	0.00	4.62	0.00	0.00	9.76	8.88	70.55	Wellbore Surveyor, cont (1)
2,363.00	12.25	153.98	2,282.45	9.57	0.00	8.93	0.00	4.65	0.00	0.00	9.80	8.92	70.59	Wellbore Surveyor, cont (1)
2,373.00	12.79	151.93	2,292.21	9.57	0.00	8.98	0.00	4.67	0.00	0.00	9.84	8.96	70.63	Wellbore Surveyor, cont (1)
2,383.00	13.35	149.87	2,301.95	9.57	0.00	9.04	0.00	4.70	0.00	0.00	9.88	9.00	70.68	Wellbore Surveyor, cont (1)
2,393.00	14.04	147.61	2,311.67	9.56	0.00	9.09	0.00	4.72	0.00	0.00	9.91	9.04	70.73	Wellbore Surveyor, cont (1)
2,403.00	14.66	145.72	2,321.35	9.55	0.00	9.15	0.00	4.74	0.00	0.00	9.95	9.08	70.78	Wellbore Surveyor, cont (1)
2,413.00	15.34	143.81	2,331.01	9.54	0.00	9.20	0.00	4.77	0.00	0.00	9.99	9.13	70.84	Wellbore Surveyor, cont (1)
2,423.00	15.89	141.95	2,340.65	9.52	0.00	9.26	0.00	4.79	0.00	0.00	10.02	9.17	70.91	Wellbore Surveyor, cont (1)
2,433.00	16.32	140.28	2,350.25	9.52	0.00	9.32	0.00	4.82	0.00	0.00	10.06	9.21	70.98	Wellbore Surveyor, cont (1)
2,443.00	16.72	138.81	2,359.84	9.51	0.00	9.37	0.00	4.84	0.00	0.00	10.10	9.25	71.07	Wellbore Surveyor, cont (1)
2,453.00	17.17	136.78	2,369.41	9.50	0.00	9.44	0.00	4.86	0.00	0.00	10.13	9.29	71.17	Wellbore Surveyor, cont (1)
2,463.00	17.67	134.92	2,378.95	9.48	0.00	9.50	0.00	4.89	0.00	0.00	10.17	9.33	71.28	Wellbore Surveyor, cont (1)
2,464.55	17.75	134.64	2,380.42	9.48	0.00	9.51	0.00	4.89	0.00	0.00	10.18	9.33	71.30	Wellbore Surveyor, cont (1)
2,493.74	18.80	129.52	2,408.14	9.39	0.00	9.63	0.00	4.96	0.00	0.00	10.23	9.39	71.55	Magnetic, std, non-mag (2)
2,536.07	20.39	125.56	2,448.02	9.23	0.00	9.70	0.00	5.07	0.00	0.00	10.24	9.40	71.95	Magnetic, std, non-mag (2)
2,576.99	21.70	125.92	2,486.21	9.17	0.00	9.72	0.00	5.18	0.00	0.00	10.25	9.41	72.68	Magnetic, std, non-mag (3)
2,617.92	26.34	124.65	2,523.59	8.86	0.00	9.78	0.00	5.28	0.00	0.00	10.26	9.44	73.91	Magnetic, std, non-mag (3)
2,658.30	30.56	121.61	2,559.08	8.52	0.00	9.89	0.00	5.38	0.00	0.00	10.30	9.48	76.13	Magnetic, std, non-mag (3)
2,699.07	33.11	117.41	2,593.72	8.26	0.00	10.06	0.00	5.47	0.00	0.00	10.36	9.54	79.74	Magnetic, std, non-mag (3)
2,738.83	35.52	115.77	2,626.56	8.07	0.00	10.23	0.00	5.57	0.00	0.00	10.45	9.60	84.50	Magnetic, std, non-mag (3)
2,779.26	41.25	113.83	2,658.24	7.62	0.00	10.47	0.00	5.66	0.00	0.00	10.61	9.67	90.22	Magnetic, std, non-mag (3)
2,820.02	45.33	112.36	2,687.90	7.31	0.00	10.77	0.00	5.75	0.00	0.00	10.86	9.73	95.97	Magnetic, std, non-mag (3)
2,860.02	49.20	108.88	2,715.05	7.00	0.00	11.16	0.00	5.84	0.00	0.00	11.19	9.77	100.41	Magnetic, std, non-mag (3)
2,900.45	51.78	104.36	2,740.77	6.80	0.00	11.62	0.00	5.92	0.00	0.00	11.62	9.80	103.19	Magnetic, std, non-mag (3)
2,939.72	53.48	102.53	2,764.61	6.72	0.00	12.12	0.00	6.01	0.00	0.00	12.12	9.81	104.57	Magnetic, std, non-mag (3)
2,980.29	54.35	103.04	2,788.51	6.71	0.00	12.70	0.00	6.10	0.00	0.00	12.71	9.82	105.33	Magnetic, std, non-mag (3)
3,008.61	54.95	103.40	2,804.89	6.71	0.00	13.15	0.00	6.16	0.00	0.00	13.15	9.83	105.67	Magnetic, std, non-mag (3)
3,060.63	54.55	99.95	2,834.92	6.80	0.00	13.99	0.00	6.28	0.00	0.00	14.02	9.85	105.84	Magnetic, std, non-mag (3)
3,081.25	54.06	97.21	2,846.95	6.87	0.00	14.30	0.00	6.33	0.00	0.00	14.39	9.85	105.72	Magnetic, std, non-mag (3)
3,136.60	53.84	95.71	2,879.53	6.95	0.00	15.02	0.00	6.45	0.00	0.00	15.14	9.86	105.26	Magnetic, std, non-mag (4)
3,172.51	53.90	98.14	2,900.70	6.92	0.00	15.44	0.00	6.51	0.00	0.00	15.51	9.86	105.01	Magnetic, std, non-mag (4)
3,216.39	53.86	101.30	2,926.57	6.91	0.00	16.00	0.00	6.59	0.00	0.00	16.02	9.87	104.79	Magnetic, std, non-mag (4)
3,257.05	53.34	103.39	2,950.70	6.95	0.00	16.53	0.00	6.67	0.00	0.00	16.54	9.88	104.70	Magnetic, std, non-mag (4)
3,297.38	53.81	105.77	2,974.65	6.96	0.00	17.09	0.00	6.75	0.00	0.00	17.10	9.90	104.73	Magnetic, std, non-mag (4)
3,337.63	53.10	107.03	2,998.62	7.03	0.00	17.68	0.00	6.84	0.00	0.00	17.69	9.92	104.83	Magnetic, std, non-mag (4)
3,375.41	53.01	106.59	3,021.33	7.05	0.00	18.27	0.00	6.92	0.00	0.00	18.27	9.93	104.95	Magnetic, std, non-mag (4)
3,416.55	53.14	107.02	3,046.04	7.09	0.00	18.93	0.00	7.02	0.00	0.00	18.94	9.96	105.07	Magnetic, std, non-mag (4)
3,456.15	52.97	106.74	3,069.84	7.13	0.00	19.60	0.00	7.11	0.00	0.00	19.60	9.98	105.19	Magnetic, std, non-mag (4)
3,495.52	52.87	105.59	3,093.58	7.16	0.00	20.29	0.00	7.21	0.00	0.00	20.29	10.01	105.26	Magnetic, std, non-mag (4)
3,520.00	52.87	105.59	3,108.36	7.19	0.00	20.73	0.00	7.27	0.00	0.00	20.73	10.02	105.29	Magnetic, std, non-mag (4)

Casing Points

Measured Depth (m)	Vertical Depth (m)	Name	Casing Diameter (in)	Hole Diameter (in)
251.00	251.00	30"	30.000	36.000
1,357.00	1,333.08	20"	20.000	26.000
2,506.00	2,419.73	14"	14.000	17.500
3,113.00	2,865.62	9 5/8"	9.625	12.250

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Output errors are at**	2.45 sigma
		Database:	EDM Oracle

Checked By: _____ Approved By: _____ Date: _____

STATOIL - Norway

SLEIPNER
Volve F
15/9-F-12
F-12

Design: F-12

Survey Report - Geographic

11 October, 2007

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Project SLEIPNER, Norway

Map System:	Universal Transverse Mercator	**System Datum:**	Mean Sea Level
Geo Datum:	European 1950 - Mean		Using Well Reference Point
Map Zone:	Zone 31N (0 E to 6 E)		Using geodetic scale factor

Site Volve F, 15/9

Site Position:		**Northing:**	6,478,563.52 m	**Latitude:**	58° 26' 29.807 N
From:	Map	**Easting:**	435,050.02 m	**Longitude:**	1° 53' 14.929 E
Position Uncertainty:	0.00 m	**Slot Radius:**	in	**Grid Convergence:**	-0.95 °

Well 15/9-F-12

Well Position	**+N/-S**	2.70 m	**Northing:**	6,478,566.22 m	**Latitude:**	58° 26' 29.894 N
	+E/-W	0.19 m	**Easting:**	435,050.21 m	**Longitude:**	1° 53' 14.937 E
Position Uncertainty		0.00 m	**Wellhead Depth:**	91.00 m	**Water Depth:**	91.00 m

Wellbore F-12

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	GNETICREFERENCE	3/1/2007	-2.34	71.63	50,321

Design F-12

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	145.90

Vertical Section:	Depth From (TVD) (m)	+N/-S (m)	+E/-W (m)	Direction (°)
	145.90	2.70	0.19	104.32

Survey Program **Date** 10/9/2007

From (m)	To (m)	Survey (Wellbore)	Tool Name	Description
174.00	2,464.55	14" Casing Gyro Survey (F-12)	Wellbore Surveyor, cont	Gyro Tool from GD
2,464.55	2,536.07	17.5" Section MWD Survey (F-12)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)
2,536.07	3,081.25	12.25" Section MWD Survey (F-12)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)
3,081.25	3,520.00	8.5" Section MWD Survey (F-12)	Magnetic, std, non-mag	Magnetic Tools (MWD, EMS)

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
145.90	0.00	0.00	145.90	2.70	0.19	6,478,566.22	435,050.21	58° 26' 29.894 N	1° 53' 14.937 E
174.00	0.12	166.21	174.00	2.67	0.20	6,478,566.19	435,050.22	58° 26' 29.893 N	1° 53' 14.938 E
204.00	0.08	159.79	204.00	2.62	0.21	6,478,566.14	435,050.23	58° 26' 29.892 N	1° 53' 14.939 E
234.00	0.15	113.27	234.00	2.58	0.25	6,478,566.10	435,050.28	58° 26' 29.890 N	1° 53' 14.942 E
264.00	0.25	94.15	264.00	2.56	0.36	6,478,566.08	435,050.38	58° 26' 29.890 N	1° 53' 14.948 E
294.00	0.34	83.77	294.00	2.57	0.51	6,478,566.09	435,050.53	58° 26' 29.890 N	1° 53' 14.957 E
324.00	0.36	81.51	324.00	2.59	0.70	6,478,566.11	435,050.72	58° 26' 29.891 N	1° 53' 14.969 E
354.00	0.46	79.36	354.00	2.63	0.91	6,478,566.15	435,050.93	58° 26' 29.892 N	1° 53' 14.982 E
384.00	0.65	66.92	384.00	2.72	1.19	6,478,566.24	435,051.21	58° 26' 29.895 N	1° 53' 14.999 E
414.00	1.09	38.86	413.99	3.01	1.52	6,478,566.53	435,051.54	58° 26' 29.905 N	1° 53' 15.019 E
444.00	2.91	27.73	443.97	3.90	2.06	6,478,567.42	435,052.08	58° 26' 29.934 N	1° 53' 15.051 E
474.00	4.85	26.01	473.90	5.72	2.97	6,478,569.24	435,052.99	58° 26' 29.993 N	1° 53' 15.105 E
504.00	6.49	27.94	503.76	8.35	4.32	6,478,571.87	435,054.34	58° 26' 30.079 N	1° 53' 15.186 E
534.00	7.69	30.42	533.53	11.58	6.13	6,478,575.10	435,056.15	58° 26' 30.184 N	1° 53' 15.294 E
564.00	6.95	32.03	563.28	14.85	8.11	6,478,578.37	435,058.12	58° 26' 30.291 N	1° 53' 15.413 E
594.00	5.54	30.06	593.10	17.64	9.79	6,478,581.16	435,059.81	58° 26' 30.382 N	1° 53' 15.514 E
624.00	4.90	17.77	622.98	20.12	10.91	6,478,583.63	435,060.93	58° 26' 30.463 N	1° 53' 15.580 E
654.00	5.08	0.38	652.87	22.66	11.31	6,478,586.18	435,061.33	58° 26' 30.545 N	1° 53' 15.602 E
684.00	5.95	334.67	682.73	25.40	10.65	6,478,588.91	435,060.67	58° 26' 30.633 N	1° 53' 15.559 E
714.00	6.39	320.18	712.56	28.09	8.92	6,478,591.60	435,058.94	58° 26' 30.719 N	1° 53' 15.449 E
744.00	6.80	303.74	742.36	30.36	6.37	6,478,593.87	435,056.39	58° 26' 30.791 N	1° 53' 15.290 E
774.00	8.44	288.20	772.10	32.03	2.80	6,478,595.54	435,052.82	58° 26' 30.843 N	1° 53' 15.069 E
804.00	11.14	278.45	801.66	33.14	-2.15	6,478,596.65	435,047.87	58° 26' 30.877 N	1° 53' 14.762 E
834.00	13.14	272.24	830.99	33.70	-8.43	6,478,597.21	435,041.59	58° 26' 30.891 N	1° 53' 14.375 E
864.00	14.81	266.26	860.11	33.59	-15.66	6,478,597.10	435,034.36	58° 26' 30.884 N	1° 53' 13.929 E
893.00	14.99	264.04	888.13	32.95	-23.09	6,478,596.47	435,026.94	58° 26' 30.859 N	1° 53' 13.472 E
903.00	14.51	263.13	897.80	32.67	-25.62	6,478,596.18	435,024.41	58° 26' 30.849 N	1° 53' 13.316 E
913.00	14.08	262.05	907.49	32.35	-28.07	6,478,595.86	435,021.96	58° 26' 30.837 N	1° 53' 13.166 E
923.00	13.81	261.01	917.20	32.00	-30.45	6,478,595.51	435,019.58	58° 26' 30.825 N	1° 53' 13.019 E
933.00	13.78	260.55	926.91	31.62	-32.81	6,478,595.13	435,017.22	58° 26' 30.811 N	1° 53' 12.874 E
943.00	13.86	260.53	936.62	31.22	-35.16	6,478,594.74	435,014.87	58° 26' 30.797 N	1° 53' 12.729 E
953.00	13.96	260.58	946.33	30.83	-37.54	6,478,594.34	435,012.50	58° 26' 30.783 N	1° 53' 12.584 E
963.00	14.13	261.38	956.03	30.45	-39.93	6,478,593.96	435,010.10	58° 26' 30.769 N	1° 53' 12.436 E
973.00	14.43	263.23	965.72	30.12	-42.38	6,478,593.63	435,007.66	58° 26' 30.757 N	1° 53' 12.286 E
983.00	14.70	264.88	975.40	29.86	-44.88	6,478,593.37	435,005.16	58° 26' 30.748 N	1° 53' 12.132 E
993.00	14.91	265.80	985.06	29.65	-47.43	6,478,593.16	435,002.61	58° 26' 30.740 N	1° 53' 11.975 E
1,003.00	15.04	266.46	994.72	29.48	-50.00	6,478,592.99	435,000.03	58° 26' 30.733 N	1° 53' 11.817 E
1,013.00	15.13	267.49	1,004.38	29.34	-52.60	6,478,592.85	434,997.44	58° 26' 30.727 N	1° 53' 11.657 E
1,023.00	15.14	268.09	1,014.03	29.24	-55.21	6,478,592.75	434,994.83	58° 26' 30.722 N	1° 53' 11.496 E
1,033.00	15.07	268.61	1,023.69	29.16	-57.82	6,478,592.68	434,992.23	58° 26' 30.718 N	1° 53' 11.336 E
1,043.00	14.54	269.28	1,033.36	29.12	-60.37	6,478,592.63	434,989.67	58° 26' 30.715 N	1° 53' 11.178 E
1,053.00	14.23	269.64	1,043.04	29.09	-62.85	6,478,592.61	434,987.19	58° 26' 30.713 N	1° 53' 11.025 E
1,063.00	14.15	269.65	1,052.74	29.08	-65.30	6,478,592.59	434,984.74	58° 26' 30.711 N	1° 53' 10.874 E
1,073.00	14.22	269.22	1,062.43	29.05	-67.75	6,478,592.57	434,982.29	58° 26' 30.709 N	1° 53' 10.723 E
1,083.00	14.38	267.93	1,072.12	28.99	-70.22	6,478,592.50	434,979.82	58° 26' 30.706 N	1° 53' 10.571 E
1,093.00	14.59	265.82	1,081.81	28.85	-72.72	6,478,592.37	434,977.33	58° 26' 30.700 N	1° 53' 10.417 E
1,103.00	14.67	263.48	1,091.48	28.62	-75.24	6,478,592.13	434,974.81	58° 26' 30.691 N	1° 53' 10.263 E
1,113.00	14.82	260.96	1,101.15	28.27	-77.76	6,478,591.79	434,972.29	58° 26' 30.679 N	1° 53' 10.108 E
1,123.00	15.14	258.59	1,110.81	27.81	-80.30	6,478,591.33	434,969.75	58° 26' 30.663 N	1° 53' 9.951 E
1,133.00	15.71	256.39	1,120.45	27.24	-82.90	6,478,590.75	434,967.15	58° 26' 30.643 N	1° 53' 9.792 E
1,143.00	16.43	254.47	1,130.06	26.54	-85.57	6,478,590.05	434,964.48	58° 26' 30.619 N	1° 53' 9.628 E
1,153.00	17.58	252.27	1,139.62	25.70	-88.38	6,478,589.22	434,961.68	58° 26' 30.590 N	1° 53' 9.456 E
1,163.00	18.82	250.54	1,149.12	24.71	-91.33	6,478,588.22	434,958.72	58° 26' 30.556 N	1° 53' 9.274 E
1,173.00	19.84	248.95	1,158.56	23.56	-94.44	6,478,587.07	434,955.61	58° 26' 30.518 N	1° 53' 9.084 E
1,183.00	20.52	248.22	1,167.95	22.30	-97.65	6,478,585.81	434,952.40	58° 26' 30.475 N	1° 53' 8.888 E

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Survey Report - Geographic

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
1,193.00	20.78	248.08	1,177.30	20.99	-100.92	6,478,584.50	434,949.13	58° 26' 30.431 N	1° 53' 8.687 E
1,203.00	20.87	248.00	1,186.65	19.66	-104.22	6,478,583.17	434,945.84	58° 26' 30.386 N	1° 53' 8.485 E
1,213.00	20.57	248.50	1,196.00	18.34	-107.51	6,478,581.86	434,942.55	58° 26' 30.342 N	1° 53' 8.284 E
1,223.00	19.87	249.42	1,205.39	17.10	-110.73	6,478,580.62	434,939.33	58° 26' 30.300 N	1° 53' 8.087 E
1,233.00	19.22	250.72	1,214.81	15.96	-113.88	6,478,579.48	434,936.18	58° 26' 30.262 N	1° 53' 7.894 E
1,243.00	18.88	251.85	1,224.26	14.91	-116.97	6,478,578.43	434,933.09	58° 26' 30.226 N	1° 53' 7.704 E
1,253.00	18.83	252.46	1,233.73	13.92	-120.05	6,478,577.44	434,930.02	58° 26' 30.193 N	1° 53' 7.516 E
1,263.00	19.07	252.60	1,243.18	12.95	-123.15	6,478,576.47	434,926.92	58° 26' 30.159 N	1° 53' 7.326 E
1,273.00	19.35	252.60	1,252.63	11.96	-126.29	6,478,575.48	434,923.78	58° 26' 30.126 N	1° 53' 7.133 E
1,283.00	19.47	252.47	1,262.06	10.97	-129.46	6,478,574.49	434,920.61	58° 26' 30.092 N	1° 53' 6.939 E
1,293.00	19.09	252.04	1,271.50	9.96	-132.60	6,478,573.48	434,917.47	58° 26' 30.058 N	1° 53' 6.746 E
1,303.00	17.98	251.23	1,280.98	8.96	-135.62	6,478,572.48	434,914.45	58° 26' 30.024 N	1° 53' 6.561 E
1,313.00	16.56	250.46	1,290.53	7.99	-138.42	6,478,571.51	434,911.65	58° 26' 29.991 N	1° 53' 6.389 E
1,323.00	15.24	250.09	1,300.14	7.06	-141.00	6,478,570.58	434,909.07	58° 26' 29.960 N	1° 53' 6.231 E
1,333.00	14.36	250.04	1,309.81	6.19	-143.40	6,478,569.71	434,906.67	58° 26' 29.930 N	1° 53' 6.084 E
1,343.00	14.09	249.89	1,319.51	5.35	-145.71	6,478,568.87	434,904.36	58° 26' 29.902 N	1° 53' 5.943 E
1,353.00	14.20	248.89	1,329.20	4.49	-148.00	6,478,568.01	434,902.07	58° 26' 29.873 N	1° 53' 5.803 E
1,363.00	14.61	247.86	1,338.89	3.57	-150.31	6,478,567.09	434,899.76	58° 26' 29.842 N	1° 53' 5.661 E
1,373.00	15.35	247.18	1,348.55	2.58	-152.70	6,478,566.11	434,897.37	58° 26' 29.809 N	1° 53' 5.515 E
1,383.00	16.31	246.75	1,358.17	1.52	-155.21	6,478,565.04	434,894.86	58° 26' 29.773 N	1° 53' 5.361 E
1,393.00	17.11	246.17	1,367.75	0.37	-157.85	6,478,563.89	434,892.23	58° 26' 29.734 N	1° 53' 5.200 E
1,403.00	17.79	245.40	1,377.29	-0.86	-160.58	6,478,562.66	434,889.50	58° 26' 29.693 N	1° 53' 5.033 E
1,413.00	18.50	244.47	1,386.79	-2.18	-163.40	6,478,561.34	434,886.68	58° 26' 29.649 N	1° 53' 4.860 E
1,423.00	19.40	243.27	1,396.25	-3.61	-166.32	6,478,559.91	434,883.76	58° 26' 29.601 N	1° 53' 4.682 E
1,433.00	20.36	242.01	1,405.65	-5.18	-169.34	6,478,558.35	434,880.74	58° 26' 29.549 N	1° 53' 4.498 E
1,443.00	21.22	240.96	1,415.00	-6.87	-172.45	6,478,556.65	434,877.63	58° 26' 29.492 N	1° 53' 4.307 E
1,453.00	22.14	239.94	1,424.29	-8.69	-175.67	6,478,554.83	434,874.41	58° 26' 29.432 N	1° 53' 4.111 E
1,463.00	22.83	239.04	1,433.53	-10.64	-178.96	6,478,552.89	434,871.12	58° 26' 29.367 N	1° 53' 3.910 E
1,473.00	22.85	238.62	1,442.75	-12.64	-182.28	6,478,550.88	434,867.80	58° 26' 29.301 N	1° 53' 3.708 E
1,483.00	22.44	238.58	1,451.98	-14.65	-185.57	6,478,548.88	434,864.52	58° 26' 29.234 N	1° 53' 3.507 E
1,493.00	21.71	239.22	1,461.24	-16.59	-188.79	6,478,546.94	434,861.30	58° 26' 29.170 N	1° 53' 3.311 E
1,503.00	21.01	240.26	1,470.56	-18.43	-191.93	6,478,545.10	434,858.16	58° 26' 29.109 N	1° 53' 3.119 E
1,513.00	20.67	241.23	1,479.90	-20.17	-195.04	6,478,543.36	434,855.05	58° 26' 29.051 N	1° 53' 2.929 E
1,523.00	20.66	242.19	1,489.26	-21.84	-198.14	6,478,541.69	434,851.95	58° 26' 28.995 N	1° 53' 2.739 E
1,533.00	20.83	243.57	1,498.61	-23.45	-201.30	6,478,540.08	434,848.80	58° 26' 28.941 N	1° 53' 2.547 E
1,543.00	20.97	245.58	1,507.95	-24.98	-204.52	6,478,538.55	434,845.58	58° 26' 28.890 N	1° 53' 2.350 E
1,553.00	21.13	247.64	1,517.29	-26.41	-207.81	6,478,537.12	434,842.28	58° 26' 28.842 N	1° 53' 2.148 E
1,563.00	21.38	249.38	1,526.61	-27.74	-211.19	6,478,535.80	434,838.91	58° 26' 28.797 N	1° 53' 1.942 E
1,573.00	21.64	251.07	1,535.91	-28.98	-214.64	6,478,534.56	434,835.46	58° 26' 28.755 N	1° 53' 1.730 E
1,583.00	21.87	252.47	1,545.20	-30.14	-218.16	6,478,533.40	434,831.94	58° 26' 28.716 N	1° 53' 1.515 E
1,593.00	22.08	253.27	1,554.47	-31.24	-221.73	6,478,532.30	434,828.37	58° 26' 28.679 N	1° 53' 1.295 E
1,603.00	22.29	253.50	1,563.73	-32.32	-225.35	6,478,531.22	434,824.75	58° 26' 28.642 N	1° 53' 1.073 E
1,613.00	22.47	253.52	1,572.98	-33.40	-229.00	6,478,530.14	434,821.10	58° 26' 28.605 N	1° 53' 0.849 E
1,623.00	22.66	253.41	1,582.21	-34.49	-232.68	6,478,529.04	434,817.42	58° 26' 28.568 N	1° 53' 0.624 E
1,633.00	22.93	253.25	1,591.43	-35.60	-236.39	6,478,527.93	434,813.71	58° 26' 28.530 N	1° 53' 0.396 E
1,643.00	23.20	253.11	1,600.63	-36.74	-240.14	6,478,526.80	434,809.96	58° 26' 28.491 N	1° 53' 0.166 E
1,653.00	23.40	252.96	1,609.82	-37.89	-243.93	6,478,525.65	434,806.18	58° 26' 28.452 N	1° 52' 59.934 E
1,663.00	23.53	252.89	1,618.99	-39.06	-247.73	6,478,524.48	434,802.37	58° 26' 28.412 N	1° 52' 59.701 E
1,673.00	23.59	252.88	1,628.16	-40.24	-251.55	6,478,523.30	434,798.56	58° 26' 28.372 N	1° 52' 59.467 E
1,683.00	23.66	252.91	1,637.32	-41.41	-255.38	6,478,522.12	434,794.73	58° 26' 28.332 N	1° 52' 59.232 E
1,693.00	23.70	252.85	1,646.48	-42.60	-259.22	6,478,520.94	434,790.89	58° 26' 28.291 N	1° 52' 58.997 E
1,703.00	23.73	252.87	1,655.63	-43.78	-263.06	6,478,519.76	434,787.05	58° 26' 28.251 N	1° 52' 58.761 E
1,713.00	23.78	252.93	1,664.78	-44.97	-266.91	6,478,518.57	434,783.20	58° 26' 28.211 N	1° 52' 58.525 E
1,723.00	23.76	252.96	1,673.94	-46.15	-270.77	6,478,517.39	434,779.35	58° 26' 28.171 N	1° 52' 58.289 E
1,733.00	23.71	252.97	1,683.09	-47.33	-274.62	6,478,516.21	434,775.50	58° 26' 28.130 N	1° 52' 58.053 E

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
1,743.00	23.70	253.01	1,692.25	-48.50	-278.46	6,478,515.04	434,771.66	58° 26' 28.090 N	1° 52' 57.817 E
1,753.00	23.68	253.05	1,701.40	-49.68	-282.30	6,478,513.86	434,767.82	58° 26' 28.050 N	1° 52' 57.581 E
1,763.00	23.63	252.90	1,710.56	-50.85	-286.14	6,478,512.69	434,763.98	58° 26' 28.010 N	1° 52' 57.346 E
1,773.00	23.56	252.97	1,719.73	-52.03	-289.97	6,478,511.52	434,760.16	58° 26' 27.970 N	1° 52' 57.112 E
1,783.00	23.50	252.85	1,728.90	-53.20	-293.78	6,478,510.34	434,756.34	58° 26' 27.930 N	1° 52' 56.878 E
1,793.00	23.40	252.68	1,738.07	-54.38	-297.58	6,478,509.16	434,752.54	58° 26' 27.890 N	1° 52' 56.645 E
1,803.00	23.37	252.68	1,747.25	-55.56	-301.37	6,478,507.98	434,748.76	58° 26' 27.850 N	1° 52' 56.412 E
1,813.00	23.36	252.63	1,756.43	-56.74	-305.16	6,478,506.80	434,744.97	58° 26' 27.810 N	1° 52' 56.180 E
1,823.00	23.39	252.65	1,765.61	-57.93	-308.94	6,478,505.62	434,741.19	58° 26' 27.769 N	1° 52' 55.948 E
1,833.00	23.45	252.52	1,774.78	-59.12	-312.74	6,478,504.43	434,737.39	58° 26' 27.729 N	1° 52' 55.715 E
1,843.00	23.48	252.56	1,783.96	-60.31	-316.54	6,478,503.23	434,733.60	58° 26' 27.688 N	1° 52' 55.483 E
1,853.00	23.41	252.72	1,793.13	-61.50	-320.33	6,478,502.05	434,729.80	58° 26' 27.648 N	1° 52' 55.250 E
1,863.00	23.39	252.72	1,802.31	-62.68	-324.12	6,478,500.87	434,726.01	58° 26' 27.608 N	1° 52' 55.017 E
1,873.00	23.47	252.78	1,811.48	-63.86	-327.92	6,478,499.69	434,722.21	58° 26' 27.568 N	1° 52' 54.785 E
1,883.00	23.51	252.91	1,820.66	-65.03	-331.73	6,478,498.51	434,718.41	58° 26' 27.528 N	1° 52' 54.551 E
1,893.00	23.49	253.11	1,829.83	-66.20	-335.54	6,478,497.35	434,714.59	58° 26' 27.488 N	1° 52' 54.317 E
1,903.00	23.50	253.09	1,839.00	-67.36	-339.36	6,478,496.19	434,710.78	58° 26' 27.448 N	1° 52' 54.083 E
1,913.00	23.55	253.15	1,848.17	-68.51	-343.18	6,478,495.03	434,706.96	58° 26' 27.409 N	1° 52' 53.849 E
1,923.00	23.58	253.33	1,857.33	-69.67	-347.00	6,478,493.88	434,703.14	58° 26' 27.370 N	1° 52' 53.614 E
1,933.00	23.56	253.55	1,866.50	-70.81	-350.84	6,478,492.74	434,699.31	58° 26' 27.331 N	1° 52' 53.379 E
1,943.00	23.58	253.60	1,875.66	-71.94	-354.67	6,478,491.61	434,695.47	58° 26' 27.292 N	1° 52' 53.144 E
1,953.00	23.57	253.53	1,884.83	-73.07	-358.51	6,478,490.48	434,691.64	58° 26' 27.253 N	1° 52' 52.909 E
1,963.00	23.19	253.55	1,894.01	-74.19	-362.32	6,478,489.36	434,687.83	58° 26' 27.215 N	1° 52' 52.675 E
1,973.00	22.48	253.50	1,903.22	-75.29	-366.04	6,478,488.26	434,684.11	58° 26' 27.177 N	1° 52' 52.447 E
1,983.00	21.77	253.27	1,912.49	-76.37	-369.65	6,478,487.18	434,680.50	58° 26' 27.141 N	1° 52' 52.226 E
1,993.00	21.15	252.84	1,921.79	-77.44	-373.15	6,478,486.11	434,677.00	58° 26' 27.104 N	1° 52' 52.011 E
2,003.00	20.52	252.07	1,931.14	-78.51	-376.54	6,478,485.04	434,673.61	58° 26' 27.068 N	1° 52' 51.803 E
2,013.00	19.83	251.05	1,940.53	-79.60	-379.81	6,478,483.95	434,670.34	58° 26' 27.031 N	1° 52' 51.603 E
2,023.00	19.24	249.89	1,949.95	-80.72	-382.96	6,478,482.83	434,667.19	58° 26' 26.993 N	1° 52' 51.410 E
2,033.00	18.67	248.97	1,959.41	-81.86	-386.00	6,478,481.69	434,664.15	58° 26' 26.955 N	1° 52' 51.223 E
2,043.00	18.09	248.27	1,968.90	-83.01	-388.94	6,478,480.54	434,661.22	58° 26' 26.916 N	1° 52' 51.044 E
2,053.00	17.42	247.76	1,978.42	-84.15	-391.77	6,478,479.40	434,658.39	58° 26' 26.878 N	1° 52' 50.871 E
2,063.00	16.64	247.57	1,987.98	-85.26	-394.48	6,478,478.29	434,655.68	58° 26' 26.840 N	1° 52' 50.705 E
2,073.00	15.74	247.32	1,997.59	-86.33	-397.05	6,478,477.22	434,653.11	58° 26' 26.804 N	1° 52' 50.547 E
2,083.00	14.82	246.86	2,007.23	-87.36	-399.48	6,478,476.20	434,650.68	58° 26' 26.770 N	1° 52' 50.399 E
2,093.00	14.11	246.33	2,016.92	-88.35	-401.77	6,478,475.21	434,648.39	58° 26' 26.736 N	1° 52' 50.258 E
2,103.00	13.55	245.78	2,026.63	-89.32	-403.96	6,478,474.24	434,646.20	58° 26' 26.704 N	1° 52' 50.125 E
2,113.00	12.56	245.14	2,036.37	-90.26	-406.01	6,478,473.30	434,644.15	58° 26' 26.672 N	1° 52' 49.999 E
2,123.00	11.76	244.30	2,046.14	-91.15	-407.92	6,478,472.40	434,642.25	58° 26' 26.642 N	1° 52' 49.883 E
2,133.00	11.30	243.19	2,055.94	-92.04	-409.71	6,478,471.52	434,640.46	58° 26' 26.613 N	1° 52' 49.773 E
2,143.00	10.90	242.00	2,065.75	-92.92	-411.42	6,478,470.63	434,638.75	58° 26' 26.583 N	1° 52' 49.669 E
2,153.00	10.37	240.37	2,075.58	-93.81	-413.04	6,478,469.74	434,637.13	58° 26' 26.554 N	1° 52' 49.570 E
2,163.00	9.96	237.45	2,085.43	-94.72	-414.55	6,478,468.83	434,635.62	58° 26' 26.523 N	1° 52' 49.478 E
2,173.00	9.68	233.80	2,095.28	-95.69	-415.95	6,478,467.87	434,634.21	58° 26' 26.492 N	1° 52' 49.392 E
2,183.00	9.51	229.85	2,105.14	-96.72	-417.26	6,478,466.84	434,632.90	58° 26' 26.458 N	1° 52' 49.312 E
2,193.00	9.30	225.13	2,115.00	-97.82	-418.47	6,478,465.74	434,631.70	58° 26' 26.421 N	1° 52' 49.239 E
2,203.00	9.20	220.24	2,124.87	-99.00	-419.56	6,478,464.56	434,630.61	58° 26' 26.383 N	1° 52' 49.173 E
2,213.00	9.10	215.05	2,134.75	-100.25	-420.53	6,478,463.30	434,629.64	58° 26' 26.342 N	1° 52' 49.115 E
2,223.00	9.02	209.82	2,144.62	-101.58	-421.37	6,478,461.98	434,628.80	58° 26' 26.298 N	1° 52' 49.064 E
2,233.00	8.95	204.57	2,154.50	-102.97	-422.08	6,478,460.59	434,628.08	58° 26' 26.253 N	1° 52' 49.022 E
2,243.00	8.91	199.61	2,164.38	-104.41	-422.67	6,478,459.15	434,627.50	58° 26' 26.206 N	1° 52' 48.987 E
2,253.00	8.98	195.16	2,174.26	-105.89	-423.13	6,478,457.67	434,627.04	58° 26' 26.158 N	1° 52' 48.960 E
2,263.00	9.11	189.99	2,184.13	-107.42	-423.47	6,478,456.14	434,626.70	58° 26' 26.108 N	1° 52' 48.941 E
2,273.00	9.31	184.67	2,194.01	-109.01	-423.68	6,478,454.55	434,626.49	58° 26' 26.057 N	1° 52' 48.930 E
2,283.00	9.55	179.31	2,203.87	-110.65	-423.73	6,478,452.92	434,626.44	58° 26' 26.004 N	1° 52' 48.928 E

Statoil

Survey Report - Geographic

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N/-S (m)	+E/-W (m)	Map Northing (m)	Map Easting (m)	Latitude	Longitude
2,293.00	9.88	174.47	2,213.73	-112.33	-423.64	6,478,451.23	434,626.53	58° 26' 25.950 N	1° 52' 48.935 E
2,303.00	10.25	171.03	2,223.57	-114.06	-423.42	6,478,449.50	434,626.75	58° 26' 25.894 N	1° 52' 48.951 E
2,313.00	10.48	167.42	2,233.41	-115.83	-423.08	6,478,447.73	434,627.09	58° 26' 25.837 N	1° 52' 48.973 E
2,323.00	10.69	163.89	2,243.24	-117.61	-422.63	6,478,445.96	434,627.54	58° 26' 25.780 N	1° 52' 49.003 E
2,333.00	10.99	161.52	2,253.06	-119.40	-422.07	6,478,444.16	434,628.10	58° 26' 25.722 N	1° 52' 49.040 E
2,343.00	11.41	158.88	2,262.87	-121.23	-421.41	6,478,442.33	434,628.76	58° 26' 25.663 N	1° 52' 49.082 E
2,353.00	11.77	156.24	2,272.67	-123.09	-420.64	6,478,440.48	434,629.53	58° 26' 25.604 N	1° 52' 49.131 E
2,363.00	12.25	153.98	2,282.45	-124.97	-419.76	6,478,438.59	434,630.40	58° 26' 25.543 N	1° 52' 49.187 E
2,373.00	12.79	151.93	2,292.21	-126.90	-418.78	6,478,436.66	434,631.39	58° 26' 25.481 N	1° 52' 49.250 E
2,383.00	13.35	149.87	2,301.95	-128.88	-417.68	6,478,434.69	434,632.49	58° 26' 25.418 N	1° 52' 49.320 E
2,393.00	14.04	147.61	2,311.67	-130.90	-416.45	6,478,432.67	434,633.72	58° 26' 25.353 N	1° 52' 49.398 E
2,403.00	14.66	145.72	2,321.35	-132.97	-415.08	6,478,430.60	434,635.08	58° 26' 25.287 N	1° 52' 49.484 E
2,413.00	15.34	143.81	2,331.01	-135.09	-413.59	6,478,428.48	434,636.57	58° 26' 25.220 N	1° 52' 49.578 E
2,423.00	15.89	141.95	2,340.65	-137.23	-411.97	6,478,426.34	434,638.20	58° 26' 25.151 N	1° 52' 49.680 E
2,433.00	16.32	140.28	2,350.25	-139.39	-410.22	6,478,424.18	434,639.94	58° 26' 25.082 N	1° 52' 49.790 E
2,443.00	16.72	138.81	2,359.84	-141.55	-408.38	6,478,422.02	434,641.78	58° 26' 25.014 N	1° 52' 49.906 E
2,453.00	17.17	136.78	2,369.41	-143.71	-406.42	6,478,419.86	434,643.74	58° 26' 24.945 N	1° 52' 50.029 E
2,463.00	17.67	134.92	2,378.95	-145.86	-404.34	6,478,417.72	434,645.83	58° 26' 24.877 N	1° 52' 50.159 E
2,464.55	17.75	134.64	2,380.42	-146.19	-404.00	6,478,417.38	434,646.16	58° 26' 24.866 N	1° 52' 50.180 E
2,493.74	18.80	129.52	2,408.14	-152.31	-397.21	6,478,411.27	434,652.95	58° 26' 24.672 N	1° 52' 50.605 E
2,536.07	20.39	125.56	2,448.02	-160.94	-385.94	6,478,402.64	434,664.21	58° 26' 24.399 N	1° 52' 51.308 E
2,576.99	21.70	125.92	2,486.21	-169.52	-374.02	6,478,394.06	434,676.13	58° 26' 24.128 N	1° 52' 52.052 E
2,617.92	26.34	124.65	2,523.59	-179.13	-360.41	6,478,384.45	434,689.73	58° 26' 23.825 N	1° 52' 52.900 E
2,658.30	30.56	121.61	2,559.08	-189.61	-344.29	6,478,373.98	434,705.85	58° 26' 23.495 N	1° 52' 53.904 E
2,699.07	33.11	117.41	2,593.72	-200.17	-325.57	6,478,363.42	434,724.56	58° 26' 23.164 N	1° 52' 55.069 E
2,738.83	35.52	115.77	2,626.56	-210.20	-305.53	6,478,353.40	434,744.60	58° 26' 22.851 N	1° 52' 56.314 E
2,779.26	41.25	113.83	2,658.24	-220.70	-282.74	6,478,342.90	434,767.38	58° 26' 22.524 N	1° 52' 57.729 E
2,820.02	45.33	112.36	2,687.90	-231.64	-257.03	6,478,331.96	434,793.08	58° 26' 22.184 N	1° 52' 59.325 E
2,860.02	49.20	108.88	2,715.05	-241.96	-229.54	6,478,321.65	434,820.56	58° 26' 21.865 N	1° 53' 1.030 E
2,900.45	51.78	104.36	2,740.77	-250.85	-199.66	6,478,312.76	434,850.43	58° 26' 21.594 N	1° 53' 2.880 E
2,939.72	53.48	102.53	2,764.61	-258.10	-169.31	6,478,305.51	434,880.77	58° 26' 21.376 N	1° 53' 4.758 E
2,980.29	54.35	103.04	2,788.51	-265.36	-137.34	6,478,298.26	434,912.73	58° 26' 21.158 N	1° 53' 6.736 E
3,008.61	54.95	103.40	2,804.89	-270.64	-114.85	6,478,292.97	434,935.21	58° 26' 21.000 N	1° 53' 8.127 E
3,060.63	54.55	99.95	2,834.92	-279.24	-73.26	6,478,284.38	434,976.79	58° 26' 20.744 N	1° 53' 10.699 E
3,081.25	54.06	97.21	2,846.95	-281.74	-56.70	6,478,281.88	434,993.34	58° 26' 20.672 N	1° 53' 11.722 E
3,136.60	53.84	95.71	2,879.53	-286.77	-12.24	6,478,276.85	435,037.79	58° 26' 20.533 N	1° 53' 14.467 E
3,172.51	53.90	98.14	2,900.70	-290.27	16.55	6,478,273.35	435,066.57	58° 26' 20.436 N	1° 53' 16.244 E
3,216.39	53.86	101.30	2,926.57	-296.25	51.48	6,478,267.37	435,101.48	58° 26' 20.261 N	1° 53' 18.403 E
3,257.05	53.34	103.39	2,950.70	-303.25	83.45	6,478,260.38	435,133.44	58° 26' 20.052 N	1° 53' 20.380 E
3,297.38	53.81	105.77	2,974.65	-311.42	114.85	6,478,252.21	435,164.83	58° 26' 19.805 N	1° 53' 22.324 E
3,337.63	53.10	107.03	2,998.62	-320.55	145.87	6,478,243.09	435,195.84	58° 26' 19.526 N	1° 53' 24.244 E
3,375.41	53.01	106.59	3,021.33	-329.28	174.77	6,478,234.36	435,224.73	58° 26' 19.260 N	1° 53' 26.034 E
3,416.55	53.14	107.02	3,046.04	-338.79	206.26	6,478,224.85	435,256.21	58° 26' 18.969 N	1° 53' 27.984 E
3,456.15	52.97	106.74	3,069.84	-347.98	236.54	6,478,215.67	435,286.48	58° 26' 18.688 N	1° 53' 29.860 E
3,495.52	52.87	105.59	3,093.58	-356.72	266.71	6,478,206.93	435,316.64	58° 26' 18.422 N	1° 53' 31.728 E
3,520.00	52.87	105.59	3,108.36	-361.97	285.51	6,478,201.68	435,335.43	58° 26' 18.262 N	1° 53' 32.892 E

Company:	STATOIL - Norway	**Local Co-ordinate Reference:**	Site Volve F
Project:	SLEIPNER	**TVD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Site:	Volve F	**MD Reference:**	Rotary Table @ 54.90m (Actual RTE as installed)
Well:	15/9-F-12	**North Reference:**	Grid
Wellbore:	F-12	**Survey Calculation Method:**	Minimum Curvature
Design:	F-12	**Database:**	EDM Oracle

Casing Points

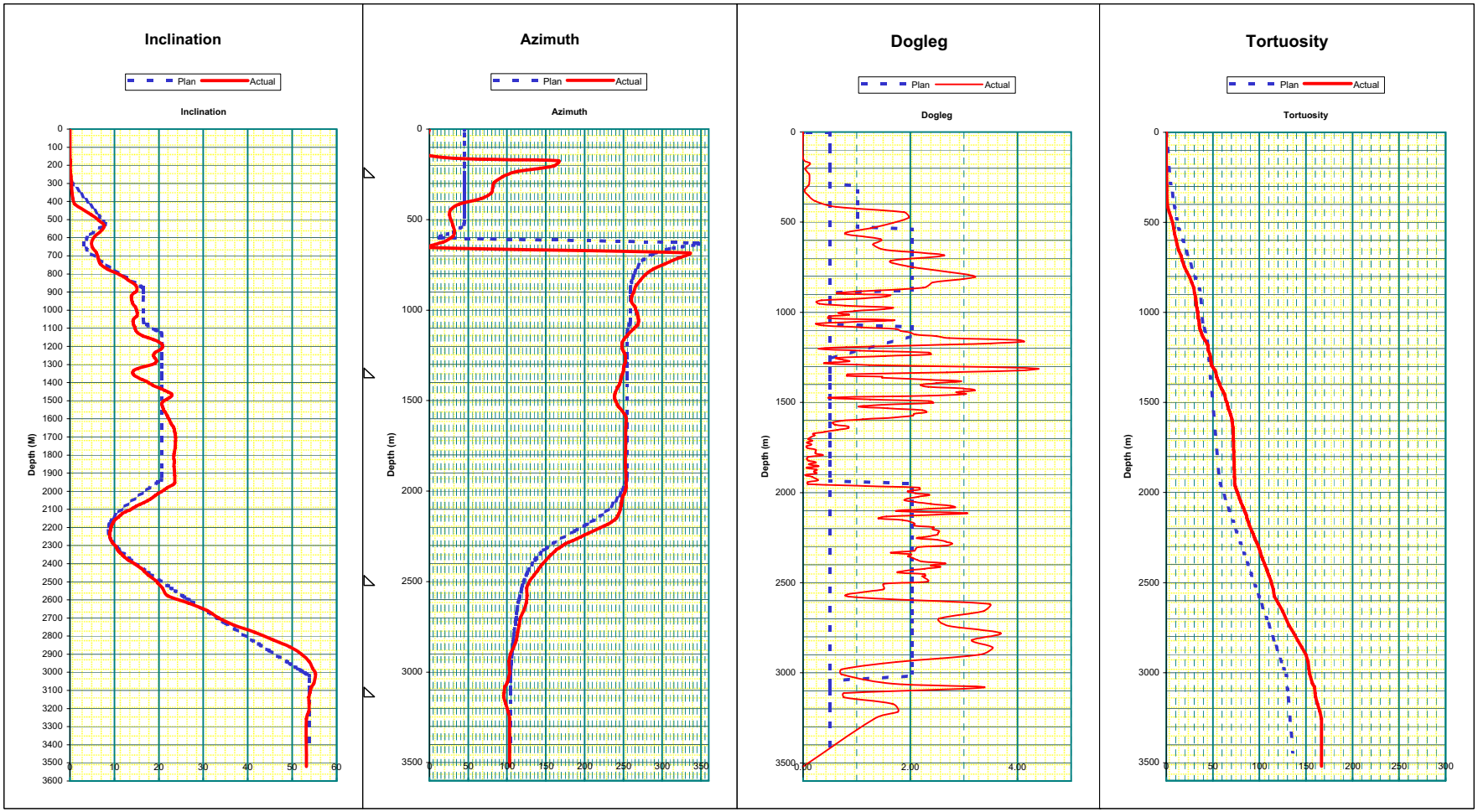
Measured Depth (m)	Vertical Depth (m)	Name	Casing Diameter (in)	Hole Diameter (in)
251.00	251.00	30"	30.000	36.000
1,357.00	1,333.08	20"	20.000	26.000
2,506.00	2,419.73	14"	14.000	17.500
3,113.00	2,865.62	9 5/8"	9.625	12.250

Checked By: _____ Approved By: _____ Date: _____

Schlumberger

Statoil : Volve 15/9 F12 T-Plot

STATOIL



Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client :	STATOIL
Well :	15/9-F-12
Hole Size :	8.5"
Mwd Run :	2
Date :	19-Jun-07
MWD Tool Number :	VB01

Acceptance Criteria :

Tool G:	1001.84	+/- 2.5 counts
Tool H:	1006.79	+/- 6 counts
Dip:	71.64	+/- 0.45 deg

Declination Date:	1-Jul-07
EDI Az Error:	0 Deg
EDI interferring field:	4026.0

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Convergence(deg):	-0.950
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	-1.39
Field Strength (nT):	50339.50
Dip (deg):	71.64

BHA Sag Correction applied:

INCL	Correction	INCL	Correction	INCL	Correction

Raw values						Temperature corrected																				
Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments
																		0	0			0.00			0.00	
-2004.00	-13.00	-13.00	1500.00	-376.00	313.00	1002.00	6.50	6.50	960.00	-240.60	200.30	1002.00	1009.80	71.88	25-Jun-07	17:11:30	320.93	0.53	81.79	PUP	None	320.93			81.79	
-2004.00	10.00	-13.00	1497.00	-358.00	-351.00	1002.00	-5.00	6.50	958.10	-229.10	-224.60	1002.00	1010.40	71.42	25-Jun-07	19:35:15	360.28	0.47	80.36	PUP	None	360.28			80.36	
-2004.00	-1.00	-16.00	1495.00	-498.00	20.00	1002.00	0.50	8.00	956.80	-318.70	12.80	1002.00	1008.60	71.55	25-Jun-07	23:27:12	400.04	0.46	85.96	PUP	None	400.04			85.96	
-2004.00	-18.00	-3.00	1493.00	-57.00	487.00	1002.00	9.00	1.50	955.50	-36.50	311.70	1002.00	1005.70	71.84	26-Jun-07	1:19:27	440.75	0.52	89.81	PUP	None	440.75			89.81	
-2004.00	12.00	12.00	1494.00	281.00	-414.00	1002.00	-6.00	-6.00	956.20	179.80	-265.00	1002.00	1008.40	71.57	26-Jun-07	4:39:32	481.57	0.49	98.01	PUP	None	481.57			98.01	
-2004.00	-12.00	14.00	1494.00	436.00	233.00	1002.00	6.00	-7.00	956.20	279.00	149.10	1002.00	1007.10	71.80	26-Jun-07	8:04:24	522.46	0.53	99.53	PUP	None	522.46			99.53	
-2004.00	17.00	-4.00	1492.00	-264.00	-429.00	1002.00	-8.50	2.00	954.90	-169.00	-274.60	1002.00	1007.80	71.50	26-Jun-07	10:26:19	563.36	0.50	105.56	PUP	None	563.36			105.56	
-2004.00	13.00	8.00	1494.00	153.00	-478.00	1002.00	-6.50	-4.00	956.20	97.90	-305.90	1002.00	1008.70	71.53	27-Jun-07	20:08:52	601.86	0.44	101.20	PUP	None	601.86			101.20	
-2004.00	2.00	17.00	1493.00	443.00	-233.00	1002.00	-1.00	-8.50	955.50	283.50	-149.10	1002.00	1007.80	71.64	27-Jun-07	22:47:15	642.28	0.49	108.27	PUP	None	642.28			108.27	
-2004.00	6.00	15.00	1491.00	277.00	-428.00	1002.00	-3.00	-7.50	954.20	177.30	-273.90	1002.00	1008.50	71.39	28-Jun-07	1:17:46	683.70	0.46	122.78	PUP	None	683.70			122.78	
-2004.00	17.00	4.00	1489.00	-299.00	-416.00	1002.00	-8.50	-2.00	953.00	-191.40	-266.20	1002.00	1007.80	71.39	28-Jun-07	3:41:52	723.26	0.50	136.59	PUP	None	723.26			136.59	
-2004.00	-13.00	-16.00	1489.00	-93.00	492.00	1002.00	6.50	8.00	953.00	-59.50	314.90	1002.10	1005.40	71.79	28-Jun-07	6:06:56	764.46	0.59	127.45	PUP	None	764.46			127.45	
-2004.00	12.00	-18.00	1488.00	-505.00	56.00	1002.00	-6.00	9.00	952.30	-323.20	35.80	1002.10	1006.30	71.54	28-Jun-07	9:18:56	805.27	0.62	127.21	PUP	None	805.27			127.21	
-2004.00	-21.00	4.00	1490.00	414.00	284.00	1002.00	10.50	-2.00	953.60	265.00	181.80	1002.10	1006.30	71.80	28-Jun-07	12:22:24	845.35	0.61	132.06	PUP	None	845.35			132.06	
-2004.00	11.00	19.00	1491.00	209.00	-467.00	1002.00	-5.50	-9.50	954.20	133.80	-298.90	1002.10	1008.90	71.42	28-Jun-07	19:41:52	885.85	0.63	122.92	PUP	None	885.85			122.92	
-2004.00	-5.00	8.00	1494.00	466.00	162.00	1002.00	2.50	-4.00	956.20	298.20	103.70	1002.00	1006.90	71.78	29-Jun-07	6:26:08	926.54	0.27	100.65	PUP	None	926.54			100.65	
-2004.00	7.00	36.00	1492.00	437.00	-252.00	1002.00	-3.50	-18.00	954.90	279.70	-161.30	1002.20	1008.00	71.63	29-Jun-07	8:32:00	965.84	1.05	104.59	PUP	None	965.84			104.59	
-2004.00	13.00	13.00	1496.00	459.00	-168.00	1002.00	-6.50	-6.50	957.40	293.80	-107.50	1002.00	1007.20	71.68	29-Jun-07	11:09:52	1006.31	0.53	62.27	PUP	None	1006.31			62.27	
-2004.00	12.00	-7.00	1495.00	5.00	-495.00	1002.00	-6.00	3.50	956.80	3.20	-316.80	1002.00	1007.90	71.47	29-Jun-07	14:06:56	1047.80	0.40	56.76	PUP	None	1047.80			56.76	
-2004.00	-3.00	13.00	1494.00	495.00	25.00	1002.00	1.50	-6.50	956.20	316.80	16.00	1002.00	1007.40	71.71	29-Jun-07	16:34:08	1088.21	0.38	97.58	PUP	None	1088.21			97.58	
-2004.00	0.00	-13.00	1493.00	-497.00	48.00	1002.00	0.00	6.50	955.50	-318.10	30.70	1002.00	1007.50	71.54	29-Jun-07	18:22:56	1127.79	0.37	93.02	PUP	None	1127.79			93.02	
-2004.00	-4.00	-14.00	1492.00	-420.00	267.00	1002.00	2.00	7.00	954.90	-268.80	170.90	1002.00	1006.60	71.67	30-Jun-07	2:44:56	1167.24	0.42	103.91	PUP	None	1167.24			103.91	
-2004.00	-4.00	-8.00	1493.00	-477.00	138.00	1002.00	2.00	4.00	955.50	-305.30	88.30	1002.00	1007.00	71.56	30-Jun-07	4:28:49	1208.62	0.26	77.43	PUP	None	1208.62			77.43	
-2004.00	-6.00	-9.00	1494.00	-494.00	1.00	1002.00	3.00	4.50	956.20	-316.20	0.60	1002.00	1007.10	71.53	30-Jun-07	6:04:19	1249.17	0.31	54.26	PUP	None	1249.17			54.26	
-2004.00	5.00	-6.00	1495.00	-110.00	-489.00	1002.00	-2.50	3.00	956.80	-70.40	-313.00	1002.00	1009.10	71.33	30-Jun-07	7:57:41	1288.86	0.22	50.57	PUP	None	1288.86			50.57	
-2004.00	-4.00	-15.00	1497.00	70.00	-486.00	1002.00	2.00	7.50	958.10	44.80	-311.00	1002.00	1008.30	71.43	30-Jun-07	10:54:07	1329.56	0.44	336.00	PUP	None	1329.56			336.00	

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client : STATOIL
Well : 15/9-F-12
Hole Size : 8.5"

Mwd Run : 2
Date : 19-Jun-07
MWD Tool Numbe VB01

Acceptance Criteria :
Tool G: 1001.84 +/- 2.5 counts
Tool H: 1006.79 +/- 6 counts
Dip: 71.64 +/- 0.45 deg

Declination Date 39264
EDI Az Error: 0 Deg

BGGM Magnetic Declination(deg): -2.339
Total Magnetic Declination(deg): -2.339
Grid Correction(deg): -0.950
Total Correction(deg): -1.389

Corrections from Local Model:
Declination (deg): -1.39
Field Strength (nT): 50339.50
Dip (deg): 71.64

BHA Sag Correction Applied

INCL	Correction	INCL	Corr	INCL	Corr

Magnetic to grid correction -1.389

Surv #	Depth	Temperature corrected axes						|G| (mg)	|H| (nT)	|H| (counts)	Statoil Reference (nT)	Dip (deg)	Inc (deg)	Mag Az (deg)	TF	Grid Az (deg)	Az Corr (deg)	Interval (m)	DD surveys Depth m	DD surveys Inc deg	DD surveys Azim deg	MWD MD m	MWD Inc deg	MWD Az deg	MWD Corr Az deg	MWD Inc w sag deg	Comparison DD vs. MWD Depth m	Comparison DD vs. MWD SAG deg	Comparison DD vs. MWD Azm corr deg	Comparison DD vs. MWD Azm deg	Comparison DD vs. MWD Inc deg	Comment
		Gx	Gy	Gz	Hx	Hy	Hz																									
1								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######	0.00							0.00	0.00									
14	320.93	1002.0	6.5	6.5	960.0	-240.6	200.3	1002.04	50488	1009.76	260.72	71.88	0.53	83.18	135	81.79	-1.39	#REFI				320.93	0.53	81.79			-320.93	-0.53	-81.79			
15	360.28	1002.0	-5.0	6.5	958.1	-229.1	-224.6	1002.03	50519	1010.39	261.63	71.42	0.47	81.75	52	80.36	-1.39	39.35				360.28	0.47	80.36			-360.28	-0.47	-80.36			
16	400.04	1002.0	0.5	8.0	956.8	-318.7	12.8	1002.03	50428	1008.56	120.03	71.55	0.46	87.35	94	85.96	-1.39	39.76				400.04	0.46	85.96			-400.04	-0.46	-85.96			
17	440.75	1002.0	9.0	1.5	955.5	-36.5	311.7	1002.04	50286	1005.72	179.81	71.84	0.52	91.20	171	89.81	-1.39	40.71				440.75	0.52	89.81			-440.75	-0.52	-89.81			
18	481.57	1002.0	-6.0	-6.0	956.2	179.8	-265.0	1002.04	50420	1008.40	101.80	71.57	0.49	99.41	-45	98.01	-1.40	40.82				481.57	0.49	98.01			-481.57	-0.49				
19	522.46	1002.0	6.0	-7.0	956.2	279.0	149.1	1002.04	50358	1007.17	142.81	71.80	0.53	100.92	-131	99.53	-1.39	40.89				522.46	0.53	99.53			-522.46	-0.53				
20	563.36	1002.0	-8.5	2.0	954.9	-169.0	-274.6	1002.04	50393	1007.87	139.78	71.49	0.50	106.95	13	105.56	-1.39	40.90				563.36	0.50	105.56			-563.36	-0.50				
21	601.86	1002.0	-6.5	-4.0	956.2	97.9	-305.9	1002.03	50435	1008.70	134.26	71.53	0.44	102.59	-32	101.20	-1.39	38.50				601.86	0.44	101.20			-601.86	-0.44				
22	642.28	1002.0	-1.0	-8.5	955.5	283.5	-149.1	1002.04	50388	1007.76	48.64	71.64	0.49	109.66	-83	108.27	-1.39	40.42				642.28	0.49	108.27			-642.28	-0.49				
23	683.70	1002.0	-3.0	-7.5	954.2	177.3	-273.9	1002.03	50422	1008.44	238.59	71.39	0.46	124.16	-68	122.78	-1.38	41.42				683.70	0.46	122.78			-683.70	-0.46				
24	723.26	1002.0	-8.5	-2.0	953.0	-191.4	-266.2	1002.04	50391	1007.82	226.93	71.39	0.50	137.98	-13	136.59	-1.39	39.56				723.26	0.50	136.59			-723.26	-0.50				
25	764.46	1002.0	6.5	8.0	953.0	-59.5	314.9	1002.05	50272	1005.44	146.73	71.79	0.59	128.84	129	127.45	-1.39	41.20				764.46	0.59	127.45			-764.46	-0.59				
26	805.27	1002.0	-6.0	9.0	952.3	-323.2	35.8	1002.06	50314	1006.29	92.54	71.54	0.62	128.59	56	127.21	-1.38	40.81				805.27	0.62	127.21			-805.27	-0.62				
27	845.35	1002.0	10.5	-2.0	953.6	265.0	181.8	1002.06	50315	1006.29	143.89	71.80	0.61	133.45	-169	132.06	-1.39	40.08				845.35	0.61	132.06			-845.35	-0.61	-132.06			
28	885.85	1002.0	-5.5	-9.5	954.2	133.8	-298.9	1002.06	50442	1008.83	220.18	71.42	0.63	124.30	-60	122.92	-1.38	40.50				885.85	0.63	122.92			-885.85	-0.63	-122.92			
29	926.54	1002.0	2.5	-4.0	956.2	298.2	103.7	1002.01	50349	1006.97	128.59	71.79	0.27	102.03	-122	100.65	-1.38	40.69				926.54	0.27	100.65			-926.54	-0.27	-100.65			
30	965.84	1002.0	-3.5	-18.0	954.9	279.7	-161.3	1002.17	50400	1008.01	61.29	71.63	1.05	105.98	-79	104.59	-1.39	39.30				965.84	1.05	104.59			-965.84	-1.05				
31	1006.31	1002.0	-6.5	-6.5	957.4	293.8	-107.5	1002.04	50361	1007.22	38.84	71.68	0.53	63.66	-45	62.27	-1.39	40.47				1006.31	0.53	62.27			-1006.31	-0.53	-62.27			
32	1047.80	1002.0	-6.0	3.5	956.8	3.2	-316.8	1002.02	50394	1007.89	157.13	71.47	0.40	58.15	30	56.76	-1.39	41.49				1047.80	0.40	56.76			-1047.80	-0.40	-56.76			
33	1088.21	1002.0	1.5	-6.5	956.2	316.8	16.0	1002.02	50372	1007.44	70.21	71.71	0.38	98.97	-103	97.58	-1.39	40.41				1088.21	0.38	97.58			-1088.21	-0.38	-97.58			
34	1127.79	1002.0	0.0	6.5	955.5	-318.1	30.7	1002.02	50376	1007.53	96.13	71.54	0.37	94.40	90	93.02	-1.38	39.58				1127.79	0.37	93.02			-1127.79	-0.37	-93.02			
35	1167.24	1002.0	2.0	7.0	954.9	-268.8	170.9	1002.03	50331	1006.63	24.92	71.67	0.42	105.30	106	103.91	-1.39	39.45				1167.24	0.42	103.91			-1167.24	-0.42	-103.91			
36	1208.62	1002.0	2.0	4.0	955.5	-305.3	88.3	1002.01	50348	1006.97	75.94	71.55	0.26	78.81	117	77.43	-1.38	41.38				1208.62	0.26	77.43			-1208.62	-0.26	-77.43			
37	1249.17	1002.0	3.0	4.5	956.2	-316.2	0.6	1002.01	50356	1007.13	99.02	71.53	0.31	55.65	124	54.26	-1.39	40.55				1249.17	0.31	54.26			-1249.17	-0.31	-54.26			
38	1288.86	1002.0	-2.5	3.0	956.8	-70.4	-313.0	1002.01	50458	1009.15	300.20	71.33	0.22	51.96	50	50.57	-1.39	39.69				1288.86	0.22	50.57			-1288.86	-0.22	-50.57			
39	1329.56	1002.0	2.0	7.5	958.1	44.8	-311.0	1002.03	50415	1008.31	196.44	71.43	0.44	337.39	105	336.00	-1.39	40.70				1329.56	0.44	336.00			-1329.56	-0.44	-336.00			
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Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client : STATOIL
Well : 15/9-F-12
Hole Size : 36"

Mwd Run : 1
Date : 19-Jun-07
MWD Tool Number : VB01

Acceptance Criteria :

Tool G:	1001.84	+/- 2.5 counts
Tool H:	1006.79	+/- 6 counts
Dip:	71.64	+/- 0.45 deg

Declination Date: 1-Jul-07
EDI Az Error: 0 Deg
EDI interferring field: 4026.0

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Convergence(deg):	-0.950
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	-1.39
Field Strength (nT):	50339.50
Dip (deg):	71.64

BHA Sag Correction applied:

INCL	Correction	INCL	Correction	INCL	Correction
6-7	-0.11	9-10	-0.14		
7-8	-0.12	10-11	-0.15		
8-9	-0.13				

Raw values Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	Temperature corrected T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	SUCOP Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments
																		0	0			0.00			0.00	
-2004.00	12.00	-2.00	1839.00	-104.00	504.00	1002.00	-6.00	1.00	1177.00	-66.60	322.60	1002.00	1222.20	74.49	14-Jun-07	13:56:16	141.69	0.35	248.65	MWD	None	141.69			248.65	Going by GWD Incl and Az
-2004.00	-6.00	-1.00	1776.00	63.00	-552.00	1002.00	3.00	0.50	1136.60	40.30	-353.30	1002.00	1191.00	72.62	14-Jun-07	17:18:56	154.88	0.17	272.11	MWD	None	154.88			272.11	Going by GWD Incl and Az
-2004.00	-4.00	-9.00	1738.00	210.00	336.00	1002.00	2.00	4.50	1112.30	134.40	215.00	1002.00	1140.90	77.44	14-Jun-07	18:50:40	166.29	0.28	186.82	MWD	None	166.29			186.82	Going by GWD Incl and Az
-2004.00	1.00	-5.00	1757.00	-429.00	109.00	1002.00	-0.50	2.50	1124.50	-274.60	69.80	1002.00	1159.60	75.92	14-Jun-07	21:00:48	183	0.15	113.64	MWD	None	183.00			113.64	Going by GWD Incl and Az
-2004.00	-5.00	1.00	1717.00	401.00	-210.00	1002.00	2.50	-0.50	1098.90	256.60	-134.40	1002.00	1136.40	75.37	14-Jun-07	22:32:32	195.17	0.15	195.09	MWD	None	195.17			195.09	Going by GWD Incl and Az
-2004.00	1.00	-4.00	1708.00	-67.00	-460.00	1002.00	-0.50	2.00	1093.10	-42.90	-294.40	1002.00	1132.90	74.67	14-Jun-07	23:42:56	207.43	0.12	20.76	MWD	None	207.43			20.76	Going by GWD Incl and Az
-2004.00	1.00	3.00	1694.00	55.00	-511.00	1002.00	-0.50	-1.50	1084.20	35.20	-327.00	1002.00	1133.00	73.20	15-Jun-07	2:03:44	222.45	0.09	153.90	MWD	None	222.45			153.90	Going by GWD Incl and Az
-2004.00	-5.00	1.00	1690.00	531.00	43.00	1002.00	2.50	-0.50	1081.60	339.80	27.50	1002.00	1134.10	72.64	15-Jun-07	6:00:32	235.69	0.15	162.53	MWD	None	235.69			162.53	Going by GWD Incl and Az
-2004.00	2.00	-4.00	1686.00	-525.00	213.00	1002.00	-1.00	2.00	1079.00	-336.00	136.30	1002.00	1138.30	71.52	15-Jun-07	7:51:28	242.74	0.13	137.00	MWD	None	242.74			137.00	Going by GWD Incl and Az
-2004.00	-13.00	-13.00	1500.00	-376.00	313.00	1002.00	6.50	6.50	960.00	-240.60	200.30	1002.00	1009.80	71.88	25-Jun-07	17:11:30	320.93	0.53	81.79	PUP	None	320.93			81.79	
-2004.00	10.00	-13.00	1497.00	-358.00	-351.00	1002.00	-5.00	6.50	958.10	-229.10	-224.60	1002.00	1010.40	71.42	25-Jun-07	19:35:15	360.28	0.47	80.36	PUP	None	360.28			80.36	
-2004.00	-1.00	-16.00	1495.00	-498.00	20.00	1002.00	0.50	8.00	956.80	-318.70	12.80	1002.00	1008.60	71.55	25-Jun-07	23:27:12	400.04	0.46	85.96	PUP	None	400.04			85.96	
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Schlumberger Private

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client :	STATOIL
Well :	15/9-F-12
Hole Size :	36"
Mwd Run :	1
Date :	19-Jun-07
MWD Tool Number :	VB01

Acceptance Criteria :

Tool G:	1001.84	+/- 2.5 counts
Tool H:	1006.79	+/- 6 counts
Dip:	71.64	+/- 0.45 deg

Declination Date:	1-Jul-07
EDI Az Error:	0 Deg
EDI interferring field:	4026.0

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Convergence(deg):	-0.950
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	-1.39
Field Strength (nT):	50339.50
Dip (deg):	71.64

BHA Sag Correction applied:

INCL	Correction	INCL	Correction	INCL	Correction
6-7	-0.11	9-10	-0.14		
7-8	-0.12	10-11	-0.15		
8-9	-0.13				

Raw values						Temperature corrected																				
Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments
																						0.00				
																						0.00				

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client : STATOIL
Well : 15/9-F-12
Hole Size : 36"

Mwd Run : 1
Date : 19-Jun-07
MWD Tool Numbe VB01

Acceptance Criteria :
Tool G: 1001.84 +/- 2.5 counts
Tool H: 1006.79 +/- 6 counts
Dip: 71.64 +/- 0.45 deg

Declination Date 39264
EDI Az Error: 0 Deg

BGGM Magnetic Declination(deg): -2.339
Total Magnetic Declination(deg): -2.339
Grid Correction(deg): -0.950
Total Correction(deg): -1.389

Corrections from Local Model:	
Declination (deg):	-1.39
Field Strength (nT):	50339.50
Dip (deg):	71.64

BHA Sag Correction Applied

INCL	Correction	INCL	Corr	INCL	Corr
6-7	-0.11				
7-8	-0.12				
8-9	-0.13	9-10	-0.14		

Magnetic to grid correction -1.389

Surv #	Depth	Temperature corrected axes Gx	Gy	Gz	Hx	Hy	Hz	|G| (mg)	|H| (nT)	|H| (counts)	Statoil Reference (nT)	Dip (deg)	Inc (deg)	Mag Az (deg)	TF	Grid Az (deg)	Az Corr (deg)	Interval (m)	DD surveys Depth m	Inc deg	Azim deg	MWD MD m	Inc deg	Az deg	Corr Az deg	Inc w sag deg	Comparison DD vs. MWD Depth m	SAG deg	Azm corr deg	Azm deg	Inc deg	Comment
1								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######	0.00							0.00	0.00								
3	141.69	1002.0	-6.0	1.0	1177.0	-66.6	322.6	1002.02	61111	1222.23	11191.58	74.49	0.35	250.04	9	248.65	-1.39	#VALUE!				141.69	0.35	248.65			-141.69	-0.35	-248.65			
5	154.88	1002.0	3.0	0.5	1136.6	40.3	-353.3	1002.00	59546	1190.93	9262.69	72.62	0.17	273.51	171	272.11	-1.40	13.19				154.88	0.17	272.11			-154.88	-0.17	-272.11			Going by GWD Incl and Az
6	166.29	1002.0	2.0	4.5	1112.3	134.4	215.0	1002.01	57042	1140.83	8844.87	77.44	0.28	188.22	114	186.82	-1.40	11.41				166.29	0.28	186.82			-166.29	-0.28	-186.82			Going by GWD Incl and Az
8	183.00	1002.0	-0.5	2.5	1124.5	-274.6	69.8	1002.00	57982	1159.65	8784.89	75.92	0.15	115.05	79	113.64	-1.41	16.71				183.00	0.15	113.64			-183.00	-0.15	-113.64			Going by GWD Incl and Az
9	195.17	1002.0	2.5	-0.5	1098.9	256.6	-134.4	1002.00	56822	1136.44	7464.88	75.37	0.15	196.49	-169	195.09	-1.40	12.17				195.17	0.15	195.09			-195.17	-0.15	-195.09			Going by GWD Incl and Az
10	207.43	1002.0	-0.5	2.0	1093.1	-42.9	-294.4	1002.00	56643	1132.86	6977.28	74.67	0.12	22.16	76	20.76	-1.40	12.26				207.43	0.12	20.76			-207.43	-0.12	-20.76			Going by GWD Incl and Az
11	222.45	1002.0	-0.5	-1.5	1084.2	35.2	-327.0	1002.00	56649	1132.99	6497.27	73.21	0.09	155.30	-72	153.90	-1.40	15.02				222.45	0.09	153.90			-222.45	-0.09	-153.90			Going by GWD Incl and Az
12	235.69	1002.0	2.5	-0.5	1081.6	339.8	27.5	1002.00	56703	1134.05	6440.58	72.65	0.15	163.94	-169	162.53	-1.41	13.24				235.69	0.15	162.53			-235.69	-0.15	-162.53			Going by GWD Incl and Az
13	242.74	1002.0	-1.0	2.0	1079.0	-336.0	136.3	1002.00	56915	1138.29	6576.29	71.52	0.13	138.39	63	137.00	-1.39	7.05				242.74	0.13	137.00			-242.74	-0.13	-137.00			Going by GWD Incl and Az
14	320.93	1002.0	6.5	6.5	960.0	-240.6	200.3	1002.04	50488	1009.76	260.72	71.88	0.53	83.18	135	81.79	-1.39	78.19				320.93	0.53	81.79			-320.93	-0.53	-81.79			
15	360.28	1002.0	-5.0	6.5	958.1	-229.1	-224.6	1002.03	50519	1010.39	261.63	71.42	0.47	81.75	52	80.36	-1.39	39.35				360.28	0.47	80.36			-360.28	-0.47	-80.36			
16	400.04	1002.0	0.5	8.0	956.8	-318.7	12.8	1002.03	50428	1008.56	120.03	71.55	0.46	87.35	94	85.96	-1.39	39.76				400.04	0.46	85.96			-400.04	-0.46	-85.96			
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Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client :	STATOIL	Acceptance Criteria :			
Well :	15/9-F-12	Tool G:	1001.84	+/- 2.5 counts	
Hole Size :	36"	Tool H:	1006.79	+/- 6 counts	
		Dip:	71.64	+/- 0.45 deg	
Mwd Run :	1				
Date :	19-Jun-07	Declination Date		39264	
MWD Tool Numbe	VB01	EDI Az Error:		0 Deg	

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Correction(deg):	-0.950
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	-1.39
Field Strength (nT):	50339.50
Dip (deg):	71.64

BHA Sag Correction Applied

INCL	Correction	INCL	Corr	INCL	Corr
6-7	-0.11				
7-8	-0.12				
8-9	-0.13	9-10	-0.14		

Magnetic to grid correction -1.389

Surv #	Depth	Temperature corrected axes Gx	Gy	Gz	Hx	Hy	Hz	|G| (mg)	|H| (nT)	|H| (counts)	Statoil Reference (nT)	Dip (deg)	Inc (deg)	Mag Az (deg)	TF	Grid Az (deg)	Az Corr (deg)	Interval (m)	DD surveys Depth m	Inc deg	Azim deg	MWD MD m	Inc deg	Az deg	Corr Az deg	Inc w sag deg	Comparison DD vs. MWD Depth m	SAG deg	Azm corr deg	Azm deg	Inc deg	Comment
68								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	
69								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	

Schlumberger Private

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client :	STATOIL
Well :	15/9-F-12
Hole Size :	26"
Mwd Run :	4
Date :	7-Jul-07
MWD Tool Number :	MDC HE VA97/MEA675

Acceptance Criteria :

Tool G:	1001.84	+/- 2.5 counts
Tool H:	1006.79	+/- 6 counts
Dip:	71.64	+/- 0.45 deg

Declination Date:	1-Jul-07
EDI Az Error:	0.39 Deg
EDI interferring field:	311 nT

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Convergence(deg):	-0.950
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	-1.39
Field Strength (nT):	50339.50
Dip (deg):	71.64

BHA Sag Correction applied:

INCL	Correction	INCL	Correction	INCL	Correction
0-12	0	17-21	-0.21		
12-14	-0.27				
14-17	-0.25				

Raw values						Temperature corrected																			
Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments
-2004.00	2.00	-4.00	1686.00	-525.00	213.00	1002.00	-1.00	2.00	1079.00	-336.00	136.30	1002.00	1138.30	71.52	15-Jun-07	7:51:28	242.74	0.13	137.00	MWD	None	242.74	0.13		137.00	T.I.P
1002.00	5.00	-1.00	967.00	74.00	305.00	1002.00	4.50	-1.00	955.50	73.60	305.30	1002.00	1005.80	71.81	6-Jul-07	14:28:16	311.15	0.26	88.83	MWD	S	311.15	0.26		88.83	Sucop survey
1002.00	-1.00	8.00	964.00	-301.00	-99.00	1002.00	-1.00	6.00	955.80	-302.10	-97.30	1002.00	1007.10	71.58	6-Jul-07	16:17:04	351.13	0.35	79.19	MWD	S	351.13	0.35		79.19	Sucop survey
1002.00	0.00	10.00	963.00	-311.00	-61.00	1002.00	0.00	9.50	956.20	-311.00	-61.40	1002.00	1007.40	71.54	6-Jul-07	23:21:36	392.25	0.54	75.84	MWD	S	392.25	0.54		75.84	Sucop survey
1002.00	39.00	10.00	972.00	-271.00	85.00	1001.50	38.50	9.50	965.90	-271.40	85.10	1002.30	1006.90	71.62	7-Jul-07	1:23:12	432.64	2.27	26.32	MWD	S	432.64	2.27		26.32	Sucop survey
999.00	83.00	-11.00	983.00	-182.00	166.00	998.50	83.00	-11.00	975.90	-182.40	166.40	1002.00	1006.70	71.67	7-Jul-07	3:35:28	473.15	4.79	25.05	MWD	S	473.15	4.79		25.05	Sucop survey
994.00	-109.00	-74.00	991.00	211.00	-45.00	993.50	-108.50	-74.00	983.50	211.20	-44.80	1002.10	1006.90	71.60	7-Jul-07	6:09:04	512.07	7.53	28.01	MWD	S	512.07	7.53		28.01	Sucop survey
993.00	59.00	126.00	989.00	-218.00	-31.00	992.50	58.50	125.50	981.90	-217.60	-30.70	1002.10	1006.20	71.81	7-Jul-07	7:55:44	553.45	7.94	34.53	MWD	S	553.45	7.94		34.53	Sucop survey
998.00	-3.00	98.00	982.00	-172.00	-160.00	997.50	-2.50	97.50	976.20	-172.20	-160.00	1002.30	1004.10	72.28	7-Jul-07	9:18:56	594.11	5.58	33.81	MWD	S	594.11	5.58		33.81	Sucop survey
999.00	83.00	-29.00	984.00	-172.00	166.00	998.50	83.00	-28.50	978.20	-172.20	166.40	1002.30	1007.10	71.58	7-Jul-07	10:52:48	633.54	5.02	17.20	MWD	S	633.54	5.02		17.20	Sucop survey
997.00	107.00	-2.00	989.00	-207.00	-46.00	996.50	106.50	-2.00	983.40	-207.40	-46.10	1002.20	1006.10	71.83	7-Jul-07	12:20:16	672.48	6.10	349.45	MWD	S	672.48	6.10		349.45	Sucop survey
995.00	35.00	-113.00	984.00	-223.00	88.00	995.00	34.50	-113.00	979.30	-223.40	87.70	1002.00	1008.30	71.27	7-Jul-07	14:06:56	714.23	6.77	323.10	MWD	S	714.23	6.77		323.10	Sucop survey
995.00	85.00	-91.00	973.00	-228.00	-170.00	994.50	84.50	-91.00	966.60	-227.80	-170.20	1002.20	1007.60	71.48	7-Jul-07	15:49:20	754.65	7.12	296.52	MWD	S	754.65	7.12		296.52	Sucop survey
985.00	61.00	-177.00	958.00	-259.00	-202.00	984.50	61.00	-177.00	952.40	-259.20	-201.60	1002.10	1007.40	71.52	7-Jul-07	17:27:28	794.73	10.77	281.94	MWD	S	794.73	10.77		281.94	Sucop survey
976.00	-10.00	-228.00	942.00	-324.00	-162.00	976.00	-10.00	-227.50	940.10	-323.80	-161.90	1002.20	1007.40	71.53	7-Jul-07	19:54:40	836.23	13.13	276.21	MWD	S	836.23	12.86		276.21	Sucop survey
961.00	-16.00	-284.00	916.00	-332.00	-262.00	961.00	-15.50	-284.00	913.80	-332.20	-261.80	1002.20	1006.90	71.62	8-Jul-07	0:02:08	875.13	16.49	267.05	MWD	S	875.13	16.24		267.05	Sucop survey
973.00	16.00	-243.00	924.00	-298.00	-287.00	972.50	16.00	-242.50	918.20	-297.60	-287.40	1002.40	1007.10	71.59	8-Jul-07	0:51:12	917.39	14.03	262.01	MWD	S	917.39	13.76		262.01	Sucop survey
975.00	187.00	143.00	925.00	401.00	-83.00	974.50	187.00	143.00	918.00	401.30	-82.60	1002.50	1005.30	71.88	8-Jul-07	1:40:16	957.61	13.60	260.23	MWD	S	957.61	13.33		260.23	Sucop survey
964.00	-52.00	-271.00	920.00	-362.00	-202.00	963.50	-51.50	-271.00	917.70	-362.20	-202.20	1002.20	1007.10	71.59	8-Jul-07	2:31:28	998.18	15.98	267.99	MWD	S	998.18	15.73		267.99	Sucop survey
967.00	233.00	-127.00	932.00	60.00	-387.00	966.50	233.00	-126.50	926.00	59.50	-386.60	1002.20	1005.20	71.93	8-Jul-07	5:09:20	1036.88	15.34	271.67	MWD	S	1036.88	15.09		271.67	Sucop survey
974.00	-207.00	-120.00	936.00	-351.00	170.00	973.50	-206.50	-119.50	930.10	-351.40	169.60	1002.30	1008.60	71.33	8-Jul-07	7:04:32	1078.16	13.77	270.12	MWD	S	1078.16	13.50		270.12	Sucop survey
970.00	-2.00	253.00	921.00	314.00	291.00	970.00	-1.50	253.00	912.30	313.60	290.60	1002.50	1007.50	71.53	8-Jul-07	10:33:36	1118.11	14.62	259.76	MWD	S	1118.11	14.37		259.76	Sucop survey
953.00	-241.00	-198.00	884.00	-490.00	0.00	952.50	-241.00	-198.00	881.90	-490.20	0.00	1002.30	1009.00	71.35	8-Jul-07	12:07:28	1156.95	18.13	253.24	MWD	S	1156.95	17.92		253.24	Sucop survey
932.00	-335.00	-158.00	851.00	-541.00	77.00	931.50	-335.00	-157.50	847.10	-541.40	77.40	1002.40	1008.30	71.46	8-Jul-07	13:39:12	1198.13	21.67	248.19	MWD	S	1198.13	21.46		248.19	Sucop survey
951.00	-72.00	-308.00	886.00	-383.00	-292.00	951.00	-71.50	-307.50	883.30	-382.70	-292.50	1002.00	1006.10	71.73	8-Jul-07	15:57:52	1238.84	18.36	254.98	MWD	S	1238.84	18.15		254.98	Sucop survey
939.00	228.00	267.00	871.00	504.00	133.00	939.00	228.00	267.00	859.40	504.30	133.10	1002.50	1005.30	71.82	8-Jul-07	17:29:36	1274.81	20.50	249.90	MWD	S	1274.81	20.29		249.90	Sucop survey
962.00	283.00	-18.00	897.00	343.00	-316.00	961.50	283.00	-17.50	888.70	343.00	-315.50	1002.40	1003.50	72.07	8-Jul-07	18:59:12	1314.50	16.43	250.56	MWD	S	1314.50	16.18		250.56	Sucop survey
965.00	78.00	-262.00	896.00	-182.00	-428.00	964.50	77.50	-261.50	891.30	-182.40	-428.20	1002.30	1005.50	71.81	8-Jul-07	22:21:52	1344.74	15.79	249.52	MWD	S	1344.74	15.54		249.52	Sucop survey

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client :	STATOIL
Well :	15/9-F-12
Hole Size :	26"
Mwd Run :	4
Date :	7-Jul-07
MWD Tool Number :	MDC HE VA97/MEA675

Acceptance Criteria :

Tool G:	1001.84	+/- 2.5 counts
Tool H:	1006.79	+/- 6 counts
Dip:	71.64	+/- 0.45 deg
Declination Date:	1-Jul-07	
EDI Az Error:	0.39 Deg	
EDI interferring field:	311 nT	

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Convergence(deg):	-0.950
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	-1.39
Field Strength (nT):	50339.50
Dip (deg):	71.64

BHA Sag Correction applied:

INCL	Correction	INCL	Correction	INCL	Correction
0-12	0	17-21	-0.21		
12-14	-0.27				
14-17	-0.25				

Raw values						Temperature corrected																			
Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments

Schlumberger Private

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client :	STATOIL	Acceptance Criteria :			
Well :	15/9-F-12	Tool G:	1001.84	+/- 2.5 counts	
Hole Size :	17.5"	Tool H:	1007.26	+/- 6 counts	
		Dip:	71.64	+/- 0.45 deg	
Mwd Run :	5				
Date :	21-Jul-07	Declination Date:	1-Jul-07		
MWD Tool Number :	VB01	EDI Az Error:	0 Deg		
		EDI interferring field:	4026.0		

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Convergence(deg):	-0.950
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	
Field Strength (nT):	
Dip (deg):	

Raw values						Temperature corrected																				
Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	SUCOP Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments
-1889.00	-535.00	404.00	1297.00	868.00	-186.00	944.50	267.50	-202.00	830.10	555.50	-119.00	1002.20	1005.90	71.61	30-Jul-07	6:45:20	2493.74	19.27	129.52	PUP	I -0.27				129.52	
-1870.00	671.00	269.00	1285.00	-611.00	-674.00	935.00	-335.50	-134.50	822.40	-391.00	-431.40	1002.40	1007.60	71.55	30-Jul-07	18:37:52	2536.07	20.86	125.56	PUP	I -0.28				125.56	
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Schlumberger Private

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client : STATOIL
Well : 15/9-F-12
Hole Size : 26"

Mwd Run : 4
Date : 07-Jul-07
MWD Tool Numbe MDC HE VA97/MEA675

Acceptance Criteria :
Tool G: 1001.84 +/- 2.5 counts
Tool H: 1006.79 +/- 6 counts
Dip: 71.64 +/- 0.45 deg

Declination Date 39264
EDI Az Error: 0.39 Deg

BGGM Magnetic Declination(deg): -2.339
Total Magnetic Declination(deg): -2.339
Grid Correction(deg): -0.950
Total Correction(deg): -1.389

Corrections from Local Model:	
Declination (deg):	-1.39
Field Strength (nT):	50339.50
Dip (deg):	71.64

BHA Sag Correction Applied

INCL	Correction	INCL	Corr	INCL	Corr
0-12	0				
12-14	-0.27				
14-17	-0.25	17-21	-0.21		

Magnetic to grid correction -1.389

Surv #	Depth	Temperature corrected axes						|G|	|H|	|H|	Statoil Reference	Dip	Inc	Mag Az	TF	Grid Az	Az Corr	Interval	DD surveys			MWD					Comparison DD vs. MWD					Comment
		Gx	Gy	Gz	Hx	Hy	Hz	(mg)	(nT)	(counts)	(nT)	(deg)	(deg)	(deg)		(deg)	(deg)	(m)	Depth m	Inc deg	Azim deg	MD m	Inc deg	Az deg	Corr Az deg	Inc w sag deg	Depth m	SAG deg	Azm corr deg	Azm deg	Inc deg	
13	242.74	1002.0	-1.0	2.0	1079.0	-336.0	136.3	1002.00	56915	1138.29	6576.29	71.52	0.13	138.39	63	137.00	-1.39	242.74	242.74	0.13	137.00	242.74	0.13	137.00		0.13	0.00	0.00	0.00	0.00	0.00	T.I.P
3	311.15	1002.0	4.5	-1.0	955.5	73.6	305.3	1002.01	50289	1005.79	156.28	71.81	0.26	90.22	-167	88.83	-1.39	68.41	311.15	0.26	88.83	311.15	0.26	88.83		0.26	0.00	0.00	0.00	0.00	0.00	Sucop survey
5	351.13	1002.0	-1.0	6.0	955.8	-302.1	-97.3	1002.02	50356	1007.12	57.82	71.58	0.35	80.58	81	79.19	-1.39	39.98	351.13	0.35	79.19	351.13	0.35	79.19		0.35	0.00	0.00	0.00	0.00	0.00	Sucop survey
6	392.25	1002.0	0.0	9.5	956.2	-311.0	-61.4	1002.05	50369	1007.38	87.90	71.55	0.54	77.23	90	75.84	-1.39	41.12	392.25	0.54	75.84	392.25	0.54	75.84			0.00			0.00	0.00	Sucop survey
8	432.64	1001.5	38.5	9.5	965.9	-271.4	85.1	1002.28	50345	1006.91	20.96	71.62	2.27	27.71	166	26.32	-1.39	40.39	432.64	2.27	26.32	432.64	2.27	26.32			0.00			0.00	0.00	Sucop survey
9	473.15	998.5	83.0	-11.0	975.9	-182.4	166.4	1002.00	50332	1006.65	24.27	71.67	4.79	26.44	-172	25.05	-1.39	40.51	473.15	4.79	25.05	473.15	4.79	25.05			0.00			0.00	0.00	Sucop survey
10	512.07	993.5	-108.5	-74.0	983.5	211.2	-44.8	1002.14	50346	1006.92	32.77	71.60	7.53	29.40	-34	28.01	-1.39	38.92	512.07	7.53	28.01	512.07	7.53	28.01			0.00			0.00	0.00	Sucop survey
11	553.45	992.5	58.5	125.5	981.9	-217.6	-30.7	1002.11	50310	1006.19	156.38	71.81	7.94	35.93	115	34.53	-1.40	41.38	553.45	7.94	34.53	553.45	7.94	34.53			0.00			0.00	0.00	Sucop survey
12	594.11	997.5	-2.5	97.5	976.2	-172.2	-160.0	1002.26	50205	1004.10	571.82	72.27	5.58	35.21	89	33.81	-1.40	40.66	594.11	5.58	33.81	594.11	5.58	33.81			0.00			0.00	0.00	Sucop survey
13	633.54	998.5	83.0	-28.5	978.2	-172.2	166.4	1002.35	50354	1007.08	59.77	71.57	5.02	18.59	-161	17.20	-1.39	39.43	633.54	5.02	17.20	633.54	5.02	17.20			0.00			0.00	0.00	Sucop survey
14	672.48	996.5	106.5	-2.0	983.4	-207.4	-46.1	1002.18	50304	1006.09	164.23	71.82	6.10	350.84	-179	349.45	-1.39	38.94	672.48	6.10	349.45	672.48	6.10	349.45			0.00			0.00	0.00	Sucop survey
15	714.23	995.0	34.5	-113.0	979.3	-223.4	87.7	1001.99	50414	1008.28	333.58	71.27	6.77	324.49	-107	323.10	-1.39	41.75	714.23	6.77	323.10	714.23	6.77	323.10			0.00			0.00	0.00	Sucop survey
16	754.65	994.5	84.5	-91.0	966.6	-227.8	-170.2	1002.22	50378	1007.56	143.17	71.48	7.12	297.92	-133	296.52	-1.40	40.42	754.65	7.12	296.52	754.65	7.12	296.52			0.00			0.00	0.00	Sucop survey
17	794.73	984.5	61.0	-177.0	952.4	-259.2	-201.6	1002.14	50371	1007.42	111.35	71.52	10.77	283.33	-109	281.94	-1.39	40.08	794.73	10.77	281.94	794.73	10.77	281.94			0.00			0.00	0.00	Sucop survey
18	836.23	976.0	-10.0	-227.5	940.1	-323.8	-161.9	1002.21	50370	1007.40	103.10	71.53	13.13	277.61	-87	276.21	-1.40	41.50	836.23	12.86	276.21	836.23	13.13	276.21		12.86	0.00	-0.27		0.00	0.00	Sucop survey
19	875.13	961.0	-15.5	-284.0	913.8	-332.2	-261.8	1002.21	50347	1006.94	21.65	71.62	16.49	268.43	-87	267.05	-1.38	38.90	875.13	16.24	267.05	875.13	16.49	267.05		16.24	0.00	-0.25		0.00	0.00	Sucop survey
20	917.39	972.5	16.0	-242.5	918.2	-297.6	-287.4	1002.41	50355	1007.10	43.25	71.59	14.03	263.39	-94	262.01	-1.38	42.26	917.39	13.76	262.01	917.39	14.03	262.01		13.76	0.00	-0.27		0.00	0.00	Sucop survey
21	957.61	974.5	187.0	143.0	918.0	401.3	-82.6	1002.53	50264	1005.28	220.43	71.88	13.58	261.63	143	260.23	-1.40	40.22	957.61	13.33	260.23	957.61	13.60	260.23		13.33	0.00	-0.27		0.00	0.00	Sucop survey
22	998.18	963.5	-51.5	-271.0	917.7	-362.2	-202.2	1002.21	50355	1007.10	48.74	71.59	15.98	269.39	-79	267.99	-1.40	40.57	998.18	15.73	267.99	998.18	15.98	267.99		15.73	0.00	-0.25		0.00	0.00	Sucop survey
23	1036.88	966.5	233.0	-126.5	926.0	59.5	-386.6	1002.20	50261	1005.22	265.55	71.93	15.34	273.06	-152	271.67	-1.39	38.70	1036.88	15.09	271.67	1036.88	15.34	271.67		15.09	0.00	-0.25		0.00	0.00	Sucop survey
24	1078.16	973.5	-206.5	-119.5	930.1	-351.4	169.6	1002.31	50431	1008.63	289.50	71.33	13.77	271.51	-30	270.12	-1.39	41.28	1078.16	13.5	270.12	1078.16	13.77	270.12		13.50	0.00	-0.27	0.00	0.00	0.00	Sucop survey
25	1118.11	970.0	-1.5	253.0	912.3	313.6	290.6	1002.45	50376	1007.51	100.04	71.53	14.62	261.14	90	259.76	-1.38	39.95	1118.11	14.37	259.76	1118.11	14.62	259.76		14.37	0.00	-0.25	0.00	0.00	0.00	Sucop survey
26	1156.95	952.5	-241.0	-198.0	881.9	-490.2	0.0	1002.27	50449	1008.98	280.72	71.35	18.13	254.64	-39	253.24	-1.40	38.84	1156.95	17.92	253.24	1156.95	18.13	253.24		17.92	0.00	-0.21	0.00	0.00	0.00	Sucop survey
27	1198.13	931.5	-335.0	-157.5	847.1	-541.4	77.4	1002.36	50415	1008.31	172.90	71.46	21.67	249.57	-25	248.19	-1.38	41.18	1198.13	21.46	248.19	1198.13	21.67	248.19		21.46	0.00	-0.21	0.00	0.00	0.00	Sucop survey
28	1238.84	951.0	-71.5	-307.5	883.3	-382.7	-292.5	1002.03	50305	1006.10	86.57	71.73	18.36	256.36	-77	254.98	-1.38	40.71	1238.84	18.15	254.98	1238.84	18.36	254.98		18.15	0.00	-0.21	0.00	0.00	0.00	Sucop survey
29	1274.81	939.0	228.0	267.0	859.4	504.3	133.1	1002.49	50264	1005.29	176.09	71.82	20.50	251.30	130	249.90	-1.40	35.97	1274.81	20.29	249.9	1274.81	20.50	249.90		20.29	0.00	-0.21		0.00	0.00	Sucop survey
30	1314.50	961.5	283.0	-17.5	888.7	343.0	-315.5	1002.44	50174	1003.48	411.73	72.07	16.43	251.96	-176	250.56	-1.40	39.69	1314.50	16.18	250.56	1314.50	16.43	250.56		16.18	0.00	-0.25		0.00	0.00	Sucop survey
31	1344.74	964.5	77.5	-261.5	891.3	-182.4	-428.2	1002.32	50275	1005.51	165.76	71.81	15.79	250.91	-107	249.52	-1.39	30.24	1344.74	15.54	249.52	1344.74	15.79	249.52		15.54	0.00	-0.25		0.00	0.00	Sucop survey
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Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client : STATOIL
Well : 15/9-F-12
Hole Size : 26"

Mwd Run : 4
Date : 07-Jul-07
MWD Tool Numbe MDC HE VA97/MEA675

Acceptance Criteria :
Tool G: 1001.84 +/- 2.5 counts
Tool H: 1006.79 +/- 6 counts
Dip: 71.64 +/- 0.45 deg

Declination Date 39264
EDI Az Error: 0.39 Deg

BGGM Magnetic Declination(deg): -2.339
Total Magnetic Declination(deg): -2.339
Grid Correction(deg): -0.950
Total Correction(deg): -1.389

Corrections from Local Model:	
Declination (deg):	-1.39
Field Strength (nT):	50339.50
Dip (deg):	71.64

BHA Sag Correction Applied

INCL	Correction	INCL	Corr	INCL	Corr
0-12	0				
12-14	-0.27				
14-17	-0.25	17-21	-0.21		

Magnetic to grid correction -1.389

Surv #	Depth	Temperature corrected axes Gx	Gy	Gz	Hx	Hy	Hz	|G| (mg)	|H| (nT)	|H| (counts)	Statoil Reference (nT)	Dip (deg)	Inc (deg)	Mag Az (deg)	TF	Grid Az (deg)	Az Corr (deg)	Interval (m)	DD surveys Depth m	Inc deg	Azim deg	MWD MD m	Inc deg	Az deg	Corr Az deg	Inc w sag deg	Comparison DD vs. MWD Depth m	SAG deg	Azm corr deg	Azm deg	Inc deg	Comment
68								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	
69								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	

Schlumberger Private

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client :	STATOIL
Well :	15/9-F-12
Hole Size :	17.5"
Mwd Run :	5
Date :	21-Jul-07
MWD Tool Number :	VB01

Acceptance Criteria :

Tool G:	1001.84	+/- 2.5 counts
Tool H:	1007.26	+/- 6 counts
Dip:	71.64	+/- 0.45 deg
Declination Date:	1-Jul-07	
EDI Az Error:	0 Deg	
EDI interferring field:	4026.0	

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Convergence(deg):	-0.950
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	
Field Strength (nT):	
Dip (deg):	

Raw values						Temperature corrected																		
Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments
																						0.00				
																						0.00				

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client : STATOIL
Well : 15/9-F-12
Hole Size : 17.5"

Mwd Run : 5
Date : 21-Jul-07
MWD Tool Numbe VB01

Acceptance Criteria :
Tool G: 1001.84 +/- 2.5 counts
Tool H: 1007.26 +/- 6 counts
Dip: 71.64 +/- 0.45 deg

Declination Date 39264
EDI Az Error: 0 Deg

BGGM Magnetic Declination(deg): -2.339
Total Magnetic Declination(deg): -2.339
Grid Correction(deg): -0.950
Total Correction(deg): -1.389

Corrections from Local Model:	
Declination (deg):	0.00
Field Strength (nT):	0.00
Dip (deg):	0.00

BHA Sag Correction Applied

INCL	Correction	INCL	Corr	INCL	Corr

Magnetic to grid correction -1.389

Surv #	Depth	Temperature corrected axes						|G| (mg)	|H| (nT)	|H| (counts)	Statoil Reference (nT)	Dip (deg)	Inc (deg)	Mag Az (deg)	TF	Grid Az (deg)	Az Corr (deg)	Interval (m)	DD surveys			MWD					Comparison DD vs. MWD					Comment
		Gx	Gy	Gz	Hx	Hy	Hz													Depth m	Inc deg	Azim deg	MD m	Inc deg	Az deg	Corr Az deg	Inc w sag deg	Depth m	SAG deg	Azm corr deg	Azm deg	Inc deg	
1	2493.74	944.5	267.5	-202.0	830.1	555.5	-119.0	1002.22	50294	1005.89	72.00	71.62	19.54	130.90	-143	129.52	-1.38	2493.74	2493.74	18.80	129.52	2493.74	19.27	129.52		18.80	0.00	-0.47	0.00	0.00	0.00	
3	2536.07	935.0	-335.5	-134.5	822.4	-391.0	-431.4	1002.43	50382	1007.64	84.78	71.55	21.14	126.94	-22	125.56	-1.38	42.33	2536.07	20.39	125.56	2536.07	20.86	125.56		20.39	0.00	-0.47	0.00	0.00	0.00	
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Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client :	STATOIL	Acceptance Criteria :			
Well :	15/9-F-12	Tool G:	1001.84	+/- 2.5 counts	
Hole Size :	17.5"	Tool H:	1007.26	+/- 6 counts	
		Dip:	71.64	+/- 0.45 deg	
Mwd Run :	5				
Date :	21-Jul-07	Declination Date		39264	
MWD Tool Numbe	VB01	EDI Az Error:		0 Deg	

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Correction(deg):	-0.950
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	0.00
Field Strength (nT):	0.00
Dip (deg):	0.00

BHA Sag Correction Applied

INCL	Correction	INCL	Corr	INCL	Corr

Magnetic to grid correction -1.389

Surv #	Depth	Temperature corrected axes Gx	Gy	Gz	Hx	Hy	Hz	|G| (mg)	|H| (nT)	|H| (counts)	Statoil Reference (nT)	Dip (deg)	Inc (deg)	Mag Az (deg)	TF	Grid Az (deg)	Az Corr (deg)	Interval (m)	DD surveys Depth m	Inc deg	Azim deg	MWD MD m	Inc deg	Az deg	Corr Az deg	Inc w sag deg	Comparison DD vs. MWD Depth m	SAG deg	Azm corr deg	Azm deg	Inc deg	Comment
68								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	
69								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	

Schlumberger Private

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client : STATOIL
Well : 15/9-F-12
Hole Size : 12.3

Mwd Run : 9
Date : 21-Jul-07
MWD Tool Number : VB01

Acceptance Criteria :

Tool G:	1001.84	+/- 2.5 counts
Tool H:	1007.76	+/- 6 counts
Dip:	71.64	+/- 0.45 deg

Declination Date: 1-Jul-07
EDI Az Error: 0.16 Deg
EDI interferring field: 57.0

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Convergence(deg):	-0.948
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	
Field Strength (nT):	
Dip (deg):	

Raw values						Temperature corrected																							
Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments
-1856.00	756.00	-74.00	1264.00	-881.00	-315.00	928.00	-378.00	37.00	809.00	-563.80	-201.60	1002.70	1006.50	71.38	12-Aug-07	3:22:40	2576.99	22	125.92	PUP	I -0.26	2576.99			125.92	Good
-1789.00	296.00	858.00	1198.00	75.00	-1016.00	894.50	-148.00	-429.00	766.70	48.00	-650.20	1003.00	1006.50	71.56	12-Aug-07	9:10:24	2617.92	26.64	124.65	PUP	I -0.26	2617.92			124.65	Good
-1717.00	-1036.00	-46.00	1138.00	980.00	455.00	858.50	518.00	23.00	728.30	627.20	291.20	1002.90	1004.30	71.80	12-Aug-07	11:58:56	2658.3	30.86	121.61	PUP	I -0.27	2658.30			121.61	Good
-1669.00	-1106.00	-120.00	1109.00	971.00	538.00	834.50	553.00	60.00	709.80	621.40	344.30	1002.90	1004.20	71.77	12-Aug-07	16:14:56	2699.07	33.41	117.41	PUP	I -0.28	2699.07			117.41	Good
-1599.00	-943.00	757.00	1054.00	1115.00	-334.00	799.50	471.50	-378.50	674.60	713.60	-213.80	1002.40	1005.00	71.75	13-Aug-07	7:17:20	2738.83	36.82	115.77	PUP	I -0.28	2738.83			115.77	Good
-1494.00	1138.00	-703.00	966.00	-1219.00	219.00	747.00	-569.00	351.50	618.20	-780.20	140.20	1002.70	1005.20	71.35	13-Aug-07	19:05:36	2779.26	41.55	113.83	PUP	I -0.29	2779.26			113.83	Good
-1395.00	-1327.00	561.00	894.00	1289.00	-55.00	697.50	663.50	-280.50	572.20	825.00	-35.20	1002.70	1004.60	71.69	14-Aug-07	1:48:48	2820.02	45.63	112.36	PUP	I -0.29	2820.02			112.36	Good
-1294.00	1506.00	278.00	830.00	-1145.00	-689.00	647.00	-753.00	-139.00	531.20	-732.80	-441.00	1002.50	1006.80	71.44	14-Aug-07	9:29:36	2860.02	49.50	108.88	PUP	I -0.30	2860.02			108.88	Good
-1224.00	1588.00	16.00	802.00	-1258.00	-494.00	612.00	-794.00	-8.00	513.30	-805.10	-316.20	1002.50	1005.80	71.45	14-Aug-07	14:36:48	2900.45	52.08	104.36	PUP	I -0.30	2900.45			104.36	Good
-1177.00	-248.00	-1606.00	775.00	-283.00	1333.00	588.50	124.00	803.00	496.00	-181.10	853.10	1003.30	1003.30	71.49	15-Aug-07	5:58:24	2939.72	53.78	102.53	PUP	I -0.31	2939.72			102.53	Good
-1151.00	-799.00	1434.00	755.00	1047.00	-895.00	575.50	399.50	-717.00	483.20	670.10	-572.80	1002.40	1005.30	71.65	15-Aug-07	21:47:44	2980.29	54.65	103.04	PUP	I -0.31	2980.29			103.04	Good
-1134.00	717.00	1490.00	739.00	-132.00	-1381.00	567.00	-358.50	-745.00	473.00	-84.50	-883.80	1002.50	1006.00	71.59	16-Aug-07	16:55:28	3008.61	55.25	103.40	PUP	I -0.31	3008.61			103.40	Good
-1145.00	-65.00	1644.00	772.00	534.00	-1259.00	572.50	32.50	-822.00	494.10	341.80	-805.80	1002.20	1005.10	71.69	17-Aug-07	3:35:28	3060.63	54.85	99.95	PUP	I -0.31	3060.63			99.95	Good
-1159.00	-481.00	1563.00	802.00	836.00	-1060.00	579.50	240.50	-781.50	513.30	535.00	-678.40	1002.20	1005.00	71.71	17-Aug-07	6:38:56	3081.25	54.36	97.21	PUP	I -0.31	3081.25			97.21	Good

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client :	STATOIL		Acceptance Criteria :						
Well :	15/9-F-12		Tool G:	1001.84	+/- 2.5 counts				
Hole Size :	12.3		Tool H:	1007.76	+/- 6 counts		BGGM Magnetic Declination(deg):	-2.339	Corrections from Local Model:
			Dip:	71.64	+/- 0.45 deg		Total Magnetic Declination(deg):	-2.339	Declination (deg):
Mwd Run :	9						Grid Convergence(deg):	-0.948	Field Strength (nT):
Date :	21-Jul-07		Declination Date:	1-Jul-07			Total Correction(deg):	-1.389	Dip (deg):
MWD Tool Number :	VB01		EDI Az Error:	0.16 Deg					
			EDI interferring field:	57.0					

Raw values						Temperature corrected																				
Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments

Schlumberger Private

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client : STATOIL
Well : 15/9-F-12
Hole Size : 12.3

Acceptance Criteria :
Tool G: 1001.84 +/- 2.5 counts
Tool H: 1007.76 +/- 6 counts
Dip: 71.64 +/- 0.45 deg

Mwd Run : 9
Date : 21-Jul-07
MWD Tool Numbe VB01

Declination Date 39264
EDI Az Error: 0.16 Deg

BGGM Magnetic Declination(deg): -2.339
Total Magnetic Declination(deg): -2.339
Grid Correction(deg): -0.948
Total Correction(deg): -1.389

Corrections from Local Model:
Declination (deg): 0.00
Field Strength (nT): 0.00
Dip (deg): 0.00

BHA Sag Correction Applied

INCL	Correction	INCL	Corr	INCL	Corr
20-50	-0.3				

Magnetic to grid correction -1.389

Surv #	Depth	Temperature corrected axes Gx	Gy	Gz	Hx	Hy	Hz	|G| (mg)	|H| (nT)	|H| (counts)	Statoil Reference (nT)	Dip (deg)	Inc (deg)	Mag Az (deg)	TF	Grid Az (deg)	Az Corr (deg)	Interval (m)	DD surveys Depth m	Inc deg	Azim deg		MWD MD m	Inc deg	Az deg	Inc w Sag	Comparison DD vs. MWD Depth m	Sag deg	Azm corr deg	Azm deg	Inc deg	Comment
1	2576.99	928.0	-378.0	37.0	809.0	-563.8	-201.6	1002.71	50324	1006.48	233.34	71.38	22.26	127.30	6	125.92	-1.38	2576.99	2576.99	21.70	125.92	#	2576.99	22.00	125.92	21.70	0.00	-0.30	0.00	0.00	0.00	Good
3	2617.92	894.5	-148.0	-429.0	766.7	48.0	-650.2	1003.03	50321	1006.43	97.13	71.56	26.90	126.04	-71	124.65	-1.39	40.93	2617.92	26.34	124.65		2617.92	26.64	124.65	26.34	0.00	-0.30	0.00	0.00	0.00	Good
5	2658.30	858.5	518.0	23.0	728.3	627.2	291.2	1002.93	50214	1004.29	221.78	71.80	31.13	123.00	177	121.61	-1.39	40.38	2658.3	30.56	121.61		2658.30	30.86	121.61	30.56	0.00	-0.30		0.00	0.00	Good
6	2699.07	834.5	553.0	60.0	709.8	621.4	344.3	1002.90	50212	1004.24	211.76	71.77	33.69	118.79	174	117.41	-1.38	40.77	2699.07	33.11	117.41		2699.07	33.41	117.41	33.11	0.00	-0.30		0.00	0.00	Good
8	2738.83	799.5	471.5	-378.5	674.6	713.6	-213.8	1002.38	50250	1005.00	169.11	71.75	37.10	117.17	-141	115.77	-1.40	39.76	2738.83	36.52	115.77		2738.83	36.82	115.77	36.52	0.00	-0.30		0.00	0.00	Good
9	2779.26	747.0	-569.0	351.5	618.2	-780.2	140.2	1002.66	50263	1005.26	282.33	71.35	41.84	115.24	32	113.83	-1.41	40.43	2779.26	41.25	113.83		2779.26	41.55	113.83	41.25	0.00	-0.30		0.00	0.00	Good
10	2820.02	697.5	663.5	-280.5	572.2	825.0	-35.2	1002.71	50231	1004.63	163.79	71.69	45.92	113.74	-157	112.36	-1.38	40.76	2820.02	45.33	112.36		2820.02	45.63	112.36	45.33	0.00	-0.30		0.00	0.00	Good
11	2860.02	647.0	-753.0	-139.0	531.2	-732.8	-441.0	1002.47	50340	1006.80	183.55	71.44	49.80	110.27	-10	108.88	-1.39	40.00	2860.02	49.20	108.88		2860.02	49.50	108.88	49.20	0.00	-0.30		0.00	0.00	Good
12	2900.45	612.0	-794.0	-8.0	513.3	-805.1	-316.2	1002.52	50290	1005.81	197.87	71.44	52.38	105.74	-1	104.36	-1.38	40.43	2900.45	51.78	104.36		2900.45	52.08	104.36	51.78	0.00	-0.30		0.00	0.00	Good
13	2939.72	588.5	124.0	803.0	496.0	-181.1	853.1	1003.25	50165	1003.29	269.61	71.49	54.08	103.92	99	102.53	-1.39	39.27	2939.72	53.48	102.53		2939.72	53.78	102.53	53.48	0.00	-0.30		0.00	0.00	Good
14	2980.29	575.5	399.5	-717.0	483.2	670.1	-572.8	1002.44	50265	1005.29	123.41	71.65	54.96	104.43	-119	103.04	-1.39	40.57	2980.29	54.35	103.04		2980.29	54.65	103.04	54.35	0.00	-0.30		0.00	0.00	Good
15	3008.61	567.0	-358.5	-745.0	473.0	-84.5	-883.8	1002.51	50298	1005.97	97.70	71.60	55.56	104.79	-64	103.40	-1.39	28.32	3008.61	54.95	103.40		3008.61	55.25	103.40	54.95	0.00	-0.30		0.00	0.00	Good
16	3060.63	572.5	32.5	-822.0	494.1	341.8	-805.8	1002.25	50256	1005.12	137.42	71.68	55.16	101.34	-92	99.95	-1.39	52.02	3060.63	54.55	99.95		3060.63	54.85	99.95	54.55	0.00	-0.30		0.00	0.00	Good
17	3081.25	579.5	240.5	-781.5	513.3	535.0	-678.4	1002.20	50248	1004.95	154.15	71.71	54.67	98.59	-107	97.21	-1.38	20.62	3081.25	54.06	97.21		3081.25	54.36	97.21	54.06	0.00	-0.30		0.00	0.00	Good
18								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	
19								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	
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22								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	
23								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	
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30								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######							#										
31								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######							#										
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45								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	
46								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######				2576.99	22.00	125.92						#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	
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Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client :	STATOIL	Acceptance Criteria :			
Well :	15/9-F-12	Tool G:	1001.84	+/- 2.5 counts	
Hole Size :	12.3	Tool H:	1007.76	+/- 6 counts	
		Dip:	71.64	+/- 0.45 deg	
Mwd Run :	9				
Date :	21-Jul-07	Declination Date		39264	
MWD Tool Numbe	VB01	EDI Az Error:		0.16 Deg	

BGGM Magnetic Declination(deg):	-2.339
Total Magnetic Declination(deg):	-2.339
Grid Correction(deg):	-0.948
Total Correction(deg):	-1.389

Corrections from Local Model:	
Declination (deg):	0.00
Field Strength (nT):	0.00
Dip (deg):	0.00

BHA Sag Correction Applied

INCL	Correction	INCL	Corr	INCL	Corr
20-50	-0.3				

Magnetic to grid correction -1.389

Surv #	Depth	Temperature corrected axes Gx	Gy	Gz	Hx	Hy	Hz	|G| (mg)	|H| (nT)	|H| (counts)	Statoil Reference (nT)	Dip (deg)	Inc (deg)	Mag Az (deg)	TF	Grid Az (deg)	Az Corr (deg)	Interval (m)	DD surveys Depth m	Inc deg	Azim deg	MWD MD m	Inc deg	Az deg	Inc w Sag	Comparison DD vs. MWD Depth m	Sag deg	Azm corr deg	Azm deg	Inc deg	Comment
68								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																
69								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																

Schlumberger Private

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client : STATOIL
Well : 15/9-F-12
Hole Size : 8.5 in.

Mwd Run : 10
Date : 21-Aug-07
MWD Tool Number : FN15

Acceptance Criteria :

Tool G:	1001.84	+/- 2.5 counts
Tool H:	1007.96	+/- 6 counts
Dip:	71.63	+/- 0.45 deg

Declination Date: 1-Sep-07
EDI Az Error: 0.08 Deg
EDI interferring field: 29.0

BGGM Magnetic Declination(deg):	-2.251
Total Magnetic Declination(deg):	-2.251
Grid Convergence(deg):	-0.950
Total Correction(deg):	-1.300

Corrections from Local Model:	
Declination (deg):	
Field Strength (nT):	
Dip (deg):	

Raw values						Temperature corrected																				
Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments
-1187.00	1601.00	-220.00	833.00	-1292.00	-320.00	593.50	-800.50	110.00	533.10	-826.90	-204.80	1002.60	1004.90	71.56	23-Aug-07	0:27:44	3136.6	53.7	95.71	PUP	None	3136.60			95.71	Good
-1185.00	1344.00	-899.00	815.00	-1311.00	288.00	592.50	-672.00	449.50	521.60	-839.00	184.30	1002.30	1005.00	71.58	23-Aug-07	5:55:11	3172.51	53.76	98.14	PUP	None	3172.51			98.14	Good
-1186.00	-1109.00	1175.00	794.00	1221.00	-587.00	593.00	554.50	-587.50	508.20	781.40	-375.70	1002.10	1005.00	71.55	23-Aug-07	10:31:28	3216.39	53.72	101.3	PUP	None	3216.39			101.30	Good
-1200.00	859.00	1355.00	791.00	-273.00	-1328.00	600.00	-429.50	-677.50	506.20	-174.70	-849.90	1001.70	1004.60	71.55	23-Aug-07	13:39:12	3257.05	53.2	103.39	PUP	None	3257.05			103.39	Good
-1188.00	1151.00	-1134.00	765.00	-1249.00	565.00	594.00	-575.50	567.00	489.60	-799.40	361.60	1002.80	1004.70	71.58	23-Aug-07	16:16:58	3297.38	53.67	105.77	PUP	None	3297.38			105.77	Good
-1207.00	1480.00	-607.00	772.00	-1366.00	50.00	603.50	-740.00	303.50	494.10	-874.20	32.00	1002.00	1004.70	71.53	23-Aug-07	18:17:31	3337.63	52.96	107.03	PUP	None	3337.63			107.03	Good
-1209.00	1385.00	795.00	777.00	-874.00	-1047.00	604.50	-692.50	-397.50	497.30	-559.40	-670.10	1001.50	1004.60	71.54	23-Aug-07	20:22:22	3375.41	52.87	106.59	PUP	None	3375.41			106.59	Good
-1207.00	741.00	-1420.00	772.00	-1011.00	920.00	603.50	-370.50	710.00	494.10	-647.00	588.80	1002.80	1004.70	71.59	23-Aug-07	23:05:19	3416.55	53.00	107.02	PUP	None	3416.55			107.02	Good
-1211.00	-1503.00	540.00	779.00	1365.00	10.00	605.50	751.50	-270.00	498.60	873.60	6.40	1002.10	1005.90	71.63	24-Aug-07	3:42:47	3456.15	52.83	106.74	PUP	None	3456.15			106.74	Good
-1213.00	1497.00	547.00	787.00	-1032.00	-883.00	606.50	-748.50	-273.50	503.70	-660.50	-565.10	1001.40	1004.60	71.56	24-Aug-07	5:47:05	3495.52	52.73	105.59	PUP	None	3495.52			105.59	Good

Schlumberger Private

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY HOLD

Client :	STATOIL		Acceptance Criteria :				
Well :	15/9-F-12	Tool G:	1001.84	+/- 2.5 counts	BGGM Magnetic Declination(deg):	-2.251	Corrections from Local Model:
Hole Size :	8.5 in.	Tool H:	1007.96	+/- 6 counts	Total Magnetic Declination(deg):	-2.251	Declination (deg):
		Dip:	71.63	+/- 0.45 deg	Grid Convergence(deg):	-0.950	Field Strength (nT):
Mwd Run :	10				Total Correction(deg):	-1.300	Dip (deg):
Date :	21-Aug-07	Declination Date:	1-Sep-07				
MWD Tool Number :	FN15	EDI Az Error:	0.08 Deg				
		EDI interferring field:	29.0				

Raw values						Temperature corrected																				
Raw Sgx_t	Raw Sgy_t	Raw Sgz_t	Raw Shx_t	Raw Shy_t	Raw Shz_t	T_corr. Sgx	T_corr. Sgy	T_corr. Sgz	T_corr. Shx	T_corr. Shy	T_corr. Shz	Tool G	Tool H	Dip Angle	Date	Time	Depth m	Incl deg	Azim deg	Tool Type	Qual Type	Depth m	Incl deg	SUCOP corr Azim deg	Final Azim deg	Comments

Schlumberger Private

Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client : STATOIL
Well : 15/9-F-12
Hole Size : 8.5 in.

Mwd Run : 10
Date : 21-Aug-07
MWD Tool Numbe FN15

Acceptance Criteria :
Tool G: 1001.84 +/- 2.5 counts
Tool H: 1007.96 +/- 6 counts
Dip: 71.63 +/- 0.45 deg

Declination Date 39326
EDI Az Error: 0.08 Deg

BGGM Magnetic Declination(deg): -2.251
Total Magnetic Declination(deg): -2.251
Grid Correction(deg): -0.950
Total Correction(deg): -1.300

Corrections from Local Model:
Declination (deg): 0.00
Field Strength (nT): 0.00
Dip (deg): 0.00

Magnetic to grid correction -1.300

Surv #	Depth	Temperature corrected axes Gx	Gy	Gz	Hx	Hy	Hz	|G| (mg)	|H| (nT)	|H| (counts)	Statoil Reference (nT)	Dip (deg)	Inc (deg)	Mag Az (deg)	TF	Grid Az (deg)	Az Corr (deg)	Interval (m)	DD surveys Depth m	Inc deg	Azim deg		MWD MD m	Inc deg	Az deg	Inc w Sag deg	Comparison DD vs. MWD Depth m	Sag deg	Azm corr deg	Azm deg	Inc deg	Comment
1	3136.60	593.5	-800.5	110.0	533.1	-826.9	-204.8	1002.57	50247	1004.94	161.44	71.56	53.70	97.01	8	95.71	-1.30	3136.60	3136.60	53.84	95.71	#	3136.60	53.70	95.71	53.84	0.00	0.14	0.00	0.00	0.00	Good
3	3172.51	592.5	-672.0	449.5	521.6	-839.0	184.3	1002.34	50248	1004.96	155.79	71.58	53.76	99.44	34	98.14	-1.30	35.91	3172.51	53.90	98.14		3172.51	53.76	98.14	53.90	0.00	0.14		0.00	0.00	Good
5	3216.39	593.0	554.5	-587.5	508.2	781.4	-375.7	1002.14	50249	1004.99	162.92	71.55	53.72	102.60	-133	101.30	-1.30	43.88	3216.39	53.86	101.30		3216.39	53.72	101.30	53.86	0.00	0.14		0.00	0.00	Good
6	3257.05	600.0	-429.5	-677.5	506.2	-174.7	-849.9	1001.74	50227	1004.53	183.84	71.55	53.20	104.69	-58	103.39	-1.30	40.66	3257.05	53.34	103.39		3257.05	53.20	103.39	53.34	0.00	0.14		0.00	0.00	Good
8	3297.38	594.0	-575.5	567.0	489.6	-799.4	361.6	1002.76	50237	1004.74	165.75	71.58	53.67	107.07	45	105.77	-1.30	40.33	3297.38	53.81	105.77		3297.38	53.67	105.77	53.81	0.00	0.14		0.00	0.00	Good
9	3337.63	603.5	-740.0	303.5	494.1	-874.2	32.0	1001.96	50234	1004.68	183.86	71.53	52.96	108.32	22	107.03	-1.29	40.25	3337.63	53.10	107.03		3337.63	52.96	107.03	53.10	0.00	0.14		0.00	0.00	Good
10	3375.41	604.5	-692.5	397.5	497.3	-559.4	-670.1	1001.49	50231	1004.62	182.38	71.54	52.87	107.89	-30	106.59	-1.30	37.78	3375.41	53.01	106.59		3375.41	52.87	106.59	53.01	0.00	0.14		0.00	0.00	Good
11	3416.55	603.5	-370.5	710.0	494.1	-647.0	588.8	1002.79	50235	1004.70	165.72	71.59	53.00	108.31	62	107.02	-1.29	41.14	3416.55	53.14	107.02		3416.55	53.00	107.02	53.14	0.00	0.14		0.00	0.00	Good
12	3456.15	605.5	751.5	-270.0	498.6	873.6	6.4	1002.14	50295	1005.89	103.45	71.63	52.83	108.04	-160	106.74	-1.30	39.60	3456.15	52.97	106.74		3456.15	52.83	106.74	52.97	0.00	0.14		0.00	0.00	Good
13	3495.52	606.5	-748.5	-273.5	503.7	-660.5	-565.1	1001.45	50232	1004.65	176.29	71.56	52.73	106.89	-20	105.59	-1.30	39.37	3495.52	52.87	105.59		3495.52	52.73	105.59	52.87	0.00	0.14		0.00	0.00	Good
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Rev#3.5 w/ Statoil Ref.

Schlumberger

SURVEY QC

Client :	STATOIL	Acceptance Criteria :			BGGM Magnetic Declination(deg):	-2.251	Corrections from Local Model:
Well :	15/9-F-12	Tool G:	1001.84	+/- 2.5 counts	Total Magnetic Declination(deg):	-2.251	Declination (deg): 0.00
Hole Size :	8.5 in.	Tool H:	1007.96	+/- 6 counts	Grid Correction(deg):	-0.950	Field Strength (nT): 0.00
		Dip:	71.63	+/- 0.45 deg	Total Correction(deg):	-1.300	Dip (deg): 0.00
Mwd Run :	10						
Date :	21-Aug-07	Declination Date		39326			
MWD Tool Numbe	FN15	EDI Az Error:		0.08 Deg			

Magnetic to grid correction -1.300

Surv #	Depth	Temperature corrected axes Gx	Gy	Gz	Hx	Hy	Hz	|G| (mg)	|H| (nT)	|H| (counts)	Statoil Reference (nT)	Dip (deg)	Inc (deg)	Mag Az (deg)	TF	Grid Az (deg)	Az Corr (deg)	Interval (m)	DD surveys Depth m	Inc deg	Azim deg	MWD MD m	Inc deg	Az deg		Inc w Sag deg	Comparison DD vs. MWD Depth m	Sag deg	Azm corr deg	Azm deg	Inc deg	Comment
68								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	
69								#VALUE!	#VALUE!	#VALUE!	#VALUE!	#######	#VALUE!	#VALUE!	######																	

Schlumberger Private