



Norsk Hydro

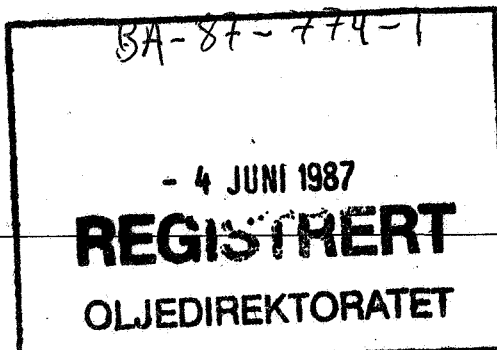
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Rapport/Report

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Resymé Konklusjon Anbefaling
Summary Conclusion Recommendation



Four organic facies have been delineated based upon richness and type of organic matter.

The Tertiary/Cretaceous section have a poor source rock potential. The Lower Cretaceous section is partly contaminated by migrated hydrocarbons.

The Upper Jurassic section (Nesna and Engelvær Fms.) have a good source potential for oil and gas. The relative amount of terrestrially derived organic matter is highest in the Engelvær Fm.

The Middle and Lower Jurassic sandstones have no source potential but are heavily contaminated by migrated hydrocarbons, and are partly oil stained. Thin shale/coal stringers interbedded in the sandstones have excellent source potential for oil and gas.

The Triassic section has no source potential.

The rich Upper Jurassic source rocks are marginally mature with respect to oil generation (Ro 0.43 %), and have not yet generated any significant amounts of hydrocarbons.

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I. INTRODUCTION

This report gives the results of the source rock evaluation and maturity estimations of well 6407/7-2.

Well 6407/7-2 was drilled by Norsk Hydro Produksjon A/S, was spudded 19.11.86 and reached T.D. at 3323 m RKB in Triassic interbedded sandstones/claystones.

A well location map is given in Fig. 1.1.

Screening by 'OilShow Analyser' of the Jurassic section in the well was undertaken by Exlog. Based on these results intervals to be covered by Side Wall Cores (SWC) were selected. Selected SWCs and CCs (Core Cuttings) were analysed in Norsk Hydro Research Center in Bergen, Norway.

The aim of these analyses were to define organic facies and depositional environments within this well, and to establish a reliable maturity profile.

Vitrinite reflectance measurements have been undertaken by Geooptics in Newcastle upon Tyne. Interpretation and compilation of this report has been carried out at Norsk Hydro Research Center in Bergen.

A list of samples selected for geochemical analysis is given in Table I.1.

Fig. I.2. gives a summary of the source rock evaluation and thermal maturities for well 6407/7-2.



II. SOURCE ROCK EVALUATION

II.1. RockEval and TOC analysis.

Well 6407/7-2 has been screened by Oil Show Analyser giving both the traditional RockEval parameters and TOC results. Analysis were carried out on 76 cuttings samples, 110 core samples and 75 SWCs. In addition, some samples from coaly horizons have been analysed by Norsk Hydro Research Center in Bergen.

The RockEval and TOC data are listed in Table II.1.1. All the Exlog data have been plotted versus depth in Fig. II.1.1..

Based on these results the well can be divided into four facies based on lithology and content of organic matter:

Organic Facies 1 (1716 m -2638 m) Tertiary/Cretaceous:

This section consisting mainly of grey to brown claystones gave low pyrolysis yields (S_2). This suggests a poor source rock potential. TOC values average 1.2%. The amount of pyrolysable hydrocarbons (S_2) are averaging 1.5 kgHC/t rock. Some horizons, however, display values in excess of 2 kgHC/t rock of pyrolysable hydrocarbons. One sample (2587 m) show excellent source rock properties with a TOC value of 8.05 % and S_2 of 29.9 kgHC/t rock.

Organic Facies 2 (2638 m - 2679 m) Upper Jurassic:

This section which consists of Upper Jurassic dark grey to green shales of the Nesna and Engelvær Fms. can according to the screening data be classified as good source rocks. Average organic matter content is 3.96 % TOC, and 11.3 kgHC/t rock of pyrolysable hydrocarbons. This gives an average Hydrogen Index ($100 \times S_2/TOC$) of 285 mgHC/g TOC. Two SWC samples (2640 m and 2650 m) show an excellent source potential with TOC values of 7.56 % and 8.00 % and S_2 values of 36.9 and 37.7 kgHC/t rock respectively.



The Hydrogen Indices (HI) for the two rich SWCs indicate a Type II kerogen (488 and 471 mgHC/g TOC). The rest of the Hydrogen Indices suggest a mixed Type II/III to dominantly Type III kerogen.

TOC values are plotted versus depth in Fig. II.1.2. and show that the source rock quality in general is best in the Upper part of the interval (Nesna Fm.) decrease downwards in the Engelvær Fm. There is a slight increase in quality in the bottom part of the interval.

Organic Facies 3 (2679 m - 2934 m) Middle/Lower Jurassic:

This facies consists mainly of sandstone with thin interbedded claystones, shales and coals. Most of the analysed samples in the cored section are apparently heavily contaminated by migrated hydrocarbons. Analysis of the uncontaminated fine grained argillaceous and coaly sections suggest mainly a poor source rock potential.

Some thin shales/coals in the lower part of the section (2838 m - 2913 m) have excellent source potential with pyrolysis yields extending up to 200 kgHC/t rock with high Hydrogen Indices indicating oil prone organic matter.

Organic Facies 4 (2934 m - 3315 m) Triassic:

This section consists of massive sandstones with interbedded claystones. The highest TOC values recorded from this section is 1.14 %. Pyrolysable hydrocarbon yield is consistently low, averaging 0.2 kgHC/t rock



II.3. Gas chromatography of saturated hydrocarbons.

All gas chromatograms including the normalised distribution of the n-alkanes and regular isoprenoids are given in Appendix I. Some samples have not been group type separated due to limited amounts of extractable organic matter. The chromatograms of the total EOM are given.

Table II.3.1. lists some of the molecular ratios calculated from the integrated gas chromatograms of the saturated hydrocarbons.

In the samples down to 2500 m, biomarkers are clearly visible in the gas chromatograms indicating a relatively low maturity of this section. This is supported by the high Pristane/n-C₁₇ ratio of these samples. This ratio decreases with depth reflecting the generation of n-alkanes from the kerogen with increasing thermal stress resulting in higher Pristane/n-C₁₇ ratios. Exceptions, however, are seen in the coal samples from 2881 to 2913 m.

The Pristane/Phytane ratio is relatively high in all samples, which could suggest an oxic depositional environment. This ratio is also influenced by the type of organic matter which could contribute to the high ratio, particularly in the interval from 2638 to 2661 m. The Pristane/n-C₁₇ and Pristane/Phytane ratios are plotted versus depth in Figure II.3.1.

The two samples at 2673 and 2678.8 m display a smooth unimodal n-alkane distribution suggesting contamination by migrated hydrocarbons. The other samples down to the sandstone at 2870 m show a n-alkane distribution dominated by heavy compounds and high CPI-1 indices, indicating immature sediments with input of mixed organic matter.

The sandstones at 2872, 2874 and 2876 m are clearly impregnated by migrated, fairly mature hydrocarbons, displaying a smooth unimodal n-alkane distribution with a maximum below n-C₁₇ and a low Pristane/n-C₁₇ ratio.

The gas chromatograms of the coal samples show a very broad hump of unresolved compounds caused by a high content of naphthenes.



II.4. Gas chromatography of aromatic hydrocarbons.

All gas chromatograms of the aromatic hydrocarbons are given in Appendix II.

The chromatograms of the samples of the upper part of the well (1716 - 2251 m) appear without any distinct pattern typical of the aromatic fraction of very immature samples. Retene (1-methyl-7-isopropylphenanthrene) seems to be present in these samples, indicating contribution from terrestrially derived organic matter.

From 2425 m down there is a maturation of the aromatic fraction resulting in a gradual appearance of only substituted polycyclic aromatic hydrocarbons like naphthalene and phenanthrene. The methylated phenanthrenes seem to dominate over the naphthalenes, but this is most likely due to an artifact caused by the concentration procedure.

There is no apparent maturation trend in the distribution of the methyl phenanthrene isomers. The 1- and 9-methyl phenanthrenes isomerise to the 2- and 3-methyl phenanthrenes with increased thermal stress, but this reaction is influenced by the matrix (type of organic matter) being much slower in a Type II than a type III kerogen.



II.5. Biological marker distribution.

The saturated and aromatic hydrocarbon fractions have been analysed by GC-MS using Selected Ion Monitoring (SIM) for the distribution of biological markers of the sterane and triterpane type in the saturated fractions, and aromatic steroids in the aromatic fractions.

Biomarker fragmentograms (m/z 191 and 217 from the saturated fractions and m/z 231 and 253 from the aromatic fractions) are given in Appendix III together with a tentative identification of selected peaks.

II.5.1. Steranes and Triterpanes.

The two samples from 1716 m and 1824 m are totally dominated by 28,30-bisnorhopane. The relative high concentrations of C_{30} and C_{27} steranes suggest a predominantly marine source. There is a very low concentration of rearranged steranes indicating a low abundance of acidic clay minerals in this section.

The sample at 1956.5 m is totally dominated of C_{27} steranes typical of marine deposits, while the triterpanes are dominated by thermodynamically unstable neohopenes typical of low maturity sediments.

The samples from 2025 m to 2632.5 m all contain mixed marine/terrestrial organic matter and is immature. Some of the samples are analysed only as deasphalted extracts, and the m/z 217 fragmentograms are often contaminated by non-hydrocarbons. The sample at 2075 m and 2251 m are rich in low molecular weight (C_{20} - C_{22}) steranes and these compounds thus appears to be source specific and not principally related to maturity.

The Upper Jurassic samples in the interval 2638 m to 2650 m (Nesna Fm.) are all dominated by C_{27} steranes indicating an organic matter of marine origin. The distribution of the triterpanes is very uniform within this interval. The samples from 2653 m to 2695 m (Engelvær Fm.) display a gradual increase in the relative concentration of C_{29} steranes with depth, indicating a higher input of terrestrially derived material in this interval.



In the other samples down to T.D., except those that are obviously contaminated by mature migrated hydrocarbons, the extracts are dominated by C_{29} steranes, indicating a further increase in the input of terrestrially derived organic matter.

The non-contaminated triterpanes all have low T_s/T_m ratios typical of terrestrially derived organic matter. Most of the samples and particularly the coal samples contain an unidentified C_{30} -triterpane eluting between hopane and moretane. This compound might be a terrestrial marker, typical for many of the coals in the Haltenbanken area.

The samples at 2872 m, 2874 m, 2876 m, 2952 m, 3032 m, 3109.5 m, 3243 m and 3298 m are obviously contaminated by migrated hydrocarbons because they appear to have a higher maturity than the trend within this well.



II.5.2. Aromatic Steroids.

The aromatic steroids may also be used as sensitive source indicators, particularly the carbon number distribution of the monoaromatic steroids can be used in this context.

The m/z 231 and m/z 253 fragmentograms are given in Appendix III.

There is a considerable variation in the distribution of the monoaromatic steroids (M/z 253) in the Tertiary/Cretaceous part of the well reflecting both maturity and source variations.

In the Jurassic part of the well many of the features observed in the nonaromatic steroids are reflected in the monoaromatic steroids. This is normal since the monoaromatic steroids are believed to be derived from the non-aromatic steroids.

The two lower samples in the Nesna Fm. (2647 m and 2650 m) have a much higher relative abundance of monoaromatic C₂₇ steroids than the samples from 2638 m and 2640 m. This might suggest a higher marine influence in the lower section of the Nesna Fm.. The two samples from 2653 m and 2673 m (Engelvær Fm.) are richer in C₂₉ monoaromatic steroids suggesting a higher terrestrial input to the organic matter in this interval.

In most of the deeper samples the m/z 253 fragmentograms are of very poor quality probably as a result of the group type separation.



II.6. Pyrolysis-Gas chromatography.

The pyrolysis-gas chromatograms (pyrograms) are given in Appendix IV, and the quantitative results are listed in Table II.6.1.

The sample from 2611 m (Cretaceous) is dominated by non-liptinitic material and gaseous hydrocarbons typical of gas-prone source rocks of predominantly marine origin.

The pyrograms from the interval 2638 m to 2653 m are all rich in liptinitic material, and are dominated by a homologous series of alkane/alkenes extending up to C_{30} . The ratio of xylene/n-octene is less than 1 in all these samples suggesting a predominantly marine organic matter. All the samples contain prist-1-ene typical of oil-prone organic matter at low maturities.

In the samples in the interval from 2661 m to 2695 m (Engelvær Fm) there is a gradual increase in the relative contents of humic material with depth. The xylene/n-octene ratio changes from 0.93 to 1.59. This parallels the change in the composition of the steranes which also indicate an increase in the input of terrestrially derived humic material with depth through the Engelvær Fm.

The sample at 2739.4 m (Tomma/Leka Fm.) are relatively rich in liptinitic material, but the homologous series of n-alkanes/alkenes does not extend beyond C_{22} suggesting that this section is mainly condensate prone while there is a predominance condensate range products from the pyrolysis-GC.

The coaly samples in the interval 2888.1 m to 2913 m are all dominated by gaseous hydrocarbons and aromatic hydrocarbons derived primarily from humic material. These will give rise to gas only.

The sample from 2934 m (Hitra Fm.) is richer in liptinitic material than the coaly material above and will be condensate prone. There is very little high molecular weight liptinitic material in this sample.



II.7. Visual Kerogen Analysis.

The results from the visual kerogen analysis are listed in Table II.7.1. and are presented as bar graphs in Fig. II.7.1.

The Cretaceous samples are dominated by woody and coaly material indicating a Type III kerogen. The relative amount of herbaceous material (spores, pollen and leaf cuticles) is increasing in the Upper Jurassic section (Nesna Fm.) indicating organic matter with better oil potential. The two samples from the Engelvær Fm. (2673 m and 2695 m) have higher relative amounts of herbaceous material than the Draupne Fm.. In contrast the other analysis clearly indicate that the organic material is be more terrestrially dominated. This suggests that there is another type of herbaceous material in the Engelvær Fm. compared to the Nesna Fm. The samples from Engelvær Fm. also contains some coaly material, suggesting a poorer preservation of the organic matter in this section.

The samples from the Leka Fm. (2750 m and 2760 m) are very rich in herbaceous material and this is supported by the Py-GC results.

The rest of the samples are dominated by woody and coaly material and are classified as a Type III kerogen with good gas potential.



III. MATURITY

III.1. Vitrinite Reflectance.

Vitrinite reflectance measurements have been carried out on 35 selected samples.

Histograms of the readings are given in Appendix V, and the mean values of the vitrinite reflectance populations are listed in Table III.1.1.. In Fig. III.1.1. the interpreted, true mean vitrinite reflectance measurements are plotted versus depth.

The interpreted vitrinite reflectance measurements changes from 0.31 at 1824 m in the Skomvær Group to 0.56 in coals at 2905.30 m. The rich source rocks in the Nesna Fm. have a maturity of 0.43 % R_o .

A number of the samples in the Tertiary/Cretaceous section are dominated by reworked material typical of this interval in the Haltenbanken area. Based on the results from this well and from well 6407/7-1 the reading of 0.31 at 1824 m is considered reliable.

Even the Upper Jurassic samples display a considerable spread, partly as a result of variations in the organic matter.

This indicates that most of the samples have not yet reached the main stage of oil generation and that only the bottom part of the well is marginally mature with respect to generation.

The source rocks in the Nesna/Engelvær Fms. are not mature enough to have generated significant amounts of hydrocarbons.



III.2. Thermal Alteration Indices.

This analysis have not been carried out on these samples.



III.3. Biological markers.

Epimerisation and isomerisation of steranes and pentacyclic triterpanes give good estimates of the thermal stress in immature and marginally mature sediments that have not been contaminated by migrated hydrocarbons.

The calculated sterane biomarker ratios are listed in Table III.3.1., and the epimerisation and isomerisation of regular C_{29} steranes are plotted versus depth in Fig. III.3.1.

% $\alpha\alpha\alpha$ 20S steranes varies from 16 % at 1716 m indicating clearly immature sediments with respect to oil generation, to near equilibrium at 58% at 3298 m indicating marginally mature sediments. These changes are also reflected in the % $\alpha\beta\beta$ values which increases with depth. This ratio is however more susceptible to variations in the depositional environment and source input due to the coelution with $\beta\alpha\alpha$ steranes.

The samples at 2625 m and 2632.5 m are clearly contaminated by mature migrated hydrocarbons of the same type as found in the interval 2872 m to 2876 m.

Based on these results it is obvious that only the deepest part of the well is marginally mature with respect to hydrocarbon generation.

The maturation trend from the isomerisation of steranes are confirmed by the epimerisation of the extended hopanes (% 22S). There is also a general decrease in the relative concentration of the thermodynamically unstable neohopanes and $\beta\beta$ -hopanes with depth until they have disappeared at 2400 m. There is also a general decrease in the ratio of moretane/hopane with depth, except for the coaly sequences in the Middle Jurassic section (Table III.3.2.: Triterpane biological marker ratios). These results confirm the vitrinite reflectance results that only the deeper part of the well is marginally mature with respect to oil generation.

The general increase in the ratio of triaromatic steroids/monoaromatic steroids with depth reflects the higher thermal stability of the triaromatic steroids.



IV. SUMMARY

Four organic facies have been defined based upon richness and type of organic matter.

1) The Tertiary/Cretaceous section have a poor source rock potential. The Lower Cretaceous section is partly contaminated by migrated hydrocarbons.

2) The Upper Jurassic section (Nesna and Engelvær Fms.) have a good source potential for oil and gas. The relative amount of terrestrially derived organic matter is highest in the Engelvær Fm.

3) The Middle/Lower Jurassic sandstones have no source potential but are heavily contaminated by migrated hydrocarbons, and are partly oil stained. Thin shale/coal stringers interbedded in the sandstones have excellent source potential for oil and gas.

4) The Triassic section have no source potential.

The rich Upper Jurassic source rocks are marginally mature with respect to oil generation (R_o 0.43 %), and have not yet generated significant amounts of hydrocarbons.

Lateral, mature equivalent of the Upper Jurassic source rocks may have generated significant amounts of liquid hydrocarbons.



TABLE I.1

Samples analysed

Survey of analyses

DEPTH m	SAMPLE TYPE	ROCK EVAL	TOC	EXTR.	ASPH.	GROUP SEP.	GCMS SAT,ARO	GCMS EOM	Ro	Pyr. GC	KER. TYPE	DEPTH m	SAMPLE TYPE	ROCK EVAL	TOC	EXTR.	ASPH.	GROUP SEP.	GCMS SAT,ARO	GCMS EOM	Ro	Pyr. GC	KER. TYPE
1716.00	SWC	2	2	1	1	1	1		4			2627.00	DC	2	2								
1775.00	SWC	2	2									2630.00	DC	2	2								
1824.00	SWC	2	2	1	1	1	1		4			2631.00	SWC	2	2								
1956.50	SWC	2	2	1	1	1	1		4			2632.00	DC	2	2								
1958.00	SWC	2	2									2632.50	SWC	2	2	1				1	4		3
1975.00	SWC	2	2									2635.00	DC	2	2								
2008.50	SWC	2	2									2637.00	DC	2	2								
2025.00	SWC	2	2	1	1	1	1		4			2638.00	SWC	2	2	1	1	1	1		4	1	3
2050.00	SWC	2	2									2640.00	DC	2	2								
2075.00	SWC	2	2	1	1	1	1		4			2640.00	SWC	2	2	1	1	1	1		4	1	
2100.00	SWC	2	2									2642.00	DC	2	2								
2139.00	SWC	2	2									2645.00	DC	2	2								
2225.00	SWC	2	2									2647.00	DC	2	2								
2251.00	SWC	2	2	1	1	1	1		4			2647.00	SWC	2	2	1	1	1	1		4	1	
2275.00	SWC	2	2									2650.00	DC	2	2								
2300.00	SWC	2	2									2650.00	SWC	2	2	1	1	1	1		4	1	3
2349.00	SWC	2	2									2652.00	DC	2	2								
2425.00	SWC	2	2	1	1	1	1		4			2653.00	SWC	2	2	1	1	1	1		4	1	3
2474.50	SWC	2	2									2655.00	DC	2	2								
2482.85	CORE	2	2									2657.00	DC	2	2								
2522.50	SWC	2	2									2660.00	DC	2	2								
2550.00	SWC	2	2									2661.00	SWC	2	2	1	1	1	1		4	1	
2553.00	SWC	2	2	1	1			1	4		3	2662.00	DC	2	2								
2560.00	DC	2	2									2665.00	DC	2	2								
2565.00	DC	2	2									2667.00	DC	2	2								
2567.00	DC	2	2									2672.00	DC	2	2								
2570.00	DC	2	2									2673.00	CORE	2	2								
2572.00	DC	2	2									2673.00	SWC	2	2	1	1	1	1		4	1	3
2575.00	DC	2	2									2674.00	CORE	2	2								
2575.00	SWC	2	2									2675.00	CORE	2	2								
2577.00	DC	2	2									2676.00	CORE	2	2								
2580.00	DC	2	2									2677.10	CORE	2	2								
2582.00	DC	2	2									2678.00	CORE	2	2								
2585.00	DC	2	2									2678.80	CORE	1	1	1	1	1	1		4	1	
2587.00	DC	2	2									2678.80	CORE	2	2								
2587.00	SWC	2	2									2679.00	CORE	2	2								
2590.00	DC	2	2									2680.00	CORE	2	2								
2592.00	DC	2	2									2681.00	CORE	2	2								
2595.00	DC	2	2									2681.75	CORE	1	1	1	1	1	1		4		
2597.00	DC	2	2									2681.75	CORE	2	2								
2600.00	DC	2	2									2682.00	CORE	2	2								
2602.00	DC	2	2									2683.00	CORE	2	2								
2605.00	DC	2	2									2684.00	CORE	2	2								
2607.00	DC	2	2									2684.65	CORE	1	1								
2610.00	DC	2	2									2684.65	CORE	2	2								
2611.00	SWC	2	2	1	1			1	4	1	3	2685.00	CORE	2	2								
2612.00	DC	2	2									2685.40	CORE	1	1								
2615.00	DC	2	2									2685.40	CORE	2	2								
2617.00	DC	2	2									2686.00	CORE	2	2								
2620.00	DC	2	2									2686.10	CORE	2	2								
2622.00	DC	2	2									2690.00	DC	2	2								
2622.00	SWC	2	2									2690.00	SWC	2	2								
2625.00	DC	2	2									2692.00	DC	2	2								
2625.00	SWC	2	2	1	1	1	1		4		3	2693.00	SWC	2	2								

LEGEND :

1 : Norsk Hydro

2 : EXLOG

3 : University of Bergen

4 : Geo Optic

Survey of analyses

DEPTH m	SAMPLE TYPE	ROCK EVAL	TOC	EXTR.	ASPH.	GROUP SEP.	GCMS SAT,ARO	GCMS EOM	Ro Pyr. GC	KER. TYPE	DEPTH m	SAMPLE TYPE	ROCK EVAL	TOC	EXTR.	ASPH.	GROUP SEP.	GCMS SAT,ARO	GCMS EOM	Ro Pyr. GC	KER. TYPE
2695.00	DC	2	2								2760.00	DC	2	2							
2695.00	SWC	2	2	1	1	1	1		4	1	3	2760.00	SWC	2	2	1	1	1	1	4	3
2698.00	SWC	2	2								2768.00	SWC	2	2							
2701.00	CORE	2	2								2772.00	SWC	2	2	1	1	1	1	4		
2702.00	DC	2	2								2775.00	CORE	2	2							
2702.00	CORE	2	2								2777.00	CORE	2	2							
2703.00	CORE	2	2								2779.00	CORE	2	2							
2704.00	CORE	2	2								2781.00	CORE	2	2							
2705.00	DC	2	2								2783.00	CORE	2	2							
2705.00	CORE	2	2								2785.00	CORE	2	2							
2706.00	CORE	2	2								2786.00	CORE	2	2							
2707.00	DC	2	2								2787.00	CORE	2	2							
2707.00	CORE	2	2								2791.50	CORE	2	2							
2708.00	CORE	2	2								2792.00	CORE	2	2							
2708.90	CORE	2	2								2793.00	CORE	2	2							
2710.00	DC	2	2								2795.00	CORE	2	2							
2710.00	CORE	2	2								2796.00	CORE	2	2							
2711.00	CORE	2	2								2798.00	CORE	2	2							
2712.00	DC	2	2								2799.00	CORE	2	2							
2712.00	CORE	2	2								2800.00	CORE	2	2							
2714.00	CORE	2	2								2800.75	CORE	1	1	1	1	1	1	4		
2715.00	DC	2	2								2800.75	CORE	2	2							
2715.00	CORE	2	2								2801.00	CORE	2	2							
2716.00	CORE	2	2								2804.50	CORE	2	2							
2717.00	CORE	2	2								2806.00	CORE	2	2							
2717.90	CORE	2	2								2808.00	CORE	2	2							
2718.40	CORE	2	2								2810.00	CORE	2	2							
2718.50	CORE	2	2								2812.00	CORE	2	2							
2718.80	CORE	2	2								2813.70	CORE	2	2							
2723.00	CORE	2	2								2815.00	CORE	2	2							
2724.00	CORE	2	2								2817.00	CORE	2	2							
2725.00	CORE	2	2								2819.00	CORE	2	2							
2726.00	CORE	2	2								2821.00	CORE	2	2							
2728.00	CORE	2	2								2823.00	CORE	2	2							
2729.00	CORE	2	2								2823.30	CORE	2	2							
2730.00	CORE	2	2								2823.50	CORE	2	2							
2732.00	CORE	2	2								2824.00	CORE	2	2							
2733.00	CORE	2	2								2827.00	CORE	2	2							
2735.00	CORE	1	1								2829.00	CORE	2	2							
2735.00	CORE	2	2								2831.00	CORE	2	2							
2735.01	CORE	2	2								2832.00	DC	2	2							
2738.00	CORE	2	2								2833.00	CORE	2	2							
2739.40	CORE	1	1	1	1	1	1		4	1	2834.00	CORE	2	2							
2739.40	CORE	2	2								2835.00	DC	2	2							
2739.50	CORE	2	2								2835.00	CORE	2	2							
2740.00	DC	2	2								2836.00	CORE	2	2							
2742.00	DC	2	2								2837.50	CORE	1	1							
2745.00	DC	2	2								2837.50	CORE	2	2							
2747.00	DC	2	2								2838.00	CORE	2	2							
2750.00	DC	2	2								2839.60	CORE	1	1							
2750.00	SWC	2	2								2839.60	CORE	2	2							
2752.00	DC	2	2								2840.00	DC	2	2							
2755.00	DC	2	2								2840.00	CORE	2	2							
2755.00	SWC	2	2	1	1	1	1		4		2840.90	CORE	2	2							

LEGEND :

1 : Norsk Hydro

2 : EXLOG

3 : University of Bergen

4 : Geo Optic

Survey of analyses

DEPTH m	SAMPLE TYPE	ROCK EVAL	TOC	EXTR.	ASPH.	GROUP SEP.	GCMS SAT,ARO	GCMS EOM	Ro GC	Pyr. GC	KER. TYPE
2848.70	CORE	1	1								
2848.70	CORE	1	2								
2849.40	CORE	1	1								
2849.40	CORE	2	2								
2865.00	DC	2	2								
2867.00	DC	2	2								
2871.00	SWC	2	2								
2872.00	SWC	2	2	1	1	1	1				
2873.00	SWC	2	2								
2874.00	SWC	2	2	1	1	1	1				
2875.00	SWC	2	2								
2876.00	SWC	2	2	1	1	1	1				
2878.00	SWC	2	2								
2880.00	CORE	1	1								
2880.00	CORE	2	2								
2880.00	SWC	2	2								
2884.85	CORE			1	1	1	1		4	1	
2888.10	CORE	2	2	1	1	1	1		4	1	3
2889.00	CORE	1	1								
2889.00	CORE	2	2								
2889.10	CORE	2	2								
2889.20	CORE	1	1								
2889.20	CORE	2	2								
2891.60	CORE	1	1								
2891.60	CORE	2	2								
2893.50	CORE	1	1								
2893.50	CORE	2	2								
2905.30	CORE	2	2	1	1	1	1		4	1	3
2913.00	CORE	2	2	1	1	1	1		4	1	3
2923.00	SWC	2	2	1	1			1	4	1	3
2934.00	SWC	2	2	1	1	1	1		4		
2952.00	SWC	2	2	1				1			3
2995.00	DC	2	2								
2996.50	SWC	2	2								
2997.00	DC	2	2								
3000.00	DC	2	2								
3002.00	DC	2	2								
3005.00	DC	2	2								
3020.00	DC	2	2								
3022.00	DC	2	2								
3030.00	DC	2	2								
3032.00	DC	2	2	1				1	4		
3032.00	SWC	2	2								
3040.00	SWC	2	2								
3042.00	DC	2	2								
3042.00	SWC	2	2								
3097.00	SWC	2	2								
3105.00	SWC	2	2								
3109.50	SWC	2	2	1				1	4		
3120.00	SWC	2	2								
3128.00	SWC	2	2								
3177.00	SWC	2	2								
3243.00	SWC	2	2	1				1	4		
3263.00	SWC	2	2								

DEPTH m	SAMPLE TYPE	ROCK EVAL	TOC	EXTR.	ASPH.	GROUP SEP.	GCMS SAT,ARO	GCMS EOM	Ro GC	Pyr. GC	KER. TYPE
3268.00	SWC	2	2								4
3272.50	SWC	2	2								
3276.00	SWC	2	2								
3283.00	SWC	2	2								
3298.00	SWC	2	2	1					1	4	
3305.00	SWC	2	2								
3315.00	SWC	2	2								

LEGEND :

1 : Norsk Hydro

2 : EXLOG

3 : University of Bergen

4 : Geo Optic



TABLE II.1.1

Rock Eval and TOC data

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2

Petroleum Geochemistry Group
Research Center Bergen



Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
1716.00	SKLINNA	SH		SWC	0.2	2.8		1.4	211.1		0.1	426	EXLOG
1775.00	SKOMVAER			SWC	0.3	1.9		1.8	104.9		0.1	419	EXLOG
1824.00	SKOMVAER	SH		SWC	0.3	3.1		1.9	166.1		0.1	431	EXLOG
1956.50	SKOMVAER	SH		SWC	0.4	0.7		1.5	47.7		0.4	422	EXLOG
1958.00	SKOMVAER			SWC	0.1	0.4		1.0	36.5		0.2	422	EXLOG
1975.00	FINNVAER			SWC	0.5	0.9		0.7	124.3		0.4	424	EXLOG
2008.50	FINNVAER			SWC	0.2	0.8		1.0	78.0		0.2	428	EXLOG
2025.00	FINNVAER	SLTY.SH		SWC	0.4	1.4		1.1	128.6		0.2	427	EXLOG
2050.00	FINNVAER			SWC	0.2	1.3		1.1	122.6		0.1	430	EXLOG
2075.00	FINNVAER	SLST		SWC	0.4	1.6		1.0	156.7		0.2	429	EXLOG
2100.00	FINNVAER			SWC	0.4	1.2		0.8	143.4		0.2	430	EXLOG
2139.00	FINNVAER			SWC	0.1	0.6		0.7	76.7		0.1	425	EXLOG
2225.00	FINNVAER			SWC	0.2	0.6		0.8	69.5		0.2	429	EXLOG
2251.00	FINNVAER	SH		SWC	0.2	0.8		0.9	78.9		0.2	431	EXLOG
2275.00	FINNVAER			SWC	0.2	1.0		1.3	80.6		0.2	431	EXLOG
2300.00	FINNVAER			SWC	0.2	1.0		1.1	89.6		0.1	433	EXLOG
2349.00	FINNVAER			SWC	0.2	0.7		1.0	63.8		0.3	428	EXLOG
2425.00	FINNVAER	SH		SWC	0.4	0.9		1.1	79.8		0.3	429	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

Petroleum Geochemistry Group
Research Center Bergen



HYDRO

Depth (m)	Group/Fm	% Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2474.50	FINNVAER		SWC	0.5	0.7		1.0	77.1		0.4	427	EXLOG
2482.85	FINNVAER		CORE	11.8	112.1		19.0	590.4		0.1	423	EXLOG
2522.50	FINNVAER		SWC	0.3	0.4		0.8	47.5		0.4	423	EXLOG
2550.00	FINNVAER		SWC	0.3	0.4		0.8	60.0		0.4	423	EXLOG
2553.00	FINNVAER	CLYST	SWC	0.0	0.3		0.1	275.0		0.0	450	EXLOG
2560.00	FINNVAER	CLYST	DC	0.7	0.8		0.4	200.0		0.4	415	EXLOG
2565.00	FINNVAER		DC	0.3	0.9		0.5	206.5		0.3	416	EXLOG
2567.00	FINNVAER		DC	0.4	0.6		0.5	128.6		0.4	415	EXLOG
2570.00	FINNVAER		DC	0.7	1.9		2.2	89.8		0.3	427	EXLOG
2572.00	FINNVAER		DC	0.6	1.4		1.5	95.2		0.3	427	EXLOG
2575.00	FINNVAER		DC	0.7	1.3		1.2	104.1		0.4	423	EXLOG
2575.00	FINNVAER	CLYST	SWC	0.0	2.1		1.1	181.7		0.0	503	EXLOG
2577.00	FINNVAER	CLYST	DC	0.6	0.9		0.9	96.7		0.4	423	EXLOG
2580.00	FINNVAER		DC	0.6	0.9		1.0	96.9		0.4	426	EXLOG
2582.00	FINNVAER		DC	0.6	0.8		0.7	105.5		0.4	421	EXLOG
2585.00	FINNVAER		DC	0.6	0.8		0.9	89.1		0.4	427	EXLOG
2587.00	FINNVAER		DC	0.4	0.6		1.0	62.5		0.4	427	EXLOG
2587.00	FINNVAER	CLYST	SWC	2.0	29.8		8.1	369.8		0.1	425	EXLOG
2590.00	FINNVAER	CLYST	DC	0.4	0.6		0.9	68.8		0.4	425	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

Petroleum Geochemistry Group
Research Center Bergen



HYDRO

Depth (m)	Group/Fm	% Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2592.00	FINNVAER		DC	0.7	0.9		1.0	85.0		0.4	420	EXLOG
2595.00	FINNVAER		DC	0.3	0.4		1.1	36.4		0.5	430	EXLOG
2597.00	FINNVAER		DC	0.3	0.4		0.9	48.8		0.5	426	EXLOG
2600.00	FINNVAER		DC	0.4	0.5		0.8	59.7		0.5	401	EXLOG
2602.00	FINNVAER		DC	0.4	0.8		2.2	37.5		0.3	431	EXLOG
2605.00	FINNVAER		DC	0.3	0.4		1.2	32.0		0.4	430	EXLOG
2607.00	FINNVAER		DC	0.3	0.3		1.1	31.2		0.5	429	EXLOG
2610.00	FINNVAER		DC	0.3	0.4		1.3	32.1		0.4	430	EXLOG
2611.00	FINNVAER	CLYST	SWC	0.1	0.7		1.6	41.1		0.1	523	EXLOG
2612.00	FINNVAER		DC	1.3	8.0		4.2	189.8		0.1	431	EXLOG
2615.00	FINNVAER		DC	0.3	0.5		1.5	34.7		0.4	431	EXLOG
2617.00	FINNVAER		DC	0.4	0.6		1.3	43.1		0.4	432	EXLOG
2620.00	FINNVAER		DC	0.4	0.9		1.9	44.7		0.3	436	EXLOG
2622.00	FINNVAER		DC	0.5	1.1		2.0	55.0		0.3	430	EXLOG
2622.00	FINNVAER	CLYST	SWC	0.1	0.2		0.3	64.3		0.2		EXLOG
2625.00	FINNVAER	CLYST	DC	0.4	0.6		1.2	45.5		0.4	428	EXLOG
2625.00	FINNVAER	CLYST	SWC	0.0	0.0		0.0	100.0		0.6		EXLOG
2627.00	FINNVAER	CLYST	DC	0.5	0.6		1.3	51.2		0.4	427	EXLOG
2630.00	FINNVAER		DC	0.2	0.5		1.0	44.2		0.3	424	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

Petroleum Geochemistry Group
Research Center Bergen



Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2631.00	FINNVAER		CLYST	SWC	0.0	0.0		0.0	100.0		0.0		EXLOG
2632.00	FINNVAER			DC	0.2	0.2		0.4	56.8		0.5	412	EXLOG
2632.50	FINNVAER		CLYST	SWC	0.0	0.0		0.1	0.0				EXLOG
2635.00	FINNVAER			DC	0.2	0.2		0.4	55.6		0.5	416	EXLOG
2637.00	FINNVAER			DC	0.2	0.2		0.3	54.8		0.5	420	EXLOG
2638.00	NESNA		CLYST	SWC	1.9	22.2		5.0	441.3		0.1	428	EXLOG
2640.00	NESNA		CLYST	SWC	2.8	36.9		7.6	488.5		0.1	425	EXLOG
2640.00	NESNA			DC	0.7	4.7		2.3	204.8		0.1	429	EXLOG
2642.00	NESNA		CLYST	DC	1.3	14.3		4.5	316.8		0.1	428	EXLOG
2645.00	NESNA			DC	1.4	15.0		4.7	319.8		0.1	429	EXLOG
2647.00	NESNA			DC	1.5	14.2		4.7	303.0		0.1	428	EXLOG
2647.00	NESNA		CLYST	SWC	0.3	0.9		0.9	102.3		0.3	425	EXLOG
2650.00	NESNA		CLYST	DC	1.7	14.8		4.8	308.8		0.1	430	EXLOG
2650.00	NESNA		CLYST	SWC	3.6	37.7		8.0	470.8		0.1	425	EXLOG
2652.00	NESNA		CLYST	DC	1.4	12.6		4.5	281.3		0.1	430	EXLOG
2653.00	ENGELVAER		CLYST	SWC	0.9	9.8		3.3	294.6		0.1	427	EXLOG
2655.00	ENGELVAER			DC	1.5	11.5		4.3	266.4		0.1	430	EXLOG
2657.00	ENGELVAER			DC	1.3	10.8		3.9	272.8		0.1	432	EXLOG
2660.00	ENGELVAER			DC	1.2	8.1		3.8	211.3		0.1	431	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

Petroleum Geochemistry Group
Research Center Bergen



Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2661.00	ENGELVAER		CLYST	SWC	2.0	14.1		5.1	276.4		0.1	430	EXLOG
2662.00	ENGELVAER			DC	1.1	7.5		4.1	182.2		0.1	432	EXLOG
2665.00	ENGELVAER			DC	1.1	8.0		4.3	183.9		0.1	432	EXLOG
2667.00	ENGELVAER			DC	1.3	8.0		4.1	196.8		0.1	431	EXLOG
2672.00	ENGELVAER			DC	1.5	7.3		4.9	149.9		0.2	431	EXLOG
2673.00	ENGELVAER		CLYST	CORE	0.4	1.3		1.0	135.4		0.2	432	EXLOG
2673.00	ENGELVAER		CLYST	SWC	0.8	6.1		2.7	221.9		0.1	463	EXLOG
2674.00	ENGELVAER		SLST/SST	CORE	0.6	2.3		1.5	152.0		0.2	433	EXLOG
2675.00	ENGELVAER		SLST/SST	CORE	0.6	3.6		2.0	179.5		0.1	431	EXLOG
2676.00	ENGELVAER		SLST/SST	CORE	0.3	0.8		0.8	97.4		0.3	435	EXLOG
2677.10	ENGELVAER		SLST/SST	CORE	0.8	2.8		2.6	106.5		0.2	431	EXLOG
2678.00	ENGELVAER		SLST/SST	CORE	1.3	11.2		4.9	229.9		0.1	426	EXLOG
2678.80	ENGELVAER	100	SLST	CORE	0.9	11.9	0.4	4.1	290.2	9.8	0.1	429	F-BG
2678.80	ENGELVAER		SLST/SST	CORE	1.3	11.4		4.9	233.1		0.1	428	EXLOG
2679.00	ENGELVAER		SLST/SST	CORE	2.0	23.0		5.9	390.7		0.1	424	EXLOG
2680.00	ENGELVAER		SLST/SST	CORE	0.6	1.7		1.8	93.4		0.3	431	EXLOG
2681.00	ENGELVAER		SLST/SST	CORE	1.0	5.9		3.0	194.1		0.1	430	EXLOG
2681.75	ENGELVAER	100	SH	CORE	0.5	5.1	0.1	2.1	242.9	4.8	0.1	439	F-BG
2681.75	ENGELVAER		SLST	CORE	0.6	5.7		2.8	205.4		0.1	434	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

Petroleum Geochemistry Group
Research Center Bergen



Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2682.00	ENGELVAER		SLST	CORE	0.5	3.8		2.2	174.9		0.1	435	EXLOG
2683.00	ENGELVAER		CLYST/SLST	CORE	0.3	2.5		1.3	196.8		0.1	434	EXLOG
2684.00	ENGELVAER		CLYST/SLST	CORE	0.4	2.2		1.1	192.2		0.1	431	EXLOG
2684.65	ENGELVAER		CLYST/SLST	CORE	0.3	2.9	0.0	1.1	263.6	0.0	0.1	436	F-BG
2684.65	ENGELVAER		CLYST/SLST	CORE	0.3	2.4		1.1	211.3		0.1	434	EXLOG
2685.00	ENGELVAER		CLYST/SLST	CORE	0.4	3.2		1.4	220.1		0.1	431	EXLOG
2685.40	ENGELVAER		CLYST/SLST	CORE	0.2	2.2	0.0	1.0	220.0	0.0	0.1	436	F-BG
2685.40	ENGELVAER		CLYST/SLST	CORE	0.3	2.1		1.4	153.7		0.1	433	EXLOG
2686.00	ENGELVAER		CLYST	CORE	0.3	2.2		1.2	181.3		0.1	431	EXLOG
2686.10	ENGELVAER		CLYST	CORE	0.4	1.2		0.9	127.4		0.3	430	EXLOG
2690.00	ENGELVAER			DC	0.6	3.8		1.8	215.9		0.1	430	EXLOG
2690.00	ENGELVAER		CLYST	SWC	0.4	0.9		1.1	78.9		0.3	457	EXLOG
2692.00	ENGELVAER		CLYST	DC	0.5	2.8		2.4	115.8		0.2	432	EXLOG
2693.00	ENGELVAER		CLYST	SWC	0.3	1.3		1.5	85.7		0.2	462	EXLOG
2695.00	ENGELVAER		CLYST	DC	0.3	0.5		0.9	51.6		0.4	427	EXLOG
2695.00	ENGELVAER		CLYST	SWC	0.2	1.3		0.5	275.0		0.1	437	EXLOG
2698.00	TOMMA		CLYST	SWC	1.0	5.7		0.6	1030.9		0.1	497	EXLOG
2701.00	TOMMA		SST	CORE	0.9	1.5		2.4	63.8		0.4	433	EXLOG
2702.00	ENGELVAER		CLYST	DC	0.3	1.1		1.8	59.9		0.2	435	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

Petroleum Geochemistry Group
Research Center Bergen



Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2702.00	TOMMA		SST	CORE	0.6	0.5		0.2	282.4		0.6	362	EXLOG
2703.00	TOMMA		SST	CORE	1.6	2.1		1.9	111.5		0.4	432	EXLOG
2704.00	TOMMA		SST	CORE	1.2	2.4		1.5	158.9		0.3	433	EXLOG
2705.00	TOMMA		SST	DC	0.3	1.0		1.2	84.6		0.3	435	EXLOG
2705.00	TOMMA		SST/CLYST	CORE	2.6	1.9		0.8	233.7		0.6	427	EXLOG
2706.00	TOMMA		SST/CLYST	CORE	1.4	1.6		1.0	160.6		0.5	431	EXLOG
2707.00	TOMMA		SST/CLYST	DC	0.3	0.9		0.9	96.8		0.3	434	EXLOG
2707.00	TOMMA		SST/CLYST	CORE	2.6	1.5		0.6	226.2		0.6	418	EXLOG
2708.00	TOMMA		SST/CLYST	CORE	2.2	1.4		0.6	258.2		0.6	426	EXLOG
2708.90	TOMMA		SST/CLYST	CORE	2.1	2.4		1.5	152.3		0.5	431	EXLOG
2710.00	TOMMA		SST/CLYST	DC	0.4	1.1		1.5	72.8		0.3	435	EXLOG
2710.00	TOMMA		SST/CLYST	CORE	0.6	1.2		1.1	107.3		0.3	434	EXLOG
2711.00	TOMMA		SST	CORE	1.1	2.4		2.0	117.7		0.3	434	EXLOG
2712.00	TOMMA		SST	DC	0.3	0.8		1.0	81.2		0.3	433	EXLOG
2712.00	TOMMA		SST	CORE	0.7	2.0		1.4	142.9		0.3	434	EXLOG
2714.00	TOMMA		SST/SLST	CORE	0.7	1.9		1.4	132.4		0.3	433	EXLOG
2715.00	TOMMA		SST/SLST	DC	0.4	0.9		0.9	104.7		0.3	431	EXLOG
2715.00	TOMMA		SST/SLST	CORE	0.9	3.0		1.5	197.4		0.2	433	EXLOG
2716.00	TOMMA		SST/SLST	CORE	0.9	3.4		2.1	161.4		0.2	434	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

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HYDRO

Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2717.00	TOMMA		SST/SLST	CORE	0.5	0.8		0.7	114.5		0.4	431	EXLOG
2717.90	TOMMA		SST/SLST	CORE	0.8	0.9		0.7	122.2		0.5	429	EXLOG
2718.40	TOMMA		SST/SLST	CORE	0.2	0.1		0.1	128.6		0.7	460	EXLOG
2718.50	TOMMA		SST/SLST	CORE	2.0	1.6		0.7	224.7		0.6	430	EXLOG
2718.80	TOMMA		SST/SLST	CORE	2.1	1.7		0.7	250.7		0.6	427	EXLOG
2723.00	TOMMA		SST/SLST	CORE	0.6	0.5		0.4	112.2		0.6	433	EXLOG
2724.00	TOMMA		SLST/SST	CORE	0.3	0.8		0.3	304.0		0.3	435	EXLOG
2725.00	TOMMA		SST/SLST	CORE	0.5	0.3		0.2	158.8		0.6	430	EXLOG
2726.00	TOMMA		SST/SLST	CORE	0.3	0.4		0.2	211.8		0.5	434	EXLOG
2728.00	TOMMA		SLST/SST	CORE	0.3	0.3		1.3	20.3		0.5	432	EXLOG
2729.00	LEKA		SST/SLST	CORE	0.2	0.1		0.4	13.6		0.7	427	EXLOG
2730.00	LEKA		SST/SLST	CORE	0.4	0.6		0.2	229.2		0.4	432	EXLOG
2732.00	LEKA		SST/SLST	CORE	0.2	0.2		0.3	82.1		0.5	433	EXLOG
2733.00	LEKA		SST/SLST	CORE	0.5	1.8		0.5	338.9		0.2	436	EXLOG
2735.00	LEKA		CLYST/SST	CORE	0.2	2.1	0.2	0.9	233.3	22.2	0.1	438	F-BG
2735.00	LEKA		CLYST/SST	CORE	0.4	2.3		0.8	272.6		0.2	436	EXLOG
2735.01	LEKA		CLYST/SST	CORE	0.3	2.4		1.2	191.9		0.1	436	EXLOG
2738.00	LEKA		CLYST/SST	CORE	1.1	8.2		2.5	326.7		0.1	434	EXLOG
2739.40	LEKA		CLYST/SST	CORE	0.7	7.4		2.7	272.2		0.1	437	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

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Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2739.40	LEKA	100	SLTY.SH	CORE	0.3	3.7	0.3	4.4	84.1	6.8	0.1	439	F-BG
2739.50	LEKA		CLYST/SST	CORE	0.8	5.3		1.9	285.5		0.1	434	EXLOG
2740.00	TOMMA		SST/SLST	DC	0.3	0.7		1.0	72.3		0.3	432	EXLOG
2742.00	LEKA		CLYST/SST	DC	0.5	1.5		0.8	189.0		0.2	433	EXLOG
2745.00	LEKA		CLYST/SST	DC	0.3	1.1		0.7	150.7		0.2	434	EXLOG
2747.00	LEKA		CLYST/SST	DC	0.6	1.1		0.6	186.4		0.3	433	EXLOG
2750.00	LEKA		CLYST	SWC	0.2	1.4		0.8	177.5		0.1	434	EXLOG
2750.00	LEKA		CLYST/SST	DC	0.5	1.5		0.7	220.9		0.2	434	EXLOG
2752.00	LEKA		CLYST	DC	0.5	1.3		0.7	194.2		0.3	436	EXLOG
2755.00	LEKA		CLYST	DC	0.5	1.2		0.6	210.5		0.3	432	EXLOG
2755.00	LEKA		CLYST	SWC	0.3	3.1		0.8	408.0		0.1	439	EXLOG
2760.00	LEKA		CLYST	DC	0.5	1.6		0.8	203.7		0.2	434	EXLOG
2760.00	LEKA		CLYST	SWC	0.3	4.0		1.1	362.7		0.1	437	EXLOG
2768.00	LEKA		CLYST	SWC	0.4	2.9		0.8	345.2		0.1	439	EXLOG
2772.00	ALDRA		CLYST	SWC	0.9	5.7		1.6	367.3		0.1	440	EXLOG
2775.00	ALDRA		CLYST/SST	CORE	4.2	2.7		1.1	251.9		0.6	432	EXLOG
2777.00	ALDRA		CLYST/SST	CORE	1.0	3.3		1.4	237.7		0.2	437	EXLOG
2779.00	ALDRA		CLYST/SST	CORE	1.2	3.0		1.4	219.0		0.3	435	EXLOG
2781.00	ALDRA		SST/CLYST	CORE	9.0	2.4		1.1	223.9		0.8	423	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

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HYDRO

Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2783.00	ALDRA		SST/CLYST	CORE	8.9	2.8		1.0	269.2		0.8	422	EXLOG
2785.00	ALDRA		SST/CLYST	CORE	9.5	2.9		1.1	264.9		0.8	426	EXLOG
2786.00	ALDRA		SST/CLYST	CORE	1.4	2.5		1.0	256.6		0.4	437	EXLOG
2787.00	ALDRA		SST/CLYST	CORE	9.2	3.2		1.1	274.8		0.7	420	EXLOG
2791.50	ALDRA		SST/CLYST	CORE	11.4	4.2		1.4	297.9		0.7	419	EXLOG
2792.00	ALDRA		SST/CLYST	CORE	3.9	5.1		2.0	246.3		0.4	437	EXLOG
2793.00	ALDRA		SST/CLYST	CORE	9.4	3.2		1.2	261.0		0.7	426	EXLOG
2795.00	ALDRA		SST/CLYST	CORE	8.4	6.7		2.4	276.3		0.6	423	EXLOG
2796.00	ALDRA		SST/CLYST	CORE	0.7	0.7		0.1	530.8		0.5	585	EXLOG
2798.00	ALDRA		CLYST/SST	CORE	3.2	6.7		3.3	207.1		0.3	430	EXLOG
2799.00	ALDRA		SST/CLYST	CORE	0.8	1.0		0.5	208.0		0.4	437	EXLOG
2800.00	ALDRA		SST/CLYST	CORE	2.1	4.0		1.8	226.7		0.3	437	EXLOG
2800.75	ALDRA	100	SLTY.SH	CORE	0.5	4.1	1.1	1.5	273.3	73.3	0.1	442	F-BG
2800.75	ALDRA		SST/CLYST	CORE	0.7	5.7		2.1	265.4		0.1	439	EXLOG
2801.00	ALDRA		SST	CORE	11.9	3.9		1.4	271.5		0.8	426	EXLOG
2804.50	ALDRA		SST/CLYST	CORE	1.3	4.1		1.4	283.2		0.2	432	EXLOG
2806.00	ALDRA		SST/CLYST	CORE	9.9	3.3		1.4	244.1		0.7	424	EXLOG
2808.00	ALDRA		SST/CLYST	CORE	1.5	2.0		0.9	241.2		0.4	435	EXLOG
2810.00	ALDRA		SST/CLYST	CORE	11.0	3.5		1.3	269.5		0.8	411	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

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Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2812.00	ALDRA		SST	CORE	4.4	1.9		0.7	286.6		0.7	417	EXLOG
2813.70	ALDRA		CLYST/SST	CORE	2.2	8.1		2.5	326.7		0.2	435	EXLOG
2815.00	ALDRA		SST/CLYST	CORE	10.5	4.2		1.6	259.6		0.7	425	EXLOG
2817.00	ALDRA		SST/CLYST	CORE	7.2	3.1		1.1	271.3		0.7	426	EXLOG
2819.00	ALDRA		SST/CLYST	CORE	5.4	2.3		0.8	301.3		0.7	411	EXLOG
2821.00	ALDRA		SST/CLYST	CORE	9.0	3.3		1.1	298.2		0.7	422	EXLOG
2823.00	ALDRA		SST/CLYST	CORE	9.8	3.5		1.2	293.3		0.7	425	EXLOG
2823.30	ALDRA		SST/CLYST	CORE	8.5	22.1		8.8	250.5		0.3	424	EXLOG
2823.50	ALDRA		SST/CLYST	CORE	0.7	0.9		0.2	445.0		0.4	587	EXLOG
2824.00	ALDRA		SST/CLYST	CORE	4.5	6.9		2.2	312.7		0.4	436	EXLOG
2827.00	ALDRA		SST/CLYST	CORE	3.2	4.6		2.2	211.0		0.4	437	EXLOG
2829.00	ALDRA		CLYST/SST	CORE	9.9	4.5		1.4	324.6		0.7	383	EXLOG
2831.00	ALDRA		SST/CLYST	CORE	7.2	3.2		1.1	289.3		0.7	419	EXLOG
2832.00	LEKA		CLYST/SST	DC	0.8	1.3		1.4	96.4		0.4	423	EXLOG
2833.00	ALDRA		SST/CLYST	CORE	9.2	3.5		1.2	298.3		0.7	424	EXLOG
2834.00	ALDRA		SST/CLYST	CORE	4.3	4.0		1.3	309.4		0.5	433	EXLOG
2835.00	ALDRA		CLYST/SST	DC	4.0	5.1		2.0	250.0		0.4	433	EXLOG
2835.00	ALDRA		SST/CLYST	CORE	4.9	4.4		2.1	215.0		0.5	429	EXLOG
2836.00	ALDRA		SST/CLYST	CORE	1.6	1.9		0.9	220.5		0.5	432	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

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HYDRO

Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2837.50	ALDRA		SST/CLYST	CORE	0.2	2.8	2.0	1.1	254.5	181.8	0.1	431	F-BG
2837.50	ALDRA		SST/CLYST	CORE	0.3	2.6		1.2	208.9		0.1	439	EXLOG
2838.00	ALDRA		SST/CLYST	CORE	1.0	3.6		1.4	264.0		0.2	436	EXLOG
2839.60	ALDRA		COAL	CORE	25.2	155.4	1.1	71.0	218.9	1.5	0.1	437	F-BG
2839.60	ALDRA		SST/CLYST	CORE	41.3	143.3		22.2	645.9		0.2	431	EXLOG
2840.00	ALDRA		SST/CLYST	DC	14.1	125.7		28.1	447.7		0.1	426	EXLOG
2840.00	ALDRA		SST/CLYST	CORE	9.1	48.2		16.4	294.0		0.2	427	EXLOG
2840.90	ALDRA		SST/CLYST	CORE	4.4	2.7		1.3	209.3		0.6	420	EXLOG
2848.70	ALDRA		COAL	CORE	12.4	125.4	1.4	42.0	298.6	3.3	0.1	430	F-BG
2848.70	ALDRA		SST/CLYST	CORE	17.6	136.9		40.7	336.4		0.1	424	EXLOG
2849.40	ALDRA		COAL	CORE	6.8	60.2	0.0	25.0	240.8	0.0	0.1	433	F-BG
2849.40	ALDRA		SST/CLYST	CORE	12.4	69.8		14.1	494.1		0.2	423	EXLOG
2865.00	ALDRA		SST/CLYST	DC	1.9	1.1		1.3	84.7		0.6	423	EXLOG
2867.00	ALDRA		SST/CLYST	DC	1.1	1.5		1.0	154.5		0.4	431	EXLOG
2871.00	ALDRA		SST	SWC	8.5	3.5		1.2	300.0		0.7	496	EXLOG
2872.00	ALDRA		SST	SWC	10.7	1.6		1.2	136.4		0.9	411	EXLOG
2873.00	ALDRA		SST	SWC	1.3	8.0		2.6	310.0		0.1	430	EXLOG
2874.00	ALDRA		SST	SWC	5.6	5.6		1.1	529.2		0.5	496	EXLOG
2875.00	ALDRA		SST	SWC	2.4	0.9		0.4	231.7		0.7	453	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

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HYDRO

Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2876.00	ALDRA		SST	SWC	4.1	1.9		0.7	263.4		0.7	499	EXLOG
2878.00	HITRA		SST	SWC	0.1	3.9		0.3	1169.7		0.0		EXLOG
2880.00	HITRA		CLYST	CORE	0.2	2.6	0.0	1.1	236.4	0.0	0.1	436	F-BG
2880.00	HITRA		CLYST	CORE	0.3	3.7		2.3	164.9		0.1	433	EXLOG
2880.00	HITRA		CLYST	SWC	0.0	0.8		0.1	709.1		0.0		EXLOG
2888.10	HITRA		CLYST	CORE	18.7	149.5		14.0	1069.7		0.1	412	EXLOG
2889.00	HITRA		CLYST	CORE	16.3	461.2		49.8	926.8		0.0	506	EXLOG
2889.00	HITRA		COAL	CORE	8.1	155.9	0.0	48.9	318.8	0.0	0.0	429	F-BG
2889.10	HITRA		CLYST	CORE	17.9	185.2		38.3	483.9		0.1	433	EXLOG
2889.20	HITRA		CLYST	CORE	0.1	1.1	0.0	1.5	73.3	0.0	0.1	445	F-BG
2889.20	HITRA		CLYST	CORE	0.2	1.2		1.6	76.6		0.1	443	EXLOG
2891.60	HITRA		MRL	CORE	0.0	0.4	1.1	0.1	400.0	1100.0	0.0	440	F-BG
2891.60	HITRA		MRL	CORE	0.1	0.2		1.1	19.1		0.2	455	EXLOG
2893.50	HITRA		CLYST	CORE	0.1	0.9	0.0	1.1	81.8	0.0	0.1	459	F-BG
2893.50	HITRA		CLYST	CORE	0.2	0.9		1.6	57.4		0.2	454	EXLOG
2905.30	HITRA		CLYST	CORE	6.2	105.3		28.3	371.9		0.1	426	EXLOG
2913.00	HITRA		SST	CORE	7.3	92.0		17.5	526.7		0.1	421	EXLOG
2923.00	HITRA		CLYST	SWC	0.0	0.6		0.2	239.1		0.1	483	EXLOG
2934.00	HITRA		CLYST	SWC	2.6	53.5		13.4	400.2		0.0	437	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

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Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
2952.00	INT TRIAS E		CLYST	SWC	0.0	0.2		0.0	600.0		0.0	515	EXLOG
2995.00	HITRA		SST/CLYST	DC	0.1	0.3		0.2	144.4		0.2	436	EXLOG
2996.50	INT TRIAS E			SWC	0.0	0.3		0.1	483.3		0.1		EXLOG
2997.00	INT TRIAS E		CLYST	DC	0.2	0.8		0.4	197.5		0.2	413	EXLOG
3000.00	INT TRIAS E			DC	0.1	0.1		0.1	100.0		0.5		EXLOG
3002.00	INT TRIAS E			DC	0.1	0.1		0.3	51.9		0.3		EXLOG
3005.00	INT TRIAS E			DC	0.1	0.1		0.1	63.6		0.5		EXLOG
3020.00	INT TRIAS E			DC	0.1	0.3		0.2	166.7		0.2		EXLOG
3022.00	INT TRIAS E			DC	0.0	0.1		0.1	90.9		0.2		EXLOG
3030.00	INT TRIAS E			DC	0.0	0.0		0.0	0.0				EXLOG
3032.00	INT TRIAS E		CLYST	DC	0.0	0.0		0.1	14.3		0.5		EXLOG
3032.00	INT TRIAS E		CLYST	SWC	0.0	0.2		0.2	106.7		0.0	433	EXLOG
3040.00	INT TRIAS E		CLYST	SWC	0.0	0.0		0.1	50.0		0.3		EXLOG
3042.00	INT TRIAS E		CLYST	DC	0.0	0.0		0.0	0.0				EXLOG
3042.00	INT TRIAS E		CLYST	SWC	0.1	0.1		0.0	700.0		0.5	484	EXLOG
3097.00	INT TRIAS E		CLYST	SWC	0.0	0.0		0.0	100.0		0.6		EXLOG
3105.00	INT TRIAS E		SST	SWC	0.0	0.1		0.1	233.3		0.0		EXLOG
3109.50	INT TRIAS E		CLYST	SWC	0.0	0.0		0.1	40.0		0.0		EXLOG
3120.00	INT TRIAS E		LST	SWC	0.1	0.3		0.1	236.4		0.2	557	EXLOG

Table 2.1.1. SOURCE ROCK SCREENING DATA WELL 6407/7-2 (cont'd)

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HYDRO

Depth (m)	Group/Fm	%	Lithology	Sample	S1 Kg/t	S2 Kg/t	S3 Kg/t	TOC %	HI	OI	PI	Tmax Deg.c	Company
3128.00	INT TRIAS E		CLYST	SWC	0.0	0.0		0.0	0.0		1.0		EXLOG
3177.00	INT TRIAS E		CLYST	SWC	0.0	0.4		1.1	36.0		0.1	523	EXLOG
3243.00	INT TRIAS E		CLYST	SWC	0.4	0.6		0.9	62.5		0.4	406	EXLOG
3263.00	INT TRIAS E		CLYST	SWC	0.1	0.4		0.2	182.6		0.2		EXLOG
3268.00	INT TRIAS E		CLYST	SWC	0.0	0.1		0.2	22.7		0.0	329	EXLOG
3272.50			CLYST	SWC	0.0	0.0		0.2	14.3		0.4		EXLOG
3276.00			CLYST	SWC	0.0	0.0		0.3	8.8		0.0	347	EXLOG
3283.00			CLYST	SWC	0.0	0.0		0.1	0.0				EXLOG
3298.00			CLYST	SWC	0.0	0.2		0.2	62.5		0.2		EXLOG
3305.00			CLYST	SWC	0.0	0.2		0.1	190.9		0.0	429	EXLOG
3315.00			CLYST	SWC	0.0	0.1		0.2	23.8		0.2	434	EXLOG



TABLE II.2.1

**Results from extraction and group
type separation**

Table 2.2.1. SOURCE ROCK EXTRACTION DATA I WELL 6407/7-2

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Depth(m)	Group/Fm	EOM(mg)	EOM(%)	Hydrocarbons			Non Hydrocarbons		
				SAT(%)	ARO(%)	TOTAL(%)	NSO(%)	ASPH(%)	TOTAL(%)
1716.00	SKLINNA	12.70	0.07	8	16	24	23	53	76
1824.00	SKOMVAER	16.90	0.08	13	14	27	17	56	73
1956.50	SKOMVAER	3.30	0.03	12	16	28	27	45	72
2025.00	FINNVAER	7.00	0.04	21	15	36	11	53	64
2075.00	FINNVAER	8.10	0.05	9	18	27	19	54	73
2251.00	FINNVAER	5.50	0.04	8	17	25	19	56	75
2425.00	FINNVAER	4.90	0.03	12	18	30	23	47	70
2553.00	FINNVAER	0.70	0.01					57	57
2611.00	FINNVAER	1.10	0.01					64	64
2625.00	FINNVAER	3.60	0.02	32	13	45	47	8	55
2632.50	FINNVAER	0.30	0.01						
2638.00	NESNA	21.00	0.49	20	18	38	16	46	62
2640.00	NESNA	46.00	0.70	22	18	40	16	44	60
2647.00	NESNA	62.60	0.62	18	17	35	17	48	65
2650.00	NESNA	73.60	0.78	17	16	33	19	48	67
2653.00	ENGELVAER	18.70	0.28	15	16	31	10	59	69
2661.00	ENGELVAER	23.40	0.30	17	13	30	9	61	70
2673.00	ENGELVAER	12.10	0.15	22	16	38	5	57	62

Table 2.2.1. SOURCE ROCK EXTRACTION DATA I WELL 6407/7-2 (cont'd)

Petroleum Geochemistry Group
Research Center Bergen



Depth(m)	Group/Fm	EOM(mg)	EOM(%)	Hydrocarbons			Non Hydrocarbons		
				SAT(%)	ARO(%)	TOTAL(%)	NSO(%)	ASPH(%)	TOTAL(%)
2678.80	ENGELVAER	14.50	0.23	16	13	29	9	62	71
2681.75	ENGELVAER	14.20	0.15	13	12	25	12	63	75
2695.00	ENGELVAER	4.10	0.08	44	6	50	8	42	50
2739.40	LEKA	10.00	0.09	25	11	36	11	53	64
2755.00	LEKA	2.80	0.05	11	20	31	12	57	69
2760.00	LEKA	3.50	0.07	17	11	28	9	63	72
2772.00	ALDRA	6.70	0.11	28	18	46	9	45	54
2800.75	ALDRA	8.50	0.11	30	13	43	9	48	57
2872.00	ALDRA	125.40	1.25	80	15	95	4	1	5
2874.00	ALDRA	62.30	0.64	79	14	93	5	2	7
2876.00	ALDRA	47.40	0.55	70	18	88	9	3	12
2884.85	HITRA	226.00	9.70	2	10	12	5	83	88
2888.10	HITRA	116.80	3.30	5	23	28	10	62	72
2905.30	HITRA	310.20	7.80	2	8	10	4	86	90
2913.00	HITRA	163.80	5.00	7	16	23	11	66	77
2923.00	HITRA	1.40	0.03					71	71
2934.00	HITRA	31.40	0.62	12	16	28	5	67	72
2952.00	INT TRIAS EV	0.40	0.00						
3032.00	INT TRIAS EV	0.50	0.01						

Table 2.2.1. SOURCE ROCK EXTRACTION DATA I WELL 6407/7-2 (cont'd)

Petroleum Geochemistry Group
Research Center Bergen



Depth(m)	Group/Fm	EOM(mg)	EOM(%)	Hydrocarbons			Non Hydrocarbons		
				SAT(%)	ARO(%)	TOTAL(%)	NSO(%)	ASPH(%)	TOTAL(%)
3109.50	INT TRIAS EV	0.40	0.00						
3243.00	INT TRIAS EV	0.70	0.01						
3298.00		0.40	0.10						



TABLE II.2.2

Extraction yield ratios

Table 2.2.2. SOURCE ROCK EXTRACTION DATA II WELL 6407/7-2

Petroleum Geochemistry Group
Research Center Bergen



Depth(m)	Group/Fm	TOC (%)	EOM(%) / TOC(%)	SAT(%) / TOC(%)	SAT(%) / ARO(%)	HC/non HC
1716.00	SKLINNA	1.35	0.05	5.93	0.50	0.32
1824.00	SKOMVAER	1.86	0.04	6.99	0.93	0.37
1956.50	SKOMVAER	1.49	0.02	8.05	0.75	0.39
2025.00	FINNVAER	1.12	0.04	18.75	1.40	0.56
2075.00	FINNVAER	1.04	0.05	8.65	0.50	0.37
2251.00	FINNVAER	0.95	0.04	8.42	0.47	0.33
2425.00	FINNVAER	1.09	0.03	11.01	0.67	0.43
2553.00	FINNVAER	0.12	0.08			
2611.00	FINNVAER	1.63	0.01			
2625.00	FINNVAER				2.46	0.82
2638.00	NESNA	5.04	0.10	3.97	1.11	0.61
2640.00	NESNA	7.56	0.09	2.91	1.22	0.67
2647.00	NESNA	0.87	0.71	20.69	1.06	0.54
2650.00	NESNA	8.00	0.10	2.13	1.06	0.49
2653.00	ENGELVAER	3.34	0.08	4.49	0.94	0.45
2661.00	ENGELVAER	5.12	0.06	3.32	1.31	0.43
2673.00	ENGELVAER	2.74	0.05	8.03	1.38	0.61
2678.80	ENGELVAER	4.10	0.06	3.90	1.23	0.41

Table 2.2.2. SOURCE ROCK EXTRACTION DATA II WELL 6407/7-2 (cont'd)

Petroleum Geochemistry Group
Research Center Bergen

Depth(m)	Group/Fm	TOC (%)	EOM(%) / TOC(%)	SAT(%) / TOC(%)	SAT(%) / ARO(%)	HC/non HC
2681.75	ENGELVAER	2.10	0.07	6.19	1.08	0.33
2695.00	ENGELVAER	0.48	0.17	91.67	7.33	1.00
2739.40	LEKA	4.40	0.02	5.68	2.27	0.56
2755.00	LEKA	0.75	0.07	14.67	0.55	0.45
2760.00	LEKA	1.10	0.06	15.45	1.55	0.39
2772.00	ALDRA	1.56	0.07	17.95	1.56	0.85
2800.75	ALDRA	1.50	0.07	20.00	2.31	0.75
2872.00	ALDRA	1.18	1.06	67.80	5.33	19.00
2874.00	ALDRA	1.06	0.60	74.53	5.64	13.29
2876.00	ALDRA	0.71	0.77	98.59	3.89	7.33
2884.85	HITRA				0.20	0.14
2888.10	HITRA	13.98	0.24	0.36	0.22	0.39
2905.30	HITRA	28.32	0.28	0.07	0.25	0.11
2913.00	HITRA	17.46	0.29	0.40	0.44	0.30
2923.00	HITRA	0.23	0.13			
2934.00	HITRA	13.36	0.05	0.90	0.75	0.39
3032.00	INT TRIAS EV	0.15	0.07			
3243.00	INT TRIAS EV	0.88	0.01			
3298.00		0.24	0.42			



TABLE II.3.1

Molecular ratios from gas chromatograms



MOLECULAR RATIOS FROM THE
GC OF THE SATURATED HYDROCARBONS

DEPTH (M)	CPI-1	CPI-2	Prist/C17	Phyt/C18	Prist/Phyt	C17/C27
1716.00		1.8	5.2	3.1	1.8	0.5
1824.00		1.4	6.7	1.8	4.0	0.6
1956.00	1.5	1.6	2.9	0.8	1.3	1.4
2025.00	1.1	1.1	1.1	0.5	2.8	2.8
2075.00	1.6	1.2	4.3	1.4	2.7	0.5
2251.00	1.5	1.4	3.5	0.9	2.5	0.3
2425.00	1.8	1.6	1.7	0.3	3.0	0.3
2553.00	3.5	1.9				
2611.00	5.2	4.5		0.1	3.4	
2625.00	1.4	1.0	1.0	0.8	0.8	0.4
2632.50	4.6	0.9		0.8		0.7
2638.00	1.1	1.0	3.2	1.7	2.3	2.5
2640.00	1.1	0.9	2.8	1.9	2.0	2.8
2647.00	1.1	1.0	2.9	1.5	2.3	2.9
2650.00	1.1	1.0	3.1	1.6	2.7	2.4
2653.00	1.1	0.9	3.4	1.5	2.0	1.0
2661.00	1.2	1.1	2.9	1.3	2.7	1.0
2673.00	1.2	1.0	0.9	0.4	2.2	4.2
2678.80	1.2	0.9	0.9	0.4	2.2	3.3
2681.75	1.6	1.5	1.9	0.5	2.9	0.4
2695.00	2.0	1.0	0.8	0.5	1.4	2.1
2739.40	1.6	1.4	0.9	0.3	0.3	1.2
2755.00	1.3	1.1	0.8	0.3	1.7	0.7
2760.00	1.4	1.2	1.7	0.4	3.1	0.7
2772.00	1.7	1.8	0.6	0.2	4.4	0.5
2800.75	1.7	1.7	1.0	0.2	3.0	0.3
2872.00	1.1	0.9	0.9	0.5	1.8	3.2
2874.00	1.1	0.9	0.9	0.5	1.8	3.2
2876.00	1.1	1.0	0.9	0.5	1.9	3.4
2884.85	1.3	1.2	2.8	1.0	3.6	3.5
2888.10	1.6	1.3	2.7	0.4	6.9	1.9
2905.30	1.0	0.7	1.2	1.1	1.9	4.8
2913.00	1.8	1.7	23.3	2.2	10.8	2.6
2923.00			1.3	2.7	0.5	
2934.00	1.9	1.3	0.6	0.1	4.2	0.5
2952.00		1.0	0.8	0.7	0.4	0.3
3032.00	2.5	1.0	0.6	0.5	0.6	2.4
3109.50	6.0	0.9		1.5		0.9
3243.00	1.4	1.0	0.7	0.6	0.5	1.1
3298.00		1.8		0.6		0.7



TABLE II.6.1

Quantitative results from pyrolysis GC

Table 2.6.1. PYROLYSIS-GASCHROMATOGRAPHY DATA 6407/7-2

Petroleum Geochemistry Group
Research Center Bergen



HYDRO

Depth (m)	Group/Fm	C1 (%)	C2-C5 (%)	C1-C5 (%)	C6-C14 (%)	C15+ (%)	GORP C1-5/C6+	C1-C6 (%)	C7-C14 (%)	GOPI C1-6/C7+
2611.00	FINNVAER	10.50	7.40	17.90	37.40	44.70	0.22			
2638.00	NESNA	4.60	19.50	24.10	42.60	33.30	0.32			
2640.00	NESNA	3.60	14.80	18.40	33.80	47.80	0.23			
2647.00	NESNA	3.40	9.20	12.60	30.00	57.40	0.14			
2650.00	NESNA	5.10	16.90	22.00	37.00	41.00	0.28			
2653.00	ENGELVAER	2.80	14.70	17.50	45.60	36.90	0.21			
2661.00	ENGELVAER	6.40	17.60	24.00	36.00	40.00	0.32			
2673.00	ENGELVAER	5.60	18.80	24.40	41.50	34.10	0.32			
2695.00	ENGELVAER	3.60	21.00	24.60	54.40	21.00	0.33			
2884.85	HITRA	17.70	16.10	33.80	33.50	32.70	0.51			
2888.10	HITRA	11.70	14.20	25.90	30.20	44.20	0.35			
2905.30	HITRA	20.10	23.00	43.10	29.70	27.20	0.76			
2913.00	HITRA	13.40	17.60	31.00	36.60	32.40	0.45			
2934.00	HITRA	11.90	18.00	29.90	31.90	38.20	0.43			



TABLE II.7.1

Semiquantitative maceral composition

Table 2.7.1. KEROGEN COMPOSITION, SPORE AND POLLEN
COMPOSITION WELL 6407/7-2

Petroleum Geochemistry Group
Research Center Bergen



HYDRO

Depth (m)	Group/Fm	Amorphous matr.	Woody	Inert- inite	Palyno- morphs	Algal Herbaceous	Reworked (%)	Particle size	Preserv. (1-3)
2553.00	FINNVAER		65.00	30.00	5.00				
2611.00	FINNVAER		82.00	8.00	10.00				
2625.00	FINNVAER		80.00	20.00					
2632.50	FINNVAER		78.00	22.00					
2638.00	NESNA		78.00	8.00	14.00				
2650.00	NESNA			88.00	12.00				
2653.00	ENGELVAER		84.00		16.00				
2673.00	ENGELVAER		77.00	11.00	12.00				
2695.00	ENGELVAER		28.00	8.00	64.00				
2750.00	LEKA		24.00	2.00	74.00				
2760.00	LEKA		25.00		75.00				
2888.10	HITRA		69.00	10.00	21.00				
2905.30	HITRA		74.00	14.00	12.00				
2913.00	HITRA		70.00	4.00	26.00				
2923.00	HITRA		76.00	4.00	20.00				
2952.00	INT TRIAS EV		83.00	13.00	4.00				
3298.00		10.00	50.00	30.00	10.00				



TABLE III.1.1.

Vitrinite reflectance, spore colouration
and fluorescence

Table 3.1.1. VITRINITE REFLECTANCE DATA WELL 6407/7-2
Average values

Petroleum Geochemistry Group
Research Center Bergen



HYDRO

Depth	Group/Fm	Population I	Population II	Population III
1716.00	SKLINNA	0.44 (9)		
1824.00	SKOMVAER	0.31 (10)		
1956.50	SKOMVAER	0.44 (6)		
2025.00	FINNVAER	0.42 (11)		
2075.00	FINNVAER	0.48 (10)		
2251.00	FINNVAER	0.50 (12)		
2425.00	FINNVAER	0.51 (5)		
2553.00	FINNVAER	0.49 (1)		
2638.00	NESNA	0.43 (22)		
2640.00	NESNA	0.42 (22)		
2647.00	NESNA	0.45 (21)		
2650.00	NESNA	0.41 (22)		
2653.00	ENGELVAER	0.49 (20)		
2661.00	ENGELVAER	0.52 (21)		
2673.00	ENGELVAER	0.53 (21)		
2678.80	ENGELVAER	0.52 (23)		
2681.75	ENGELVAER	0.51 (20)		
2695.00	ENGELVAER	0.53 (9)		

Table 3.1.1. VITRINITE REFLECTANCE DATA WELL 6407/7-2 (cont'd)
Average values

Petroleum Geochemistry Group
Research Center Bergen



Depth	Group/Fm	Population I	Population II	Population III
2739.40	LEKA	0.48 (21)		
2755.00	LEKA	0.53 (7)		
2760.00	LEKA	0.50 (21)		
2772.00	ALDRA	0.48 (22)		
2800.75	ALDRA	0.54 (20)		
2884.85	HITRA	0.42 (21)		
2888.10	HITRA	0.52 (21)		
2905.30	HITRA	0.56 (20)		
2913.00	HITRA	0.48 (22)		
2923.00	HITRA	0.39 (1)		
2934.00	HITRA	0.71 (20)		



TABLE III.3.1.

Sterane biomarker ratios



BIOMARKER RATIOS
STERANE ISOMERISATION

DEPTH (M)	20S aaa %	20S+R aBB %	20Raaa/ HOMOPRE.
1716.00			
1824.00	29		11.70
1956.00			
2025.00	19	36	2.10
2075.00	21	43	1.10
2251.00	24	46	0.82
2425.00	24	36	2.20
2553.00			
2611.00			
2625.00	54	55	0.81
2632.50	51	56	0.57
2638.00	31	23	5.70
2640.00	30	24	7.00
2647.00	39	27	3.40
2650.00	45	29	2.70
2653.00	39	26	6.10
2661.00	39	26	6.50
2673.00	36	25	4.80
2678.80	36	26	9.05
2681.75	37	25	10.30
2695.00	45	49	1.80
2739.40	43	24	5.04
2755.00	43	28	2.50
2760.00	42	31	1.60
2772.00	33	26	7.00
2800.75	42	28	10.30
2872.00	58	56	0.41
2874.00	64	59	0.29
2876.00	65	58	0.29
2881.10	42	30	3.60
2884.85	45	36	5.70
2905.30	43	32	
2913.00	40	29	7.80
2923.00	30	25	0.43
2934.00	41		
2952.00	52	58	0.56
3032.00	49	53	0.90
3109.50	50	55	1.00
3243.00	53	52	1.00
3298.00		54	0.37



TABLE III.3.2.

Triterpane biomarker ratios



BIOMARKER RATIOS
TRITERPANE ISOMERISATION

DEPTH (M)	TS/TM	NOR/ NOR+HOP	BNO BNO+NOR	MORET/ HOPAN	22S %
1716.00					
1824.00					
1956.00		0.34	0.34	0.63	43
2025.00	0.66	0.30	0.22	0.17	21
2075.00	0.69	0.28	0.17	0.16	23
2251.00	0.20	0.31		0.36	17
2425.00	0.05	0.40		0.60	37
2553.00	0.12	0.47		0.52	56
2611.00	0.14	0.49		0.54	60
2625.00	0.79	0.43	0.08	0.20	55
2632.50	1.08	0.46	0.14	0.14	55
2638.00	0.40	0.40		0.24	55
2640.00	0.46	0.36		0.23	54
2647.00	0.28	0.39		0.23	56
2650.00	0.20	0.38		0.24	57
2653.00	0.19	0.37		0.28	55
2661.00	0.20	0.37		0.30	57
2673.00	0.25	0.37		0.25	57
2678.80	0.18	0.34		0.26	58
2681.75	0.21	0.36		0.29	56
2695.00	0.79	0.43	0.08	0.17	58
2739.40	0.18	0.38	0.13	0.27	58
2755.00	0.23	0.39	0.08	0.27	57
2760.00	0.16	0.46	0.10	0.32	56
2772.00	0.28	0.36		0.29	55
2800.75	0.16	0.37		0.32	57
2872.00	1.50	0.31	0.26	0.17	57
2874.00	1.90	0.26	0.32	0.13	57
2876.00	2.00	0.27	0.32	0.13	58
2881.10		0.55	0.28	0.29	53
2884.85	0.06	0.43	0.06	0.40	58
2905.30	0.17	0.40	0.23	0.25	58
2913.00		0.43	0.13	0.40	55
2923.00	0.15	0.37	0.20	0.39	58
2934.00	0.01	0.45		0.54	58
2952.00	1.10	0.41	0.14	0.12	62
3032.00	1.02	0.43	0.09	0.13	66
3109.50	1.00	0.44	0.09	0.11	64
3243.00	0.97	0.44	0.09	0.13	67
3298.00	1.30	0.32	0.26	0.13	64



FIGURE I.1.

Well location map

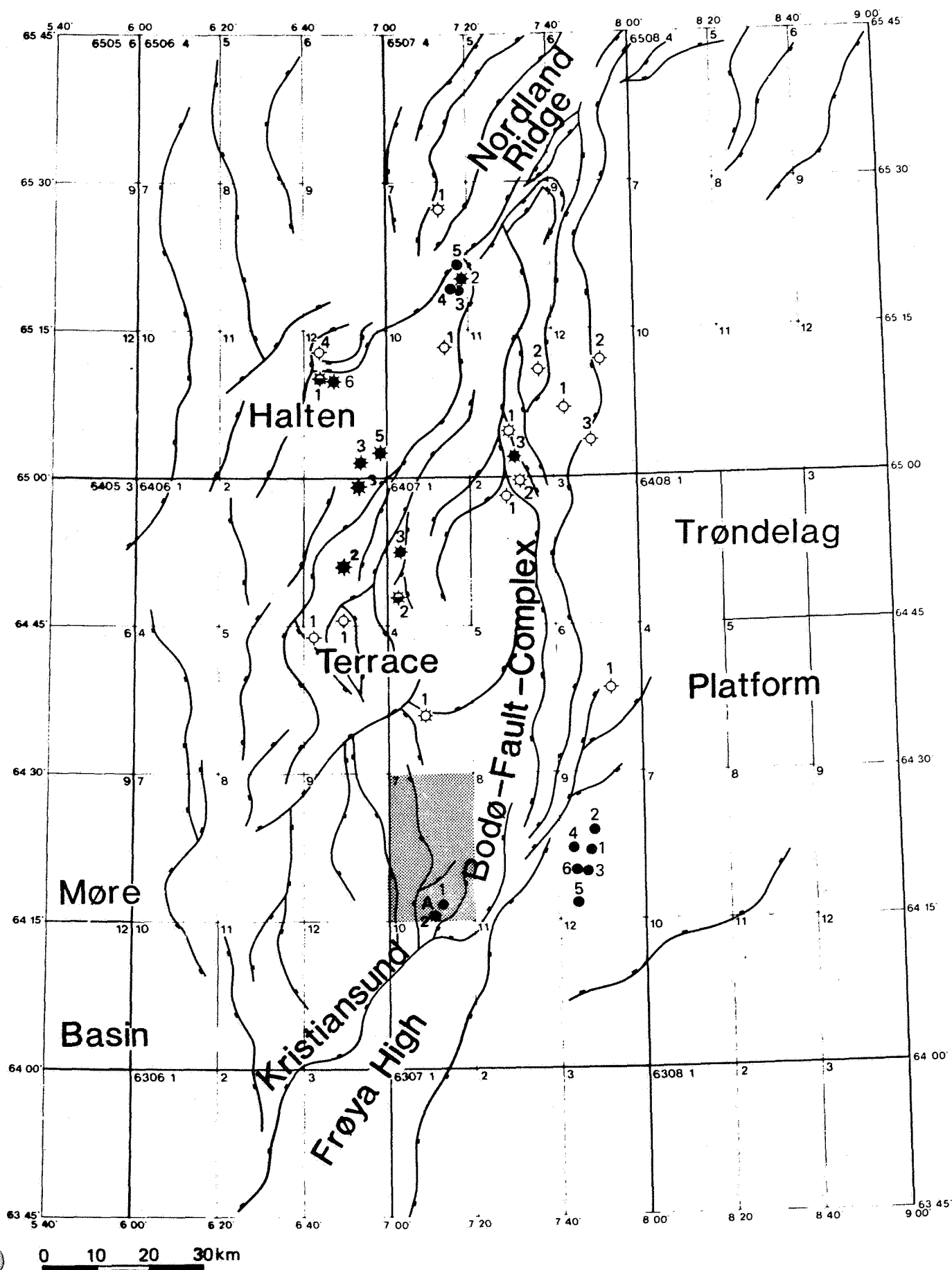




FIGURE I.2

Summary of source rock potential

SOURCE ROCK EVALUATION

	DEPTH (m)	SOURCE POTENTIAL	KEROGEN TYPE	MATURITY
TERT/CRET	1716	POOR	III	IMMATURE
	2638	GOOD	II	MARGINALLY MATURE
	2679	POOR/ EXCELLENT	II	
	2934			
TRIASSIC	3315	NO		



FIGURE II.1.1

Results from rigsite geochemistry

GEOCHEMICAL EVALUATION LOG

GENERAL DATA

Data Range : 1716 m to 3315 m

Plot Prepared on : 9 Mar 1987

Plot Scale : 1 to 10000

Exlog Laboratory :

Plot Prepared By :

Analysis : Oil Show Analyser

[illegible]



FIGURE 11.1.2

TOC values versus depth

TOTAL ORGANIC CARBON

WELL: 6407/7-2

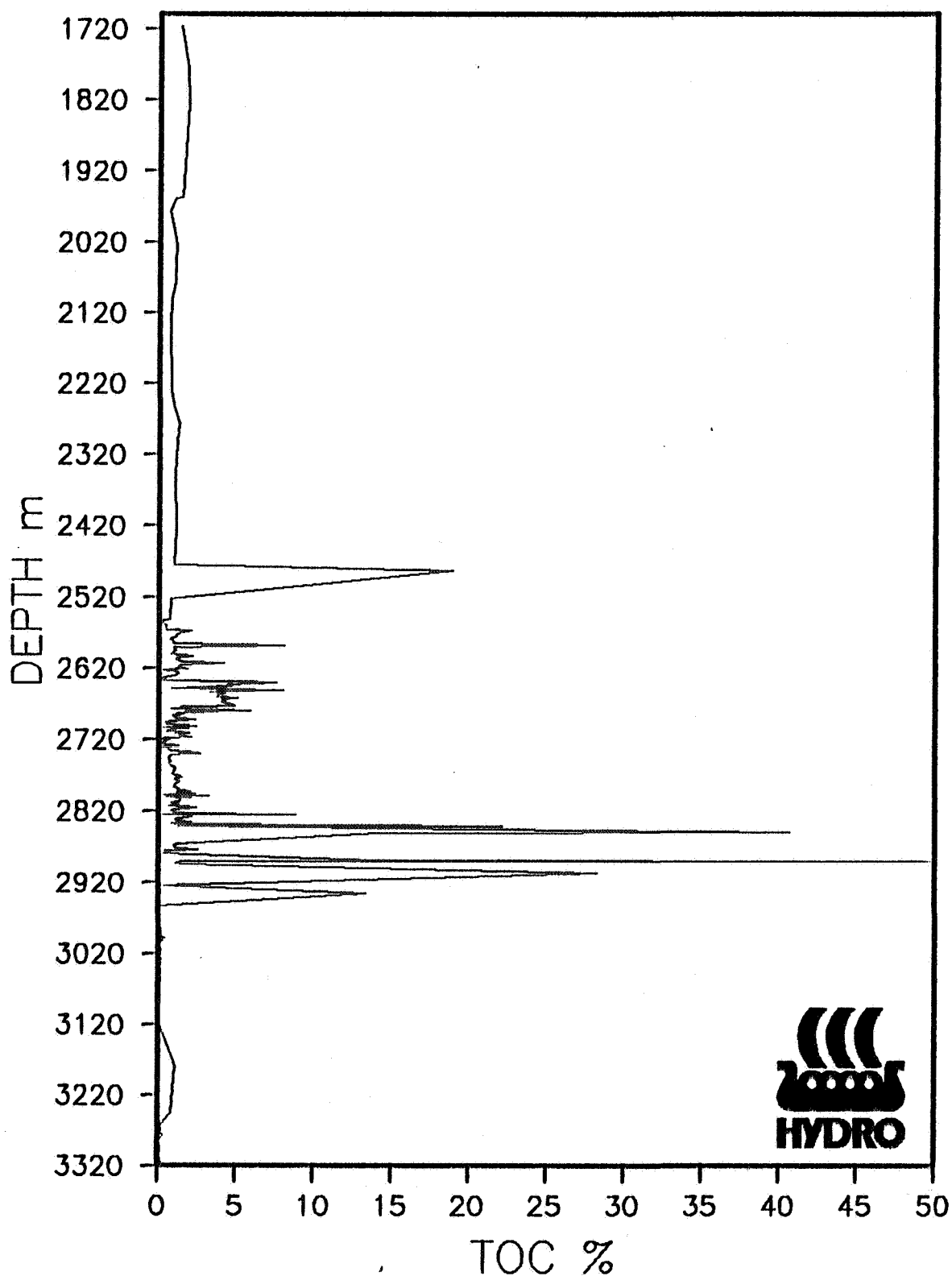




FIGURE II.2.1

EOM(ppm) versus depth

EOM (ppm) OF WELL 6407/7-2

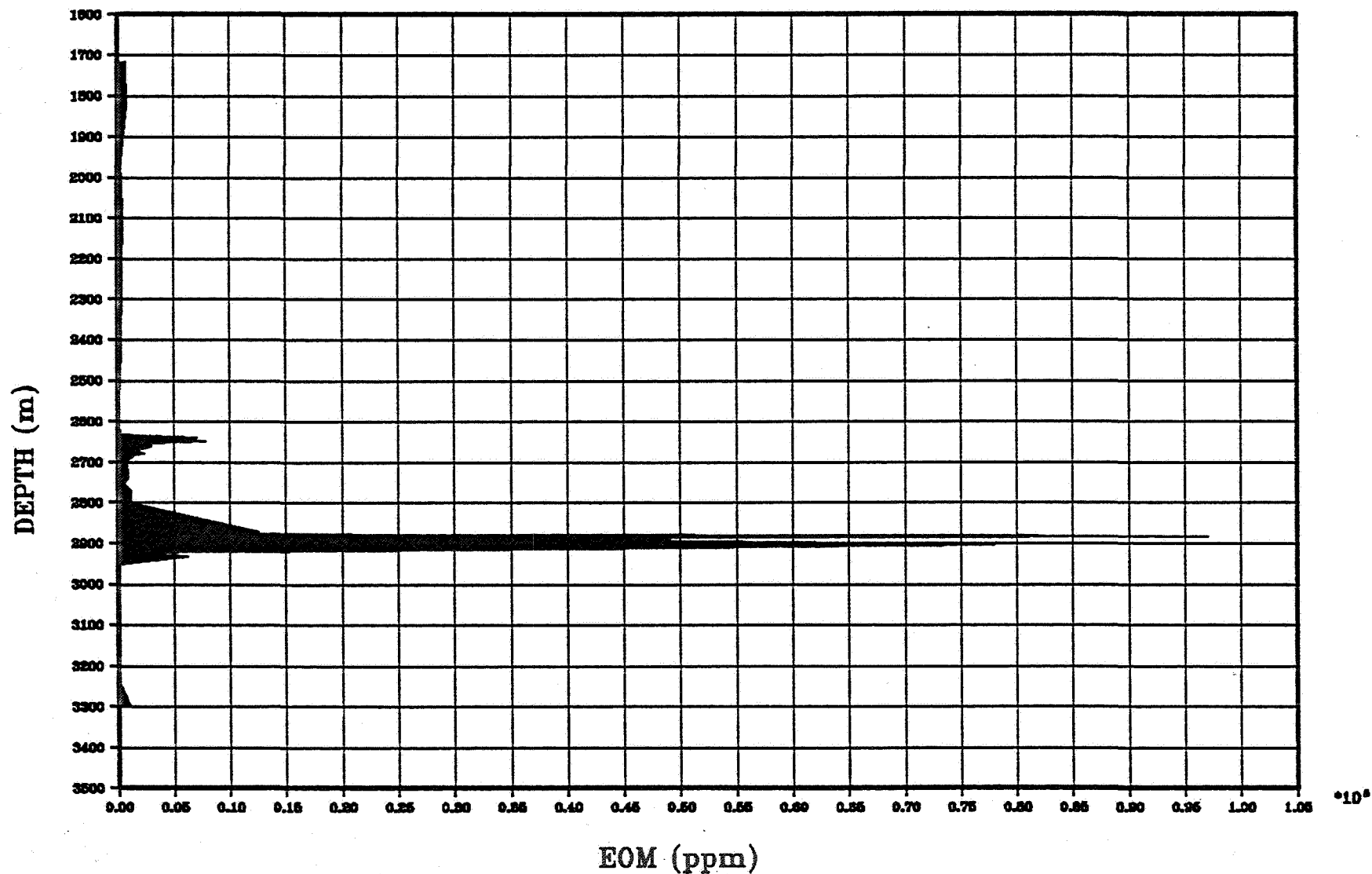




FIGURE II.2.2

EOM/TOC versus depth

EOM/TOC FROM WELL 6407/7-2

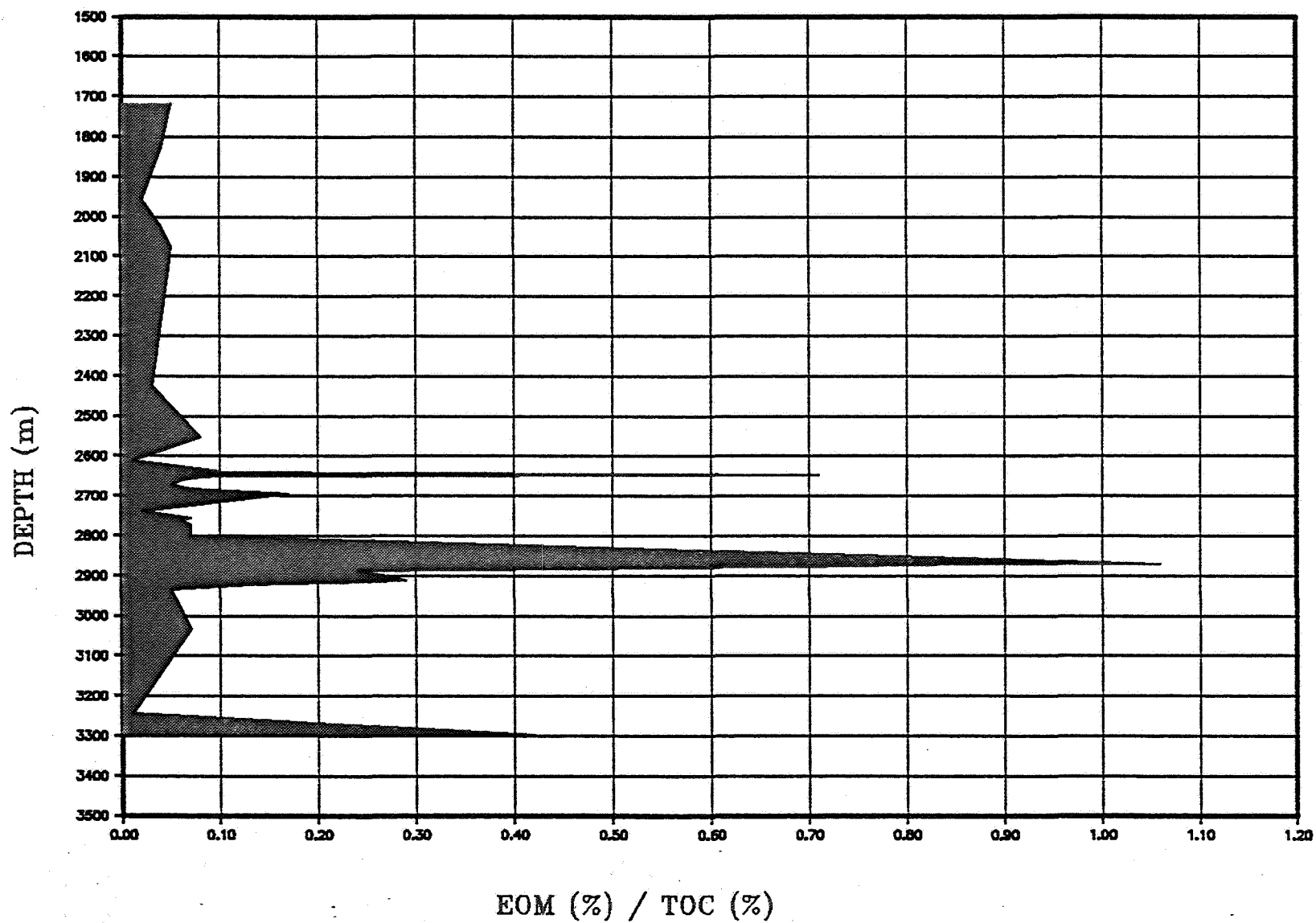
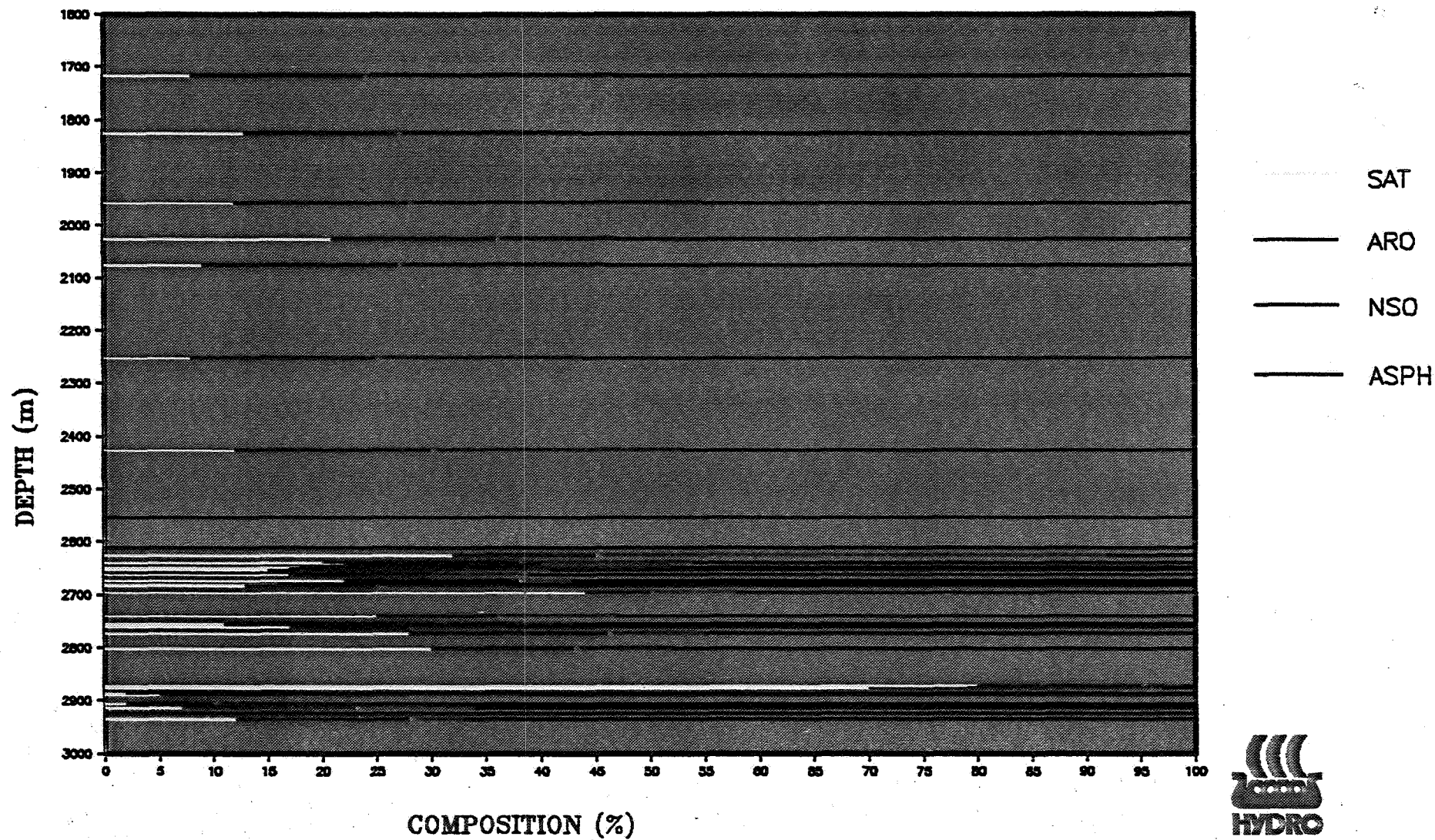




FIGURE 11.2.3

Composition of EOM versus depth

EOM COMPOSITION OF WELL 6407/7-2



EOM COMPOSITION OF WELL 6407/7-2

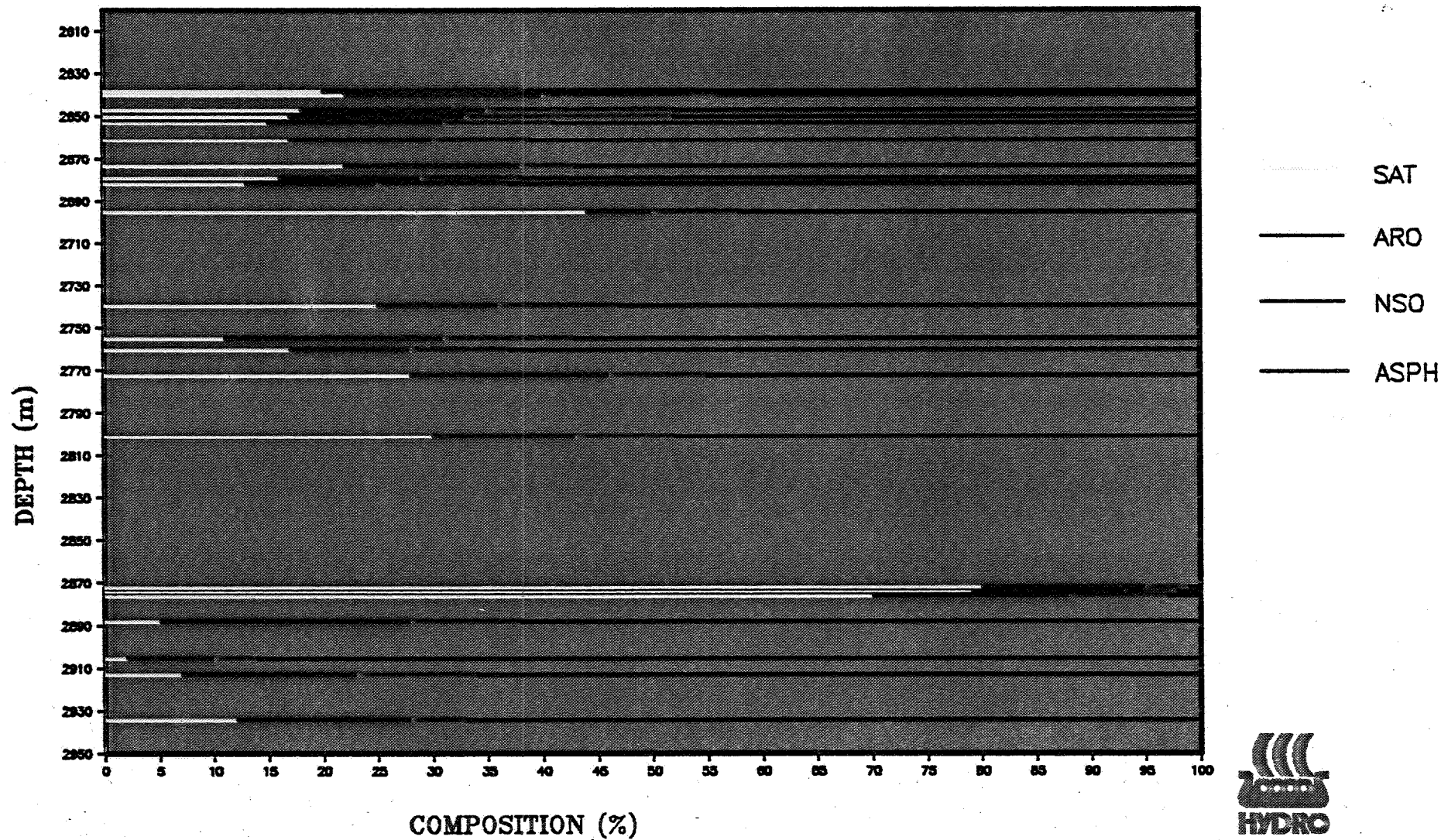




FIGURE II.3.1

Molecular ratios versus depth

WELL: 6407/7-2

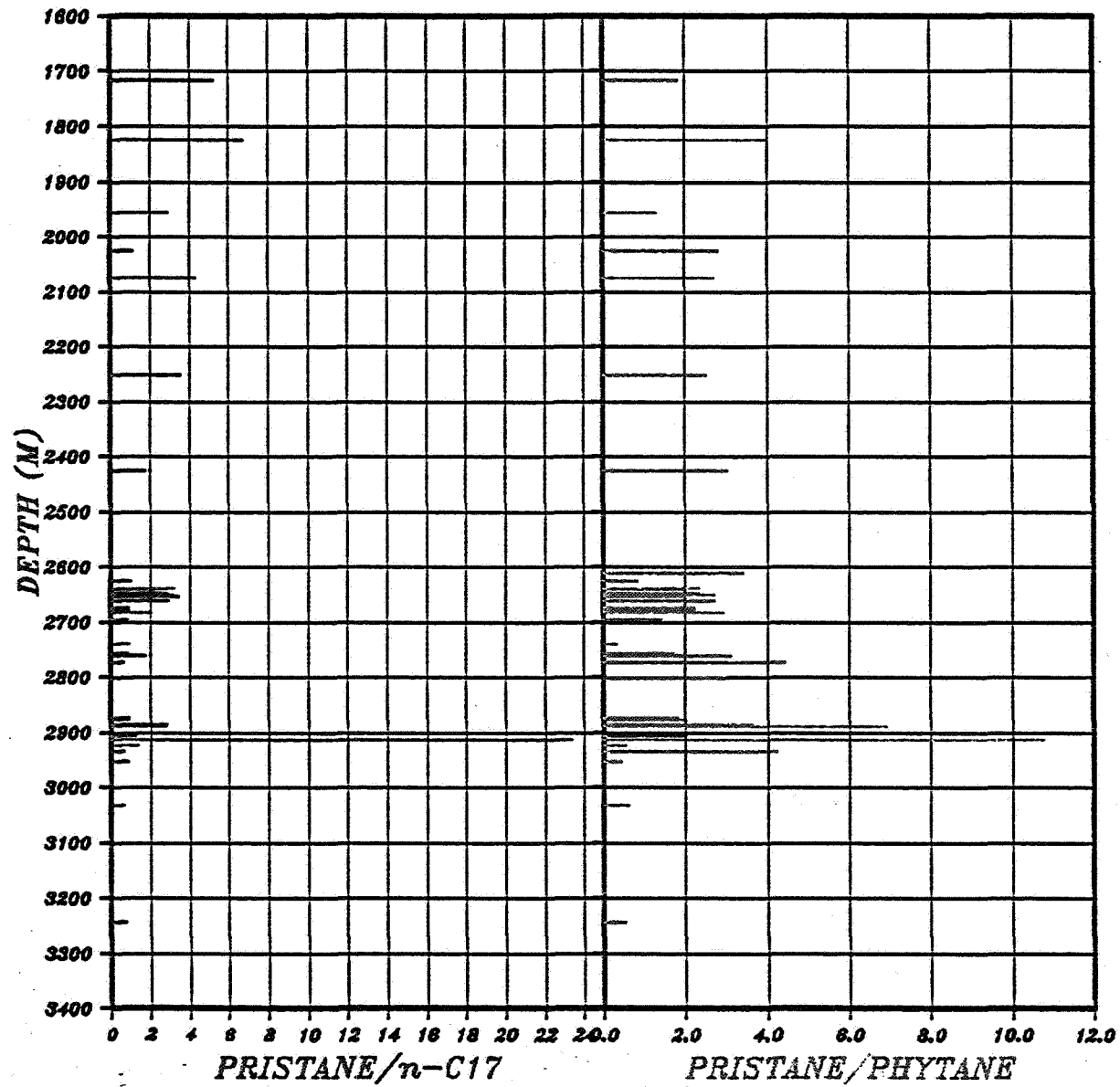
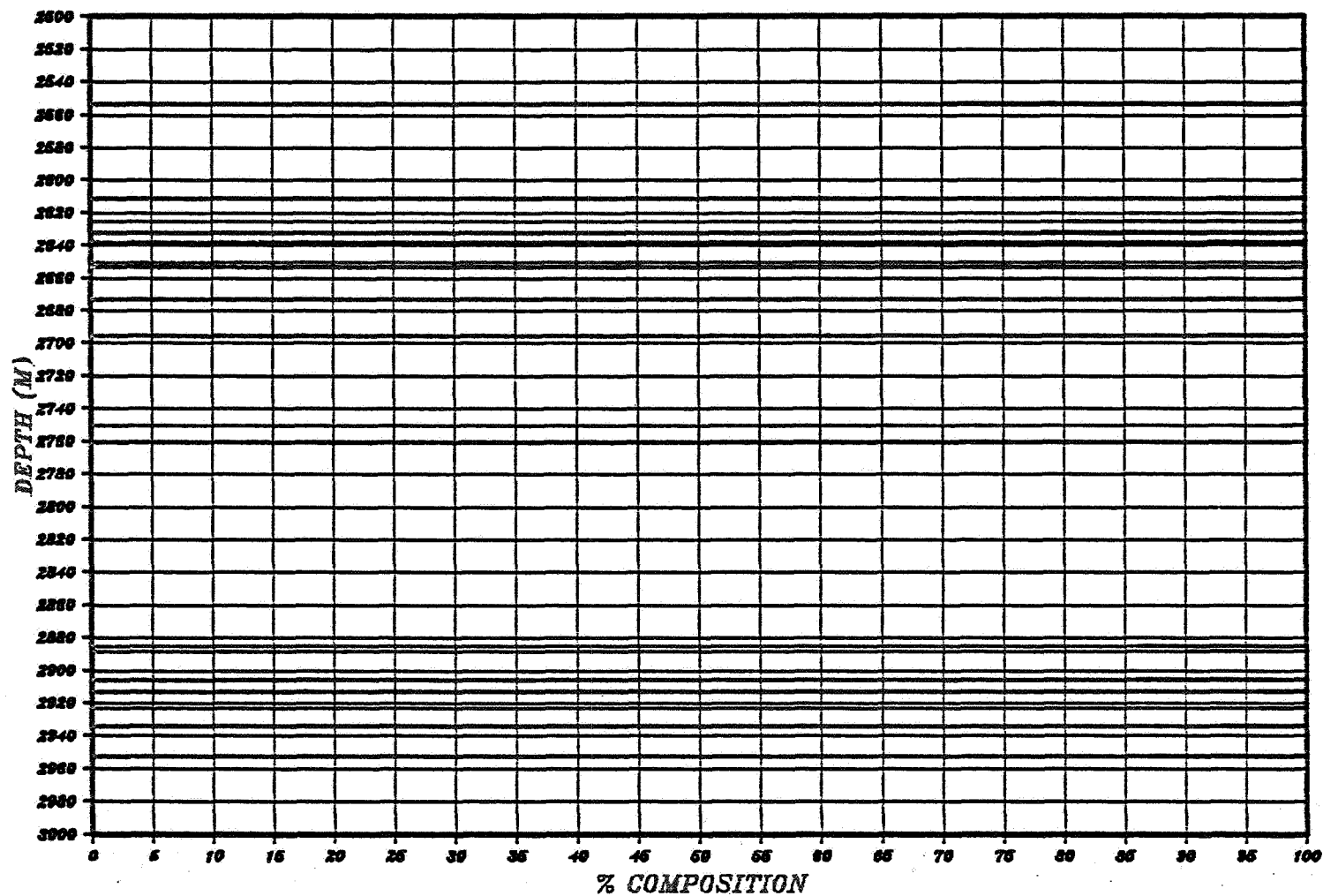




FIGURE II.7.1

Semiquantitative maceral composition

VISUAL KEROGEN WELL: 6407/7-2



— HERBACEOUS

— WOODY

— COALY

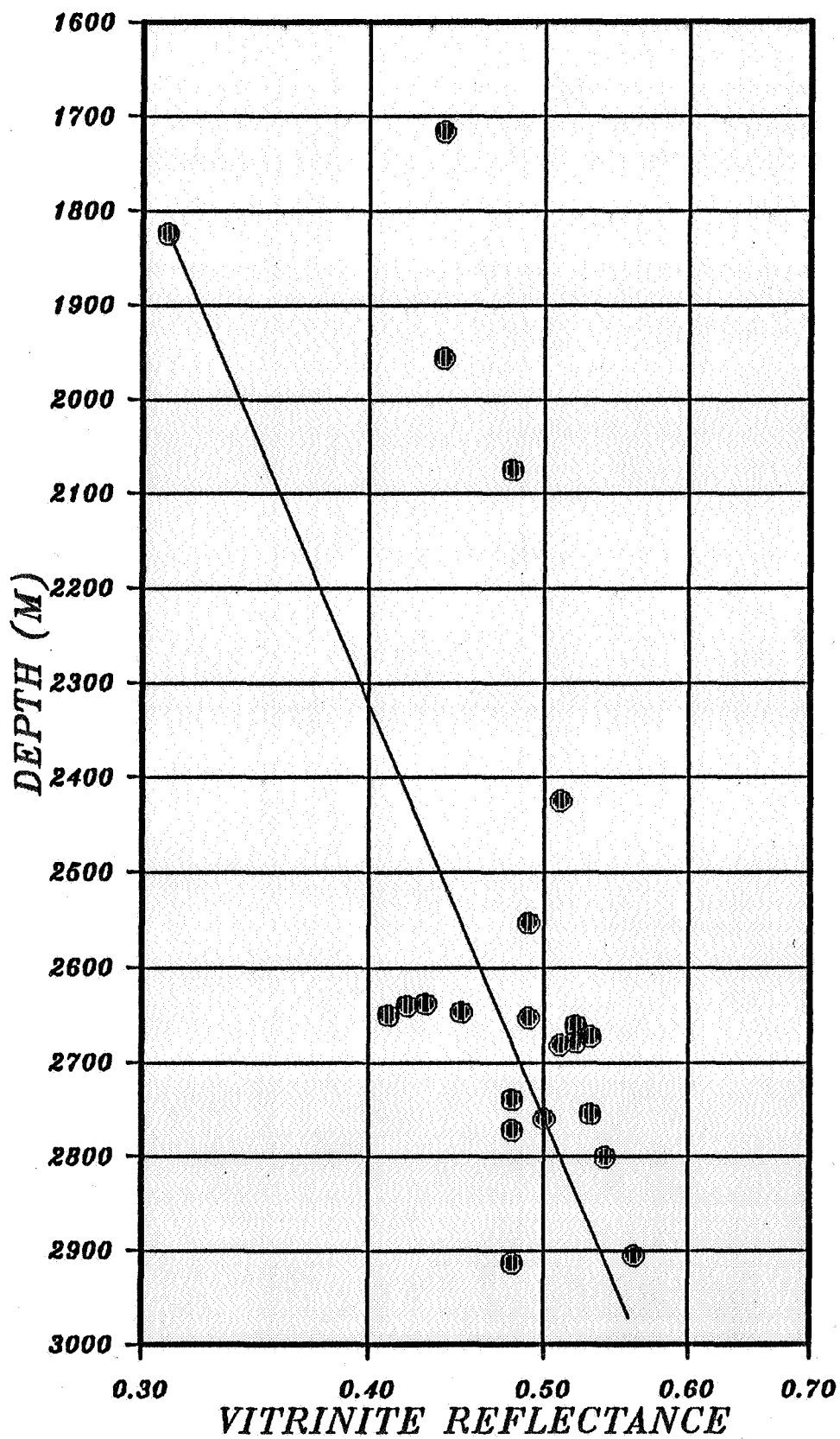




FIGURE III.1.1.

Vitrinite reflectance versus depth

WELL 6407/7-2



WELL: 6407/7-2

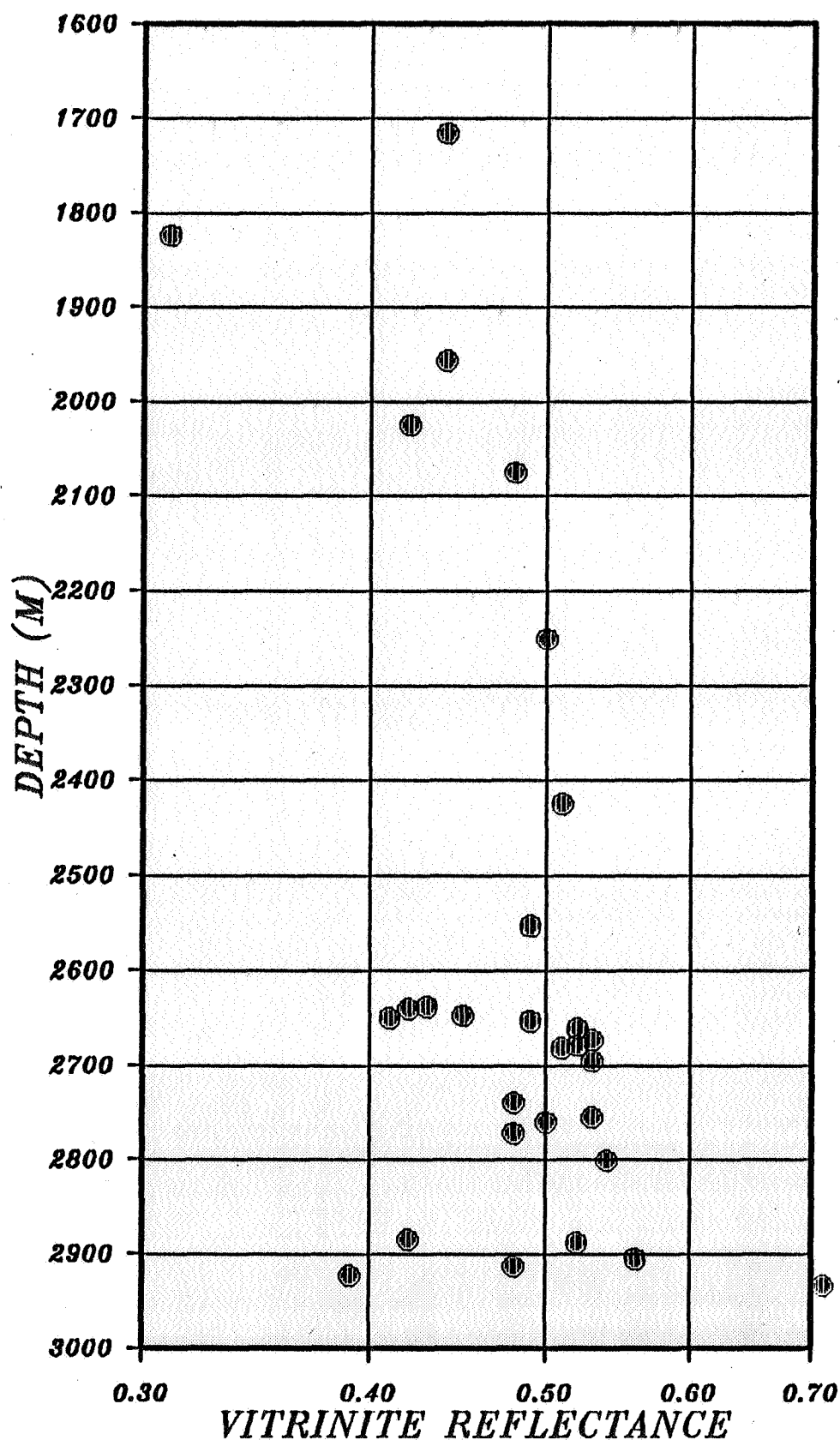
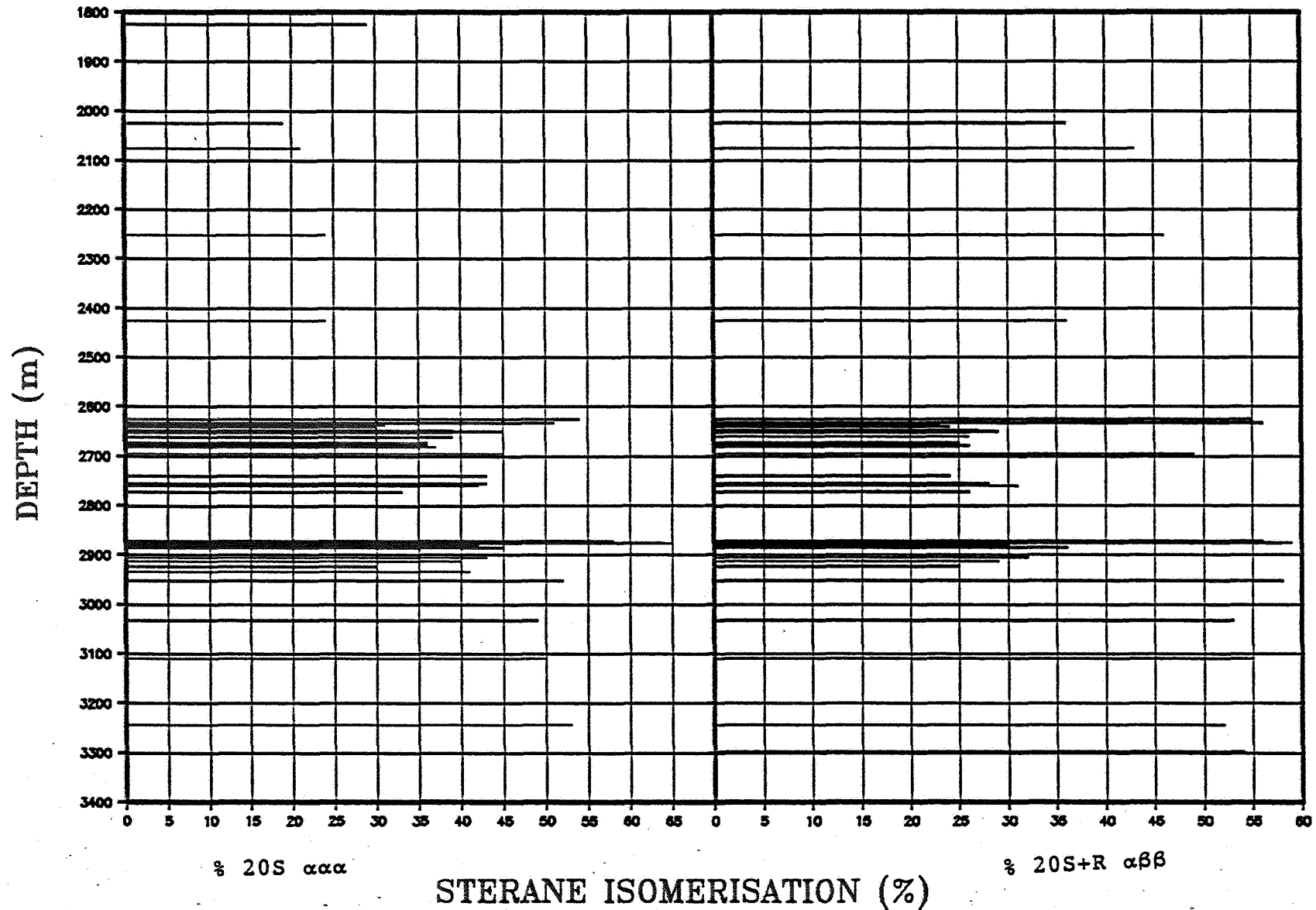




FIGURE III.3.1.

Sterane isomerisation versus depth

BIOMARKER RATIOS WELL 6407/7-2





APPENDIX I

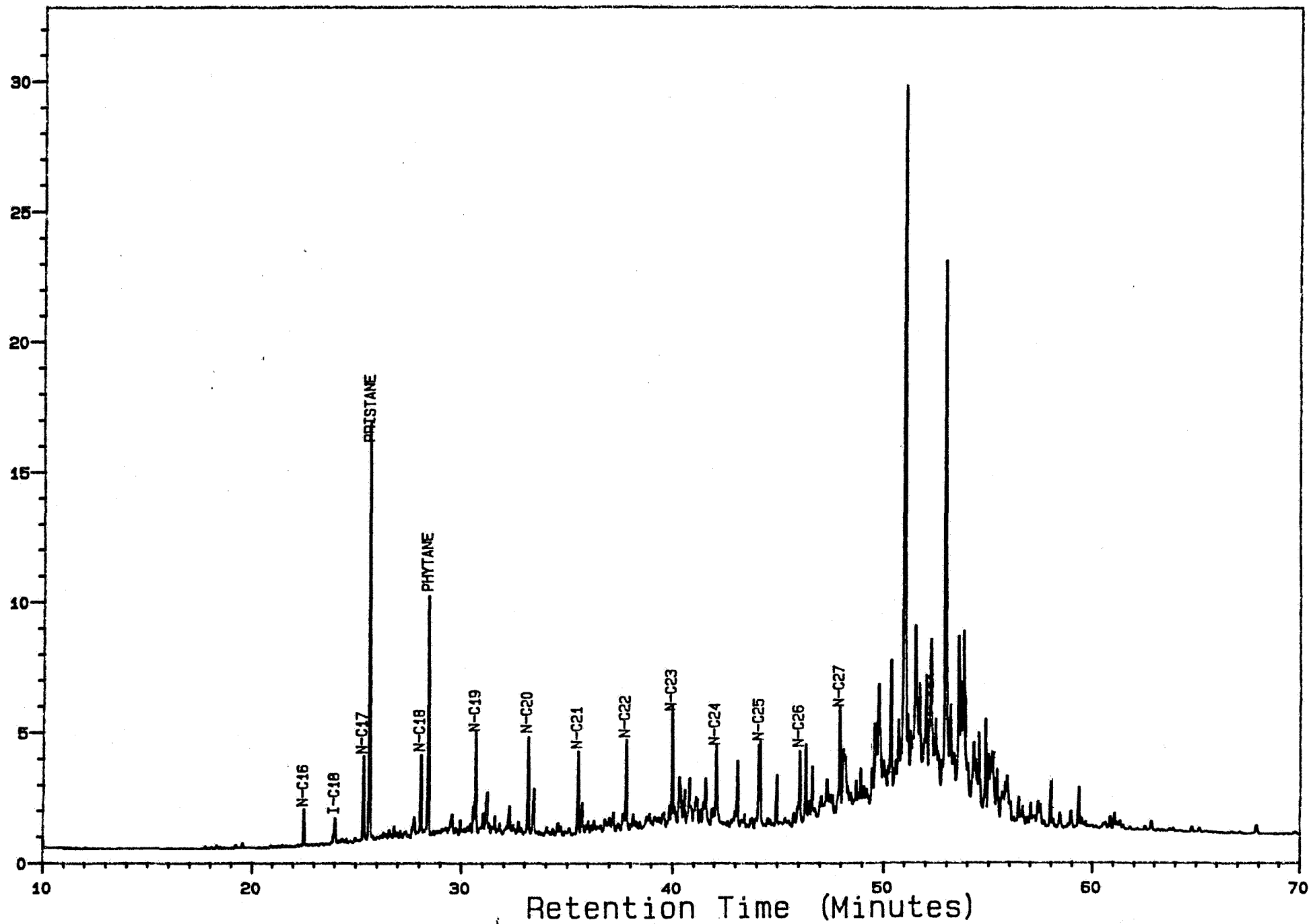
Gas chromatograms of saturated hydrocarbons

Analysis A64070702

7, 12, 1

1716 M SAT

Intensity (mV)

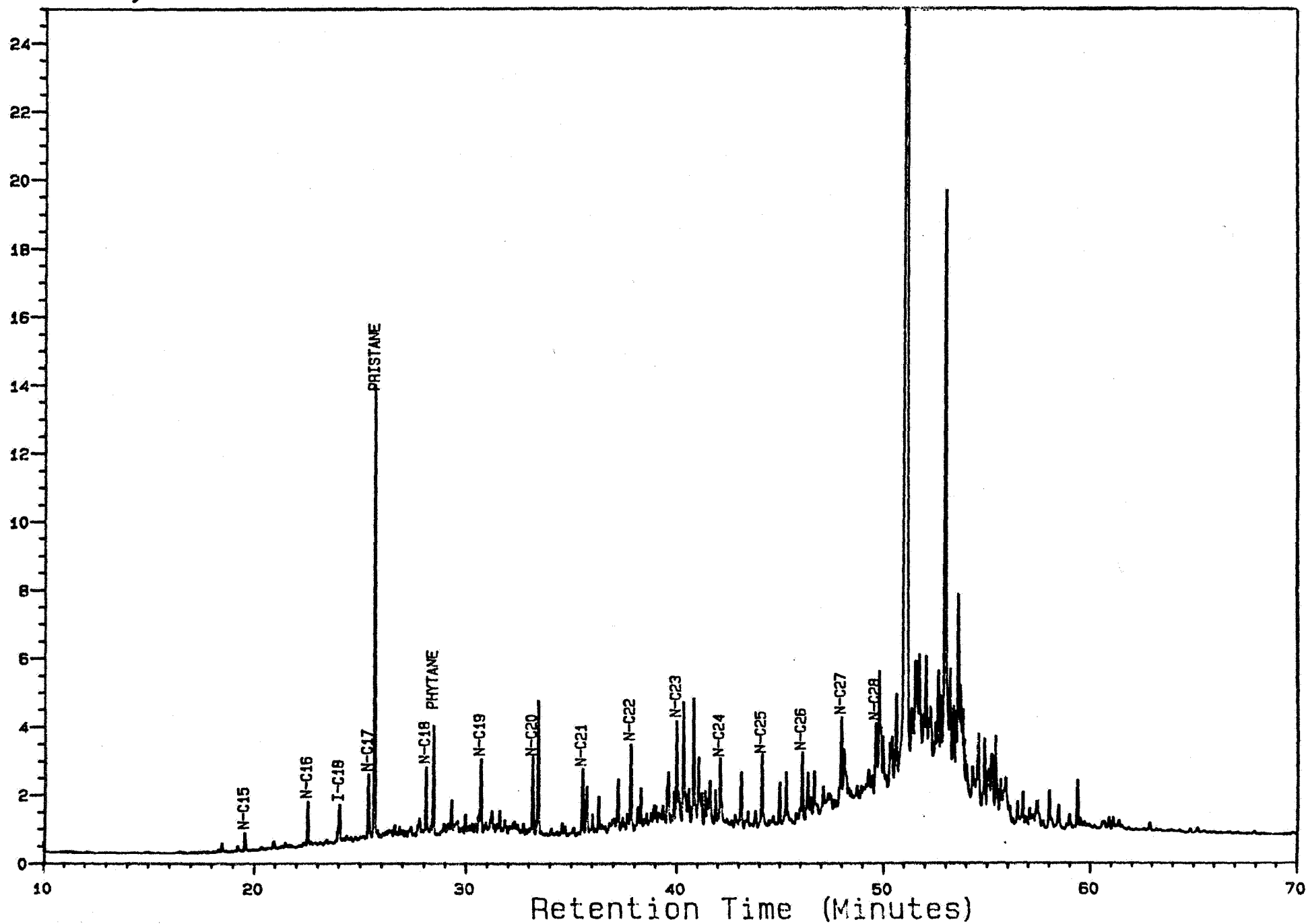


Analysis A64070702

7, 13, 1

1824 M SAT

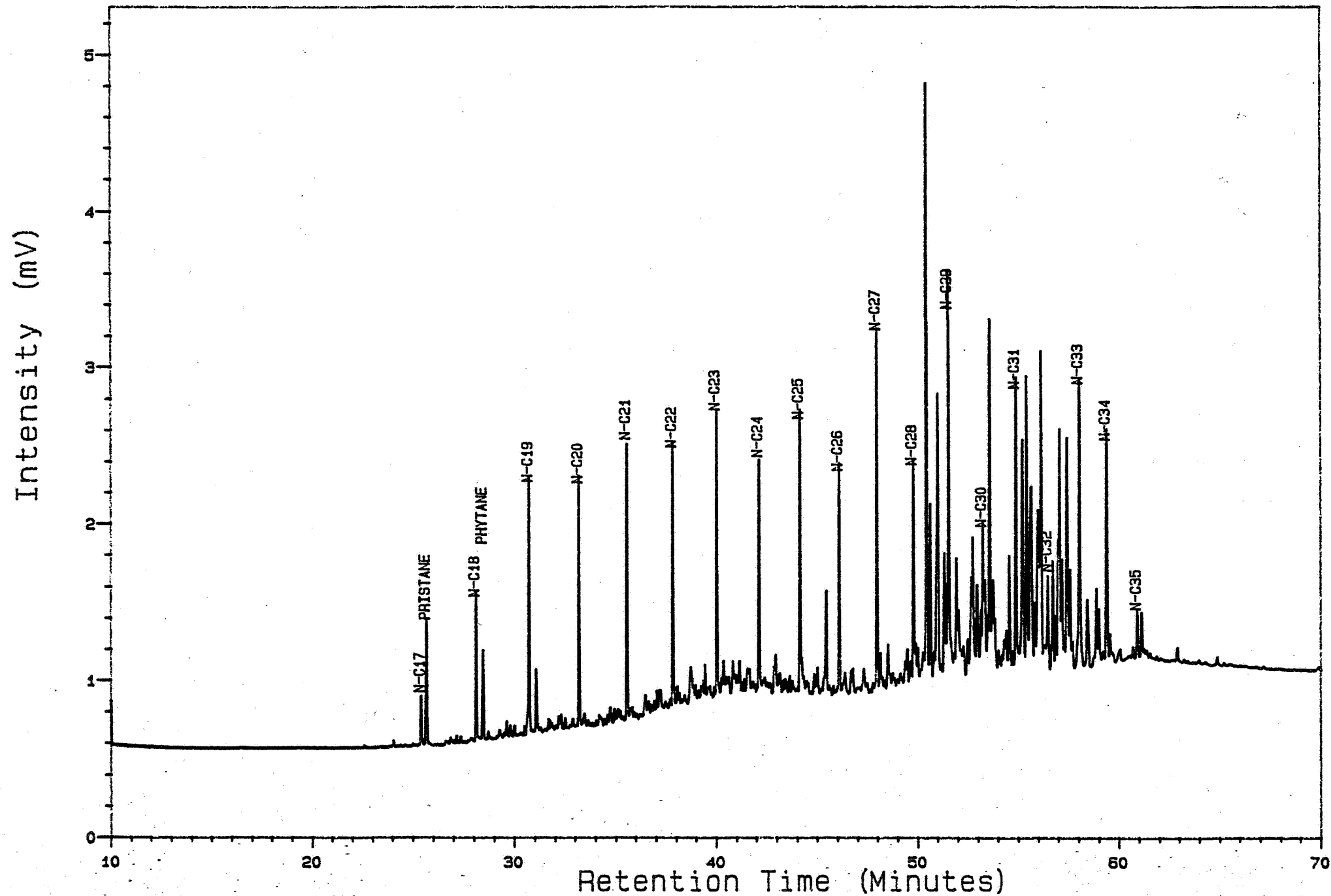
Intensity (mV)

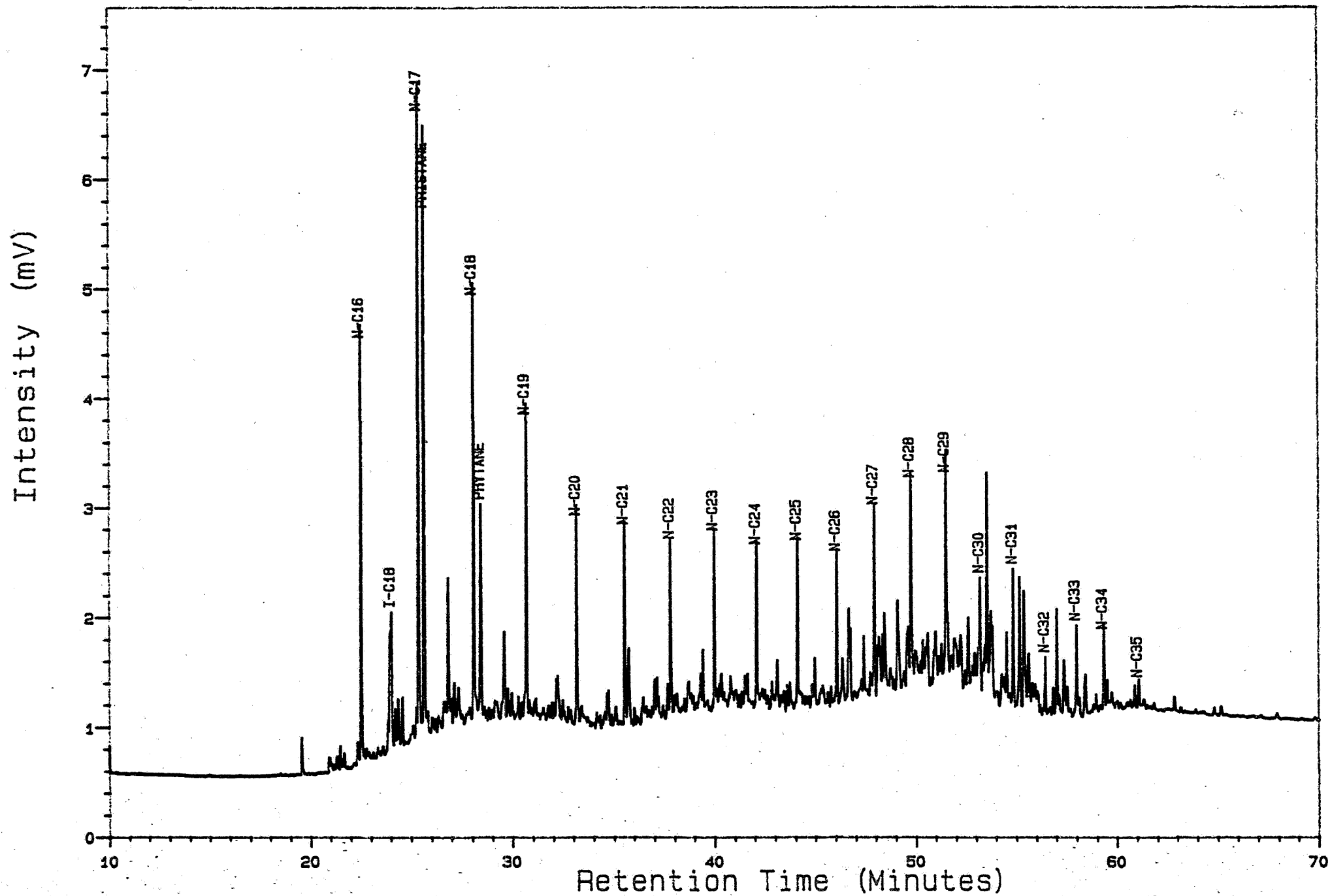


Analysis A64070702

7, 14, 1

1956.5 M SAT

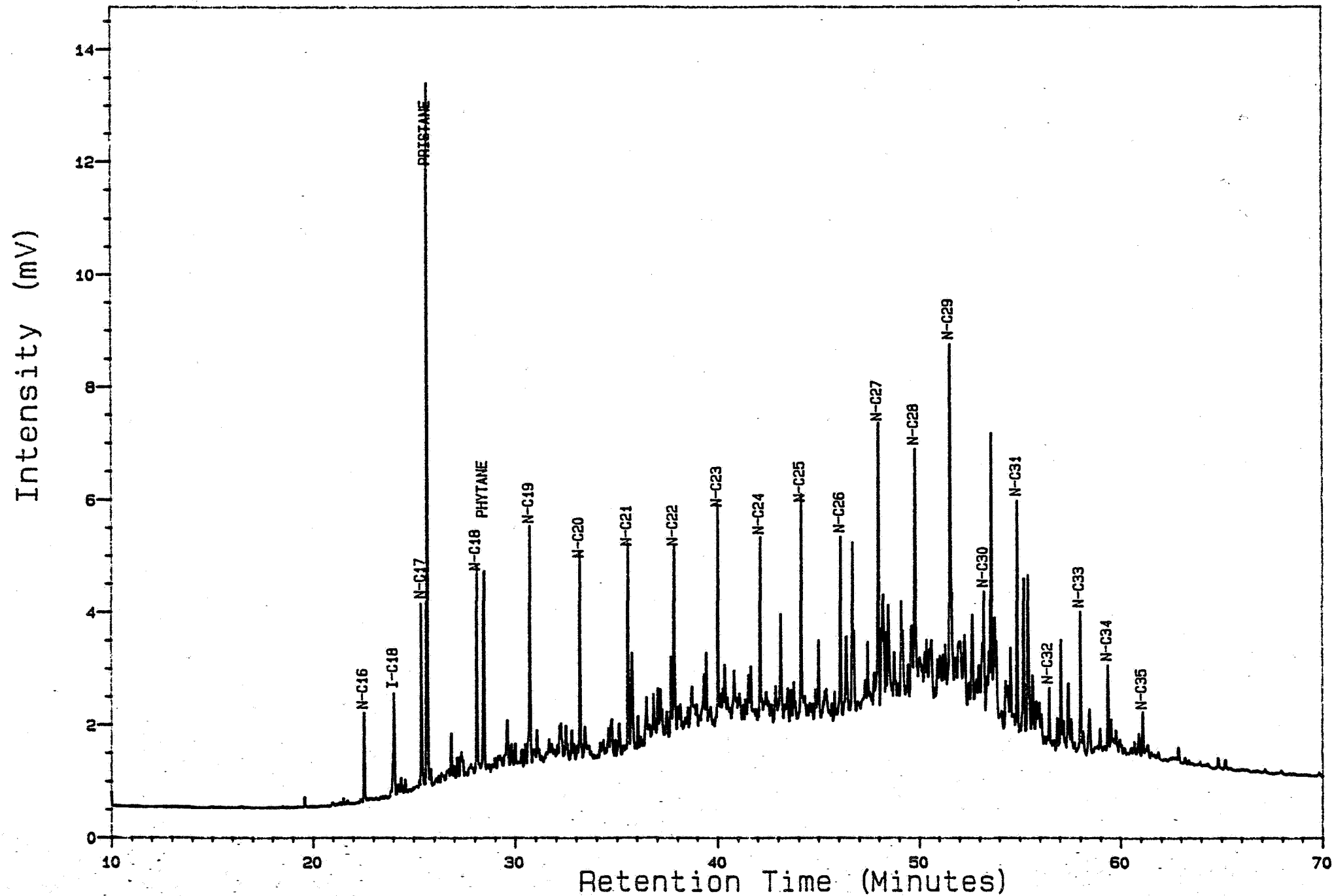




Analysis A64070702

7, 16, 1

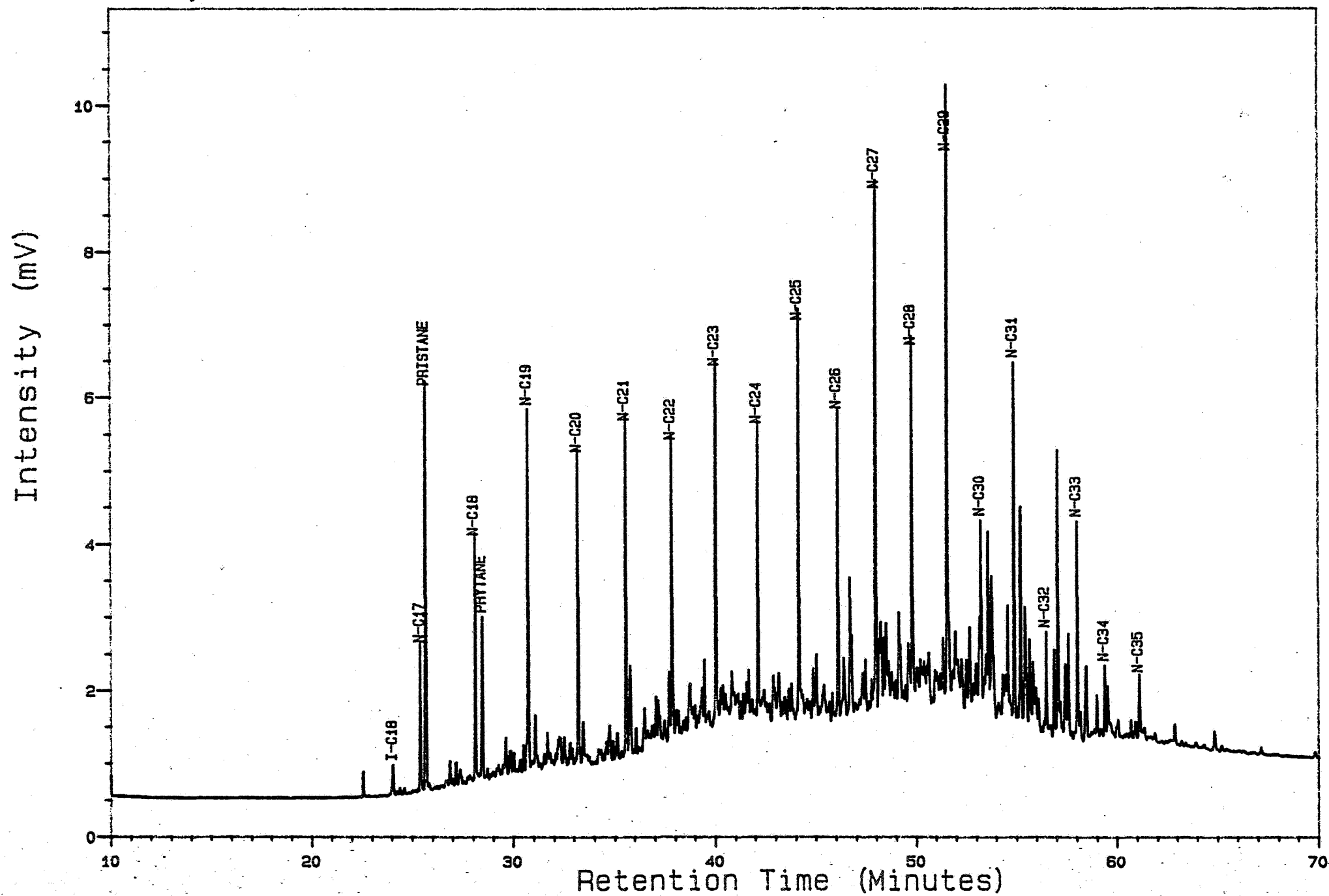
2075 M SAT



Analysis A64070702

7, 17, 1

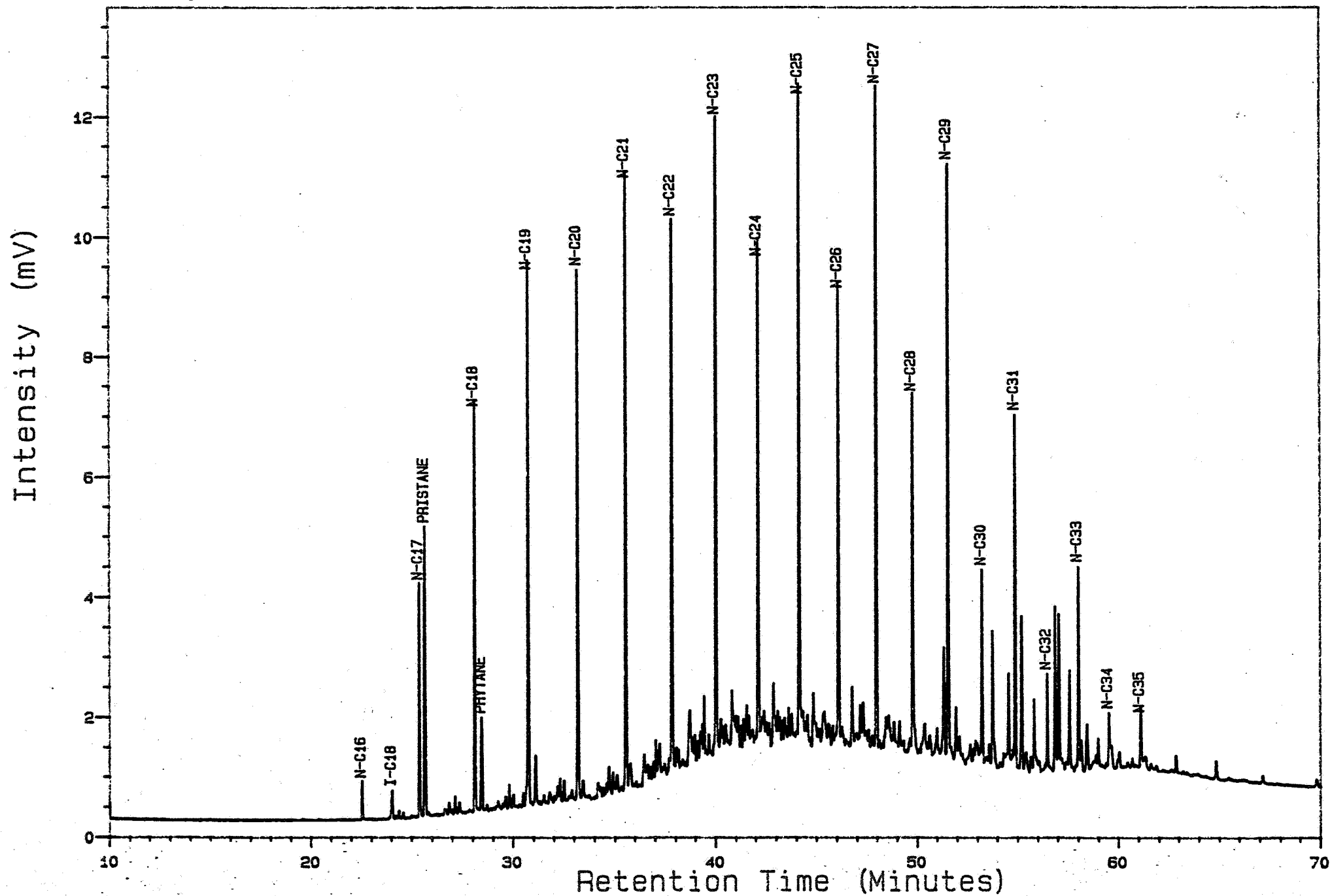
2251 M SAT



Analysis A64070702

7, 18, 1

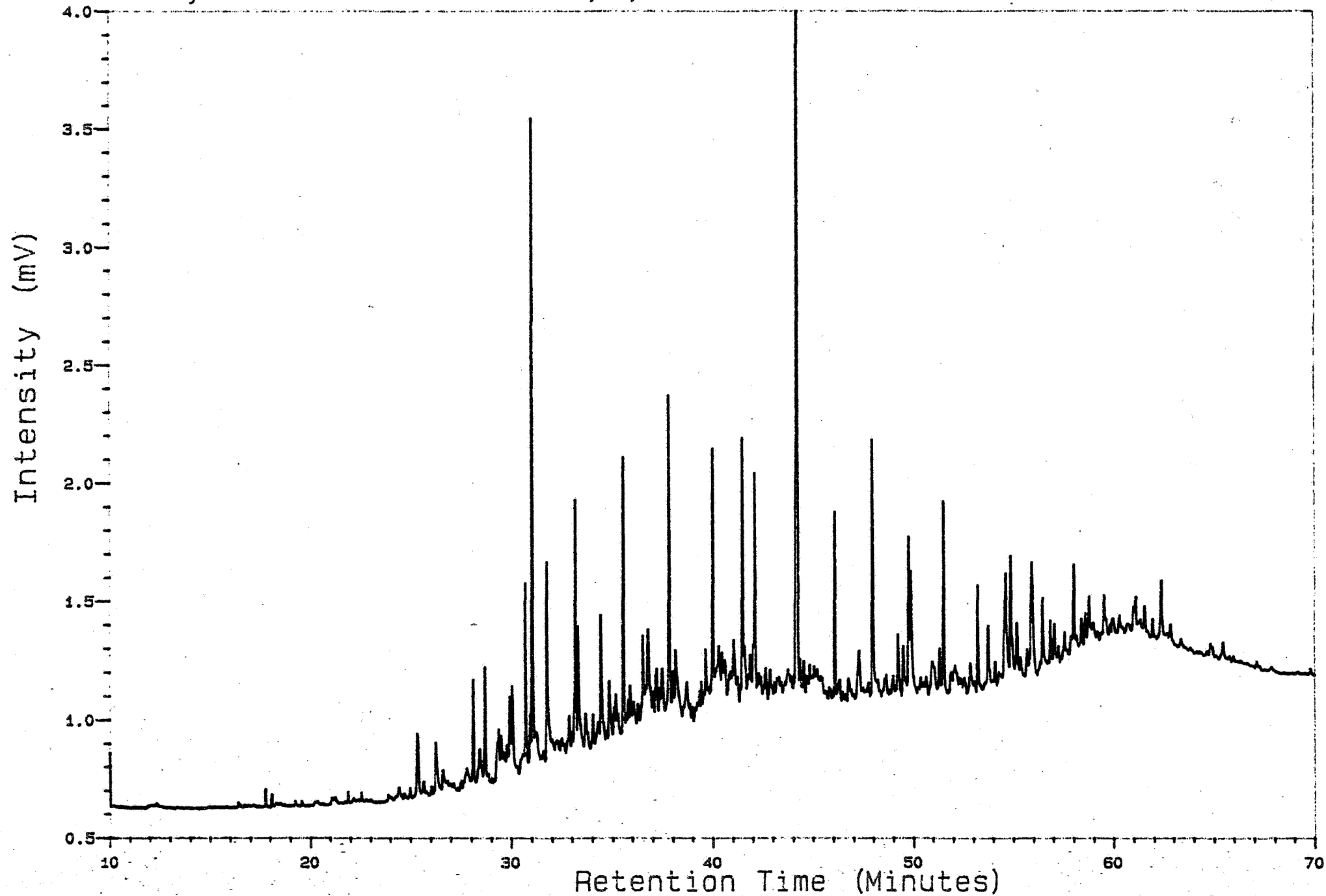
2425 M SAT



Analysis A64070702

7, 4, 1

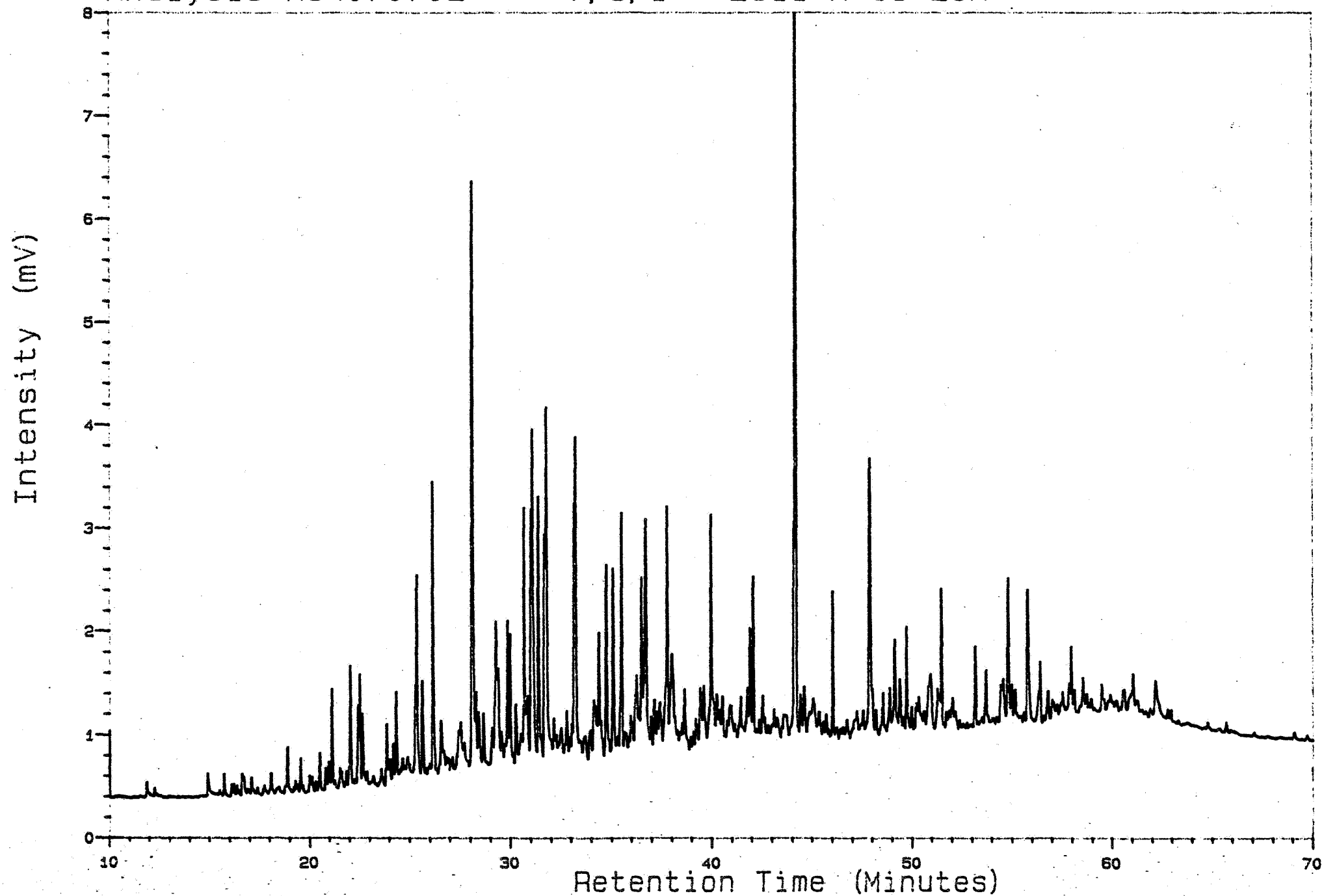
2553 M C5-EOM



Analysis A64070702

7, 5, 1

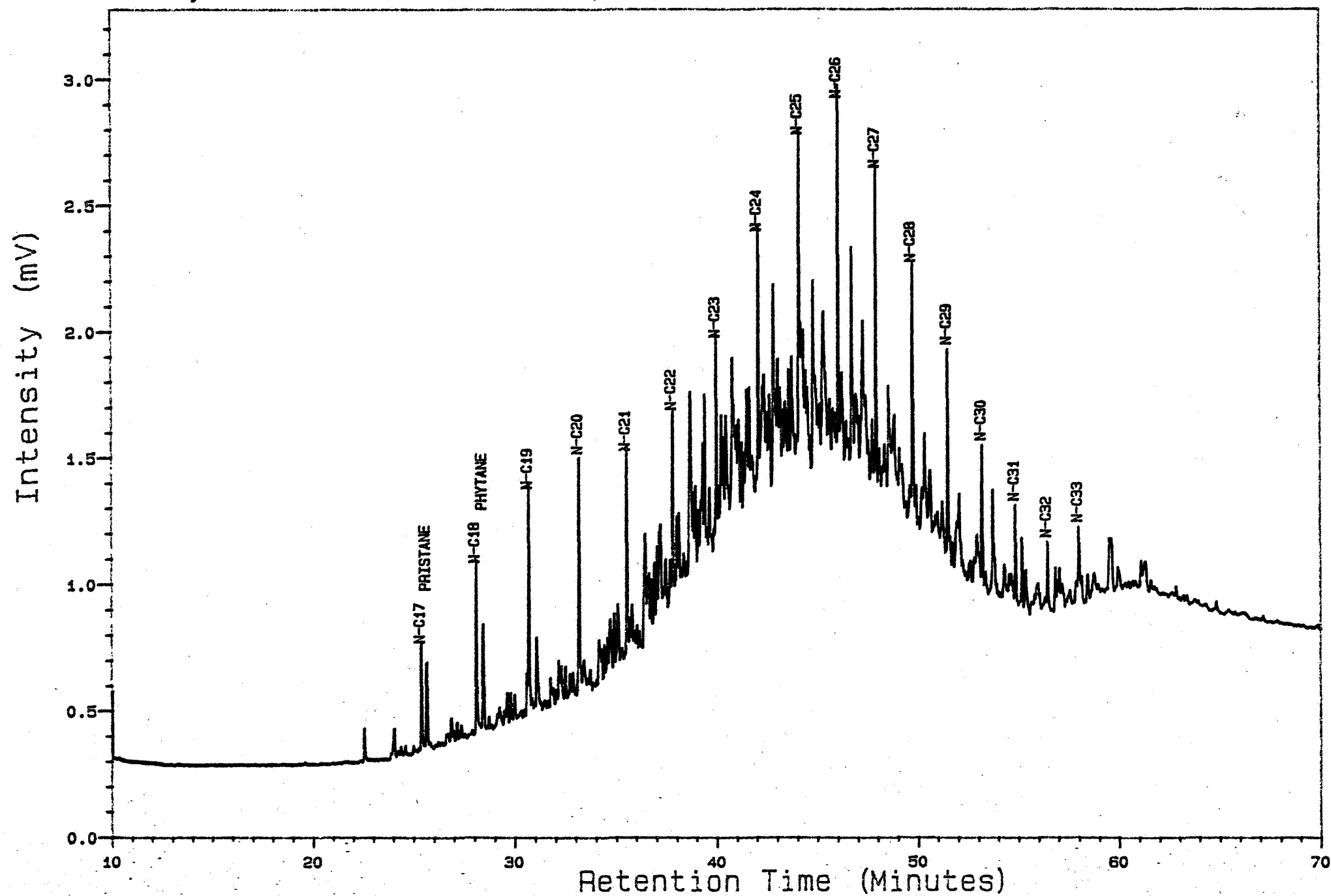
2611 M C5-EOM



Analysis A64070702

7, 19, 1

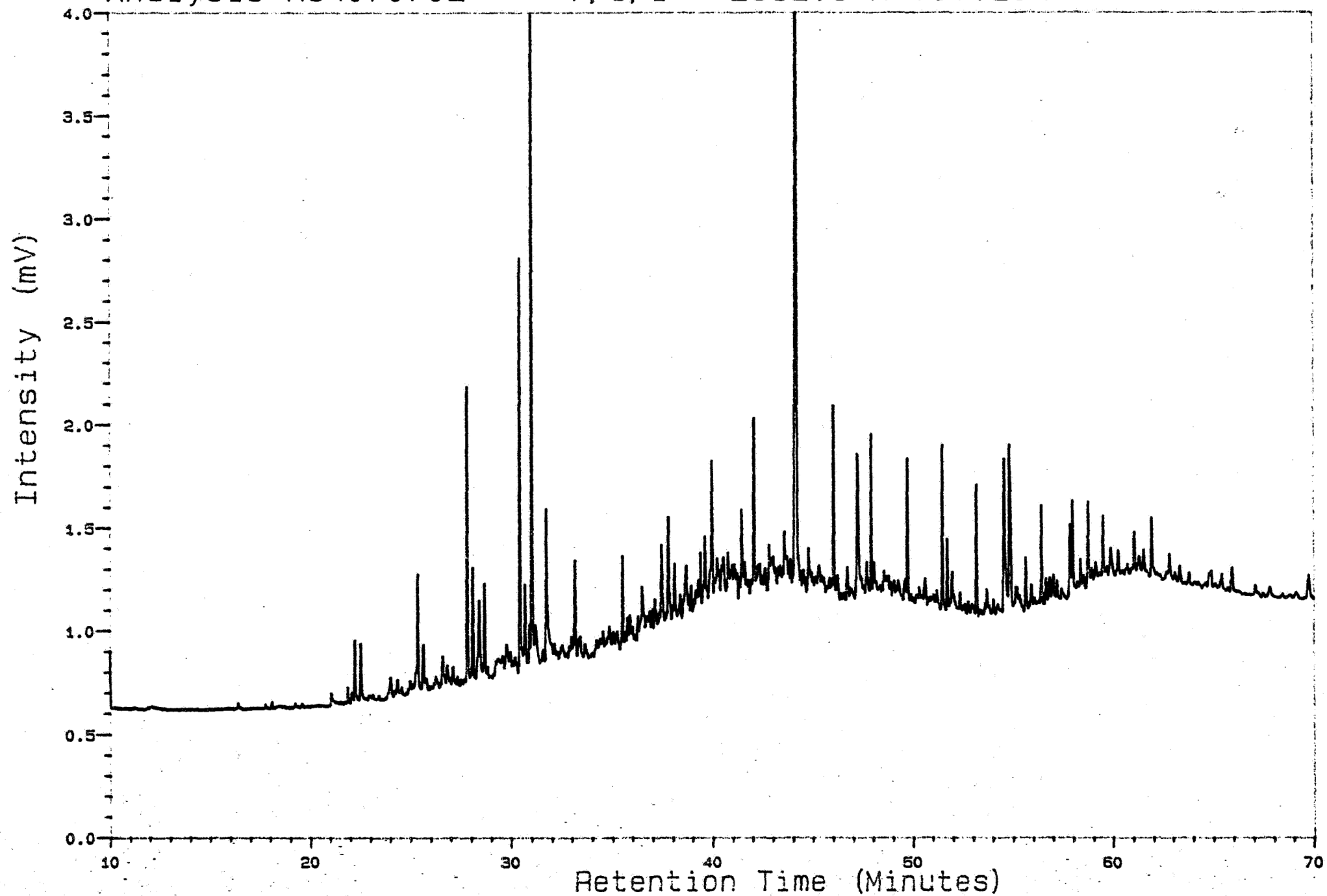
2625 M SAT



Analysis A64070702

7, 6, 1

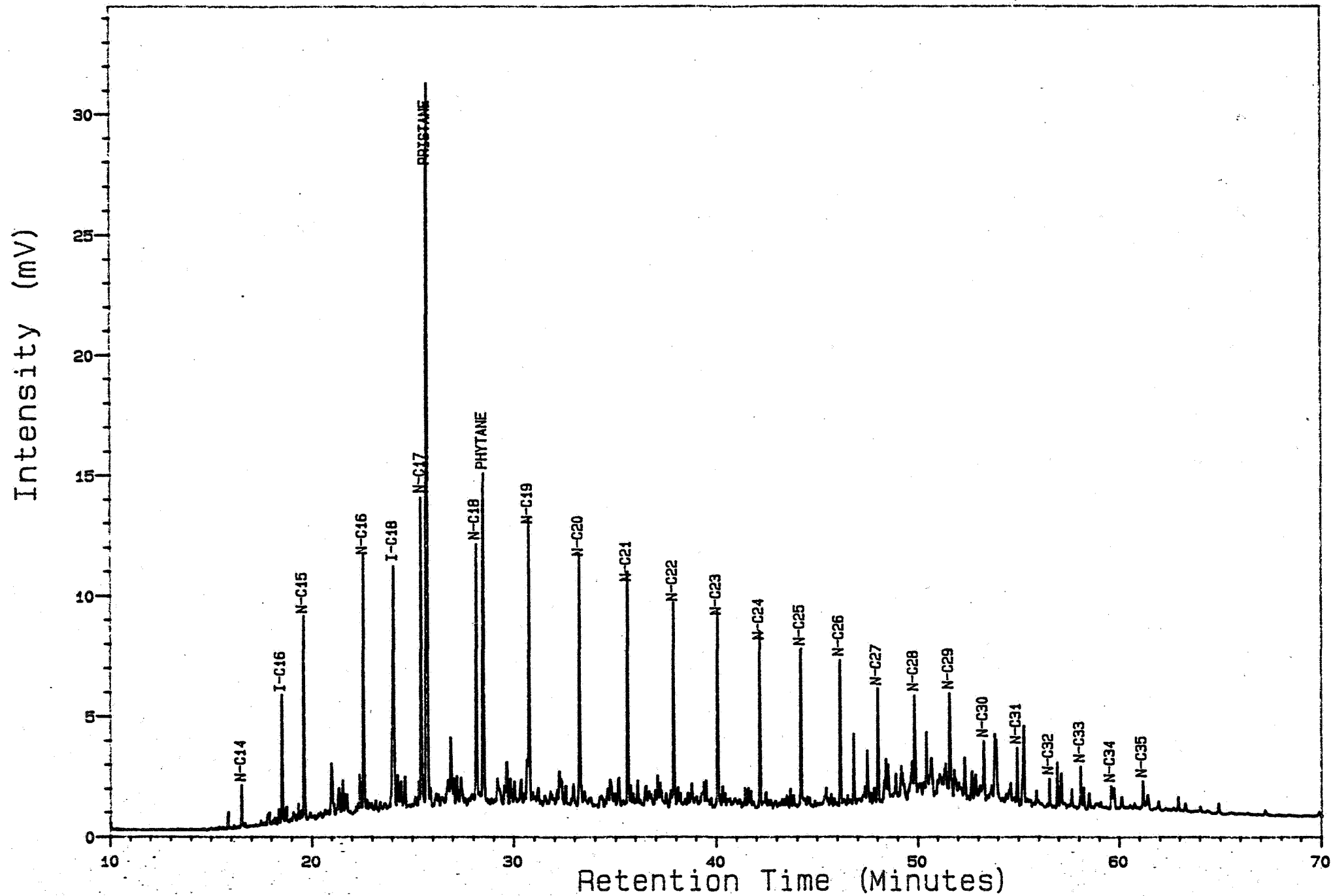
2632.5 M TOT.EOM



Analysis A64070702

7, 20, 1

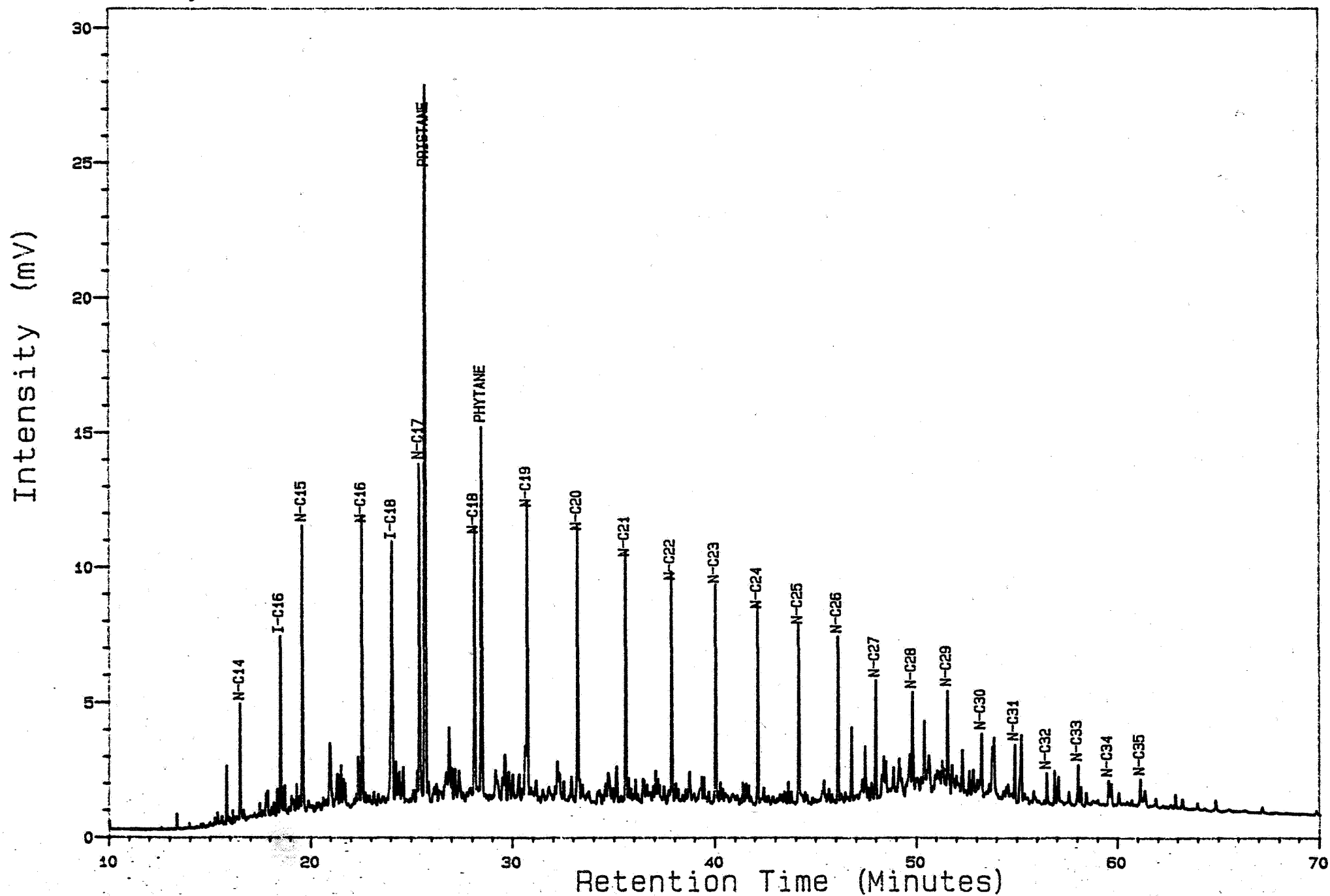
2638 M SAT



Analysis A64070702

7, 21, 1

2640 M SAT

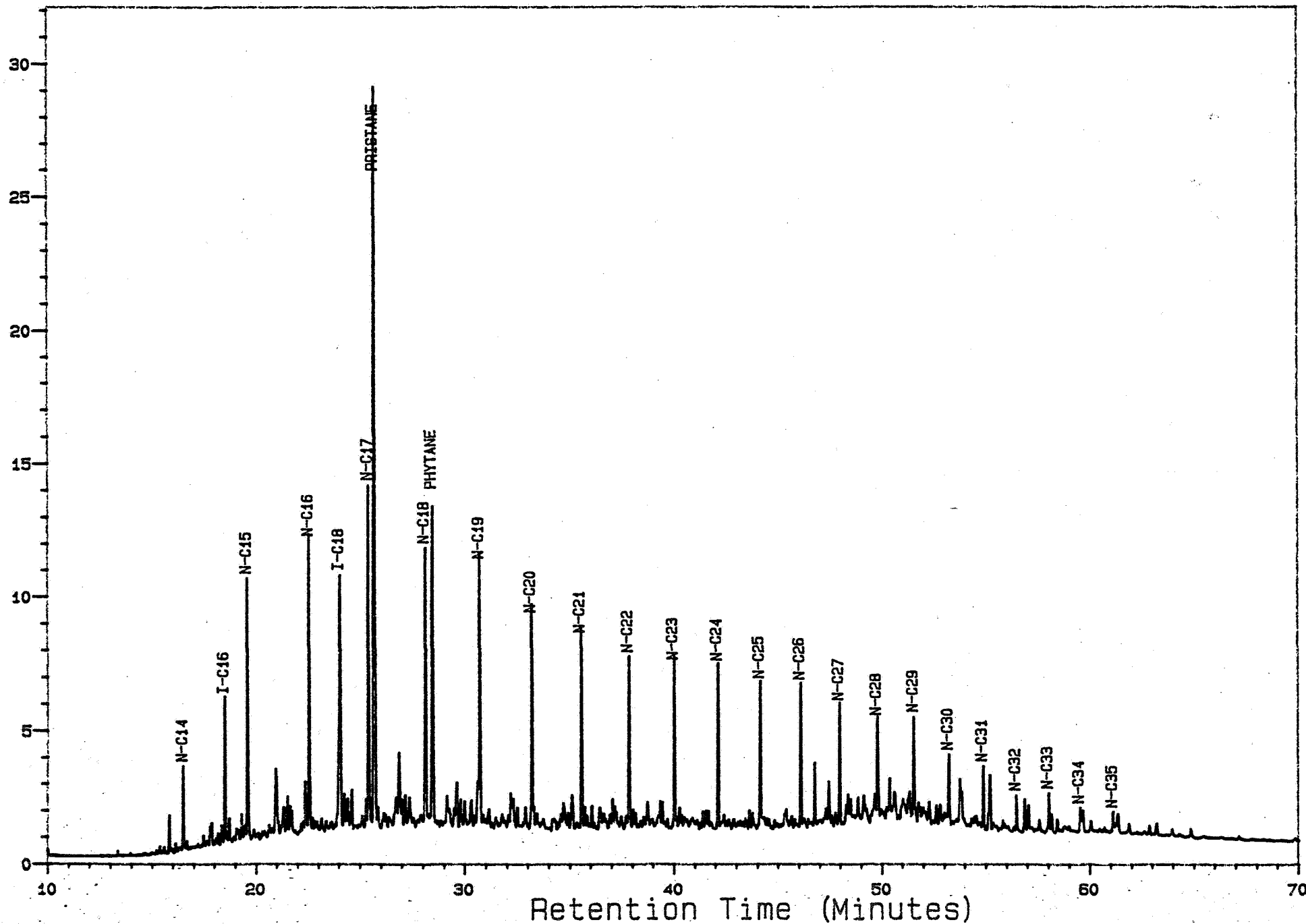


Analysis A64070702

7, 22, 1

2647 M SAT

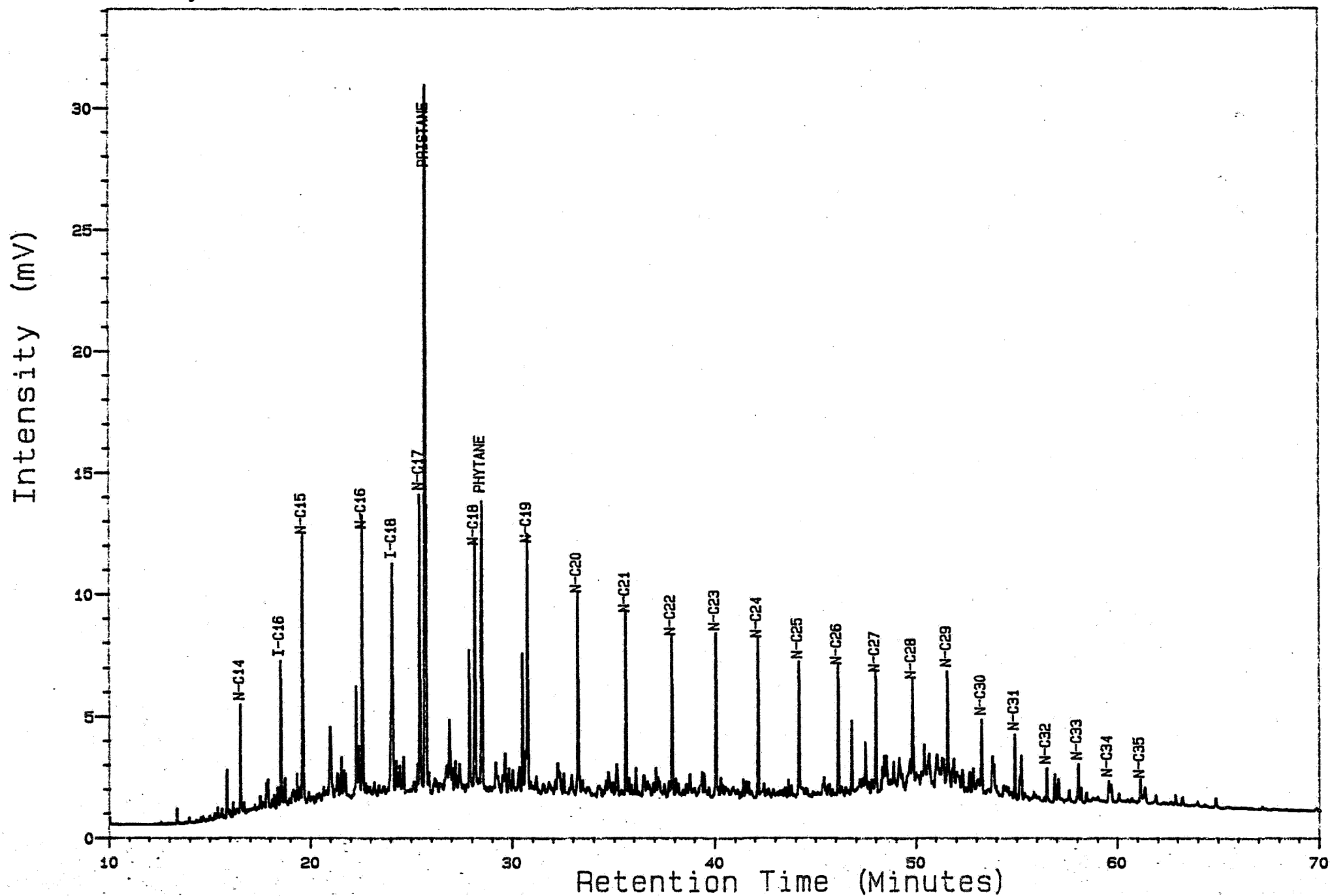
Intensity (mV)



Analysis A64070702

7.23.1

2650 M SAT

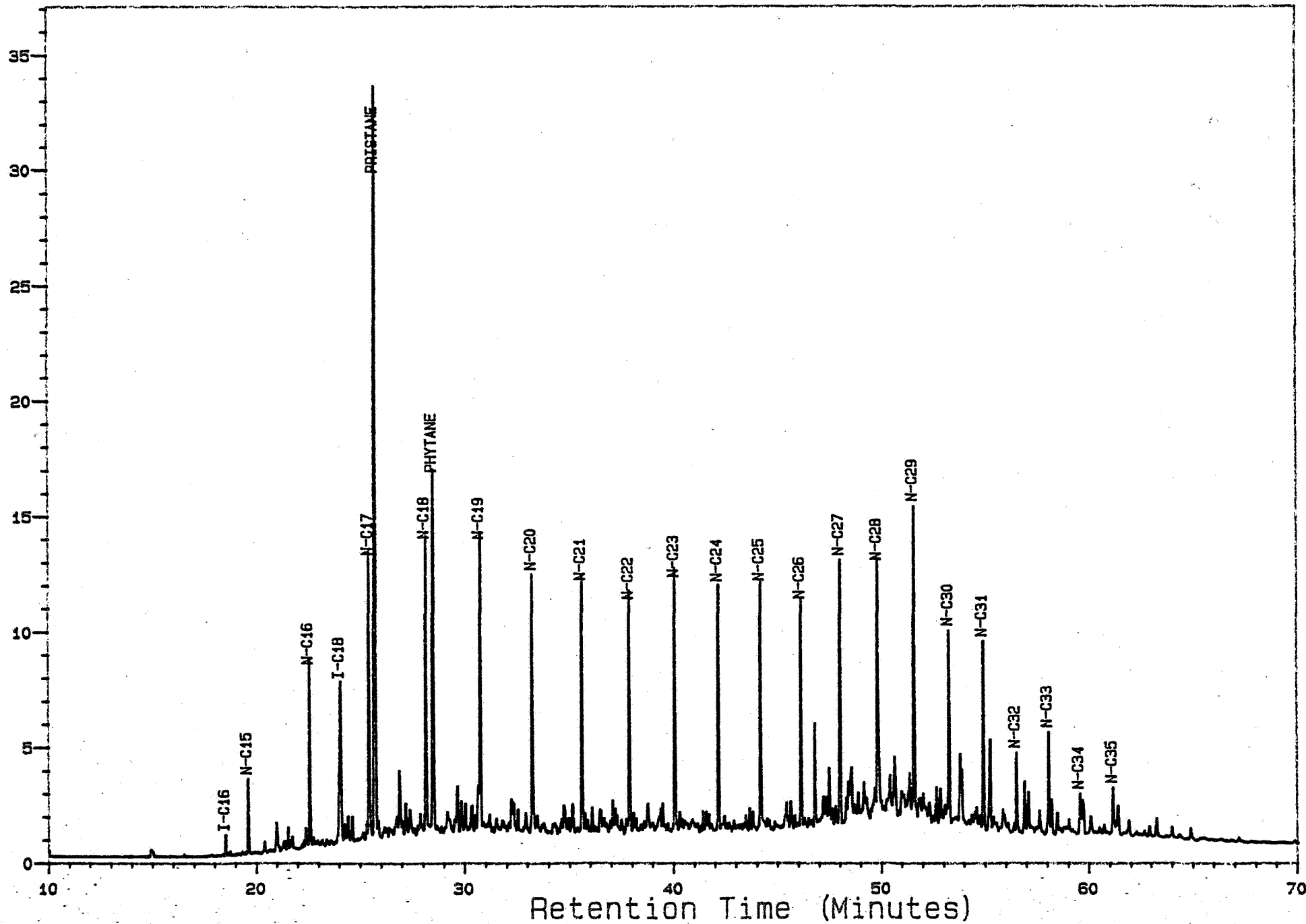


Analysis A64070702

7, 24, 1

2653 M SAT

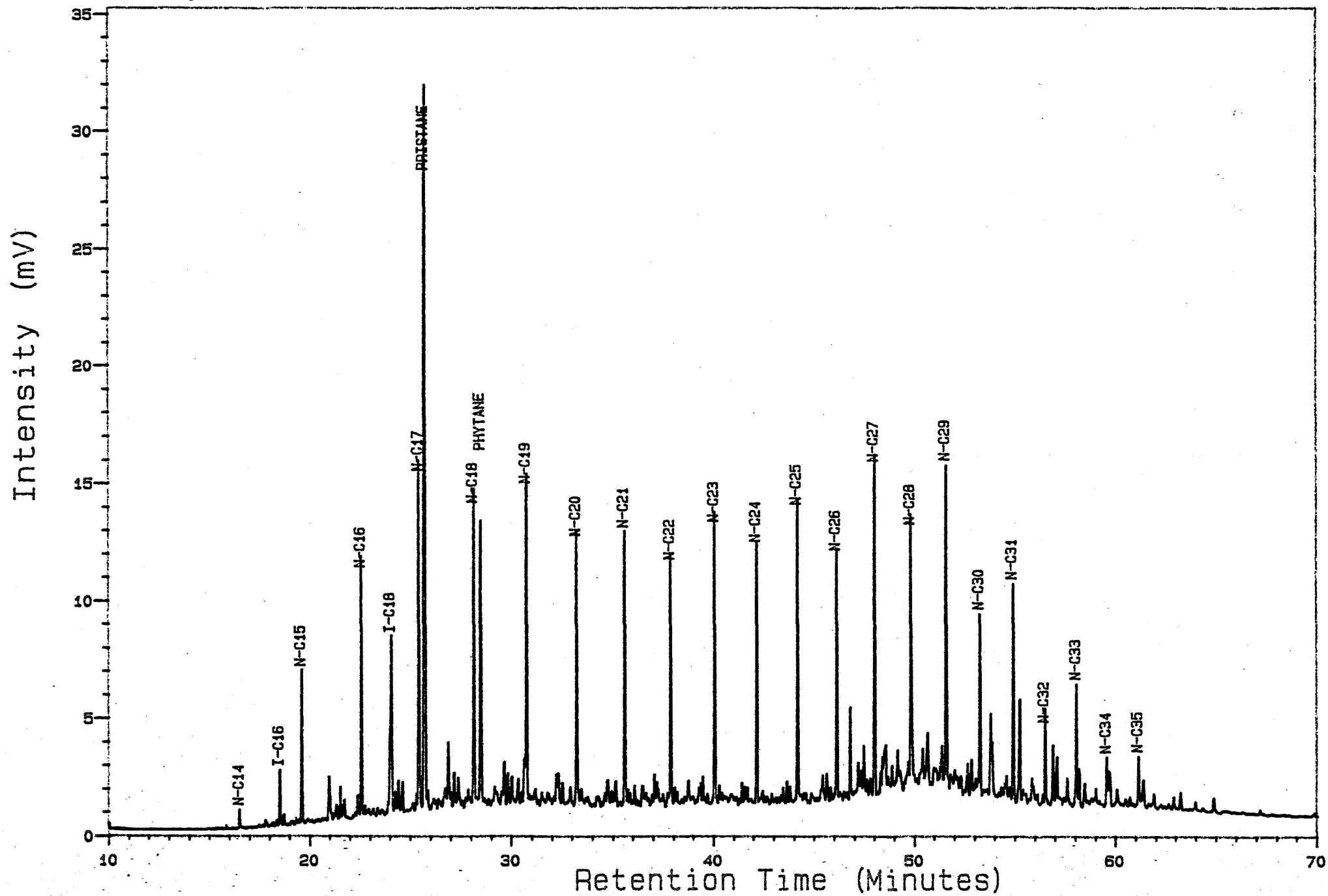
Intensity (mV)



Analysis A64070702

7.25.1

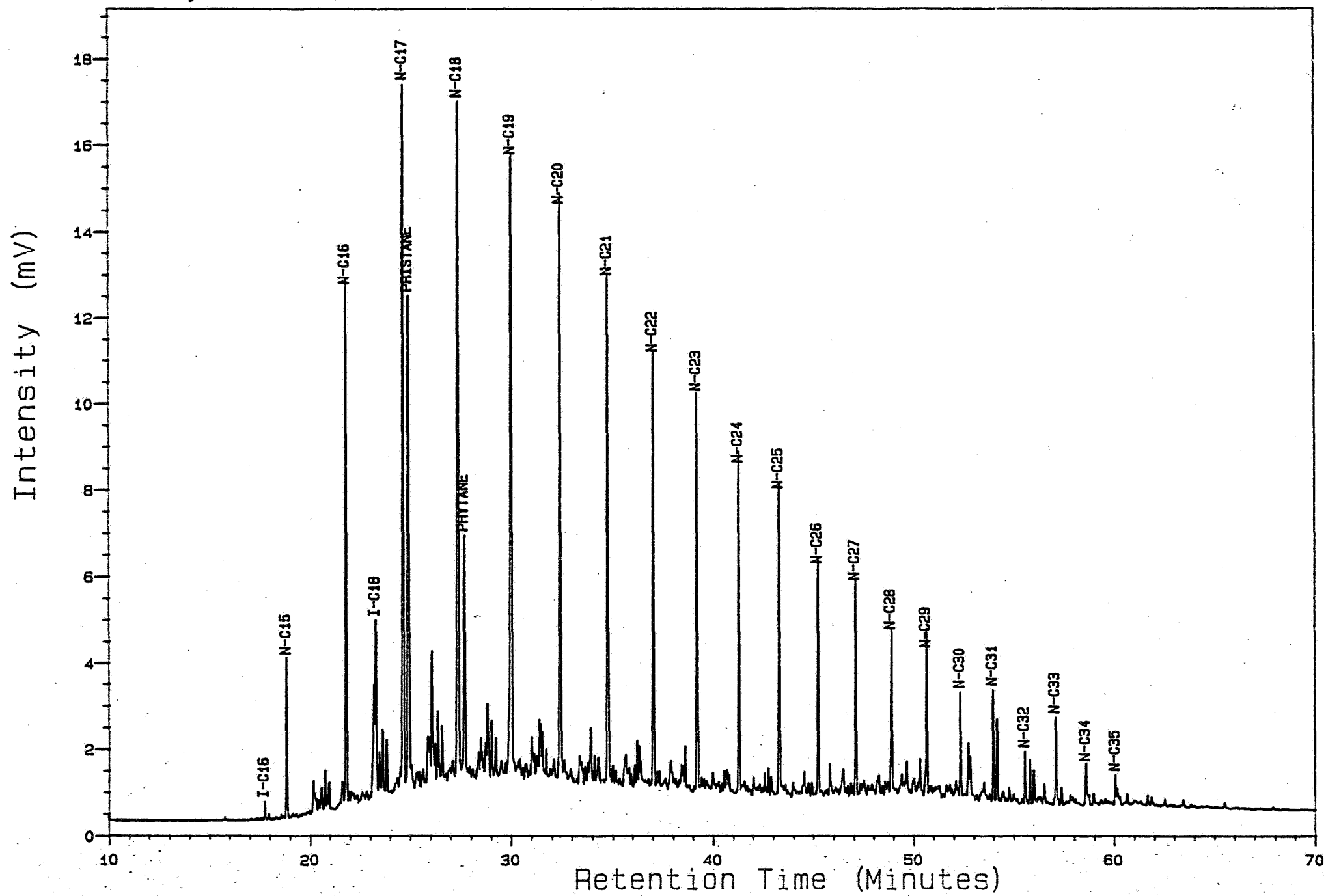
2661 M SAT



Analysis B64070702

7.2.1

2673 M SAT

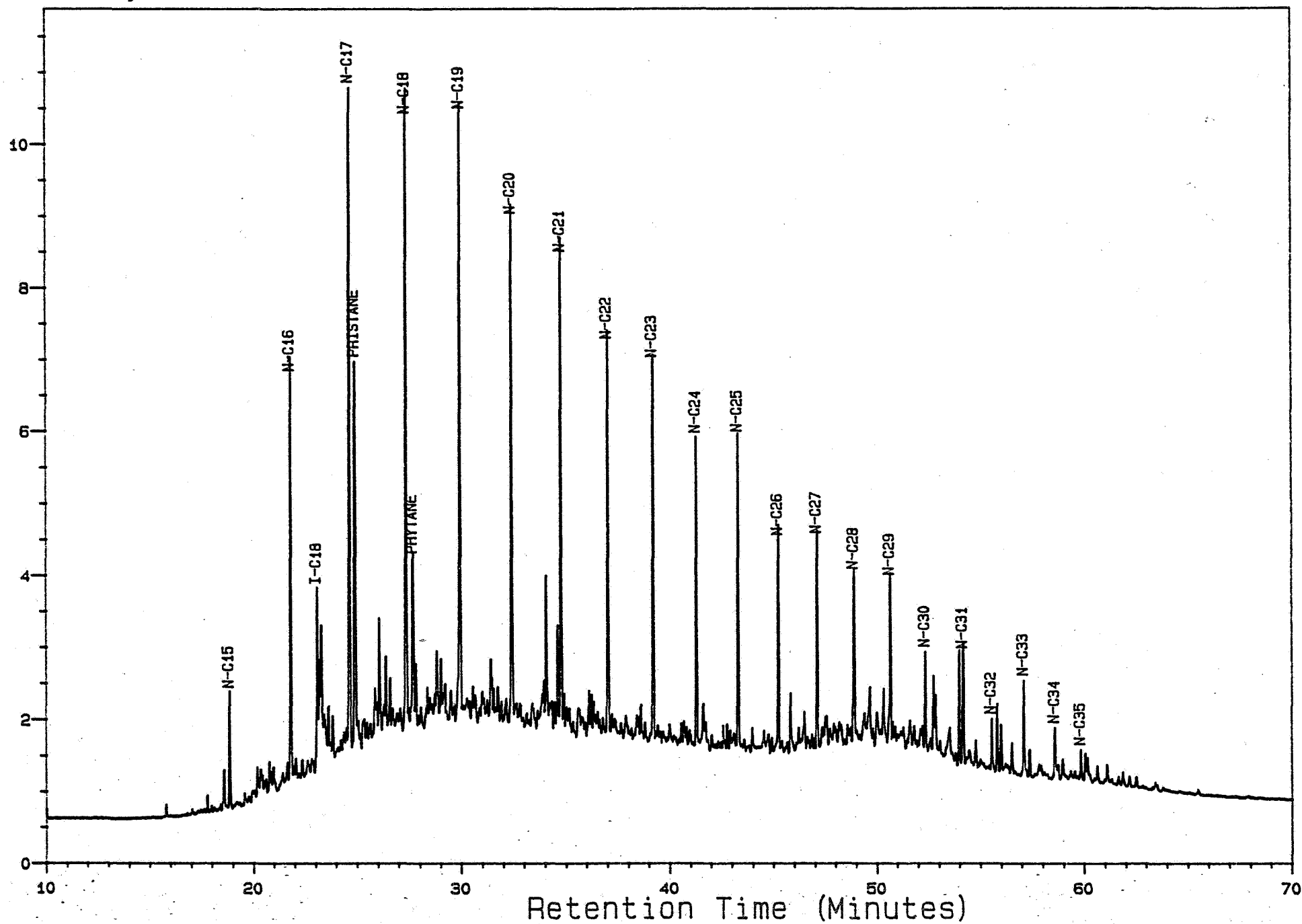


Analysis B64070702

7, 15, 1

2678.8 M SAT

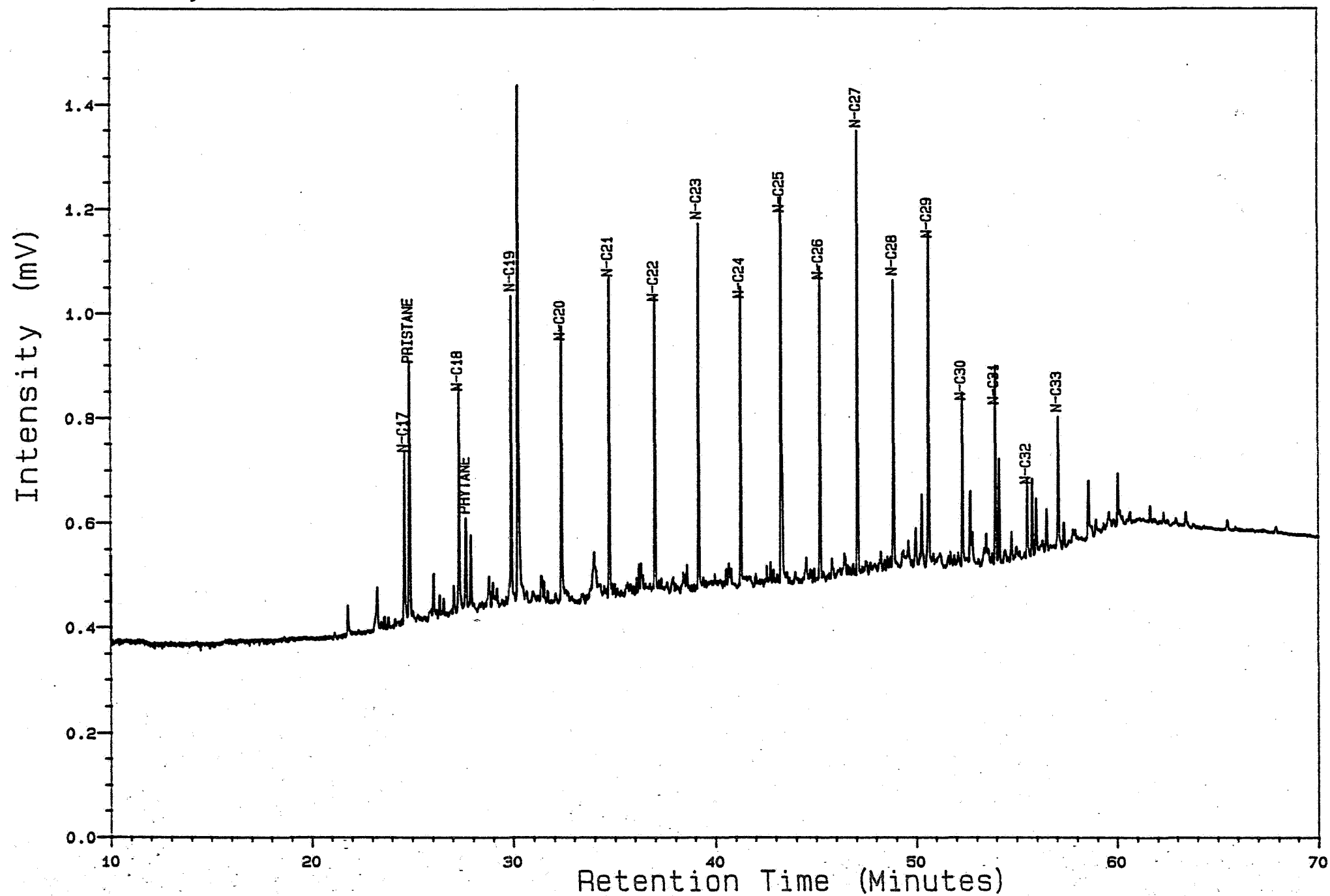
Intensity (mV)



Analysis B64070702

7, 17, 1

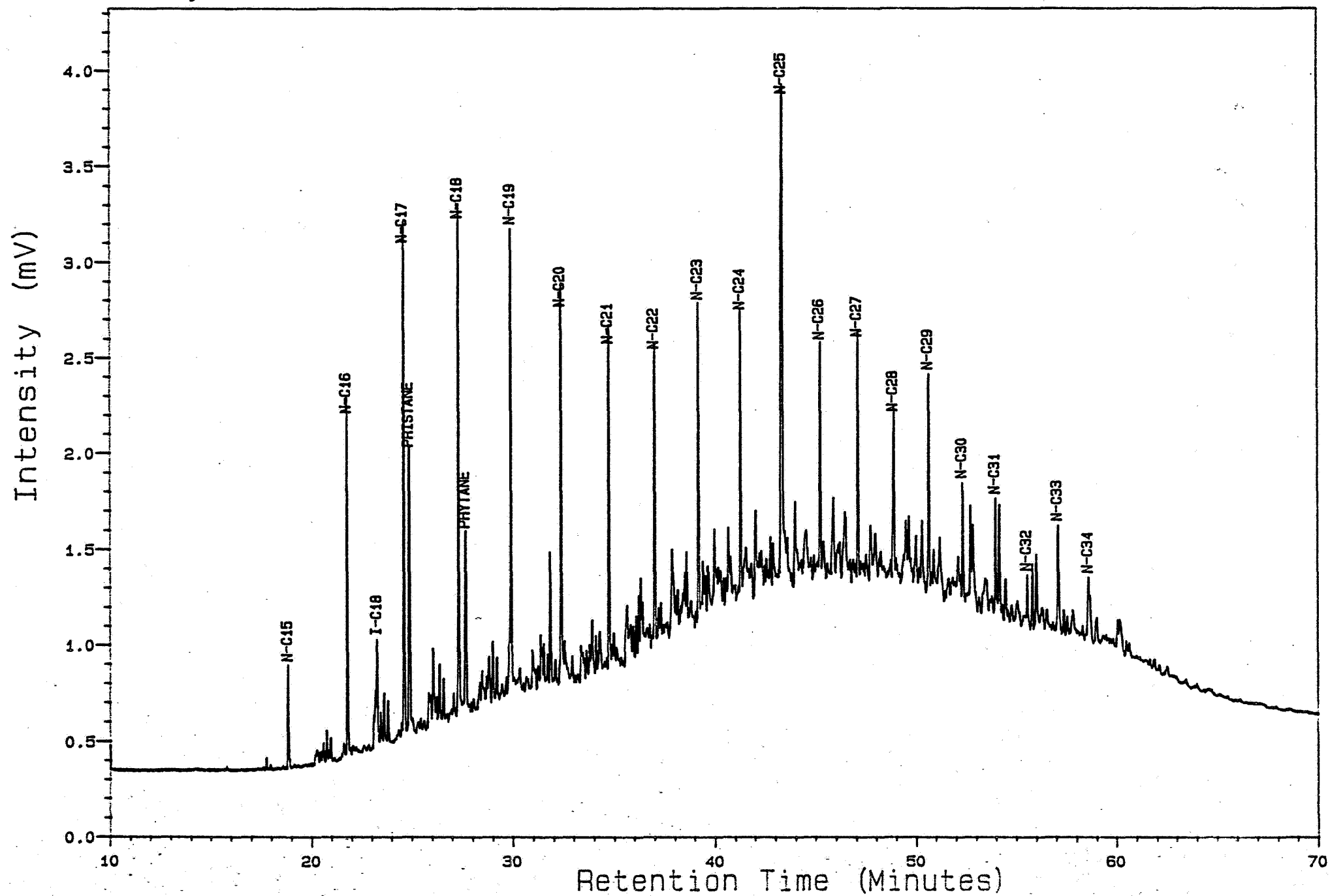
2681.75 M SAT



Analysis B64070702

7, 3, 1

2695 M SAT

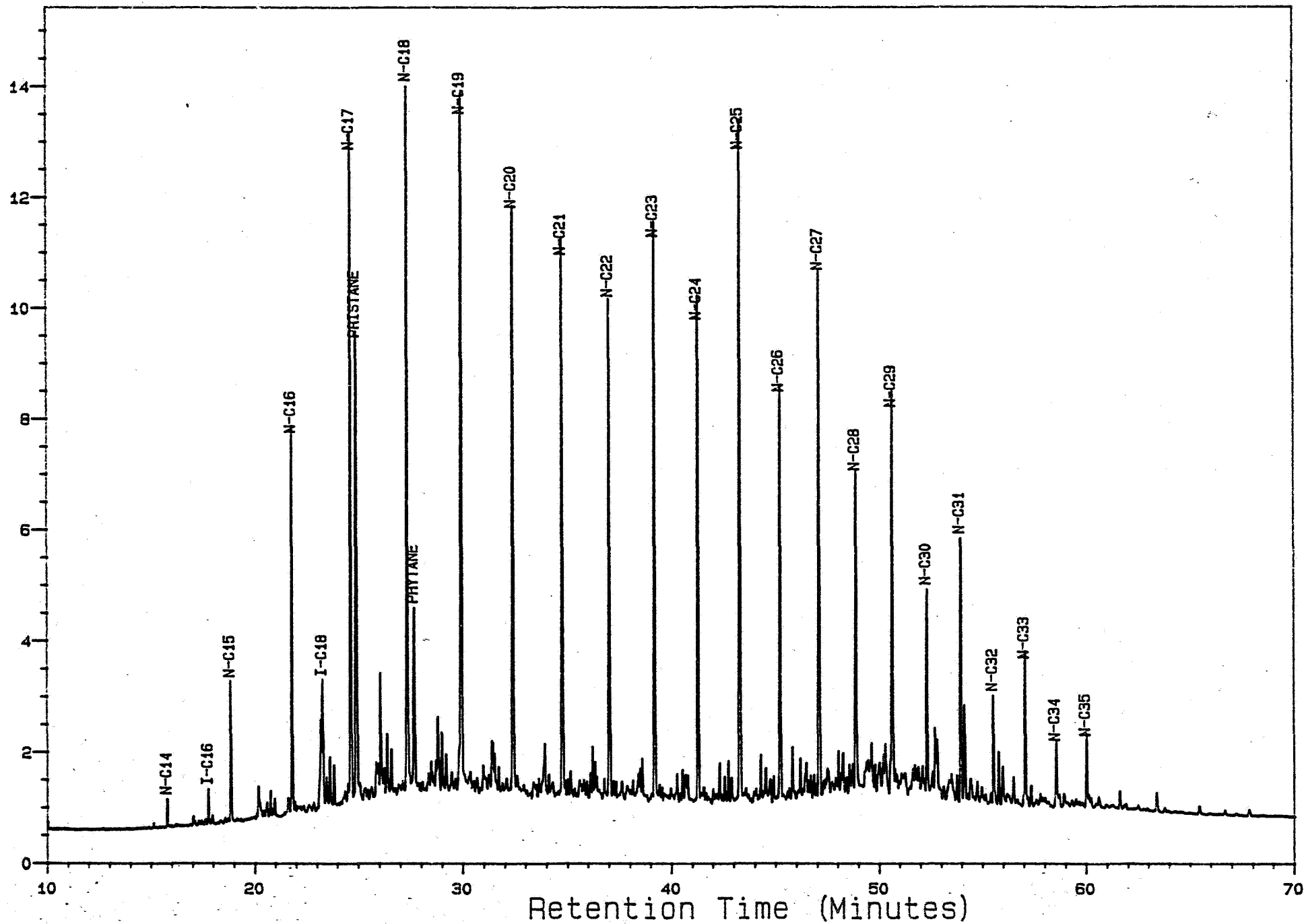


Analysis B64070702

7, 18, 1

2739.4 M SAT

Intensity (mV)

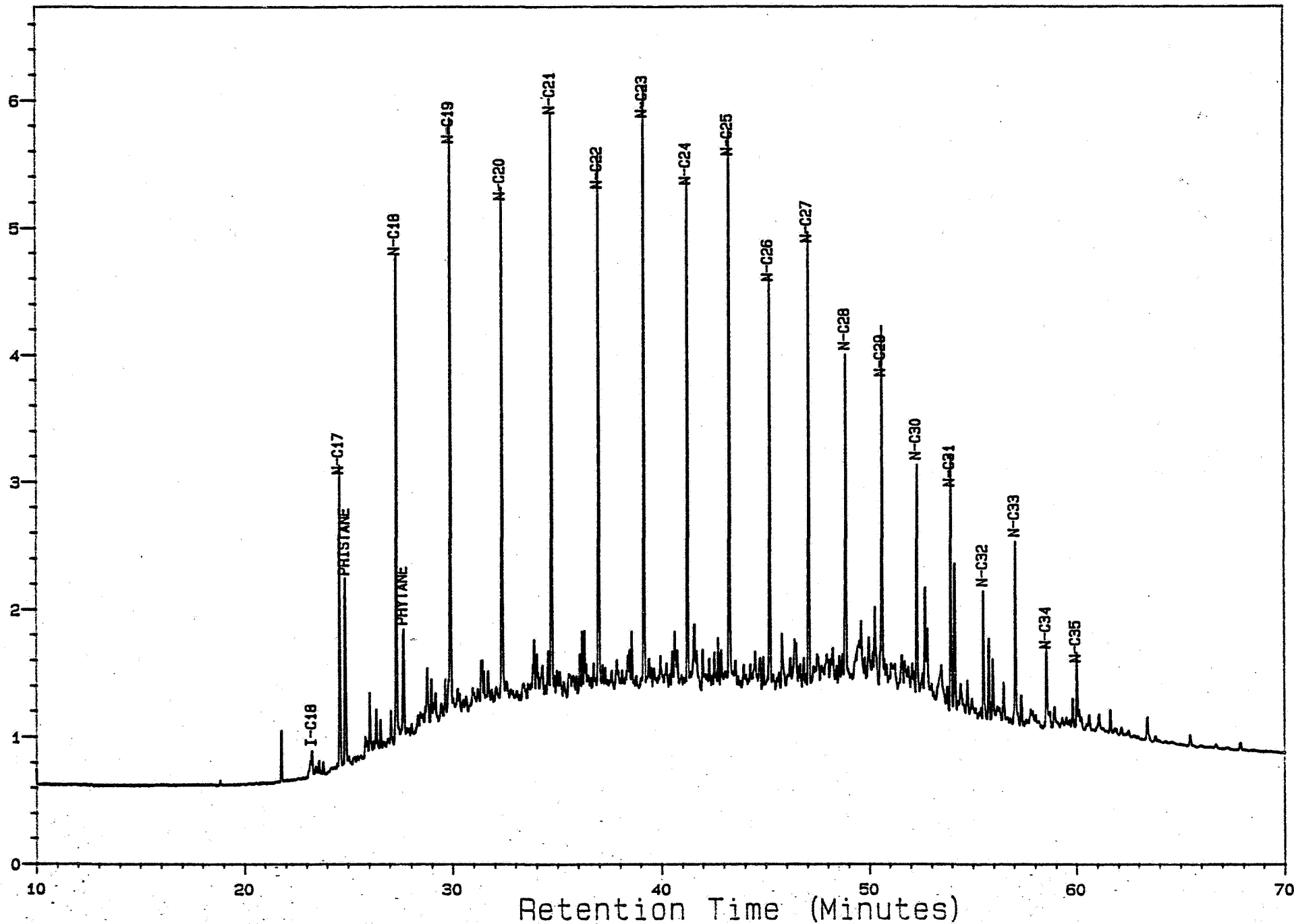


Analysis B64070702

7, 4, 1

2755 M SAT

Intensity (mV)

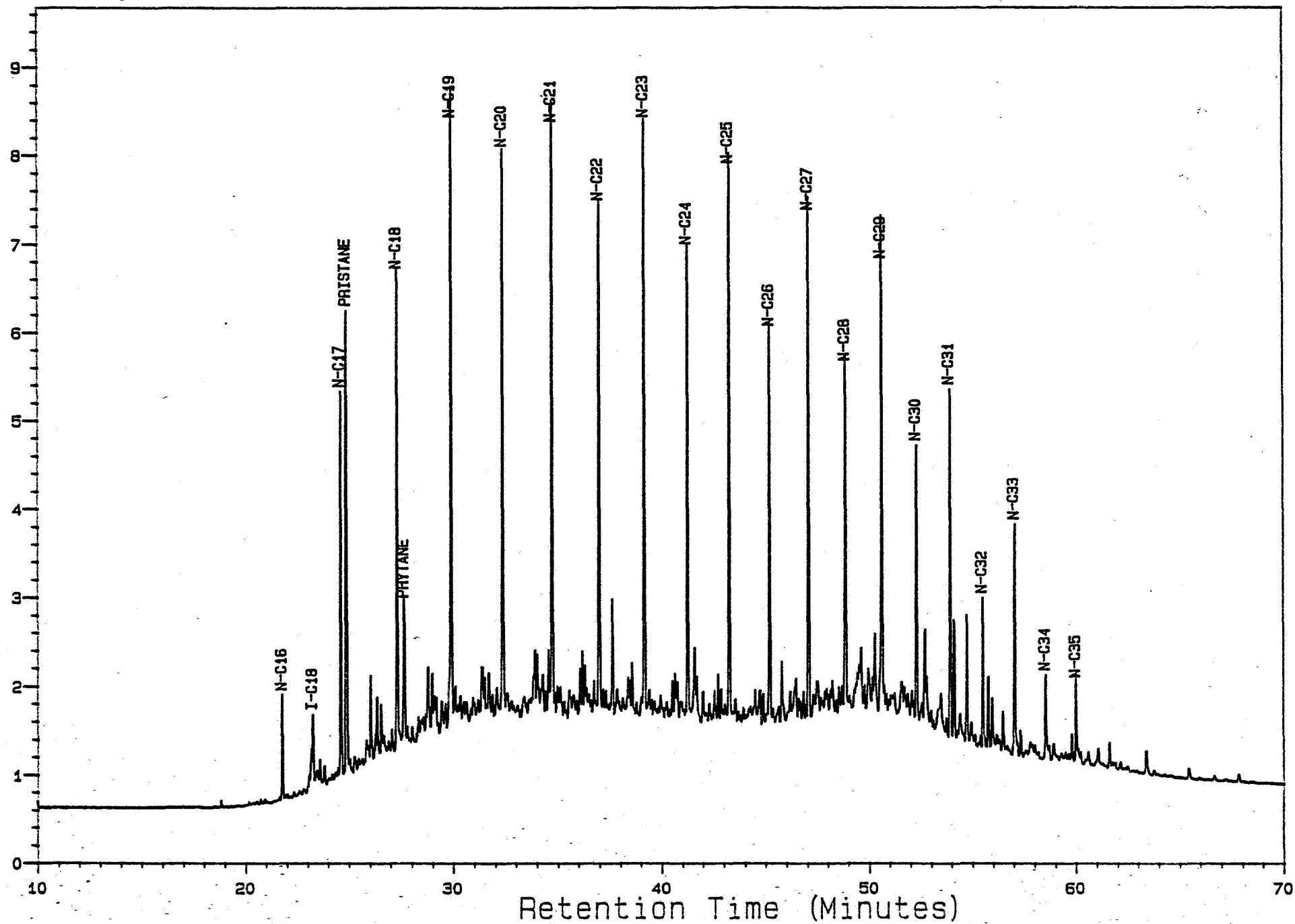


Analysis B64070702

7, 5, 1

2760 M SAT

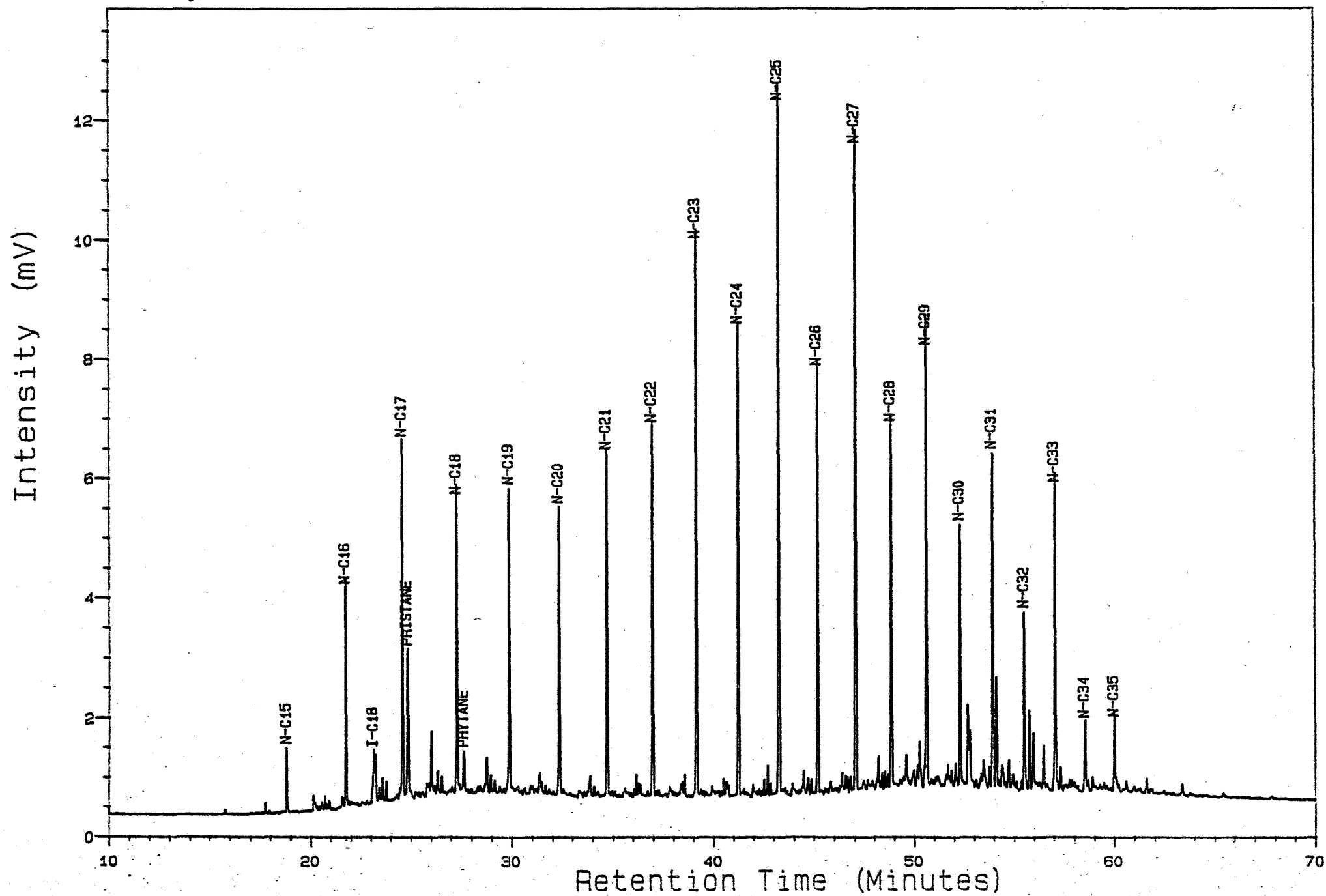
Intensity (mV)



Analysis B64070702

7, 6, 1

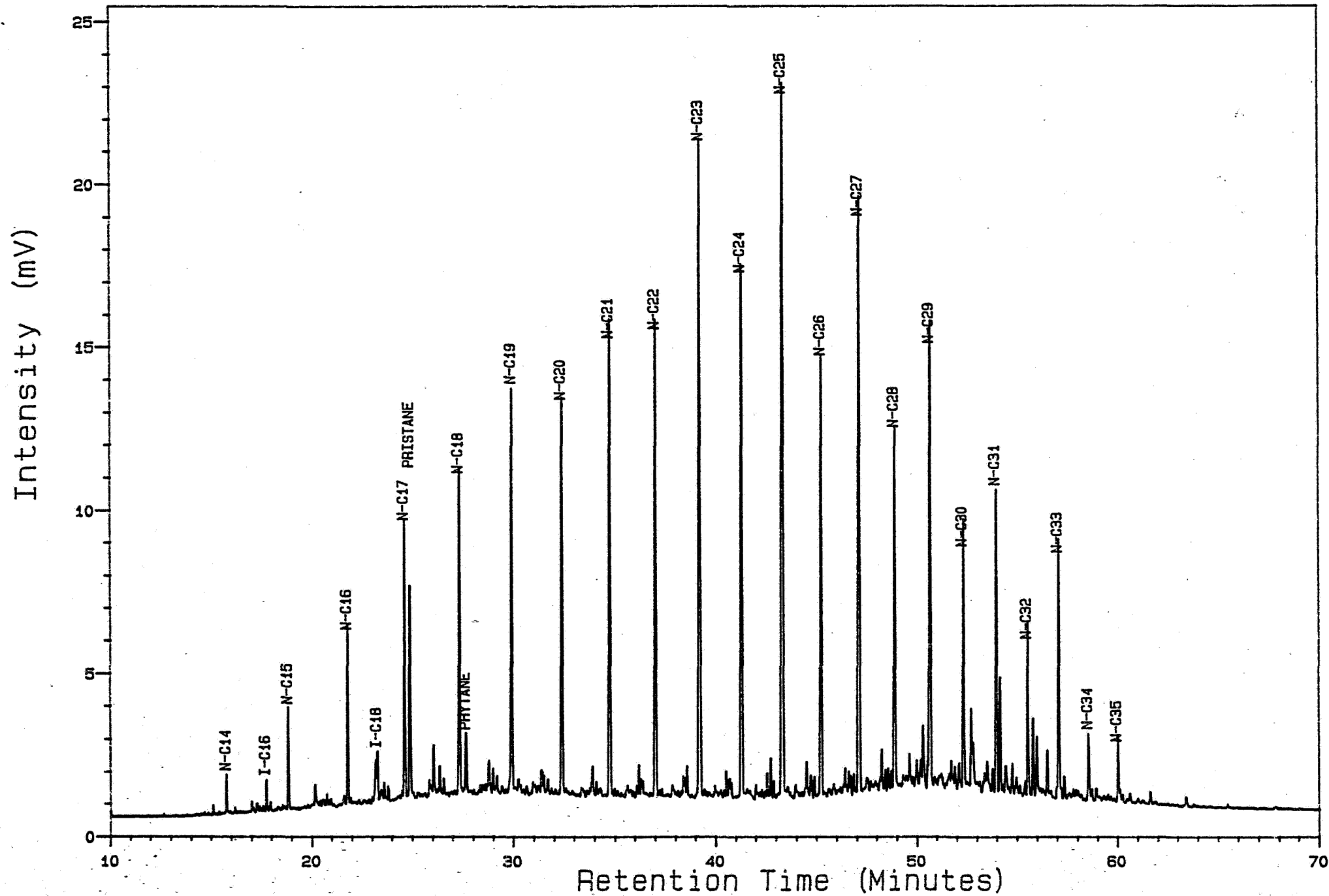
2772 M SAT



Analysis B64070702

7, 19, 1

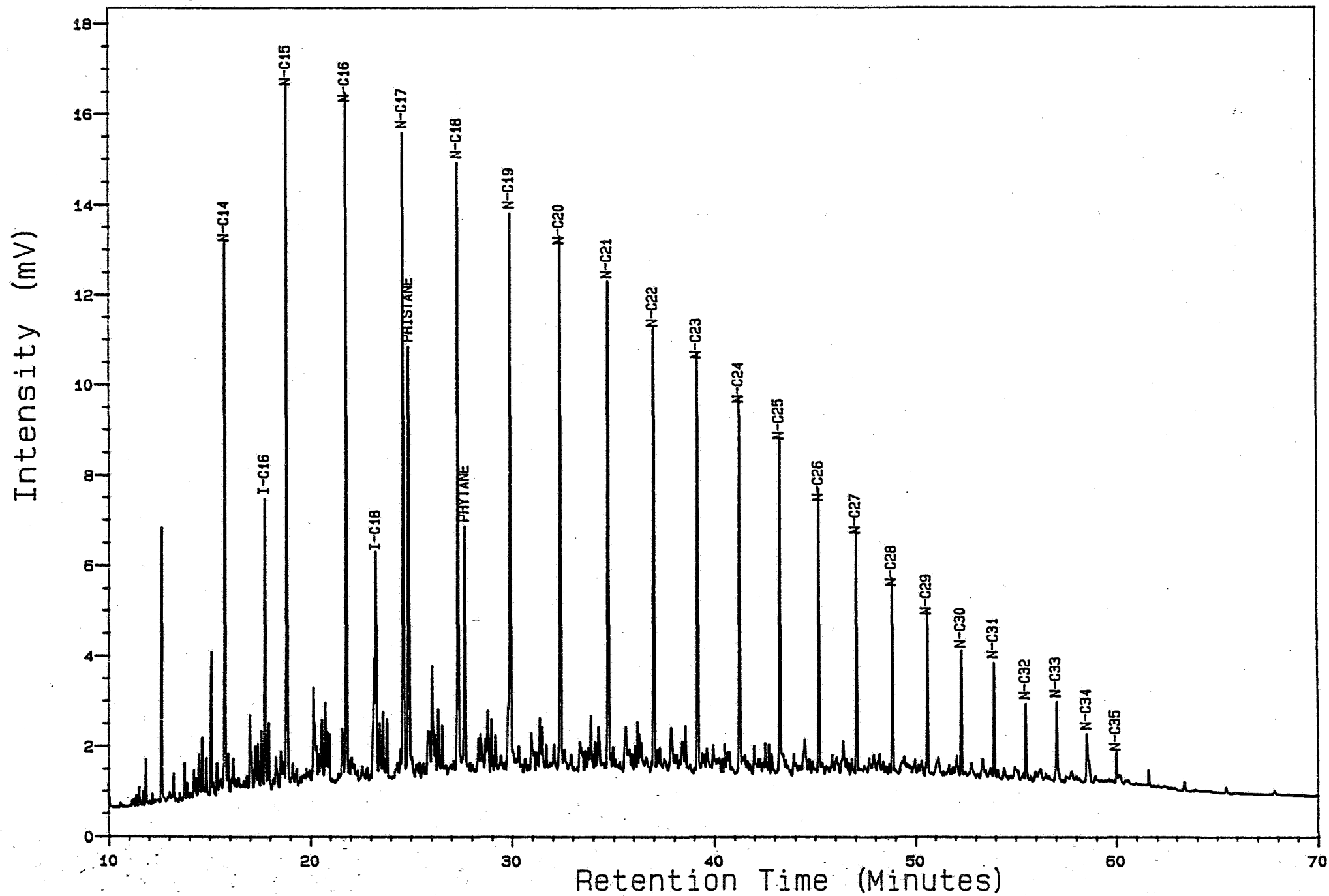
2800.75 M SAT



Analysis B64070702

7, 8, 1

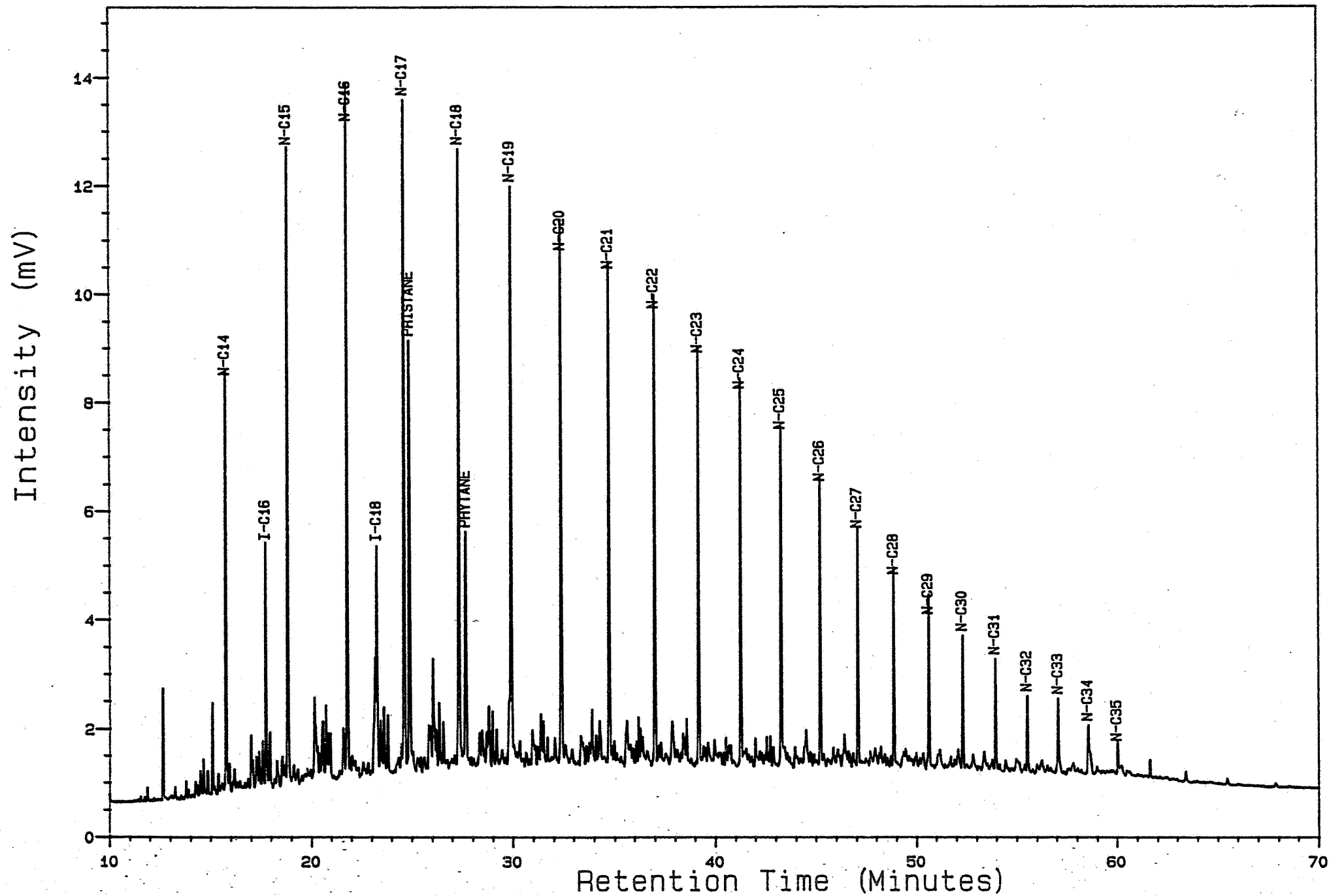
2872 M SAT



Analysis B64070702

7, 9, 1

2874 M SAT

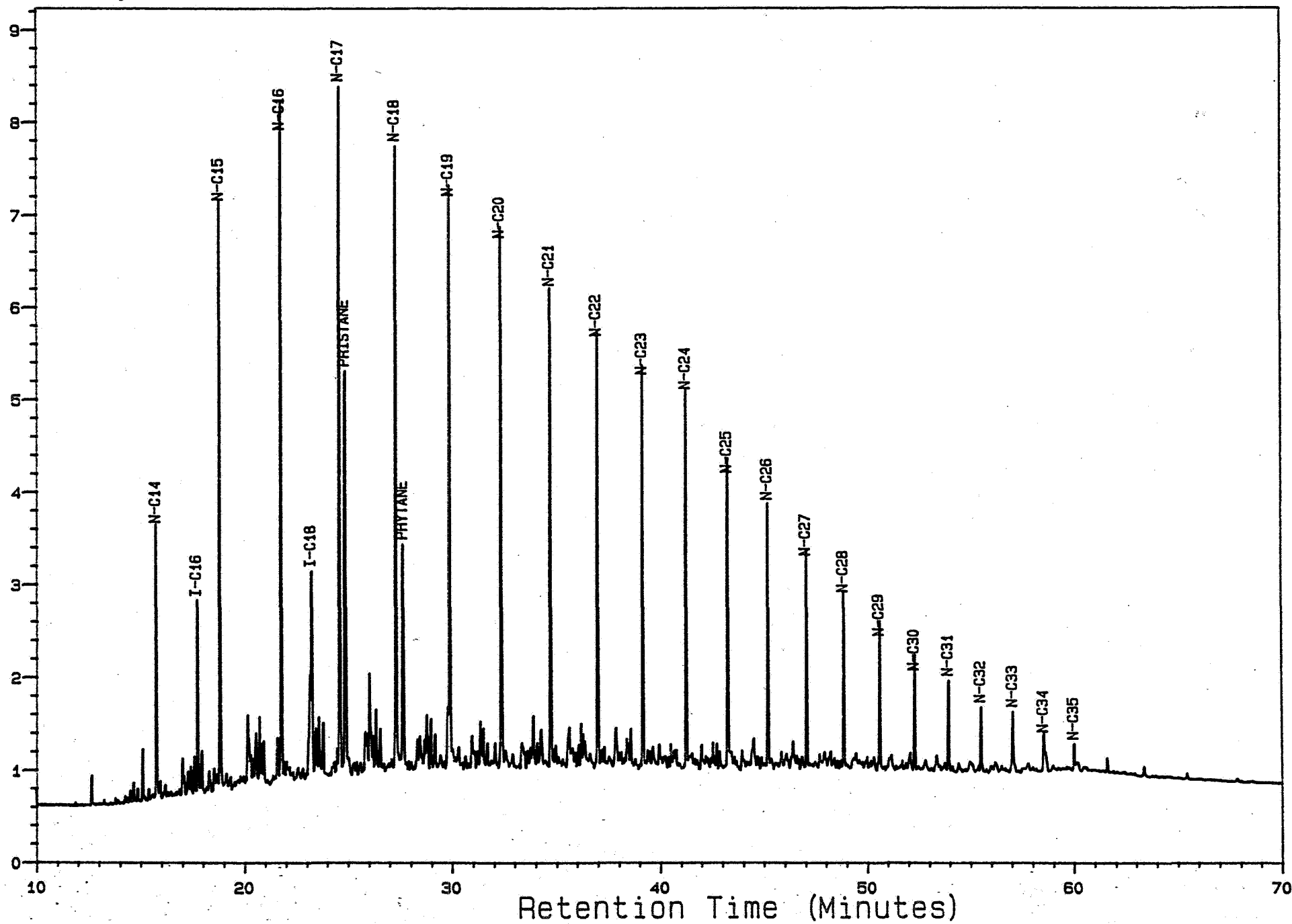


Analysis B64070702

7, 10, 1

2876 M SAT

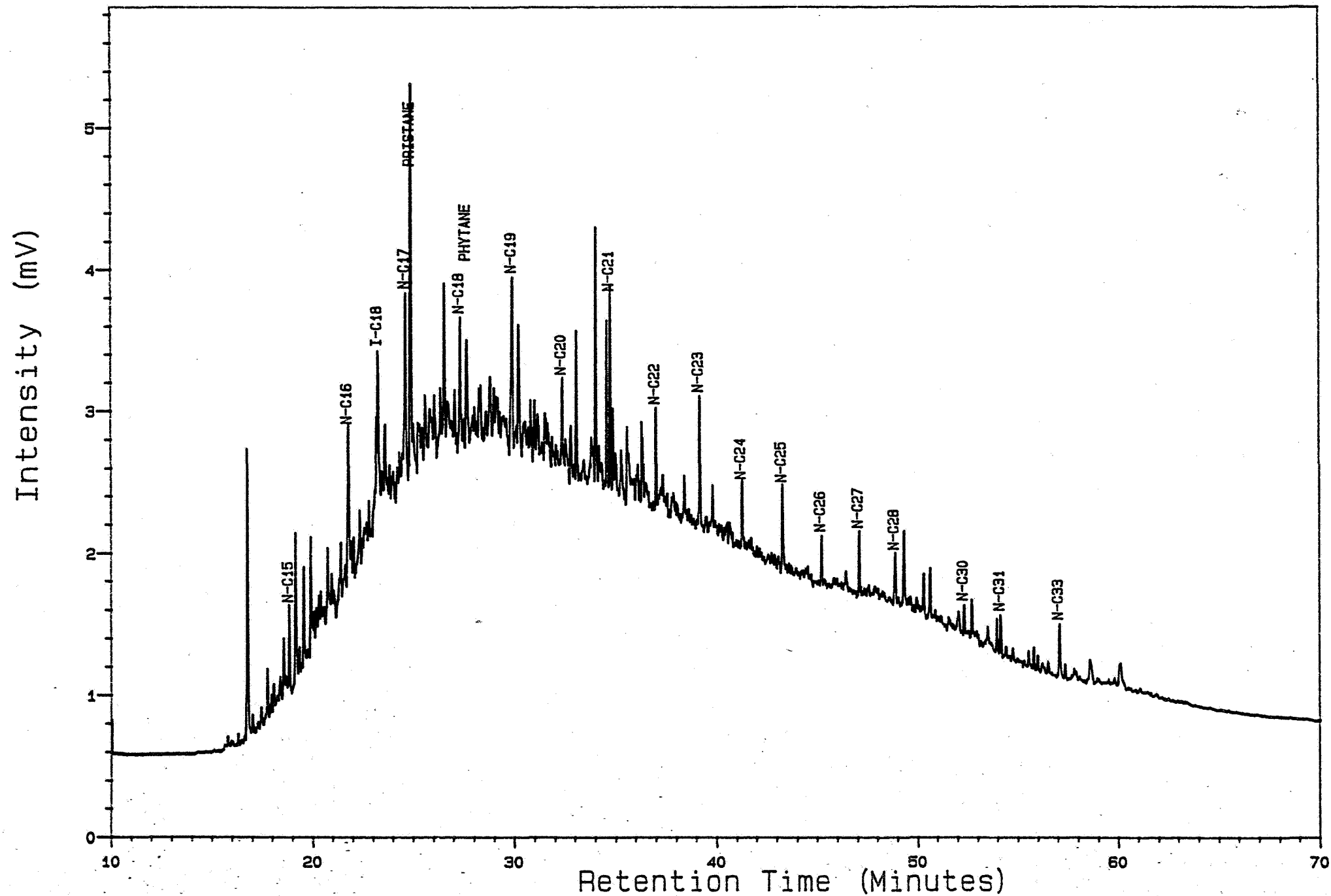
Intensity (mV)



Analysis B64070702

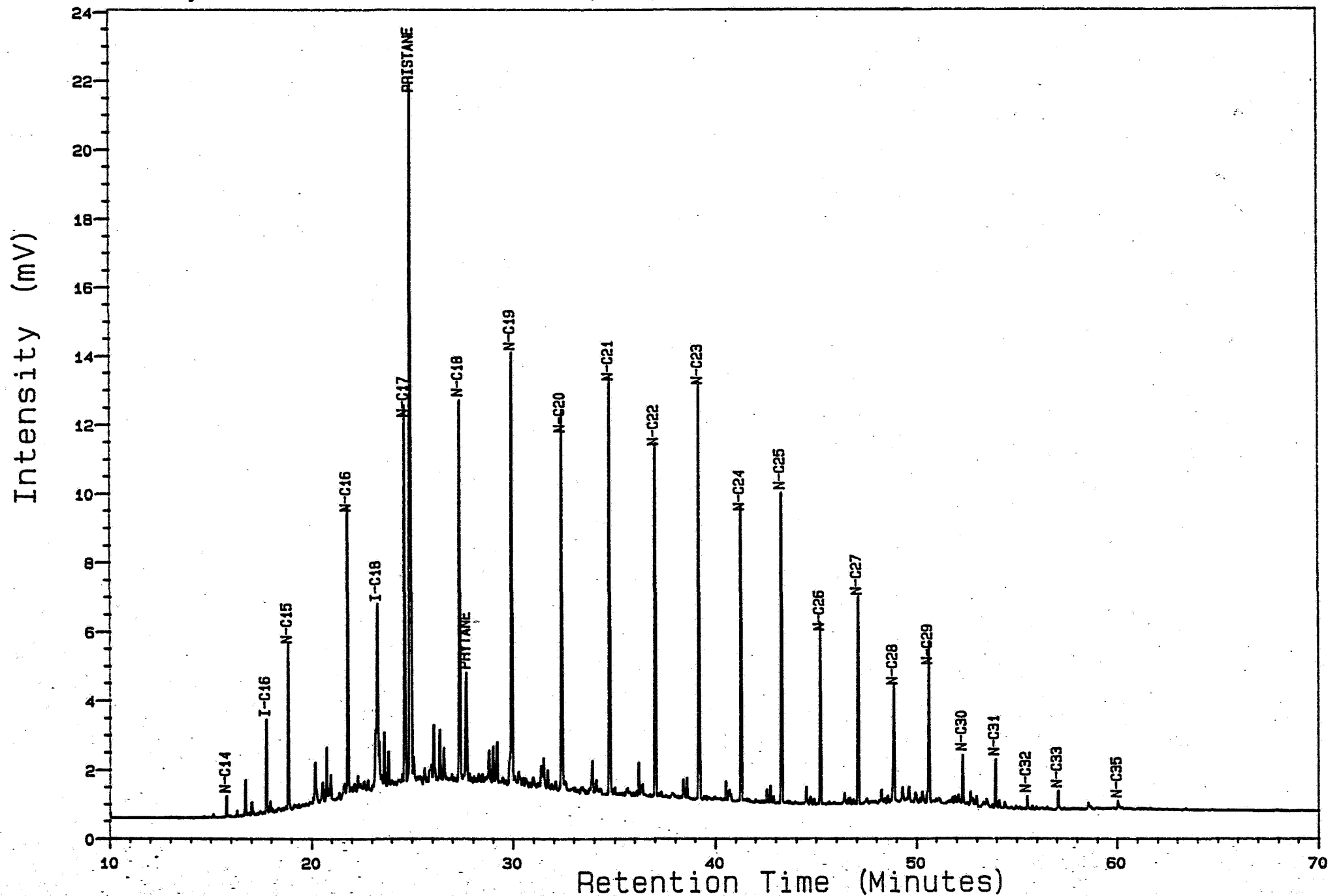
7.20.1

2884.85 M SAT KULL



Analysis B64070702

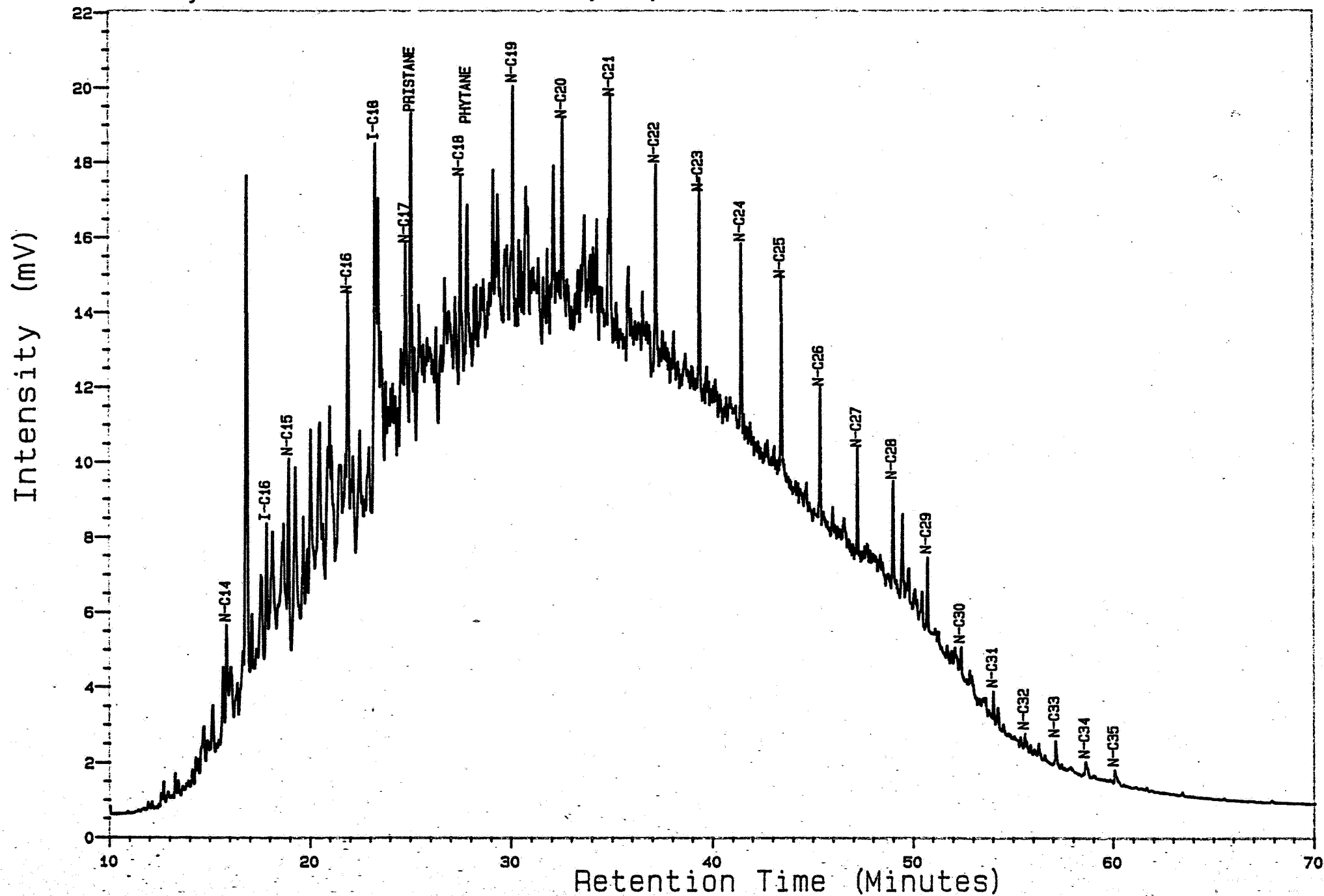
7, 21, 1 2888.10 M II SAT. KULL



Analysis C64070702

7.12.1

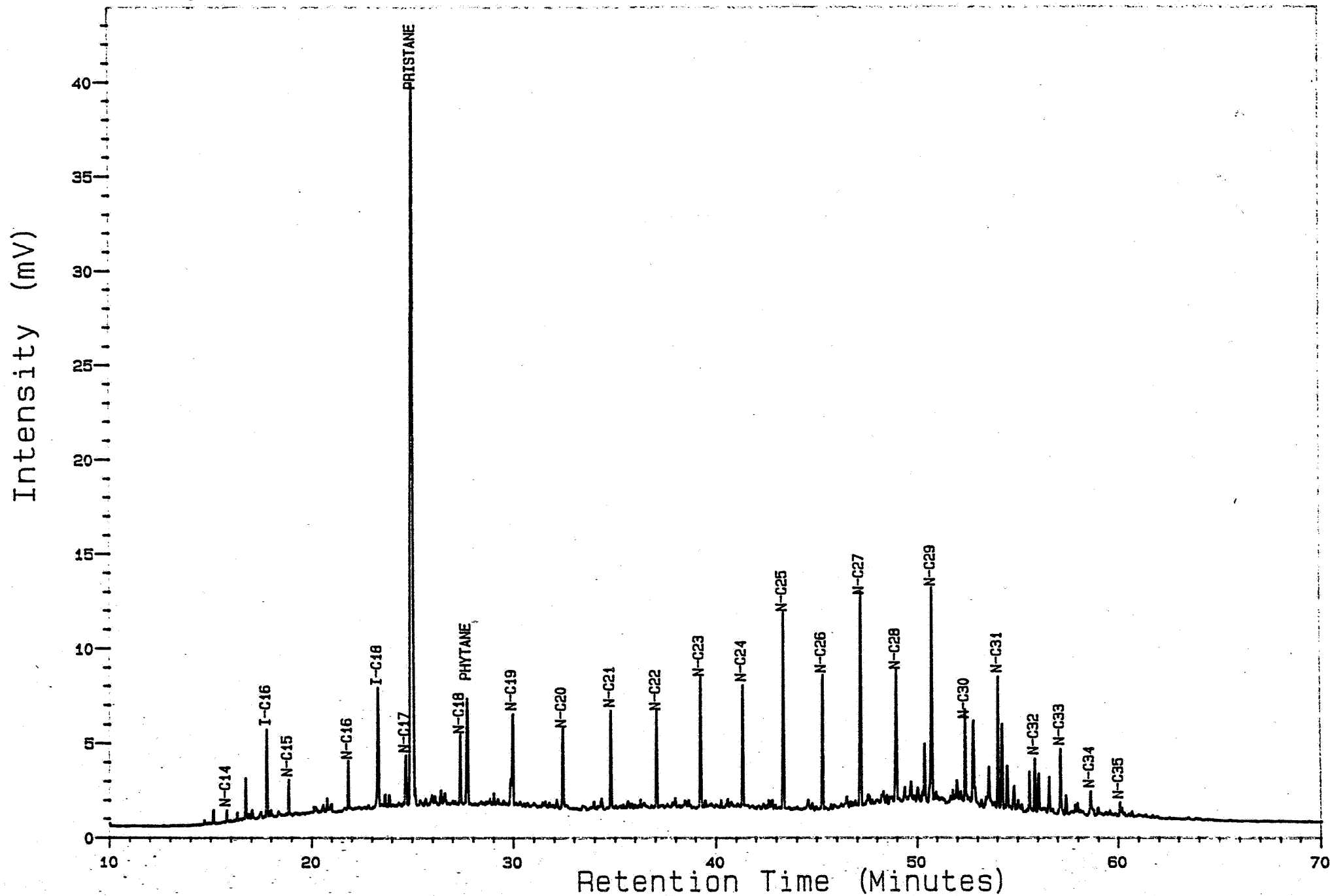
2905.3 M SAT KULL



Analysis C64070702

7.13.1

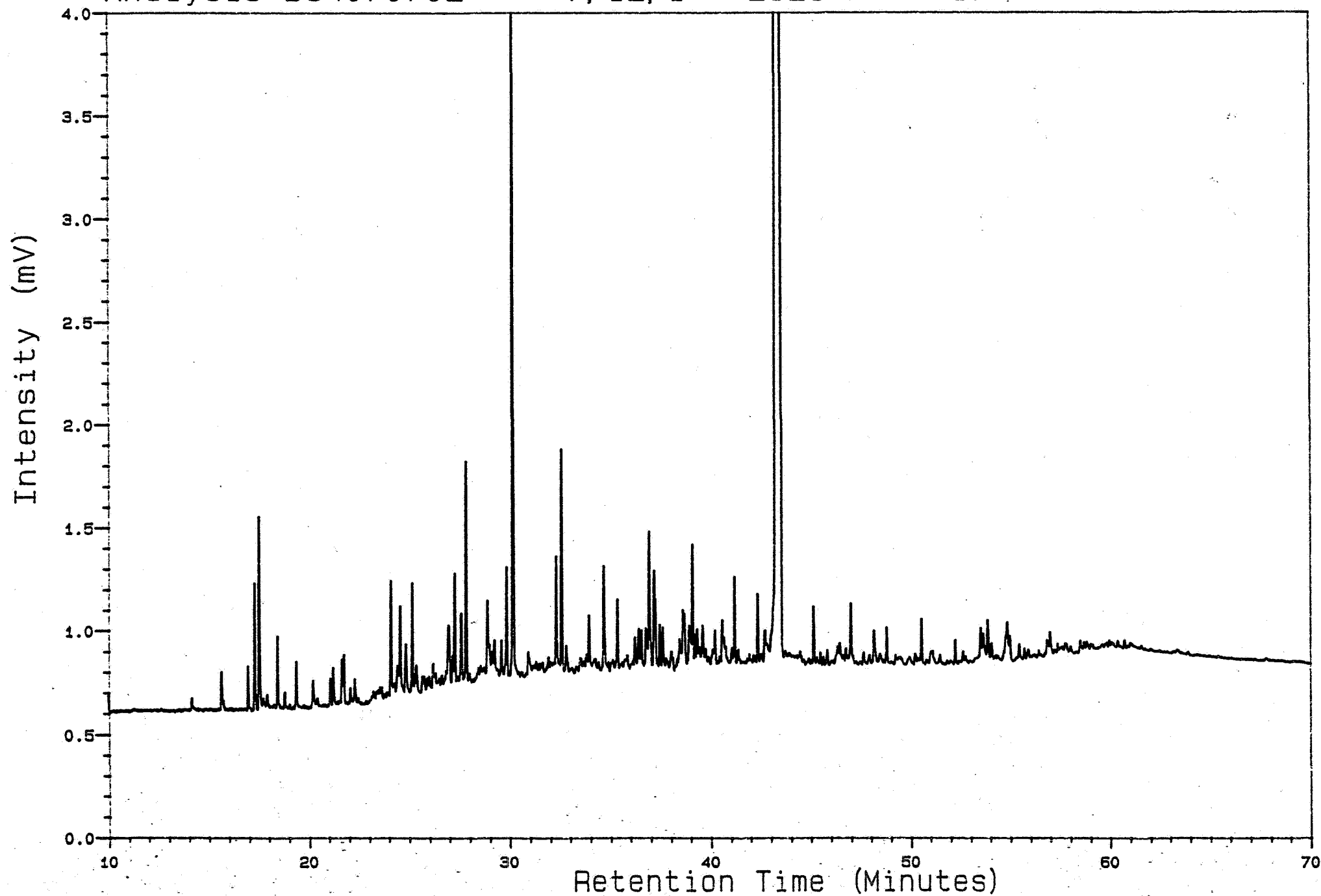
2913 M SAT KULL



Analysis B64070702

7, 12, 1

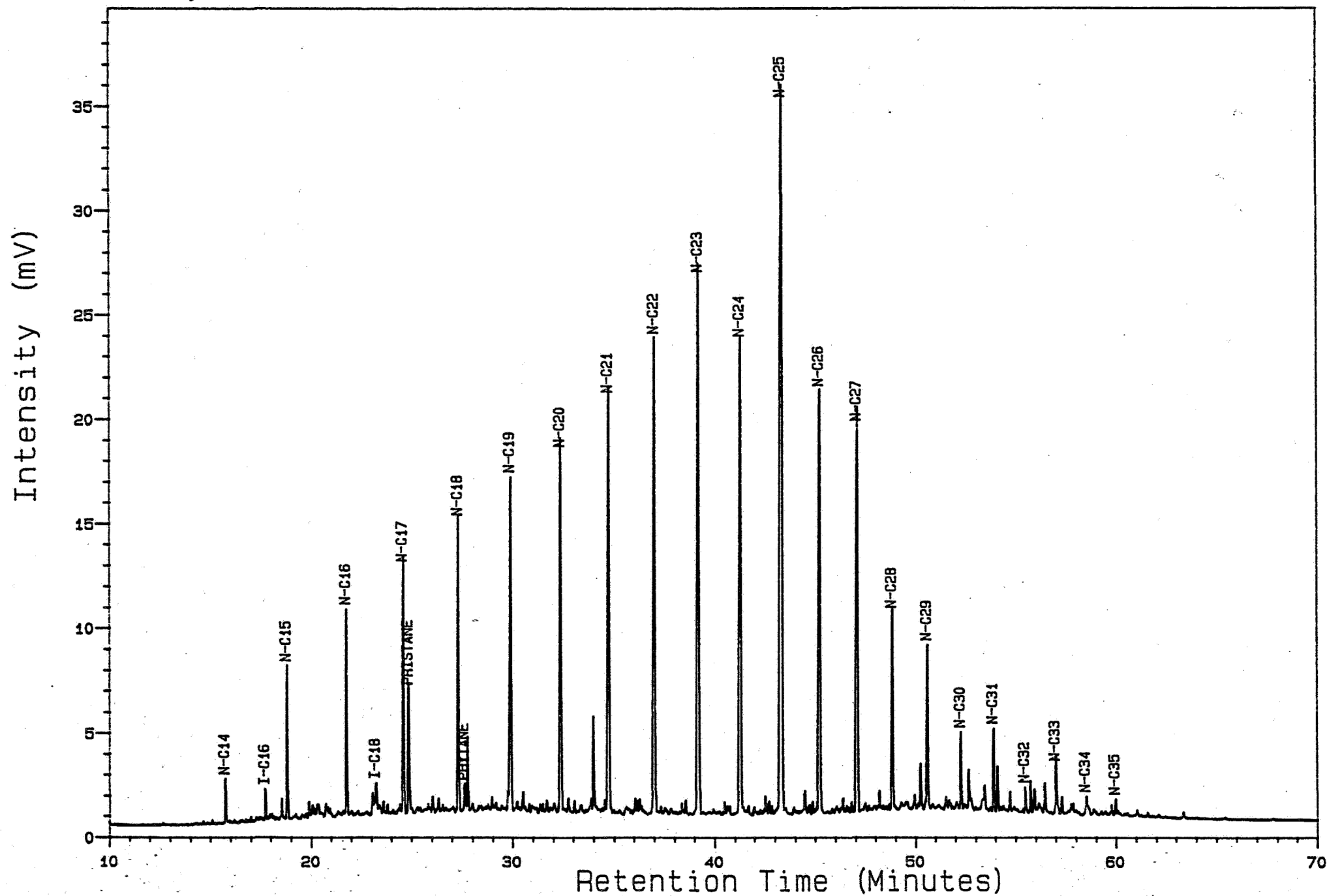
2923 M C5-EOM



Analysis B64070702

7, 13, 1

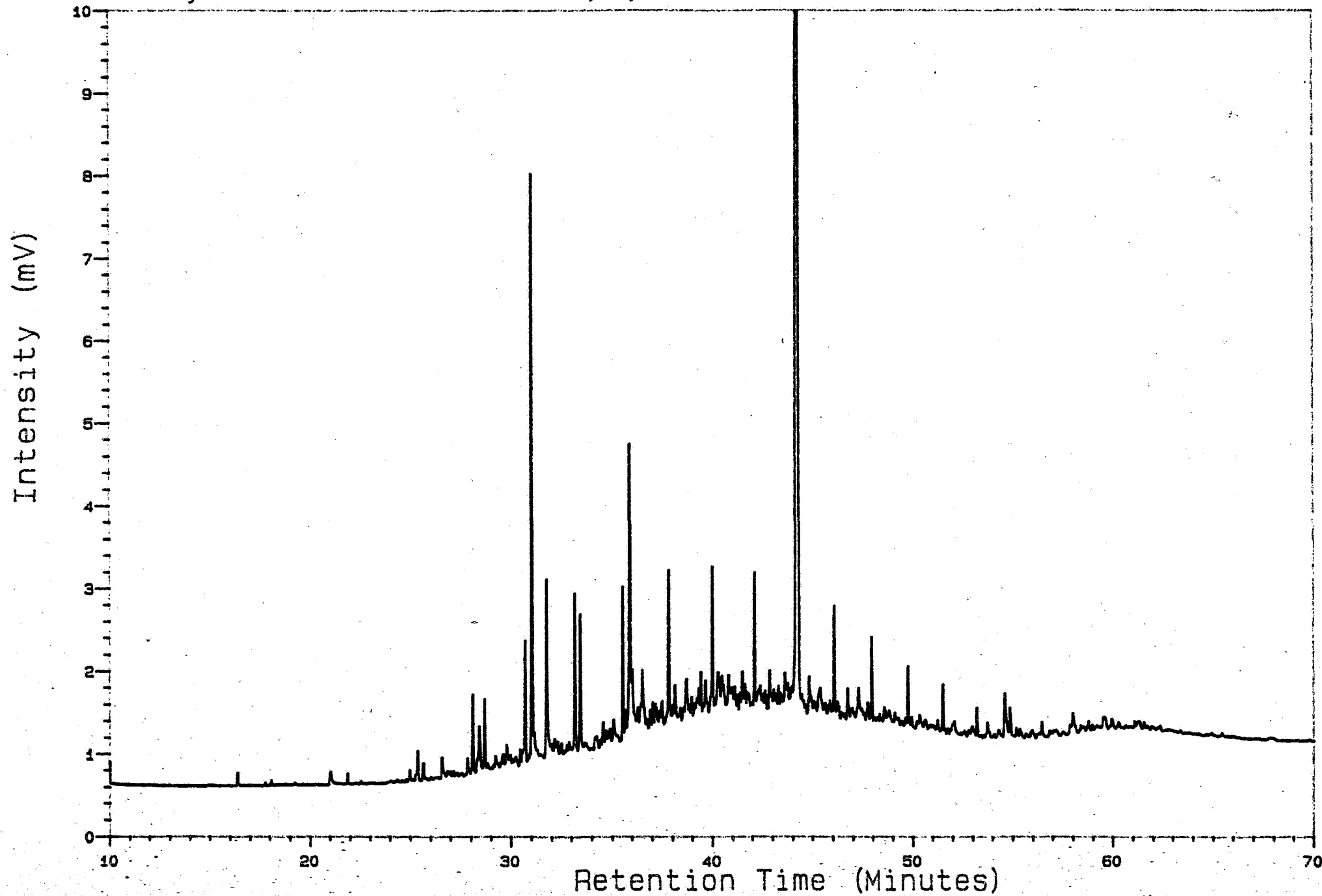
2934 M SAT



Analysis A64070702

7.7.1

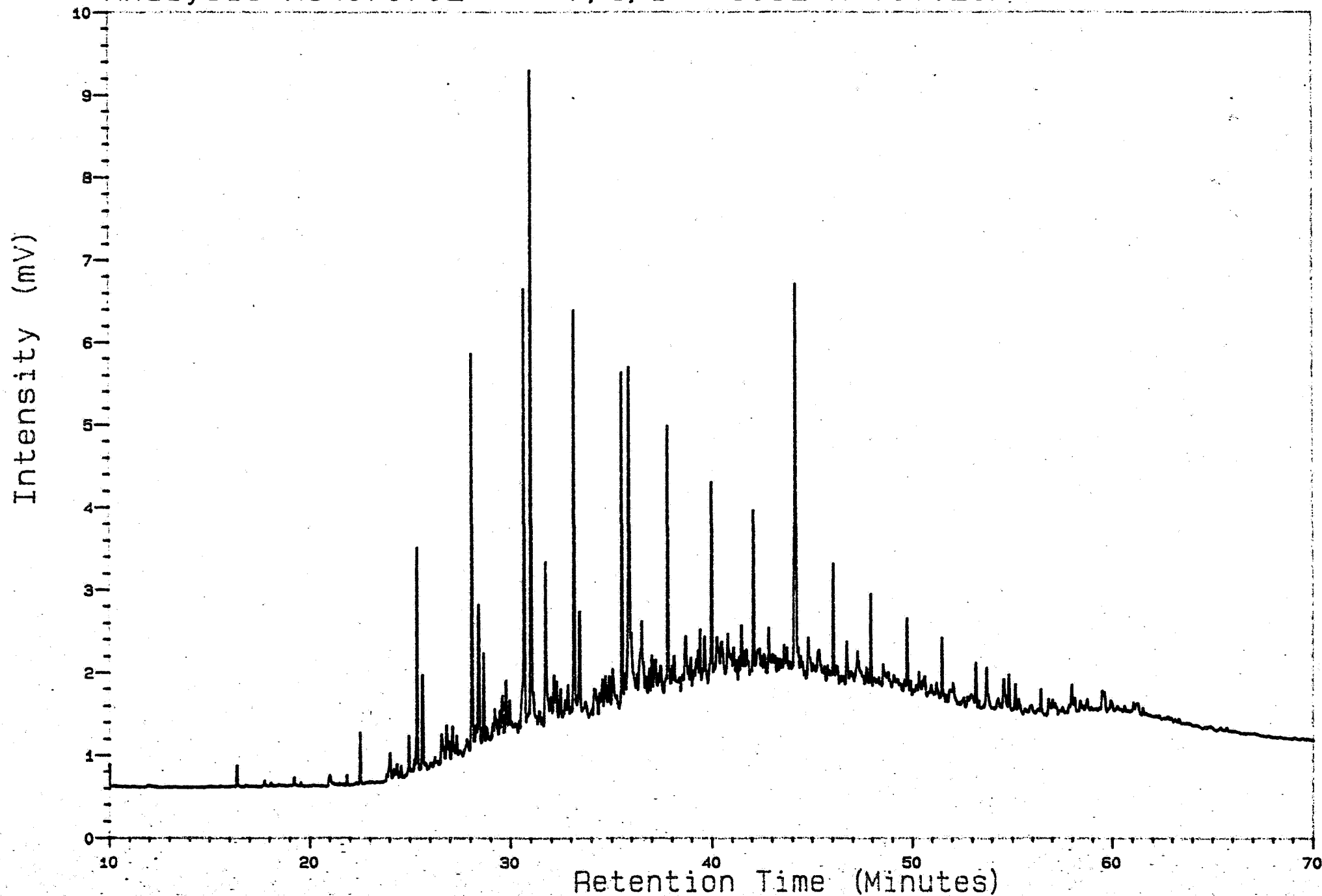
2952 M TOT.EOM



Analysis A64070702

7.8.1

3032 M TOT.EOM

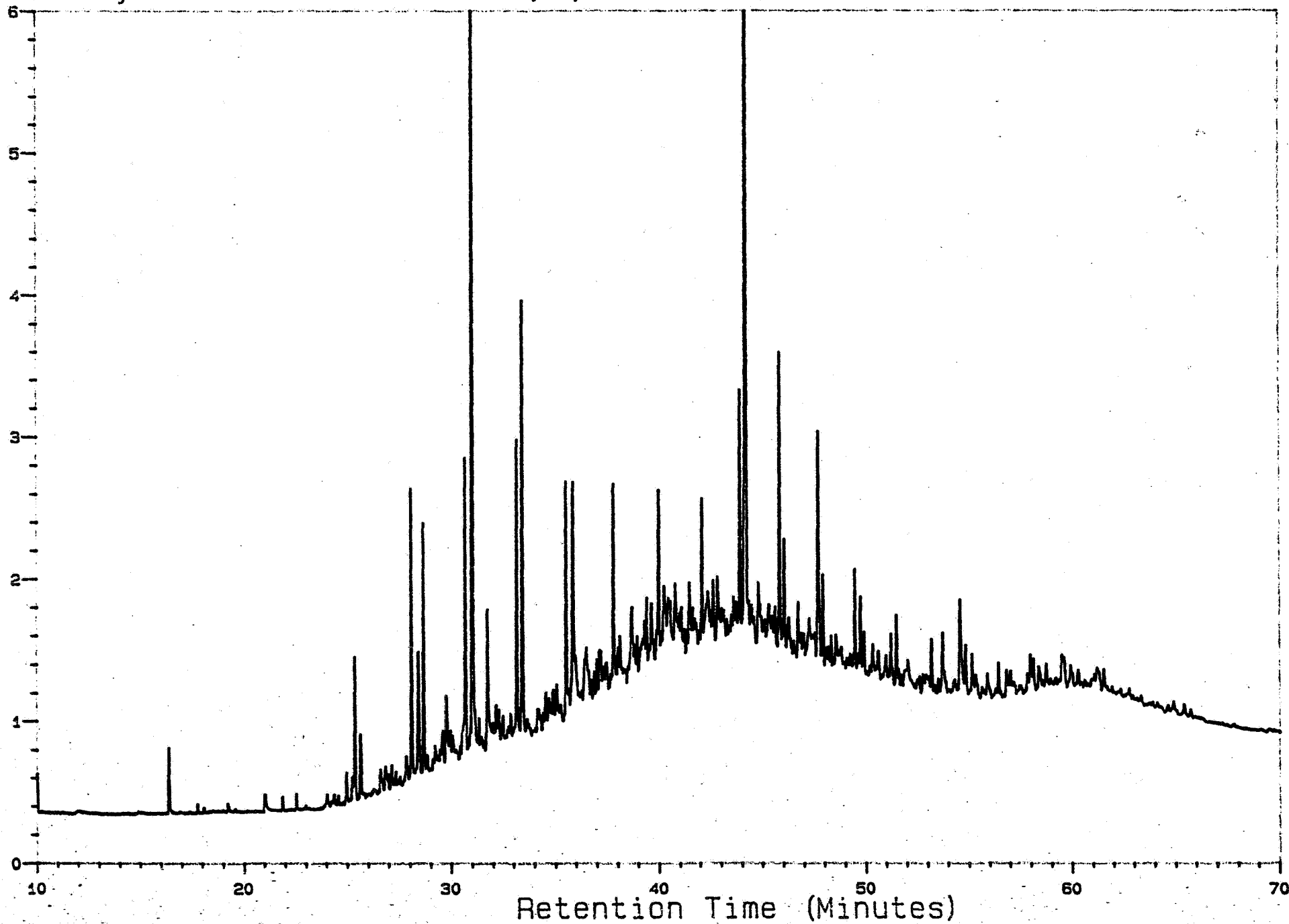


Analysis A64070702

7, 9, 1

3109.5M TOT.EOM

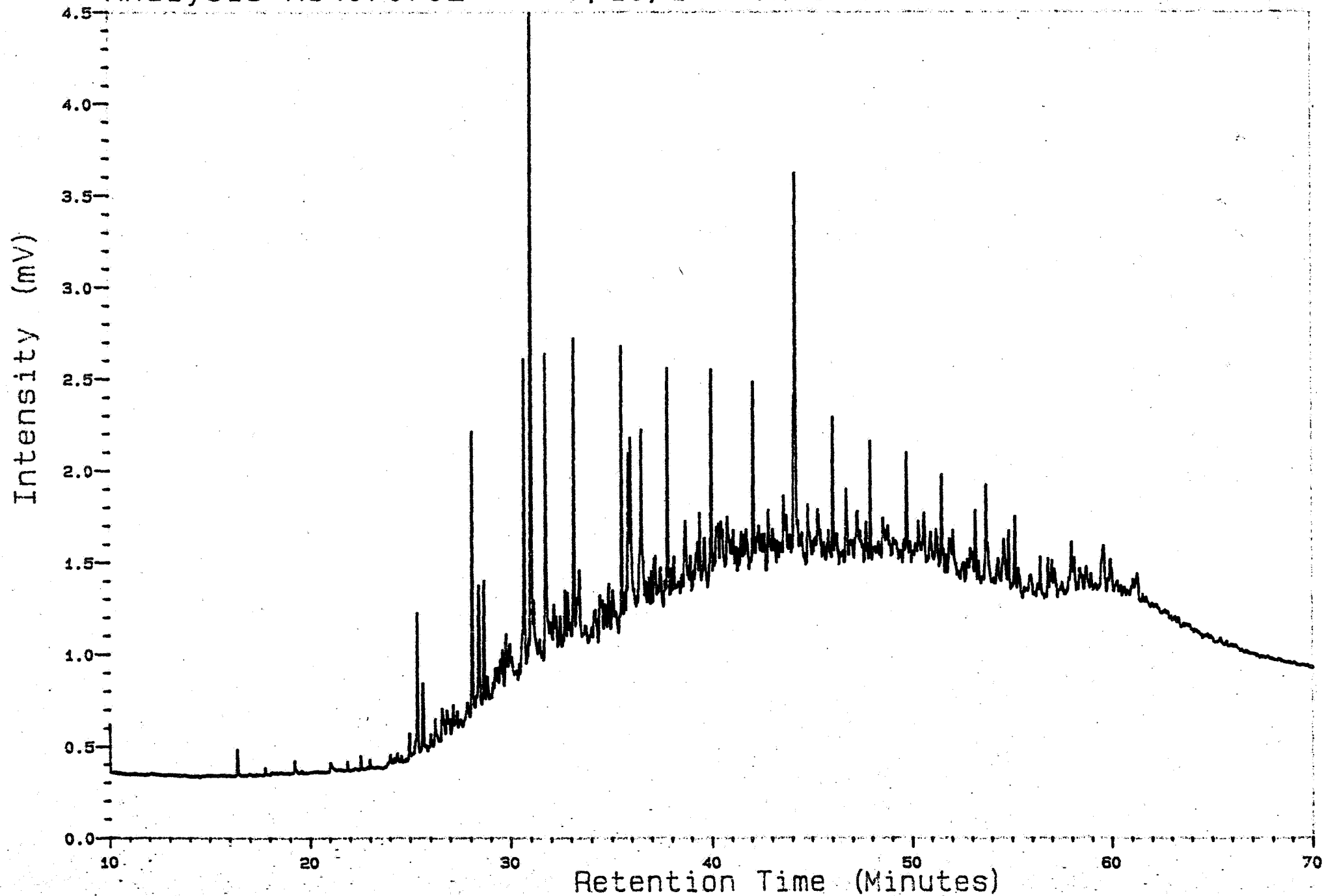
Intensity (mV)



Analysis A64070702

7.10.1

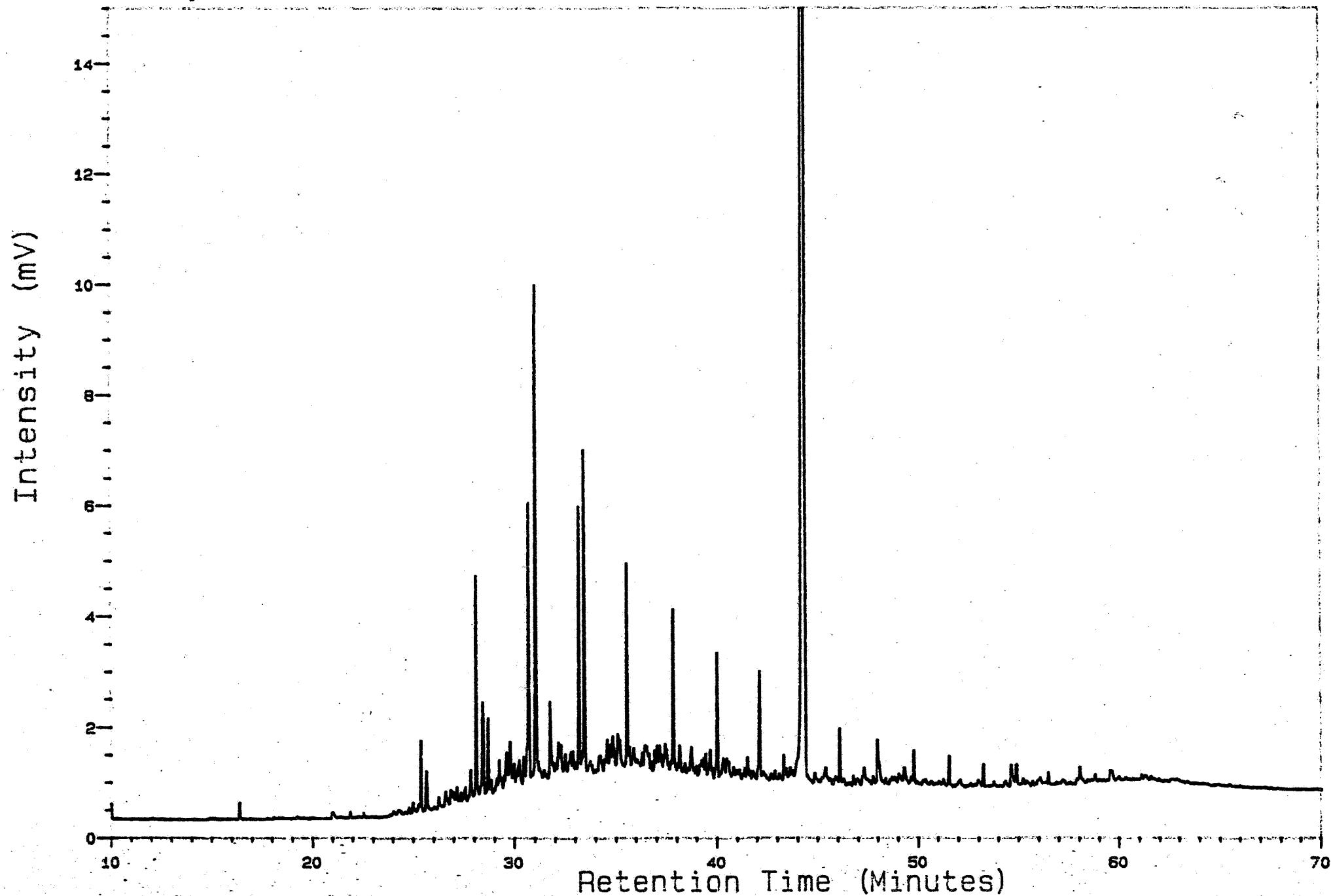
3243 M TOT. EOM



Analysis A64070702

7, 11, 1

3298 M TOT.EOM



Analysis: 7 A64070702.12.1

Reported on 09-Mar-87 at 10:43

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 7-Mar-87 Time 7:43

Analysis: A64070702 Sample Name: 1716 M SAT

Sample ID: 0

Bottle: 1

Sample 12 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	22.507	22.320	1600.0	1409	4500	0.238 N-C16
2	24.011	23.822	1652.8	934	4318	0.229 I-C18
4	25.355	25.165	1700.0	3246	11028	0.584 N-C17
5	25.653	25.463	1711.0	16053	57039	3.018 PRISTANE
11	28.075	27.881	1800.0	2983	10134	0.536 N-C18
12	28.440	28.246	1814.1	9111	31754	1.680 PHYTANE
20	30.669	30.473	1900.0	3869	13606	0.720 N-C19
30	33.149	32.950	2000.0	3670	12558	0.665 N-C20
35	35.515	35.293	2100.0	3167	11220	0.594 N-C21
47	37.792	37.548	2200.0	3457	12555	0.664 N-C22
58	39.973	39.708	2300.0	4445	15216	0.805 N-C23
70	42.069	41.784	2400.0	2995	13853	0.733 N-C24
80	44.165	43.860	2500.0	3288	12185	0.645 N-C25
86	46.043	45.869	2600.0	2783	13819	0.731 N-C26
95	47.933	47.893	2700.0	4297	23175	1.226 N-C27
104	49.443	49.509	2800.0	1912	11690	0.619 N-C28
111	51.032	51.210	2900.0	28162	208971	11.058
117	52.472	52.751	3000.0	3864	46784	2.476
122	54.264	54.669	3100.0	3005	38372	2.031
127	55.373	55.857	3200.0	2023	12752	0.675
133	56.997	57.595	3300.0	721	3604	0.191
136	58.413	59.111	3400.0	560	3454	0.183

Residual	181818	1317160	69.700
Total	287771	1889746	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 13, 1

Reported on 09-Mar-87 at 10:45

Page 1

MULTICHROM V3.2

Analyst Name : LOTTE
Information : GEOKJEMI 6407/7-2 L009A

Analysis ID:

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 7-Mar-87 Time 9:10

Analysis: A64070702 Sample Name: 1824 M SAT

Sample ID: 0 Bottle: 1

Sample 13 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	19.563	19.377	1500.0	506	1711	0.107 N-C15
3	22.533	22.320	1600.0	1260	4105	0.256 N-C16
4	24.032	23.816	1652.6	1063	5231	0.326 I-C18
5	25.381	25.163	1700.0	1874	7097	0.442 N-C17
6	25.680	25.461	1711.0	13271	47591	2.965 PRISTANE
10	28.104	27.881	1800.0	1908	6722	0.419 N-C18
12	28.461	28.238	1813.7	3185	12034	0.750 PHYTANE
21	30.707	30.480	1900.0	2124	7863	0.490 N-C19
30	33.181	32.950	2000.0	2298	8409	0.524 N-C20
35	35.552	35.313	2100.0	1897	7173	0.447 N-C21
43	37.837	37.590	2200.0	2509	10839	0.675 N-C22
55	40.019	39.764	2300.0	2979	10894	0.679 N-C23
67	42.107	41.845	2400.0	1886	9051	0.564 N-C24
72	44.128	43.860	2500.0	2120	10038	0.625 N-C25
77	46.083	45.906	2600.0	1796	5769	0.359 N-C26
85	47.984	47.896	2700.0	2546	12626	0.787 N-C27
93	49.645	49.636	2800.0	2019	12103	0.754 N-C28
98	51.149	51.210	2900.0	55233	447539	27.881
107	52.995	53.142	3000.0	18109	115544	7.198
2	54.296	54.504	3100.0	1396	12632	0.787
119	55.896	56.179	3200.0	1311	18833	1.173
123	57.411	57.764	3300.0	679	5111	0.318

Residual	124198	826278	51.475
Total	246167	1605193	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 14, 1

Reported on 09-Mar-87 at 10:43

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 7-Mar-87 Time 10:41

Analysis: A64070702 Sample Name: 1956.5 M SAT

Sample ID: 0

Bottle: 1

Sample 14 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	25.392	25.217	1700.0	307	1075	0.419 N-C17
2	25.664	25.487	1710.0	797	3079	1.200 PRISTANE
3	28.101	27.908	1800.0	952	3014	1.175 N-C18
4	28.461	28.265	1813.7	569	2323	0.905 PHYTANE
5	30.723	30.511	1900.0	1565	4638	1.808 N-C19
7	33.179	32.950	2000.0	1598	4974	1.939 N-C20
8	35.552	35.315	2100.0	1750	5554	2.165 N-C21
9	37.824	37.579	2200.0	1680	5427	2.115 N-C22
11	40.011	39.757	2300.0	1811	6056	2.360 N-C23
12	42.112	41.851	2400.0	1454	4916	1.916 N-C24
14	44.128	43.860	2500.0	1771	6259	2.440 N-C25
16	46.077	45.797	2600.0	1455	4708	1.835 N-C26
17	47.960	47.667	2700.0	2281	7438	2.899 N-C27
20	49.771	49.467	2800.0	1318	4434	1.728 N-C28
26	51.525	51.210	2900.0	2525	10819	4.217 N-C29
30	53.232	52.906	3000.0	931	8599	3.352 N-C30
33	54.875	54.538	3100.0	1822	7204	2.808 N-C31
40	56.472	56.125	3200.0	532	2112	0.823 N-C32
44	58.021	57.664	3300.0	1833	9727	3.791 N-C33
7	59.376	59.010	3400.0	1501	8425	3.284 N-C34
48	60.891	60.515	3500.0	305	1395	0.544 N-C35

Residual	26289	144383	56.277
Total	55048	256559	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 15, 1

Reported on 09-Mar-87 at 10:43

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 7-Mar-87 Time 12:14

Analysis: A64070702 Sample Name: 2025 M SAT

Sample ID: 0

Bottle: 1

Sample 15 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
2	22.523	22.320	1600.0	3961	12191	3.775 N-C16
5	24.024	23.821	1652.7	1147	4628	1.433 I-C18
10	25.371	25.167	1700.0	5889	19350	5.992 N-C17
11	25.656	25.452	1710.5	5478	20881	6.466 PRISTANE
16	28.085	27.880	1800.0	3949	14142	4.379 N-C18
17	28.440	28.235	1813.6	1897	7524	2.330 PHYTANE
22	30.685	30.479	1900.0	2846	10736	3.324 N-C19
27	33.157	32.950	2000.0	1978	6704	2.076 N-C20
28	35.531	35.316	2100.0	1851	6003	1.859 N-C21
34	37.803	37.581	2200.0	1598	6022	1.865 N-C22
37	39.984	39.755	2300.0	1618	5815	1.801 N-C23
44	42.085	41.850	2400.0	1475	4970	1.539 N-C24
49	44.101	43.860	2500.0	1479	4826	1.494 N-C25
52	46.051	45.798	2600.0	1374	4451	1.378 N-C26
58	47.925	47.662	2700.0	1740	6932	2.147 N-C27
64	49.744	49.471	2800.0	1858	8015	2.482 N-C28
69	51.493	51.210	2900.0	2022	9952	3.082 N-C29
73	53.197	52.904	3000.0	1050	7653	2.370 N-C30
77	54.851	54.548	3100.0	1240	4381	1.357 N-C31
85	56.440	56.129	3200.0	506	1745	0.540 N-C32
85	57.987	57.666	3300.0	826	4280	1.325 N-C33
88	59.333	59.005	3400.0	755	2967	0.919 N-C34
91	61.061	60.724	3500.0	245	1021	0.316 N-C35

Residual 29818 147761 45.753

Total 76603 322951 100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 16, 1
Reported on 09-Mar-87 at 10:44

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE Analysis ID:
Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 7-Mar-87 Time 13:47
Analysis: A64070702 Sample Name: 2075 M SAT Sample ID: 0 Bottle: 1
Sample 16 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
1	22.539	22.320	1600.0	1557	4954	0.625	N-C16
2	24.040	23.819	1652.7	1778	8462	1.067	I-C18
6	25.389	25.167	1700.0	3228	11053	1.394	N-C17
7	25.688	25.465	1711.0	12470	47603	6.003	PRISTANE
13	28.107	27.880	1800.0	3681	12605	1.589	N-C18
14	28.464	28.237	1813.6	3562	17679	2.229	PHYTANE
20	30.725	30.495	1900.0	4209	16074	2.027	N-C19
30	33.184	32.950	2000.0	3686	12967	1.635	N-C20
38	35.560	35.317	2100.0	3638	12502	1.576	N-C21
47	37.835	37.583	2200.0	3350	15048	1.898	N-C22
56	40.016	39.756	2300.0	3780	11759	1.483	N-C23
68	42.117	41.849	2400.0	3164	10801	1.362	N-C24
75	44.136	43.860	2500.0	3900	13880	1.750	N-C25
83	46.088	45.797	2600.0	3162	11229	1.416	N-C26
89	47.965	47.659	2700.0	4991	20210	2.548	N-C27
98	49.787	49.466	2800.0	4257	22268	2.808	N-C28
105	51.544	51.210	2900.0	6304	34678	4.373	N-C29
112	53.219	52.872	3000.0	2006	12109	1.527	N-C30
116	54.872	54.512	3100.0	4041	13679	1.725	N-C31
126	56.461	56.089	3200.0	1002	4622	0.583	N-C32
126	58.008	57.623	3300.0	2488	11222	1.415	N-C33
129	59.373	58.978	3400.0	1498	5972	0.753	N-C34
135	61.091	60.682	3500.0	757	3133	0.395	N-C35

Residual	83742	458532	57.820
Total	166253	793040	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702.17.1

Reported on 09-Mar-87 at 10:44

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M U L T I C H R O M V3.2

Analyst Name : LOTTE Analysis ID:
Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 7-Mar-87 Time 15:19
Analysis: A64070702 Sample Name: 2251 M SAT Sample ID: 0 Bottle: 1
Sample 17 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
1	24.040	23.869	1609.8	396	1917	0.285	I-C18
3	25.387	25.206	1700.0	2010	6767	1.005	N-C17
4	25.669	25.486	1710.4	5586	23864	3.543	PRISTANE
7	28.107	27.906	1800.0	3356	10727	1.592	N-C18
8	28.461	28.258	1813.5	2187	9665	1.435	PHYTANE
13	30.725	30.506	1900.0	4912	17665	2.622	N-C19
20	33.187	32.950	2000.0	4271	14297	2.122	N-C20
26	35.560	35.314	2100.0	4647	14857	2.205	N-C21
36	37.829	37.574	2200.0	4174	15531	2.305	N-C22
44	40.021	39.757	2300.0	4955	17299	2.568	N-C23
55	42.117	41.844	2400.0	3973	12707	1.886	N-C24
62	44.141	43.860	2500.0	5519	20872	3.098	N-C25
69	46.085	45.792	2600.0	4190	14245	2.115	N-C26
76	47.971	47.666	2700.0	7128	24244	3.599	N-C27
87	49.776	49.461	2800.0	5028	21322	3.165	N-C28
92	51.536	51.210	2900.0	8294	31980	4.747	N-C29
99	53.229	52.893	3000.0	2624	16760	2.488	N-C30
104	54.872	54.526	3100.0	4877	17982	2.669	N-C31
110	56.461	56.106	3200.0	1377	6641	0.986	N-C32
118	58.019	57.654	3300.0	2976	13264	1.969	N-C33
118	59.373	59.000	3400.0	960	3952	0.587	N-C34
123	61.083	60.699	3500.0	840	3485	0.517	N-C35

Residual	65253	353600	52.491
Total	149534	673643	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 18, 1

Reported on 09-Mar-87 at 10:44

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 7-Mar-87 Time 16:51

Analysis: A64070702 Sample Name: 2425 M SAI

Sample ID: 0

Bottle: 1

Sample 18 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
1	22.528	22.320	1600.0	649	2097	0.295	N-C16
2	24.019	23.807	1652.3	453	2039	0.287	I-C18
4	25.376	25.161	1700.0	3888	12461	1.752	N-C17
5	25.653	25.438	1710.2	4810	20669	2.906	PRISTANE
8	28.101	27.880	1800.0	6838	21211	2.983	N-C18
9	28.435	28.212	1812.6	1536	6966	0.980	PHYTANE
13	30.741	30.513	1900.0	9088	34018	4.783	N-C19
18	33.184	32.950	2000.0	8821	30085	4.230	N-C20
24	35.557	35.312	2100.0	10253	33584	4.722	N-C21
31	37.837	37.581	2200.0	9090	30004	4.219	N-C22
42	40.021	39.754	2300.0	10603	36216	5.092	N-C23
53	42.117	41.840	2400.0	8297	27685	3.893	N-C24
64	44.147	43.860	2500.0	10851	37704	5.302	N-C25
71	46.088	45.789	2600.0	7525	25257	3.551	N-C26
77	47.971	47.660	2700.0	11034	38190	5.370	N-C27
82	49.773	49.451	2800.0	5918	22483	3.161	N-C28
87	51.544	51.210	2900.0	9905	37215	5.233	N-C29
91	53.219	52.874	3000.0	3153	11061	1.555	N-C30
95	54.872	54.517	3100.0	5837	21287	2.993	N-C31
100	56.461	56.096	3200.0	1591	5763	0.810	N-C32
104	58.008	57.633	3300.0	3368	14572	2.049	N-C33
107	59.512	59.127	3400.0	876	5725	0.805	N-C34
110	61.072	60.677	3500.0	941	3564	0.501	N-C35

Residual 49529 231311 32.526

Total 184852 711168 100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 AG4070702.4.1

Reported on 09-Mar-87 at 10:42

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 6-Mar-87 Time 19:37

Analysis: AG4070702 Sample Name: 2553 M C5-EOM

Sample ID: 0

Bottle: 1

Sample 4 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	28.099	27.909	1800.0	430	1430	1.311 N-C18
5	30.701	30.495	1900.0	742	2572	2.358 N-C19
9	33.173	32.950	2000.0	1003	3791	3.476 N-C20
13	35.547	35.295	2100.0	1145	3710	3.401 N-C21
16	37.827	37.547	2200.0	1304	4568	4.187 N-C22
19	40.011	39.705	2300.0	984	3017	2.766 N-C23
21	42.109	41.779	2400.0	823	2555	2.342 N-C24
22	44.216	43.860	2500.0	4672	18490	16.951 N-C25
23	46.075	45.730	2600.0	776	2455	2.251 N-C26
24	47.957	47.624	2700.0	1062	4293	3.936 N-C27
26	49.768	49.445	2800.0	631	2115	1.939 N-C28
29	51.523	51.210	2900.0	808	2967	2.720 N-C29
30	53.221	52.919	3000.0	443	1644	1.507 N-C30
33	54.864	54.571	3100.0	510	2668	2.446 N-C31
36	56.464	56.181	3200.0	278	1230	1.127 N-C32
39	58.019	57.745	3300.0	324	1347	1.235 N-C33

Residual	10825	50227	46.047
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Total	26763	109079	100.000
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Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702.5.1
Reported on 09-Mar-87 at 10:42

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M U L T I C H R O M V3.2

Analyst Name : LOTTE
Information : GEOKJEMI 6407/7-2 L009A

Analysis ID:

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 6-Mar-87 Time 21:06
Analysis: A64070702 Sample Name: 2611 M C5-EOM Sample ID: 0 Bottle: 1
Sample 5 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
2	18.880	19.127	1500.0	389	1380	0.278	N-C15
7	22.032	22.320	1600.0	1136	4994	1.008	N-C16
14	25.357	25.480	1709.5	1910	10120	2.042	PRISTANE
18	28.107	28.092	1800.0	5668	30764	6.207	N-C18
19	28.272	28.249	1806.4	702	3001	0.605	PHYTANE
28	30.675	30.533	1900.0	2281	7376	1.488	N-C19
38	33.219	32.950	2000.0	2896	11868	2.395	N-C20
42	35.515	35.232	2100.0	2265	9041	1.824	N-C21
50	37.781	37.485	2200.0	2250	11723	2.365	N-C22
56	39.968	39.659	2300.0	2185	12338	2.489	N-C23
62	42.072	41.750	2400.0	1489	4915	0.992	N-C24
66	44.195	43.860	2500.0	12775	52663	10.626	N-C25
69	46.032	45.714	2600.0	1389	4366	0.881	N-C26
70	47.885	47.583	2700.0	2592	17892	3.610	N-C27
76	49.725	49.440	2800.0	979	3631	0.733	N-C28
79	51.480	51.210	2900.0	1194	3827	0.772	N-C29
81	53.168	52.913	3000.0	761	3208	0.647	N-C30
83	54.819	54.578	3100.0	1322	6173	1.246	N-C31
87	56.419	56.193	3200.0	579	3857	0.778	N-C32
90	57.957	57.745	3300.0	638	5410	1.092	N-C33
92	59.461	59.262	3400.0	257	1696	0.342	N-C34
94	61.037	60.852	3500.0	266	1182	0.238	N-C35

Residual	55957	284192	57.341
Total	101881	495615	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 AG4070702, 19, 1
Reported on 09-Mar-87 at 10:44

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M U L T I C H R O M V3.2

Analyst Name : LOTTE Analysis ID:
Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 7-Mar-87 Time 18:23
Analysis: AG4070702 Sample Name: 2625 M SAT Sample ID: 0 Bottle: 1
Sample 19 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	25.371	25.208	1700.0	421	1517	1.099 N-C17
2	25.637	25.473	1709.8	326	1444	1.046 PRISTANE
3	28.085	27.905	1800.0	673	2443	1.770 N-C18
4	28.435	28.252	1813.4	409	1919	1.390 PHYTANE
5	30.685	30.489	1900.0	816	2476	1.794 N-C19
8	33.163	32.950	2000.0	897	3314	2.400 N-C20
11	35.531	35.309	2100.0	799	2588	1.874 N-C21
19	37.808	37.578	2200.0	713	2581	1.870 N-C22
29	39.989	39.750	2300.0	776	3003	2.175 N-C23
39	42.091	41.844	2400.0	951	3029	2.194 N-C24
48	44.115	43.860	2500.0	1242	8954	6.486 N-C25
51	46.053	45.789	2600.0	1392	4236	3.068 N-C26
55	47.933	47.660	2700.0	1258	4157	3.012 N-C27
57	49.747	49.464	2800.0	961	4500	3.260 N-C28
60	51.501	51.210	2900.0	822	3124	2.263 N-C29
61	53.197	52.898	3000.0	529	1730	1.253 N-C30
63	54.851	54.543	3100.0	369	1198	0.868 N-C31
65	56.451	56.135	3200.0	249	884	0.641 N-C32
66	57.997	57.674	3300.0	254	1516	1.098 N-C33

Residual	15585	83438	60.440
Total	29445	138050	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis:7 A64070702,6,1

Reported on 09-Mar-87 at 10:42

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M U L T I C H R O M V3.2

Analyst Name :LOTTE

Analysis ID:

Information :GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel:7 Title: CHANNEL 7

Date 6-Mar-87 Time 22:37

Analysis:A64070702 Sample Name:2632.5 M TOT.EOM

Sample ID: 0

Bottle:1

Sample 6 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
3	25.379	25.183	1700.0	508	1613	1.321 N-C17
5	28.099	27.883	1800.0	525	1700	1.392 N-C18
6	28.419	28.200	1812.3	299	1296	1.062 PHYTANE
9	30.696	30.460	1900.0	361	1132	0.927 N-C19
14	35.536	35.263	2100.0	418	1280	1.048 N-C21
17	37.811	37.520	2200.0	475	1846	1.512 N-C22
21	39.992	39.684	2300.0	595	1911	1.565 N-C23
23	42.085	41.762	2400.0	795	2593	2.124 N-C24
25	44.200	43.860	2500.0	8387	32554	26.663 N-C25
27	46.056	45.728	2600.0	887	2763	2.263 N-C26
29	47.925	47.610	2700.0	758	2305	1.888 N-C27
30	49.741	49.438	2800.0	665	2263	1.853 N-C28
31	51.501	51.210	2900.0	794	2736	2.241 N-C29
33	53.197	52.917	3000.0	630	2036	1.667 N-C30
35	54.843	54.574	3100.0	789	4764	3.902 N-C31
37	56.440	56.182	3200.0	475	1612	1.320 N-C32
39	57.989	57.741	3300.0	442	1683	1.379 N-C33
41	59.493	59.255	3400.0	280	1022	0.837 N-C34
42	61.069	60.842	3500.0	180	709	0.581 N-C35

Residual	14265	54275	44.454
Total	32529	122093	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using:Area

Analysis: 7 A64070702, 20, 1
Reported on 09-Mar-87 at 10:44

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M U L T I C H R O M V3.2

Analyst Name : LOTTE Analysis ID:
Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 7-Mar-87 Time 19:55
Analysis: A64070702 Sample Name: 2638 M SAT Sample ID: 0 Bottle: 1
Sample 20 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
2	16.480	16.309	1400.0	1759	5330	0.375 N-C14
6	18.488	18.296	1464.9	5316	18116	1.273 I-C16
10	19.573	19.370	1500.0	8410	27226	1.914 N-C15
20	22.555	22.320	1600.0	10658	36006	2.531 N-C16
26	24.056	23.818	1652.5	10006	55100	3.873 I-C18
32	25.416	25.175	1700.0	12823	48085	3.380 N-C17
33	25.720	25.478	1711.2	30073	152689	10.732 PRISTANE
43	28.131	27.884	1800.0	10638	39682	2.789 N-C18
44	28.488	28.240	1813.8	13663	67254	4.727 PHYTANE
55	30.728	30.475	1900.0	11767	40190	2.825 N-C19
65	33.208	32.950	2000.0	10502	38655	2.717 N-C20
75	35.576	35.309	2100.0	9634	31503	2.214 N-C21
86	37.851	37.576	2200.0	8505	30477	2.142 N-C22
97	40.032	39.749	2300.0	8110	30118	2.117 N-C23
107	42.128	41.838	2400.0	7271	23588	1.658 N-C24
117	44.157	43.860	2500.0	6541	25230	1.773 N-C25
124	46.101	45.792	2600.0	5990	19699	1.385 N-C26
131	47.979	47.657	2700.0	4759	18901	1.329 N-C27
138	49.805	49.472	2800.0	4012	17160	1.206 N-C28
151	51.555	51.210	2900.0	4279	18602	1.308 N-C29
152	53.251	52.895	3000.0	2484	14249	1.002 N-C30
157	54.893	54.527	3100.0	2367	9092	0.639 N-C31
160	56.493	56.117	3200.0	1211	5652	0.397 N-C32
164	58.040	57.654	3300.0	1775	7352	0.517 N-C33
168	59.544	59.148	3400.0	934	3809	0.268 N-C34
173	61.123	60.717	3500.0	1165	5363	0.377 N-C35

Residual	118868	633591	44.534
Total	313520	1422719	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702.21.1

Reported on 09-Mar-87 at 10:44

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 7-Mar-87 Time 21:27

Analysis: A64070702 Sample Name: 2640 M SAT

Sample ID: 0

Bottle: 1

Sample 21 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
6	16.485	16.314	1400.0	4276	12745	0.921	N-C14
12	18.491	18.298	1464.7	6606	22301	1.611	I-C16
17	19.584	19.380	1500.0	10583	35027	2.530	N-C15
28	22.555	22.320	1600.0	10726	37163	2.685	N-C16
34	24.053	23.816	1652.4	9709	55880	4.037	I-C18
40	25.416	25.176	1700.0	12540	47013	3.396	N-C17
41	25.715	25.474	1711.0	26602	130664	9.439	PRISTANE
52	28.128	27.883	1800.0	9892	35725	2.581	N-C18
53	28.488	28.242	1813.8	13616	66230	4.784	PHYTANE
63	30.728	30.477	1900.0	11073	39334	2.841	N-C19
75	33.205	32.950	2000.0	10160	38043	2.748	N-C20
85	35.573	35.310	2100.0	9299	32201	2.326	N-C21
98	37.845	37.574	2200.0	8573	29625	2.140	N-C22
107	40.032	39.754	2300.0	8041	28142	2.033	N-C23
117	42.131	41.845	2400.0	7462	25324	1.829	N-C24
128	44.152	43.860	2500.0	6627	25059	1.810	N-C25
135	46.096	45.793	2600.0	6096	20223	1.461	N-C26
142	47.973	47.660	2700.0	4405	16651	1.203	N-C27
149	49.792	49.468	2800.0	3642	16280	1.176	N-C28
5	51.544	51.210	2900.0	3785	17817	1.287	N-C29
162	53.240	52.896	3000.0	2338	11666	0.843	N-C30
167	54.883	54.530	3100.0	2133	7880	0.569	N-C31
170	56.472	56.110	3200.0	1117	3823	0.276	N-C32
174	58.029	57.658	3300.0	1520	6426	0.464	N-C33
177	59.533	59.154	3400.0	903	3802	0.275	N-C34
182	61.112	60.724	3500.0	1016	4996	0.361	N-C35

Residual	122001	614302	44.375
Total	314739	1384341	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 22, 1

Reported on 09-Mar-87 at 10:45

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 7-Mar-87 Time 22:59

Analysis: A64070702 Sample Name: 2647 M SAT

Sample ID: 0 Bottle: 1

Sample 22 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
2	16.483	16.311	1400.0	3143	9738	0.777 N-C14
9	18.488	18.296	1464.7	5441	17348	1.385 I-C16
14	19.581	19.378	1500.0	9800	32050	2.558 N-C15
27	22.555	22.320	1600.0	11116	37725	3.011 N-C16
33	24.051	23.815	1652.4	9461	52808	4.215 I-C18
39	25.411	25.175	1700.0	12847	48031	3.834 N-C17
40	25.709	25.473	1711.0	27826	138589	11.062 PRISTANE
51	28.125	27.888	1800.0	10305	38966	3.110 N-C18
52	28.472	28.235	1813.4	11912	59659	4.762 PHYTANE
61	30.717	30.479	1900.0	10228	35495	2.833 N-C19
72	33.189	32.950	2000.0	8395	30532	2.437 N-C20
82	35.560	35.314	2100.0	7573	24485	1.954 N-C21
94	37.835	37.582	2200.0	6443	23488	1.875 N-C22
103	40.011	39.752	2300.0	6375	21986	1.755 N-C23
111	42.112	41.847	2400.0	6134	19458	1.553 N-C24
120	44.131	43.860	2500.0	5552	23508	1.876 N-C25
127	46.075	45.793	2600.0	5356	17723	1.415 N-C26
134	47.952	47.660	2700.0	4576	16527	1.319 N-C27
141	49.768	49.465	2800.0	3745	15550	1.241 N-C28
151	51.523	51.210	2900.0	3922	16318	1.302 N-C29
154	53.208	52.886	3000.0	2619	11590	0.925 N-C30
157	54.861	54.530	3100.0	2349	7840	0.626 N-C31
161	56.451	56.110	3200.0	1389	6130	0.489 N-C32
165	58.008	57.658	3300.0	1503	6381	0.509 N-C33
168	59.512	59.154	3400.0	901	3593	0.287 N-C34
172	61.091	60.724	3500.0	787	3894	0.311 N-C35

Residual	105227	533470	42.579
Total	284924	1252883	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702.23.1

Reported on 09-Mar-87 at 10:45

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 8-Mar-87 Time 0:32

Analysis: A64070702 Sample Name: 2650 M SAT

Sample ID: 0 Bottle: 1

Sample 23 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
7	16.483	16.311	1400.0	4466	13334	0.923 N-C14
15	18.493	18.301	1464.9	5923	19990	1.384 I-C16
20	19.561	19.378	1500.0	10996	36112	2.500 N-C15
32	22.555	22.320	1600.0	11499	39071	2.705 N-C16
38	24.056	23.820	1652.5	9370	52517	3.636 I-C18
44	25.416	25.179	1700.0	12211	46988	3.254 N-C17
45	25.715	25.477	1711.0	29085	147360	10.204 PRISTANE
56	28.123	27.883	1800.0	10095	34873	2.415 N-C18
57	28.477	28.237	1813.6	11714	54651	3.784 PHYTANE
69	30.723	30.480	1900.0	10585	34843	2.413 N-C19
80	33.195	32.950	2000.0	8304	31087	2.153 N-C20
89	35.563	35.310	2100.0	7629	26149	1.811 N-C21
103	37.835	37.574	2200.0	6657	24972	1.729 N-C22
111	40.021	39.754	2300.0	6648	24530	1.698 N-C23
121	42.117	41.843	2400.0	6520	21633	1.498 N-C24
132	44.141	43.860	2500.0	5515	22242	1.540 N-C25
138	46.080	45.788	2600.0	5372	17631	1.221 N-C26
146	47.957	47.654	2700.0	5022	19440	1.346 N-C27
154	49.779	49.465	2800.0	4559	22260	1.541 N-C28
160	51.533	51.210	2900.0	4916	23312	1.614 N-C29
167	53.219	52.886	3000.0	3018	12556	0.869 N-C30
170	54.872	54.530	3100.0	2665	9460	0.655 N-C31
174	56.461	56.110	3200.0	1395	6097	0.422 N-C32
178	58.008	57.648	3300.0	1595	6791	0.470 N-C33
181	59.512	59.143	3400.0	874	3765	0.261 N-C34
186	61.091	60.713	3500.0	985	4688	0.325 N-C35

Residual 134332 687854 47.629

Total 321951 1444204 100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 24, 1

Reported on 09-Mar-87 at 10:45

Page 1

MULTICHROM V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 8-Mar-87 Time 2:04

Analysis: A64070702 Sample Name: 2653 M SAT

Sample ID: 0

Bottle: 1

Sample 24 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	X	Identity
1	18.483	18.295	1416.4	878	2927	0.167	I-C16
2	19.573	19.374	1500.0	3233	10584	0.632	N-C15
11	22.549	22.320	1600.0	8081	26301	1.497	N-C16
15	24.048	23.815	1652.3	6965	41527	2.363	I-C18
21	25.413	25.176	1700.0	12421	46344	2.637	N-C17
22	25.723	25.485	1711.4	32606	158295	9.007	PRISTANE
34	28.133	27.889	1800.0	12935	51773	2.946	N-C18
35	28.491	28.245	1813.7	15771	78479	4.466	PHYTANE
46	30.733	30.482	1900.0	12922	44478	2.531	N-C19
58	33.208	32.950	2000.0	11239	42367	2.411	N-C20
68	35.581	35.314	2100.0	11068	35994	2.048	N-C21
80	37.851	37.575	2200.0	10484	36314	2.066	N-C22
90	40.037	39.753	2300.0	11388	40802	2.322	N-C23
101	42.139	41.846	2400.0	10546	35006	1.992	N-C24
112	44.160	43.860	2500.0	10729	41941	2.387	N-C25
120	46.109	45.795	2600.0	9873	33069	1.882	N-C26
130	47.995	47.666	2700.0	11418	44528	2.534	N-C27
139	49.805	49.463	2800.0	11321	63403	3.608	N-C28
144	51.565	51.210	2900.0	13728	58171	3.310	N-C29
150	53.251	52.883	3000.0	8503	43133	2.454	N-C30
156	54.904	54.524	3100.0	8158	29296	1.667	N-C31
160	56.483	56.091	3200.0	3455	14531	0.827	N-C32
164	58.029	57.626	3300.0	4397	17895	1.018	N-C33
168	59.533	59.118	3400.0	1737	7467	0.425	N-C34
173	61.112	60.685	3500.0	2038	10066	0.573	N-C35

Residual	131650	742702	42.262
Total	377546	1757395	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 25, 1

Reported on 09-Mar-87 at 10:45

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 8-Mar-87 Time 3:36

Analysis: A64070702 Sample Name: 2661 M SAT

Sample ID: 0 Bottle: 1

Sample 25 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	16.485	16.314	1400.0	781	2415	0.142 N-C14
3	18.485	18.293	1464.7	2360	7882	0.463 I-C16
5	19.576	19.372	1500.0	6549	20505	1.203 N-C15
13	22.555	22.320	1600.0	11035	35241	2.068 N-C16
18	24.048	23.810	1652.2	7555	45155	2.650 I-C18
24	25.413	25.172	1700.0	14913	53866	3.161 N-C17
25	25.723	25.481	1711.4	30916	156756	9.199 PRISTANE
38	28.128	27.881	1800.0	13348	46095	2.705 N-C18
39	28.483	28.235	1813.6	11972	57836	3.394 PHYTANE
50	30.733	30.481	1900.0	14065	49416	2.900 N-C19
62	33.208	32.950	2000.0	11719	42550	2.497 N-C20
73	35.579	35.311	2100.0	11727	40748	2.391 N-C21
86	37.851	37.574	2200.0	10767	38860	2.280 N-C22
96	40.037	39.751	2300.0	12439	43451	2.550 N-C23
103	42.139	41.844	2400.0	11094	37135	2.179 N-C24
114	44.163	43.860	2500.0	12789	45723	2.683 N-C25
122	46.109	45.793	2600.0	10514	35390	2.077 N-C26
131	47.995	47.665	2700.0	14487	53408	3.134 N-C27
140	49.803	49.460	2800.0	11696	58122	3.411 N-C28
14	51.565	51.210	2900.0	13615	52477	3.079 N-C29
150	53.251	52.883	3000.0	7723	36364	2.134 N-C30
156	54.904	54.525	3100.0	9221	31876	1.871 N-C31
161	56.475	56.084	3200.0	4115	16948	0.995 N-C32
165	58.040	57.639	3300.0	5200	20568	1.207 N-C33
169	59.544	59.132	3400.0	2044	8813	0.517 N-C34
174	61.112	60.689	3500.0	2156	10070	0.591 N-C35

Residual 126831 656426 38.520

Total 391630 1704099 100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 2, 1

Reported on 16-Mar-87 at 14:20

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 9-Mar-87 Time 10:46

Analysis: B64070702 Sample Name: 2673 M SAT

Sample ID: 0

Bottle: 1

Sample 2 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	17.755	17.751	1413.2	397	1320	0.125 I-C16
2	18.845	18.841	1500.0	3719	11930	1.132 N-C15
10	21.835	21.830	1600.0	12071	44591	4.231 N-C16
13	23.307	23.293	1651.4	4048	19169	1.819 I-C18
19	24.696	24.675	1700.0	16286	71269	6.762 N-C17
20	24.952	24.929	1709.4	11382	62856	5.964 PRISTANE
30	27.411	27.374	1800.0	15634	72776	6.906 N-C18
31	27.715	27.676	1811.5	5587	29023	2.754 PHYTANE
42	30.045	29.993	1900.0	14442	75683	7.181 N-C19
55	32.456	32.390	2000.0	13576	55942	5.308 N-C20
63	34.808	34.750	2100.0	11753	46285	4.392 N-C21
73	37.064	37.014	2200.0	10059	38821	3.684 N-C22
81	39.235	39.193	2300.0	9154	34778	3.300 N-C23
89	41.307	41.272	2400.0	7835	27320	2.592 N-C24
97	43.317	43.290	2500.0	7163	27188	2.580 N-C25
102	45.245	45.220	2600.0	5459	19824	1.881 N-C26
109	47.115	47.091	2700.0	5027	16875	1.601 N-C27
117	48.907	48.884	2800.0	3763	15642	1.484 N-C28
121	50.651	50.630	2900.0	3836	16371	1.553 N-C29
123	52.344	52.325	3000.0	2389	8476	0.804 N-C30
127	53.976	53.958	3100.0	2592	8980	0.852 N-C31
132	55.555	55.538	3200.0	1183	4405	0.418 N-C32
136	57.101	57.087	3300.0	2021	8258	0.784 N-C33
138	58.587	58.573	3400.0	982	5882	0.558 N-C34
140	60.056	60.044	3500.0	691	5263	0.499 N-C35

Residual	67984	324961	30.834
Total	239033	1053887	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 15, 1

Reported on 11-Mar-87 at 11:22

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 10-Mar-87 Time 22:07

Analysis: B64070702 Sample Name: 2678.8 M SAT

Sample ID: 0

Bottle: 1

Sample 15 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
2	18.837	18.856	1500.0	1609	5004	0.854 N-C15
9	21.808	21.830	1600.0	5832	19266	3.289 N-C16
12	23.093	23.109	1645.1	2541	10497	1.792 I-C18
19	24.659	24.666	1700.0	9153	33077	5.648 N-C17
20	24.915	24.921	1709.4	5359	28778	4.914 PRISTANE
28	27.371	27.365	1800.0	8919	34426	5.878 N-C18
29	27.685	27.678	1812.2	2418	12810	2.187 PHYTANE
40	29.957	29.938	1900.0	8468	32829	5.605 N-C19
50	32.421	32.390	2000.0	7140	25753	4.397 N-C20
58	34.781	34.753	2100.0	6867	24462	4.177 N-C21
68	37.035	37.008	2200.0	5584	19649	3.355 N-C22
74	39.213	39.189	2300.0	5316	18084	3.088 N-C23
78	41.296	41.274	2400.0	4276	14975	2.557 N-C24
85	43.309	43.290	2500.0	4347	14911	2.546 N-C25
89	45.235	45.215	2600.0	3074	10170	1.737 N-C26
93	47.104	47.084	2700.0	2999	10155	1.734 N-C27
99	48.901	48.881	2800.0	2393	11596	1.980 N-C28
105	50.651	50.630	2900.0	2324	10910	1.863 N-C29
108	52.333	52.312	3000.0	1325	4672	0.798 N-C30
114	54.160	54.139	3100.0	1659	6610	1.129 N-C31
117	55.544	55.522	3200.0	701	2572	0.439 N-C32
121	57.091	57.069	3300.0	1328	5585	0.954 N-C33
13	58.584	58.562	3400.0	708	4366	0.745 N-C34
125	59.832	59.810	3500.0	411	1665	0.284 N-C35

Residual 47242 222859 38.051

Total 141993 585682 100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 17, 1

Reported on 11-Mar-87 at 11:22

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 11-Mar-87 Time 1:25

Analysis: B64070702 Sample Name: 268L75 M SAT

Sample ID: 0

Bottle: 1

Sample 17 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
1	24.619	24.631	1700.0	323	1179	3.070	N-C17
2	24.875	24.887	1709.5	487	2192	5.708	PRISTANE
3	27.323	27.337	1800.0	425	1457	3.795	N-C18
4	27.651	27.665	1812.7	169	744	1.937	PHYTANE
5	29.907	29.922	1900.0	561	1729	4.502	N-C19
7	32.373	32.390	2000.0	518	1751	4.558	N-C20
8	34.736	34.754	2100.0	604	1881	4.898	N-C21
9	36.997	37.016	2200.0	559	1826	4.755	N-C22
10	39.173	39.192	2300.0	697	2204	5.739	N-C23
11	41.259	41.279	2400.0	567	1785	4.648	N-C24
12	43.269	43.290	2500.0	731	3033	7.897	N-C25
13	45.200	45.218	2600.0	595	1847	4.810	N-C26
14	47.072	47.088	2700.0	849	2786	7.255	N-C27
15	48.877	48.891	2800.0	544	1855	4.829	N-C28
17	50.619	50.630	2900.0	634	2273	5.918	N-C29
18	52.304	52.313	3000.0	326	1108	2.886	N-C30
19	53.936	53.943	3100.0	379	1291	3.363	N-C31
21	55.525	55.530	3200.0	150	545	1.418	N-C32
23	57.069	57.072	3300.0	250	1007	2.621	N-C33

Residual	1444	5913	15.395
Total	10811	38405	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 3, 1
Reported on 16-Mar-87 at 14:32

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE Analysis ID:
Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 9-Mar-87 Time 12:26
Analysis: B64070702 Sample Name: 2695 M SAT Sample ID: 0 Bottle: 1
Sample 3 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
1	18.843	18.871	1500.0	531	1653	0.907	N-C15
3	21.797	21.830	1600.0	1858	5758	3.160	N-C16
4	23.299	23.325	1652.9	427	1577	0.866	I-C18
8	24.635	24.656	1700.0	2659	8660	4.753	N-C17
9	24.901	24.922	1709.8	1468	6830	3.748	PRISTANE
13	27.344	27.354	1800.0	2668	9390	5.153	N-C18
14	27.680	27.689	1812.9	947	4812	2.641	PHYTANE
17	29.939	29.939	1900.0	2287	6967	3.823	N-C19
23	32.400	32.390	2000.0	2069	7075	3.882	N-C20
29	34.763	34.739	2100.0	1769	5599	3.073	N-C21
36	37.029	36.992	2200.0	1545	5109	2.804	N-C22
42	39.205	39.155	2300.0	1629	5405	2.966	N-C23
46	41.296	41.233	2400.0	1455	4555	2.500	N-C24
50	43.365	43.290	2500.0	2506	14313	7.855	N-C25
52	45.245	45.182	2600.0	1184	3822	2.097	N-C26
54	47.109	47.058	2700.0	1286	4189	2.299	N-C27
55	48.907	48.867	2800.0	888	4322	2.372	N-C28
60	50.659	50.630	2900.0	1142	4270	2.343	N-C29
64	52.344	52.326	3000.0	597	2104	1.155	N-C30
66	53.987	53.979	3100.0	592	2304	1.265	N-C31
69	55.565	55.568	3200.0	242	864	0.485	N-C32
72	57.101	57.114	3300.0	553	2738	1.503	N-C33
74	58.605	58.628	3400.0	317	2618	1.437	N-C34

Residual	13605	67264	36.914
Total	44224	182216	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 18, 1

Reported on 11-Mar-87 at 11:22

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT LO09A FEM SISTE ERA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 11-Mar-87 Time 3:04

Analysis: B64070702 Sample Name: 2739.4 M SAT

Sample ID: 0

Bottle: 1

Sample 18 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	15.755	15.782	1400.0	500	1452	0.162 N-C14
2	17.739	17.770	1464.6	630	2074	0.231 I-C16
3	18.824	18.857	1500.0	2511	7924	0.884 N-C15
9	21.792	21.830	1600.0	6936	22915	2.557 N-C16
12	23.269	23.301	1651.8	2288	10311	1.151 I-C18
17	24.645	24.670	1700.0	12035	45029	5.025 N-C17
18	24.912	24.936	1709.8	8449	42378	4.729 PRISTANE
25	27.357	27.370	1800.0	12696	49817	5.559 N-C18
26	27.667	27.678	1812.0	3279	16871	1.883 PHYTANE
34	29.941	29.942	1900.0	12476	52339	5.840 N-C19
42	32.400	32.390	2000.0	10475	38948	4.346 N-C20
46	34.760	34.750	2100.0	10017	37818	4.220 N-C21
56	37.019	37.008	2200.0	8998	33225	3.707 N-C22
64	39.197	39.187	2300.0	10384	39718	4.432 N-C23
72	41.277	41.266	2400.0	9080	32617	3.640 N-C24
79	43.301	43.290	2500.0	12197	49122	5.481 N-C25
85	45.219	45.210	2600.0	7448	27993	3.124 N-C26
94	47.099	47.094	2700.0	9454	37806	4.219 N-C27
102	48.880	48.878	2800.0	5737	25359	2.830 N-C28
109	50.629	50.630	2900.0	7181	32815	3.662 N-C29
112	52.301	52.305	3000.0	3622	13219	1.475 N-C30
118	53.944	53.950	3100.0	4734	17056	1.903 N-C31
119	55.512	55.521	3200.0	1910	6998	0.781 N-C32
127	57.040	57.051	3300.0	2779	11369	1.269 N-C33
129	58.523	58.536	3400.0	1195	6406	0.715 N-C34
131	59.984	60.000	3500.0	1283	5026	0.561 N-C35

Residual 52960 229563 25.616

Total 221254 896168 100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 4, 1

Reported on 16-Mar-87 at 14:42

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MULTICHROM V3.2.

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64...

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 9-Mar-87 Time 14:06

Analysis: B64070702 Sample Name: 2755 M SAT

Sample ID: 0 Bottle: 1

Sample 4 Injection 1

Peak	R/T m.	RT	Corr	RT Val	Hght uV	Area uVs	%	Identity
2	23.272	23.272	1607.0	149	537	0.189	I-C18	
3	24.619	24.619	1700.0	2355	7565	2.666	N-C17	
4	24.891	24.891	1710.0	1442	6267	2.208	PRISTANE	
9	27.333	27.334	1800.0	3802	13014	4.586	N-C18	
10	27.667	27.667	1812.9	813	3658	1.289	PHYTANE	
15	29.925	29.926	1900.0	4663	16900	5.956	N-C19	
18	32.389	32.390	2000.0	3970	13681	4.821	N-C20	
22	34.757	34.758	2100.0	4556	16010	5.642	N-C21	
28	37.013	37.013	2200.0	4168	13790	4.860	N-C22	
32	39.192	39.192	2300.0	4679	15155	5.340	N-C23	
37	41.280	41.280	2400.0	3938	12691	4.472	N-C24	
44	43.291	43.290	2500.0	4287	15021	5.293	N-C25	
48	45.224	45.224	2600.0	3189	10408	3.668	N-C26	
52	47.093	47.093	2700.0	3549	11518	4.059	N-C27	
56	48.891	48.891	2800.0	2558	10518	3.706	N-C28	
61	50.629	50.630	2900.0	2800	11855	4.178	N-C29	
64	52.323	52.324	3000.0	1762	5985	2.109	N-C30	
68	53.947	53.948	3100.0	1979	6833	2.408	N-C31	
72	55.533	55.535	3200.0	989	3375	1.189	N-C32	
76	57.069	57.071	3300.0	1440	5856	2.063	N-C33	
78	58.555	58.557	3400.0	651	3579	1.261	N-C34	
80	60.016	60.018	3500.0	561	2299	0.810	N-C35	

Residual	17590	77261	27.226
Total	75889	283778	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 5, 1
Reported on 16-Mar-87 at 14:51

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M U L T I C H R O M V3.2

Analyst Name : LOTTE Analysis ID:
Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 9-Mar-87 Time 15:46
Analysis: B64070702 Sample Name: 2760 M SAT Sample ID: 0 Bottle: 1
Sample 5 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	21.792	21.830	1600.0	1183	3899	0.725 N-C16
3	23.283	23.312	1652.3	739	3030	0.563 I-C18
6	24.640	24.661	1700.0	4325	14381	2.673 N-C17
7	24.917	24.937	1710.2	5223	24387	4.532 PRISTANE
13	27.355	27.359	1800.0	5437	20462	3.803 N-C18
14	27.675	27.677	1812.3	1635	7958	1.479 PHYTANE
24	29.947	29.936	1900.0	7227	27777	5.162 N-C19
31	32.416	32.390	2000.0	6323	22544	4.190 N-C20
37	34.776	34.754	2100.0	6934	25740	4.784 N-C21
46	37.035	37.016	2200.0	5777	21998	4.088 N-C22
53	39.208	39.193	2300.0	6673	23555	4.378 N-C23
60	41.291	41.279	2400.0	5297	18785	3.491 N-C24
68	43.299	43.290	2500.0	6368	22763	4.230 N-C25
73	45.229	45.220	2600.0	4462	16188	3.008 N-C26
80	47.101	47.092	2700.0	5868	20721	3.851 N-C27
86	48.891	48.881	2800.0	3997	18088	3.362 N-C28
91	50.640	50.630	2900.0	5586	23634	4.392 N-C29
94	52.323	52.312	3000.0	3109	11260	2.093 N-C30
98	53.955	53.944	3100.0	3919	14046	2.610 N-C31
103	55.523	55.512	3200.0	1665	6046	1.124 N-C32
107	57.069	57.058	3300.0	2602	10382	1.929 N-C33
109	58.552	58.541	3400.0	956	4896	0.910 N-C34
112	60.005	59.994	3500.0	962	3667	0.681 N-C35

Residual	36083	171868	31.941
Total	132349	538077	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702.6.1
Reported on 16-Mar-87 at 16:44

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M U L T I C H R O M V3.2

Analyst Name : LOTTE Analysis ID:
Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 9-Mar-87 Time 17:24
Analysis: B64070702 Sample Name: 2772 M SAT Sample ID: 0 Bottle: 1
Sample 6 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
1	18.824	18.866	1500.0	1076	3409	0.604	N-C15
5	21.781	21.830	1600.0	3803	12160	2.154	N-C16
6	23.168	23.212	1648.8	885	3546	0.681	I-C18
11	24.624	24.663	1700.0	6022	21022	3.724	N-C17
12	24.860	24.918	1709.5	2500	12314	2.182	PRISTANE
16	27.323	27.352	1800.0	5147	17928	3.176	N-C18
17	27.656	27.684	1812.9	638	2780	0.492	PHYTANE
21	29.912	29.932	1900.0	4990	16317	2.891	N-C19
23	32.379	32.390	2000.0	4800	16464	2.917	N-C20
26	34.744	34.749	2100.0	5801	20082	3.558	N-C21
30	37.011	37.010	2200.0	6274	21419	3.795	N-C22
33	39.197	39.191	2300.0	9470	34219	6.062	N-C23
35	41.283	41.271	2400.0	7885	28921	5.124	N-C24
40	43.307	43.290	2500.0	11851	50503	8.947	N-C25
43	45.221	45.206	2600.0	7248	26421	4.681	N-C26
48	47.109	47.096	2700.0	11059	44355	7.858	N-C27
53	48.885	48.874	2800.0	6203	23237	4.117	N-C28
56	50.640	50.630	2900.0	7877	31348	5.554	N-C29
60	52.323	52.314	3000.0	4380	17341	3.072	N-C30
64	53.955	53.948	3100.0	5598	19502	3.455	N-C31
69	55.533	55.528	3200.0	2532	10645	1.886	N-C32
73	57.072	57.068	3300.0	5317	20907	3.704	N-C33
75	58.544	58.541	3400.0	1199	5892	1.044	N-C34
77	60.005	60.004	3500.0	1304	5188	0.919	N-C35

Residual	22337	98221	17.401
Total	146594	564441	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 19, 1

Reported on 11-Mar-87 at 11:22

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 11-Mar-87 Time 4:42

Analysis: B64070702 Sample Name: 2800.75 M SAT

Sample ID: 0

Bottle: 1

Sample 19 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
2	15.747	15.786	1400.0	1156	3256	0.239	N-C14
4	17.731	17.775	1464.6	955	3154	0.231	I-C16
6	18.816	18.863	1500.0	3123	9982	0.732	N-C15
2	21.776	21.830	1600.0	5451	17679	1.296	N-C16
16	23.253	23.298	1651.9	1522	6937	0.508	I-C18
21	24.624	24.661	1700.0	8538	31144	2.283	N-C17
22	24.891	24.926	1709.8	6509	31486	2.308	PRISTANE
27	27.333	27.354	1800.0	9994	39179	2.872	N-C18
28	27.648	27.667	1812.1	1876	10438	0.765	PHYTANE
34	29.933	29.938	1900.0	12356	51385	3.766	N-C19
41	32.400	32.390	2000.0	12121	49031	3.594	N-C20
45	34.771	34.750	2100.0	14612	60341	4.423	N-C21
54	37.037	37.006	2200.0	14605	62003	4.544	N-C22
62	39.235	39.194	2300.0	20112	103845	7.611	N-C23
68	41.307	41.257	2400.0	16267	74209	5.439	N-C24
76	43.349	43.290	2500.0	21768	122343	8.967	N-C25
81	45.251	45.196	2600.0	13471	61028	4.473	N-C26
88	47.141	47.091	2700.0	18281	95501	7.000	N-C27
94	48.912	48.866	2800.0	11113	52647	3.859	N-C28
102	50.672	50.630	2900.0	14212	68618	5.029	N-C29
107	52.325	52.287	3000.0	8181	33313	2.442	N-C30
111	53.976	53.942	3100.0	9239	38012	2.786	N-C31
8	55.525	55.495	3200.0	5331	20700	1.517	N-C32
122	57.072	57.045	3300.0	7938	35215	2.581	N-C33
125	58.541	58.518	3400.0	2056	10118	0.742	N-C34
128	59.995	59.975	3500.0	1996	8327	0.610	N-C35

Residual	59286	264471	19.384
Total	302067	1364364	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 8, 1

Reported on 11-Mar-87 at 11:21

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MULTICHROM V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 10-Mar-87 Time 10:33

Analysis: B64070702 Sample Name: 2872 M SAT

Sample ID: 0

Bottle: 1

Sample 8 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
17	15.795	15.791	1400.0	12066	38848	3.256	N-C14
25	17.771	17.767	1464.2	6396	22286	1.868	I-C16
29	18.875	18.871	1500.0	15456	55790	4.676	N-C15
40	21.835	21.830	1600.0	15158	57687	4.835	N-C16
44	23.296	23.287	1651.5	5002	23239	1.948	I-C18
49	24.675	24.661	1700.0	14222	58823	4.930	N-C17
50	24.941	24.927	1709.9	9516	50613	4.242	PRISTANE
59	27.373	27.351	1800.0	13450	54772	4.591	N-C18
60	27.699	27.675	1812.6	5425	27721	2.323	PHYTANE
68	29.960	29.929	1900.0	12373	61582	5.161	N-C19
78	32.429	32.390	2000.0	11813	47496	3.981	N-C20
87	34.784	34.751	2100.0	10784	41029	3.439	N-C21
97	37.045	37.018	2200.0	9733	37454	3.139	N-C22
106	39.211	39.189	2300.0	9204	33932	2.844	N-C23
115	41.296	41.280	2400.0	8146	30401	2.548	N-C24
124	43.301	43.290	2500.0	7370	29400	2.464	N-C25
129	45.229	45.221	2600.0	6280	24208	2.029	N-C26
135	47.088	47.083	2700.0	5370	18198	1.525	N-C27
141	48.885	48.883	2800.0	4307	15329	1.285	N-C28
144	50.629	50.630	2900.0	3645	14578	1.222	N-C29
148	52.315	52.318	3000.0	2753	9870	0.827	N-C30
152	53.955	53.961	3100.0	2576	9888	0.829	N-C31
155	55.533	55.542	3200.0	1652	5857	0.491	N-C32
159	57.069	57.081	3300.0	1748	8107	0.680	N-C33
161	58.563	58.576	3400.0	1060	7317	0.613	N-C34
162	60.016	60.032	3500.0	647	2018	0.169	N-C35

Residual	92976	406683	34.085
Total	289128	1193126	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702.9.1

Reported on 11-Mar-87 at 11:21

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 10-Mar-87 Time 12:13

Analysis: B64070702 Sample Name: 2874 M SAT

Sample ID: 0

Bottle: 1

Sample 9 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
9	15.779	15.783	1400.0	7631	22762	2.537 N-C14
16	17.763	17.768	1464.3	4501	15312	1.707 I-C16
19	18.864	18.869	1500.0	11653	40114	4.472 N-C15
27	21.824	21.830	1600.0	12672	44739	4.987 N-C16
31	23.299	23.300	1651.9	4151	18556	2.069 I-C18
36	24.664	24.661	1700.0	12340	48278	5.382 N-C17
37	24.925	24.922	1709.7	7923	41420	4.617 PRISTANE
45	27.368	27.357	1800.0	11348	45401	5.061 N-C18
46	27.693	27.682	1812.6	4304	23017	2.566 PHYTANE
54	29.955	29.936	1900.0	10667	50902	5.674 N-C19
62	32.416	32.390	2000.0	9954	38143	4.252 N-C20
69	34.779	34.757	2100.0	9222	32827	3.660 N-C21
79	37.035	37.017	2200.0	8604	30680	3.420 N-C22
88	39.205	39.192	2300.0	7658	27757	3.094 N-C23
96	41.291	41.281	2400.0	7013	24989	2.786 N-C24
102	43.296	43.290	2500.0	6172	23611	2.632 N-C25
106	45.229	45.225	2600.0	5288	19968	2.226 N-C26
112	47.093	47.091	2700.0	4359	14989	1.671 N-C27
117	48.891	48.890	2800.0	3647	13008	1.450 N-C28
119	50.629	50.630	2900.0	3204	12101	1.349 N-C29
122	52.323	52.325	3000.0	2428	8293	0.924 N-C30
125	53.955	53.958	3100.0	2069	7926	0.884 N-C31
128	55.544	55.549	3200.0	1377	4840	0.540 N-C32
130	57.080	57.087	3300.0	1376	6671	0.744 N-C33
131	58.573	58.581	3400.0	899	6393	0.713 N-C34
132	60.027	60.036	3500.0	548	1766	0.197 N-C35

Residual	60383	272576	30.386
Total	221390	897041	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702.10.1

Reported on 11-Mar-87 at 11:21

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 10-Mar-87 Time 13:53

Analysis: B64070702 Sample Name: 2876 M SAT

Sample ID: 0

Bottle: 1

Sample 10 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
3	15.768	15.788	1400.0	2917	8335	2.046	N-C14
6	17.755	17.777	1464.6	2062	6668	1.637	I-C16
8	18.845	18.869	1500.0	6329	19601	4.811	N-C15
16	21.803	21.830	1600.0	7299	23507	5.769	N-C16
19	23.280	23.304	1652.1	2194	9830	2.413	I-C18
24	24.637	24.658	1700.0	7423	25364	6.225	N-C17
25	24.909	24.929	1710.1	4348	21953	5.388	PRISTANE
31	27.341	27.355	1800.0	6722	24184	5.936	N-C18
32	27.677	27.690	1813.0	2425	11723	2.877	PHYTANE
39	29.925	29.932	1900.0	6275	25301	6.210	N-C19
45	32.389	32.390	2000.0	5808	19898	4.884	N-C20
50	34.752	34.757	2100.0	5168	17061	4.187	N-C21
58	37.011	37.020	2200.0	4667	15642	3.839	N-C22
64	39.179	39.192	2300.0	4324	14225	3.491	N-C23
69	41.269	41.286	2400.0	4049	12744	3.128	N-C24
73	43.269	43.290	2500.0	3289	11271	2.766	N-C25
76	45.205	45.226	2600.0	2812	9122	2.239	N-C26
78	47.067	47.088	2700.0	2334	7487	1.837	N-C27
79	48.869	48.891	2800.0	1900	6284	1.542	N-C28
80	50.608	50.630	2900.0	1608	6032	1.481	N-C29
82	52.293	52.316	3000.0	1234	4031	0.989	N-C30
83	53.944	53.967	3100.0	960	3275	0.804	N-C31
84	55.523	55.546	3200.0	673	2249	0.552	N-C32
85	57.059	57.082	3300.0	643	3154	0.774	N-C33
86	58.544	58.567	3400.0	423	3020	0.741	N-C34
87	60.016	60.040	3500.0	252	836	0.205	N-C35

Residual	22089	94641	23.228
Total	110227	407438	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 21, 1

Reported on 11-Mar-87 at 11:23

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 11-Mar-87 Time 8:01

Analysis: B64070702 Sample Name: 2888.10 II SAT KULL Sample ID: 0 Bottle: 1

Sample 21 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	15.755	15.774	1400.0	606	1851	0.232 N-C14
4	17.747	17.769	1464.7	2710	8778	1.099 I-C16
6	18.835	18.858	1500.0	4770	14944	1.870 N-C15
13	21.803	21.830	1600.0	8236	27633	3.459 N-C16
19	23.285	23.307	1652.1	5284	30182	3.778 I-C18
23	24.651	24.667	1700.0	10918	40729	5.098 N-C17
24	24.965	24.980	1711.6	20227	111768	13.989 PRISTANE
32	27.363	27.368	1800.0	11057	39962	5.002 N-C18
33	27.677	27.681	1812.2	3175	16163	2.023 PHYTANE
41	29.947	29.941	1900.0	12452	50833	6.362 N-C19
50	32.405	32.390	2000.0	10967	43384	5.430 N-C20
53	34.776	34.764	2100.0	12090	45976	5.754 N-C21
59	37.027	37.018	2200.0	10242	36666	4.589 N-C22
63	39.208	39.202	2300.0	12093	47128	5.899 N-C23
66	41.277	41.274	2400.0	8561	30121	3.770 N-C24
70	43.291	43.290	2500.0	8988	33469	4.189 N-C25
73	45.203	45.208	2600.0	5275	17601	2.203 N-C26
78	47.077	47.088	2700.0	6034	21003	2.629 N-C27
81	48.861	48.878	2800.0	3422	14047	1.758 N-C28
85	50.608	50.630	2900.0	4670	17825	2.231 N-C29
88	52.291	52.318	3000.0	1432	4916	0.615 N-C30
92	53.923	53.955	3100.0	1409	4747	0.594 N-C31
95	55.501	55.538	3200.0	381	1458	0.182 N-C32
96	57.040	57.082	3300.0	550	2489	0.312 N-C33
97	60.005	60.056	3500.0	234	1396	0.175 N-C35

Residual	35112	133904	16.759
Total	200892	798971	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 20, 1

Reported on 11-Mar-87 at 11:23

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 11-Mar-87 Time 6:21

Analysis: B64070702 Sample Name: 2884.85 M SAT KULL Sample ID: 0

Bottle: 1

Sample 20 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
4	18.824	18.861	1500.0	589	1754	1.000	N-C15
14	21.787	21.830	1600.0	1122	5850	3.334	N-C16
20	23.277	23.315	1652.3	1007	4472	2.548	I-C18
25	24.637	24.670	1700.0	1247	5536	3.155	N-C17
26	24.907	24.938	1710.0	2763	15311	8.725	PRISTANE
32	27.339	27.361	1800.0	943	4121	2.349	N-C18
34	27.659	27.680	1812.4	750	4195	2.391	PHYTANE
39	29.917	29.930	1900.0	1243	7694	4.385	N-C19
46	32.387	32.390	2000.0	640	2642	1.505	N-C20
54	34.744	34.752	2100.0	1463	4357	2.483	N-C21
62	37.003	37.016	2200.0	688	2240	1.276	N-C22
65	39.176	39.193	2300.0	884	2657	1.514	N-C23
67	41.256	41.278	2400.0	474	1739	0.991	N-C24
68	43.264	43.290	2500.0	616	2699	1.538	N-C25
69	45.195	45.225	2600.0	341	1092	0.622	N-C26
70	47.061	47.095	2700.0	453	1571	0.895	N-C27
71	48.859	48.896	2800.0	361	1724	0.982	N-C28
75	52.301	52.346	3000.0	198	661	0.377	N-C30
78	54.115	54.163	3100.0	286	1077	0.614	N-C31
81	57.048	57.103	3300.0	379	2389	1.361	N-C33

Individual	25990	101704	57.956
Total	42437	175486	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 C64070702, 12, 1
Reported on 12-Mar-87 at 11:22

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M U L T I C H R O M V3.2

Analyst Name : LOTTE
Information : GEOKJEMI 6407/7-2 SAT

Analysis ID:

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 12-Mar-87 Time 4:25
Analysis: C64070702 Sample Name: 2905.3 M SAT KULL Sample ID: 0 Bottle: 1
Sample 12 Injection 1

F	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity	
5	15.821	15.760	1400.0	2820	17406	0.719	N-C14
14	17.829	17.760	1464.5	3154	15862	0.655	I-C16
18	18.933	18.860	1500.0	4574	21469	0.886	N-C15
29	21.915	21.830	1600.0	5927	35447	1.464	N-C16
35	23.265	23.185	1647.5	10043	82897	3.423	I-C18
46	24.800	24.683	1700.0	6173	49775	2.055	N-C17
47	25.077	24.957	1710.2	9379	61826	2.553	PRISTANE
61	27.520	27.372	1800.0	5454	30083	1.242	N-C18
62	27.856	27.705	1812.9	4427	31849	1.315	PHYTANE
76	30.131	29.954	1900.0	6845	43950	1.815	N-C19
95	32.595	32.390	2000.0	6063	40964	1.691	N-C20
110	34.957	34.765	2100.0	6773	28536	1.178	N-C21
124	37.203	37.022	2200.0	5681	29236	1.207	N-C22
137	39.368	39.199	2300.0	6021	26019	1.074	N-C23
149	41.443	41.285	2400.0	5142	20629	0.852	N-C24
162	43.437	43.290	2500.0	5288	21849	0.902	N-C25
169	45.347	45.219	2600.0	3619	13596	0.561	N-C26
176	47.197	47.089	2700.0	2913	10324	0.426	N-C27
187	48.979	48.889	2800.0	2875	14484	0.598	N-C28
187	50.701	50.630	2900.0	1957	7779	0.321	N-C29
193	52.376	52.322	3000.0	805	3834	0.158	N-C30
196	53.987	53.950	3100.0	796	2534	0.105	N-C31
200	55.555	55.534	3200.0	419	2464	0.102	N-C32
205	57.080	57.075	3300.0	690	4268	0.176	N-C33
206	58.584	58.595	3400.0	363	3311	0.137	N-C34
207	60.035	60.061	3500.0	362	3083	0.127	N-C35

Residual	295815	1798419	74.257
Total	404380	2421894	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 C64070702, 13, 1
Reported on 12-Mar-87 at 11:22

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M U L T I C H R O M V3.2

Analyst Name : LOTTE
Information : GEOKJEMI 6407/7-2 SAT

Analysis ID:

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 12-Mar-87 Time 6:05

Analysis: C64070702 Sample Name: 2913 M-SAT KULL
Sample 13 Injection 1

Sample ID: 0

Bottle: 0

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
2	15.765	15.789	1400.0	632	1878	0.168 N-C14
6	17.763	17.789	1465.1	4636	15506	1.386 I-C16
7	18.835	18.863	1500.0	1868	5612	0.502 N-C15
13	21.797	21.830	1600.0	2606	8869	0.793 N-C16
15	23.296	23.322	1652.4	6305	30983	2.770 I-C18
20	24.656	24.676	1700.0	2695	12822	1.146 N-C17
21	25.040	25.058	1714.3	38290	298537	26.690 PRISTANE
30	27.349	27.357	1800.0	3736	12758	1.141 N-C18
31	27.699	27.705	1813.5	5550	27714	2.478 PHYTANE
39	29.944	29.940	1900.0	4785	15880	1.420 N-C19
44	32.405	32.390	2000.0	4329	16391	1.465 N-C20
47	34.781	34.759	2100.0	5152	17971	1.607 N-C21
56	37.040	37.011	2200.0	5229	17855	1.596 N-C22
61	39.224	39.188	2300.0	6965	24898	2.226 N-C23
66	41.312	41.270	2400.0	6421	22638	2.024 N-C24
71	43.339	43.290	2500.0	10394	38198	3.415 N-C25
75	45.264	45.206	2600.0	7084	25716	2.299 N-C26
81	47.157	47.090	2700.0	11349	49362	4.413 N-C27
87	48.941	48.865	2800.0	6967	32724	2.926 N-C28
93	50.715	50.630	2900.0	11348	52100	4.658 N-C29
98	52.357	52.265	3000.0	4818	17860	1.597 N-C30
103	54.008	53.907	3100.0	6999	25610	2.290 N-C31
109	55.832	55.722	3200.0	2791	10409	0.931 N-C32
112	57.112	56.996	3300.0	3477	15704	1.404 N-C33
116	58.595	58.472	3400.0	1319	8731	0.781 N-C34
121	60.045	59.915	3500.0	766	6143	0.549 N-C35

Residual	62130	305673	27.328
Total	228643	1118542	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 12, 1

Reported on 11-Mar-87 at 11:21

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE ERA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 10-Mar-87 Time 17:14

Analysis: B64070702 Sample Name: 2923 M C5-EOM

Sample ID: 0

Bottle: 1

Sample 12 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
10	24.872	24.708	1700.0	230	1199	0.253 N-C17
11	25.184	25.018	1711.4	511	1613	0.340 PRISTANE
13	27.608	27.426	1800.0	313	1201	0.253 N-C18
14	27.859	27.675	1809.7	1054	3231	0.681 PHYTANE
18	30.205	30.006	1900.0	3611	12012	2.533 N-C19
20	32.605	32.390	2000.0	1062	3254	0.686 N-C20
26	37.200	36.968	2200.0	454	2542	0.536 N-C22
33	43.544	43.290	2500.0	41709	414601	87.419 N-C25

Residual 10190 34618 7.299

Total 59133 474271 100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 B64070702, 13, 1

Reported on 11-Mar-87 at 11:22

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 SAT L009A FEM SISTE FRA A64..

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 10-Mar-87 Time 18:52

Analysis: B64070702 Sample Name: 2934 M SAT

Sample ID: 0

Bottle: 1

Sample 13 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	15.757	15.779	1400.0	2117	6201	0.352 N-C14
2	17.744	17.768	1464.4	1485	4759	0.270 I-C16
5	18.840	18.866	1500.0	7367	23716	1.345 N-C15
8	21.800	21.830	1600.0	9867	35720	2.026 N-C16
16	23.259	23.280	1651.4	1316	6058	0.344 I-C18
21	24.640	24.653	1700.0	12270	47859	2.714 N-C17
22	24.891	24.902	1709.2	6166	29186	1.655 PRISTANE
28	27.355	27.351	1800.0	14173	56918	3.228 N-C18
29	27.643	27.637	1811.1	1342	6991	0.396 PHYTANE
40	29.949	29.930	1900.0	15931	73064	4.143 N-C19
48	32.424	32.390	2000.0	17907	85037	4.822 N-C20
54	34.792	34.740	2100.0	20353	97233	5.514 N-C21
59	37.069	37.001	2200.0	22798	121289	6.878 N-C22
63	39.253	39.169	2300.0	26384	156138	8.854 N-C23
68	41.336	41.236	2400.0	22779	131389	7.451 N-C24
75	43.405	43.290	2500.0	34800	257420	14.598 N-C25
80	45.269	45.187	2600.0	20288	110796	6.283 N-C26
85	47.131	47.081	2700.0	19380	101361	5.748 N-C27
92	48.880	48.861	2800.0	9696	42292	2.398 N-C28
97	50.619	50.630	2900.0	7825	33424	1.895 N-C29
102	52.291	52.331	3000.0	3729	13810	0.783 N-C30
107	53.923	53.992	3100.0	3977	14351	0.814 N-C31
111	55.491	55.588	3200.0	1240	5223	0.296 N-C32
116	57.019	57.142	3300.0	2719	13681	0.776 N-C33
120	58.520	58.670	3400.0	899	7396	0.419 N-C34
125	59.981	60.157	3500.0	768	4474	0.254 N-C35

Residual	61058	277651	15.745
Total	348634	1763438	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 7, 1

Reported on 09-Mar-87 at 10:42

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M U L T I C H R O M V3.2

Analyst Name : LOTTE
Information : GEOKJEMI 6407/7-2 L009A

Analysis ID:

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 7-Mar-87 Time 0:08

Analysis: A64070702 Sample Name: 2952 M TOT.EOM

Sample ID: 0

Bottle: 1

Sample 7 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
2	25.368	25.207	1700.0	332	1027	0.275 N-C17
3	25.637	25.475	1709.9	197	858	0.230 PRISTANE
6	28.080	27.902	1800.0	935	3110	0.832 N-C18
7	28.413	28.233	1812.8	447	2104	0.563 PHYTANE
11	30.685	30.491	1900.0	1403	4339	1.161 N-C19
14	33.160	32.950	2000.0	1888	6218	1.664 N-C20
18	35.531	35.276	2100.0	1844	5840	1.562 N-C21
27	37.811	37.513	2200.0	1768	5727	1.532 N-C22
35	39.989	39.650	2300.0	1703	6142	1.643 N-C23
42	42.091	41.712	2400.0	1569	4899	1.311 N-C24
47	44.280	43.860	2500.0	39385	203295	54.394 N-C25
49	46.056	45.668	2600.0	1272	3999	1.070 N-C26
52	47.928	47.573	2700.0	1000	3210	0.859 N-C27
53	49.747	49.424	2800.0	697	2482	0.664 N-C28
55	51.501	51.210	2900.0	572	2217	0.593 N-C29
56	53.197	52.936	3000.0	343	1153	0.308 N-C30
57	54.587	54.350	3100.0	514	3524	0.943 N-C31
59	56.440	56.237	3200.0	149	553	0.148 N-C32
60	57.997	57.822	3300.0	180	1133	0.303 N-C33

Residual	24869	111918	29.945
Total	81059	373747	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 AG4070702, 8, 1
Reported on 09-Mar-87 at 10:42

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE Analysis ID:
Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 7-Mar-87 Time 1:39
Analysis: AG4070702 Sample Name: 3032 M TOT.EOM Sample ID: 0 Bottle: 1
Sample 8 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	22.507	22.320	1600.0	625	1995	0.601 N-C16
2	24.008	23.820	1652.8	248	977	0.294 I-C18
6	25.352	25.163	1700.0	2655	8614	2.595 N-C17
7	25.616	25.426	1709.7	1119	4864	1.465 PRISTANE
12	28.069	27.877	1800.0	4748	15739	4.742 N-C18
13	28.413	28.221	1813.2	1601	7681	2.314 PHYTANE
21	30.672	30.478	1900.0	5310	20621	6.212 N-C19
29	33.147	32.950	2000.0	4875	16999	5.121 N-C20
35	35.515	35.294	2100.0	3999	12668	3.816 N-C21
45	37.795	37.551	2200.0	3101	9999	3.012 N-C22
53	39.976	39.710	2300.0	2273	7203	2.170 N-C23
62	42.069	41.783	2400.0	1900	6139	1.850 N-C24
69	44.168	43.860	2500.0	4676	22751	6.854 N-C25
73	46.029	45.731	2600.0	1345	4234	1.275 N-C26
77	47.907	47.618	2700.0	1116	3596	1.083 N-C27
78	49.725	49.446	2800.0	835	3107	0.936 N-C28
81	51.480	51.210	2900.0	745	2848	0.858 N-C29
82	53.165	52.904	3000.0	504	1745	0.526 N-C30
85	54.819	54.566	3100.0	424	1606	0.484 N-C31
87	56.419	56.174	3200.0	271	1027	0.309 N-C32
88	57.955	57.718	3300.0	280	1974	0.595 N-C33

Residual	36427	175548	52.887
Total	79076	331934	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 9, 1

Reported on 09-Mar-87 at 10:43

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M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 7-Mar-87 Time 3:09

Analysis: A64070702 Sample Name: 3109 M TUF.EOM

Sample ID: 0

Bottle: 1

Sample 9 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
1	16.355	16.129	1400.0	460	1741	0.712 N-C14
4	25.621	25.268	1700.0	434	1837	0.751 N-C17
6	28.397	28.006	1800.0	835	3922	1.603 N-C18
7	28.656	28.261	1809.9	1754	5951	2.433 PHYTANE
10	31.021	30.594	1900.0	9473	33063	13.518 N-C19
15	33.411	32.950	2000.0	3033	10632	4.347 N-C20
18	35.515	35.081	2100.0	1582	5003	2.046 N-C21
22	37.789	37.385	2200.0	1354	4471	1.828 N-C22
30	39.976	39.600	2300.0	1057	3242	1.326 N-C23
36	42.069	41.721	2400.0	953	2934	1.200 N-C24
43	44.181	43.860	2500.0	9628	38786	15.857 N-C25
47	46.035	45.737	2600.0	759	2930	1.198 N-C26
51	47.907	47.634	2700.0	627	2134	0.873 N-C27
54	49.725	49.476	2800.0	484	1799	0.736 N-C28
61	53.165	52.960	3000.0	345	1179	0.482 N-C30
63	54.552	54.365	3100.0	640	4348	1.778 N-C31
66	56.419	56.256	3200.0	213	765	0.313 N-C32
67	57.965	57.822	3300.0	206	1791	0.732 N-C33

Residual	26468	118060	48.269
Total	60305	244590	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 10, 1

Reported on 09-Mar-87 at 10:43

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE

Analysis ID:

Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7

Date 7-Mar-87 Time 4:40

Analysis: A64070702 Sample Name: 3243 M TOT. EOM

Sample ID: 0

Bottle: 1

Sample 10 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	Z	Identity
2	25.363	25.212	1700.0	733	2356	1.806	N-C17
3	25.632	25.480	1709.9	358	1555	1.192	PRISTANE
4	28.080	27.913	1800.0	1525	5136	3.938	N-C18
5	28.408	28.239	1812.6	624	2979	2.284	PHYTANE
8	30.675	30.493	1900.0	1585	4998	3.832	N-C19
15	33.147	32.950	2000.0	1598	5479	4.200	N-C20
18	35.520	35.299	2100.0	1471	4294	3.292	N-C21
24	37.795	37.551	2200.0	1224	4156	3.186	N-C22
30	39.976	39.710	2300.0	1081	3323	2.548	N-C23
33	42.069	41.783	2400.0	951	3037	2.329	N-C24
36	44.168	43.860	2500.0	1638	4541	3.482	N-C25
38	46.037	45.736	2600.0	737	2261	1.734	N-C26
40	47.912	47.618	2700.0	652	2064	1.583	N-C27
41	49.731	49.443	2800.0	535	2032	1.558	N-C28
44	51.491	51.210	2900.0	508	2181	1.672	N-C29
45	53.176	52.902	3000.0	342	1240	0.950	N-C30
48	54.829	54.561	3100.0	296	1129	0.866	N-C31
50	56.419	56.156	3200.0	193	743	0.569	N-C32
51	57.976	57.720	3300.0	225	1901	1.457	N-C33
2	59.597	59.347	3400.0	238	2454	1.882	N-C34

Residual 16515 72572 55.640

Total 33028 130432 100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000

Method: MSDS Calibration: MSDS Type: UC Using: Area

Analysis: 7 A64070702, 11, 1
Reported on 09-Mar-87 at 10:43

Page 1

M U L T I C H R O M V3.2

Analyst Name : LOTTE Analysis ID:
Information : GEOKJEMI 6407/7-2 L009A

GCMS SATURATES 4 DEG/MIN.

Channel: 7 Title: CHANNEL 7 Date 7-Mar-87 Time 6:12
Analysis: A64070702 Sample Name: 3298 M TOT.EOM Sample ID: 0 Bottle: 1
Sample 11 Injection 1

Peak	R/T m.	RT Corr	RT Val	Hght uV	Area uVs	% Identity
8	25.627	25.257	1700.0	699	3077	0.409 N-C17
9	28.413	28.004	1800.0	1578	7676	1.021 N-C18
10	28.675	28.261	1810.0	1352	4566	0.608 PHYTANE
19	31.035	30.587	1900.0	8940	34797	4.630 N-C19
27	33.432	32.950	2000.0	5791	20338	2.706 N-C20
33	35.651	35.164	2100.0	319	1398	0.186 N-C21
42	38.131	37.639	2200.0	456	1967	0.262 N-C22
54	44.365	43.860	2500.0	67311	501062	66.673 N-C25
55	46.061	45.604	2600.0	969	3190	0.424 N-C26
57	47.936	47.532	2700.0	763	4502	0.599 N-C27
58	49.747	49.394	2800.0	568	1911	0.254 N-C28
59	51.512	51.210	2900.0	544	2041	0.272 N-C29
60	53.208	52.954	3000.0	392	1303	0.173 N-C30
61	54.587	54.372	3100.0	385	2791	0.371 N-C31
63	56.451	56.289	3200.0	198	647	0.086 N-C32

Residual	40172	160259	21.324
Total	130438	751526	100.000

Sample Type: SA Scale Factor: 1.000 Amount: 1.000
Method: MSDS Calibration: MSDS Type: UC Using: Area



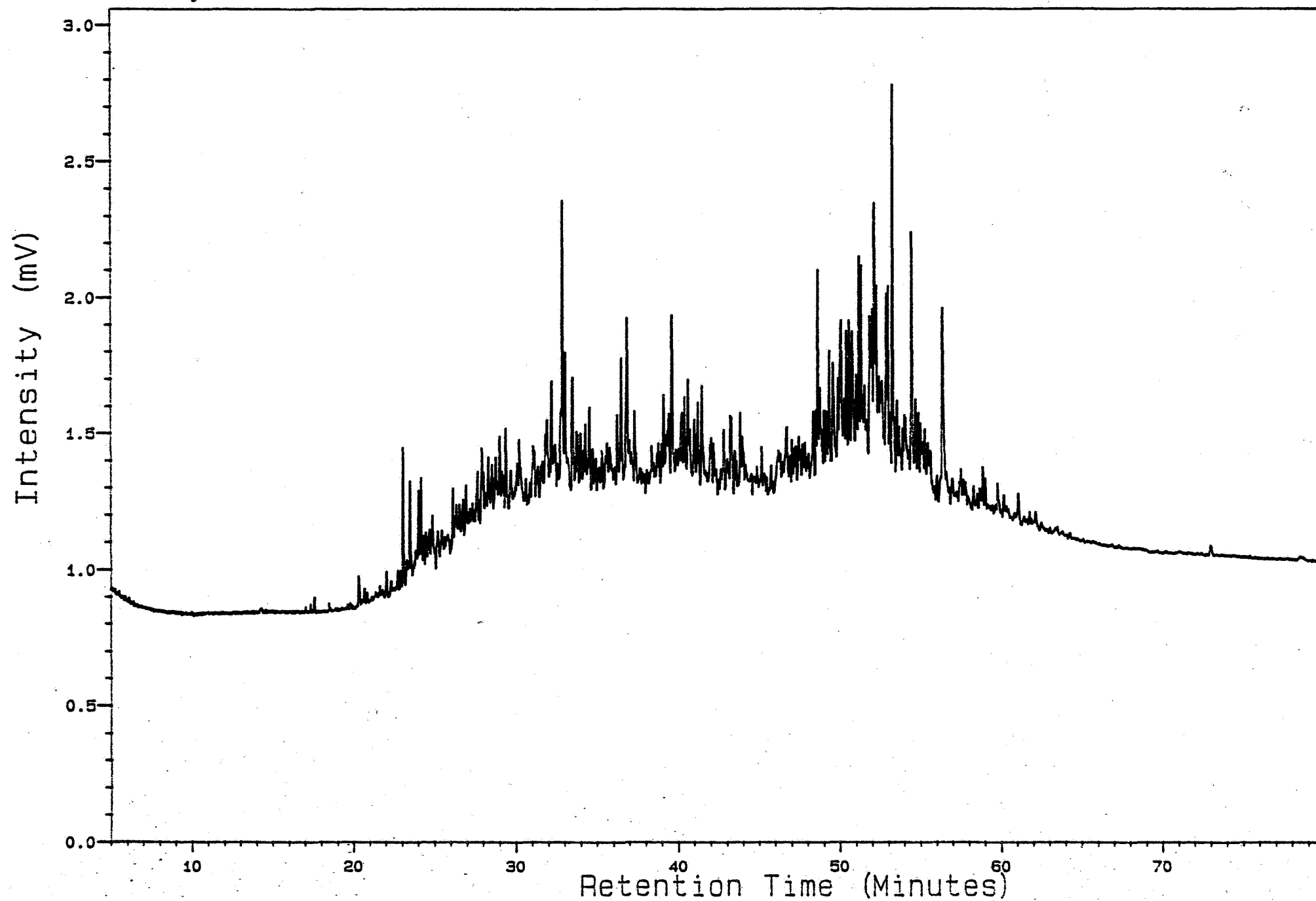
APPENDIX II

Gaschromathograms of aromaticc hydrocarbons

Analysis A6407072A

7.6, 1

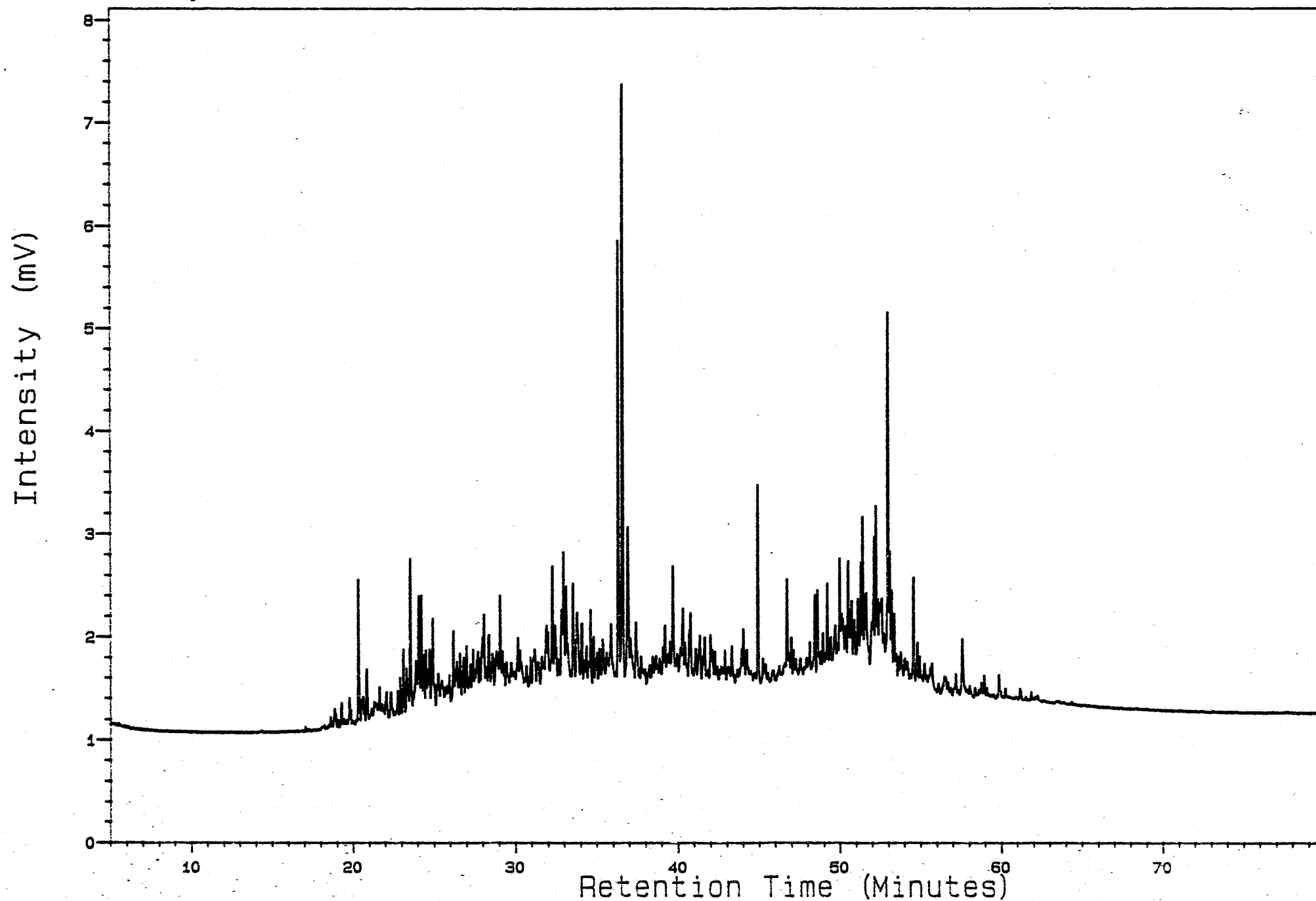
1716.0 M ARO



Analysis A6407072A

7.7.1

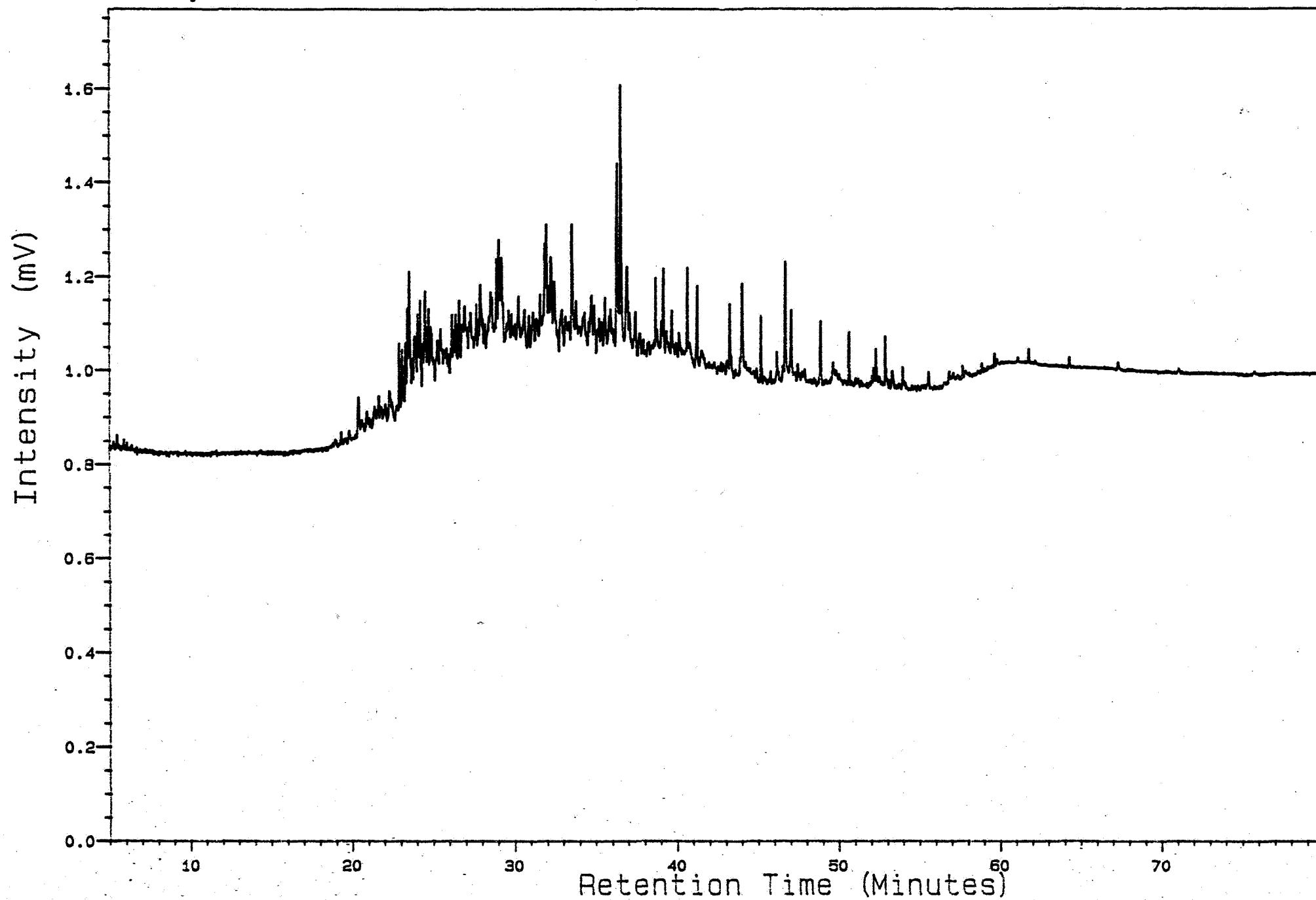
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Analysis A6407072A

7, 9, 1

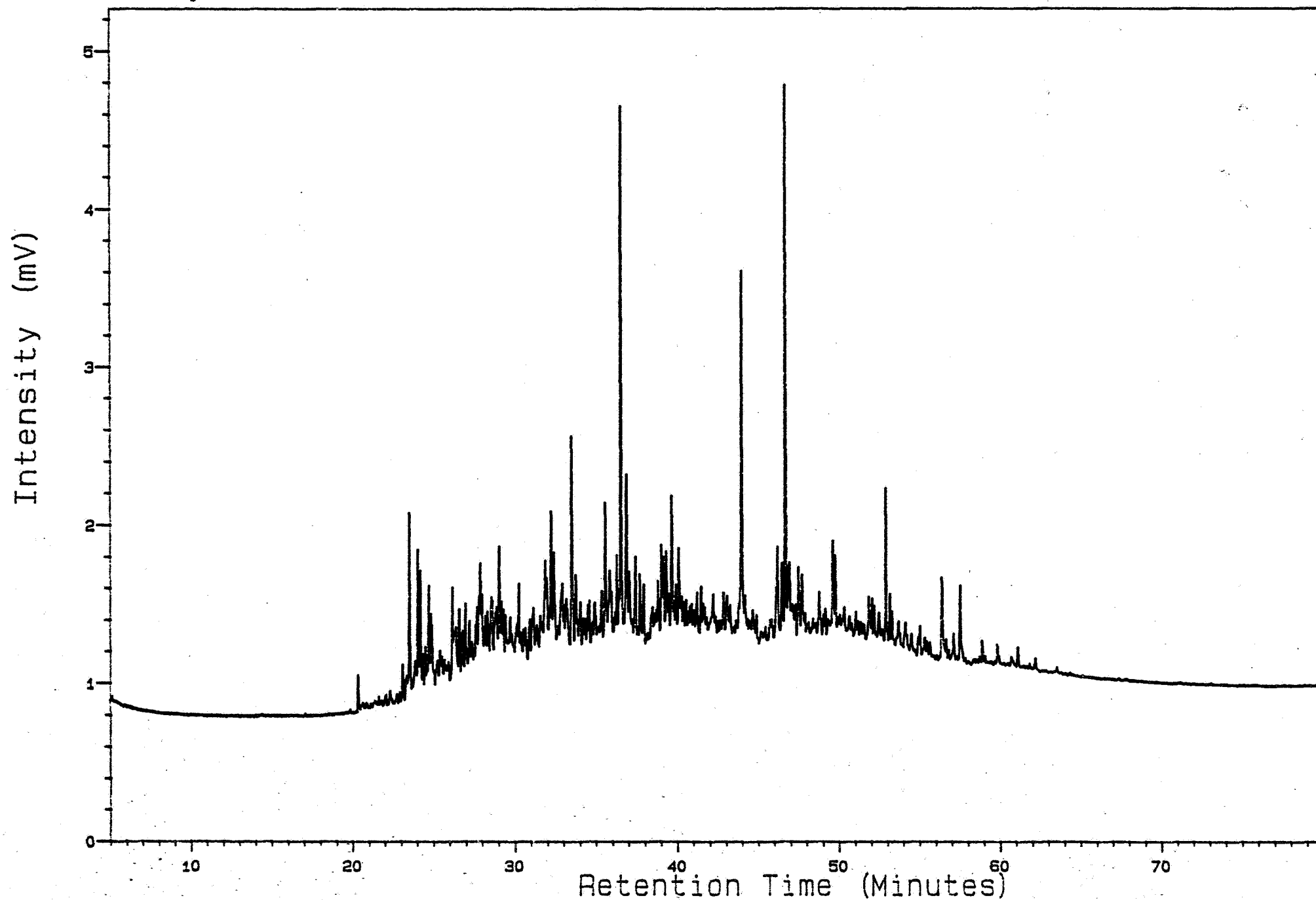
2025.0 M ARO



Analysis A6407072A

7, 10, 1

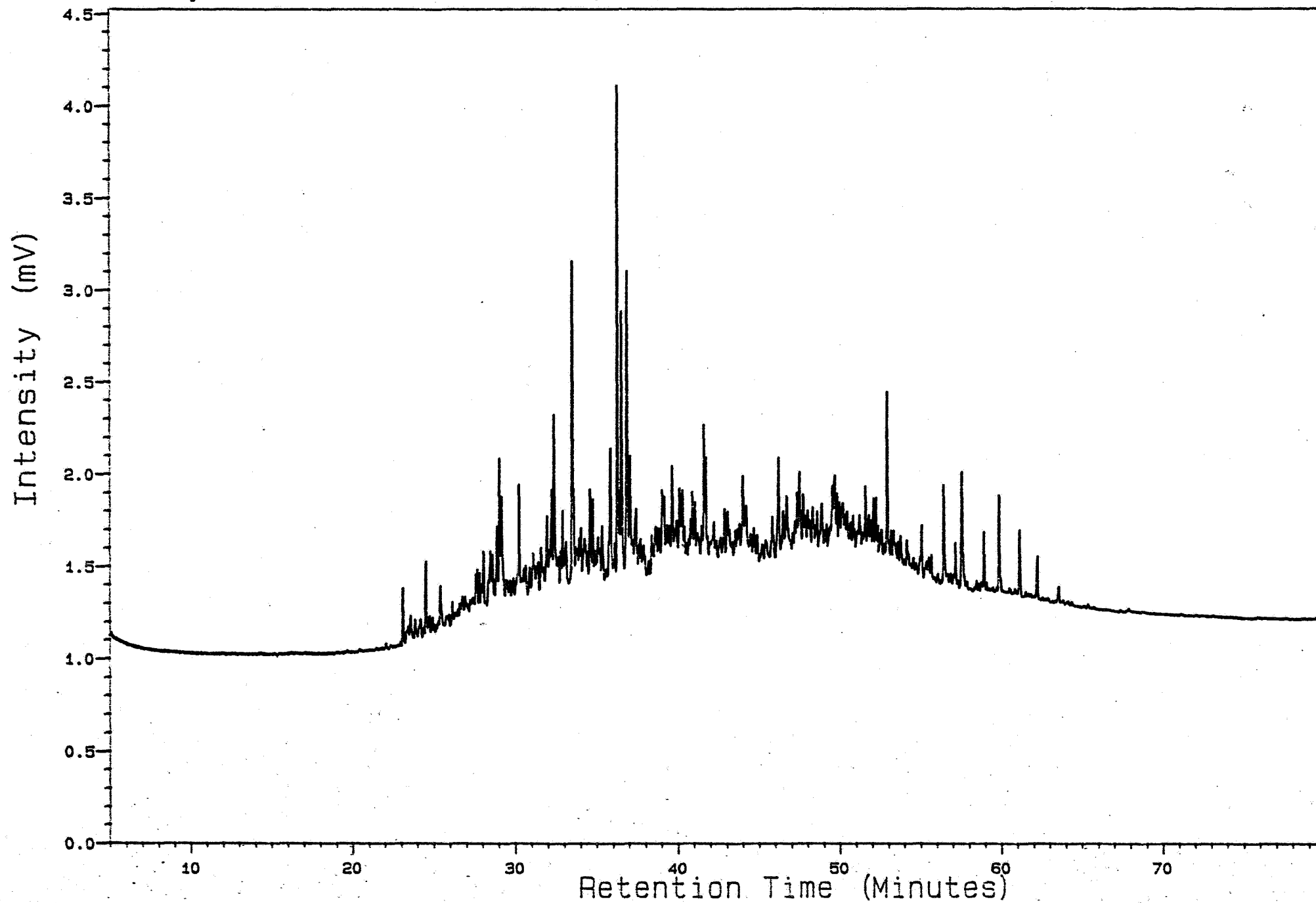
2075.0 M ARO



Analysis A6407072A

7, 11, 1

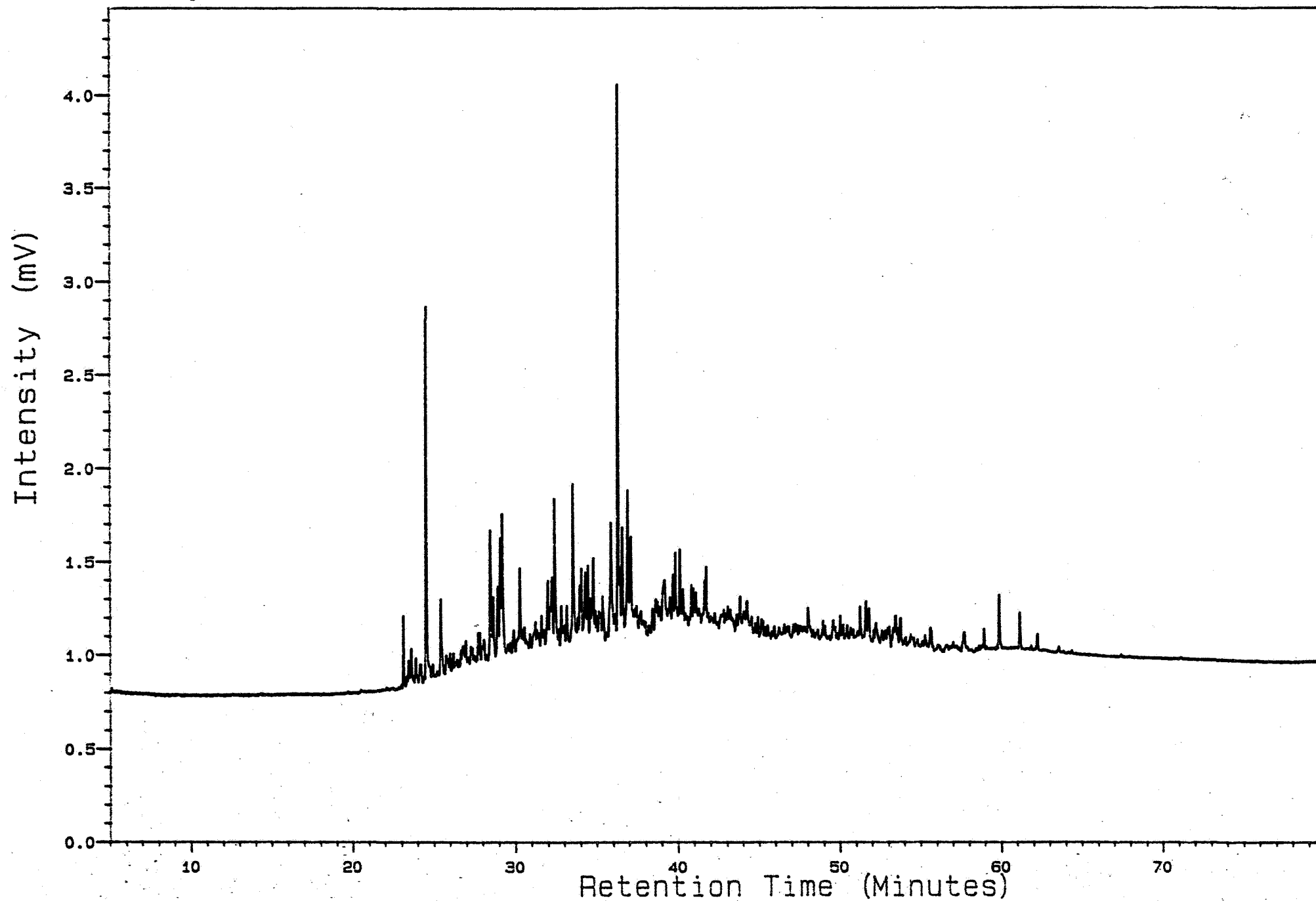
2251.0 M ARO



Analysis A6407072A

7, 12, 1

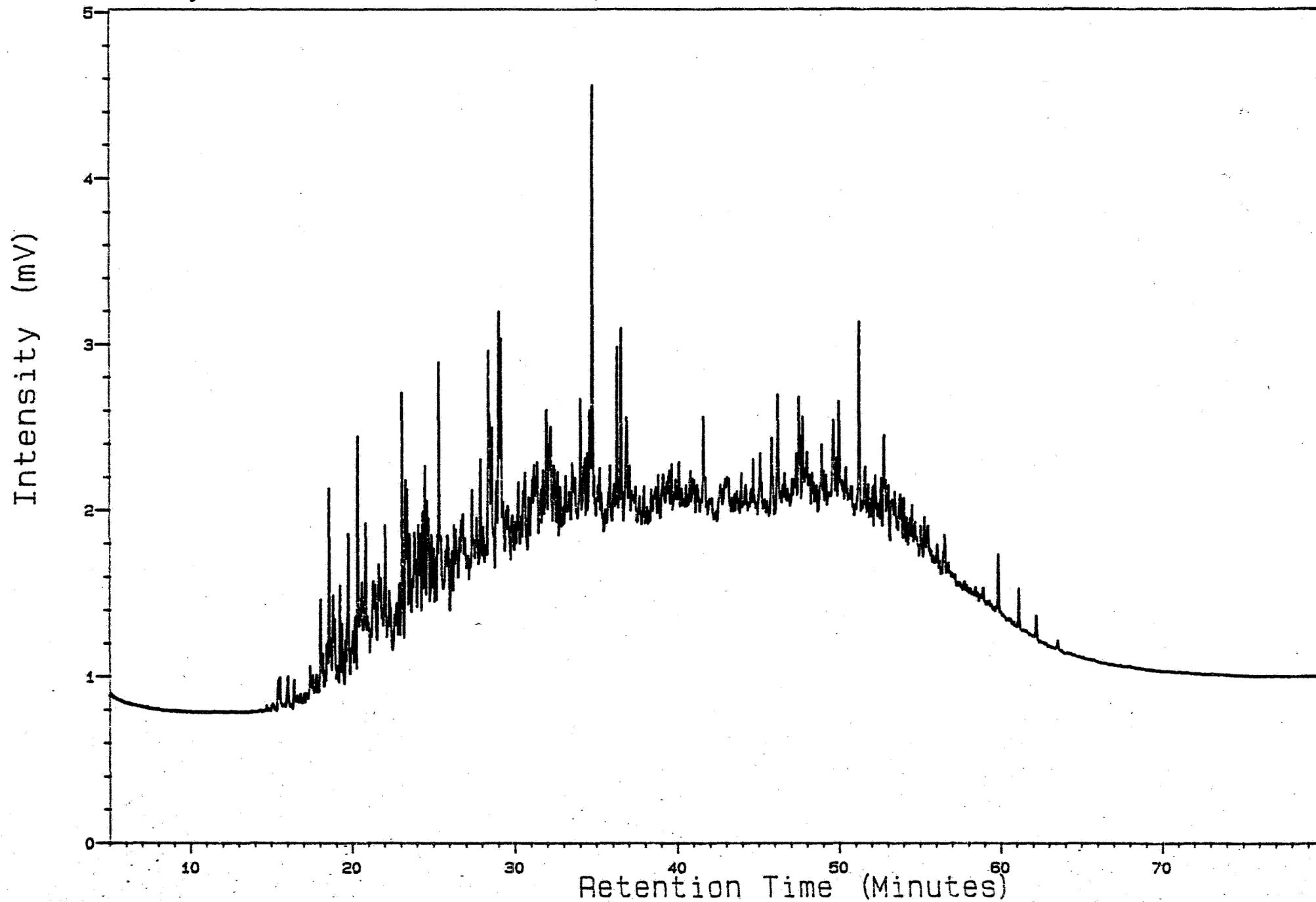
2425.0 M ARO



Analysis A6407072A

7, 14, 1

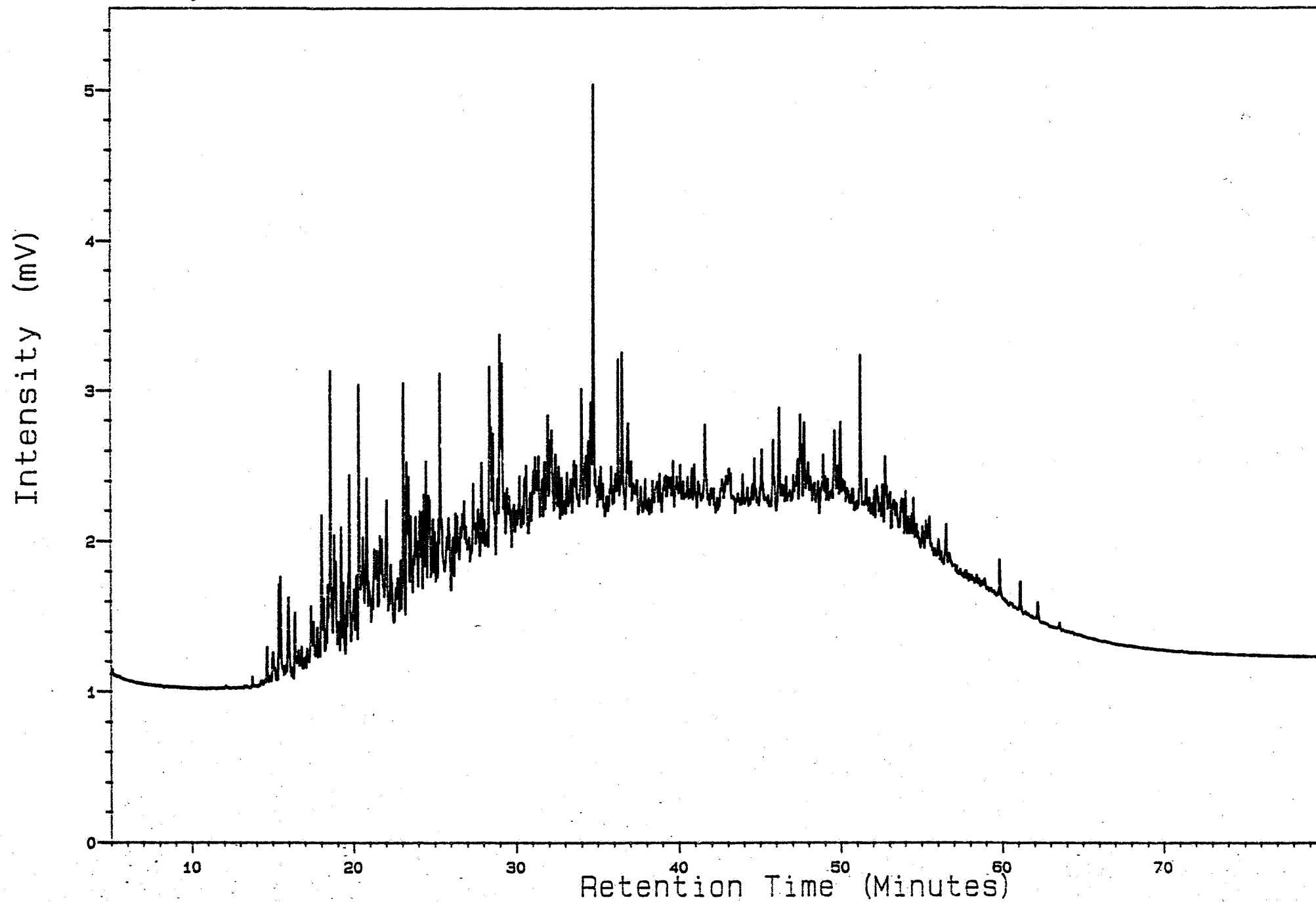
2638.0 M ARO



Analysis A6407072A

7, 15, 1

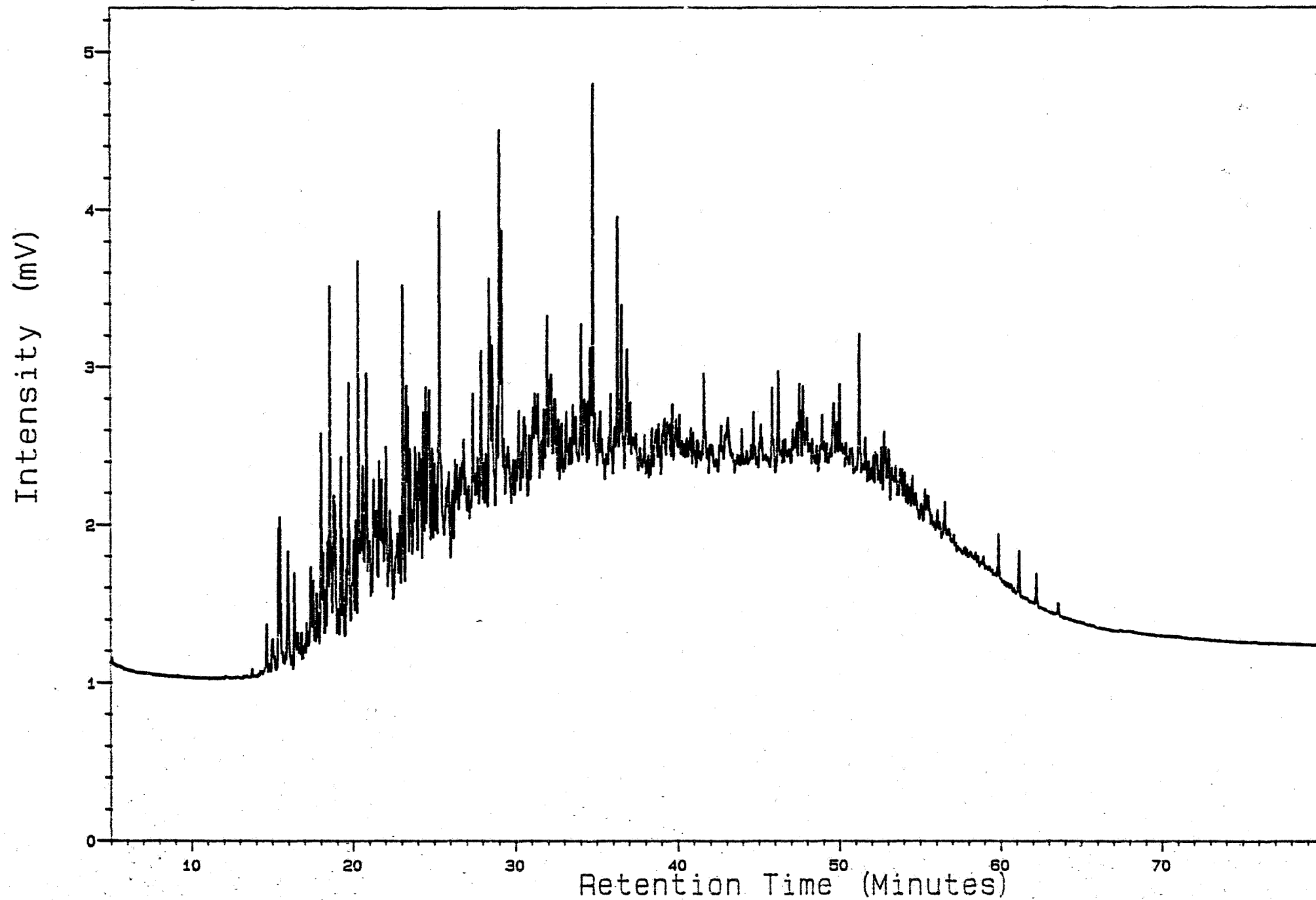
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Analysis A6407072A

7, 16, 1

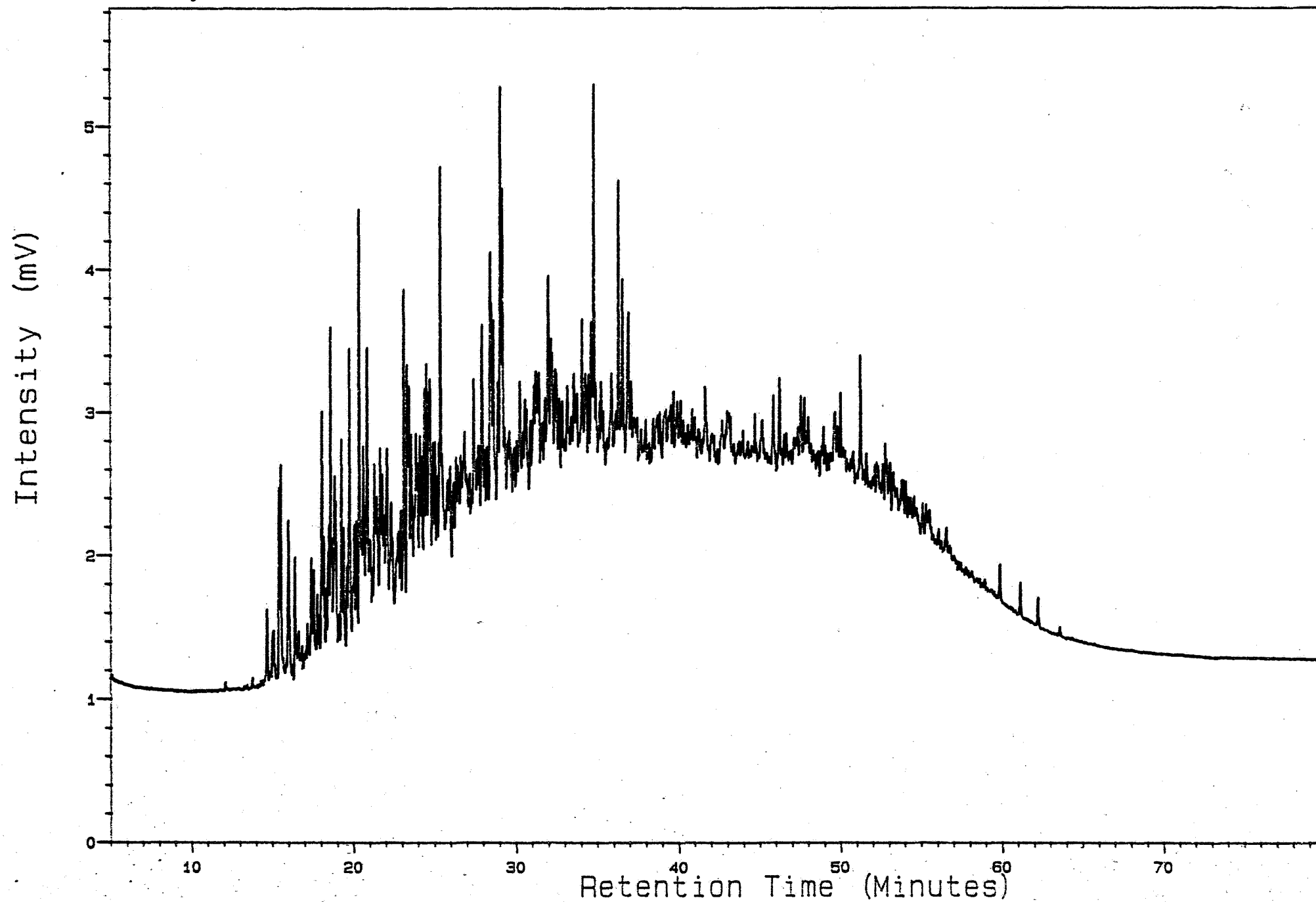
2647.0 M ARO



Analysis A6407072A

7.17.1

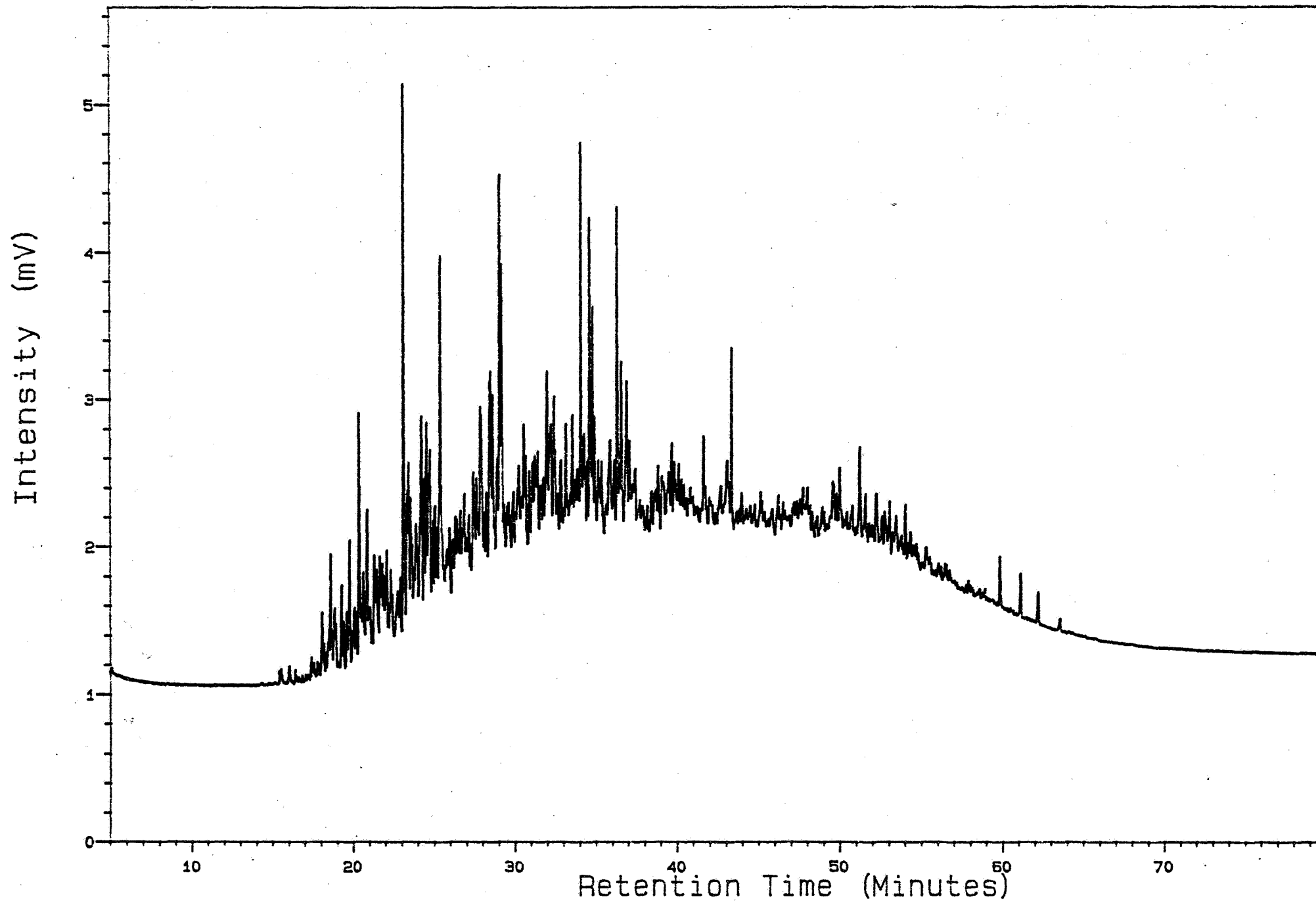
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Analysis A6407072A

7, 18, 1

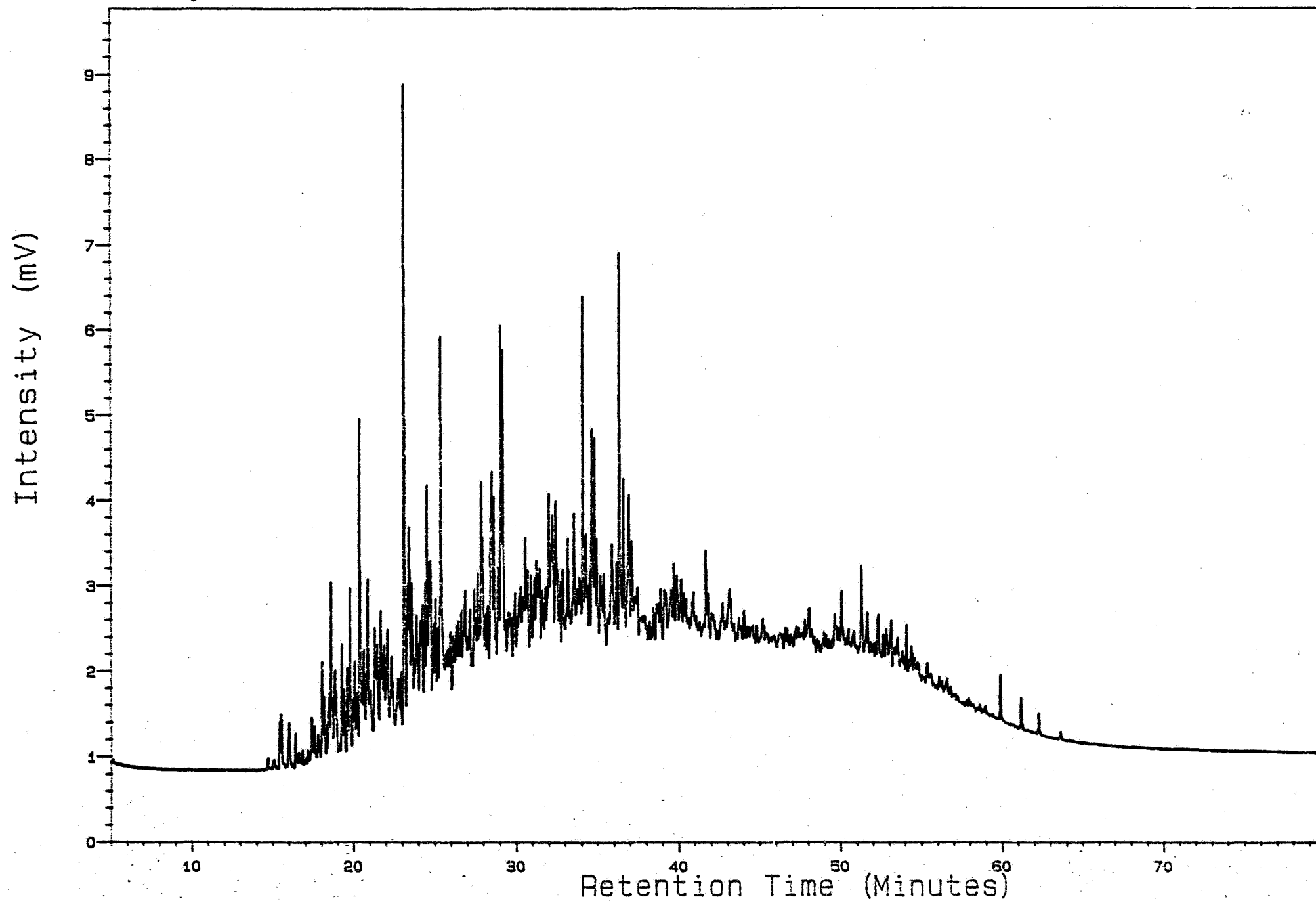
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Analysis A6407072A

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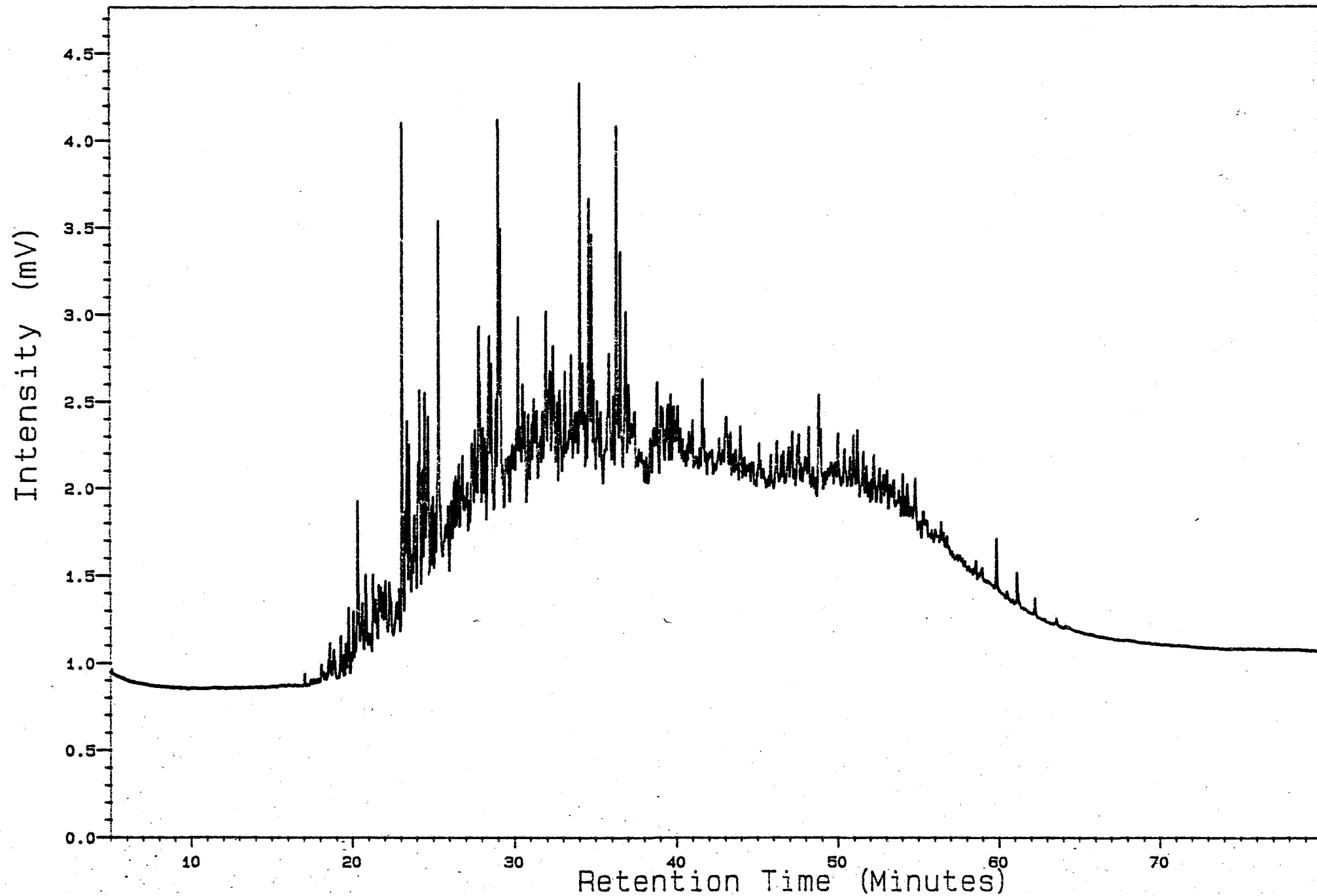
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Analysis A6407072A

7.20.1

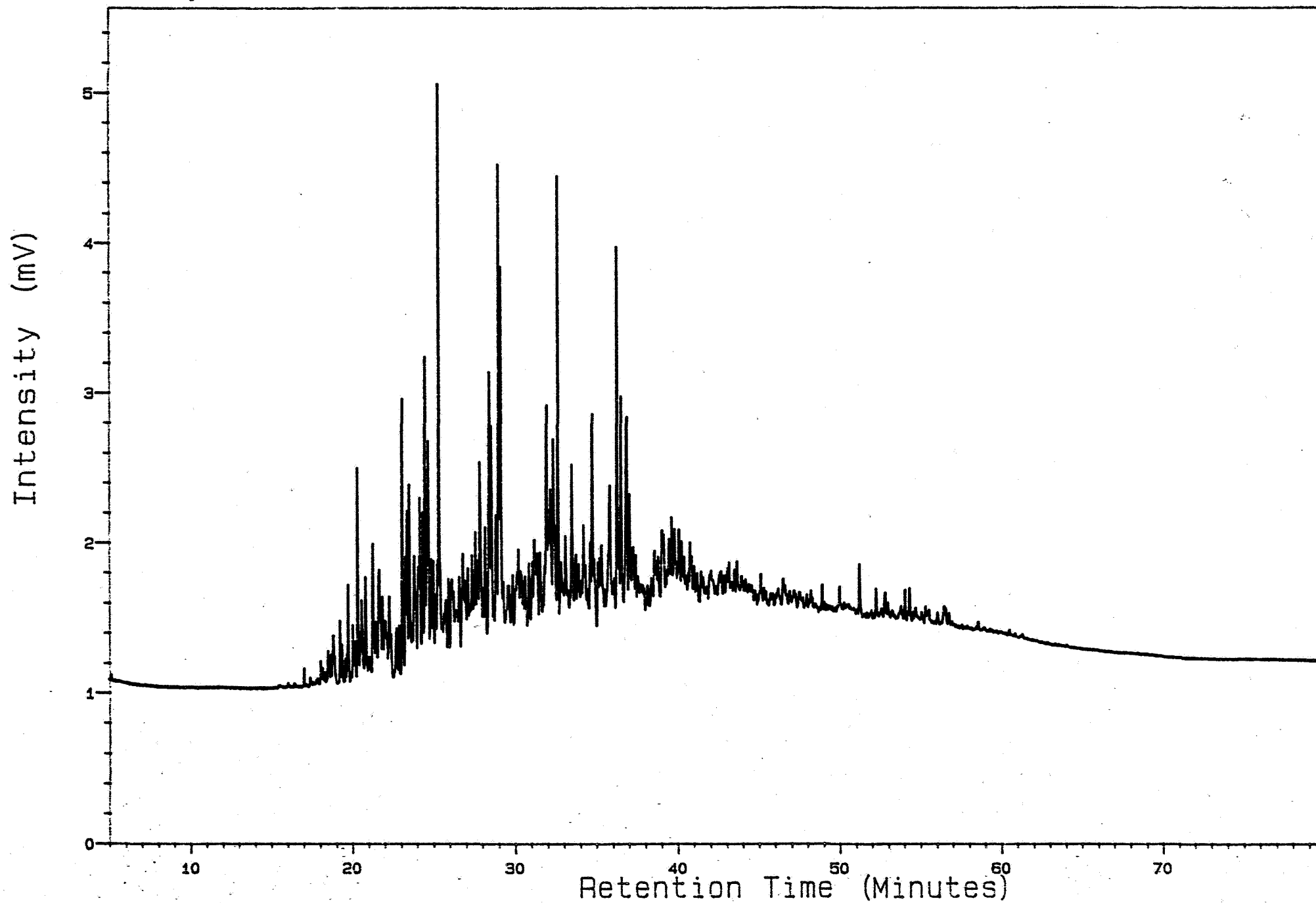
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Analysis B6407072A

7, 10, 1

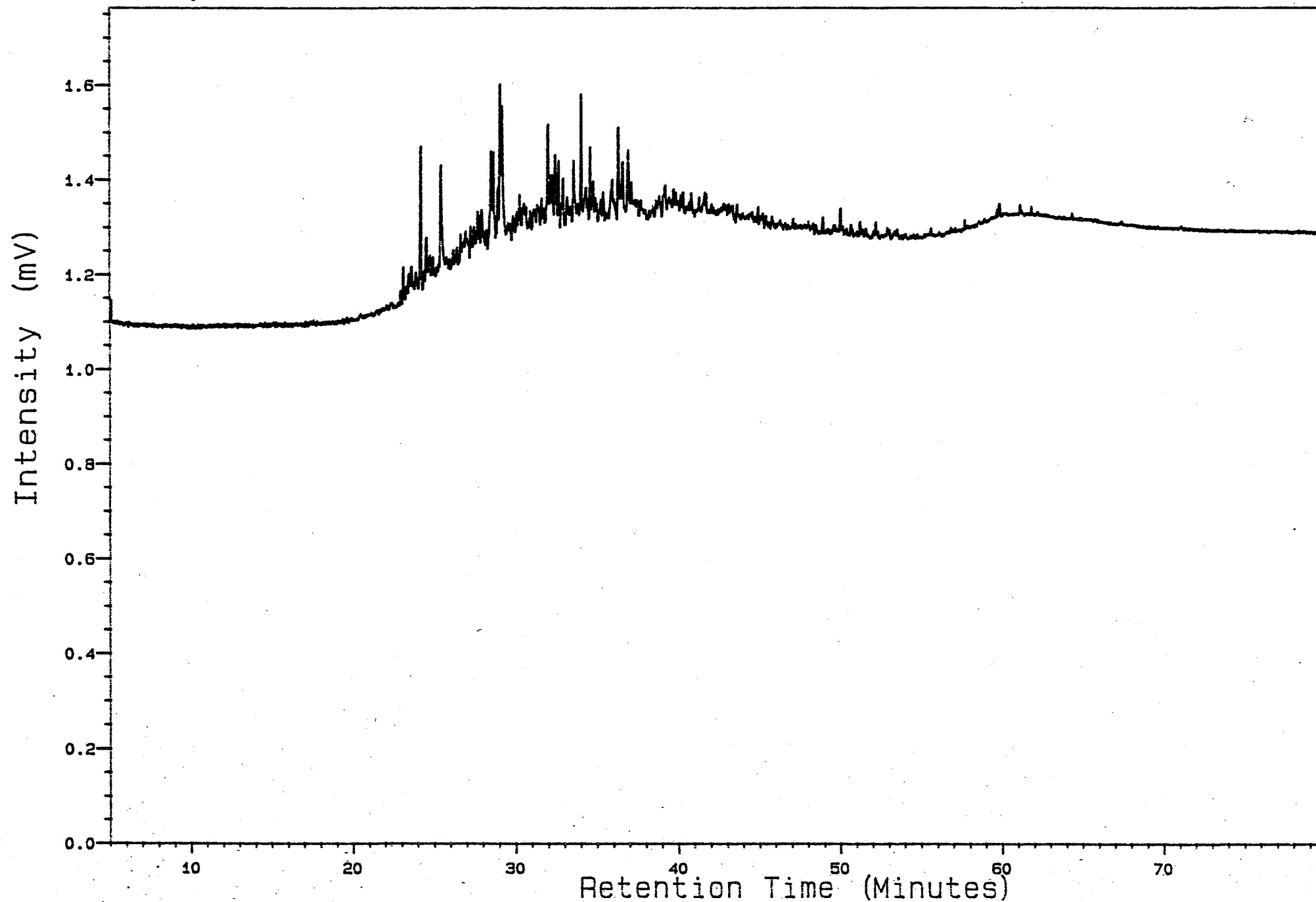
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Analysis A6407072A

7.21.1

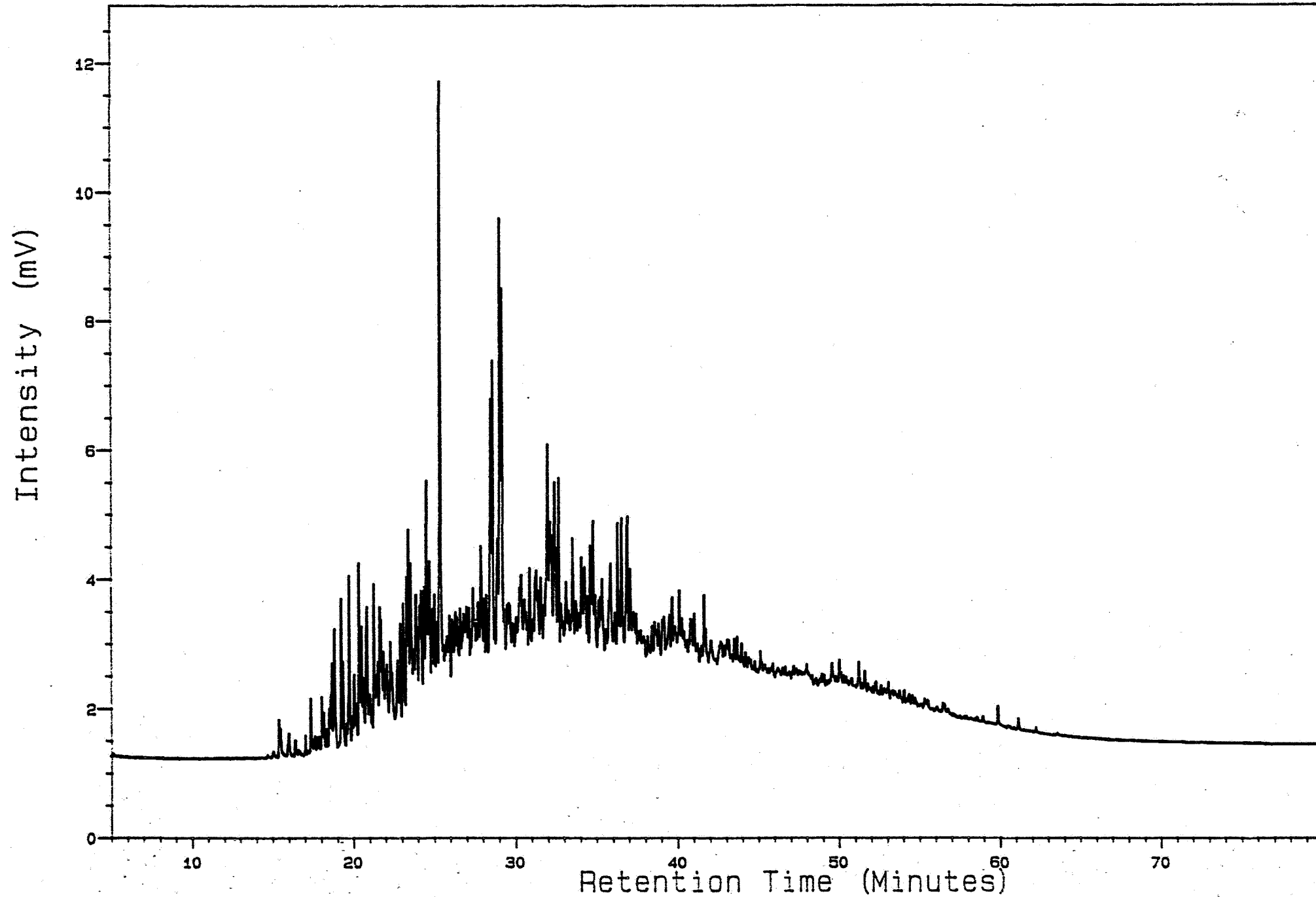
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Analysis B6407072A

7, 13, 1

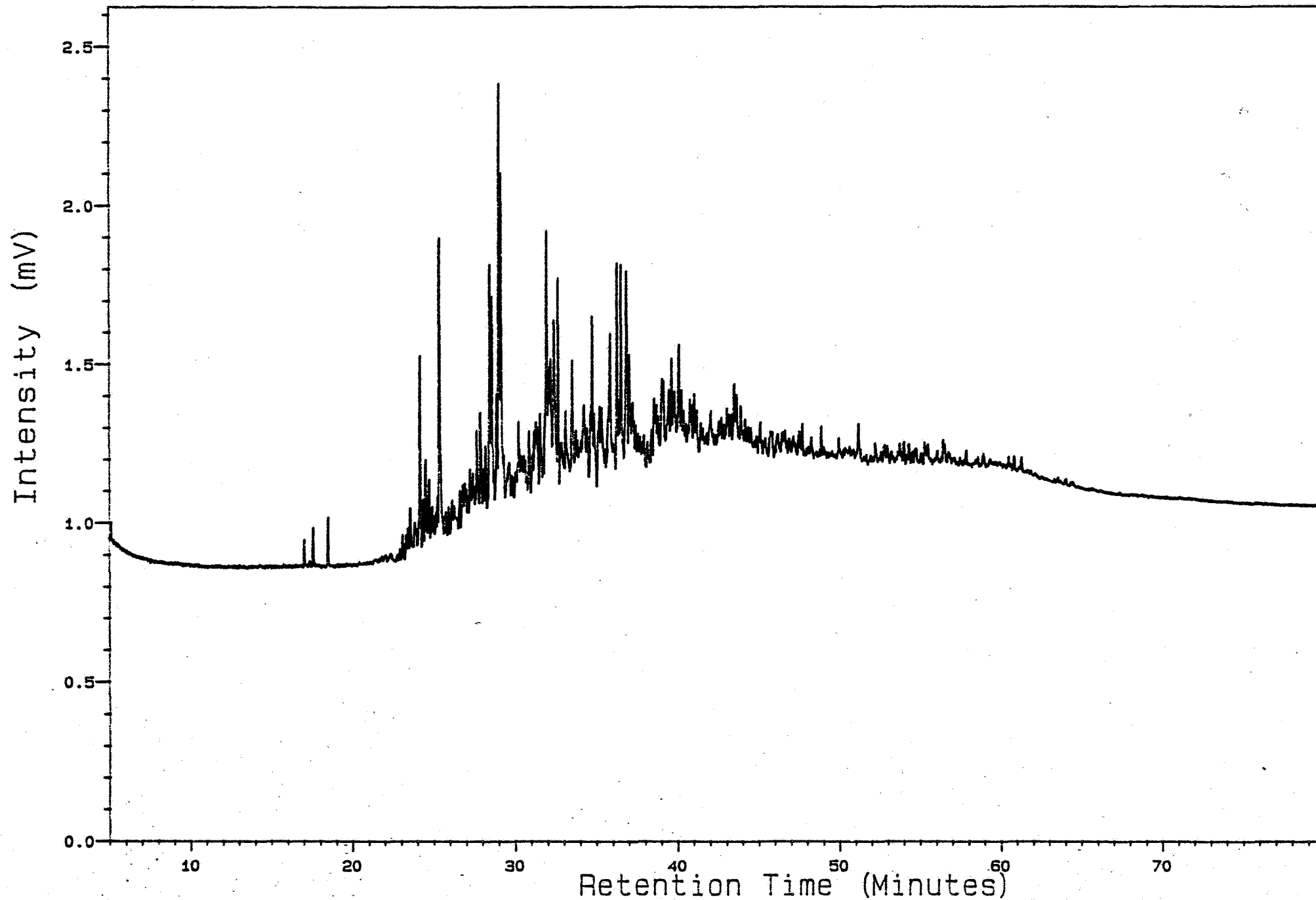
2739.5 M ARO



Analysis A6407072A

7.22.1

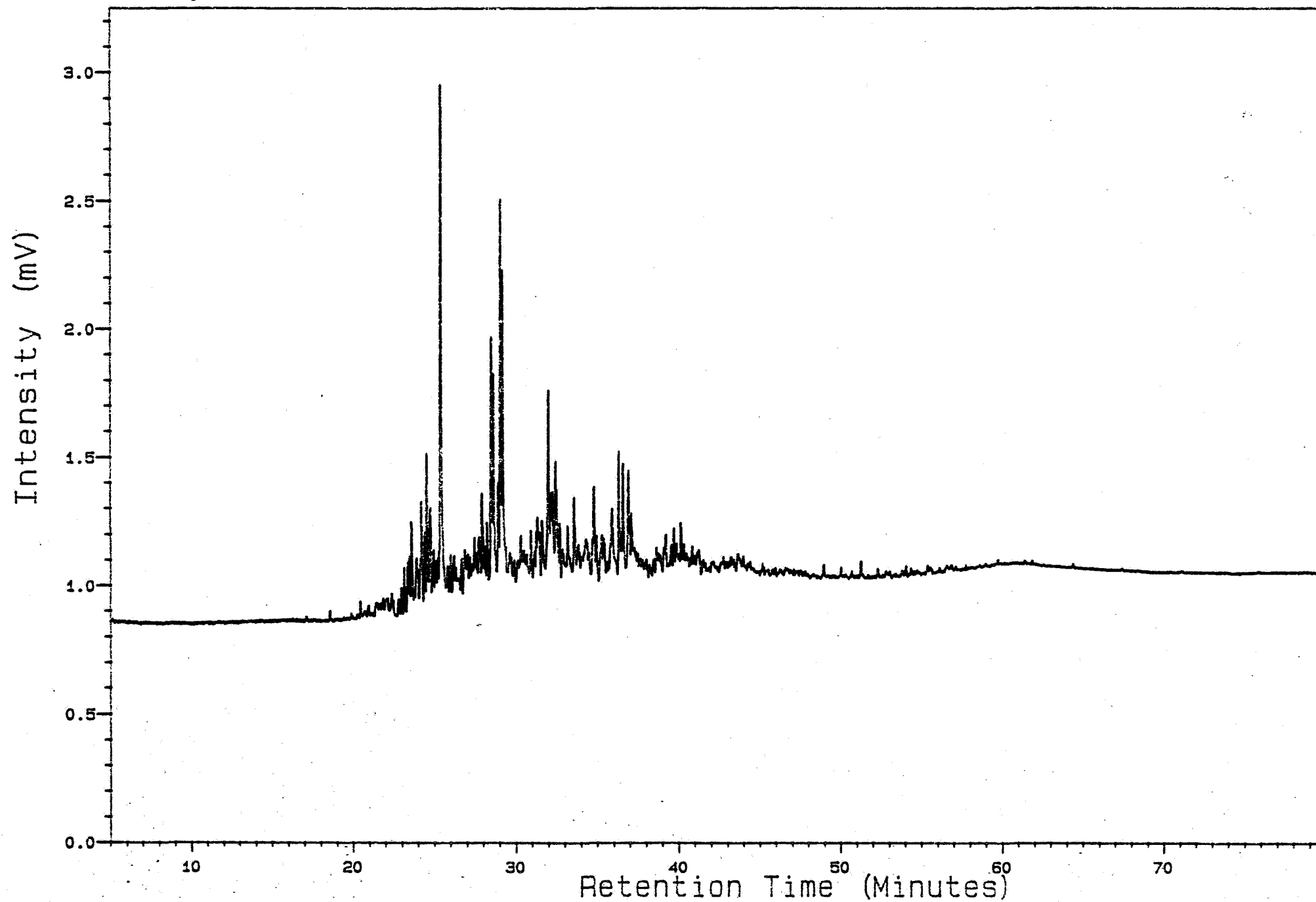
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Analysis A6407072A

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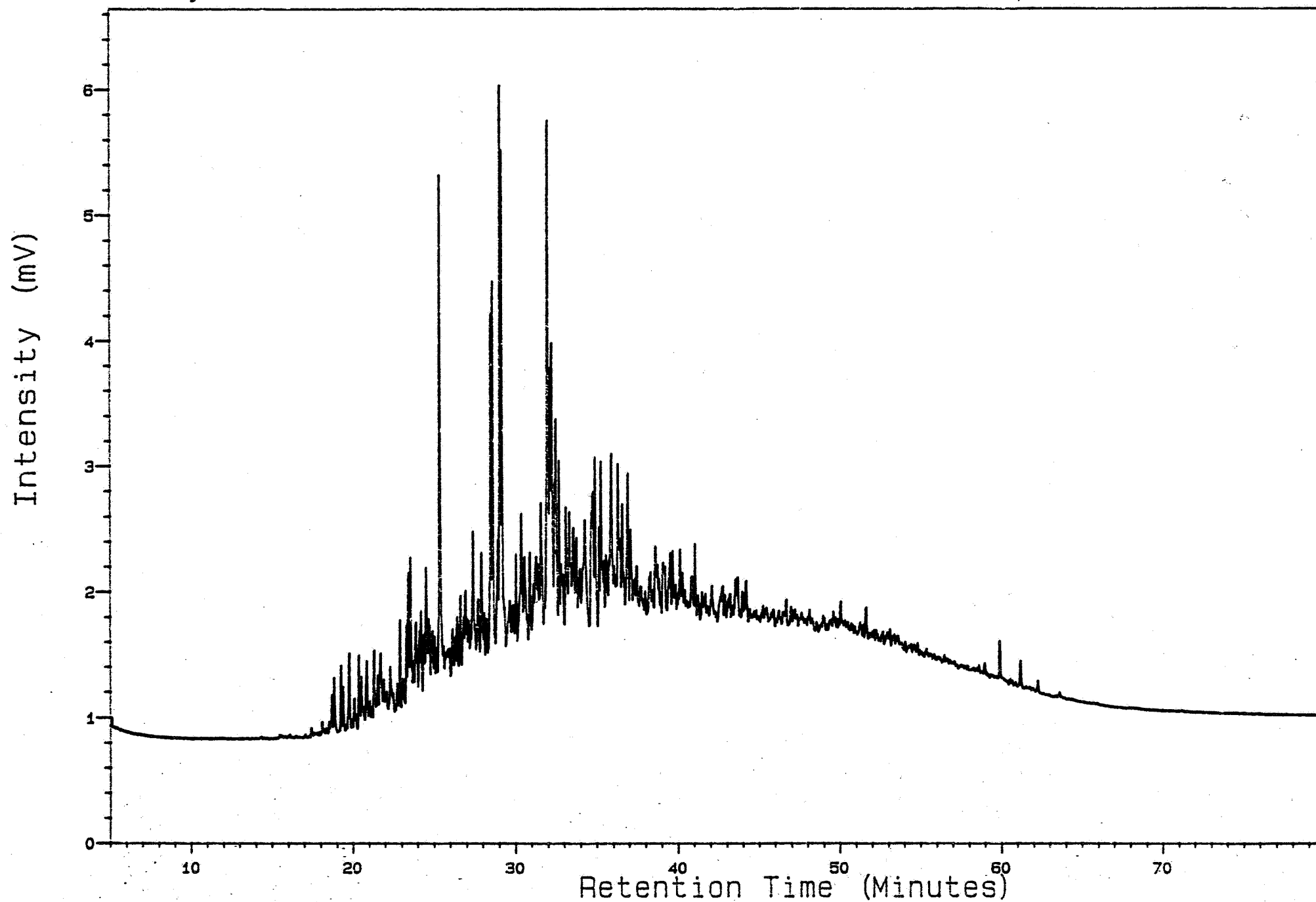
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Analysis A6407072A

7.24.1

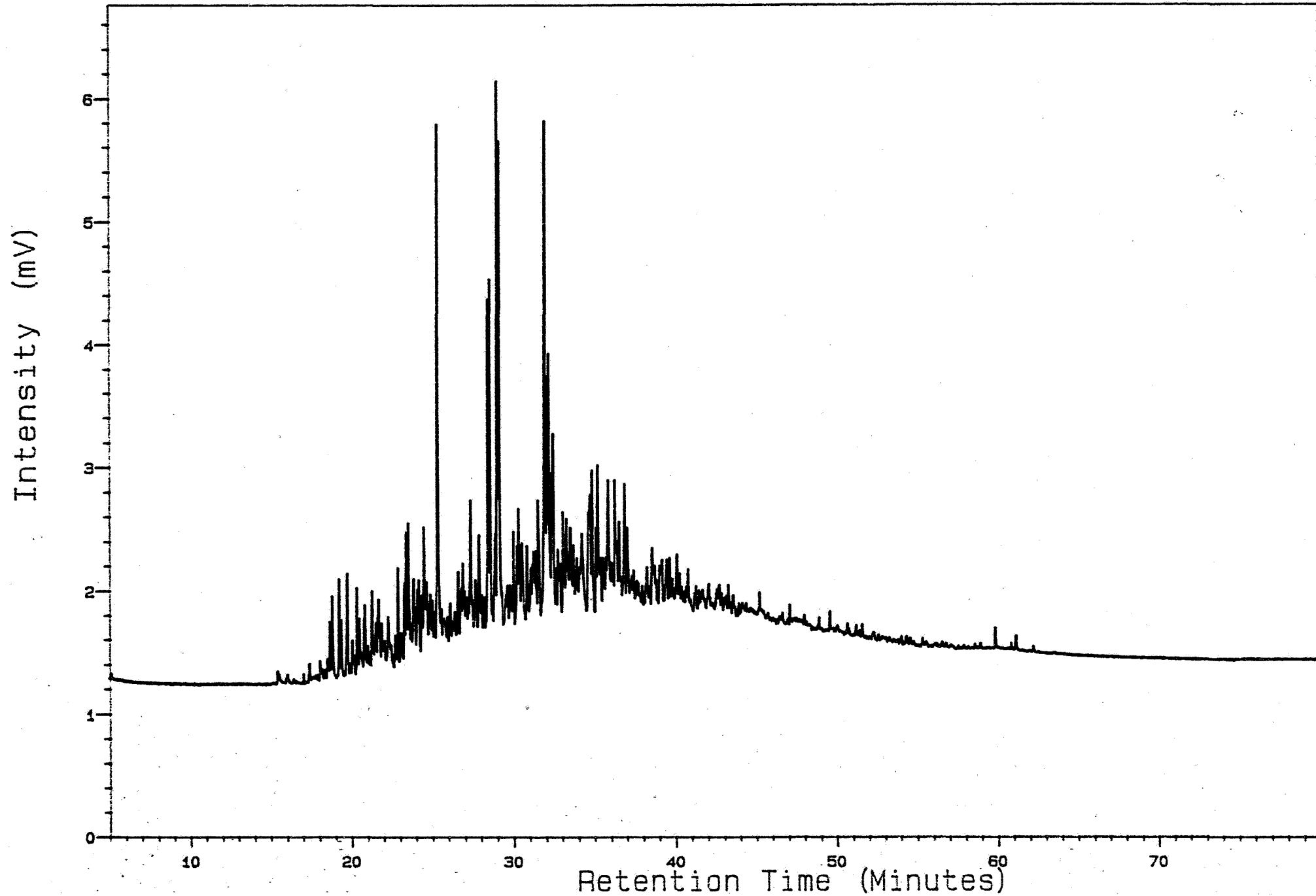
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Analysis B6407072A

7, 14, 1

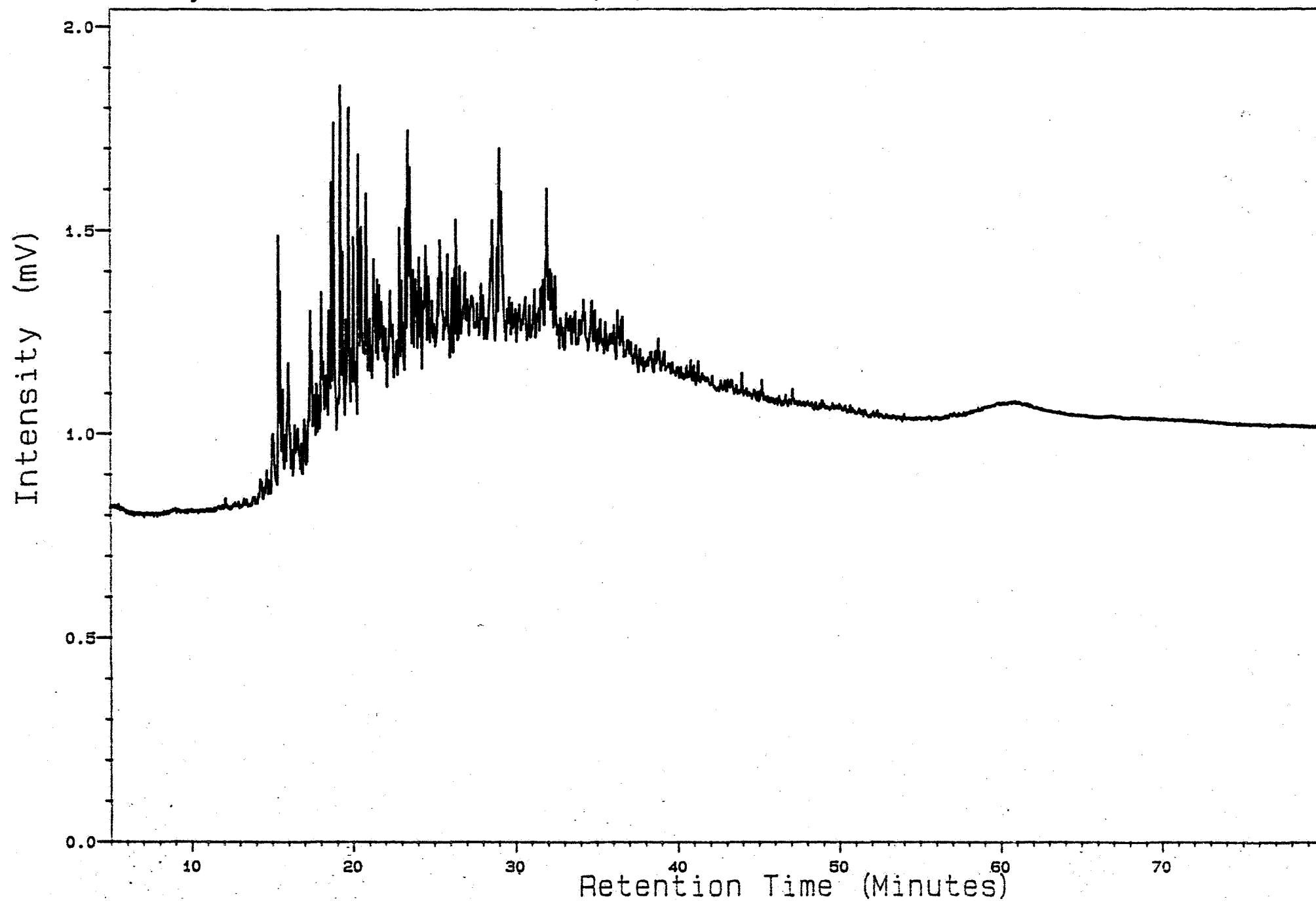
2800.75 M ARO



Analysis B6407072A

7, 4, 1

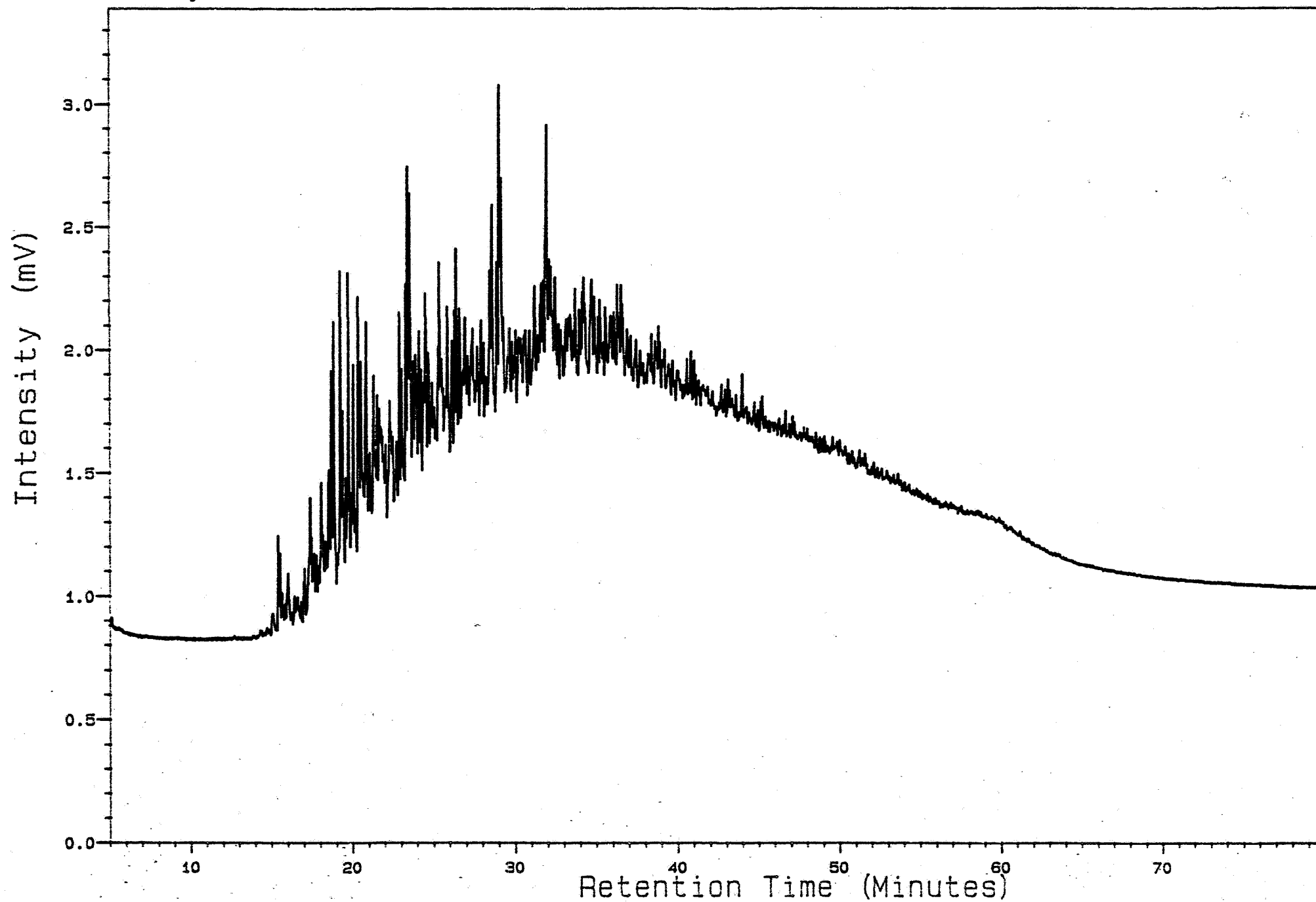
2872.0 M ARO



Analysis B6407072A

7.5.1

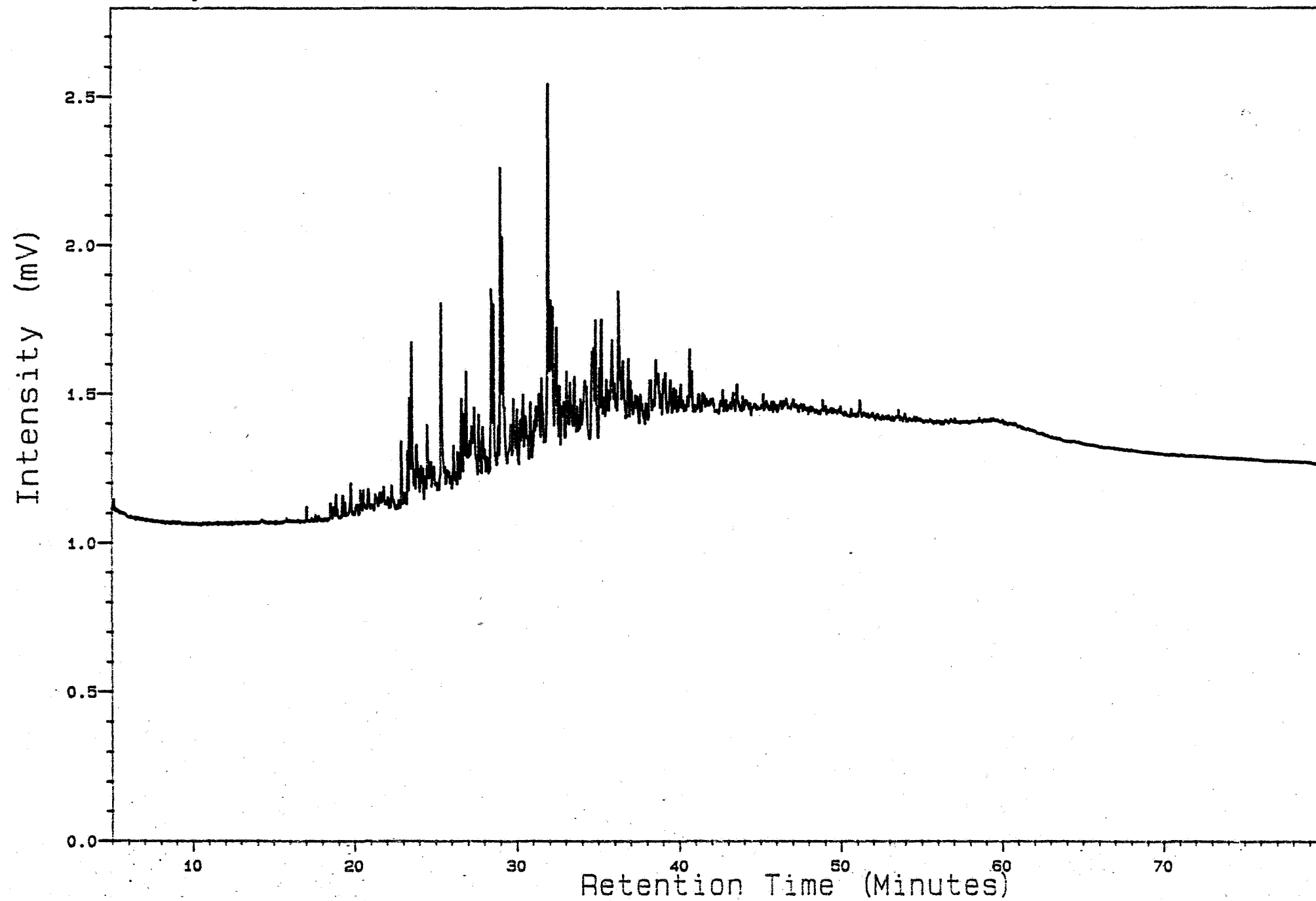
2874.0 M ARO



Analysis B6407072A

7.6, 1

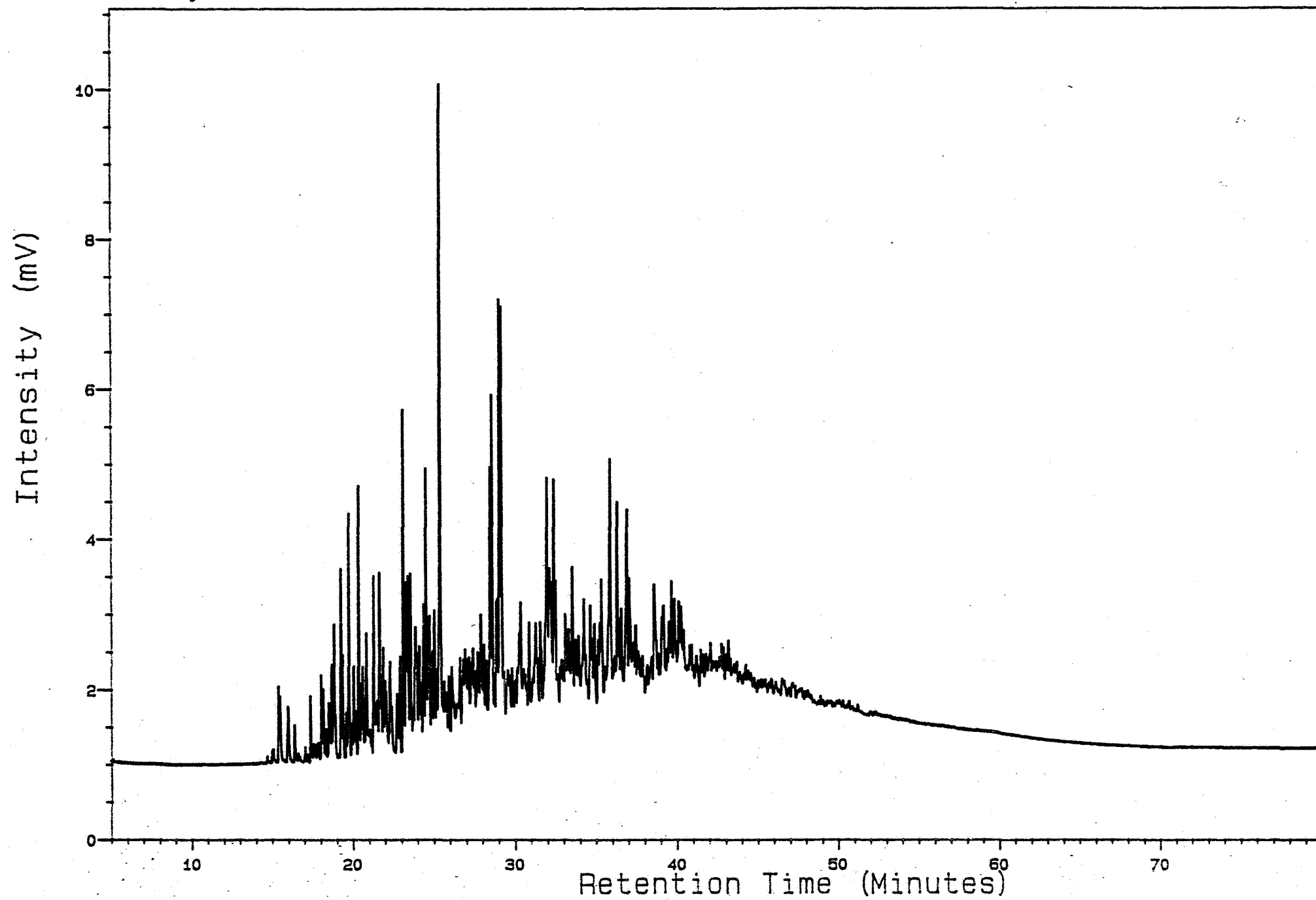
2876.0 M ARO



Analysis B6407072A

7, 15, 1

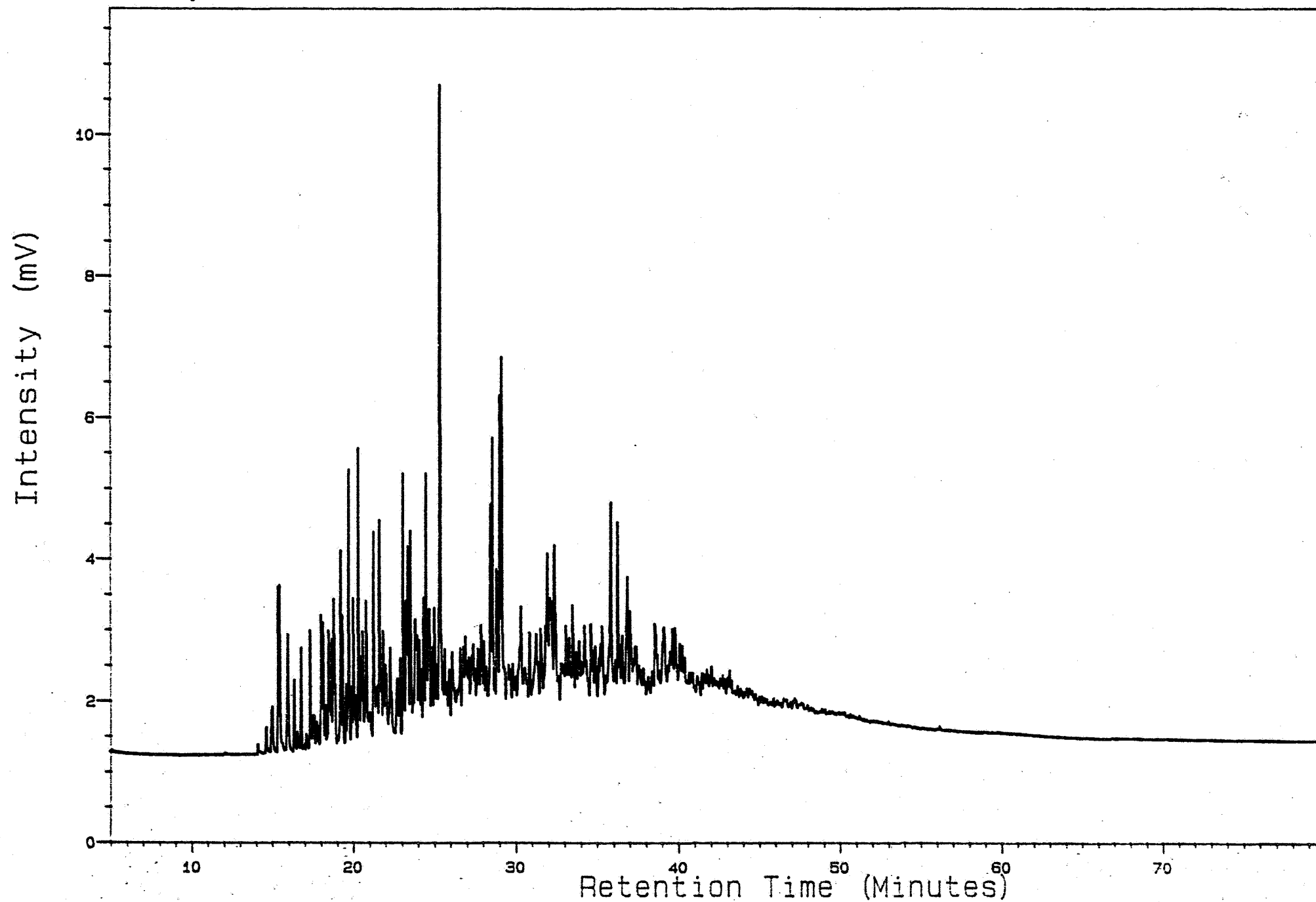
2884.85 M KULL ARO



Analysis B6407072A

7, 16, 1

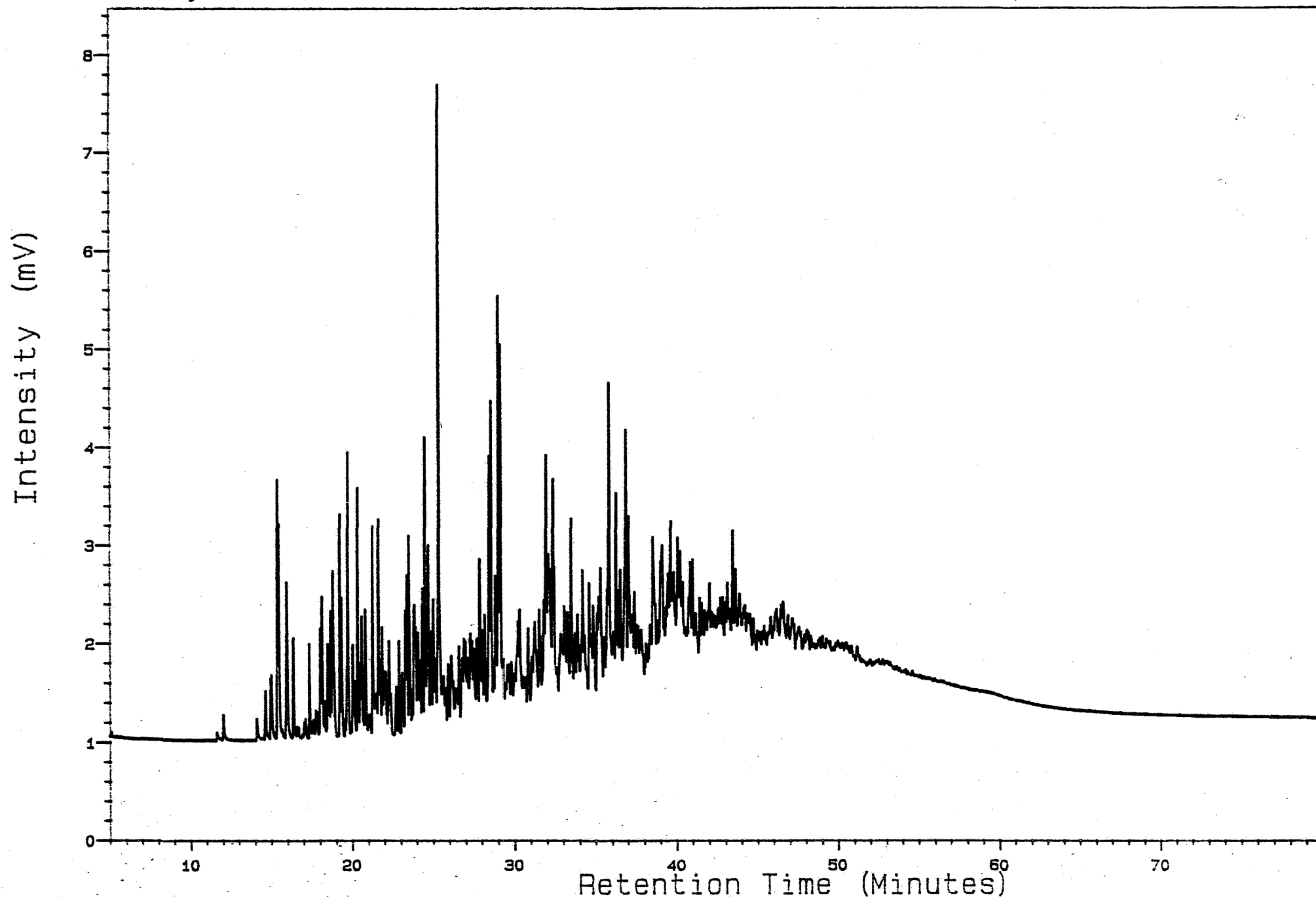
2888.10 M KULL ARO



Analysis B6407072A

7, 17, 1

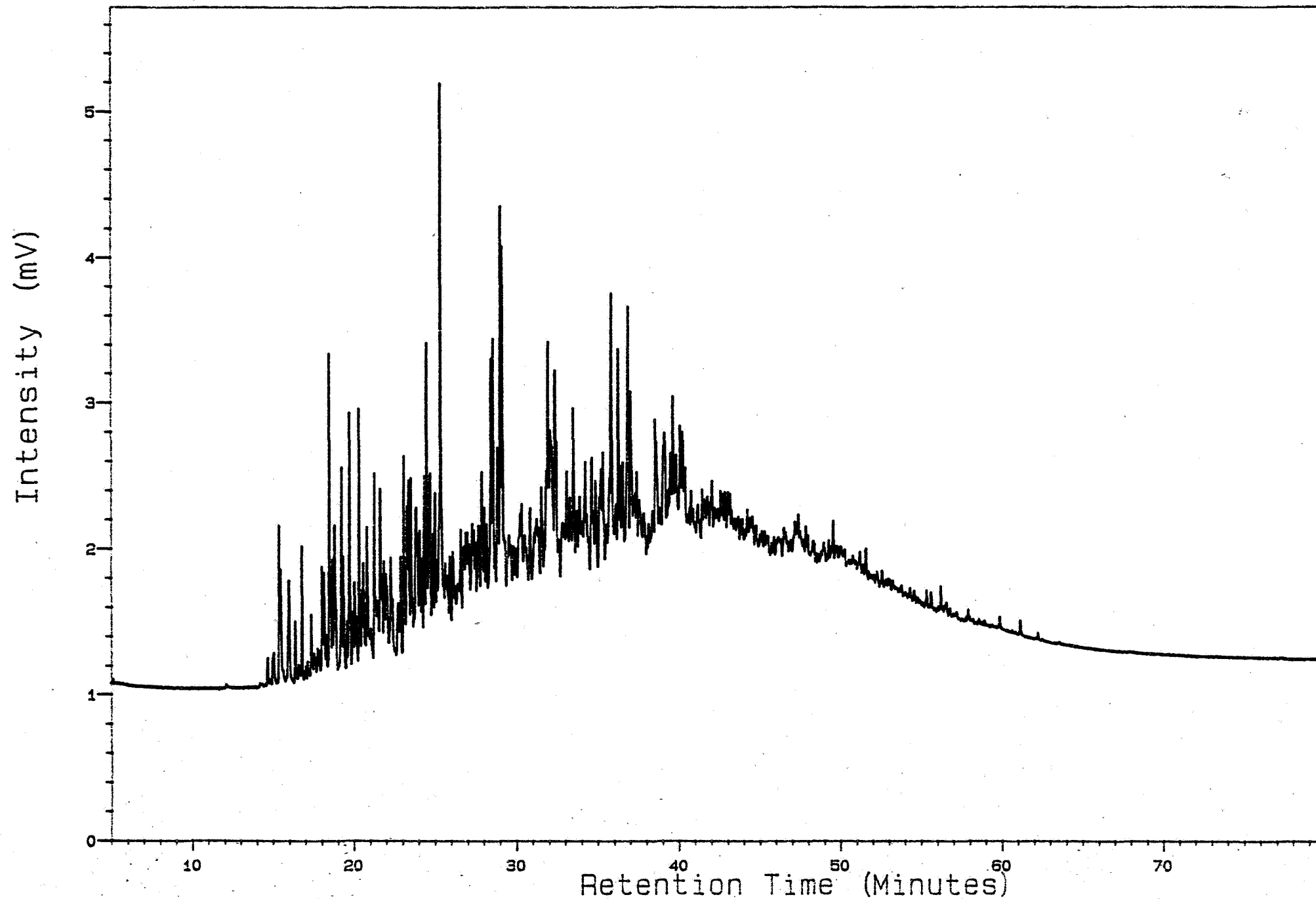
2905.3 M KULL ARO



Analysis B6407072A

7, 18, 1

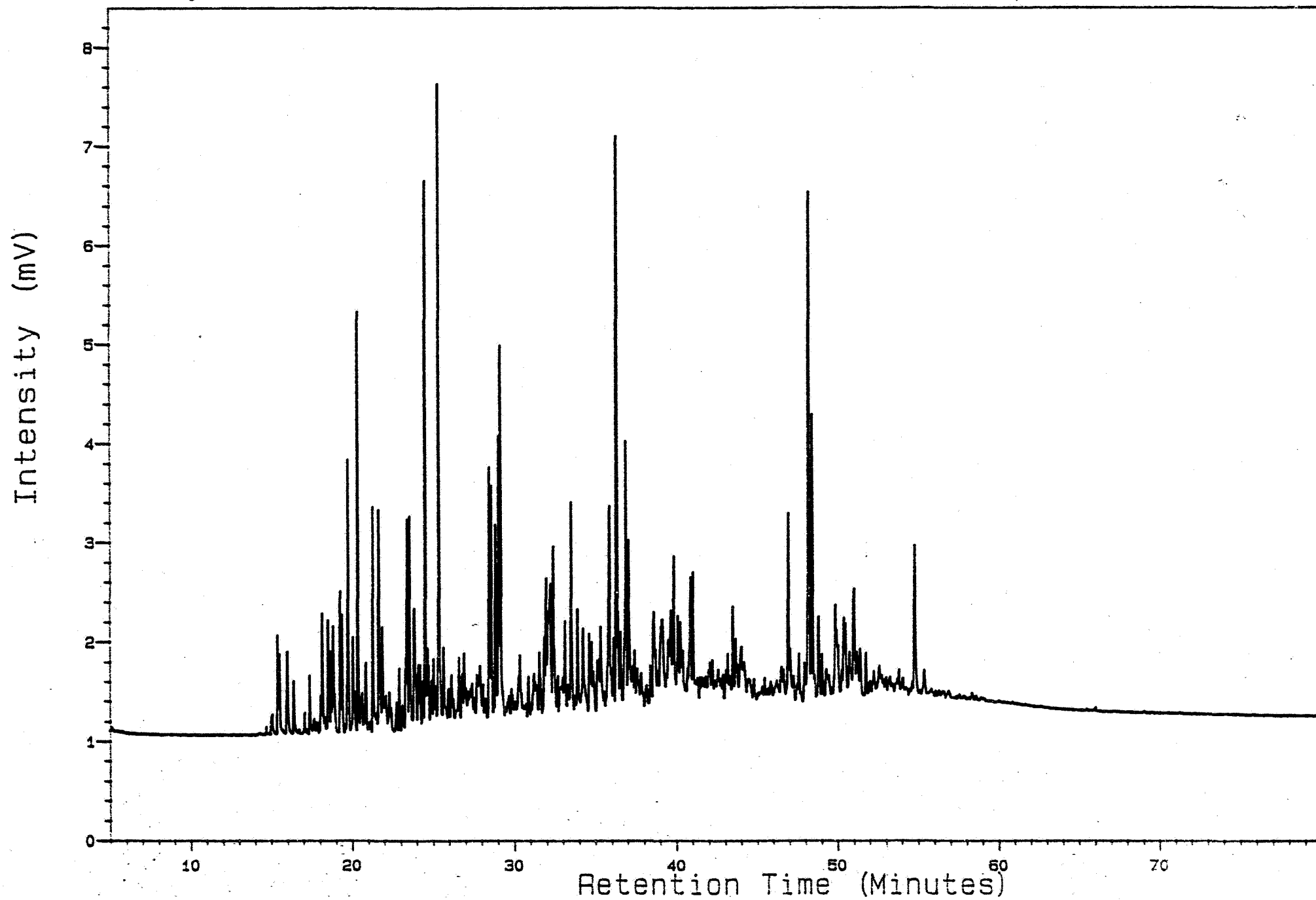
2913.0 M KULL ARO



Analysis B6407072A

7, 8, 1

2934.0 M ARO





APPENDIX III

Biological marker fragmentograms

M/z 217 steranes

M/z 191 triterpanes

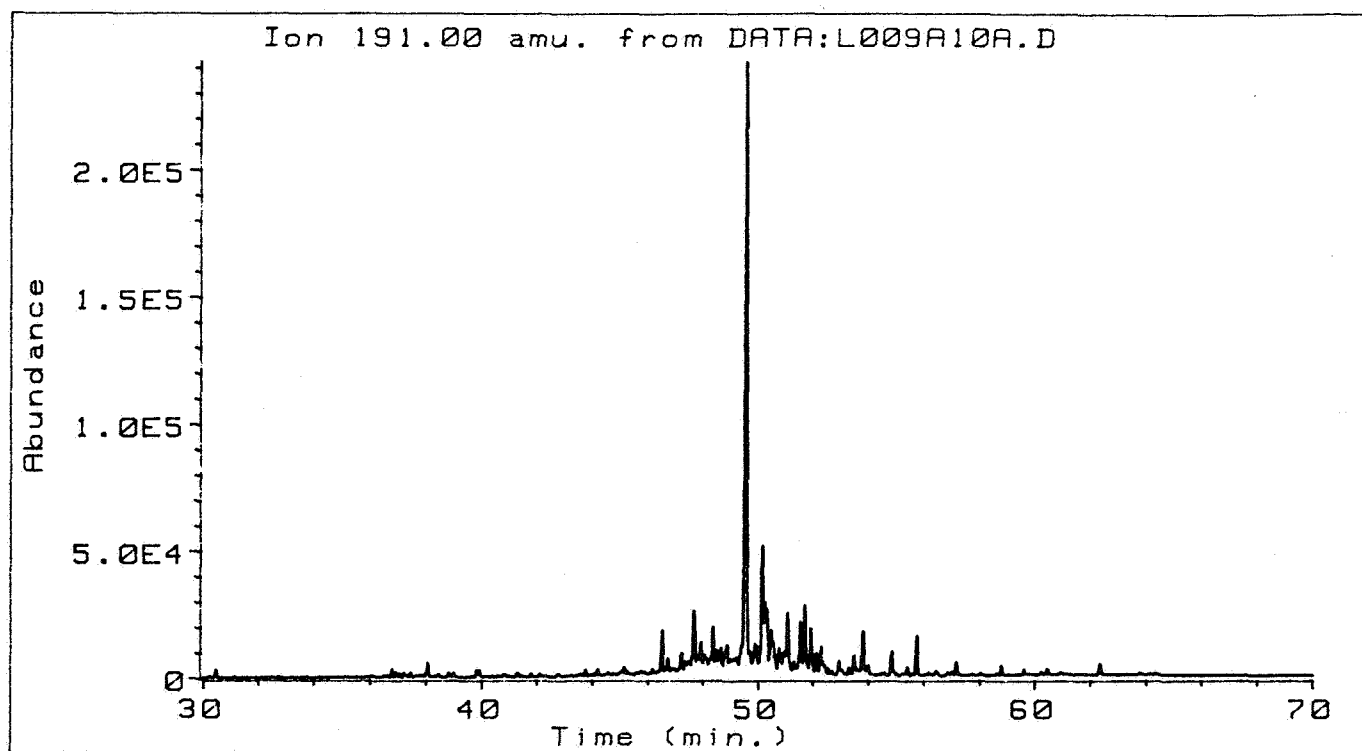
Compound/peak identification of		C27	C28	C29	C30
STERANES		S	2 s	2 s	2 s
		t	4 t	4 t	4 t
		e	- e	- e	- e
		r	m r	e r	p r
		a	e a	t a	r a
		n	t n	h n	o n
		e	h e	y e	p e
			y	l	y
			l		l
13 β (H),17 α (H)-diasterane-20S.....		.. 1a	.. 2a	.. 3a	.. 4a
-----,-----20R.....		.. b	.. b	.. b	.. b
13 α (H),17 β (H)-----,-----20S.....		.. c	.. c	.. c	.. c
-----,-----20R.....		.. d	.. d	.. d	.. d
5 α (H),14 α (H),17 α (H)-sterane-20S...		.. e	.. e	.. e	.. e
5 α (H),14 β (H),17 β (H)----,-----20R...		.. f	.. f	.. f	.. f
-----,-----20S...		.. g	.. g	.. g	.. g
5 α (H),14 α (H),17 α (H)-sterane-20R...		.. h	.. h	.. h	.. h

*** Example of interpretation of table:

3g = 24-ethyl-5 α (H),14 β (H),17 β (H)-cholestane-20S, which is a C₂₇-sterane. This compound can for simplicity be abbreviated C₂₇, $\alpha\beta\beta$ 20S

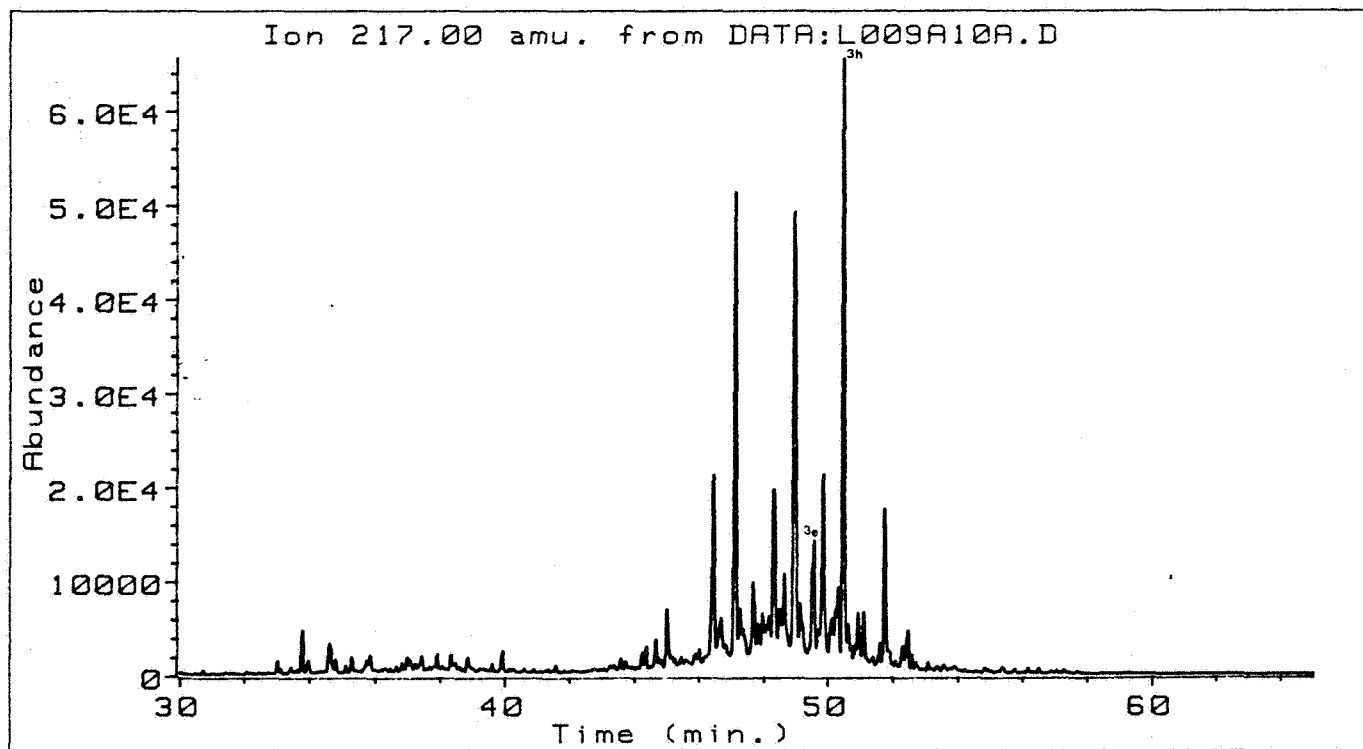
Compound/peak identification of	I.D. c o d e	No. C- a t o m s
TRITERPANES		
Ts, 18 α (H)-22,29,30-trisnorneohopane..	1A	27
Tm, 17 α (H)-22,29,30-trisnorhopane.....	B	
17 α (H),21 β (H)-28,30-bisnorhopane.....	2A	28
17 β (H),21 α (H)-----,-----moretane....	B	
17 β (H),21 β (H)-----,-----hopane.....	C	
17 α (H),21 β (H)-30-norhopane.....	3A	29
17 β (H),21 α (H)-30-normoretane.....	B	
17 α (H),21 β (H)-30-hopane.....	4A	30
17 β (H),21 α (H)-30-moretane.....	B	
17 β (H),21 β (H)-30-hopane.....	C	
17 α (H),21 β (H)-homohopane-22S.....	5A	31
17 α (H),21 β (H)-homohopane-22R.....	B	
17 β (H),21 α (H)-homohopane.....	C	
17 β (H),21 β (H)-homohopane.....	D	
17 α (H),21 β (H)-bishomohopane-22S.....	6A	32
17 α (H),21 β (H)-bishomohopane-22R.....	B	
17 α (H),21 β (H)-trishomohopane-22S.....	7A	33
17 α (H),21 β (H)-trishomohopane-22R.....	B	
17 α (H),21 β (H)-tetrakishomohopane-22S..	8A	34
17 α (H),21 β (H)-tetrakishomohopane-22R..	B	
17 α (H),21 β (H)-pentakishomohopane-22S..	9A	35
17 α (H),21 β (H)-pentakishomohopane-22R..	B	

*** Abbreviation: 17 α (H),21 β (H)-homohopane-22S = C.. α B22S



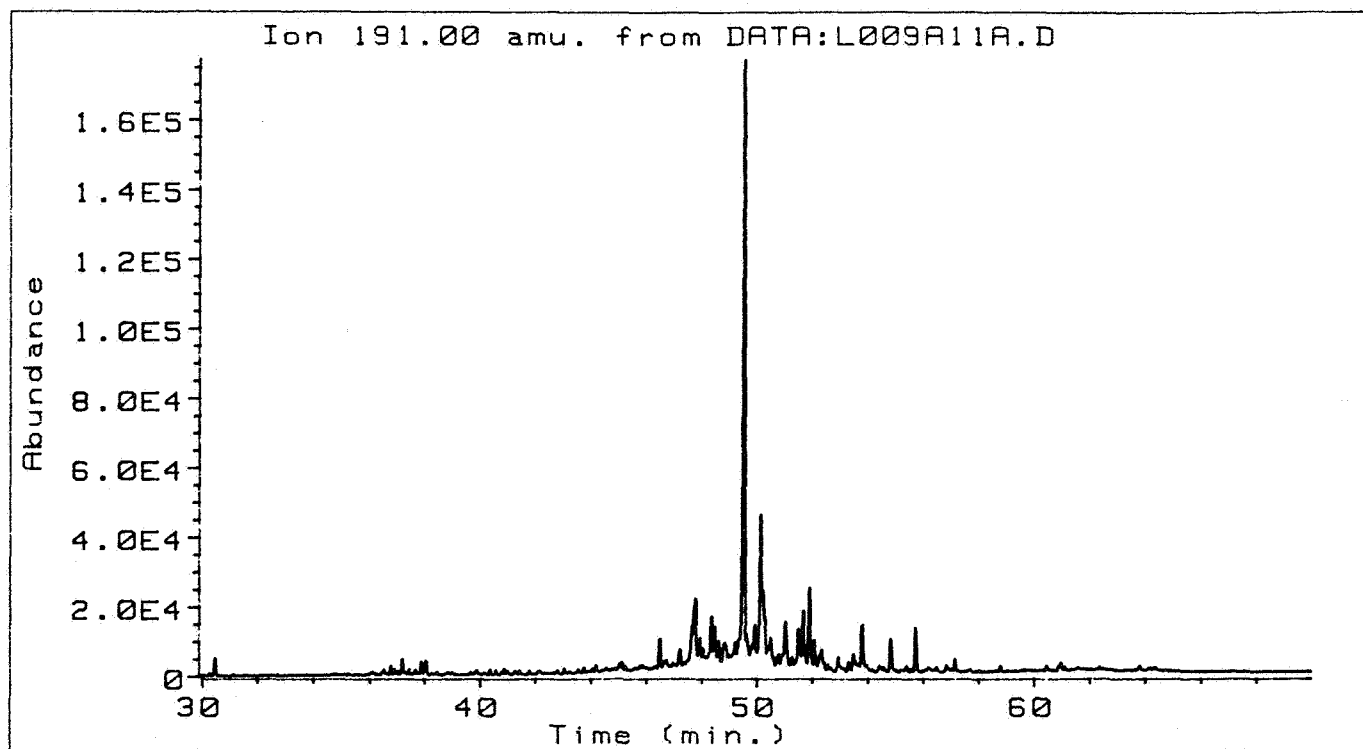
6407/7 2

1716 m



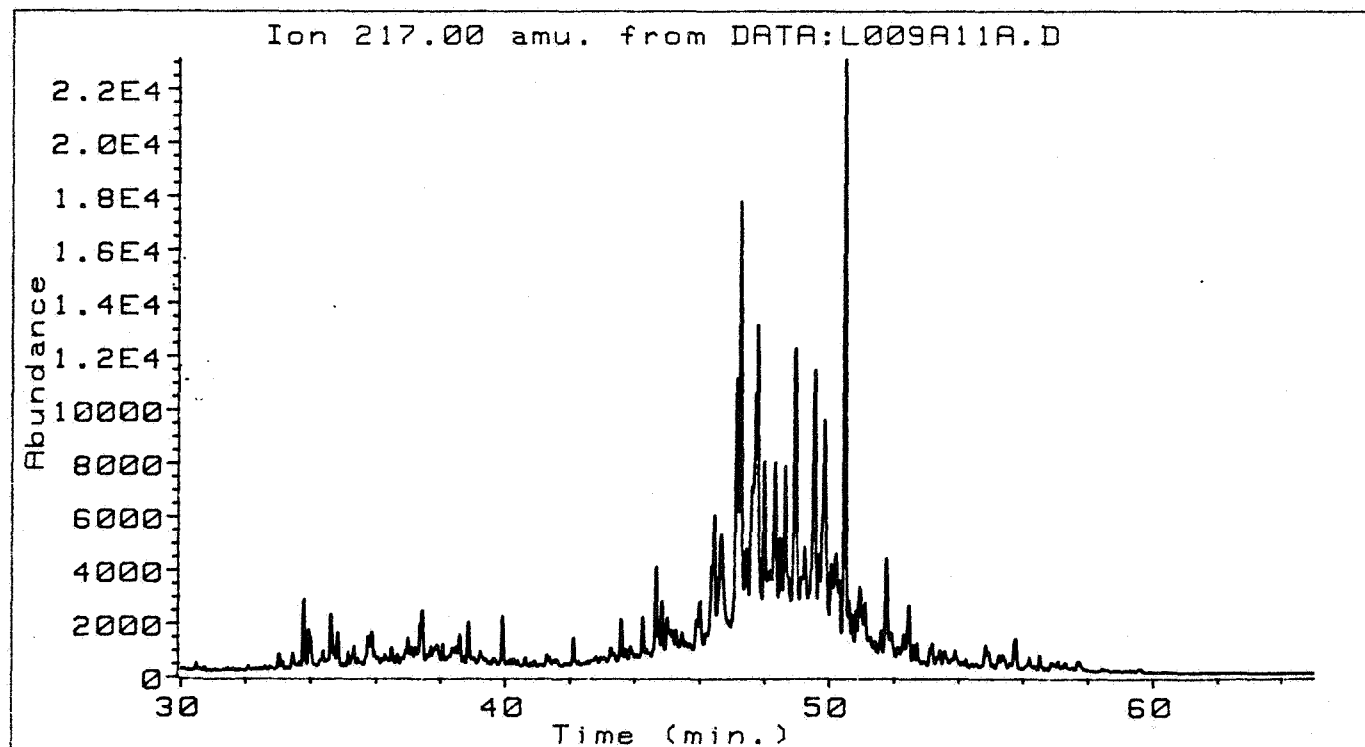
6407/7 2

1716 m



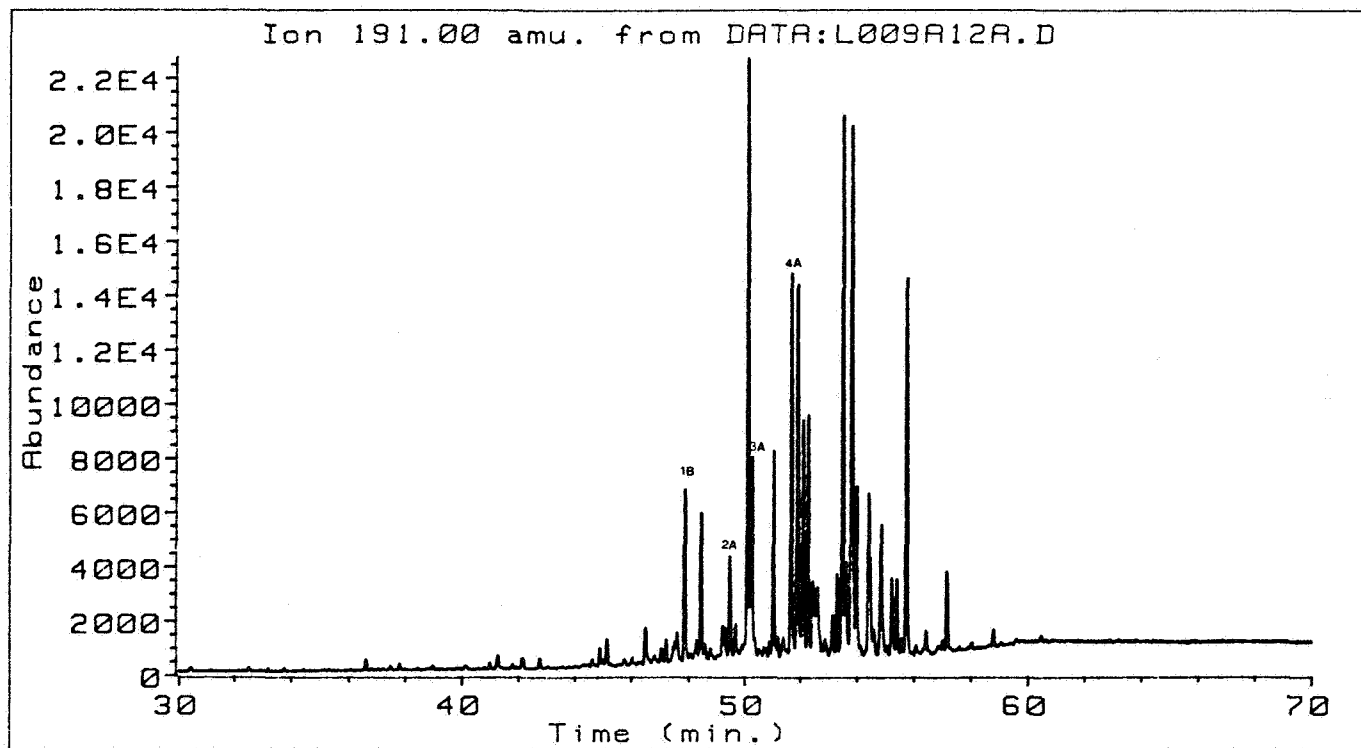
6407/7 2

1824 m



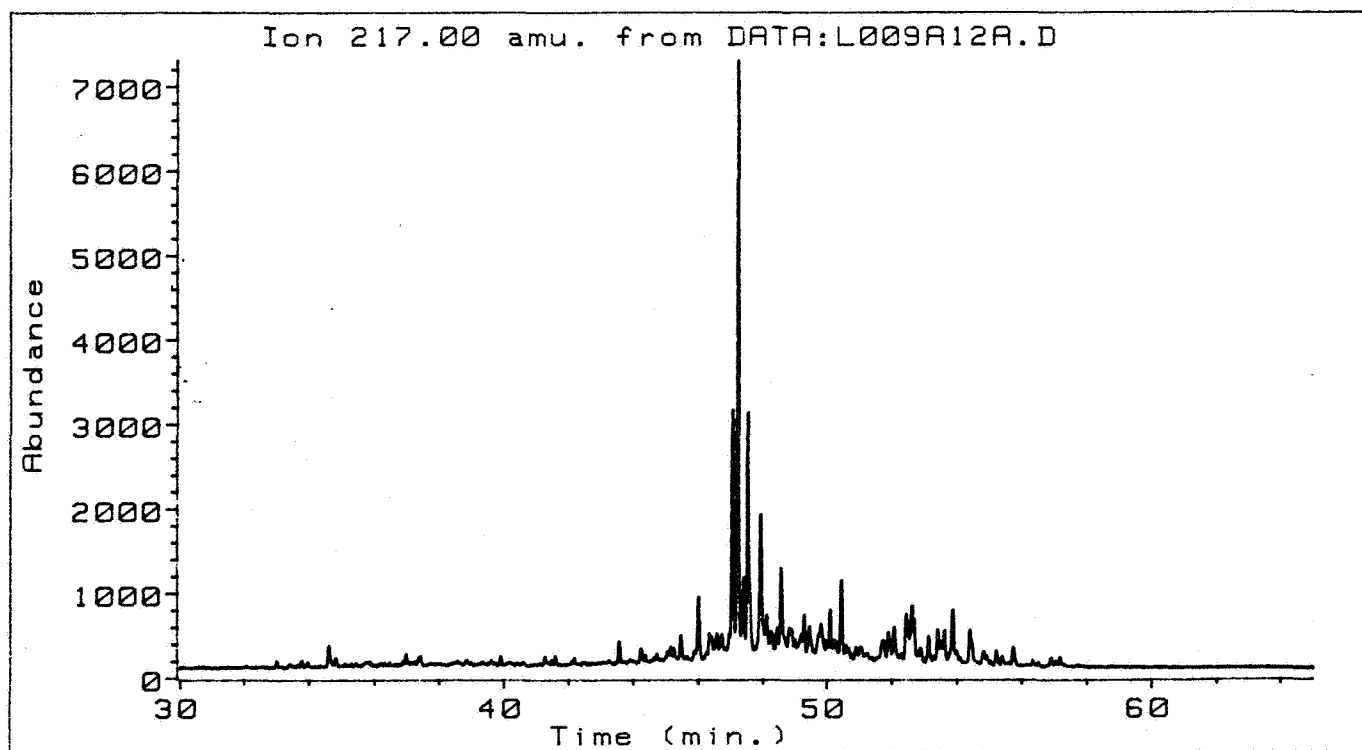
6407/7 2

1824 m



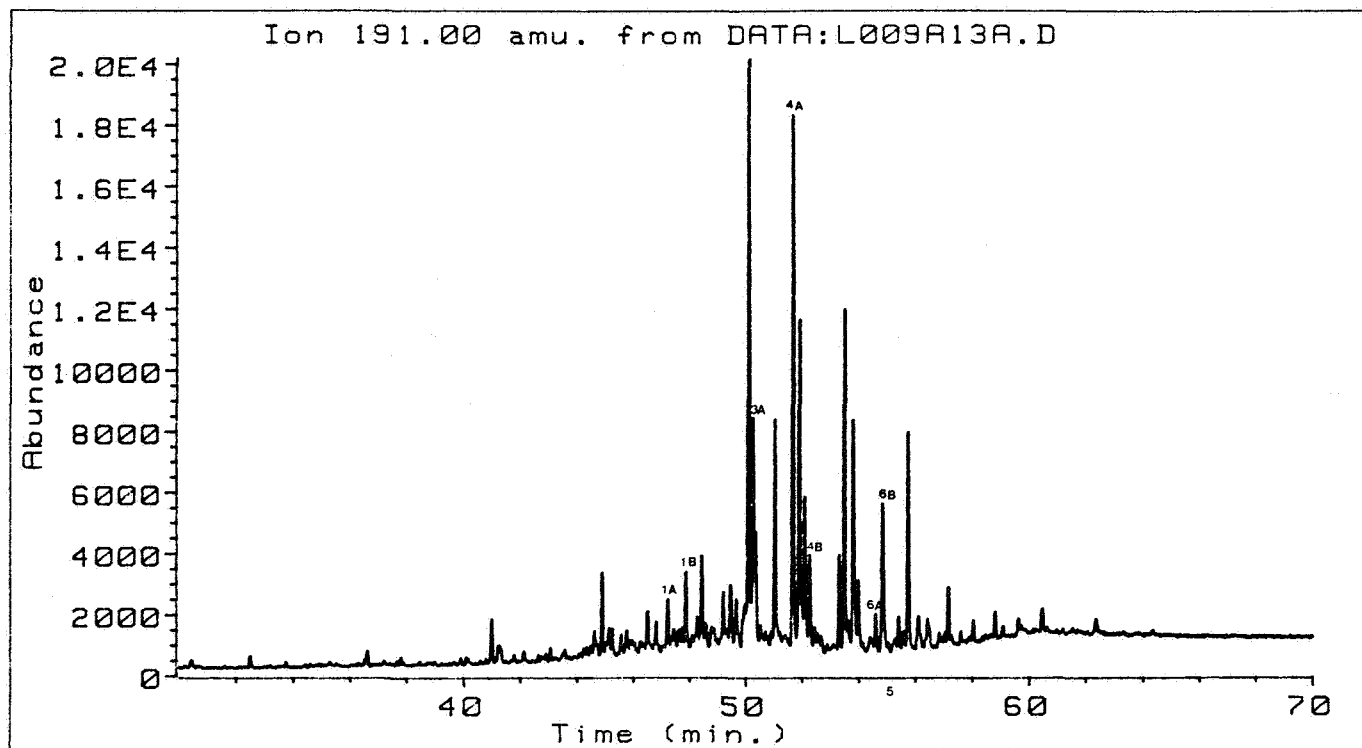
6407/7 2

1956.50 m



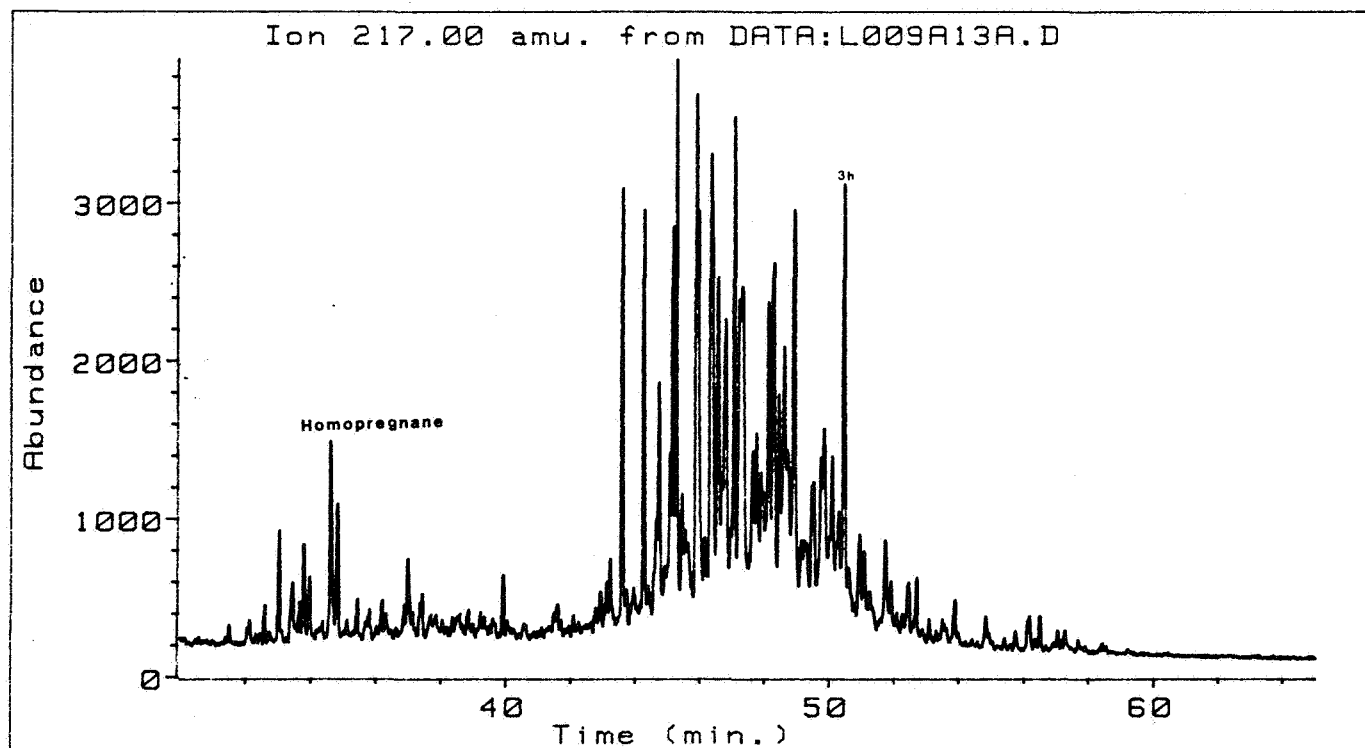
6407/7 2

1956.50 m



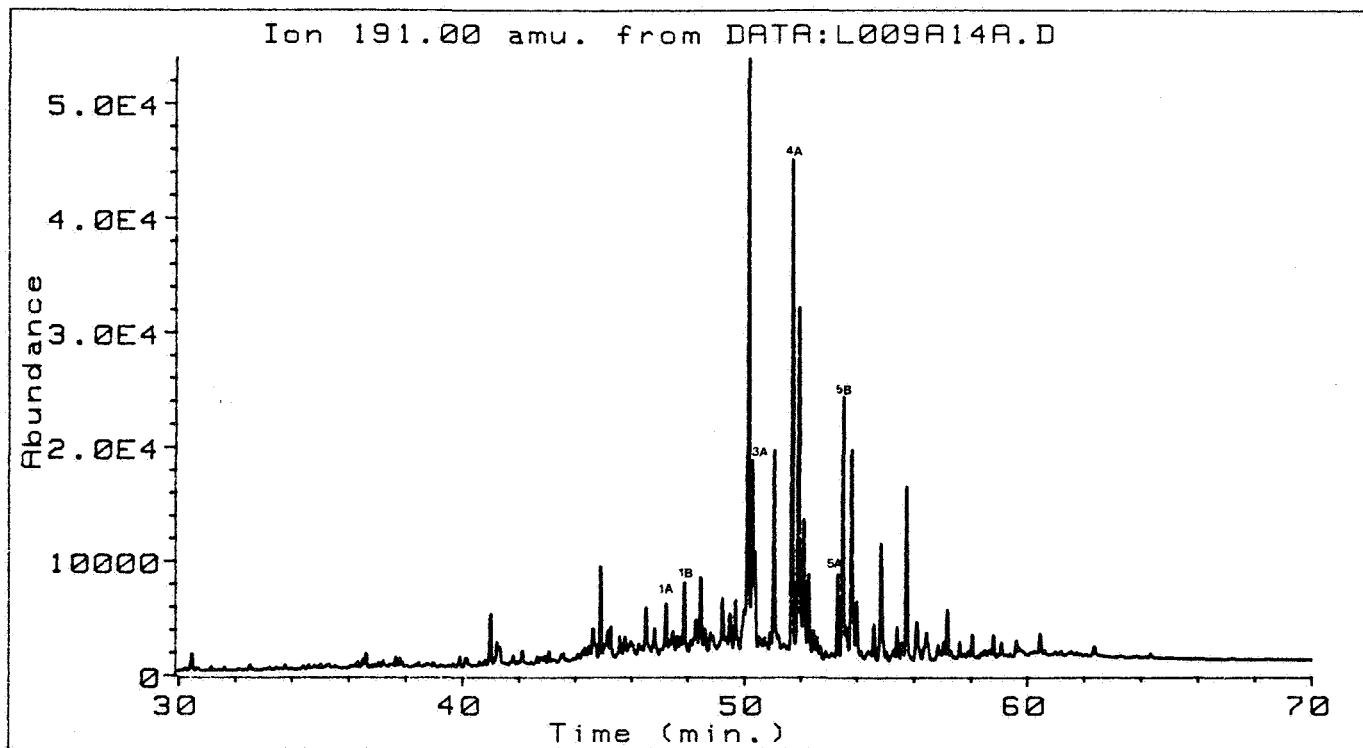
6407/7 2

2025 m



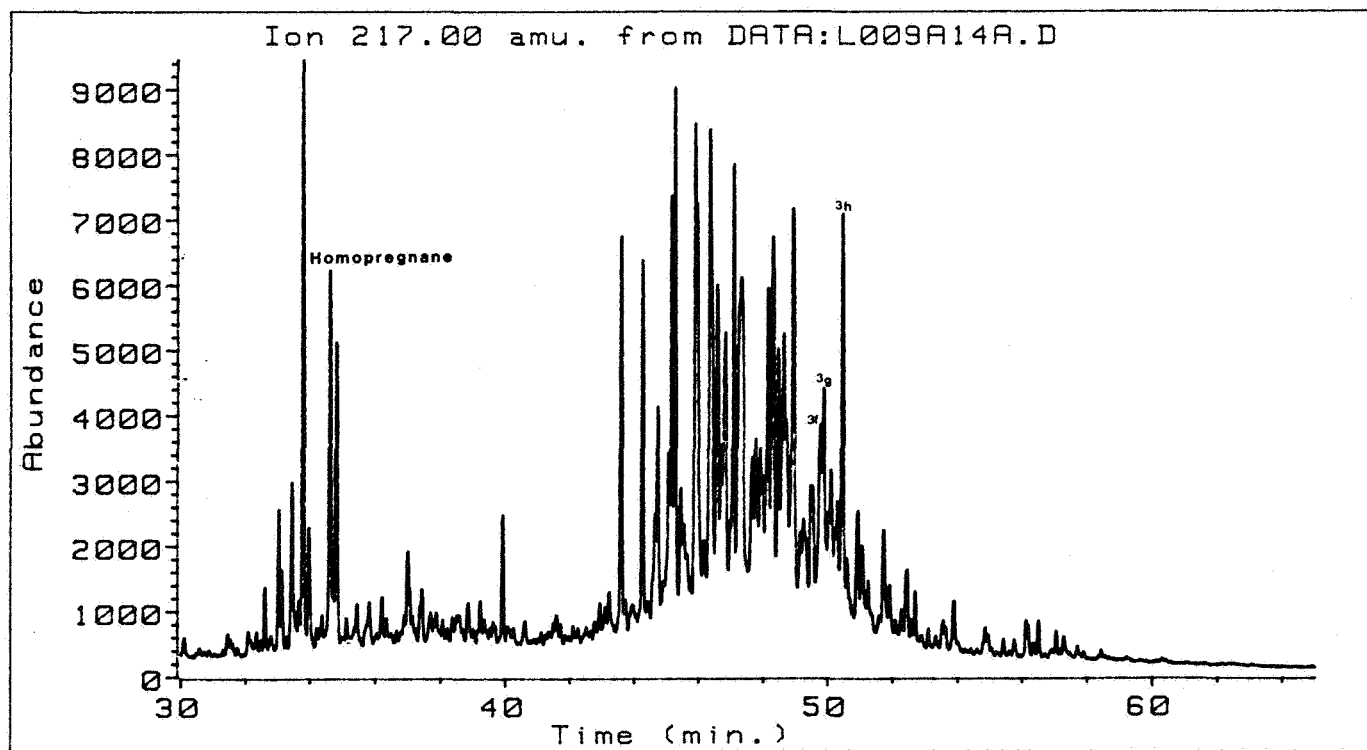
6407/7 2

2025 m



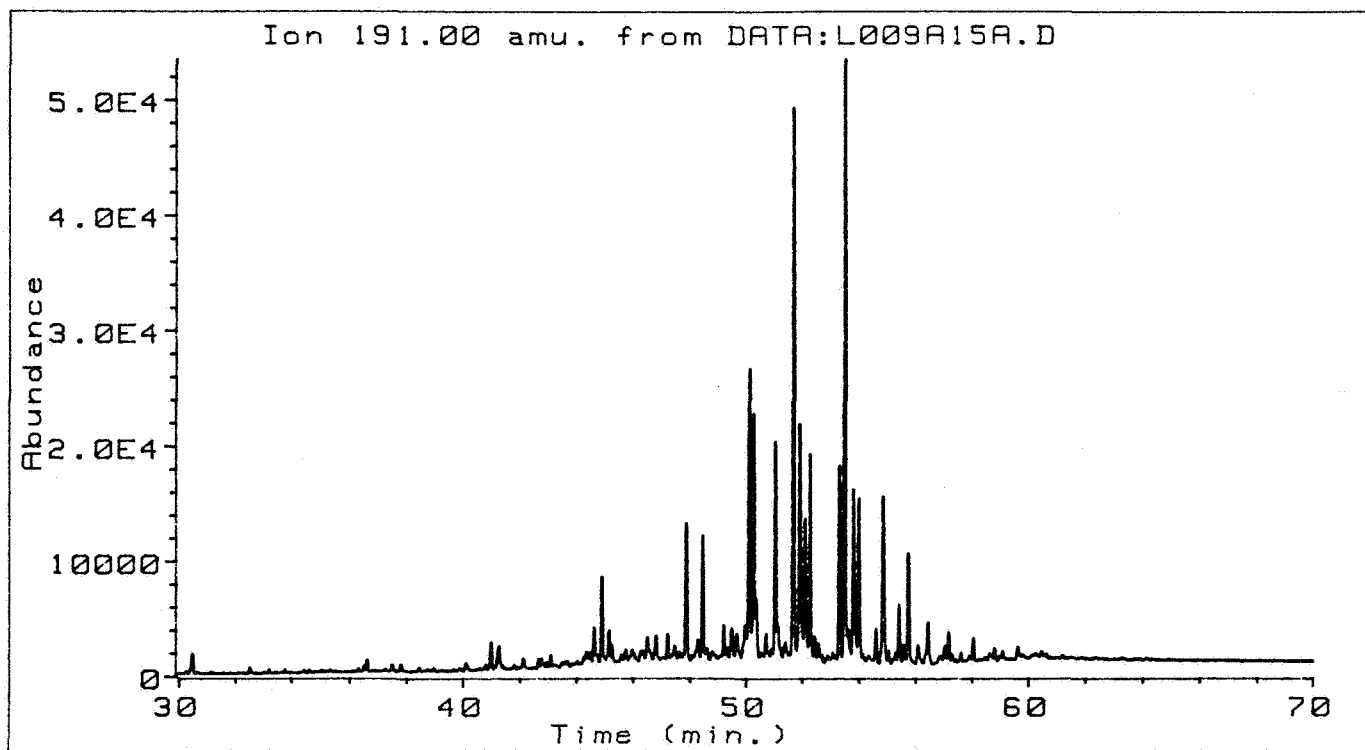
6407/7.2

2075 m



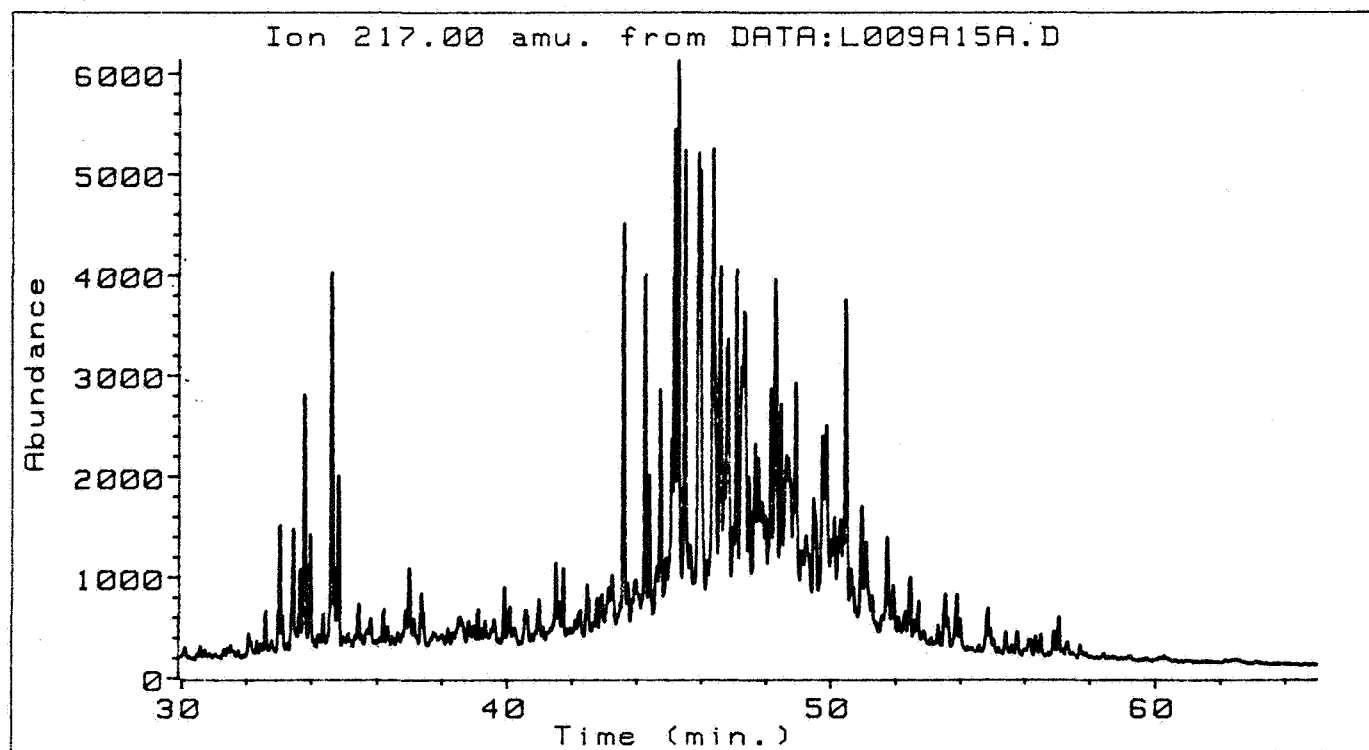
6407/7.2

2075 m



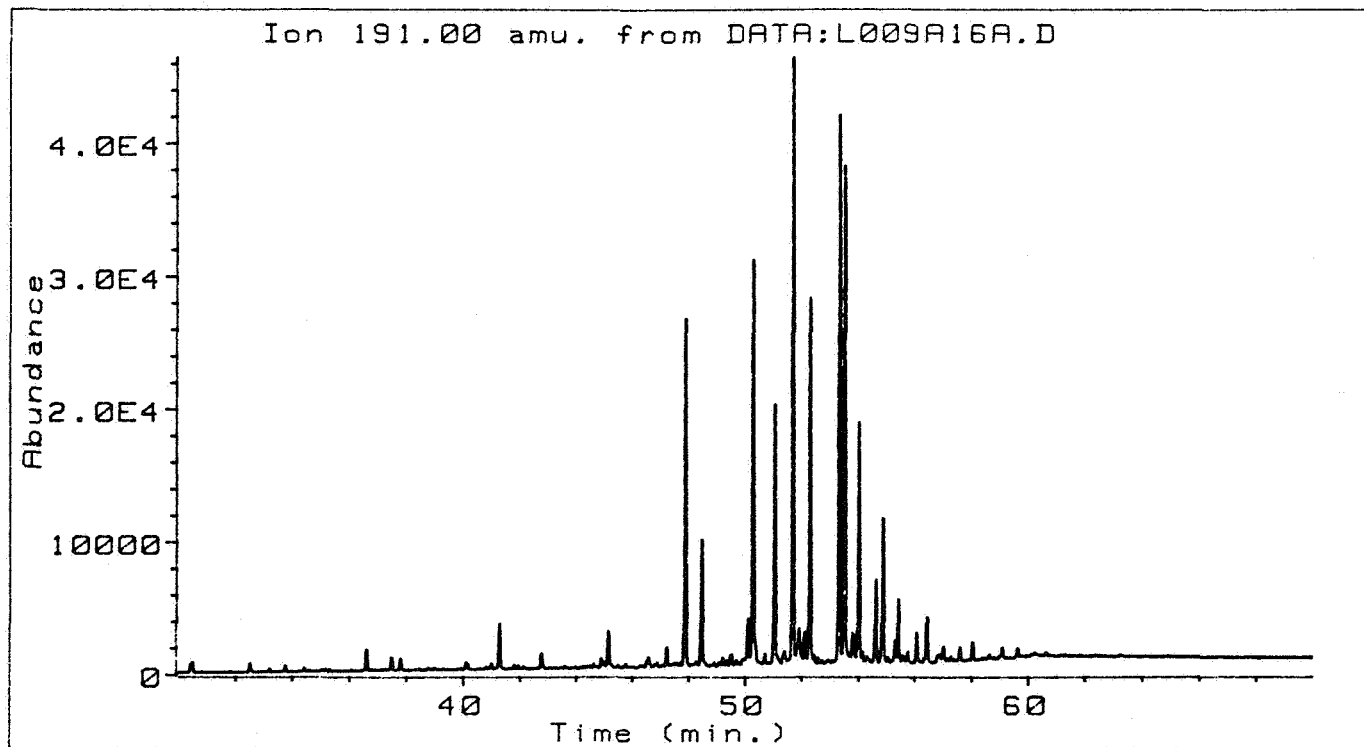
6407/7 2

2251 m



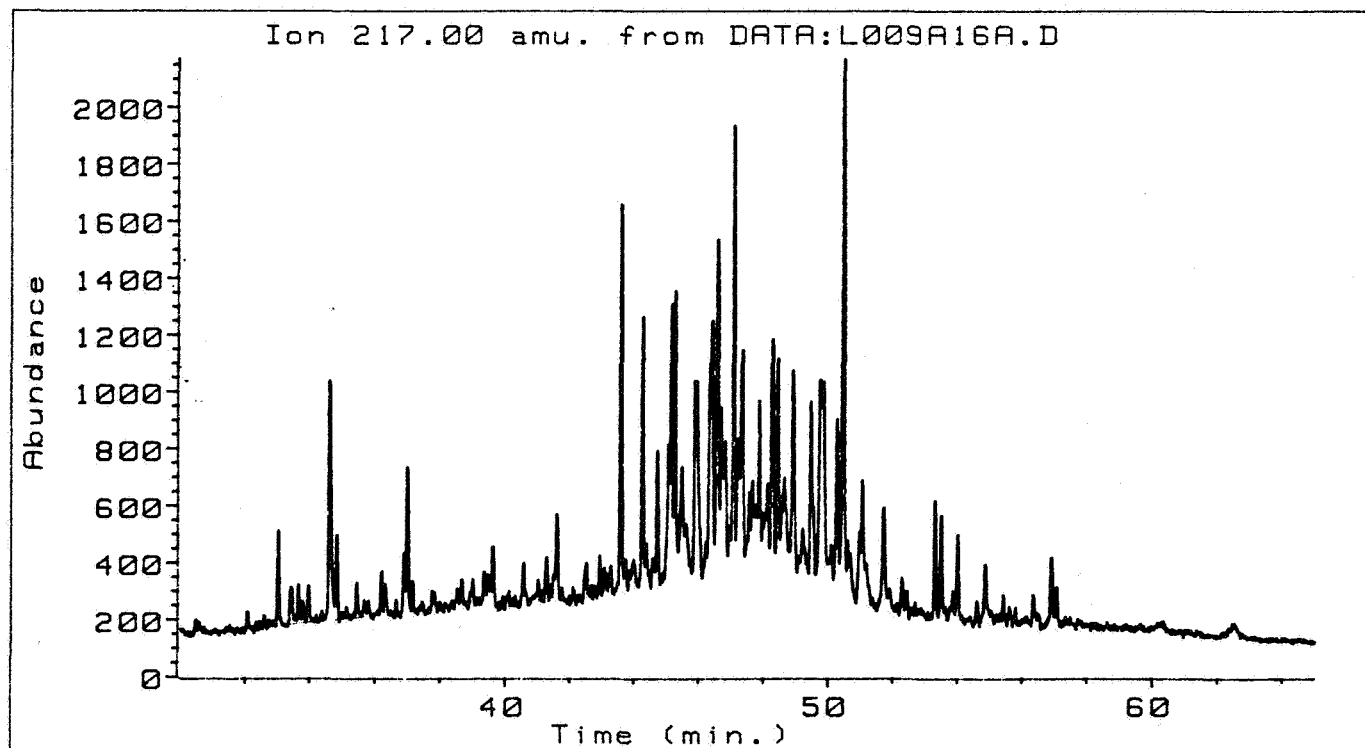
6407/7 2

2251 m



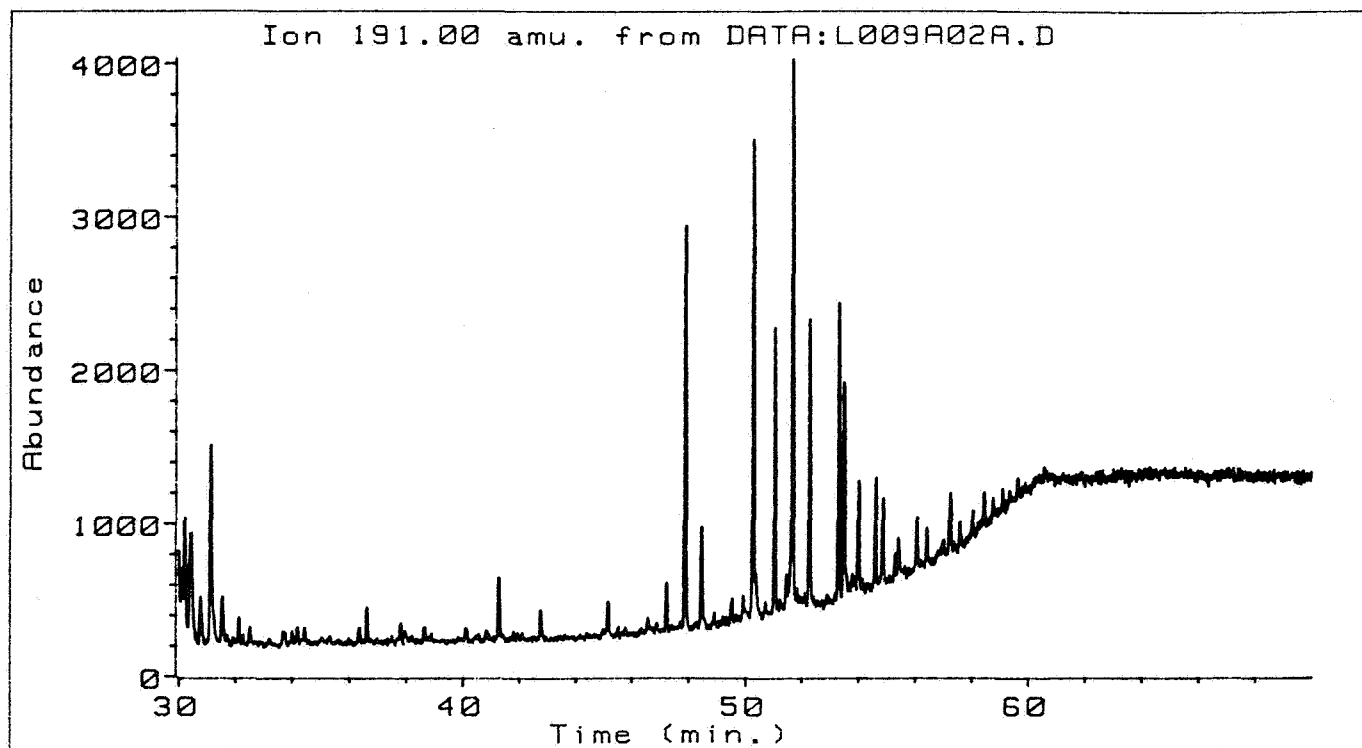
6407/7 2

2425 m



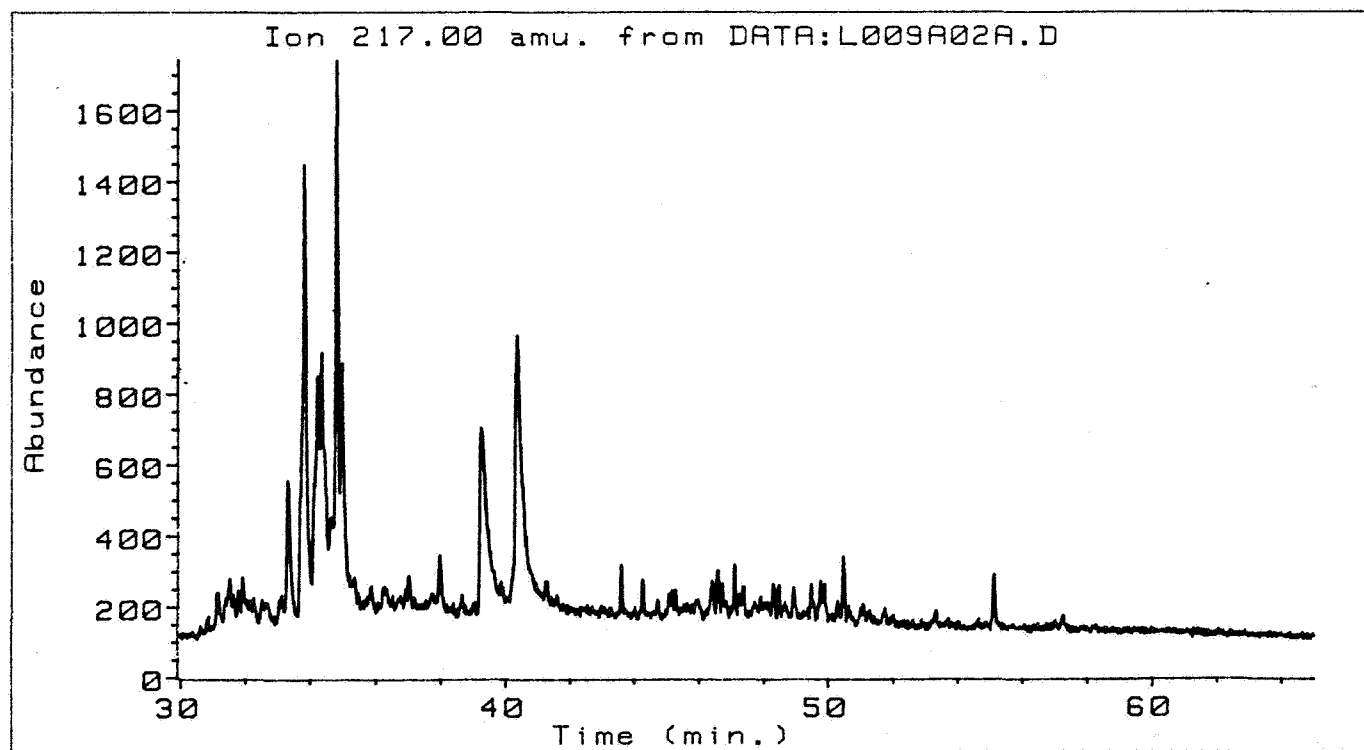
6407/7 2

2425 m



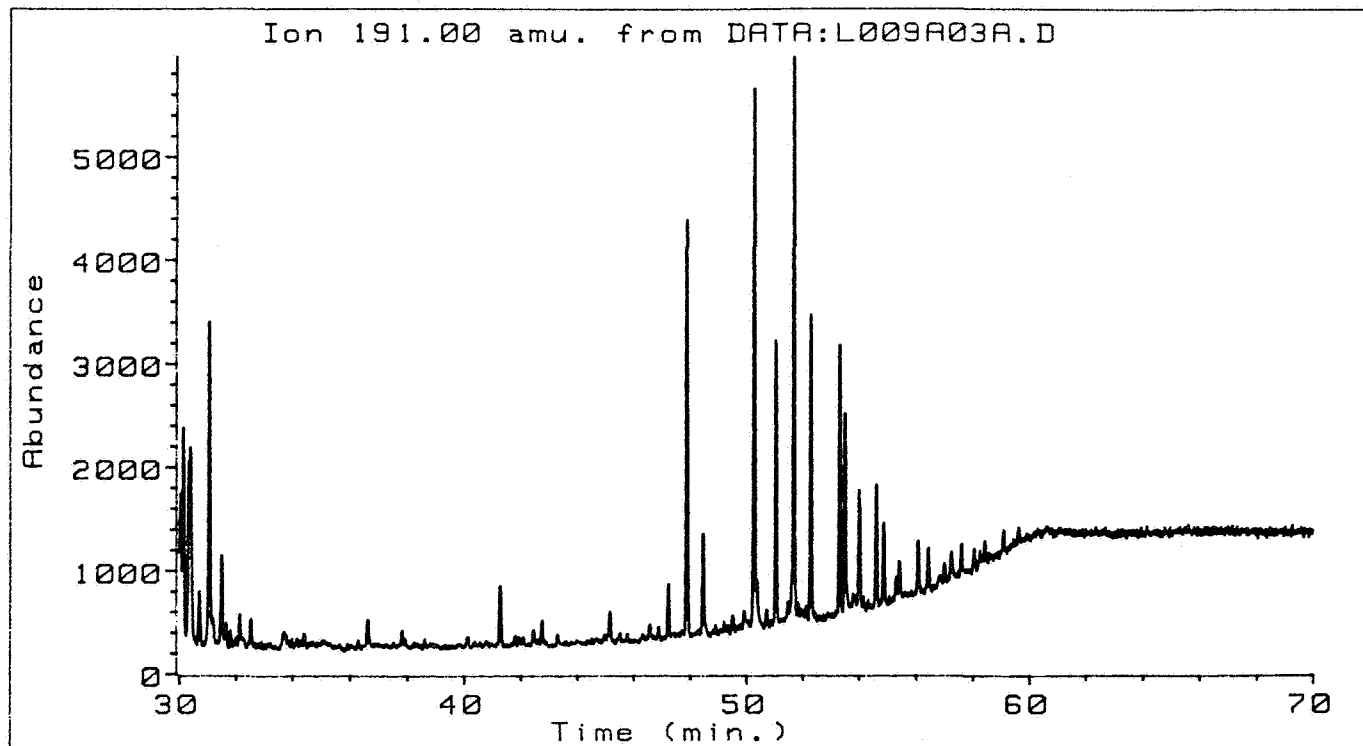
6407/7 2

2553 m C5 EOM



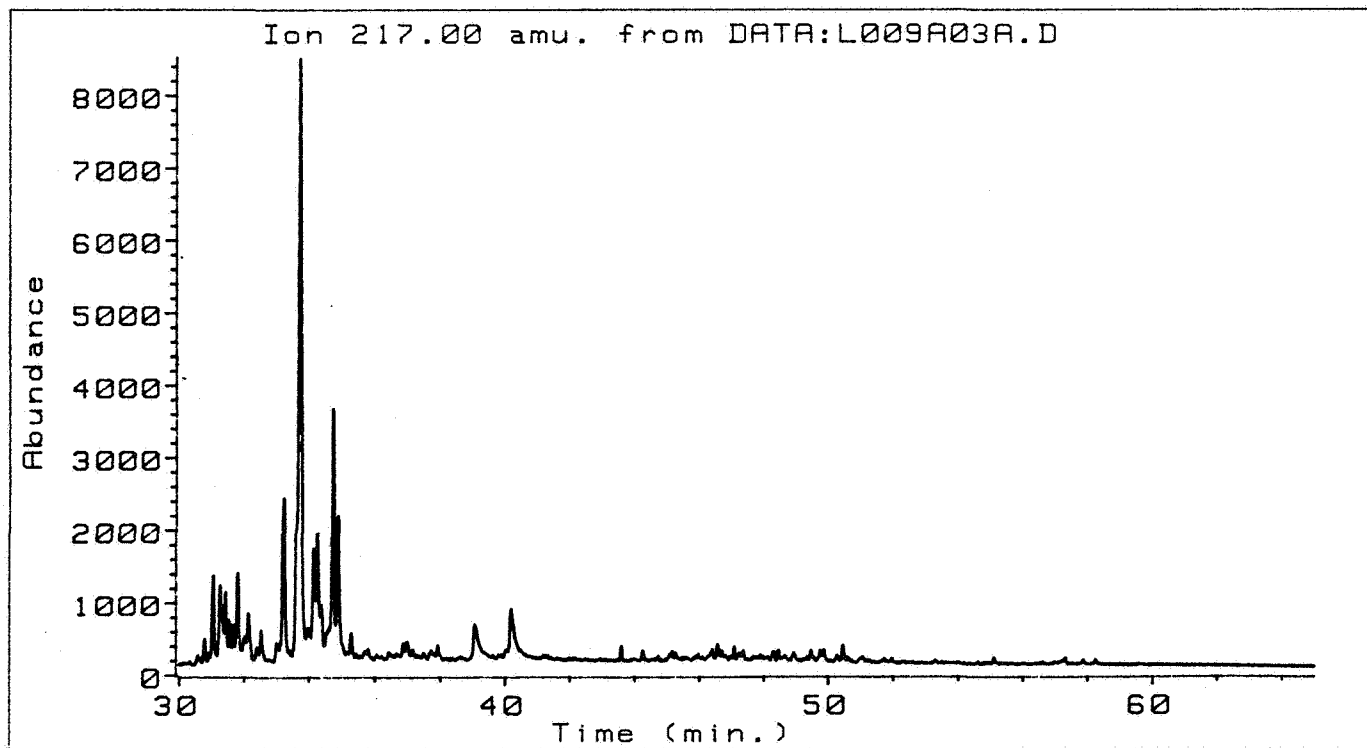
6407/7 2

2553 m C5 EOM



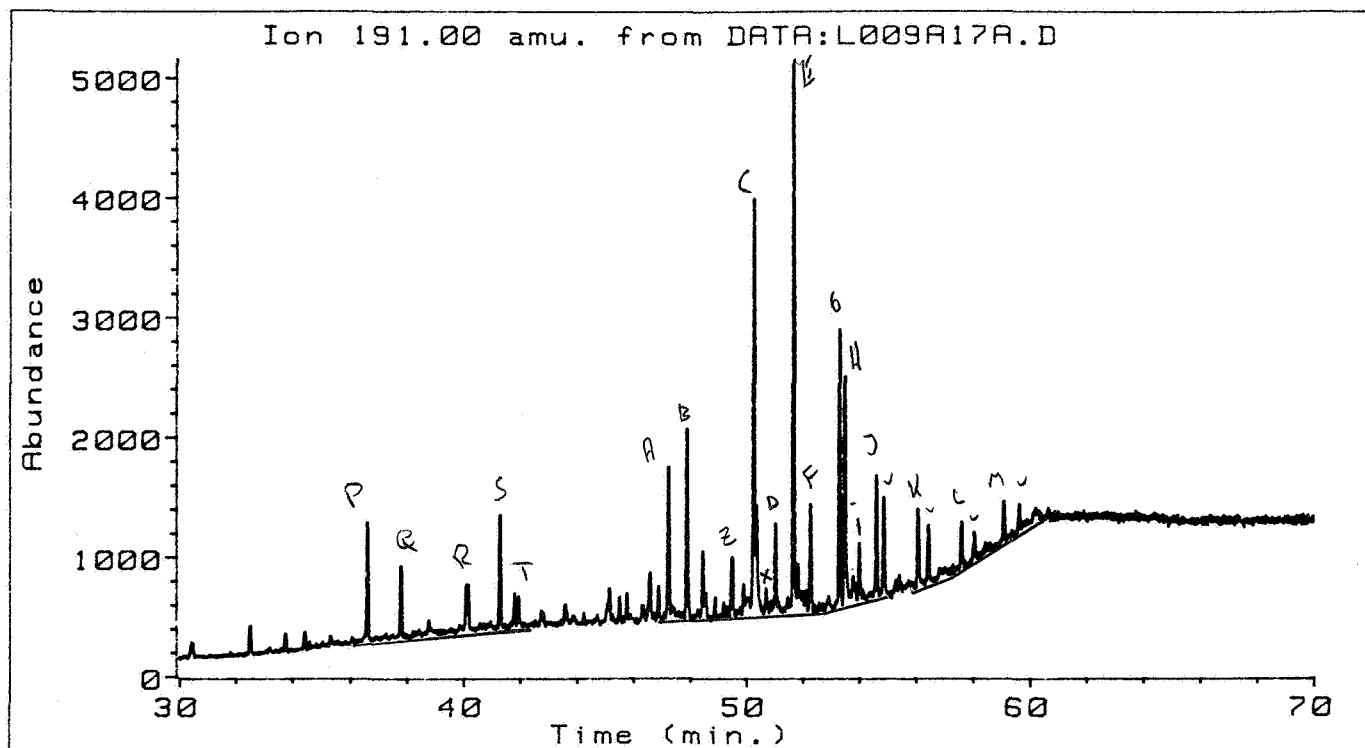
6407/7 2

2611 m C5 EOM



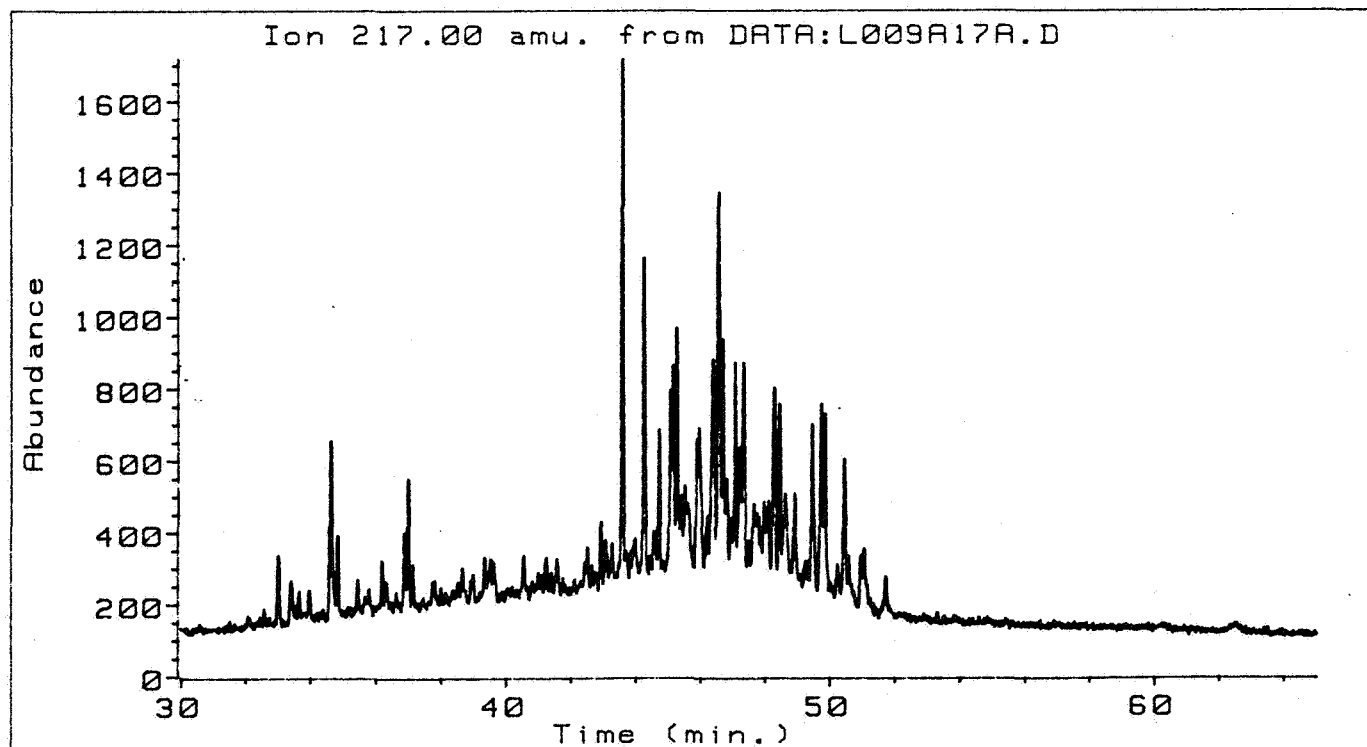
6407/7 2

2611 m C5 EOM



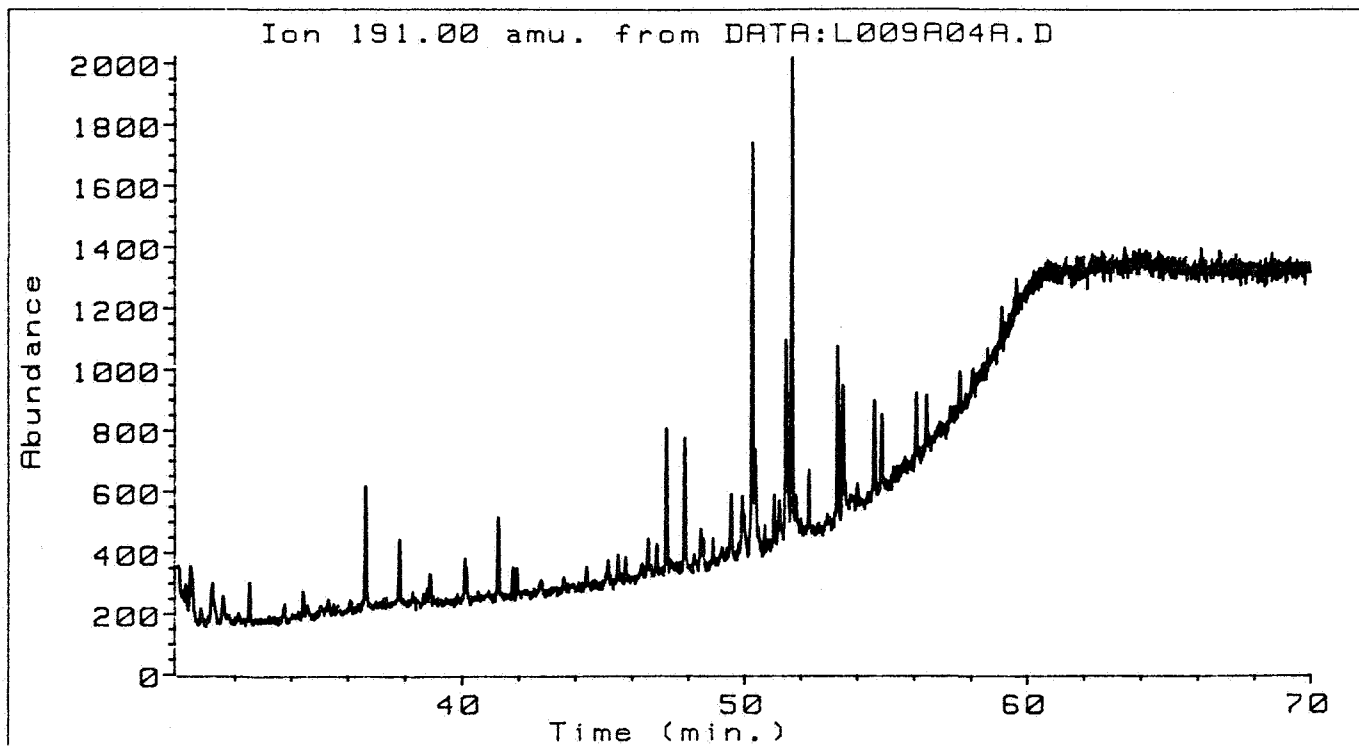
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2625 m



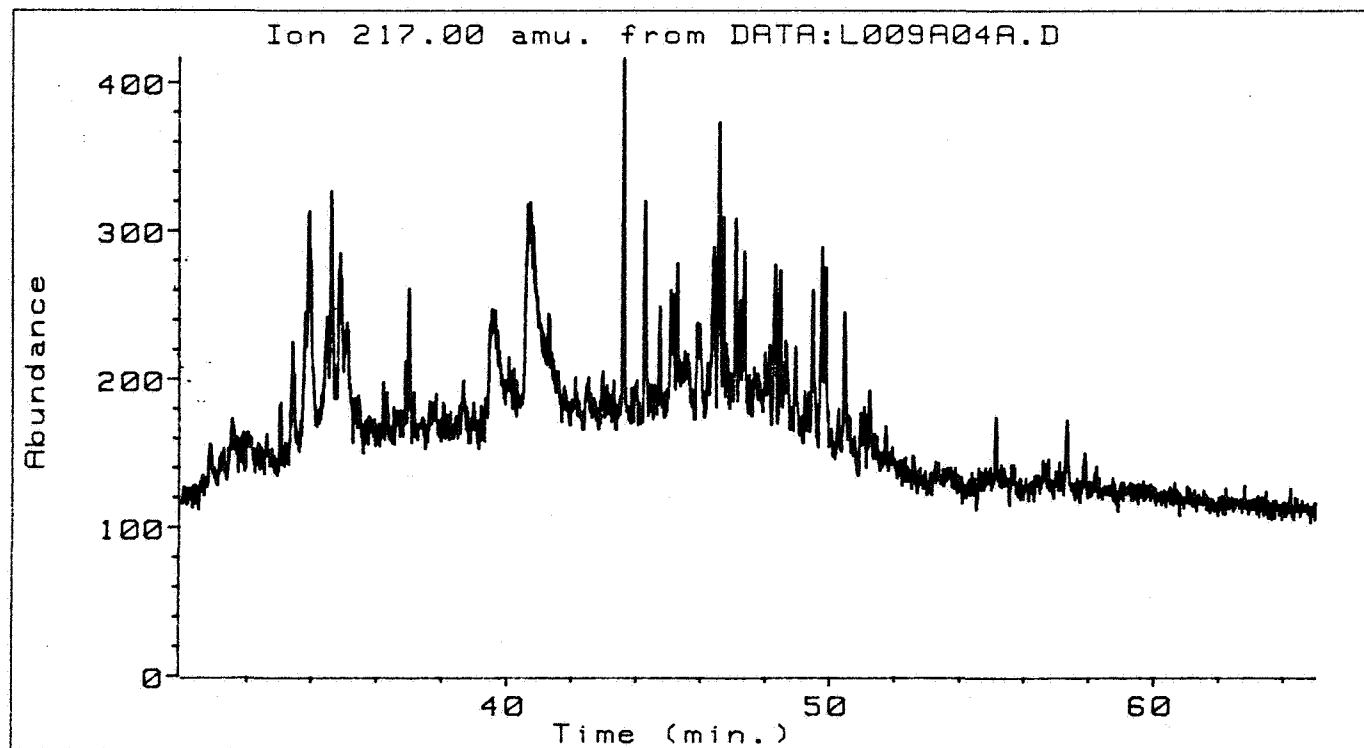
6407/7 2

2625 m



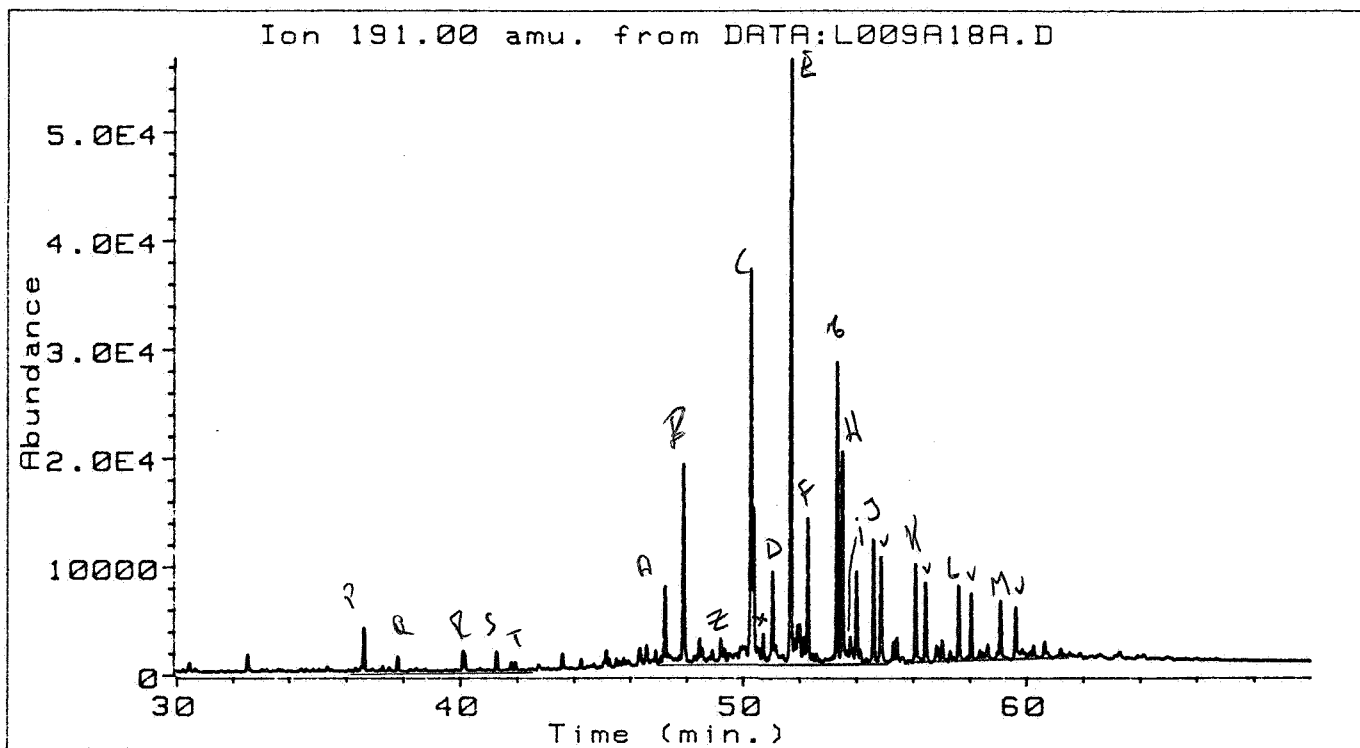
6407/7 2

2632.50 m Tot EOM



6407/7 2

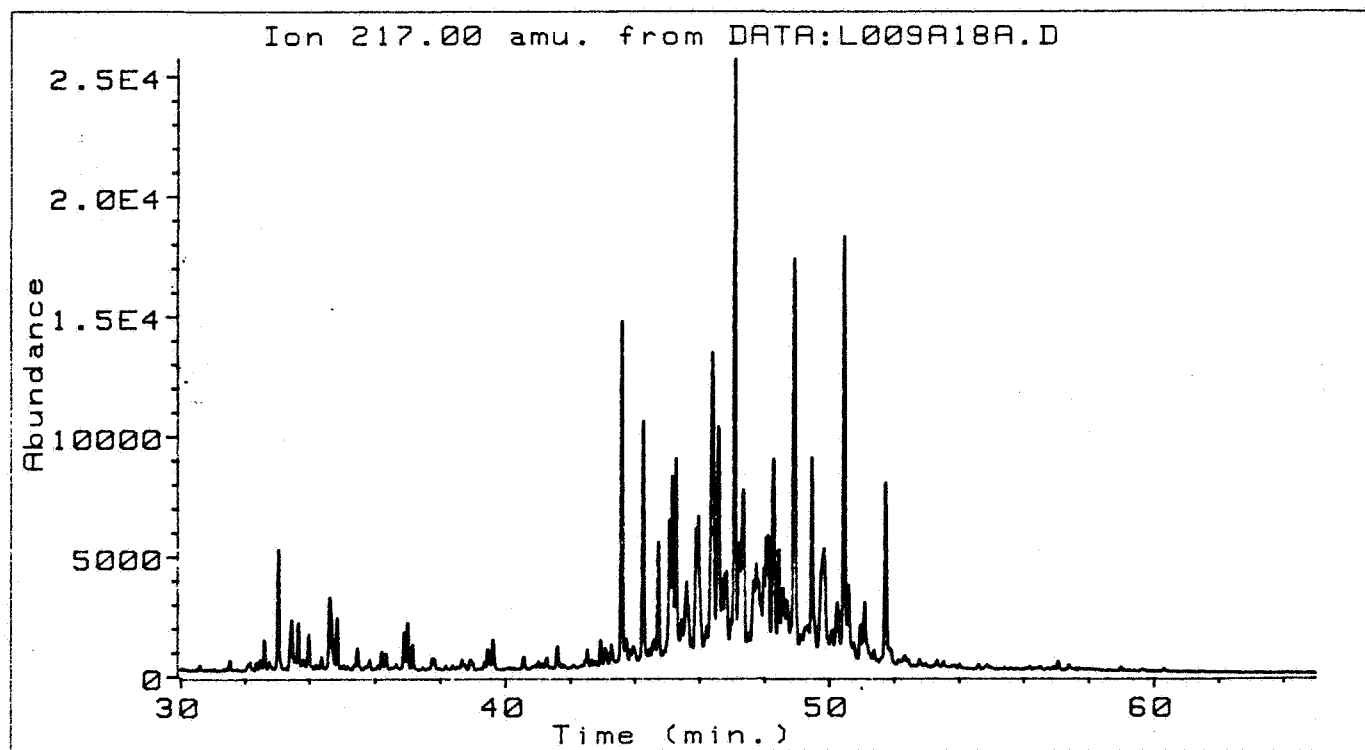
2632.50 m Tot EOM



6407/7 2

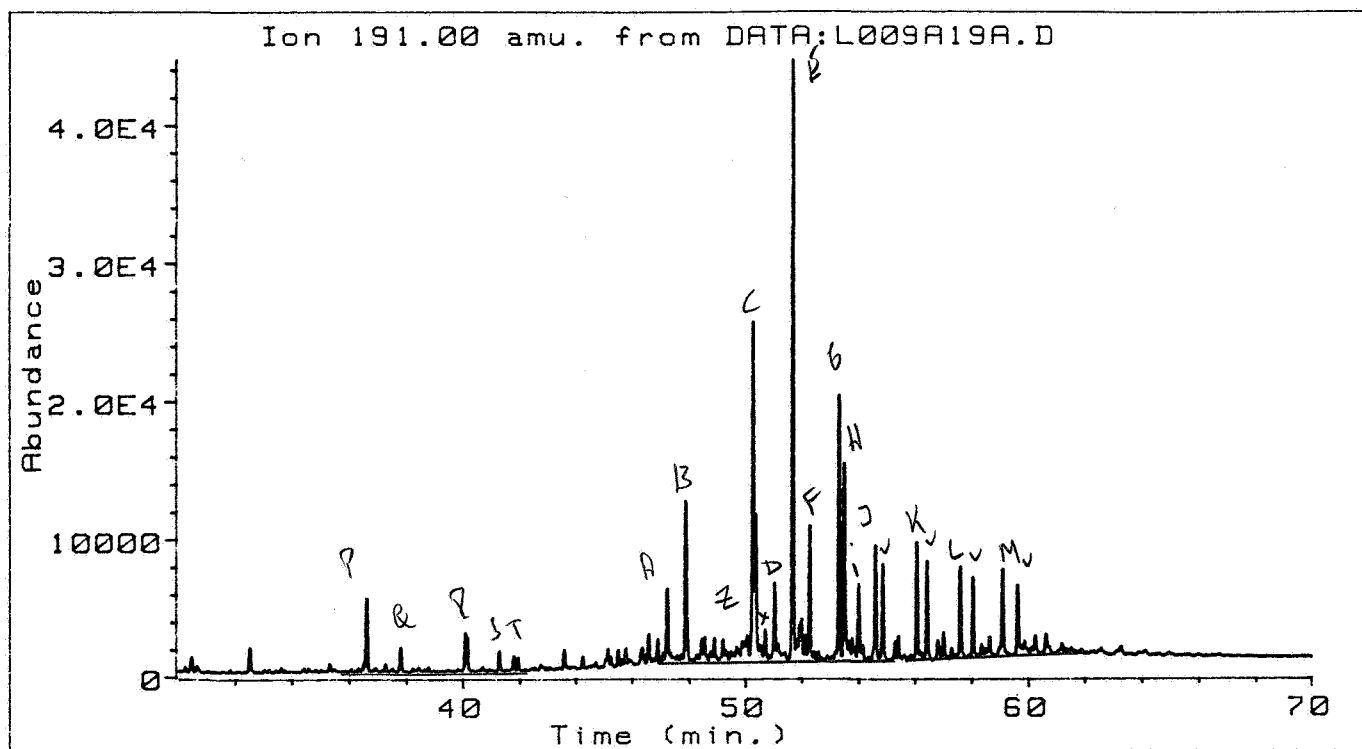
Spelke.

2638 m



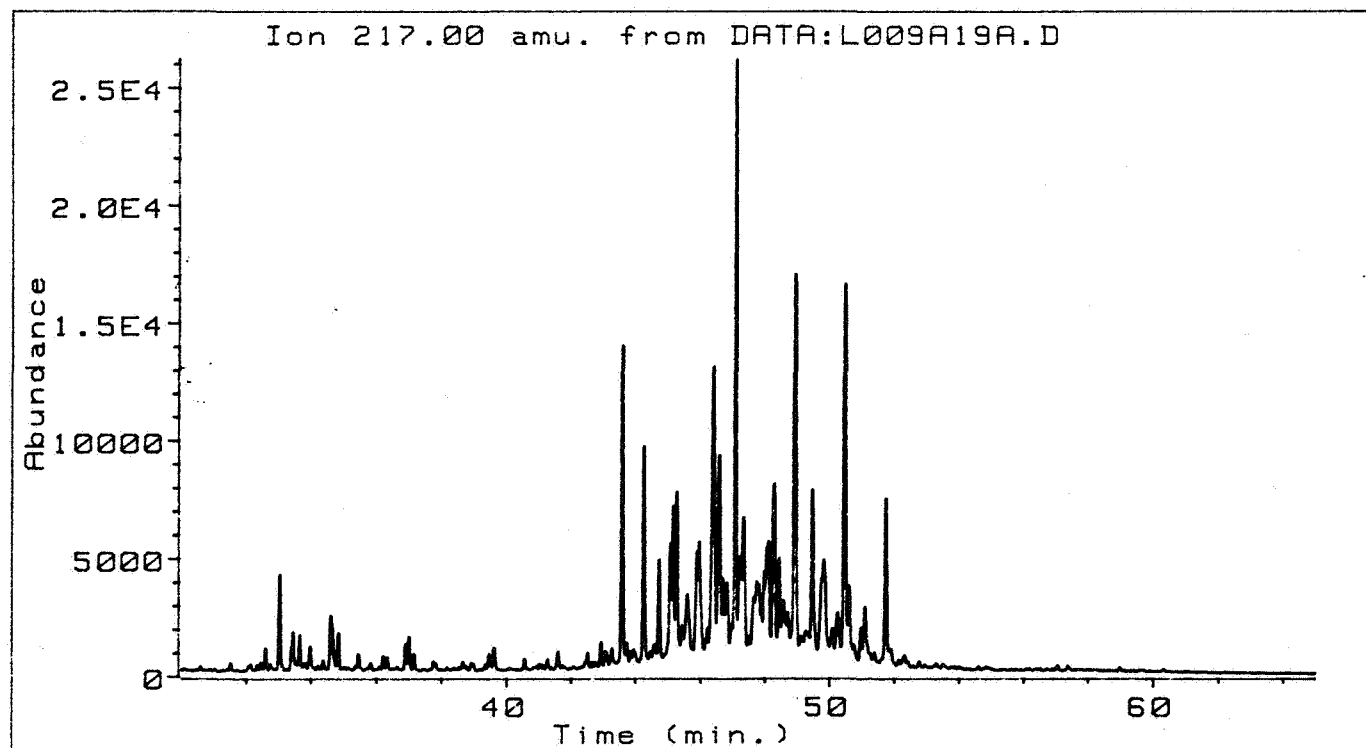
6407/7 2

2638 m



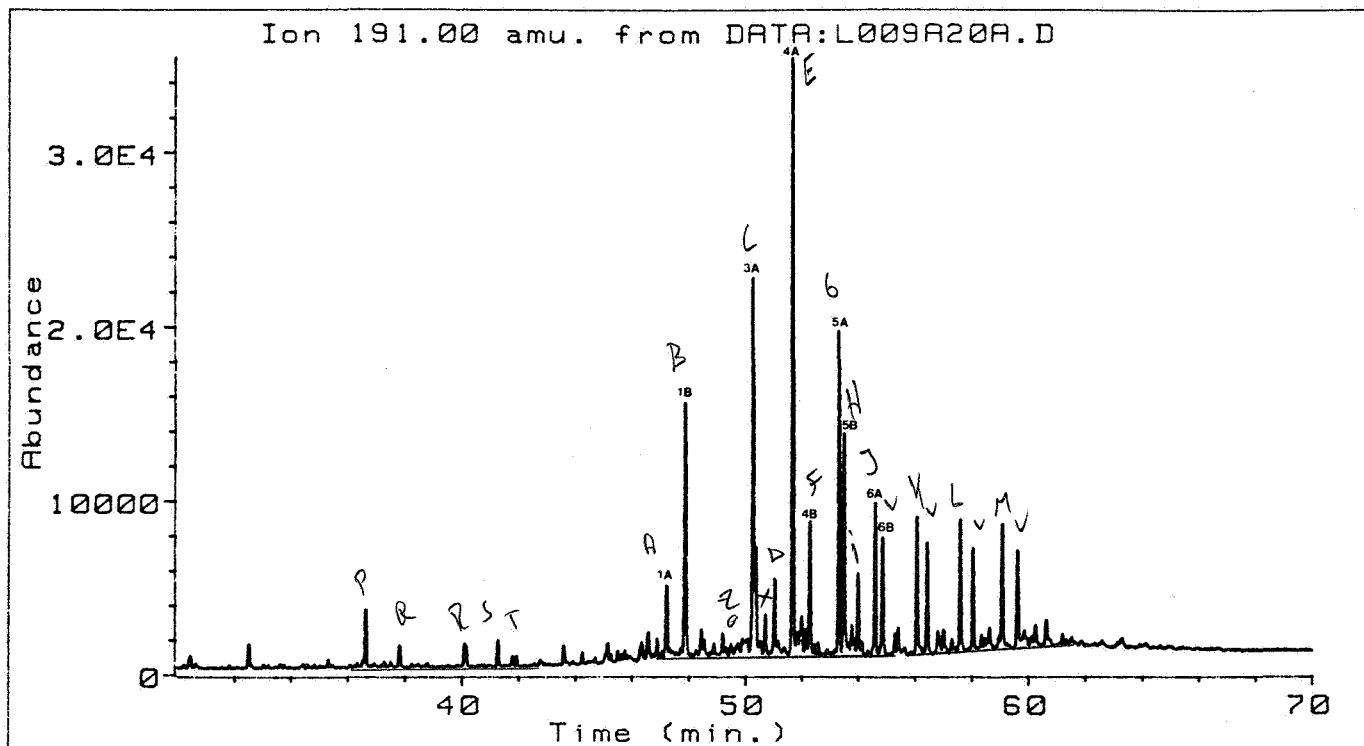
6407/7 2

2640 m



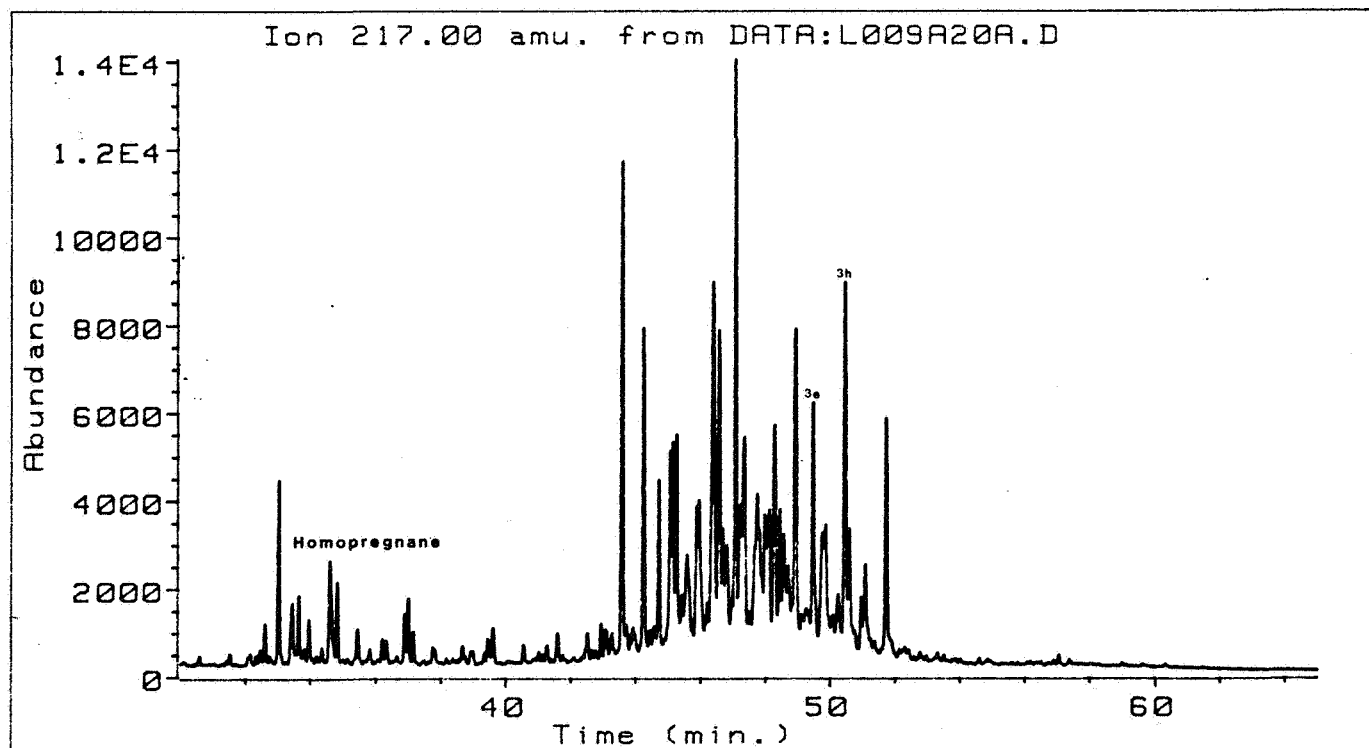
6407/7 2

2640 m



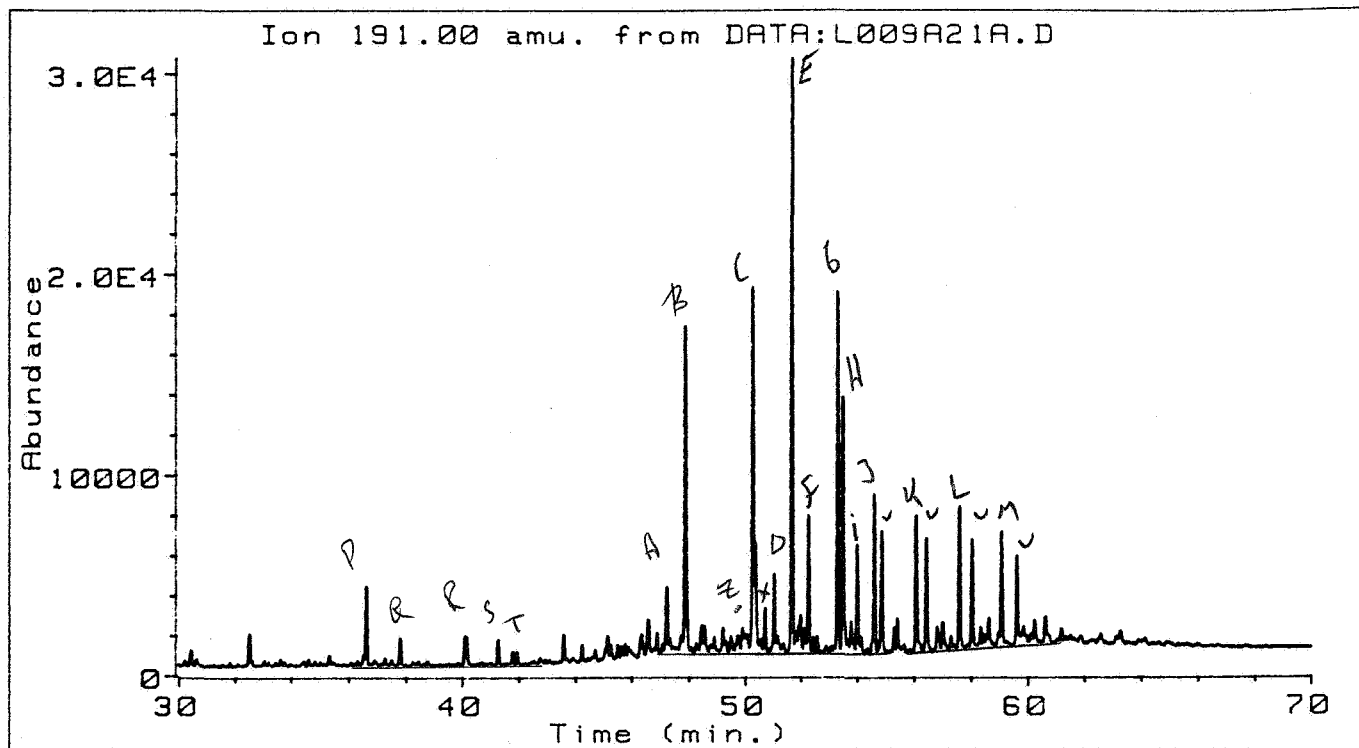
6407/7 2

2647 m



6407/7 2

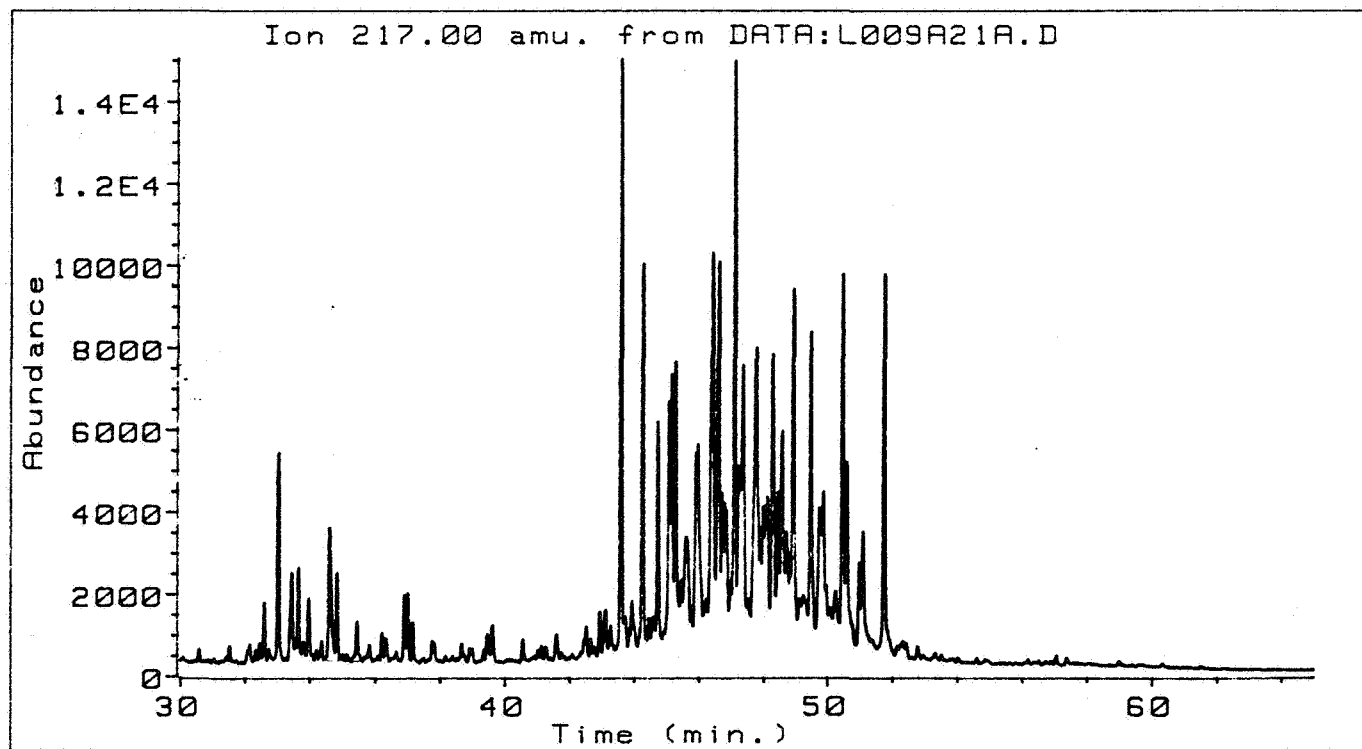
2647 m



Spiked

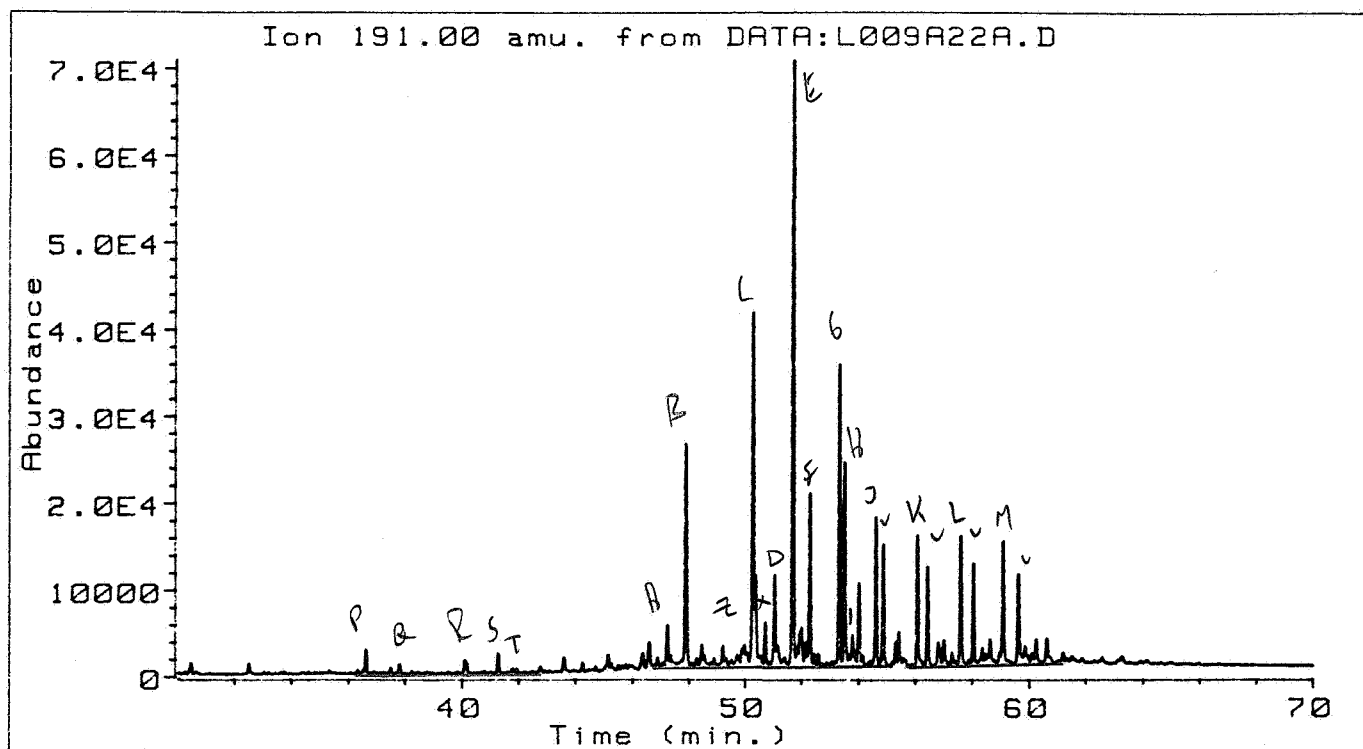
6407/7 2

2650 m



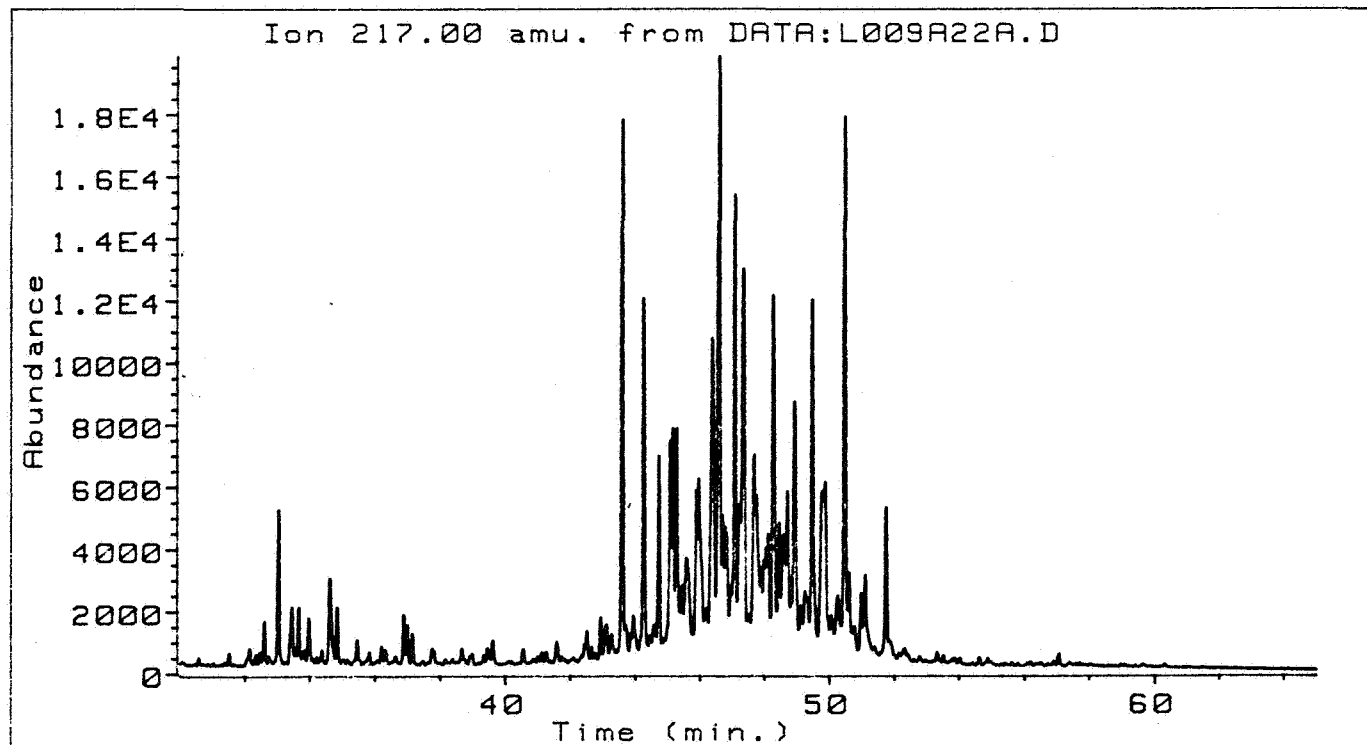
6407/7 2

2650 m



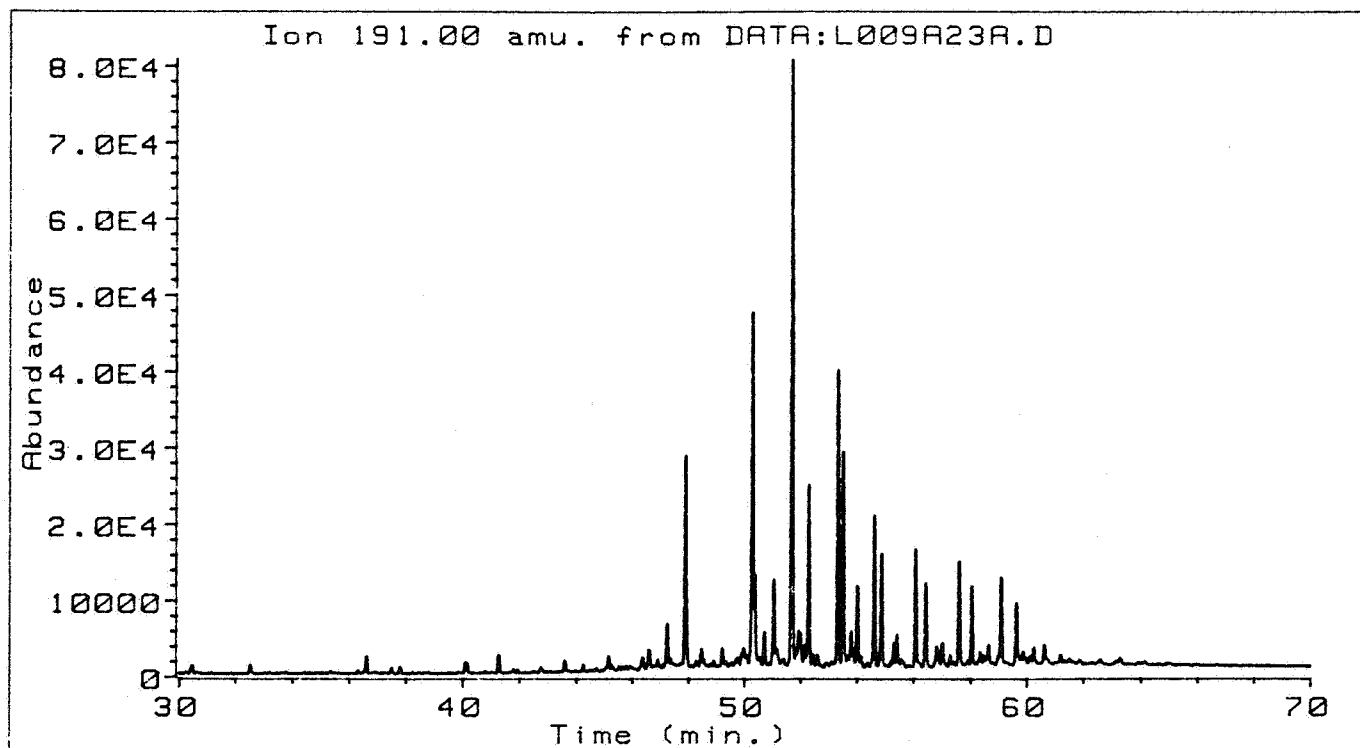
6407/7 2

2653 m



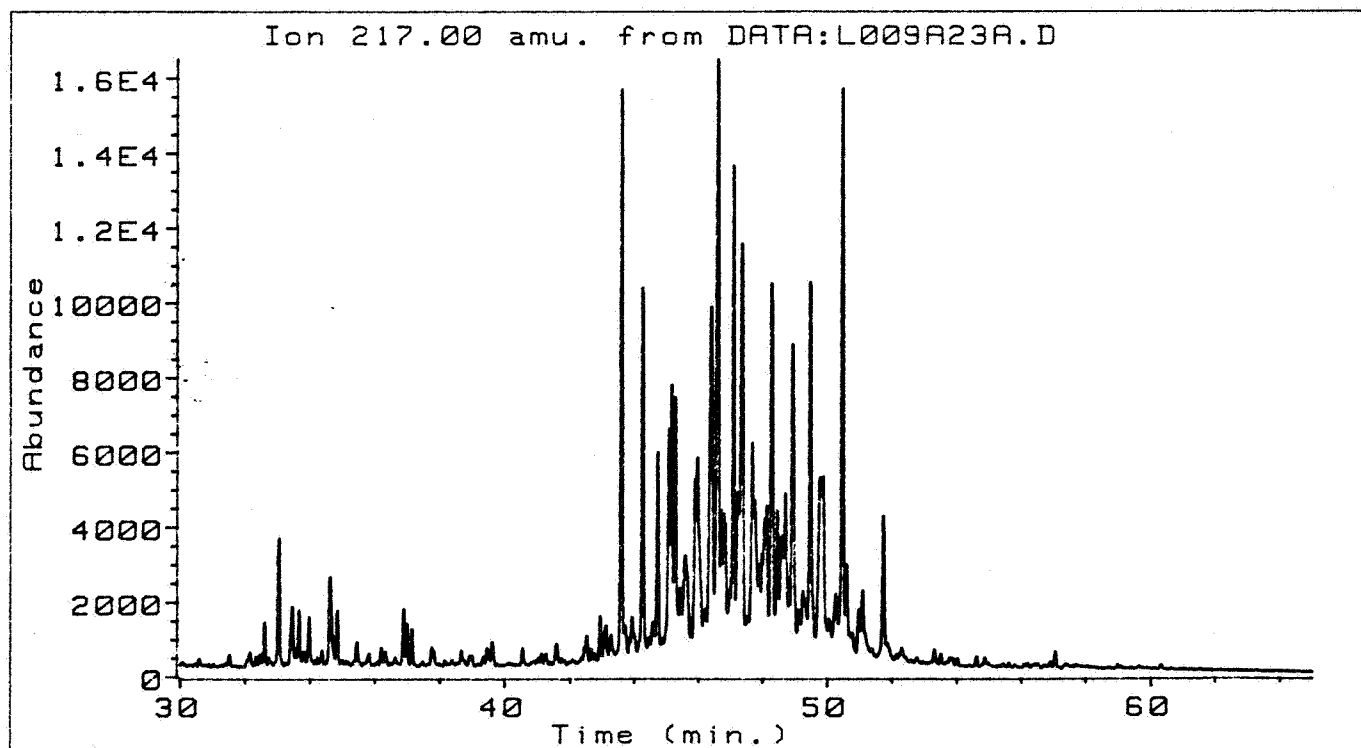
6407/7 2

2653 m



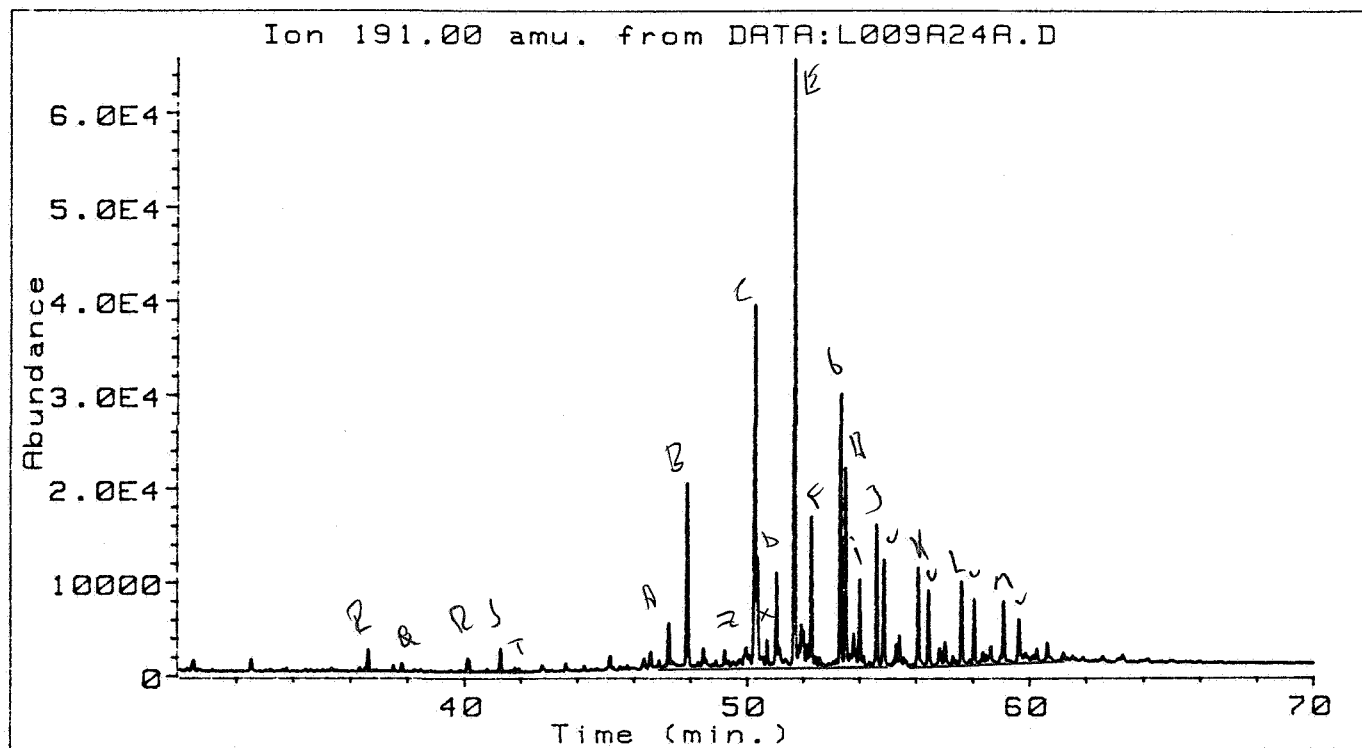
6407/7 2

2661 m



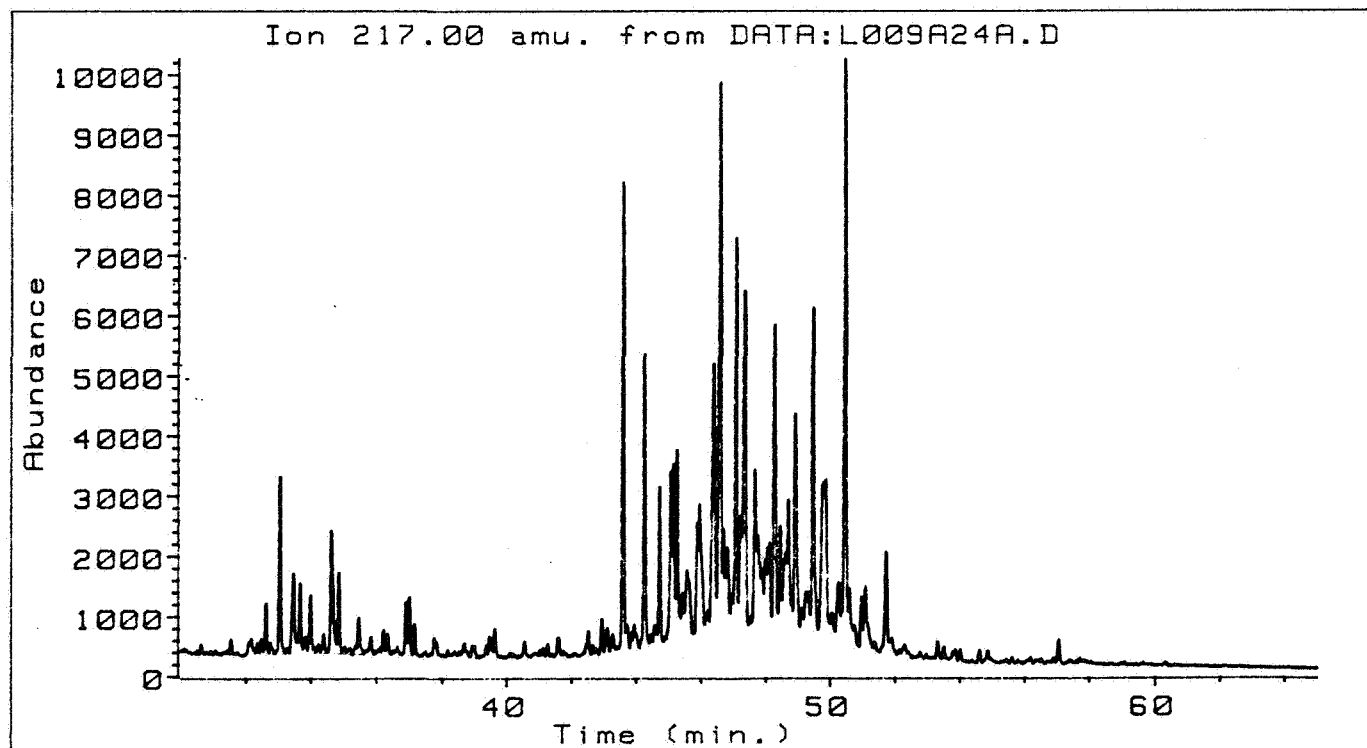
6407/7 2

2661 m



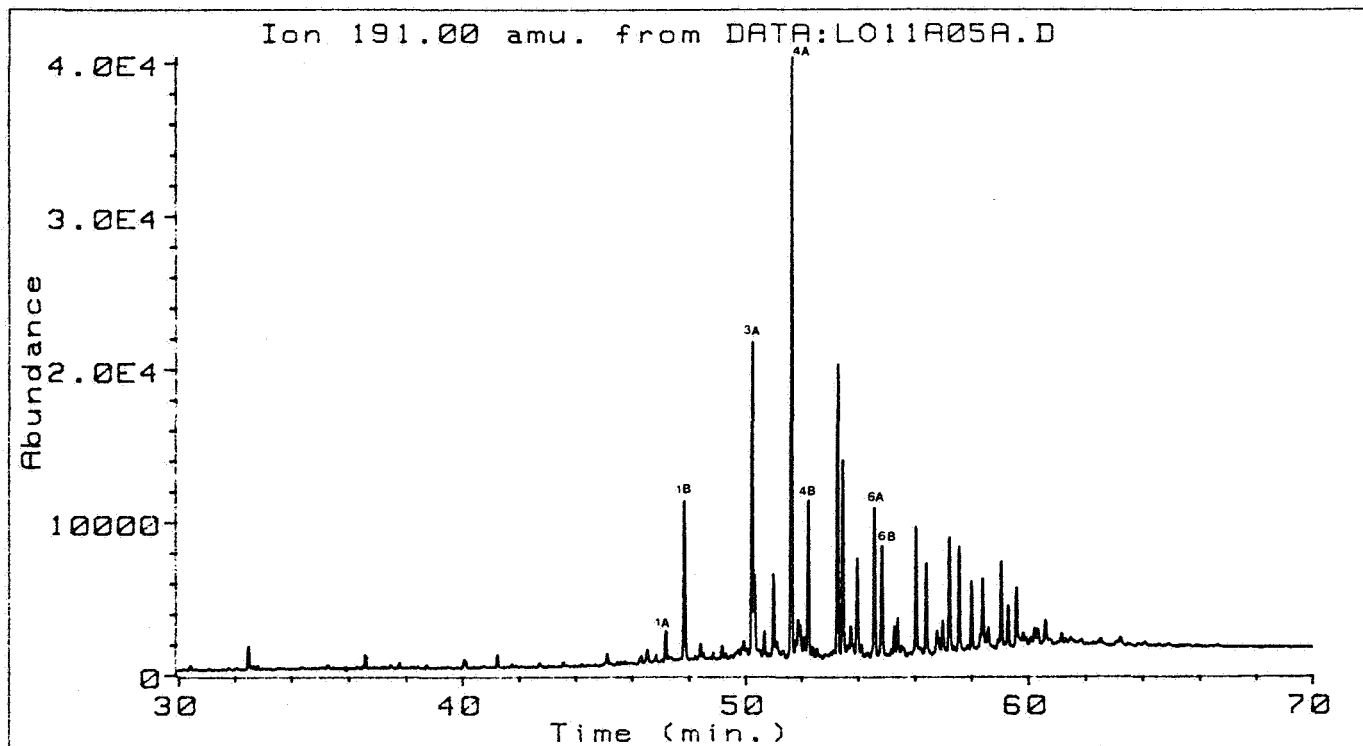
6407/7 2

2673 m



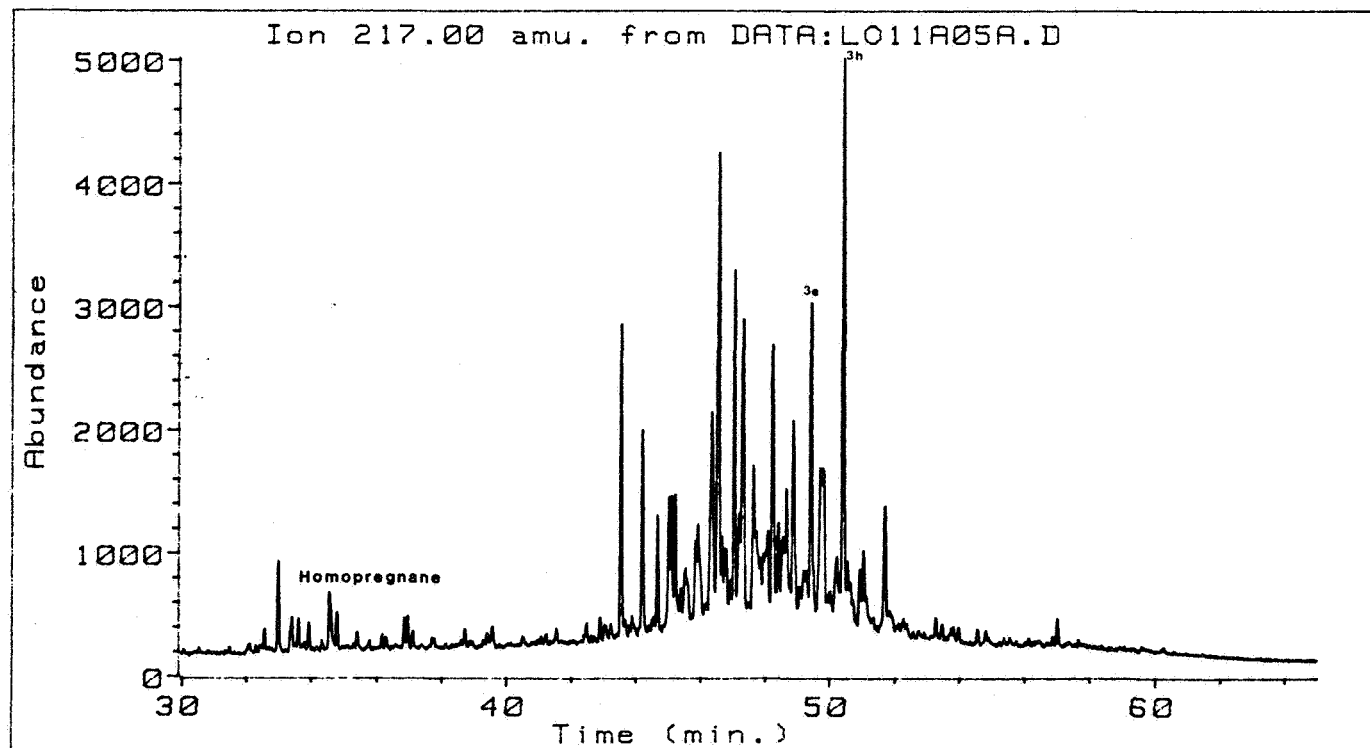
6407/7 2

2673 m



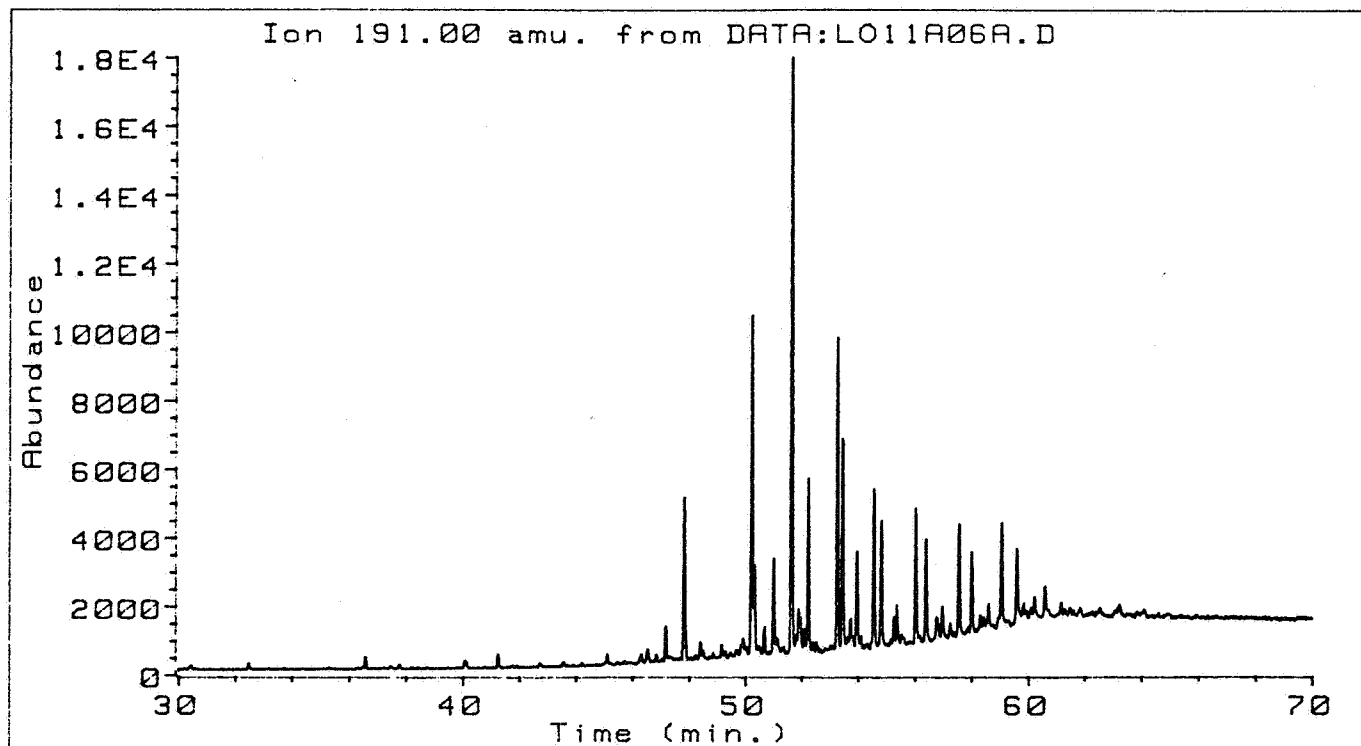
6407/7 2

2678.80 m



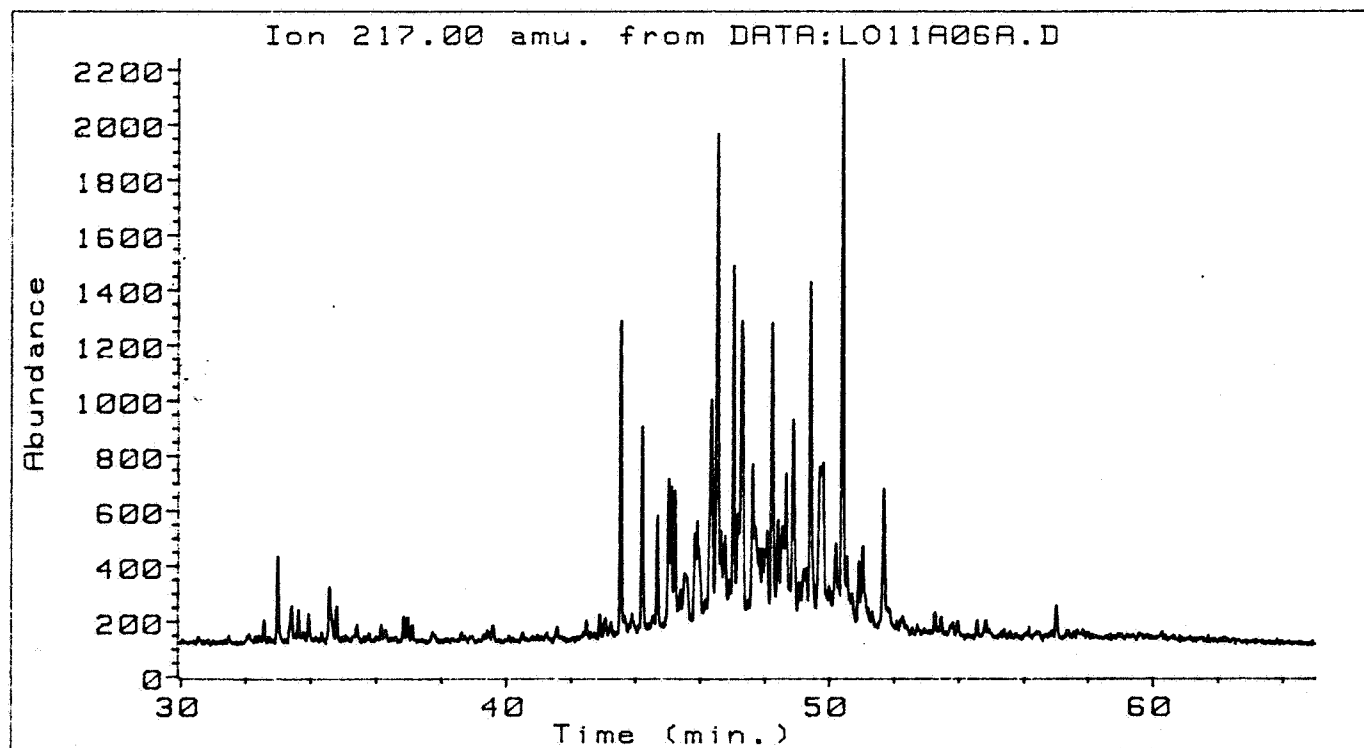
6407/7 2

2678.80 m



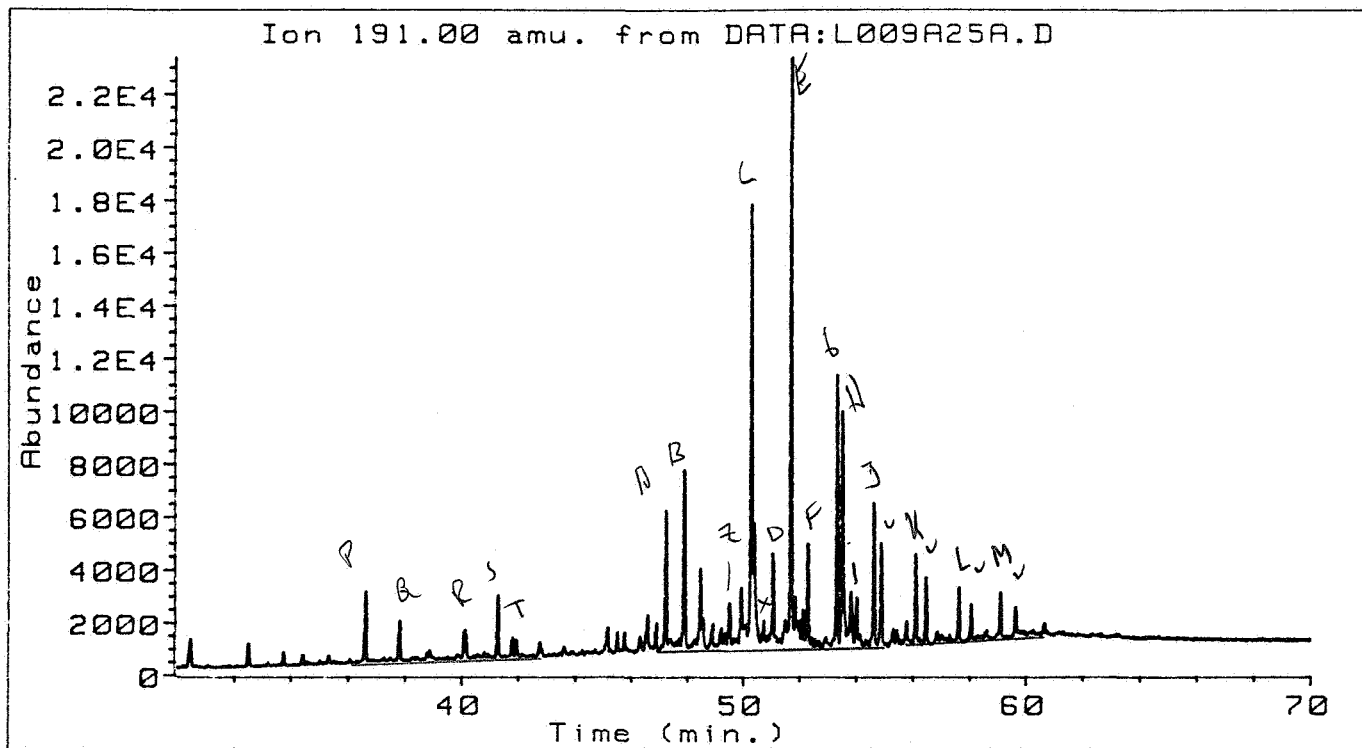
6407/7 2

2681.75 m



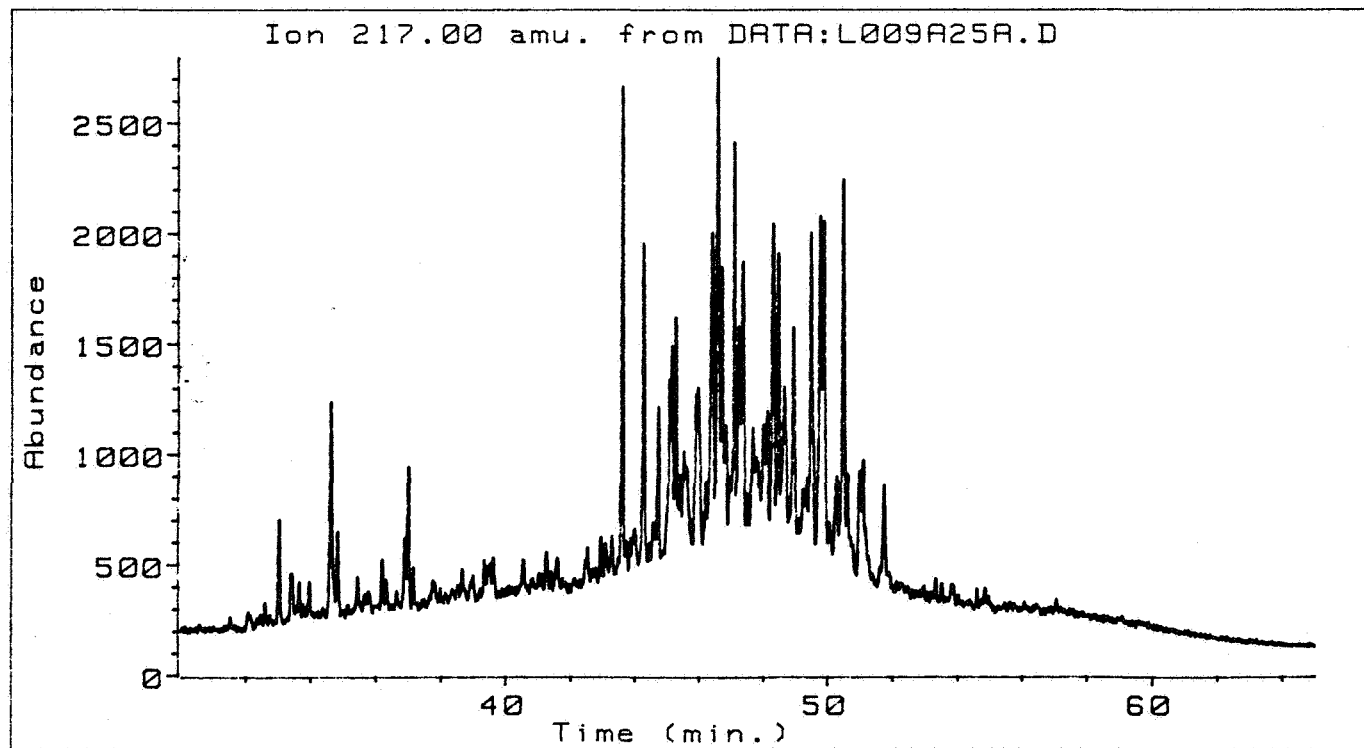
6407/7 2

2681.75 m



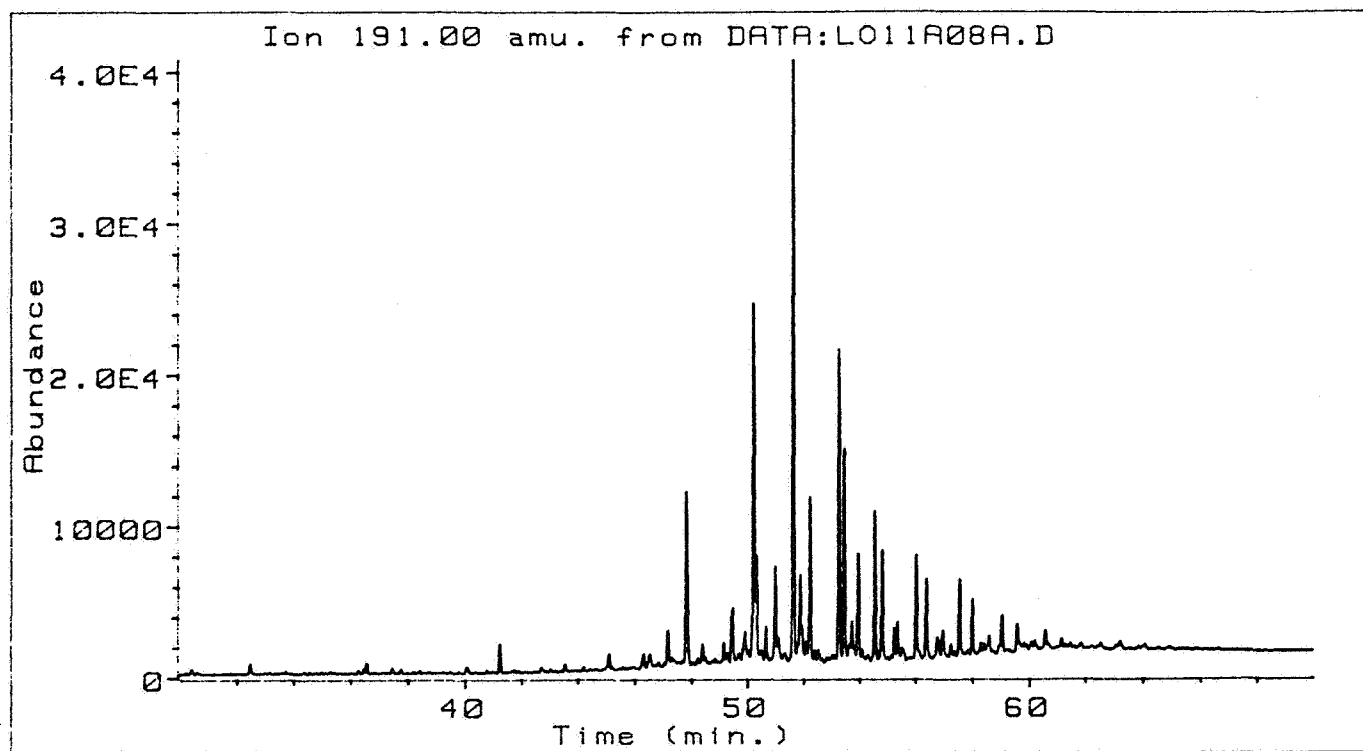
6407/7 2

2695 m



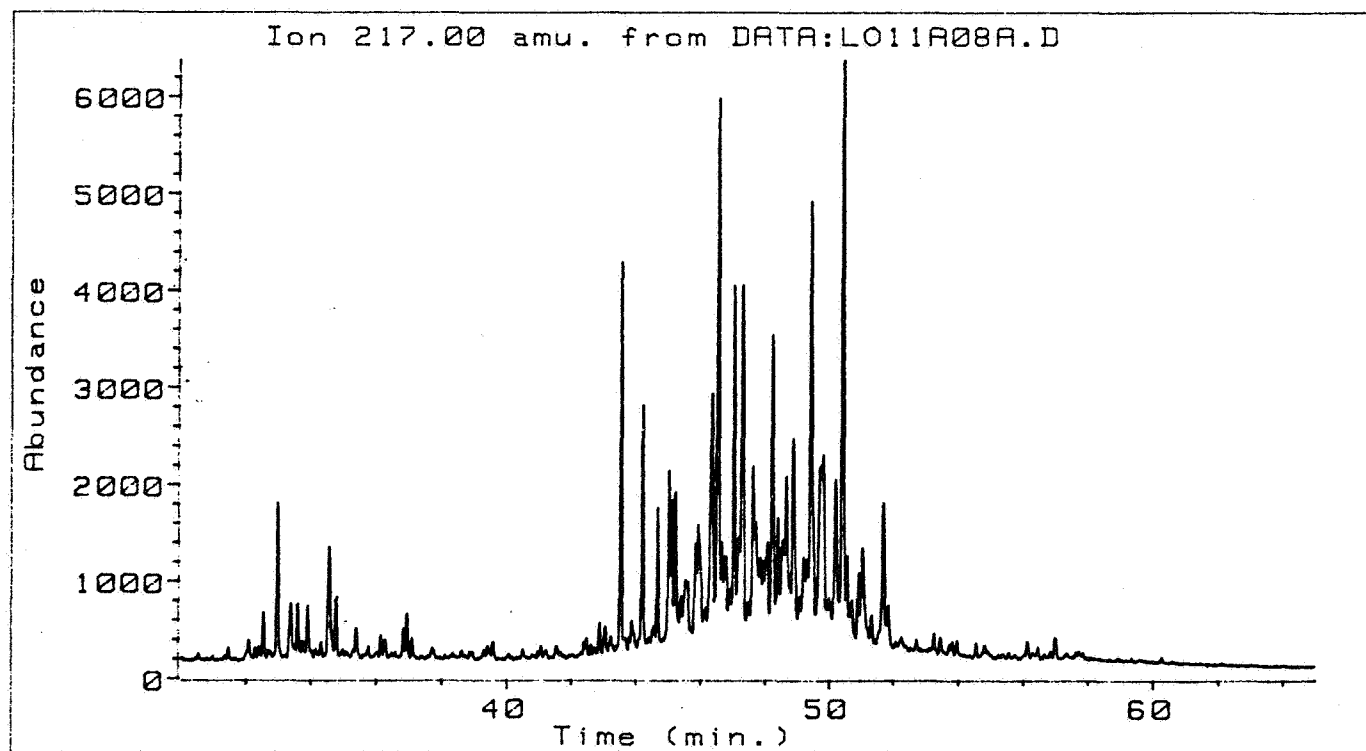
6407/7 2

2695 m



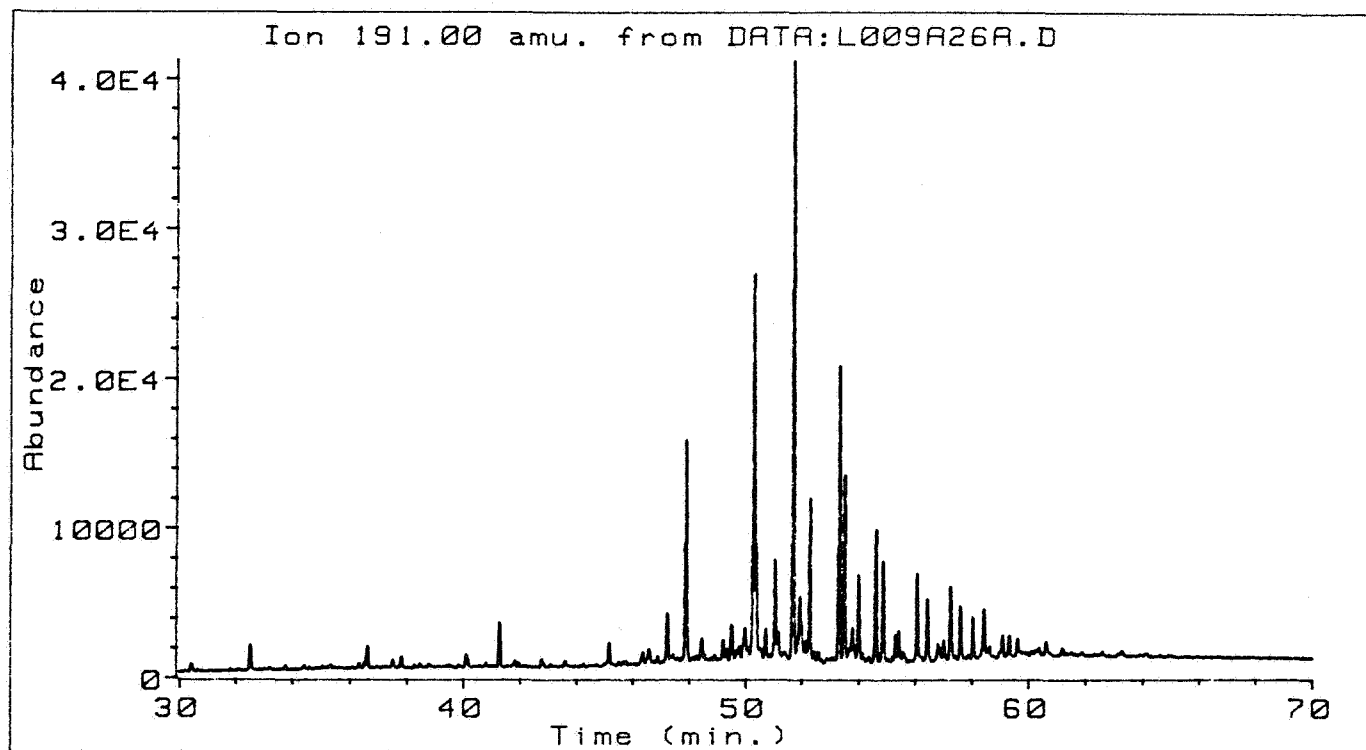
6407/7 2

2739.40 m



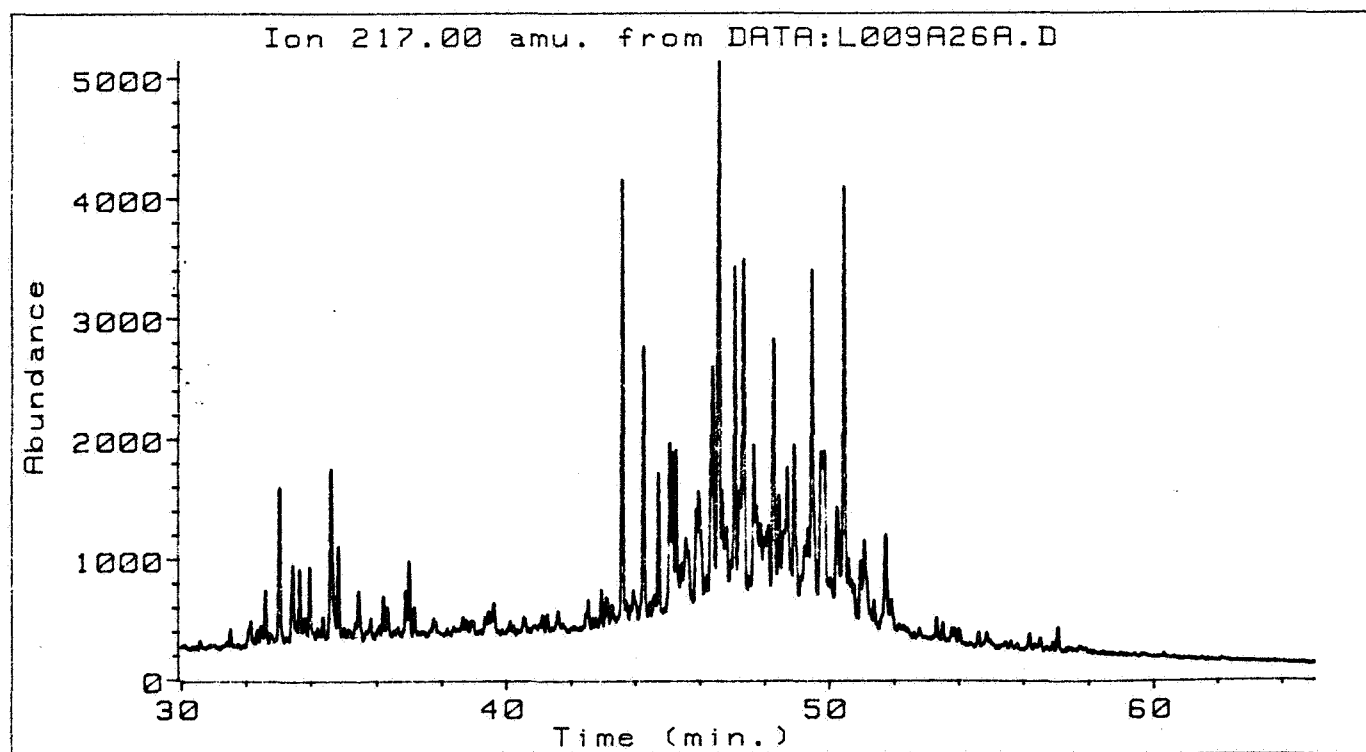
6407/7 2

2739.40 m



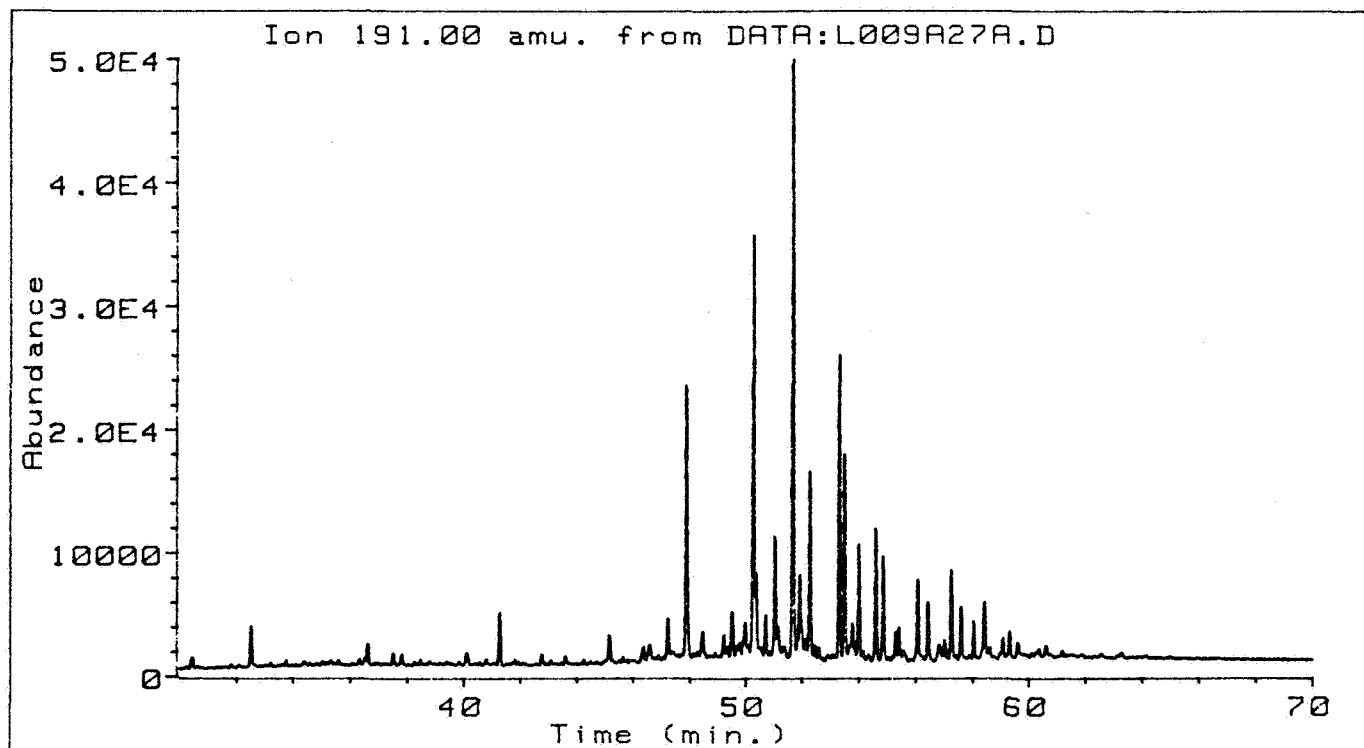
6407/7 2

2755 m



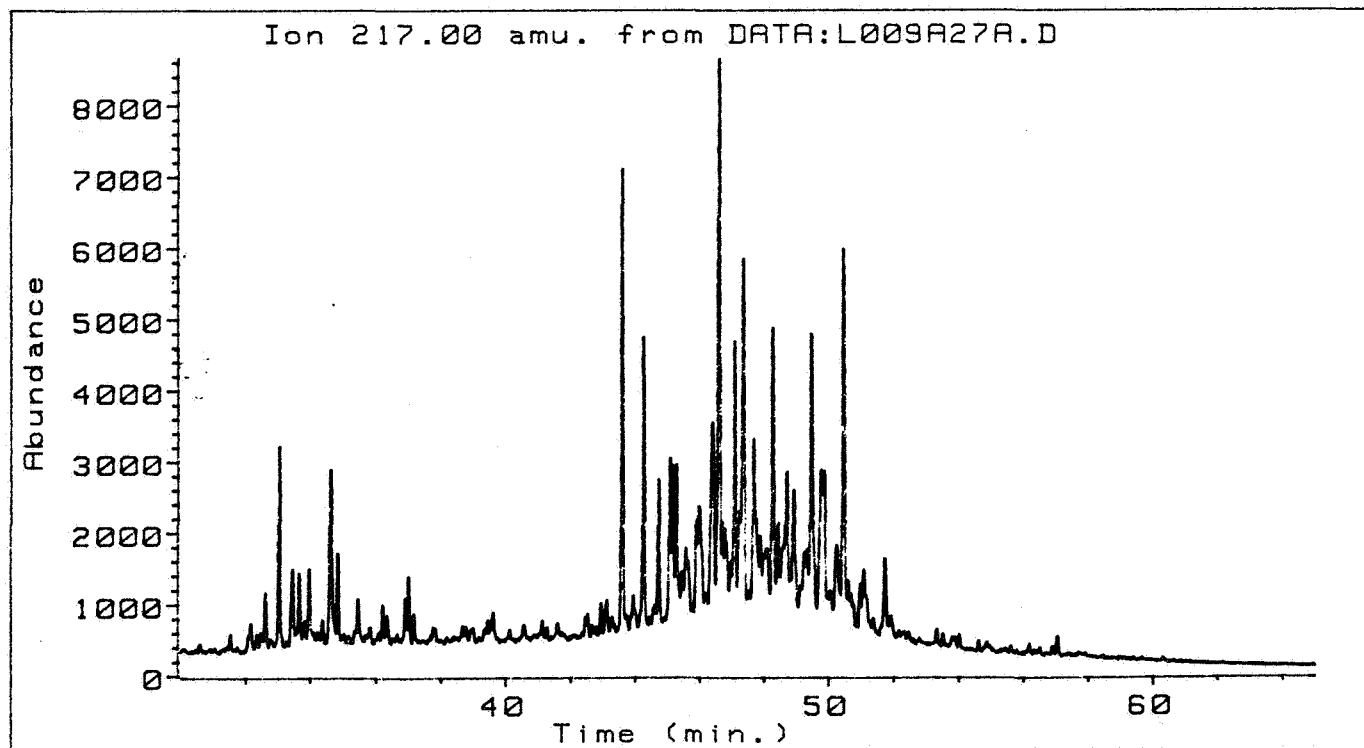
6407/7 2

2755 m



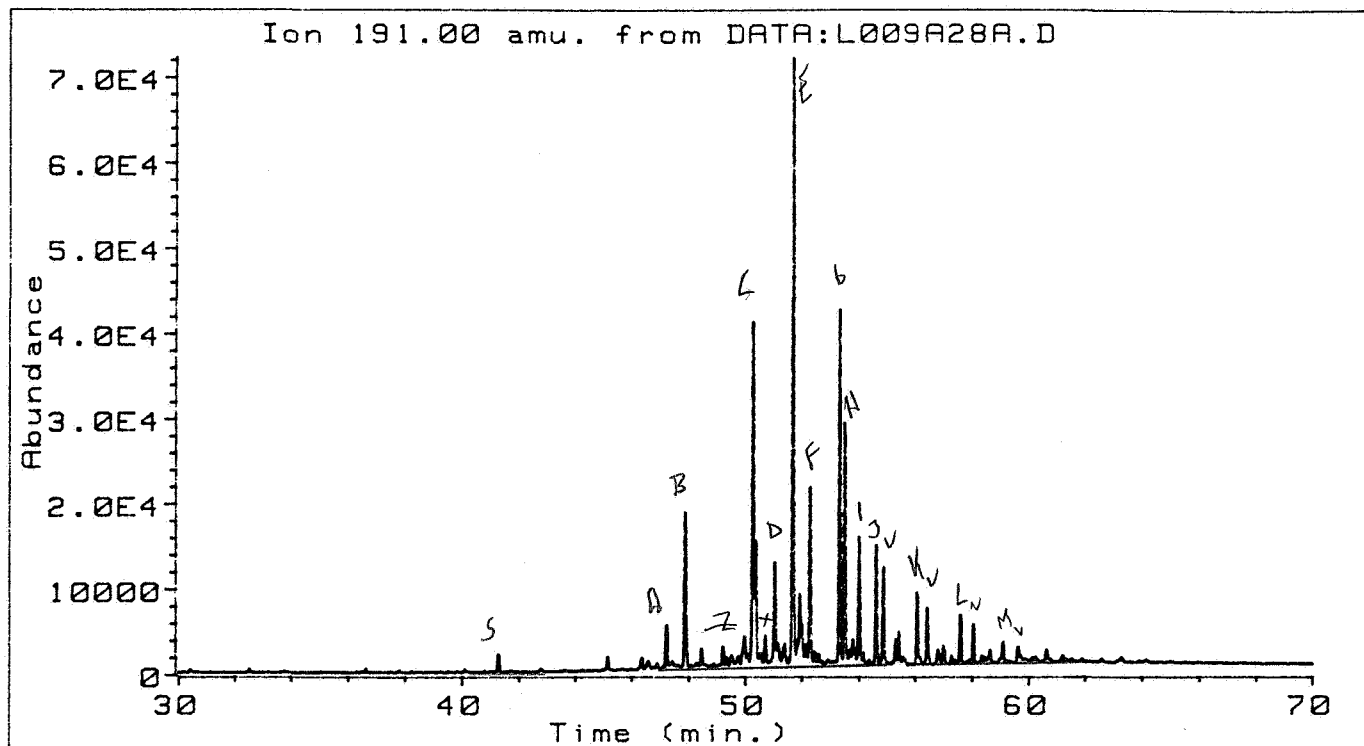
6407/7 2

2760 m



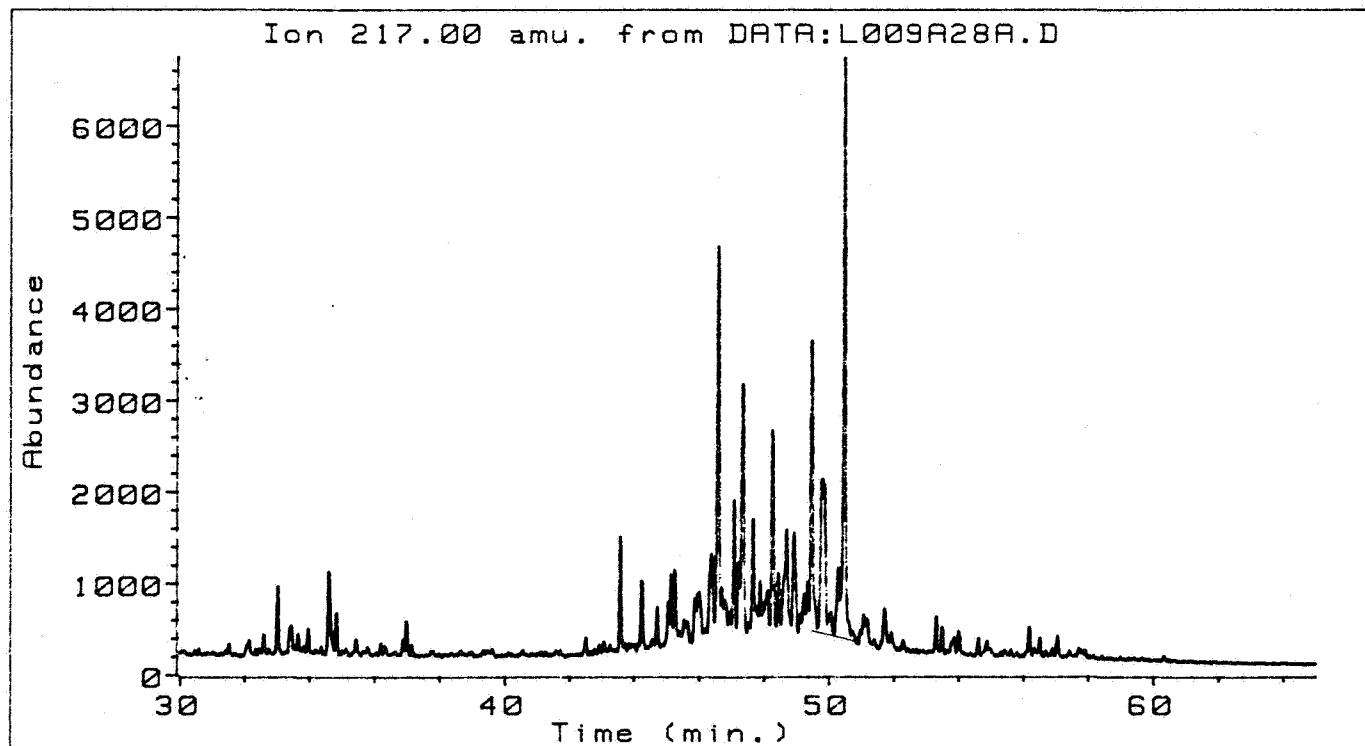
6407/7 2

2760 m



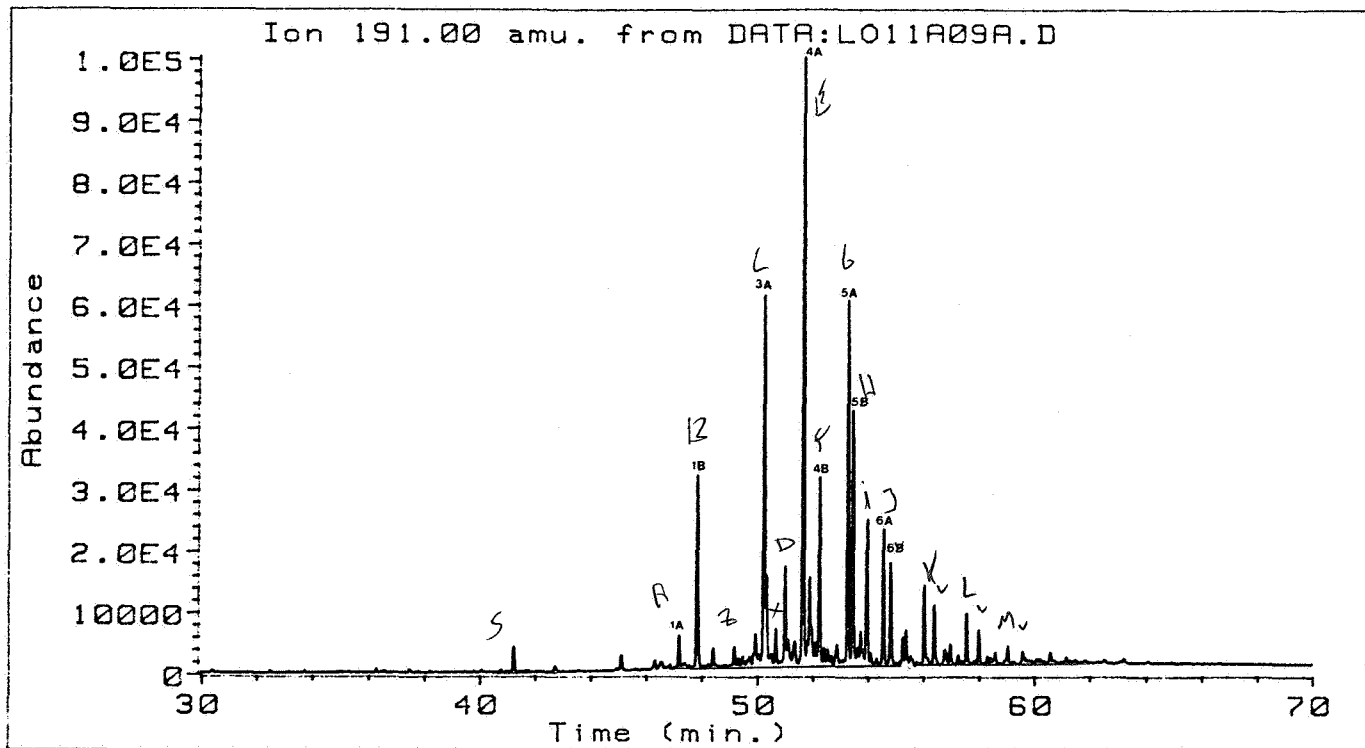
6407/7 2

2772 m



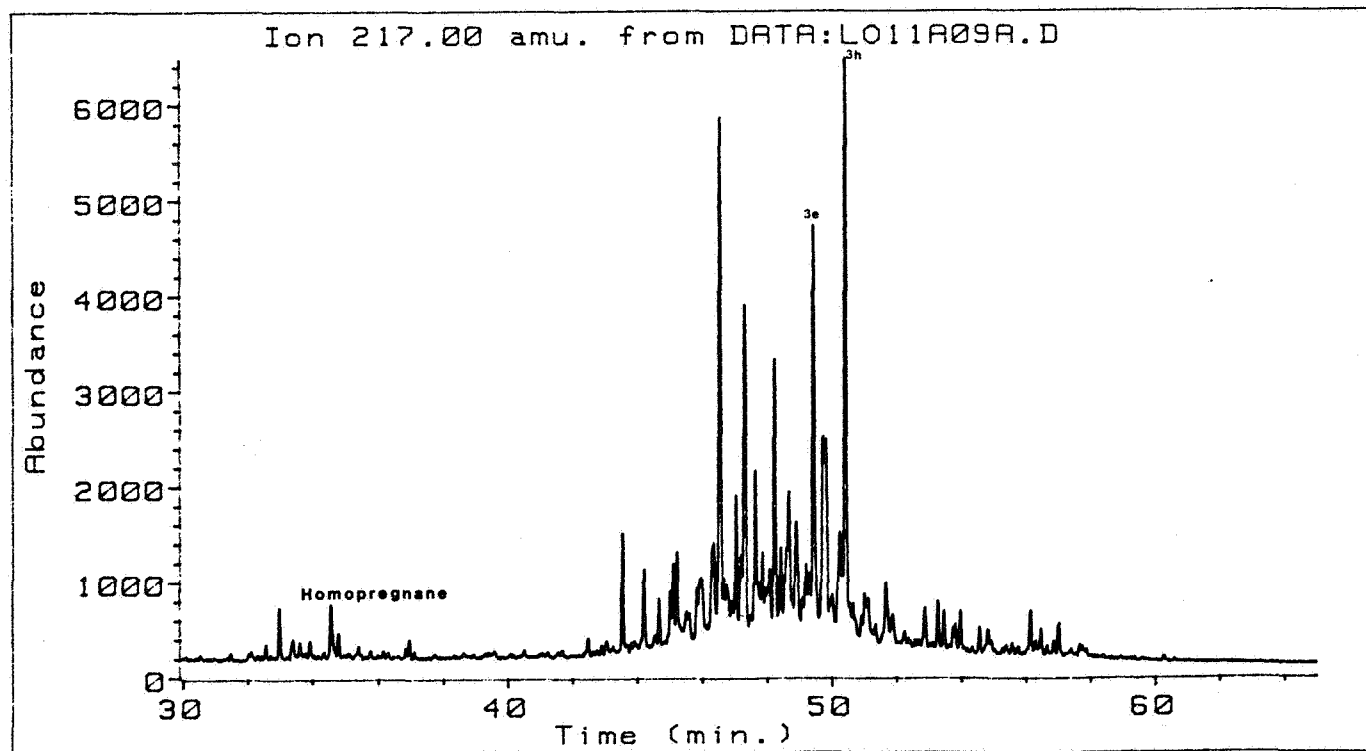
6407/7 2

2772 m



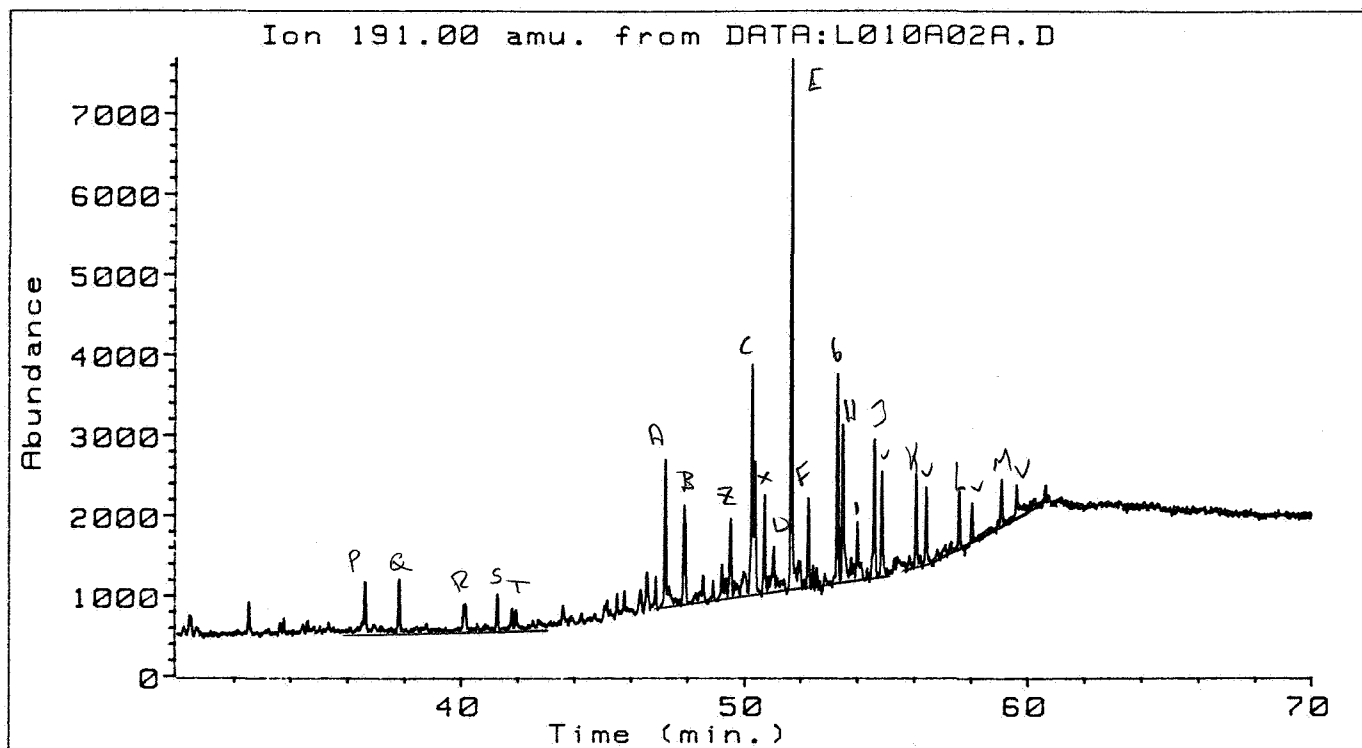
6407/7 2

2800.75 m



6407/7 2

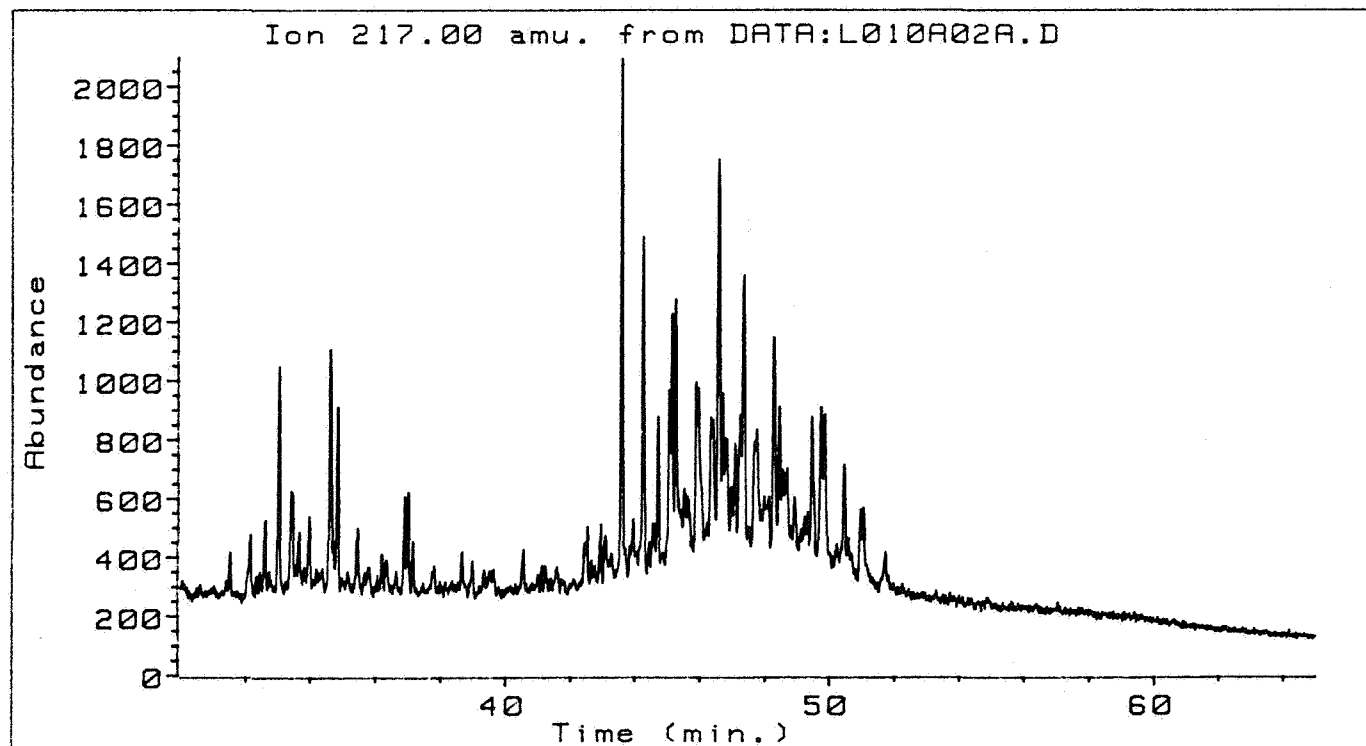
2800.75 m



1. 6407/7 2

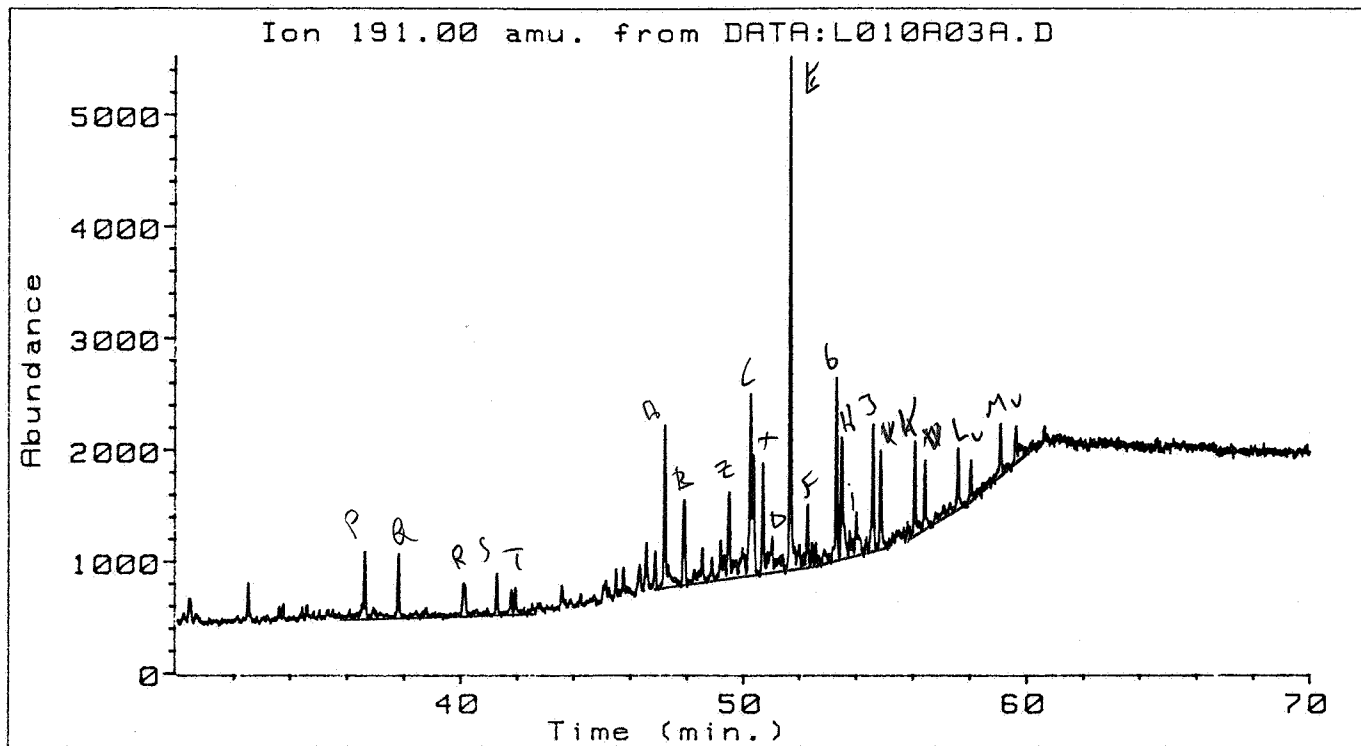
6407/7 2

2872 m



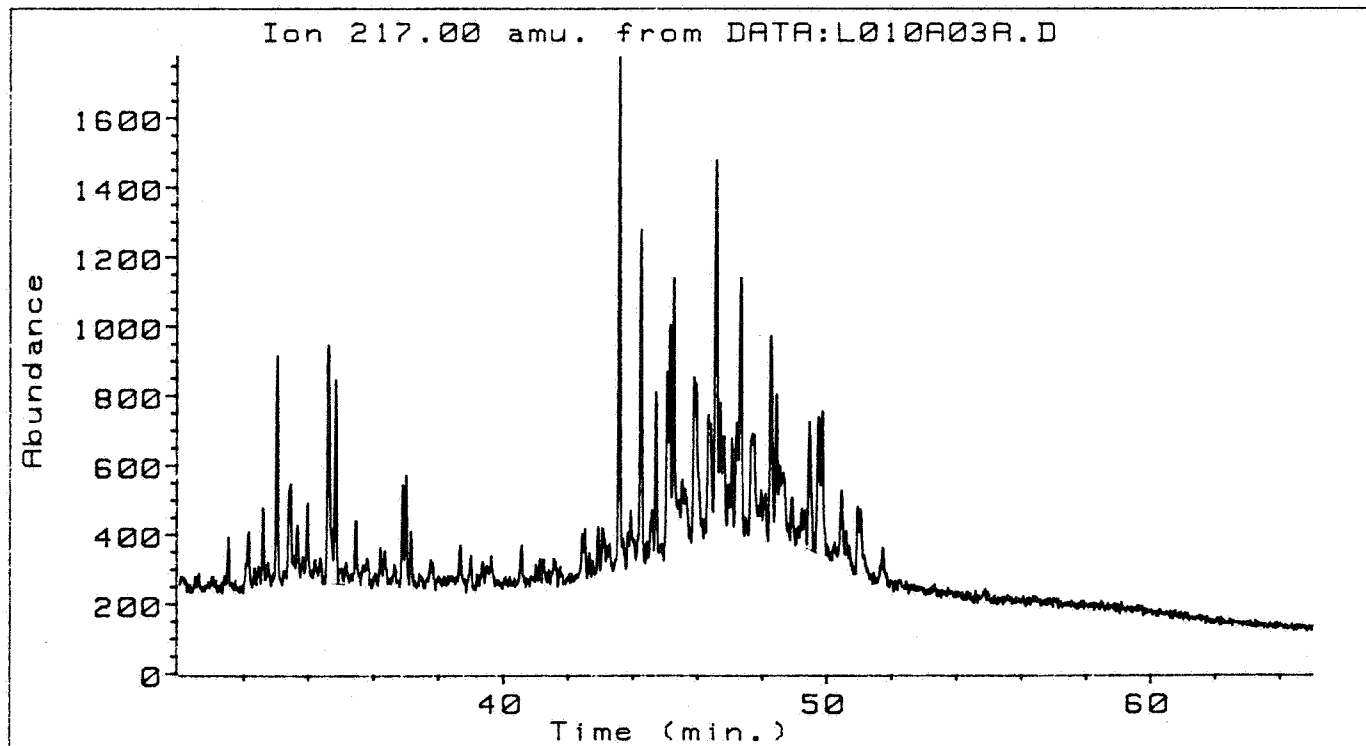
6407/7 2

2872 m



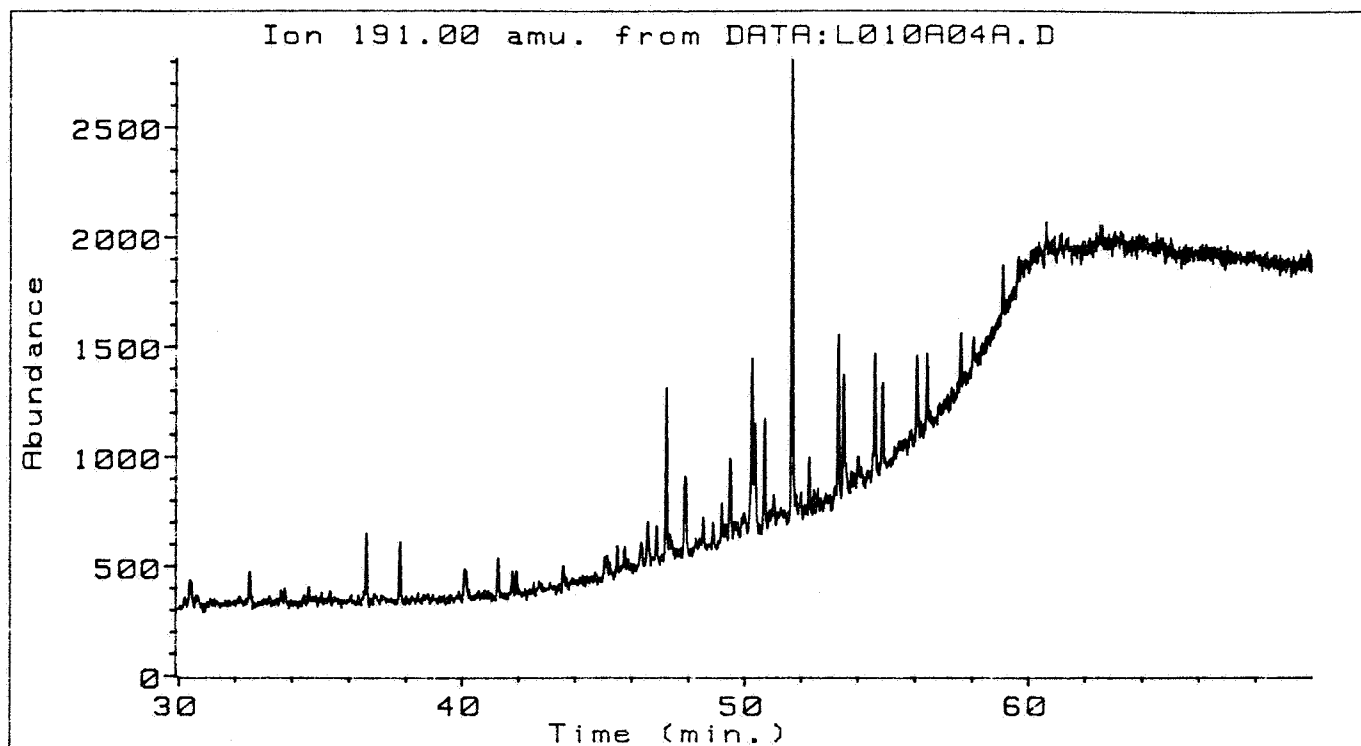
6407/7 2

2874 m



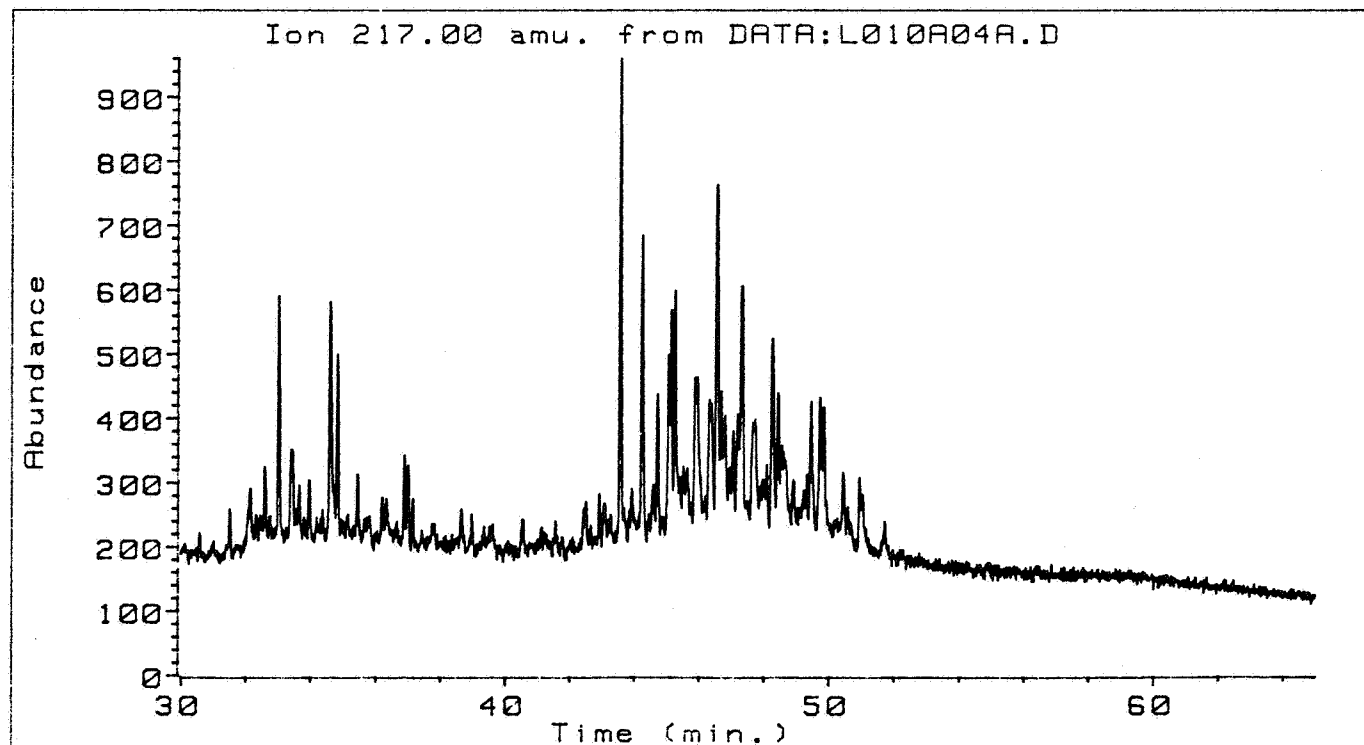
6407/7 2

2874 m



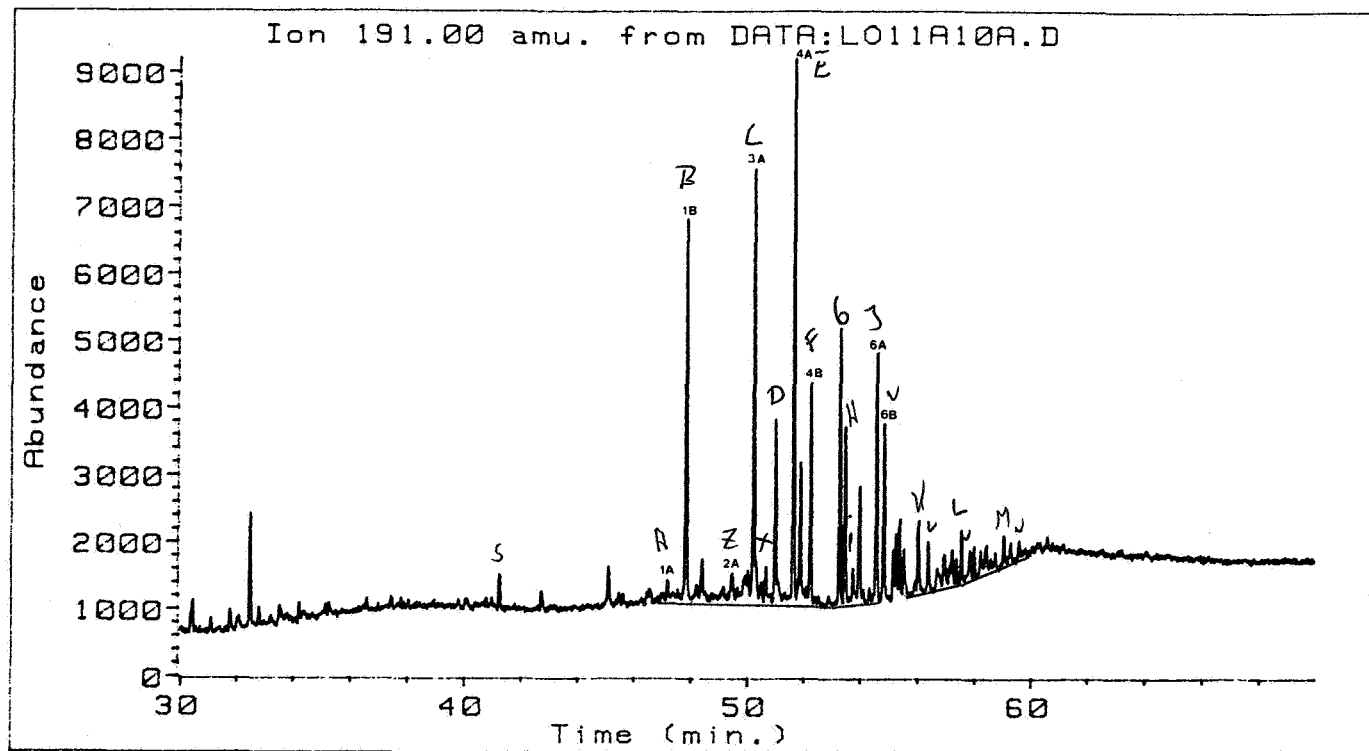
6407/7 2

2876 m



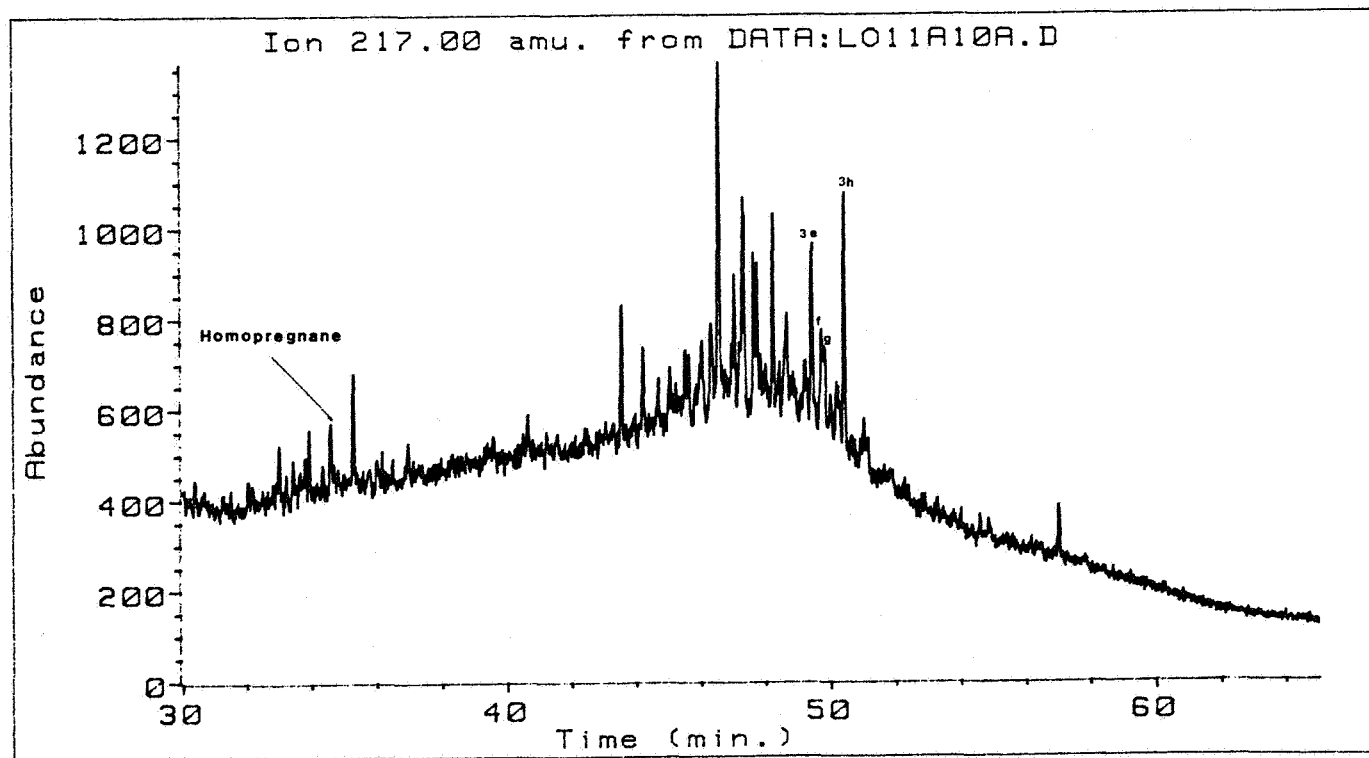
6407/7 2

2876 m



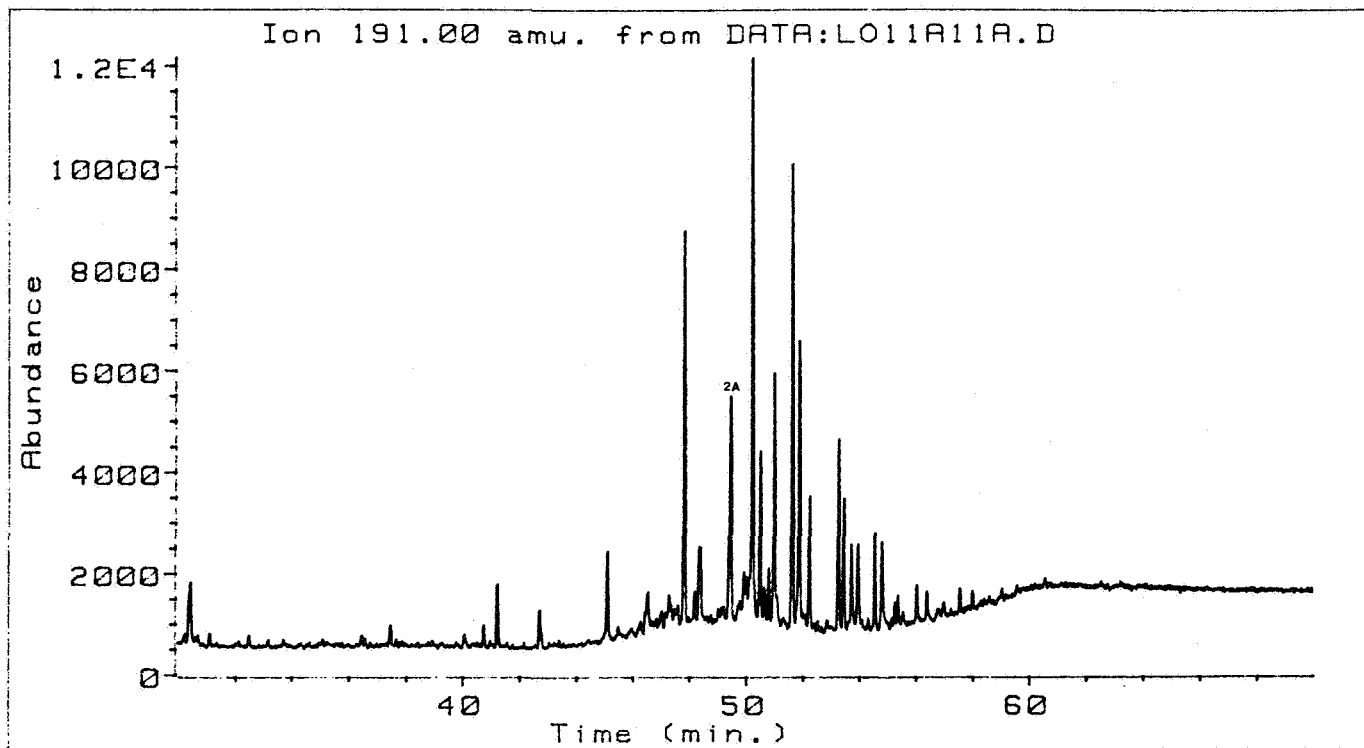
6407/7 2

2884.85 m COAL



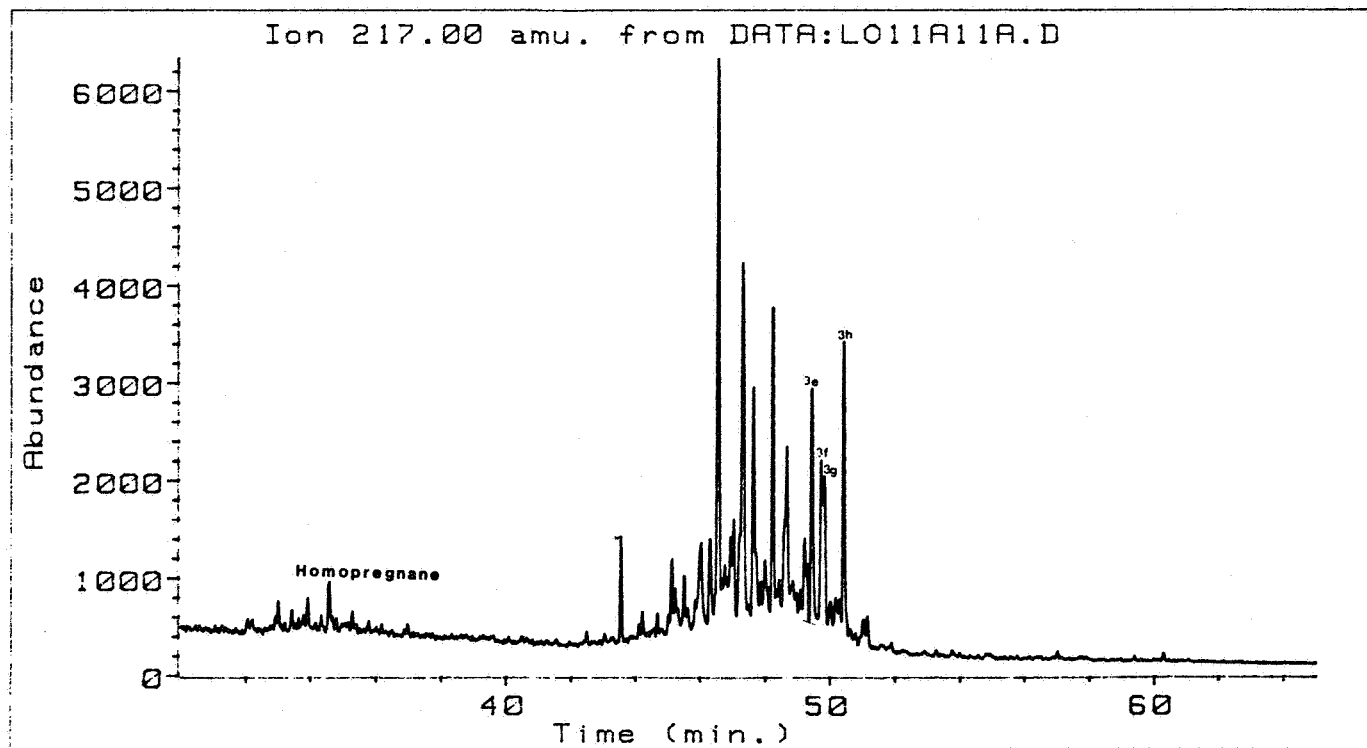
6407/7 2

2884.85 m COAL



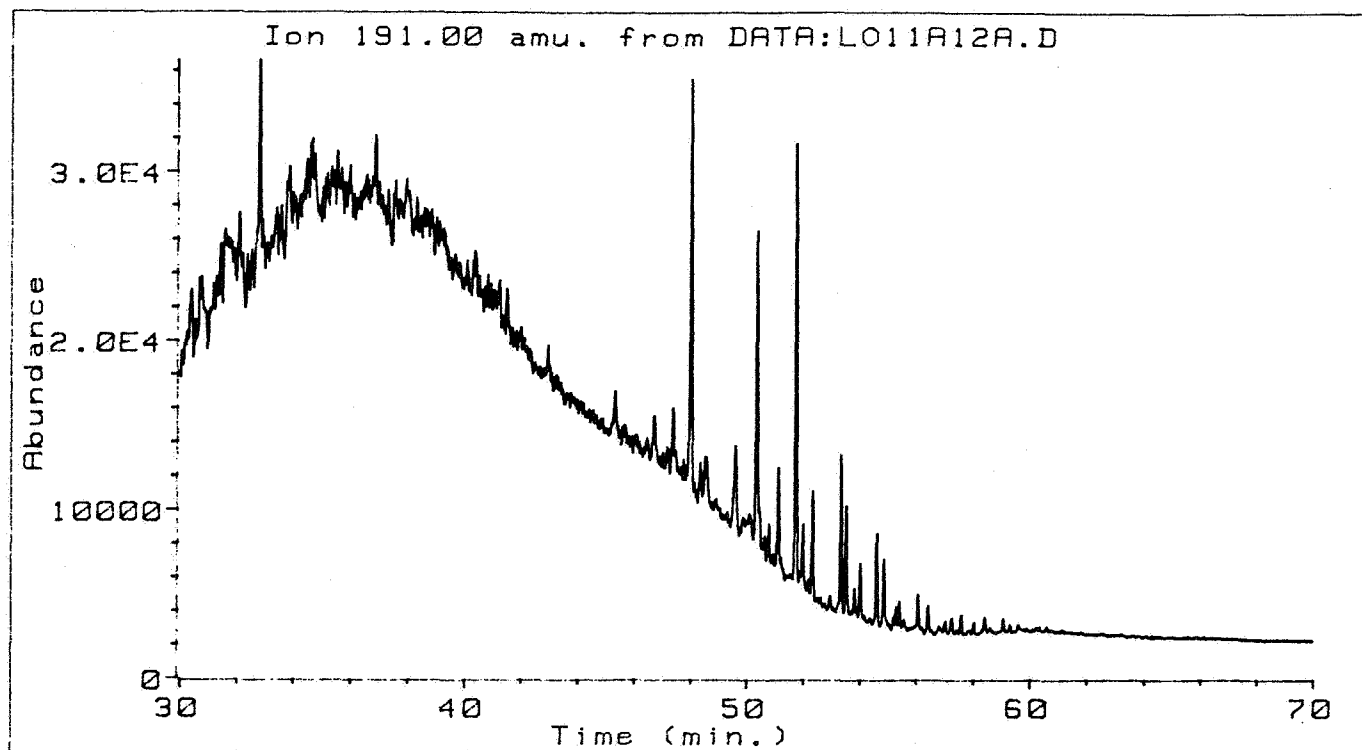
6407/7 2

2888.10 M COAL



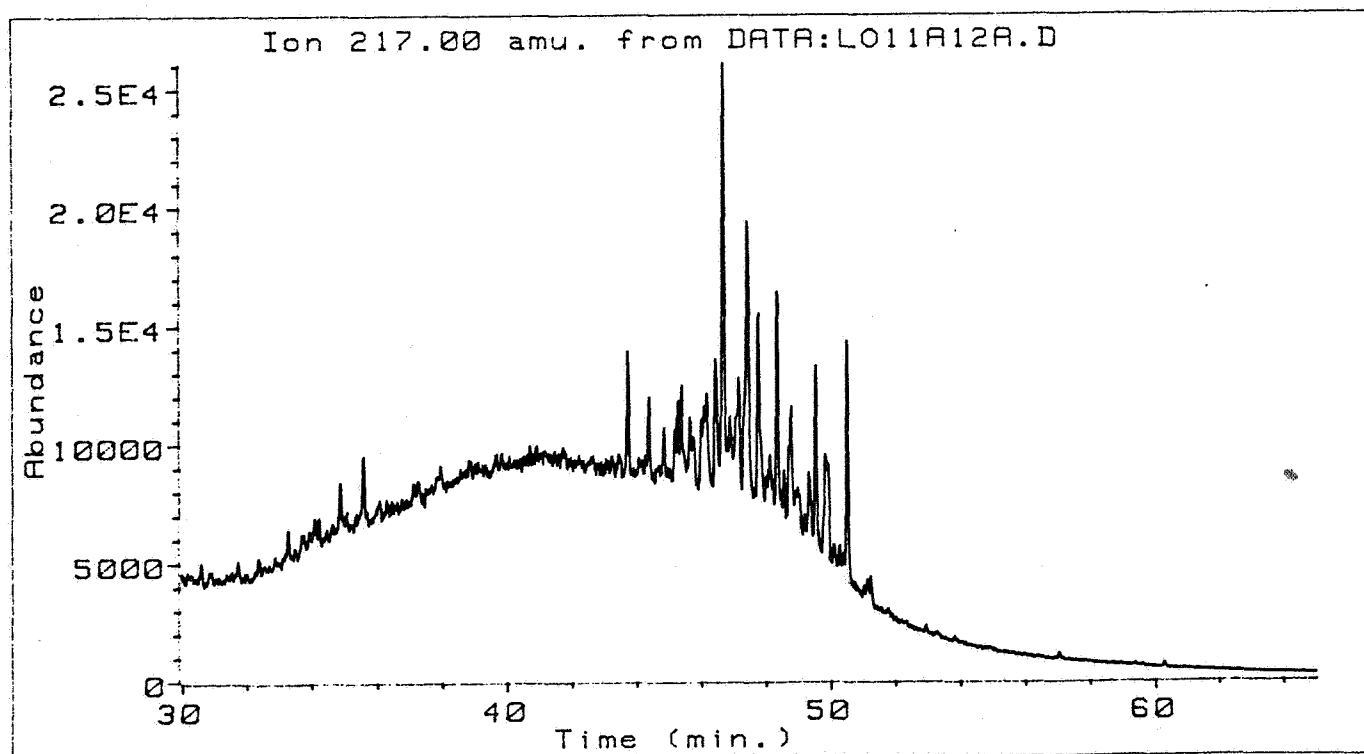
6407/7 2

2888.10 M COAL



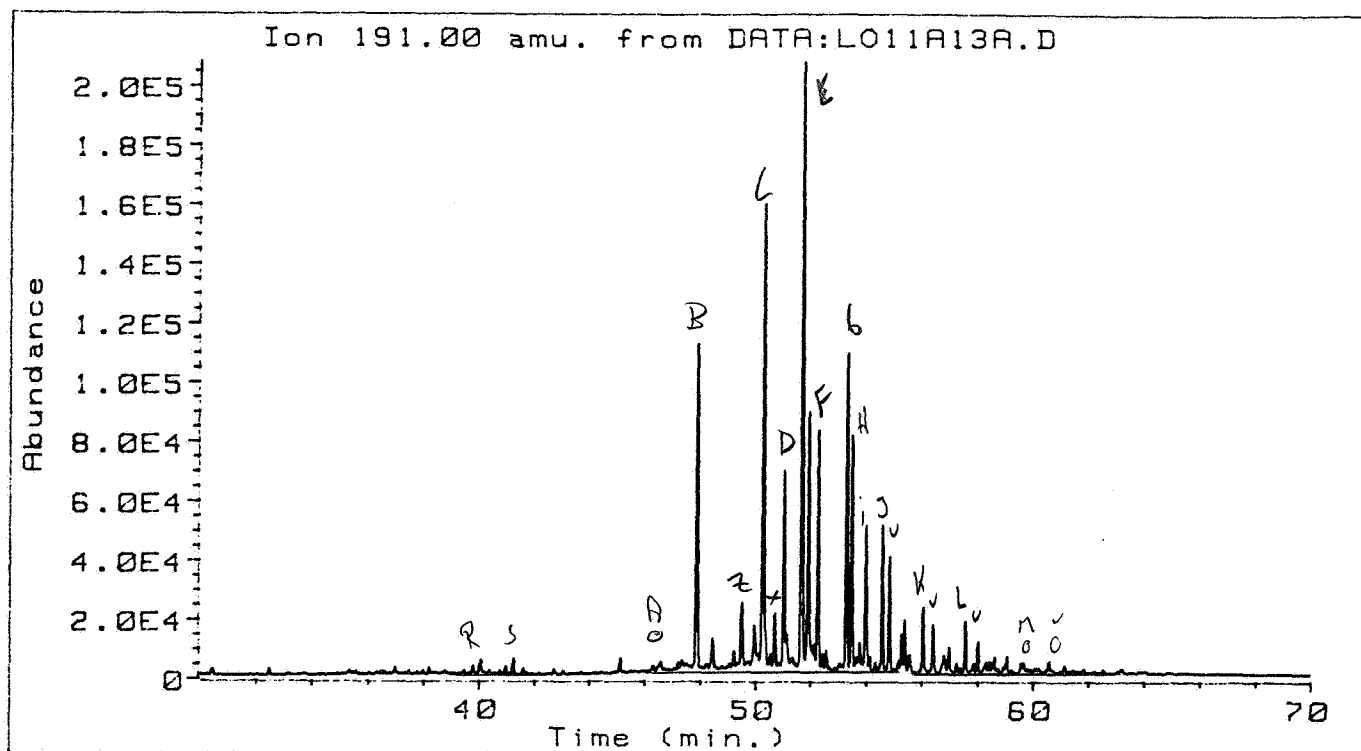
6407/7 2

2905.30 m COAL



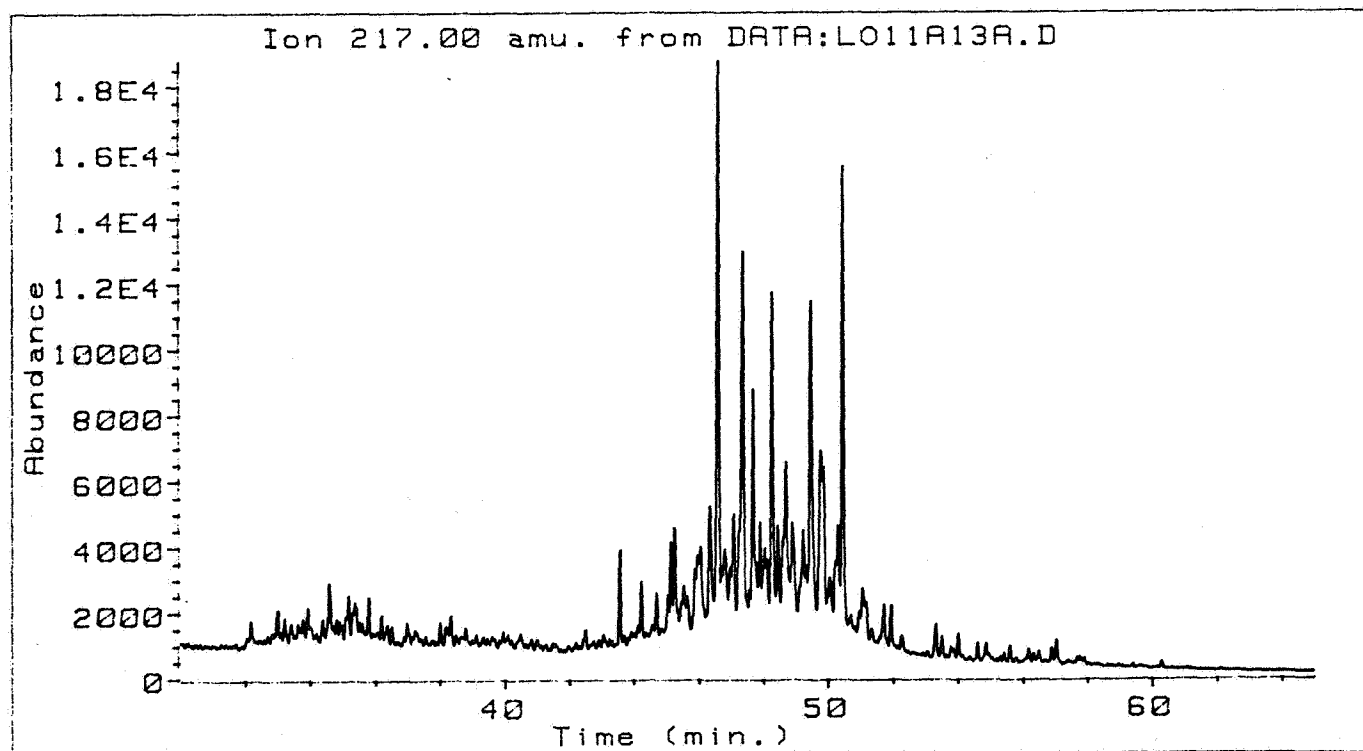
6407/7 2

2905.30 m COAL



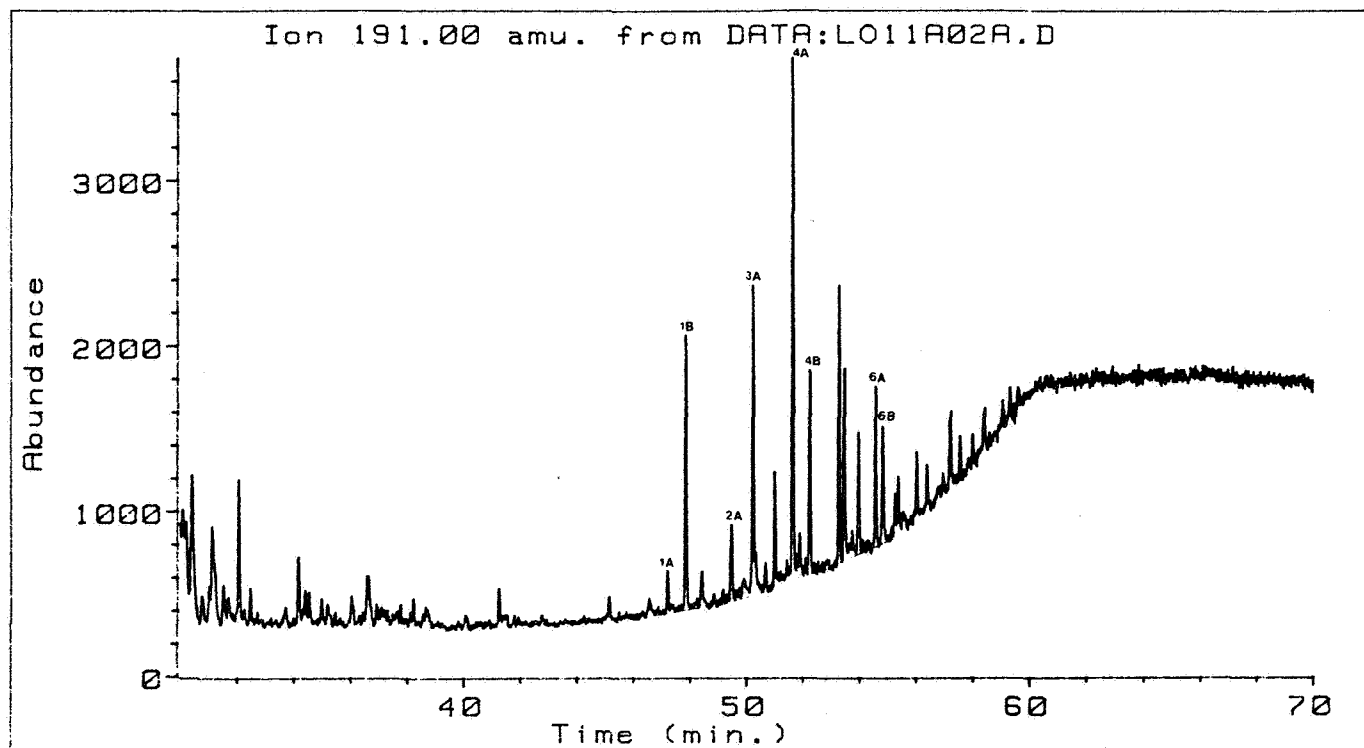
6407/7 2

2913 m COAL



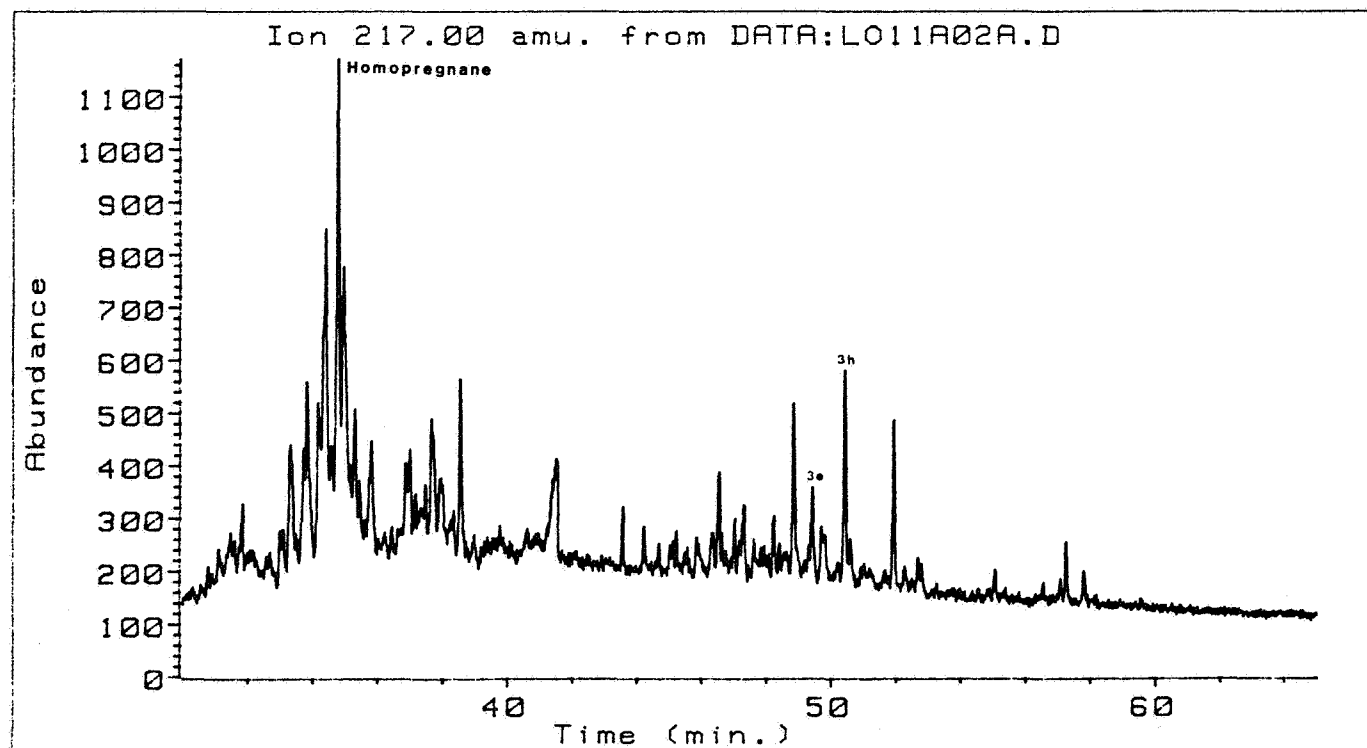
6407/7 2

2913 m COAL



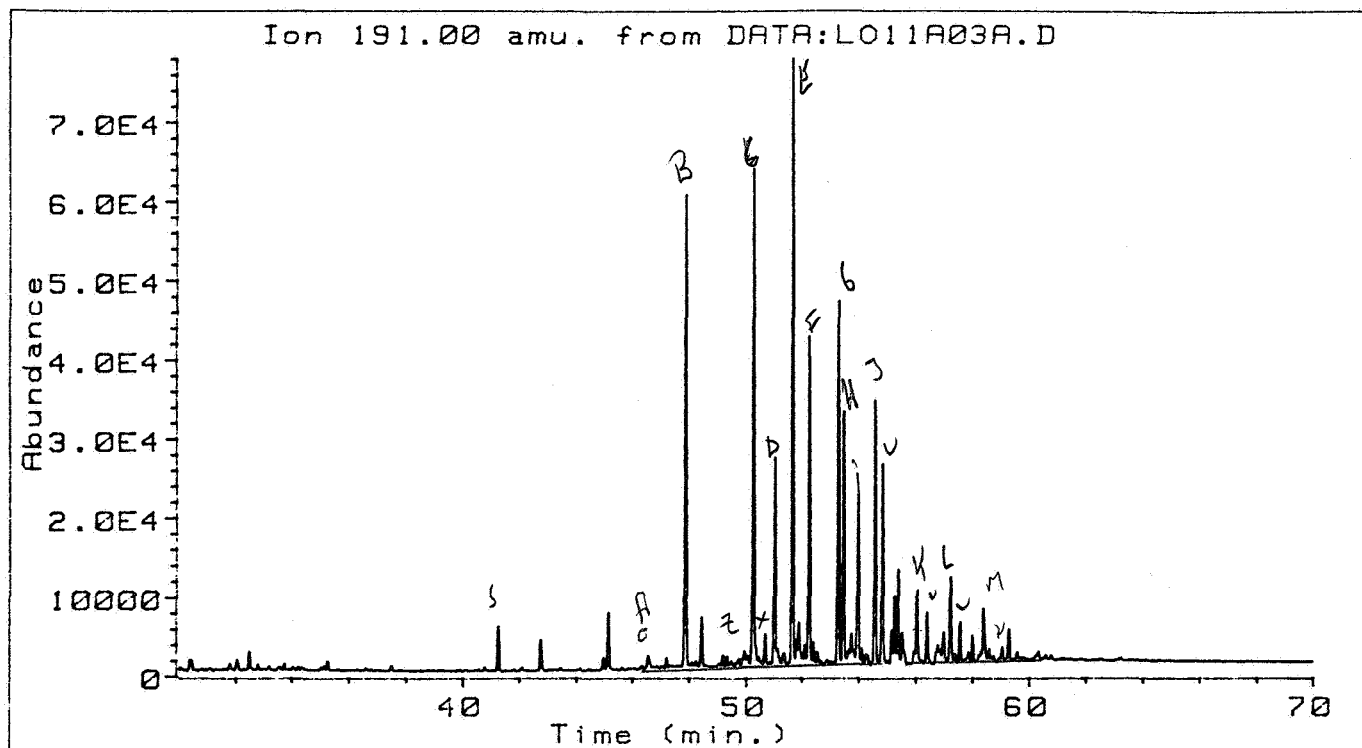
6407/7 2

2923 m C5 EOM



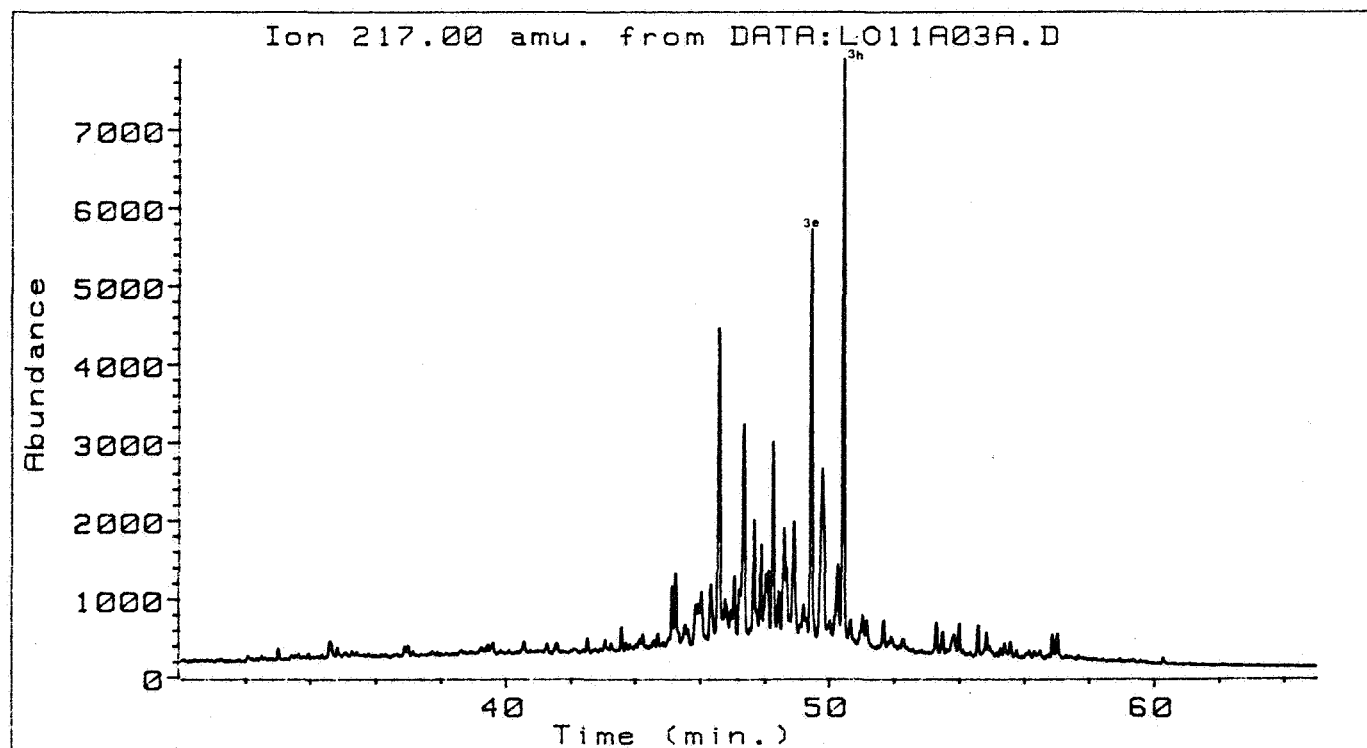
6407/7 2

2923 m C5 EOM



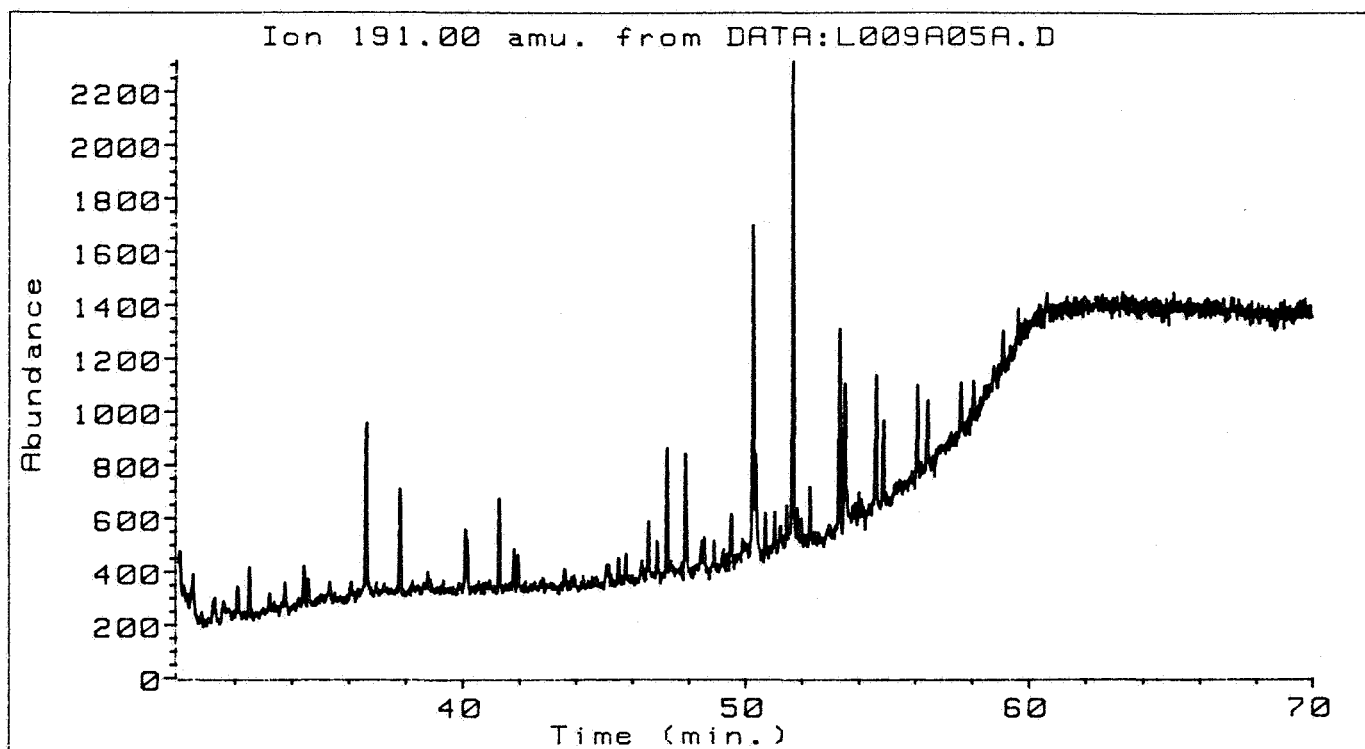
6407/7 2

2934 m



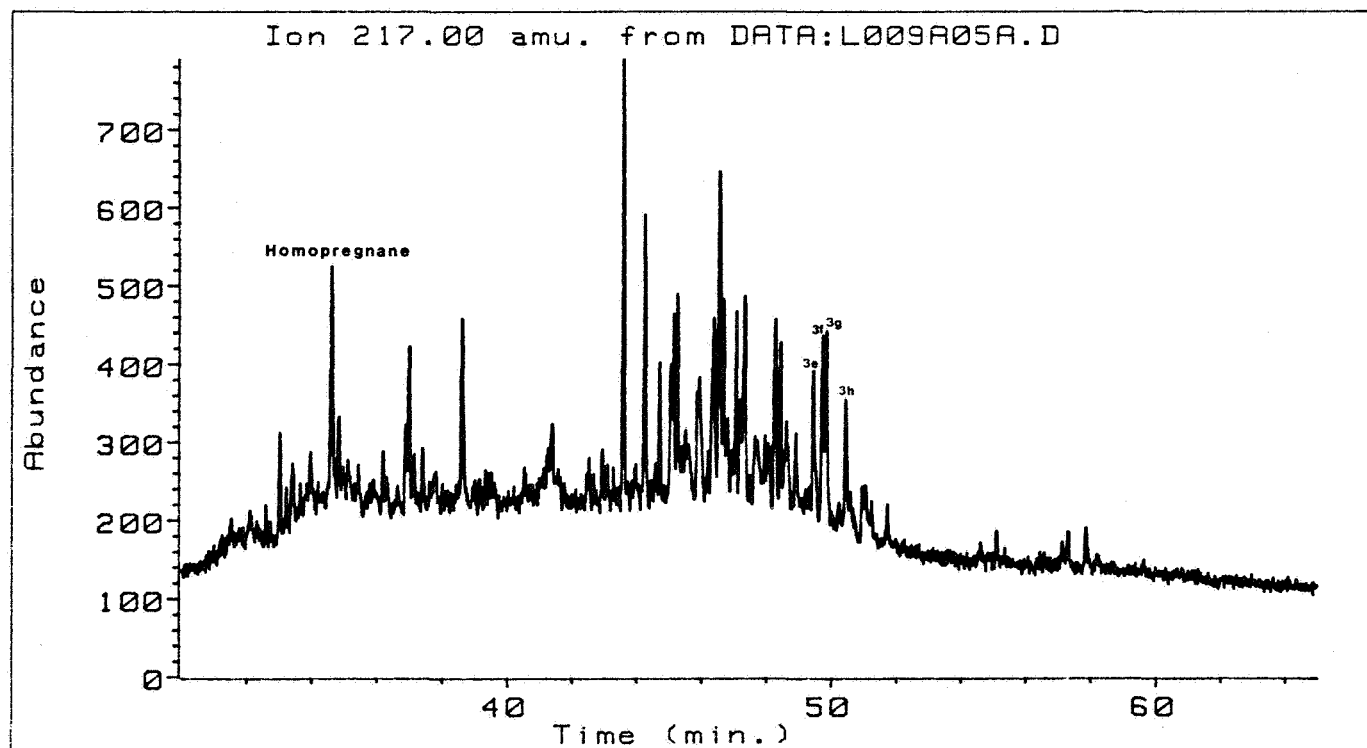
6407/7 2

2934 m



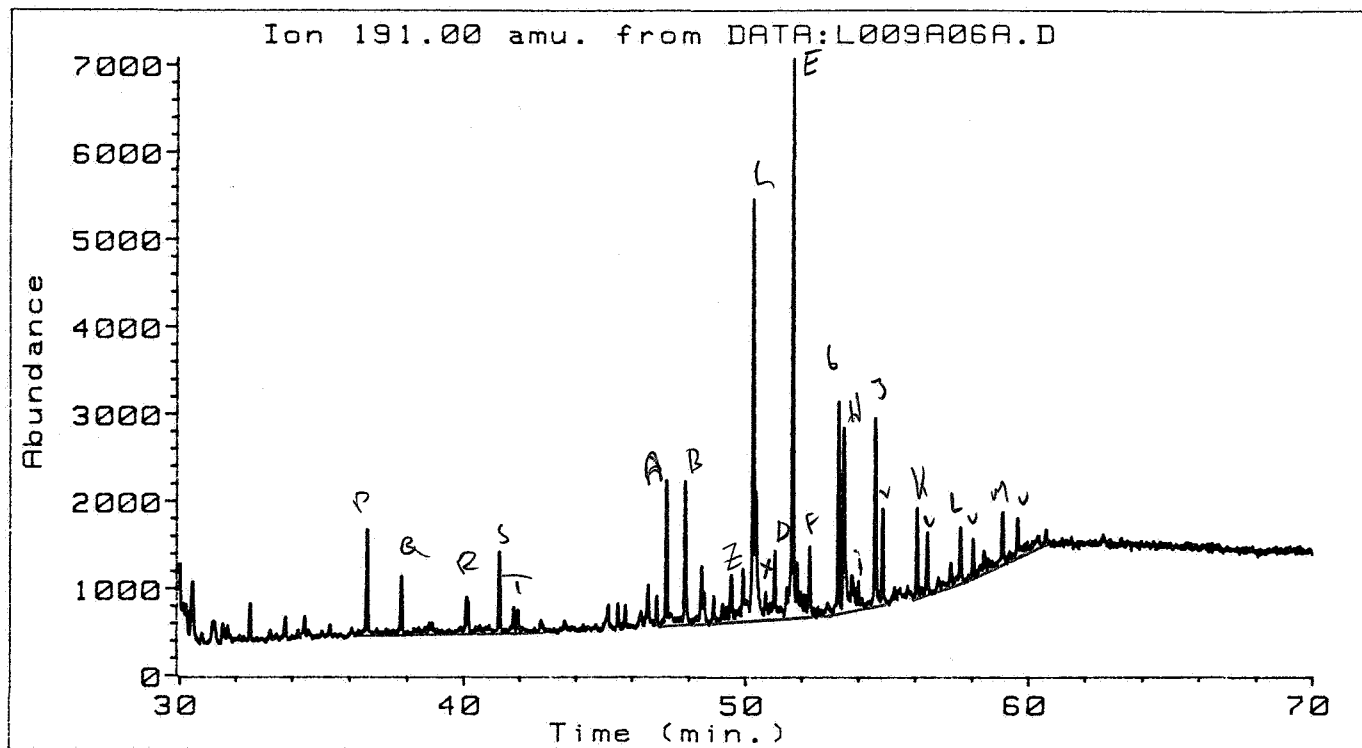
6407/7 2

2952 m Tot EOM



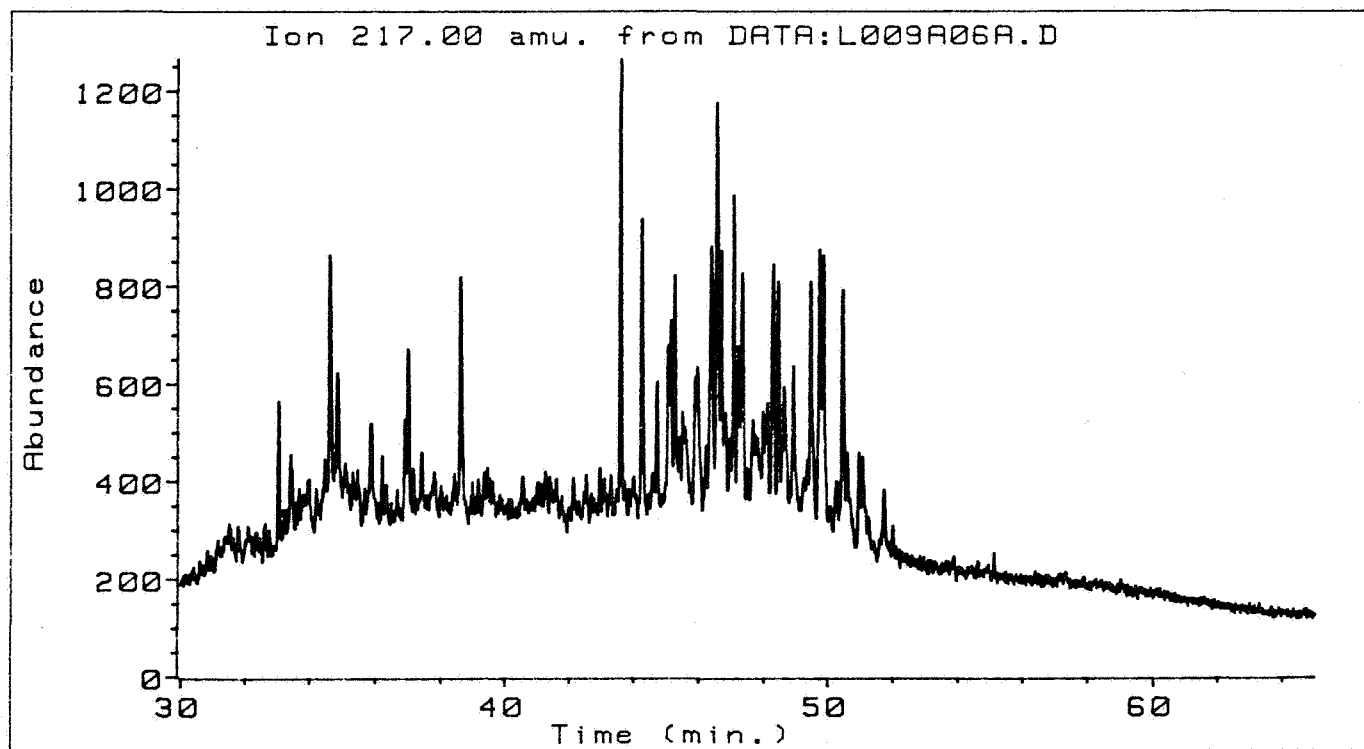
6407/7 2

2952 m Tot EOM



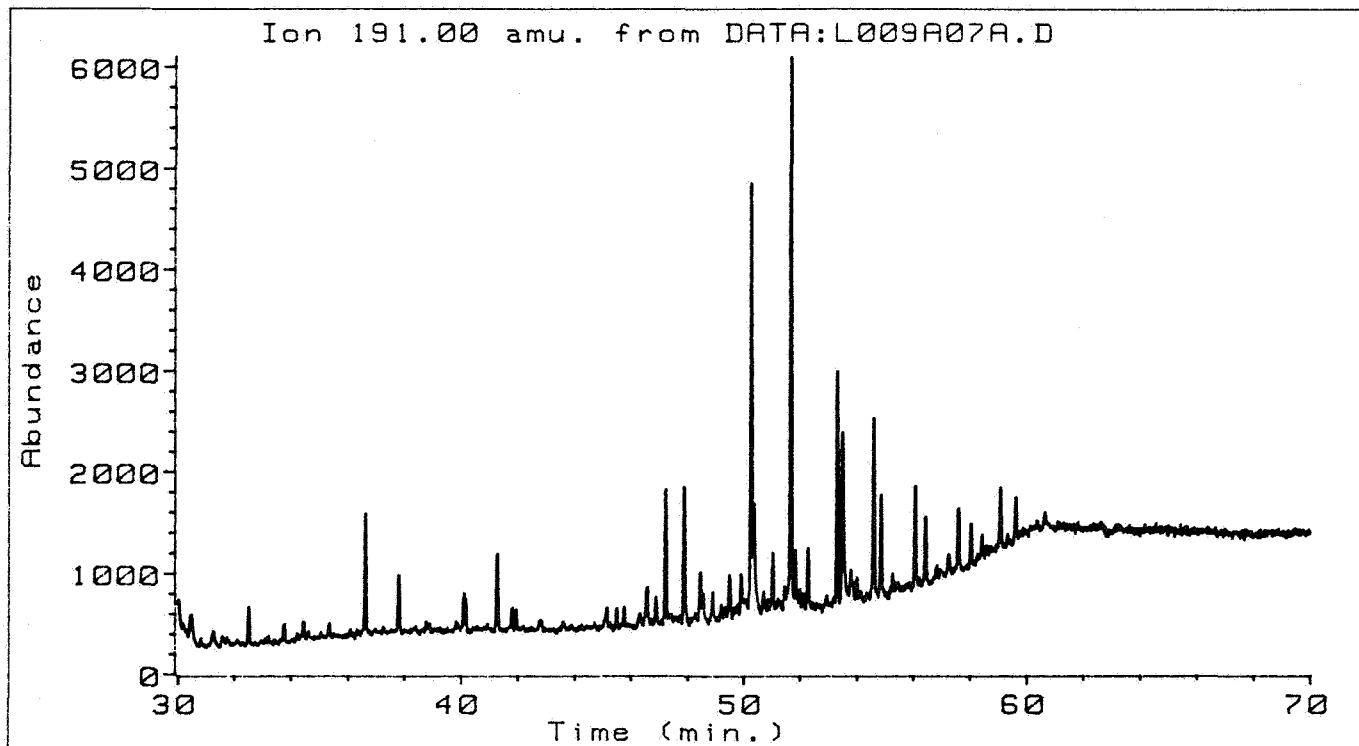
6407/7 2

3032 m Tot EOM



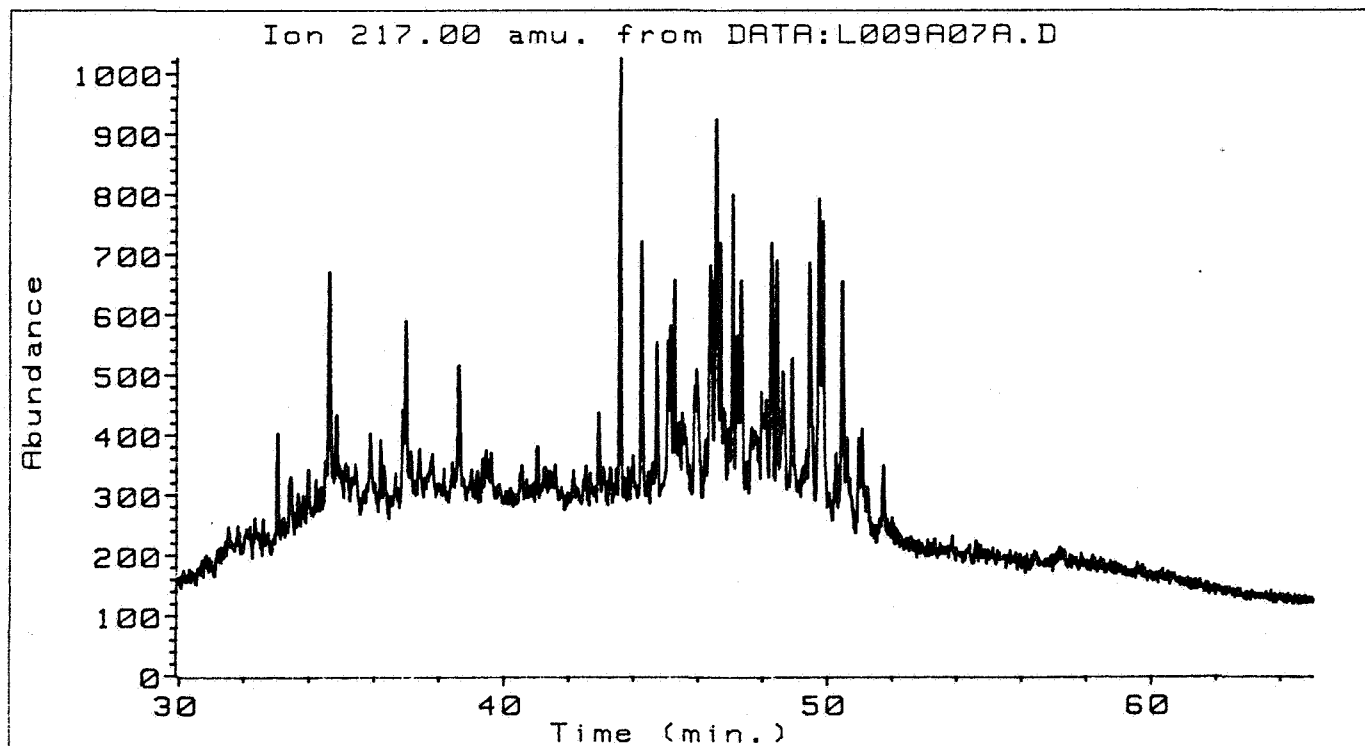
6407/7 2

3032 m Tot EOM



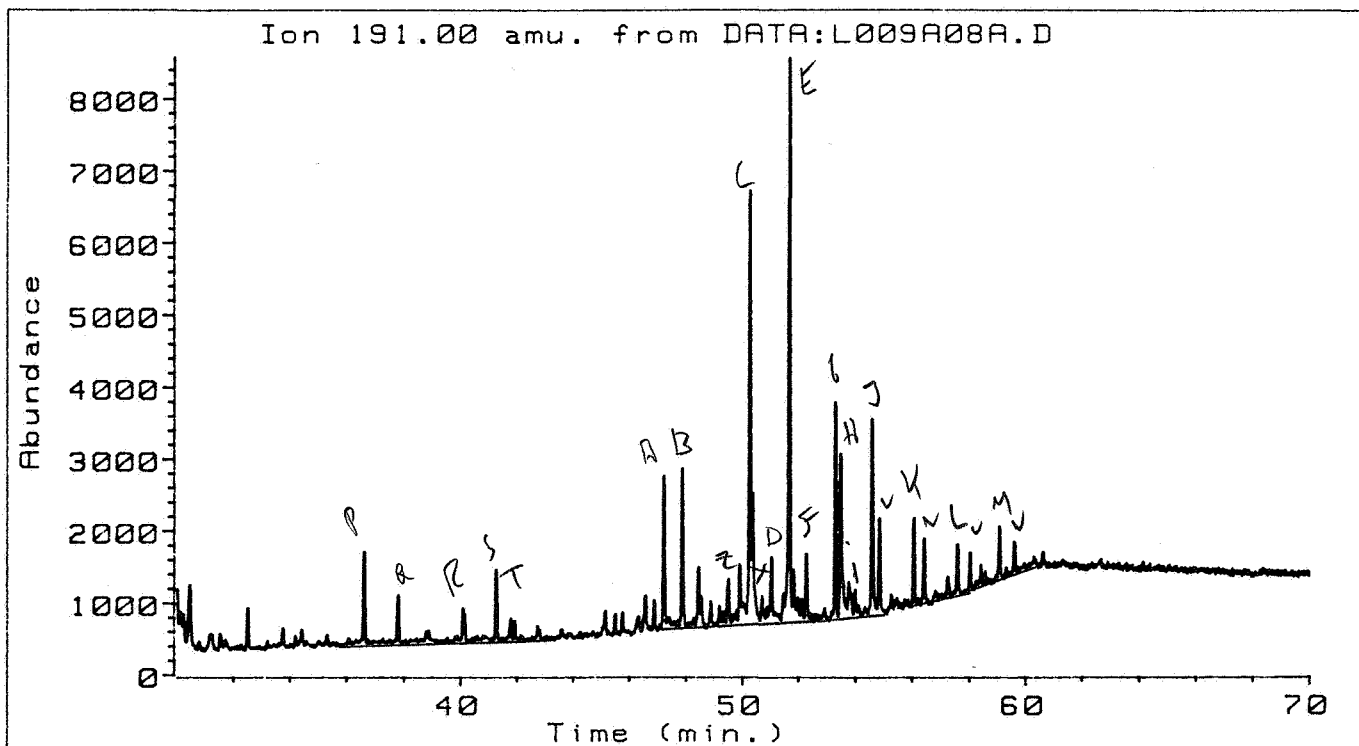
6407/7 2

3109.50 m Tot EOM



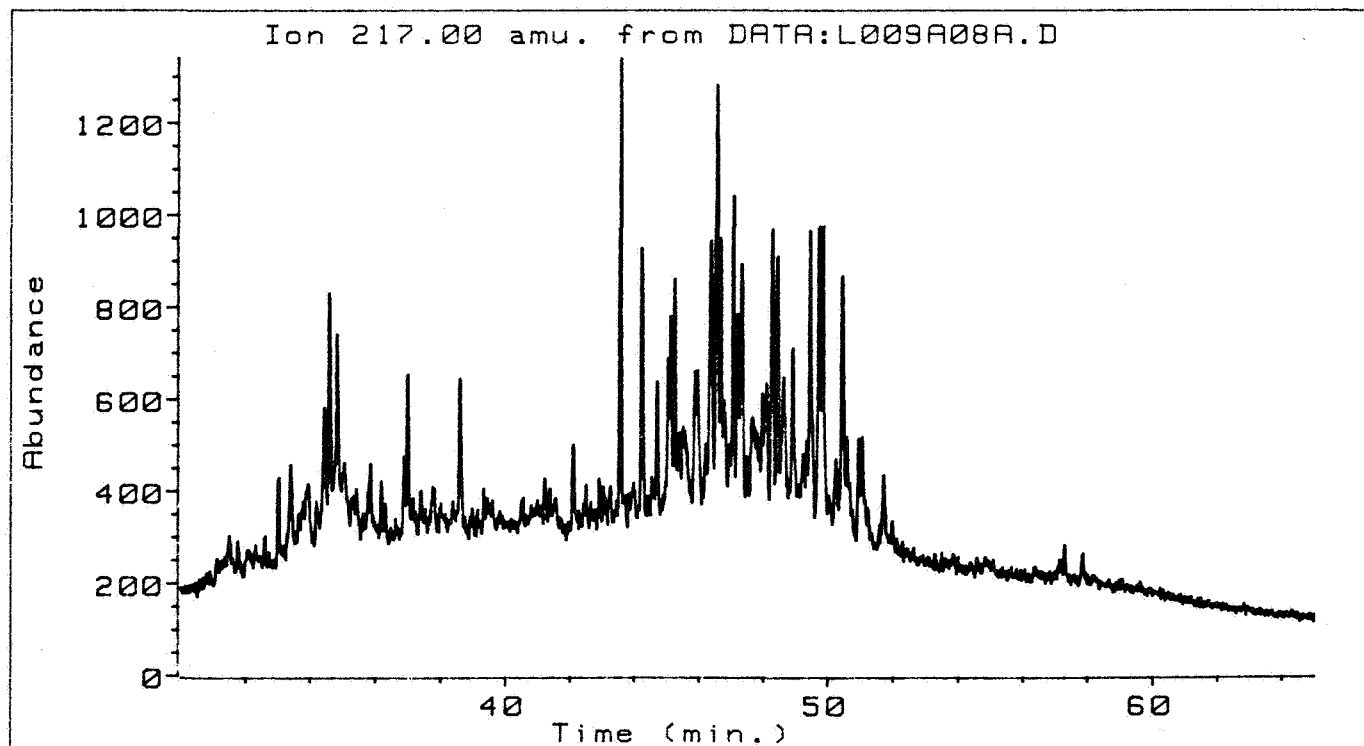
6407/7 2

3109.50 m Tot EOM



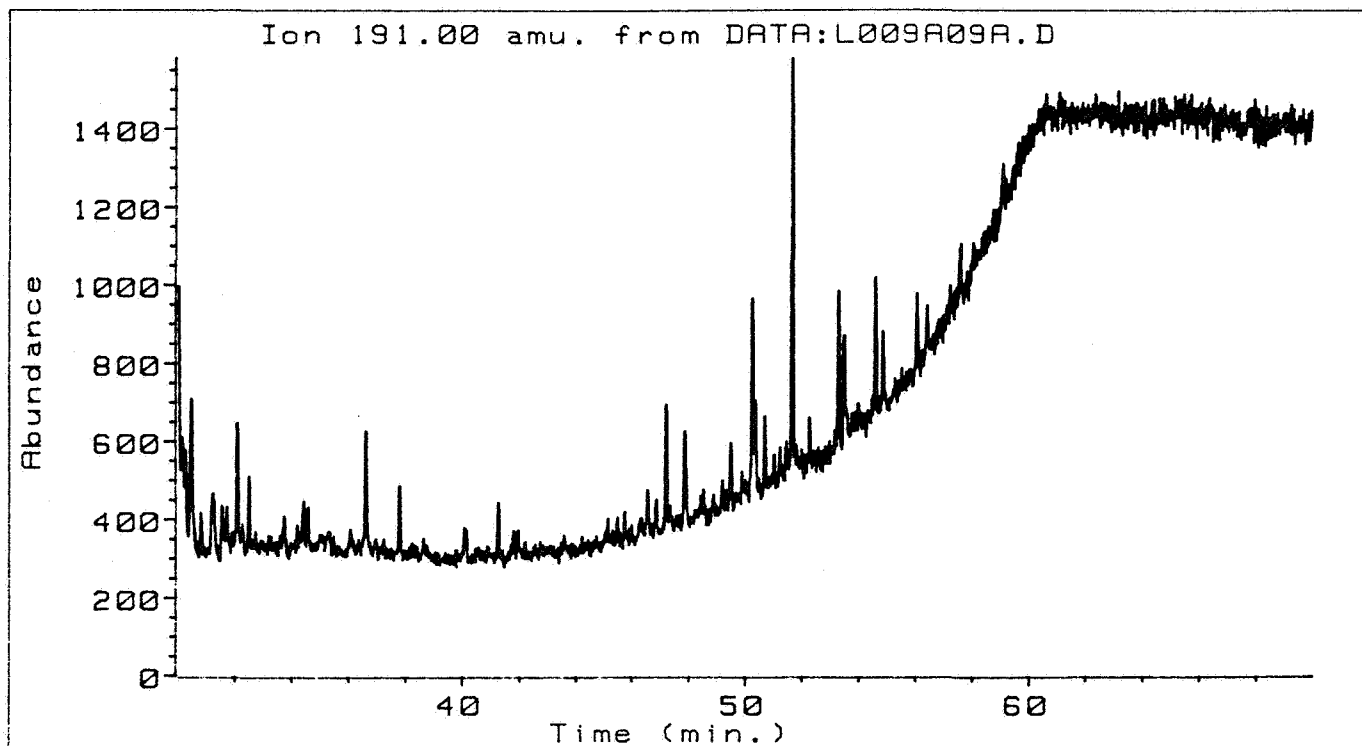
6407/7 2

3243 m Tot EOM



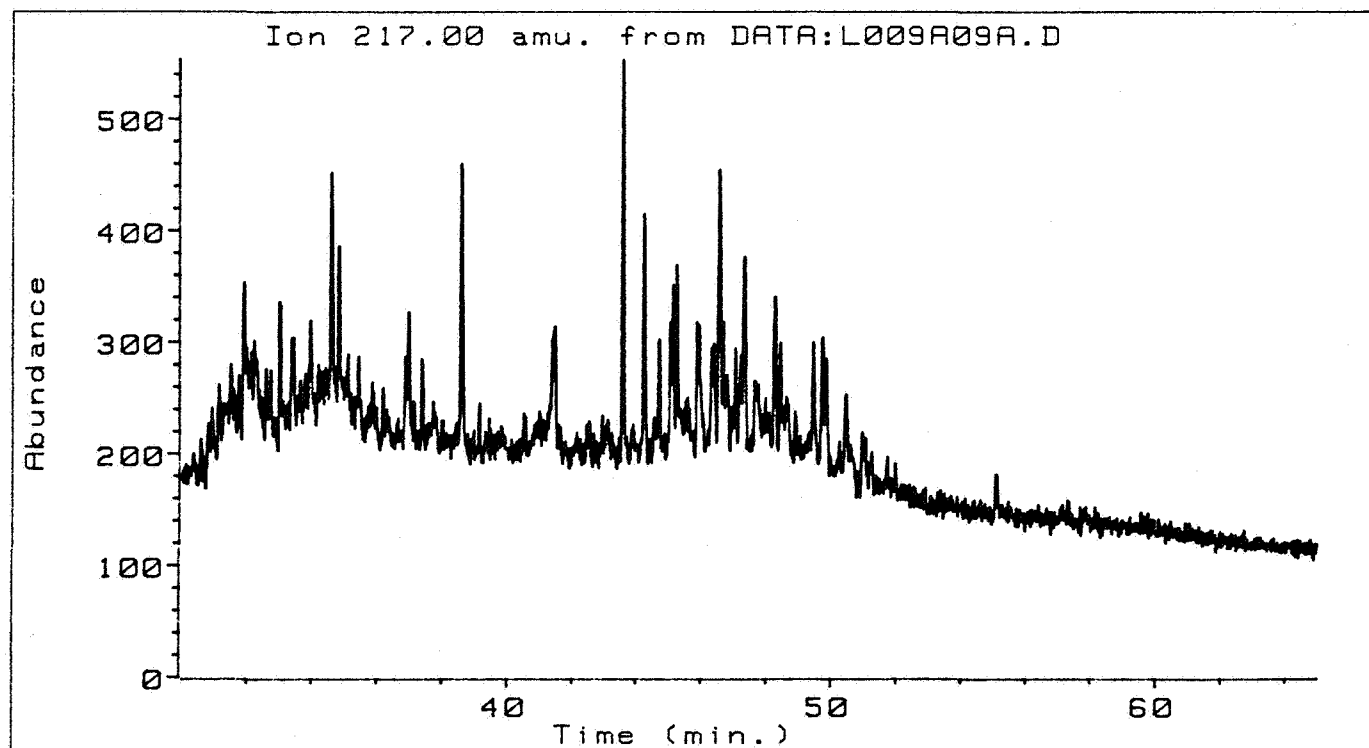
6407/7 2

3243 m Tot EOM



6407/7 2

3298 m Tot EOM



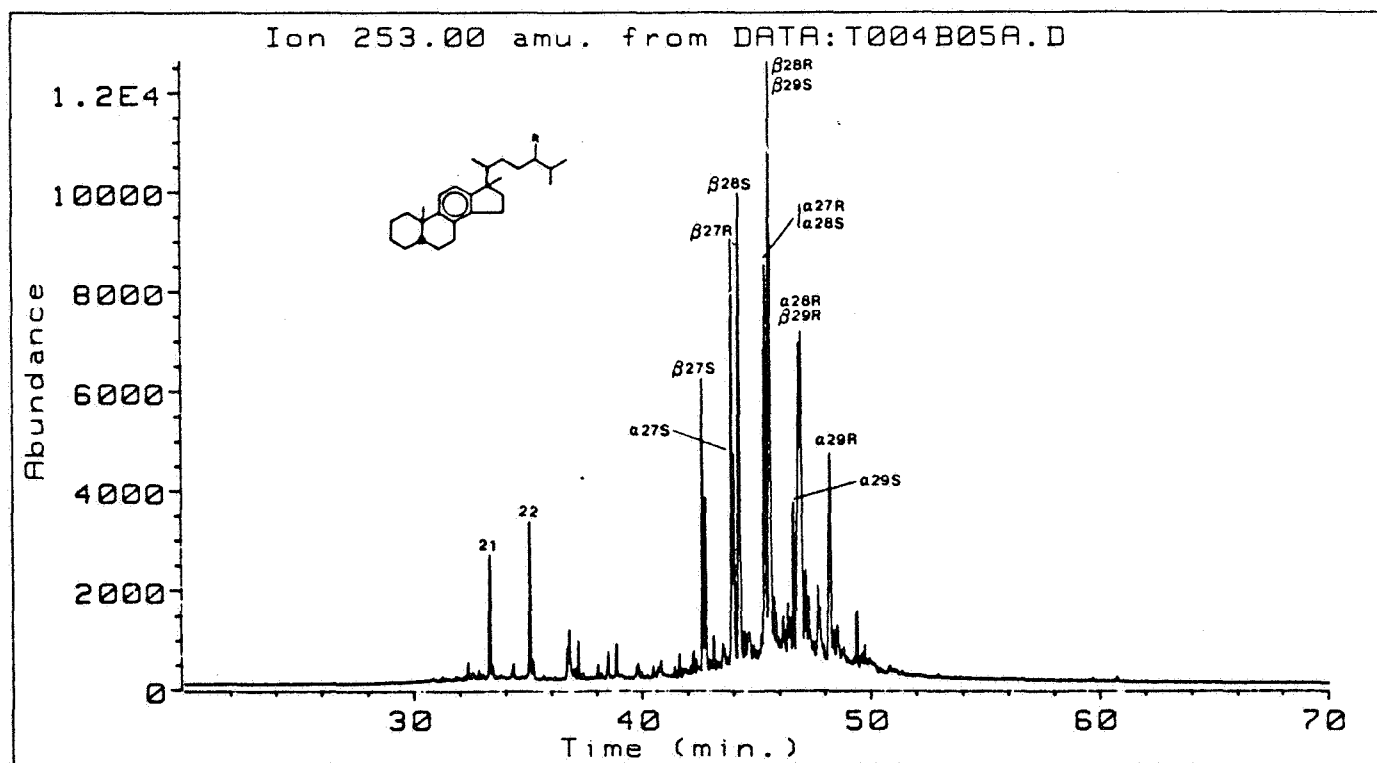
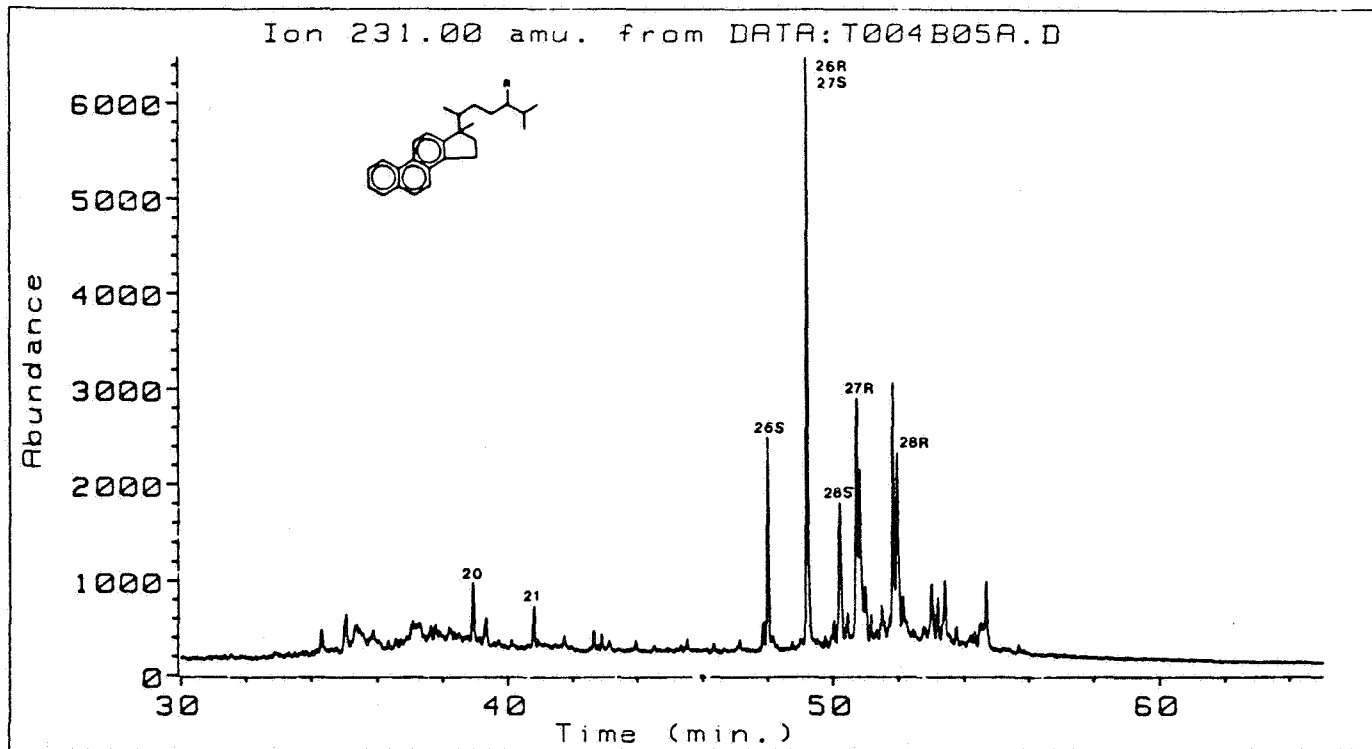
6407/7 2

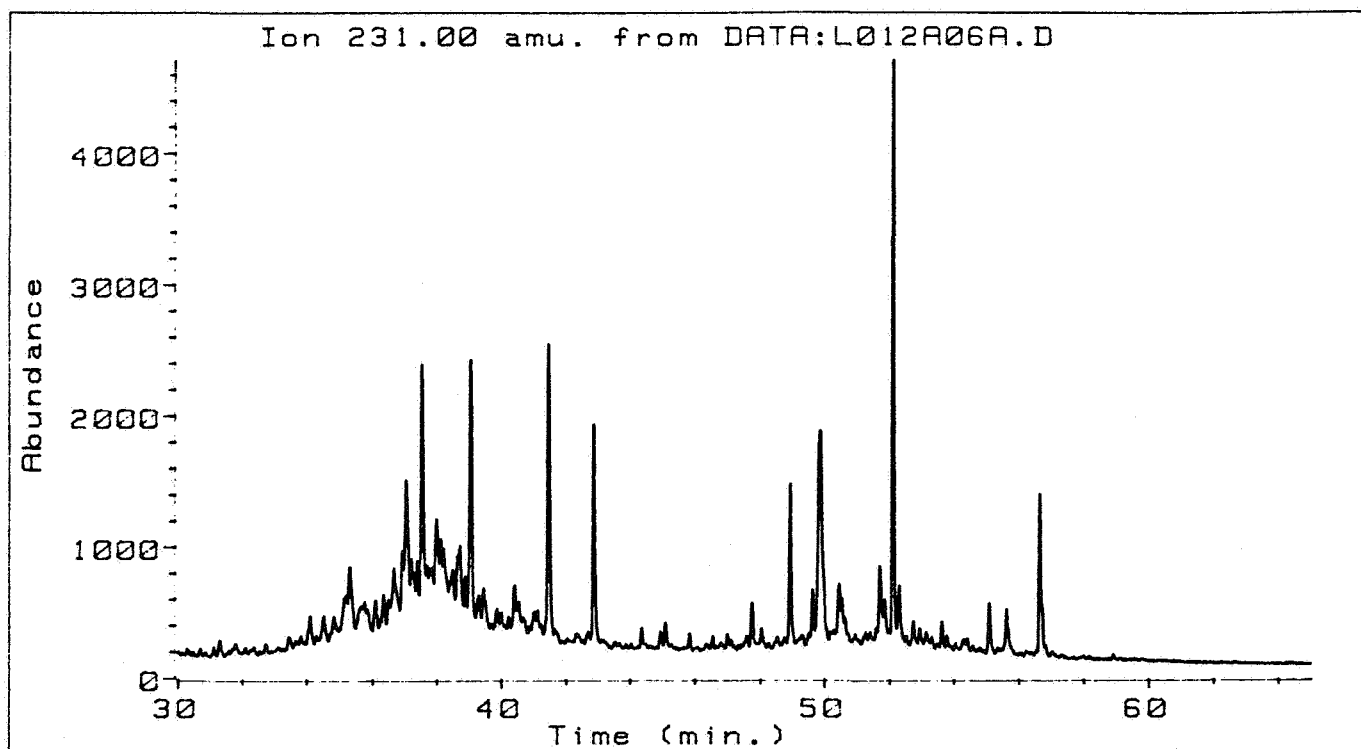
3298 m Tot EOM

M z 253 Monoaromatic

M z 231 Triaromatic

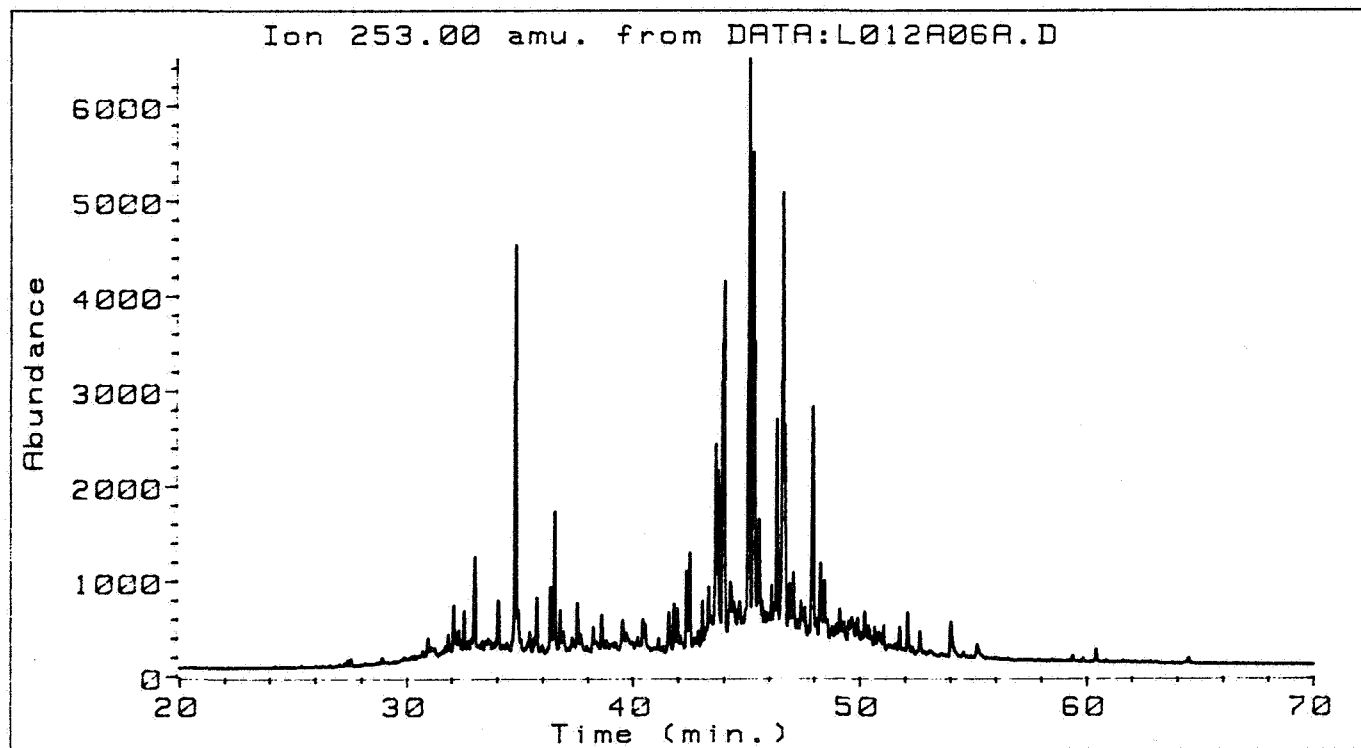
COMPOUND/PEAK IDENTIFICATION OF AROMATIC STEROID HYDROCARBONS		Ident- ity
<u>Monoaromatic steroid hydrocarbons (m/z 253)</u>		
C ₂₁ C-ring monoaromatic steroid hydrocarbon		21
C ₂₂ ----- " -----		22
5 β (H),20S C ₂₇ C-ring monoarom. ster. hydrocarb.		β 27S
5 β (H),20R ----- " -----		β 27R
5 α (H),20S ----- " -----		α 27S
5 α (H),20R ----- " -----		α 27R
5 β (H),20S C ₂₈ C-ring monoarom. ster. hydrocarb.		β 28S
5 β (H),20R ----- " -----		β 28R
5 α (H),20S ----- " -----		α 28S
5 α (H),20R ----- " -----		α 28R
5 β (H),20S C ₂₉ C-ring monoarom. ster. hydrocarb.		β 29S
5 β (H),20R ----- " -----		β 29R
5 α (H),20S ----- " -----		α 29S
5 α (H),20R ----- " -----		α 29R
<u>Triaromatic steroid hydrocarbons (m/z 231)</u>		
C ₂₀ triaromatic steroid hydrocarbon		20
C ₂₁ ----- " -----		21
20S C ₂₆ triaromatic steroid hydrocarbon		26S
20R C ₂₆ ----- " -----		26R
20S C ₂₇ ----- " -----		27S
20R C ₂₇ ----- " -----		27R
20S C ₂₈ ----- " -----		28S
20R C ₂₈ ----- " -----		28R





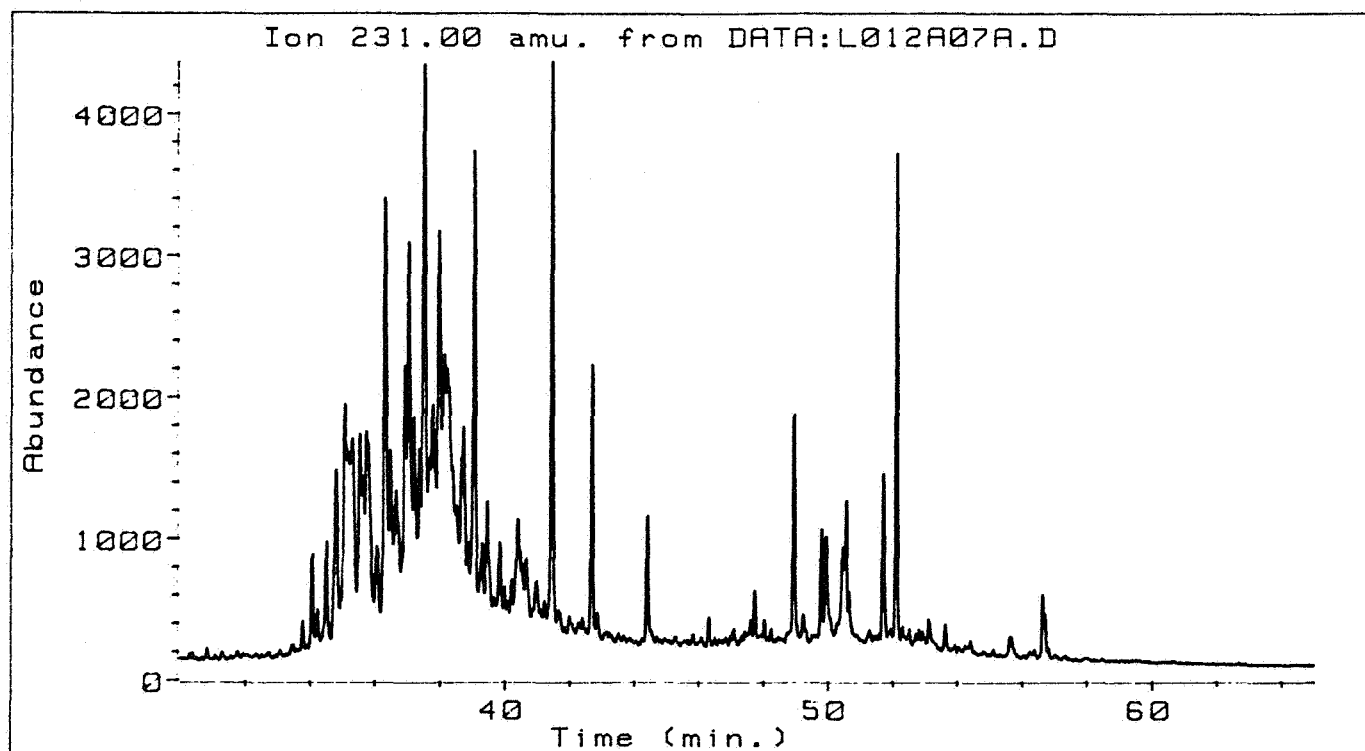
6407/7 2

1716 m



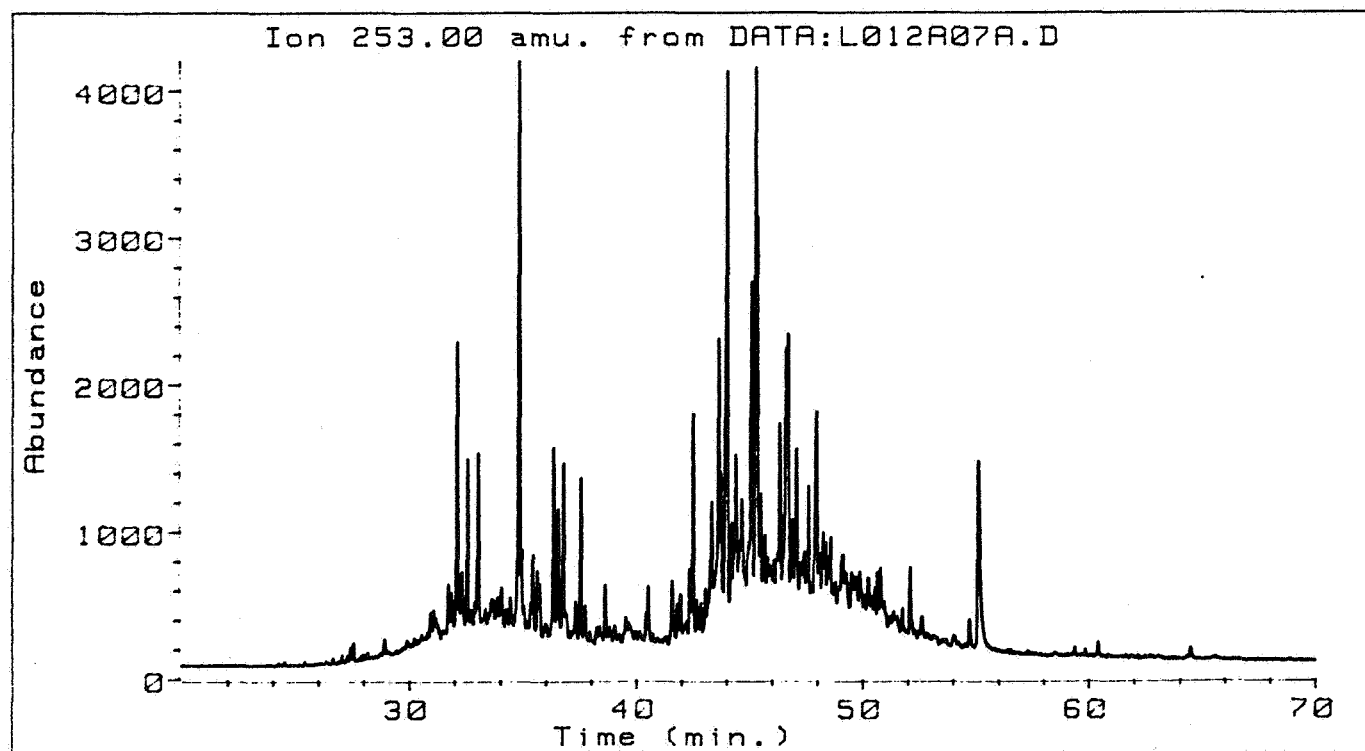
6407/7 2

1716 m



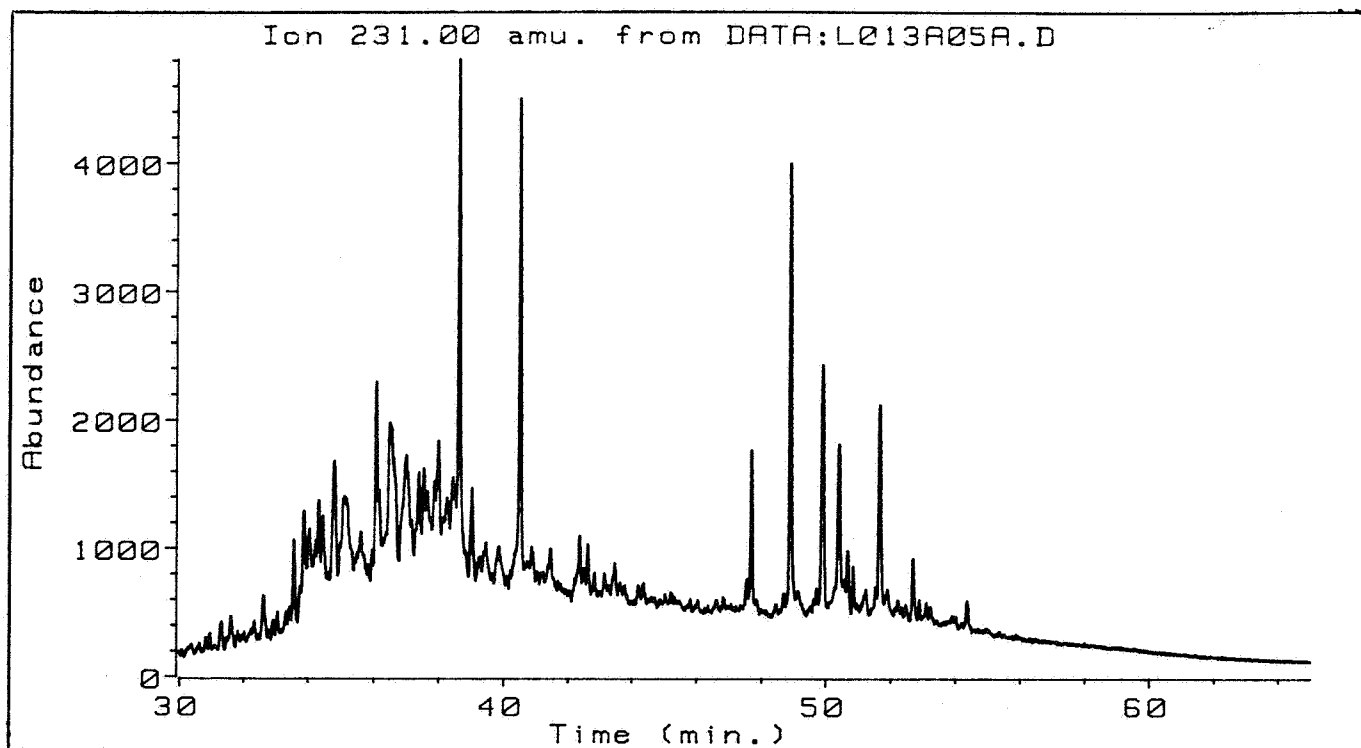
6407/7 2

1824 m



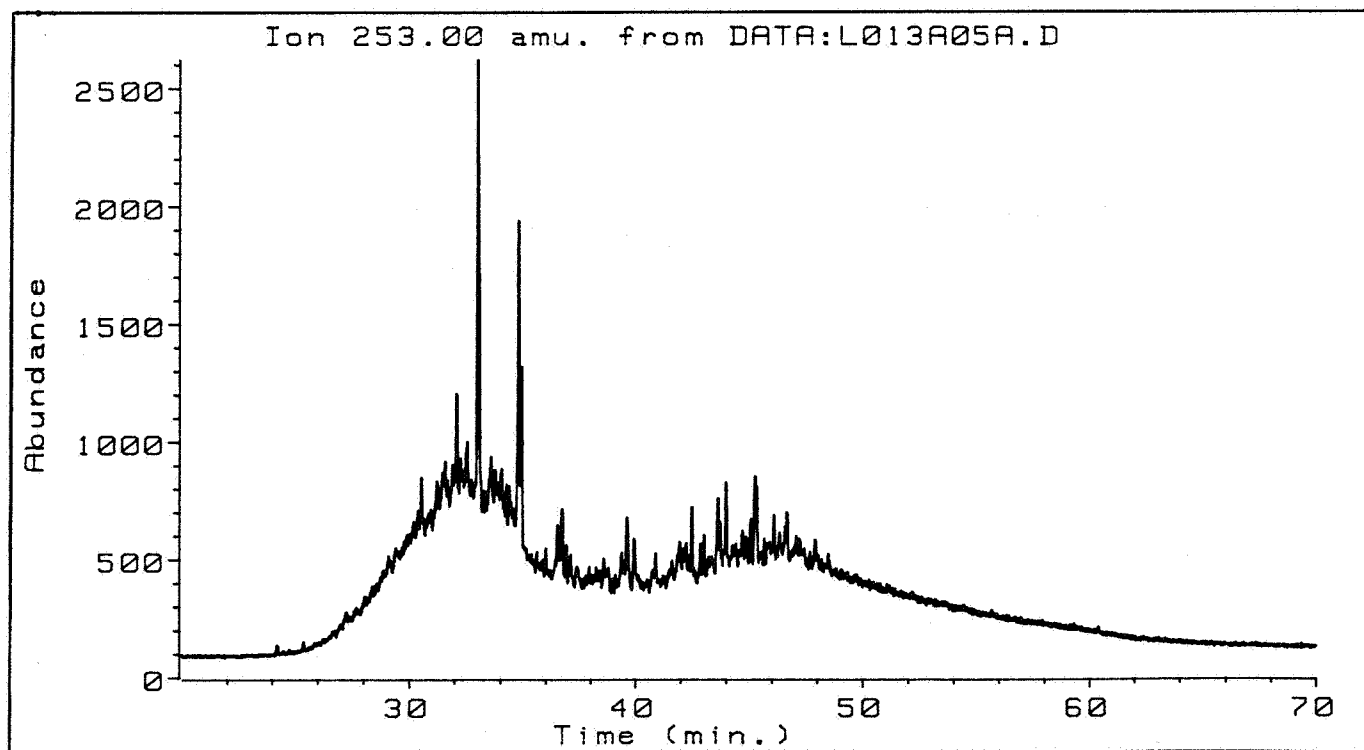
6407/7 2

1824 m



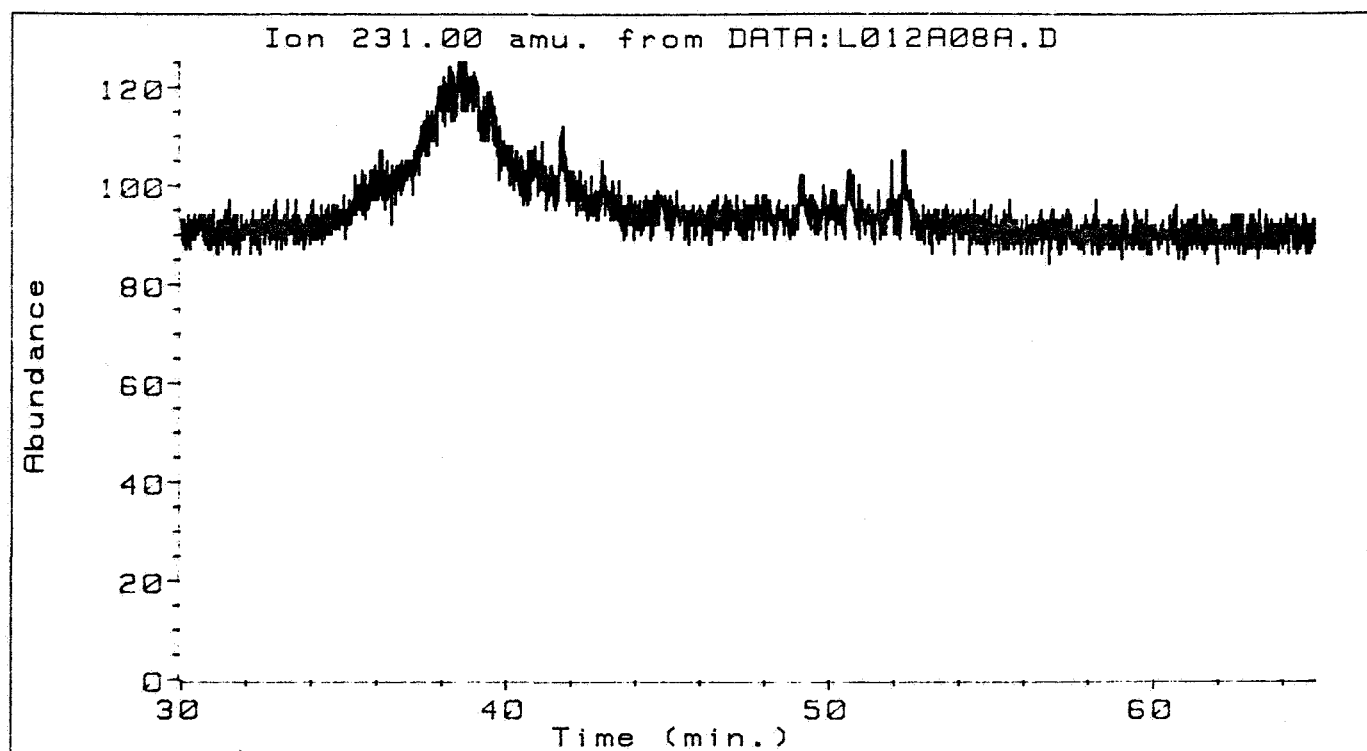
6407/7 2

2874 m



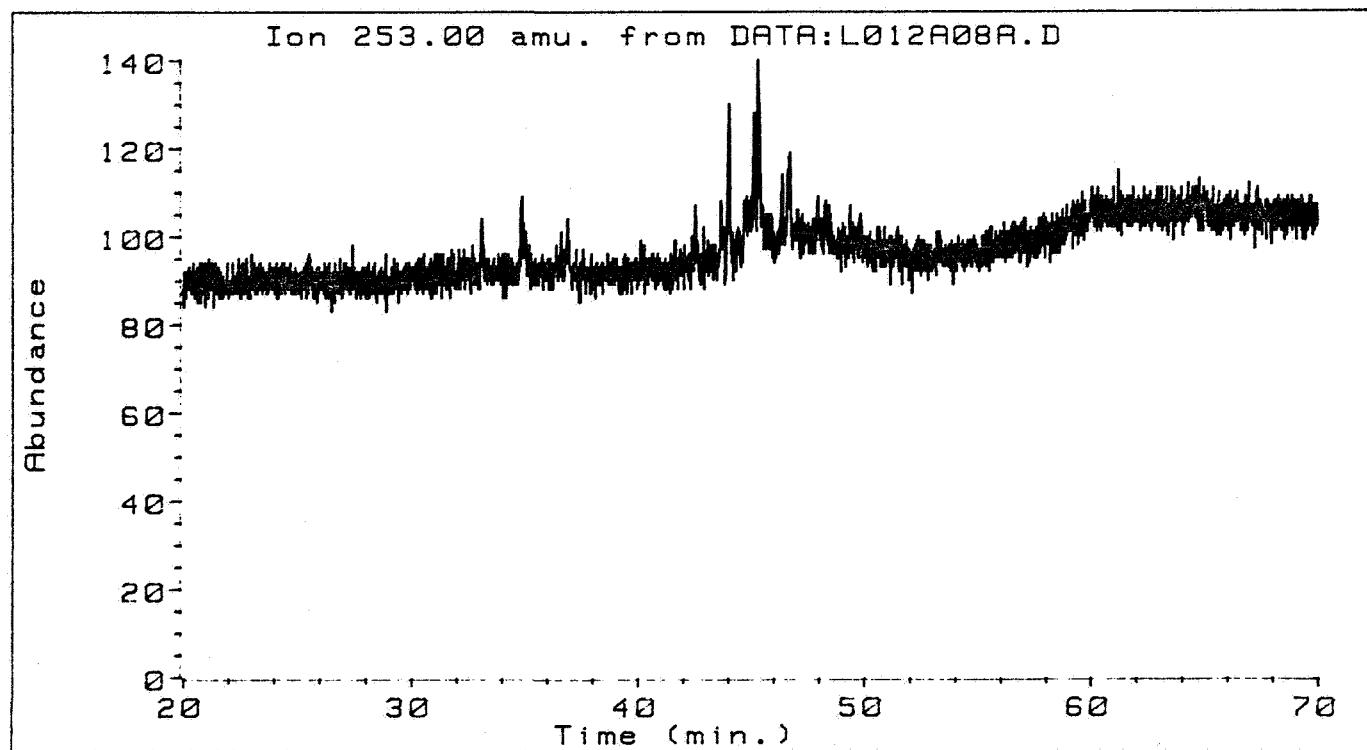
6407/7 2

2874 m



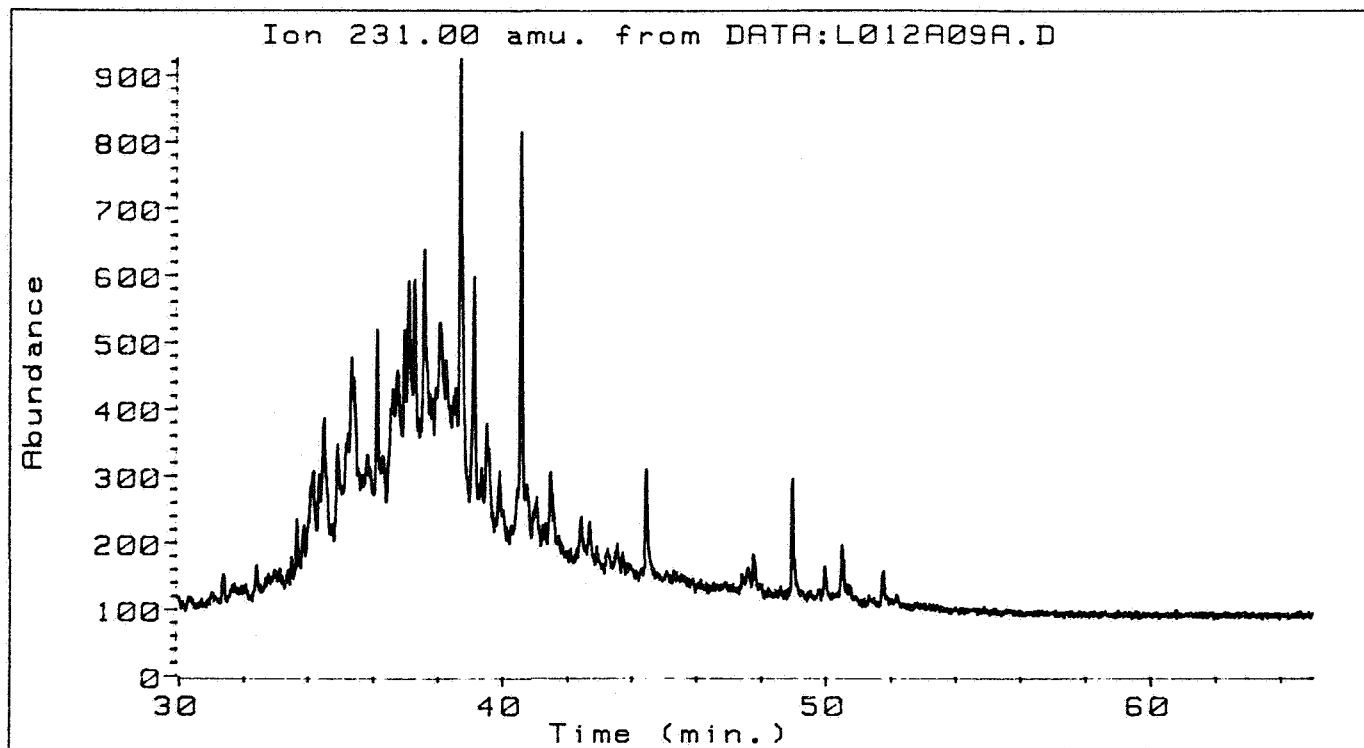
6407/7 2

1956.50 m



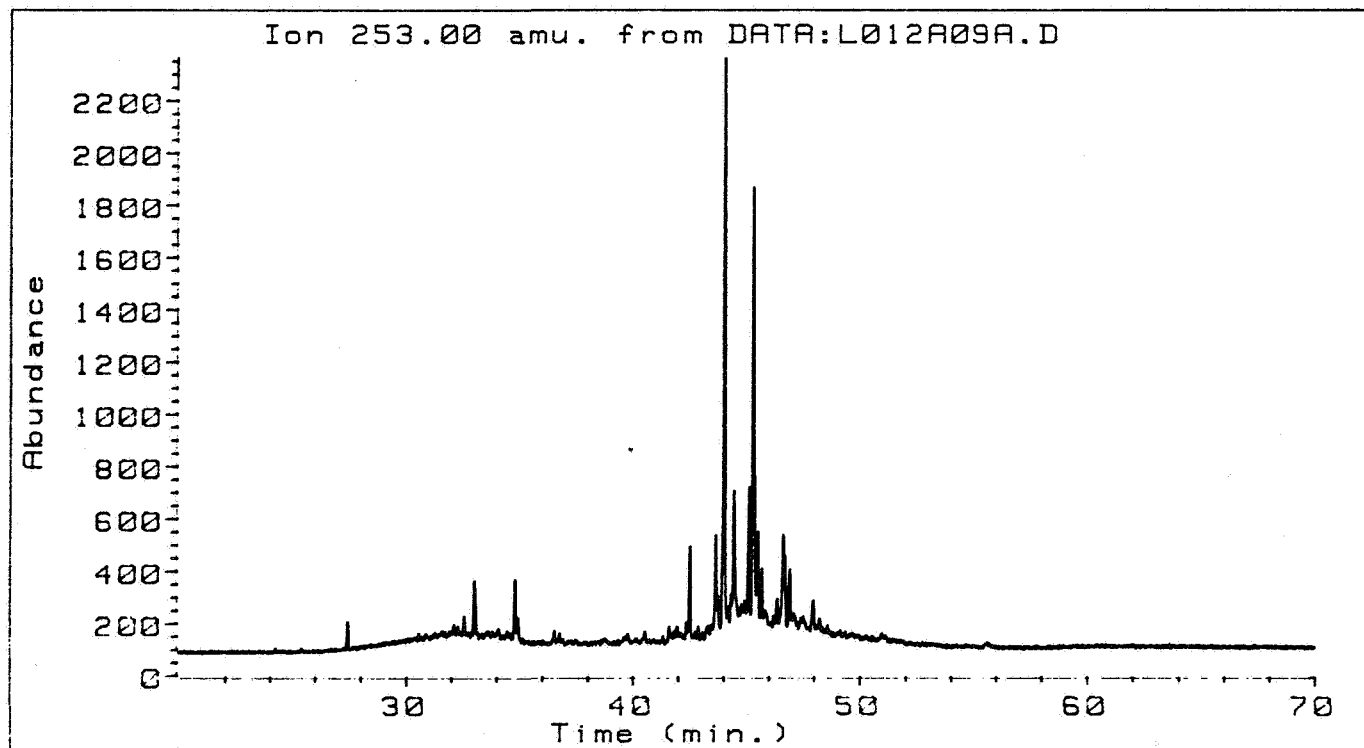
6407/7 2

1956.50 m



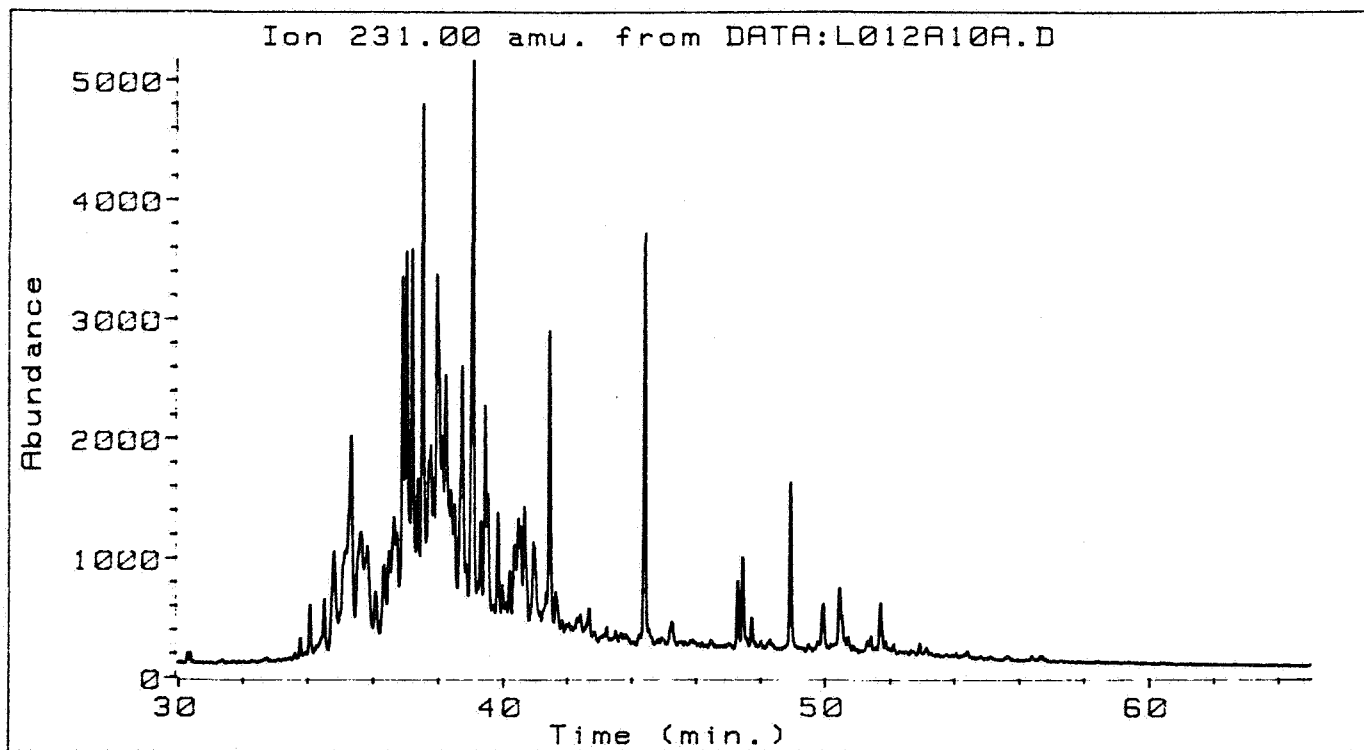
6407/7 2

2025 m



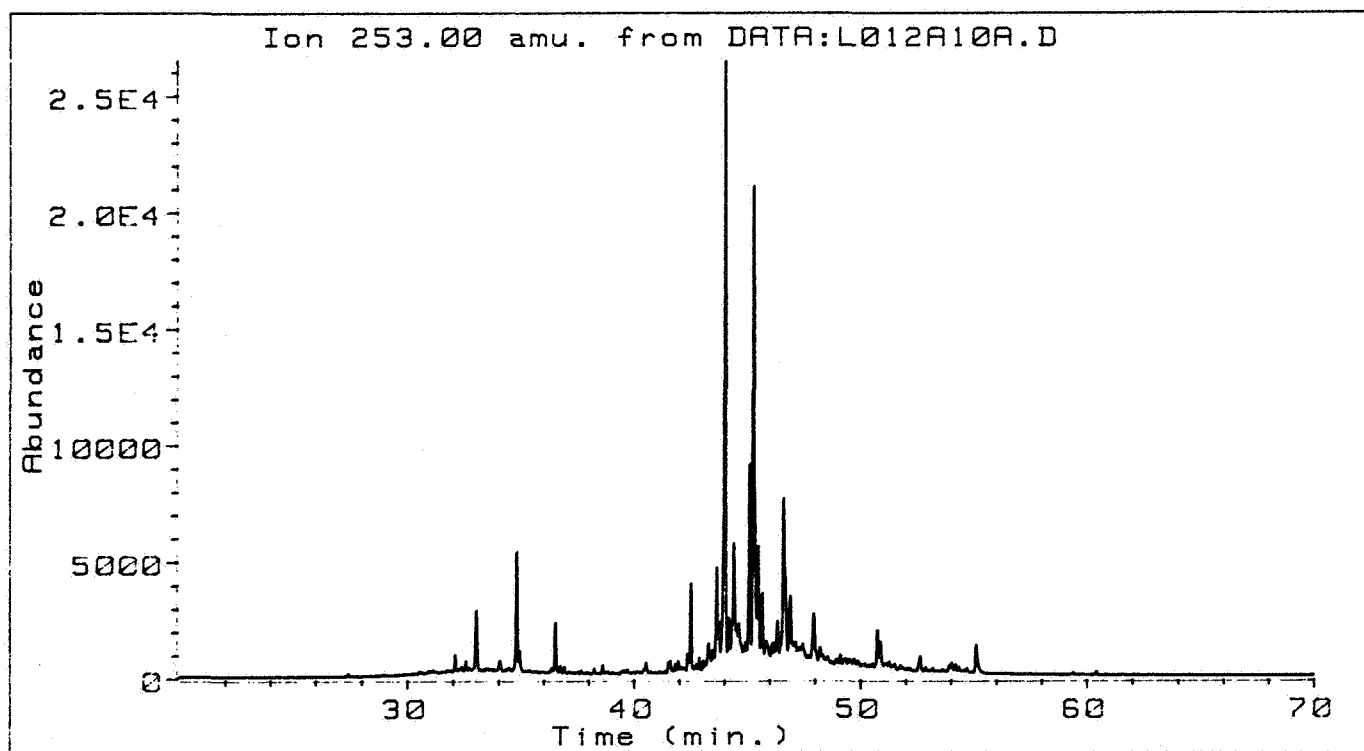
6407/7 2

2025 m



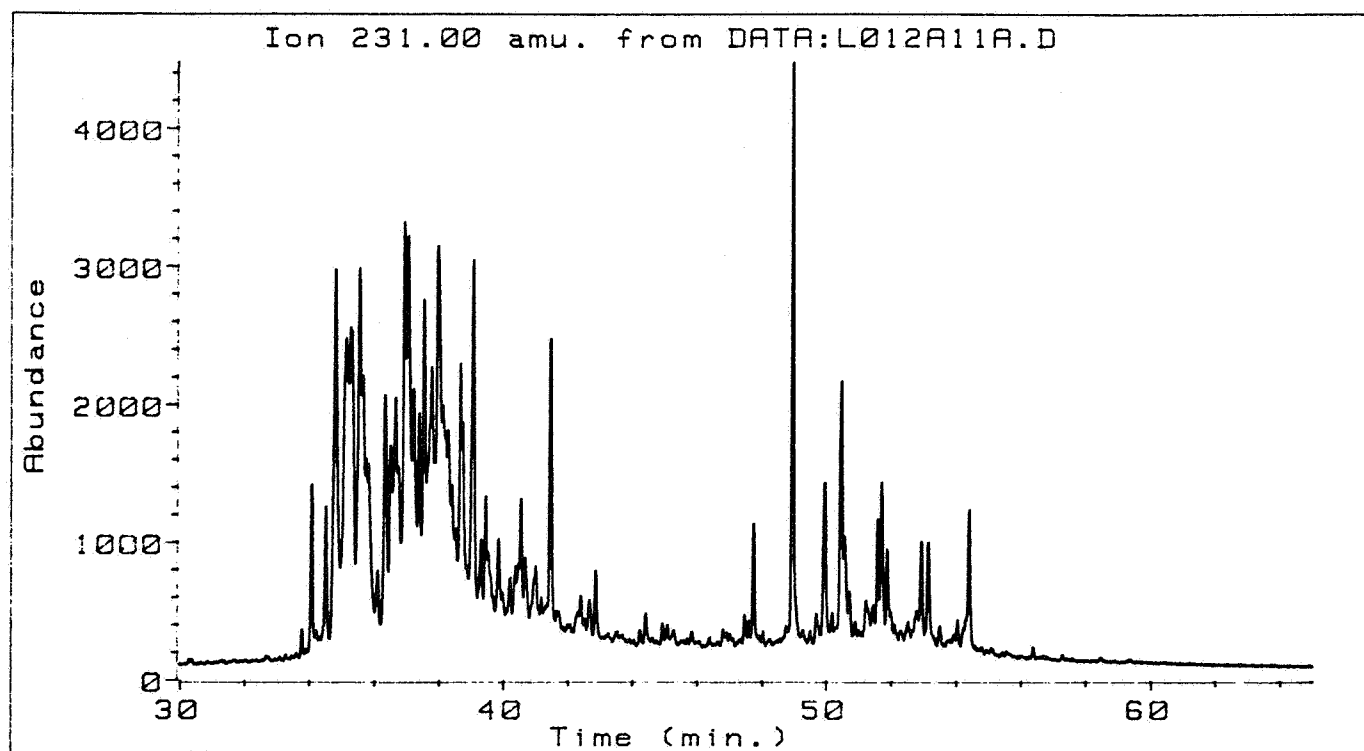
6407/7 2

2075 m



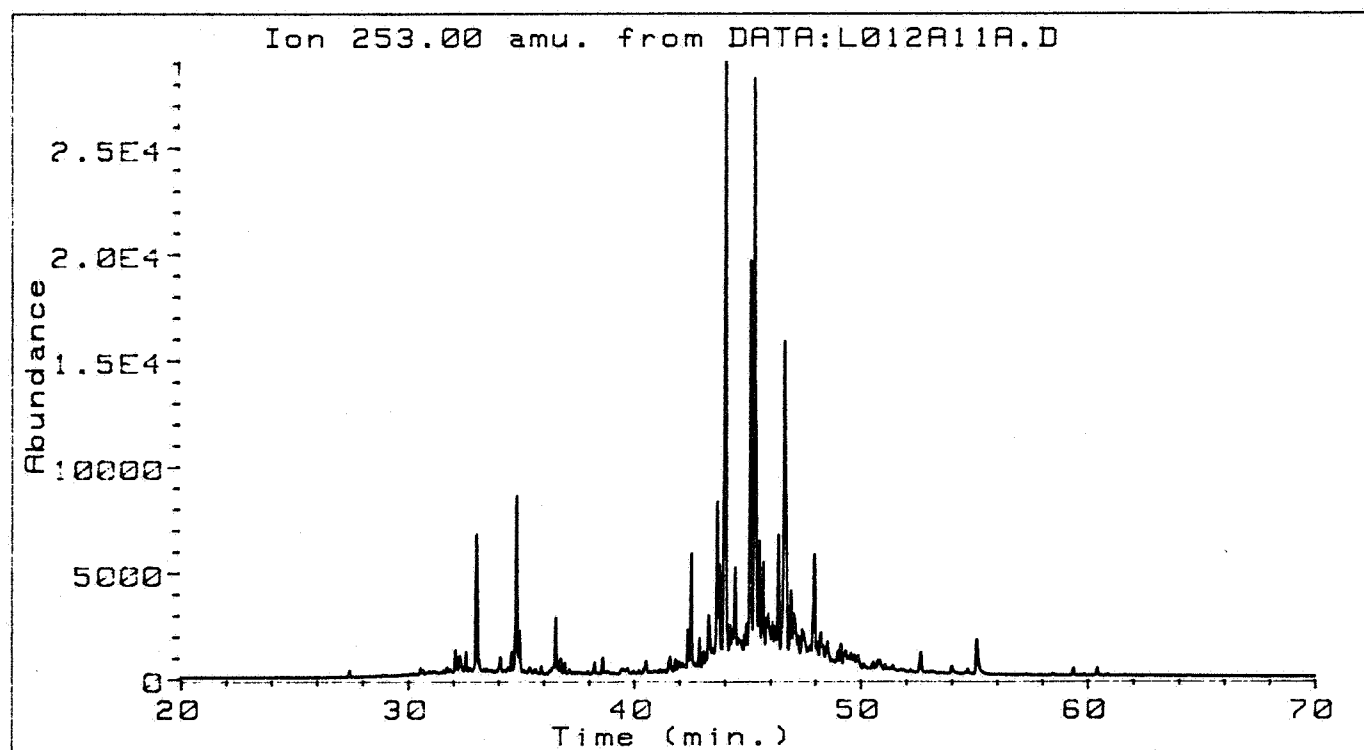
6407/7 2

2075 m



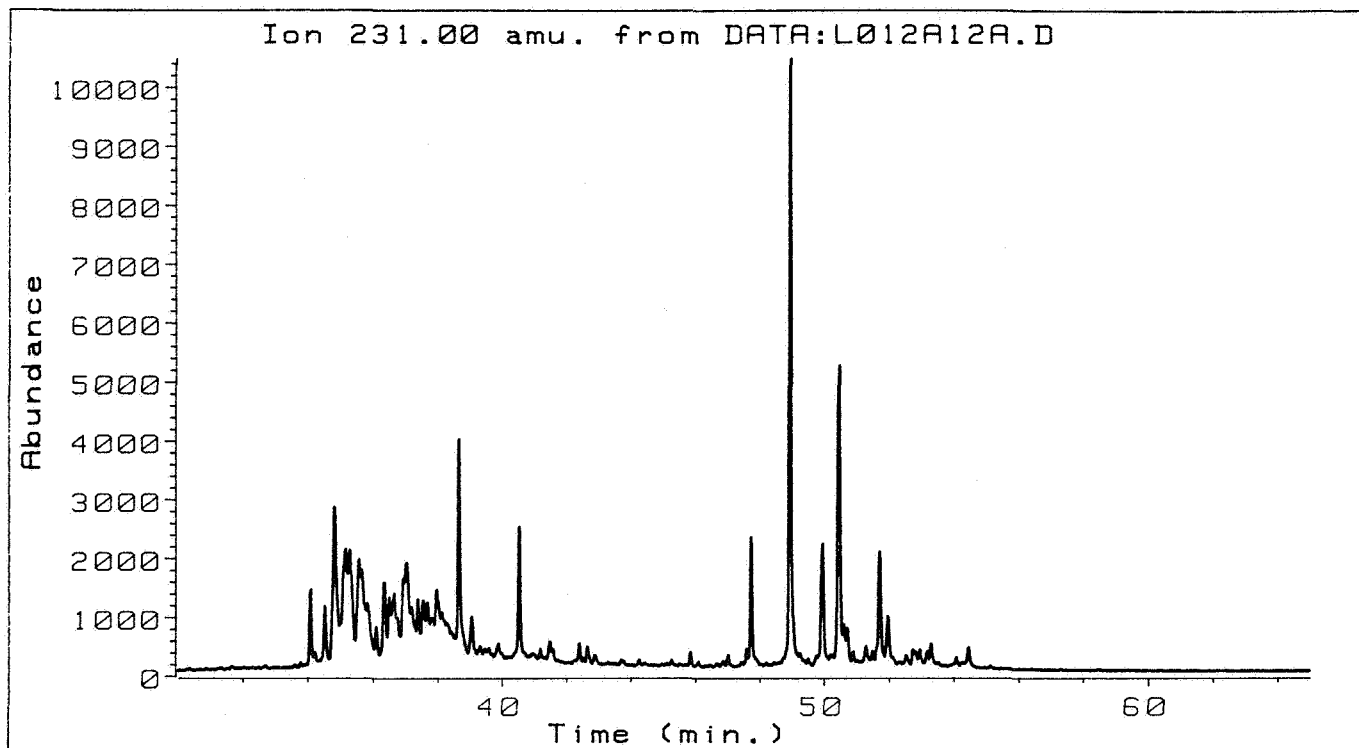
6407/7 2

2251 m



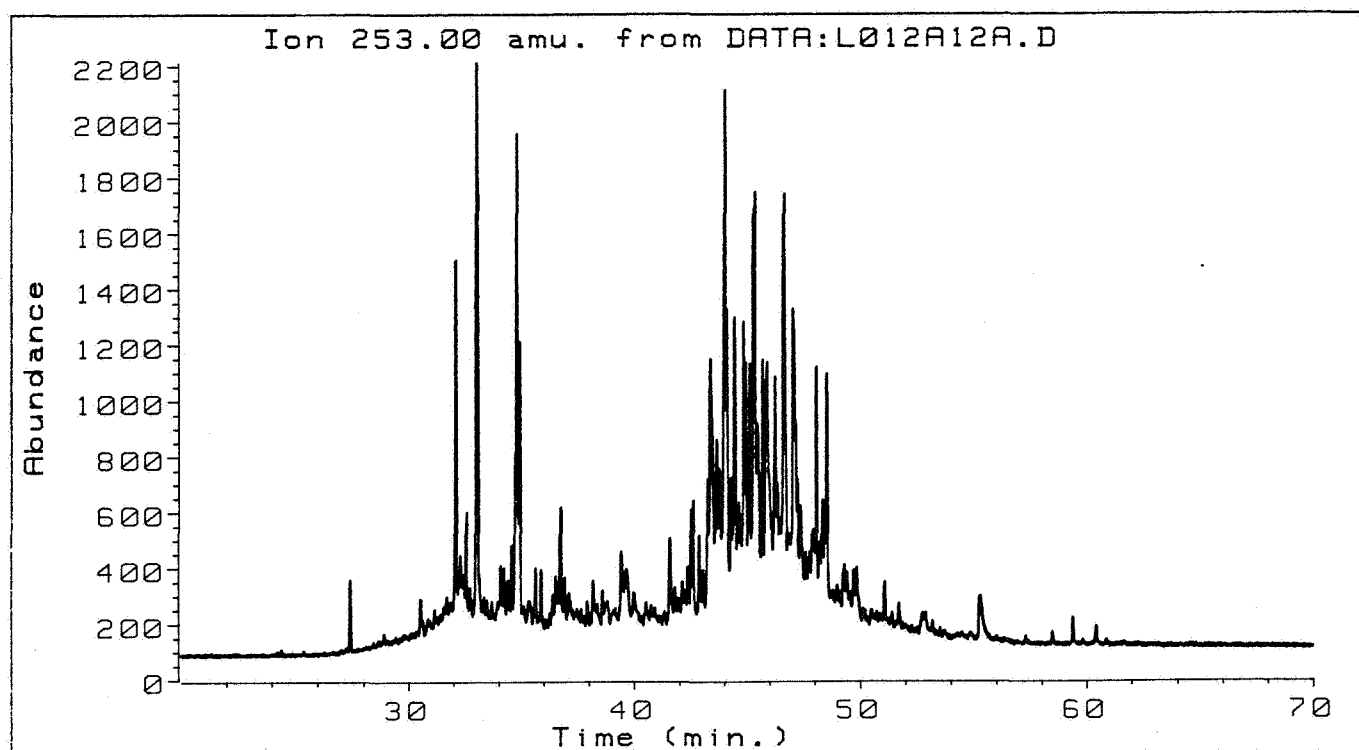
6407/7 2

2251 m



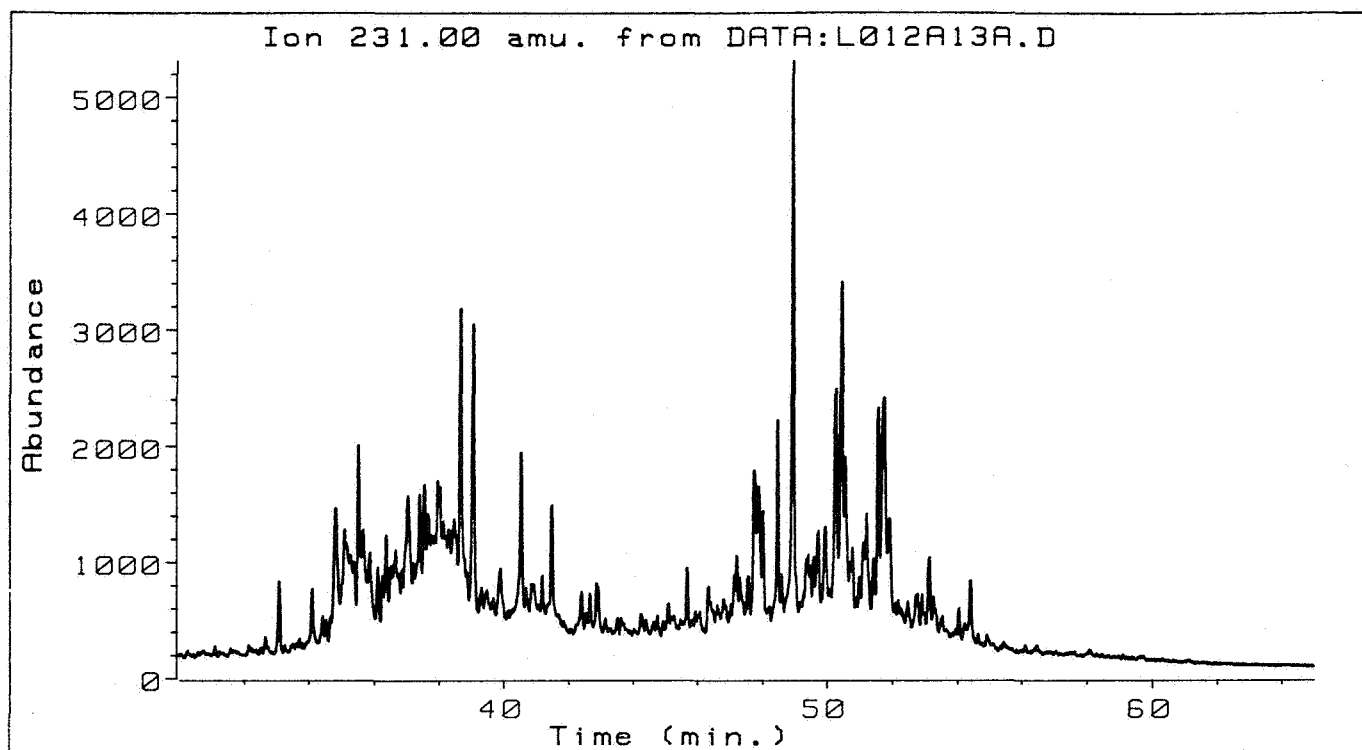
6407/7 2

2425 m



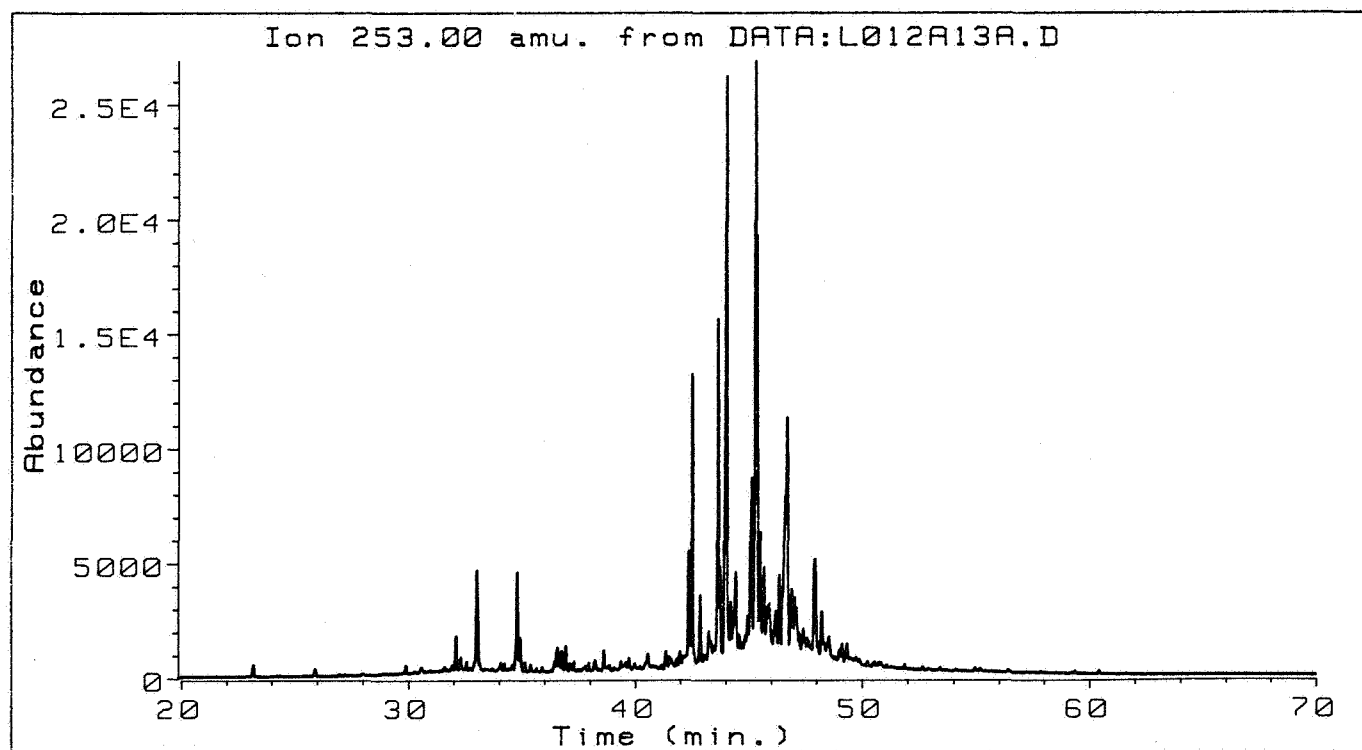
6407/7 2

2425 m



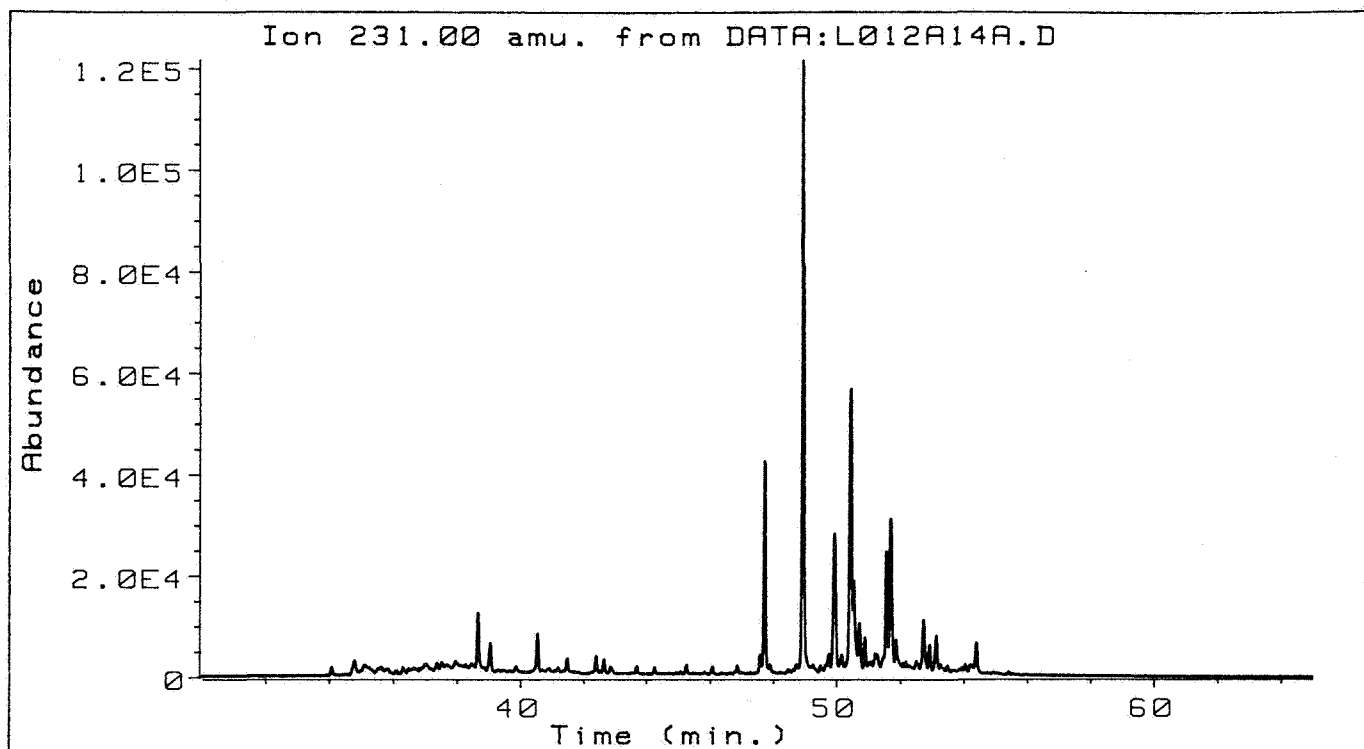
6407/7 2

2625 m



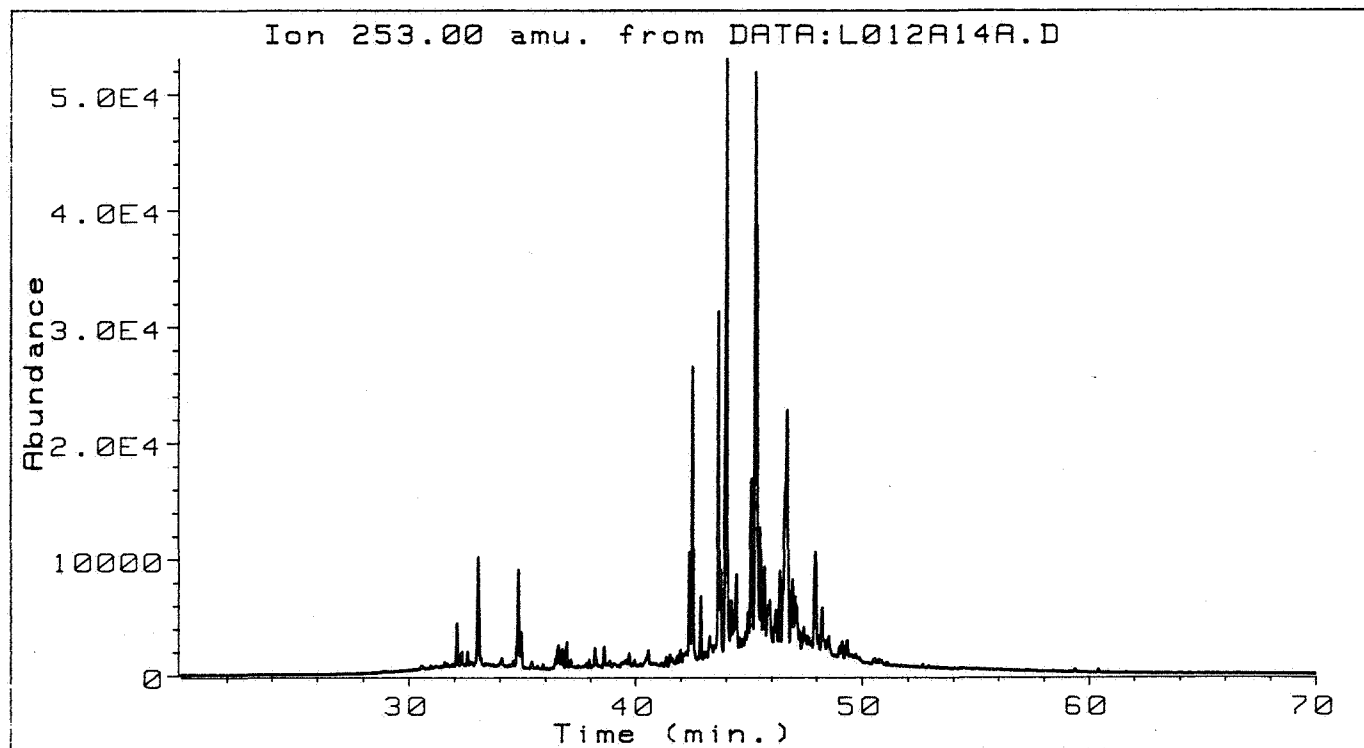
6407/7 2

2625 m



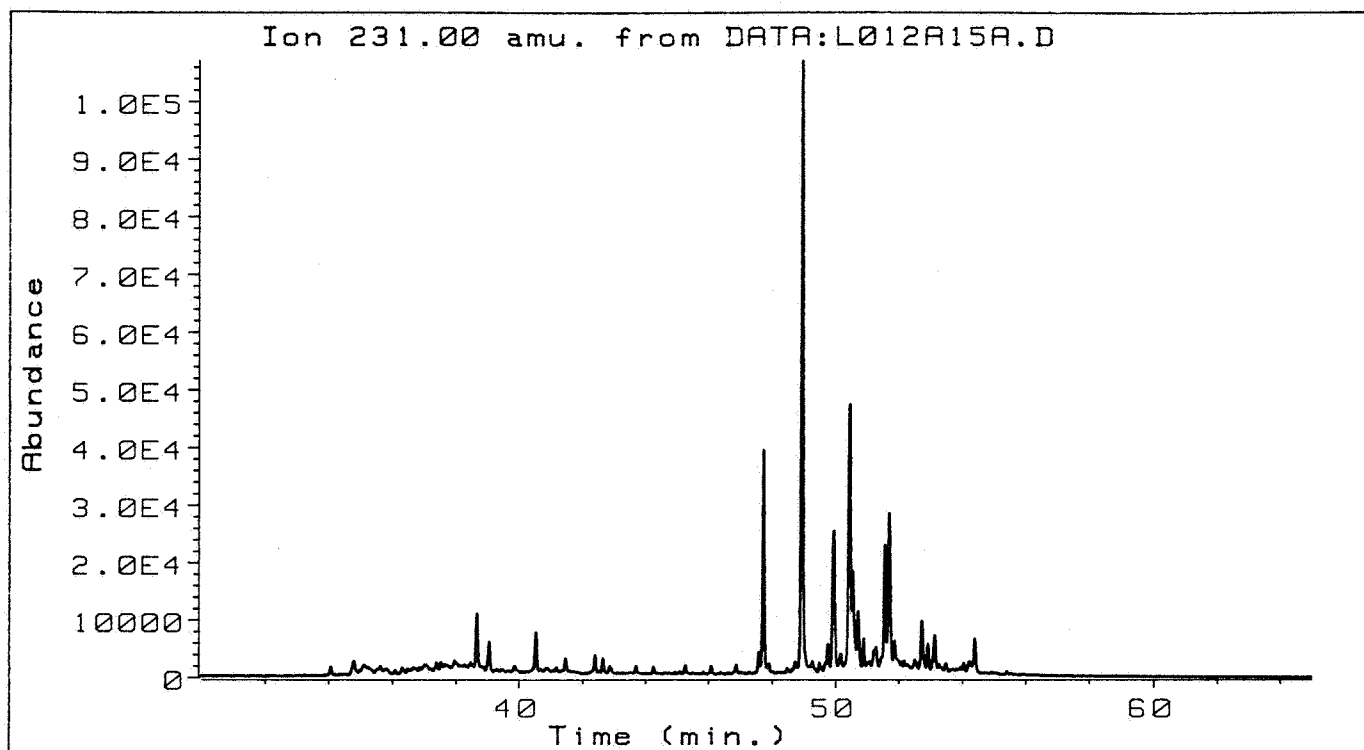
6407/7 2

2638 m



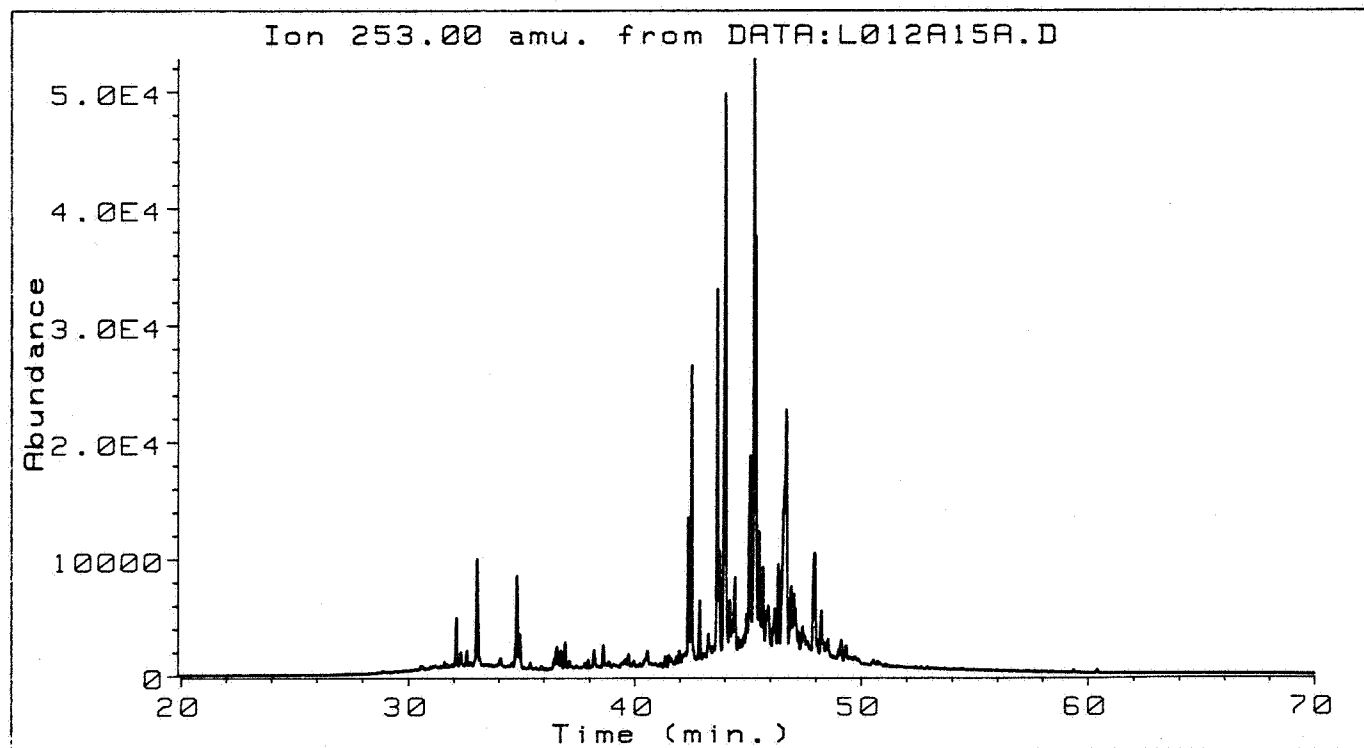
6407/7 2

2638 m



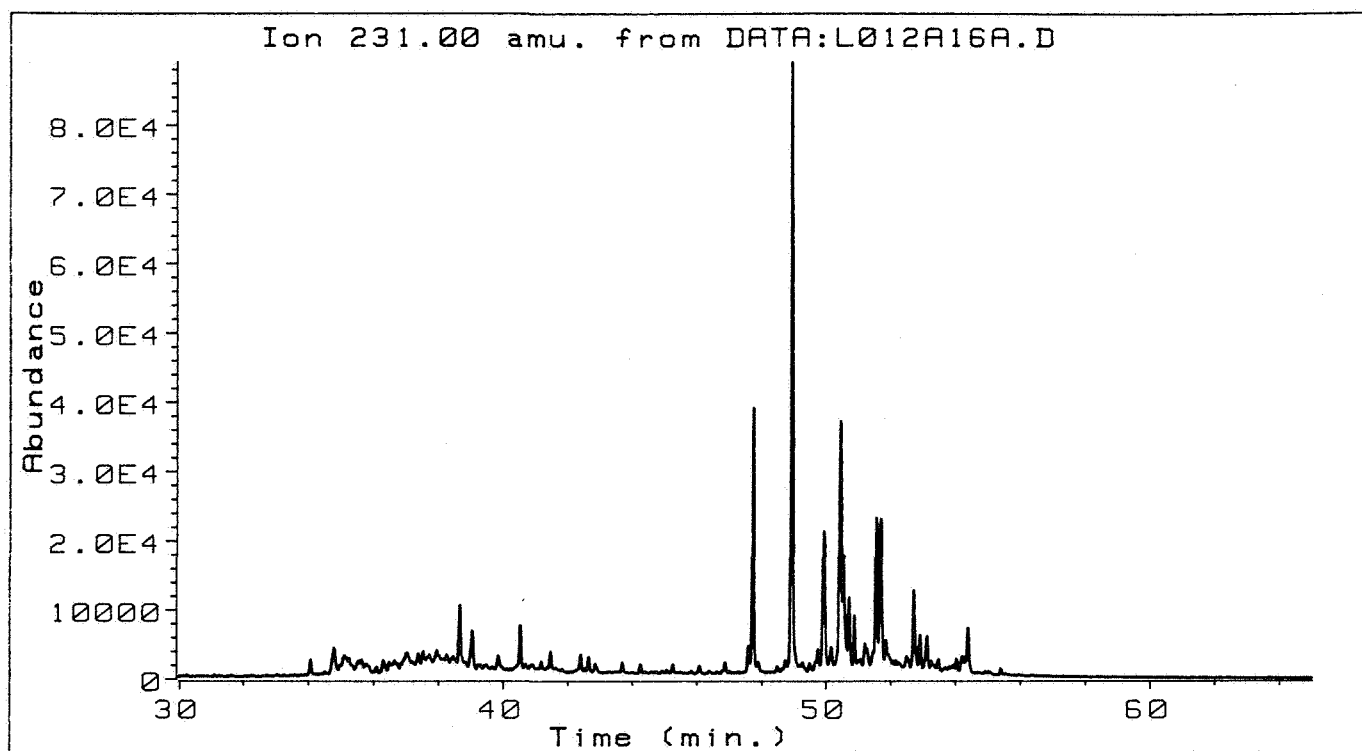
6407/7 2

2640 m



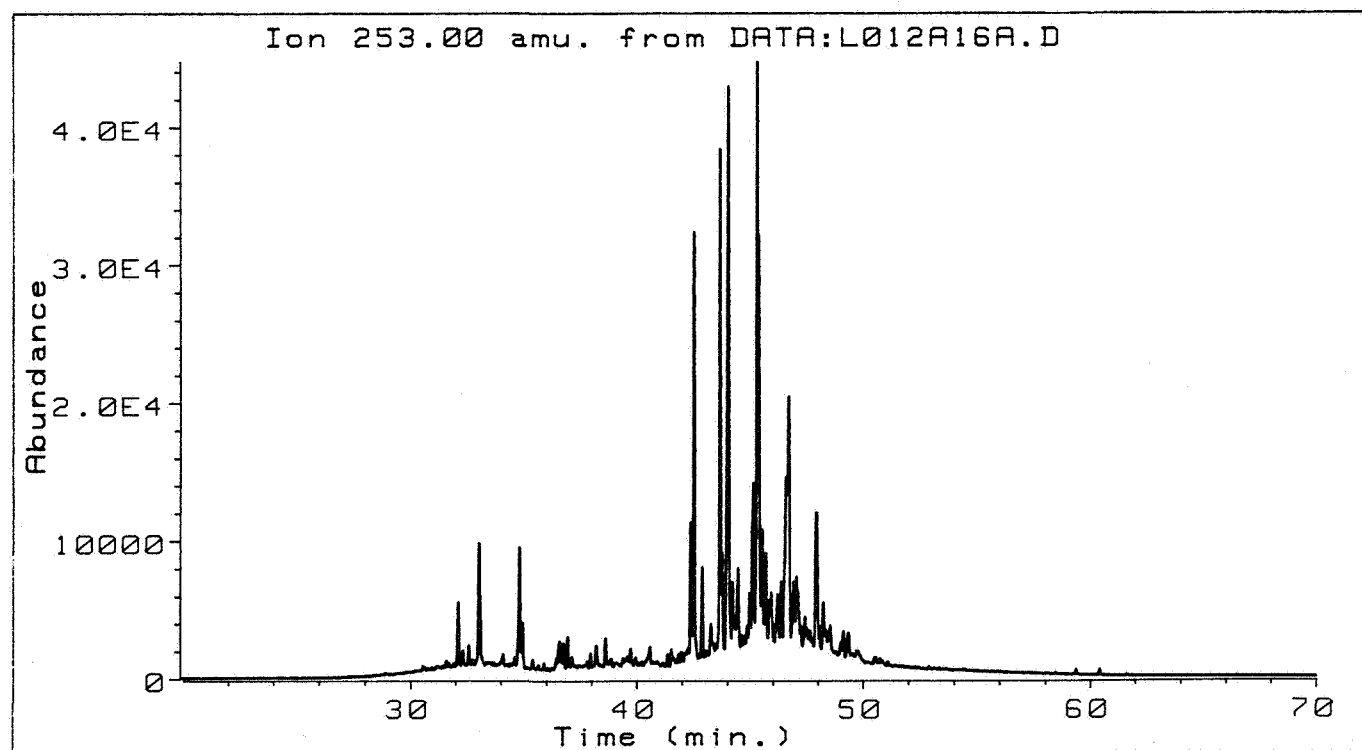
6407/7 2

2640 m



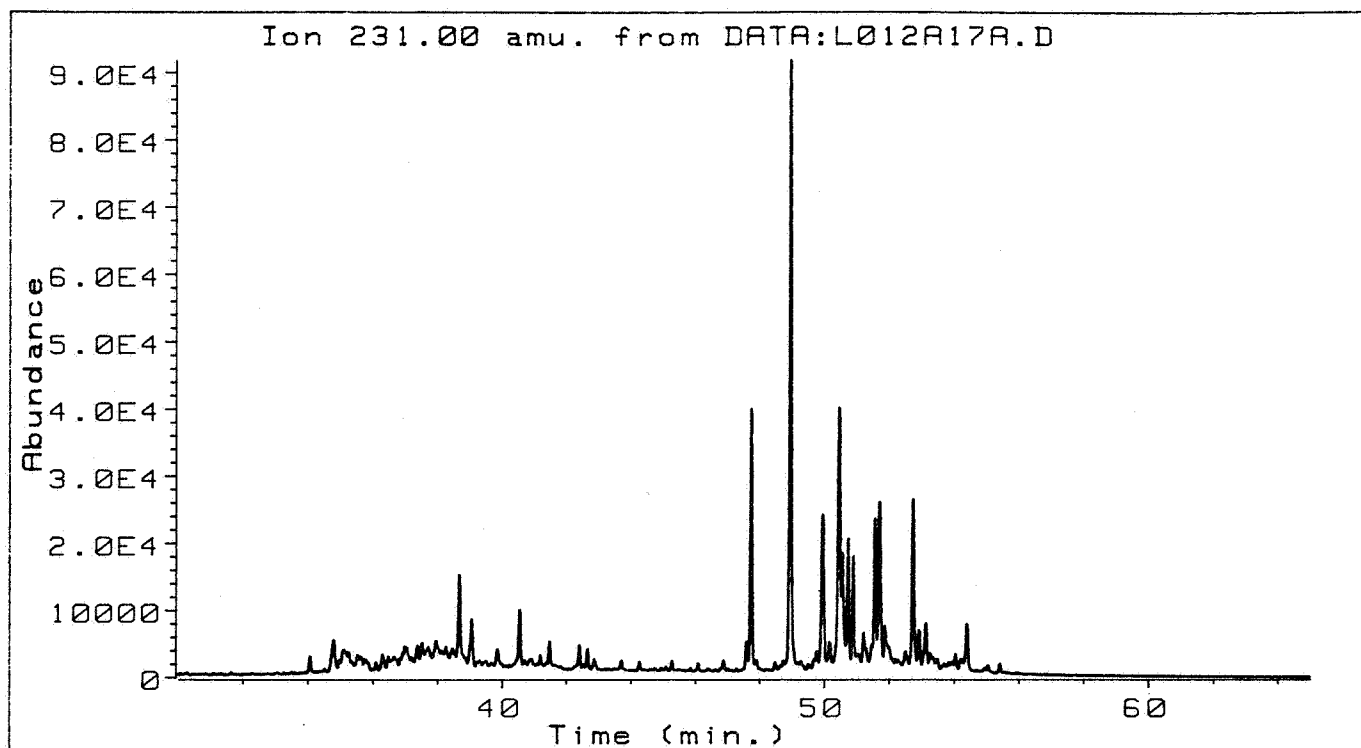
6407/7 2

2647 m



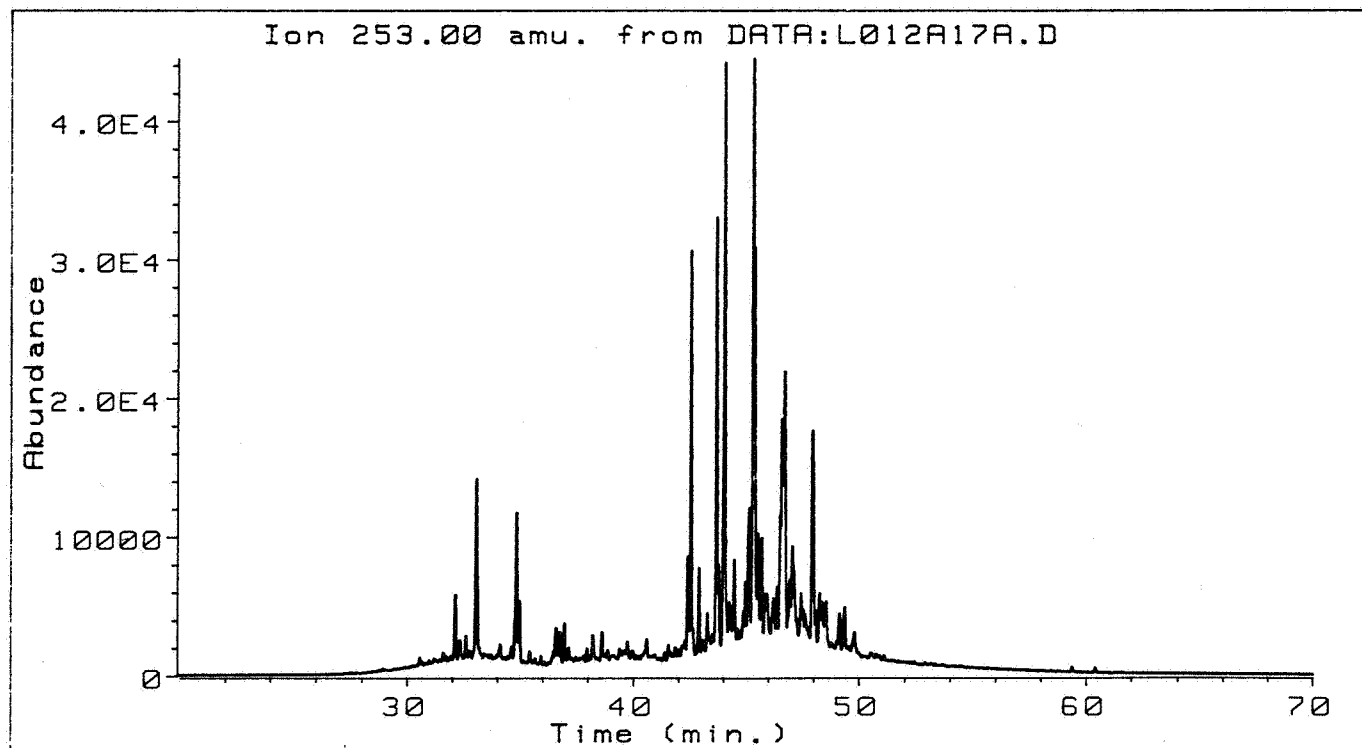
6407/7 2

2647 m



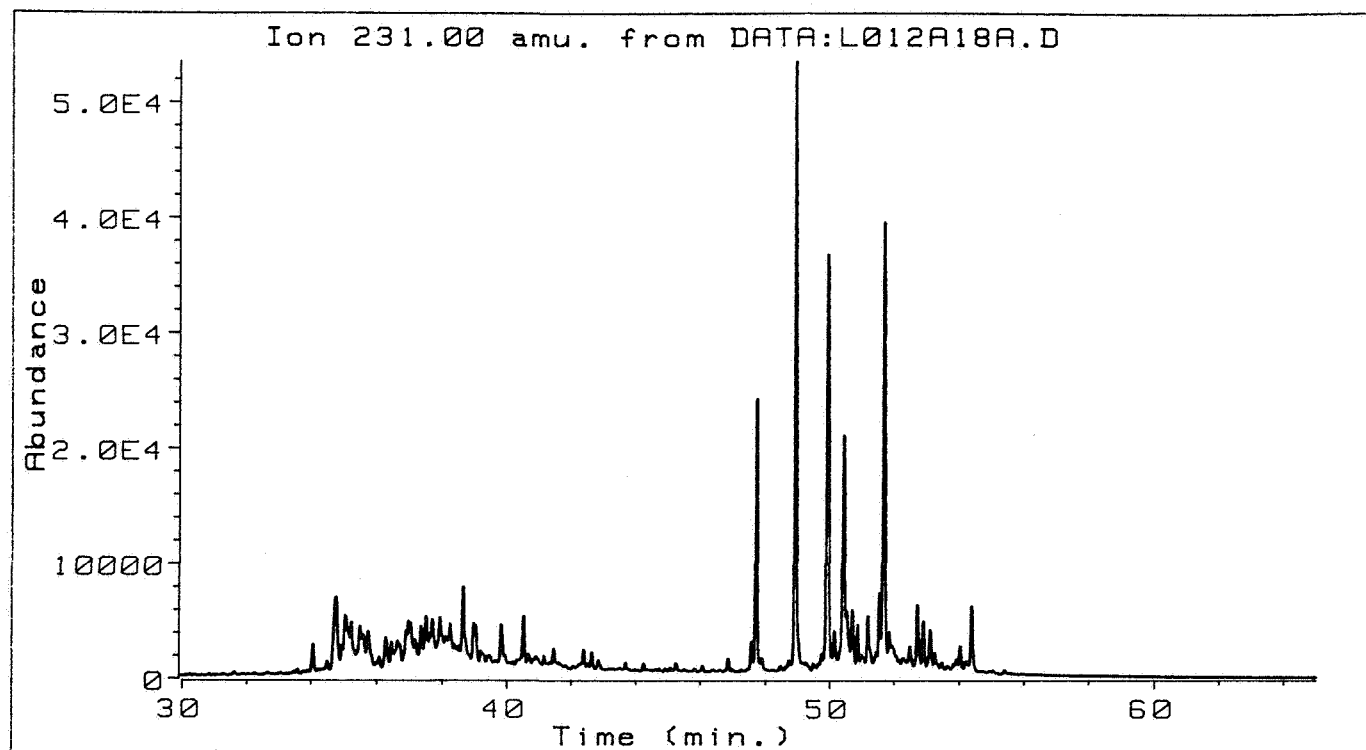
6407/7 2

2650 m



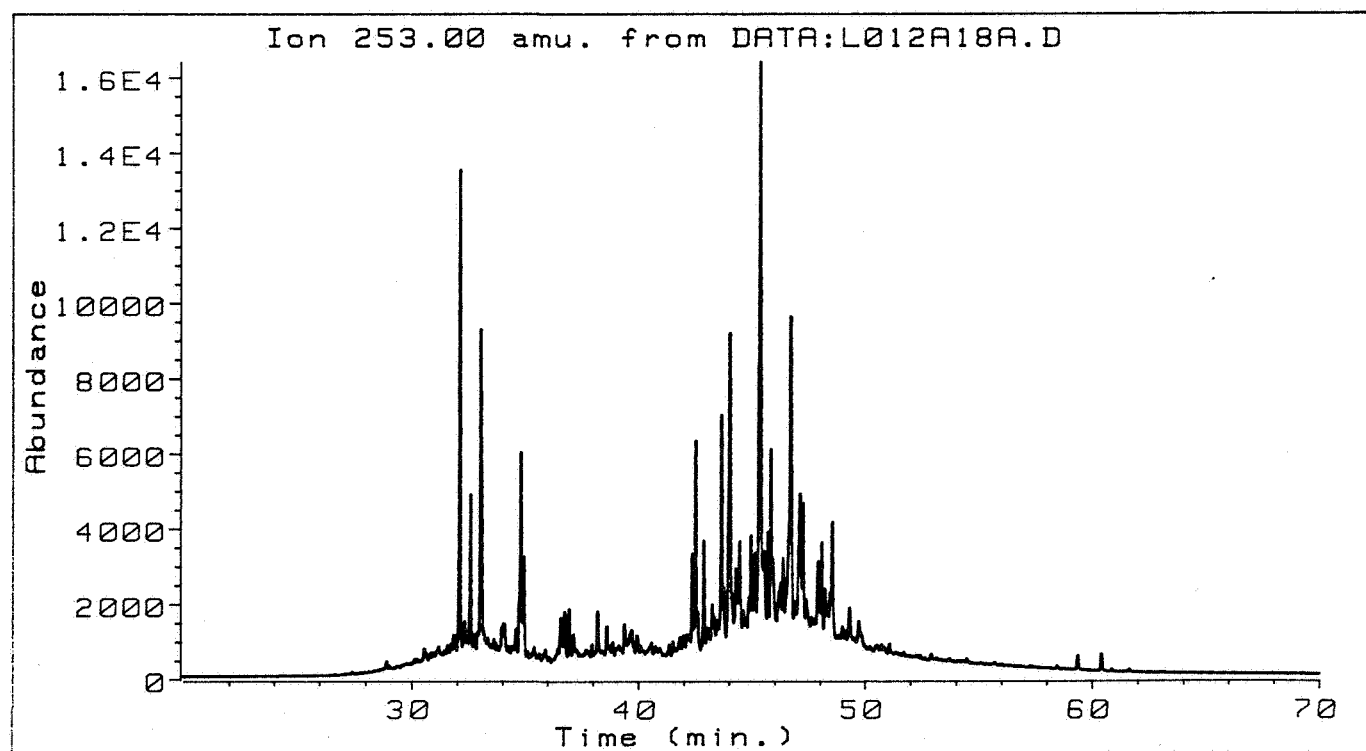
6407/7 2

2650 m



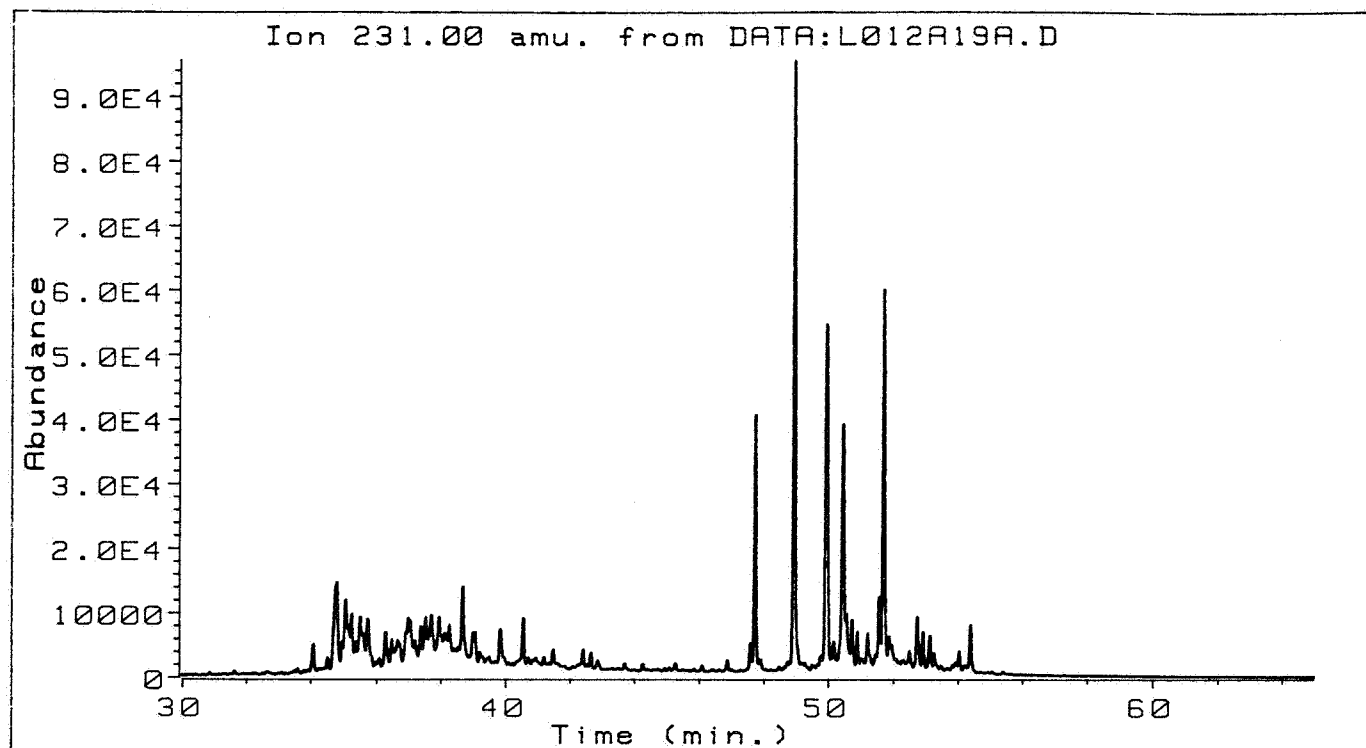
6407/7 2

2653 m



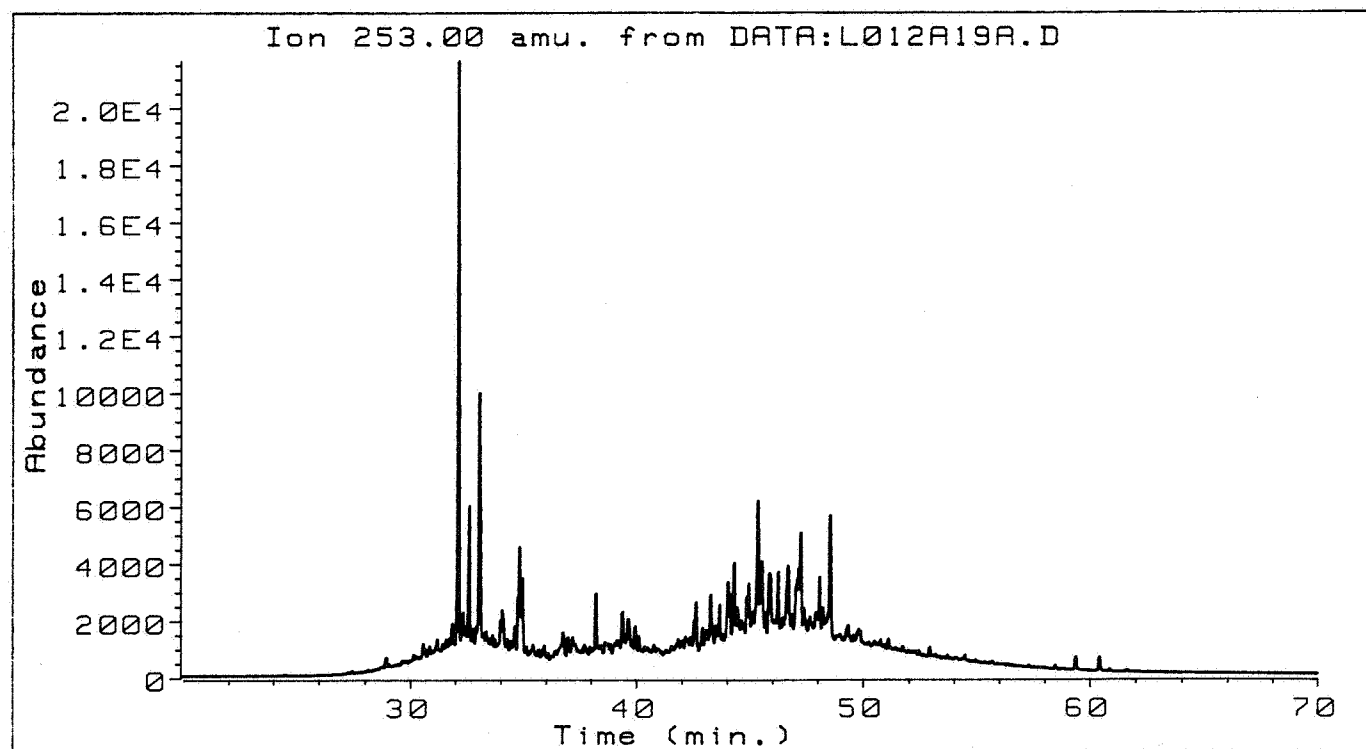
6407/7 2

2653 m



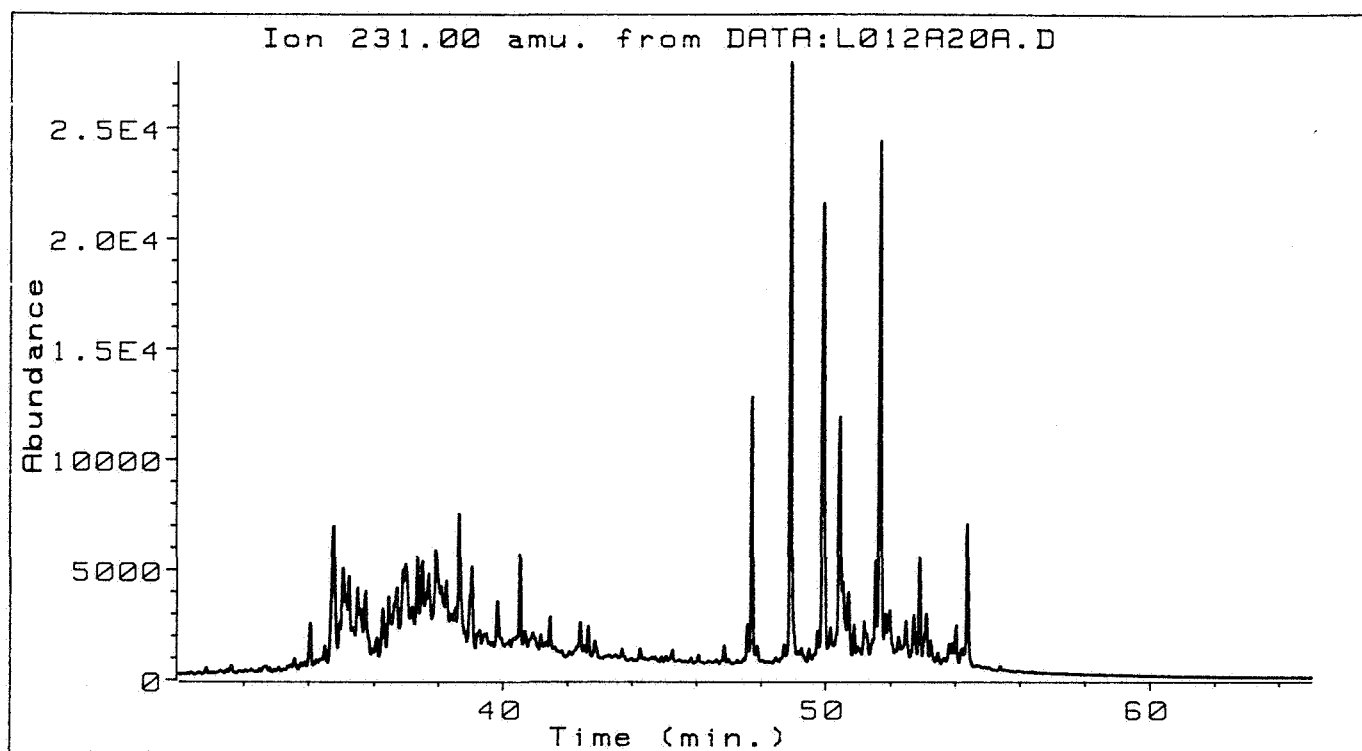
6407/7 2

2661 m



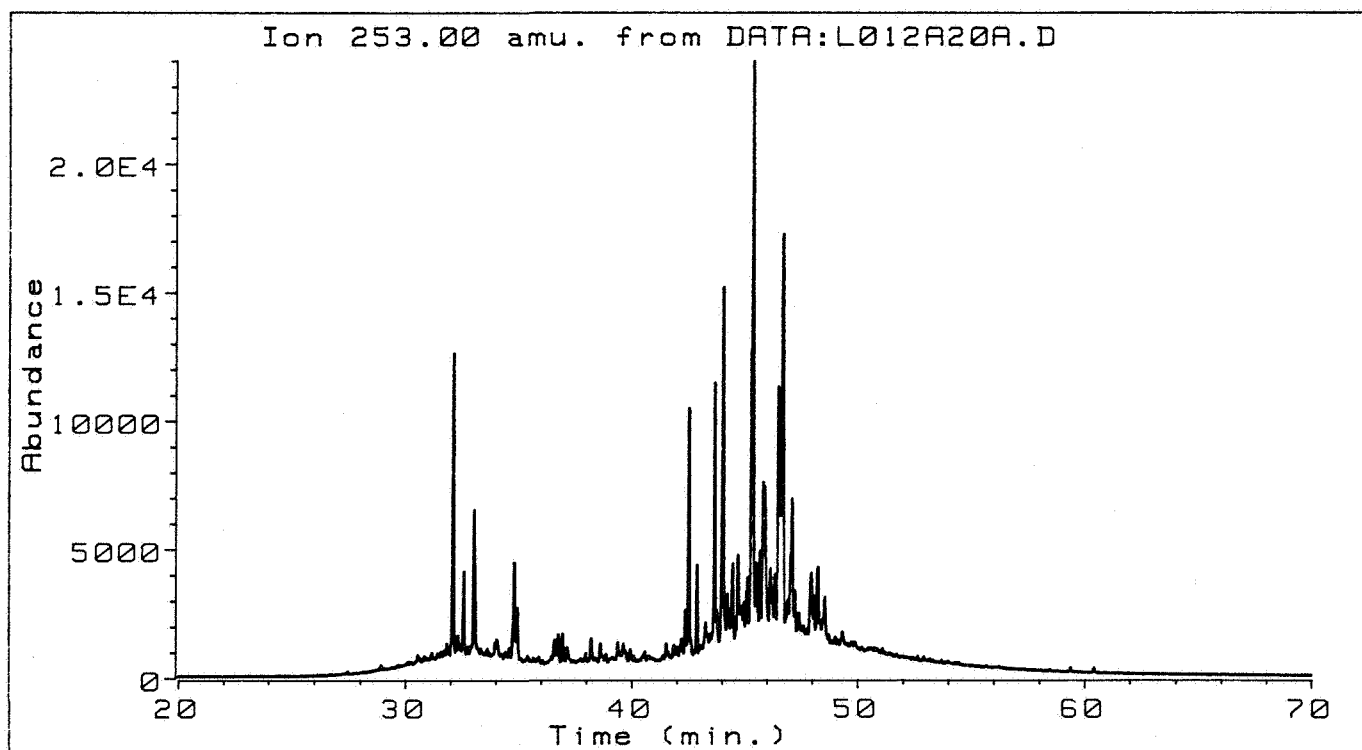
6407/7 2

2661 m



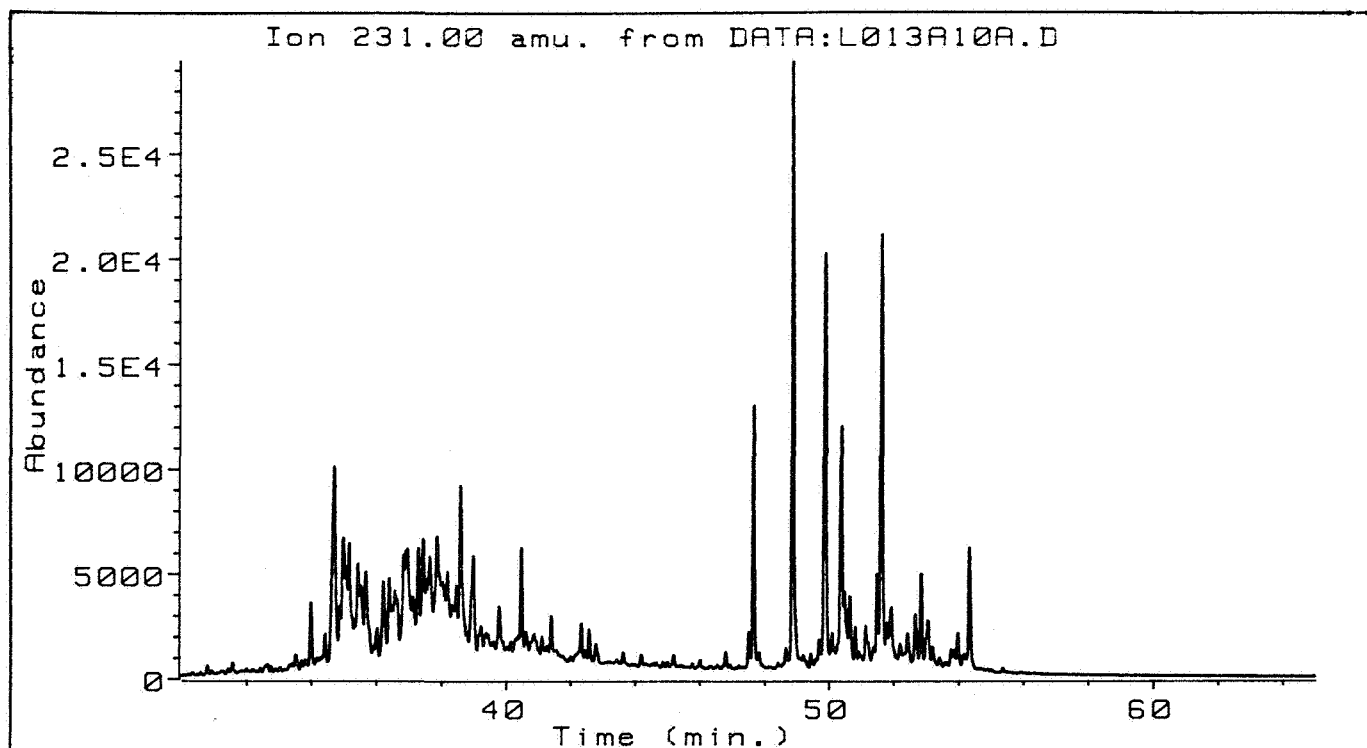
6407/7 2

2673 m



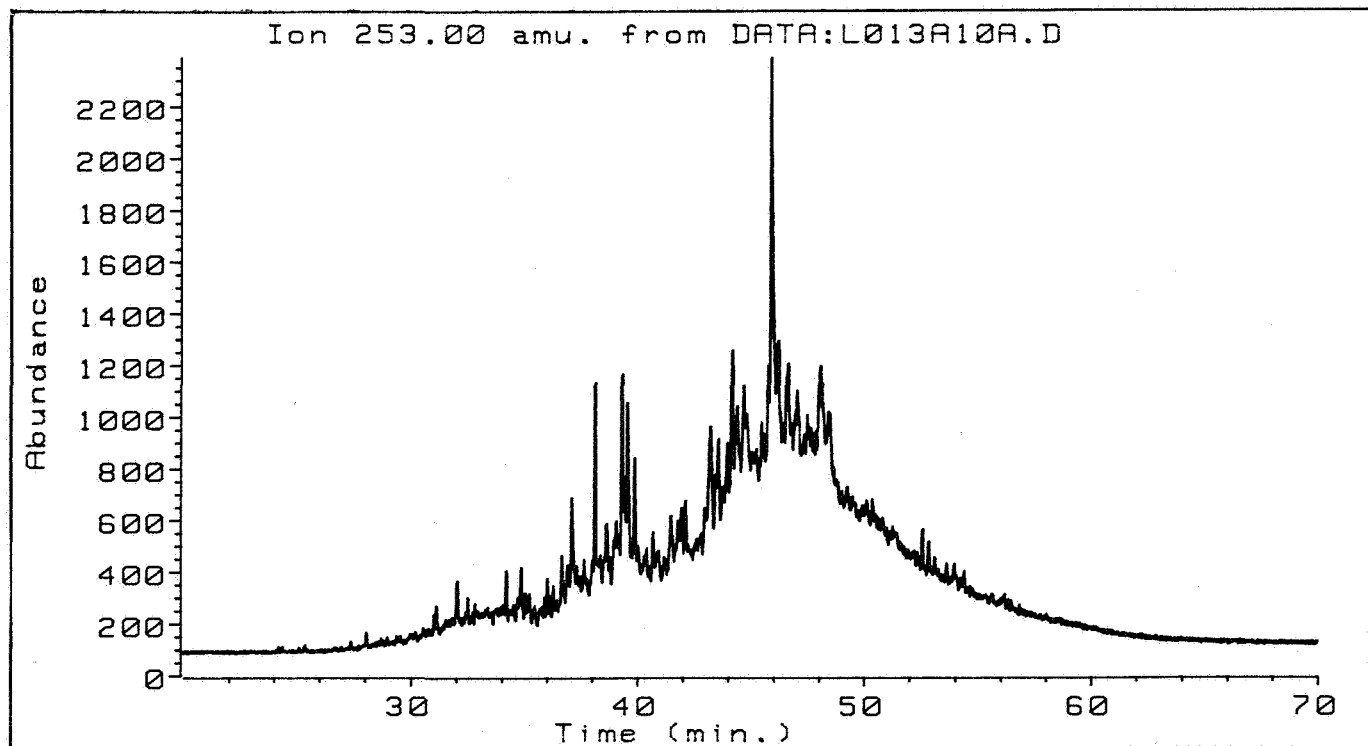
6407/7 2

2673 m



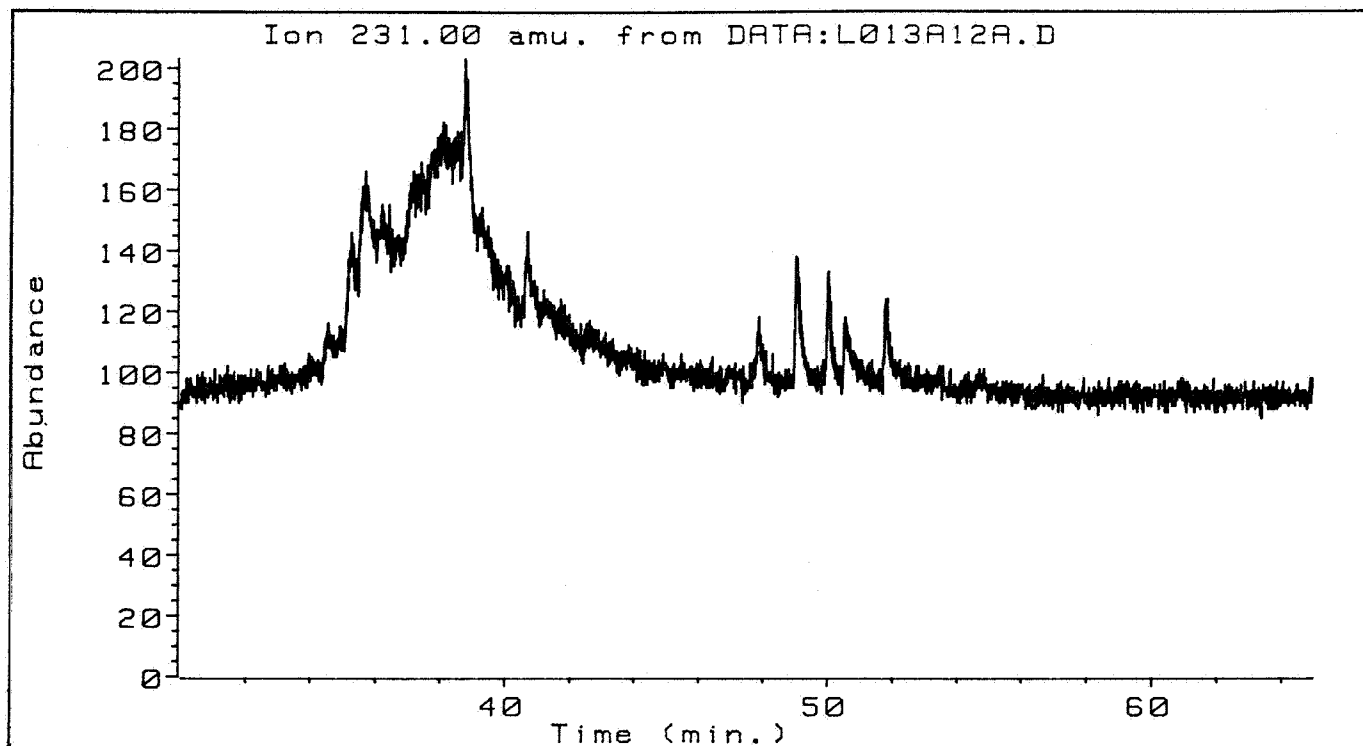
6407/7 2

2678.80 m



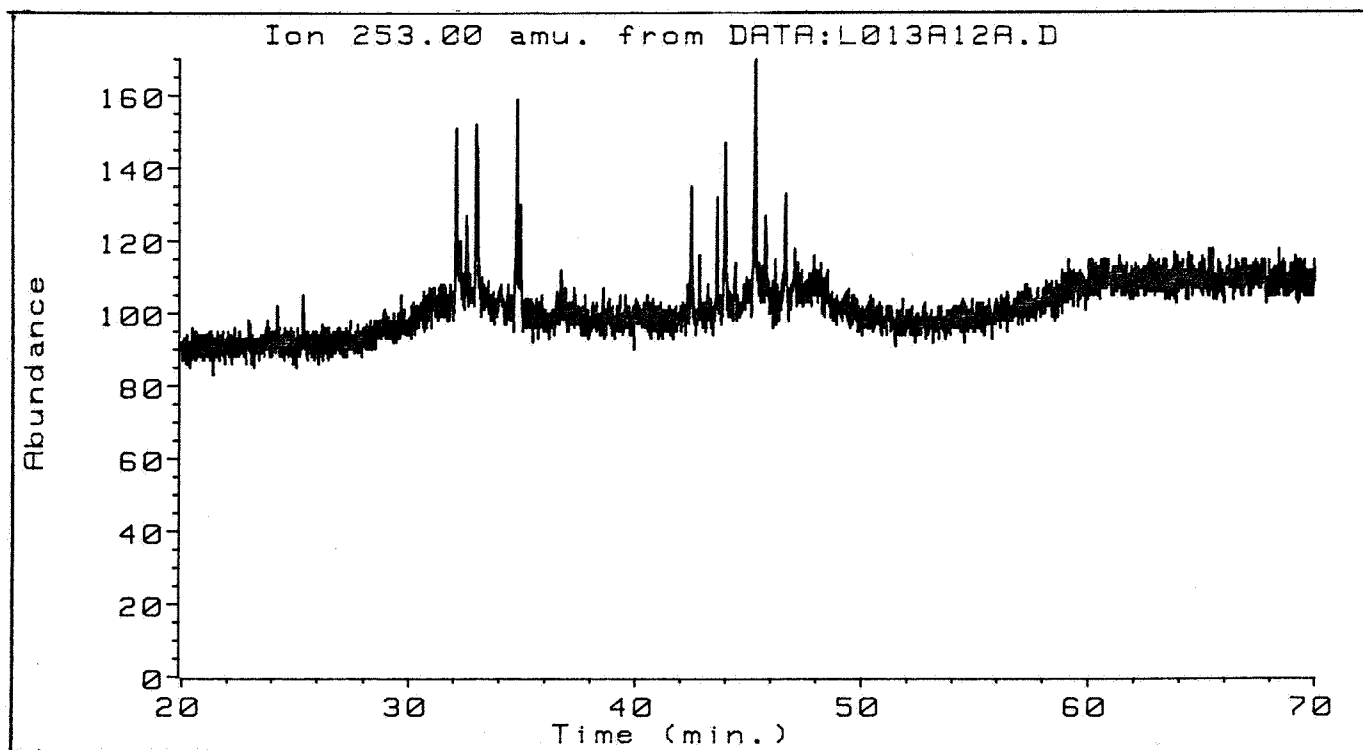
6407/7 2

2678.80 m



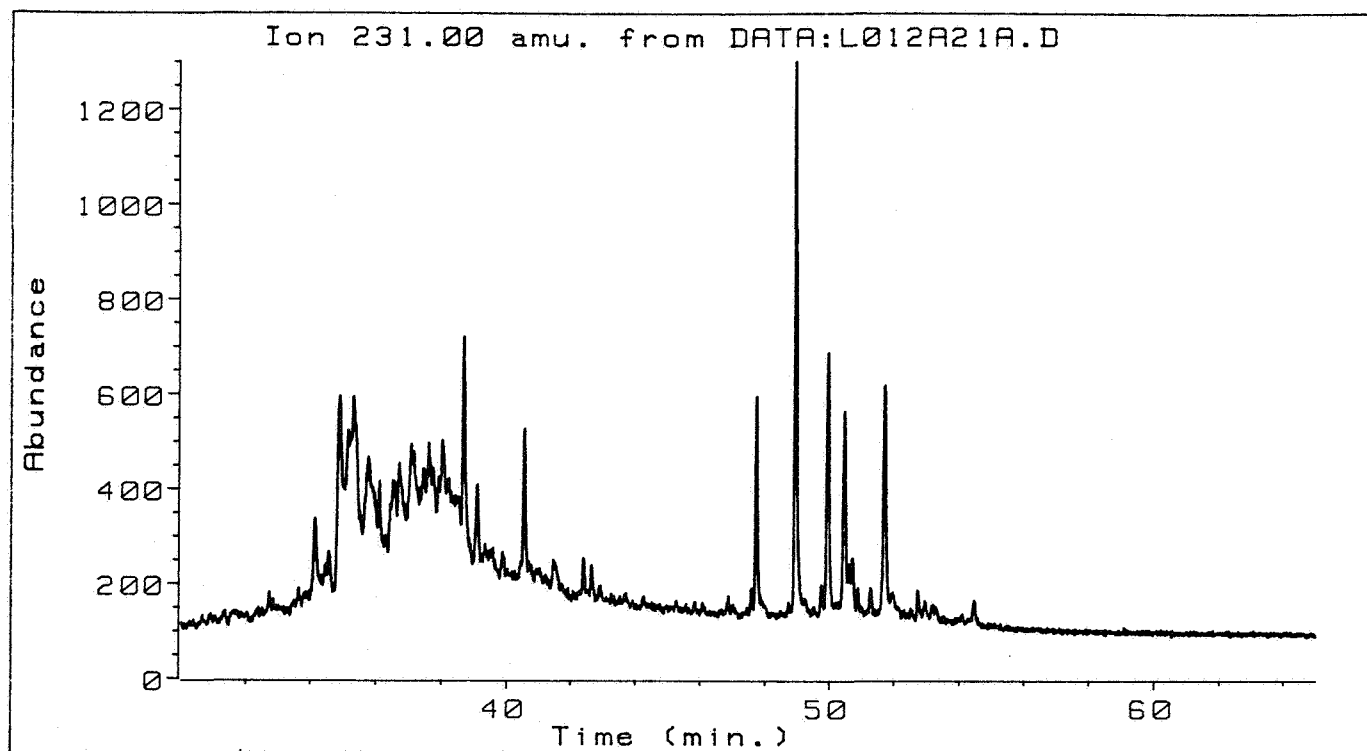
6407/7 2

2681.75 m



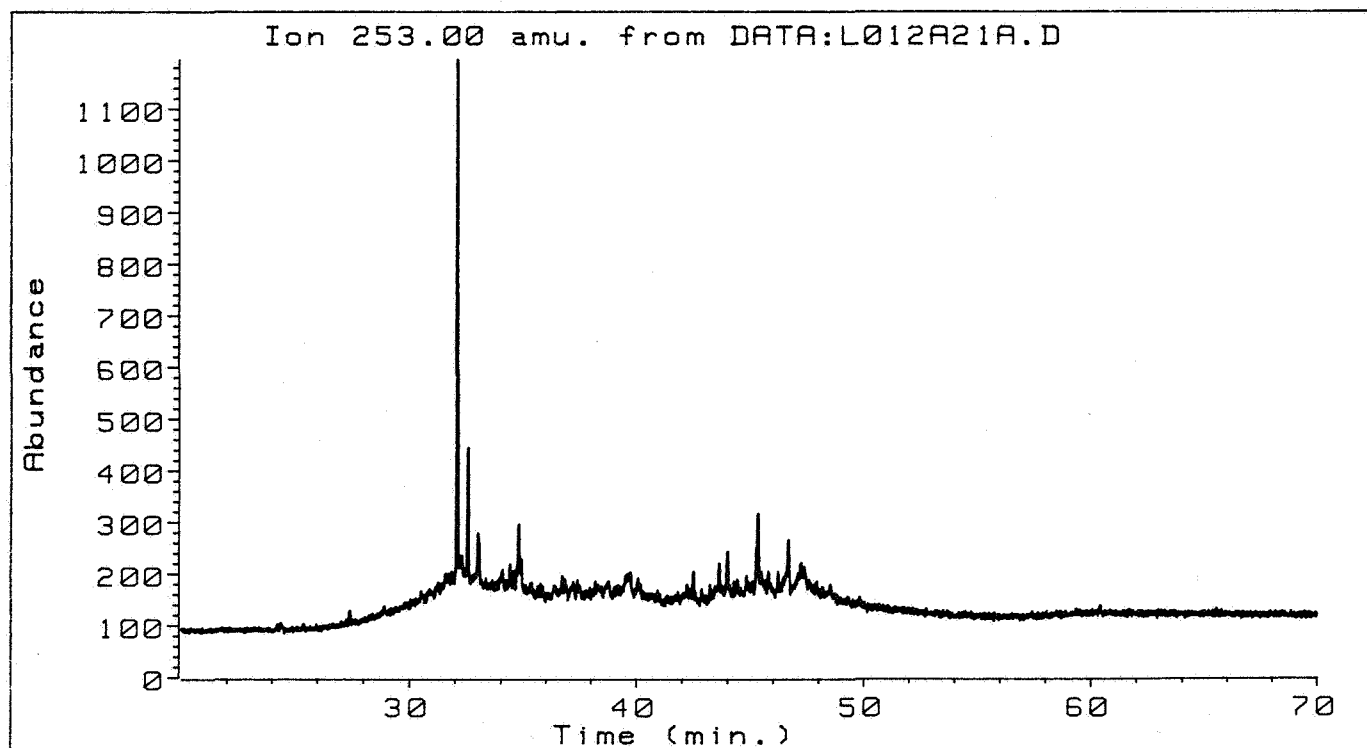
6407/7 2

2681.75 m



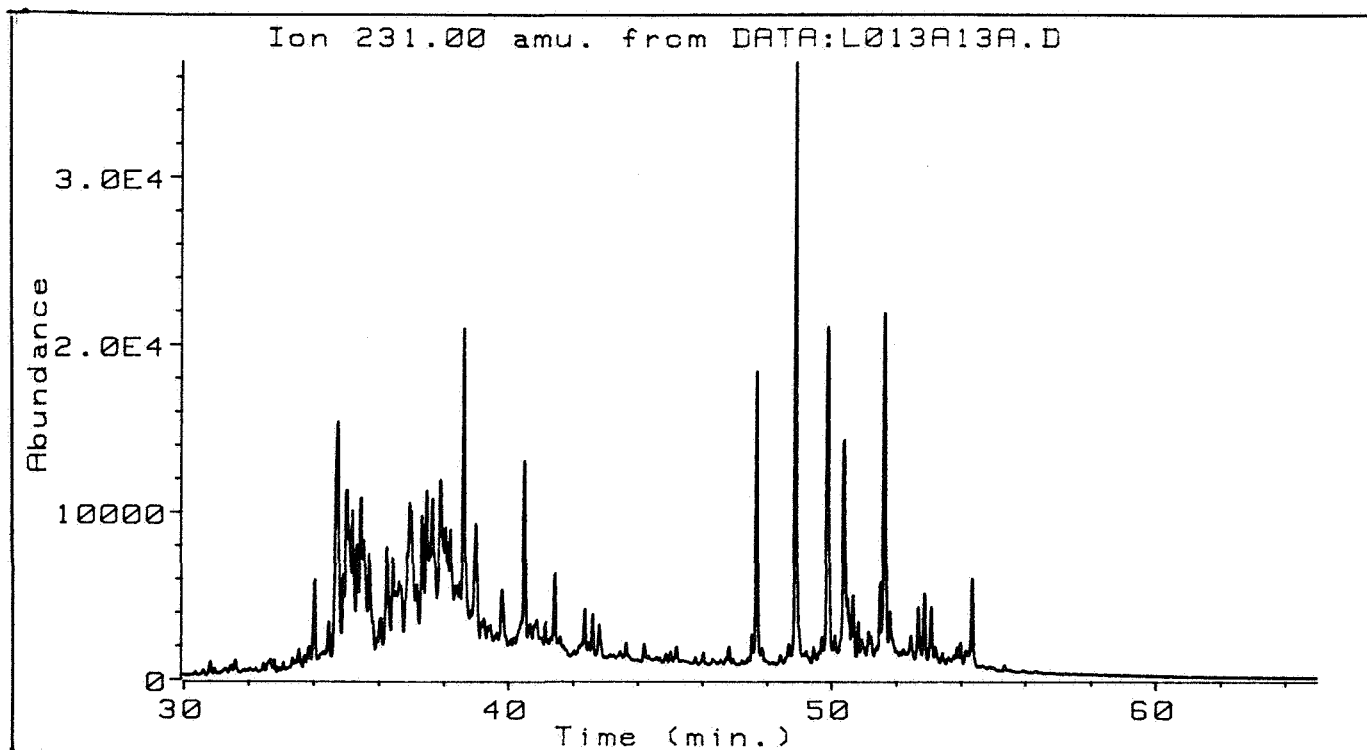
6407/7 2

2695 m



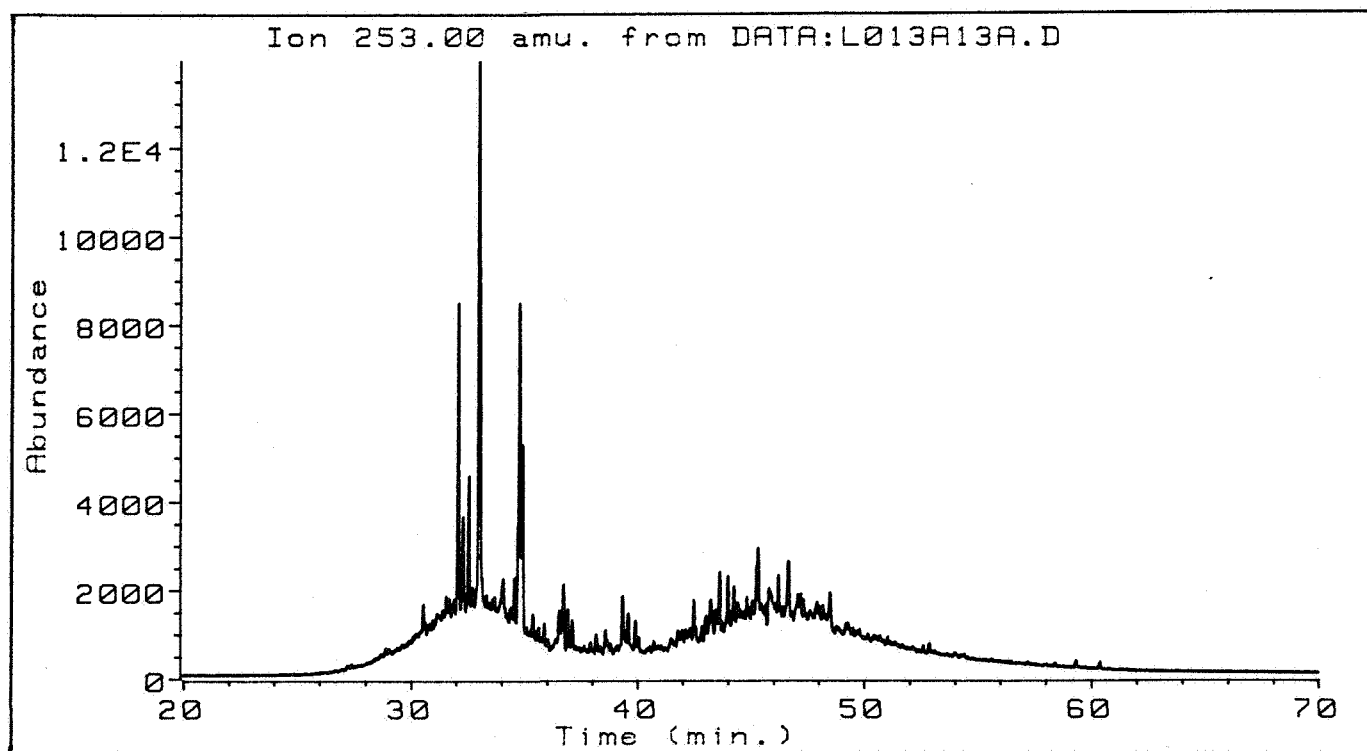
6407/7 2

2695 m



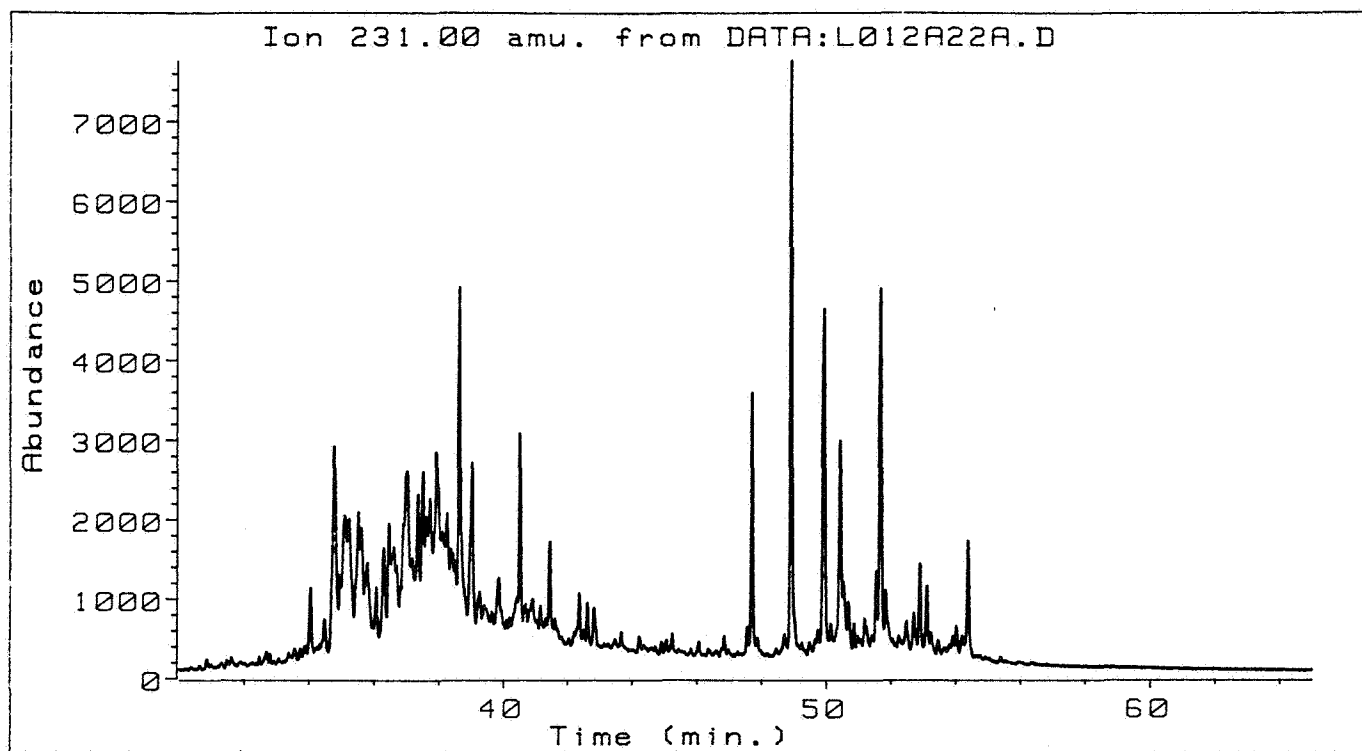
6407/7 2

2739.50 m



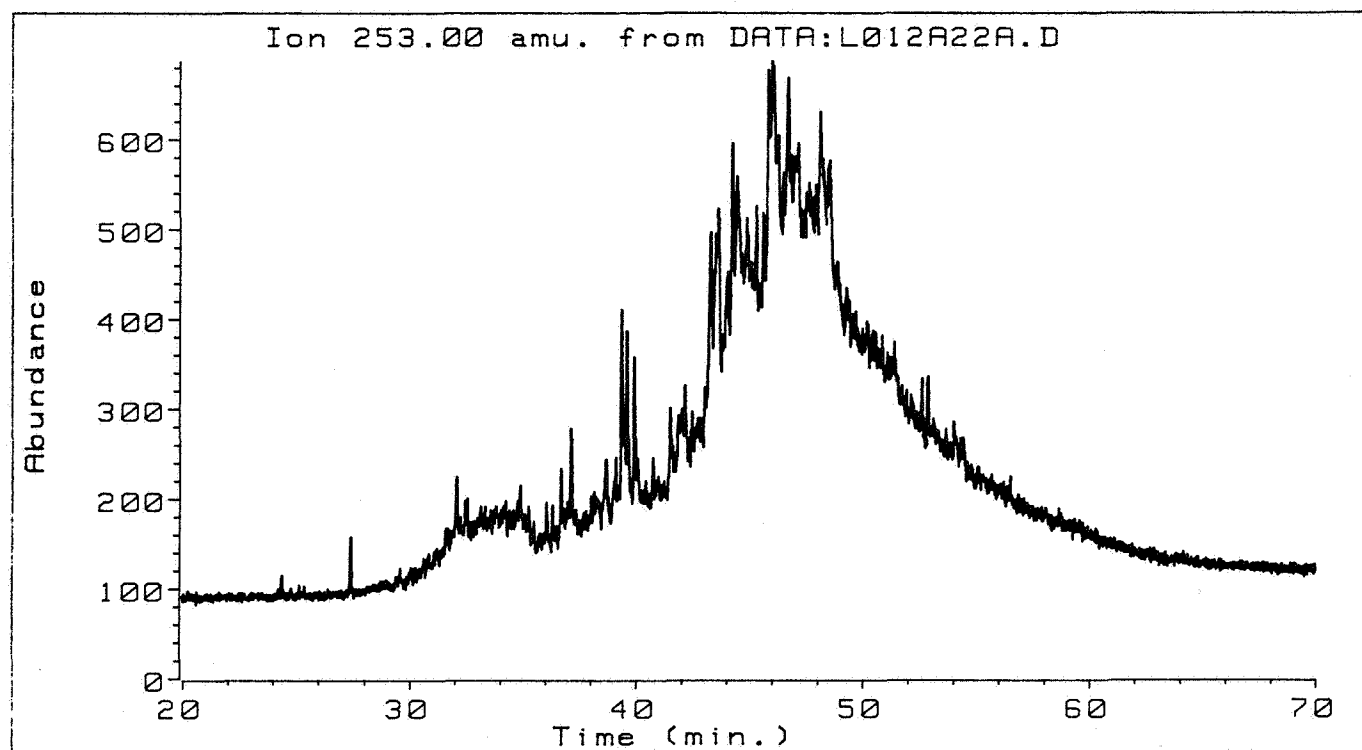
6407/7 2

2739.50 m



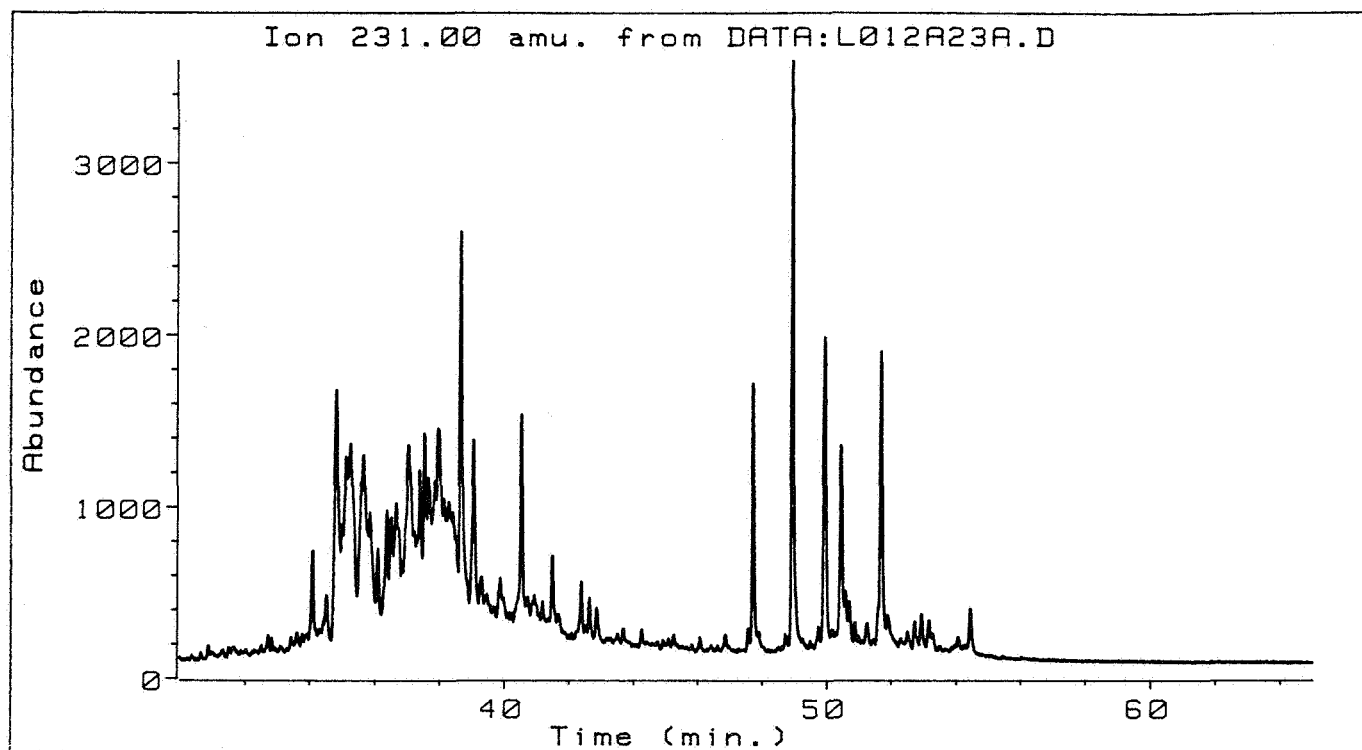
6407/7 2

2755 m



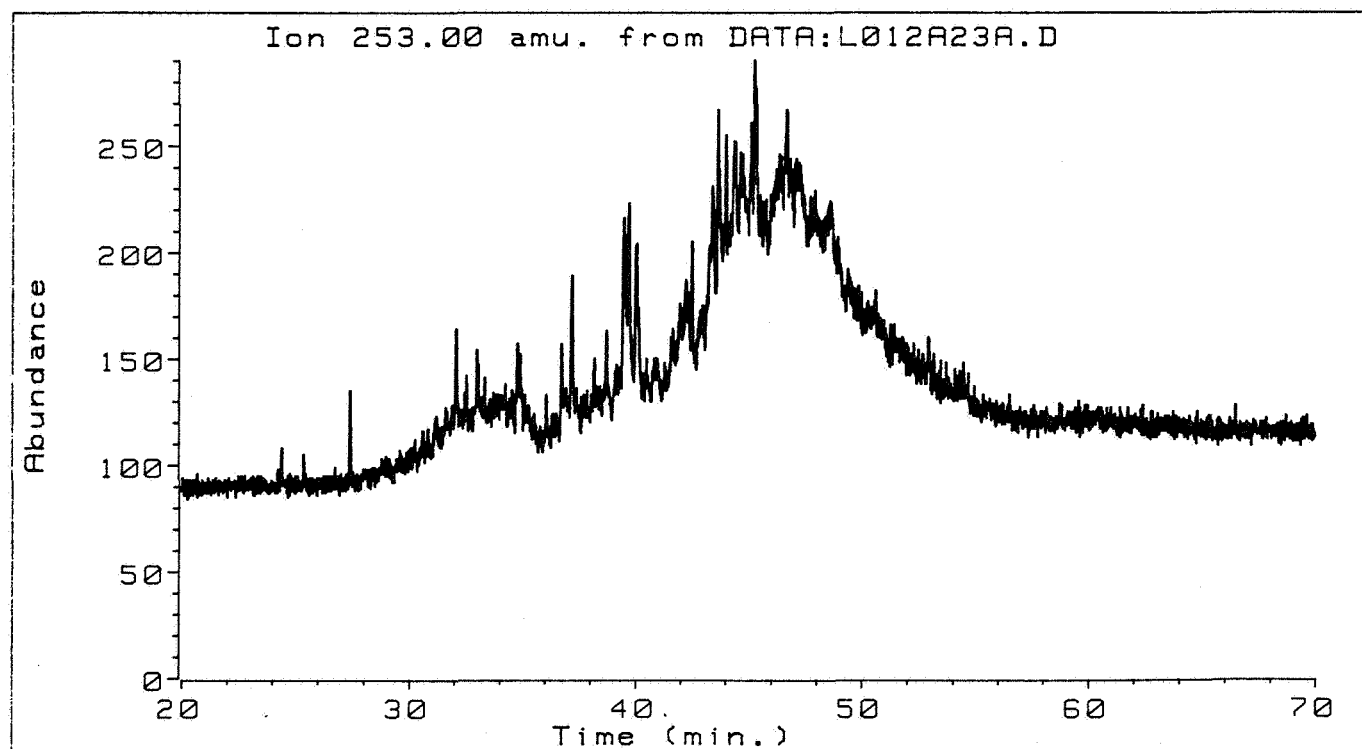
6407/7 2

2755 m



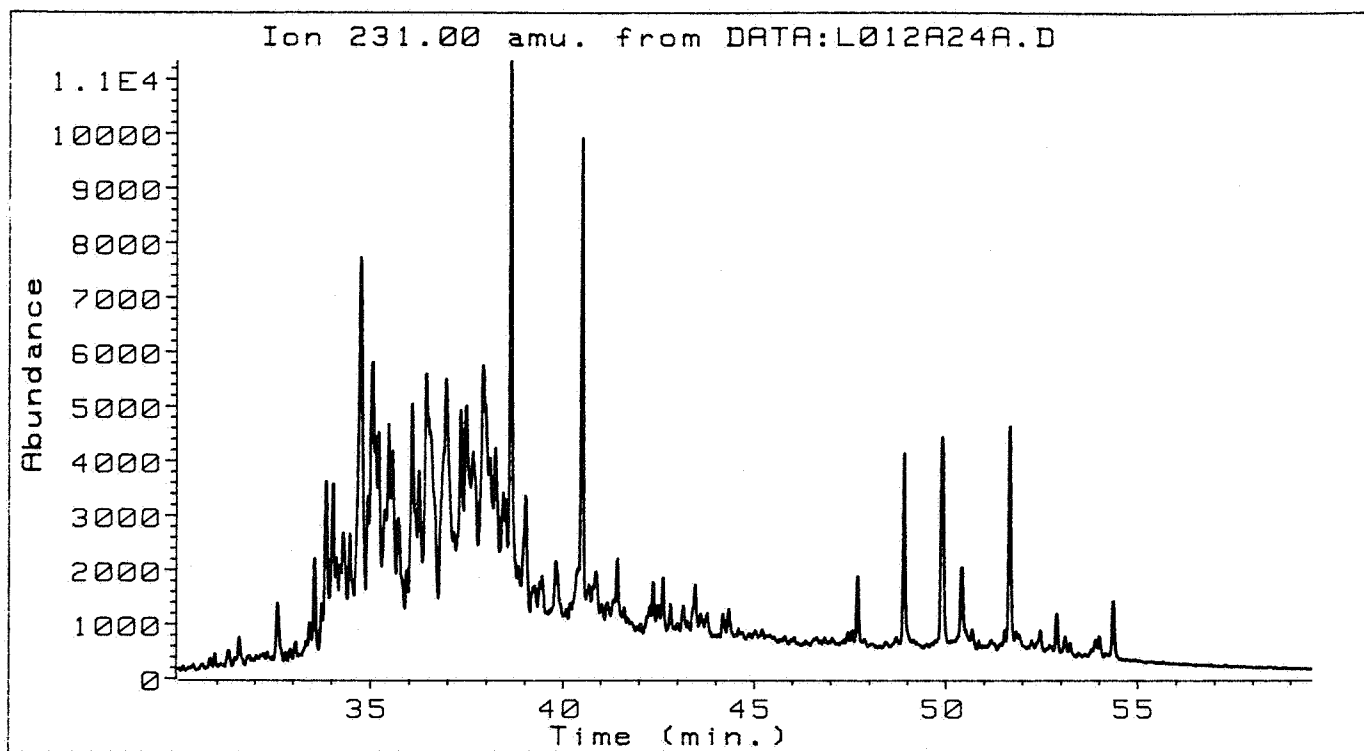
6407/7 2

2760 m



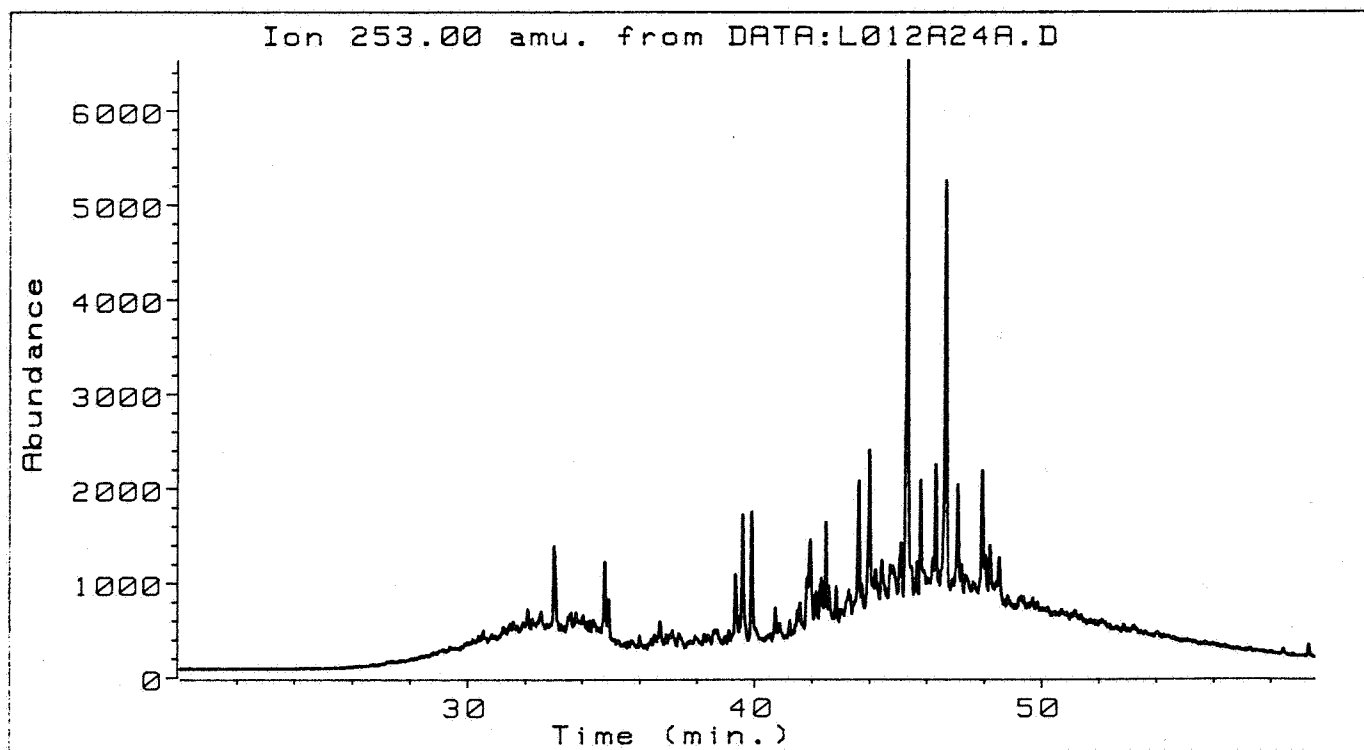
6407/7 2

2760 m



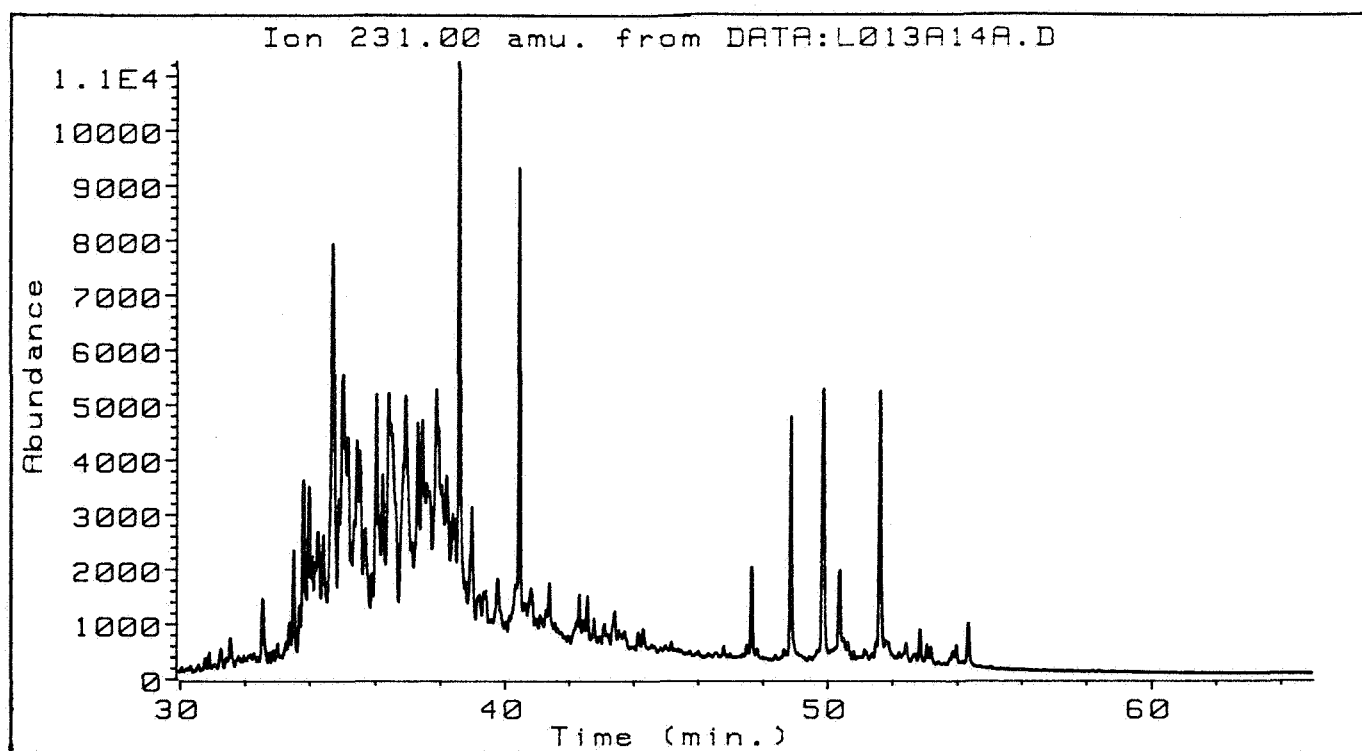
6407/7 2

2772 m



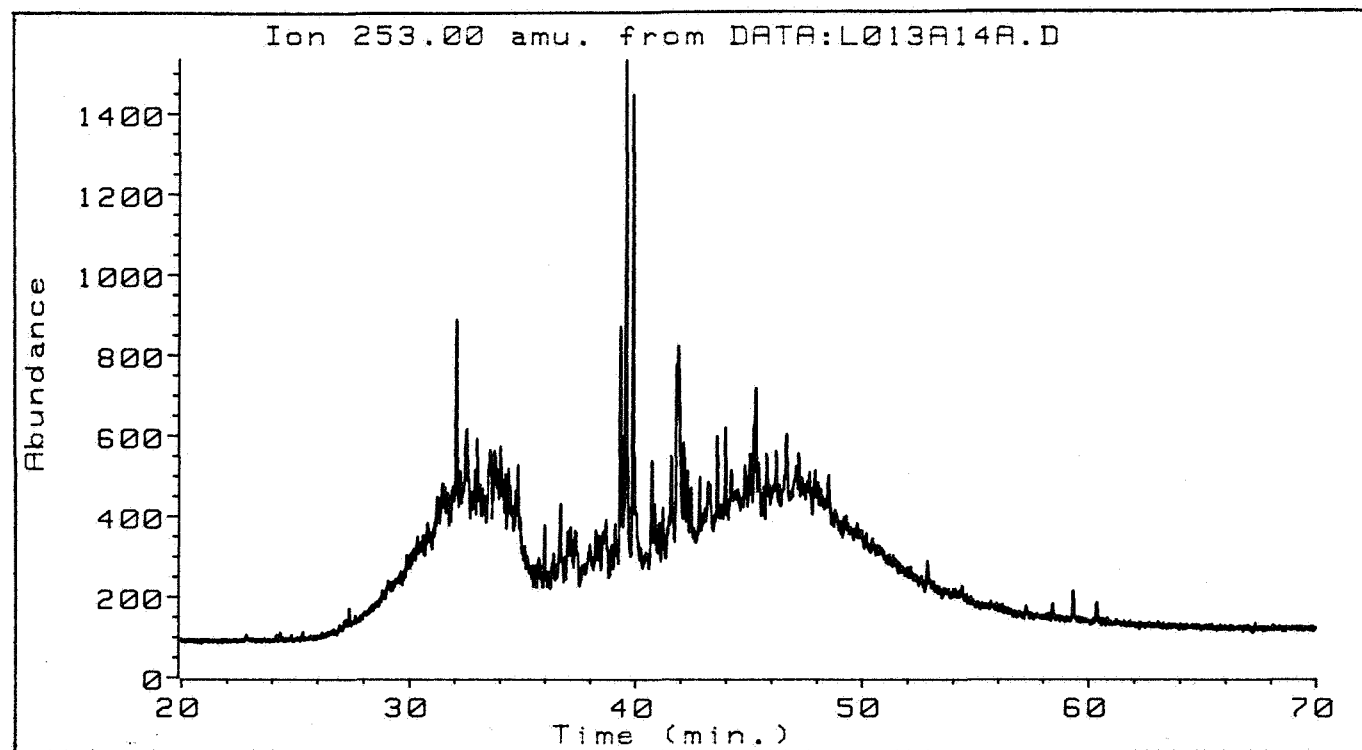
6407/7 2

2772 m



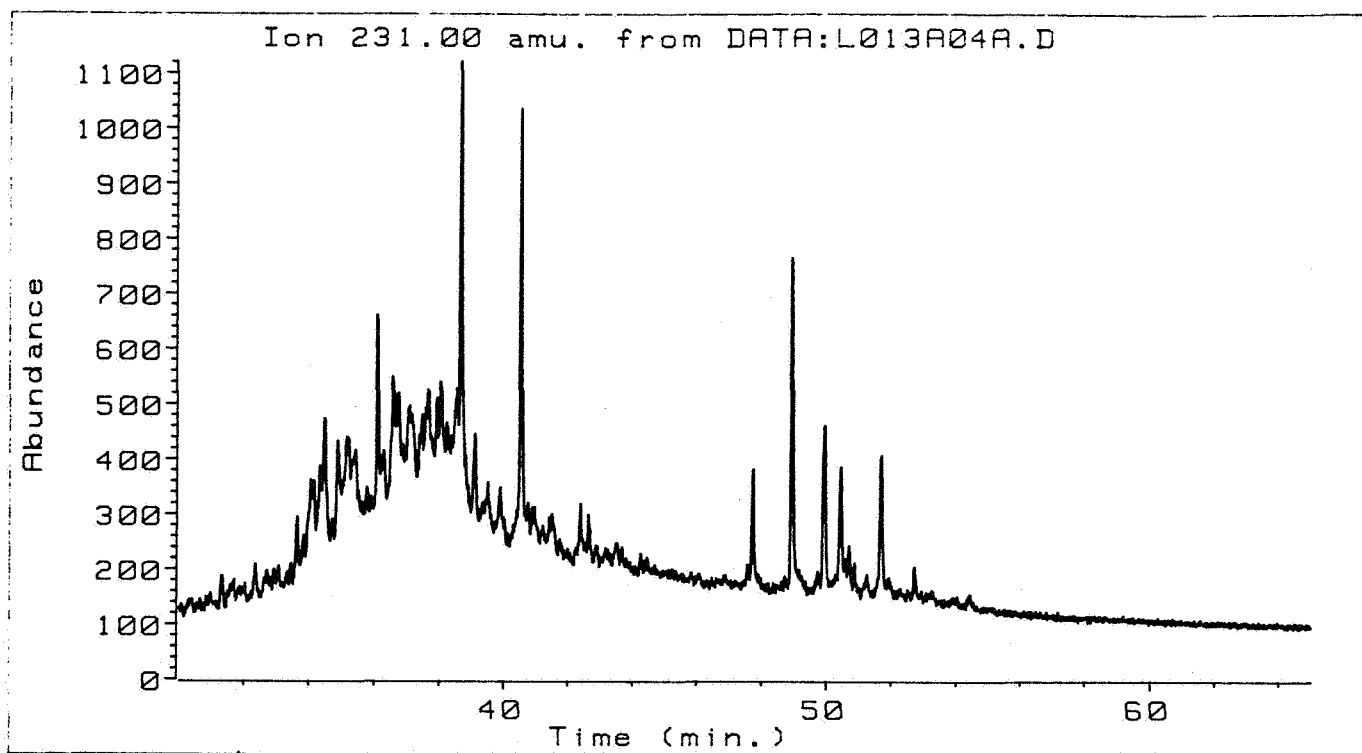
6407/7 2

2800.75 m



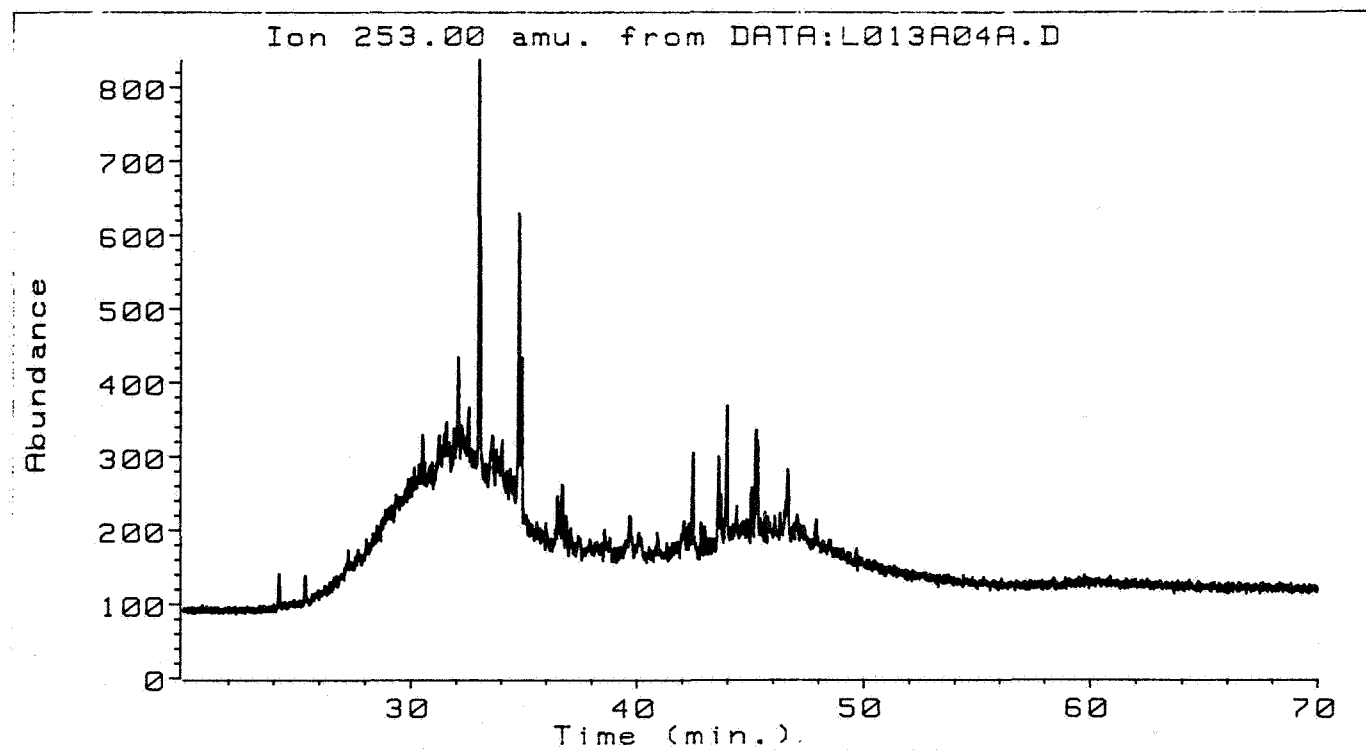
6407/7 2

2800.75 m



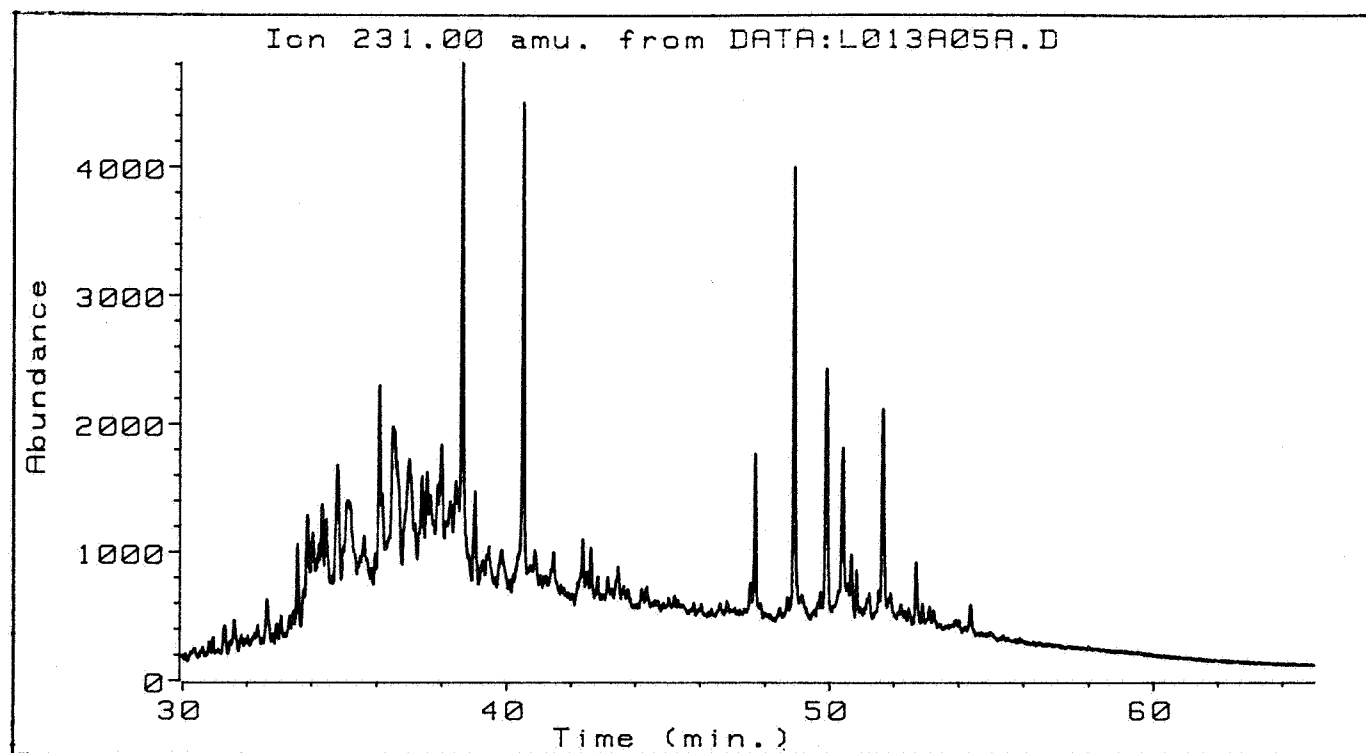
6407/7 2

2872 m



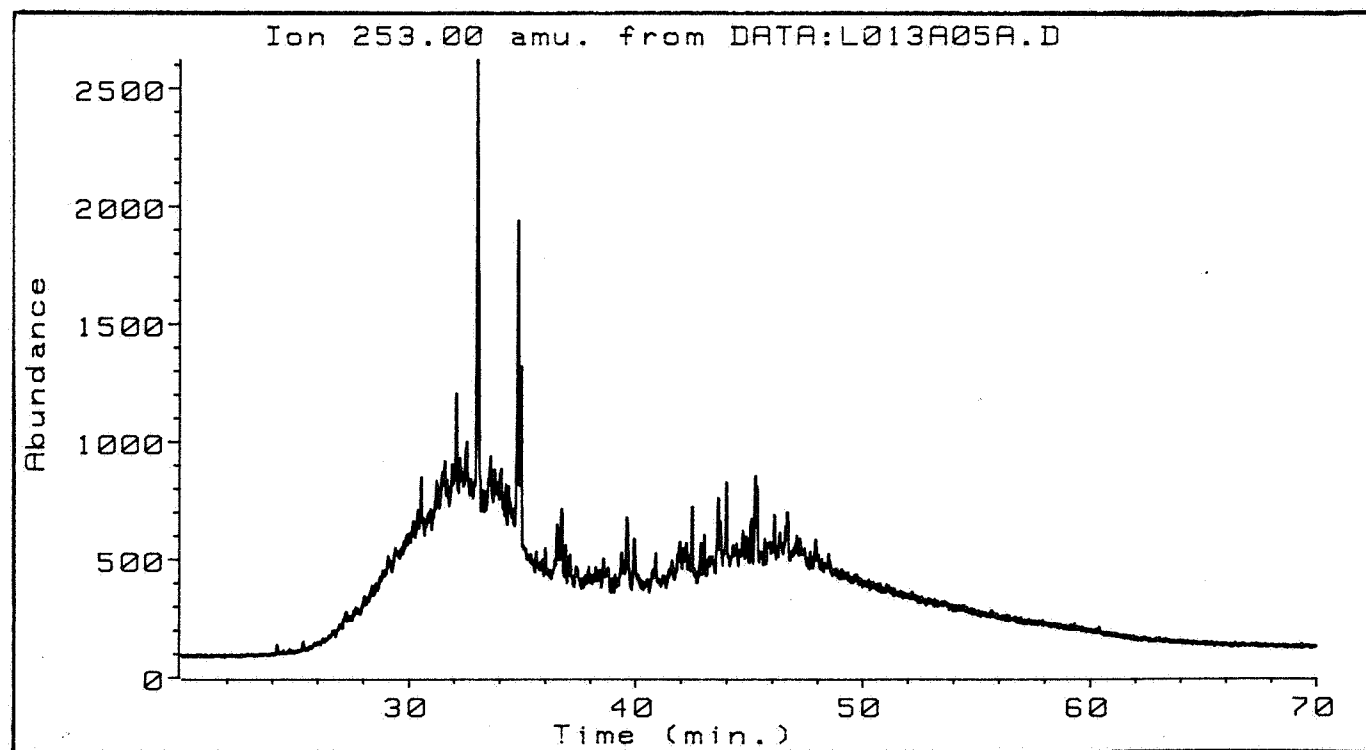
6407/7 2

2872 m



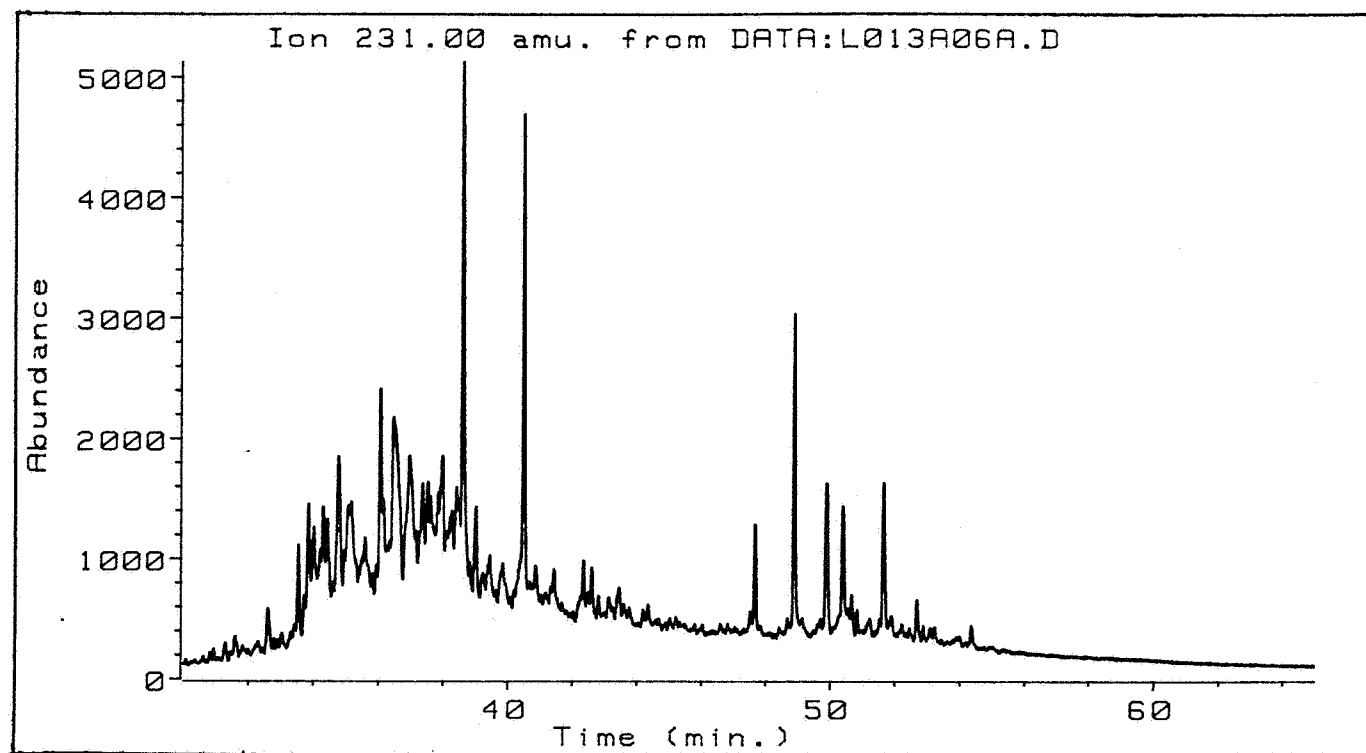
6407/7 2

2874 m



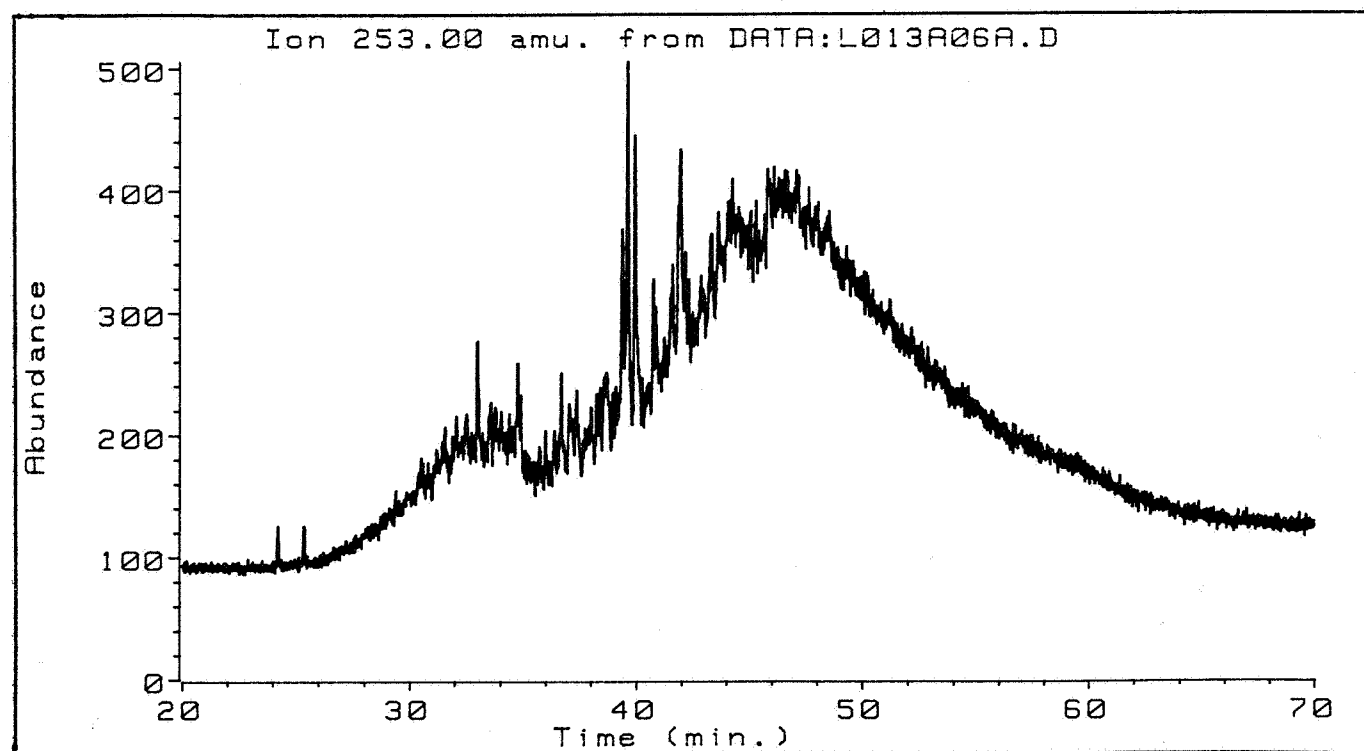
6407/7 2

2874 m



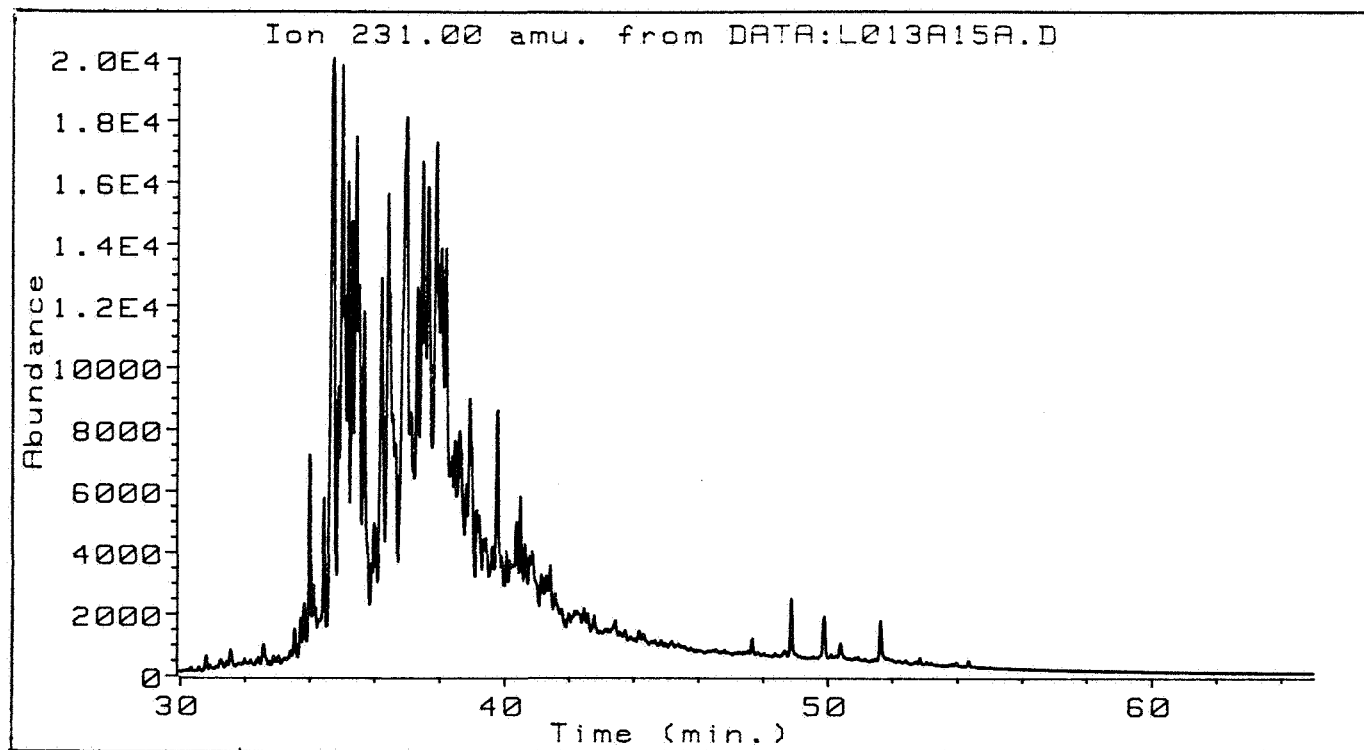
6407/7 2

2876 m



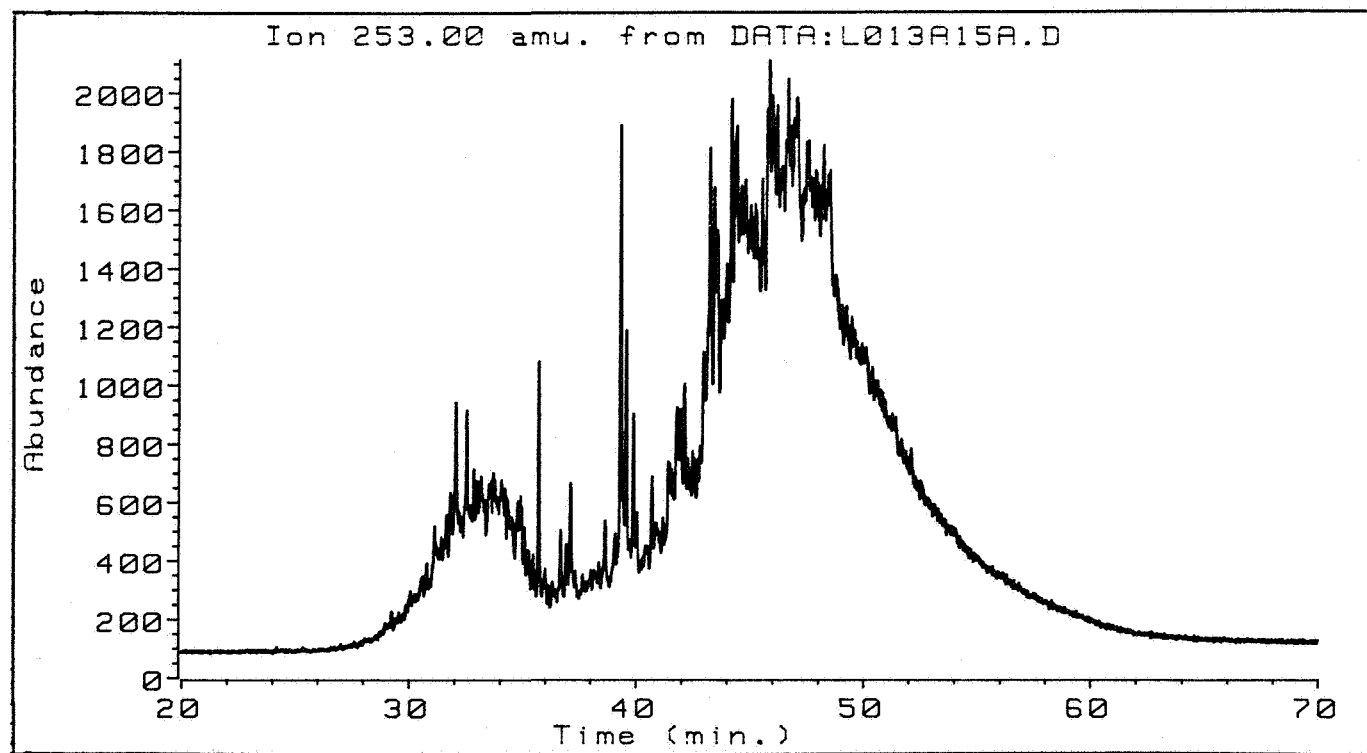
6407/7 2

2876 m



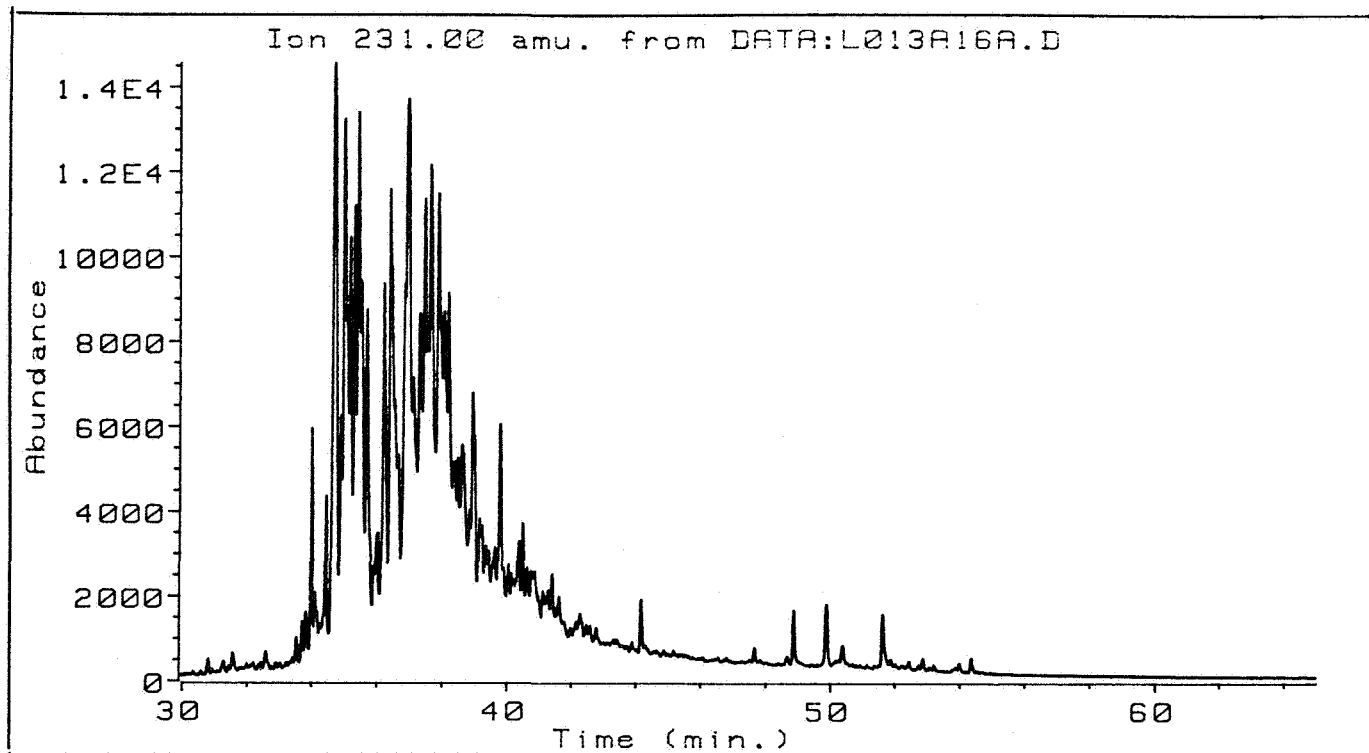
6407/7 2

2884.85 m COAL



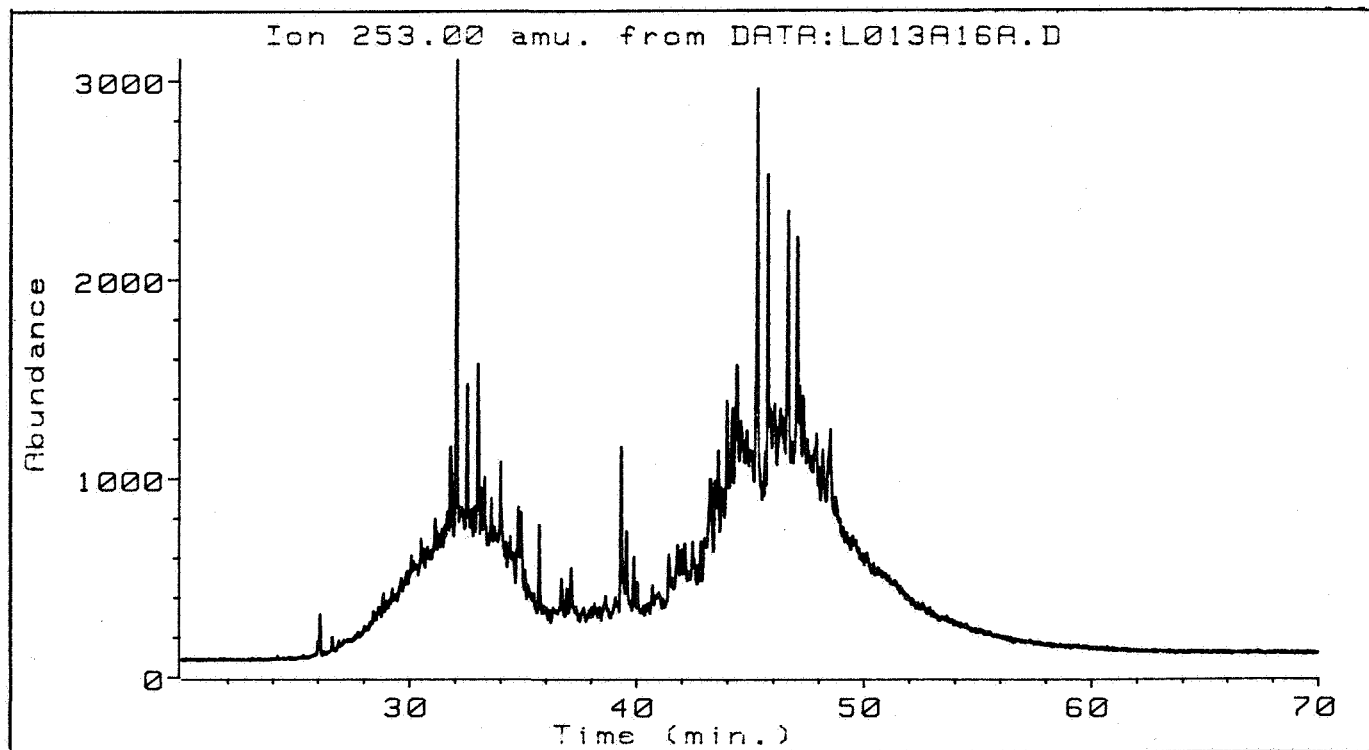
6407/7 2

2884.85 m COAL



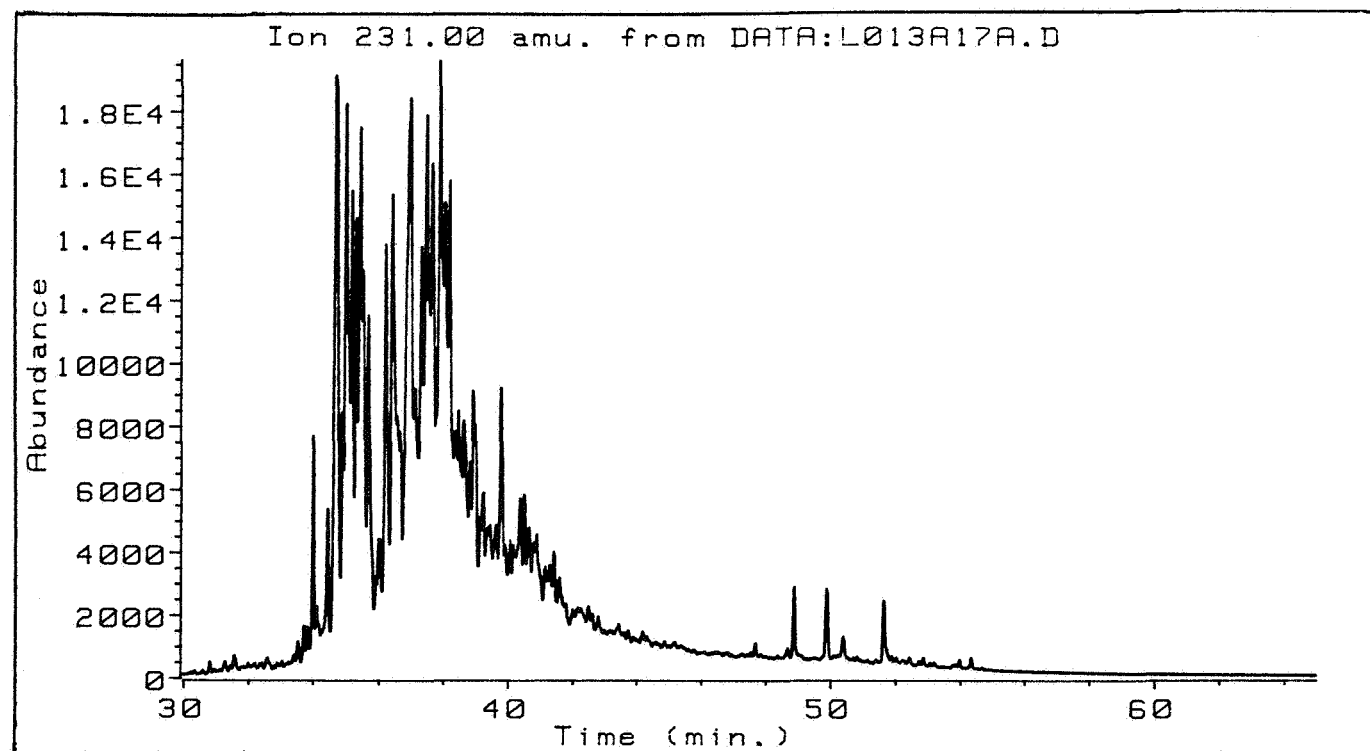
6407/7 2

2888.10 M COAL



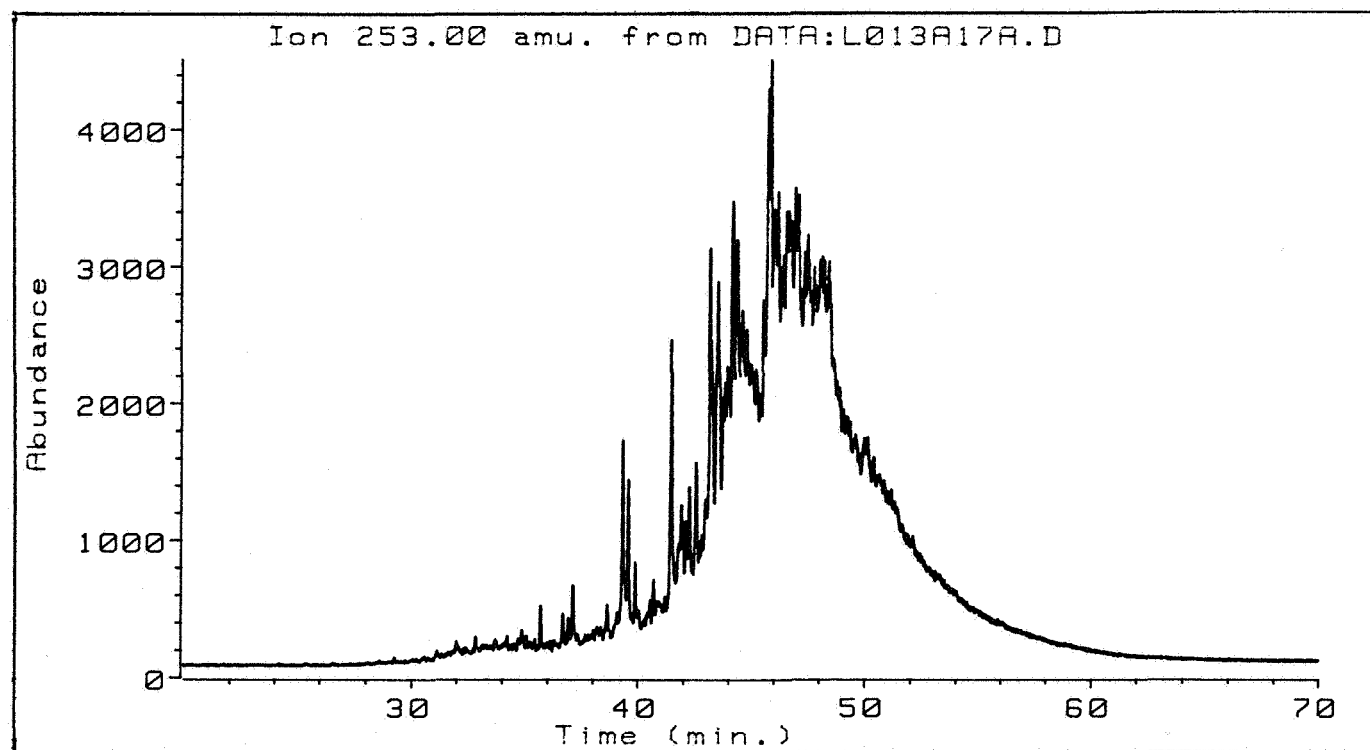
6407/7 2

2888.10 M COAL



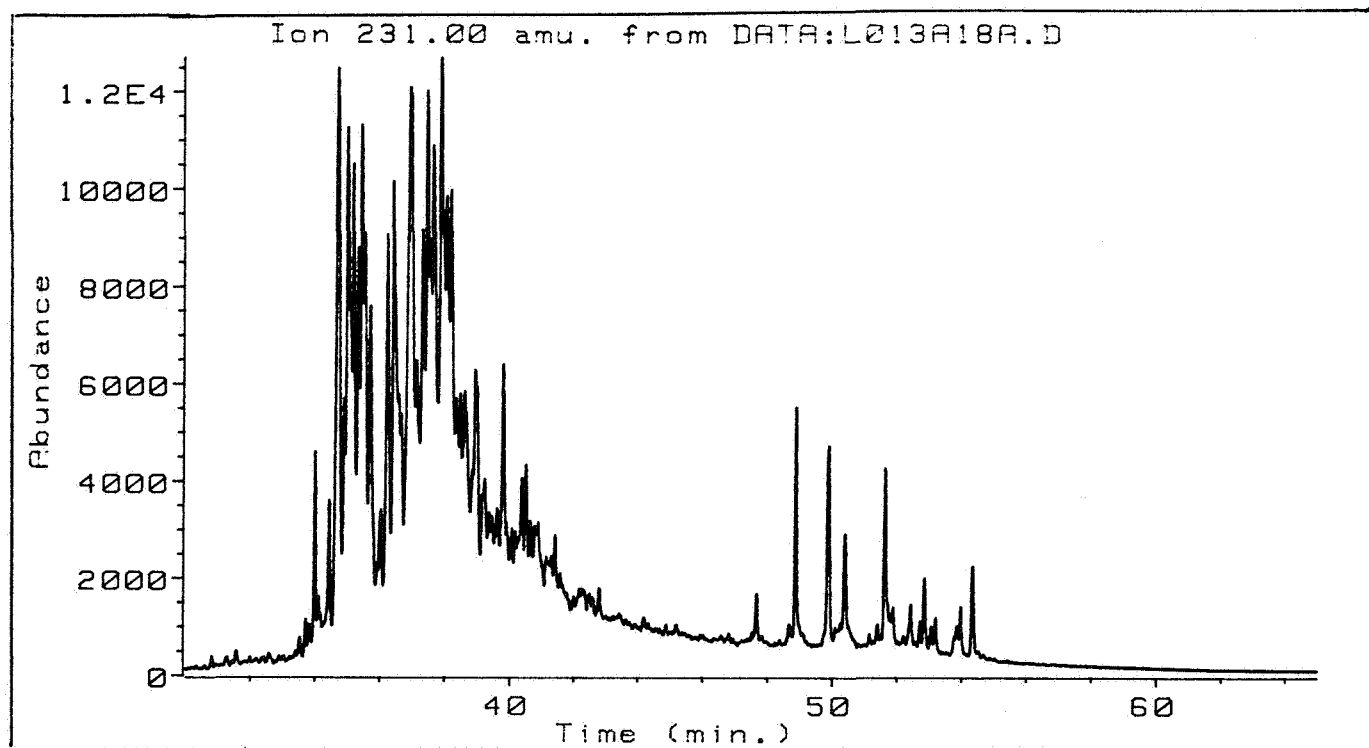
6407/7 2

2905.30 m COAL



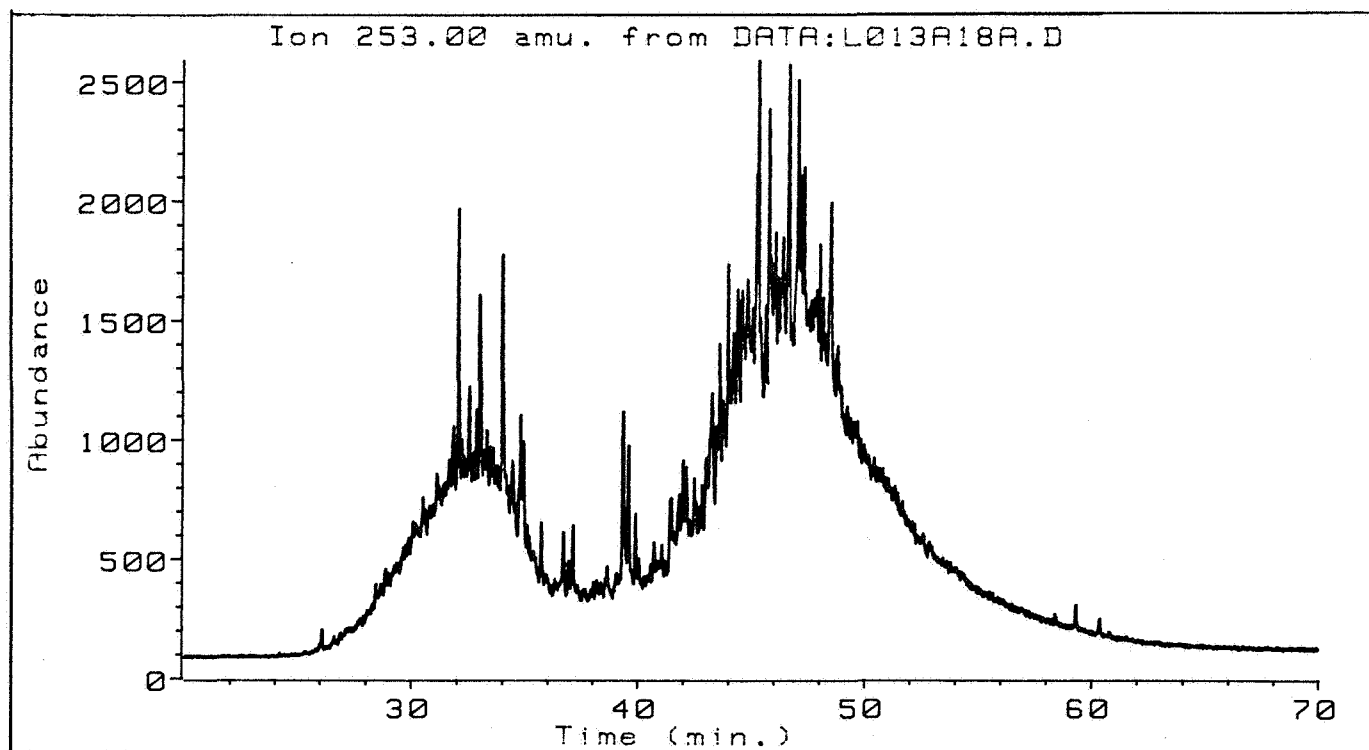
6407/7 2

2905.30 m COAL



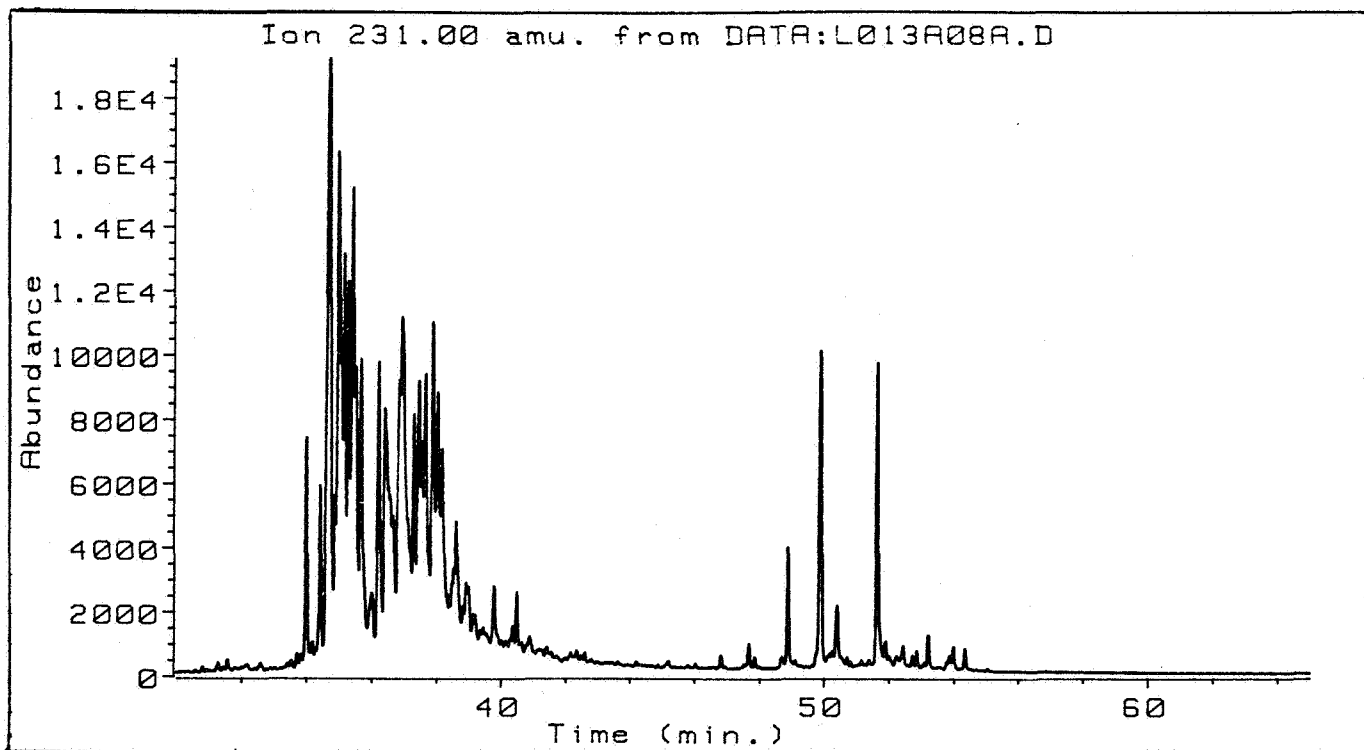
6407/7 2

2913 m COAL



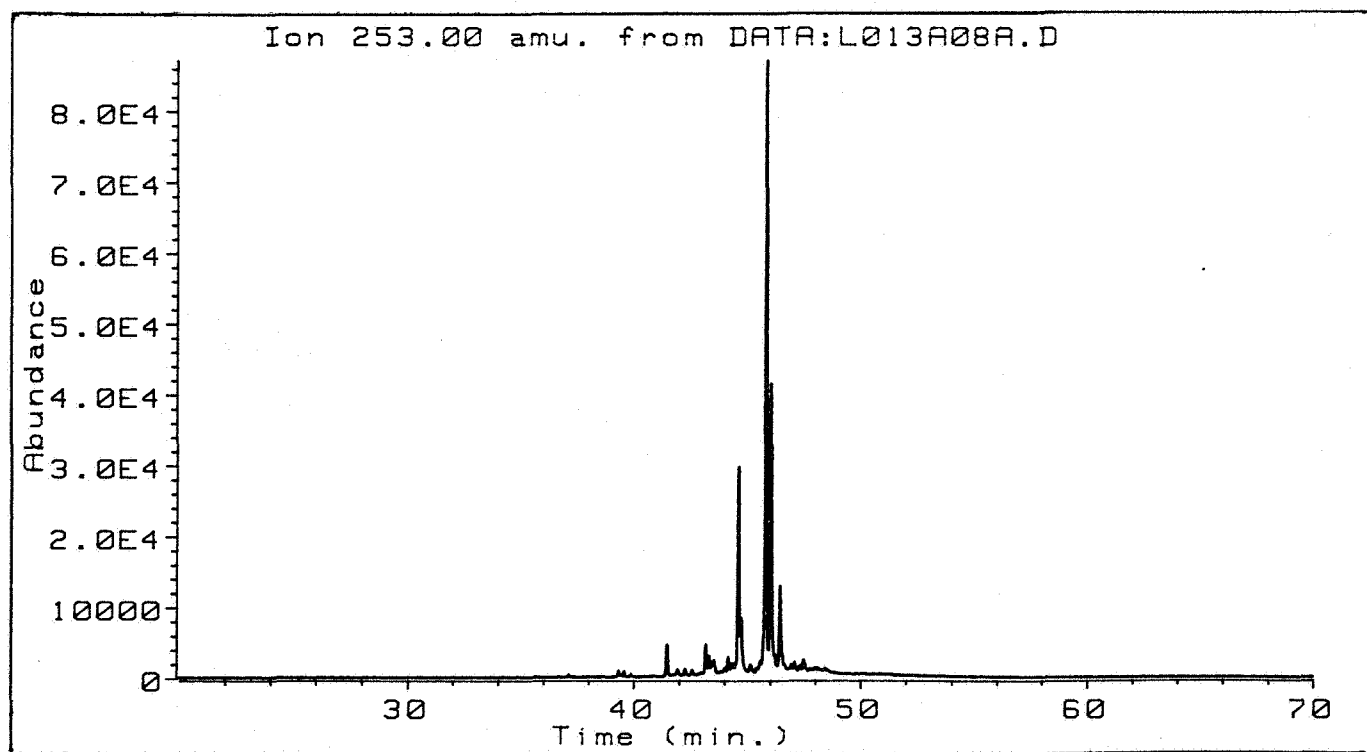
6407/7 2

2913 m COAL



6407/7 2

2934 m



6407/7 2

2934 m



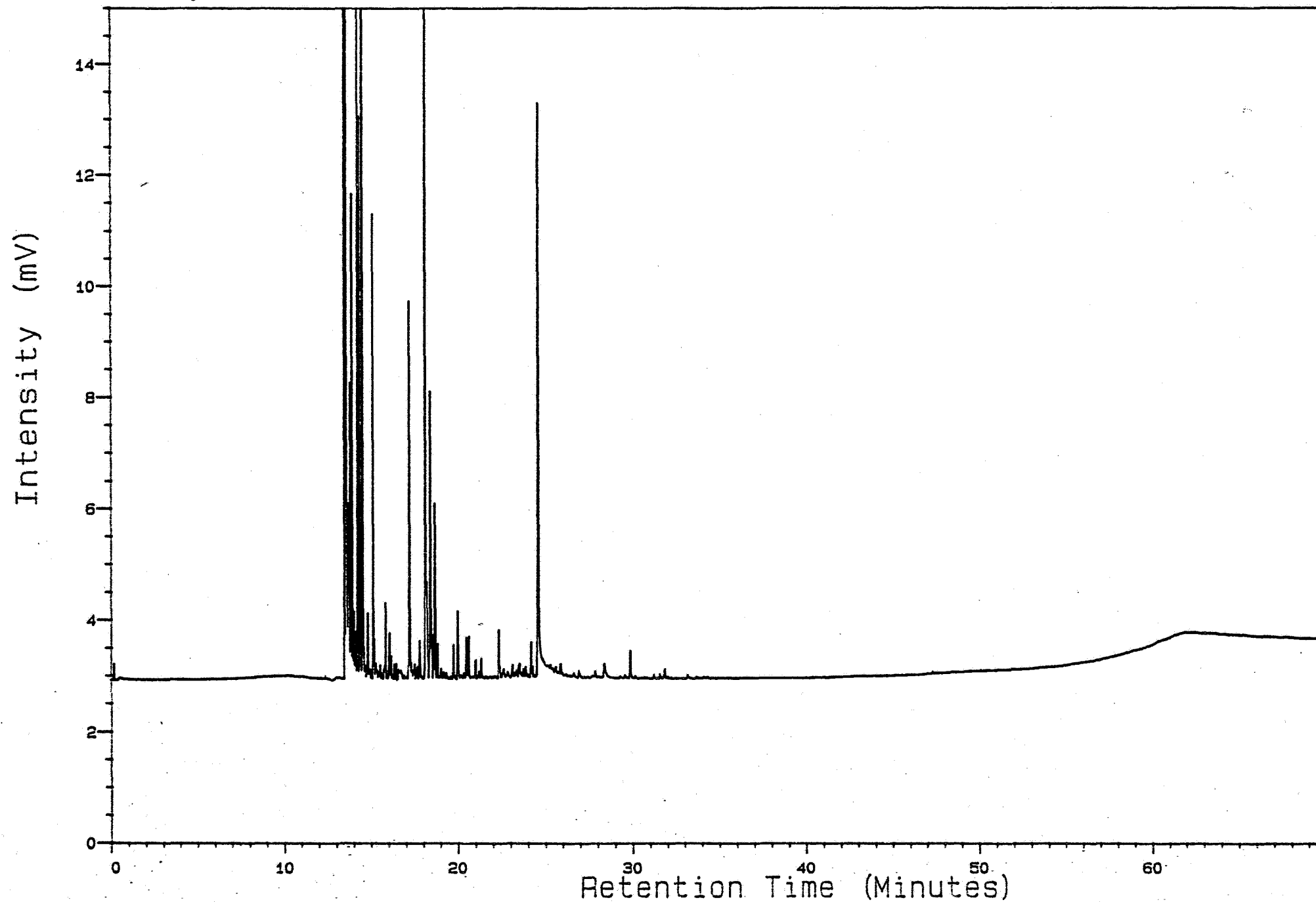
APPENDIX IV

Pyrolysis gas chromatography

Analysis G64070702

9.2.1

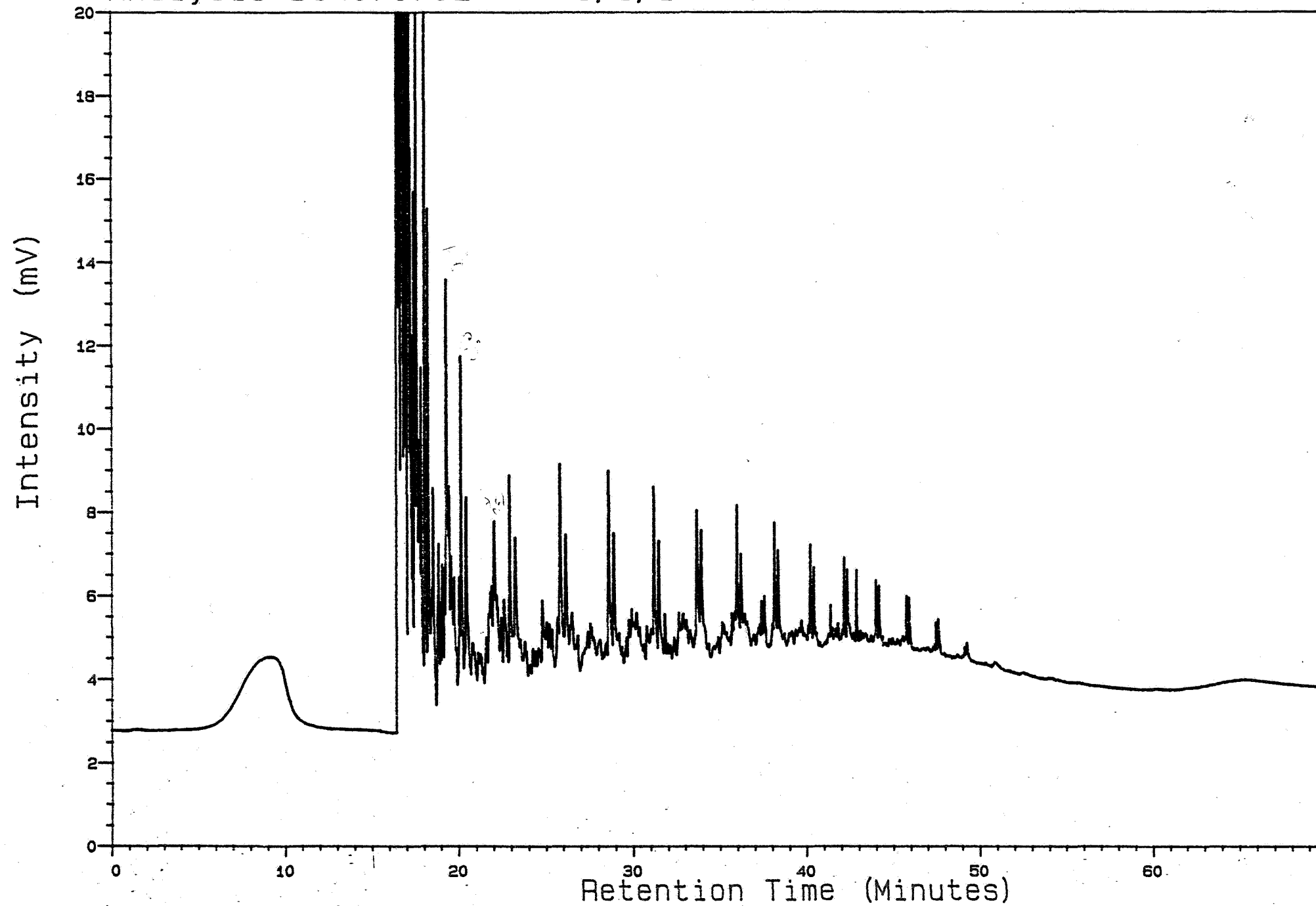
2611.0 M



Analysis B64070702

9, 3, 1

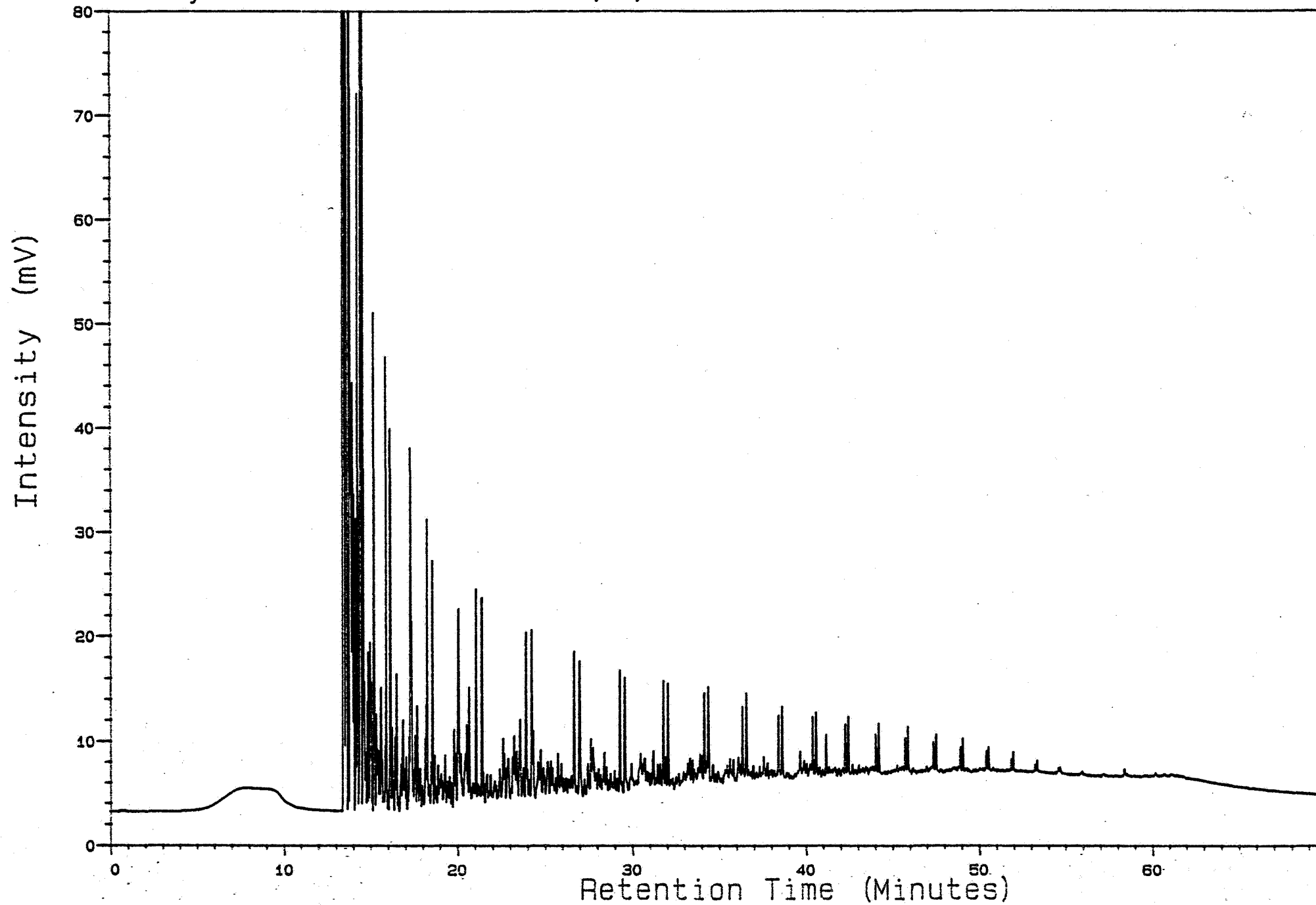
2638 M SWC



Analysis G64070702

9, 3, 1

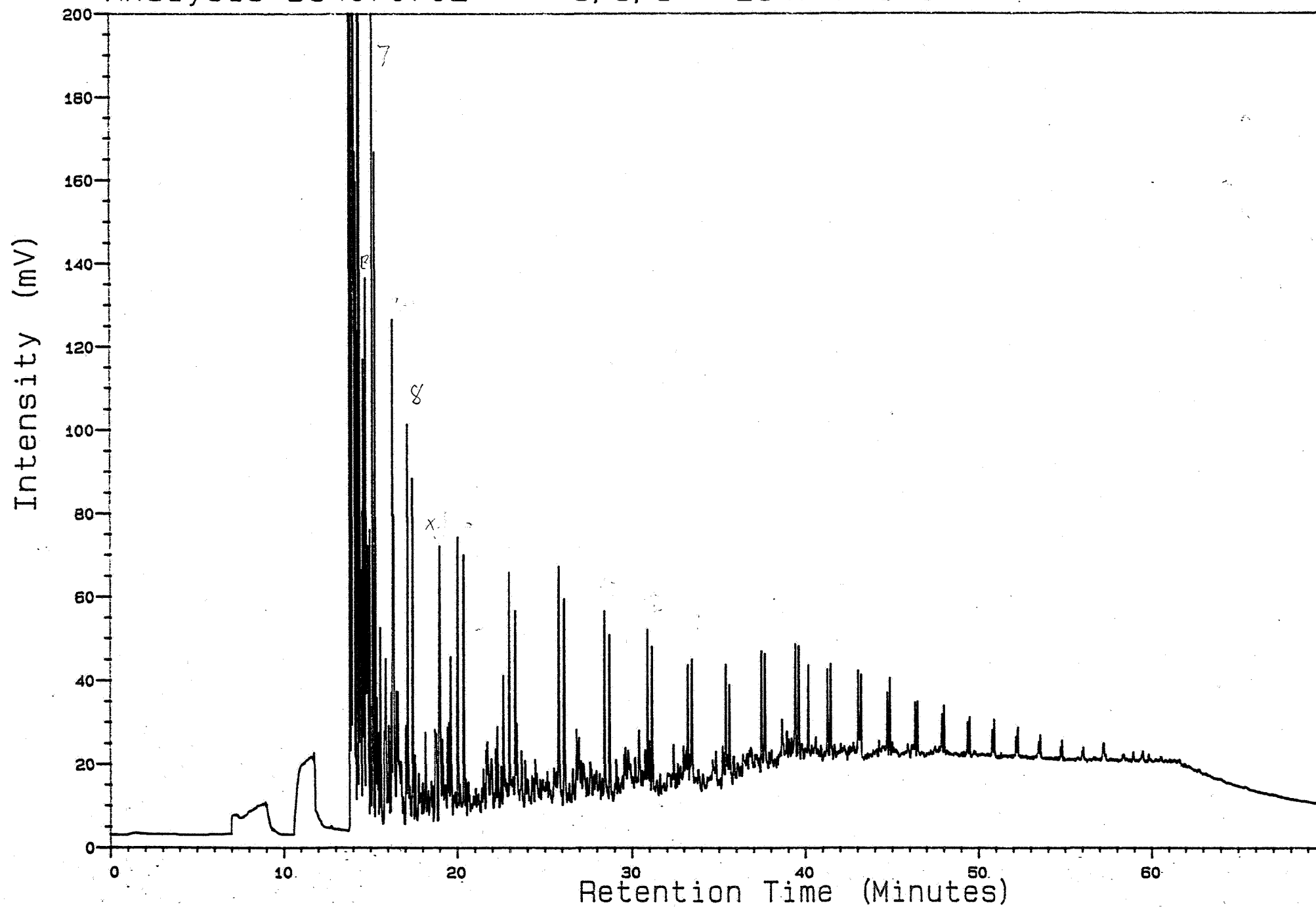
2640.0 M



Analysis B64070702

9.5.1

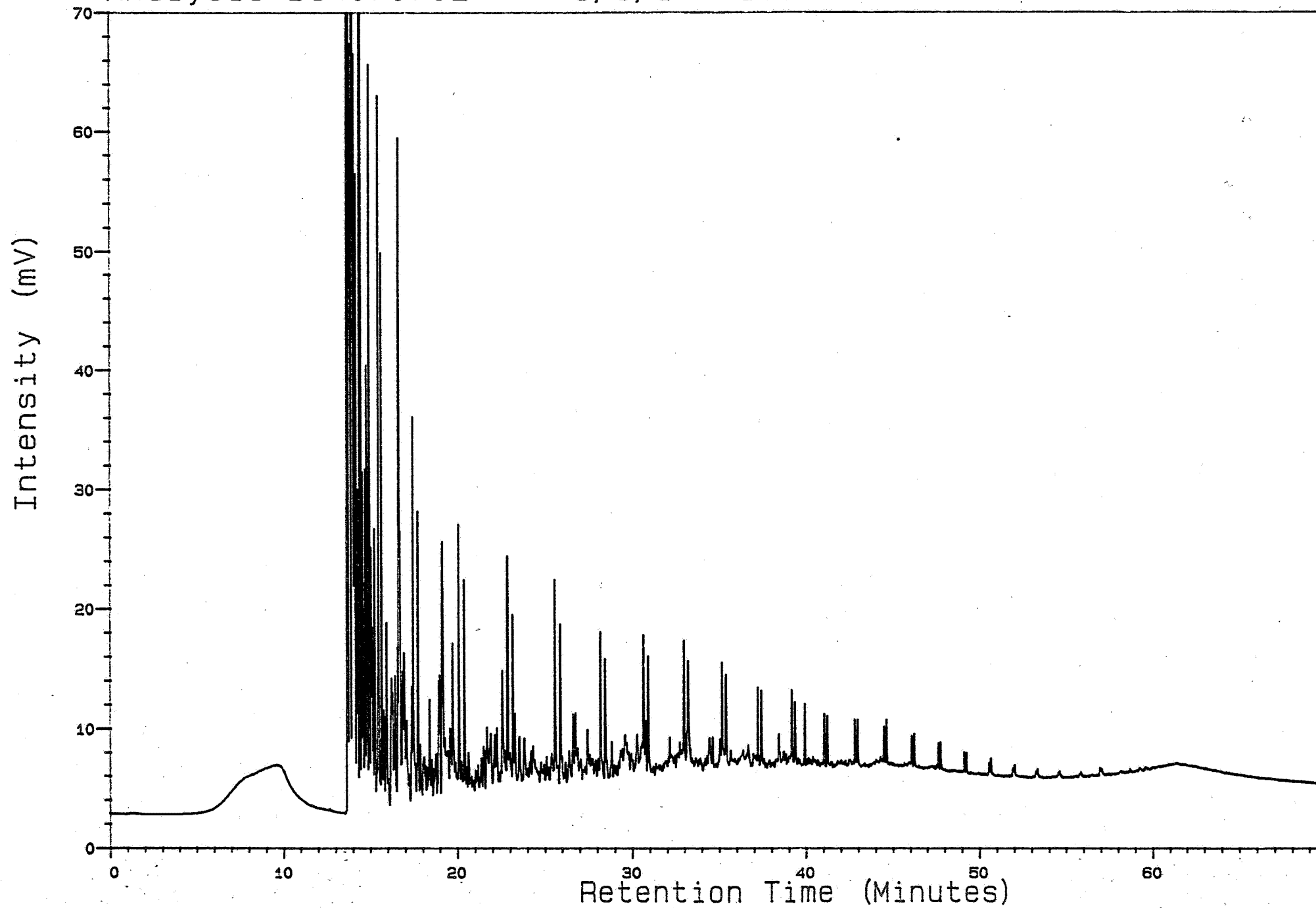
2647 M SWC



Analysis B64070702

9, 6, 1

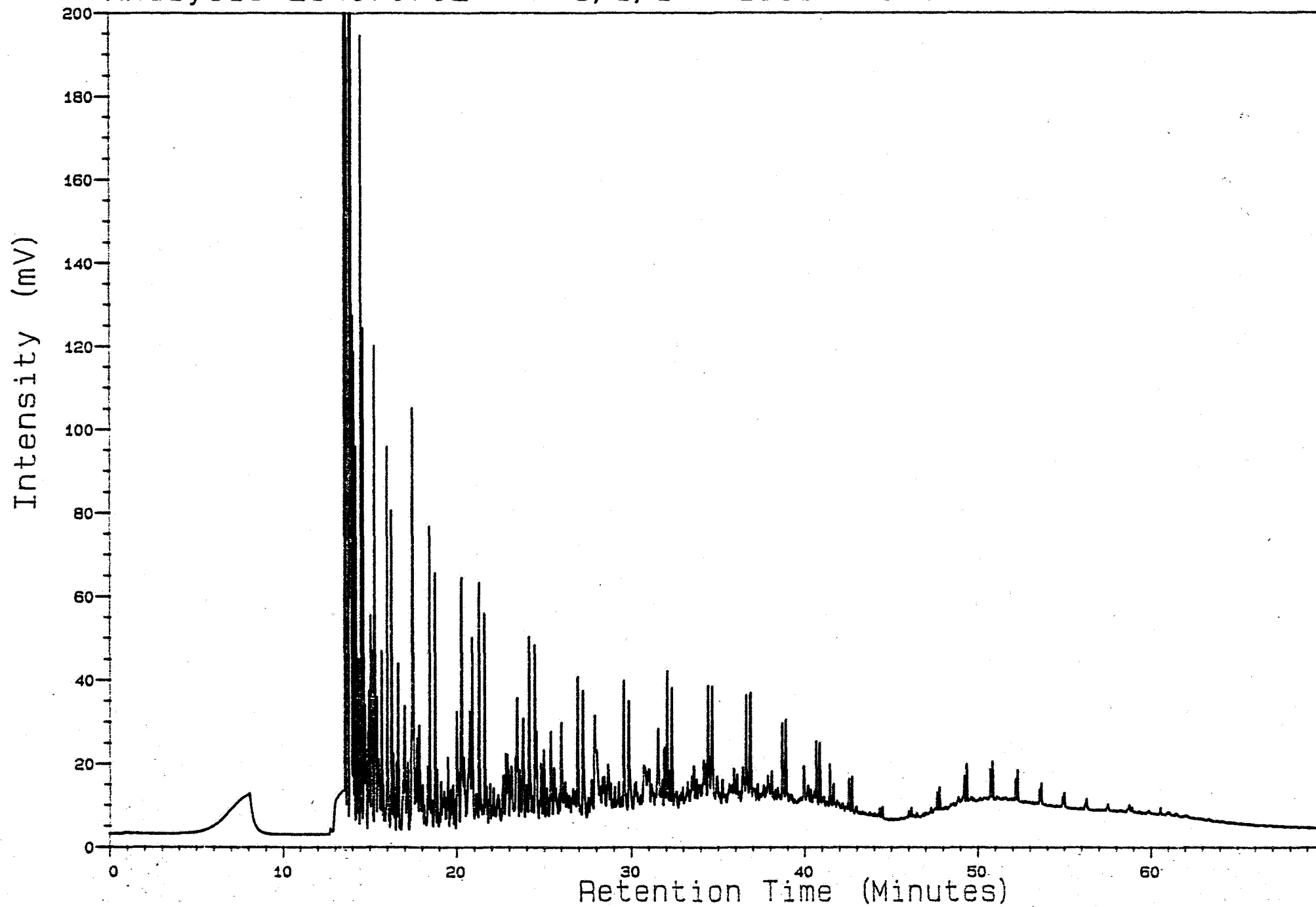
2650 M SWC



Analysis E64070702

9, 1, 1

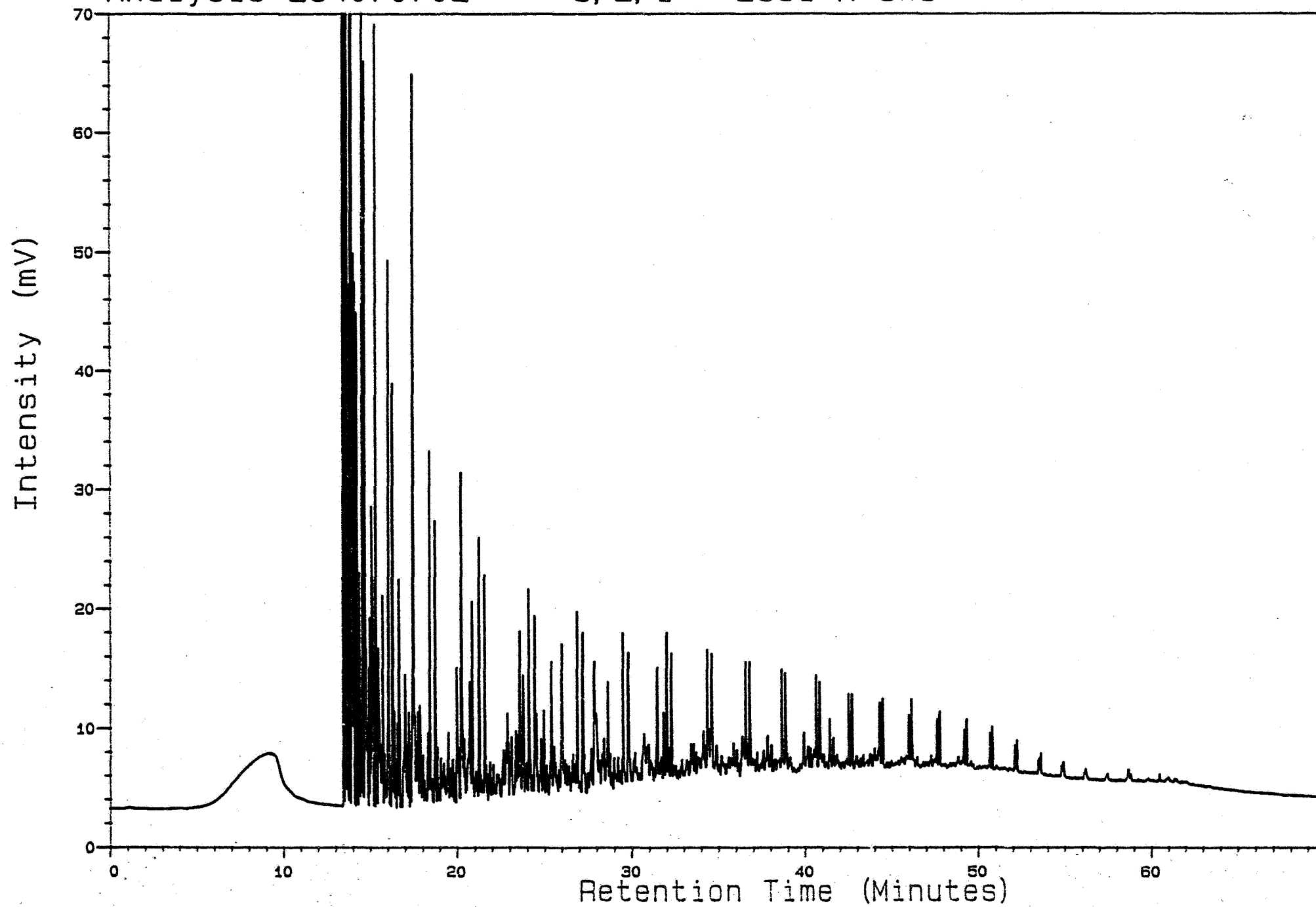
2653 M SWC



Analysis E64070702

9, 2, 1

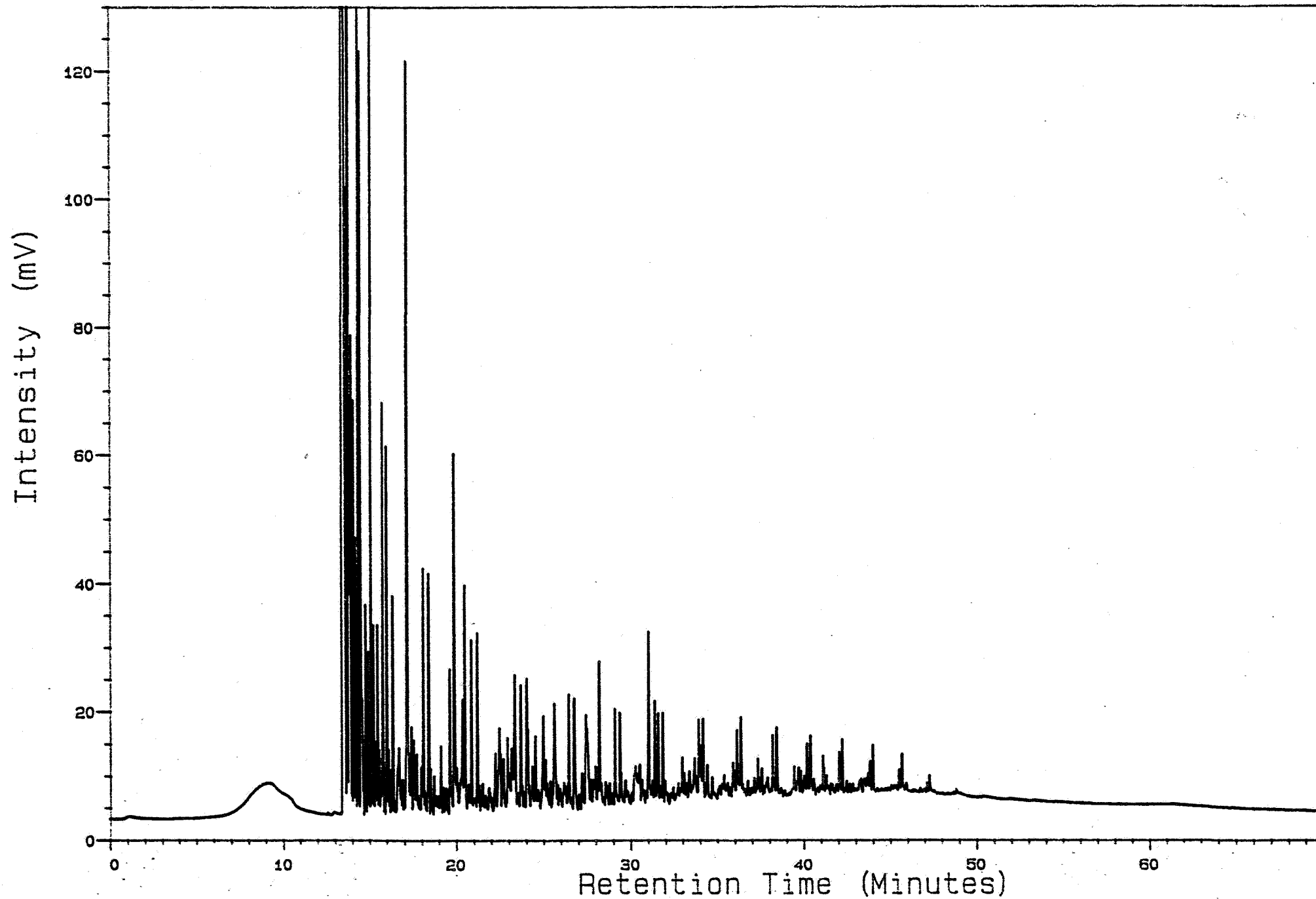
2661 M SWC



Analysis F64070702

9, 1, 1

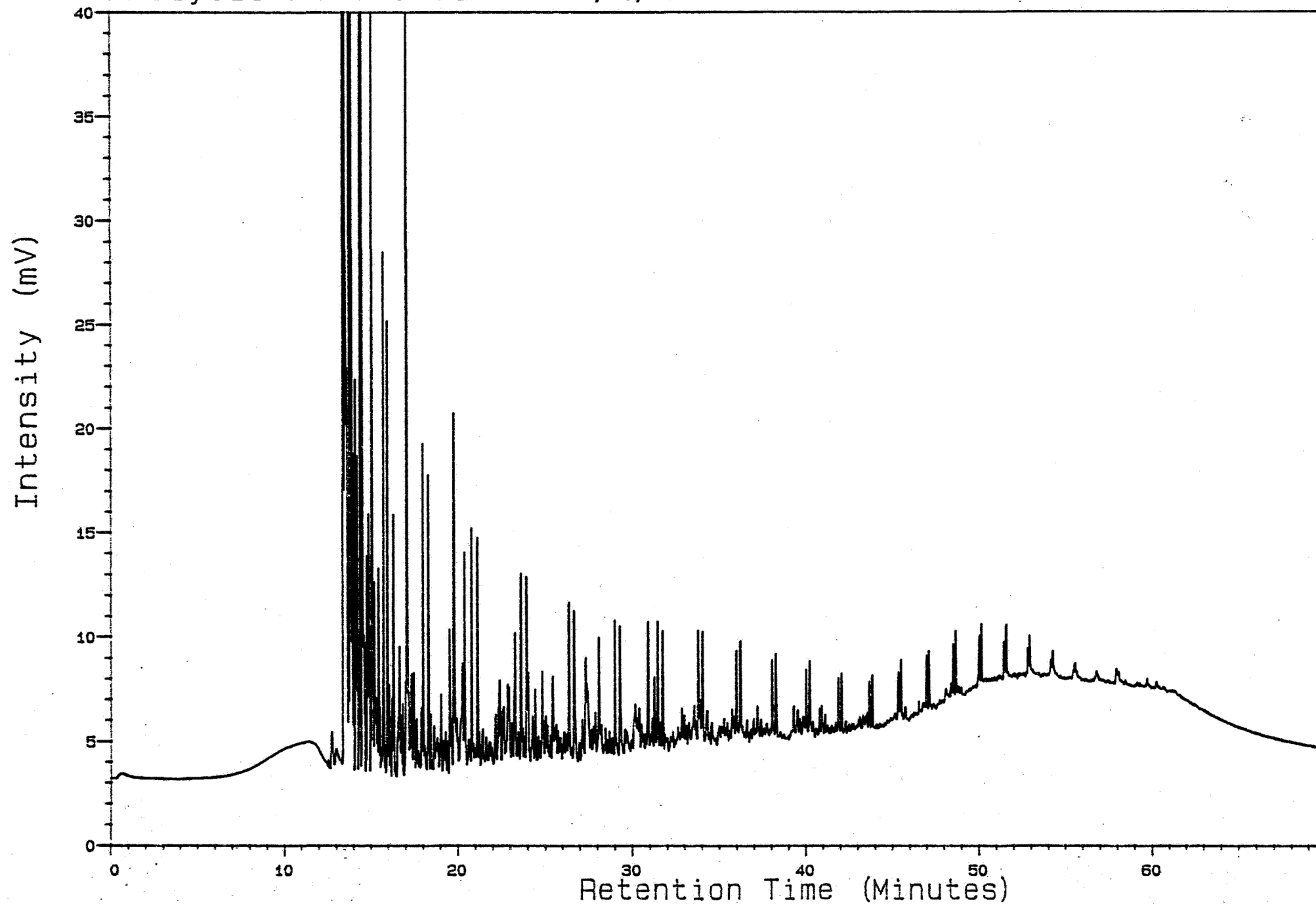
2673 M SWC



Analysis H64070702

9, 1, 1

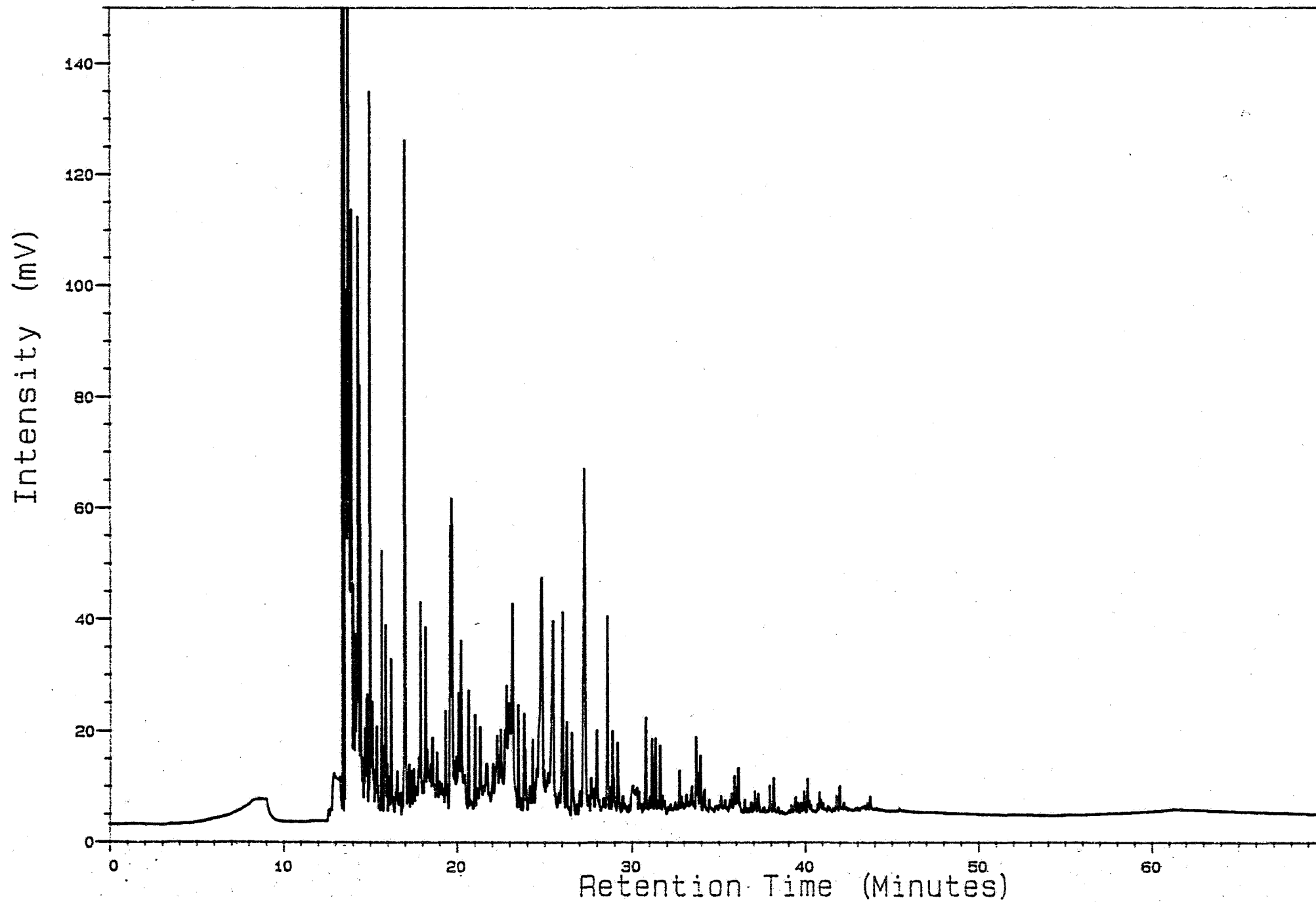
2678.8 M SWC



Analysis E64070702

9, 9, 1

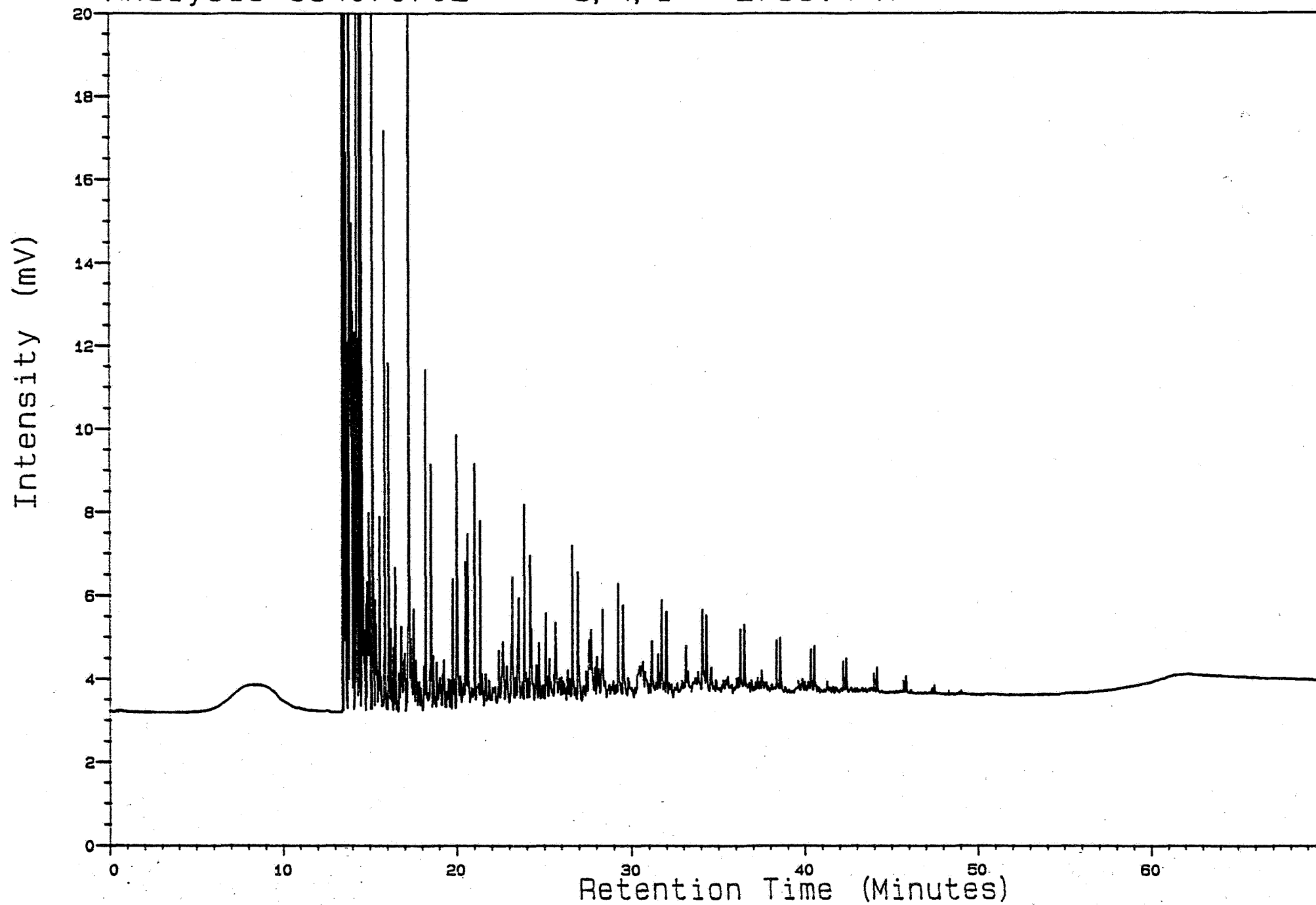
2695 M SWC



Analysis G64070702

9, 4, 1

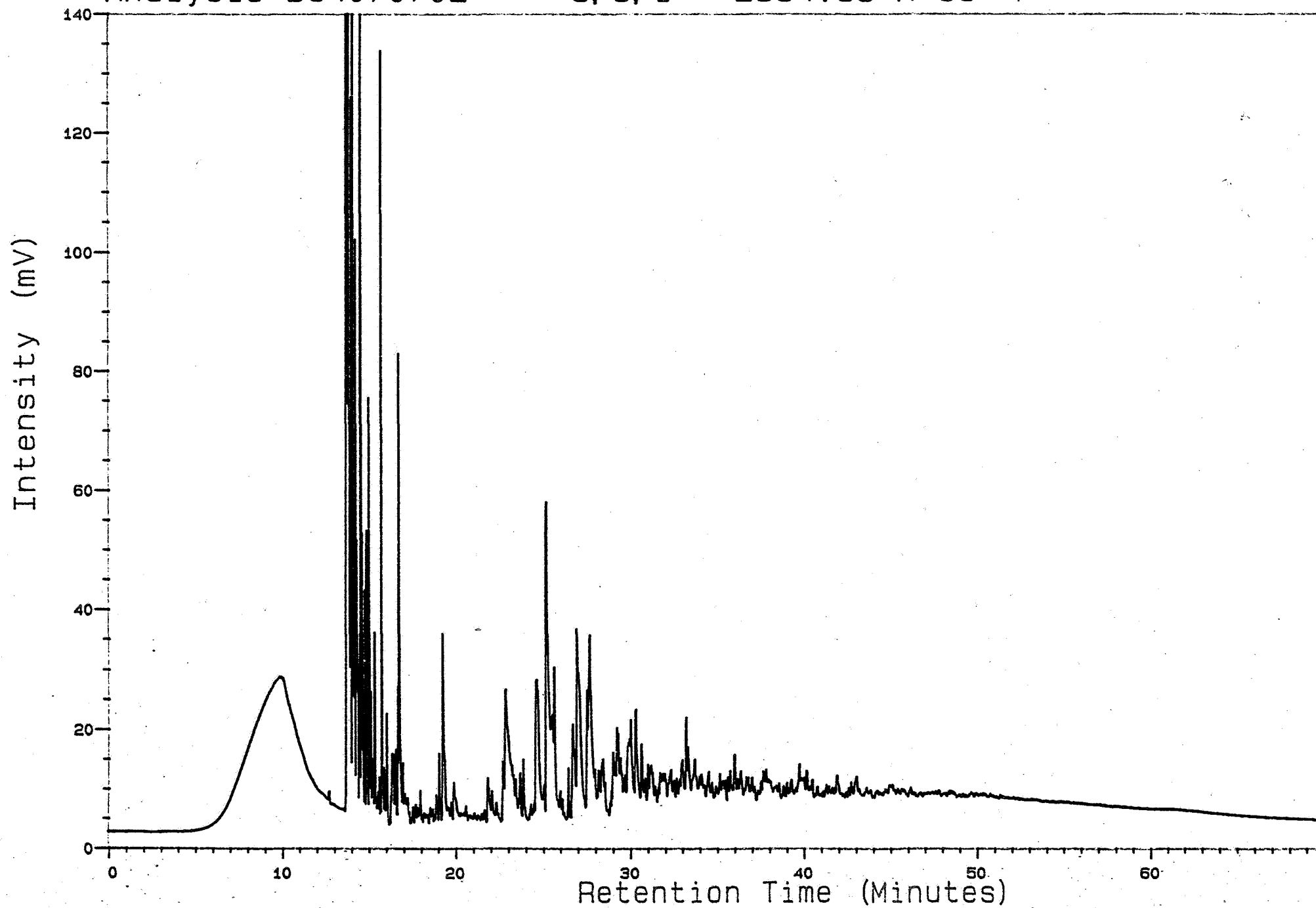
2739.4 M



Analysis B64070702

9.8.1

2884.85 M CC

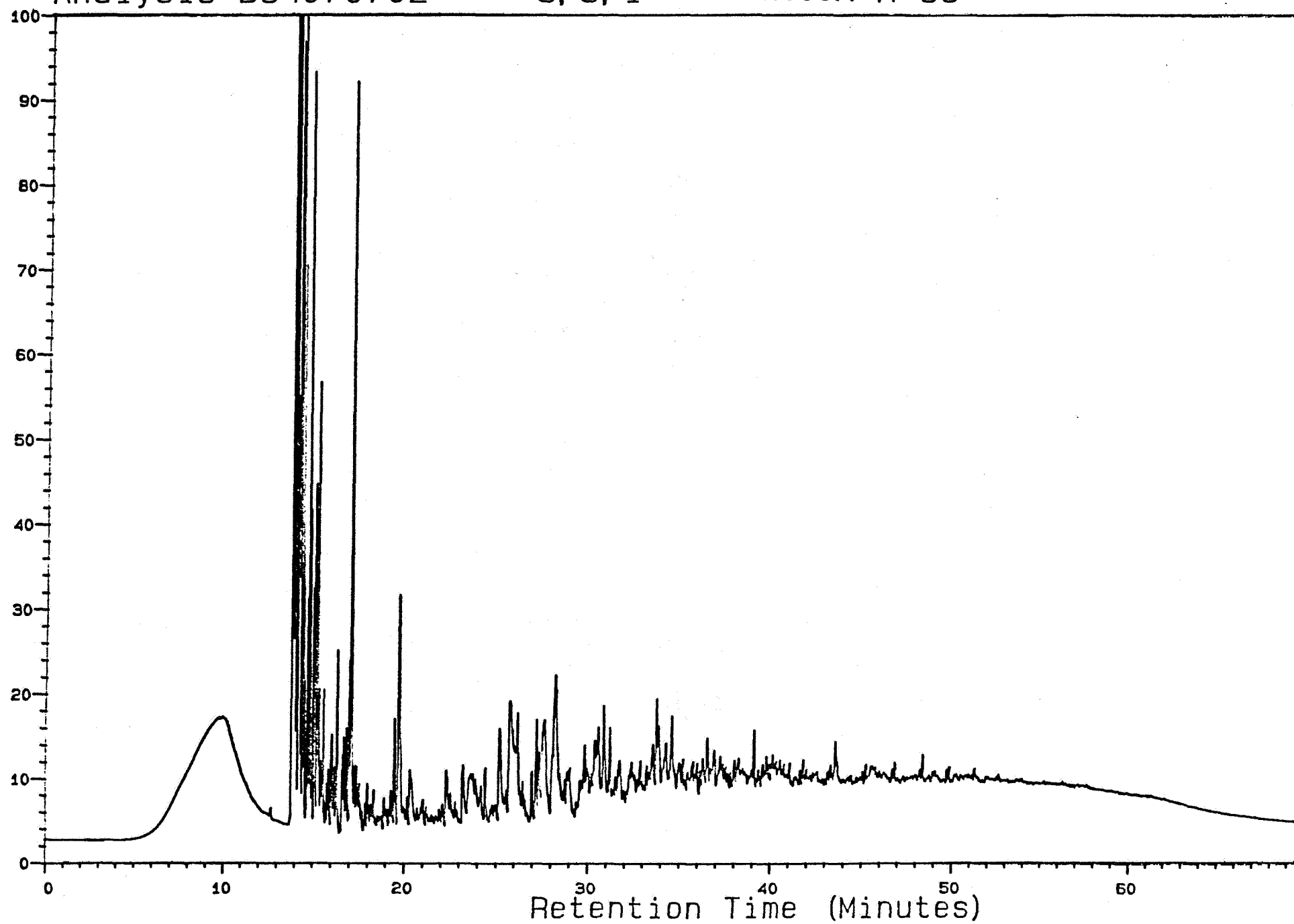


Analysis B64070702

9, 9, 1

2888.1 M CC

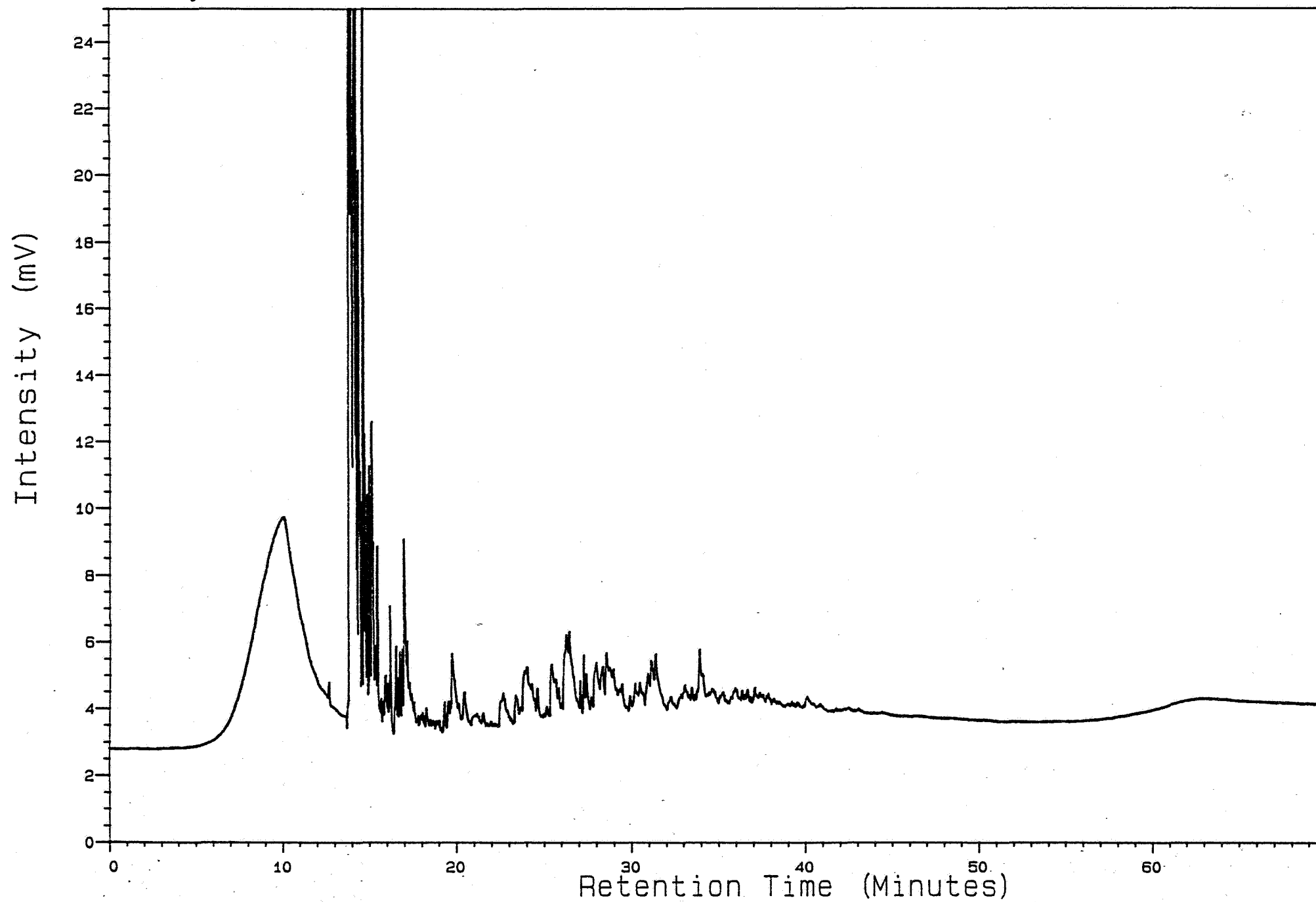
Intensity (mV)



Analysis B64070702

9, 10, 1

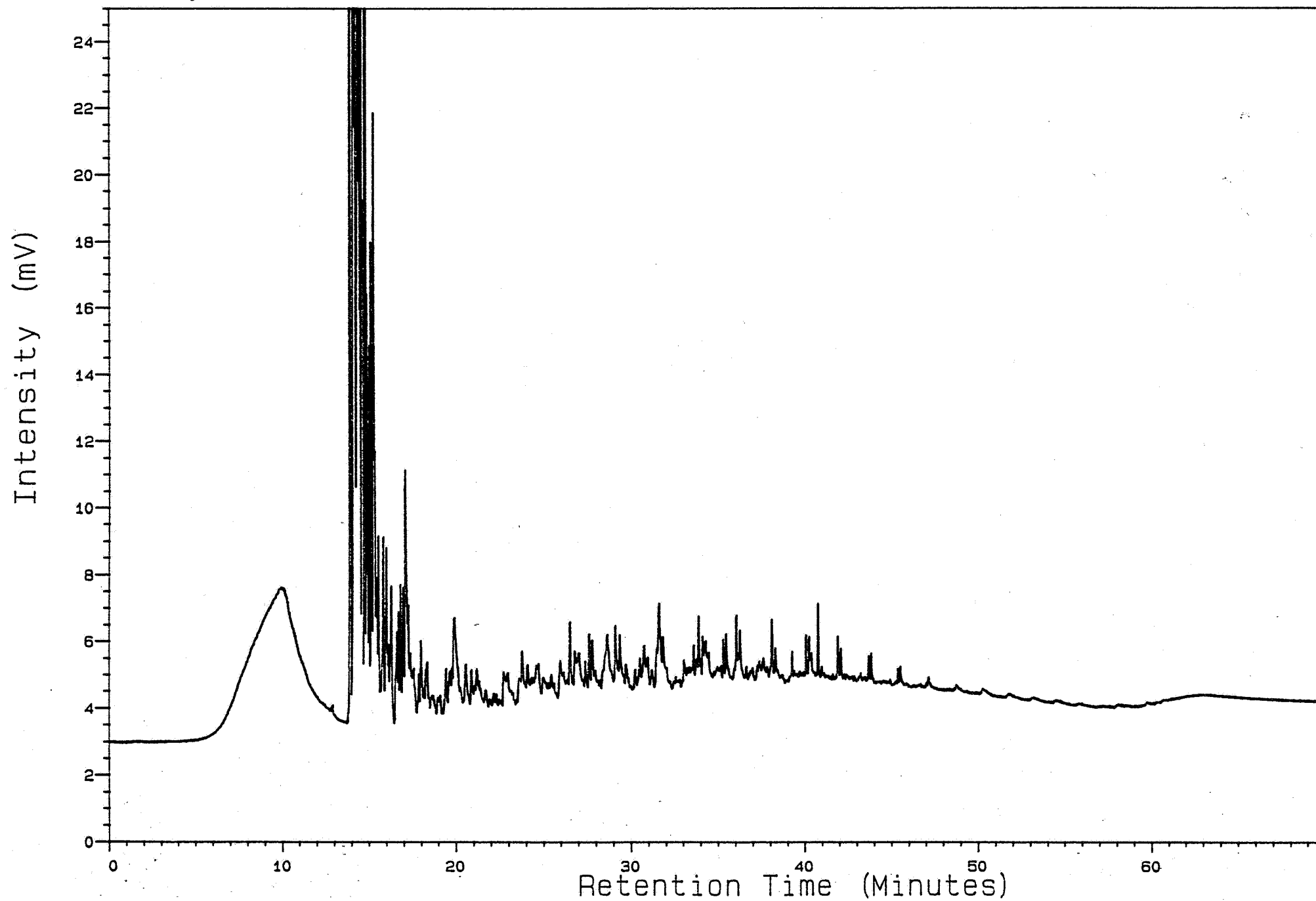
2905.30 M CC



Analysis B64070702

9, 11, 1

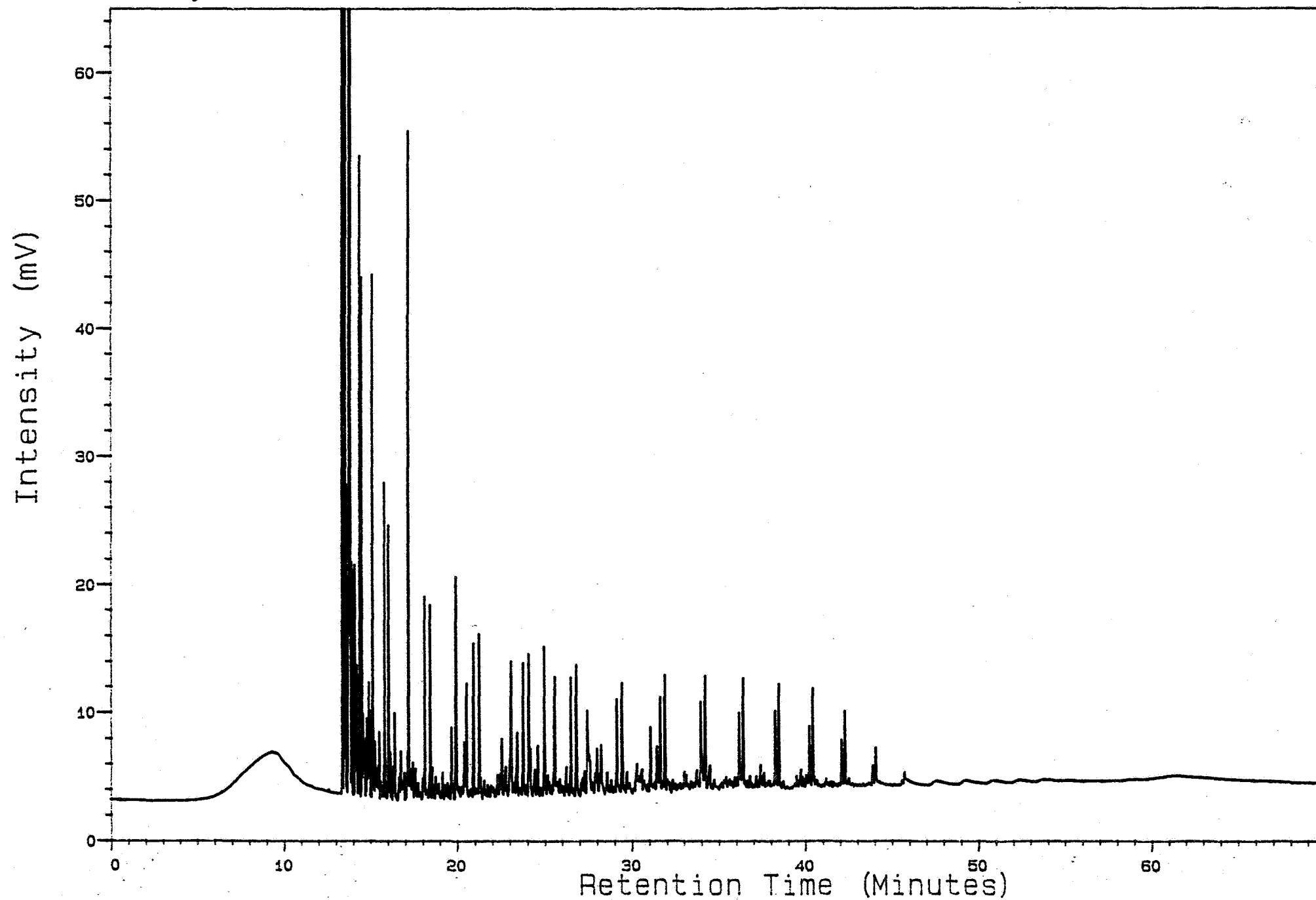
2913.00 M CC



Analysis E64070702

9, 11, 1

2934 M SWC





APPENDIX V

Vitrinite reflectance histograms

PREPARATION				WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water				546nm /		1.516 /	
0.54	0.44			TOTAL No. OF PARTICLES MEASURED		9	
0.44	0.41			REFLECTIVITY (%)		No. OF PARTICLES	
0.41	0.25			0.44		9	
0.41	0.63			R _{max} / R _{aver.}			
0.42							

1716.0 M

Geo-optics Ltd.
Ash House
Bell Villas
Ponteland
Northumberland
NE20 9BE
Date 24.2.87

Signature: *[Signature]*

PREPARATION				WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water				546nm /		1.516 /	
0.31	0.31			TOTAL No. OF PARTICLES MEASURED		10	
0.33	0.33			REFLECTIVITY (%)		No. OF PARTICLES	
0.28	0.26			0.31		10	
0.25	0.37			R _{max} / R _{aver.}			
0.31	0.33						

1824.0 M

Geo-optics Ltd.
Ash House
Bell Villas
Ponteland
Northumberland
NE20 9BE
Date 24.2.87

Signature: *[Signature]*

PREPARATION				WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water				546nm /		1.516 /	
0.47	0.43			TOTAL No. OF PARTICLES MEASURED		6	
0.46				REFLECTIVITY (%)		No. OF PARTICLES	
0.47				0.44		6	
0.41				R _{max} / R _{aver.}			
0.37							

1956.5 M

Geo-optics Ltd.
Ash House
Bell Villas
Ponteland
Northumberland
NE20 9BE
Date 24.2.87

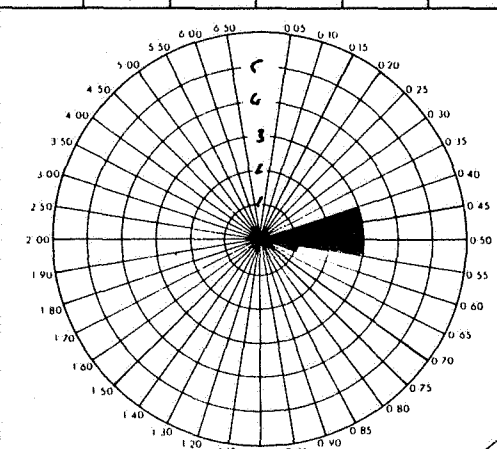
Signature: *[Signature]*

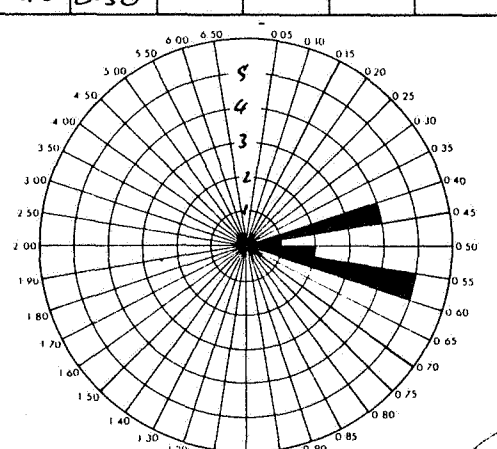
PREPARATION				WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water				546nm /		1.516 /	
0.34	0.59	0.35		TOTAL No. OF PARTICLES MEASURED		11	
0.33	0.27			REFLECTIVITY (%)		No. OF PARTICLES	
0.42	0.44			0.42		11	
0.31	0.61			R _{max} / R _{aver.}			
0.58	0.43						

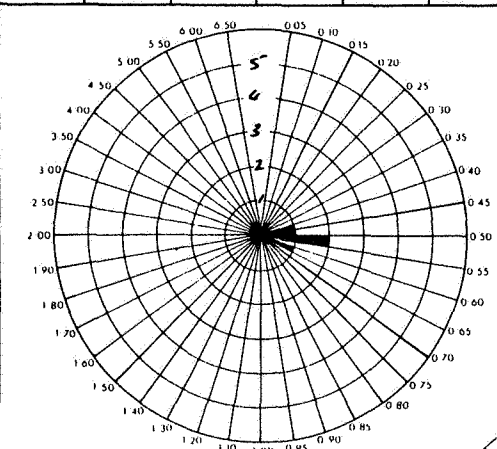
2025.0 M

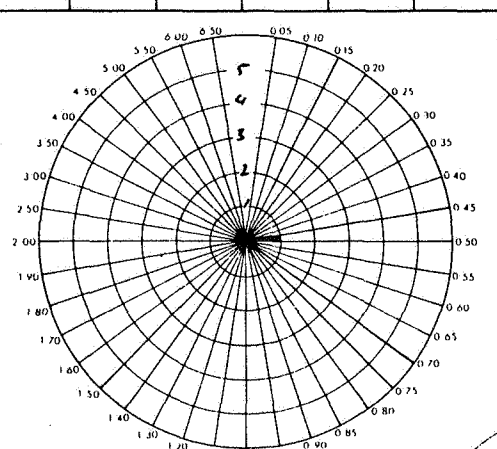
Geo-optics Ltd.
Ash House
Bell Villas
Ponteland
Northumberland
NE20 9BE
Date 24.2.87

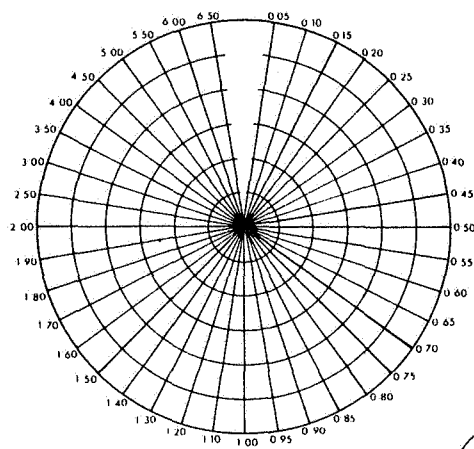
Signature: *[Signature]*

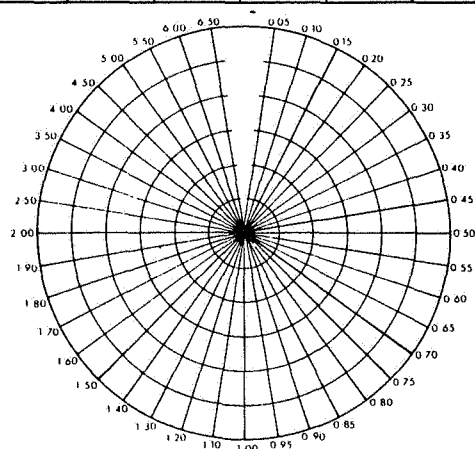
PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
0.49	0.46	TOTAL No. OF PARTICLES MEASURED 10			
0.44	0.51				
0.50	0.57				
0.41	0.50				
0.47	0.41	REFLECTIVITY (%)		No. OF PARTICLES	
		0.48		10	
					
COMMENTS					
2075.0 M					
Ben-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>Phillip Jan</i> Date 24.2.87					

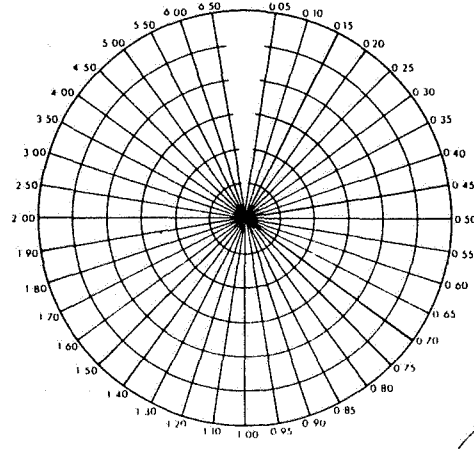
PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
0.57	0.43	0.46	TOTAL No. OF PARTICLES MEASURED 12		
0.58	0.56	0.53			
0.43	0.55				
0.43	0.58				
0.43	0.50	REFLECTIVITY (%)		No. OF PARTICLES	
		0.50		12	
					
COMMENTS					
2251.0 M					
Ben-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>Phillip Jan</i> Date 24.2.87					

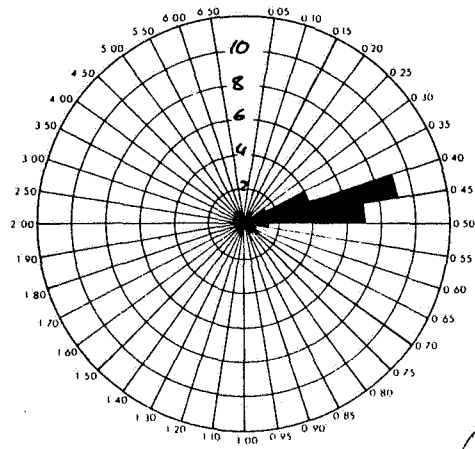
PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
0.46		TOTAL No. OF PARTICLES MEASURED 5			
0.62					
0.54					
0.51					
0.43		REFLECTIVITY (%)		No. OF PARTICLES	
		0.51		5	
					
COMMENTS					
2425.0 M					
Ben-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>Phillip Jan</i> Date 24.2.87					

PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
0.49		TOTAL No. OF PARTICLES MEASURED 1			
		REFLECTIVITY (%)		No. OF PARTICLES	
		0.49		1	
					
COMMENTS					
2553.0 M					
Ben-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>Phillip Jan</i> Date 24.2.87					

PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
				TOTAL No. OF <i>No DETERMINATION</i>	
				PARTICLES MEASURED <i>POSSIBLE</i>	
				REFLECTIVITY (%)	
				No. OF PARTICLES	
				$\bar{R}_{max}$ / $\bar{R}_{aver.}$	
				COMMENTS <i>WHOLLY INERTINITE</i> 2611.0 M Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature <i>John H. Jan</i> Date 24.2.87	

PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
				TOTAL No. OF <i>No DETERMINATION</i>	
				PARTICLES MEASURED <i>POSSIBLE</i>	
				REFLECTIVITY (%)	
				No. OF PARTICLES	
				$\bar{R}_{max}$ / $\bar{R}_{aver.}$	
				COMMENTS 2625.0 M Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature <i>John H. Jan</i> Date 24.2.87	

PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
				TOTAL No. OF <i>No DETERMINATION</i>	
				PARTICLES MEASURED <i>POSSIBLE</i>	
				REFLECTIVITY (%)	
				No. OF PARTICLES	
				$\bar{R}_{max}$ / $\bar{R}_{aver.}$	
				COMMENTS 2632.5 M Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature <i>John H. Jan</i> Date 24.2.87	

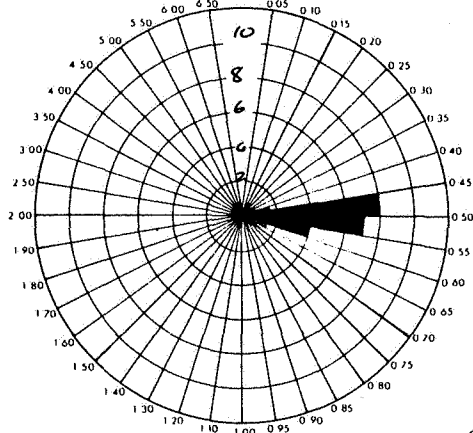
PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
0.47	0.41	0.48	0.53	0.41	
0.45	0.42	0.38	0.38	0.33	
0.49	0.43	0.44	0.48		
0.42	0.41	0.46	0.38		
0.41	0.40	0.46	0.39		
				TOTAL No. OF	
				PARTICLES MEASURED 22	
				REFLECTIVITY (%)	
				No. OF PARTICLES	
				$\bar{R}_{max}$ / $\bar{R}_{aver.}$	
				COMMENTS 2638.0 M Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature <i>John H. Jan</i> Date 24.2.87	

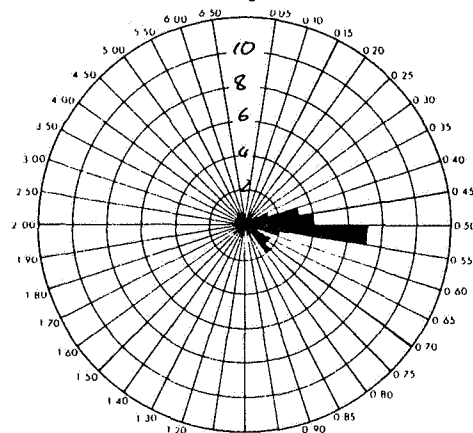
PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / Water					546nm /	1.516 /
0.41	0.36	0.44	0.39	0.42	TOTAL No. OF PARTICLES MEASURED 22	
0.35	0.40	0.38	0.42	0.39	REFLECTIVITY (%)	
0.35	0.43	0.57	0.40		No. OF PARTICLES	
0.33	0.37	0.55	0.39		REFLECTIVITY (%)	
0.52	0.44	0.38	0.49		No. OF PARTICLES	
					R_{max}	0.42
					$R_{aver.}$	22
COMMENTS						2640.0 M
Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>[Signature]</i> Date 24.2.57						

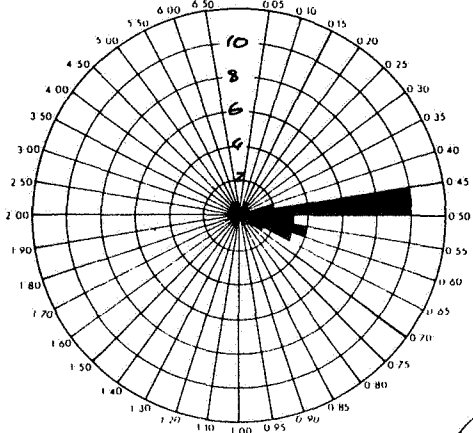
PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / Water					546nm /	1.516 /
0.46	0.48	0.46	0.39	0.43	TOTAL No. OF PARTICLES MEASURED 21	
0.47	0.43	0.41	0.40		REFLECTIVITY (%)	
0.65	0.43	0.50	0.38		No. OF PARTICLES	
0.38	0.44	0.39	0.41		REFLECTIVITY (%)	
0.51	0.51	0.55	0.41		No. OF PARTICLES	
					R_{max}	0.45
					$R_{aver.}$	21
COMMENTS						2647.0 M
Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>[Signature]</i> Date 24.2.57						

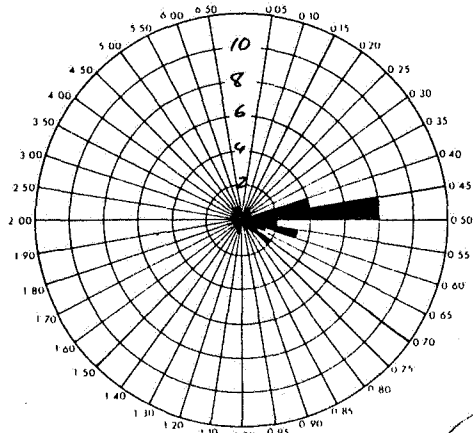
PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / Water					546nm /	1.516 /
0.40	0.35	0.47	0.35	0.45	TOTAL No. OF PARTICLES MEASURED 22	
0.37	0.39	0.38	0.47	0.42	REFLECTIVITY (%)	
0.50	0.39	0.42	0.49		No. OF PARTICLES	
0.36	0.44	0.41	0.47		REFLECTIVITY (%)	
0.32	0.42	0.38	0.47		No. OF PARTICLES	
					R_{max}	0.41
					$R_{aver.}$	22
COMMENTS						2650.0 M
Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>[Signature]</i> Date 24.2.57						

PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / Water					546nm /	1.516 /
0.42	0.62	0.59	0.54		TOTAL No. OF PARTICLES MEASURED 20	
0.47	0.55	0.48	0.42		REFLECTIVITY (%)	
0.47	0.49	0.39	0.39		No. OF PARTICLES	
0.48	0.52	0.55	0.50		REFLECTIVITY (%)	
0.47	0.50	0.47	0.51		No. OF PARTICLES	
					R_{max}	0.49
					$R_{aver.}$	20
COMMENTS						2653.0 M
Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>[Signature]</i> Date 24.2.57						

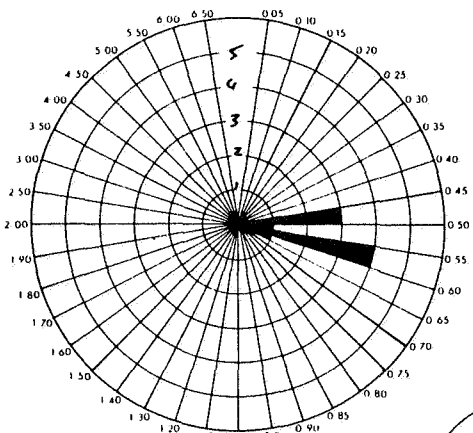
PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / <u>Water</u>					546nm /	1.516 /
0.48	0.58	0.53	0.54	0.41	TOTAL No. OF	
0.57	0.62	0.49	0.57		PARTICLES MEASURED 21	
0.53	0.54	0.46	0.52		REFLECTIVITY (%)	No. OF PARTICLES
0.54	0.56	0.49	0.45			
0.54	0.44	0.49	0.46			
					R_{max} / $R_{aver.}$	0.52 / 21
					COMMENTS	
2661.0 M					Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE	
					Signature <i>John H. Jan</i> Date 24.2.87	

PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / <u>Water</u>					546nm /	1.516 /
0.51	0.71	0.75	0.38	0.46	TOTAL No. OF	
0.75	0.68	0.59	0.41		PARTICLES MEASURED 21	
0.53	0.51	0.50	0.50		REFLECTIVITY (%)	No. OF PARTICLES
0.58	0.52	0.48	0.48			
0.50	0.44	0.41	0.45			
					R_{max} / $R_{aver.}$	0.53 / 21
					COMMENTS	
2673.0 M					Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE	
					Signature <i>John H. Jan</i> Date 24.2.87	

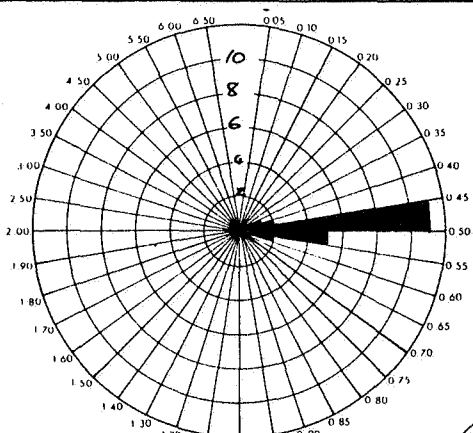
PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / <u>Water</u>					546nm /	1.516 /
0.46	0.45	0.48	0.52	0.63	TOTAL No. OF	
0.55	0.49	0.47	0.57	0.63	PARTICLES MEASURED 23	
0.47	0.43	0.43	0.51	0.61	REFLECTIVITY (%)	No. OF PARTICLES
0.67	0.59	0.48	0.46			
0.58	0.45	0.50	0.47			
					R_{max} / $R_{aver.}$	0.52 / 23
					COMMENTS	
2678.8 M					Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE	
					Signature <i>John H. Jan</i> Date 24.2.87	

PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / <u>Water</u>					546nm /	1.516 /
0.43	0.46	0.46	0.42		TOTAL No. OF	
0.46	0.56	0.60	0.73		PARTICLES MEASURED 20	
0.54	0.47	0.49	0.73		REFLECTIVITY (%)	No. OF PARTICLES
0.41	0.55	0.48	0.41			
0.47	0.55	0.48	0.51			
					R_{max} / $R_{aver.}$	0.51 / 20
					COMMENTS	
2681.75 M					Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE	
					Signature <i>John H. Jan</i> Date 24.2.87	

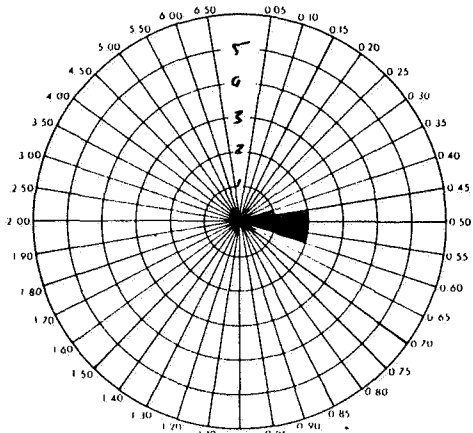
PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
0.57	0.46				
0.48	0.50				
0.56	0.56				
0.57	0.45				
0.62					
TOTAL No. OF PARTICLES MEASURED		9			
REFLECTIVITY (%)		No. OF PARTICLES			
$R_{max} / R_{aver.}$		0.53 / 9			
COMMENTS					
2695.0 M					
Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>John M. J.</i> Date 24.2.87					



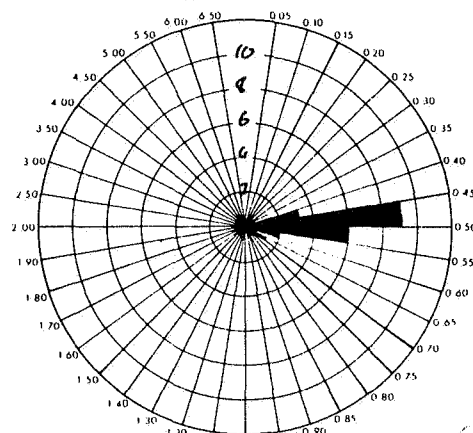
PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
0.46	0.46	0.42	0.55	0.46	
0.44	0.51	0.45	0.52		
0.45	0.38	0.46	0.45		
0.53	0.49	0.52	0.51		
0.49	0.47	0.55	0.46		
TOTAL No. OF PARTICLES MEASURED		21			
REFLECTIVITY (%)		No. OF PARTICLES			
$R_{max} / R_{aver.}$		0.48 / 21			
COMMENTS					
2739.4 M					
Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>John M. J.</i> Date 24.2.87					



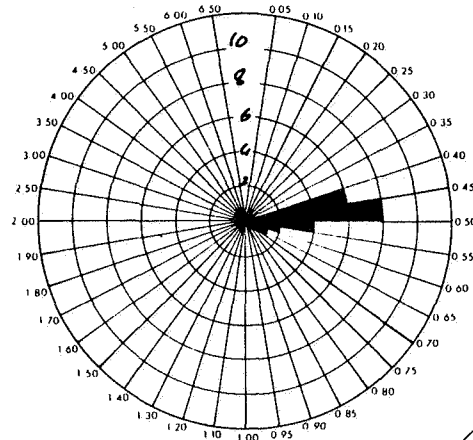
PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
0.58	0.53				
0.44	0.56				
0.49					
0.50					
0.49					
TOTAL No. OF PARTICLES MEASURED		7			
REFLECTIVITY (%)		No. OF PARTICLES			
$R_{max} / R_{aver.}$		0.53 / 7			
COMMENTS					
2755.0 M					
Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>John M. J.</i> Date 24.2.87					



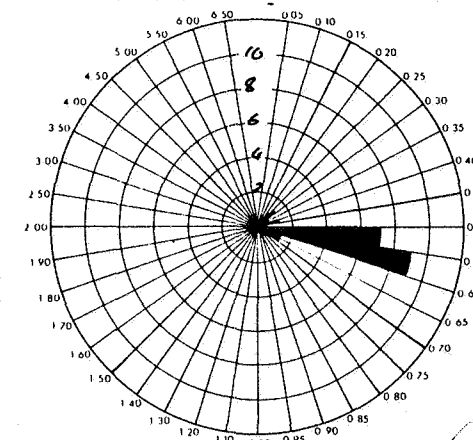
PREPARATION		WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water		546nm /		1.516 /	
0.56	0.51	0.48	0.48	0.51	
0.53	0.53	0.47	0.45		
0.46	0.57	0.44	0.53		
0.40	0.48	0.46	0.47		
0.66	0.47	0.53	0.44		
TOTAL No. OF PARTICLES MEASURED		21			
REFLECTIVITY (%)		No. OF PARTICLES			
$R_{max} / R_{aver.}$		0.50 / 21			
COMMENTS					
2760.0 M					
Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature: <i>John M. J.</i> Date 24.2.87					



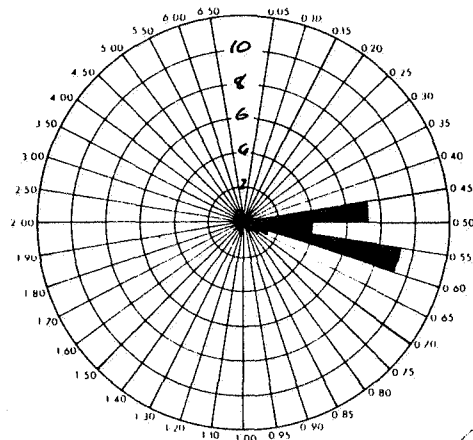
PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / Water					546nm /	1.516 /
0.45	0.46	0.45	0.46	0.45	TOTAL No. OF PARTICLES MEASURED 22	
0.40	0.52	0.41	0.44	0.50		
0.46	0.52	0.46	0.44			
0.57	0.48	0.45	0.56			
0.60	0.47	0.43	0.50			
					REFLECTIVITY (%)	No. OF PARTICLES
					0.48	22
					$\bar{R}_{max}$ / $\bar{R}_{aver.}$	
					COMMENTS	
					2772.0 M	
					Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Date 24.87	
					Signature	



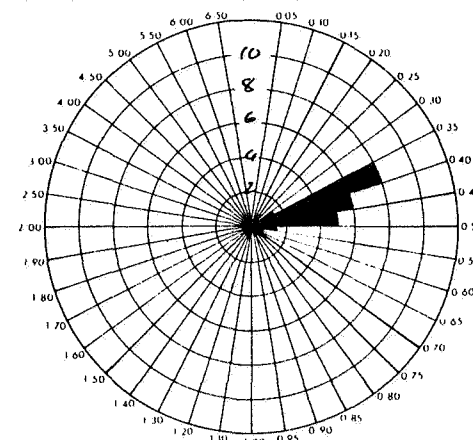
PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / Water					546nm /	1.516 /
0.54	0.54	0.55	0.56		TOTAL No. OF PARTICLES MEASURED 20	
0.51	0.56	0.44	0.50			
0.52	0.56	0.55	0.55			
0.56	0.58	0.66	0.29			
0.52	0.61	0.53	0.57			
					REFLECTIVITY (%)	No. OF PARTICLES
					0.54	20
					$\bar{R}_{max}$ / $\bar{R}_{aver.}$	
					COMMENTS	
					2800.75 M	
					Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Date 24.87	
					Signature	



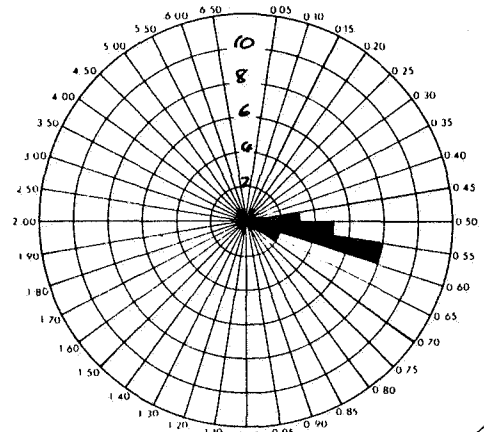
PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / Water					546nm /	1.516 /
0.58	0.48	0.47	0.55	0.50	TOTAL No. OF PARTICLES MEASURED 21	
0.58	0.45	0.47	0.50			
0.56	0.47	0.59	0.52			
0.60	0.56	0.55	0.50			
0.59	0.47	0.56	0.47			
					REFLECTIVITY (%)	No. OF PARTICLES
					0.52	21
					$\bar{R}_{max}$ / $\bar{R}_{aver.}$	
					COMMENTS	
					2888.10 M	
					Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Date 24.87	
					Signature	



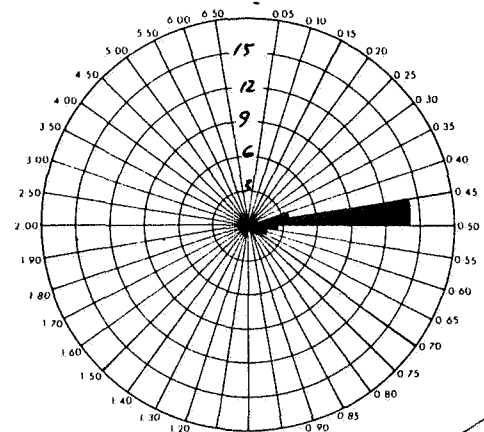
PREPARATION					WAVELENGTH	R.I. OF IMMERSION OIL
Isopropyl Alcohol / Water					546nm /	1.516 /
0.39	0.48	0.38	0.42	0.34	TOTAL No. OF PARTICLES MEASURED 21	
0.46	0.37	0.49	0.39			
0.39	0.43	0.43	0.39			
0.49	0.40	0.53	0.37			
0.42	0.43	0.46	0.36			
					REFLECTIVITY (%)	No. OF PARTICLES
					0.42	21
					$\bar{R}_{max}$ / $\bar{R}_{aver.}$	
					COMMENTS	
					R.O. POSSIBLY LOWERED BY BITUMEN IMMAGINATION	
					2884.85 M	
					Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Date 24.87	
					Signature	



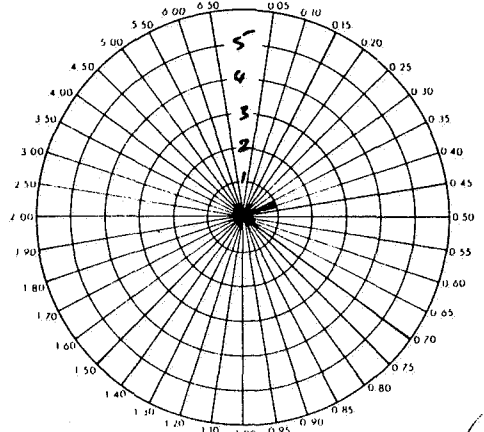
PREPARATION				WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water				546nm /		1.516 /	
0.58	0.54	0.66	0.59	TOTAL No. OF PARTICLES MEASURED 20			
0.58	0.60	0.57	0.50				
0.59	0.50	0.47	0.55				
0.60	0.67	0.47	0.45				
0.55	0.54	0.50	0.59				
				REFLECTIVITY (%)		No. OF PARTICLES	
				0.56		20	
				$R_{max} / R_{aver.}$			
				COMMENTS			
				2905.3 M			
				Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature Date 24.2.87			



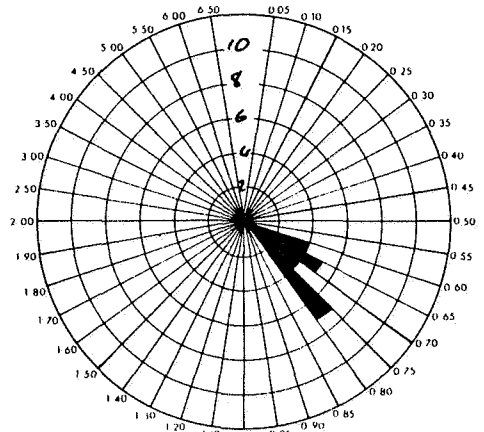
PREPARATION				WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water				546nm /		1.516 /	
0.46	0.49	0.44	0.49	TOTAL No. OF PARTICLES MEASURED 22			
0.46	0.45	0.47	0.46				
0.46	0.44	0.46	0.49				
0.42	0.48	0.47	0.45				
0.42	0.45	0.50	0.54				
				REFLECTIVITY (%)		No. OF PARTICLES	
				0.48		22	
				$R_{max} / R_{aver.}$			
				COMMENTS			
				2913.0 M			
				Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature Date 24.2.87			

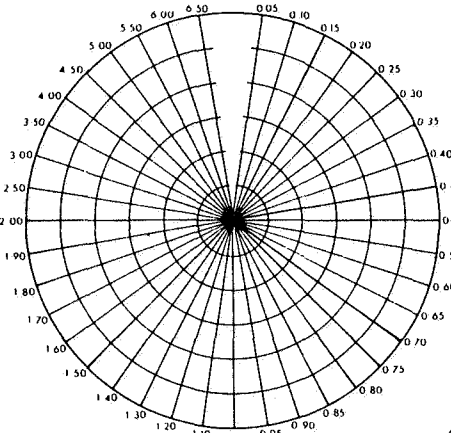


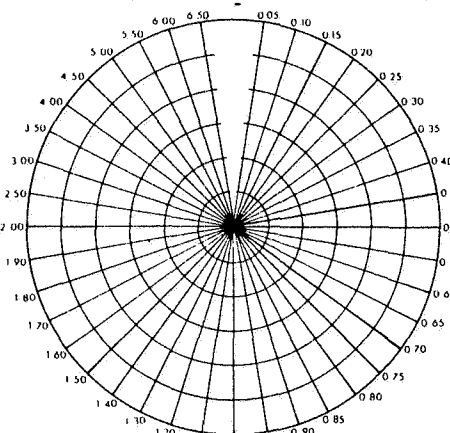
PREPARATION				WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water				546nm /		1.516 /	
0.39				TOTAL No. OF PARTICLES MEASURED 1			
				REFLECTIVITY (%)		No. OF PARTICLES	
				0.39		1	
				$R_{max} / R_{aver.}$			
				COMMENTS			
				2923.0 M			
				Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature Date 24.2.87			

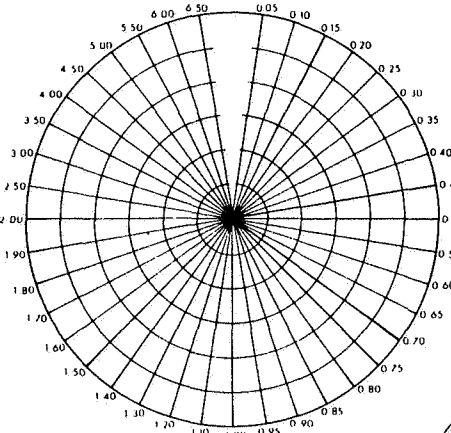


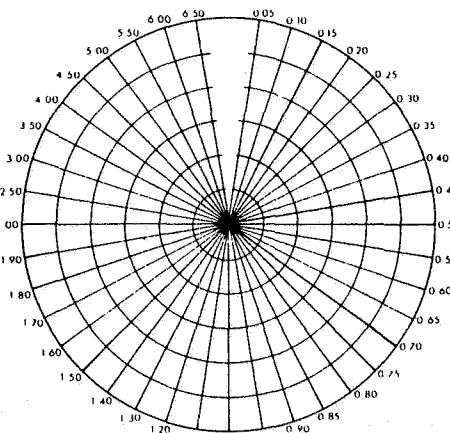
PREPARATION				WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water				546nm /		1.516 /	
0.65	0.63	0.69	0.78	TOTAL No. OF PARTICLES MEASURED 20			
0.73	0.77	0.78	0.79				
0.63	0.70	0.67	0.75				
0.70	0.69	0.75	0.79				
0.68	0.72	0.60	0.66				
				REFLECTIVITY (%)		No. OF PARTICLES	
				0.71		20	
				$R_{max} / R_{aver.}$			
				COMMENTS			
				2934.0 M			
				Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature Date 24.2.87			

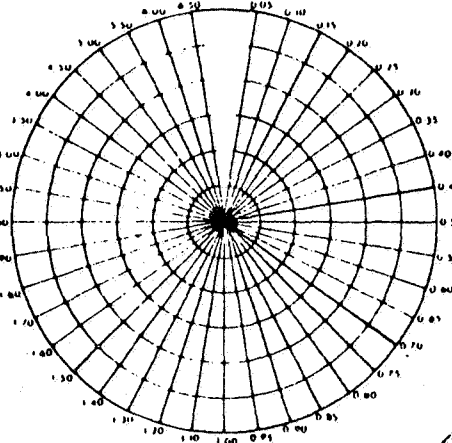


PREPARATION Isopropyl Alcohol / Water		WAVELENGTH 546nm /		R.I. OF IMMERSION OIL 1.516 /	
TOTAL No. OF <i>No DETERMINATION</i> PARTICLES MEASURED <i>POSSIBLE</i>					
REFLECTIVITY (%)				No. OF PARTICLES	
$\bar{R}_{max} / \bar{R}_{aver.}$					
COMMENTS					
				3032.0 M Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature <i>John M. ja</i> Date 24.2.87	

PREPARATION Isopropyl Alcohol / Water		WAVELENGTH 546nm /		R.I. OF IMMERSION OIL 1.516 /	
TOTAL No. OF <i>No DETERMINATION</i> PARTICLES MEASURED <i>POSSIBLE</i>					
REFLECTIVITY (%)				No. OF PARTICLES	
$\bar{R}_{max} / \bar{R}_{aver.}$					
COMMENTS					
				3109.5 M Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature <i>John M. ja</i> Date 24.2.87	

PREPARATION Isopropyl Alcohol / Water		WAVELENGTH 546nm /		R.I. OF IMMERSION OIL 1.516 /	
TOTAL No. OF <i>No DETERMINATION</i> PARTICLES MEASURED <i>POSSIBLE</i>					
REFLECTIVITY (%)				No. OF PARTICLES	
$\bar{R}_{max} / \bar{R}_{aver.}$					
COMMENTS					
				3243.0 M Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature <i>John M. ja</i> Date 24.2.87	

PREPARATION Isopropyl Alcohol / Water		WAVELENGTH 546nm /		R.I. OF IMMERSION OIL 1.516 /	
TOTAL No. OF <i>No DETERMINATION</i> PARTICLES MEASURED <i>POSSIBLE</i>					
REFLECTIVITY (%)				No. OF PARTICLES	
$\bar{R}_{max} / \bar{R}_{aver.}$					
COMMENTS					
				3268.0 M Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE Signature <i>John M. ja</i> Date 24.2.87	

PREPARATION				WAVELENGTH		R.I. OF IMMERSION OIL	
Isopropyl Alcohol / Water				546nm /		1.516 /	
						TOTAL No OF <i>No DETERMINATION</i>	
						PARTICLES MEASURED <i>185416</i>	
						REFLECTIVITY (%)	
						No OF PARTICLES	
						$\bar{R}_{max}$	
						$\bar{R}_{aver}$	
						COMMENTS	
						3298.0 M	
						Geo-optics Ltd. Ash House Bell Villas Ponteland Northumberland NE20 9BE	
						Signature <i>[Signature]</i> Date 24.2.87	