Coiled Tubing Drilling from a Vessel

P&A Seminar October 30th

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Coil Tubing
studies

INTEGRATED
OPERATIONAL
CONTROL CABIN

KILL REEL &
KILLHOSE

CT - REEL

MOONPOOL
HATCHES

WELL SERVICE
PUMPS

PROCESSING UNIT

LOWER
CURSORFRAME

COIL LOOP
SUPPORT

INJECTOR
STRIPEF

CT-INJECTOR
FRAME

TOPTENSION

CATWALK
MACHINE ON
PALLETS

PIPERACK
w/ RISER

IRON
ROUGHNECK

INTEGRATED
OPERATIONAL
CONTROL CABIN

CT-REEL

CT-CURSOR/
RISER HANGOFF
FRAME

CON.

SURFACE
BOP

FLOW-
TEE

QUICK-

EDP

BASED ON
MODIFIED
LLP AND
- RETAINER VALVE
- BREAKAWAY JOINT
- STRESS MEASUREMENT

EDP -BASED ON
MODIFIED
LLP AND
- RETAINER VALVE
- BREAKAWAY JOINT
- STRESS MEASUREMENT

LUB

ULP

T-RING

HSET

LUB SWIVEL

WEAK

LINK

STRESSJ.

RET. VALVE

& LLP (EDP)

LRP / WCP
Rogfast Coiled Tubing Drilling & Coring

scope of delivery

**Baker Hughes:**
- CT equipment on deck
- Pumps
- 2 7/8" Coiled tubing
- Directional Drilling and Coring equipment

**Island Offshore:**
- Deck and handling equipment
- Passive compensator
- Subsea injector
- Baseplate
- ROV Service
Rogfast

- 25.5km subsea tunnel from Randaberg to Bokn
- Area with no reliable bedrock information
- Collect core samples to Statens Vegvesen
- Baker Hughes delivered CT, Drilling & Pumping service
- Finish project October 2014
Vessel: Island Performer

- Loa: 130m
- B: 25m
- 300T tower – 140Te winch – 29m lifting height
- 250T offshore crane
- 2 off ROVs
Injector Parking & Tool Handling Skid
Launching & Landing of Subsea Gide Base
Subsea Injector Operation, ROV Panel

- Gauges for Load-Cells
- Receptacle for Low-Flow functions
- Receptacle for High-Flow coupler.
- Receptacles for Inductive couplers
- Gauges for Injector functions.
Subsea injector operator panel

- Weight on bit
- Coiled Tubing running/pulling speed
- Heave monitoring, position of vessel compensator
- Hydraulic pressure from power unit
Drilling & Coring

Directional Drilling - «standard» oilfield CT drilling equipment

- Equipment:
  - 5 7/8” Hughes Christensen rock bit
  - AutoTrak X-treme 3D RSS driven by a 4 3/4” X-treme motor
  - 4 3/4” Ultra X-treme LS (400-1200LPM)(50-155RPM) max 4450Nm
  - 3 1/8” CoilTrak contingency drilling assembly (not used)
  - HT-10 Coring system driven by 4 3/4” Ultra X-treme LS motor

- The primary AutoTrak assembly have proven to have a dogleg capability of 15 degrees / 30 meters in the Rogfast project with full formation evaluation capabilities
Rogfast wells

Well no: 1
Water depth: 250
Length: 172 meter
Deg inc: 41°

Well no: 2
Water depth: 200
Length: 260 meter
Deg inc: 52°

Well no: 3
Water depth: 286
Length: 169 meter
Deg inc: 34,5°

• Well cementsed after collect core samples
RISERLESS LIGHT WELL INTERVENTION (RLWI)

- Plug and Abandonment of Subsea wells
- Pilot-hole drilling with Coiled Tubing
- Open water completion
- Well Intervention from vessel
  - Mechanical and hydraulic tool operation
  - Pumping and injection
  - Well cleaning and circulation