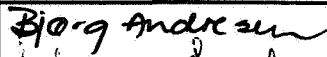
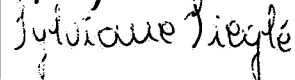
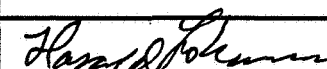
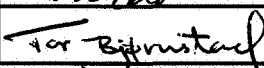


ADDRESS KJELLER Box 40, N-2007 Kjeller, Norway TELEPHONE +47 63 806000 TELEX 76 361 isotp n TELEFAX +47 63 815553		HALDEN N-1751 Halden, Norway +47 69 183100 76 335 energ n		AVAILABILITY In Confidence
REPORT TYPE	REPORT NO. IFE/KR/F-98/012		DATE 1998-01-26	
	REPORT TITLE DATAREPORT ON STABLE ISOTOPES, GAS SAMPLE FROM WELL 15/5-5 (ref. IFE no. 2.5.001.98)		DATE OF LAST REV.	
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SUMMARY One gas sample from well 15/5-5 is analysed for gas and isotopic composition. The work is done in accordance with the "The Norwegian Industry Guide to Organic Geochemical Analyses", Third Edition 1993.			DISTRIBUTION Statoil/Geo Lab Nor (8) Andresen, B. Bjørnstad, T. Johansen, H. Sieglé, S. File (3)	
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	NAME	DATE	SIGNATURE	
PREPARED BY	Bjørg Andresen Sylviane Sieglé	1998-01-26	 	
REVIEWED BY	Harald Johansen	1998-01-26		
APPROVED BY	Tor Bjørnstad	1998-01-26		

1 Introduction

One gas sample from well 15/5-5, Test 1 is analysed for gas and isotopic composition.

On the sample $C_1 - C_5$ and CO_2 are quantified. The $\delta^{13}C$ value is measured on methane, ethane, propane, the butanes and CO_2 . In addition the δD value is measured on methane.

2 Analytical procedures

Aliquots of 0.5 ml are sampled with a syringe for analysis on a Poraplot Q column connected with flame ionisation (FID) and thermal conductivity (TCD) detectors. The detection limit for the hydrocarbon gas components is 0.01 $\mu\text{l/ml}$, for CO_2 0.2 $\mu\text{l/ml}$.

For the isotope analysis 5-10 ml of the gas is sampled with a syringe and then separated into the different gas components by a Carlo Erba 4200 gas chromatograph. The hydrocarbon gas components are oxidised in separate CuO-ovens in order to prevent cross contamination. The combustion products CO_2 and H_2O are frozen into collection vessels and separated.

The combustion water is reduced with zinc metal in a sealed quartz tube to prepare hydrogen for isotopic analysis. The isotopic measurements are performed on a Finnigan MAT 251 and a Finnigan Delta mass spectrometer.

IFEs value on NBS 22 is $-29.77 \pm .06\text{‰}$ PDB.

The uncertainty in the $\delta^{13}C$ value is estimated to be $\pm 0.3\text{‰}$ PDB and includes all the different analytical steps. The estimate is based on repeated analysis of a laboratory standard gas mixture. The uncertainty in the δD value is likewise estimated to be $\pm 5\text{‰}$.

3 Results

The normalised volume composition of the gas sample is shown in Table 1. The stable isotope composition is shown in Table 2. Due to an analytical problem the uncertainty in the reported iC_4 isotope value is larger than indicated by repeated analysis of the laboratory standard gas mixture.

The analytical system has been tested with the standard gas mixture both in advance and after the analysis of the present samples, with acceptable results.

Table 1 Volume composition of gas samples (normalised values) from well 15/5-5

Sample	IFE no GEO	C ₁ %	C ₂ %	C ₃ %	iC ₄ %	nC ₄ %	iC ₅ %	nC ₅ %	CO ₂ %	ΣC ₁ -C ₅ %	Wet- ness	iC ₄ / nC ₄
Test 1	980005	80.2	7.6	6.6	1.1	3.0	0.62	0.73	0.12	99.9	0.20	0.38

Table 2 Isotopic composition of gas samples from well 15/5-5

Sample	IFE no GEO	C ₁	C ₁	C ₂	C ₃	iC ₄	nC ₄	CO ₂	CO ₂
		δ ¹³ C ‰ PDB	δ D ‰ SMOW	δ ¹³ C ‰ PDB	δ ¹³ C ‰ PDB	δ ¹³ C ‰ PDB	δ ¹³ C ‰ PDB	δ ¹³ C ‰ PDB	δ ¹³ C ‰ PDB
Test 1	980005	-50.9	-213	-28.9	-29.8	-29.1	-32.1	-21.1	-7.7
				-28.8	-29.7				-32.1

4 Literature

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