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| SUMMARY The gas components $\text{C}_1\text{-C}_5$ have been separated from two gas samples from well 15/12-6; DST 1 and DST 2, and the $\delta^{13}\text{C}$ values of methane, ethane, propane, the butanes and CO_2 have been measured when possible. The hydrogen isotopic composition of methane has also been determined. | | | DISTRIBUTION Statoil (10) Andresen, B. Råheim, A. Thronsen, T. File (2) |
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1 INTRODUCTION

Two gas samples from well 15/12-6; DST 1: 2922 - 2930 mRKB and DST 2: 2875 - 2890 mRKB were received and analysed during November and December 1990.

On the samples C₁ - C₅ and CO₂ are quantified. The $\delta^{13}\text{C}$ value is measured on methane, ethane, propane, the butanes and CO₂. In addition the δD value is measured on methane from both samples.

2 ANALYTICAL PROCEDURE

The natural gas samples have been quantified and separated into the different gas components by a Carlo Erba 4200 instrument.

The hydrocarbon gas components were oxidized in separate CuO-ovens in order to prevent cross contamination. The combustion products CO₂ and H₂O were frozen into collection vessels and separated.

The combustion water was reduced with zinc metal in a sealed tube to prepare hydrogen for isotopic analysis. The isotopic measurements were performed on a Finnigan Mat 251 and Finnigan Delta mass spectrometer. IFE's value on NBS 22 is $-29.77 \pm .06$ ‰ PDB.

3 RESULTS

The volume composition of the gas samples is given in Table 1. The results have been normalized to 100%. The stable isotope results are given in Table 2.

The uncertainty on the $\delta^{13}\text{C}$ value is estimated to be ± 0.3 ‰ PDB and includes all the different analytical steps.

The uncertainty on the δD value is likewise estimated to be ± 5 ‰.

Table 1 Volume composition of gas samples from well 15/12-6.

| SAMPLE | IFE no. | C ₁ % | C ₂ % | C ₃ % | iC ₄ % | nC ₄ % | iC ₅ % | nC ₅ % | CO ₂ % | Σ C ₁ - C ₅ | WET- NESS | iC ₄ / nC ₄ |
|-------------------------|------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------------------|--------------|--------------------------------------|
| DST 1, 2922 - 2930 mRKB | 9339 | 73.4 | 13.6 | 6.7 | 0.69 | 1.28 | 0.25 | 0.26 | 3.7 | 96.3 | 0.24 | 0.54 |
| DST 2, 2875 - 2890 mRKB | 9340 | 76.5 | 11.9 | 6.3 | 0.66 | 1.26 | 0.22 | 0.23 | 2.97 | 97.0 | 0.21 | 0.53 |

Table 2 Isotopic composition of gas samples from well 15/12-6.

| SAMPLE | IFE no. | C ₁ δ ¹³ C PDB | C ₁ δD SMOW | C ₂ δ ¹³ C PDB | C ₃ δ ¹³ C PDB | iC ₄ δ ¹³ C PDB | nC ₄ δ ¹³ C PDB | CO ₂ δ ¹³ C PDB | CO ₂ δ ¹⁸ O PDB |
|-------------------------|------------|--|------------------------------|--|--|---|---|---|---|
| DST 1, 2922 - 2930 mRKB | 9339 | -39.7 | -232 | -28.4 | -27.6 | -25.5 | -28.8 | -12.2 | -7.1 |
| DST 2, 2875 - 2890 mRKB | 9340 | -40.0 | -222 | -28.5 | -27.9 | -25.9 | -28.8 | -12.9 | -14.0 |