


Wellsite Lithology Log (MD)

Plate 2

TOTAL E&P DENMARK B.V. Vendsyssel-1	Partners TOTAL E&P Denmark B.V. Nordsøfonden	80 % 20 %	Licence Operator TOTAL E&P Denmark B.V.	VDS001
Country Denmark				
TOTAL GAS SHALE EUROPE				
Vendsyssel-1				
VDS001				

WELL SUMMARY	LOCALISATION																
<p>Projection : UTM - UTM 32N 9E Platform : n/a Datum : ETRS 89 Slot : n/a Spheroid : WSG1984</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Wellhead Co-ordinates</th> <th>Main Target Co-ordinates (Prognosis)</th> </tr> </thead> <tbody> <tr> <td>Formation : Quaternary - Vendsyssel</td> <td>Formation : Alum Shales</td> </tr> <tr> <td>Latitude : 57°17'3.186"</td> <td>Latitude : 57°17'03.186"N</td> </tr> <tr> <td>Longitude : 10°16'6.159"</td> <td>Longitude : 10°16'06.159"E</td> </tr> <tr> <td>X : 576460.30 mE</td> <td>X : 576460.30 mE</td> </tr> <tr> <td>Y : 6349736.61 mN</td> <td>Y : 6349736.61 mN</td> </tr> <tr> <td>GL : 21.35 m/NM</td> <td>MD : 3666.3 m MD/RT</td> </tr> <tr> <td>RT : 9.18 m/GL</td> <td>TVDSS : 3635.00 m TVDSS</td> </tr> </tbody> </table> <p>Rig : 36" sect & 30" CP with water well drilling company "A. Højfeldt A/S" 20" sect to TD with Land rig SMP105</p> <p>Suspension Depth : 188.5 m MD/RT Suspension Date : 12 Nov 14 Return on : 04 May 15</p> <p>On location Date : 01/05/15 Spud Date : 04/05/15 TD Date : 14/08/15 Off Location Date :</p>	Wellhead Co-ordinates	Main Target Co-ordinates (Prognosis)	Formation : Quaternary - Vendsyssel	Formation : Alum Shales	Latitude : 57°17'3.186"	Latitude : 57°17'03.186"N	Longitude : 10°16'6.159"	Longitude : 10°16'06.159"E	X : 576460.30 mE	X : 576460.30 mE	Y : 6349736.61 mN	Y : 6349736.61 mN	GL : 21.35 m/NM	MD : 3666.3 m MD/RT	RT : 9.18 m/GL	TVDSS : 3635.00 m TVDSS	
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WELL DESIGN (all depths in m MD/RT)									
Hole Diameter	Final Depth		Casing Diameter	Shoe Depth		Hanger Depth		Cement	
	Drilling	Logs		Drilling	Logs	Drilling	Logs		
36"	26.7		30"	26.5				1.8 sg cement. Top cmt in csg at 17.2 m.	
26"	188.5	189	20"	184	182			1.52sg lead, 1.90sg tail slurry. Top cmt in csg at 176 m.	
18 1/2"	1578	1577	13 3/8"	1574	1572			1.52sg lead, 1.90sg tail slurry. Top cmt in csg at 1537 m.	
12 1/2"	3345		9 5/8"	3327	3324.5			1.52sg lead, 1.90sg tail slurry. Top cmt in csg at 3241 m.	
8 1/2"	3645	3644							

OBJECTIVES									
#	Formation	m MD/RT	m TVDSS	Fluid	X	Y	Inclination	Azimuth	Departure

CONTRACTORS	
CIVIL WORKS	A. KJELKVIST A/S
RIG (top hole)	A. HØJFELDT A/S
WIRELINE (top hole)	ORBICON
RIG	SMP
MUD ENGINEERING	MI Swaco
DIRECTIONAL DRILLING/MWD	HALLIBURTON
MUDLOGGING	GEOLOG
WIRELINE	SCHLUMBERGER (job #1) ; BAKER HUGHES (Jobs #2, #3)
CORING	CORPRO
CEMENT	SCHLUMBERGER
WASTES TREATMENT	MI Swaco
CASING	VALLUREC
CASING ACCESSORIES	WEATHERFORD
CASING RUNNING SERVICES	WEATHERFORD
WELL HEAD	FMC

WELL SKETCH	
36"	26.7 m MD
20"	188.5 m MD
13 3/8"	1577 m MD
9 5/8"	3345 m MD
30"	26.5 m MD
20"	184 m MD
13 3/8"	1574 m MD
12 1/2"	3327 m MD
9 5/8"	3324.5 m MD

GEOLOGICAL SYMBOLS

	Shale 1		Med Sand\Sandstone		Chalk		Volcanics
	Shale 2		Marl		Anhydrite		Tuff
	Claystone 1		Dolomite		Gypsum		Intrusive Igneous
	Claystone 2		Chalk		Halite		Basement
	Silt\Siltstone		Limestone		Sylvite		Cement
	Fine Sand\Sandstone		Oolitic Limestone		Coal		No Sample
	Coarse Sand\Sandstone		Argillaceous Limestone		Quartzite		

QUALIFIERS, ACCESSORIES AND FOSSILS

	Argillaceous		Calcareous		Micaceous		Glaucinitic		Microfossils
	Silty		Dolomitic		Pyritic		Cherty		Shell fragments
	Sandy		Limestone Bed		Ferruginous		Tuffaceous		Rudist
	Coarsely Sandy		Anhydritic		Carbonaceous		Feldspathic		Echinoids
	Gravelly/Pebbly		Gypsiferous		Bituminous		Siliceous		Ooids

GENERAL SYMBOLS

<p>Liner hanger 7" TOL 1856 m/TR [L]</p> <p>Casing Shoe 2596 m/TR [L]</p> <p>1b.19 Recovery 1b.18 No Recovery</p> <p>Sidewall Core</p> <p>Cored Interval (symbol plotted using corrected depths)</p> <p>Core 1 2345 m - 2360 m Rec. 12 m (80%)</p> <p>No Recovery</p> <p>Shows</p> <ul style="list-style-type: none"> ● Oil ⊙ Gas ⊙ Condensate ▲ Natural Fluor. △ Cut Fluor. ◇ Odour — Continuous Shows - - - Discontinuous Shows 	<p>1.1.3.26 Echantillon</p> <p>1.1.3.12 No Sample</p> <p>1.1.3.25 Dry</p> <p>Wireline Pressure Test</p> <p>Flow Test (in casing)</p> <p>Flow Test (open hole)</p> <p>Perforated Interval</p>	<p>1883 m MD/RT 1806.2 m TVDSS Inc: 48° Azi: N50°E</p> <p>Survey Point Inclination/Azimuth</p> <p>Mud Loss Partial loss of returns, volume lost and mud weight indicated.</p> <p>Mud Loss Total loss of returns, static mud weight indicated above line</p> <p>960 m/TR 20 m3/hr 1.25 SG</p> <p>4 m3/h 1.21 sg</p> <p>Fluid Influx Volume gained and mud weight indicated</p>
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Vendsyssel-1

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1/500 scale

Depth Range 0 m - 3655 m MD

