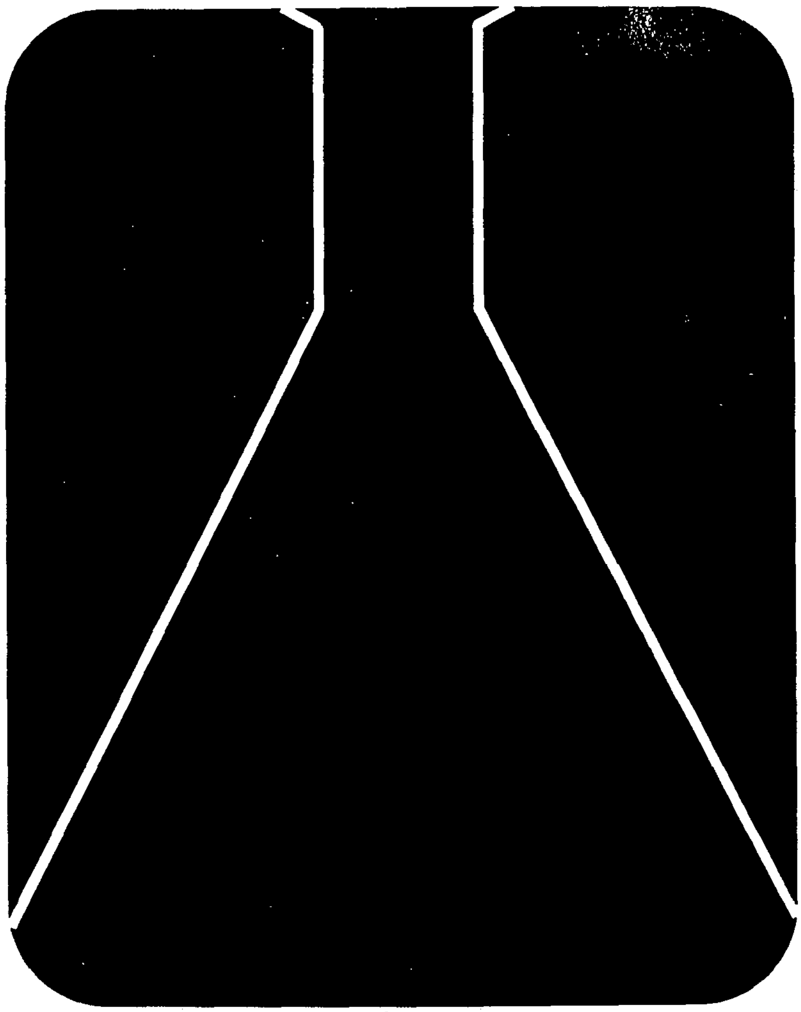
# Geochemical Report
## Well NOCS 34/7-5



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**NORWAY**

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# GEOCHEMICAL ANALYSES REPORT
## WELL NOCS 34/7-5

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## SUMMARY

Well NOCS 34/7-5 is situated east of the Statfjord oil field in the Norwegian sector of the North Sea.

Samples were analysed between 390 m and 3129 m.

The well is immature down to at least 2750 m. A precise definition of the top of the oil window (0.6 % Ro) was not possible in this well due to poor quality and quantities of kerogen and vitrinite, but a best estimate places this at approximately 3000 m.

None of the analysed sections of this well have any source rock potential of significance. Only very minor potential for gas generation exists, but the maturity is not high enough for this to have been released.

Migrated hydrocarbons are abundant in the Brent Gp. of this well (2502 - 2621.5 m). These hydrocarbons are all similar and derived from the same (Viking Gp.?) source rock and have the same maturity (close to, but not past peak oil, 0.8 % Ro). Similar hydrocarbons were encountered in the Drake Fm., but these are probably due to staining.

Traces of hydrocarbons are present in the Cromer Knoll Gp., these being possibly due to leakage from the Brent Gp.

## INTRODUCTION

Well NOCS 34/7-5 is situated in the Norwegian sector of the North Sea, east of the main Statfjord field. The total drilled depth is 3146 m. The well is located at 61°21'54.95''N and 02°01'23.67''E in a water depth of 244 m. Elevation of Kelly Bushing (KB) was 26 m. All depths are relative to KB unless otherwise specified. Samples were collected between 390 m and 3129 m from the Norwegian Petroleum Directorate in Stavanger. A total of 245 samples was collected, washed (only the cuttings samples) and described. The analysed section of the well is from 480 m to 3129 m with a sampling interval of 6 m for the cuttings samples in the Jurassic and Triassic sections, 30 m in the Cretaceous section and a variable sampling interval for the core-chip samples. A careful selection of suitable samples was made for screening analysis (i.e. TOC and Rock-Eval analysis). Forty-one samples were selected for this analysis, and from the data obtained samples were chosen for follow-up analyses. These were as follows:

| | |
|---|---|
| Thermal extraction - pyrolysis - gas chromatography | 18 samples |
| Extraction, MPLC fractionation, saturated and aromatic hydrocarbon gas chromatography | 7 samples |
| Vitrinite reflectance microscopy | 14 samples |
| Visual kerogen analysis | 4 samples |
| Isotope analysis of C15+ fractions | 5 samples |
| Gas chromatography - mass spectrometry | 5 samples |

Tables listing in detail which samples were analysed and the results are located in Appendix 1. The following stratigraphic information was given orally by NPD.

| | |
|---|---|
| Tertiary | |
| Nordland Group | 385.5 - 1093.5 m |
| Utsira Formation | 956.5 - 1093.5 m |
| Hordaland Group | 1093.5 - 1670.0 m |
| Rogaland Group | 1670.0 - 1910.5 m |
| Balder Formation | 1670.0 - 1738.0 m |
| Lista/Sele Formations | 1738.0 - 1840.5 m |
| Heimdal Formation | 1840.5 - 1910.5 m |
| | |
| Cretaceous | |
| Shetland Group | 1910.5 - 2485.5 m |
| Cromer Knoll Group | 2485.5 - 2495.5 m |
| | |
| Jurassic | |
| Viking Group | 2495.5 - 2502.0 m |
| Heather Formation | 2495.5 - 2502.0 m |
| Brent Group | 2502.0 - 2621.5 m |
| Ness Formation | 2502.0 - 2531.0 m |
| Etive Formation | 2531.0 - 2564.0 m |
| Rannoch Formation | 2564.0 - 2621.5 m |
| Dunlin Group | 2621.5 - 2892.5 m |
| Drake Formation | 2621.5 - 2696.0 m |
| Cook Formation | 2696.0 - 2767.5 m |
| Burton Formation | 2767.5 - 2793.5 m |
| Amundsen Formation | 2793.5 - 2892.5 m |
| Statfjord Formation | 2892.5 - 3010 m |
| | |
| Triassic | |
| Hegre Group | 3010.0 - 3146 m |
| Lunde Formation | 3010.0 - 3146 m |
| | |
| Total Depth (TD) | 3146 m |

## LITHOLOGY AND TOTAL ORGANIC CARBON CONTENT

Two hundred and forty-five samples were described and forty-one of these were analysed for TOC content. Figure 1 shows the variation in TOC over the analysed interval of the well plotted with a generalised lithological column. A similar plot of TOC versus the observed lithology is shown in Enclosure 1. The TOC data are listed in Tables 1 and 2, while the lithology descriptions can be found in Table 1.

### Nordland Group (385.5 - 1093.5 m)

Twenty-three samples were described from this group. The group is dominated by various sand/sandstone lithologies. The finer sand/sandstones are grading to siltstone towards the base of the group. Occasional carbonates are also present. No samples were analysed for TOC content in this group.

### Hordaland Group (1093.5 - 1670 m)

Twenty samples were described from this group. The group is dominated by claystones of various greyish shades. Two claystone samples were analysed, one having a good TOC (1.63 %) and one having a poor TOC (0.24 %).

### Rogaland Group (1670 - 1910.5 m)

Seven samples were described from this group. The group is dominated by claystones of various greyish shades, possibly with a slightly more greenish tint than in the Hordaland Gp., also minor amounts of sand/sandstone towards the base.

One claystone sample was analysed and found to have a fair (0.33 %) TOC content.

Cretaceous (1910.5 - 2495.5 m)

Shetland Group (1910.5 - 2485.5 m)

Twenty-one samples were described from this group. Claystones of various grey and brown shades dominate throughout. Minor amounts of sandstone are also present, especially in the lower part of the group. One claystone sample was analysed, the TOC content being fair (0.40 %).

Cromer Knoll Group (2485.5 - 2495.5 m)

Only two samples were described from this group. The dominant lithology consists of an orange coloured carbonate. One of the samples was analysed for TOC content, this having a low TOC content of 0.28 %.

Jurassic (2495.5 - 3010 m)

Viking Group (2495.5 - 2502 m)

Heather Formation (2495.5 - 2502 m)

One sample was described from this formation. The sample is composed of carbonate and sandstones. According to the wire-line logs, the Heather Fm. is a claystone unit. Hence the observed lithologies are all thought to be caved. The carbonate sample was analysed for TOC content (0.28 %, poor) and is thought to represent the base of the Cromer Knoll Gp. The sample will hereafter be discussed together with the

Cromer Knoll Gp. samples.

Brent Group (2502 - 2621.5 m)

Ness Formation (2502 - 2531 m)

Fourteen samples were described from this formation of which ten are core-chip samples and four cuttings samples. The samples are dominated by sandstone interbedded with siltstone and claystone and minor amounts of coal and this is believed to be the true lithology of the formation. Five core-chip samples were analysed (one siltstone, one claystone and three sandstones). The siltstone has a good TOC content (1.98 %), the claystone has a fair TOC content (0.96 %), while the sandstones have TOC contents ranging 0.48 to 0.70 % (relatively rich for sandstones). The TOC contents of the siltstone and the sandstones are at least partly due to the content of migrated hydrocarbons (see later discussions).

Etive Formation (2531 - 2564 m)

Twenty-one samples were described from this formation, sixteen core-chip samples and five cuttings samples. The samples are dominated by sandstone, which is the in-situ lithology. Caved claystone is common in the cuttings samples. Five samples were analysed, four sandstones and one conglomerate/very coarse sandstone. The samples have TOC contents ranging 0.10 to 0.45 %, the content corresponding with the amount of free hydrocarbons in the samples.

Rannoch Formation (2564 - 2621.5 m)

Thirty-seven samples were described from this formation. Twenty-nine of these samples are core-chips, the others being cuttings samples. The core-chip samples consist of sandstone, which is the in-situ lithology. Most of the cuttings samples are dominated by claystones which are considered caved. Twelve sandstone core-chip samples were analysed and found to have TOC contents ranging 0.04 to 0.73 %. The TOC content reflects fairly well the hydrocarbon content in the samples.

Dunlin Group (2621.5 - 2892.5 m)

Drake Formation (2621.5 - 2696 m)

Eighteen samples were described from this formation, five core-chip samples and thirteen cuttings samples. The core-chip samples are all from the uppermost ten metres of the formation. The cuttings samples in this upper part of the formation are dominated by caved sandstone. Below the cored section the cuttings samples are dominated by claystones, except at the base where more caved sandstone is present and where the Drake Fm. consists of claystone (partly silty) in this well. Four claystone samples were analysed, two core-chip and two cuttings samples. The two core-chip samples have good TOC contents (1.11 and 1.12 %), while the two cuttings samples have fair TOC contents (0.57 and 0.80 %).

Cook Formation (2696 - 2767.5 m)

Twelve samples were described from this formation. The dominant lithologies are claystones. Sandstones are also present in the samples, but are considered to be caved from the cored section(s) above. Two of the claystone samples were analysed, these having fair TOC contents (0.97 and 0.94 %).

Burton Formation (2767.5 - 2793.5 m)

Four samples were described from this formation. The samples are dominated by claystone, which is thought to be the in-situ lithologiy of the formation. One claystone sample was analysed and found to have a fair TOC content (0.57 %).

Amundsen Formation (2793.5 - 2892.5 m)

Twenty-five samples were described from this formation, eight core-chip samples and seventeen cuttings samples. Down to about 2850 m the samples are dominated by claystones. In addition, below 2850 m the samples contain sandstone. All the core-chip samples are located in this lower part, these consisting entirely of sandstone and siltstone. The section above 2850 m is interpreted to consist of clay, while the section below 2850 m is interpreted to consist of sandstone/ siltstone. Four samples were analysed from this formation, one claystone cuttings sample, two sandstone core-chip samples and one siltstone core-chip sample. The claystone sample has a fair TOC content (0.41 %). The sandstone and siltstone samples all have similar poor/fair TOC contents ranging (0.23 to 0.28 %).

Statfjord Formation (2892.5 - 3010 m)

Nineteen samples were described from this formation. The dominant lithology is a coarse sandstone, but smaller amounts of claystones are also present as well as minor amounts of coal. The formation is considered to consist primarily of sandstone but with some claystone (and thin coal?) beds. Two sandstone samples were analysed from this formation, both being virtually barren of organic carbon (0.02 and 0.04 %).

<u>Triassic</u> (3010 - 3146 m)

Hegre Group (3010 - 3146 m, TD)

Lunde Formation (3010 - 3146 m)

Twenty-one samples were described from this formation. The dominant lithology down to 3085 m is a coarse sandstone, and below 3085 m a brownish claystone. The formation is thought to consist of interbedded claystone and sandstone with sandstone dominant in the upper section and claystone dominant in the lower section. One sandstone sample was analysed, which was virtually barren of organic carbon (0.09 % TOC).

## ROCK-EVAL ANALYSIS

Forty-one samples were analysed. The data are listed in Table 2. Production index is plotted in Figure 2, Tmax in Figure 3 and Tmax versus hydrogen index in Figure 4. Rock-Eval data versus the observed lithology is plotted in Enclosure 1.

Kerogen Type and Richness
(Hydrogen Index, Oxygen Index and Petroleum Potential)

Tertiary (385.5 - 1910.5 m)

Hordaland Group (1093.5 - 1670 m)

Two claystone samples were analysed. The samples have hydrogen indices of 175 and 33 mg HC/g TOC and oxygen indices of 116 and 250 mg $CO_2$/g TOC, suggesting kerogen type III and IV. The samples have fair (3.8 mg HC/g rock) and poor (0.1 mg HC/g rock) petroleum potentials respectively. At best, sections of the Hordaland Gp. have a fair potential for gas generation.

Rogaland Group (1670 - 1910.5 m)

Balder Formation (1670 - 1738 m)

One claystone sample was analysed from this formation. This has a hydrogen index of 39 mg HC/g TOC and an oxygen index of 209 mg $CO_2$/g TOC, suggesting that it contains kerogen type IV. The sample has a poor petroleum potential (0.2 mg

HC/g rock). The sample does not have any potential for hydrocarbon generation.

<u>Cretaceous</u> (1910.5 - 2495.5 m)

Shetland Group (1910.5 - 2485.5 m)

One claystone sample was analysed from this group, this having a hydrogen index of 20 mg HC/g TOC and an oxygen index of 63 mg $CO_2$/g TOC, suggesting that it contains kerogen type IV. The sample has a poor petroleum potential (0.1 mg HC/g rock). The sample does not have any potential for hydrocarbon generation.

Cromer Knoll Group (2485.5 - 2495.5 m)

One carbonate sample was analysed from this group (from 2496 m, see discussion in lithology chapter), this having a hydrogen index of 121 and an oxygen index of 243, indicating that it contains kerogen type III. The sample has a poor petroleum potential (0.6 mg HC/g rock). However, the $S_1$ value is relatively high for this sample, indicating the presence of either contaminants or migrated hydrocarbons. These are thought to have elevated the hydrogen index and hence the real potential for hydrocarbon generation is even poorer than indicated by the hydrogen index/petroleum potential and most likely the sample does not have any source rock potential.

Jurassic (2495.5 - 3010 m)

Viking Group (2495.5 - 2502 m)

No suitable material was available from the Viking Gp. (Heather Fm.).

Brent Group (2502 - 2621.5 m)

Ness Formation (2502 - 2531 m)

Five samples were analysed from this formation, one siltstone, one claystone and three sandstone samples. The claystone sample has a hydrogen index of 116 mg HC/g TOC and an oxygen index of 88 mg $CO_2$/g TOC, indicating kerogen type III. The sample has a poor petroleum potential. The siltstone and the sandstones are dominated by migrated hydrocarbons (high $S_1$ values) and the hydrogen indices are not thought to reflect any source rock potential. The data indicates that claystone beds in the (dominantly sandy) Ness Fm. can have a poor potential for gas generation (presently insufficiently mature for generation).

Etive Formation (2531 - 2564 m)

Five samples were analysed from this formation, all sandstones or conglomerates. All the samples are dominated by migrated hydrocarbons (relatively high $S_1$ values) and the hydrogen indices does not reflect any source rock potential.

Rannoch Formation (2564 - 2621.5 m)

Twelve samples were analysed from this formation, all sandstones. All the samples are dominated by migrated hydrocarbons (relatively high $S_1$ values) and the hydrogen indices do not reflect any source rock potential.

Dunlin Group (2621.5 - 2892.5 m)

Drake Formation (2621.5 - 2696 m)

Four samples were analysed from this formation, all claystones. The two uppermost samples are darker than the two lowermost and have slightly higher hydrogen indices and TOC contents. The hydrogen indices range 33 to 91 mg HC/g TOC and oxygen indices 8 to 176, indicating kerogen type IV. The samples have poor petroleum potentials (0.3 to 1.5 mg HC/g rock). The Drake Fm. is not thought to have any source rock potential in this well.

Cook Formation (2696 - 2767.5 m)

Two samples were analysed from this formation, both claystones. The hydrogen indices are 88 and 120 mg HC/g TOC and the oxygen indices are 24 and 12 mg $CO_2$/g TOC, indicating kerogen type IV. The samples have poor petroleum potentials (1.0 and 1.2 mg HC/g rock). The samples do not have any source rock potential.

Burton Formation (2767.5 - 2793.5 m)

One claystone sample was analysed from this formation. The sample has a hydrogen index of 40 mg HC/g TOC and an oxygen index of 818, indicating kerogen type IV. The sample has a poor petroleum potential (0.3 mg HC/g rock). The sample does not have any source rock potential.

Amundsen Formation (2793.5 - 2892.5 m)

Four samples were analysed from this formation, one claystone, one siltstone and two sandstone samples. The samples have hydrogen indices ranging 29 to 70 mg HC/g TOC and oxygen indices ranging 4 to 305 mg $CO_2$/g TOC, indicating kerogen type IV. The samples have poor petroleum potentials (0.1 to 0.3 mg HC/g rock). The samples are devoid of any source rock potential.

Statfjord Formation (2892.5 - 3010 m)

Two samples were analysed from this formation, both sandstones. Both samples have very low TOC and $S_2$ values, making the hydrogen indices more or less random. The petroleum potentials of these samples are poor (less than 0.1 mg HC/g rock) and they do not have any potential for hydrocarbon generation.

<u>Triassic</u> (3010 - 3146 m, TD)

Hegre Group (3010 - 3146 m, TD)

Lunde Formation (3010 - 3146 m, TD)

One sandstone sample was analysed from this formation. The data is similar to those of the Statfjord Fm. samples and the same interpretation applies.

Generation and Migration
(Production Index, $S_1/(S_1+S_2)$)

The production indices are low for all three Tertiary and Shetland Gp. samples and do not indicate the presence of any migrated hydrocarbons. The sample from the Cromer Knoll Gp. has a somewhat higher production index which could suggest the presence of either migrated hydrocarbons or contamination.

The Brent Gp. (2502 - 2621.5 m) has generally consecutively high production indices and also mainly high $S_1$ values, strongly indicating the presence of migrated hydrocarbons in this group.

In the Dunlin Gp. and Statfjord and Lunde Fms., the production indices can occasionally be high, but this is due to very low $S_2$ values and not to the presence of migrated hydrocarbons. None of these units are thought to contain migrated hydrocarbons.

None of the analysed rocks were previously found to have any source rock potential of significance and hence only insignificant in-situ generation is thought to have taken place in the analysed rock samples.

Maturity (Tmax)

Most of the samples contain almost only kerogen type IV, which is poor for measuring Tmax. Only four samples have reliable Tmax data. This is too small a data set to establish any maturity trend. The data does however indicate that the well has not reached the oil window by 2750 m and it is tentatively suggested that the top of the oil window may occur at approximately 3000 m in this well.

THERMAL EXTRACTION - GAS CHROMATOGRAPHY

Eighteen samples were analysed by thermal extraction gas chromatography. Typical thermal extract chromatograms are shown in Figures 5a-e.

Tertiary (385.5 - 1910.5 m)

Hordaland Group (1093.5 - 1670 m)

One claystone sample from this group was analysed by thermal extraction. The chromatogram of the sample is dominated by gaseous compounds and light molecular weight aromatic compounds, showing the terrestrial origin of the hydrocarbons. The hydrocarbons are thought to be generated in-situ and the products are compatible with the previous observed properties of the sample.

Cretaceous (1910.5 - 2495.5 m)

Cromer Knoll Group (2485.5 - 2495.5 m)

One carbonate sample from this group was analysed by thermal extraction. The chromatogram of the sample is dominated by hydrocarbons in the $C_{16}$ to $C_{21}$ range in addition to gaseous hydrocarbons. The sample is rich in isoprenoids and lacking $C_{12}$ to $C_{15}$ range n-alkanes. This could possibly indicate biodegradation of the sample. The high isoprenoid content indicates that the hydrocarbons are not due to contamination.

Jurassic (2495.5 - 3010 m)

Brent Group (2502 - 2621.5 m)

Ness Formation (2502 - 2531 m)

Four samples from this formation were analysed by thermal extraction (one siltstone and three sandstone samples). The chromatograms are very similar, being dominated by n-alkanes in the $C_{15}$+ range eluting on an unresolved hump (Figure 5a). This is the typical pattern for an oil residue. The lighter compounds have probably been lost during water washing/ drilling/storage/transport.

Etive Formation (2531 - 2564 m)

Three samples from this formation were analysed by thermal extraction, all being sandstones. The chromatograms are similar to each other and quite similar to those of the Ness Fm. samples, except for a slight difference in the $C_{15}$ to $C_{18}$ range where the Etive Fm. samples contain fewer n-alkanes but some unidentified peaks (Figure 5b). However, the Etive Fm. is considered to contain oil similar to that in the Ness Fm. The observed variation might be a grain size effect.

Rannoch Formation (2564 - 2621.5 m)

Five samples were analysed from this formation, all being sandstones. The chromatograms of the four uppermost samples are very similar to each other and to the chromatograms of the samples from the Ness and Etive Fms. (Figure 5c), and the same interpretation applies. The lowermost sample has a very different chromatogram (Figure 5d) which is dominated by compounds in the $C_{11}$ to $C_{17}$ range. This sample is considered to be below the oil zone and to contain a mixture of in-situ generated hydrocarbons (in small amounts) and either contaminants or light migrated hydrocarbons.

Generally, the Brent Gp. is thought to contain an oil zone from the very top of the group (2502 m) and down to about 2610 m.

Dunlin Group (2621.5 - 2892.5 m)

Drake Formation (2621.5 - 2696 m)

Two samples were analysed from this formation, both being claystones. The samples have chromatograms which are fairly similar (Figure 5e), containing hydrocarbons in the $nC_{10}$ to $nC_{16}$ range, which are well-mature based on the ratios of isoprenoids to n-alkanes. Aromatic compounds are not easily identified. The hydrocarbons are most likely generated in-situ, although the samples could be affected by contamination.

Cook Formation (2696 - 2767.5 m)

One claystone sample was analysed from this formation. The chromatogram of this sample is dominated by gaseous compounds, light molecular weight aromatic compounds and phenols. This suite of hydrocarbons is typically produced from kerogen type III and indicates that the sample has only a slight potential for gas generation.

Amundsen Formation (2793.5 - 2892.5 m)

One siltstone sample from this formation was analysed by thermal extraction. The chromatogram is very similar to those of the Drake Fm. samples and the same interpretation applies.

## PYROLYSIS - GAS CHROMATOGRAPHY

Eighteen samples were analysed. Typical pyrograms can be seen in Figures 6a-d and a pyrolysis products triangle in Figure 7. Pyrolysis GC data are listed in Table 3.

### Tertiary (385.5 - 1910.5 m)

#### Hordaland Group (1093.5 - 1670 m)

One claystone sample from this group was analysed by pyrolysis GC. The pyrogram of this sample is dominated by gaseous compounds, light molecular weight aromatic compounds and phenol compounds. This suite of compounds is typical of the pyrolysis products of low mature terrestrial material. The sample has a potential for mainly gas generation.

### Cretaceous (1910.5 - 2495.5 m)

#### Cromer Knoll Group (2485.5 - 2495.5 m)

One carbonate sample from this group was analysed by pyrolysis GC. The pyrogram of the sample shows prominent gaseous compounds together with alkene peaks. The alkene peaks could be pyrolysis products from asphaltenes and the sample might represent a "tar-mat". Possibly this could be a result of hydrocarbons seeping through (from the Brent reservoir).

Jurassic (2495.5 - 3010 m)

Brent Group (2502 - 2621.5 m)

Ness Formation (2502 - 2531 m)

Four samples from this formation were analysed by pyrolysis GC, one siltstone and three sandstone. The pyrograms are very similar to each other, showing fairly prominent gaseous compounds and alkene/alkane doublets (Figure 6a). Prominent alkene/alkane doublets are commonly taken as an indication of kerogen type II to II/III, but for these samples the doublets are thought to be an effect of pyrolysation of asphaltenes (abundant alkenes) and of heavy molecular weight hydrocarbons (alkanes), i.e. the pyrolysis products reflect the oil present in the samples.

Etive Formation (2531 - 2564 m)

Three samples from this formation were analysed by pyrolysis GC, all being sandstones. The pyrograms are somewhat different for the three samples (Figure 6b,c). The variation is possibly due to the variation of asphaltenes in the oil, the samples having the highest asphaltene content having the relatively most prominent alkene peaks.

Rannoch Formation (2564 - 2621.5 m)

Five sandstone samples were analysed from this formation. The pyrograms of the four uppermost samples are similar to those of the Etive Fm. and the same interpretation applies. The lowermost sample has a very different pyrogram (Figure 6d), dominated by aromatic compounds and phenols (plus abundant gaseous compounds). This sample is below the oil zone proper (see previous discussion) and the pyrolysis products are not due to oil, but to (terrestrial) plant material in the sandstone. The products indicate that the sample has only a (very small) potential for gas generation, but also that it has a low maturity.

Dunlin Group (2621.5 - 2892.5 m)

Drake Formation (2621.5 - 2696 m)

Two samples were analysed from this formation, both being claystones, these having pyrograms which are somewhat different. Both are dominated by gaseous compounds, but the uppermost pyrogram shows abundant n-alkane peaks. These n-alkanes are thought to be due to the presence of migrated hydrocarbons (possibly staining).

Cook Formation (2696 - 2767.5 m)

Two samples from this formation were analysed, one claystone and one siltstone. The pyrogram of the claystone resembles that of the uppermost Drake Fm. sample, while that of the siltstone resembles that of the lowermost Drake Fm. sample and the same interpretation applies.

Generally the pyrolysis GC compositions (Figure 7) are fairly similar for all the samples and none of these reflect any source rocks of significance. The pyrolysis products are strongly affected by the migrated hydrocarbons present in the well.

## EXTRACTION DATA

Seven samples were extracted, fractionated and the hydrocarbons analysed by gas chromatography. The data are listed in Tables 4a-e, 5 and 6. The data are plotted in Enclosure 2. The chromatograms are located in Appendix 4. Typical saturates chromatograms are shown in Figures 8a-c and saturates ratios are plotted in Enclosure 3. Typical aromatic chromatograms in Figures 9a-c. All the extracted samples are from the Brent and Dunlin Gps. of the Jurassic section.

<u>Jurassic</u> (2495.5 - 3010 m)

Brent Group (2502 - 2621.5 m)

Ness Formation (2502 - 2531 m)

Two samples from this formation were extracted, one siltstone and one sandstone sample. Both samples have rich contents of extractable organic material (7871 and 3933 ppm EOM) as well as of extractable hydrocarbons (6301 and 3011 ppm EHC). These two samples have the highest content of hydrocarbons of any samples extracted in the well and also have the lowest percentage of polar compounds (non-hydrocarbons) of any of the sandstone/siltstones analysed (about 20 %). The two samples contain about three times as much saturated as aromatic hydrocarbons, which is common for migrated hydrocarbons. The Ness Fm. is thought to contain an oil zone in this well.

Etive Formation (2531 - 2564 m)

One sandstone sample from this formation was extracted. The sample has a fair content of extractable organic material (593 ppm EOM) and a good content of extractable hydrocarbons (411 ppm EHC). This is far less than in the Ness Fm. and clearly indicates that the Etive Fm. does not contain an oil saturated zone, but rather a water zone with maybe 10 % oil. The Etive Fm. sample contains about 30 % polar compounds and about eight times as much saturated as aromatic hydrocarbons.

Rannoch Formation (2564 - 2621.5 m)

Three sandstone samples from this formation were extracted. The analytical results are similar to those of the Etive Fm. sample (408 - 825 ppm EOM, 295 - 557 ppm EHC and ~ 30 % polar compounds). The ratio of saturated to aromatic compounds is variable, ranging ~ 3.0 - 8.0, but the same interpretation as that for the Etive Fm. applies.

Dunlin Group (2621.5 - 2892.5 m)

Drake Formation (2621.5 - 2696 m)

One claystone sample from this formation was extracted, this having a poor content of extractable organic material (335 ppm EOM) and a good content of extractable hydrocarbons (264 ppm EHC). The sample contains about two times as much saturated as aromatic hydrocarbons and about 20 % polar compounds. Normalised against TOC the sample has a poor content of extractable organic material (23 mg EOM/g TOC) and a fair content of extractable hydrocarbons (18 mg EHC/g TOC). The high content of rock normalised hydrocarbons indicates that the sample contains migrated hydrocarbons in addition to in-situ generated hydrocarbons. The total amounts of hydrocarbons are however small. The rock does not appear to be a good source rock.

## Saturated Hydrocarbons

### Jurassic (2495.5 - 3010 m)

### Brent Group (2502 - 2621.5 m)

### Ness Formation (2502 - 2531 m)

Two samples from this formation were analysed. The two chromatograms are very similar. These show a full range of hydrocarbons from $nC_{17}$ to $nC_{37}$ (Figure 8a), reflecting the presence of migrated oil. The pristane/$nC_{17}$ ratios are fairly low, indicating a maturity close to peak oil generation. The pristane/phytane ratios are close to one (0.9), indicating that the hydrocarbons are derived from a marine source rock.

### Etive Formation (2531 - 2564 m)

One sample was analysed from this formation. The chromatogram is fairly similar to those of the Ness Fm. samples, but the heavy molecular weight compounds are slightly less prominent. The pristane/$nC_{17}$ ratio is also similar. The pristane/phytane ratio is also closer to one, but slightly higher (at 1.3) than that of the Ness Fm. The difference is marginal, but could possibly indicate a slightly higher input of land plant material in the source rock. Also note from the previous discussion that only the Ness Fm. samples are from a proper oil zone.

### Rannoch Formation (2564 - 2621.5 m)

Three samples were analysed from this formation. The chromatograms of these samples are fairly similar to each other and to that of the Ness Fm., but again the heavy molecular compounds are slightly less prominent than in the Ness Fm. (Figure 8b). The pristane/n$C_{17}$ ratio is similar for the three samples and similar to those for the previously analysed hydrocarbons. The pristane/phytane ratios are similar to that of the Etive Fm., except for the lowermost sample where it is marginally higher.

Dunlin Group (2621.5 - 2892.5 m)

Drake Formation (2621.5 - 2696 m)

One claystone sample was analysed from this formation. The chromatogram is very different to those of the previously analysed samples (Figure 8c). The chromatogram is dominated by light molecular weight compounds, as opposed to those previously analysed. The pristane/n$C_{17}$ ratio is smaller, which could indicate a higher maturity, but the CPI value is slightly higher, which may indicate a lower maturity or proportionally greater amounts of terrigenous plant material. The pristane/phytane ratio is about twice as high as for the other analysed samples, suggesting a more terrestrially influenced source rock for the hydrocarbons. It is suggested that the hydrocarbons in the Drake Fm. claystone are a mixture of low mature, in-situ generated and either migrated hydrocarbons or staining similar to the hydrocarbons in the Ness Fm.

## Aromatic Hydrocarbons

### Jurassic (2495.5 - 3010 m)

### Brent Group (2502 - 2621.5 m)

### Ness Formation (2502 - 2531 m)

Two samples from this formation were analysed. The two FID chromatograms are fairly similar, being dominated by a large unresolved hump, with phenanthrene compounds eluting on top (Figure 9a). The samples have MPI1 ratios indicating a maturity close to peak oil generation (0.8 % Ro). Other ratios, e.g. 4/1 methyl dibenzothiophene, also suggest a maturity well within the oil window and close to peak oil generation. The FPD chromatograms indicate a similar maturity for the two samples, but could possibly suggest a lower sulphur content for the lowermost sample, although the difference is very small according to the DBT/P ratios.

### Etive Formation (2531 - 2564 m)

One sample was analysed from this formation. The FID chromatogram is fairly similar to those of the Ness Fm. samples, except that the heavy molecular weight compounds are slightly less prominent. The hydrocarbons also appear to have the same maturities and sulphur contents. The FPD chromatogram is almost identical to that of the uppermost Ness Fm. sample.

### Rannoch Formation (2564 - 2621.5 m)

Three samples were analysed from this formation. The chromatograms of these samples are fairly similar to each other and to those of the Ness Fm., but again the heavy molecular compounds are slightly less prominent than in the Ness Fm. (Figure 9b). The calculated aromatic ratios are also similar, although these could possibly be interpreted to indicate a (very marginally) lower maturity. The FPD chromatograms are very similar to that of the lowermost sample from the Ness Fm.

Dunlin Group (2621.5 - 2892.5 m)

Drake Formation (2621.5 - 2696 m)

One claystone sample was analysed from this formation. The FID chromatogram is different to those of the above analysed samples, being dominated by naphthalene compounds (Figure 9c). These compounds are prominent in oils and condensates but not in low mature source rocks. The maturity of the hydrocarbons in this sample appears to be around 0.7 % Ro, slightly lower than that of the previously analysed hydrocarbons. The FPD chromatogram indicates that the sulphur content is low, although the DBT/P ratio suggests a similar sulphur content to that of the previously analysed samples. It is suggested that the Drake Fm. contains partly in-situ generated hydrocarbons, which makes the hydrocarbons appear less mature than the Brent Gp. hydrocarbons, and partly migrated hydrocarbons of the same type as those in the Brent Gp. The dominance of the light molecular weight compounds compared with the Brent Gp. samples could then be an effect of the difference in grain size, with the claystones of the Drake Fm. being relatively enriched in the lighter compounds.

VITRINITE REFLECTANCE

A total of thirteen cuttings samples and one core-chip sample was analysed for thermal maturity in this well using vitrinite reflectance. The samples, from 480 - 3129 m, covered the stratigraphic range of Nordland Gp. (Tertiary) - Hegre Gp. (Triassic). The thermal maturity data are presented in Table 7, while Figure 10 shows a plot of vitrinite reflectance versus depth. The individual sample histograms are in Appendix 2.

The first three silty claystone samples (480. 660 and 830 m) from the Nordland Gp. have extremely low phytoclast contents where vitrinite is practically absent. The next four samples from the Hordaland Gp. (1100 - 1550 m) are also very similar to the overlying samples. Bitumen staining is low. Only minimal measurements were possible.

No significant difference was observed in the samples from the Rogaland and Shetland Gps. (1730 - 2094 m) with respect to overall phytoclast content. Vitrinite is similarly very rare. However, bitumen staining in these three samples was occasionally moderate.

The only sample from the Dunlin Gp. where measurement was possible (2631.6 m), which is also a core-chip sample, exhibits a significant change. The maceral content is high, although composed of 100 % inertinite. Poor quality and small sized vitrinite occurs only in traces. Bitumen staining is moderate to high.

The two deepest samples analysed (2994 and 3129 m from the Statfjord Fm. and Hegre Gp. respectively) have low to very low phytoclast contents, with poor quality vitrinite occurring only in traces. Bitumen staining is moderate to high in the 2994 m sample, but low in the 3129 m sample.

Based on the data obtained and the microscopic observations, a thermal maturity curve is proposed for the well (Figure 10). Accordingly, the entire analysed interval lies above the onset of the oil window (Ro = 0.6 %). The well is estimated to reach early maturity (Ro = 0.5 %) at approximately 3000 m.

# VISUAL KEROGEN MICROSCOPY

Only four samples were optically examined from this well, due to the general unsuitability of the lithologies present. The detailed kerogen compositions are shown in Table 8, while the gross compositions are plotted in a triangular diagram, Figure 12. Note that the latter does not take into account the precise nature of the liptinite component, i.e. whether fresh/reworked or amorphous/well-formed, which have considerable consequences for the types/amounts of hydrocarbons that may be generated. Maturity data (Spore Colour Index) is included in Table 7.

## Kerogen Typing

### Tertiary (385.5 - 1910.5 m)

Hordaland Group (1093.5 - 1670 m)

One cuttings sample of shale was analysed from this interval at 1130 m. This contains almost exclusively dark brown fluorescent (low-H) amorphous reworked/degraded liptinite (?including an unknown amount of degraded vitro-humic matter). Algae are subordinate and dinoflagellates are common, while spores are rare. Detrital vitrinite and inertinite occur in only trace amounts.

This marine detrital assemblage, possibly representing a relatively distal site of deposition, is considered to have only minor potential for gas at best.

Jurassic (2495.5 - 3010 m)

Brent Group (2502 - 2621.5 m)

Ness Formation (2502 - 2531 m)

One core-chip sample of siltstone was analysed from the Ness Fm. (2511 m). The concentrate from this sample appears to contain mainly only mineral matter and kerogen typing has not been attempted. The concentrate appears to contain abundant yellowish-white for less matter and common whitish-blue droplets of free hydrocarbons. Kerogen in the form of amorphinite, spores, algae and detrital inertinite and vitrinite are observed. The nature of the concentrate and the observations made do not agree with the Rock-Eval results for this sample which shows a good/rich TOC and suggests kerogen type II/III-III. It is possible that the latter reflect the presence of asphaltenes and free hydrocarbons rather than indigenous kerogen.

Dunlin Group (2621.5 - 2892.5 m)

Drake Formation (2621.5 - 2696 m)

One core-chip sample of shale (2630 m) was examined. This contains accessory/significant liptinite (15 %), mainly as spore/pollen with subordinate cuticle and algae. Vitrinite as thick, dark, non-bituminous clasts is dominant (70 %), giving the assemblage a distinctly coaly appearance. Semi-fusinitic inertinite is also significant.

This terrestrially dominated assemblage has only minor generative potential for gas, especially when the rather low TOC content is considered.

Cook Formation (2696 - 2767.5 m)

One cuttings sample of shale was examianed (2754 m). This contains a moderate liptinite content (20 %) mainly of well preserved spores with subordinate amorphous reworked/degraded matter and algae with common dinoflagellates. Vitrinite is dominant (65 %), this and the inertinite components being similar to those in the Drake Fm. sample.

Similar to the Drake Fm. sample, this sample suggests the Cook Fm. to have potential only for small amounts of gas.

## Maturity

Due to the limited data set it is not possible to assess the maturity profile of this well with any confidence. The uppermost sample (Hordaland Gp.) is immature, while the lowermost samples (Dunlin Gp.) are in the uppermost part of the oil window. The top of the oil window (SCI 6.0) may tentatively occur in the Brent Gp. interval, i.e. between ~ 2500 and 2600 m.

ISOTOPE ANALYSIS OF C15+ FRACTIONS

Five samples were analysed, comprising four sandstone/siltstone samples from the Brent Gp. (2511 m, 2550 m, 2576 m and 2611 m) and one claystone sample from the Drake Fm.(2630 m). Figure 12a shows a crossplot of the $\delta^{13}C$ isotope values of saturated versus aromatic hydrocarbons and Figure 12b shows the Galimov plots of the $\delta^{13}C$ isotopic values of the various fractions from the extracted material of the samples. All data are listed in Tables 9a and 9b in Appendix 1.

The isotope values for the Brent Gp. sandstone/siltstone samples are for all practical purposes identical and similar to those expected for hydrocarbons derived from mature Viking Gp. source rocks in the northern North Sea area. There are no indications of any differences either in source or maturity for these four Brent Gp. samples.

The Drake Fm. claystone also has isotope values very similar to those of the Brent Gp. samples. The isotope values for the Drake Fm. are however, very slightly isotopically heavier than those of the Brent Gp.. samples. The claystones of the Drake Fm. are thought to be stained with the same migrated hydrocarbons as those present in the Brent Gp. and the very small differences in isotope values could be due to a very minor in-situ generation of hydrocarbons in the claystones.

Sofer, Z. (1984) Stable carbon isotope compositions of crude oils: Application to source depositional environments and petroleum alteration. Bull. Am. Ass. Pet. Geol. Vol. 68, No 1, p 31-49.

## GAS CHROMATOGRAPHY - MASS SPECTROMETRY

Five samples were analysed, all being from the Lower Jurassic Brent Gp. and Drake Fm. of the well. The data is listed in Tables 10a-i. Typical fragmentograms are shown in Figures 13a-d.

Brent Group (2502 - 2621.5 m)

Four samples were analysed from this group. These comprise one siltstone sample from the Ness Fm. (2511 m), one sandstone from the Etive Fm. (2550 m) and two sandstones from the Rannoch Fm. (2576 m and 2611 m). The following discussion will show that these four samples have identical fragmentograms and that the hydrocarbons in the four samples are identical.

<u>Saturated Hydrocarbons</u>

Terpanes

The M/Z 163 fragmentograms of the four samples are identical. The fragmentograms have prominent sterane peaks (Figure 13a), demonstrating the marine nature of the soure rock for these hydrocarbons. The steranes are however subordinate, showing that the source rock has been influenced by terrestrially derived organic material. The M/Z 177 fragmentograms give the same picture.

The M/Z 191 fragmentograms are identical for all four Brent Gp. samples. Tricyclic terpanes are minor peaks, but identifiable, even the $C_{28}$ and $C_{29}$ tricylic terpanes. The $T_m/T_s$ ratio is small (0.7 - 0.9), indicating a reducing depositional environment for the source rock and/or a high maturity for the hydrocarbons. Maturity parameters like $J_1/(J_1+J_2)$ and (D+F)/(C+E) indicate an oil window maturity for the hydrocarbons, probably close to peak oil maturity (0.8 % Ro). The unknown triterpane "X" peak is moderately high, indicating a moderate maturity. See Figure 13b and Table 10A. All the calculated ratios are almost identical for the four samples, again showing the similarity of the hydrocarbons.

The M/Z 205, 370 and 384 fragmentograms support the above discussion and the peak identifications.

Steranes

The M/Z 149 and 189 fragmentograms show that $C_{27}$ and $C_{29}$ diasteranes are relatively the most abundant biomarkers. This suggests that the hydrocarbons were sourced from a terrestrially affected, marine source rock which is well-mature. However, regular steranes are also fairly prominent and the maturity of the hydrocarbons is probably not too high, and a maturity close to, but probably not past, peak oil generation (0.8 % Ro) is tentatively suggested. $C_{30}$ steranes are also identified in the samples.

The M/Z 259 fragmentograms again show the similarity of the samples and the dominance of diasteranes.

The M/Z 217 fragmentograms are also almost identical for all four Brent Gp. samples. A detailed study of the fragmentograms shows that coelution of compounds is important in these samples (Figure 13c). The most prominent peaks represent $C_{27}$ diasteranes, but closely followed by $C_{27}$ regular steranes, $C_{29}$ regular steranes and $C_{29}$ diasteranes. The least prominent peaks represent $C_{28}$ regular steranes. The observations indicate that the hydrocarbons are sourced from a marine source rock (prominence of $C_{27}$ steranes), but with a significant terrestrial input of organic material ($C_{29}$ steranes). The relative amounts of dia- and regular steranes suggest a maturity in the upper part of the oil window. This is supported by calculated maturity indicators such as Ratios 2 and Ratio 3 (Table 10B). Ratio 2 suggests that the hydrocarbons are only moderately mature, while Ratio 3 suggests them to be within the oil window.

The M/Z 218 fragmentogram supports the previous observations.

The M/Z 231 fragmentograms (methyl steranes) are similar for the four Brent Gp. samples, but clear identification of individual peaks is difficult.

## Aromatic Hydrocarbons

### Alkyl Benzenes

M/Z 106 fragmentograms are identical for the four Brent Gp. samples. The fragmentograms are dominated by two homologous series of $C_2$-substituted benzenes, of which the first eluting has the highest peaks. The fragmentograms also have a very prominent single peak at 45 minutes retention time. The M/Z 134 fragmentograms are again similar for all four samples.

### Naphthalenes

The M/Z 142 and 156 fragmentograms are different for the four samples. However, the aromatic GC chromatograms showed that very little of these early eluting naphthalene compounds were recovered for the four Brent Gp. samples and the variation in the fragmentograms is thought to be due to the variability in the recovery of hydrocarbons and not due to variation in the original composition of the samples. The M/Z 170 fragmentograms are again similar for all four samples, with the 1,3,6 $C_3$-naphthalene peak as the largest.

## Phenanthrenes

The M/Z 178 fragmentograms show only the phenanthrene peak. The M/Z 192 fragmentograms are similar to each other. The largest peak is the 9-methyl phenanthrene peak followed by the 1-, 2- and 3-methyl phenanthrene peaks. This indicates a pre-peak oil maturity (i.e. < 0.8 % Ro). The hydrocarbons probably have a maturity within the oil window, between 0.6 % and 0.8 % Ro. The M/Z 206 and 220 fragmentograms also demonstrate the similarity in maturity of the four samples.

## Dibenzothiophenes

The M/Z 198 fragmentograms are simialar for the four Brent Gp. samples. The 2+3-dibenzothiophene peak is slightly higher than the 1-dibenzothiophene peak, indicating a maturity slightly less than peak oil generation (about 0.7 % to 0.8 % Ro?). The M/Z 212 fragmentograms yet again demonstrate the similarity between the four samples and support the above maturity indications.

## Aromatic Steranes

The M/Z 231 fragmentograms are identical for the four samples. The early- and late-eluting compounds are about equally prominent, which is compatible with an early oil window maturity. Of the peaks, the $d_1$-denoted peak is the largest. The calculated triaromatic ratios are similar for all four samples (Table 10C).

The M/Z 253 fragmentograms are identical for the four samples. Again, early- and late-eluting compounds are equally prominent and the calculated monoaromatic ratios are similar (Table 10D). The same interpretation applies as for the monoaromatic compounds.

The aromatisation of the steranes (Table 10E) again demonstrates the great similarity between the four Brent Gp. samples. The calculated ratios show that the maturity is the same for all four samples.

Drake Formation (2621.5 - 2696 m)

One claystone sample was analysed from this formation (2630 m).

Saturated Hydrocarbons

Terpanes

The M/Z 163 fragmentogram of the Drake Fm. sample contains about the same relative amount of steranes and triterpanes as that of the Brent Gp. samples, but the amounts of $C_{31}$ and $C_{32}$ triterpanes are possibly slightly higher in the Drake Fm. sample (Figure 13d). This appears to support the previous observation that the Drake Fm. claystone is stained by the same hydrocarbons as those found in the Brent Gp., but that additional hydrocarbons are present, these having been generated in-situ (the $C_{29}$ and $C_{30}$ triterpanes). The M/Z 177 fragmentogram supports this interpretation and shows the same relative increase of late eluting triterpanes.

The M/Z 191 fragmentogram shows a distinct difference in the triterpanes of the Drake Fm. to those of the Brent Gp. Early-eluting triterpanes are slightly more prominent. The $T_m/T_s$ ratio is greater than 1 (3.5) compared to less than one for the Brent Gp. samples. This suggests a terrestrial source rock for the hydrocarbons. The X/E ratio is slightly lower than that of the Brent Gp. samples, which could indicate a slightly lower maturity. The late eluting pentacyclic terpanes are relatively more prominent, especially the $C_{31}$ $\alpha\beta$ homohopanes (Figure 13d). The calculated maturity parameters, such as $J_1/(J_1+J_2)$ and $(D+F)/(C+E)$, indicate that the hydrocarbons are only early mature. It is suggested that the sample contains a mixture of well-mature hydrocarbons, which are similar to those of the Brent Gp. (due to staining) and low mature in-situ generated hydrocarbons from the terrestrial source rock which the Drake Fm. represents in this well.

The M/Z 205, 370 and 384 fragmentograms support the above observations and peak identifications.

Steranes

The M/Z 149 fragmentogram shows the steranes to be less abundant than in the Brent Gp. samples. It also shows a relatively greater prominence of $C_{29}$ steranes compared with the Brent Gp. samples, supporting the previous indication of a contribution to the hydrocarbons from in-situ generation in this terrestrially influenced source rock. The M/Z 189 fragmentogram is not very different to those of the Brent Gp. samples, but shows a slightly greater prominence of the $C_{29}$ steranes.

The M/Z 259 fragmentogram is very similar to those of the Brent Gp. samples, indicating that the diasteranes are derived from the same source, i.e. the mature hydrocarbons in the Drake Fm. claystone are due to staining with the same type of hydrocarbons as those found in the Brent Gp.

The M/Z 217 fragmentogram is similar to those of the Brent Gp. samples. The greater prominence of $C_{29}$ steranes observed previously is difficult to see here (Figure 13g). The only easily detected difference is the greater prominence of the early eluting "u" and "v" peaks. However, a close inspection reveals other, more subtle differences. These can best be demonstrated with reference to Table 10B. Most of the calculated ratios can be seen to differ from those of the Brent Gp. samples. As an example, maturity parameters such as Ratios 2 and 3 indicate a lower maturity for the Drake Fm. sample than for the Brent Gp. samples. This lower maturity is thought to be due to some in-situ (early mature?) generation of hydrocarbons, which lowers the apparent maturity of the mixed migrated and in-situ generated hydrocarbons.

The M/Z 218 fragmentogram supports the above observations.

<u>Aromatic Hydrocarbons</u>

Alkyl Benzenes

The M/Z 106 fragmentogram shows the same series of doublets to those of the Brent Gp. samples, but the early eluting peaks are much more dominant than those of the Brent Gp. samples. The prominent single peak around 45 minutes retention time is also almost absent. The M/Z 134 fragmentogram shows a similar difference, i.e. the early eluting peaks are much more prominent.

Naphthalenes

The M/Z 142 fragmentogram shows that the 2-methyl naphthalene peak is slightly higher than the 1-methyl naphthalene peak which could indicate a maturity around peak oil generation (0.8 % Ro). The M/Z 156 and 170 fragmentograms appear to support a maturity in the upper part of the oil window.

Phenanthrenes

The M/Z 178 fragmentogram is strongly dominated by the phenanthrene peak, but anthracene is also identifiable. This seems to support the previous view that the Drake Fm. sample is more terrestrial. The M/Z 192 fragmentograms show that the 3- and 2- are lower than the 9-methyl phenanthrene peak, but less so than for the Brent Gp. samples. This should indicate a higher maturity than that of the Brent Gp. samples, which is not in accordance with the other discussed data. The M/Z 206 fragmentogram is fairly similar to those of the Brent Gp. samples, but the early eluting peaks are slightly more prominent, which indicates a higher maturity than that of the Brent Gp. samples. The M/Z 220 fragmentogram shows the same pattern.

Dibenzothiophenes

The M/Z 198 fragmentogram is similar to that of the Brent Gp. samples, suggesting a maturity close to peak oil generation (0.8 % Ro). The M/Z 212 fragmentogram supports the observations of similarity in the maturity.

Aromatic Steranes

The M/Z 231 fragmentogram is similar to those of the Brent

Gp. although small variations can be seen in the calculated ratios (Table 10C). The general impression is that the tri-aromatic steranes are very similar for all the analysed samples in the well.

The M/Z 253 fragmentogram also has many features in common with those of the Brent Gp. samples. However, the $I_1$ peak is the dominant peak in the Drake Fm. samples, whereas this peak is only minor in the Brent Gp. fragmentograms. The general impression is of similarity, as can also be seen in the calculated monoaromatic ratios (Table 10D).

The aromatisation of the steranes (Table 10E) gives clear indication of a difference between the Brent Gp. and Drake Fm. samples. The calculated ratios show clearly the lower maturity of the Drake Fm. sample compared with the Brent Gp. samples.

Summary

The Brent Gp. samples are identical. They are derived from the same terrestrially affected source rock. The maturity of the source rock is close to, but not past peak oil generation (0.8 % Ro). The biomarkers indicate that the source rock might very well be the Upper Jurassic Viking Gp. It is not possible to see any differences between the analysed Brent Gp. samples.

The Drake Fm. sample has many similarities to the Brent Gp. samples and is thought to be stained with the same hydrocarbons (which constitute the majority of hydrocarbon present). The sample is however, also thought to contain some early mature, in-situ generated hydrocarbons. These in-situ generated hydrocarbons have the effect of making the free hydrocarbons as a whole less mature and from a more terrestrial source rock compared with those in the Brent Gp. samples.

# CONCLUSIONS

The following conclusions have been made based on the analyses performed on samples from this well:

## Source Rock Potential

None of the analysed sections of this well have any source rock potential of significance. The Draupne Fm. is absent in this well, while the Heather Fm. is fairly thin (6.5 m) and unfortunately suitable material for analyses was not available from this formation. There are however no indications that the Heather Fm. should be an important source rock in this well, while the formation is immature and in any case has hence not generated any significant amounts of hydrocarbons.

Slight potentials for gas generation were encountered in many of the formations/groups, but none of them of significance. Furthermore, all of these units have insufficient maturites for this potential to have been realised.

## Generation and Migration

None of the analysed sections of this well have generated any significant amounts of hydrocarbons. The Drake Fm. is seen to have generated some early mature hydrocarbons (GC-MS data), but these amounts must be minor. The formation is thought to be without any potential for expulsion of hydrocarbons in this well.

Migrated hydrocarbons are abundant in the well. The Brent Gp. contains oil derived from a (close to but not past) peak oil (0.8 % Ro), terrestrially influenced marine source rock. No variation in these hydrocarbons could be found. Traces of migrated hydrocarbons were also detected in the Cromer Knoll Gp. These probably represent leakage from the Brent Gp. through the thin Viking Gp. cap rock.

## Maturity

Due to the poor kerogen and vitrinite, maturity estimates are not very reliable. Due to the abundance of migrated hydrocarbons, maturity estimates based on chemical parameters only poorly reflect the maturity of the rock. It is very tentatively suggested that the well is immature (< 0.5 % Ro) down to at least 2750 m and that the top of the oil window might be reached at 3000 m. Note that the different maturity parameters, such as SCI, Ro and Tmax give very different results for this well. The above suggestion is based on what the authors think is the best compromise between available data and a general impression as to the expected behaviour of the (poor) kerogen present in the rock.

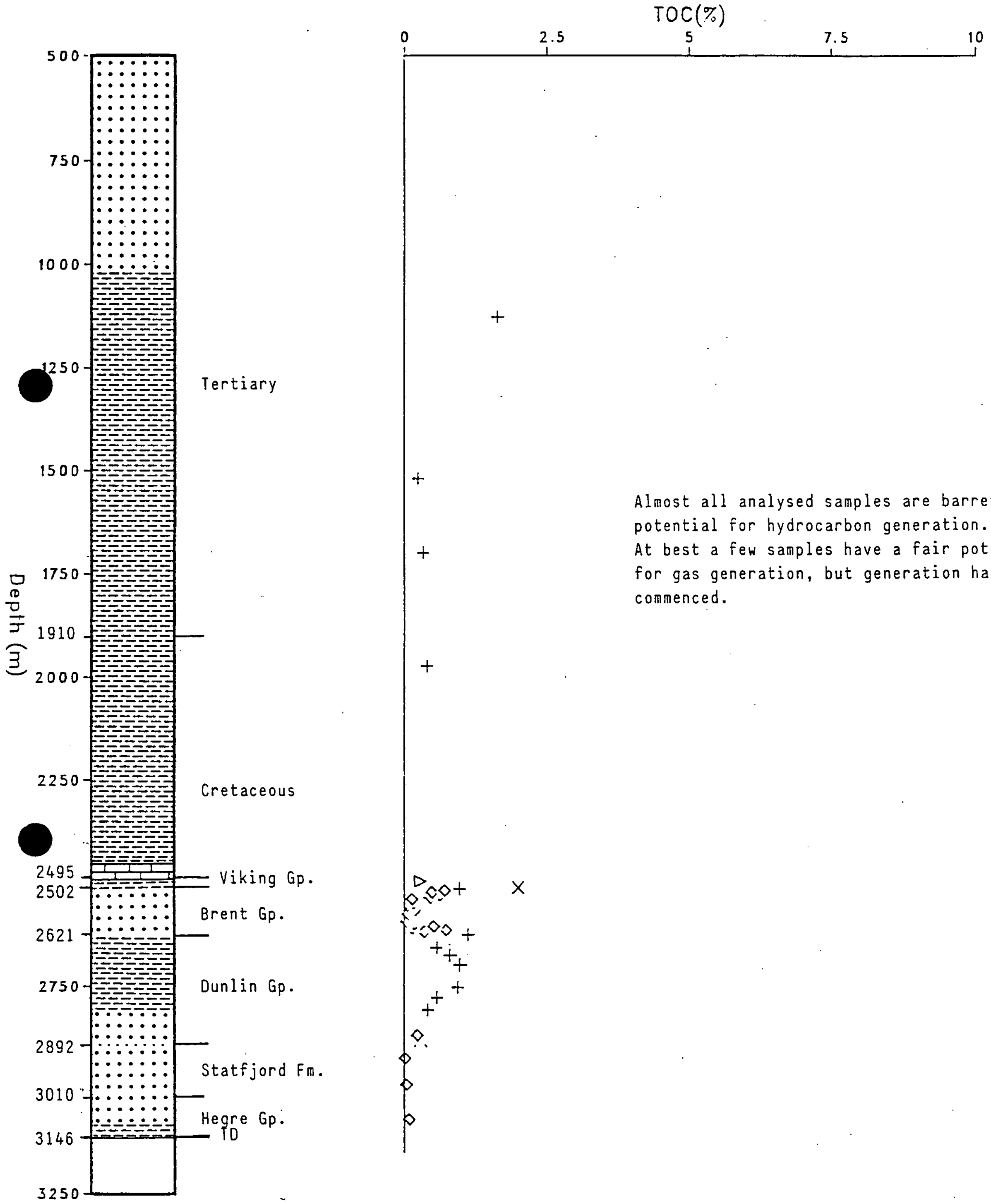
## Correlation

All the migrated hydrocarbons encountered in this well are derived from the same source rock and have similar maturities. This source rock is likely to be the Upper Jurassic Viking Gp. There is no positive identification of several pulses of hydrocarbon filling or of multiple sources (except for very small amounts of in-situ generated hydrocarbons).

Figure: 1

Client: GEOLAB NOR.

# TOC Data for Well NOCS 34/7-5

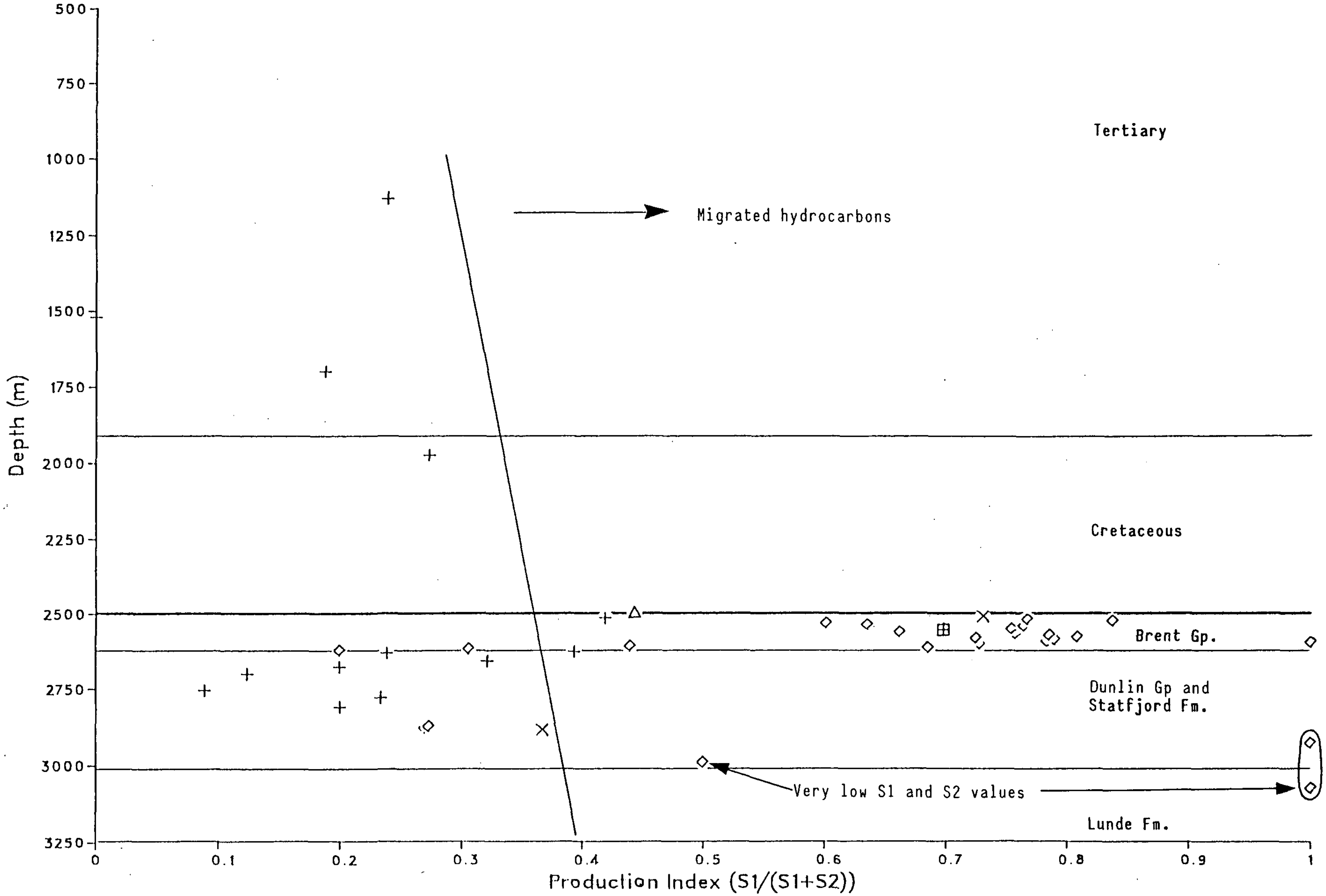



Almost all analysed samples are barren of potential for hydrocarbon generation.
At best a few samples have a fair potential for gas generation, but generation has not commenced.

Figure 2

# Production Index Data for Well NOCS 34/7-5

Client: GEOLAB NOR



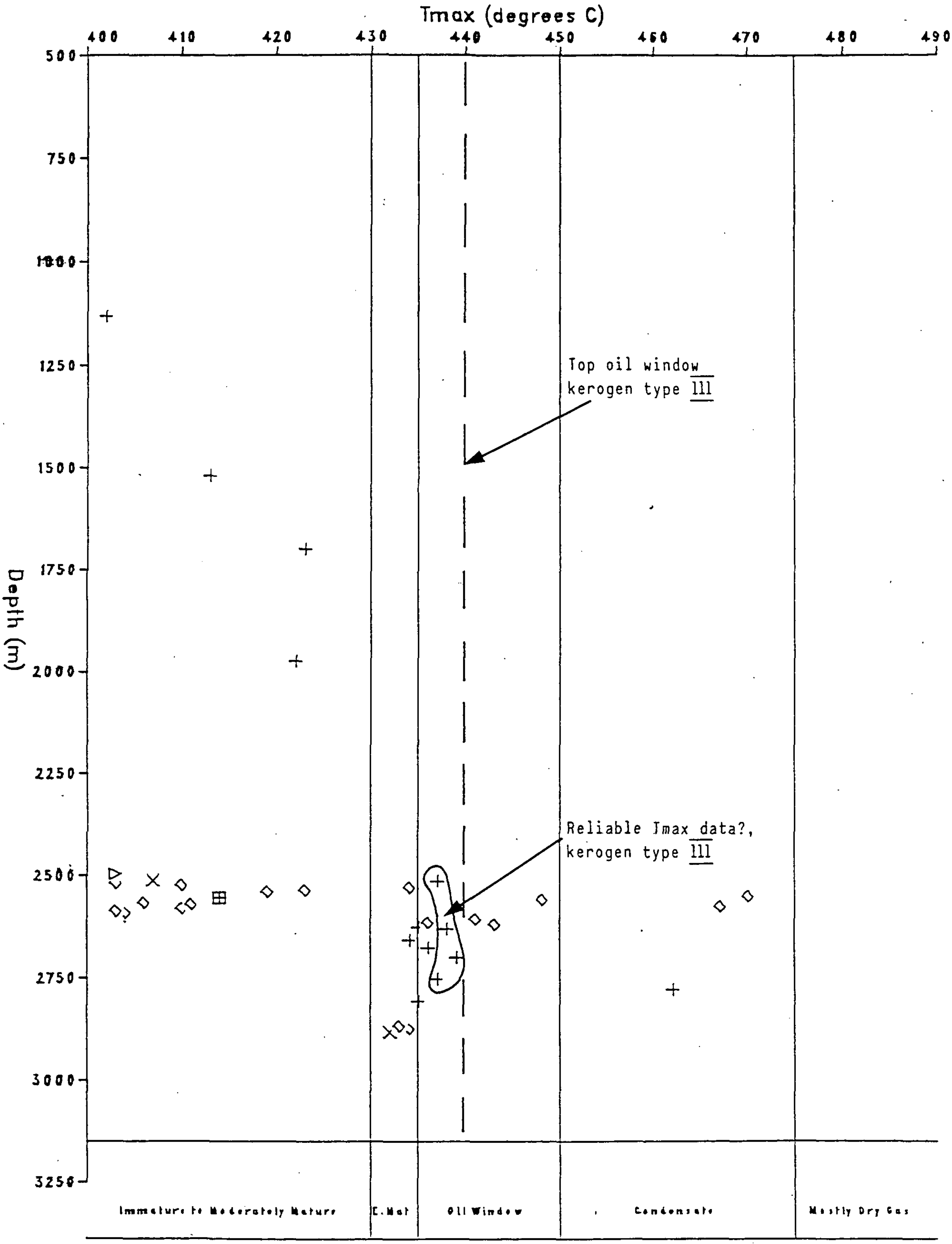

GEOLAB NOR

GEOLAB NOR

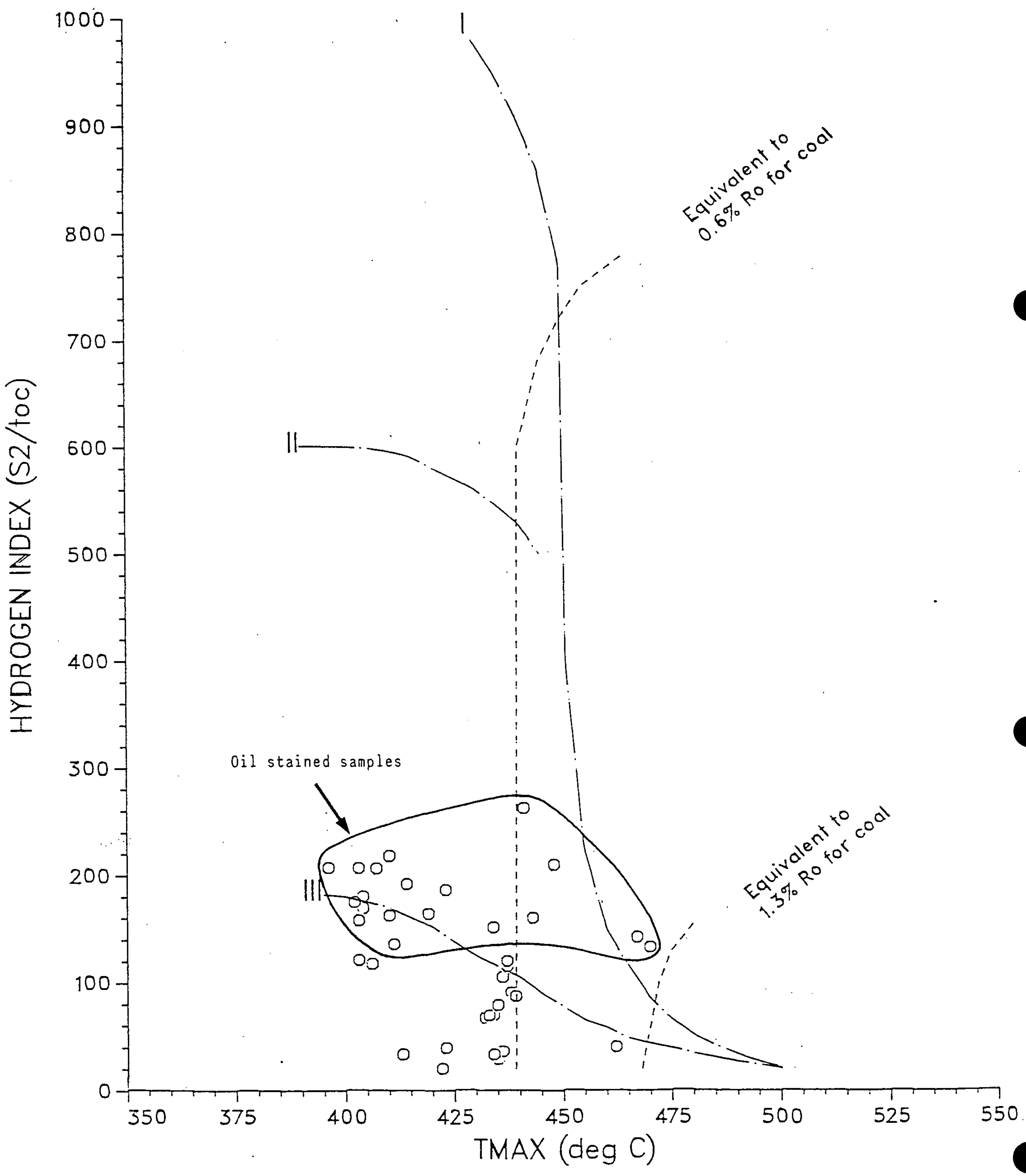
Figure: 3

Client: GEOLAB NOR

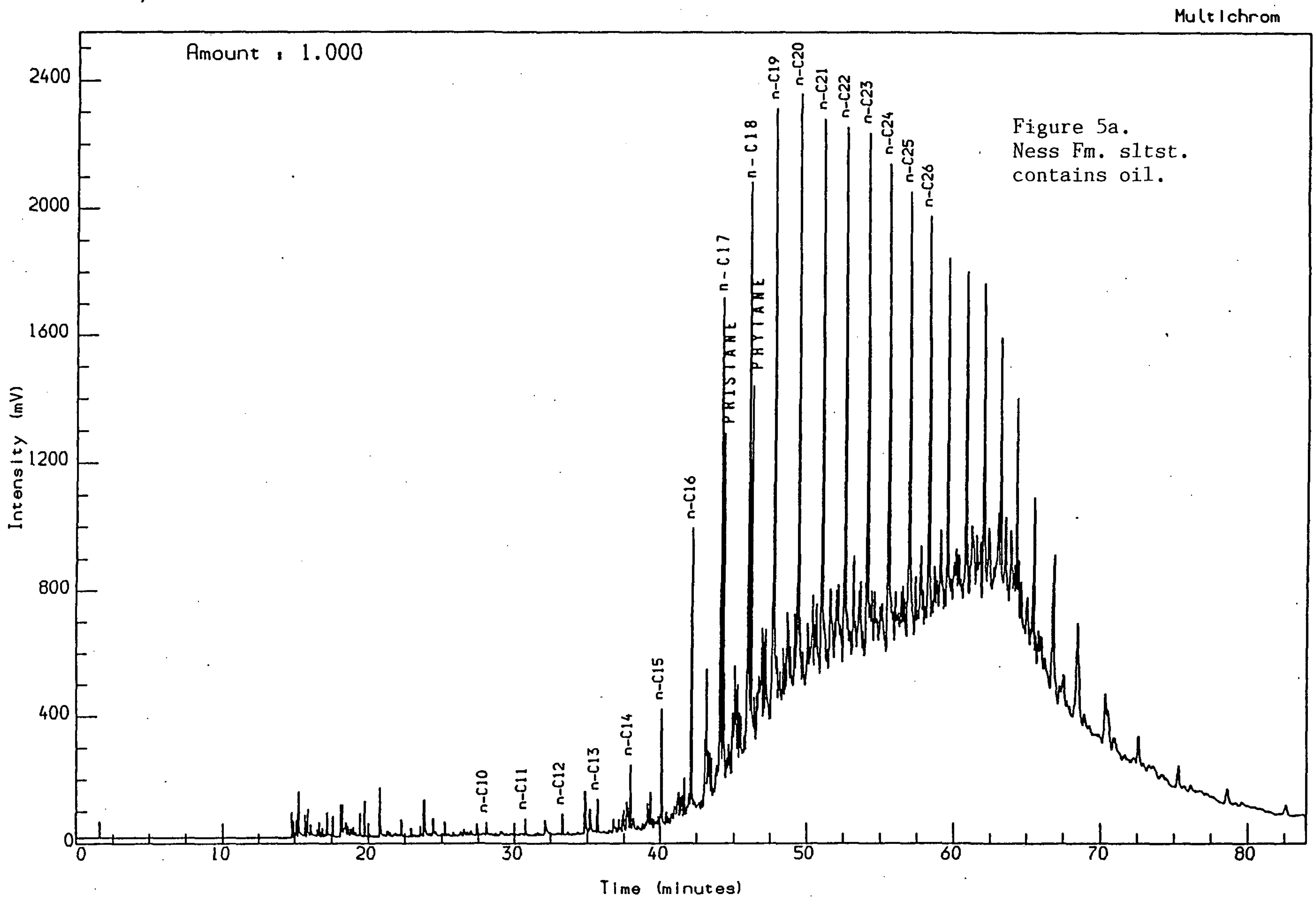
# Tmax Data for Well NOCS 34/7–5



# Figure 4 : Hydrogen Index v.s. Tmax values
## Well NOCS 34/7-5



Analysis Name : [P2408] 22 PE7101781B.1.1.

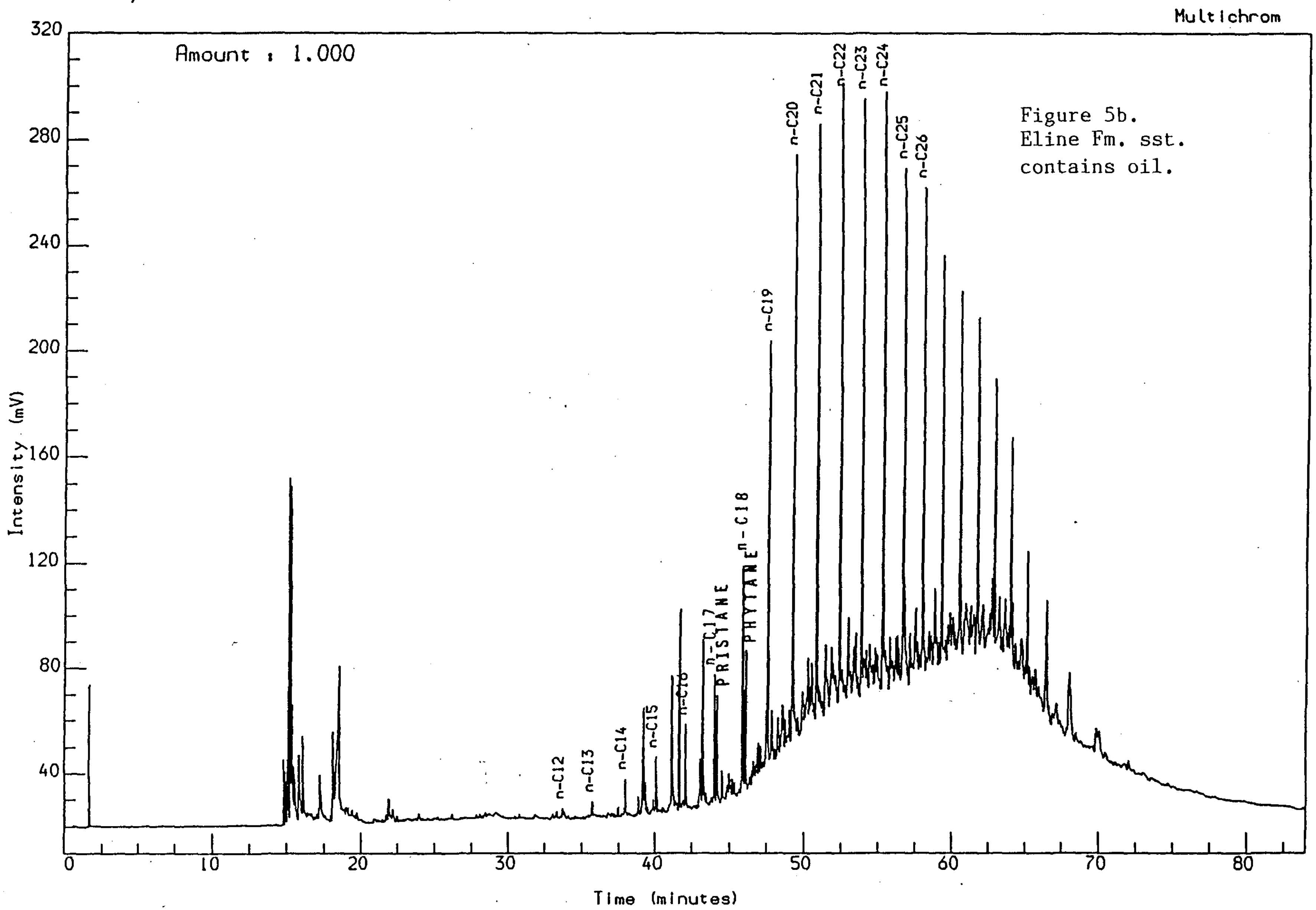



WELL NOCS 34/7-5 2511.00m ccp
THERMAL EXTRACTION GC (S1)
Sltst: lt brn gy to pl y brn

Reported on 31-JAN-1991 at 14:48

GEOLAB NOR

Analysis Name : [P2408] 22 PE7101971,1,1.




WELL NOCS 34/7-5 2550.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt or gy to lt brn gy to lt g

Reported on 31-JAN-1991 at 14:53

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102251,1,1.

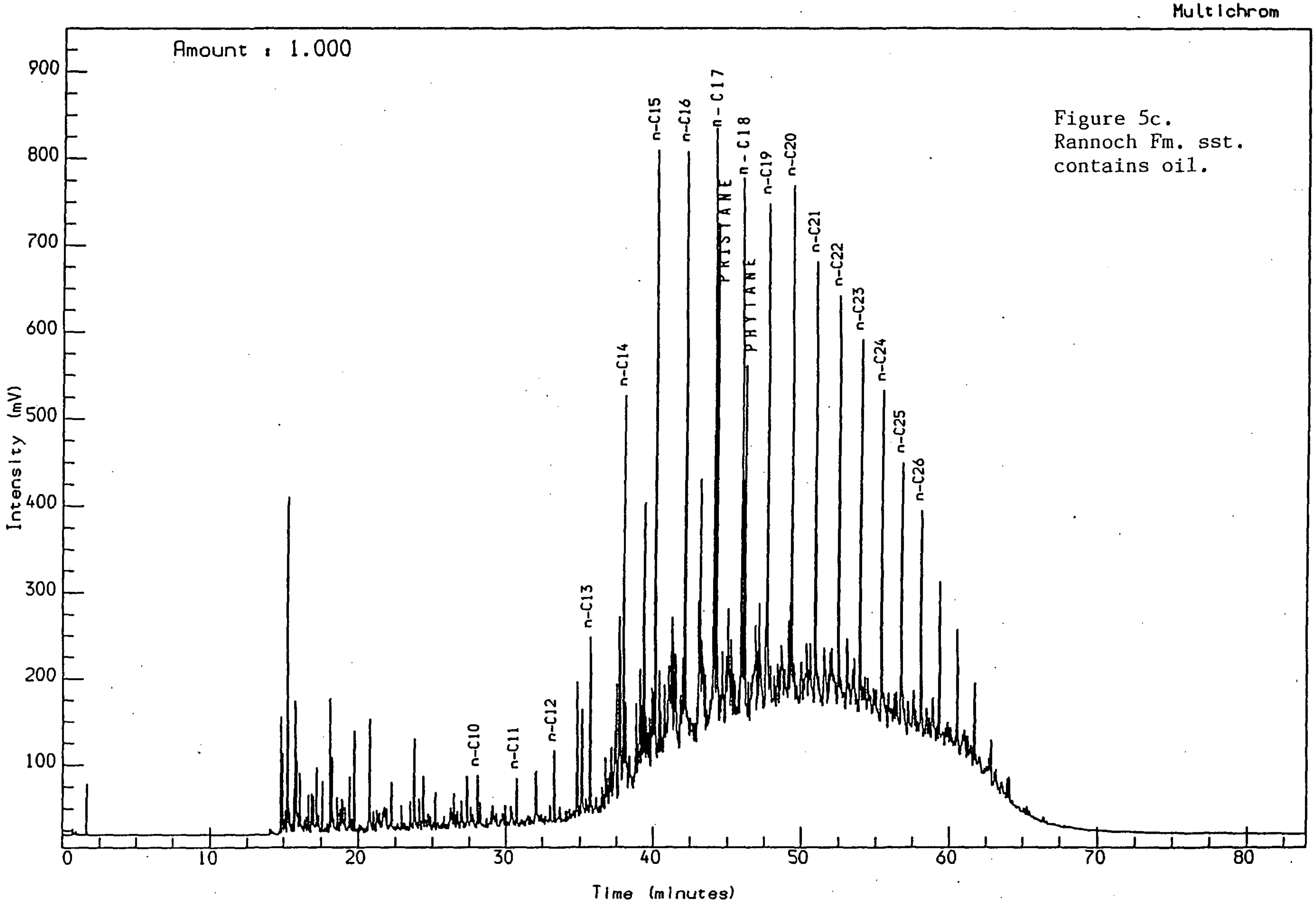



Figure 5c.
Rannoch Fm. sst.
contains oil.

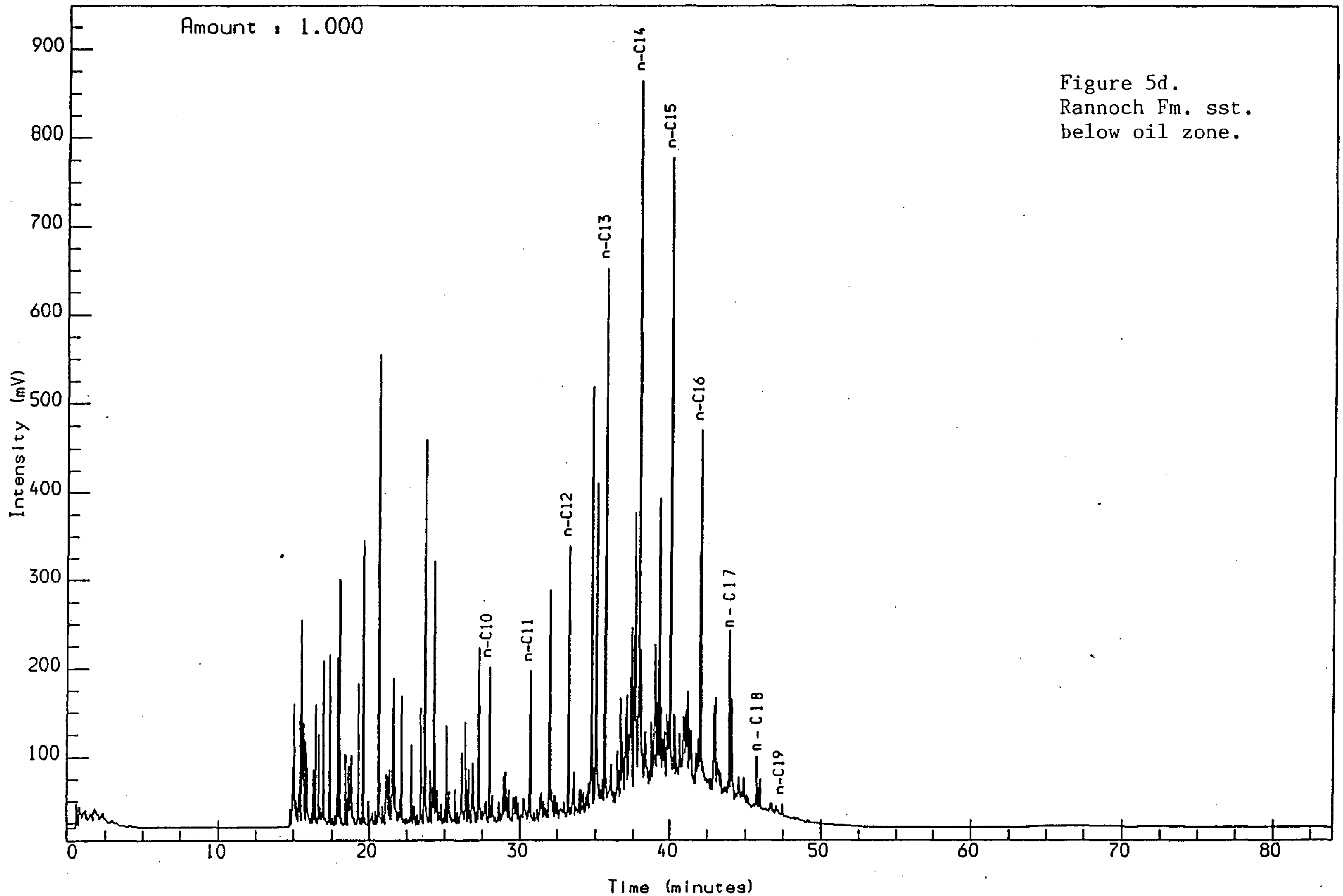
WELL NOCS 34/7-5 2606.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt gy to lt brn gy

Reported on 31-JAN-1991 at 14:59

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102291,1,1.

Multichrom

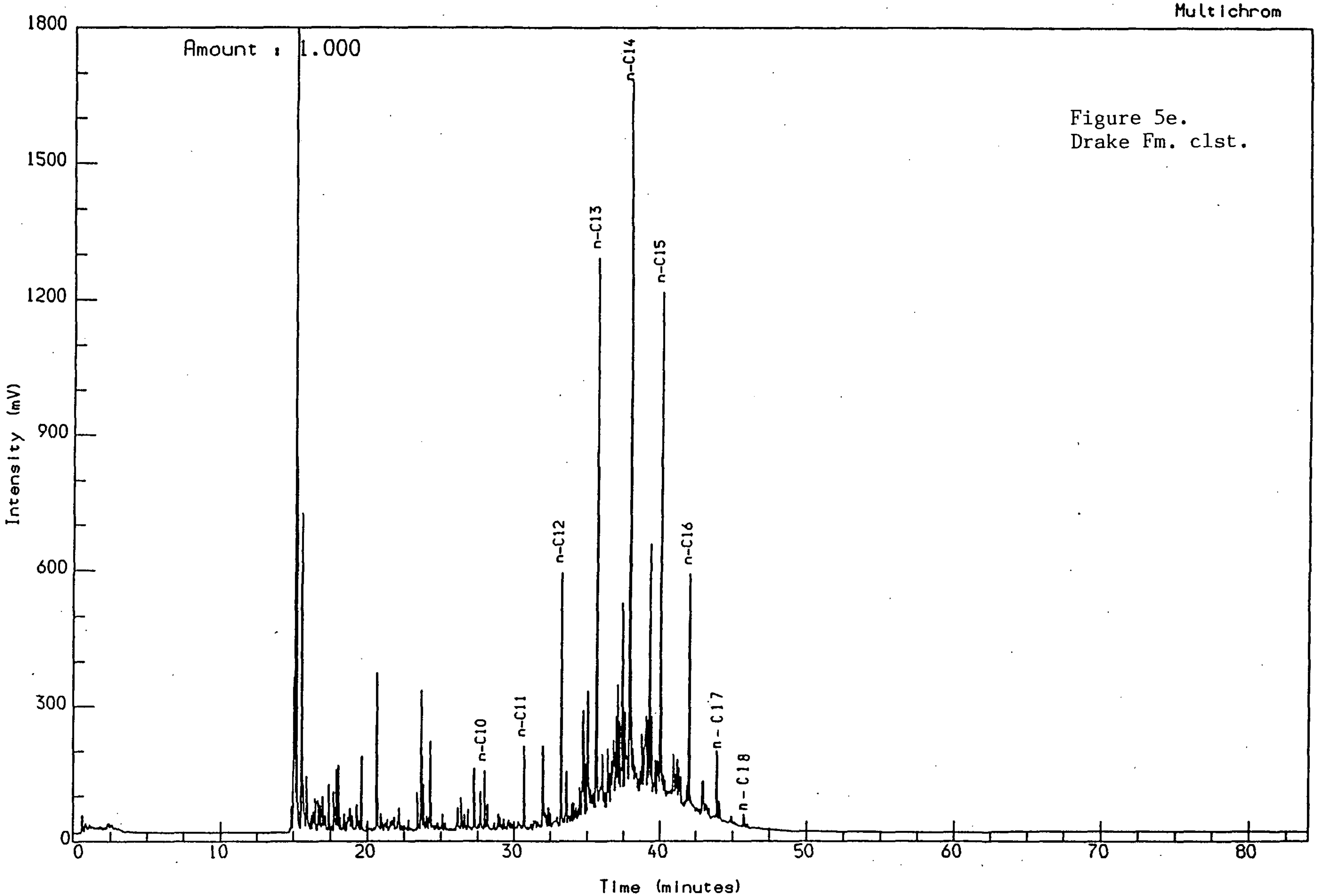



WELL NOCS 34/7-5 2615.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt gy to m gy to lt brn gy

Reported on 31-JAN-1991 at 14:59

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102341,1,1.

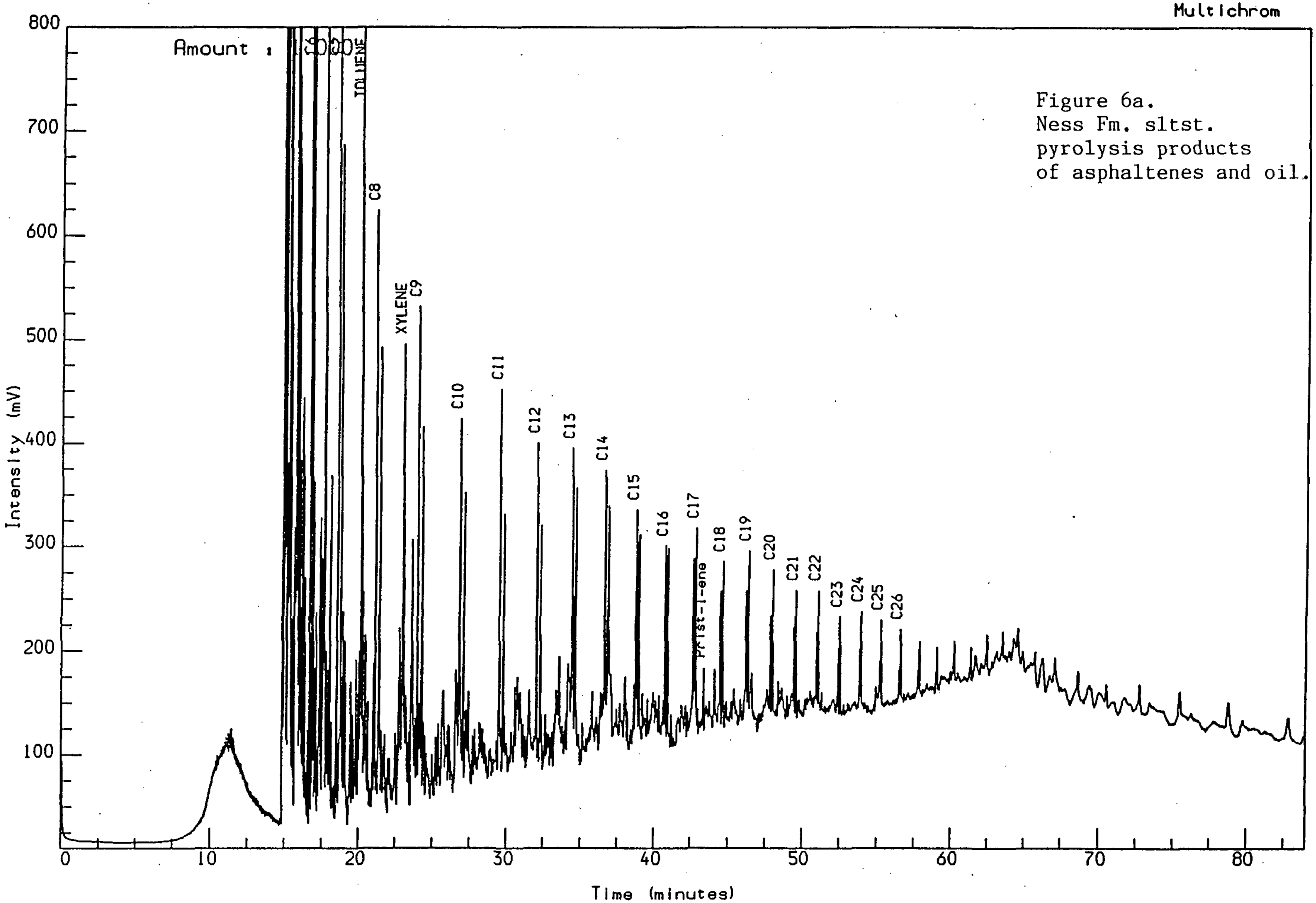



WELL NOCS 34/7-5 2626.00m ccp
THERMAL EXTRACTION GC (S1)
Sh/Clst: m gy to drk gy

Reported on 4-FEB-1991 at 08:49

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101781B.1.1.




WELL NOCS 34/7-5 2511.00m ccp
PYROLYSIS GC (S2)
Sltst: lt brn gy to pl y brn

Reported on 4-FEB-1991 at 09:00

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101901,1,1.

Multichrom

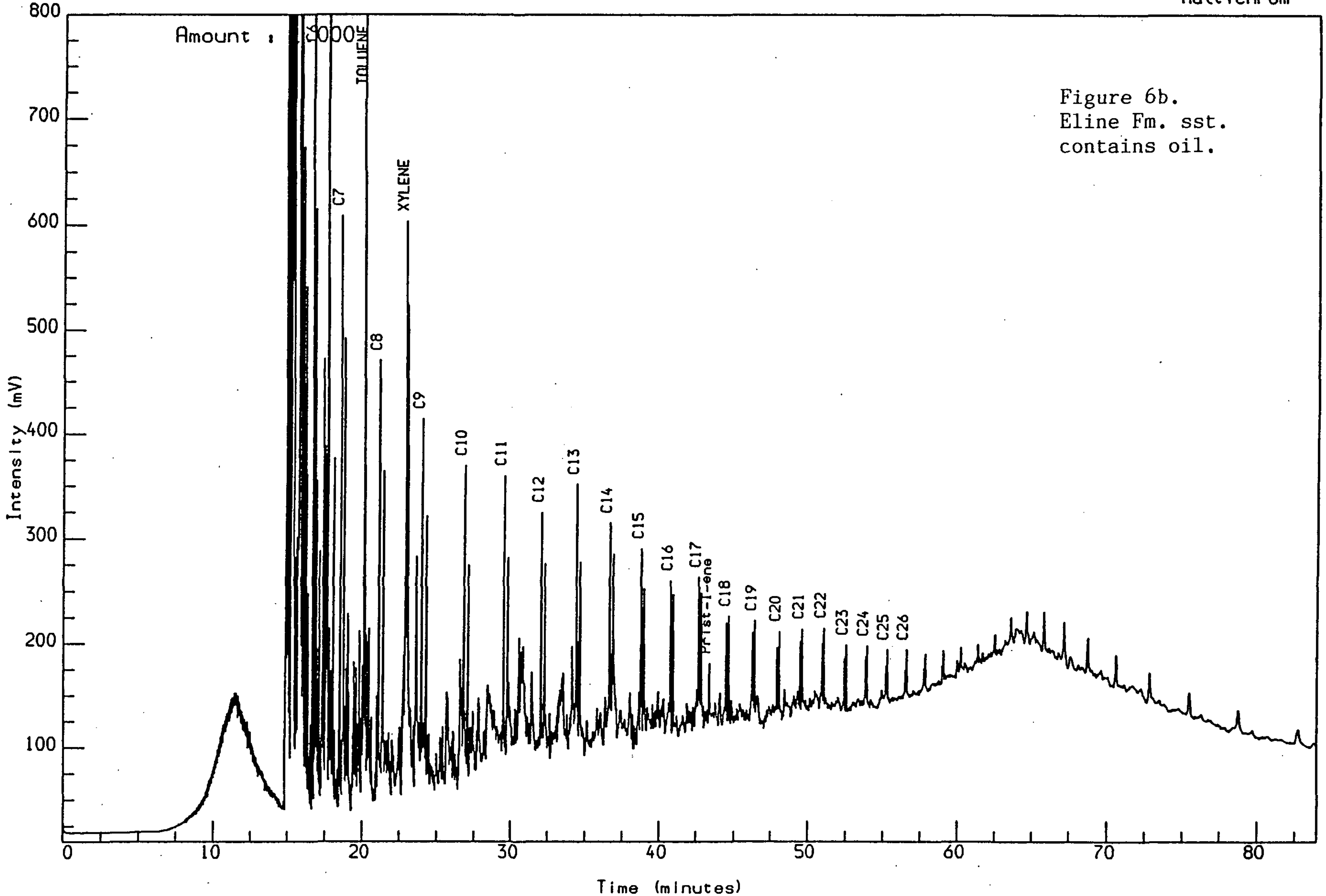


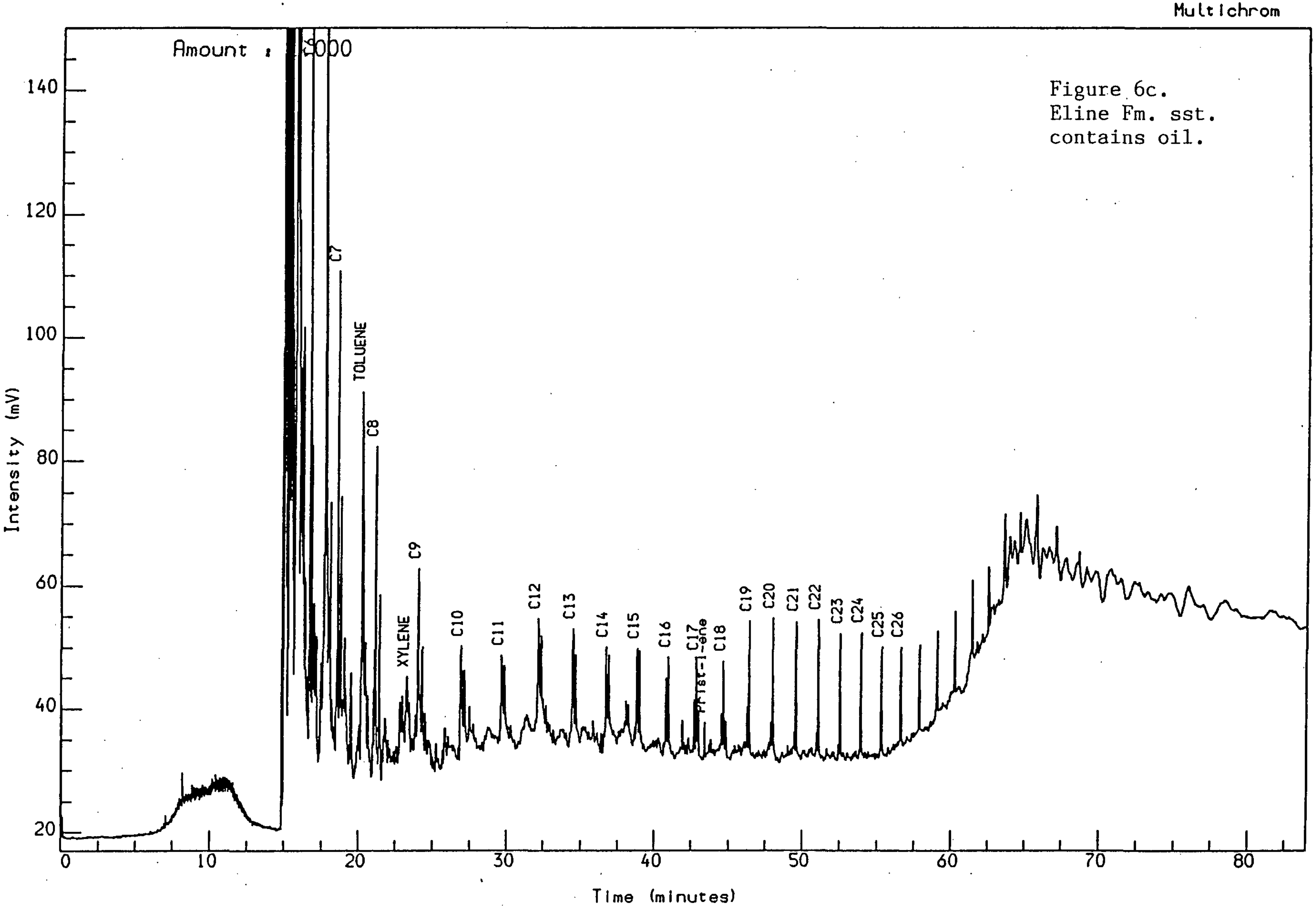

Figure 6b.
Eline Fm. sst.
contains oil.

WELL NOCS 34/7-5 2536.00m ccp
PYROLYSIS GC (S2)
S/Sst: lt or gy to lt brn gy

Reported on 11-FEB-1991 at 10:04

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101971,1,1.

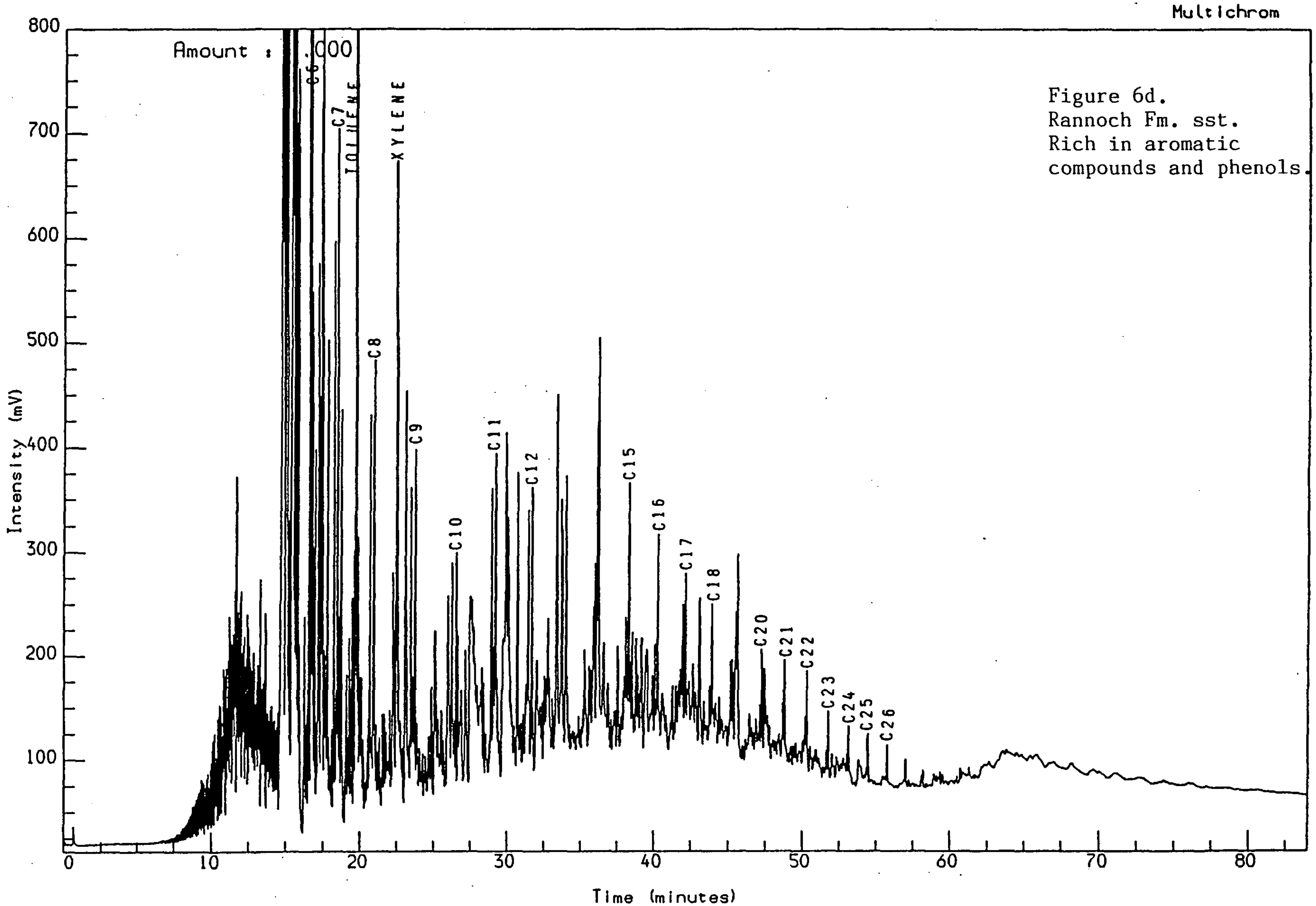



WELL NOCS 34/7-5 2550.00m ccp
PYROLYSIS GC (S2)
S/Sst: lt or gy to lt brn gy to lt g

Reported on 11-FEB-1991 at 10:05

GEOLAB NOR

Analysis Name : [P2408] 21 PE7102291,1,1.




WELL NOCS 34/7-5 2615.00m ccp
PYROLYSIS GC (S2)
S/Sst: lt gy to m gy to lt brn gy

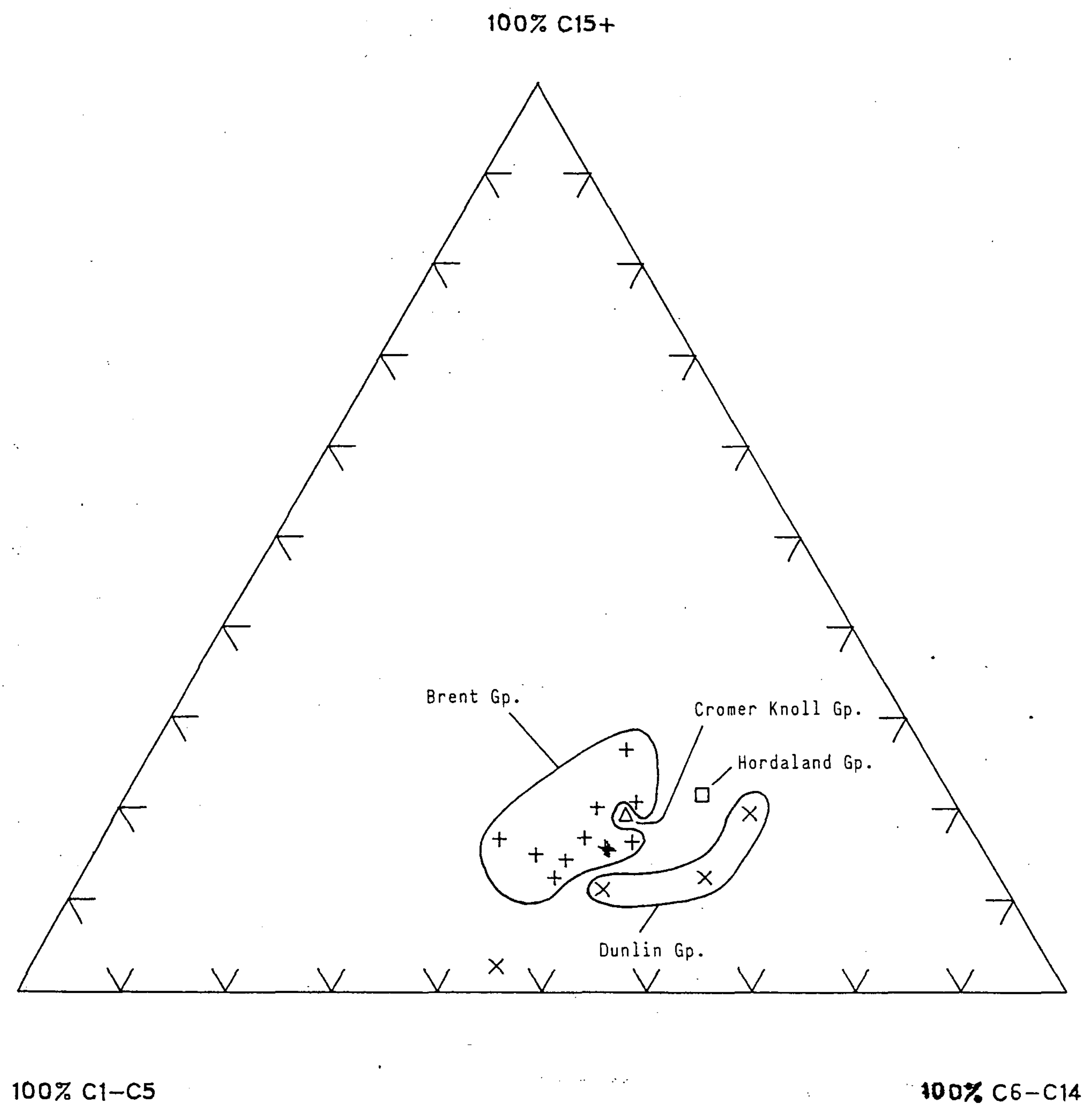
Reported on 11-FEB-1991 at 11:02

GEOLAB NOR

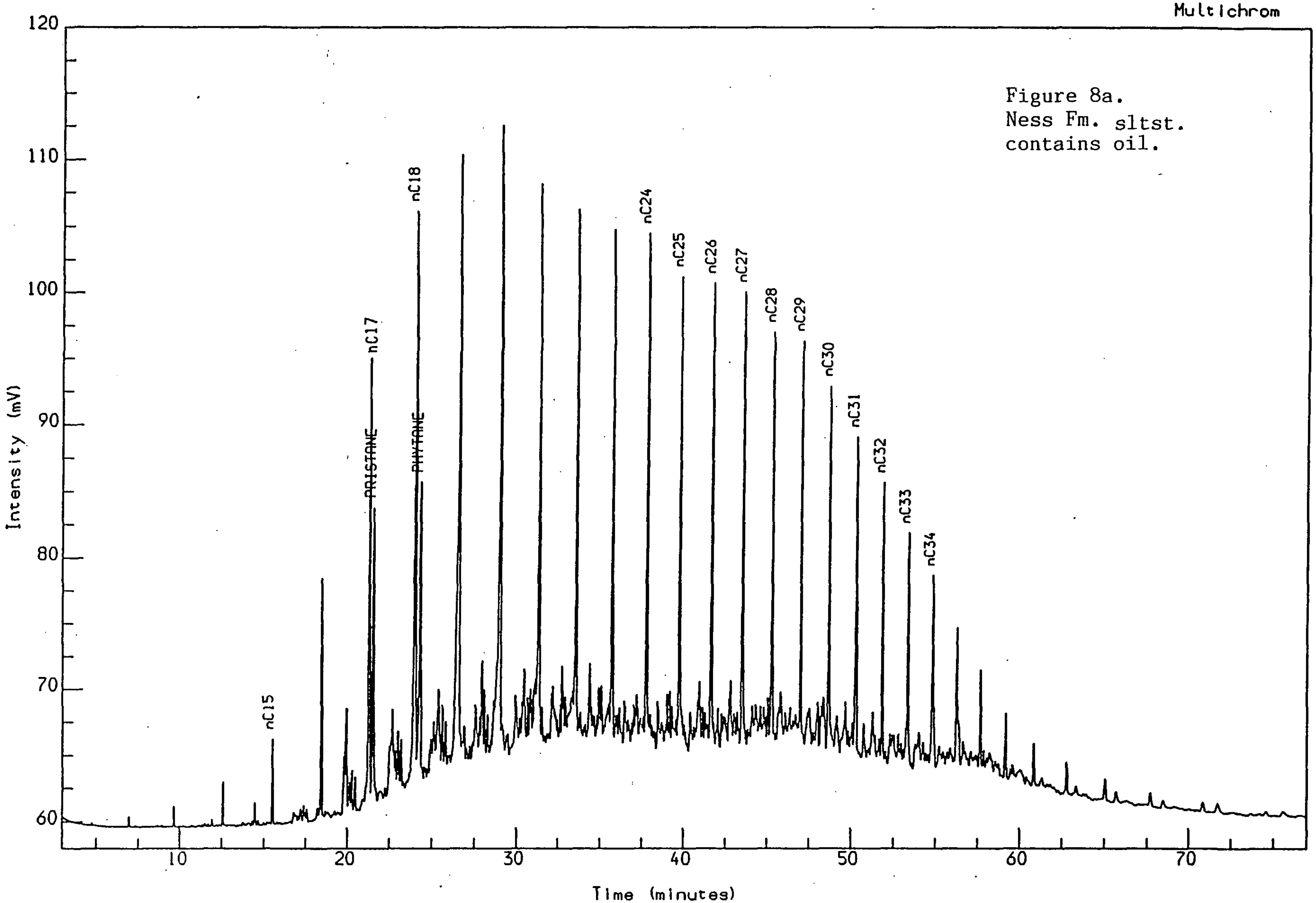
GEOLAB NOR

Figure 7: Pyrolysis GC Composition

Well NOCS 34/7-5



Analysis Name : [P2408] 11 SE7101781L,1,1.



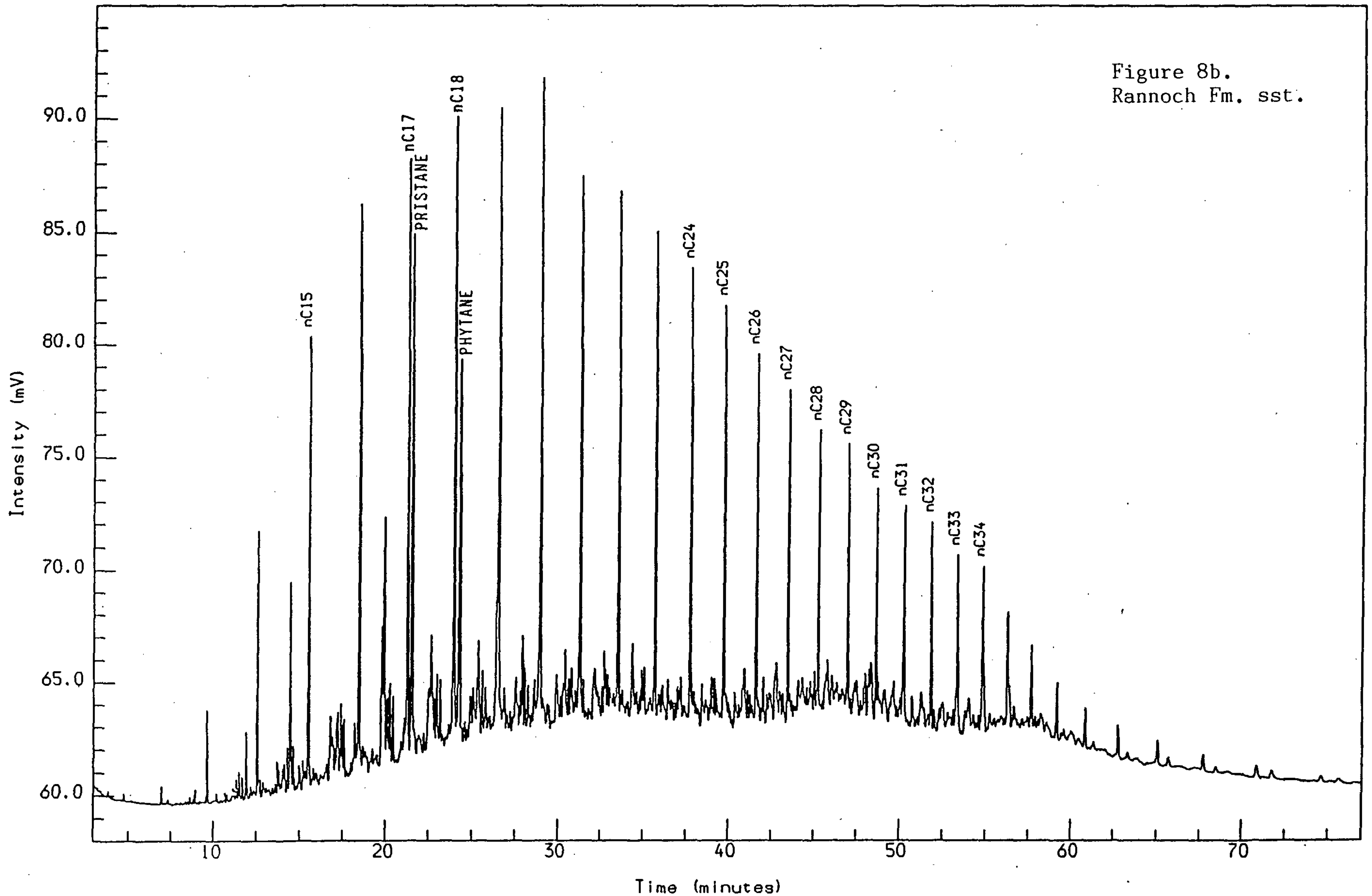

WELL NOCS 34/7-5 2511m
SATURATED GC
Sltst: lt brn gy to pl y brn

Reported on 6-FEB-1991 at 09:05

GEOLAB NOR

Analysis Name : [P2408] 11 SE7102530B,1,1.

Multichrom

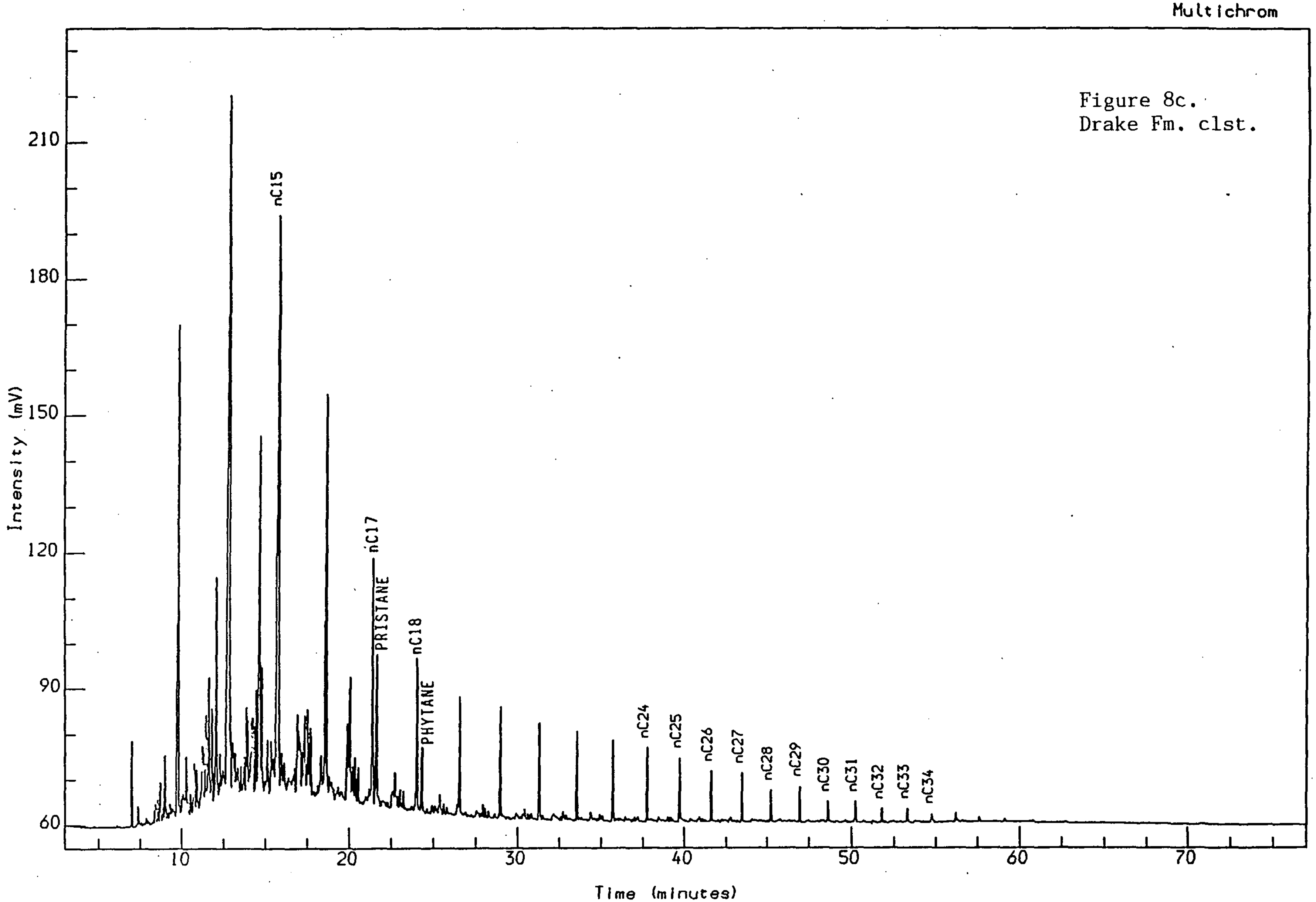



WELL NOCS 34/7-5    2600-2611m
SATURATED GC
S/Sst: lt gy to lt brn gy to y gy,
lt gy to y gy to lt brn gy

Reported on 6-FEB-1991 at 12:54

GEOLAB NOR

Analysis Name : [P2408] 11 SE7102540B,1,1.

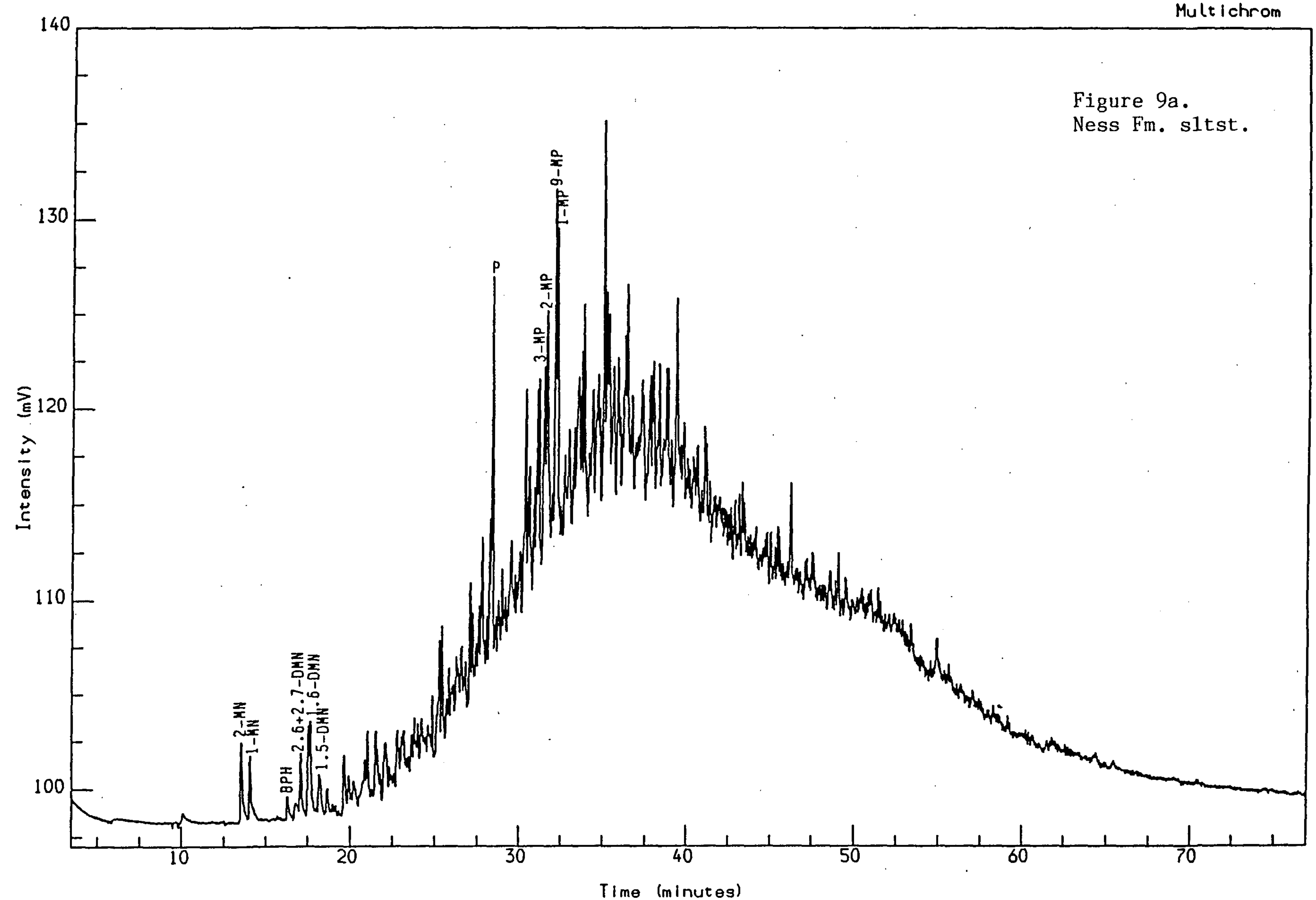



WELL NOCS 34/7-5 2626-2630m
SATURATED GC
Sh/Clst: m gy to drk gy

Reported on 6-FEB-1991 at 14:28

GEOLAB NOR

Analysis Name : [P2408] 9 AE7101781L,1,1.

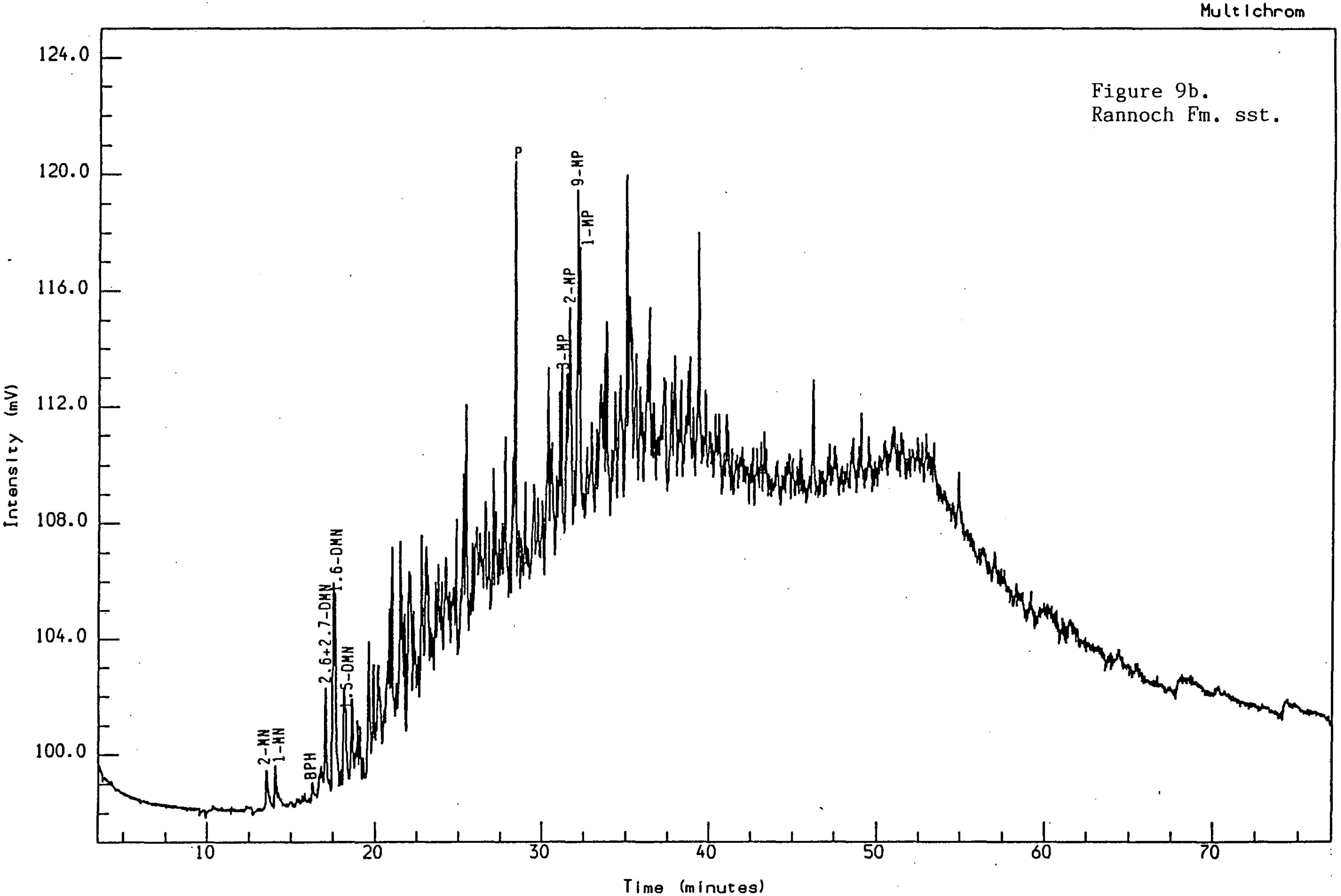



WELL NOCS 34/7-5 2511m
AROMATIC GC (FID)
Sltst: lt brn gy to pl y brn

Reported on 13-FEB-1991 at 11:30

GEOLAB NOR

Analysis Name : [P2408] 9 AE7102530B,1,1.

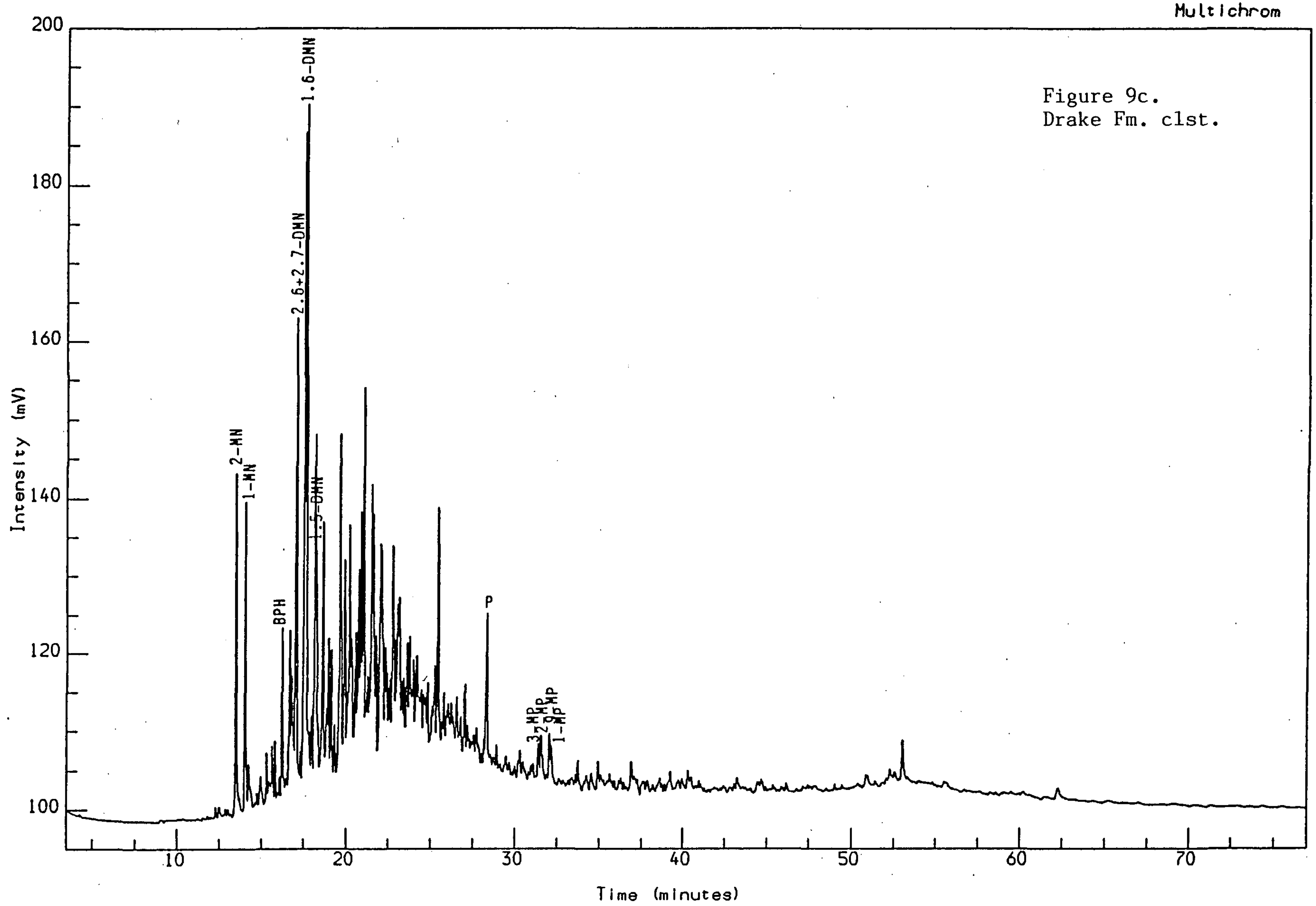



WELL NOCS 34/7-5 2600-2611m
AROMATIC GC (FID)
S/Sst: lt gy to lt brn gy to y gy,
lt gy to y gy to lt brn gy

Reported on 14-FEB-1991 at 08:46

GEOLAB NOR

Analysis Name : [P2408] 9 AE7102540B,1,1.




WELL NOCS 34/7-5 2626-2630m
AROMATIC GC (FID)
Sh/Clst: m gy to drk gy

Reported on 14-FEB-1991 at 11:16

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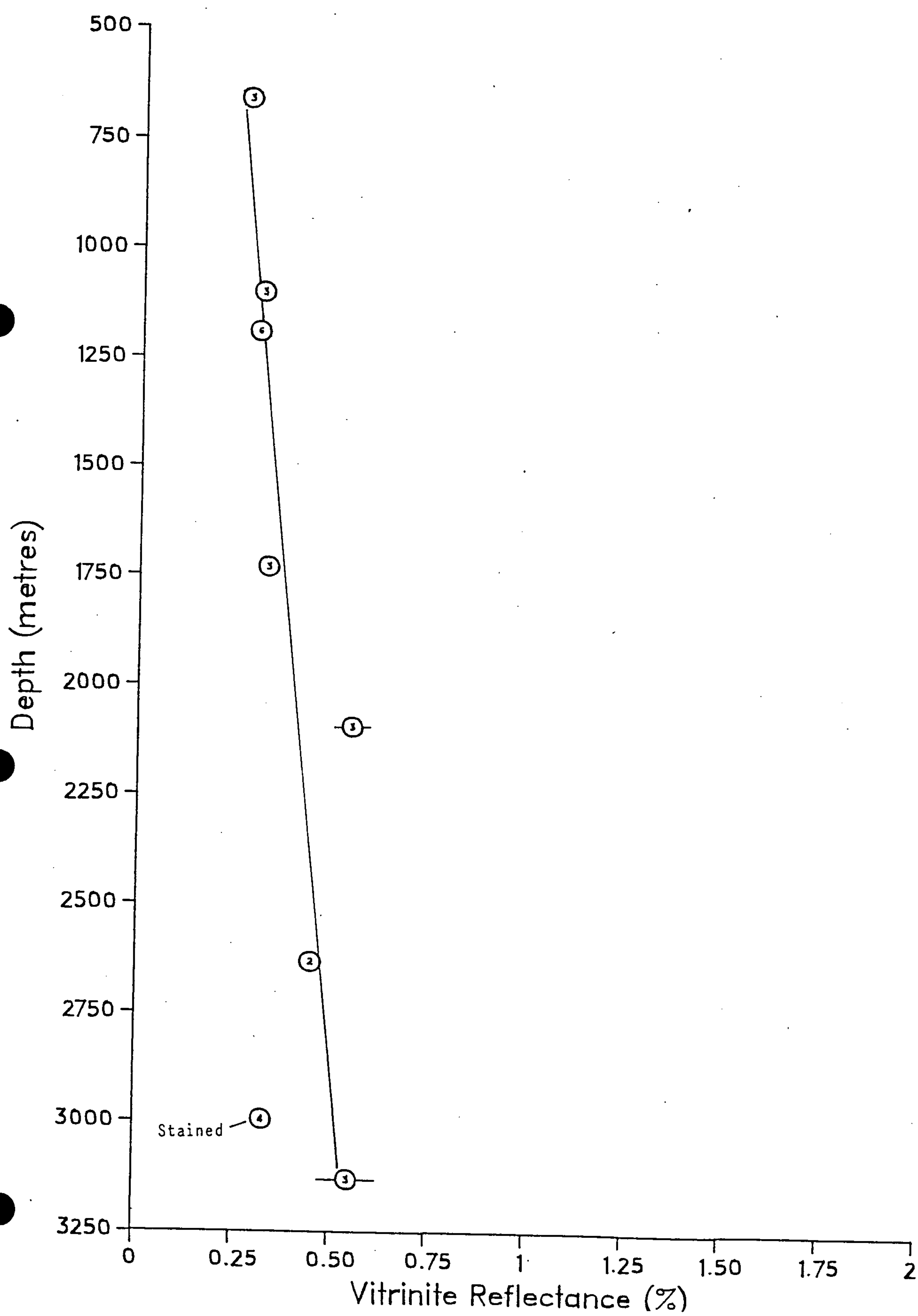
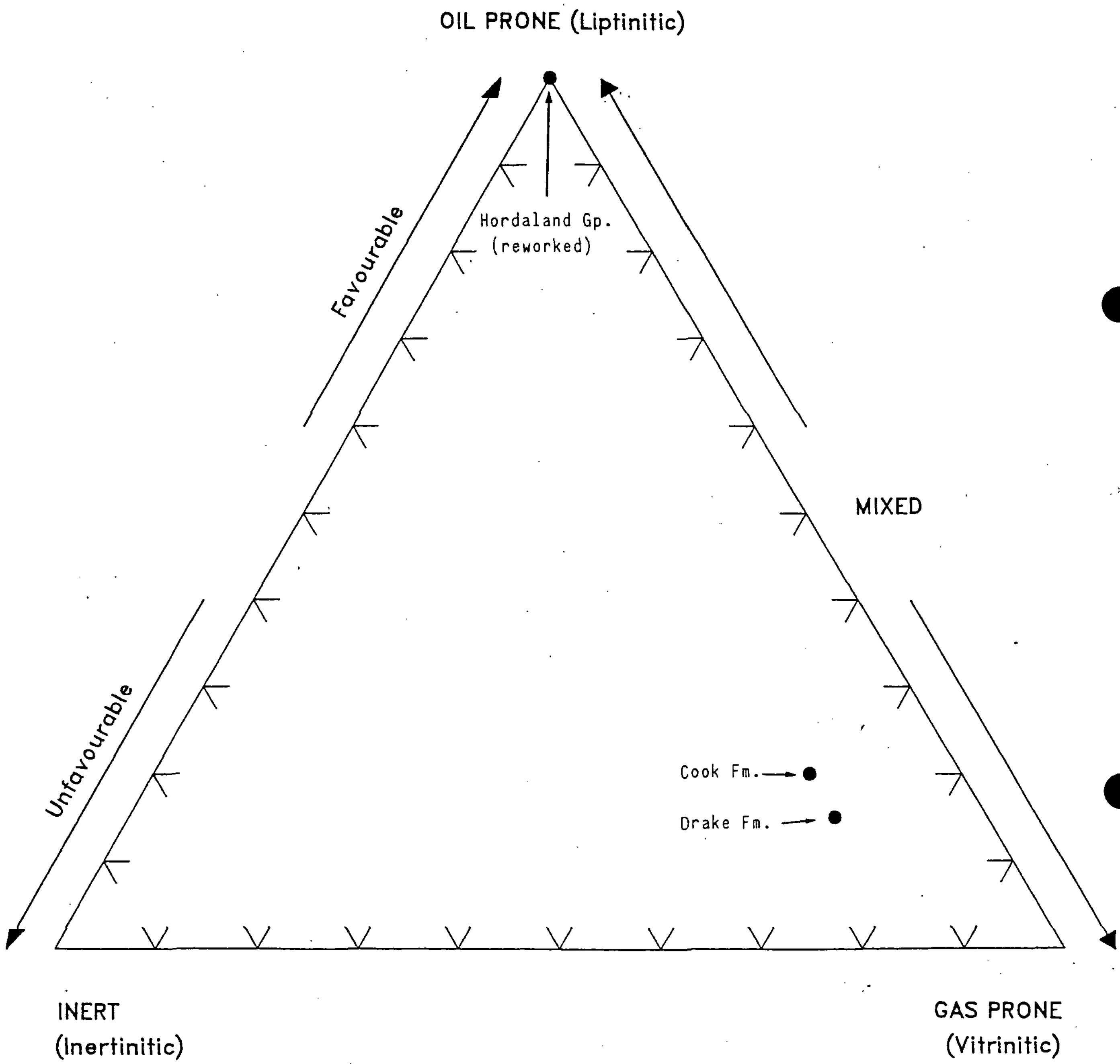
# Figure 10: Vitrinite Reflectance versus Depth
## Well NOCS 34/7-5



GEOLAB NOR

# Figure 11: Kerogen Composition and Potential Hydrocarbon Products

## Well NOCS 34/7-5



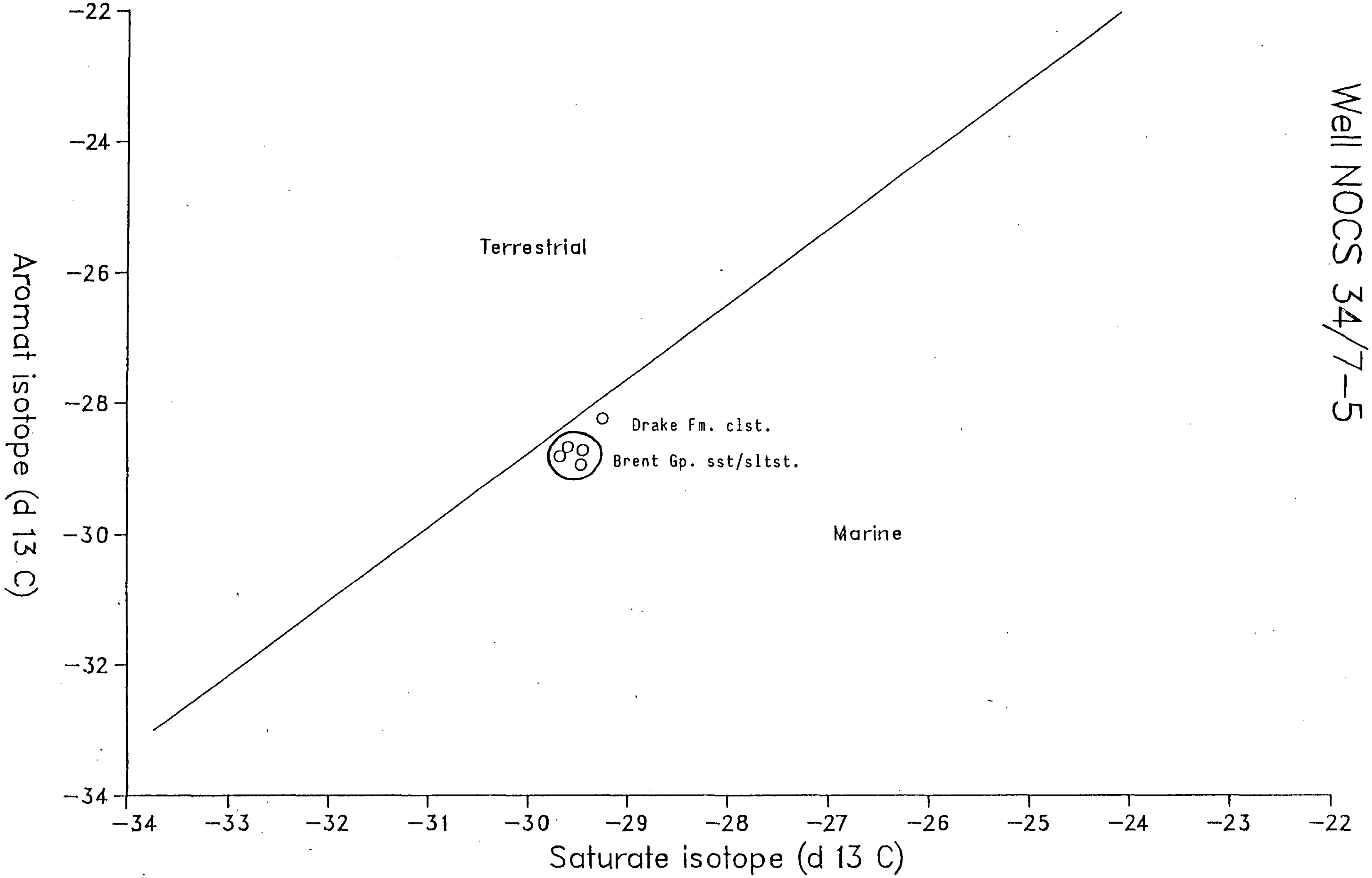



Figure 12a: Aromatic v.s. saturate isotope values
Well NOCS 34/7-5

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# Figure 12b:13C/12C isotope ratios. Galimov plot. Well NOCS 34/7-5

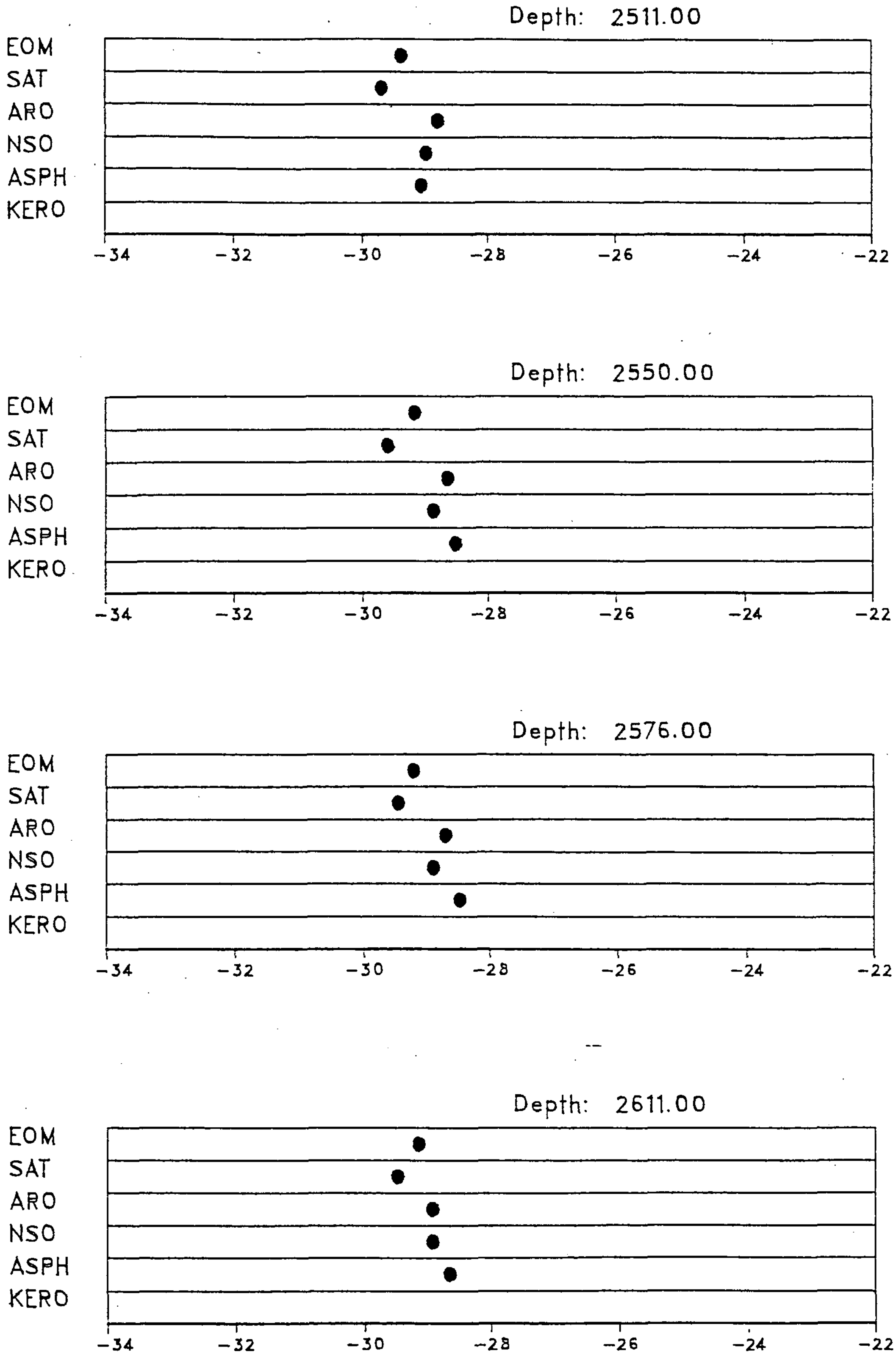
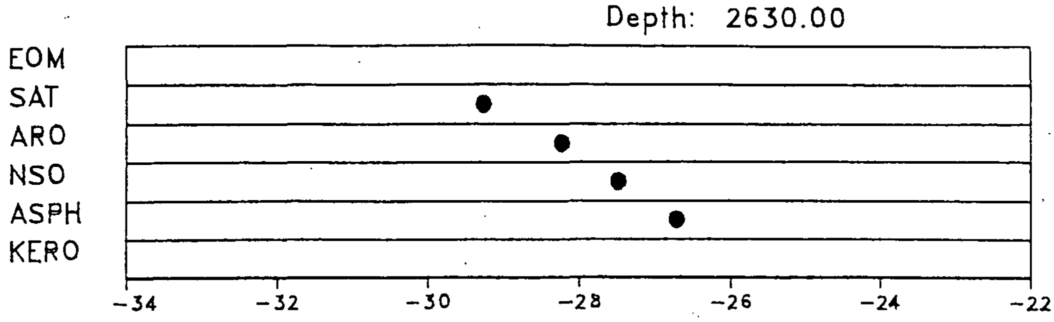


Figure 12b:13C/12C isotope ratios. Galimov plot.
Well NOCS 34/7-5



TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 177.1642
Text:WELL 34/7-5, 2550M, SATURATED FRACTION

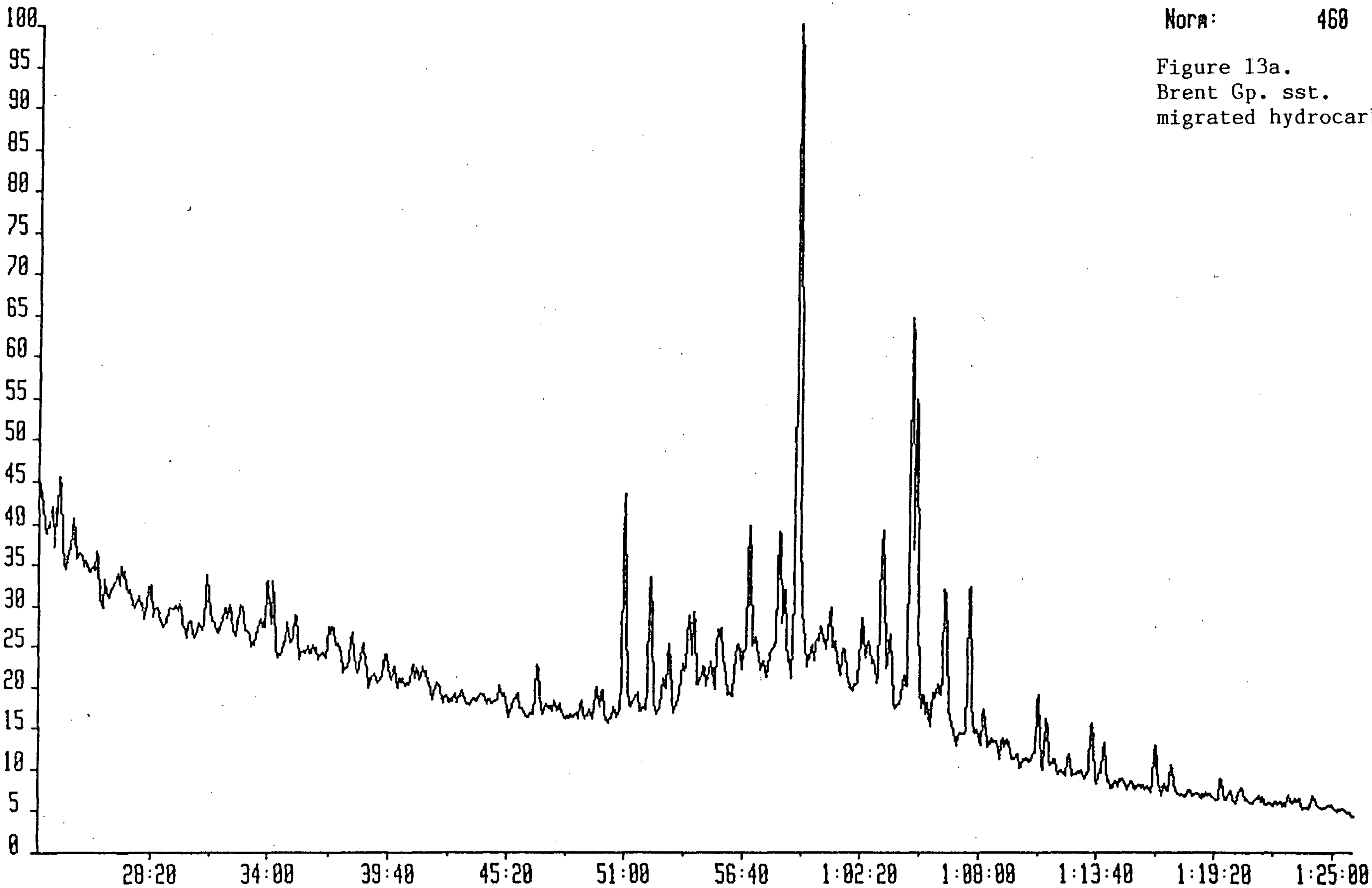



Figure 13a.
Brent Gp. sst.
migrated hydrocarbon.

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 191.1800
Text:WELL 34/7-5, 2550M, SATURATED FRACTION

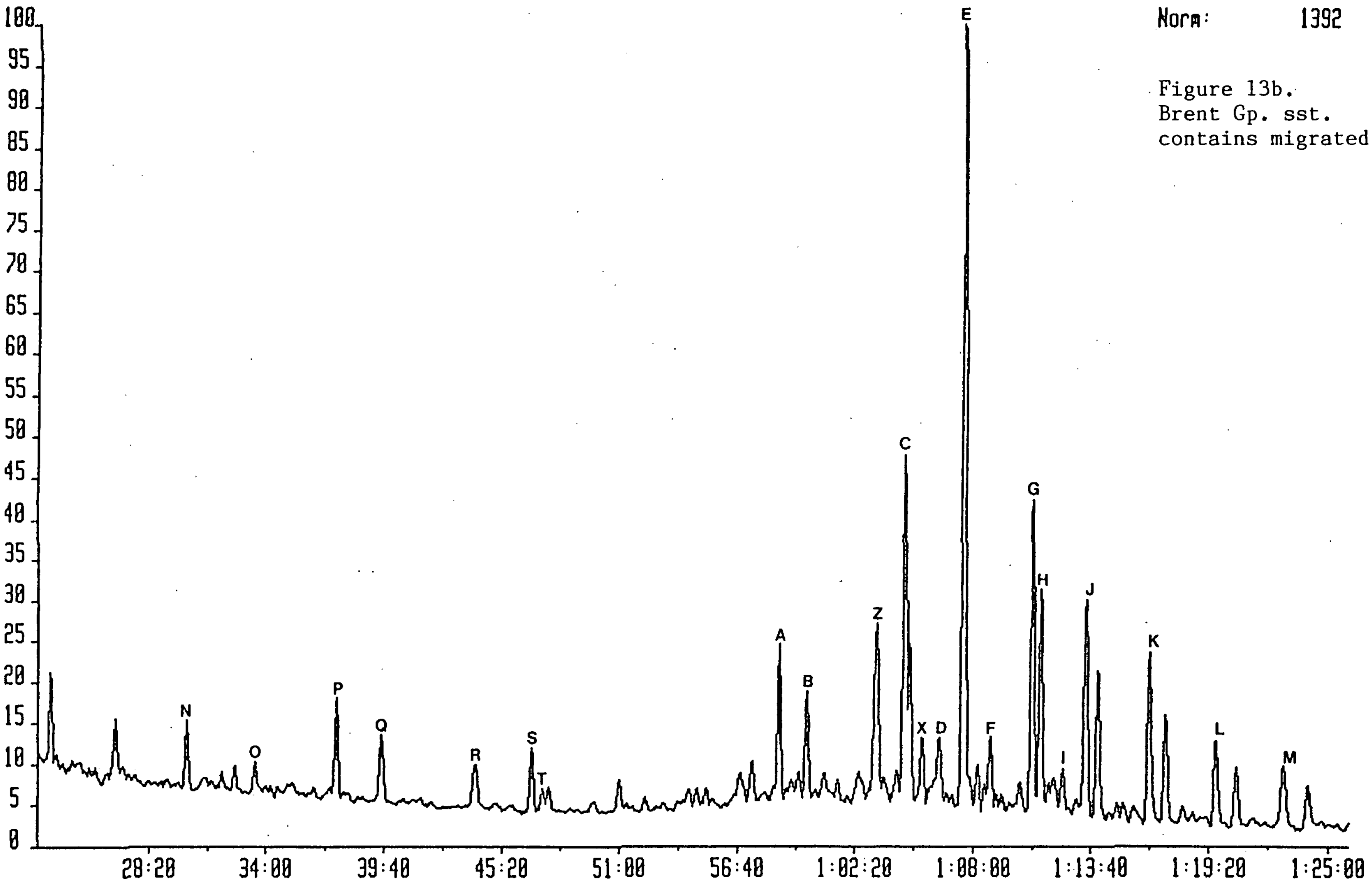



Figure 13b.
Brent Gp. sst.
contains migrated hydrocarbons.

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Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 390.00 | | | | Nrdl | | Pliocene-Miocene | | 0001 |
| | | | 90 | Cont : dd | | | | 0001-1L |
| | | | 10 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0001-2L |
| 420.00 | | | | Nrdl | | Pliocene-Miocene | | 0002 |
| | | | 80 | S/Sst : lt gy to lt brn gy, f, slt | | | | 0002-1L |
| | | | 20 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0002-2L |
| 450.00 | | | | Nrdl | | Pliocene-Miocene | | 0003 |
| | | | 70 | S/Sst : lt gy to lt brn gy, f, slt | | | | 0003-1L |
| | | | 20 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0003-2L |
| | | | 10 | Ca : w to lt or | | | | 0003-3L |
| 480.00 | | | | Nrdl | | Pliocene-Miocene | | 0004 |
| | | | 60 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0004-1L |
| | | | 35 | S/Sst : lt gy to lt brn gy, f, slt, carb | | | | 0004-2L |
| | | | 5 | Ca : w to lt or | | | | 0004-3L |
| 510.00 | | | | Nrdl | | Pliocene-Miocene | | 0005 |
| | | | 70 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0005-1L |
| | | | 30 | S/Sst : lt gy to lt brn gy, f, slt, carb | | | | 0005-2L |
| 540.00 | | | | Nrdl | | Pliocene-Miocene | | 0006 |
| | | | 70 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0006-1L |
| | | | 30 | S/Sst : lt gy to lt brn gy, f, slt, carb | | | | 0006-2L |
| | | | tr | Ca : w to lt or | | | | 0006-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 570.00 | | | | Nrdl | | Pliocene-Miocene | | 0007 |
| | | | 70 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0007-1L |
| | | | 25 | S/Sst : lt gy to lt brn gy, f, slt, carb | | | | 0007-2L |
| | | | 5 | Ca : w to lt or | | | | 0007-3L |
| 600.00 | | | | Nrdl | | Pliocene-Miocene | | 0008 |
| | | | 60 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0008-1L |
| | | | 35 | S/Sst : lt gy to lt brn gy, f, slt, carb | | | | 0008-2L |
| | | | 5 | Ca : w to lt or | | | | 0008-3L |
| 630.00 | | | | Nrdl | | Pliocene-Miocene | | 0009 |
| | | | 60 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0009-1L |
| | | | 35 | S/Sst : lt gy to lt brn gy, f, slt, carb | | | | 0009-2L |
| | | | 5 | Ca : w to lt or | | | | 0009-3L |
| 660.00 | | | | Nrdl | | Pliocene-Miocene | | 0010 |
| | | | 60 | S/Sst : lt gy to lt brn gy, f, slt, carb | | | | 0010-1L |
| | | | 40 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0010-2L |
| | | | tr | Ca : drk gy | | | | 0010-3L |
| 690.00 | | | | Nrdl | | Pliocene-Miocene | | 0011 |
| | | | 70 | S/Sst : lt gy to lt brn gy, f, slt, carb | | | | 0011-1L |
| | | | 30 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0011-2L |
| | | | tr | Ca : drk gy | | | | 0011-3L |
| 720.00 | | | | Nrdl | | Pliocene-Miocene | | 0012 |
| | | | 70 | S/Sst : lt gy to lt brn gy, f, slt, carb | | | | 0012-1L |
| | | | 30 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0012-2L |
| | | | tr | Ca : drk gy | | | | 0012-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 750.00 | | | | Nrdl | | Pliocene-Miocene | | 0013 |
| | | | 80 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0013-1L |
| | | | 15 | S/Sst : lt gy to lt brn gy, f, slt | | | | 0013-2L |
| | | | 5 | Ca : w to lt or | | | | 0013-3L |
| 800.00 | | | | Nrdl | | Pliocene-Miocene | | 0014 |
| | | | 70 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0014-1L |
| | | | 30 | S/Sst : lt gy to lt brn gy, f, slt, calc | | | | 0014-2L |
| | | | tr | Ca : w to lt or | | | | 0014-3L |
| 830.00 | | | | Nrdl | | Pliocene-Miocene | | 0015 |
| | | | 80 | S/Sst : lt gy to lt brn gy, f, slt, calc | | | | 0015-1L |
| | | | 15 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0015-2L |
| | | | 5 | Ca : lt or | | | | 0015-3L |
| 860.00 | | | | Nrdl | | Pliocene-Miocene | | 0016 |
| | | | 50 | S/Sst : lt gy to lt brn gy, f, slt, calc | | | | 0016-1L |
| | | | 45 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0016-2L |
| | | | 5 | Ca : lt or | | | | 0016-3L |
| 890.00 | | | | Nrdl | | Pliocene-Miocene | | 0017 |
| | | | 60 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0017-1L |
| | | | 35 | S/Sst : lt gy to lt brn gy, f, slt, calc | | | | 0017-2L |
| | | | 5 | Ca : lt or to m gy | | | | 0017-3L |
| 920.00 | | | | Nrdl | | Pliocene-Miocene | | 0018 |
| | | | 50 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0018-1L |
| | | | 50 | S/Sst : lt gy to lt brn gy, f, slt, calc | | | | 0018-2L |
| | | | tr | Ca : lt or to m gy, fos | | | | 0018-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp | Frm | Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 950.00 | | | | Nrdl | | Pliocene-Miocene | | 0019 |
| | | | 90 | S/Sst | | : w to lt gy to drk gy, crs, l | | 0019-1L |
| | | | 10 | Ca | | : w to lt or, fos | | 0019-2L |
| 980.00 | | | | Nrdl | Utsi | Pliocene-Miocene | | 0020 |
| | | | 80 | S/Sst | | : lt gy to lt brn gy, f, slt | | 0020-1L |
| | | | 10 | Ca | | : w to lt or, fos | | 0020-2L |
| | | | 10 | S/Sst | | : w to lt gy to drk gy, crs, l | | 0020-3L |
| 1010.00 | | | | Nrdl | Utsi | Pliocene-Miocene | | 0021 |
| | | | 80 | S/Sst | | : lt gy to lt brn gy, f, slt | | 0021-1L |
| | | | 10 | Ca | | : w to lt or, fos | | 0021-2L |
| | | | 10 | S/Sst | | : w to lt gy to drk gy, crs, l | | 0021-3L |
| 1040.00 | | | | Nrdl | Utsi | Pliocene-Miocene | | 0022 |
| | | | 90 | Sltst | | : lt brn gy to lt gy, calc, s | | 0022-1L |
| | | | 5 | Ca | | : lt or, fos | | 0022-2L |
| | | | 5 | S/Sst | | : w to lt gy, crs, l | | 0022-3L |
| 1070.00 | | | | Nrdl | Utsi | Pliocene-Miocene | | 0023 |
| | | | 100 | Sltst | | : lt brn gy to lt gy, calc, s | | 0023-1L |
| 1100.00 | | | | Hord | | Oligocene-Eocene | | 0024 |
| | | | 100 | Sh/Clst | | : lt ol gy to lt brn gy, slt | | 0024-1L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 1130.00 | | | | Hord | | Oligocene-Eocene | | 0025 |
| | | 1.63 | 100 | Sh/Clst: lt ol gy to lt brn gy | | | | 0025-1L |
| 1160.00 | | | | Hord | | Oligocene-Eocene | | 0026 |
| | | | 100 | Sh/Clst: lt ol gy to lt brn gy | | | | 0026-1L |
| 1190.00 | | | | Hord | | Oligocene-Eocene | | 0027 |
| | | | 100 | Sh/Clst: lt ol gy to lt brn gy | | | | 0027-1L |
| 1220.00 | | | | Hord | | Oligocene-Eocene | | 0028 |
| | | | 100 | Sh/Clst: lt ol gy to lt brn gy | | | | 0028-1L |
| 1250.00 | | | | Hord | | Oligocene-Eocene | | 0029 |
| | | | 90 | Sh/Clst: drk y brn to brn gy | | | | 0029-1L |
| | | | 10 | Sh/Clst: lt ol gy to lt or | | | | 0029-2L |
| | | | tr | S/Sst : w to lt gy, crs, l | | | | 0029-3L |
| 1280.00 | | | | Hord | | Oligocene-Eocene | | 0030 |
| | | | 85 | Sh/Clst: drk y brn to brn gy | | | | 0030-1L |
| | | | 10 | Sh/Clst: lt ol gy to lt or | | | | 0030-2L |
| | | | 5 | S/Sst : w to lt gy, crs, l | | | | 0030-3L |
| 1310.00 | | | | Hord | | Oligocene-Eocene | | 0031 |
| | | | 60 | Sh/Clst: drk y brn to brn gy to m gy | | | | 0031-1L |
| | | | 40 | Sh/Clst: lt ol gy to lt or | | | | 0031-2L |
| | | | tr | S/Sst : w to lt gy, crs, l | | | | 0031-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 1340.00 | | | | Hord | | Oligocene-Eocene | | 0032 |
| | | | 60 | Sh/Clst: lt ol gy to lt or | | | | 0032-1L |
| | | | 40 | Sh/Clst: drk y brn to brn gy to m gy | | | | 0032-2L |
| 1380.00 | | | | Hord | | Oligocene-Eocene | | 0033 |
| | | | 100 | Sh/Clst: lt gy to lt brn gy to m gy | | | | 0033-1L |
| 1400.00 | | | | Hord | | Oligocene-Eocene | | 0034 |
| | | | 90 | Sh/Clst: lt gy to lt brn gy to m gy | | | | 0034-1L |
| | | | 10 | Sh/Clst: lt ol gy to lt gy, slt | | | | 0034-2L |
| 1430.00 | | | | Hord | | Oligocene-Eocene | | 0035 |
| | | | 100 | Sh/Clst: lt gy to m gy to lt brn gy | | | | 0035-1L |
| 1460.00 | | | | Hord | | Oligocene-Eocene | | 0036 |
| | | | 100 | Sh/Clst: lt gy to m gy to brn gy | | | | 0036-1L |
| 1490.00 | | | | Hord | | Oligocene-Eocene | | 0037 |
| | | | 100 | Sh/Clst: lt gy to m gy to brn gy | | | | 0037-1L |
| | | | tr | Ca : lt or | | | | 0037-2L |
| 1520.00 | | | | Hord | | Oligocene-Eocene | | 0038 |
| | | 0.24 | 100 | Sh/Clst: lt gy to m gy to brn gy | | | | 0038-1L |
| | | | tr | Ca : lt or | | | | 0038-2L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp | Frm | Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 1550.00 | | | | Hord | | Oligocene-Eocene | | 0039 |
| | | | 100 | Sh/Clst: | | lt gy to m gy to brn gy | | 0039-1L |
| 1580.00 | | | | Hord | | Oligocene-Eocene | | 0040 |
| | | | 100 | Sh/Clst: | | lt gy to m gy to brn gy | | 0040-1L |
| | | | tr | Sh/Clst: | | lt ol gy, s | | 0040-2L |
| 1610.00 | | | | Hord | | Oligocene-Eocene | | 0041 |
| | | | 90 | Sh/Clst: | | lt gy to m gy to brn gy | | 0041-1L |
| | | | 10 | Cont : | | dd, prp | | 0041-2L |
| 1640.00 | | | | Hord | | Oligocene-Eocene | | 0042 |
| | | | 90 | Sh/Clst: | | lt gy to m gy to brn gy | | 0042-1L |
| | | | 10 | Cont : | | dd | | 0042-2L |
| 1670.00 | | | | Hord | | Oligocene-Eocene | | 0043 |
| | | | 100 | Sh/Clst: | | lt gy to m gy to drk y brn to pl y brn | | 0043-1L |
| 1700.00 | | | | Rogl | Bald | Eocene-Paleocene | | 0044 |
| | | 0.33 | 100 | Sh/Clst: | | lt gy to m gy to drk y brn to pl y brn to m brn | | 0044-1L |
| 1730.00 | | | | Rogl | Bald | Eocene-Paleocene | | 0045 |
| | | | 100 | Sh/Clst: | | lt gy to m gy to drk y brn to pl y brn to m brn | | 0045-1L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 1760.00 | | | | Rogl | List | Paleocene | | 0046 |
| | | | 100 | Sh/Clst: lt gy to lt brn gy | | | | 0046-1L |
| | | | tr | S/Sst : brn gy, f | | | | 0046-2L |
| 1790.00 | | | | Rogl | List | Paleocene | | 0047 |
| | | | 90 | Sh/Clst: lt gy to lt ol | | | | 0047-1L |
| | | | 10 | Ca : ol gy to lt or | | | | 0047-2L |
| 1820.00 | | | | Rogl | List | Paleocene | | 0048 |
| | | | 100 | Sh/Clst: lt gy to lt brn gy to pl ol | | | | 0048-1L |
| | | | tr | Cont : dd | | | | 0048-2L |
| 1851.00 | | | | Rogl | Heim | Paleocene | | 0049 |
| | | | 100 | Sh/Clst: lt gy to lt brn gy to pl ol | | | | 0049-1L |
| | | | tr | Ca : ol gy to lt or | | | | 0049-2L |
| 1884.00 | | | | Rogl | Heim | Paleocene | | 0050 |
| | | | 70 | Sh/Clst: lt gy to lt brn gy to pl ol | | | | 0050-1L |
| | | | 20 | Cont : dd | | | | 0050-2L |
| | | | 10 | S/Sst : w to lt gy to drk gy, crs, l | | | | 0050-3L |
| | | | tr | Ca : ol gy to lt or | | | | 0050-4L |
| 1914.00 | | | | Shet | | Upper Cretaceous | | 0051 |
| | | | 60 | Sh/Clst: lt gy to m gy | | | | 0051-1L |
| | | | 40 | Sh/Clst: lt brn gy to pl y brn, slt, carb | | | | 0051-2L |
| | | | tr | S/Sst : w to lt gy, crs, l | | | | 0051-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 1944.00 | | | | Shet | | Upper Cretaceous | | 0052 |
| | | | 50 | Sh/Clst: lt gy to m gy | | | | 0052-1L |
| | | | 45 | Sh/Clst: lt brn gy to pl y brn, slt, carb | | | | 0052-2L |
| | | | 5 | Ca : w to lt or | | | | 0052-3L |
| | | | tr | Cont : prp | | | | 0052-4L |
| 1974.00 | | | | Shet | | Upper Cretaceous | | 0053 |
| | | 0.40 | 95 | Sh/Clst: lt gy to m gy to lt brn gy | | | | 0053-1L |
| | | | 5 | Ca : w to lt or | | | | 0053-2L |
| | | | tr | Cont : prp, Coal-ad | | | | 0053-3L |
| 2004.00 | | | | Shet | | Upper Cretaceous | | 0054 |
| | | | 90 | Sh/Clst: y gy to lt brn gy, slt | | | | 0054-1L |
| | | | 10 | Sh/Clst: lt gy to m gy, carb | | | | 0054-2L |
| | | | tr | Cont : prp | | | | 0054-3L |
| 2034.00 | | | | Shet | | Upper Cretaceous | | 0055 |
| | | | 80 | Sh/Clst: y gy to lt brn gy, slt | | | | 0055-1L |
| | | | 20 | Sh/Clst: lt gy to m gy, carb | | | | 0055-2L |
| | | | tr | Cont : prp | | | | 0055-3L |
| 2064.00 | | | | Shet | | Upper Cretaceous | | 0056 |
| | | | 70 | Sh/Clst: y gy to lt brn gy, slt | | | | 0056-1L |
| | | | 30 | Sh/Clst: lt gy to m gy, carb | | | | 0056-2L |
| | | | tr | Cont : prp | | | | 0056-3L |
| 2094.00 | | | | Shet | | Upper Cretaceous | | 0057 |
| | | | 75 | Sh/Clst: lt brn gy to m ol gy, carb | | | | 0057-1L |
| | | | 25 | Sh/Clst: lt gy to m gy, carb | | | | 0057-2L |
| | | | tr | Cont : dd | | | | 0057-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2124.00 | | | | Shet | | Upper Cretaceous | | 0058 |
| | | | 95 | Sh/Clst: lt brn gy to pl y brn, carb | | | | 0058-1L |
| | | | 5 | Sh/Clst: lt gy to m gy, carb | | | | 0058-2L |
| | | | tr | Ca : w to lt or | | | | 0058-3L |
| | | | tr | Cont : dd | | | | 0058-4L |
| 2154.00 | | | | Shet | | Upper Cretaceous | | 0059 |
| | | | 70 | Sh/Clst: lt gy to m gy, carb | | | | 0059-1L |
| | | | 30 | Sh/Clst: lt brn gy to pl y brn, carb | | | | 0059-2L |
| | | | tr | Cont : dd | | | | 0059-3L |
| 2181.00 | | | | Shet | | Upper Cretaceous | | 0060 |
| | | | 60 | Sh/Clst: lt gy to m gy, pyr | | | | 0060-1L |
| | | | 40 | Sh/Clst: lt brn gy to pl y brn, carb | | | | 0060-2L |
| 2214.00 | | | | Shet | | Upper Cretaceous | | 0061 |
| | | | 60 | Sh/Clst: lt gy to m gy, pyr | | | | 0061-1L |
| | | | 20 | Sh/Clst: lt brn gy to pl y brn, carb | | | | 0061-2L |
| | | | 20 | Ca : lt or to or gy | | | | 0061-3L |
| 2244.00 | | | | Shet | | Upper Cretaceous | | 0062 |
| | | | 70 | Sh/Clst: lt gy to m gy, pyr | | | | 0062-1L |
| | | | 30 | Sh/Clst: lt brn gy to pl y brn, carb | | | | 0062-2L |
| | | | tr | S/Sst : w to lt gy to drk gy, f, l | | | | 0062-3L |
| 2274.00 | | | | Shet | | Upper Cretaceous | | 0063 |
| | | | 60 | Sh/Clst: lt gy to m gy, pyr | | | | 0063-1L |
| | | | 40 | Sh/Clst: lt brn gy to pl y brn, carb | | | | 0063-2L |
| | | | tr | S/Sst : w to lt gy to drk gy, f, l | | | | 0063-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2304.00 | | | | Shet | | Upper Cretaceous | | 0064 |
| | | | 70 | Sh/Clst: lt brn gy to pl y brn, carb | | | | 0064-1L |
| | | | 30 | Sh/Clst: lt gy to m gy, pyr | | | | 0064-2L |
| | | | tr | S/Sst : w to lt gy, f, l | | | | 0064-3L |
| 2337.00 | | | | Shet | | Upper Cretaceous | | 0065 |
| | | | 50 | Sh/Clst: lt brn gy to pl y brn, carb | | | | 0065-1L |
| | | | 25 | Sh/Clst: lt gy to m gy, pyr | | | | 0065-2L |
| | | | 25 | S/Sst : w to lt gy to pl red brn, f, l | | | | 0065-3L |
| 2364.00 | | | | Shet | | Upper Cretaceous | | 0066 |
| | | | 70 | Sh/Clst: lt brn gy to pl y brn, carb | | | | 0066-1L |
| | | | 25 | Sh/Clst: lt gy to m gy, pyr | | | | 0066-2L |
| | | | 5 | S/Sst : w to lt gy to pl red brn, f, l | | | | 0066-3L |
| 2394.00 | | | | Shet | | Upper Cretaceous | | 0067 |
| | | | 80 | Sh/Clst: lt brn gy to pl y brn, carb, slt | | | | 0067-1L |
| | | | 20 | Sh/Clst: lt gy to m gy, pyr | | | | 0067-2L |
| | | | tr | S/Sst : w to lt gy, f, l | | | | 0067-3L |
| 2424.00 | | | | Shet | | Upper Cretaceous | | 0068 |
| | | | 70 | Sh/Clst: lt brn gy to pl y brn, carb, slt | | | | 0068-1L |
| | | | 30 | Sh/Clst: lt gy to m gy, pyr | | | | 0068-2L |
| | | | tr | S/Sst : w to lt gy, f, l | | | | 0068-3L |
| 2454.00 | | | | Shet | | Upper Cretaceous | | 0069 |
| | | | 85 | Sh/Clst: lt brn gy to pl y brn, slt | | | | 0069-1L |
| | | | 15 | Sh/Clst: lt gy to m gy to drk gy, pyr | | | | 0069-2L |
| | | | tr | S/Sst : w to lt gy, f, l | | | | 0069-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2475.00 | | | | Shet | | Upper Cretaceous | | 0070 |
| | | | 60 | Sh/Clst: lt gy to m gy to lt bl gy to lt y gn | | | | 0070-1L |
| | | | 40 | Sh/Clst: m brn to pl brn | | | | 0070-2L |
| 2484.00 | | | | Shet | | Upper Cretaceous | | 0071 |
| | | | 50 | Sh/Clst: lt gy to m gy, calc, pyr | | | | 0071-1L |
| | | | 30 | S/Sst : w to lt gy, f, l | | | | 0071-2L |
| | | | 20 | Sh/Clst: lt brn gy to pl y brn, calc | | | | 0071-3L |
| | | | tr | Cont : prp | | | | 0071-4L |
| 2490.00 | | | | Crom | | Lower Cretaceous | | 0072 |
| | | | 80 | Ca : lt or to or gy | | | | 0072-1L |
| | | | 10 | Sh/Clst: lt gy to m gy | | | | 0072-2L |
| | | | 10 | Sh/Clst: m brn to pl brn, carb | | | | 0072-3L |
| | | | tr | Cont : dd | | | | 0072-4L |
| 2496.00 | | | | Crom | | Lower Cretaceous | | 0073 |
| | | 0.28 | 90 | Ca : lt or to or gy | | | | 0073-1L |
| | | | 10 | Sh/Clst: m brn to pl brn, carb | | | | 0073-2L |
| | | | tr | Sh/Clst: lt gy to m gy | | | | 0073-3L |
| 2502.00 | | | | Viki | Heat | Middle Jurassic | | 0074 |
| | | | 40 | S/Sst : brn gy to drk gy, f | | | | 0074-1L |
| | | | 30 | Ca : lt or to or gy | | | | 0074-2L |
| | | | 30 | S/Sst : w to lt gy, crs, l | | | | 0074-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type / TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2508.00 | | | | Bren | Ness | Middle Jurassic | | 0075 |
| | | | 90 | S/Sst : brn gy to gy brn, f, slt, calc | | | | 0075-1L |
| | | | 5 | Ca : lt or to or gy | | | | 0075-2L |
| | | | 5 | Sh/Clst: lt gy to drk gy | | | | 0075-3L |
| | | | tr | S/Sst : w to lt gy, f, l | | | | 0075-4L |
| 2511.00 | | ccp | | Bren | Ness | Middle Jurassic | | 0178 |
| | | 1.98 | 100 | Sltst : lt brn gy to pl y brn, s, mic, lam | | | | 0178-1L |
| 2513.00 | | ccp | | Bren | Ness | Middle Jurassic | | 0179 |
| | | | 100 | Sh/Clst: lt brn gy to drk y brn | | | | 0179-1L |
| 2514.00 | | | | Bren | Ness | Middle Jurassic | | 0076 |
| | | | 70 | Sh/Clst: lt gy to m gy | | | | 0076-1L |
| | | | 20 | S/Sst : w to lt gy, f, l | | | | 0076-2L |
| | | | 5 | Ca : lt or to or gy | | | | 0076-3L |
| | | | 5 | S/Sst : lt brn gy to gy brn, f | | | | 0076-4L |
| | | | tr | Cont : prp | | | | 0076-5L |
| 2515.00 | | ccp | | Bren | Ness | Middle Jurassic | | 0180 |
| | | 0.96 | 100 | Sh/Clst: lt brn gy to drk y brn, pyr | | | | 0180-1L |
| 2517.00 | | ccp | | Bren | Ness | Middle Jurassic | | 0181 |
| | | | 100 | Sltst : lt gy to lt brn gy, s | | | | 0181-1L |
| | | | tr | Coal : blk | | | | 0181-2L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type / TOC% | % | Grp Frm Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2519.00 | | ccp | | Bren Ness Middle Jurassic | | 0182 |
| | | 0.70 | 100 | S/Sst : lt brn gy to lt gy, crs | | 0182-1L |
| 2520.65 | | ccp | | Bren Ness Middle Jurassic | | 0183 |
| | | | 95 | S/Sst : brn gy to drk gy, f, slt, mic | | 0183-1L |
| | | | 5 | Coal : blk | | 0183-2L |
| 2523.00 | | | | Bren Ness Middle Jurassic | | 0077 |
| | | | 70 | S/Sst : w to lt gy, f, l | | 0077-1L |
| | | | 30 | Sh/Clst: lt gy to m gy, calc | | 0077-2L |
| | | | tr | Sh/Clst: m brn | | 0077-3L |
| | | | tr | Cont : prp | | 0077-4L |
| 2523.00 | | ccp | | Bren Ness Middle Jurassic | | 0184 |
| | | 0.48 | 100 | S/Sst : lt brn gy to lt or gy, crs | | 0184-1L |
| 2525.00 | | ccp | | Bren Ness Middle Jurassic | | 0185 |
| | | | 100 | Sh/Clst: m gy to brn gy, s, mic, lam | | 0185-1L |
| 2526.00 | | | | Bren Ness Middle Jurassic | | 0078 |
| | | | 80 | S/Sst : w to lt gy, f, l | | 0078-1L |
| | | | 20 | Sh/Clst: lt gy to m gy, calc | | 0078-2L |
| | | | tr | Sh/Clst: m brn | | 0078-3L |
| | | | tr | Cont : prp, dd | | 0078-4L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type / TOC% | % | Grp | Frm | Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2527.00 | | ccp | | Bren | Ness | Middle Jurassic | | 0186 |
| | | | 100 | S/Sst | | : gy pi to lt or gy to lt gy, crs, l | | 0186-1L |
| 2530.50 | | ccp | | Bren | Ness | Middle Jurassic | | 0187 |
| | | 0.60 | 100 | S/Sst | | : gy pi to lt brn gy to lt gy, crs, l | | 0187-1L |
| 2532.00 | | | | Bren | Etiv | Middle Jurassic | | 0079 |
| | | | 80 | S/Sst | | : w to lt gy, f, l | | 0079-1L |
| | | | 20 | Sh/Clst | | : lt gy to m gy to drk gy | | 0079-2L |
| | | | tr | Sh/Clst | | : m brn to gy pi, calc | | 0079-3L |
| 2532.50 | | ccp | | Bren | Etiv | Middle Jurassic | | 0188 |
| | | | 100 | S/Sst | | : lt gy to m gy, crs, l | | 0188-1L |
| 2534.50 | | ccp | | Bren | Etiv | Middle Jurassic | | 0189 |
| | | | 100 | S/Sst | | : lt or gy to gy pi, crs | | 0189-1L |
| 2536.00 | | ccp | | Bren | Etiv | Middle Jurassic | | 0190 |
| | | 0.45 | 100 | S/Sst | | : lt or gy to lt brn gy, crs, pyr | | 0190-1L |
| 2538.00 | | | | Bren | Etiv | Middle Jurassic | | 0080 |
| | | | 50 | Sltst | | : lt brn, carb, s | | 0080-1L |
| | | | 30 | S/Sst | | : w to lt gy, f, l | | 0080-2L |
| | | | 20 | Sh/Clst | | : lt gy to m gy to drk gy | | 0080-3L |
| | | | tr | Coal | | : blk | | 0080-4L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type / TOC% | % | Grp / Lithology | Frm / Lithology description | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2538.00 | | ccp | | Bren | Etiv | Middle Jurassic | | 0191 |
| | | | 100 | S/Sst | : lt or gy to lt brn gy to lt gy, crs, l | | | 0191-1L |
| 2540.00 | | ccp | | Bren | Etiv | Middle Jurassic | | 0192 |
| | | 0.14 | 100 | S/Sst | : lt or gy to lt brn gy to lt gy, crs, l | | | 0192-1L |
| 2541.00 | | | | Bren | Etiv | Middle Jurassic | | 0081 |
| | | | 50 | Sltst | : lt brn, carb, s | | | 0081-1L |
| | | | 25 | S/Sst | : w to lt gy, f, crs, l | | | 0081-2L |
| | | | 25 | Sh/Clst | : lt gy to m gy to drk gy | | | 0081-3L |
| | | | tr | Coal | : blk | | | 0081-4L |
| | | | tr | Cont | : prp, dd | | | 0081-5L |
| 2542.00 | | ccp | | Bren | Etiv | Middle Jurassic | | 0193 |
| | | | 100 | S/Sst | : lt or gy to lt brn gy to lt gy, crs, l | | | 0193-1L |
| 2544.00 | | ccp | | Bren | Etiv | Middle Jurassic | | 0194 |
| | | | 100 | S/Sst | : lt or gy to lt brn gy to lt gy, crs, l | | | 0194-1L |
| 2546.00 | | ccp | | Bren | Etiv | Middle Jurassic | | 0195 |
| | | | 100 | S/Sst | : lt or gy to lt brn gy to lt gy, crs, l | | | 0195-1L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth (Int) | Depth (Cvd) | Type / TOC% | % | Grp / Frm / Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2548.00 | | ccp | | Bren Etiv Middle Jurassic | | 0196 |
| | | | 100 | S/Sst : lt or gy to lt brn gy to lt gy, crs, l | | 0196-1L |
| 2550.00 | | ccp | | Bren Etiv Middle Jurassic | | 0197 |
| | | 0.15 | 100 | S/Sst : lt or gy to lt brn gy to lt gy, crs, l, mic | | 0197-1L |
| 2552.00 | | ccp | | Bren Etiv Middle Jurassic | | 0198 |
| | | | 100 | S/Sst : lt or gy to lt brn gy to lt gy, crs, l, mic | | 0198-1L |
| 2554.00 | | ccp | | Bren Etiv Middle Jurassic | | 0199 |
| | | 0.12 | 100 | Congl : lt or gy to lt brn gy to lt gy, f, s | | 0199-1L |
| 2556.00 | | | | Bren Etiv Middle Jurassic | | 0082 |
| | | | 85 | S/Sst : w to lt gy, crs, l | | 0082-1L |
| | | | 15 | Sh/Clst: lt gy to m gy to drk gy | | 0082-2L |
| | | | tr | Cont : prp | | 0082-3L |
| 2556.00 | | ccp | | Bren Etiv Middle Jurassic | | 0200 |
| | | | 100 | S/Sst : lt or gy to lt brn gy to lt gy, crs, l | | 0200-1L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type / TOC% | % | Grp Frm Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2558.00 | | ccp | | Bren Etiv Middle Jurassic | | 0201 |
| | | | 100 | S/Sst : lt or gy to lt brn gy to lt gy, crs, l, mic | | 0201-1L |
| 2560.00 | | ccp | | Bren Etiv Middle Jurassic | | 0202 |
| | | 0.10 | 100 | S/Sst : lt brn gy to lt gy, crs, l, mic | | 0202-1L |
| 2562.00 | | | | Bren Etiv Middle Jurassic | | 0083 |
| | | | 90 | S/Sst : w to lt gy, crs, l | | 0083-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk | | 0083-2L |
| | | | tr | Cont : prp, dd | | 0083-3L |
| 2562.00 | | ccp | | Bren Etiv Middle Jurassic | | 0203 |
| | | | 100 | S/Sst : lt brn gy to lt gy to gy pi, crs, l | | 0203-1L |
| 2564.00 | | ccp | | Bren Rano Middle Jurassic | | 0204 |
| | | | 100 | S/Sst : lt gy to lt brn gy, crs, l | | 0204-1L |
| 2566.00 | | ccp | | Bren Rano Middle Jurassic | | 0205 |
| | | 0.17 | 100 | S/Sst : lt gy to m gy to lt brn gy, crs, l, mic | | 0205-1L |
| 2568.00 | | | | Bren Rano Middle Jurassic | | 0084 |
| | | | 85 | S/Sst : w to lt gy, crs, l | | 0084-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk | | 0084-2L |
| | | | 5 | Cont : prp, dd | | 0084-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp | Frm | Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2568.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0206 |
| | | | 100 | S/Sst | | : lt gy to lt brn gy to gy pi, crs, l, mic | | 0206-1L |
| 2570.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0207 |
| | | 0.14 | 100 | S/Sst | | : lt gy to lt brn gy to gy pi, crs, l, mic | | 0207-1L |
| 2571.90 | | ccp | | Bren | Rano | Middle Jurassic | | 0208 |
| | | | 100 | S/Sst | | : lt gy to lt brn gy to gy pi, crs, l, mic, slt, lam | | 0208-1L |
| 2574.00 | | | | Bren | Rano | Middle Jurassic | | 0085 |
| | | | 85 | S/Sst | | : w to lt gy, crs, l | | 0085-1L |
| | | | 10 | Sh/Clst | | : lt gy to m gy to brn blk | | 0085-2L |
| | | | 5 | Cont | | : prp, dd | | 0085-3L |
| 2574.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0209 |
| | | | 100 | S/Sst | | : lt gy to lt brn gy, l, mic | | 0209-1L |
| 2576.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0210 |
| | | 0.07 | 100 | S/Sst | | : w to lt gy, crs, l, mic | | 0210-1L |
| 2578.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0211 |
| | | | 100 | S/Sst | | : w to lt gy to m gy, crs, l, mic | | 0211-1L |

GEOLAB NOR

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp Frm Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2580.00 | | | | Bren Rano Middle Jurassic | | 0086 |
| | | | 80 | Sh/Clst: lt or to gy pi, slt | | 0086-1L |
| | | | 10 | Sh/Clst: lt gy to m gy to drk gy | | 0086-2L |
| | | | 10 | S/Sst : w to lt gy, crs, l | | 0086-3L |
| 2580.00 | | ccp | | Bren Rano Middle Jurassic | | 0212 |
| | | 0.11 | 100 | S/Sst : y gy to lt gy to m gy, crs, mic | | 0212-1L |
| 2582.00 | | ccp | | Bren Rano Middle Jurassic | | 0213 |
| | | | 100 | S/Sst : w to lt gy, crs, mic | | 0213-1L |
| 2584.00 | | ccp | | Bren Rano Middle Jurassic | | 0214 |
| | | | 100 | S/Sst : w to lt gy, f, mic | | 0214-1L |
| 2586.00 | | ccp | | Bren Rano Middle Jurassic | | 0215 |
| | | 0.12 | 100 | S/Sst : y gy to lt gy to drk gy, f, mic | | 0215-1L |
| 2588.00 | | ccp | | Bren Rano Middle Jurassic | | 0216 |
| | | | 100 | S/Sst : w to lt gy, crs, mic | | 0216-1L |
| 2590.00 | | ccp | | Bren Rano Middle Jurassic | | 0217 |
| | | 0.13 | 100 | S/Sst : w to lt gy, crs, mic | | 0217-1L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp | Frm | Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2592.00 | | | | Bren | Rano | Middle Jurassic | | 0087 |
| | | | 60 | | | Sh/Clst: lt or to gy pi, slt | | 0087-1L |
| | | | 30 | | | Sh/Clst: lt gy to m gy to drk gy | | 0087-2L |
| | | | 10 | | | S/Sst : w to lt gy, crs, l | | 0087-3L |
| | | | tr | | | Cont : prp | | 0087-4L |
| 2592.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0218 |
| | | | 100 | | | S/Sst : w to lt gy, crs, hd, mic | | 0218-1L |
| 2594.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0219 |
| | | 0.04 | 100 | | | S/Sst : m gy to drk gy, crs, hd | | 0219-1L |
| 2596.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0220 |
| | | | 100 | | | S/Sst : w to lt gy, crs, hd, mic | | 0220-1L |
| 2598.00 | | | | Bren | Rano | Middle Jurassic | | 0088 |
| | | | 80 | | | Sh/Clst: lt or to gy pi, slt | | 0088-1L |
| | | | 15 | | | Sh/Clst: lt gy to m gy to drk gy | | 0088-2L |
| | | | 5 | | | S/Sst : w to lt gy, crs, l | | 0088-3L |
| | | | tr | | | Cont : prp | | 0088-4L |
| 2598.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0221 |
| | | | 100 | | | S/Sst : lt gy to lt brn gy, crs, hd, mic, lam | | 0221-1L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type / TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2600.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0222 |
| | | 0.15 | 100 | S/Sst : lt gy to lt brn gy to y gy, f, hd, mic, lam | | | | 0222-1L |
| 2601.00 | | | | Bren | Rano | Middle Jurassic | | 0089 |
| | | | 80 | Sh/Clst: lt or to gy pi, slt | | | | 0089-1L |
| | | | 15 | Sh/Clst: lt gy to m gy to drk gy | | | | 0089-2L |
| | | | 5 | S/Sst : w to lt gy, crs, l | | | | 0089-3L |
| | | | tr | Cont : prp | | | | 0089-4L |
| 2602.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0223 |
| | | | 100 | S/Sst : lt gy to m gy, crs, hd, mic, lam | | | | 0223-1L |
| 2604.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0224 |
| | | | 100 | S/Sst : lt gy to y gy to w, crs, hd | | | | 0224-1L |
| 2606.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0225 |
| | | 0.51 | 100 | S/Sst : lt gy to lt brn gy, f, mic | | | | 0225-1L |
| | | | tr | Sh/Clst: dsk brn | | | | 0225-2L |
| 2609.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0226 |
| | | | 100 | S/Sst : w to lt gy, f, mic, lam | | | | 0226-1L |
| | | | tr | Sh/Clst: dsk brn | | | | 0226-2L |
| 2610.00 | | | | Bren | Rano | Middle Jurassic | | 0090 |
| | | | 60 | Sh/Clst: lt or to gy pi, slt | | | | 0090-1L |
| | | | 30 | Sh/Clst: lt gy to m gy to drk gy | | | | 0090-2L |
| | | | 10 | S/Sst : w to lt gy, crs, l | | | | 0090-3L |
| | | | tr | Coal : blk | | | | 0090-4L |
| | | | tr | Cont : prp | | | | 0090-5L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp | Frm | Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2611.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0227 |
| | | 0.14 | 100 | S/Sst | | : lt gy to y gy to lt brn gy, f, mic, lam | | 0227-1L |
| 2613.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0228 |
| | | | 100 | S/Sst | | : lt gy to m gy to lt brn gy, f, slt, mic, lam | | 0228-1L |
| 2615.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0229 |
| | | 0.73 | 100 | S/Sst | | : lt gy to m gy to lt brn gy, f, slt, mic, lam | | 0229-1L |
| 2616.00 | | | | Bren | Rano | Middle Jurassic | | 0091 |
| | | | 60 | Sh/Clst | | : lt or to gy pi, slt | | 0091-1L |
| | | | 20 | Sh/Clst | | : lt gy to m gy to drk gy | | 0091-2L |
| | | | 10 | S/Sst | | : w to lt gy, crs, l | | 0091-3L |
| | | | 10 | Coal | | : blk | | 0091-4L |
| 2617.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0230 |
| | | | 100 | S/Sst | | : lt gy to m gy to lt brn gy, f, slt, mic, lam | | 0230-1L |
| 2619.00 | | ccp | | Bren | Rano | Middle Jurassic | | 0231 |
| | | 0.35 | 100 | S/Sst | | : lt gy to m gy to lt brn gy, f, slt, mic, lam | | 0231-1L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp Frm Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2621.00 | ccp | | | Bren Rano Middle Jurassic | | 0232 |
| | | | 100 | Sltst : m gy to drk gy, s, mic | | 0232-1L |
| 2622.00 | | | | Dunl Drak Middle Jurassic | | 0092 |
| | | | 70 | S/Sst : w to lt gy to gy pi, f, l | | 0092-1L |
| | | | 10 | Coal : blk | | 0092-2L |
| | | | 10 | Sh/Clst: m gy to drk gy | | 0092-3L |
| | | | 10 | Cont : Mica-ad, prp, dd | | 0092-4L |
| 2624.00 | ccp | | | Dunl Drak Middle Jurassic | | 0233 |
| | | | 90 | Sh/Clst: m gy to drk gy, slt, mic, lam | | 0233-1L |
| | | | 10 | S/Sst : lt gy, f, slt, lam | | 0233-2L |
| 2626.00 | ccp | | | Dunl Drak Middle Jurassic | | 0234 |
| | | 1.11 | 90 | Sh/Clst: m gy to drk gy, slt, mic, lam | | 0234-1L |
| | | | 10 | S/Sst : lt gy, f, slt, lam | | 0234-2L |
| 2628.00 | | | | Dunl Drak Middle Jurassic | | 0093 |
| | | | 90 | S/Sst : w to lt gy to gy pi, f, l | | 0093-1L |
| | | | 5 | Coal : blk | | 0093-2L |
| | | | 5 | Sh/Clst: m gy to drk gy | | 0093-3L |
| 2628.00 | ccp | | | Dunl Drak Middle Jurassic | | 0235 |
| | | | 100 | Sh/Clst: m gy to drk gy | | 0235-1L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp / Frm / Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2630.00 | | ccp | | Dunl Drak Middle Jurassic | | 0236 |
| | | 1.12 | 100 | Sh/Clst: m gy to drk gy, lam | | 0236-1L |
| 2631.60 | | ccp | | Dunl Drak Middle Jurassic | | 0237 |
| | | | 100 | Sh/Clst: m gy to drk gy | | 0237-1L |
| 2634.00 | | | | Dunl Drak Middle Jurassic | | 0094 |
| | | | 90 | Sh/Clst: gy pi to lt brn, slt | | 0094-1L |
| | | | 10 | Sh/Clst: m gy to drk gy | | 0094-2L |
| 2640.00 | | | | Dunl Drak Middle Jurassic | | 0095 |
| | | | 90 | Sh/Clst: gy pi to lt brn, slt | | 0095-1L |
| | | | 10 | Sh/Clst: m gy to drk gy | | 0095-2L |
| 2646.00 | | | | Dunl Drak Middle Jurassic | | 0096 |
| | | | 80 | Sh/Clst: gy pi to lt brn, slt | | 0096-1L |
| | | | 20 | Sh/Clst: m gy to drk gy | | 0096-2L |
| 2652.00 | | | | Dunl Drak Middle Jurassic | | 0097 |
| | | | 95 | Sh/Clst: gy pi to lt brn, slt | | 0097-1L |
| | | | 5 | Sh/Clst: m gy to drk gy | | 0097-2L |
| 2658.00 | | | | Dunl Drak Middle Jurassic | | 0098 |
| | | 0.57 | 80 | Sh/Clst: gy pi to lt brn, slt | | 0098-1L |
| | | | 20 | Sh/Clst: m gy to drk gy | | 0098-2L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type / TOC% | % | Grp Frm Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2664.00 | | | | Dunl Drak Middle Jurassic | | 0099 |
| | | | 90 | Sh/Clst: gy pi to lt brn, slt | | 0099-1L |
| | | | 10 | Sh/Clst: m gy to drk gy | | 0099-2L |
| 2670.00 | | | | Dunl Drak Middle Jurassic | | 0100 |
| | | | 90 | Sh/Clst: gy pi to lt brn, slt | | 0100-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk | | 0100-2L |
| 2676.00 | | | | Dunl Drak Middle Jurassic | | 0101 |
| | | 0.80 | 90 | Sh/Clst: gy pi to lt brn, slt | | 0101-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk | | 0101-2L |
| | | | tr | Coal : blk | | 0101-3L |
| 2682.00 | | | | Dunl Drak Middle Jurassic | | 0102 |
| | | | 50 | Sh/Clst: gy pi to lt brn, slt | | 0102-1L |
| | | | 40 | S/Sst : w to lt gy, f, l | | 0102-2L |
| | | | 10 | Sh/Clst: m gy to drk gy | | 0102-3L |
| 2688.00 | | | | Dunl Drak Middle Jurassic | | 0103 |
| | | | 60 | S/Sst : w to lt gy, f, l | | 0103-1L |
| | | | 40 | Sh/Clst: m gy to drk gy | | 0103-2L |
| | | | tr | Sh/Clst: m brn to gy pi, slt | | 0103-3L |
| 2694.00 | | | | Dunl Drak Middle Jurassic | | 0104 |
| | | | 60 | S/Sst : w to lt gy, f, l | | 0104-1L |
| | | | 40 | Sh/Clst: m gy to drk gy | | 0104-2L |
| | | | tr | Sh/Clst: m brn to gy pi, slt | | 0104-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Frm / Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2700.00 | | | | Dunl Cook Lower Jurassic | | 0105 |
| | | 0.97 | 60 | Sh/Clst: m gy to drk gy to brn blk, mic | | 0105-1L |
| | | | 30 | S/Sst : w to lt gy, f, l | | 0105-2L |
| | | | 10 | Sh/Clst: lt brn to gy pi | | 0105-3L |
| | | | tr | Cont : prp | | 0105-4L |
| 2709.00 | | | | Dunl Cook Lower Jurassic | | 0106 |
| | | | 40 | Sh/Clst: m gy to drk gy to brn blk, mic | | 0106-1L |
| | | | 40 | Sh/Clst: lt brn to gy pi | | 0106-2L |
| | | | 20 | S/Sst : w to lt gy, f, l | | 0106-3L |
| 2712.00 | | | | Dunl Cook Lower Jurassic | | 0107 |
| | | | 80 | Sh/Clst: m gy to drk gy to brn blk, mic | | 0107-1L |
| | | | 20 | Sh/Clst: lt brn to gy pi | | 0107-2L |
| | | | tr | S/Sst : w to lt gy, f, l | | 0107-3L |
| | | | tr | Cont : dd | | 0107-4L |
| 2718.00 | | | | Dunl Cook Lower Jurassic | | 0108 |
| | | | 70 | S/Sst : w to lt gy, f, l | | 0108-1L |
| | | | 20 | Sh/Clst: lt brn | | 0108-2L |
| | | | 10 | Sh/Clst: lt gy to m gy to drk gy | | 0108-3L |
| 2724.00 | | | | Dunl Cook Lower Jurassic | | 0109 |
| | | | 85 | S/Sst : w to lt gy, f, l | | 0109-1L |
| | | | 10 | Sh/Clst: lt brn | | 0109-2L |
| | | | 5 | Sh/Clst: lt gy to m gy to drk gy | | 0109-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp | Frm | Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2730.00 | | | | Dunl | Cook | Lower Jurassic | | 0110 |
| | | | 60 | Sh/Clst: | | lt brn | | 0110-1L |
| | | | 35 | S/Sst : | | w to lt gy, f, l | | 0110-2L |
| | | | 5 | Sh/Clst: | | lt gy to m gy to drk gy | | 0110-3L |
| 2736.00 | | | | Dunl | Cook | Lower Jurassic | | 0111 |
| | | | 60 | S/Sst : | | w to lt gy, f, l | | 0111-1L |
| | | | 25 | Sh/Clst: | | lt gy to m gy to drk gy to lt ol gy | | 0111-2L |
| | | | 10 | Sh/Clst: | | lt brn | | 0111-3L |
| | | | 5 | Ca : | | w to lt or | | 0111-4L |
| 2742.00 | | | | Dunl | Cook | Lower Jurassic | | 0112 |
| | | | 90 | Sh/Clst: | | lt brn | | 0112-1L |
| | | | 10 | Sh/Clst: | | lt gy to m gy to drk gy | | 0112-2L |
| 2748.00 | | | | Dunl | Cook | Lower Jurassic | | 0113 |
| | | | 90 | Sh/Clst: | | lt brn | | 0113-1L |
| | | | 10 | Sh/Clst: | | lt gy to m gy to drk gy | | 0113-2L |
| | | | tr | Cont : | | prp, dd | | 0113-3L |
| 2754.00 | | | | Dunl | Cook | Lower Jurassic | | 0114 |
| | | 0.94 | 80 | Sh/Clst: | | drk gy to brn blk, mic | | 0114-1L |
| | | | 15 | Sh/Clst: | | lt brn | | 0114-2L |
| | | | 5 | S/Sst : | | w to lt gy, f, l | | 0114-3L |
| | | | tr | Cont : | | prp | | 0114-4L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp Frm Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2760.00 | | | | Dunl Cook Lower Jurassic | | 0115 |
| | | | 90 | Sh/Clst: drk gy to brn blk, mic | | 0115-1L |
| | | | 10 | Sh/Clst: lt brn | | 0115-2L |
| | | | tr | S/Sst : w to lt gy, f, l | | 0115-3L |
| | | | tr | Cont : prp | | 0115-4L |
| 2766.00 | | | | Dunl Cook Lower Jurassic | | 0116 |
| | | | 60 | Sh/Clst: lt brn | | 0116-1L |
| | | | 30 | Sh/Clst: m gy to drk gy to brn blk, mic | | 0116-2L |
| | | | 10 | S/Sst : w to lt gy, l, f | | 0116-3L |
| | | | tr | Cont : prp, dd | | 0116-4L |
| 2772.00 | | | | Dunl Burt Lower Jurassic | | 0117 |
| | | | 60 | Sh/Clst: lt brn | | 0117-1L |
| | | | 40 | Sh/Clst: m gy to drk gy to brn blk, mic | | 0117-2L |
| | | | tr | S/Sst : w to lt gy, l, f | | 0117-3L |
| 2778.00 | | | | Dunl Burt Lower Jurassic | | 0118 |
| | | 0.57 | 70 | Sh/Clst: lt brn | | 0118-1L |
| | | | 30 | Sh/Clst: m gy to drk gy to brn blk, mic | | 0118-2L |
| | | | tr | S/Sst : w to lt gy, l, f | | 0118-3L |
| | | | tr | Cont : prp | | 0118-4L |
| 2784.00 | | | | Dunl Burt Lower Jurassic | | 0119 |
| | | | 50 | Sh/Clst: lt brn | | 0119-1L |
| | | | 50 | Sh/Clst: m gy to drk gy to brn blk, mic | | 0119-2L |
| | | | tr | S/Sst : w to lt gy, l, f | | 0119-3L |
| | | | tr | Cont : prp | | 0119-4L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2790.00 | | | | Dunl | Burt | Lower Jurassic | | 0120 |
| | | | 90 | Sh/Clst: lt brn | | | | 0120-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk, mic | | | | 0120-2L |
| | | | tr | Cont : prp, dd, Mica-ad | | | | 0120-3L |
| 2796.00 | | | | Dunl | Amun | Lower Jurassic | | 0121 |
| | | | 90 | Sh/Clst: lt brn | | | | 0121-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk, mic | | | | 0121-2L |
| | | | tr | Cont : prp, dd, Mica-ad | | | | 0121-3L |
| 2802.00 | | | | Dunl | Amun | Lower Jurassic | | 0122 |
| | | | 90 | Sh/Clst: lt brn | | | | 0122-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk, mic | | | | 0122-2L |
| | | | tr | Cont : prp, dd, Mica-ad | | | | 0122-3L |
| 2808.00 | | | | Dunl | Amun | Lower Jurassic | | 0123 |
| | | 0.41 | 90 | Sh/Clst: lt brn to lt brn gy | | | | 0123-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk, mic | | | | 0123-2L |
| | | | tr | Cont : prp, dd, Mica-ad | | | | 0123-3L |
| 2814.00 | | | | Dunl | Amun | Lower Jurassic | | 0124 |
| | | | 95 | Sh/Clst: lt brn to lt brn gy | | | | 0124-1L |
| | | | 5 | Sh/Clst: m gy to drk gy to brn blk, mic | | | | 0124-2L |
| | | | tr | Cont : prp, dd | | | | 0124-3L |
| 2820.00 | | | | Dunl | Amun | Lower Jurassic | | 0125 |
| | | | 95 | Sh/Clst: lt brn to lt brn gy, calc | | | | 0125-1L |
| | | | 5 | Sh/Clst: m gy to drk gy to brn blk, mic | | | | 0125-2L |
| | | | tr | Cont : prp, dd | | | | 0125-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2826.00 | | | | Dunl | Amun | Lower Jurassic | | 0126 |
| | | | 90 | Sh/Clst: lt brn to lt brn gy, calc | | | | 0126-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk, mic | | | | 0126-2L |
| | | | tr | Cont : prp, dd | | | | 0126-3L |
| 2829.00 | | | | Dunl | Amun | Lower Jurassic | | 0127 |
| | | | 90 | Sh/Clst: lt brn to lt brn gy, calc | | | | 0127-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk, mic | | | | 0127-2L |
| | | | tr | Cont : prp, dd | | | | 0127-3L |
| 2838.00 | | | | Dunl | Amun | Lower Jurassic | | 0128 |
| | | | 60 | Sh/Clst: lt brn to lt brn gy, calc | | | | 0128-1L |
| | | | 40 | Sh/Clst: m gy to drk gy to brn blk, mic | | | | 0128-2L |
| | | | tr | S/Sst : w to lt gy, f, crs, l | | | | 0128-3L |
| | | | tr | Cont : Mica-ad, prp | | | | 0128-4L |
| 2844.00 | | | | Dunl | Amun | Lower Jurassic | | 0129 |
| | | | 50 | Sh/Clst: lt brn to lt brn gy, calc | | | | 0129-1L |
| | | | 50 | Sh/Clst: m gy to drk gy to brn blk | | | | 0129-2L |
| | | | tr | S/Sst : w to lt gy, f, crs, l | | | | 0129-3L |
| | | | tr | Cont : prp | | | | 0129-4L |
| 2850.00 | | | | Dunl | Amun | Lower Jurassic | | 0130 |
| | | | 70 | Sh/Clst: m gy to drk gy to brn blk | | | | 0130-1L |
| | | | 20 | Sh/Clst: lt brn gy to lt brn | | | | 0130-2L |
| | | | 10 | Ca : lt or to or gy | | | | 0130-3L |
| | | | tr | S/Sst : w to lt gy, f, l | | | | 0130-4L |
| | | | tr | Cont : prp | | | | 0130-5L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type / TOC% | % | Grp / Lithology | Frm | Age / description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2856.00 | | | | Dunl | Amun | Lower Jurassic | | 0131 |
| | | | 60 | Sh/Clst | | m gy to drk gy to brn blk, mic | | 0131-1L |
| | | | 30 | S/Sst | | w to lt gy, crs, l | | 0131-2L |
| | | | 5 | Sh/Clst | | lt brn gy to lt brn | | 0131-3L |
| | | | 5 | Ca | | lt or to or gy | | 0131-4L |
| | | | tr | Cont | | prp | | 0131-5L |
| 2862.00 | | | | Dunl | Amun | Lower Jurassic | | 0132 |
| | | | 60 | Sh/Clst | | m gy to drk gy to brn blk, mic | | 0132-1L |
| | | | 20 | S/Sst | | w to lt gy, crs, l | | 0132-2L |
| | | | 15 | Sh/Clst | | lt brn gy to lt brn | | 0132-3L |
| | | | 5 | Ca | | lt or to or gy | | 0132-4L |
| | | | tr | Cont | | prp | | 0132-5L |
| 2868.00 | | | | Dunl | Amun | Lower Jurassic | | 0133 |
| | | | 40 | S/Sst | | w to lt gy, crs, l | | 0133-1L |
| | | | 40 | Sh/Clst | | lt brn gy to lt brn | | 0133-2L |
| | | | 20 | Sh/Clst | | m gy to drk gy to brn blk | | 0133-3L |
| 2869.00 | | ccp | | Dunl | Amun | Lower Jurassic | | 0238 |
| | | 0.23 | 100 | S/Sst | | m gy to drk gy, hd, f, mic | | 0238-1L |
| 2871.00 | | ccp | | Dunl | Amun | Lower Jurassic | | 0239 |
| | | | 100 | S/Sst | | m gy to drk gy, hd, f, mic | | 0239-1L |
| 2873.00 | | ccp | | Dunl | Amun | Lower Jurassic | | 0240 |
| | | | 100 | S/Sst | | m gy to drk gy, hd, f, mic | | 0240-1L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int Cvd | Type TOC% | % | Grp Frm Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|
| 2874.00 | | | Dunl Amun Lower Jurassic | | 0134 |
| | | 60 | Sh/Clst: m gy to drk gy to brn blk | | 0134-1L |
| | | 30 | Sh/Clst: lt brn gy to lt brn | | 0134-2L |
| | | 10 | S/Sst : w to lt gy, f, l | | 0134-3L |
| | | tr | Cont : prp | | 0134-4L |
| 2875.00 | ccp | | Dunl Amun Lower Jurassic | | 0241 |
| | 0.27 | 100 | S/Sst : m gy to drk gy, hd, f, mic | | 0241-1L |
| 2877.00 | ccp | | Dunl Amun Lower Jurassic | | 0242 |
| | | 100 | Sltst : m gy to drk gy, hd, mic | | 0242-1L |
| 2879.00 | ccp | | Dunl Amun Lower Jurassic | | 0243 |
| | | 100 | Sltst : m gy to drk gy, hd, mic | | 0243-1L |
| 2880.00 | | | Dunl Amun Lower Jurassic | | 0135 |
| | | 90 | Sh/Clst: m gy to drk gy to brn blk, calc | | 0135-1L |
| | | 10 | S/Sst : w to lt gy, crs, l | | 0135-2L |
| | | tr | Cont : prp | | 0135-3L |
| 2881.00 | ccp | | Dunl Amun Lower Jurassic | | 0244 |
| | | 100 | Sltst : m gy to drk gy, hd, s, mic | | 0244-1L |
| 2883.25 | ccp | | Dunl Amun Lower Jurassic | | 0245 |
| | 0.28 | 100 | Sltst : m gy to drk gy, hd, s, mic | | 0245-1L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp | Frm | Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 2886.00 | | | | Dunl | Amun | Lower Jurassic | | 0136 |
| | | | 80 | | | Sh/Clst: m gy to drk gy to brn blk, calc | | 0136-1L |
| | | | 20 | | | Sh/Clst: lt brn gy to lt brn | | 0136-2L |
| 2892.00 | | | | Dunl | Amun | Lower Jurassic | | 0137 |
| | | | 65 | | | Sh/Clst: m gy to drk gy to brn blk, calc | | 0137-1L |
| | | | 25 | | | Sh/Clst: lt brn gy to lt brn | | 0137-2L |
| | | | 10 | | | S/Sst : w to lt gy, f, l | | 0137-3L |
| | | | tr | | | Cont : prp | | 0137-4L |
| 2898.00 | | | | | Stat | Lower Jurassic | | 0138 |
| | | | 40 | | | S/Sst : w to lt gy, crs, l | | 0138-1L |
| | | | 30 | | | S/Sst : lt brn, f | | 0138-2L |
| | | | 20 | | | Sh/Clst: m gy to drk gy to brn blk | | 0138-3L |
| | | | 10 | | | Other : w | | 0138-4L |
| 2904.00 | | | | | Stat | Lower Jurassic | | 0139 |
| | | | 90 | | | S/Sst : w to lt gy, crs, l | | 0139-1L |
| | | | 10 | | | Sh/Clst: m gy to brn blk | | 0139-2L |
| | | | tr | | | S/Sst : lt brn, f | | 0139-3L |
| | | | tr | | | Other : w | | 0139-4L |
| | | | tr | | | Cont : prp | | 0139-5L |
| 2910.00 | | | | | Stat | Lower Jurassic | | 0140 |
| | | | 90 | | | S/Sst : w to lt gy, crs, l | | 0140-1L |
| | | | 5 | | | Sh/Clst: m gy to brn blk | | 0140-2L |
| | | | 5 | | | Sh/Clst: lt brn, slt | | 0140-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Frm / Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2916.00 | | | | Stat Lower Jurassic | | 0141 |
| | | | 90 | S/Sst : w to lt gy to gy pi, crs, l | | 0141-1L |
| | | | 10 | Sh/Clst: m gy to brn blk | | 0141-2L |
| | | | tr | Cont : prp | | 0141-3L |
| 2925.00 | | | | Stat Lower Jurassic | | 0142 |
| | | 0.02 | 95 | S/Sst : gy pi to lt gy, crs, l | | 0142-1L |
| | | | 5 | Sh/Clst: m gy to drk gy, mic | | 0142-2L |
| | | | tr | Other : w | | 0142-3L |
| 2928.00 | | | | Stat Lower Jurassic | | 0143 |
| | | | 95 | S/Sst : gy pi to lt gy, crs, l | | 0143-1L |
| | | | 5 | Sh/Clst: m gy to drk gy, mic | | 0143-2L |
| | | | tr | Other : w | | 0143-3L |
| 2934.00 | | | | Stat Lower Jurassic | | 0144 |
| | | | 95 | S/Sst : gy pi to lt gy, crs, l | | 0144-1L |
| | | | 5 | Sh/Clst: m gy to drk gy to brn blk, mic | | 0144-2L |
| | | | tr | Other : w | | 0144-3L |
| | | | tr | Cont : prp | | 0144-4L |
| 2940.00 | | | | Stat Lower Jurassic | | 0145 |
| | | | 80 | S/Sst : gy pi to lt gy to w, crs, l | | 0145-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk | | 0145-2L |
| | | | 5 | Sh/Clst: lt brn, slt | | 0145-3L |
| | | | 5 | Coal : blk | | 0145-4L |
| | | | tr | Other : w | | 0145-5L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Frm / Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2946.00 | | | | Stat Lower Jurassic | | 0146 |
| | | | 85 | S/Sst : gy pi to lt gy to w, crs, l | | 0146-1L |
| | | | 15 | Sh/Clst: m gy to drk gy to brn blk | | 0146-2L |
| | | | tr | Other : w | | 0146-3L |
| 2952.00 | | | | Stat Lower Jurassic | | 0147 |
| | | | 90 | S/Sst : gy pi to lt gy to w, crs, l | | 0147-1L |
| | | | 10 | Sh/Clst: m gy to drk gy to brn blk | | 0147-2L |
| | | | tr | Cont : prp | | 0147-3L |
| 2958.00 | | | | Stat Lower Jurassic | | 0148 |
| | | | 85 | S/Sst : gy pi to lt gy to w, crs, l | | 0148-1L |
| | | | 15 | Sh/Clst: m gy to drk gy | | 0148-2L |
| | | | tr | Other : w | | 0148-3L |
| | | | tr | Cont : prp, dd | | 0148-4L |
| 2964.00 | | | | Stat Lower Jurassic | | 0149 |
| | | | 95 | S/Sst : gy pi to lt gy to w, crs, l | | 0149-1L |
| | | | 5 | Sh/Clst: m gy to drk gy | | 0149-2L |
| | | | tr | Other : w | | 0149-3L |
| 2970.00 | | | | Stat Lower Jurassic | | 0150 |
| | | | 80 | S/Sst : w to lt gy, crs, l | | 0150-1L |
| | | | 20 | Sh/Clst: m gy to drk gy | | 0150-2L |
| | | | tr | Other : w | | 0150-3L |
| 2976.00 | | | | Stat Lower Jurassic | | 0151 |
| | | | 80 | S/Sst : w to lt gy to gy pi, crs, l | | 0151-1L |
| | | | 15 | Sh/Clst: m gy to drk gy | | 0151-2L |
| | | | 5 | Sh/Clst: pl ol to drk red brn | | 0151-3L |
| | | | tr | Other : w | | 0151-4L |
| | | | tr | Cont : prp | | 0151-5L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Frm / Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 2982.00 | | | | Stat Lower Jurassic | | 0152 |
| | | | 90 | S/Sst : w to lt gy to gy pi, crs, l | | 0152-1L |
| | | | 10 | Sh/Clst: m gy to drk gy | | 0152-2L |
| | | | tr | Coal : blk | | 0152-3L |
| | | | tr | Other : w | | 0152-4L |
| | | | tr | Cont : prp, Mica-ad | | 0152-5L |
| 2988.00 | | | | Stat Lower Jurassic | | 0153 |
| | | 0.04 | 90 | S/Sst : w to lt gy to gy pi, crs, l | | 0153-1L |
| | | | 10 | Sh/Clst: m gy to drk gy | | 0153-2L |
| | | | tr | Other : w | | 0153-3L |
| 2994.00 | | | | Stat Lower Jurassic | | 0154 |
| | | | 70 | S/Sst : w to lt gy, crs, f, l | | 0154-1L |
| | | | 30 | Sh/Clst: m gy to drk gy to dsk brn to brn blk | | 0154-2L |
| | | | tr | Other : w | | 0154-3L |
| | | | tr | Cont : prp | | 0154-4L |
| 3000.00 | | | | Stat Lower Jurassic | | 0155 |
| | | | 85 | S/Sst : w to lt gy to gy pi, crs, l | | 0155-1L |
| | | | 15 | Sh/Clst: m gy to drk gy | | 0155-2L |
| | | | tr | Sh/Clst: drk brn | | 0155-3L |
| | | | tr | Other : w | | 0155-4L |
| | | | tr | Cont : prp, Mica-ad | | 0155-5L |
| 3006.00 | | | | Stat Lower Jurassic | | 0156 |
| | | | 85 | S/Sst : w to lt gy to gy pi to or brn, crs, l | | 0156-1L |
| | | | 10 | Sh/Clst: m gy to drk gy | | 0156-2L |
| | | | 5 | Sh/Clst: drk brn to drk red brn | | 0156-3L |
| | | | tr | Other : w | | 0156-4L |
| | | | tr | Cont : prp, Mica-ad | | 0156-5L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology | Frm | Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 3012.00 | | | | Hegr | Lund | Upper Triassic | | 0157 |
| | | | 95 | S/Sst | | : w to lt gy to gy pi to or brn, crs, l | | 0157-1L |
| | | | 5 | Sh/Clst | | : m gy to drk gy | | 0157-2L |
| | | | tr | Cont | | : prp, Mica-ad | | 0157-3L |
| 3018.00 | | | | Hegr | Lund | Upper Triassic | | 0159 |
| | | | 95 | S/Sst | | : w to lt gy to gy pi to or brn to gy brn, crs, l | | 0159-1L |
| | | | 5 | Sh/Clst | | : m gy to drk gy to pl brn, slt | | 0159-2L |
| | | | tr | Cont | | : prp, Mica-ad | | 0159-3L |
| 3024.00 | | | | Hegr | Lund | Upper Triassic | | 0158 |
| | | | 95 | S/Sst | | : w to lt gy to gy pi to or brn to gy brn, crs, l | | 0158-1L |
| | | | 5 | Sh/Clst | | : pl brn, slt | | 0158-2L |
| | | | tr | Sh/Clst | | : m gy to drk gy | | 0158-3L |
| | | | tr | Cont | | : prp | | 0158-4L |
| 3030.00 | | | | Hegr | Lund | Upper Triassic | | 0160 |
| | | | 95 | S/Sst | | : w to lt gy to gy pi to or brn to gy brn, crs, l | | 0160-1L |
| | | | 5 | Sh/Clst | | : m gy to drk gy | | 0160-2L |
| | | | tr | Other | | : w | | 0160-3L |
| 3036.00 | | | | Hegr | Lund | Upper Triassic | | 0161 |
| | | | 80 | S/Sst | | : w to lt gy to gy pi to or brn, crs, l | | 0161-1L |
| | | | 20 | Sh/Clst | | : pl brn to lt brn | | 0161-2L |
| | | | tr | Other | | : w | | 0161-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp Frm Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 3042.00 | | | | Hegr Lund Upper Triassic | | 0162 |
| | | | 75 | S/Sst : w to lt gy to gy pi to or brn to pl brn, crs, l | | 0162-1L |
| | | | 25 | Sh/Clst: pl brn to lt brn, calc | | 0162-2L |
| | | | tr | Other : w | | 0162-3L |
| | | | tr | Cont : prp, Mica-ad, dd | | 0162-4L |
| 3048.00 | | | | Hegr Lund Upper Triassic | | 0163 |
| | | | 90 | S/Sst : w to lt gy to or brn, crs, l | | 0163-1L |
| | | | 10 | Sh/Clst: pl brn to pl y brn to pl ol | | 0163-2L |
| | | | tr | Ca : lt or to or gy | | 0163-3L |
| 3054.00 | | | | Hegr Lund Upper Triassic | | 0164 |
| | | | 90 | S/Sst : w to lt gy to or brn, crs, l | | 0164-1L |
| | | | 10 | Sh/Clst: pl brn to pl y brn to pl ol | | 0164-2L |
| | | | tr | Ca : lt or to or gy | | 0164-3L |
| 3060.00 | | | | Hegr Lund Upper Triassic | | 0165 |
| | | | 85 | S/Sst : w to lt gy to or brn, crs, l | | 0165-1L |
| | | | 15 | Sh/Clst: pl brn to pl y brn to pl ol to lt pu | | 0165-2L |
| | | | tr | Ca : lt or to or gy | | 0165-3L |
| 3066.00 | | | | Hegr Lund Upper Triassic | | 0166 |
| | | | 85 | S/Sst : w to lt gy to or brn, crs, l | | 0166-1L |
| | | | 15 | Sh/Clst: pl brn to pl y brn to pl ol, mic | | 0166-2L |
| | | | tr | Ca : lt or to or gy | | 0166-3L |
| | | | tr | Cont : prp | | 0166-4L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp / Lithology description | Frm | Age | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 3072.00 | | | | Hegr | Lund | Upper Triassic | | 0167 |
| | | 0.09 | 90 | S/Sst : w to lt gy to or brn to gy pi, crs, l | | | | 0167-1L |
| | | | 10 | Sh/Clst: pl brn to pl y brn to pl ol, mic | | | | 0167-2L |
| | | | tr | Ca : w to or gy to lt or | | | | 0167-3L |
| | | | tr | Cont : prp | | | | 0167-4L |
| 3078.00 | | | | Hegr | Lund | Upper Triassic | | 0168 |
| | | | 90 | S/Sst : w to lt gy to or brn to gy pi, crs, l | | | | 0168-1L |
| | | | 10 | Sh/Clst: pl brn to pl y brn to pl ol, mic | | | | 0168-2L |
| | | | tr | Ca : w to or gy to lt or | | | | 0168-3L |
| | | | tr | Cont : prp | | | | 0168-4L |
| 3084.00 | | | | Hegr | Lund | Upper Triassic | | 0169 |
| | | | 80 | S/Sst : w to lt gy to or brn to gy pi, crs, l | | | | 0169-1L |
| | | | 15 | Sh/Clst: pl brn to pl y brn to m gy, mic | | | | 0169-2L |
| | | | 5 | Ca : w to or gy to lt or | | | | 0169-3L |
| 3090.00 | | | | Hegr | Lund | Upper Triassic | | 0170 |
| | | | 60 | Sh/Clst: pl brn to pl y brn to m gy, mic | | | | 0170-1L |
| | | | 35 | S/Sst : w to lt gy to gy pi to or brn, crs, l | | | | 0170-2L |
| | | | 5 | Ca : w to or gy to lt or | | | | 0170-3L |
| 3096.00 | | | | Hegr | Lund | Upper Triassic | | 0171 |
| | | | 85 | Sh/Clst: pl brn to pl y brn to dsk brn, mic | | | | 0171-1L |
| | | | 10 | S/Sst : lt gy to gy pi to or brn, crs, l | | | | 0171-2L |
| | | | 5 | Ca : or gy to lt or | | | | 0171-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Depth Cvd | Type TOC% | % | Grp Frm Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|
| 3102.00 | | | | Hegr Lund Upper Triassic | | 0172 |
| | | | 85 | Sh/Clst: pl brn to pl y brn to dsk brn, mic | | 0172-1L |
| | | | 15 | S/Sst : lt gy to gy pi to or brn, crs, l | | 0172-2L |
| | | | tr | Ca : or gy to lt or | | 0172-3L |
| | | | tr | Cont : prp | | 0172-4L |
| 3108.00 | | | | Hegr Lund Upper Triassic | | 0173 |
| | | | 95 | Sh/Clst: pl brn to m brn to brn to lt pu | | 0173-1L |
| | | | 5 | S/Sst : lt gy to gy pi to or brn, crs, l | | 0173-2L |
| | | | tr | Cont : prp | | 0173-3L |
| 3114.00 | | | | Hegr Lund Upper Triassic | | 0174 |
| | | | 95 | Sh/Clst: pl brn to m brn to brn to m gy | | 0174-1L |
| | | | 5 | S/Sst : lt gy to gy pi to or brn, crs, l | | 0174-2L |
| | | | tr | Cont : prp, dd | | 0174-3L |
| 3120.00 | | | | Hegr Lund Upper Triassic | | 0175 |
| | | | 95 | Sh/Clst: pl brn to m brn to brn | | 0175-1L |
| | | | 5 | S/Sst : lt gy to gy pi to or brn, crs, l | | 0175-2L |
| | | | tr | Cont : prp | | 0175-3L |
| 3126.00 | | | | Hegr Lund Upper Triassic | | 0176 |
| | | | 85 | Sh/Clst: pl brn to m brn to or gy to dsk y | | 0176-1L |
| | | | 10 | Sh/Clst: lt gy to m gy to drk gy, calc | | 0176-2L |
| | | | 5 | S/Sst : w to lt gy to gy pi, crs, l | | 0176-3L |

Table 1 : Lithology description for well NOCS 34/7-5

Depth unit of measure: m

| Depth Int | Cvd | Type TOC% | % | Grp | Frm | Age / Lithology description | Trb | Sample |
|---|---|---|---|---|---|---|---|---|
| 3129.00 | | | | Hegr | Lund | Upper Triassic | | 0177 |
| | | | 85 | Sh/Clst: | | pl brn to m brn to or gy to dsk y | | 0177-1L |
| | | | 10 | Sh/Clst: | | lt gy to m gy to drk gy, calc | | 0177-2L |
| | | | 5 | S/Sst : | | w to lt gy to gy pi, crs, l | | 0177-3L |
| 3135.00 | | | | Hegr | Lund | Upper Triassic | | 0247 |
| | | | 70 | Sh/Clst: | | m brn, wx | | 0247-1L |
| | | | 20 | S/Sst : | | w to lt gy to gy pi, crs, l | | 0247-2L |
| | | | 10 | Sh/Clst: | | or gy to y gy, carb | | 0247-3L |
| | | | tr | Ca : | | lt or | | 0247-4L |
| | | | tr | Coal : | | blk | | 0247-5L |
| 3141.00 | | | | Hegr | Lund | Upper Triassic | | 0248 |
| | | | 70 | Sh/Clst: | | m brn to brn gy, wx | | 0248-1L |
| | | | 20 | S/Sst : | | w to lt gy to gy pi, crs, l | | 0248-2L |
| | | | 5 | Sh/Clst: | | or gy to y gy, carb | | 0248-3L |
| | | | 5 | Ca : | | lt or | | 0248-4L |
| 3146.00 | | | | Hegr | Lund | Upper Triassic | | 0246 |
| | | | 90 | Sh/Clst: | | pl brn to m brn to or gy to dsk y | | 0246-1L |
| | | | 5 | Sh/Clst: | | lt gy to m gy, calc | | 0246-2L |
| | | | 5 | S/Sst : | | w to lt gy to gy pi, crs, l | | 0246-3L |

Table 2 : Rock-Eval table for well NOCS 34/7-5

Depth unit of measure: m

| Depth | Typ | Lithology | S1 | S2 | S3 | S2/S3 | TOC | HI | OI | PP | PI | Tmax | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1130.00 | cut | Sh/Clst: lt ol gy to lt brn gy | 0.90 | 2.86 | 1.89 | 1.51 | 1.63 | 175 | 116 | 3.8 | 0.24 | 402 | 0025-1L |
| 1520.00 | cut | Sh/Clst: lt gy to m gy to brn gy | – | 0.08 | 0.60 | 0.13 | 0.24 | 33 | 250 | 0.1 | – | 413 | 0038-1L |
| 1700.00 | cut | Sh/Clst: lt gy to m gy to drk y brn to pl y brn to m brn | 0.03 | 0.13 | 0.69 | 0.19 | 0.33 | 39 | 209 | 0.2 | 0.19 | 423 | 0044-1L |
| 1974.00 | cut | Sh/Clst: lt gy to m gy to lt brn gy | 0.03 | 0.08 | 0.25 | 0.32 | 0.40 | 20 | 63 | 0.1 | 0.27 | 422 | 0053-1L |
| 2496.00 | cut | Ca : lt or to or gy | 0.27 | 0.34 | 0.68 | 0.50 | 0.28 | 121 | 243 | 0.6 | 0.44 | 403 | 0073-1L |
| 2511.00 | ccp | Sltst : lt brn gy to pl y brn | 11.04 | 4.09 | 0.50 | 8.18 | 1.98 | 207 | 25 | 15.1 | 0.73 | 407 | 0178-1L |
| 2515.00 | ccp | Sh/Clst: lt brn gy to drk y brn | 0.80 | 1.11 | 0.84 | 1.32 | 0.96 | 116 | 88 | 1.9 | 0.42 | 437 | 0180-1L |
| 2519.00 | ccp | S/Sst : lt brn gy to lt gy | 4.75 | 1.45 | 0.33 | 4.39 | 0.70 | 207 | 47 | 6.2 | 0.77 | 403 | 0182-1L |
| 2523.00 | ccp | S/Sst : lt brn gy to lt or gy | 4.00 | 0.78 | 0.22 | 3.55 | 0.48 | 163 | 46 | 4.8 | 0.84 | 410 | 0184-1L |
| 2530.50 | ccp | S/Sst : gy pi to lt brn gy to lt gy | 1.37 | 0.91 | 0.27 | 3.37 | 0.60 | 152 | 45 | 2.3 | 0.60 | 434 | 0187-1L |
| 2536.00 | ccp | S/Sst : lt or gy to lt brn gy | 1.46 | 0.84 | 0.41 | 2.05 | 0.45 | 187 | 91 | 2.3 | 0.63 | 423 | 0190-1L |
| 2540.00 | ccp | S/Sst : lt or gy to lt brn gy to lt gy | 0.74 | 0.23 | 0.23 | 1.00 | 0.14 | 164 | 164 | 1.0 | 0.76 | 419 | 0192-1L |
| 2550.00 | ccp | S/Sst : lt or gy to lt brn gy to lt gy | 0.61 | 0.20 | 0.33 | 0.61 | 0.15 | 133 | 220 | 0.8 | 0.75 | 470 | 0197-1L |

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Table 2 : Rock-Eval table for well NOCS 34/7-5

Depth unit of measure: m

| Depth | Typ | Lithology | S1 | S2 | S3 | S2/S3 | TOC | HI | OI | PP | PI | Tmax | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2554.00 | ccp | Congl : lt or gy to lt brn gy to lt gy | 0.53 | 0.23 | 0.04 | 5.75 | 0.12 | 192 | 33 | 0.8 | 0.70 | 414 | 0199-1L |
| 2560.00 | ccp | S/Sst : lt brn gy to lt gy | 0.41 | 0.21 | 0.05 | 4.20 | 0.10 | 210 | 50 | 0.6 | 0.66 | 448 | 0202-1L |
| 2566.00 | ccp | S/Sst : lt gy to m gy to lt brn gy | 0.62 | 0.20 | 0.18 | 1.11 | 0.17 | 118 | 106 | 0.8 | 0.76 | 406 | 0205-1L |
| 2570.00 | ccp | S/Sst : lt gy to lt brn gy to gy pi | 0.69 | 0.19 | 0.17 | 1.12 | 0.14 | 136 | 121 | 0.9 | 0.78 | 411 | 0207-1L |
| 2576.00 | ccp | S/Sst : w to lt gy | 0.42 | 0.10 | - | - | 0.07 | 143 | - | 0.5 | 0.81 | 467 | 0210-1L |
| 2580.00 | ccp | S/Sst : y gy to lt gy to m gy | 0.63 | 0.24 | 0.03 | 8.00 | 0.11 | 218 | 27 | 0.9 | 0.72 | 410 | 0212-1L |
| 2586.00 | ccp | S/Sst : y gy to lt gy to drk gy | 0.71 | 0.19 | 0.06 | 3.17 | 0.12 | 158 | 50 | 0.9 | 0.79 | 403 | 0215-1L |
| 2590.00 | ccp | S/Sst : w to lt gy | 0.79 | 0.22 | 0.08 | 2.75 | 0.13 | 169 | 62 | 1.0 | 0.78 | 404 | 0217-1L |
| 2594.00 | ccp | S/Sst : m gy to drk gy | 0.03 | - | - | - | 0.04 | - | - | - | 1.00 | - | 0219-1L |
| 2600.00 | ccp | S/Sst : lt gy to lt brn gy to y gy | 0.72 | 0.27 | 0.12 | 2.25 | 0.15 | 180 | 80 | 1.0 | 0.73 | 404 | 0222-1L |
| 2606.00 | ccp | S/Sst : lt gy to lt brn gy | 1.05 | 1.34 | 0.16 | 8.38 | 0.51 | 263 | 31 | 2.4 | 0.44 | 441 | 0225-1L |
| 2611.00 | ccp | S/Sst : lt gy to y gy to lt brn gy | 0.63 | 0.29 | 0.11 | 2.64 | 0.14 | 207 | 79 | 0.9 | 0.68 | 396 | 0227-1L |

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Table 2 : Rock-Eval table for well NOCS 34/7-5 

Depth unit of measure: m

| Depth | Typ | Lithology | S1 | S2 | S3 | S2/S3 | TOC | HI | OI | PP | PI | Tmax | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2615.00 | ccp | S/Sst : lt gy to m gy to lt brn gy | 0.34 | 0.77 | 0.48 | 1.60 | 0.73 | 105 | 66 | 1.1 | 0.31 | 436 | 0229-1L |
| 2619.00 | ccp | S/Sst : lt gy to m gy to lt brn gy | 0.14 | 0.56 | 0.11 | 5.09 | 0.35 | 160 | 31 | 0.7 | 0.20 | 443 | 0231-1L |
| 2626.00 | ccp | Sh/Clst: m gy to drk gy | 0.57 | 0.88 | 0.09 | 9.78 | 1.11 | 79 | 8 | 1.5 | 0.39 | 435 | 0234-1L |
| 2630.00 | ccp | Sh/Clst: m gy to drk gy | 0.32 | 1.02 | 0.25 | 4.08 | 1.12 | 91 | 22 | 1.3 | 0.24 | 438 | 0236-1L |
| 2658.00 | cut | Sh/Clst: gy pi to lt brn | 0.09 | 0.19 | 0.48 | 0.40 | 0.57 | 33 | 84 | 0.3 | 0.32 | 434 | 0098-1L |
| 2676.00 | cut | Sh/Clst: gy pi to lt brn | 0.07 | 0.28 | 1.41 | 0.20 | 0.80 | 35 | 176 | 0.3 | 0.20 | 436 | 0101-1L |
| 2700.00 | cut | Sh/Clst: m gy to drk gy to brn blk | 0.12 | 0.85 | 0.23 | 3.70 | 0.97 | 88 | 24 | 1.0 | 0.12 | 439 | 0105-1L |
| 2754.00 | cut | Sh/Clst: drk gy to brn blk | 0.11 | 1.13 | 0.11 | 10.27 | 0.94 | 120 | 12 | 1.2 | 0.09 | 437 | 0114-1L |
| 2778.00 | cut | Sh/Clst: lt brn | 0.07 | 0.23 | 4.66 | 0.05 | 0.57 | 40 | 818 | 0.3 | 0.23 | 462 | 0118-1L |
| 2808.00 | cut | Sh/Clst: lt brn to lt brn gy | 0.03 | 0.12 | 1.25 | 0.10 | 0.41 | 29 | 305 | 0.1 | 0.20 | 435 | 0123-1L |
| 2869.00 | ccp | S/Sst : m gy to drk gy | 0.06 | 0.16 | 0.01 | 16.00 | 0.23 | 70 | 4 | 0.2 | 0.27 | 433 | 0238-1L |
| 2875.00 | ccp | S/Sst : m gy to drk gy | 0.07 | 0.19 | 0.29 | 0.66 | 0.27 | 70 | 107 | 0.3 | 0.27 | 434 | 0241-1L |
| 2883.25 | ccp | Sltst : m gy to drk gy | 0.11 | 0.19 | 0.02 | 9.50 | 0.28 | 68 | 7 | 0.3 | 0.37 | 432 | 0245-1L |
| 2925.00 | cut | S/Sst : gy pi to lt gy | – | – | – | – | 0.02 | – | – | – | – | – | 0142-1L |

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Table 2 : Rock-Eval table for well NOCS 34/7-5

Depth unit of measure: m

| Depth | Typ | Lithology | S1 | S2 | S3 | S2/S3 | TOC | HI | OI | PP | PI | Tmax | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2988.00 | cut | S/Sst : w to lt gy to gy pi | 0.01 | 0.01 | - | - | 0.04 | 25 | - | - | 0.50 | 318 | 0153-1L |
| 3072.00 | cut | S/Sst : w to lt gy to or brn to gy pi | - | - | - | - | 0.09 | - | - | - | - | - | 0167-1L |

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Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 34/7-5



Depth unit of measure: m

| Depth | Typ | Lithology | C1 | C2-C5 | C6-C14 | C15+ | S2 from Rock-Eval | Sample |
|---|---|---|---|---|---|---|---|---|
| 1130.00 | cut | Sh/Clst: lt ol gy to lt brn gy | 4.04 | 19.76 | 54.58 | 21.61 | 2.86 | 0025-1L |
| 2496.00 | cut | Ca : lt or to or gy | 7.00 | 25.27 | 48.28 | 19.44 | 0.34 | 0073-1L |
| 2511.00 | ccp | Sltst : lt brn gy to pl y brn | 6.94 | 27.57 | 45.39 | 20.10 | 4.09 | 0178-1L |
| 2519.00 | ccp | S/Sst : lt brn gy to lt gy | 5.01 | 25.53 | 48.73 | 20.74 | 1.45 | 0182-1L |
| 2523.00 | ccp | S/Sst : lt brn gy to lt or gy | 5.51 | 32.06 | 45.63 | 16.80 | 0.78 | 0184-1L |
| 2530.50 | ccp | S/Sst : gy pi to lt brn gy to lt gy | 10.97 | 34.70 | 37.74 | 16.59 | 0.91 | 0187-1L |
| 2536.00 | ccp | S/Sst : lt or gy to lt brn gy | 9.54 | 33.45 | 42.06 | 14.95 | 0.84 | 0190-1L |
| 2550.00 | ccp | S/Sst : lt or gy to lt brn gy to lt gy | 5.41 | 37.18 | 44.99 | 12.41 | 0.20 | 0197-1L |
| 2560.00 | ccp | S/Sst : lt brn gy to lt gy | 4.40 | 28.77 | 50.50 | 16.33 | 0.21 | 0202-1L |
| 2570.00 | ccp | S/Sst : lt gy to lt brn gy to gy pi | 5.53 | 34.87 | 45.18 | 14.42 | 0.19 | 0207-1L |
| 2580.00 | ccp | S/Sst : y gy to lt gy to m gy | 4.25 | 31.64 | 48.52 | 15.59 | 0.24 | 0212-1L |
| 2590.00 | ccp | S/Sst : w to lt gy | 5.47 | 30.56 | 48.20 | 15.77 | 0.22 | 0217-1L |
| 2606.00 | ccp | S/Sst : lt gy to lt brn gy | 5.36 | 23.14 | 44.97 | 26.53 | 1.34 | 0225-1L |

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Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 34/7-5

Depth unit of measure: m

| Depth | Typ | Lithology | C1 | C2-C5 | C6-C14 | C15+ | S2 from Rock-Eval | Sample |
|---|---|---|---|---|---|---|---|---|
| 2615.00 | ccp | S/Sst : lt gy to m gy to lt brn gy | 9.12 | 26.72 | 48.74 | 15.42 | 0.77 | 0229-1L |
| 2626.00 | ccp | Sh/Clst: m gy to drk gy | 3.21 | 25.04 | 59.24 | 12.51 | 0.88 | 0234-1L |
| 2676.00 | cut | Sh/Clst: gy pi to lt brn | 13.81 | 39.12 | 44.26 | 2.81 | 0.28 | 0101-1L |
| 2754.00 | cut | Sh/Clst: drk gy to brn blk | 5.83 | 14.59 | 60.08 | 19.50 | 1.13 | 0114-1L |
| 2883.25 | ccp | Sltst : m gy to drk gy | 5.45 | 33.30 | 50.12 | 11.13 | 0.19 | 0245-1L |

Table 4 a: Weight of EOM and Chromatographic Fraction for well NOCS 34/7-5

Depth unit of measure: m

| Depth | Typ | Lithology | Rock Extracted (g) | EOM (mg) | Sat (mg) | Aro (mg) | Asph (mg) | NSO (mg) | HC (mg) | Non-HC (mg) | TOC(e) (%) | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | ccp | Sltst : lt brn gy to pl y brn | 9.7 | 76.2 | 46.1 | 14.9 | 2.9 | 12.3 | 61.0 | 15.2 | 1.43 | 0178-1L |
| 2523.00 | com | Composite sample - see table 4 e | 9.3 | 36.7 | 20.4 | 7.7 | 0.7 | 7.9 | 28.1 | 8.6 | 0.58 | 0249-0B |
| 2550.00 | com | Composite sample - see table 4 e | 10.4 | 6.2 | 3.8 | 0.5 | 0.5 | 1.4 | 4.3 | 1.9 | 0.28 | 0250-0B |
| 2576.00 | com | Composite sample - see table 4 e | 9.8 | 4.0 | 2.6 | 0.3 | 0.1 | 1.0 | 2.9 | 1.1 | 0.19 | 0251-0B |
| 2590.00 | com | Composite sample - see table 4 e | 10.1 | 8.3 | 4.2 | 1.4 | 0.5 | 2.2 | 5.6 | 2.7 | 0.25 | 0252-0B |
| 2611.00 | com | Composite sample - see table 4 e | 10.3 | 7.9 | 4.2 | 1.2 | 0.2 | 2.3 | 5.4 | 2.5 | 0.30 | 0253-0B |
| 2630.00 | com | Composite sample - see table 4 e | 9.8 | 3.3 | 1.7 | 0.9 | 0.4 | 0.3 | 2.6 | 0.7 | 1.49 | 0254-0B |

Table 4 b: Concentration of EOM and Chromatographic Fraction (wt ppm rock) for well NOCS 34/7-5

Depth unit of measure: m

| Depth | Typ | Lithology | EOM | Sat | Aro | Asph | NSO | HC | Non-HC | Sample |
|---|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | ccp | Sltst : lt brn gy to pl y brn | 7871 | 4762 | 1539 | 299 | 1270 | 6301 | 1570 | 0178-1L |
| 2523.00 | com | Composite sample - see table 4 e | 3933 | 2186 | 825 | 75 | 846 | 3011 | 921 | 0249-0B |
| 2550.00 | com | Composite sample - see table 4 e | 593 | 363 | 47 | 47 | 134 | 411 | 181 | 0250-0B |
| 2576.00 | com | Composite sample - see table 4 e | 408 | 265 | 30 | 10 | 102 | 295 | 112 | 0251-0B |
| 2590.00 | com | Composite sample - see table 4 e | 825 | 417 | 139 | 49 | 218 | 557 | 268 | 0252-0B |
| 2611.00 | com | Composite sample - see table 4 e | 768 | 408 | 116 | 19 | 223 | 525 | 243 | 0253-0B |
| 2630.00 | com | Composite sample - see table 4 e | 335 | 172 | 91 | 40 | 30 | 264 | 71 | 0254-0B |

Table 4 c: Concentration of EOM and Chromatographic Fraction (mg/g TOC(e)) for well NOCS 34/7-5

Depth unit of measure: m

| Depth | Typ | Lithology | EOM | Sat | Aro | Asph | NSO | HC | Non-HC | Sample |
|---|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | ccp | Sltst : lt brn gy to pl y brn | 550.48 | 333.03 | 107.64 | 20.95 | 88.86 | 440.68 | 109.81 | 0178-1L |
| 2523.00 | com | Composite sample - see table 4 e | 678.20 | 376.98 | 142.29 | 12.94 | 145.99 | 519.27 | 158.92 | 0249-0B |
| 2550.00 | com | Composite sample - see table 4 e | 212.10 | 129.99 | 17.10 | 17.10 | 47.89 | 147.10 | 65.00 | 0250-0B |
| 2576.00 | com | Composite sample - see table 4 e | 214.82 | 139.63 | 16.11 | 5.37 | 53.71 | 155.75 | 59.08 | 0251-0B |
| 2590.00 | com | Composite sample - see table 4 e | 330.35 | 167.16 | 55.72 | 19.90 | 87.56 | 222.89 | 107.46 | 0252-0B |
| 2611.00 | com | Composite sample - see table 4 e | 256.16 | 136.19 | 38.91 | 6.49 | 74.58 | 175.10 | 81.06 | 0253-0B |
| 2630.00 | com | Composite sample - see table 4 e | 22.51 | 11.59 | 6.14 | 2.73 | 2.05 | 17.73 | 4.77 | 0254-0B |

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Table 4 d: Composition of material extracted from the rock (%) for well NOCS 34/7-5



Depth unit of measure: m

| Depth | Typ | Lithology | Sat / EOM | Aro / EOM | Asph / EOM | NSO / EOM | HC / EOM | Non-HC / EOM | Sat / Aro | HC / Non-HC | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | ccp | Sltst : lt brn gy°to pl y brn | 60.50 | 19.55 | 3.81 | 16.14 | 80.05 | 19.95 | 309.40 | 401.32 | 0178-1L |
| 2523.00 | com | Composite sample - see table 4 e | 55.59 | 20.98 | 1.91 | 21.53 | 76.57 | 23.43 | 264.94 | 326.74 | 0249-0B |
| 2550.00 | com | Composite sample - see table 4 e | 61.29 | 8.06 | 8.06 | 22.58 | 69.35 | 30.65 | 760.00 | 226.32 | 0250-0B |
| 2576.00 | com | Composite sample - see table 4 e | 65.00 | 7.50 | 2.50 | 25.00 | 72.50 | 27.50 | 866.67 | 263.64 | 0251-0B |
| 2590.00 | com | Composite sample - see table 4 e | 50.60 | 16.87 | 6.02 | 26.51 | 67.47 | 32.53 | 300.00 | 207.41 | 0252-0B |
| 2611.00 | com | Composite sample - see table 4 e | 53.16 | 15.19 | 2.53 | 29.11 | 68.35 | 31.65 | 350.00 | 216.00 | 0253-0B |
| 2630.00 | com | Composite sample - see table 4 e | 51.52 | 27.27 | 12.12 | 9.09 | 78.79 | 21.21 | 188.89 | 371.43 | 0254-0B |

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Table 4 e: List of composite samples appearing in the extraction tables for well NOCS 34/7-5

Depth unit of measure: m

NOTE: Depths shown in tables 4 a to d correspond to the composite samples' lower depth.

| Upper depth | Lower depth | Typ | Sample | Depth | Typ | Lithology | Sample |
|---|---|---|---|---|---|---|---|
| 2519.00 | 2523.00 | com | 0249-0B is composed of: | 2519.00 | ccp | S/Sst : lt brn gy to lt gy, crs | 0182-1L |
| | | | | 2523.00 | ccp | S/Sst : lt brn gy to lt or gy, crs | 0184-1L |
| 2536.00 | 2550.00 | com | 0250-0B is composed of: | 2536.00 | ccp | S/Sst : lt or gy to lt brn gy, crs, pyr | 0190-1L |
| | | | | 2540.00 | ccp | S/Sst : lt or gy to lt brn gy to lt gy, crs, l | 0192-1L |
| | | | | 2550.00 | ccp | S/Sst : lt or gy to lt brn gy to lt gy, crs, l, mic | 0197-1L |
| 2566.00 | 2576.00 | com | 0251-0B is composed of: | 2566.00 | ccp | S/Sst : lt gy to m gy to lt brn gy, crs, l, mic | 0205-1L |
| | | | | 2570.00 | ccp | S/Sst : lt gy to lt brn gy to gy pi, crs, l, mic | 0207-1L |
| | | | | 2576.00 | ccp | S/Sst : w to lt gy, crs, l, mic | 0210-1L |
| 2580.00 | 2590.00 | com | 0252-0B is composed of: | 2580.00 | ccp | S/Sst : y gy to lt gy to m gy, crs, mic | 0212-1L |
| | | | | 2586.00 | ccp | S/Sst : y gy to lt gy to drk gy, f, mic | 0215-1L |
| | | | | 2590.00 | ccp | S/Sst : w to lt gy, crs, mic | 0217-1L |

Table 4 e: List of composite samples appearing in the extraction tables for well NOCS 34/7-5

Depth unit of measure: m

NOTE: Depths shown in tables 4 a to d correspond to the composite samples' lower depth.

| Upper depth | Lower depth | Typ | Sample | Depth | Typ | Lithology | Sample |
|---|---|---|---|---|---|---|---|
| 2600.00 | 2611.00 | com | 0253-0B is composed of: | 2600.00 | ccp | S/Sst : lt gy to lt brn gy to y gy, f, hd, mic, lam | 0222-1L |
| | | | | 2606.00 | ccp | S/Sst : lt gy to lt brn gy, f, mic | 0225-1L |
| | | | | 2611.00 | ccp | S/Sst : lt gy to y gy to lt brn gy, f, mic, lam | 0227-1L |
| 2626.00 | 2630.00 | com | 0254-0B is composed of: | 2626.00 | ccp | Sh/Clst: m gy to drk gy, slt, mic, lam | 0234-1L |
| | | | | 2630.00 | ccp | Sh/Clst: m gy to drk gy, lam | 0236-1L |

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Table 5 : Saturated Hydrocarbon Ratios for well NOCS 34/7-5



Depth unit of measure: m

| Depth | Typ | Lithology | Pristane / nC17 | Pristane / Phytane | Pristane + Phytane / nC17 + nC18 | Phytane / nC18 | CPI | Sample |
|---|---|---|---|---|---|---|---|---|
| 2511.00 | ccp | Sltst : lt brn gy to pl y brn | 0.66 | 0.94 | 0.59 | 0.54 | 1.13 | 0178-1L |
| 2523.00 | com | bulk | 0.68 | 0.90 | 0.59 | 0.53 | 1.07 | 0249-0B |
| 2550.00 | com | bulk | 0.76 | 1.26 | 0.66 | 0.56 | 1.05 | 0250-0B |
| 2576.00 | com | bulk | 0.85 | 1.15 | 0.71 | 0.59 | 1.06 | 0251-0B |
| 2590.00 | com | bulk | 0.83 | 1.18 | 0.68 | 0.56 | 1.07 | 0252-0B |
| 2611.00 | com | bulk | 0.87 | 1.37 | 0.74 | 0.61 | 1.04 | 0253-0B |
| 2630.00 | com | bulk | 0.61 | 2.30 | 0.54 | 0.43 | 1.28 | 0254-0B |

Table 6 : Aromatic Hydrocarbon Ratios for well NOCS 34/7-5



Depth unit of measure: m

| Depth | Typ | Lithology | MNR | DMNR | BPhR | 2/1MP | MPI1 | MPI2 | Rc | DBT/P | 4/1MDBT | (3+2) /1MDBT | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | ccp | Sltst : lt brn gy to pl y brn | 1.23 | 1.97 | 0.26 | 0.80 | 0.66 | 0.73 | 0.80 | 0.21 | 7.42 | 1.24 | 0178-1L |
| 2523.00 | com | bulk | 0.95 | 1.31 | - | 0.80 | 0.68 | 0.76 | 0.81 | 0.17 | 4.74 | 0.99 | 0249-0B |
| 2550.00 | com | bulk | - | 0.94 | - | 0.81 | 0.59 | 0.67 | 0.75 | 0.27 | 8.45 | 1.37 | 0250-0B |
| 2576.00 | com | bulk | - | - | - | 0.82 | 0.65 | 0.75 | 0.79 | 0.15 | 3.97 | 0.98 | 0251-0B |
| 2590.00 | com | bulk | - | - | - | 0.83 | 0.63 | 0.75 | 0.78 | 0.17 | 4.63 | 1.05 | 0252-0B |
| 2611.00 | com | bulk | 0.95 | 1.43 | 0.10 | 0.83 | 0.59 | 0.68 | 0.75 | 0.19 | 5.90 | 1.13 | 0253-0B |
| 2630.00 | com | bulk | 1.10 | 2.14 | 0.25 | 1.20 | 0.52 | 0.57 | 0.71 | 0.16 | - | - | 0254-0B |

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Table 7. : Thermal Maturity Data for well NOCS 34/7-5

Depth unit of measure: m

| Depth | Typ | Lithology | Vitrinite Reflectance (%) | Number of Readings | Standard Deviation | Spore Fluorescence Colour | SCI | Tmax (°C) | Sample |
|---|---|---|---|---|---|---|---|---|---|
| 480.00 | cut | S/Sst : lt gy to lt brn gy | NDP | - | - | - | - | - | 0004-2L |
| 660.00 | cut | S/Sst : lt gy to lt brn gy | 0.27 | 3 | 0.01 | - | - | - | 0010-1L |
| 830.00 | cut | S/Sst : lt gy to lt brn gy | NDP | - | - | - | - | - | 0015-1L |
| 1100.00 | cut | Sh/Clst: lt ol gy to lt brn gy | 0.31 | 3 | 0.01 | - | - | - | 0024-1L |
| 1130.00 | cut | Sh/Clst: lt ol gy to lt brn gy | - | - | - | - | 4.0(?) | 402 | 0025-1L |
| 1190.00 | cut | Sh/Clst: lt ol gy to lt brn gy | 0.30 | 6 | 0.02 | - | - | - | 0027-1L |
| 1380.00 | cut | Sh/Clst: lt gy to lt brn gy to m gy | NDP | - | - | - | - | - | 0033-1L |
| 1550.00 | cut | Sh/Clst: lt gy to m gy to brn gy | NDP | - | - | - | - | - | 0039-1L |
| 1730.00 | cut | Sh/Clst: lt gy to m gy to drk y brn to pl y brn to m brn | 0.33 | 3 | 0.02 | - | - | - | 0045-1L |
| 1914.00 | cut | Sh/Clst: lt brn gy to pl y brn | NDP | - | - | - | - | - | 0051-2L |
| 2094.00 | cut | Sh/Clst: lt brn gy to m ol gy | 0.55 | 3 | 0.05 | - | - | - | 0057-1L |
| 2511.00 | ccp | Sltst : lt brn gy to pl y brn | - | - | - | - | 6.0 | 407 | 0178-1L |
| 2630.00 | ccp | Sh/Clst: m gy to drk gy | - | - | - | - | 6.0-6.5 | 438 | 0236-1L |

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Depth unit of measure: m

| Depth | Typ | Lithology | Vitrinite Reflectance (%) | Number of Readings | Standard Deviation | Spore Fluorescence Colour | SCI | Tmax (°C) | Sample |
|---|---|---|---|---|---|---|---|---|---|
| 2631.60 | ccp | Sh/Clst: m gy to drk gy | 0.45 | 2 | 0.00 | - | - | - | 0237-1L |
| 2754.00 | cut | Sh/Clst: drk gy to brn blk | - | - | - | - | 6.0-6.5 | 437 | 0114-1L |
| 2820.00 | cut | Sh/Clst: lt brn to lt brn gy | NDP | - | - | - | - | - | 0125-1L |
| 2994.00 | cut | Sh/Clst: m gy to drk gy to dsk brn to brn blk | 0.33 | 4 | 0.02 | - | - | - | 0154-2L |
| 3129.00 | cut | Sh/Clst: pl brn to m brn to or gy to dsk y | 0.55 | 3 | 0.07 | - | - | - | 0177-1L |

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Table 8 : Visual Kerogen Composition Data for well NOCS 34/7-5



Depth unit of measure: m

| Depth | Typ | Lithology | LIPT % | AmorL | LipDet | Sp/Pol | Cuticl | Resin | Algae | Dinofl | Acrit | BitL | INERT % | Fusin | SemFus | IntDet | Micrin | Sclero | BitI | VITR % | Telin | Colin | VitDet | AmorV | BitV | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1130.00 | cut | Sh/Clst: lt ol gy to lt brn gy | 100 | * | ** | * | | | * | * | | | TR | | | * | | | | TR | | | * | | | 0025-1L |
| 2511.00 | ccp | Sltst : lt brn gy to pl y brn | NDP | ** | | * | | | * | | | * | NDP | | | * | | | | NDP | | | * | | | 0178-1L |
| 2630.00 | ccp | Sh/Clst: m gy to drk gy | 15 | | | ** | * | | * | | | | 15 | * | ** | | | | | 70 | ** | * | | | | 0236-1L |
| 2754.00 | cut | Sh/Clst: drk gy to brn blk | 20 | * | ** | ** | | | * | * | | | 15 | | * | * | | | | 65 | * | * | * | | | 0114-1L |

Table 9a : Tabulation of carbon isotope data for EOM/EOM - fractions or Oils for well NOCS 34/7-5

Depth unit of measure: m

| Depth | Typ | Lithology | EOM/Oil | Saturated | Aromatic | NSO | Asphaltenes | Kerogen | Sample |
|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | ccp | | -29.38 | -29.69 | -28.80 | -28.99 | -29.07 | - | 0178-1L |
| 2550.00 | com | Composite sample | -29.18 | -29.61 | -28.66 | -28.89 | -28.53 | - | 0250-0B |
| 2576.00 | com | Composite sample | -29.21 | -29.46 | -28.71 | -28.91 | -28.48 | - | 0251-0B |
| 2611.00 | com | Composite sample | -29.15 | -29.48 | -28.93 | -28.93 | -28.66 | - | 0253-0B |
| 2630.00 | com | Composite sample | - | -29.26 | -28.23 | -27.49 | -26.72 | - | 0254-0B |

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Table 9b : Tabulation of cv values from carbon isotope data for well NOCS 34/7-5

Depth unit of measure: m

| Depth | Typ | Lithology | Saturated | Aromatic | cv value | Interpretation | Sample |
|---|---|---|---|---|---|---|---|
| 2511.00 | ccp | | -29.69 | -28.80 | -0.47 | Marine | 0178-1L |
| 2550.00 | com | Composite sample | -29.61 | -28.66 | -0.36 | Marine | 0250-0B |
| 2576.00 | com | Composite sample | -29.46 | -28.71 | -0.85 | Marine | 0251-0B |
| 2611.00 | com | Composite sample | -29.48 | -28.93 | -1.29 | Marine | 0253-0B |
| 2630.00 | com | Composite sample | -29.26 | -28.23 | -0.29 | Marine | 0254-0B |

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Table 10A: Variation in Triterpane Distribution (peak height) for Well NOCS 34/7-5

Depth unit of measure: m

| Depth | Lithology | B/A | B/B+A | B / B+E+F | C/E | C/C+E | X/E | Z/E | Z/C | Z/Z+E | Q/E | E/E+F | C+D / C+D+E+F | D+F/C+E | J1 / J1+J2% | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | Sltst | 0.69 | 0.41 | 0.10 | 0.44 | 0.31 | 0.08 | 0.23 | 0.52 | 0.19 | 0.09 | 0.92 | 0.32 | 0.11 | 58.87 | 0178-1 |
| 2550.00 | S/Sst | 0.71 | 0.41 | 0.11 | 0.45 | 0.31 | 0.08 | 0.23 | 0.51 | 0.18 | 0.08 | 0.92 | 0.32 | 0.11 | 60.15 | 0250-0 |
| 2576.00 | bulk | 0.79 | 0.44 | 0.11 | 0.44 | 0.31 | 0.08 | 0.22 | 0.49 | 0.18 | 0.08 | 0.92 | 0.32 | 0.11 | 60.94 | 0251-0 |
| 2611.00 | bulk | 0.88 | 0.47 | 0.12 | 0.44 | 0.31 | 0.06 | 0.20 | 0.45 | 0.17 | 0.08 | 0.92 | 0.32 | 0.11 | 59.09 | 0253-0 |
| 2630.00 | bulk | 3.52 | 0.78 | 0.22 | 0.52 | 0.34 | 0.05 | 0.11 | 0.22 | 0.10 | 0.10 | 0.78 | 0.36 | 0.31 | 44.02 | 0254-0 |

Table 10B: Variation in Sterane Distribution (peak height) for Well NOCS 34/7-5 

Depth unit of measure: m

| Depth | Lithology | Ratio1 | Ratio2 | Ratio3 | Ratio4 | Ratio5 | Ratio6 | Ratio7 | Ratio8 | Ratio9 | Ratio10 | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | Sltst | 0.69 | 42.72 | 74.01 | 0.98 | 0.77 | 0.33 | 0.23 | 0.59 | 0.75 | 2.49 | 0178-1 |
| 2550.00 | S/Sst | 0.67 | 41.47 | 73.47 | 0.93 | 0.77 | 0.32 | 0.23 | 0.58 | 0.71 | 2.37 | 0250-0 |
| 2576.00 | bulk | 0.68 | 43.13 | 73.19 | 0.92 | 0.76 | 0.29 | 0.20 | 0.58 | 0.76 | 2.40 | 0251-0 |
| 2611.00 | bulk | 0.65 | 42.83 | 74.97 | 0.83 | 0.78 | 0.34 | 0.23 | 0.60 | 0.75 | 2.62 | 0253-0 |
| 2630.00 | bulk | 0.64 | 33.59 | 68.93 | 1.06 | 0.77 | 0.52 | 0.41 | 0.53 | 0.51 | 1.67 | 0254-0 |

Ratio1: a / a + j
Ratio2: q / q + t * 100%
Ratio3: 2(r + s)/(q + t + 2(r + s)) * 100%
Ratio4: a + b + c + d / h + k + l + n
Ratio5: r + s / r + s + q

Ratio6: u + v / u + v + q + r + s + t
Ratio7: u + v / u + v + i + m + n + q + r + s + t
Ratio8: r + s / q + r + s + t
Ratio9: q / t
Ratio10: r + s / t

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Table 10C: Variation in Triaromatic Sterane Distribution for Well NOCS 34/7-5



Depth unit of measure: m

| Depth | Lithology | Ratio1 | Ratio2 | Ratio3 | Ratio4 | Ratio5 | Sample |
|---|---|---|---|---|---|---|---|
| 2511.00 | Sltst | 0.50 | 0.51 | 0.26 | 0.24 | 0.32 | 0178-1 |
| 2550.00 | S/Sst | 0.56 | 0.56 | 0.30 | 0.29 | 0.37 | 0250-0 |
| 2576.00 | bulk | 0.52 | 0.52 | 0.27 | 0.25 | 0.34 | 0251-0 |
| 2611.00 | bulk | 0.48 | 0.48 | 0.24 | 0.22 | 0.31 | 0253-0 |
| 2630.00 | bulk | 0.60 | 0.55 | 0.31 | 0.31 | 0.41 | 0254-0 |

Ratio1: a1 / a1 + g1
Ratio2: b1 / b1 + g1
Ratio3: a1 + b1 / a1 + b1 + c1 + d1 + e1 + f1 + g1
Ratio4: a1 / a1 + e1 + f1 + g1
Ratio5: a1 / a1 + d1

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Table 10D: Variation in Monoaromatic Sterane Distribution for Well NOCS 34/7-5



Depth unit of measure: m

| Depth | Lithology | Ratio1 | Ratio2 | Ratio3 | Ratio4 | Sample |
|---|---|---|---|---|---|---|
| 2511.00 | Sltst | 0.36 | 0.27 | 0.22 | 0.20 | 0178-1 |
| 2550.00 | S/Sst | 0.35 | 0.24 | 0.21 | 0.18 | 0250-0 |
| 2576.00 | bulk | 0.34 | 0.22 | 0.21 | 0.18 | 0251-0 |
| 2611.00 | bulk | 0.35 | 0.23 | 0.22 | 0.19 | 0253-0 |
| 2630.00 | bulk | 0.39 | 0.30 | 0.25 | 0.19 | 0254-0 |

Ratio1: A1 / A1 + E1
Ratio2: B1 / B1 + E1
Ratio3: A1 / A1 + E1 + G1
Ratio4: A1+B1 / A1+B1+C1+D1+E1+F1+G1+H1+I1

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Table 10E: Aromatisation of Steranes for Well NOCS 34/7-5



Depth unit of measure: m

| Depth | Lithology | Ratio1 | Ratio2 | Sample |
|---|---|---|---|---|
| 2511.00 | Sltst | 0.43 | 0.90 | 0178-1 |
| 2550.00 | S/Sst | 0.37 | 0.92 | 0250-0 |
| 2576.00 | bulk | 0.41 | 0.91 | 0251-0 |
| 2611.00 | bulk | 0.42 | 0.90 | 0253-0 |
| 2630.00 | bulk | 0.73 | 0.20 | 0254-0 |

Ratio1: $$\frac{C1+D1+E1+F1+G1+H1+I1}{C1+D1+E1+F1+G1+H1+I1 + c1+d1+e1+f1+g1}$$

Ratio2: g1 / g1 + I1

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Table 10F: Raw GCMS triterpane data (peak height) for Well NOCS 34/7-5

Depth unit of measure: m

| Depth | Lithology | p | q | r | s | t | a | b | z | c | x | d | e | f | g | h | i | j1 | j2 | k1 | k2 | l1 | l2 | m1 | m2 | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | Sltst | 70.56 | 52.52 | 31.90 | 45.31 | 14.23 | 109.74 | 75.54 | 138.97 | 265.88 | 48.84 | 43.15 | 603.66 | 53.12 | 245.36 | 163.23 | 31.41 | 165.32 | 115.48 | 139.96 | 86.31 | 72.84 | 51.55 | 54.99 | 36.42 | 0178-1 |
| 2550.00 | S/Sst | 167.49 | 105.94 | 67.32 | 106.80 | 32.95 | 255.47 | 181.08 | 295.03 | 581.99 | 101.63 | 89.64 | 1304.58 | 113.29 | 524.98 | 367.22 | 71.98 | 357.10 | 236.55 | 286.54 | 180.83 | 140.14 | 99.57 | 96.00 | 70.92 | 0250-0 |
| 2576.00 | bulk | 111.47 | 74.40 | 49.71 | 71.39 | 23.87 | 169.20 | 133.74 | 212.69 | 432.35 | 78.56 | 67.90 | 974.86 | 80.20 | 408.07 | 282.70 | 53.18 | 279.84 | 179.39 | 221.33 | 140.92 | 114.58 | 76.22 | 80.37 | 55.34 | 0251-0 |
| 2611.00 | bulk | 170.89 | 107.12 | 63.22 | 101.14 | 28.14 | 215.11 | 190.35 | 268.39 | 596.61 | 81.15 | 105.17 | 1346.11 | 114.66 | 552.57 | 384.51 | 73.68 | 378.78 | 262.22 | 287.08 | 178.92 | 148.32 | 98.73 | 106.70 | 66.44 | 0253-0 |
| 2630.00 | bulk | 96.68 | 39.64 | 17.23 | 41.69 | 8.63 | 41.89 | 147.50 | 46.27 | 208.65 | 20.36 | 80.78 | 403.09 | 111.17 | 191.83 | 180.26 | 82.78 | 62.48 | 79.44 | 33.85 | 34.69 | 16.96 | 14.63 | 11.13 | 7.37 | 0254-0 |

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Table 10G: Raw GCMS sterane data (peak height) for Well NOCS 34/7-5 

Depth unit of measure: m

| Depth | Lithology | u | v | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | Sltst | 153.58 | 79.58 | 212.44 | 137.87 | 55.17 | 56.50 | 100.40 | 57.25 | 98.41 | 211.36 | 123.88 | 93.55 | 114.95 | 40.84 | 57.06 | 105.16 | 119.48 | 62.48 | 84.72 | 157.82 | 124.50 | 113.58 | 0178-1 |
| 2550.00 | S/Sst | 330.13 | 160.93 | 426.69 | 286.36 | 113.58 | 106.57 | 214.07 | 127.61 | 225.97 | 462.71 | 275.64 | 207.40 | 253.84 | 76.73 | 120.07 | 212.99 | 243.39 | 137.86 | 181.42 | 334.41 | 271.14 | 256.01 | 0250-0 |
| 2576.00 | bulk | 213.45 | 107.71 | 322.57 | 207.12 | 90.61 | 77.85 | 154.32 | 93.85 | 167.16 | 351.02 | 205.09 | 154.54 | 193.73 | 57.81 | 93.23 | 156.37 | 170.94 | 102.44 | 145.90 | 255.35 | 206.32 | 192.36 | 0251-0 |
| 2611.00 | bulk | 338.52 | 177.08 | 405.46 | 265.57 | 94.24 | 101.35 | 189.15 | 115.21 | 224.25 | 467.50 | 294.10 | 219.43 | 250.59 | 84.32 | 135.97 | 238.19 | 260.38 | 135.56 | 174.06 | 338.10 | 270.60 | 232.31 | 0253-0 |
| 2630.00 | bulk | 143.40 | 54.24 | 92.35 | 64.41 | 26.14 | 24.57 | 39.29 | 24.18 | 41.11 | 88.42 | 49.19 | 52.74 | 53.36 | 18.73 | 18.02 | 36.01 | 37.49 | 31.58 | 29.04 | 55.90 | 40.00 | 57.41 | 0254-0 |

Table 10H: Raw GCMS trioaromatic sterane data (peak height) for Well NOCS 34/7-5



Depth unit of measure: m

| Depth | Lithology | a1 | b1 | c1 | d1 | e1 | f1 | g1 | Sample |
|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | Sltst | 535.49 | 562.22 | 279.40 | 1118.61 | 594.92 | 561.62 | 540.37 | 0178-1 |
| 2550.00 | S/Sst | 620.84 | 625.84 | 252.59 | 1040.57 | 515.01 | 538.43 | 494.66 | 0250-0 |
| 2576.00 | bulk | 464.41 | 470.91 | 216.32 | 888.74 | 486.01 | 445.52 | 430.21 | 0251-0 |
| 2611.00 | bulk | 411.59 | 414.65 | 213.06 | 912.13 | 490.17 | 482.19 | 451.13 | 0253-0 |
| 2630.00 | bulk | 108.40 | 87.58 | 52.14 | 156.40 | 86.62 | 78.82 | 71.56 | 0254-0 |

Table 10I: Raw GCMS monoaromatic sterane data (peak height) for Well NOCS 34/7-5



Depth unit of measure: m

| Depth | Lithology | a1 | b1 | c1 | d1 | e1 | f1 | g1 | h1 | i1 | Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2511.00 | Sltst | 350.82 | 230.35 | 348.34 | 289.27 | 616.43 | 96.96 | 636.68 | 263.87 | 60.38 | 0178-1 |
| 2550.00 | S/Sst | 237.49 | 140.11 | 251.73 | 224.68 | 443.83 | 76.80 | 446.83 | 194.85 | 41.38 | 0250-0 |
| 2576.00 | bulk | 237.78 | 125.22 | 242.70 | 217.76 | 455.39 | 76.30 | 458.33 | 198.89 | 42.32 | 0251-0 |
| 2611.00 | bulk | 270.25 | 152.66 | 245.71 | 236.54 | 503.79 | 74.90 | 480.62 | 222.74 | 50.84 | 0253-0 |
| 2630.00 | bulk | 166.91 | 108.50 | 114.29 | 107.44 | 257.17 | 58.52 | 255.60 | 126.85 | 292.46 | 0254-0 |

# Vitrinite Reflectance Histogram

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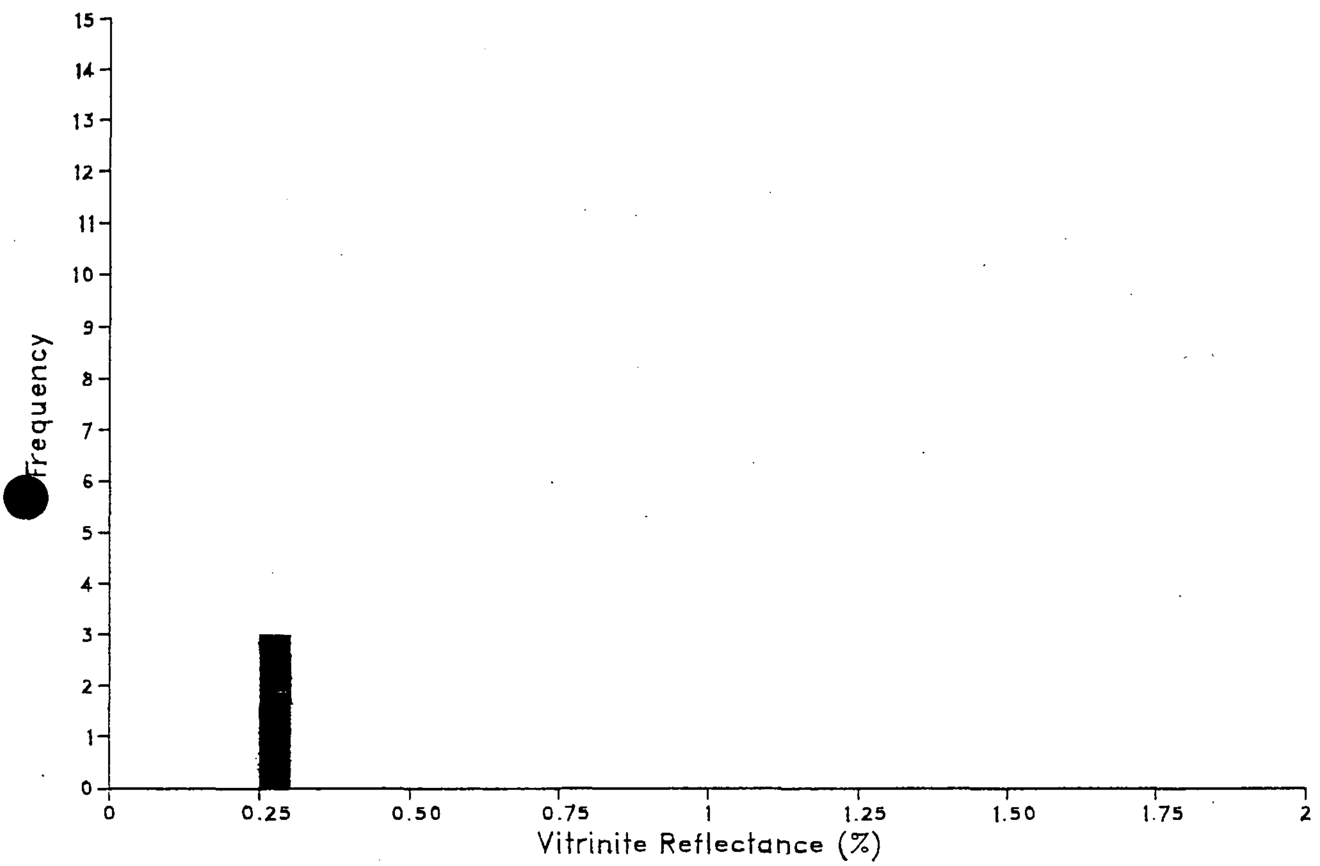
Well: NOCS 34/7-5
Depth: 660.00(m )




| Statistics: | Mean | St.Dev. | n |
|---|---|---|---|
| Indigenous Population (from 0.250 to 0.300): | 0.27 | 0.01 | 3 |

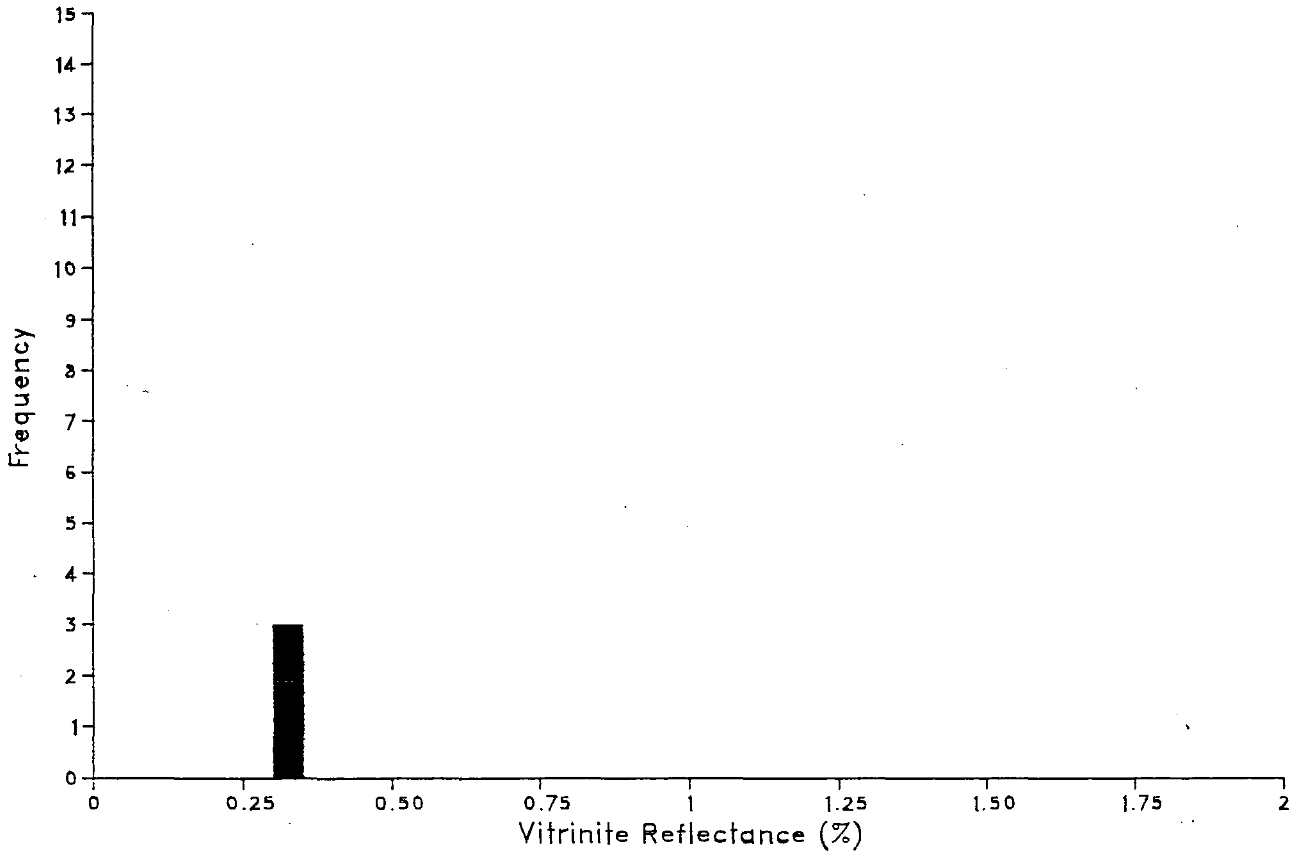
Readings:

| | | | |
|---|---|---|---|
| 0.185 | 0.259 | 0.264 | 0.274 |

# Vitrinite Reflectance Histogram

GEOLAB NOR

Well: NOCS 34/7-5
Depth: 1100.00(m )




| Statistics: | Mean | St.Dev. | n |
|---|---|---|---|
| Indigenous Population (from 0.300 to 0.350): | 0.31 | 0.01 | 3 |

Readings:

0.305 0.306 0.322

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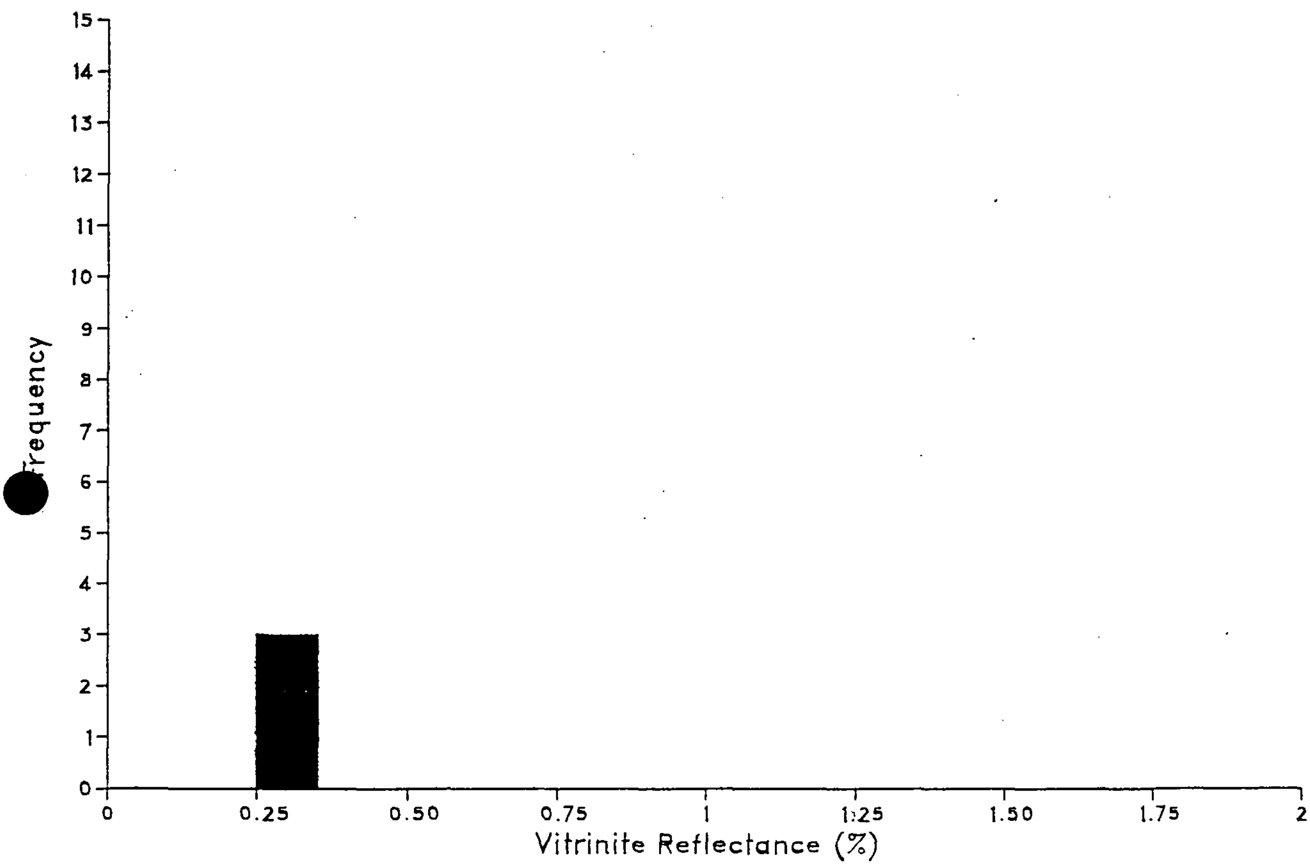
# Vitrinite Reflectance Histogram

GEOLAB NOR

Well: NOCS 34/7-5
Depth: 1190.00(m )




| Statistics: | Mean | St.Dev. | n |
|---|---|---|---|
| Indigenous Population (from 0.250 to 0.350): | 0.30 | 0.02 | 6 |

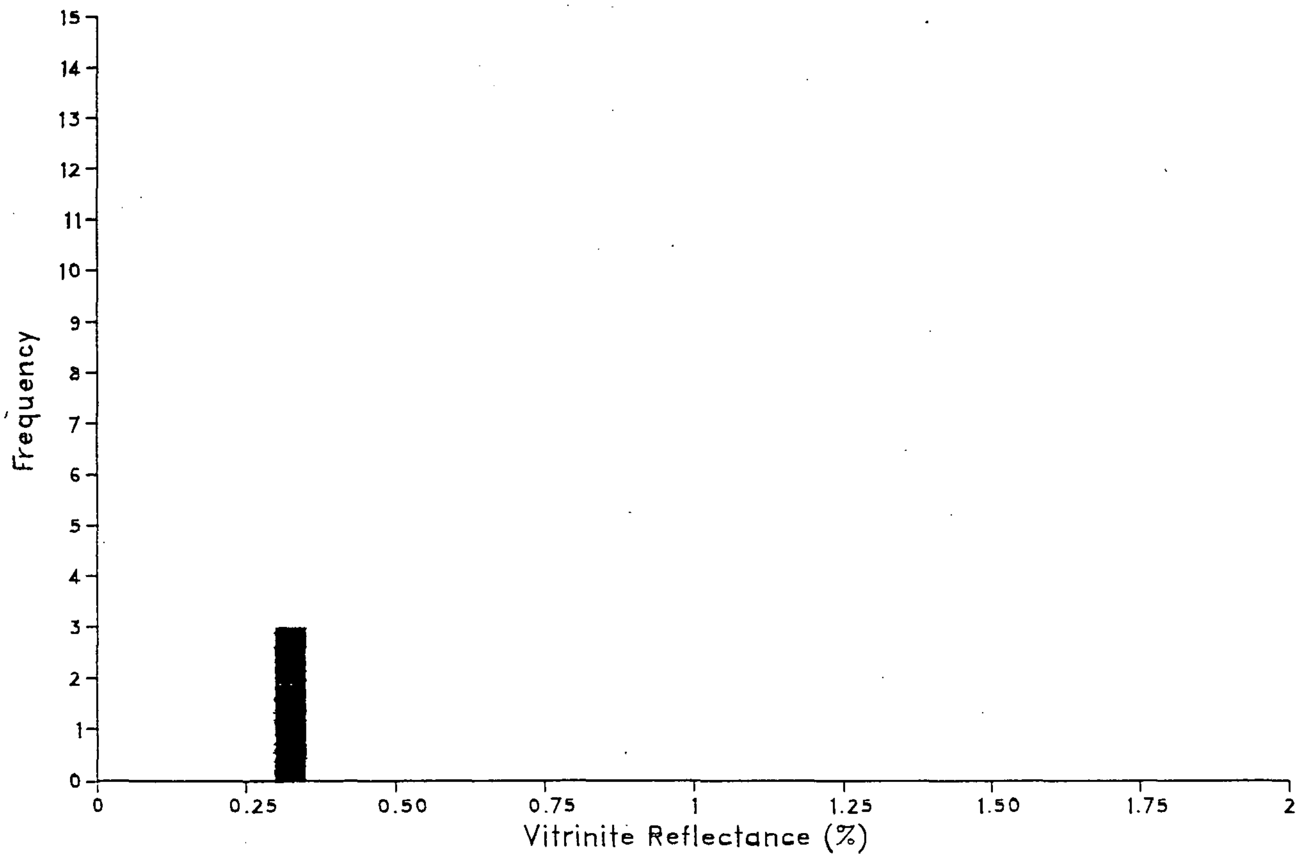
Readings:

0.287 0.287 0.296 0.301 0.320 0.332

# Vitrinite Reflectance Histogram

GEOLAB NOR

Well: NOCS 34/7-5
Depth: 1730.00(m )




| Statistics: | Mean | St.Dev. | n |
|---|---|---|---|
| Indigenous Population (from 0.300 to 0.350): | 0.33 | 0.02 | 3 |

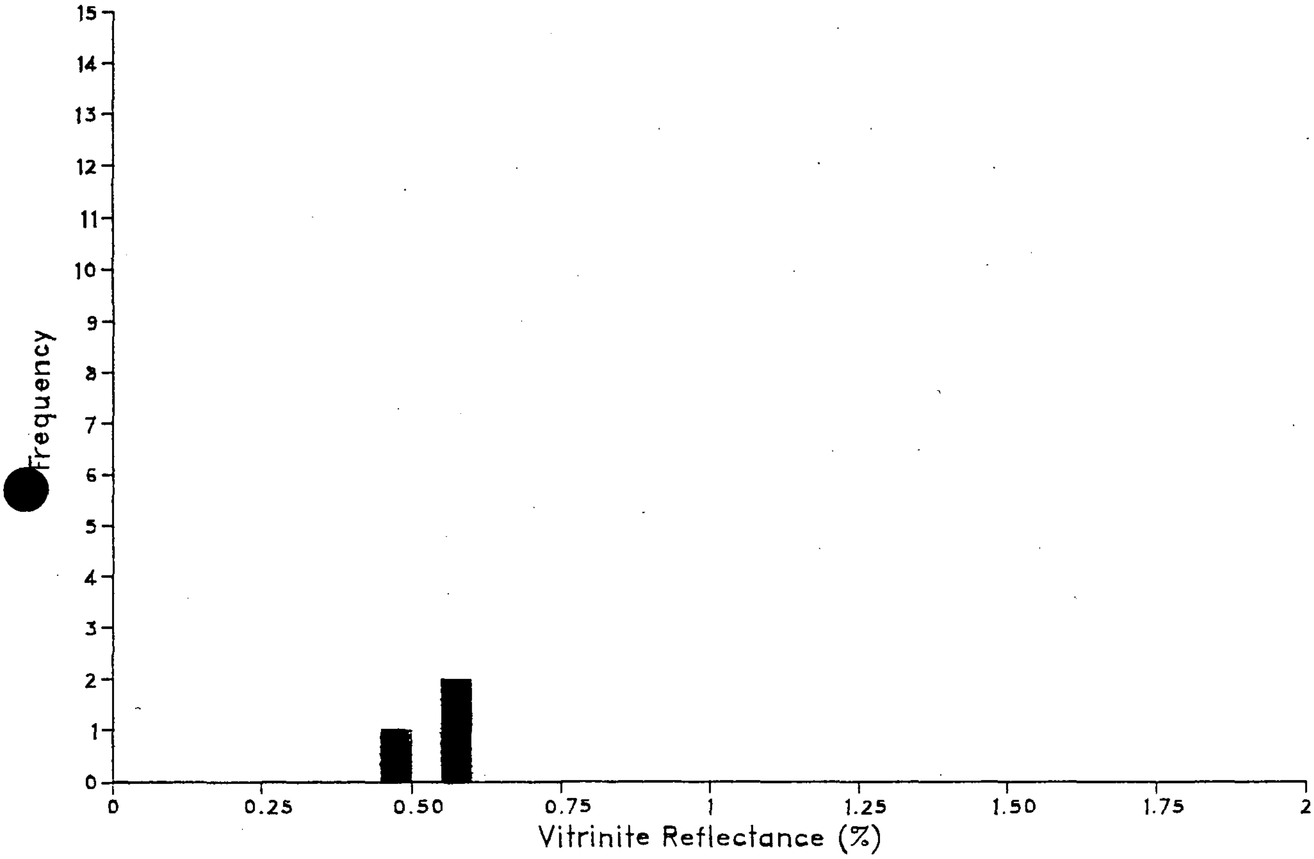
Readings:

0.314 0.339 0.341

# Vitrinite Reflectance Histogram

GEOLAB NOR

Well: NOCS 34/7-5
Depth: 2094.00(m )




| Statistics: | Mean | St.Dev. | n |
|---|---|---|---|
| Indigenous Population (from 0.450 to 0.600): | 0.55 | 0.05 | 3 |

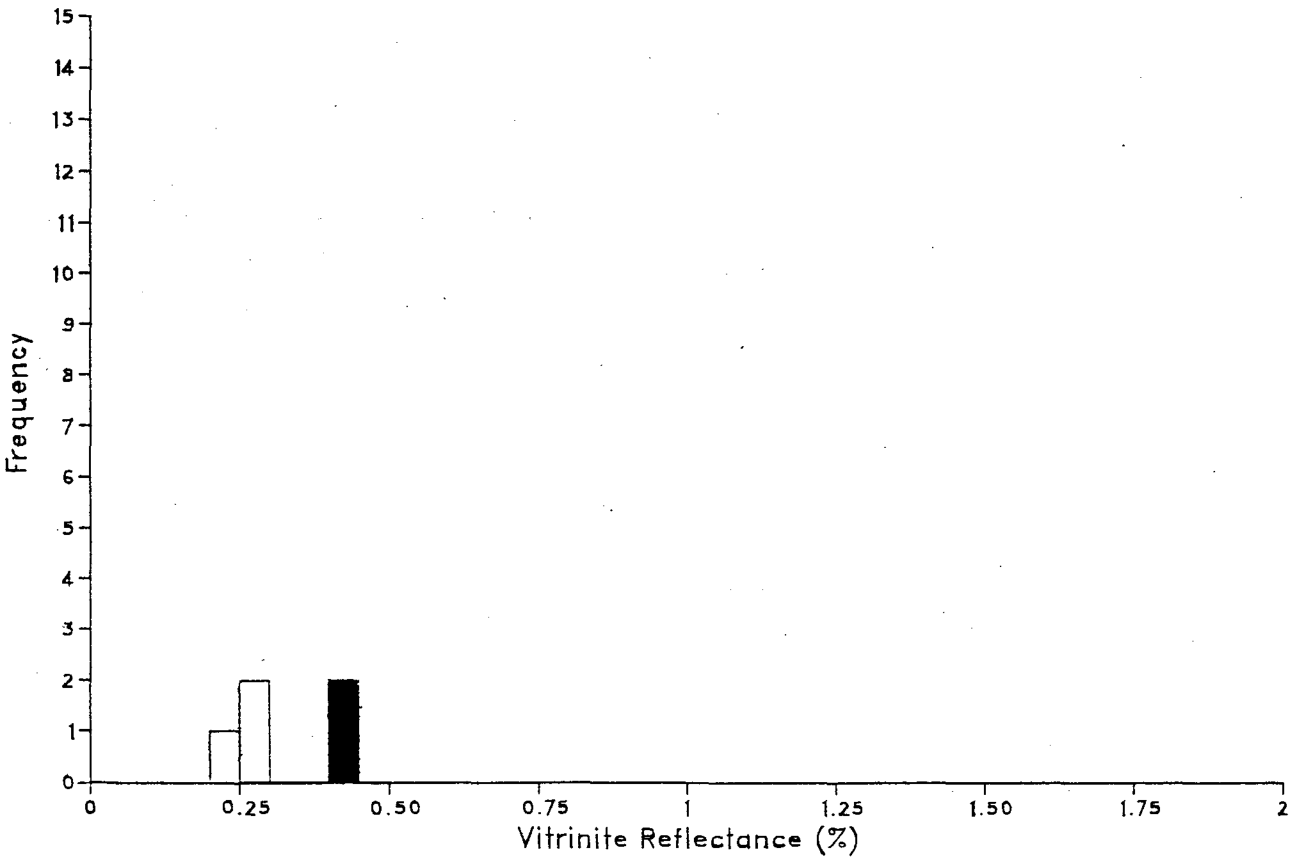
Readings:

0.330 0.499 0.576 0.582

# Vitrinite Reflectance Histogram

GEOLAB NOR

Well: NOCS 34/7-5
Depth: 2631.60(m )




| Statistics: | Mean | St.Dev. | n |
|---|---|---|---|
| Indigenous Population (from 0.400 to 0.450): | 0.45 | 0.00 | 2 |
| Population Two (from 0.200 to 0.300): | 0.25 | 0.03 | 3 |

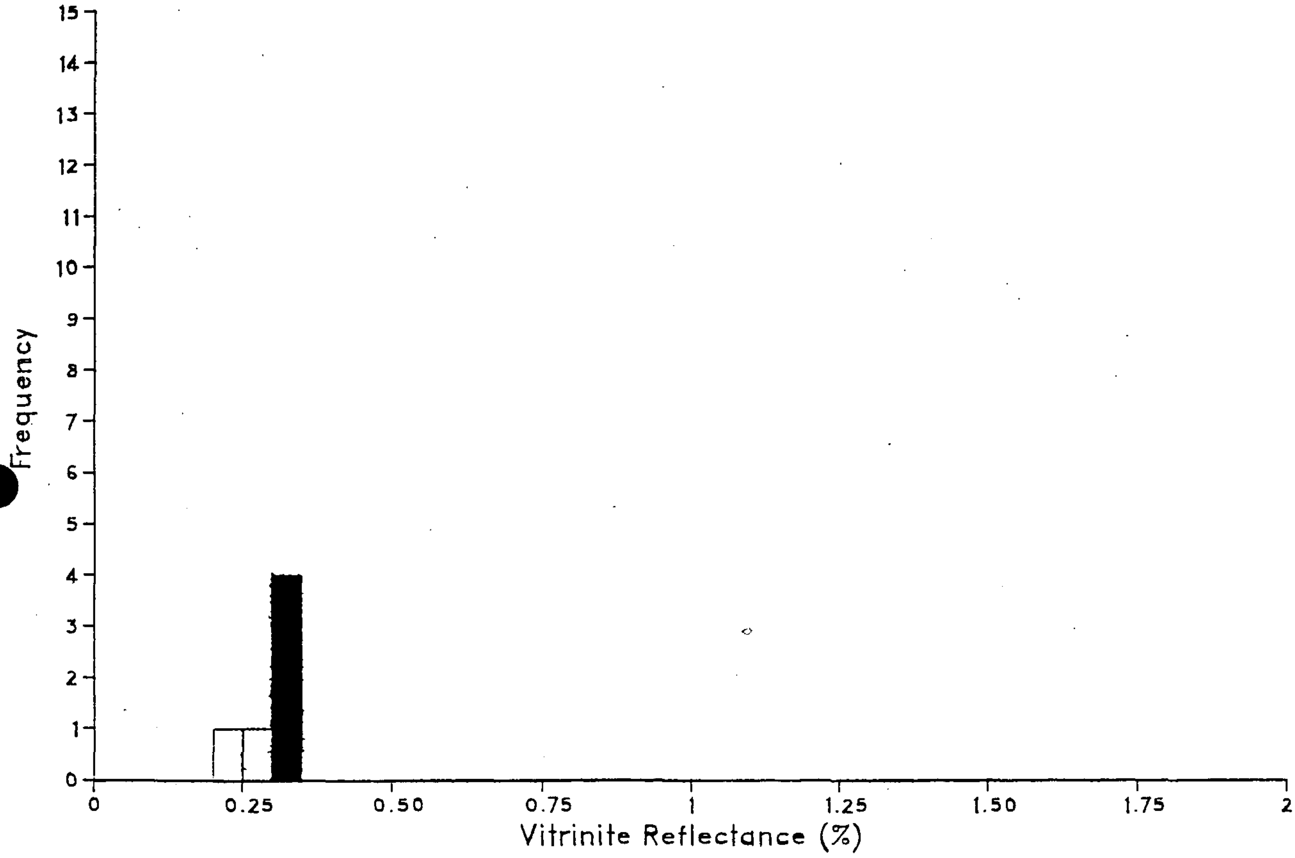
Readings:

0.210 0.265 0.271 0.448 0.449 0.604

# Vitrinite Reflectance Histogram

GEOLAB NOR

Well: NOCS 34/7-5
Depth: 2994.00(m )




| Statistics: | Mean | St.Dev. | n |
|---|---|---|---|
| Indigenous Population (from 0.300 to 0.350): | 0.33 | 0.02 | 4 |
| Population Two (from 0.200 to 0.300): | 0.26 | 0.02 | 2 |

Readings:

0.238 0.273 0.305 0.317 0.342 0.345

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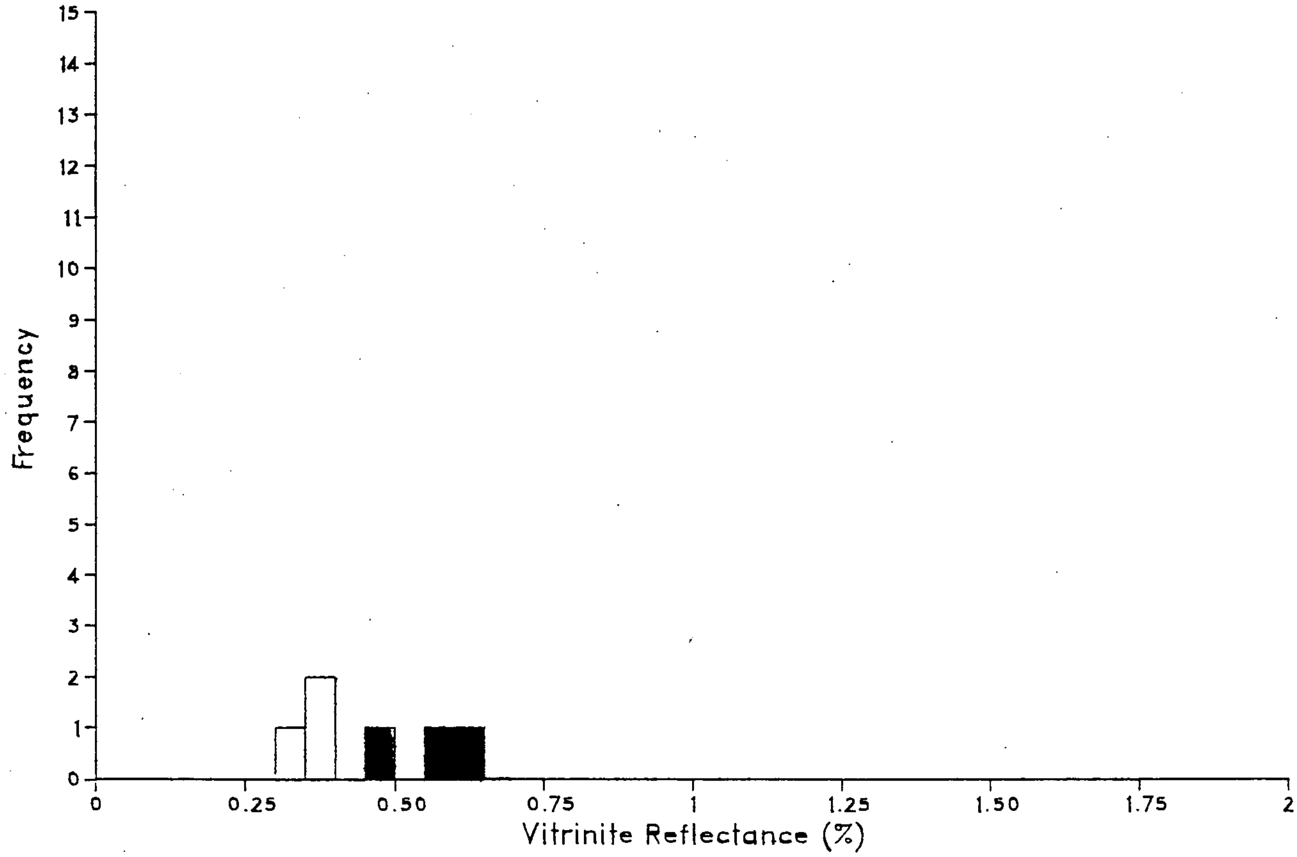
# Vitrinite Reflectance Histogram

GEOLAB NOR

Well: NOCS 34/7-5
Depth: 3129.00(m )

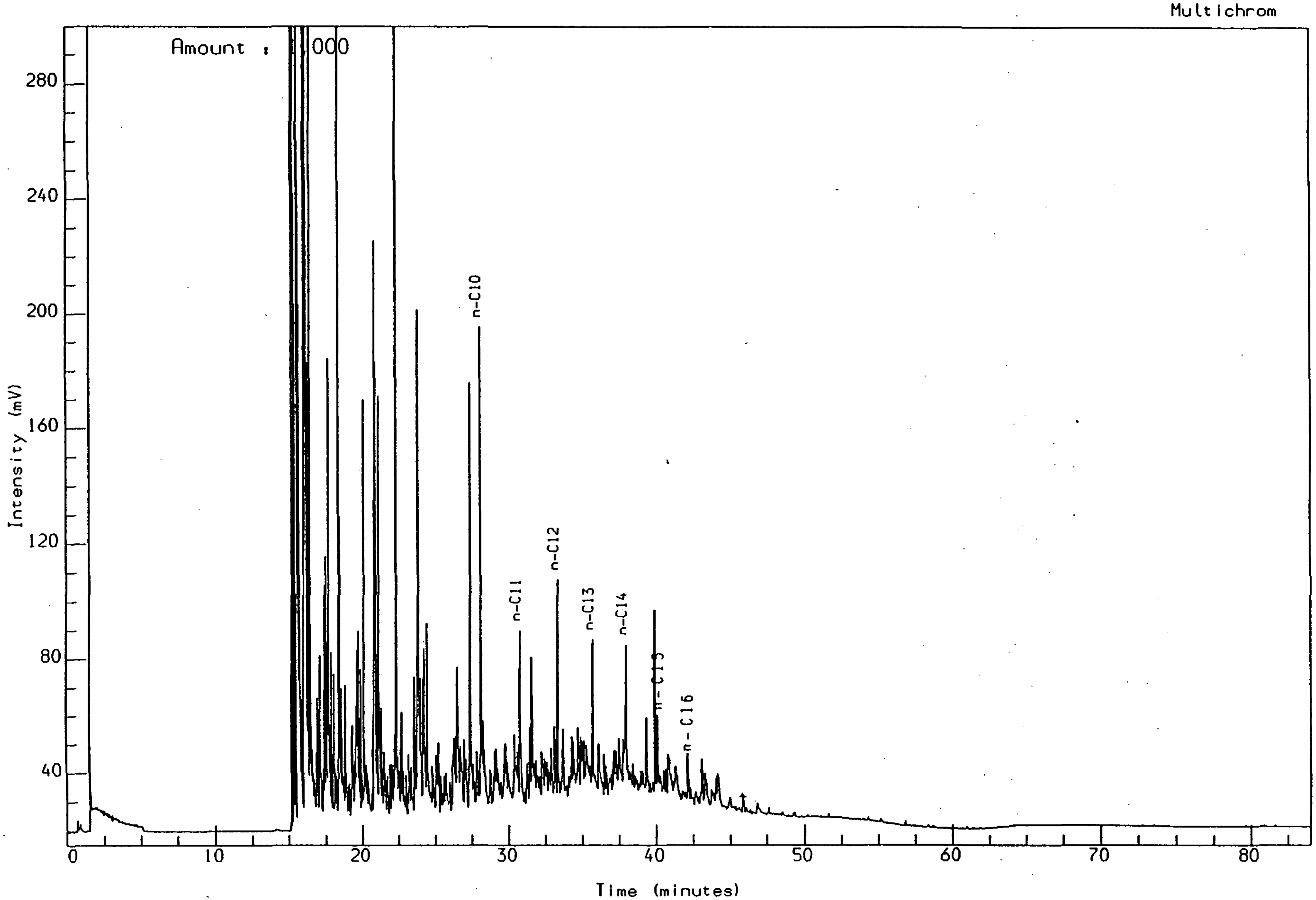



| Statistics: | Mean | St.Dev. | n |
|---|---|---|---|
| Indigenous Population (from 0.450 to 0.650): | 0.55 | 0.07 | 3 |
| Population Two (from 0.300 to 0.400): | 0.36 | 0.04 | 3 |

Readings:

0.310 0.387 0.388 0.472 0.580 0.612

Analysis Name : [P2408] 22 PE7100251,1,1.

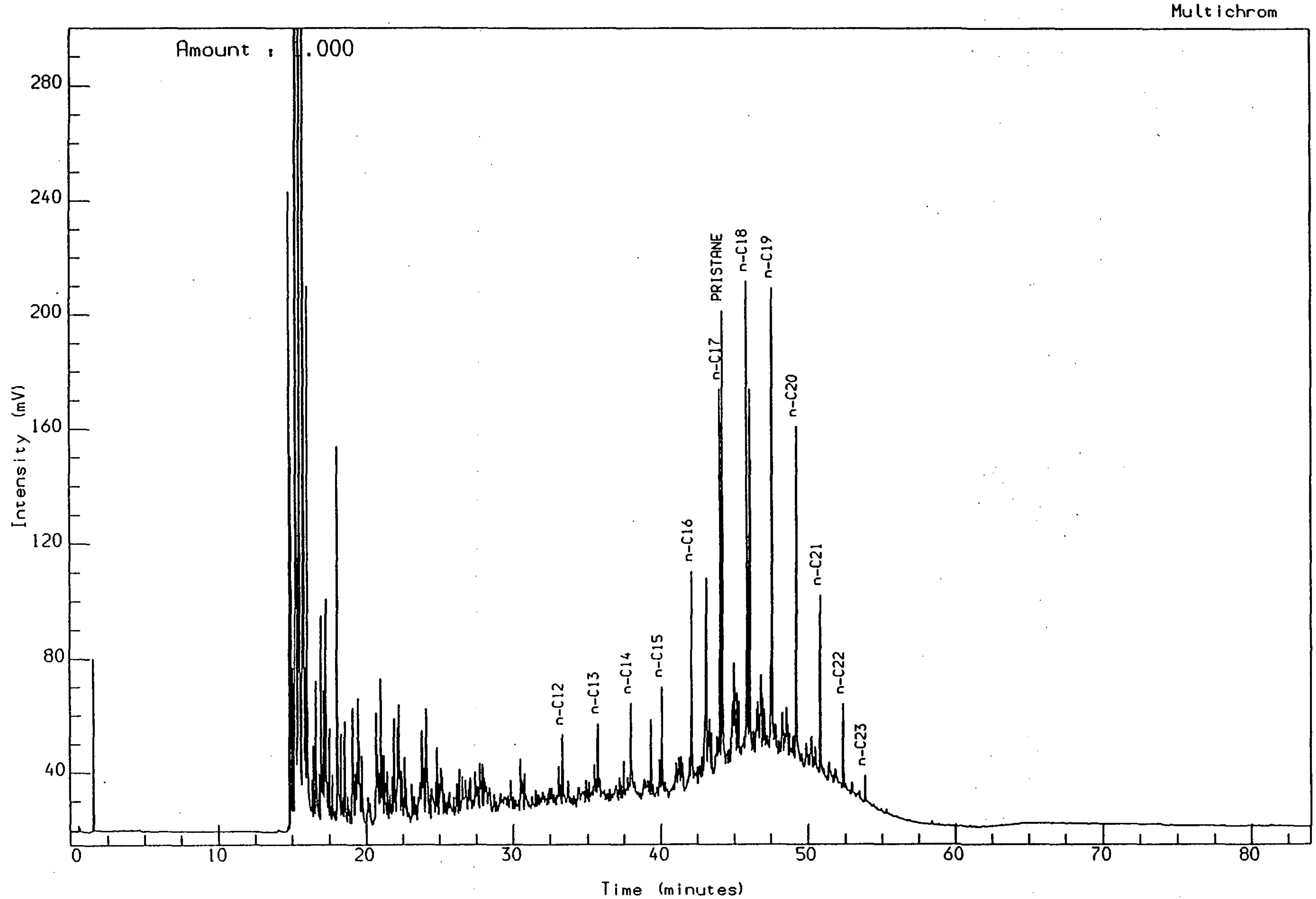



WELL NOCS 34/7-5 1130.00m cut
THERMAL EXTRACTION GC (S1)
Sh/Clst: lt ol gy to lt brn gy

Reported on 31-JAN-1991 at 14:45

GEOLAB NOR

Analysis Name : [P2408] 22 PE7100731,1,1.

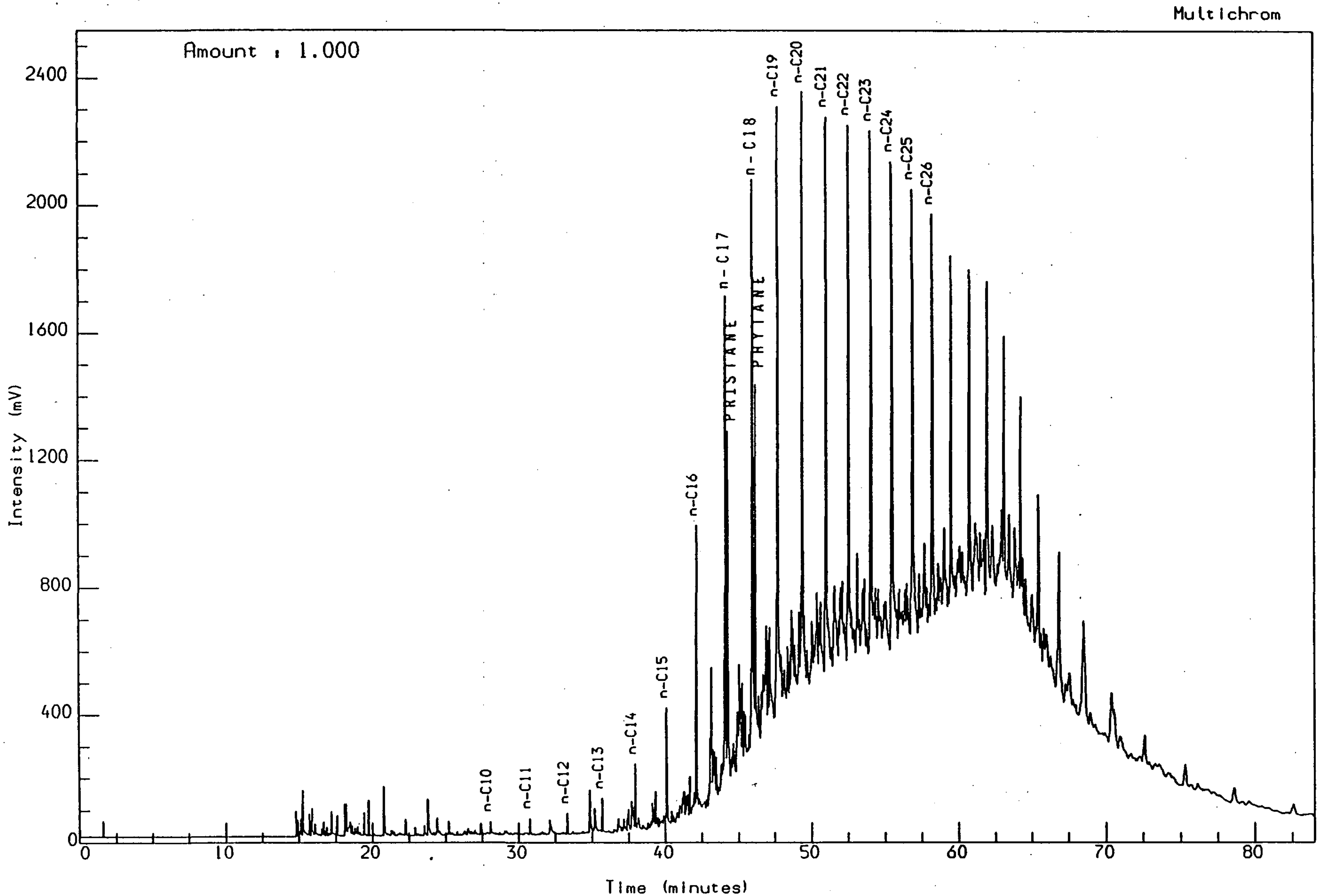



WELL NOCS 34/7-5 2496.00m cut
THERMAL EXTRACTION GC (S1)
Ca: lt or to or gy

Reported on 31-JAN-1991 at 14:47

GEOLAB NOR

Analysis Name : [P2408] 22 PE7101781B,1,1.



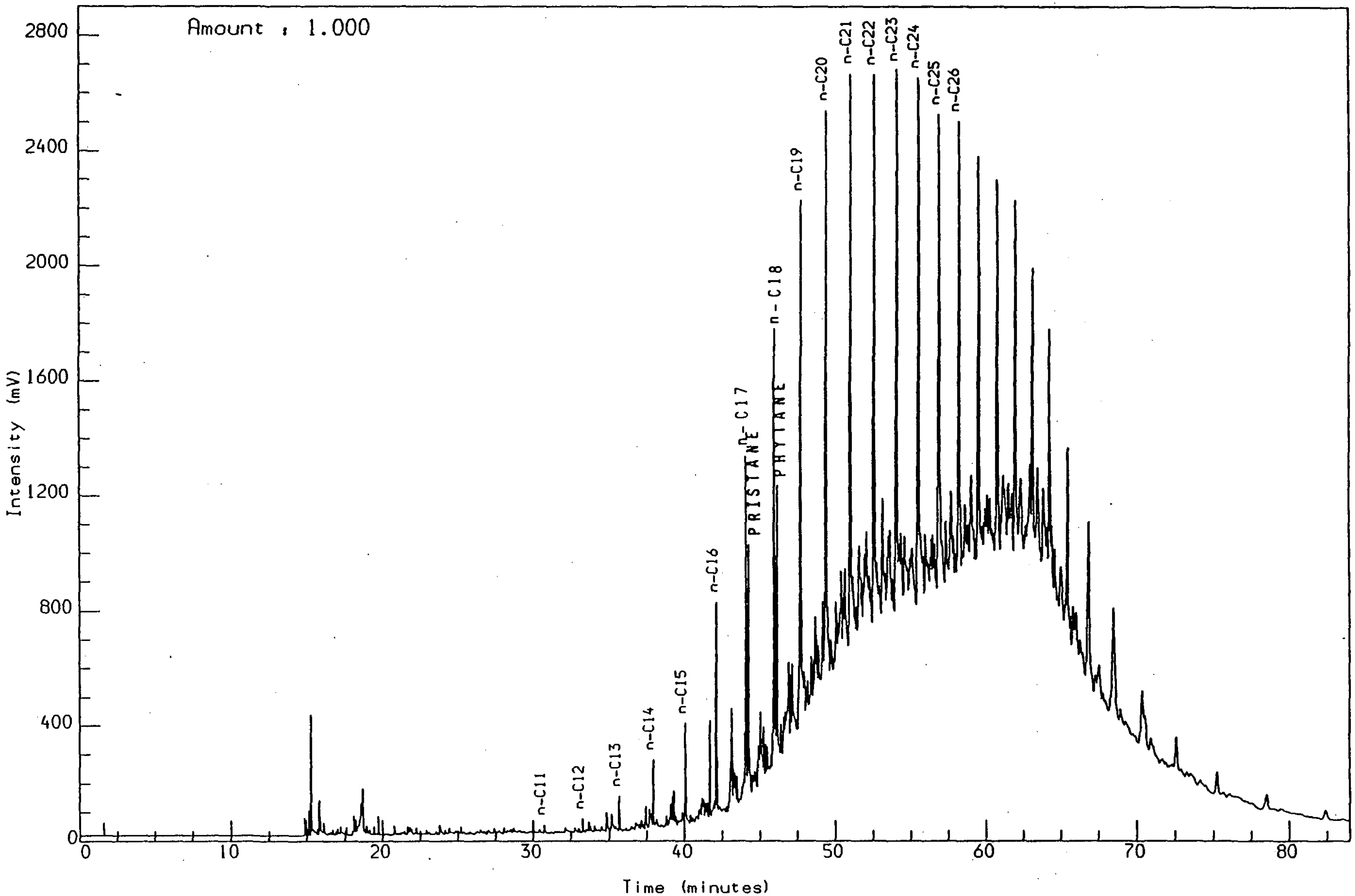

WELL NOCS 34/7-5 2511.00m ccp
THERMAL EXTRACTION GC (S1)
Sltst: lt brn gy to pl y brn

Reported on 31-JAN-1991 at 14:48

GEOLAB NOR

Analysis Name : [P2408] 22 PE7101821,1,1.

Multichrom

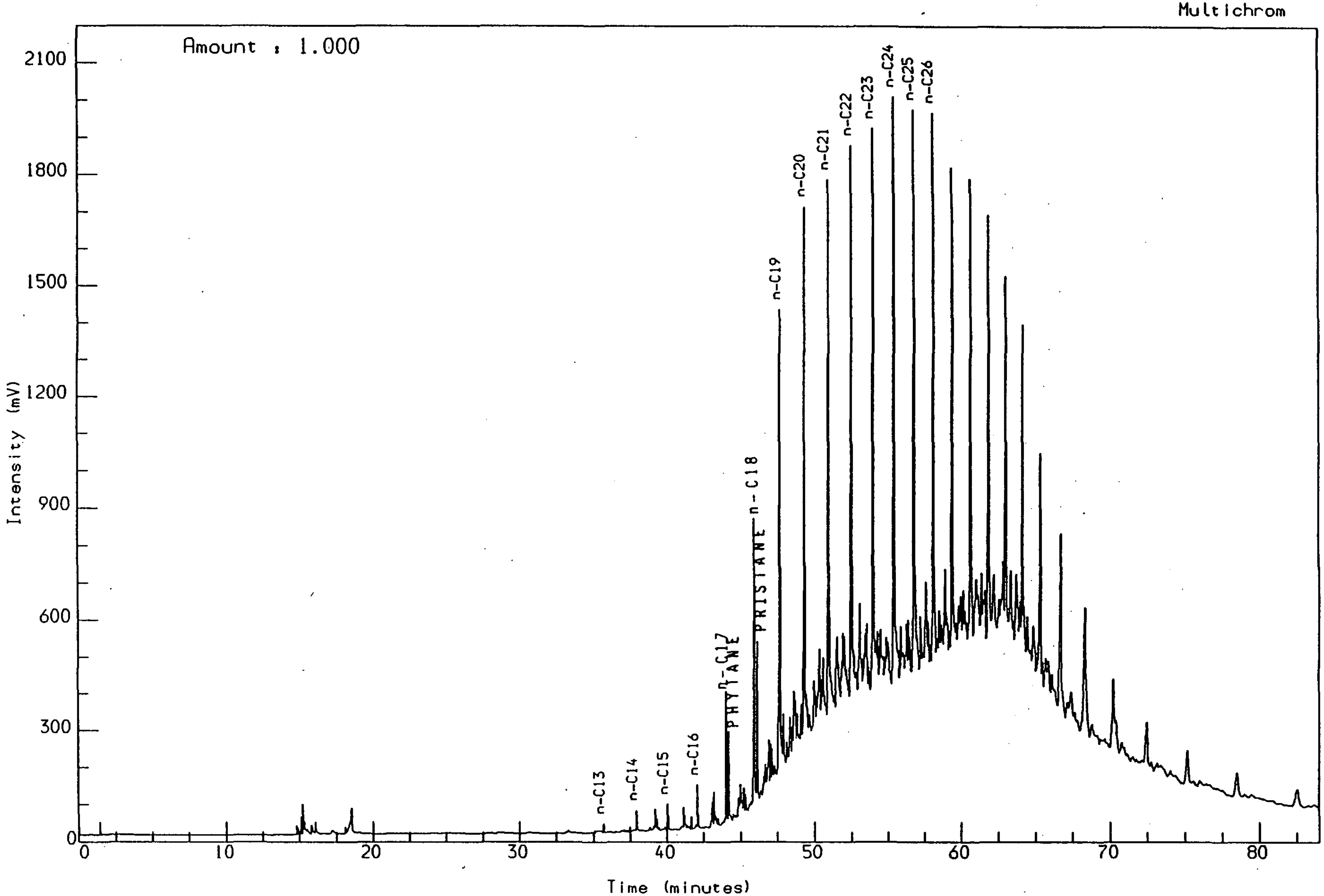



WELL NOCS 34/7-5 2519.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt brn gy to lt gy

Reported on 31-JAN-1991 at 14:49

GEOLAB NOR

Analysis Name : [P2408] 22 PE7101841,1,1.

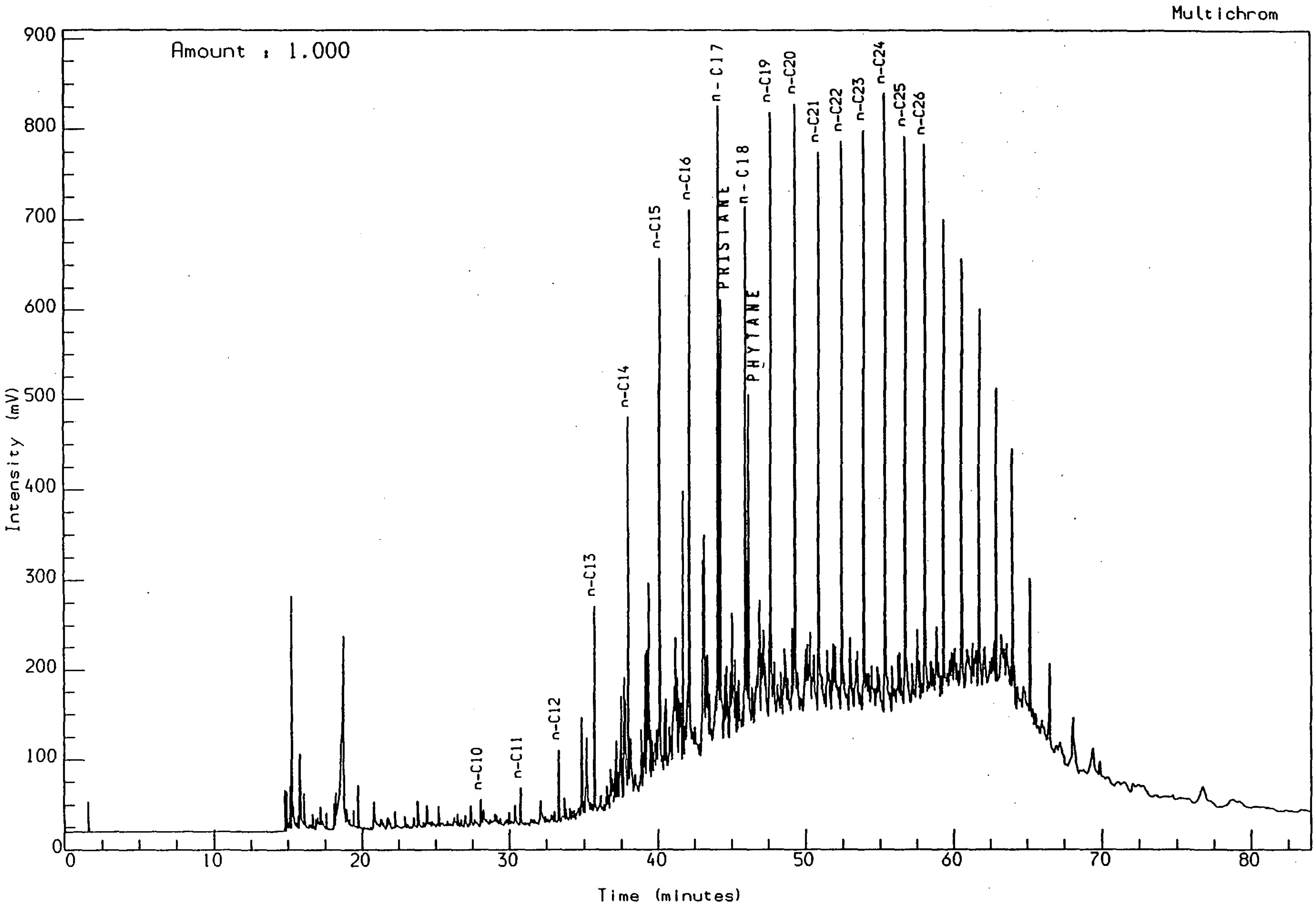



WELL NOCS 34/7-5 2523.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt brn gy to lt or gy

Reported on 31-JAN-1991 at 14:50

GEOLAB NOR

Analysis Name : [P2408] 22 PE7101871,1,1.

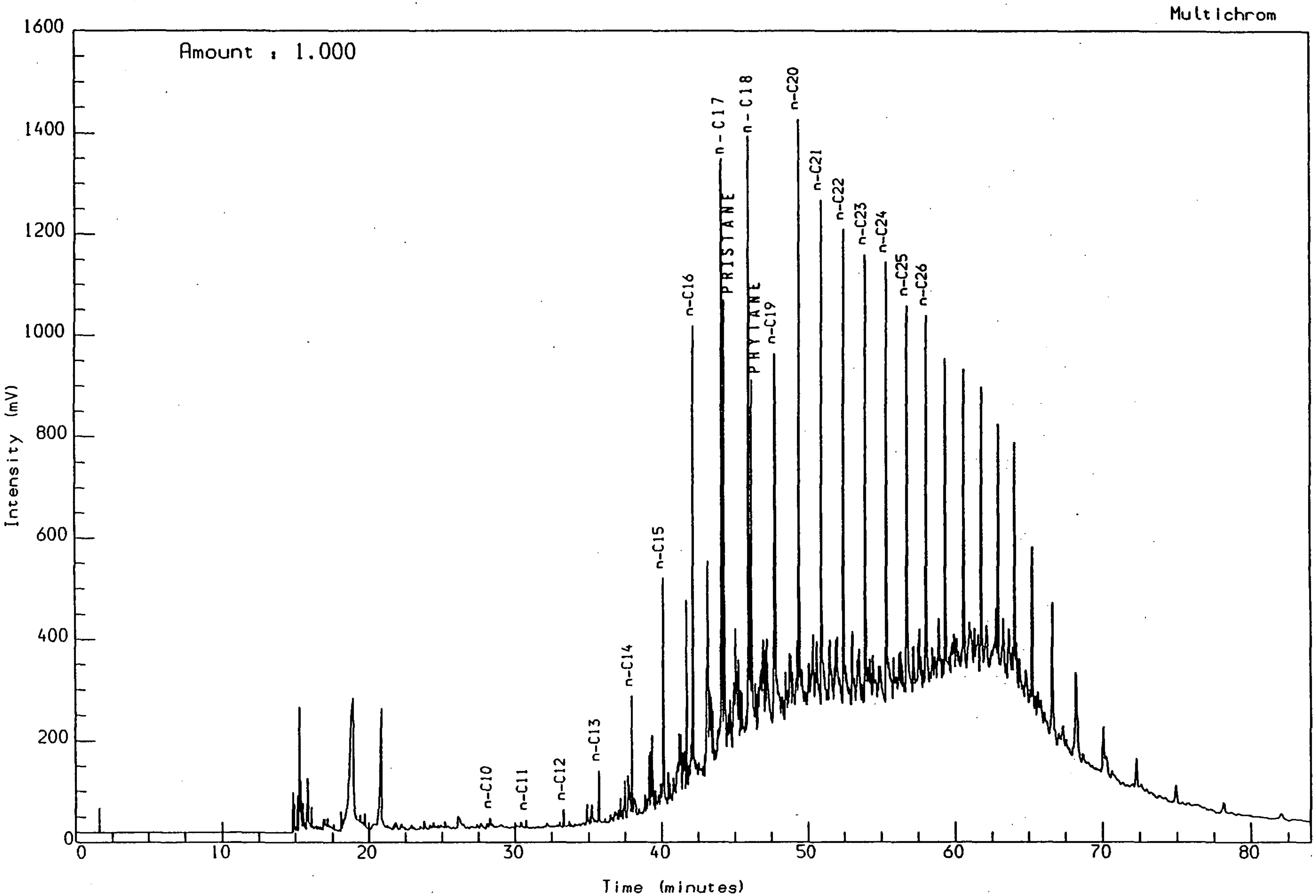



WELL NOCS 34/7-5 2530.50m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: gy pi to lt brn gy to lt gy

Reported on 31-JAN-1991 at 14:51

GEOLAB NOR

Analysis Name : [P2408] 22 PE7101901,1,1.

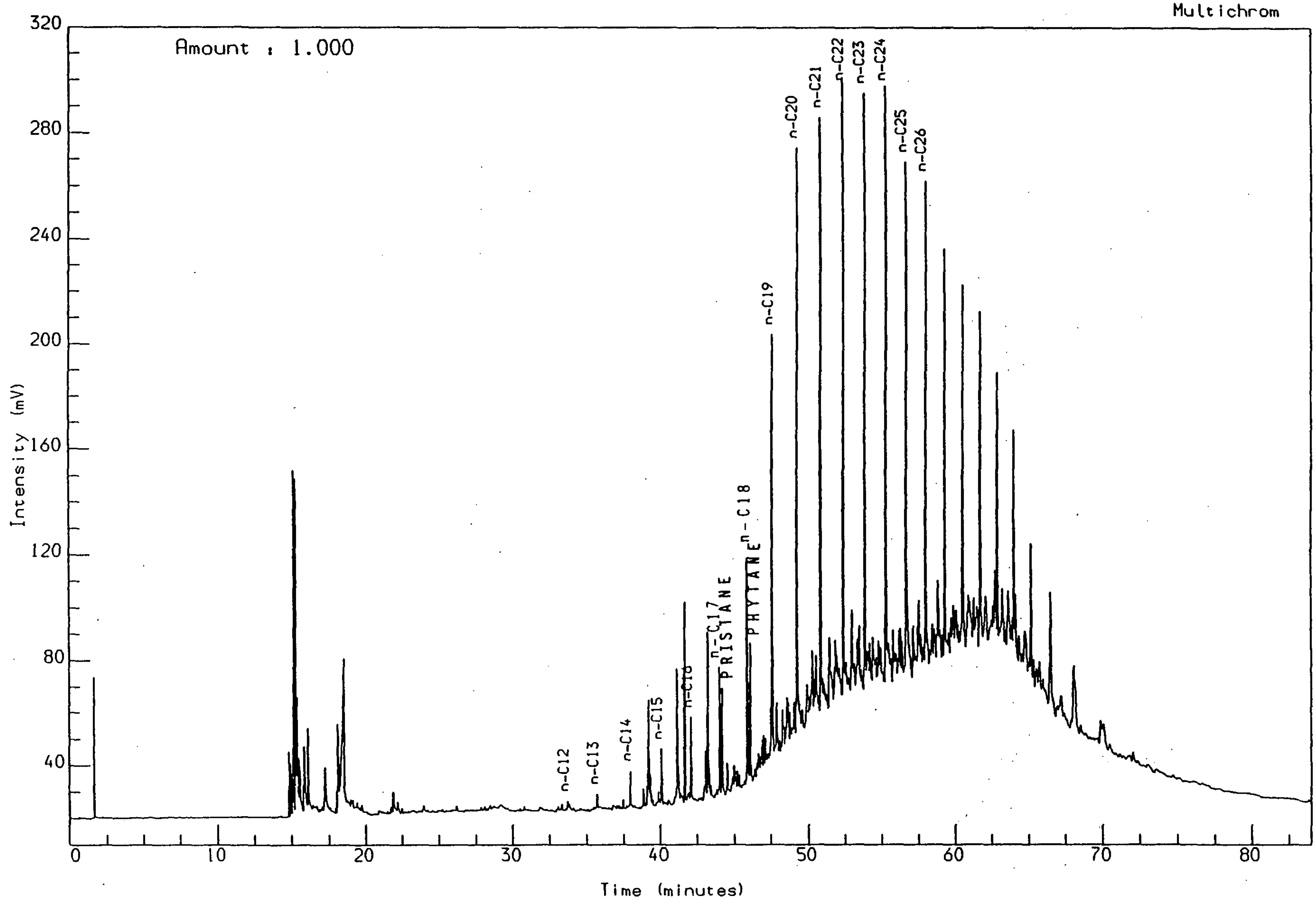



WELL NOCS 34/7-5 2536.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt or gy to lt brn gy

Reported on 31-JAN-1991 at 14:52

GEOLAB NOR

Analysis Name : [P2408] 22 PE7101971,1,1.



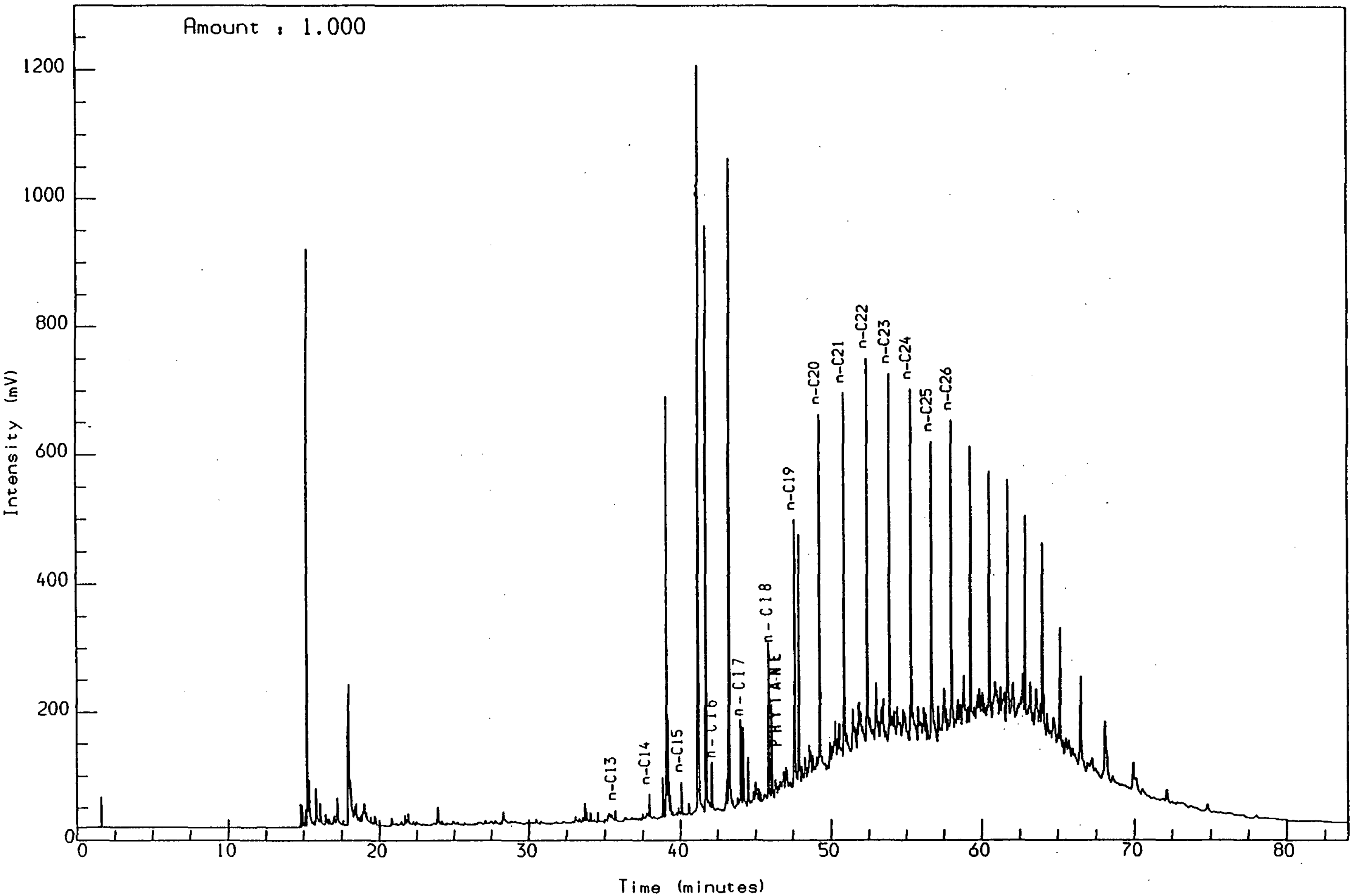

WELL NOCS 34/7-5 2550.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt or gy to lt brn gy to lt g

Reported on 31-JAN-1991 at 14:53

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102021,1,1.

Multichrom

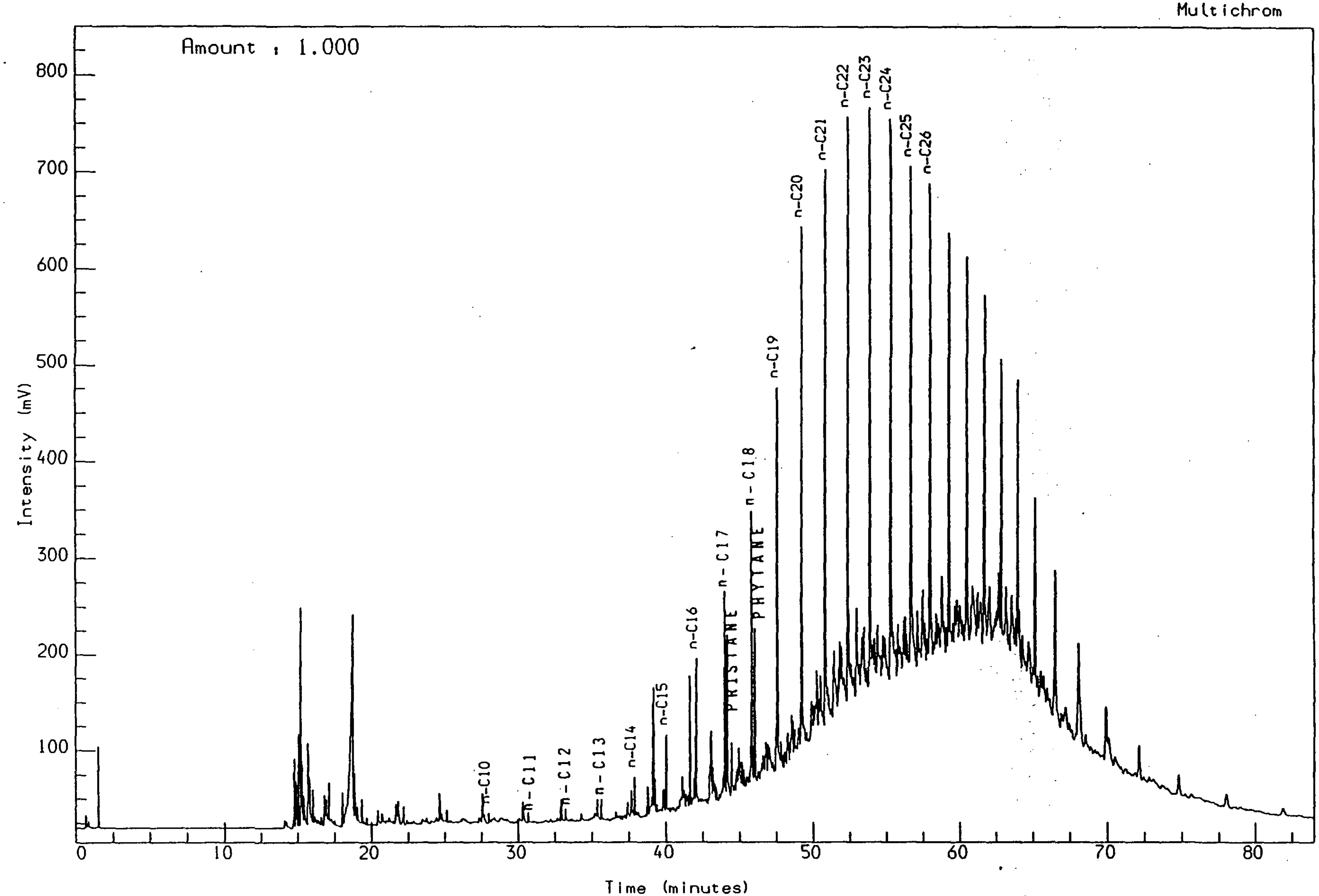



WELL NOCS 34/7-5 2560.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt brn gy to lt gy

Reported on 31-JAN-1991 at 14:54

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102071,1,1.

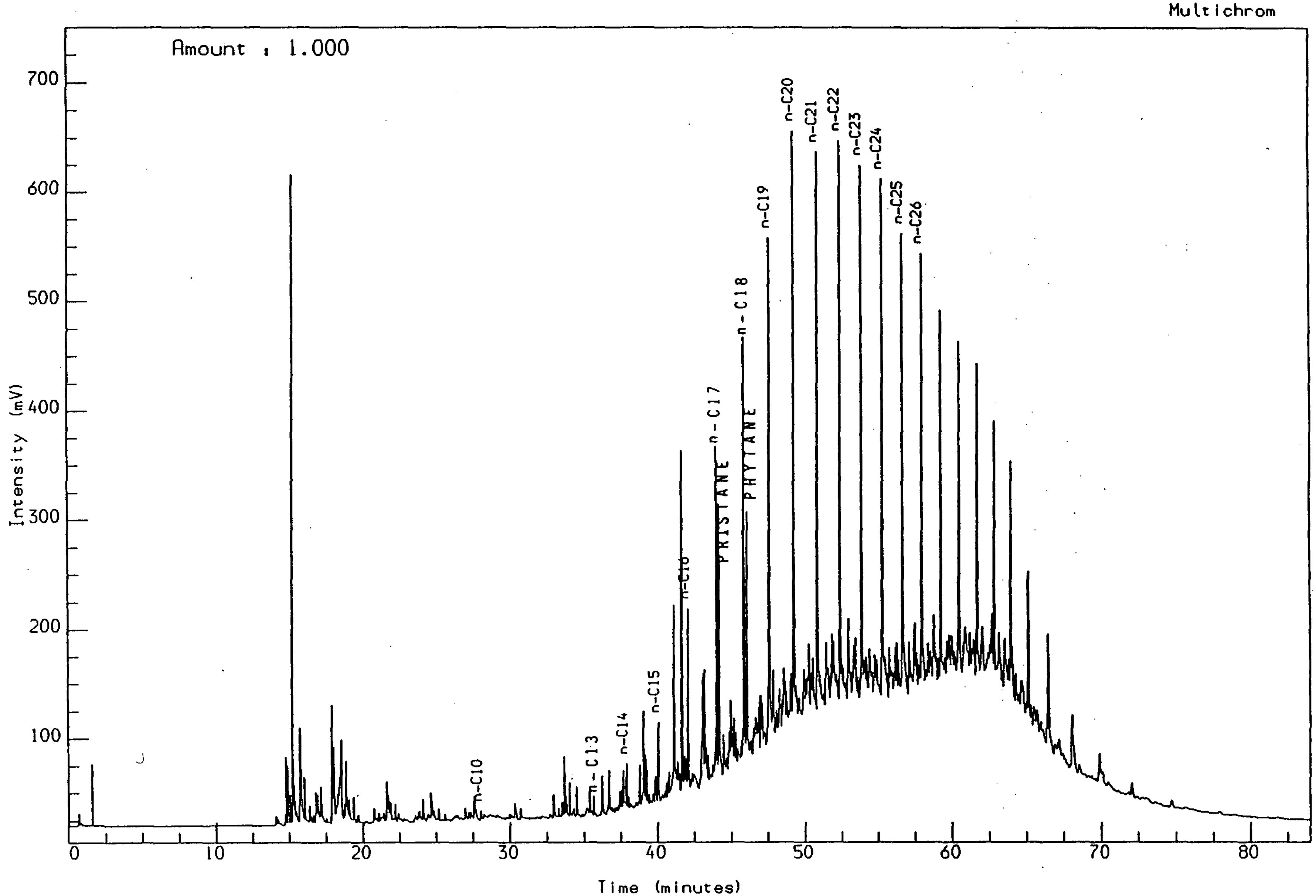



WELL NOCS 34/7-5 2570.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt gy to lt brn gy to gy pi

Reported on 31-JAN-1991 at 14:55

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102121,1,1.

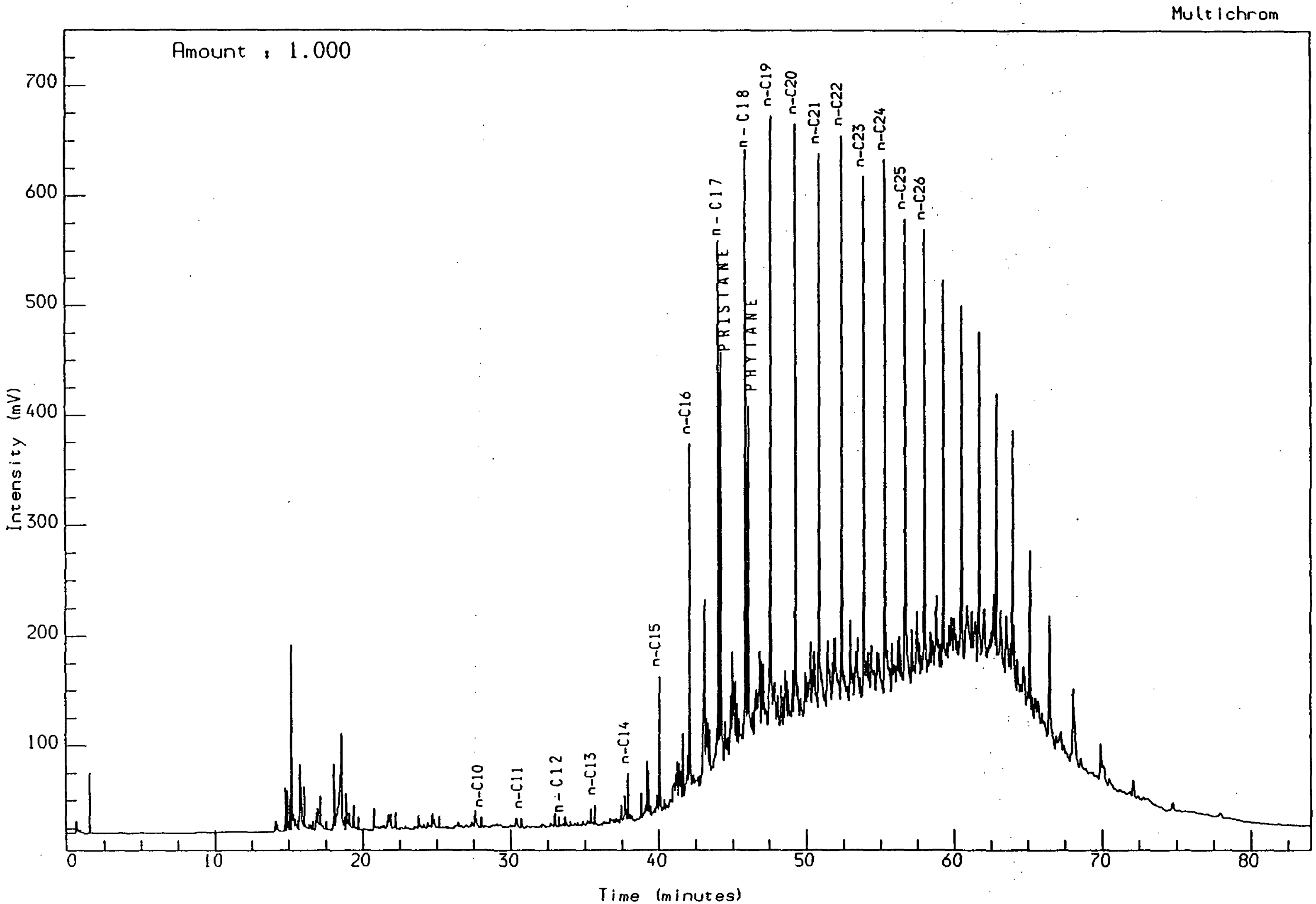



WELL NOCS 34/7-5 2580.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: y gy to lt gy to m gy

Reported on 31-JAN-1991 at 14:57

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102171,1,1.

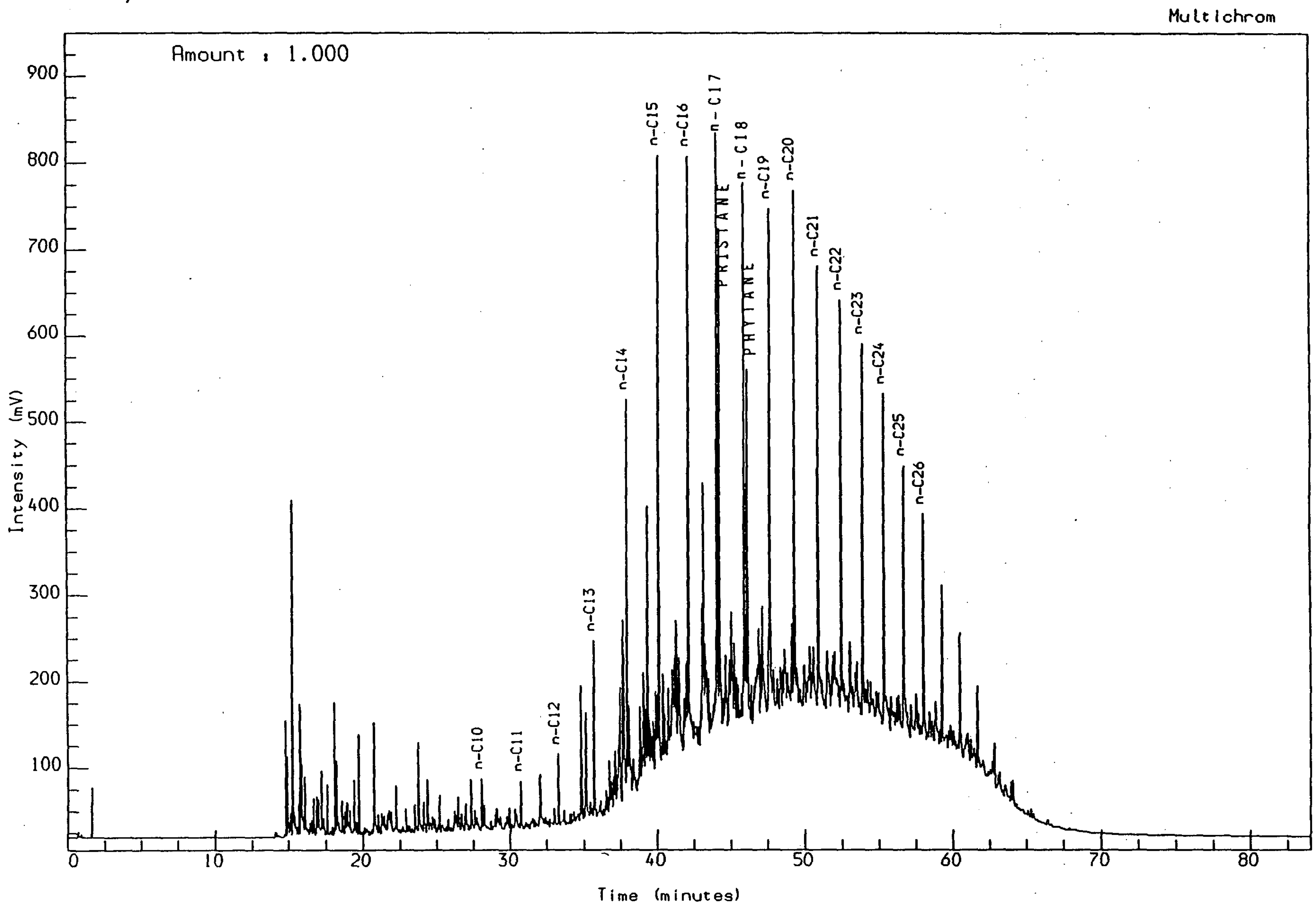



WELL NOCS 34/7-5 2590.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: w to lt gy

Reported on 31-JAN-1991 at 14:57

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102251,1,1.

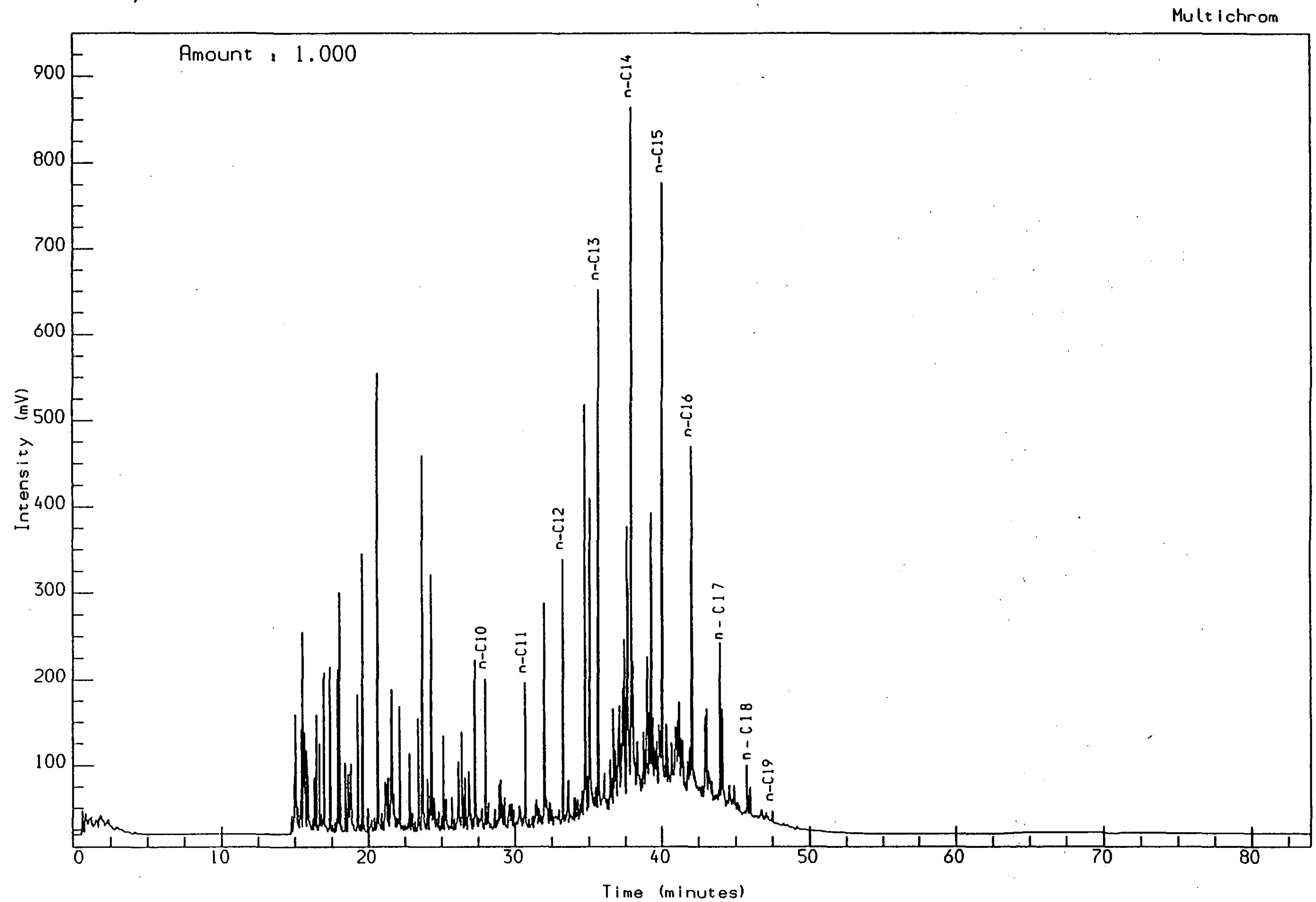



WELL NOCS 34/7-5 2606.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt gy to lt brn gy

Reported on 31-JAN-1991 at 14:59

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102291,1,1.

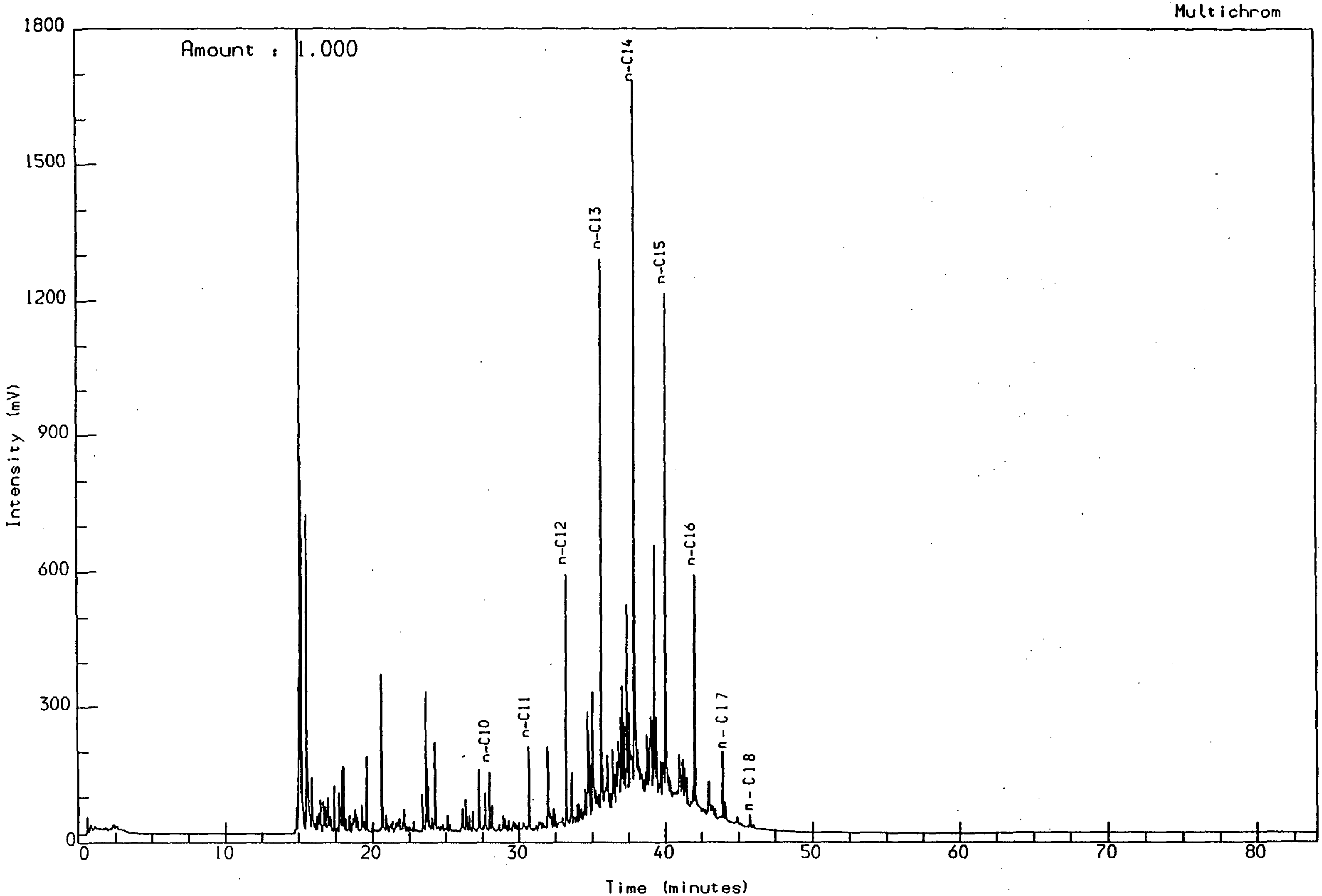



WELL NOCS 34/7-5 2615.00m ccp
THERMAL EXTRACTION GC (S1)
S/Sst: lt gy to m gy to lt brn gy

Reported on 31-JAN-1991 at 14:59

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102341,1,1.

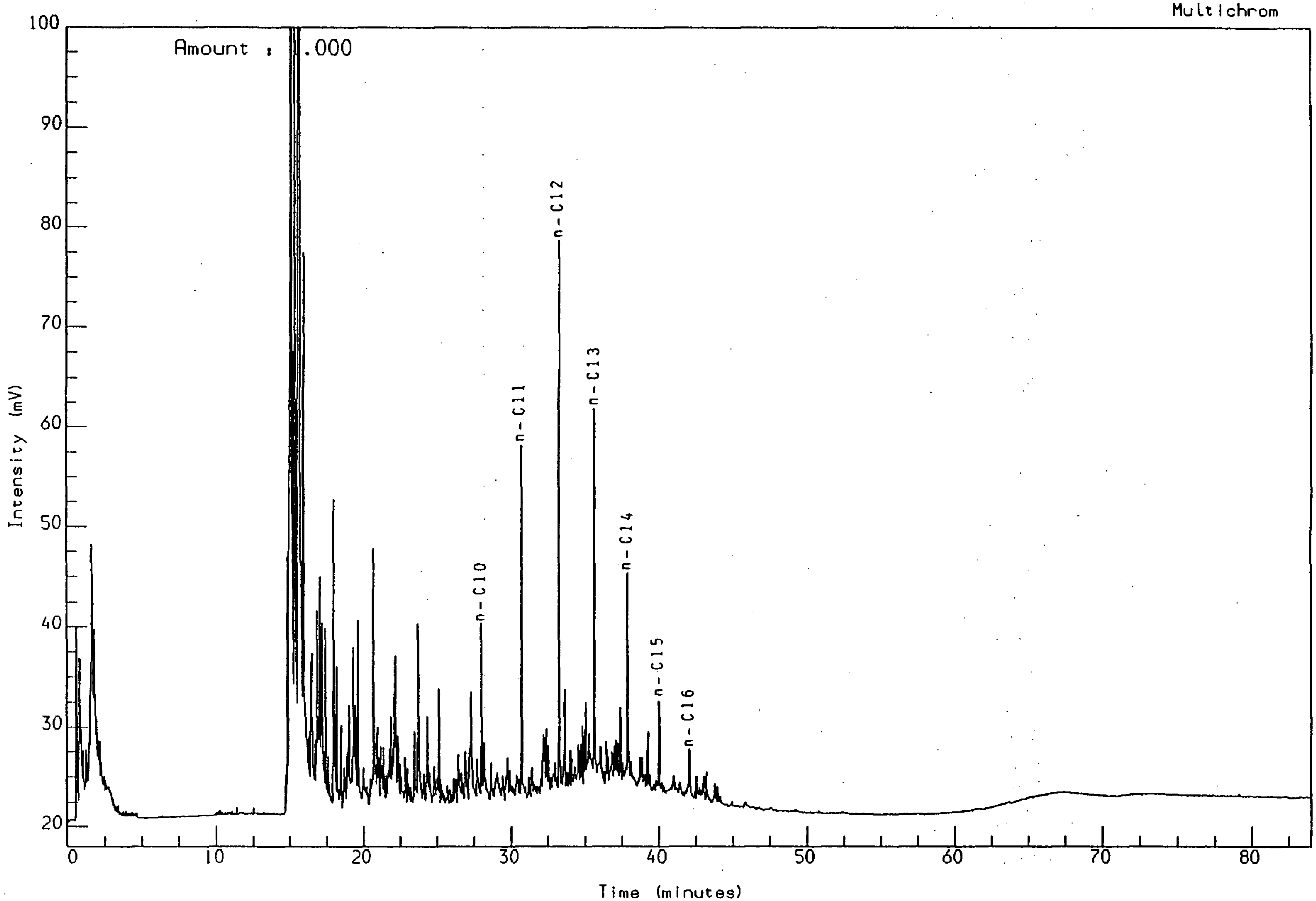



WELL NOCS 34/7-5 2626.00m ccp
THERMAL EXTRACTION GC (S1)
Sh/Clst: m gy to drk gy

Reported on 4-FEB-1991 at 08:49

GEOLAB NOR

Analysis Name : [P2408] 22 PE7101011,1,1.

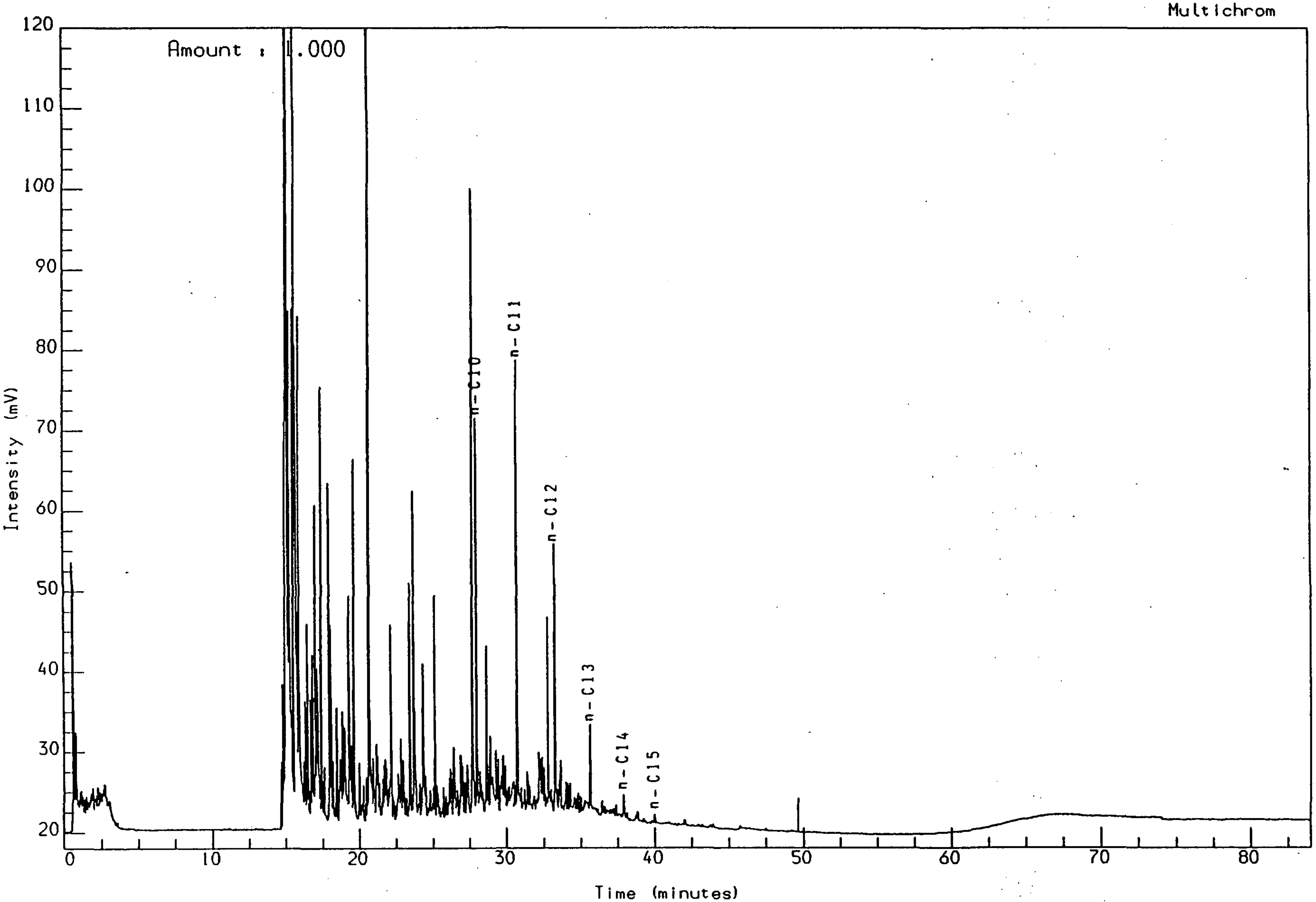



WELL NOCS 34/7-5 2676.00m cut
THERMAL EXTRACTION GC (S1)
Sh/Clst: gy pi to lt brn

Reported on 4-FEB-1991 at 08:52

GEOLAB NOR

Analysis Name : [P2408] 22 PE7101141,1,1.

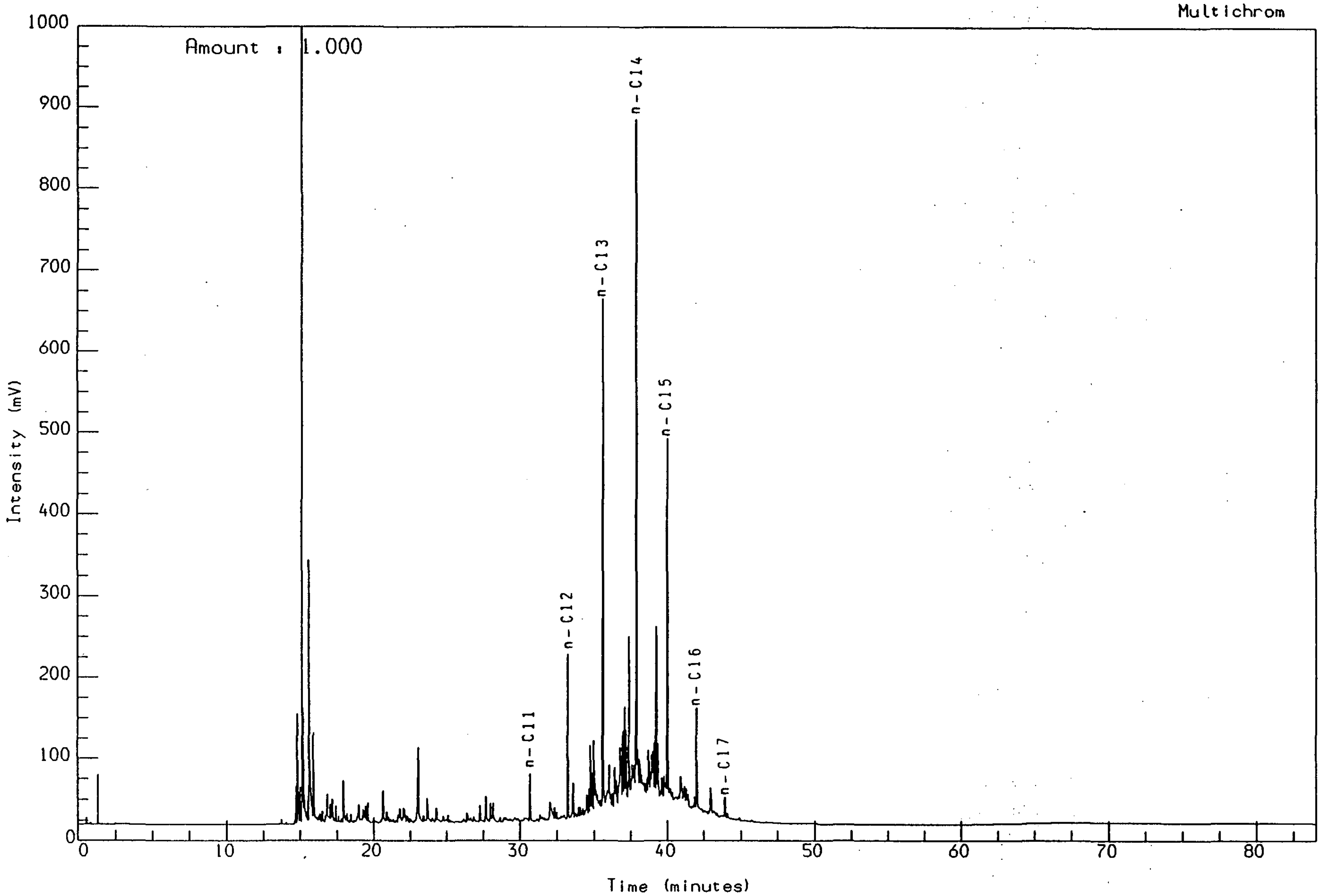



WELL NOCS 34/7-5 2754.00m cut
THERMAL EXTRACTION GC (S1)
Sh/Clst: drk gy to brn blk

Reported on 4-FEB-1991 at 08:53

GEOLAB NOR

Analysis Name : [P2408] 22 PE7102451.1.1.



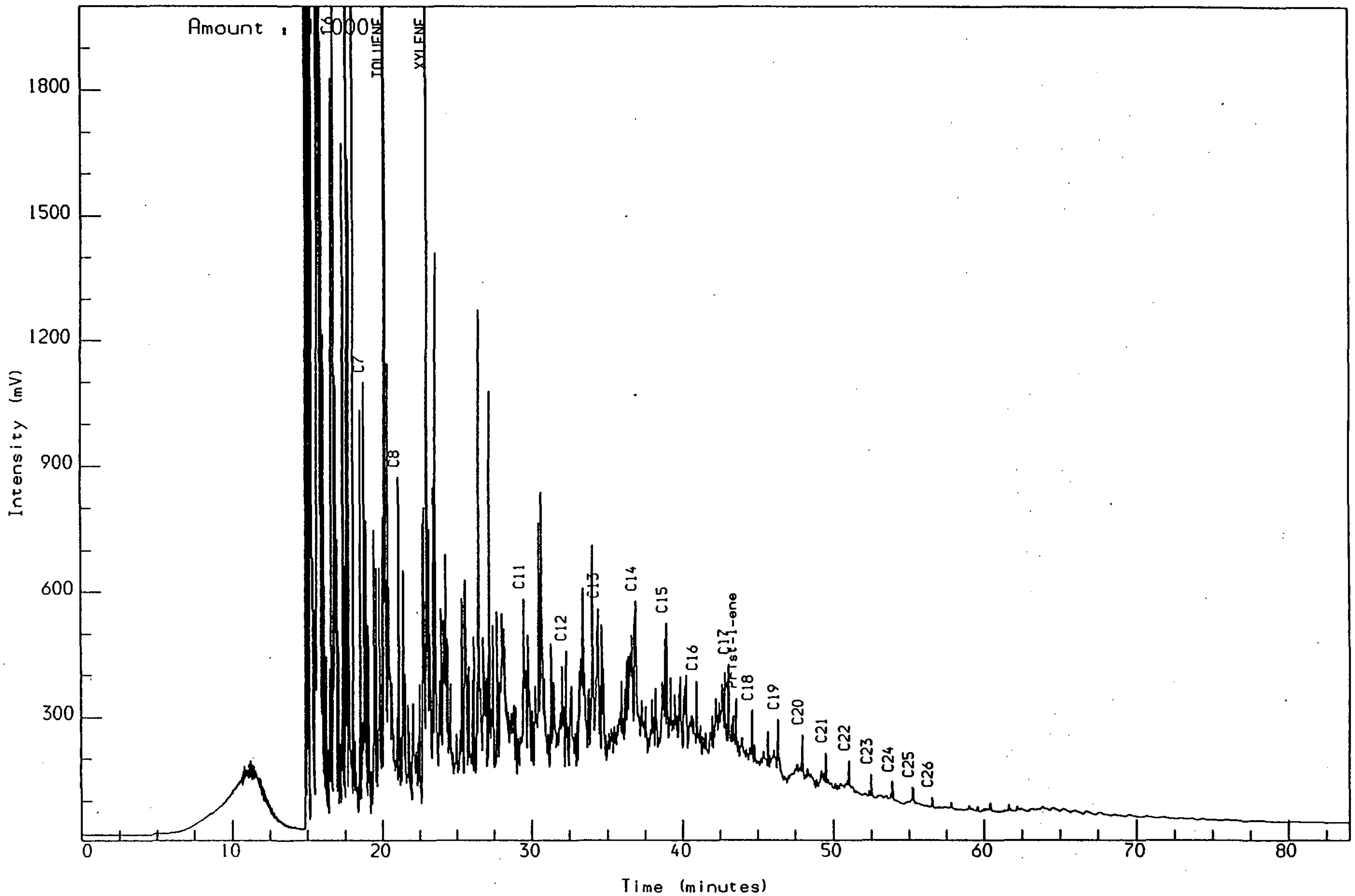

WELL NOCS 34/7-5 2883.25m ccp
THERMAL EXTRACTION GC (S1)
Sltst: m gy to drk gy

Reported on 4-FEB-1991 at 08:57

GEOLAB NOR

Analysis Name : [P2408] 21 PE7100251,1,1.

Multichrom

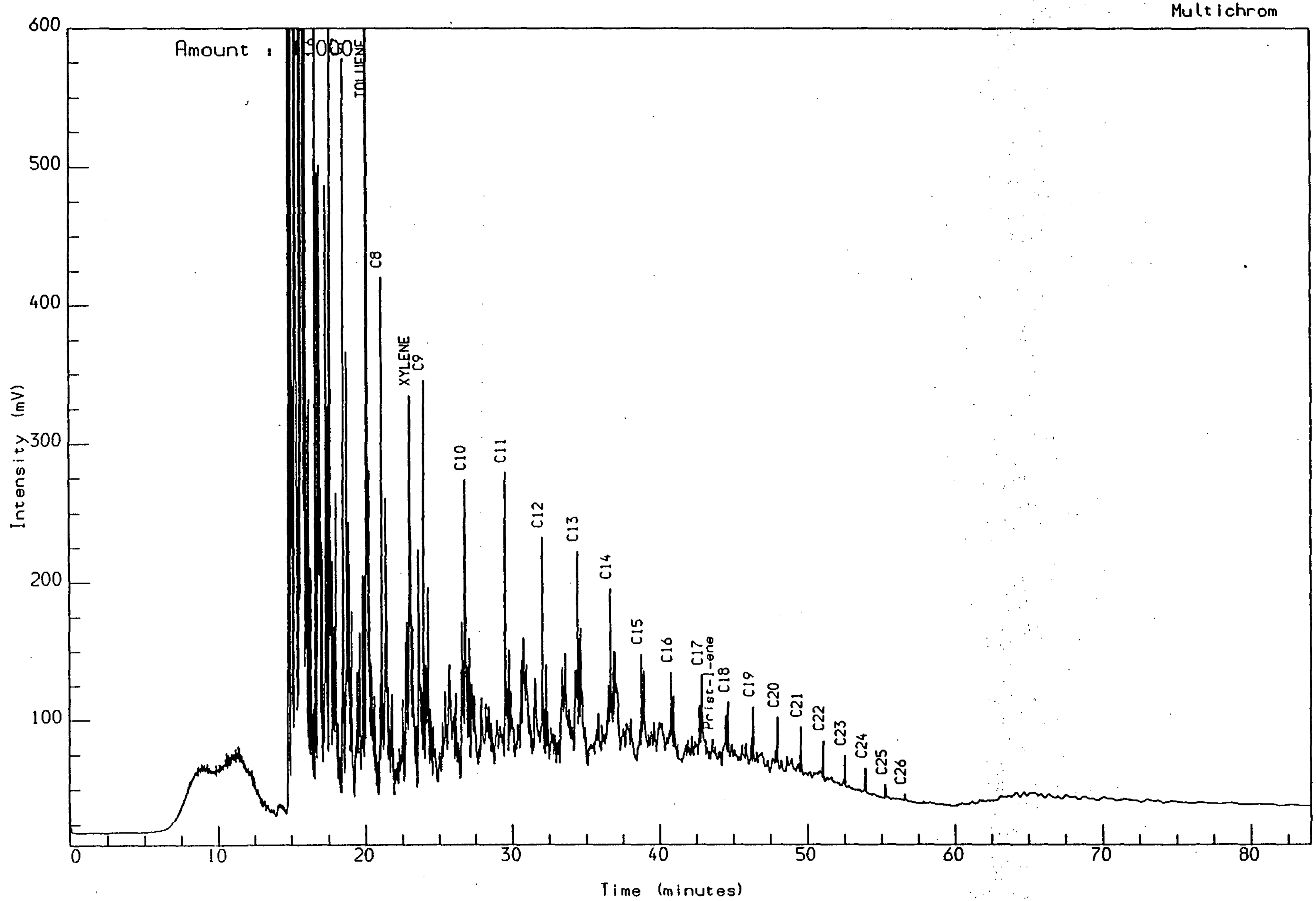



WELL NOCS 34/7-5 1130.00m cut
PYROLYSIS GC (S2)
Sh/Clst: lt ol gy to lt brn gy

Reported on 4-FEB-1991 at 10:36

GEOLAB NOR

Analysis Name : [P2408] 21 PE7100731,1,1.



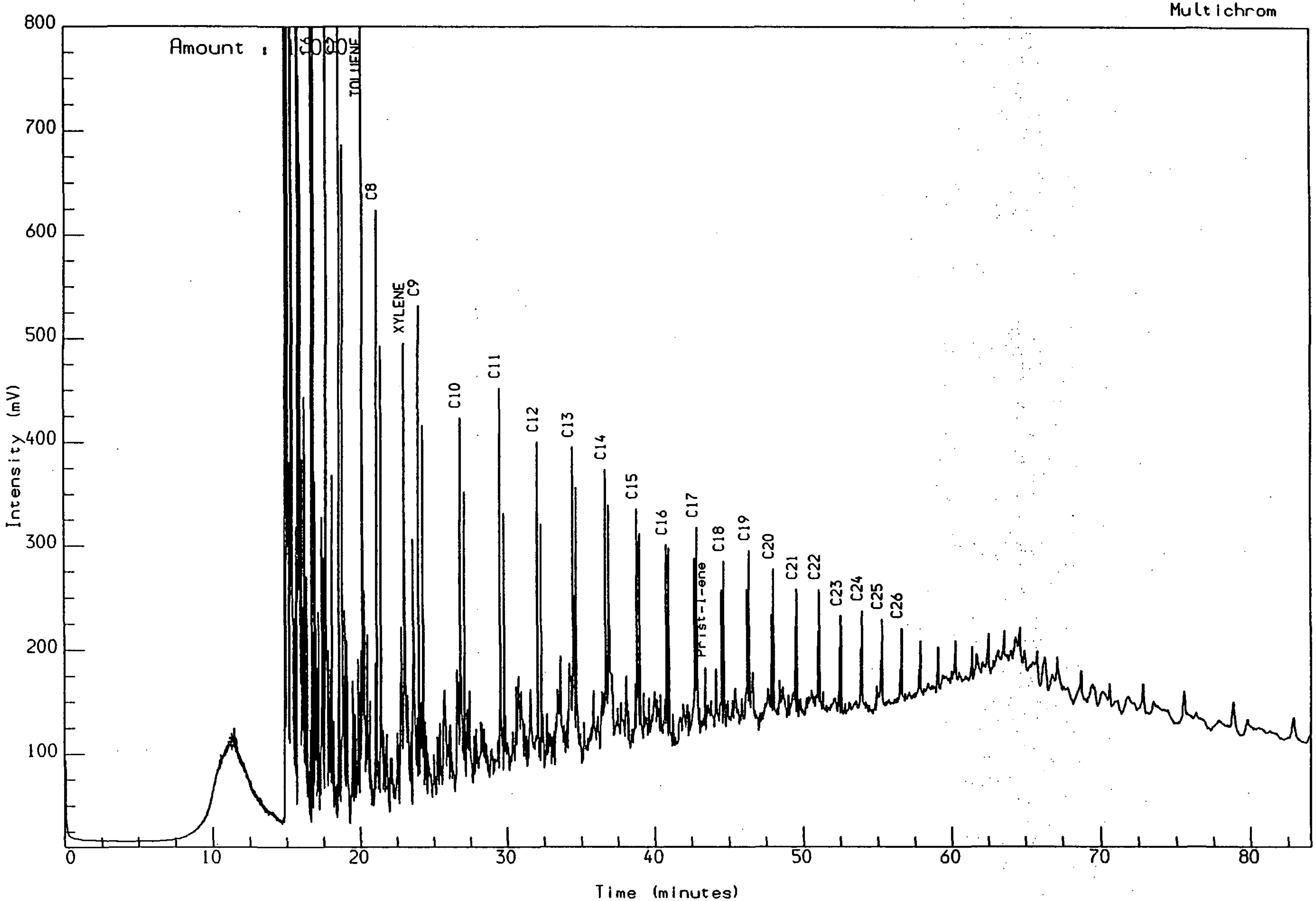

WELL NOCS 34/7-5
PYROLYSIS GC (S2)
Ca: lt or to or gy

2496.00m cut

Reported on 4-FEB-1991 at 08:58

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101781B,1,1.

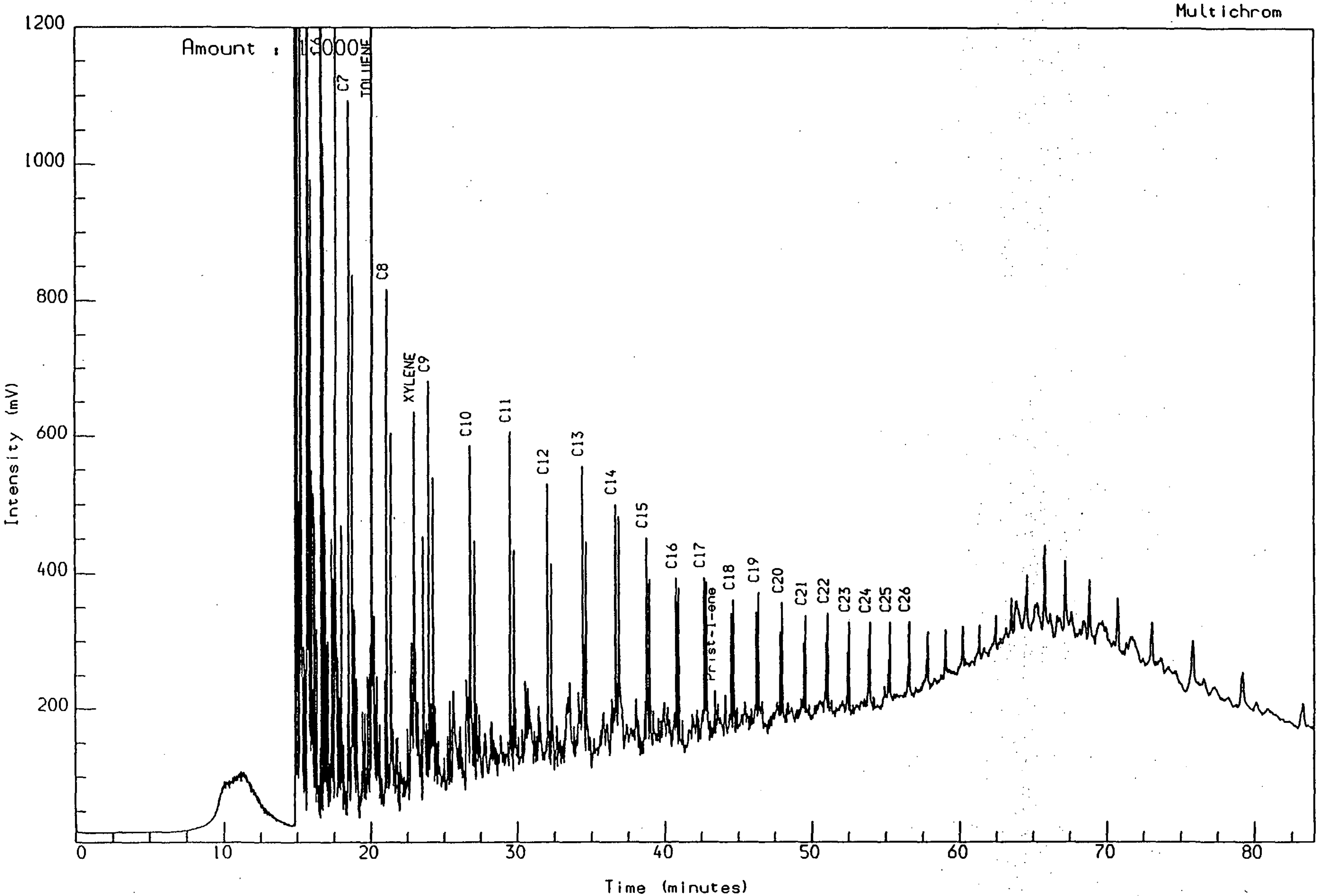



WELL NOCS 34/7-5 2511.00m ccp
PYROLYSIS GC (S2)
Sltst: lt brn gy to pl y brn

Reported on 4-FEB-1991 at 09:00

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101821,1,1.

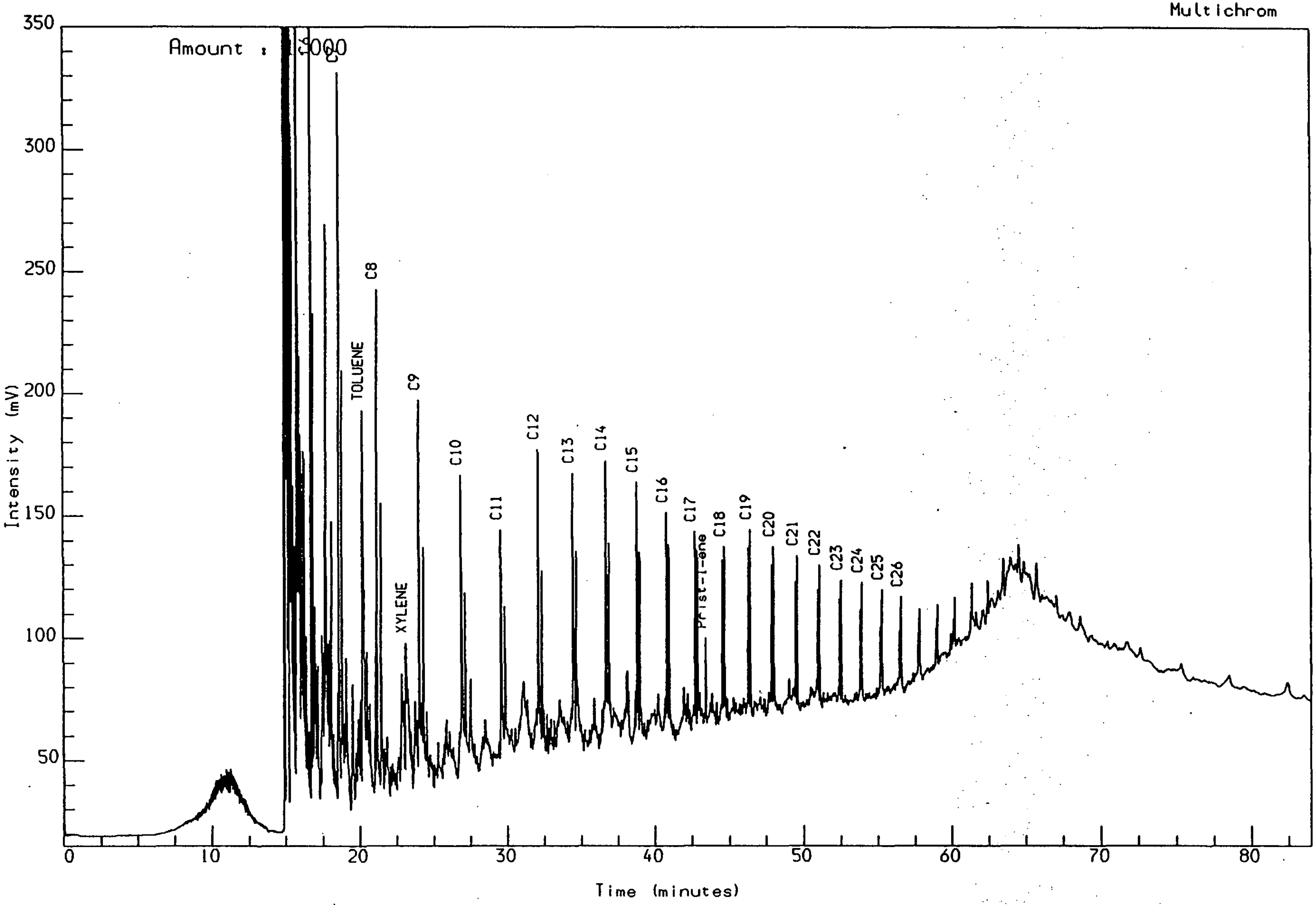



WELL NOCS 34/7-5 2519.00m ccp
PYROLYSIS GC (S2)
S/Sst: lt brn gy to lt gy

Reported on 4-FEB-1991 at 10:06

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101841,1,1.

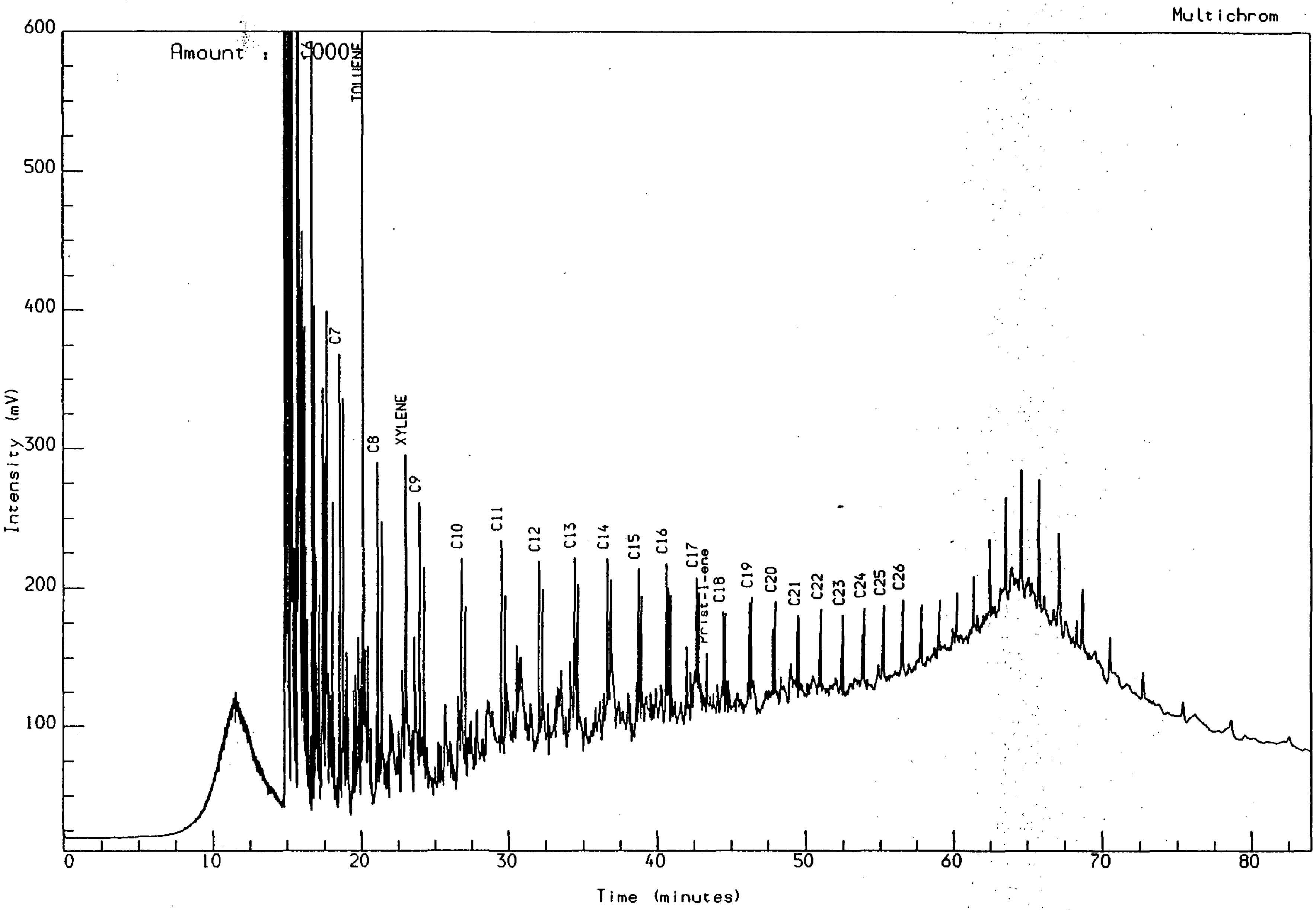



WELL NOCS 34/7-5 2523.00m ccp
PYROLYSIS GC (S2)
S/Sst: lt brn gy to lt or gy

Reported on 11-FEB-1991 at 10:00

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101871,1,1.

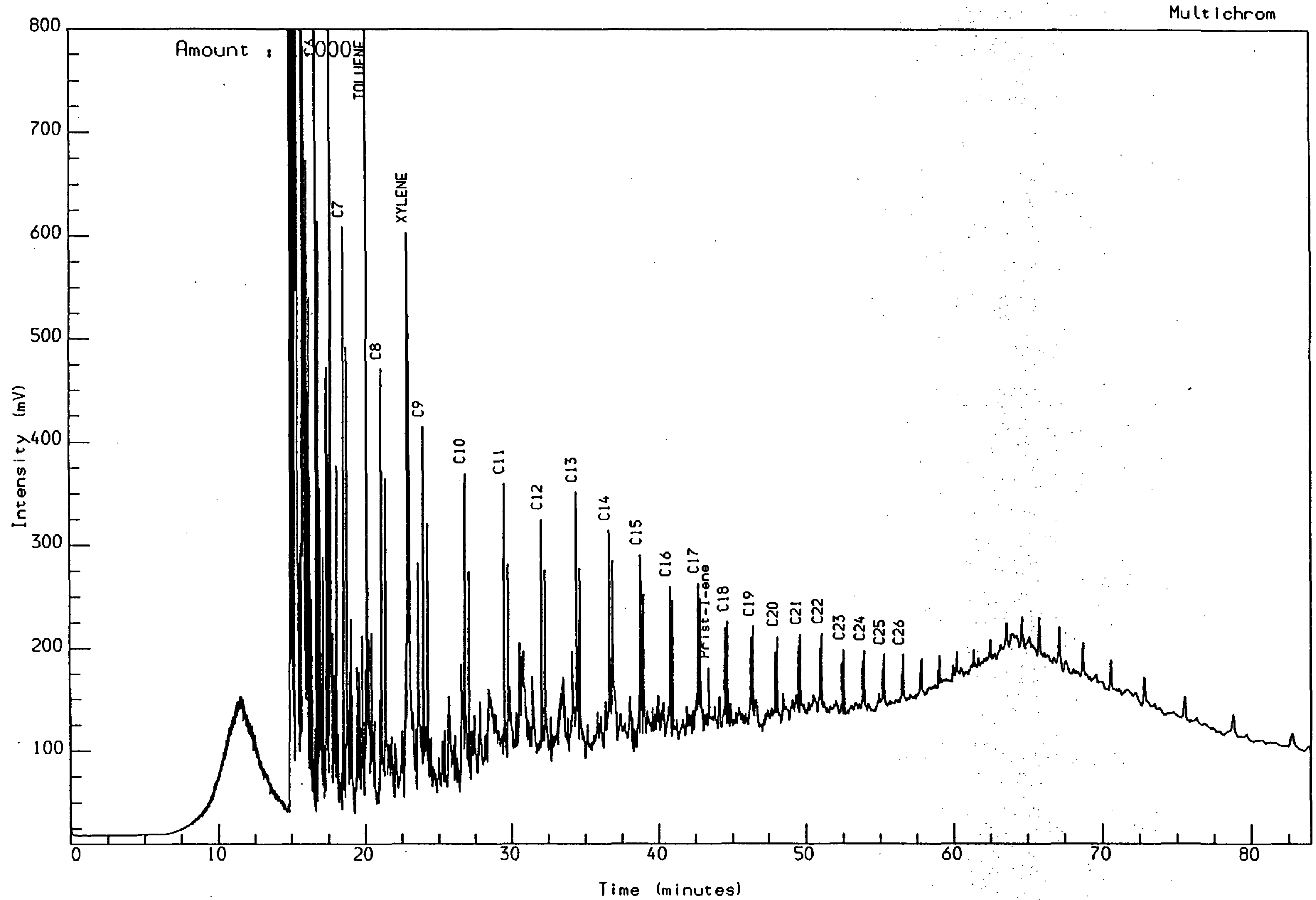



WELL NOCS 34/7-5 2530.50m ccp
PYROLYSIS GC (S2)
S/Sst: gy pi to lt brn gy to lt gy

Reported on 11-FEB-1991 at 10:03

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101901,1,1.

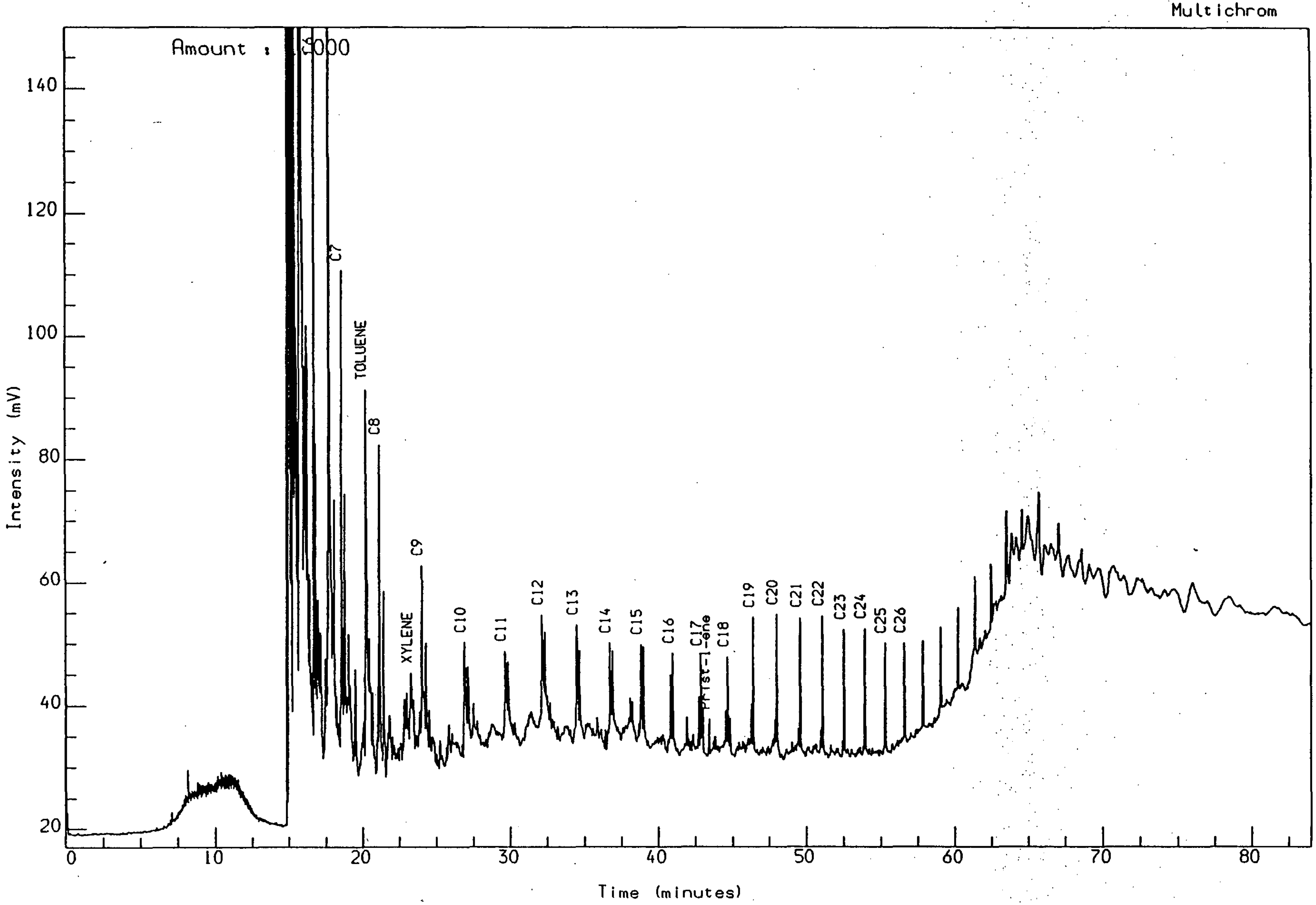



WELL NOCS 34/7-5 2536.00m ccp
PYROLYSIS GC (S2)
S/Sst: lt or gy to lt brn gy

Reported on 11-FEB-1991 at 10:04

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101971,1,1.

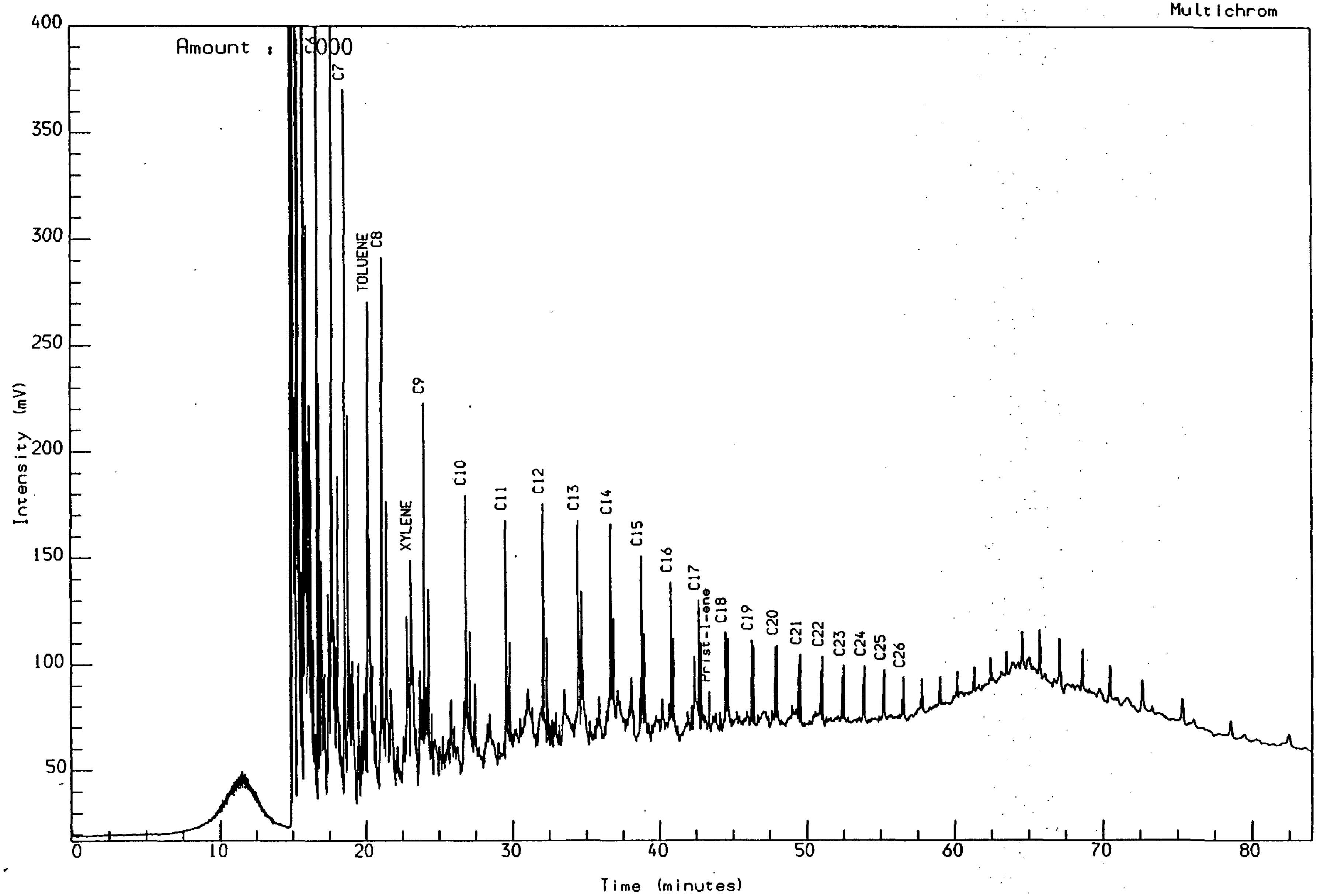



WELL NOCS 34/7-5 2550.00m ccp
PYROLYSIS GC (S2)
S/Sst: lt or gy to lt brn gy to lt g

Reported on 11-FEB-1991 at 10:05

GEOLAB NOR

Analysis Name : [P2408] 21 PE7102021,1,1.

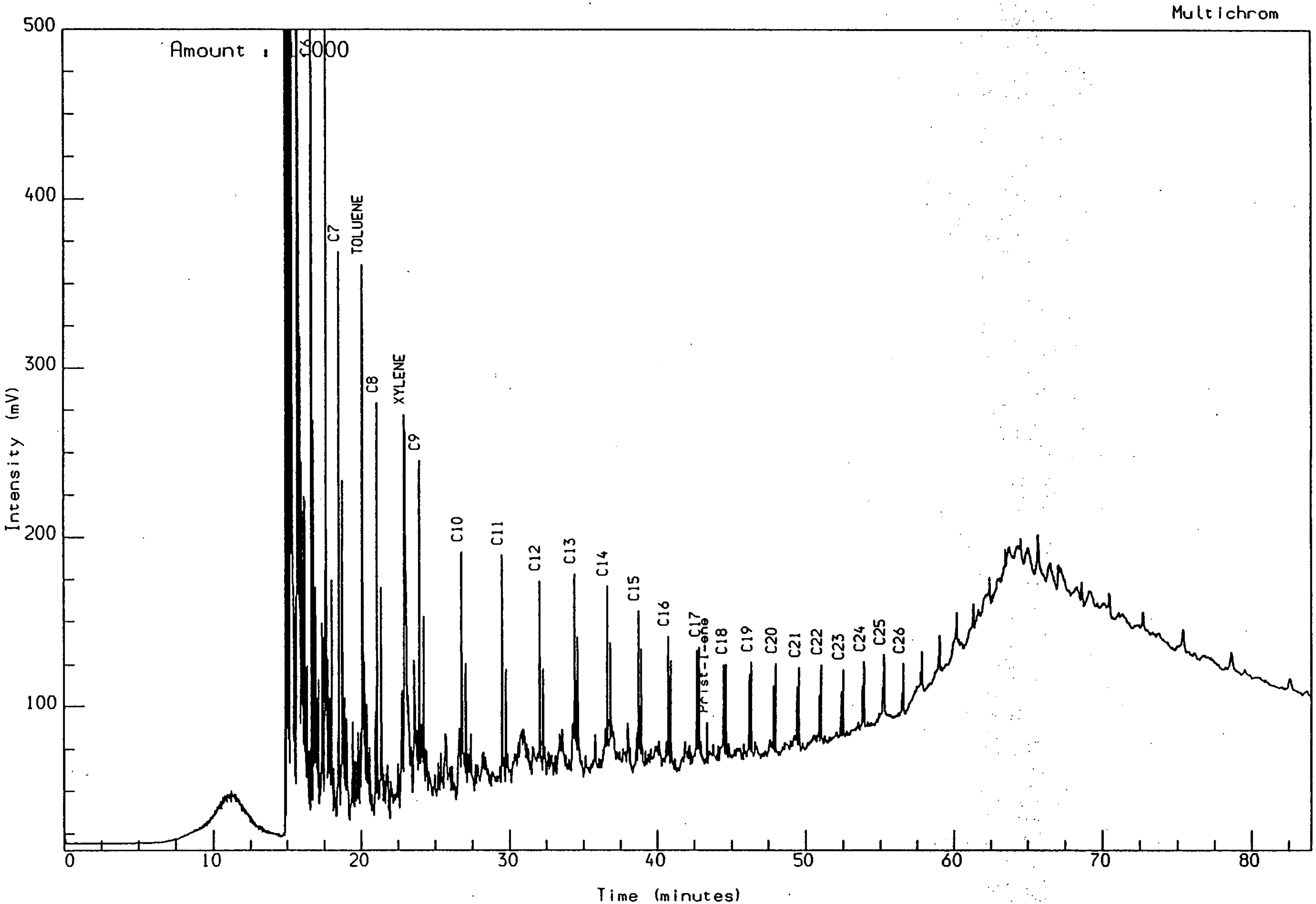



WELL NOCS 34/7-5 2560.00m ccp
PYROLYSIS GC (S2)
S/Sst: lt brn gy to lt gy

Reported on 11-FEB-1991 at 10:06

GEOLAB NOR

Analysis Name : [P2408] 21 PE7102071,1,1.

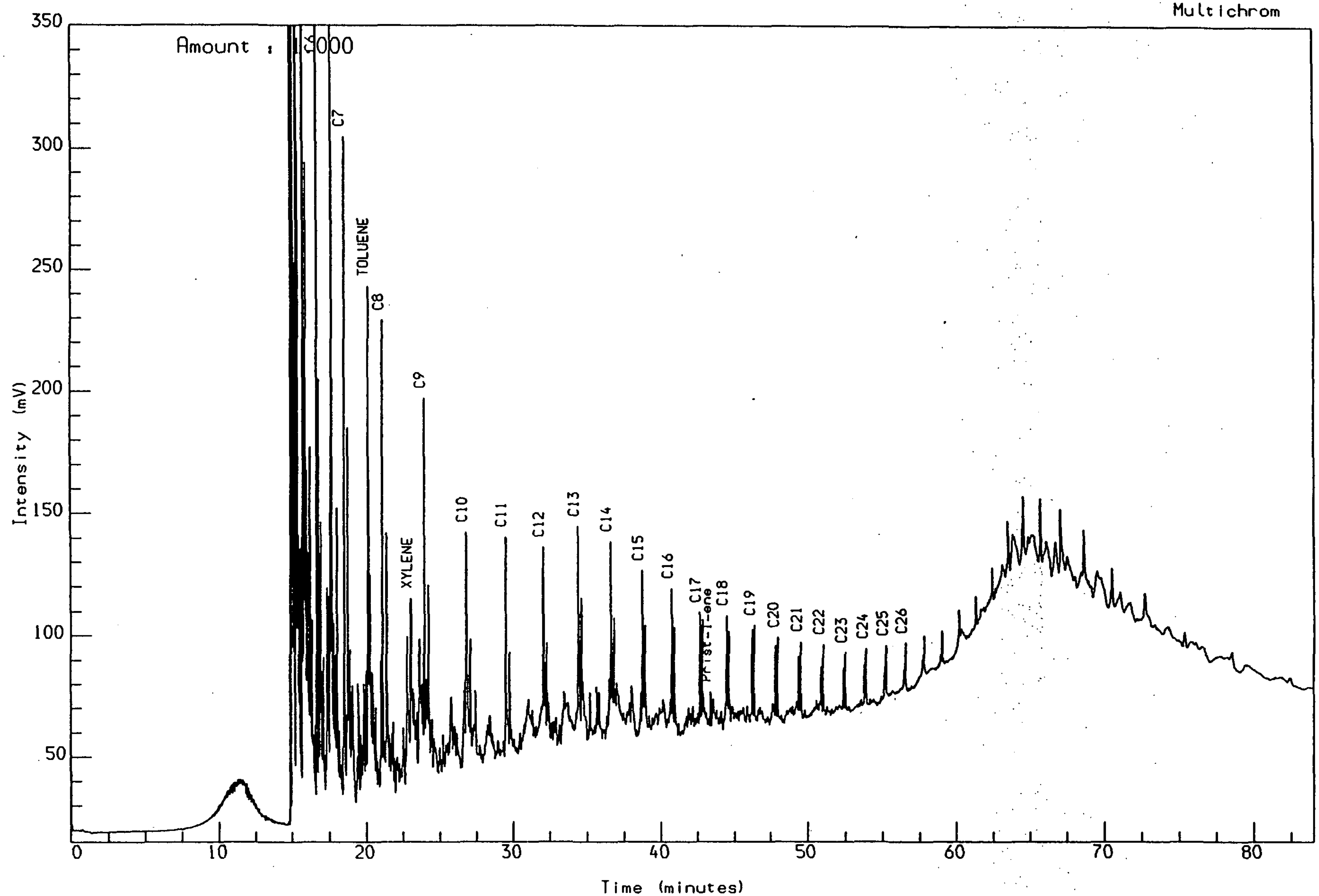



WELL NOCS 34/7-5 2570.00m ccp.
PYROLYSIS GC (S2)
S/Sst: lt gy to lt brn gy to gy pi

Reported on 11-FEB-1991 at 10:08

GEOLAB NOR

Analysis Name : [P2408] 21 PE7102121,1,1.

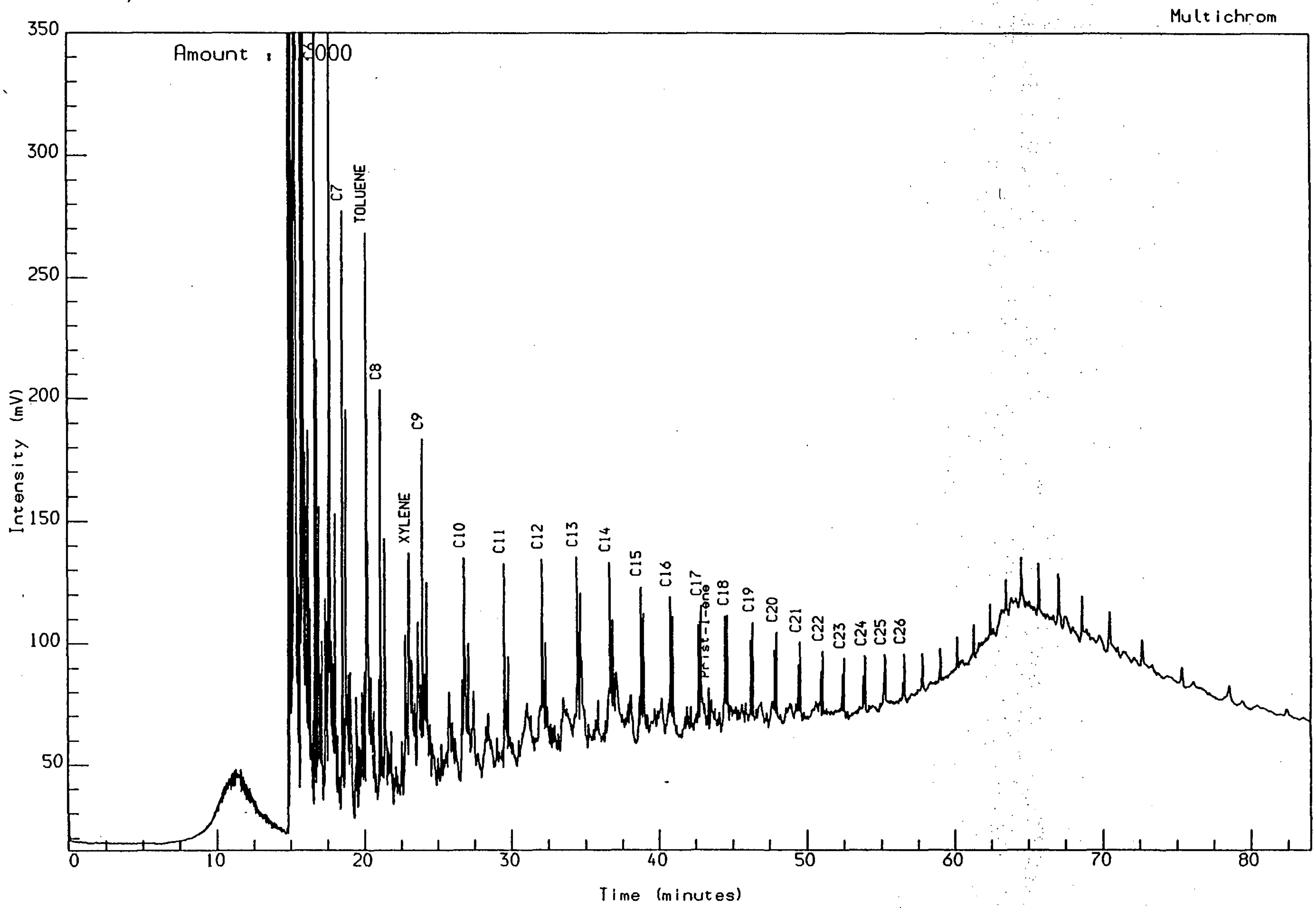



WELL NOCS 34/7-5 2580.00m ccp
PYROLYSIS GC (S2)
S/Sst: y gy to lt gy to m gy

Reported on 11-FEB-1991 at 10:09

GEOLAB NOR

Analysis Name : [P2408] 21 PE7102171,1,1.



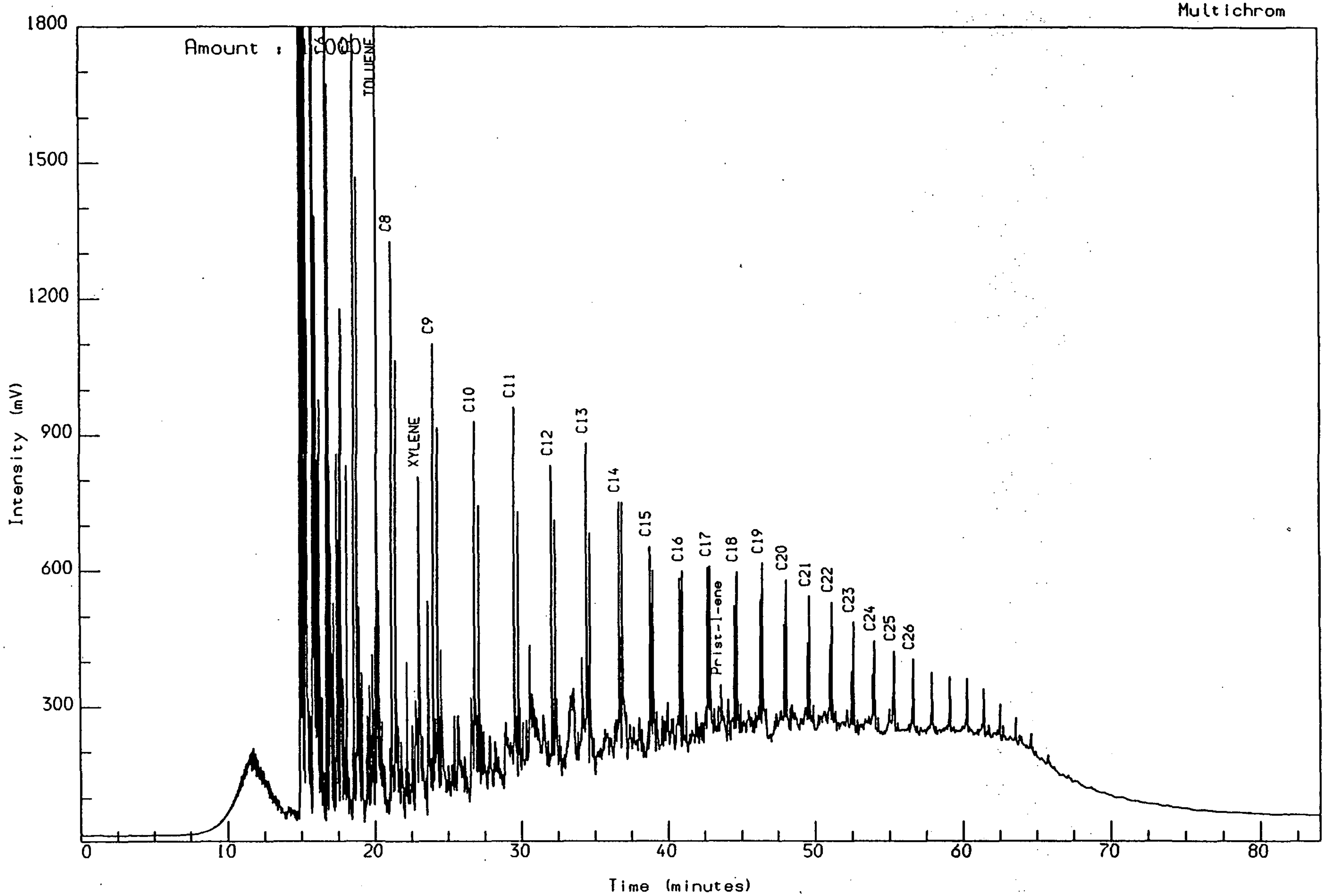

WELL NOCS 34/7-5
PYROLYSIS GC (S2)
S/Sst: w to lt gy

2590.00m ccp

Reported on 11-FEB-1991 at 10:10

GEOLAB NOR

Analysis Name : [P2408] 21 PE7102251,1,1.




WELL NOCS 34/7-5 2606.00m ccp

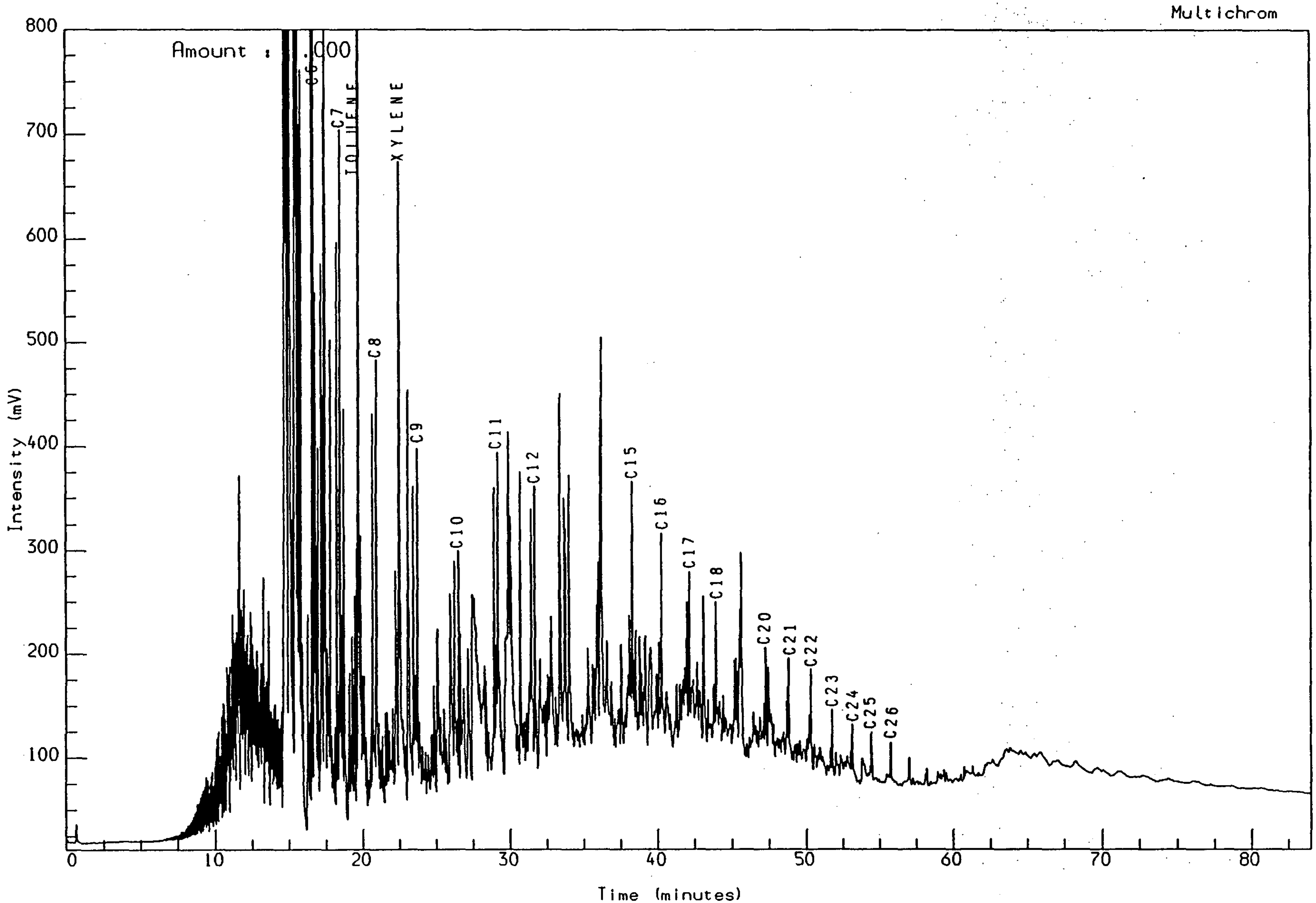
PYROLYSIS GC (S2)

S/Sst: lt gy to lt brn gy

Reported on 11-FEB-1991 at 10:12

GEOLAB NOR

Analysis Name : [P2408] 21 PE7102291.1.1.

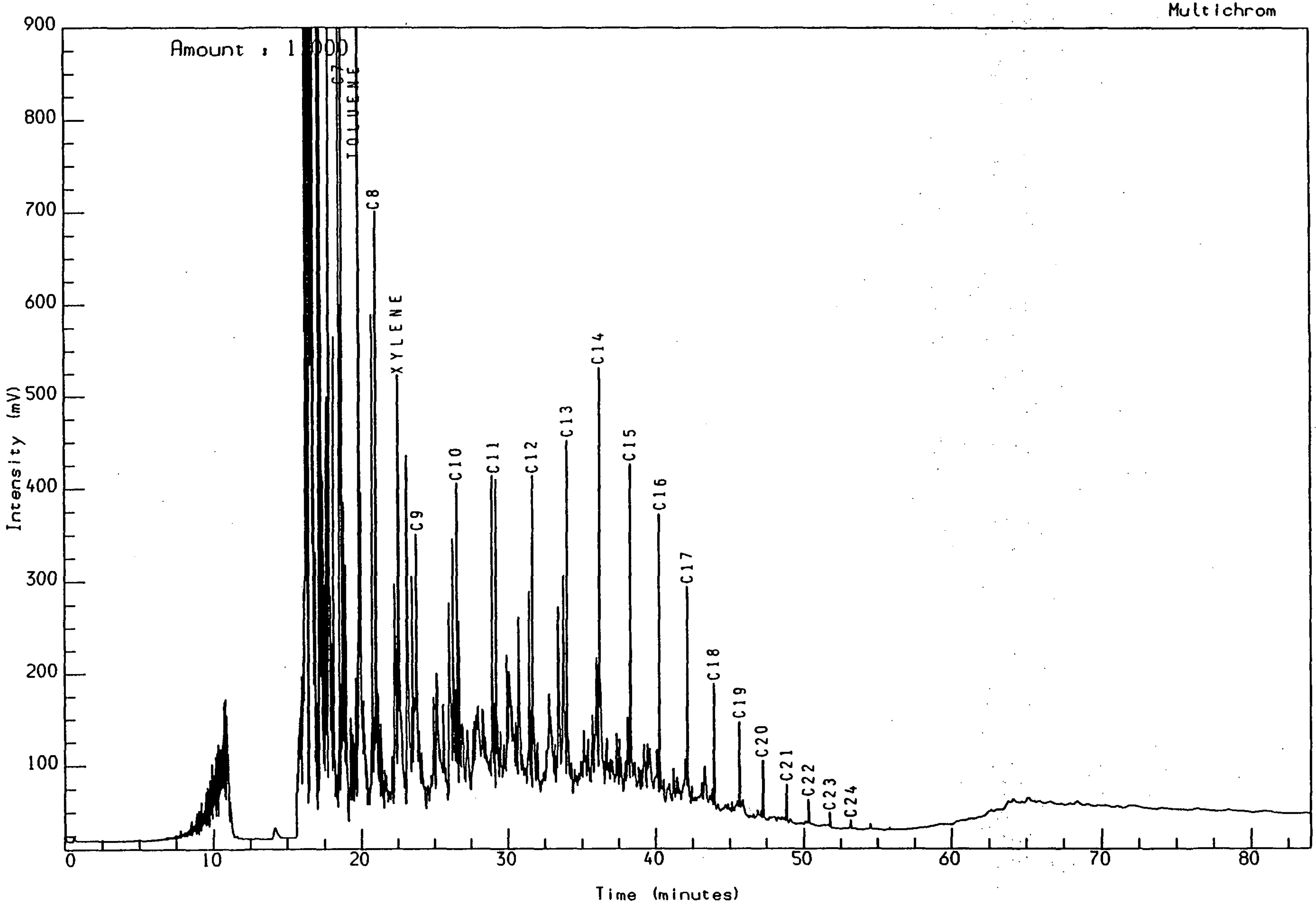



WELL NOCS 34/7-5 2615.00m ccp
PYROLYSIS GC (S2)
S/Sst: lt gy to m gy to lt brn gy

Reported on 11-FEB-1991 at 11:02

GEOLAB NOR

Analysis Name : [P2408] 21 PE7102341,1,1.

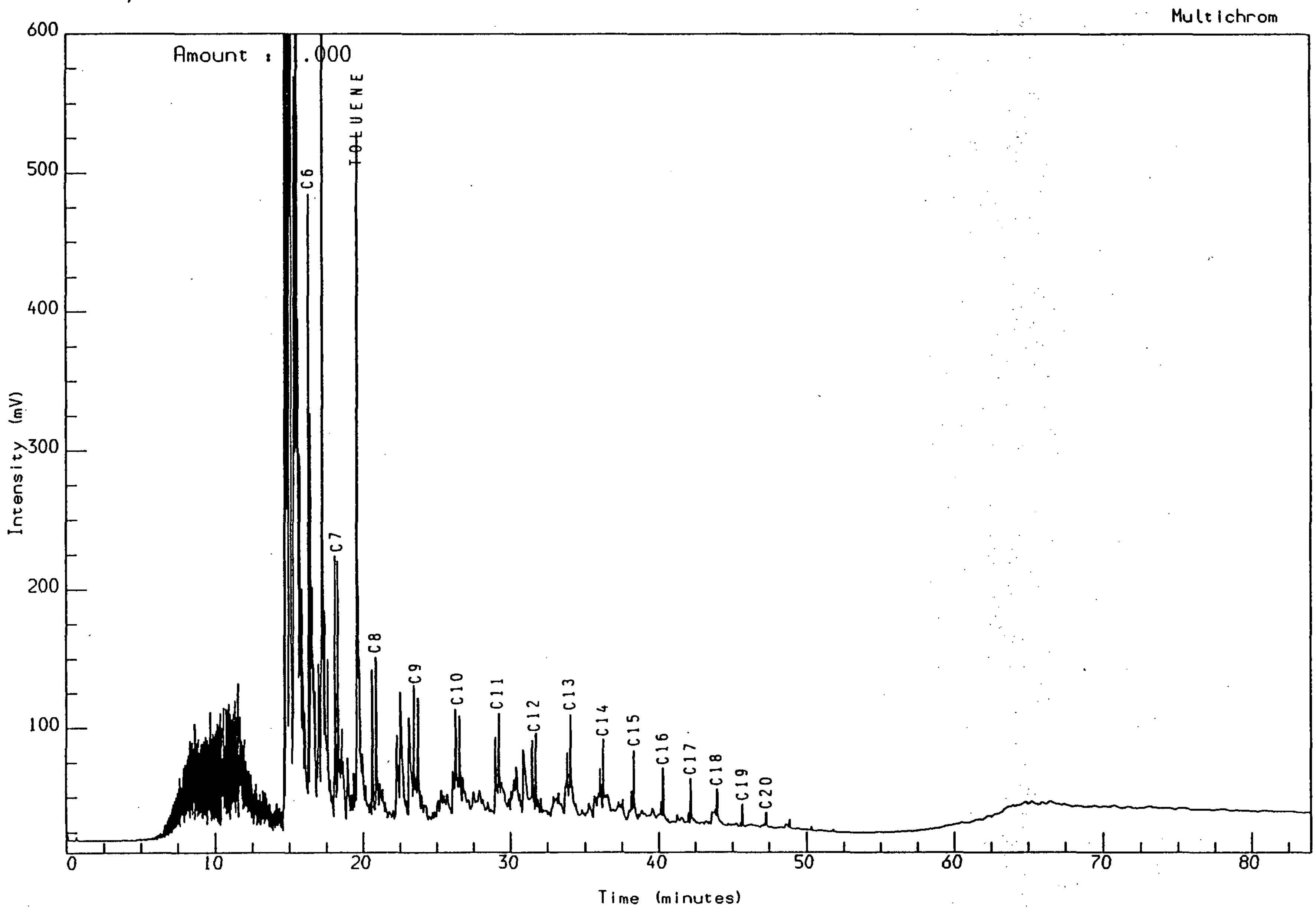



WELL NOCS 34/7-5 2626.00m ccp
PYROLYSIS GC (S2)
Sh/Clst: m gy to drk gy

Reported on 11-FEB-1991 at 11:04

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101011,1,1.

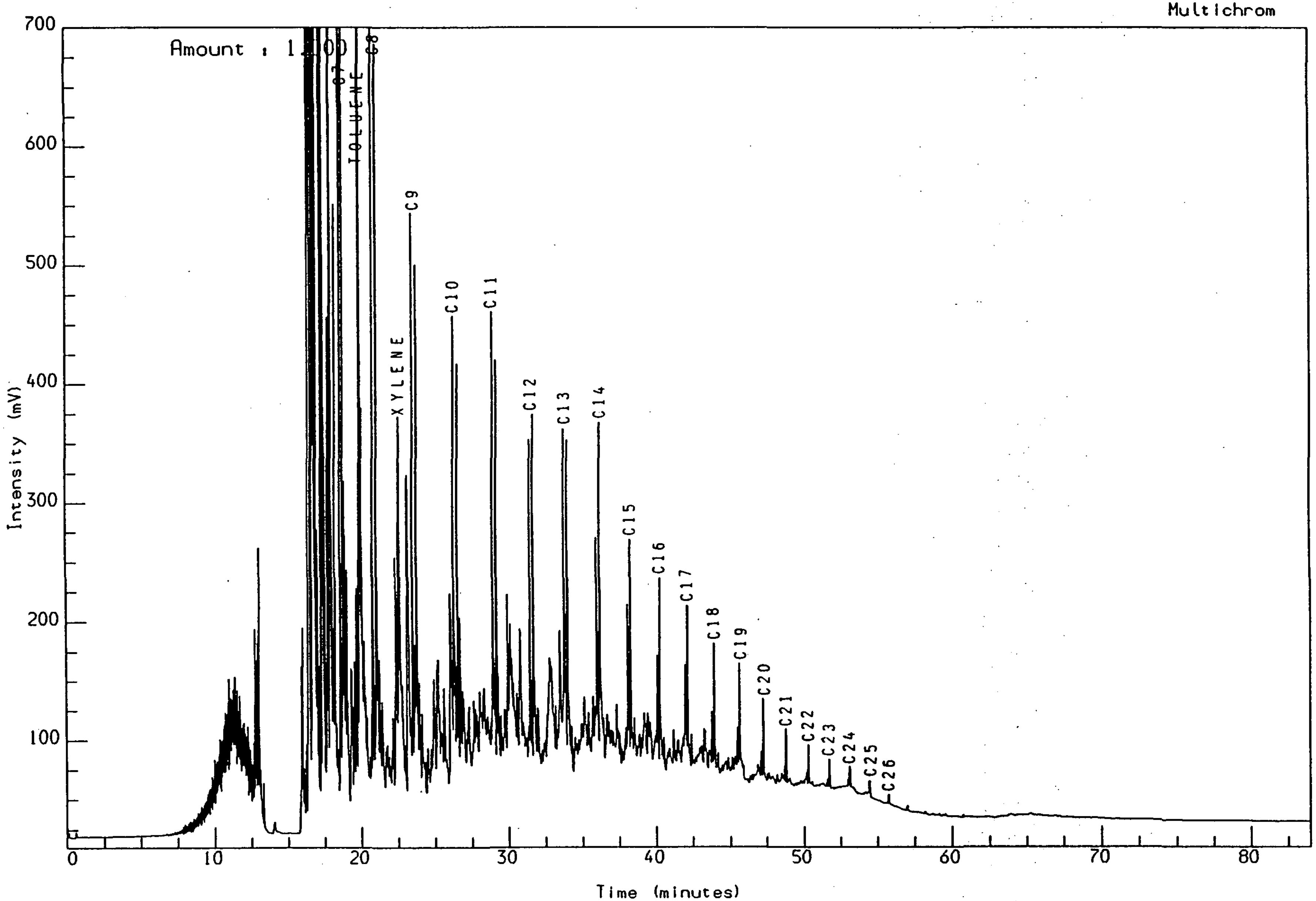



WELL NOCS 34/7-5 2676.00m cut
PYROLYSIS GC (S2)
Sh/Clst: gy pi to lt brn

Reported on 11-FEB-1991 at 11:05

GEOLAB NOR

Analysis Name : [P2408] 21 PE7101141,1,1.

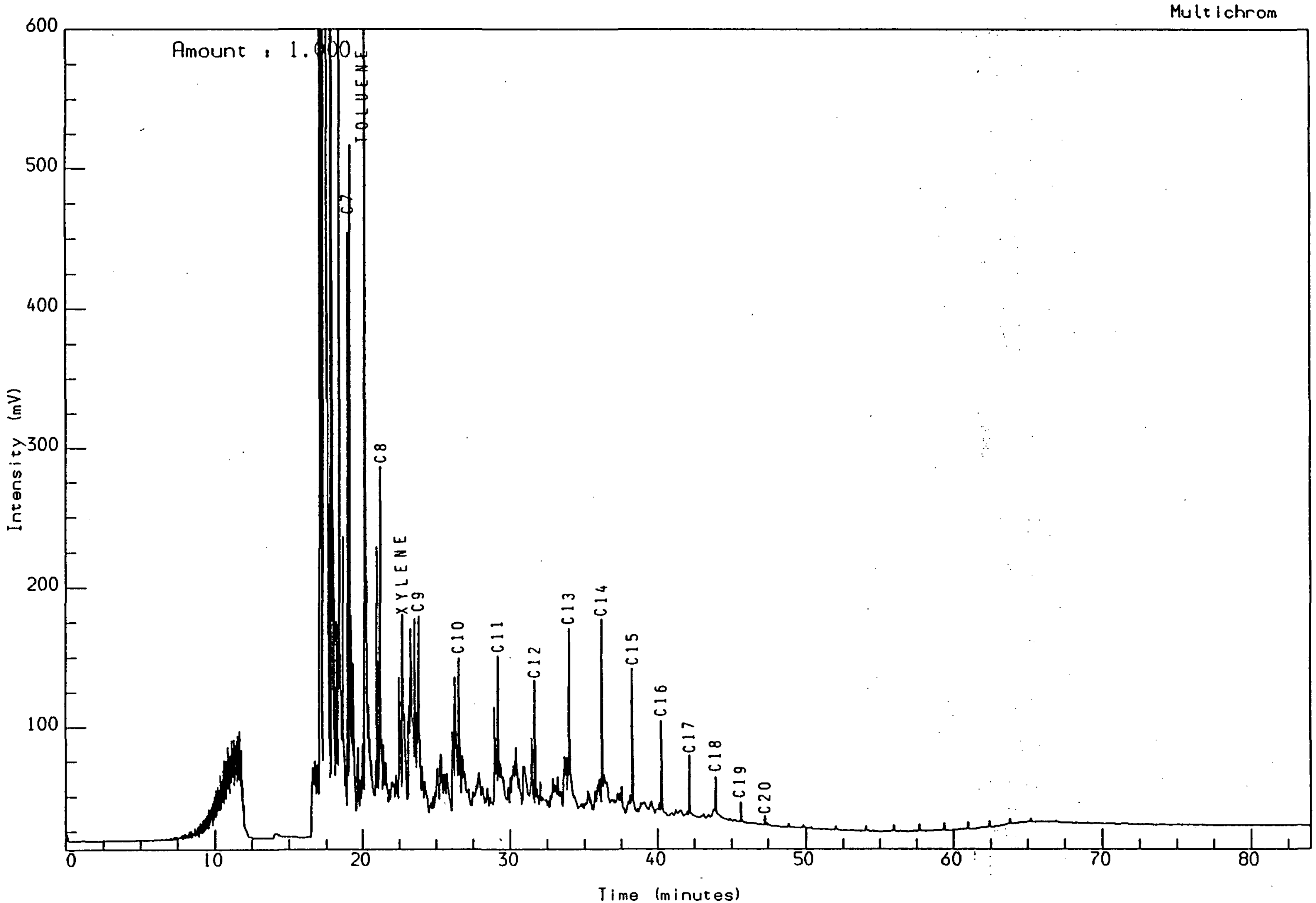



WELL NOCS 34/7-5 2754.00m cut
PYROLYSIS GC (S2)
Sh/Clst: drk gy to brn blk

Reported on 11-FEB-1991 at 11:06

GEOLAB NOR

Analysis Name : [P2408] 21 PE7102451.1.1.



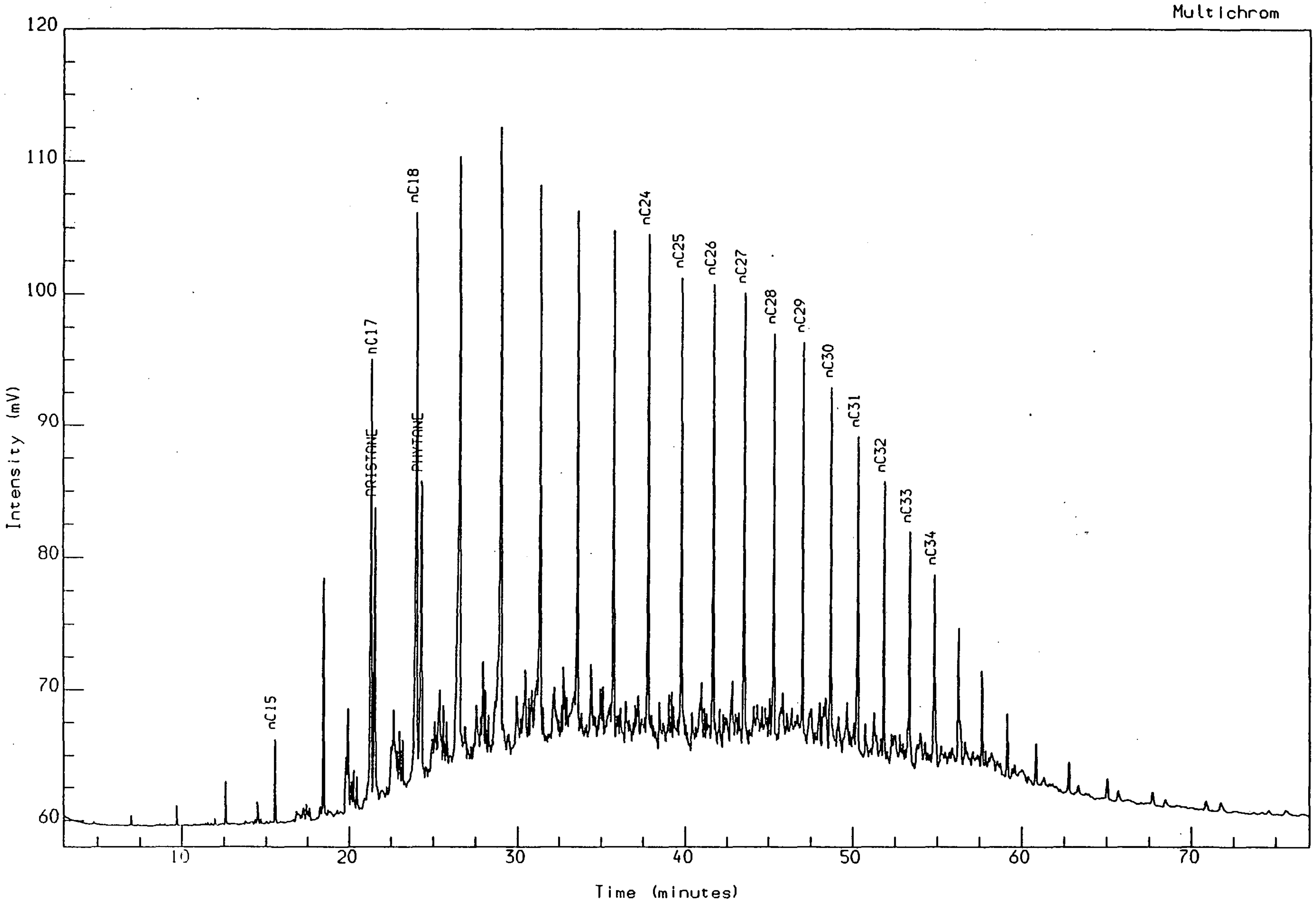

WELL NOCS 34/7-5
PYROLYSIS GC (S2)
Sltst: m gy to drk gy

2883.25m ccp

Reported on 11-FEB-1991 at 11:07

GEOLAB NOR

Analysis Name : [P2408] 11 SE7101781L,1,1.

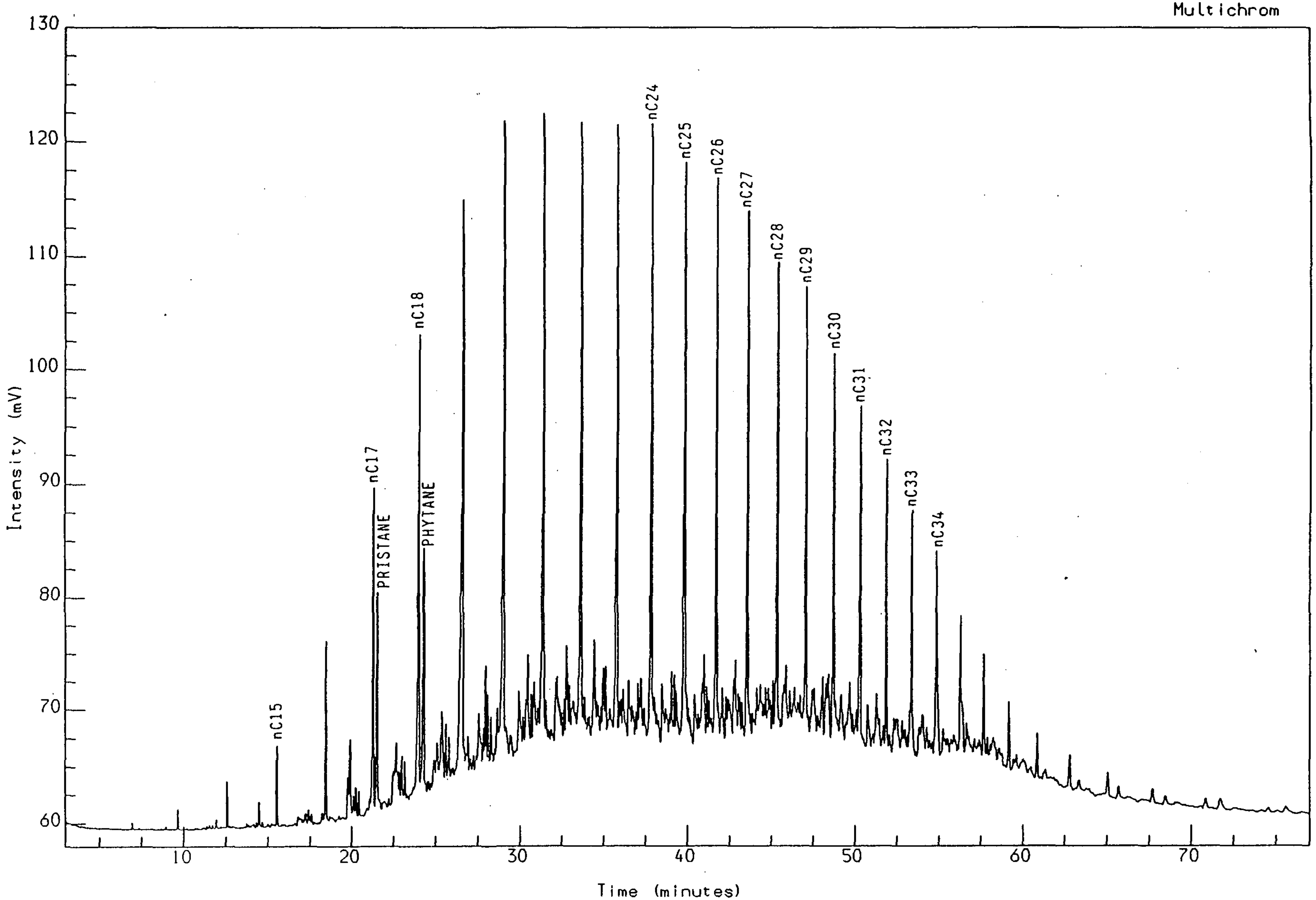



WELL NOCS 34/7-5 2511m
SATURATED GC
Sltst: lt brn gy to pl y brn

Reported on 6-FEB-1991 at 09:05

GEOLAB NOR

Analysis Name : [P2408] 11 SE7102490B,1,1.

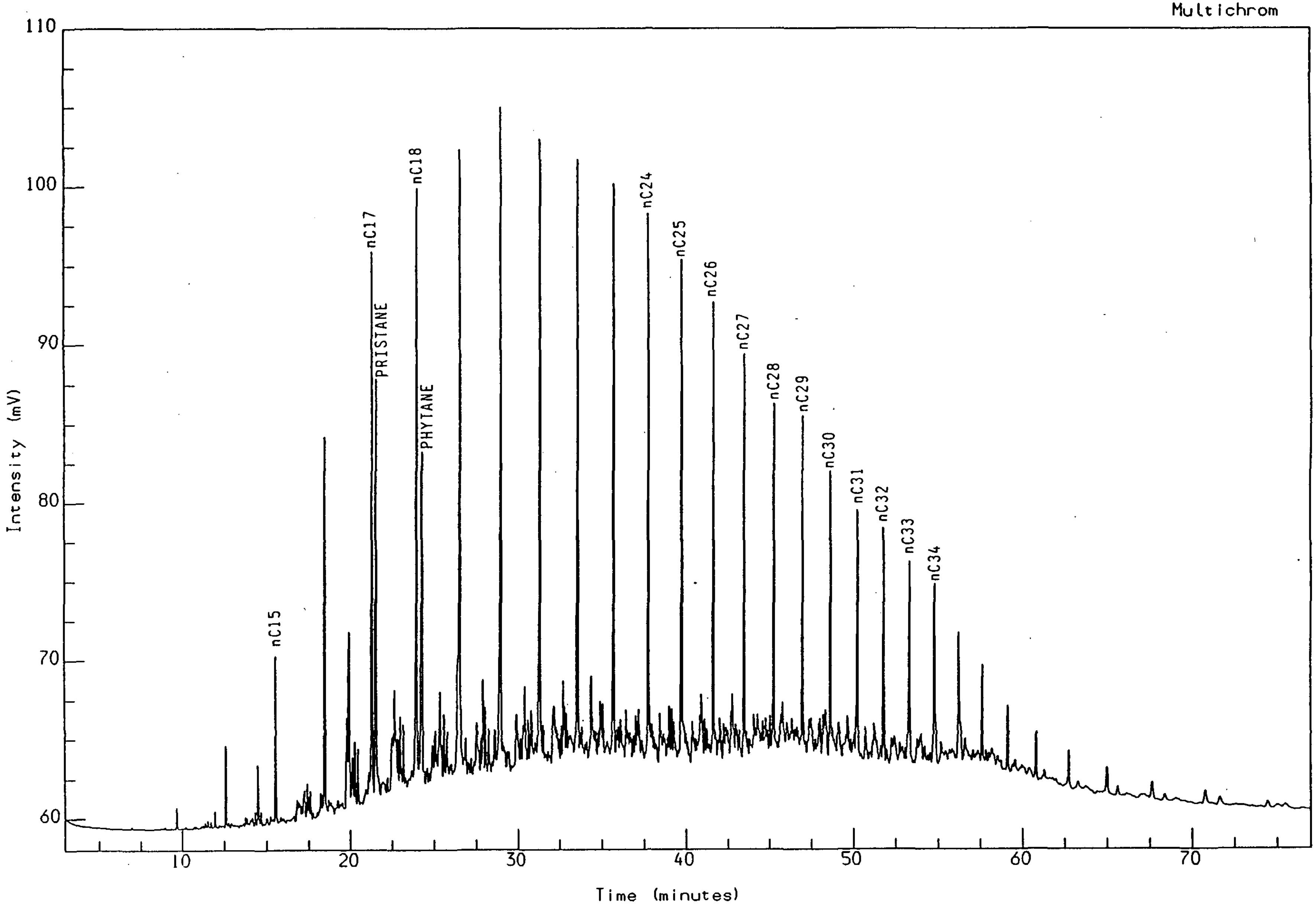



WELL NOCS 34/7-5   2519-2523m
SATURATED GC
S/Sst: lt brn gy to lt or gy

Reported on 5-FEB-1991 at 14:27

GEOLAB NOR

Analysis Name : [P2408] 11 SE7102500B,1,1.

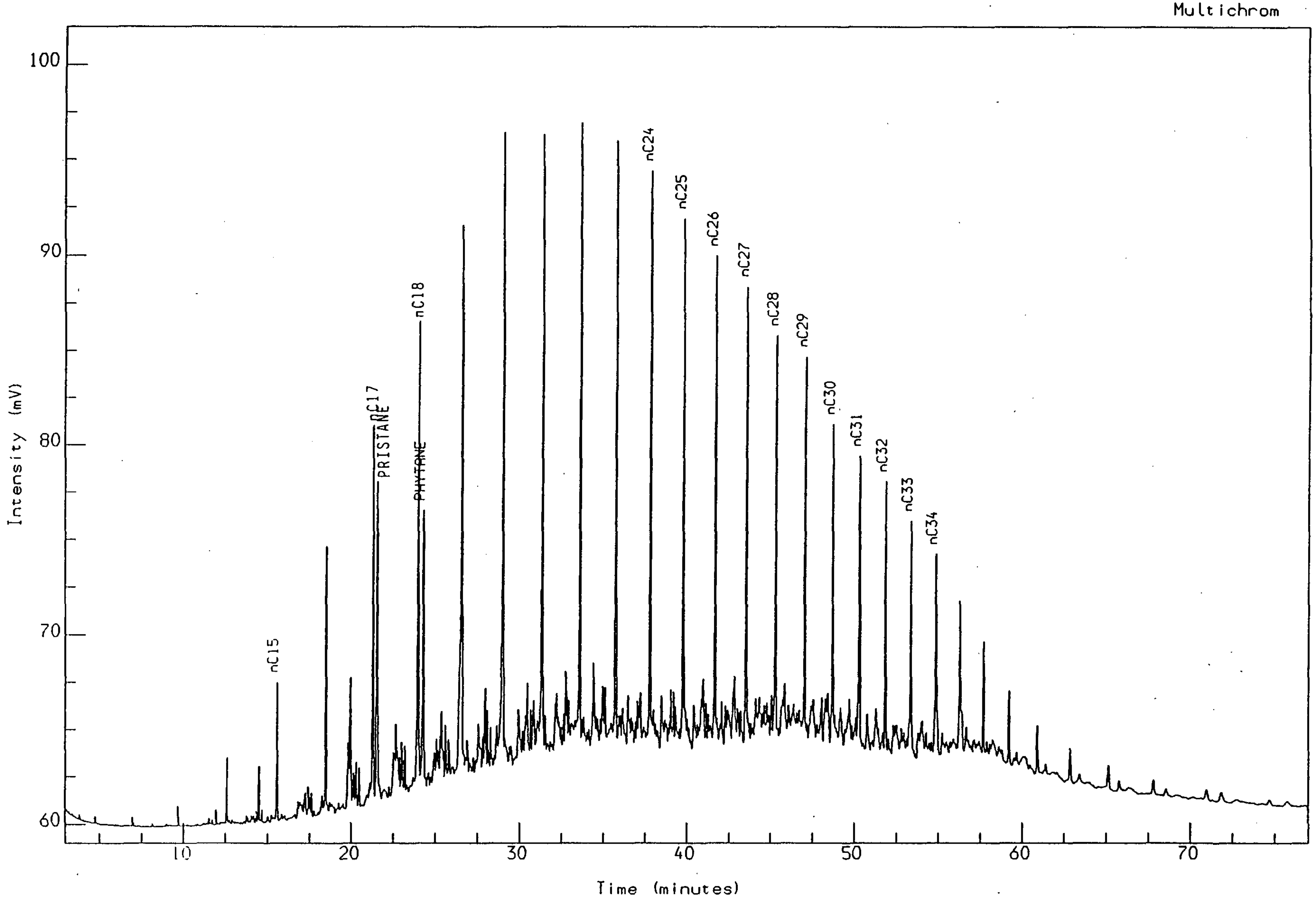



WELL NOCS 34/7-5 2536-2550m
SATURATED GC
S/Sst: lt or gy to lt brn gy
to lt gy

Reported on 5-FEB-1991 at 15:45

GEOLAB NOR

Analysis Name : [P2408] 11 SE7102510B,1,1.

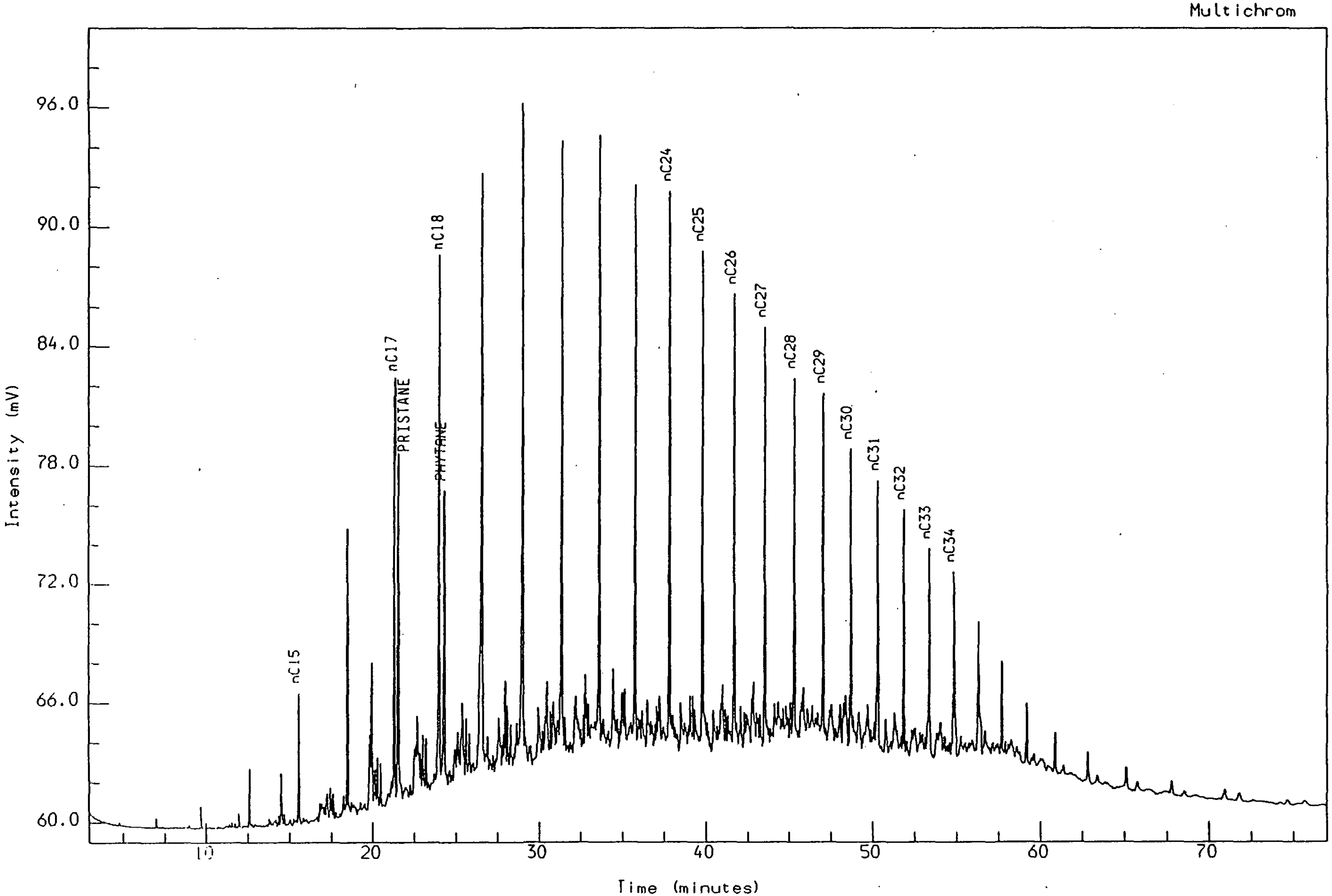



WELL NOCS 34/7-5 2566-2576m
SATURATED GC
S/Sst: lt gy to m gy to lt brn gy,
lt gy to lt brn gy to gy pi

Reported on 6-FEB-1991 at 09:52

GEOLAB NOR

Analysis Name : [P2408] 11 SE7102520B,1,1.

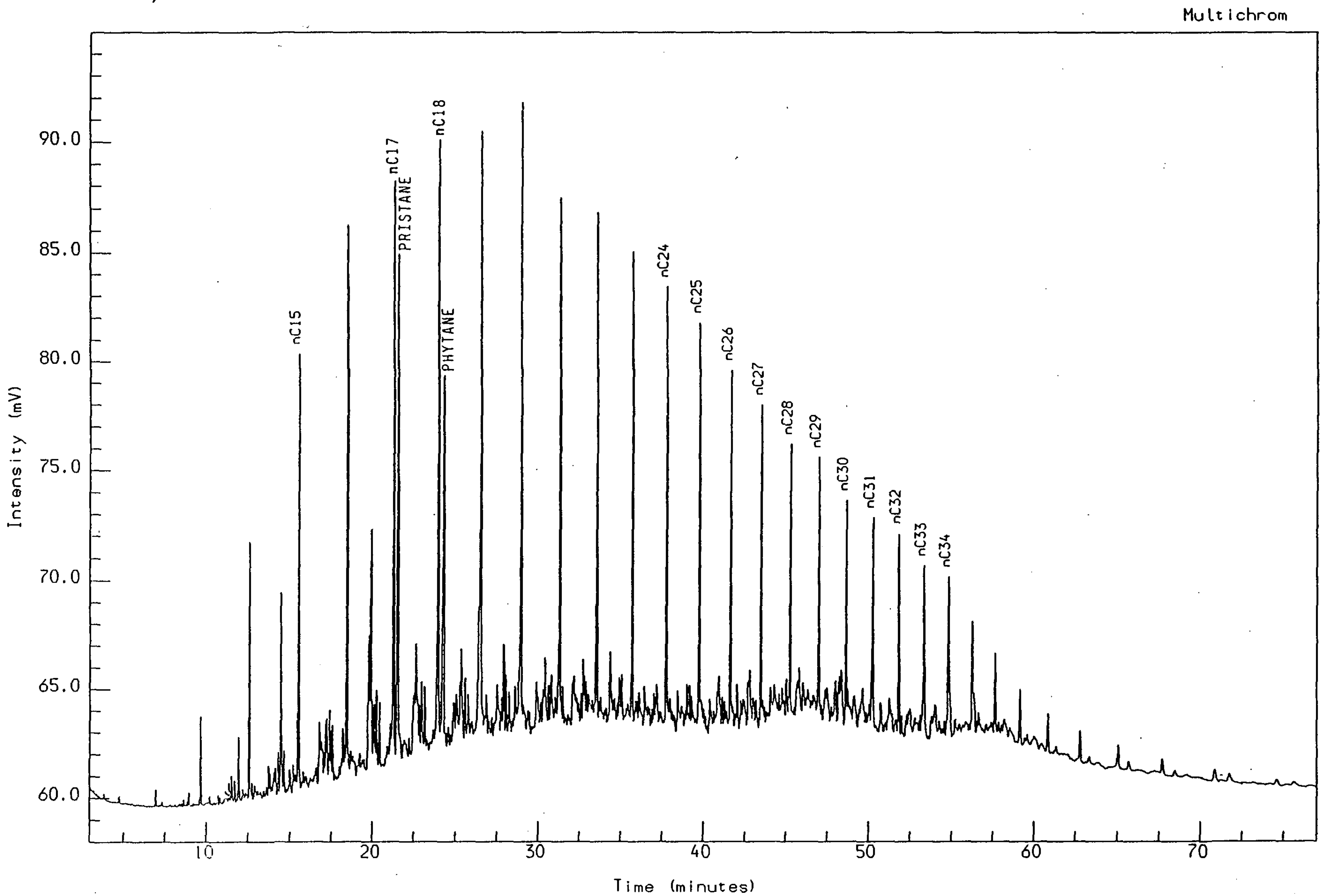



WELL NOCS 34/7-5 2580-2590m
SATURATED GC
S/Sst: y gy to lt gy to drk gy,
w to lt gy

Reported on 6-FEB-1991 at 11:20

GEOLAB NOR

Analysis Name : [P2408] 11 SE7102530B,1,1.

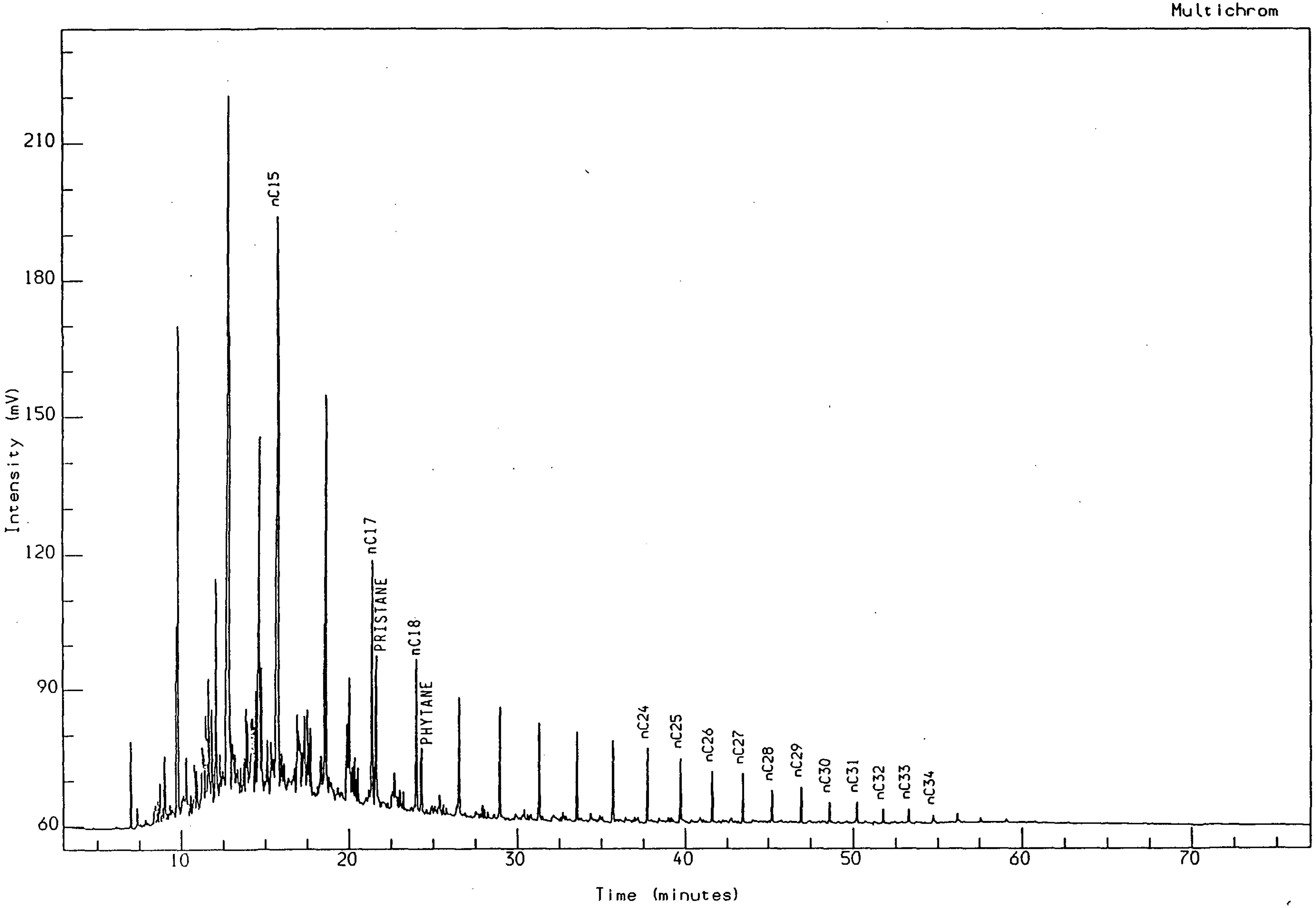



WELL NOCS 34/7-5 2600-2611m
SATURATED GC
S/Sst: lt gy to lt brn gy to y gy,
lt gy to y gy to lt brn gy

Reported on 6-FEB-1991 at 12:54

GEOLAB NOR

Analysis Name : [P2408] 11 SE7102540B,1,1.

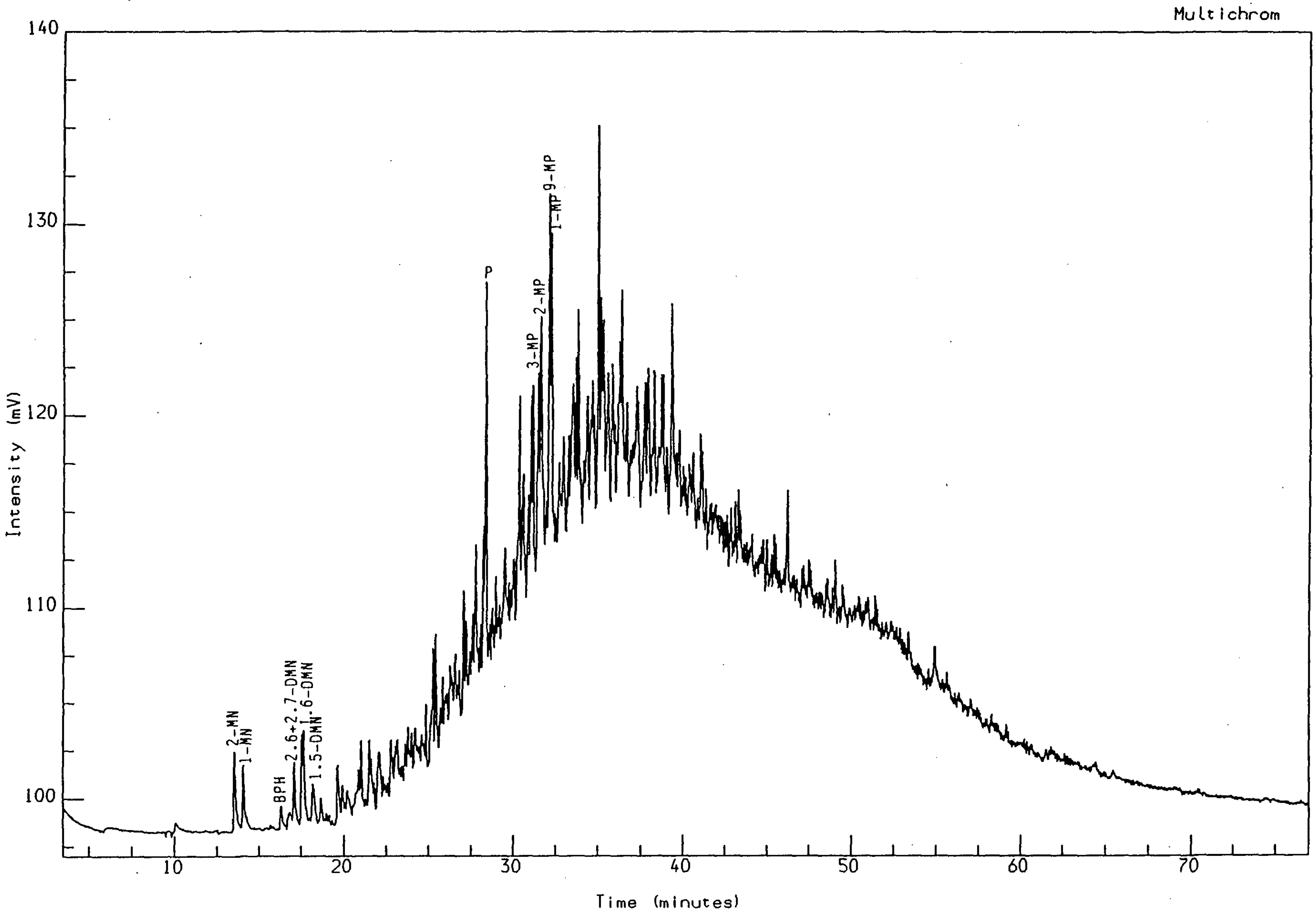



WELL NOCS 34/7-5 2626-2630m
SATURATED GC
Sh/Clst: m gy to drk gy

Reported on 6-FEB-1991 at 14:28

GEOLAB NOR

Analysis Name : [P2408] 9 AE7101781L,1,1.

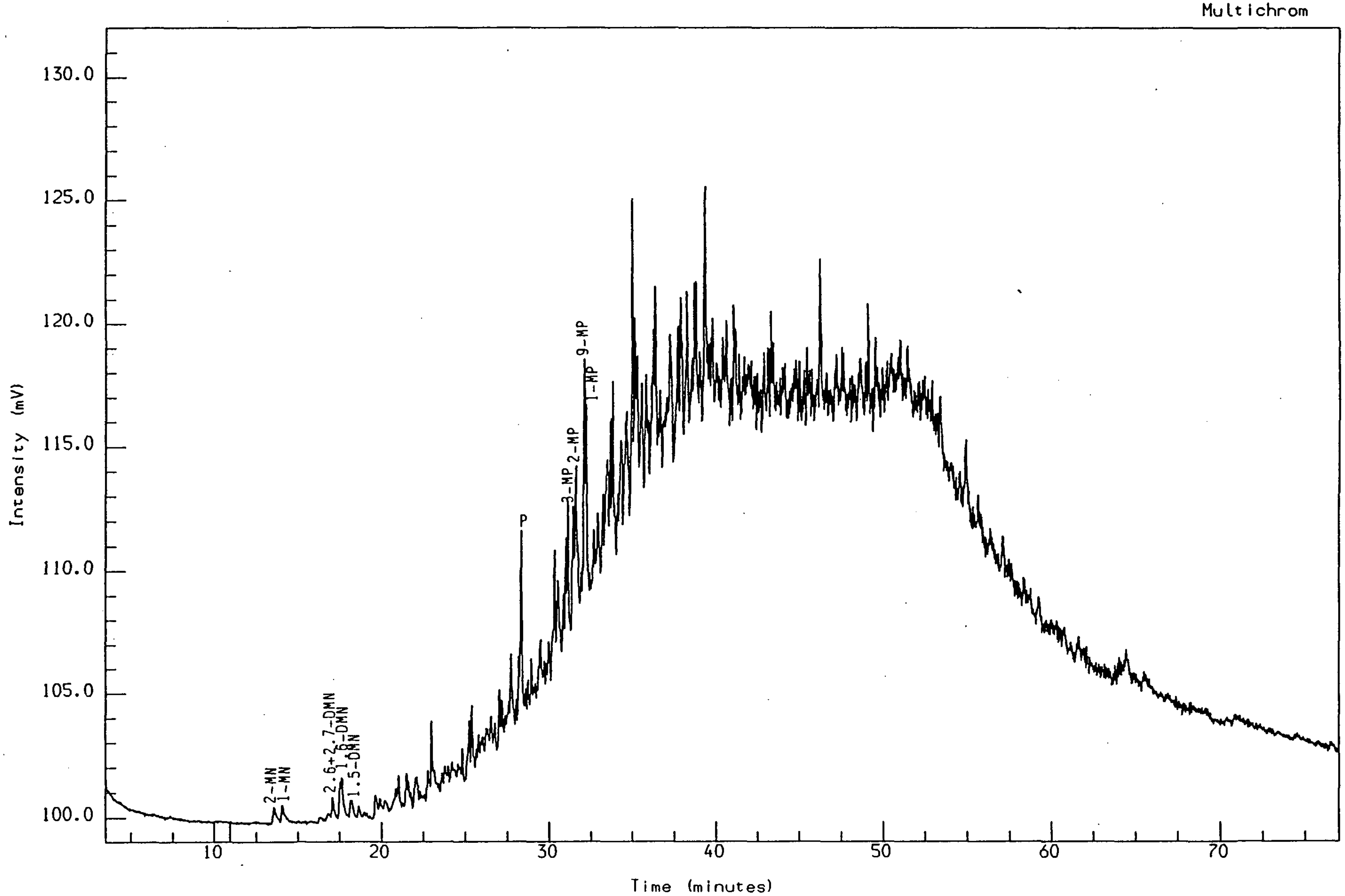



WELL NOCS 34/7-5    2511m
AROMATIC GC (FID)
Sltst: lt brn gy to pl y brn

Reported on 13-FEB-1991 at 11:30

GEOLAB NOR

Analysis Name : [P2408] 9 AE7102490B,1,1.

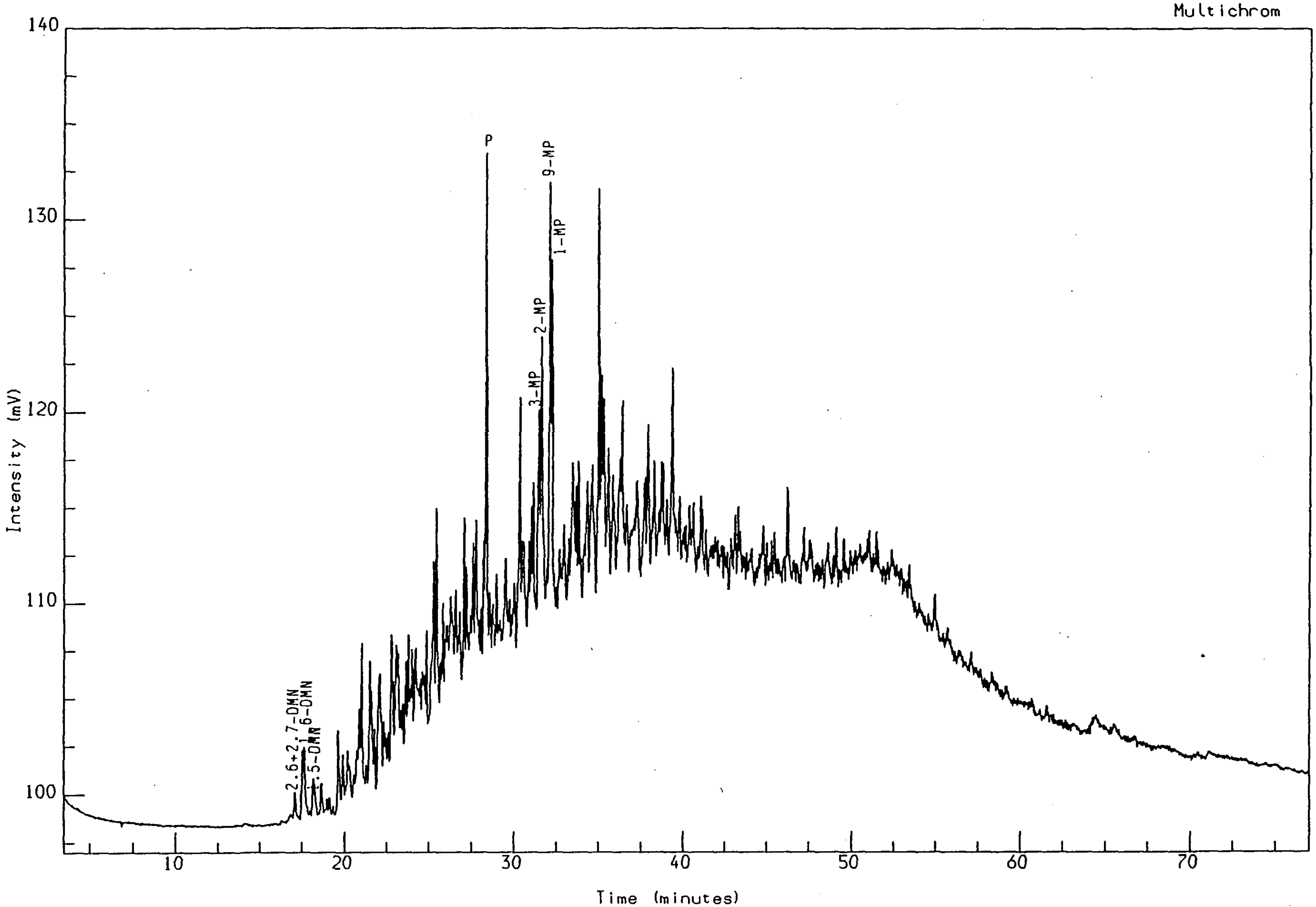



WELL NOCS 34/7-5    2519-2523m
AROMATIC GC (FID)
S/Sst: lt brn gy to lt or gy

Reported on 13-FEB-1991 at 12:30

GEOLAB NOR

Analysis Name : [P2408] 9 AE7102500B,1,1.

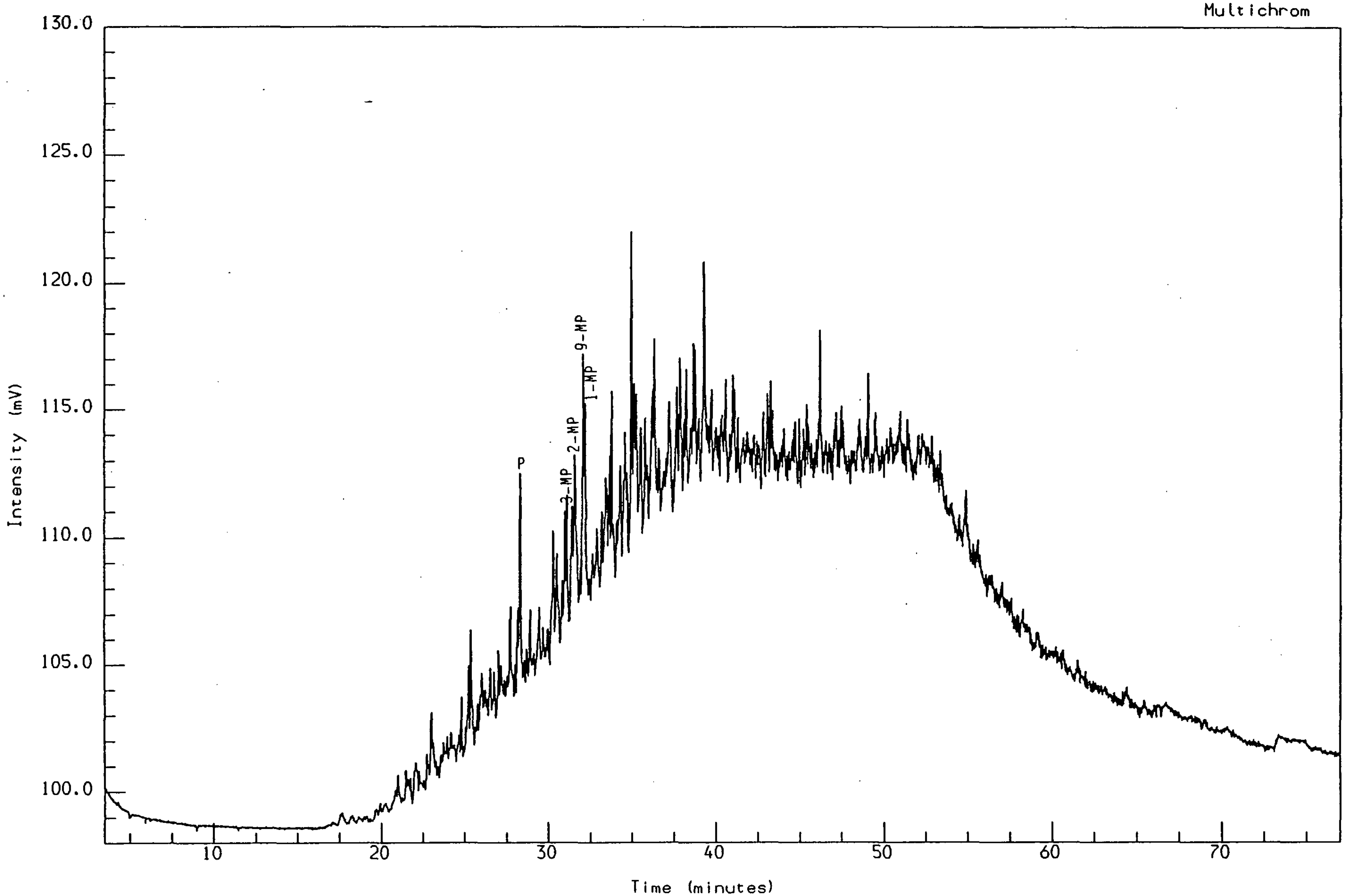



WELL NOCS 34/7-5 2536-2550m
AROMATIC GC (FID)
S/Sst: lt or gy to lt brn gy
to lt gy

Reported on 13-FEB-1991 at 12:55

GEOLAB NOR

Analysis Name : [P2408] 9 AE7102510B,1,1.

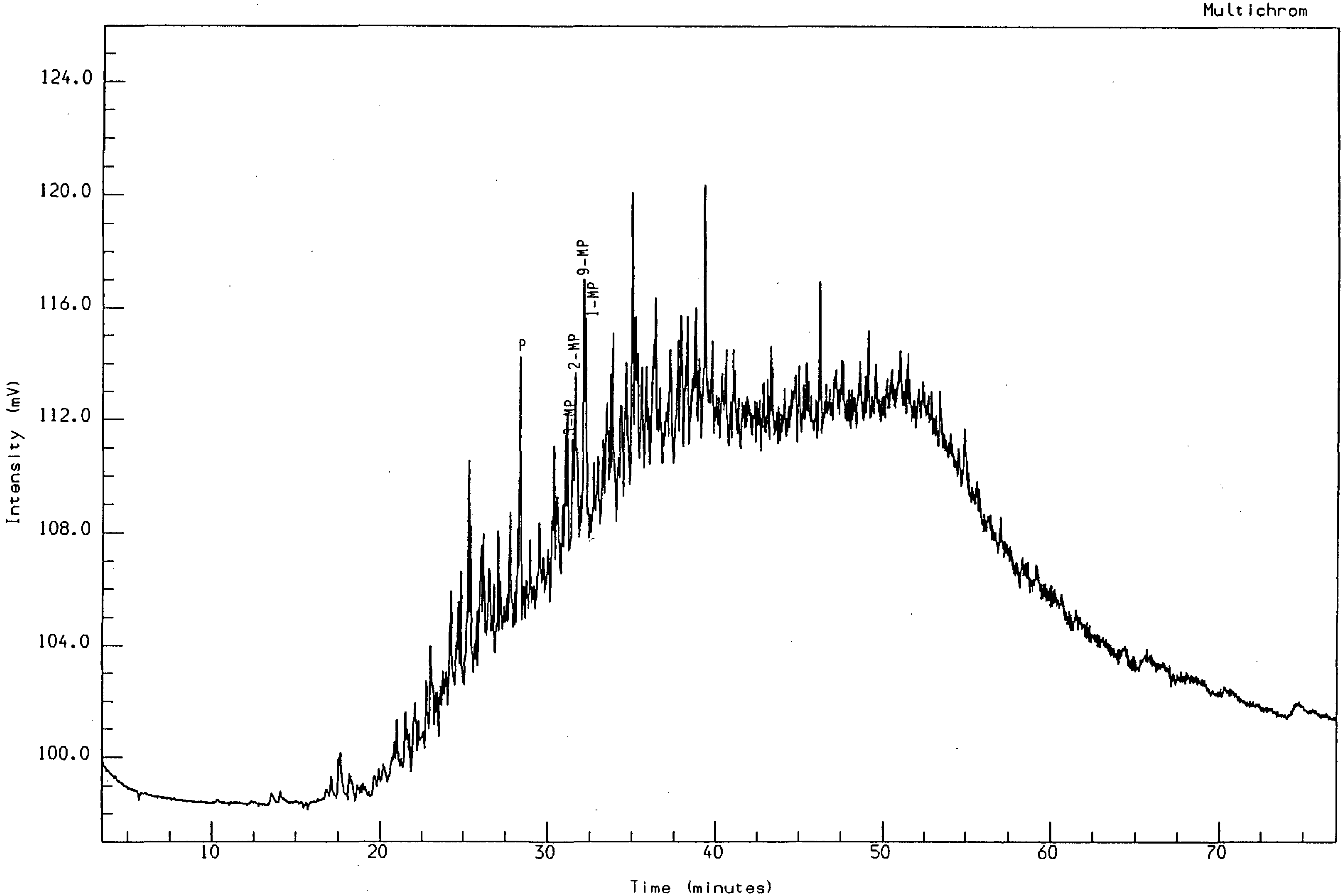



WELL NOCS 34/7-5 2566-2576m
AROMATIC GC (FID)
S/Sst: lt gy to m gy to lt brn gy,
lt gy to lt brn gy to gy pi

Reported on 13-FEB-1991 at 14:48

GEOLAB NOR

Analysis Name : [P2408] 9 AE7102520B,1,1.

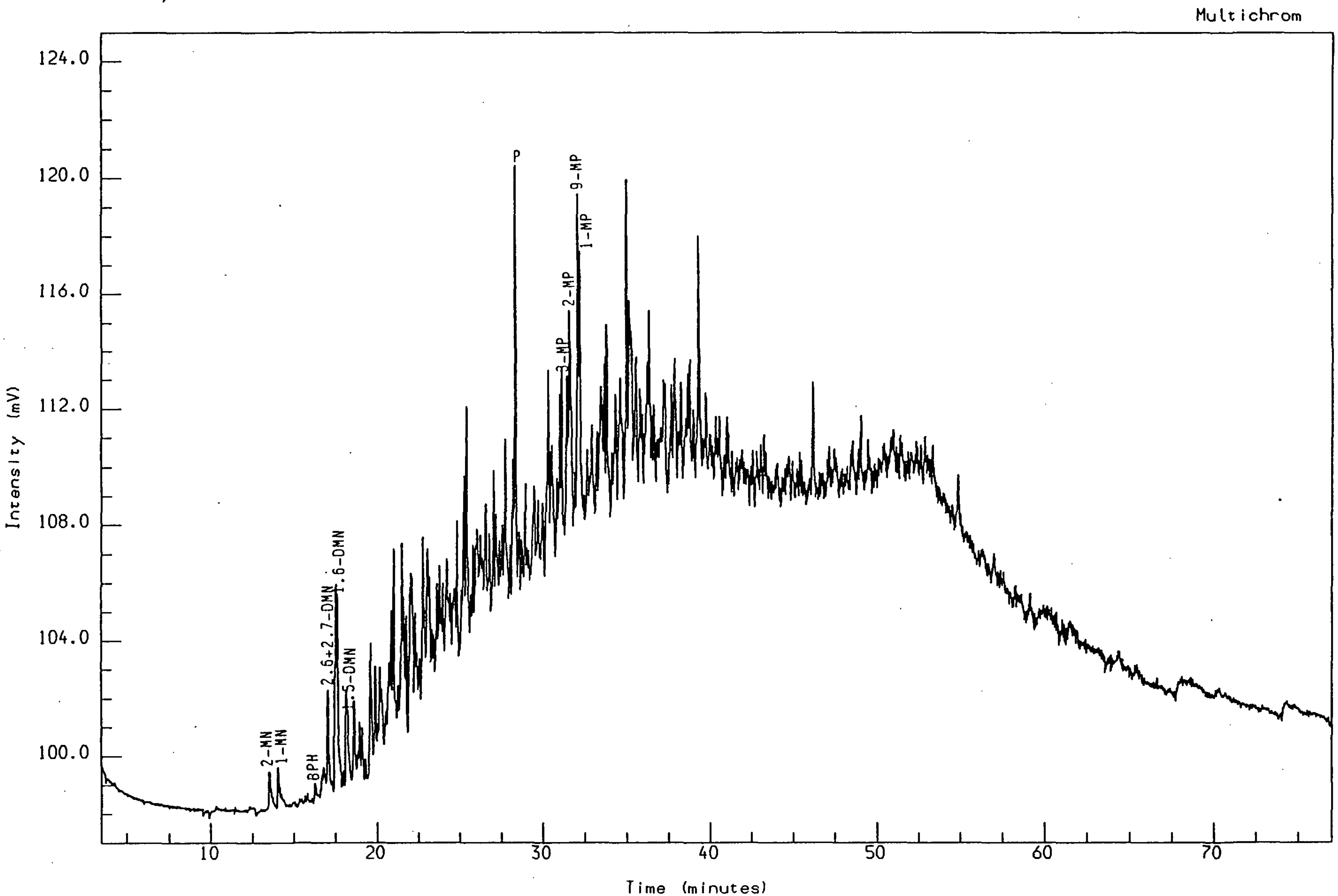



WELL NOCS 34/7-5 2580-2590m
AROMATIC GC (FID)
S/Sst: y gy to lt gy to drk gy,
w to lt gy

Reported on 13-FEB-1991 at 16:00

GEOLAB NOR

Analysis Name : [P2408] 9 AE7102530B,1,1.

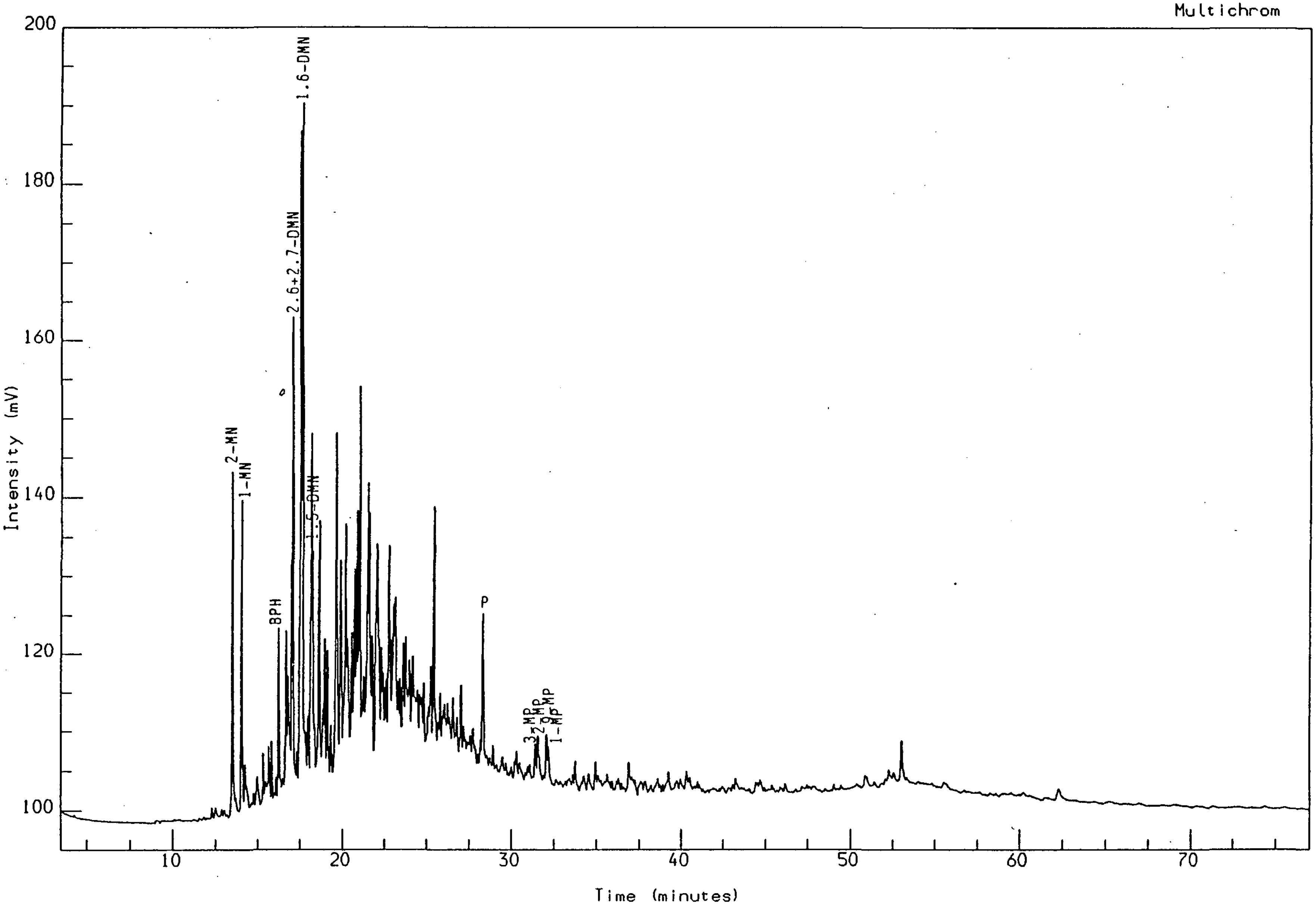



WELL NOCS 34/7-5   2600-2611m
AROMATIC GC (FID)
S/Sst: lt gy to lt brn gy to y gy,
lt gy to y gy to lt brn gy

Reported on 14-FEB-1991 at 08:46

GEOLAB NOR

Analysis Name : [P2408] 9 AE7102540B,1,1.

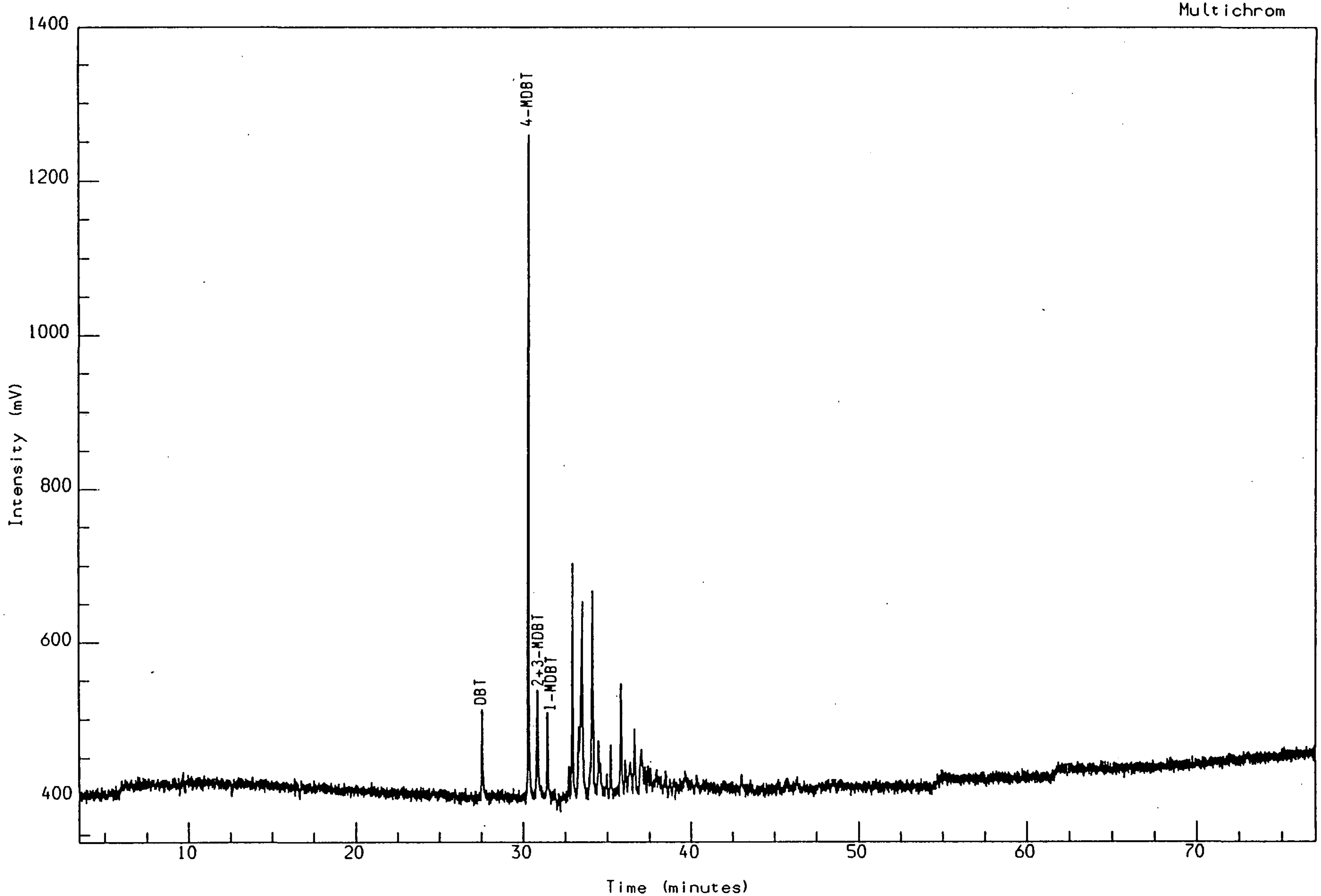



WELL NOCS 34/7-5 2626-2630m
AROMATIC GC (FID)
Sh/Clst: m gy to drk gy

Reported on 14-FEB-1991 at 11:16

GEOLAB NOR

Analysis Name : [P2408] 10 AE7101781L,1,1.



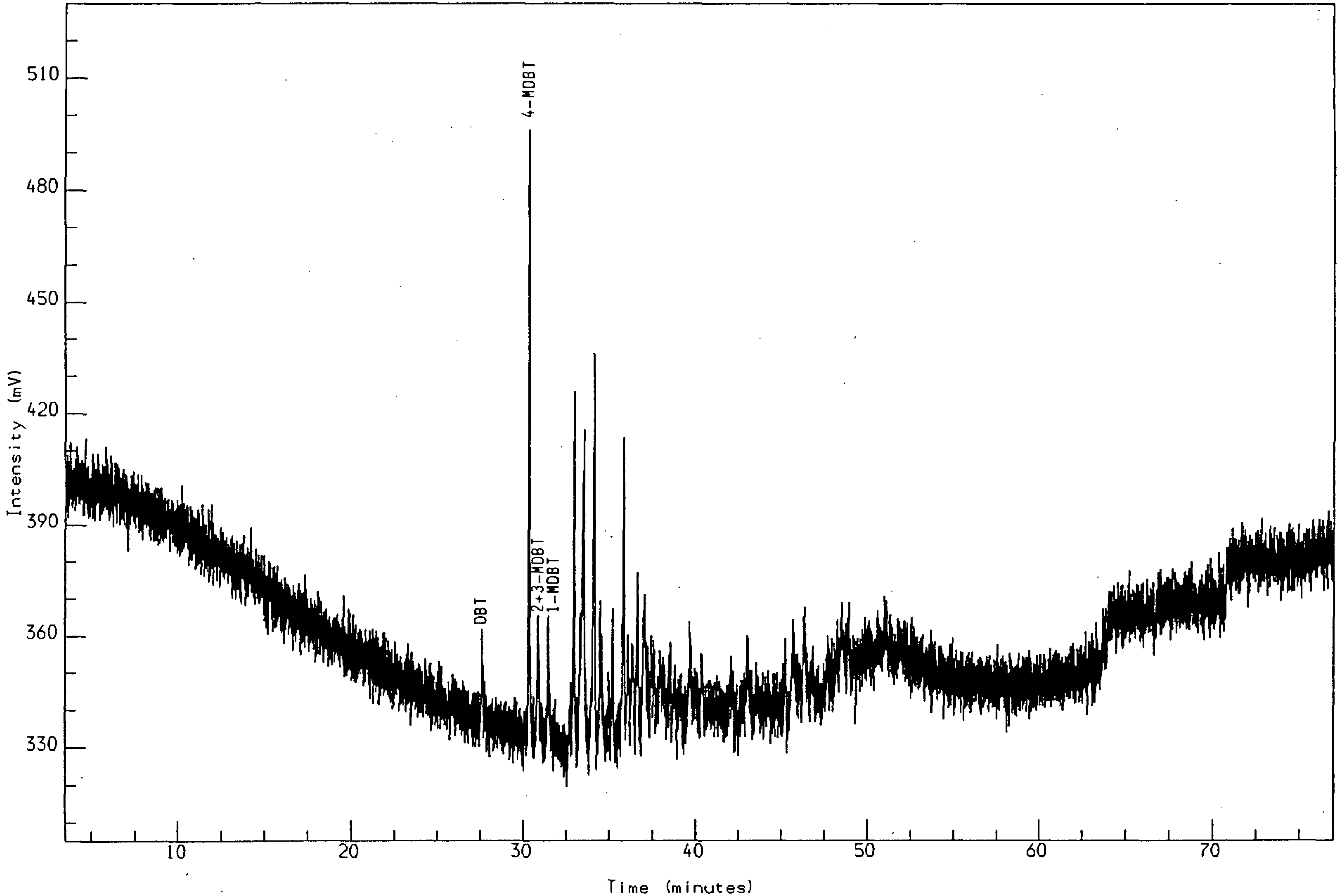

WELL NOCS 34/7-5 2511m
AROMATIC GC (FPD)
Sltst: lt brn gy to pl y brn

Reported on 13-FEB-1991 at 10:05

GEOLAB NOR

Analysis Name : [P2408] 10 AE7102490B,1,1.

Multichrom

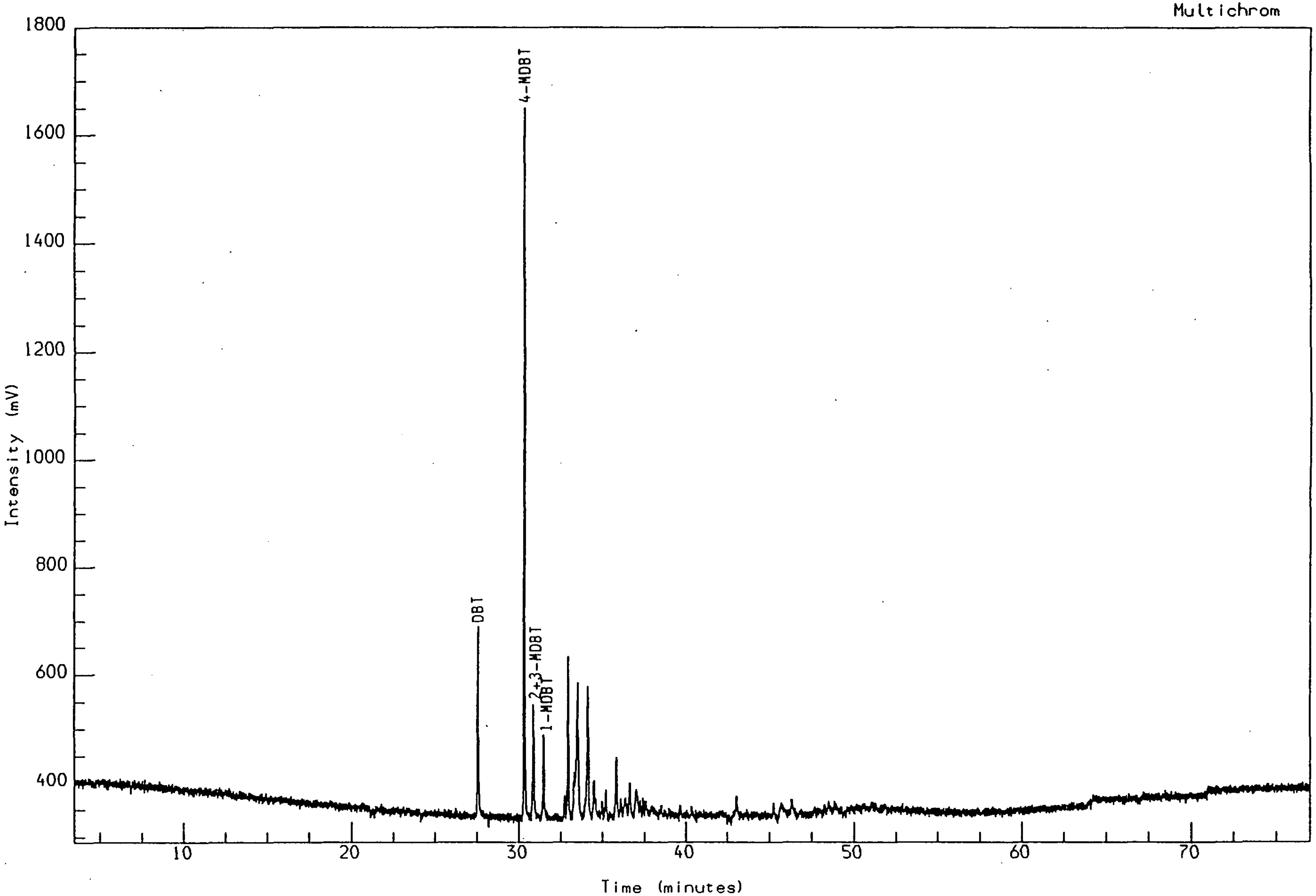



WELL NOCS 34/7-5 2519-2523m
AROMATIC GC (FPD)
S/Sst: lt brn gy to lt or gy

Reported on 13-FEB-1991 at 12:27

GEOLAB NOR

Analysis Name : [P2408] 10 AE7102500B,1,1.



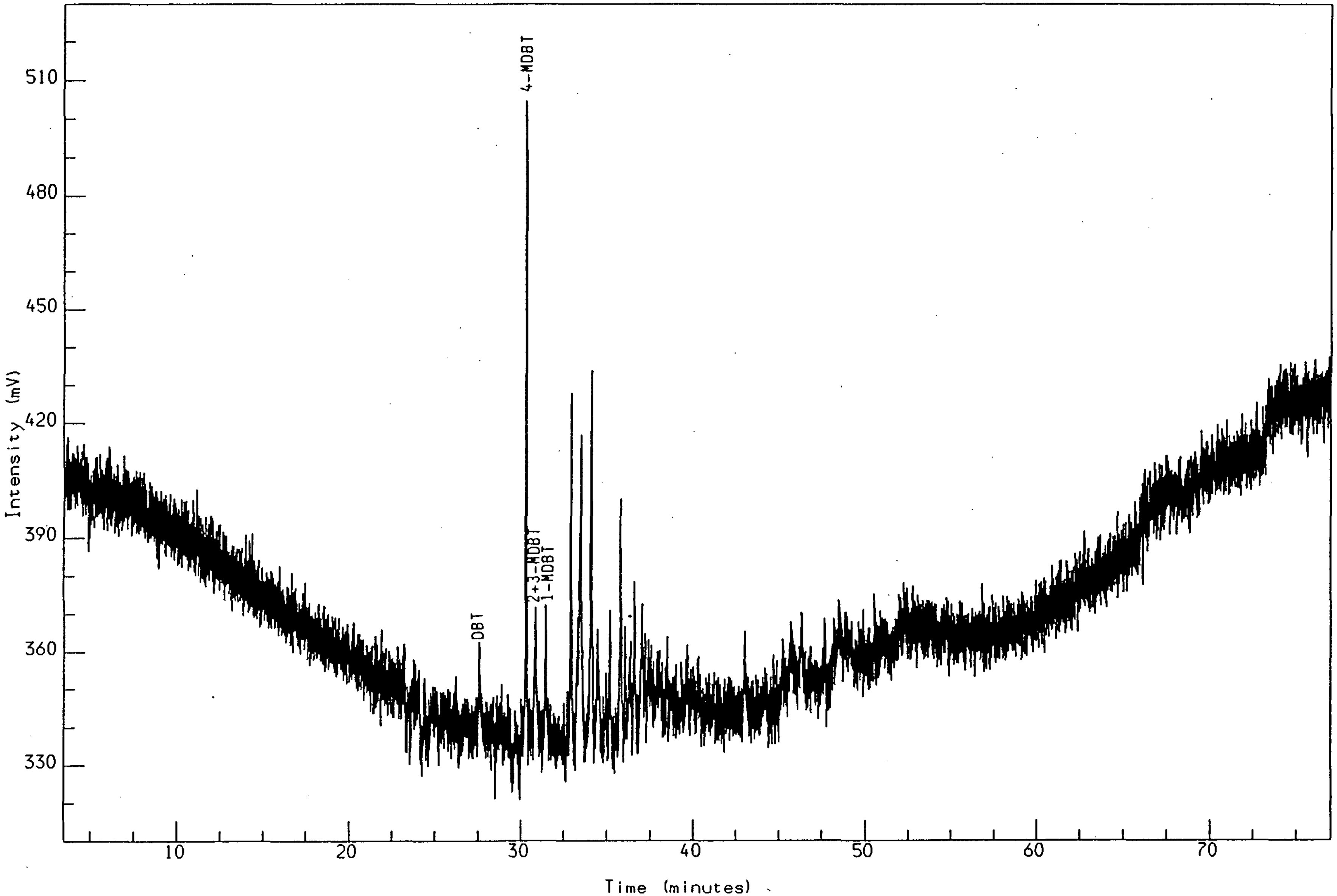

WELL NOCS 34/7-5 2536-2550m
AROMATIC GC (FPD)
S/Sst: lt or gy to lt brn gy
to lt gy

Reported on 13-FEB-1991 at 12:59

GEOLAB NOR

Analysis Name : [P2408] 10 AE7102510B,1,1.

Multichrom

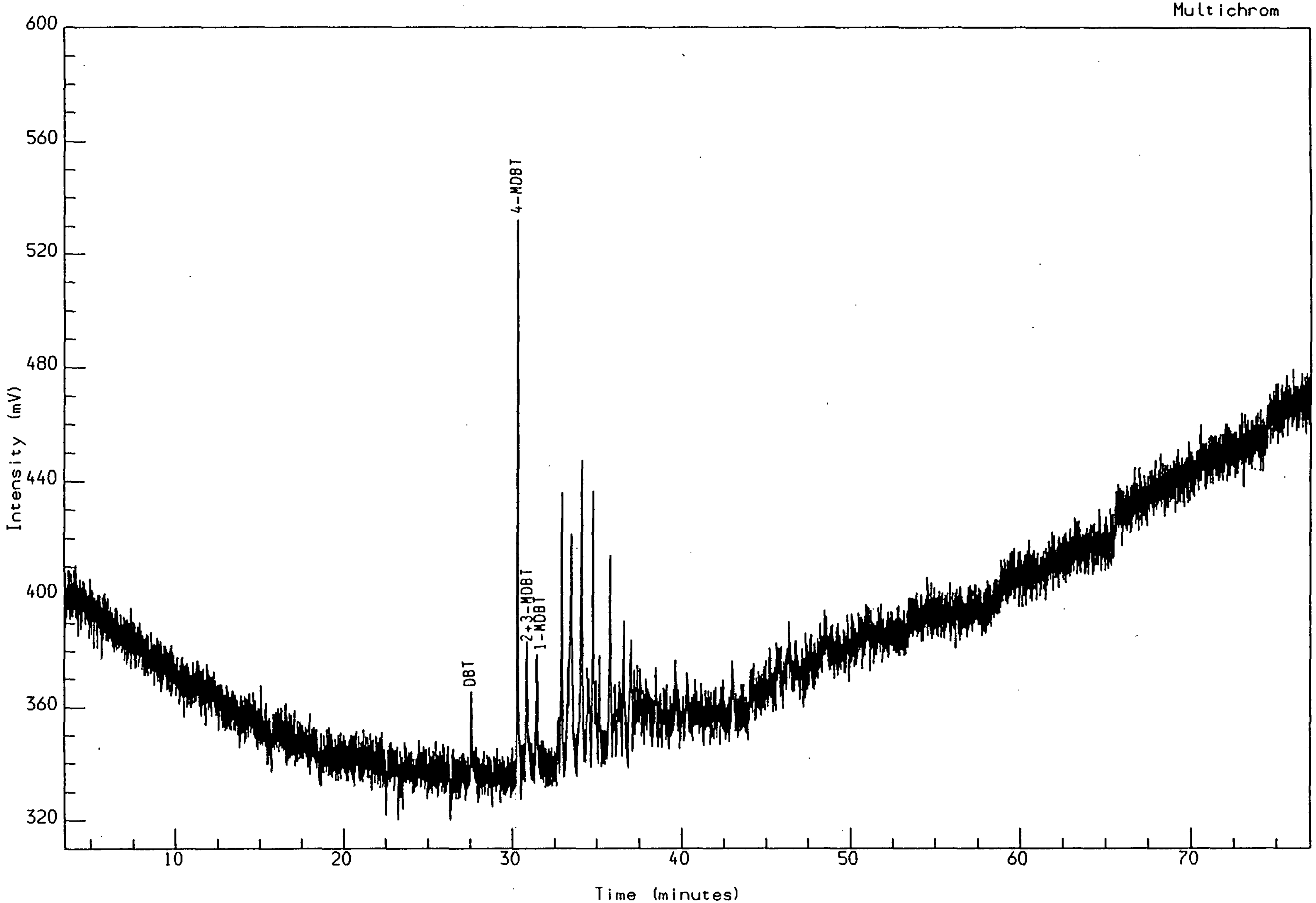



WELL NOCS 34/7-5 2566-2576m
AROMATIC GC (FPD)
S/Sst: lt gy to m gy to lt brn gy,
lt gy to lt brn gy to gy pi

Reported on 13-FEB-1991 at 14:33

GEOLAB NOR

Analysis Name : [P2408] 10 AE7102520B,1,1.

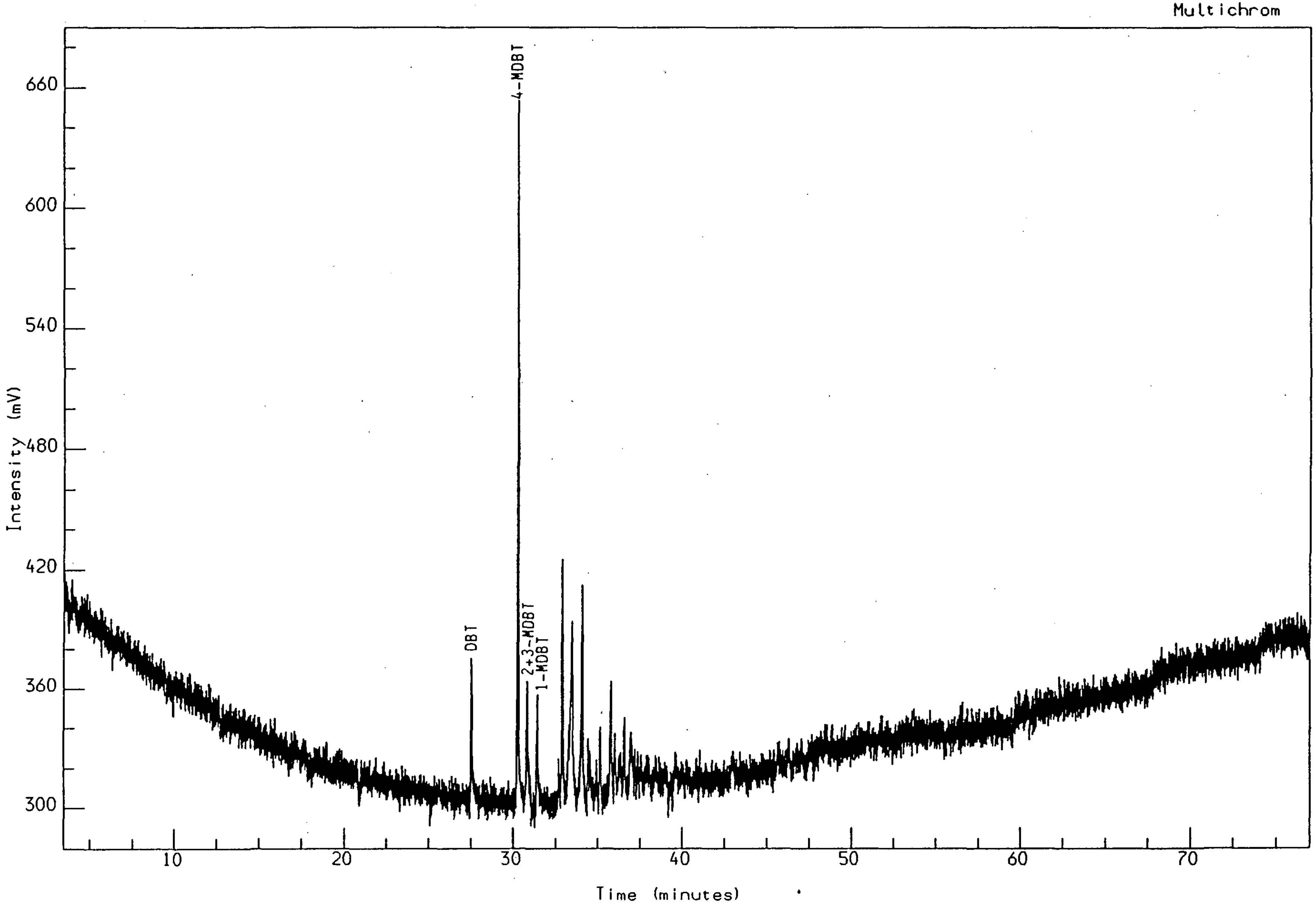



WELL NOCS 34/7-5   2580-2590m
AROMATIC GC (FPD)
S/Sst: y gy to lt gy to drk gy,
w to lt gy

Reported on 13-FEB-1991 at 15:56

GEOLAB NOR

Analysis Name : [P2408] 10 AE7102530B,1,1.

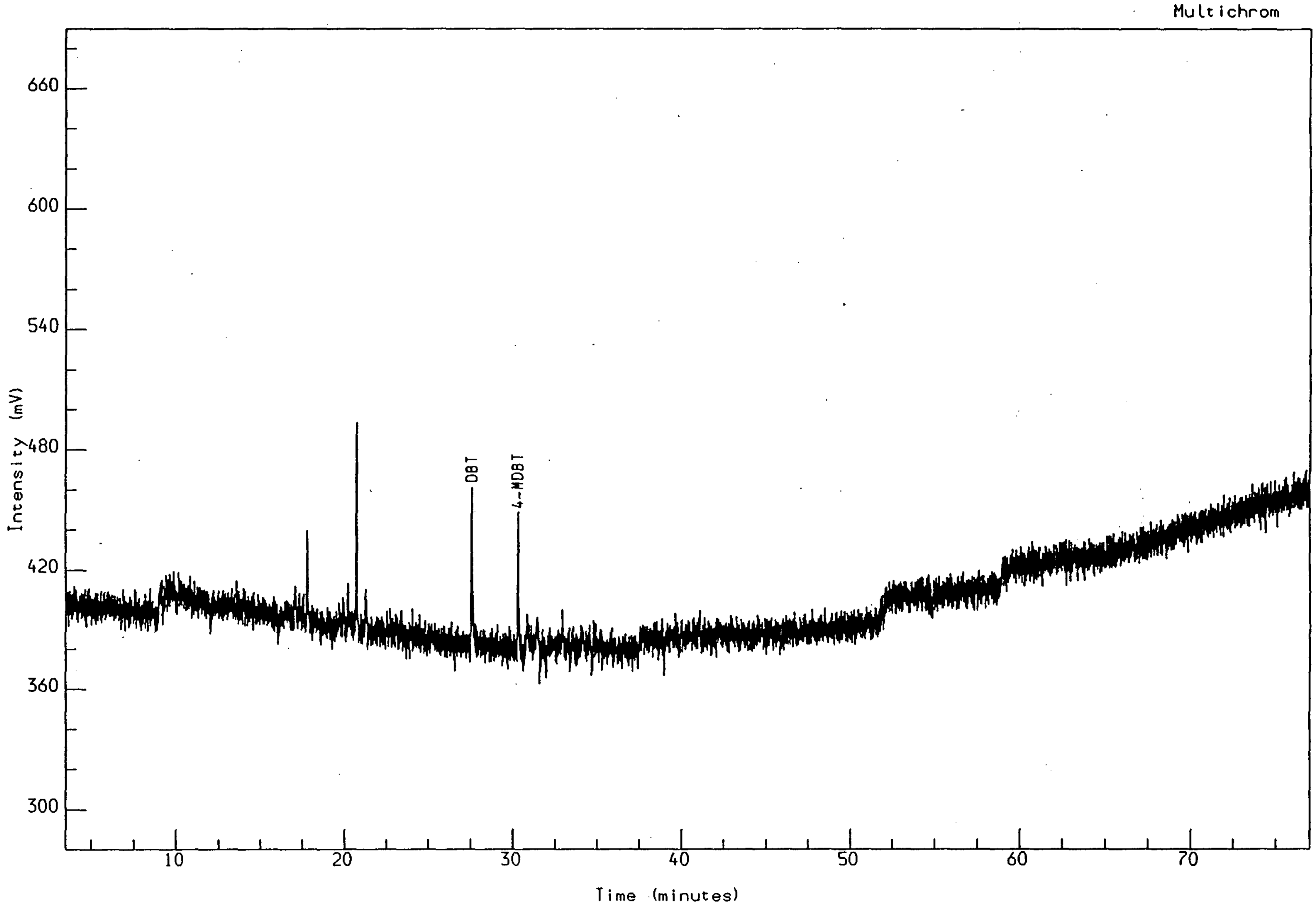



WELL NOCS 34/7-5 2600-2611m
AROMATIC GC (FPD)
S/Sst: lt gy to lt brn gy to y gy,
lt gy to y gy to lt brn gy

Reported on 14-FEB-1991 at 08:43

GEOLAB NOR

Analysis Name : [P2408] 10 AE7102540B,1,1.

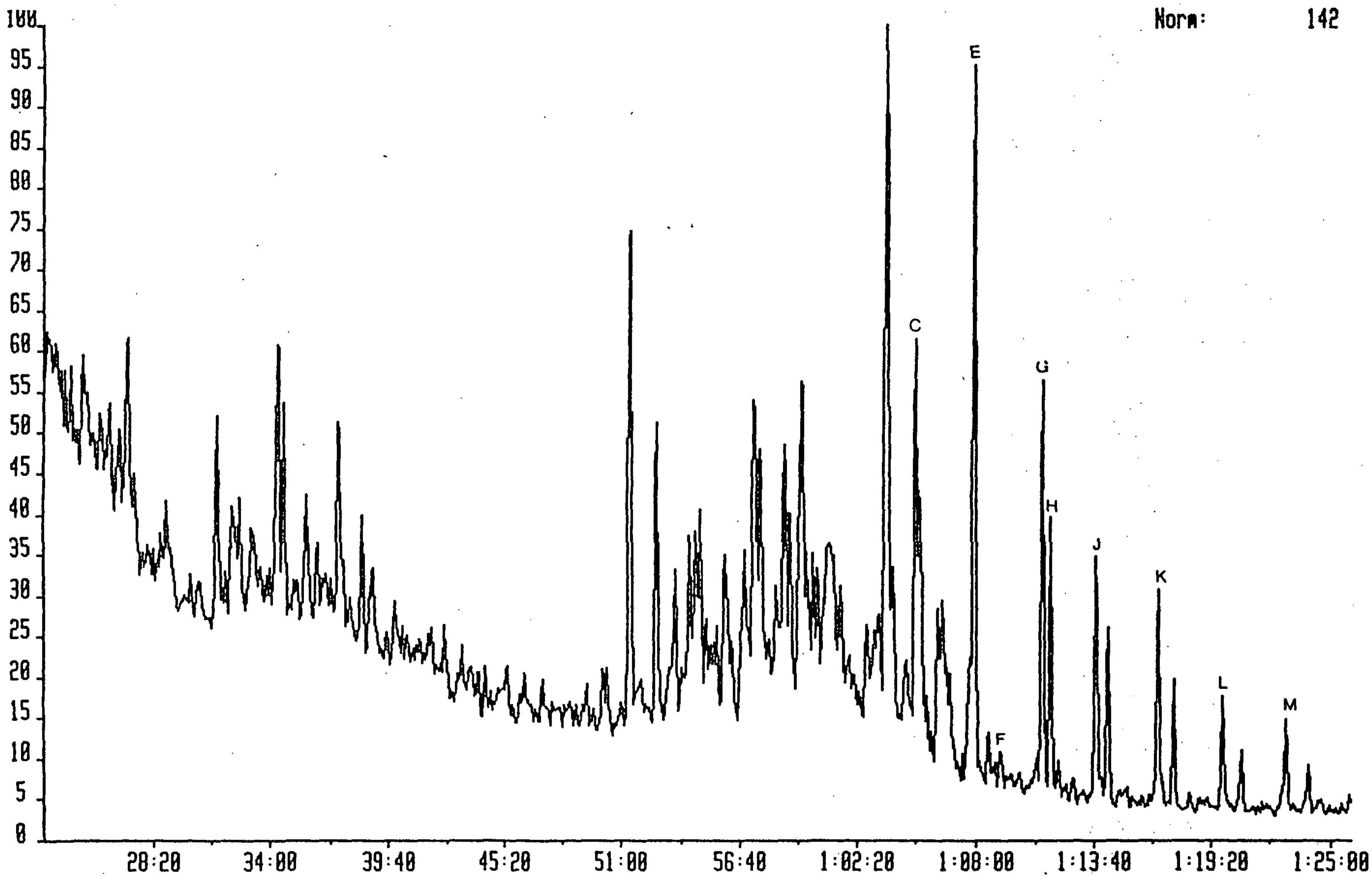



WELL NOCS 34/7-5 2626-2630m
AROMATIC GC (FPD)
Sh/Clst: m gy to drk gy

Reported on 14-FEB-1991 at 09:57

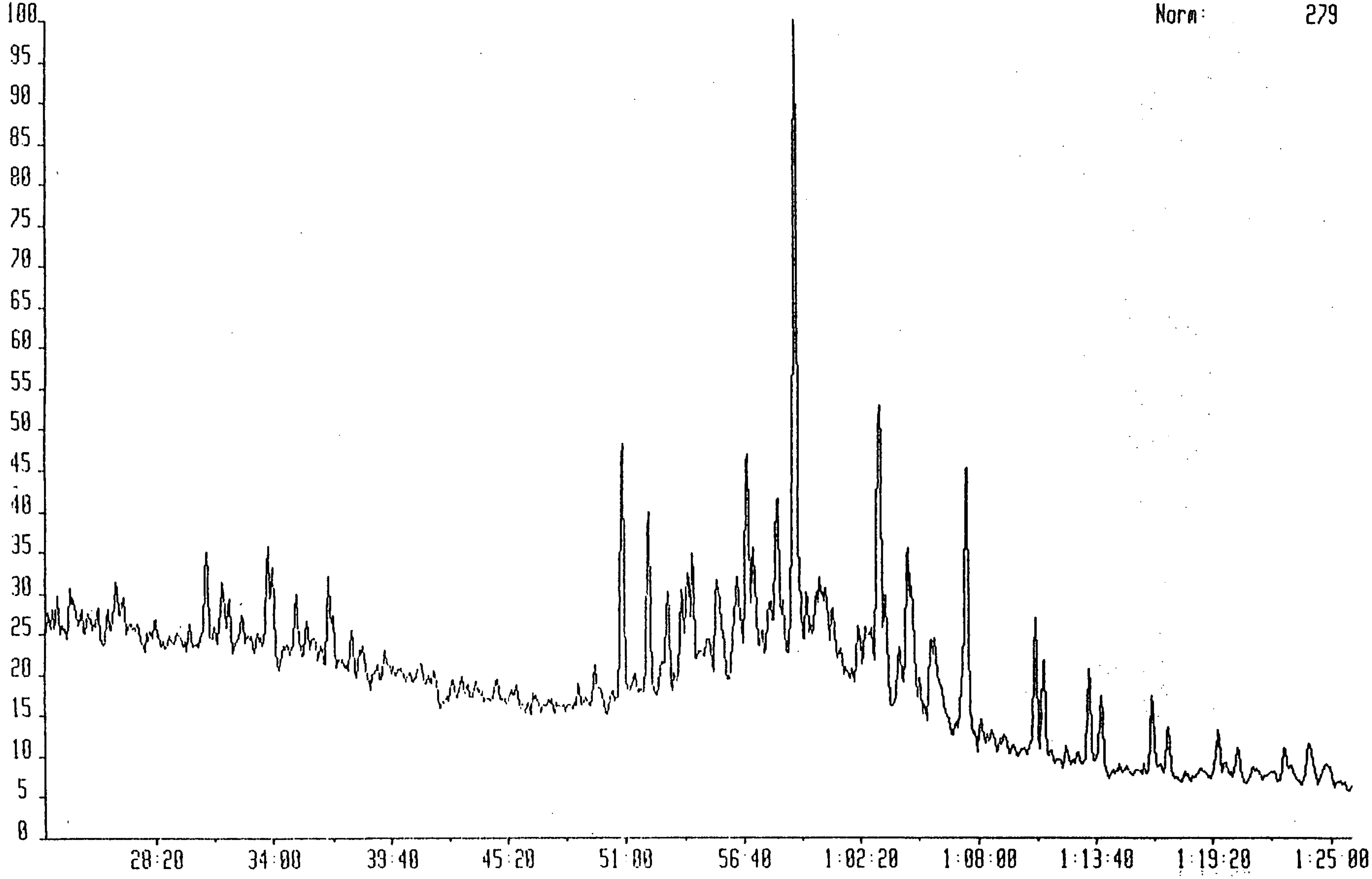
GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 163



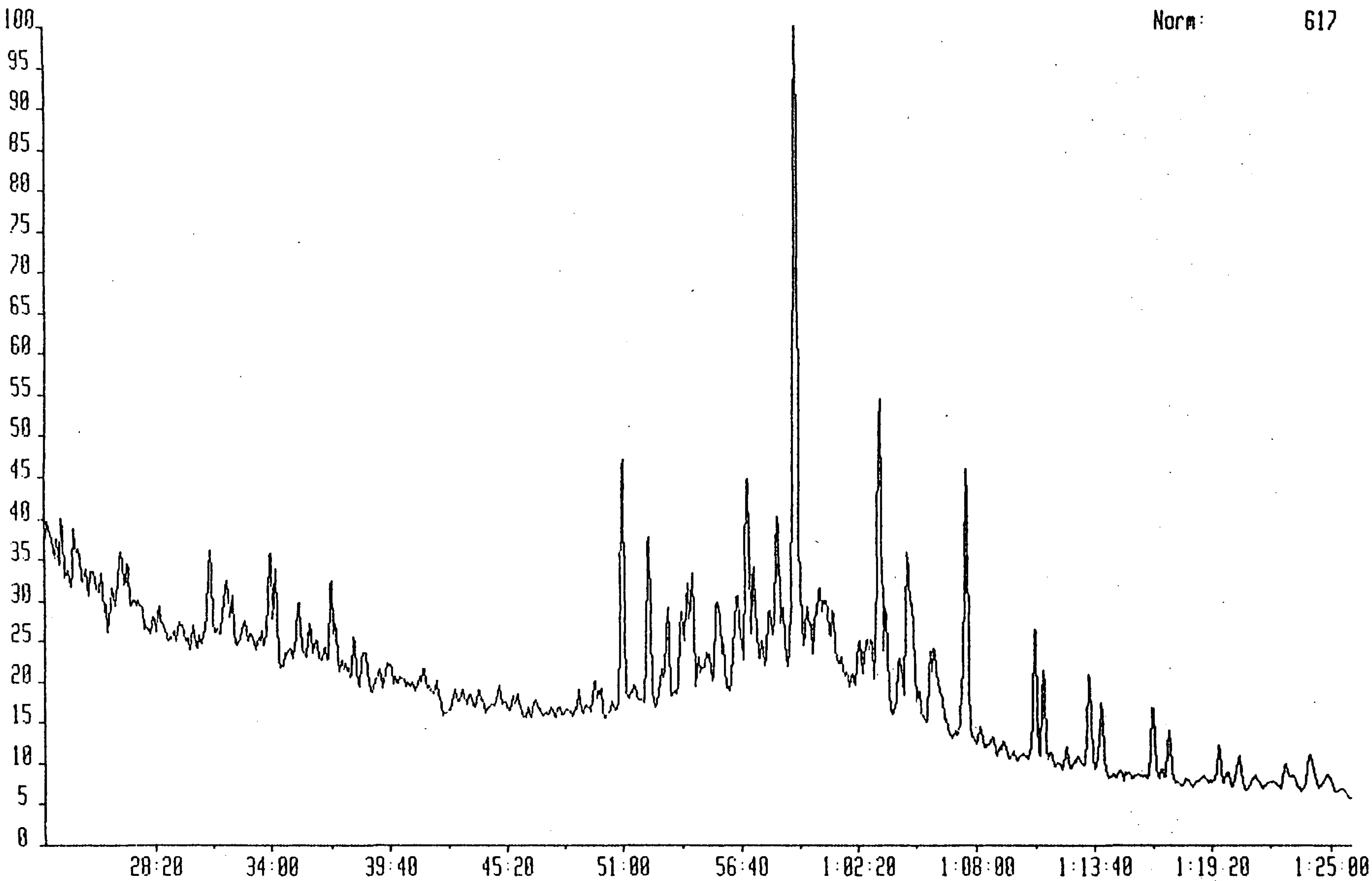

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 163.1485
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



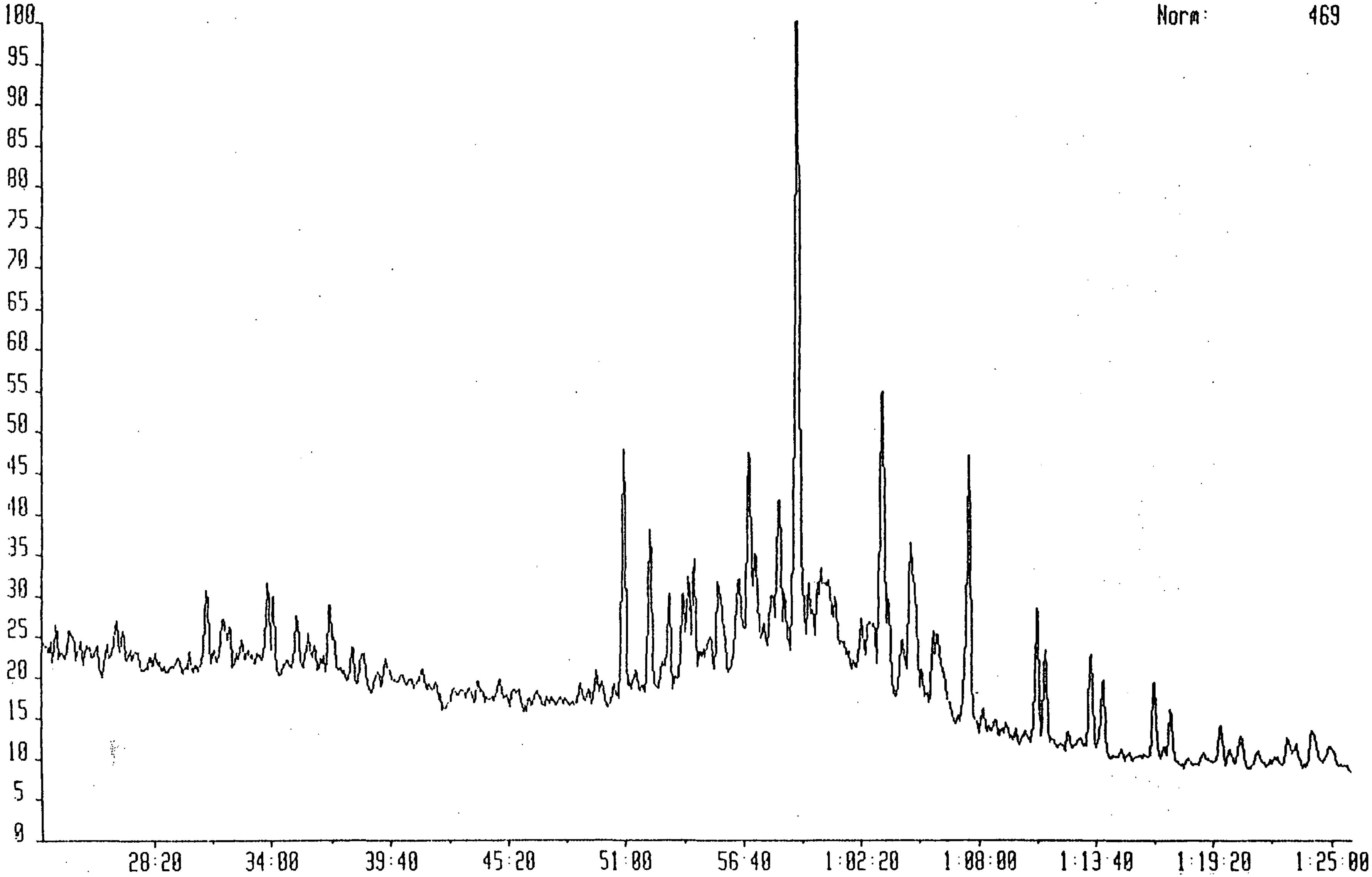

GEOLAB NOR

?AMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SATI
Sample 3 Injection 1 Group 1 Mass 163.1485
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



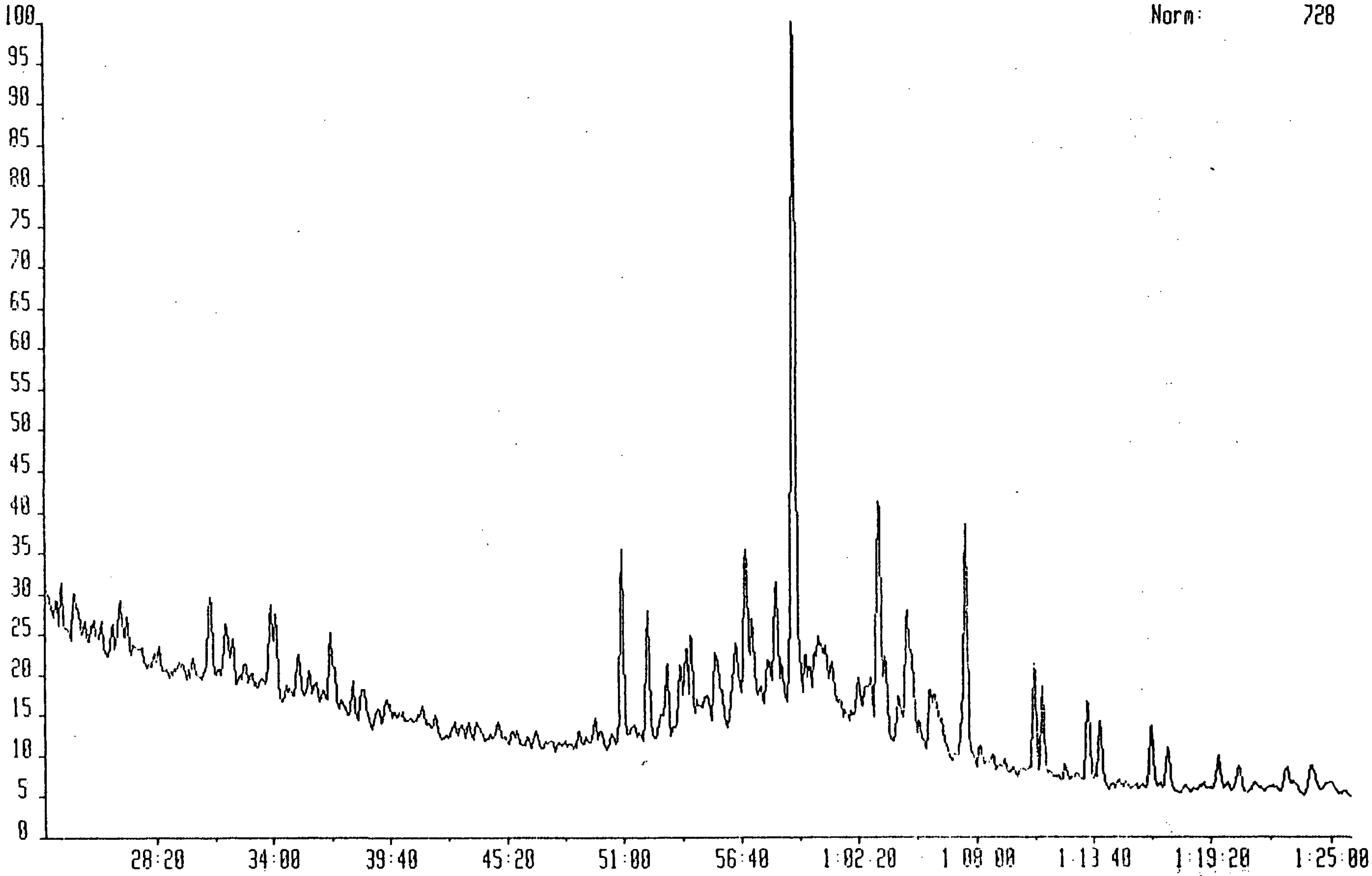

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 163.1485
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



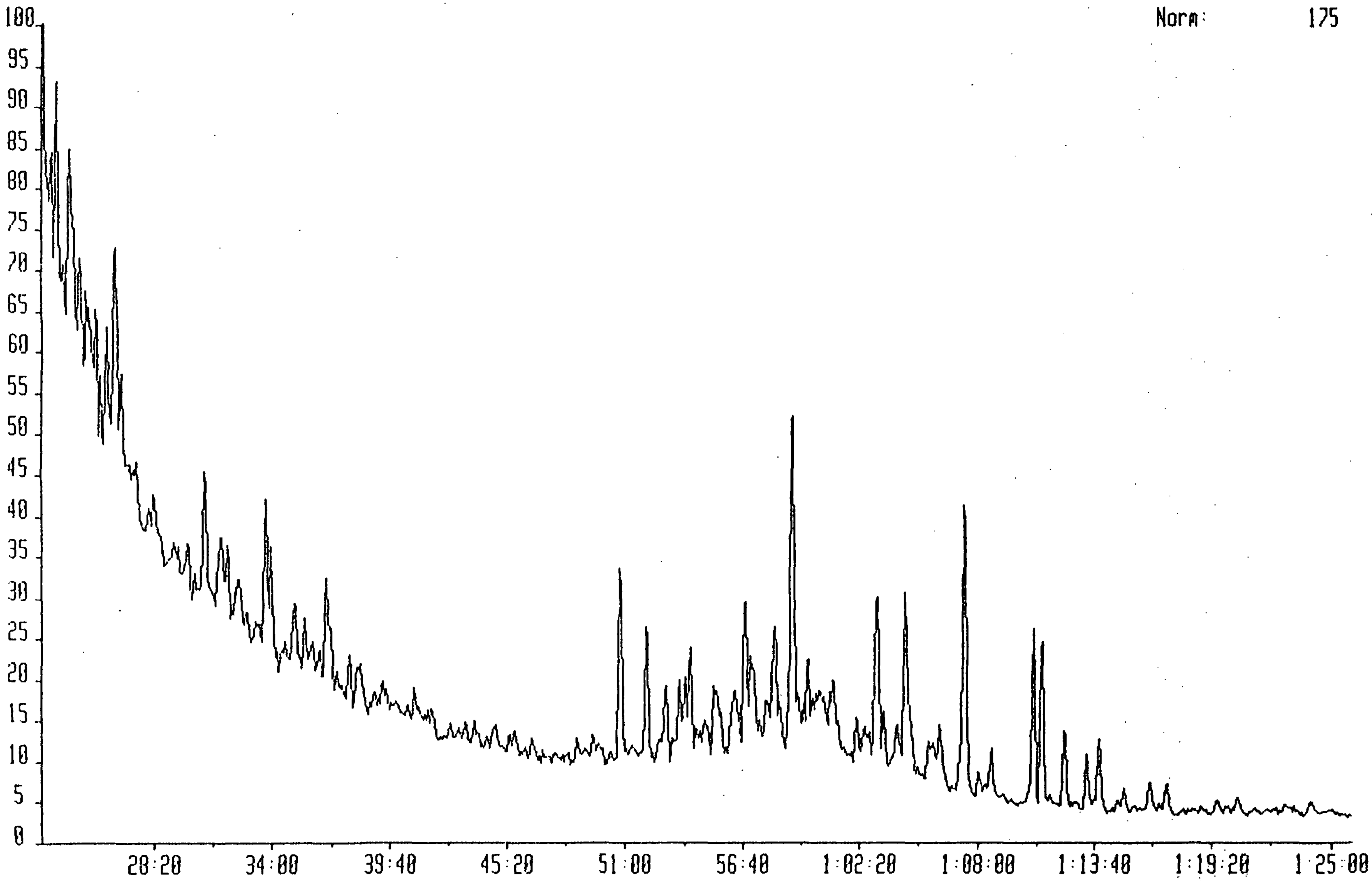

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 163.1405
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



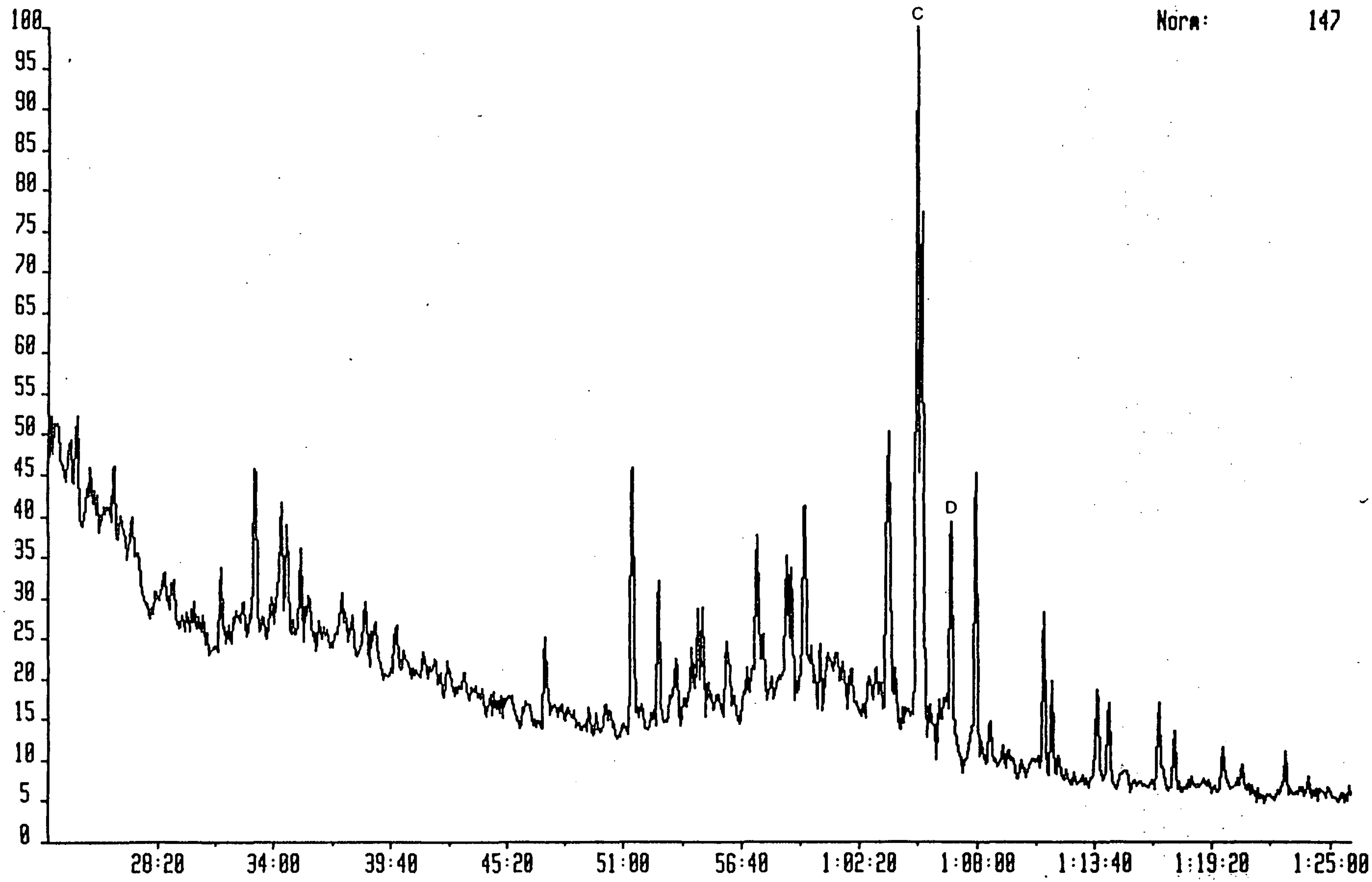

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 163.1485
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



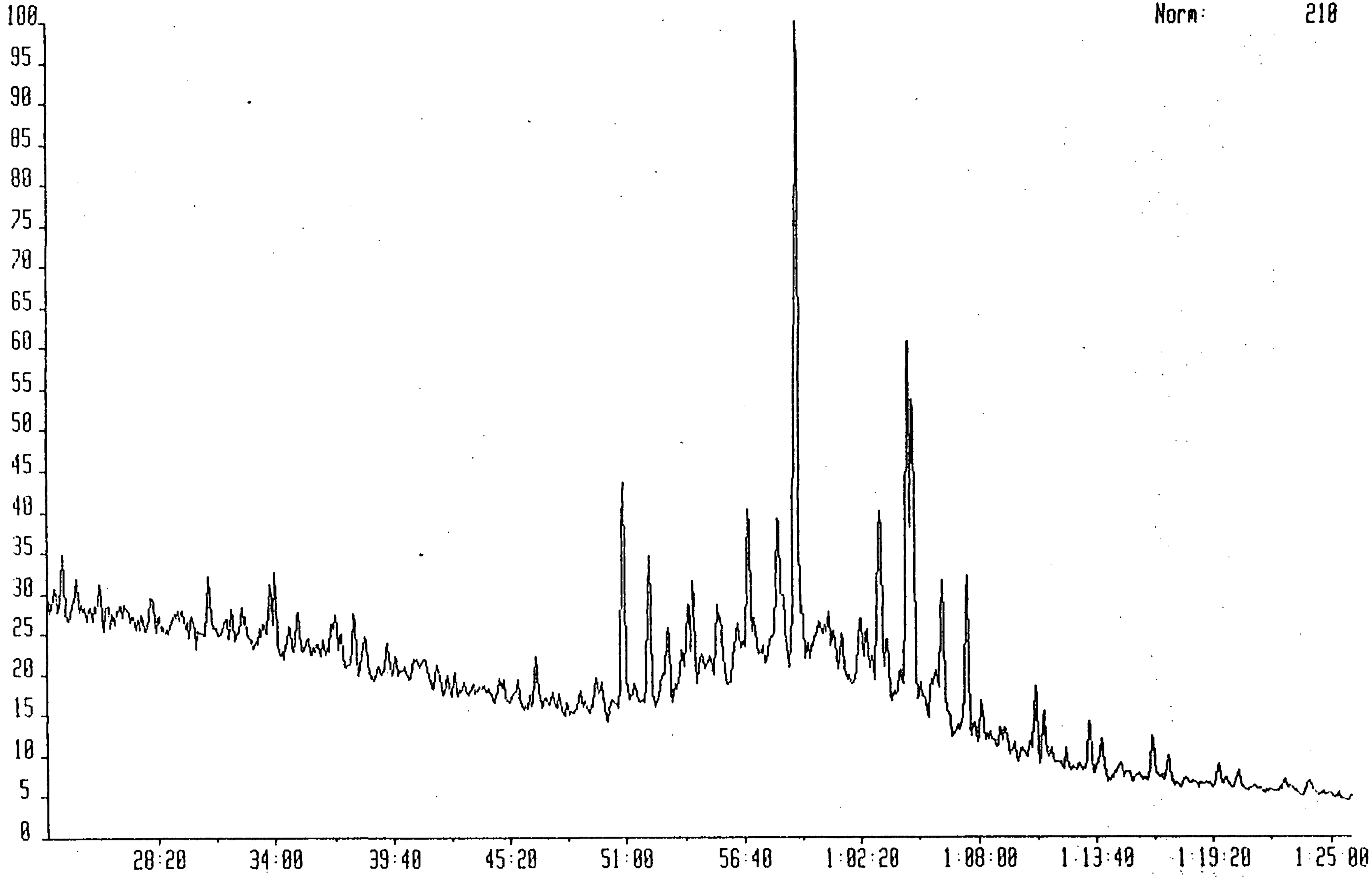

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 177 DEMETHYLATED TRITERPANES



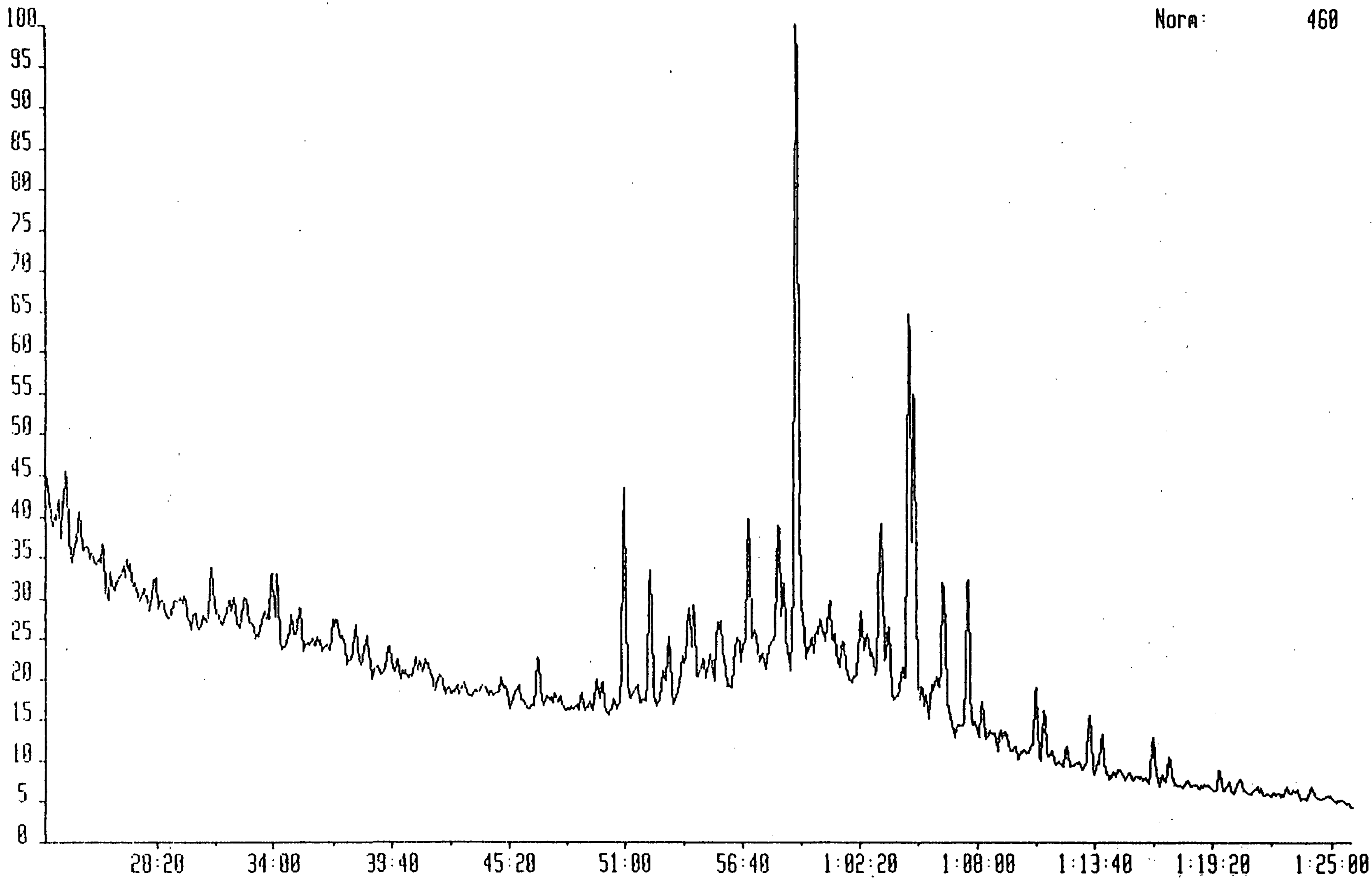

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 177.1642
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



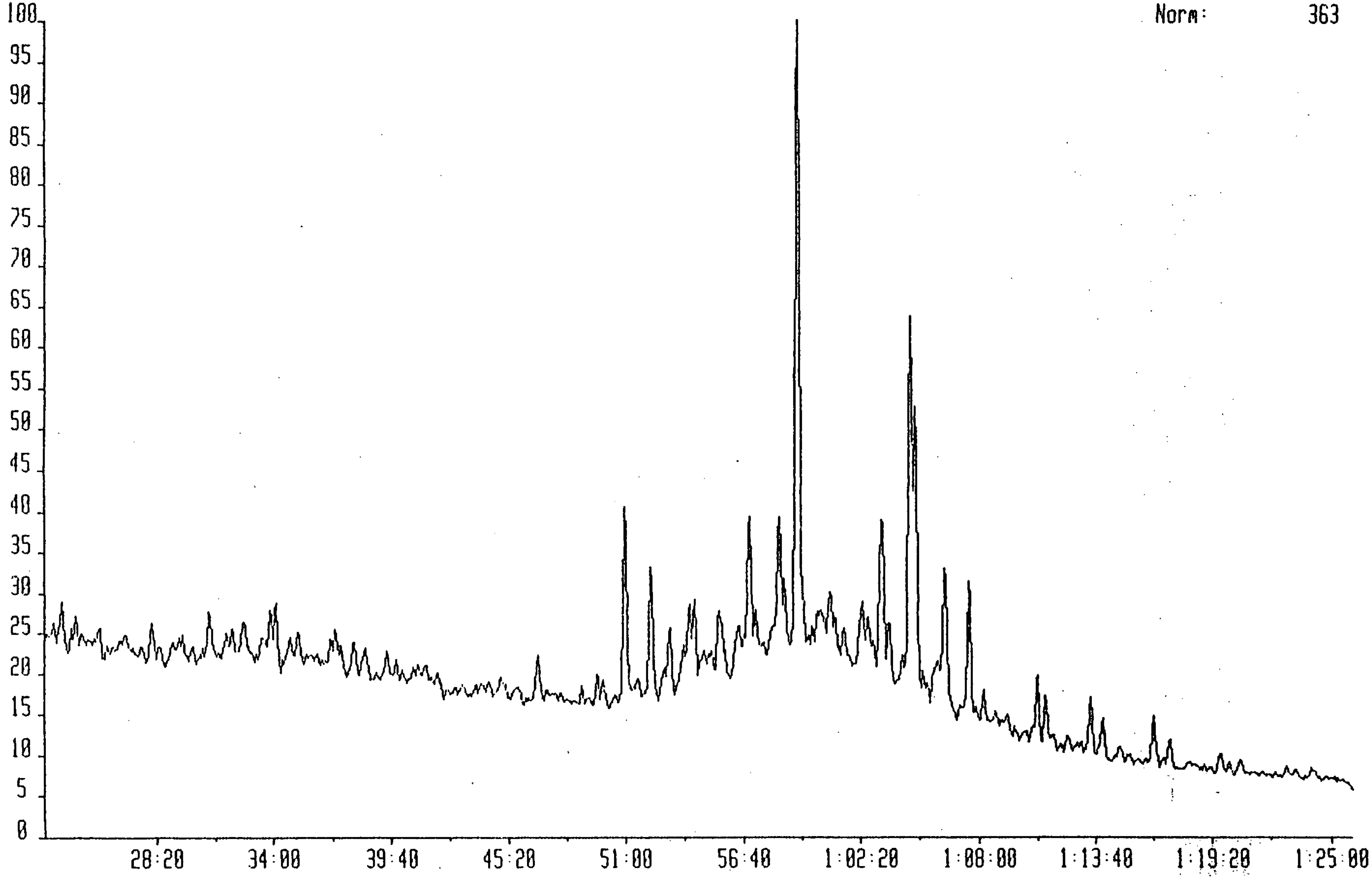

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 177.1642
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



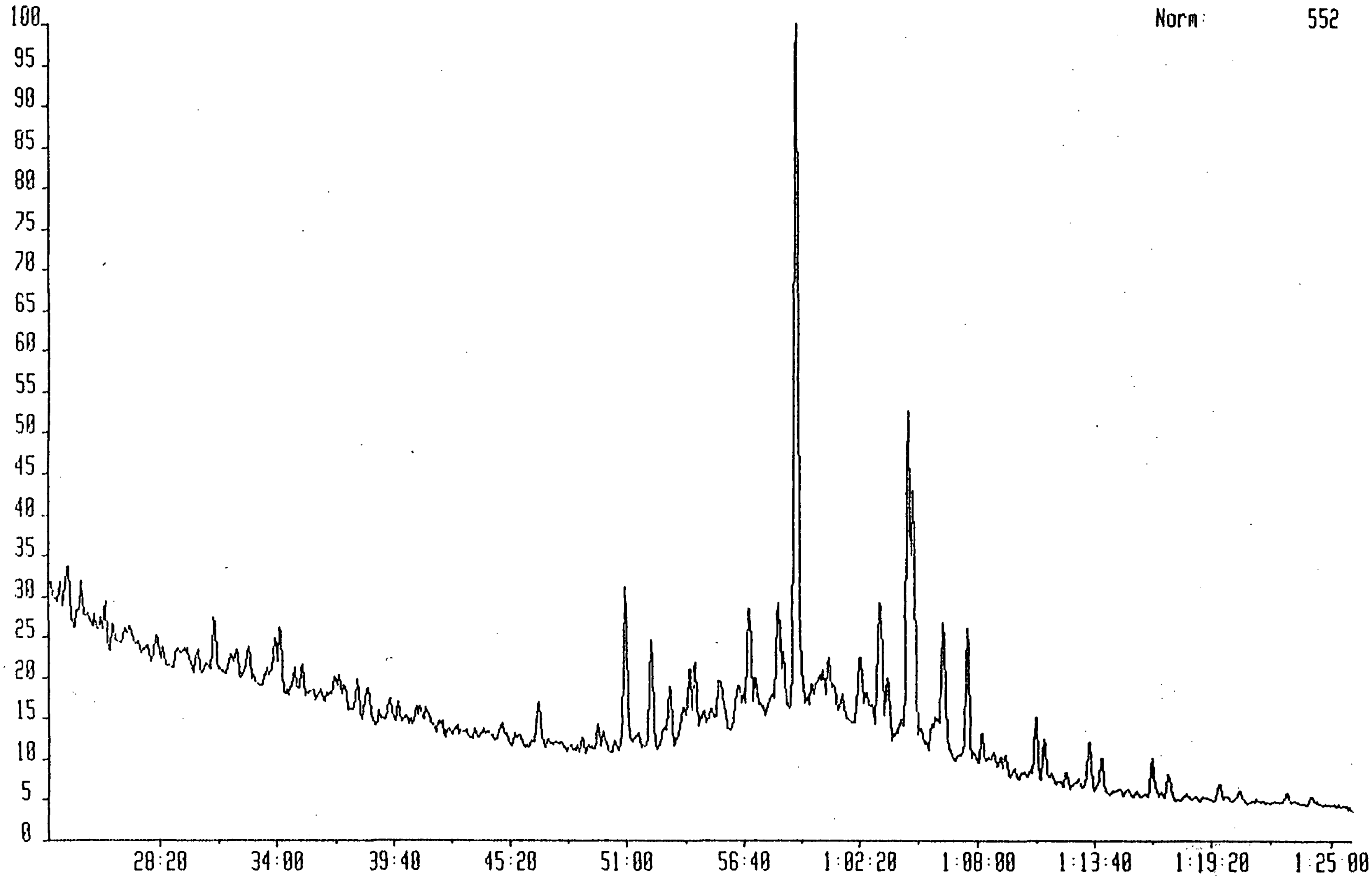

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 177.1642
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



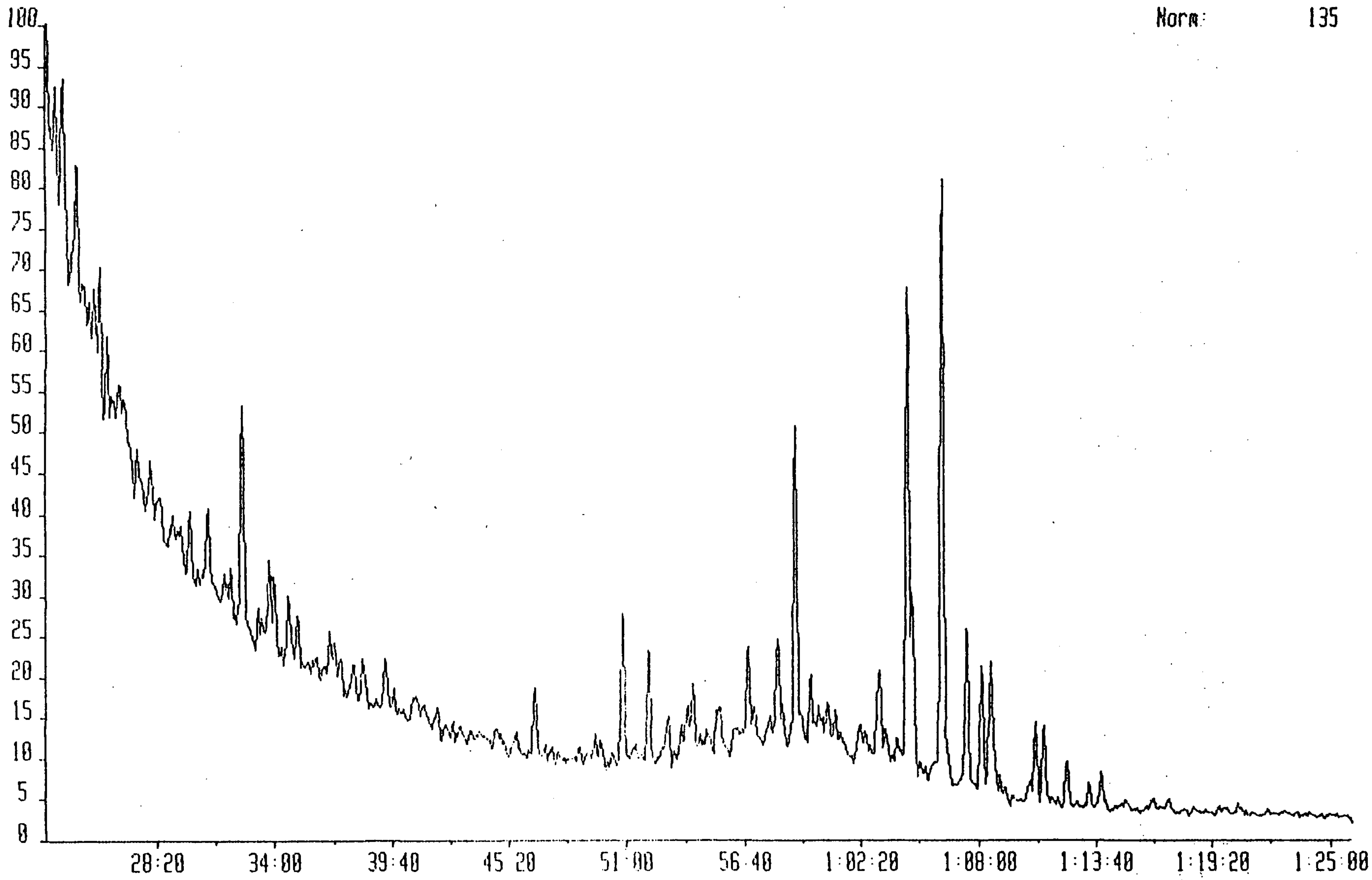

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 177.1642
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



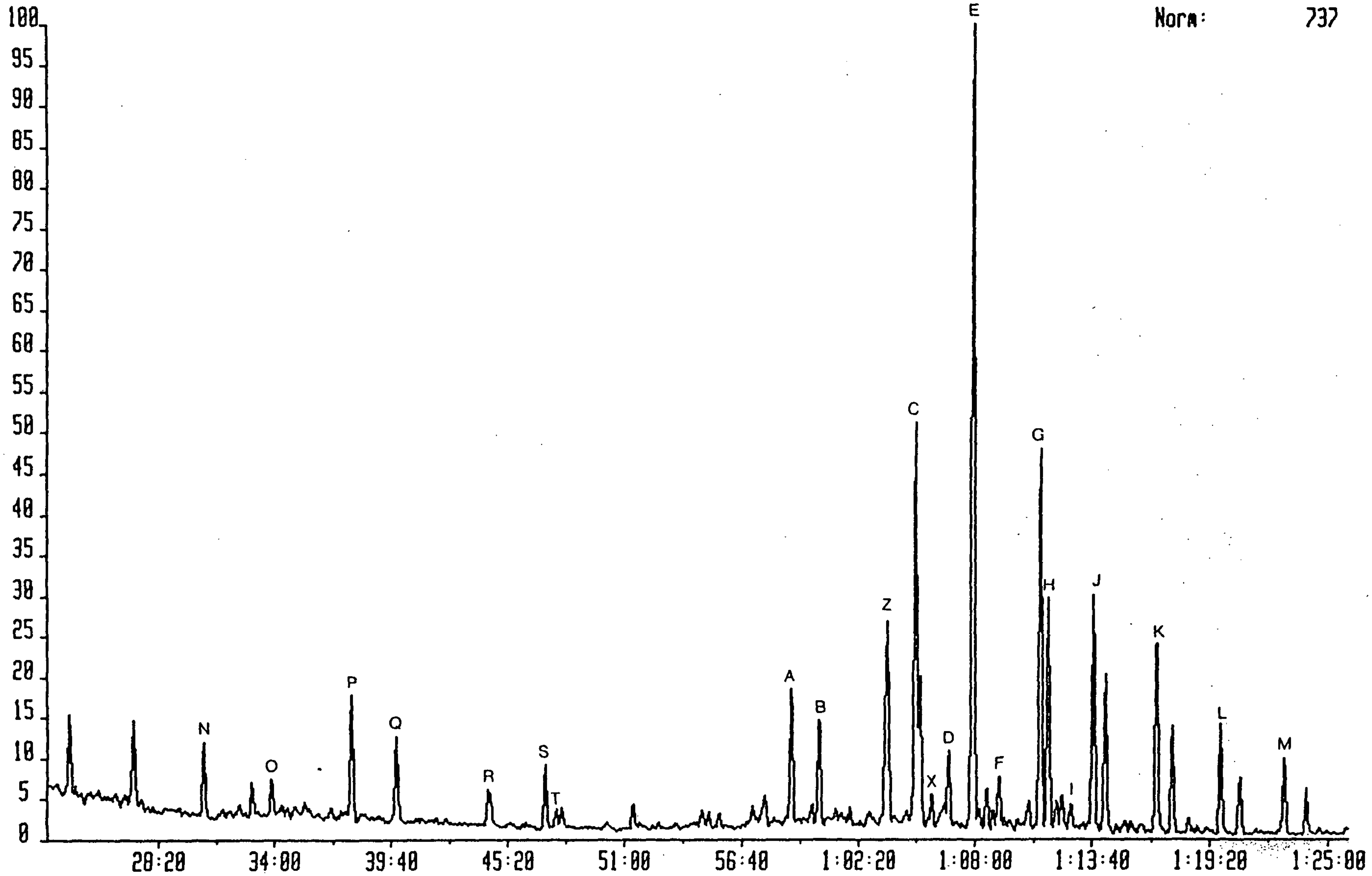

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 177.1642
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



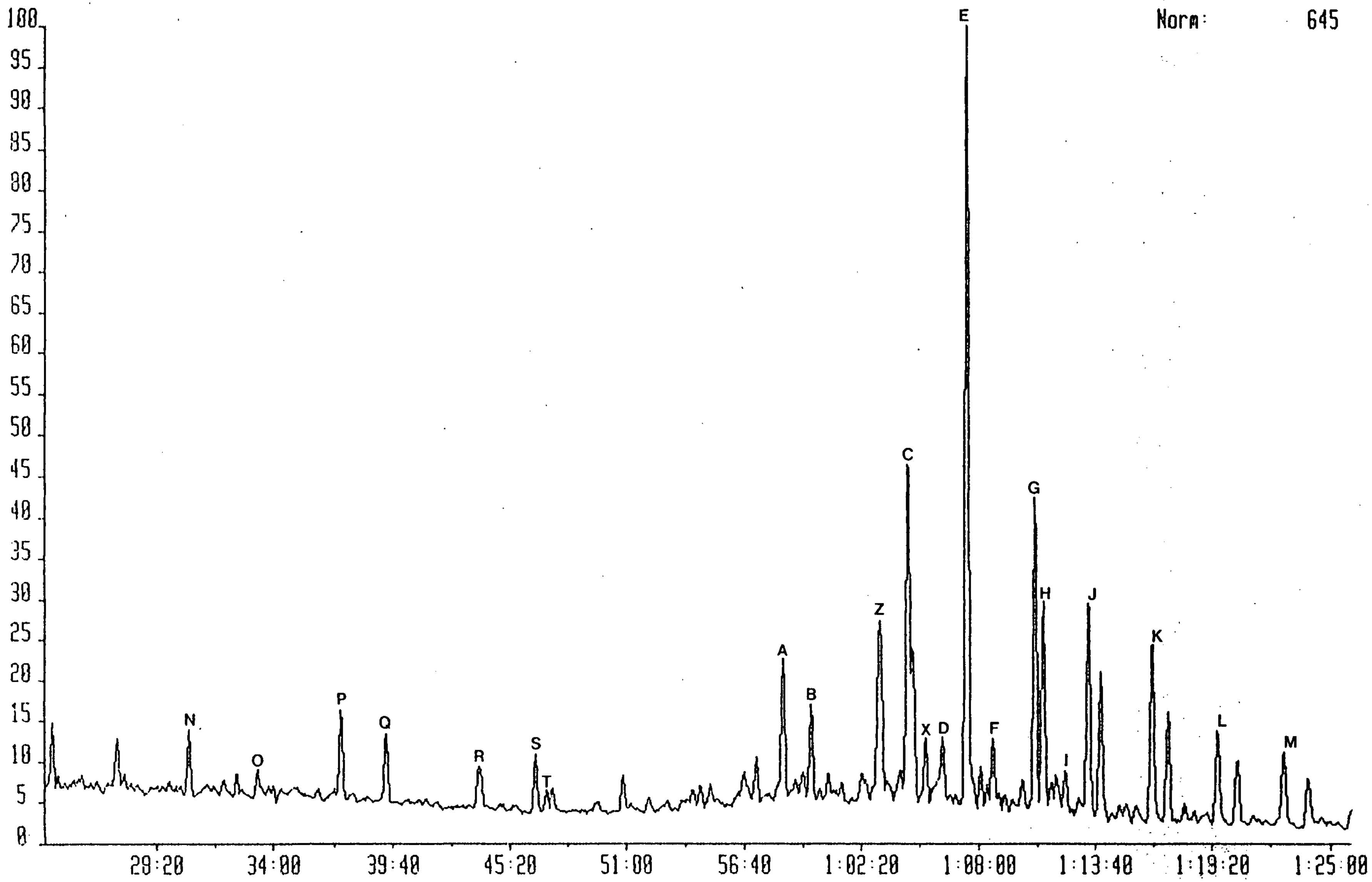

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 191 TRITERPANES



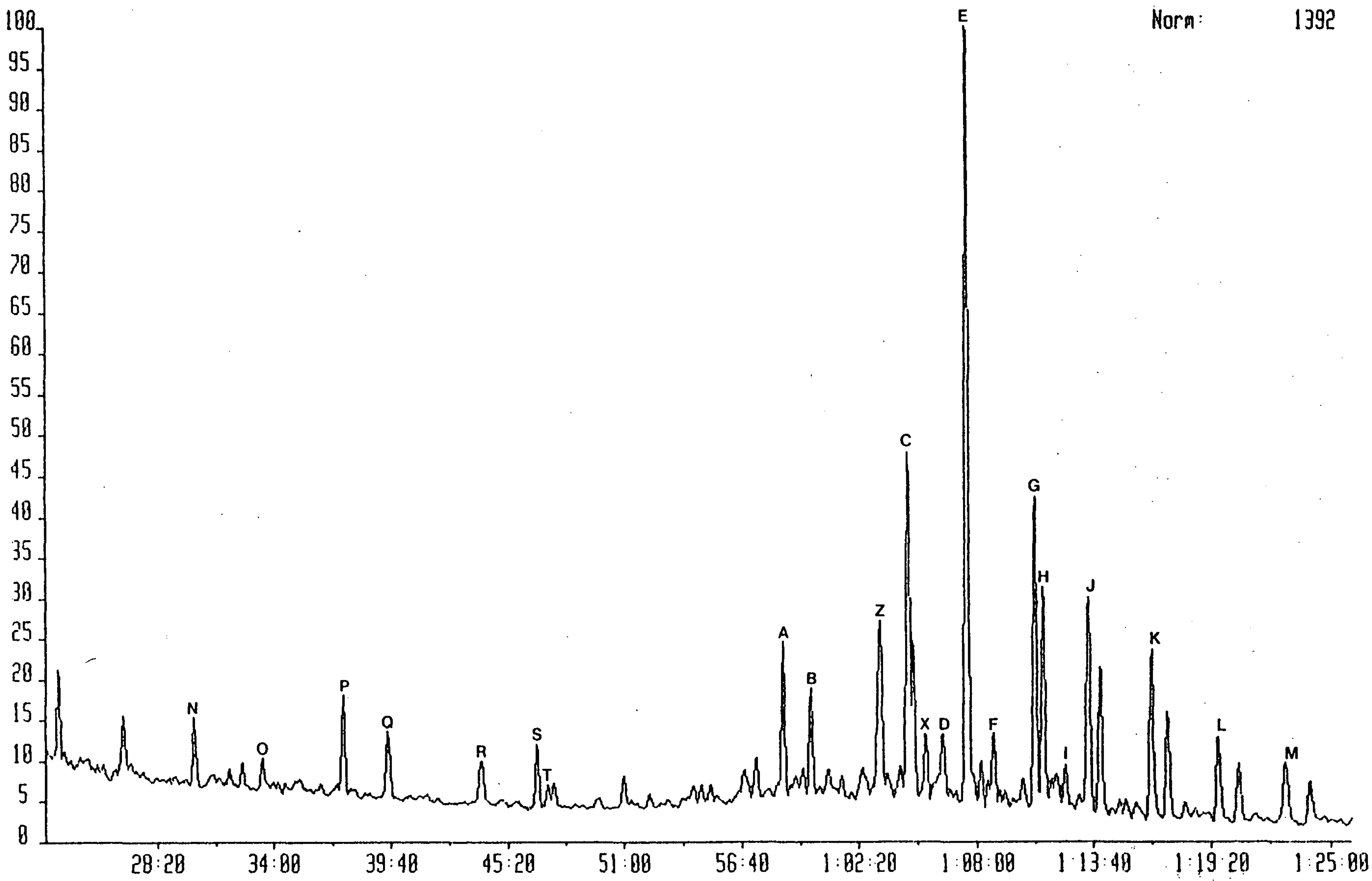

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 191.1800
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



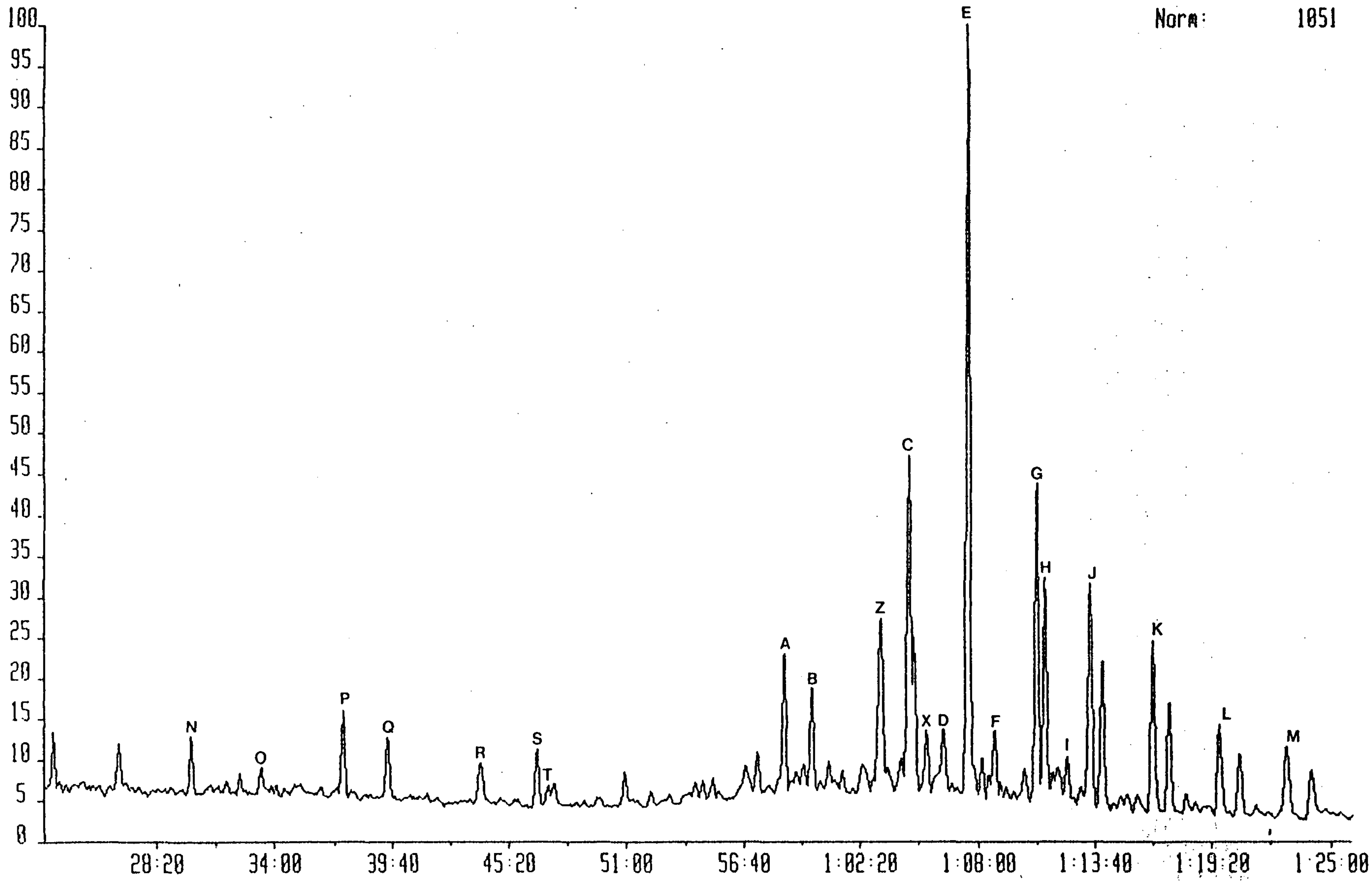

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 191.1800
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



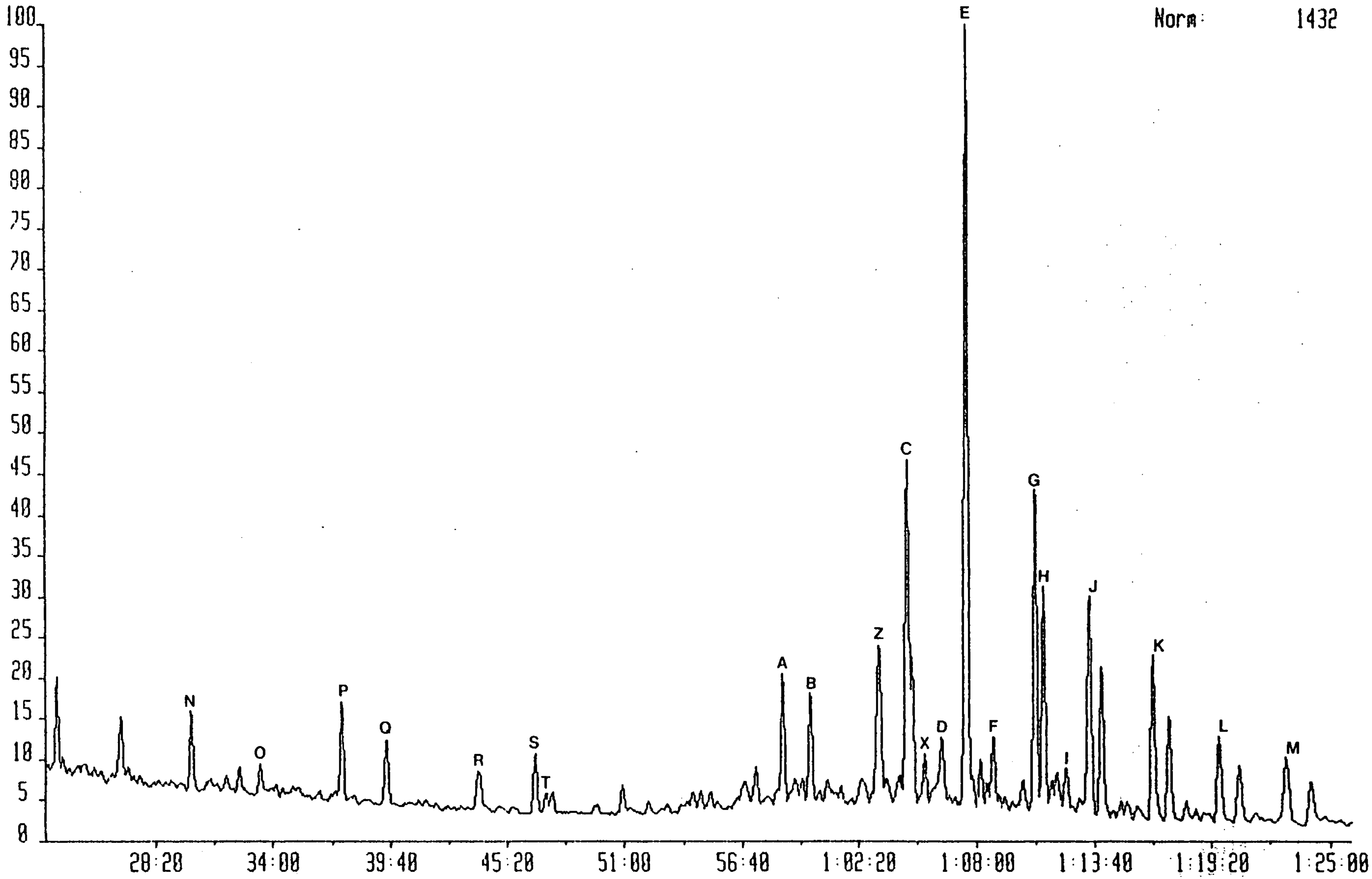

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 191.1800
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



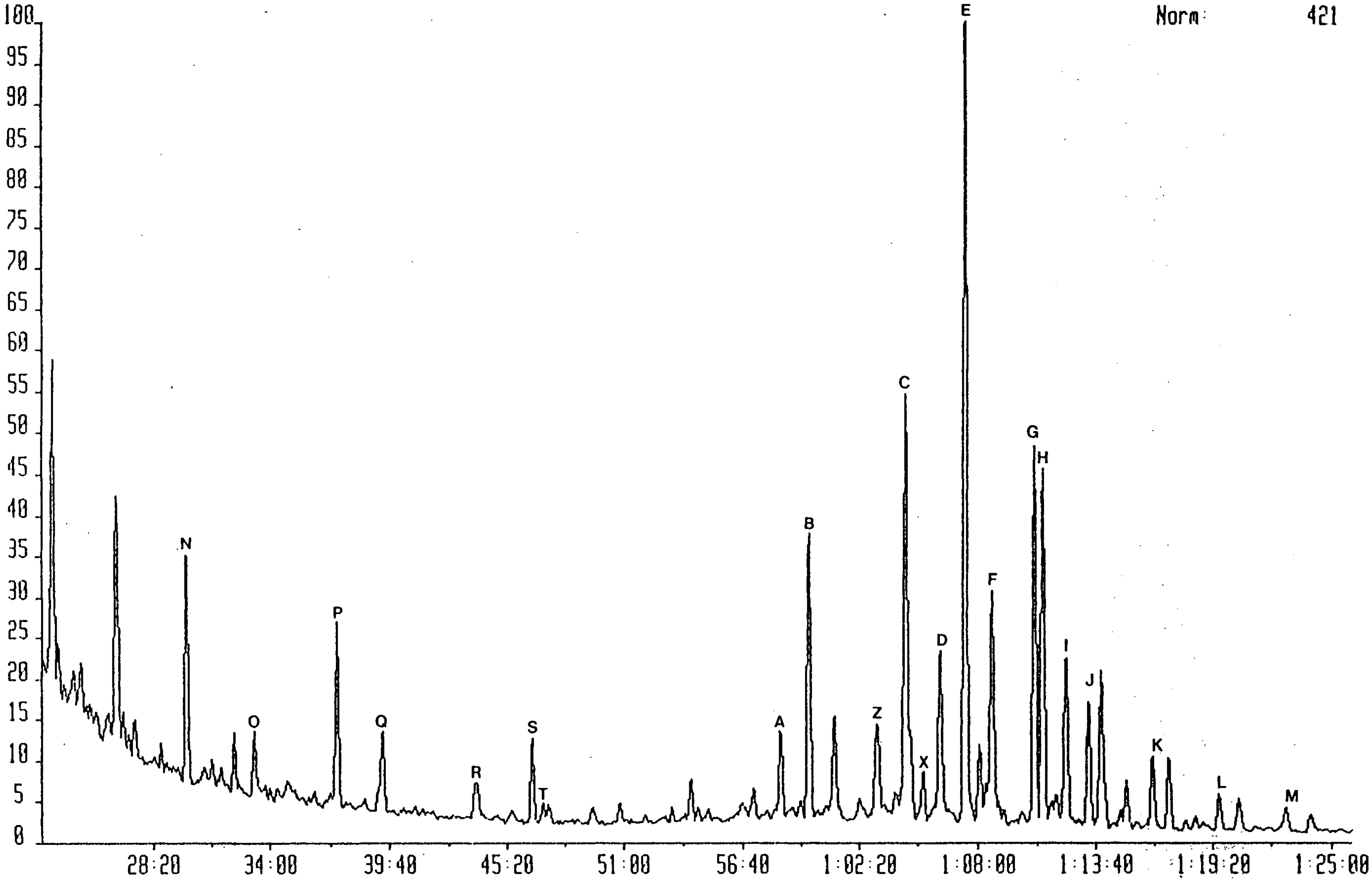

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 191.1800
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



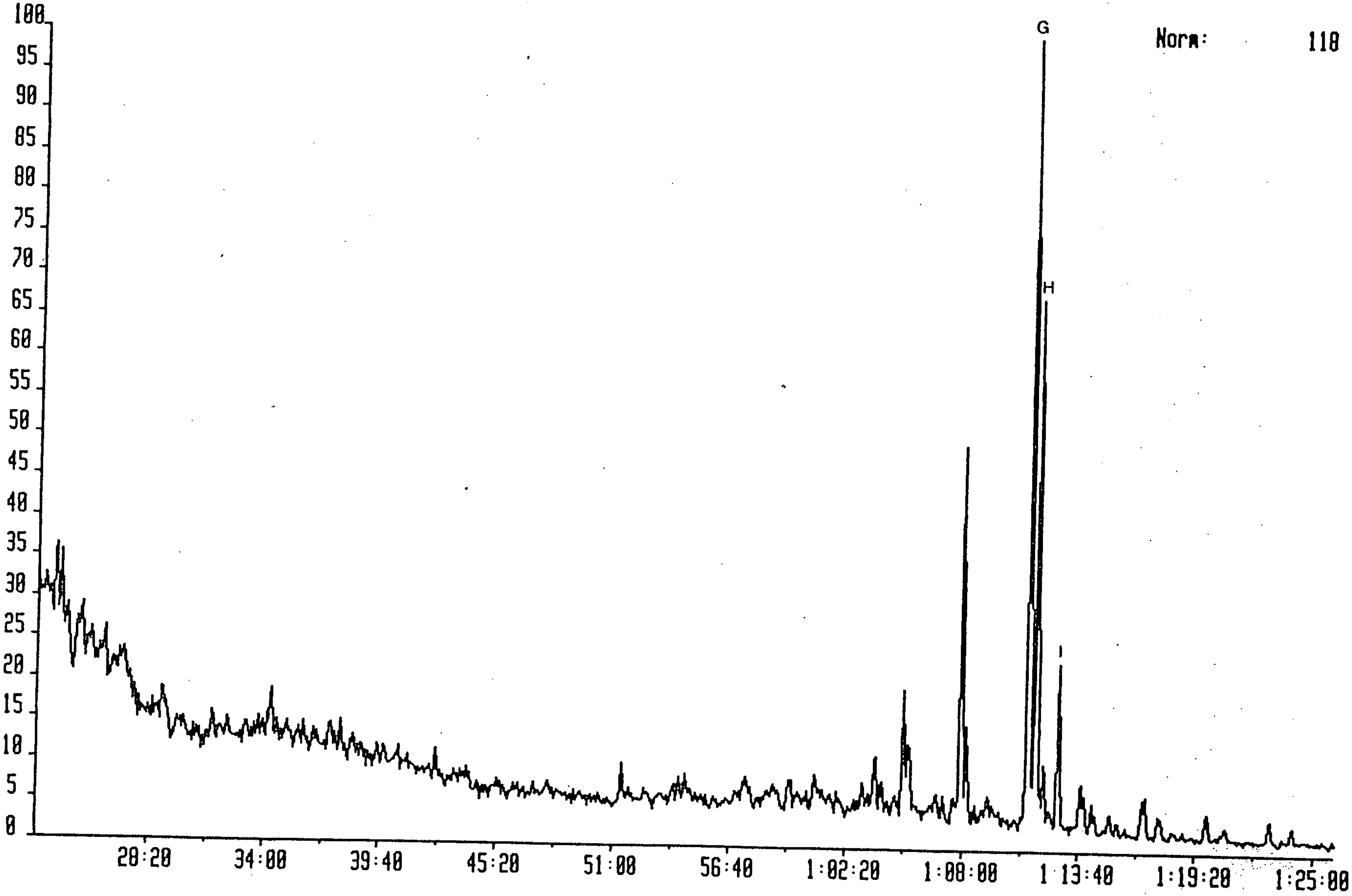

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 191.1800
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



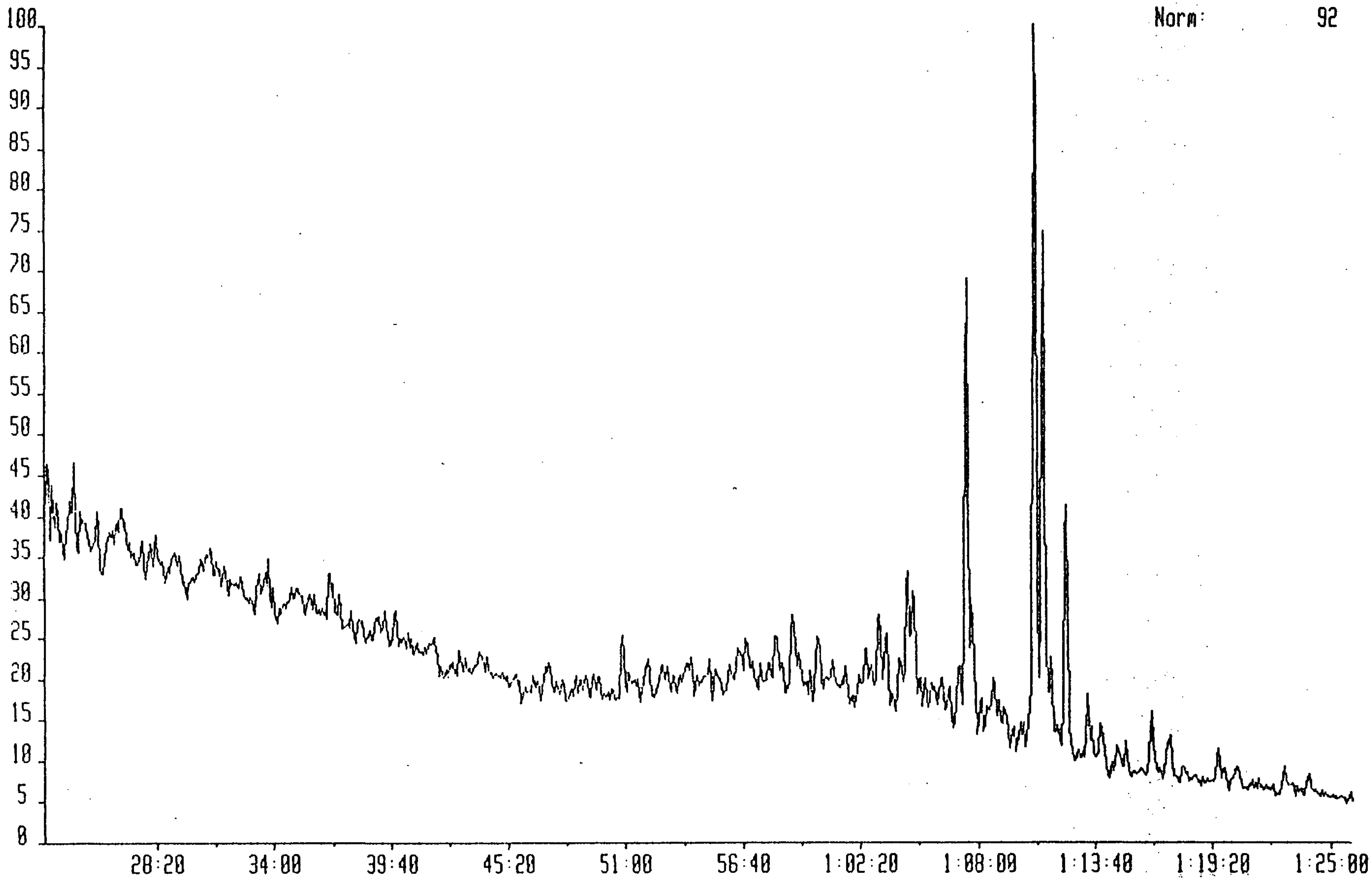

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 205 METHYLATED TRITERPANES



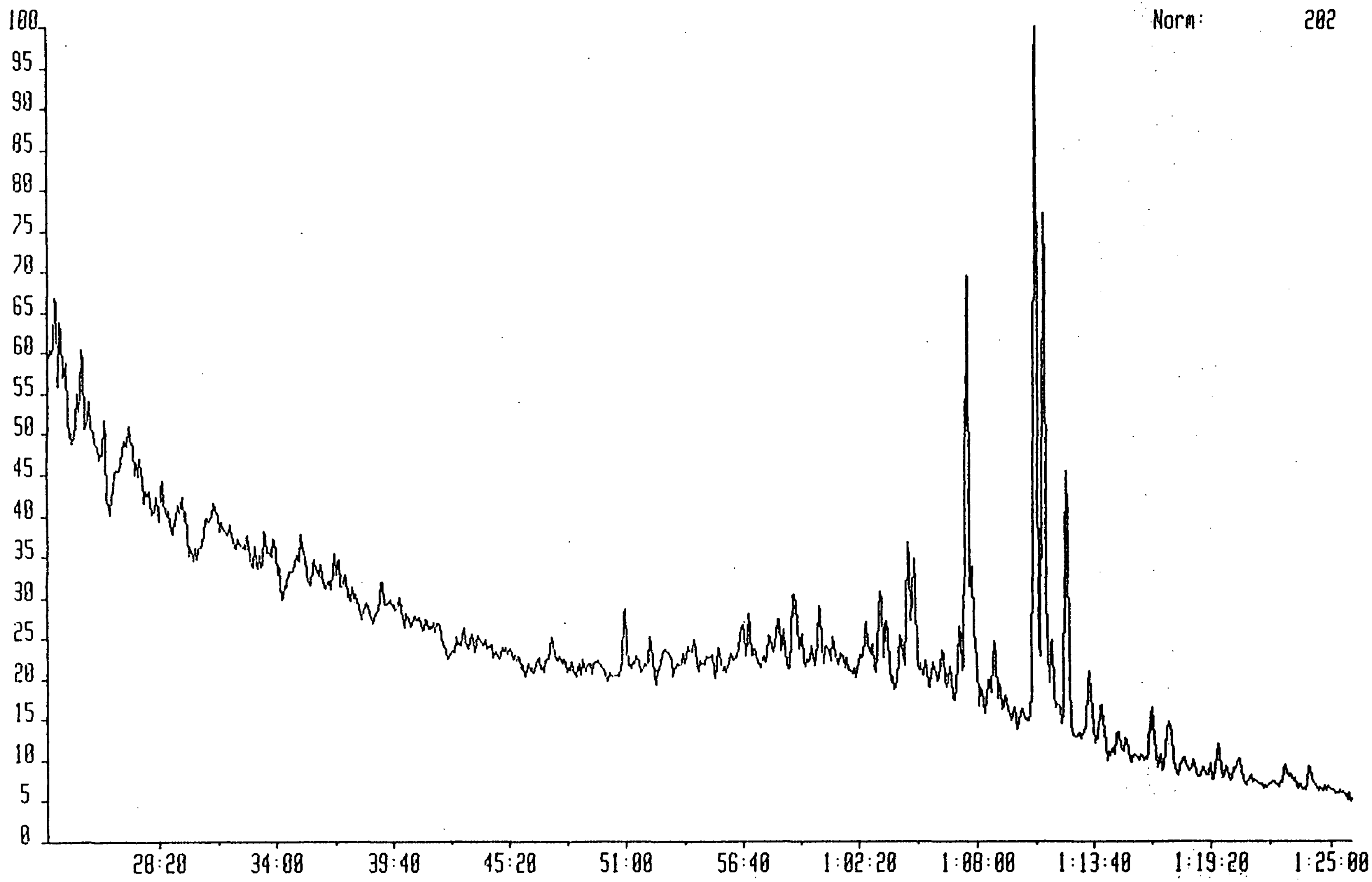

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 205.1956
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



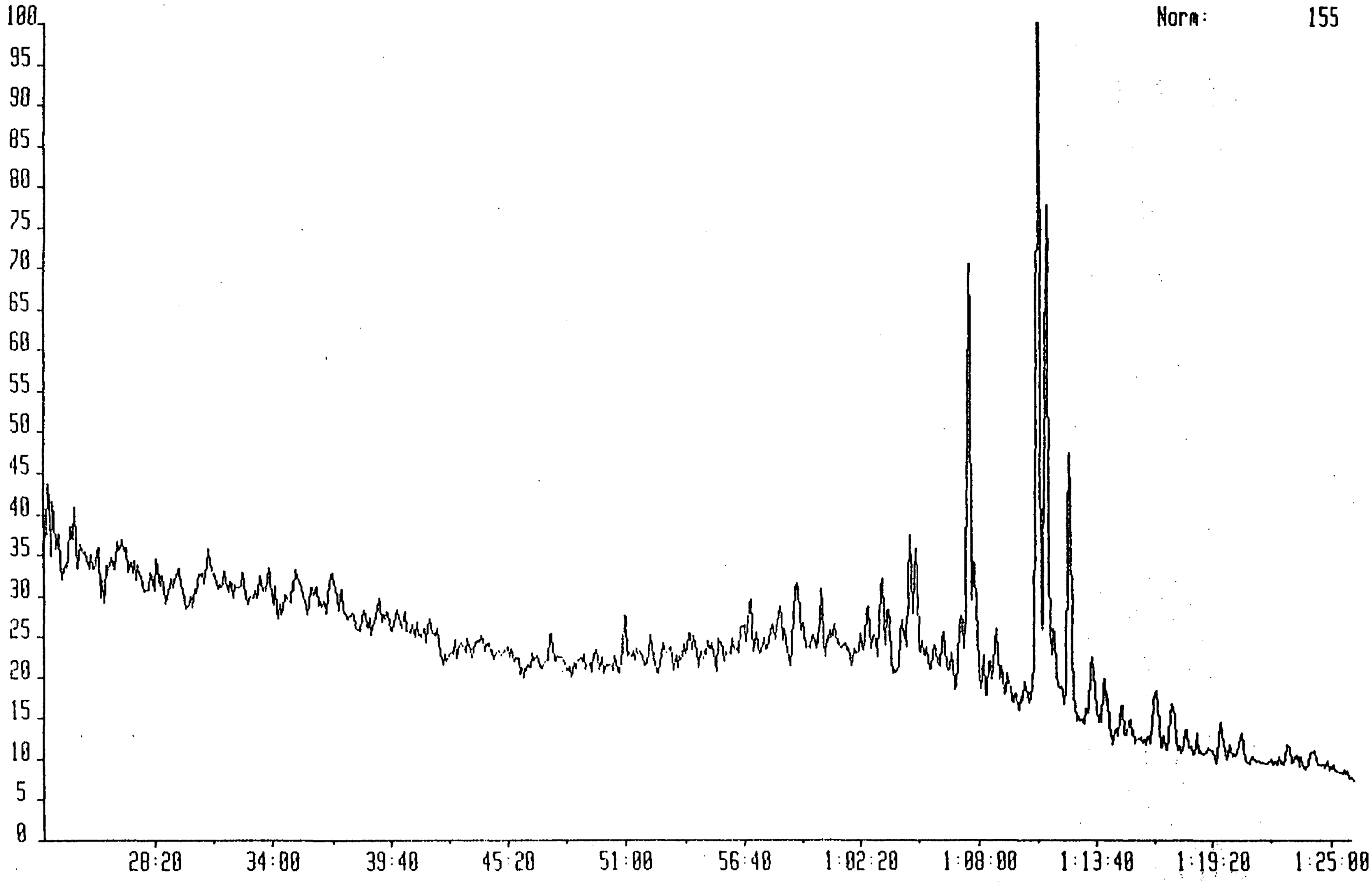

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 205.1956
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



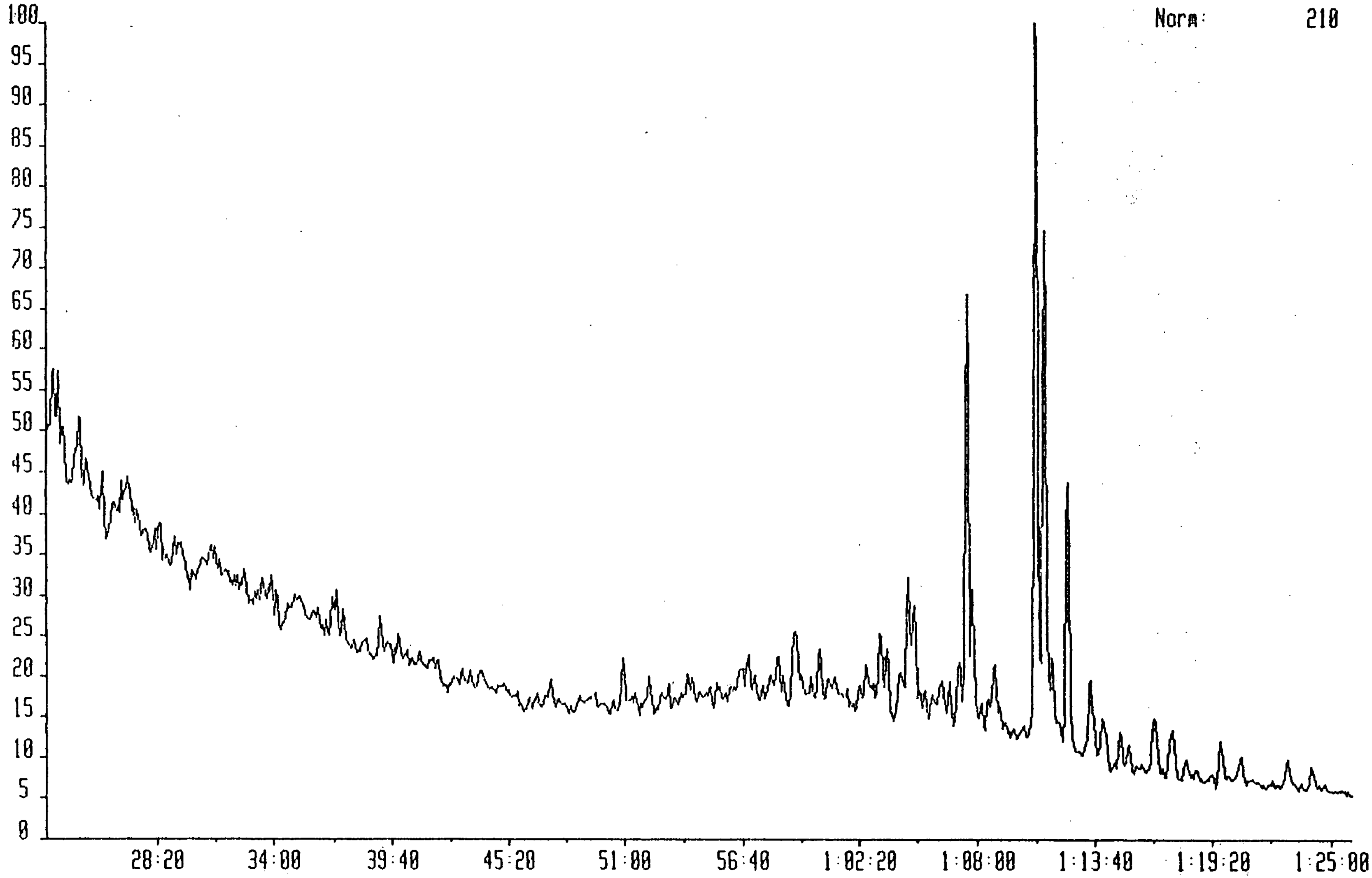

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 205.1956
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



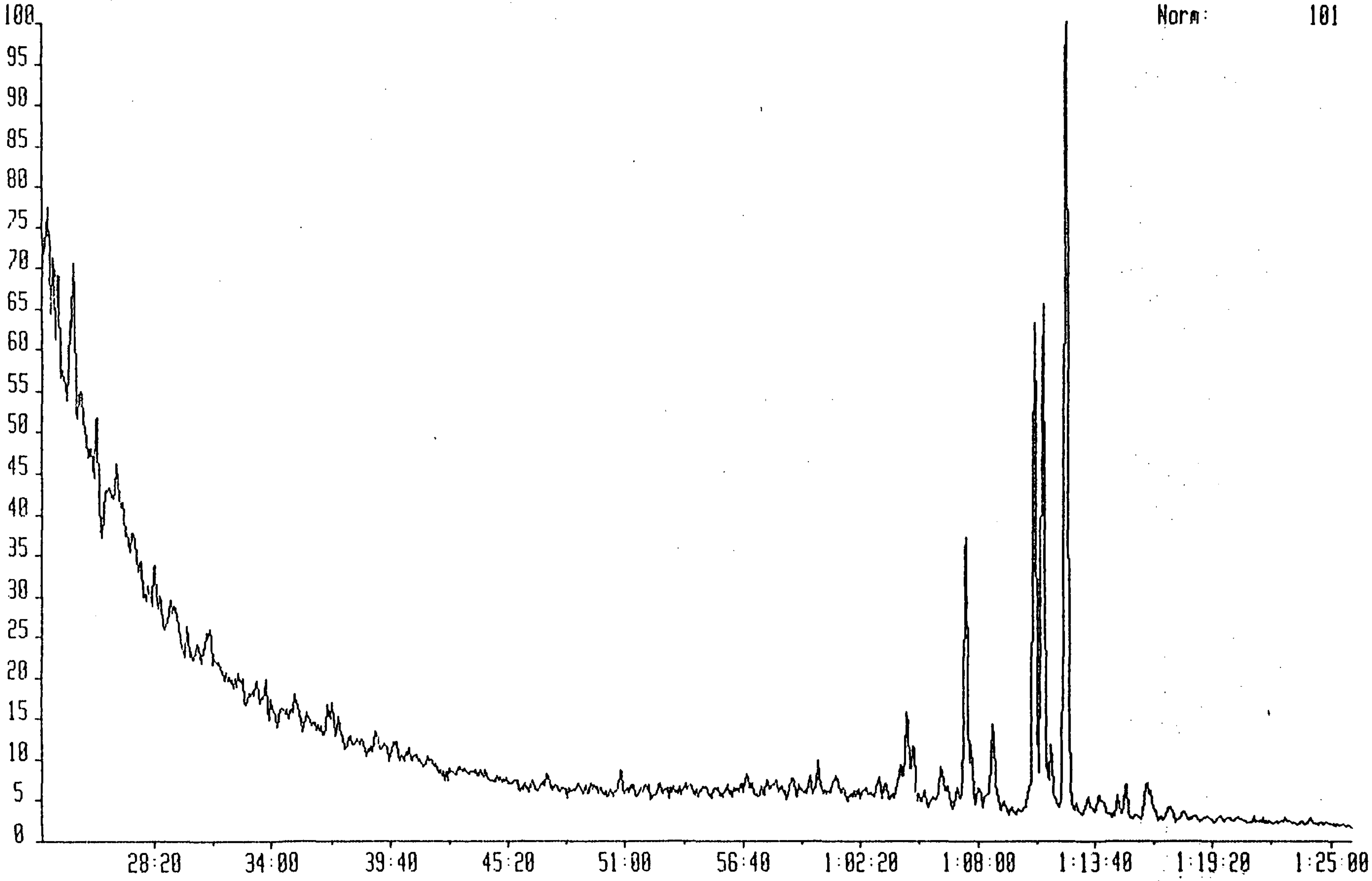

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 205.1956
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



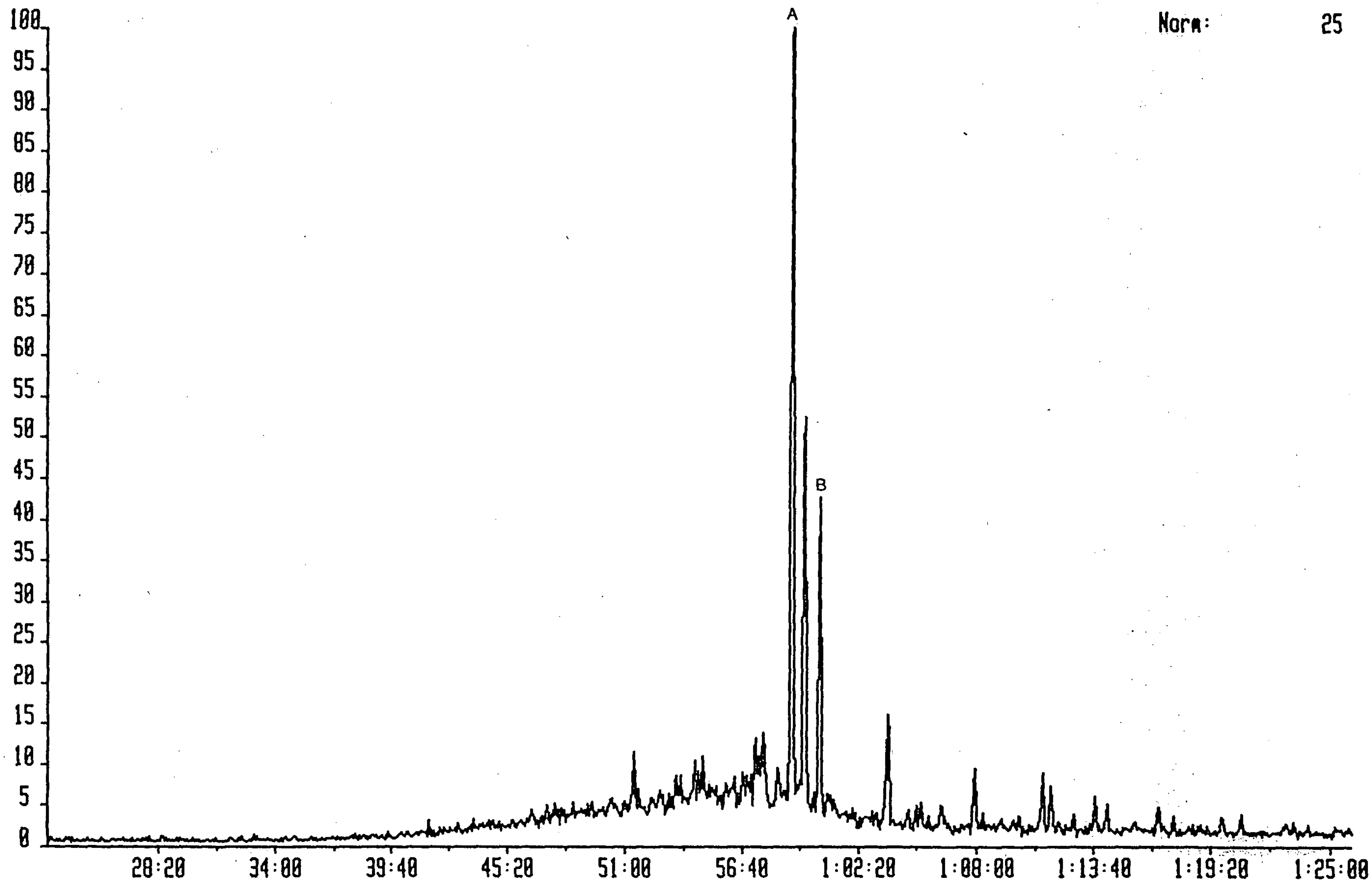

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 205.1956
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



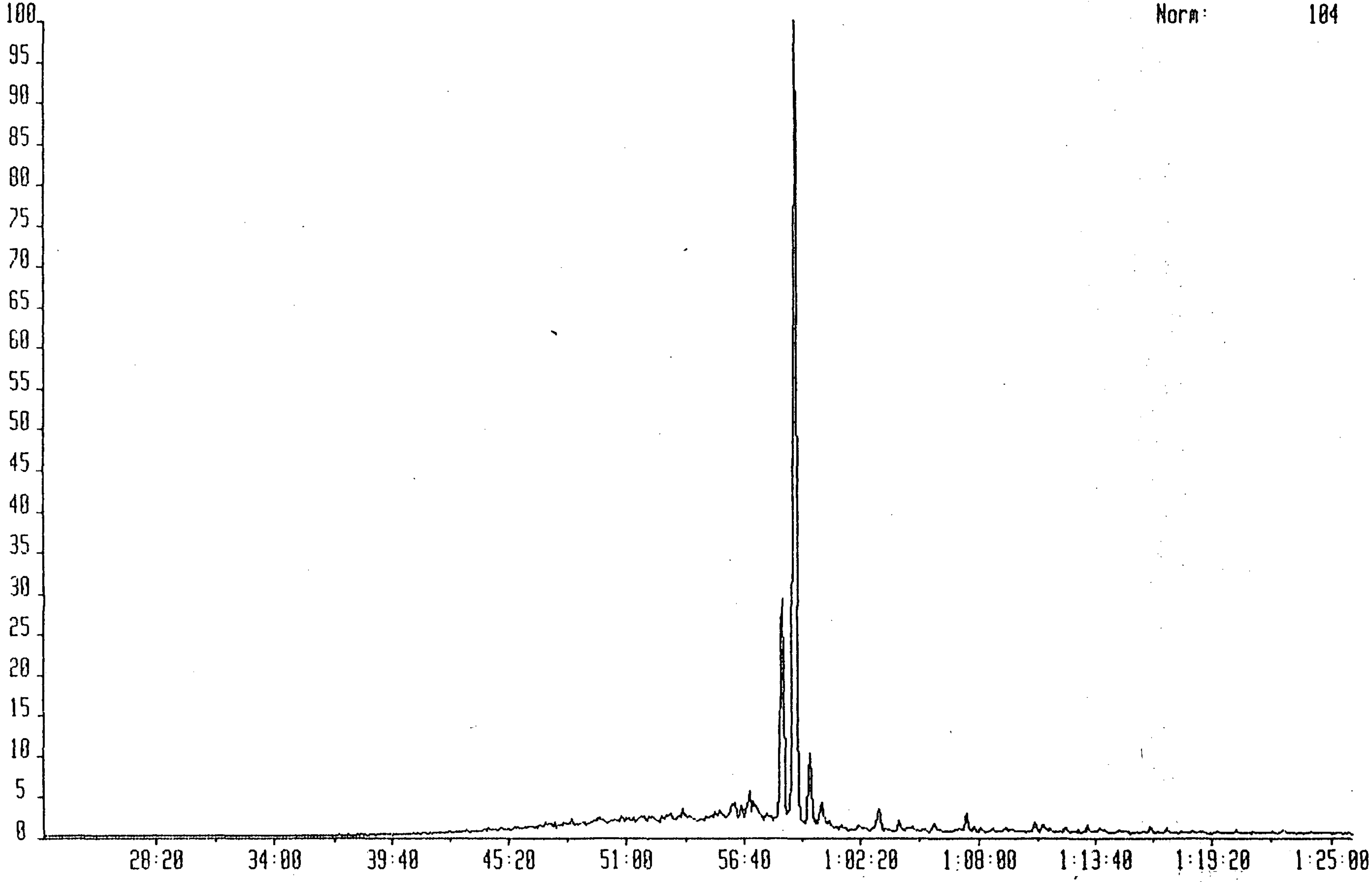

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 370 C27 TRITERPANES



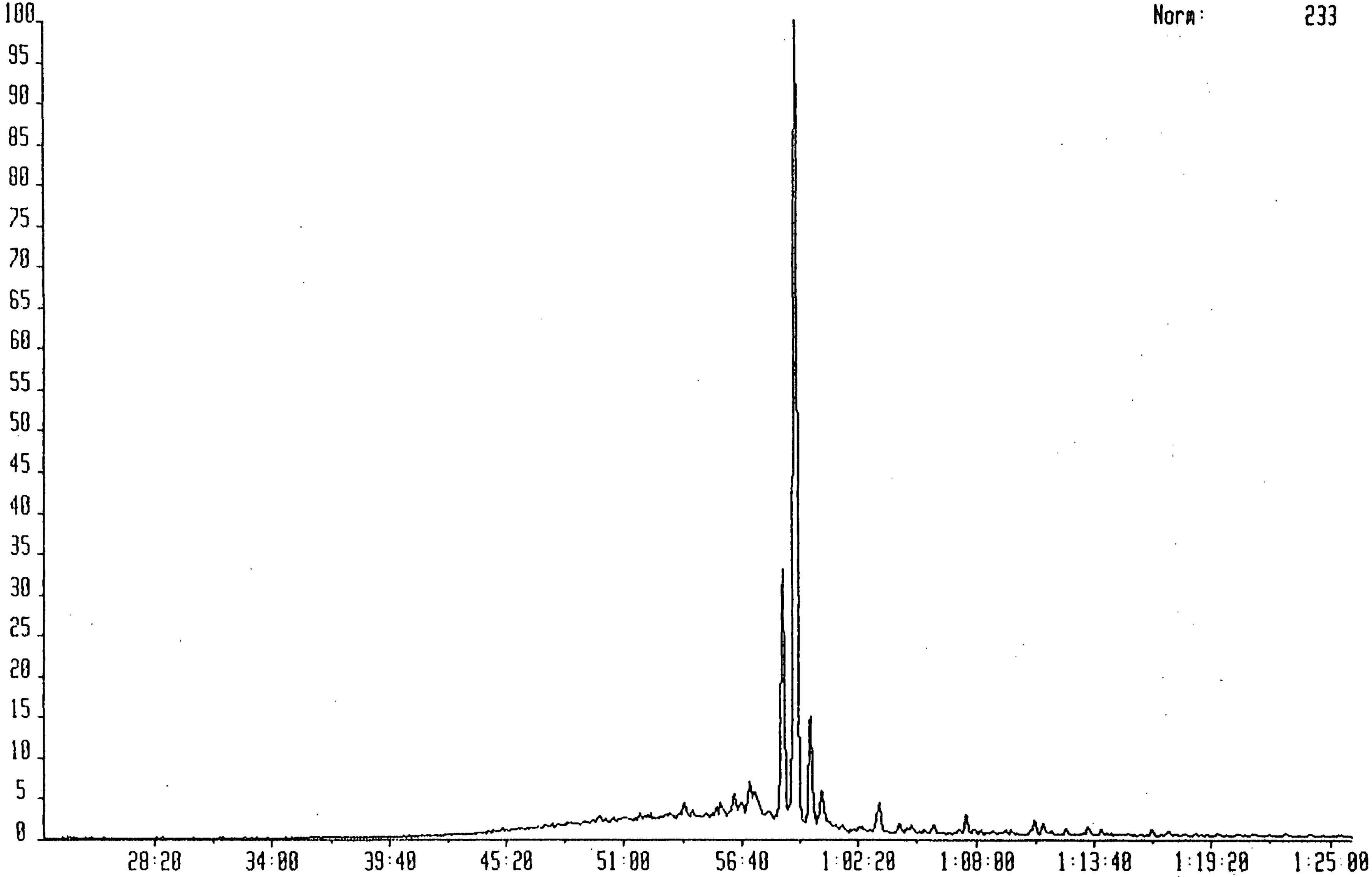

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 370.3608
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



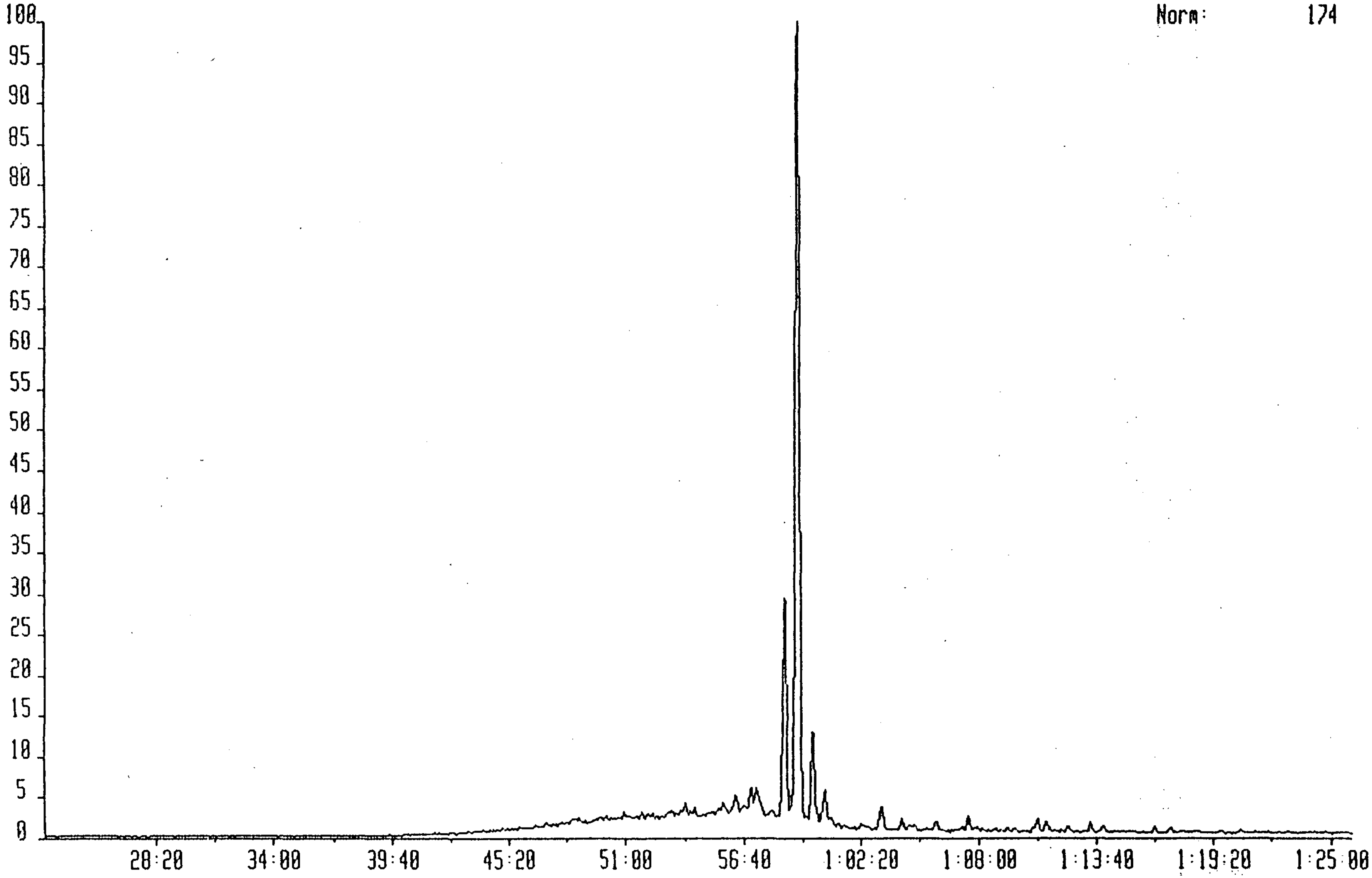

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 370.3608
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



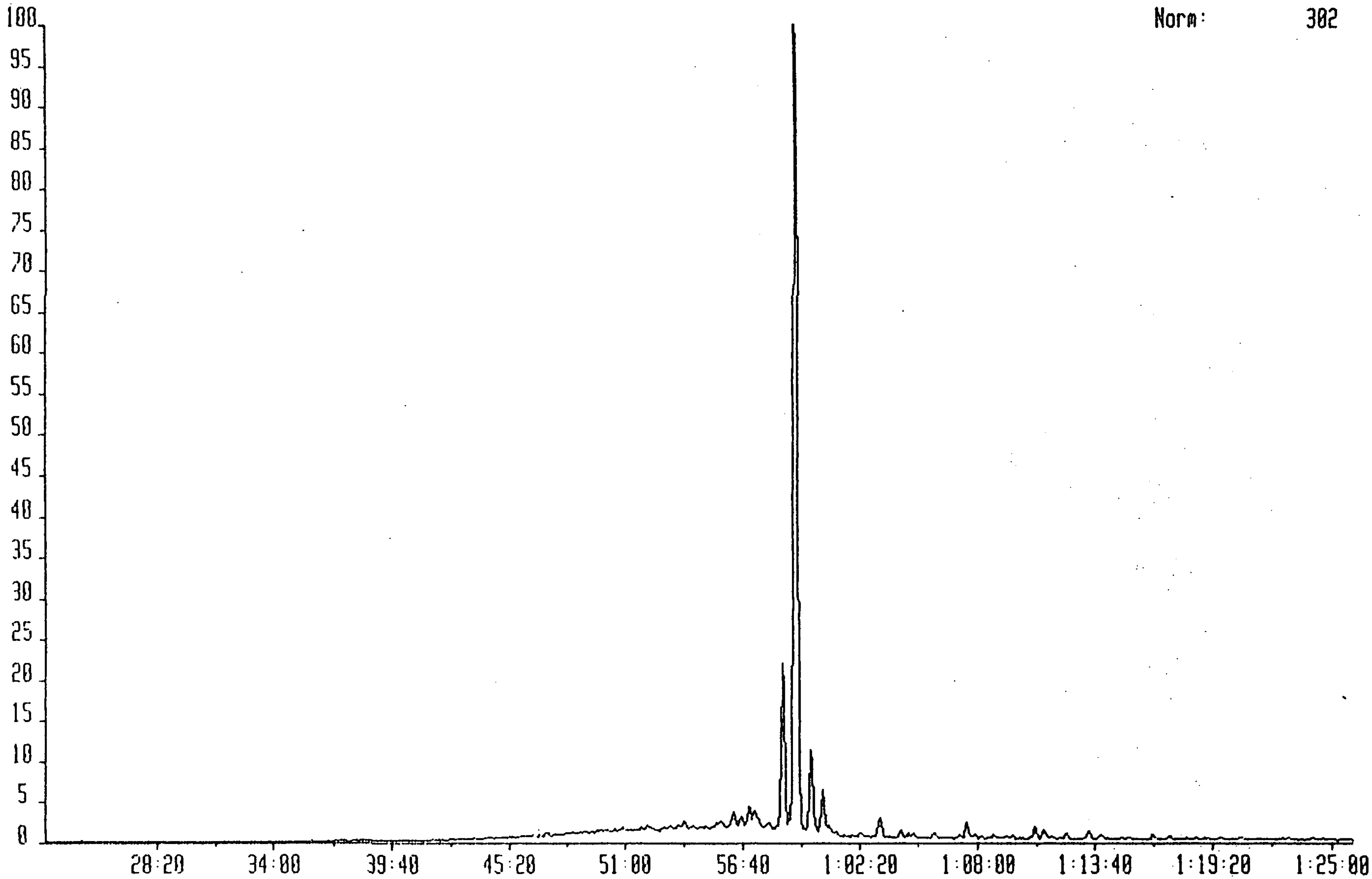

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 370.3608
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



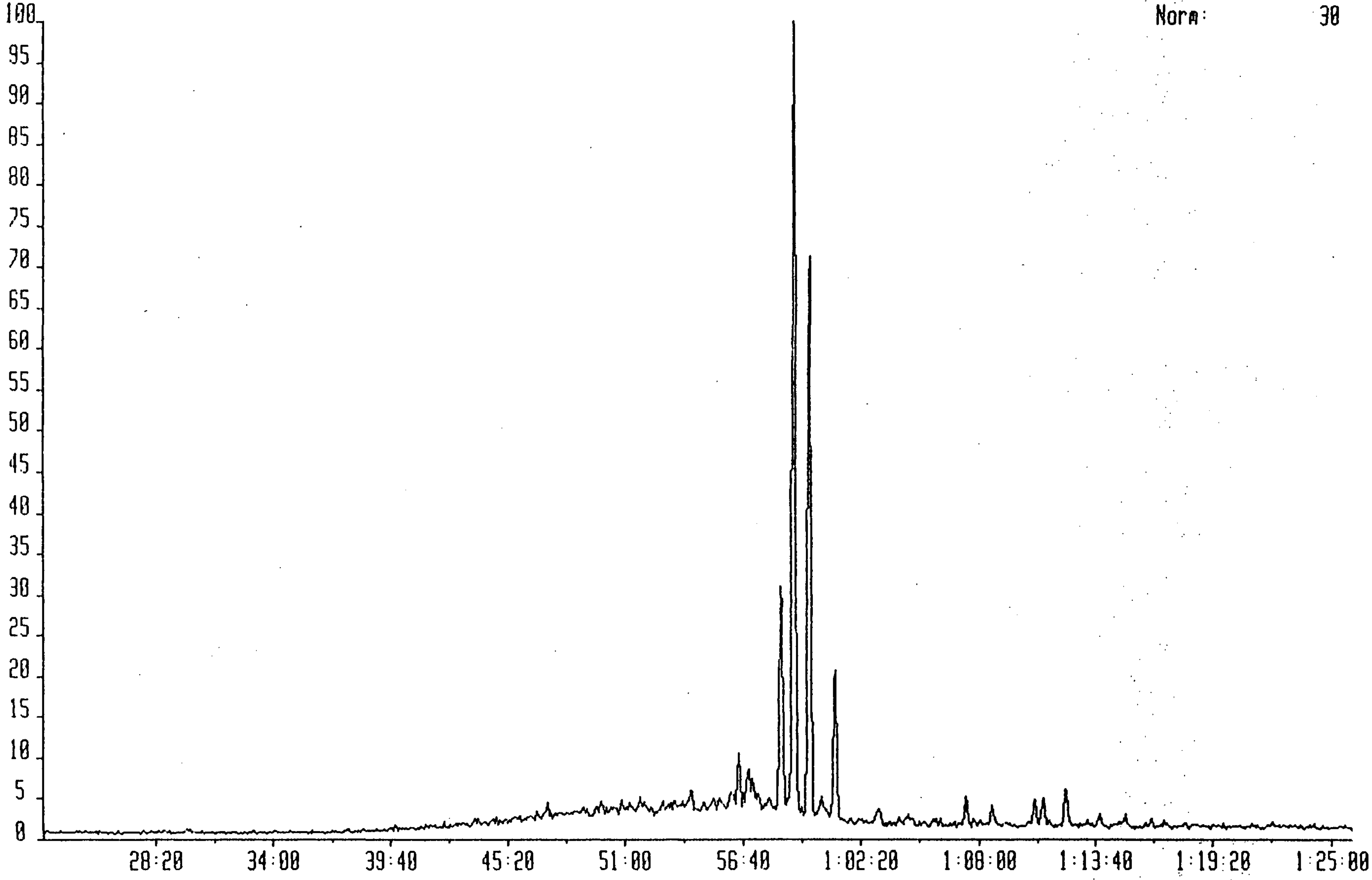

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 370.3608
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



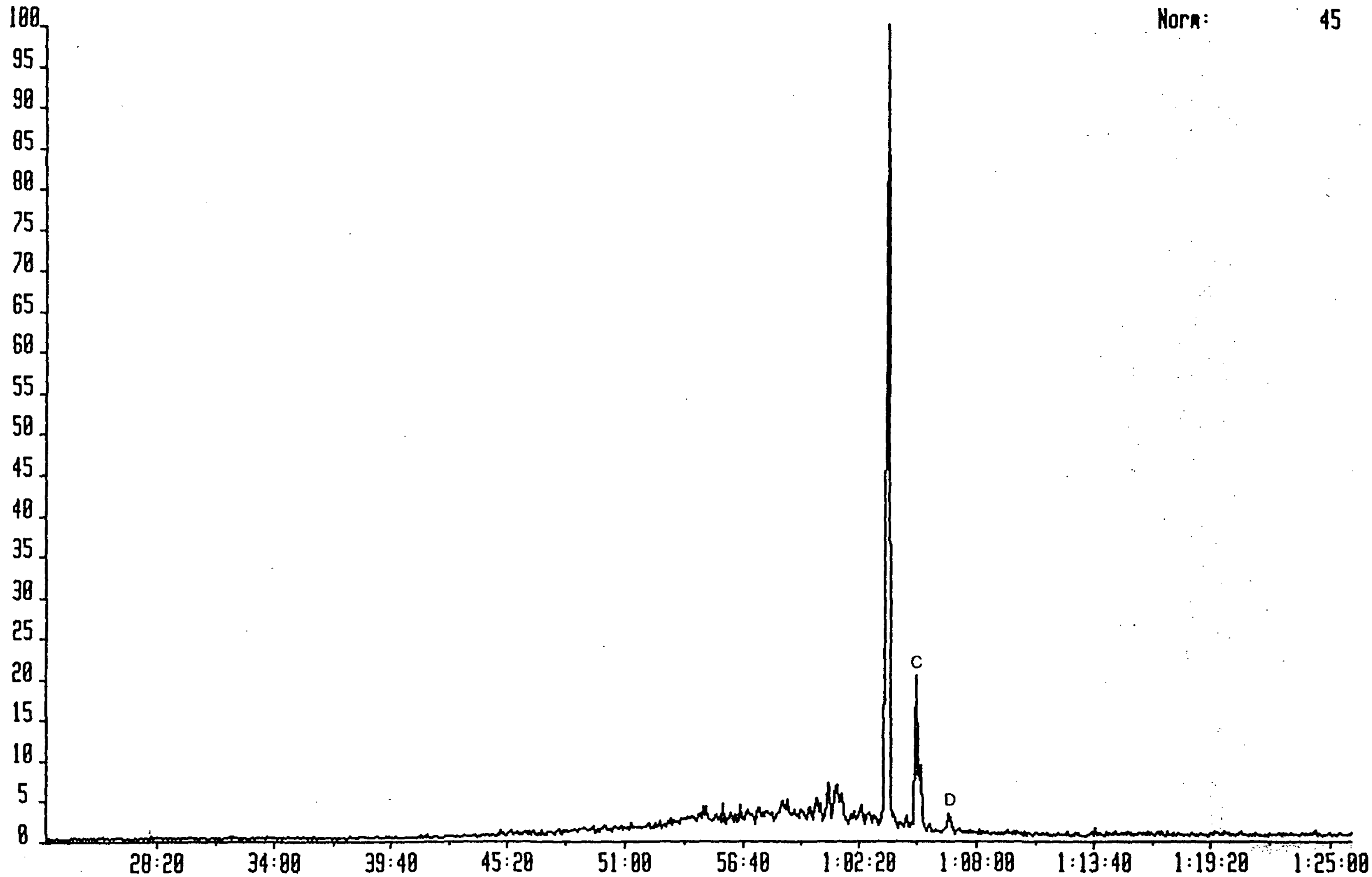

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 370.3608
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



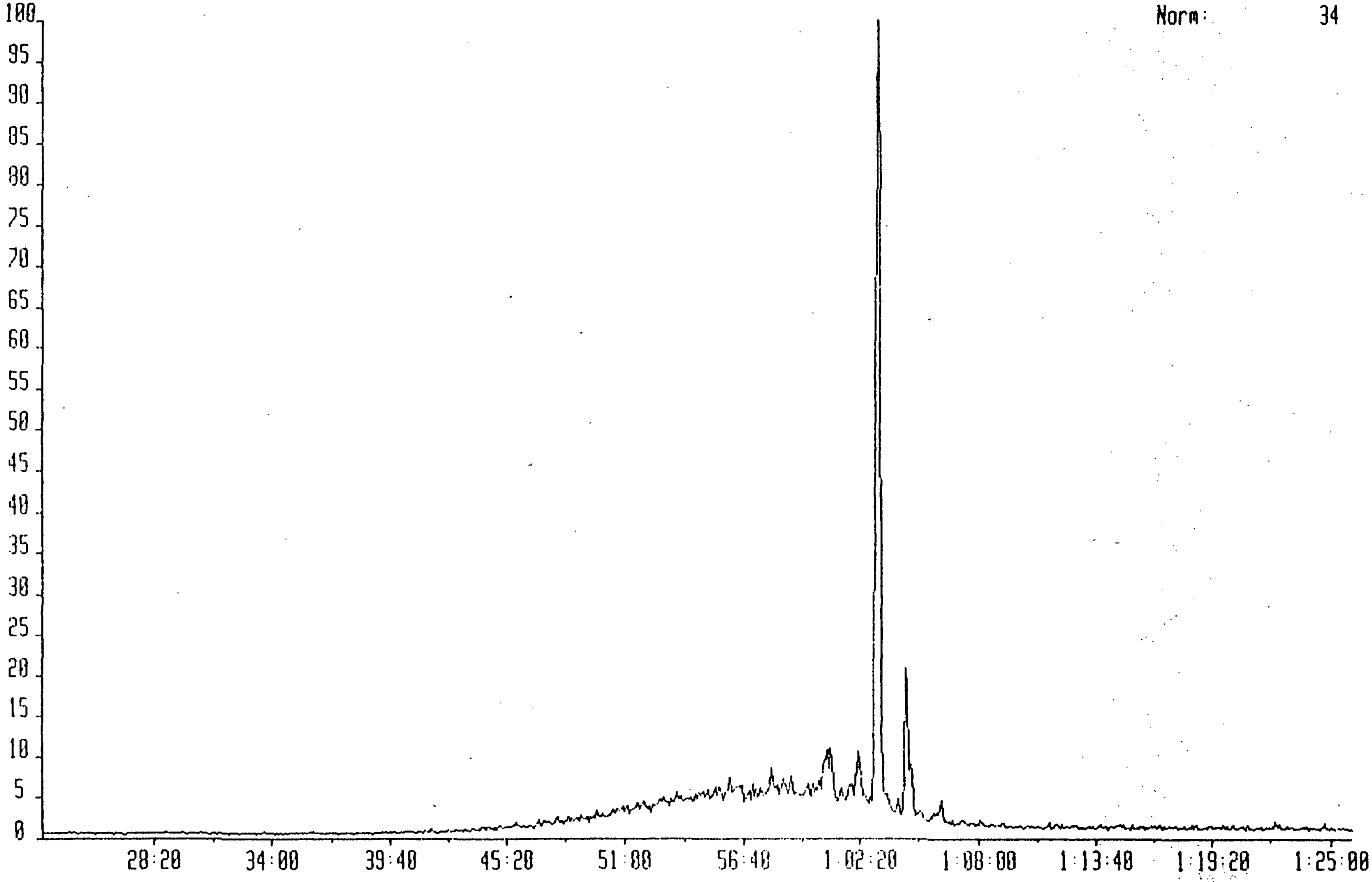

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 384 C28 TRITERPANES



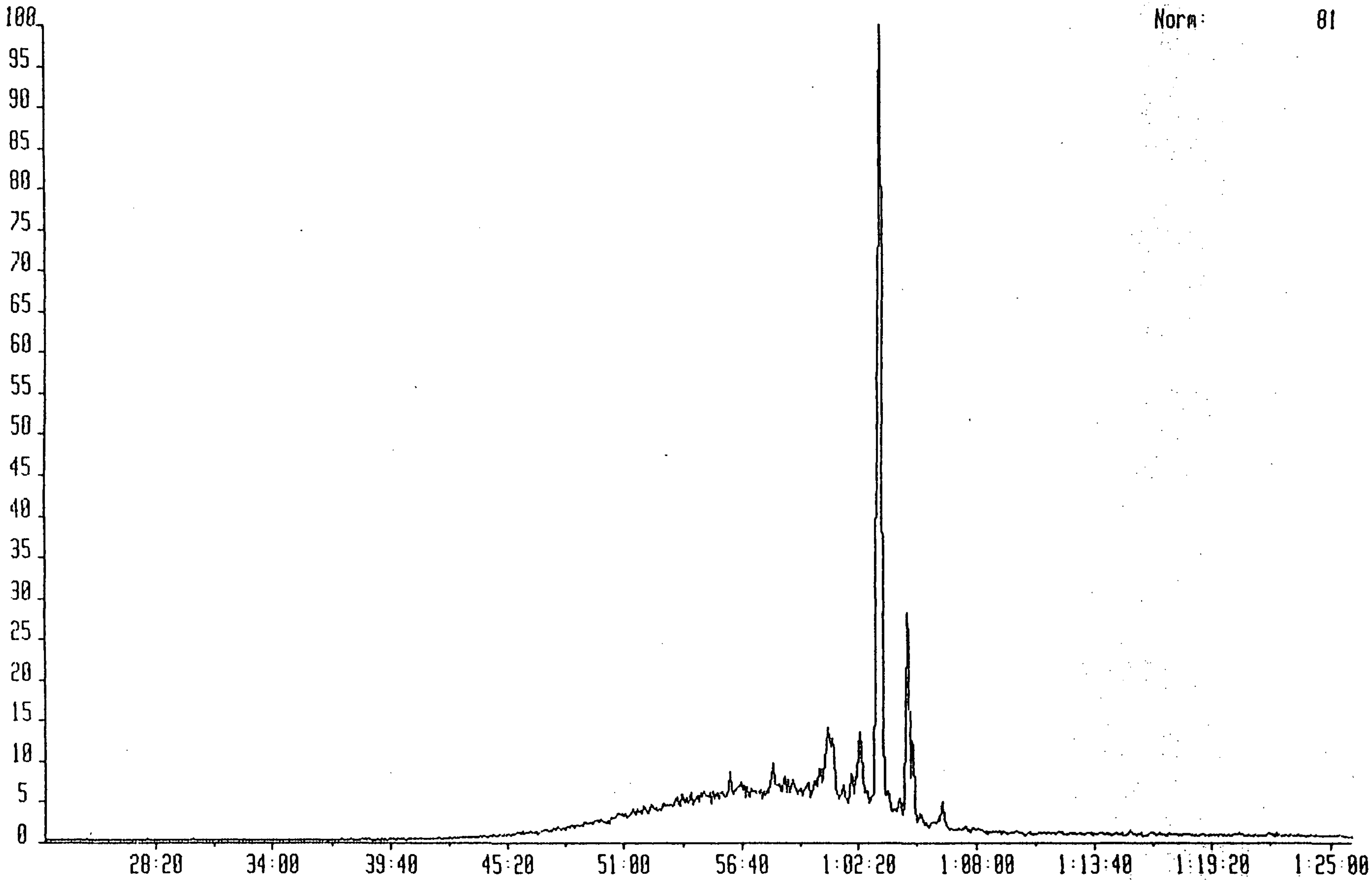

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 304.3757
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



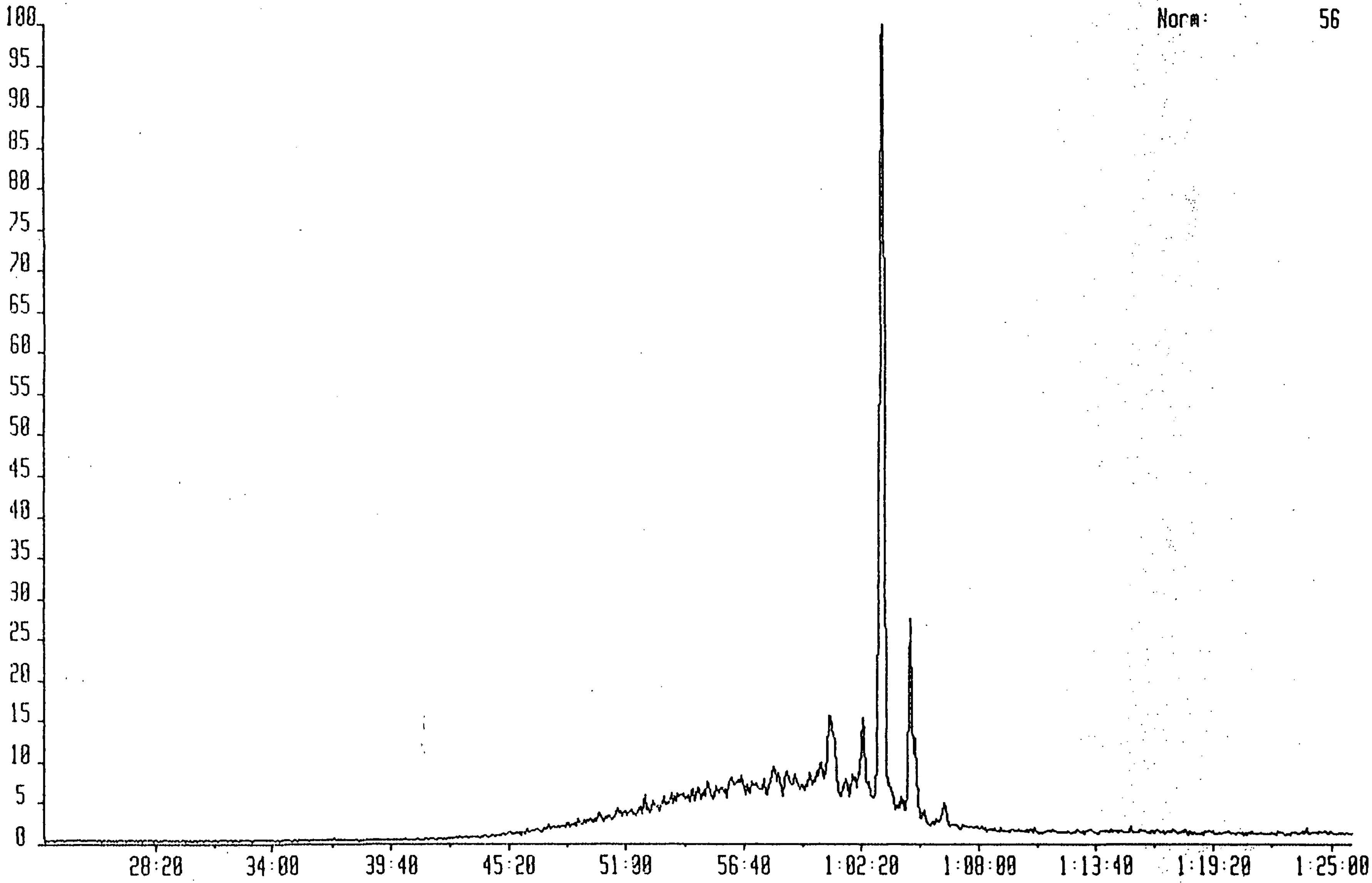

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 384.3757
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



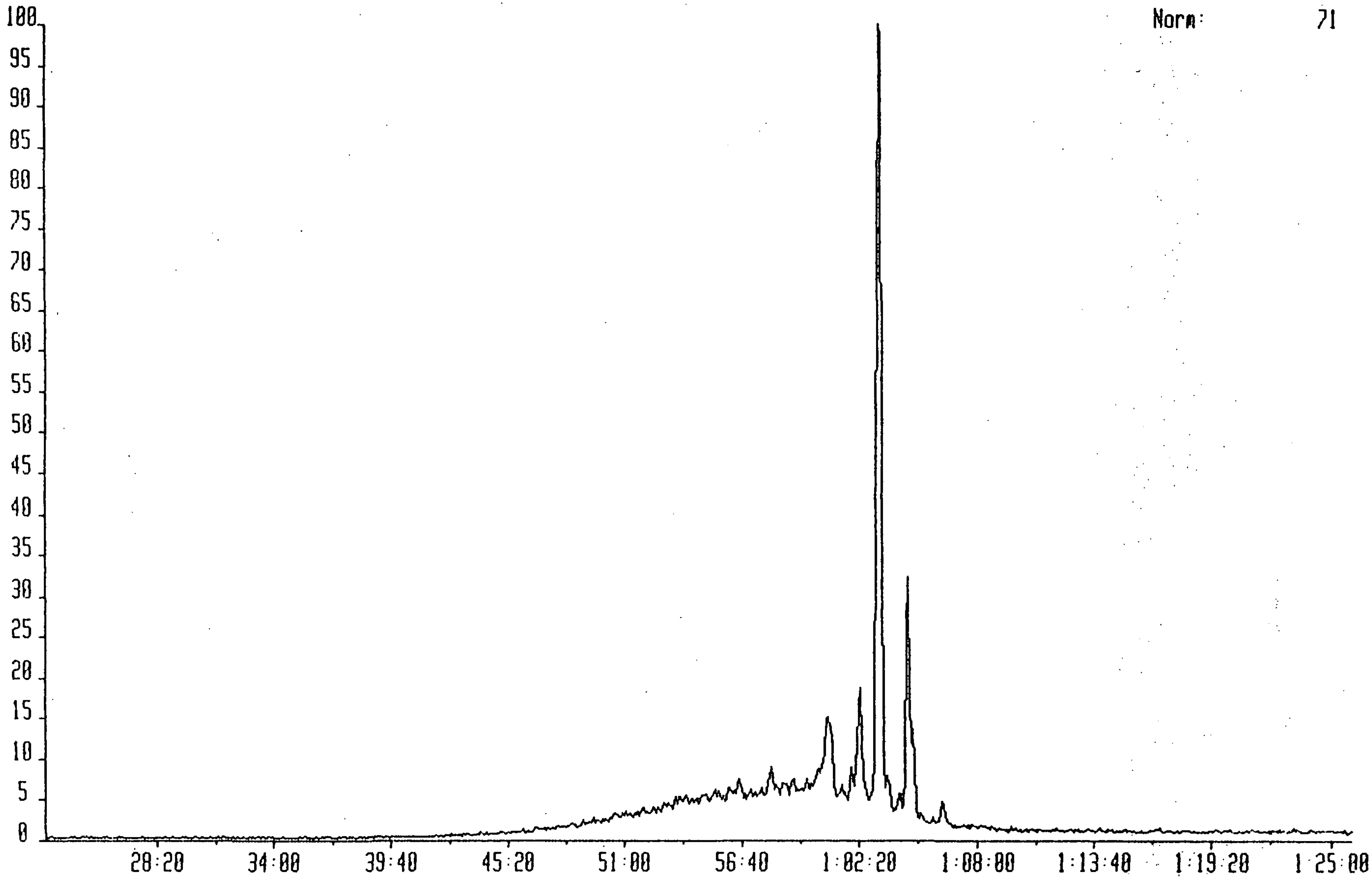

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 384.3757
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



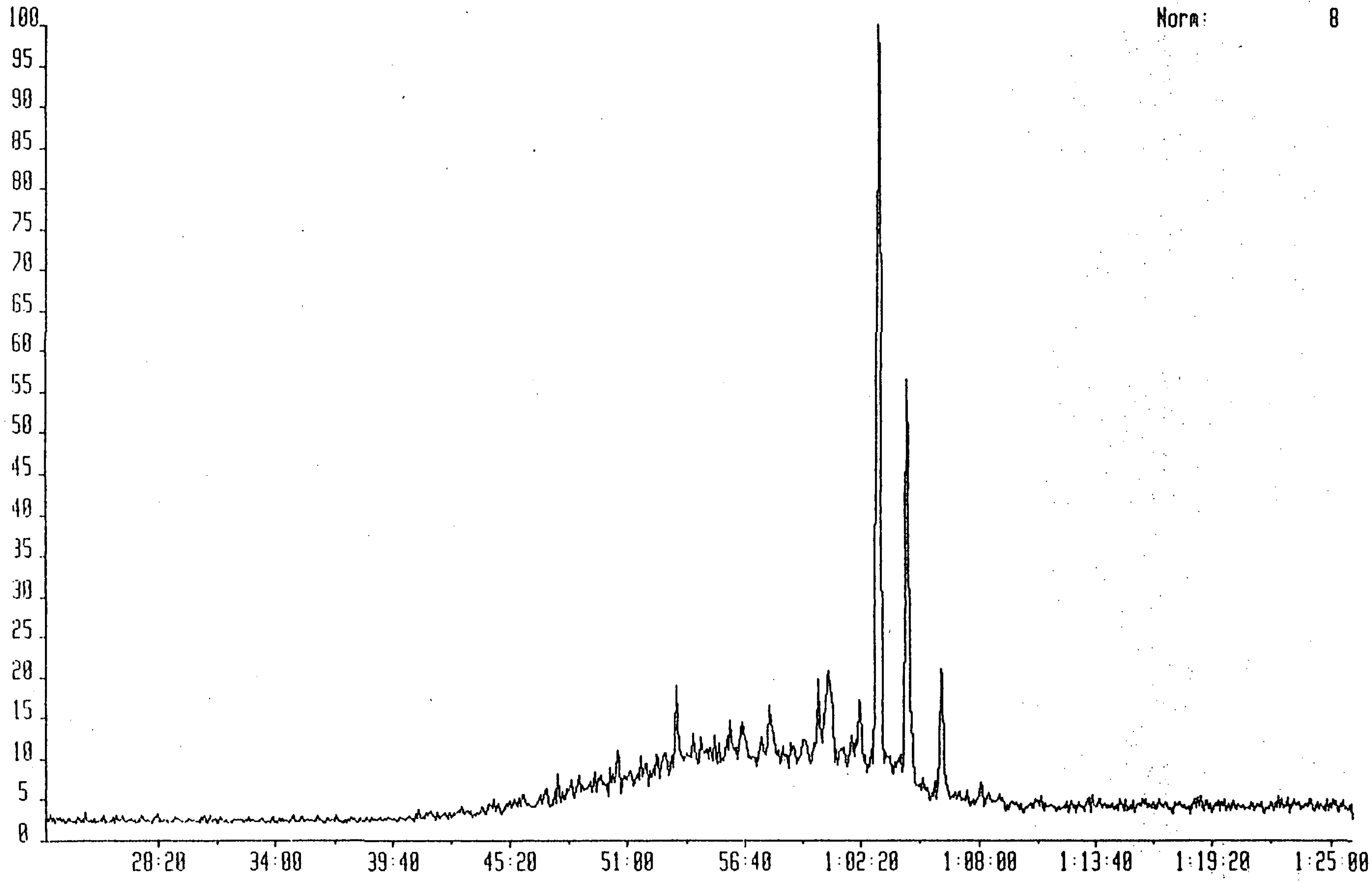

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 304.3757
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



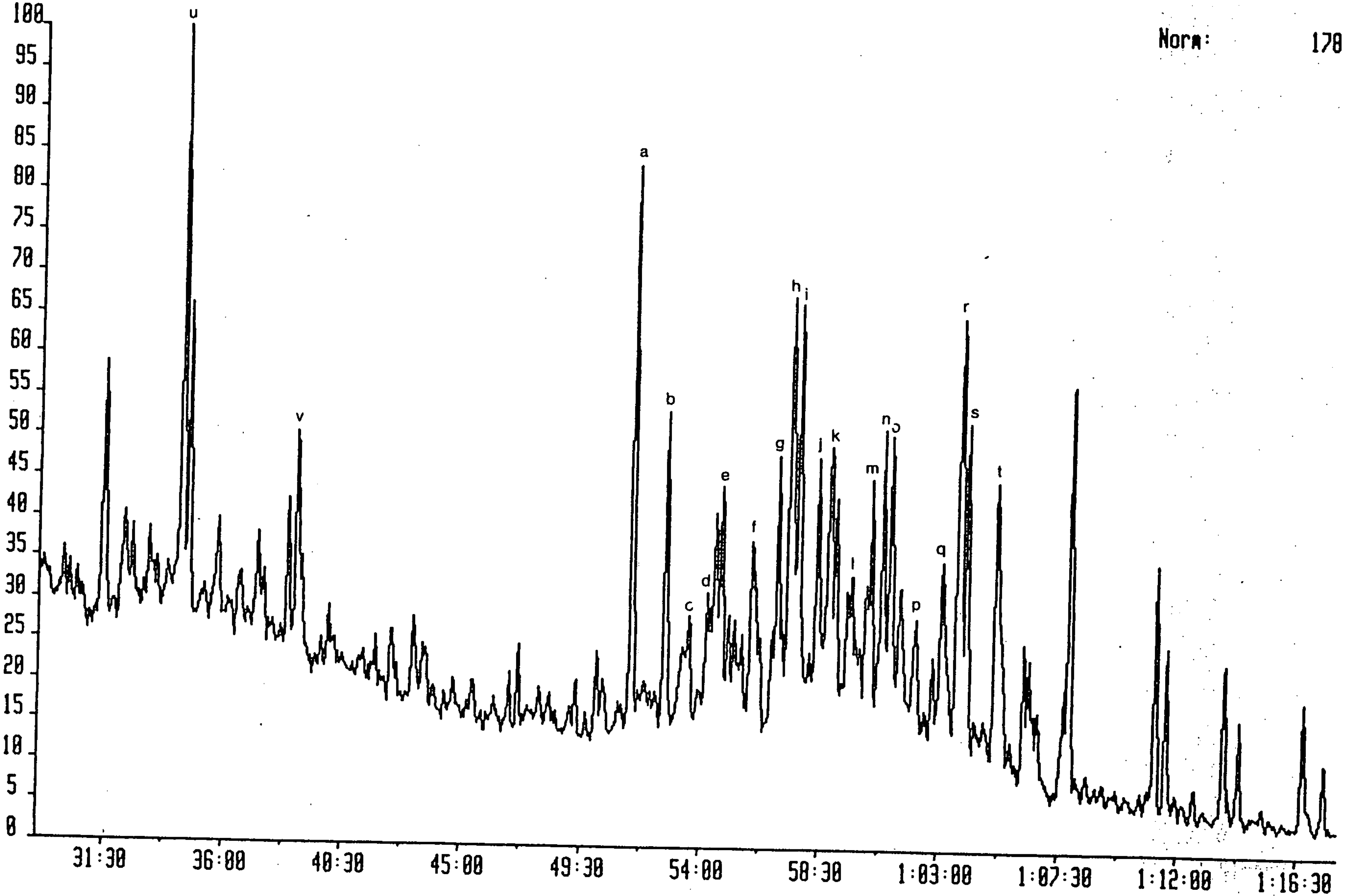

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 384.3757
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



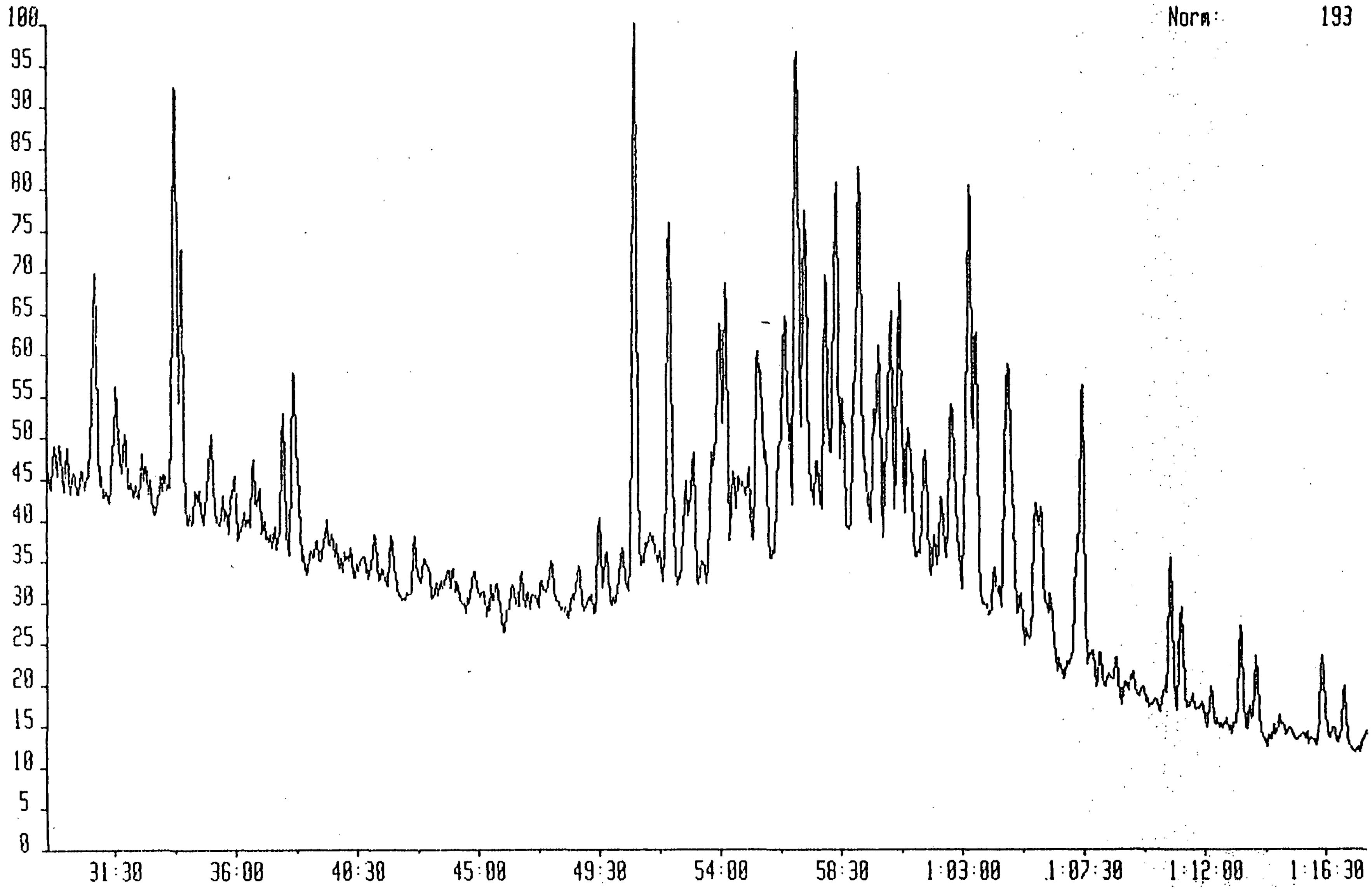

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 149. 5-alpha and 5-beta STERANES.



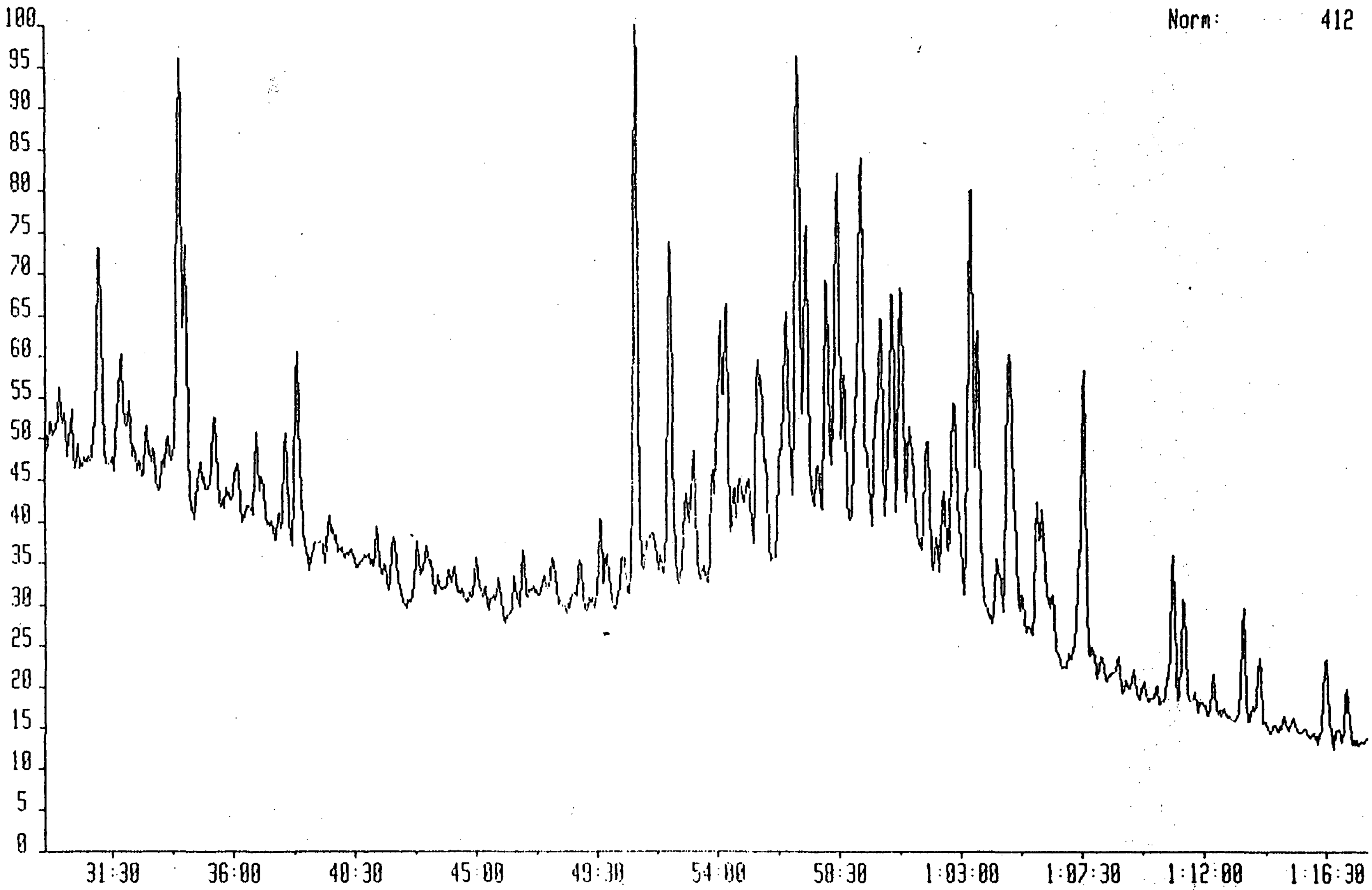

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 149.1328
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



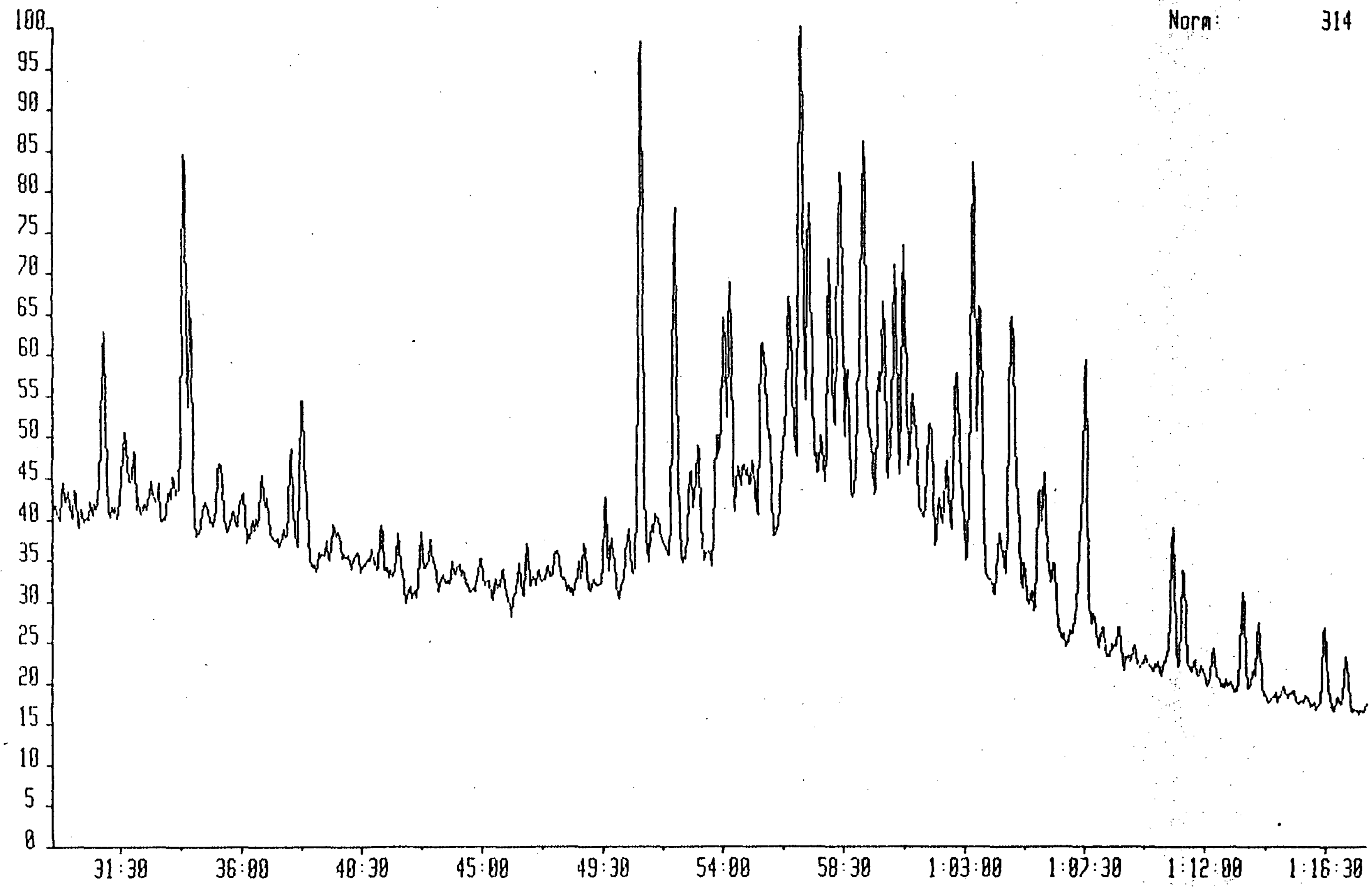

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 149.1328
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



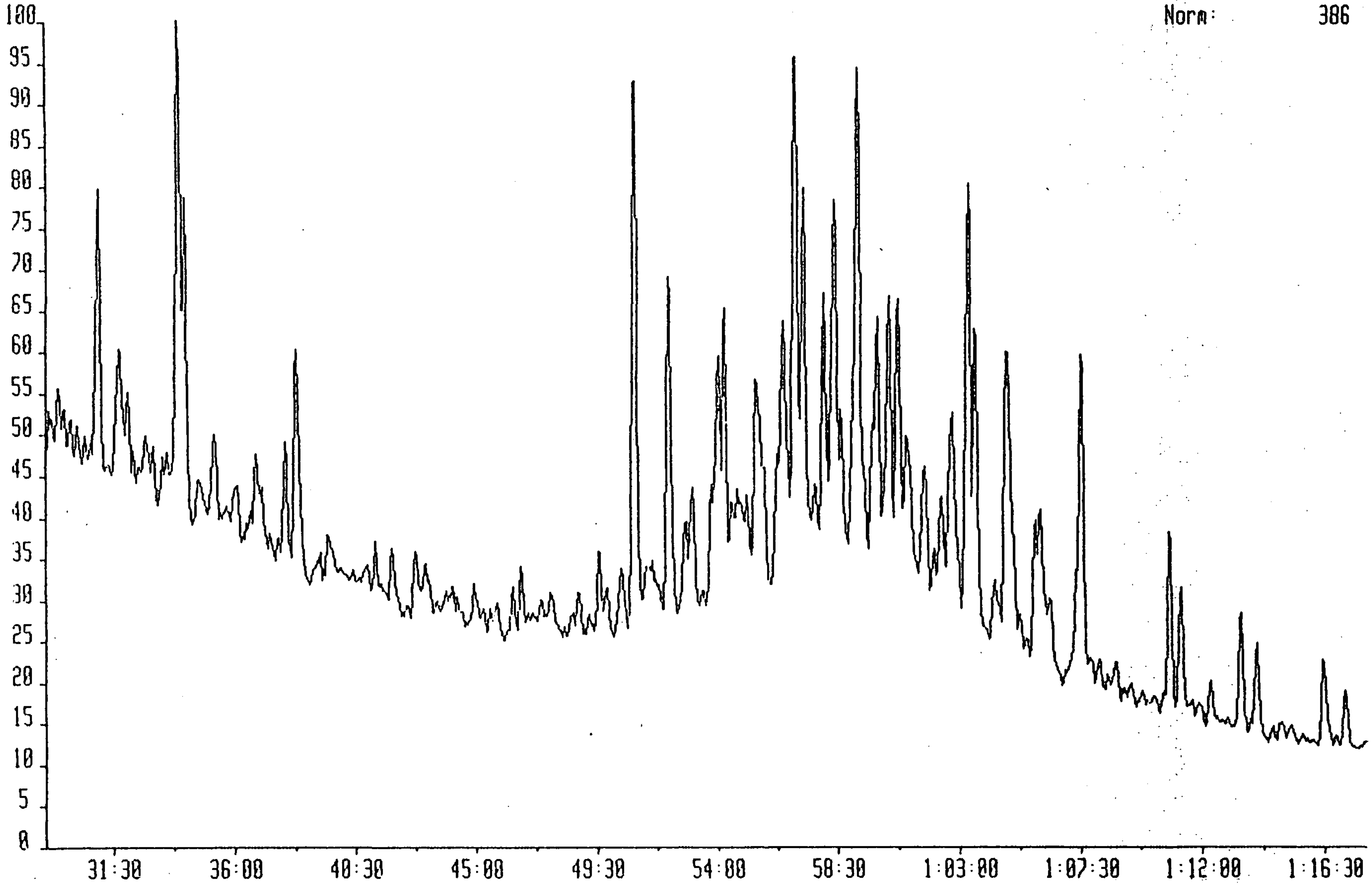

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 149.1328
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



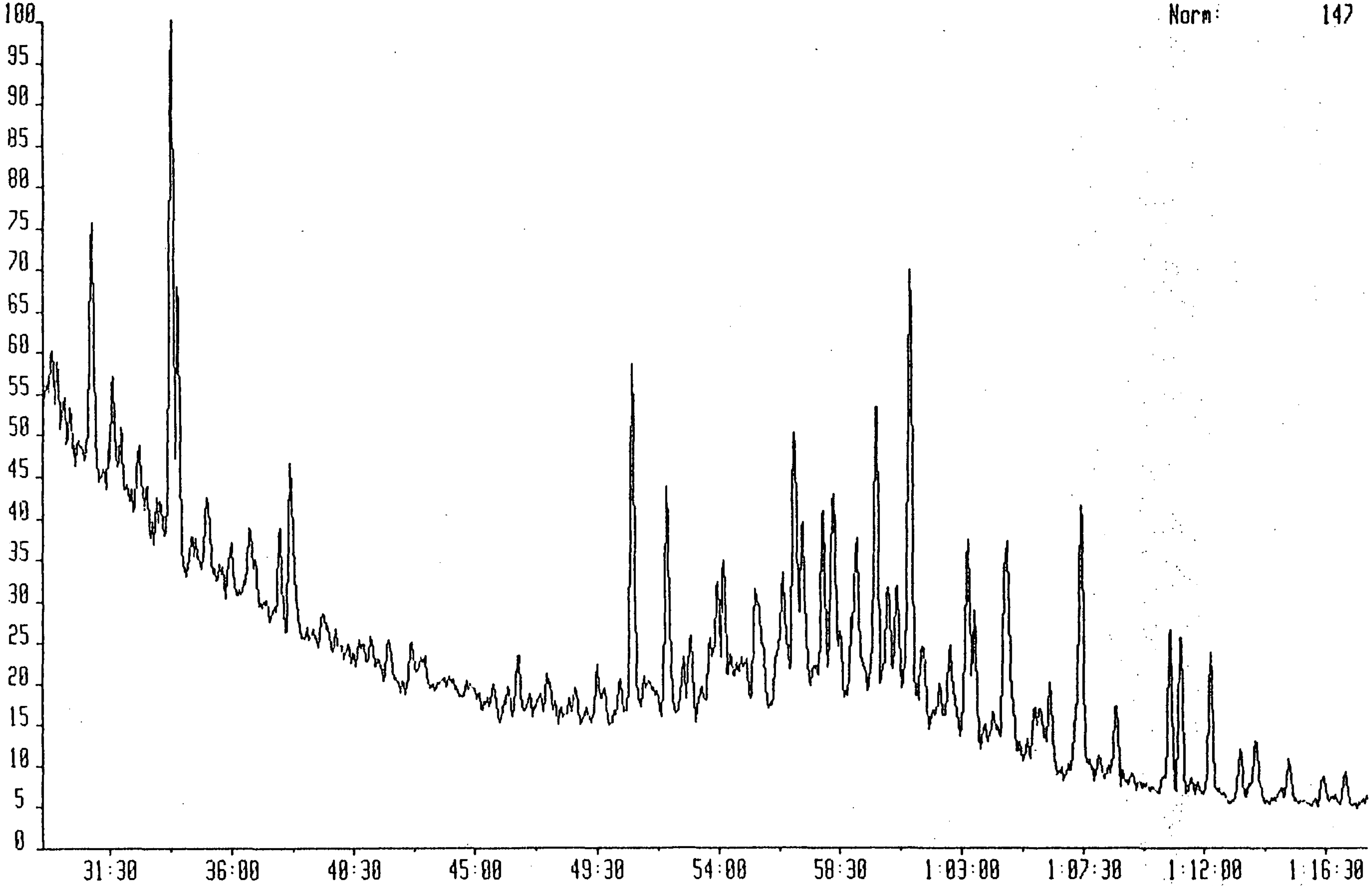

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 149.1328
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



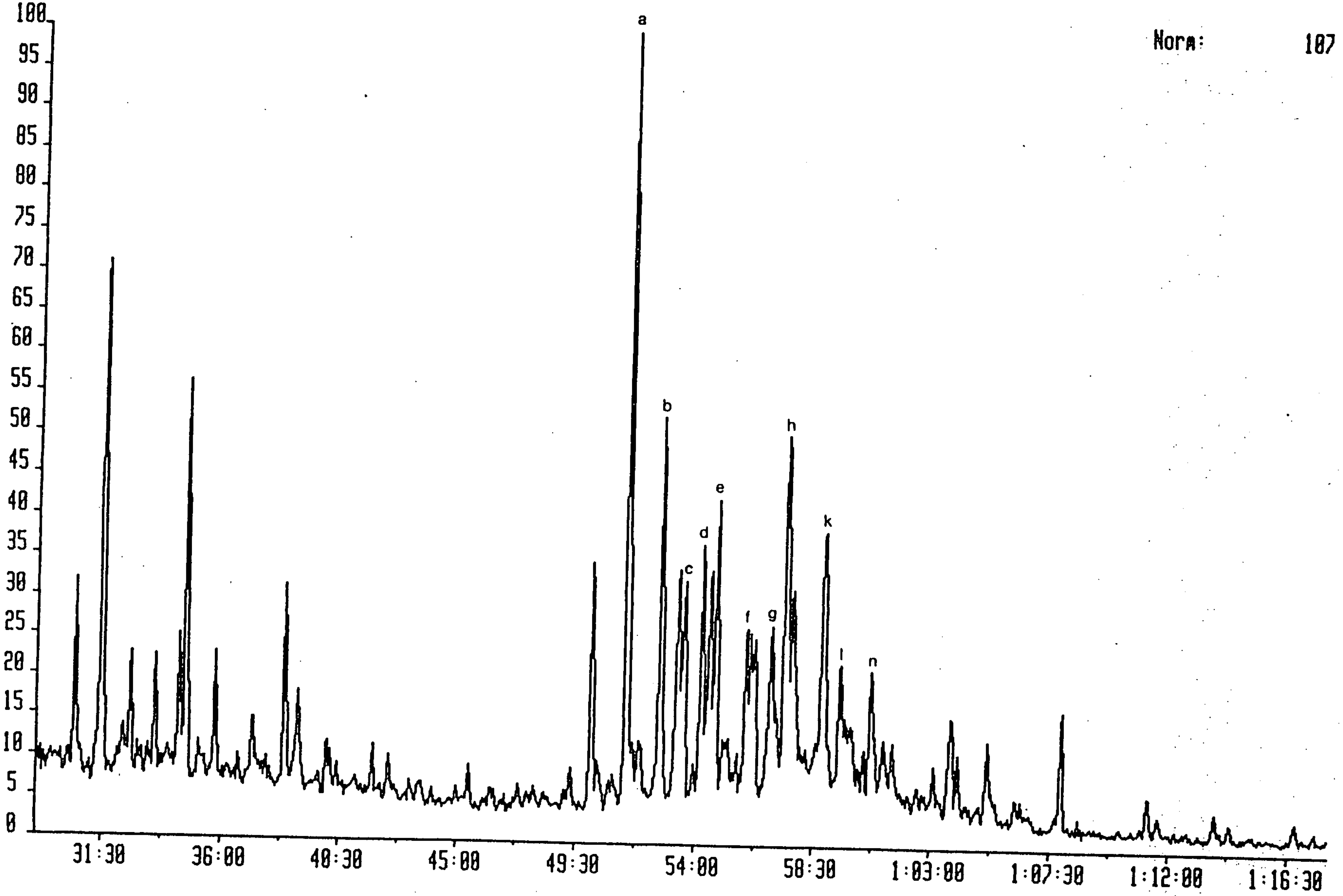

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 149.1328
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



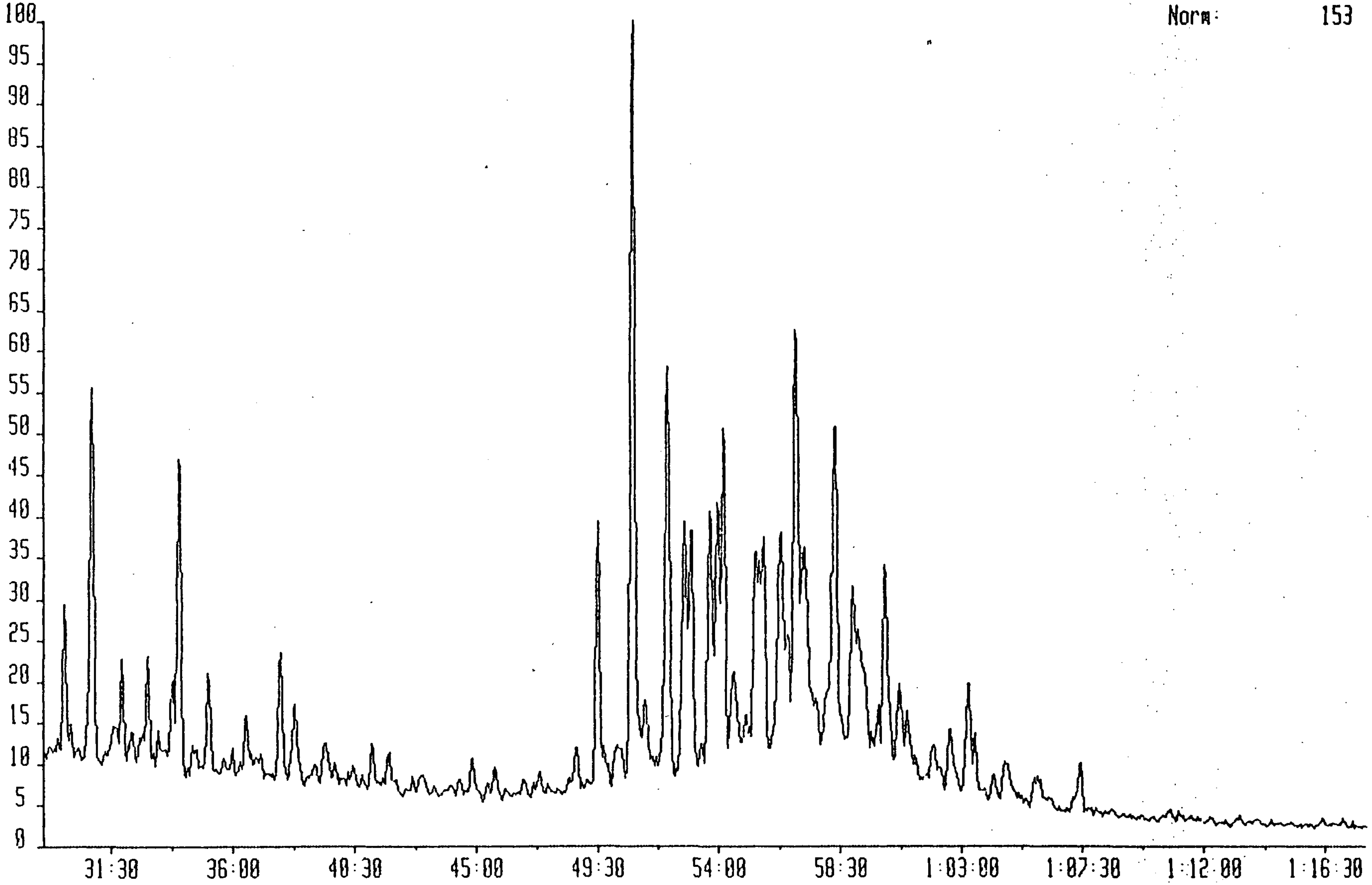

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 189 REARRANGED STERANES



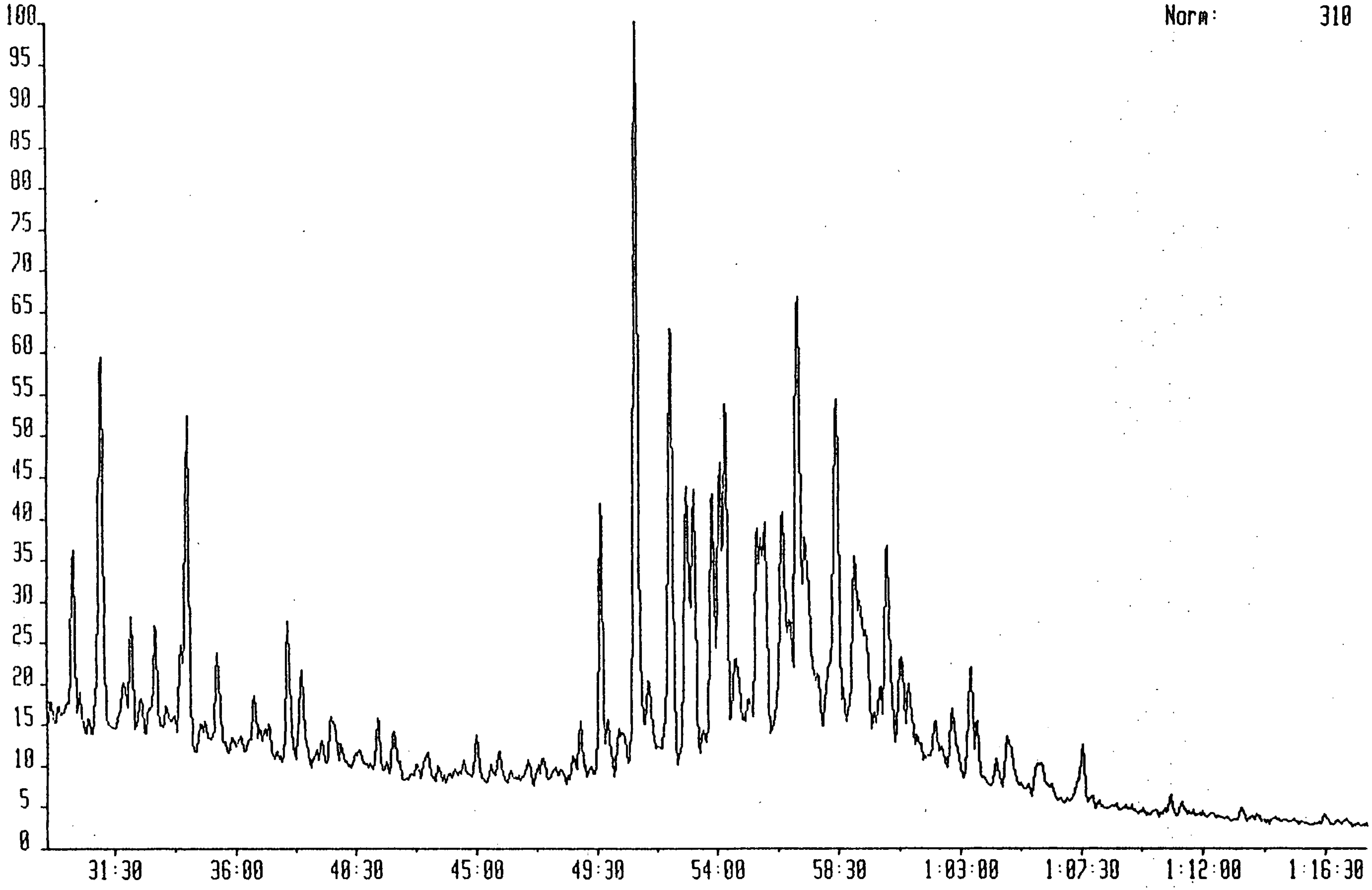

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 189.1643
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



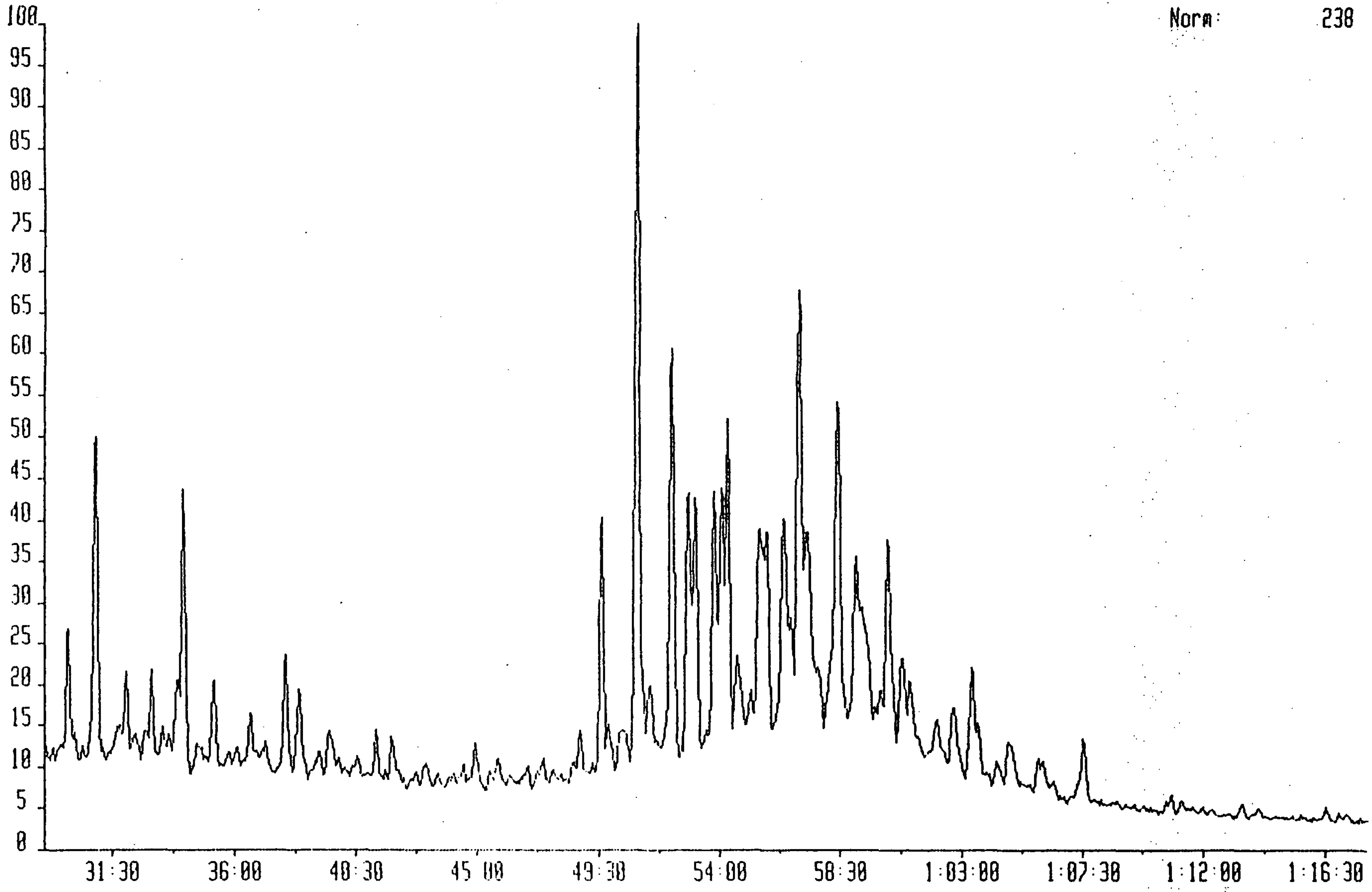

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 189.1643
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



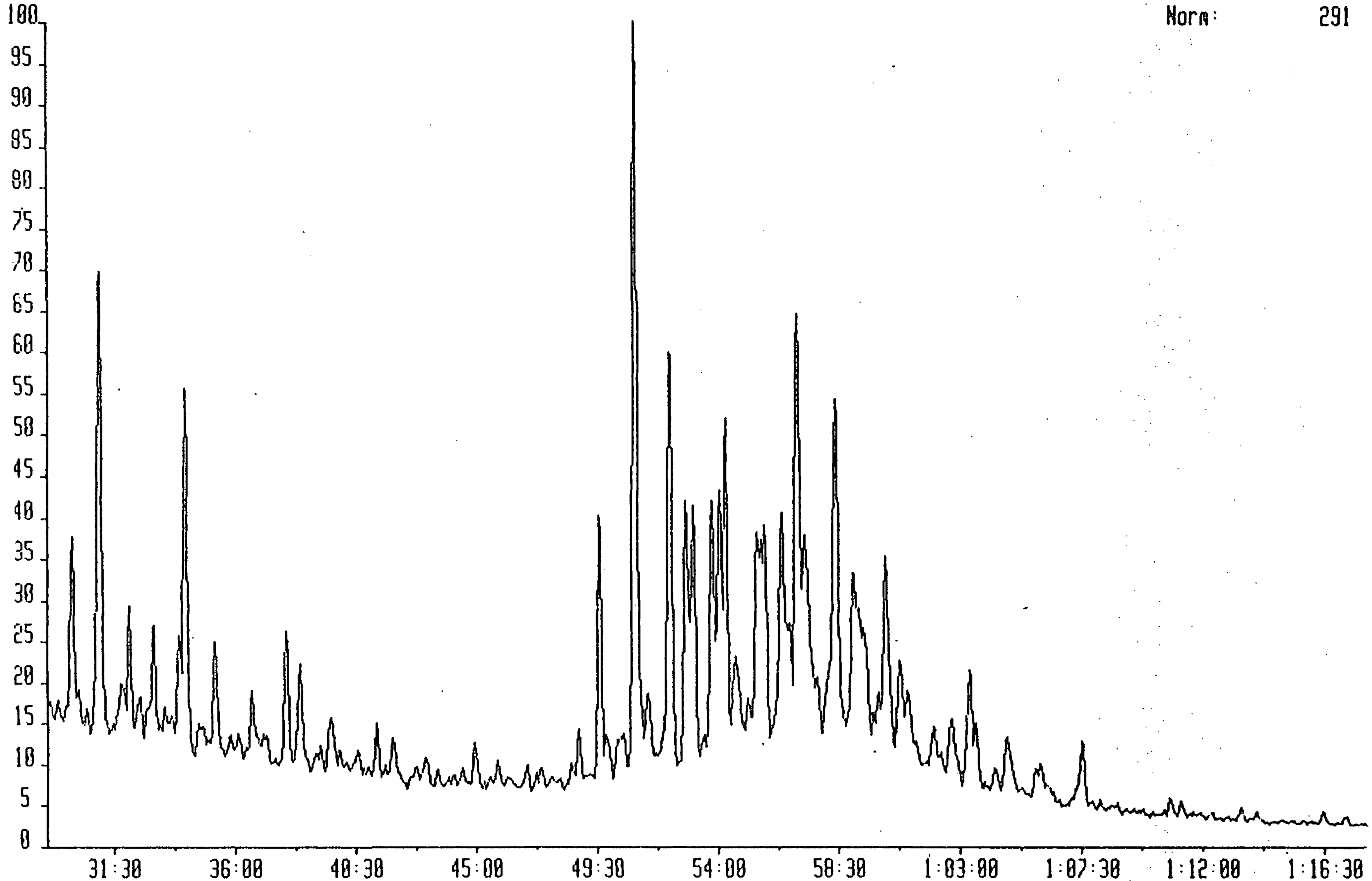

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 189.1643
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



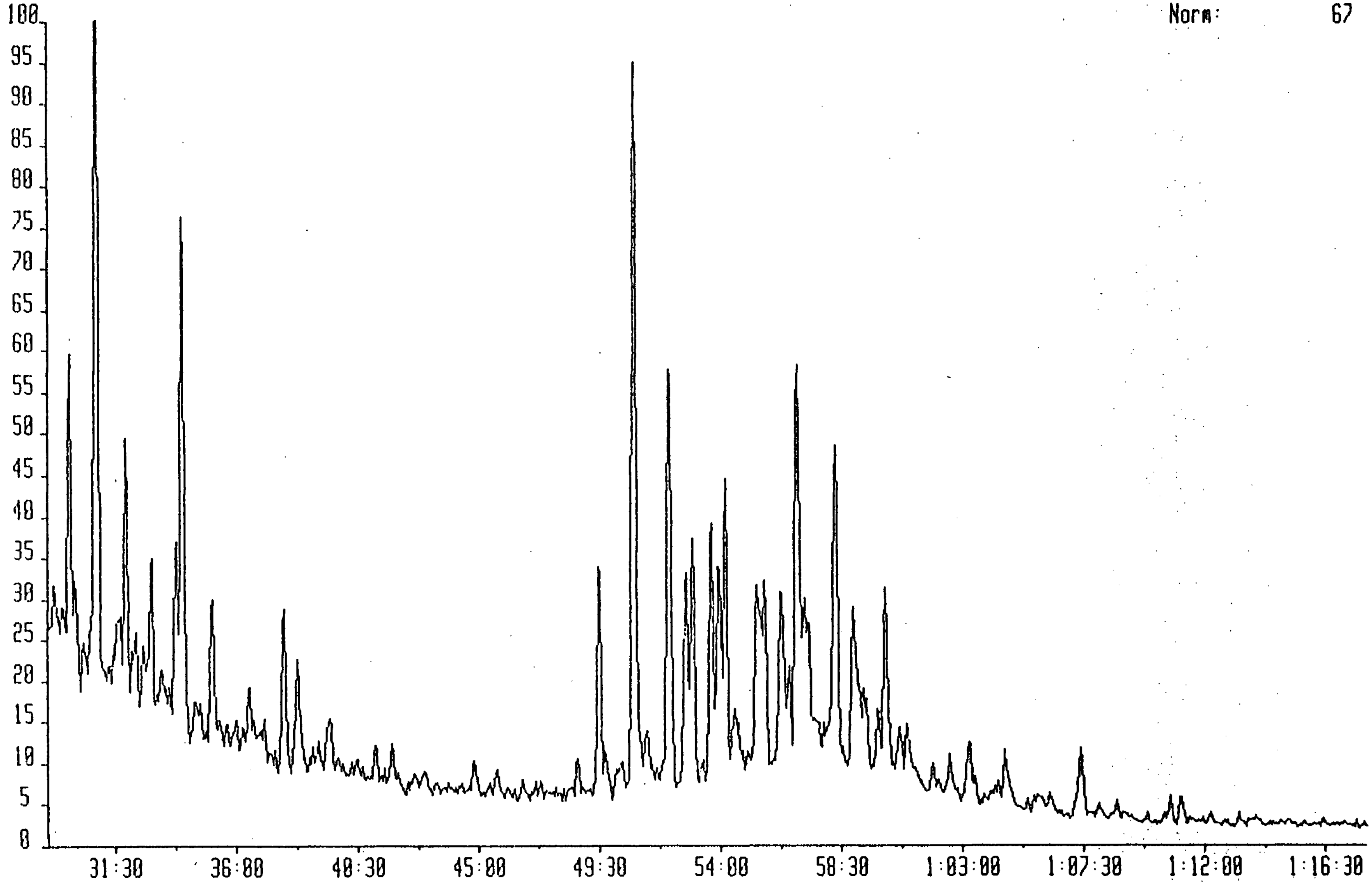

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 189.1643
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



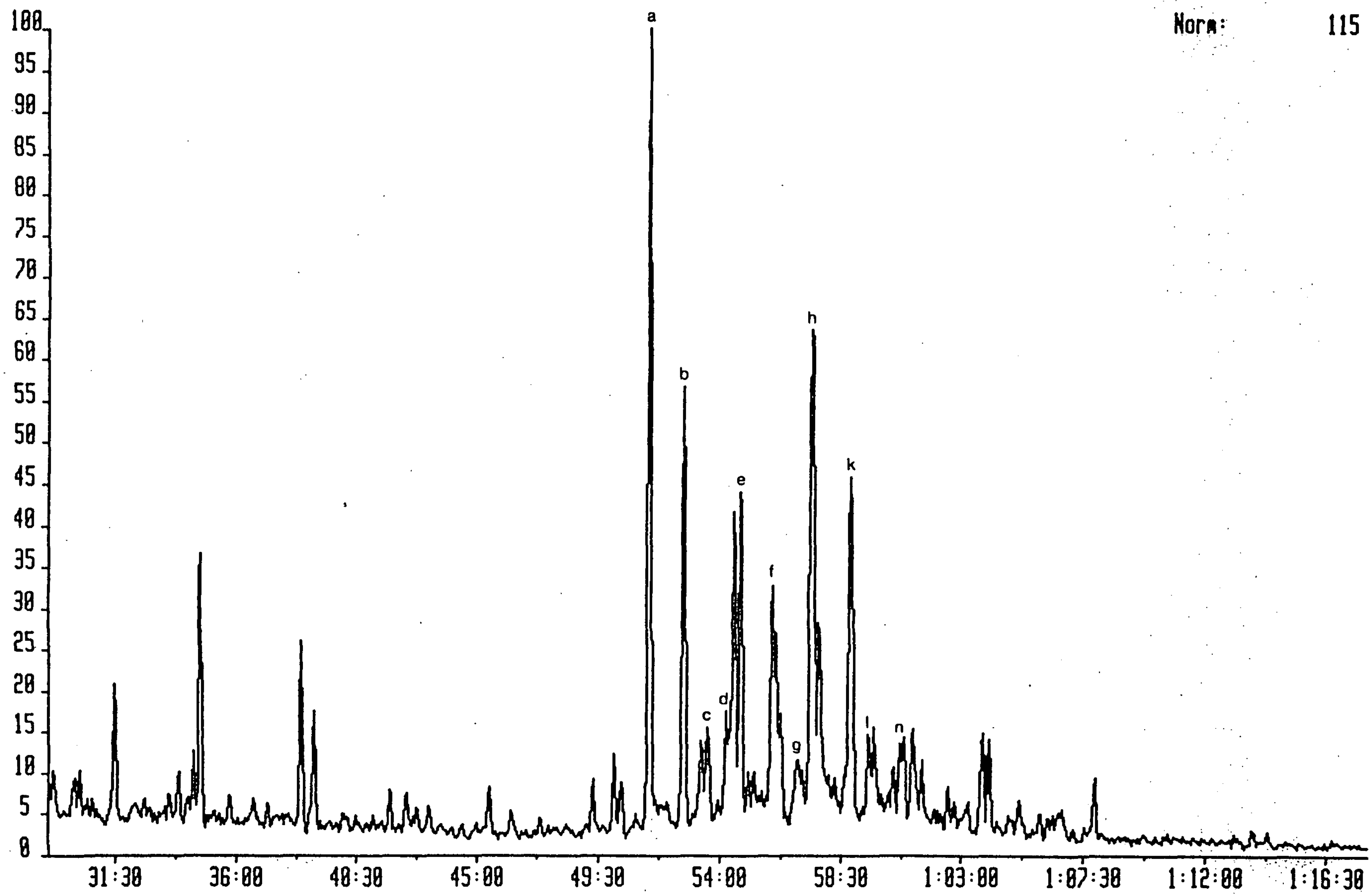

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 189.1643
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



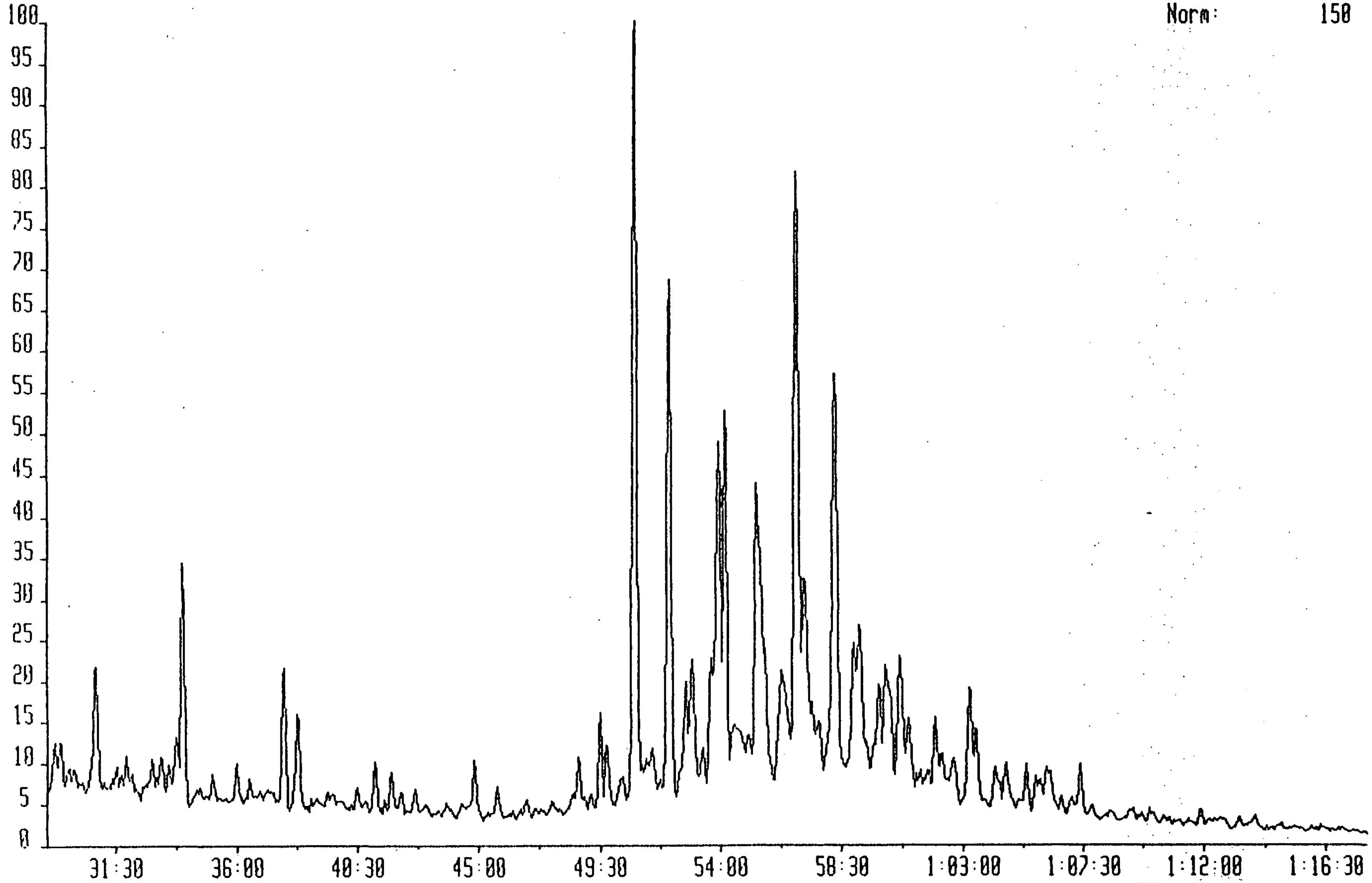

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 259 REARRANGED STERANES



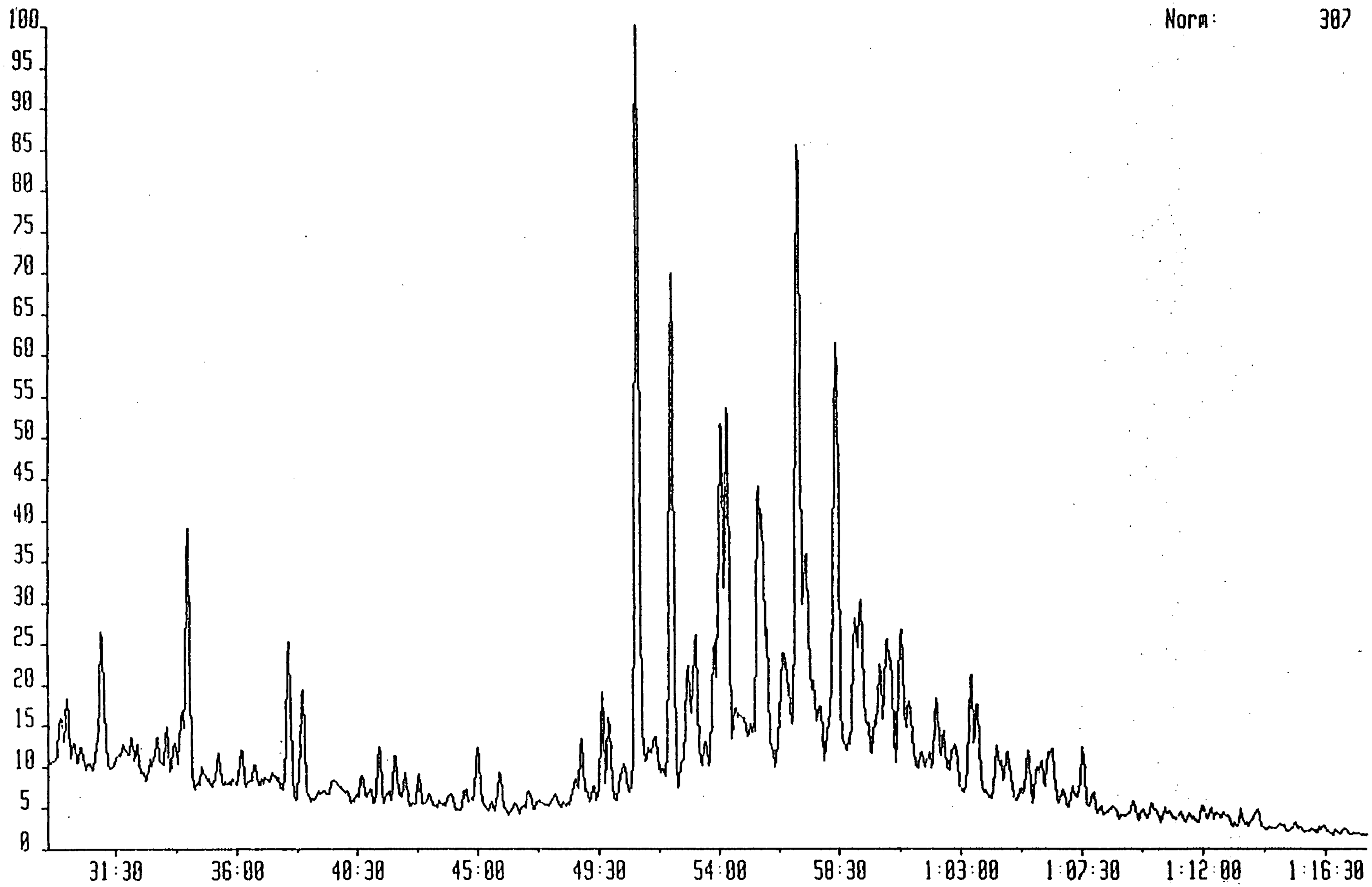

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 259.2427
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



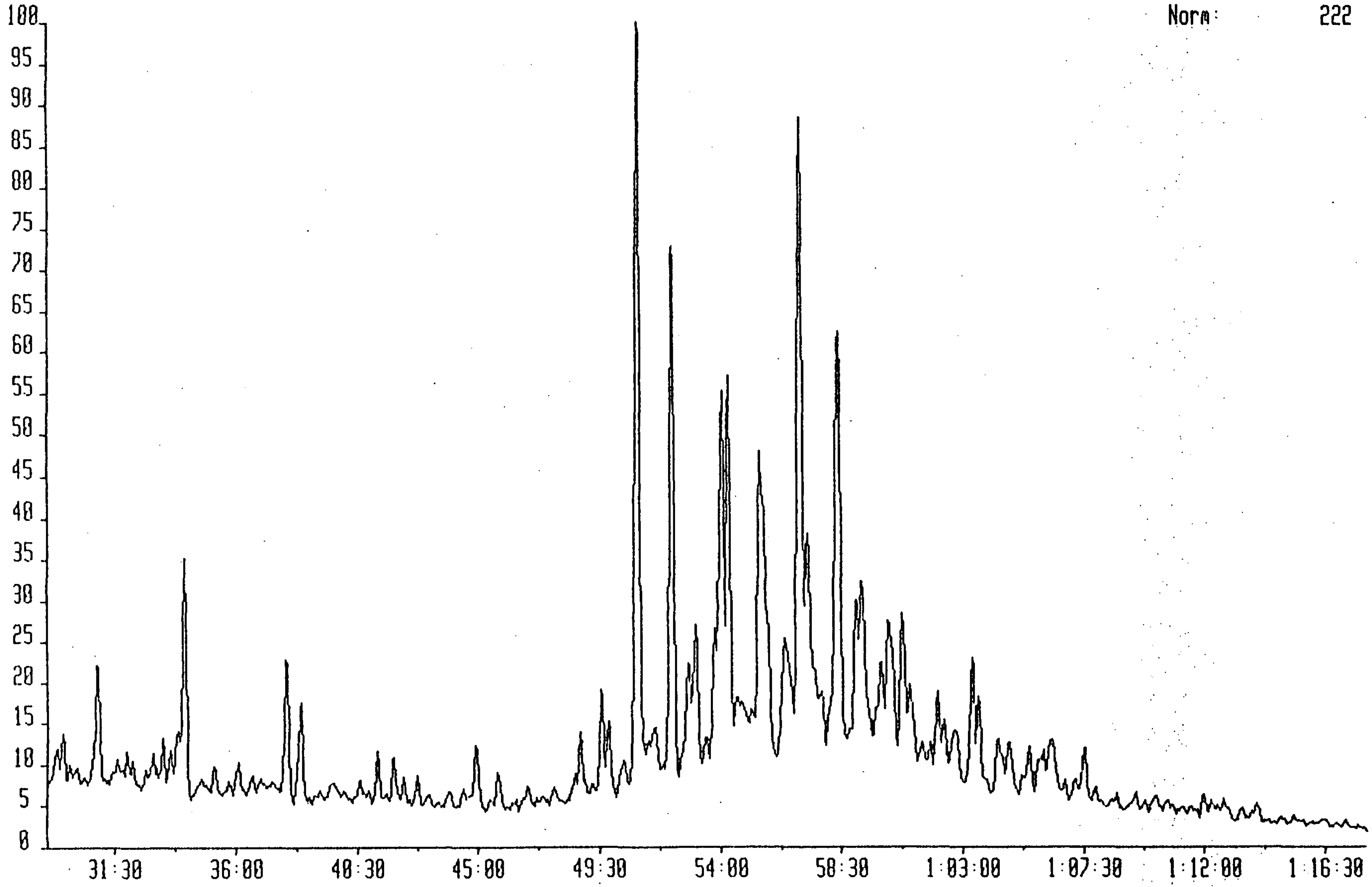

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 259.2427
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



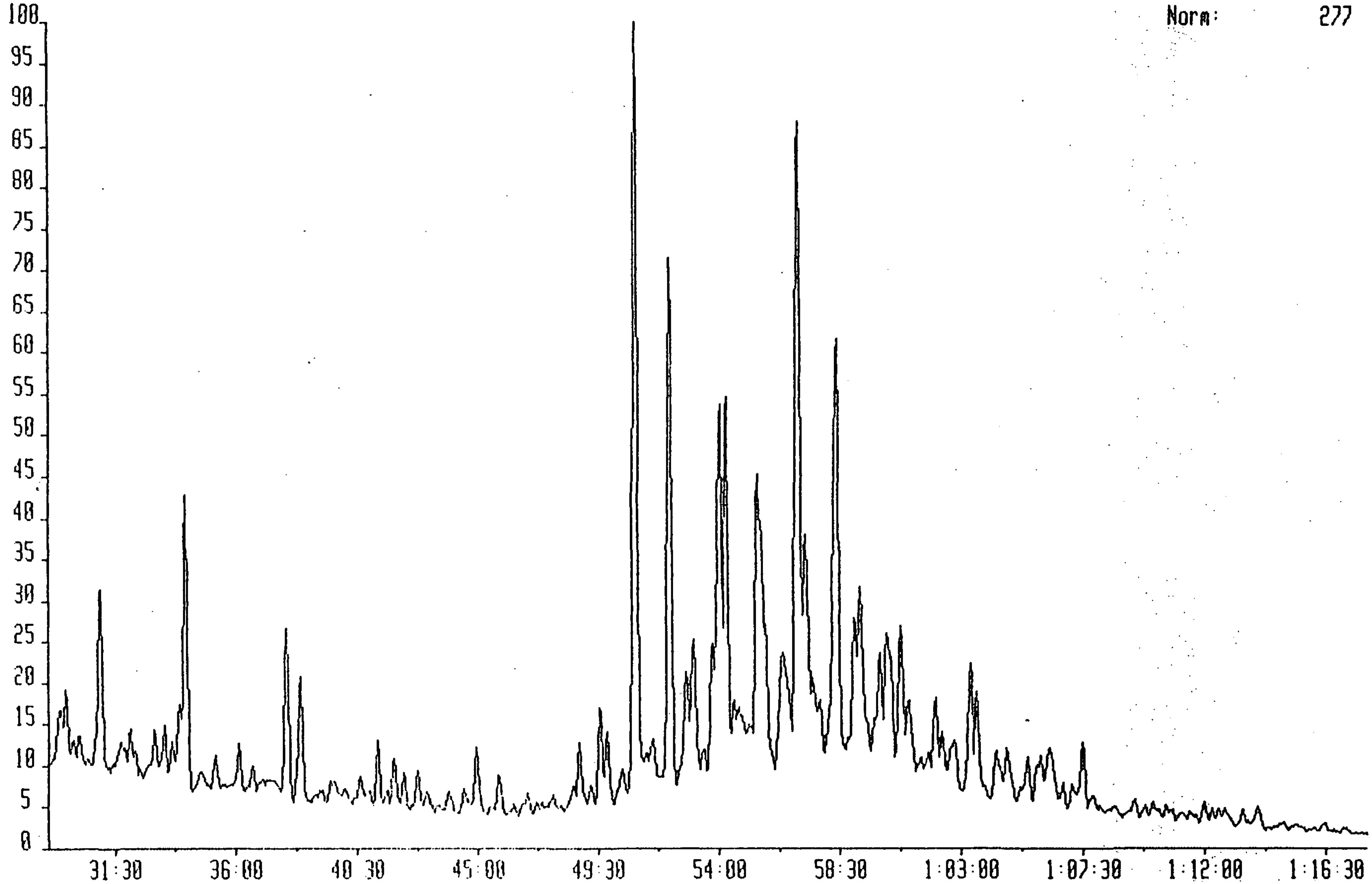

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 259.2427
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



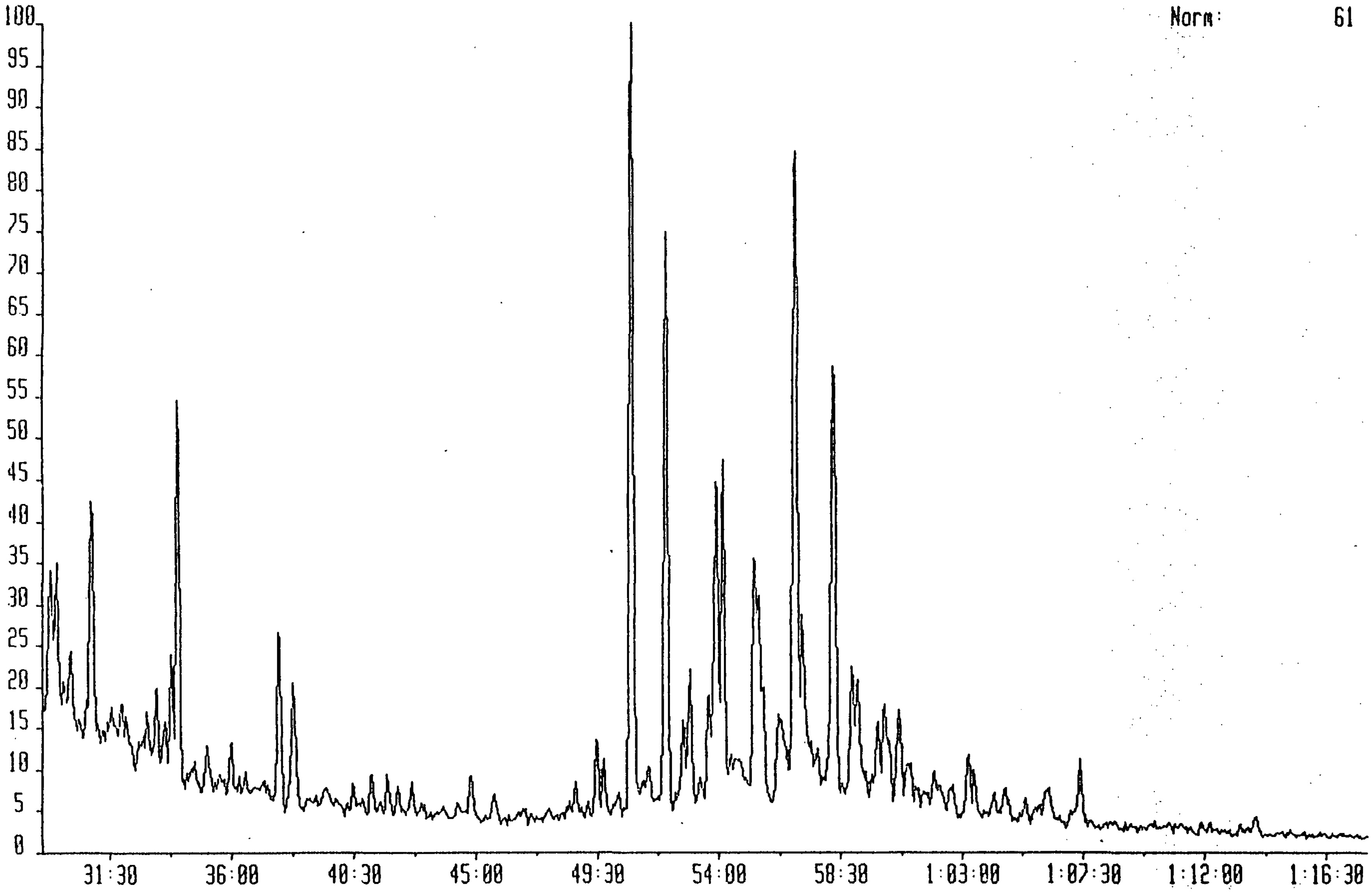

GEOLAB NOR

TAMPENSAT 20-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 259.2427
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



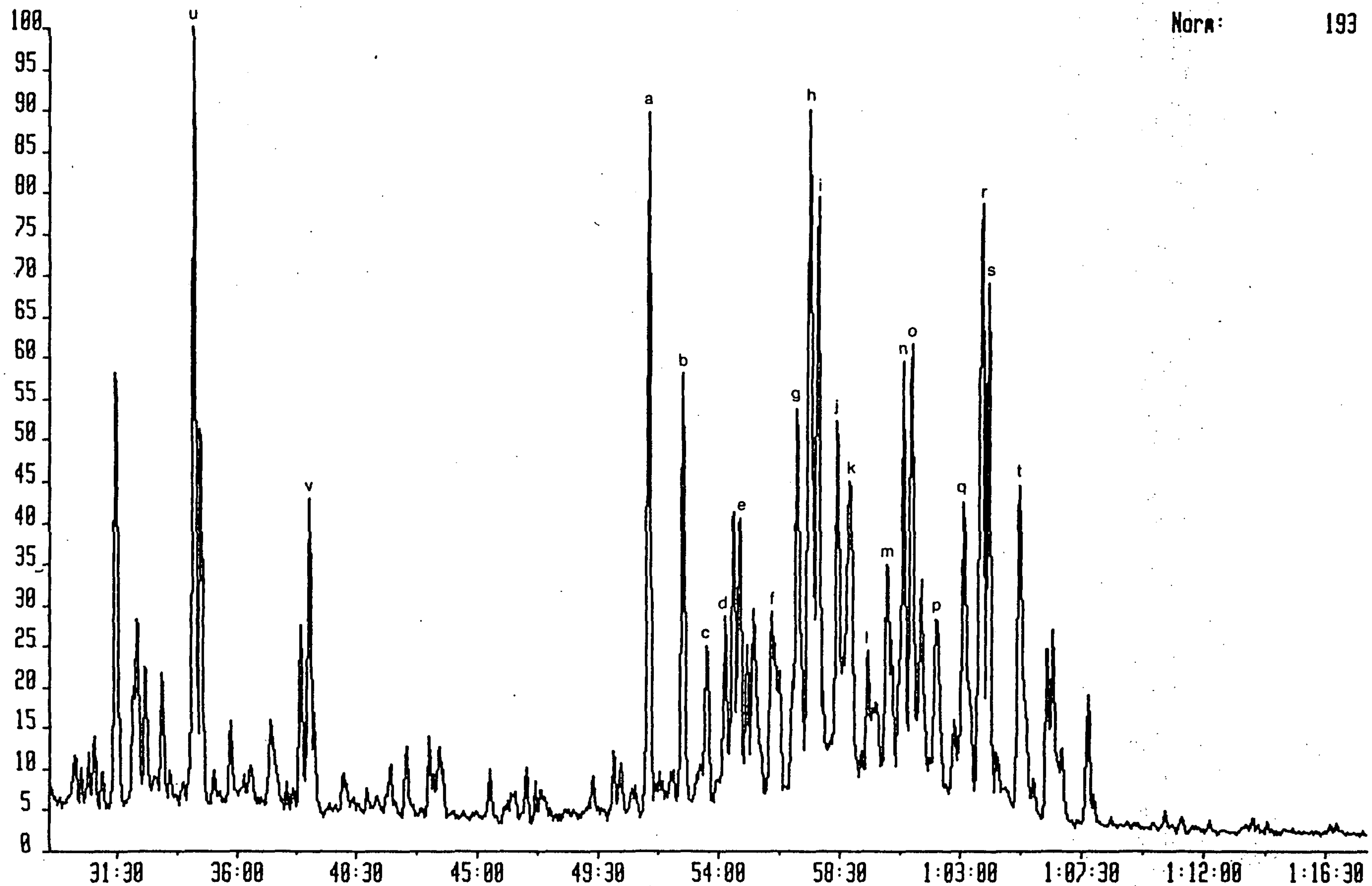

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 259.2427
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



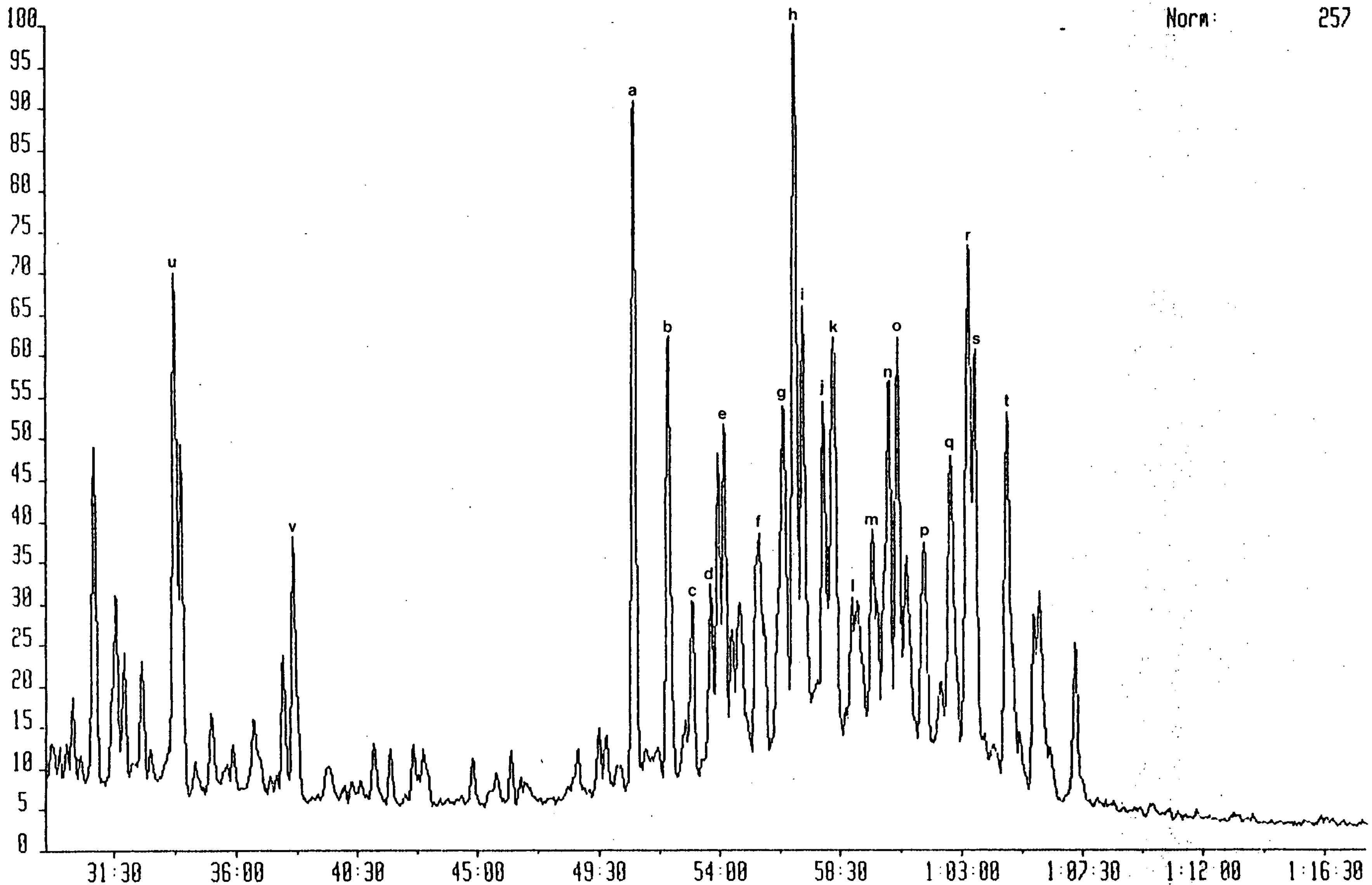

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 217 STERANES



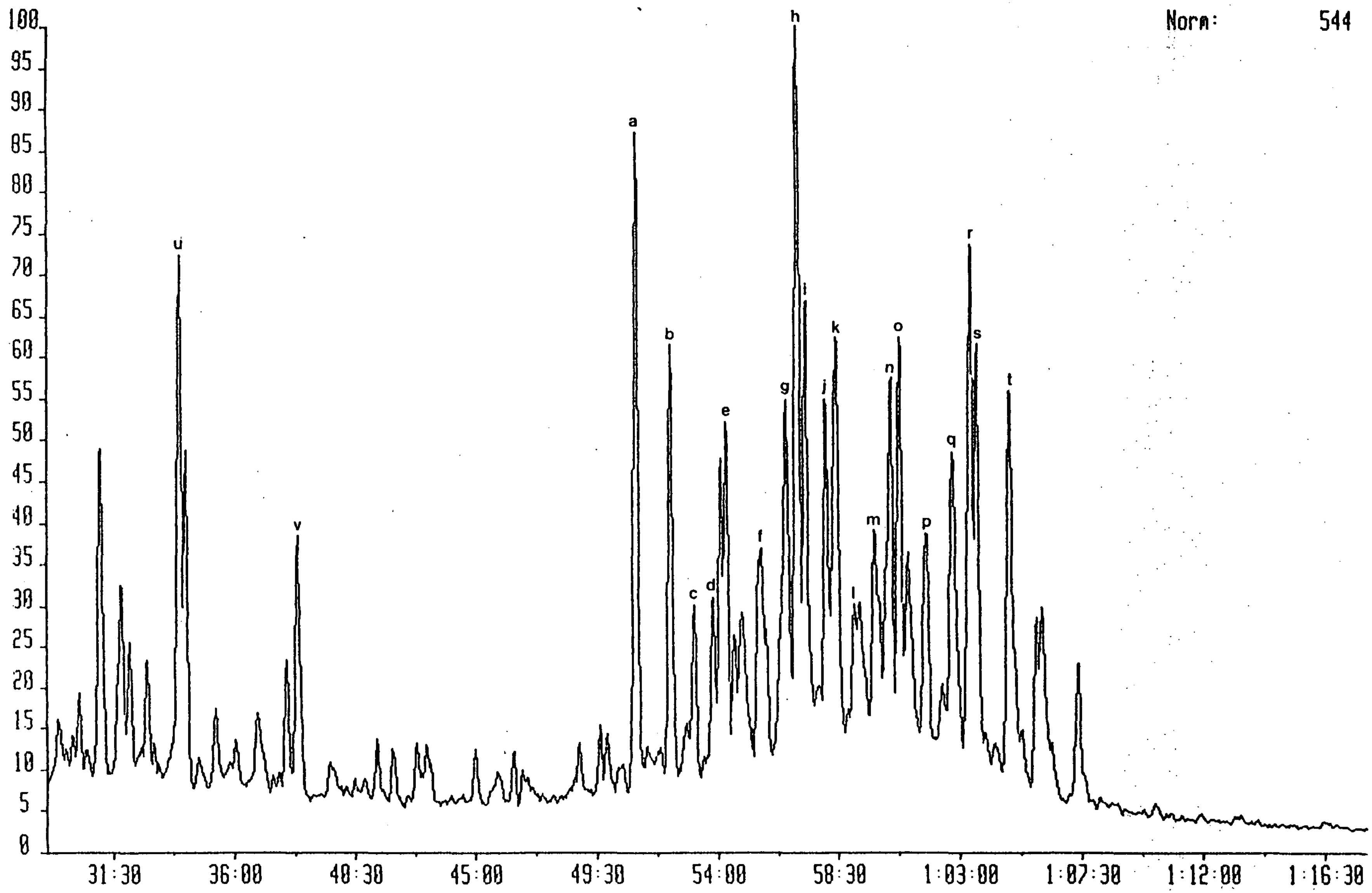

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 217.1956
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



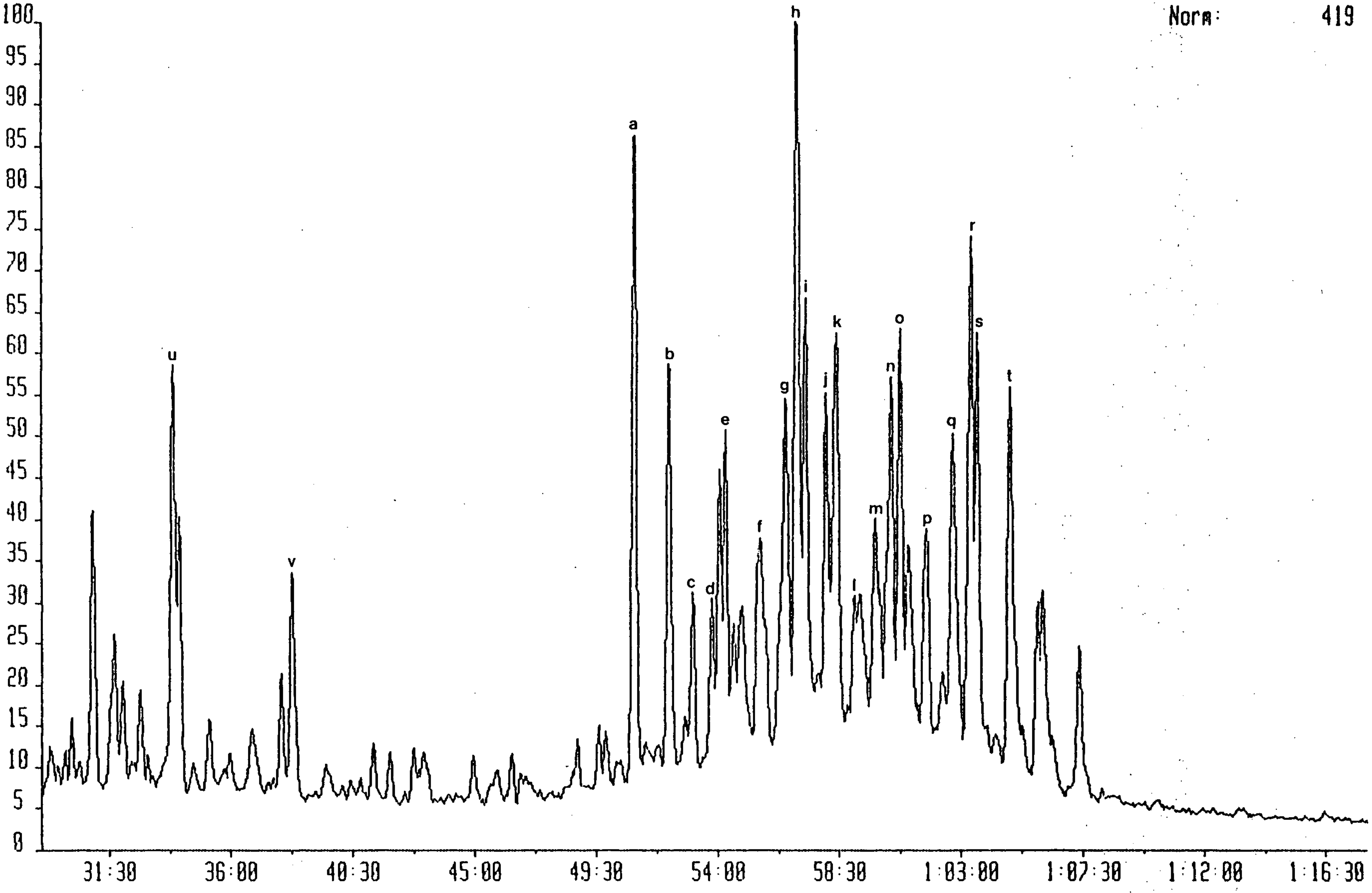

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 217.1956
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



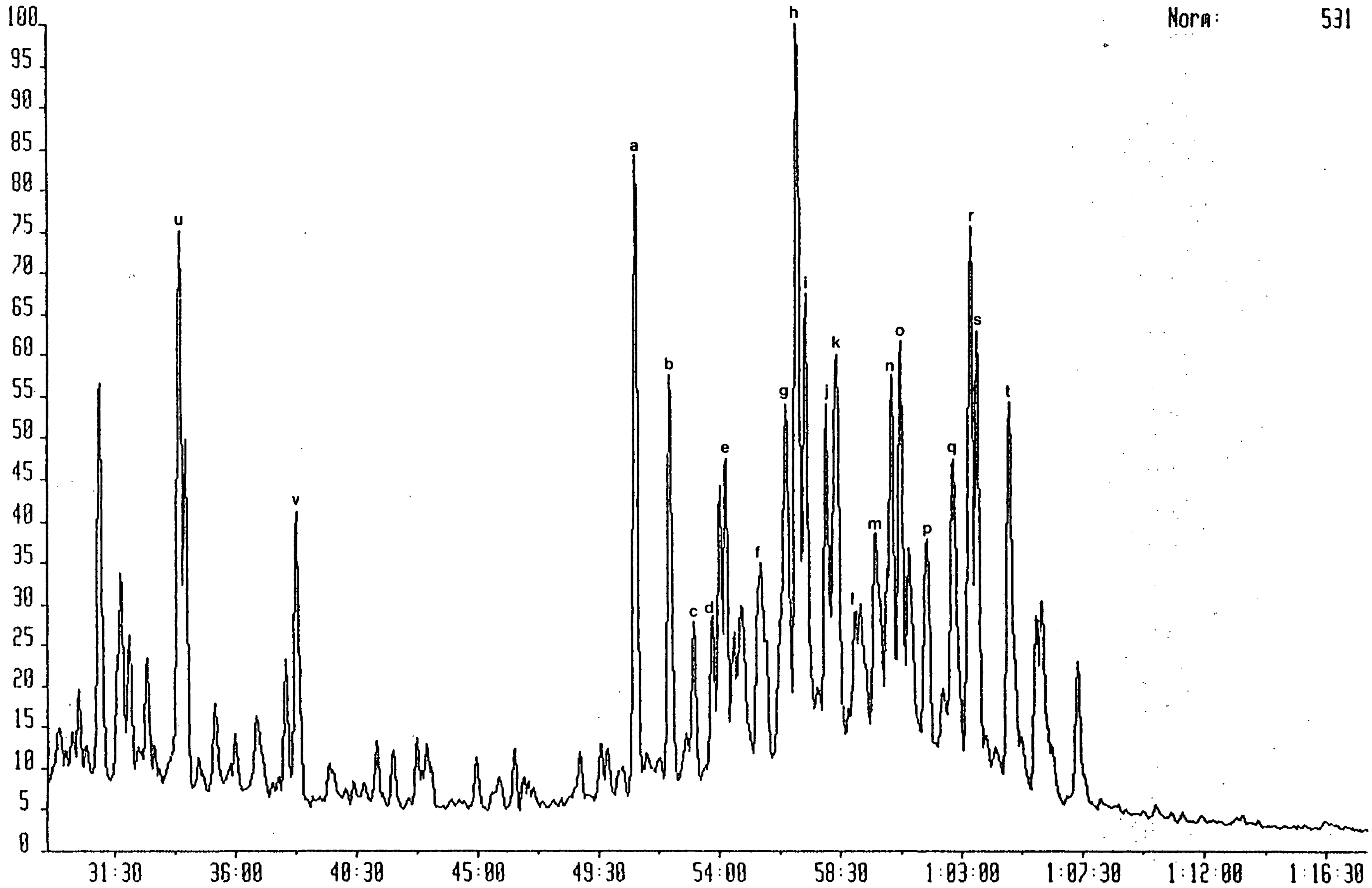

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 217.1956
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



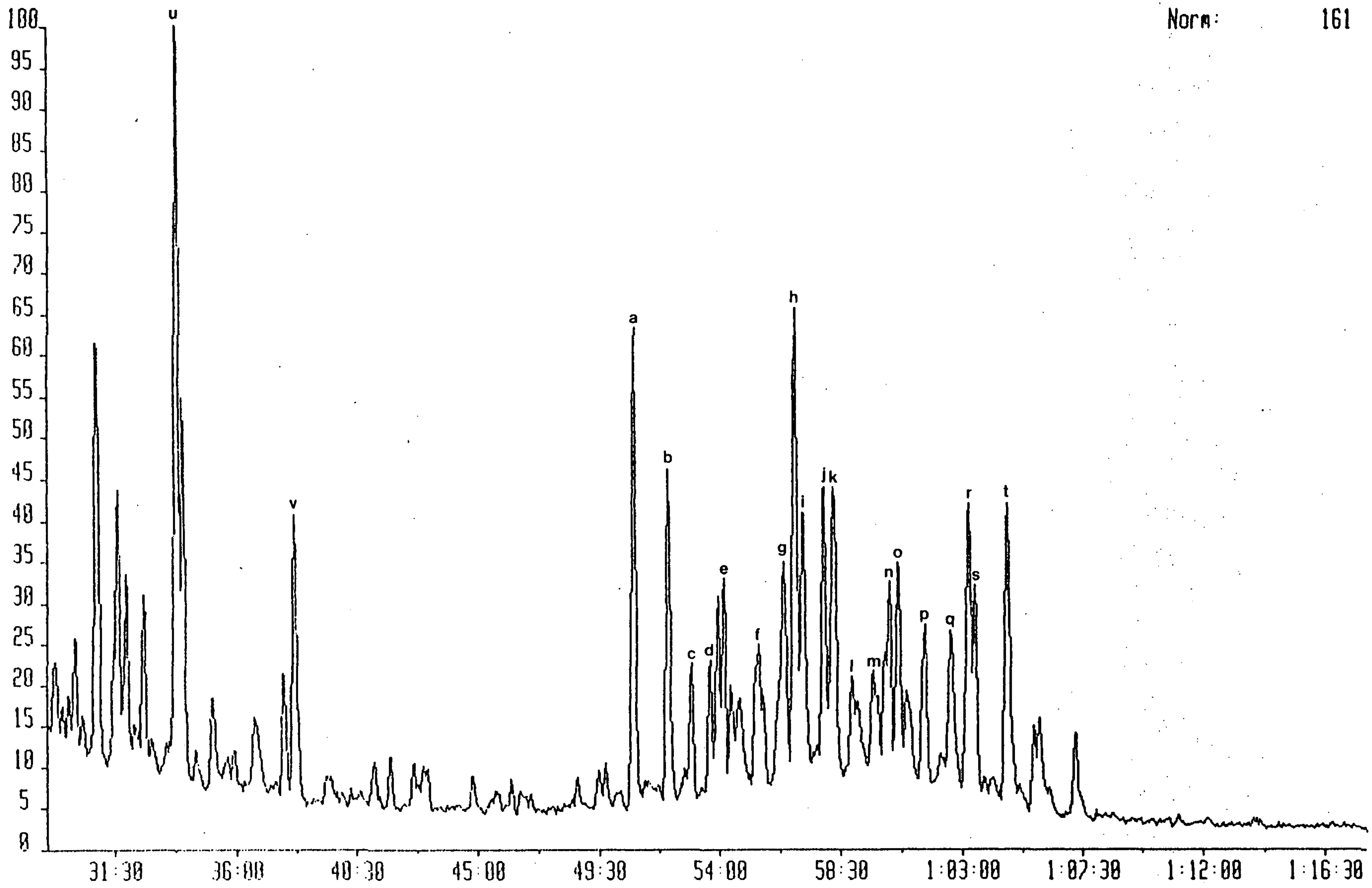

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 217.1956
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



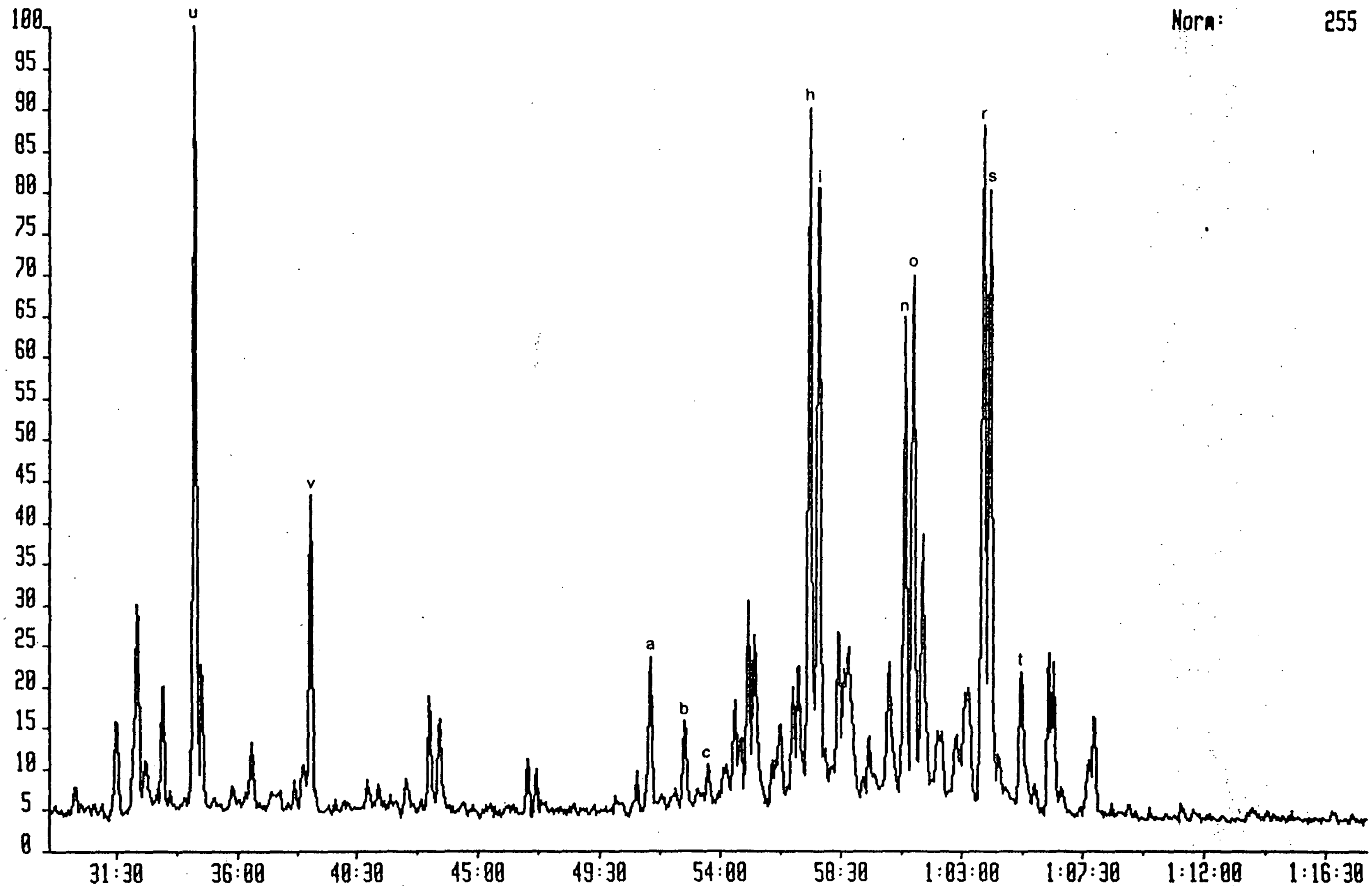

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 217.1956
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



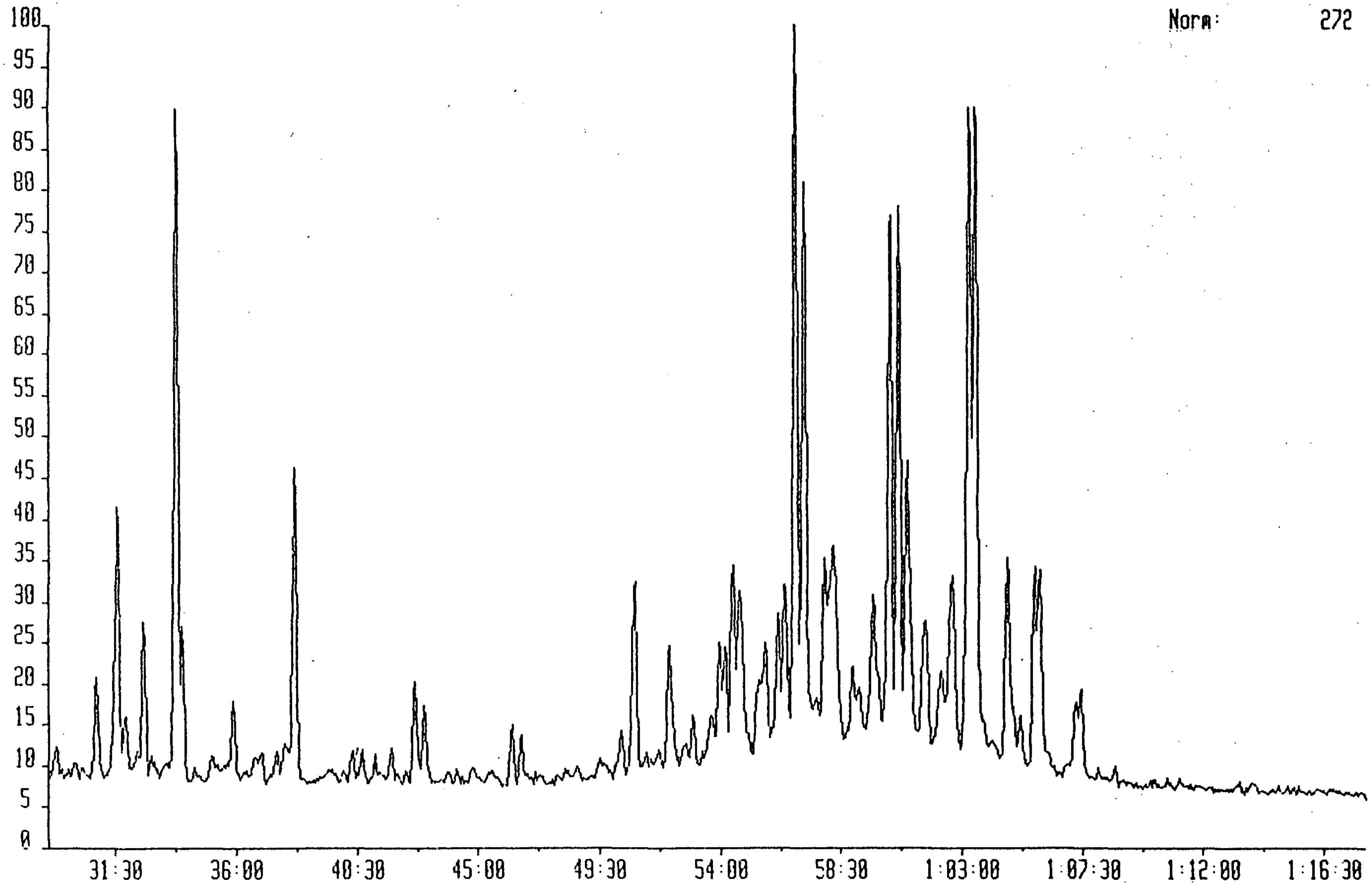

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 218.  14beta(H), 17beta(H)  STERANES.



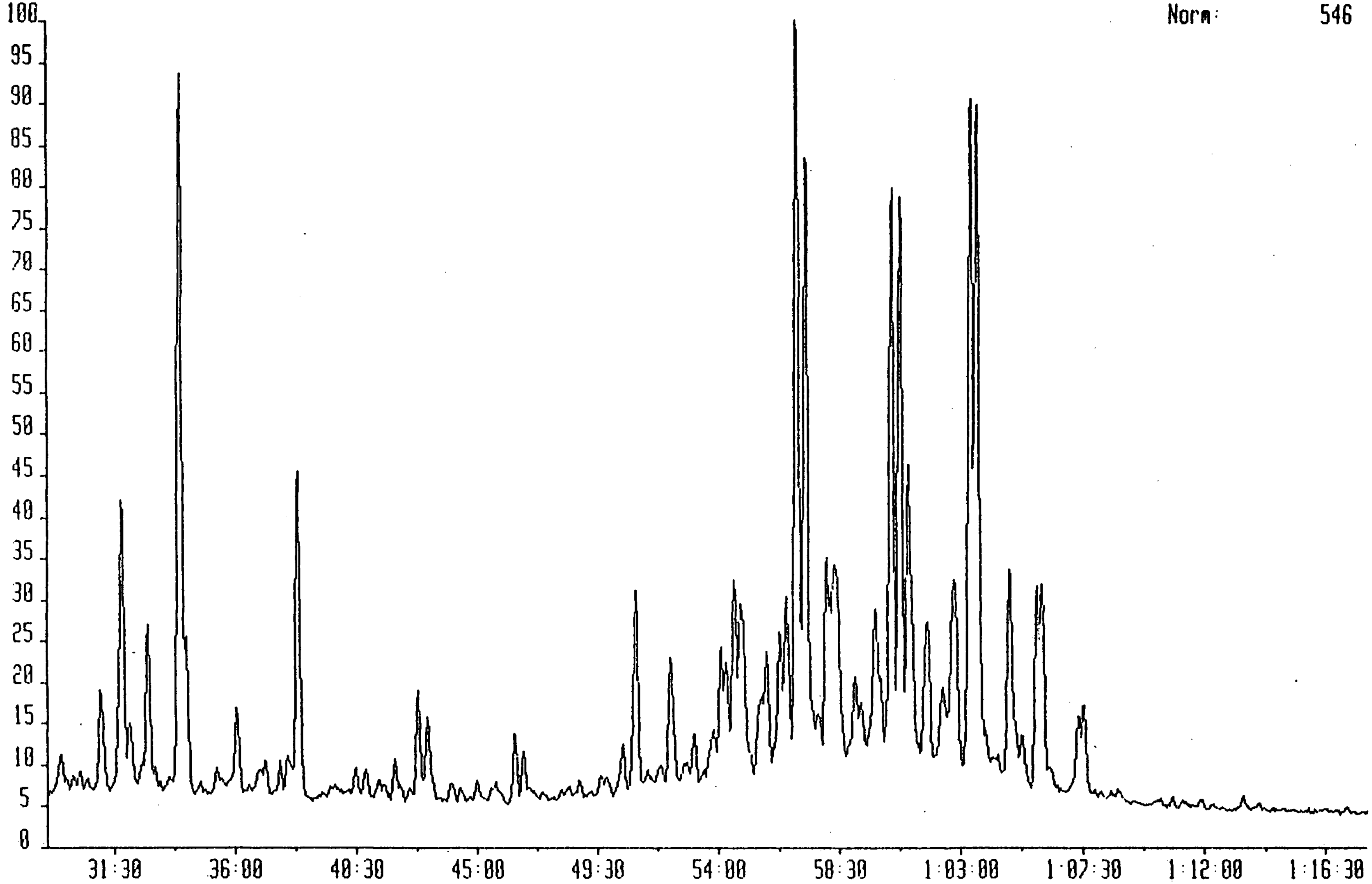

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 218.2034
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



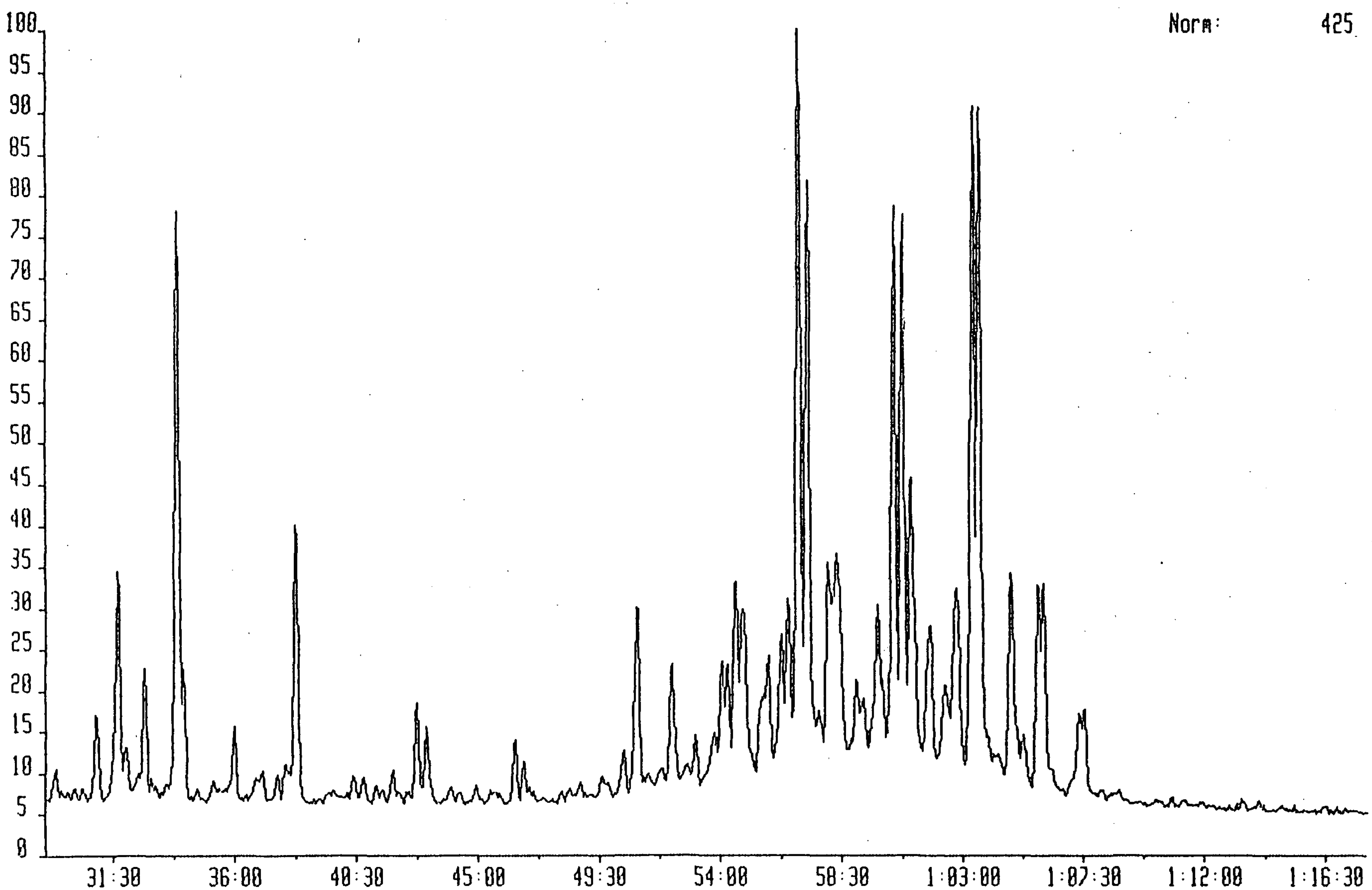

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 218.2034
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



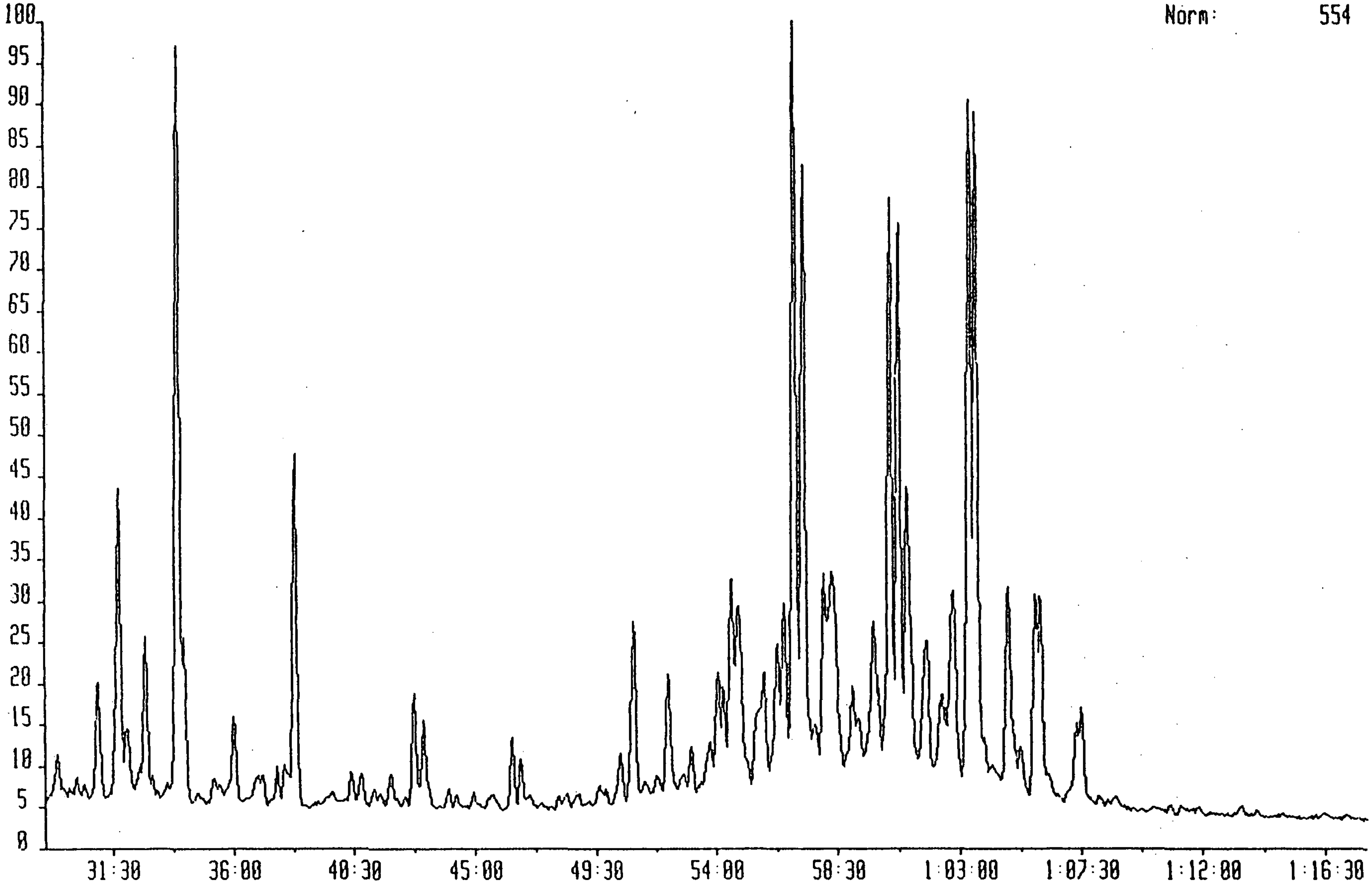

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 218.2034
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



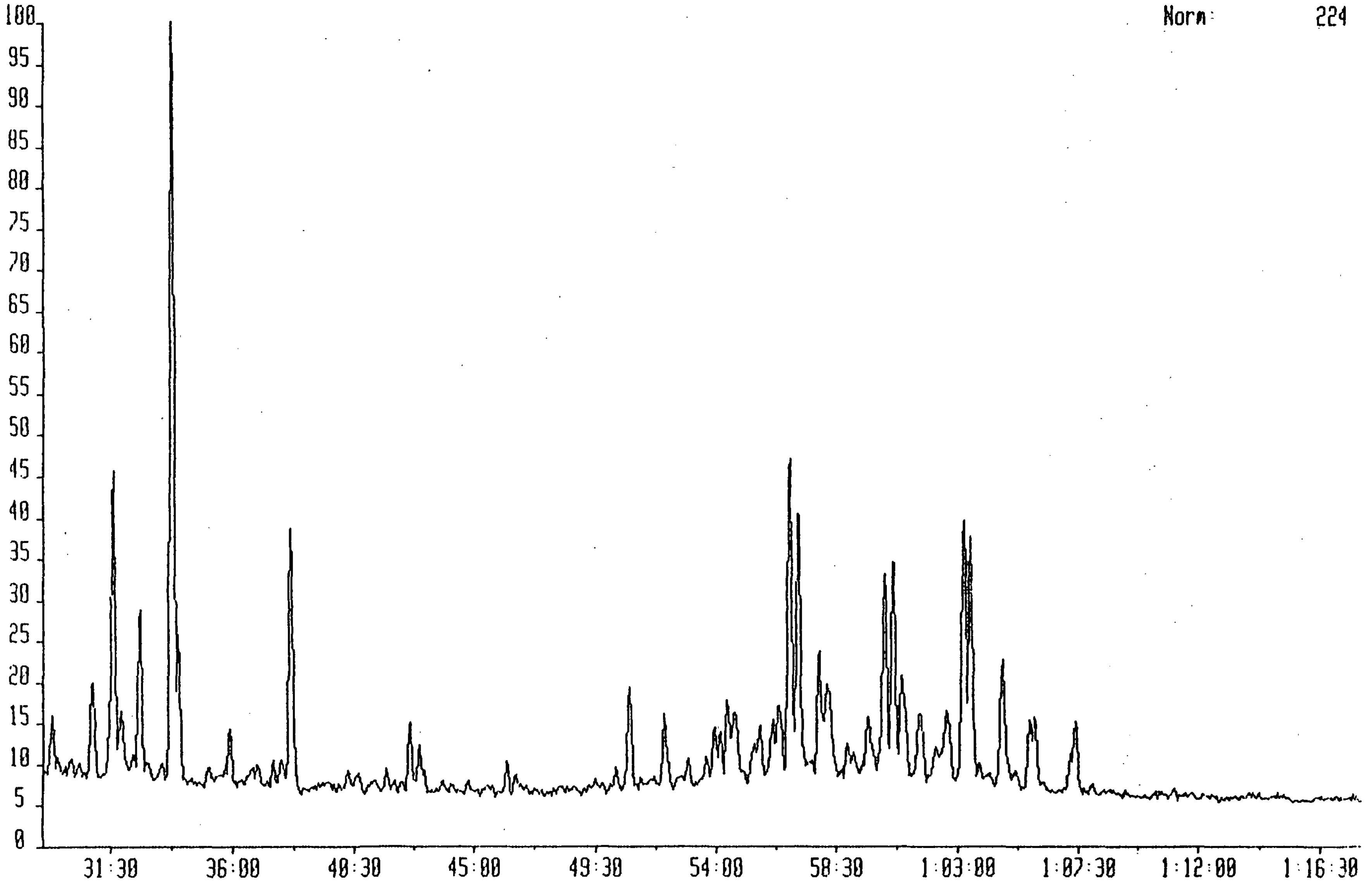

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 218.2034
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



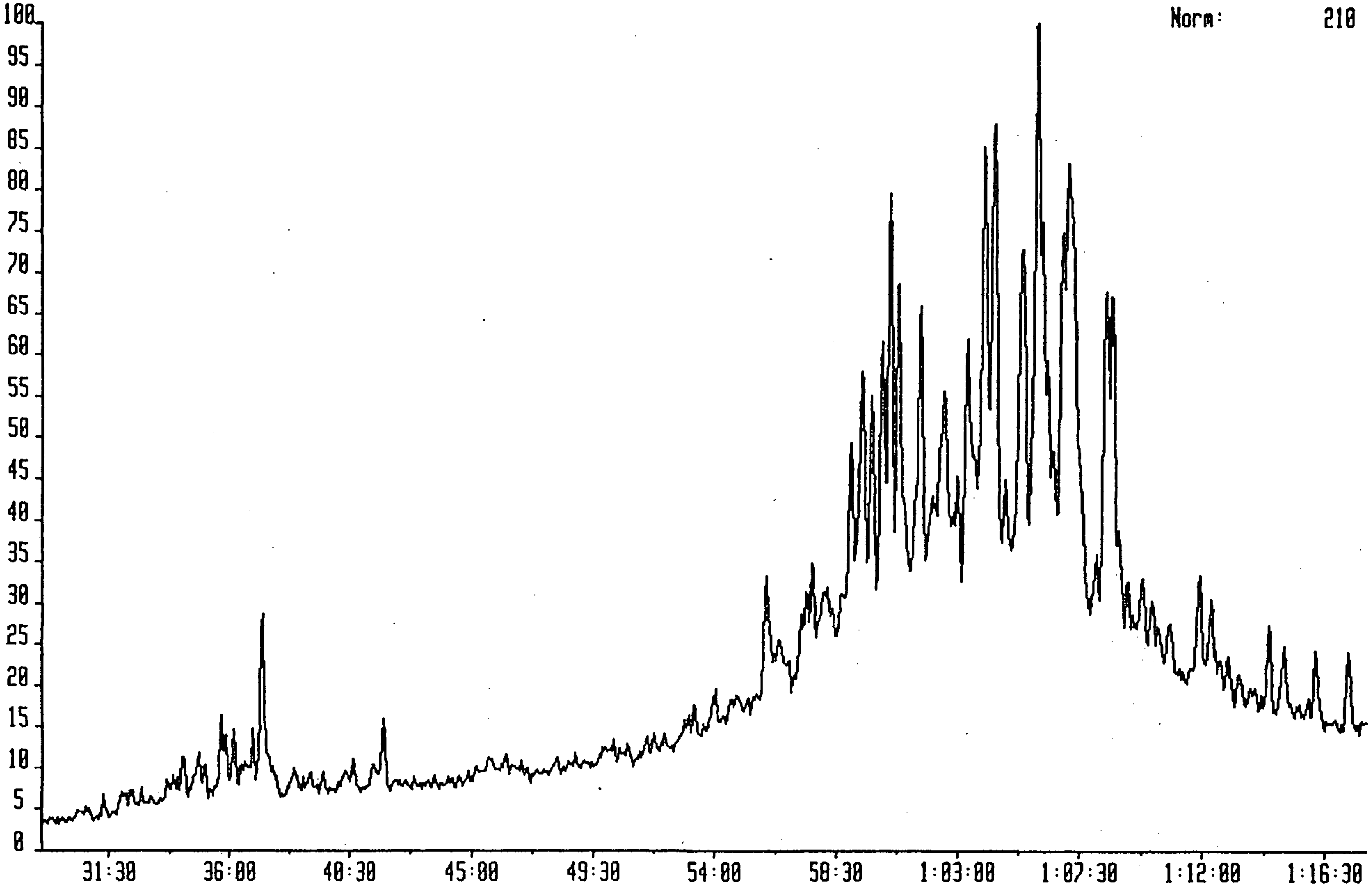

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 218.2034
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



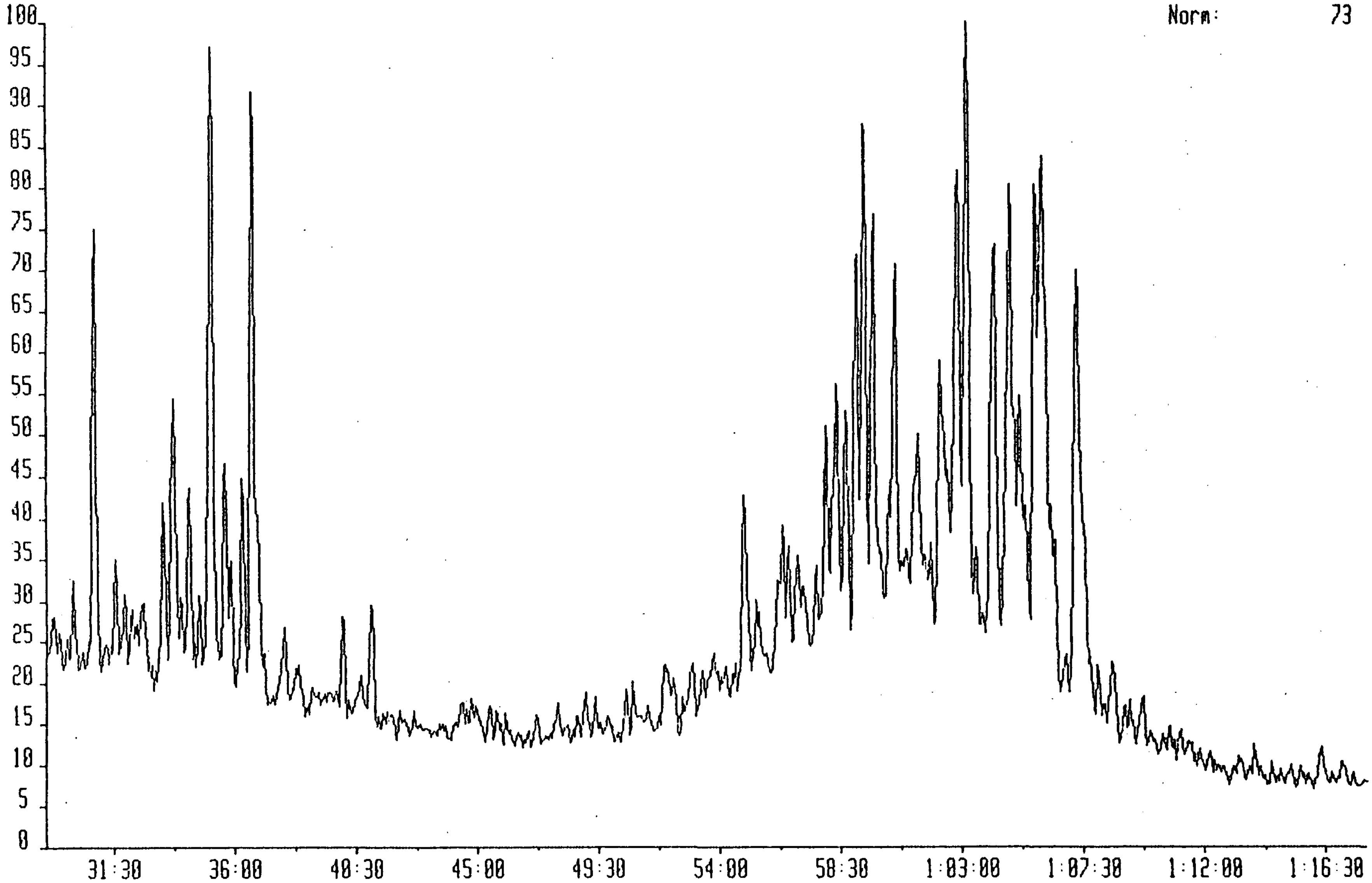

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 231 METHYL STERANES



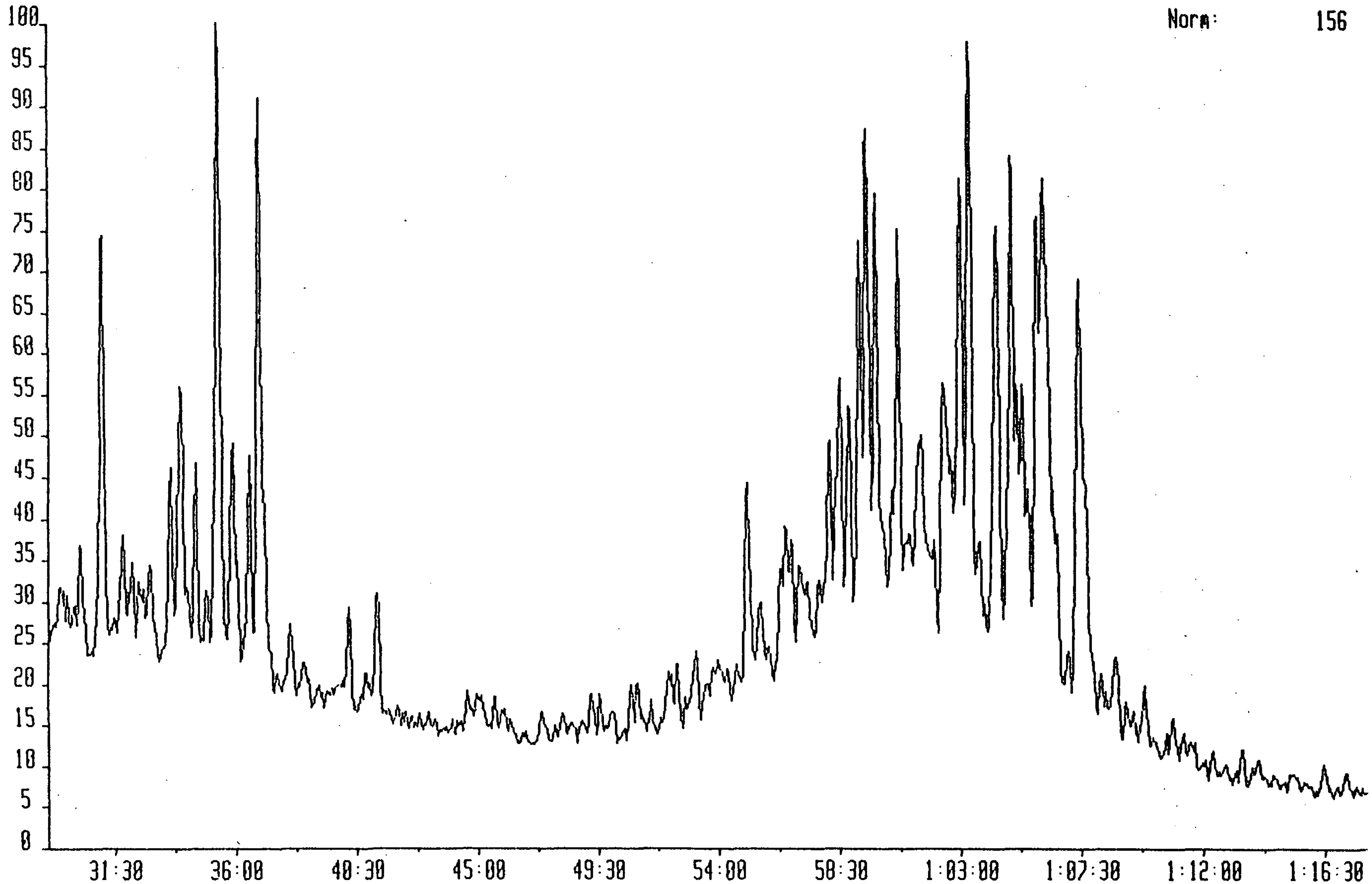

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 231.2113
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



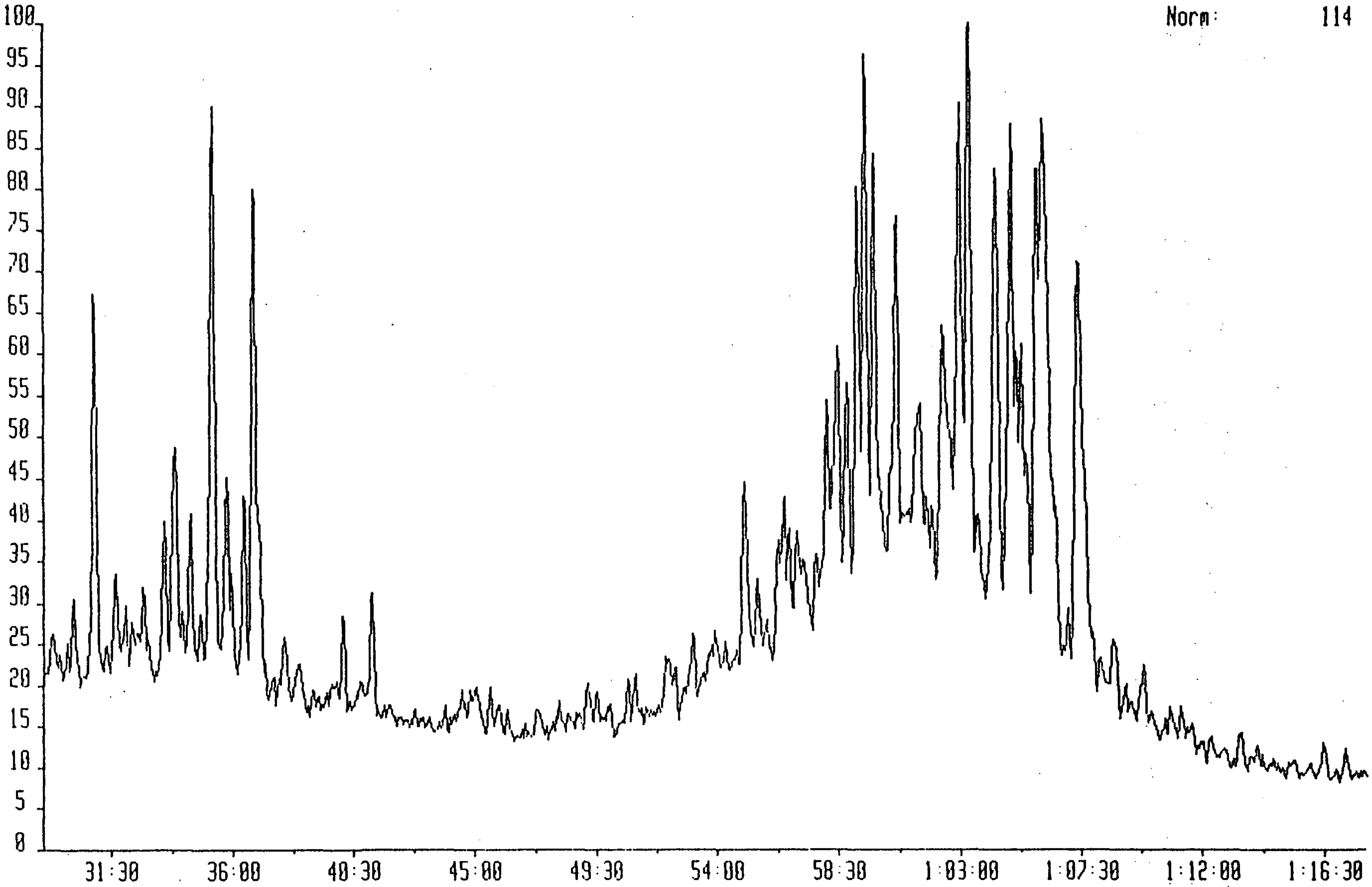

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass [illegible]1.2113
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



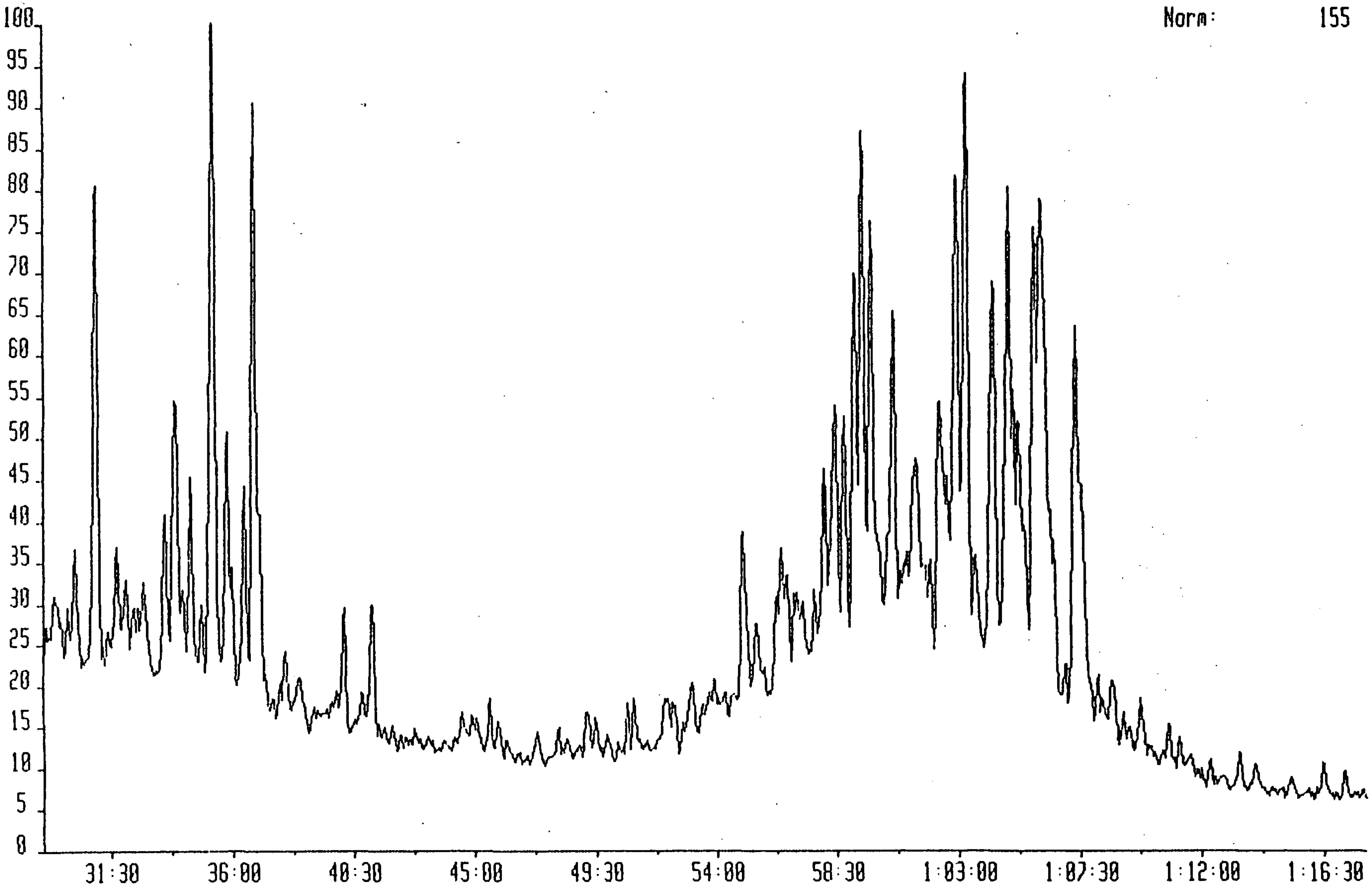

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 231.2113
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



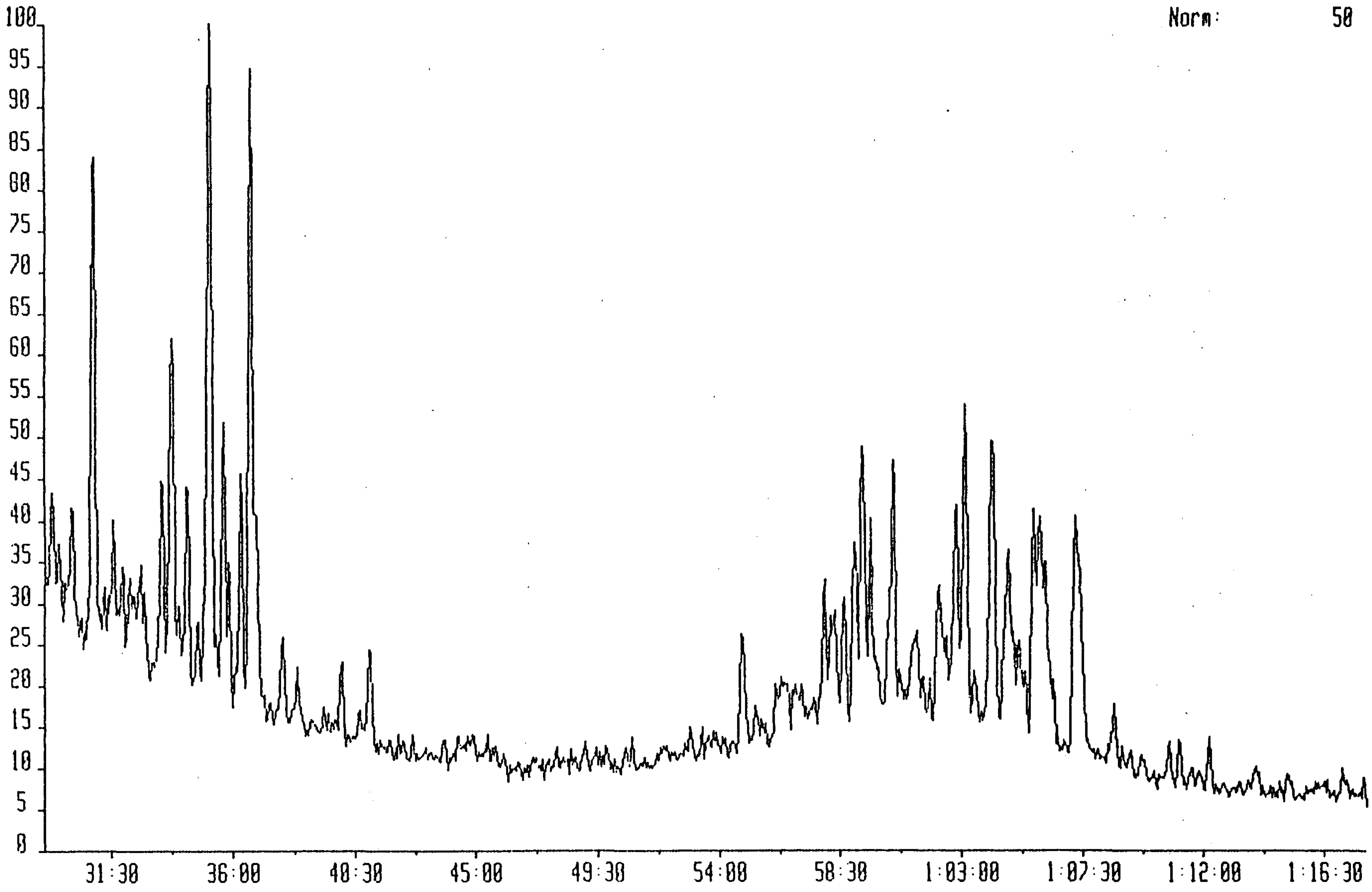

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 231.2113
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



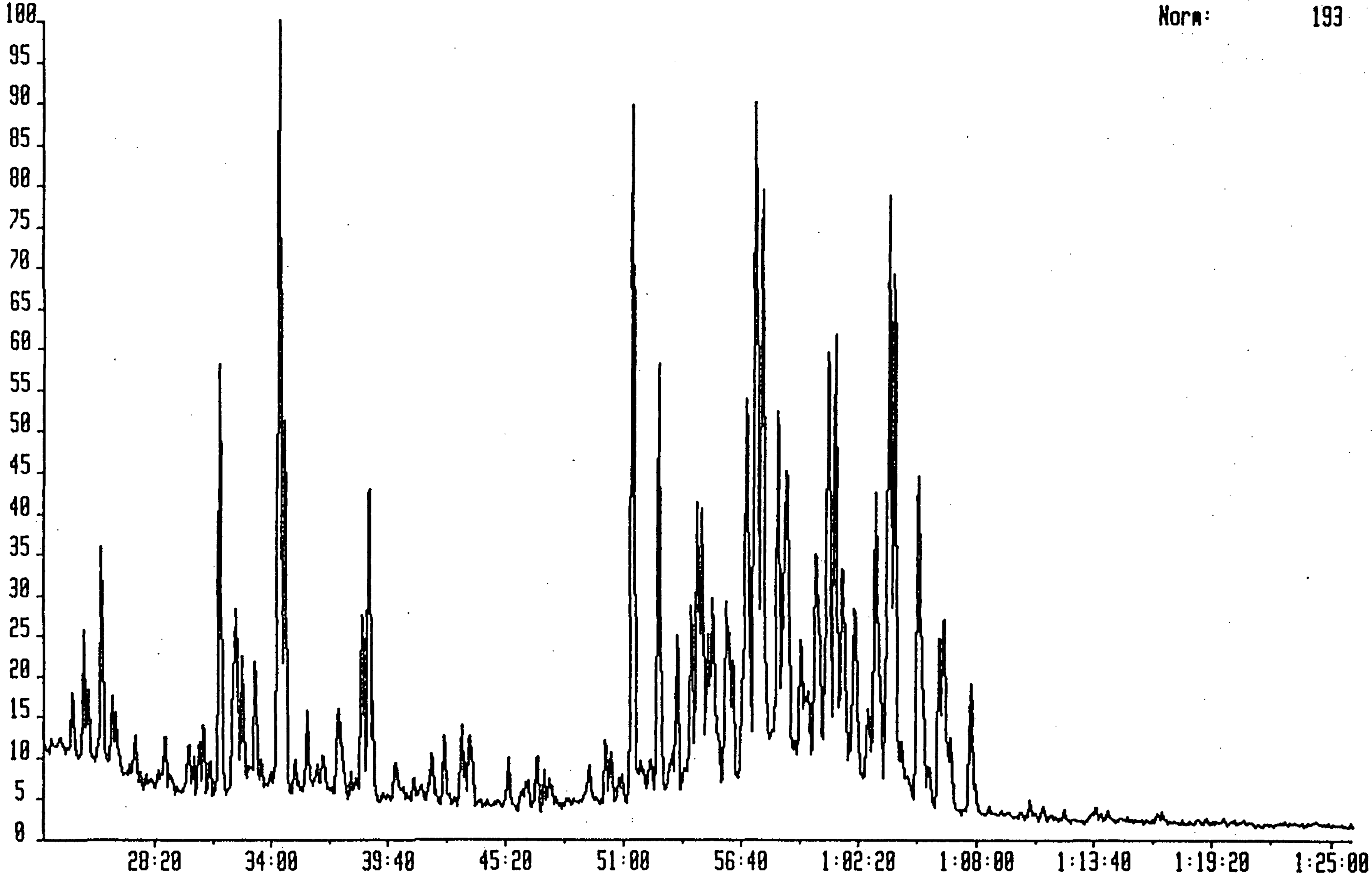

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 231.2113
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



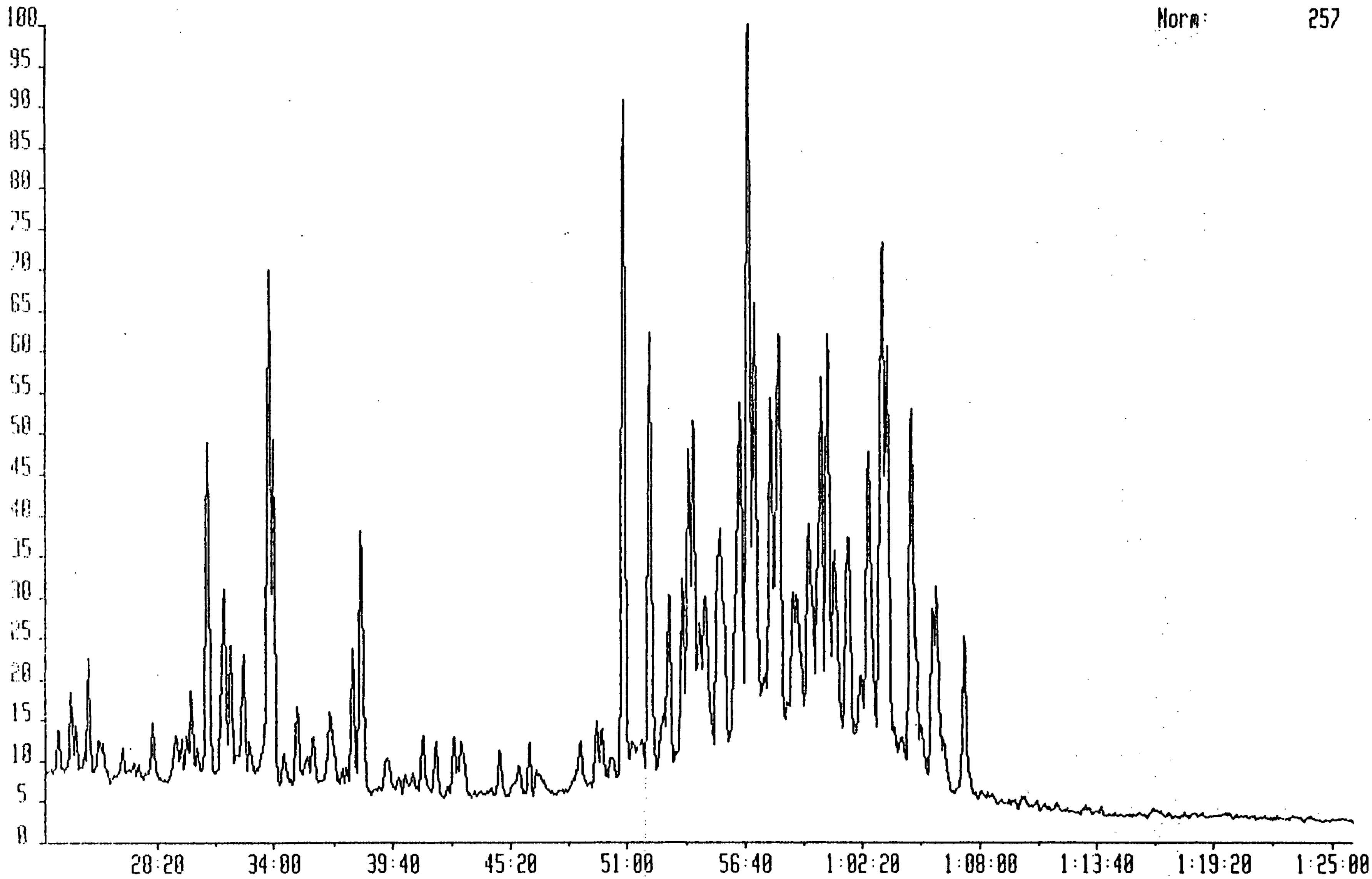

GEOLAB NOR

M/Z 217 Fragmentograms, processed using the Triterpane
Window for comparison between Steranes and Triterpanes



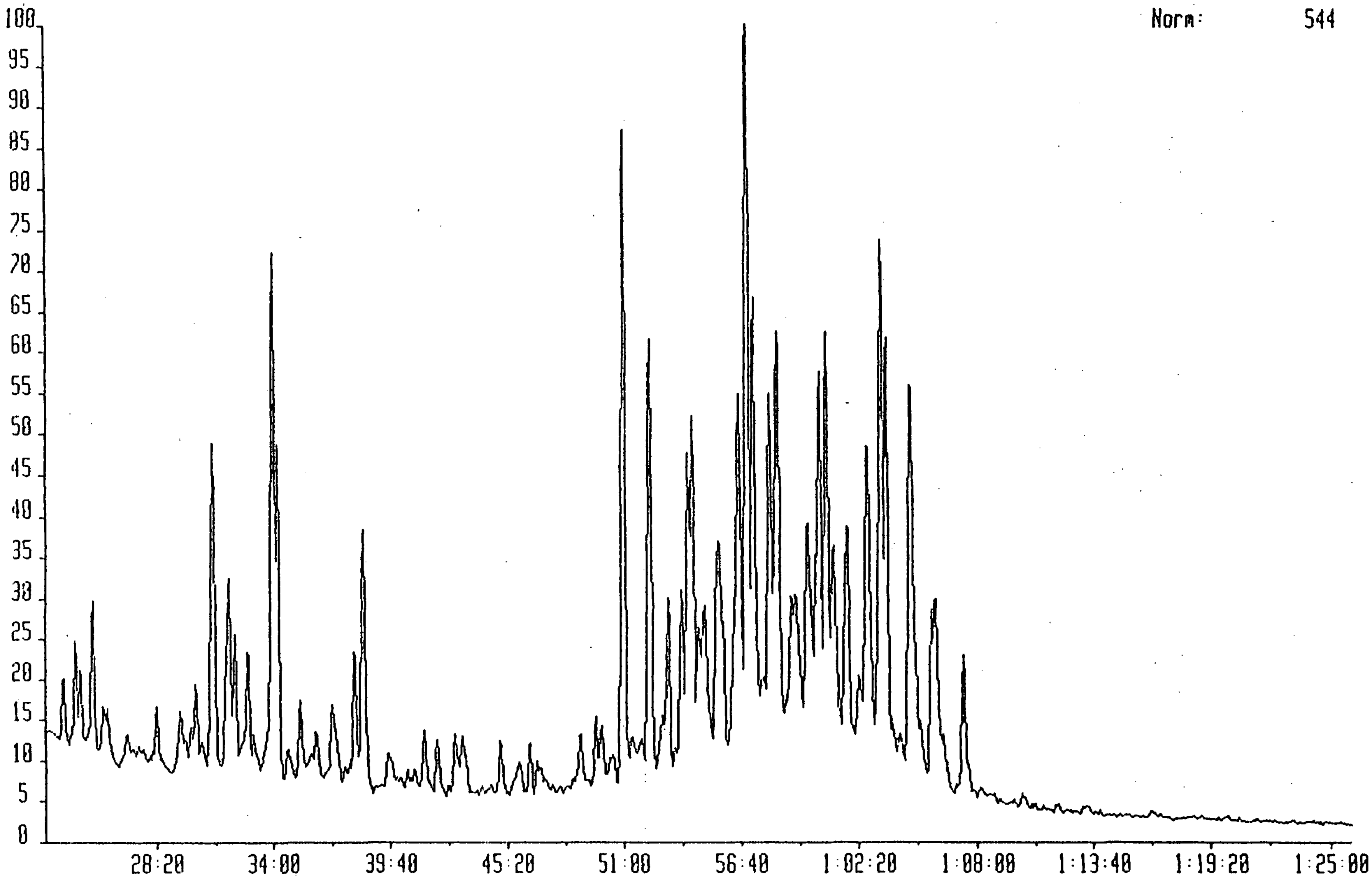

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 2 Injection 1 Group 1 Mass 217.1956
Text:WELL 34/7-5, 2511M, SATURATED FRACTION



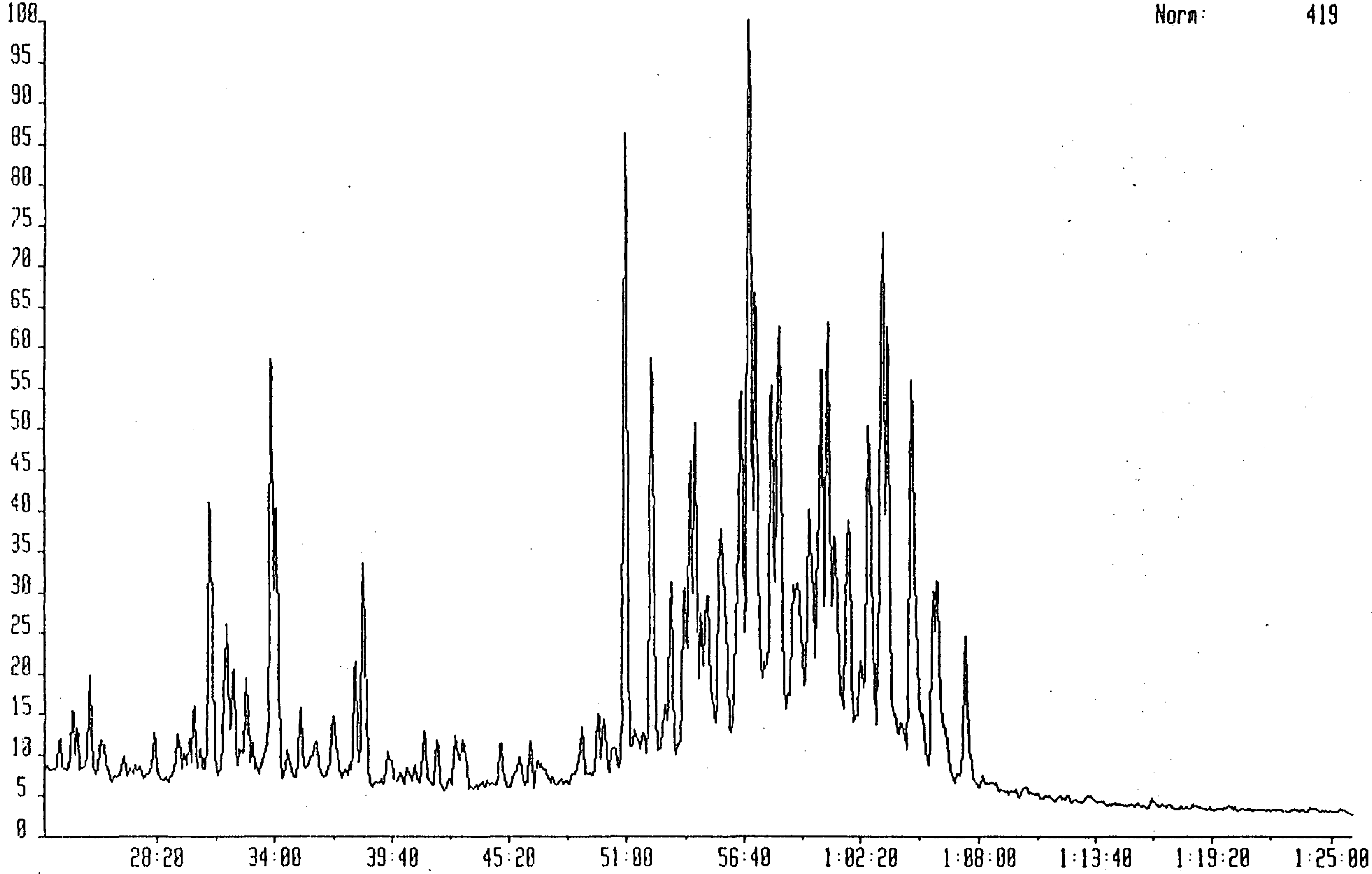

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 3 Injection 1 Group 1 Mass 217.1956
Text:WELL 34/7-5, 2550M, SATURATED FRACTION



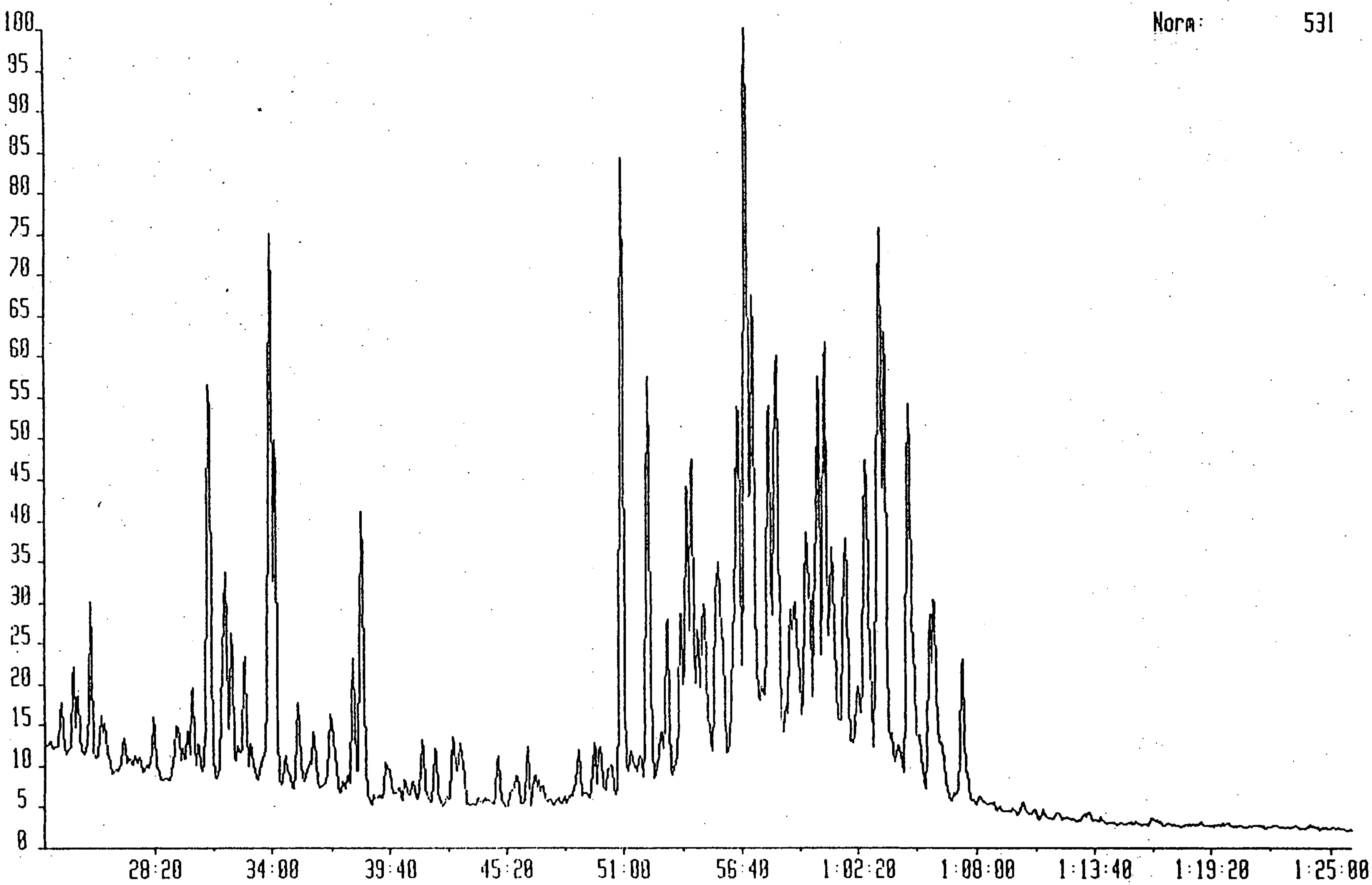

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 4 Injection 1 Group 1 Mass 217.1956
Text:WELL 34/7-5, 2576M, SATURATED FRACTION



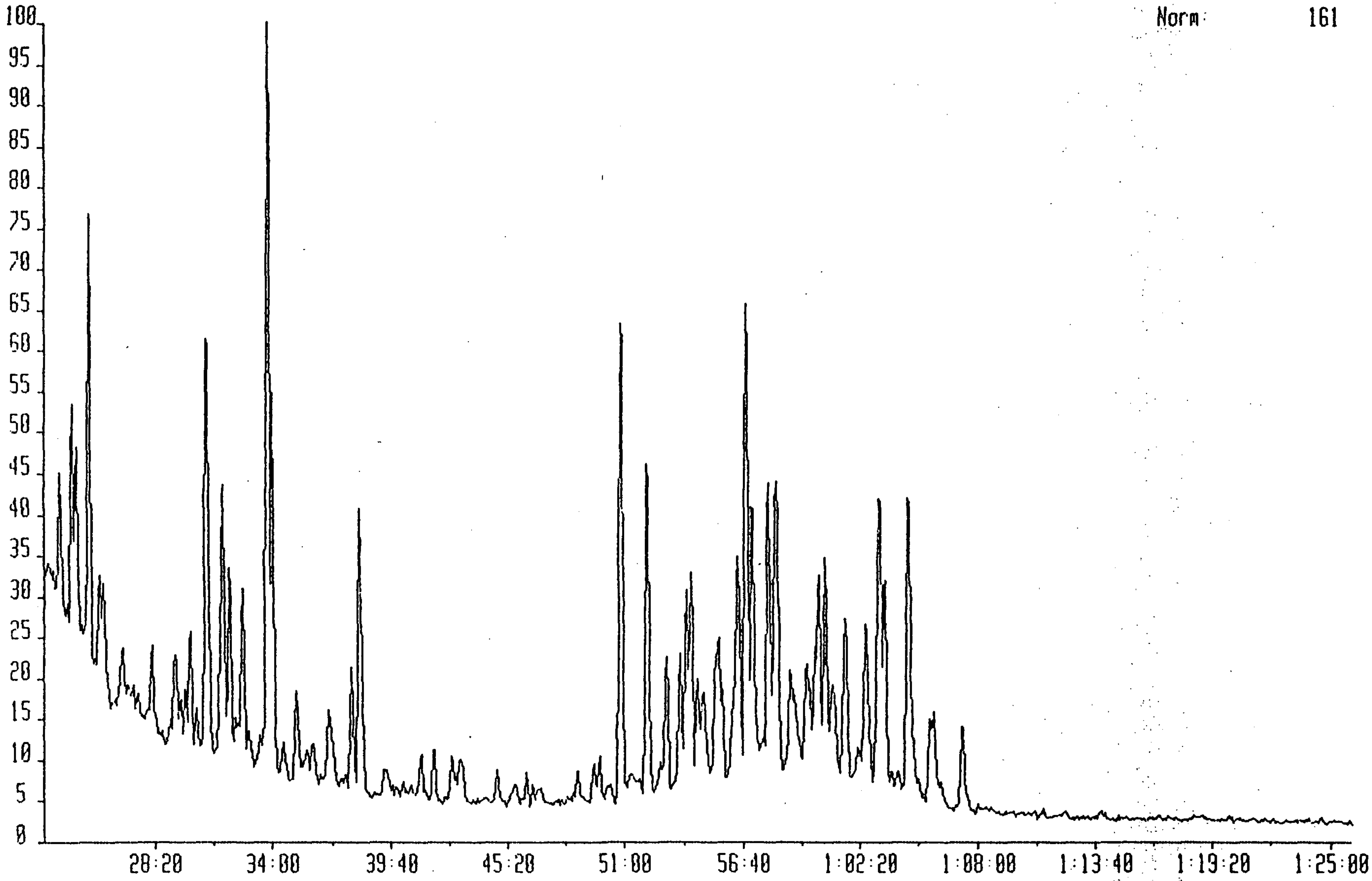

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS25 Acnt:GEOLAB System:SAT1
Sample 5 Injection 1 Group 1 Mass 217.1956
Text:WELL 34/7-5, 2611M, SATURATED FRACTION



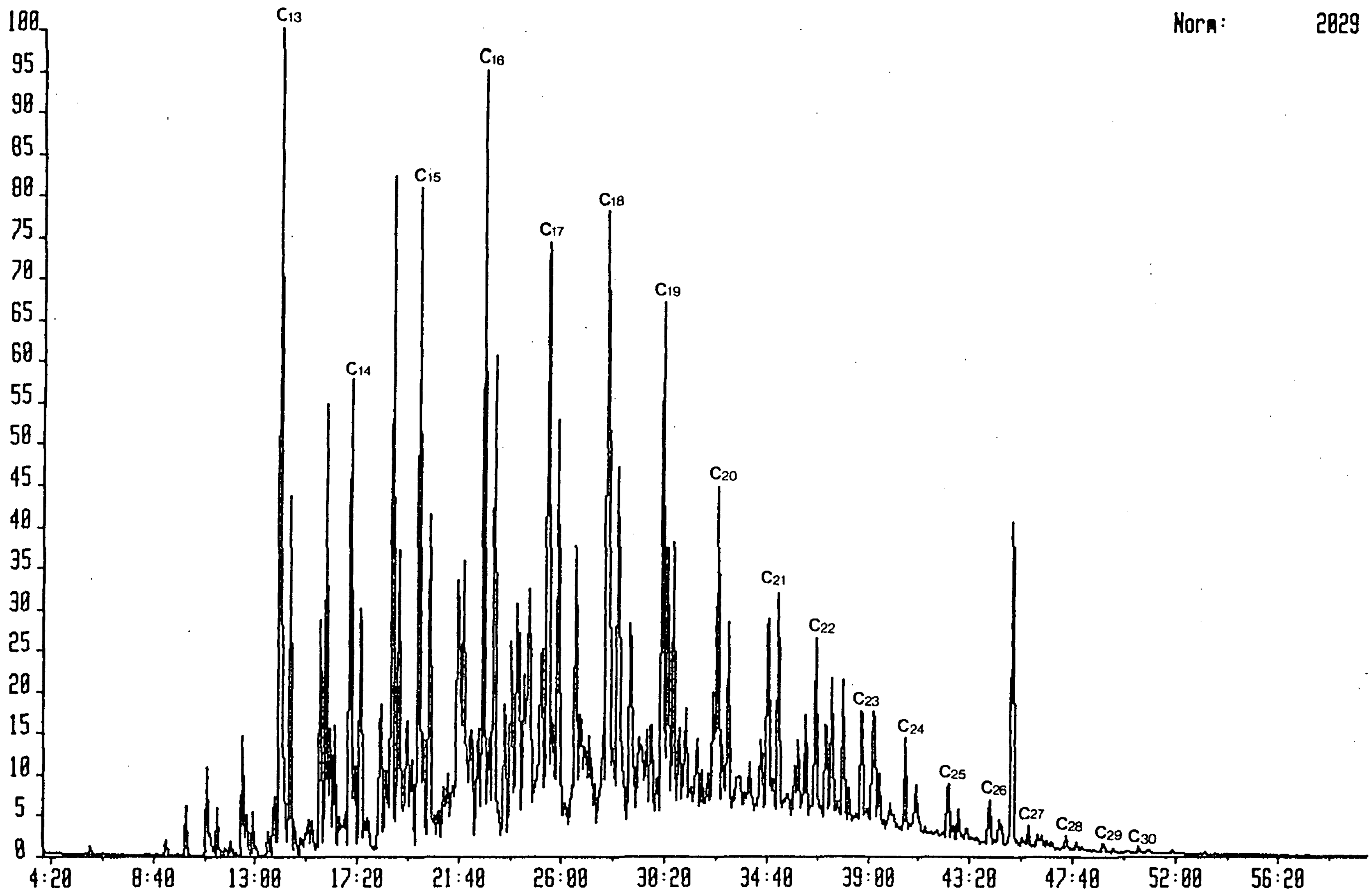

GEOLAB NOR

TAMPENSAT 28-FEB-91 Sir:Magnetic TS250 Acnt:GEOLAB System:SAT1
Sample 6 Injection 1 Group 1 Mass 217.1956
Text:WELL 34/7-5, 2630M, SATURATED FRACTION



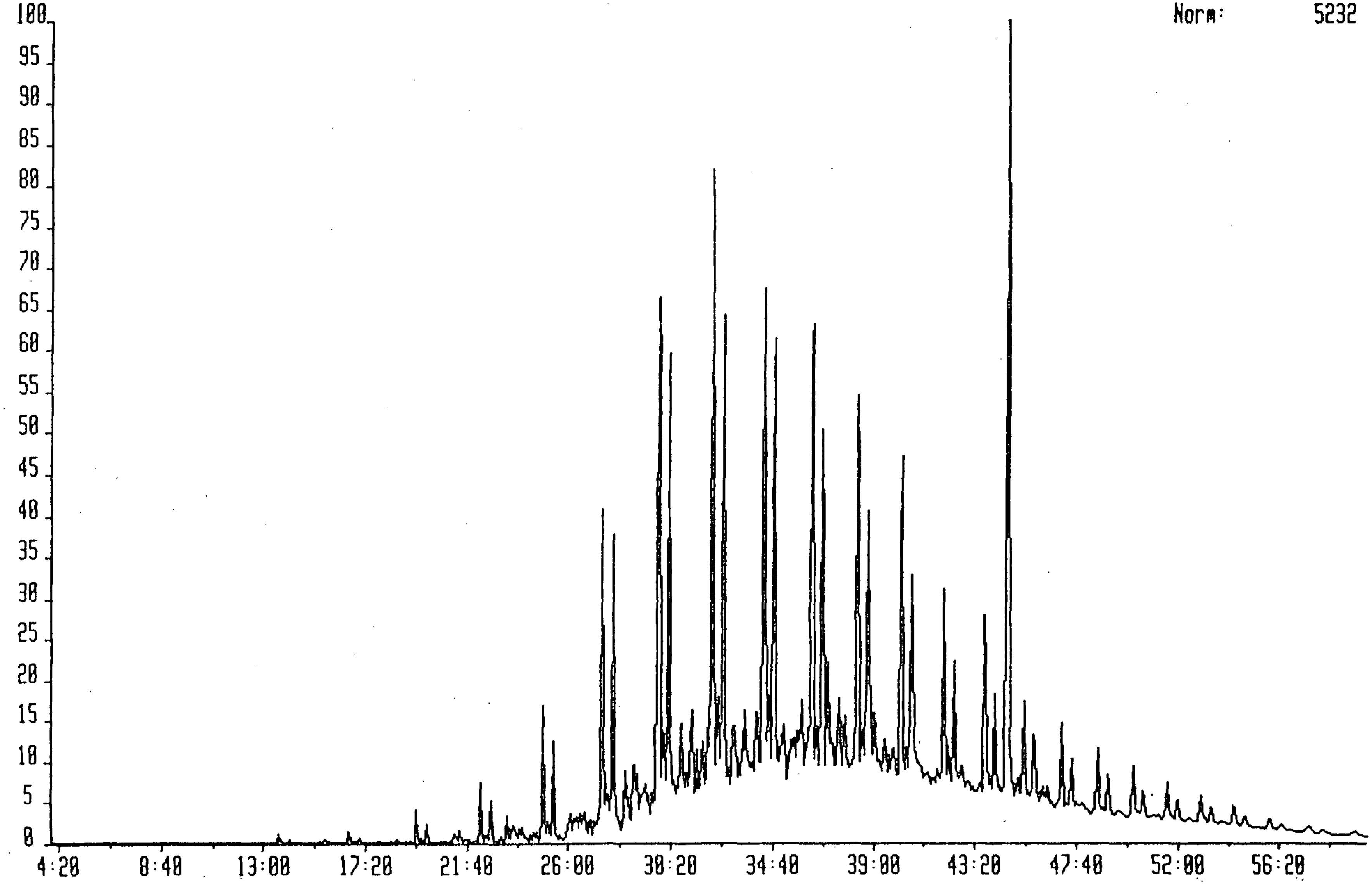

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 106 ALKYLBENZENES



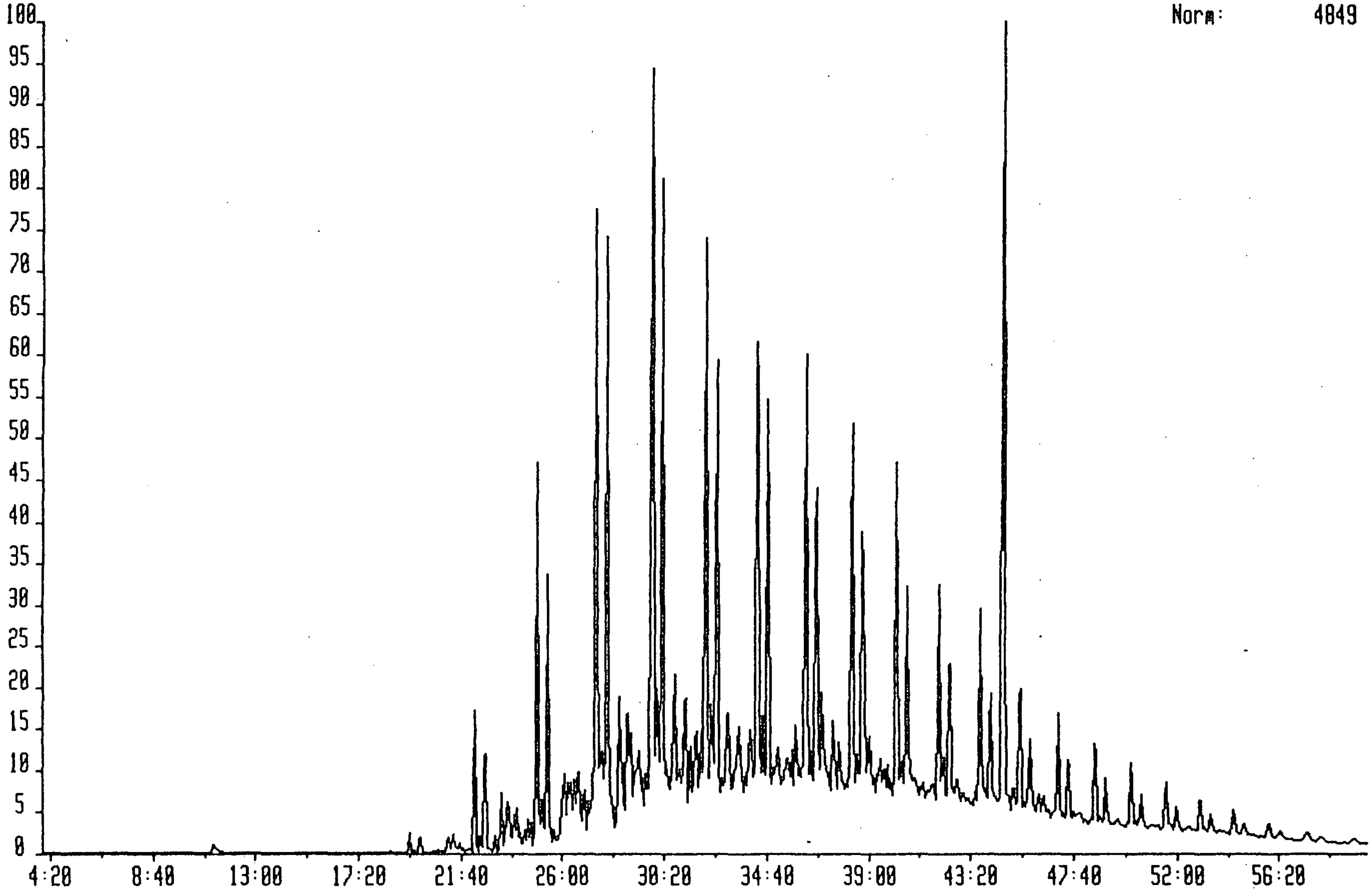

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 1 Injection 1 Group 1 Mass 106.0783
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



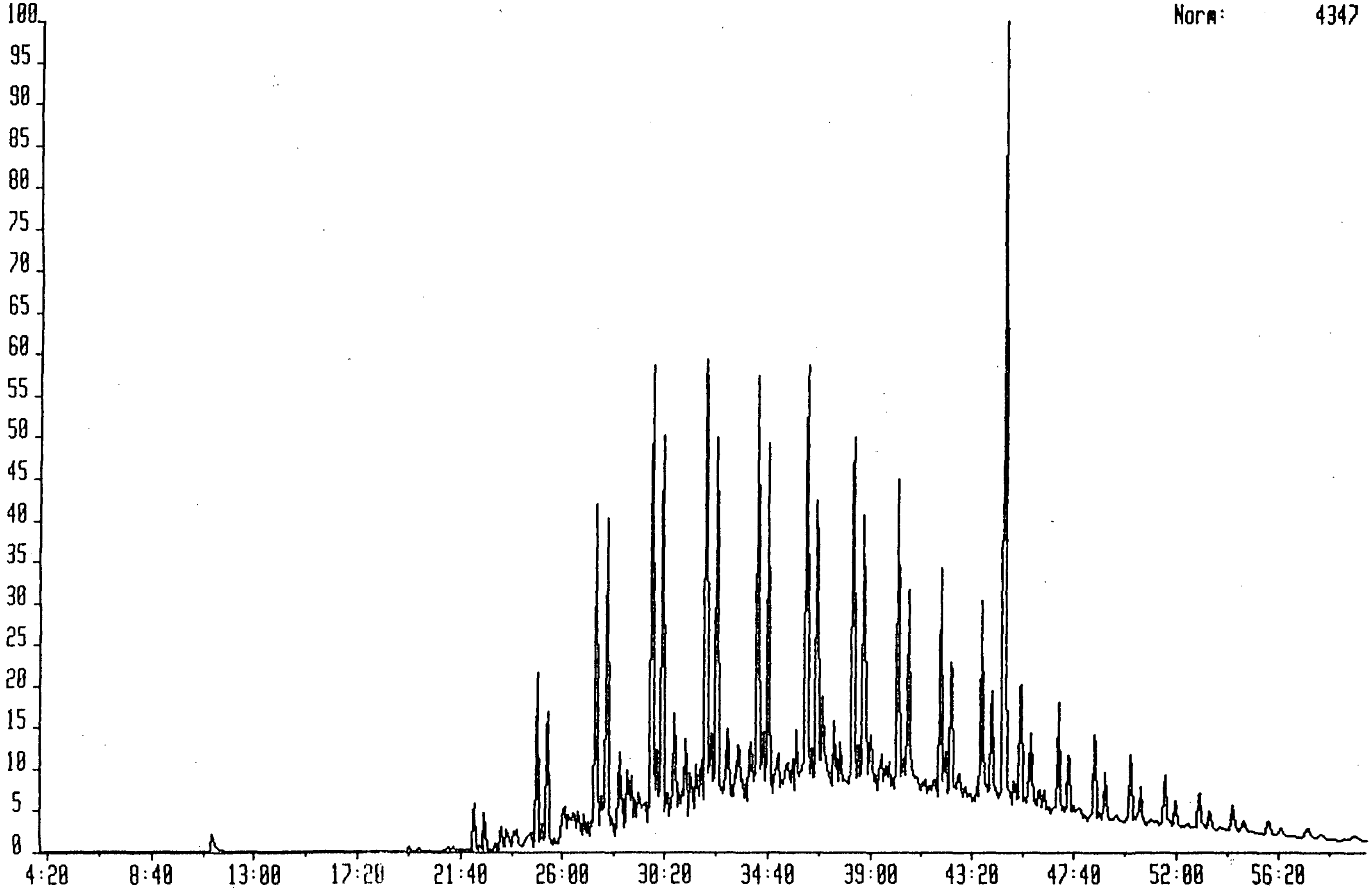

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 2 Injection 1 Group 1 Mass 106.0783
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



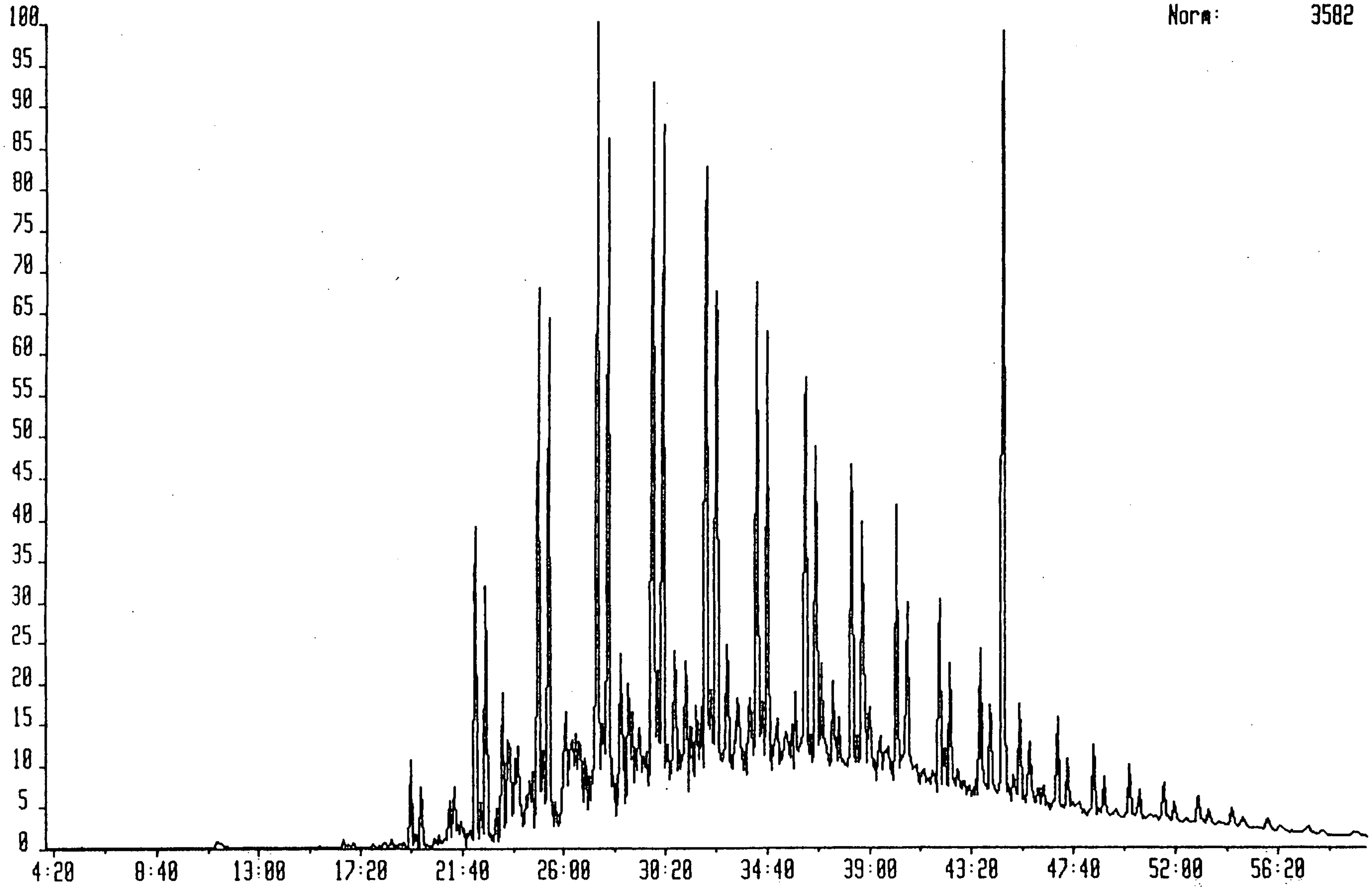

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 3 Injection 1 Group 1 Mass 106.0783
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



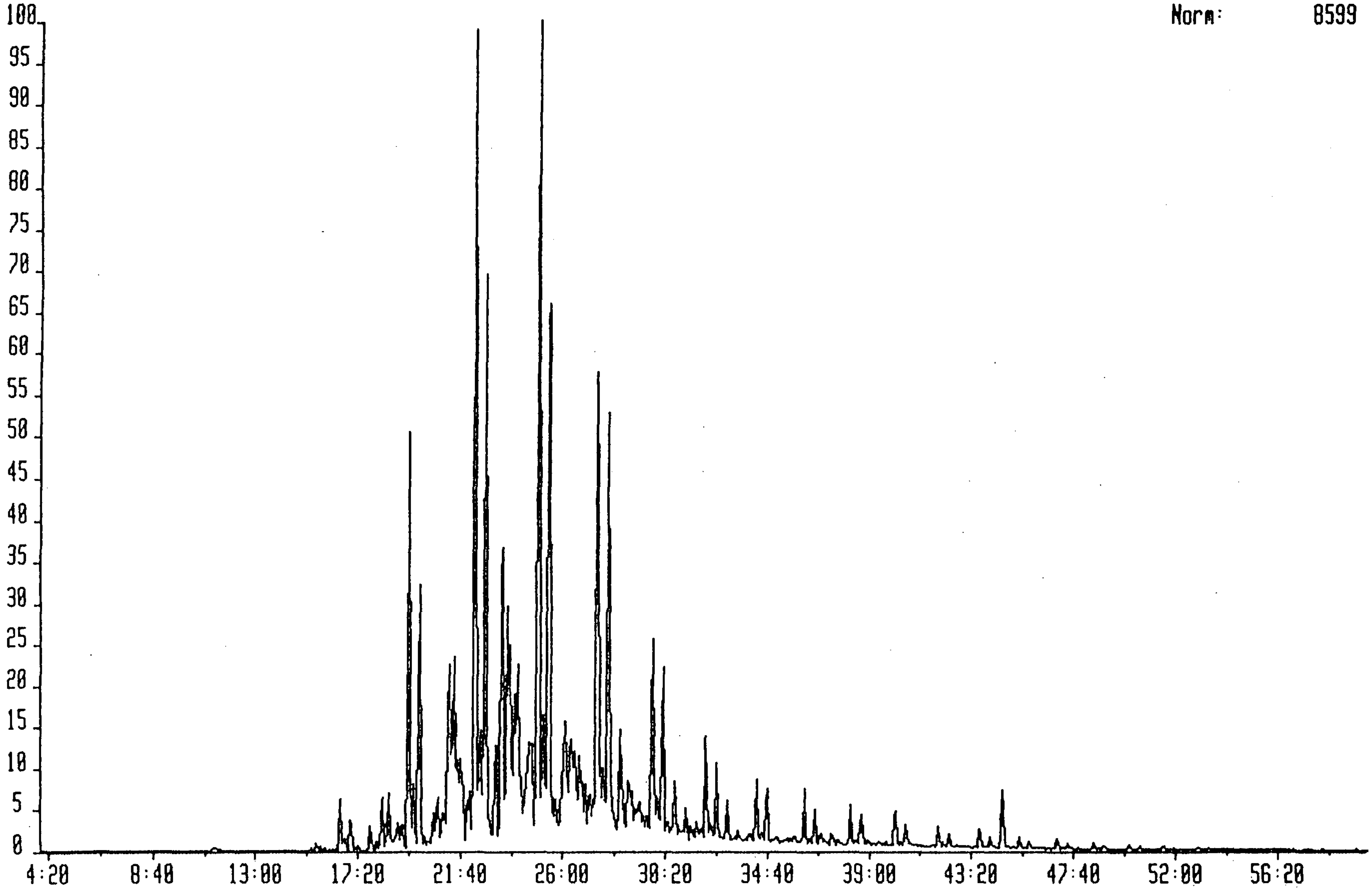

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 4 Injection 1 Group 1 Mass 106.0783
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



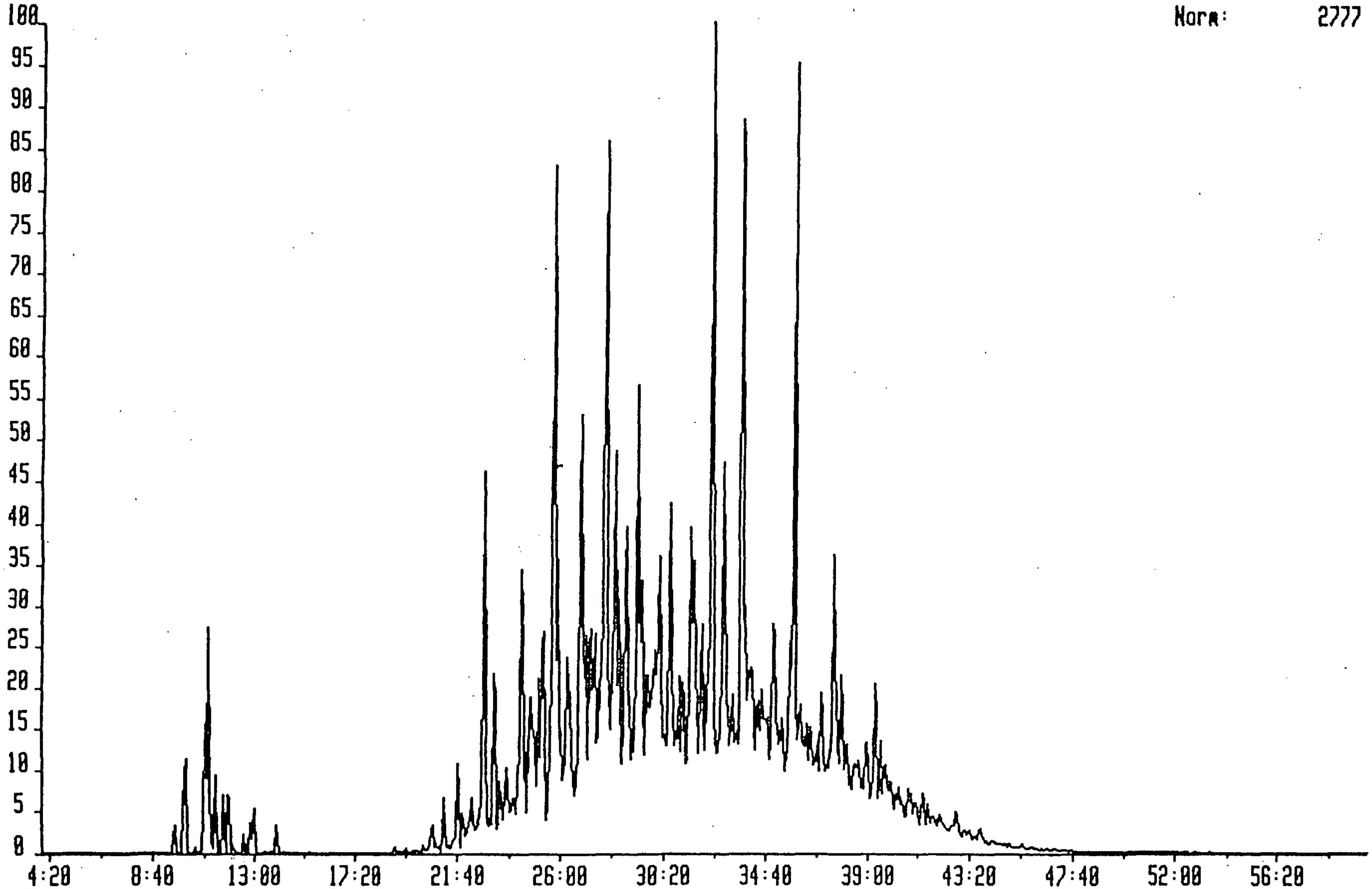

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 5 Injection 1 Group 1 Mass 106.0783
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



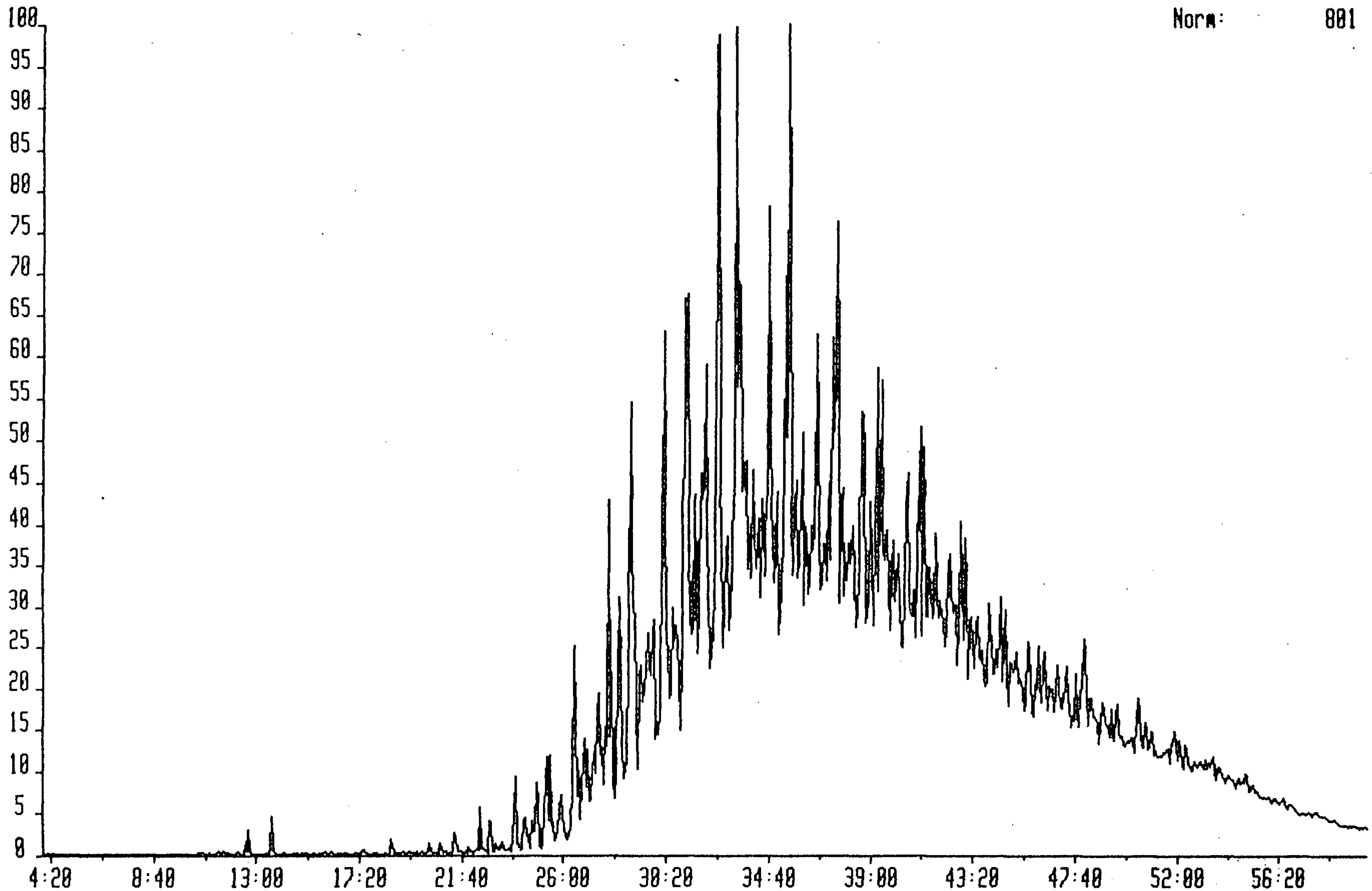

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 134 C4 ALKYLBENZENES



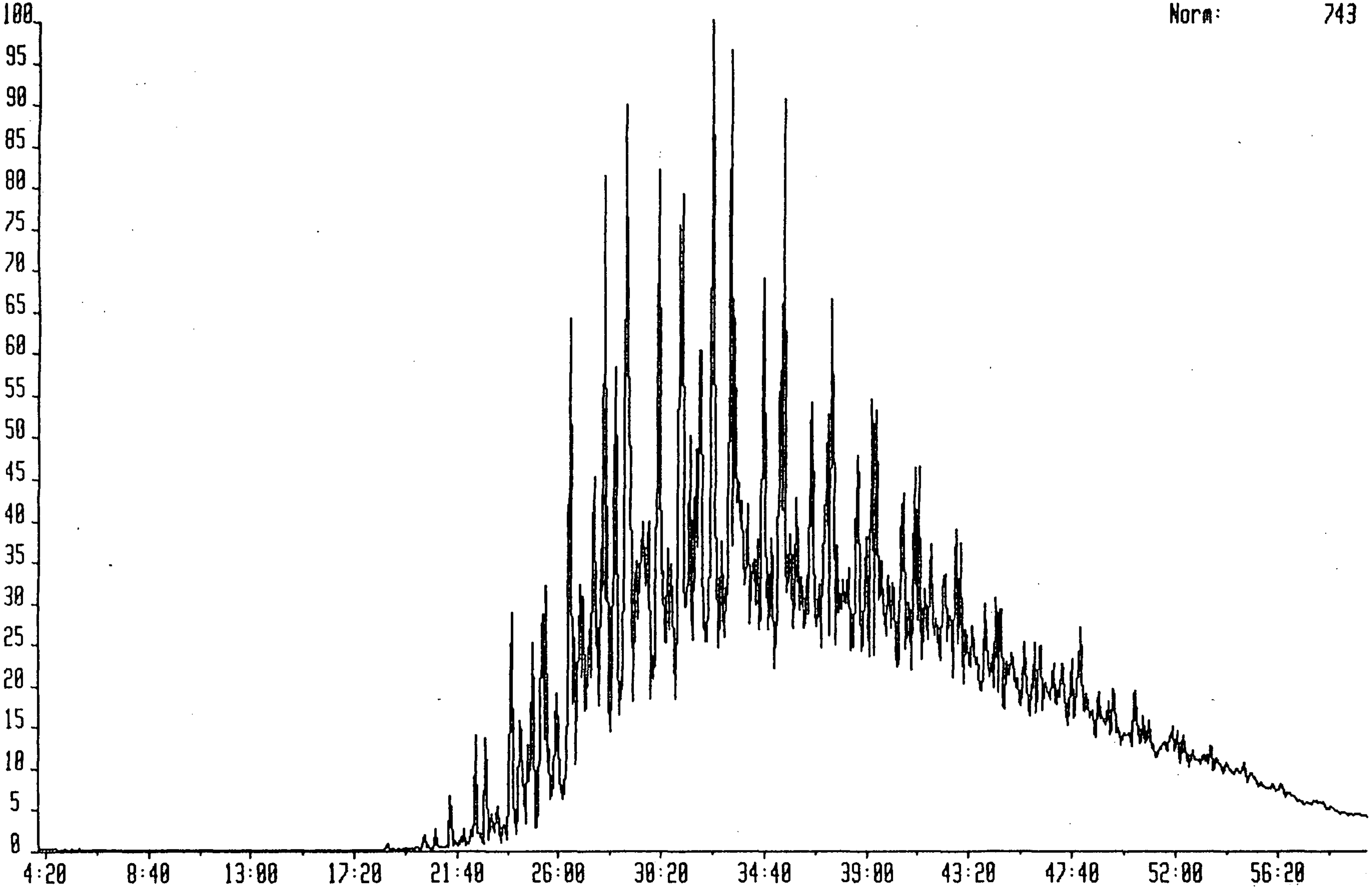

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 1 Injection 1 Group 1 Mass 134.1096
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



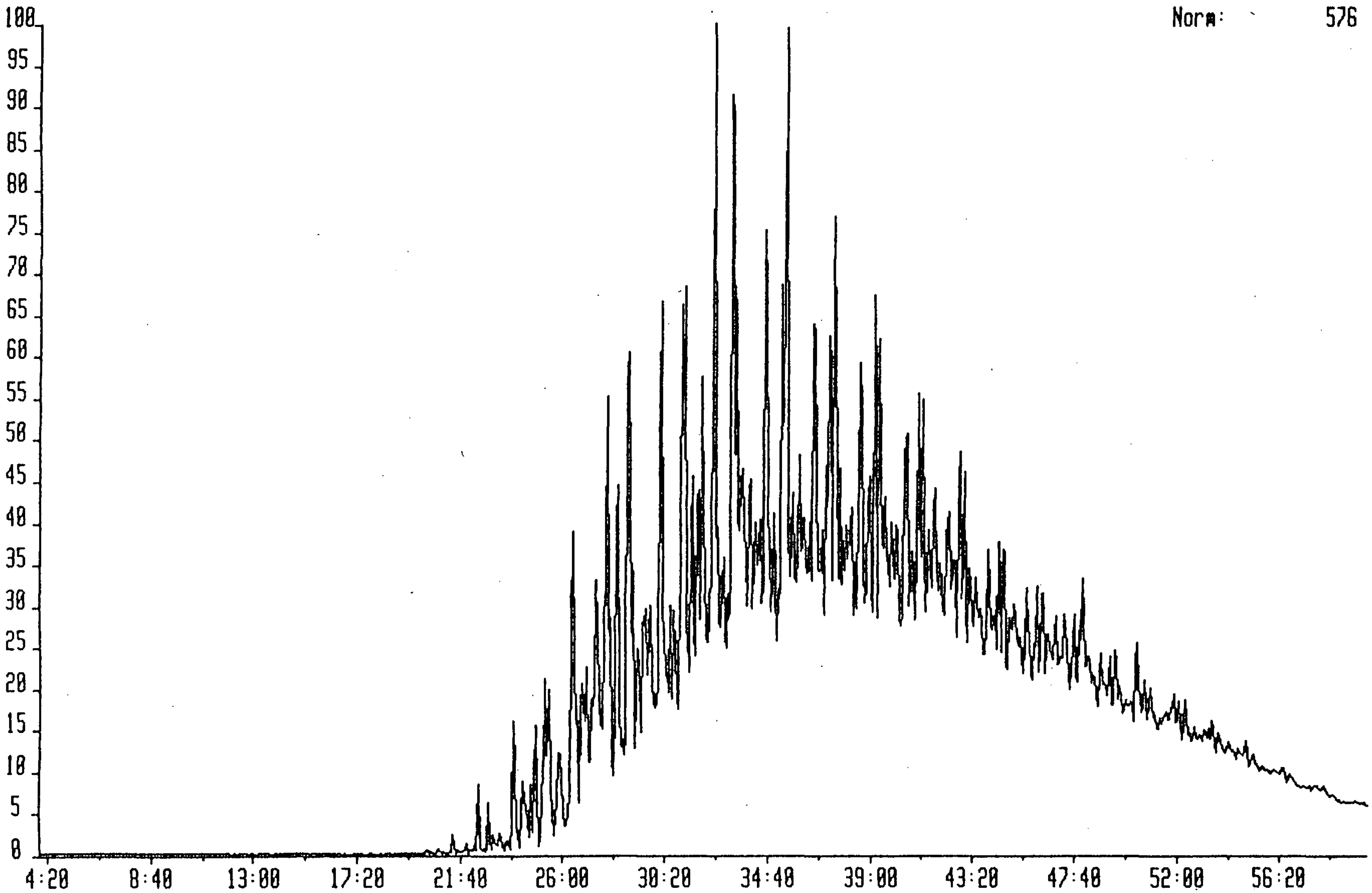

GEOLAB NOR

TARPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 2 Injection 1 Group 1 Mass 134.1096
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



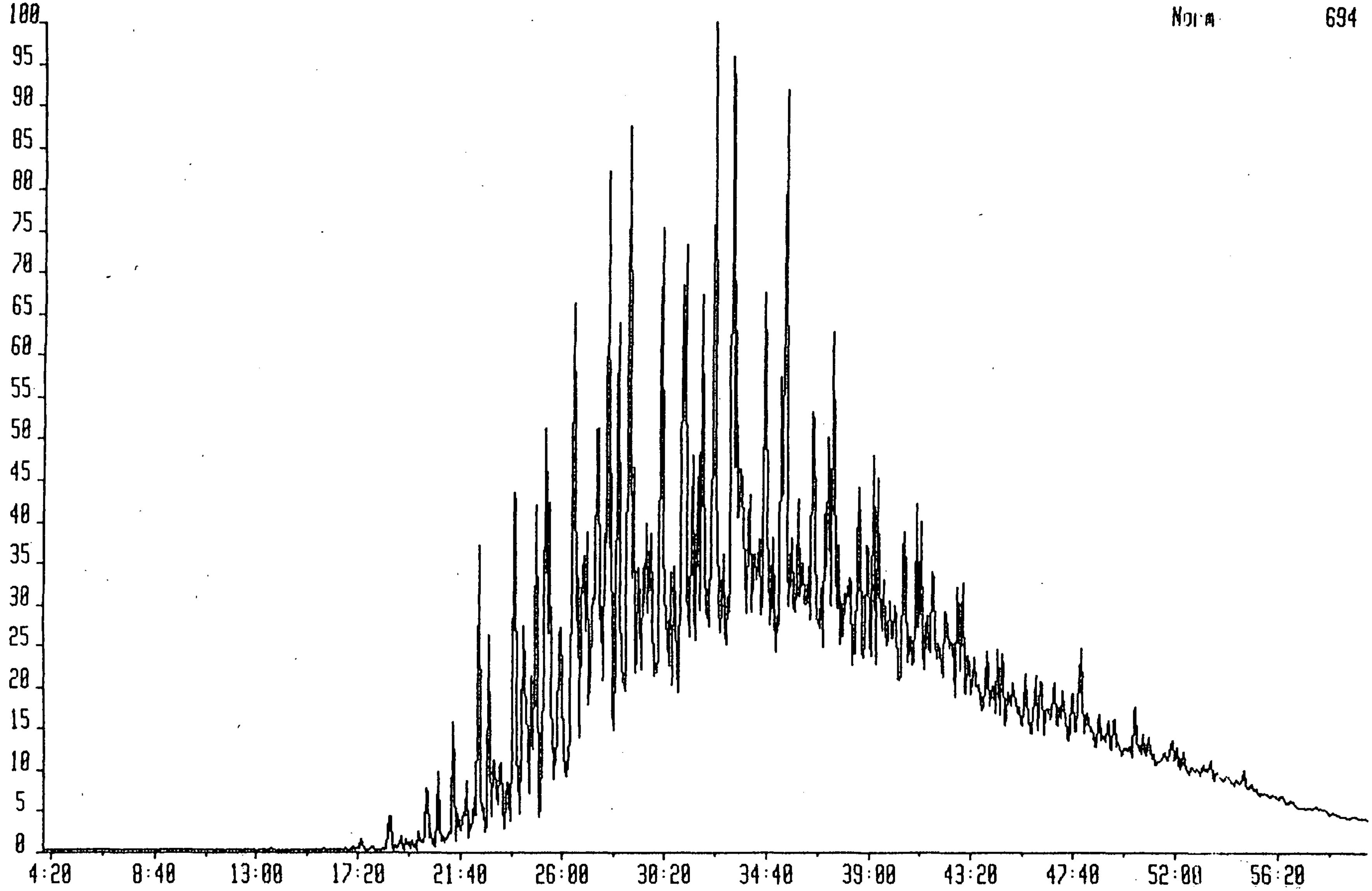

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 3 Injection 1 Group 1 Mass 134.1096
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



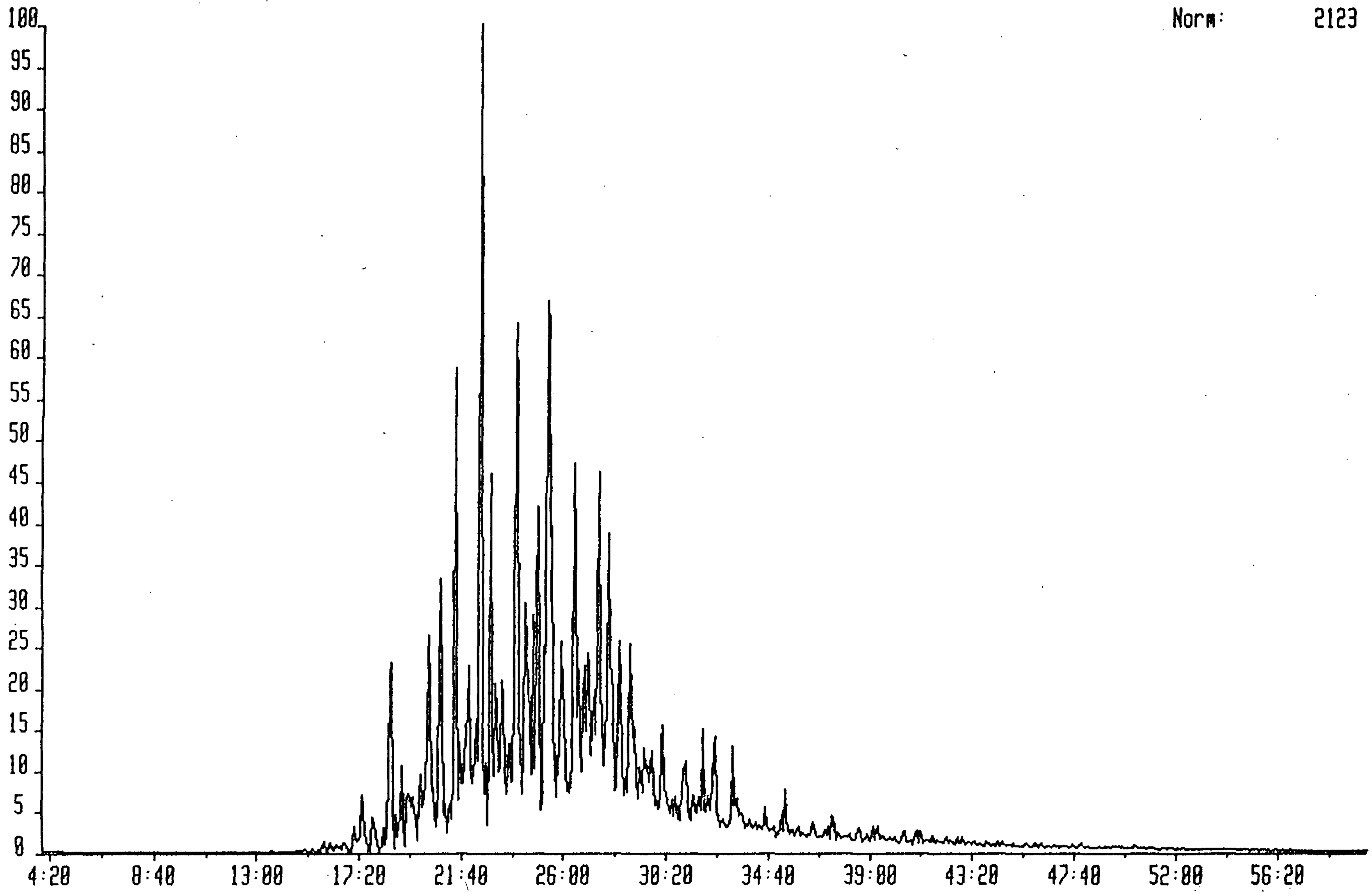

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 4 Injection 1 Group 1 Mass 134.1096
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



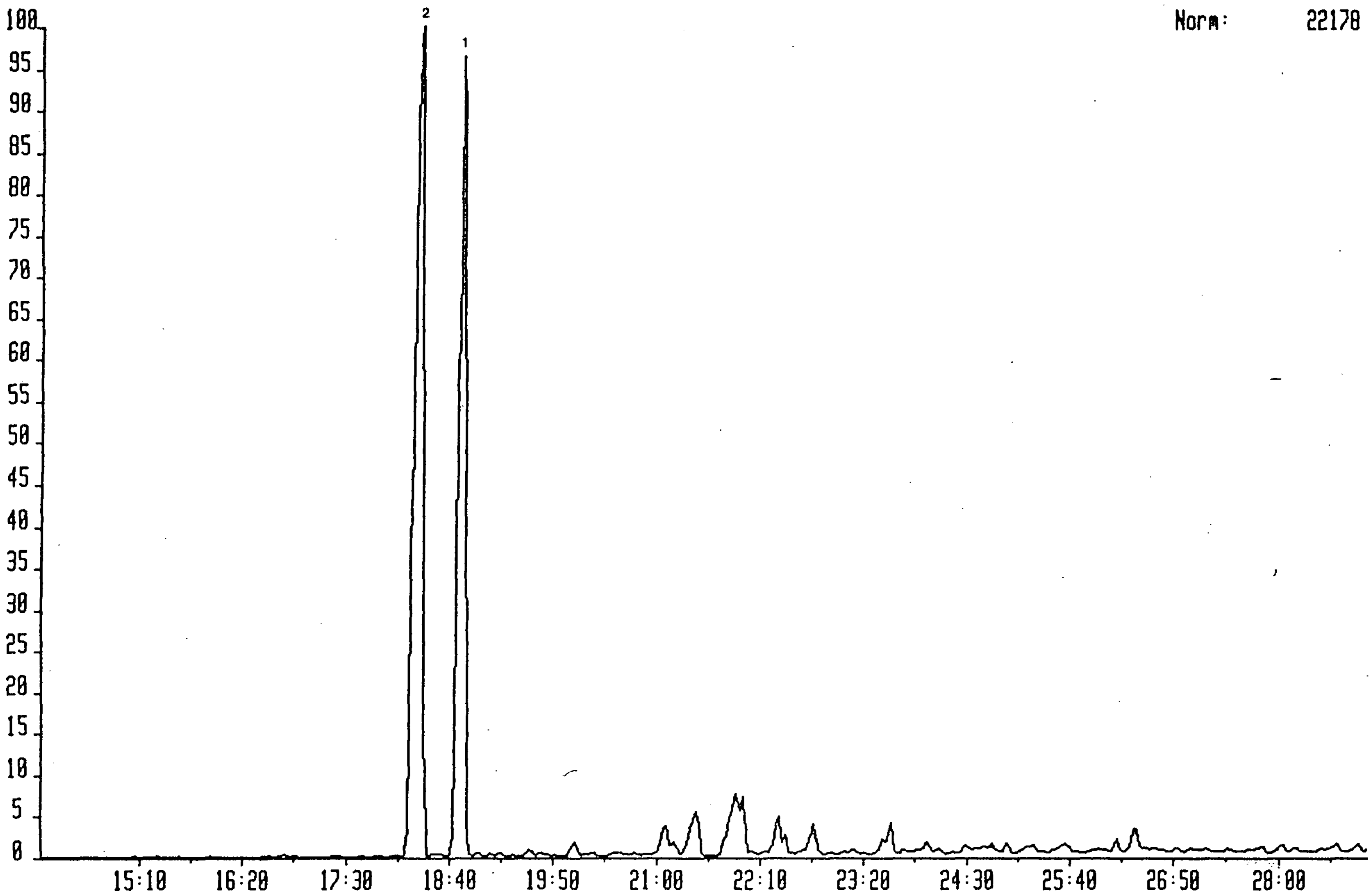

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 5 Injection 1 Group 1 Mass 134.1096
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



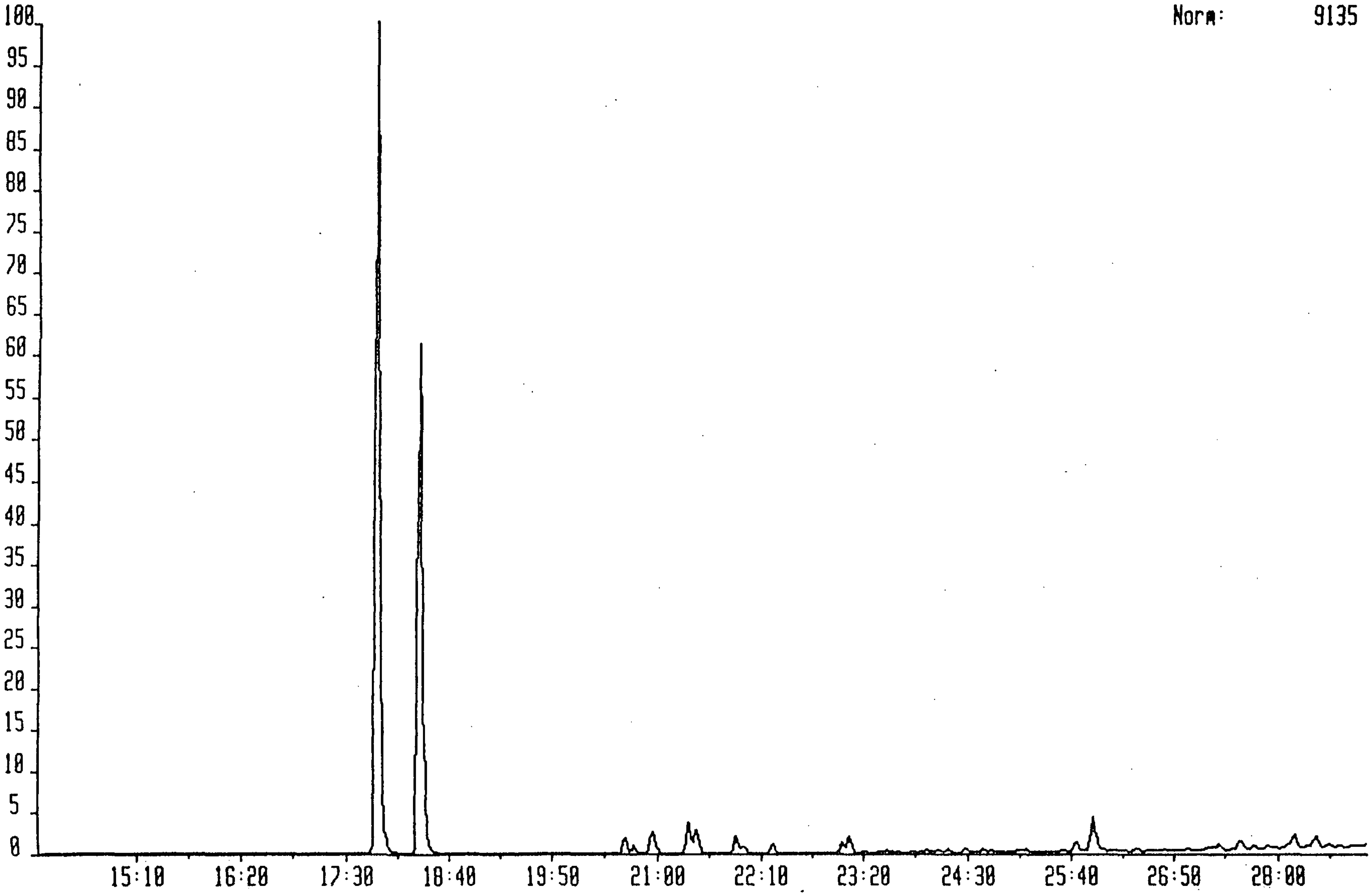

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 142 METHYL NAPHTHALENES



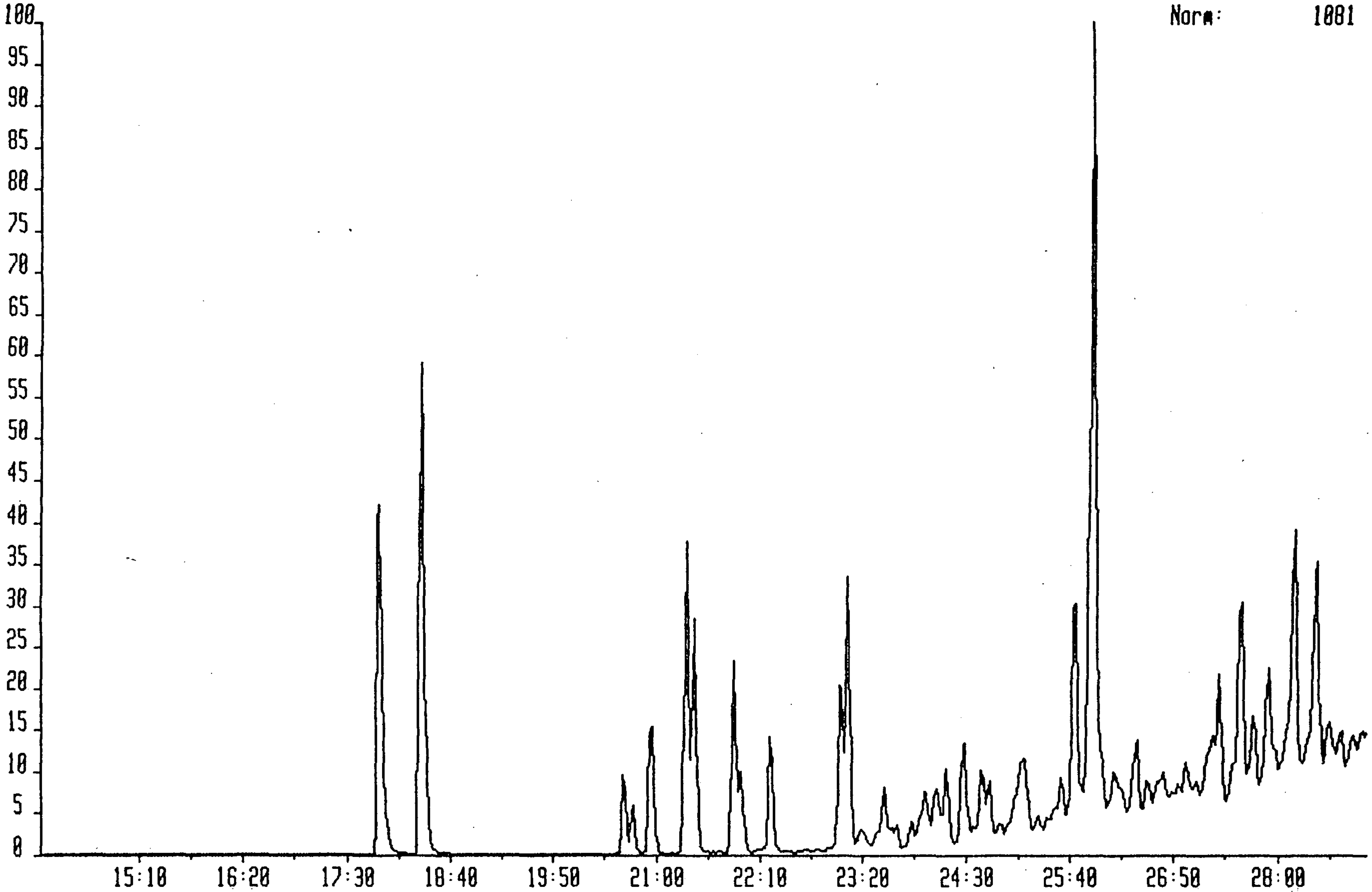

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 1 Injection 1 Group 1 Mass 142.0783
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



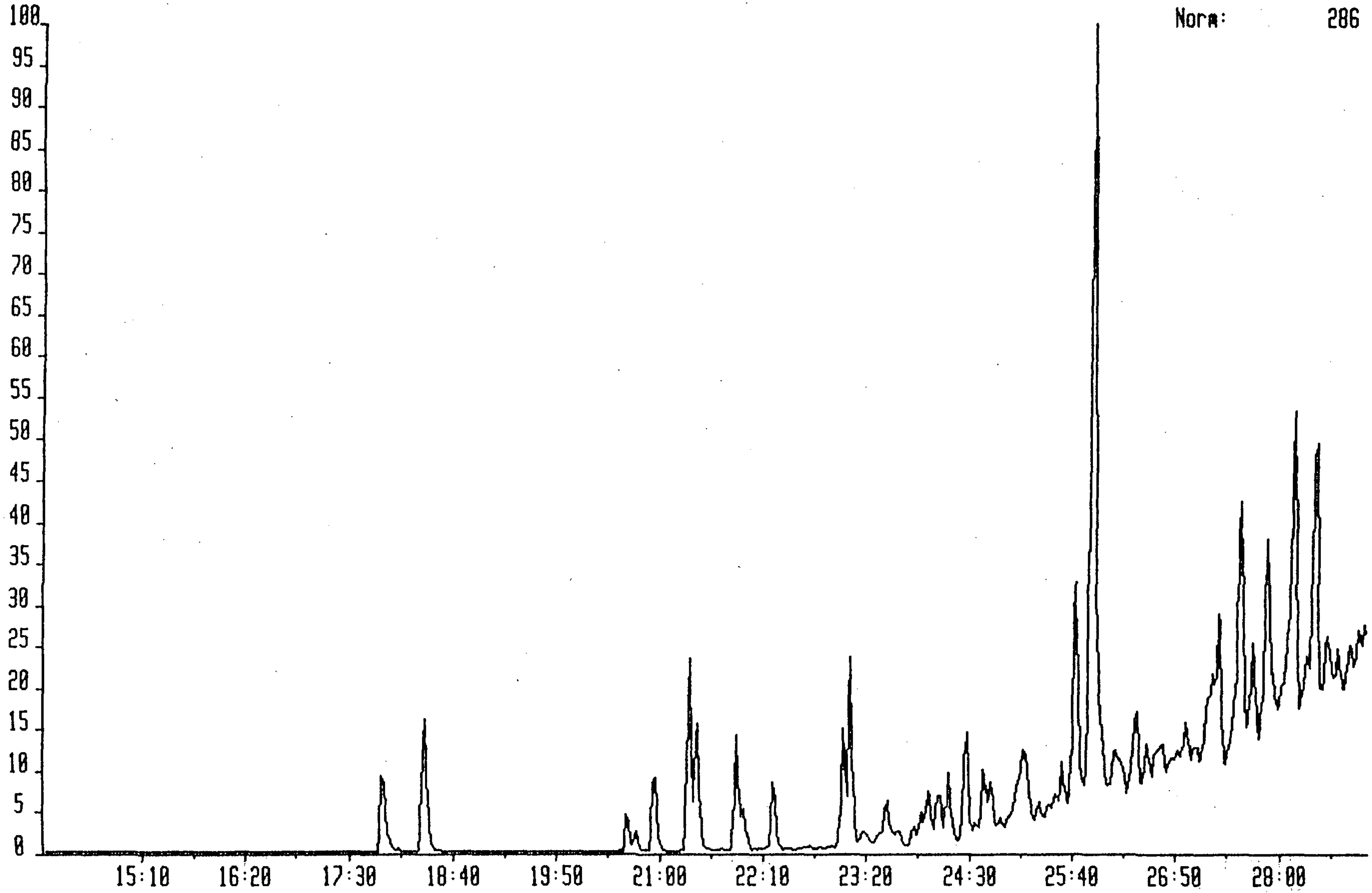

GEOLAB NOR

THMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 2 Injection 1 Group 1 Mass 142.0783
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



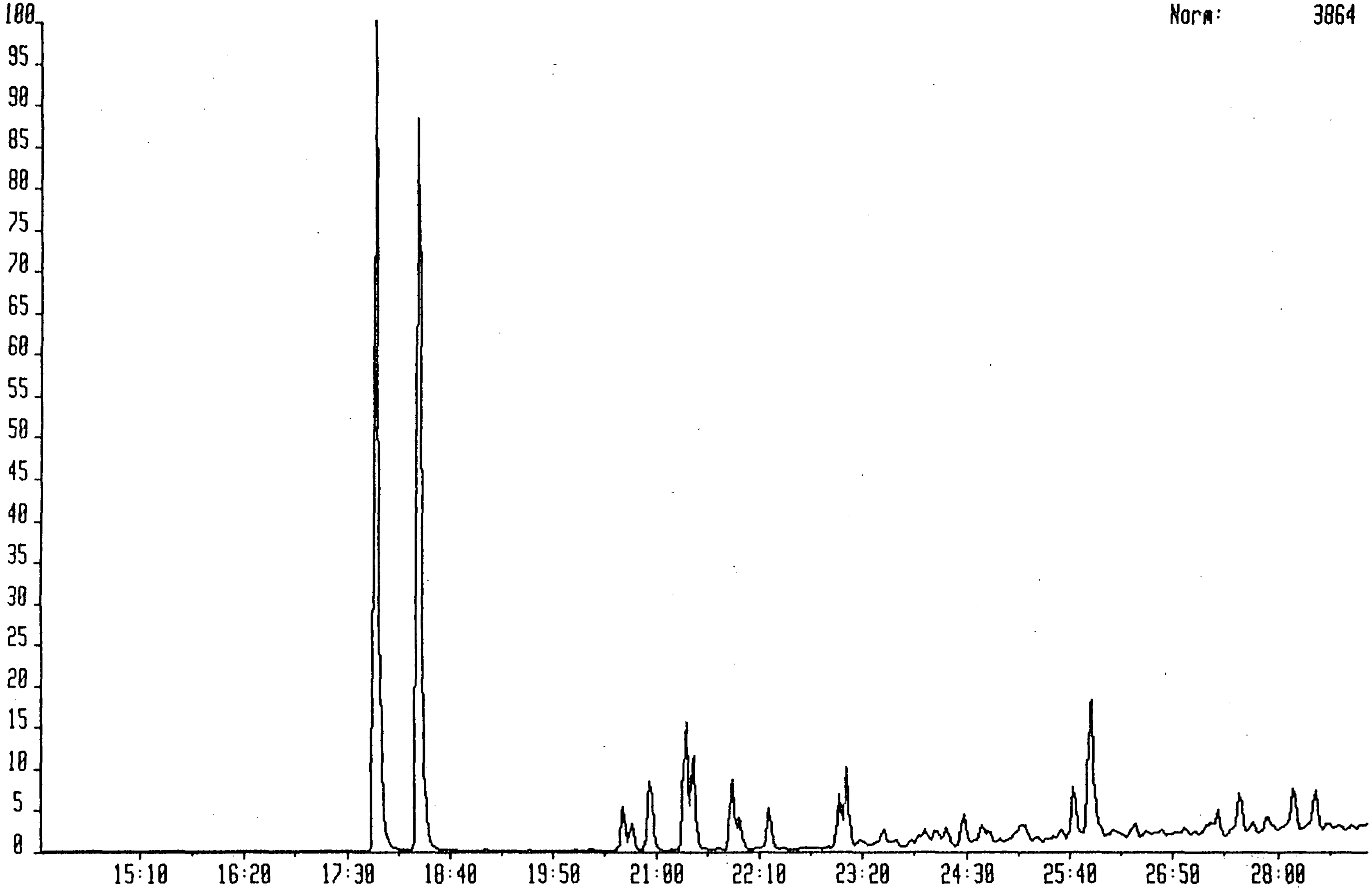

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 3 Injection 1 Group 1 Mass 142.0783
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



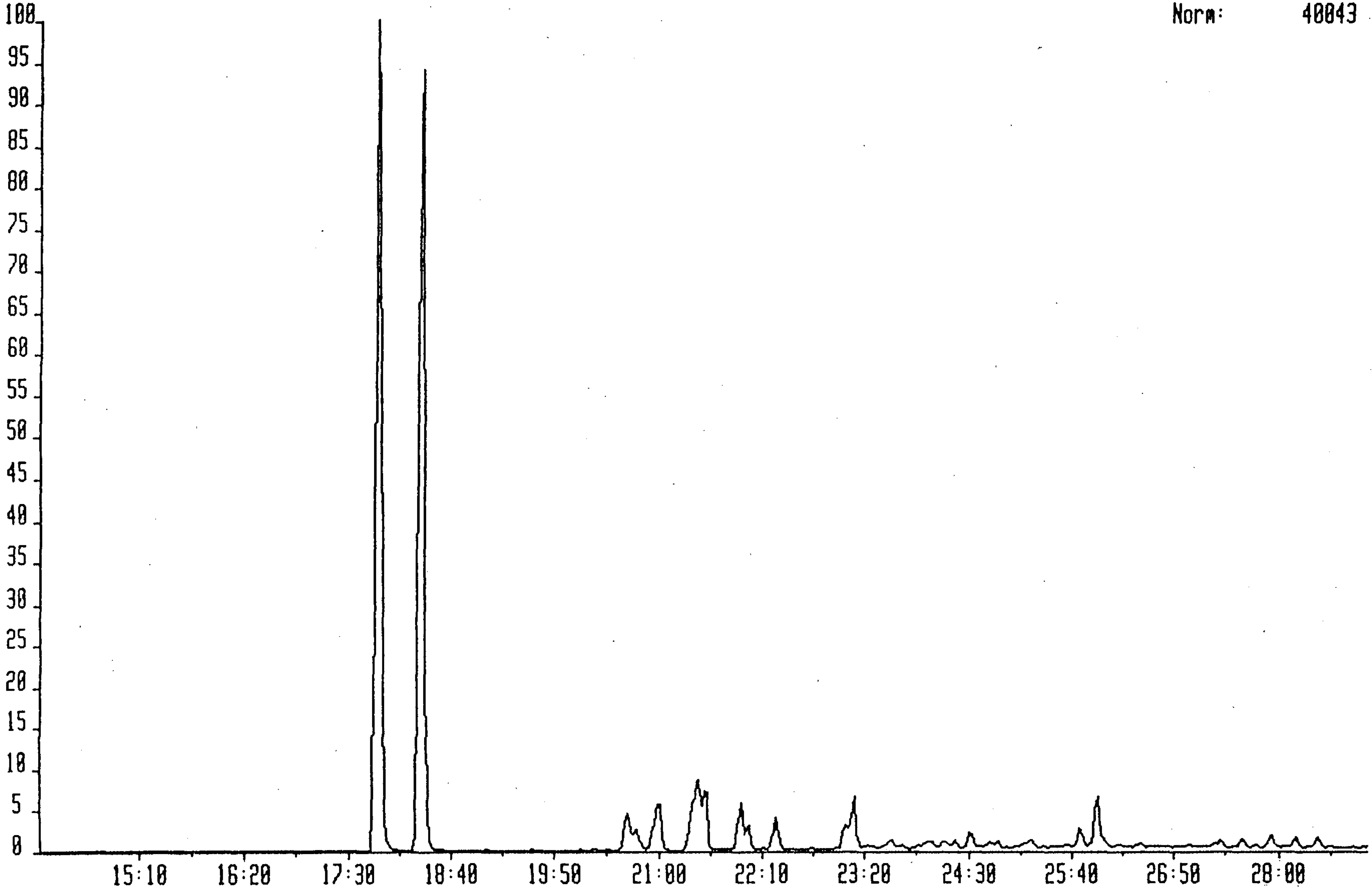

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 4 Injection 1 Group 1 Mass 142.0783
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



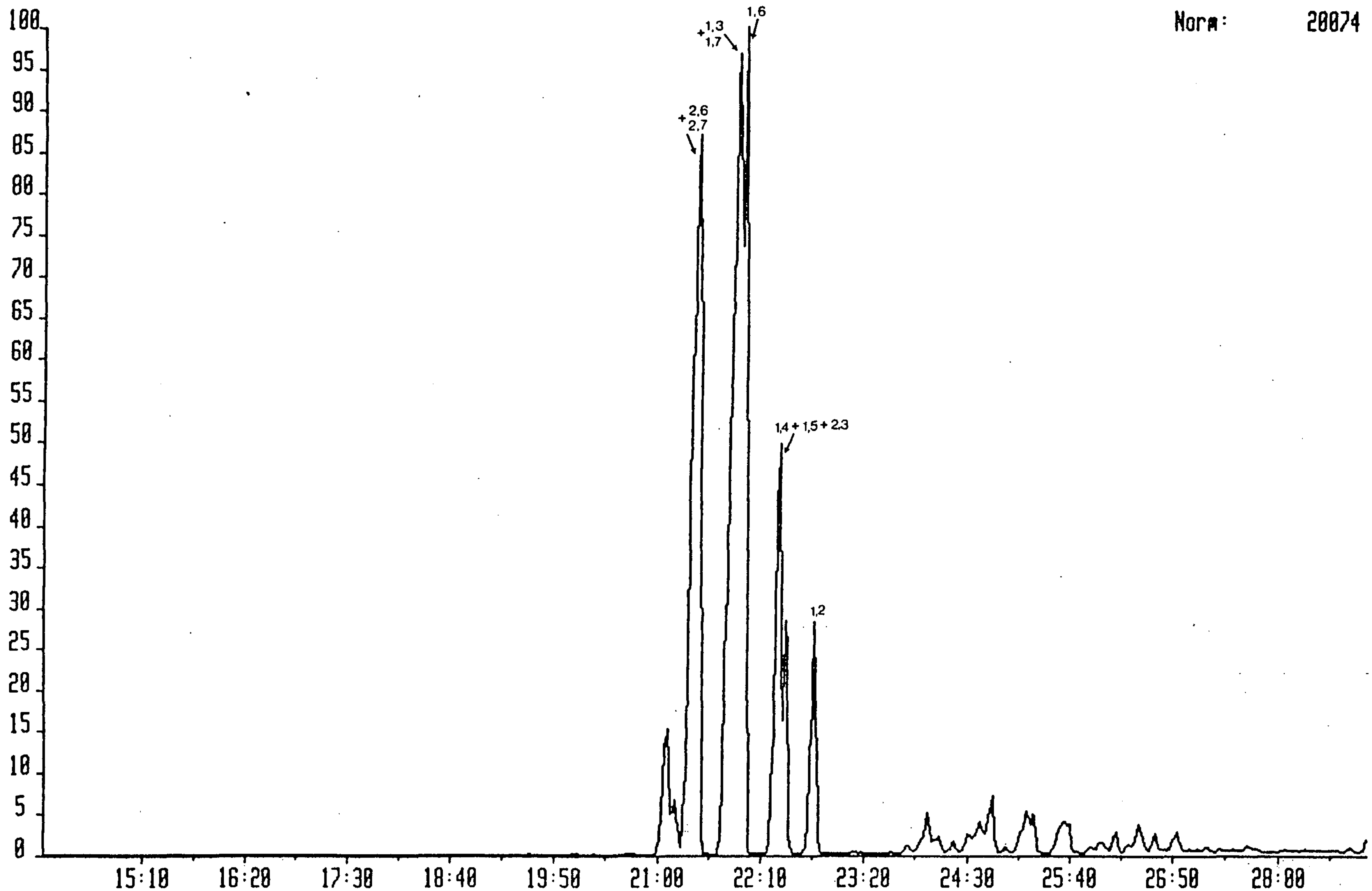

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 5 Injection 1 Group 1 Mass 142.0783
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



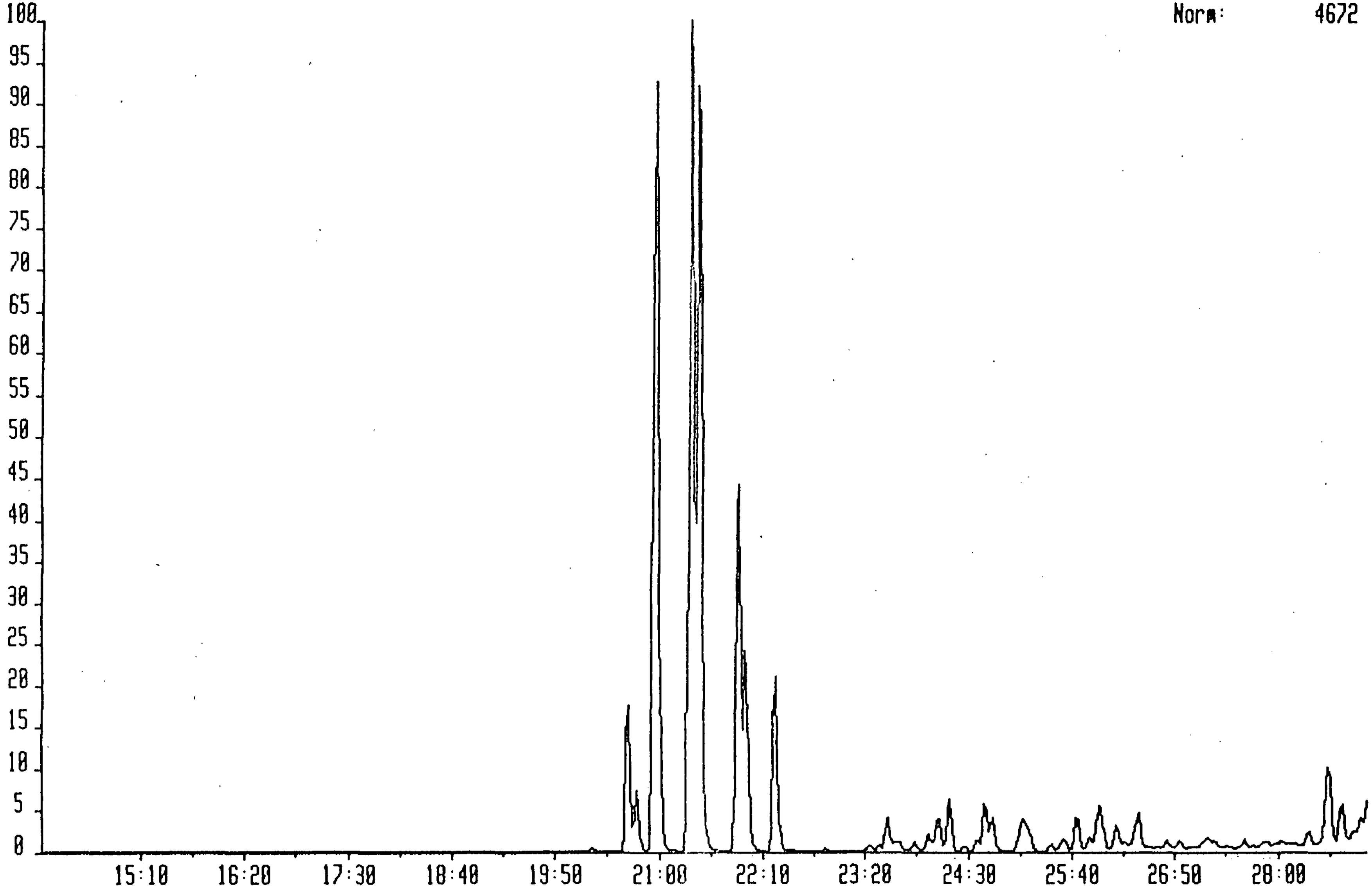

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 156 C2 NAPHTHALENES



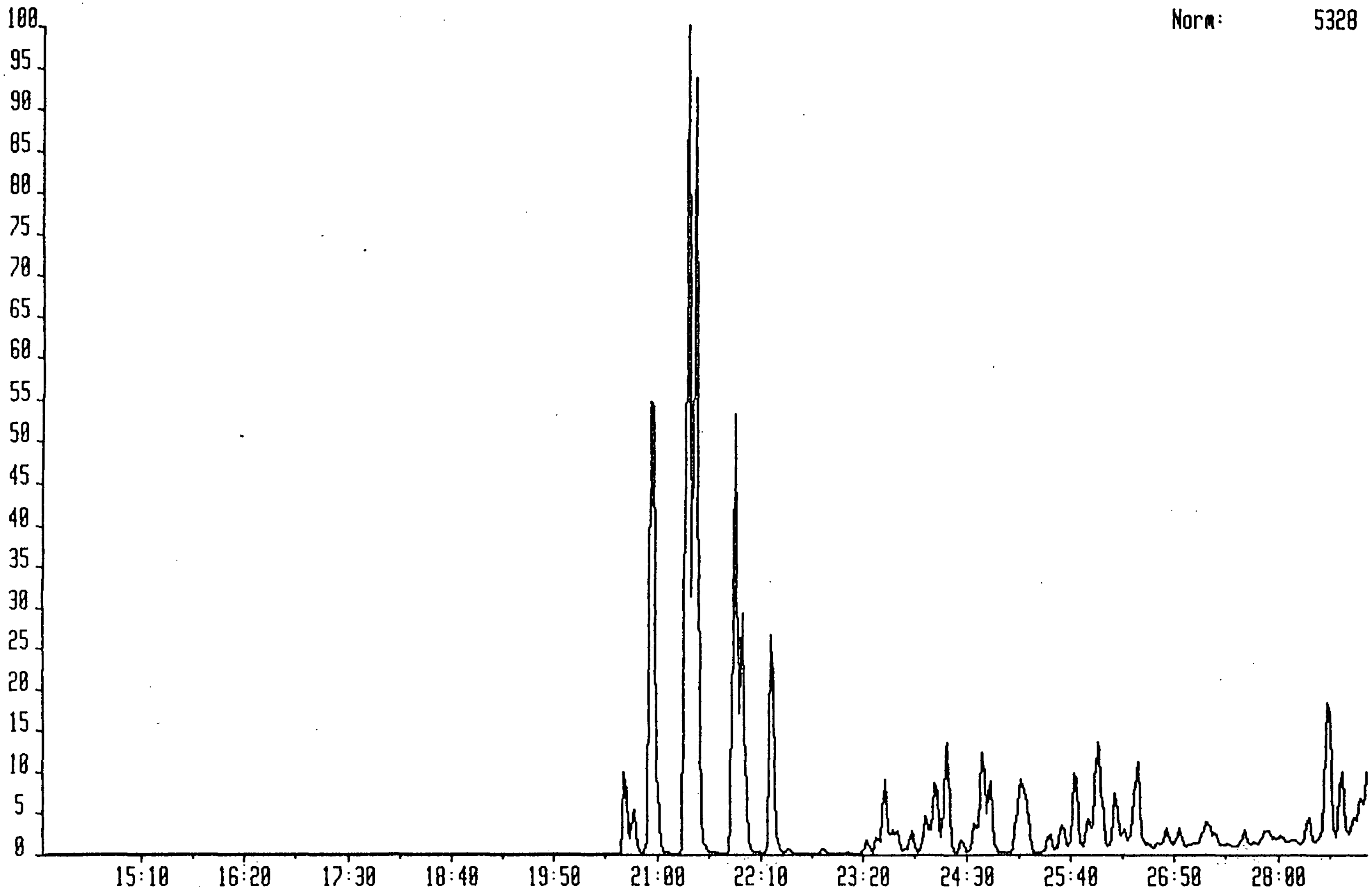

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 1 Injection 1 Group 1 Mass 156.0939
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



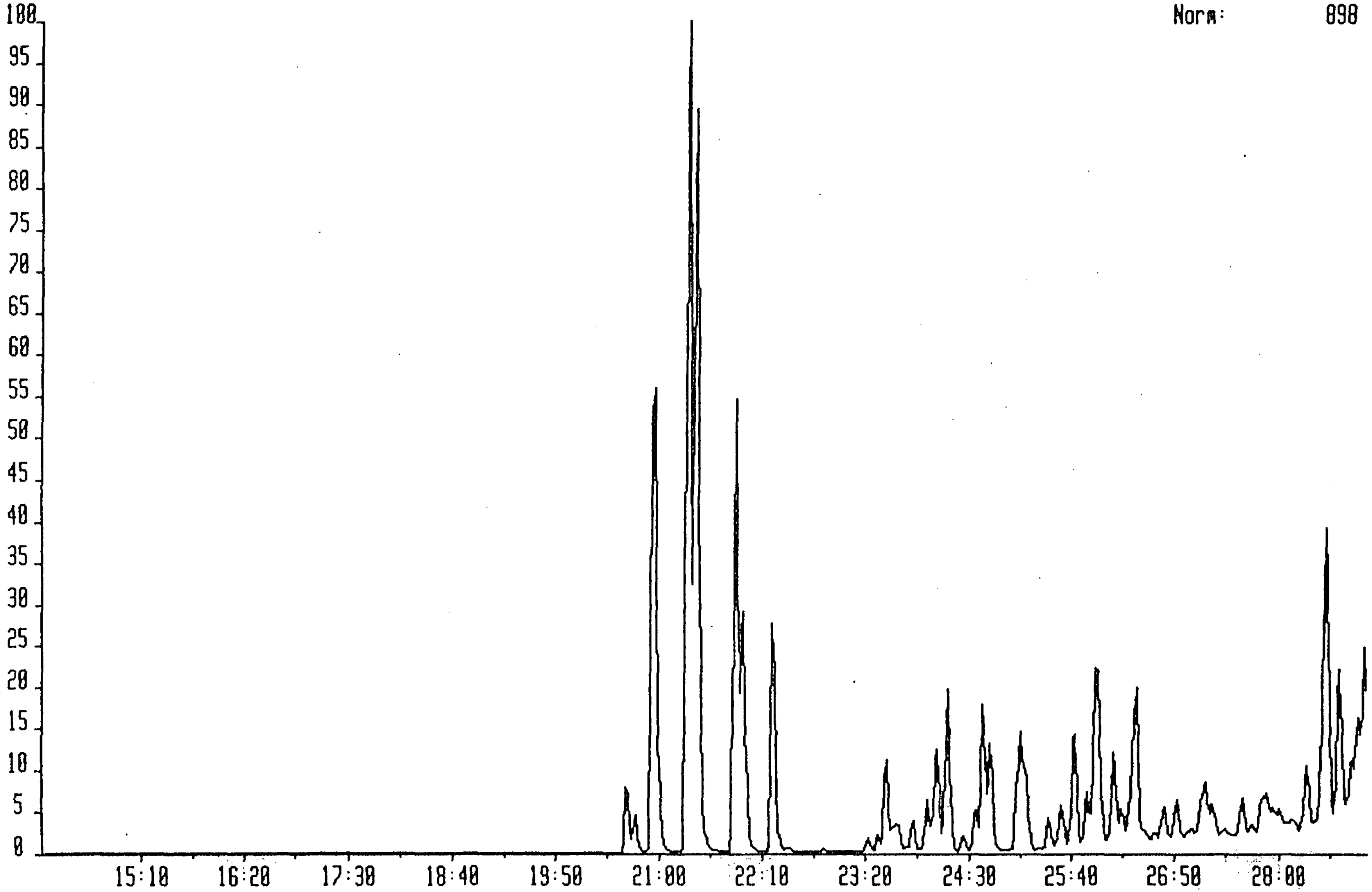

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 2 Injection 1 Group 1 Mass 156.0939
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



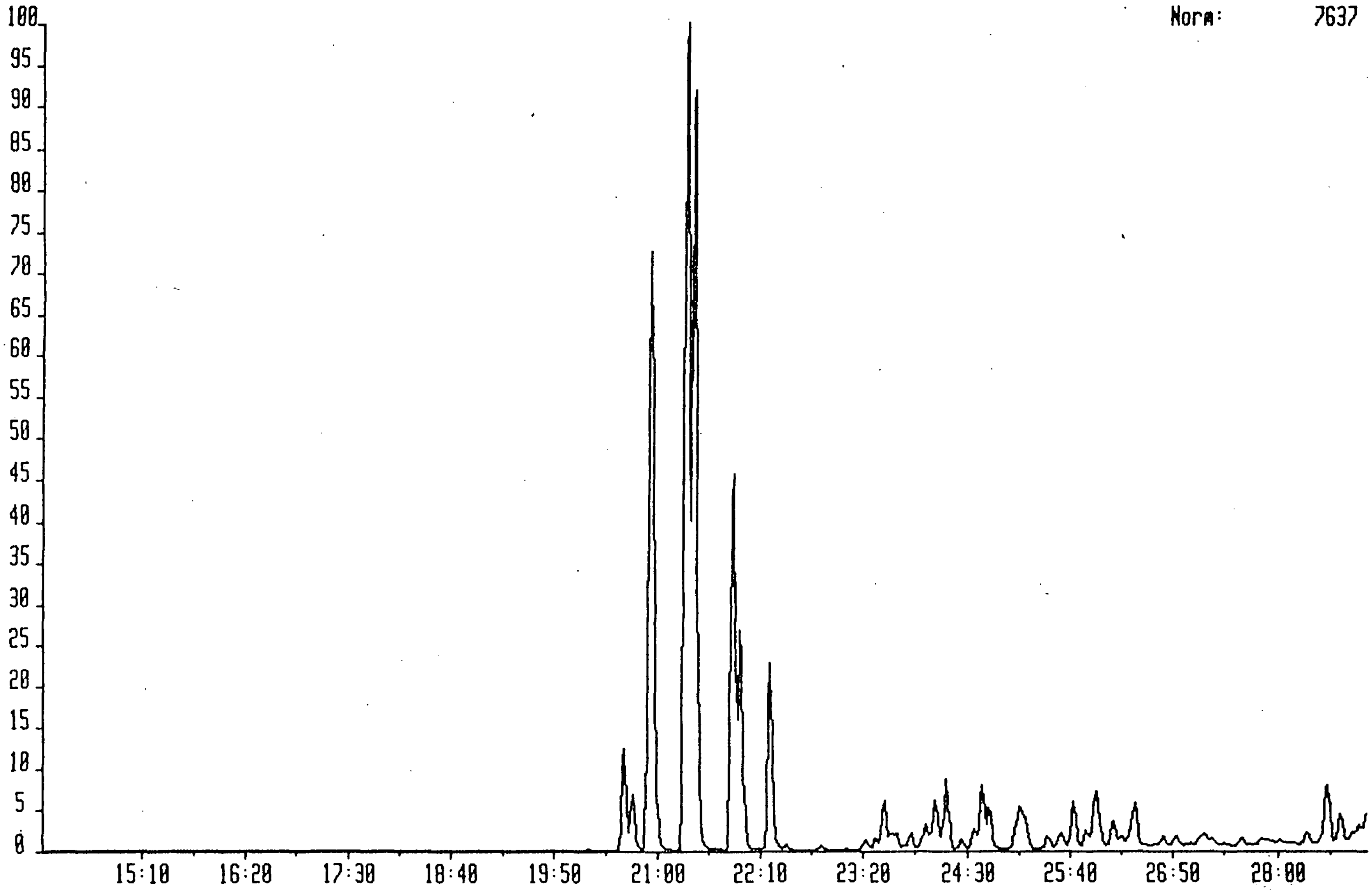

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 3 Injection 1 Group 1 Mass 156.0939
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



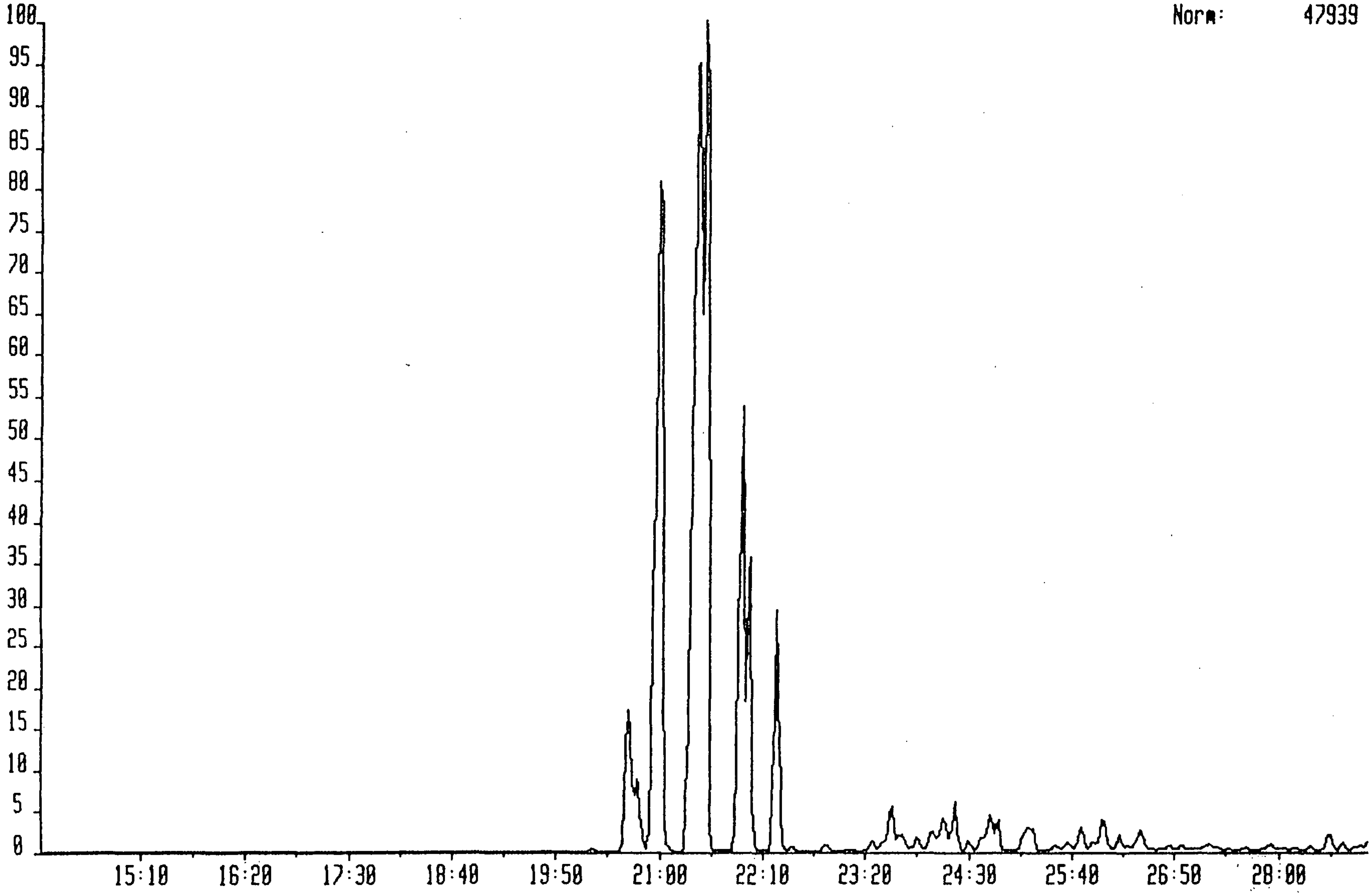

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 4 Injection 1 Group 1 Mass 156.0939
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



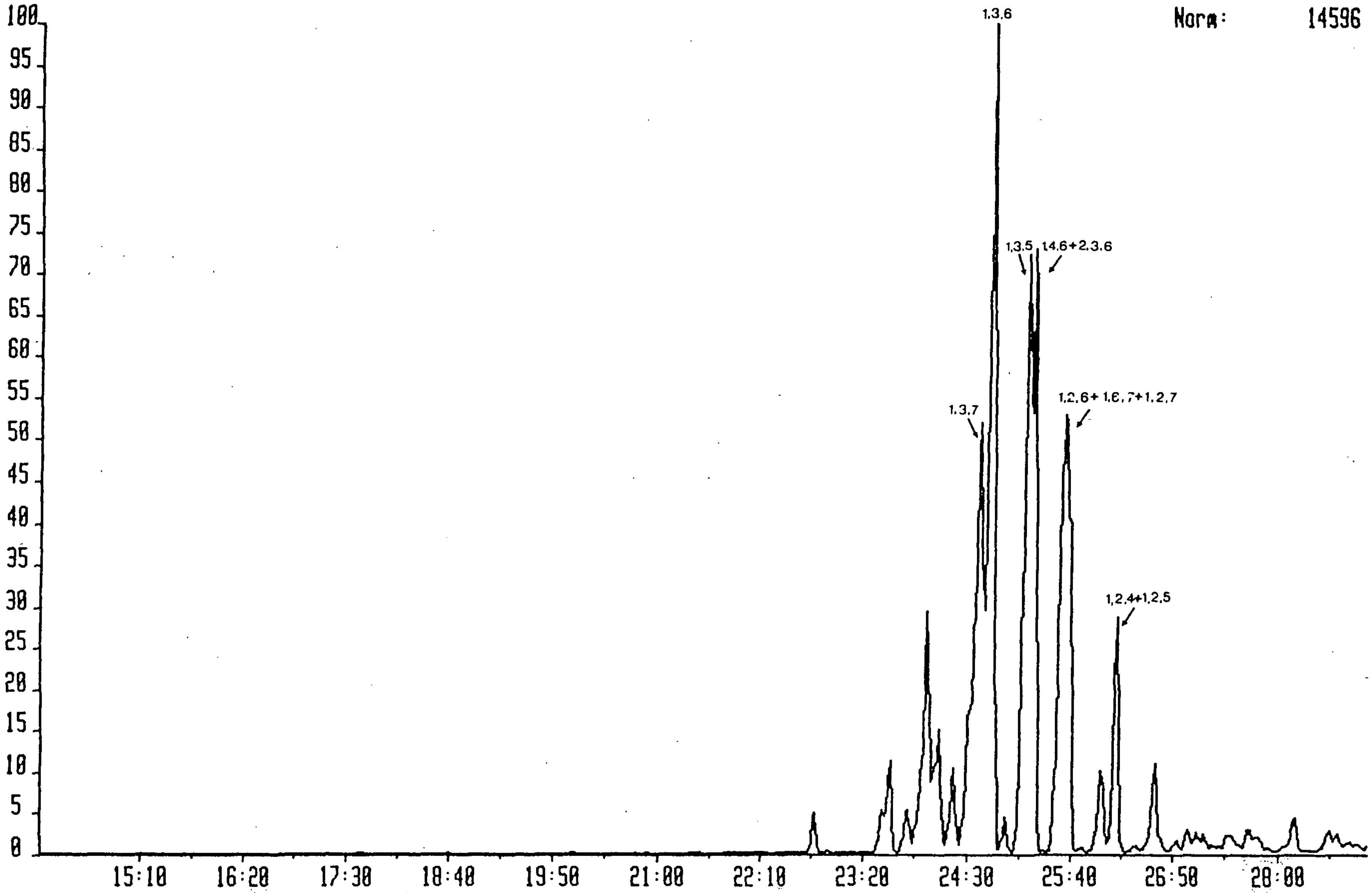

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 5 Injection 1 Group 1 Mass 156.0939
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



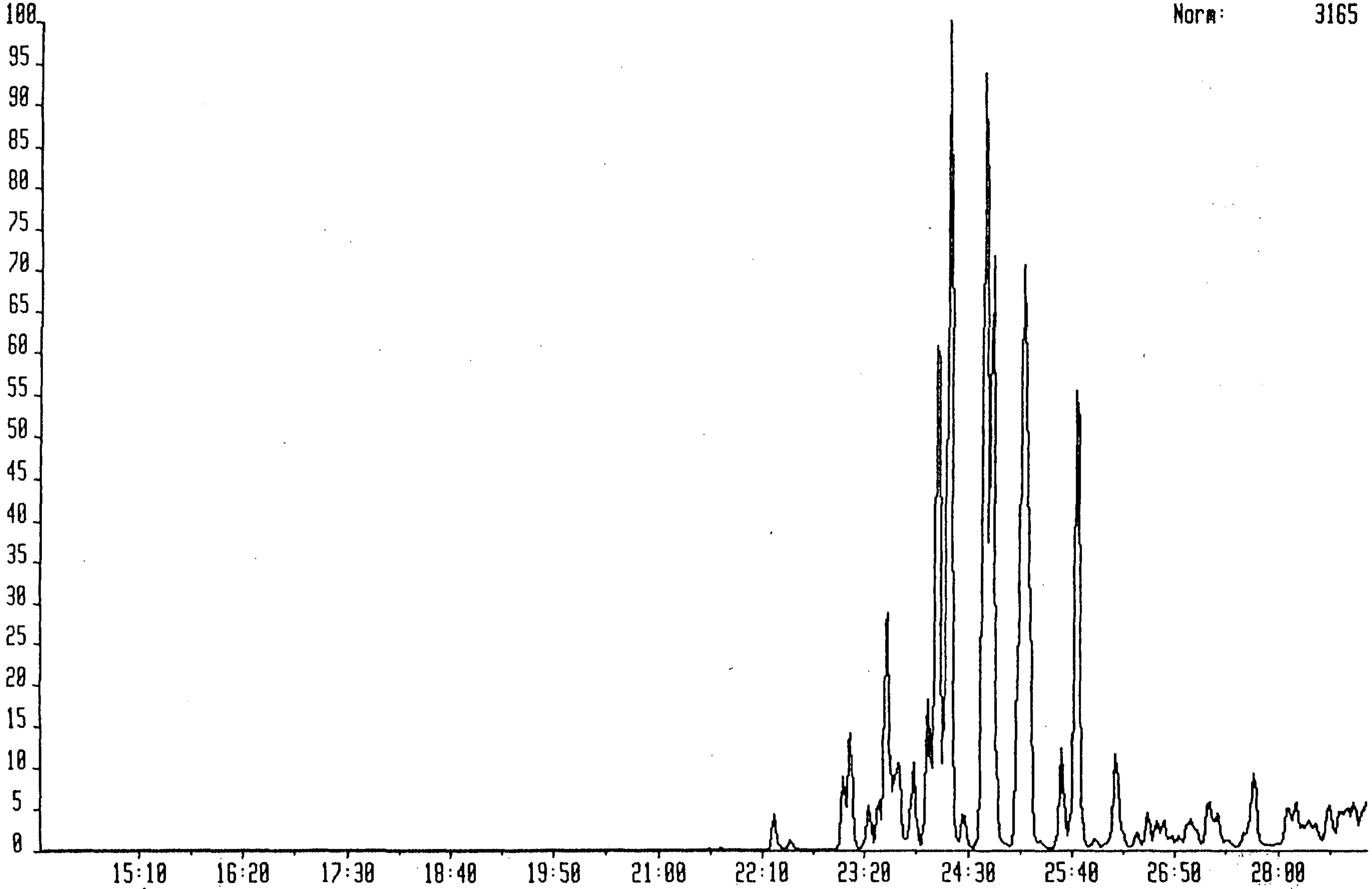

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 170 C3 NAPHTHALENES



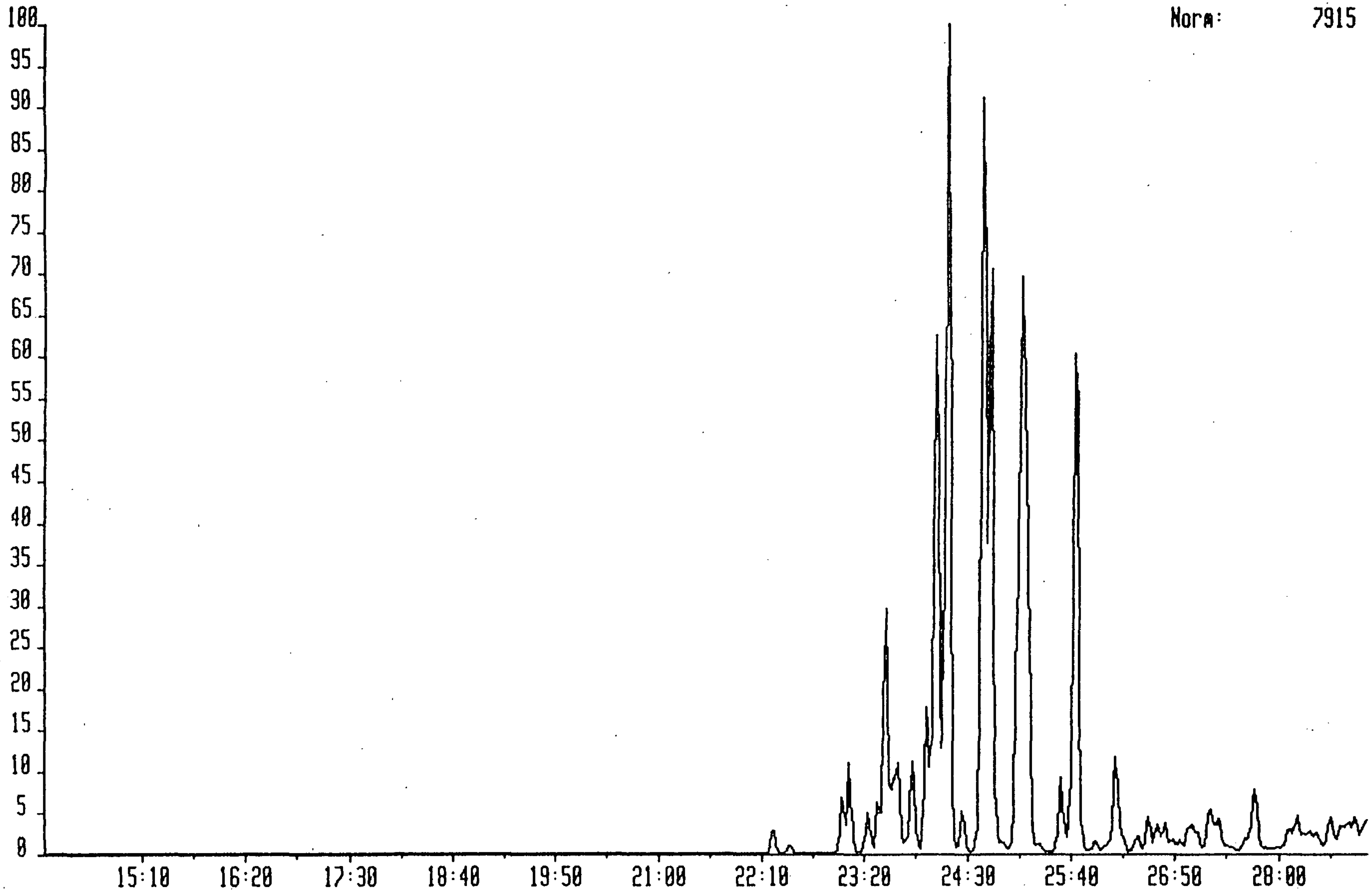

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 1 Injection 1 Group 1 Mass 170.1096
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



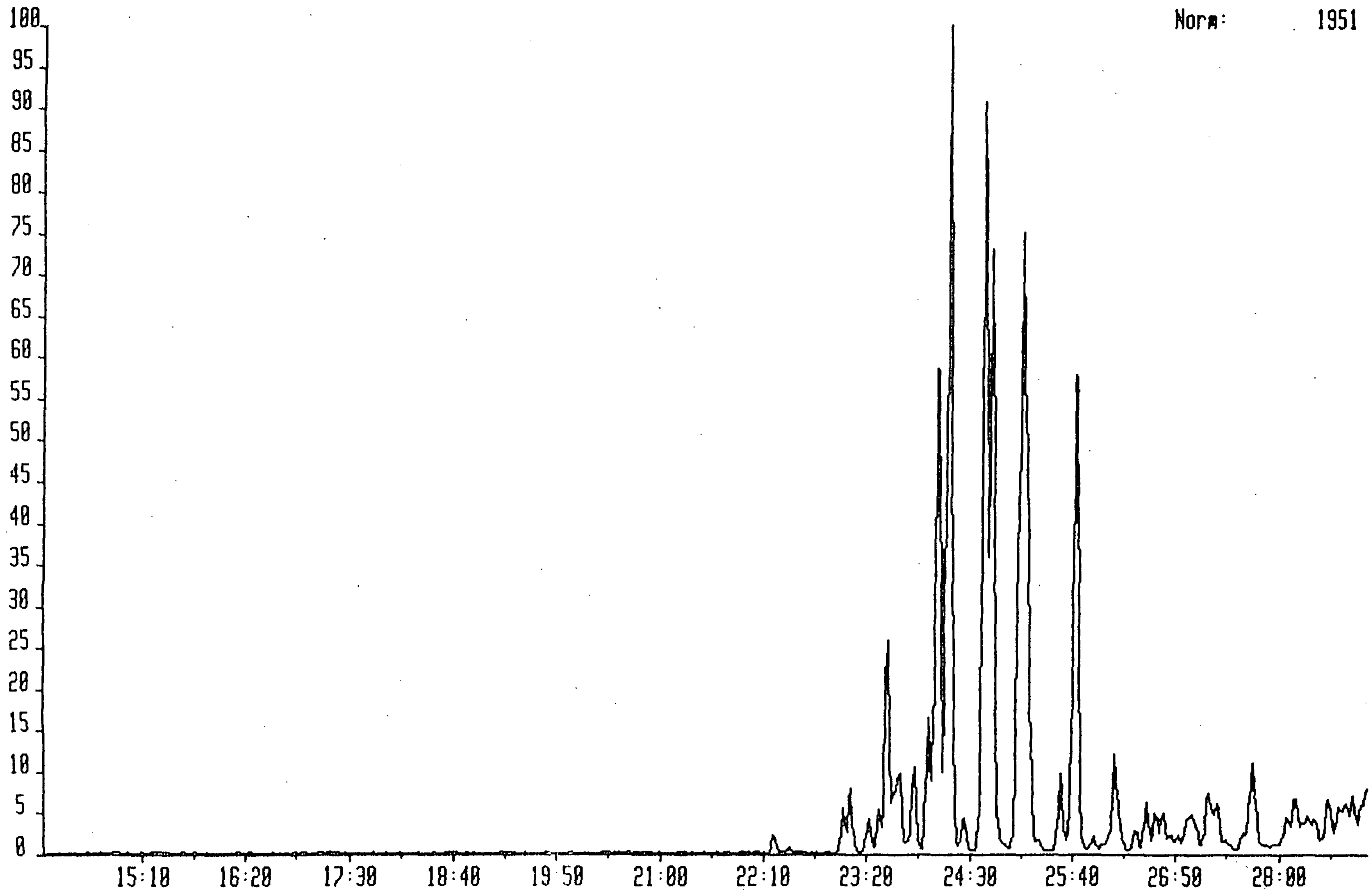

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 2 Injection 1 Group 1 Mass 170.1096
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



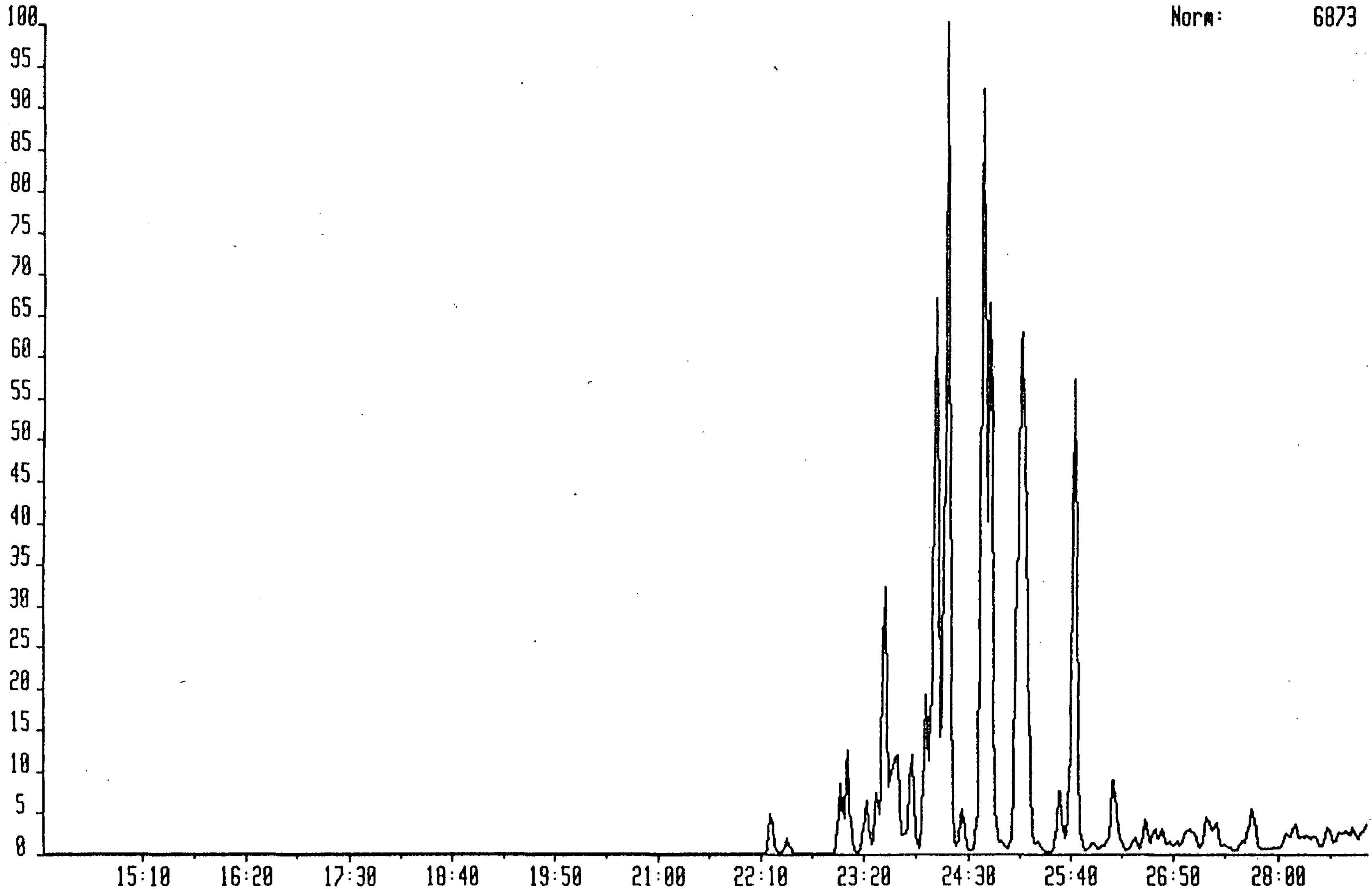

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 3 Injection 1 Group 1 Mass 170.1096
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



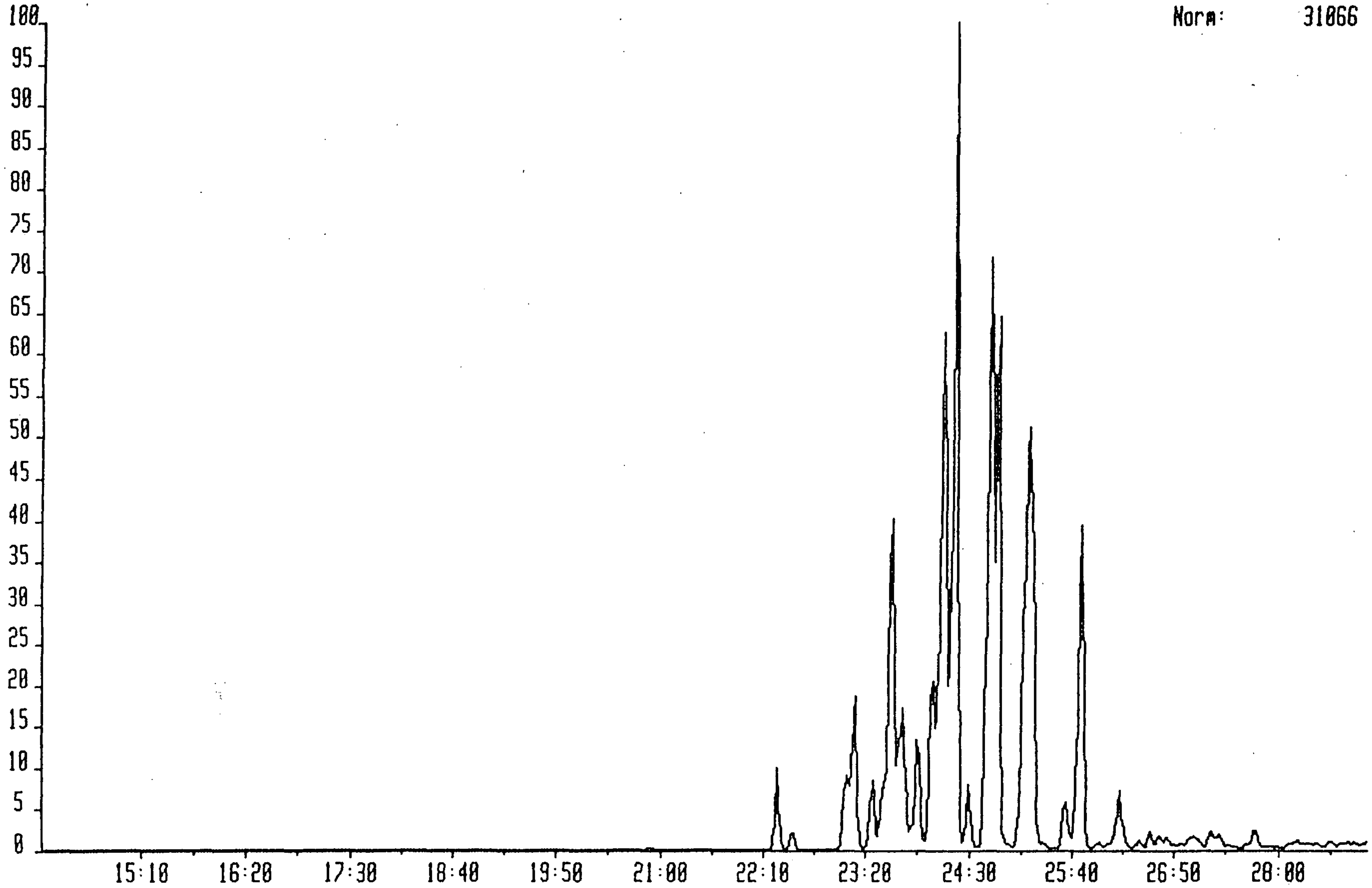

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 4 Injection 1 Group 1 Mass 170.1096
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



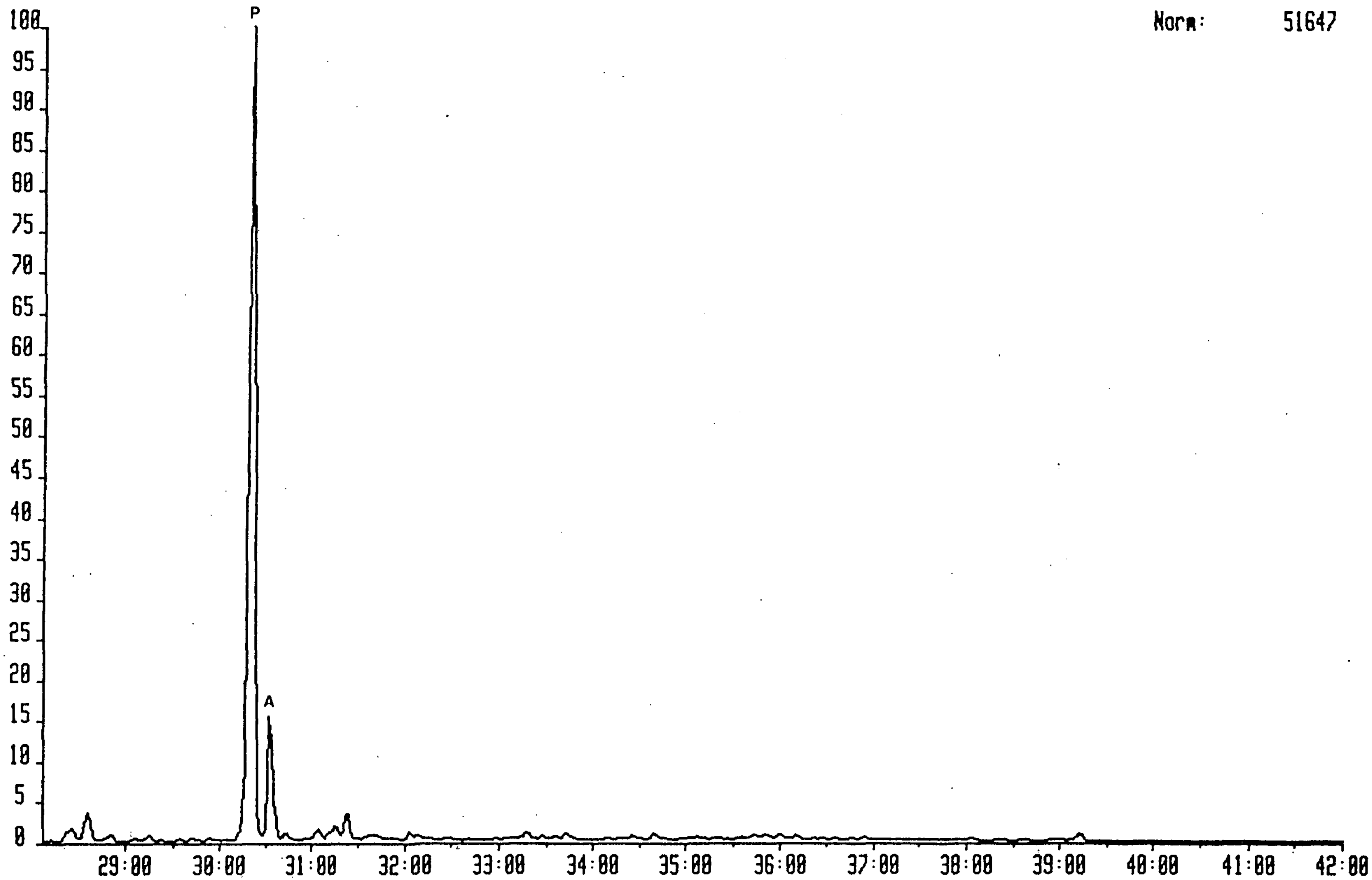

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 5 Injection 1 Group 1 Mass 170.1096
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



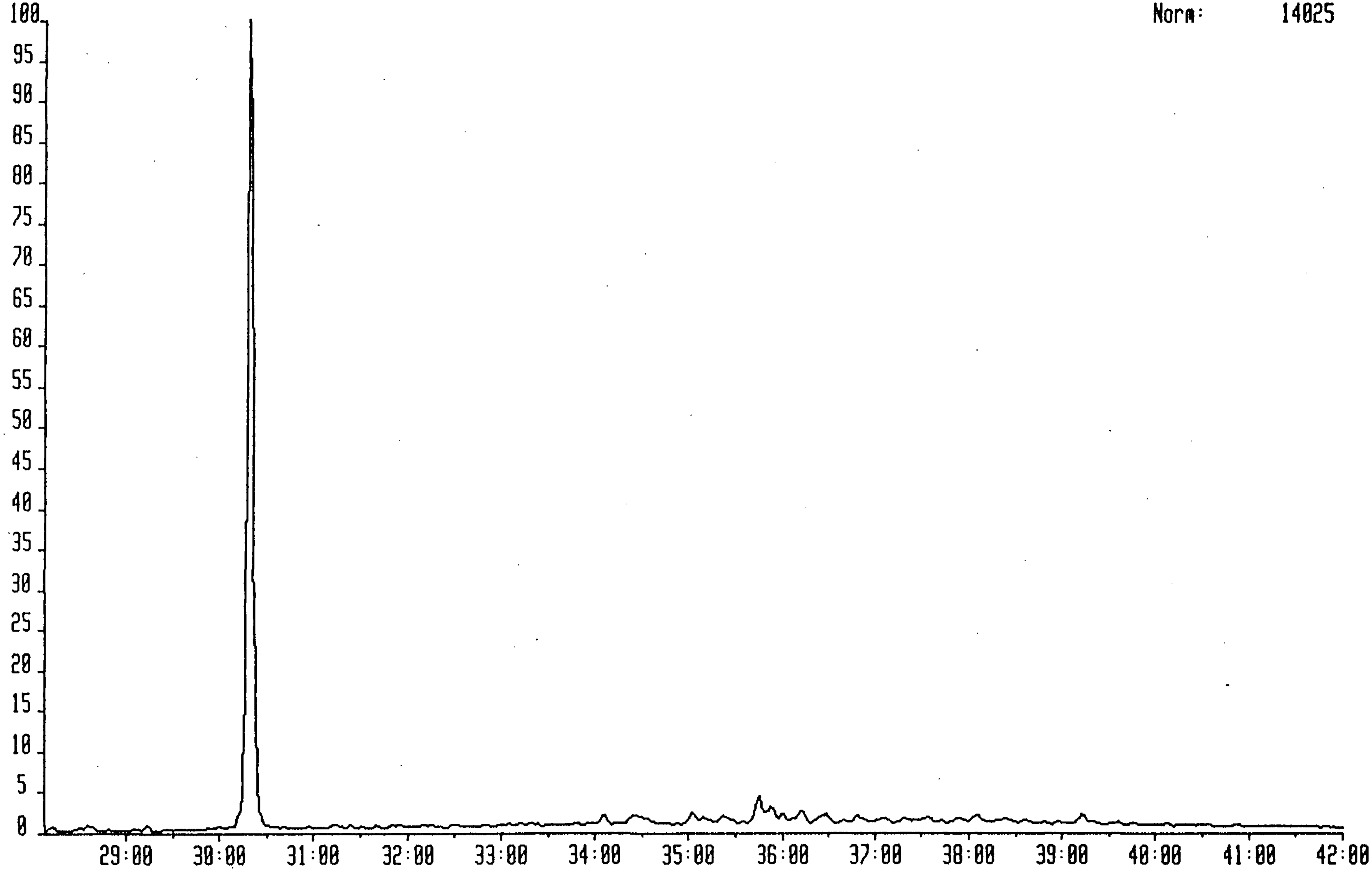

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 178 PHENANTHRENE AND ANTHRACENE



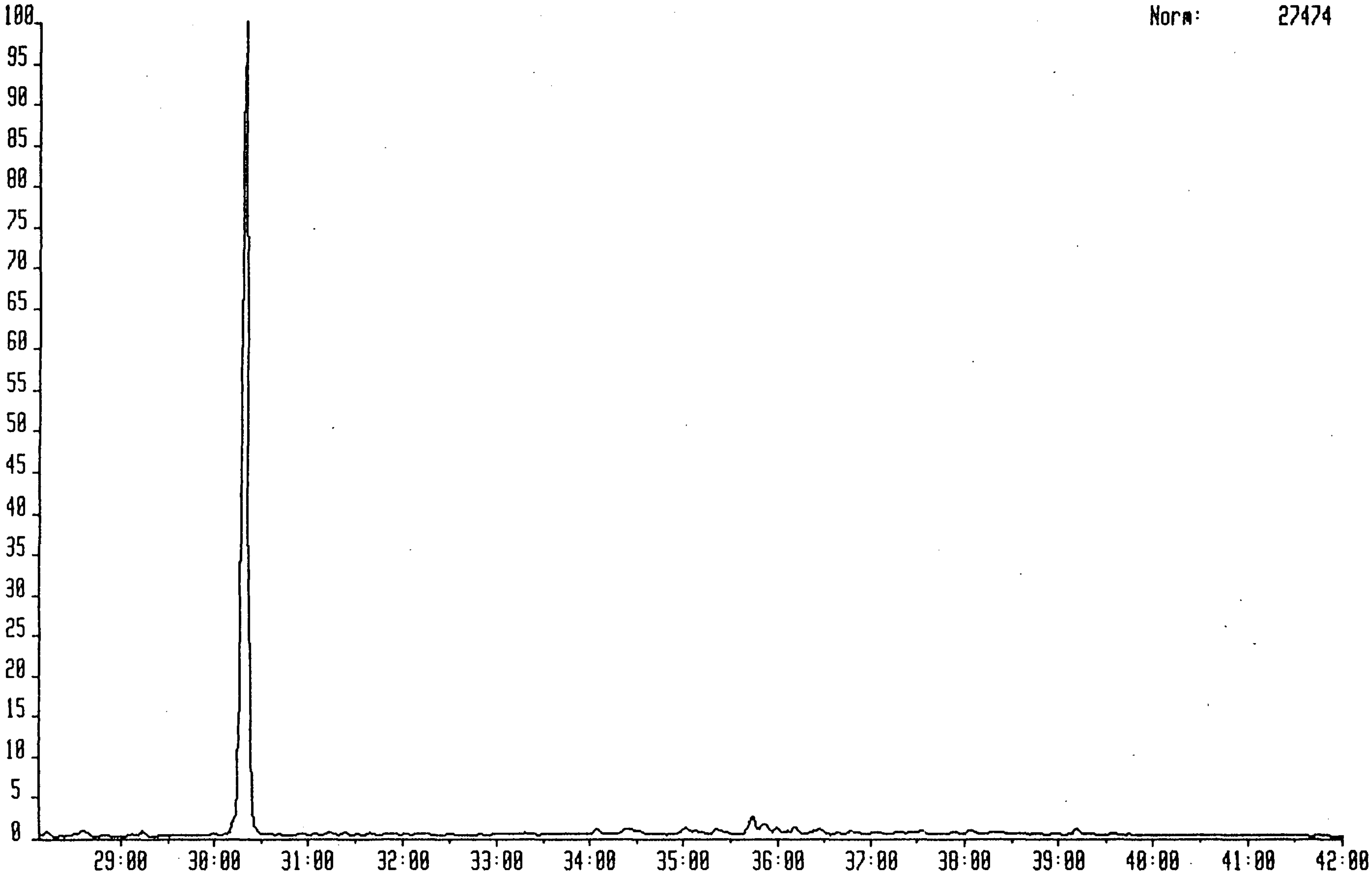

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 1 Injection 1 Group 1 Mass 178.0783
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



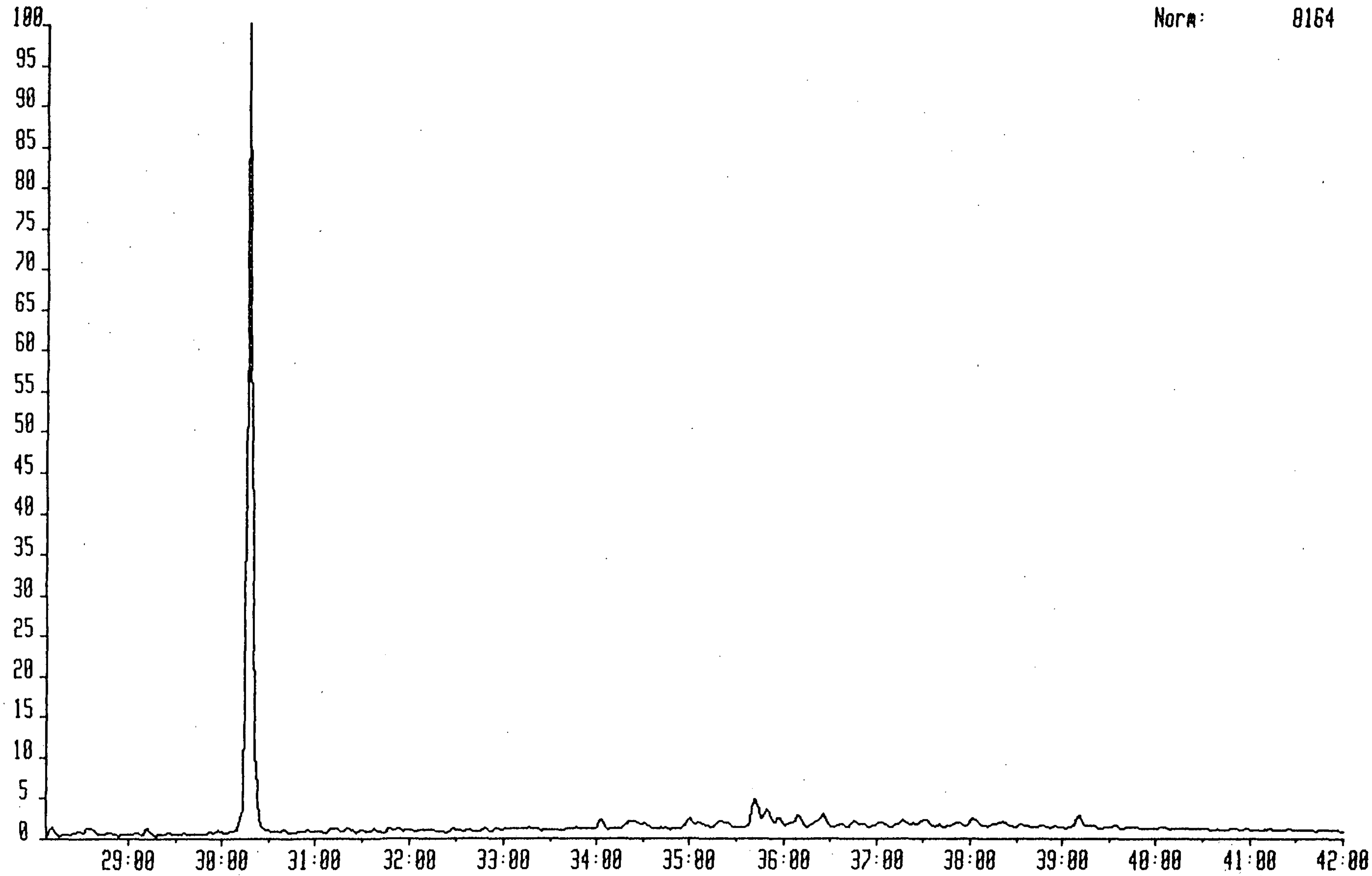

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 2 Injection 1 Group 1 Mass 178.0783
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



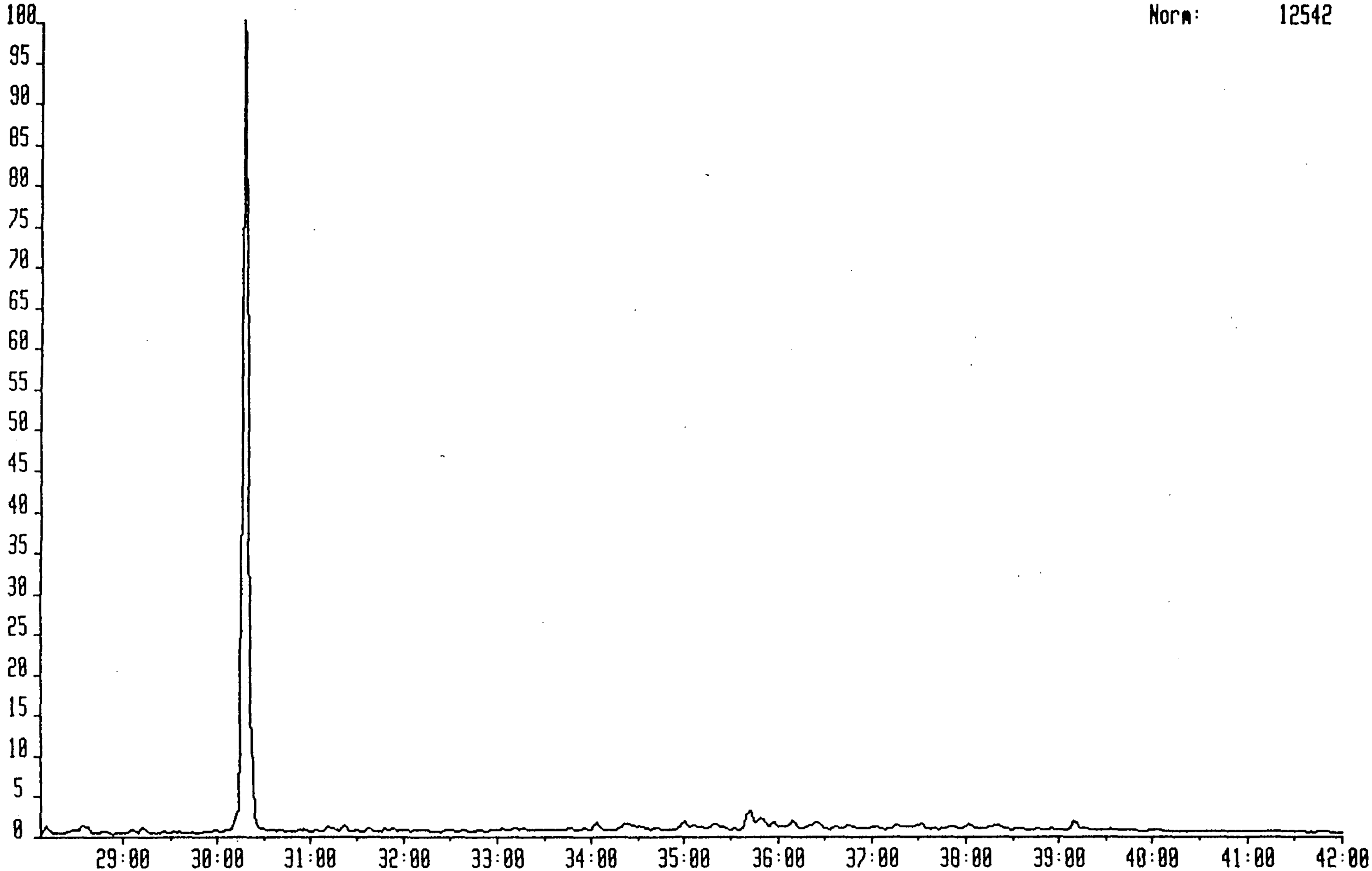

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 3 Injection 1 Group 1 Mass 178.0783
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



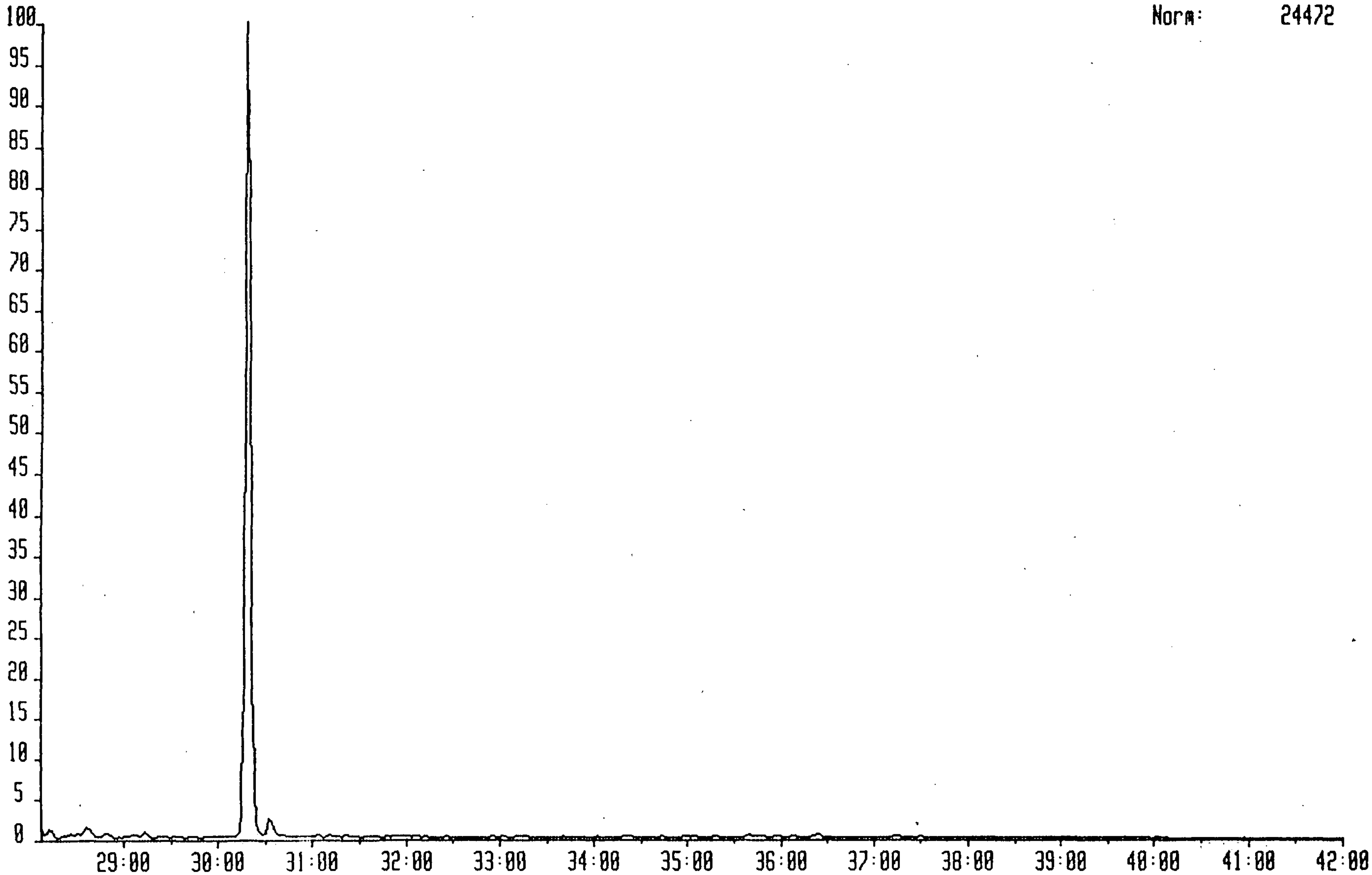

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 4 Injection 1 Group 1 Mass 178.0783
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



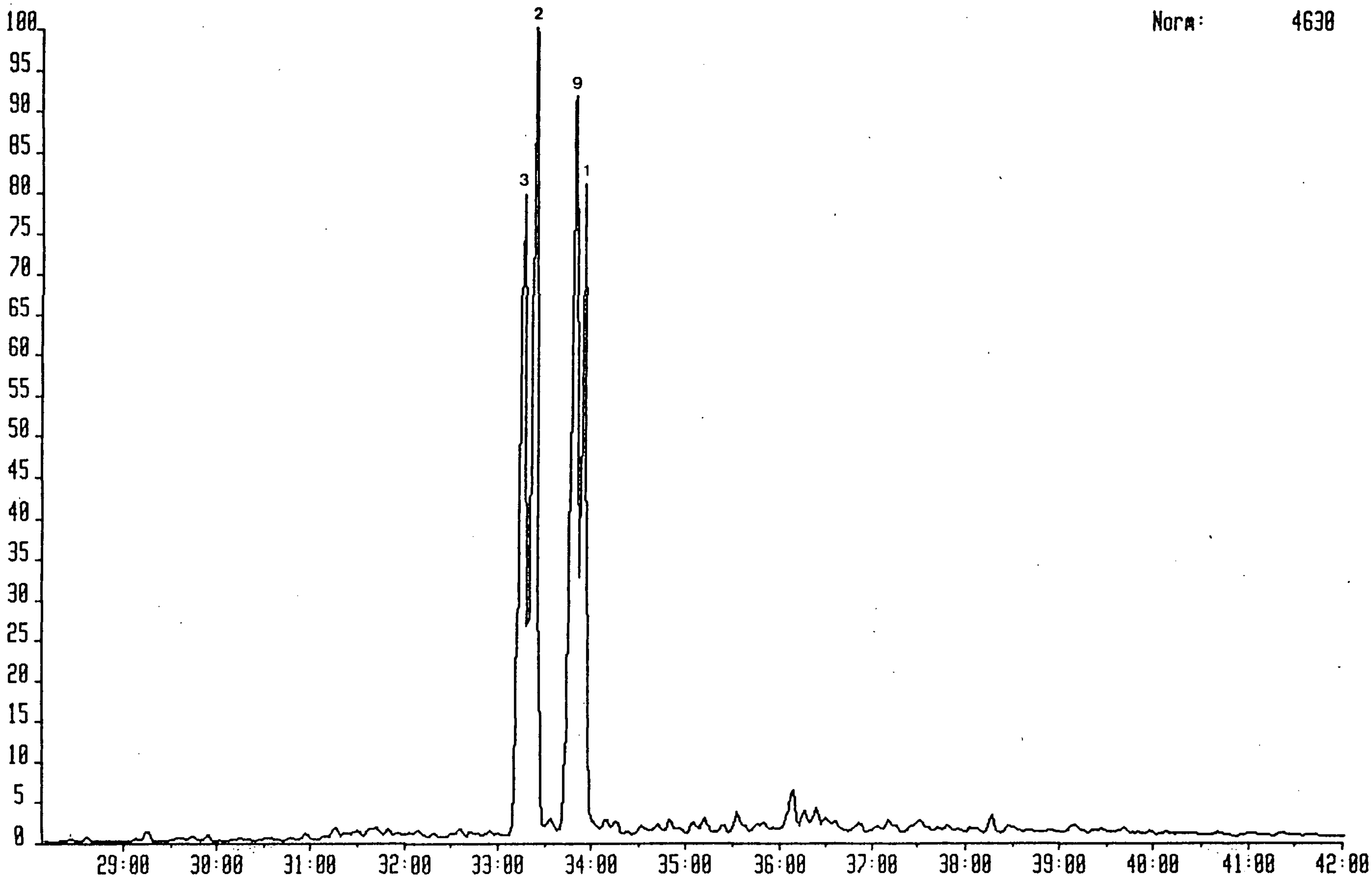

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 5 Injection 1 Group 1 Mass 178.0783
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



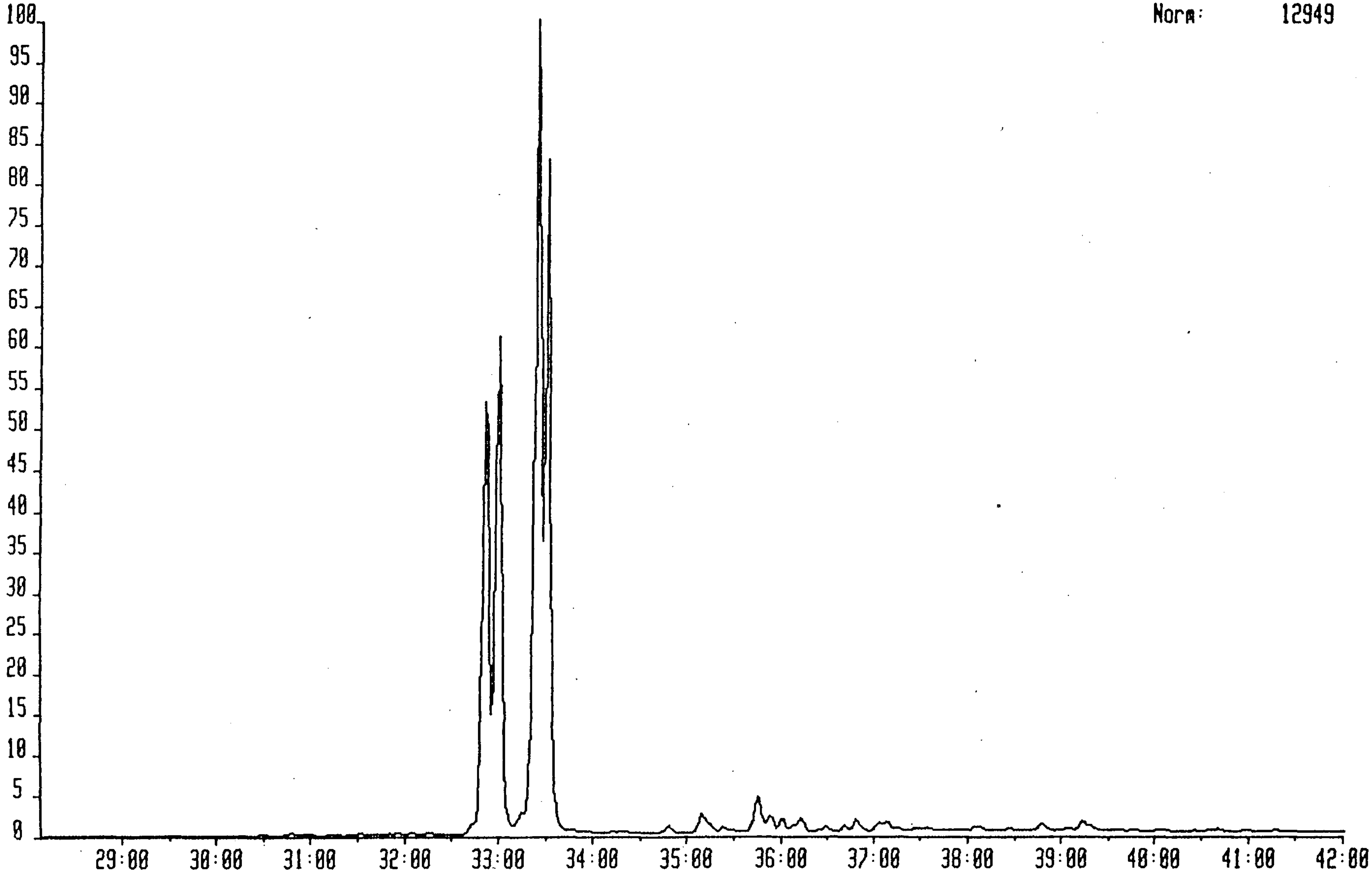

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 192 METHYL PHENANTHRENES




GEOLAB NOR

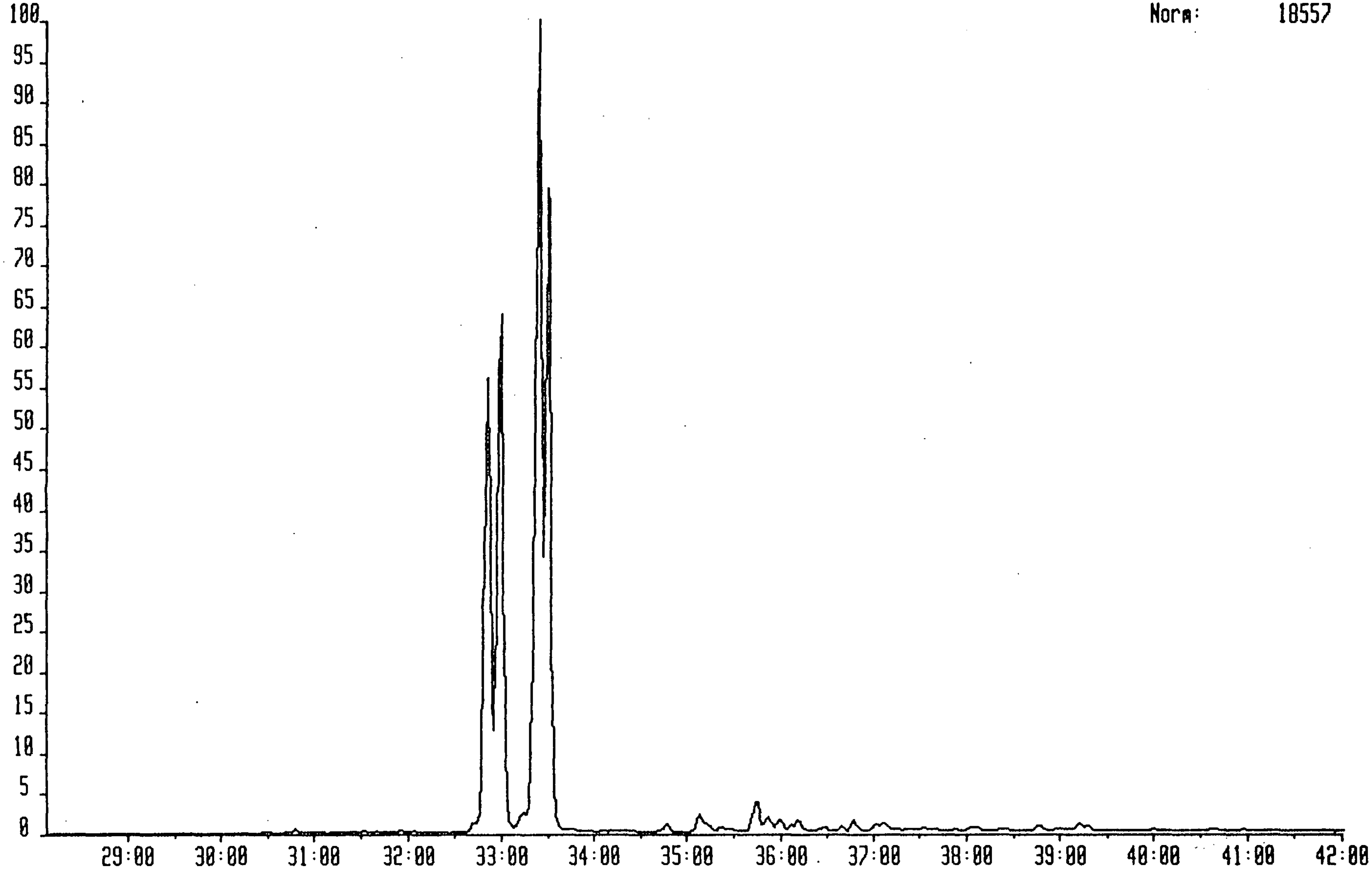
TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 1 Injection 1 Group 1 Mass 192.0939
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION




GEOLAB NOR

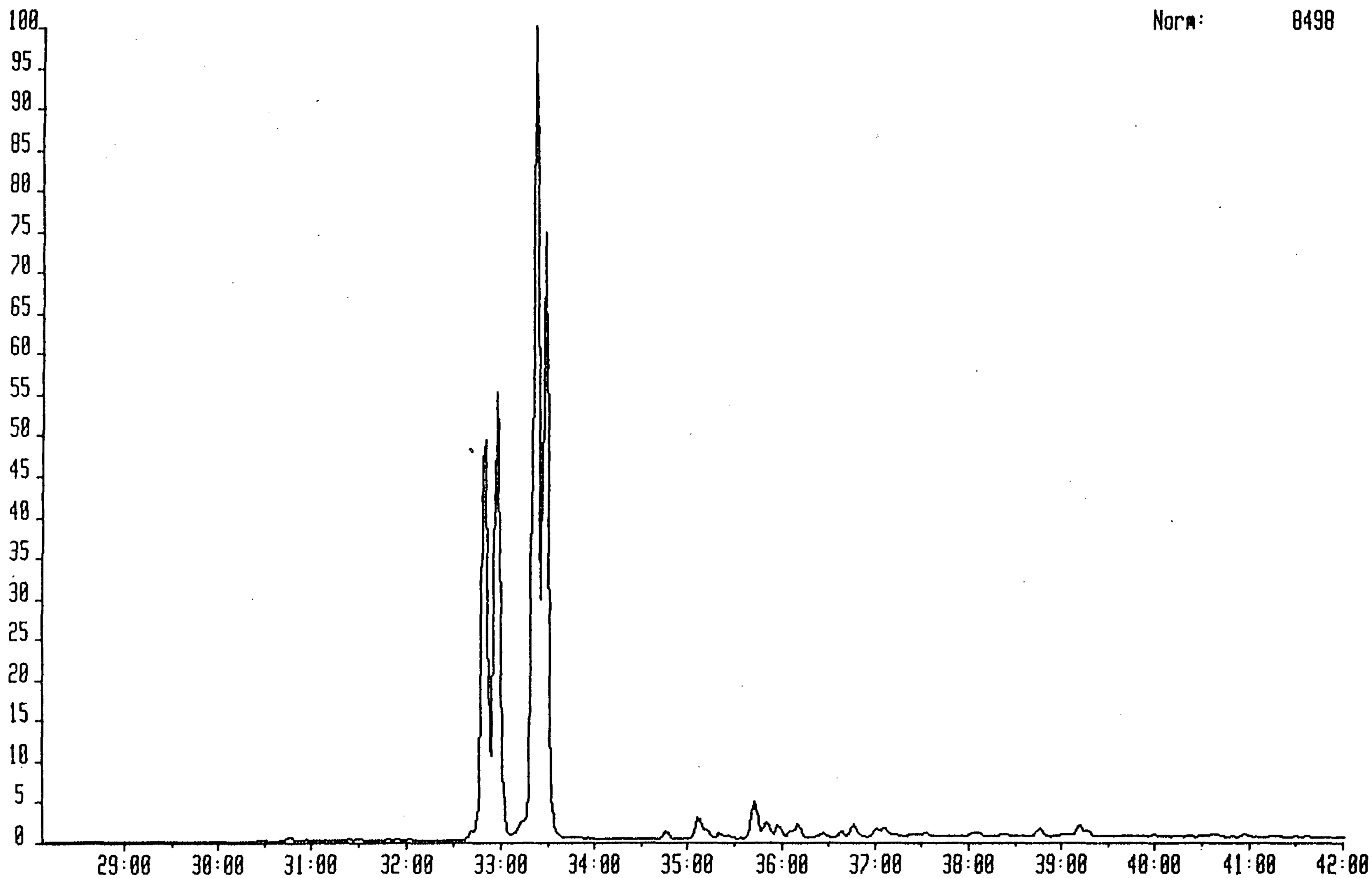
TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 2 Injection 1 Group 1 Mass 192.0939
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION

Norm: 10557



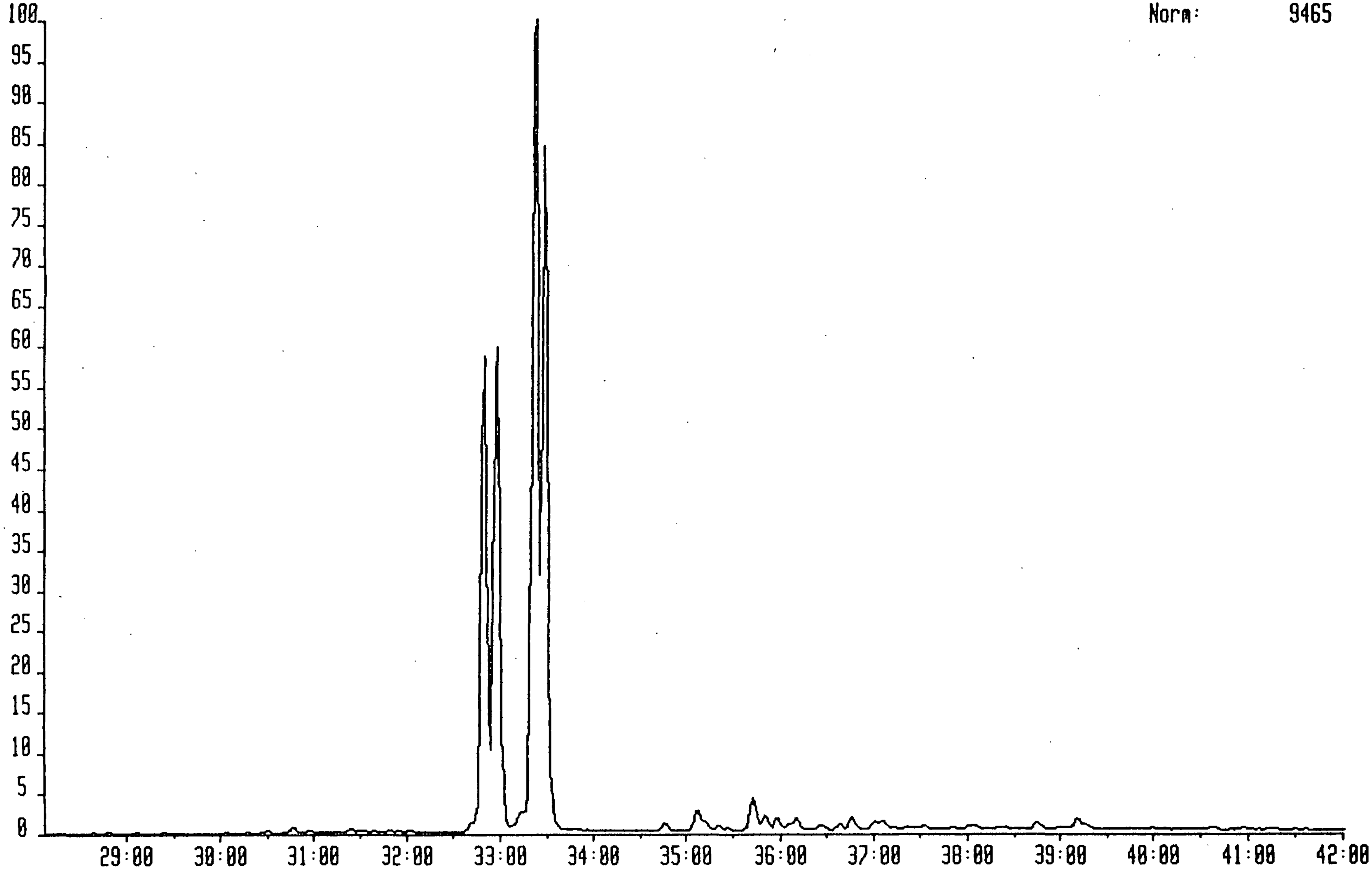

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 3 Injection 1 Group 1 Mass 192.0939
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



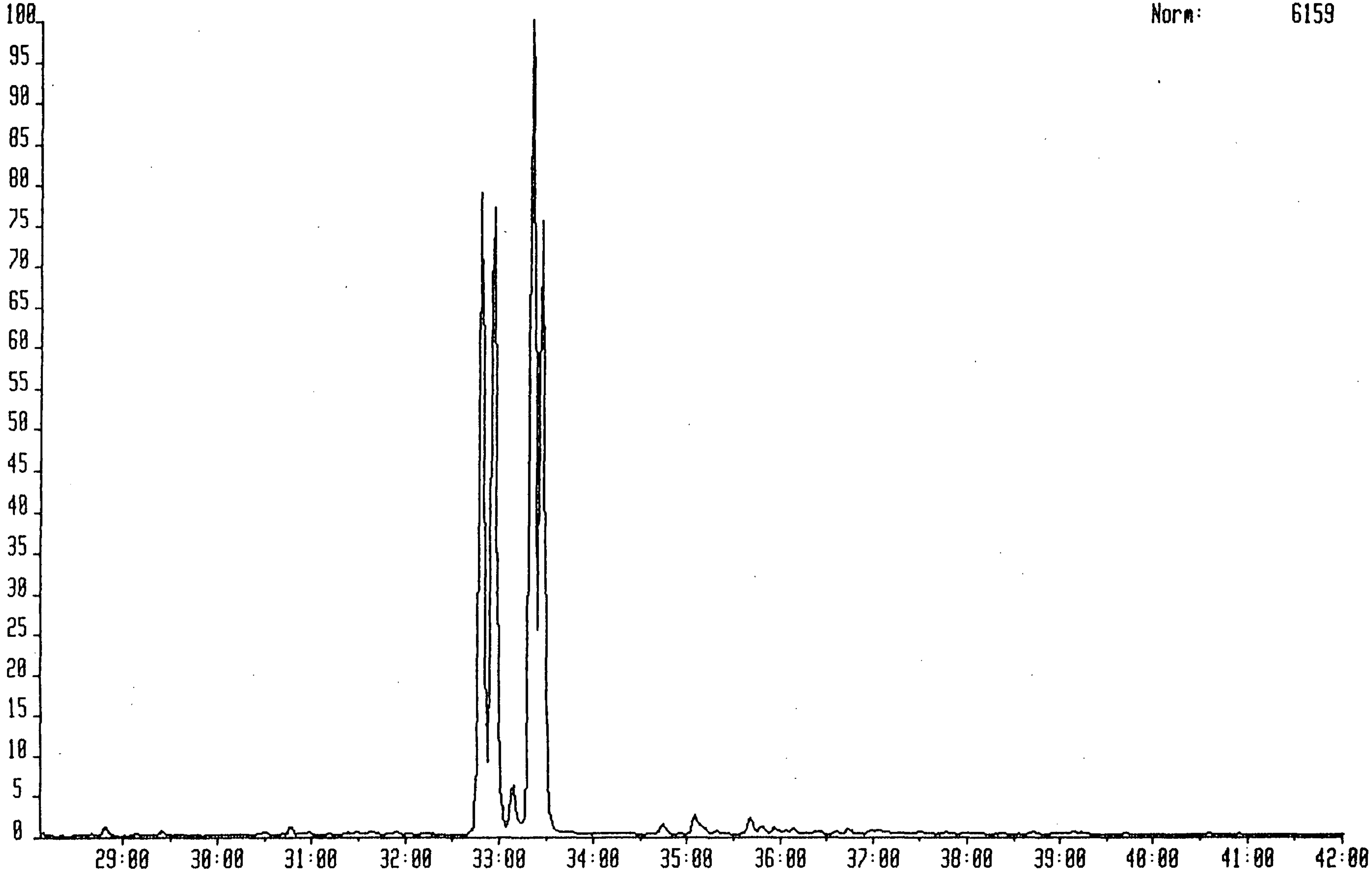

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 4 Injection 1 Group 1 Mass 192.0939
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



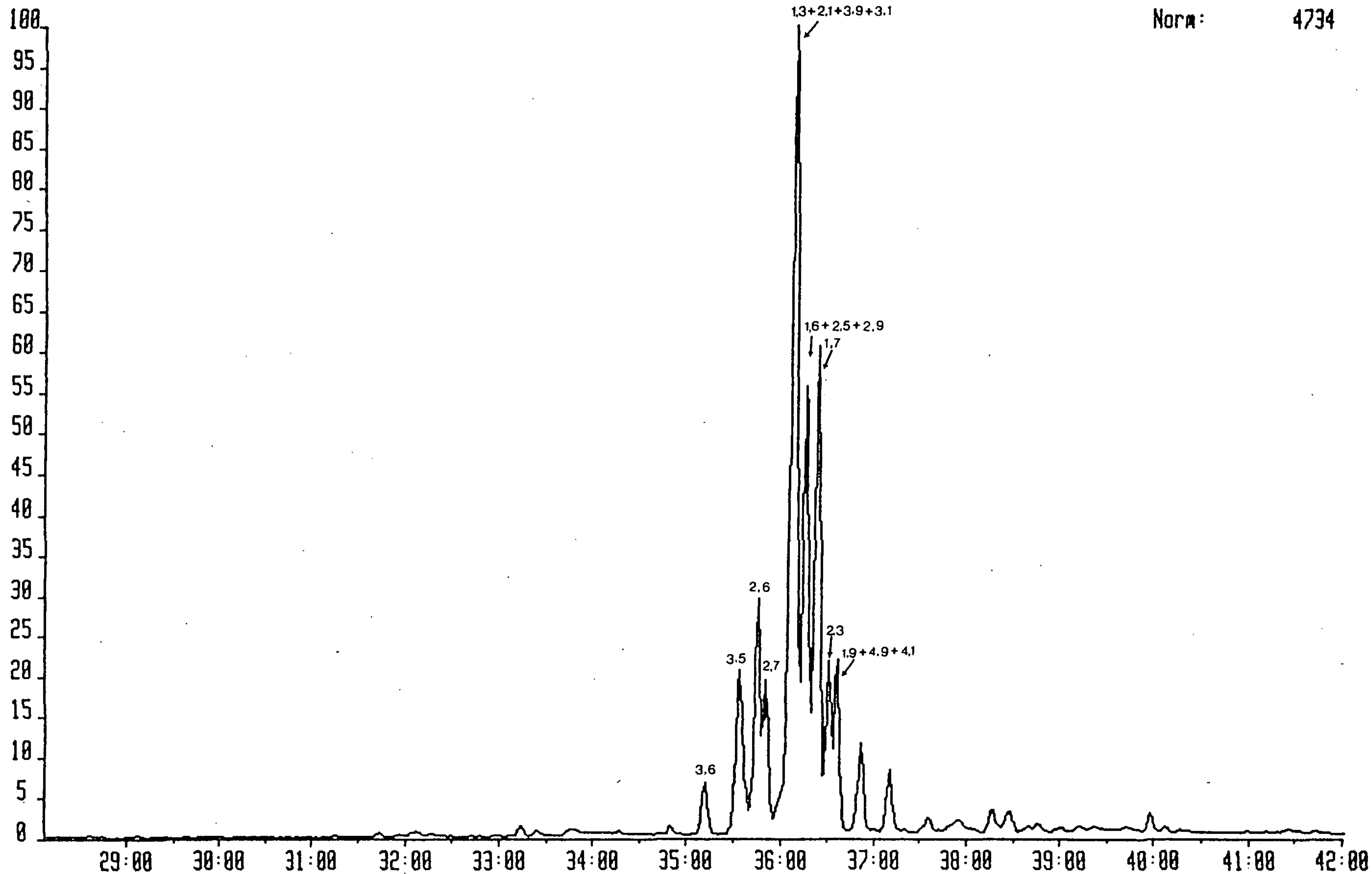

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 5 Injection 1 Group 1 Mass 192.0939
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



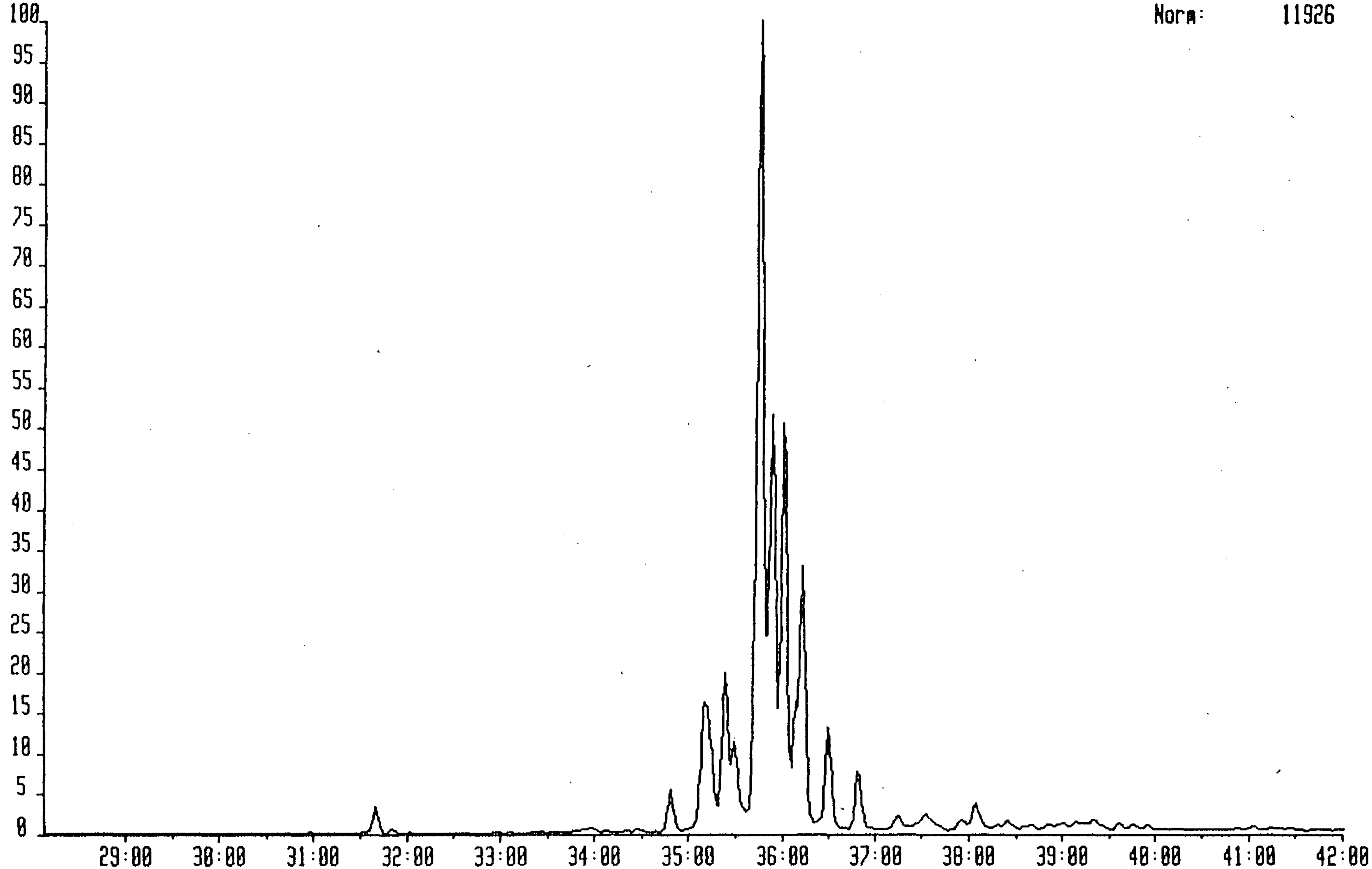

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 206 C2 PHENANTHRENES

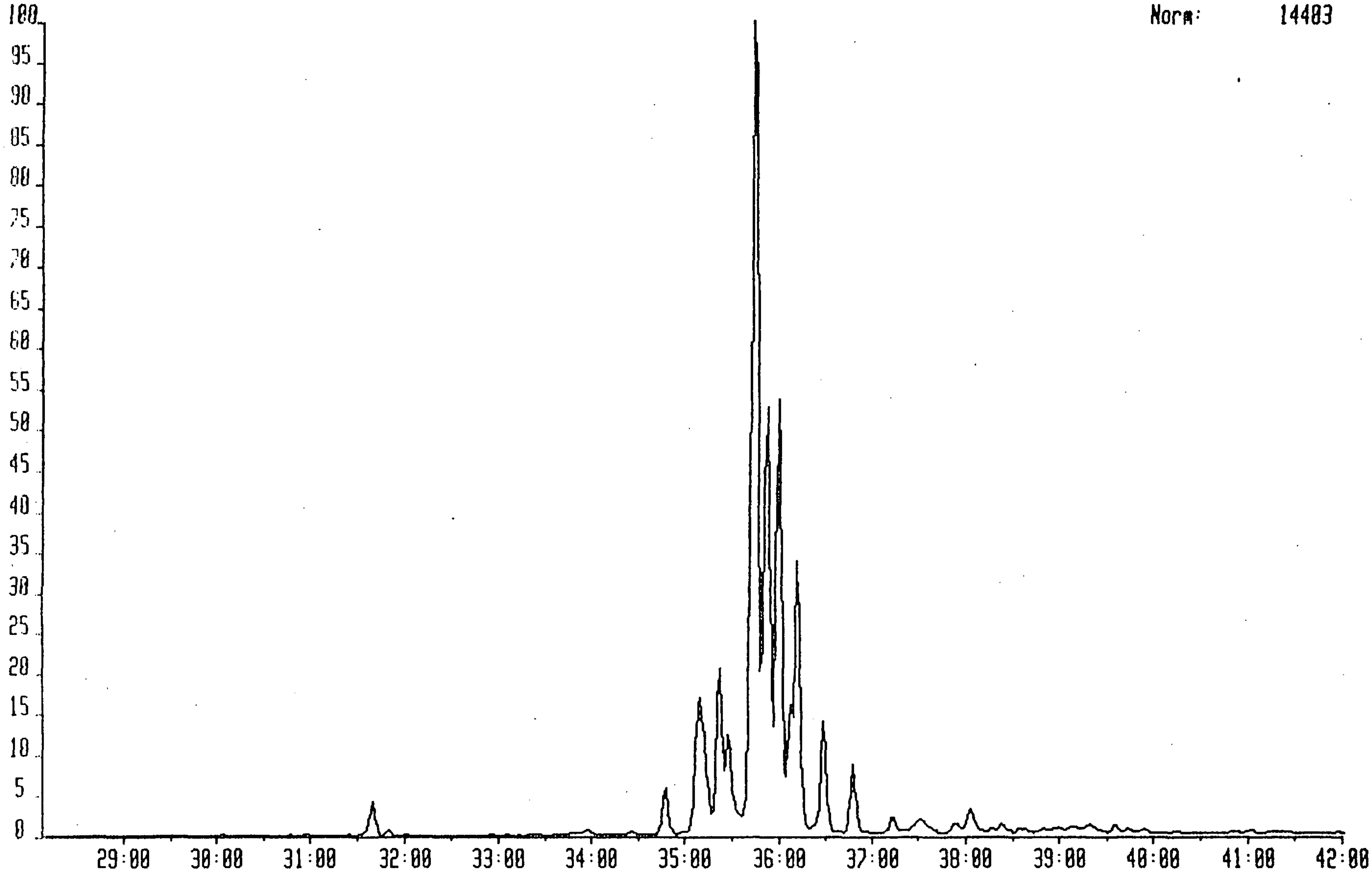



GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 1 Injection 1 Group 1 Mass 206.1096
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION

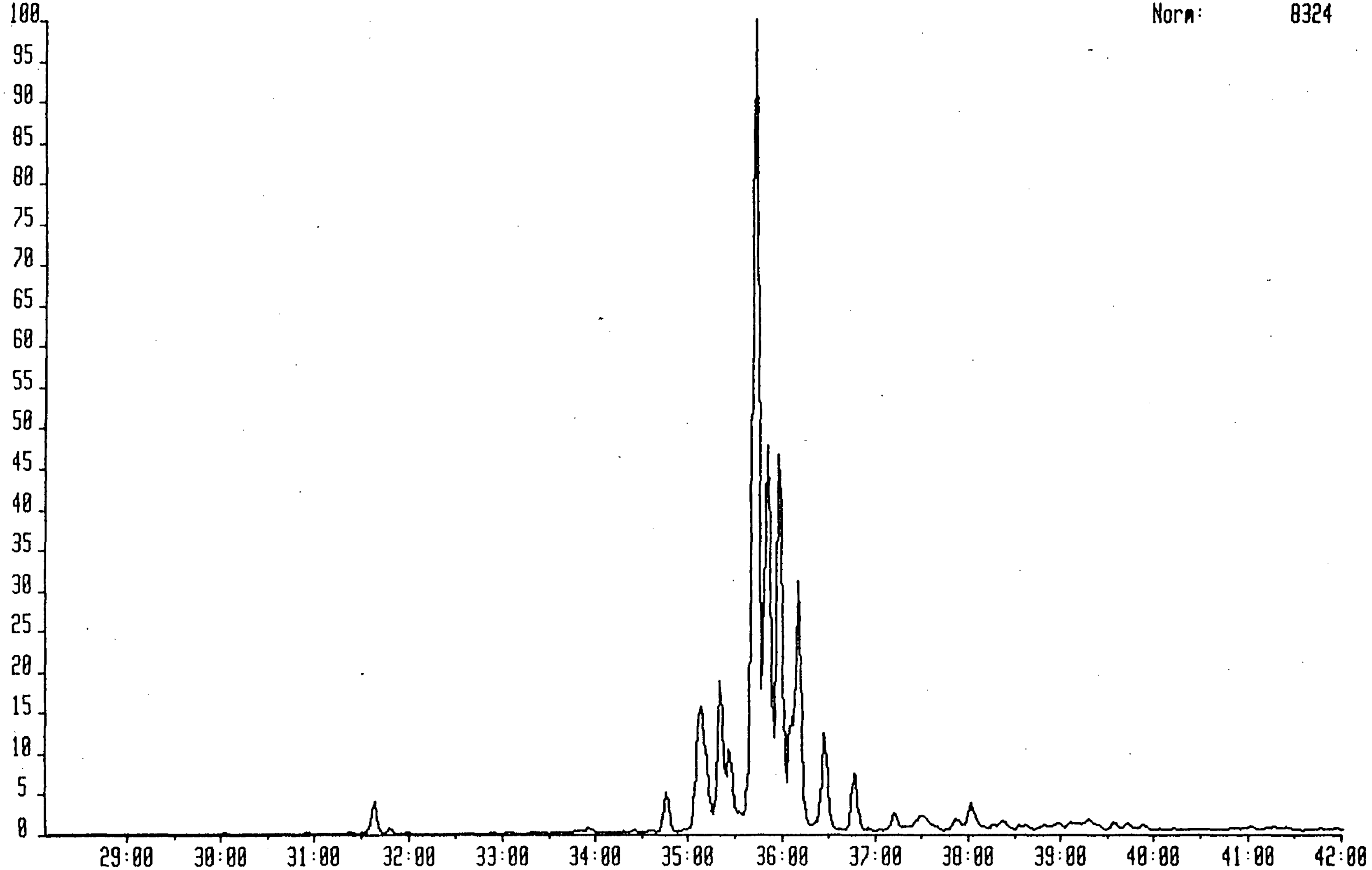


TRAPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 2 Injection 1 Group 1 Mass 206.1096
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



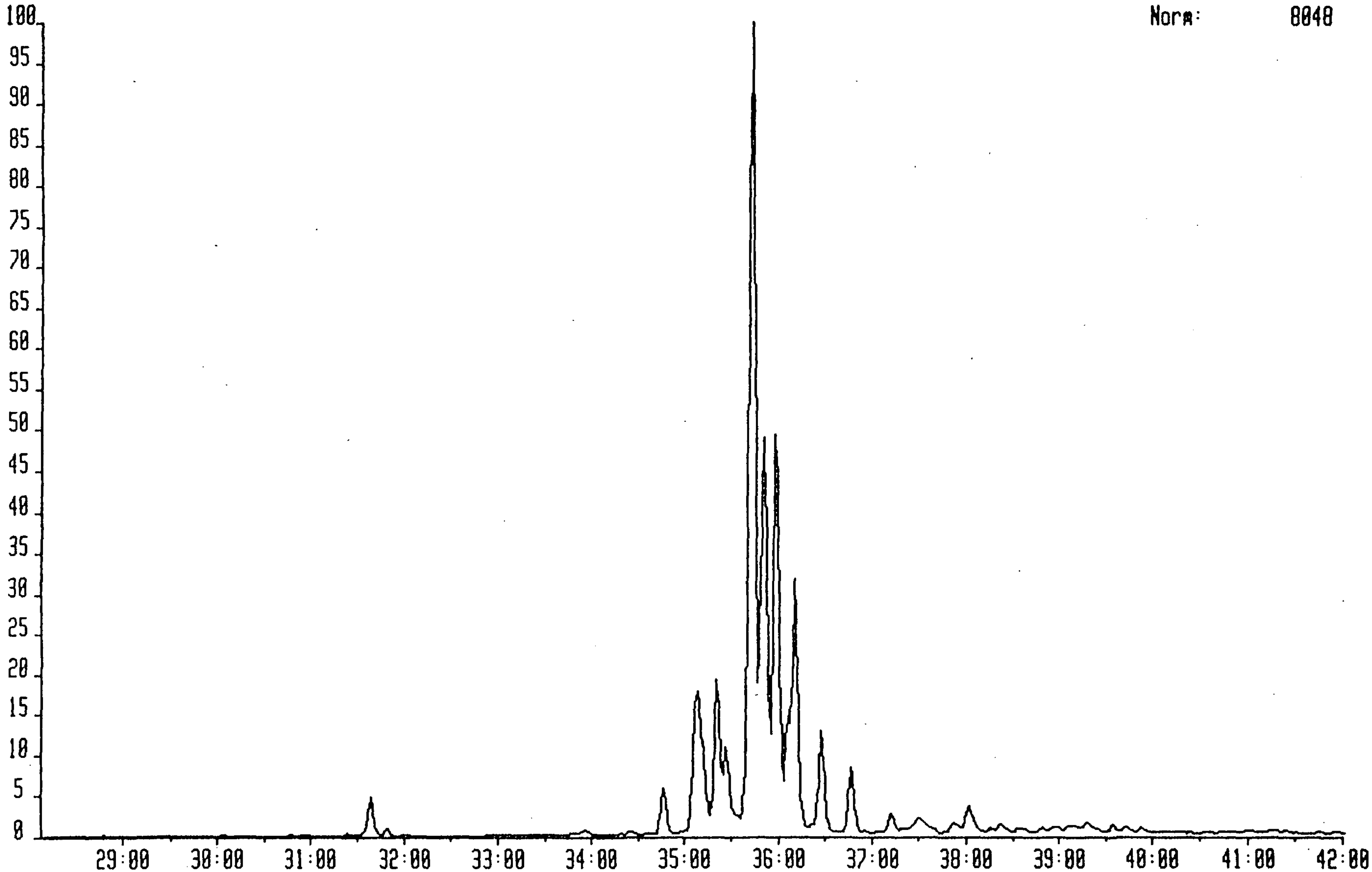

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 3 Injection 1 Group 1 Mass 206.1096
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



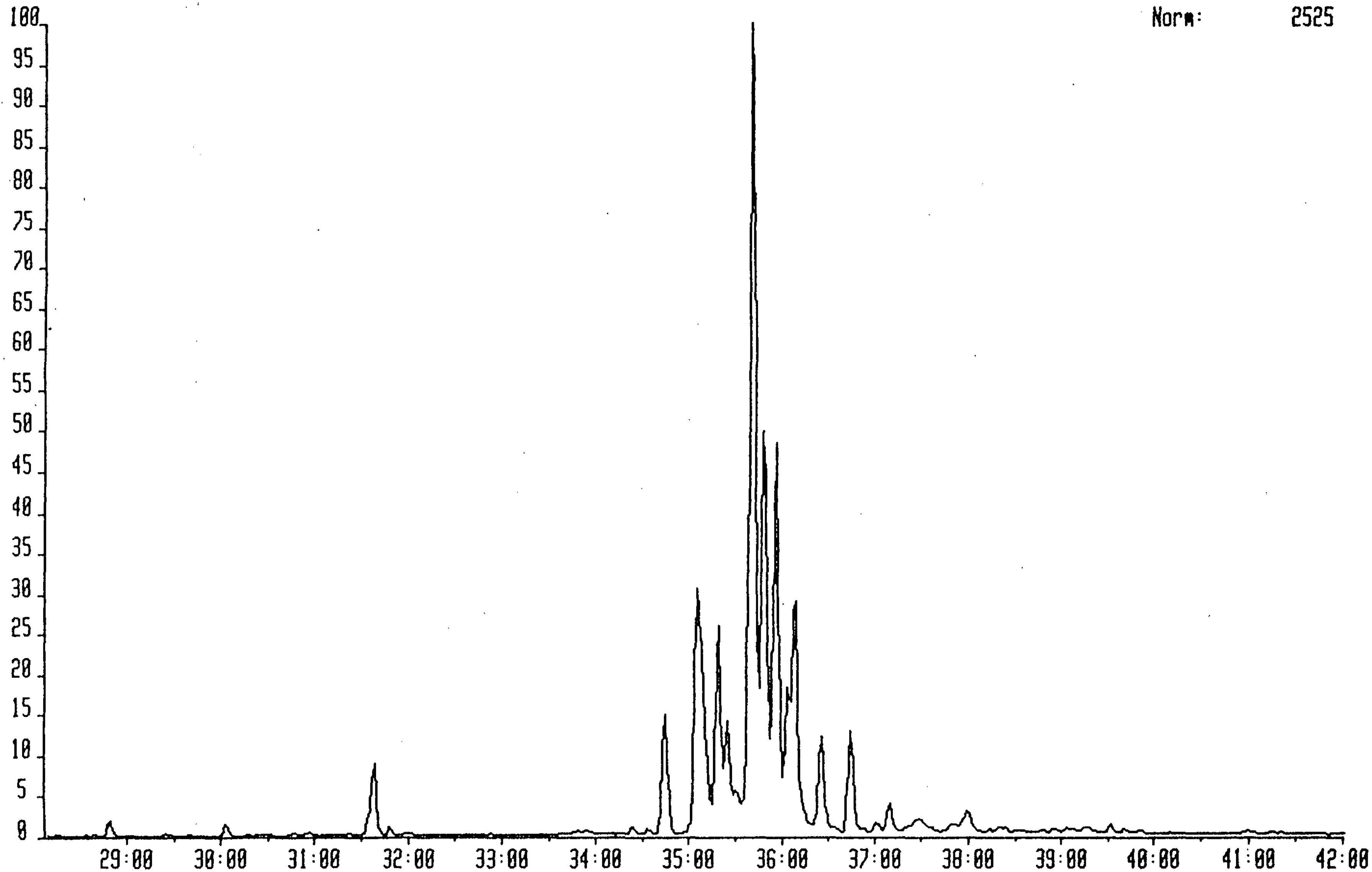

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 4 Injection 1 Group 1 Mass 206.1096
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



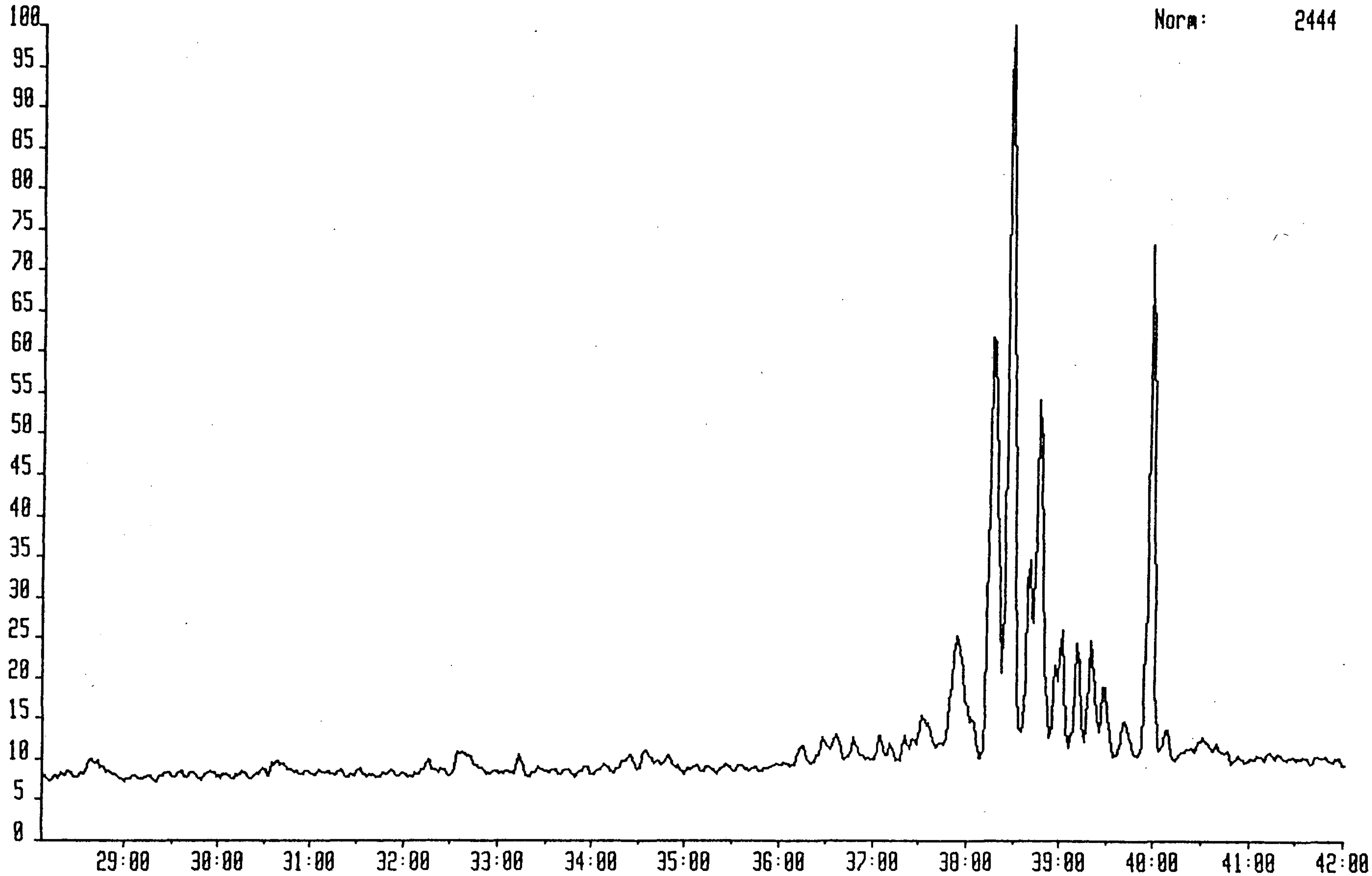

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 5 Injection 1 Group 1 Mass 206.1096
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



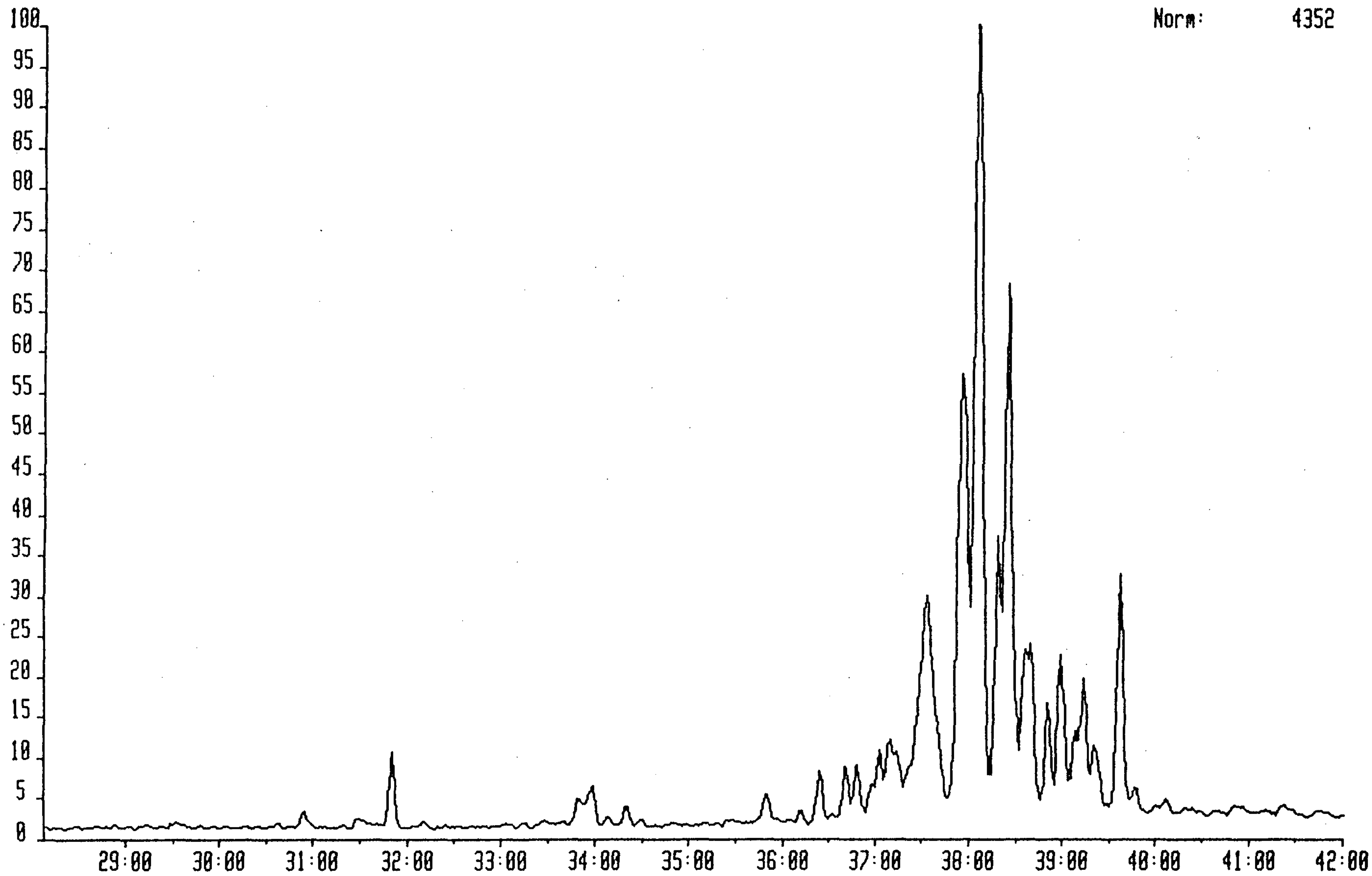

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 220 C3 PHENANTHRENES



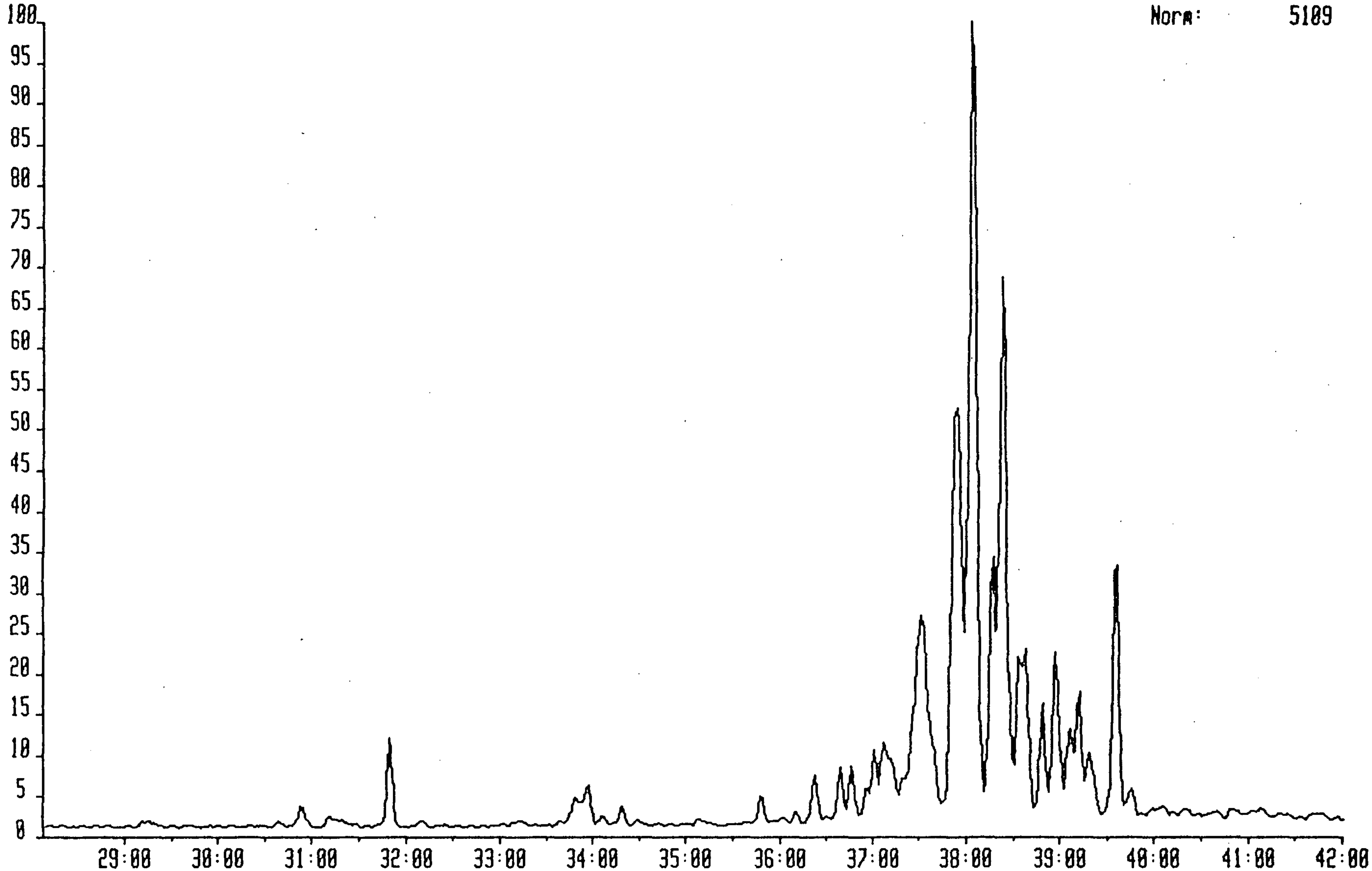

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 1 Injection 1 Group 1 Mass 220.1253
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



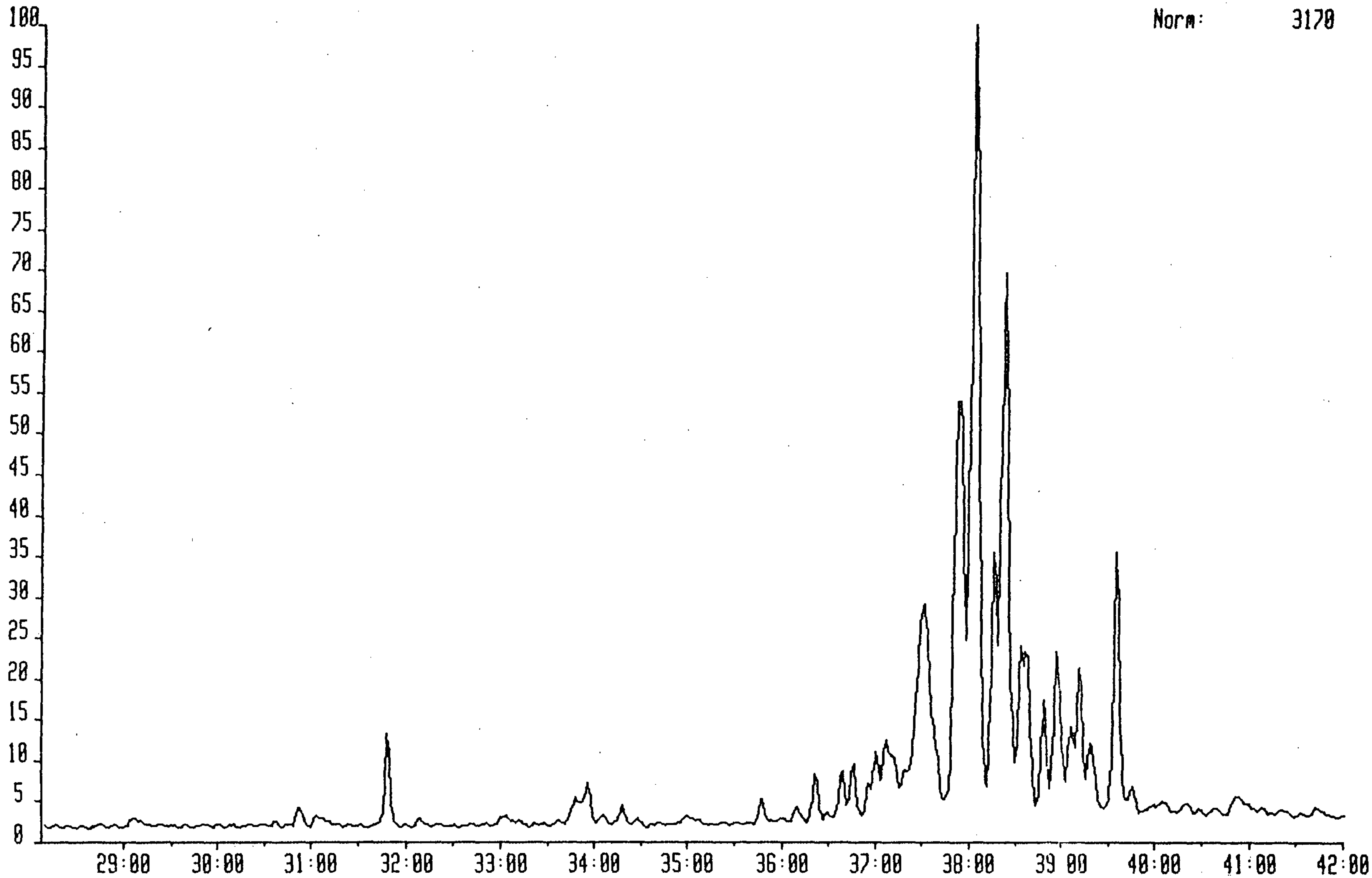

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 2 Injection 1 Group 1 Mass 220.1253
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



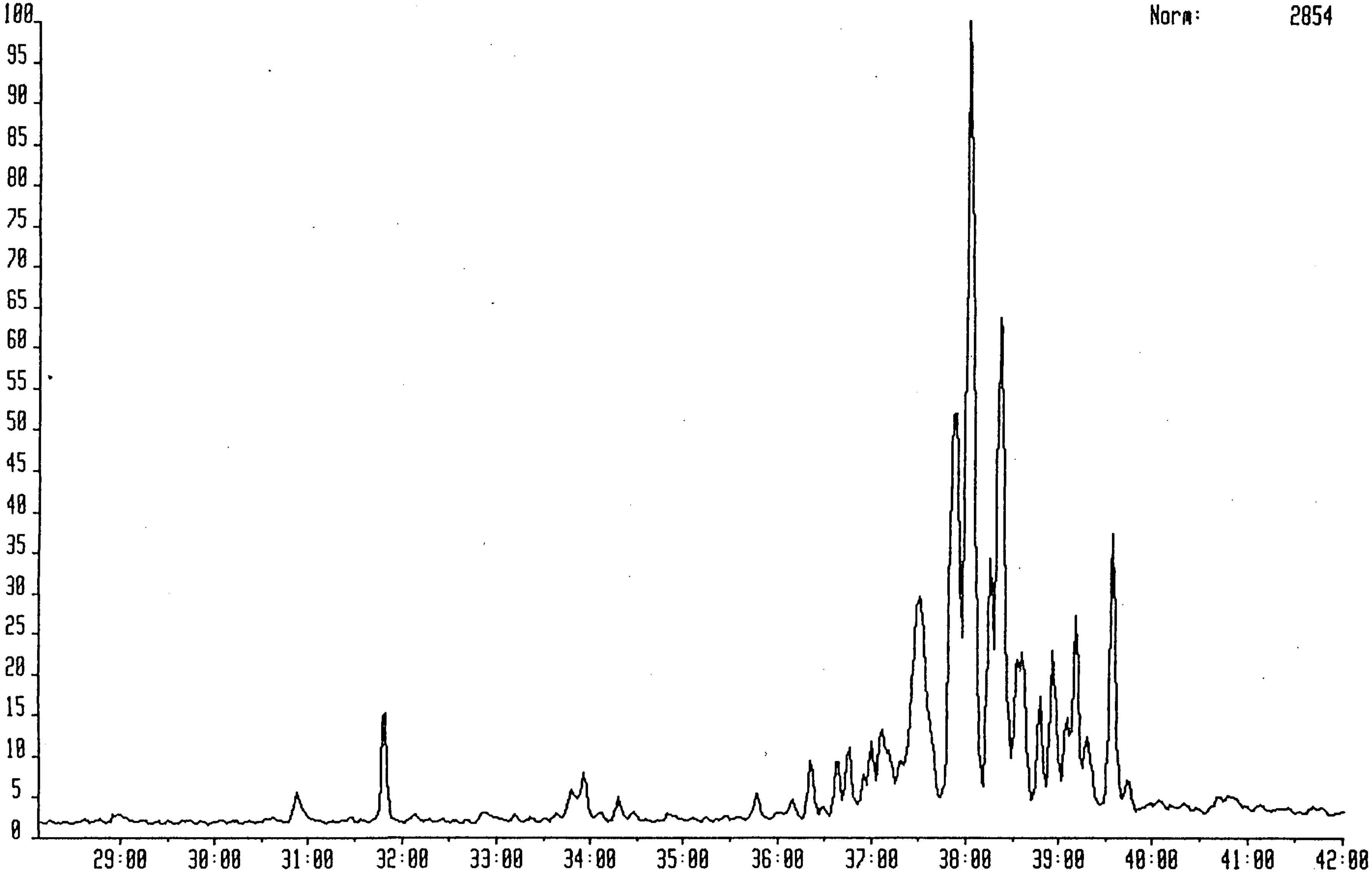

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 3 Injection 1 Group 1 Mass 220.1253
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



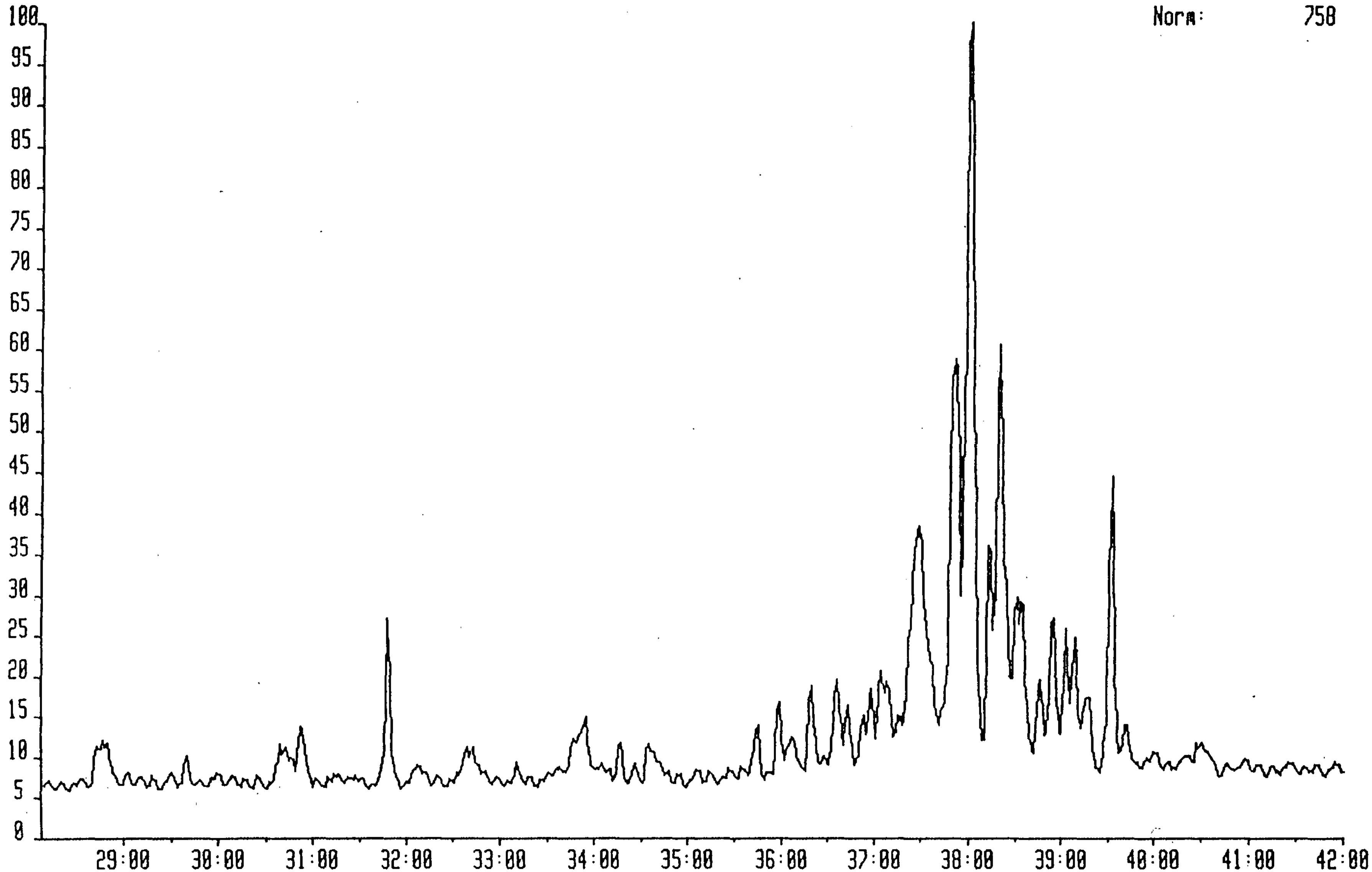

GEOLAB NOR

?AMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 4 Injection 1 Group 1 Mass 220.1253
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



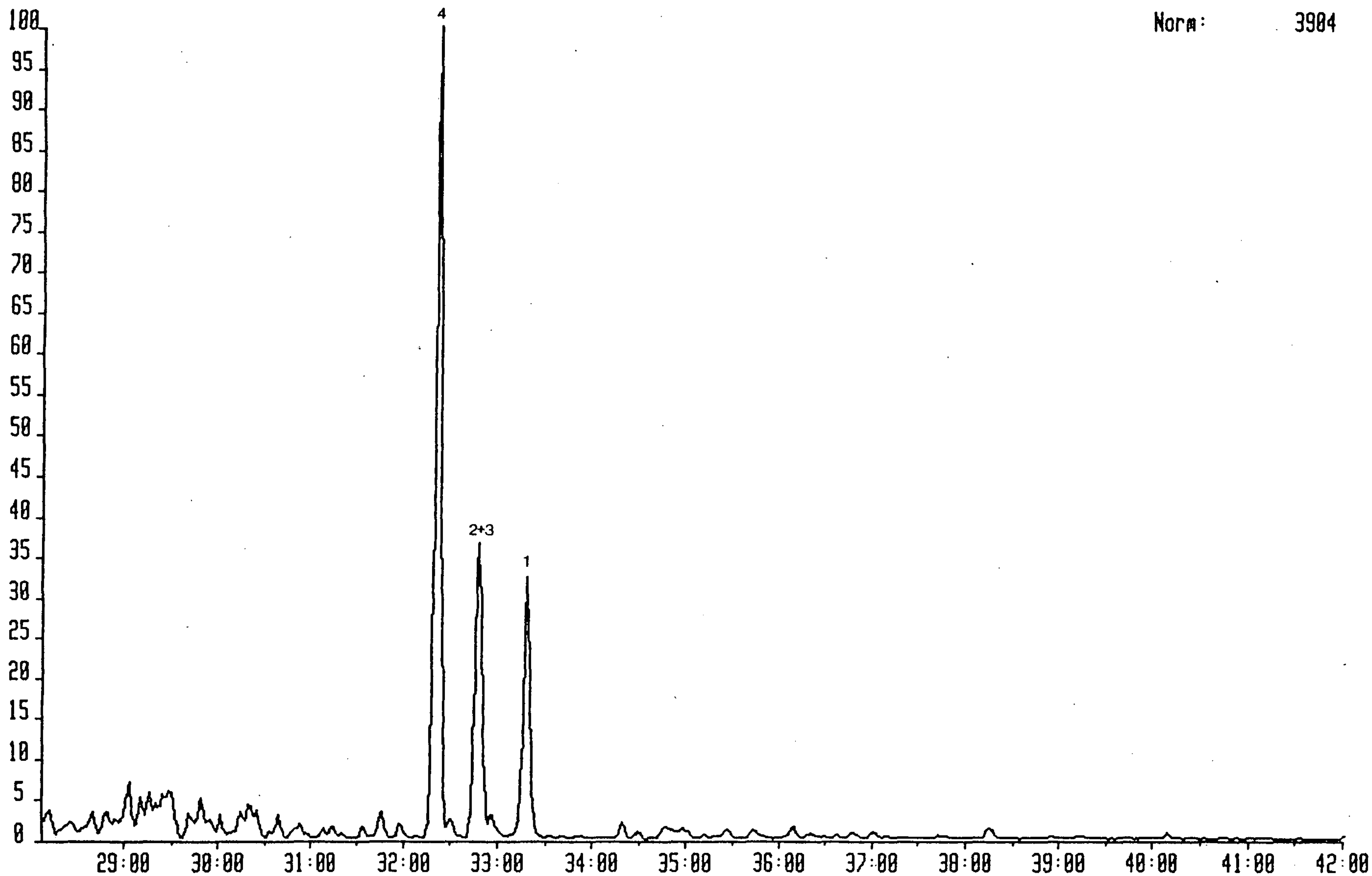

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 5 Injection 1 Group 1 Mass 220.1253
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



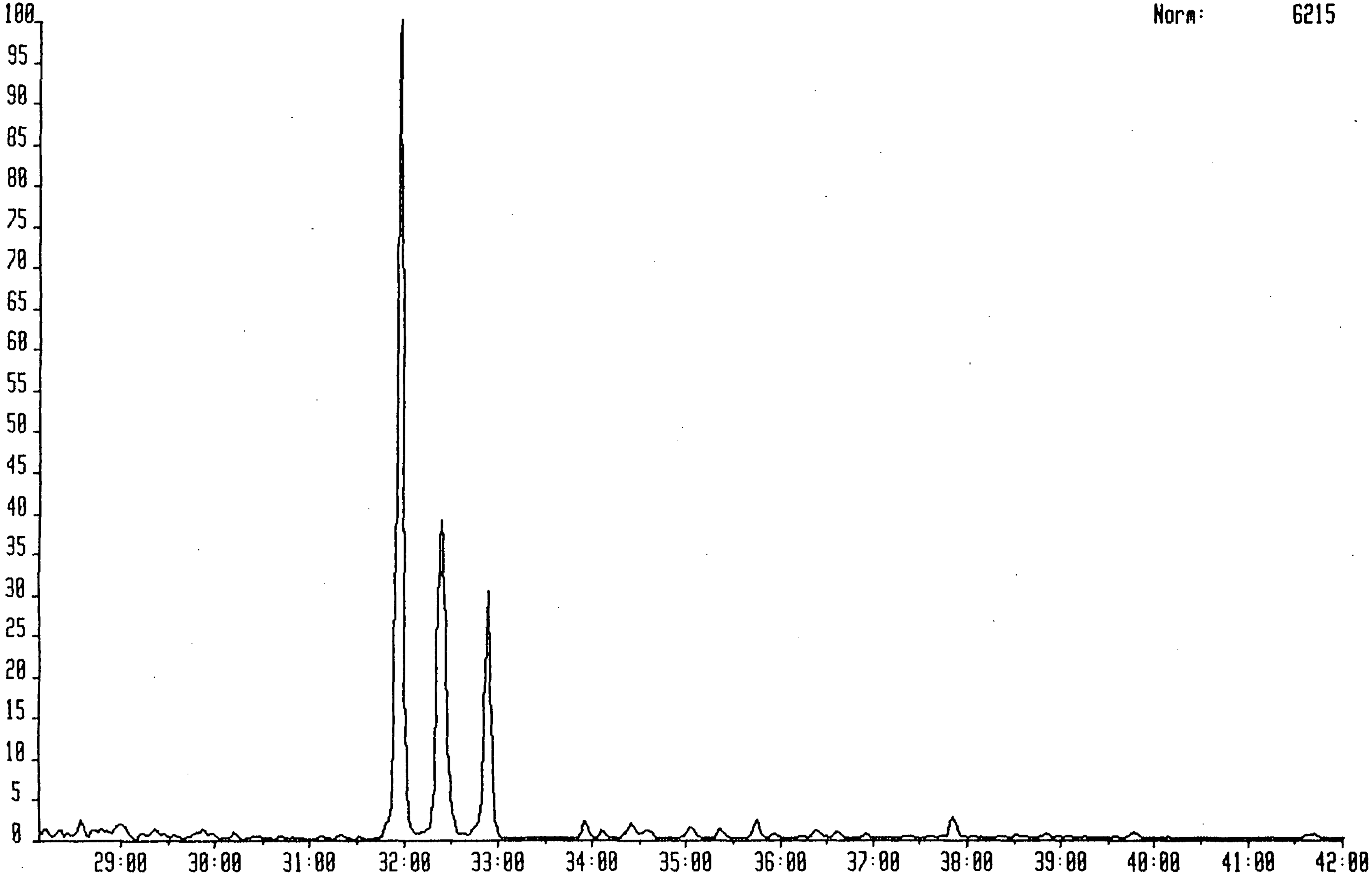

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 198 DIBENZOTHIOPHENES



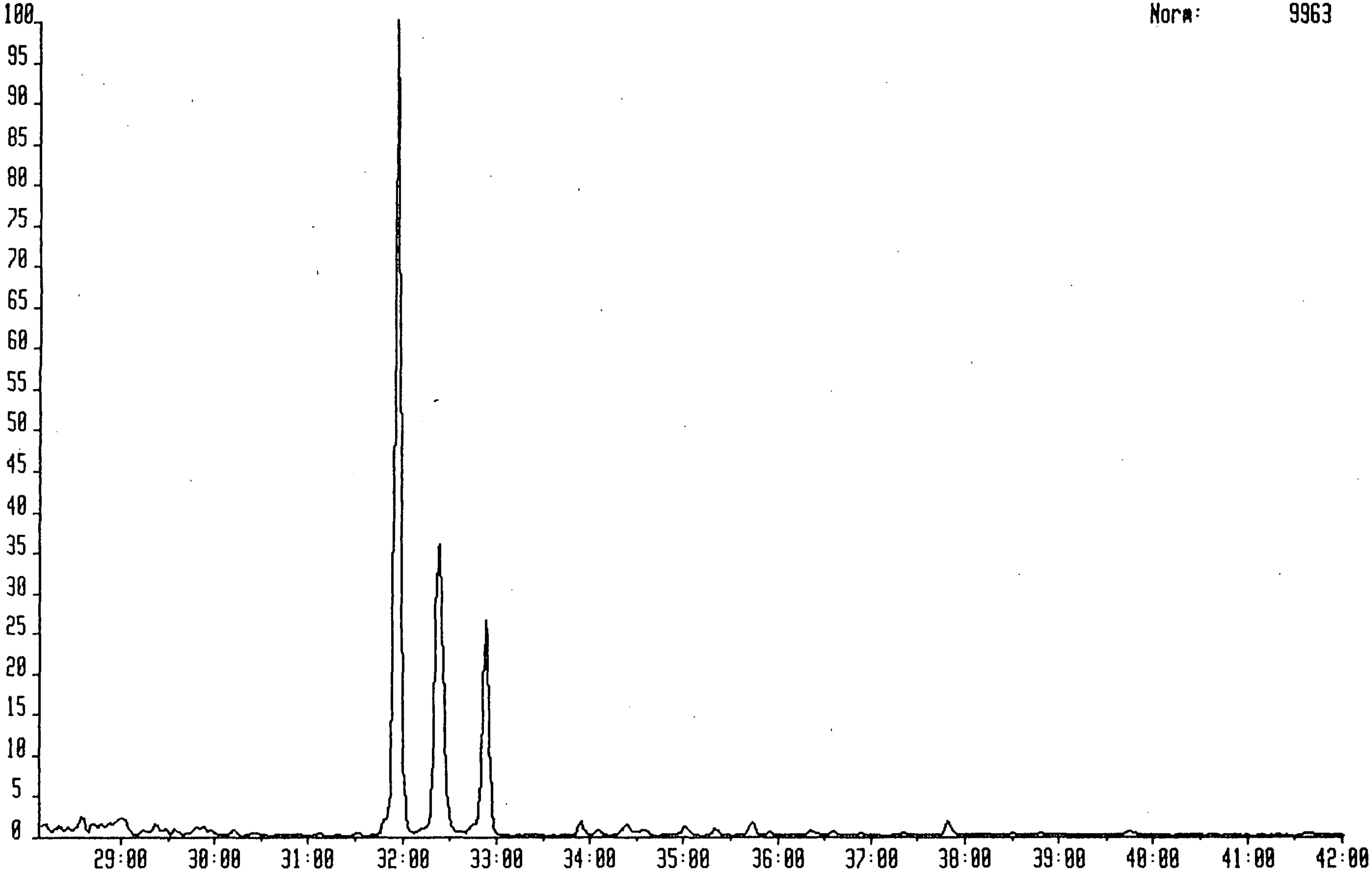

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 1 Injection 1 Group 1 Mass 198.0503
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



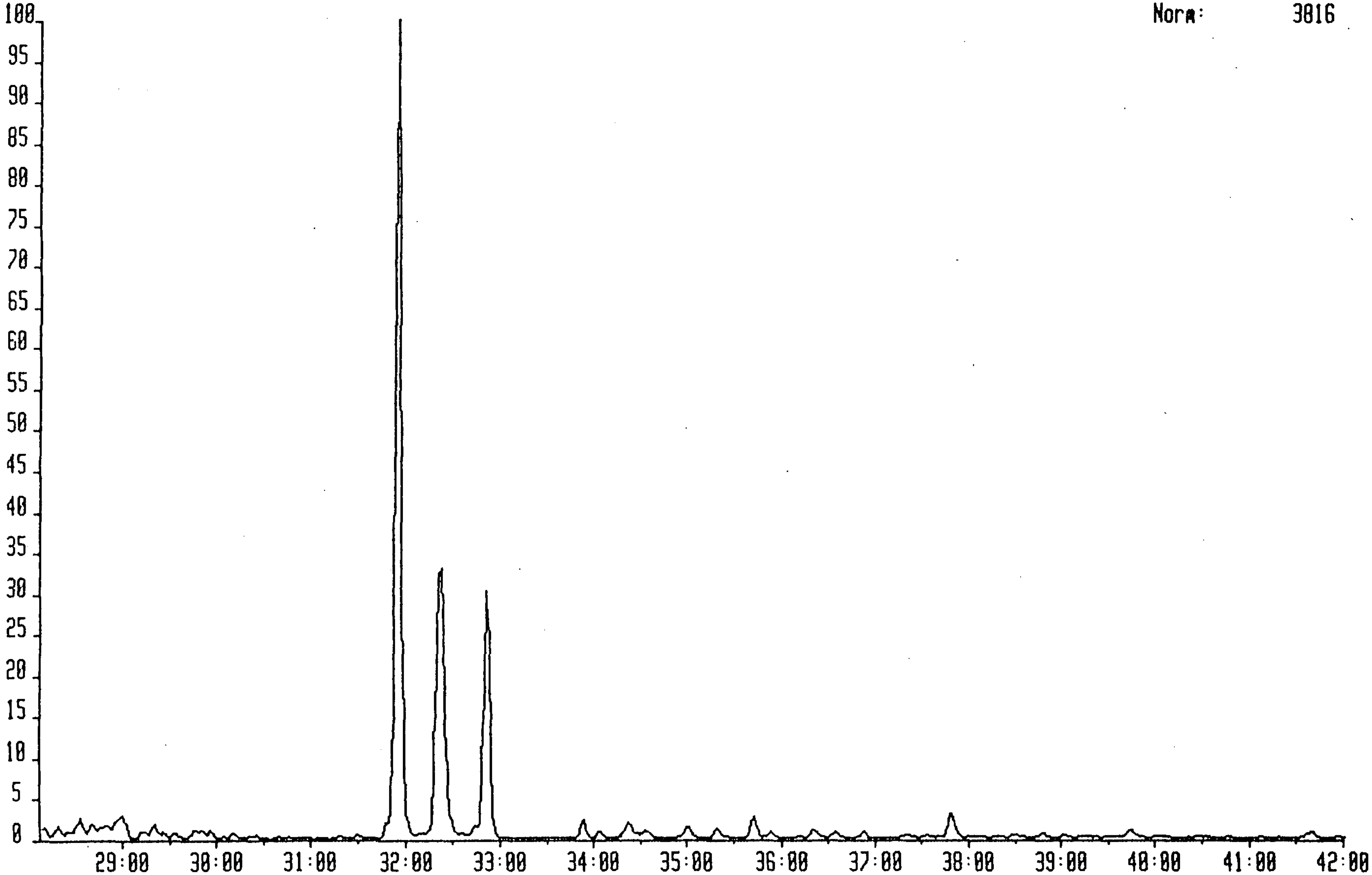

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 2 Injection 1 Group 1 Mass 198.0503
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



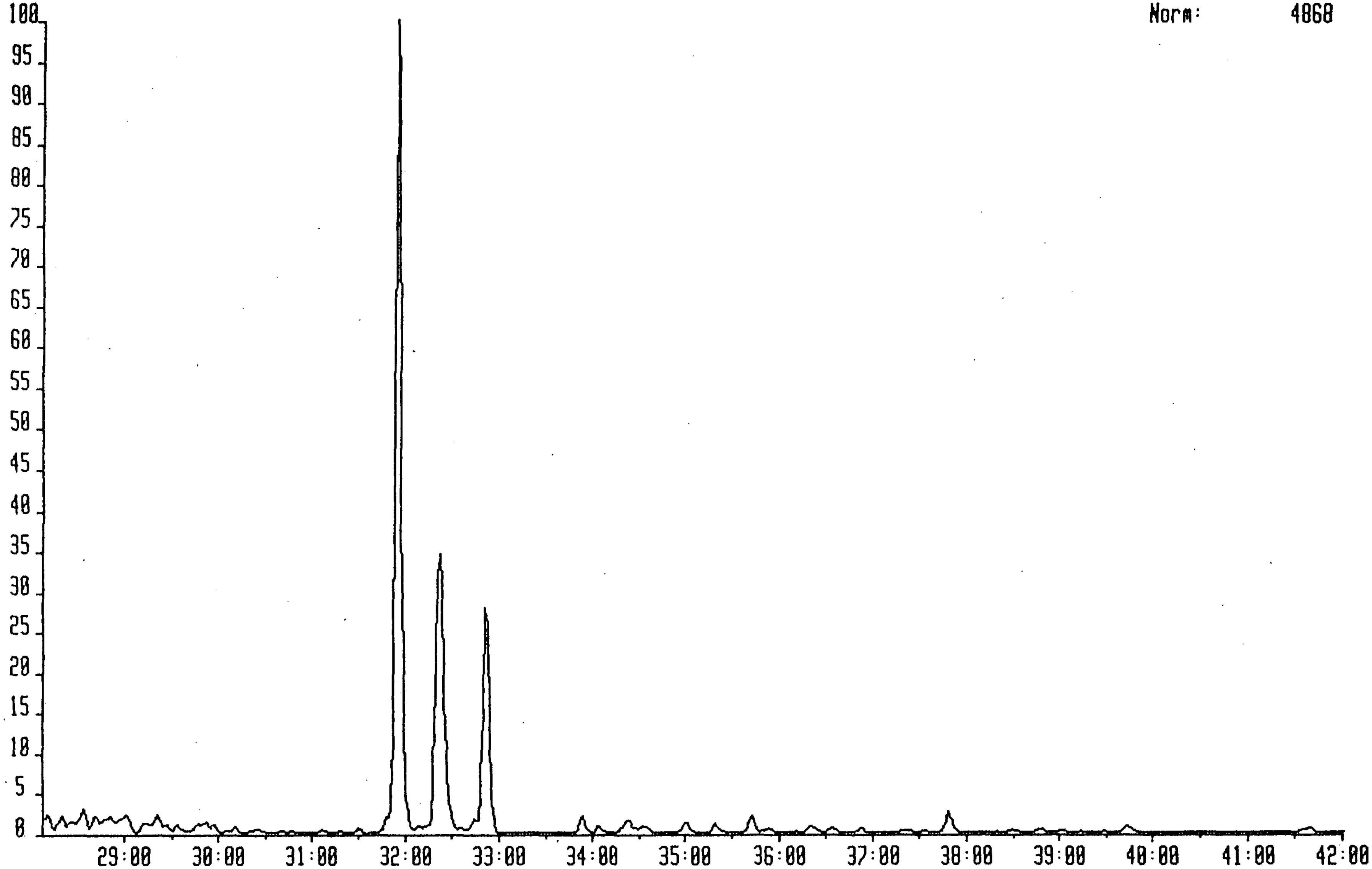

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 3 Injection 1 Group 1 Mass 198.0503
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



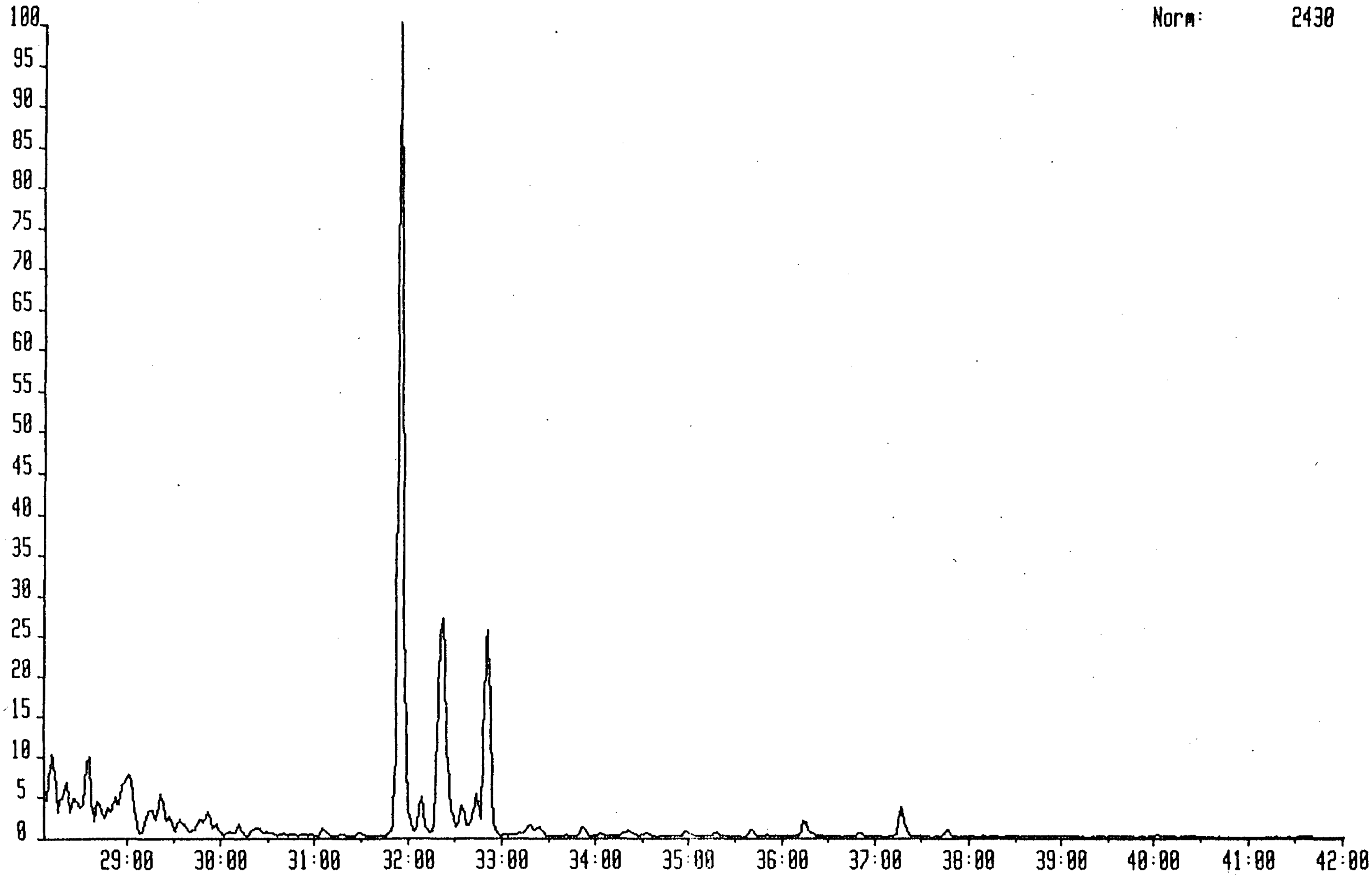

GEOLAB NOR

T[illegible]PENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 4 Injection 1 Group 1 Mass 198.0503
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



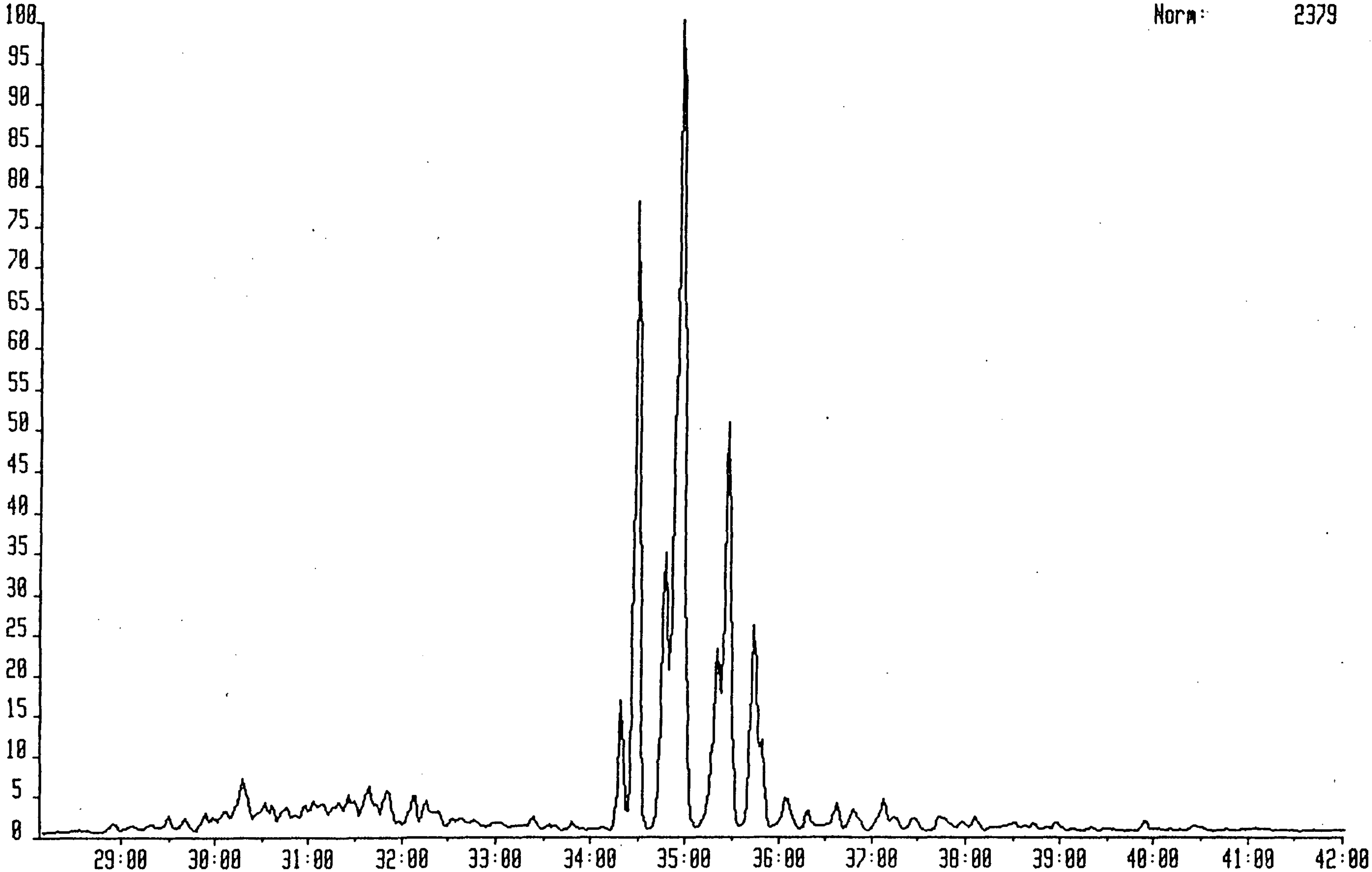

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 5 Injection 1 Group 1 Mass 198.0503
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



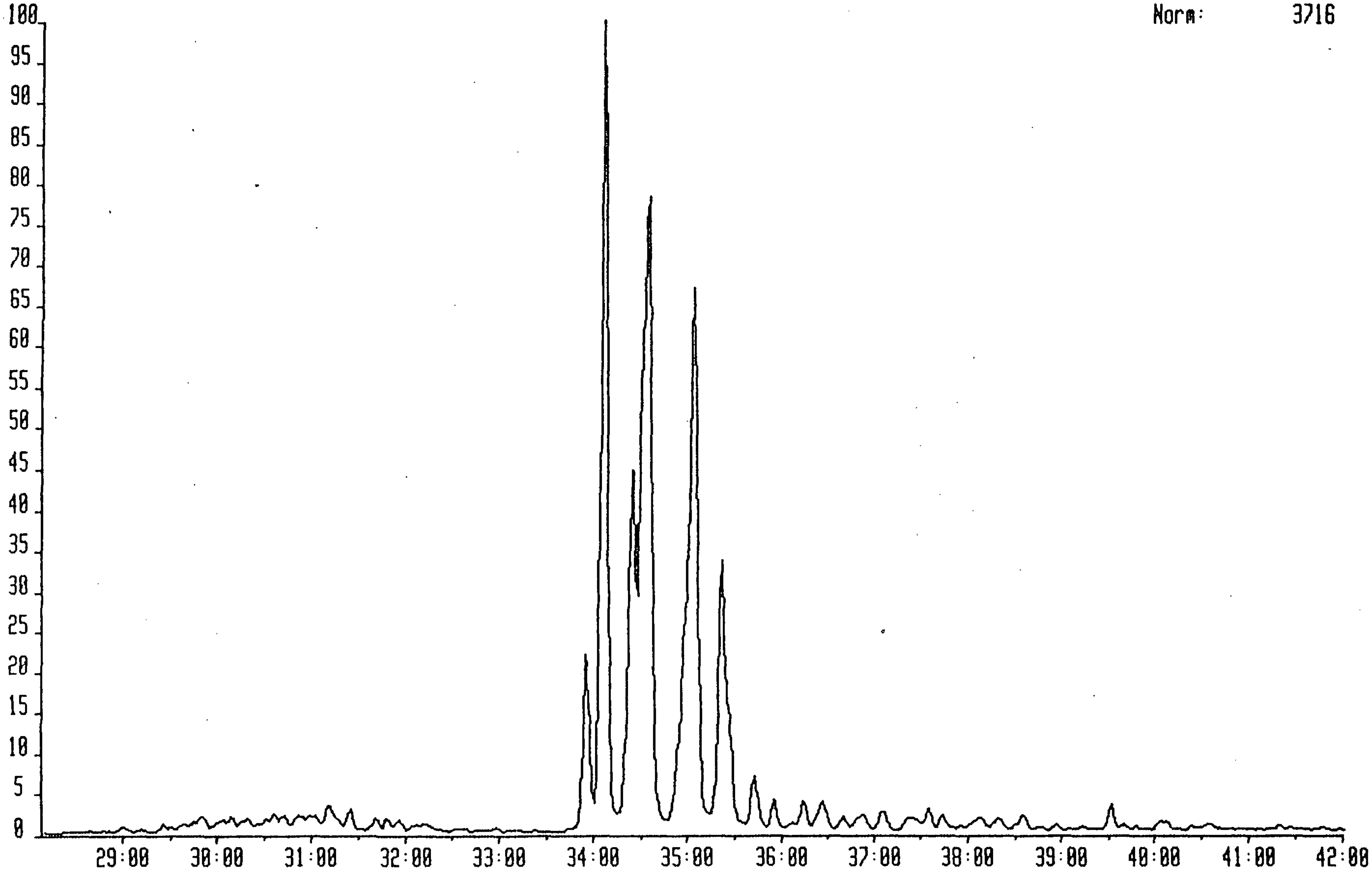

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 212 C2 DIBENZOTHIOPHENES



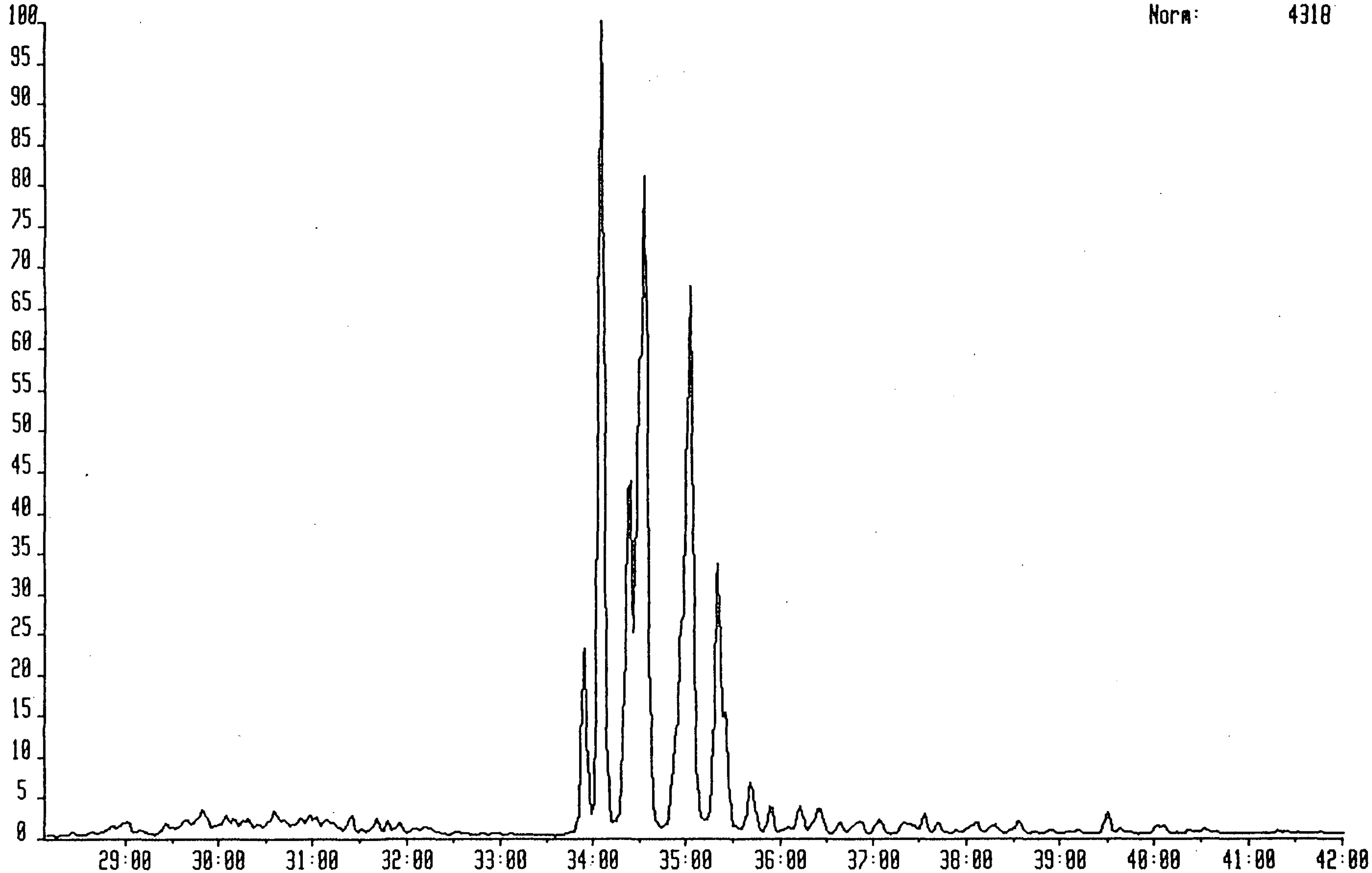

GEOLAB NOR

TAMPENARO  1-MAR-91    Sir:Magnetic TS250    Acnt:GEOLAB    System:ARO1
Sample 1   Injection 1   Group 1   Mass 212.0660
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



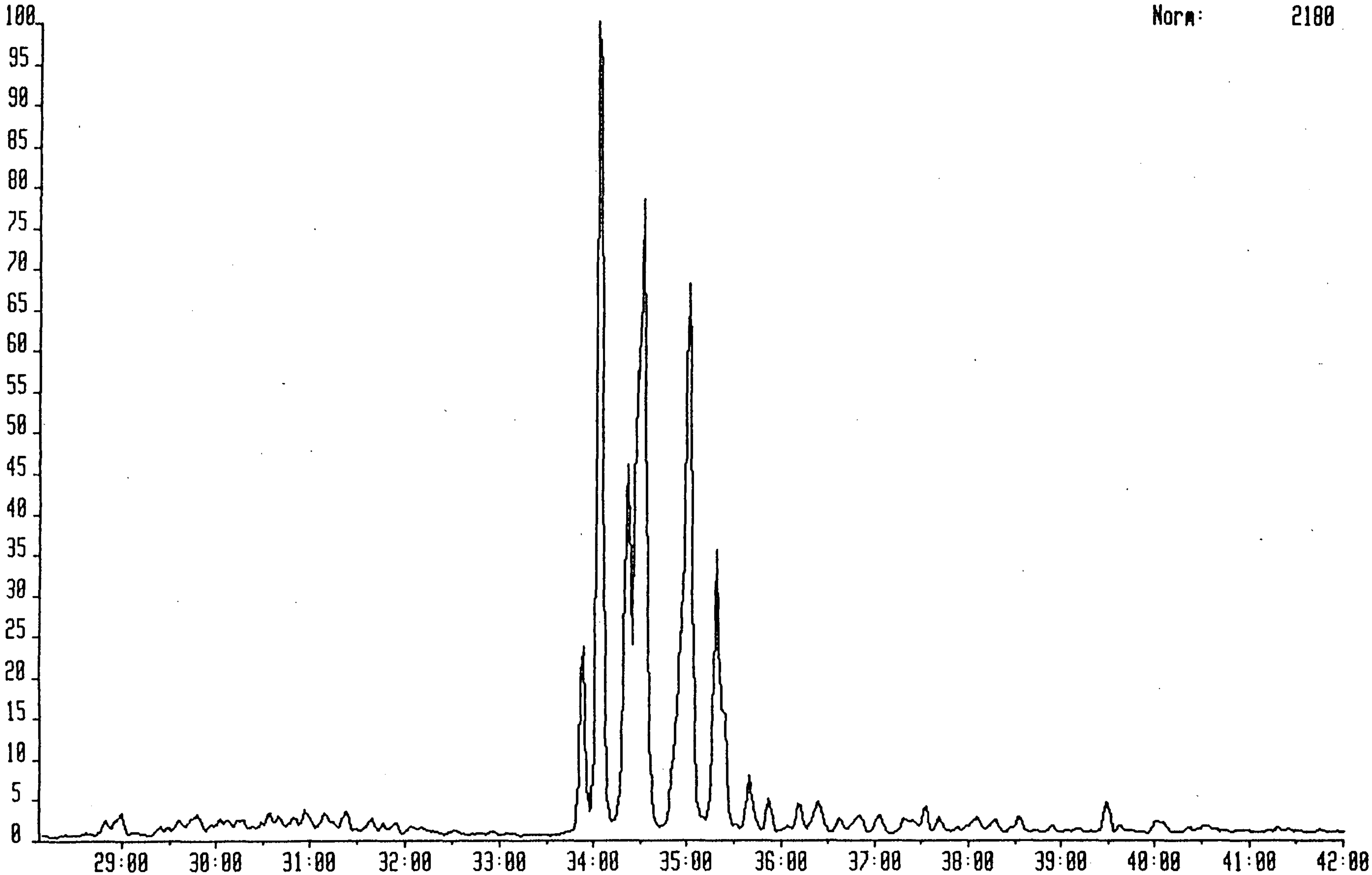

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 2 Injection 1 Group 1 Mass 212.0660
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



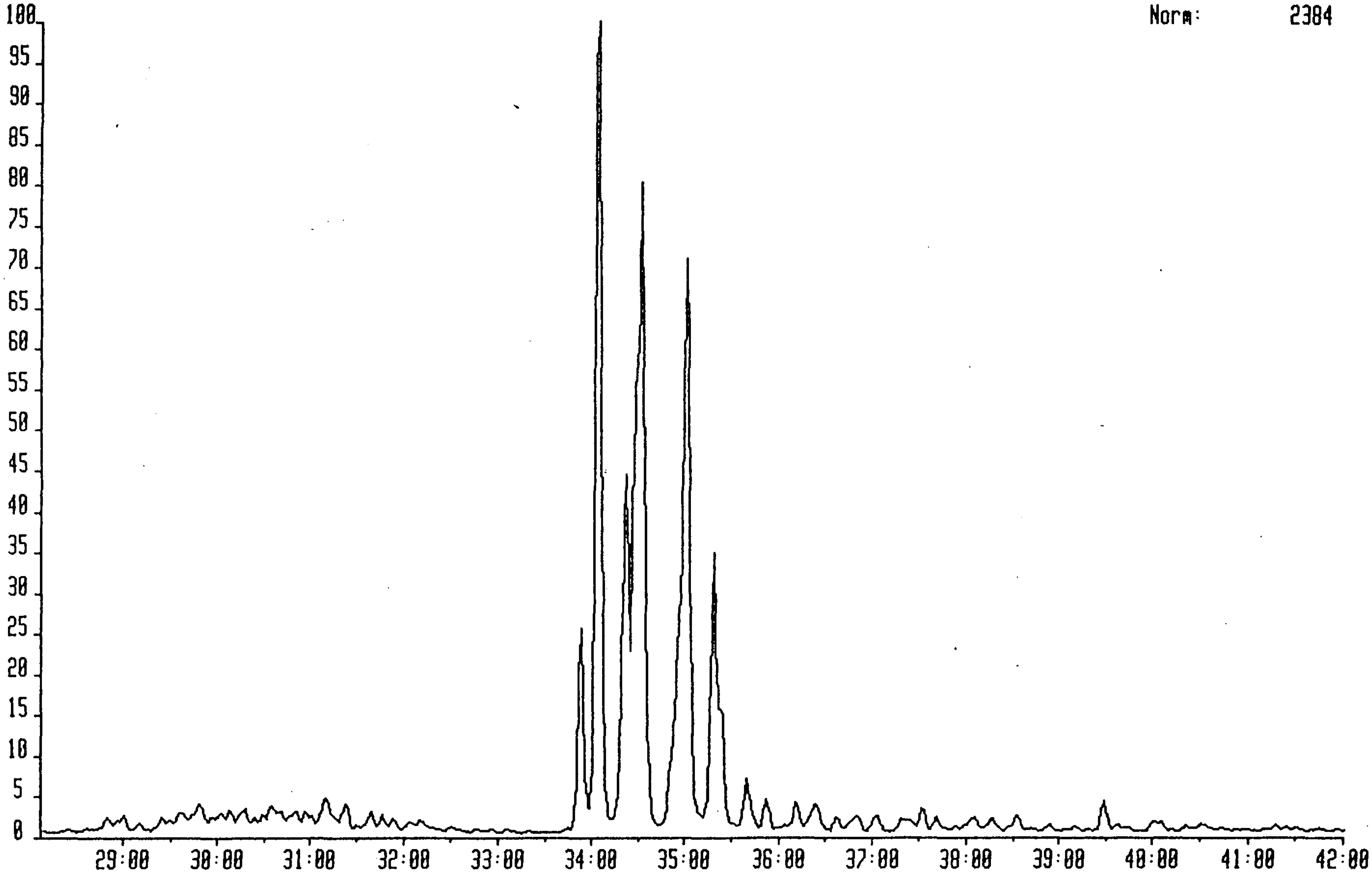

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 3 Injection 1 Group 1 Mass 212.0660
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



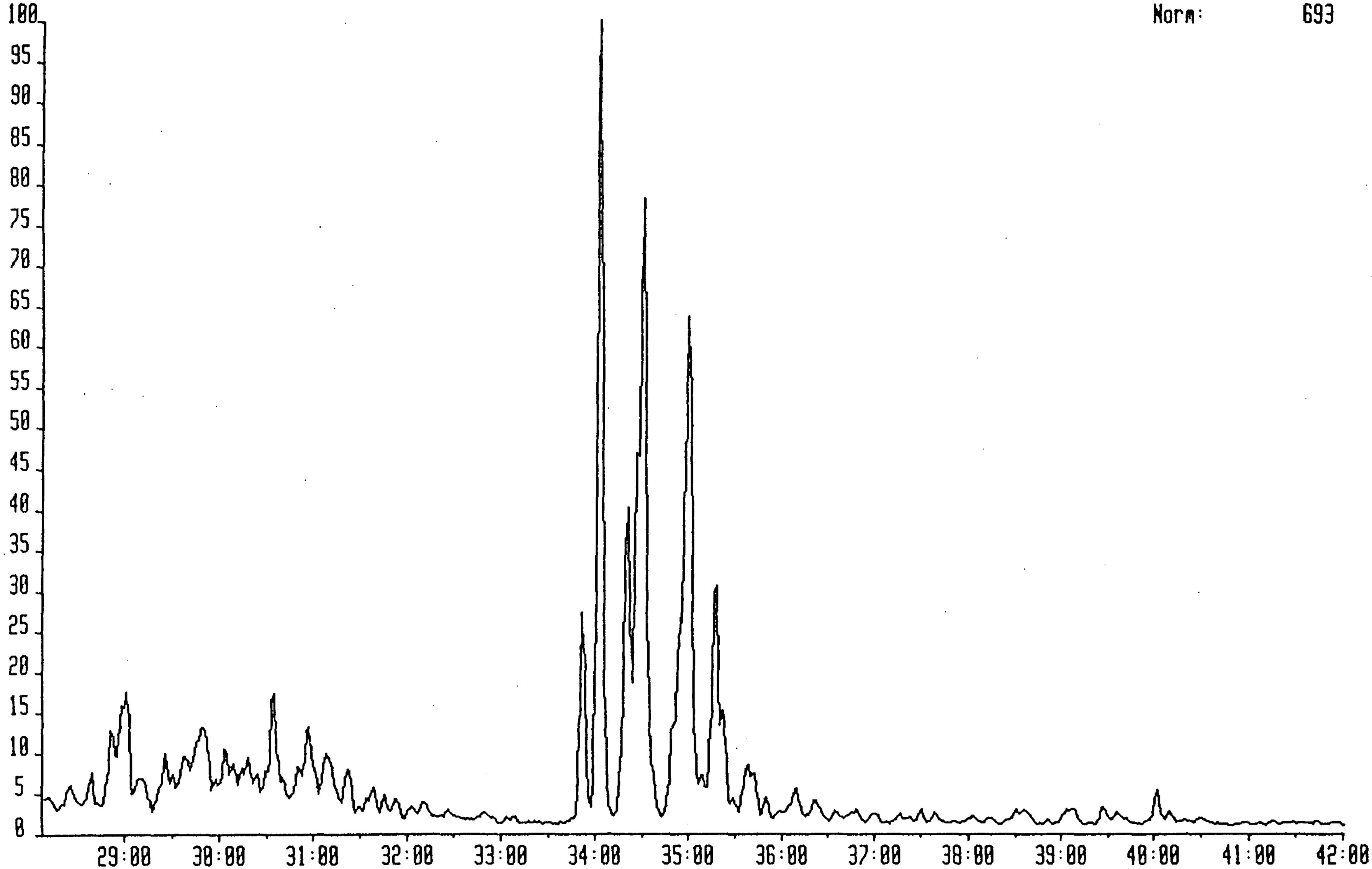

GEOLAB NOR

?APENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 4 Injection 1 Group 1 Mass 212.0660
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



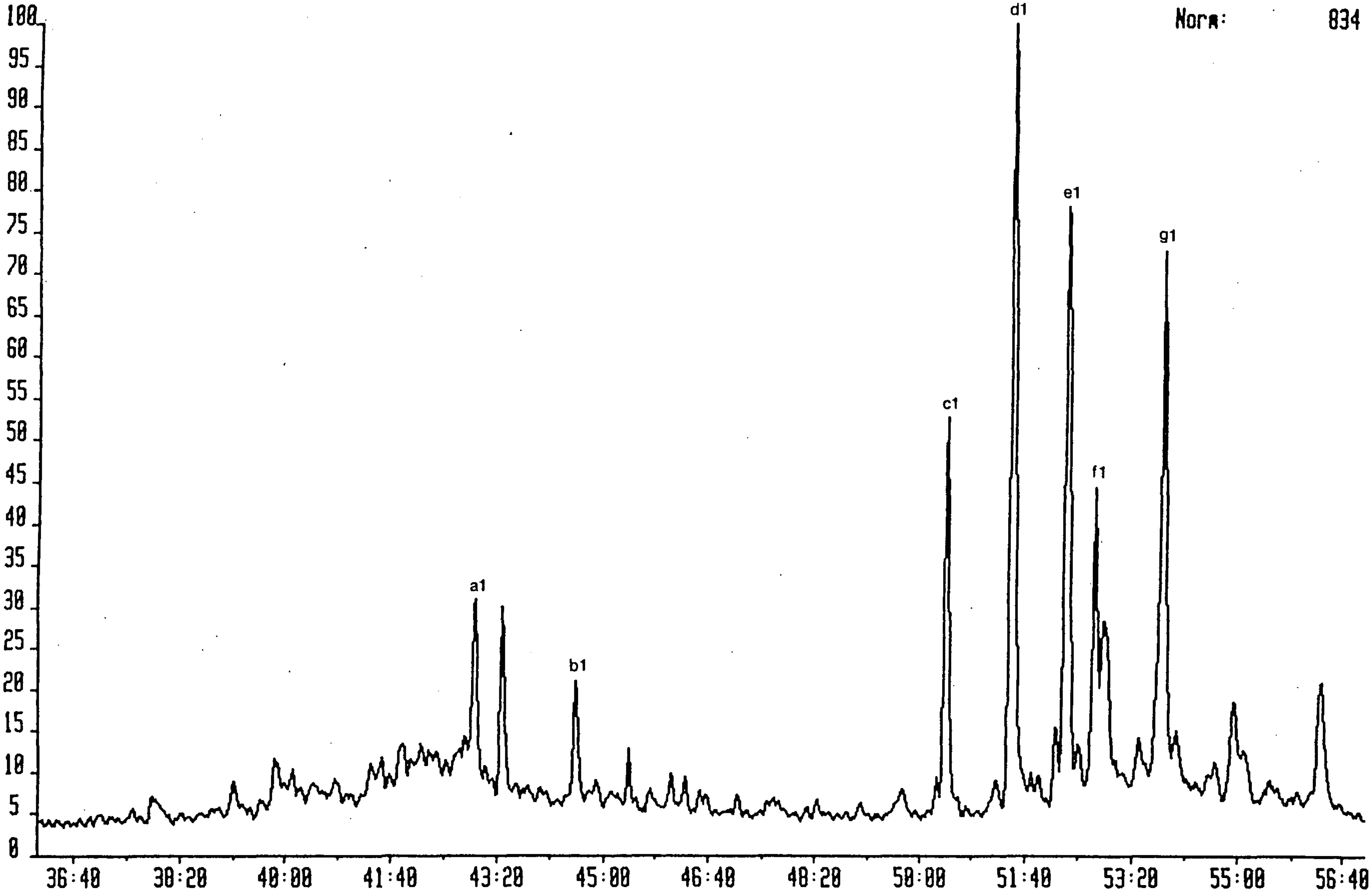

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 5 Injection 1 Group 1 Mass 212.0660
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



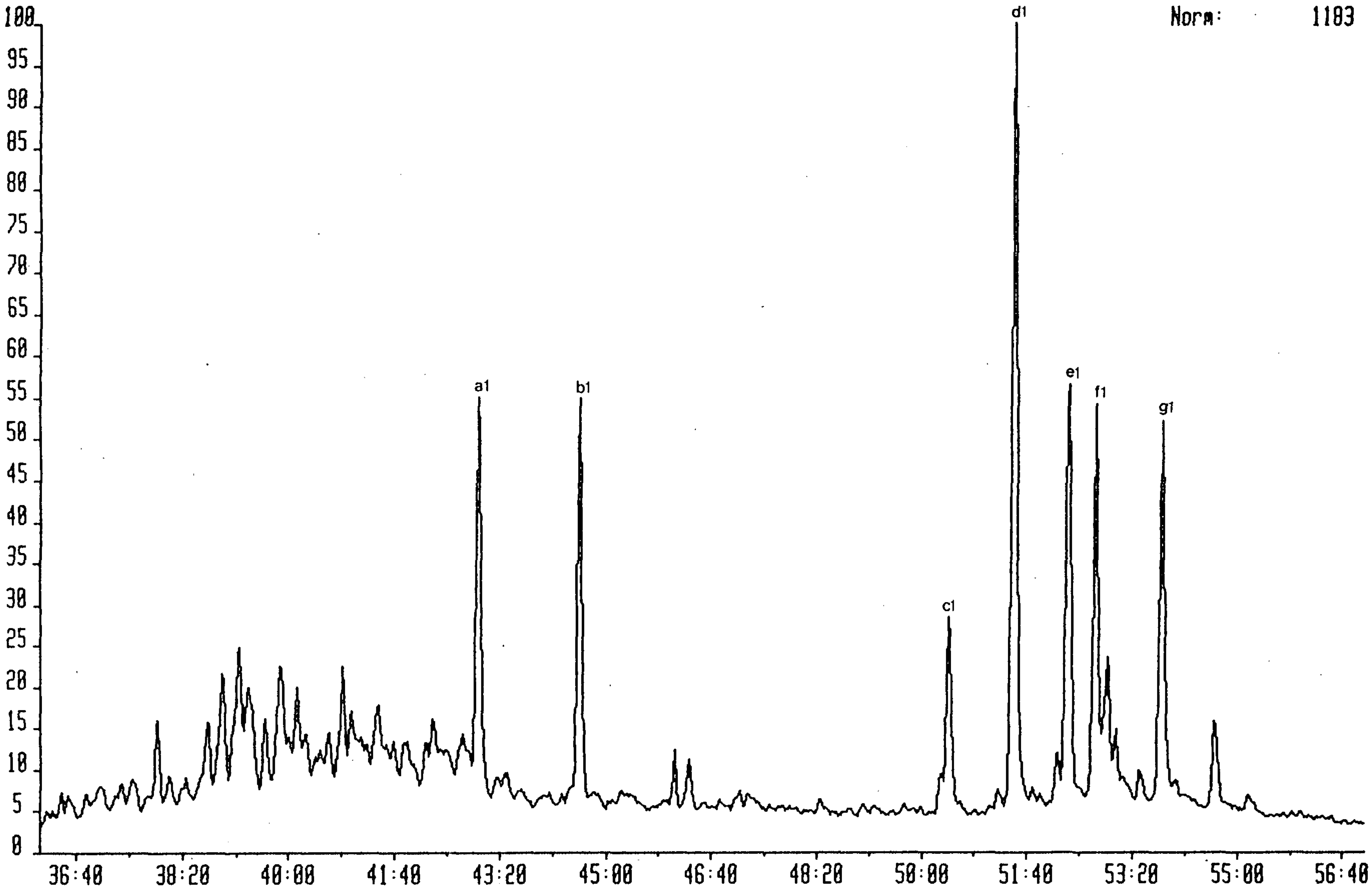

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 231 TRIAROMATIC STERANES



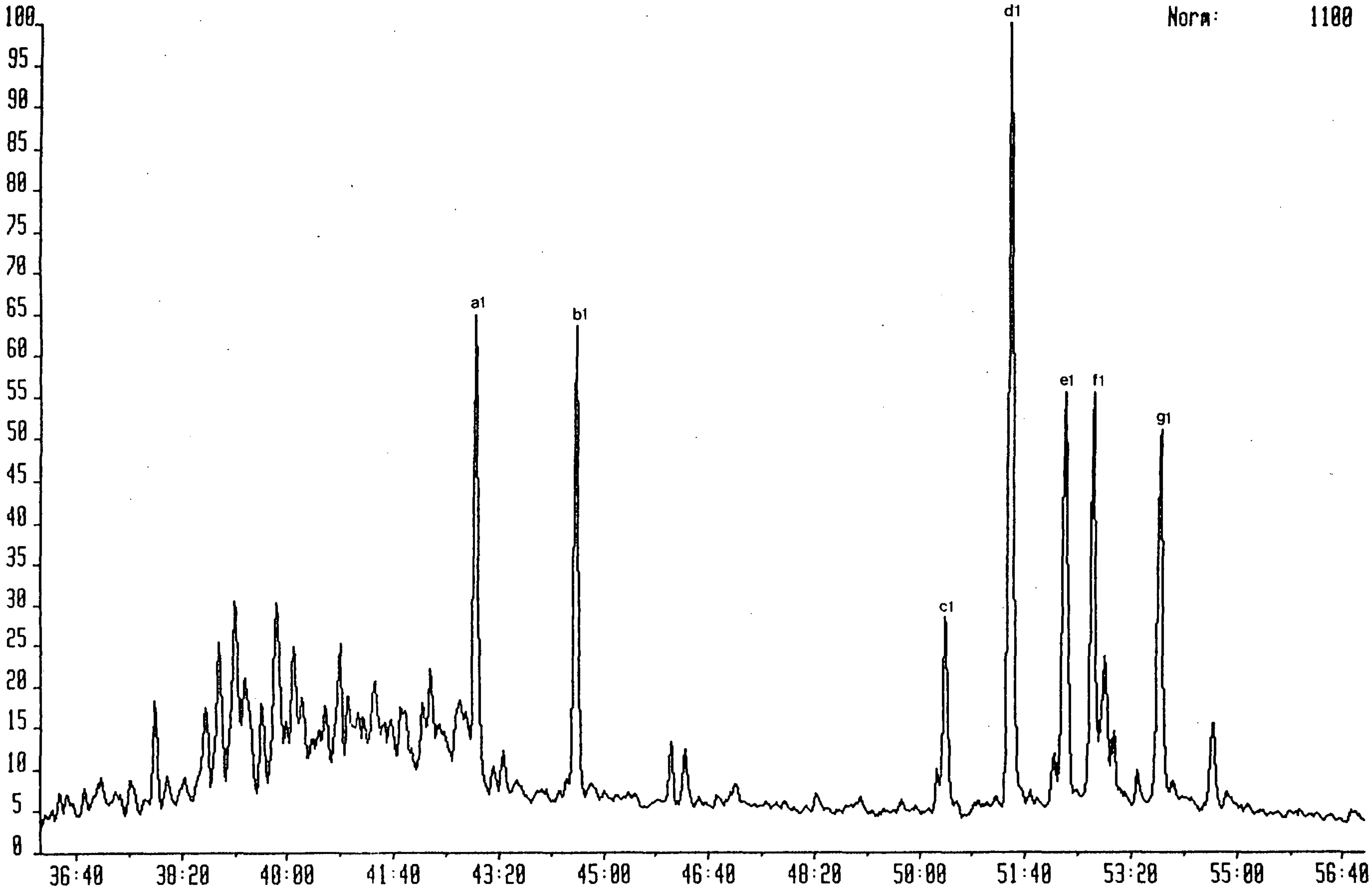

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 1 Injection 1 Group 1 Mass 231.1174
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



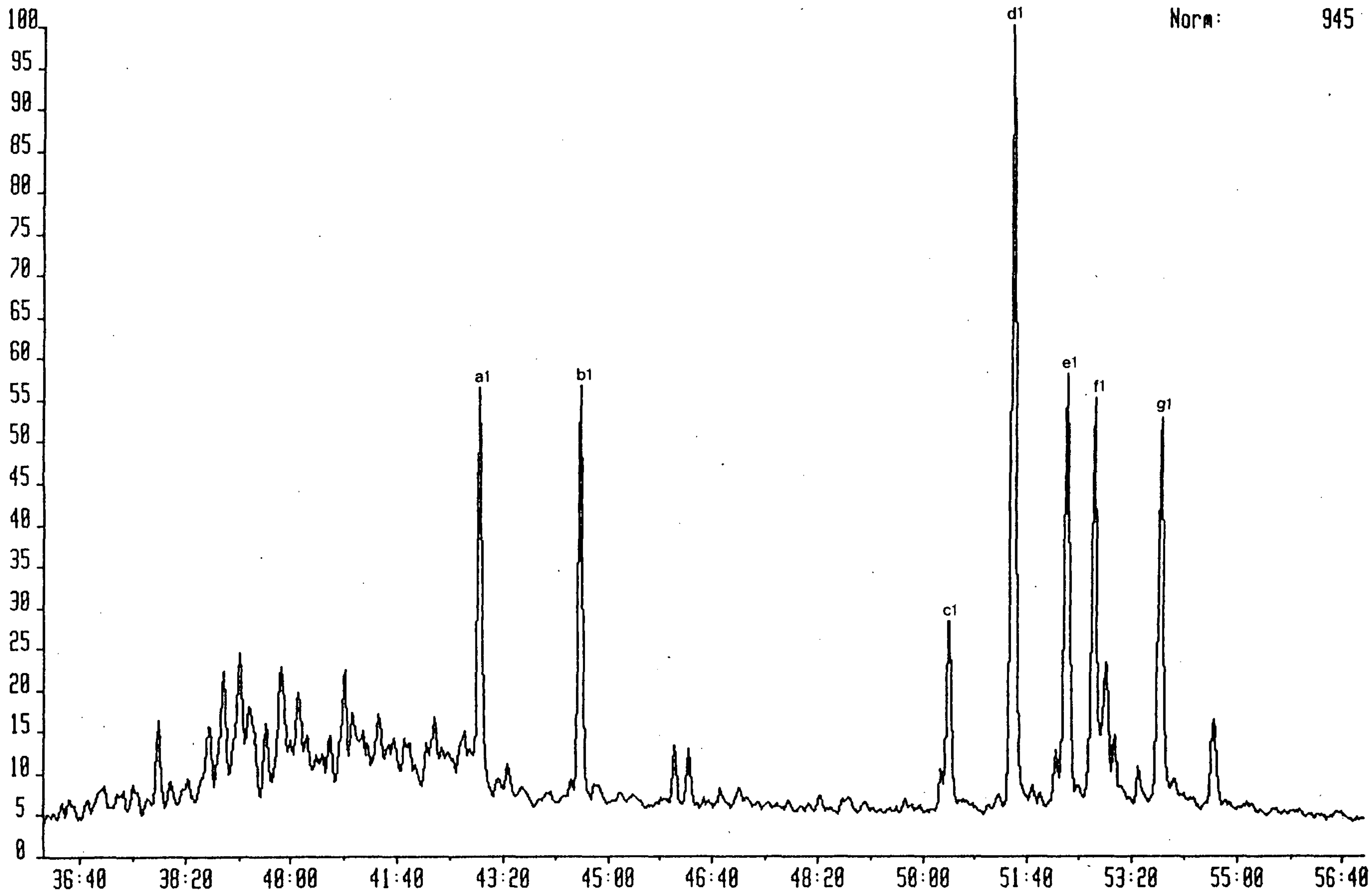

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 2 Injection 1 Group 1 Mass 231.1174
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



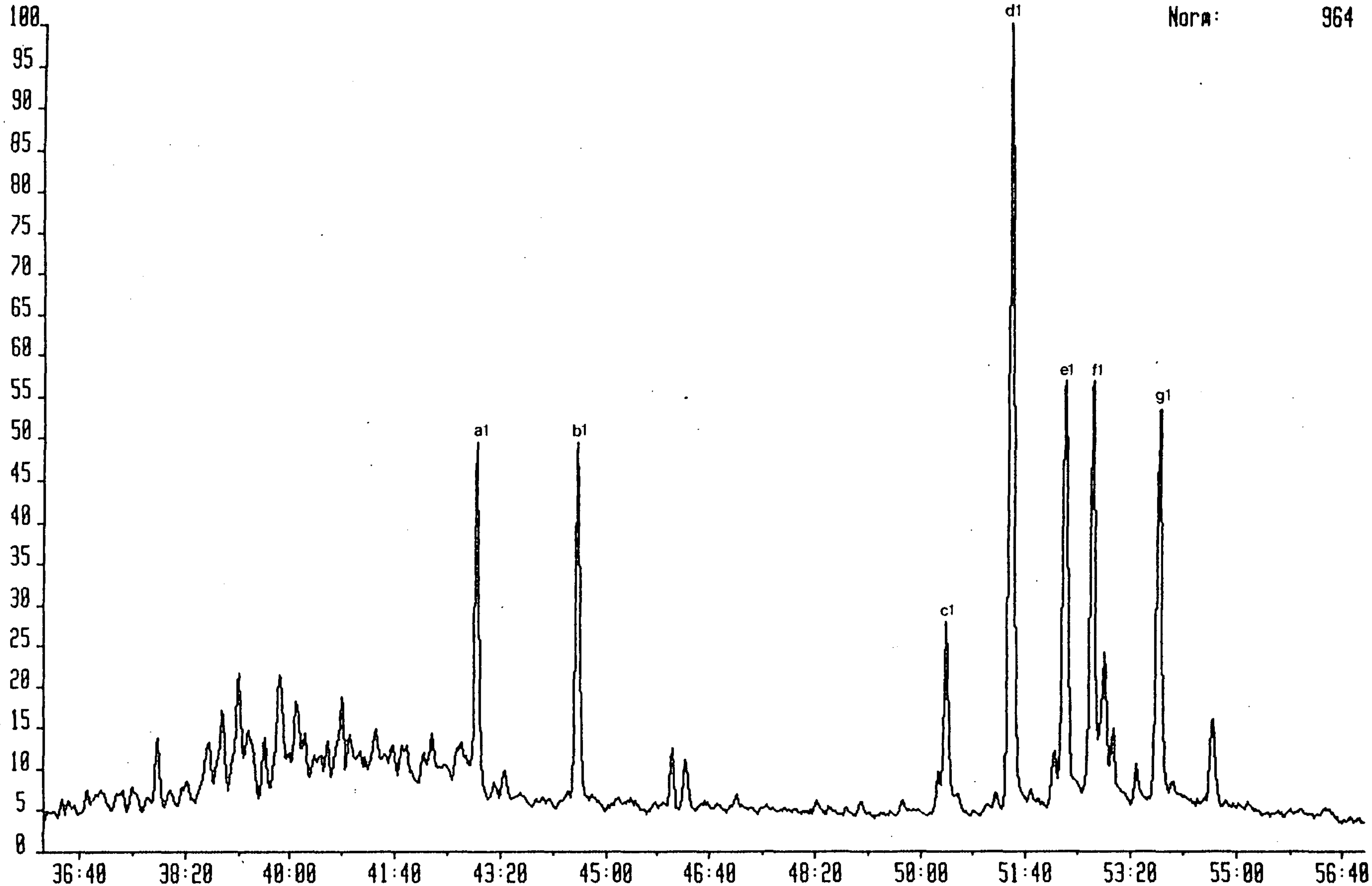

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 3 Injection 1 Group 1 Mass 231.1174
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



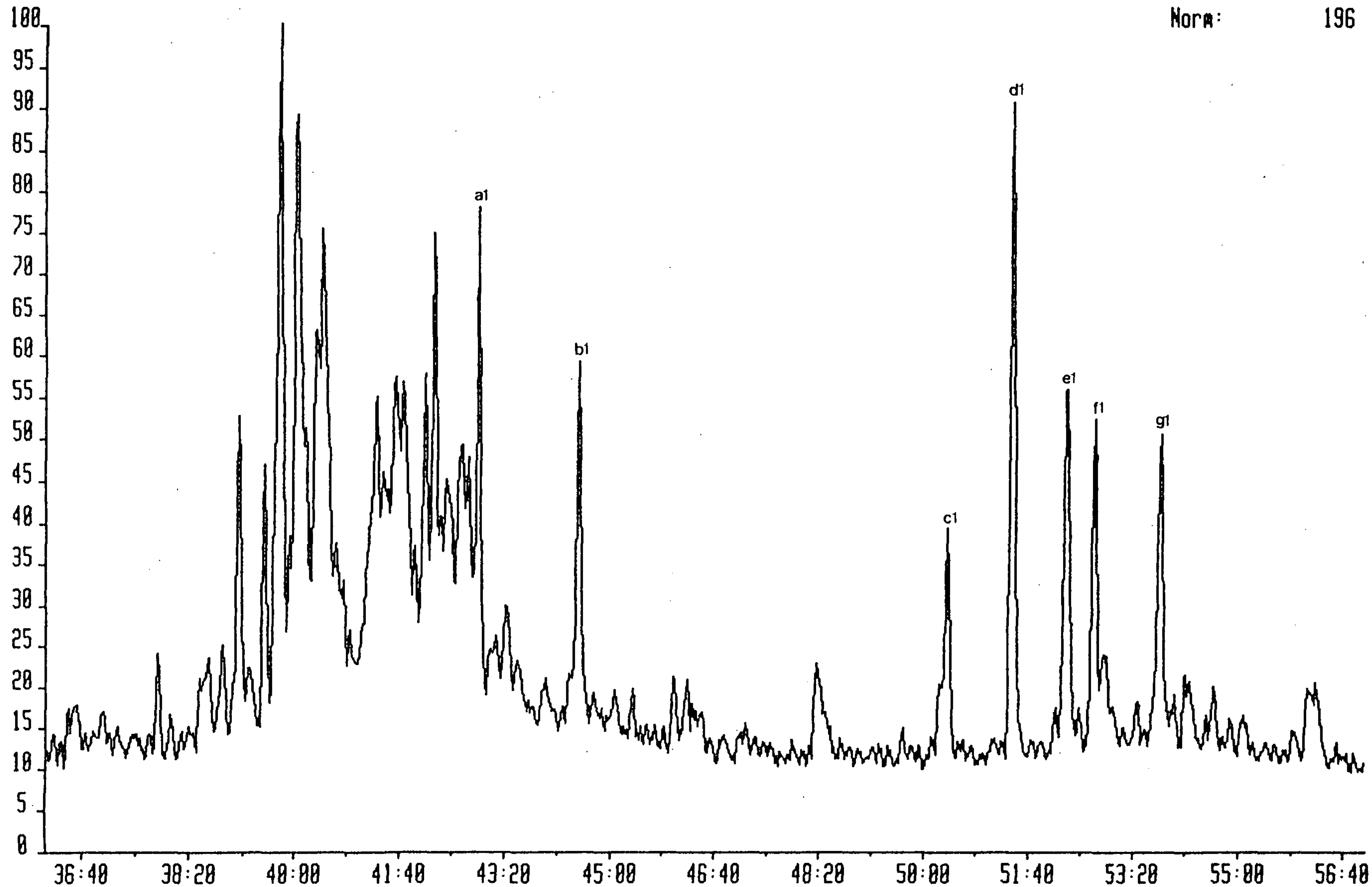

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 4 Injection 1 Group 1 Mass 231.1174
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION



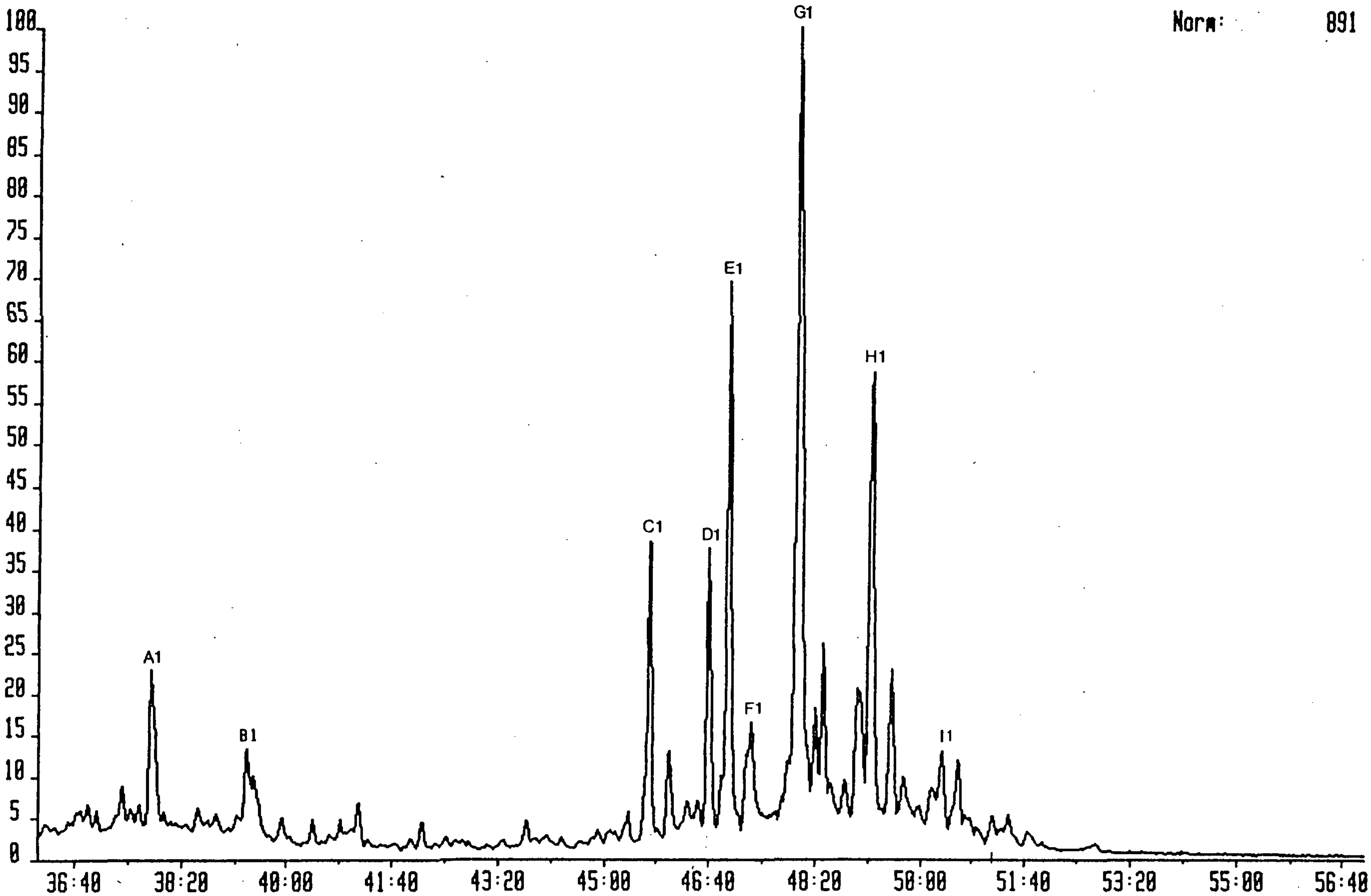

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 5 Injection 1 Group 1 Mass 231.1174
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION



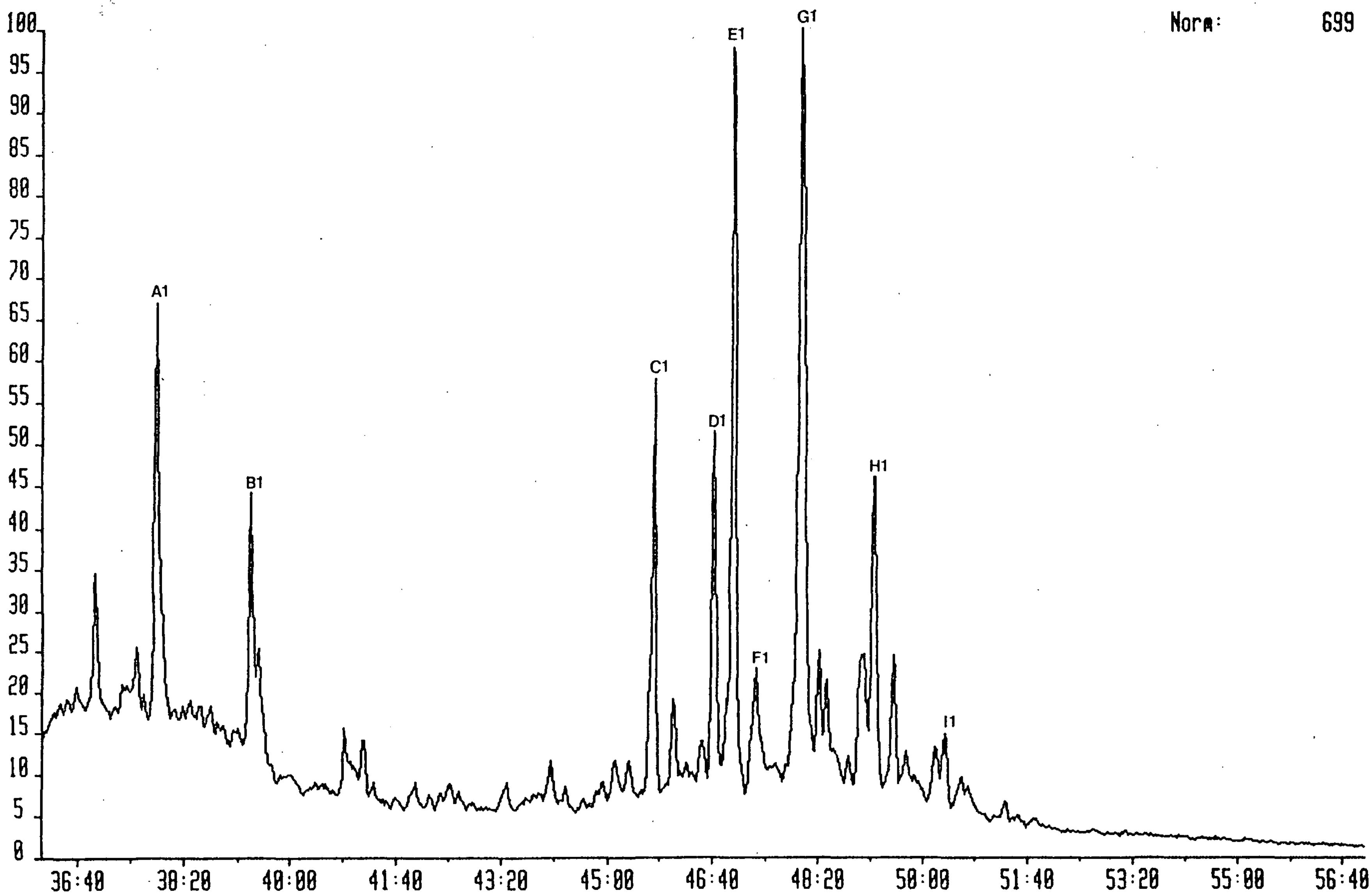

GEOLAB NOR

EXAMPLE OF PEAK IDENTIFICATION FOR M/Z 253 MONOAROMATIC STERANES



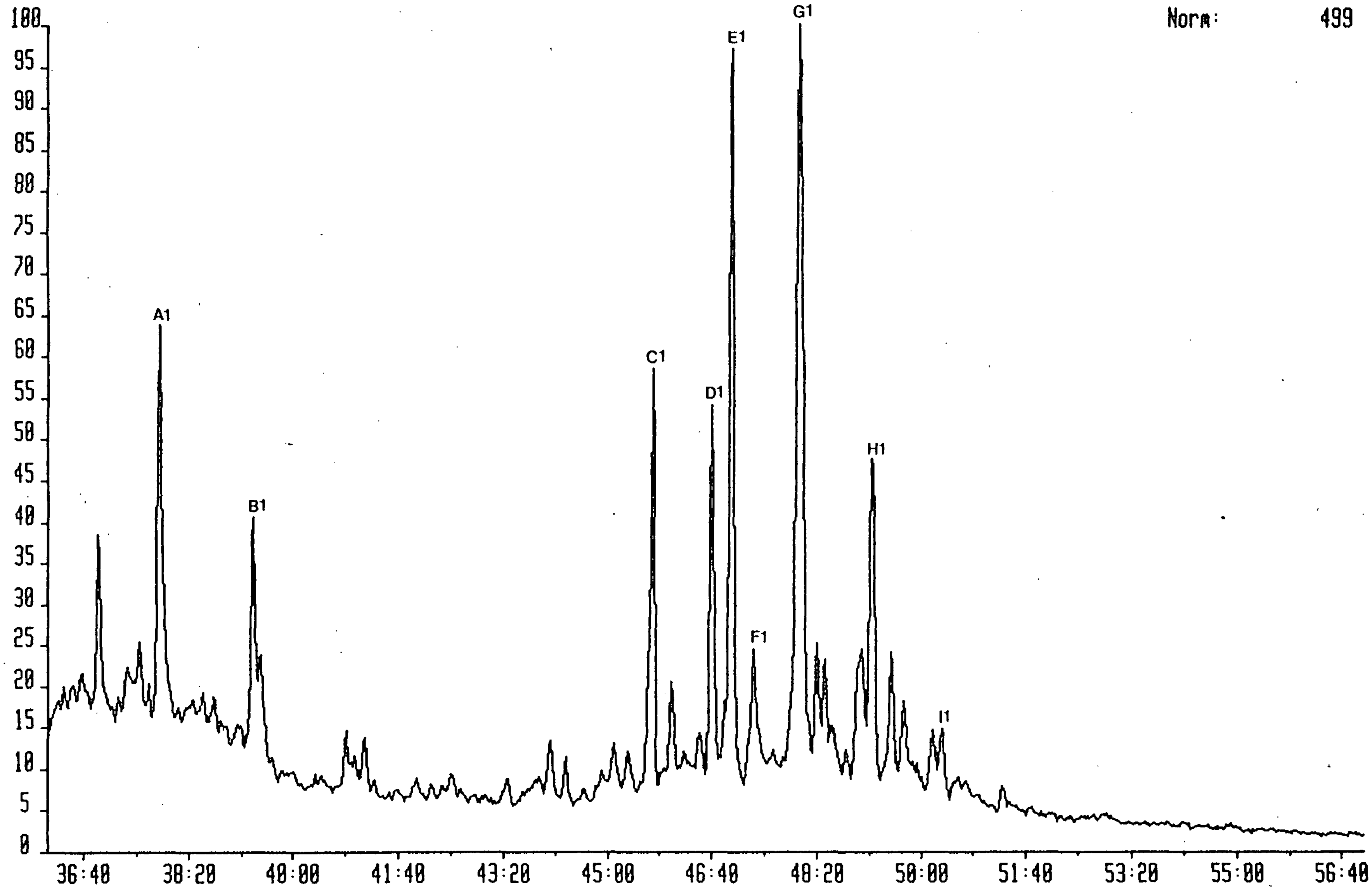

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 1 Injection 1 Group 1 Mass 253.1956
Text:WELL 34/7-5, 2511M, AROMATIC FRACTION



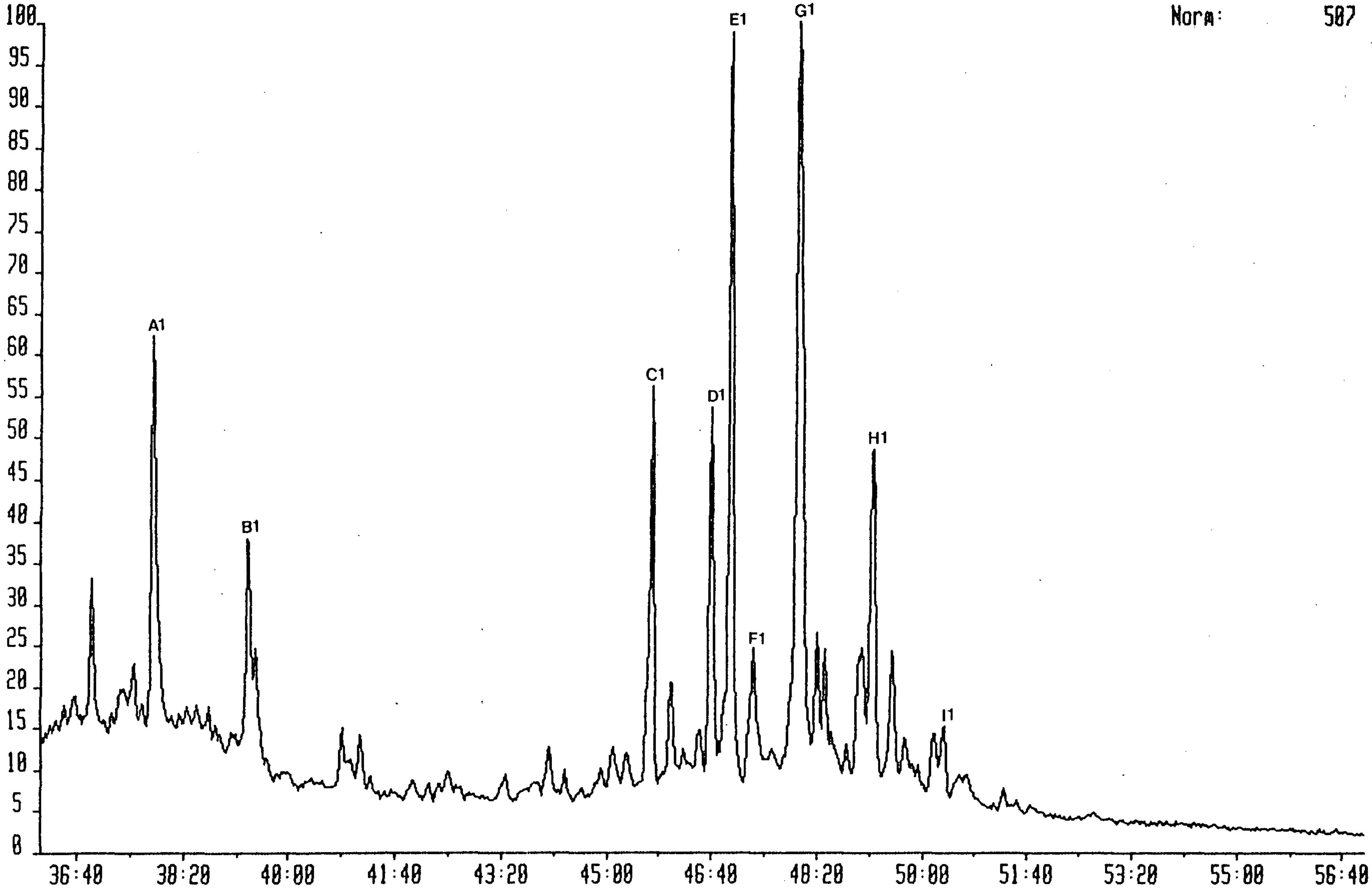

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 2 Injection 1 Group 1 Mass 253.1956
Text:WELL 34/7-5, 2550M, AROMATIC FRACTION



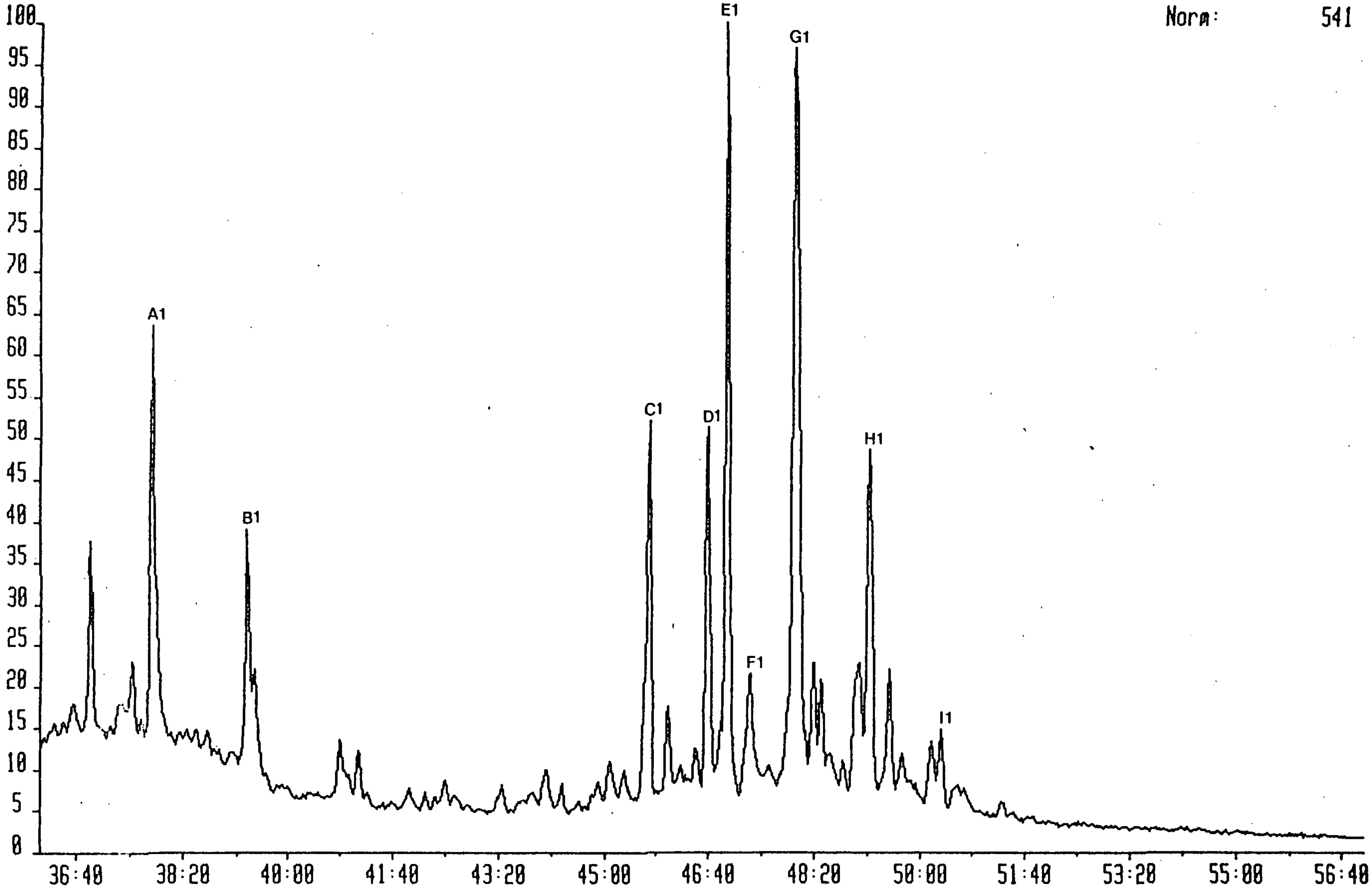

GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 3 Injection 1 Group 1 Mass 253.1956
Text:WELL 34/7-5, 2576M, AROMATIC FRACTION



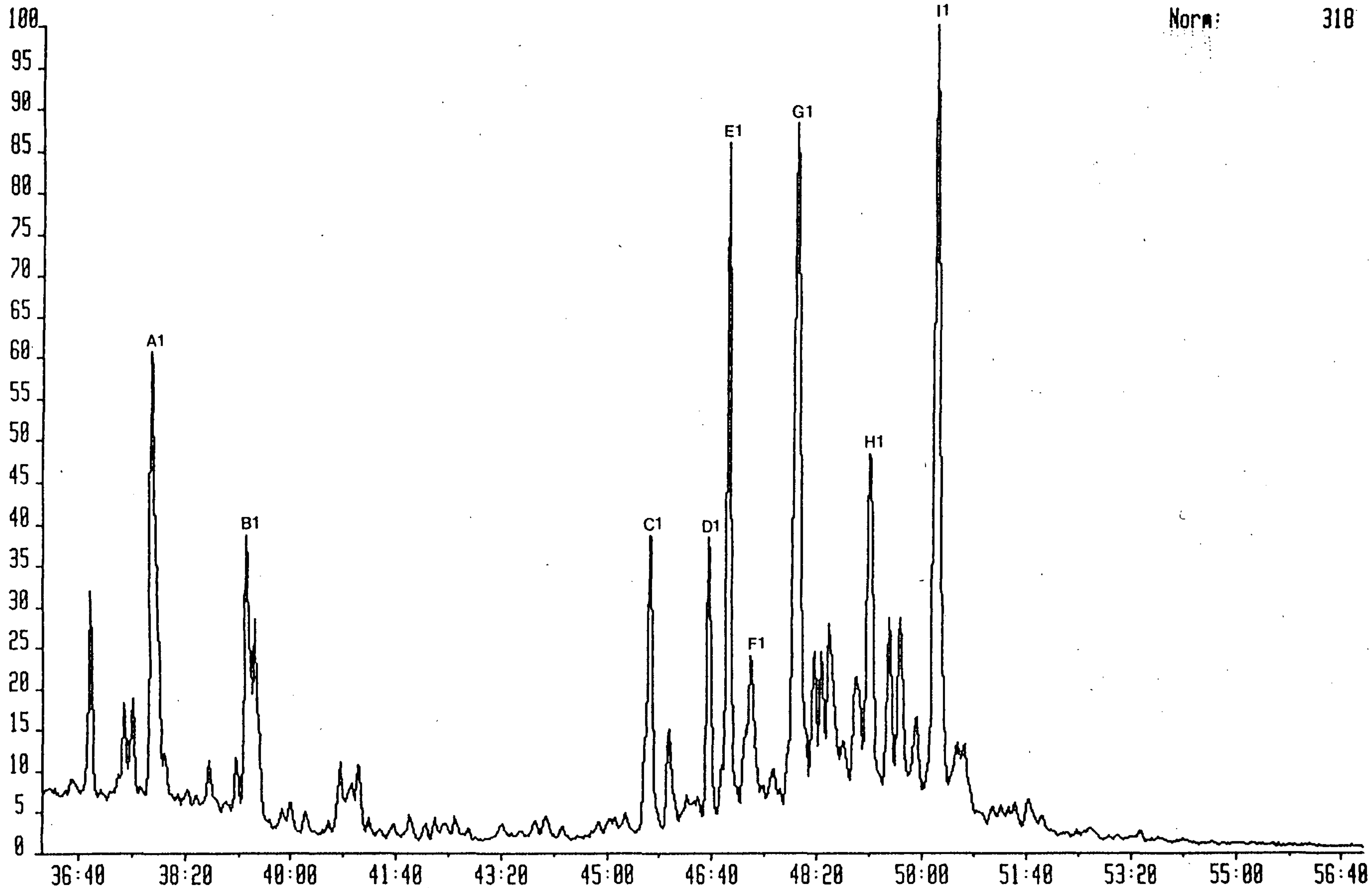

GEOLAB NOR

T[illegible]PENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:AR01
Sample 4 Injection 1 Group 1 Mass 253.1956
Text:WELL 34/7-5, 2611M, AROMATIC FRACTION




GEOLAB NOR

TAMPENARO 1-MAR-91 Sir:Magnetic TS250 Acnt:GEOLAB System:ARO1
Sample 5 Injection 1 Group 1 Mass 253.1956
Text:WELL 34/7-5, 2630M, AROMATIC FRACTION

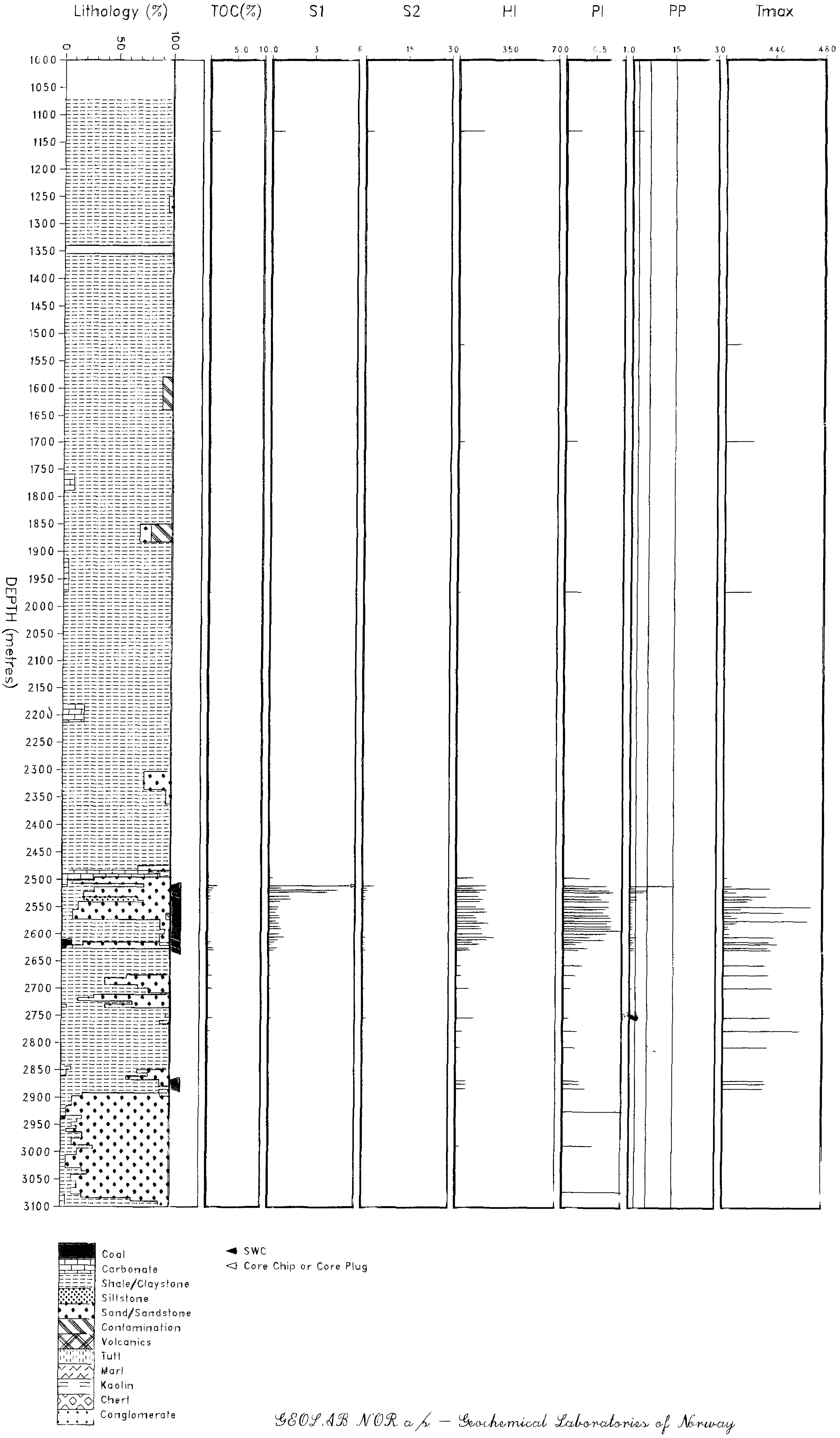



GEOLAB NOR

Enclosure: 1

Client: GEOLAB NOR

# Rock–Eval Pyrolysis Data for Well NOCS 34/7–5

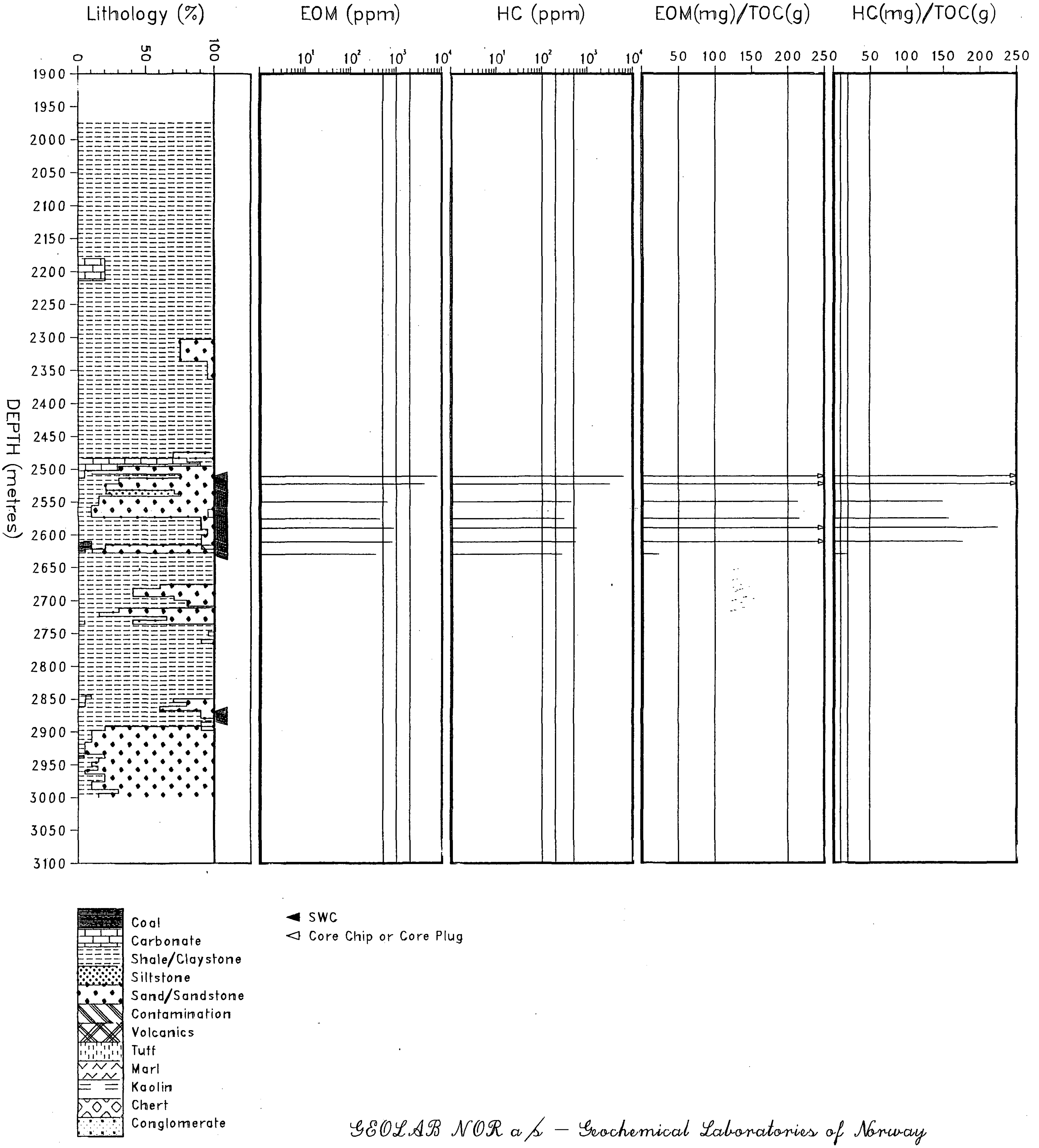



GEOLAB NOR a/s – Geochemical Laboratories of Norway

Enclosure: 2

Client: GEOLAB NOR

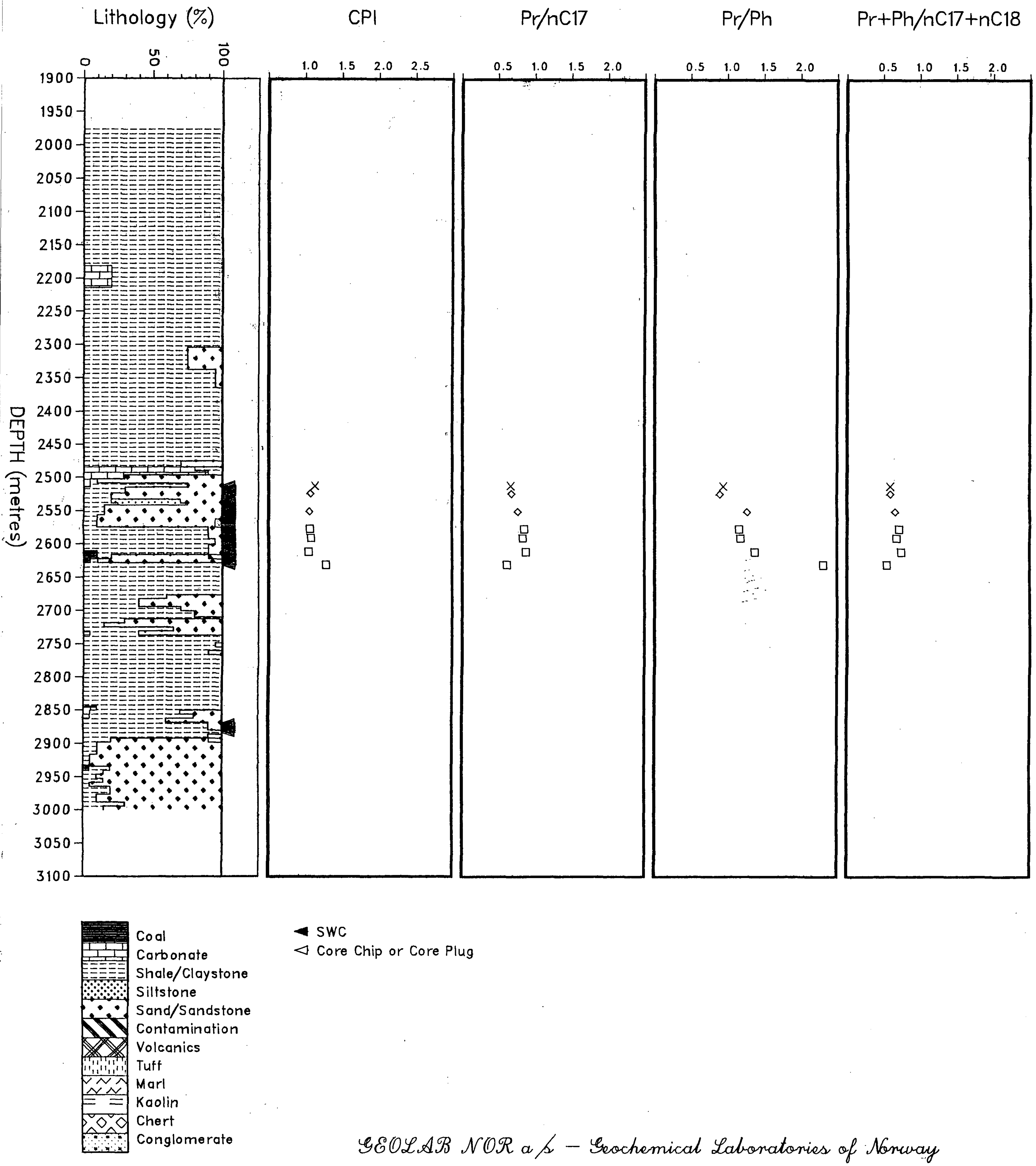
# Extraction Data for Well NOCS 34/7-5




GEOLAB NOR a/s – Geochemical Laboratories of Norway

Enclosure: 3 Client: GEOLAB NOR

# Saturated Hydrocarbon Ratios for Well NOCS 34/7-5

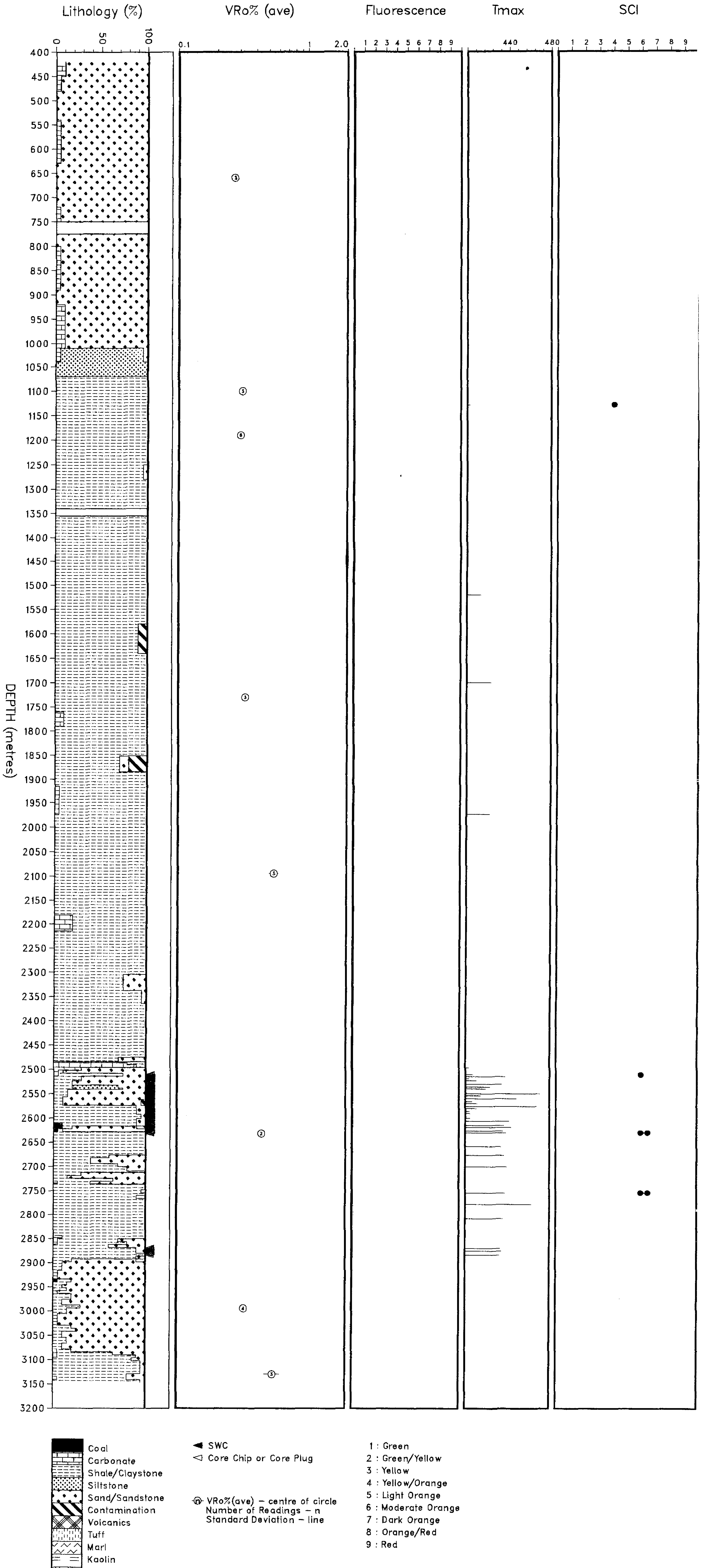



*GEOLAB NOR a/s — Geochemical Laboratories of Norway*

Enclosure: 4

Client: GEOLAB NOR

# Thermal Maturity Data for Well NOCS 34/7-5




*GEOLAB NOR a/s - Geochemical Laboratories of Norway*

Enclosure: 5

Client: GEOLAB NOR

# Summary Log for Well NOCS 34/7-5


GEOLAB NOR a/s – Geochemical Laboratories of Norway

Enclosure: 6

Client: GEOLAB NOR

# Geochemical summary for Well NOCS 34/7-5