

BP003270

NOCS 2/11-1 W 25.1.



**BP PETROLEUM DEVELOPMENT LTD.
(NORWAY)**

Geochemical analysis of an oil
sample from NOCS Well 2/11-1.

By S.P. Lowe and P. Callow

Memorandum

EXPLORATION LIBRARY
NCS 2/11-1 W 25.1.

AMG



To DR. D. SOUTH,
BP PETROLEUM DEVELOPMENT OF NORWAY LTD.,
STAVANGER.

When did we ask
for this?

From T. DORAN,
GEOCHEMISTRY BRANCH,
EPD/SUNBURY

Ourref EPD/TD/6105

Date 31st October, 1979

Your ref

Subject GEOCHEMICAL EXAMINATION - OIL FROM 2/11-1

Please find the enclosed report for our work on the above sample. I apologise for our part in the delay, but you will probably recall that this sample presented some difficulty in being obtained and arrived some months late. For our part in the delay, I can only offer the usual reason - overload of work at a higher priority rating.

T. DORAN

- c.t. Dr. D.A.L. Jenkins
- Mr. L.P. Newman
- Dr. F. Howitt
- Mr. G.C. Speers
- Dr. S.P. Lowe
- Mr. T. Doran (2)
- Files (2) 8/REG/NCS

PETROLEUM GEOCHEMISTRY LABORATORY BRIEF REPORT NO. 49/79

GEOCHEMICAL ANALYSIS OF AN OIL

SAMPLE FROM NOCS WELL 2/11-1 W 25. 1

By S.P. Lowe and P. Callow

The sample of crude oil from the NOCS Well 2/11-1 received at Sunbury was derived from FIT 1. The Inspection Properties of the crude oil show it to be similar in many respects to other North Sea Crudes. It is a high quality oil with low asphaltene and sulphur contents. However, the wax content is only slightly lower than average for North Sea oils (\approx 6% wt).

The type analysis of this oil together with the high resins content (23.6% wt) and apparently low saturates content (43.7% wt) suggests an oil of only moderate maturity. The relatively high value of 1.06 calculated from the n-alkane distribution is consistent with the suggestion that the oil is only moderately mature. The n-alkane distribution further suggests a high input of terrestrial material.

The stable carbon isotope ratio $\delta^{13}\text{C}_{\text{PDB-1}}$ of -29.0 per mil is indicative of a marginal marine source with a moderately high terrestrial input. The sterane and pentacyclane distributions are not typical of those of North Sea Production crudes, but more typical of an oil that has not reached thermal maturity.

SPL/VAF
31st August 1979

TITLE: GEOCHEMICAL ANALYSIS OF OIL SAMPLE FROM 2/11-1

TRUE BOILING POINT DATA

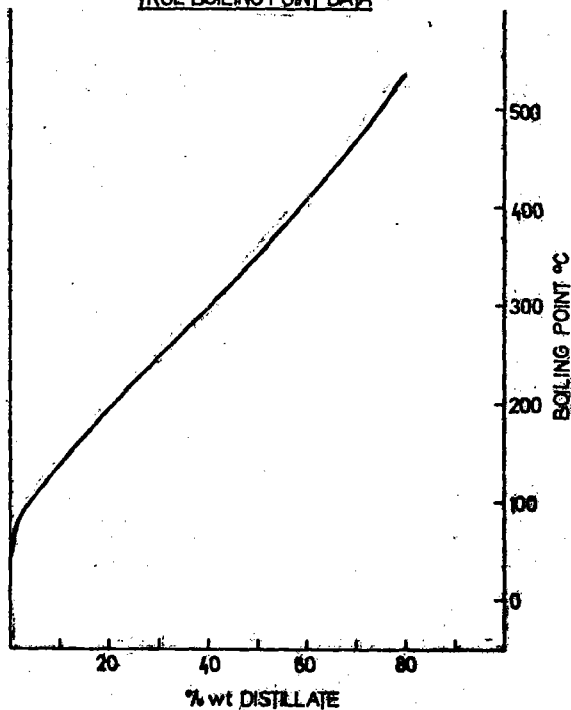
WELL/LOCATION: NOCS 2/11-1

FIG. 1

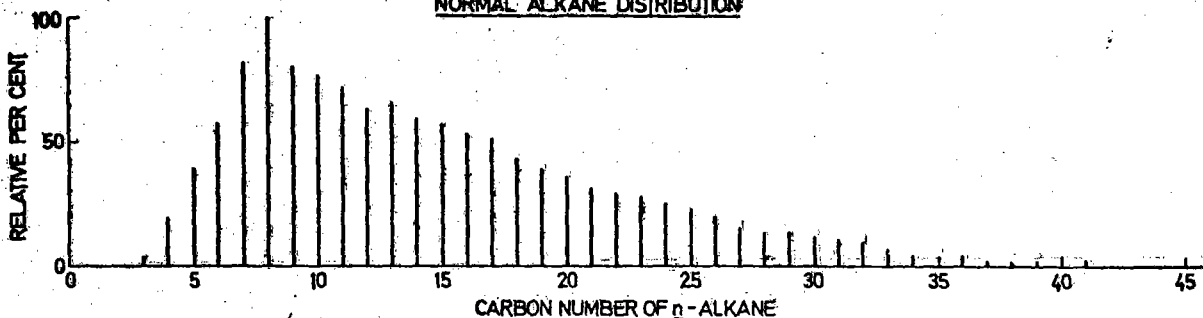
DEPTH: —

GEOCHEMICAL DATA:

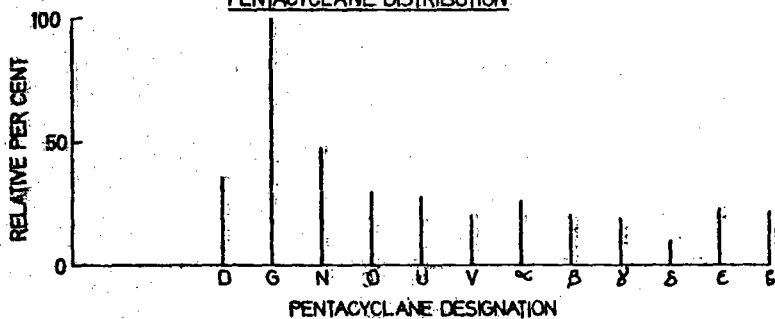
API GRAVITY	60°F		32.3
SPECIFIC GRAVITY	60/60°F		0.8640
SULPHUR		%wt	0.37
WAX		%wt	5.5
WAX m pt		°C	57
FOUR POINT		°C	9
ASPHALTENES		%wt	<0.85
NICKEL		ppm	9
VANADIUM		ppm	5
NICKEL/VANADIUM RATIO			1.8
NITROGEN		ppm	1870
TOTAL ACIDITY		mg KOH/g	0.12
KINEMATIC VISCOSITY	(cSt AT 70°F) (cSt AT 100°F)		16.9
TYPE ANALYSIS			
N+P		%wt	43.7
(A+H) ₁		%wt	32.7
(A+H) ₂		%wt	
RESINS		%wt	23.6
CARBON ISOTOPE RATIO $\delta^{13}C_{\text{‰}}$			
n-ALKANE CPI			-29.0
PRISTANE/PHYTANE RATIO			1.06



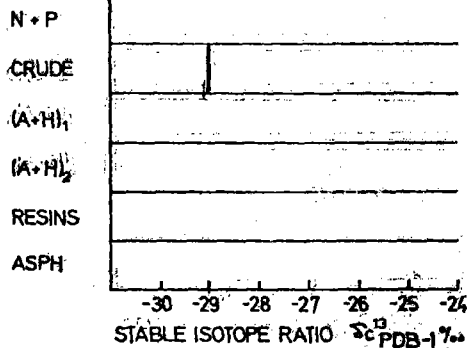
NORMAL ALKANE DISTRIBUTION



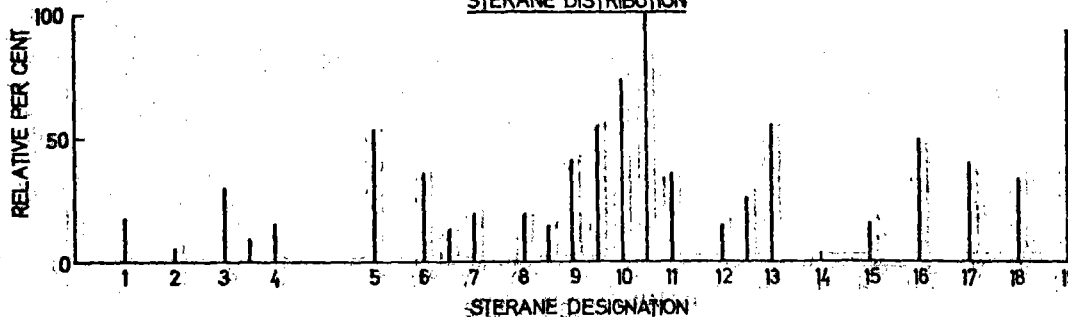
PENTACYCLANE DISTRIBUTION



STABLE CARBON ISOTOPE DISTRIBUTION



STERANE DISTRIBUTION



ACYCLIC ISOPRENOLID DISTRIBUTION

