

# REPORT

*REPORT TITLE:*

SHALLOW DRILLING BARENTS SEA 1985  
Macrofossil dating of core D85-K

*REPORT NO.:* 21.3405.00/05/86

*AUTHORS:*

Atle Mørk



INSTITUTT FOR KONTINENTALSOKKELUNDERSØKELSER OG PETROLEUMSTEKNOLOGI AS

# REPORT

|           |                |
|-----------|----------------|
| REG. NO.: | ACCESSIBILITY: |
| 86.142    | CONFIDENTIAL   |

|                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>REPORT TITLE:</b><br><br>SHALLOW DRILLING BARENTS SEA 1985<br>Macrofossil dating of core D85-K<br><br><br>REPORT NO.: 21.3405.00/05/86 |
| <b>AUTHORS:</b><br><br>Atle Mørk                                                                                                          |

|                   |                    |                         |                              |                    |
|-------------------|--------------------|-------------------------|------------------------------|--------------------|
| DATE:<br>86.10.13 | NO. OF PAGES:<br>4 | NO. OF APPENDICES:<br>- | PROJECT MANAGER:<br>T. Bugge | SIGN.:<br>1. Bugge |
|-------------------|--------------------|-------------------------|------------------------------|--------------------|

**CLIENT:**

BP Petroleum Dev. Ltd., Conoco Norway Inc., Esso Norge a.s, Fina Exploration Norway, Norsk Agip A/S, A/S Norske Shell, Statoil

**SUMMARY:**

The presence of the bivalve Halobia Zitteli (identified by Hamish Campbell) indicates that the core is of Carnian (or uppermost Ladinian) age.

**KEY WORDS:**

Barents Sea

Dia-Structure

Biostratigraphy

Bivalves

Triassic

Shallow drilling

#### IKU Reports

21.3405.00/01/85: "Shallow Drilling Barents Sea 1985"

21.3405.00/02/85: "Heat Flow Measurements Barents Sea 1985"

21.3405.00/03/86: "Shallow drilling and heat flow measurements Barents Sea 1985. Data report 3."

21.3405.00/04/86: "Barents Sea mapping program 1984/85. Comparisons and correlations."

21.3405.00/05/86: "Shallow drilling Barents Sea 1985 Macrofossil dating of core D85-K."

## ADDENDUM

The coreholes drilled in the Barents Sea in 1985 were given preliminary names by IKU, and these were used in all reports. The table shows these names along with the later assigned official NPD names and the final coordinates and water depths.

| IKU name | NPD name     | Latitude          | Longitude         | Water depth (m) |
|----------|--------------|-------------------|-------------------|-----------------|
| C85-A    | 7126/06-U-01 | 71° 38' 49.795" N | 26° 52' 43.295" E | 369             |
| D85-H    | 7220/02-U-01 | 72° 45' 3.095" N  | 20° 34' 45.644" E | 429             |
| C85-E    | 7222/09-U-01 | 72° 24' 19.739" N | 22° 47' 39.787" E | 322.5           |
| D85-V    | 7317/02-U-01 | 73° 49' 10.924" N | 17° 22' 4.526" E  | 296             |
| D85-I    | 7317/02-U-02 | 73° 47' 8.062" N  | 17° 23' 35.505" E | 324             |
| D85-J    | 7320/03-U-01 | 73° 51' 15.18" N  | 20° 55' 0.802" E  | 419             |
| D85-K    | 7323/07-U-10 | 73° 16' 51.539" N | 23° 1' 25.834" E  | 420             |
| D85-W    | 7323/10-U-01 | 73° 13' 15.87" N  | 23° 18' 42.716" E | 380             |
| D85-N    | 7425/09-U-01 | 74° 29' 25.296" N | 25° 46' 19.261" E | 334             |
| D85-O    | 7524/12-U-01 | 75° 12' 20.536" N | 24° 43' 21.607" E | 108             |

The coreholes drilled in the Barents Sea in 1984 will get official NPD names in 2008.

## INTRODUCTION

During the last three years, 14 coreholes have been drilled by shallow drilling techniques in the Dia-Structure area. Unfortunately, the composition of company participation has differed somewhat each year, both with respect to the drilling projects as well as in projects supplying important stratigraphic reference material in land areas. Consequently, this report is supplied only to the companies that supported the 1985 drilling. Other IKU-reports with additional information are referred below. A comparative palynological study of the D85-K core and the cores drilled stratigraphically below and above also gives important results that will be dealt with in a later report in the "Dia-Structure shallow drilling 1986" project.

The report 21.3420.00/02/86, "Dia-Structure shallow drilling 1986. Data report II. Paleontological datings by macrofossils" by Atle Mørk and Wolfgang Weitschat, gives the macrofossil dating results from the drilling in 1986.

The report 23.1252.12/01/86 (of the IKU-Arctic Geoprogram "Palaeontoligical age for the Lower-Middle Triassic Sassendalen Group on Svalbard" by Atle Mørk, summarizes the age information for macrofossils in Svalbard. Comments on the occurrence of Halobic zitteli are also included.

The age information in the review paper by Tozer & Parker (1968) also supply important information on macrofauna in the area.

Wolfgang Weitschat (University of Hamburg) is thanked for solving the Daonella/Halobia problem with the help of Hamish Campbell (Geol. Surv. of New Zealand), who is also thanked for this valuable identification.

## MACROFOSSIL DATING OF CORE D85-K

This core has been the subject of some discussion concerning its age.

The palynology indicates that the core has an undefined Ladinian-Carnian age.

The core is rich in thin shelled bivalves. In the Middle and lower Upper Triassic, the bivalve genus Daonella and Halobia, with their different species, are regarded as good biostratigraphical indicators. These bivalve groups (Daonellidae) are presently being studied by Hamish Campbell (Geol. Survey of New Zealand) and we have forwarded photographs of several specimens of the bivalves from Core K.

He has indentified the bivalves as Halobia (Zittelihalobia) zitteli Lindstroem. Halobia zitteli is restricted to the Tschermakfjellet Formation on Svalbard. The Tschermakfjellet Formation is regarded as of Carnian and possibly also uppermost Ladinian age (Weitschat & Lehmann 1982, Korchinskaya 1982).

The bivalve identification then indicates that the K core which after reevaluation of the navigation data is regarded to have been drilled above a nearby seismic reflector, may be regarded as Carnian (or possible uppermost Ladinian) age.

## REFERENCES

KORCHINSKAYA, M.V., 1982: Obyasnitelnaya zapiska k stratigraficheskoy skheme mesozoya (trias) Svalbarda. (An explanotory note to the stratigraphic scheme of the Mesozoic (Trias) of Svalbard). Min. Geol. USSR, NPO, "Sevmorgeo". Leningrad. 40-99. (In Russian).

TOZER, E.T. & PARKER, J.R., 1968: Notes on the Triassic biostratigraphy of Svalbard. Geol. Mag. 105. 526-542.

WEITSCHAT, W. & LEHMANN, U., 1983: Stratigraphy and ammonoids from the Middle Triassic Botneheia Formation (Daonella Shales) of Spitsbergen. Mitt. Geol. Palaont. Inst. Univ. Hamburg, 54. 27-54.