## *1.2 Technical Progress and Main Results*

## WP 1 – Geology led by BGS and supported by GEUS and SINTEF

***Summary***
In the reporting period work has continued on the following tasks:

- Task 1.4 Characterise Caprock
- Task 1.7 Iterative Development of full Regional Geological Model

## Task 1.4. Characterise caprock

### Work carried out during the reporting period

Caprock cuttings from the Norwegian (report completed) and UK sectors (report in preparation) have been analysed by SEM and XRD, including determinations of grain size, quartz content, total organic carbon and cation exchange capacity. Results have been interpreted in terms of the Krushin sealing capacity.

Core material from a suitable cap rock analogue has been identified from the Ekofisk area in well 2/4-C-11. XRD clay mineralogy is similar to that of Sleipner caprock (report in preparation).

A workplan has been developed for the detailed analysis and characterisation of a caprock core, in the anticipation that this may be obtained later in the summer.

### Problems and difficulties encountered

Ekofisk samples suitable for analysis of physical properties were not obtainable from NPD, this affected amount of analysis possible.

## Task 1.7 Iterative development of full regional geological model

### Work carried out during the reporting period

Regional interpretation of the Utsira Sand has been finalised. This incorporates additional well data in the north and infill seismic data to the NW of Sleipner (in an area of predicted long term $CO_2$ migration). These additional data have been interpreted and integrated into the regional interpretation. Prior to depth conversion the regional interpretation has been merged with the detailed interpretation of the Utsira Sand based on the Sleipner 3D survey (from Work Package 5).

Depth conversion of the Utsira Sand interpretation is underway.

The regional seismic stratigraphy of the caprock succession has been interpreted and work has commenced on constructing stratigraphical sections to characterise regional properties of the caprock.

Seismic amplitude anomalies have been mapped around Sleipner and preliminary interpretation of the continuity cube has begun.

**Problems and difficulties encountered**

The depth conversion, which utilises both seismic and well data, was held up by the fact that many wells still had slightly incorrect picks for top and base Utsira Sand. Correction of this was quite time consuming. Excepting this, only minor problems have been encountered which have been overcome.

## Brief forecast of next six months activities

A meeting of the Work Package partners was held in Trondheim, prior to the main SACS Technical Session, where final deliverables and responsibilities were agreed.

**Task 1.4**
Complete and report on the cuttings analysis and the Ekofisk core.

**Task 1.7**
Complete Utsira Sand depth conversion.

Build attributed 3D model of Utsira Sand.

Complete account of depositional model for the Utsira Sand.

Complete regional caprock stratigraphy study.

Commence Final Work Area 1 Report.