SNEA (P)
DIRECTION EXPLORATION
LABORATOIRE DE GEOLOGIE DE BOUSSENS
-
GEO/LAB Bss n° 2/2318 RP
/ca

30/6-5 WELL (NORWAY)

BETA STRUCTURE

GEOCHEMICAL STUDY OF OIL (RFT 1 : 2874.5 M)
COMPARISON WITH ALPHA STRUCTURE FLUIDS

P. CAILLEAUX

Boussens - August 1982

Reference : Order n° 103421281

- R. CUSSEY - J.M. MASSET - C. AUGIER - J. DUCAZEAUX - E. GROSDIDIER - B. LE THEOFF - F. WALGENWITZ - Report n° 1/2037 RP - "Block 30/6 (Norway) - Synthesis of the studies on 30/6 alpha structure Jurassic deposits - Distributions of sandstone bodies in the Brent Formation and other Jurassic prospects".

- R. CUSSEY - Report n° 1/2175 RP - "30/3-2 well (Norway) - Sedimentological interpretation of the cores of the Jurassic deposits - Some implications on the 30/6 block synthesis".

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A B S T R A C T

The analyses carried out on the RFT 1 oil sample from 30/6-5 well (Norway) show mainly that :

- this oil, β structure, has the same Upper Jurassic origin than the oils and condensates from α structure,

- it is slightly less mature than the other fluids in the 30/6 block.

4 pages
1 table
3 figures

In 30/6-5 well (β structure) the organic geochemistry analyses were carried out only on the oil sample recovered by test (RFT 1) in Brent Formation at 2874.5 m.

The gross composition of this oil and calculated indices are given in table 1, its chromatograms of thermovaporized, saturated and aromatic fractions are given on plate 2.

This oil is compared with oils from 30/6-4 and condensates from 30/6-1, 2 and 3.

The oil from 30/6-5 RFT 1 shows similarities with the oils and condensates from α structure particularly in origin. Slight differencies appears in details :

- The specific gravity is 0.834 in β versus 0.853-0.857 in 30/6-4 oils and 0.86 in 30/6-3 FIT 2.
- The sulfur content of the distillation residue is 0.190 % in weight vs 0.300-0.305 in 30/6-4. In aromatic fraction the thiophenic compounds are also less abundant.

The usual catagenetical indices as well the X2 ratio (nC7/dimethylcyclopentane) as the Pristane/nC17 and Phytane/nC18 ratios show a slightly lower degree of evolution for the β oil than for the other 30/6 oils.

Genetically the β oil exibits the same characteristics as the α oils and condensates particularly the relative proportion of isoprenoids and n-alkanes : (Pristane/nC17)/(Phytane/nC18) = 1.30.
In the 30/6 block this genetical characteristic has been found in the 30/6-4 late Portlandian only, where a marine sapropelic facies has been observed. Thus all the 30/6 fluids are thought to have been sourced by a sapropelic Upper Jurassic source rock, but more mature than already met in 30/6.

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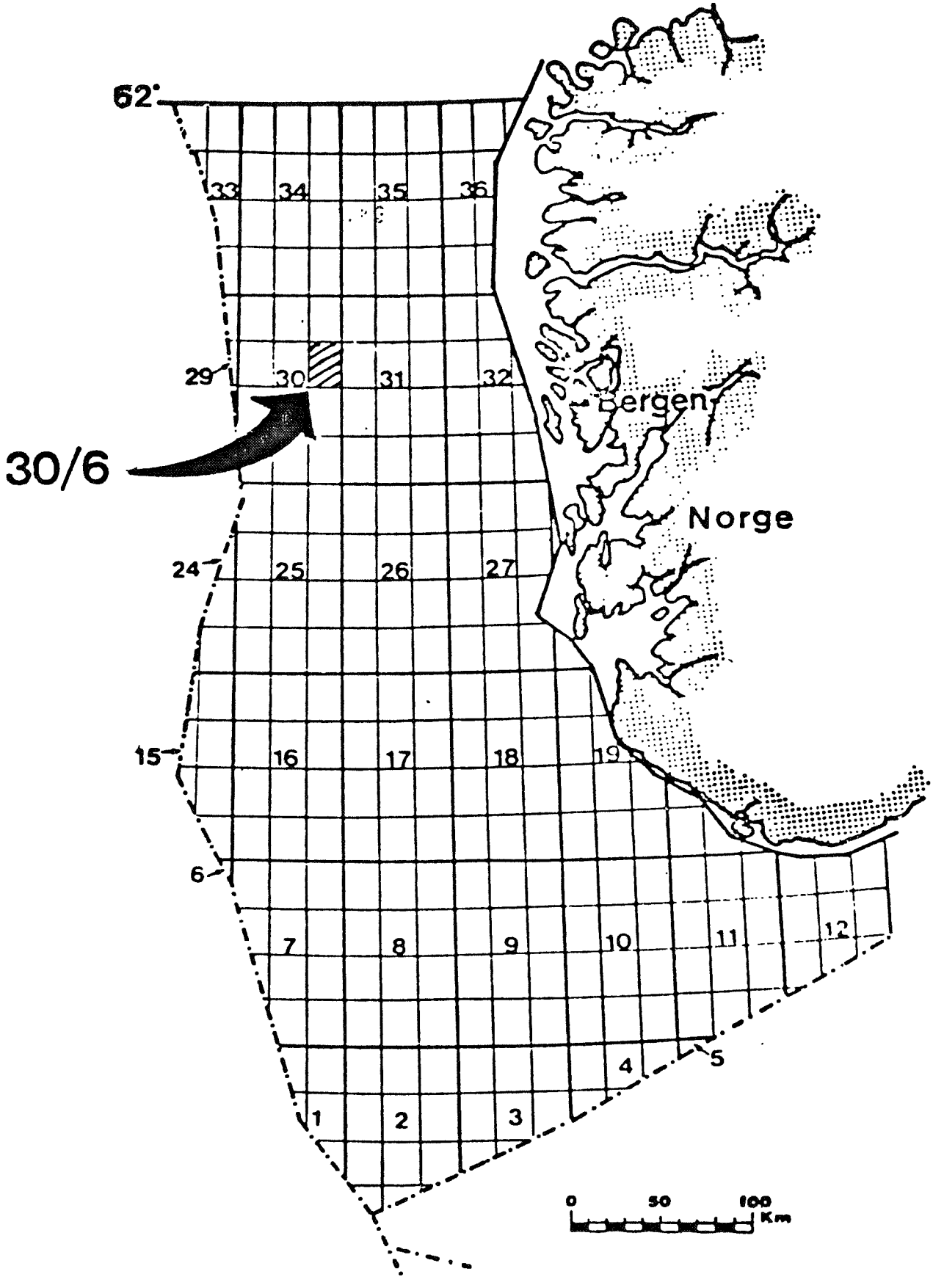
* GEO/LAB Bss n° 0/1961 RP
30/6-1 well - Organic matter study of the Jurassic series -
P. CAILLEAUX - P. ROBERT - August 1980.

* GEO/LAB Bss n° 1/2105 RP -
30/6-1, 2 and 3 wells - Geochemical analyses of fluids (oil, condensates and gases) -
P. CAILLEAUX - July 1981.

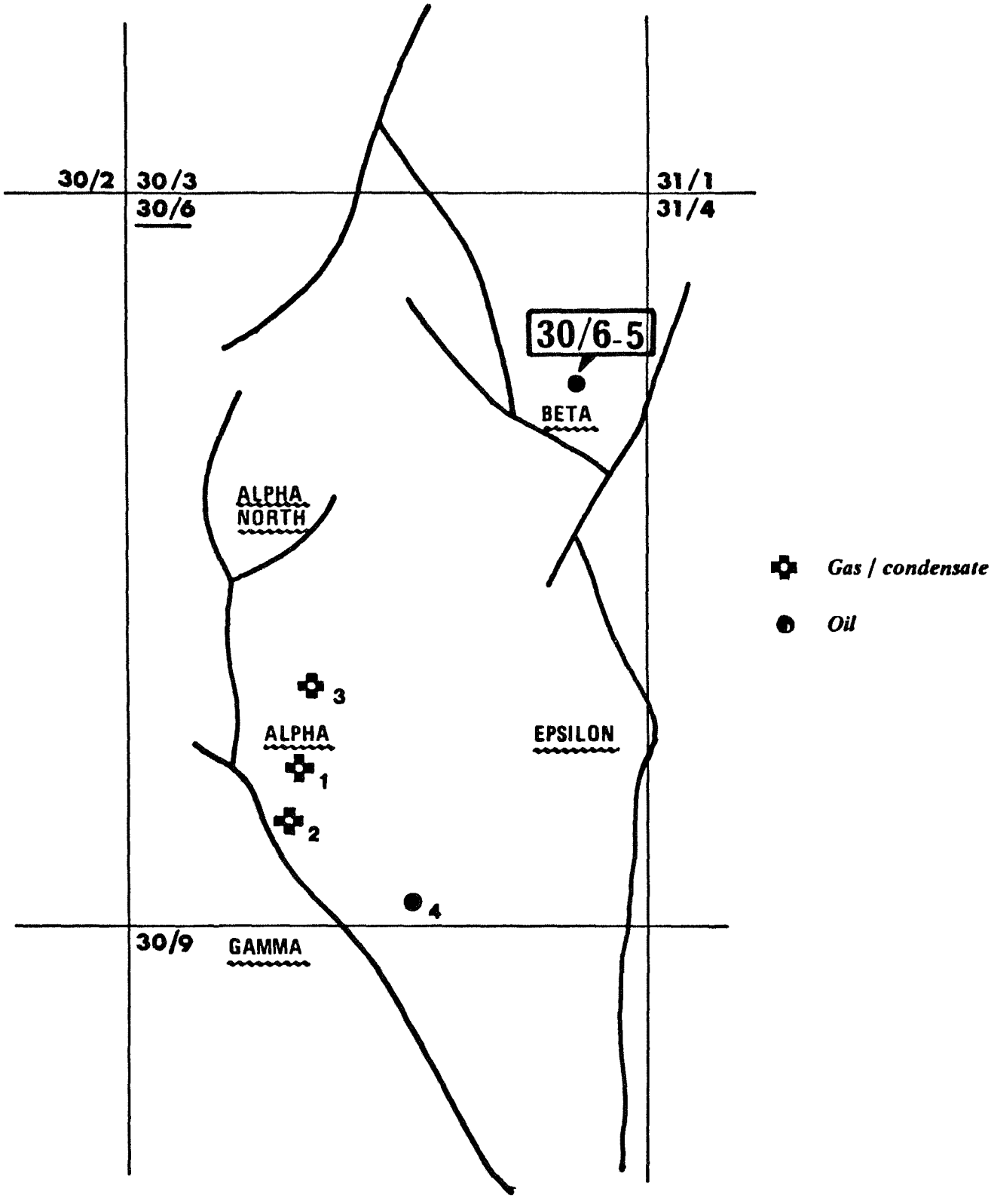
* GEO/LAB Bss n° 2/2252 RP
30/6-4 well - Biostratigraphy, sedimentology and organic geochemistry (oils an rocks) -
P. CAILLEAUX - P. ROBERT - R. CUSSEY - J. DUCAZEAUX - J.L. VOLAT - April 1982.

TABLE 1 - GEOCHEMICAL ANALYSES OF 30/6-5 OIL

	Test	RFT 1
	Depth	2874.5 m
	Formation	Brent
	Specific Gravity (15°C)	0.834
	Sulfur (% weight)	0.190
Composition of total product	Distillate (D)	30.2
	Asphaltenes	2.6
	Resins	5.7
	Saturated HC (S)	43.1
	Aromatic HC (A)	18.5
	S/A	2.33
	S + D	73.3
C5 - C15	X1 = nC6/MCP	2.2
	X2 = nC7/DMCP	4.08
	Y1 = nC7/TOL	4.67
	Σ TV % Total product	34
	n Alk % TV	32
C15 - C30	n Alk % Sat.	18
	A = Pristane/nC17	0.93
	B = Phytane/nC18	0.71
	Pristane/Phytane	1.38
	A/B	1.30



30 / 6 · LOCATION MAP



30 / 6 - 5 - LOCATION MAP

S. N. E. A. (P)

DEPARTEMENT LABORATOIRE DE GEOLOGIE DE BOUSSENS

PAYS *Country* : **NORWAY**

SONDAGE *Well* : **30 / 6 - 5**

Huile *Oil*

Cote *Depth* **2874,5 m**

Identification *Identification* **RFT 1**

Formation *Formation* **BRENT**

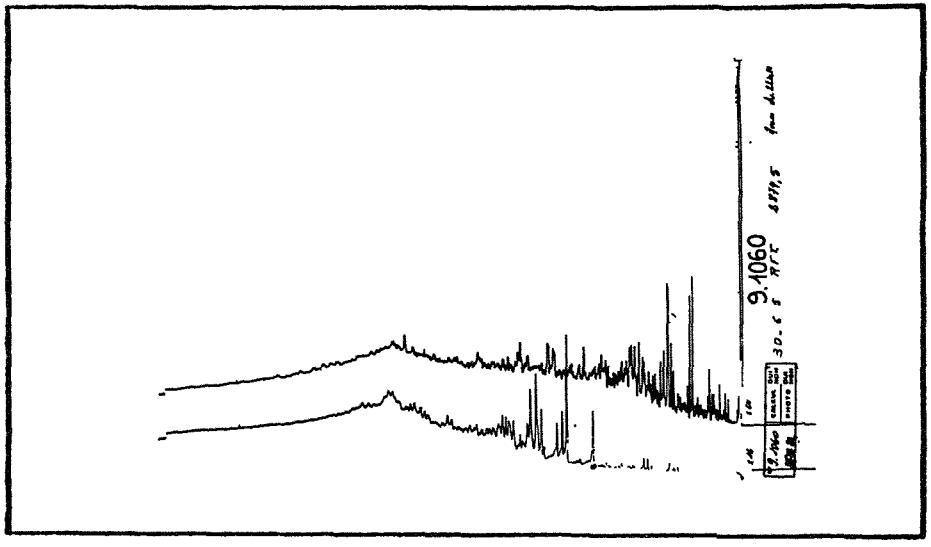
Age *Age*

Specific gravity 0,834

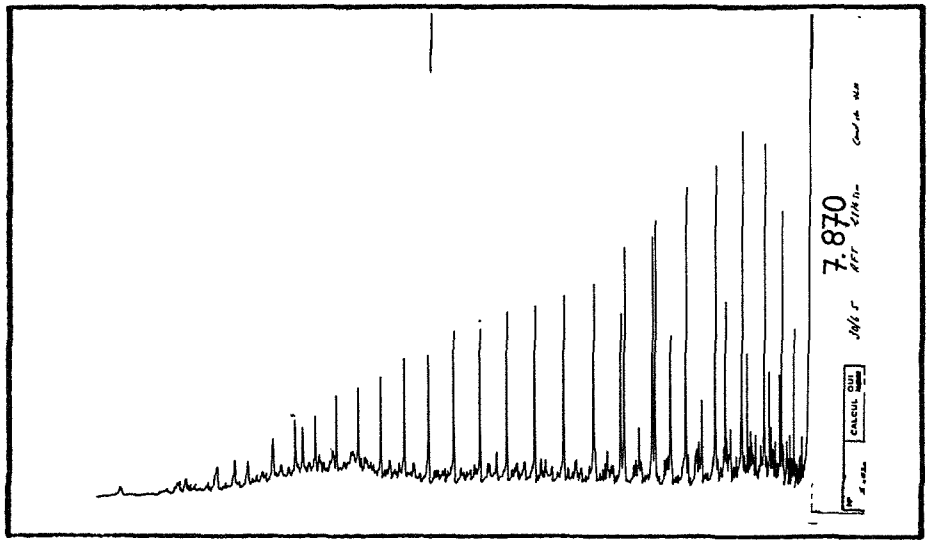
Sulfur (%) 0,190

Composition du produit total (%)
Composition of total product

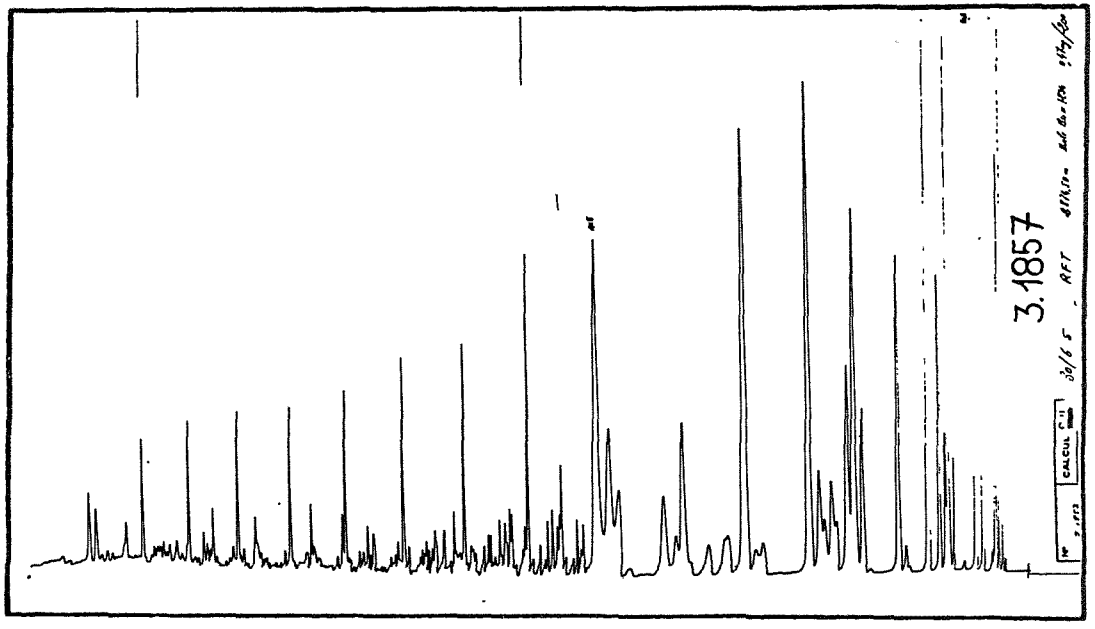
Asphaltènes *Asphaltenes*	As	: 2,8	
Résines *Resins*	R	: 5,7	
HC saturés *Saturated HC*	S	: 43,1	$\frac{S}{A}$ = 2,33
HC aromatiques *Aromatic HC*	A	: 18,5	
Distillat *Distillate*	D	: 30,2	



HC AROMATIQUES *AROMATIC HC.*



HC SATURES *SATURATED HC.*



HC THERMOVAPORISES *THERMOVAPORIZED HC.*

A.3592