

Geochemical analysis of cores

from well 6506/12-3

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Tittel Geochemical analysis of cores from well 6506/12-3		
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Stikkord 6506/12-3 asphaltenes in 3 cores

Kort sammendrag <p>3 cores of different colours from 3896.20-3898.60 m were extracted for hydrocarbons. No qualitative difference in the hydrocarbons was found. In the darkest core there was a very high content of asphaltenes.</p>
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1 GEOCHEMICAL ANALYSIS OF CORES FROM WELL 6506/12-3

1.1 Introduction

Three cores from the lower-middle Jurassic Tomma formation were analysed.

1.2 Analytical

The following cores were extracted.

Statoil code	Core no.	Depth	Lithological description
S1377	1	3896.35-.45	Light grey, yellow ss, just below core no. 3
S1378	3	3896.20-.30	Grey to dark grey ss, near base of gradually darkening layer.
S1379	6	3898.40-.60	Light grey, yellow ss.

The cores were crushed in a centrifugal mill for 1 minute and then extracted with dichloromethane:methanol; 93:7. The solution was filtered and then analysed by means of gas-chromatography. Results are shown in fig. 1, 2 and 3 respectively. The asphaltenes were precipitated from the extracts. The results are listed in Table 1.

Table 1. Concentration of extracted organic material in rock.

Statoil code	EOM (ppm)	Asph.in % of EOM
S1377	3195	4.0
S1378	8191	54.5
S1379	4562	3.7

2 RESULTS

The three analysed cores from 3896.20-3898.60 m contain hydrocarbons. The amount of hydrocarbons varies from 3195 ppm to 8191 ppm. The GC-chromatograms show no significant differences in the quality of the hydrocarbons. Table 1 indicates however that the asphaltene content is very high in the dark-colored core 3. This might indicate "gravity" separation as described in a report from Geochem Laboratories performed on this well. The report includes a Correlation Study involving DST fluids and hydrocarbon shows from the middle-lower Jurassic sands.

It concludes that the abundance of C₁₅₊ hydrocarbons seems to vary in a cyclic manner within the 3837-4264 m interval. An upward diminution in C₁₅₊ hydrocarbon abundance within each reservoir unit is believed to be due to "gravity" separation of the gas-condensate and associated crude oil.

The three cores analysed indicate that there might exist smaller intervals with the same kind of cyclicity within bigger zones as described in the Geochem report. But the high content of heavy asphaltenes in core 3 seems to be rather high for "gravity" separation of an oil alone. Other factors are influx of gas and water-washing.

Case S1377

4,1,1 6506/12-3

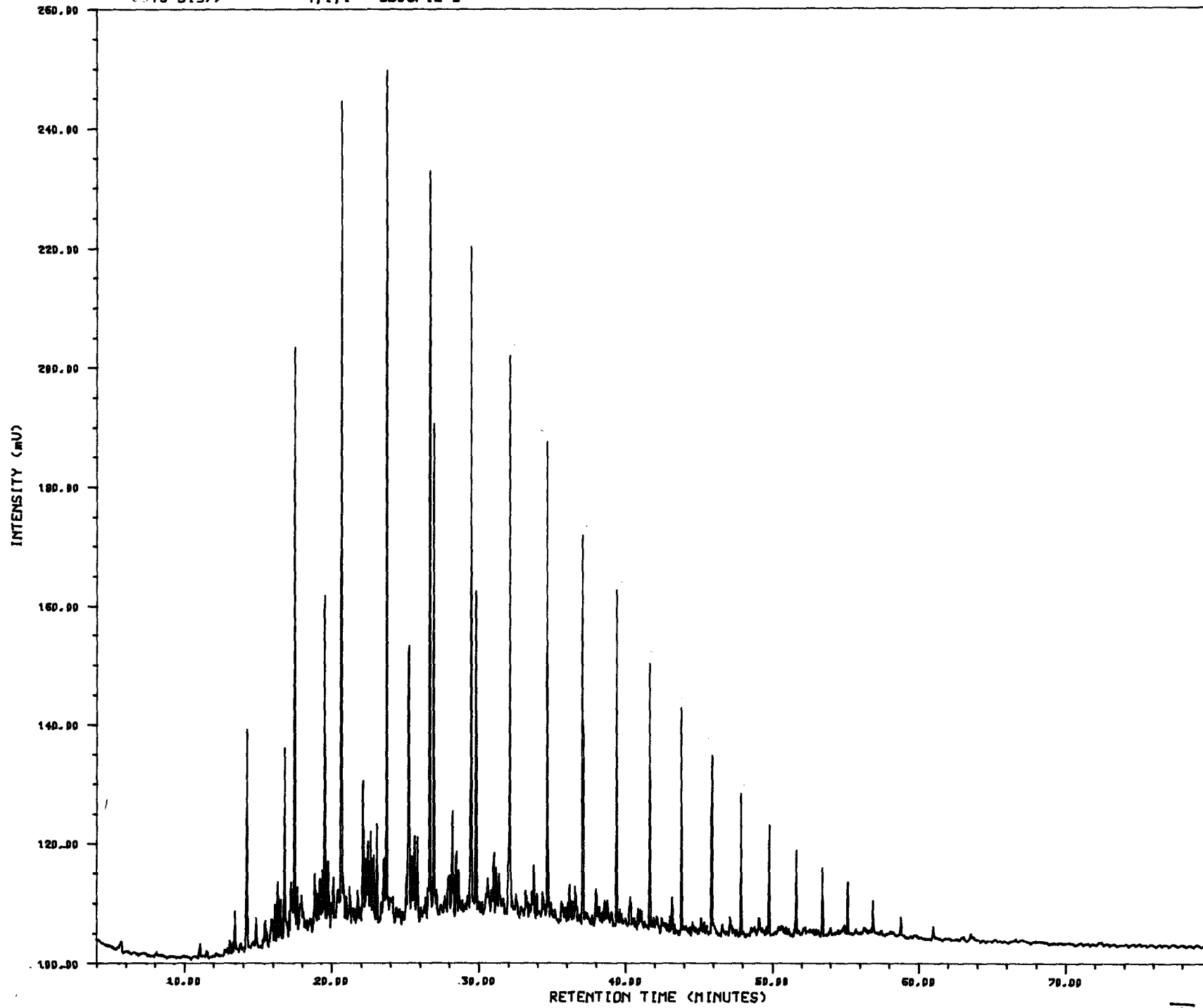


Fig 1.

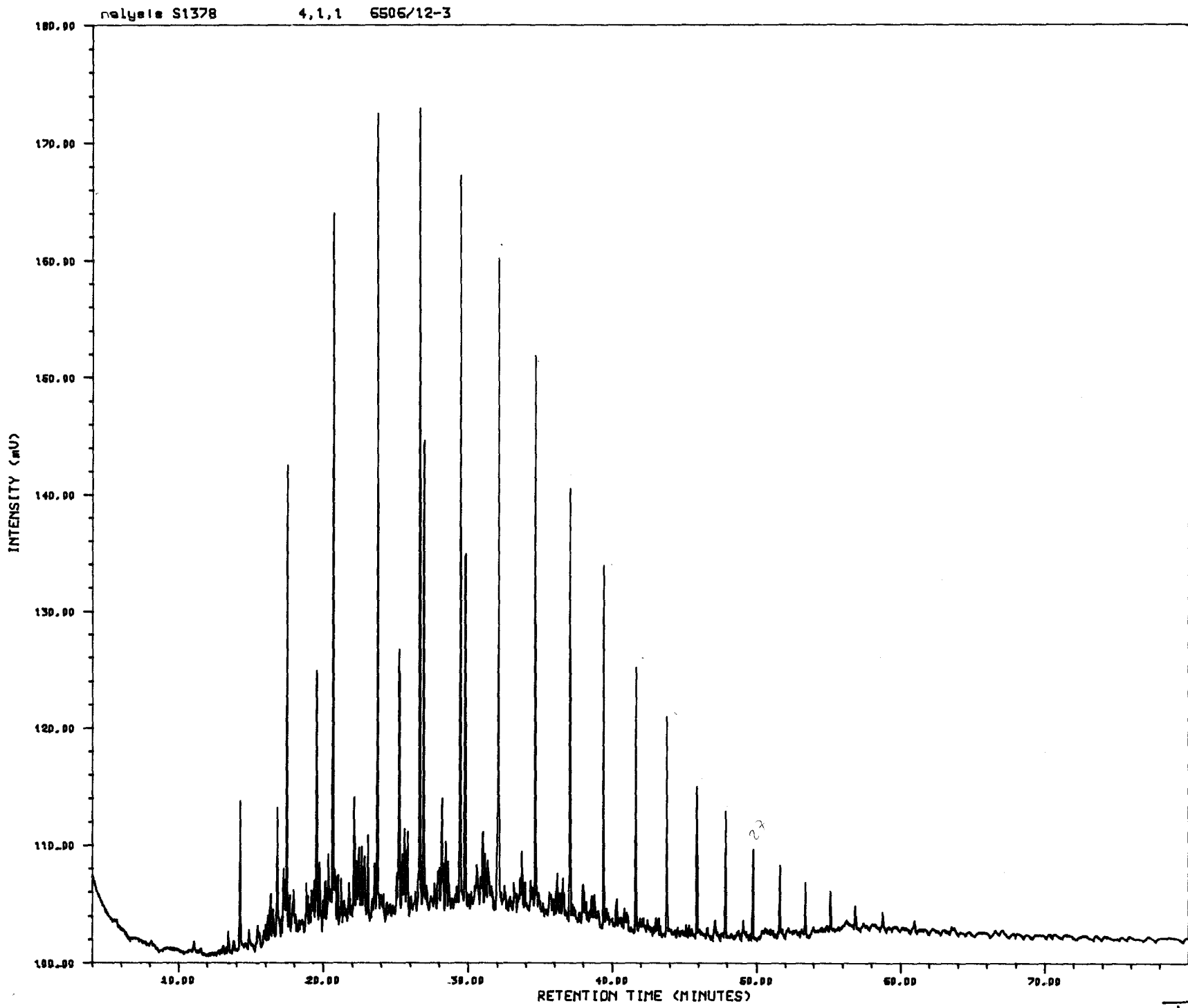


Fig. 2

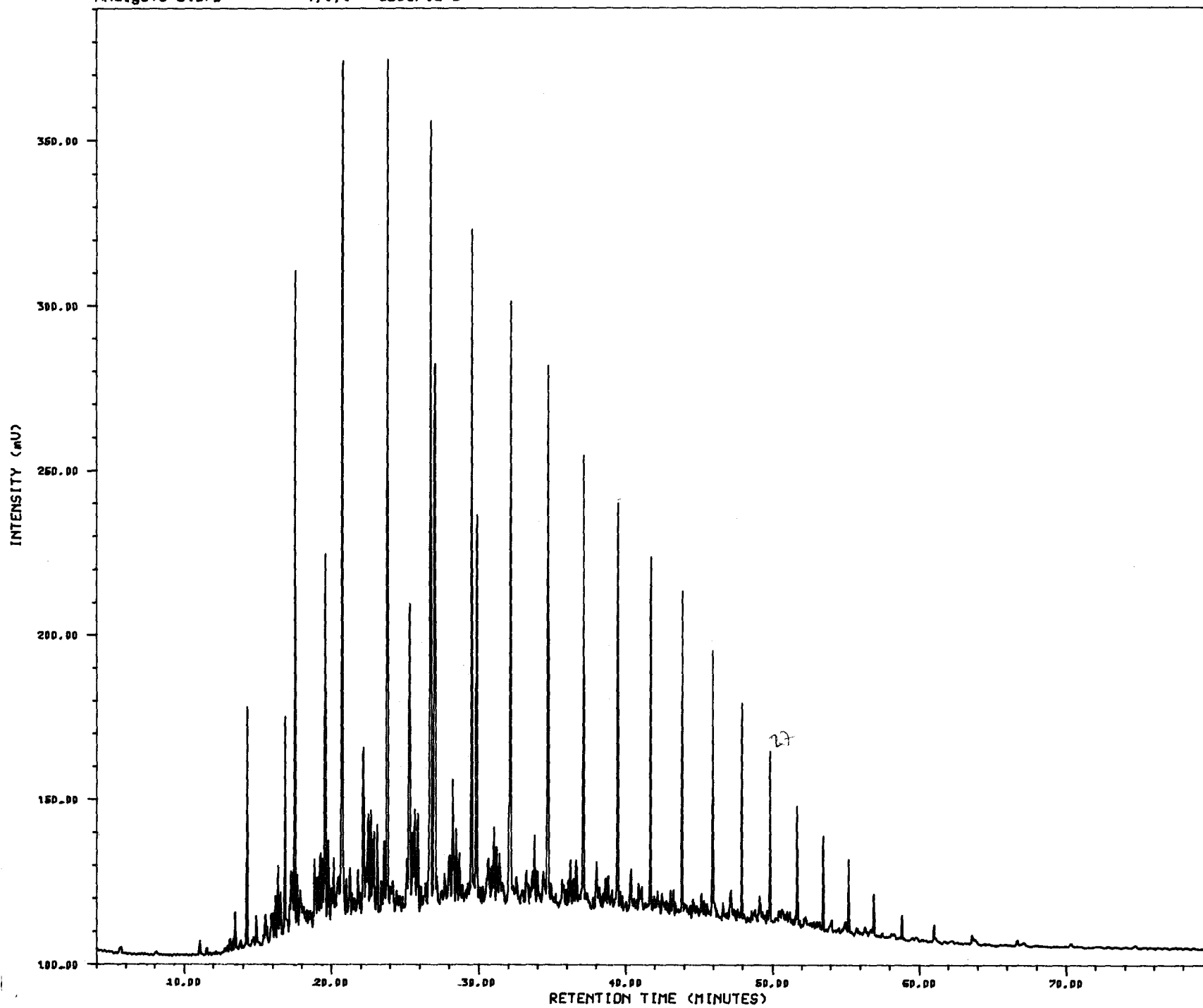


Fig. 3