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III DRILLING REPORT

III 1. SUMMARY

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Well 6406/3-2 was a wildcat, situated on the undrilled alpha structure in the central part of the block.

The well was drilled to 4523 m, into Jurrasic formation, and it was performed two production tests.

Because of problem after the first test, 543.5 hrs were spend on fishing to get the cmt. stinger loose in order to continue with the next test.

The tests were performed in 7" liner and in Aldra and Tomma formation.

The well was drilled from 23.06.86 to 23.11.86 and 152 days and 19.5 hrs were spent total.

III 2. DRILLING OPERATIONS IN INTERVALS

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Well 6406/3-2 was spudded in at 02.00 hours 28.06.86. The water depth was measured to be 300 m.

Final position: LAT: 64° 51' 46.78"N
LON: 06° 49' 51.87"E

Rig heading: 226°

Deviation from intendent position: 40 m, dir: 001°

Anchor handling:

8.5 hours were spent on anchoring the rig. All anchors were tested to 150 metric tons.

36" hole section: 322 - 433.5 m:

Mud system: Used seawater with returns to seabed.
Pumped high-viscous pill on each connection.

Drilled 17-1/2" pilot hole down to 436 m. Opened up to 36" hole (using 26" and 36" hole openers) down to 433.5 m. Survey showed: 0 deg at 429 m.

Ran 30" casing. Had some problems during cement job (see "equipment failure" 29.06.86). Cemented casing. Had to hold casing in tension while cement sat up due to casing sinking. Ended up with 30" shoe at 433 m. Ran pin connector and 21" riser.

26" hole section: 433.5 - 965 m:

Mud system: Spud mud, Displaced to Gyp/Polymer while drilling out cement.
Mud weight: 1.10 S.G. - 1.12 S.G.

Hole was displaced to 1.10 s.g. mud and 12-1/2" pilot hole was drilled down to 965 m without any major problems.

Ran Schlumberger logs and opened up 12-1/4" pilot hole to 26" hole down to 965 m (12-1/4" guiding bit at 969 m).

Ran and cemented 20" casing with shoe at 951 m.

Plugged kill/choke lines:

After installing B.O.P. and attempting to flush kill/choke lines: No success. Had to disconnect both lines on cellar-deck and released plugs with 240 bar with B.J. Kil-line hooked-up for B.O.P. test.
Lost approximatly 2 hours rig-time.

Drilled out float and shoe and 3 m of new formation. Performed leak off test equivalent to 1.60 S.G. mud.

17-1/2" hole section: 965-2298 M:

Mud system: Gyp/polymer.
Mud weight: 1.12-1.58 S.G.

Drilled 17-1/2" hole down to 1509 m. Had pressure drop during circulating to increase mud weight: Lost 40 bar.

Washout:
Pulled out of hole and found center nozzle (1/32") washed out. Did not loose much rig-time since the bit was due to be pulled anyway (worn: 6-5-1/4).

Continued drilling 17-1/2" hole down to 2298 m without any major problems. Mudweight was increased in steps and was 1.50 S.G. when reaching t.d. Over-pull during tripping was in the range of 20-40 tons.

Before starting logging, mudweight was increased to 1.58 S.G. due to excess cuttings over shakers:

Ran Schlumberger logs. Had to pull one log and make a wipertrip due to tight hole.

Ran and cemented 13-3/8" casing with shoe at 2283 m.

Negative 13-3/8" casing test:

Got max. 120 bar. Pressure dropped 40 bar. Ran in with R.T.T.S.-Packer. Set packer at 2183 m and tested casing to 345 bar: O.K.
Spent approx. 17 hours on this.

Squeezing 13-3/8" casing shoe:

To inprove leak-off test (1.73 S.G.) a balanced cement plug was set from 2283 to 2199 m and hesition squeezed. Performed leak off test equivalent to 1.85 S.G. mud. Spent approx. 25 hours to achieve this.

<u>12-1/4" hole section: 2298-3930 m</u>

Mud system: Gyp/Lignosulphonate/Lignite. Excess gyp drifted out at about 3200 m.
Mud weight: 1.61-1,82 S.G.

Drilled 12-1/4" hole down to 2412 m while increasing mudweight in steps to 1.80 s.g. Responding to indication of increasing pore pressure (like high gas reading). Continued drilling with 1.80 s.g. Mud down to 2974 m without any major problems. Switched over to turbine drilling at this point of depth to improve drilling rate (approx. 6 m/hr average last 100 m ending with approx. 2.7 m/hr last 10 m).

The well was continued drilling with turbine down to 3527 m with one bit. This bit was a crystal with T.F.A. = 1.5, drilled for 183.6 hours and had an average drilling rate of 3.01 m/hr. The bit was 50% worn and 1/16" undergauged.

Made up new turbin assembly and continued drilling 12-1/4" hole from 3527 to 3697 m. Had a pressure drop of 15.2 bar for 15 min.

Washout in D.P. tool-joint:

Pulled out and found washout in drill-pipe tool-joint 462 m above bit. This caused about 13 hour rig-time.

Continued drilling 12-1/4" hole down to 3930 m. Had some tight spots and overpull during wiper trips in range of 30-40 mt. Had drilling break at 3926.5 m. Flowchecked for 15 min.: well was static. Was ready for logging.

Did not reach T.D. on first log-run. Had to make a wipertrip. Pumped out and reamed from 3884 to 3818 m. Maximum overpull was 40 mt. Increased mudweight from 1.80 to 1.82 S.G. to improve hole conditions.

Completed running Schlumberger logs. Last run was C.S.T. and 12 of 30 bullets were lost in hole. Junk bit and junkbasket were run in wipertrips before casing job.

Had tight spots from 3923 to 3904 m: Maximum 40 mt overpull. No overpull above 3810 m. Recovered only small amount of C.S.T. bullets and one complete bullet resting on top of stabilizer.

Rigged up and ran 9-5/8" casing with shoe at 3913 m.

Lost partial returns during cementing:
Displaced plug with a total of 133.9 m^3 mud. Had partial returns during mixing and displacing of cement. Lost 31 m^3 while mixing cement and 92 m^3 while displacing plug (total: 123 m^3 mud).

Ran temperature/CCL log. Drilled cement, plugs and float from 3872 m to 3906 m and cement and shoe from 3906 m to 3913 m. No cement below shoe. Drilled 0.5 m new formation and performed a leak-off equivalent to 1.93 S.G. mud.

8-1/2" hole section: 3903-4380 m:

Mud system: Lignite/Lignosulphnate/Anco Resin.
Mud weight: 1.23 - 1.37 S.G.

After drilling 1 m of new formation (down to 3931 m) with bit and junk-basket and recovered 1550 gram junk, coring started:

Core no. 1:	3931 - 3935 m
Recovery:	2.94 m, 73.5%
Bit:	CB-303, 100% worn
R.O.P.:	1.1 m/hr

Stopped coring due to high torque and no progress.
Later: Recovered 900 gram junk.

Core no. 2:	3935 - 3952 m
Recovery:	17 m, 100%
Bit:	CT-303, 50% worn
R.O.P.:	1.4 m/hr

Core no. 3:	3952 - 3965 m, with R.L.L.-tool
Recovery:	12 m, 94%
Bit:	CT-303, 30% worn
R.O.P.:	2.6 m/hr

Core no. 3: Had to pull due to core jammed.

Stuck pipe:

Stared cutting core no. 4 down to 3983 m. Pipe become stuck. Unable to pick off bottom. Jar did not work. Worked pipe free with maximum 55 tons over-pull. Set back kelly and attempted to pull out of hole: Pipe was stuck. Picked up kelly. Pumped and worked pipe into 9-5/8" casing shoe at 3913 m. Max over-pull: 55 tons.

Core no. 4:	3965 - 3983 m, with R.L.L.-tool
Recovery:	16.5 m, 92%
Bit:	CB-303, 25% worn
R.O.P.:	1.6 m/hr

The stuck-pipe situation was believed to be caused by junk in hole, and 1 kg junk was recovered in one junk-basket run.

Core no. 5:	3983 - 4001 m
Recovery:	18.0 m, 100%
Bit:	CT-303, 25% worn
R.O.P.:	2.7 m/hr

Stopped coring due to core jammed

Core no. 6:	4000-4027.5 m, with R.L.L.-tool
Recovery:	26.0 m, 98%
Bit:	CT-303, 25% worn
R.O.P.:	3.3 m/hr

Core no. 7:	4027.5-4048 m, eith R.L.L.tool
Recovery:	20.5 m, 100%
Bit:	CB-303, 40% worn
R.O.P.:	1.5 m/hr

Core no. 8:	4048-4056.5 m, with R.L.L.-tool
Recovery:	8.5 m, 100%
Bit:	CT-303, 10% worn
R.O.P.:	1.2 m/hr

Drilled 8-1/2" hole from 4056.5 - 4067 m. Continued coring:

Core no. 9:	4067 - 4094 m
Recovery:	27.0 m, 100%
Bit:	CT-303, 30% worn
R.O.P.:	3.6 m/hr

Core no. 10:	4094 - 4121 m, with R.L.L.-tool
Recovery:	25.8 m, 95.6%
Bit:	CT-303, 30% worn
R.O.P.:	4.5 m/hr

Core no. 11:	4121 - 4149 m with R.L.L.-tool
Recovery:	28.0 m, 100%
Bit:	CT-303, 20% worn
R.O.P.:	4.3 m/hr

Continued drilling 8-1/2" hole down to 4282 m without any major problems. Reddy for coring:

Core no. 12:	4282 - 4298.5 m
Recovery:	14.0 m, 85%
Bit:	CT-303, 20% worn
R.O.P.:	2.5 m/hr, core jammed
Core no. 13	4298.5-4308.5 m, with R-L.L.-tool.
Recovery:	10.0, 100%
Bit:	CT-303, 10%
R.O.P.:	3.3 m/hr

Stopped coring due to pressure drop (17.2 bar). Pulled out. Flow checked at shoe: Negative.

Continued cutting cores:

Core no. 14:	4308.5-4336 m, with R.L.L.-tool
Recovery:	27.0 m, 98%
Bit:	CB-303, 60% worn
R.O.P.:	2.9 m/hr
Core no. 15:	4336-4345.5 m, with R.L.L.-tool
Recovery:	4.9 m, 52%
Bit:	CT-303, 15%
R.O.P.:	3.1 m/hr
Core no. 16:	4345.5-4363 m, with R.L.L.-tool
Recovery:	15.4 m, 88%
Bit:	CT-303, 35%
R.O.P.:	3.2 m/hr
Core no. 17:	4363-4377.5 m, with R.L.L.-tool
Recovery:	12.3 m, 85%
Bit:	CT-303, 25%
R.O.P.:	3.6 m/hr

During pulling out with core no. 17:
Unstable hole:

When pulling out at 2082 m: Stopped due to hole not taking correct amount of mud (1.0 m^3 volum difference over last 25 stands drill-pipe pulled). Ran to T.D. and hole displaced correct volum. Circulated bottoms up half way, , flow checked for 20 min: Negative. Continued circulating bottoms up to wellhead: Well gained 300 liters. Shut in well with M.P.R. Circulated riser volum down kill line: Max. 39% gas. Stopped circulating, closed upper annular and opened M.P.R. Checked annulus pressure from below B.O.P.: Zero pressure. Drill-pipe pressure: Zero. Circulated down drill string up kill-line. Max gas after "poor-boy" degasser: 33%. Circulated until gas went down to 7%. Mudweight was increased from 1.23 to 1.26 S.G. and "normal" operation went on.

Lost approximatly 25 hours rigtime.

The 8-1/2" hole was logged, and during running R.F.T.: Stuck at 4371.5 m.

Used "cut and thread" method to recover stuck R.F.T. tool. Broke Schlumberger wireline at weakpoint after having latched onto fish. Recovered R.F.T.-tool.

Lost approximatly 28 hours rig-time due to this. Continued logging as required. Was then ready for running 7" liner.

Problem running 7" liner:

Ran 7" liner string down to 906 m (shoe) when a 10 mt restriction was observed. Liner was pulled out and centralizers were checked. Ran in with 8-1/2" bit and junk basket to T.D. and worked junk basket. Pulled out drifting all drill-pipe with 2-3/4" rabbit.

Lost approximatly 20 hours rig-time due to this problem.

Ran 7" liner and cemented same without any problems. Placed shoe at 4377 m and top of hanger at 3763 m.

6" hole was drilled from 4380 m to 4282 m and leak-off test equivalent to 2.07 S.G.

6" hole section: 4380 - 4523 m

Mud system: Lignite/Lignosulphonate/Anco Resin.
Mud weight: 1.26 - 1.62 S.G.

6" hole was drilled down to 4420 m while increasing mudweight in steps from 1.26 - 1.62 S.G. Continued drilling down to 4523 m (total depth) using 1.62 S.G. mud. Had no major problems.

Waiting on weather:

Due to bad weather a gray inside B.O.P. was installed. Ran in and landed with DP: Not able to release running tool. Had to instal kelly on top and back off to ralease running tool.

Anchor-problems:

Due to extreme bad weather (wind: 36-40 m/s, wave hight: 7-12 m), anchor no. 8 slipped and the rig moved approximatly 17 m off location. This meant that riser had to be disconnected.

After having waited on weather, anchor no. 8 was reset and pretensioned to 180 mt and rig moved back on exact location. Riser was connected and gray B.O.P. was pulled out.

Interruption due to bad weather caused approximatly 52 hours before normal drilling operation was re-gained.

Problems passing lower annular:

When going in with jet-sub to wash wellhead before retriving wear bushing and testing B.O.P., could not pass lower annular preventer. Made several atempts to work through: No success. Had to pull out and run in with new assembly to gain more weight: 4 stands 6.5" D.C. 7 stands H.W.D.P. and 17.5" stab. managed to work through.

Lost approximatly 13 hours rig-time.

Ran Schlumberger cement evaluation logs. Reduced mudweight from 1.62 to 1.54 S.G. Had to wait on weather: Lost additional 6 hours rig-time. Continued reducing mudweight in steps down to 1.38 S.G. Hole was in good condition. Completed running Schlumberger formation evaluation logs. Plugged back 6" open hole and was ready for testing preparations. A 7" bridge-plug was placed at 4353 m.

III 3. EXTRACT OF DAILY ACTIVITIES

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23.06. The rig "West Vanguard" was transfered to well 6406/3-2. At 2200 hrs, started towing.

24.06. Rig under tow to location.

25.06. Rig under tow to location.

26.06. Rig arrived location at 2300 hrs. Started anchorhandling.

27.06. Continued anchorhandling. Made up 30" running tool on HWDP, made up 9 joint 5" DP for cement stinger. Made up 18 joints HWDP and set back in derrick. Made up 30" casing and installed same in P.G.B. and hung off tool on trolly in moon pool. Made up 17½" bit and MWD tool. Function-tested MWD O.K. ran in hole to 307 m. Ran to seabed while observing with R.O.V. Tagged bottom at 322 m.

28.06. Spaced out and spudded in at 0020 hrs. Drilled 17½" pilot hole from 322 m to 436 m. Pumped 1.6 M3 spud mud on every connection. No signs of gas observed. Pumped 15 M3 spud mud, dropped survey and pulled out of hole. Retrieved survey: 0.0 deg off at 425 m. Laid down MWD tool. Made up 17½" bit, 26" and 36" H.O. and ran in hole to seabed. Stabbed into hole while observing by R.O.V. started to open up 17½" pilot hole to 36" hole.

29.06. Continued opening up to 36" hole down to 433.5 m. Inspected with R.O.V. to assure correct depth drilled at seabed: O.K. Circulated 5 M^3 spud mud and displaced hole with 70 M^3 spud mud at 436 m. Dropped survey and pulled out to 329 m. No drag. Retrieved survey: 0 deg at 429 m. Ran in to T.D.: 436 m. No fill. Displaced hole with 100 M^3 spud mud. Pulled out to 330 m.

Displaced 5 M^3 spud mud and continued pulling out. No drag. Made up and ran 30" casing on H.W.D.P. to 433 m. P.G.B heading: 225 deg. R.K.B. to top 30" W.H.: 319.5 m. R/U cement lines and circ. 50 M^3 sea water, pressure tested cement lines to 173 bar: O.K. Attempted to cement 30" casing, no success due to plugged transfer line. Total slury volum pumped: 27.5 M^3. Circ. out cement w/rig pumps while working w/plugged cement transfer line. Transfer line O.K. Pressure tested cement lines to 173 bar: O.K: cemented 30" casing with 47 M^3 lead slurry at 1.56 S.G. slurry weight, and 10 M^3 tail slurry at 1.92 S.G. Displaced cement with 8.3 M^3 S.W. No backflow. Waited on cement. Had casing in tension. Backed off R/T and pulled out. Washed wellhead housing and P.G.B. on way out.

30.06. Broke and L/D running tool, 17½" bit. 20" H.O. and 36" H.O. R/U and ran pin connector and 21" riser. Had electric power problem, Unable to reset S.C.R. on drawwork. Continued running riser and inst. diverter. Landed pin connector W/10 MT weight. Attempted to make pull test. Disconnected at 15 MT overpull. Relatched conn. and made pull test to 25 MT: O.K. Disconnecnted w/25 MT pull. Time to unlatch: 20 sec. Latched on and made pull test to 25 MT: O.K. Filled up riser w/sea water and observed leak on W.H. connector. Disc. pin connector and inspected W.H. with R.O.V.: O.K. no leak observed. Pressure tested diverter system to 4 bar for 10 min: o:k: Made up 17½" bit and 26" U.R., functiontested: O.K. Ran in hole and tagged cement at 430 m. Drilled cement, shoe and cleaned out rat hole to 436 m (26" hole to 434.5 m). Displaced hole w/1.10 S.G. mud, pulled out. Made up new B.H.A. w/12 - 1/4" bit and M.W.D. tool.

01.07. Ran in hole after function testing M.W.D. tool. Drilled 12 1/4" hole from 436 to 505 m. Flow checked at 483 m due to pit gain; well static. Circulated bottoms up to

test out N.P.S. gas detector for proper reading. Continued drilling 12 1/4" hole form 505 to 563 m., flow checked at 534 m due to pit gain; well static. Circulated bottoms up for samples at 677 m. Max gas: 1.2% at bottoms up. Flow checked at 677 m, well static.

02.07. Made wipertrip to 30" CSG shoe. Ran back to T.D. (677M). No drag, no fill. Drilled 12 1/4 " pilot hole form 677 to 965 m. Circulated bottoms up and dropped survey. Started to pull out of hole.

03.07. Pulled out of hole. L/D M.W.D. tool. Rigged up and ran Schlumberger logs.

Run no. 1 : ISF - MSFL - LSS - GR
Made three attempts to come down. Still not able to pass 436 m. Ran in with shorter tool;

Run no. 2 : LSS - GR
Had to pull out due to failure on Schlmb. tension meter. Reparired same.

Rigged down Schlumerger. Made up 12 1/4" bit and ran in to 30" shoe. L/D kelly spinner for inspection and repair. Continued running in hole. Took 10 mT wight at 436 m. Repaired fault on SC system for draw-work. Reamed and washed from 436 - 448 m, 480 - 505 m, 890 - 965 m. Had 1 m fill. Circulated hi-vis pill around, max gas: 3% from 965 m. Pulled out. No drag. Stripped measured pipe; no depth corection. Rigged up Schlumberger.

Run no. 3 : ISF - LSS - MSFL - GR (Re-run no.1)

04.07. Rigged down Schlumberger. Made up new B.H.A., function tested U.R., and ran in hole to 430 m. Reamed with 26" U.R. to shoe and opened up hole to 26" form 433 to 612

m. Flow checked at 582 m : static. Circulated with mudpump no. 1 while repairing pump no. 2. Continued opening up to 26" hole w/U.R.

05.07. Opened up to 26" hole down to 749 m. Circulated bottom up. Dropped sruvey and pulled out. Laid down holeopener and underreamer. Made up new H.O./U.R. assembly, function tested and ran in hole to 749 m. Started to open up to 26" hole from 749 m.

06.07. Opened up to 26" hole down to 965 m, 12 1/4" bit at 969 m. Pumped 5 M^3 hi-vis pill and circulated shakers clean. Flow-checked: well static. Dropped survey and pulled out to 30" CSG shoe. No drag. Retrieved survey. Ran in hole to 969 m., no drag or fill. Circulated bottom up. Max gas: 1.3%. Displaced open hole to 1.23 S.G. mud (185 M^3). Pulled out to 30" casing shoe. Displaced 30" CSG to 1.23 S.G. mud (60 M^3). Pulled out to W.H. displaced riser to sea water in two steps. Flow-checked: O.K. Pulled out. Function tested U.R. at surface: O.K. service broke and L/D same. Unlatched pin connector and observed W.H. for 20 min. Well was static. Pulled riser and pin connector.

07.07. Slipped 9 m drilling line. Made up cement sub sea plugs in 18 3/4" housing and stood back in derrick. M/U X-over for cementhead on H.W.D.P. stand. M/U 26" bit and ran in hole for check trip w/2-arm utility guide frame and S.S.T.V. Had to make re-run due to pad eye on lock on guide frame, broke. Stabbed in with bit, pulled guide frame and S.S.T.V. while running in hole. No drag or fill. Circulated bottom up. Pulled out to 357 m. No drag. Pumped 8 M^3 1.23 S.G. mud, pulled out. R/U to run 20" casing. Ran in w/20" casing. Shoe at 951 m.

08.07. Circulated 97 M^3 1.23 S.G. mud pressure tested cement surface line to 345 bar. Pumped 10 barrels sea water ahead. Mixed and pumped lead slurry and tail slurry.

Dropped dart and sheared cement plug w/138 bar. Displaced cement plug w/106 M3 sea water using rig pump. Switched to B.J. unit and displaced 2.3 M3 sea water and hesitation squeeded. Final pressure: 31 bar. Plug did not bump. Checked floats: O.K. Backed out 20" running tool and pulled out. M/U jet sub and ran in hole to W.H. using guide frame. Washed W.H. area. Pulled out. R/U and ran B.O.P. Pressure tested choke and kill lines every third joint to 513 bar for 10 min: O.K. Positioned rig. Adjusted rucker tension lines to middel stroke position. Positioned rig. Landed B.O.P. with slip joint open. B.O.P. latched on.

09.07. Tested connector with 25 tons overpull. Ran in hole w/tesplug on D.P. while connecting kill and choke lines and hose reel connectors. Attempted to flush kill/choke lines w/rigpumps. Lines plugged. Disconnected kill and choke line at cellar deck. Plugs released w/240 bar pressure with B.J. kill-line hooked up for B.O.P. test. Choke-line partly plugged. Tested B.O.P. on blue pod. Pipe rams and tail safes to 516 bar. Bag preventers to 480 bar. All tests held 10 min. Function tested yellow pod form mim-panel. Pulled out w/test plug. Had 10 tons O.P. in L.A.P. M/U seatprotector. Closed shear ram usning accoustic system. Tested 20" casing to 120 bar. Ran in and set seat protector by the second attempt. M/U new BHA included MWD-tool, and start R.I.H.

10.07. Cont. RIH and tagged top of cmt. at 915 m. Drilled cmt. from 915 m to 948 m, including float collar at 925 m. Displaced csg. to 1,12 SG mud and took SCR up riser and up chike line. Drilled cmt. down to 958 M. Washed down to 969 m. Drilled down to 972 m. Performed leak off test eg. to 1.60 S.G. mud. Drilled down to 1030 m.

11.07 Cont. drilling 17-1/2" hole down to 1215 M.

12.07. Cont. drilling 17½" hole down to 1509 m. Had drilling break at 1492 m, flow checked, the well static. Raised m.w. to 1.20 S.G., and the pressure dropped 40 Bar. Pooh and found center nozzle washed out. Had drag from 1375 - 980 m. Max op. 30 tons. M/u new BHA and MWD-tool and RIH. Had 20 tons drag in open hole. Washed down from 1490 m to 1509 m. No fill. Drilled down to 1571 m.

13.07. Cont. drilling from 1571 m to 1972 m.

14.07. Drilled 17½" hole down to 2087 m and increased m.w. to 1.35 S.G. Cont. drlling down to 2216 m. Start increasing m.w. to 1.50 S.G.

15.07. Increased m.w. to 1.50 S.G. and drilled down to 2298 m. Increased m.w. to 1.55 S.G. Pooh for wipertrip. Had tight hole from 2170 - 1960 m. Max o.p. was 40 tons, swabbed the well and RIH. Circ bttm. up. Max gas was 4.3%.

16.07. Po for wiper trip. Tight hole, had to pump out at 1570 - 1550 m.

Tight at: 2140 - 1912 m
1740 - 1570 m
1530 - 1485 m
1228 - 1200 m

Max o.p. was 30 tons. When R.H. tight at 1513 - 1551 m. Max weight 40 tons. Reamed from 1551 m to 2298 m. No fill. Circulated and reaised m.w. to 1.58 S.G. Pooh max o.p. 35 tons. Ran Schlumberger, ISF - MSFL - LSS - GR. Tight hole, could not pass through at 1000 m. Pooh and prepared for wipertrip.

17.07. RIH. Some tight spots. Max weight 10 tons. No fill at bttm. Circulated bottom up and Pooh. Max 20 tons

overpull. Ran Schlumberger logs: ISF - MSFL - LSS - GR. M/u 5" FH landing string and set back in derrick.

18.07. RIH for wipertrip. Max weight, 10 tons. Pumped 14 m^3 hi-vis pill when sirculated bottom up. When Pooh, flushed w.h. area. Circulated riservolum through K/C lines. Retrieved seat protector and washed seal area using brass nose jet tool made up on 2 stds HWDP below seat protector RT. Start running 13 3/8" casing.

19.07. Ran 13 3/8" casing. Got stuck at 1950 m. Pulled free with 110 tons overpull. Landed casing with shoe at 2283 m and float at 2258 m. Circulated mud mixed with H_2S scavenger. Tested surface lines and dropped bottom plug. When start pumping cmt., B.J. unit failed. It was the power take off for mixing pump that broke. Had to circulate while waiting for spare parts.

20.07. Repared the failure and tested the unit by mixing a neat cmt. slurry. While doing this, pumped 40 m^3 w/ZINK-CARB mud, Ph 10 - 10,5, w/the mud pumps. Mixed and pumped the lead slurry, then the B.J. unit shut down due to cooling water hose came off and engine became overheated. Repaired it, and attempted to start up, but the hopper was plugged. Repaired it, and attempted to start up again, but the engine temperature increased rapidly due to shut down of hydraulic driven radiator fan. Rotated fan by blowing air on it: O.K. Mixed and pumped the tail slurry. Sheared the plug w/97 Bars. Pumped 3.2 m^3 mud W/B.J. unit. Cont. displacing w/mud pumps. Plug did not bump. Had full return during cementing and displacing. Flushed w.h. area and displased riser when Pooh with landing string. Run in with seal ass. and activated same w/10 tons. Tested same O.K. M/U brass nose jet sub on 2 stds dp and w.b. and RIH. Flushed w.h. seal area and circ riser. Set wear bushing and Pooh.

21.07. Tested surface equipment and M.U. 12 1/4" drilling ass. Tested 13 3/8" csg. RIH and tagged cmt. at 2255.5 m. Drilled cmt, F.C., F.S. and 3 m of new formation to 2301 m. Circulated and cond. mud. MWD-tool failed. Performed LOT to 1.73 S.G. using mudweight 1.61 S.G. Pooh and l.d. MWD-tool.

22.07. M/U mule shoe d.p., RTTS packer safety jnt. and cic. valve and R.I.H. Set the packer at 2183 m and tested csg. to 345 bar O.K. Unseated the packer and tested surface lines. When starting the squeeze cmt. job, the B.J. unit broke down due to failure in the power take off. Slugged the pipe and Pooh. M/U 3½" cmt. tubing and R.I.H. to 2283 m. Laid a balansed cmt. plug from 2283 - 2199 m.

23.07. Squeezed 4.53 m^3 at 320 L/min. Max press 116 Bar. Hesitation squeezed 1 m^3 in 2 hrs. Circulated bottom up and Pooh. R.I.H. w/12 1/4" BHA and drilled cmt. and 3 m of new formation. Performed LOT to 1.85 S.G. Continued drilling 12 1/4" hole.

24.07. Increased m.w. to 1.70 S.G. due to increase fo pore pressure and conn.gass. Drilled to 2412 m. Increased m.w. to 1.80 S.G. due to high gasreadings. Drilled down to 2498 m.

25.07. Continued drilling down to 2581 m. Hole in good shape. No surveys from HWD-tool; Using single shots.

26.07. Circulated bottom up for samples. Drilled down to 2735 m. Pumped 6 m^3 nutplug pill at 2726 m due to surpected balled bit. Drilled down to 2741 m.

27.07. When Pooh with survey from 2759 m had 50 tons OP. Changed MWD-tool. R.I.H. no fill. Cont. drilling down to 2827 m.

28.07. Continuied drilling down to 2911 m. Dropped survey and Pooh. Slow trip due to heavy clay had build up on DCs.

29.07. RIH and retrieved wear bushing, which was broken down. Had 4 tons drag in U.A.P. when Pooh. R.I.H.W/BOP test tool and tested BOP. When Pooh v/test tool, had 6 tonnes drag in L.A.P. RIH and set wear bushing. M/U new BHA and RIH. Hole O.K. and no fill. Drilled down to 2937 m.

30.07. Drilled down to 2974 m. Pumped a total of 11 m^3 caustic pill, and 6 m^3 lignosulfonate/caustic pill to clean bit and BHA. Pooh and M/U new bit, turbine and MWD-tool and RIH.

31.07. Max 15 tons weight w/RIH. Circulated and drilled down to 2984 m. Had to shut down mud pump no. 2. Pooh to shoe and repaired the pump. RIH, circulated and drilled down to 2994 m.

01.08. Drilled down to 3045 m. Had to change out kelly swivel wash pipe.

02.08. Drilled down to 3106 m.

03.08.-09.08. Continuied drilling down to 3511 m.

10.08. Drilled down to 3527 m. Dropped survey and Pooh. RIH W/jet sub and combination tool. Washed w.h. area and retrieved w.b. Had 5 tons O.P. at UAP. RIH W/BOP test tool and tested BOP, Pooh.

11.08. RIH and set w.b., when Pooh, had 10 tonnes through U.A.P. M/U and RIH with new BHA w/turbo. Had to wash down from 3379 m to 3527 m. Drilled down to 3556 m.

12.08. Continued drilling down to 3622 m.

13.08 Drilled 12-1/4" hole to 3696 m.

14.08. Drilled down to 3697 m, when the pressure dropped 15.2 Bar for 15 min. Picked off bottom and checked for surface washouts - O.K. Start Pooh and check for string wasouts. Found washout 462 m above bit. When Pooh, now drag was observed. Changed out bearing section on turbine. Beasing wear was 70% or 2.1 mm. RIH, max weight was 35 tons. Drilled down to 3707 m.

15.08. Continued drilling down to 3780 m.

16.08. Continued drilling down to 3840 m.

17.08. Wiper tripped to 3680 m. Some tight spots. Max weight, 35 tons. Max gas on bottom up 1.2%. Pooh. Max pull: 20 tons. L/O turbine ass. M/U new MWD-tool and bit. RIH. Had to ream and wash due to tight spots form 3193 m to TD. Max weight 35 tons. Drilled down to 3850 m.

18.08. Drilled down to 3872 m. Pooh. Changed bit and RIH. Had to wash and ream from 3637 m to 3662 m. Max weight, 30 tons.

19.08. Drilled down to 3904 m.

20.08. Drilled down to 3930 m, when drilling brake accured at 3926.5 m. Well static for 15 mins. Wipertripped to 3780 m, no drag. Circulated bottom up, max gas 0.6%. Start Pooh.

21.08. No drag when Pooh. Ran Schlumberger logs: ISF - MSFL - BHC - GR. Unable to pass 3638 m. Pooh. Made second attempt, but stopped at 3637 m. Pooh. M/U bit and junk basket and RIH. Reamed and washed form 3616 to 3651 m. RIH to TD and circ. bottom up. When Pooh tight hole from 3884 to 3818 m. Max OP 40 tons. Ran back to TD and raised m.w. to 1,82 S.G.

22.08. Pooh, hole in good shape. R/U and ran logs.

23.08. Pooh with logging tool and RIH w/junkmill and junk basekt, due to 12 bullets from CST left in hole (12 out of 30). RIH and milled and worked junk basket. Circulated and Pooh. Recovered some junk i j.b. and 1 compleate bullet resting on top of stabiliser. Ran jet sub and W.B. R.R. tool. Washed wellhead and retrived w.b., and washed w.h. again, Pooh. R/U to ran 9 5/8" csg.

24.08. Ran and landed 9 5/8" csg. When circulating, lost return w/34 bars pump pressure. Had full return w/31 bars and 170 LPM pumpe rate. Mixed and pump the cmt. Sheared the plug w/190 bars and bumped the plug w/90 bars. Released the pressure - O.K. Had partial returns during mixing and displasing. Lost 31 m^3 while mixing and 92 m^3 while displacing.

25.08. Ran Temp/CCL log. L/D 8" DC, jars and 5" landing string. P/U 6.5" DCs and jars and RIH.

26.08. Continued R/H. Drilled cement plugs and shoe and 0.5 m new formation. Performed L.O.T. equivalent to 1.93 S.G. at 3913 m. Pmped slug and Pooh. Recovered 800 grams junk in junk basket. Bit had junk marks on O.D. M/U and RIH with j.b. and new bit.

27.08. Worked on junk and drilled 0.5 m of hole. Pumped slug and Pooh. Recovered 750 grams of junk. R/H with core bbl. Cut core no. 1 from 3931 to 3935 m. Had to Pooh due to high torque and no progress L/d core bbl. due to swelled connection on outer bbl. M/U bit, junk basket and roller reamer.

28.08. RIH w/bit j.b. and r.r. Reamed and worked on junk. Repaired valve on standpipe. Pooh. Recovered 900 grams

junk. RIH with 90 ft core bbl. and cut core no. 2 from 3935m to 3947.5 m.

29.08. continued cutting core no. 2 to 3952m. Pooh. Changed out safety jnt. due to washout, and bottom. jnt. of innerbarrel. M/U and RIH with new corehead and RLL-tool. Cut core no. 3 from 3952 m to 3965 m. Core jammed. Start Pooh.

30.08. Recovered core no. 3, changed corehead, RLL-tool and RIH. Cut core no. 4 from 3965m to 3983 m. Stuck pipe, unable to pick off bottom. The jar did not work. P/U kelly and pumped and worked pipe into casing. Max overpull 55 tons. Start Pooh.

31.08. Pooh w/core no. 4. M/U flat bottom mill and junk basket, new RLL-tool, changed upper jar section and RIH. Reamed from 3928 m to 3983 m, worked the junk basket and Pooh. Recovered 1 kg junk in j.b. The mill was 1/16" under gange, the roller reamer was 1/4" under gauge and the stabilizer 1/16" under gauge. Changed bottom section and 3 stabs. on core bbl. M/U new corehead and RIH.

01.09. Cut core no. 5 from 3983 m to 4001 m. The core jammed. Pooh. Had to pump the core out fo innerbarrel. RIH w/jet sub and wear bushing RR tool and retrieved w.b. RIH w/BOP test plug and tested BOP on Y-pod. Annulars tested to 480 Bars, rams and feilsafes to 499 Bars. Function tested BOP from minipanel on B-pod. All tests were O.K. Pooh. M/U new w.b. RIH. and set same. Pooh. M/U new corehead and RLL tool and start RIH.

02.09. RIH and cut core no. 6 from 4001 m to 4027.5 m. Pooh. M/U new corehead and RLL tool, RIH and cut core no. 7 from 4027.5 m to 4031 m.

03.09. Continued cutting core no. 7 down to 4048 m. Pooh. M/U new corehead, p/u RLL tool and monel and R.H.

04.09. Cut core no. 8 from 4048 m to 4056.5 m Pooh. M/U 8½" bit and new BHA and RIH. Drilled from 4056.5m to 4060 m. Circulated bottom up for sample.

05.09. Drilled down to 4067 m, pumped hivis pill and circulated bottom up. Pooh. M/U and RIH with coring assy. Cut core no. 9 from 4067 m to 4094 m. Start Pooh.

06.09. Pooh and recovered core no. 9. P/U RLL tool and RIH w/new corehead. Cut core no. 10 from 4094 m to 4121 m. Pooh. RIH w/new corehead and RLL tool.

07.09. Cut core no. 11 from 4121 m to 4149 m. Pooh. M/U and RIH with new BHA and MWD. Reamed from 4066 m to 4149 m. Drilled 8½" hole from 4149 m to 4164 m.

08.09. Drilled down to 4168 m. Wipertripped and reamed from 4151 m to 4168 m. Max overpull 70 tons at 4167 m . Pooh. R/U and washed wellhead and retrieved wearbushing. Tested BOP on Y-pod and functiontested on B-pod from minimpanel. All tests were O.K. except wash out in X/O to kill line goose neck, repaired same - O.K. Pooh with BOP test tool RIH and set wearbushing. Pooh. M/U new BHA. Changed out mech.jar.

09.09. RIH to 4150 m and washed to TD. Drilled 8½" hole from 4168 m to 4176 m. Circulated bottom up for sample. Drilled down to 4212 m after having circulated for samples at 4191 m.

10.09. Cintinued drilling down to 4282 m.

11.09. Circulated bottom up for sample. Pooh. M/U and RIH with coring assy. Cut core no. 12 from 4282m to 4298.5 m. Core jammed. Pooh.

12.09. M/U new core head, P/U RLL tool and RIH. cut core no. 13 from 4298.5 m to 4308.5 m. Pressure dropped 17.2 bars.
Pooh, flow checked at 9 5/8" shoe, neg. L/O RLL-tool. Changed out NB. stab, and RIH. w/new corehead and w/RLL-tool. Start cutting core no. 14.

13.09. Cut core no. 14 from 4308.5 m to 4336 m. Pooh. Recovered core no. 14. M/U new corehead and RIH. Cut core no. 15 from 4336 m to 4345.5 m. Pooh. RIH with the same corehead.

14.09. Cut core no. 16 from 4345.5 m to 4363 m. Pooh. L/O RLL-tool. Changed out shoe and corecatcher. RIH. with new corehead and RLL-tool. Cut core no. 17 to 4377.5 m. Circulated bottoms up to check for gas-neg. Pooh to 3913 m., flowchecked-neg. Pulled out to 2082 m. As the well did not take the correct amount of mud, RIH to TD.

15.09. Circulated bottom up to wellhead. Flow checked, the hole gained 300 ltr. Shut in the well and circ. up riser. Max gas 39%. Opened well and circ. bottom up several times, while raising mudweight to 1.26 S.G. Well static. Circulated gass down to 0.7% at TD.

16.09. Pooh w. core no. 17. R/U and ran logs.

Run no. 1 ISF - MSFL - BHC - GR
Run no. 2 LDL - CNL - GR
Run no. 3 DLL - GR

17.09. RIH w/8 ½" bit. 2 m fill. Circulated and Pooh. RIH w/Schlumberger.

Run no. 4 RFT

Had to pull out due to tool failure. RIH agiain, but had to pull out again due to malfunction of the tool. Changed out the tool, and RIH.

18.09. Got stude w/RFT fool. Aftempted to free stuck pipe-unsuccessful. RIH to retrieve RFT-tool, using "cut and Thread" method.

19.09. Latched on to fish at 4362 m. Broke Schl. wireline at weakpoint. Pooh w/fish. RIH to TD w/8½" bit. No fill. Circulated bottom up. Flowchecked half way out and at wellhead, - negative. Observed pressure drop to 6.9 bar. Pooh and located wash out in jars.

20.09. R/U and ran log run no. 5: SHDT - GR. Ran 7" liner, observed 10 tons restriction when shoe at 906 m. Pooh. RIH w/8½" bit and junk basket.

21.09. RIH to TD, had 2 m fill. Worked j.b. and circulated bottom up. Pooh. Ran 7" liner with shoe at 4377 m and top of hanger at 3763 m.

22.09. Mixed and pumped cmt. slurry. Bumped the plug w/120 bar. Pulled out of hanger and observed 19 bar back pressure. Bled back 1.9 m^3 mud. Pulled out to 3473 m. Flowchecked - neg. Pooh. Retrieved wearbushing and RIH with BOP test plug. Washed wellhead area and tested BOP. Tested piprams and failsafes to 516 bar - O.K., and annulars to 480 bar - O.K. Pooh. Set the wear-bushing.

23.09. M/U DC and DPs and stood back in derric. RIH w/8½" bit. Washed down from 3540 m to 3763 m. No hard cmt. Circ. bottom up. When circulated through kill and chokelines, observed 10 bar pressure drop. Pooh. Tested linerlap to 503 bar - O.K. M/U 6" bit and RIH.

24.09. Washed down from 3750 m to flapper valve at 3768 m. Drilled valve and cont. down to 3822 m RIH to 4316 m. Pressuretesed linerlap/casing to 503 bar - O.K. Drilled collars and shoe and 2 m of new 6" hole. Circulated

bottom up and conditioned mud. Performed L.O.T. equivalent to 2.07 S.G. mud weight. Drilled down to 4400 m. Raised m.w. to 1.35 S.G.

25.09. Pooh and M/U new 6" bit. RIH. Drilled down to 4420 m. Raised m.w. to 1.41 S.G. at 4410 m. Increased m.w. to 1.47 S.G.

26.09. Increased m.w. to 1.62 S.G. and drilled down to 4446 m. Circulated bottom up, and flowchecked - O.K. Pooh due to lost slips hinge. Start RIH w/bit and junk sub.

27.09. RIH to 4446 m, circulated and work junksub. Drilled 6" hole down to 4513 m.

28.09. Cintinued drilling down to 4523 m. Dropped survey. P.O. to 4372 m and attempted to retrive survey - neg. due to wire on retrieving tool broke. Pooh. L/O junksub and bit. M/U new bit and RIH to 7" shoe at 4377 m, P/O 12 stds and M/U Gray inside BOP and hang off tool due to bad weather. Landed w/DP and P/O R/R tool. Diskonnected riser due to anchor no. 8 having slipped and rig moved 17 m off location . W.O.W.

29.09. W.O.W. for a total of 26.5 hrs. Start handling on anchor no. 8.

30.09. Worked on anchor no. 8. W.O.W. Pretensioned the anchor and tensioned it up to 180 tons, and it held O.K. Connected LMRP and installed diverfer. Performed the pull test - O.K. RIH and screwed into hang off tool and Pooh with the inside BOP. RIH and circulated bottom up. Flowchecked - neg.

01.10. Pooh. RIH with jet sub and wearbushing R/R-tool. Had problem to pass L.A.P. Retrieved w.b. and tested BOP. Tested rams and failsafes to 516 bar - O.K., and annulars preventer to 480 bar - O.K. All tests with Y pod.

02.10. Installed wearbushing and prepared for logging.

Run no. 1 : CBL/VDL

M/U and RIH with bit and junk sub. No fill. Circulated and reduced m.w. from 1.62 - 1.54 S.G. Flowchecked - neg.

03.10. Pooh w/17 std. due to bad weather. M/U hang off tool and RIH. Pooh with same after 3 hrs. L/O hang off tool and RIH to TD. Circulated and cut m.w. to 1.38 S.G. in steps. No gas when circulating.

04.10. Pooh and ran logs:

Run no. 2 : ISF - BHC - MSFL - GR
Run no. 3 : CNT - LDT
Run no. 4 : VSP (GECO)
Run no. 5 : CST

05.10. Finished logging and RIH w/openended DP and laid a balansed cmt. plug from 4523m to 4300 m. Pooh to 4200 m and circ. string volume. Pooh and start L/D BHA.

06.10. L/D BHA and M/U new BHA, RIH, and tagged cmt. at 4290 m. Drilled cmt. down to 4353 m. Circulated bottom up. Pooh. M/U and RIH w/6" bit, 7" and 9 5/8" csg. scraper.

07.10. Reduced m.w. to 1.26 S.G. Pooh. P/U test equipment and made a dummy run w/fluted hander. Retrieved w.b. and tested BOP on Y-pod and function tested on B-pod from minipanel. All tests - O.K. Pooh, and set w.b.

08.10. RIH and set EZSV bridge plug on Schl. wireline at 4363 m. Tested 9 5/8" x 7" csg. to 516 bar - O.K. M/U and RIH w/BAKER FI packer on Schl. wireline. Top of packer at 4227.9 m. RIH w/BHA for test no. 1. Tested same to 380 bar - O.K. Start RIH w/test tubing.

09.10. Complete running test string. Tested same to 550 bar - O.K. Connected flowhead and manifold. Tested surface equipment as pr. program. Perforated the well and shut it in for build up no. 1. Open it up after one hrs. for clean up flow.

10.10. Flowed the well on 32/64" choke, for a total of 8.5 hrs. Shut it in. Circulated through APR - OMNI valve and caught samples. Bullheaded and observed the well - O.K. Rev. circulated. Max gas 2,8%.

11.10. Circulated through choke, and up riser while W.O.W. Pulled seal assy out of F1 packer and flowchecked - neg. Circulated bottom up through choke. Max gas 0.17%. Flowchecked - neg. Pooh w/test string and BHA. Ran Schl. gauge ring and junk basket. Ran in and set EZSV retainer at 4223 m.

12.10. Pooh w/Schl. and RIH w/EZSV stinger. Stung into retainer and establised injection rate, stung out. Pumped f.w. and the mixed cmt. slurry. Stung into retainer and squeezed through same. Po to 4161 m and attempted to rev. cire. No circ, w/152 bar pressure. Pipe stuck. Attempted to circ-down string w/550 bar, no circ. Worked stuck pipe. Displaced riser to s.w. due to bad weather W.O.W.

13.10 W.O.W. Ran Schlumberger CCL and located top of cmt. in pipe at 4095 M. Displaced riser to 1.26 S.G. mud RIH with Stringshot on Schlumberger. Did not managed to back out. Prepared for new Stringshot.

14.10 RIH with Stringshot no.2, did not back out. RIH w/Free point indicator, pipe free at 4044 M and 4091 M. Tagged T.O.C. at 4100 M. Prepared to-and ran Pengocutter. Did not cut the pipe. Worked the pipe, and backed off at 3923 M. Start Pooh.

15.10 Pooh. RIH w/overshot and bumpersub Pooh and L/D overshot. RIH w/3-1/2" and 5" DP, and screwed onto fish. Prepared to run JRC explosive cutter.

16.10 RIH w/Pengo TBG-cutter. Stopped at 4022 M. Pooh. W.O.W. Ran Schlumberger Scallop puncher. Fired at 4064 M. W.O.W.

17.10 W.O.W. Attempted to circ down string w/550 bar. Pressure dropped 69 bar pr. 5 min. RIH w/Schlumberger. Pengo TBG-cutter. Fired at 4076 M w/25 tons overpull on string. Uncuccesfull. Worked stuck pipe. RIH w/Schlumberger Stringshot. Worked the pipe.

18.10 Fired Stringshot at 4051 M. No back off. Backed off mech. at 3808 M. Pooh. RIH w/3-1/2" DP and fishing jar assy. Screwed on to fish. Worked on fish, no movement. R/u to-and ran Free point indicator.

19.10 Tagged fill at 4079 M. Worked Free point indicator. 100% struck pipe at 4025 M, 100% free pipe at 4005 M. Pooh. RIH w/Stringshot and fired at 4017 M. No backoff. Performed new attempt with Schlumberger Stringshot. Fired at 4008 M, no backoff. Worked on fish while preparing new Stringshot. No movement of fish. RIH w/Schlumberger Stringshot.

20.10 Fired Stringshot at 3999 M. No back off RIH w/new Stringshot (Schlumberger). Fired Stringshot at 3999 M, no back off. Jared on fish, Pressure up string to 550 bar. Pressure dropped 110 bar for 5 min. RIH w/JRC-HET gun.

21.10 When RIH, hit obstruction at 3999 M - P/u 0.5 M. Fired the gun, no movement of fish. Jared and worked the fish - no movement. RIH w/Free point indicator. Made mech. back off at 3837 m, and Pooh. RIH to top of fish w/reversing tool.

22.10 Tried to enter fish w/pump on, Pooh, but recovered no fish. RIH w/reversing tool. Problem to enter 7" liner. Entered fish and start Pooh.

23.10 Pooh and recovered 38.1 M of 3-1/2" fish. RIH w/redressed reversing tool fishing assy. Entered fish, but when doing left hand turs, no torque build up-Pooh. Found that top Sub on bumpsersub were broken off. M/u overshot w/grapple and RIH. Tagged top of fish and worked the string over fish.

24.10 Pooh, recovered bottom. of bumper sub and top part of safety jnt. RIH w/washover assy. Washed over fish down to 3885 M. Circulated hi-vis and Pooh. M/u new washover shoe.

25.10 RIH. Washed over fish down to 3899 M. Pumped hi-vis pill and Pooh. RIH, w/reversing tool to top of fish. Tried to back off w/reversing tool-no success. Prepered to run slim line Stringshot.

26.10 Ran Stringshot. Spaced out to shot at 3894 M, Fired Stringshot and Pooh. Recovered same fish. M/u reversing tool w/pin tap.

27.10 RIH to top of fish. RIH w/Stringshot. Not able to pass 3896 M. Pooh w/Stringshot. RIH w/Schlumberger tieback Stringshot. Fired at 3923 M, no back off. Pooh w/Schlumberger. Worked the fish, start Pooh.

28.10 Pooh. Had backed off L.H. conn. between bumpersub and safety jnt. RIH w/overshot and grapple to top of fish at 3893,15 M. Enterd onto fish. Pooh, recovered 1.3 M of fish. RIH w/washover shoe. Milled and wash down to 3920 M.

29.10 Pumped hi-vis pill and Pooh. RIH w/new washovershoe. Milled and washed down to 3923 M. Pumped hi-vis pill and Pooh. RIH w/overshot and grapple.

30.10 Entered fish and worked on it. Pooh. Found overshot and female part of J-jnt. left in hole. RIH and fished out bumpersub and J-jnt. comp. Overshot left in hole. M/u new BHA. w/lipguide and overshot.

31.10 RIH and worked on fish. Did not enter fish. Pooh. Recovered both overshots. RIH w/fishing equipment, and engaged fish. Ran Schlumberger w/Stringshot to 3913.5 M. Fired and PO w/Schlumberger. Pooh w/2 jnt. 3-1/2" fish.

01.11 M/u new washovershoe, washoverjnts. and BHA. RIH to 3913 M. Milled and washed down to 3951 M. Reduced m.w. from 1.26 S.G. to 1.15 S.G. Pumped hi-vis pill in fish area. Pooh.

02.11 RIH w/overshot and grapple to top of fish at 3913.5 M. Tried to latch on to the fish, unsuccessfull. Pooh and found lipguide left in hole. RIH w/3-1/2" DP opened and screwed on the fish. RIH w/CCL and Stringshot. Located Stringshot to 3951.5 M. Backed off and Pooh.

03.11 Pooh and recovered 4 jnts 3-1/2" DP including lipguide. RIH w/washovershoe to 3915 M. Washed over and milled from 3951.5 M to 3979 M. Increased m.w. from 1.15 S.G. to 1.26 S.G. Pumped hi-vis pill and Pooh. M/u new washovershoe.

04.11 RIH, entered fish and washed and milled down to 3989 M. Stopped due to fish rotating and lost torque. Pumped hi-vis pill circ. bttm.up. Pooh. Recovered 5 jnt 3-1/2" fish. RIH and retrieved wearbushing. Tested BOP on Y-pod. Tested rams and fail safe valves to 516 bar and annular preventers to 480 bar. Functioned B-pod from minipanel-all tests OK.

05.11 Finished BOP tests and RIH w/6" bit and 7" csg. scraper. Circulated bottom up, pumped hi-vis pill and Pooh. R/u

and ran Schlumberger, CCL and gauge ring. Tagged top of fish at 4000 M log depth. Pooh. RIH and set Backer F.1. packer with top at 3821.3 M.

06.11 Pooh and R/D Schlumberger. Start RIH w/BHA for DST no. 2. Landed string in packer, functioned MPR. POOH to top of tubing and spased out.

07.11 M/U hang-off tool due to bad weather. Wow for 4 hours. L/D hang-off tool and finished RIH w/test string. M/U surface equipment and tested the valves, OK. Perforated the well closed. Had 1 hrs. build up. WHP: 80.76 bar. RIH and set 4 ganges in F-nipple. POOH and start flowing the well.

08.11 Flowed the well for clean up, through 96/64" choke. Took PVT and oil samples. Closed the well in and prepared for Must run. When lifting Must tool into string on top of wireline BOP, the tool slipped out of lifting clamp and dropped into string braking weak point on Flopetrol wire.

09.11 Fished out the fish w/overshot while the well on build up. Start R/U for Must run.

10.11 RIH w/Must and filled the string w/diesel and F.W./Glycol. Pressure tested lubricator stuffing box against LPR-N valve to 207 bar, OK. Opened up the well for lowrate flow through 28/64" fixed choke. Took PVT samples. Shut the well in on Must and choke manifold for build up.

11.11 Built up for a total of 18 hrs. Open up for highrate flow through 128/64" fixed choke. Took one PVT sample. Flowed the well for about 10.5 hrs. before shut in, on Must and choke manifold.

12.11 Built up for 10 hrs (total). Opened up and flowed the well for 1 hr. Closed choke and released Must. Closed LPR-N valve. When attempting to P/U Must actuator, the tool was stuck. Worked wireline free, P.O. to 275 m, then the wireline was stuck in stuffing box. Closed S.S.T.T. and bled of pressure above. Flowchecked prior to disconnect lubricator/stuffing box. Disconnected same and pulled Must actuator. Opened up and flowed the well on adj. choke for two hrs. Shut the well in. Installed 4 bttm. hole samples (BHS) in lubricator valve. Pressure tested stuffing box to 150 bar, OK.

13.11 Opened lubricator valve and RIH to 1500 m w/BHS. Opened well on adj. choke and RIH to 3400 M w/BHS. Flowed the well on 24/64" and 8/64" fixed choke. Continued RIH to 3695 M w/BHS and sampled. Pooh w/BHS and 2 gauges (Sperry Sun). Equalized pressure across lub. valve and opened same. Circulated to remove gas from the string prior to bullhead. Bullheaded w/max 324 bar. Omni-valve did not open, sheared APR-M valve and rev. circulated. Max gas 6.5%. Circulated long way up choke line, max gas 0.8%. Pulled seal assy. out of packer. Max 5.6% gas when circulating long wag up riser. Flowchecked prior to start pulling teststring.

14.11 Pooh and L/D teststring and BHA. Schlumberger ran gauge ring and junk basket. Ran and set EZSV retrainer at 3817 M. RIH w 3-1/2" cmt. stinger, circulated. R/u cmt. lines and tested same to 400 bar - OK. Stung into retrainer and etablized injection rate, stung out. Mixed and pumped cmt. slurry. Stung into retainer and squeezed w/max 338 bar. Stung out and rev. circulated. Pooh to 3760 M.

15.11 Pressure tested csg - cmt plug to 327 bar - OK. R/u and placed a cmt. plug from 3816 M to 3710 M. Pooh to 3587 M. Rev. circulated, no cmt. in return. Pooh. RIH w/3.5" TBG. Pooh and L/D TBG.

16.11 Cont. L/D TBG. RIH w/8-1/2" bit and 9-5/8" scraper. Tagged cmt. at 3626 M. Put 10 tons weight on cmt. -OK. Pooh to 2200 M and increased m.w. to 1.82 S.G. Pooh. Schlumberger RIH and set EZSV bridge plug at 3621 M. Pooh . RIH w/Schlumberger and perforated 9-5/8" csg. at 2182 M. Pressuretested 9-5/8" x 13-3/8" annulus to 77 bar - OK. RIH w/3-1/2" and 5" DP to 2230 M.

17.11 Laid a balansed cmt. plug from 2230 M to 2060 M. Pooh to 2030 M and rev. circulated out. Dumped 2.7 M^3 contaminated mud. Pooh. RIH w/bit and scraper. Tagged firm cmt. at 2082 M, weight tested w/10 tons - ok. Pooh. Perforated csg. at 334 M w/Schlumberger. No pressure change. Pooh. RIH to 1004 M and cut 9-5/8" csg. w/U.A.P. closed. Flowchecked - neg. Pooh. RIH w/jet sub and wearbushing R/R-tool. Could not pass L.A.P. Pooh. M/u and RIH w/2 std. 8" DC below w.b. R/R-tool. Not able to pass L.A.P.

18.11 Pooh. M/u 18.5" tapered BOP-drift. RIH and worked through L.A.P. Pooh and L/D drift. RIH and retrieved w.b. Pooh. RIH w/ 9-5/8" spear assy. and stung into 9-5/8" csg. Attempted to pull csg. free w/185 tons OP. - no success. Pooh w/spear. RIH w/cutting assy, to 744 M. Cut the casing w/U.A.P. closed. Flow checked - neg. Pooh. RIH w/spear and pulled 9-5/8" csg. free w/ 75 tons. O.P. Pooh and start L/D csg.

19.11 L/D all 9-5/8" csg. RIH w/3.5" DP to 800 M and laid a balanced cmt. plug from 800 M to 630 M. Pooh to 600 M and rev. circulated out. Dumped 3 M^3 cmt. contaminated mud. Pooh. M/u and RIH w/12-1/4" bit and 13-3/8" csg. scraper. Took weight at 485 M. Scraped csg. from 485 M to 644 M. Tagged cmt. Circulated and reduced m.w. to 1.58 SG Pooh. Schlumberger ran in hole and set bridge plug at 595 M. Punched csg. at 327 M. Pressure dropped 7 bar when perf. M/u cutting assy.

20.11 RIH to 503 M. Cut csg. w/UAP cloased. Pump pressure dropped 21 bar, torque dropped and lost 7 M^3 mud initially. Continued keeping riser full w/0.2 M^3/min. Filled hole w/total of 49 M^3 sea water. Pooh. First attempt trying to Pooh w/13-3/8" csg. was misrun. Had to RIH and recut the casing at 444.5 M. w/UAP closed. Pressure dropped 400 PSI. Displaced hole to 1.20 S.G. mud. Pooh. RIH w/spear assy.

21.11 Attempted to engage 13-3/8" csg. No success. Pooh. Spear grapple had jammed in unset position. Changed out spear grapple carrier and RIH. Engaged 13-3/8" csg, but did not managed to pull lose csg. MOP 200 tons. Pooh w/spear assy. RIH w/cutting assy. and recut the csg. at 397 M. PO w/cutting assy. and RIH w/spear assy. Engaged spear in csg. and attempted to pull out. Not able to move the csg. w/185 tons OP. Pooh w/spear assy. Laid a balanced amt. plug from 550 M to 375 M. Pooh to 350 M and rev. circulated. Squeezed 4.8 M^3 slurry between 13-3/8" x 20" csg. Pooh and RIH w/12-1/4" bit. Tagged top of cmt. at 468 M w/10 tons. Laid a cmt. plug using open ended DP, from 468 M to 335 M.

22.11 Pooh to 335 M and rev. circulated. Pooh. Displaced riser to S.W. RIH and tagged top of cmt. at 359 M w/3 tons. Tested cmt. plug to 63 bar w/sea water-OK. Pulled BOP and RIH w/explosiwes on sand line, and fired it at 330 M. Pooh w/sand line. RIH and PO permanent guide bace w/cut off 13-3/8"x30" csg. Performed bottom survey with the Bandit. Started anchor handling.

23.11 Finished anchor handling. Used 3 boats and spent 12 hrs. to pull the anchors. Last anchor on bolster at 09:25 hrs. West Vanguard sailed for "Halsenøy" and Stavanger for demobilization.

III 4. WELL AND SUBSEA SCHEMATIC

III 4. WELLBORE SCHEMATIC

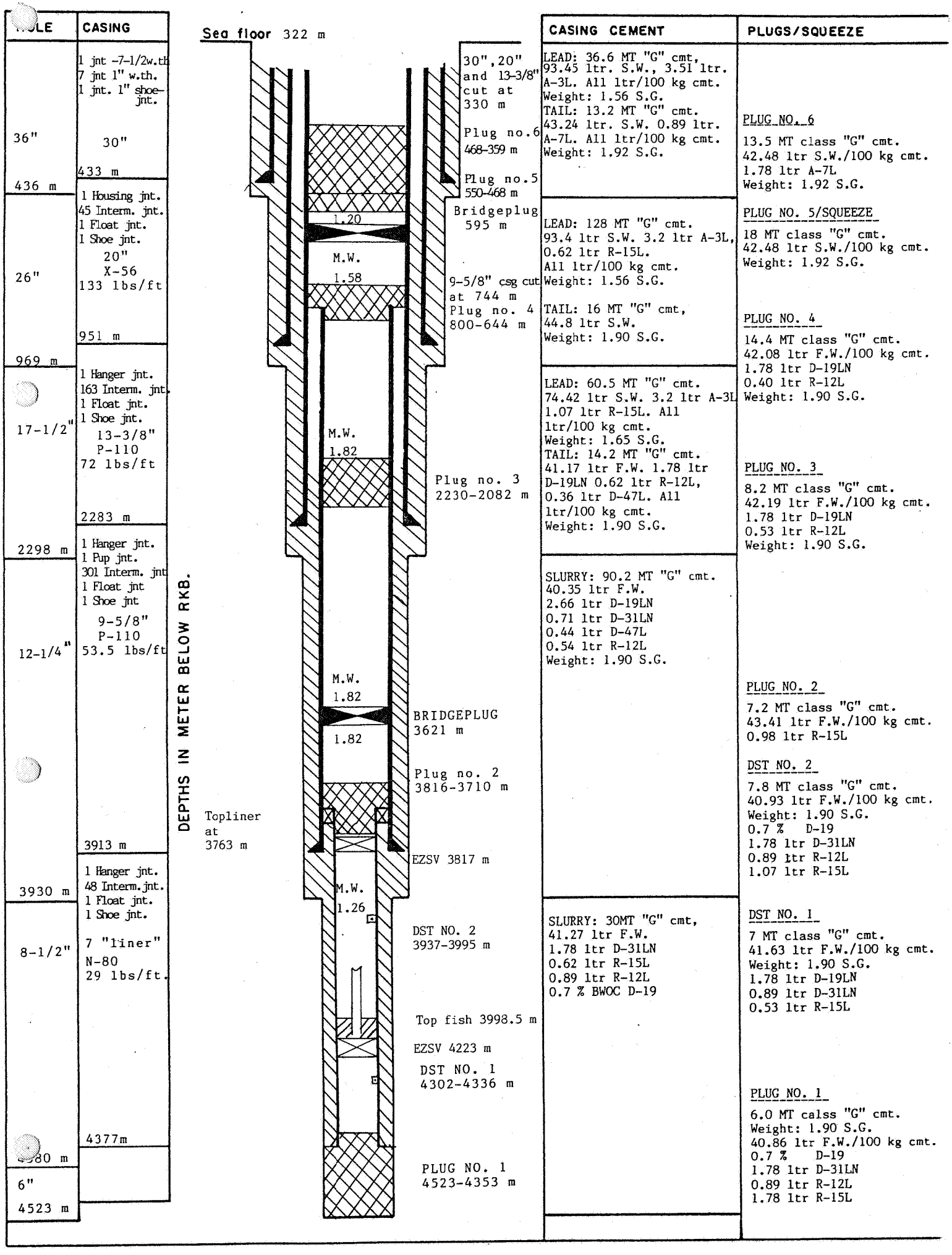
(NOT TO SCALE)

Statoil Den norske stats oljeselskap a.s

ORIGINAL AV: O.Th.
TEGNET AV:
DATO: 20.02.87

RKB - MSL: 22 m.

WATER DEPTH: 300 m.



CASING CEMENT

LEAD: 36.6 MT "G" cmt, 93.45 ltr. S.W., 3.51 ltr. A-3L. All ltr/100 kg cmt. Weight: 1.56 S.G.
TAIL: 13.2 MT "G" cmt. 43.24 ltr. S.W. 0.89 ltr. A-7L. All ltr/100 kg cmt. Weight: 1.92 S.G.

LEAD: 128 MT "G" cmt. 93.4 ltr S.W. 3.2 ltr A-3L, 0.62 ltr R-15L. All ltr/100 kg cmt. Weight: 1.56 S.G.

TAIL: 16 MT "G" cmt, 44.8 ltr S.W. Weight: 1.90 S.G.

LEAD: 60.5 MT "G" cmt. 74.42 ltr S.W. 3.2 ltr A-3L 1.07 ltr R-15L. All ltr/100 kg cmt. Weight: 1.65 S.G.
TAIL: 14.2 MT "G" cmt. 41.17 ltr F.W. 1.78 ltr D-19LN 0.62 ltr R-12L, 0.36 ltr D-47L. All ltr/100 kg cmt. Weight: 1.90 S.G.

SLURRY: 90.2 MT "G" cmt. 40.35 ltr F.W. 2.66 ltr D-19LN 0.71 ltr D-31LN 0.44 ltr D-47L 0.54 ltr R-12L Weight: 1.90 S.G.

SLURRY: 30MT "G" cmt, 41.27 ltr F.W. 1.78 ltr D-31LN 0.62 ltr R-15L 0.89 ltr R-12L 0.7 % BWOC D-19

PLUGS/SQUEEZE

PLUG NO. 6
13.5 MT class "G" cmt.
42.48 ltr S.W./100 kg cmt.
1.78 ltr A-7L
Weight: 1.92 S.G.

PLUG NO. 5/SQUEEZE
18 MT class "G" cmt.
42.48 ltr S.W./100 kg cmt.
Weight: 1.92 S.G.

PLUG NO. 4
14.4 MT class "G" cmt.
42.08 ltr F.W./100 kg cmt.
1.78 ltr D-19LN
0.40 ltr R-12L
Weight: 1.90 S.G.

PLUG NO. 3
8.2 MT class "G" cmt.
42.19 ltr F.W./100 kg cmt.
1.78 ltr D-19LN
0.53 ltr R-12L
Weight: 1.90 S.G.

PLUG NO. 2
7.2 MT class "G" cmt.
43.41 ltr F.W./100 kg cmt.
0.98 ltr R-15L

DST NO. 2
7.8 MT class "G" cmt.
40.93 ltr F.W./100 kg cmt.
Weight: 1.90 S.G.
0.7 % D-19
1.78 ltr D-31LN
0.89 ltr R-12L
1.07 ltr R-15L

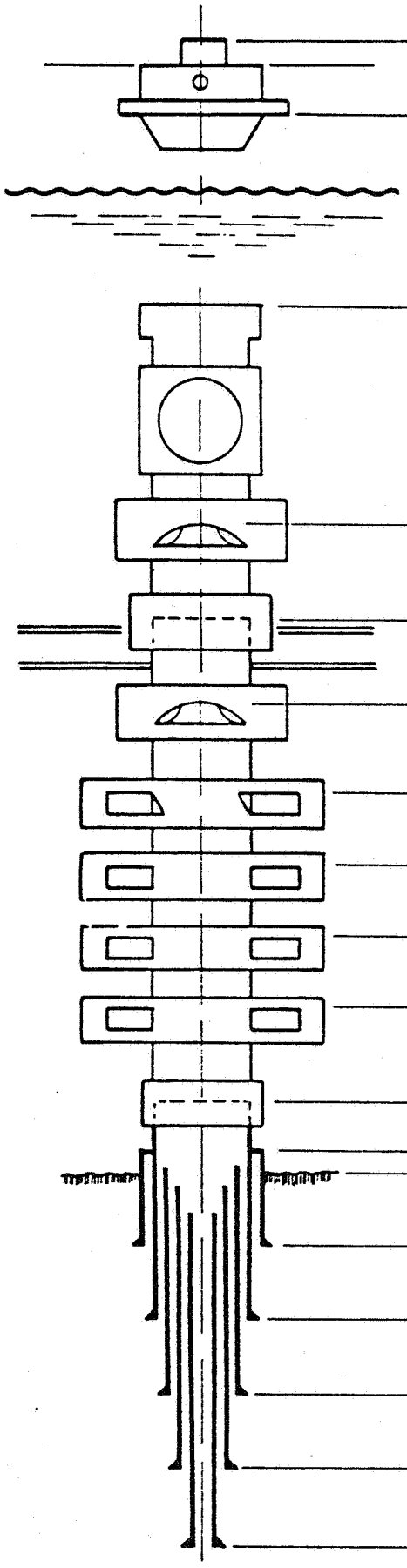
DST NO. 1
7 MT class "G" cmt.
41.63 ltr F.W./100 kg cmt.
Weight: 1.90 S.G.
1.78 ltr D-19LN
0.89 ltr D-31LN
0.53 ltr R-15L

PLUG NO. 1
6.0 MT calss "G" cmt.
Weight: 1.90 S.G.
40.86 ltr F.W./100 kg cmt.
0.7 % D-19
1.78 ltr D-31LN
0.89 ltr R-12L
1.78 ltr R-15L

WEST VANGUARD 18 3/4" SUBSEA ASSEMBLY

WELL 6406/3-2

(NOT TO SCALE)



M	
0	RKB
	DIVERTER RISER CONN. FLANGE
22	MEAN SEA LEVEL
306.7	JOINT RISER CONNECTOR FLANGE
309.7	UPPER ANNULAR RUBBER TOP (CLOSED).
312.0	LOWER STACK ASSEMBLY TOP
312.79	LOWER ANNULAR RUBBER TOP (CLOSED)
314.69	SHEAR RAMS TOP
315.76	U.P. RAMS TOP
316.85	M.P. RAMS TOP
317.63	L.P. RAMS TOP
319.13	18 3/4" WELLHEAD TOP
319.5	30" HOUSING TOP
322.0	MUD LINE
433.0	30" SHOE
951.0	20" SHOE
2283.0	13 3/8" SHOE
3913.0	9 5/8" SHOE
4377.0	7" SHOE

Statoil

ORIGINAL AV: O.Th
TEGNET AV:
DATO: 20.3.87

III 5. FORMATION INTEGRITY TESTS

Statoil

FORMASJONSSTYRKETEST

Dato: 10.07.86

Brønn nr.: 6406/3-2 **Dybde:** Brønn: 972m Foring: 951m Test: 951m

Fartøy: West Vanguard **Høyde R.K.B.:** Over vannfl.: 22m Over sjøb.: 322m

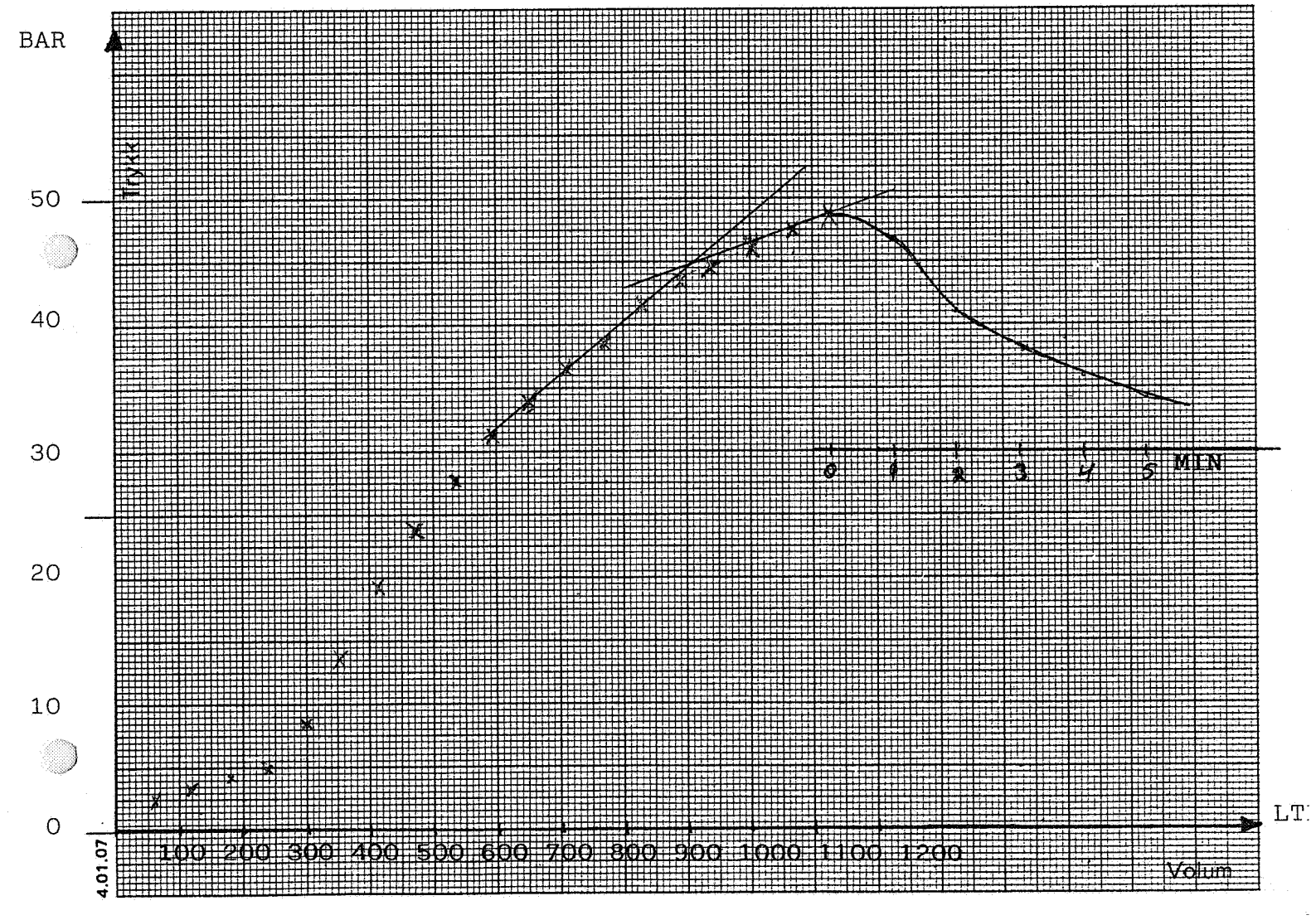
Foring: Diam.: 20" Tyngde: 133 Grad: X-56 Maks. trykk:

Boreslam: Tetthet: 1.12 Vis: 55 sec/qt P.V.: 15 cp Y.P.: 15 lb/100 sq ft Filt: 5.6 ml Gel.: 2/3 lb/100 ft²

Pumpe: Type: Kapasitet: 2.96 l/stk Vol./tidsenh.: 74 l/min Tilb.str.: 510 liter

Antatt styrke: 1.63 SG Obs. spr. trykk: 44.8 BAR Ekv. formasj. styrke: 1.60 SG

liter Volum/~~tid~~	bar Trykk	liter Volum/~~tid~~	bar Trykk	liter Volum/~~tid~~	bar Trykk	Anmerkninger
60	2.4	535	27.6	1005	46.2	660 liter lost to the
120	3.1	595	31.0	1065	47.6	formation
180	4.1	650	33.8	1125	48.6	
240	4.8	710	35.9			
300	8.6	770	38.6			
355	13.8	830	41.4			
415	19.3	890	43.4			Sign.: Rolf M. Andersen
475	23.4	940	44.8			



Statoil

FORMASJONSSTYRKETEST

Dato: 22.07.86

Brønn nr.: 6406/3-2 **Dybde:** Brønn: 2298 m Foring: 2283 m Test: 2283 m

Fartøy: West Vanguard **Høyde R.K.B.:** Over vannfl.: 22 m Over sjøb.: 322 m

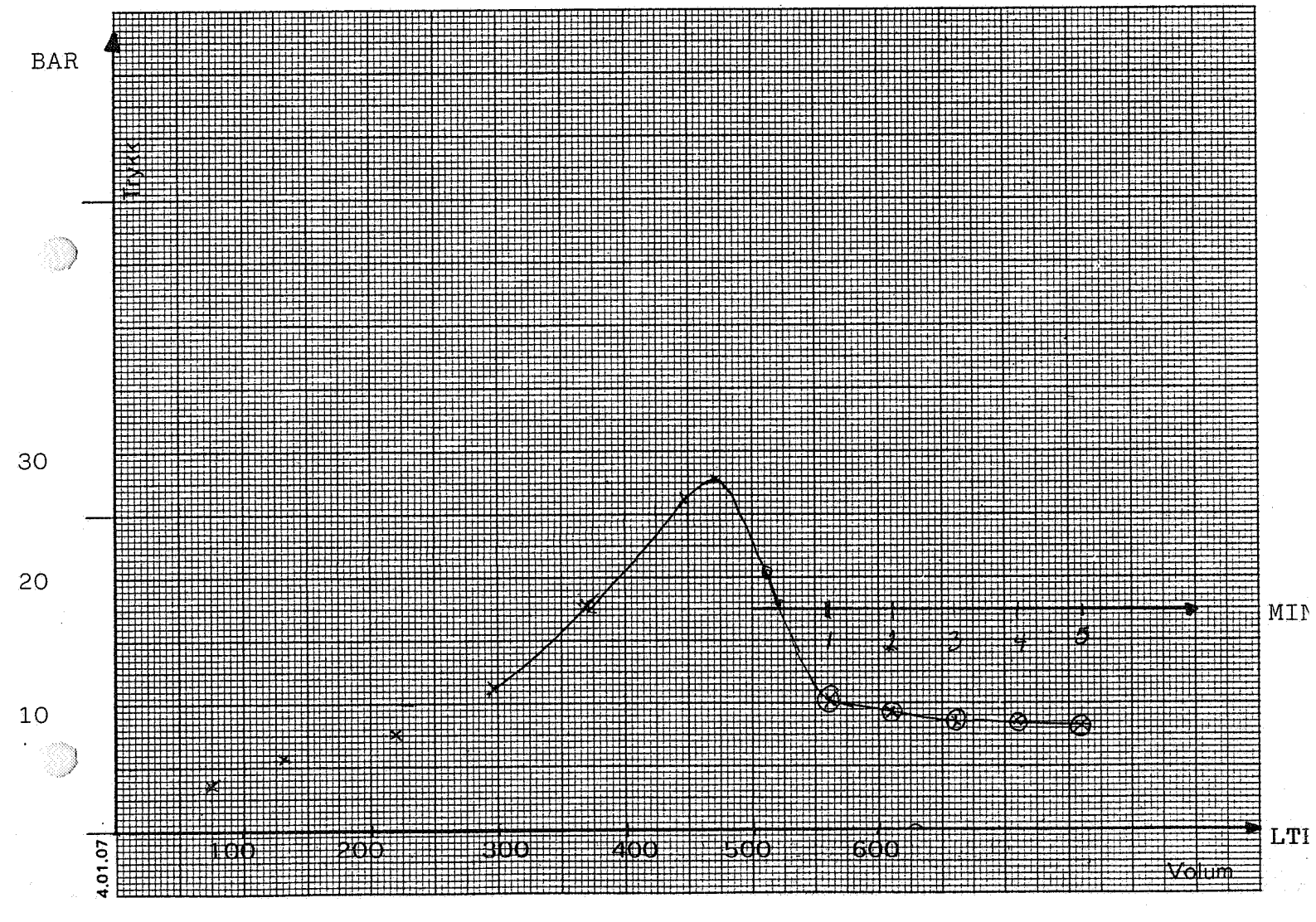
Foring: Diam.: 13 3/8" Tyngde: 72 Grad: P110 Maks. trykk:

Boreslam: Tetthet: 1.61 Vis: 61 P.V.: 27 Y.P.: 20 Filt: 7.7 Gel.: 10/22

Pumpe: Type: Pacemaker 4 1/2" Kapasitet: 2.96 l/stk Vol./tidsenh.: 80 l/min Tilb.str.: 350 l

Antatt styrke: 1.80 SG Obs. spr. trykk: 27.9 BAR Ekv. formasj. styrke: 1.73 SG

liter	bar	min	bar			
Volum/tid	Trykk	~~Volum~~/tid	Trykk	Volum/tid	Trykk	Anmerkninger
74	4.1	1	10.0			
148	5.5	2	9.7			
222	7.2	3	9.0			
296	11.0	4	8.6			
370	17.9	5	8.3			
444	26.2					
470	27.9					Sign.: Rolf M. Andersen
518	17.9					



Statoil

FORMASJONSSTYRKETEST

Dato: 23.07.86

Brønn nr.: 6406/3-2 **Dybde:** Brønn: 2304 m Foring: 2283 m Test: 2283

Fartøy: West Vanguard **Høyde R.K.B.:** Over vannfl.: 22 m Over sjøb.: 322 m

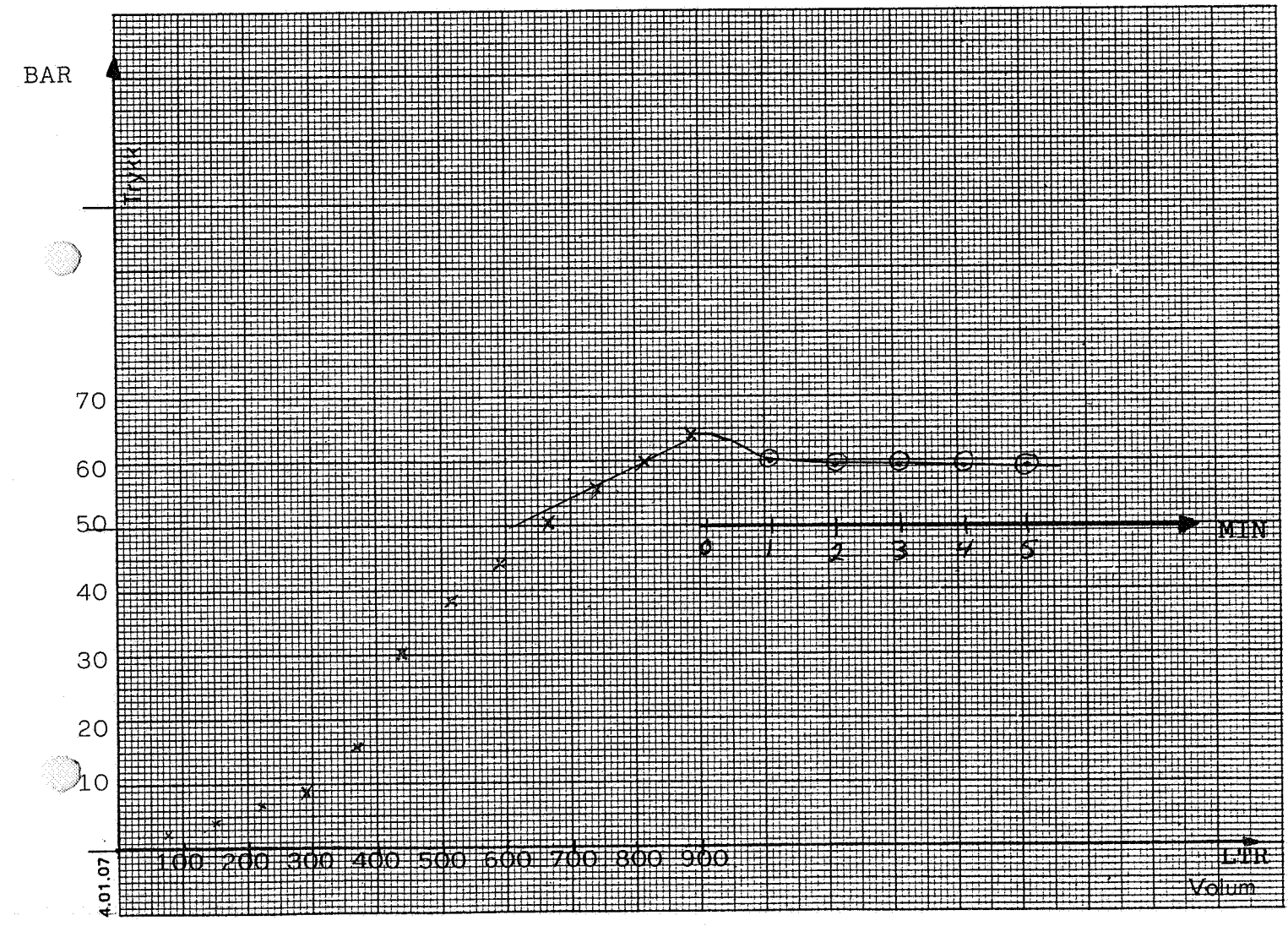
Foring: Diam.: 13 3/8" Tyngde: 72 Grad: P110 Maks. trykk: 510

Boreslam: Tetthet: 1.61 Vis: 59 P.V.: 23 Y.P.: 17 Filt: 7.7 Gel.: 9/22

Pumpe: Type: Pacemaker Kapasitet: 2.96 l/stk Vol./tidsenh.: 80 l/min Tilb.str.: 795 l

Antatt styrke: 4 1/2" 1.80 SG Obs. spr. trykk: 53 Bar Ekv. formasj. styrke: 1.85 SG

liter	bar	liter	bar	min	bar	
Volum/~~tid~~	Trykk	Volum/~~tid~~	Trykk	~~Volum~~/tid	Trykk	Anmerkninger
74	2.8	666	50.3	1	60	Test no.2 of 2 below
148	4.1	740	55.2	2	59.3	13 3/8" csg. test after
222	6.9	814	59.3	3	59.3	Sqeeze cementation
296	8.3	888	64.1	4	59.1	Lost to the formation
370	15.7			5	59.1	119 l
444	30.3					
518	38.6					Sign.: Rolf M. Andersen
592	44.1					



statoil

FORMASJONSSTYRKETEST

Dato: 26.08.86

Brønn nr.: 6406/3-2 **Dybde:** Brønn: 3930 Foring: 3913 Test: 3930 m

Fartøy: West Vanguard **Høyde R.K.B.:** Over vannfl.: 22 Over sjøb.: 322

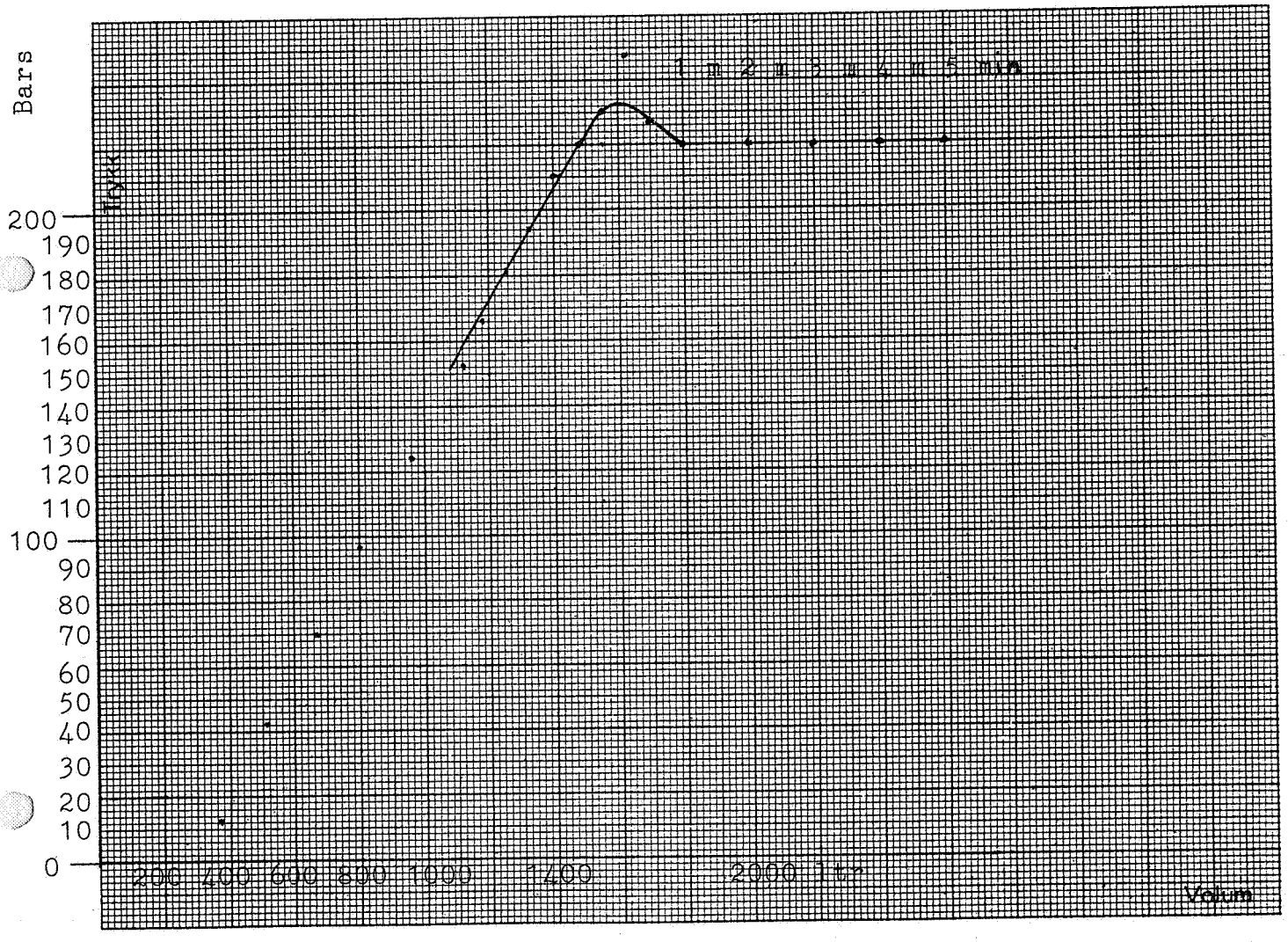
Foring: Diam.: 9 5/8 Tyngde: 53.5 lbs Grad: P-110 Maks. trykk: 752

Boreslam: Tetthet: 1.36 Vis: P.V.: Y.P.: Filt: Gel.:

Pumpe: Type: Pacem 4 1/2 Kapasitet: 2.96 Vol./tidsenh.: 100 l/m Tilb.str.:

Antatt styrke: 1.83 Obs. spr. trykk: 220 bar Ekv. formasj. styrke: 1.93

~~LTR.~~ Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
370	13.8	1332	195.2			Blødde tilbake 240 L.
518	41.4	1406	210.3			
666	77.2	1480	222.4			
814	96.6	1554	236.2			
962	125.9	1628	248.3			
1110	153.5	1702	227.6			
1184	157.2					Sign.:
1258	182.8					



statoil

FORMASJONSSTYRKETEST

Dato: 24.09.86

Brønn nr.: 6406/3-2 **Dybde:** Brønn: 4383 M Foring: 4377 M Test: 4377

Fartøy: WEST VANGUARD **Høyde R.K.B.:** Over vannfl.: 22 M Over sjøb.: 322 M

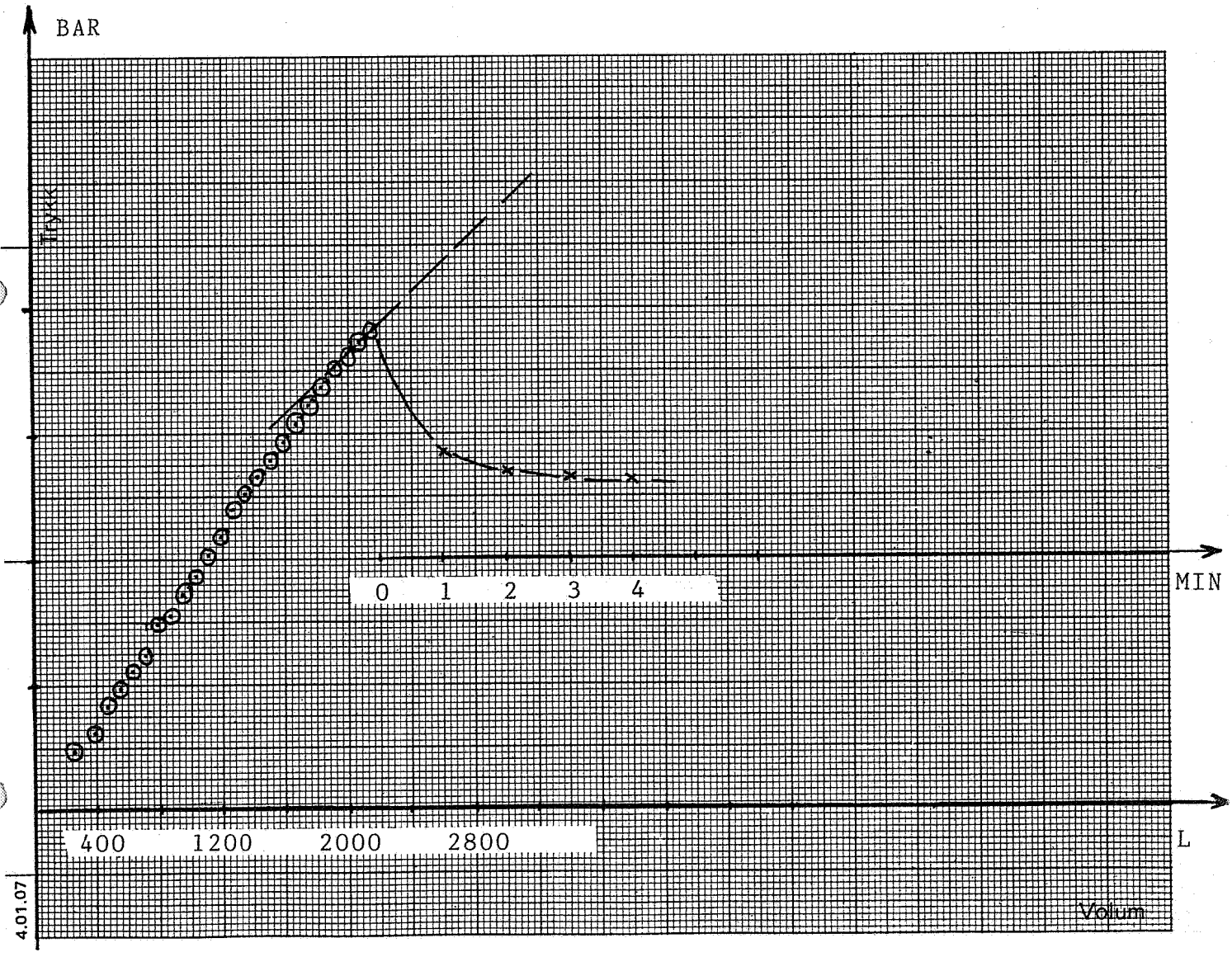
Foring: Diam.: 7" Tyngde: 29 LB/FT Grad: N-80 Maks. trykk: 563 BAR

Boreslam: Tetthet: 1.26 S.G Vis: 68 P.V.: 20 Y.P.: 12 Filt: 5.0 Gel.: 4/18

Pumpe: Type: B.J. Kapasitet: 2.96 L/STK Vol./tidsenh.: 159 L/MIN Tilb.str.: 1590 L

Antatt styrke: 1.99 S.G. Obs. spr. trykk: 350 BAR Ekv. formasj. styrke: 2.07 S.G.

L Volum/	BAR Trykk	L Volum/	BAR Trykk	L Volum/	BAR Trykk	Anmerkninger
252	48.0	954	171.7	1598	283.1	1 MIN : 285 BAR
398	62.0	1033	186.2	1670	306.9	2 MIN : 270 BAR
477	82.8	1113	203.5	1749	320.7	3 MIN : 265 BAR
556	96.6	1192	219.0	1828	336.6	4 MIN : 262.5 BAR
636	110.3	1272	240.0	1908	351.7	
715	124.1	1351	251.7	1987	362.1	
795	145.0	1431	265.5	2067	372.4	Sign.: TVEIT
875	155.2	1510	279.3	2146	382.8	



III 6. RIG TIME DISTRIBUTION

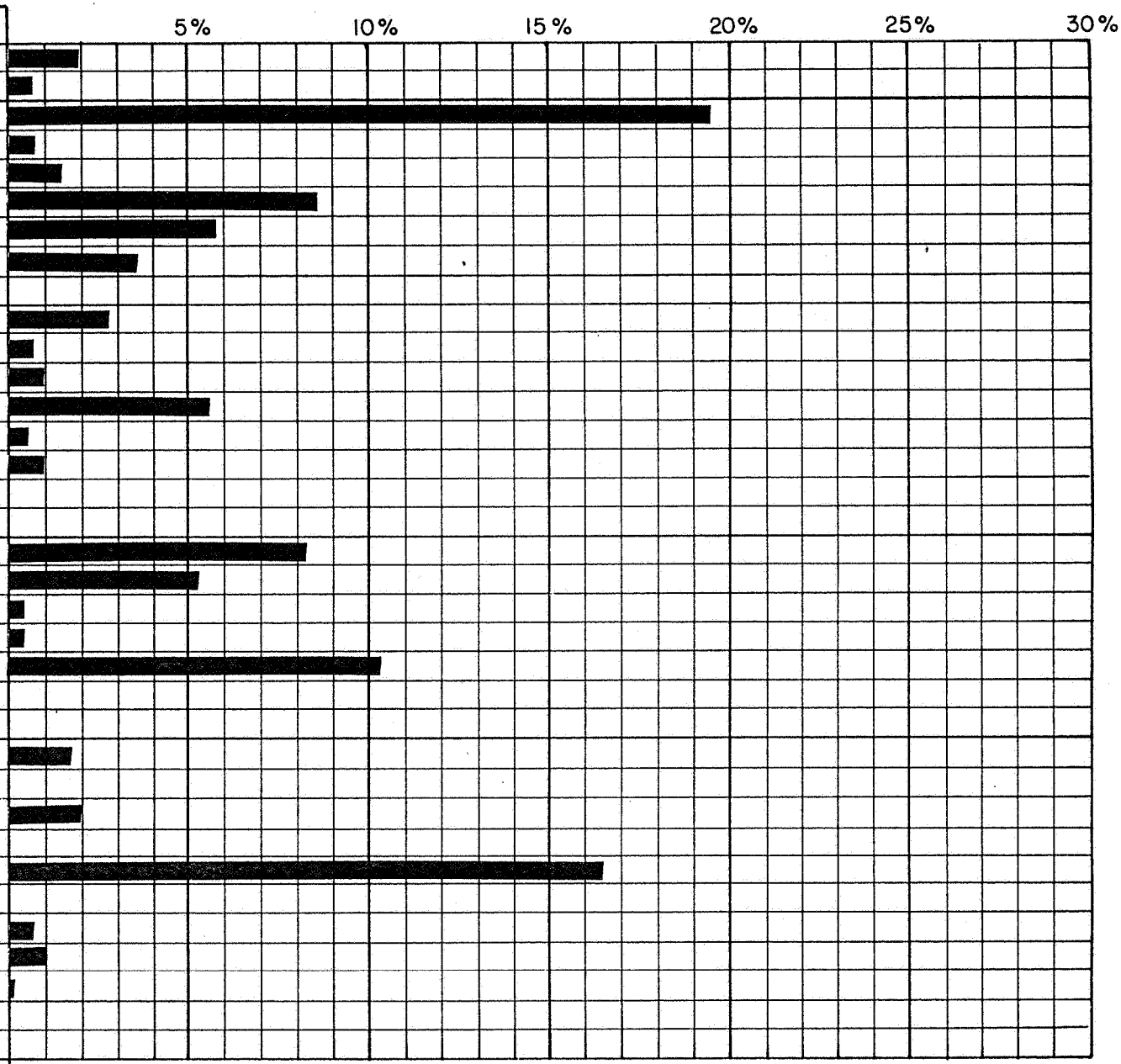
DRILLING TIME VS, DEPTH

DRILLING COST VS, DEPTH

TOTAL RIG TIME DISTRIBUTION FOR WELL 6406/3-2

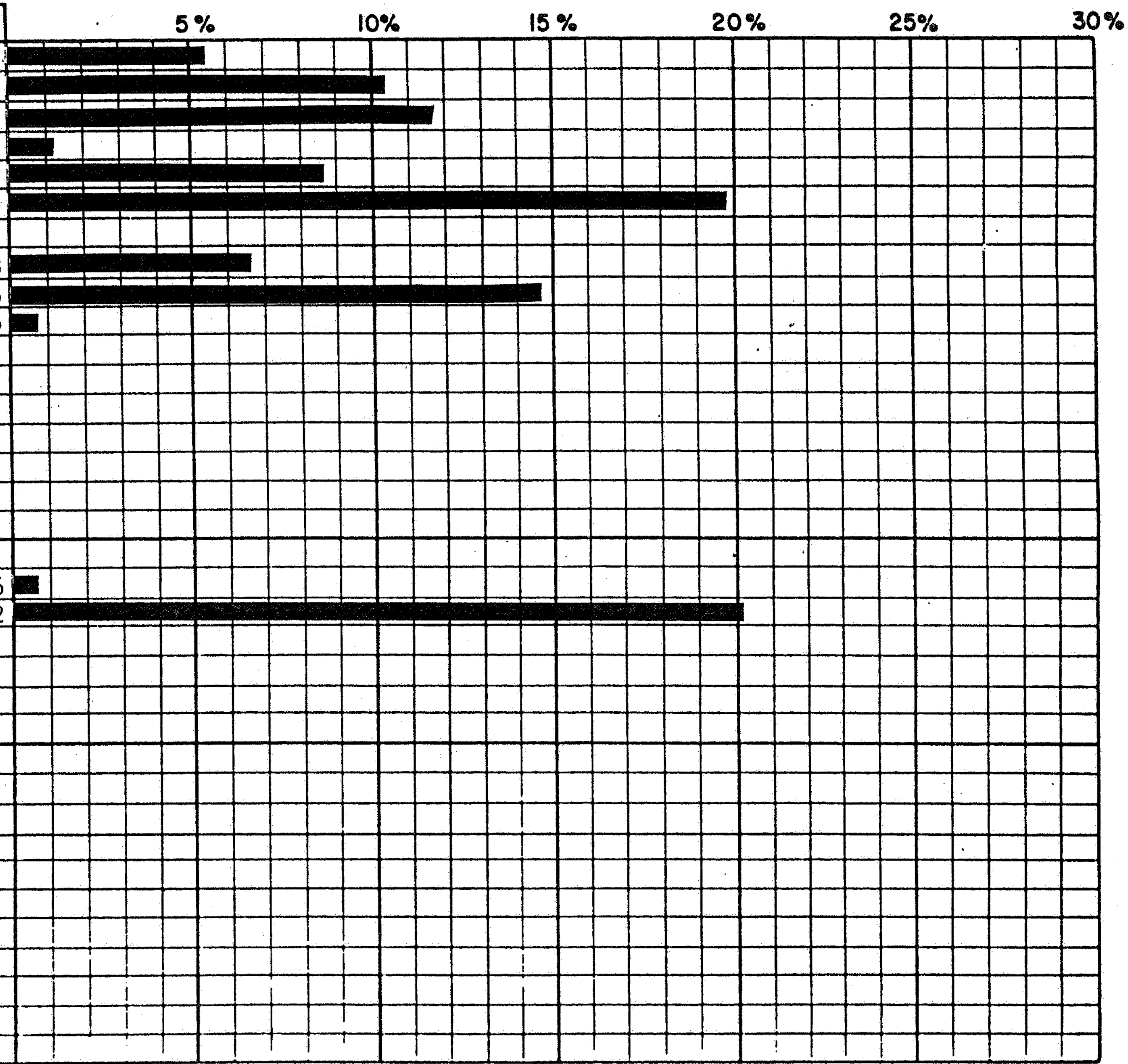
statoil
Den norske stats oljeselskap a.s

		HRS	%
	Moving	73.0	2.0
	Mooring	20.5	0.6
Drilling operation	Efficient drilling	721.5	19.7
	Other drilling	24.0	0.7
	Hole opening	52.0	1.4
	Regular tripping	322.0	8.8
	Casing and cementing	218.0	5.9
	Sub sea eq. and BOP	127.0	3.5
	Abnormal press. detection		
	Cond. and circ.	100.5	2.7
	Reaming	24.5	0.7
	Directional survey	35.0	1.0
	Plugging	208.5	5.7
	Formation leak-off test	17.0	0.5
	Maintenance	38.0	1.0
	Other		
Formation Evaluation	Coring	304.0	8.3
	El. logging	194.5	5.3
	Circ. for samples	12.5	0.3
	RFT	16.5	0.45
	Production testing	380.5	10.4
	Other		
Downtime	Rig repairs	67.0	1.8
	Rig moving		
	Waiting on weather	72.0	2.0
	Sub sea eq. and BOP		
	Fishing	602.5	16.5
	Lost circulation		
	Well control	21.5	0.6
	Hole problems	5.0	0.1
	Formation evaluation	2.0	0.05
	Diving		
	Other		
	TOTAL	3659.5	100



RIG TIME DISTRIBUTION FOR PLUGGING, INCL. IN TOTAL RIG TIME DISTRIBUTION.

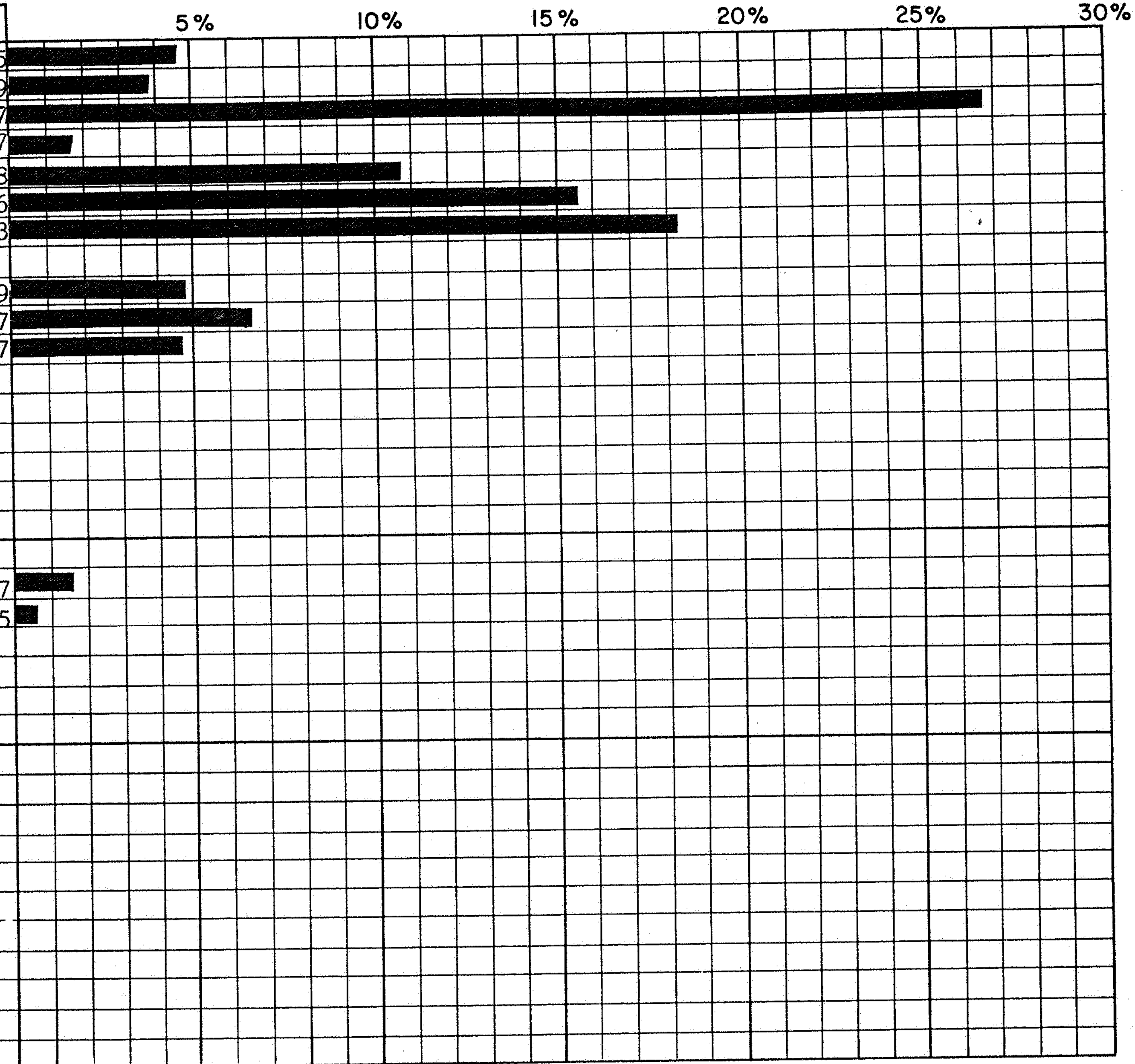
		HRS	%
Plugging	Preparations	8.5	5.3
	Con. and circ.	16.5	10.3
	Cement / Squeeze	19.0	11.8
	Pressure testing	2.0	1.2
	Wire line ops.	14.0	8.7
	Tripping	32.0	19.9
	Other drilling		
	Sub sea eq. and BOP	11.0	6.8
	Cutting casing	23.5	14.6
	Diving	1.0	0.6
	Other		
Downtime	Waiting on weather		
	Waiting on cement	1.0	0.6
	Cutting casing	32.5	20.2
	Other		
TOTAL		161	100

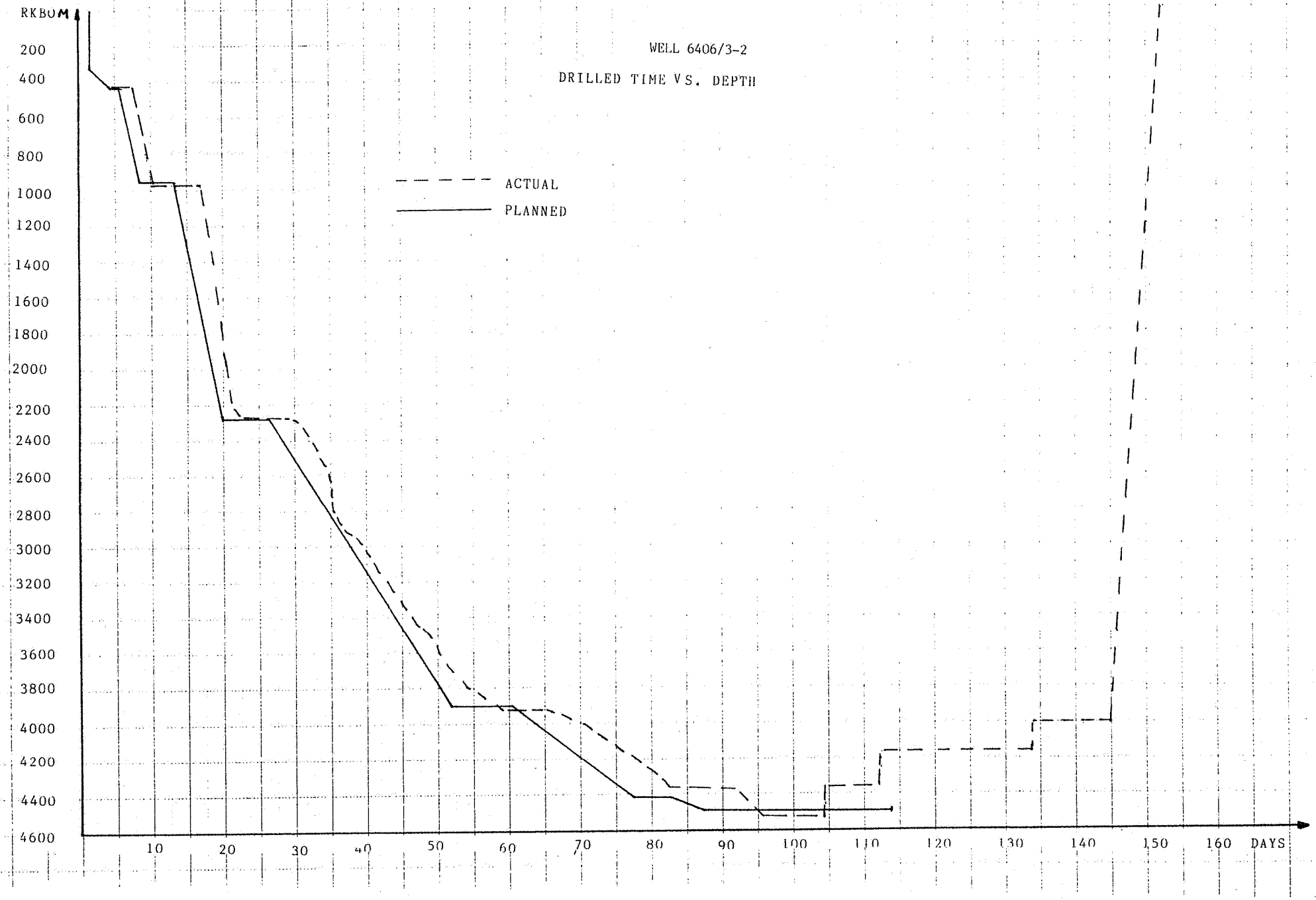


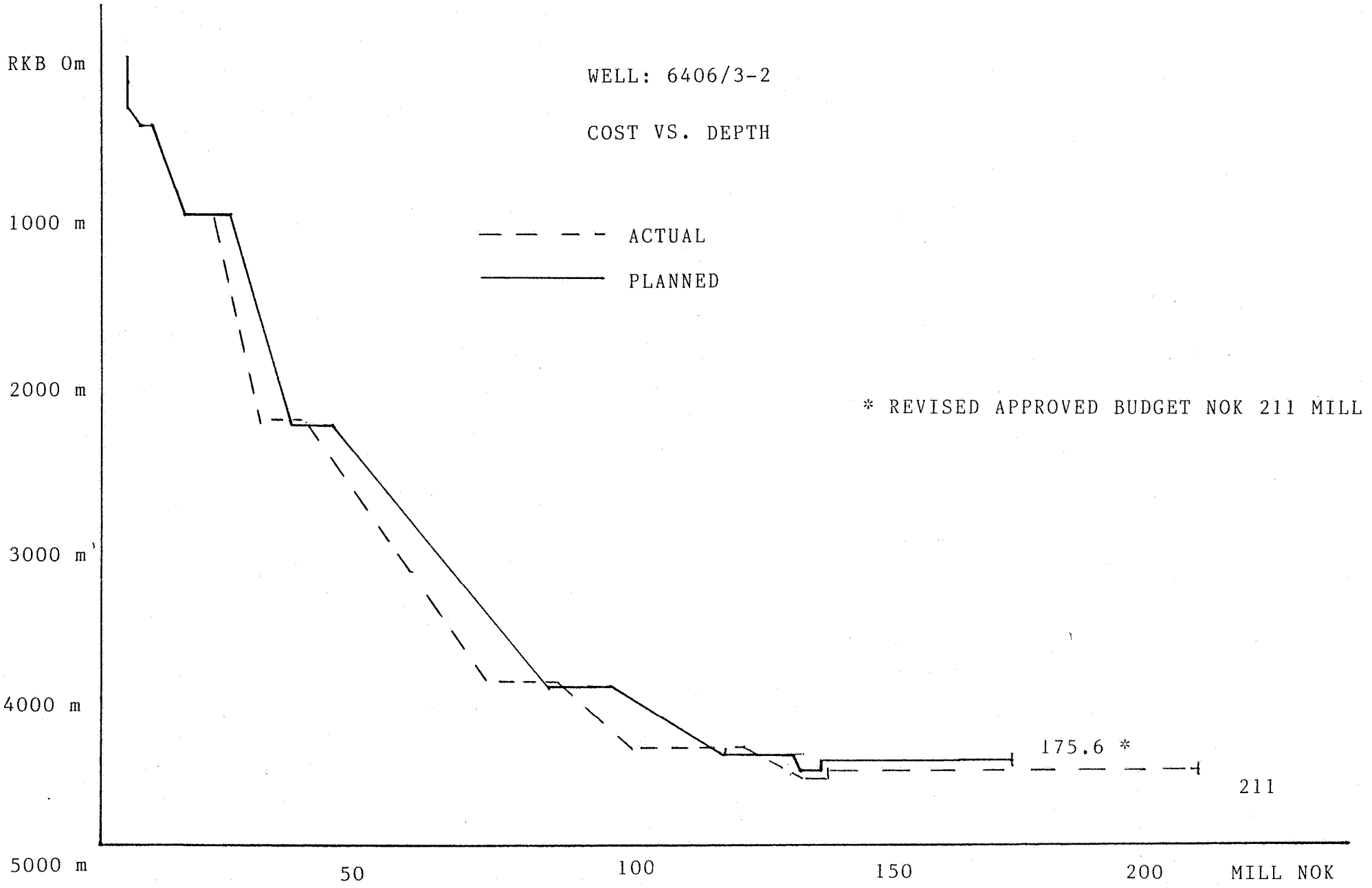
Den norske stats oljeselskap a.s

RIG TIME DISTRIBUTION FOR FORMATION EVALUATION, INCL. IN TOTAL RIG TIME DISTRIBUTION.

		HRS	%
Production testing	Preparations	17.0	4.5
	Pressure testing	15.0	3.9
	Teststring	101.5	26.7
	Cond. and circ.	6.5	1.7
	Wire line ops.	41.0	10.8
	Flow the well	59.5	15.6
	Build up	69.5	18.3
	Stimulation		
	Killing well	18.5	4.9
	Cement / Squeeze	25.5	6.7
	Sub sea eq. and BOP	18.0	4.7
	Other		
Downtime	Rig repairs		
	Waiting on weather	6.5	1.7
	Production testing	2.0	0.5
	Other		
TOTAL		380.5	100




WELL 6406/3-2
DRILLED TIME VS. DEPTH
RKB0M
ACTUAL
PLANNED
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
3400
3600
3800
4000
4200
4400
4600
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
DAYS


WELL: 6406/3-2
COST VS. DEPTH
ACTUAL
PLANNED
* REVISED APPROVED BUDGET NOK 211 MILL
RKB Om
1000 m
2000 m
3000 m
4000 m
5000 m
175.6 *
211
50
100
150
200
MILL NOK

III 7. BIT RECORD AND LITHOLOGY COLUMN

Statoil

BORKRONEDATA

Brønn nr.: 6406/3-2

Nr.	B. k. Nr.	Diam.	Fabr.	Type	Serie no.	Dyser 1/32"	Dybde ut	Fremdrift	Rot. tid	Total rot.tid	Bore-hast.	V.p.b.	O.p.m.	Pumpe			Tilstand			Anmerkninger
														Trykk	V.grad	v/t	T	B	G	
1	1	17 ½	HTC	CX3A	125 BR	1 x 16 3 x 18	436	114	5	5	22.8	0-3	115	120		3365	1	1	I	
2	1RR1	''	''	''	''	1 x 16 3 x 18	436	–	6.8	11.8	16.4	2-5	70	90		3800	1	1	I	Open up 17½"
''		26"	GRANT	H.O.	19862	3 x 24	435	113	OPEN UP 17 ½" PILOT HOLE TO								1	1	I	'' pilot
''		36"	''	H.O.	29798	4 x 24	434	112		36" HOLE.							1	1	I	''
3	1RR2	17 ½"	HTC	CX3A	125 BR	1 x 16 3 x 12	436	6	0.5	12.3	6.7	2-5	70	108		3500	1	1	I	Drilled cement
''		26"	R.Baron	U.R.	2110005	3 x 16	435	5									1	1	I	shoe plus 3m of hole
4	2√	12 1/4"	Smith	SDS-C	XD 36	1 x 14 3 x 16	965	529	23.3	35.6	22.7	2-7	150-200	135		2900	8	8	5/8	Drilled 12 1/4 pilot hole
5	3	''	Reed	HP 12	AAG495	3 x 15	965	WASHED AND REAMED TIGHT SECTIONS IN PILOT						HOLE			2	2	I	
6	3RR1	''	''	''	''	3 x 12	749	316	18.7	54.3	16.9	1-9	120	150		4100	2	3	I	
''		17 ½	GRANT	H.O.		3 x 16	OPEN UP 12 1/4" PILOT HOLE TO 26" HOLE.										5	4	I	
''	1RR1	26"	5-13 R.Baron	U.R.	2110005	3 x 16											7	8	I	
7	3RR2	12 1/4"	Reed	HP 12	AAG 495	3 x 12	969	220	10.5	64.8	20.0	1-10	120	150		4100	3	3	I	
''		17 ½	GRANT	H.O.		16-16-24	OPEN UP 12 1/4" PILOT HOLE TO 26" HOLE.													
''		26"	R.Baron	URx3A		3 x 13														
8	4	26"		BIT	K97436	3 x 20		CHECK TRIP PRIOR TO RUNNING 20" CASING									1	1	I	
9	5	17 ½"	HTC	CX3A	EX9304	1 x 16 3 x 18	1509	540	24.8	89.6	21.8	10-16	180	205		3800	6	5	1/4	
10	6	''	Smith	SDT		1 x 16 3 x 20	2298	789	30.8	120.4	25.6	6-18	140-200	215		2825	3	4	1/8	
11	6RR1	''	''	''		''	''	''	WIPER TRIP								3	4	1/8	
12	7	12 1/4"			234BS	3 x 16	2301	3	0.3	120.7	12	5-12	55-100	190-215		1000-1100	1	1	I	Drilled 3m of cmt and 3m of hole
13	8	''	Smith	SDT	XB3055	3 x 16	2545	244	18.9	139.6	12.9	10-15	150	210		1950	5	5	I	Drilled 12m cement

Statoil

BORKRONEDATA

Brønn nr.: 6406/3-2

Nr.	B. k. Nr.	Diam.	Fabr.	Type	Serie no.	Dyser 1/32"	Dybde ut	Fremdrift	Rot. tid	Total rot.tid	Bore-hast.	V.p.b.	O.p.m.	Pumpe			Tilstand			Anmerkninger
														Trykk	V.grad	v/t	T	B	G	
14	9	12 1/4"	HTC	J2	348GS	3 x 16	2759	214	18.3	157.9	11.7	10–25	90–110	235		2070	3	4	I	
15	10	"	Reed	HP11SC	ULY869	3 x 14 1 x 12	2911	152	19.5	177.4	7.8	10–15	140–150	227		2097	1	3	I	
16	11	"	"	HP43A		3 x 16	2974	63	18.1	195.5	3.5	22–24	90–110	210–220		2057	8	8	I	Broken teeth loose cone
17	12	"	Crystal	S260L	CP1537	TFA 1,5	3527	553	183.6	379.1	3.01	23	735	293		2135	50	%	1/16	Turbine
18	13	"	K-839 Christensen		115791	TFA 2,3	3697	170	51.0	430.1	3.33	24	725	300		2140	10	%		Turbine
19	13RR1	"	"	"	"	"	3840	143	43.8	473.9	3.26	24	750	297		2145	35	%		Turbine
20	14	"	Smith	SDGH	XD6983	1 x 16 2 x 18	3872	32	14.1	488.0	2.27	26	115	294		2490	7	8	I	
21	15	"	"	F-2L	XD9897	2 x 16 1 x 18	3930	58	39.2	527.2	1.48	25	95	238		2175	2	7	1/4	
22	10RR1	"	Reed	HP11 SC	ULY869	3 x 15 1 x 11	WIPER	TRIP												
23	16	"	MILL		WORKED JUNK BASKET															
24	17	8 ½	HTC	JD 8	160 VL	3 x 12	DRILLED CMT AND SHOE, WORKED ON JUNK										7	1	1/32	
25	18	"	"	"	154 VL	3 x 12	WORKED ON JUNK										7	1	I	Junk marks on bit
26	19	"	DB	CB-303	7850466		3935	4	2.6	529.8	1.5	2–10	58–82	69–116		938	100	%		Core no.1
27	20	"	HTC	J3	211VK	3 x 12	WORKED JUNK BASKET										2	1	I	
28	21	"	DB	CT-303	7860323		3952	17	11.4	541.2	1.5	10	90–110	72		990	50	%		Core no.2
29	22	"	"	CT-303	7860357		3965	13	4.7	545.9	2.8	10	80–110	66		950	30	%		Core no.3
30	23	"	"	DB-303	7840864		3983	18	10.6	556.5	1.7	10	80–110	70		950	25	%		Core no.4
31	24	"	MILL		WORKED JUNK BASKET															
32	25	"	"	CT-303	7860358		4001	18	6.2	562.7	2.9	5–10	50–70	59		950	25	%		Core no.5
33	26	"	"	CT-303	7860317		4027.5	26.5	7.0	569.7	3.8	5–10	50–70	51		950	25	%		Core no.6

Statoil

BORKRONEDATA

Brønn nr.: 6406/3-2

Nr.	B. k. Nr.	Diam.	Fabr.	Type	Serie no.	Dyser 1/32"	Dybde ut	Fremdrift	Rot. tid	Total rot.tid	Bore-hast.	V.p.b.	O.p.m.	Pumpe			Tilstand			Anmerkninger
														Trykk	V.grad	v/t	T	B	G	
34	27	8 ½"	MILL	CB-303	7840725		4048	20.5	13.2	582.9	1.55	10-14	50-90	65		950	40	%		Core no.7
35	28	"	DB	CT-303	7860366		4056	8.5	7.0	589.9	1.2	10-12	50-90	70		1000	10	%		Core no.8
36	29	"	HTC	J3	212VK	3 x 11	4067	10.5	2.1	592.0	5.0	14	50-80	160		1300	1	2	I	
37	RR 28	"	DB	CT 303	7860366		4094	27	6.7	598.7	4.0	10	60-80	70		950	30	%	I	Core no.9
38	30	"	"	CTG303	7860385		4121	27	5.5	604.2	4.9	10	60-80	70		950	30	%	I	Core no.10
39	31	"	"	CT303	7860365		4149	28	5.8	610.0	4.8	10	60-80	70		950	20	%	I	Core no.11
40	32	"	Christ.	MD-331	P6264-D	TFA = 0.5	4168	19	4.9	614.9	3.9	20	50-60	110/190		1300	50	%	I	
41	33	"	SMT	F2L	XF0061	3 x 10	4282	114	34.3	649.2	3.3	13-17	70-50	193		1300	2	8	I	
42	34	"	DB	CT-303	7860392		4298.5	16.5	6.0	655.2	2.8	10-12	50	67		950	20	%	/16	Core no.12
43	35	"	"	CT-303	7860390		4308.5	10.0	3	658.2	3.3	10-12	50	70		950	10	%	I	Core no.13
44	35RR	"	"	CT-303	7860390		4336	27.5	8.7	666.9	3.2	10-12	50	70		950	60	%	I	Core no.14
45	36	"	"	CT-303	7860395		4345.5	9.5	2.7	669.6	3.5	10-12	50	70		950	15	%	I	Core no.15
46	36RR	"	"	CT-303	"		4363	17.5	5.1	674.7	3.4	10-12	50	70		950	35	%	1/32	Core no.16
47	37	"	"	CT-303	7860391		4377.5	14.5	3.7	678.4	3.9	10	50	70		950	25	%	1/32	Core no.17
48	29RR	"	HTC	J3	212VK	OPEN	RIH to T.D. Circ.							74		1300				
49	38	"	"	J2	223XF	3 x 15	CLEAN OUT CEMENT TO TOP OF LINER										1	1	I	
50	39	6	"	J33	779CS	3 x 10	4430	20	3.0	681.4	6.67	5-7	40-50	134		870	2	3	I	
51	40	6	"	J33	946YL	3 x 10	4446	46	14.1	695.5	3.26	6-12	45-60	145		780	2	4	1/32	
52	41	6	"	J33	300BS	3 x 10	4523	77	22.8	718.3	3.38	10-14	50-60	158		803	2	4	I	
53	42	6	"	J33	YL945	3 x 10														

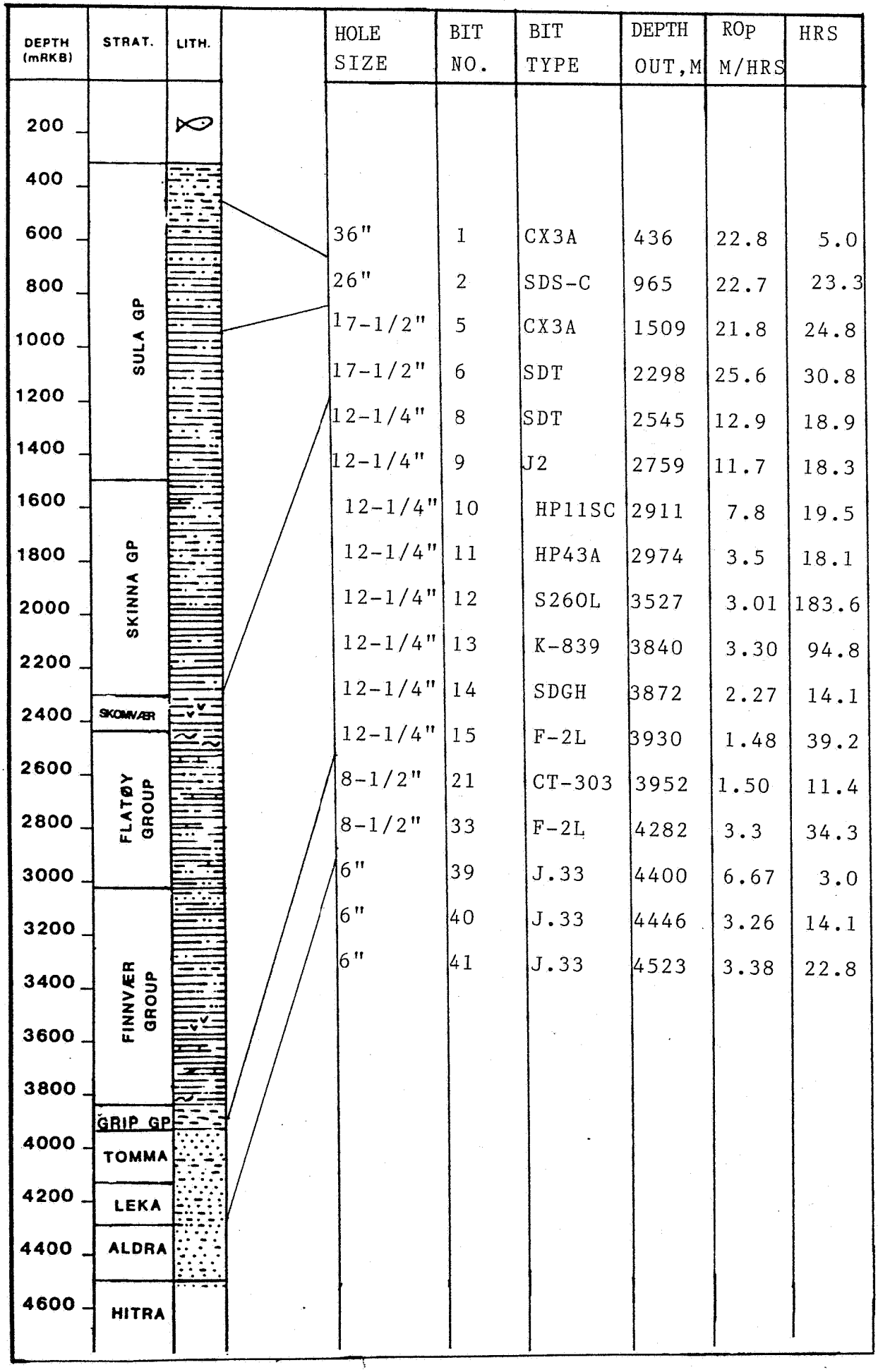
Statoil

BORKRONEDATA

Brønn nr.: 6406/3-2

Nr.	B. k. Nr.	Diam.	Fabr.	Type	Serie no.	Dyser 1/32"	Dybde ut	Fremdrift	Rot. tid	Total rot.tid	Bore-hast.	V.p.b.	O.p.m.	Pumpe			Tilstand			Anmerkninger
														Trykk	V.grad	v/t	T	B	G	
54	43	6"	HTC	J2	103EK	3 x 12	RIH	TO CIRC.	TO DEC	REASE M.W.										
55	43RR	"	"	"	103EK	3 x 12		DRILLED	CMT +	CIRC BTTM UP.										

LITHOLOGY COLUMN



HOLE SIZE	BIT NO.	BIT TYPE	DEPTH OUT, M	ROP M/HRS	HRS
36"	1	CX3A	436	22.8	5.0
26"	2	SDS-C	965	22.7	23.3
17-1/2"	5	CX3A	1509	21.8	24.8
17-1/2"	6	SDT	2298	25.6	30.8
12-1/4"	8	SDT	2545	12.9	18.9
12-1/4"	9	J2	2759	11.7	18.3
12-1/4"	10	HP11SC	2911	7.8	19.5
12-1/4"	11	HP43A	2974	3.5	18.1
12-1/4"	12	S260L	3527	3.01	183.6
12-1/4"	13	K-839	3840	3.30	94.8
12-1/4"	14	SDGH	3872	2.27	14.1
12-1/4"	15	F-2L	3930	1.48	39.2
8-1/2"	21	CT-303	3952	1.50	11.4
8-1/2"	33	F-2L	4282	3.3	34.3
6"	39	J.33	4400	6.67	3.0
6"	40	J.33	4446	3.26	14.1
6"	41	J.33	4523	3.38	22.8

III 8. PRESSURE PROFILES

WELL: 6406/3-2

RIG NAME: WEST VANGUARD

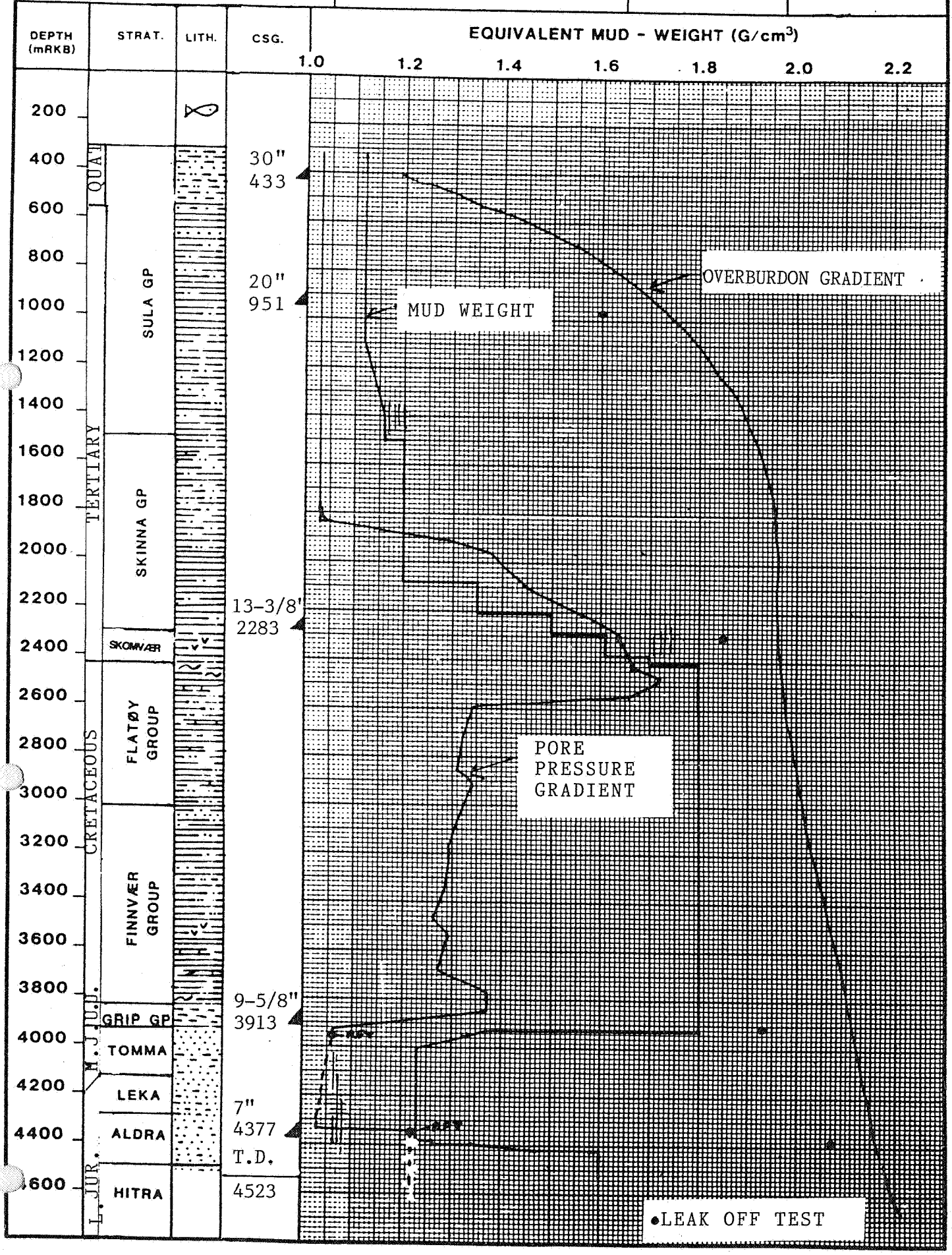
DEPTH mRKB:

PRESSURE COMPOSITE GRADIENTS

statoil

MADE BY/DRAWN BY:

DATE:



III 9. SURVEY

Baroid Logging Systems

METHOD of CALCULATION:- Minimum Curvature
:COMPANY: STATOIL :FIELD: HALTENBANKEN :WELL: 6406/3-2 :DATE: 28 Sep 1986

SURVEY DATA	MEASURED DEPTH m	TRUE VERTICAL DEPTH m	BEARING	INCLINATION	EASTING m	NORTHING m	DEPARTURE m	DOG LEG SEVERITY	BUILD RATE °/30 m	WALK RATE °/30 m
	322	322	0	0	0	0	0	0	0	0
	338	338	215	.1	-.01	-.01	.01	.187	.187	XXXXXXXX
	359	359	170	.3	-.01	-.08	.08	.343	.286	-64.286
	383	383	291	.2	-.04	-.13	.13	.547	-.125	151.25
	413	413	192	.2	-.1	-.16	.19	.304	0	-99
	432	432	171	.1	-.1	-.21	.23	.178	-.158	-33.158
	446	446	183	.1	-.1	-.23	.25	.045	0	25.714
	474	474	151	.4	-.05	-.34	.35	.342	.321	-34.286
	502	502	164	.4	.02	-.52	.52	.097	0	13.929
	531	531	343	.3	.03	-.55	.55	.724	-.103	185.172
	559	559	55	.5	.1	-.41	.42	.533	.214	77.143
	587	587	0	.3	.2	-.26	.33	.439	-.214	-58.929
	616	616	316	.1	.19	-.17	.25	.247	-.207	-45.517
	645	645	4	.3	.18	-.08	.19	.253	.207	49.655
	673	673	226	.1	.16	-.02	.16	.407	-.214	XXXXXXXX
	702	702	207	.3	.11	-.1	.15	.215	.207	-19.655
	731	731	26	.4	.12	-.08	.14	.724	.103	185.172
	779	779	343	.2	.17	.15	.23	.18	-.125	-26.875
	808	808	343	.4	.12	.29	.32	.207	.207	0
	834	833.99	55	.5	.19	.45	.49	.617	.115	83.077
	863	862.99	67	.3	.36	.55	.66	.223	-.207	12.414
	892	891.99	108	.3	.51	.56	.75	.217	0	42.414
	921	920.99	69	.6	.72	.59	.93	.427	.31	-40.345
	961	960.99	39	.8	1.09	.88	1.4	.308	.15	-22.5
	991	990.99	59	.5	1.34	1.11	1.74	.372	-.3	20
	1017	1016.99	9	.2	1.44	1.21	1.88	.464	-.346	-57.692
	1045	1044.99	43	.4	1.51	1.33	2.02	.278	.214	36.429
	1083	1082.99	108	.1	1.6	1.4	2.12	.383	-.237	114.474
	1111	1110.99	39	.5	1.67	1.47	2.23	.63	.429	XXXXXXXX
	1140	1139.99	278	.4	1.65	1.58	2.29	.812	-.103	XXXXXXXX
	1168	1167.99	213	.2	1.53	1.55	2.18	.39	-.214	-69.643
	1198	1197.99	358	.3	1.5	1.59	2.18	.478	.1	145
	1225	1224.99	229	.4	1.42	1.59	2.14	.704	.111	XXXXXXXX
	1253	1252.99	285	.1	1.33	1.54	2.03	.379	-.321	60
	1282	1281.99	170	.2	1.31	1.49	1.99	.268	.103	XXXXXXXX
	1311	1310.98	175	.4	1.33	1.34	1.89	.208	.207	5.172
	1339	1338.98	212	.3	1.3	1.18	1.76	.259	-.107	39.643
	1367	1366.98	92	.3	1.33	1.12	1.74	.557	0	XXXXXXXX
	1396	1395.98	184	.3	1.4	1.04	1.75	.446	0	95.172
	1425	1424.98	355	.1	1.4	.99	1.71	.413	-.207	176.896
	1464	1463.98	337	.1	1.38	1.05	1.74	.024	0	-13.846

Baroid Logging Systems

METHOD of CALCULATION:- Minimum Curvature
:COMPANY: STATOIL :FIELD: HALTENBANKEN :WELL: 6406/3-2 :DATE: 28 Sep 1986

SURVEY DATA	MEASURED DEPTH m	TRUE VERTICAL DEPTH m	BEARING	INCLINATION	EASTING m	NORTHING m	DEPARTURE m	DOG LEG SEVERITY	BUILD RATE °/30 m	WALK RATE °/30 m
	3037	3036.87	268	1.3	-4.04	-9.02	9.88	.345	.237	-12.632
	3066	3065.86	268	1.7	-4.8	-9.05	10.24	.414	.414	0
	3085	3084.85	258	1.9	-5.39	-9.12	10.6	.587	.316	-15.789
	3113	3112.84	251	2.1	-6.33	-9.39	11.32	.338	.214	-7.5
	3133	3132.82	259	2	-7.02	-9.57	11.87	.454	-.15	12
	3152	3151.81	260	2.6	-7.77	-9.71	12.44	.949	.947	1.579
	3171	3170.79	257	2.7	-8.63	-9.88	13.12	.27	.158	-4.737
	3190	3189.77	247	2.6	-9.46	-10.15	13.88	.746	-.158	-15.789
	3241	3240.71	251	2.8	-11.71	-11.01	16.07	.162	.118	2.353
	3263	3262.68	246	2.9	-12.72	-11.41	17.09	.365	.136	-6.818
	3269	3268.68	250	2.7	-12.99	-11.52	17.37	1.397	-1	20
	3305	3304.63	245	3	-14.64	-12.21	19.07	.324	.25	-4.167
	3307	3306.63	250	3.1	-14.74	-12.25	19.17	4.262	1.5	75.001
	3359	3358.55	246	3.3	-17.43	-13.34	21.95	.173	.115	-2.308
	3363	3362.54	247	3.1	-17.64	-13.43	22.17	1.557	-1.5	7.5
	3392	3391.49	251	3.4	-19.17	-14.02	23.75	.389	.31	4.138
	3421	3420.45	244	3	-20.67	-14.63	25.32	.578	-.414	-7.241
	3449	3448.41	250	3.2	-22.06	-15.22	26.8	.408	.214	6.429
	3463	3462.39	249	3	-22.77	-15.48	27.53	.444	-.429	-2.143
	3479	3478.37	246	3.1	-23.55	-15.81	28.37	.353	.188	-5.625
	3497	3496.34	244	3.1	-24.44	-16.22	29.33	.18	0	-3.333
	3522	3521.31	234	2.7	-25.52	-16.86	30.59	.772	-.48	-12
	3550	3549.28	244	2.4	-26.58	-17.51	31.83	.574	-.321	10.714
	3578	3577.26	232	2.4	-27.57	-18.12	32.99	.537	0	-12.857
	3607	3606.23	236	2	-28.47	-18.78	34.11	.443	-.414	4.138
	3636	3635.21	236	2.8	-29.47	-19.46	35.32	.828	.828	0
	3664	3663.18	239	2.3	-30.52	-20.13	36.56	.554	-.536	3.214
	3750	3749.13	232	1.7	-33.01	-21.81	39.56	.226	-.209	-2.442
	3838	3837.08	250	1.9	-35.41	-23.11	42.28	.203	.068	6.136
	3923	3922.06	225	1	-37.26	-24.12	44.38	.381	-.318	-8.824
	3966	3965.05	236	1.3	-37.93	-24.65	45.23	.259	.209	7.674
	4080	4079.02	239	1.3	-40.11	-26.04	47.82	.018	0	.789
	4261	4259.95	239	1.9	-44.44	-28.65	52.87	.099	.099	0
	4513	4521.84	155	2	-46.01	-35.1	57.87	.311	.012	-10

Baroid Logging Systems

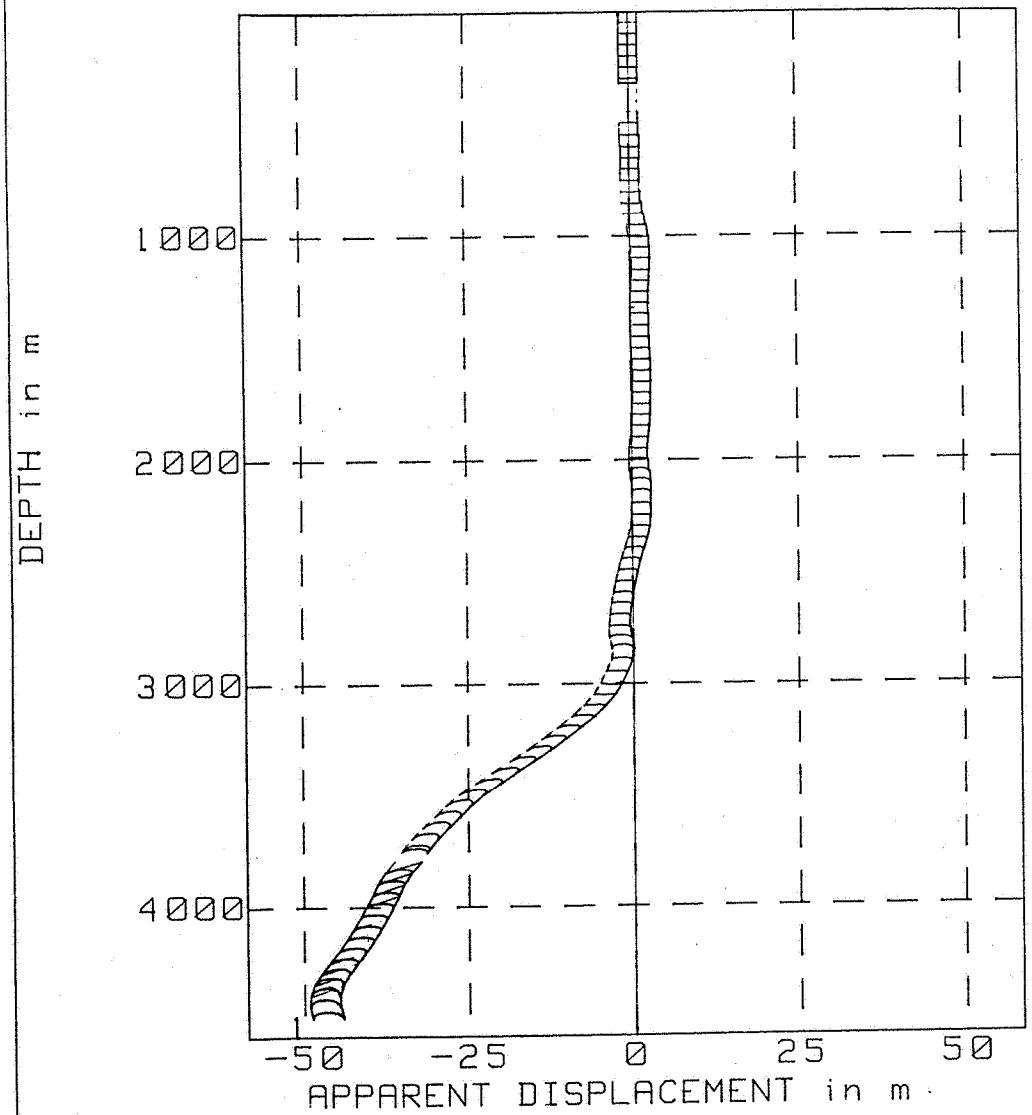
METHOD of CALCULATION:- Minimum Curvature
:COMPANY: STATOIL :FIELD: HALTENBANKEN :WELL: 6406/3-2 :DATE: 28 Sep 1986

SURVEY DATA	MEASURED DEPTH m	TRUE VERTICAL DEPTH m	BEARING	INCLINATION	EASTING m	NORTHING m	DEPARTURE m	DOG LEG SEVERITY	BUILD RATE °/30 m	WALK RATE °/30 m
	1491	1490.98	114	.2	1.41	1.06	1.77	.313	.111	152.222
	1519	1518.98	49	.2	1.5	1.07	1.84	.23	0	-69.643
	1548	1547.98	174	.1	1.54	1.08	1.88	.279	-.103	129.31
	1577	1576.98	28	.3	1.57	1.12	1.93	.4	.207	XXXXXXXXX
	1606	1605.98	125	.1	1.63	1.17	2.01	.339	-.207	100.345
	1634	1633.98	322	.2	1.62	1.2	2.01	.318	.107	XXXXXXXXX
	1691	1690.98	181	.2	1.56	1.18	1.95	.198	0	-74.211
	1720	1719.98	284	.1	1.53	1.13	1.9	.251	-.103	106.552
	1748	1747.98	257	.1	1.49	1.13	1.87	.05	0	-28.929
	1777	1776.98	359	.2	1.46	1.18	1.87	.25	.103	105.517
	1805	1804.98	171	.2	1.47	1.18	1.88	.428	0	184.286
	1835	1834.98	296	.2	1.43	1.15	1.83	.355	0	125
	1872	1871.98	288	.2	1.31	1.2	1.77	.023	0	-6.486
	1900	1899.98	273	.4	1.16	1.22	1.68	.228	.214	-16.071
	1939	1938.98	295	.1	1	1.24	1.59	.238	-.231	16.923
	1968	1967.98	211	.2	.95	1.21	1.53	.221	.103	-96.897
	1997	1996.98	170	.9	.96	.94	1.34	.787	.724	-42.414
	2026	2025.98	172	.8	1.03	.51	1.15	.108	-.103	2.069
	2055	2054.97	156	.9	1.15	.1	1.15	.265	.103	-16.552
	2083	2082.97	161	1.3	1.34	-.4	1.4	.44	.429	5.357
	2112	2111.96	185	1.1	1.43	-.99	1.73	.554	-.207	24.828
	2140	2139.96	174	1	1.43	-1.5	2.07	.241	-.107	-11.786
	2169	2168.96	204	.4	1.41	-1.84	2.32	.787	-.621	31.035
	2198	2197.95	186	.6	1.36	-2.08	2.49	.261	.207	-18.621
	2227	2226.95	169	.1	1.35	-2.26	2.63	.523	-.517	-17.586
	2266	2265.95	186	.6	1.33	-2.5	2.83	.389	.385	13.077
	2294	2293.95	245	.4	1.23	-2.68	2.95	.56	-.214	63.214
	2397	2396.94	224	1	.28	-3.48	3.49	.187	.175	-6.117
	2408	2407.94	224	1	.14	-3.62	3.62	0	0	0
	2493	2492.93	218	.7	-.69	-4.56	4.61	.11	-.106	-2.118
	2504	2503.93	218	.7	-.77	-4.67	4.73	0	0	0
	2603	2602.92	211	.7	-1.46	-5.66	5.85	.026	0	-2.121
	2714	2713.92	202	.5	-1.99	-6.69	6.98	.06	-.054	-2.432
	2754	2753.92	192	.3	-2.08	-6.96	7.26	.158	-.15	-7.5
	2801	2800.91	152	1.5	-1.81	-7.62	7.83	.82	.766	-25.532
	2829	2828.9	157	1.3	-1.52	-8.24	8.38	.251	-.214	5.357
	2890	2889.89	232	.9	-1.62	-9.17	9.31	.677	-.197	36.885
	2953	2952.89	280	1	-2.56	-9.38	9.72	.371	.048	22.857
	2971	2970.88	301	1	-2.84	-9.27	9.7	.607	0	35
	2999	2998.88	284	1	-3.29	-9.09	9.66	.317	0	-18.214

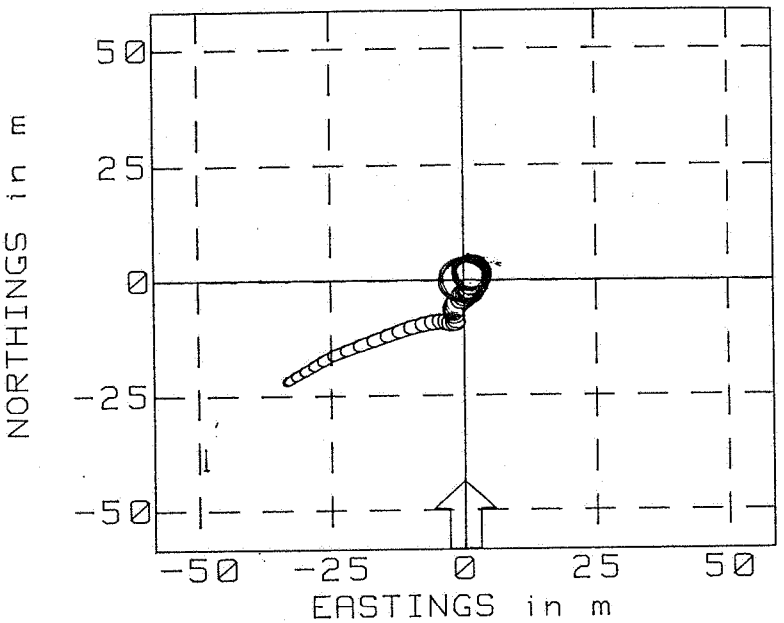
:COMPANY: STATOIL :FIELD: HALTENBANKEN

METHOD of CALCULATION:- Minimum Curvature (Depth interval 50m)

ELEVATION VIEWED FROM 180°



PLAN VIEW

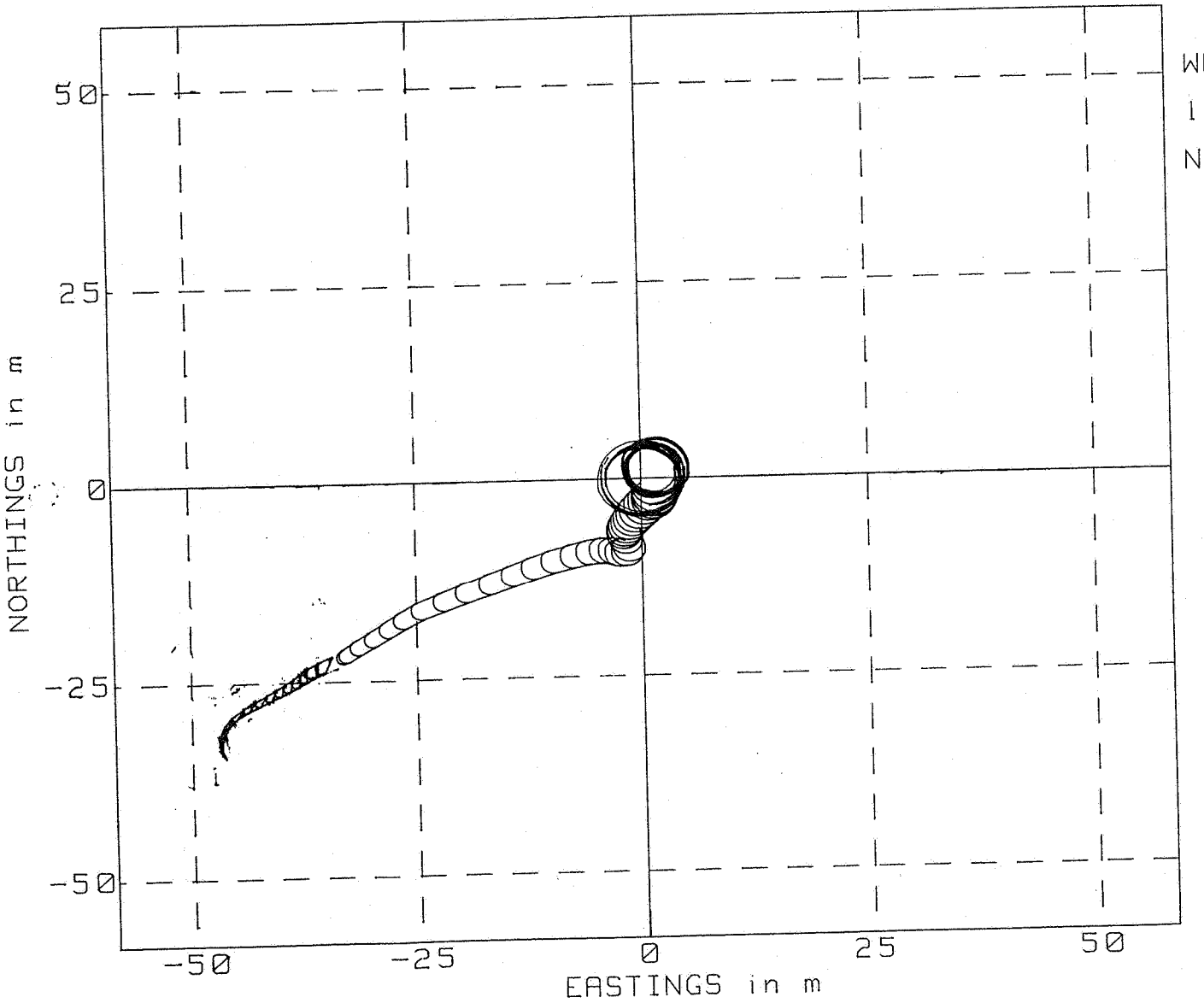


WELL No & NAME	TVD m	NORTHING	EASTING
1 6406/3-2	4522	-35.1	-46.0

Baroid
Logging
Systems

:COMPANY: STATOIL :FIELD: HALTENBANKEN

METHOD of CALCULATION:- Minimum Curvature (Depth interval 50m)



WELL No & NAME	TVD in m
1 6406/3-2	4522
NORTH -35.1 EAST	-46.0

*** PLAN VIEW ***

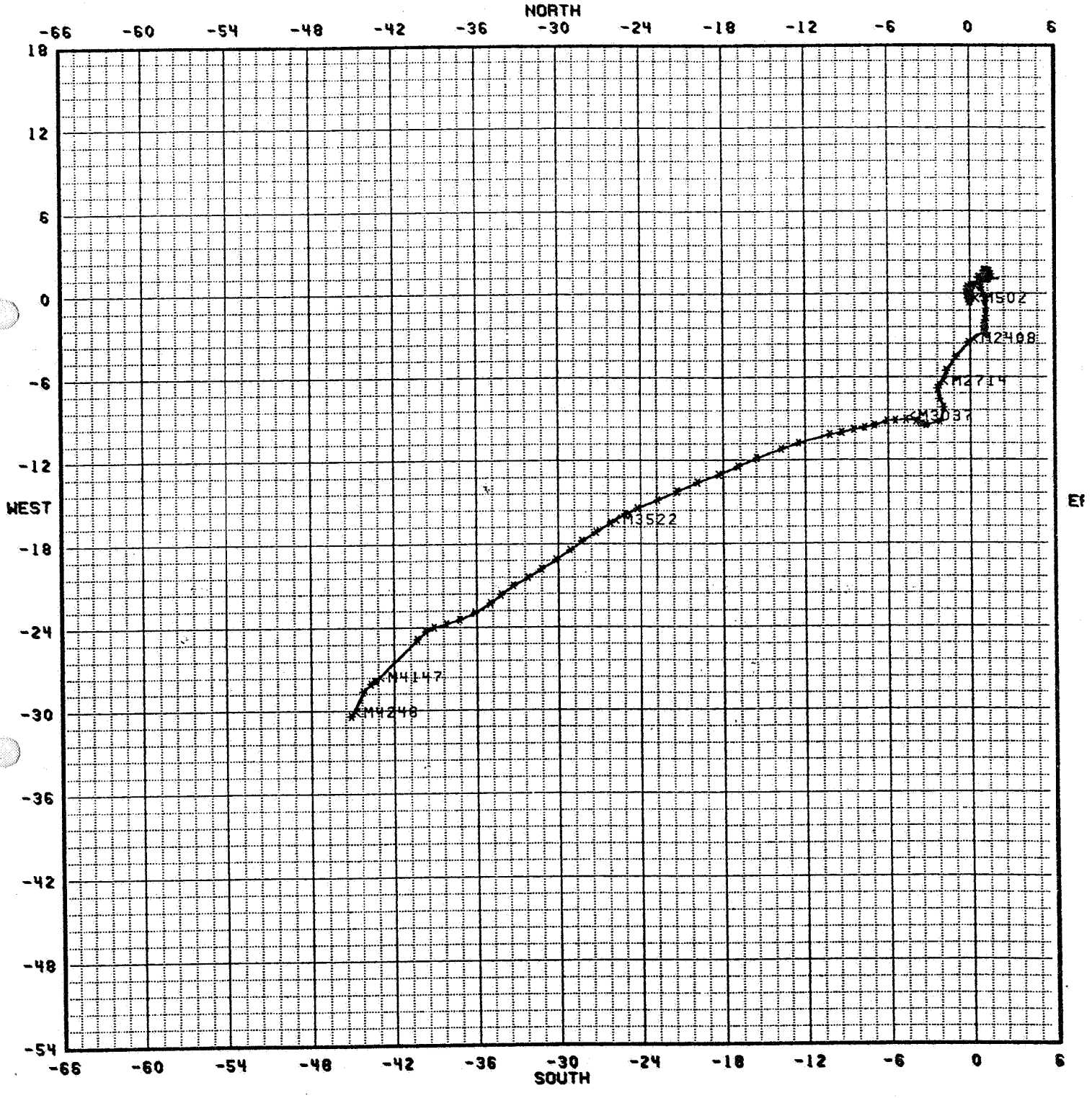
NL Baroid Logging Systems

PLAN VIEW PLOT FOR WELL INDEX # 1: STATOIL 6406/3-2

SURVEYS STARTED 28 JUN 86 AT DEPTH = 0 M . LAST SURVEY #118 AT MD = 4246 M
DLWD AND CONVENTIONAL SURVEY DATA

DEPTHS ARE MEASURED RELATIVE TO RKB AT 22 M ABOVE MEAN SEA LEVEL

PLOT SCALE IN METRES

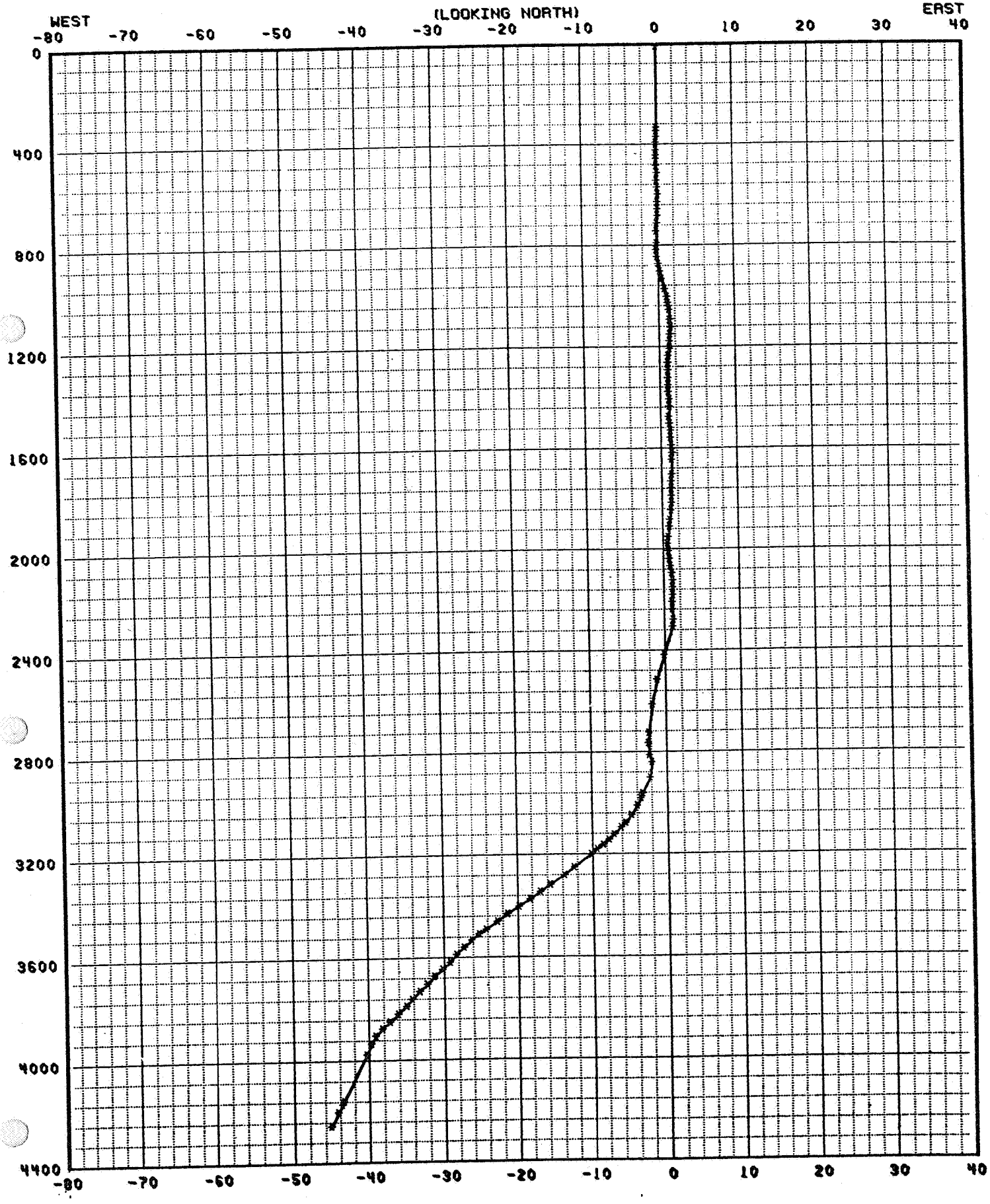


ELEVATION VIEW PLOT FOR WELL INDEX # 1: STATOIL 6406/3-2

SURVEYS STARTED 28 JUN 86 AT DEPTH = 0 M FROM KB. LAST SURVEY # 118 AT MD = 4246 M
DLWD AND CONVENTIONAL SURVEY DATA

DEPTHS ARE MEASURED RELATIVE TO RKB AT 22 M ABOVE MEAN SEA LEVEL.

BOTH SCALES IN METRES

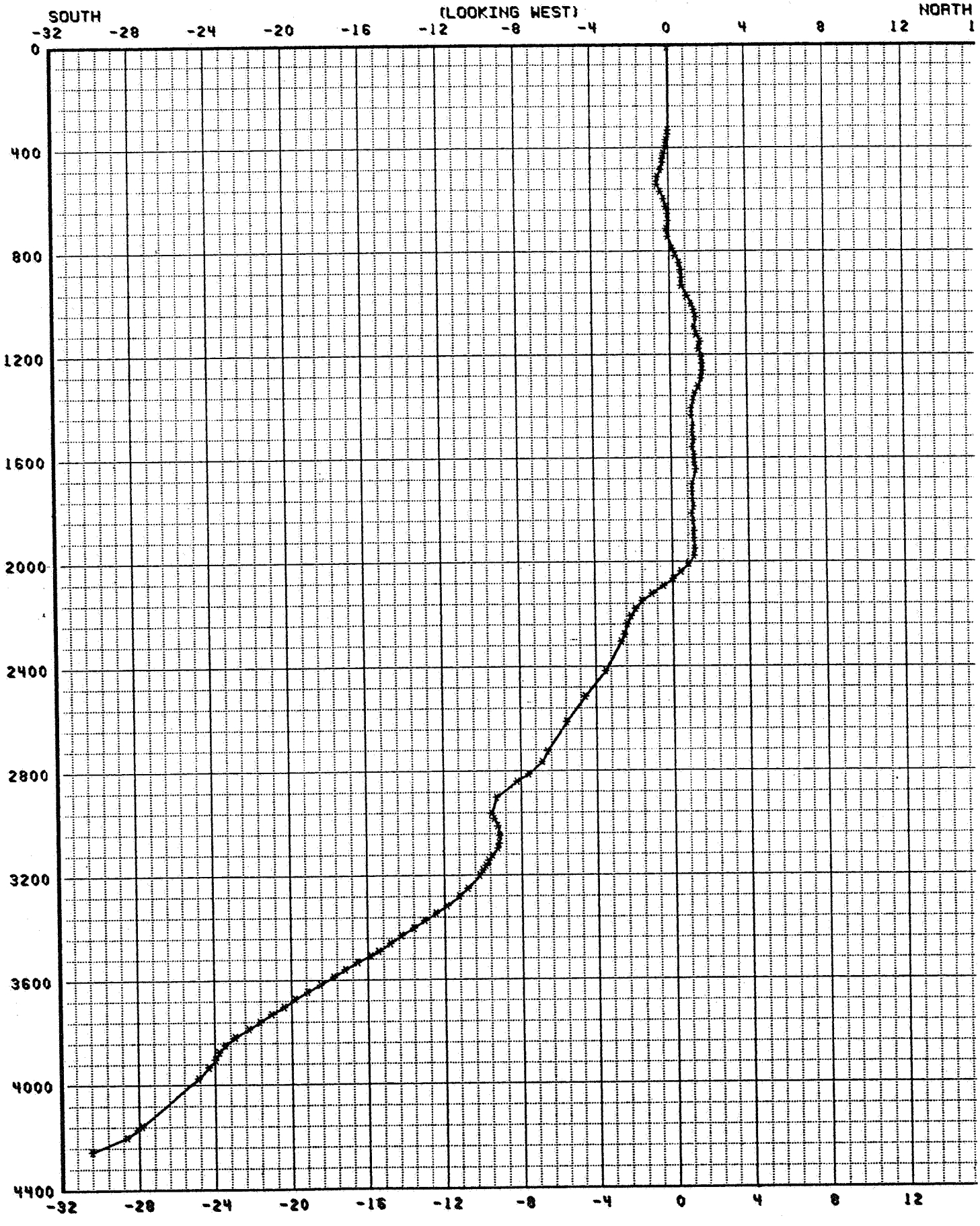


ELEVATION VIEW PLOT FOR WELL INDEX # 1: STATOIL 6406/3-2

SURVEYS STARTED 28 JUN 86 AT DEPTH = 0 M FROM KB. LAST SURVEY # 118 AT MD = 4246 M
DLWD AND CONVENTIONAL SURVEY DATA

DEPTHS ARE MEASURED RELATIVE TO RKB AT 22 M ABOVE MEAN SEA LEVEL.

BOTH SCALES IN METRES



III 10. DRILLING FLUID SUMMARY

STATOIL A/S

WELL 6406/3-2

ENGINEERS: BRULAND
RASMUSSEN
SØRBØ
VISTNES

STATOIL A/S

WELL 6406/3-2

Rig	:	West Vanguard
Drilling Contractor	:	Smedvig
Water Depth from RKB	:	322 m
36" Hole to	:	433 m
30" Casing to	:	432 m
26" Hole to	:	965 m
20" Casing to	:	950 m
17 1/2" Hole to	:	2298 m
13 3/8" Casing to	:	2283 m
12 1/4" Hole to	:	3930 m
9 5/8" Casing to	:	3913 m
8 3/8" Hole to	:	4380 m
7 " Liner from	:	3763 m
7 " Liner to	:	4377 m
6" Hole to	:	4523 m

COMMENTS/RECOMMENDATIONS

Casing Size	:	30"	-	432 m
Hole Size	:	36"	-	433 m
Drilled from	:	322 m	-	436 m

Spud in on the 28th of June 1986.

Prior to spud in 206 m^3 spud mud and 40 m^3 kill was built.

The hole was drilled to 436 m with a 17 1/2" bit and opened up with 36" hole opener. The hole was drilled with sea water and high viscosity pill with Bentonite on every connection. A total of 236 m^3 spud mud was used on this section. Displaced hole with 100 m^3 gel mud prior to run and cement 30" casing. The casing was set and cemented without any problems.

COMMENTS/RECOMMENDATIONS

Casing Size	:	20"	-	950 m
Hole Size	:	26"	-	965 m
Drilled from	:	463 m	-	965 m

The cement shoe was drilled with a 26" bit and sea water. A 12 1/4" pilot hole was drilled using spud mud to 965 m and logged.

The hole was opened with a 26" under-reamer to 965 m and the mud weight was increased to 1.12 s.g. Displaced the open hole with 185 m^3, 1.23 s.g. mud.

The 20" casing was set and cemented in place at 951 m.

COMMENTS/RECOMMENDATIONS

Casing Size	:	13 3/8"	-	2283 m
Hole Size	:	17 1/2"	-	2298 m
Drilled from	:	965 m	-	2298 m

A total of 295 m^3 of Gyp-polymer was built prior to drilling the 20" casing shoe. The fluid was sheared for four hours at 800 psi, which was maximum pressure that could be obtained thru the mud guns. The guns were washed out and replaced, but later the shear pump broke down and consequently the drilling fluid couldn't be sheared properly.

Drilled 17 1/2" hole to 2090 m and added new mud continuesly to the active system to keep mud properties in good shape. Raised mud weight to 1.35 s.g. and YP and MBT started increasing. Drilled ahead to 2216 m and raised mud weight to 1.50 s.g. The 10 min gel, YP and MBT continued increasing. This was due to reactive clay, increased mud weight, bad solids control equipment and a very long drilling section. Raised mud weight to 1.55 s.g. and to 1.58 s.g. because spots of shale and reactive clay was comming over the shakers.

At TD a 15 m^3 high viscosity pill was pumped before circulating bottoms up and pulling out of hole to log. Schlumbergers log stopped at 1000 m and we had to return in hole with 17 1/2" bit.

Pumped a new pill. Circulated bottoms up and pulled out of hole. Logged with Schlumberger and ran 13 3/8" casing without any further problems. However, the cement unit broke down during cementing.

RECOMMENDATIONS

Mud properties:

The Gyp-polymer mud is fairly intolerant to mud densities above 1.50 s.g. and large amounts of reactive drill-solids. Therefore it is recommended to increase the density and stabilize the mud prior to drilling into pressured zones. Excess Gyp was kept between 4 - 6 ppb during this section. However, the gyp-polymer system is not very tolerant to larger sections of reactive clay, and a KCl-polymer system will be more tolerant to the formation in this geological area. We will therefore recommend a KCl-system for drilling new wells in the same geological area.

Solids contol equipment:

It is important to improve the solids control equipment on West Vanguard. The shakers is a limiting factor in drilling the 17 1/2" section and also the mud cleaner can be improved on. For this section the centrifuge broke down early and the mud cleaner broke down when circulating under logging.

The need for a better shearing device for the polymer is obvious. We recommend the existing system being rebuildt to have pressure loss of at least 1200 psi. through the jets.

Costs:

The costs for this section was kept below estimated.

COMMENTS/RECOMMENDATIONS

Casing Size	:	9 5/8"	-	3913 m
Hole size	:	12 1/4"	-	3930 m
Drilled from	:	2298 m	-	3930 m

The cement and 13 3/8" casing shoe were drilled out with the Gyp-polymer lignosulfonate mud system while the mud weight was increased to 1.62 s.g. 70 m^3 cement-contaminated mud was dumped, and the leak off test failed at 1.73 s.g. The drill string was then run in the hole open-ended with a packer, and the casing was tested with positive results. An attempt was made to squeeze cement, but the BJ-Hughes cementing unit broke down again. While the cement unit was being repaired, the drill string was pulled and run back in with 3 1/2" tubing on the the drill pipe. The cement plug was then displaced and squeezed without any further problems. After drilling out the poorly cured plug, the mud was again cement contaminated.

The leak-off test failed at 1.85 s.g. Drilling continued to 2412 m where gas was encountered on bottoms-up after a wiper trip. The mud weight was therefore raised to 1.80 s.g. at this point, and was maintained at 1.80 s.g. throughout this section.

Due to the high mud weight, and due to the fact that the centrifuge remained broken down, a high rate of dilution was necessary to maintain the properties of the partially cement contaminated mud. Also, the mud cleaner was imtermittently broken down during this section. These factors combined in making a high rate of barite usage necessary in order to maintain the mud weight.

The mud remained relatively stable throughout the section. However in the lower section below 3700 +- m carbonate contamination was experienced and was duly treated out with gypsum (excess gyp remained in mud till 3400 m).

10 min gels remained somewhat high but I believe this was a direct result of not having a centrifuge available (broken) to remove the fines generated from a high mud weight. Due to this, a high rate of diluion was needed throughout the drilling of this section.

The mud was dispersed with lignite, and as a result fluid loss properties, both API and HTHP were easily maintained.

Hole problems were only evident on trips and seemed to be intermittent. Some trips were good and others bad.

Tights spots down to casing point were at 2700 m +-, 3500 m to 3800 m.

Logs would not pass 3600 m on first attempt, but after a wiper trip and raising mud weight to 1.82 s.g. the log would pass with no problems. There were no problems running 9 5/8" casing to bottom. However on circulating vol of casing, we virtually packed off and lost 75% returns.

Total returns during cementing were about 40%. However CBL showed cement to 3200 +- m.

RECOMMENDATIONS

Mud Properties

It would be an advantage to fully disperse the mud before setting casing. This would limit the effects of cement contamination and make the mud more tolerant to solids. Also, rapid increases in mud weight after drilling through cement with a non - dispersed system, can result in viscosity problems making heavy dilution with lignosulphonate premix necessary.

Solids Control

Both centrifuge and, at times, the mud cleaner were broken down during this section. Also, when the centrifuge was operating, it became obvious that it's capacity was much too low. Mud cleaner screens of all sizes must be in stock at all times.

Costs

Because it was necessary with large amounts of dilution in order to maintain mud properties, the barite cost for this section was higher than anticipated. However, total cost for the section was only slightly above estimated cost.

COMMENTS / RECOMMENDATION

Casing Size	:	7"	3763 m	- 4377 m
Hole size	:	8 3/8"		- 4380 m
Drilled from	:	3913 m		- 4380 m

The mud weight was reduced to 1.36 s.g. before drilling out. After drilling out cement and shoe, a leak off equivalent to 1.93 s.g. was achieved.

Then the hole had to be cleaned out for a total of 1650 gram junk. 8 1/2" cores were cut from 3931 m to 3983 m when pipe almost got stuck. Mud weight were then reduced to 1.23 s.g. Hole had to be cleaned again with junk basket. 1 kg junk were recovered this time.

Continued coring to 4149 m. A 8 1/2" bit was now run in hole and drilled to 4284 m. A core barrel was once again run in the hole and cores were cut to casing point at 4380 m. Mud weight were increased to 1.26 s.g. due to high pore pressure. Close to TD trip speed had to be reduced due to two incidents of swabbing.

This lignosufonate mud performed well throughout this section. When bit was pulled at 4167 m, hole was tight and 80 MT overpull was recorded. One % by volume Lubrisal was added to the drilling fluids. This cured the problem almost instantly. Mud properties were maintained with additions of premixed lignosulfonate, lignite and Desco. Viscosity was controlled with prehydrated bentonite and Drispac.

After reaching TD, the hole was circulated clean, hole was logged. Schlumberger RFT - tool got stuck and had to be recovered with drill pipe. Other than that, no problems with logging.

When the 7" liner was run, it took weight when passing through wellhead. Liner were pulled again and checked. After a wiper trip, the 7" liner was successfully run and set from 3763 m to 4377 m. No problems were encountered when cementing.

RECOMMENDATIONS

Mud Properties	The mud performed good throughout this section. No further recommendations necessary.
Solids Cost	Both mud cleaner and centrifuge performed satisfactority with the reduced flow in this section.
Costs	Costs for this section was kept below estimate. Mostly because of the well treated mud from last section.

COMMENTS / RECOMMENDATION

Casing Size	:	not cased	
Hole size	:	6"	- 4523 m
Drilled from	:	4377 m	- 4523 m

Drilled out cement and shoe without any problems and with a leak-off equivalent of 2.07 s.g. Before drilling out the shoe the mud density was increased to 1.35 s.g.

Drilled 6" hole to 4401 m where mud density was increased to 1.41 s.g. The density was again increased to 1.62 s.g. and this density was kept for the rest of the section. At 4523 m a trip was made due to junk in the hole. Throughout the whole section the mud was still in good condition, and premixed lignoslulfonate was added to keep the mud deflocculated.

Before logging the mud denisty was lowered to 1.38 s.g. by dilution with premix and drillwater. The centrifuge and mud-cleaner was also used to lower the density.

The well was logged and a balanced cement plug was set. The mud density was reduced to 1.26 s.g. and a bridge plug was set. The well was tested and killed.

The pipe was accidentally cemented in hole. Ran Schlumberger several times to try to back-off the pipe. Backed off mechanically. Due to fishing, several high viscosity pills were pumped.

Ran test string and tested the well.

The mud density was raised to 1.82 s.g. and the 9 5/8" casing perforated. Cut and pulled same. Set various plugs and abandoned well.

RECOMMENDATIONS

Mud Properties	No problem with mud properties.
Solids Control	All solids control equipment performed good.
Costs	The high mud cost on this section are because of the extra 3 - 4 weeks of activity due to stuck pipe.

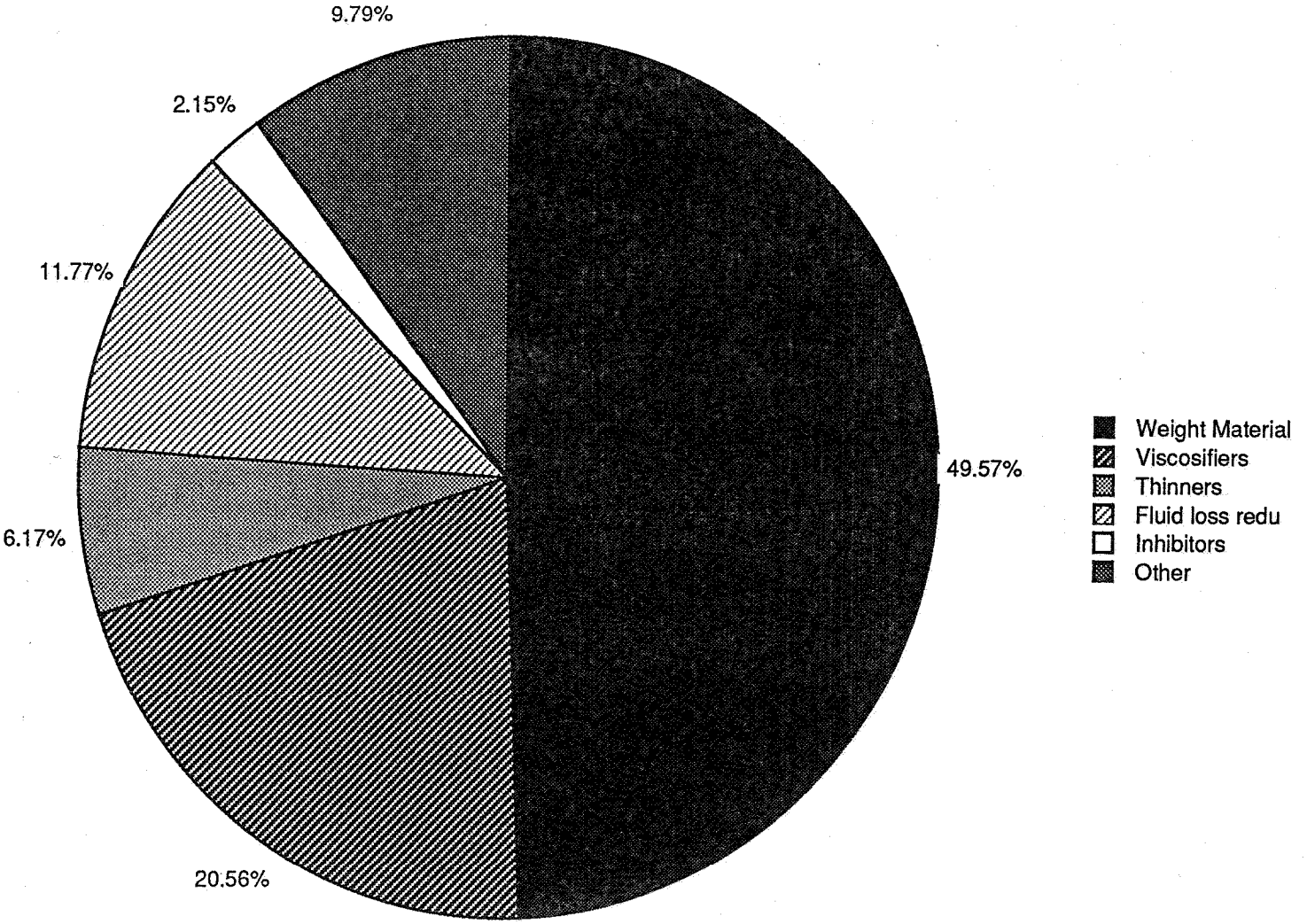
TOTAL MUD MATERIALS

Well: 6406/3-2 **Operator:** Statoil

Quantity:	Material:	Units:	Unit Price:	Total Cost:
2495	Barite	ton	$100.30	$250,248.50
121	Bentonite	ton	$310.30	$37,546.30
103	Bicarbonate	50 kg	$23.91	$2,462.73
170	Chemtrol-X	25 kg	$91.26	$15,514.20
130	Desco	25 lbs	$36.85	$4,790.50
5	Detergent	200 l	$327.25	$1,636.25
272	Drispac Reg	50 lbs	$97.35	$26,479.20
451	Drispac SL	50 lbs	$97.35	$43,904.85
1016	Gypsum	40 kg	$10.70	$10,871.20
515	Ligcon	25 kg	$20.85	$10,737.75
46	Lime	20 kg	$20.50	$943.00
13	Lubrisal	200 l	$812.70	$10,565.10
56	Milgard	25 kg	$96.91	$5,426.96
189	Milpolymer 302	25 kg	$200.00	$37,800.00
576	NaOH	25 kg	$15.00	$8,640.00
49	Nutplug	25 kg	$19.35	$948.15
13	Probio	200 l	$675.00	$8,775.00
84	Prodefoamer	25 l	$108.00	$9,072.00
1123	Prothin	25 kg	$13.90	$15,609.70
46	Soda Ash	50 kg	$20.50	$943.00
8	W.O. 21	25 kg	$245.90	$1,967.20

Total Cost:	$504,881.59
Depth at TD [m] 4553	Average Cost pr Meter: $122.63

Chemicals 6406/3-2



CASING INTERVAL

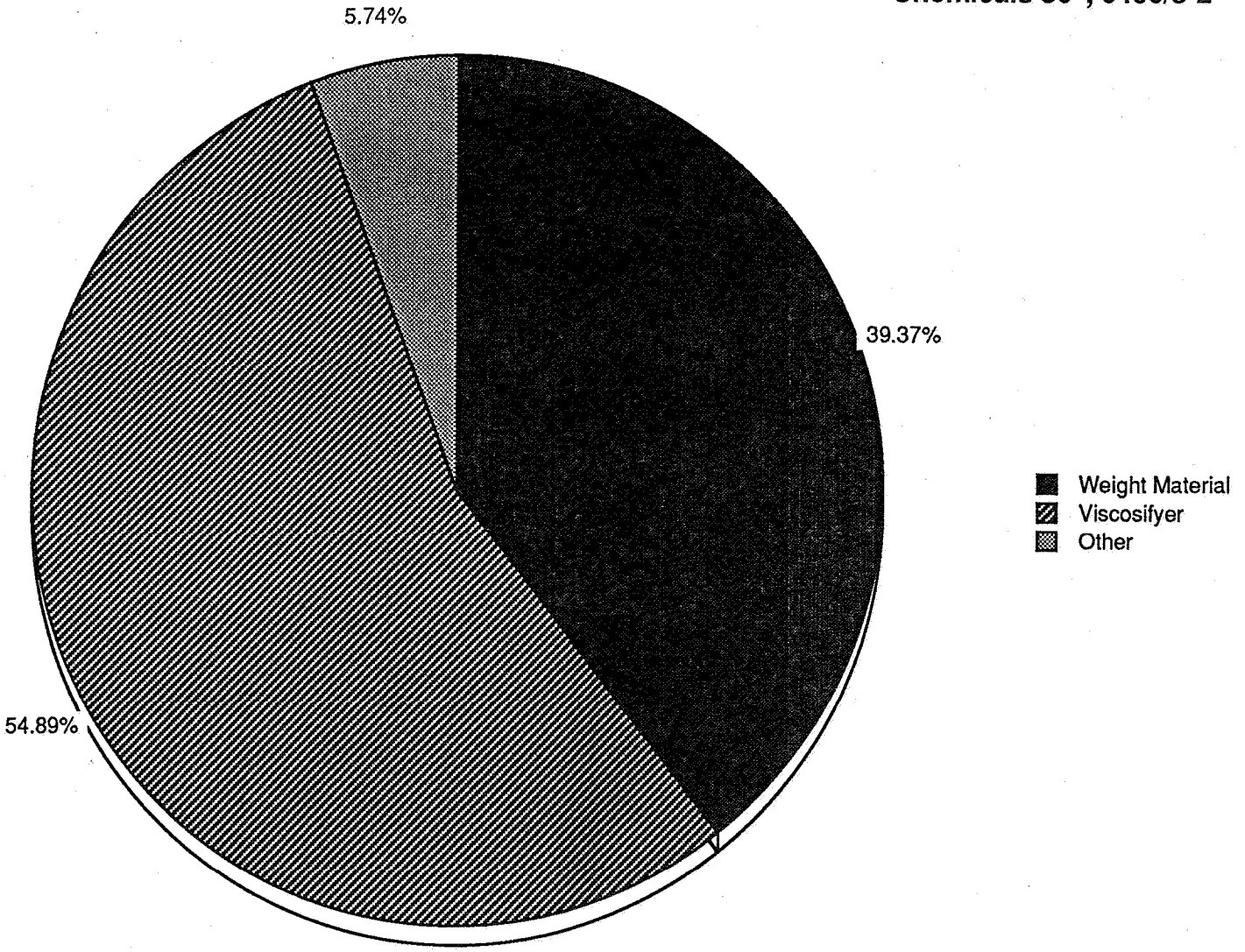
Well:	6406/3-2	**Operator:**	Statoil		
Casing:	30"	**From/to:**	322.0 m	432.0 m	
Bit:	36"	**From/to:**	322.0 m	436.0 m	

Quantity:	Material:	Units:	Unit Price:	Total Cost:
71	Barite	ton	$100.30	$7,121.30
32	Bentonite	ton	$310.30	$9,929.60
21	NaOH	25 kg	$15.00	$315.00
12	Nutplug	25 kg	$19.35	$232.20
24	Soda Ash	50 kg	$20.50	$492.00

Total Cost for Interval:	$18,090.10
Average Cost pr Meter	$158.69
Average Cost pr Day	$6,030.03

Drilling days: 3

Chemicals 36", 6406/3-2



CASING INTERVAL

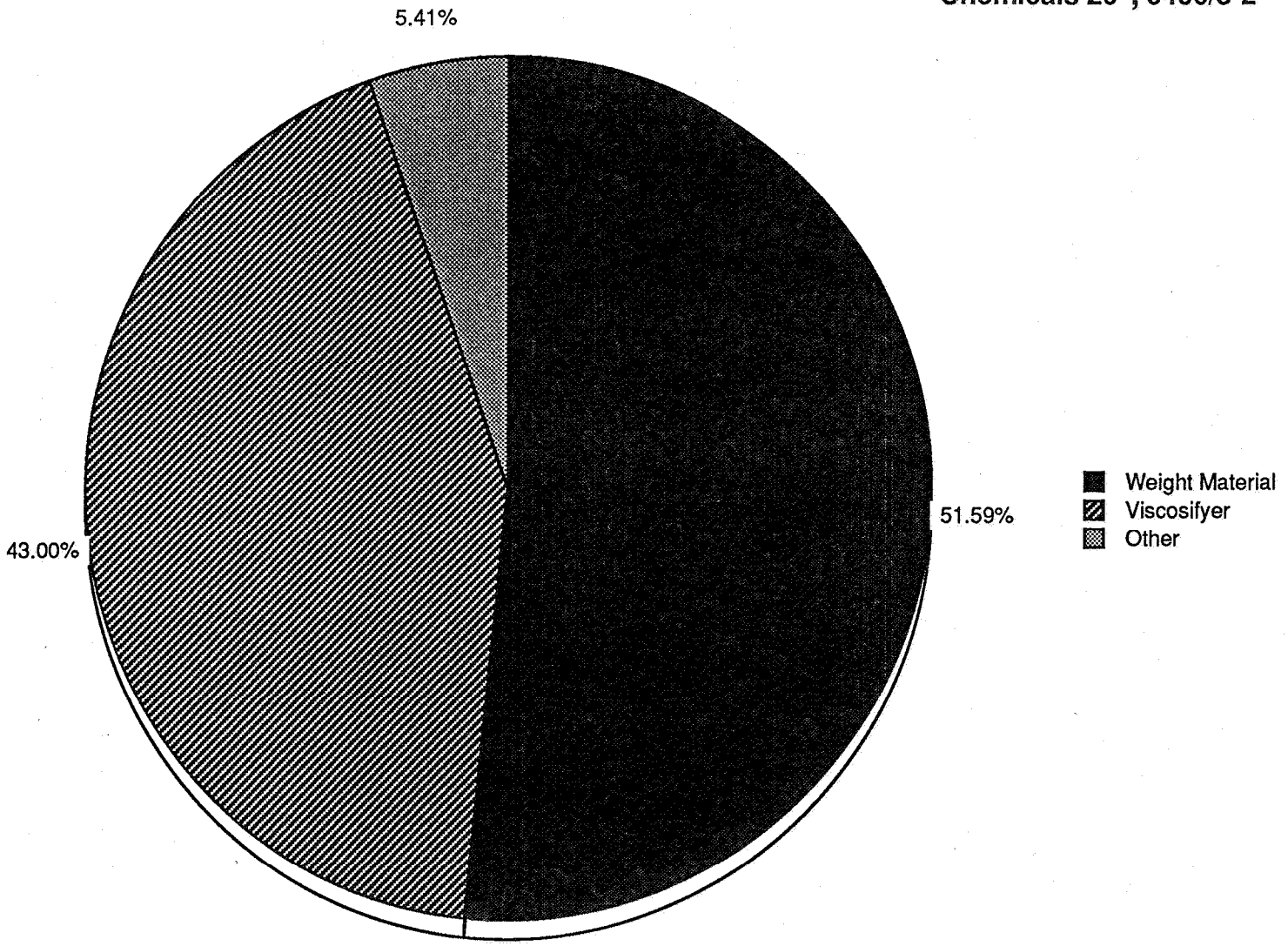
Well:	6406/3-2	**Operator:**	Statoil		
Casing:	20"	**From/to:**	322.0 m	951.0 m	
Bit:	26"	**From/to:**	432.0 m	965.0 m	

Quantity:	Material:	Units:	Unit Price:	Total Cost:
167	Barite	ton	$100.30	$16,750.10
45	Bentonite	ton	$310.30	$13,963.50
20	Lime	20 kg	$20.50	$410.00
66	NaOH	25 kg	$15.00	$990.00
5	Prothin	25 kg	$13.90	$69.50
14	Soda Ash	50 kg	$20.50	$287.00

Total Cost for Interval:	$32,470.10
Average Cost pr Meter	$60.92
Average Cost pr Day	$4,058.76

Drilling days: 8

Chemicals 26", 6406/3-2



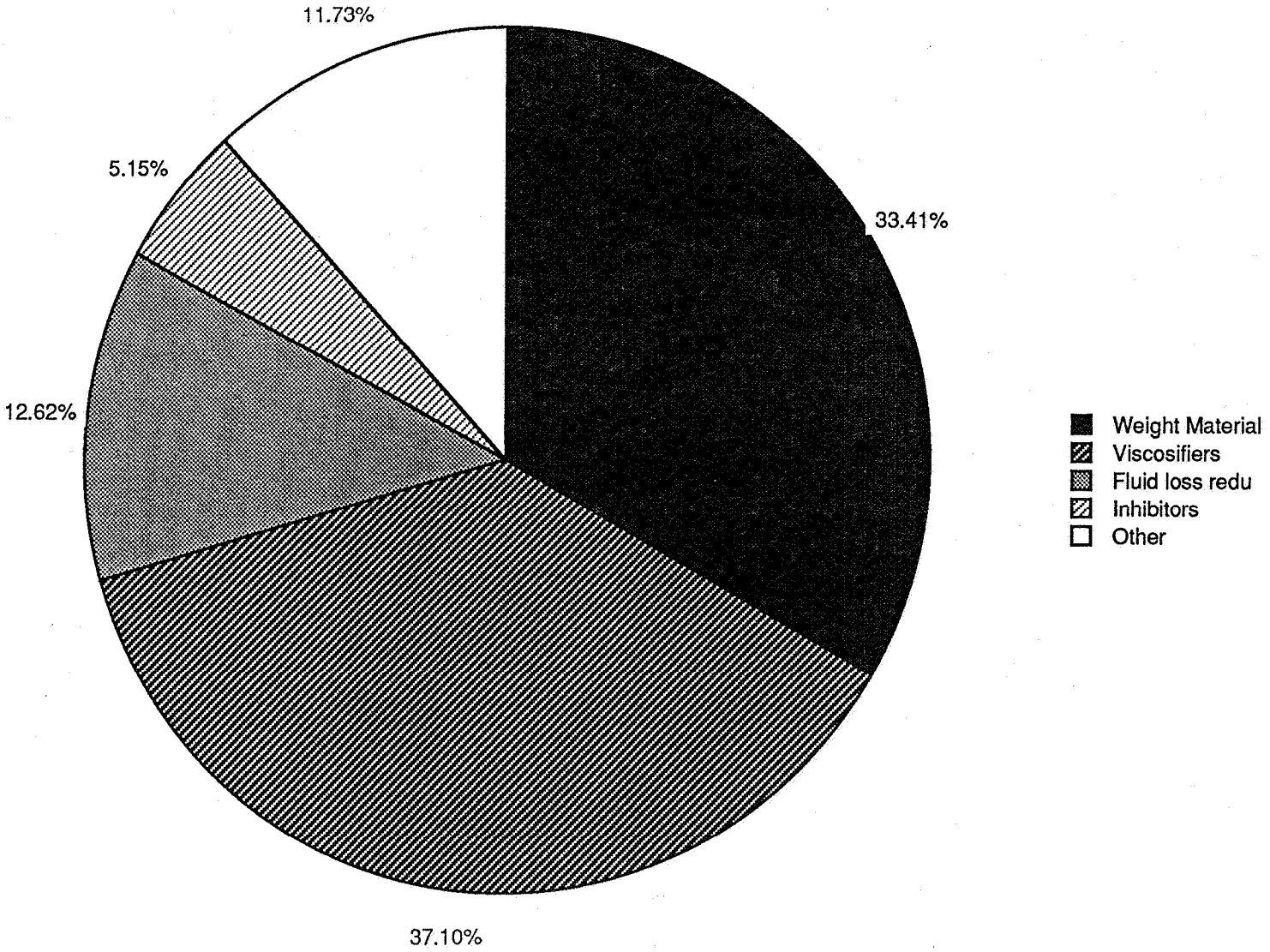
CASING INTERVAL

Well:	6406/3-2	**Operator:**	Statoil	
Casing:	13 3/8"	**From/to:**	322.0 m	2283.0 m
Bit:	17 1/2"	**From/to:**	950.0 m	2301.0 m

Quantity:	Material:	Units:	Unit Price:	Total Cost:
496	Barite	ton	$100.30	$49,748.80
1	Bentonite	ton	$310.30	$310.30
12	Bicarbonate	50 kg	$23.91	$286.92
176	Drispac Reg	50 lbs	$97.35	$17,133.60
193	Drispac SL	50 lbs	$97.35	$18,788.55
717	Gypsum	40 kg	$10.70	$7,671.90
25	Lime	20 kg	$20.50	$512.50
52	Milgard	25 kg	$96.91	$5,039.32
189	Milpolymer 302	25 kg	$200.00	$37,800.00
73	NaOH	25 kg	$15.00	$1,095.00
11	Probio	200 l	$675.00	$7,425.00
14	Prodefoamer	25 l	$108.00	$1,512.00
115	Prothin	25 kg	$13.90	$1,598.50

Total Cost for Interval:	$148,922.39
Average Cost pr Meter	$110.23
Drilling days: 13	
Average Cost pr Day	$11,455.57

Chemicals 17 1/2", 6406/3-2



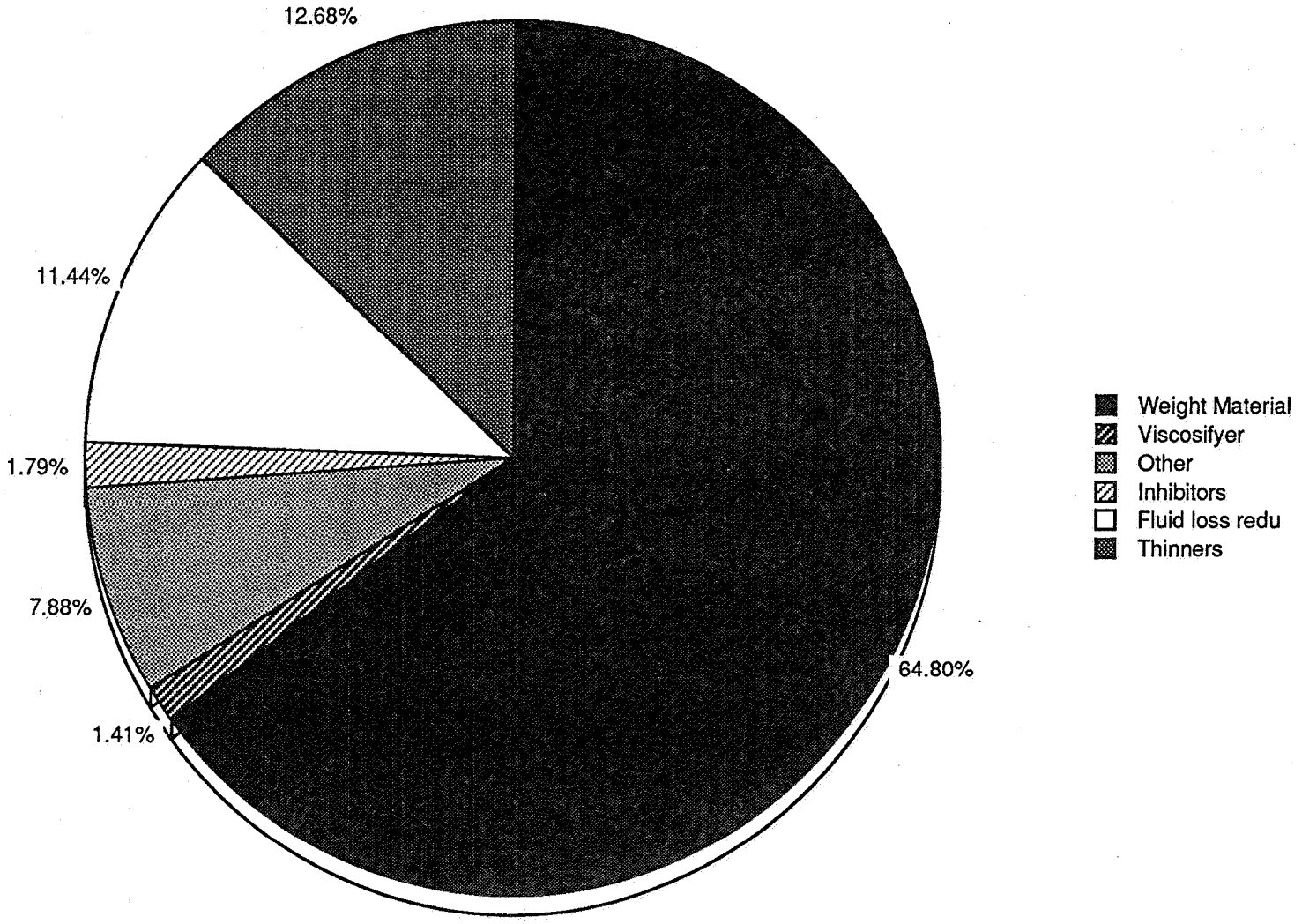
CASING INTERVAL

Well:	6406/3-2	**Operator:**	Statoil	
Casing:	9 5/8"	**From/to:**	322.0 m	3913.0 m
Bit:	12 1/4"	**From/to:**	2283.0 m	3930.0 m

Quantity:	Material:	Units:	Unit Price:	Total Cost:
1154	Barite	ton	$100.30	$115,746.20
5	Bentonite	ton	$310.30	$1,551.50
31	Bicarbonate	50 kg	$23.91	$741.21
130	Chemtrol-X	25 kg	$91.26	$11,863.80
120	Desco	25 lbs	$36.85	$4,422.00
5	Detergent	200 l	$327.75	$1,638.75
10	Drispac Reg	50 lbs	$97.35	$973.50
88	Drispac SL	50 lbs	$97.35	$8,566.80
299	Gypsum	40 kg	$10.70	$3,199.30
370	Ligcon	25 kg	$20.85	$7,714.50
318	NaOH	25 kg	$15.00	$4,770.00
26	Nutplug	25 kg	$19.35	$503.10
2	Probio	200 l	$675.00	$1,350.00
47	Prodefoamer	25 l	$108.00	$5,076.00
756	Prothin	25 kg	$13.90	$10,508.40

Total Cost for Interval:	$178,625.06
Average Cost pr Meter	$108.45
Drilling days: 36	
Average Cost pr Day	$4,961.81

Chemicals 12 1/4", 6406/3-2



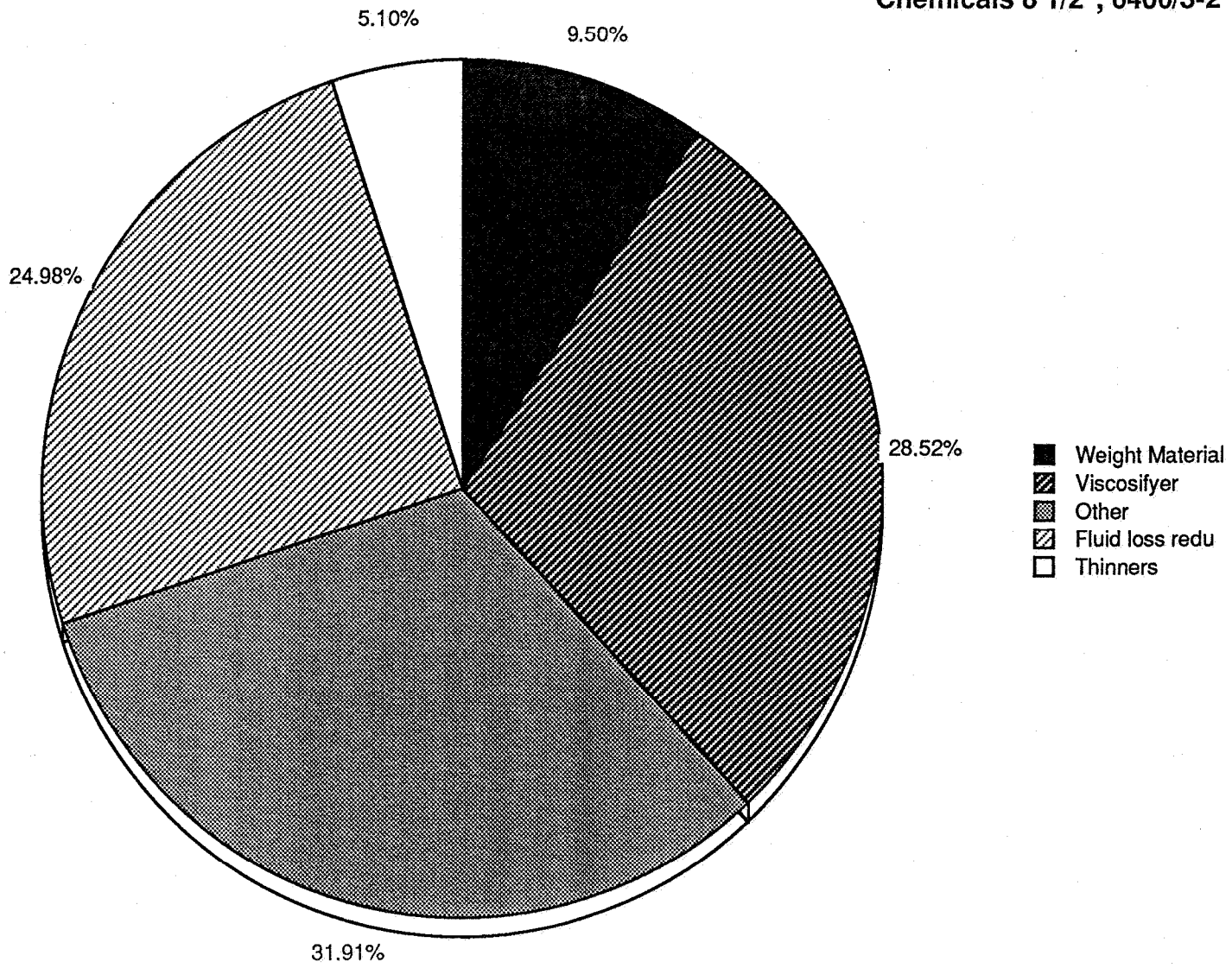
CASING INTERVAL

Well:	6406/3-2	**Operator:**	Statoil	
Casing:	7"	**From/to:**	322.0 m	4377.0 m
Bit:	8 1/2"	**From/to:**	3919.0 m	4380.0 m

Quantity:	Material:	Units:	Unit Price:	Total Cost:
42	Barite	ton	$100.30	$4,212.60
26	Bentonite	ton	$310.30	$8,067.80
8	Bicarbonate	50 kg	$23.91	$191.28
20	Chemtrol-X	25 kg	$91.26	$1,825.20
10	Desco	25 lbs	$36.85	$368.50
47	Drispac Reg	50 lbs	$97.35	$4,575.45
95	Drispac SL	50 lbs	$97.35	$9,248.25
125	Ligcon	25 kg	$20.85	$2,606.25
13	Lubrisal	200 l	$812.70	$10,565.10
4	Milgard	25 kg	$96.91	$387.64
85	NaOH	25 kg	$15.00	$1,275.00
16	Prodefoamer	25 l	$108.00	$1,728.00
136	Prothin	25 kg	$13.90	$1,890.40

Total Cost for Interval:	$46,941.47
Average Cost pr Meter	$101.83
Drilling days: 29	
Average Cost pr Day	$1,618.67

Chemicals 8 1/2", 6406/3-2



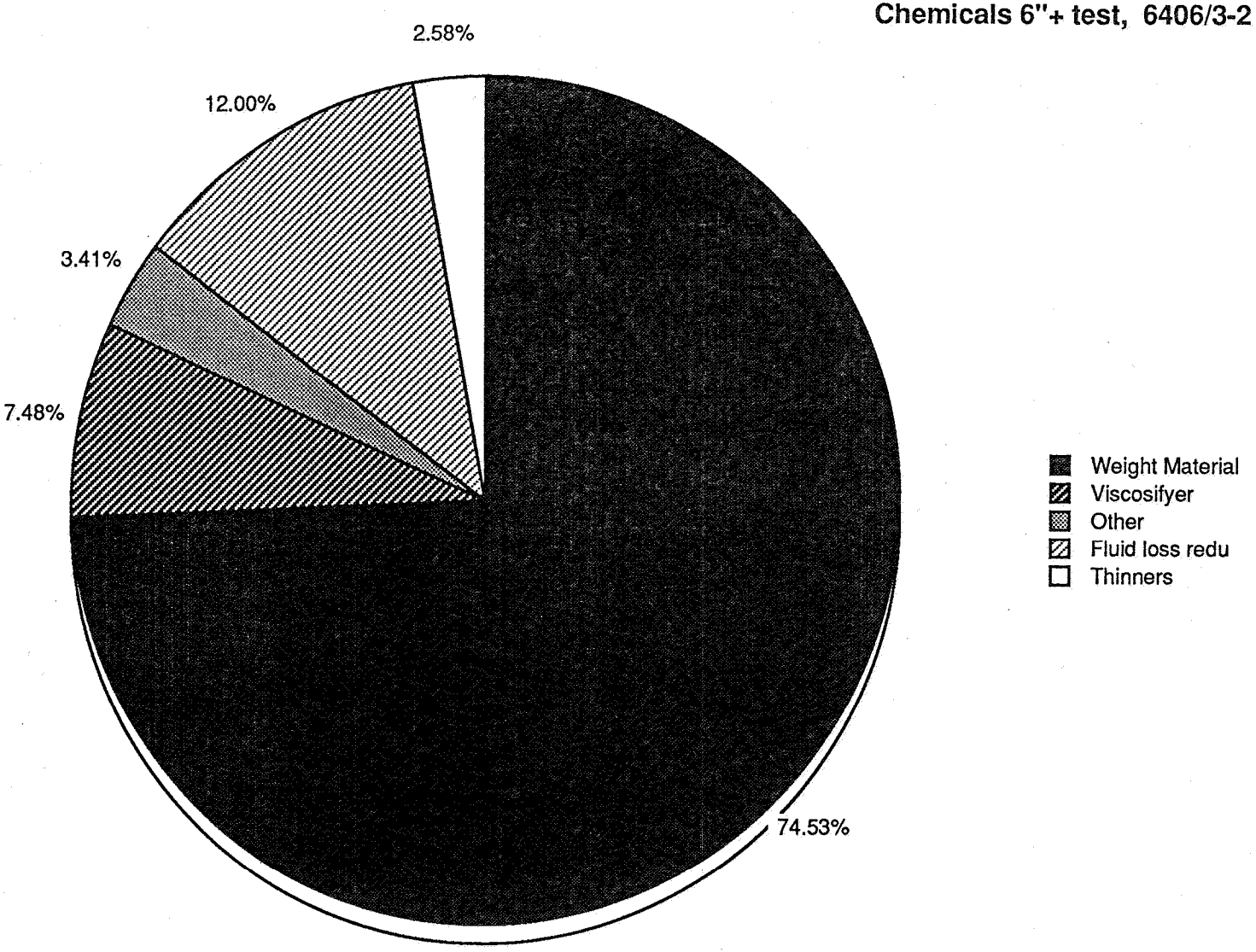
CASING INTERVAL

Well: 6406/3-2 **Operator:** Statoil
Casing: **From/to:**
Bit: 6" **From/to:** 4377.0 m 4553.0 m

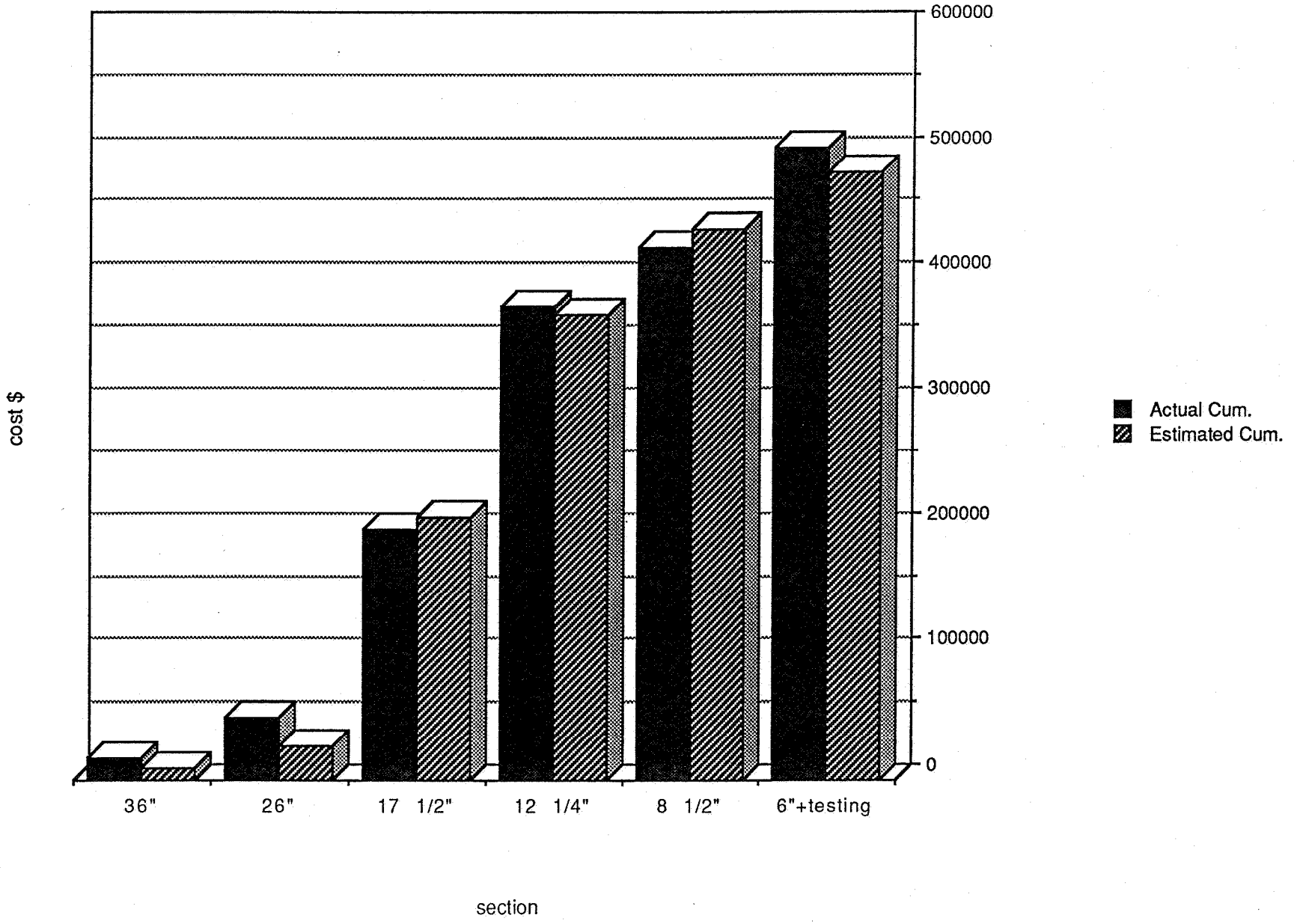
Quantity:	Material:	Units:	Unit Price:	Total Cost:
565	Barite	ton	$100.30	$56,669.50
12	Bentonite	ton	$310.30	$3,723.60
52	Bicarbonate	50 kg	$23.91	$1,243.32
20	Chemtrol-X	25 kg	$91.26	$1,825.20
39	Drispac Reg	50 lbs	$97.35	$3,796.65
75	Drispac SL	50 lbs	$97.35	$7,301.25
20	Ligcon	25 kg	$20.85	$417.00
1	Lime	20 kg	$20.50	$20.50
13	NaOH	25 kg	$15.00	$195.00
11	Nutplug	25 kg	$19.35	$212.85
7	Prodefoamer	25 l	$108.00	$756.00
111	Prothin	25 kg	$13.90	$1,542.90
8	Soda Ash	50 kg	$20.50	$164.00
8	W.O. 21	25 kg	$245.90	$1,967.20

Total Cost for Interval:	$79,834.97
Average Cost pr Meter	$453.61
Drilling days: 58 Average Cost pr Day	$1,376.47

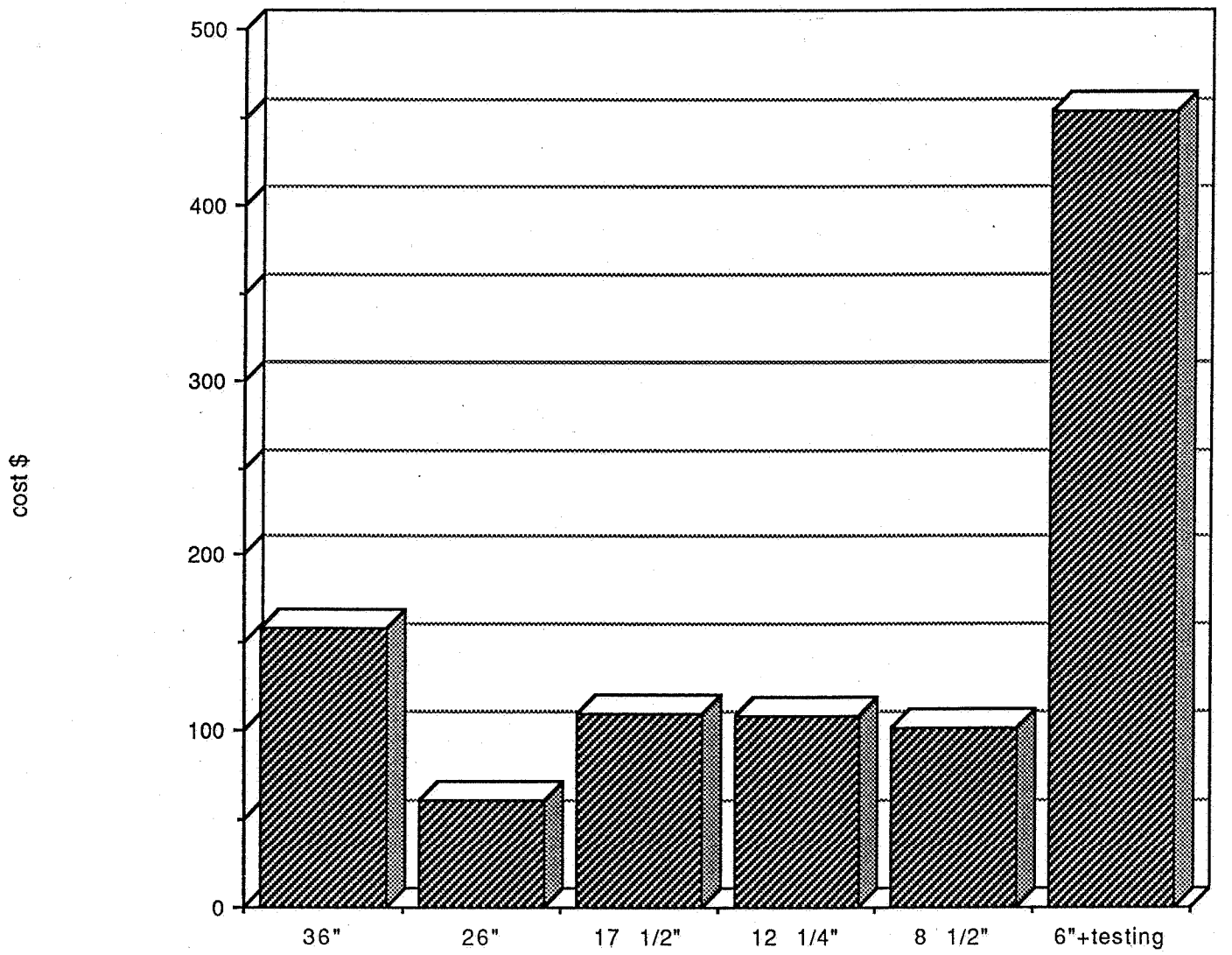
Chemicals 6"+ test, 6406/3-2



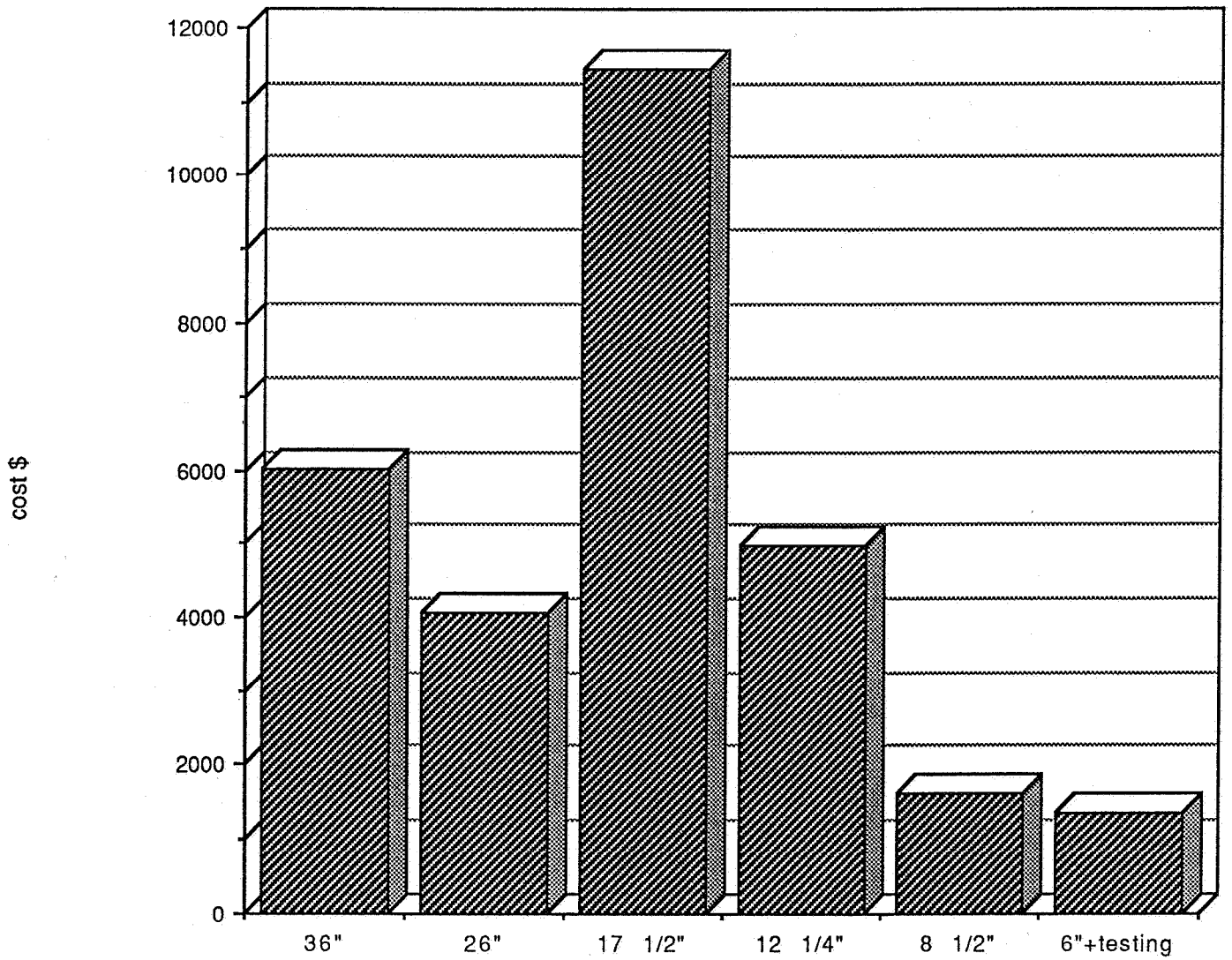
Total Cost 6406/3-2



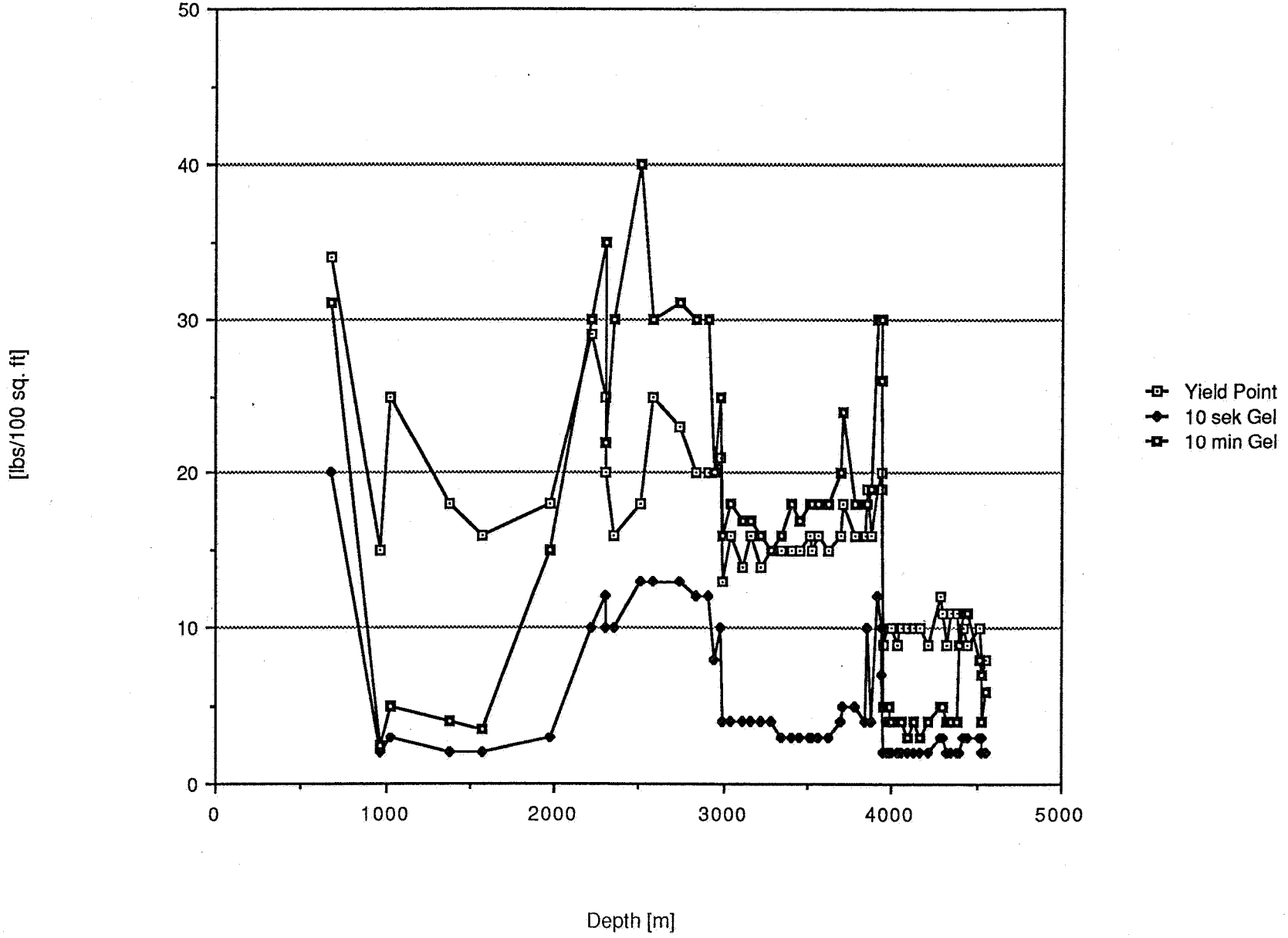
Cost pr Meter 6406/3-2



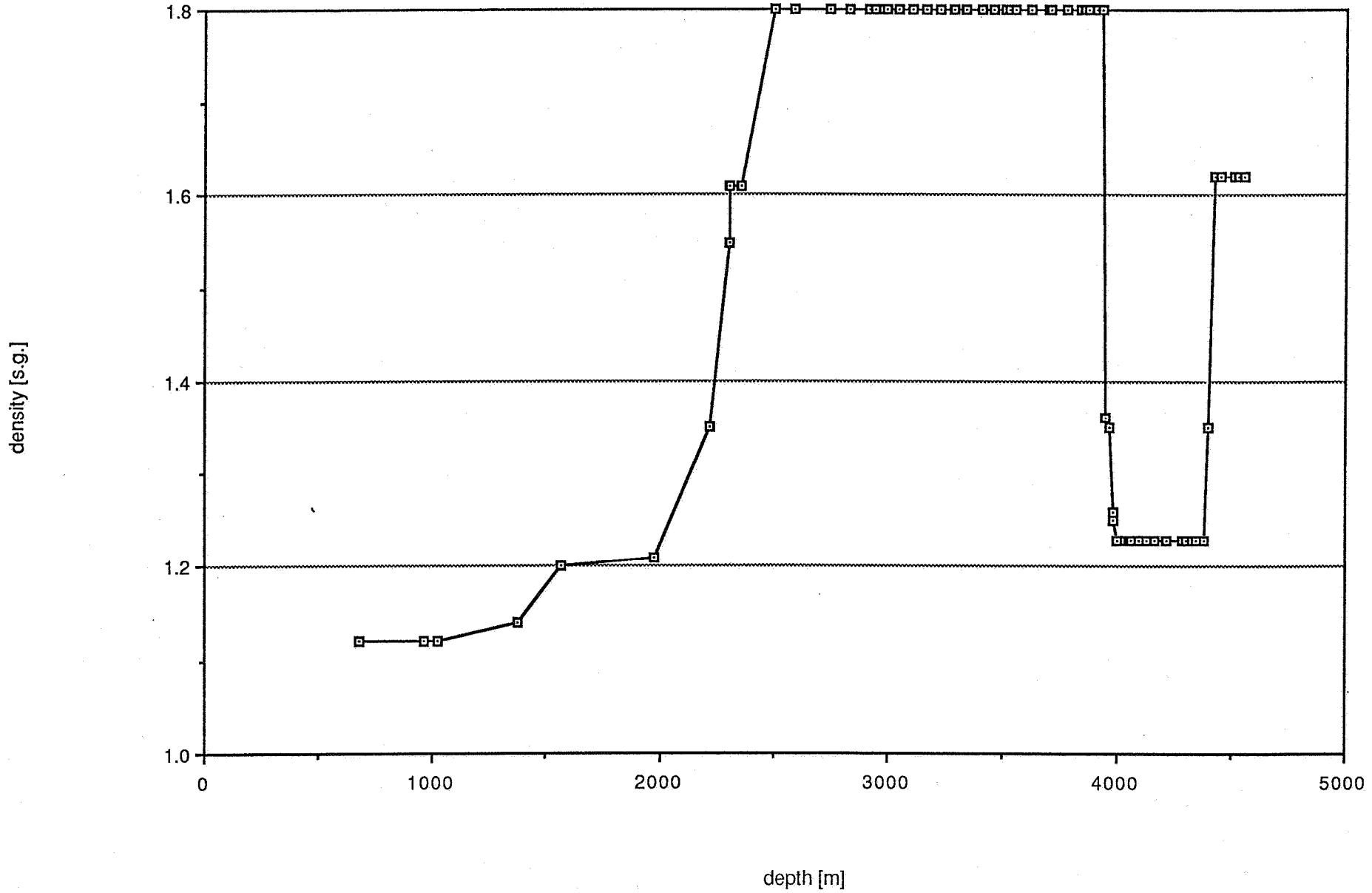
Cost pr Day 6406/3-2



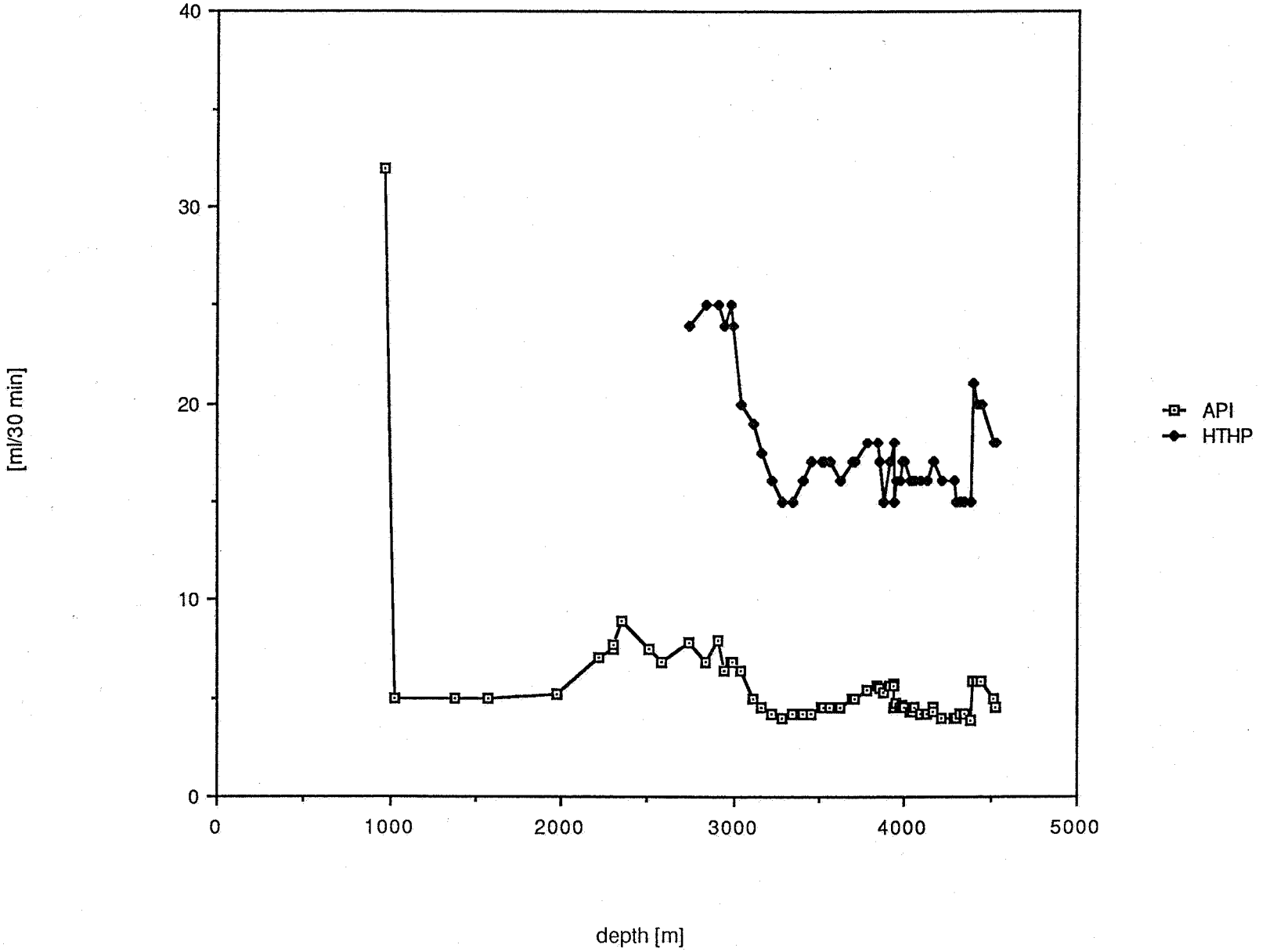
Rheology 6406/3-2



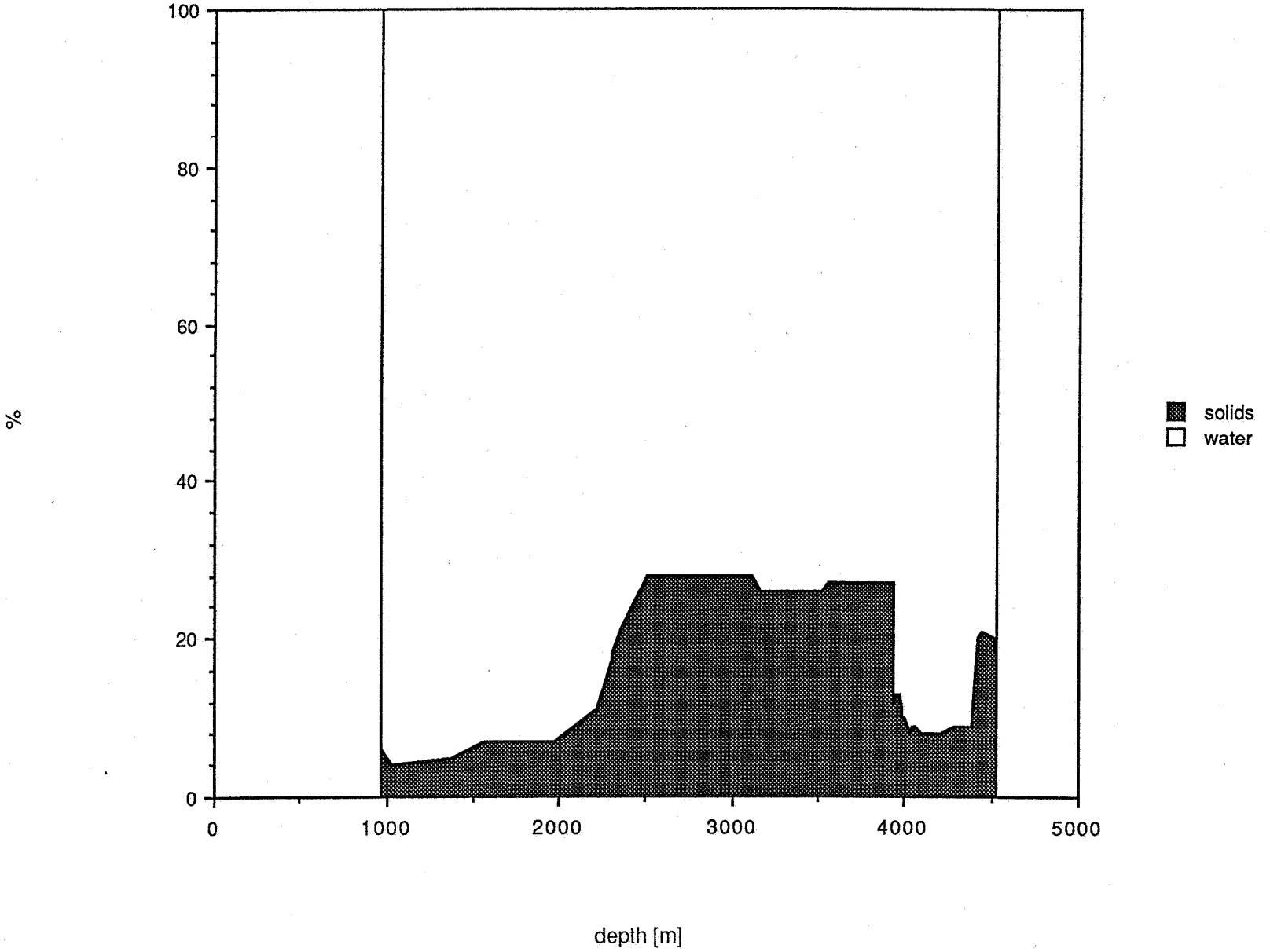
Mud Density 6406/3-2



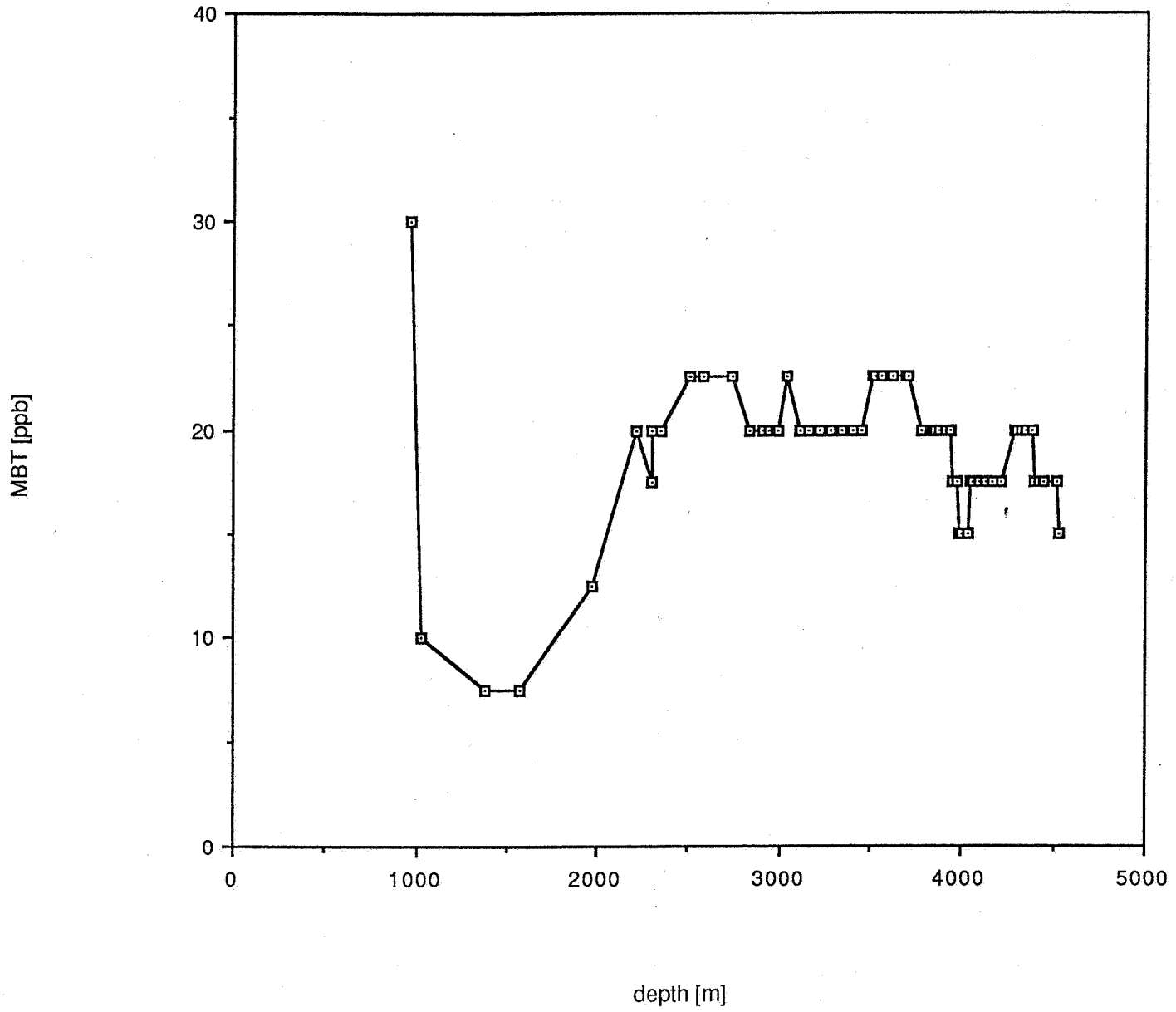
Fluid loss 6406/3-2



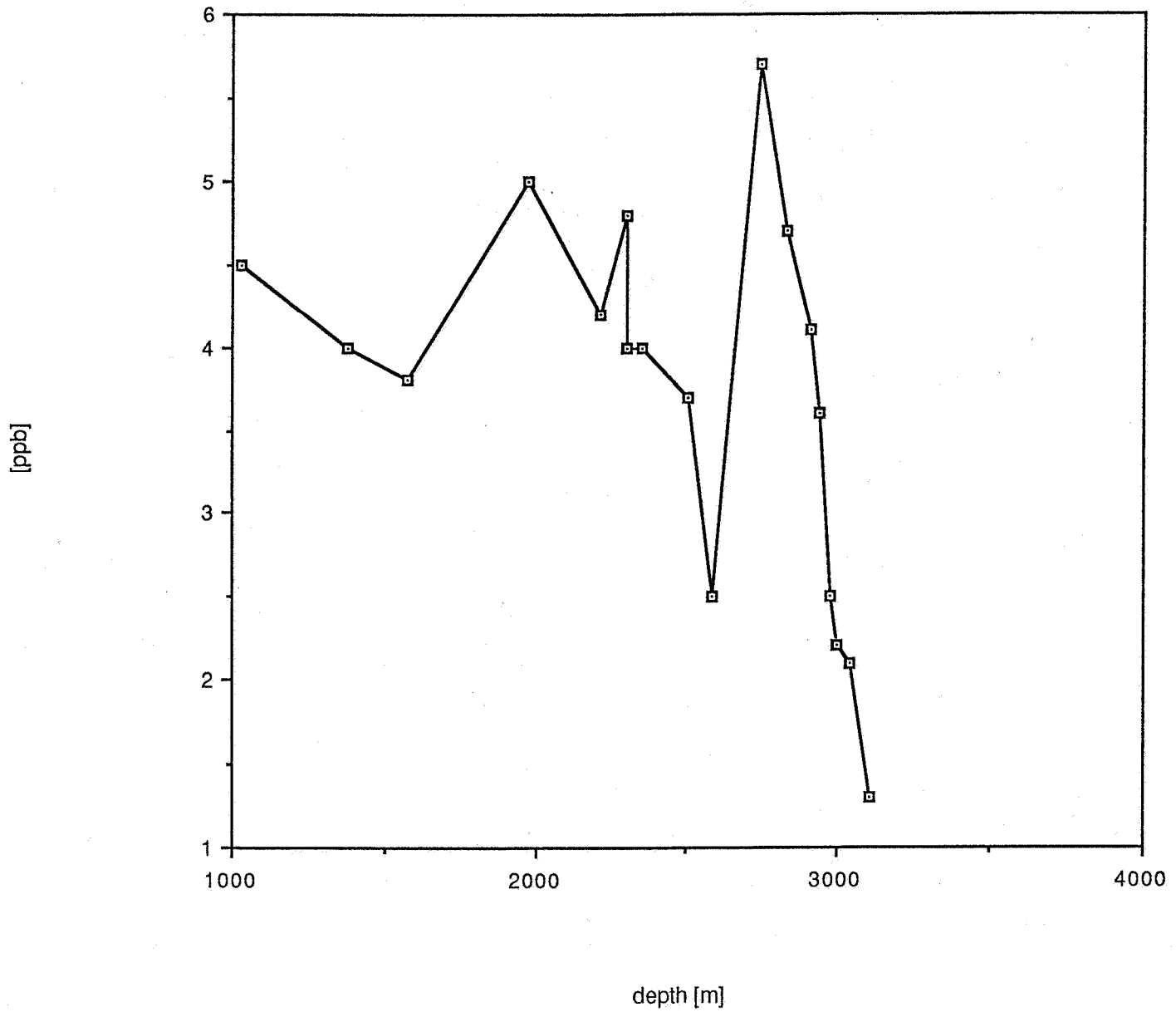
Solids Content 6406/3-2



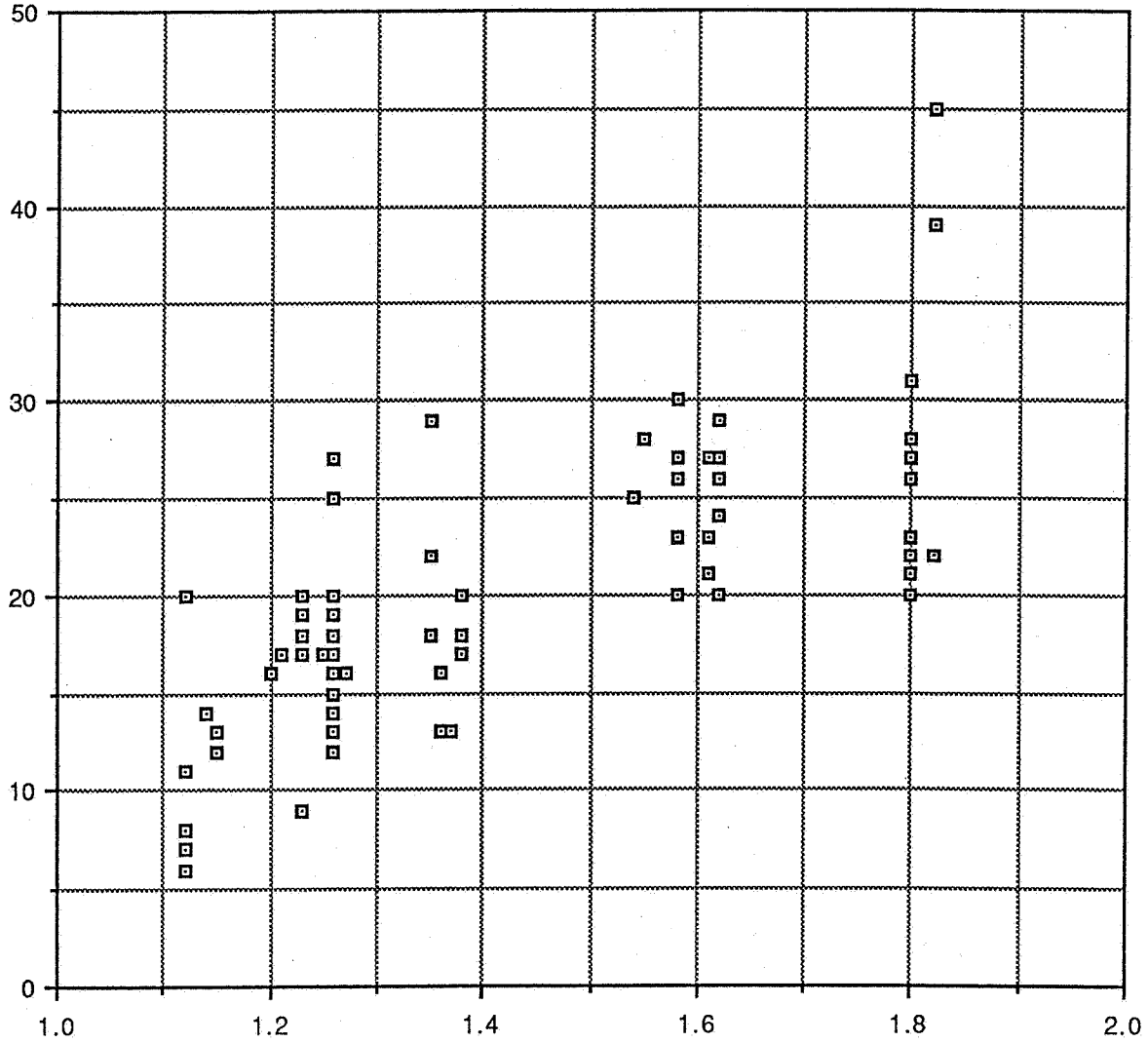
MBT 6406/3-2



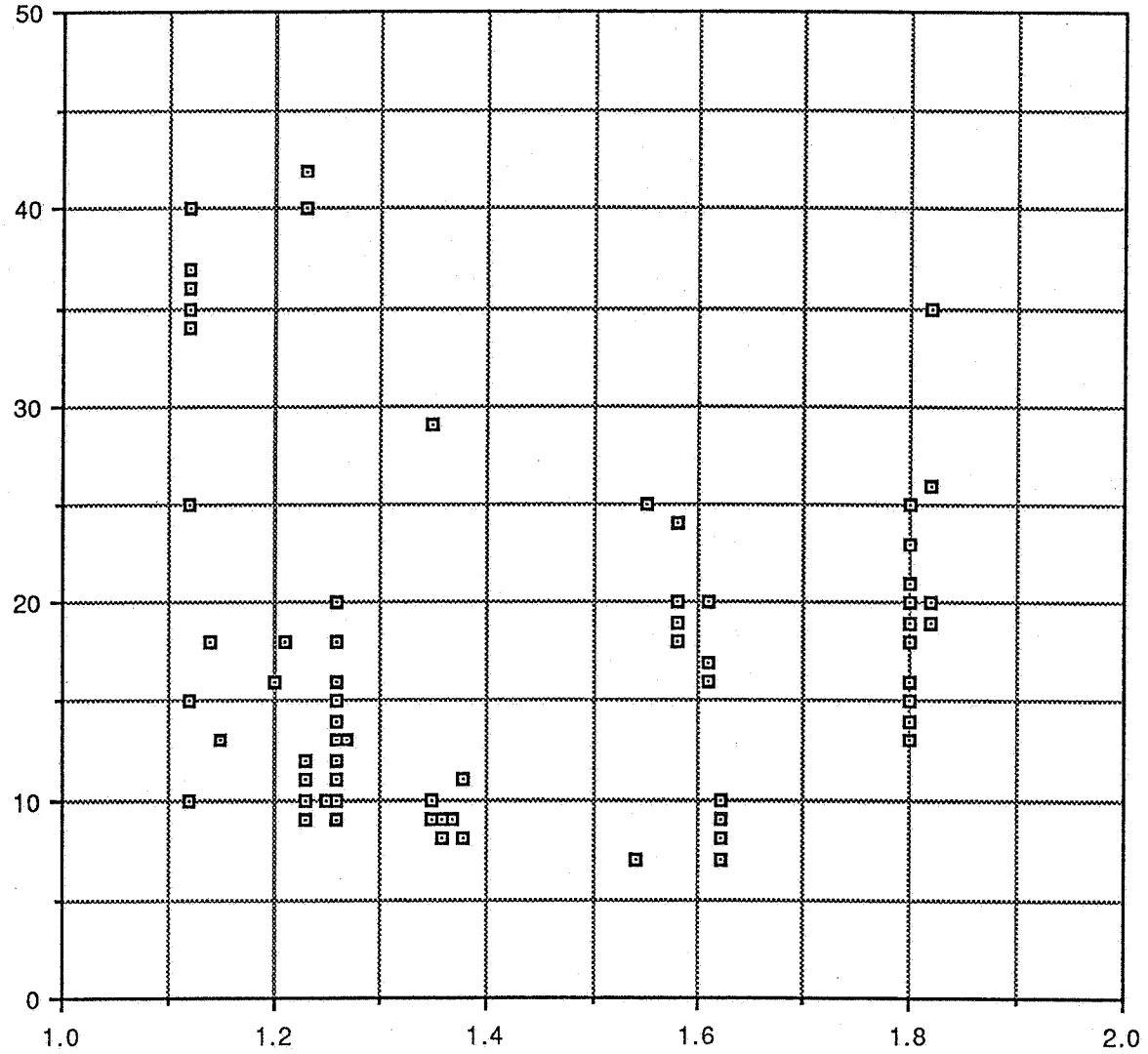
Excess Gypsum 6406/3-2



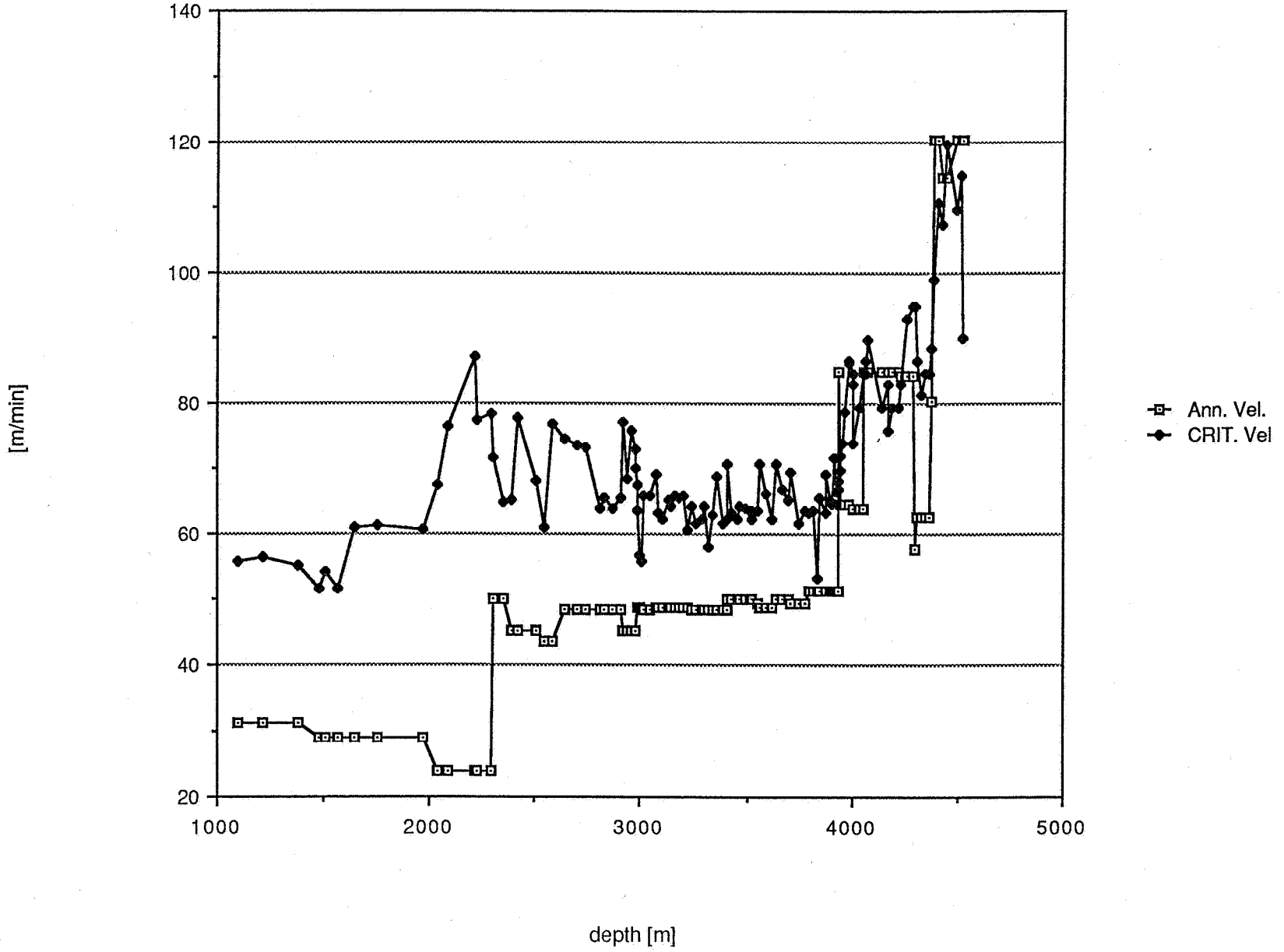
Plastic Viscosity 6406/3-2



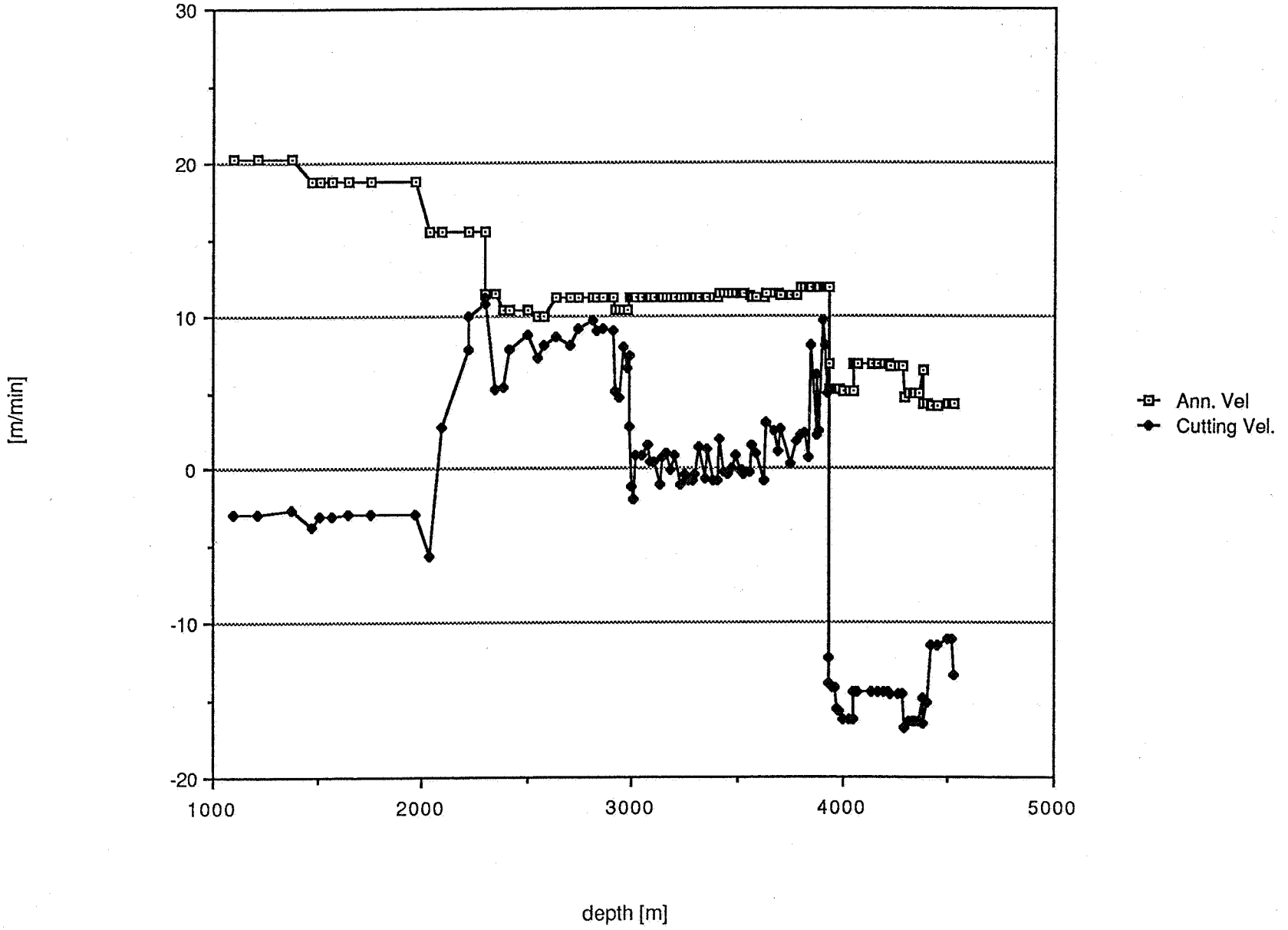
Yield Point 6406/3-2



Flowregime hole-collar 6406/3-2



Transport rate for 20 mm cuttings in riser, 6406/3-2



DAILY DRILLING MUD ADDITIONS

Well no:	6406/3-2			**Spud date:**	27-Jun-86		**Rig name:**	West Vanguard		**Engineers:**	Sørbø					
											Vistnes					
Operator	Statoil			**Days to TD:**			**Warehouse**	Sandnessjøen			Rasmussen					
											Bruland					
Contractor:	Smedvig			**Total depth**	4553	[m]	**Total Cost:**	$504,882								
		Product:	Barite	Bentonite	NaOH	Soda Ash	Bicarbonate	Lime	Drispac Reg	Drispac SL	Milpolymer	Gypsum	Prothin	W.O. 21	Milgard	Probio
		Unit:	ton	ton	25 kg	50 kg	50 kg	20 kg	50 lbs	50 lbs	302 25 kg	40 kg	25 kg	25 kg	25 kg	200 l
		Unit Price:	$100.30	$310.30	$15.00	$20.50	$23.91	$20.50	$97.35	$97.35	$200.00	$10.70	$13.90	$245.90	$96.91	$675.00
Date:	**Section:**	**Depth:**														
27-Jun-86		-	41	32	8	7										
28-Jun-86		436			3	3										
29-Jun-86		436	30		10	14										
30-Jun-86		436	47	1	3	2										
1-Jul-86		677			2								5			
2-Jul-86		965		7	6											
3-Jul-86		965			2											
4-Jul-86		965			9			15								
5-Jul-86		965		14	27	2		5								
6-Jul-86		965	41	5	10	1										
7-Jul-86		965	79	18	7	9										
8-Jul-86		965	23	1	2			1	39	20	32	134				2
9-Jul-86		965	25		1					9	3					
10-Jul-86		1030					3	1	20	8	17	55				
11-Jul-86		1380	6					2	20	35	23	101				1
12-Jul-86		1571	22					2	30	28	23	120				3
13-Jul-86		1972	10		2			6	20	22	40	132				2
14-Jul-86		2216	197		4			13	32	19	22	84				1
15-Jul-86		2298	126		20				10	4	9	38	29			1
16-Jul-86		2298	49		10				2	24			25			
17-Jul-86		2298	13		4				1	1	3	43	13			
18-Jul-86		2298	7							7						1
19-Jul-86		2298	9		30				2	10	13		28		52	
20-Jul-86		2298	9				9			6	4	10	20			
21-Jul-86		2301	66				19			2			25			
22-Jul-86		2301		1												
23-Jul-86		2351					5			2		45	79			
24-Jul-86		2503	175		13					12		76	136			
25-Jul-86		2583	69		5					13		125	30			
26-Jul-86		2741	100		9							26	30			
27-Jul-86		2828	60	2	8								30			
28-Jul-86		2911	85		14								30			
29-Jul-86		2937	9		14											
30-Jul-86		2975	24		8								20			
31-Jul-86		2994	10		23								70			
1-Aug-86		3044	46		23		7			9			70			
2-Aug-86		3106	12		4					5						
3-Aug-86		3162	27		17					8			20			
4-Aug-86		3224	51		11								40			
5-Aug-86		3286	11		13											
6-Aug-86		3340	10		7											
7-Aug-86		3402	44		11											
8-Aug-86		3453	12		10								25			

DAILY DRILLING MUD ADDITIONS

Well no:	6406/3-2			**Spud date:**	27-Jun-86		**Rig name:**	West Vanguard		**Engineers:**	Sørbø					
											Vistnes					
Operator	Statoil			**Days to TD:**			**Warehouse**	Sandnessjøen			Rasmussen					
											Bruland					
Contractor:	Smedvig			**Total depth**	4553	[m]	**Total Cost:**	$504,882								
		Product:	Barite	Bentonite	NaOH	Soda Ash	Bicarbonate	Lime	Drispac Reg	Drispac SL	Milpolymer	Gypsum	Prothin	W.O. 21	Milgard	Probio
											302					
		Unit:	ton	ton	25 kg	50 kg	50 kg	20 kg	50 lbs	50 lbs	25 kg	40 kg	25 kg	25 kg	25 kg	200 l
		Unit Price:	$100.30	$310.30	$15.00	$20.50	$23.91	$20.50	$97.35	$97.35	$200.00	$10.70	$13.90	$245.90	$96.91	$675.00
Date:	**Section:**	**Depth:**														
9-Aug-86		3511	3		8											
10-Aug-86		3527	36							4						
11-Aug-86		3554	5		14					10			30			
12-Aug-86		3622	11		10					2						
13-Aug-86		3697	28		14								30			
14-Aug-86		3707	10		10								30			
15-Aug-86		3780	32		7					1						
16-Aug-86		3840	36		24					4						
17-Aug-86		3850	18		1					8						
18-Aug-86		3872														1
19-Aug-86		3905	64		26							5	30			1
20-Aug-86		3931	22		7							22	23			
21-Aug-86		3930	6		1											
22-Aug-86		3930	22		2					8						
23-Aug-86		3930	15	2	4				10				8			
24-Aug-86		3930	35													
25-Aug-86		3930			2		8			2					4	
26-Aug-86		3930	2	10	1				10	3			1			
27-Aug-86		3935							7							
28-Aug-86		3947								16						
29-Aug-86		3965							3	9						
30-Aug-86		3983			5				3	24						
31-Aug-86		3983	2	1					1	3			10			
1-Sep-86		4001								12						
2-Sep-86		4034		5	5				2							
3-Sep-86		4048							1							
4-Sep-86		4060	2	3	7				1							
5-Sep-86		4094	7	1	4				1				15			
6-Sep-86		4128			5								25			
7-Sep-86		4165	2		3				2							
8-Sep-86		4168			1											
9-Sep-86		4213	7		17				7				40			
10-Sep-86		4284		2					2							
11-Sep-86		4299	8		8								15			
12-Sep-86		4327			9								30			
13-Sep-86		4347							2							
14-Sep-86		4377			4				5	11						
15-Sep-86		4377	12							1						
16-Sep-86		4377														
17-Sep-86		4377			3					2						
18-Sep-86		4377			3											
19-Sep-86		4377			3					4						
20-Sep-86		4377		4						1						

DAILY DRILLING MUD ADDITIONS

Well no:	6406/3-2			**Spud date:**	27-Jun-86		**Rig name:**	West Vanguard		**Engineers:**	Sørbø					
											Vistnes					
Operator	Statoil			**Days to TD:**			**Warehouse**	Sandnessjøen			Rasmussen					
											Bruland					
Contractor:	Smedvig			**Total depth**	4553	[m]	**Total Cost:**	$504,882								
		Product:	Barite	Bentonite	NaOH	Soda Ash	Bicarbonate	Lime	Drispac Reg	Drispac SL	Milpolymer 302	Gypsum	Prothin	W.O. 21	Milgard	Probio
		Unit:	ton	ton	25 kg	50 kg	50 kg	20 kg	50 lbs	50 lbs	25 kg	40 kg	25 kg	25 kg	25 kg	200 l
		Unit Price:	$100.30	$310.30	$15.00	$20.50	$23.91	$20.50	$97.35	$97.35	$200.00	$10.70	$13.90	$245.90	$96.91	$675.00
Date:	**Section:**	**Depth:**														
21-Sep-86		4377			5					6						
22-Sep-86		4377								1						
23-Sep-86		4377	15				12			3						
24-Sep-86		4400	24			2	10			9						
25-Sep-86		4420	97				16			4						
26-Sep-86		4446	45							5						
27-Sep-86		4512	9							19			45			
28-Sep-86		4523	13							6			16			
29-Sep-86		4523	72		2					8			14			
30-Sep-86		4553	9													
1-Oct-86		4553	2		1			1	2	5				1		
2-Oct-86		4553	13						1	1			3			
3-Oct-86		4553		8	3				3	13			1			
4-Oct-86		4553							1							
5-Oct-86		4553			1					2						
6-Oct-86		4553	2		1		8		3				2	4		
7-Oct-86		4553														
8-Oct-86		4553														
9-Oct-86		4553														
10-Oct-86		4553							2							
11-Oct-86		4553							5							
12-Oct-86		4553					2									
13-Oct-86		4553														
14-Oct-86		4553	5						1							
15-Oct-86		4553														
16-Oct-86		4553														
17-Oct-86		4553														
18-Oct-86		4553														
19-Oct-86		4553														
20-Oct-86		4353							1							
21-Oct-86		4353							1							
22-Oct-86		3837														
23-Oct-86		3872							2							
24-Oct-86		3885			1	1			2							
25-Oct-86		3899	6						1							
26-Oct-86		3899														
27-Oct-86		3899														
28-Oct-86		3914	17		1	1										
29-Oct-86		3923							1							
30-Oct-86		3923														
31-Oct-86		3923	13	3	1	1										
1-Nov-86		3951			2	2										
2-Nov-86		3951		1					6							

DAILY DRILLING MUD ADDITIONS

Well no:	6406/3-2			**Spud date:**	27-Jun-86		**Rig name:**	West Vanguard		**Engineers:**	Sørbø					
											Vistnes					
Operator	Statoil			**Days to TD:**			**Warehouse**	Sandnessjøen			Rasmussen					
											Bruland					
Contractor:	Smedvig			**Total depth**	4553	[m]	**Total Cost:**	$504,882								
		Product:	Barite	Bentonite	NaOH	Soda Ash	Bicarbonate	Lime	Drispac Reg	Drispac SL	Milpolymer 302	Gypsum	Prothin	W.O. 21	Milgard	Probio
		Unit:	ton	ton	25 kg	50 kg	50 kg	20 kg	50 lbs	50 lbs	25 kg	40 kg	25 kg	25 kg	25 kg	200 l
		Unit Price:	$100.30	$310.30	$15.00	$20.50	$23.91	$20.50	$97.35	$97.35	$200.00	$10.70	$13.90	$245.90	$96.91	$675.00
Date:	**Section:**	**Depth:**														
3-Nov-86		3979	41										3			
4-Nov-86		3999				1			2							
5-Nov-86		3999														
6-Nov-86		3999														
7-Nov-86		3999														
8-Nov-86		3999														
9-Nov-86		3999							1							
10-Nov-86		3999														
11-Nov-86		3999					3		3				3			
12-Nov-86		3999							1							
13-Nov-86		3999	2				1						3	2		
14-Nov-86		3817														
15-Nov-86		3710	30													
16-Nov-86		2200	120										13			
17-Nov-86		2050														
18-Nov-86		2050	29										8	1		
19-Nov-86		545	1													
		Total:	2495	121	576	46	103	46	272	451	189	1016	1123	8	56	13

Well no:	6406/3-2										
Operator	Statoil										
Contractor:	Smedvig										
		Product:	Prodefoamer	Nutplug	Chemtrol-X	Ligcon	Desco	Detergent	Lubrisal		
		Unit:	25 l	25 kg	25 kg	25 kg	25 lbs	200 l	200 l		
		Unit Price:	$108.00	$19.35	$91.26	$20.85	$36.85	$327.25	$812.70	**Daily Cost**	**Cumulative Cost**
Date:	**Section:**	**Depth:**									
27-Jun-86		-								$14,305.40	$14,305.40
28-Jun-86		436								$106.50	$14,411.90
29-Jun-86		436		12						$3,678.20	$18,090.10
30-Jun-86		436								$5,110.40	$23,200.50
1-Jul-86		677								$99.50	$23,300.00
2-Jul-86		965								$2,262.10	$25,562.10
3-Jul-86		965								$30.00	$25,592.10
4-Jul-86		965								$442.50	$26,034.60
5-Jul-86		965								$4,892.70	$30,927.30
6-Jul-86		965								$5,834.30	$36,761.60
7-Jul-86		965								$13,798.60	$50,560.20
8-Jul-86		965	5							$18,135.15	$68,695.35
9-Jul-86		965								$3,998.65	$72,694.00
10-Jul-86		1030								$6,806.53	$79,500.53
11-Jul-86		1380								$12,352.75	$91,853.28
12-Jul-86		1571	5							$16,342.90	$108,196.18
13-Jul-86		1972	1							$16,115.10	$124,311.28
14-Jul-86		2216	1							$31,132.25	$155,443.53
15-Jul-86		2298								$17,585.40	$173,028.93
16-Jul-86		2298	1							$8,051.30	$181,080.23
17-Jul-86		2298	1							$2,907.40	$183,987.63
18-Jul-86		2298								$2,058.55	$186,046.18
19-Jul-86		2298								$10,549.42	$196,595.60
20-Jul-86		2298								$2,886.99	$199,482.59
21-Jul-86		2301								$7,616.29	$207,098.88
22-Jul-86		2301								$310.30	$207,409.18
23-Jul-86		2351								$1,893.85	$209,303.03
24-Jul-86		2503	3							$21,943.30	$231,246.33
25-Jul-86		2583								$10,015.75	$241,262.08
26-Jul-86		2741	1	14	50	50		3		$17,826.35	$259,088.43
27-Jul-86		2828	3		30	20				$10,654.40	$269,742.83
28-Jul-86		2911			40	20				$13,219.90	$282,962.73
29-Jul-86		2937		12				2		$1,999.40	$284,962.13
30-Jul-86		2975								$2,805.20	$287,767.33
31-Jul-86		2994	3			30				$3,270.50	$291,037.83
1-Aug-86		3044	2			30				$7,816.82	$298,854.65
2-Aug-86		3106	4							$2,182.35	$301,037.00
3-Aug-86		3162	5		10	40				$6,306.50	$307,343.50
4-Aug-86		3224	1			30	35			$7,859.55	$315,203.05
5-Aug-86		3286								$1,298.30	$316,501.35
6-Aug-86		3340	1			30	30			$2,947.00	$319,448.35
7-Aug-86		3402	3							$4,902.20	$324,350.55
8-Aug-86		3453	3			16	11			$2,764.05	$327,114.60

Well no:	6406/3-2										
Operator	Statoil										
Contractor:	Smedvig										
		Product:	Prodefoamer	Nutplug	Chemtrol-X	Ligcon	Desco	Detergent	Lubrisal		
		Unit:	25 l	25 kg	25 kg	25 kg	25 lbs	200 l	200 l		
		Unit Price:	$108.00	$19.35	$91.26	$20.85	$36.85	$327.25	$812.70	**Daily Cost**	**Cumulative Cost**
Date:	**Section:**	**Depth:**									
9-Aug-86		3511	2			20				$1,053.90	$328,168.50
10-Aug-86		3527	1							$4,108.20	$332,276.70
11-Aug-86		3554	3			20	15			$3,395.75	$335,672.45
12-Aug-86		3622	4							$1,880.00	$337,552.45
13-Aug-86		3697	2			20	9			$4,400.05	$341,952.50
14-Aug-86		3707	1			20	10			$2,463.50	$344,416.00
15-Aug-86		3780								$3,411.95	$347,827.95
16-Aug-86		3840								$4,360.20	$352,188.15
17-Aug-86		3850				14				$2,891.10	$355,079.25
18-Aug-86		3872								$675.00	$355,754.25
19-Aug-86		3905				10	10			$8,531.70	$364,285.95
20-Aug-86		3931								$2,866.70	$367,152.65
21-Aug-86		3930								$616.80	$367,769.45
22-Aug-86		3930								$3,015.40	$370,784.85
23-Aug-86		3930	5							$3,809.80	$374,594.65
24-Aug-86		3930								$3,510.50	$378,105.15
25-Aug-86		3930								$803.62	$378,908.77
26-Aug-86		3930								$4,598.05	$383,506.82
27-Aug-86		3935								$681.45	$384,188.27
28-Aug-86		3947	1			15				$1,978.35	$386,166.62
29-Aug-86		3965								$1,168.20	$387,334.82
30-Aug-86		3983								$2,703.45	$390,038.27
31-Aug-86		3983	1		5	5				$1,707.85	$391,746.12
1-Sep-86		4001								$1,168.20	$392,914.32
2-Sep-86		4034								$1,821.20	$394,735.52
3-Sep-86		4048								$97.35	$394,832.87
4-Sep-86		4060	1							$1,441.85	$396,274.72
5-Sep-86		4094								$1,378.25	$397,652.97
6-Sep-86		4128				5				$526.75	$398,179.72
7-Sep-86		4165								$440.30	$398,620.02
8-Sep-86		4168				55				$1,161.75	$399,781.77
9-Sep-86		4213	10			30			13	$14,465.15	$414,246.92
10-Sep-86		4284				15				$1,128.05	$415,374.97
11-Sep-86		4299								$1,130.90	$416,505.87
12-Sep-86		4327			15		10			$2,289.40	$418,795.27
13-Sep-86		4347								$194.70	$418,989.97
14-Sep-86		4377	1							$1,725.60	$420,715.57
15-Sep-86		4377								$1,300.95	$422,016.52
16-Sep-86		4377								$0.00	$422,016.52
17-Sep-86		4377								$239.70	$422,256.22
18-Sep-86		4377								$45.00	$422,301.22
19-Sep-86		4377	1							$542.40	$422,843.62
20-Sep-86		4377								$1,338.55	$424,182.17

Well no:	6406/3-2										
Operator	Statoil										
Contractor:	Smedvig										
		Product:	Prodefoamer	Nutplug	Chemtrol-X	Ligcon	Desco	Detergent	Lubrisal		
		Unit:	25 l	25 kg	25 kg	25 kg	25 lbs	200 l	200 l		
		Unit Price:	$108.00	$19.35	$91.26	$20.85	$36.85	$327.25	$812.70	**Daily Cost**	**Cumulative Cost**
Date:	**Section:**	**Depth:**									
21-Sep-86		4377								$659.10	$424,841.27
22-Sep-86		4377	1							$205.35	$425,046.62
23-Sep-86		4377								$2,083.47	$427,130.09
24-Sep-86		4400	1							$3,671.45	$430,801.54
25-Sep-86		4420	1							$10,609.06	$441,410.60
26-Sep-86		4446								$5,000.25	$446,410.85
27-Sep-86		4512	2							$3,593.85	$450,004.70
28-Sep-86		4523								$2,110.40	$452,115.10
29-Sep-86		4523	2		20	20				$10,683.20	$462,798.30
30-Sep-86		4553								$902.70	$463,701.00
1-Oct-86		4553		10						$1,356.95	$465,057.95
2-Oct-86		4553								$1,540.30	$466,598.25
3-Oct-86		4553								$4,098.90	$470,697.15
4-Oct-86		4553								$97.35	$470,794.50
5-Oct-86		4553								$209.70	$471,004.20
6-Oct-86		4553								$1,710.33	$472,714.53
7-Oct-86		4553								$0.00	$472,714.53
8-Oct-86		4553								$0.00	$472,714.53
9-Oct-86		4553								$0.00	$472,714.53
10-Oct-86		4553								$194.70	$472,909.23
11-Oct-86		4553								$486.75	$473,395.98
12-Oct-86		4553								$47.82	$473,443.80
13-Oct-86		4553								$0.00	$473,443.80
14-Oct-86		4553								$598.85	$474,042.65
15-Oct-86		4553								$0.00	$474,042.65
16-Oct-86		4553								$0.00	$474,042.65
17-Oct-86		4553								$0.00	$474,042.65
18-Oct-86		4553								$0.00	$474,042.65
19-Oct-86		4553								$0.00	$474,042.65
20-Oct-86		4353	1							$205.35	$474,248.00
21-Oct-86		4353								$97.35	$474,345.35
22-Oct-86		3837								$0.00	$474,345.35
23-Oct-86		3872								$194.70	$474,540.05
24-Oct-86		3885								$230.20	$474,770.25
25-Oct-86		3899								$699.15	$475,469.40
26-Oct-86		3899								$0.00	$475,469.40
27-Oct-86		3899								$0.00	$475,469.40
28-Oct-86		3914								$1,740.60	$477,210.00
29-Oct-86		3923								$97.35	$477,307.35
30-Oct-86		3923								$0.00	$477,307.35
31-Oct-86		3923								$2,270.30	$479,577.65
1-Nov-86		3951								$71.00	$479,648.65
2-Nov-86		3951								$894.40	$480,543.05

Well no:	6406/3-2										
Operator	Statoil										
Contractor:	Smedvig										
		Product:	Prodefoamer	Nutplug	Chemtrol-X	Ligcon	Desco	Detergent	Lubrisal		
		Unit:	25 l	25 kg	25 kg	25 kg	25 lbs	200 l	200 l		
		Unit Price:	$108.00	$19.35	$91.26	$20.85	$36.85	$327.25	$812.70	**Daily Cost**	**Cumulative Cost**
Date:	**Section:**	**Depth:**									
3-Nov-86		3979								$4,154.00	$484,697.05
4-Nov-86		3999								$215.20	$484,912.25
5-Nov-86		3999								$0.00	$484,912.25
6-Nov-86		3999								$0.00	$484,912.25
7-Nov-86		3999								$0.00	$484,912.25
8-Nov-86		3999								$0.00	$484,912.25
9-Nov-86		3999								$97.35	$485,009.60
10-Nov-86		3999								$0.00	$485,009.60
11-Nov-86		3999								$405.48	$485,415.08
12-Nov-86		3999								$97.35	$485,512.43
13-Nov-86		3999		1						$777.36	$486,289.79
14-Nov-86		3817								$0.00	$486,289.79
15-Nov-86		3710								$3,009.00	$489,298.79
16-Nov-86		2200								$12,216.70	$501,515.49
17-Nov-86		2050								$0.00	$501,515.49
18-Nov-86		2050								$2,908.70	$504,424.19
19-Nov-86		545								$457.40	$504,881.59
		Total:	84	49	170	515	130	5	13		

DAILY DRILLING MUD PROPERTIES

Well no:	6406/3-2		**Spud date:**	27-Jul-86		**Rig name:**	West Vanguard		**Engineers:**	Bruland					
										Rasmussen					
Operator	Statoil		**Days to TD:**			**Warehouse**	Sandnessjøen			Sørbø					
										Vistnes					
Contractor:	Smedvig		**Total Depth**	4553	[m]	**Total Cost:**	$504,882								
		Property:	Mud	Funnel	Plastic	Yield Point	10 sek gel	10 min gel	pH	Filtrate	Filtrate	Filtrate temp	Cake	Alkalinity	Alkalinity
			Density	Viscosity	Viscosity					API	HTHP	HTHP	Thickness	Mud (Pm)	Filtrate (Pf)
		Unit:	sg	sec/qt	cp	lbs/100 sq.ft	lbs/100 sq.ft	lbs/100 sq.ft		ml/30 min	ml/30 min	°F	32 nd ich.	ml	ml
Date:	**Time:**	**Depth:**													
27-Jun-86		-	1.06	100											
28-Jun-86		436	1.06	100											
29-Jun-86		436	1.10	60											
30-Jun-86		436	1.10	60											
1-Jul-86		677	1.12	57	8	34	20	31	8.70	26			2	0.40	0.01
2-Jul-86		965	1.12	41	6	37	21	28	8.50	32			2	0.10	0.01
3-Jul-86		965	1.12	40	6	36	20	28	8.50	34			2	0.10	0.01
4-Jul-86		965	1.12	41	6	35	19	29	9.00	34			2	0.50	0.05
5-Jul-86		965	1.12	44	7	40	25	32	10.00	36			2	0.30	0.05
6-Jul-86		965	1.23	55	9	42	22	32	9.80	32			2	0.20	0.01
7-Jul-86		965	1.23	53	9	40	20	31	9.90	33			2	0.30	0.01
8-Jul-86		965	1.12	57	11	10	2	2.5	8.50	8			1	0.30	0.10
9-Jul-86		965	1.12	48	11	15	2	2.5	8.50	6			1	0.30	0.10
10-Jul-86		1030	1.12	57	20	25	3	5	8.70	5			1	0.12	0.10
11-Jul-86		1380	1.14	53	14	18	2	4	9.00	5			1	0.15	0.01
12-Jul-86		1571	1.20	58	16	16	2	3.5	8.50	5			1	0.10	0.01
13-Jul-86		1972	1.21	65	17	18	3	15	8.50	5.2			1	0.10	0.01
14-Jul-86		2216	1.35	80	29	29	10	30	8.50	7			1	0.10	0.01
15-Jul-86		2298	1.55	75	28	25	12	35	8.60	7.5			1	0.10	0.01
16-Jul-86		2298	1.58	72	30	24	10	28	8.90	7.5			1	0.12	0.01
17-Jul-86		2298	1.58	61	30	20	8	20	9.20	7.2			1	0.13	0.04
18-Jul-86		2298	1.58	71	27	18	8	18	9.30	7.2			1	0.15	0.05
19-Jul-86		2298	1.58	72	26	19	8	19	10.50	6.4			1	0.50	0.25
20-Jul-86		2298	1.58	60	23	18	6	20	10.50	7.4			1	0.70	0.15
21-Jul-86		2301	1.61	61	27	20	10	22	10.50	7.7			1	4.80	0.15
22-Jul-86		2301	1.61	59	23	17	9	22	10.00	7.7			1	0.70	0.10
23-Jul-86		2351	1.61	51	21	16	10	30	11.00	8.9			1	2.50	0.30
24-Jul-86		2503	1.80	72	31	18	13	40	10.00	7.5			1	0.80	0.20
25-Jul-86		2583	1.80	82	27	25	13	30	9.50	6.8			1	0.55	0.12
26-Jul-86		2741	1.80	65	26	23	13	31	9.30	7.8	24	250	1	0.35	0.10
27-Jul-86		2828	1.80	55	20	20	12	30	9.20	6.8	25	250	1	0.30	0.10
28-Jul-86		2911	1.80	60	20	20	12	30	10.10	7.9	25	250	1	0.30	0.20
29-Jul-86		2937	1.80	56	20	20	8	20	9.80	6.4	24	250	1	0.30	0.15
30-Jul-86		2975	1.80	52	21	21	10	25	9.70	6.8	25	250	1	0.30	0.12
31-Jul-86		2994	1.80	47	20	13	4	16	10.10	6.8	24	250	1	0.30	0.10
1-Aug-86		3044	1.80	54	28	16	4	18	10.00	6.4	20	250	1	0.35	0.20
2-Aug-86		3106	1.80	52	27	14	4	17	10.00	5	19	250	1	0.50	0.20
3-Aug-86		3162	1.80	55	28	16	4	17	10.50	4.5	17.5	250	1	1.00	0.30
4-Aug-86		3224	1.80	54	27	14	4	16	10.20	4.2	16	250	1	0.90	0.30
5-Aug-86		3286	1.80	55	27	15	4	15	10.20	4	15	250	1	0.90	0.20
6-Aug-86		3340	1.80	57	28	15	3	16	10.20	4.2	15	250	1	1.00	0.20
7-Aug-86		3402	1.80	53	27	15	3	18	10.30	4.2	16	250	1	1.00	0.25
8-Aug-86		3453	1.80	51	27	15	3	17	10.50	4.2	17	250	1	1.10	0.23
9-Aug-86		3511	1.80	51	27	16	3	18	10.50	4.5	17	250	1	1.15	0.30

DAILY DRILLING MUD PROPERTIES

Well no:	6406/3-2		**Spud date:**	27-Jul-86		**Rig name:**	West Vanguard		**Engineers:**	Bruland						
										Rasmussen						
Operator	Statoil		**Days to TD:**			**Warehouse**	Sandnessjøen			Sørbø						
										Vistnes						
Contractor:	Smedvig		**Total Depth**	4553	[m]	**Total Cost:**	$504,882									
		Property:	Mud	Funnel	Plastic	Yield Point	10 sek gel	10 min gel	pH	Filtrate	Filtrate	Filtrate temp	Cake	Alkalinity	Alkalinity	
			Density	Viscosity	Viscosity					API	HTHP	HTHP	Thickness	Mud (Pm)	Filtrate (Pf)	
		Unit:	sg	sec/qt	cp	lbs/100 sq.ft	lbs/100 sq.ft	lbs/100 sq.ft		ml/30 min	ml/30 min	°F	32 nd ich.	ml	ml	
Date:	**Time:**	**Depth:**														
10-Aug-86		3527	1.80	51	27	15	3	18	10.20	4.5	17	250	1	1.00	0.25	
11-Aug-86		3554	1.80	53	27	16	3	18	10.30	4.5	17	250	1	1.00	0.25	
12-Aug-86		3622	1.80	51	27	15	3	18	10.40	4.5	16	250	1	1.00	0.30	
13-Aug-86		3697	1.80	48	27	16	4	20	10.30	5	17	250	1	1.20	0.35	
14-Aug-86		3707	1.80	48	28	18	5	24	10.00	5	17	250	1	1.10	0.25	
15-Aug-86		3780	1.80	47	23	16	5	18	10.20	5.4	18	250	1	1.10	0.35	
16-Aug-86		3840	1.80	48	20	16	4	18	10.10	5.6	18	250	1	1.10	0.30	
17-Aug-86		3850	1.80	50	20	19	10	18	9.90	5.5	17	250	1	1.00	0.25	
18-Aug-86		3872	1.80	48	21	16	4	19	10.50	5.3	15	250	1	1.30	0.30	
19-Aug-86		3905	1.80	47	21	19	12	30	10.40	5.6	17	250	1	1.30	0.50	
20-Aug-86		3931	1.80	49	22	19	7	26	10.10	5.6	18	250	1	1.10	0.30	
21-Aug-86		3930	1.80	52	22	20	10	30	9.80	5.7	18	250	1	0.75	0.20	
22-Aug-86		3930	1.82	52	22	20	10	30	9.90	5.7	18	250	1	0.80	0.20	
23-Aug-86		3930	1.82	52	22	19	7	24	9.80	5.4	18	250	1	0.75	0.20	
24-Aug-86		3930	1.82	52	22	19	7	24	9.80	5.4	18	250	1	0.75	0.20	
25-Aug-86		3930											1			
26-Aug-86		3930	1.36		13	8	2	4	11.80	4.6	16	250	1	2.00	0.40	
27-Aug-86		3935	1.37		13	9	2	4	11.00	4.5	15	250	1	1.30	0.25	
28-Aug-86		3947	1.36	50	16	9	2	5	11.00	4.8	16	250	1	1.30	0.25	
29-Aug-86		3965	1.35	50	18	10	2	5	10.80	4.6	16	250	1	1.10	0.15	
30-Aug-86		3983	1.26	53	20	10	2	5	10.90	4.7	17	250	1	1.10	0.25	
31-Aug-86		3983	1.25	56	17	10	2	4	10.80	4.7	17	250	1	0.90	0.15	
1-Sep-86		4001	1.23	57	17	10	2	4	10.40	4.6	17	250	1	0.90	0.15	
2-Sep-86		4034	1.23	56	17	9	2	4	10.80	4.3	16	250	1	1.10	0.15	
3-Sep-86		4048	1.23	60	18	10	2	4	10.40	4.3	16	250	1	0.90	0.10	
4-Sep-86		4060	1.23	58	19	10	2	4	10.80	4.5	16	250	1	1.10	0.20	
5-Sep-86		4094	1.23	58	17	10	2	3	10.80	4.2	16	250	1	1.15	0.20	
6-Sep-86		4128	1.23	58	18	10	2	4	10.50	4.2	16	250	1	1.00	0.20	
7-Sep-86		4165	1.23	55	17	10	2	3	10.20	4.5	17	300	1	0.70	0.13	
8-Sep-86		4168	1.23	62	18	10	2	3	10.40	4.3	17	300	1	1.00	0.15	
9-Sep-86		4213	1.23	56	17	9	2	4	10.80	4	16	300	1	1.30	0.60	
10-Sep-86		4284	1.23	62	20	12	3	5	10.20	4	16	300	1	0.90	0.25	
11-Sep-86		4299	1.23	58	19	11	3	5	10.60	4	15	300	1	1.10	0.30	
12-Sep-86		4327	1.23	59	18	9	2	4	10.60	4.2	15	300	1	1.10	0.55	
13-Sep-86		4347	1.23	62	19	11	2	4	10.20	4.2	15	300	1	0.90	0.25	
14-Sep-86		4377	1.23	62	18	11	2	4	10.10	3.9	15	300	1	0.90	0.15	
15-Sep-86		4377	1.23	61	19	10	2	6	10.00	4	15	300	1	0.80	0.15	
16-Sep-86		4377	1.26	60	19	10	2	5	9.90	4	15	300	1	0.80	0.12	
17-Sep-86		4377	1.26	60	20	10	2	6	10.20	4	15	300	1	0.90	0.20	
18-Sep-86		4377	1.26	62	19	11	2	5	10.10	4	15	300	1	0.85	0.15	
19-Sep-86		4377	1.26	55	18	9	2	5	10.00	4.2	16	300	1	1.20	0.25	
20-Sep-86		4377	1.26	53	17	9	2	5	10.10	4.2	16	300	1	1.20	0.35	
21-Sep-86		4377	1.26	58	18	9	3	5	10.00	4.1	16	300	1	1.20	0.35	
22-Sep-86		4377	1.26	55	17	9	2	15	10.20	4.2	16	300	1	1.30	0.40	

DAILY DRILLING MUD PROPERTIES

Well no:	6406/3-2		**Spud date:**	27-Jul-86		**Rig name:**	West Vanguard		**Engineers:**	Bruland						
										Rasmussen						
Operator	Statoil		**Days to TD:**			**Warehouse**	Sandnessjøen			Sørbø						
										Vistnes						
Contractor:	Smedvig		**Total Depth**	4553	[m]	**Total Cost:**	$504,882									
		Property:	Mud	Funnel	Plastic	Yield Point	10 sek gel	10 min gel	pH	Filtrate	Filtrate	Filtrate temp	Cake	Alkalinity	Alkalinity	
			Density	Viscosity	Viscosity					API	HTHP	HTHP	Thickness	Mud (Pm)	Filtrate (Pf)	
		Unit:	sg	sec/qt	cp	lbs/100 sq.ft	lbs/100 sq.ft	lbs/100 sq.ft		ml/30 min	ml/30 min	°F	32 nd ich.	ml	ml	
Date:	**Time:**	**Depth:**														
23-Sep-86		4377	1.26	68	20	12	4	18	12.00	5	19	300	1	11.80	2.80	
24-Sep-86		4400	1.35	57	22	9	2	9	12.00	5.9	21	300	1	10.50	3.60	
25-Sep-86		4420	1.62	63	26	10	3	11	12.00	5.8	20	300	1	9.50	3.30	
26-Sep-86		4446	1.62	55	27	9	3	11	12.00	5.8	20	300	1	9.40	3.10	
27-Sep-86		4512	1.62	59	29	10	3	8	12.00	5	18	300	1	7.30	2.20	
28-Sep-86		4523	1.62	60	27	8	3	7	12.00	4.5	18	300	1	7.00	2.00	
29-Sep-86		4523	1.62	47	20	7	2	4	12.00	4.5	18	300	1	7.00	1.30	
30-Sep-86		4553	1.62	62	29	8	2	6	12.00	4.5	18	300	1	5.20	1.80	
1-Oct-86		4553	1.62	55	24	8	2	7	12.00	4.5	18	300	1	5.00	1.50	
2-Oct-86		4553	1.54	60	25	7	2	5	11.80	5.2	18	300	1	3.80	0.80	
3-Oct-86		4553	1.38	60	18	8	2	3	11.80	4.8	17	300	1	3.10	0.60	
4-Oct-86		4553	1.38	60	18	8	2	4	11.70	4.9	18	300	1	3.00	0.55	
5-Oct-86		4553	1.38	58	17	8	2	4	11.50	5	18	300	1	3.00	0.50	
6-Oct-86		4553	1.38	64	20	11	2	5	12.00	5.1	18	300	1	4.90	1.10	
7-Oct-86		4553	1.26	64	15	12	2	4	11.00	5.2	18	300	1	3.20	0.90	
8-Oct-86		4553	1.26	62	14	11	2	4	10.80	3.2	19	300	1	3.20	0.90	
9-Oct-86		4553	1.26	60	12	10	2	3	10.60	3.2	19	300	1	3.20	0.95	
10-Oct-86		4553	1.26	53	14	9	2	3	10.20	3	19	300	1	3.00	0.80	
11-Oct-86		4553	1.26	55	14	10	2	3	10.50	3	19	300	1	3.00	0.80	
12-Oct-86		4553	1.26	55	13	11	2	3	10.50	3	19	300	1	3.00	0.80	
13-Oct-86		4553	1.26	55	13	11	2	3	10.50	3	19	300	1	3.00	0.80	
14-Oct-86		4553	1.26	60	14	12	2	3	10.50	3	19	300	1	3.00	0.80	
15-Oct-86		4553	1.26	60	14	12	2	3	10.50	3	19	300	1	3.00	0.80	
16-Oct-86		4553	1.26	56	14	11	2	3	10.50	3	19	300	1	3.00	0.80	
17-Oct-86		4553	1.26	55	13	10	2	3	10.50	5.5	19	300	1	3.00	0.80	
18-Oct-86		4553	1.26	60	17	15	2	4	11.50	6	19	300	1	2.20	0.45	
19-Oct-86		4553	1.26	55	16	13	2	3	11.00	6	19	300	1	2.20	0.45	
20-Oct-86		4353	1.26	60	16	15	2	4	10.50	6	19	300	1	2.20	0.45	
21-Oct-86		4353	1.26	63	15	15	2	4	11.00	6	19	300	1	2.20	0.45	
22-Oct-86		3837	1.26	63	15	15	2	4	11.00	6	19	300	1	2.20	0.45	
23-Oct-86		3872	1.27	60	16	13	3	5	10.80	6.5	19.5	300	1	2.00	0.20	
24-Oct-86		3885	1.26	60	15	13	3	4	10.60	6.5	20	300	1	1.90	0.20	
25-Oct-86		3899	1.26	60	15	13	3	4	10.50	6.5	20	300	1	1.90	0.20	
26-Oct-86		3899	1.26	60	15	13	2	4	10.50	6.5	20	300	1	1.90	0.20	
27-Oct-86		3899	1.26	60	15	13	2	4	10.50	6.5	20	300	1	1.50	0.15	
28-Oct-86		3914	1.26	60	16	15	3	5	10.30	6	20	300	1	1.00	0.15	
29-Oct-86		3923	1.26	60	16	15	3	5	10.50	6.2	20	300	1	1.00	0.15	
30-Oct-86		3923	1.26	60	16	14	2	5	10.60	6.2	20	300	1	1.00	0.15	
31-Oct-86		3923	1.26	60	16	14	2	5	10.50	6	20	300	1	1.00	0.15	
1-Nov-86		3951	1.15	60	13	13	3	8	10.30	6.6	22	300	1	0.65	0.15	
2-Nov-86		3951	1.15	58	12	13	3	7	10.30	6.6	22	300	1	0.65	0.15	
3-Nov-86		3979	1.26	60	16	12	2	4	10.30	6.8	24	300	1	0.60	0.15	
4-Nov-86		3999	1.26	62	18	15	3	12	10.60	7.2	24	300	1	0.90	0.15	
5-Nov-86		3999	1.26	62	20	16	6	15	10.90	7	24	300	1	0.90	0.25	

DAILY DRILLING MUD PROPERTIES

Well no:	6406/3-2		**Spud date:**	27-Jul-86		**Rig name:**	West Vanguard		**Engineers:**	Bruland					
										Rasmussen					
Operator	Statoil		**Days to TD:**			**Warehouse**	Sandnessjøen			Sørbø					
										Vistnes					
Contractor:	Smedvig		**Total Depth**	4553	[m]	**Total Cost:**	$504,882								
		Property:	Mud	Funnel	Plastic	Yield Point	10 sek gel	10 min gel	pH	Filtrate	Filtrate	Filtrate temp	Cake	Alkalinity	Alkalinity
			Density	Viscosity	Viscosity					API	HTHP	HTHP	Thickness	Mud (Pm)	Filtrate (Pf)
		Unit:	sg	sec/qt	cp	lbs/100 sq.ft	lbs/100 sq.ft	lbs/100 sq.ft		ml/30 min	ml/30 min	°F	32 nd ich.	ml	ml
Date:	**Time:**	**Depth:**													
6-Nov-86		3999	1.26	61	20	16	5	15	10.70	7	24	300	1	0.90	0.25
7-Nov-86		3999	1.26	60	20	16	5	14	10.70	7	24	300	1	0.90	0.25
8-Nov-86		3999	1.26	60	20	16	5	14	10.70	7	24	300	1	0.90	0.25
9-Nov-86		3999	1.26	60	20	16	5	14	10.70	7	24	300	1	0.90	0.25
10-Nov-86		3999	1.26	60	20	16	5	14	10.70	7	24	300	1	0.90	0.25
11-Nov-86		3999	1.26	60	20	16	5	14	10.70	7	24	300	1	0.90	0.25
12-Nov-86		3999	1.26	60	20	16	5	14	10.70	7	24	300	1	0.90	0.25
13-Nov-86		3999	1.26	60	20	14	6	16	10.00	7	24	300	1	0.60	0.15
14-Nov-86		3817	1.26	63	27	20	7	18	10.10	7	24	300	1	0.60	0.13
15-Nov-86		3710	1.26	60	25	18	5	15	10.30	7	24	300	1	0.60	0.13
16-Nov-86		2200	1.82	70	45	35	12	35	10.00	6			1	0.50	0.15
17-Nov-86		2050	1.82	60	39	26	15	35	11.00	10			1	1.30	0.20
18-Nov-86		2050	1.82	60	39	26	15	35	10.80	10			1	1.30	0.20
19-Nov-86			1.58	55	20	18	14	34	11.50	10			1	1.30	0.20

Well no:	6406/3-2												
Operator	Statoil												
Contractor:	Smedvig												
		Property:	Alkalinity	Chloride	Total	Calsium	Sand	Solids	Oil	Water	Excess	Methylene	KCl
			Filtrate (Mf)	Content	Hardness		Content	Content	Content	Content	Gypsum	Blue Capasity	Content
		Unit:	ml	ppm	mg/l	mg/l	% vol	%vol	% vol	% vol	ppb	ppb	ppb
Date:	**Time:**	**Depth:**											
27-Jun-86		-											
28-Jun-86		436											
29-Jun-86		436											
30-Jun-86		436											
1-Jul-86		677	0.20	10500		180	0.5						
2-Jul-86		965	0.06	13500		240	0.5	6		94		30	
3-Jul-86		965	0.06	13500		240	0.5	6		94		30	
4-Jul-86		965	0.40	15000		280	0.5	6		94		30	
5-Jul-86		965	0.10	17000		600	tr	7		93		25	
6-Jul-86		965	0.10	16000		480	tr	11		89		20	
7-Jul-86		965	0.10	15000		490	tr	11		89		22.5	
8-Jul-86		965	0.23	17000		2960							
9-Jul-86		965	0.25	17000		2640	tr						
10-Jul-86		1030	0.12	17000		2180	0.75	4		96	4.5	10	
11-Jul-86		1380	0.15	20000		3400	0.75	5		95	4	7.5	
12-Jul-86		1571	0.10	20000		3400	0.75	7		93	3.8	7.5	
13-Jul-86		1972	0.15	20000		3040	0.75	7		93	5	12.5	
14-Jul-86		2216	0.12	20000		2880	0.75	11		89	4.2	20	
15-Jul-86		2298	0.20	20000		2640	0.75	17		83	4.8	17.5	
16-Jul-86		2298	0.25	20000		2880	1	18		82	4.3	20	
17-Jul-86		2298	0.40	20000		2880	1	18		82	4.3	20	
18-Jul-86		2298	0.41	20000		2880	1	18		82	4	20	
19-Jul-86		2298	0.80	20000		2900	0.5	18		82	4	20	
20-Jul-86		2298	0.80	20000		2600	0.5	18		82	4	20	
21-Jul-86		2301	0.70	20000		1760	0.5	18		82	4	20	
22-Jul-86		2301	0.75	20000		2200	0.5	19		81	3	20	
23-Jul-86		2351	1.50	20000		1600	0.5	21		79	4	20	
24-Jul-86		2503	0.75	20000		2600	0.5	28		72	3.7	22.5	
25-Jul-86		2583	0.65	20000		2880	0.5	28		72	2.5	22.5	
26-Jul-86		2741	0.45	15000		2500	0.5	28		72	5.7	22.5	
27-Jul-86		2828	0.45	13500		2000	0.5	28		72	4.7	20	
28-Jul-86		2911	0.60	13000		1640	0.5	28		72	4.1	20	
29-Jul-86		2937	0.50	13000		1700	0.25	28		72	3.6	20	
30-Jul-86		2975	0.45	13000		1580	0.25	28		72	2.5	20	
31-Jul-86		2994	0.40	12500		1700	tr	28		72	2.2	20	
1-Aug-86		3044	0.45	11500		1280	tr	28		72	2.1	22.5	
2-Aug-86		3106	0.45	11000		1040	0.25	28		72	1.3	20	
3-Aug-86		3162	1.60	10500		760	0.25	26		74	1	20	
4-Aug-86		3224	1.80	10000		660	tr	26		74		20	
5-Aug-86		3286	1.70	10000		560	tr	26		74		20	
6-Aug-86		3340	2.00	10000		560	tr	26		74		20	
7-Aug-86		3402	2.00	10000		560	tr	26		74		20	
8-Aug-86		3453	1.90	9500		400	tr	26		74		20	
9-Aug-86		3511	2.00	9000		360	tr	26		74		22.5	

Well no:	6406/3-2												
Operator	Statoil												
Contractor:	Smedvig												
		Property:	Alkalinity	Chloride	Total	Calsium	Sand	Solids	Oil	Water	Excess	Methylene	KCl
			Filtrate (Mf)	Content	Hardness		Content	Content	Content	Content	Gypsum	Blue Capasity	Content
		Unit:	ml	ppm	mg/l	mg/l	% vol	%vol	% vol	% vol	ppb	ppb	ppb
Date:	**Time:**	**Depth:**											
10-Aug-86		3527	1.80	9000		360	tr	26		74		22.5	
11-Aug-86		3554	2.00	9000		280	tr	27		73		22.5	
12-Aug-86		3622	2.20	8800		280	tr	27		73		22.5	
13-Aug-86		3697	2.30	8800		200	tr	27		73		22.5	
14-Aug-86		3707	2.00	8800		200	tr	27		73		22.5	
15-Aug-86		3780	2.20	9000		240	tr	27		73		20	
16-Aug-86		3840	1.70	9000		240	tr	27		73		20	
17-Aug-86		3850	1.50	8500		260	tr	27		73		20	
18-Aug-86		3872	1.60	8500		240	tr	27		73		20	
19-Aug-86		3905	2.50	8000		260	tr	27		73		20	
20-Aug-86		3931	1.90	7800		320	tr	27		73		20	
21-Aug-86		3930	1.60	7800		240	tr	27		73		20	
22-Aug-86		3930	1.60	7800		240		27		73		20	
23-Aug-86		3930	1.40	7800		220		27		73		20	
24-Aug-86		3930	1.40	7800		220		27		73		20	
25-Aug-86		3930											
26-Aug-86		3930	1.20	6000		120	tr	12		88		20	
27-Aug-86		3935	1.00	5000		160	tr	12		88		20	
28-Aug-86		3947	1.10	4500		160	tr	13		87		17.5	
29-Aug-86		3965	0.80	4500		200	tr	13		87		17.5	
30-Aug-86		3983	0.90	4000		200	tr	11		89		15	
31-Aug-86		3983	0.60	4000		160	tr	10		90		15	
1-Sep-86		4001	0.60	4000		160	tr	10		90		15	
2-Sep-86		4034	0.70	4000		160	tr	8		92		15	
3-Sep-86		4048	0.70	4000		160	tr	9		91		17.5	
4-Sep-86		4060	0.90	4000		160	tr	9		91		17.5	
5-Sep-86		4094	1.40	4200		160	tr	8		92		17.5	
6-Sep-86		4128	1.20	4100		160	tr	8		92		17.5	
7-Sep-86		4165	0.93	4500		140	tr	8		92		17.5	
8-Sep-86		4168	1.00	4500		140	tr	8		92		17.5	
9-Sep-86		4213	1.80	4700		120	tr	8		92		17.5	
10-Sep-86		4284	1.20	5200		120	tr	9		91		20	
11-Sep-86		4299	1.40	4700		120	tr	9		91		20	
12-Sep-86		4327	1.95	5500		120	tr	9		91		20	
13-Sep-86		4347	1.20	5500		120	tr	9		91		20	
14-Sep-86		4377	1.00	5500		120	tr	9		91		20	
15-Sep-86		4377	1.00	6000		100	tr	10		90		20	
16-Sep-86		4377	0.99	6000		100	tr	10		90		20	
17-Sep-86		4377	1.20	6000		100	tr	10		90		20	
18-Sep-86		4377	1.10	6000		100	tr	10		90		20	
19-Sep-86		4377	1.40	6000		100	tr	10		90		20	
20-Sep-86		4377	1.70	7000		100	tr	10		90		20	
21-Sep-86		4377	1.80	6500		100	tr	10		90		20	
22-Sep-86		4377	2.00	6500		100	tr	10		90		20	

Well no:	6406/3-2												
Operator	Statoil												
Contractor:	Smedvig												
		Property:	Alkalinity	Chloride	Total	Calsium	Sand	Solids	Oil	Water	Excess	Methylene	KCl
			Filtrate (Mf)	Content	Hardness		Content	Content	Content	Content	Gypsum	Blue Capasity	Content
		Unit:	ml	ppm	mg/l	mg/l	% vol	%vol	% vol	% vol	ppb	ppb	ppb
Date:	**Time:**	**Depth:**											
23-Sep-86		4377	4.80	6500		240	tr	11		89		20	
24-Sep-86		4400	4.40	7000		240	tr	13		87		17.5	
25-Sep-86		4420	5.10	7000		100	tr					17.5	
26-Sep-86		4446	4.90	6500		100	tr	20		80		17.5	
27-Sep-86		4512	4.00	6000		100	tr	21		79		17.5	
28-Sep-86		4523	3.50	6000		160	tr	20		80		17.5	
29-Sep-86		4523	6.80	6000		160	tr	17		83		15	
30-Sep-86		4553	3.50	6000		200	tr	21		79		15	
1-Oct-86		4553	3.40	6000		200	tr	21		79		15	
2-Oct-86		4553	1.90	6000		200	tr	17		83		15	
3-Oct-86		4553	1.60	5500		200	tr	12		88		12.5	
4-Oct-86		4553	1.50	5500		200	tr	12		88		12.5	
5-Oct-86		4553	1.50	5500		280	tr	12		88		12.5	
6-Oct-86		4553	2.30	5500		200	tr	12		88		12.5	
7-Oct-86		4553	1.80	4000		240	tr	10		90		12.5	
8-Oct-86		4553	1.80	4000		240	tr	10		90		12.5	
9-Oct-86		4553	1.90	4000		240	tr	10	1	89		12.5	
10-Oct-86		4553	1.50	10000		800	tr	10	1	89		12.5	
11-Oct-86		4553	1.50	8000		360	tr	10	1	89		12.5	
12-Oct-86		4553	1.50	8000		360	tr	10	1	89		12.5	
13-Oct-86		4553	1.50	8000		360	tr	10	1	89		12.5	
14-Oct-86		4553	1.50	8000		360	tr	10	1	89		12.5	
15-Oct-86		4553	1.50	8000		360	tr	10	1	89		12.5	
16-Oct-86		4553	1.50	8000		360	tr	10	1	89		12.5	
17-Oct-86		4553	1.50	8000		360	tr	10	1	89		12.5	
18-Oct-86		4553	1.50	7000		200	tr	10		90		12.5	
19-Oct-86		4553	1.50	7000		200	tr	10		90		12.5	
20-Oct-86		4353	1.50	7000		200	tr	10		90		12.5	
21-Oct-86		4353	1.50	7000		200	tr	10		90		12.5	
22-Oct-86		3837	1.50	7000		200	tr	10		90		12.5	
23-Oct-86		3872	1.50	7000		200	tr	10		90		12.5	
24-Oct-86		3885	1.50	7000		200	tr	10		90		12.5	
25-Oct-86		3899	1.50	7000		200	tr	10		90		12.5	
26-Oct-86		3899	1.50	7000		200	tr	10		90		12.5	
27-Oct-86		3899	1.20	7000		200	tr	10		90		12.5	
28-Oct-86		3914	0.65	6000		220	tr	10		90		12.5	
29-Oct-86		3923	0.65	6000		240	tr	10		90		12.5	
30-Oct-86		3923	0.65	6000		240	tr	10		90		12.5	
31-Oct-86		3923	0.65	6000		240	tr	10		90		12.5	
1-Nov-86		3951	0.50	4000		140	tr	5		95		15	
2-Nov-86		3951	0.50	4000		140	tr	5		95		15	
3-Nov-86		3979	0.50	4500		210	tr	10		90		15	
4-Nov-86		3999	0.55	4000		220	tr	10		90		15	
5-Nov-86		3999	0.60	4000		280	tr	10		90		15	

Well no:	6406/3-2												
Operator	Statoil												
Contractor:	Smedvig												
		Property:	Alkalinity	Chloride	Total	Calsium	Sand	Solids	Oil	Water	Excess	Methylene	KCl
			Filtrate (Mf)	Content	Hardness		Content	Content	Content	Content	Gypsum	Blue Capasity	Content
		Unit:	ml	ppm	mg/l	mg/l	% vol	%vol	% vol	% vol	ppb	ppb	ppb
Date:	**Time:**	**Depth:**											
6-Nov-86		3999	0.60	4000		280	tr	10		90		15	
7-Nov-86		3999	0.60	4000		280	tr	10		90		15	
8-Nov-86		3999	0.60	4000		280	tr	10		90		15	
9-Nov-86		3999	0.60	4000		280	tr	10		90		15	
10-Nov-86		3999	0.60	4000		280	tr	10		90		15	
11-Nov-86		3999	0.60	4000		280	tr	10		90		15	
12-Nov-86		3999	0.60	4000		280	tr	10		90		15	
13-Nov-86		3999	0.50	6000		280	tr	10		90		15	
14-Nov-86		3817	0.50	6000		280	tr	10		90		15	
15-Nov-86		3710	0.50	6000		280	tr	10		90		15	
16-Nov-86		2200	0.45	5500		280	tr	22		78		15	
17-Nov-86		2050	1.00	5500		320	tr	22		78		15	
18-Nov-86		2050	1.00	5500		320	tr	22		78		15	
19-Nov-86			1.30	5500		600	tr	18				15	

	MUD VOLUME SUMMARY					
WELL:	6406/3-2		**OPERATOR**	Statoil		
RIG:	West Vanguard					
Section:	36"	26"	17 1/2"	12 1/4"	8 1/2"	6" + test
Hole from [m]	322	432	950	2283	3919	4377
Hole to [m]	436	965	2301	3930	4380	4553
Hole length [m]	114	533	1351	1647	461	176
Mud Type	spud	spud	gyp-polymer	gyp-ligno	ligno	ligno
Vol transfered to interval	0	251	0	439	568	565
Vol buildt	567	952	747	856	478	338
Vol transferd to next sect.	251	0	439	568	565	0
Vol transfered to external		0	0	0	0	0
Vol behind casing [cub.m]	?	?	?	46	0	0
Vol dumped	0	463	67	348	239	600
Vol lost to sea	316	480	35	22	23	111
Vol lost to formation	0	0	0	160	5	62
Vol lost on solids equipment	0	260	0	151	214	130
Vol cuttings drilled [cub. m]	74	183	210	122	17	4
Mud used this section	316	1203	308	727	481	903
TOTALS						
mud/brine buildt	3938.0					
mud/brine dumped	1717.0					
mud/brine lost to formation	227.0					
mud/brine lost on solids cont.	755.0					
mud/brine behind csg	46.0					
mud/brine left in hole	0.0					
total mud/brine left in hole	46.0					
mud/brine to sea	987.0					
total vol cuttings drilled	610.0					

CHEMICALS SUMMARY

WELL:	6406/3-2		**OPERATOR**	Statoil		
Section:	36"	26"	17 1/2"	12 1/4"	8 3/8"	6" + test
Mud Type	spud	spud	gyp-polymer	gyp-ligno	ligno	ligno
Vol mud used this section	316	1203	308	727	481	903
Thinner used [kg]		125	2875	18900	3530	3275
Thinner consentration [kg/m3]	0.00	0.10	9.33	26.00	7.34	3.63
Bentonite used [kg]	32000	45000	0	5000	26000	12000
Bentonite consentration [kg/m3]	101.27	37.41	0.00	6.88	54.05	13.29
Visc. polymer used [kg]		0	8260	3475	1057.5	1377.5
Visc. polymer consentration [kg/m3]	0.00	0.00	26.82	4.78	2137.50	1.53
Fluid loss polymer used [kg]			4342.5	5450	2137.5	1620
Fluid loss polymer cons [kg/m3]	0.00	0.00	14.10	7.50	4.44	1.79

III 11. EQUIPMENT FAILURE

III 11. EQUIPMENT FAILURE

20.07	B.J. unit shut down
22.07	B.J. unit shut down
31.07	Mud pump no. 2, shut down, lost 8 hrs rigtime
13.08	Mud pump no. 1, lost 2 hrs rigtime
02.10	Problem to pass L.A.P. - lost 10.5 hrs rigtime
18.11	Problem to pass L.A.P. - lost 7.0 hrs rigtime