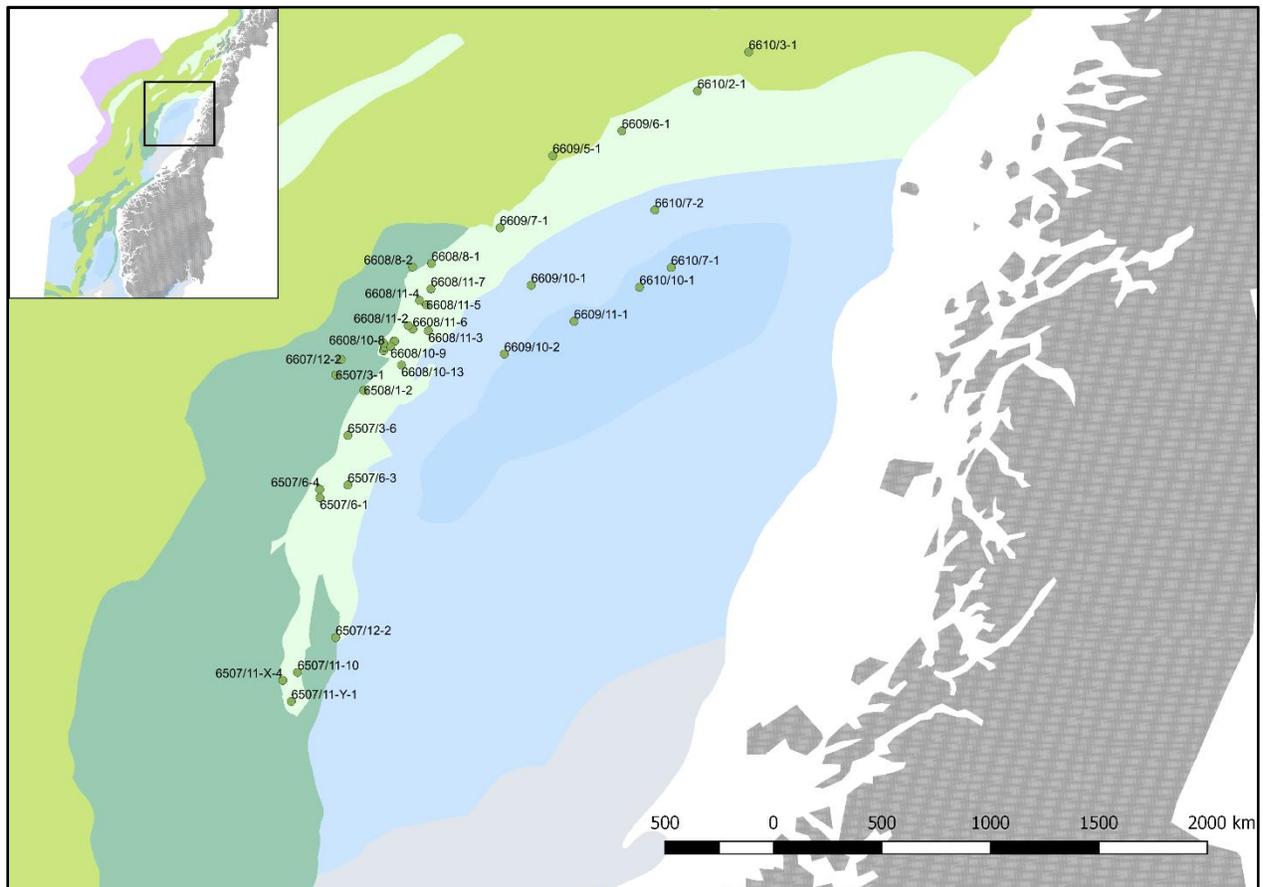


# Nordland Ridge & Helgeland Basin

## Hydrocarbon and Seal Evaluation Study

By

GeoProvider



Price:	Completion:
On request	2017

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# Proposal

Mud gas data from the Norwegian Sea, for 46 wells are being systematically analysed for hydrocarbon bearing and sealing zones. A Hydrocarbon Evaluation Log (HEL) and Seal Evaluation Log (SEL) are generated for each well. By using these two logs along with several other sophisticated (generated) plots and techniques, advanced failure and success analyses are presented. The result of this is a more detailed understanding of the petroleum system and the different plays. This new type of well evidence can be applied directly in prospect risking for charge, reservoir effectiveness, seal and volumetric calculations (GOR, phase and pay thickness).

This study focuses on using gas data along with different gas ratios calibrated to fields and discoveries. The uncontaminated data is determined by plotting the Gas Quality Ratio (GQR) throughout the whole well. This is followed by the selection of zones of interest where the gas data indicates a higher concentration of hydrocarbons and the GQR is within a range where the data is suitable for analysis.

## Study wells

The wells in this study are:

Nordland Ridge	Nordland Ridge	Nordland Ridge	Helgeland Basin	Trøndelag Platform	Nearby wells
6507/3-6	6608/10-13	6608/11-2 *	6609/11-1 *	6609/10-1 *	6507/3-1 *
6507/6-1 *	6608/10-8	6608/11-3	6610/7-1 *	6609/10-2 *	6607/12-2 S *
6507/6-3 *	6608/10-8 A	6608/11-4 *	6610/10-1 *	6610/7-2 *	6608/8-2 *
6507/6-4 A *	6608/10-9	6608/11-5			6609/5-1 *
6507/6-4 S *	6608/10-G-1 H	6608/11-6			6610/3-1 *
6507/11-10	6608/10-G-2 H	6608/11-7 S			
6507/11-X-4 AH	6608/10-G-3 H	6609/6-1			
6507/11-X-4 H	6608/10-G-4 H	6609/7-1 *			
6507/11-Y-1 H	6608/10-H-1 H	6610/2-1			
6507/12-2 *	6608/10-H-2 H				
6508/1-2	6608/10-H-4 AH				
6608/8-1 *	6608/10-J-1 H				
6608/10-10	6608/10-J-2 H				

\* Reports ready for delivery

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## Project description

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### Hydrocarbon Evaluation:

The gas data used in these studies are generally collected while the wells were drilled, and later verified using the GQR for contamination. To aid the evaluation, Hydrocarbon Evaluation Logs (HEL) have been generated along with Pixler and Spider diagrams. The selected intervals for zones of interest are analysed and interpreted to determine productive and non-productive intervals, hydrocarbon type and characterization within reservoir sections. In addition, wetness of the gas, formation permeability, presence of biodegradable fluids, and water zones may be determined. Uncalibrated GOR is estimated for gas and oil bearing zones.

### Seal Evaluation:

The seal evaluation also utilizes the same data as the HEL, but focuses on different ratios as presented in the Seal Evaluation Log (SEL).

To aid the seal evaluation a SEL has been generated for each well. The SEL consists of several plotted gas ratios that supports the determination of potential seals. The evaluation will consist of interpretation of the whole well, with more in depth analyses on specific intervals of interest.

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## Deliverables and timing

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The project deliverables will consist of the following:

1. Individual reports for each well, containing:
  - Hydrocarbon and Seal Evaluation Logs
  - Hydrocarbon Evaluation
  - Seal Evaluation
  - Mud log data in ASCII format
2. Regional evaluation
3. Digital files of all data and reports.

**Expected completion: 2017**

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## Price and terms

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Cost	per well
Standard price per well	On request
E&P Norwegian Sea study (>30 wells)	On request

### *Terms and Conditions*

Any data licensed will be subject to the signing of a Data Use License Agreement and Supplement.

The operating company within an AMI or JV may licence the data at a rate of 1.0 x the published license fee and any JV Partners may license the data at a rate of 0.7 x the published license fee at the data of order.

All licensed data will be fully invoiced upon signing of a Data Use License Agreement and Supplement. All fees in this proposal are quoted in US dollars and are exclusive of VAT (or any other applicable local taxes or duties.)

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## Optional additional analyses

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Similar well data for the Barents Sea have been obtained as well and is ready for analysis.

At an additional fee, analysis of these data can be made available.

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## Further information and contacts

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For further information, please contact:

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