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- Q.9 Carbon isotope compositions
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TABLE E1
ORGANIC CARBON RESULTS AND GROSS LITHOLOGIC DESCRIPTIONS

| JOB 4127 | DEPTH/ IDENTITY | GROSS LITHOLOGIC DESCRIPTION | G S A COLOUR CODE | TOTAL ORGANIC CARBON (Wt. %) |
|-----------------------------|--------------------|------------------------------|-------------------------|---------------------------------------|
| GEOCHEM SAMPLE NUMBER | | | | |

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| | | | | |
|----------|---------|---|---------|--|
| 4127-001 | 2577.4m | A100% SANDSTONE - med to coarse grained, blocky, mod soft, yellow F, slow blooming milky cut, moderate yellowish brown. | 10YR5/4 | |
| 4127-002 | 2605.7m | A100% SANDSTONE - med grained, blocky, mod soft, yellow F, slow blooming milky cut, dark yellowish orange. | 10YR6/6 | |

Abbreviations = arenaceous, argillaceous, calcareous, Cut, dolomite, Fluorescence, foraminifera fossiliferous, Lost Circulation Material, moderately, occasionally, slightly, very

TABLE E2
 CONCENTRATION (PPM) OF EXTRACTED C₁₅₊ MATERIAL IN ROCK

| JOB 4127 | L I T H O | DEPTH/ IDENTITY | TOTAL EXTRACT | HYDROCARBONS | | | NON HYDROCARBONS | | | |
|----------|-----------------------|--------------------|------------------|--------------|-----------|-------|--------------------------|-----------------|---------------------|-------|
| | | | | Saturates | Aromatics | TOTAL | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's | TOTAL |

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| | | | | | | | | | |
|----------|---------|-------|------|------|-------|-----|-----|----|------|
| 4127-001 | 2577.4m | 12059 | 8778 | 2094 | 10872 | 292 | 871 | 24 | 1187 |
| 4127-002 | 2605.7m | 8226 | 5785 | 1222 | 7007 | 236 | 967 | 17 | 1219 |

TABLE E3
COMPOSITION (NORMALISED %) OF C₁₅₊ MATERIAL

| WB 4127 GEOCHEM SAMPLE NUMBER | L I T H O | DEPTH/ IDENTITY | HYDROCARBONS | | NON HYDROCARBONS | | |
|--|-----------------------|--------------------|--------------|-----------|--------------------------|-----------------|---------------------|
| | | | Saturates | Aromatics | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's |

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| | | | | | | |
|----------|---------|-------|-------|------|-------|------|
| 4127-001 | 2577.4m | 72.79 | 17.37 | 2.42 | 7.22 | 0.20 |
| 4127-002 | 2605.7m | 70.32 | 14.86 | 2.86 | 11.75 | 0.20 |

TABLE E4
SIGNIFICANT C₁₅₊ RATIOS

| JOB 4127 | L I T H O | DEPTH/ IDENTITY | TOC (%) | mg/g TOC | | | | | | HYDROCARBONS % TOTAL EXTRACT | SATURATES AROMATICS |
|----------|-----------------------|--------------------|------------|------------------|-----------|-----------|-----------------------|-----------------|-------------|------------------------------------|------------------------|
| | | | | TOTAL EXTRACT | SATURATES | AROMATICS | TOTAL HYDROCARBONS | ELUTED NSO's | ASPHALTENES | | |
| 4127-001 | | 2577.4m | 0.12 | 10049.32 | 7314.96 | 1745.07 | 9060.02 | 725.43 | 243.64 | 90.16 | 4.19 |
| 4127-002 | | 2605.7m | 0.31 | 2653.58 | 1866.08 | 394.34 | 2260.42 | 311.80 | 75.97 | 85.18 | 4.73 |

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4127-001 2577.4m 0.12 10049.32 7314.96 1745.07 9060.02 725.43 243.64 90.16 4.19
 4127-002 2605.7m 0.31 2653.58 1866.08 394.34 2260.42 311.80 75.97 85.18 4.73

TABLE E5
 C₁₅₊ CHROMATOGRAPHY WEIGHTS (gms)

| JOB 4127 | L I T H O | DEPTH/ IDENTITY | ROCK EXTRACTED | TOTAL EXTRACT | PRECIPTD. ASPHALTENES | NC5 | SATURATES | AROMATICS | ELUTED NSO's | NON-ELUTED NSO's |
|-----------------------------|-----------------------|--------------------|-------------------|------------------|--------------------------|-----|-----------|-----------|-----------------|---------------------|
| GEOCHEM SAMPLE NUMBER | | | | | | | | | | |

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| | | | | | | | | | | |
|-----------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 4127-001A | | 2577.4m | 19.7700 | 0.23841 | 0.00578 | 0.23263 | 0.17354 | 0.04140 | 0.01721 | 0.00048 |
| 4127-002A | | 2605.7m | 19.1500 | 0.15753 | 0.00451 | 0.15302 | 0.11078 | 0.02341 | 0.01851 | 0.00032 |

TABLE E6
COMPOSITION (NORMALISED %) OF C₁₅+ SATURATE-(PARAFFIN - NAPHTHENE) HYDROCARBONS

| GEOCHEM SAMPLE NUMBER | 001 | 002 |
|-----------------------|---------|---------|
| DEPTH | 2577.4m | 2605.7m |
| SAMPLE TYPE | | |
| nC15 | 0.63 | 0.34 |
| nC16 | 2.01 | 0.58 |
| nC17 | 6.14 | 1.91 |
| nC18 | 8.67 | 5.15 |
| nC19 | 10.38 | 7.94 |
| nC20 | 10.74 | 10.26 |
| nC21 | 8.89 | 10.05 |
| nC22 | 9.77 | 10.13 |
| nC23 | 8.03 | 9.18 |
| nC24 | 7.85 | 9.28 |
| nC25 | 6.24 | 8.03 |
| nC26 | 5.05 | 7.01 |
| nC27 | 4.04 | 5.40 |
| nC28 | 3.24 | 3.99 |
| nC29 | 2.72 | 3.50 |
| nC30 | 1.85 | 2.43 |
| nC31 | 1.29 | 1.71 |
| nC32 | 0.84 | 0.99 |
| nC33 | 0.69 | 0.85 |
| nC34 | 0.54 | 0.71 |
| nC35 | 0.38 | 0.58 |
| Paraffin | 12.95 | 15.27 |
| Isoprenoid | 1.64 | 1.19 |
| Naphthene | 85.41 | 83.54 |
| CPI 1 Index | 0.93 | 0.98 |
| CPI 2 Index | 1.05 | 1.06 |
| CPI 3 Index | 0.97 | 0.98 |
| Prist/Phytane | 0.94 | 0.67 |
| Prist/nC17 | 0.78 | 1.29 |
| Phytane/nC18 | 0.59 | 0.72 |

Job Number : 4127

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27} + C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31} + C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{28} + C_{28}}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE E7
METHYLPHENANTHRENE INDICES (MPI)

| JOB 4127 GEOCHEM SAMPLE NUMBER | DEPTH/ IDENTITY | SAMPLE TYPE | MPI 1 | | Rcalc | | MPI 2 | |
|---|--------------------|----------------|-------|--------|-------|--------|-------|--------|
| | | | AREA | HEIGHT | AREA | HEIGHT | AREA | HEIGHT |

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| | | | | | | | | |
|----------|---------|--|------|------|--|--|------|------|
| 4127-001 | 2577.4m | | 0.74 | 0.81 | | | 0.79 | 0.84 |
| 4127-002 | 2605.7m | | 0.66 | 0.69 | | | 0.71 | 0.73 |

$$i = \frac{1.5(2\text{-MP} + 3\text{-MP})}{P + 1\text{-MP} + 9\text{-MP}} \quad \text{MPI 2} = \frac{3(2\text{-MP})}{P + 1\text{-MP} + 9\text{-MP}}$$

$$\text{Rcalc} = \begin{cases} 0.60(\text{MPI 1}) + 0.40 & \text{(if } R_o < 1.35\% \text{)} \\ -0.60(\text{MPI 1}) + 2.30 & \text{(if } R_o > 1.35\% \text{)} \end{cases}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE E8

AROMATIC HYDROCARBONS RATIOS (MSD, PEAK AREA DATA)

| SAMPLE NUMBER | DEPTH (m) | 2MP/1MP | RATIO 1 | RATIO 2 | RATIO 3 |
|---------------|-----------|---------|---------|---------|---------|
|---------------|-----------|---------|---------|---------|---------|

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| | | | | | |
|-----------|--------|------|------|------|------|
| 4127-001A | 2577.4 | 0.74 | 0.27 | 0.58 | 0.13 |
| 4127-002A | 2605.7 | 0.63 | 0.23 | 0.59 | 0.10 |

RATIO 1 = $A(231)/A(231) + G(231)$

RATIO 2 = $E(253)/E(253) + G(253)$

RATIO 3 = $A(253)/B(231) + E(253)$

TABLE E9
 CARBON ISOTOPE COMPOSITIONS (‰, PDB)

| JOB 4127 | DEPTH/ IDENTITY | TOTAL EXTRACT WHOLE OIL | SATURATES | AROMATICS | NSO | ASPHALTENES | KEROGEN | PYROLYSATE (S2) |
|----------|--------------------|----------------------------|-----------|-----------|-----|-------------|---------|--------------------|
|----------|--------------------|----------------------------|-----------|-----------|-----|-------------|---------|--------------------|

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| | | | | | | | | |
|----------|---------|--------|--------|--------|--------|--------|--|--|
| 4127-001 | 2577.4m | -29.76 | -29.89 | -28.91 | -29.05 | -29.23 | | |
| 4127-002 | 2605.7m | -29.78 | -29.75 | -28.70 | -29.16 | -29.19 | | |

TABLE E10
BIOMARKER MOLECULAR RATIOS

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| SAMPLE NUMBER | DEPTH (m) | Steranes (m/z 217) | | | Steranes (m/z 218) | | |
|------------------|--------------|--------------------|------------|--------------------|-------------------------|-----|-----|
| | | A (A+J) | Q (Q+T) | (R+S) (Q+R+S+T) | NORMALISED COMPOSITION: | | |
| | | | | | B | D | F |
| 4127-001A | 2577.4 | 0.56 | 0.50 | 0.46 | 26% | 28% | 46% |
| 4127-002A | 2605.7 | 0.59 | 0.48 | 0.46 | 32% | 28% | 40% |

TABLE E11
BIOMARKER MOLECULAR RATIOS

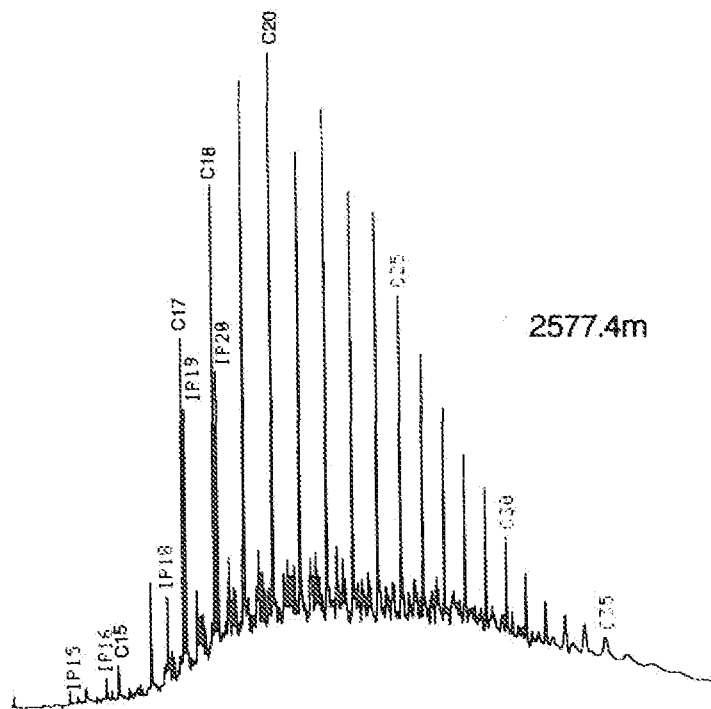
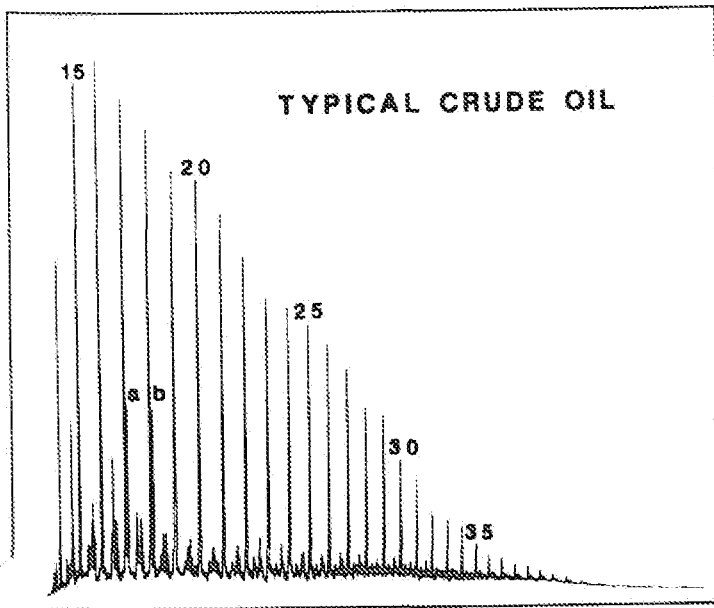
WELL 33/9-4

Terpanes (m/z 191)

| SAMPLE NUMBER | DEPTH (m) | A/B | Z/E | Z/C | Z (Z+E) | C (C+E) | %22S for J | E (E+F) | X (X+D) | Q/E |
|---------------|-----------|------|------|------|------------|------------|---------------|------------|------------|------|
| 4127-001A | 2577.4 | 1.38 | 0.40 | 0.62 | 0.29 | 0.40 | 62% | 0.88 | 0.63 | 0.06 |
| 4127-002A | 2605.7 | 1.28 | 0.31 | 0.52 | 0.24 | 0.37 | 64% | 0.88 | 0.60 | 0.07 |

FIGURE E.1.1 C₁₅₊ SATURATES CHROMATOGRAMS

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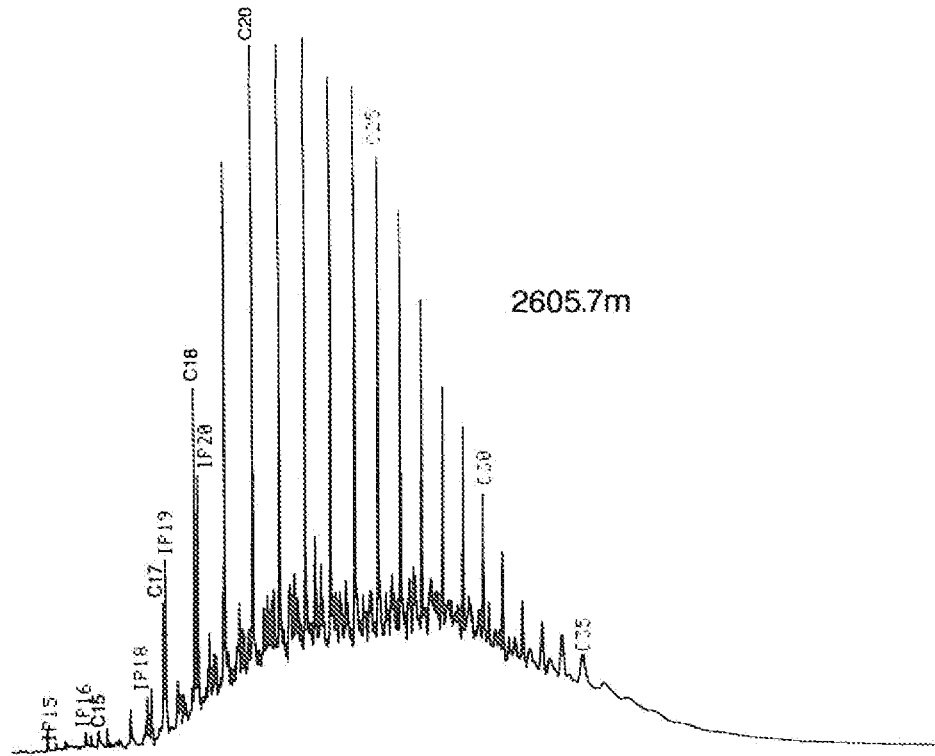
a - PRISTANE
b - PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20-nC₂₀)

FIGURE E1.2

C₁₅+ SATURATES CHROMATOGRAMS

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a = PRISTANE
b = PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20 - nC₂₀)

FIGURE E2.1

C₁₅+ AROMATIC CHROMATOGRAMS

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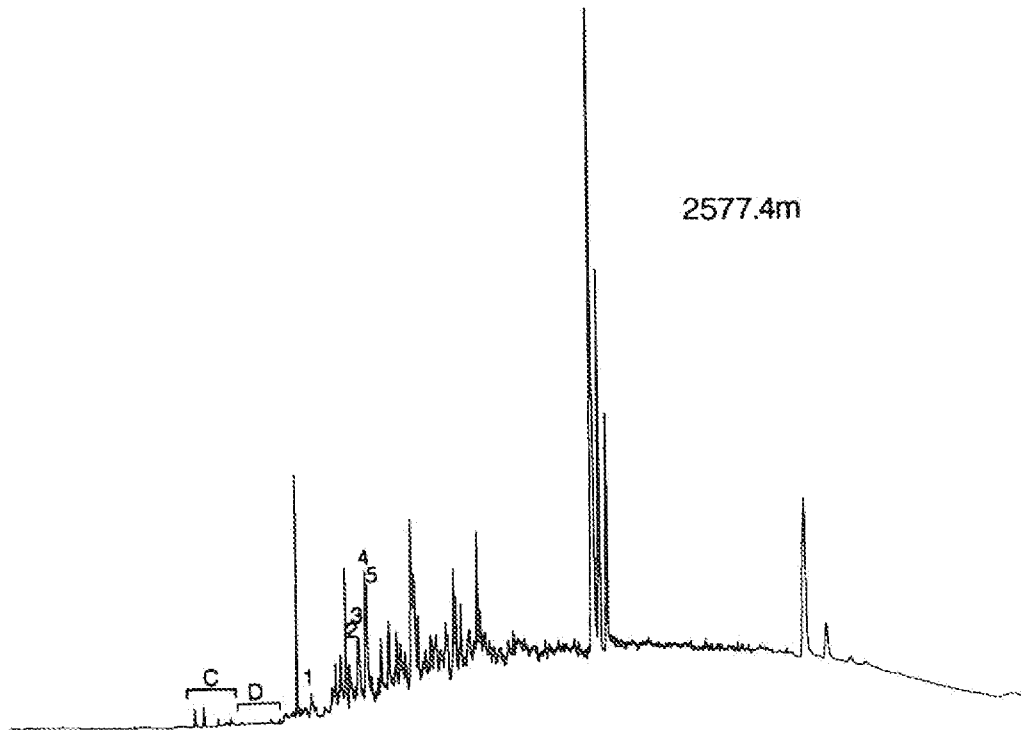
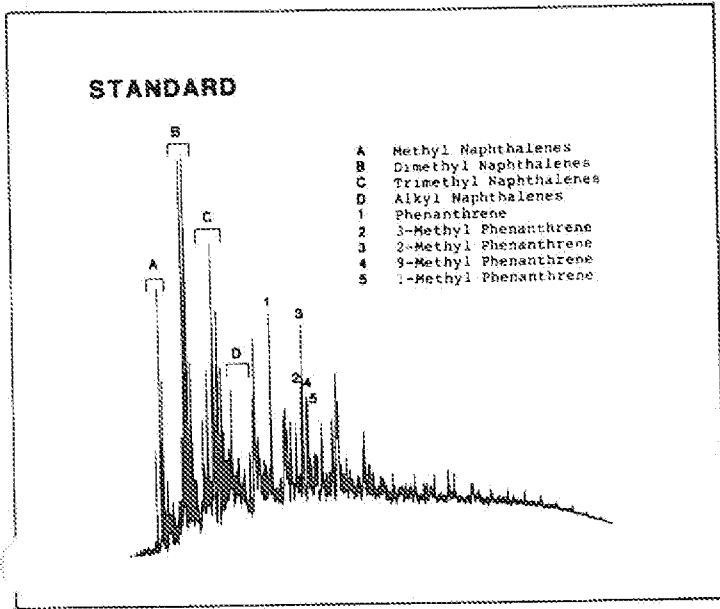
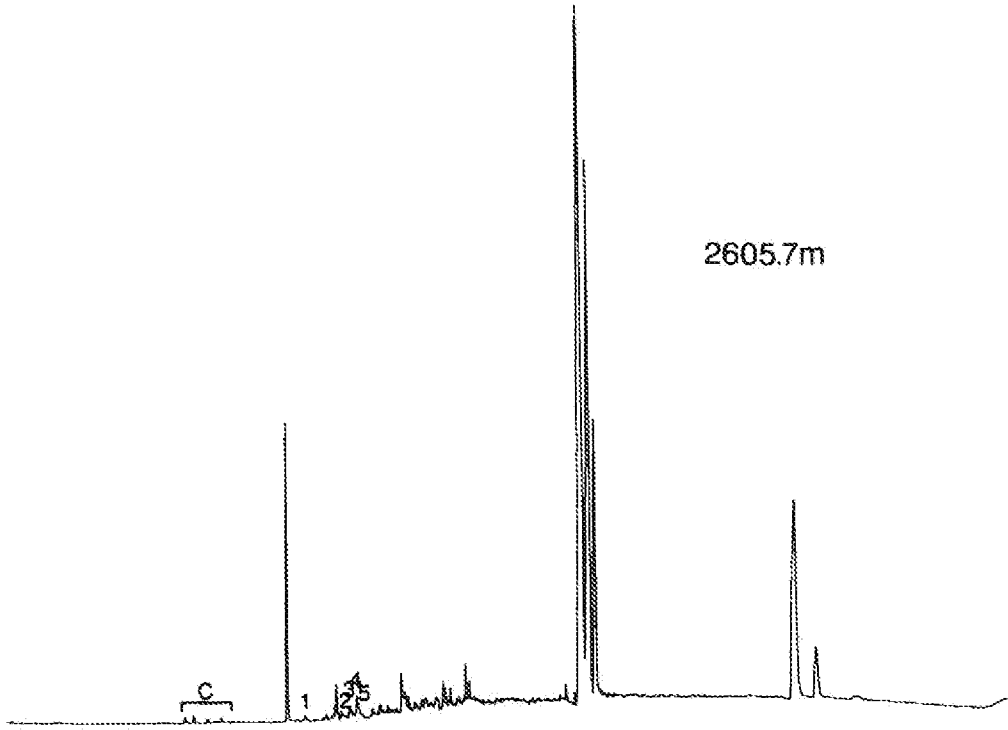


FIGURE E2.2

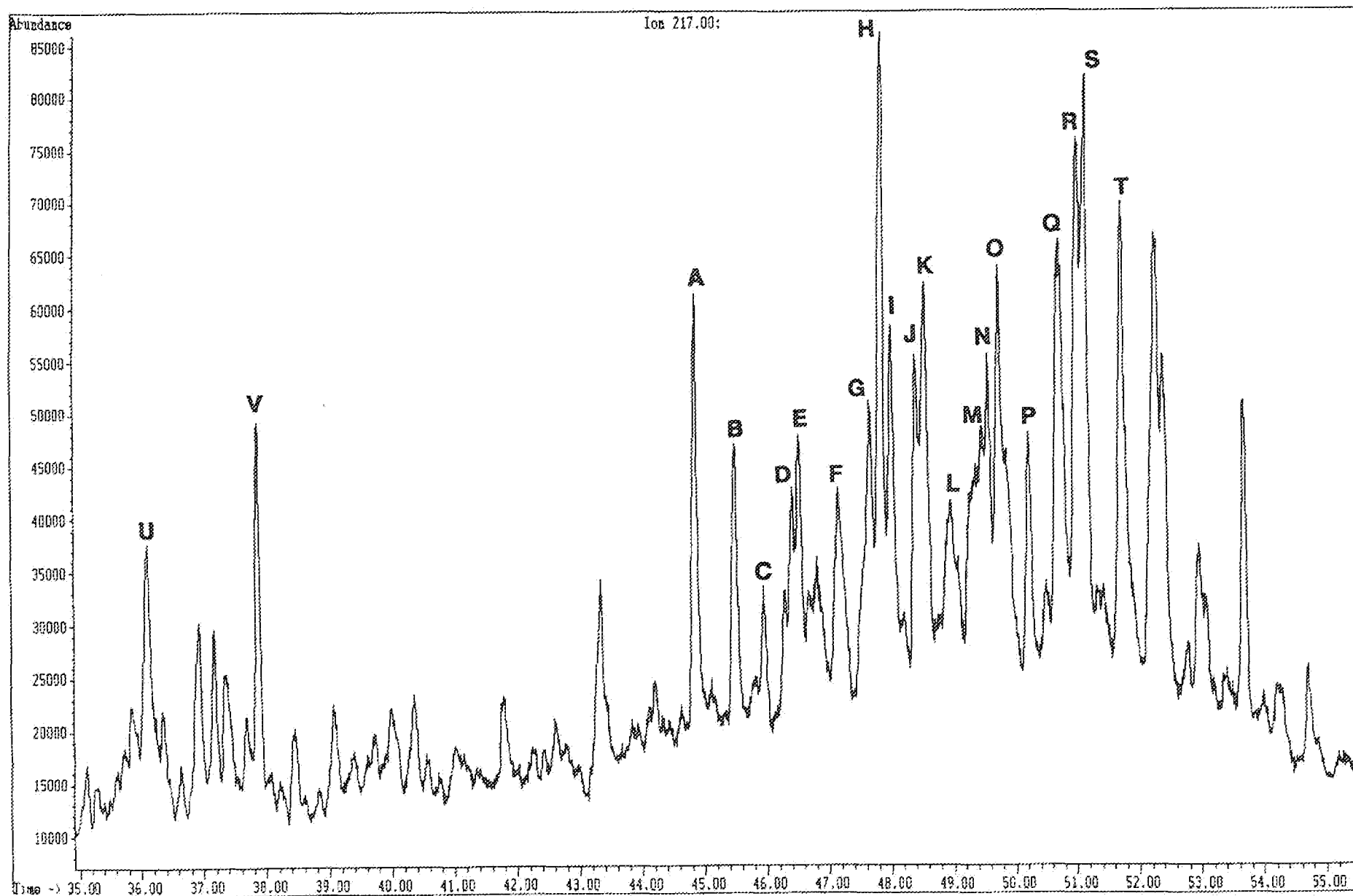
C₁₅+ AROMATIC CHROMATOGRAMS

WELL 33/9-4



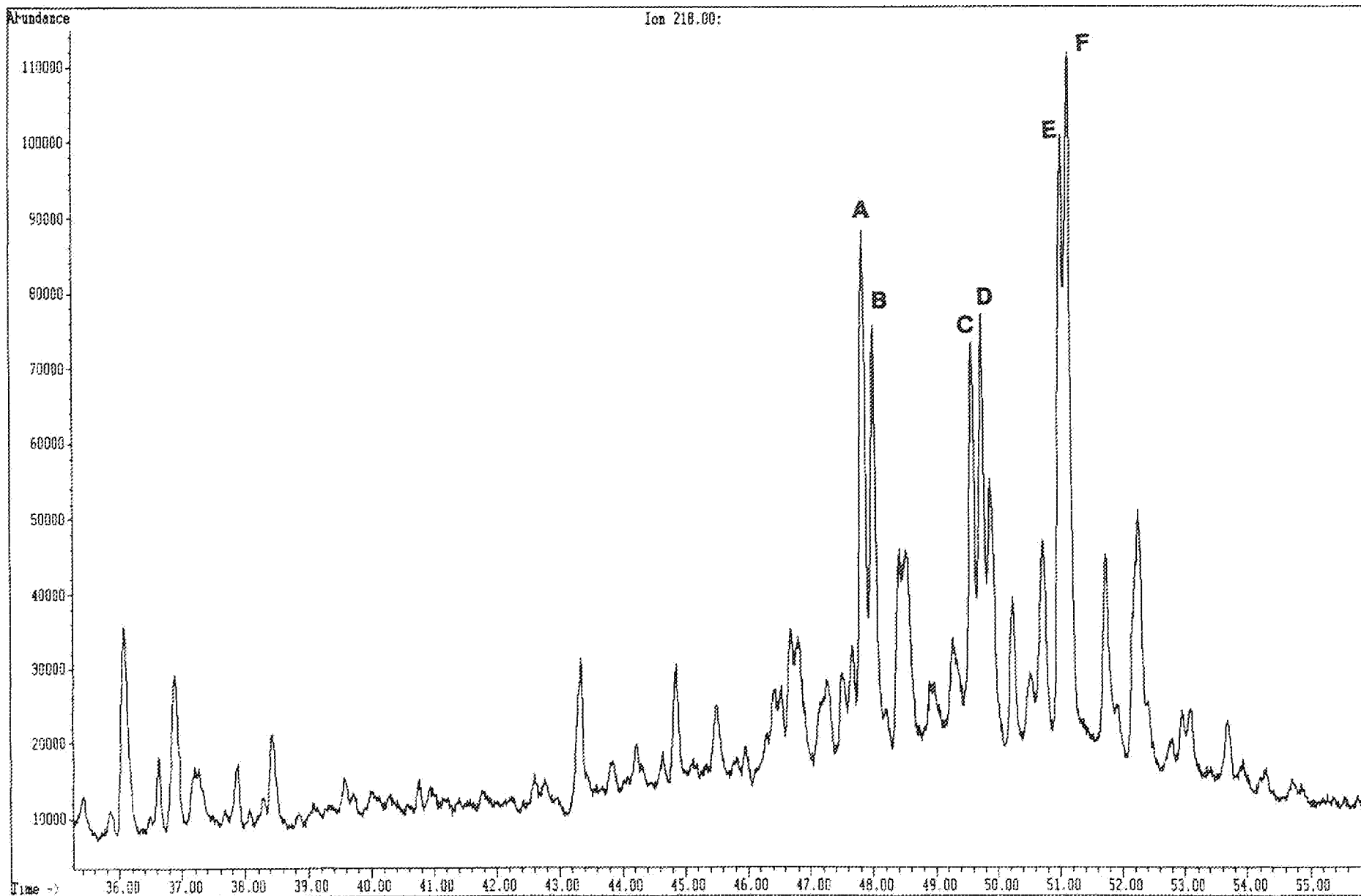
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Operator:
Date Acquired: 14 Dec 90 1:03 pm
Method File Name: BIOM.M
Sample Name: 4127-001
Misc info: WELL 33/9-4 2577.4M
Bottle Number: 23

ES. 1



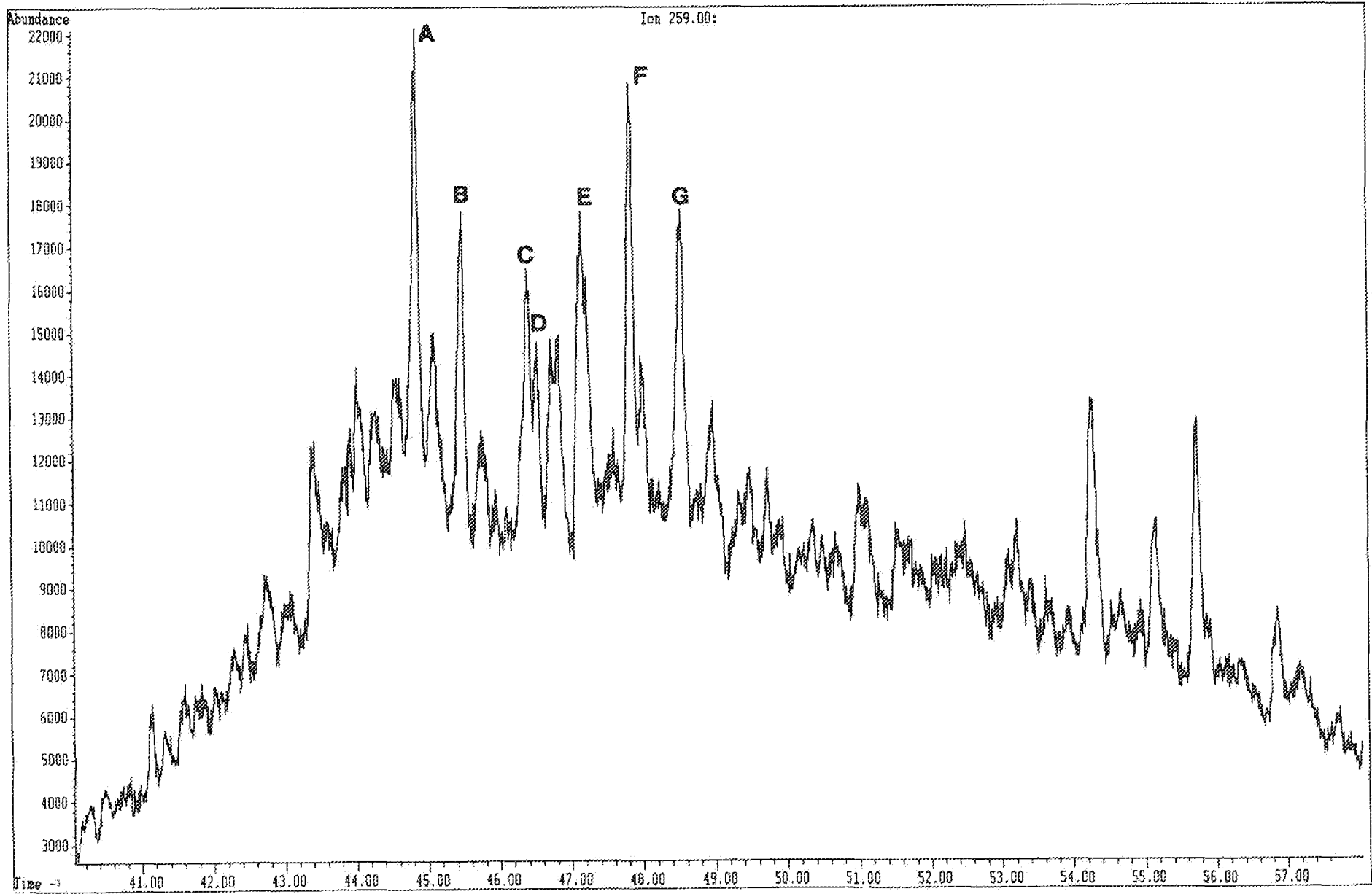
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Date Acquired: 14 Dec 90 1:03 pm
Method File Name: R10M.M
Sample Name: 4127-001
Misc Info: WELL 33/9-4 2577.4M
Bottle Number: 23

Es.1b



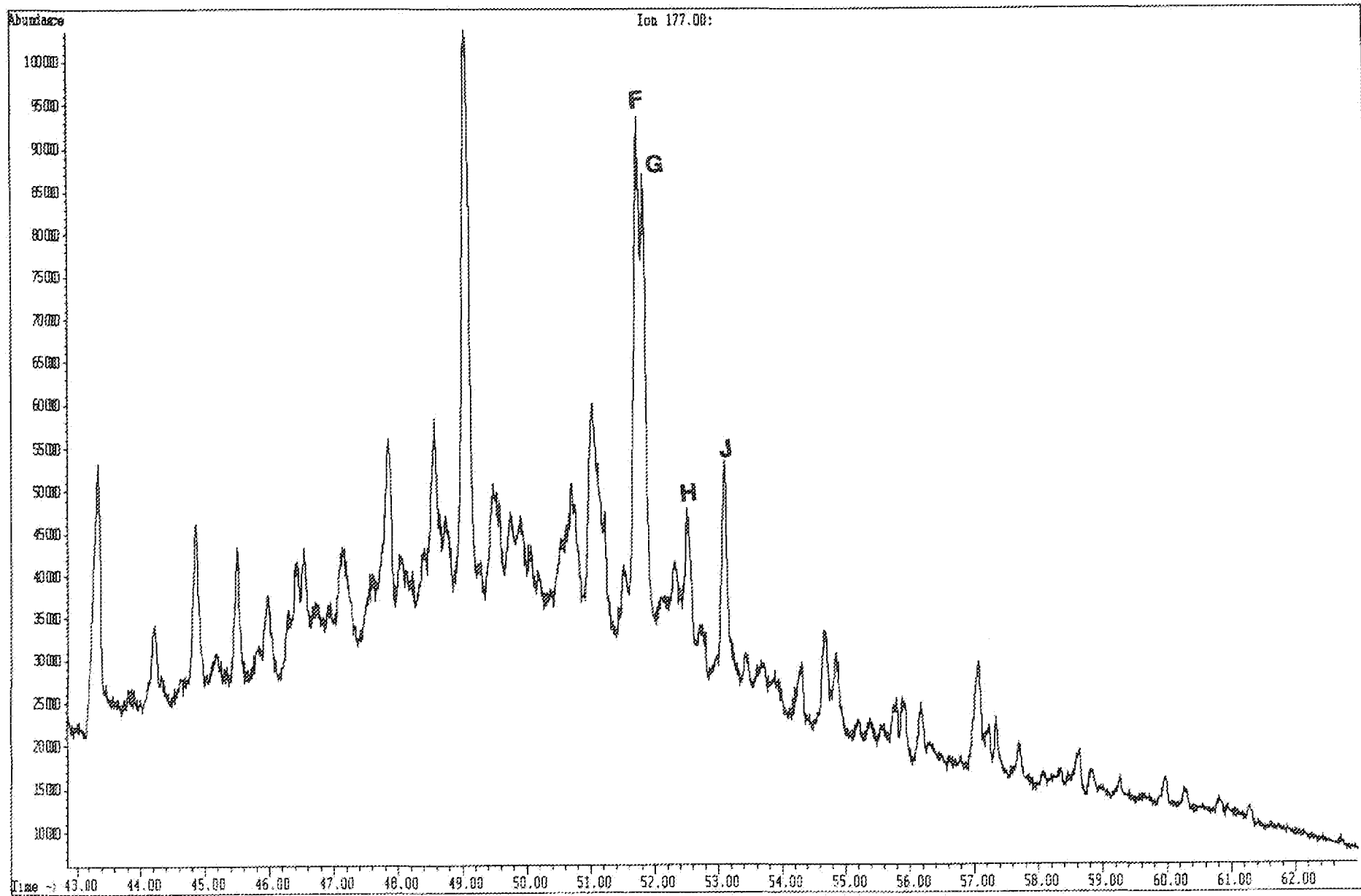
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Method File Name: BIOM.M
Sample Name: 4127-001
Misc Info: WELL 33/9-4 2577.4M
Bottle Number: 23

L.C



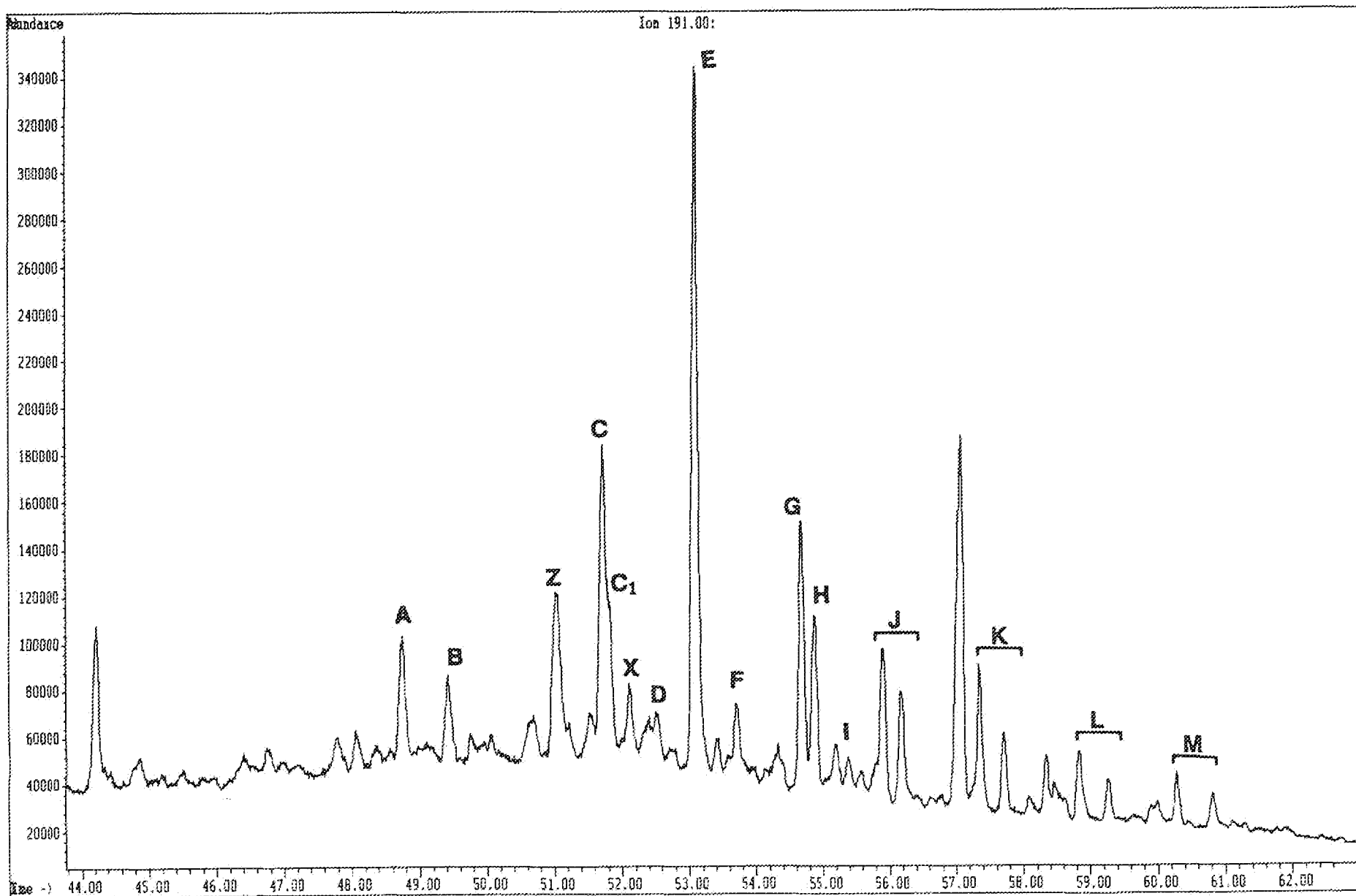
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Method File Name: B1GM.M
Sample Name: 4127-001
Mix Info: WELL 33/9-4 2577.4M
Bottle Number: 23

ES. 13

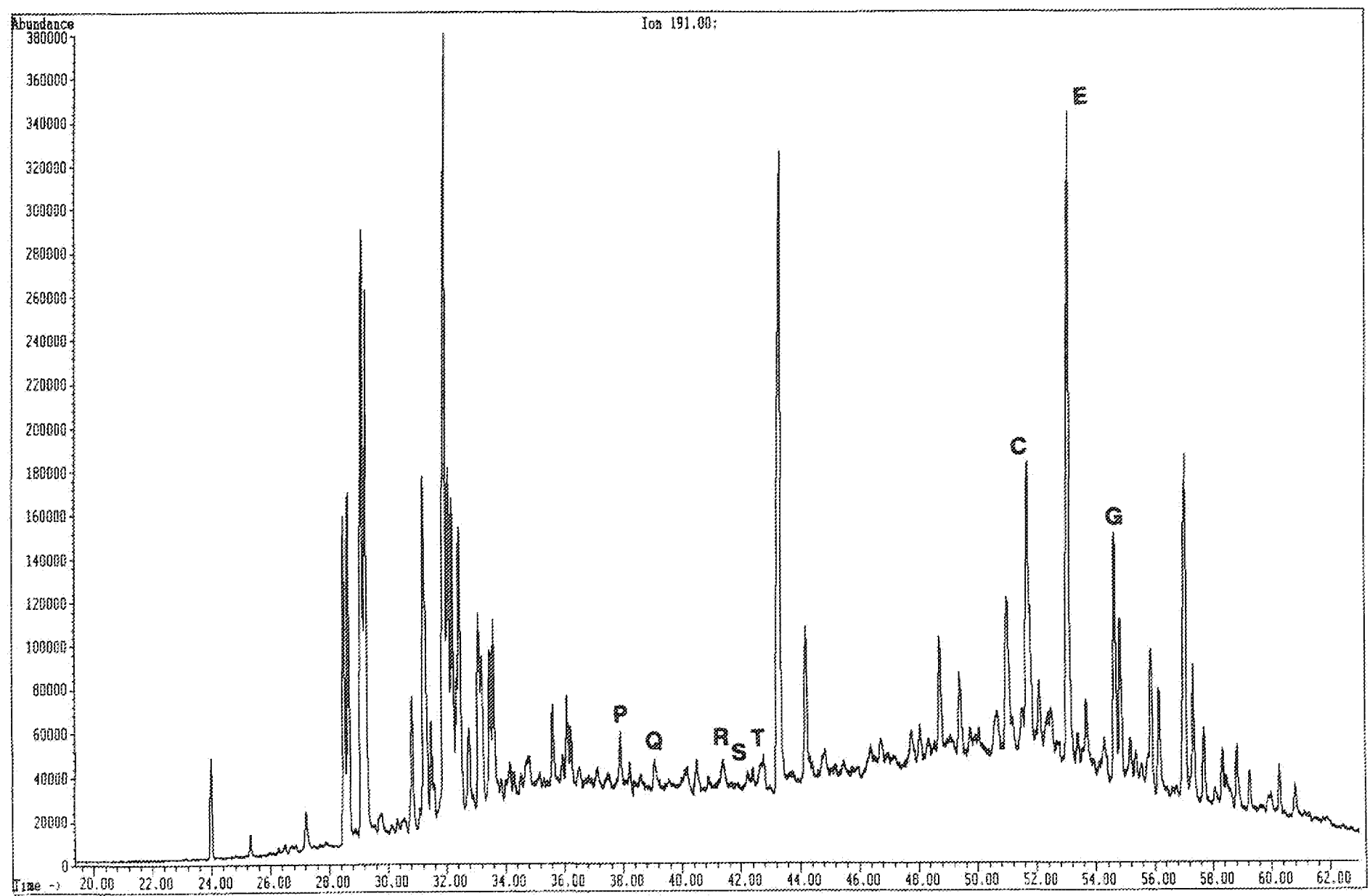


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Sample Name: 4127-001
Misc Info: WELL 33/9-4 2577.4M
Bottle Number: 23

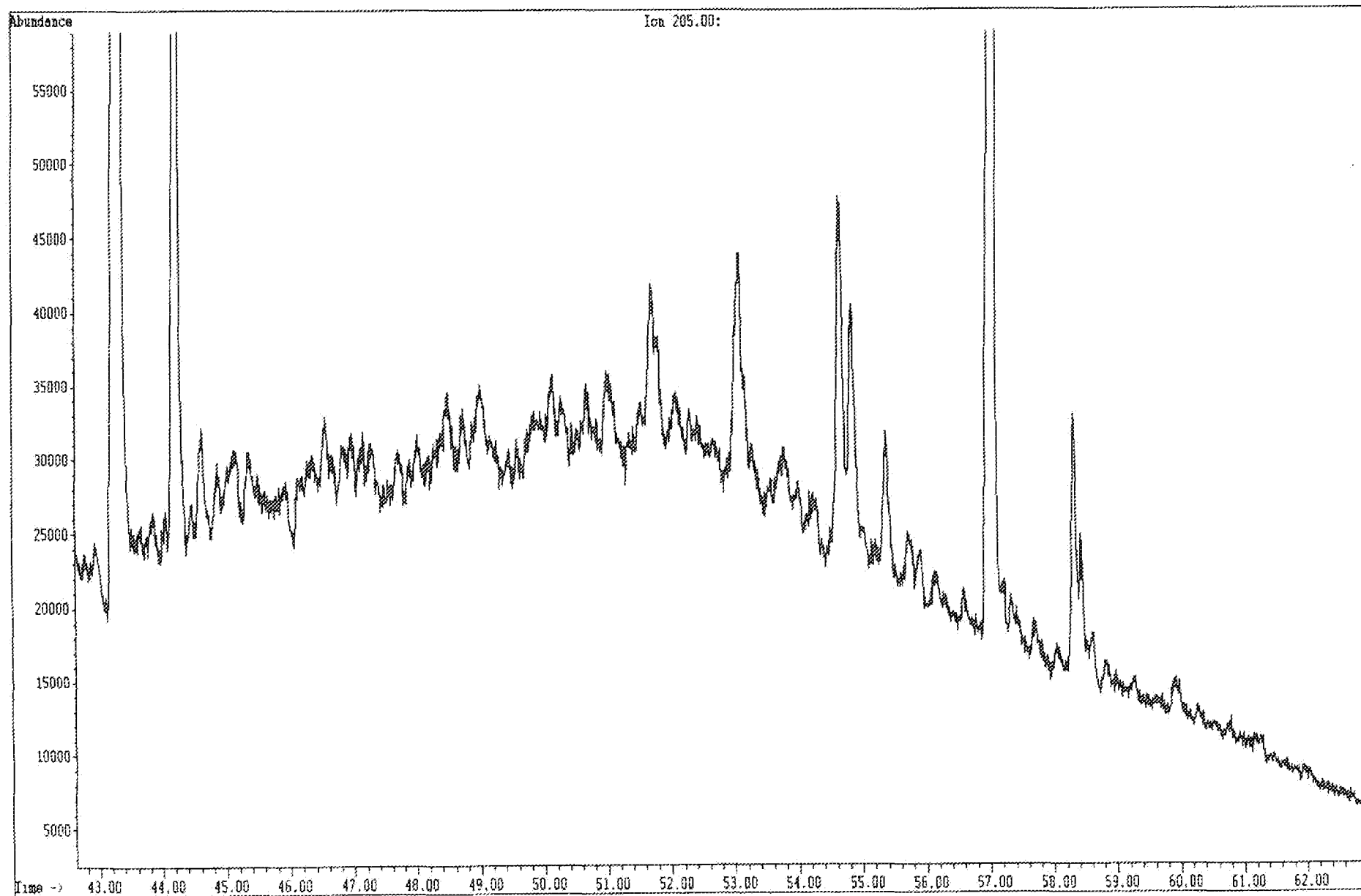
E3.1e



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Sample Name: 4127-001
Misc Info: WELL 33/9-4 2577.4M
Bottle Number: 23

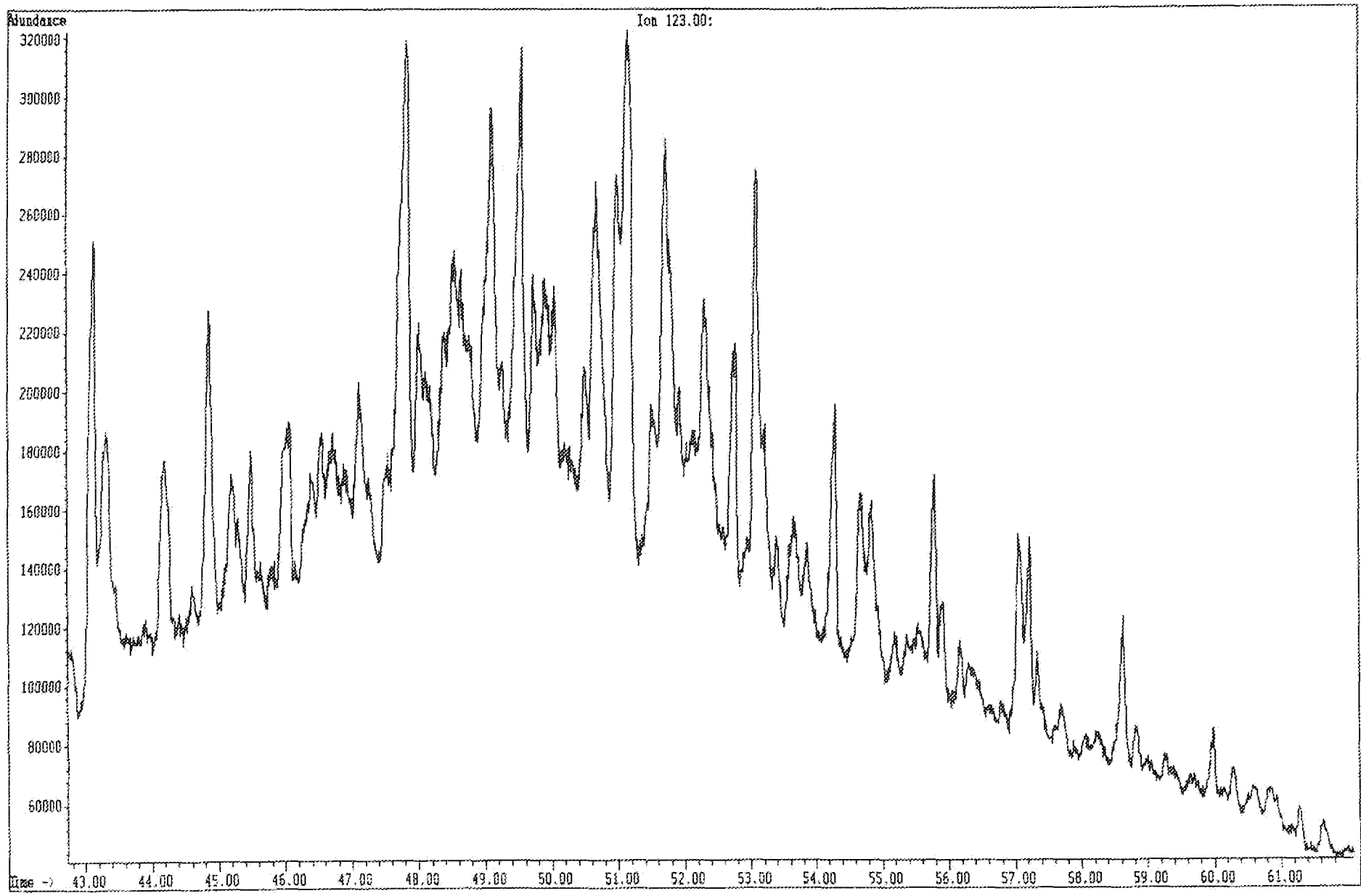


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Operator:
Date Acquired: 14 Dec 90 1:03 pm
Method File Name: BIOM.M
Sample Name: 4127-001
Misc Info: WELL 33/9-4 2577.4M
Bottle Number: 23



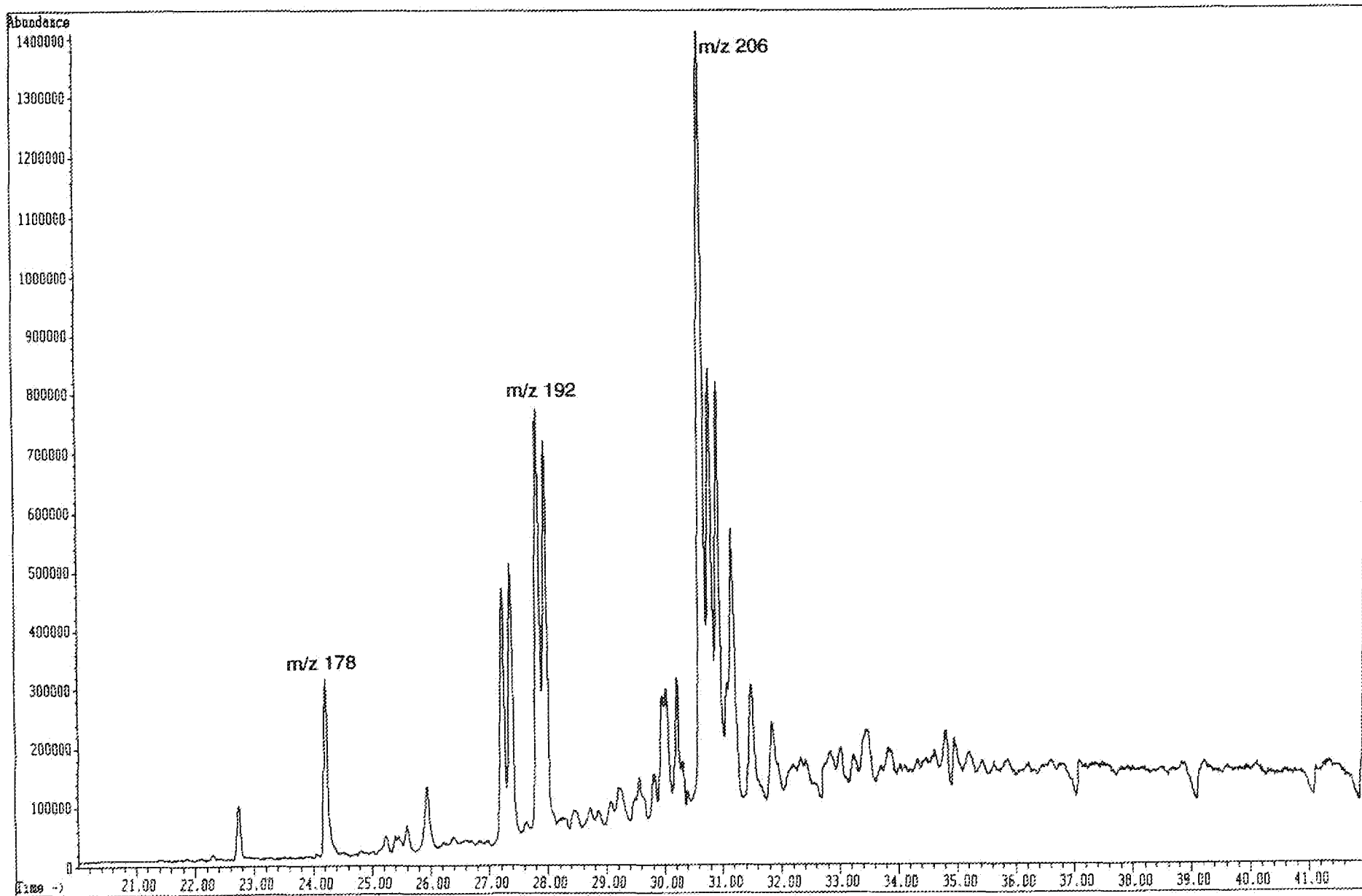
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Method File Name: BIOM.M
Sample Name: 4127-001
Misc Info: WELL 33/9-4 2577.4M
Bottle Number: 23

E. 1



File: D:\CHEMPC\DATA\1201011.D
Operator:
Date Acquired: 13 Dec 90 5:54 am
Method File Name: B10MY.M
Sample Name: 4127-001
Misc Info: WELL 33/9-4 2577.4M
Bottle Number: 12

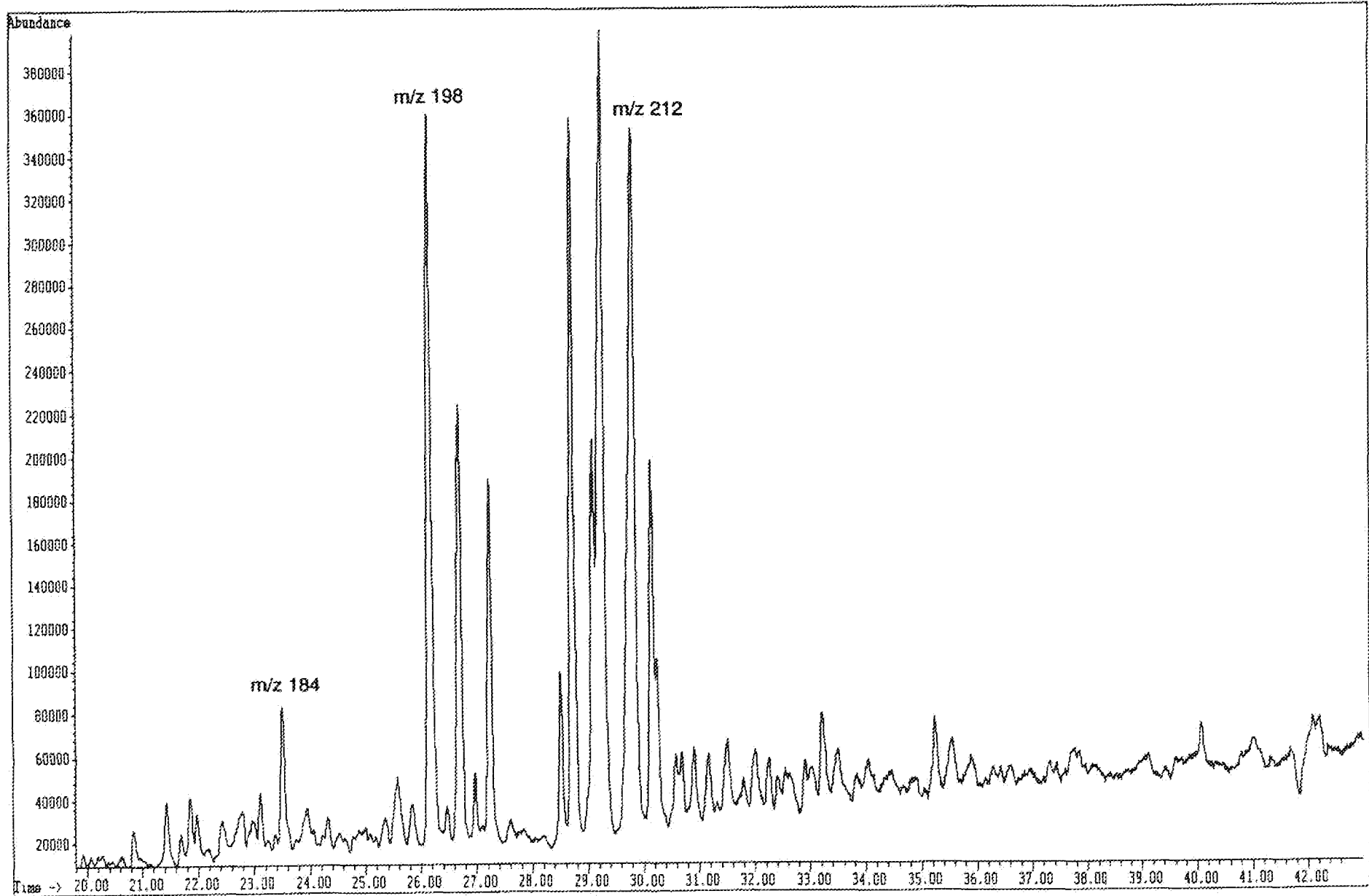
Phenanthrenes



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Operator:
Date Acquired: 13 Dec 98 5:54 am
Method File Name: B10MY.M
Sample Name: 4127-001
Misc Info: WELL 33/9-4 2577.4M
Bottle Number: 12

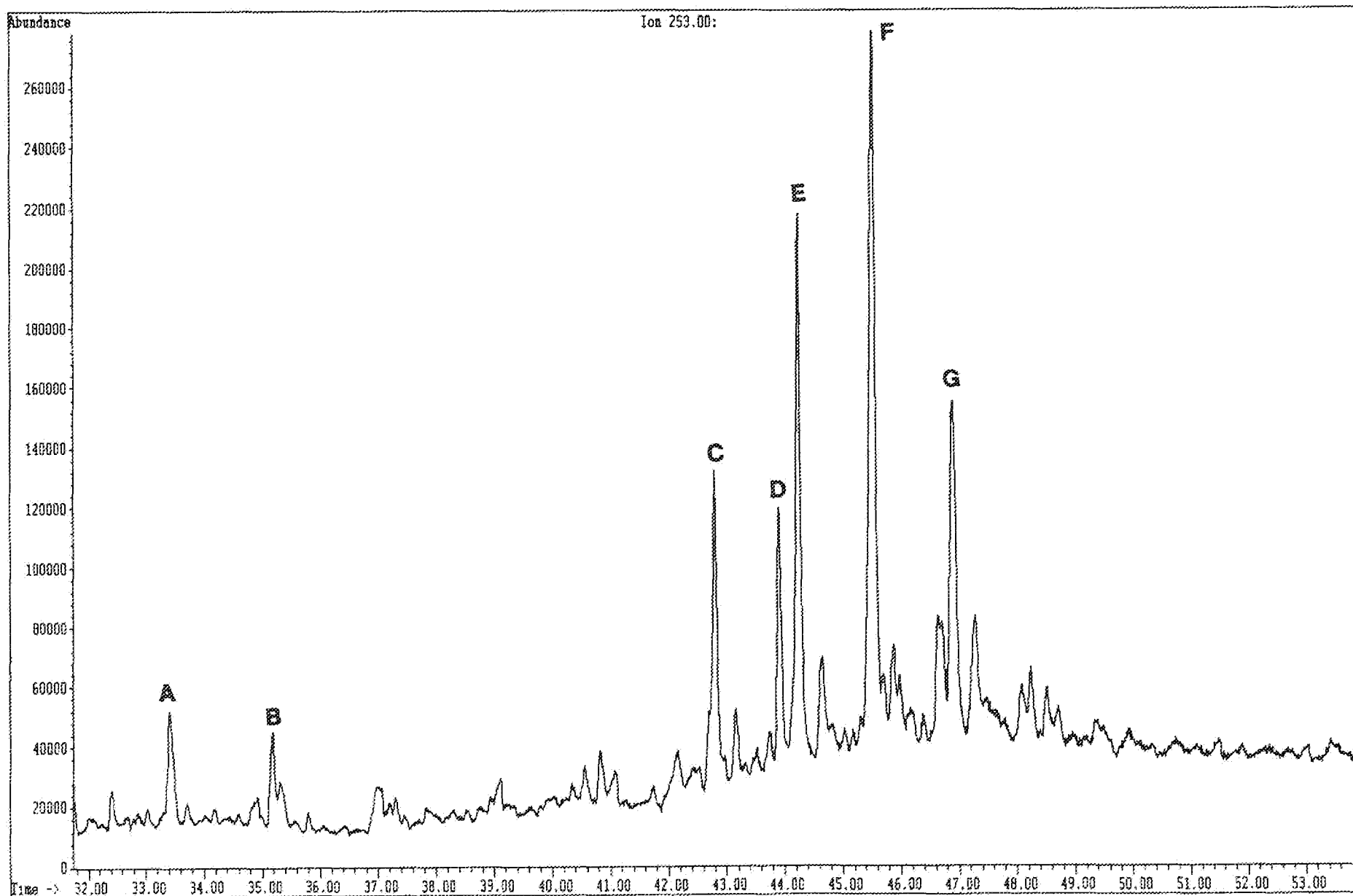
E-1

Dibenzothiophenes

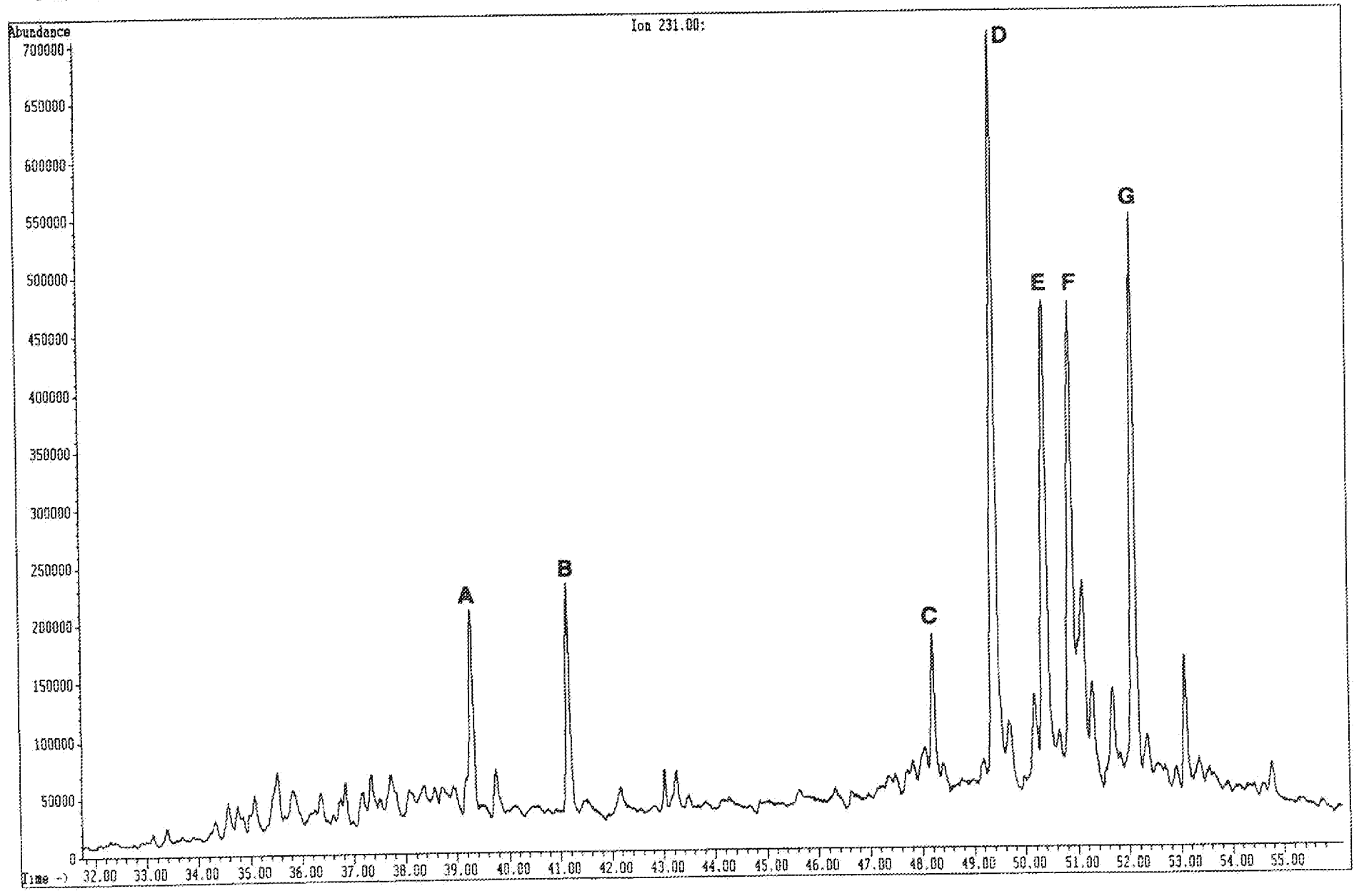


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Operator:
Date Acquired: 13 Dec 90 5:54 am
Method File Name: BICOMY.M
Sample Name: 4127-001
Misc Info: WELL 33/9-4 2577.4M
Bottle Number: 12

E3.1k

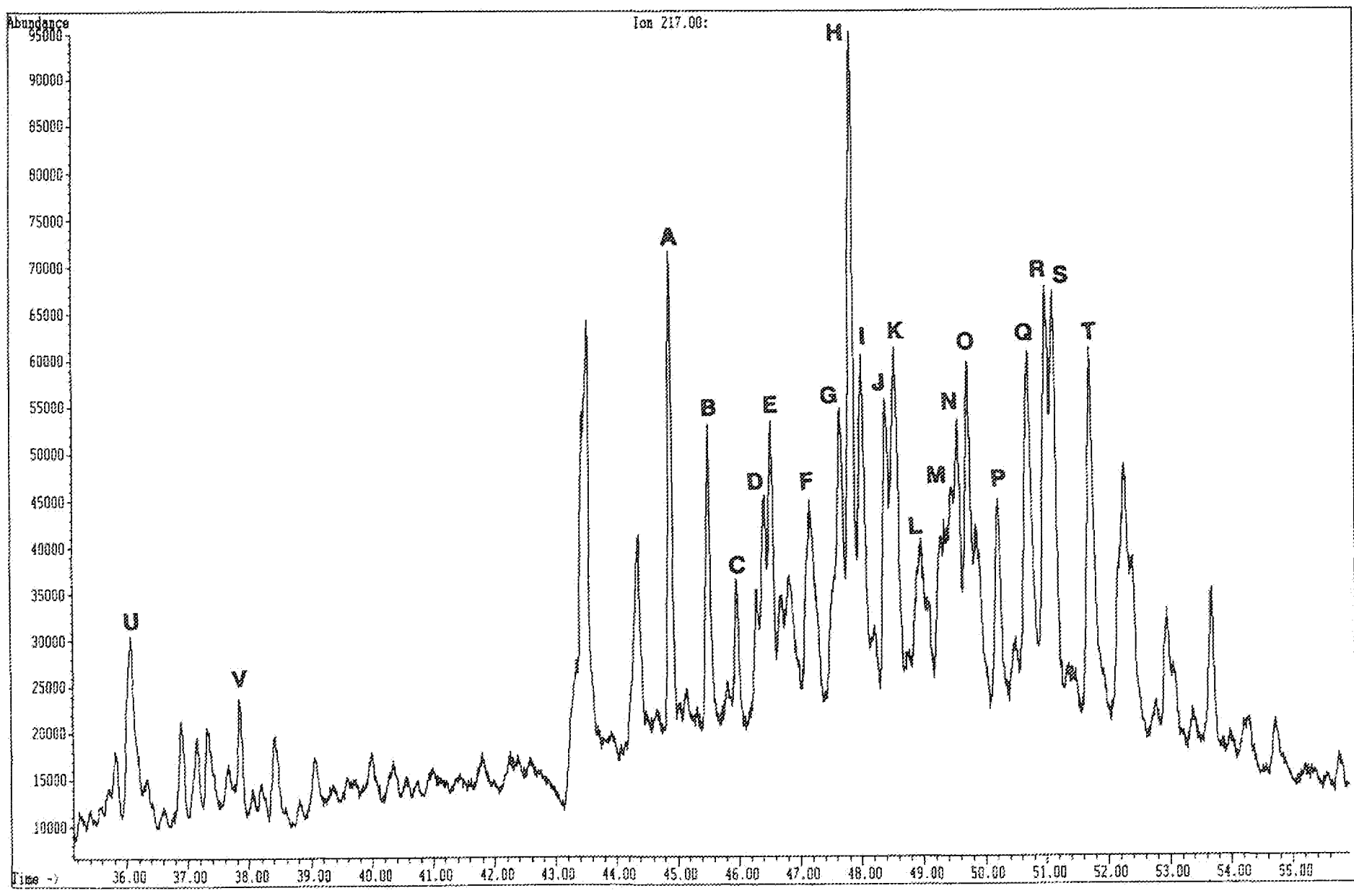


File: D:\CHEMPC\DATA\1201011.D
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Method File Name: B10MY.M
Sample Name: 4127-001
Misc Info: WELL 33/9-4 2577.4M
Bottle Number: 12



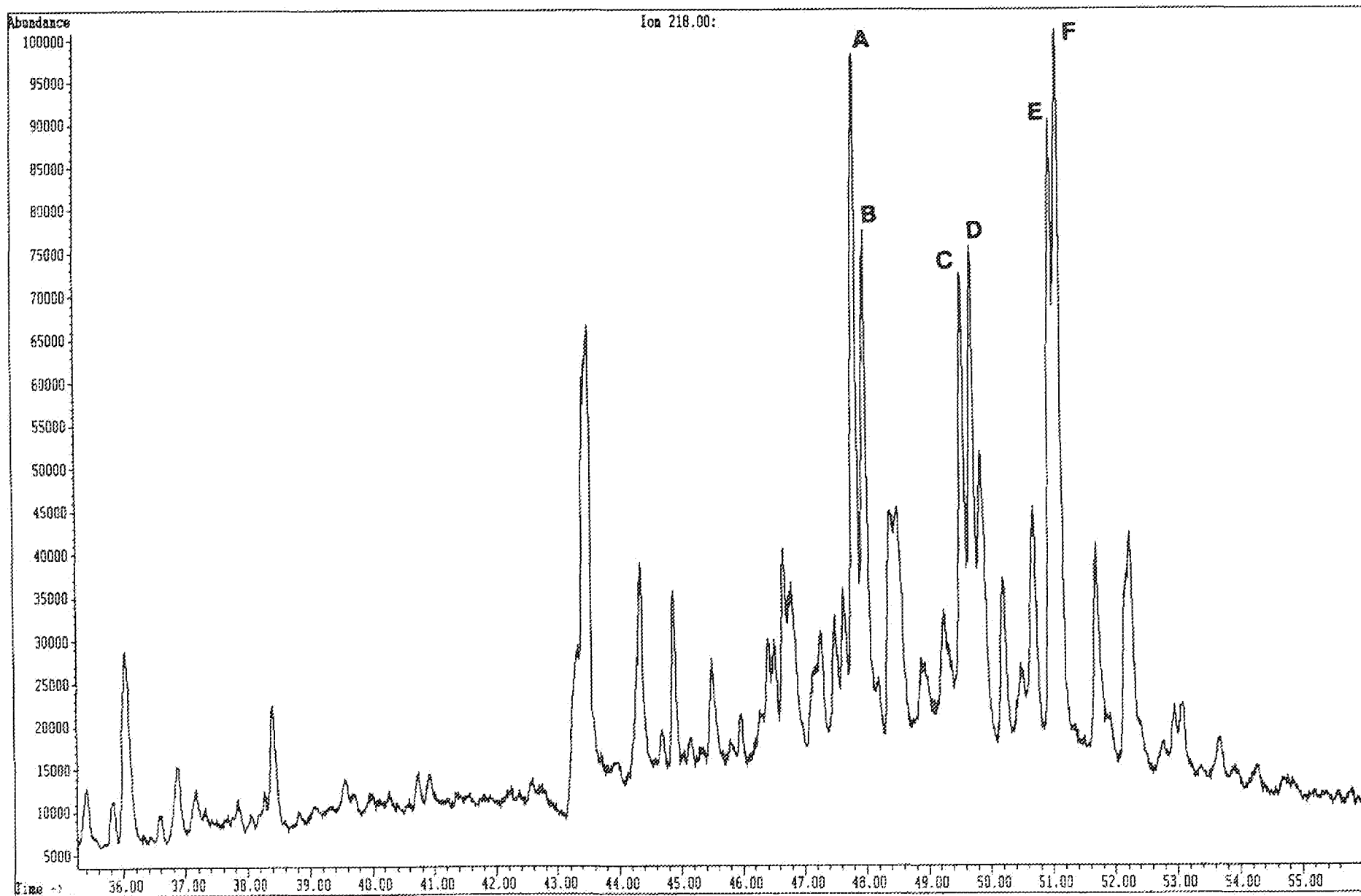
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Misc Info: WELL 33/9-4 2605.7M
Bottle Number: 24

Evza



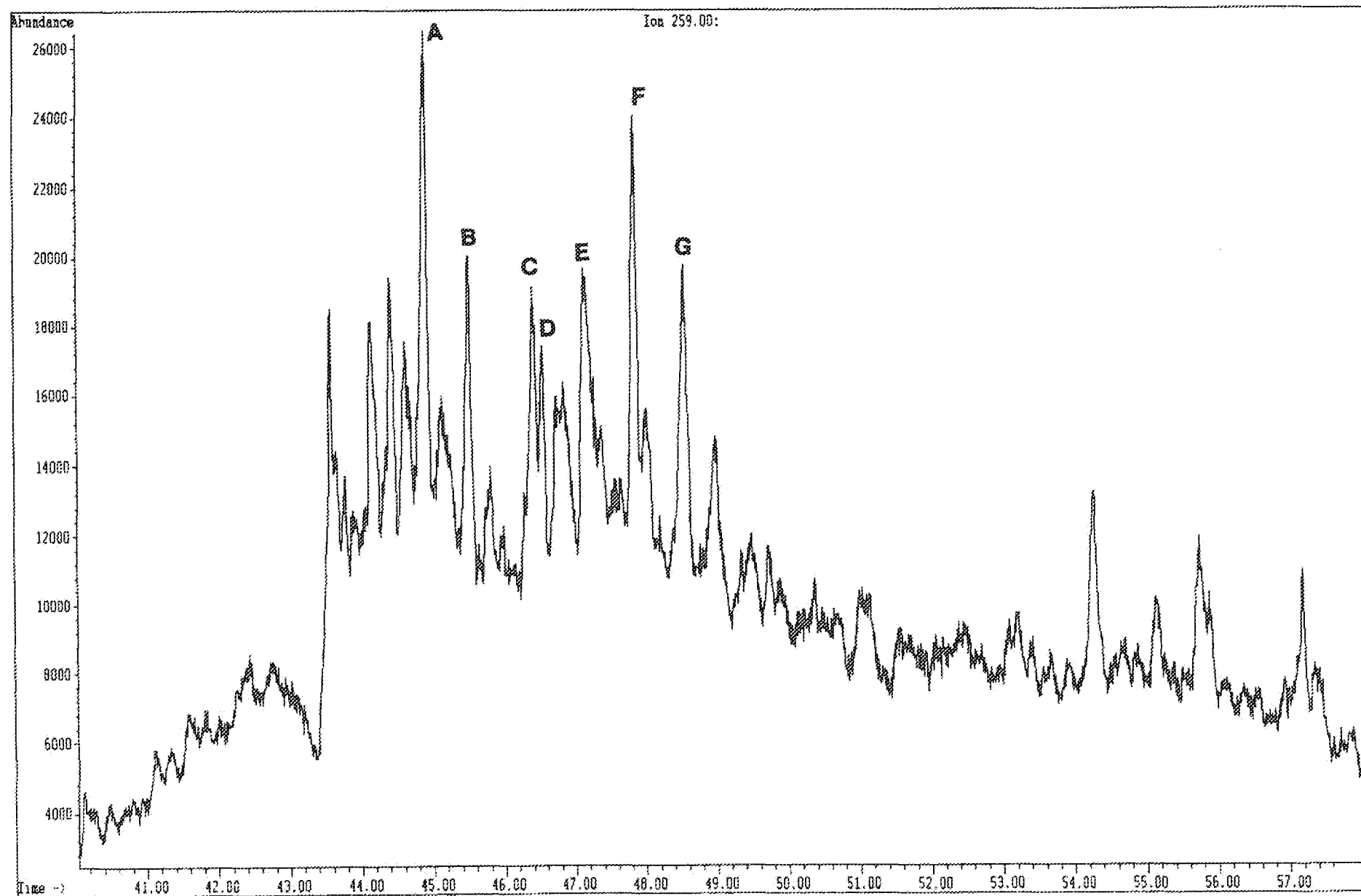
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Method File Name: BIOM.M
Sample Name: 4127-002
Misc Info: WELL 33/9-4 2605.7M
Bottle Number: 24

E3.2b



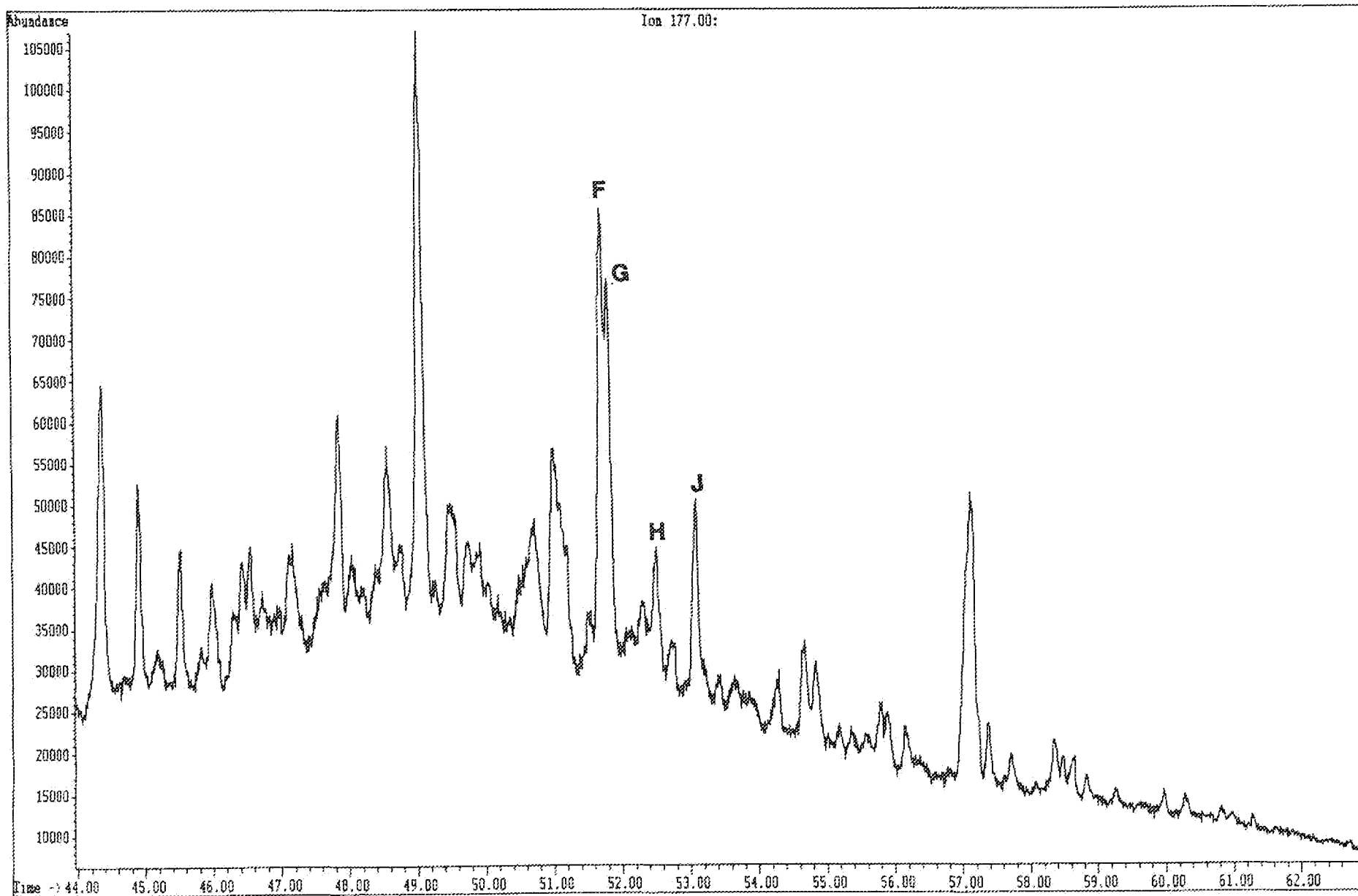
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Sample Name: 4127-002
Misc Info: WELL 33/9-4 2605.7M
Bottle Number: 24

E3.2



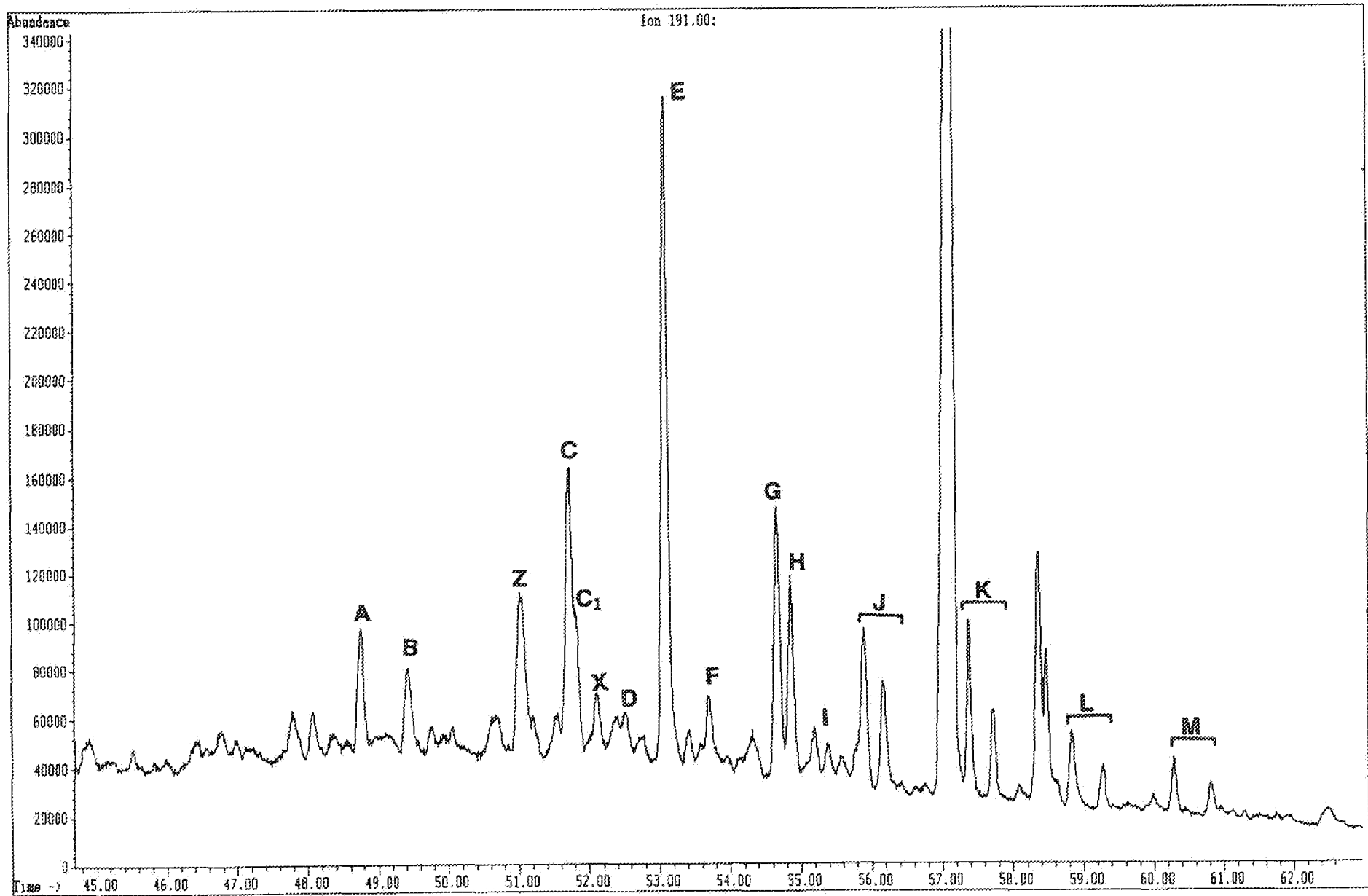
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Sample Name: 4127-002
Misc Info: WELL 33/9-4 2605.7M
Bottle Number: 24

Euzd



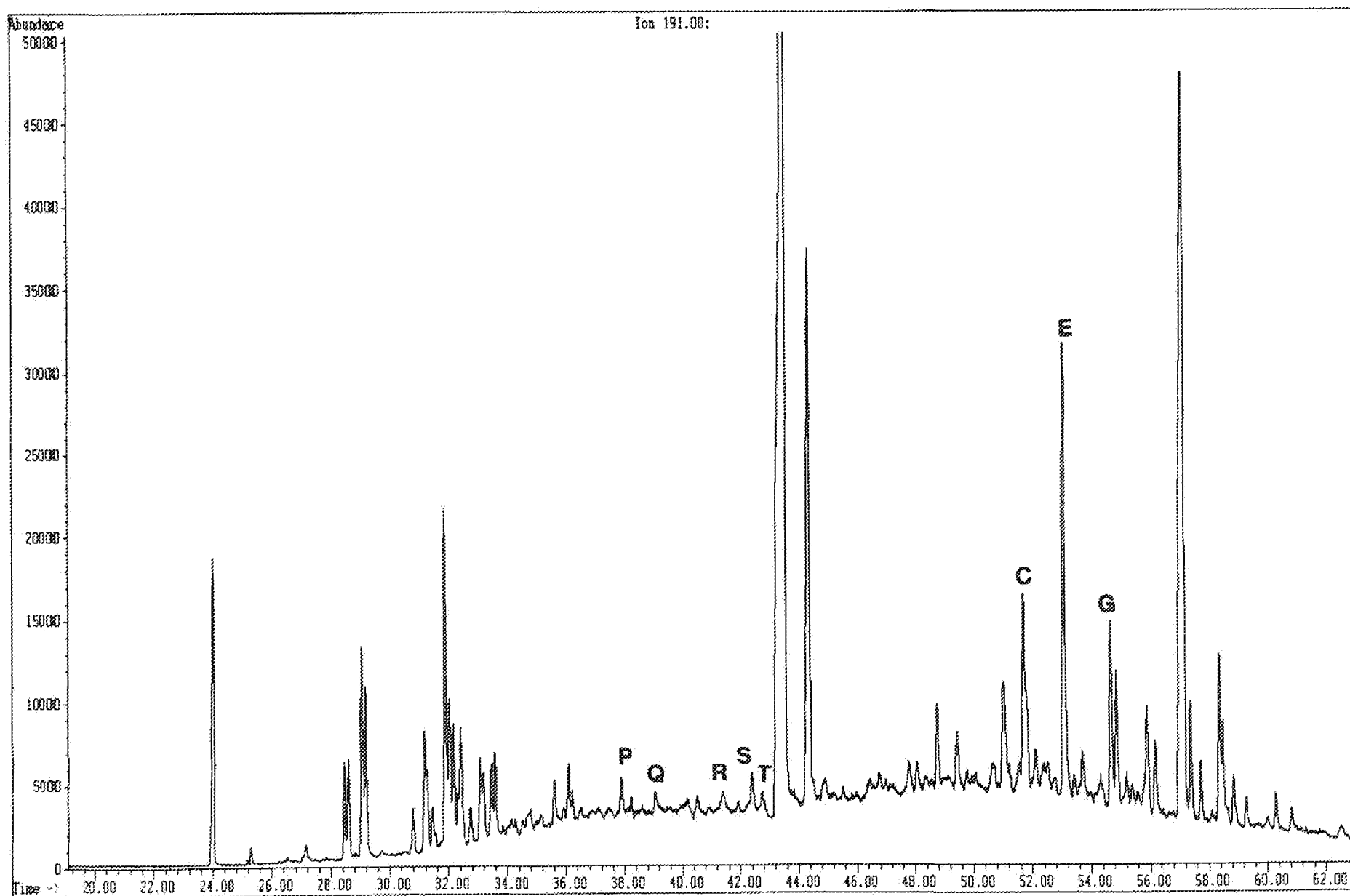
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Method File Name: BICH.M
Sample Name: 4127-002
Misc Info: WELL 33/9-4 2605.7M
Bottle Number: 24

E3.ze



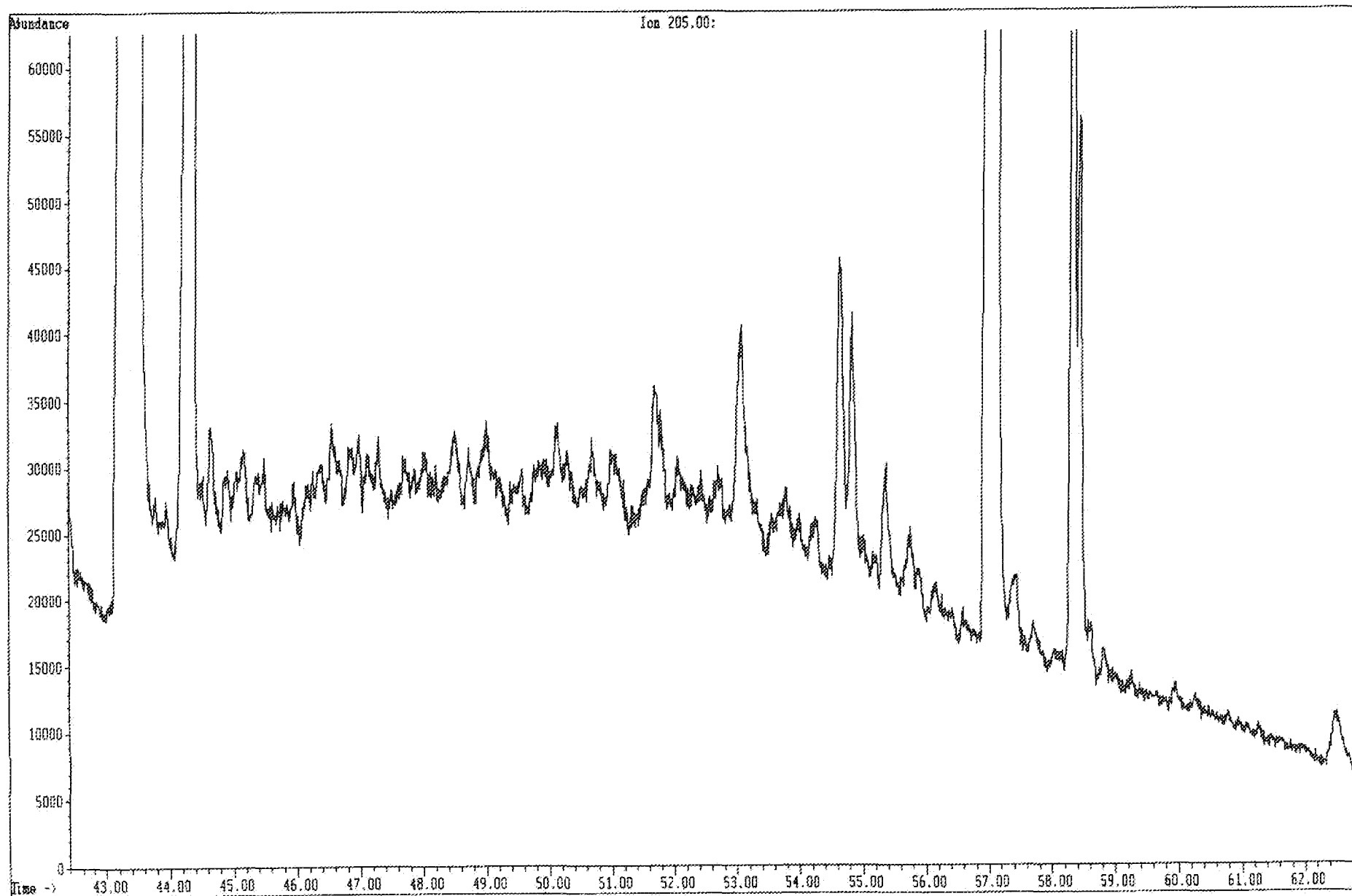
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Sample Name: 4127-002
Mix Info: WELL 33/9-4 2605.7M
Bottle Number: 24

E3.21



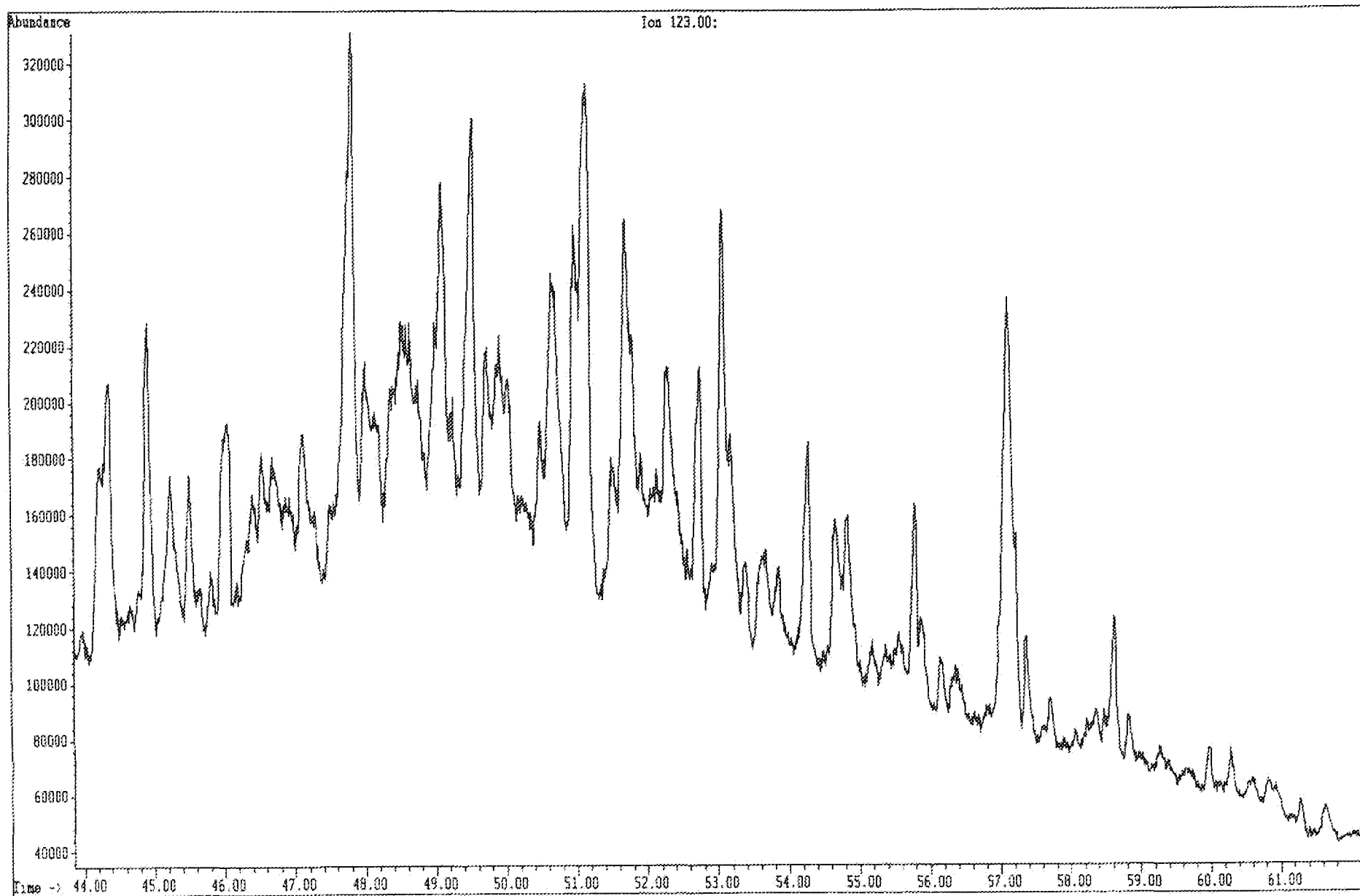
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Misc Info: WELL 33/9-4 2605.7M
Bottle Number: 24

EJLJG

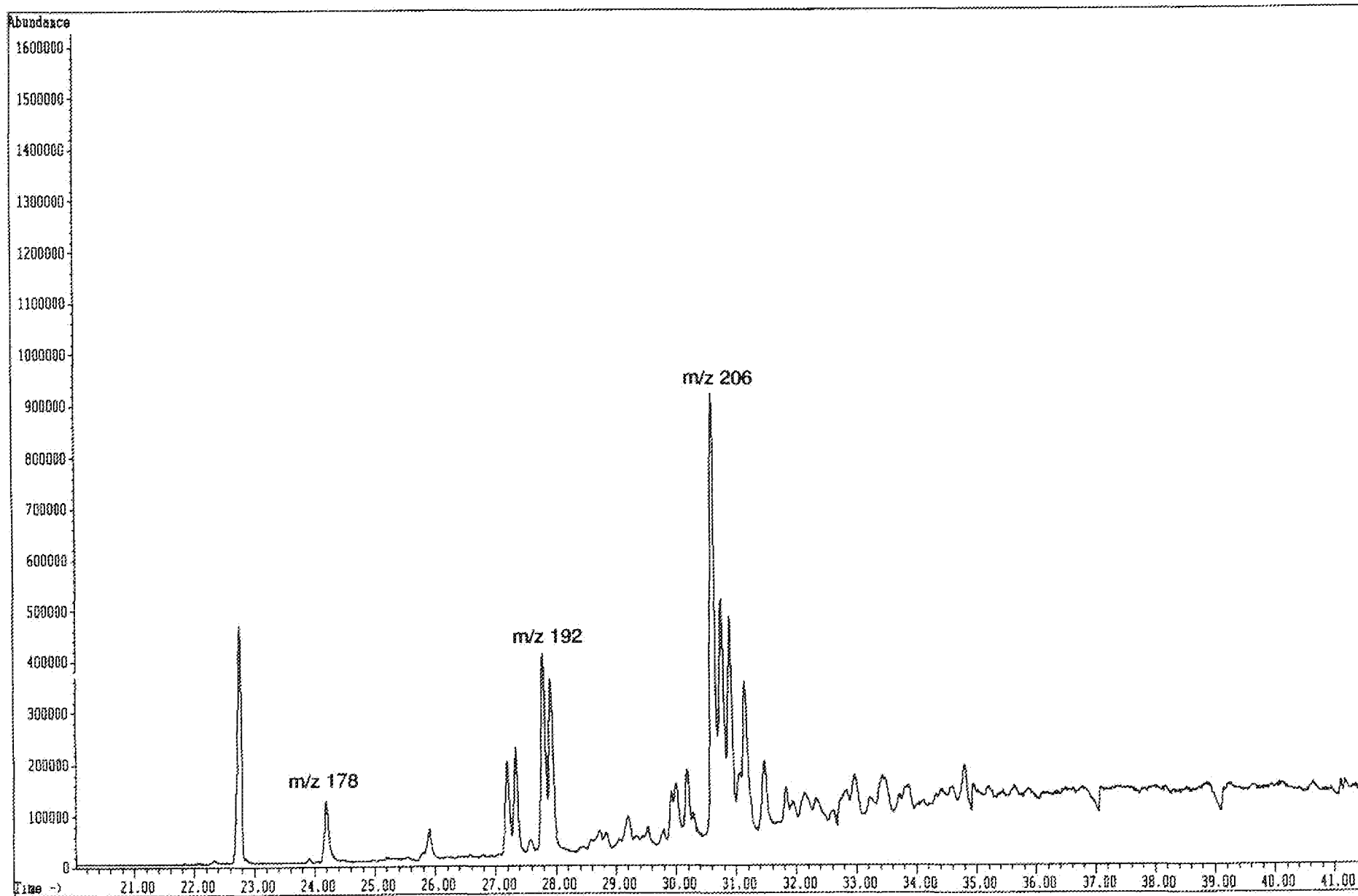


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Sample Name: 4127-002
Misc Info: WELL 33/9-4 2605.7M
Bottle Number: 24

EC-11



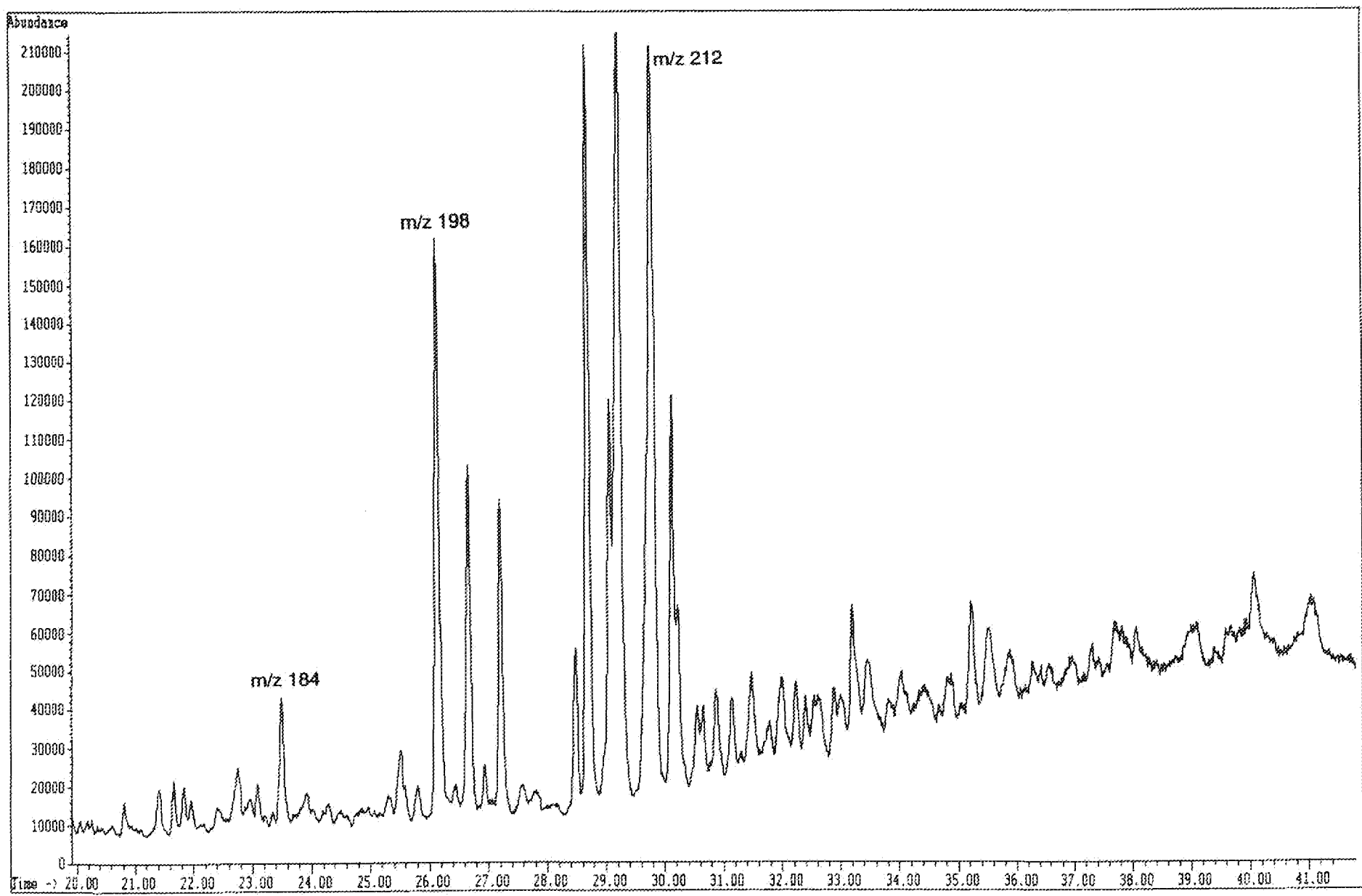
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Method File Name: B10MY.M
Sample Name: 4127-002
Misc Info: WELL 33/9-4 2605.7
Bottle Number: 13

Phenanthrenes

File: D:\CHEMPC\DATA\1301012.D
Operator:
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Method File Name: BICMY.M
Sample Name: 4127-002
Misc Info: WELL 33/9-4 2605.7
Bottle Number: 13

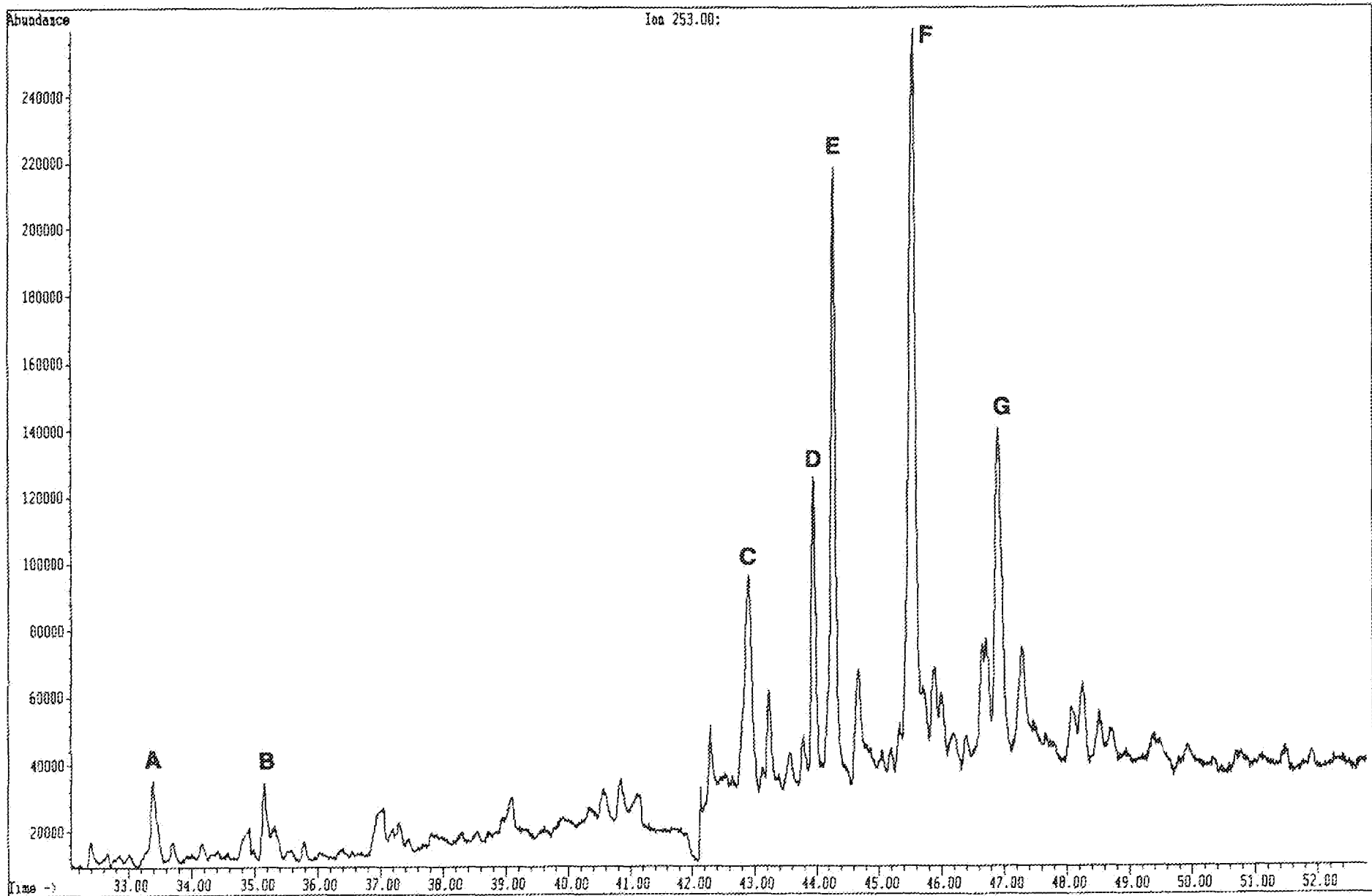
E3.2j

Dibenzothiophenes



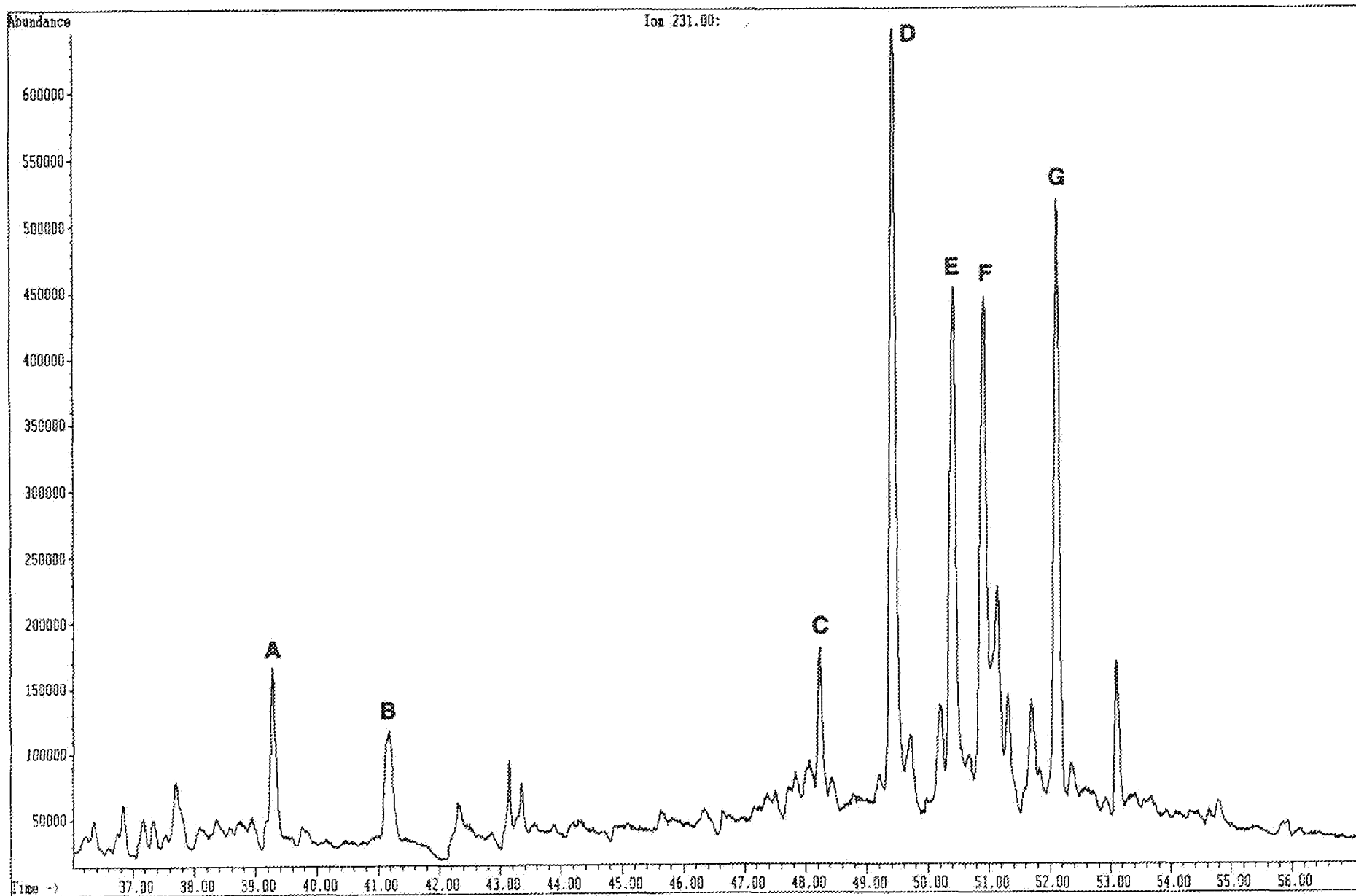
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Method File Name: BIONY.M
Sample Name: 4127-002
Misc Info: WELL 33/9-4 2605.7
Bottle Number: 13

ELUK



File: D:\CHEMPC\DATA\1301012.D
Operator:
Date Acquired: 13 Dec 90 7:02 am
Method File Name: BICOMY.M
Sample Name: 4127-002
Misc Info: WELL 33/9-4 2685.7
Bottle Number: 13

E3.21



33/9-9

TABLE F1
ORGANIC CARBON RESULTS AND GROSS LITHOLOGIC DESCRIPTIONS

| JOB 4128 | DEPTH/ IDENTITY | GROSS LITHOLOGIC DESCRIPTION | G S A COLOUR CODE | TOTAL ORGANIC CARBON (Wt. %) |
|-----------------------------|--------------------|------------------------------|-------------------------|---------------------------------------|
| GEOCHEM SAMPLE NUMBER | | | | |

WELL: 33/9-9

| | | | | |
|----------|---------|---|---------|--|
| 4128-001 | 2457.9m | A100% SANDSTONE - med grained, blocky, soft and friable, micaceous, gold F, rapid blooming milky cut, dark yellowish brown. | 10YR4/2 | |
| 4128-002 | 2464.5m | A100% SANDSTONE - med grained, blocky, soft and friable, yellow F, instant blooming milky cut, greyish orange. | 10YR7/4 | |
| 4128-003 | 2750.0m | A100% SANDSTONE - coarse grained, poorly sorted, blocky, firm, pale yellow F, slow blooming milky cut, greyish orange. | 10YR7/4 | |

TABLE F2
CONCENTRATION (PPM) OF EXTRACTED C₁₅₊ MATERIAL IN ROCK

| JOB 4128 GEOCHEM SAMPLE NUMBER | L I T H O | DEPTH/ IDENTITY | TOTAL EXTRACT | HYDROCARBONS | | | NON HYDROCARBONS | | | |
|---|-----------------------|--------------------|------------------|--------------|-----------|-------|--------------------------|-----------------|---------------------|-------|
| | | | | Saturates | Aromatics | TOTAL | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's | TOTAL |

WELL: 33/9-9

| | | | | | | | | | |
|----------|---------|-------|------|------|------|-----|-----|----|------|
| 4128-001 | 2457.9m | 9399 | 7043 | 1493 | 8536 | 240 | 604 | 19 | 864 |
| 4128-002 | 2464.5m | 10717 | 7831 | 1800 | 9631 | 191 | 863 | 32 | 1087 |
| 4128-003 | 2750.0m | 8880 | 6833 | 1093 | 7925 | 274 | 663 | 18 | 955 |

TABLE F3
COMPOSITION (NORMALISED %) OF C₁₅₊ MATERIAL

| JOB 4128 | L I T H O | DEPTH/ IDENTITY | HYDROCARBONS | | NON HYDROCARBONS | | |
|-----------------------------|-----------------------|--------------------|--------------|-----------|--------------------------|-----------------|---------------------|
| GEOCHEM SAMPLE NUMBER | | | Saturates | Aromatics | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's |

WELL: 33/9-9

| | | | | | | |
|----------|---------|-------|-------|------|------|------|
| 4128-001 | 2457.9m | 74.93 | 15.88 | 2.56 | 6.43 | 0.20 |
| 4128-002 | 2464.5m | 73.07 | 16.79 | 1.79 | 8.05 | 0.30 |
| 4128-003 | 2750.0m | 76.95 | 12.30 | 3.08 | 7.46 | 0.20 |

TABLE F4
SIGNIFICANT C₁₅₊ RATIOS

| JOB 4128 GEOCHEM SAMPLE NUMBER | L I T H O | DEPTH/ IDENTITY | TOC (%) | mg/g TOC | | | | | | HYDROCARBONS % TOTAL EXTRACT | SATURATES AROMATICS |
|---|-----------------------|--------------------|------------|------------------|-----------|-----------|-----------------------|-----------------|-------------|------------------------------------|------------------------|
| | | | | TOTAL EXTRACT | SATURATES | AROMATICS | TOTAL HYDROCARBONS | ELUTED NSO's | ASPHALTENES | | |

WELL: 33/9-9

| | | | | | | | | | | |
|----------|---------|------|---------|---------|--------|---------|--------|--------|-------|------|
| 4128-001 | 2457.9m | 0.49 | 1918.24 | 1437.39 | 304.62 | 1742.01 | 123.33 | 49.03 | 90.81 | 4.72 |
| 4128-002 | 2464.5m | 0.19 | 5640.74 | 4121.51 | 947.25 | 5068.77 | 454.25 | 100.78 | 89.86 | 4.35 |
| 4128-003 | 2750.0m | 0.13 | 6830.52 | 5255.86 | 840.39 | 6096.26 | 509.67 | 210.61 | 89.25 | 6.25 |

TABLE F5
C₁₅₊ CHROMATOGRAPHY WEIGHTS (grams)

| JOB 4128 | L I T H O | DEPTH/ IDENTITY | ROCK EXTRACTED | TOTAL EXTRACT | PRECIPITD. ASPHALTENES | NC5 | SATURATES | AROMATICIS | ELUTED NSO's | NON-ELUTED NSO's |
|-----------------------------|-----------------------|--------------------|-------------------|------------------|---------------------------|-----|-----------|------------|-----------------|---------------------|
| GEOCHEM SAMPLE NUMBER | | | | | | | | | | |

WELL: 33/9-9

| | | | | | | | | | |
|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 4128-001A | 2457.9m | 18.9800 | 0.17840 | 0.00456 | 0.17384 | 0.13368 | 0.02833 | 0.01147 | 0.00036 |
| 4128-002A | 2464.5m | 18.3300 | 0.19645 | 0.00351 | 0.19294 | 0.14354 | 0.03299 | 0.01582 | 0.00059 |
| 4128-003A | 2750.0m | 18.7000 | 0.16605 | 0.00512 | 0.16093 | 0.12777 | 0.02043 | 0.01239 | 0.00034 |

TABLE F6
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

| GEOCHEM SAMPLE NUMBER | 001 | 002 | 003 |
|-----------------------|---------|---------|-------|
| DEPTH | 2457.9m | 2464.5m | 2750m |
| SAMPLE TYPE | | | |
| nC15 | 2.09 | 3.11 | 1.53 |
| nC16 | 5.32 | 7.27 | 3.29 |
| nC17 | 7.08 | 8.08 | 5.72 |
| nC18 | 8.20 | 8.82 | 7.62 |
| nC19 | 9.63 | 8.50 | 9.09 |
| nC20 | 9.41 | 8.62 | 9.41 |
| nC21 | 8.02 | 7.83 | 9.33 |
| nC22 | 7.82 | 7.77 | 8.05 |
| nC23 | 6.64 | 6.58 | 8.10 |
| nC24 | 7.09 | 6.85 | 7.18 |
| nC25 | 6.07 | 5.88 | 6.91 |
| nC26 | 5.41 | 5.07 | 5.66 |
| nC27 | 4.41 | 4.09 | 4.50 |
| nC28 | 3.77 | 3.06 | 3.79 |
| nC29 | 3.03 | 2.89 | 3.32 |
| nC30 | 2.13 | 1.91 | 2.25 |
| nC31 | 1.46 | 1.38 | 1.64 |
| nC32 | 0.88 | 0.81 | 0.96 |
| nC33 | 0.68 | 0.65 | 0.75 |
| nC34 | 0.52 | 0.49 | 0.56 |
| nC35 | 0.34 | 0.32 | 0.36 |
| Paraffin | 17.64 | 16.86 | 14.51 |
| Isoprenoid | 2.24 | 2.71 | 1.74 |
| Naphtene | 80.12 | 80.43 | 83.75 |
| CPI 1 Index | 0.94 | 0.97 | 1.06 |
| CPI 2 Index | 1.02 | 1.08 | 1.08 |
| CPI 3 Index | 0.96 | 1.01 | 0.95 |
| Prist/Phytane | 1.11 | 1.10 | 0.95 |
| Prist/nC17 | 0.76 | 0.71 | 0.88 |
| Phytane/nC18 | 0.59 | 0.59 | 0.69 |

Job Number : 4128

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{26} + C_{28}}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE F7
METHYLEPHENANTHRENE INDICES (MPI)

| TOB 4128 GEOCHEM SAMPLE NUMBER | DEPTH/ IDENTITY | SAMPLE TYPE | MPI 1 | | Rcalc | | MPI 2 | |
|---|--------------------|----------------|-------|--------|-------|--------|-------|--------|
| | | | AREA | HEIGHT | AREA | HEIGHT | AREA | HEIGHT |

WELL: 33/9-9

| | | | | | | | | |
|----------|---------|--|------|------|--|--|------|------|
| 4128-001 | 2457.9m | | 0.60 | 0.65 | | | 0.63 | 0.65 |
| 4128-002 | 2464.5m | | 0.61 | 0.67 | | | 0.64 | 0.69 |
| 4128-003 | 2750.0m | | 0.55 | 0.58 | | | 0.60 | 0.60 |

$$MPI\ 1 = \frac{1.5(2-MP + 3-MP)}{P + 1-MP + 9-MP}$$

$$MPI\ 2 = \frac{3(2-MP)}{P + 1-MP + 9-MP}$$

$$R_{calc} = \begin{cases} 0.60(MPI\ 1) + 0.40 & \text{(if } R_o < 1.35\% \text{)} \\ -0.60(MPI\ 1) + 2.30 & \text{(if } R_o > 1.35\% \text{)} \end{cases}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE F8

AROMATIC HYDROCARBONS RATIOS (MSD, PEAK AREA DATA)

| SAMPLE NUMBER | DEPTH (m) | 2MP/1MP | RATIO 1 | RATIO 2 | RATIO 3 |
|---------------|-----------|---------|---------|---------|---------|
|---------------|-----------|---------|---------|---------|---------|

WELL: 33/9-9

| | | | | | |
|-----------|--------|------|------|------|------|
| 4128-001A | 2457.9 | 0.68 | 0.26 | 0.55 | 0.18 |
| 4128-002A | 2464.5 | 0.70 | 0.30 | 0.59 | 0.14 |
| 4128-003A | 2750.0 | 0.59 | 0.21 | 0.59 | 0.11 |

RATIO 1 = $A(231)/A(231) + G(231)$

RATIO 2 = $E(253)/E(253) + G(253)$

RATIO 3 = $A(253)/B(231) + E(253)$

TABLE F9
 CARBON ISOTOPE COMPOSITIONS (‰, PDB)

| JOB 4128 | DEPTH/ IDENTITY | TOTAL EXTRACT WHOLE OIL | SATURATES | AROMATICS | NSO | ASPHALTENES | KEROGEN | PYROLYSATE (S2) |
|----------|--------------------|----------------------------|-----------|-----------|-----|-------------|---------|--------------------|
|----------|--------------------|----------------------------|-----------|-----------|-----|-------------|---------|--------------------|

WELL: 33/9-9

| | | | | | | | | |
|----------|---------|--------|--------|--------|--------|--------|--|--|
| 4128-001 | 2457.9m | -29.62 | -29.66 | -28.98 | -29.42 | -29.21 | | |
| 4128-002 | 2464.5m | -29.64 | -29.67 | -29.05 | -29.36 | -29.11 | | |
| 4128-003 | 2750.0m | -29.61 | -29.82 | -29.41 | -29.72 | -29.54 | | |

TABLE F10
BIOMARKER MOLECULAR RATIOS

WELL: 33/9-9

| SAMPLE NUMBER | DEPTH (m) | Steranes (m/z 217) | | | Steranes (m/z 218) | | |
|------------------|--------------|--------------------|------------|--------------------|-------------------------|-----|-----|
| | | A (A+J) | Q (Q+T) | (R+S) (Q+R+S+T) | NORMALISED COMPOSITION: | | |
| | | | | | B | D | F |
| 4128-001A | 2457.9 | 0.49 | 0.49 | 0.45 | 31% | 32% | 37% |
| 4128-002A | 2464.5 | 0.61 | 0.44 | 0.41 | 30% | 33% | 37% |
| 4128-003A | 2750.0 | 0.42 | 0.42 | 0.39 | 30% | 34% | 36% |

TABLE F11
BIOMARKER MOLECULAR RATIOS

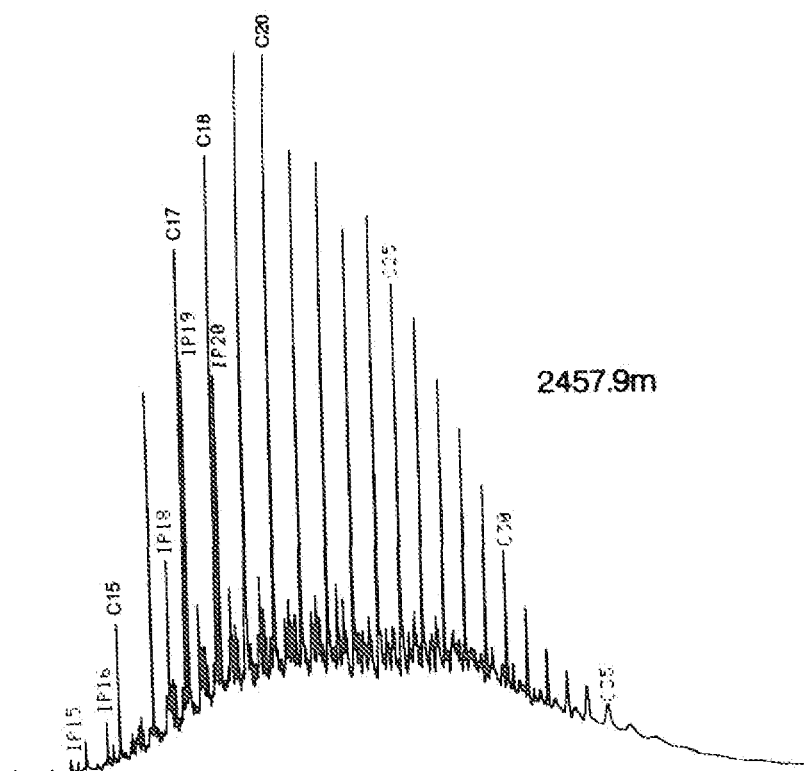
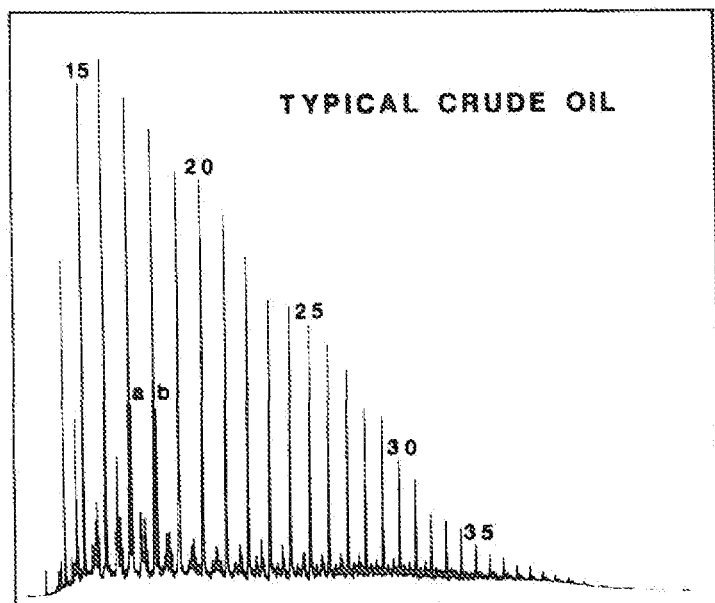
WELL 33/9-9

Terpanes (m/z 191)

| SAMPLE NUMBER | DEPTH (m) | A/B | Z/E | Z/C | $\frac{Z}{Z+E}$ | $\frac{C}{C+E}$ | %22S for J | $\frac{E}{E+F}$ | $\frac{X}{X+D}$ | Q/E |
|---------------|-----------|------|------|------|-----------------|-----------------|------------|-----------------|-----------------|------|
| 4128-001A | 2457.9 | 1.39 | 0.28 | 0.76 | 0.22 | 0.27 | 58% | 0.90 | 0.57 | 0.04 |
| 4128-002A | 2464.5 | 1.54 | 0.28 | 0.48 | 0.22 | 0.37 | 57% | 0.88 | 0.52 | 0.05 |
| 4128-003A | 2750.0 | 1.39 | 0.37 | 0.60 | 0.27 | 0.38 | 61% | 0.92 | 0.39 | 0.12 |

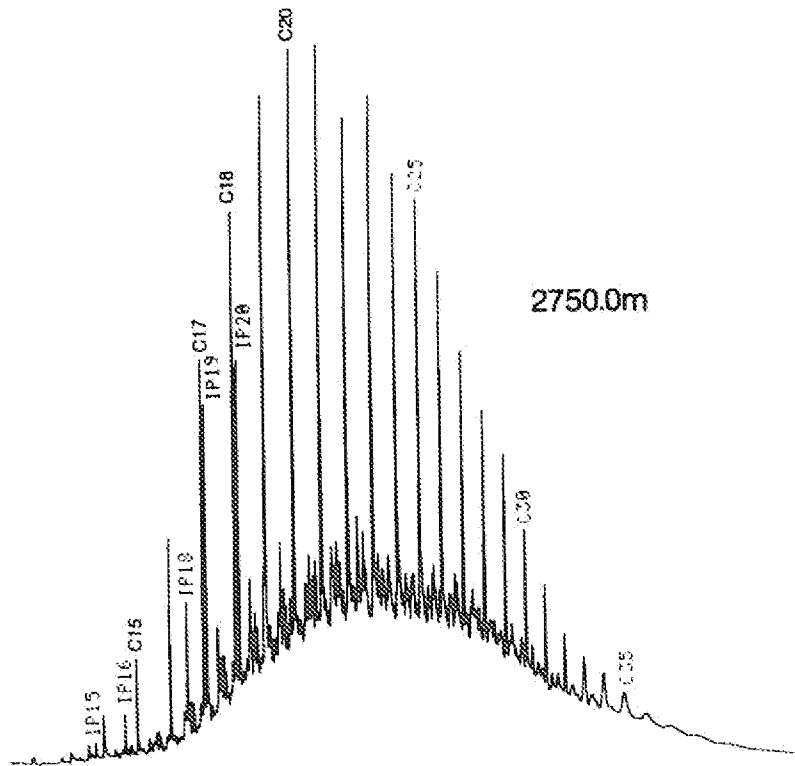
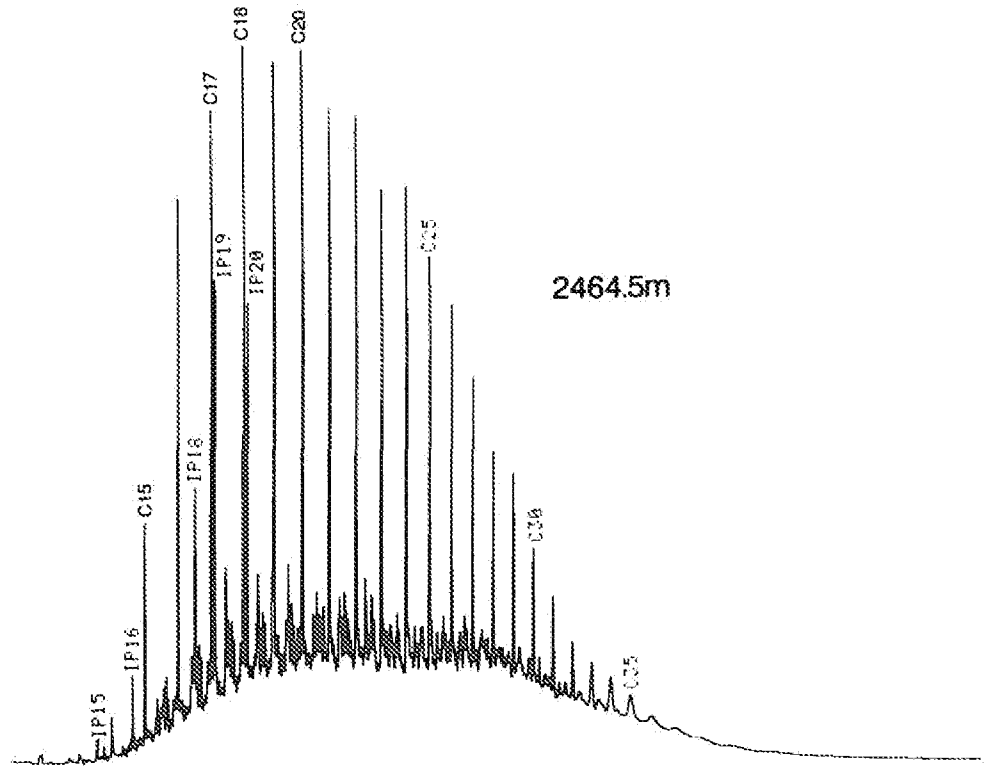
FIGURE F1.1 C₁₅₊ SATURATES CHROMATOGRAMS

WELL 33/9-9



a = PRISTANE
b = PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20-nC₂₀)



a - PRISTANE
b - PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20 - nC₂₀)

FIGURE F21

C₁₅+ AROMATIC CHROMATOGRAMS



WELL 33/9-9

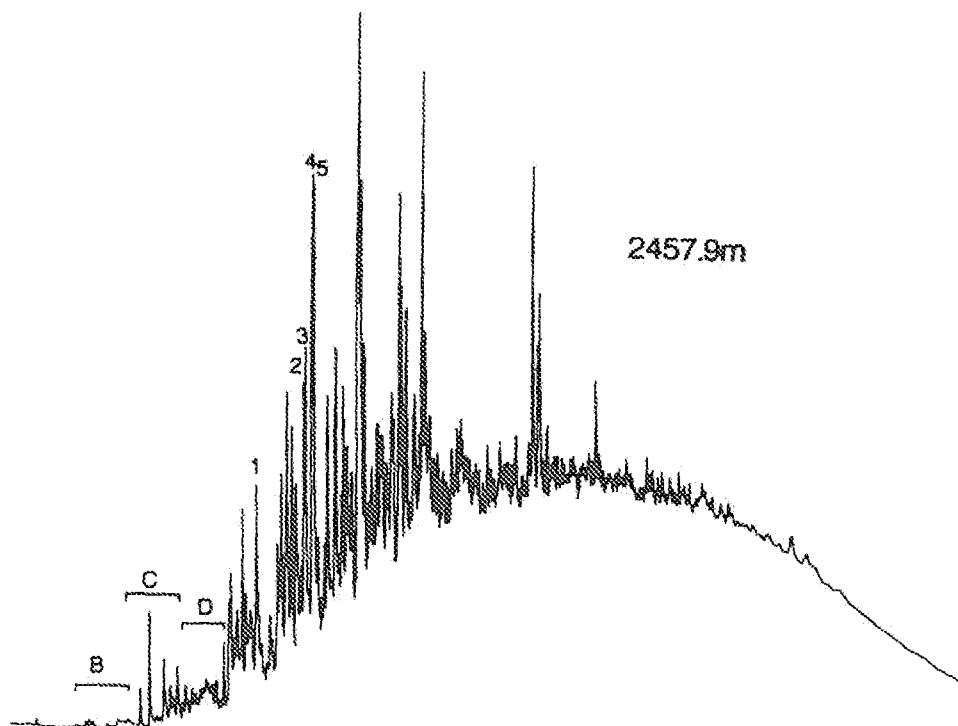
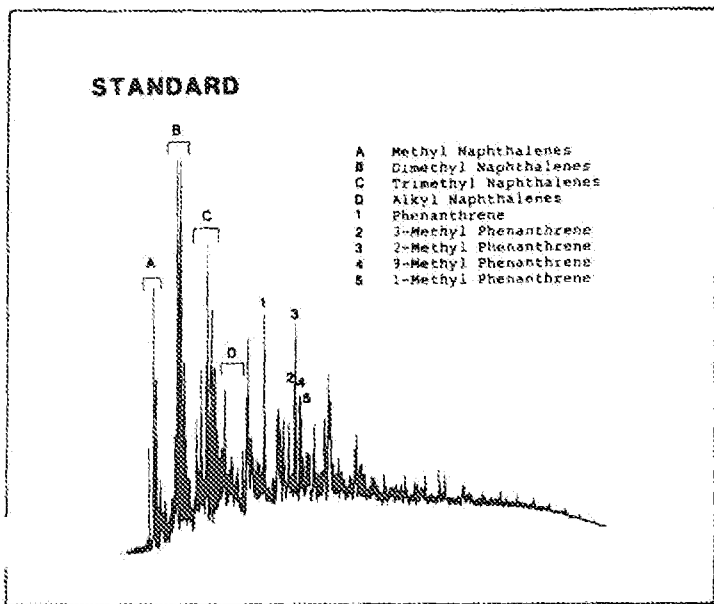
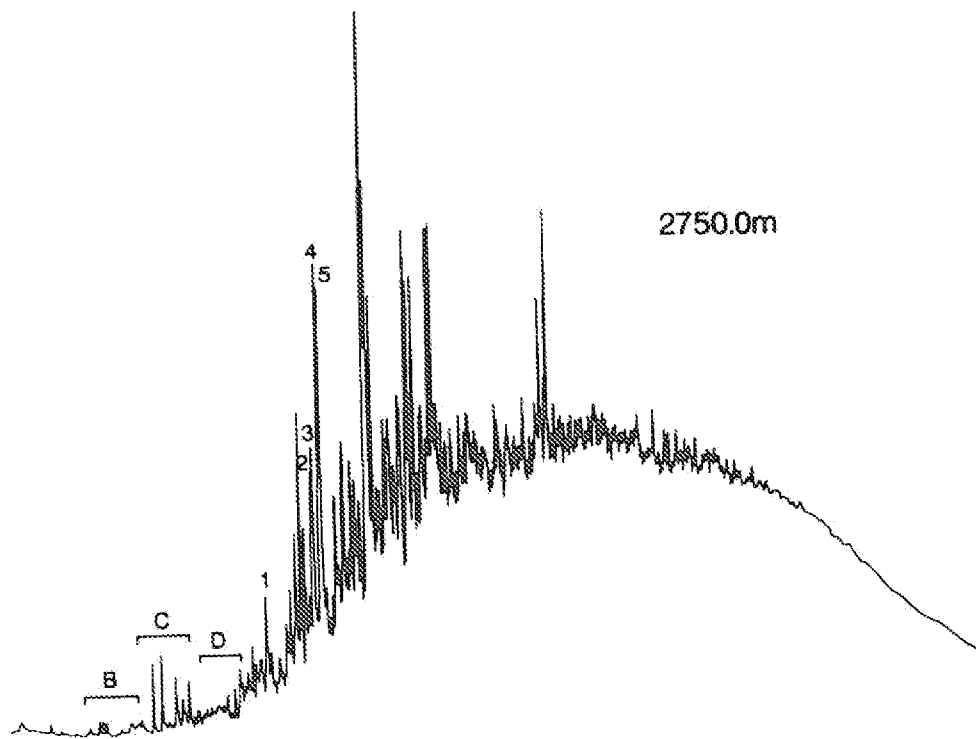
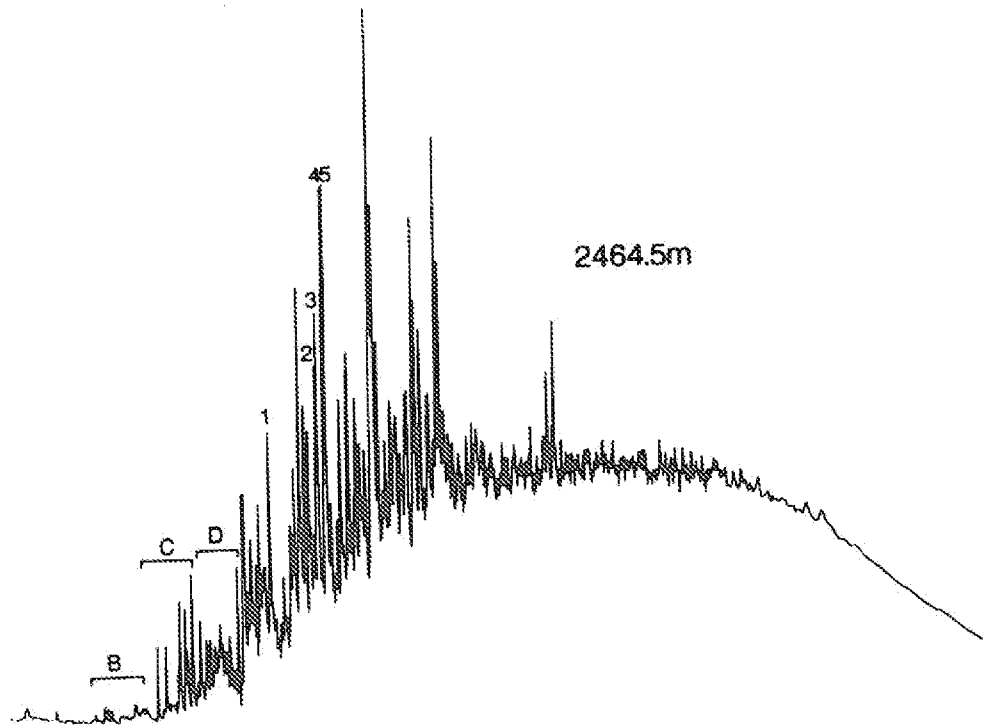


FIGURE F22

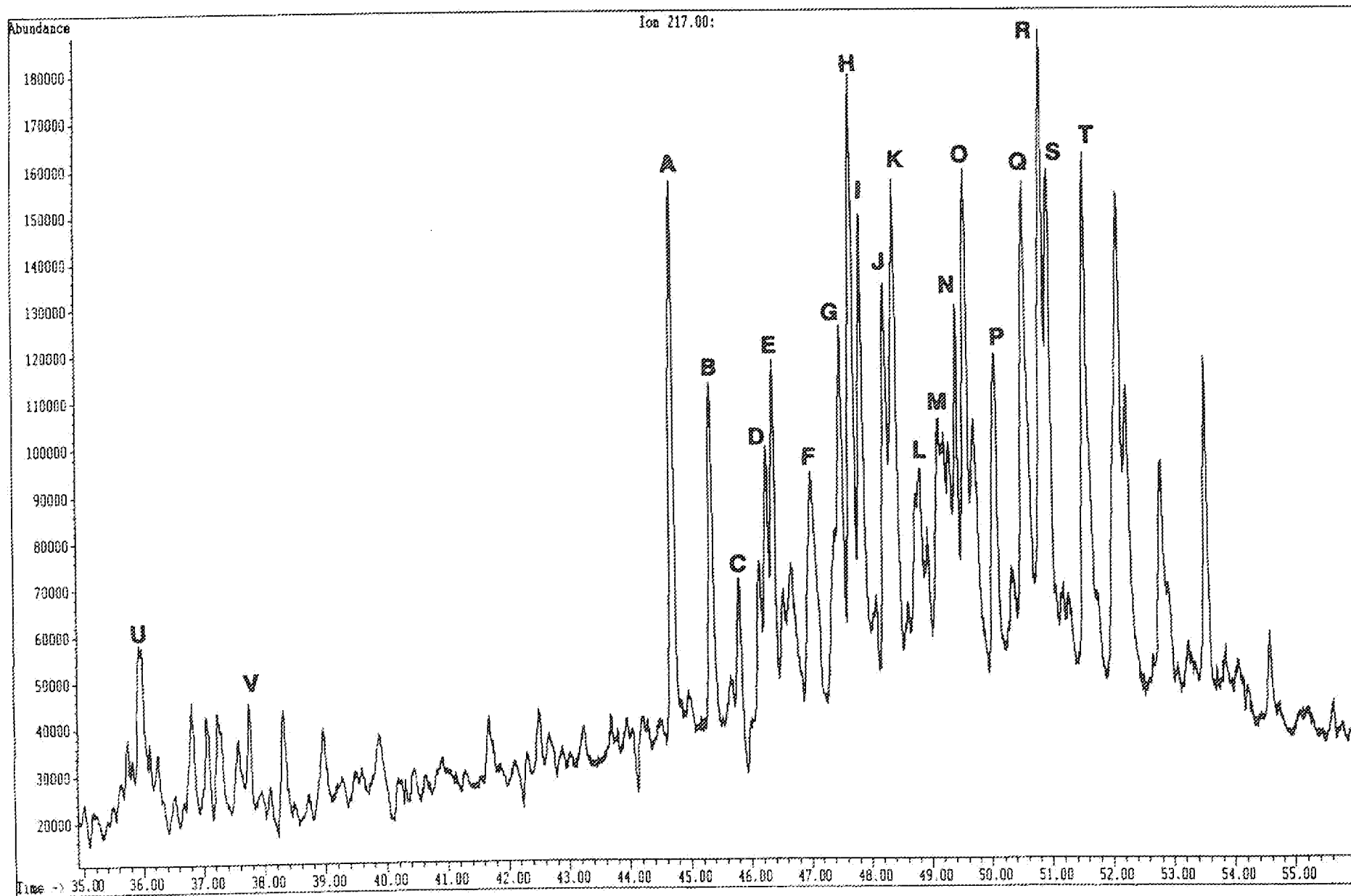
C₁₅+ AROMATIC CHROMATOGRAMS

WELL 33/9-9



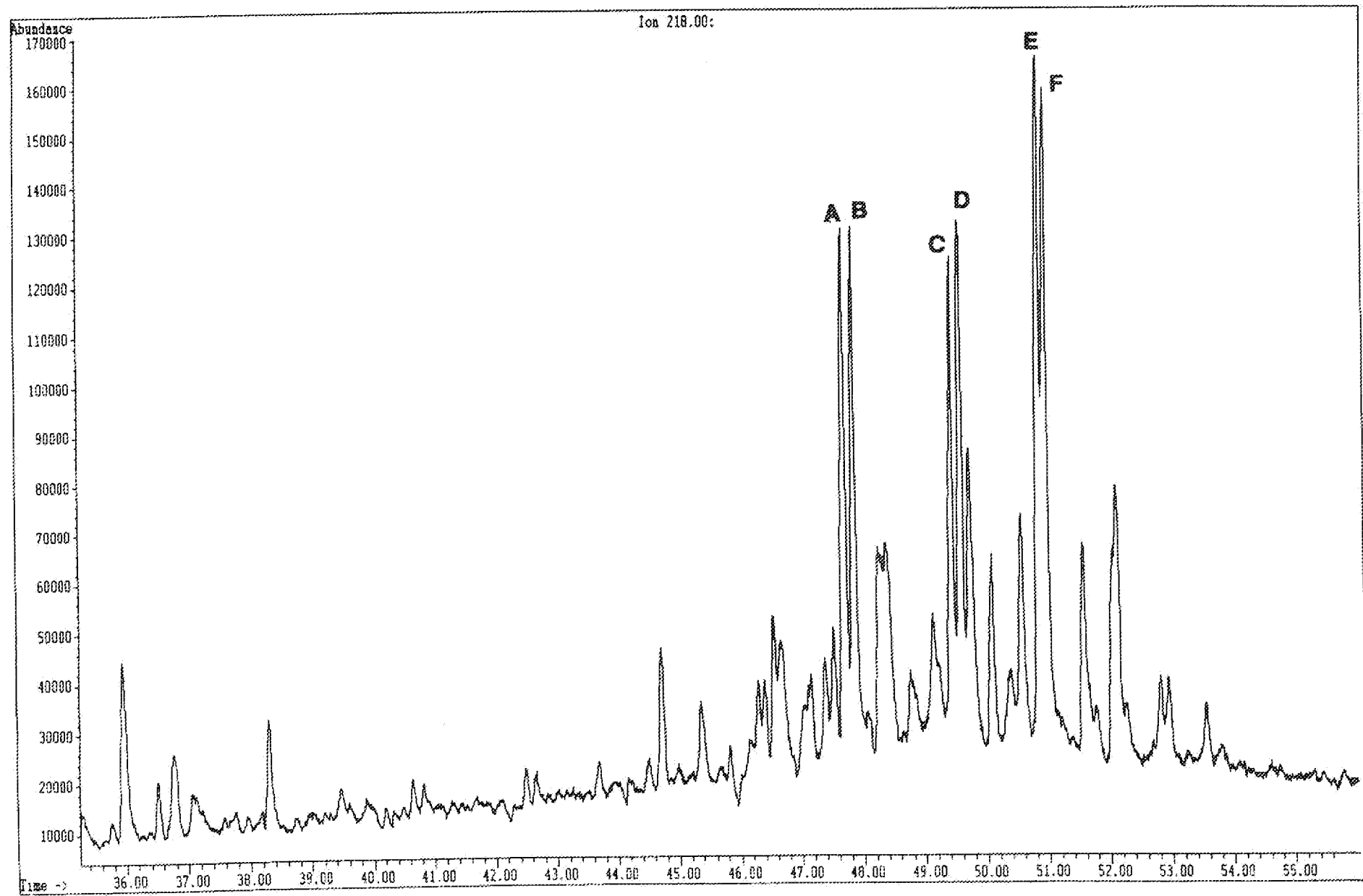
PEAK IDENTIFICATION ON FIRST SHEET

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Method File Name: B10M.M
Sample Name: 4129-001
Misc Info: WELL 33/9-9 2457.9M
Bottle Number: 14

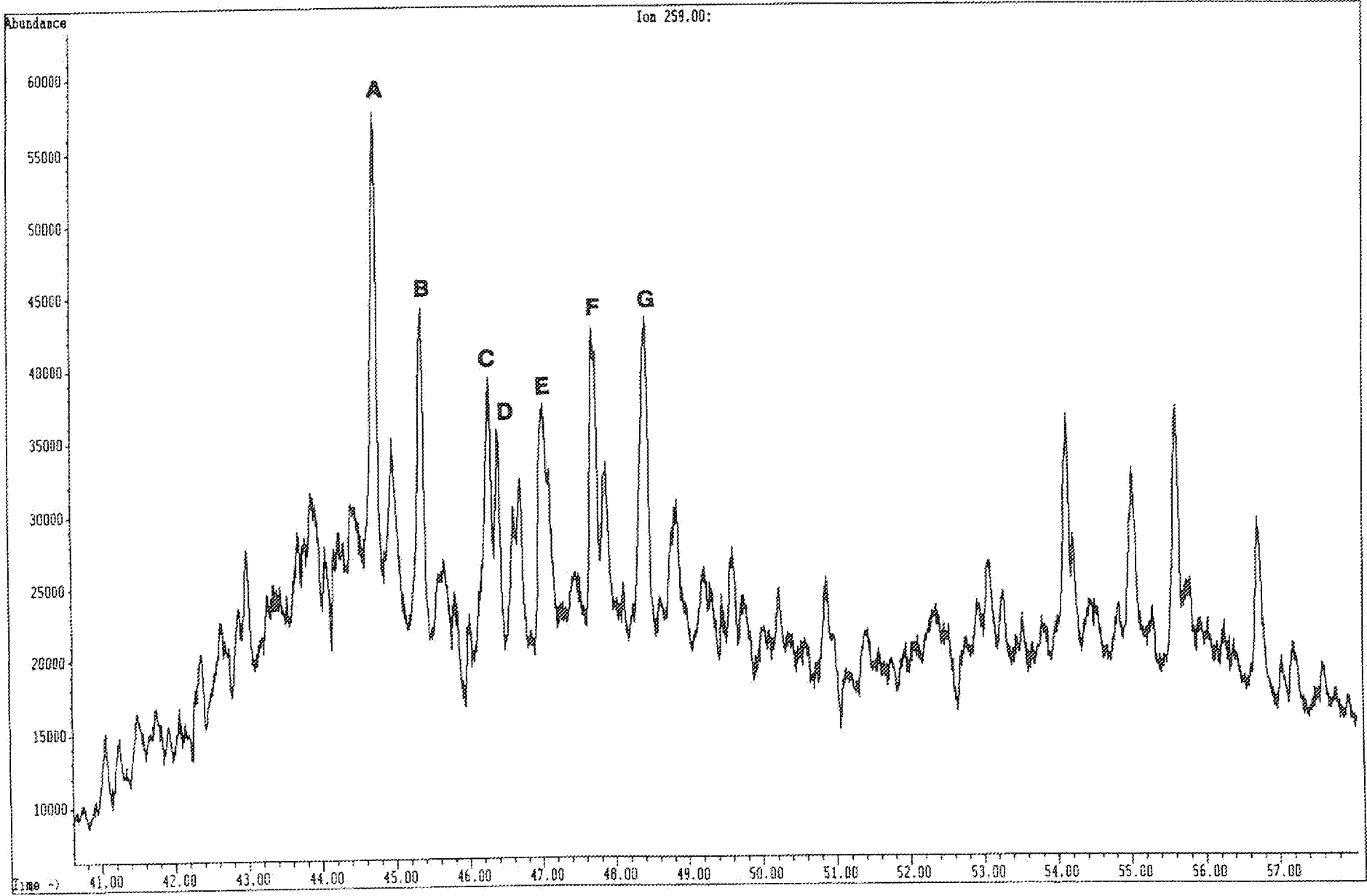


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Method File Name: BIOM.M
Sample Name: 4128-001
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Bottle Number: 14

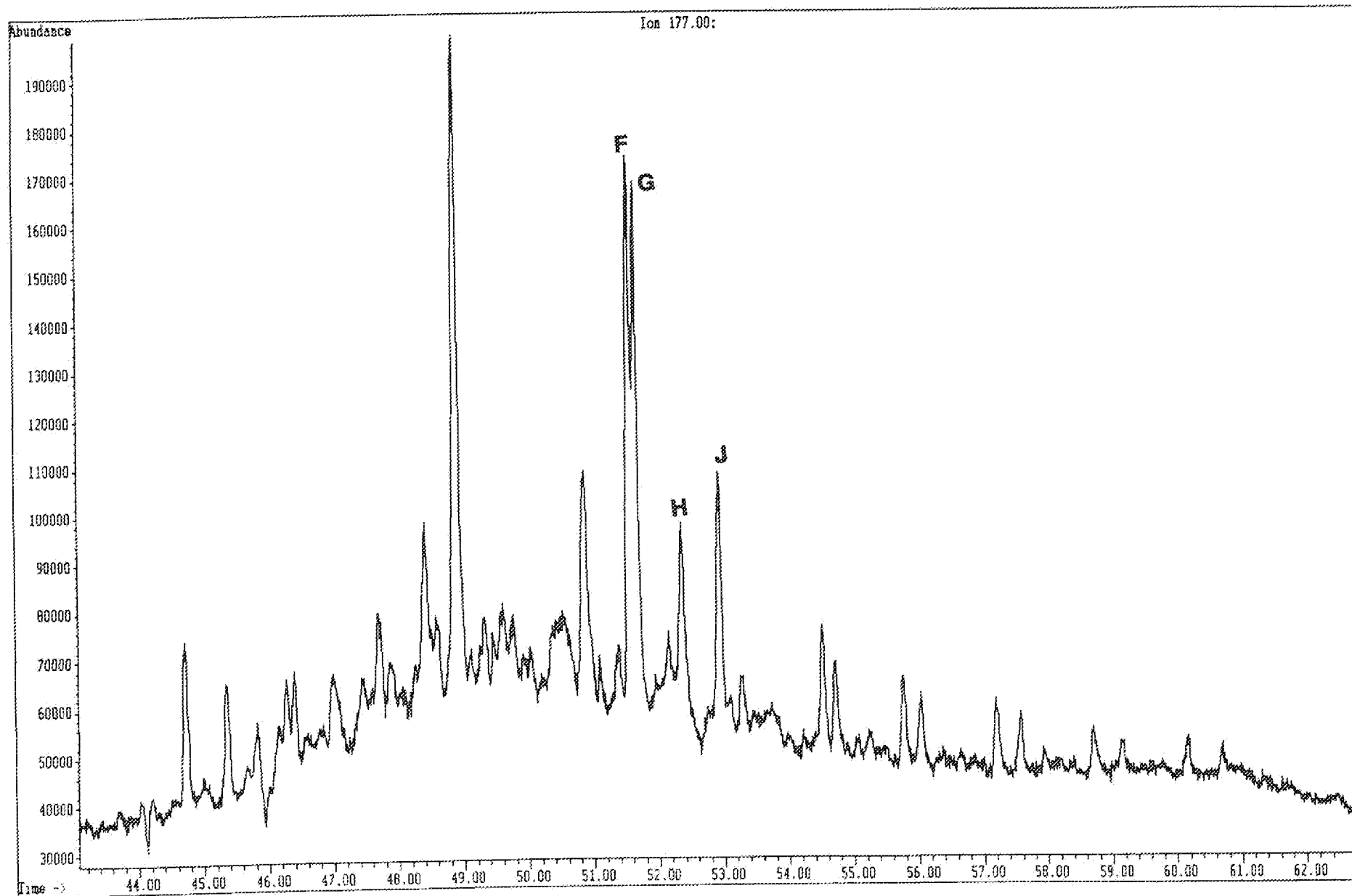
F3.1b



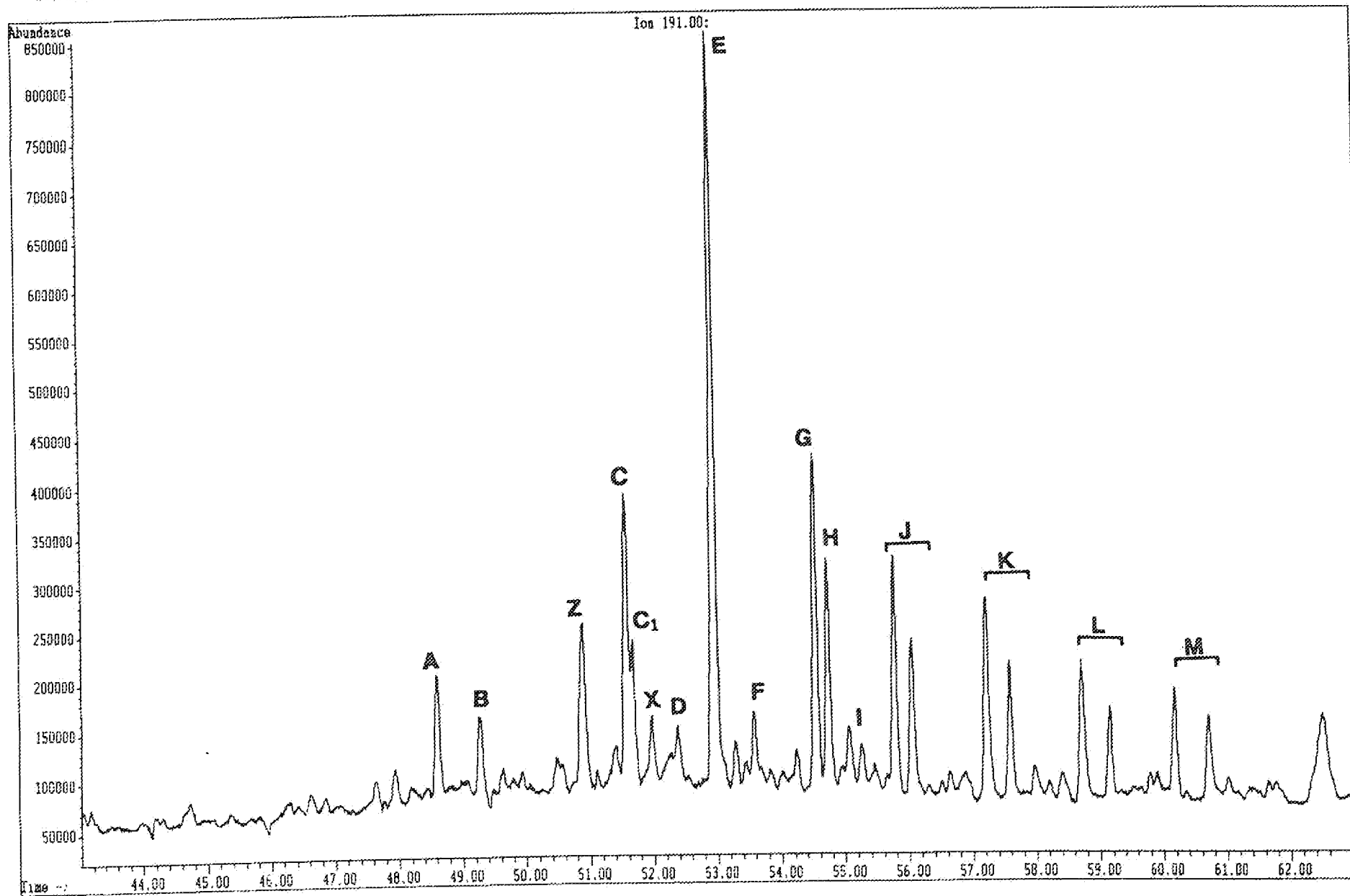
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Sample Name: 4128-001
Misc Info: WELL 33/9-9 2457.9M
Bottle Number: 14



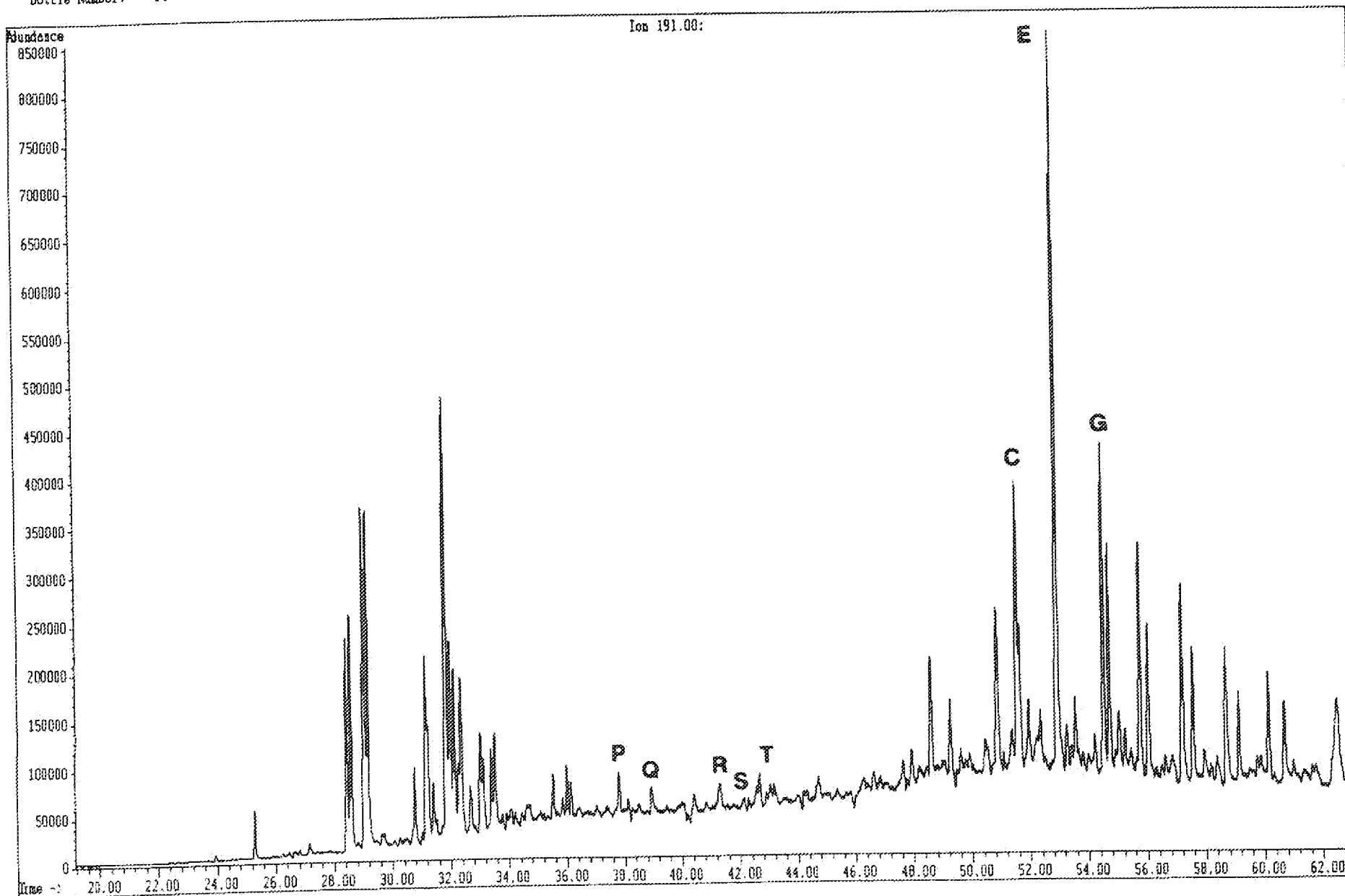
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Bottle Number: 14



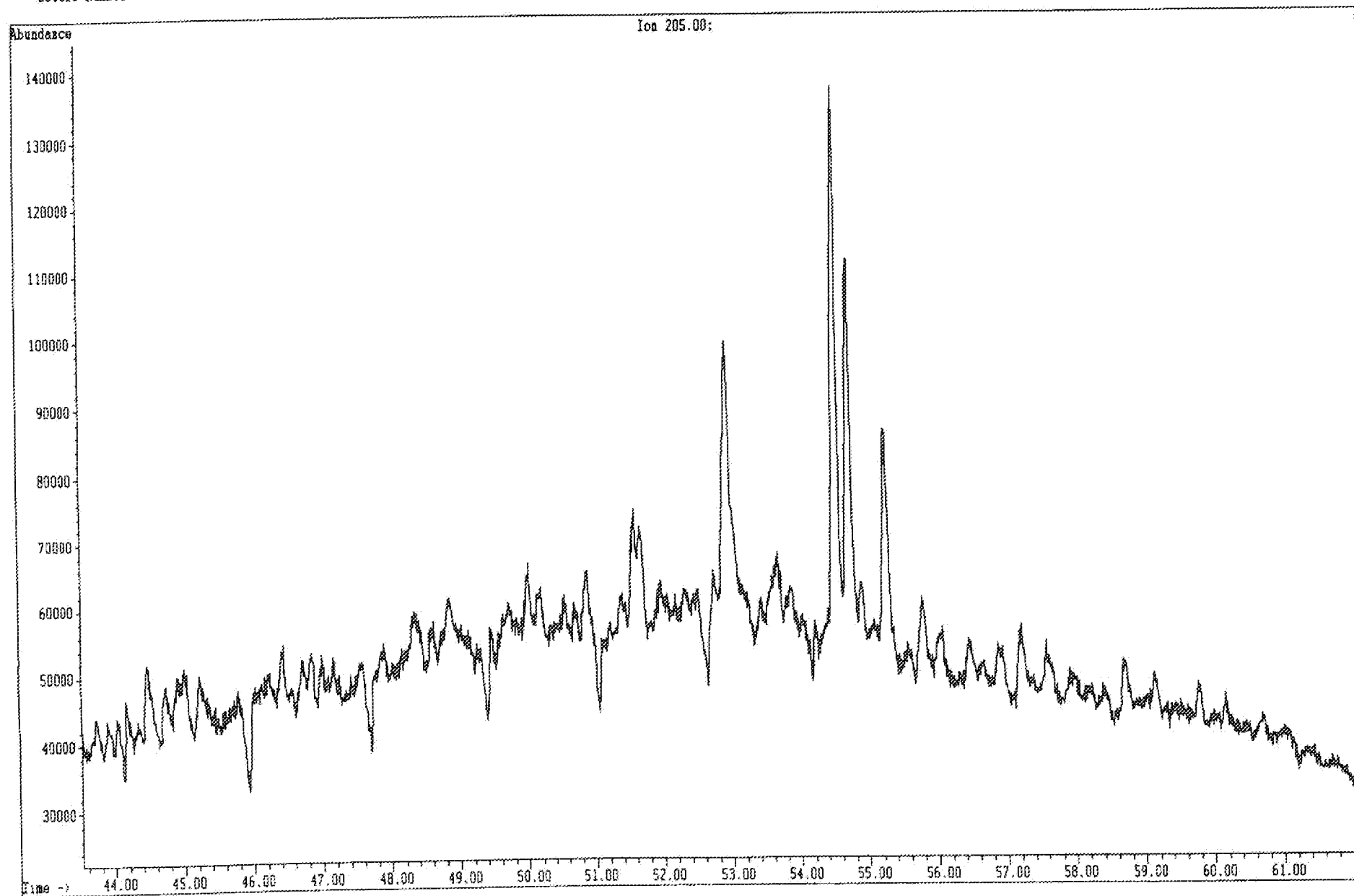
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 Bottle Number: 14



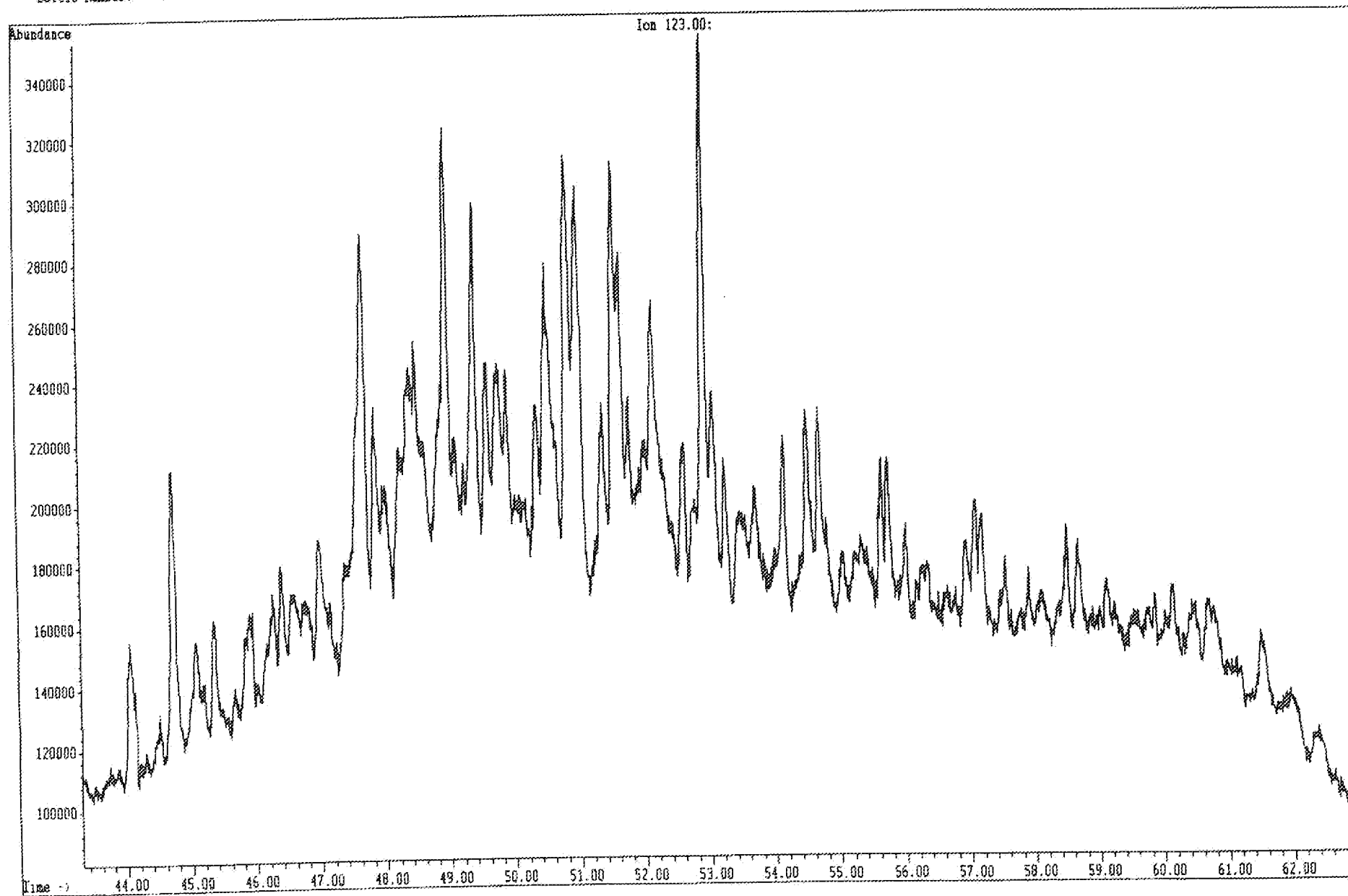
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Sample Name: 4128-001
Misc Info: WELL 33/9-9 2457.9M
Bottle Number: 14



File: C:\CHEMPC\DATA\1401013.D
Operator:
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Bottle Number: 14

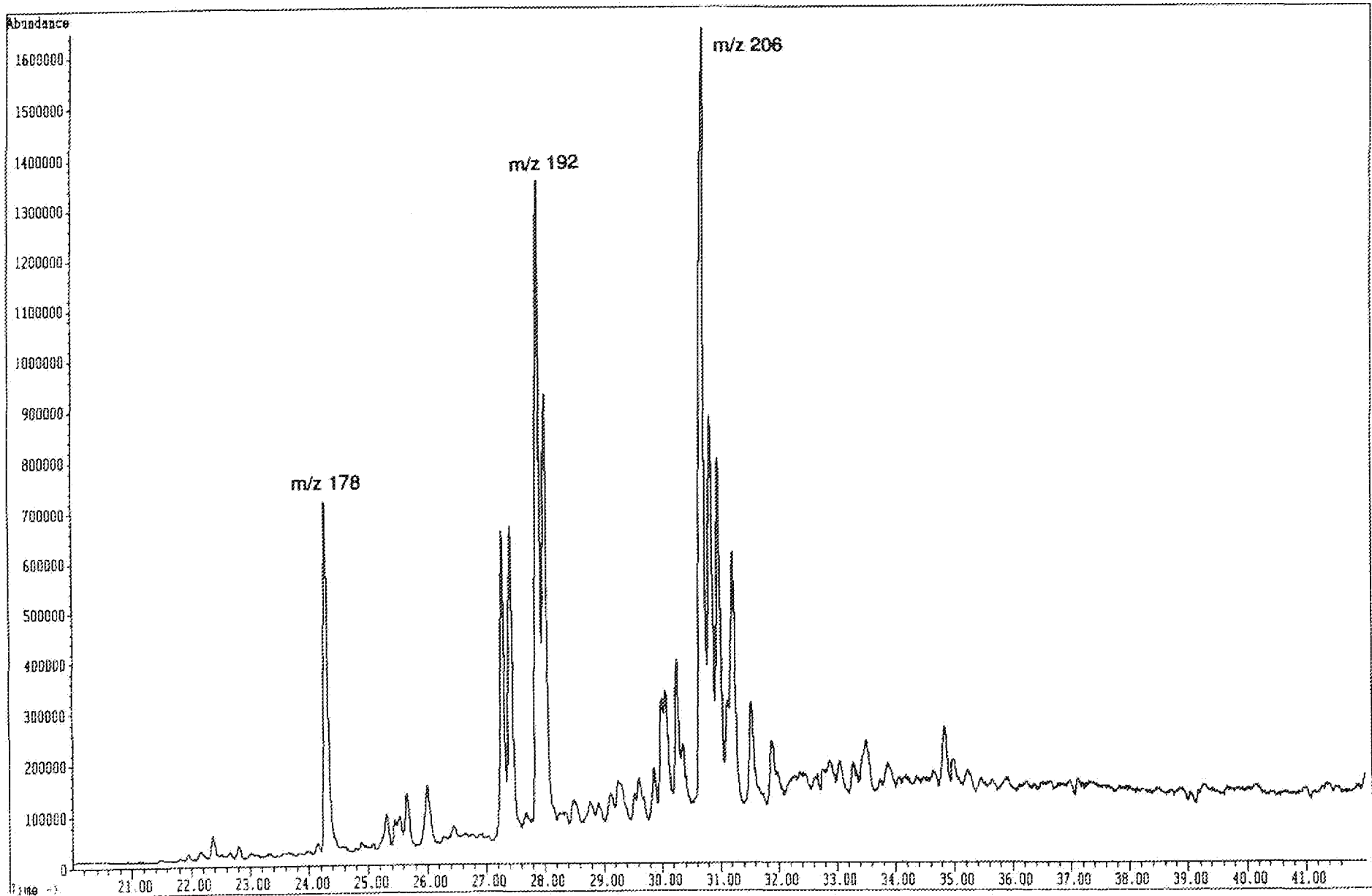


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Bottle Number: 14

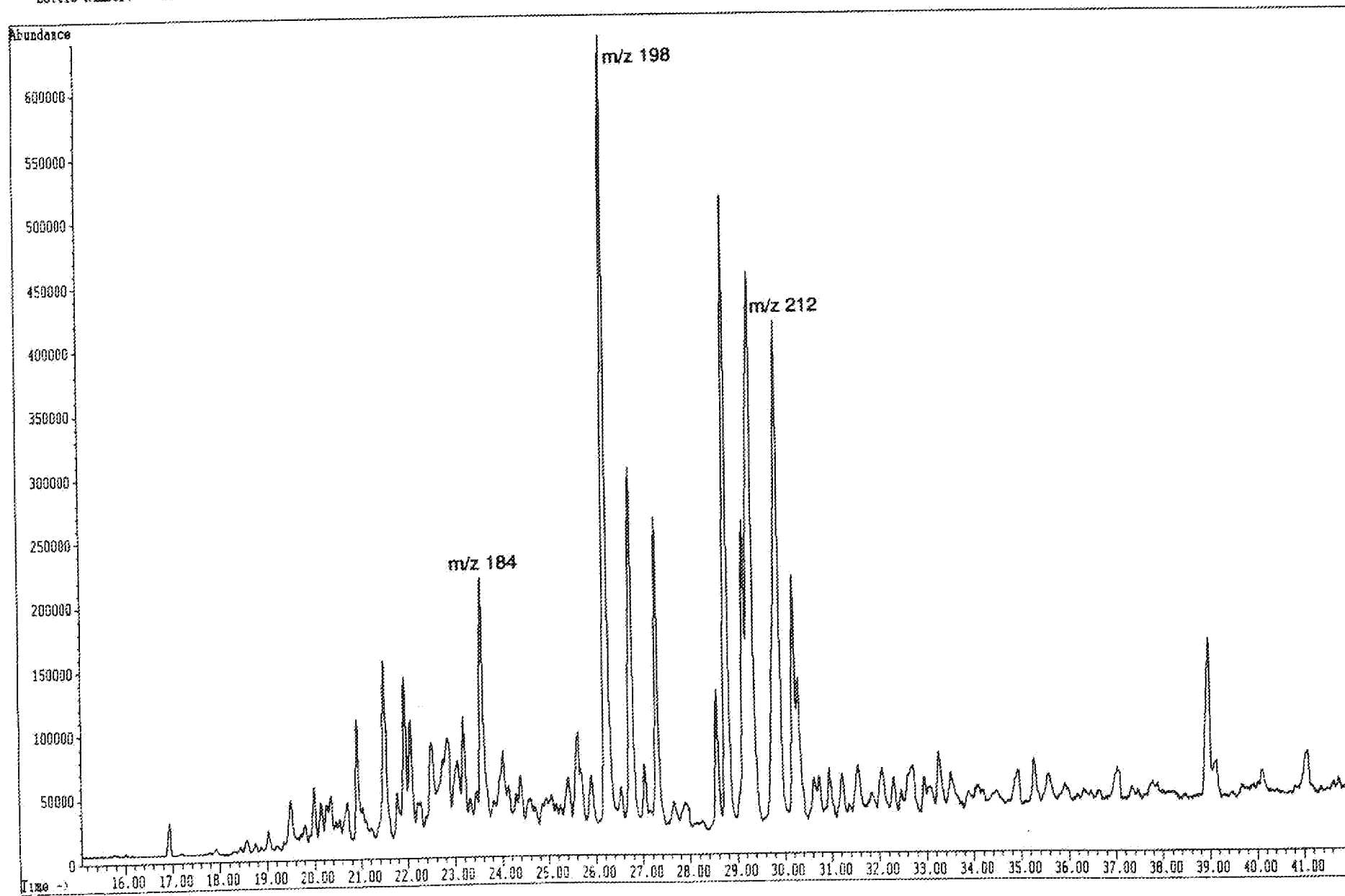


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Operator:
Date Acquired: 10 Dec 90 8:59 pm
Method File Name: BICOMY.M
Sample Name: 412E-001
Misc Info: WELL 33/9-9 2457.9M
Bottle Number: 81

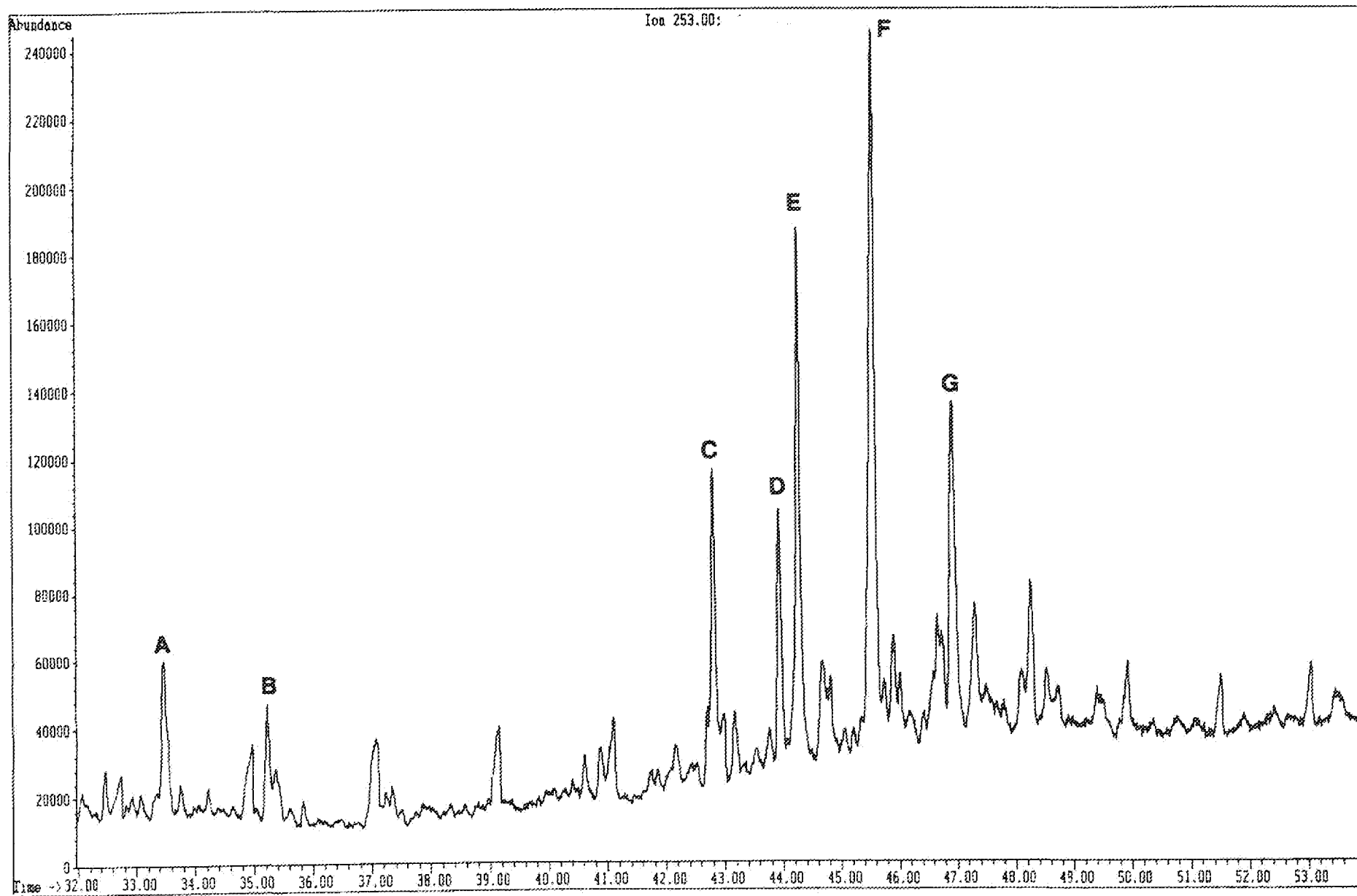
Phenanthrenes



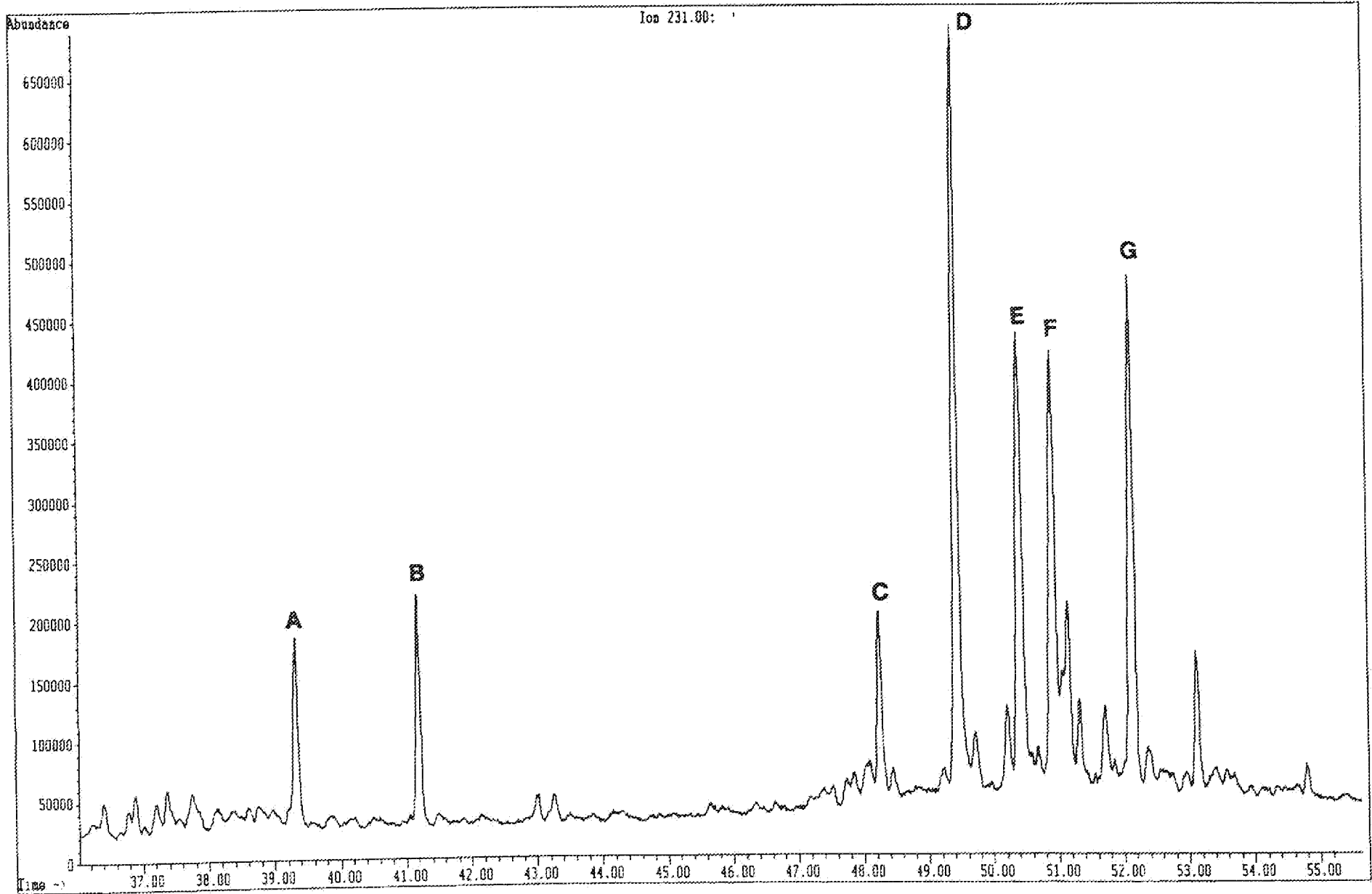
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Operator:
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Method File Name: B10MY.M
Sample Name: 412B-001
Misc Info: WELL 33/4-9 2457.9M
Bottle Number: B1

Dibenzothiophenes

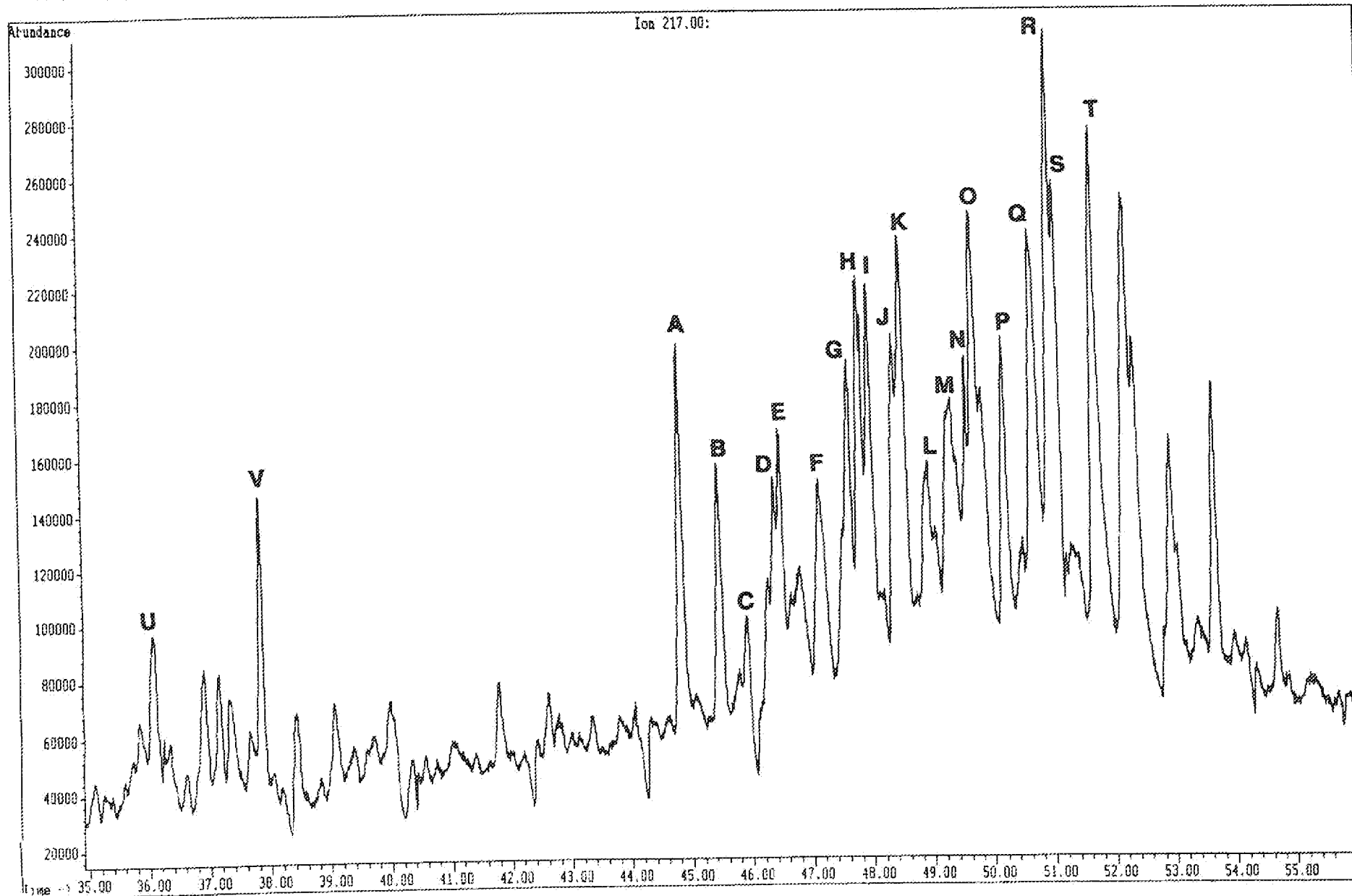
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Misc Info: WELL 33/9-9 2457.9M
Bottle Number: 81



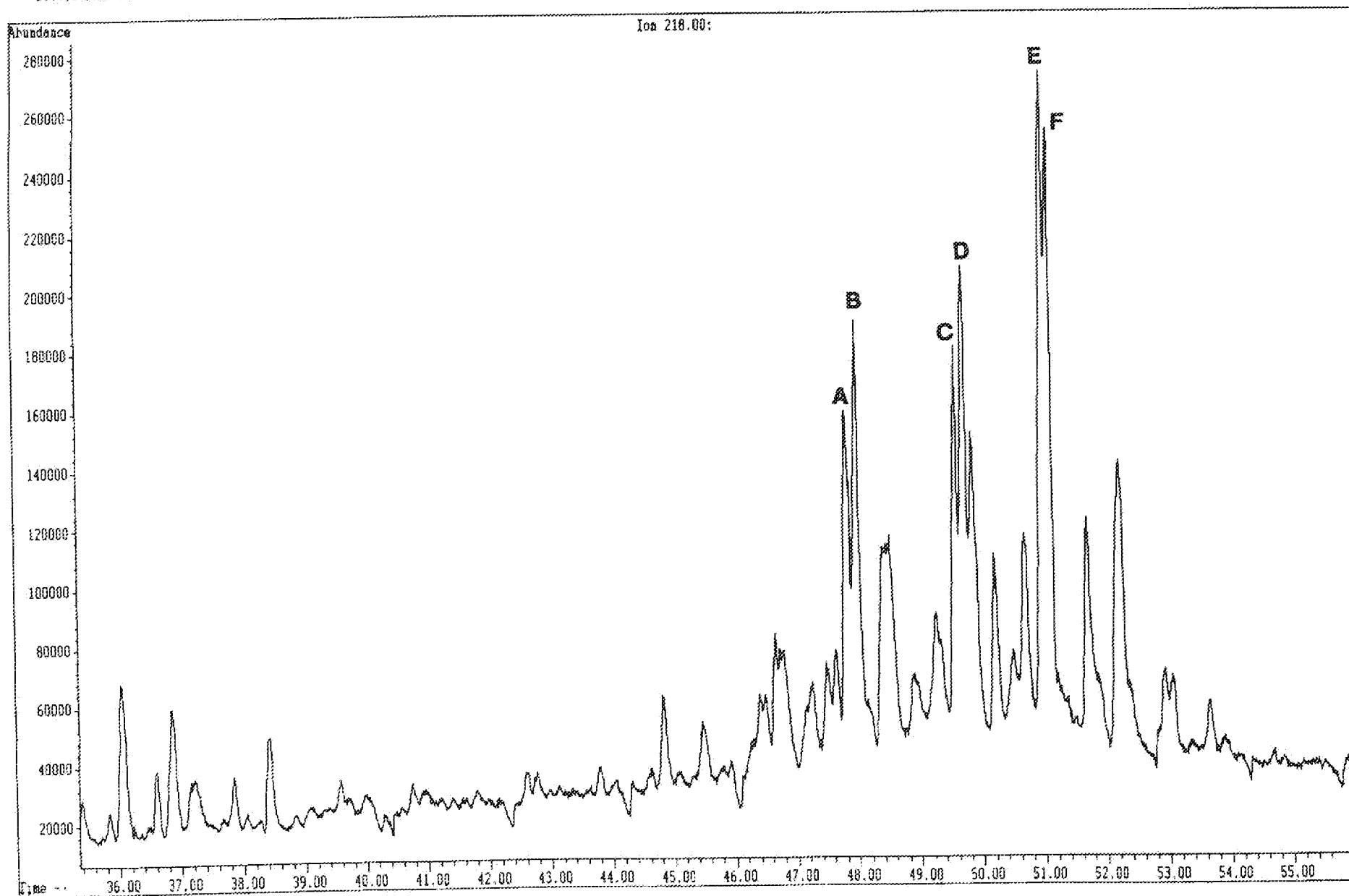
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Sample Name: 4128-001
Misc Info: WELL 33/9-9 2457.9M
Bottle Number: 8i



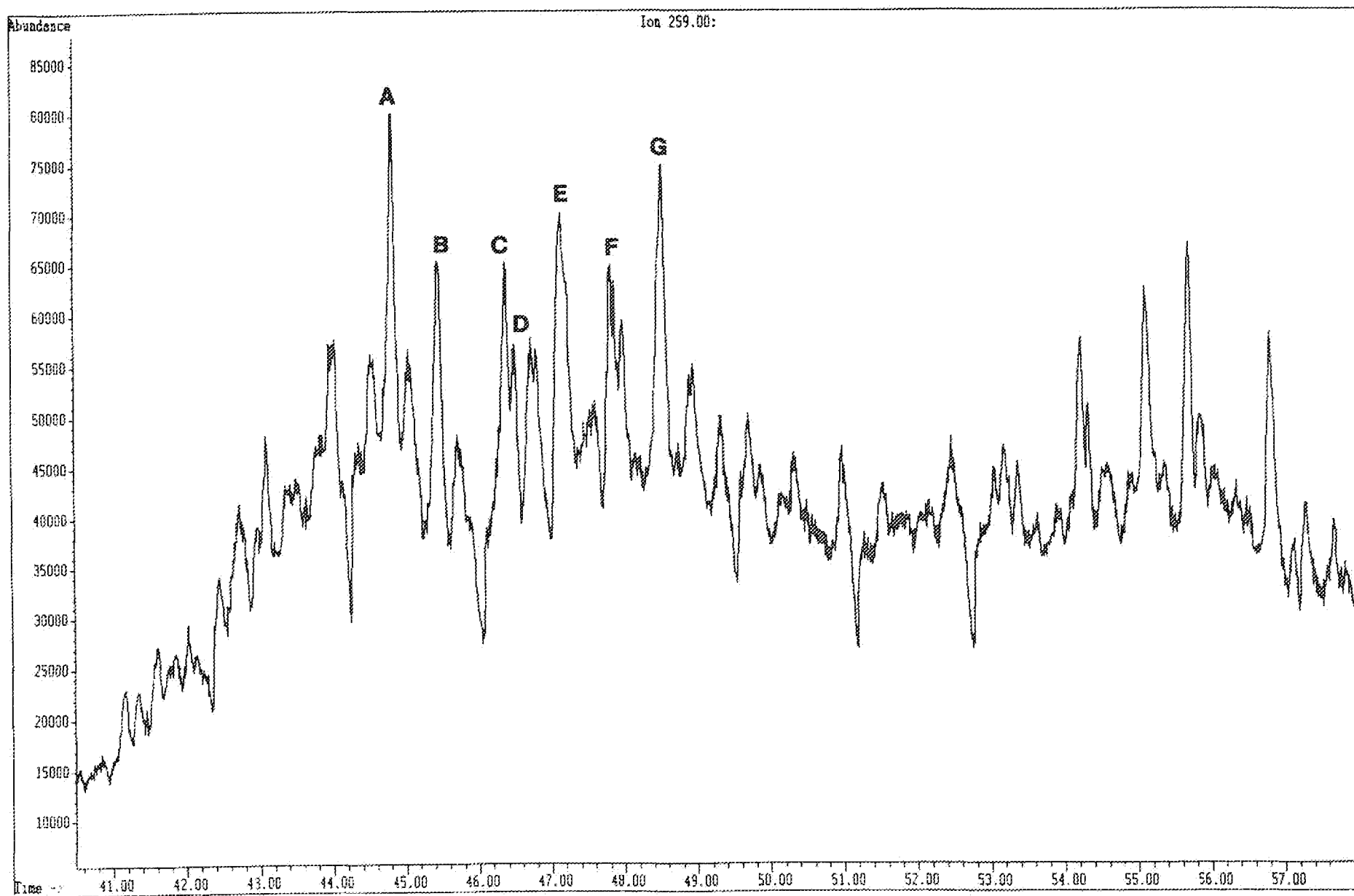
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Sample Name: 4128-002
Misc Info: WELL 33/9-9 2464.SM
Bottle Number: 15



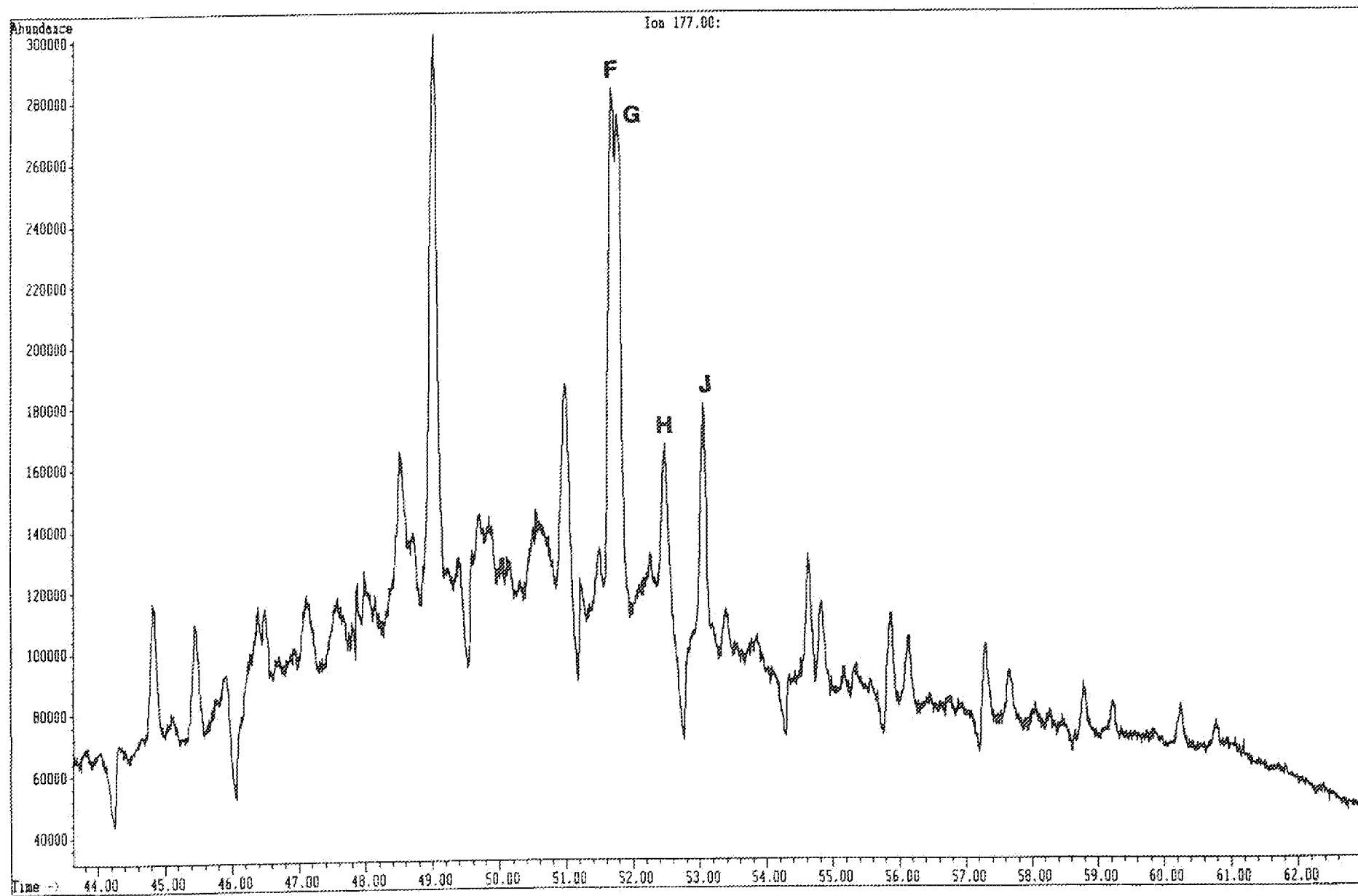
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Operator:
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Method File Name: BICH.M
Sample Name: 4128-082
Misc Info: WELL 33/9-9 2464.5M
Bottle Number: 15



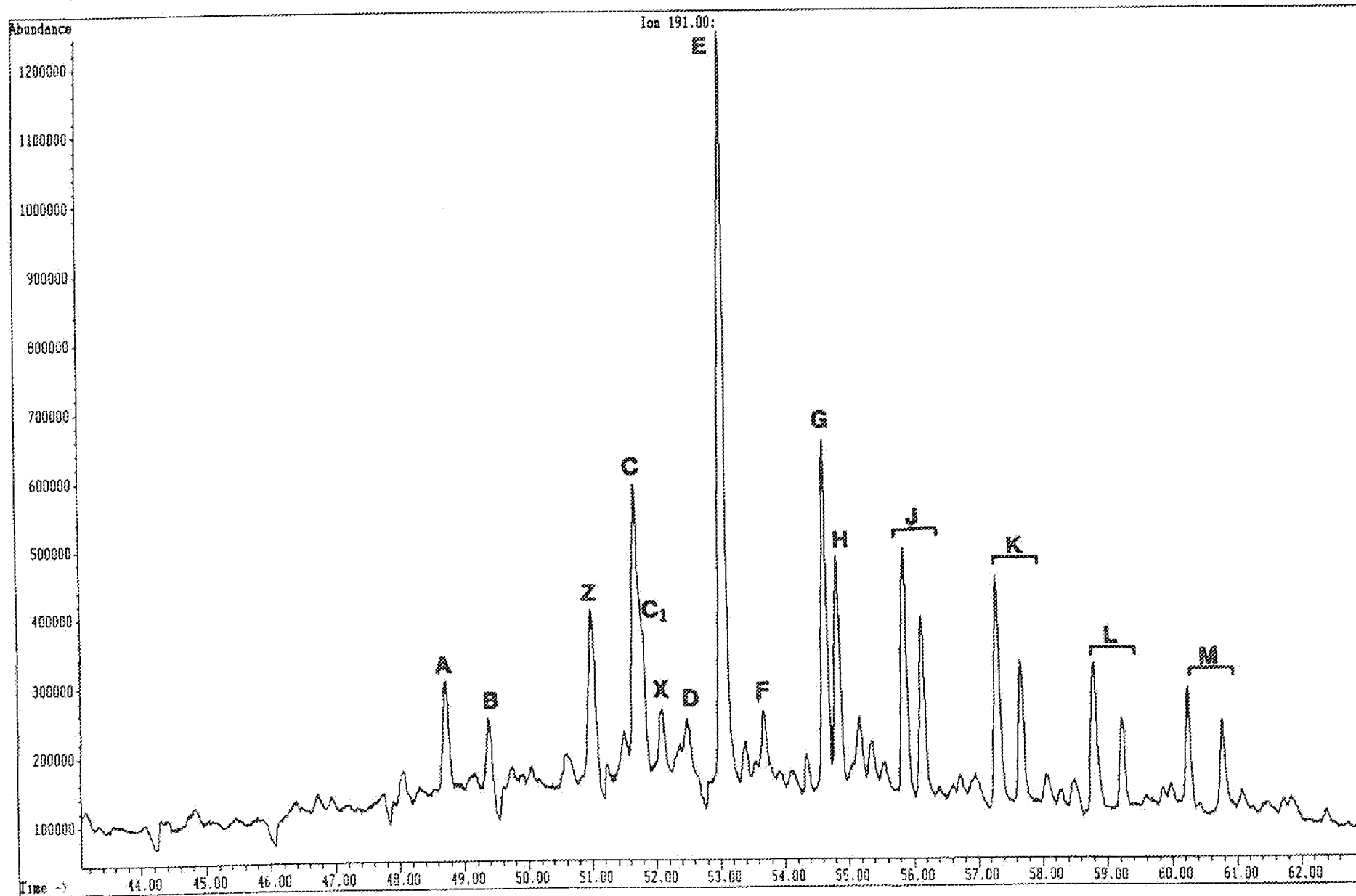
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Sample Name: 4128-002
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Bottle Number: 15



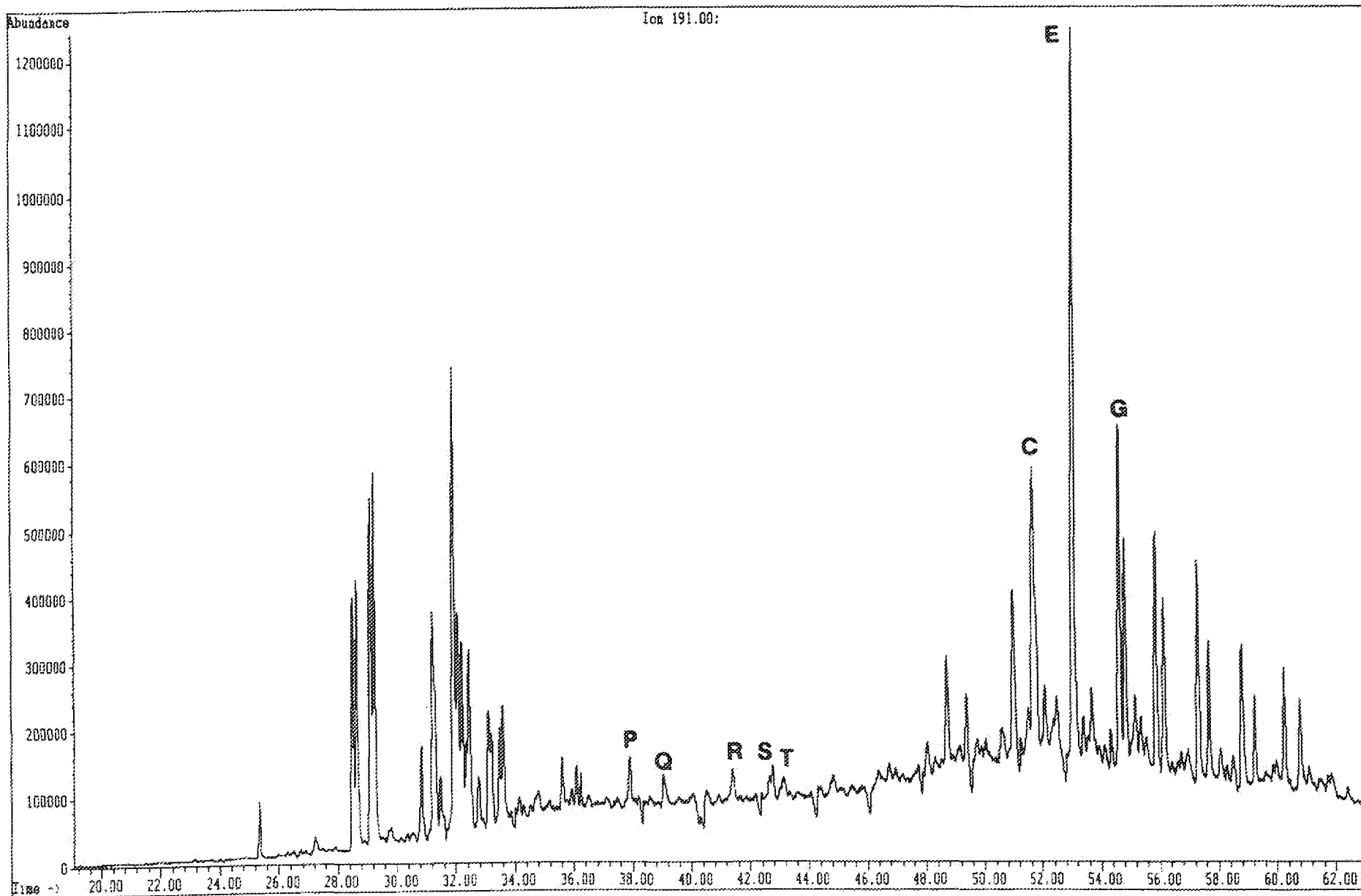
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Bottle Number: 15



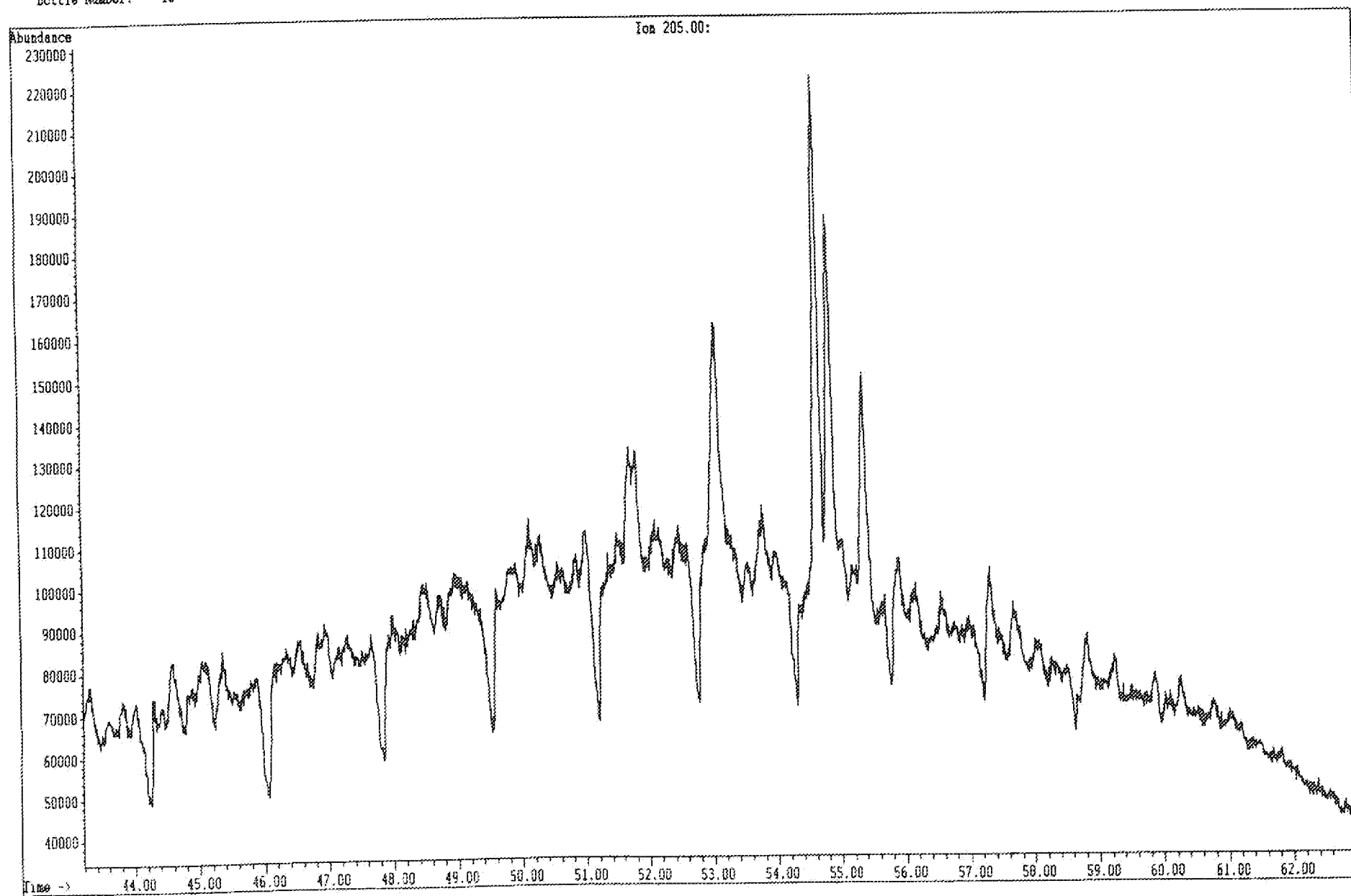
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Bottle Number: 15



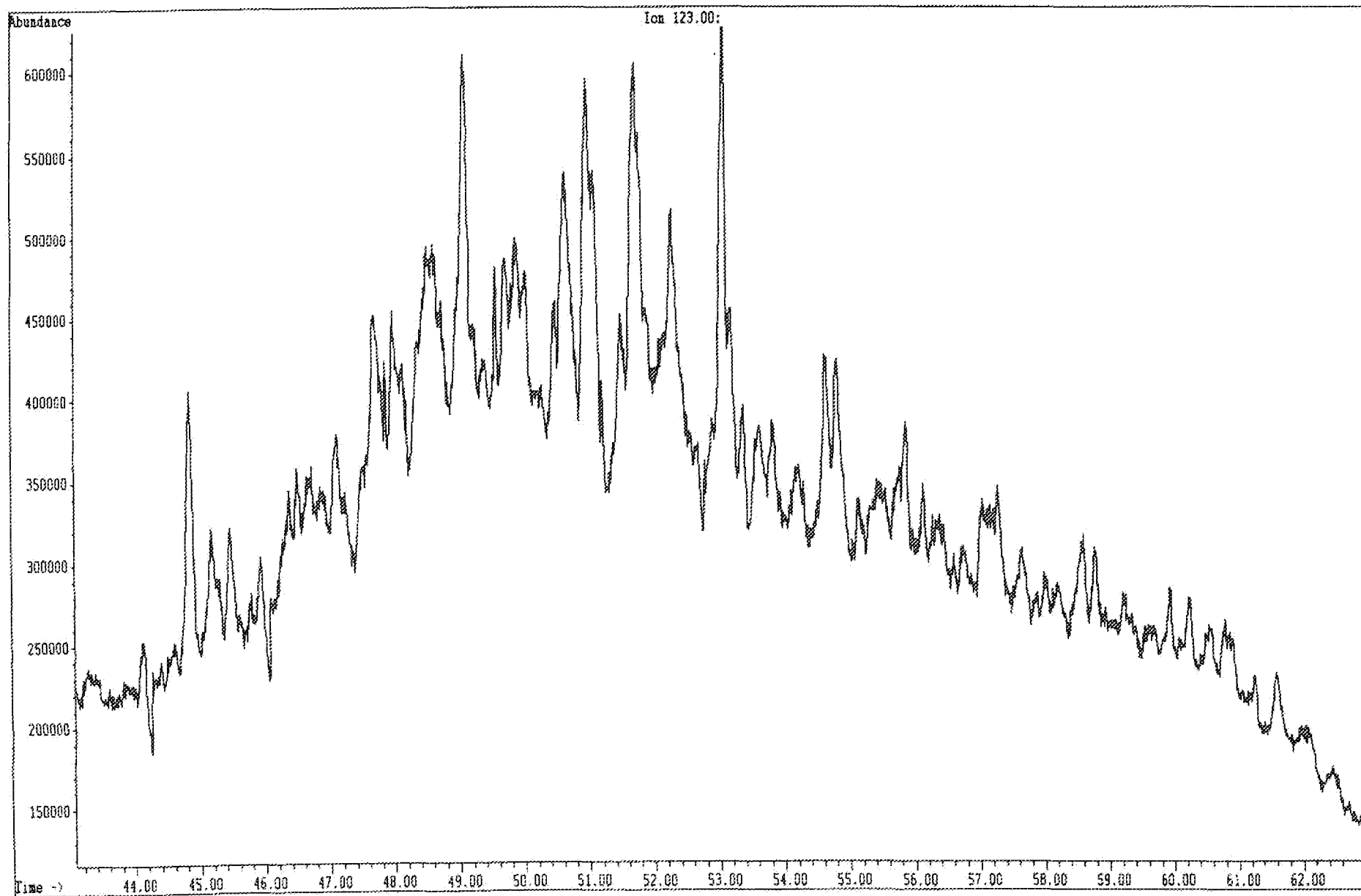
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Bottle Number: 15



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Method File Name: B10M.M
Sample Name: 4128-002
Misc Info: WELL 33/9-9 2464.5M
Bottle Number: 15

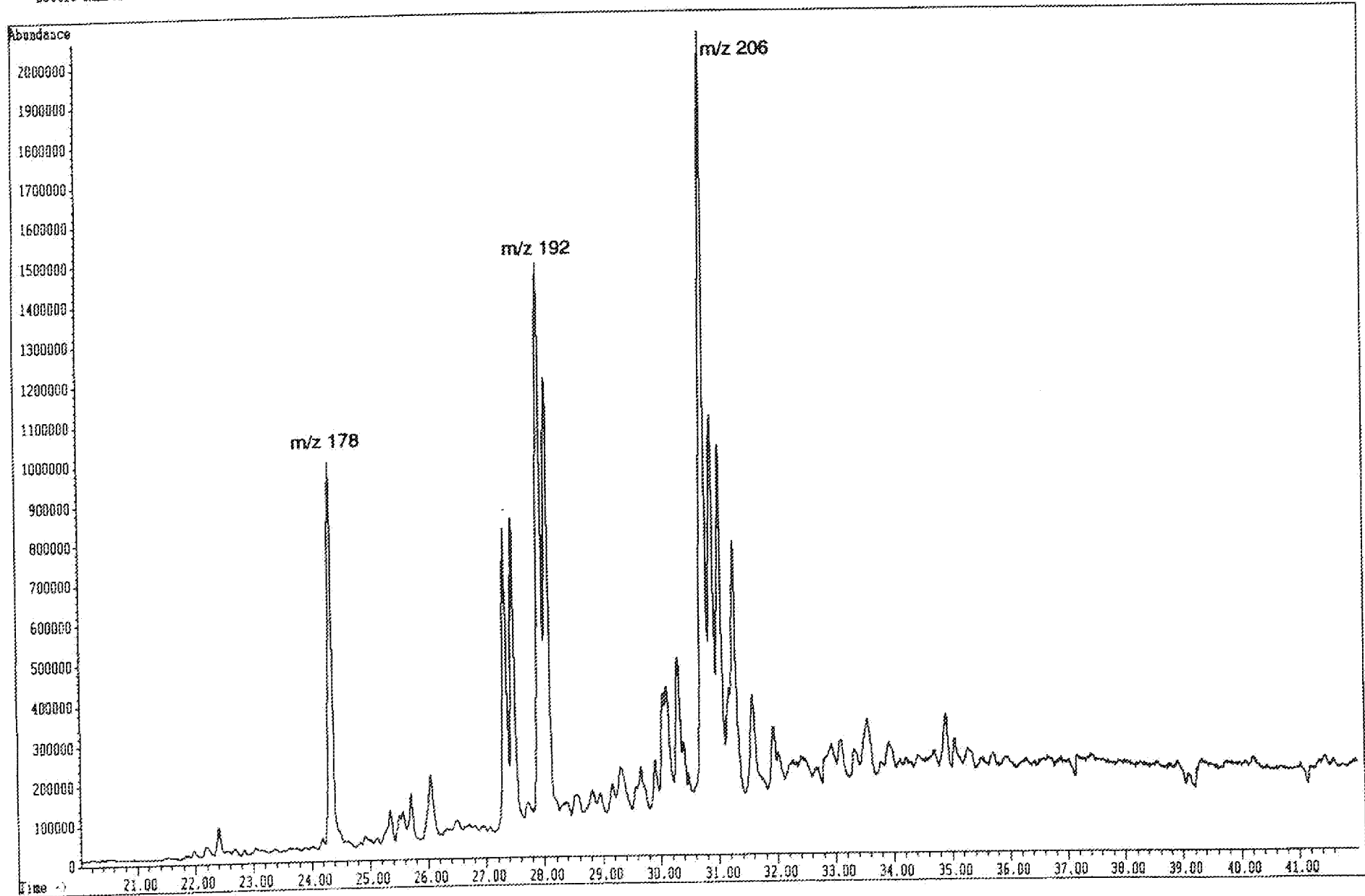


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Sample Name: 4128-002
Misc Info: WELL 33/9-9 2464.5M
Bottle Number: 15

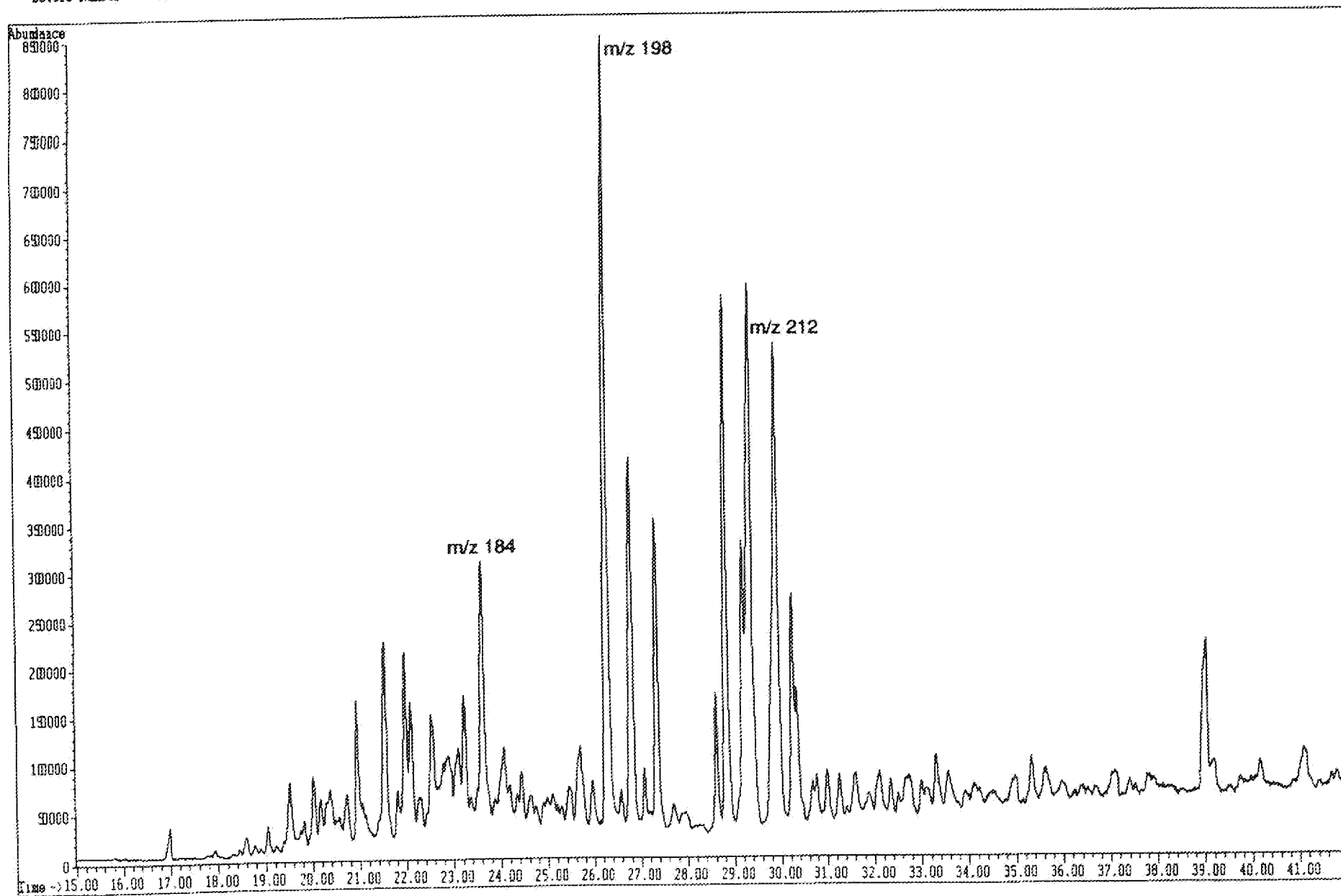


File: D:\CHEMPC\DATA\8201004.D
Operator:
Date Acquired: 10 Dec 98 10:08 pm
Method File Name: B10MY.M
Sample Name: 4128-002
Misc Info: WELL 33/9-9 2464.SM
Bottle Number: 82

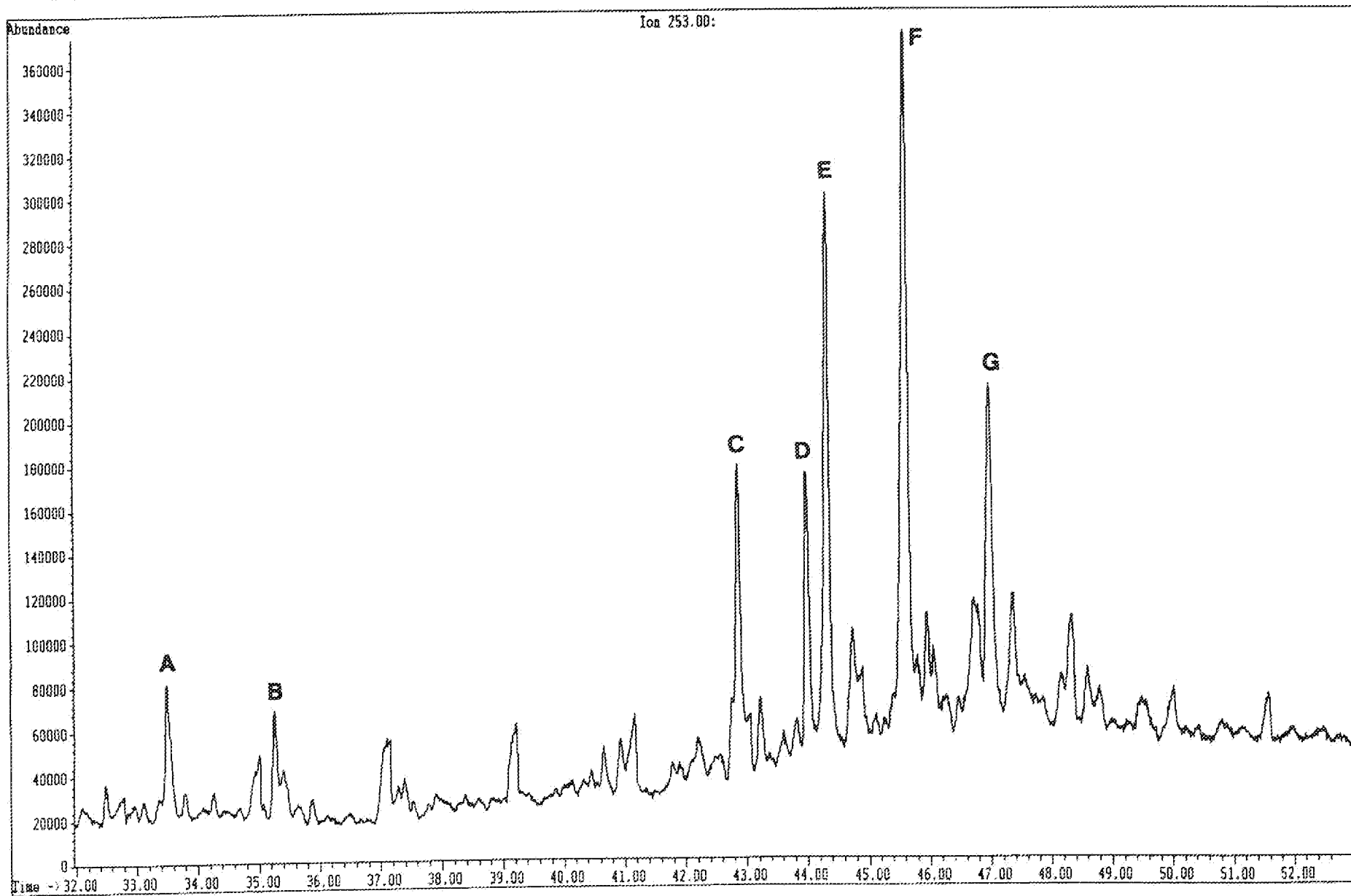
Phenanthrene



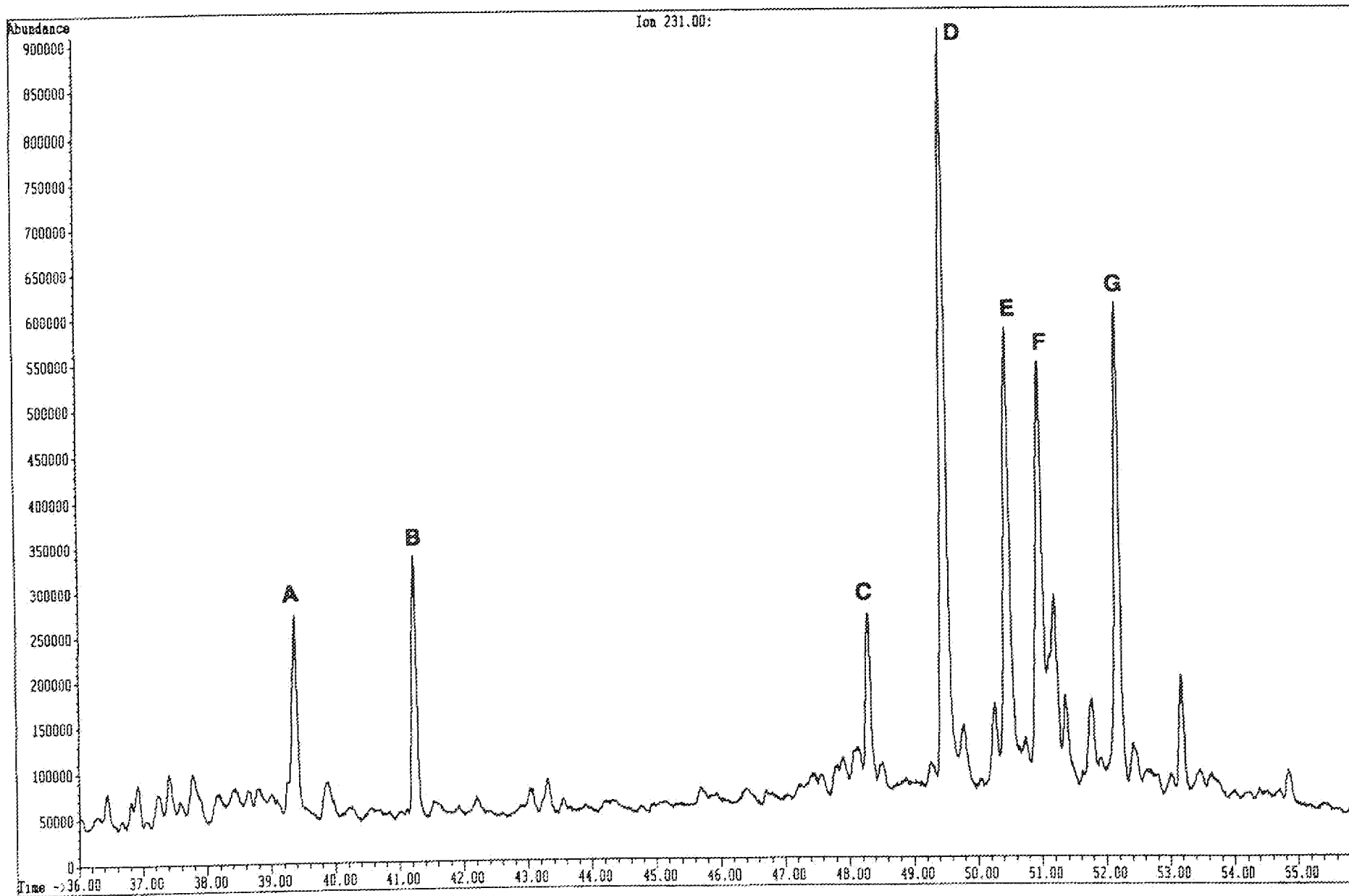
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Operator:
Date Acquired: 10 Dec 90 10:08 pm
Method File Name: B10M.M
Sample Name: 4128-082
Misc Info: WELL 33/9-9 2464.5K
Bottle Number: 82

Dibenzothiophenes

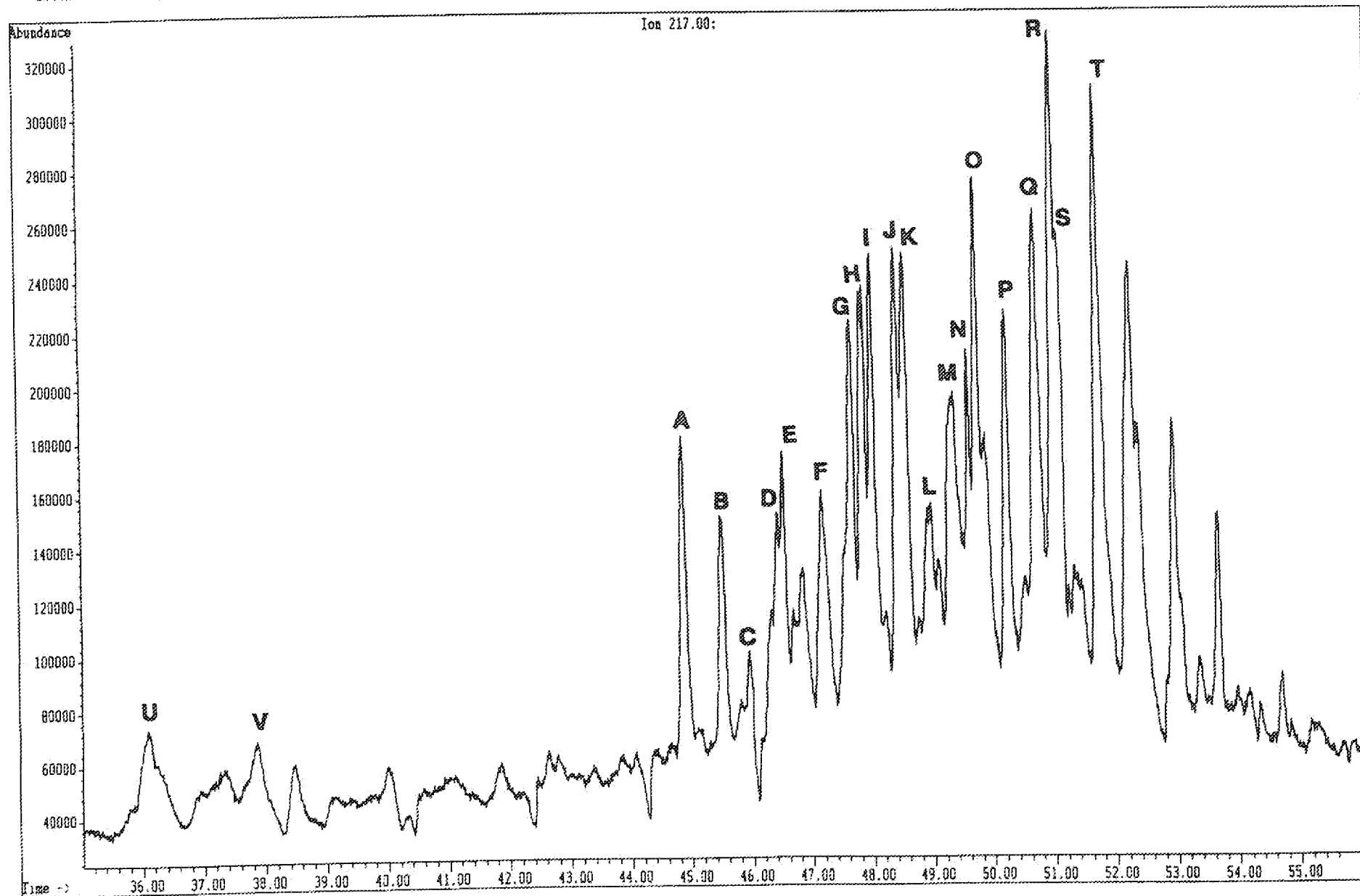
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Sample Name: 4128-002
Misc Info: WELL 33/9-9 2464.5M
Bottle Number: 82



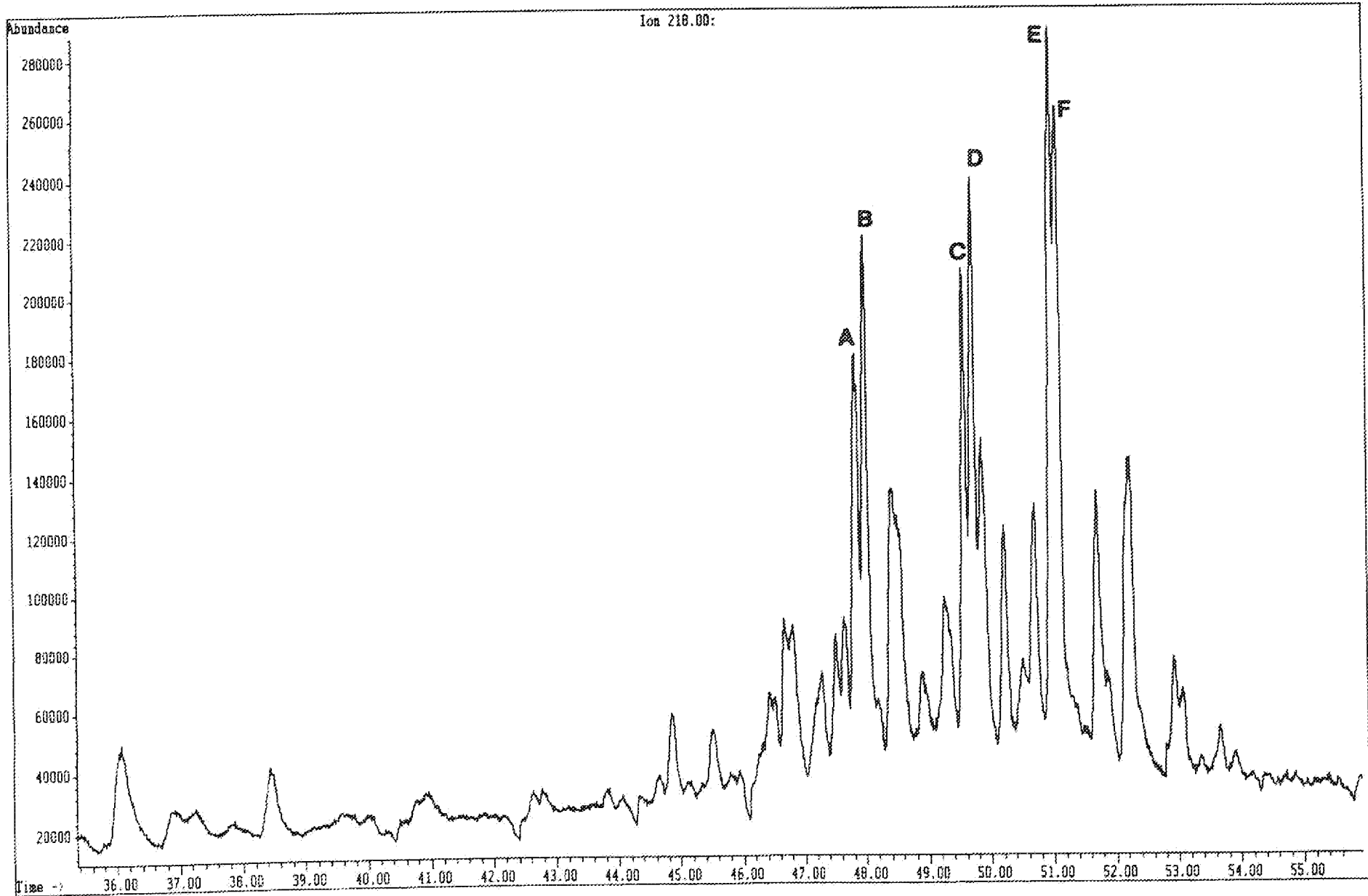
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Method File Name: B10MY.M
Sample Name: 4120-002
Misc Info: WELL 33/9-9 2464.5M
Bottle Number: 02



File: C:\CHEMPC\DATA\1601015.D
Operator:
Date Acquired: 13 Dec 90 10:31 am
Method File Name: BICM.M
Sample Name: 4128-003
Misc Info: WELL 33/9-9 2750.0M
Bottle Number: 16

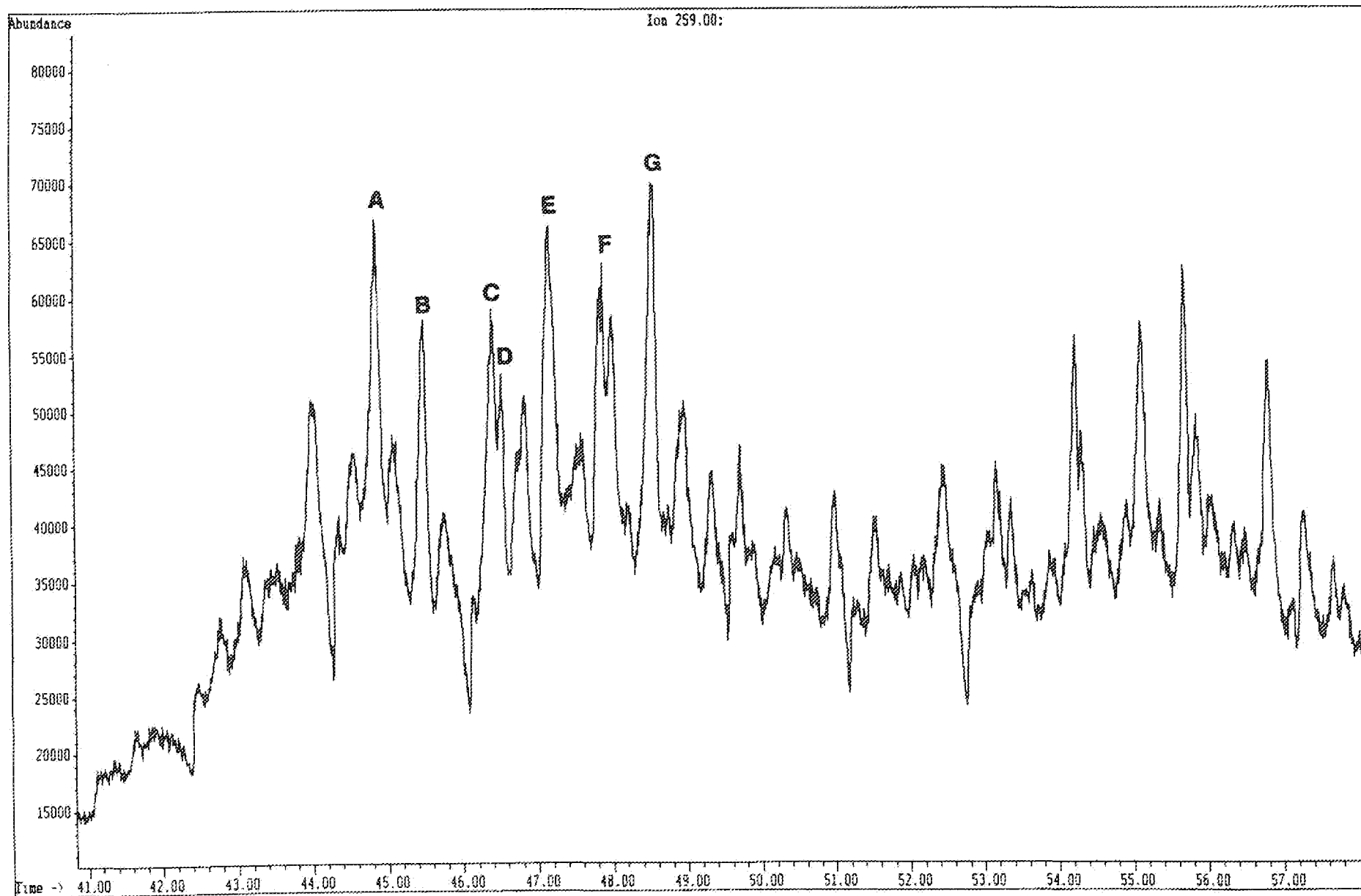


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Method File Name: B10M.M
Sample Name: 4128-003
Misc Info: WELL 33/9-9 2750.0M
Bottle Number: 16



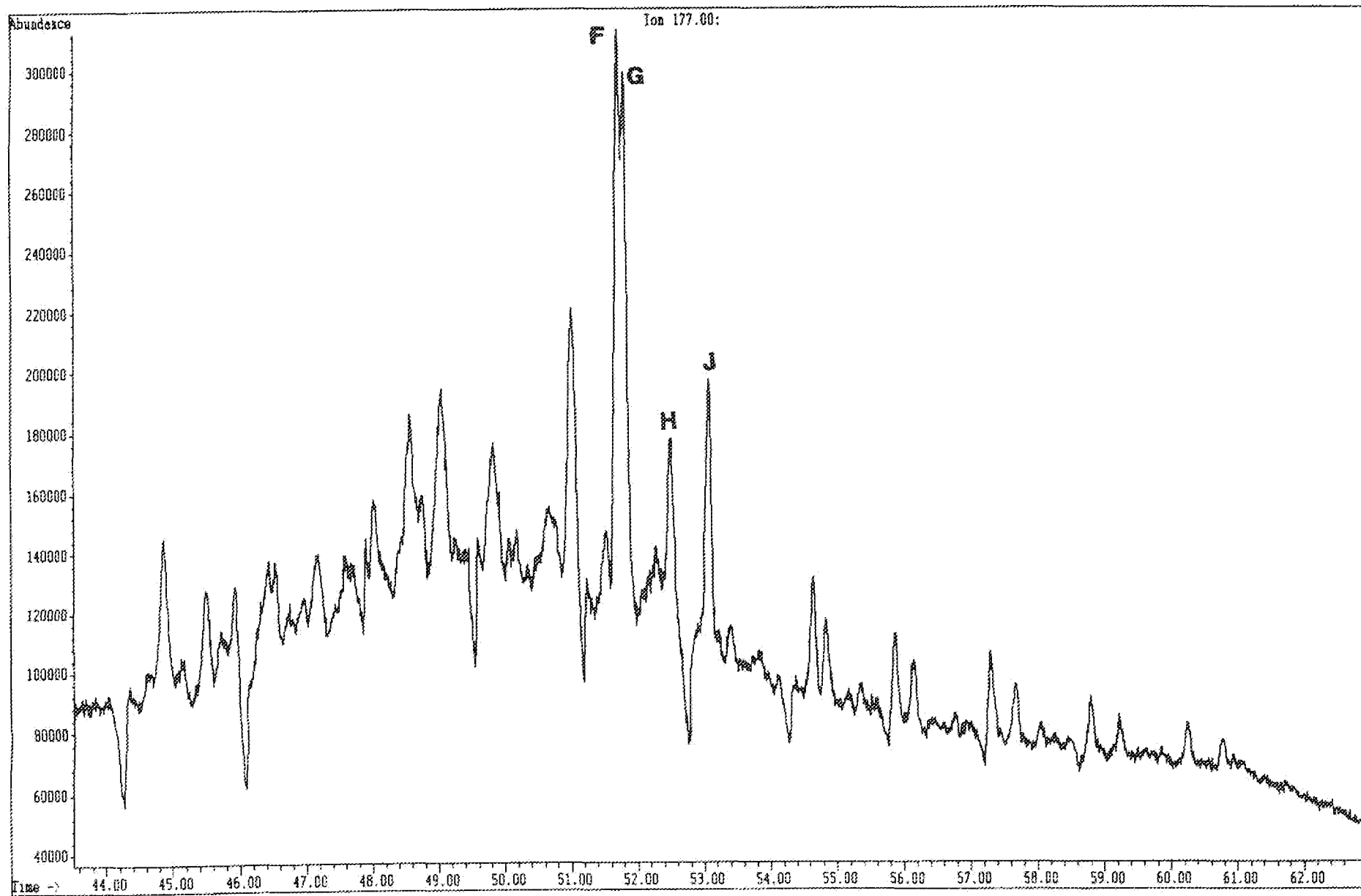
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Operator:
Date Acquired: 13 Dec 90 10:31 am
Method File Name: BICM.M
Sample Name: 4128-003
Misc Info: WELL 33/9-9 2750.OM
Bottle Number: 16

F33c



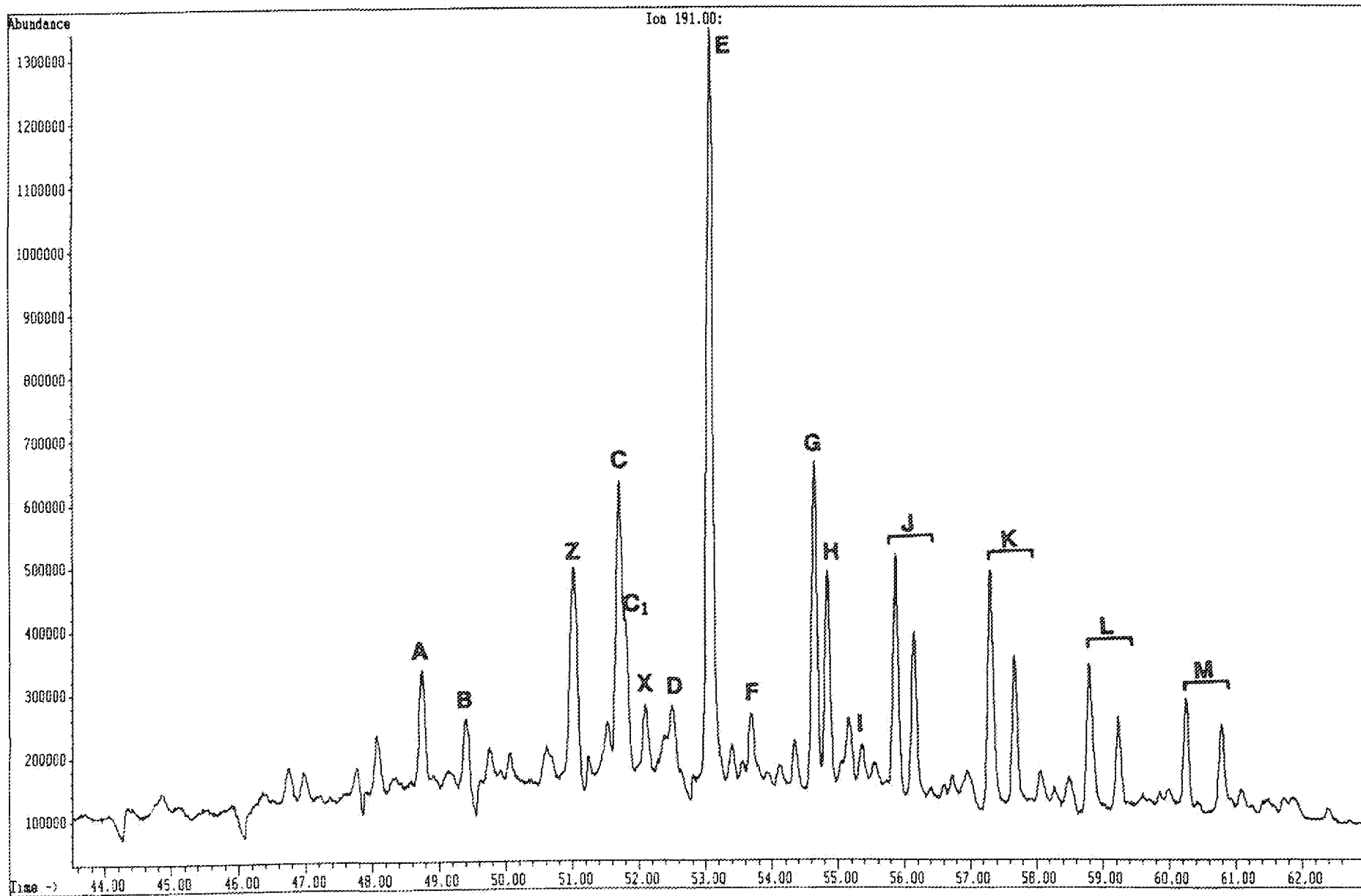
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Bottle Number: 16

F33d



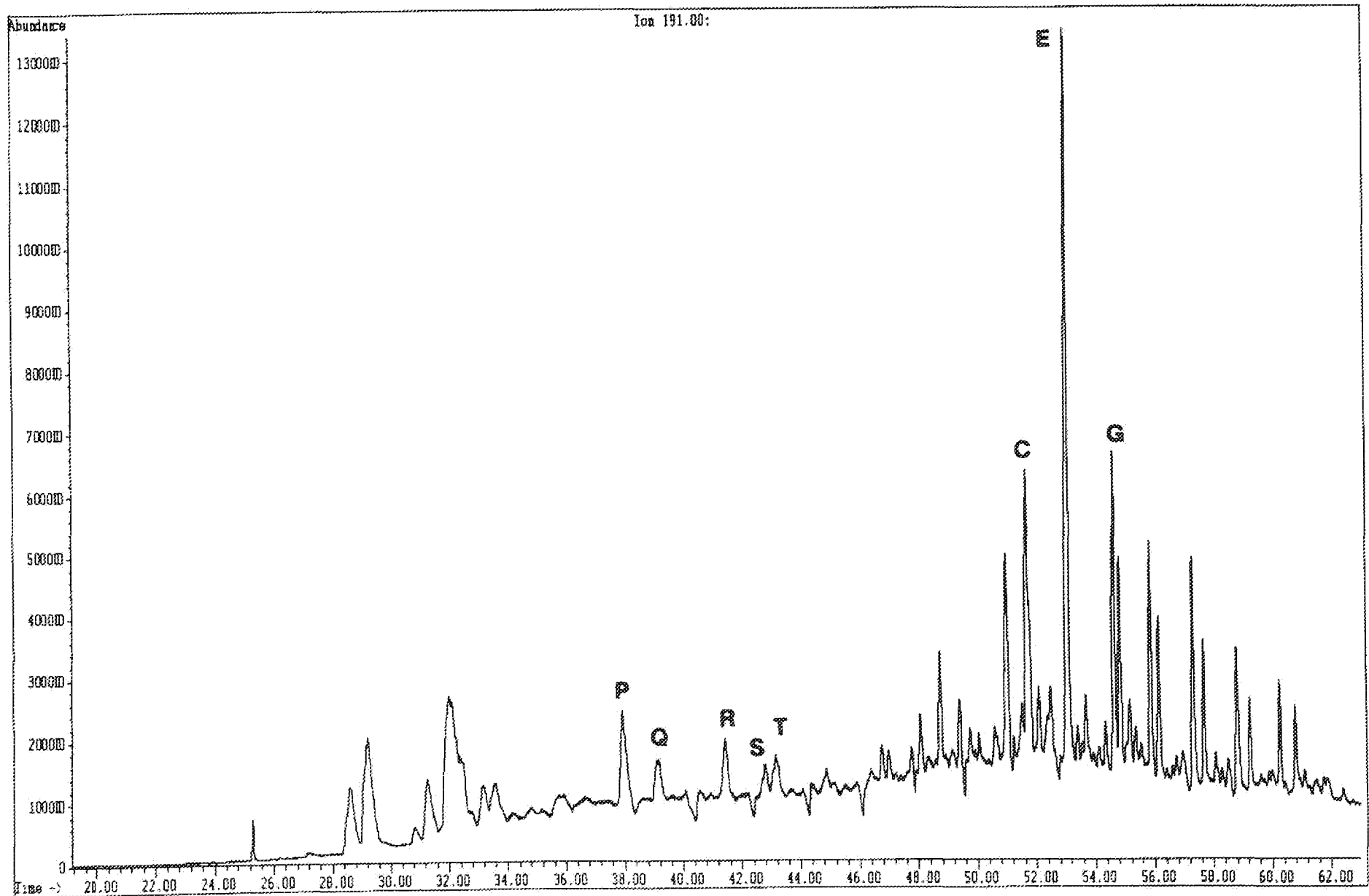
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Operator:
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Method File Name: BION.M
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Misc Info: WELL 33/4-9 2750.0M
Bottle Number: 16

F33e

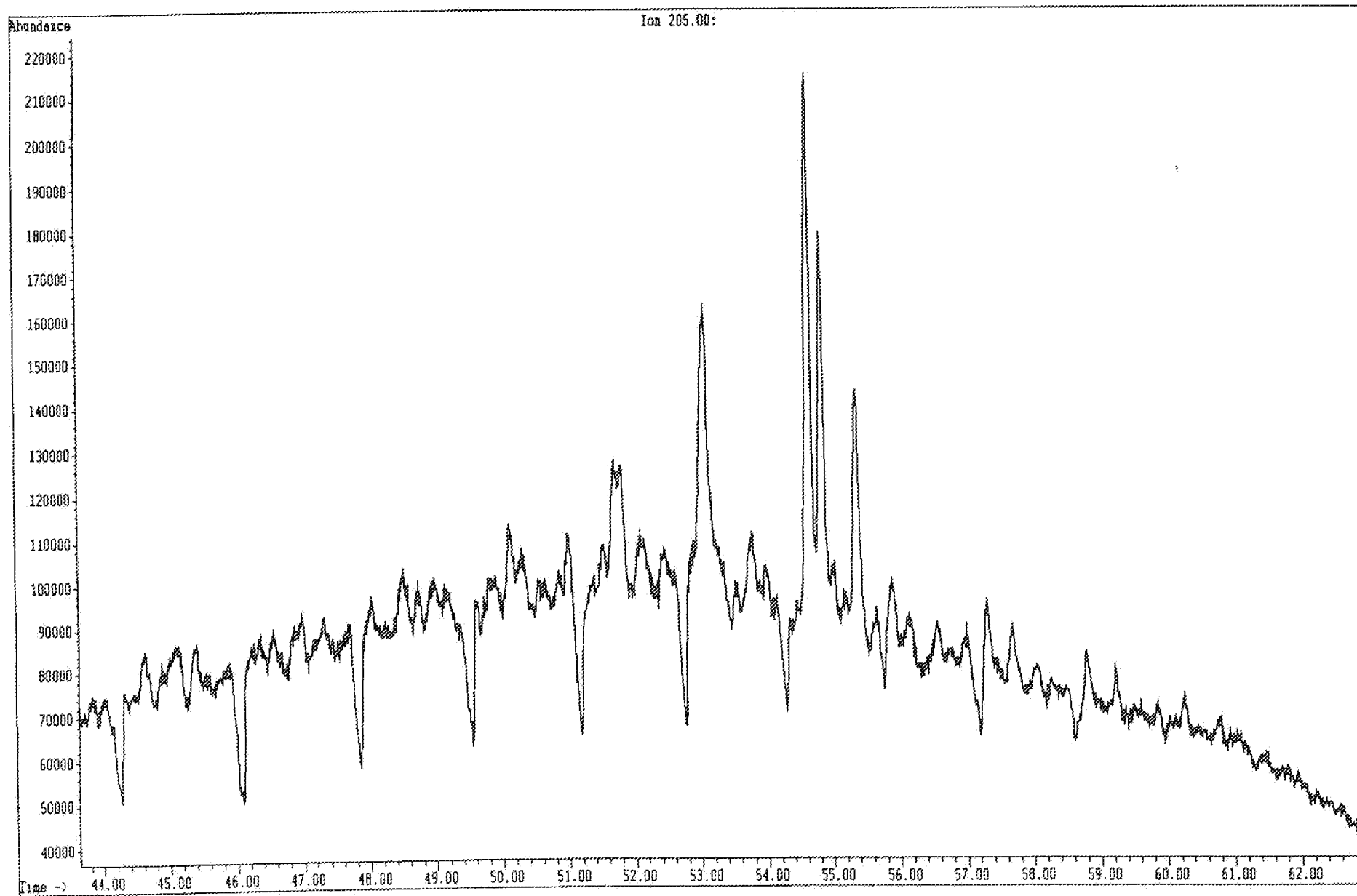


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Operator:
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Method File Name: BLOW.M
Sample Name: 4128-003
Mix Info: WELL 33/9-9 2750.0M
Bottle Number: 16

F33f

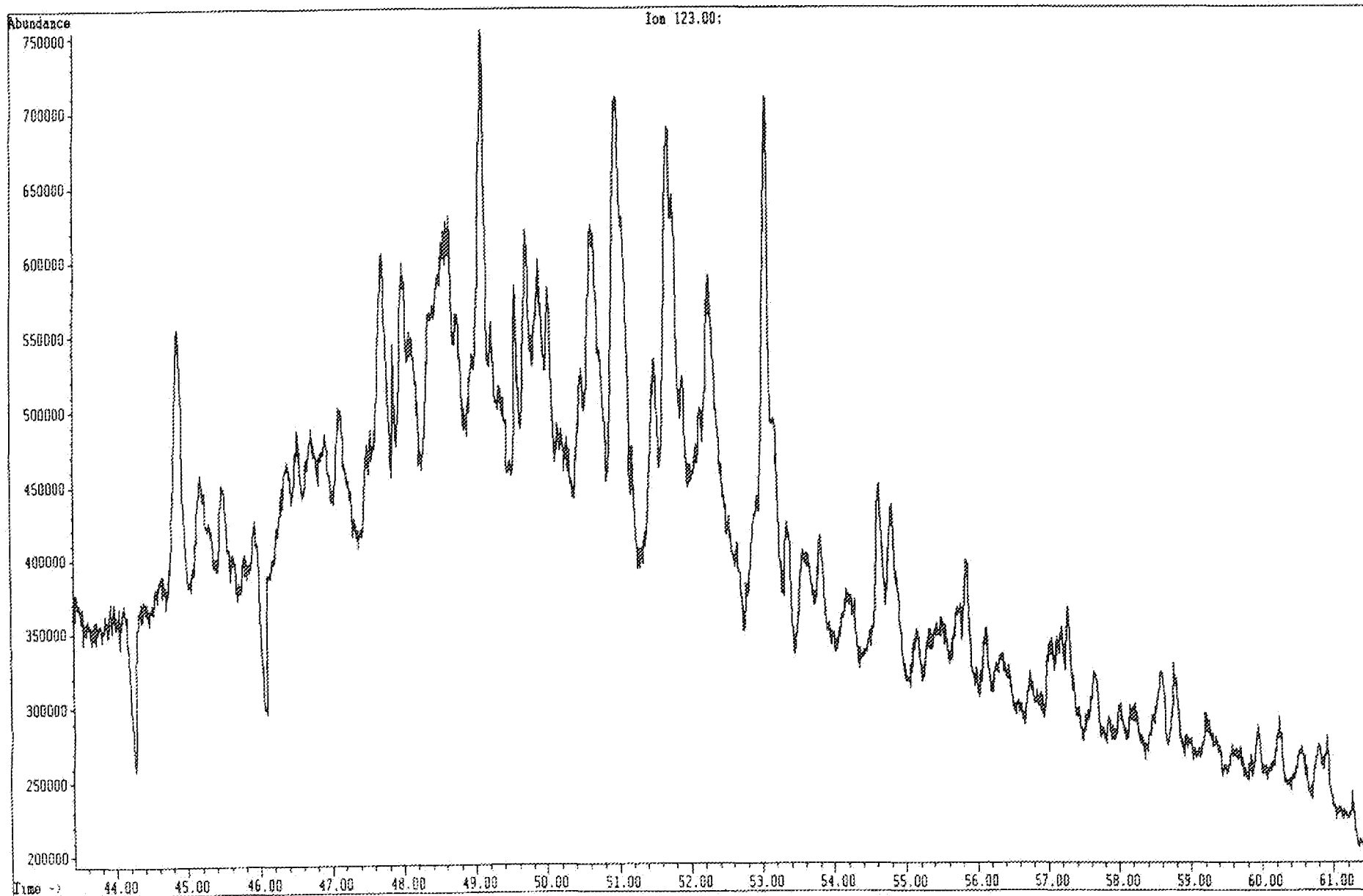


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Sample Name: 4128-003
Misc Info: WELL 33/9-9 2750.0M
Bottle Number: 16



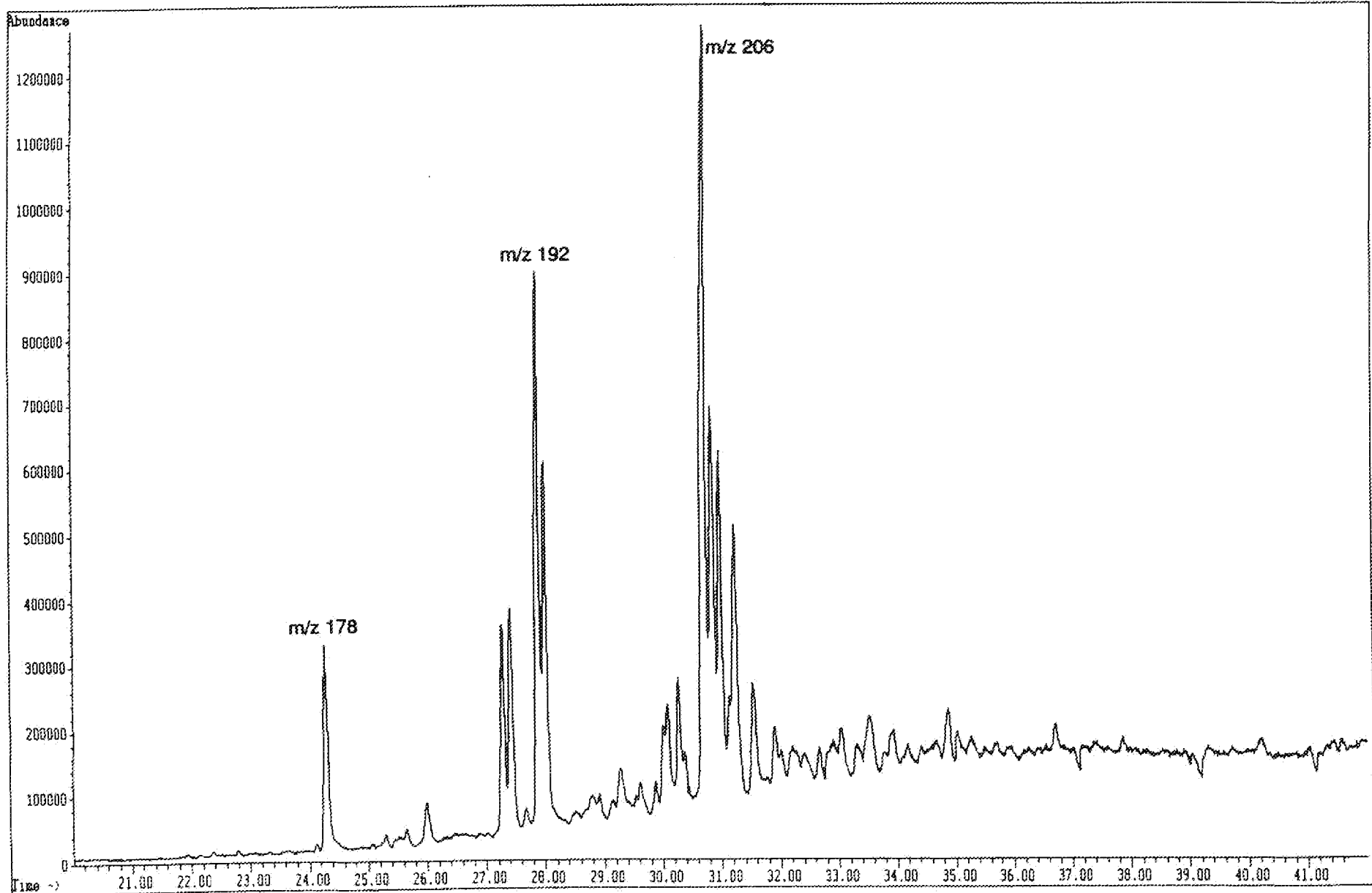
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Method File Name: 810M.M
Sample Name: 4128-003
Misc Info: WELL 33/9-9 2750.0M
Bottle Number: 16

F33h



File: D:\CHEMPC\DATA\8301005.D
Operator:
Date Acquired: 10 Dec 90 11:16 pm
Method File Name: B10MY.M
Sample Name: 4128-003
Misc Info: WELL 33/9-9 2750.DM
Bottle Number: 83

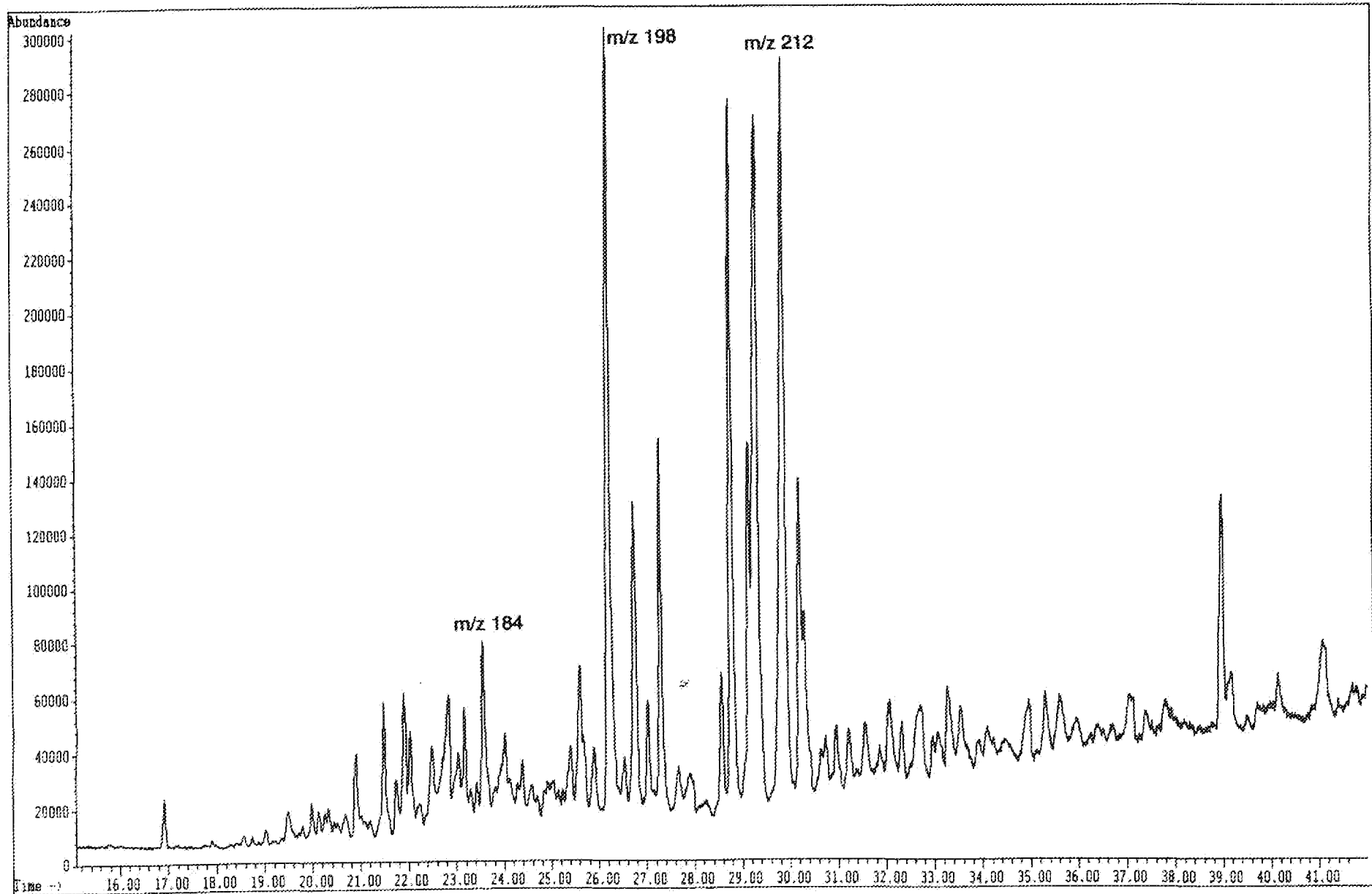
Phenanthrene



File: D:\CHEMPC\DATA\8301005.D
Operator:
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Method File Name: BIONY.M
Sample Name: 4128-003
Misc Info: WELL 33/9-9 2750.0M
Bottle Number: 83

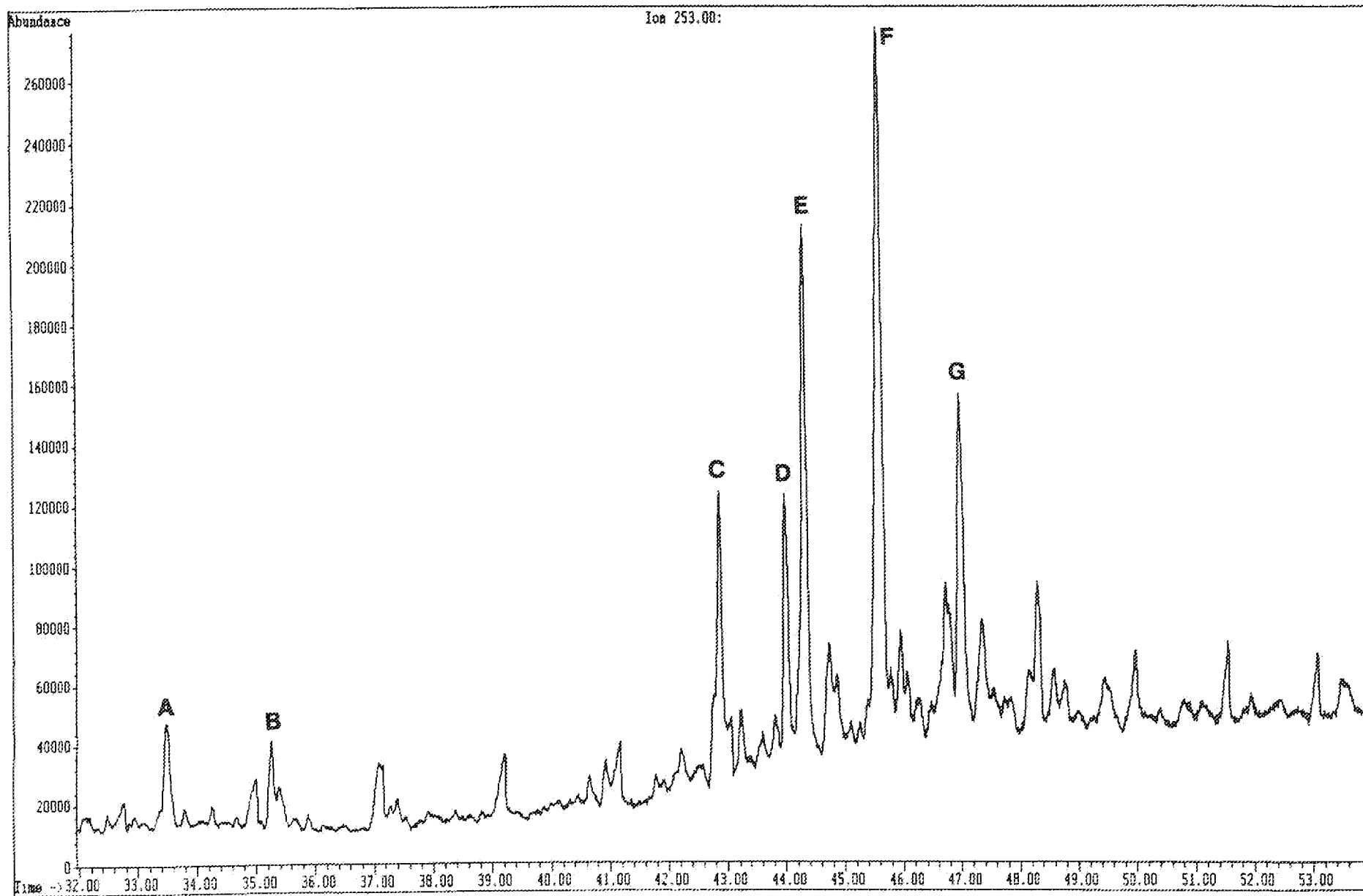
F33j

Dibenzothiophenes



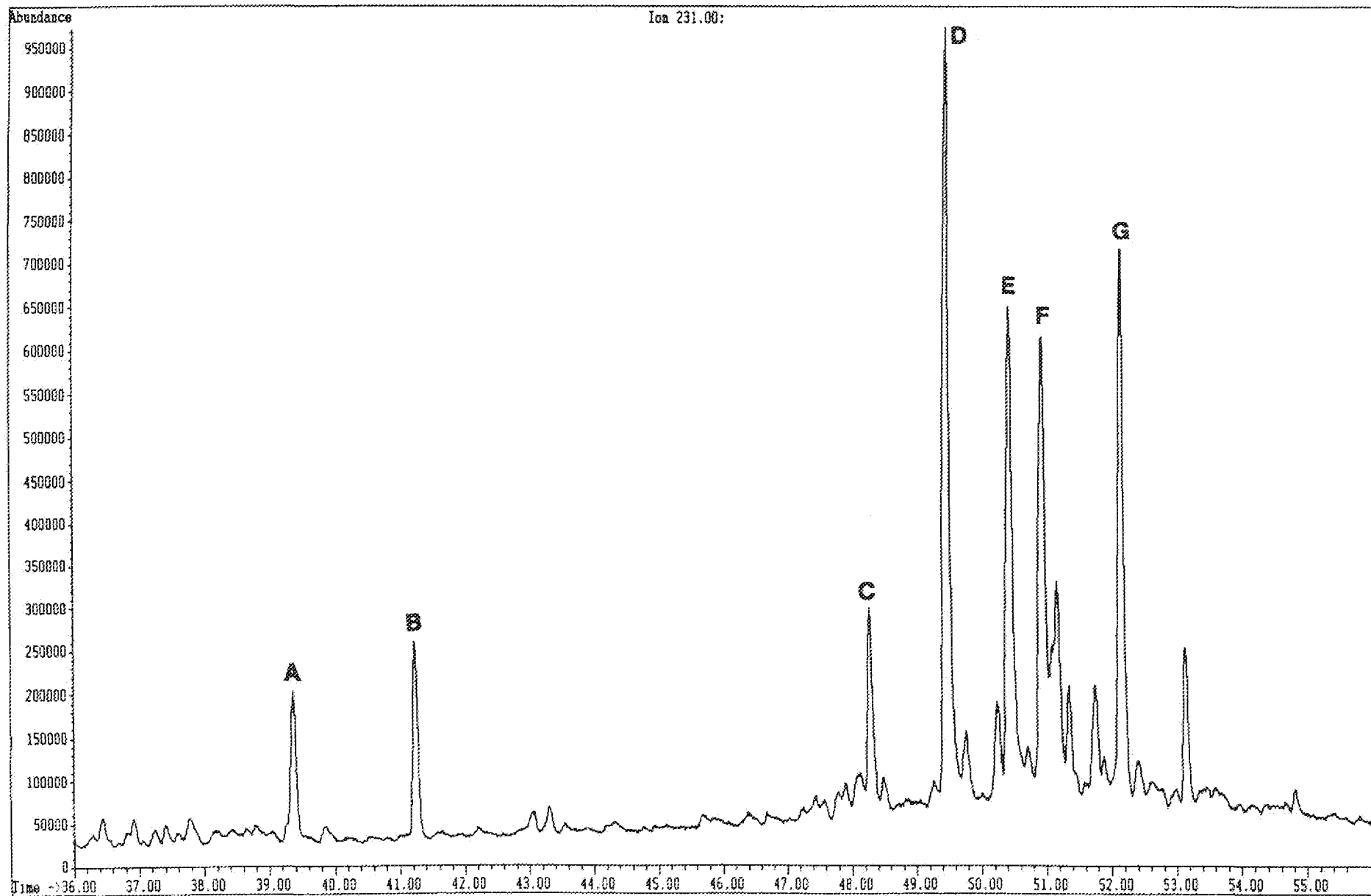
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Method File Name: BICOMY.M
Sample Name: 4128-003
Misc Info: WELL 33/9-9 2750.0M
Bottle Number: 03

F3.3k



File: D:\CHEMPC\DATA\8301005.D
Operator:
Date Acquired: 10 Dec 90 11:16 pm
Method File Name: BIGMY.M
Sample Name: 4128-003
Misc Info: WELL 33/9-9 2750.0M
Bottle Number: 83

F331



33/12-2

TABLE G1
ORGANIC CARBON RESULTS AND GROSS LITHOLOGIC DESCRIPTIONS

| JOB 4129 | DEPTH/ IDENTITY | GROSS LITHOLOGIC DESCRIPTION | G S A COLOUR CODE | TOTAL ORGANIC CARBON (wt. %) |
|-----------------------------|--------------------|------------------------------|-------------------------|---------------------------------------|
| GEOCHEM SAMPLE NUMBER | | | | |

WELL: 33/12-2

| | | | | |
|----------|---------|---|---------|--|
| 4129-001 | 2642.0m | A100% CLAYSTONE - fissile to platy, mod soft to firm, micaceous, silty, medium grey. | N5 | |
| 4129-002 | 2705.4m | A100% SANDSTONE - v coarse grained, poorly sorted, blocky, firm, pale yellow F, instant blooming milky cut, greyish orange. | 10YR7/4 | |
| 4129-003 | 2707.2m | A100% SANDSTONE - as 4129-002A, greyish orange. | 10YR7/4 | |
| 4129-004 | 2707.8m | A100% SANDSTONE - as 4129-002A, greyish orange. | 10YR7/4 | |

Abbreviations = arenaceous, argillaceous, calcareous, Cut, dolomite, Fluorescence, foraminifera fossiliferous, Lost Circulation Material, moderately, occasionally, slightly, very

TABLE G3
COMPOSITION (NORMALISED %) OF C₁₅₊ MATERIAL

| JOB 4129 GEOCHEM SAMPLE NUMBER | L I T H O | DEPTH/ IDENTITY | HYDROCARBONS | | NON HYDROCARBONS | | |
|---|-----------------------|--------------------|--------------|-----------|--------------------------|-----------------|---------------------|
| | | | Saturates | Aromatics | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's |

WELL: 33/12-2

| | | | | | | |
|----------|---------|-------|-------|------|-------|------|
| 4129-001 | 2642.0m | 70.50 | 6.52 | 8.07 | 14.80 | 0.12 |
| 4129-002 | 2705.4m | 75.88 | 11.45 | 2.96 | 9.50 | 0.20 |
| 4129-003 | 2707.2m | 77.06 | 11.86 | 1.96 | 8.92 | 0.20 |
| 4129-004 | 2707.8m | 74.71 | 14.00 | 2.08 | 9.01 | 0.20 |

TABLE G5
C₁₅₊ CHROMATOGRAPHY WEIGHTS (gms)

| JOB 4129 | L I T H O | DEPTH/ IDENTITY | ROCK EXTRACTED | TOTAL EXTRACT | PRECIPTD. ASPHALTENES | NC5 | SATURATES | AROMATICS | ELUTED NSO's | NON-ELUTED NSO's |
|----------|-----------------------|--------------------|-------------------|------------------|--------------------------|-----|-----------|-----------|-----------------|---------------------|
|----------|-----------------------|--------------------|-------------------|------------------|--------------------------|-----|-----------|-----------|-----------------|---------------------|

WELL: 33/12-2

| | | | | | | | | | | |
|-----------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 4129-001A | | 2642.0m | 18.5400 | 0.06074 | 0.00490 | 0.05584 | 0.04282 | 0.00396 | 0.00899 | 0.00007 |
| 4129-002A | | 2705.4m | 18.6400 | 0.12385 | 0.00367 | 0.12018 | 0.09398 | 0.01418 | 0.01177 | 0.00025 |
| 4129-003A | | 2707.2m | 19.4100 | 0.14214 | 0.00278 | 0.13936 | 0.10953 | 0.01686 | 0.01268 | 0.00029 |
| 4129-004A | | 2707.8m | 17.5600 | 0.10846 | 0.00226 | 0.10620 | 0.08103 | 0.01518 | 0.00977 | 0.00022 |

TABLE G 6
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

| GEOCHEM SAMPLE NUMBER | 001 | 002 | 003 | 004 |
|-----------------------|-------|---------|---------|---------|
| DEPTH | 2642m | 2705.4m | 2707.2m | 2707.8m |
| SAMPLE TYPE | | | | |
| nC15 | 17.68 | 1.25 | 0.91 | 2.54 |
| nC16 | 15.94 | 2.24 | 1.77 | 2.92 |
| nC17 | 14.28 | 4.33 | 4.86 | 3.82 |
| nC18 | 10.48 | 6.77 | 7.62 | 6.69 |
| nC19 | 8.39 | 8.88 | 9.59 | 8.70 |
| nC20 | 7.96 | 9.15 | 9.89 | 8.90 |
| nC21 | 6.63 | 8.60 | 9.91 | 8.74 |
| nC22 | 5.37 | 8.65 | 8.75 | 9.55 |
| nC23 | 4.36 | 7.68 | 7.57 | 7.81 |
| nC24 | 3.01 | 8.27 | 8.06 | 7.29 |
| nC25 | 2.25 | 7.33 | 6.75 | 7.35 |
| nC26 | 1.28 | 5.99 | 6.04 | 6.32 |
| nC27 | 0.96 | 5.03 | 4.82 | 4.99 |
| nC28 | 0.49 | 4.05 | 3.68 | 3.88 |
| nC29 | 0.41 | 3.70 | 3.45 | 3.53 |
| nC30 | 0.19 | 2.72 | 2.20 | 2.41 |
| nC31 | 0.13 | 2.01 | 1.57 | 1.76 |
| nC32 | 0.06 | 1.19 | 0.92 | 1.00 |
| nC33 | 0.08 | 0.96 | 0.72 | 0.81 |
| nC34 | 0.02 | 0.76 | 0.55 | 0.60 |
| nC35 | 0.02 | 0.43 | 0.37 | 0.41 |
| Paraffin | 18.64 | 15.87 | 16.21 | 16.29 |
| Isoprenoid | 4.75 | 1.27 | 1.50 | 1.36 |
| Naphthene | 76.61 | 82.86 | 82.29 | 82.35 |
| CPI 1 Index | 1.10 | 0.98 | 0.99 | 0.98 |
| CPI 2 Index | 1.31 | 1.08 | 1.06 | 1.09 |
| CPI 3 Index | 1.08 | 1.00 | 0.99 | 0.98 |
| Prist/Phytane | 1.46 | 0.76 | 0.85 | 0.80 |
| Prist/nC17 | 0.51 | 0.76 | 0.77 | 0.71 |
| Phytane/nC18 | 0.48 | 0.64 | 0.58 | 0.51 |

Job Number : 4129

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{28} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{25} + C_{28}}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE G7
METHYLPHENANTHRENE INDICES (MPI)

| JOB 4129 | DEPTH/ IDENTITY | SAMPLE TYPE | MPI 1 | | Rcalc | | MPI 2 | |
|-----------------------------|--------------------|----------------|-------|--------|-------|--------|-------|--------|
| GEOCHEM SAMPLE NUMBER | | | AREA | HEIGHT | AREA | HEIGHT | AREA | HEIGHT |

WELL: 33/12-2

| | | | | | | | | |
|----------|---------|--|------|------|--|--|------|------|
| 4129-001 | 2642.0m | | 1.00 | 1.02 | | | 1.11 | 1.10 |
| 4129-002 | 2705.4m | | 0.52 | 0.55 | | | 0.54 | 0.54 |
| 4129-003 | 2707.2m | | 0.56 | 0.62 | | | 0.60 | 0.63 |
| 4129-004 | 2707.8m | | 0.51 | 0.56 | | | 0.54 | 0.56 |

$$MPI\ 1 = \frac{1.5(2-MP + 3-MP)}{P + 1-MP + 9-MP} \quad MPI\ 2 = \frac{3(2-MP)}{P + 1-MP + 9-MP}$$

$$Rcalc = \begin{cases} 0.60(MPI\ 1) + 0.40 & (\text{if } Ro < 1.35\%) \\ -0.60(MPI\ 1) + 2.30 & (\text{if } Ro > 1.35\%) \end{cases}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE G8

AROMATIC HYDROCARBONS RATIOS (MSD, PEAK AREA DATA)

| SAMPLE NUMBER | DEPTH (m) | 2MP/ 1MP | RATIO 1 | RATIO 2 | RATIO 3 |
|---------------|-----------|-------------|---------|---------|---------|
|---------------|-----------|-------------|---------|---------|---------|

WELL: 33/12-2

| | | | | | |
|-----------|--------|------|------|------|------|
| 4129-001A | 2642.0 | 1.84 | 0.58 | 0.43 | 0.30 |
| 4129-002A | 2705.4 | 0.50 | 0.24 | 0.57 | 0.15 |
| 4129-003A | 2707.2 | 0.54 | 0.23 | 0.57 | 0.12 |
| 4129-004A | 2707.8 | 0.50 | 0.24 | 0.59 | 0.10 |

RATIO 1 = $A(231)/A(231) + G(231)$

RATIO 2 = $E(253)/E(253) + G(253)$

RATIO 3 = $A(253)/B(231) + E(253)$

TABLE G9
 CARBON ISOTOPE COMPOSITIONS (‰, PDB)

| JOB 4129 | | | | | | | | |
|-----------------------------|--------------------|----------------------------|-----------|-----------|-----|-------------|---------|--------------------|
| GEOCHEM SAMPLE NUMBER | DEPTH/ IDENTITY | TOTAL EXTRACT WHOLE OIL | SATURATES | AROMATICS | NSO | ASPHALTENES | KEROGEN | PYROLYSATE (S2) |

WELL: 33/12-2

| | | | | | | | | |
|----------|---------|--------|--------|--------|--------|--------|--|--|
| 4129-001 | 2642.0m | -28.40 | -27.77 | -27.20 | -28.45 | -28.30 | | |
| 4129-002 | 2705.4m | -30.09 | -30.05 | -29.76 | -29.90 | -29.69 | | |
| 4129-003 | 2707.2m | -29.98 | -30.19 | -29.80 | -29.86 | -29.54 | | |
| 4129-004 | 2707.8m | -29.93 | -29.91 | -29.42 | -29.91 | -29.79 | | |

TABLE G10
BIOMARKER MOLECULAR RATIOS

WELL: 33/12-2

| SAMPLE NUMBER | DEPTH (m) | Steranes (m/z 217) | | | Steranes (m/z 218) | | |
|------------------|--------------|--------------------|------------|--------------------|-------------------------|-----|-----|
| | | A (A+J) | Q (Q+T) | (R+S) (Q+R+S+T) | NORMALISED COMPOSITION: | | |
| | | | | | B | D | F |
| 4129-001A | 2642.0 | 0.50 | 0.26 | 0.48 | 38% | 29% | 33% |
| 4129-002A | 2705.4 | 0.45 | 0.46 | 0.44 | 31% | 33% | 36% |
| 4129-003A | 2707.2 | 0.45 | 0.43 | 0.42 | 28% | 34% | 38% |
| 4129-004A | 2707.8 | 0.45 | 0.43 | 0.42 | 28% | 32% | 40% |

TABLE G11
BIOMARKER MOLECULAR RATIOS

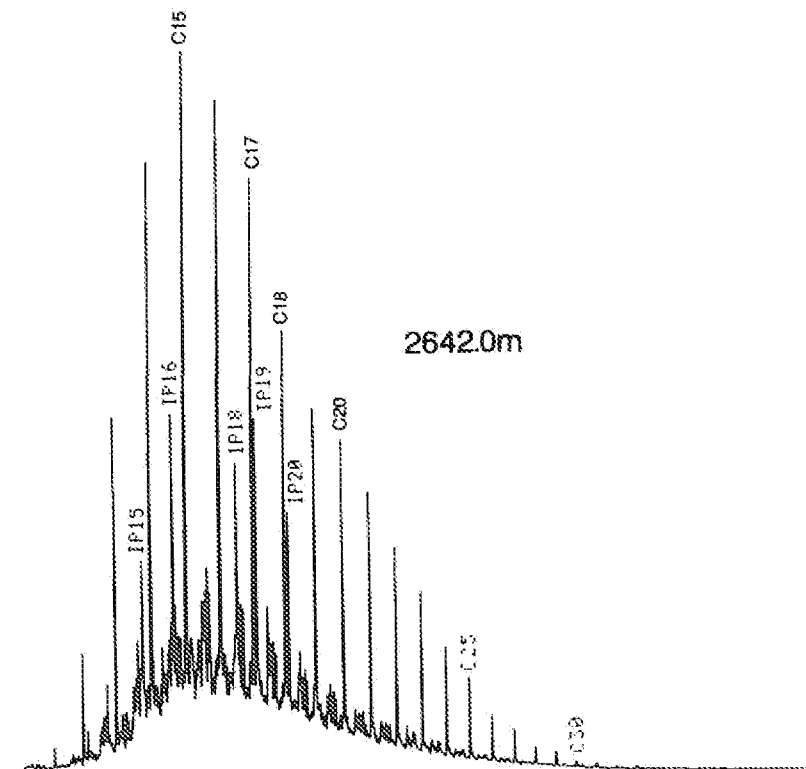
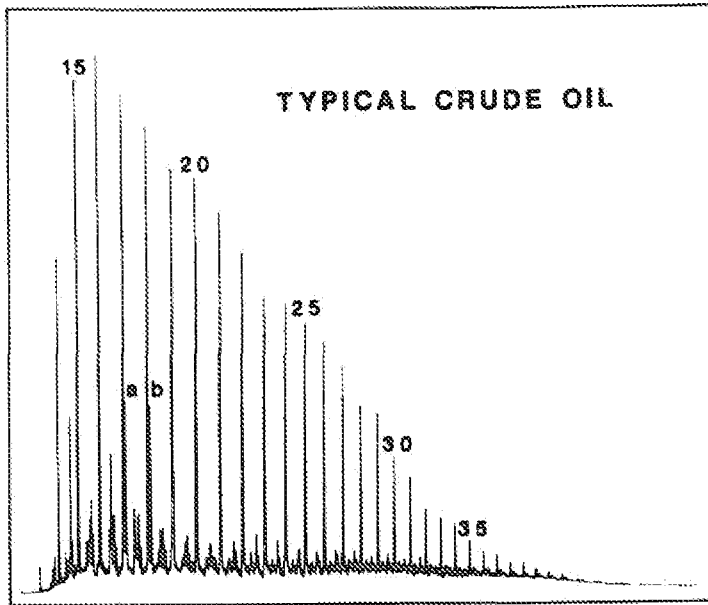
WELL 33/12-2

Terpanes (m/z 191)

| SAMPLE NUMBER | DEPTH (m) | A/B | Z/E | Z/C | <u>Z</u> (Z+E) | <u>C</u> (C+E) | %22S for J | <u>E</u> (E+F) | <u>X</u> (X+D) | Q/E |
|------------------|--------------|------|------|------|-------------------|-------------------|---------------|-------------------|-------------------|------|
| 4129-001A | 2642.0 | 0.38 | 0.09 | 0.13 | 0.08 | 0.41 | 55% | 0.70 | 0.17 | 0.31 |
| 4129-002A | 2705.4 | 1.47 | 0.38 | 1.03 | 0.28 | 0.27 | 59% | 0.90 | 0.55 | 0.04 |
| 4129-003A | 2707.2 | 1.39 | 0.42 | 1.09 | 0.30 | 0.28 | 60% | 0.87 | 0.58 | 0.03 |
| 4129-004A | 2707.8 | 1.56 | 0.35 | 0.96 | 0.26 | 0.26 | 57% | 0.88 | 0.56 | 0.02 |

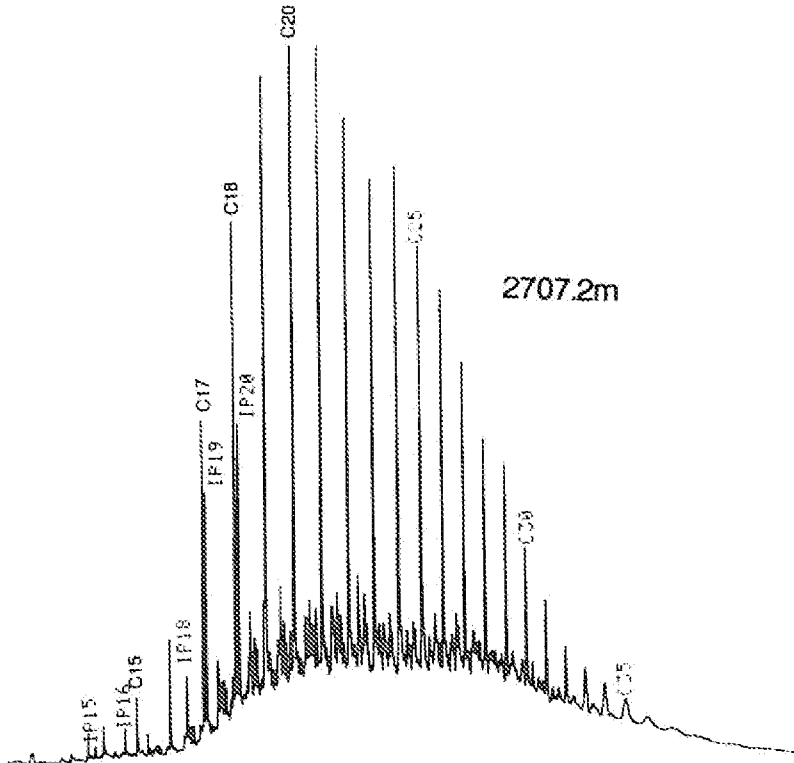
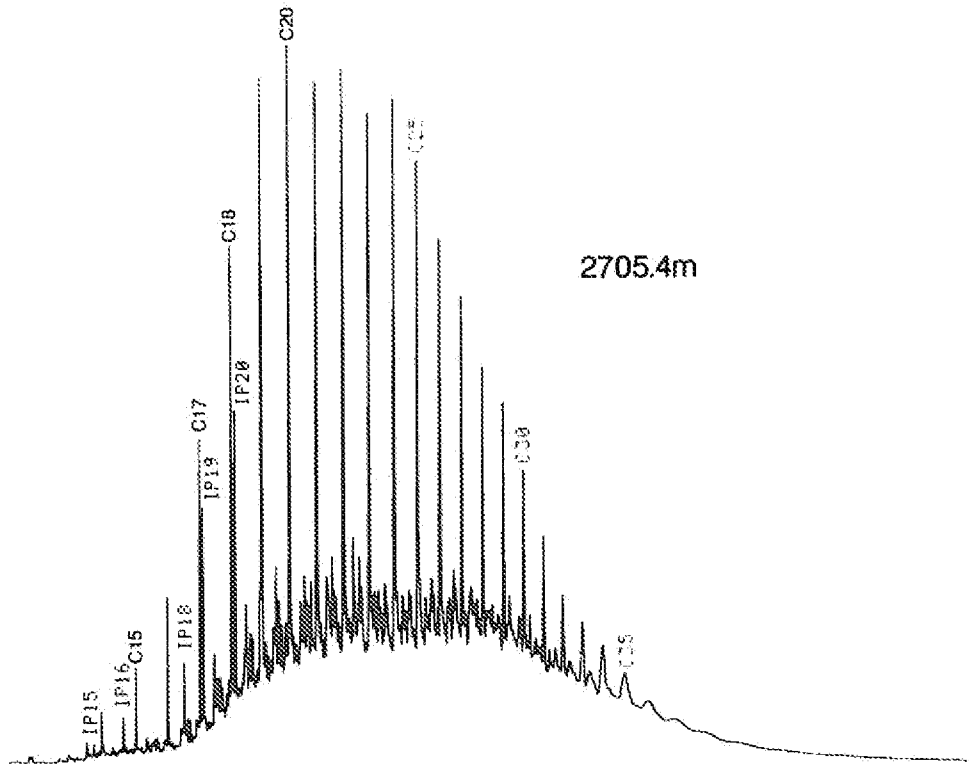
FIGURE G1.1 C₁₅₊ SATURATES CHROMATOGRAMS

WELL 33/12-2



a - PRISTANE
b - PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20-nC₂₀)

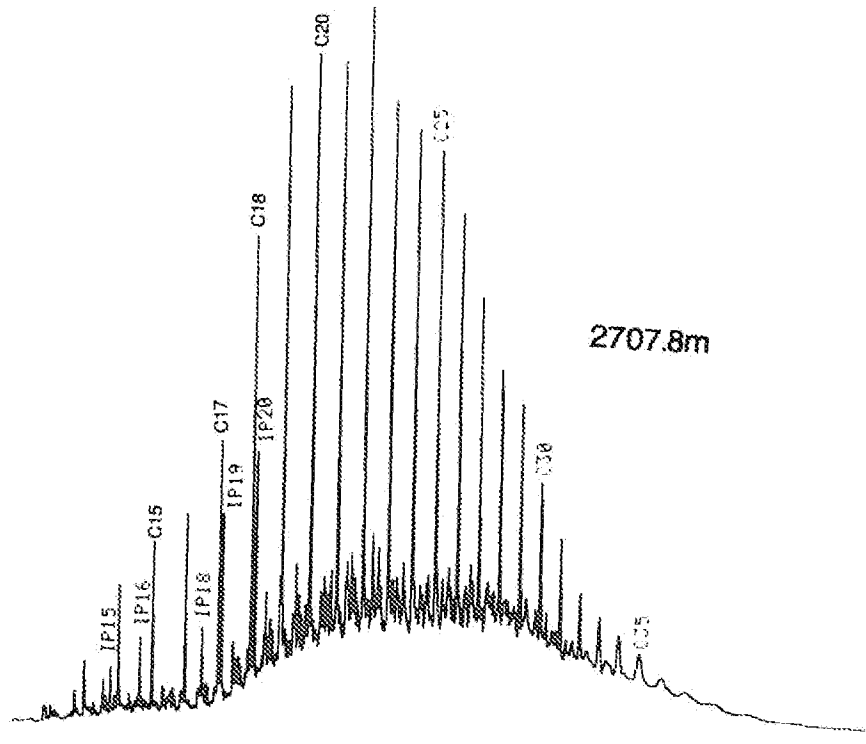


a - PRISTANE
b - PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20 - nC₂₀)

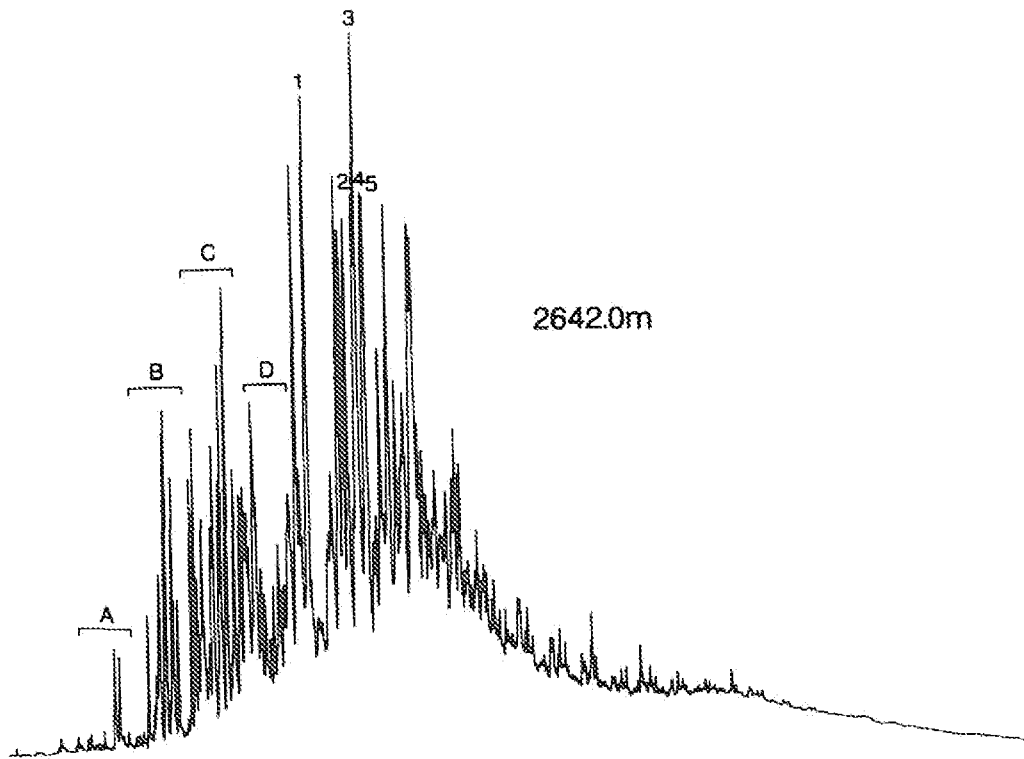
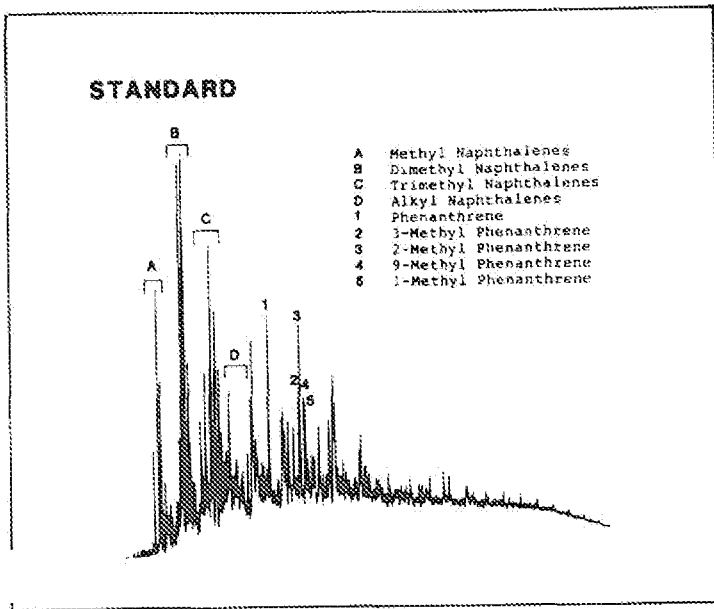
FIGURE G1.3 **C₁₅₊ SATURATES CHROMATOGRAMS**

WELL 33/12-2



a = PRISTANE
b = PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20 - nC₂₀)



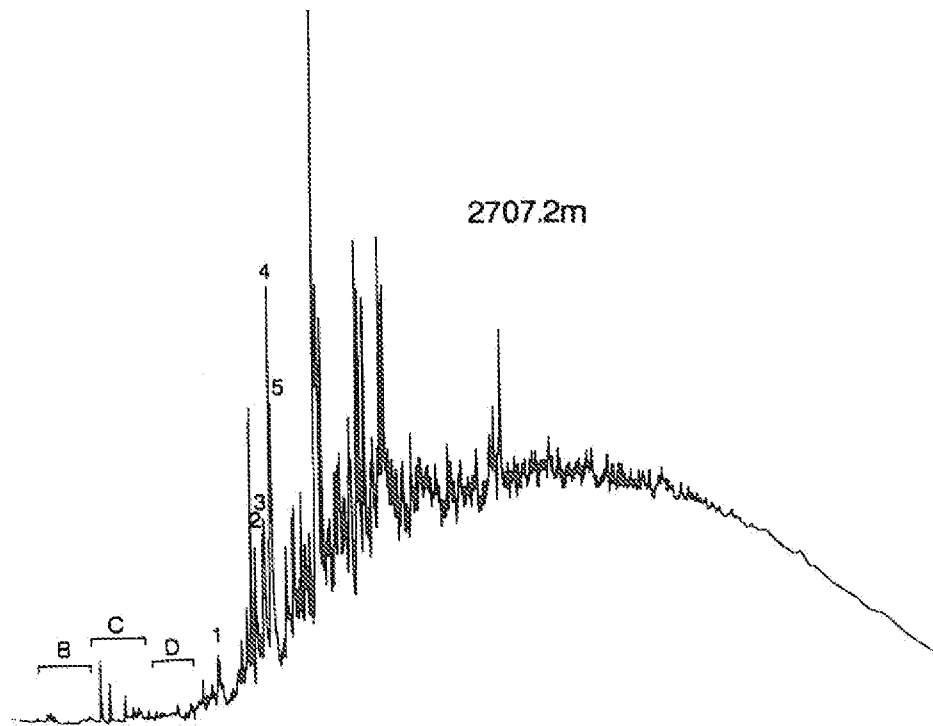
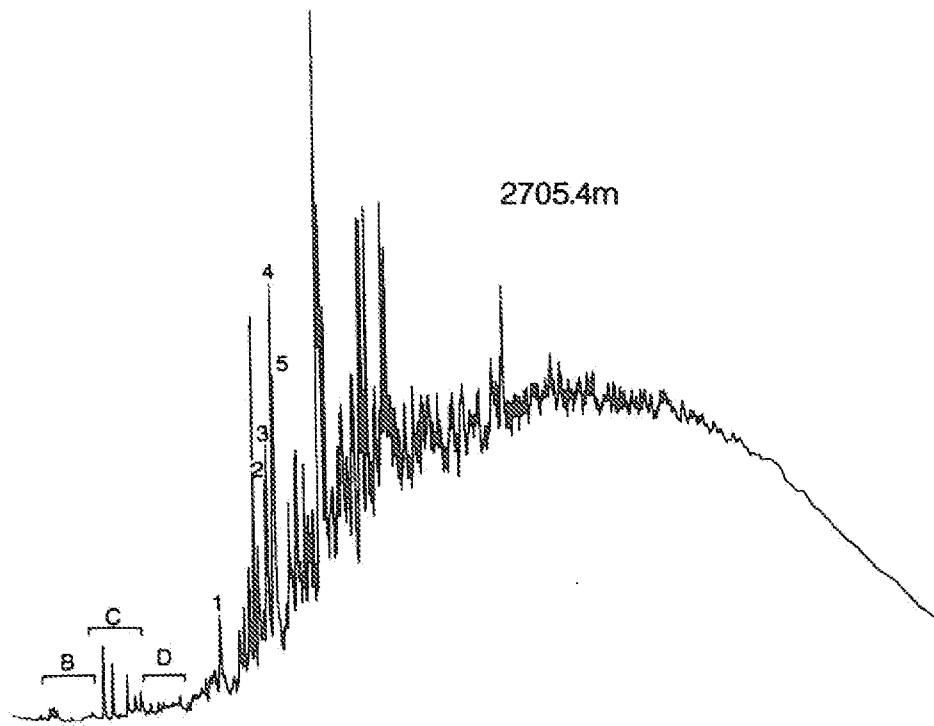
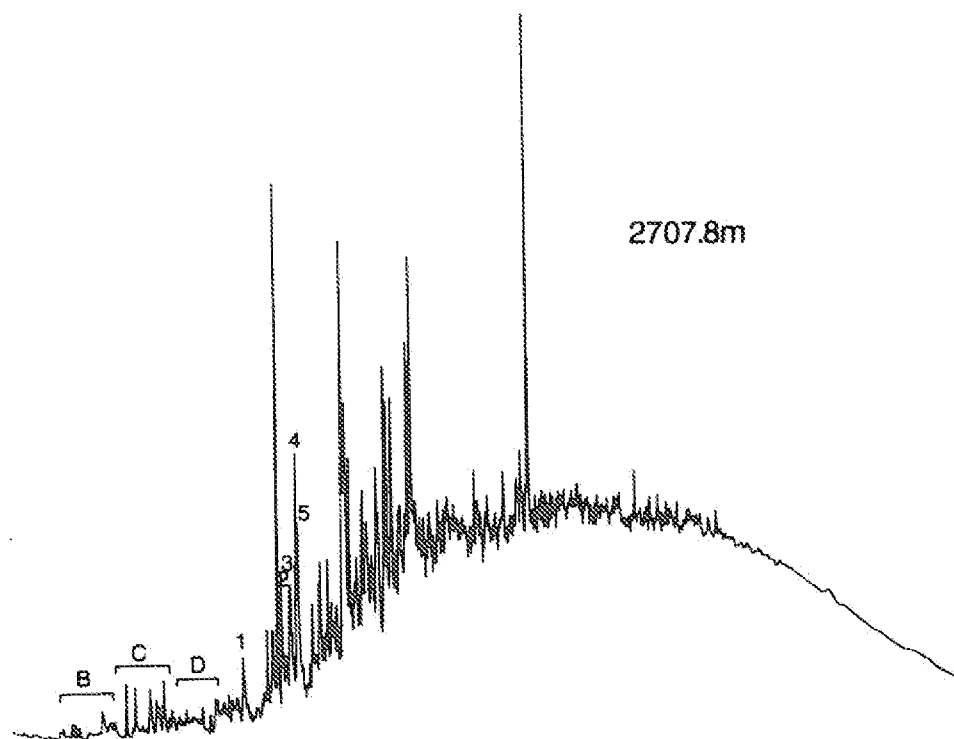


FIGURE G23

C₁₅+ AROMATIC CHROMATOGRAMS

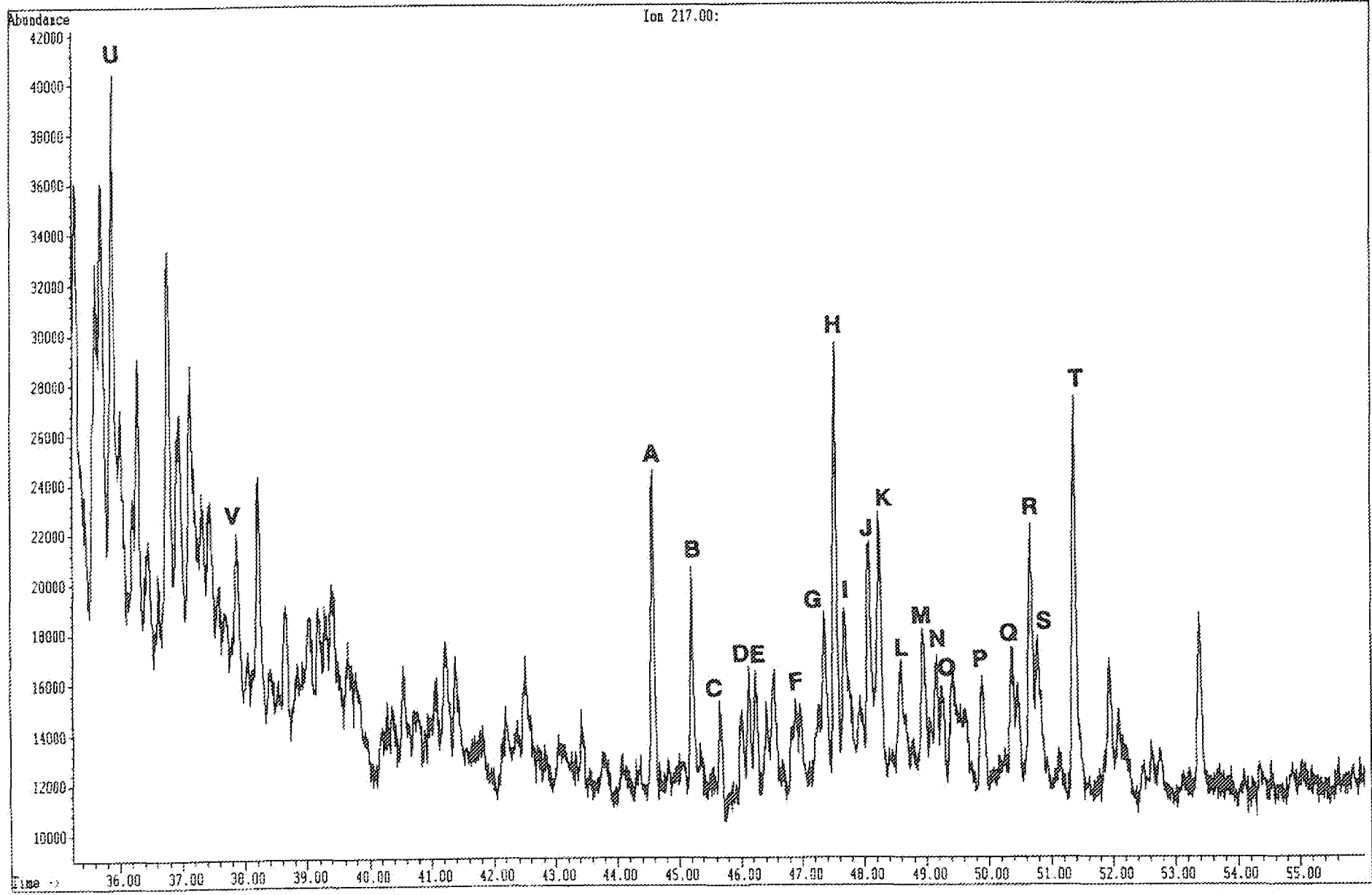
WELL 33/12-2



PEAK IDENTIFICATION ON FIRST SHEET

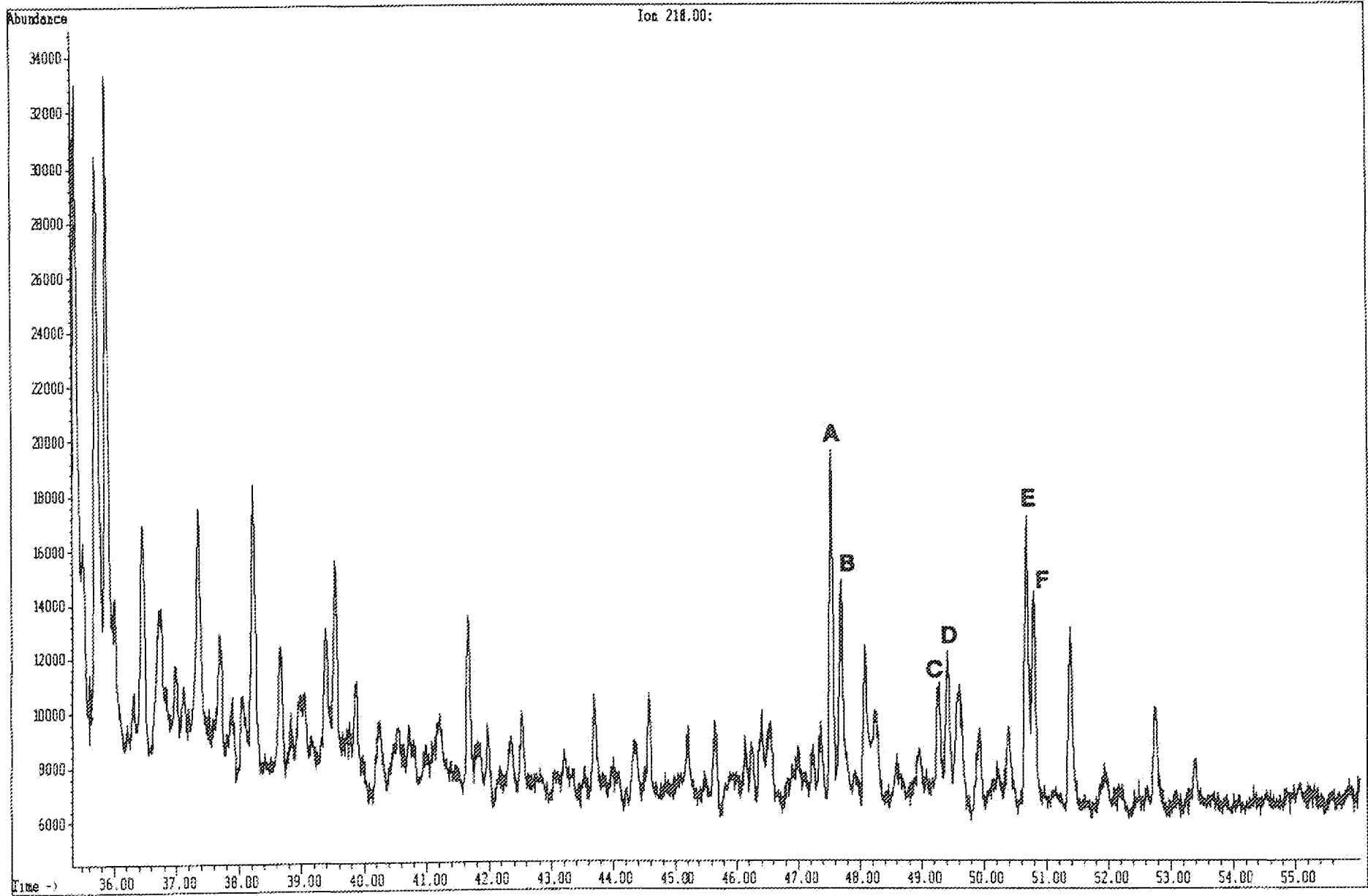
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Sample Name: 4129-001
Misc Info:
Bottle Number: 1

G3.1a



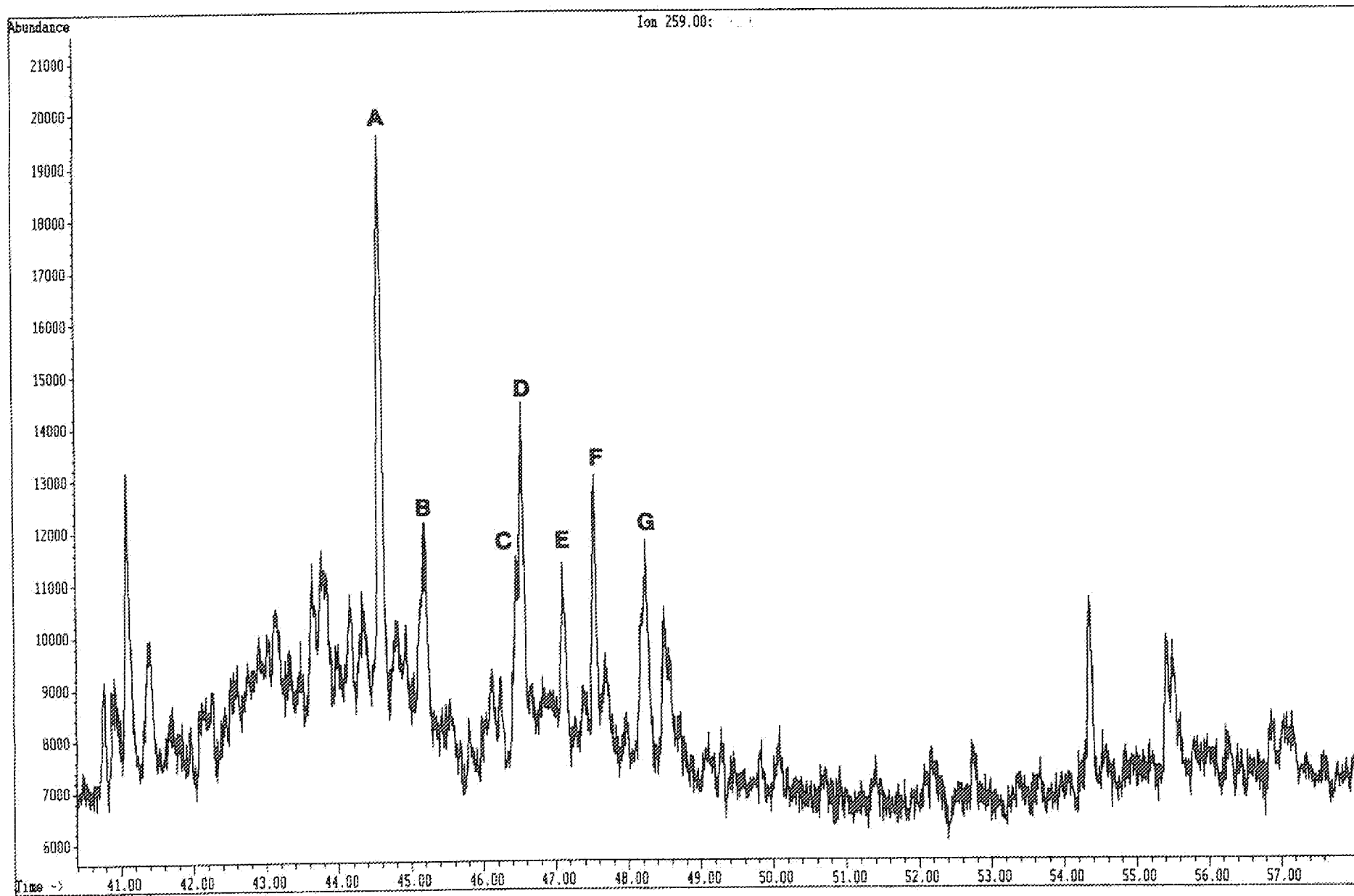
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G3.1b

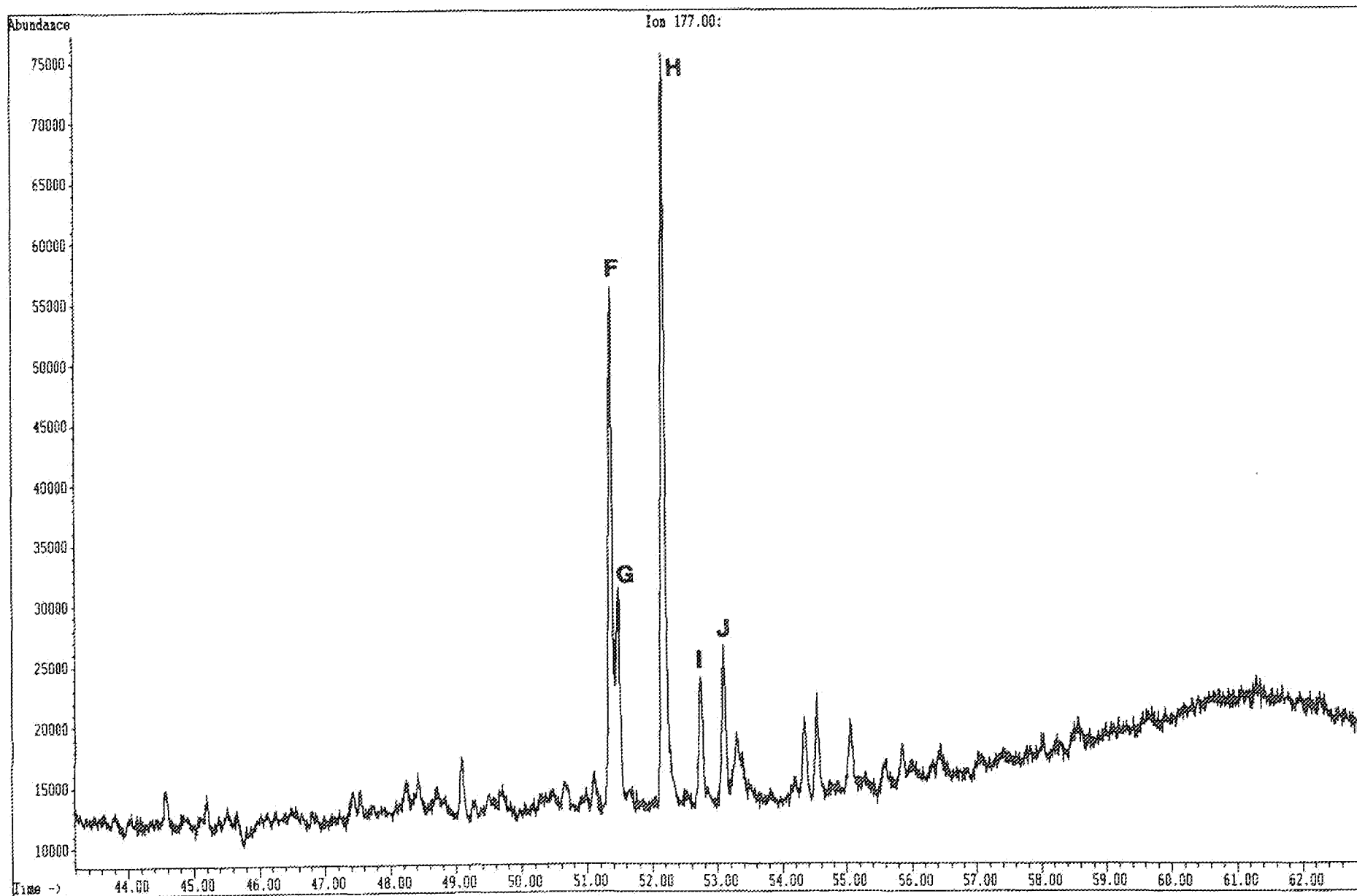


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G3.1c

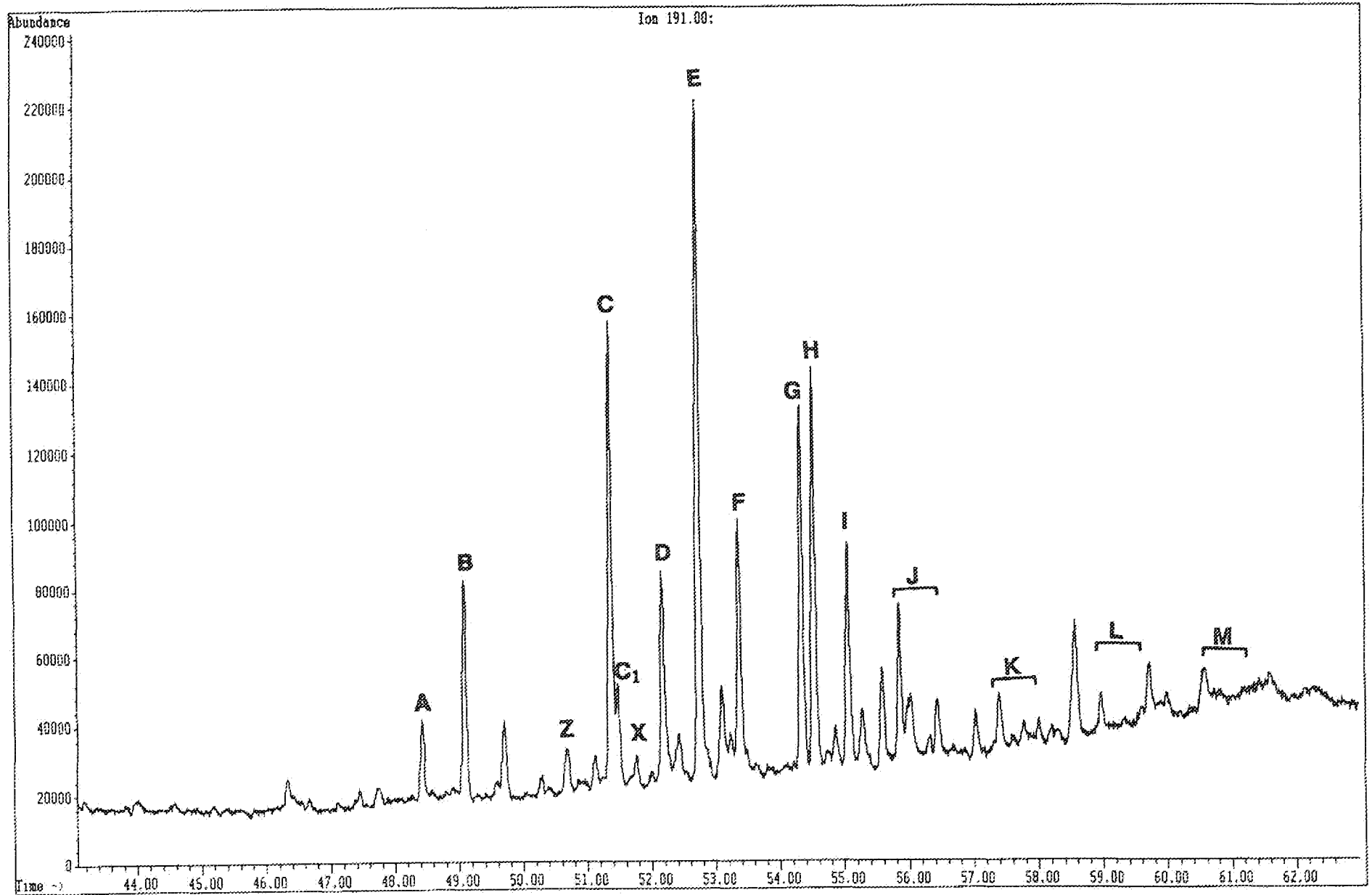


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Misc Info:
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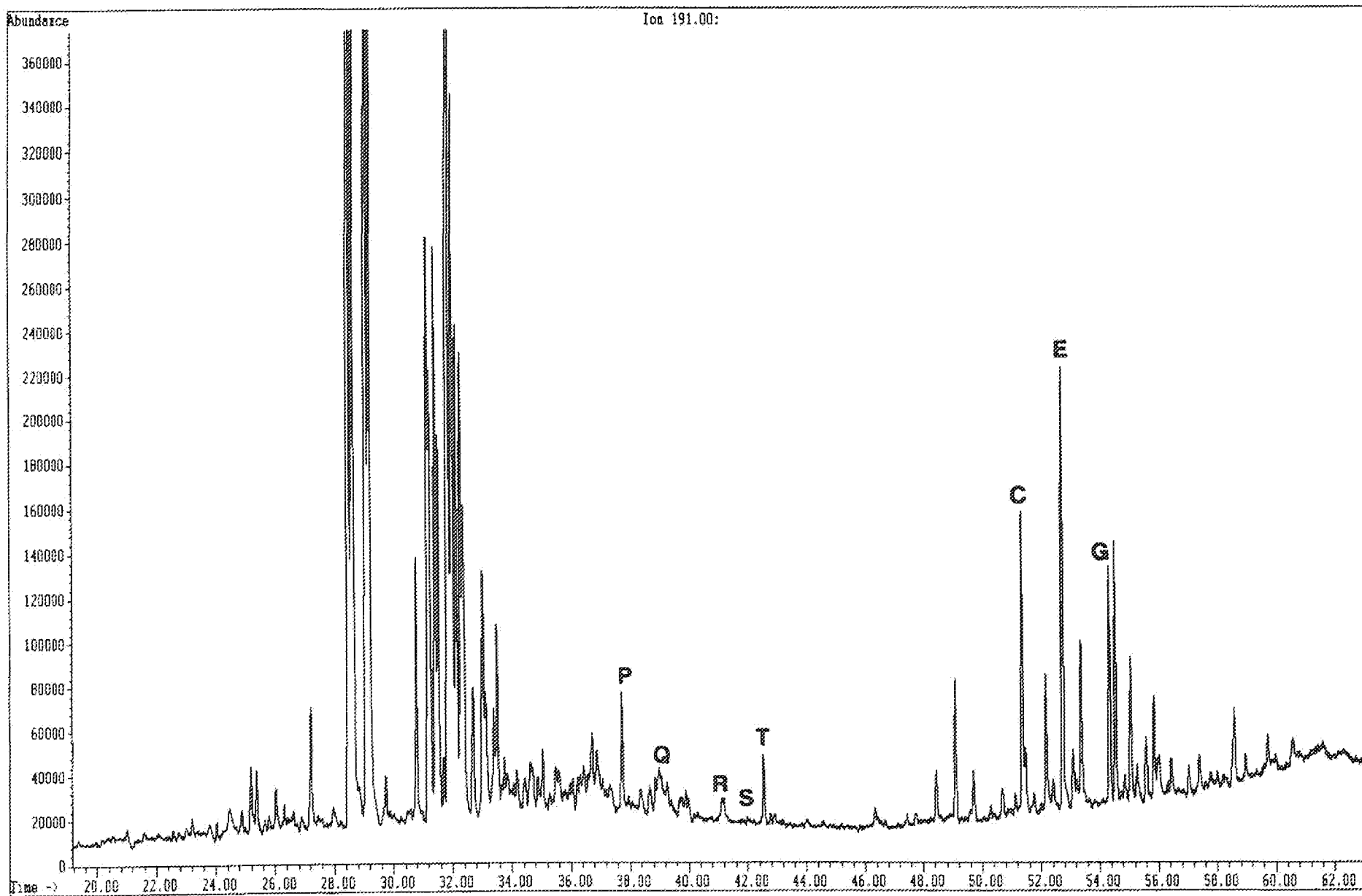
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G3.1e

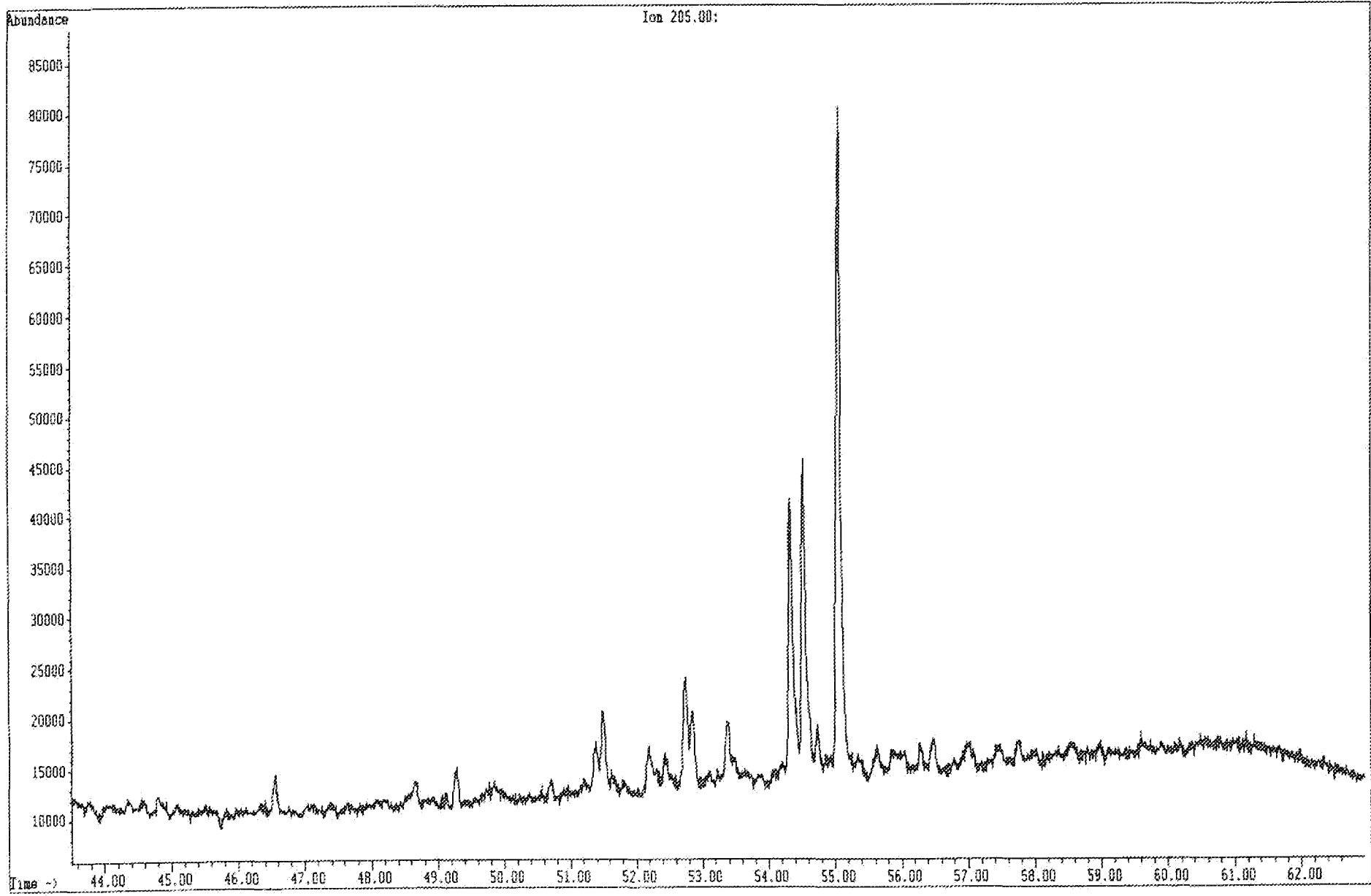


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G3.1f

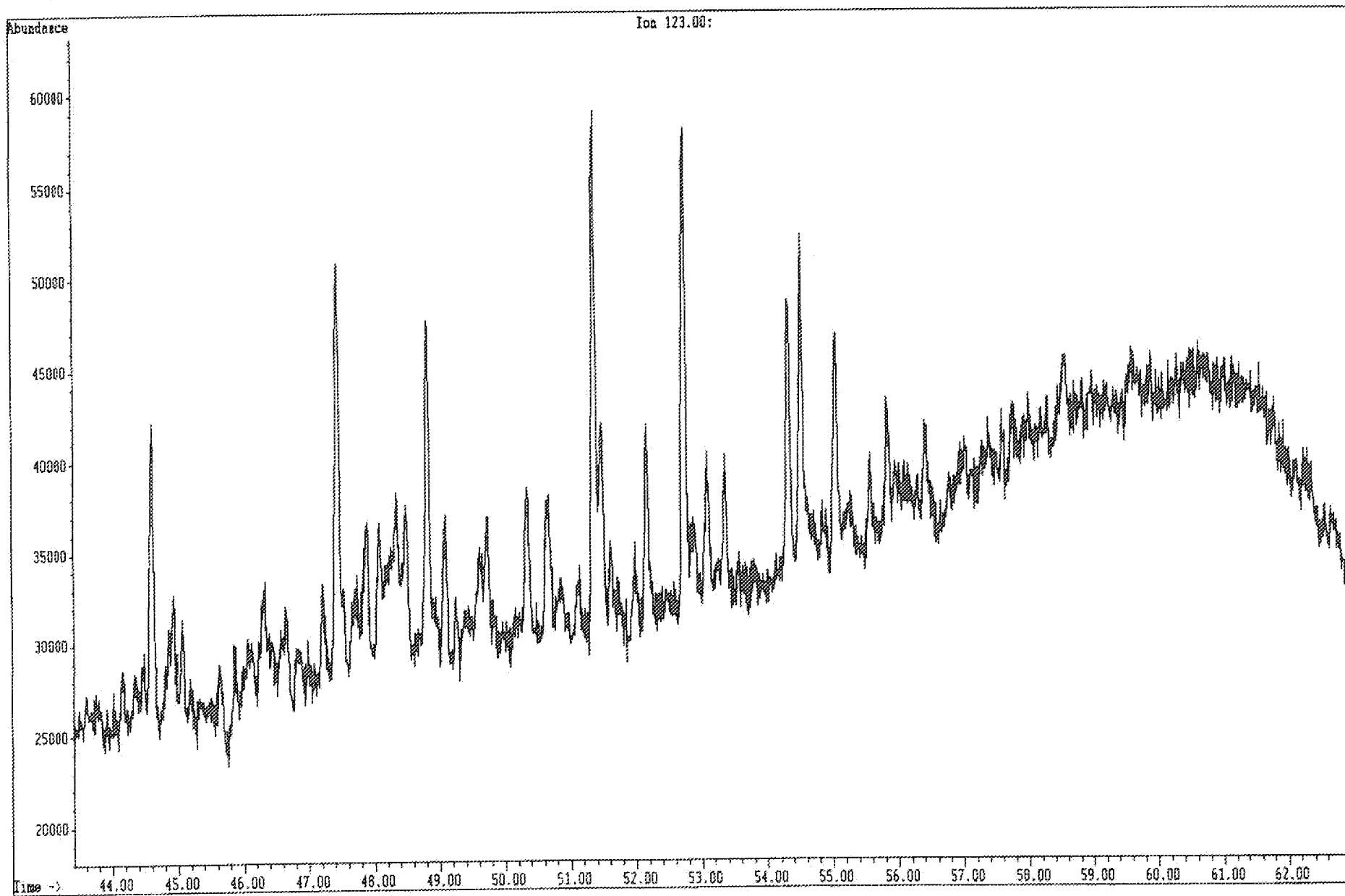


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Misc Info:
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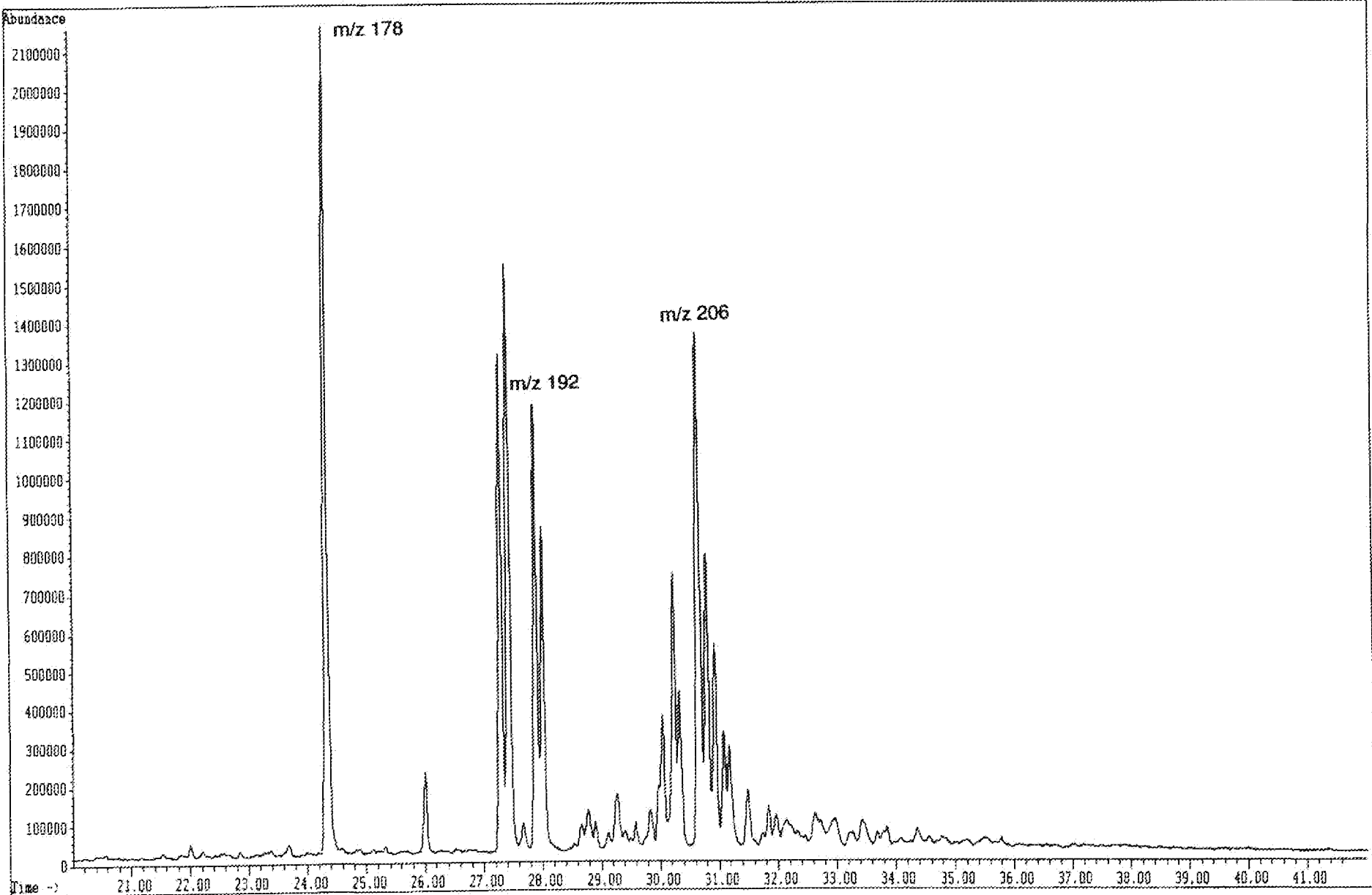
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Misc Info:
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G3.1h



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Method File Name: BICOMY.M
Sample Name: 4129-001
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Bottle Number: 84

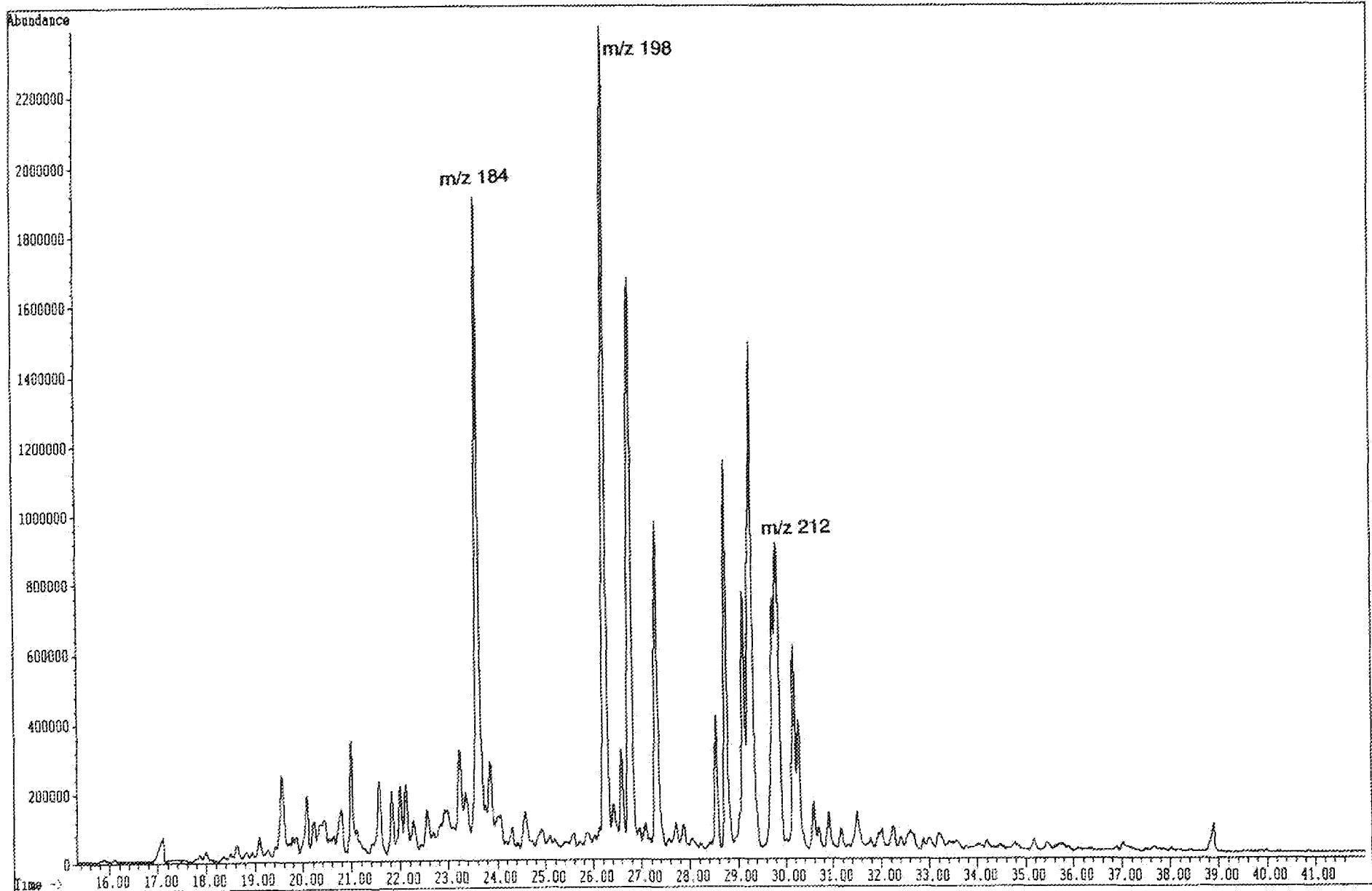
Phenanthrenes



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Bottle Number: 84

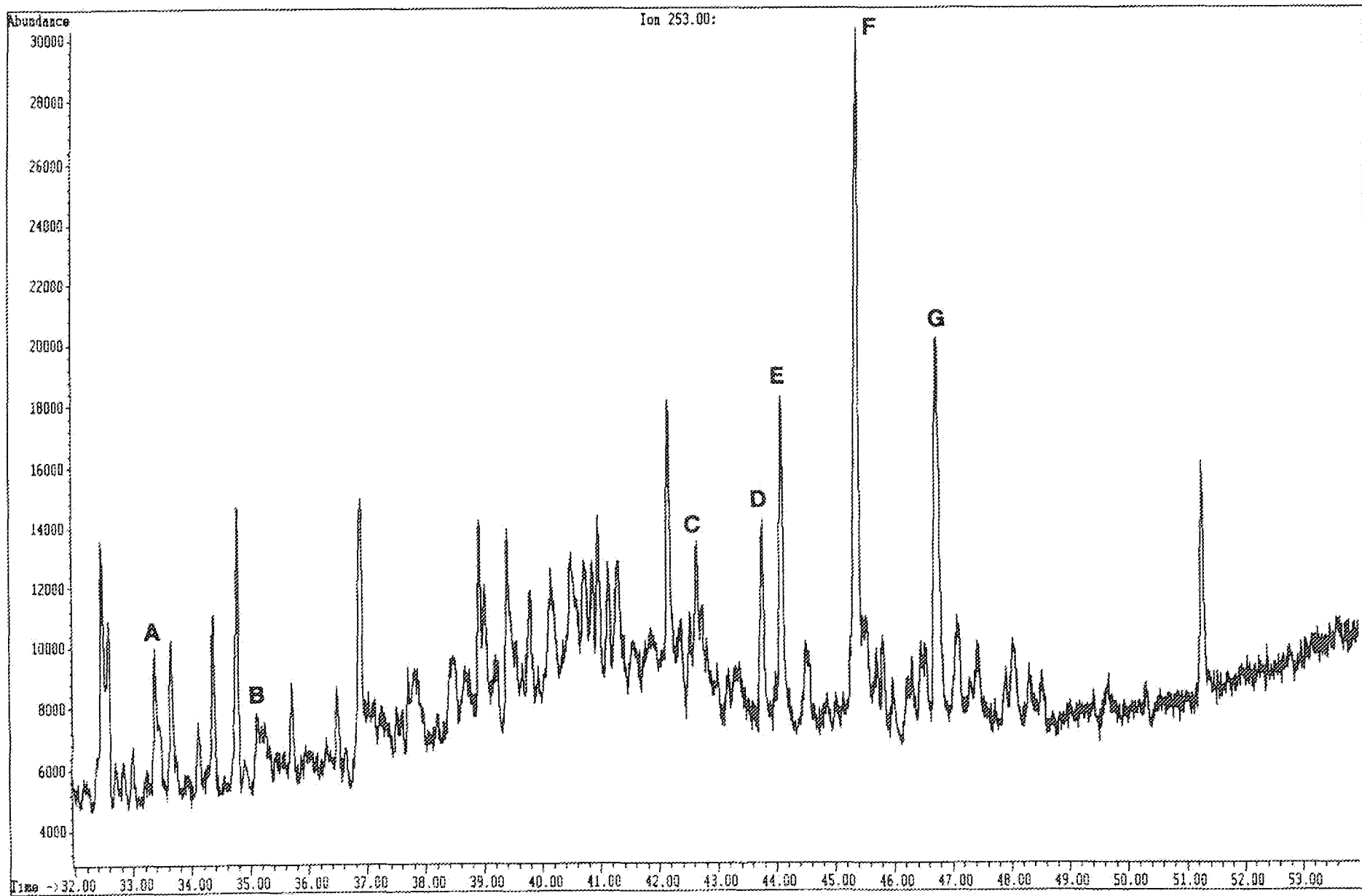
G3.1j

Dibenzothiophenes

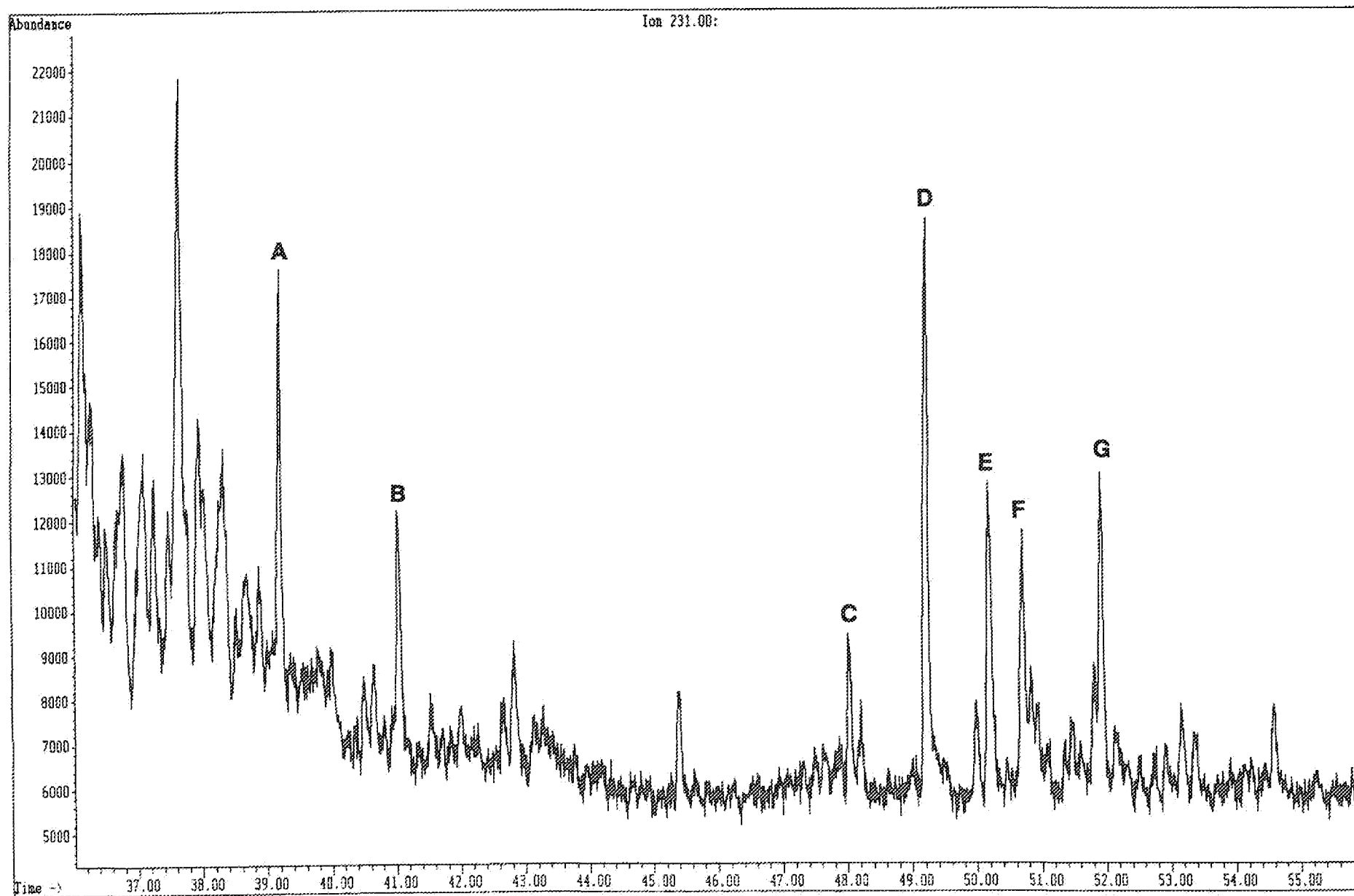


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Bottle Number: 84

G3.1k

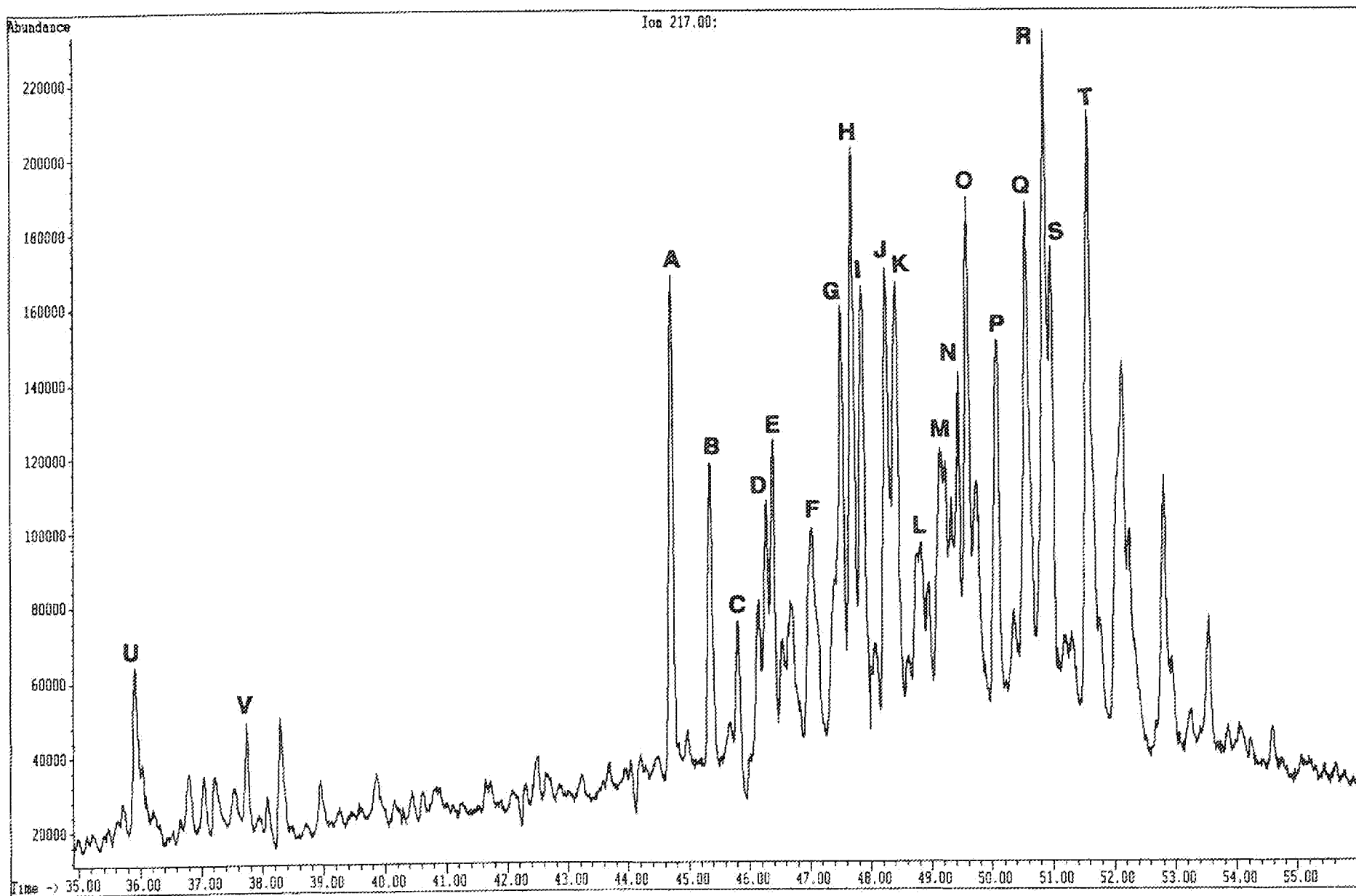


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Bottle Number: 84



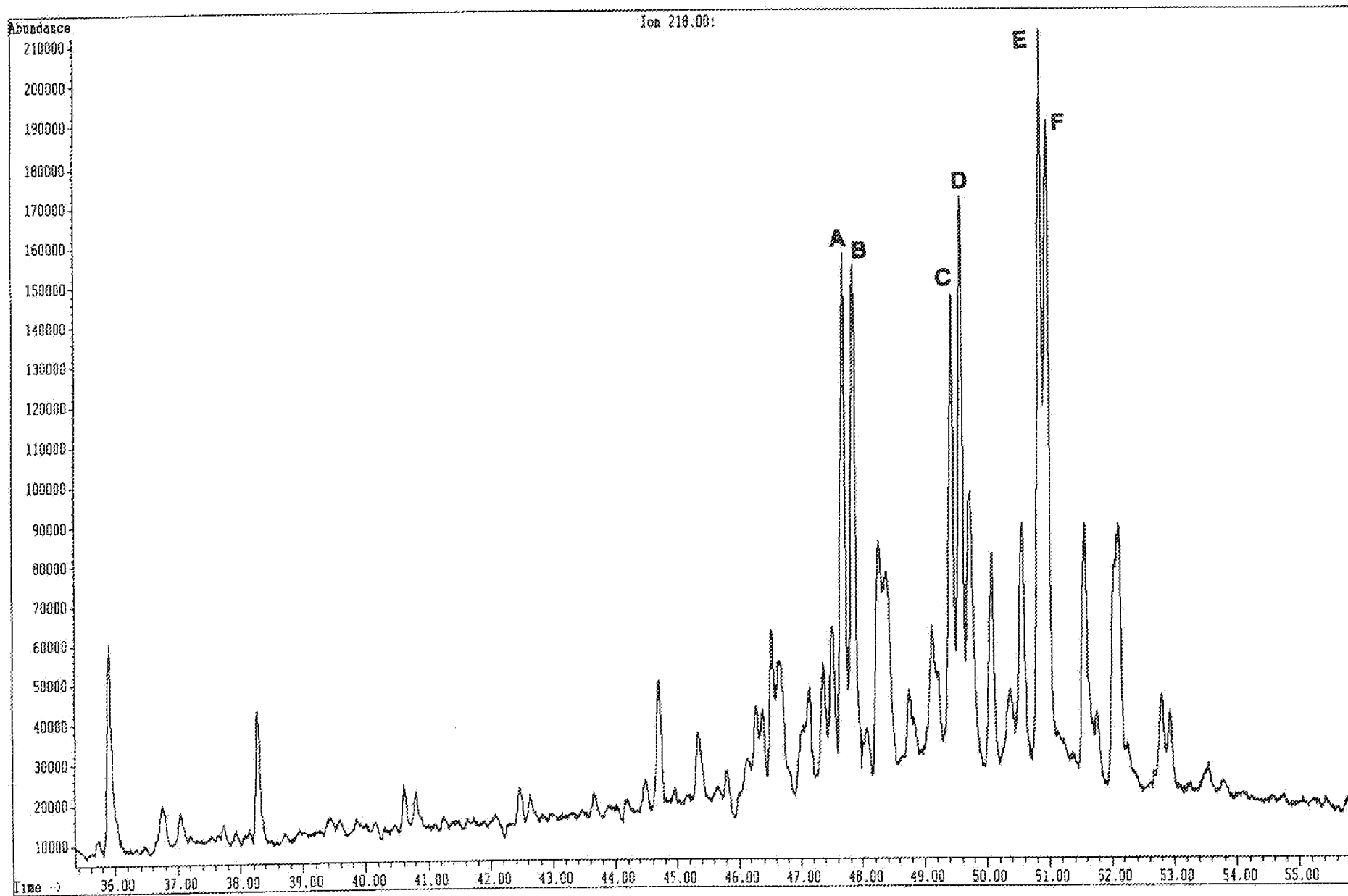
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Misc Info:
Bottle Number: 2

G3.2a



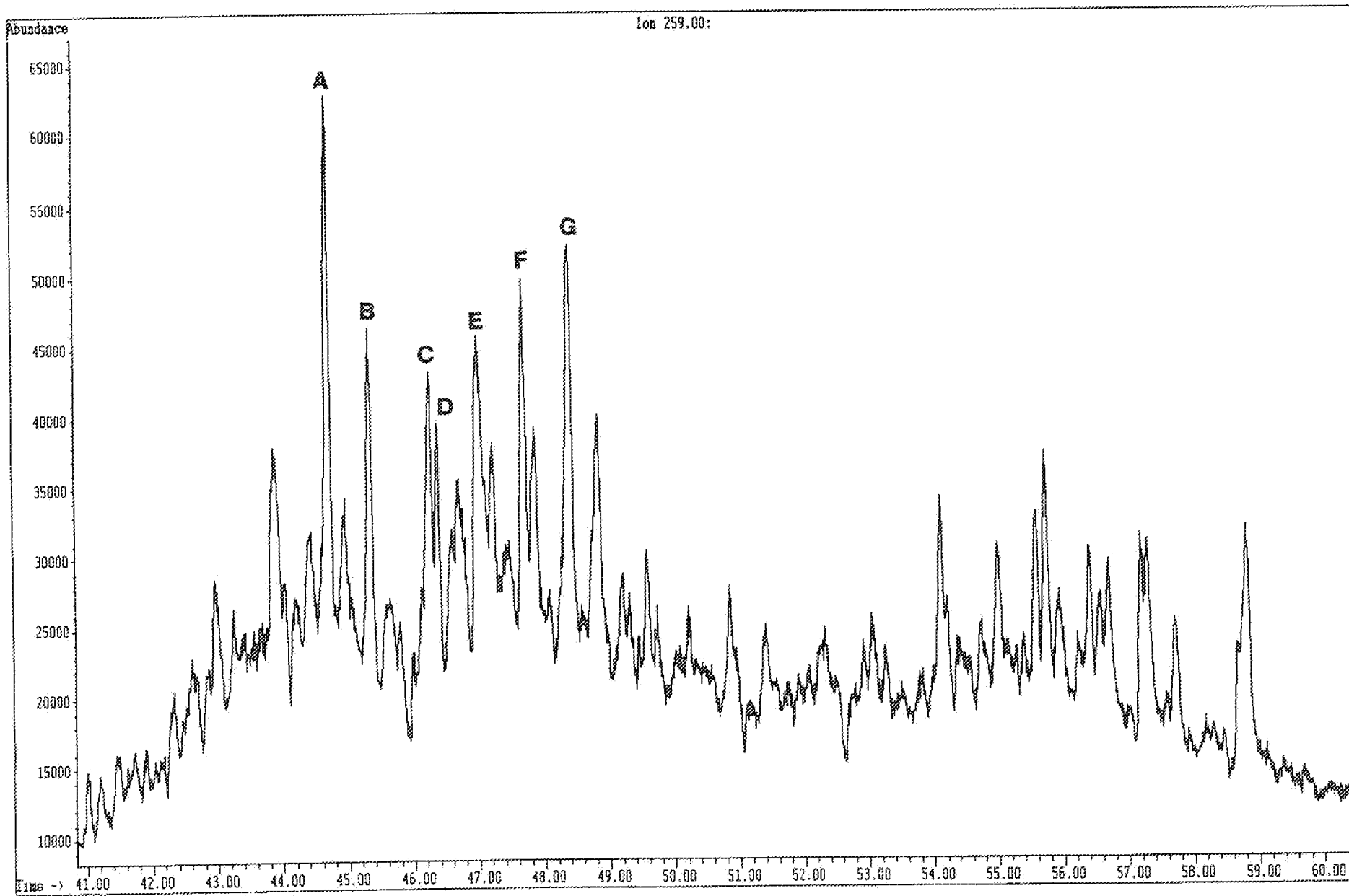
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Misc Info:
Bottle Number: 2

G3.2b

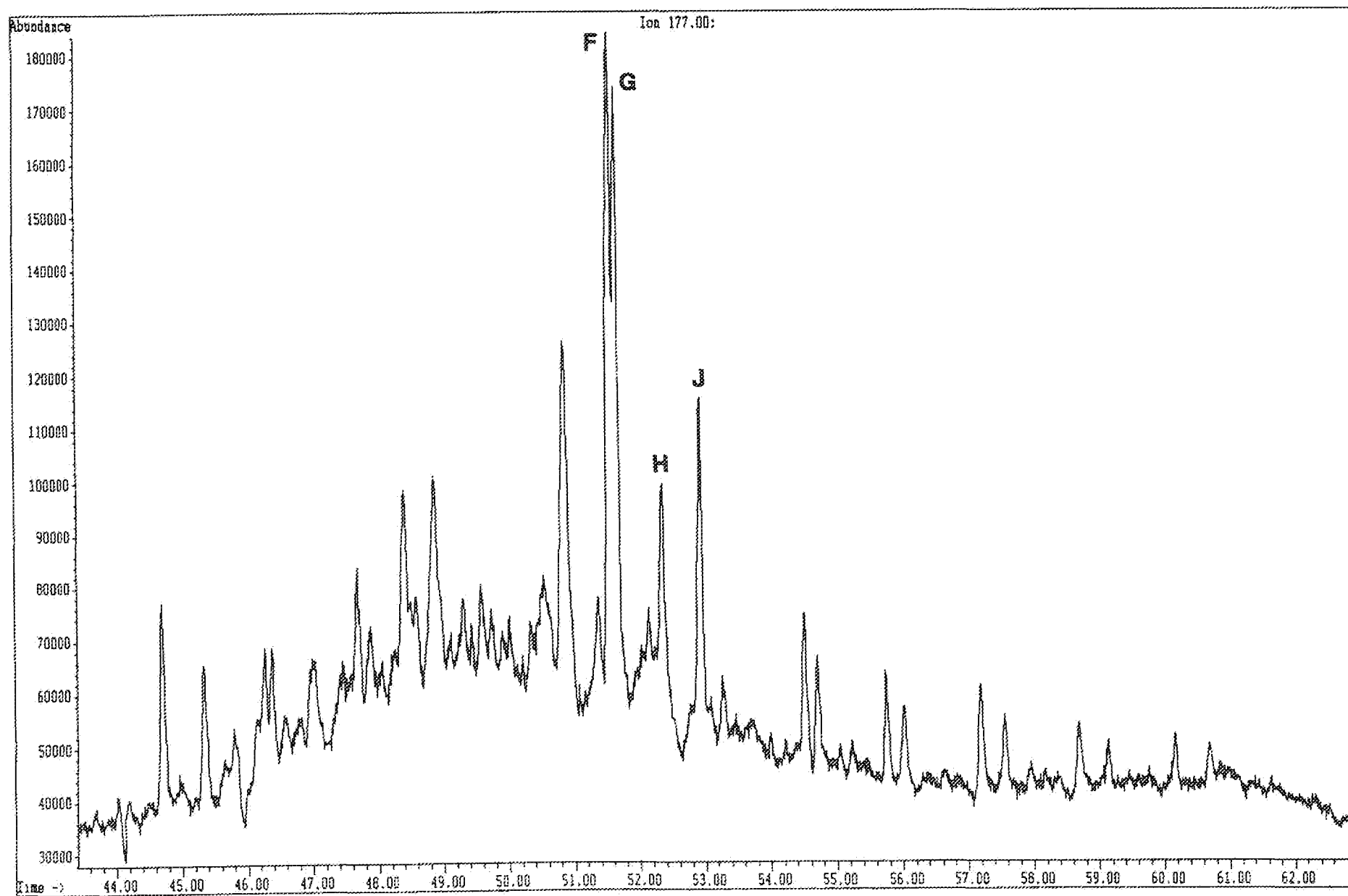


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Sample Name: 4129-002
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Bottle Number: 2

G3.2c

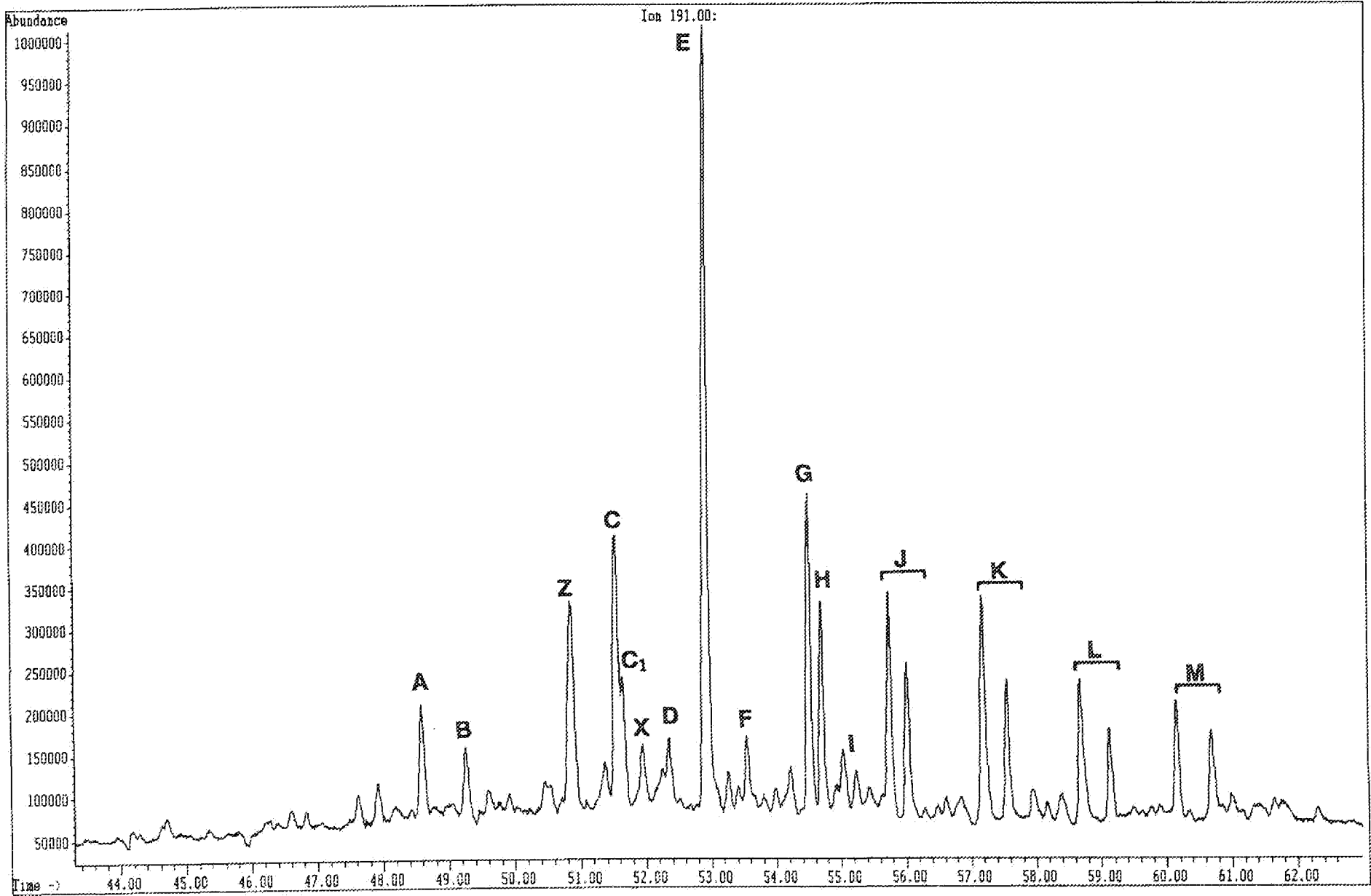


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Misc Info:
Bottle Number: 2



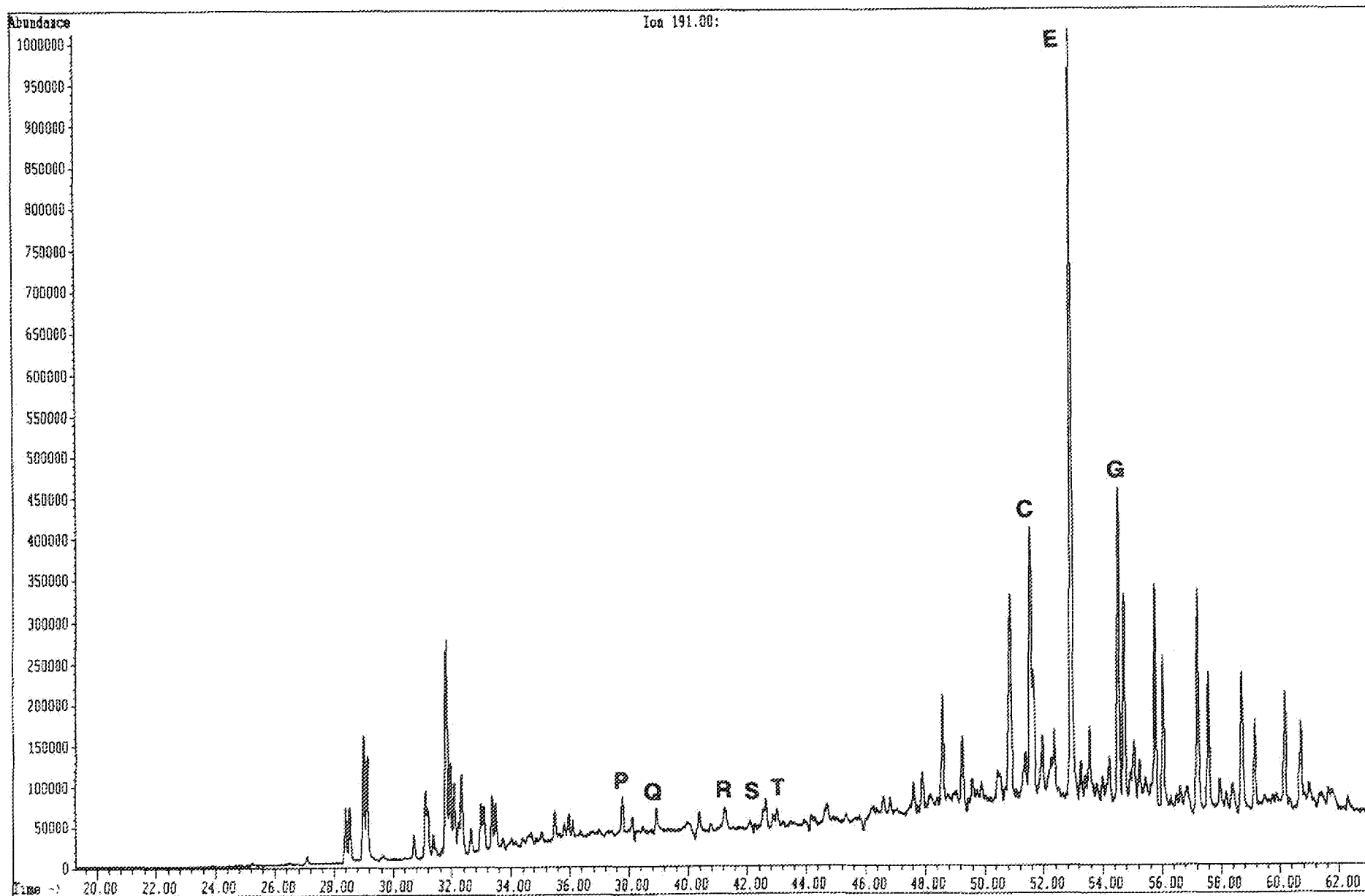
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Bottle Number: 2

G3.2e

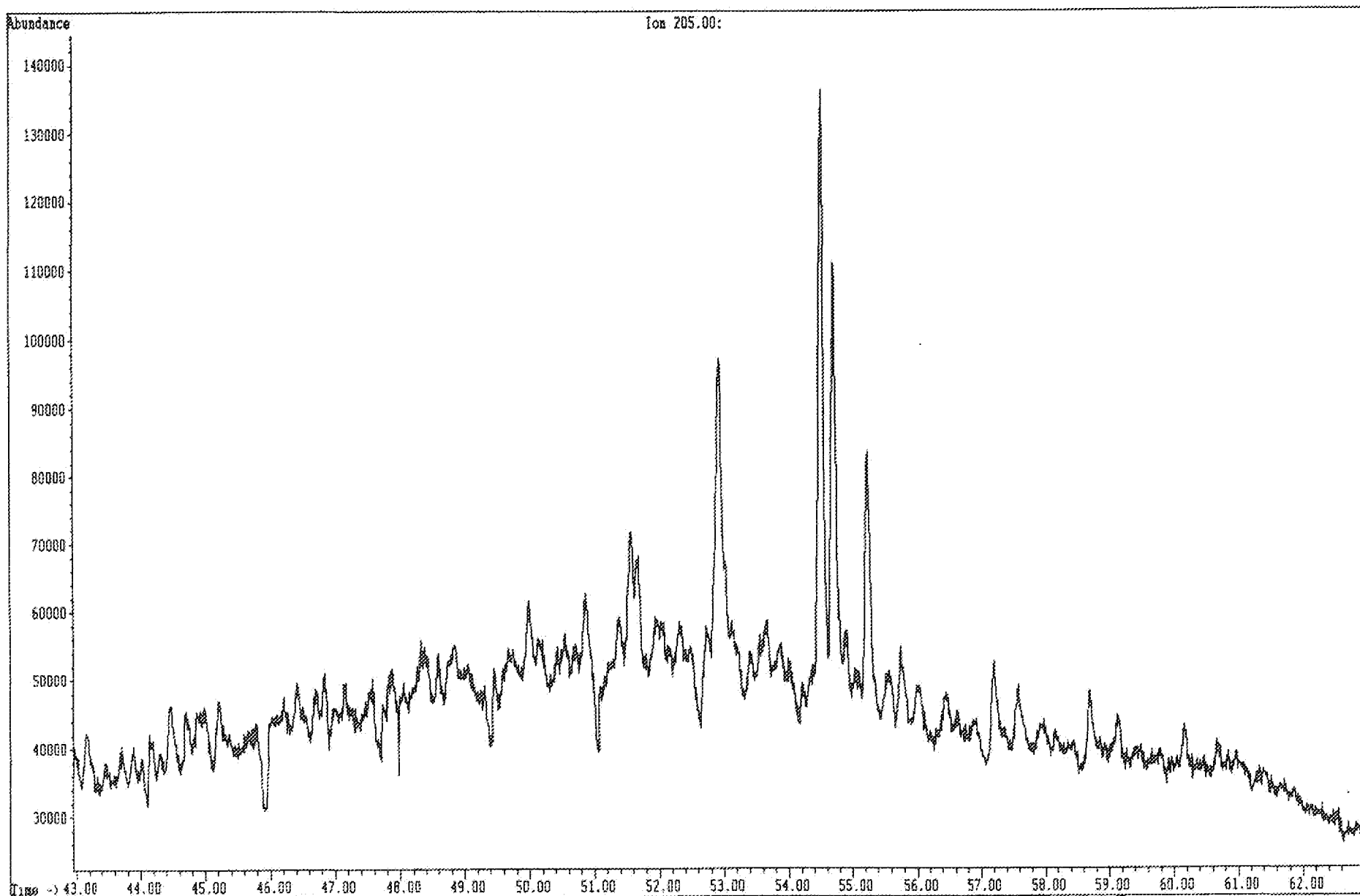


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Misc Info:
Bottle Number: 2

63.2f

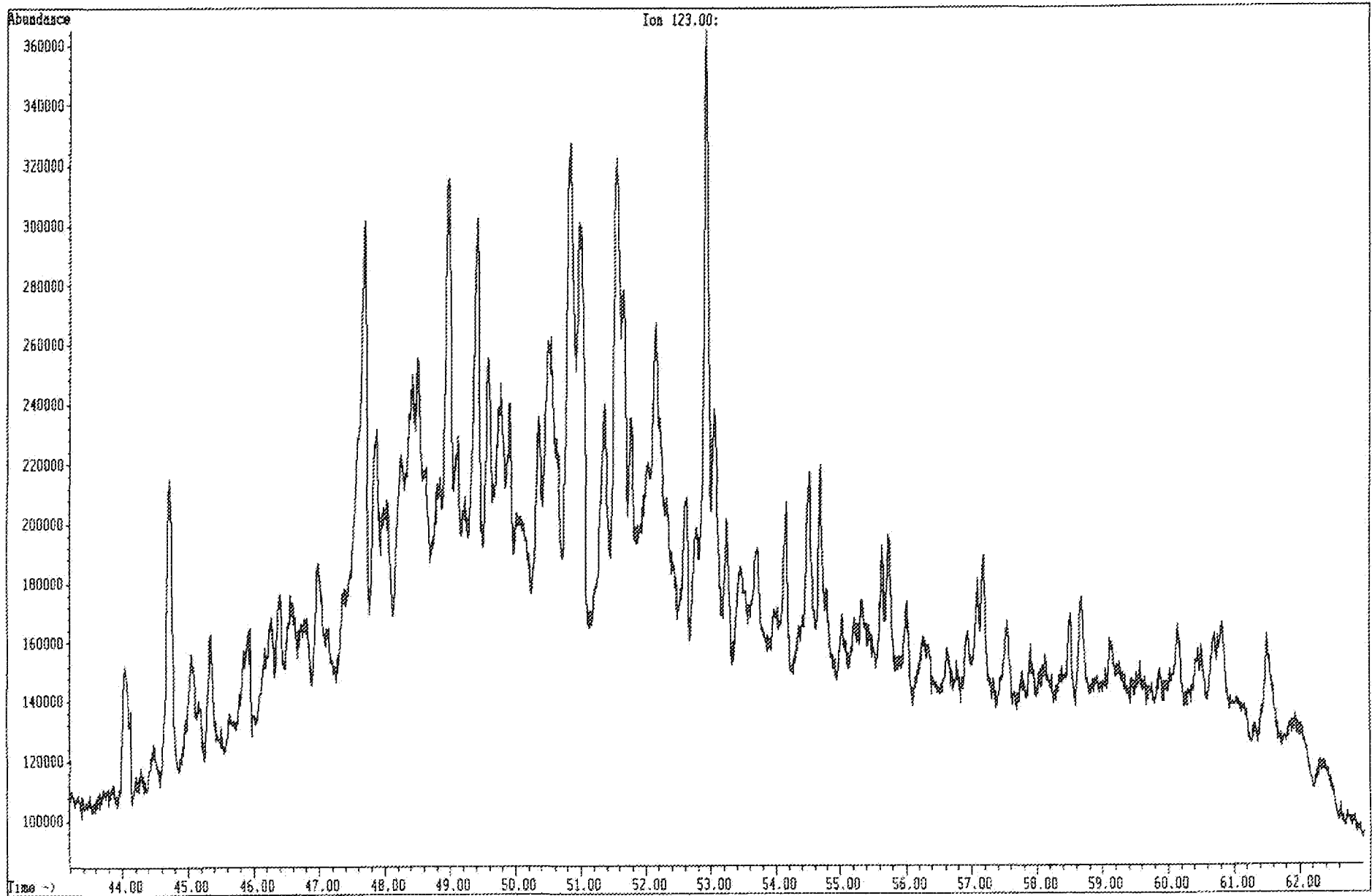


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Sample Name: 4129-002
Misc Info:
Bottle Number: 2



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Misc Info:
Bottle Number: 2

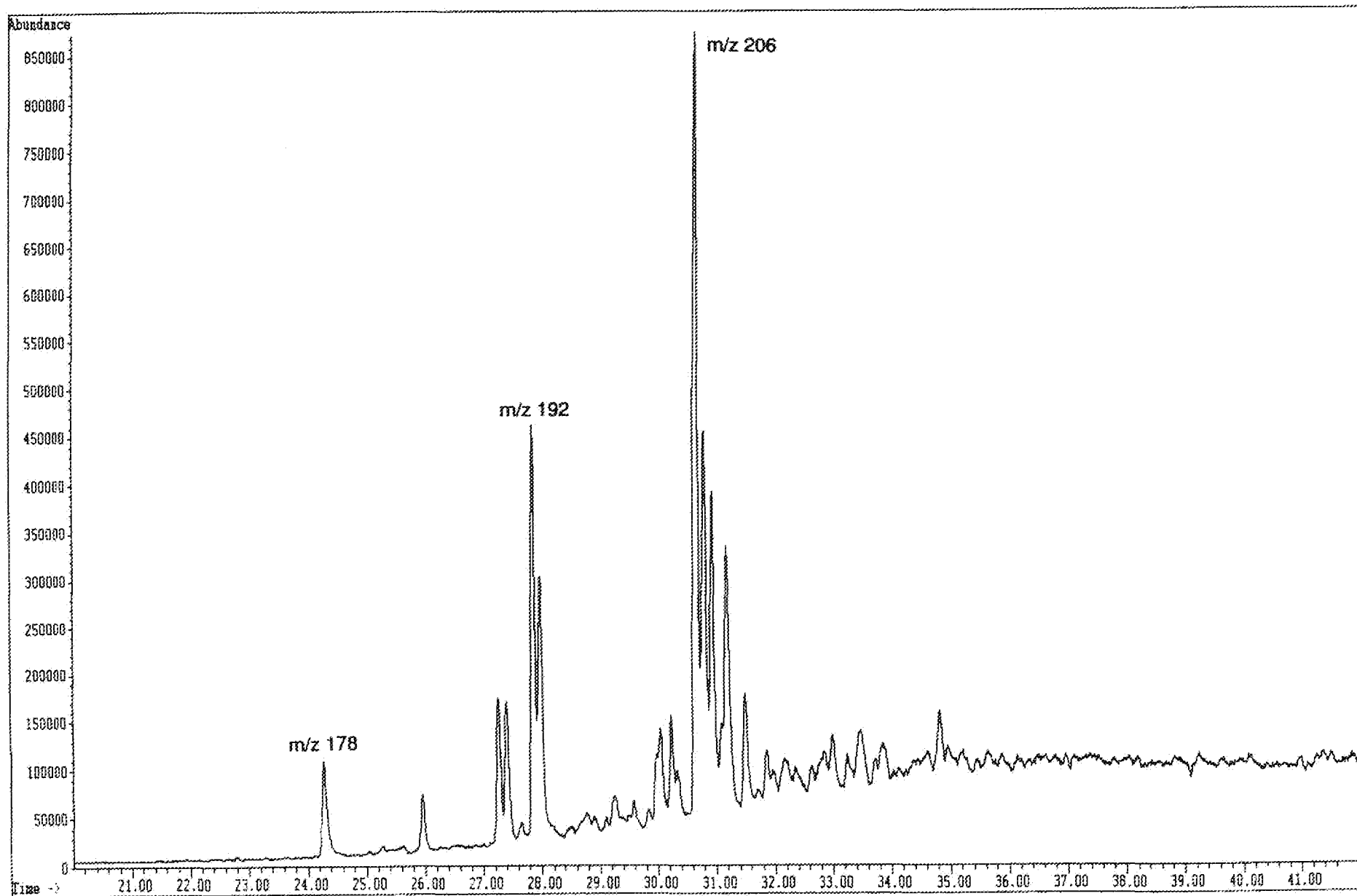
02h



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Bottle Number: 85

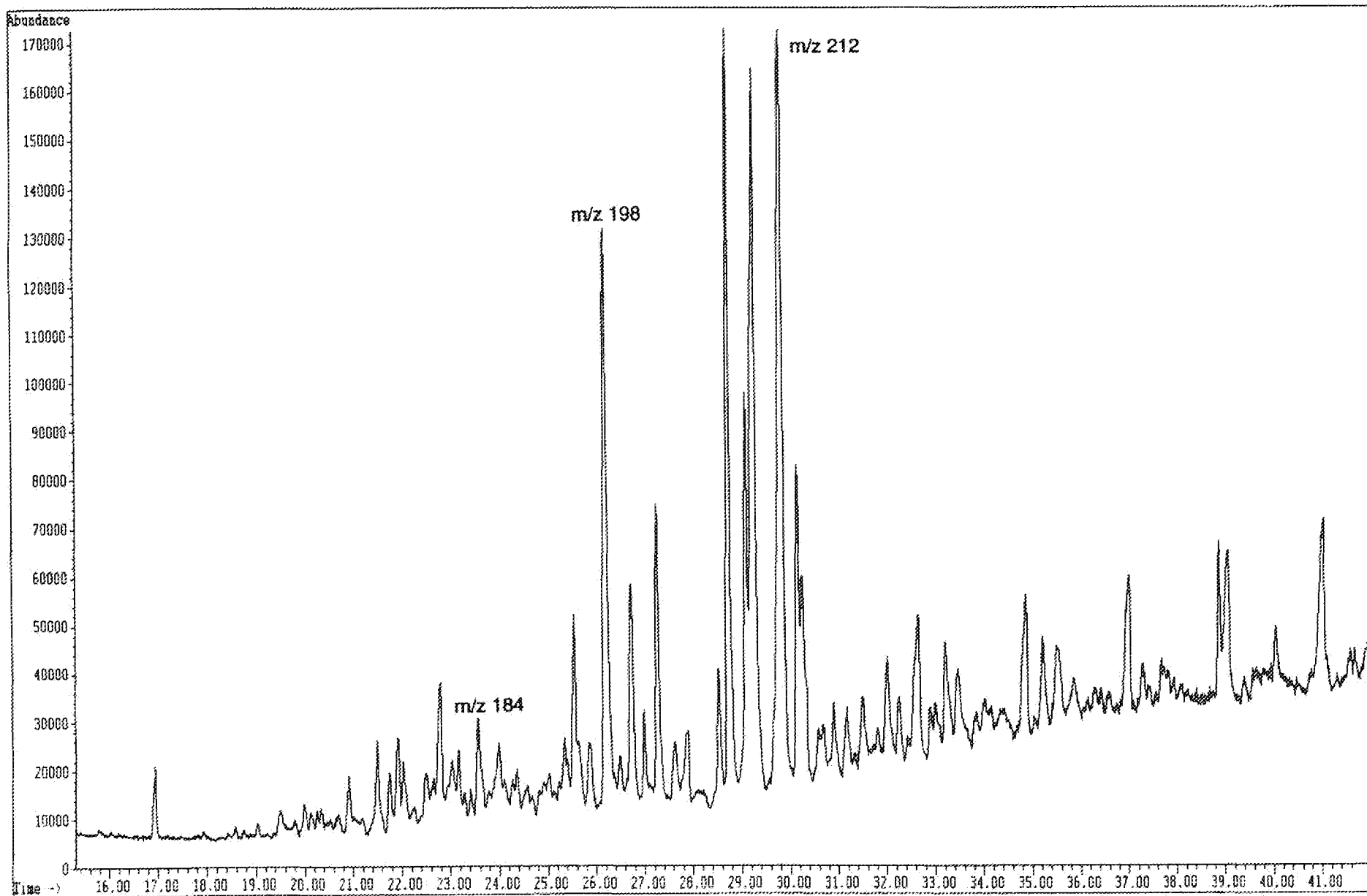
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Phenanthrenes

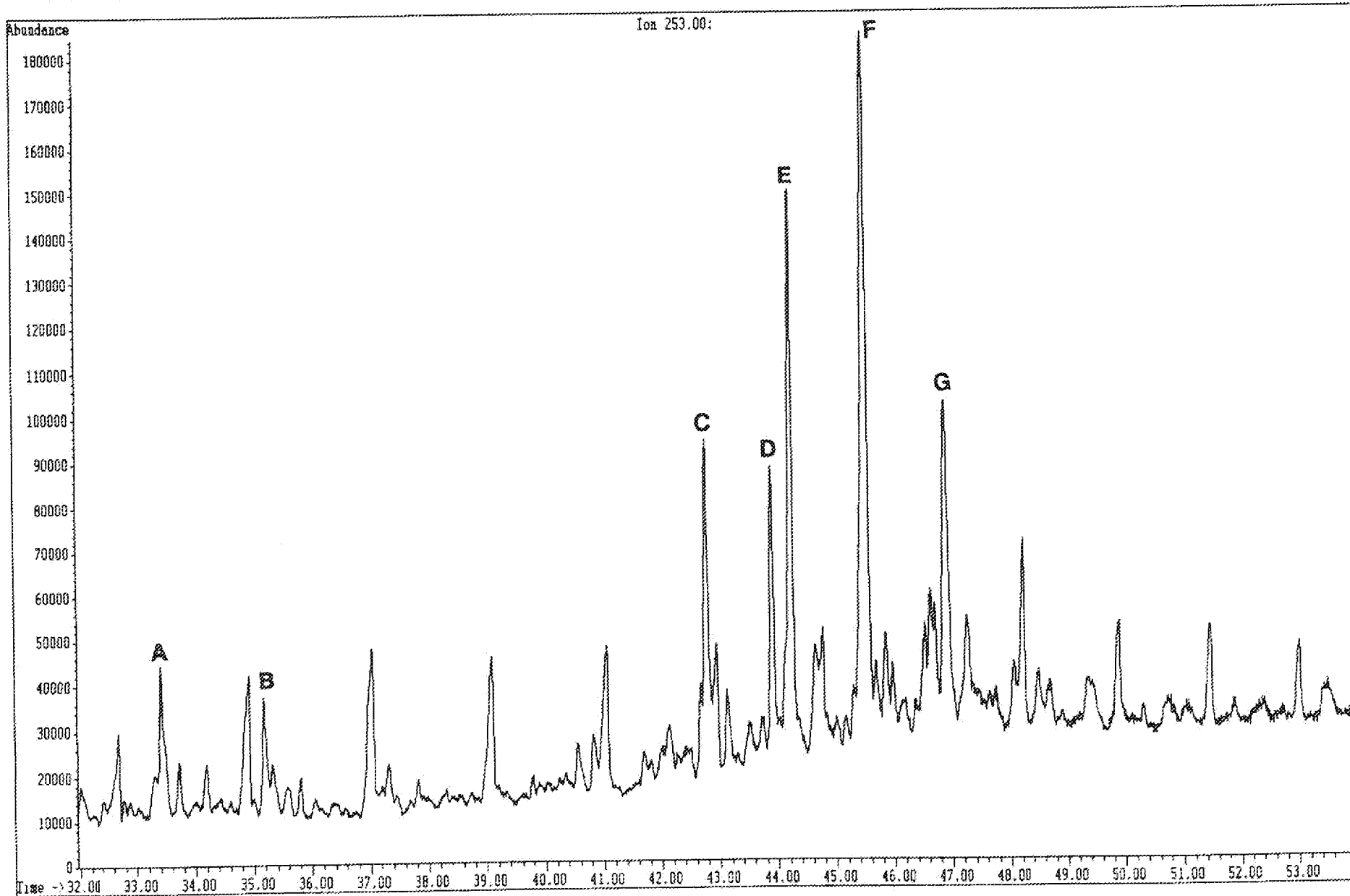


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Bottle Number: 85

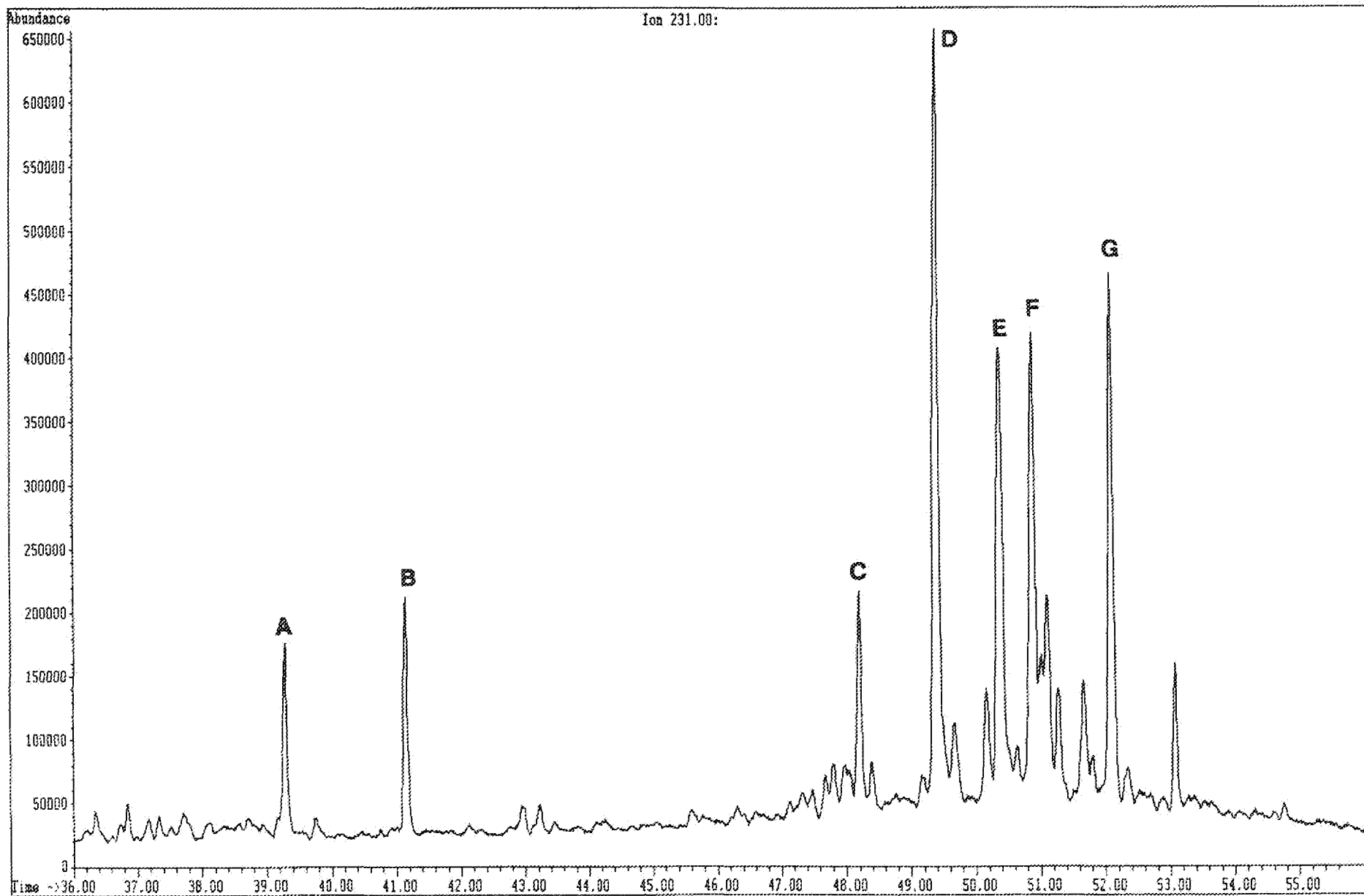
Dibenzothiophenes



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Bottle Number: 85

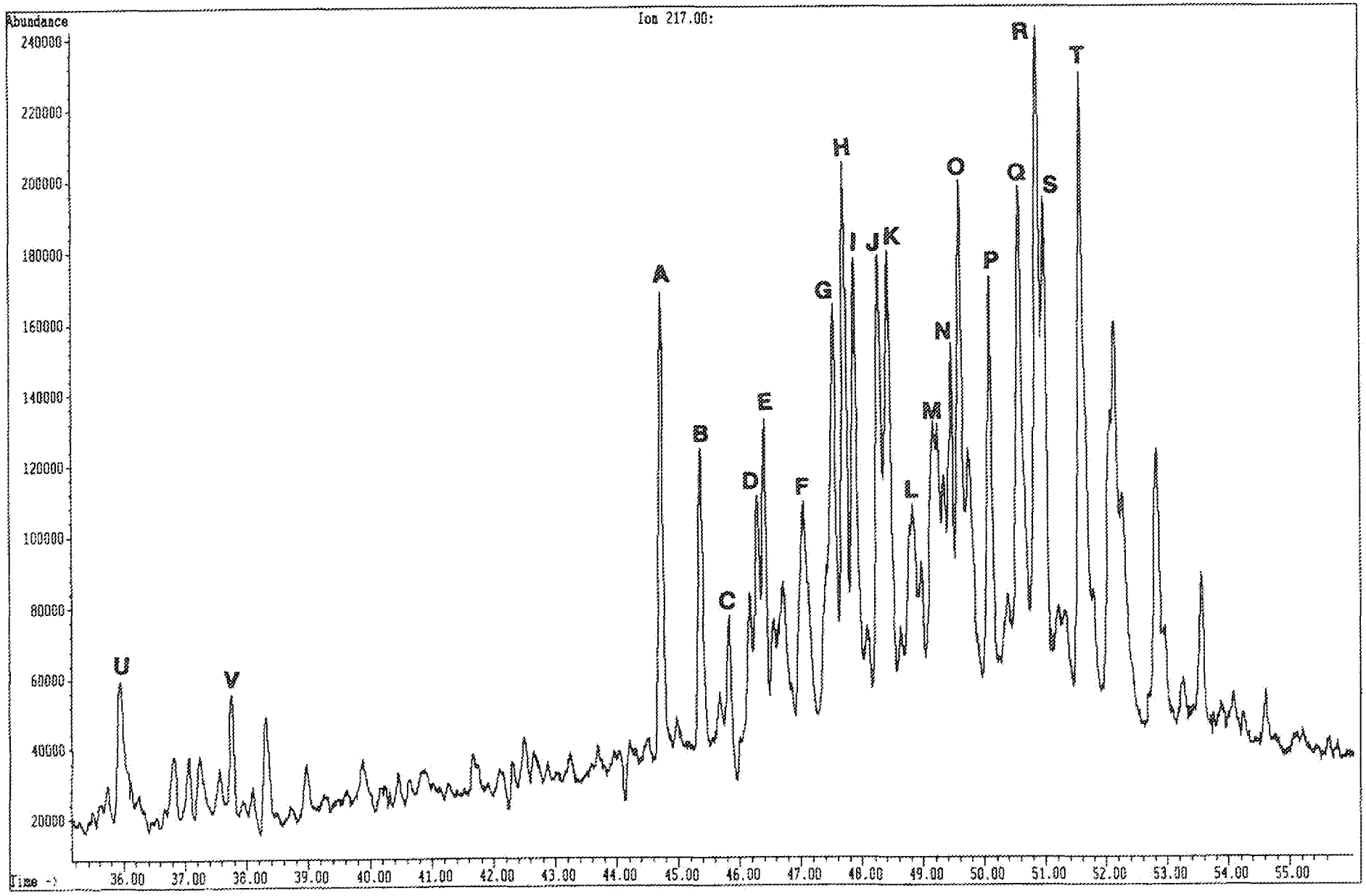


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Bottle Number: 85



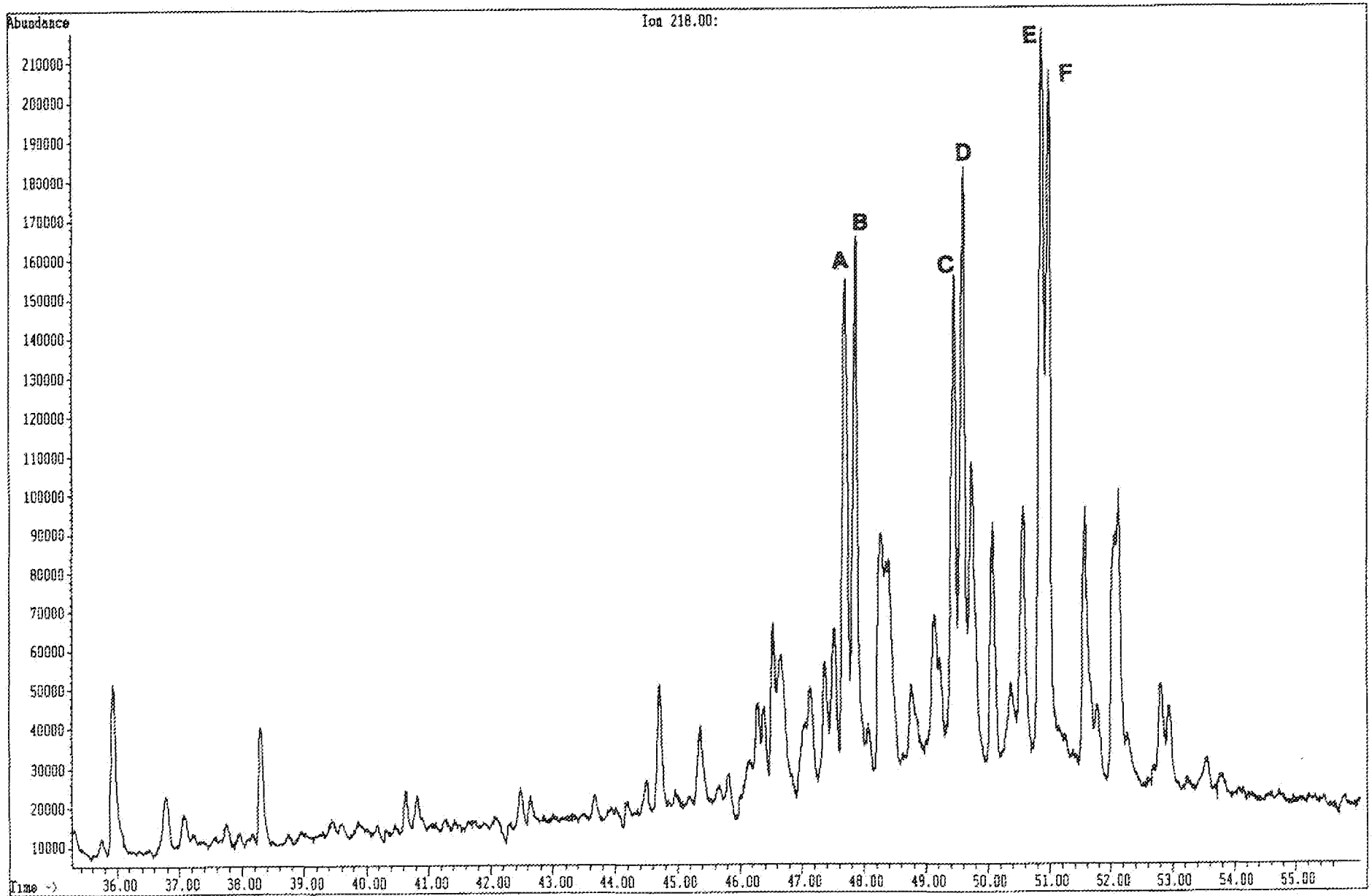
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Gold



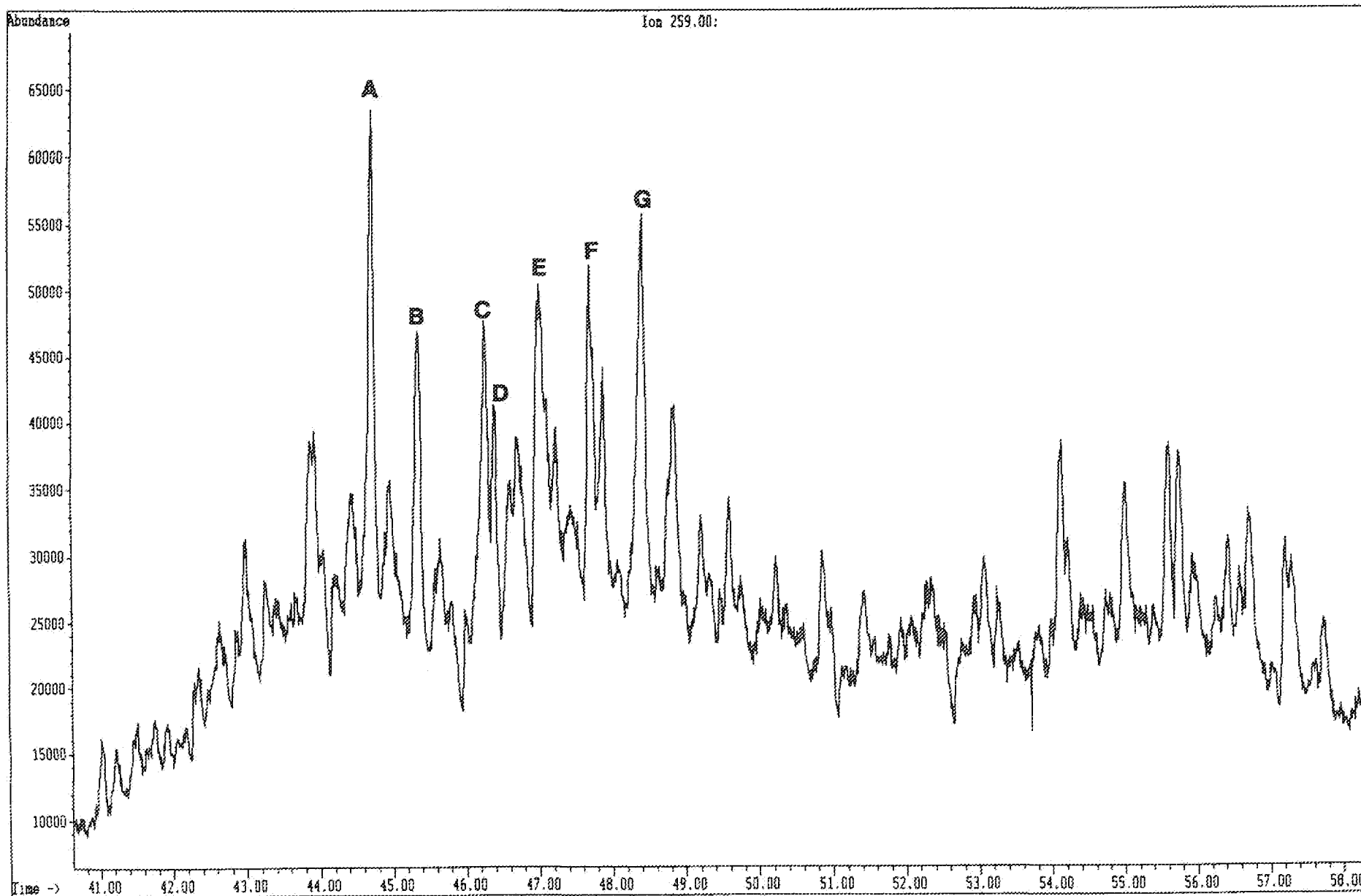
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Misc Info:
Bottle Number: 3

33b



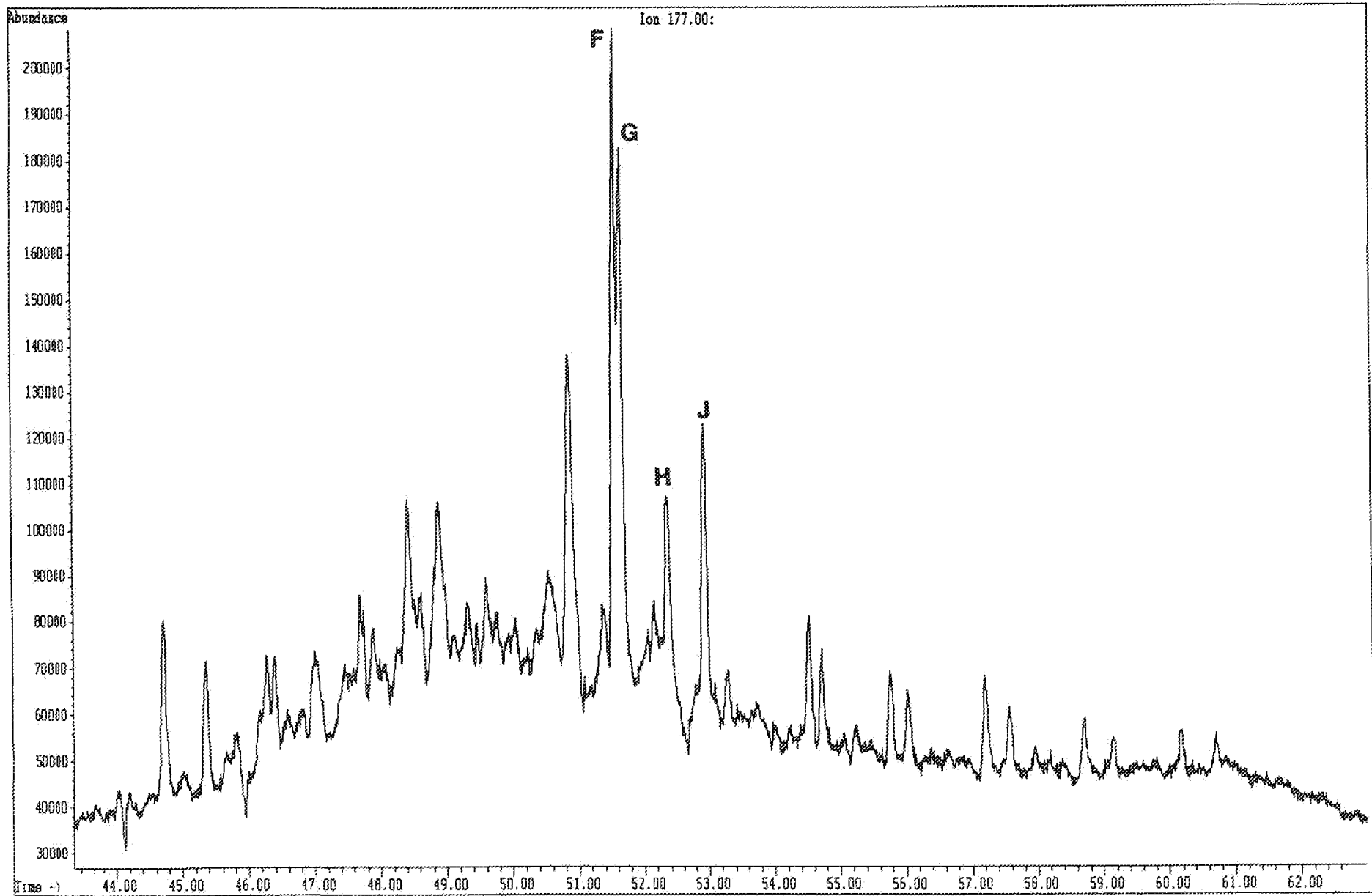
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Operator:
Date Acquired: 13 Dec 90 8:27 pm
Method File Name: BIOM.M
Sample Name: 4129-003
Misc Info:
Bottle Number: 3

GLSC



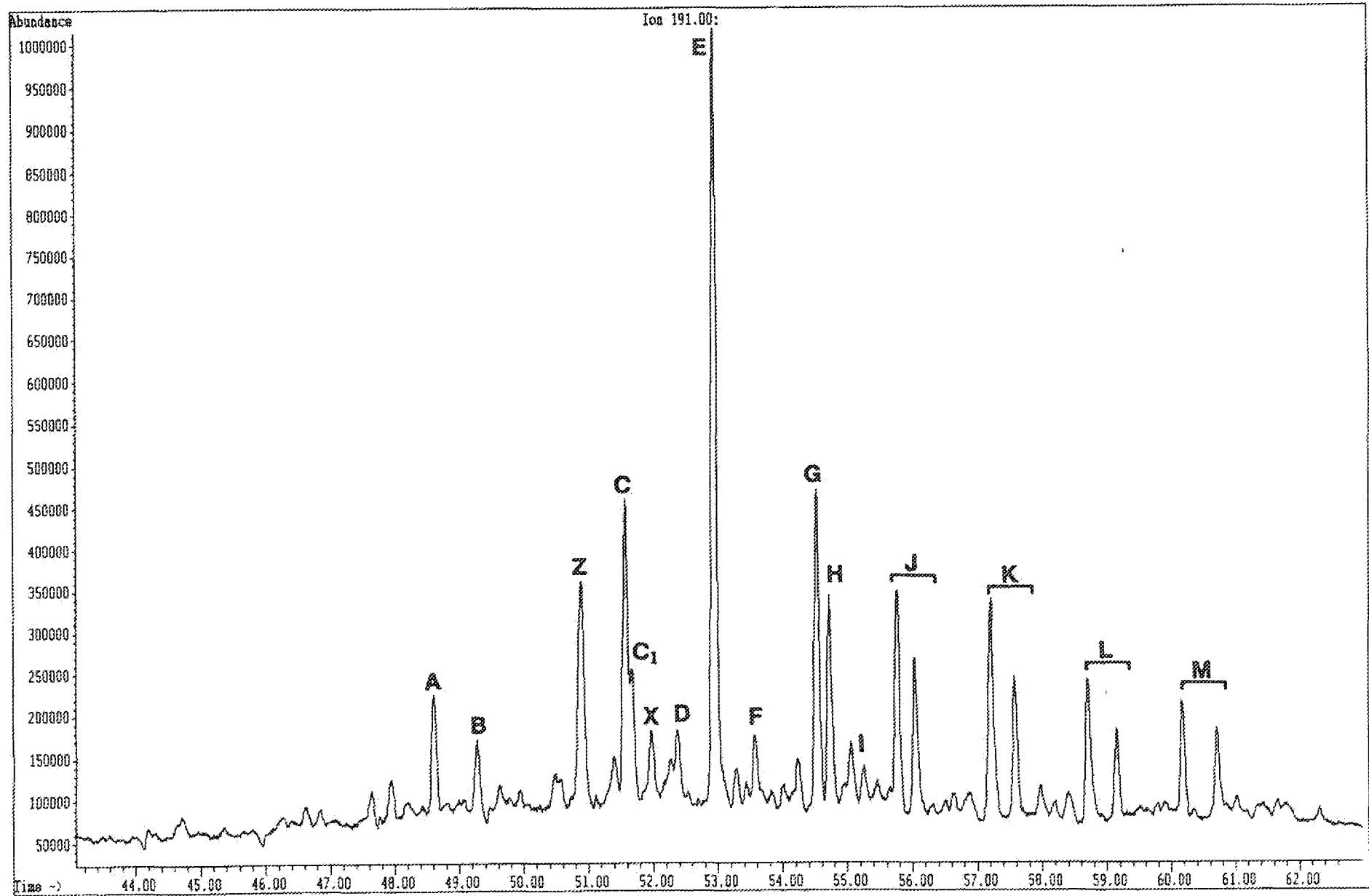
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Method File Name: B10M.M
Sample Name: 4129-003
Misc Info:
Bottle Number: 3

Good

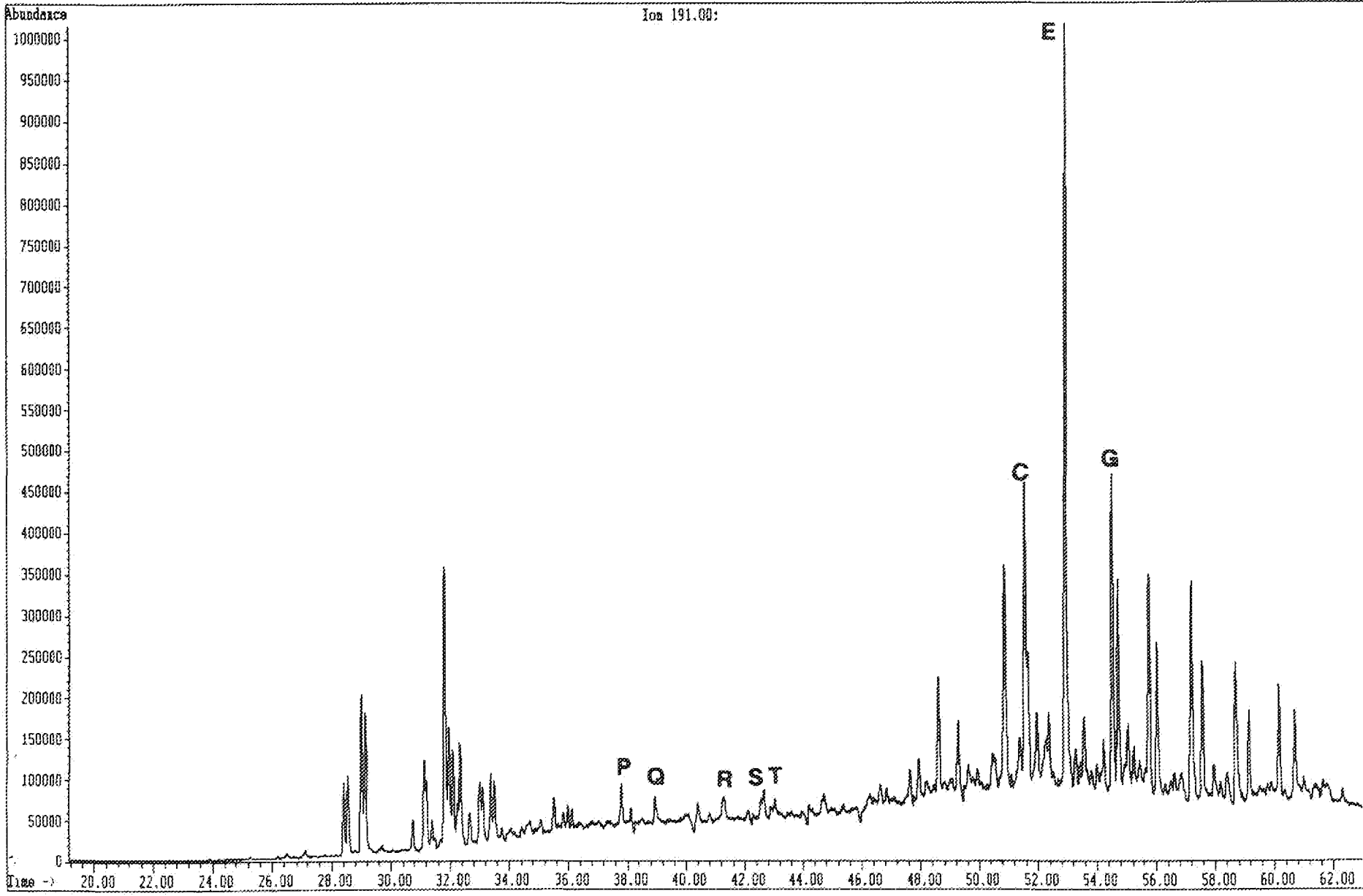


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Method File Name: B10M.M
Sample Name: 4129-003
Misc Info:
Bottle Number: 3

G3.

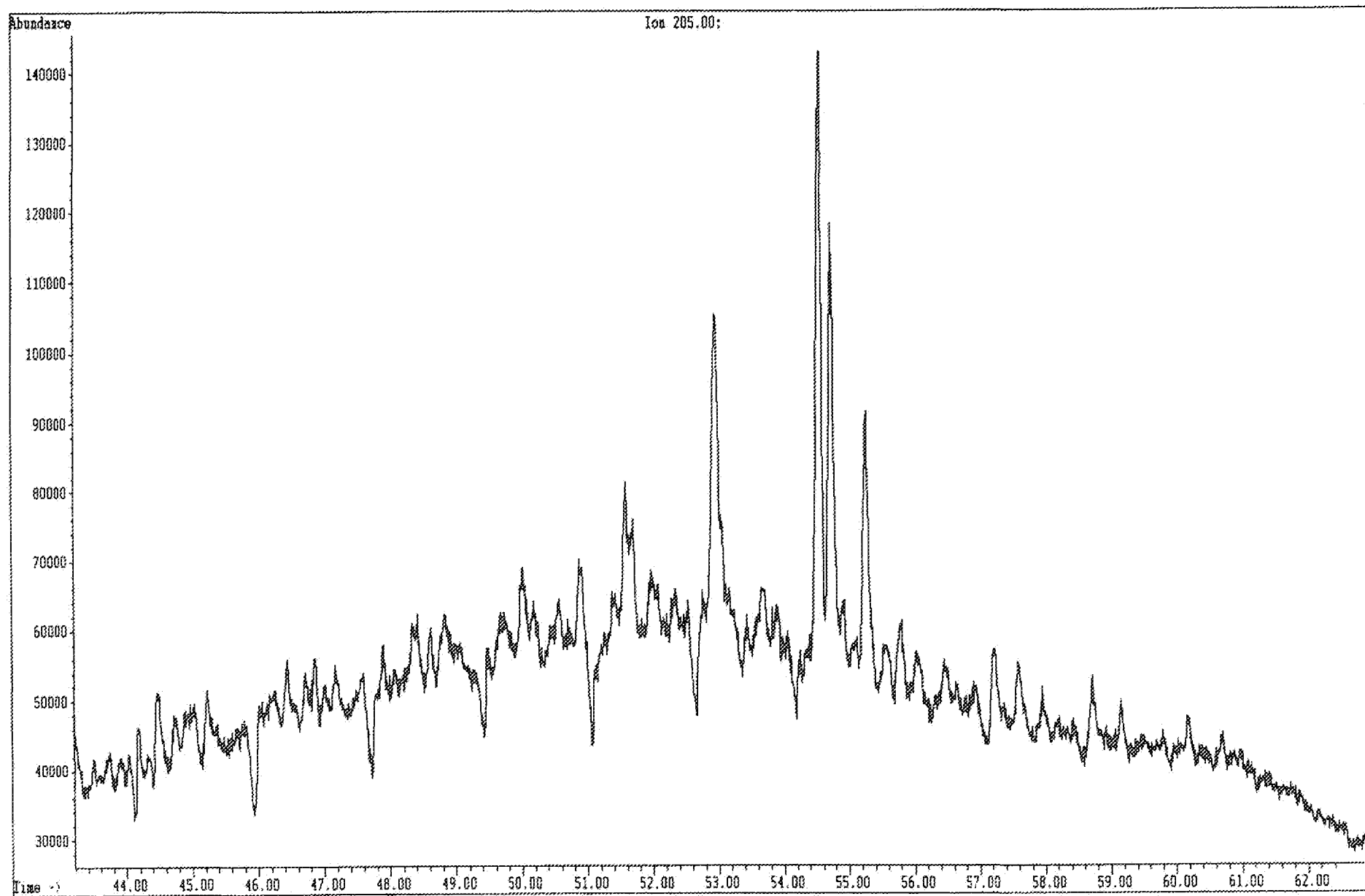


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Date Acquired: 13 Dec 90 8:27 pm
Method File Name: BICM.M
Sample Name: 4129-003
Misc Info:
Bottle Number: 3



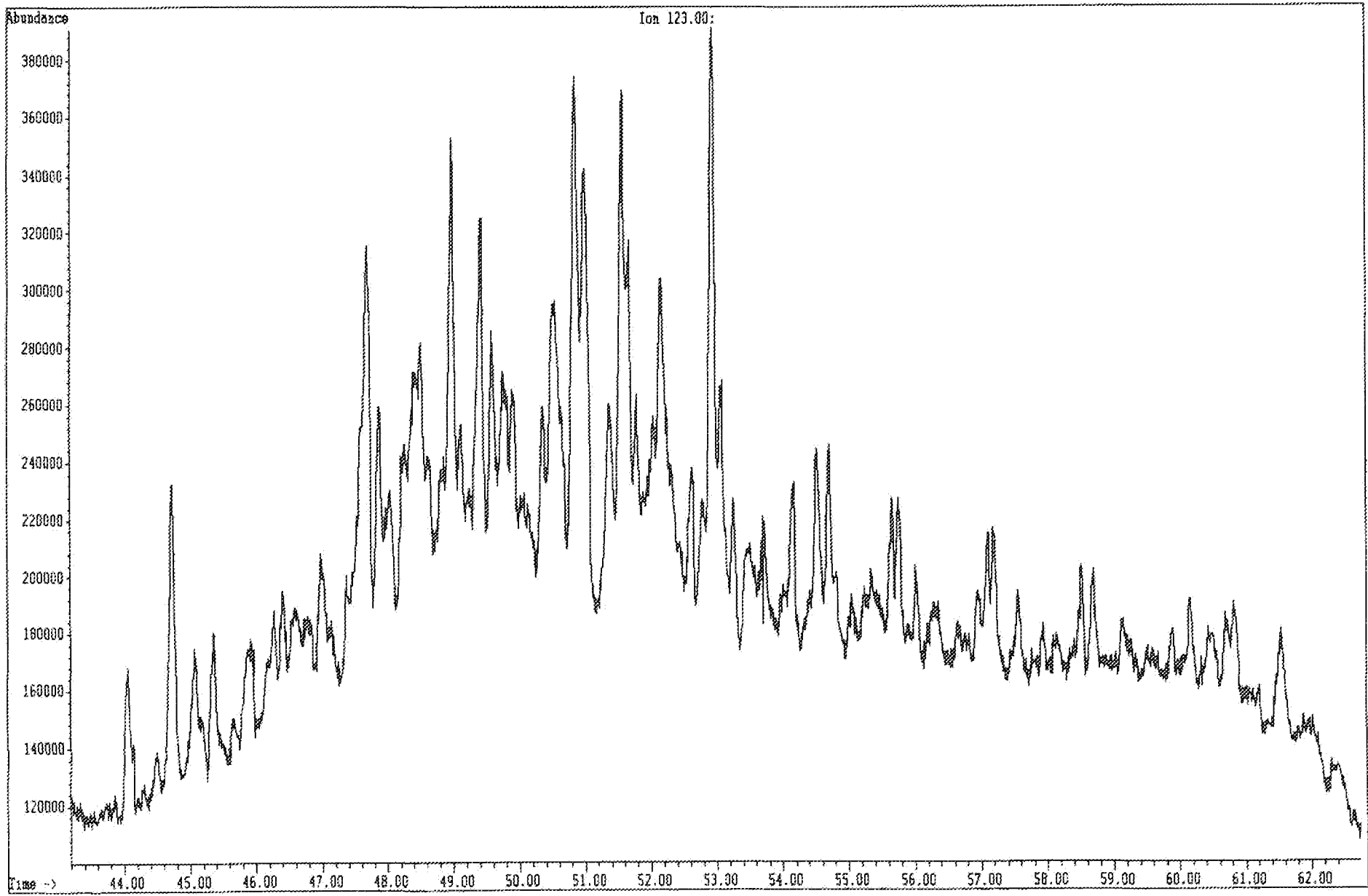
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Operator:
Date Acquired: 13 Dec 90 8:27 pm
Method File Name: BIOM.M
Sample Name: 4129-003
Misc Info:
Bottle Number: 3

3.3g



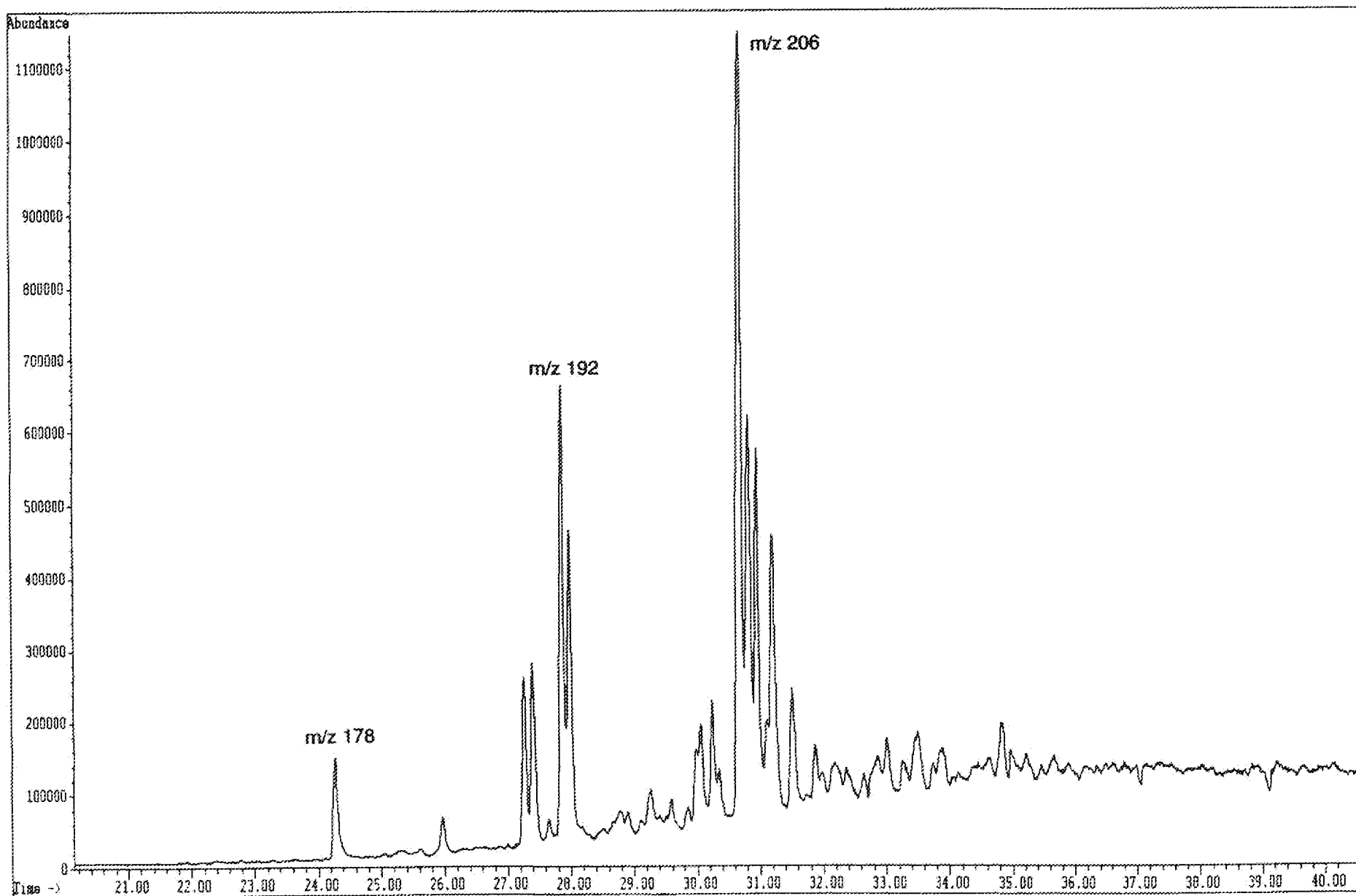
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Operator:
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Method File Name: BIOM.M
Sample Name: 4129-003
Misc Info:
Bottle Number: 3

GS



File: D:\CHEMPC\DATA\8601080.D
Operator:
Date Acquired: 11 Dec 90 10:16 am
Method File Name: BICOM.M
Sample Name: 4129-093
Misc Info: WELL 33/12-2 2707.2M
Bottle Number: 86

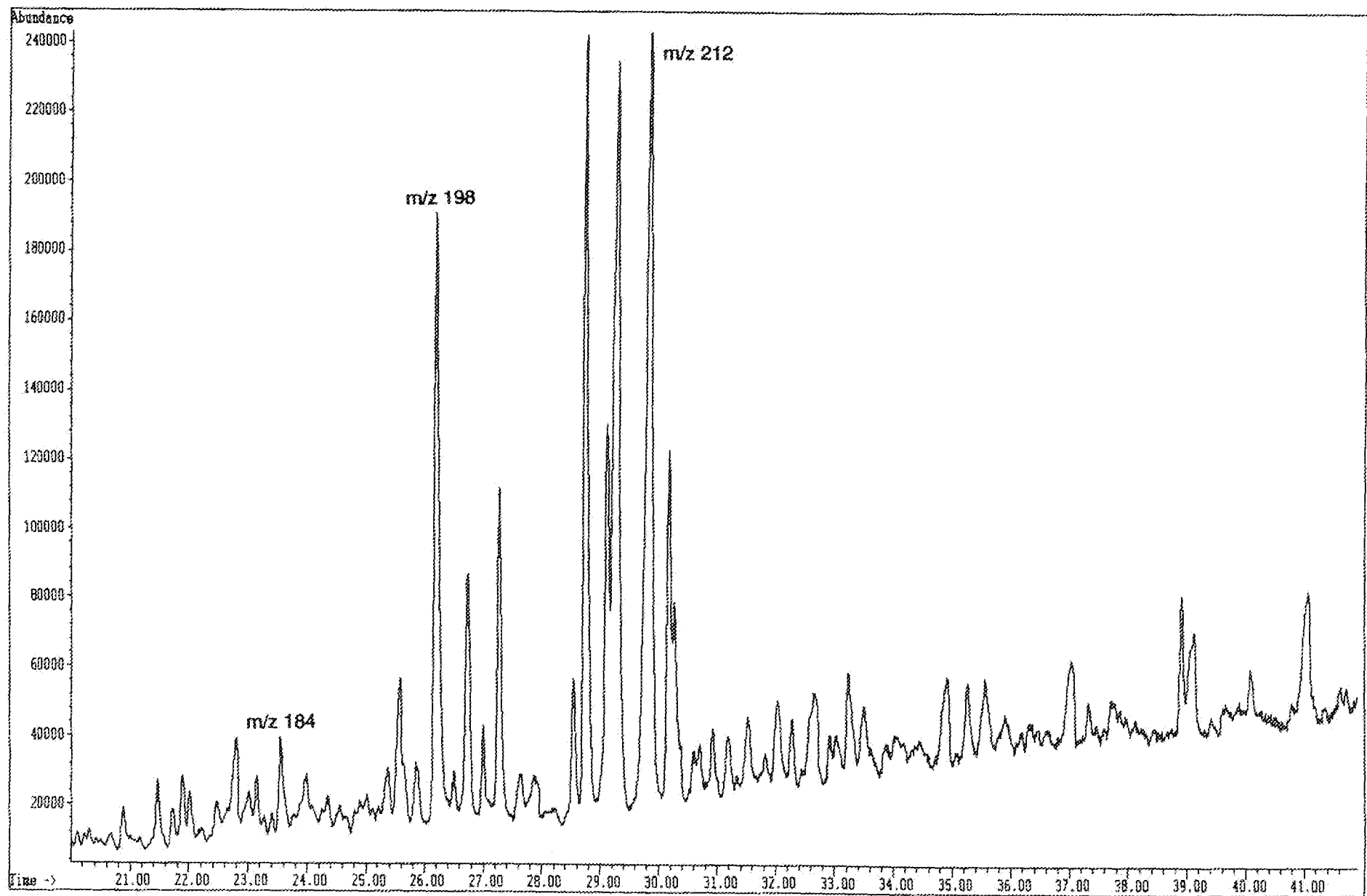
Phenanthrenes



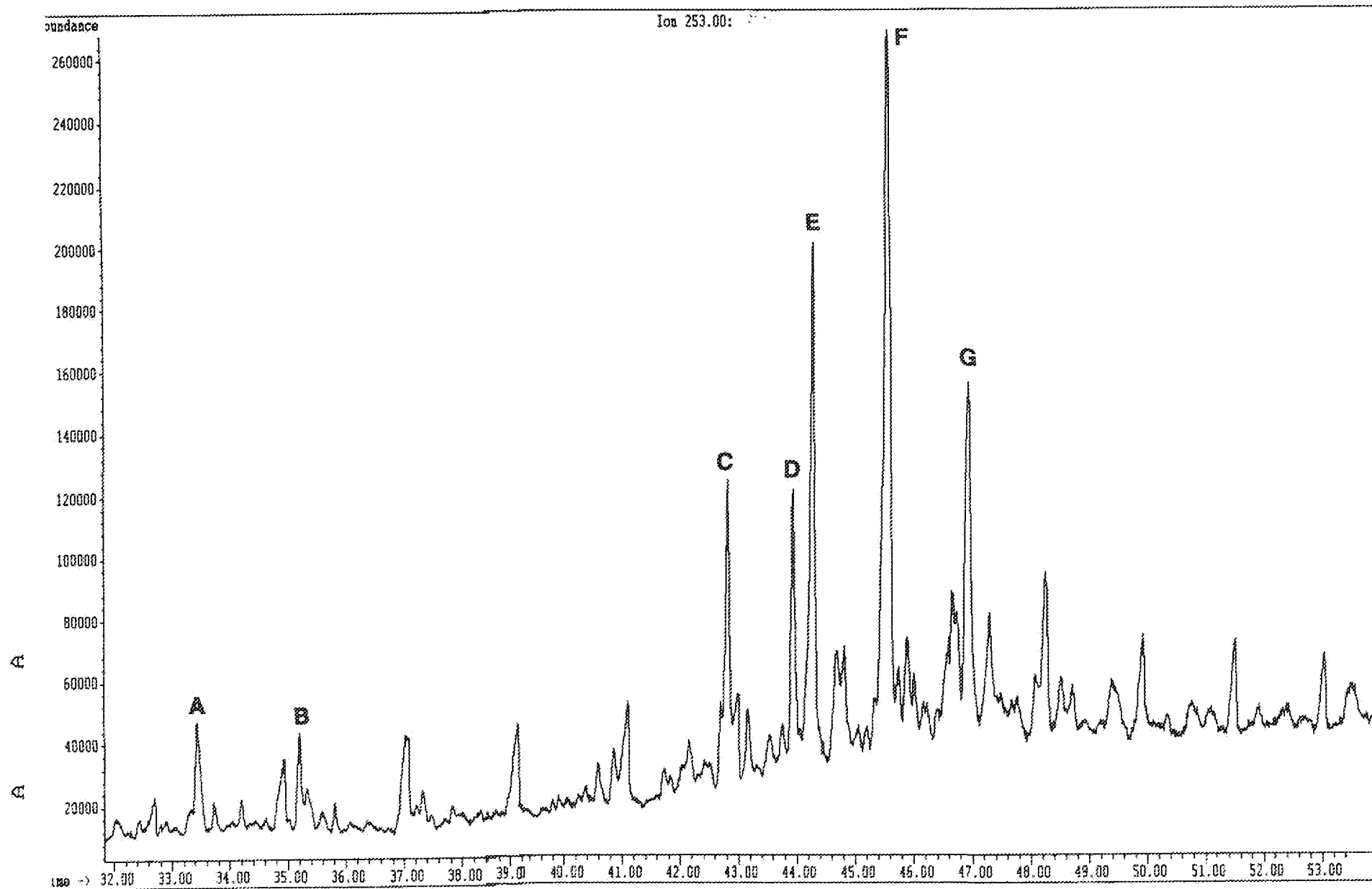
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Method File Name: BICOMY.M
Sample Name: 4129-003
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Bottle Number: 86

3j

Dibenzothiophenes

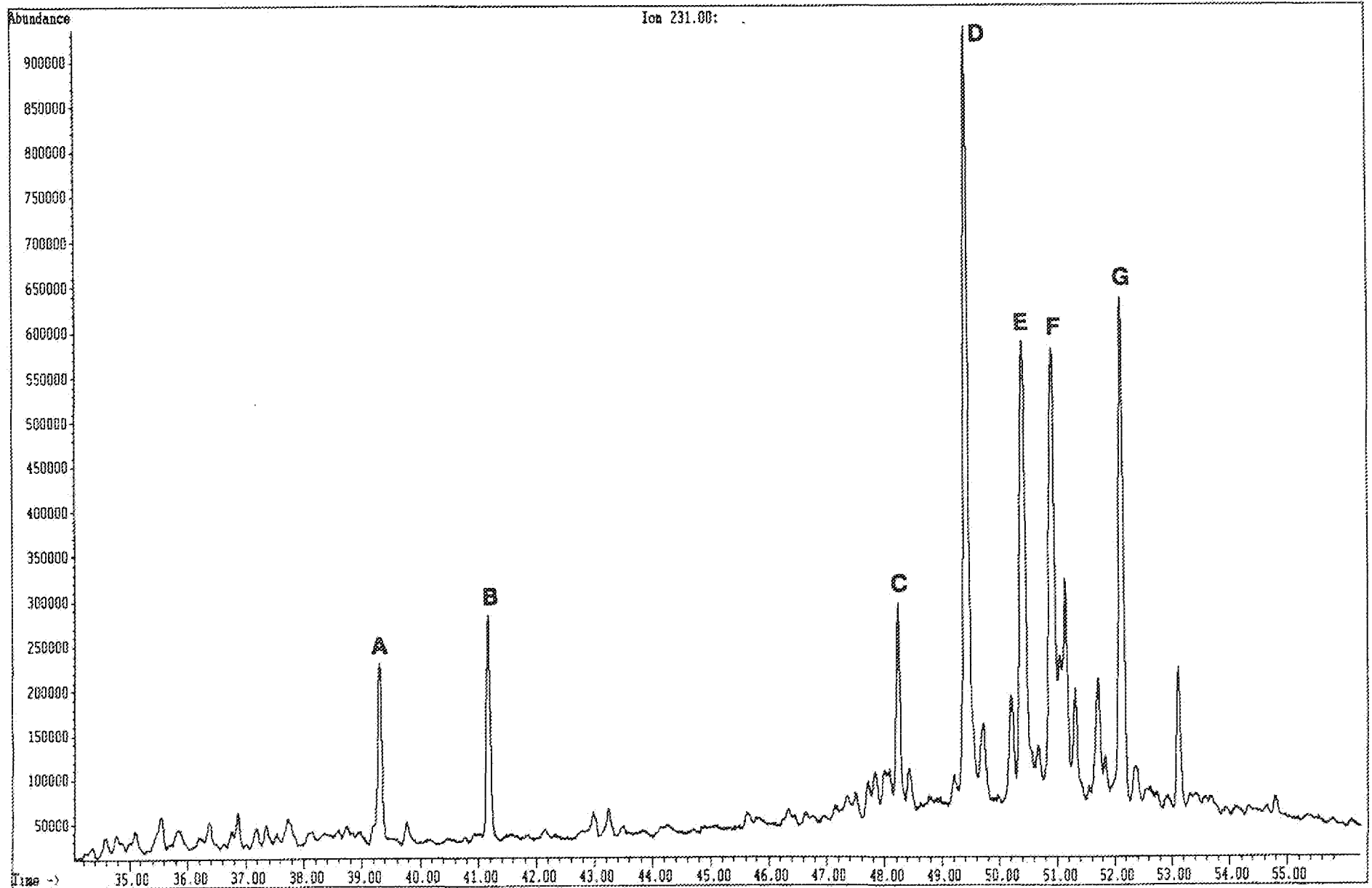


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Method File Name: B10MY.M
Sample Name: 4129-003
Misc Info: WELL 33/12-2 2707.ZH
Bottle Number: 86



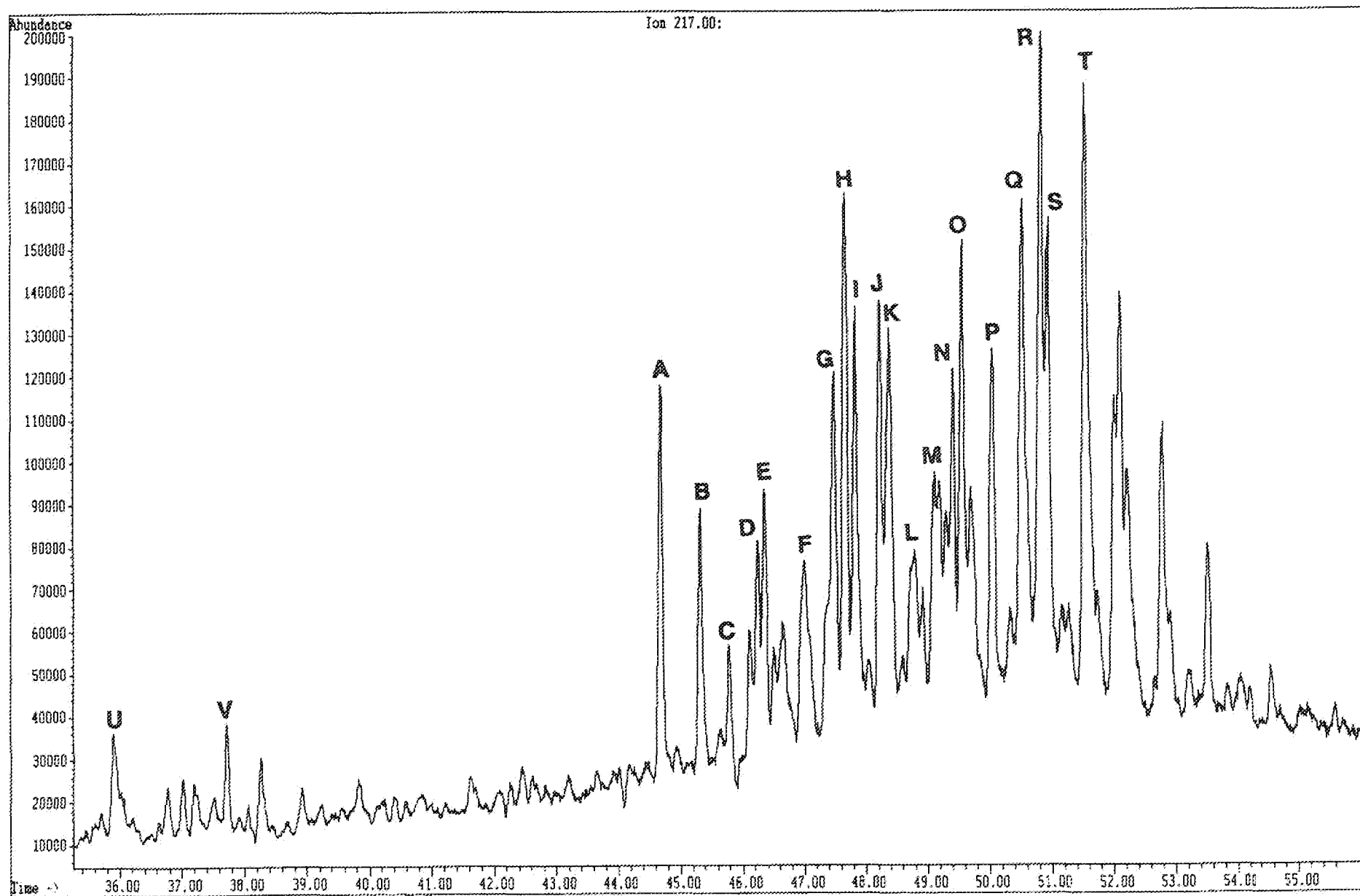
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Method File Name: BIOMY.M
Sample Name: 4129-003
Misc Info: WELI 33/12-2 2707.ZM
Bottle Number: 86

G331



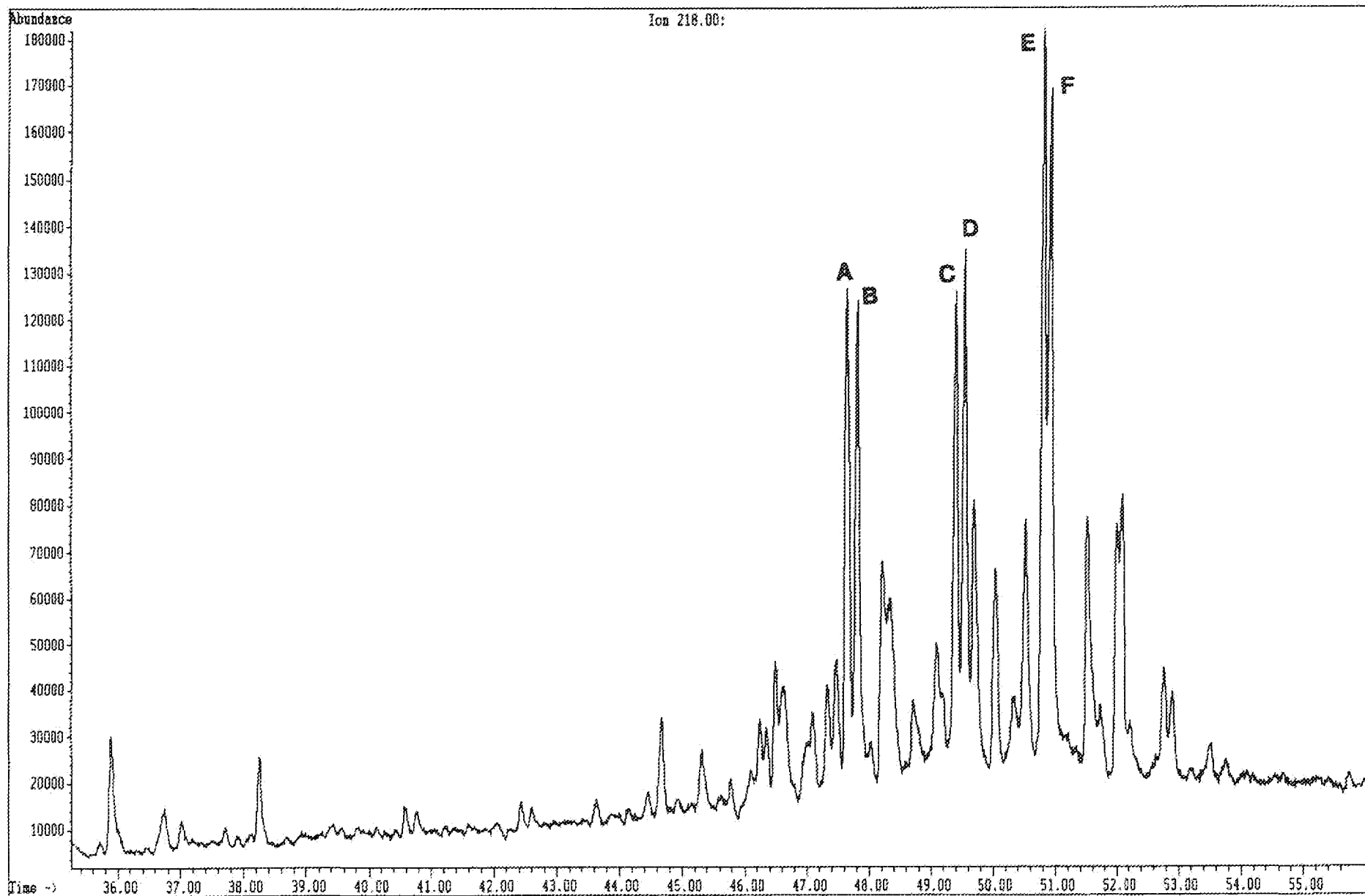
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Operator:
Date Acquired: 13 Dec 90 9:36 pm
Method File Name: BIOM.M
Sample Name: 4129-004
Misc Info:
Bottle Number: 4

G34a



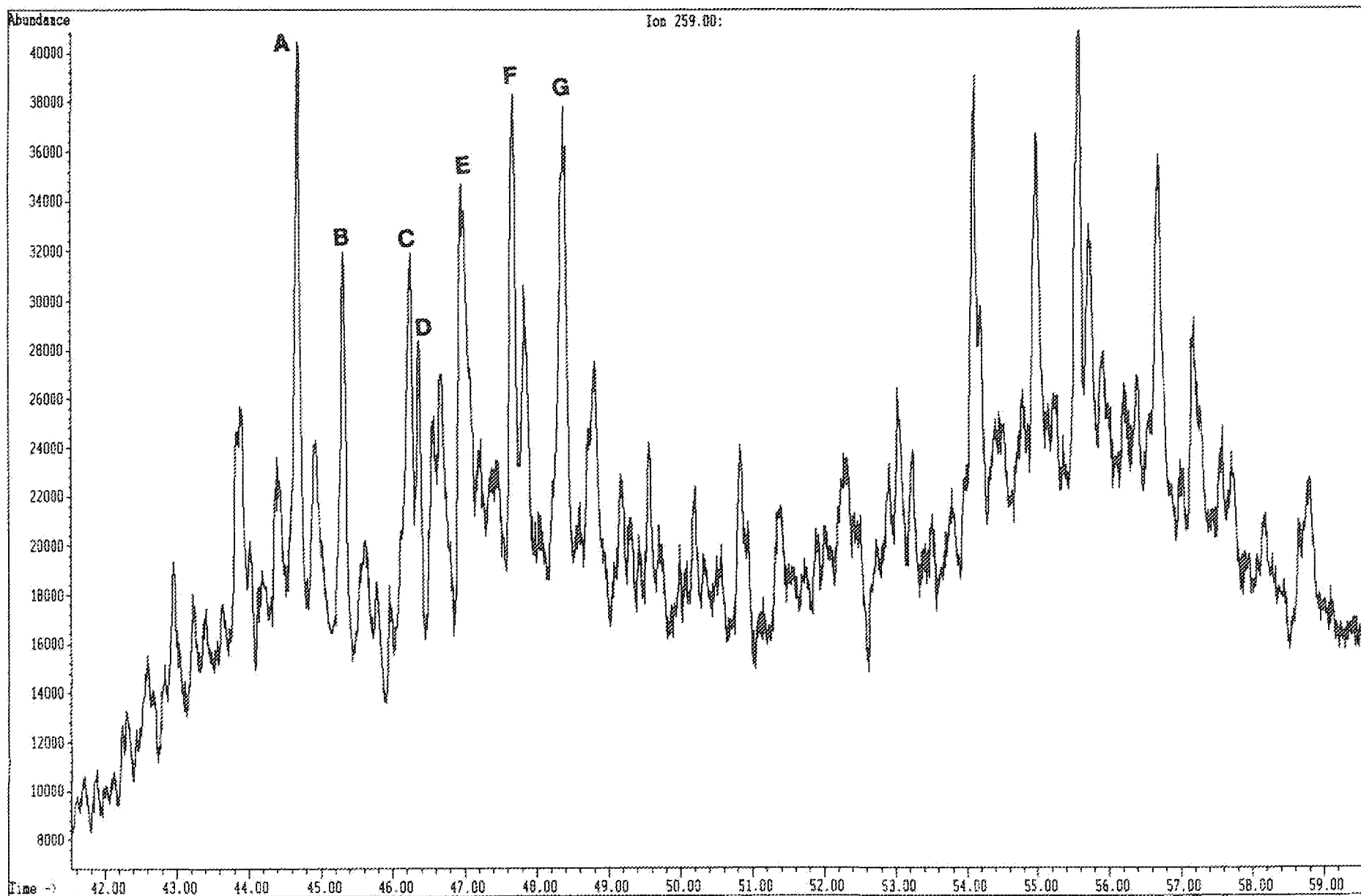
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Method File Name: BIOM.M
Sample Name: 4129-004
Misc Info:
Bottle Number: 4

G3.40



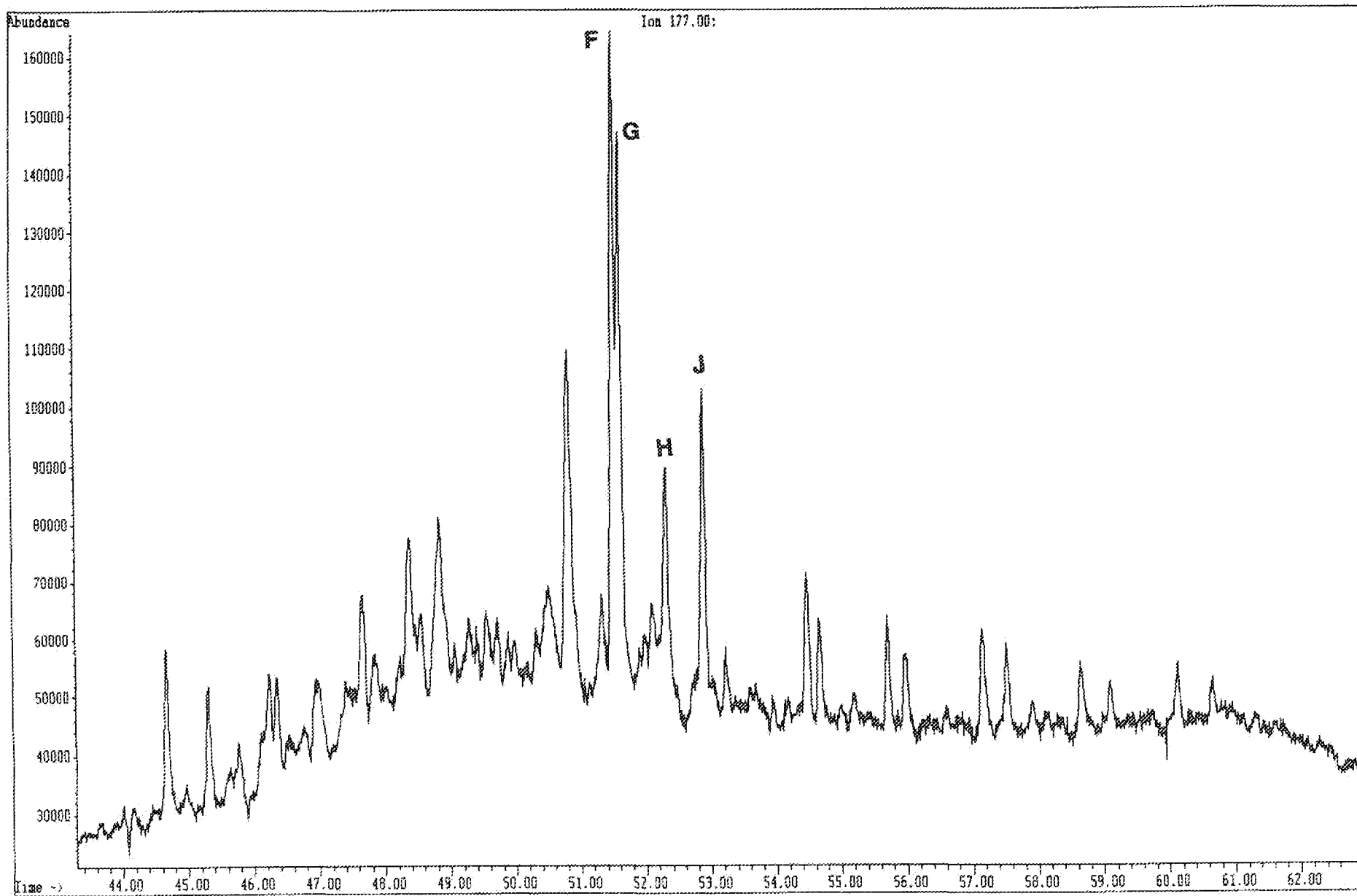
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Operator:
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Method File Name: B10M.M
Sample Name: 4129-004
Misc Info:
Bottle Number: 4

6040



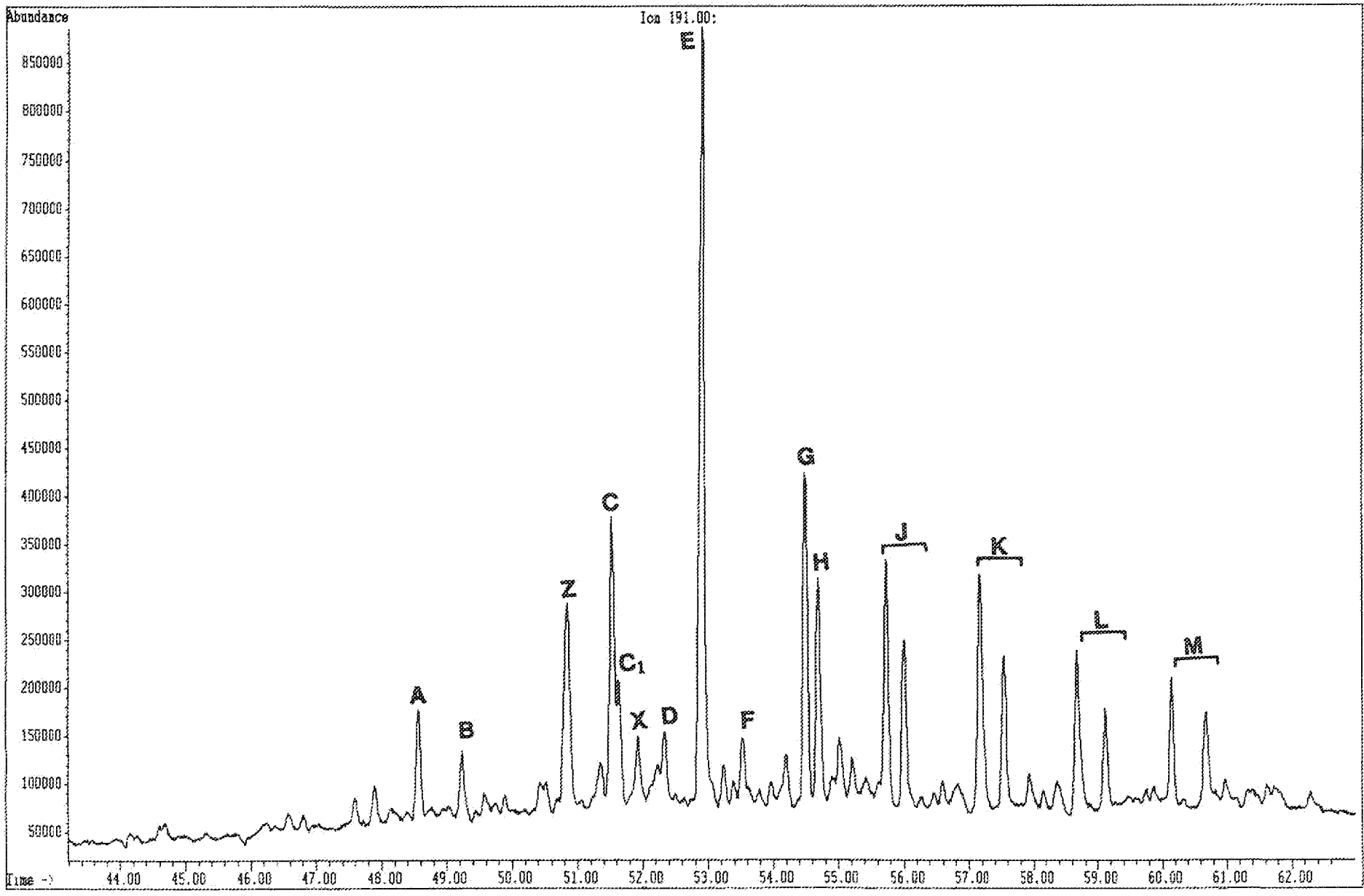
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Method File Name: BIOM.M
Sample Name: 4129-004
Misc Info:
Bottle Number: 4

G.L.D



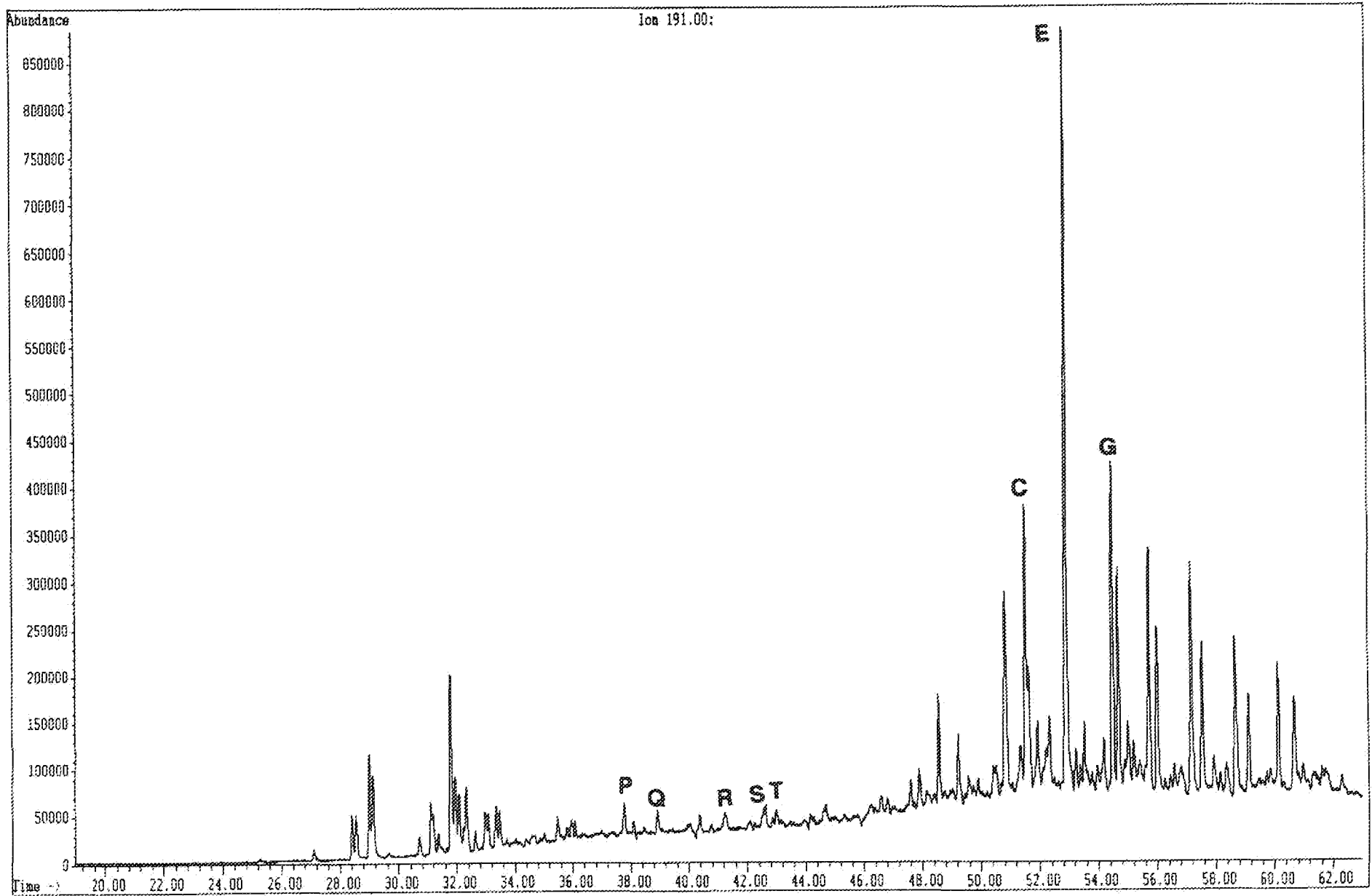
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Operator:
Date Acquired: 13 Dec 90 9:36 pm
Method File Name: B10M.M
Sample Name: 4129-004
Misc info:
Bottle Number: 4

Gas. re

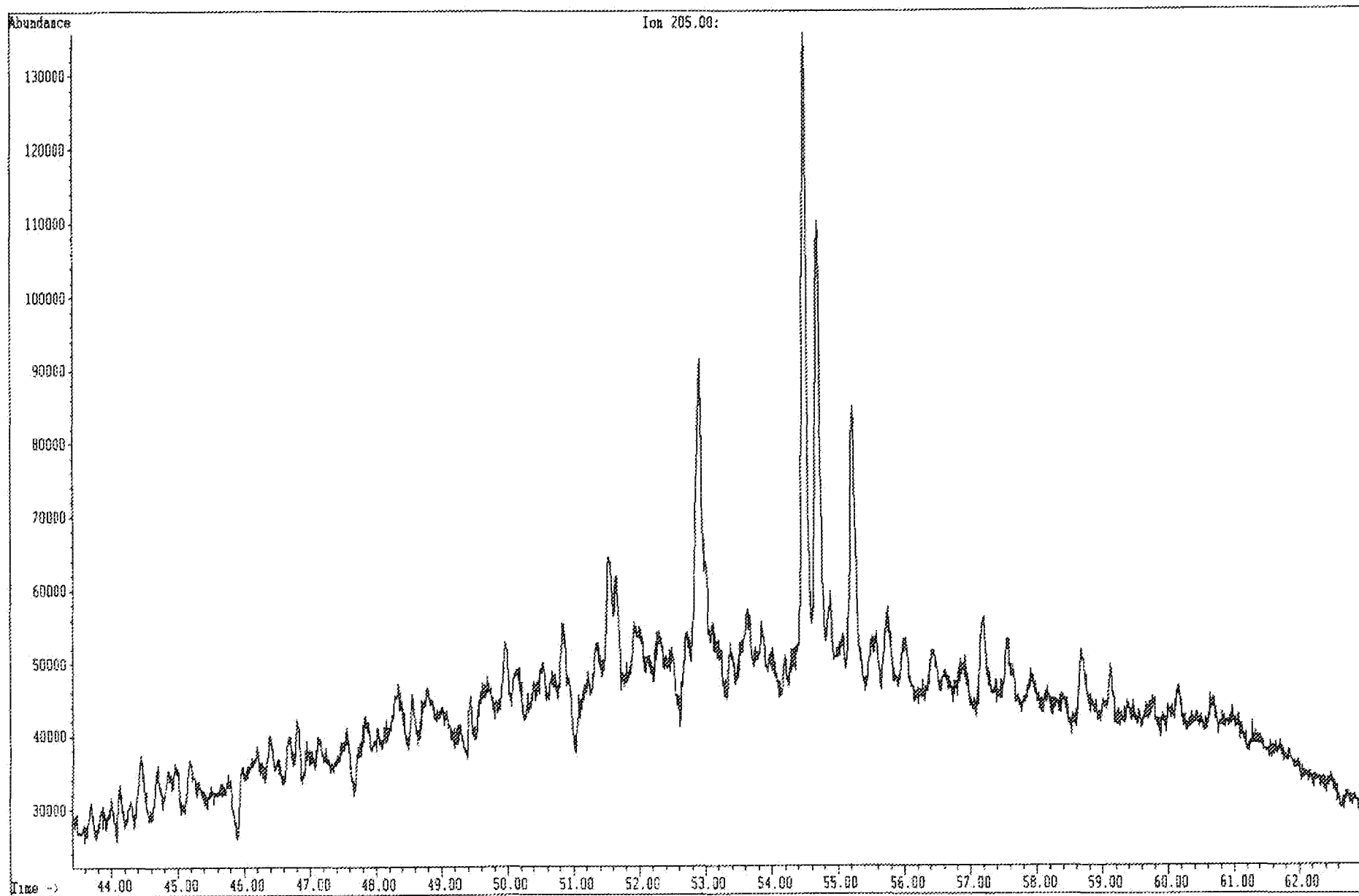


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Method File Name: BIOM.M
Sample Name: 4129-084
Misc Info:
Bottle Number: 4

G5.4f

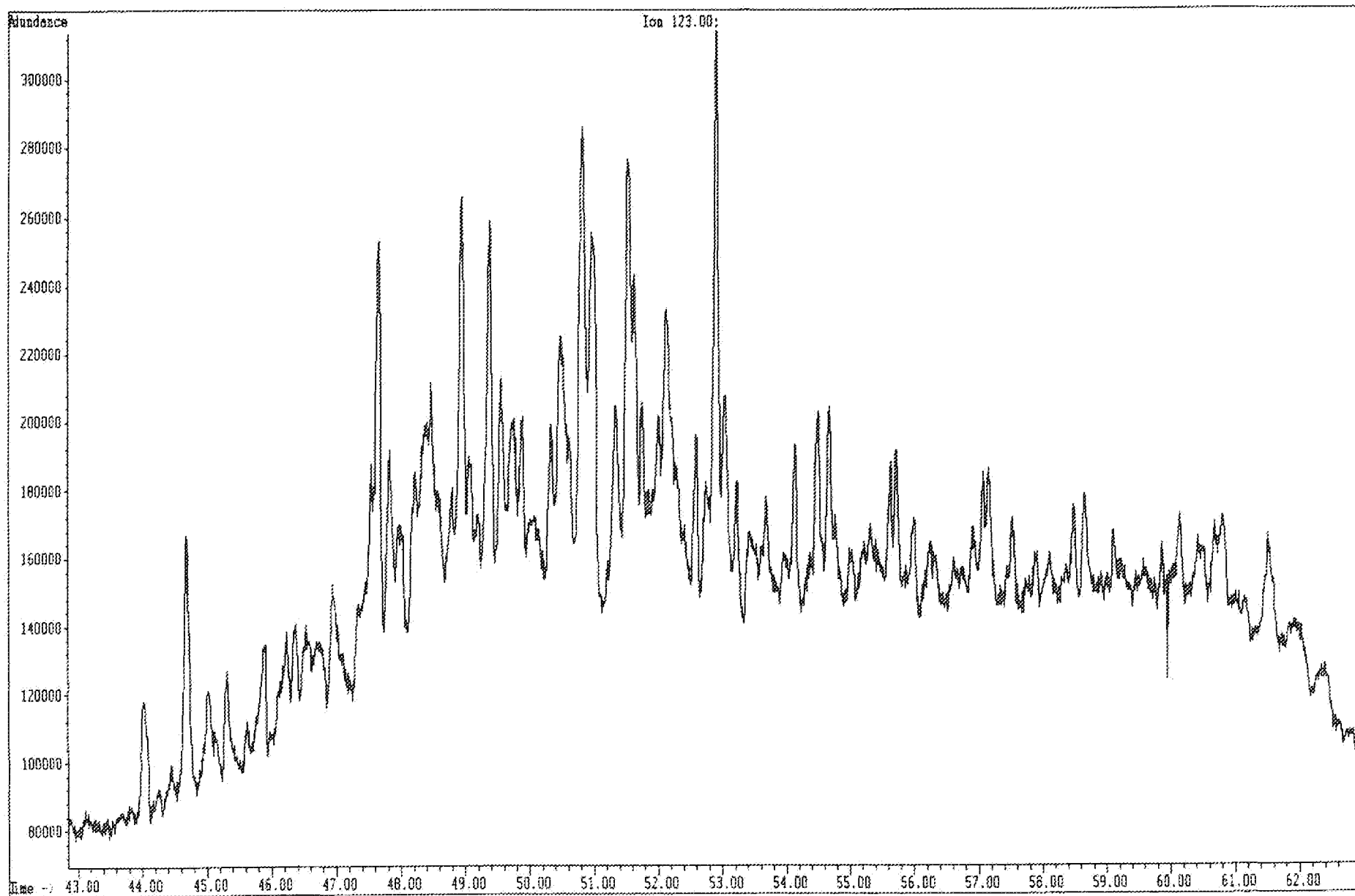


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Operator:
Date Acquired: 13 Dec 90 9:36 pm
Method File Name: B10M.M
Sample Name: 4129-004
Misc Info:
Bottle Number: 4



File: C:\CHEMPC\DATA\0401004.D
Operator:
Date Acquired: 13 Dec 90 9:36 pm
Method File Name: BIOM.M
Sample Name: 4129-004
Misc Info:
Bottle Number: 4

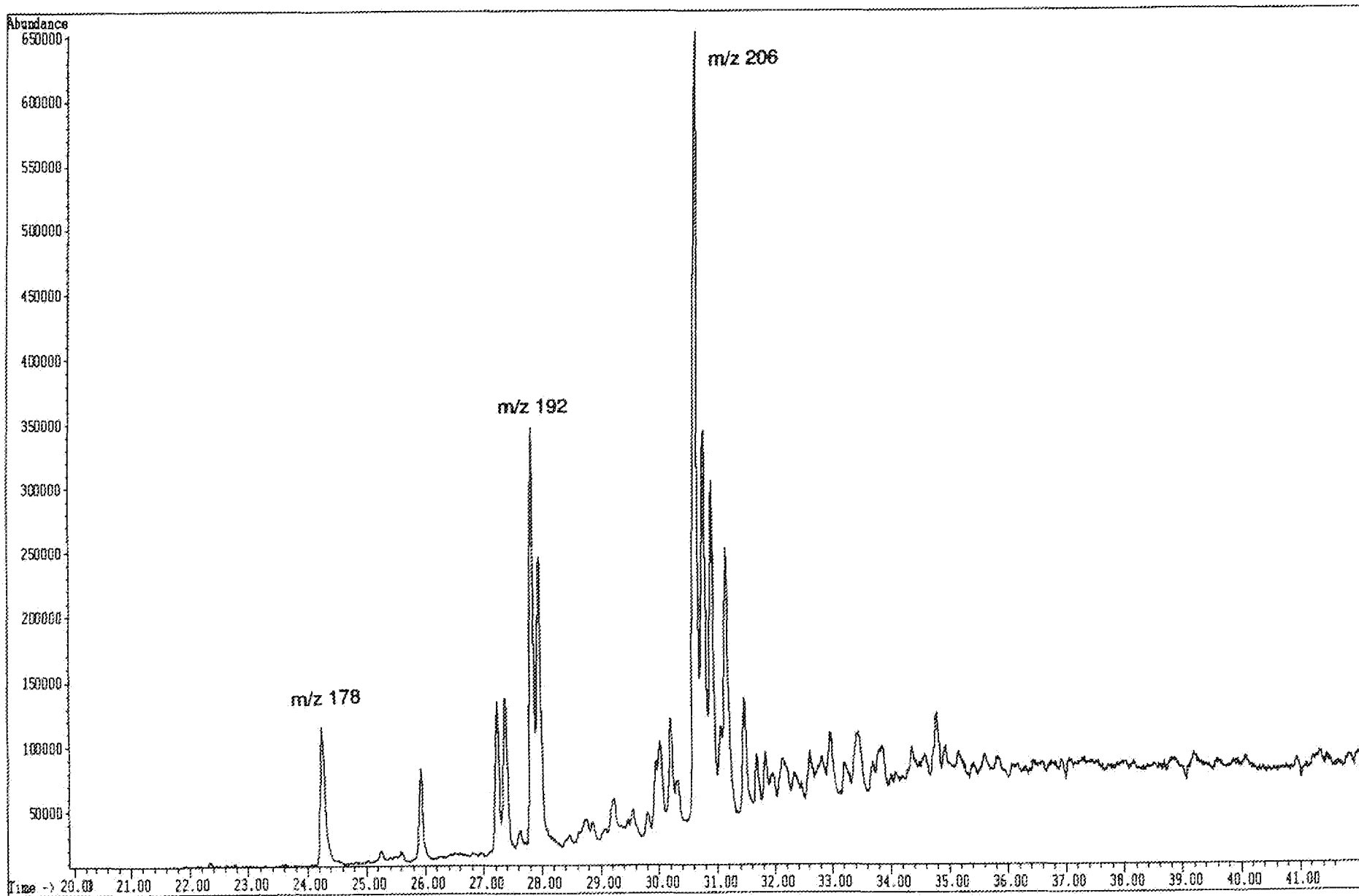
Guth



File: D:\CHEMPC\DATA\8701009.D
Operator:
Date Acquired: 11 Dec 90 11:24 am
Method File Name: BICMY.M
Sample Name: 4129-004
Misc Info: WELL 33/12-2 2707.04
Bottle Number: 07

3.4i

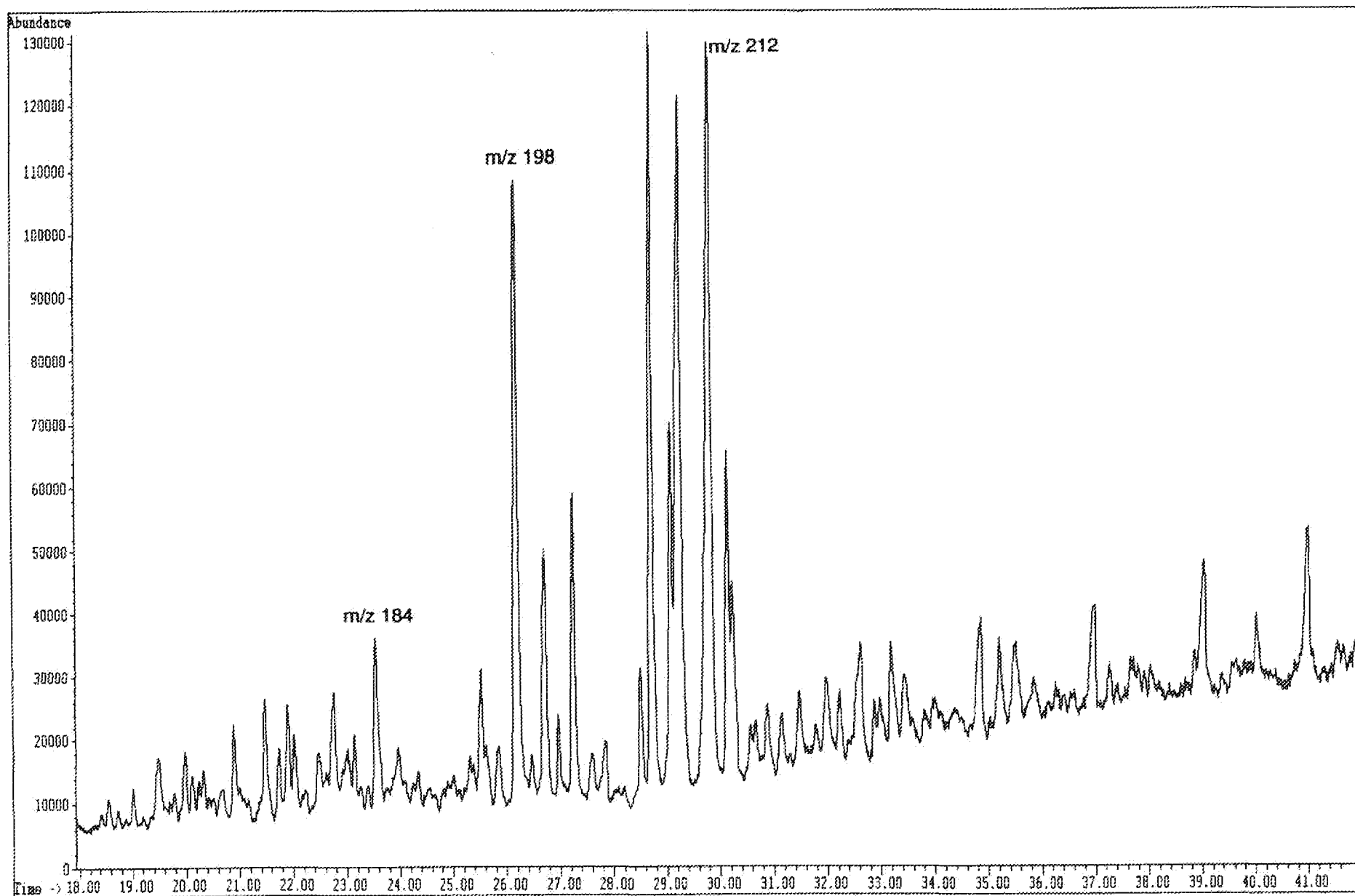
Phenanthrenes



File: D:\CHEMPC\DATA\8701009.D
Operator:
Date Acquired: 11 Dec 90 11:24 am
Method File Name: BICOMY.M
Sample Name: 4129-004
Misc Info: WELL 33/12-2 2707.0M
Bottle Number: 87

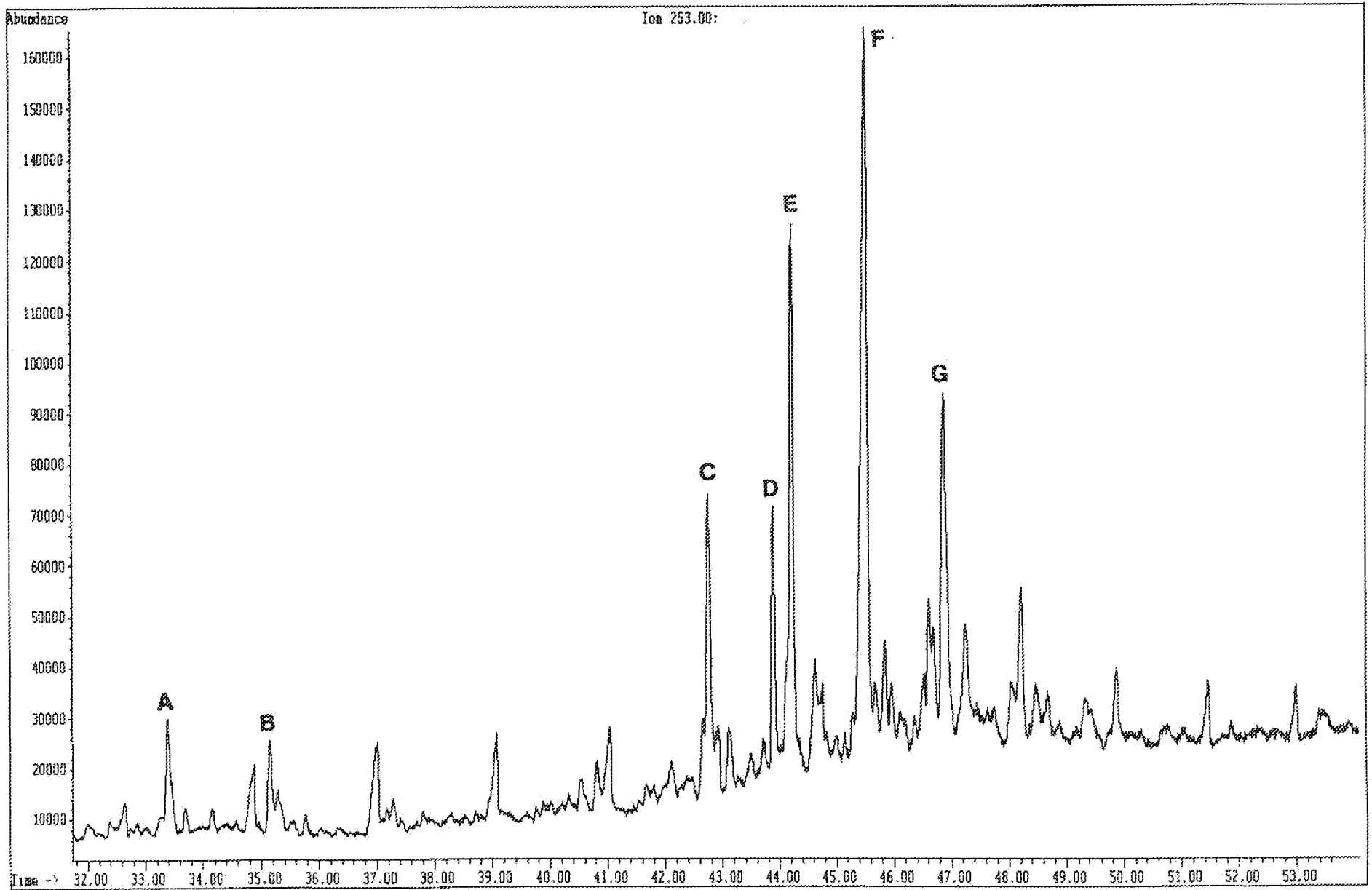
G3.4j

Dibenzothiophenes



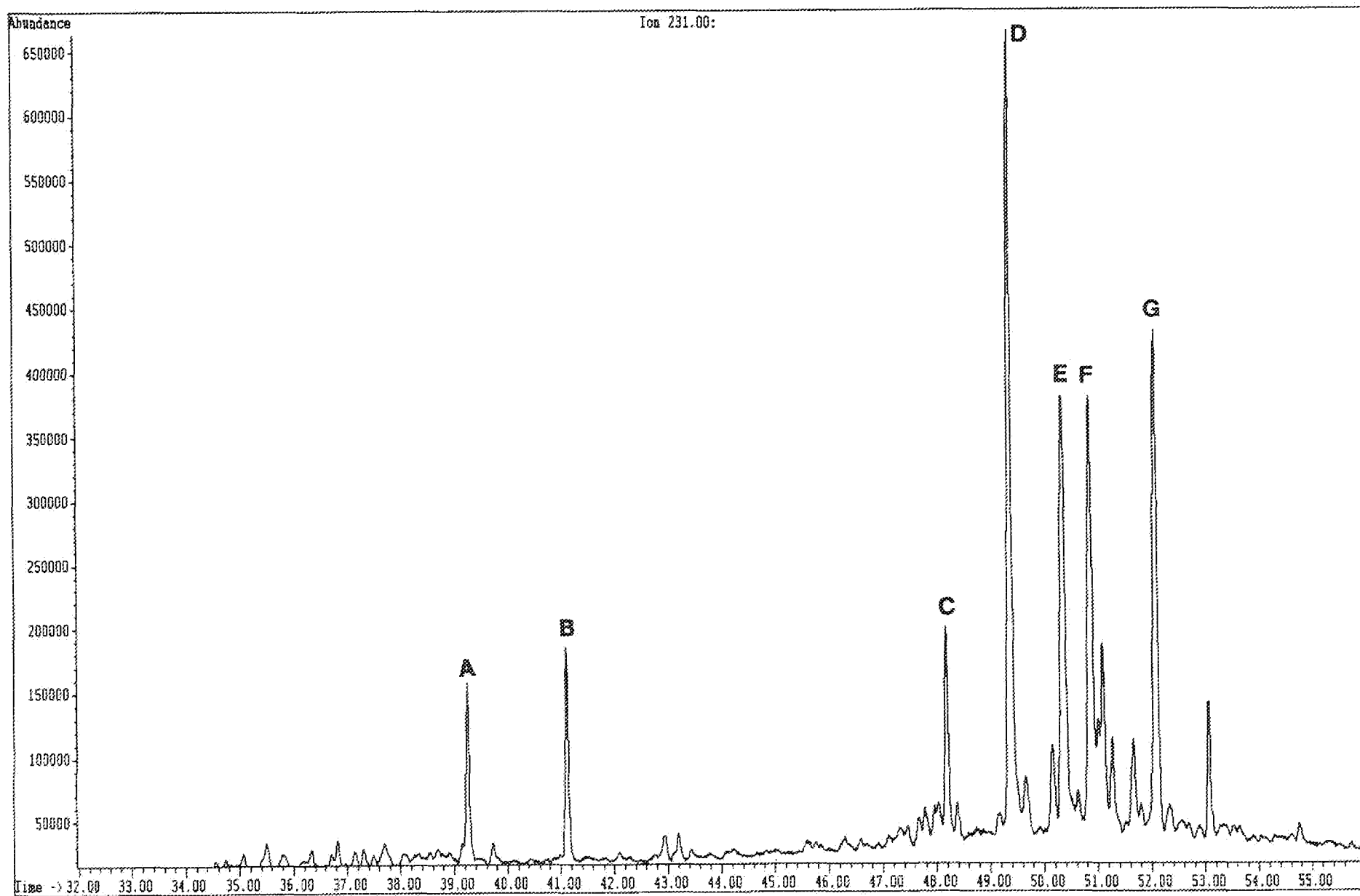
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Method File Name: BICMY.M
Sample Name: 4129-004
Misc Info: WELL 33/12-2 2707.6M
Bottle Number: 87

G3.4k



File: D:\CHEMPC\DATA\8701009.D
Operator:
Date Acquired: 11 Dec 90 11:24 am
Method File Name: BIONY.M
Sample Name: 4129-004
Misc Info: WELL 33/12-2 2707.8M
Bottle Number: 67

G3.4I



33/9-14

TABLE H1
ORGANIC CARBON RESULTS AND GROSS LITHOLOGIC DESCRIPTIONS

| JOB 4130 | | | | |
|-----------------------------|--------------------|------------------------------|-------------------------|---------------------------------------|
| GEOCHEM SAMPLE NUMBER | DEPTH/ IDENTITY | GROSS LITHOLOGIC DESCRIPTION | G S A COLOUR CODE | TOTAL ORGANIC CARBON (wt. %) |

WELL: 33/9-14

| | | | | |
|----------|---------|---|---------------------|--|
| 4130-001 | 2680.5m | A100% SANDSTONE - med grained, blocky, mod soft, oily, pale yellow F, v sl blooming milky cut, dark yellowish brown. | 10YR4/2 | |
| 4130-002 | 2692.5m | A100% SANDSTONE - as 4130-001A, dark yellowish brown. | 10YR4/2 | |
| 4130-003 | 2797.2m | A100% SANDSTONE - med grained, blocky, firm, dull yellow F, rapid blooming milky cut, pale yellowish brown to very pale orange. | 10YR6/2- 10YR8/2 | |
| 4130-004 | 2803.5m | A100% SANDSTONE - med grained, blocky, firm, no F, no C, very pale orange to white. | 10YR8/2- N9 | |

Abbreviations = arenaceous, argillaceous, calcareous, Cut, dolomite, Fluorescence, foraminifera fossiliferous, Lost Circulation Material, moderately, occasionally, slightly, very

TABLE H2
 CONCENTRATION (PPM) OF EXTRACTED C₁₅₊ MATERIAL IN ROCK

| JOB 4130 GEOCHEM SAMPLE NUMBER | L I T H O | DEPTH/ IDENTITY | TOTAL EXTRACT | HYDROCARBONS | | | NON HYDROCARBONS | | | |
|---|-----------------------|--------------------|------------------|--------------|-----------|-------|--------------------------|-----------------|---------------------|-------|
| | | | | Saturates | Aromatics | TOTAL | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's | TOTAL |

WELL: 33/9-14

| | | | | | | | | | |
|----------|---------|-------|-------|------|-------|-----|------|----|------|
| 4130-001 | 2680.5m | 13797 | 11093 | 1315 | 12408 | 102 | 1260 | 28 | 1390 |
| 4130-002 | 2692.5m | 8916 | 7102 | 779 | 7881 | 159 | 858 | 18 | 1035 |
| 4130-003 | 2797.2m | 12573 | 10096 | 781 | 10877 | 553 | 1106 | 37 | 1696 |
| 4130-004 | 2803.5m | 315 | 182 | 18 | 199 | 57 | 57 | 2 | 115 |

TABLE H3
COMPOSITION (NORMALISED %) OF C₁₅₊ MATERIAL

| JOB 4130 | L I T H O | DEPTH/ IDENTITY | HYDROCARBONS | | NON HYDROCARBONS | | |
|----------|-----------------------|--------------------|--------------|-----------|--------------------------|-----------------|---------------------|
| | | | Saturates | Aromatics | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's |

WELL: 33/9-14

| | | | | | | |
|----------|---------|-------|------|-------|-------|------|
| 4130-001 | 2680.5m | 80.40 | 9.53 | 0.74 | 9.13 | 0.20 |
| 4130-002 | 2692.5m | 79.65 | 8.74 | 1.78 | 9.62 | 0.21 |
| 4130-003 | 2797.2m | 80.30 | 6.21 | 4.40 | 8.79 | 0.29 |
| 4130-004 | 2803.5m | 57.77 | 5.57 | 18.07 | 18.07 | 0.51 |

TABLE H4
SIGNIFICANT C₁₅₊ RATIOS

| JOB 4130 | L I T H O | DEPTH/ IDENTITY | TOC (%) | mg/g TOC | | | | | | HYDROCARBONS % TOTAL EXTRACT | SATURATES AROMATICS |
|----------|-----------------------|--------------------|------------|------------------|-----------|-----------|-----------------------|-----------------|-------------|------------------------------------|------------------------|
| | | | | TOTAL EXTRACT | SATURATES | AROMATICS | TOTAL HYDROCARBONS | ELUTED NSO's | ASPHALTENES | | |

WELL: 33/9-14

| | | | | | | | | | | |
|----------|---------|------|---------|---------|--------|---------|--------|--------|-------|-------|
| 4130-001 | 2680.5m | 0.24 | 5748.85 | 4622.05 | 547.78 | 5169.83 | 524.90 | 42.57 | 89.93 | 8.44 |
| 4130-002 | 2692.5m | 0.35 | 2547.40 | 2029.01 | 222.56 | 2251.58 | 245.13 | 45.42 | 88.39 | 9.12 |
| 4130-003 | 2797.2m | 0.15 | 8382.10 | 6730.96 | 520.55 | 7251.51 | 737.17 | 368.95 | 86.51 | 12.93 |
| 4130-004 | 2803.5m | 0.11 | 285.96 | 165.20 | 15.94 | 181.14 | 51.69 | 51.69 | 63.34 | 10.36 |

TABLE H5
C₁₅₊ CHROMATOGRAPHY WEIGHTS (gms)

| JOB 4130 | L I T H O | DEPTH/ IDENTITY | ROCK EXTRACTED | TOTAL EXTRACT | PRECIPTD. ASPHALTENES | NC5 | SATURATES | AROMATICS | ELUTED NSO's | NON-ELUTED NSO's |
|----------|-----------------------|--------------------|-------------------|------------------|--------------------------|-----|-----------|-----------|-----------------|---------------------|
|----------|-----------------------|--------------------|-------------------|------------------|--------------------------|-----|-----------|-----------|-----------------|---------------------|

WELL: 33/9-4

| | | | | | | | | | | |
|-----------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 4130-001A | | 2680.5m | 19.4800 | 0.26877 | 0.00199 | 0.26678 | 0.21609 | 0.02561 | 0.02454 | 0.00054 |
| 4130-002A | | 2692.5m | 19.5000 | 0.17386 | 0.00310 | 0.17076 | 0.13848 | 0.01519 | 0.01673 | 0.00036 |
| 4130-003A | | 2797.2m | 18.2500 | 0.22946 | 0.01010 | 0.21936 | 0.18426 | 0.01425 | 0.02018 | 0.00067 |
| 4130-004A | | 2803.5m | 18.8200 | 0.00592 | 0.00107 | 0.00485 | 0.00342 | 0.00033 | 0.00107 | 0.00003 |

TABLE H6
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

| GEOCHEM SAMPLE NUMBER | 001 | 002 | 003 | 004 |
|-----------------------|---------|---------|---------|---------|
| DEPTH | 2680.5m | 2692.5m | 2797.2m | 2803.5m |
| SAMPLE TYPE | | | | |
| nC15 | 8.07 | 7.73 | 1.21 | 9.58 |
| nC16 | 9.15 | 8.81 | 3.05 | 9.66 |
| nC17 | 7.84 | 8.20 | 4.79 | 9.42 |
| nC18 | 8.17 | 8.03 | 6.47 | 8.29 |
| nC19 | 8.48 | 7.62 | 7.04 | 6.83 |
| nC20 | 7.46 | 7.88 | 7.57 | 7.56 |
| nC21 | 7.10 | 7.52 | 7.37 | 7.39 |
| nC22 | 6.85 | 7.19 | 7.31 | 7.32 |
| nC23 | 5.98 | 6.26 | 6.69 | 6.24 |
| nC24 | 6.05 | 6.03 | 7.26 | 5.92 |
| nC25 | 4.77 | 5.22 | 6.90 | 5.07 |
| nC26 | 5.05 | 5.02 | 6.61 | 4.59 |
| nC27 | 3.81 | 3.72 | 5.62 | 3.30 |
| nC28 | 3.19 | 3.17 | 5.06 | 2.74 |
| nC29 | 2.72 | 2.65 | 5.09 | 2.14 |
| nC30 | 1.95 | 1.85 | 3.87 | 1.41 |
| nC31 | 1.34 | 1.21 | 3.01 | 0.97 |
| nC32 | 0.72 | 0.67 | 2.00 | 0.59 |
| nC33 | 0.54 | 0.50 | 1.44 | 0.44 |
| nC34 | 0.43 | 0.38 | 1.03 | 0.32 |
| nC35 | 0.33 | 0.34 | 0.59 | 0.23 |
| Paraffin | 17.57 | 16.67 | 16.18 | 15.40 |
| Isoprenoid | 3.07 | 3.14 | 2.17 | 3.83 |
| Naphthene | 79.36 | 80.19 | 81.65 | 80.77 |
| CPI 1 Index | 0.94 | 0.97 | 0.97 | 0.97 |
| CPI 2 Index | 0.97 | 1.00 | 1.04 | 1.01 |
| CPI 3 Index | 0.92 | 0.91 | 0.96 | 0.90 |
| Prist/Phytane | 1.26 | 1.30 | 1.18 | 1.44 |
| Prist/nC17 | 0.85 | 0.69 | 1.10 | 0.96 |
| Phytane/nC18 | 0.65 | 0.54 | 0.69 | 0.76 |

Job Number : 4130

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{26} + C_{28}}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE H7
METHYLPHENANTHRENE INDICES (MPI)

| OB 4130 | DEPTH/ IDENTITY | SAMPLE TYPE | MPI 1 | | Rcalc | | MPI 2 | |
|-----------------------------|--------------------|----------------|-------|--------|-------|--------|-------|--------|
| GEOCHEM SAMPLE NUMBER | | | AREA | HEIGHT | AREA | HEIGHT | AREA | HEIGHT |

WELL: 33/9-14

| | | | | | | | | |
|----------|---------|--|------|------|--|--|------|------|
| 4130-001 | 2680.5m | | 0.64 | 0.67 | | | 0.67 | 0.70 |
| 4130-002 | 2692.5m | | 0.61 | 0.65 | | | 0.65 | 0.66 |
| 4130-003 | 2797.2m | | 0.52 | 0.56 | | | 0.58 | 0.62 |
| 4130-004 | 2803.5m | | 0.32 | 0.47 | | | 0.34 | 0.48 |

$$MPI\ 1 = \frac{1.5(2-MP + 3-MP)}{P + 1-MP + 9-MP}$$

$$MPI\ 2 = \frac{3(2-MP)}{P + 1-MP + 9-MP}$$

$$Rcalc = 0.60(MPI\ 1) + 0.40 \quad (\text{if } R_o < 1.35\%)$$

$$= -0.60(MPI\ 1) + 2.30 \quad (\text{if } R_o > 1.35\%)$$

CF - ditch cuttings CO - core SWC - sidewall core

TABLE H8

AROMATIC HYDROCARBONS RATIOS (MSD, PEAK AREA DATA)

| SAMPLE NUMBER | DEPTH (m) | 2MP/1MP | RATIO 1 | RATIO 2 | RATIO 3 |
|---------------|-----------|---------|---------|---------|---------|
| WELL: 33/9-14 | | | | | |
| 4130-001A | 2680.5 | 0.80 | 0.34 | 0.54 | 0.16 |
| 4130-002A | 2692.5 | 0.71 | 0.41 | 0.56 | 0.20 |
| 4130-003A | 2797.2 | 0.80 | 0.09 | 0.51 | 0.12 |
| 4130-004A | 2803.5 | 0.43 | 0.25 | 0.52 | 0.45 |

RATIO 1 = $A(231)/A(231) + G(231)$

RATIO 2 = $E(253)/E(253) + G(253)$

RATIO 3 = $A(253)/B(231) + E(253)$

TABLE H9
 CARBON ISOTOPE COMPOSITIONS (‰,PDB)

| JOB 4130 | | | | | | | | |
|-----------------------------|--------------------|----------------------------|-----------|-----------|-----|-------------|---------|--------------------|
| GEOCHEM SAMPLE NUMBER | DEPTH/ IDENTITY | TOTAL EXTRACT WHOLE OIL | SATURATES | AROMATICS | NSO | ASPHALTENES | KEROGEN | PYROLYSATE (S2) |

WELL: 33/9-14

| | | | | | | | | |
|----------|---------|--------|--------|--------|--------|--------|--|--|
| 4130-001 | 2680.5m | -28.38 | -28.68 | -28.64 | -29.61 | -29.51 | | |
| 4130-002 | 2692.5m | -28.92 | -28.96 | -28.09 | -29.16 | -28.91 | | |
| 4130-003 | 2797.2m | -29.24 | -29.08 | -28.07 | -29.25 | -29.16 | | |
| 4130-004 | 2803.5m | -30.17 | -30.67 | -30.31 | -30.20 | -30.07 | | |

TABLE H10
BIOMARKER MOLECULAR RATIOS

WELL: 33/9-14

| SAMPLE NUMBER | DEPTH (m) | Steranes (m/z 217) | | | Steranes (m/z 218) | | |
|------------------|--------------|--------------------|------------|--------------------|-------------------------|-----|-----|
| | | A (A+J) | Q (Q+T) | (R+S) (Q+R+S+T) | NORMALISED COMPOSITION: | | |
| | | | | | B | D | F |
| 4130-001A | 2680.5 | 0.71 | 0.42 | 0.46 | 33% | 32% | 35% |
| 4130-002A | 2692.5 | 0.70 | 0.57 | 0.54 | 32% | 31% | 37% |
| 4130-003A | 2797.2 | 0.56 | 0.55 | 0.55 | 24% | 25% | 51% |
| 4130-004A | 2803.5 | - | - | - | 28% | 26% | 46% |

TABLE H11
BIOMARKER MOLECULAR RATIOS

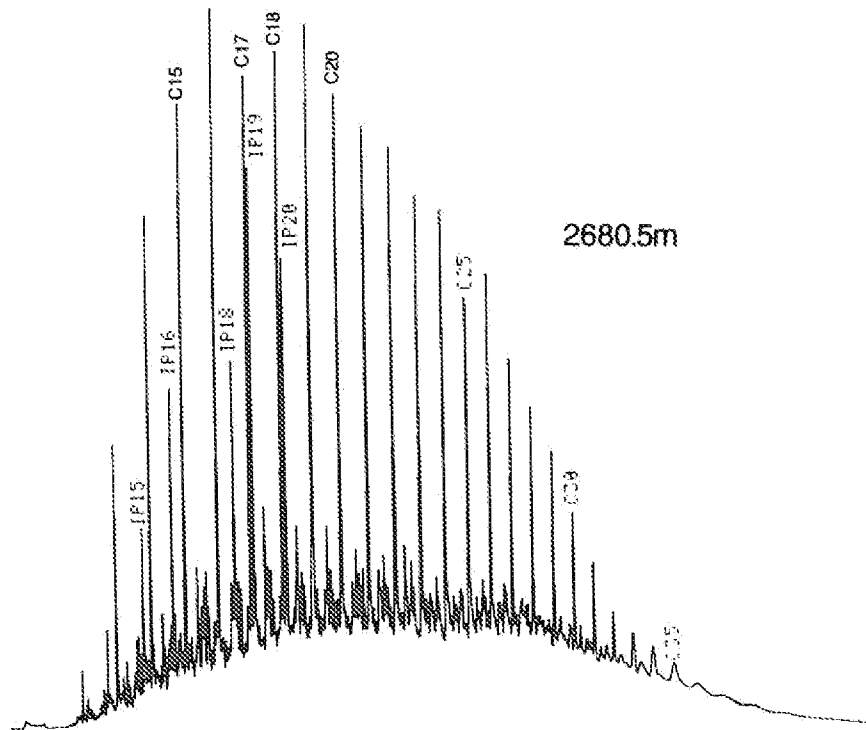
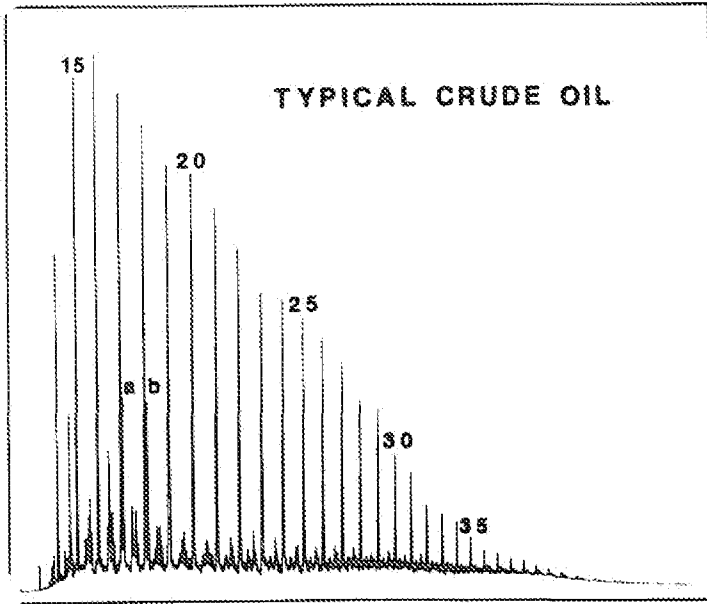
WELL 33/9-14

Terpanes (m/z 191)

| SAMPLE NUMBER | DEPTH (m) | A/B | Z/E | Z/C | <u>Z</u> (Z+E) | <u>C</u> (C+E) | %22S for J | <u>E</u> (E+F) | <u>X</u> (X+D) | Q/E |
|--------------------------|----------------------|------------|------------|------------|---------------------------|---------------------------|-----------------------|---------------------------|---------------------------|------------|
| 4130-001A | 2680.5 | 1.92 | 0.23 | 0.41 | 0.18 | 0.36 | 58% | 0.85 | 0.60 | 0.06 |
| 4130-002A | 2692.5 | 1.31 | 0.24 | 0.63 | 0.19 | 0.27 | 57% | 0.86 | 0.67 | 0.05 |
| 4130-003A | 2797.2 | 0.86 | 0.25 | 0.45 | 0.20 | 0.36 | 60% | 0.85 | 0.64 | 0.03 |
| 4130-004A | 2803.5 | 1.28 | 0.29 | 0.38 | 0.23 | 0.43 | 43% | 0.60 | 0.63 | - |

FIGURE H1.1 C₁₅+ SATURATES CHROMATOGRAMS

WELL 33/9-14

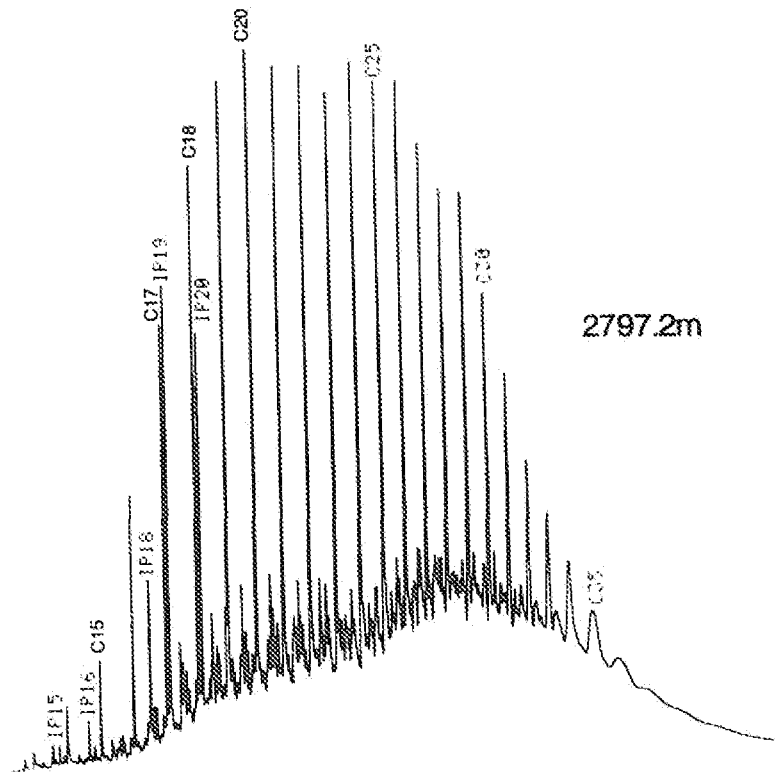
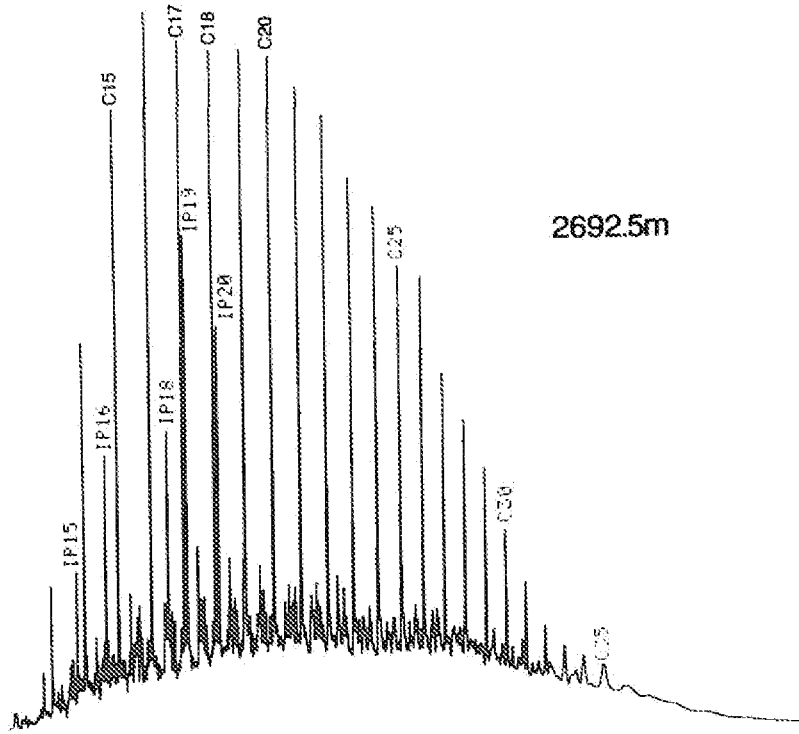


a = PRISTANE
b = PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20-nC₂₀)

C₁₅+ SATURATES CHROMATOGRAMS

WELL 33/9-14

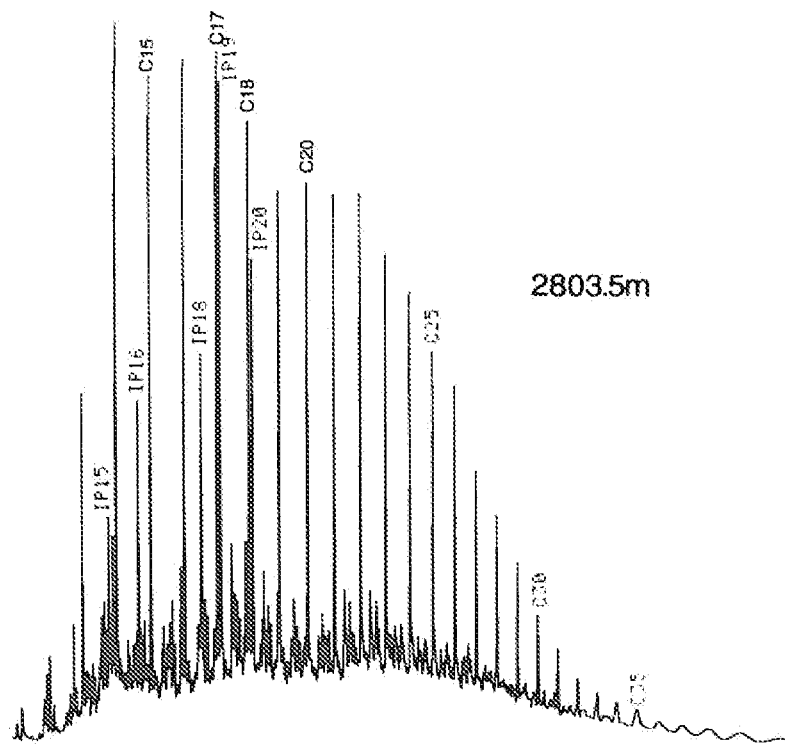


a * PRISTANE
b * PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20 - nC₂₀)

FIGURE H1.3 **C₁₅₊ SATURATES CHROMATOGRAMS**

WELL 33/9-14



a - PRISTANE
b - PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20 - nC₂₀)

C₁₅+ AROMATIC CHROMATOGRAMS

WELL 33/9-14

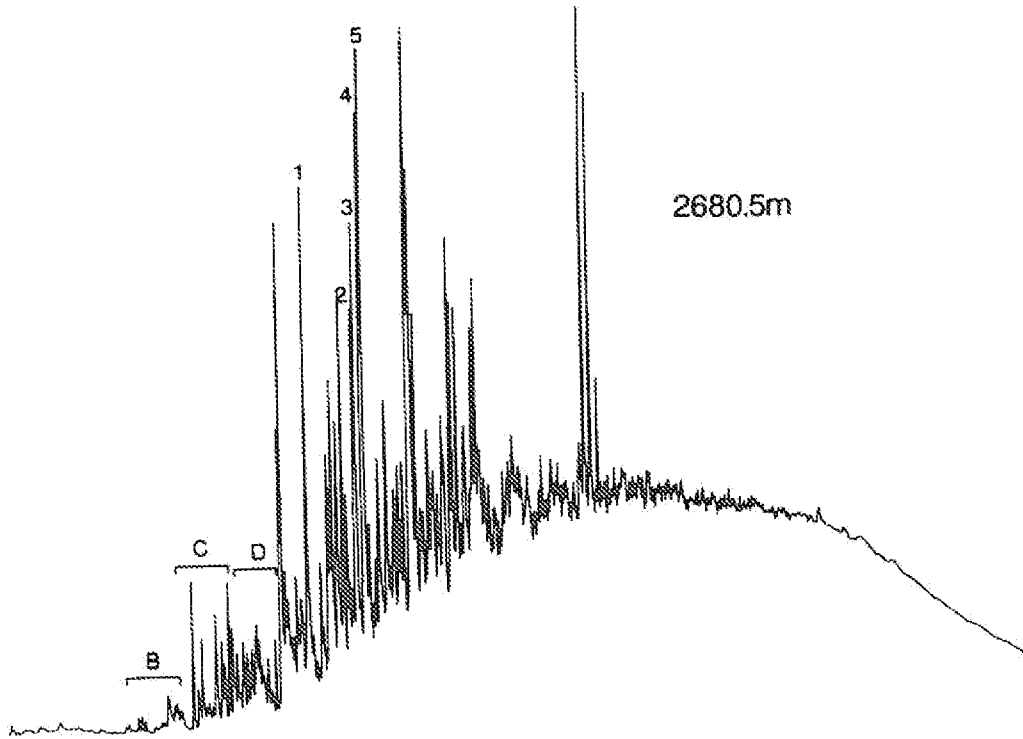
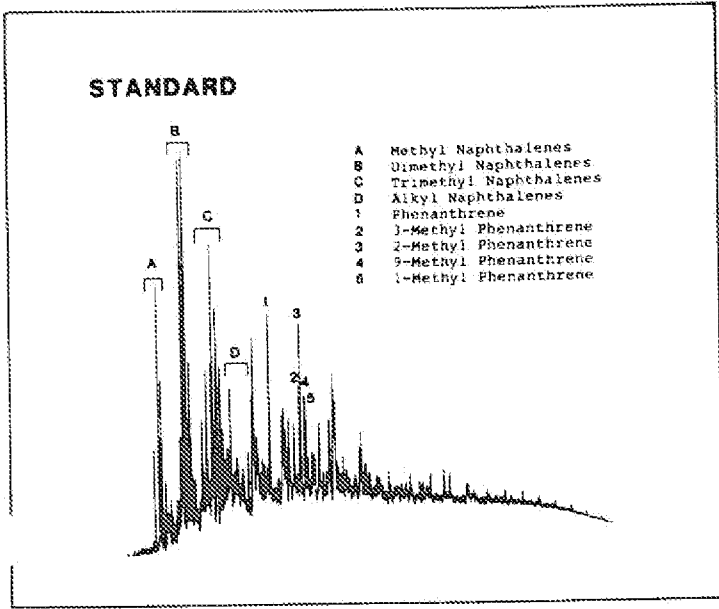
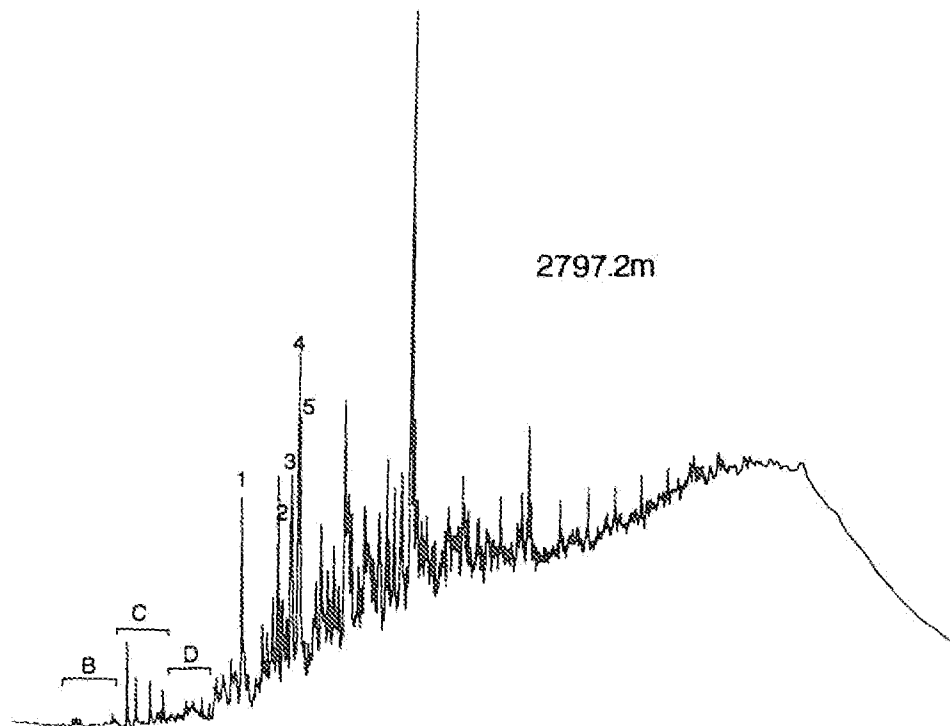
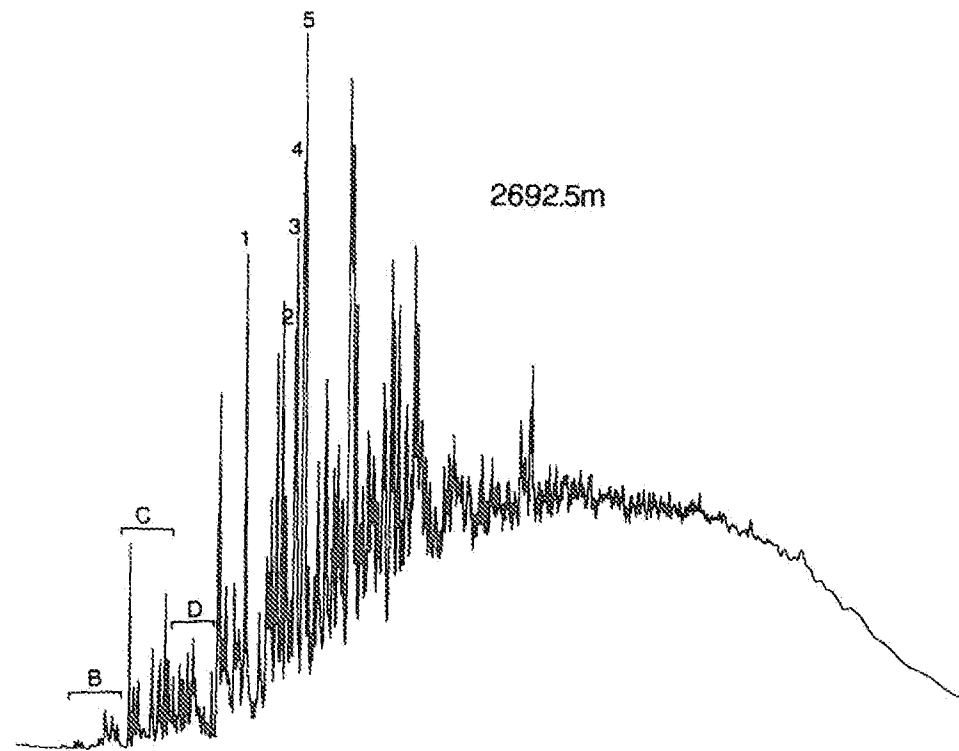


FIGURE H22

C₁₅+ AROMATIC CHROMATOGRAMS

WELL 33/9-14

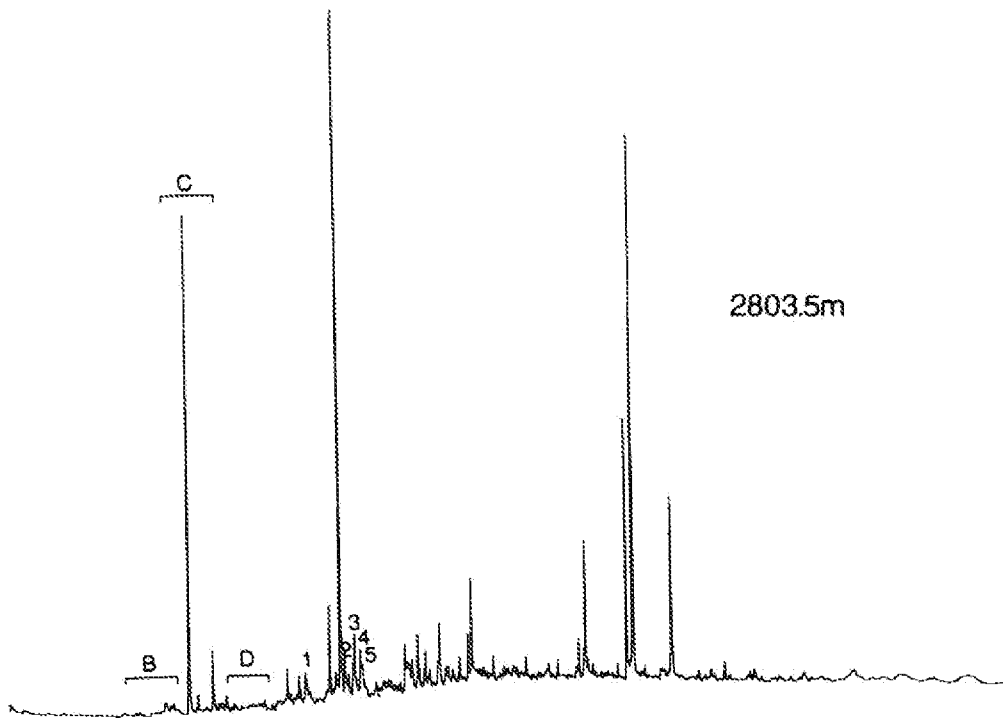


PEAK IDENTIFICATION ON FIRST SHEET

FIGURE H23

C₁₅+ AROMATIC CHROMATOGRAMS

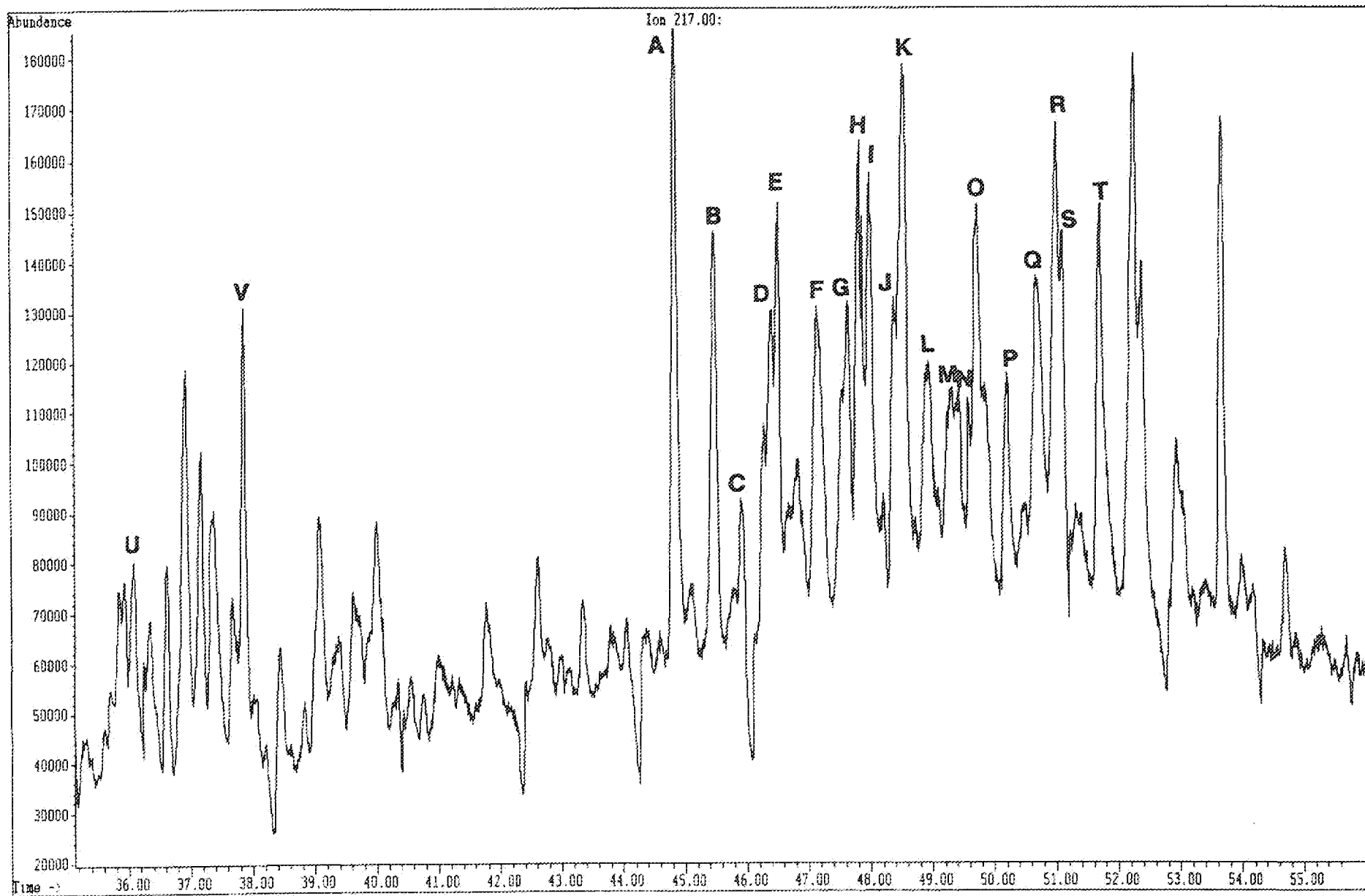
WELL 33/9-14



PEAK IDENTIFICATION ON FIRST SHEET

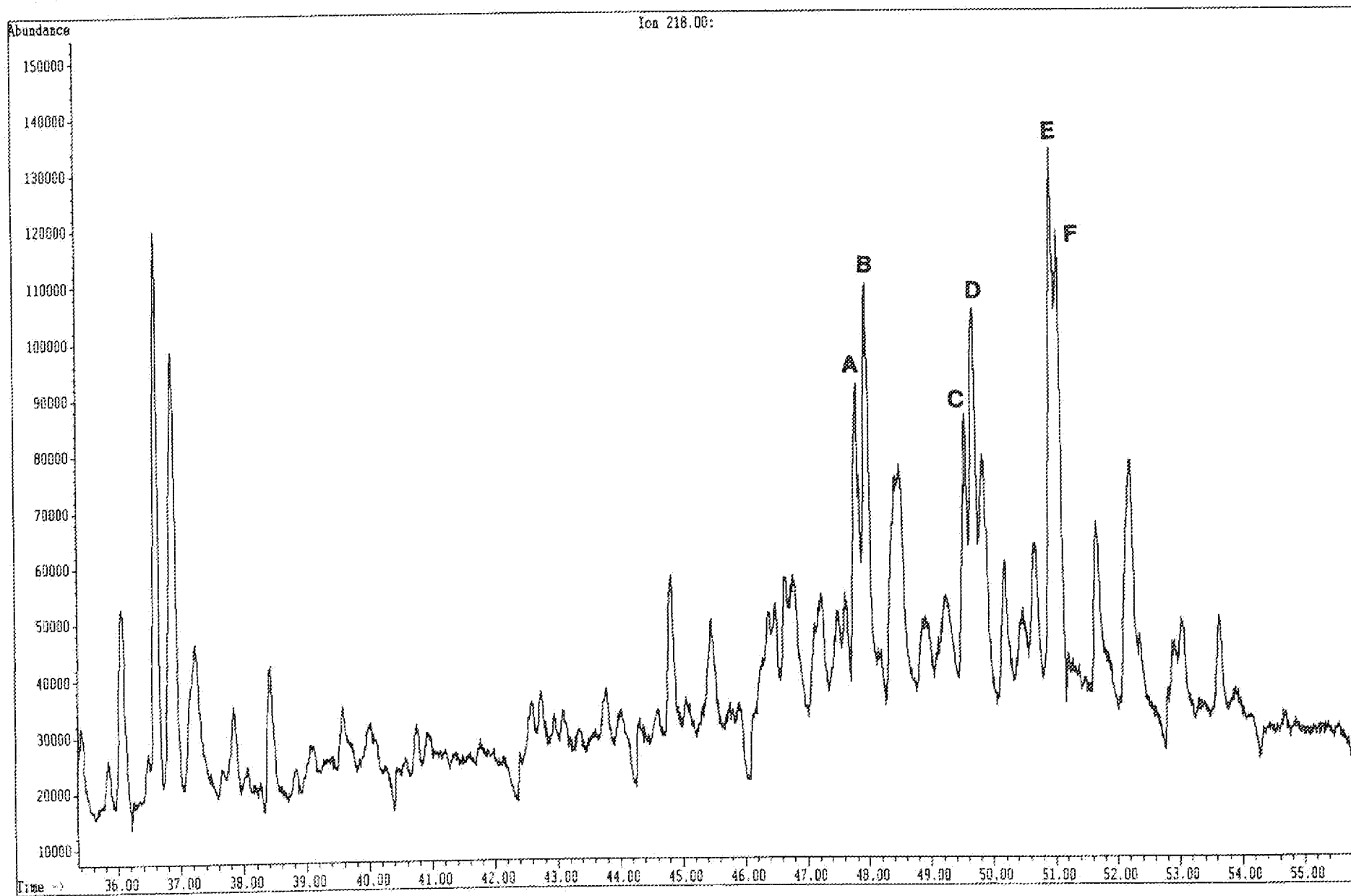
File: C:\CHEMPC\DATA\0501005.D
Operator:
Date Acquired: 13 Dec 90 10:47 pm
Method File Name: BIOM.M
Sample Name: 4130-001
Misc Info:
Bottle Number: 5

H3.1a



File: C:\CHEMPC\DATA\0501005.D
Operator:
Date Acquired: 13 Dec 90 10:47 pm
Method File Name: B10M.M
Sample Name: 4130-001
Misc Info:
Bottle Number: 5

H3.1b



File: C:\CHEMPC\DATA\N0501005.D

H3.1c

Operator:

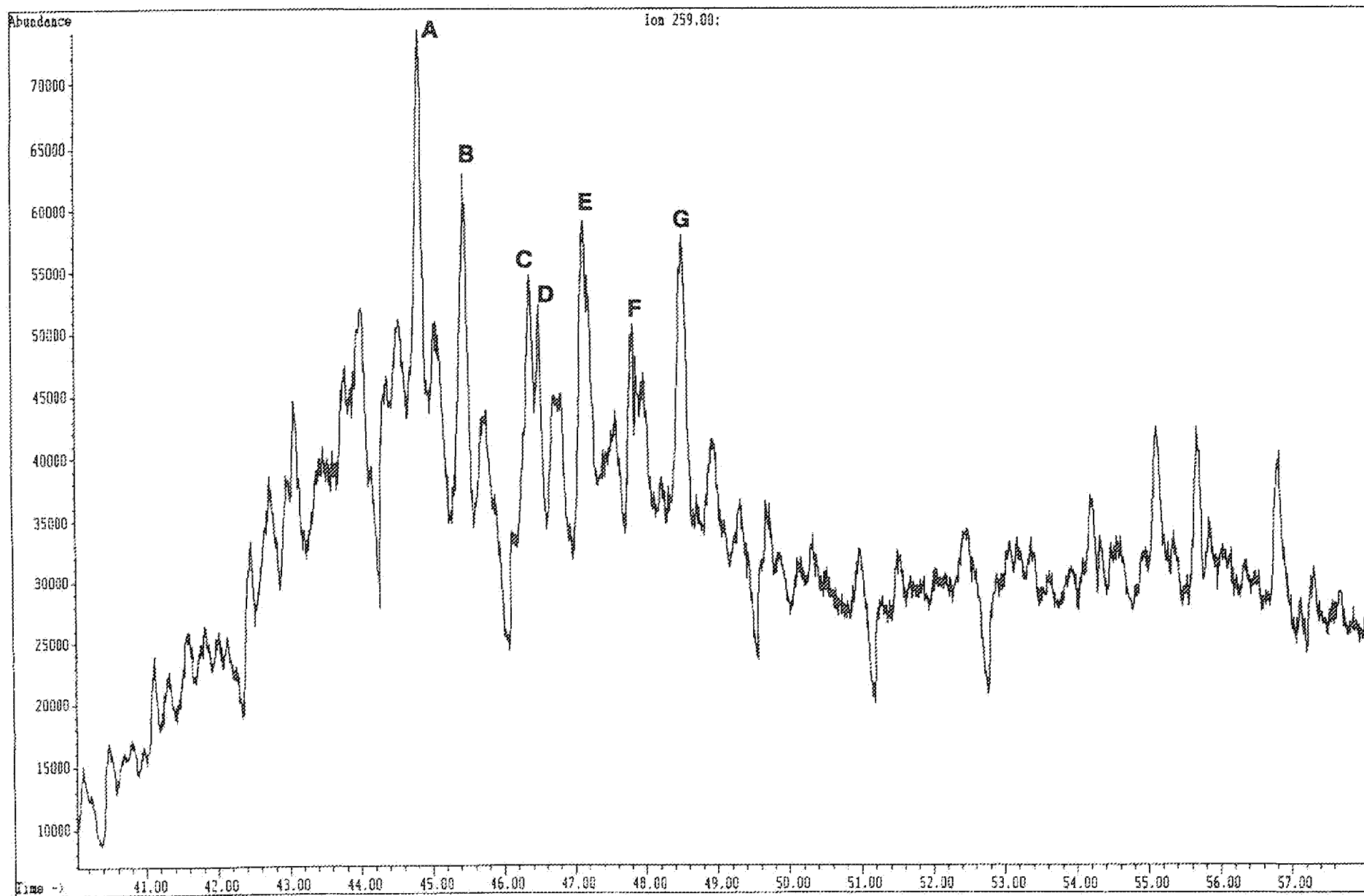
Date Acquired: 13 Dec 90 10:47 pm

Method File Name: B10M.M

Sample Name: 4130-001

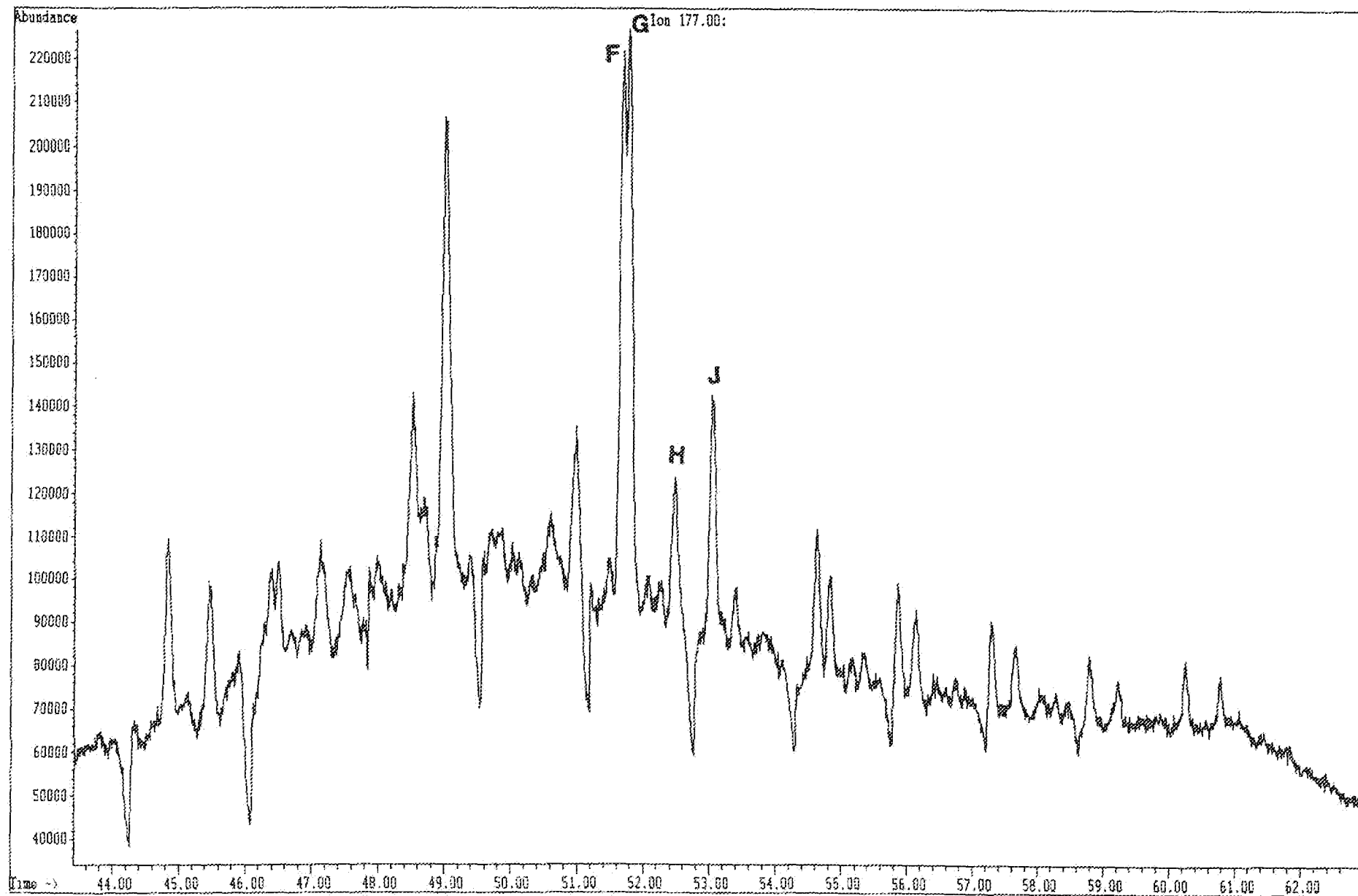
Misc Info:

Bottle Number: 5



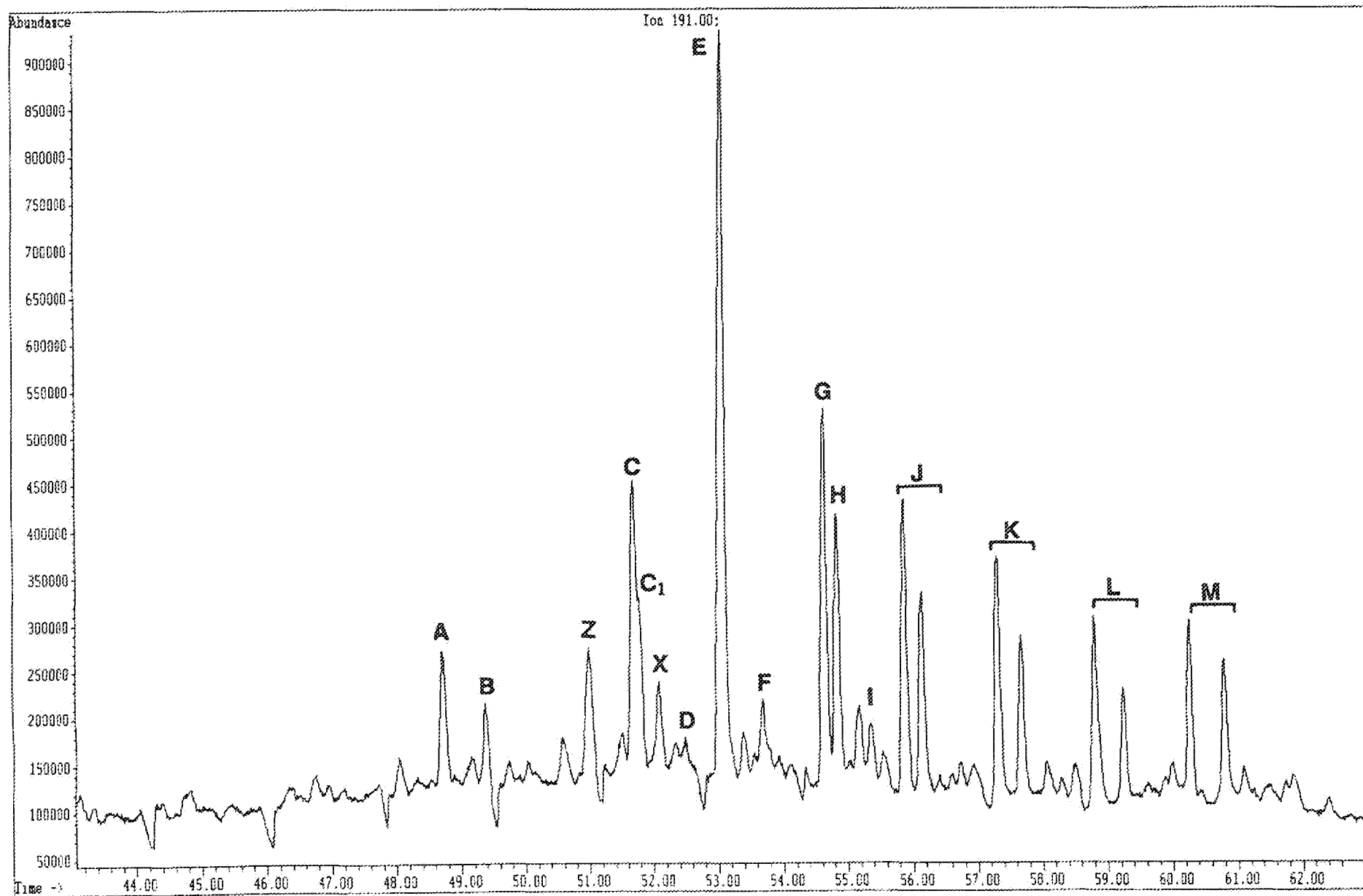
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Sample Name: 4130-001
Misc Info:
Bottle Number: 5

H3.1d



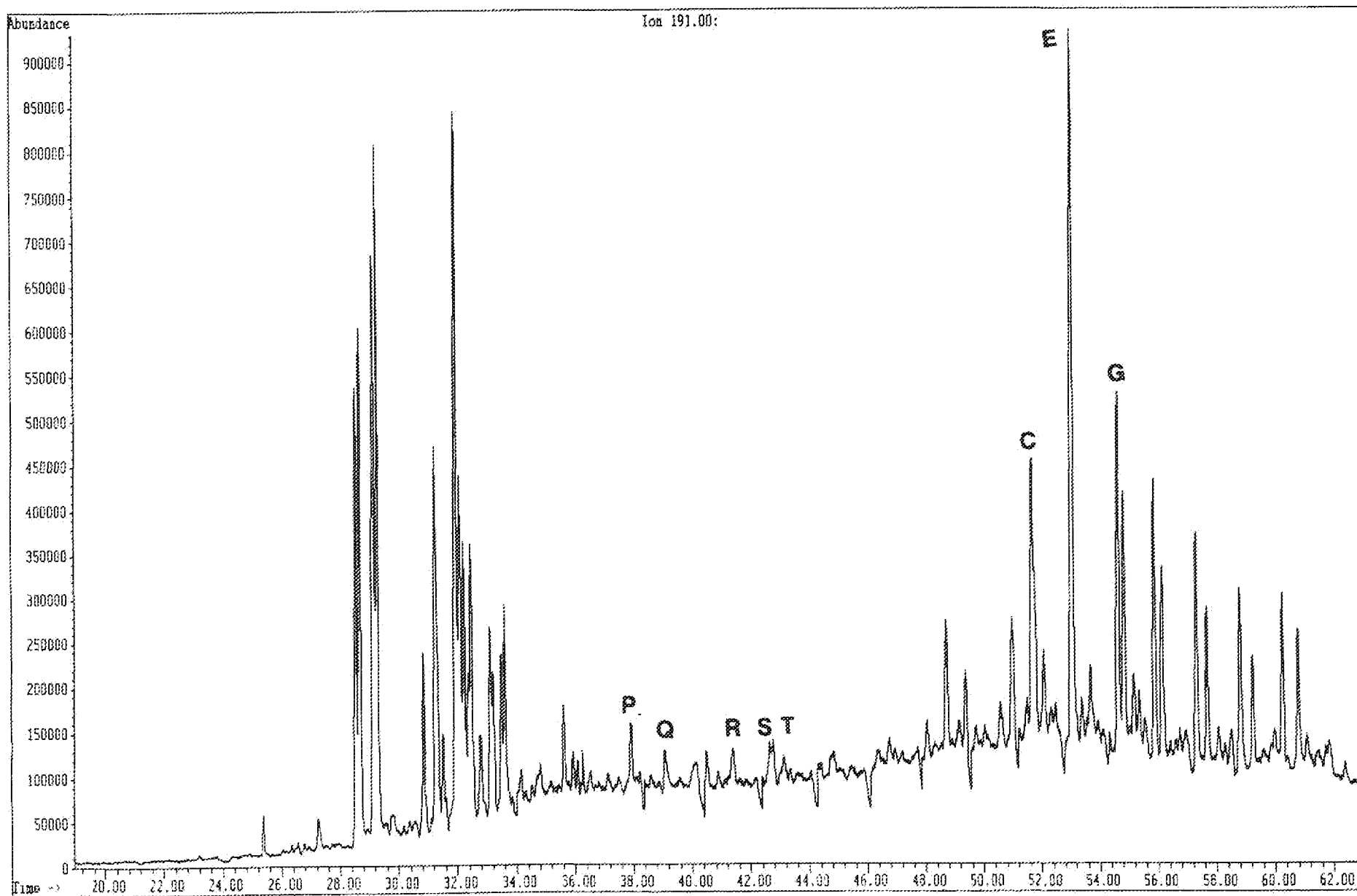
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Method File Name: BIOM.M
Sample Name: 4130-001
Misc Info:
Bottle Number: 5

H3.1e



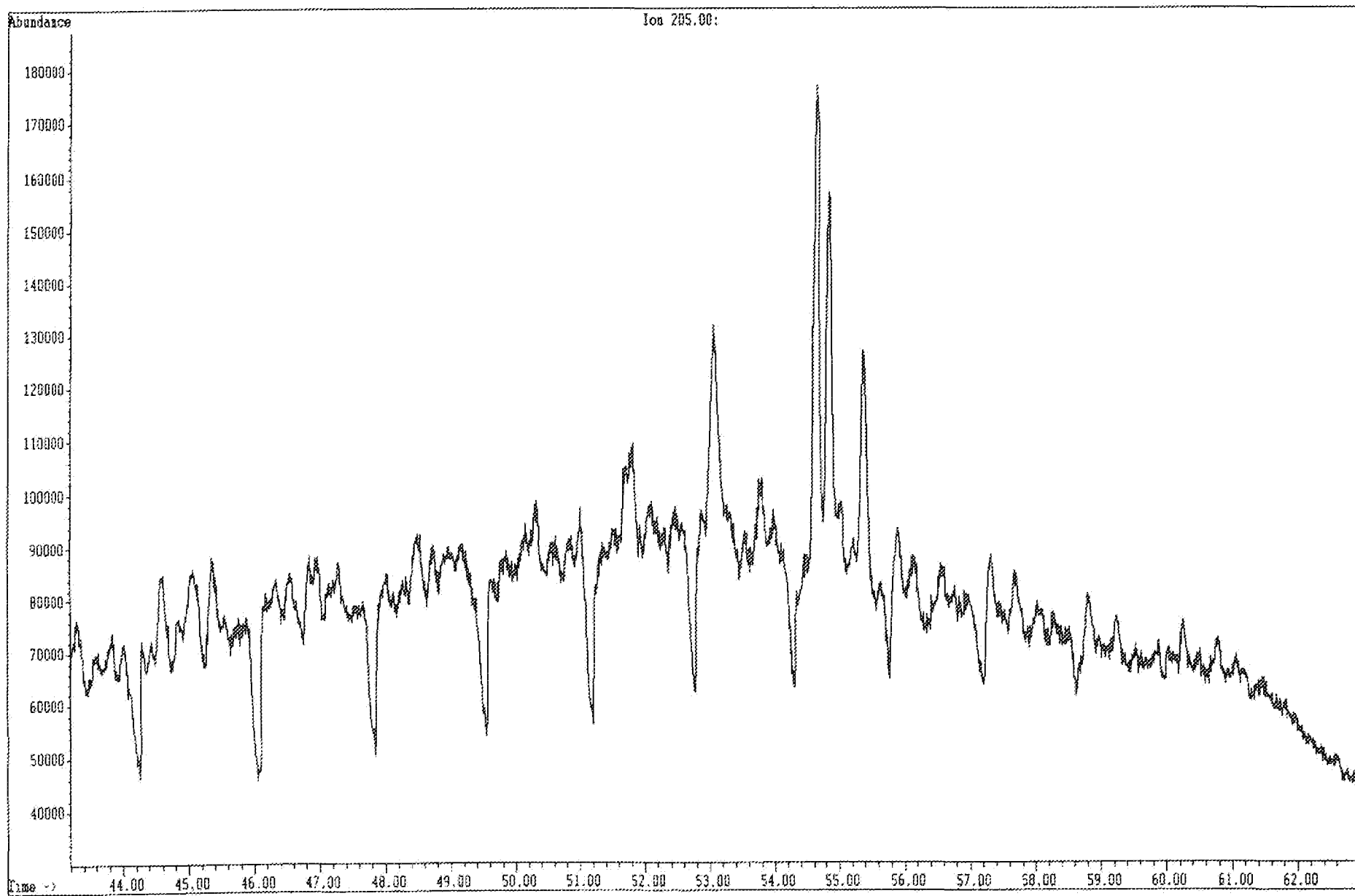
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Method File Name: B10M.M
Sample Name: 4130-001
Misc Info:
Bottle Number: 5

H3.1f



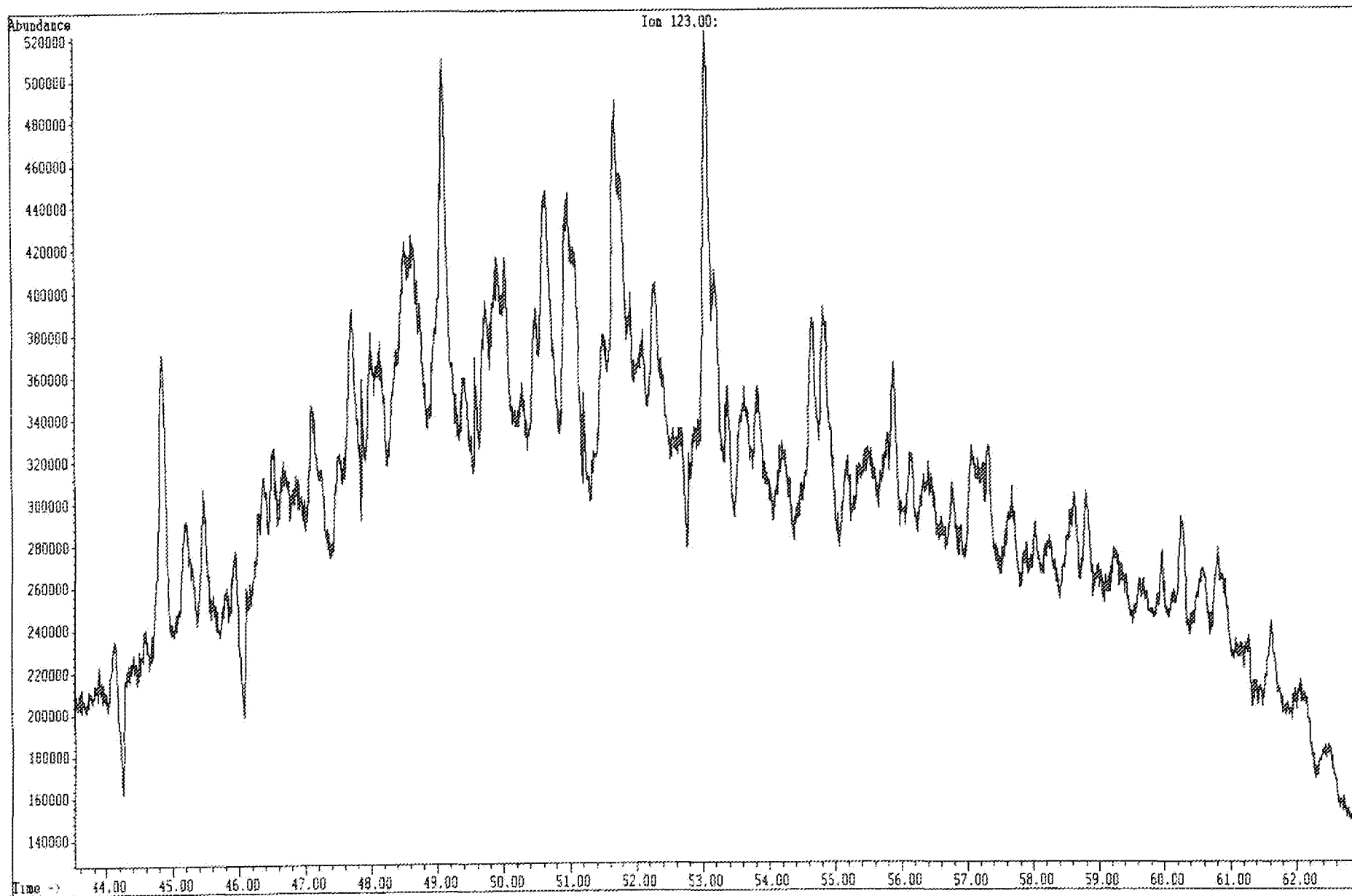
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Operator:
Date Acquired: 13 Dec 90 10:47 pm
Method File Name: BIOM.M
Sample Name: 4130-001
Misc Info:
Bottle Number: 5

H3.1g



File: C:\CHEMPC\DATA\0501005.D
Operator:
Date Acquired: 13 Dec 90 10:47 pm
Method File Name: BIOM.M
Sample Name: 4130-001
Misc Info:
Bottle Number: 5

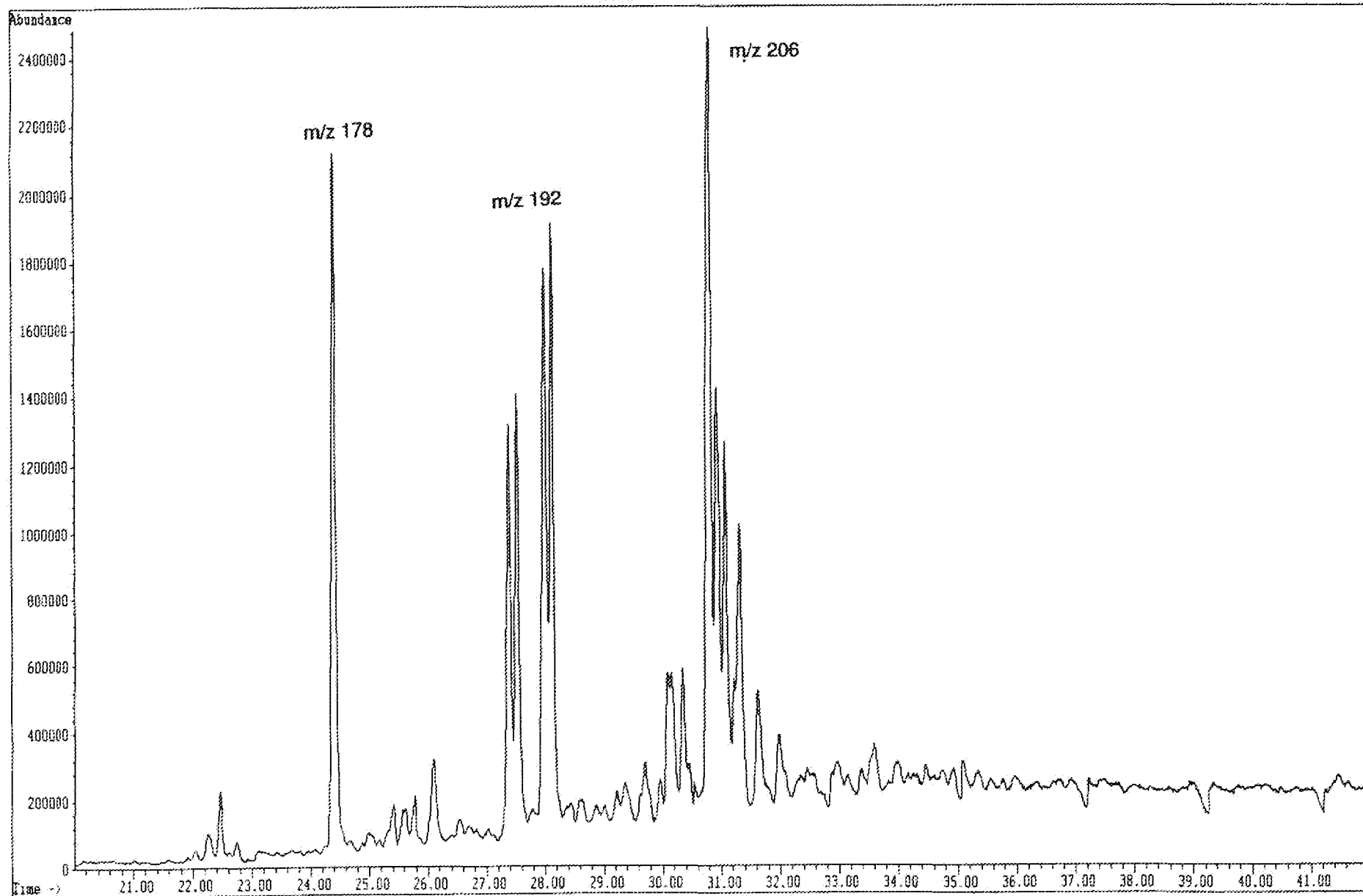
H3.1h



File: C:\CHEMPC\DATA\8801010.D
Operator:
Date Acquired: 11 Dec 90 12:33 pm
Method File Name: B10MY.M
Sample Name: 4130-001
Misc Info: WELL 33/9-14 2680.5M
Bottle Number: 88

H3.11

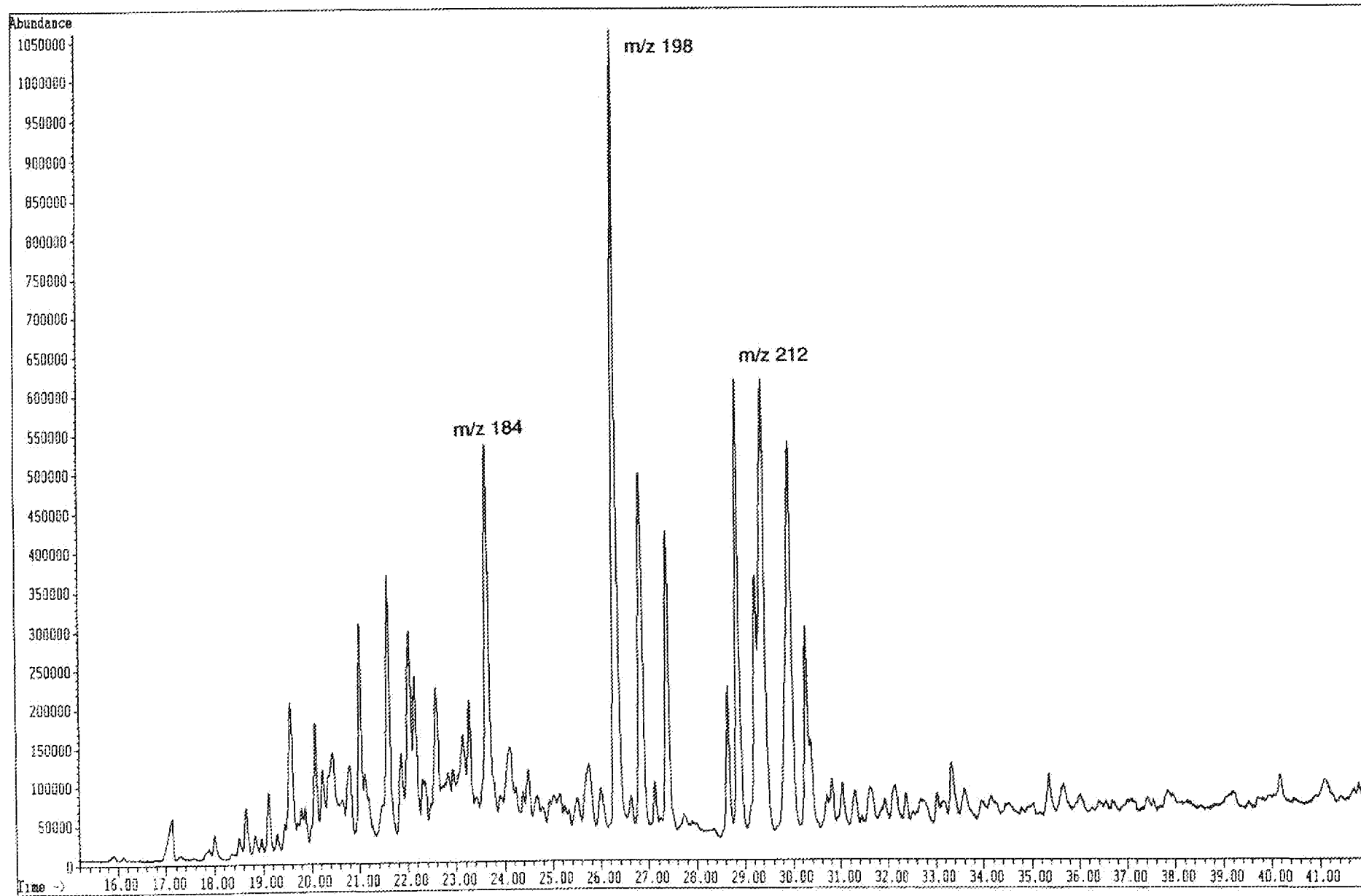
Phenanthrenes



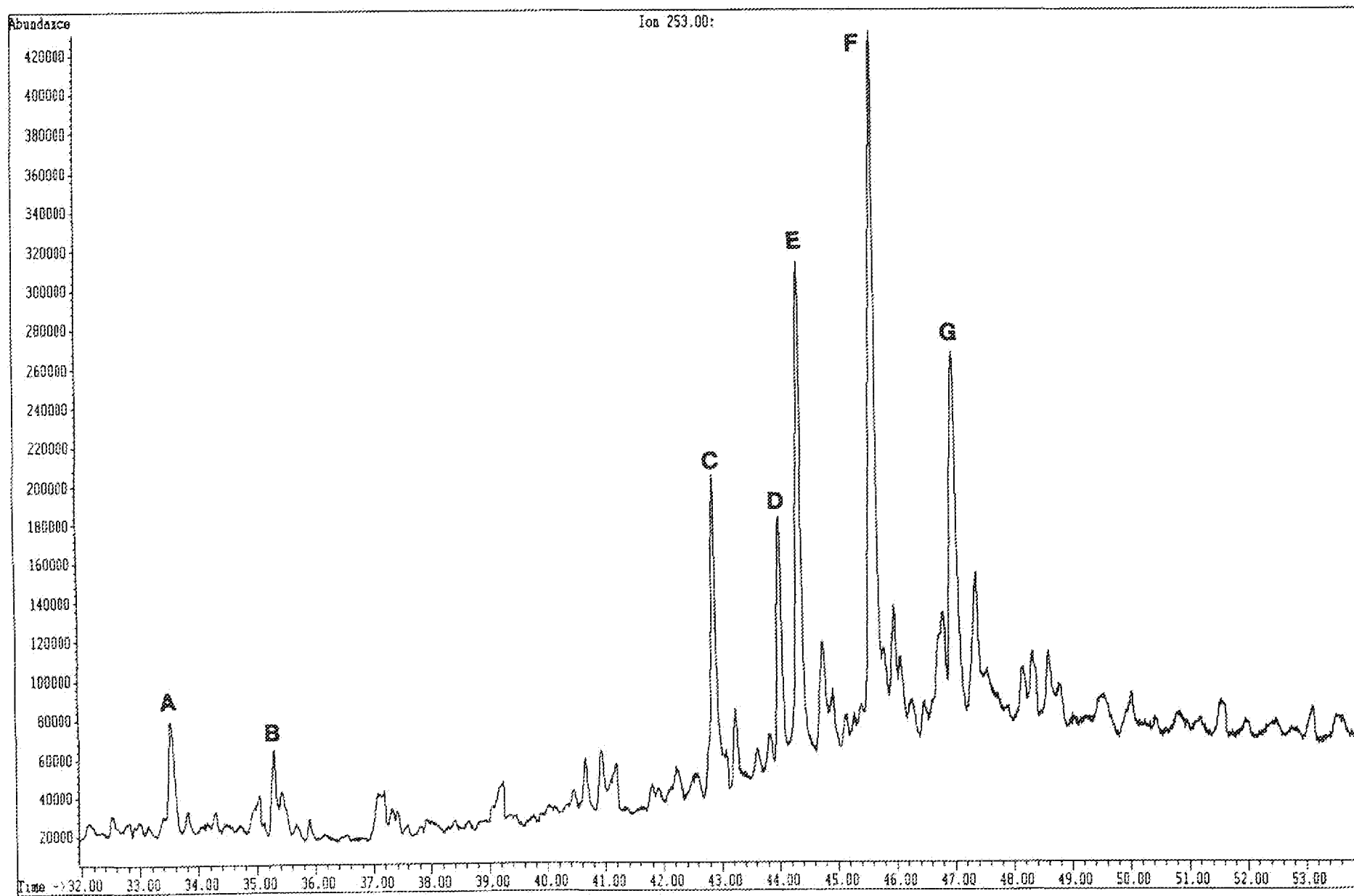
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Operator:
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Sample Name: 4130-001
Misc Info: WELL 33/9-14 2680.5M
Bottle Number: 88

H3.1j

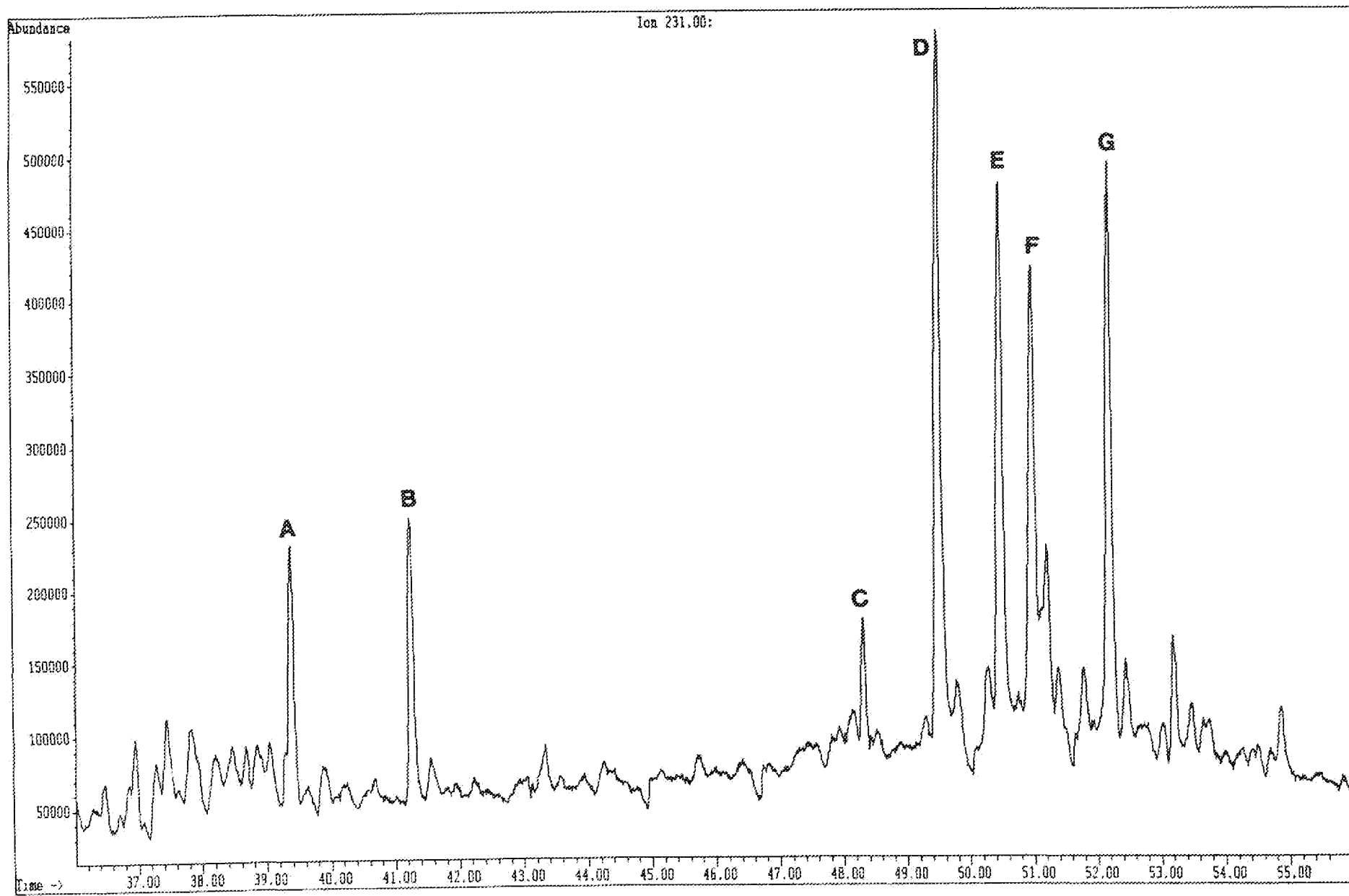
Dibenzothiophenes



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Method File Name: B10MY.M
Sample Name: 4130-001
Misc Info: WELL 33/9-14 2680.SM
Bottle Number: 88

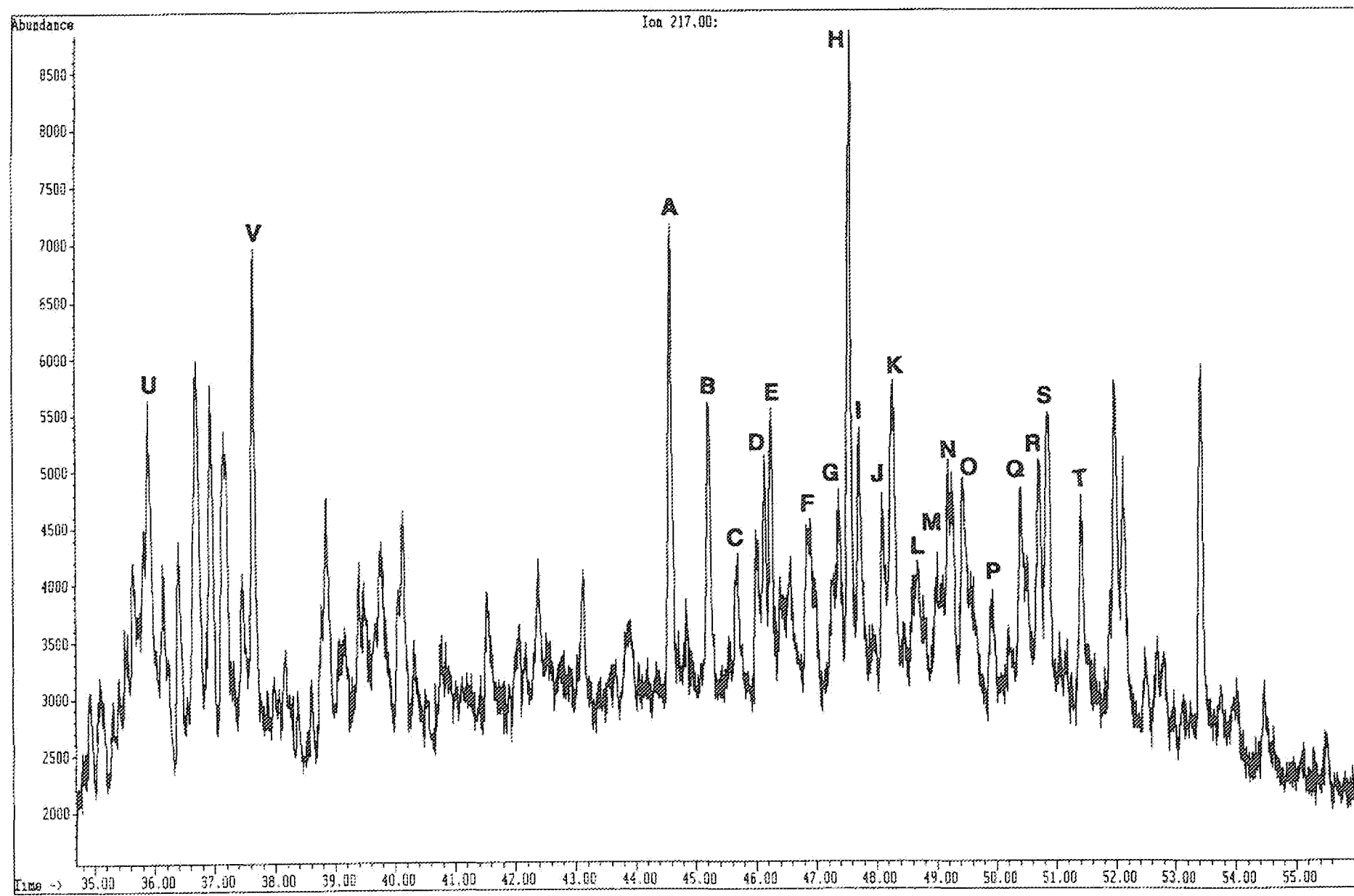


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Method File Name: B10MY.M
Sample Name: 4130-001
Misc Info: WELL 33/9-14 2680.5M
Bottle Number: 88



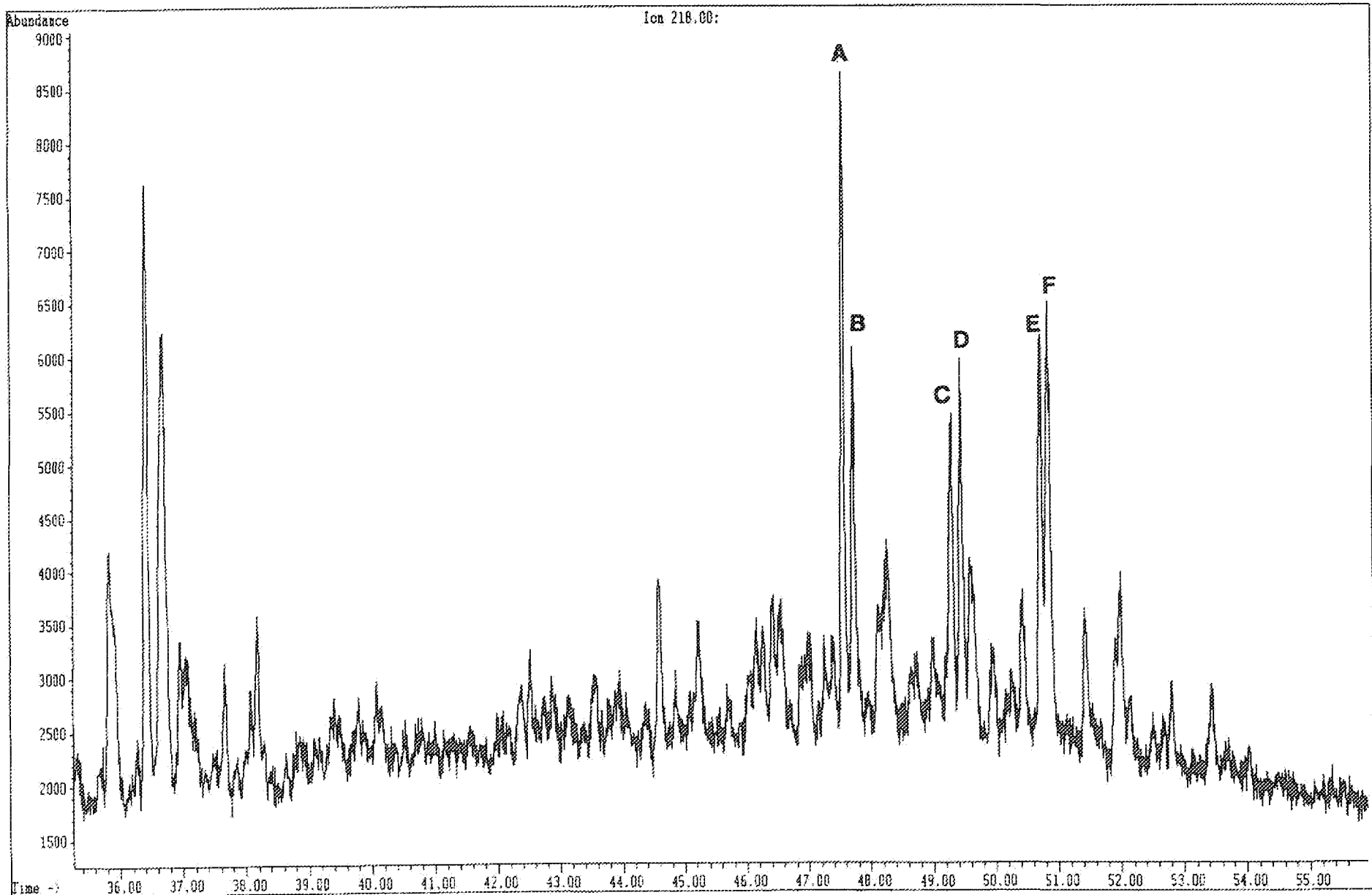
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Operator:
Date Acquired: 15 Dec 90 8:39 pm
Method File Name: BIOM.M
Sample Name: 4130-002
Misc Info: WELL 33/9-14 2692.5M
Bottle Number: 45

H3.2a

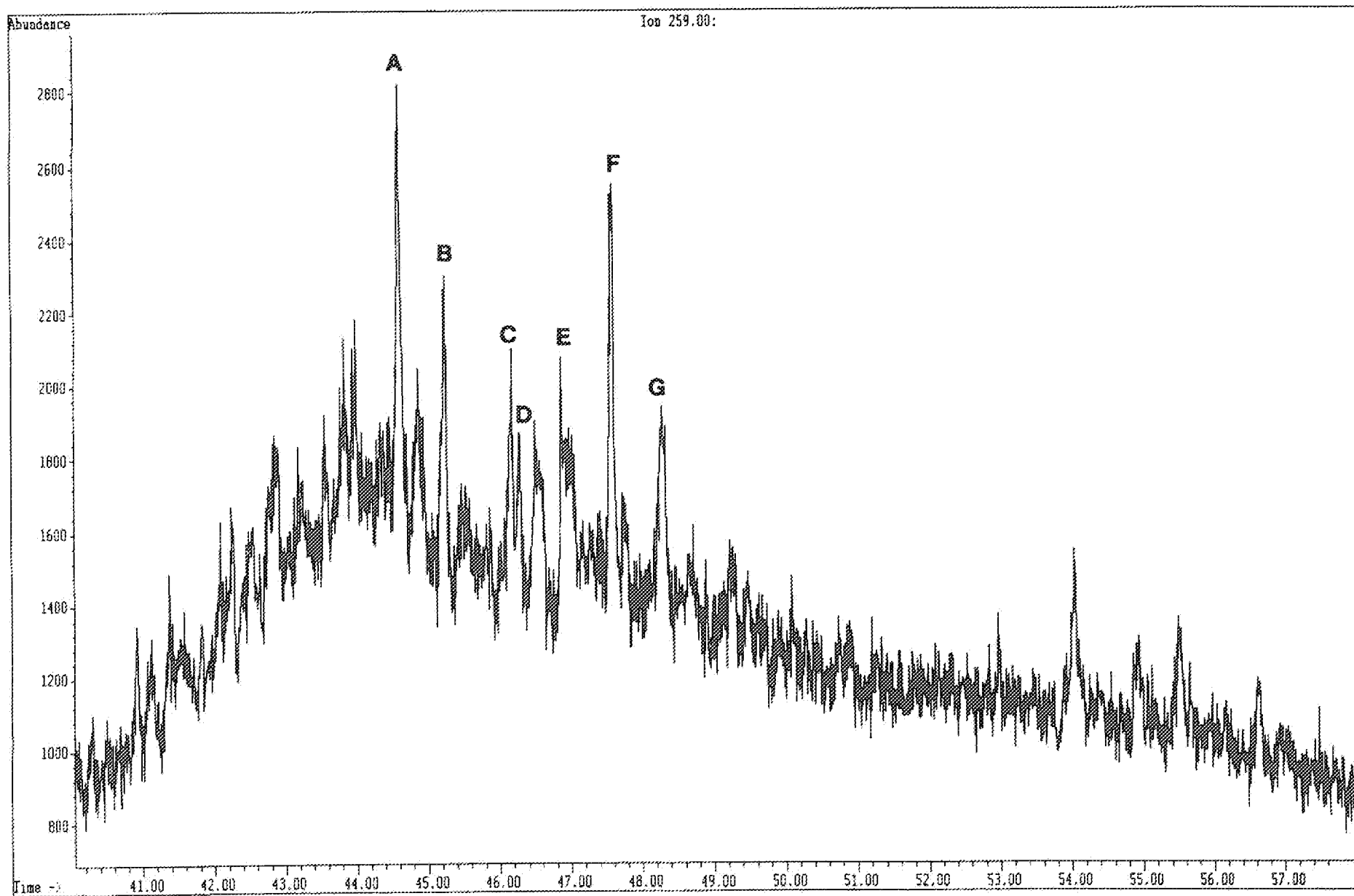


File: C:\CHEMPC\DATA\4501007.D
Operator:
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Method File Name: BIOM.M
Sample Name: 4130-002
Misc Info: WELL 33/9-14 2692.5M
Bottle Number: 45

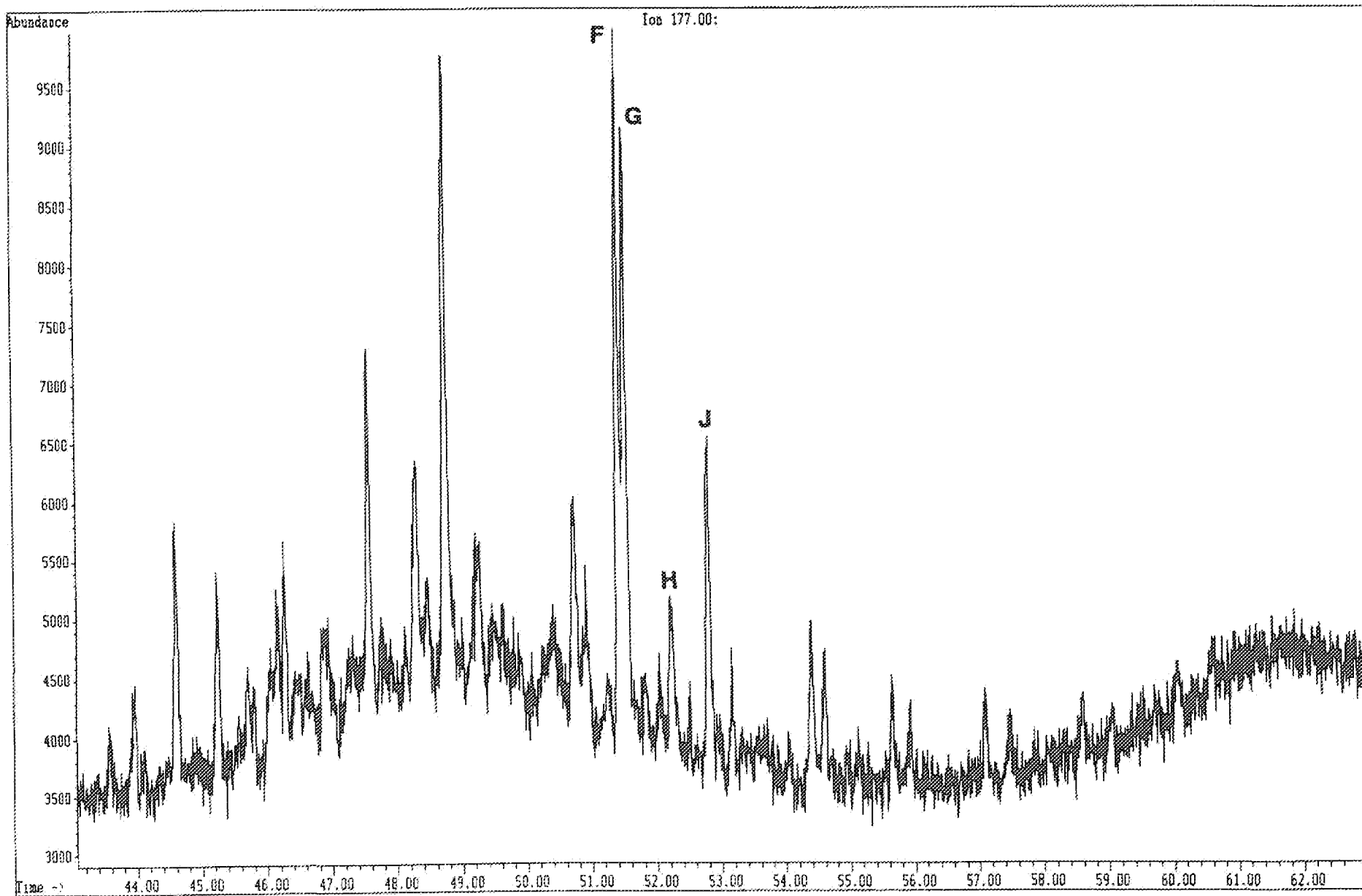
H3.2b



File: C:\CHEMPC\DATA\4501007.D
Operator:
Date Acquired: 15 Dec 90 8:39 pm
Method File Name: B10M.M
Sample Name: 4130-002
Misc Info: WELL 33/9-14 2692.5M
Bottle Number: 45

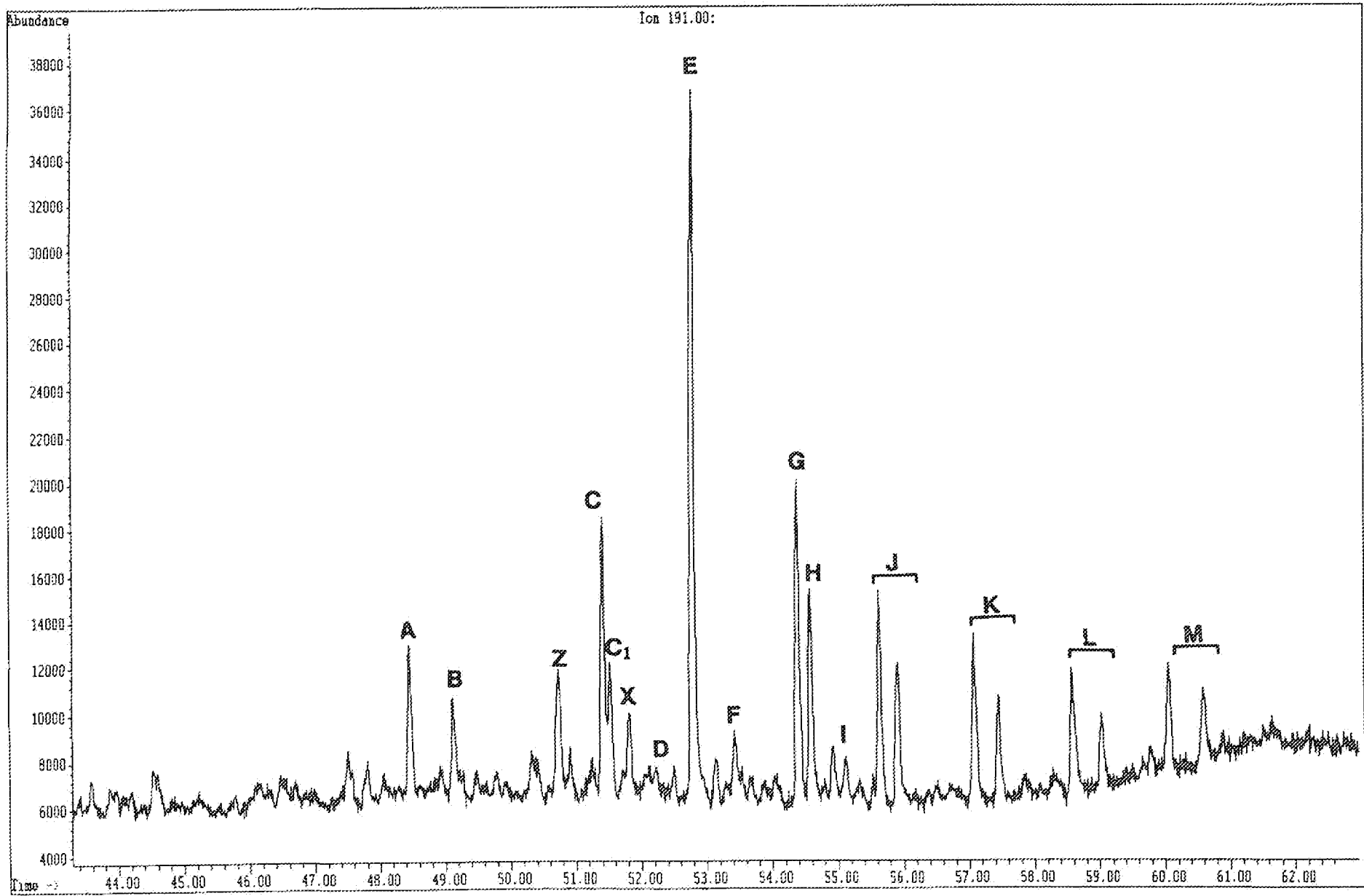


File: C:\CHEMPC\DATA\4501007.D
Operator:
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Method File Name: BIOM.M
Sample Name: 4130-002
Misc Info: WELL 33/9-14 2692.SM
Bottle Number: 45



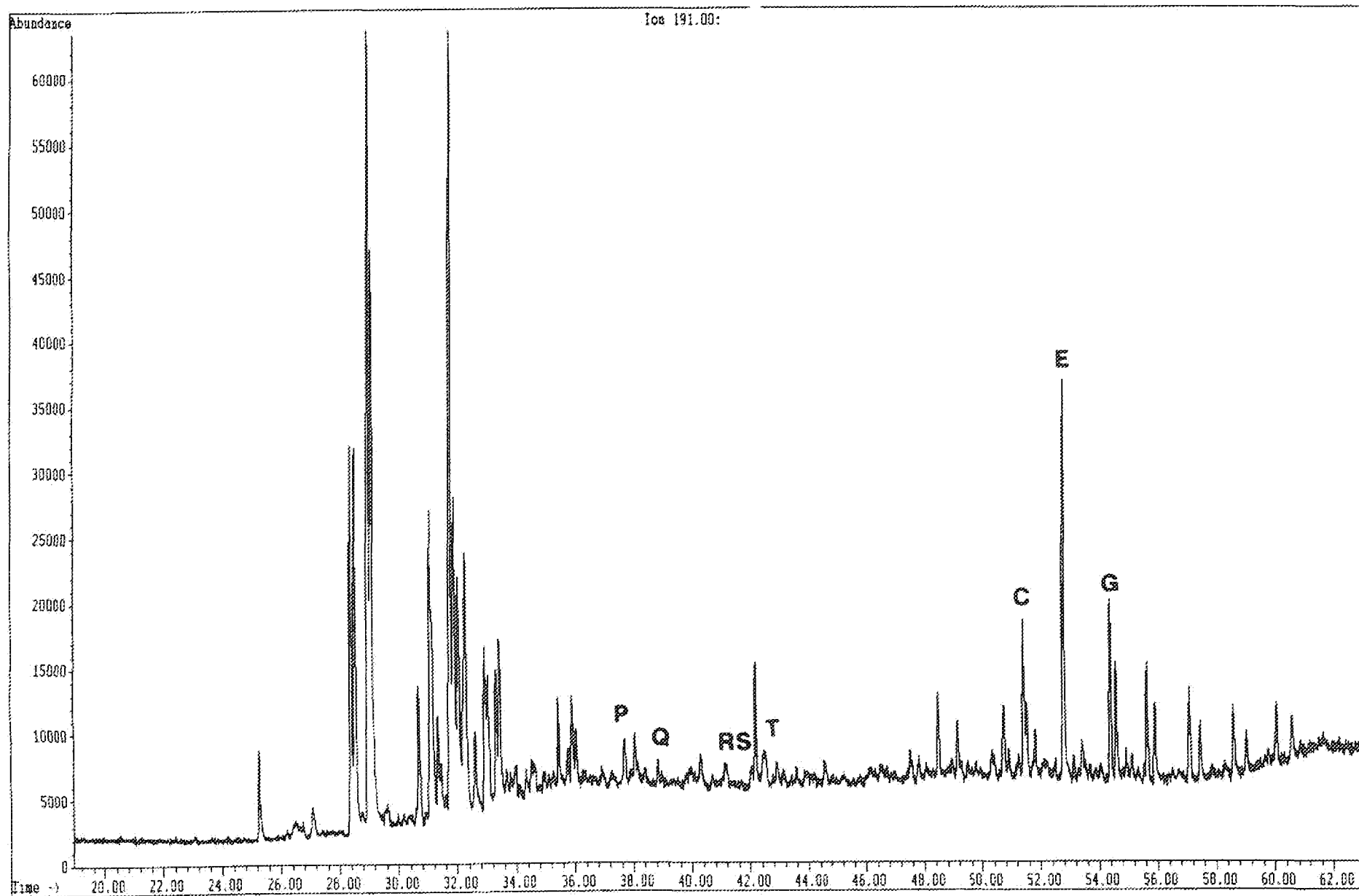
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Operator:
Date Acquired: 15 Dec 90 8:39 pm
Method File Name: BICM.M
Sample Name: 4130-002
Misc Info: WELL 33/9-14 2692.5M
Bottle Number: 45

H3.2e

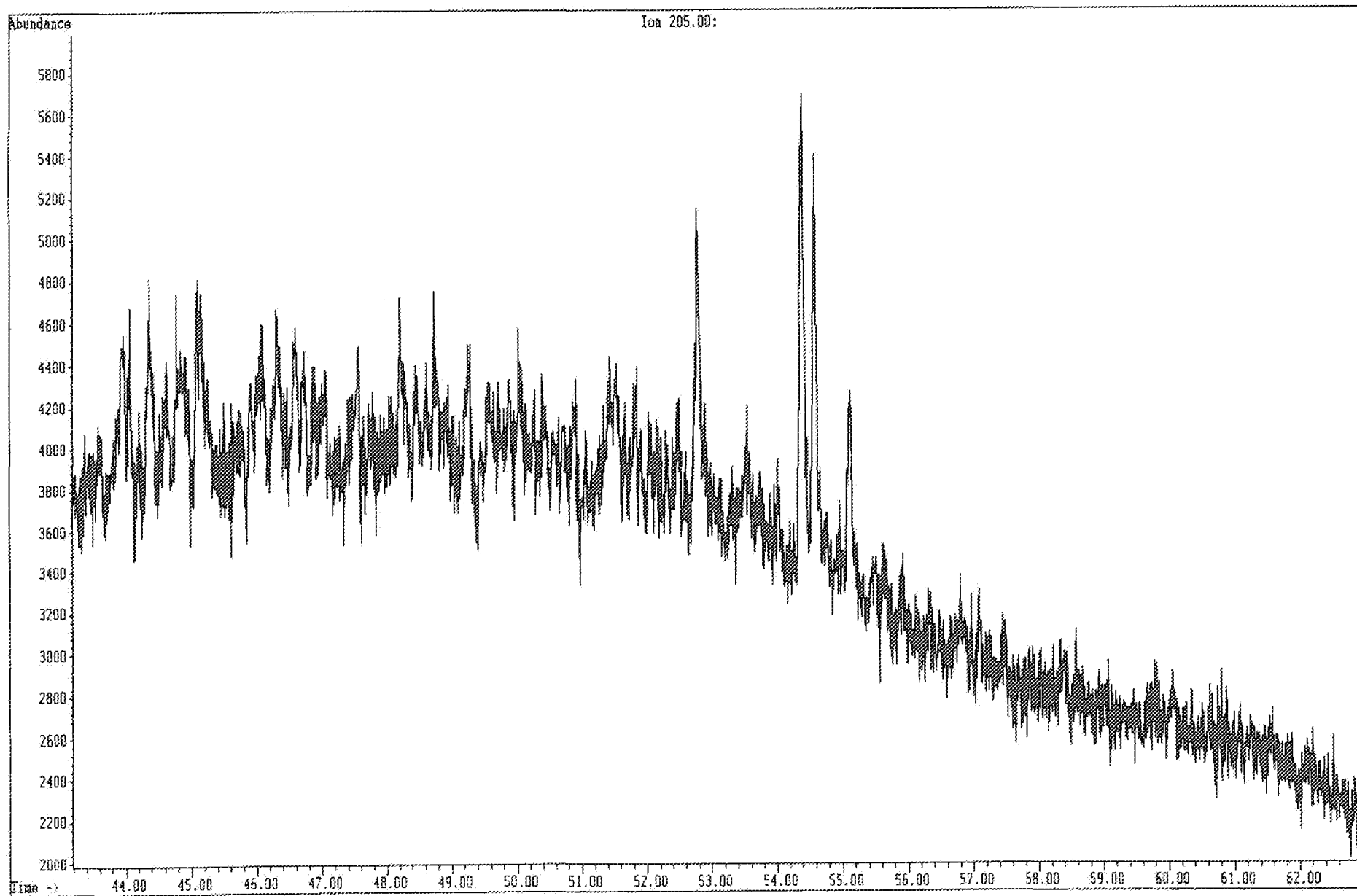


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Operator:
Date Acquired: 15 Dec 90 8:39 pm
Method File Name: BICM.M
Sample Name: 4130-002
Misc Info: WELL 33/9-14 2692.5M
Bottle Number: 45

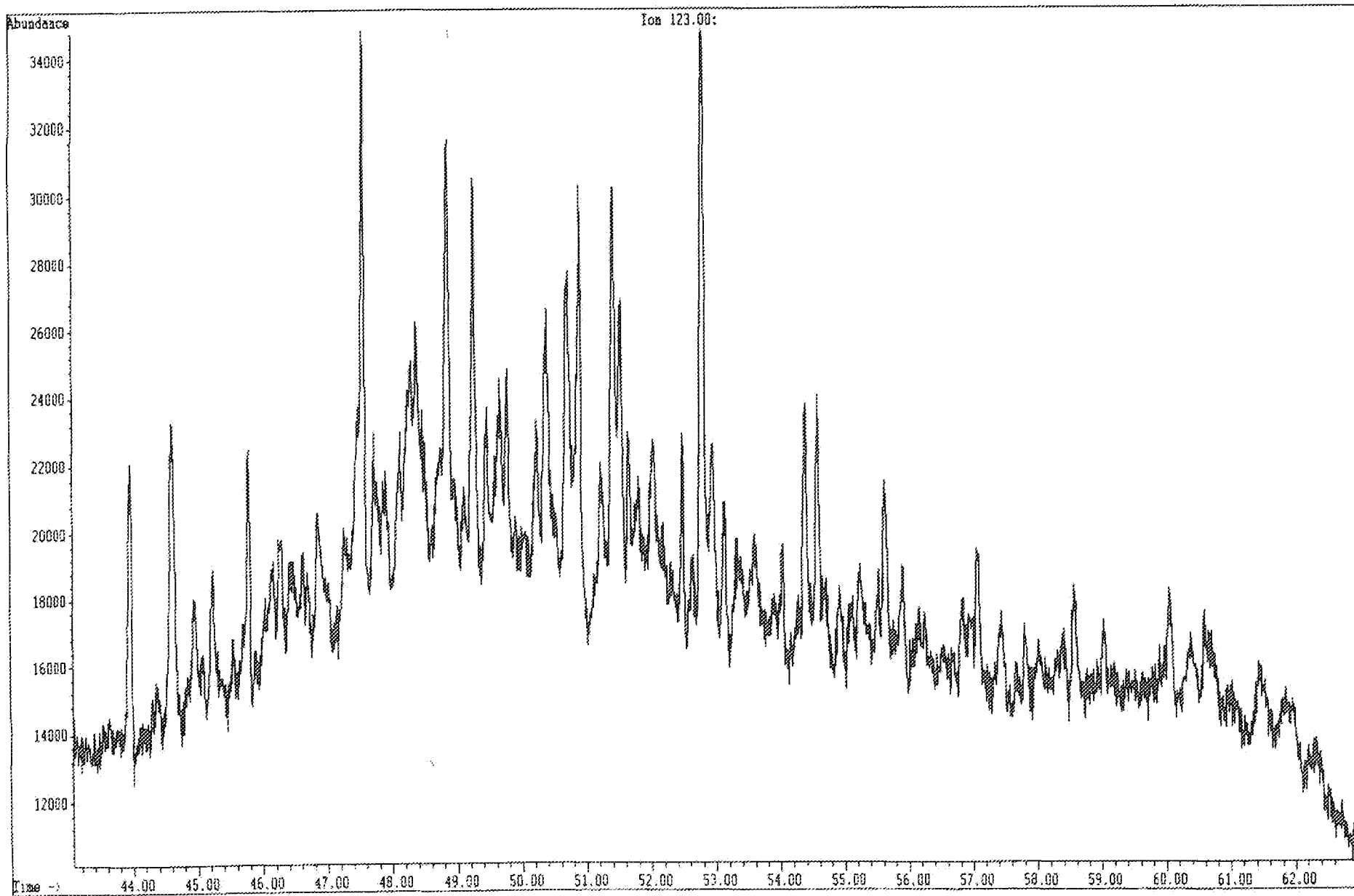
H3.2f



File: C:\CHEMPC\DATA\4561007.D
Operator:
Date Acquired: 15 Dec 90 8:39 pm
Method File Name: BIOM.M
Sample Name: 4130-082
Misc Info: WELL 33/9-14 2692.5M
Bottle Number: 45

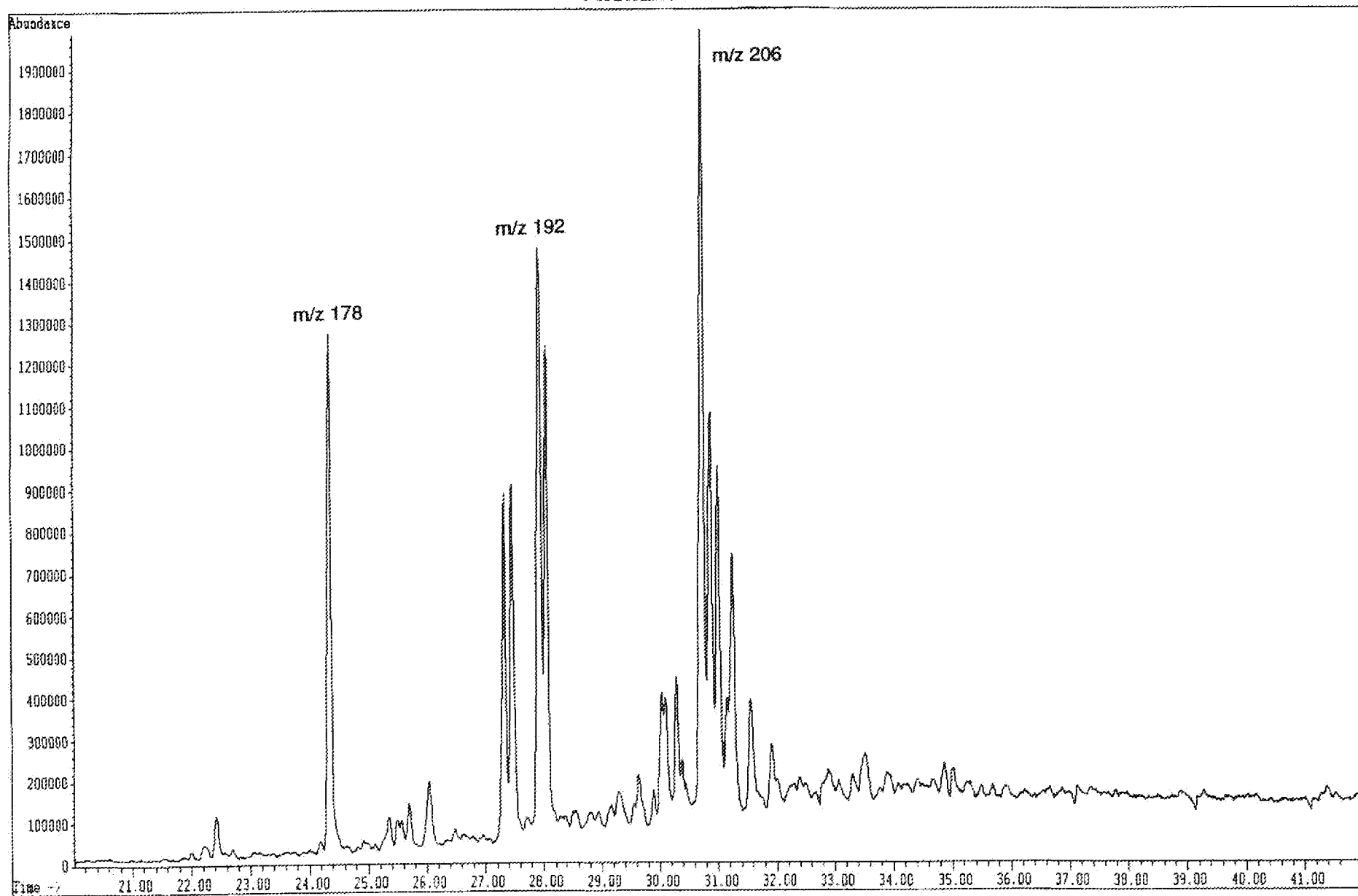


File: C:\CHEMPC\DATA\4501087.D
Operator:
Date Acquired: 15 Dec 90 8:39 pm
Method File Name: BICM.M
Sample Name: 4130-002
Misc Info: WELL 33/9-14 2692.SM
Bottle Number: 45



File: C:\CHEMPC\DATA\8901011.D
Operator:
Date Acquired: 11 Dec 90 1:41 pm
Method File Name: B10MY.M
Sample Name: 4130-002
Misc Info: WELL 33/9-14 2692.5M
Bottle Number: 89

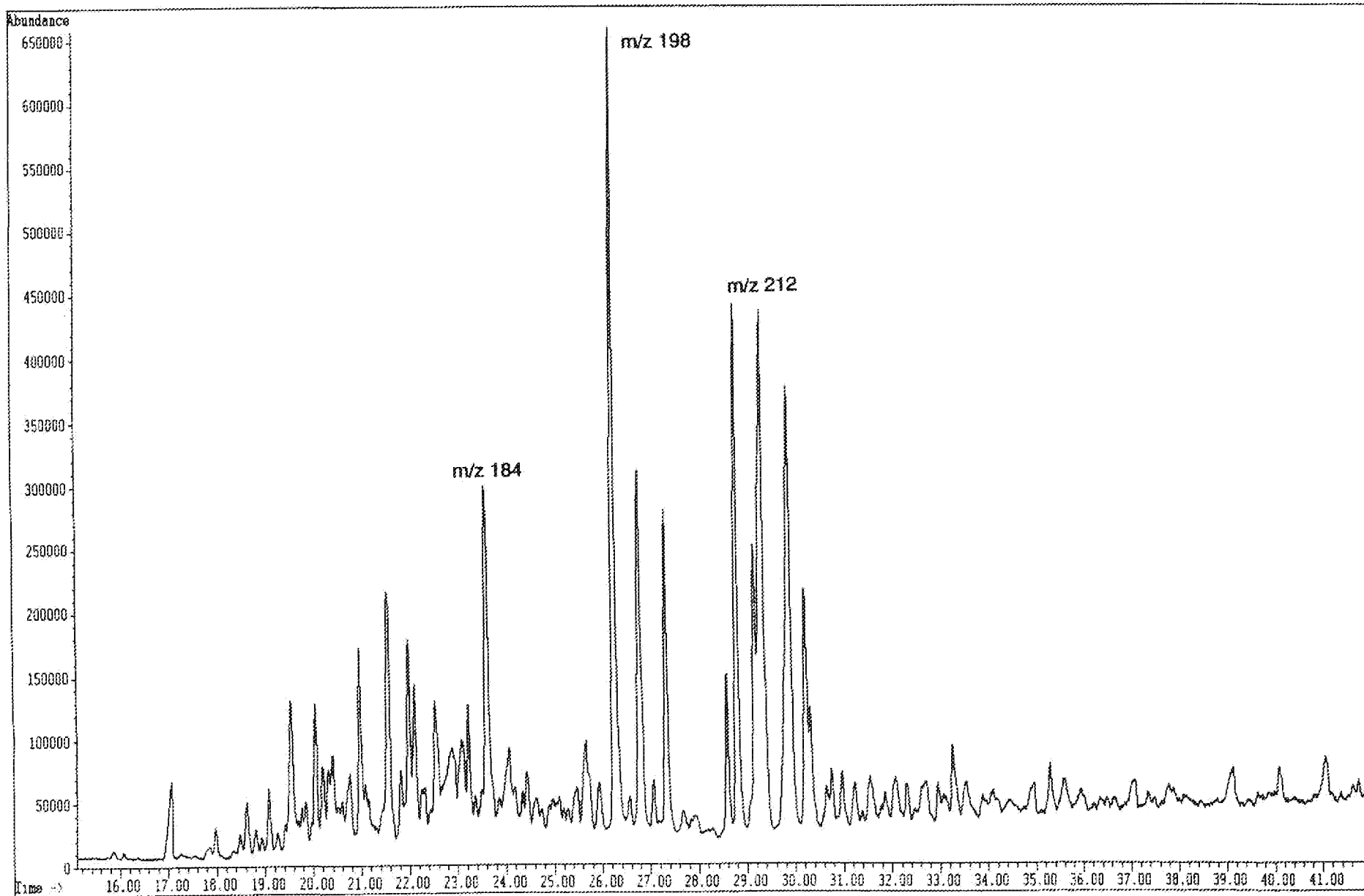
Phenanthrene



File: C:\CHEMPC\DATA\8901011.D
Operator:
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Method File Name: 810MY.M
Sample Name: 4130-002
Misc Info: WELL 33/9-14 2692.5M
Bottle Number: 89

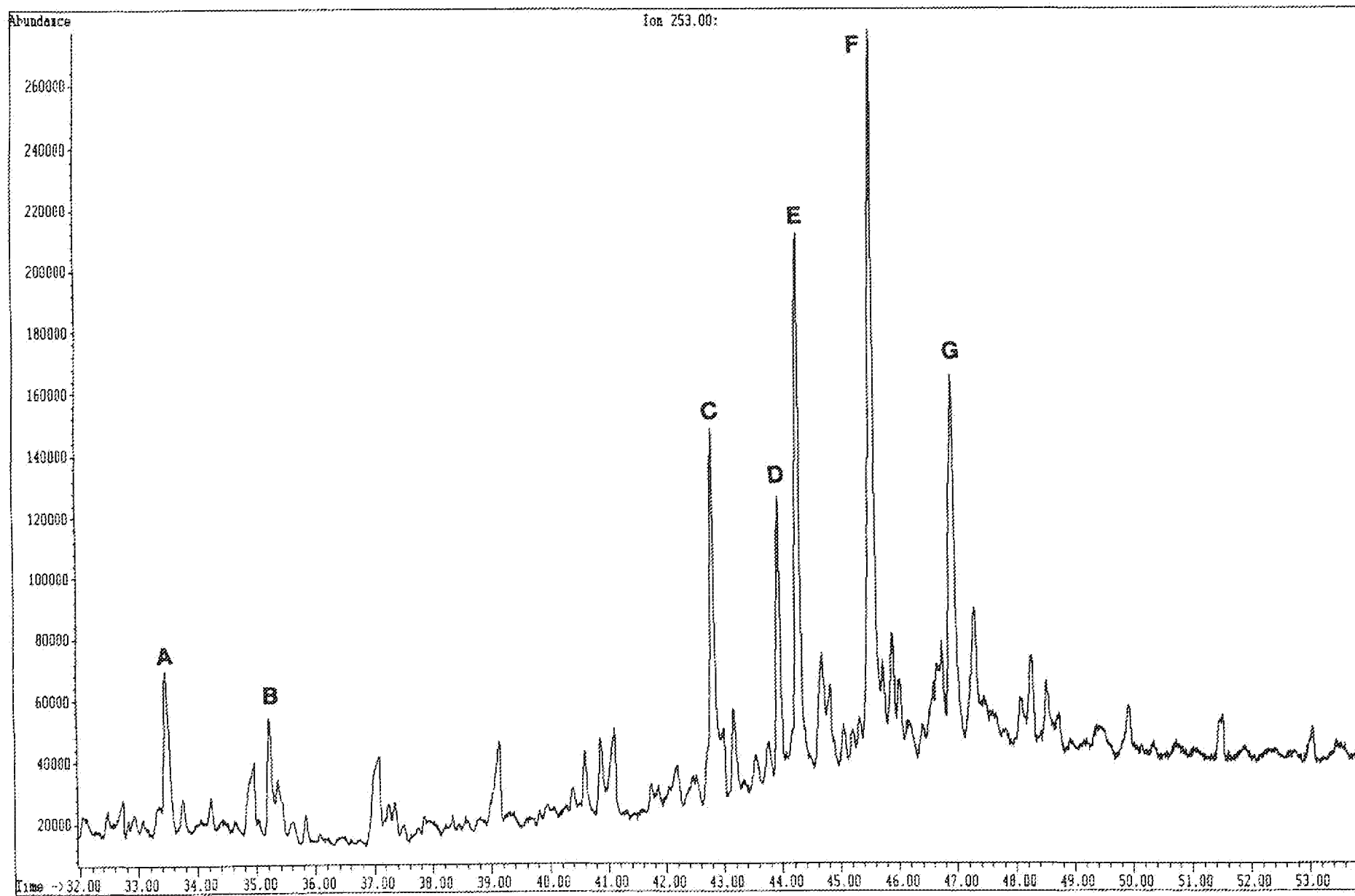
H3.2j

Dibenzothiophenes



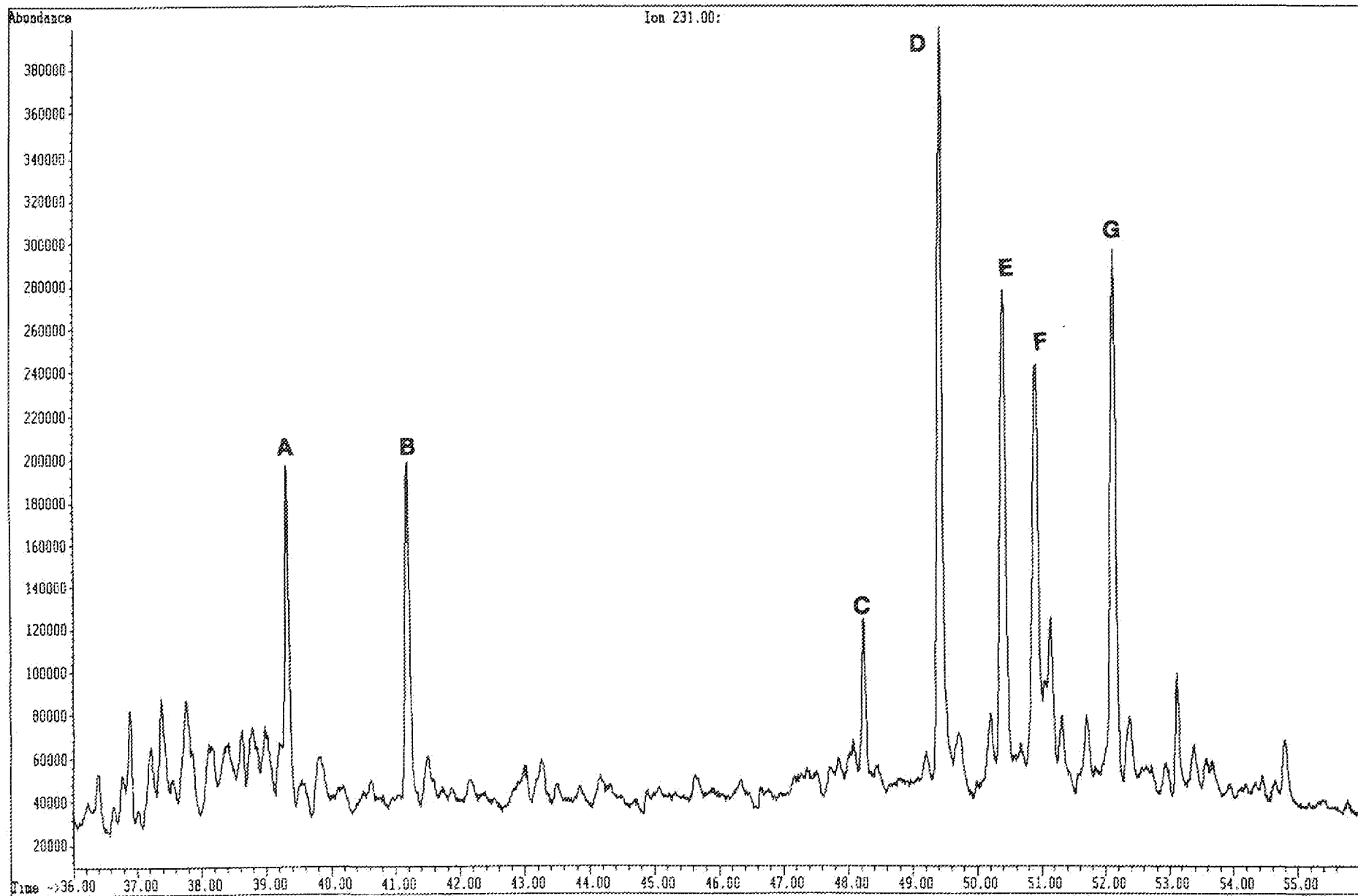
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Operator:
Date Acquired: 11 Dec 90 1:41 pm
Method File Name: BIOMY.M
Sample Name: 4130-802
Misc Info: WELL 33/9-14 2692.5M
Bottle Number: 89

H3.2k



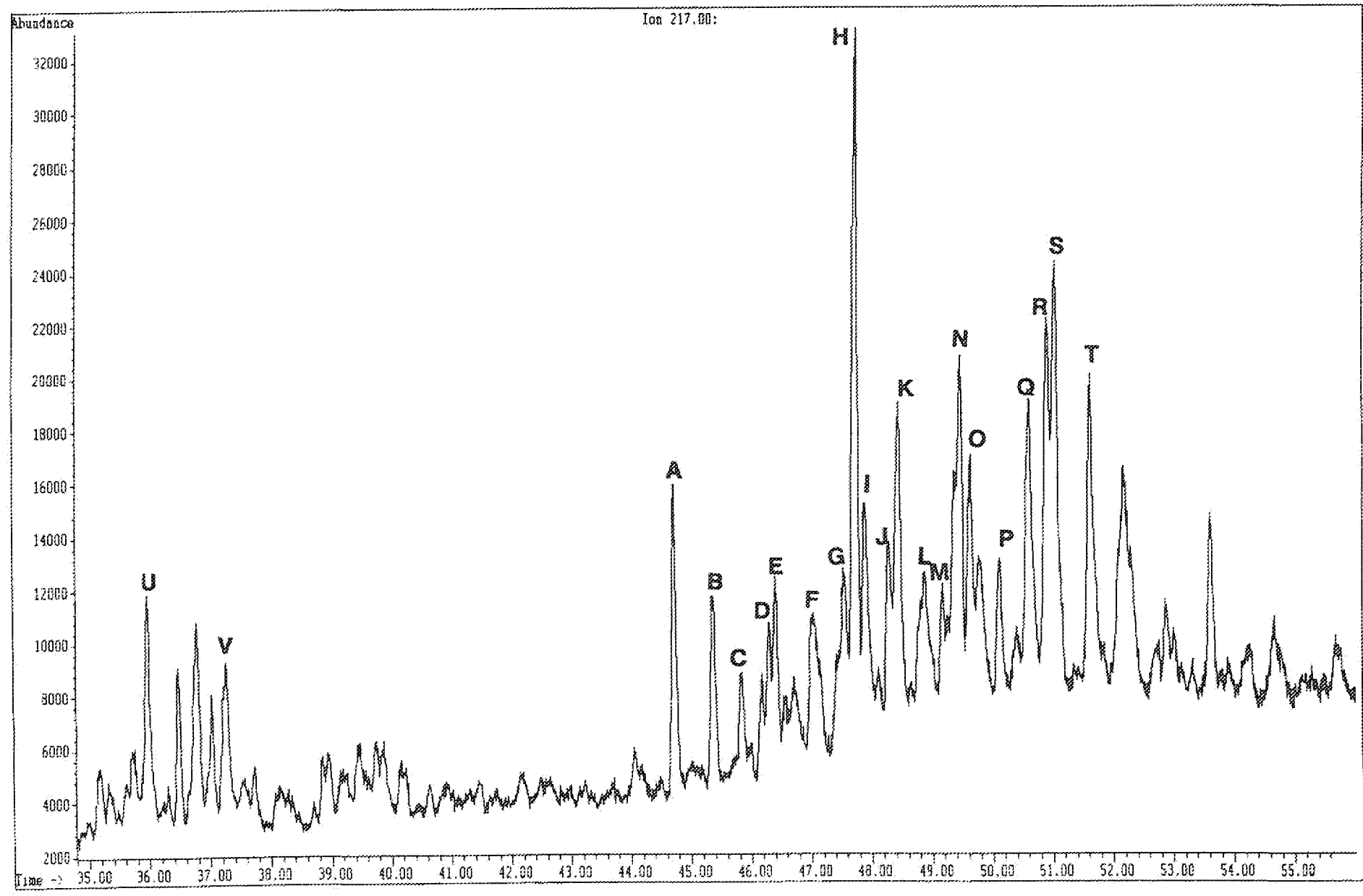
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Date Acquired: 11 Dec 90 1:41 pm
Method File Name: BIONY.M
Sample Name: 4130-002
Misc Info: WELL 33/9-14 2692.5M
Bottle Number: 89

H3.21



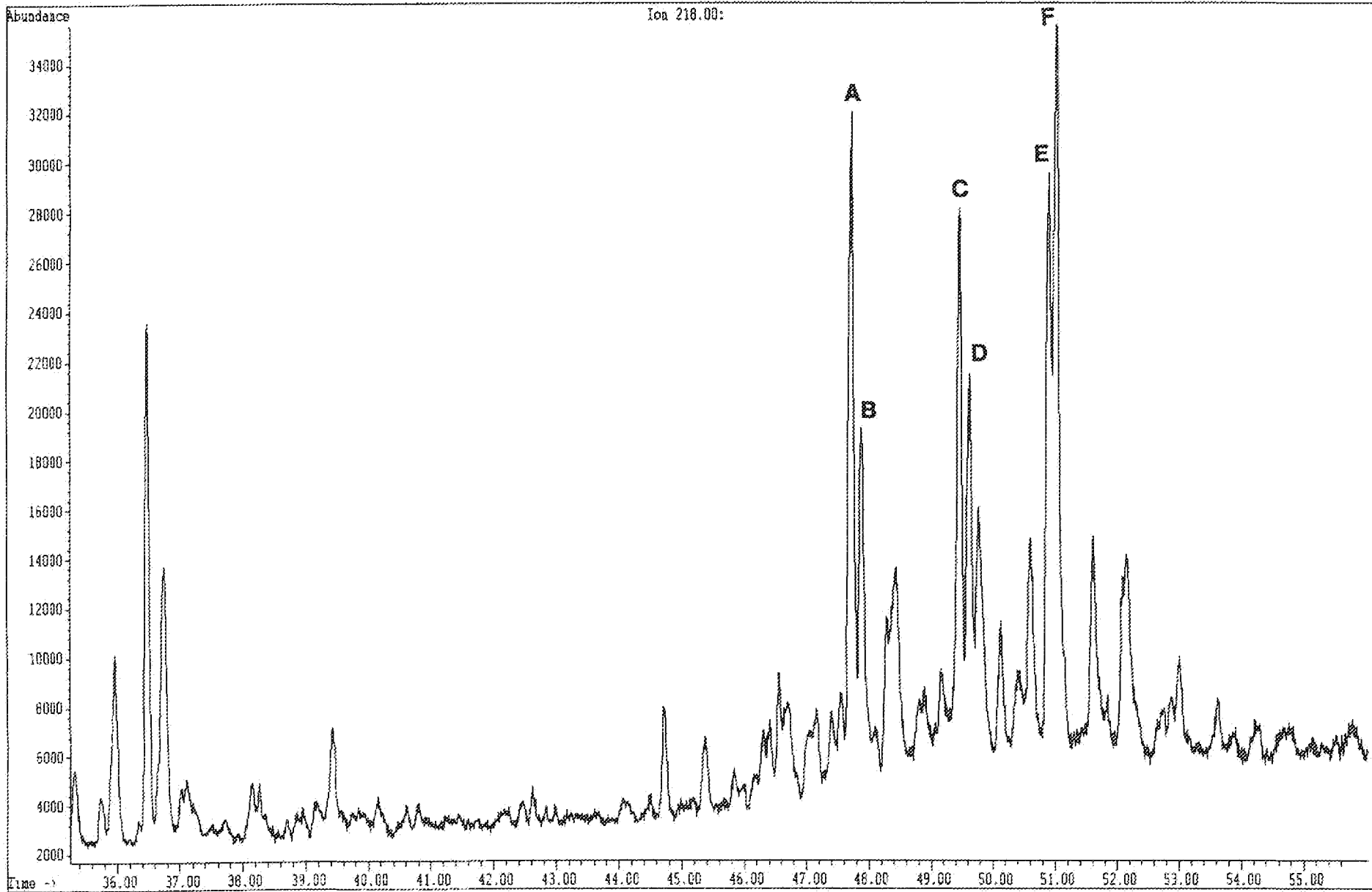
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Date Acquired: 15 Dec 90 9:49 pm
Method file Name: E10M.M
Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.ZM
Bottle Number: 46

H3.3a



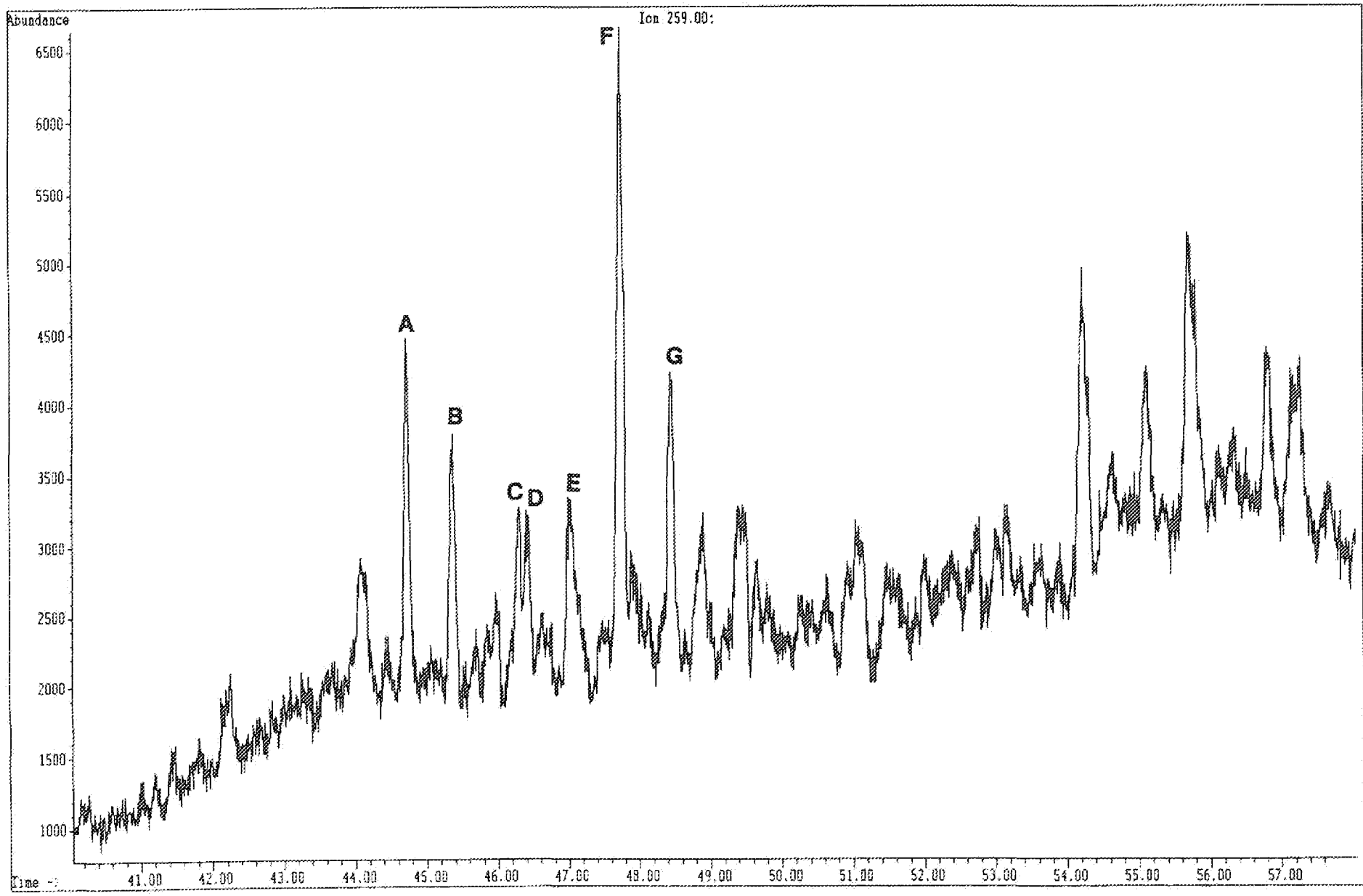
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Operator:
Date Acquired: 15 Dec 90 9:49 pm
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Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.2M
Bottle Number: 46

H3.3b

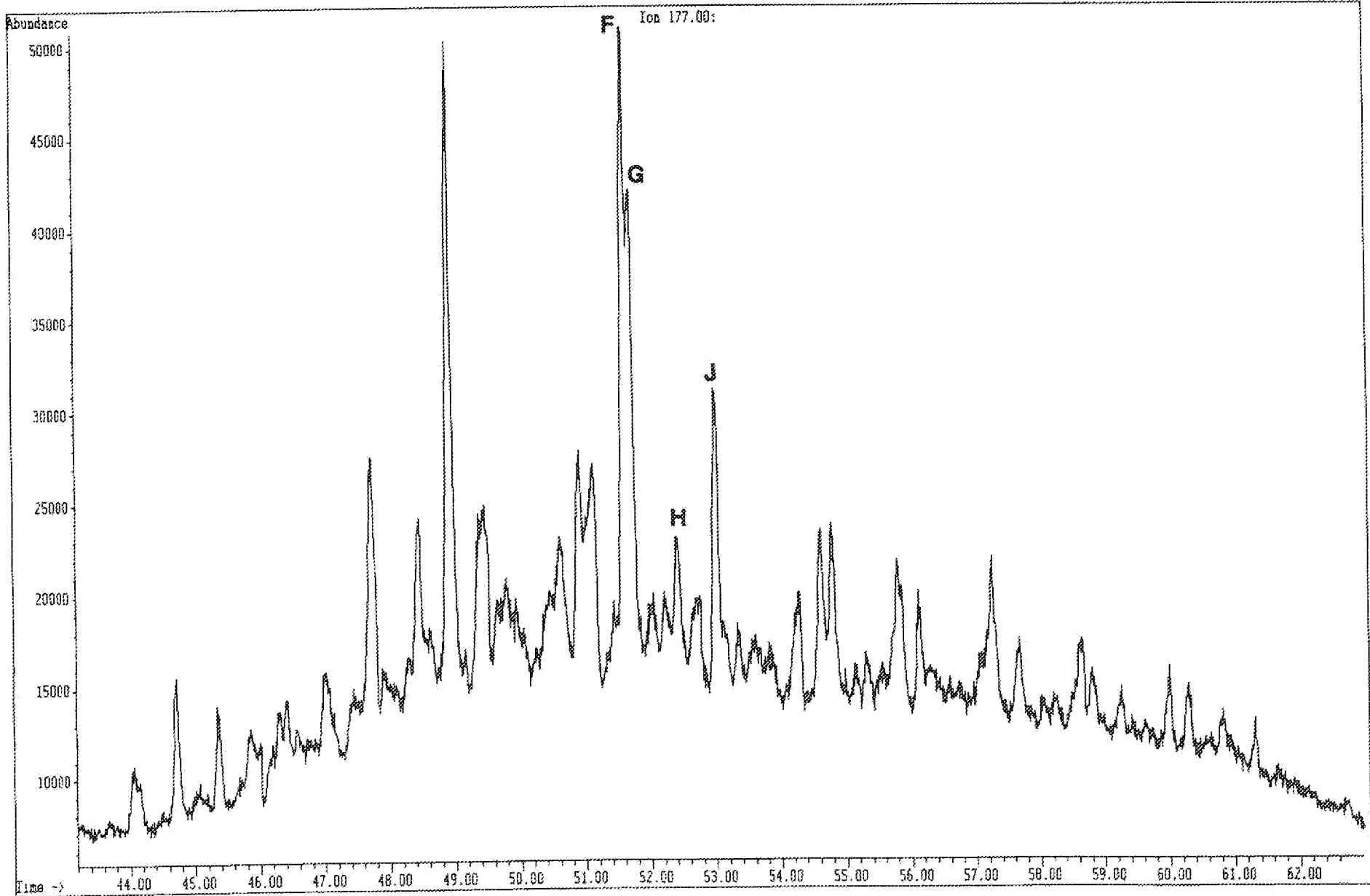


File: C:\CHEMPC\DATA\4601008.D
Operator:
Date Acquired: 15 Dec 90 9:49 pm
Method File Name: BIOM.M
Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.2M
Bottle Number: 46

H3.3c

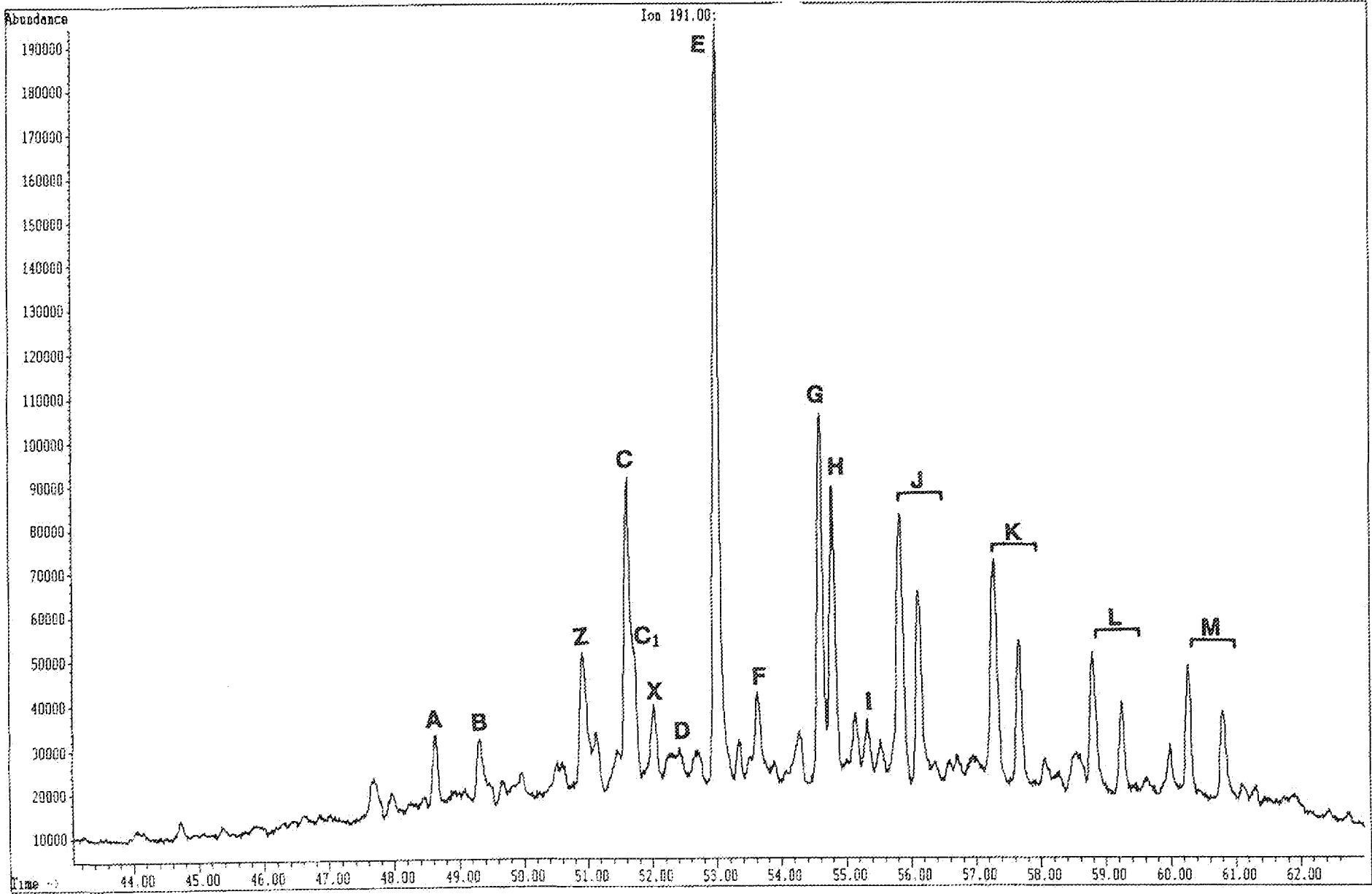


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Operator:
Date Acquired: 15 Dec 90 9:49 pm
Method File Name: BIOM.M
Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.ZM
Bottle Number: 46



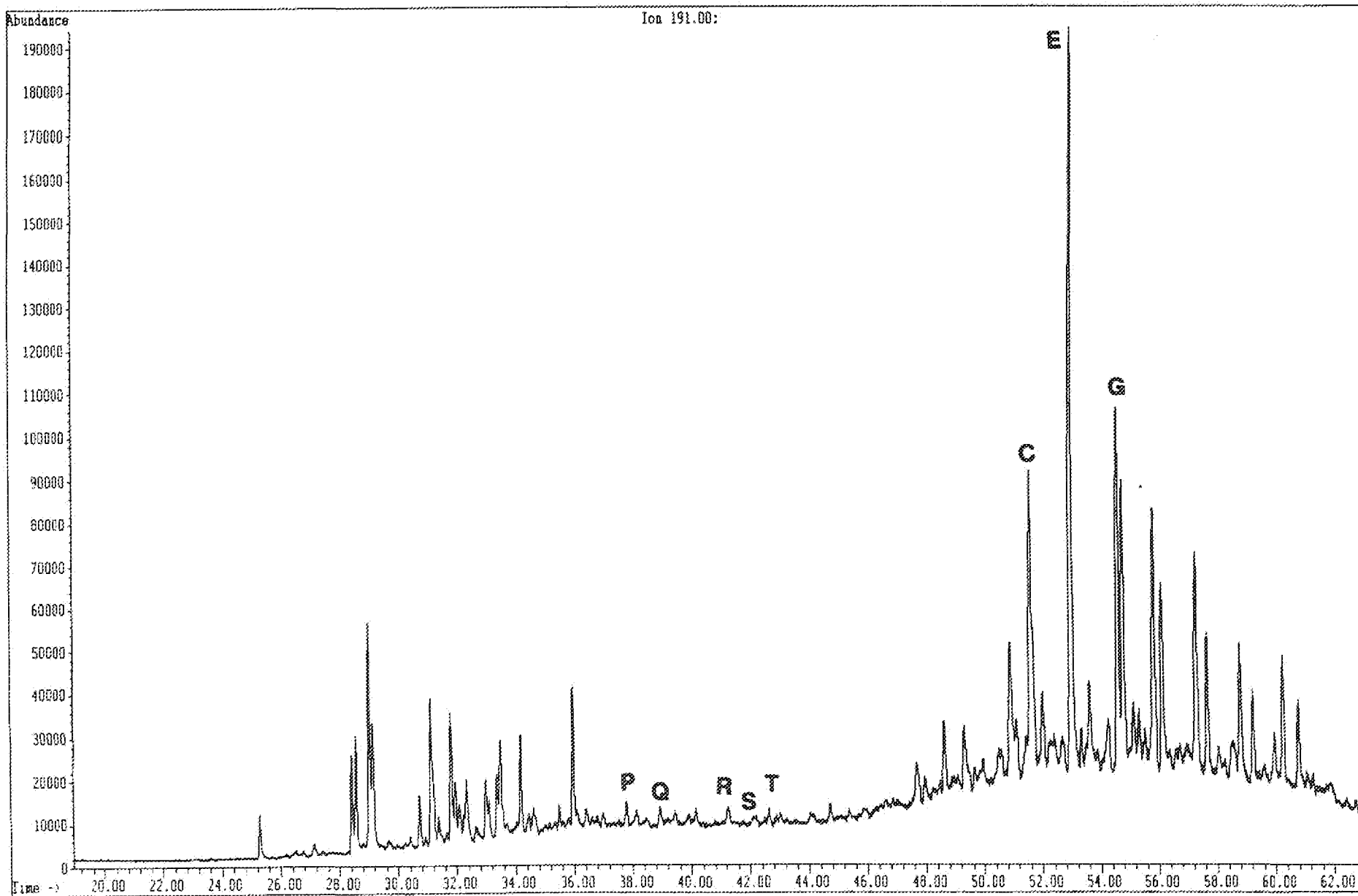
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Operator:
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Bottle Number: 46

H3.3e



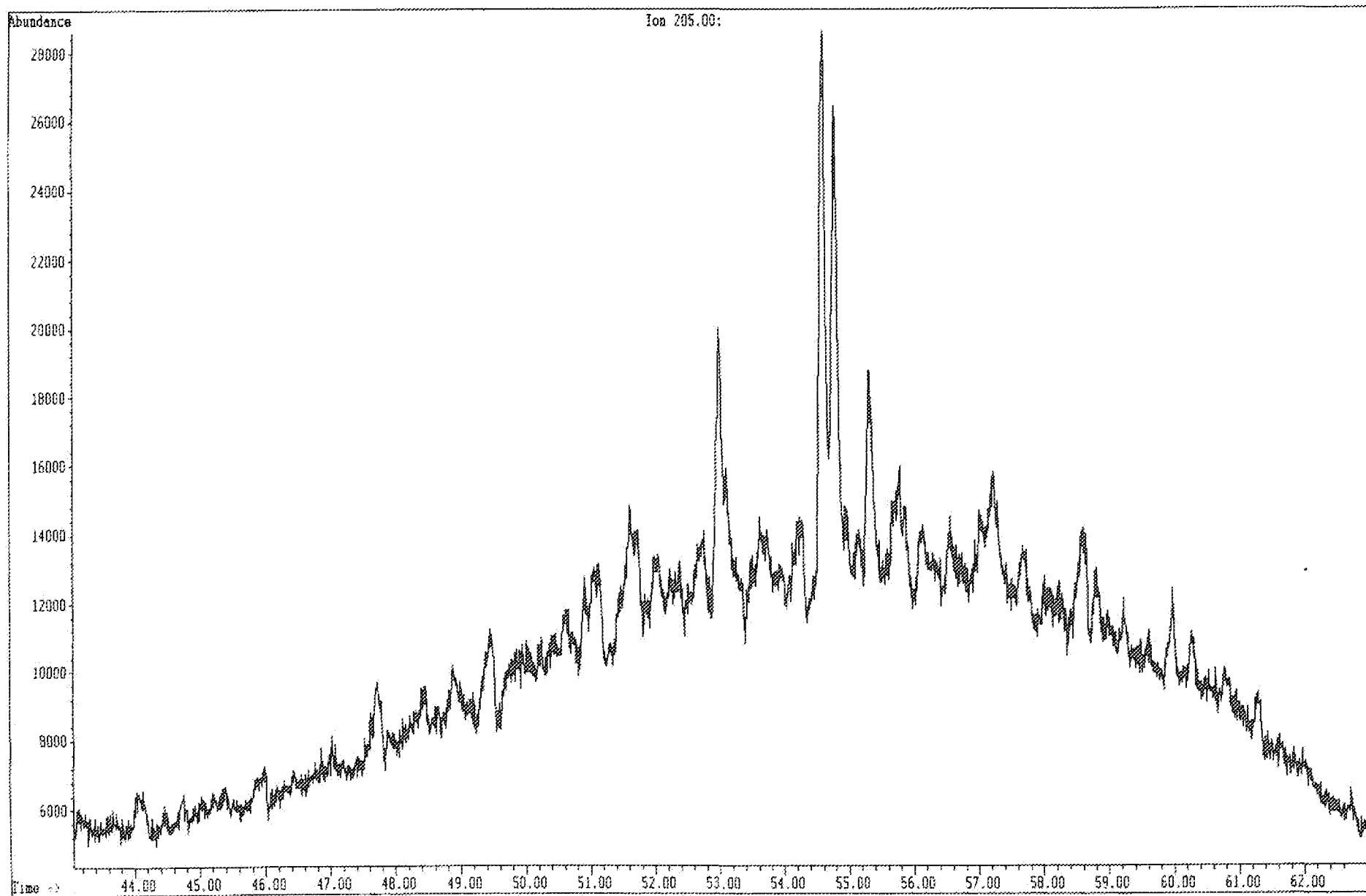
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Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.2M
Bottle Number: 46

H3.3f



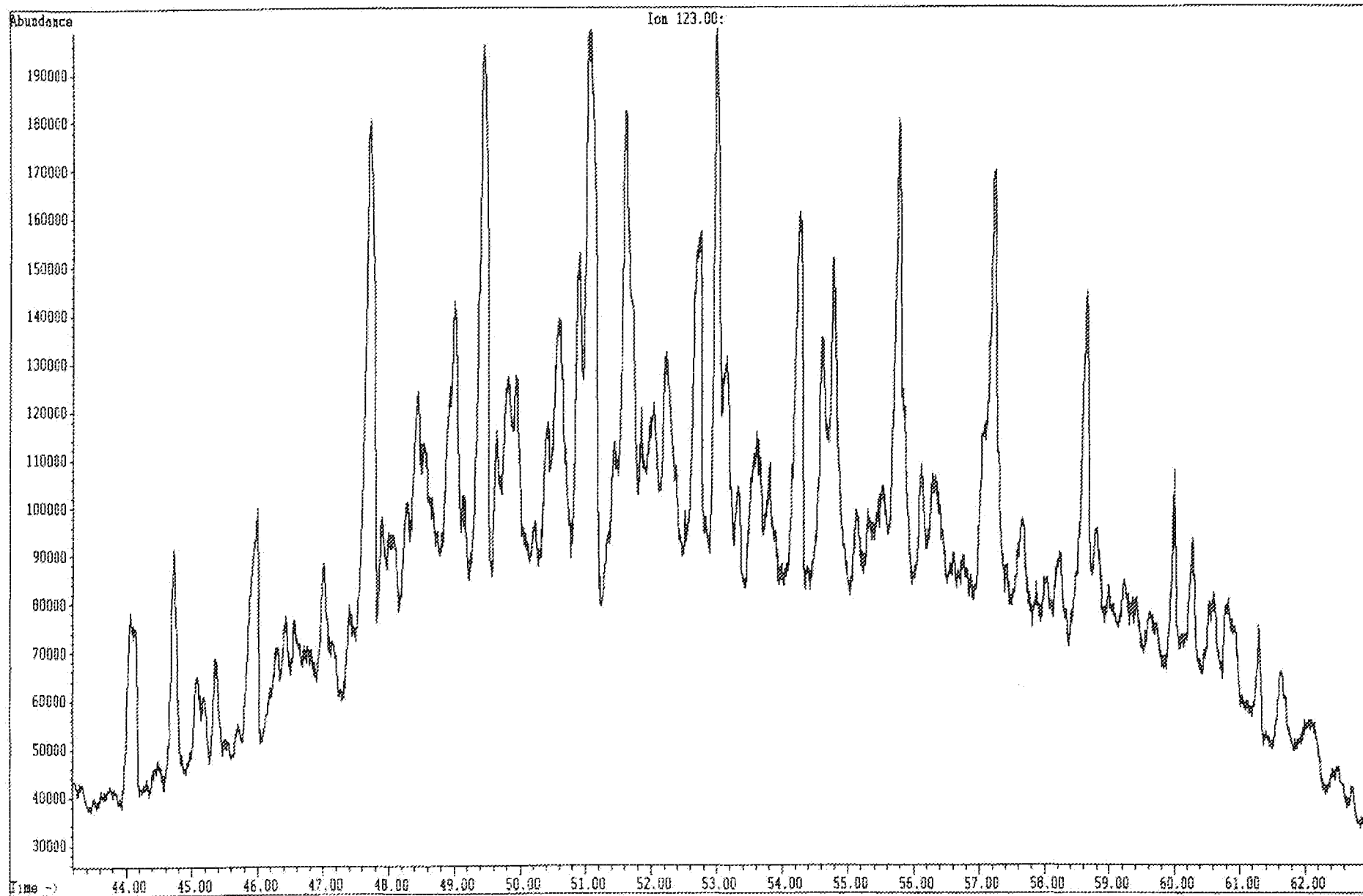
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Operator:
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Method File Name: BIOM.M
Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.ZM
Bottle Number: 46

H3.3g



File: C:\CHEMPC\DATA\4601008.D
Operator:
Date Acquired: 15 Dec 90 9:49 pm
Method File Name: BIOM.M
Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.2M
Bottle Number: 46

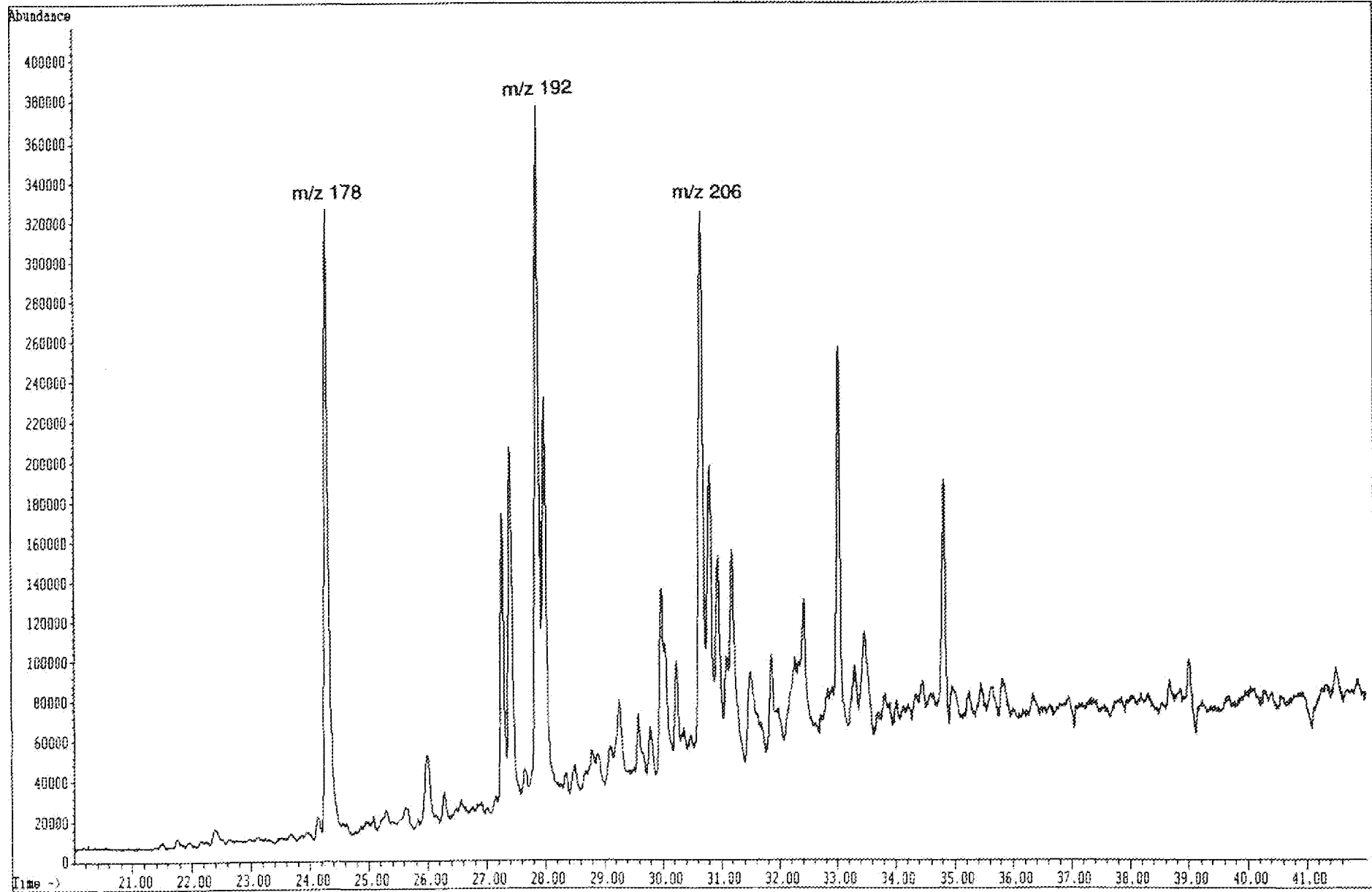
H3.3h



File: C:\CHEMPC\DATA\9001012.D
Operator:
Date Acquired: 11 Dec 90 2:49 pm
Method File Name: BIOMY.M
Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.ZK
Bottle Number: 90

H3.3i

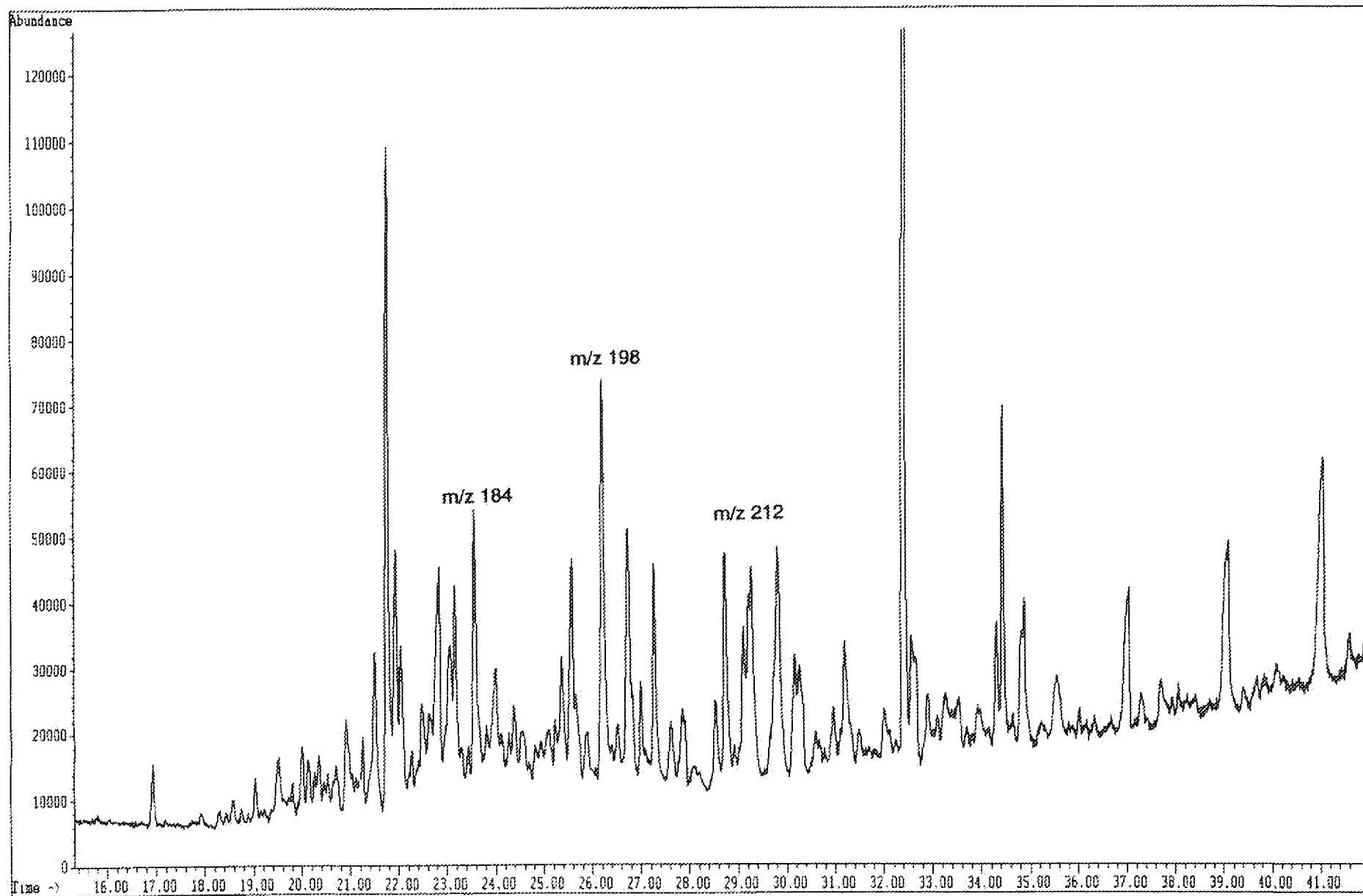
Phenanthrenes



File: C:\CHEMPC\DATA\9081012.D
Operator:
Date Acquired: 11 Dec 90 2:49 pm
Method File Name: BICOMY.M
Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.ZM
Bottle Number: 90

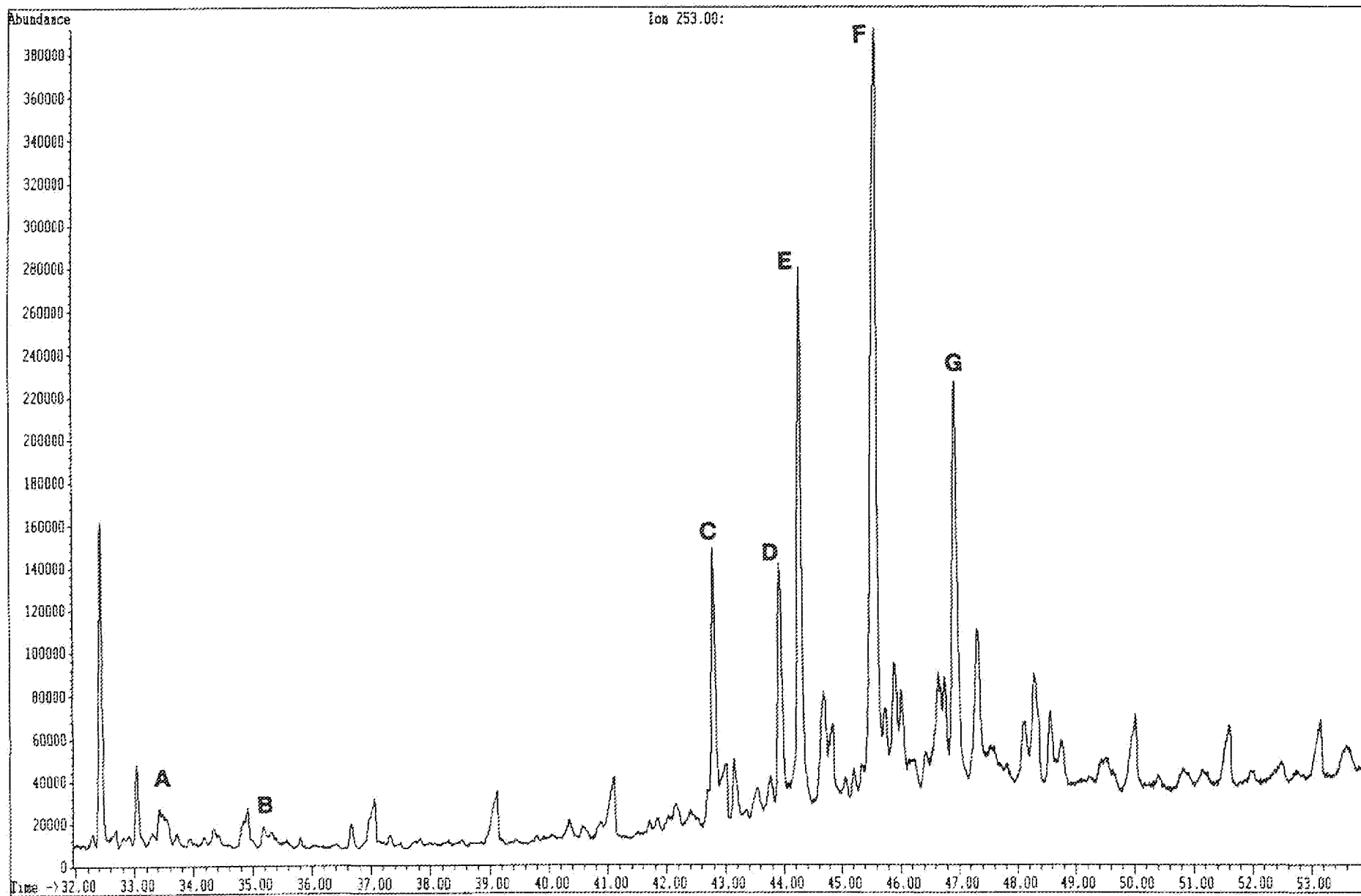
H3.3j

Dibenzothiophene

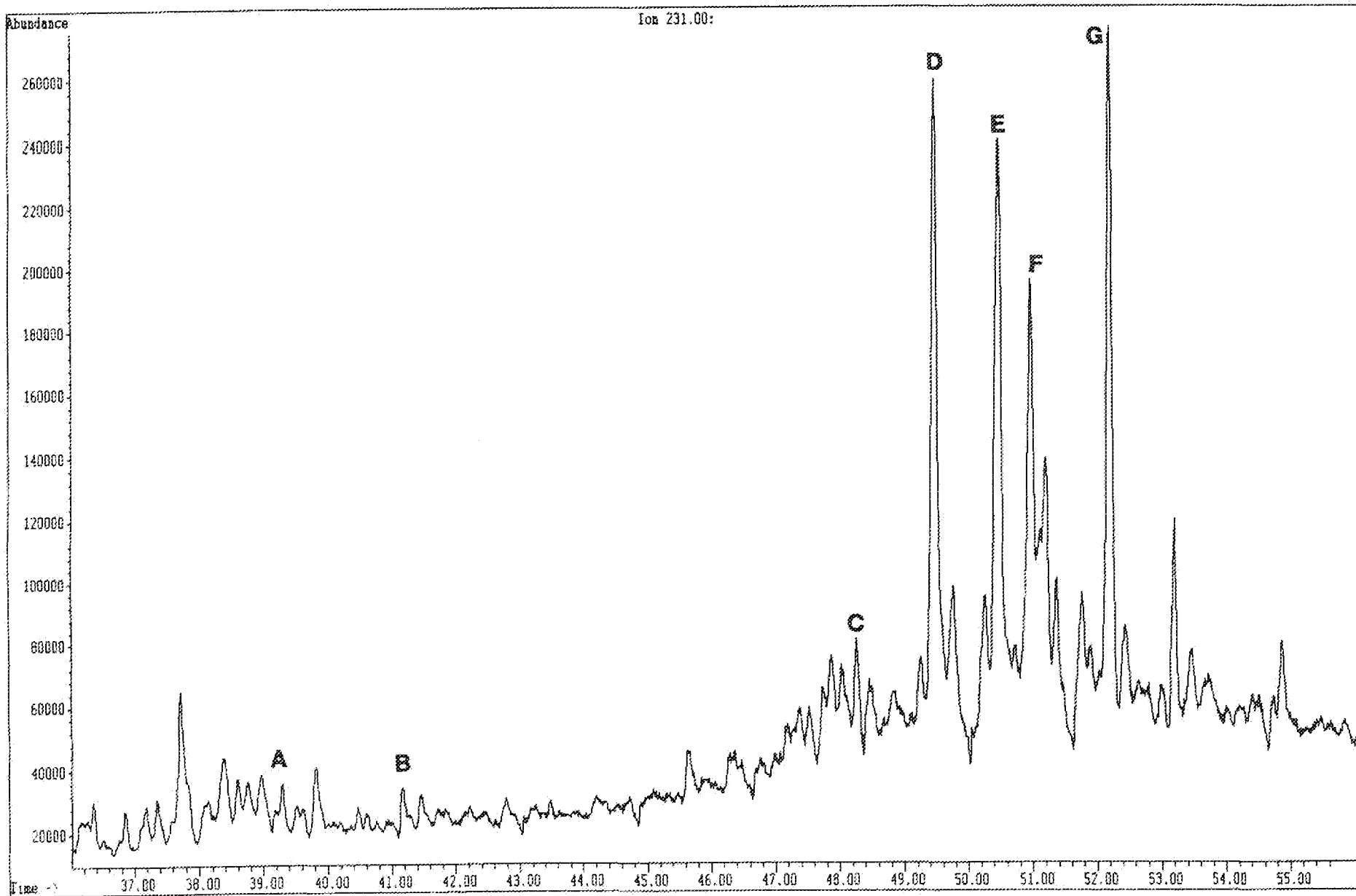


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Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.2M
Bottle Number: 90

H3.3k

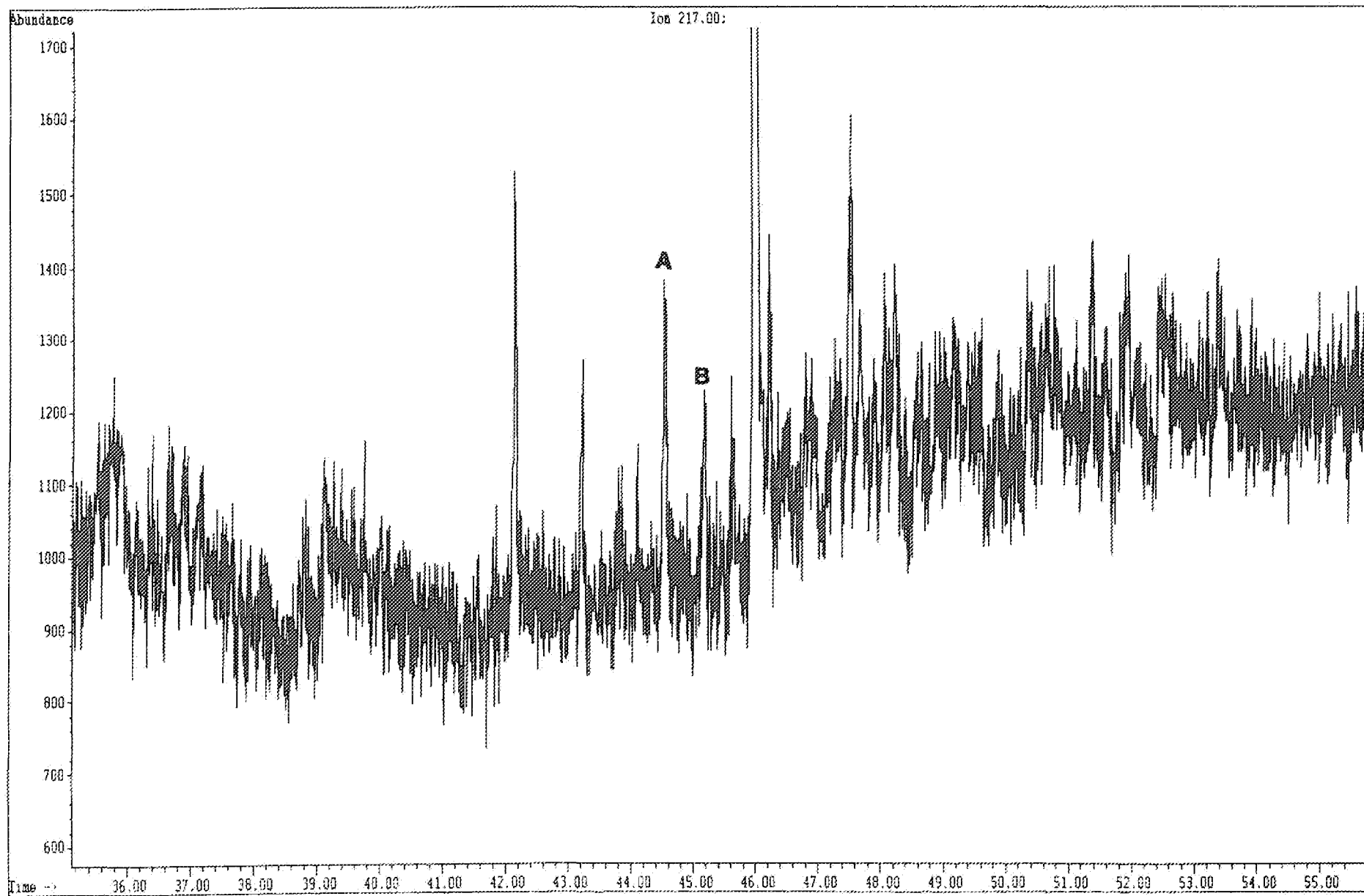


File: C:\CHEMPC\DATA\9001012.D
Operator:
Date Acquired: 11 Dec 90 2:49 pm
Method File Name: BICOMY.M
Sample Name: 4130-003
Misc Info: WELL 33/9-14 2797.ZM
Bottle Number: 90

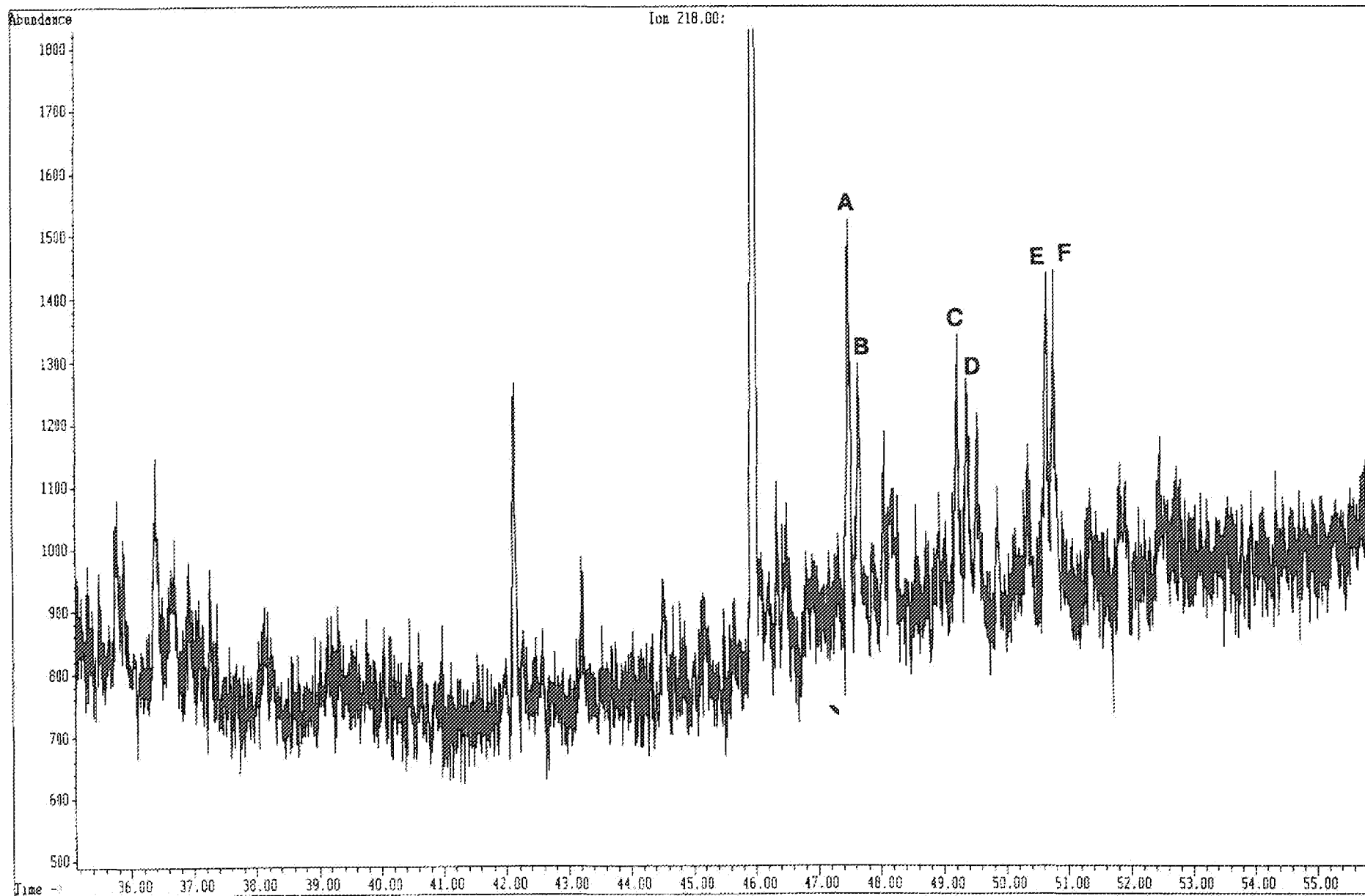


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Operator:
Date Acquired: 15 Dec 90 10:59 pm
Method File Name: BIOM.M
Sample Name: 4138-804
Misc Info: WELL 33/9-14 2803.5M
Bottle Number: 47

H3.4a

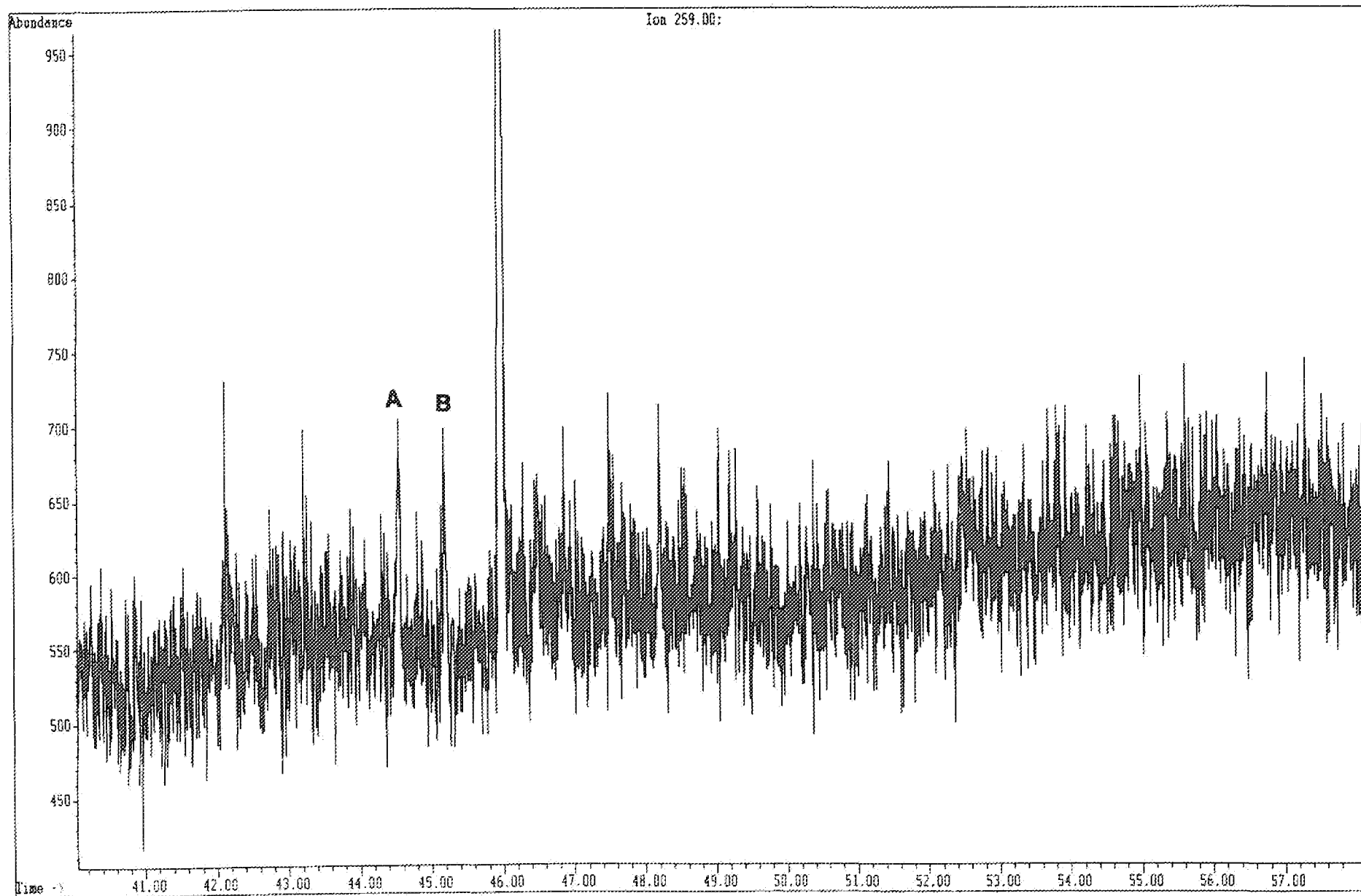


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Operator:
Date Acquired: 15 Dec 90 10:59 pm
Method File Name: BIOM.M
Sample Name: 4130-004
Misc Info: WELL 33/9-14 2803.5M
Bottle Number: 47



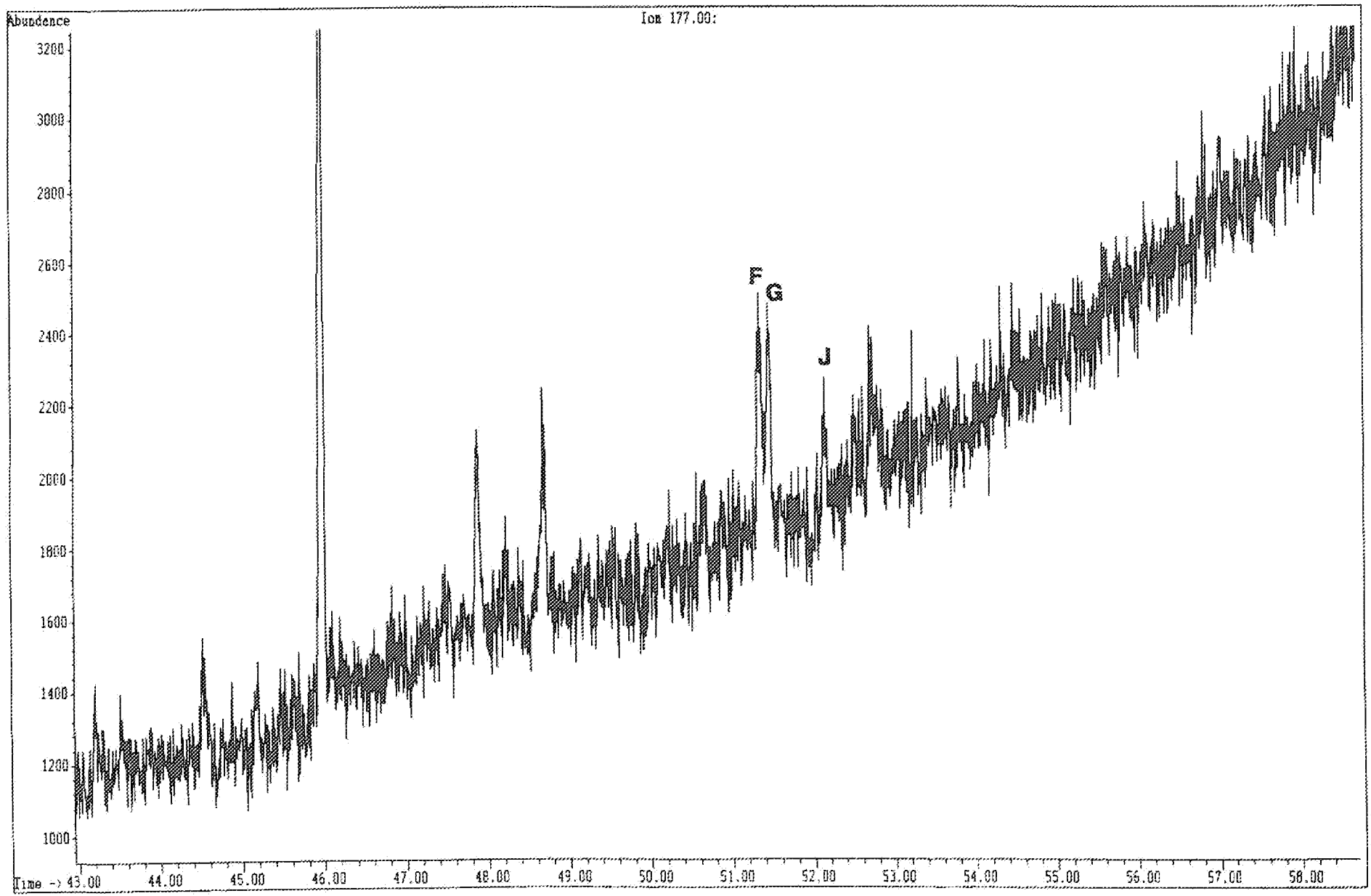
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Date Acquired: 15 Dec 98 10:59 pm
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Sample Name: 4130-004
Misc Info: WELL 33/9-14 2803.5M
Bottle Number: 47

H3.4c



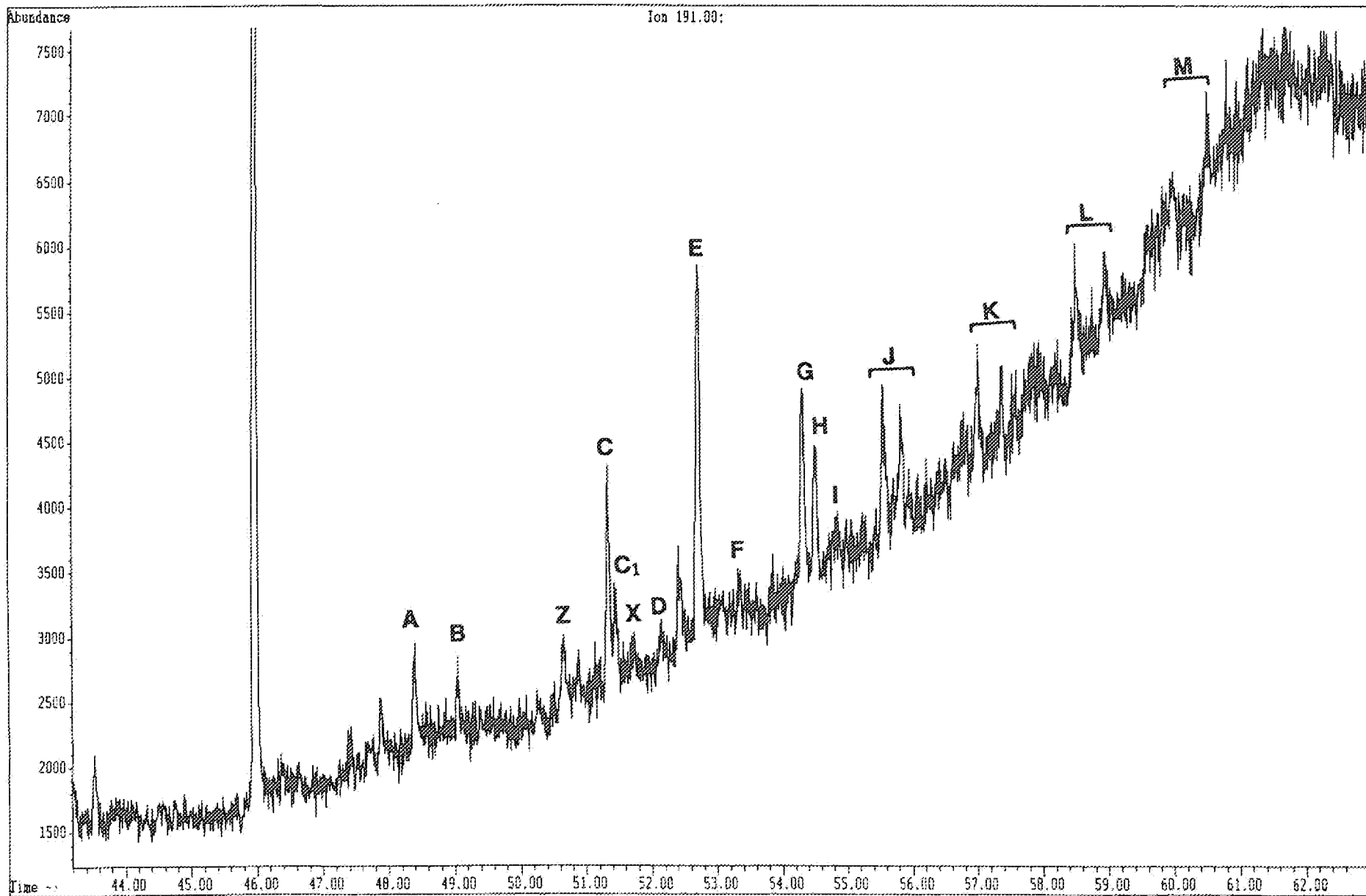
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Date Acquired: 15 Dec 90 10:59 pm
Method File Name: B10M.M
Sample Name: 4130-004
Misc Info: WELL 33/9-14 2883.5M
Bottle Number: 47

H3.4d



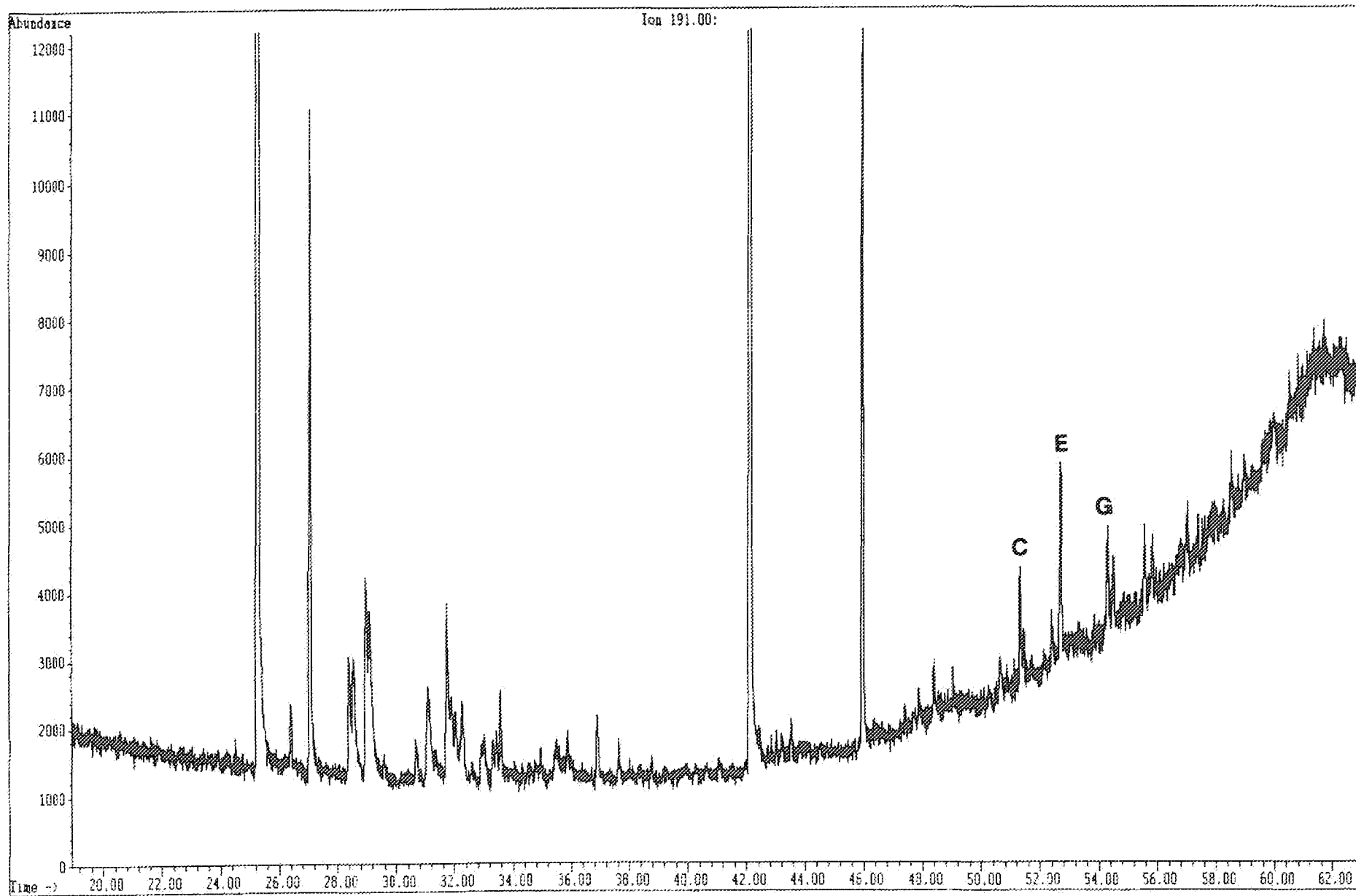
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Operator:
Date Acquired: 15 Dec 90 10:59 pm
Method File Name: BIOM.M
Sample Name: 4130-004
Misc Info: WELL 33/9-14 2803.5M
Bottle Number: 47

H3.4e



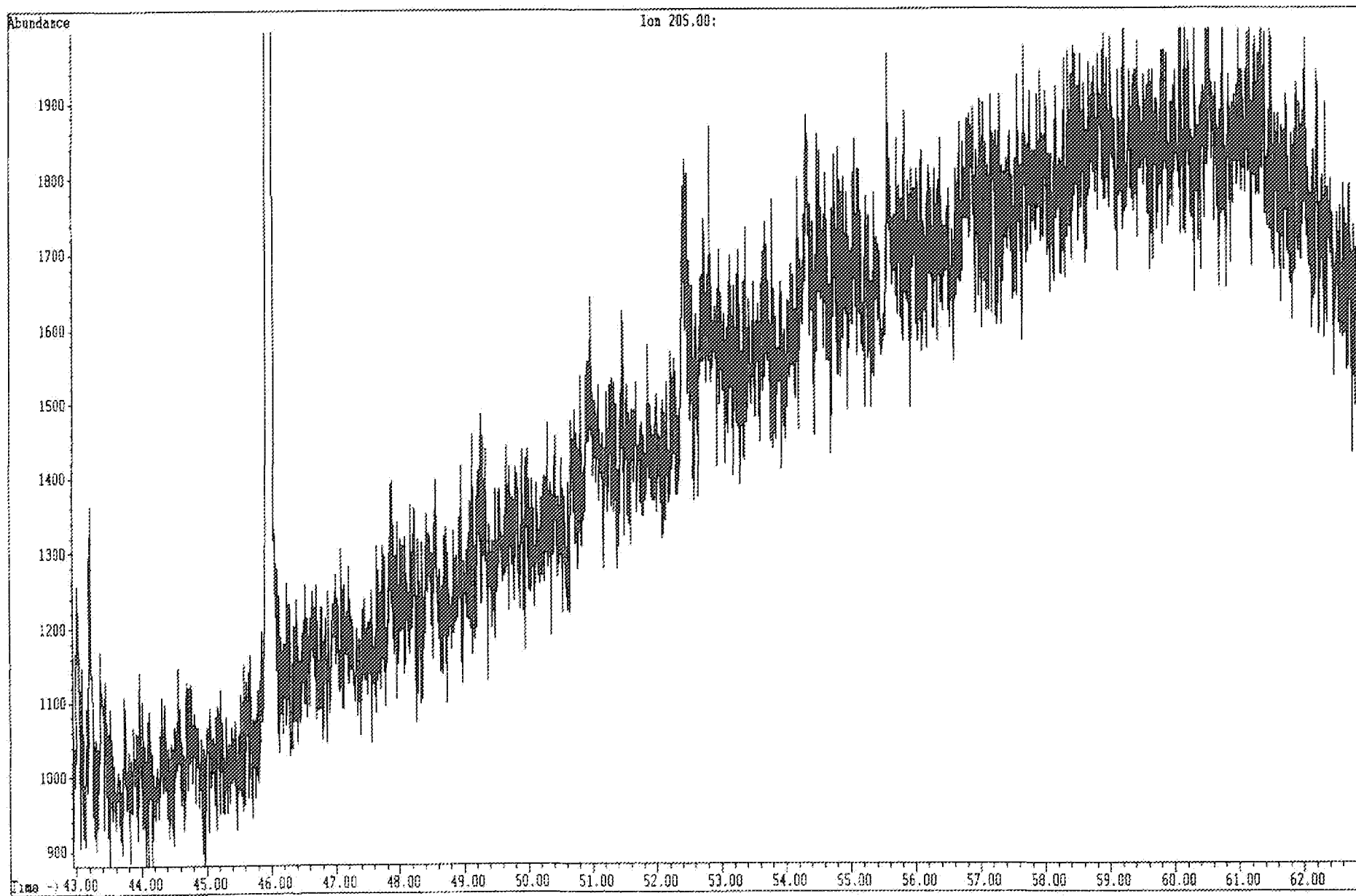
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Misc Info: WELL 33/9-14 2803.5M
Bottle Number: 47

H3.4f

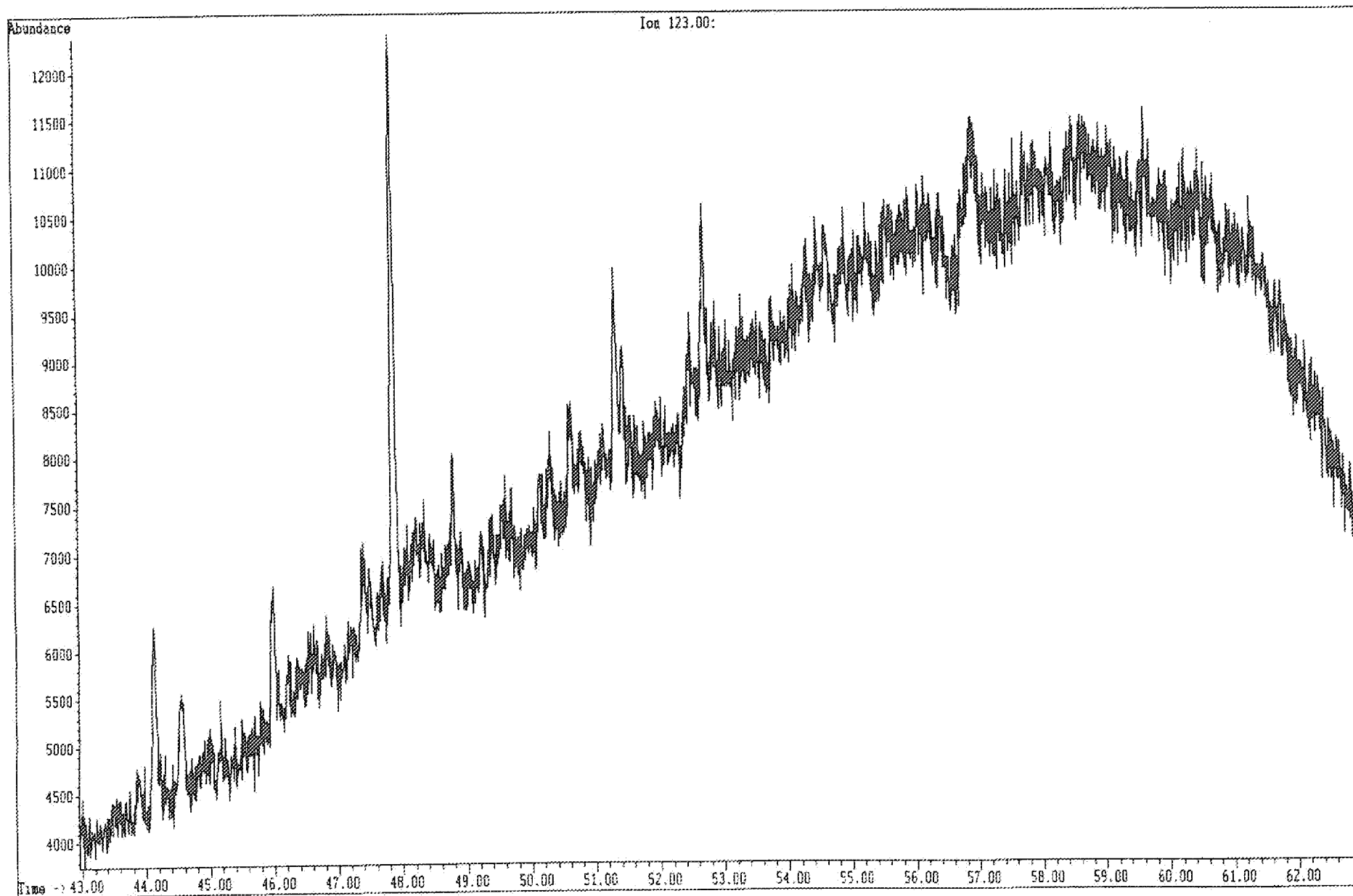


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Method File Name: BICM.M
Sample Name: 4130-004
Misc Info: WELL 33/9-14 2803.5M
Bottle Number: 47

H3.4g



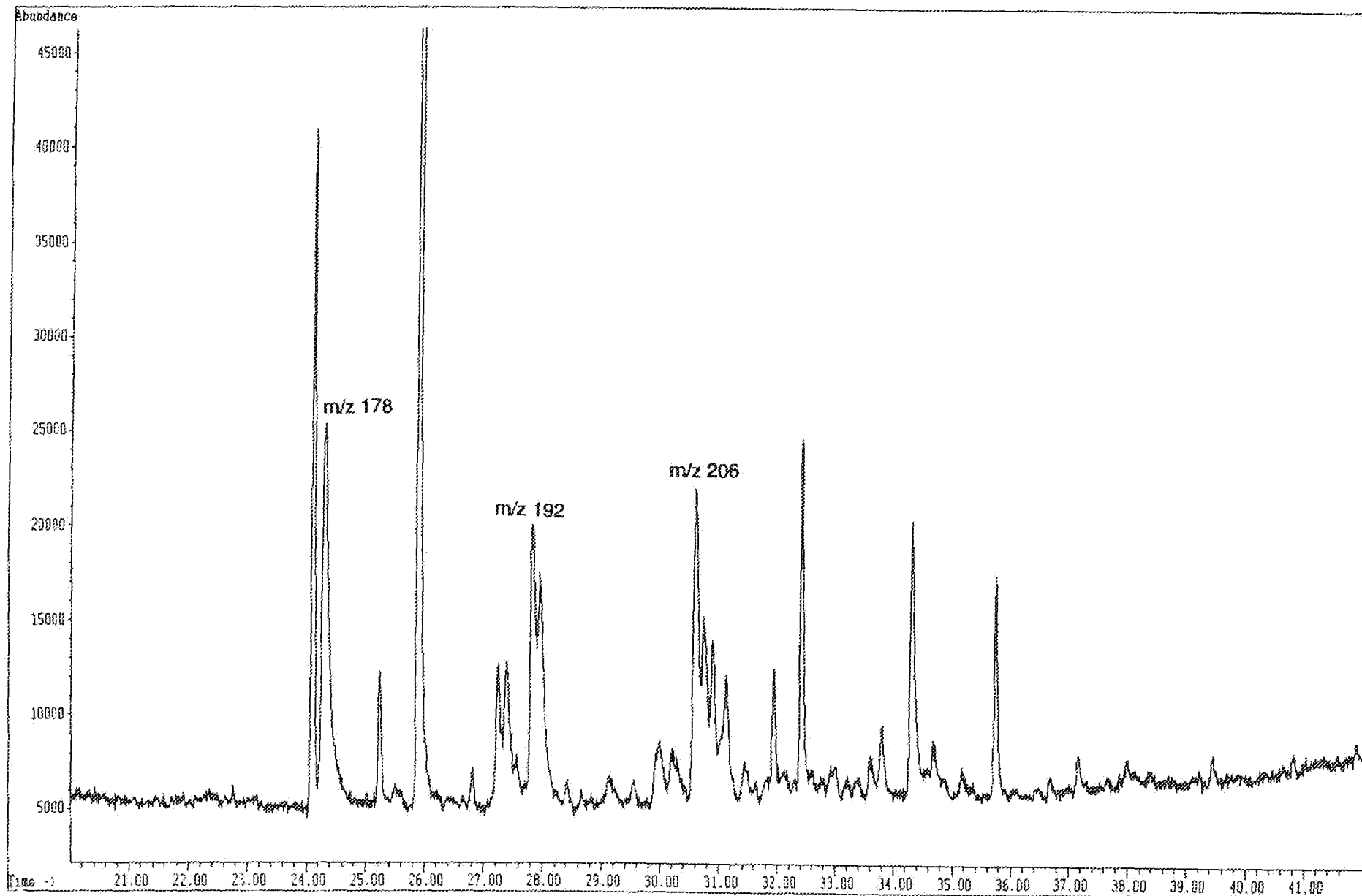
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Method File Name: B10M.M
Sample Name: 4130-004
Misc Info: WELL 33/9-14 2803.SM
Bottle Number: 47



File: C:\CHEMPC\DATA\91D1013.D
Operator:
Date Acquired: 11 Dec 90 3:57 pm
Method File Name: BICMY.M
Sample Name: 4130-004
Misc Info: WELL 33/9-14 2803.SM
Bottle Number: 91

H3.4i

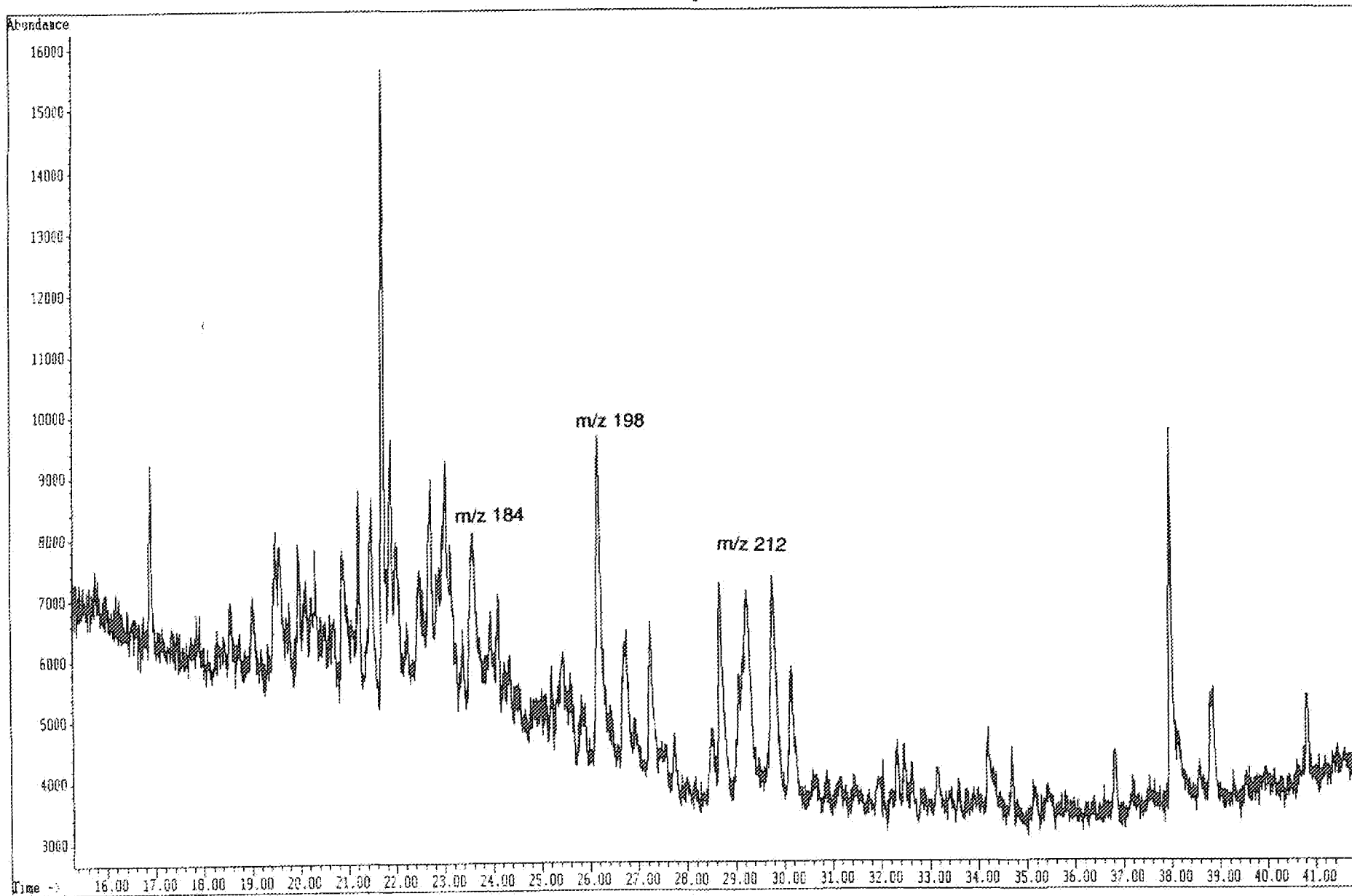
Phenanthrenes



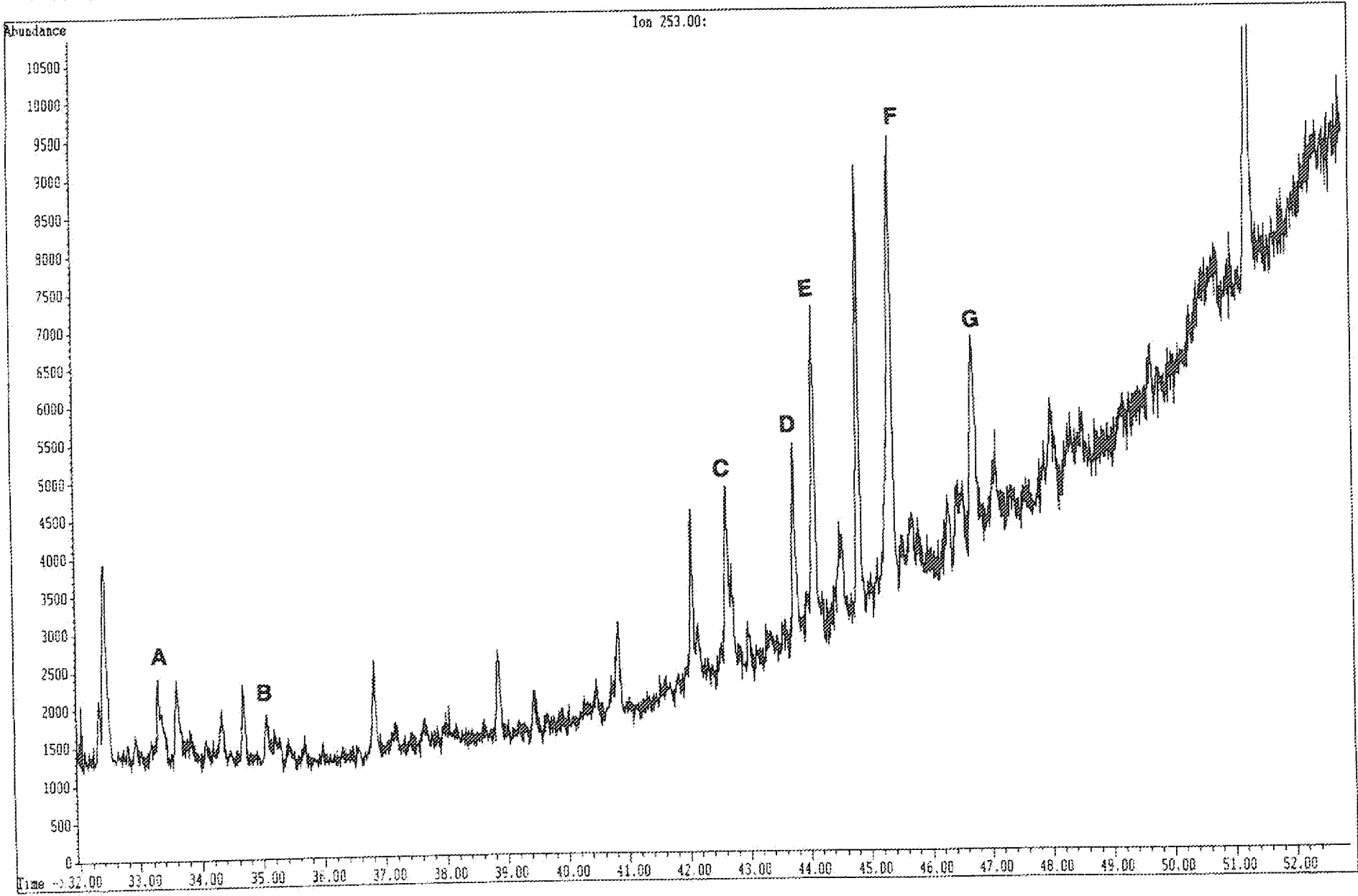
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Operator:
Date Acquired: 11 Dec 90 3:57 pm
Method File Name: BIOMY.M
Sample Name: 413H-004
Misc Info: WELL 33/9-14 2803.5M
Bottle Number: 91

H3.4j

Dibenzothiophenes

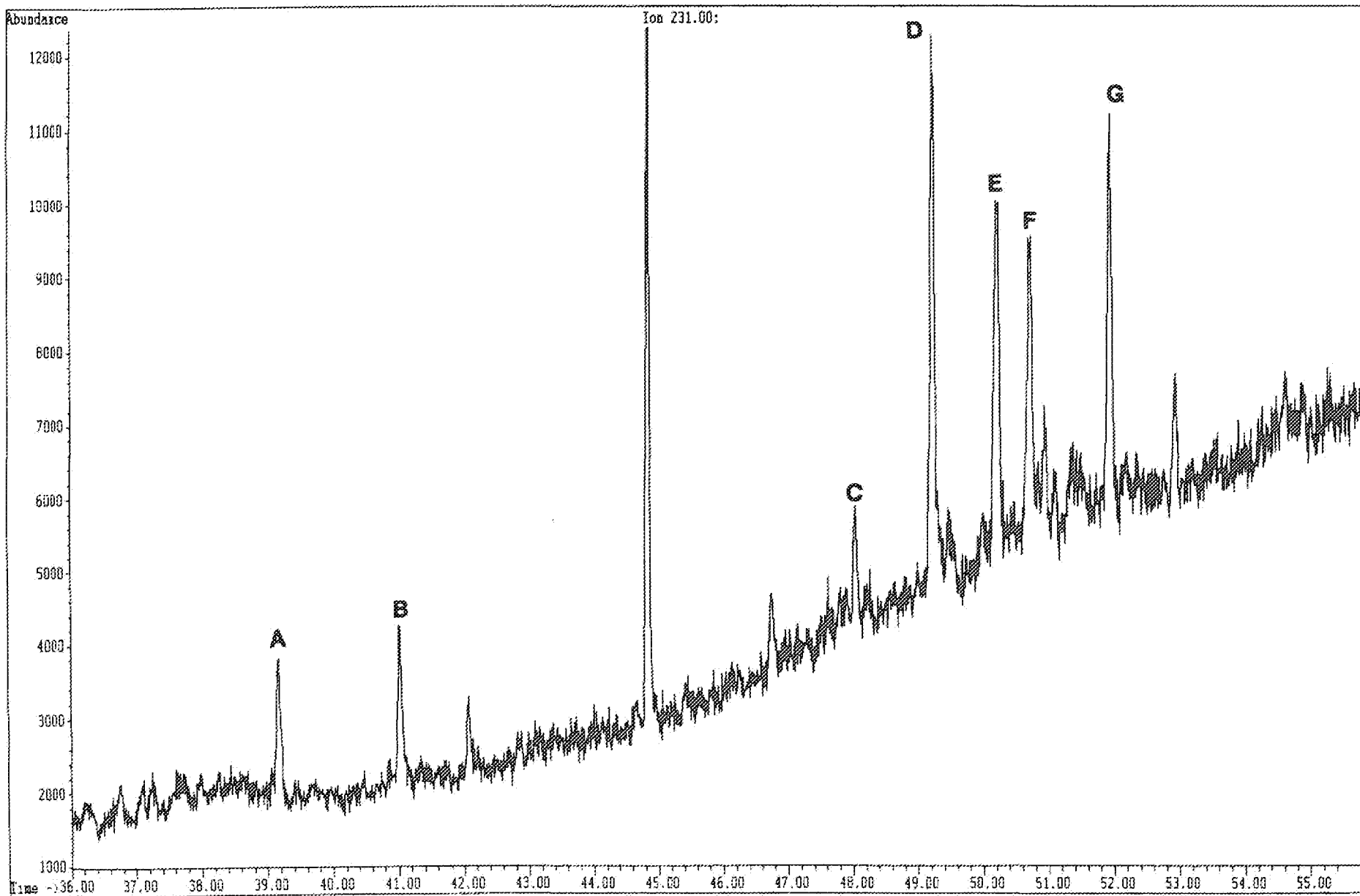


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Operator:
Date Acquired: 11 Dec 90 3:57 pm
Method File Name: B10MY.M
Sample Name: 4130-004
Misc Info: WELL 33/9-14 2803.5M
Bottle Number: 91



File: C:\CHEMPC\DATA\9101013.D
Operator:
Date Acquired: 11 Dec 90 3:57 pm
Method File Name: BICOMY.M
Sample Name: 4130-004
Misc Info: WELL 33/9-14 2803.5M
Bottle Number: 91

H3.41



33/9-8

TABLE 11
ORGANIC CARBON RESULTS AND GROSS LITHOLOGIC DESCRIPTIONS

| JOB 4131 | DEPTH/ IDENTITY | GROSS LITHOLOGIC DESCRIPTION | G S A COLOUR CODE | TOTAL ORGANIC CARBON (wt. %) |
|-----------------------------|--------------------|------------------------------|-------------------------|---------------------------------------|
| GEOCHEM SAMPLE NUMBER | | | | |

WELL: 33/9-8

| | | | | |
|----------|---------|---|---------|--|
| 4131-001 | 2689.7m | A100% SANDSTONE - med grained, blocky, mod soft, yellow F, slow blooming milky cut, pale yellowish brown. | 10YR6/2 | |
| 4131-002 | 2696.5m | A100% SANDSTONE - as 4131-001A, pale yellowish brown. | 10YR6/2 | |

Abbreviations = arenaceous, argillaceous, calcareous, Cut, dolomite, Fluorescence, foraminifera
fossiliferous, Lost Circulation Material, moderately, occasionally, slightly, very

TABLE 12
 CONCENTRATION (PPM) OF EXTRACTED C₁₅₊ MATERIAL IN ROCK

| JOB 4131 GEOCHEM SAMPLE NUMBER | L I T H O | DEPTH/ IDENTITY | TOTAL EXTRACT | HYDROCARBONS | | | NON HYDROCARBONS | | | |
|---|-----------------------|--------------------|------------------|--------------|-----------|-------|--------------------------|-----------------|---------------------|-------|
| | | | | Saturates | Aromatics | TOTAL | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's | TOTAL |

WELL: 33/9-8

| | | | | | | | | | |
|----------|---------|-------|------|-----|------|-----|------|----|------|
| 4131-001 | 2689.7m | 9853 | 7185 | 847 | 8031 | 546 | 1247 | 29 | 1821 |
| 4131-002 | 2696.5m | 11366 | 8602 | 977 | 9579 | 626 | 1127 | 33 | 1786 |

TABLE 13
COMPOSITION (NORMALISED %) OF C₁₅₊ MATERIAL

| JOB 4131 GEOCHEM SAMPLE NUMBER | L I T H O | DEPTH/ IDENTITY | HYDROCARBONS | | NON HYDROCARBONS | | |
|---|-----------------------|--------------------|--------------|-----------|--------------------------|-----------------|---------------------|
| | | | Saturates | Aromatics | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's |

WELL: 33/9-8

| | | | | | | |
|----------|---------|-------|------|------|-------|------|
| 4131-001 | 2689.7m | 72.92 | 8.60 | 5.54 | 12.65 | 0.29 |
| 4131-002 | 2696.5m | 75.69 | 8.60 | 5.51 | 9.92 | 0.29 |

TABLE 14
SIGNIFICANT C₁₅₊ RATIOS

| JOB 4131 | L I T H O | DEPTH/ IDENTITY | TOC (%) | mg/g TOC | | | | | | HYDROCARBONS % TOTAL EXTRACT | SATURATES AROMATICS |
|----------|-----------------------|--------------------|------------|------------------|-----------|-----------|-----------------------|-----------------|-------------|------------------------------------|------------------------|
| | | | | TOTAL EXTRACT | SATURATES | AROMATICS | TOTAL HYDROCARBONS | ELUTED NSO's | ASPHALTENES | | |

WELL: 33/9-8

| | | | | | | | | | | |
|----------|---------|------|---------|---------|--------|---------|--------|--------|-------|------|
| 4131-001 | 2689.7m | 0.26 | 3789.54 | 2763.28 | 325.72 | 3088.99 | 479.52 | 210.00 | 81.51 | 8.48 |
| 4131-002 | 2696.5m | 0.27 | 4209.46 | 3185.96 | 361.83 | 3547.79 | 417.53 | 231.94 | 84.28 | 8.81 |

TABLE 15
C₁₅₊ CHROMATOGRAPHY WEIGHTS (grams)

| JOB 4131 | L I T H O | DEPTH/ IDENTITY | ROCK EXTRACTED | TOTAL EXTRACT | PRECIPTD. ASPHALTENES | NC5 | SATURATES | AROMATICS | ELUTED NSO's | NON-ELUTED NSO's |
|-----------------------------|-----------------------|--------------------|-------------------|------------------|--------------------------|-----|-----------|-----------|-----------------|---------------------|
| GEOCHEM SAMPLE NUMBER | | | | | | | | | | |

WELL: 33/9-8

| | | | | | | | | | |
|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 4131-001A | 2689.7m | 18.4800 | 0.18208 | 0.01009 | 0.17199 | 0.13277 | 0.01565 | 0.02304 | 0.00053 |
| 4131-002A | 2696.5m | 18.2200 | 0.20708 | 0.01141 | 0.19567 | 0.15673 | 0.01780 | 0.02054 | 0.00060 |

TABLE 16
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

| GEOCHEM SAMPLE NUMBER | 001 | 002 |
|-----------------------|---------|---------|
| DEPTH | 2689.7m | 2696.5m |
| SAMPLE TYPE | | |
| nC15 | 0.72 | 0.71 |
| nC16 | 1.81 | 1.56 |
| nC17 | 4.63 | 3.61 |
| nC18 | 6.28 | 6.72 |
| nC19 | 7.63 | 8.26 |
| nC20 | 8.28 | 10.27 |
| nC21 | 8.56 | 9.71 |
| nC22 | 9.15 | 9.32 |
| nC23 | 7.36 | 8.39 |
| nC24 | 7.75 | 8.60 |
| nC25 | 7.49 | 7.63 |
| nC26 | 6.95 | 7.23 |
| nC27 | 5.89 | 5.27 |
| nC28 | 4.90 | 4.06 |
| nC29 | 4.18 | 3.36 |
| nC30 | 3.03 | 2.10 |
| nC31 | 2.18 | 1.35 |
| nC32 | 1.27 | 0.70 |
| nC33 | 0.91 | 0.52 |
| nC34 | 0.64 | 0.39 |
| nC35 | 0.42 | 0.27 |
| Paraffin | 18.75 | 15.10 |
| Isoprenoid | 1.47 | 1.31 |
| Naphthene | 79.78 | 83.59 |
| CPI 1 Index | 0.97 | 0.97 |
| CPI 2 Index | 1.05 | 1.03 |
| CPI 3 Index | 0.99 | 0.93 |
| Prist/Phytane | 0.88 | 0.79 |
| Prist/nC17 | 0.72 | 0.86 |
| Phytane/nC18 | 0.61 | 0.59 |

Job Number : 4131

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{26} + C_{22} + C_{24} + C_{28}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{26} + C_{28}}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 17
METHYLPHENANTHRENE INDICES (MPI)

| JOB 4131 | DEPTH/ IDENTITY | SAMPLE TYPE | MPI 1 | | Rcalc | | MPI 2 | |
|-----------------------------|--------------------|----------------|-------|--------|-------|--------|-------|--------|
| GEOCHEM SAMPLE NUMBER | | | AREA | HEIGHT | AREA | HEIGHT | AREA | HEIGHT |

WELL: 33/9-8

| | | | | | | | | |
|----------|---------|--|------|------|--|--|------|------|
| 4131-001 | 2689.7m | | 0.63 | 0.67 | | | 0.67 | 0.66 |
| 4131-002 | 2696.5m | | 0.65 | 0.70 | | | 0.68 | 0.71 |

$$\text{MPI 1} = \frac{1.5(2\text{-MP} + 3\text{-MP})}{\text{P} + 1\text{-MP} + 9\text{-MP}} \quad \text{MPI 2} = \frac{3(2\text{-MP})}{\text{P} + 1\text{-MP} + 9\text{-MP}}$$

$$\text{Rcalc} = \begin{cases} -0.60(\text{MPI 1}) + 0.40 & (\text{if } R_o < 1.35\%) \\ -0.60(\text{MPI 1}) + 2.30 & (\text{if } R_o > 1.35\%) \end{cases}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 18

AROMATIC HYDROCARBONS RATIOS (MSD, PEAK AREA DATA)

| SAMPLE NUMBER | DEPTH (m) | 2MP/1MP | RATIO 1 | RATIO 2 | RATIO 3 |
|---------------|-----------|---------|---------|---------|---------|
|---------------|-----------|---------|---------|---------|---------|

WELL: 33/9-8

| | | | | | |
|-----------|--------|------|------|------|------|
| 4131-001A | 2689.7 | 0.62 | 0.41 | 0.54 | 0.14 |
| 4131-002A | 2696.5 | 0.63 | 0.36 | 0.54 | 0.19 |

RATIO 1 = $A(231)/A(231) + G(231)$

RATIO 2 = $E(253)/E(253) + G(253)$

RATIO 3 = $A(253)/B(231) + E(253)$

TABLE 19
 CARBON ISOTOPE COMPOSITIONS (‰, PDB)

| JOB 4131 | | | | | | | | |
|-----------------------------|--------------------|----------------------------|-----------|-----------|-----|-------------|---------|--------------------|
| GEOCHEM SAMPLE NUMBER | DEPTH/ IDENTITY | TOTAL EXTRACT WHOLE OIL | SATURATES | AROMATICS | NSO | ASPHALTENES | KEROGEN | PYROLYSATE (S2) |

WELL: 33/9-8

| | | | | | | | | |
|----------|---------|--------|--------|--------|--------|--------|--|--|
| 4131-001 | 2689.7m | -28.53 | -29.32 | -28.13 | -29.50 | -28.51 | | |
| 4131-002 | 2696.5m | -28.81 | -29.02 | -28.56 | -29.40 | -28.17 | | |

TABLE I10
BIOMARKER MOLECULAR RATIOS

WELL: 33/9-8

| SAMPLE NUMBER | DEPTH (m) | Steranes (m/z 217) | | | Steranes (m/z 218) | | |
|------------------|--------------|--------------------|------------|--------------------|-------------------------|-----|-----|
| | | A (A+J) | Q (Q+T) | (R+S) (Q+R+S+T) | NORMALISED COMPOSITION: | | |
| | | | | | B | D | F |
| 4131-001A | 2689.7 | 0.68 | 0.53 | 0.51 | 23% | 29% | 48% |
| 4131-002A | 2696.5 | 0.70 | 0.59 | 0.49 | 25% | 28% | 47% |

TABLE I11
BIOMARKER MOLECULAR RATIOS

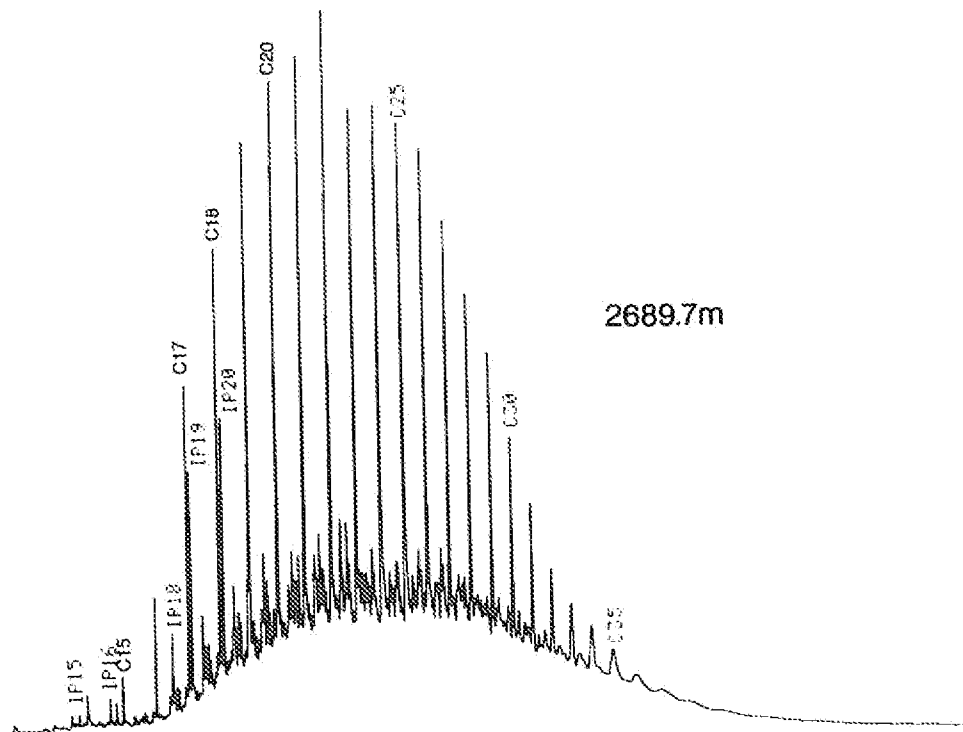
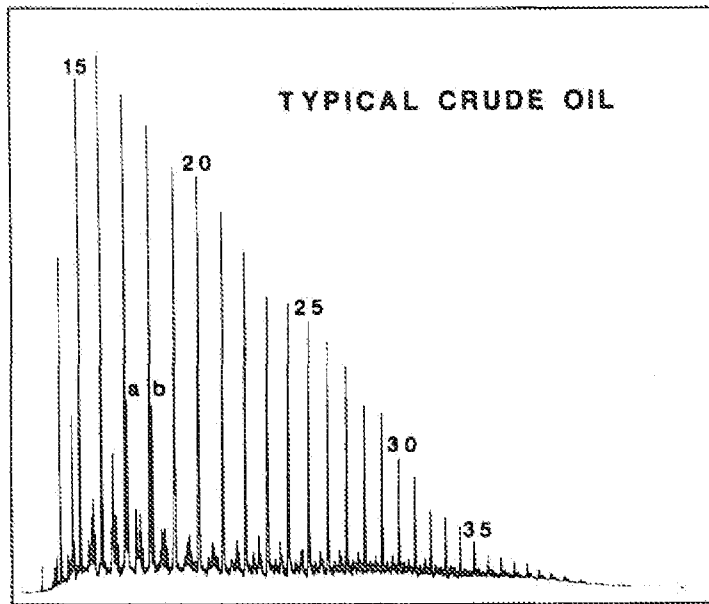
WELL 33/9-8

Terpanes (m/z 191)

| SAMPLE NUMBER | DEPTH (m) | A/B | Z/E | Z/C | <u>Z</u> (Z+E) | <u>C</u> (C+E) | %22S for J | <u>E</u> (E+F) | <u>X</u> (X+D) | Q/E |
|------------------|--------------|------|------|------|-------------------|-------------------|---------------|-------------------|-------------------|------|
| 4131-001A | 2689.7 | 1.27 | 0.26 | 0.59 | 0.20 | 0.30 | 0.64 | 0.83 | 0.74 | 0.14 |
| 4131-002A | 2696.5 | 1.62 | 0.26 | 0.44 | 0.21 | 0.37 | 0.63 | 0.81 | 0.63 | 0.13 |

FIGURE 11.1 C₁₅+ SATURATES CHROMATOGRAMS

WELL 33/9-8



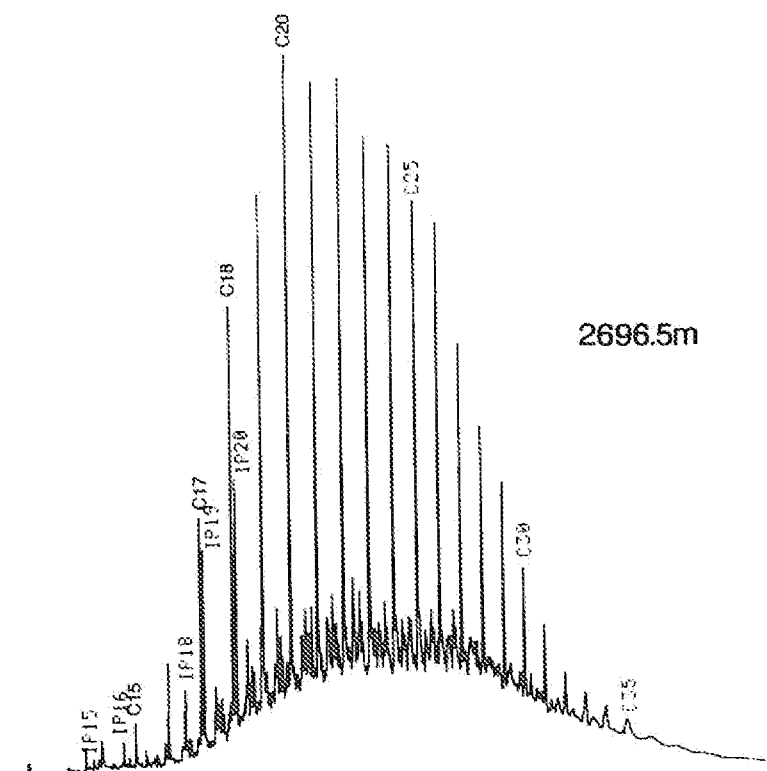
a = PRISTANE
b = PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20-nC₂₀)

FIGURE 11.2

C₁₅+ SATURATES CHROMATOGRAMS

WELL 33/9-8



a - PRISTANE
b - PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20 - nC₂₀)

FIGURE 12.1

C₁₅+ AROMATIC CHROMATOGRAMS

/ELL 33/9-8

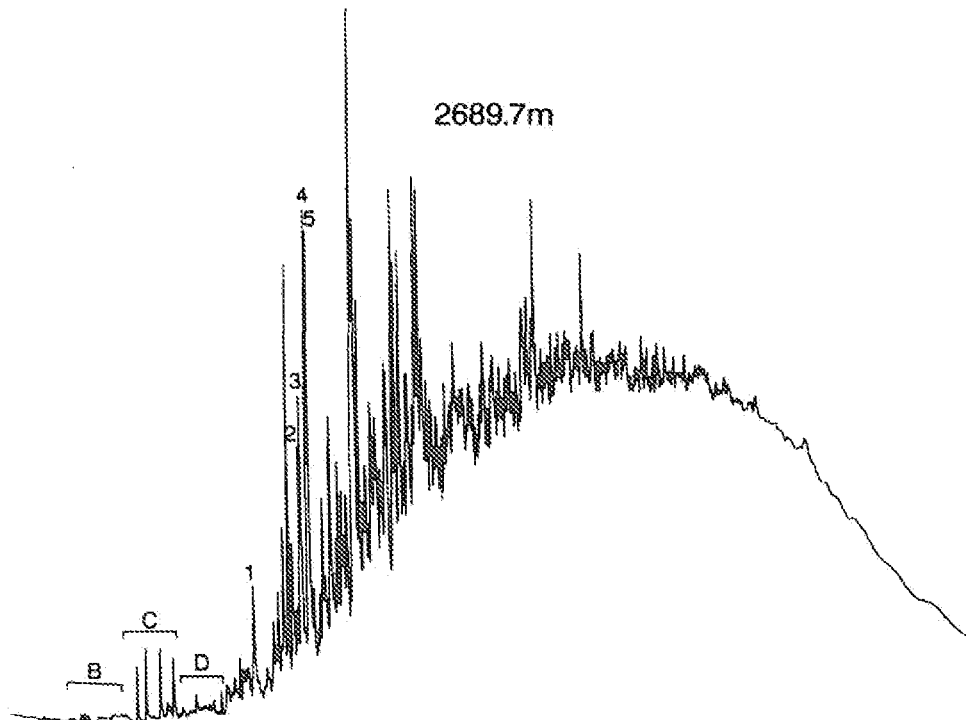
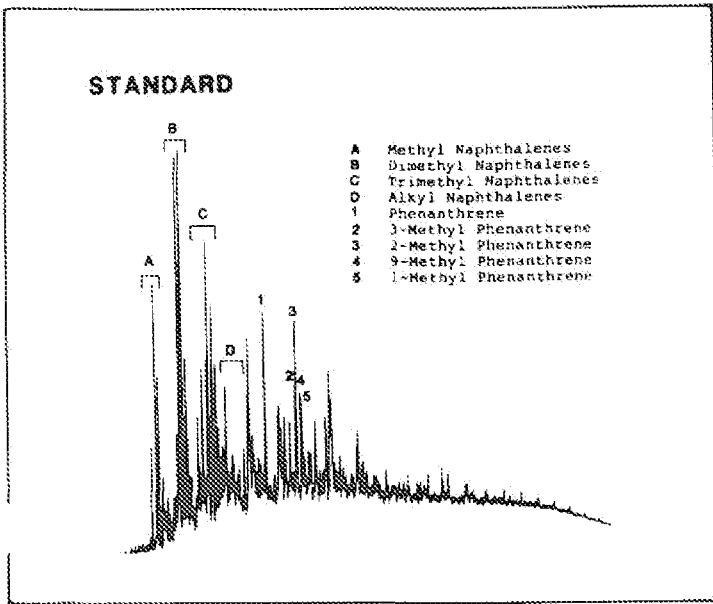
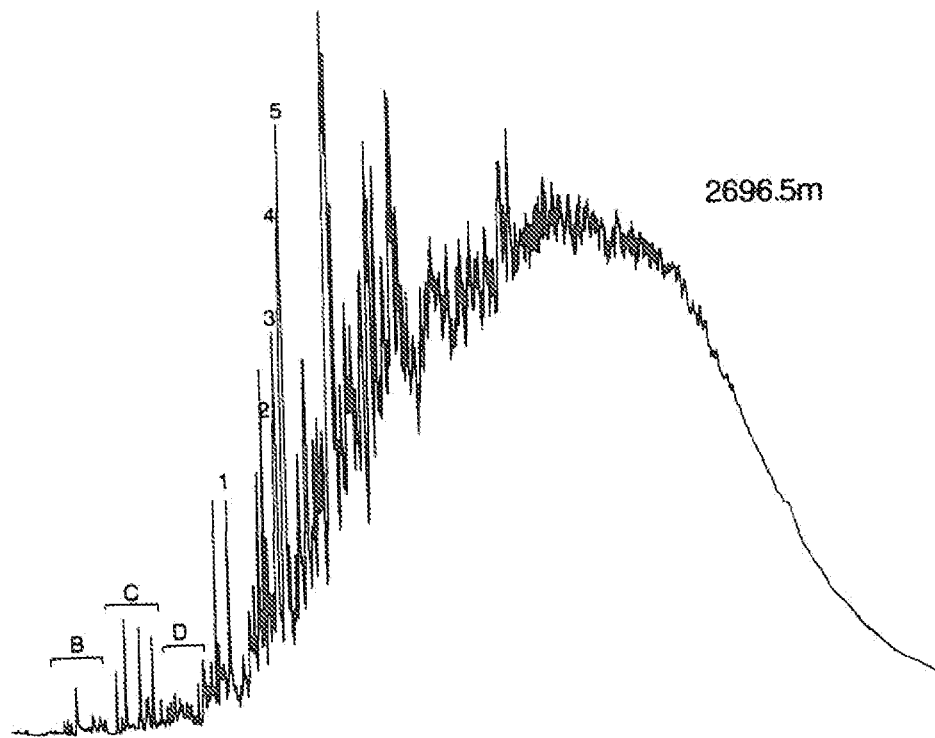


FIGURE 122

C₁₅+ AROMATIC CHROMATOGRAMS

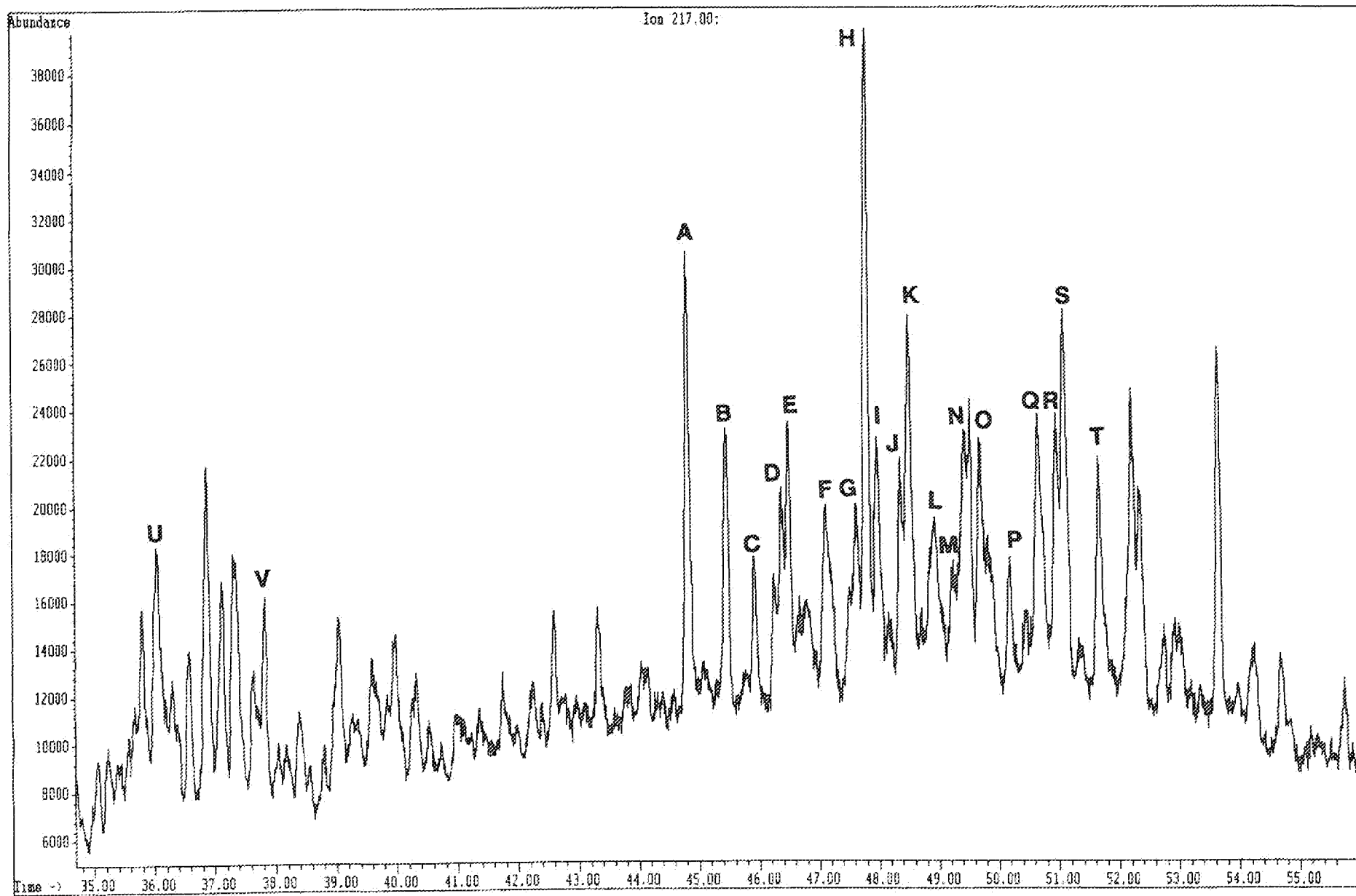
WELL 33/9-8



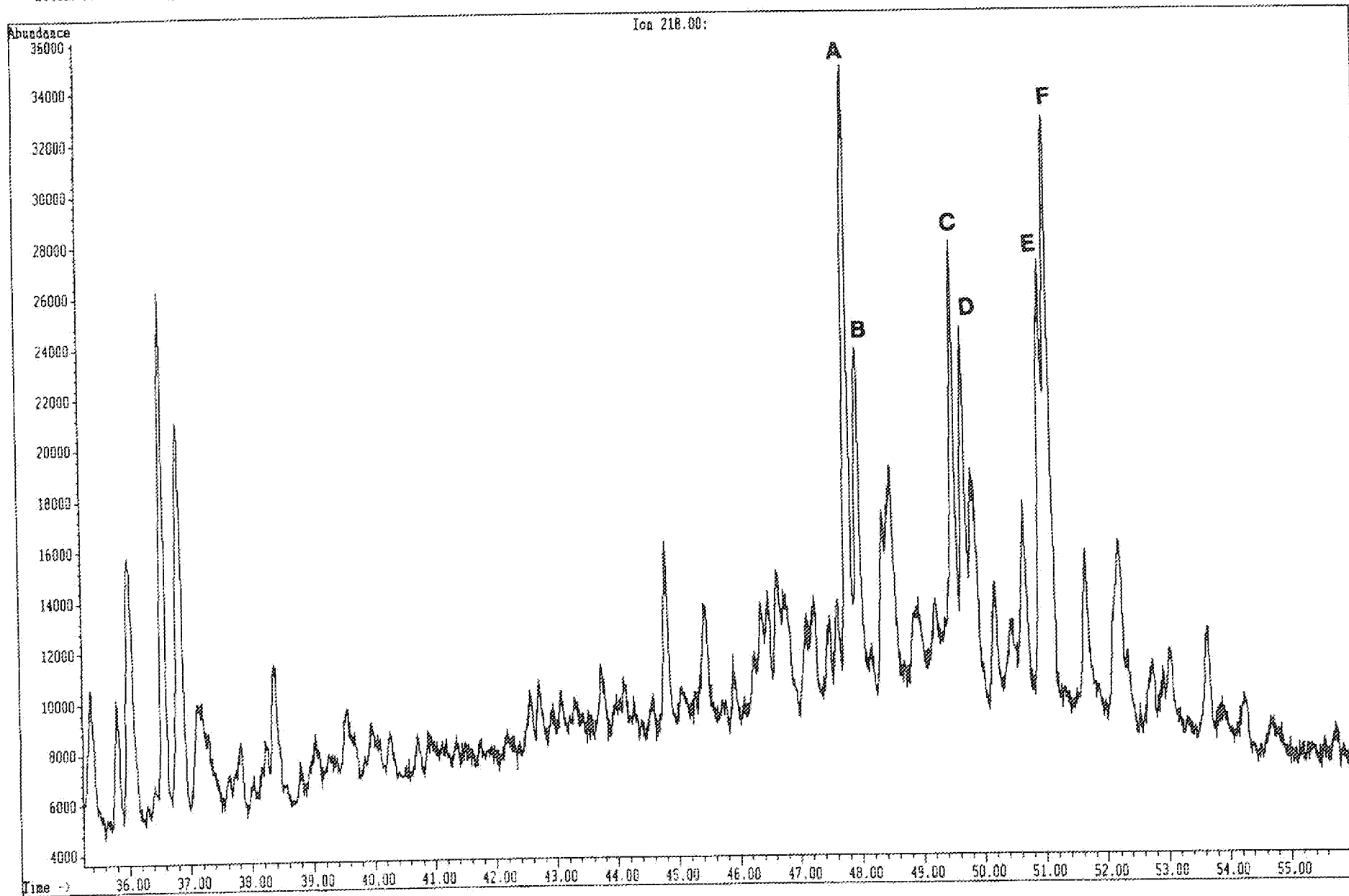
PEAK IDENTIFICATION ON FIRST SHEET

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Method File Name: BIOM.M
Sample Name: 4131-001
Misc Info: WELL 33/9-8 2689.7M
Bottle Number: 25

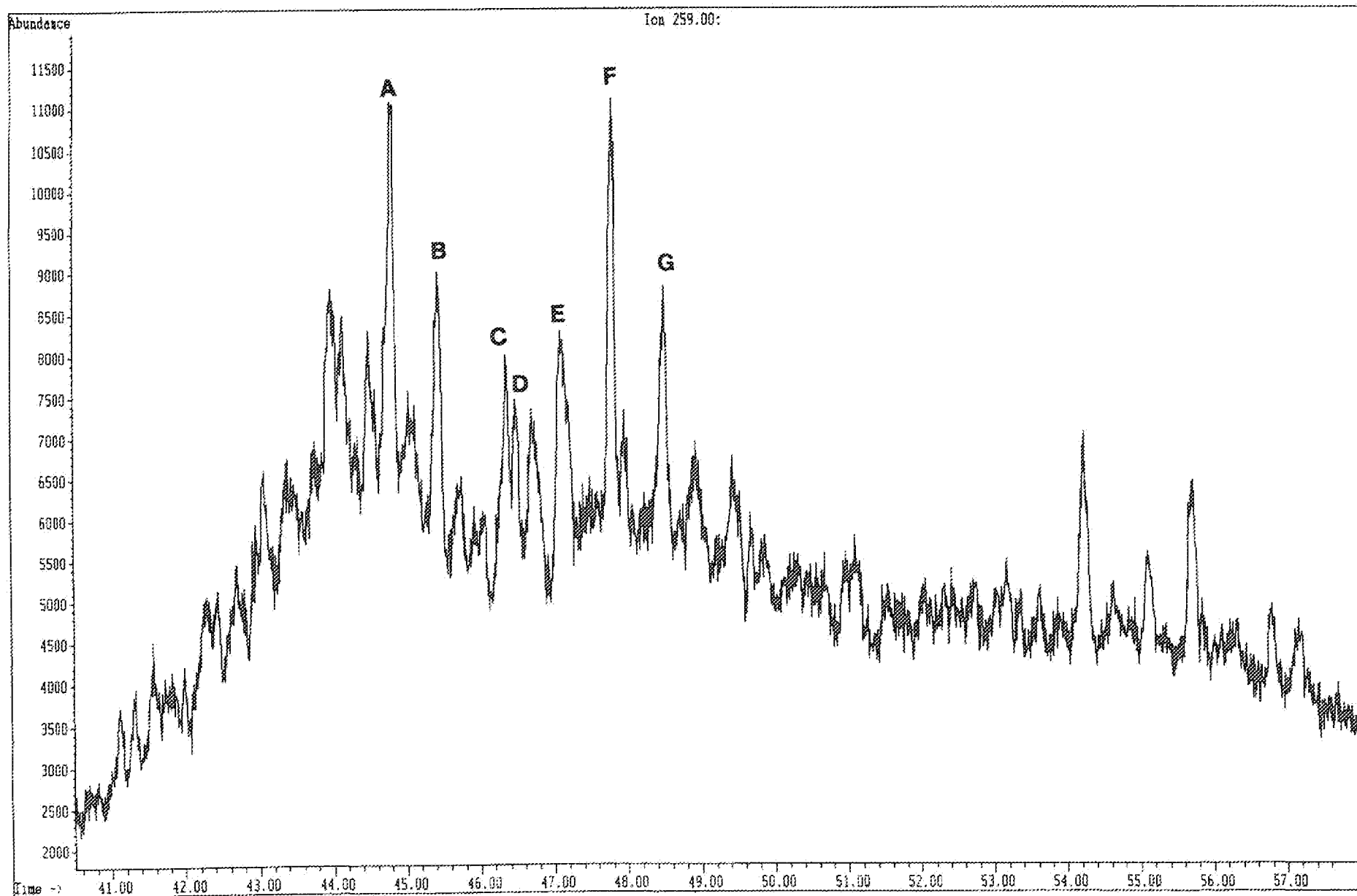
13.1a



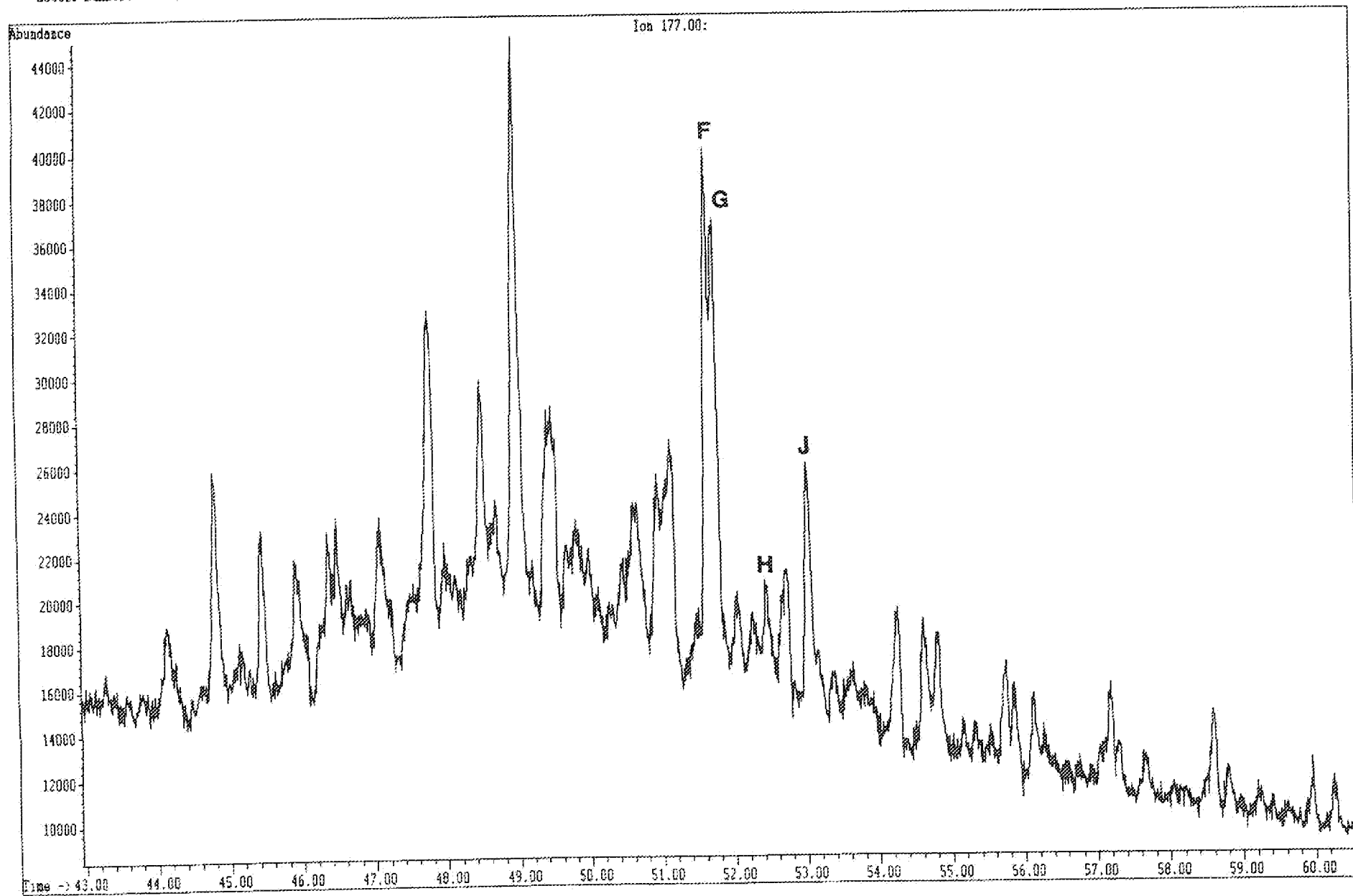
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Method File Name: BTOM.M
Sample Name: 4131-001
Misc Info: WELL 33/9-8 2689.7M
Bottle Number: 25



File: C:\CHEMPC\DATA\2501004.D
Operator:
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Method File Name: HICM.M
Sample Name: 4131-001
Misc info: WELL 33/9-8 2689.7M
Bottle Number: 25

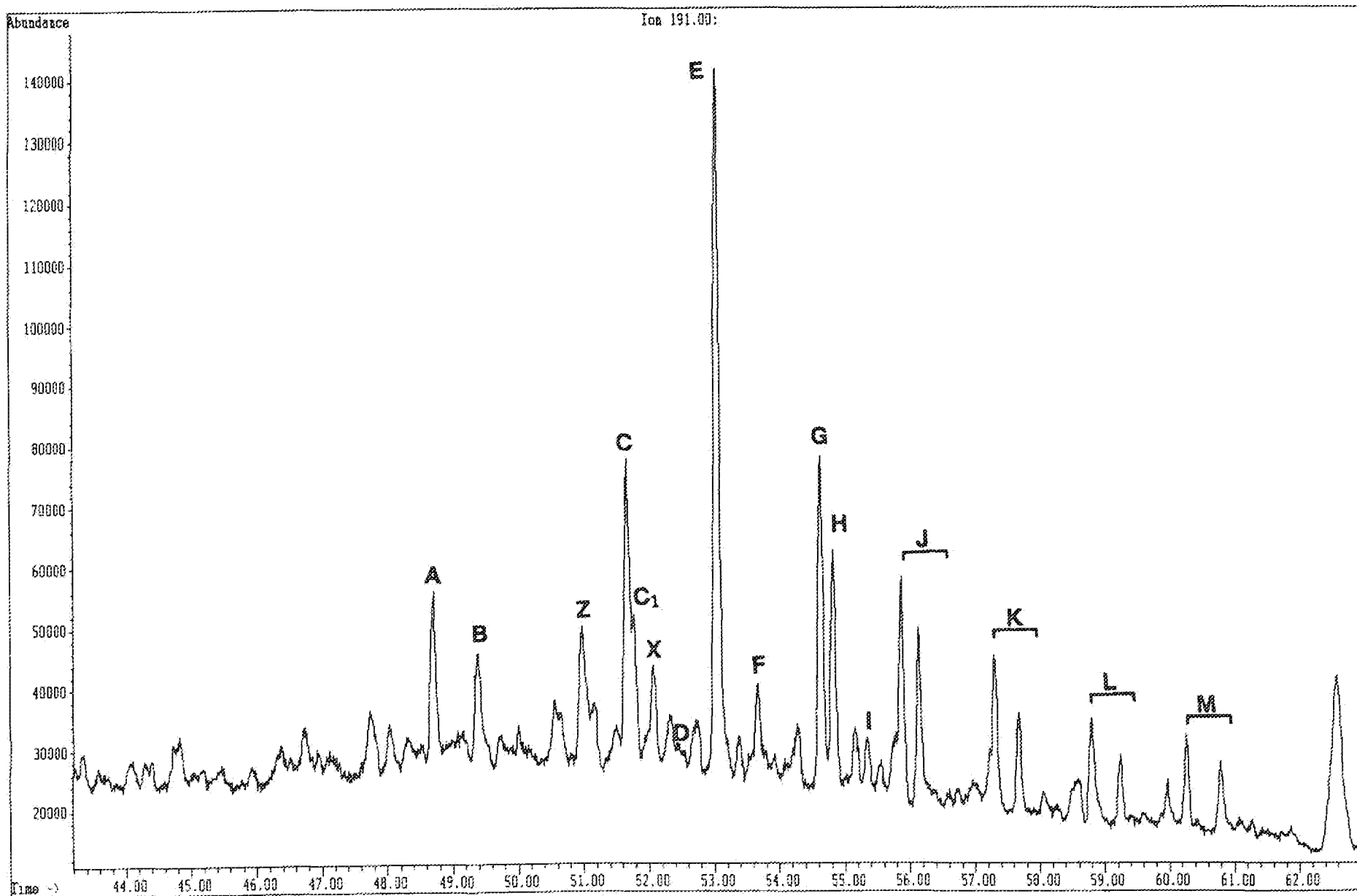


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Operator:
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Method File Name: B10M.M
Sample Name: 4131-001
Misc Info: WELL 33/9-8 2689.7M
Bottle Number: 25

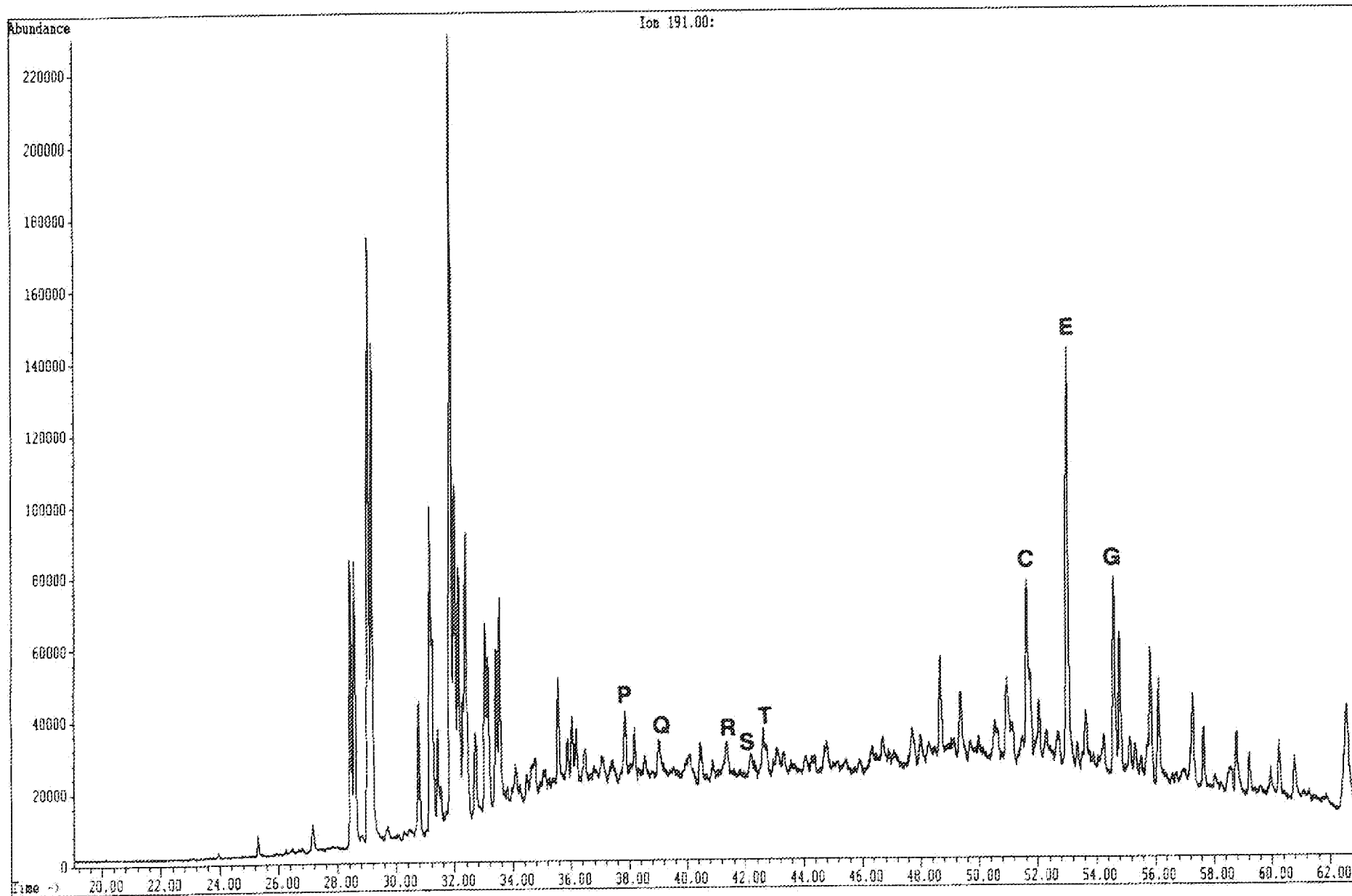


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Operator:
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Method File Name: BIOM.M
Sample Name: 4131-001
Misc Info: WELL 33/9-B 2689.7M
Bottle Number: 25

13.1e

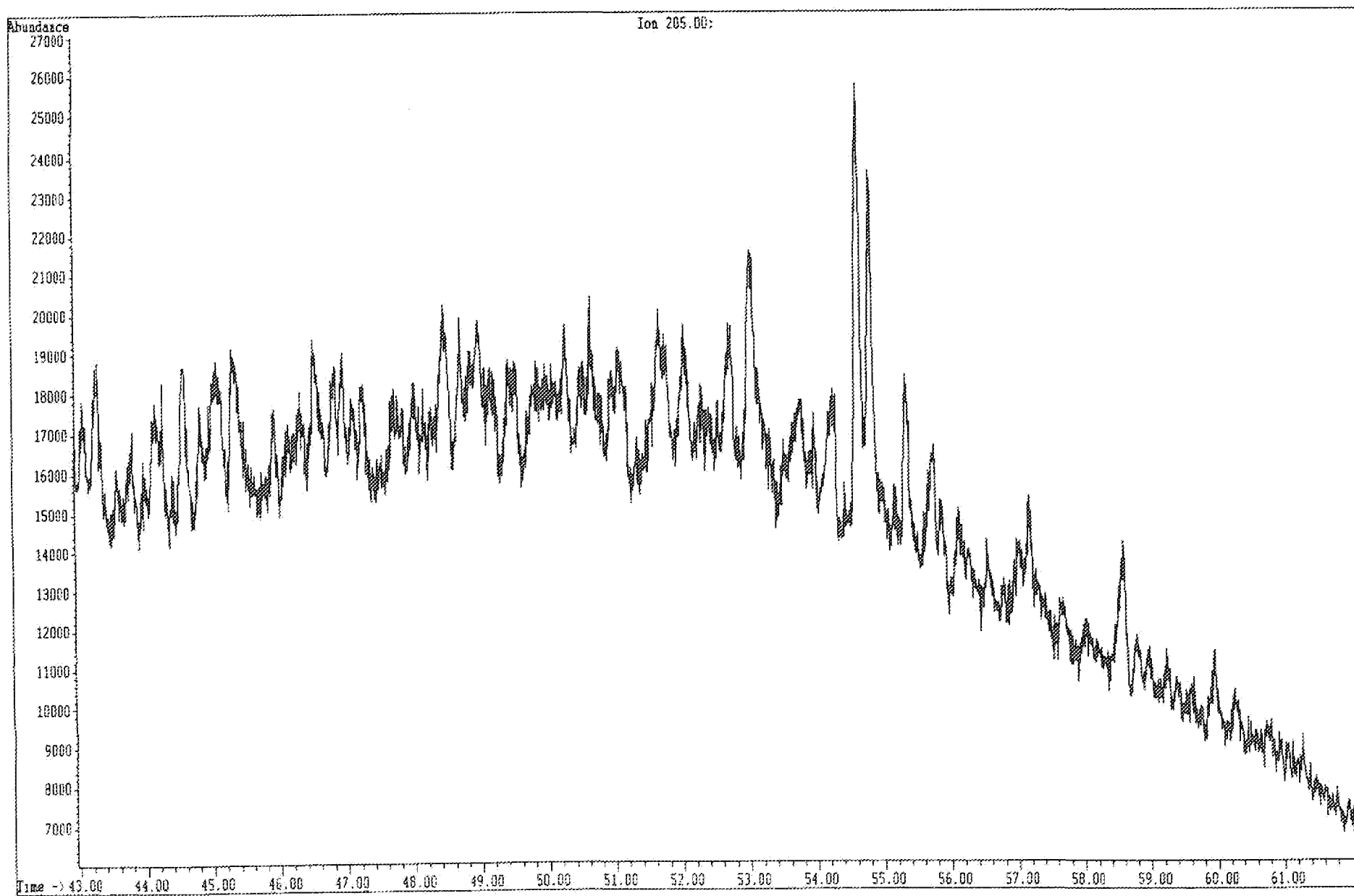


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Operator:
Date Acquired: 14 Dec 90 3:23 pm
Method File Name: E10M.M
Sample Name: 4131-001
Misc Info: WELL 33/9-8 2689.7M
Bottle Number: 25



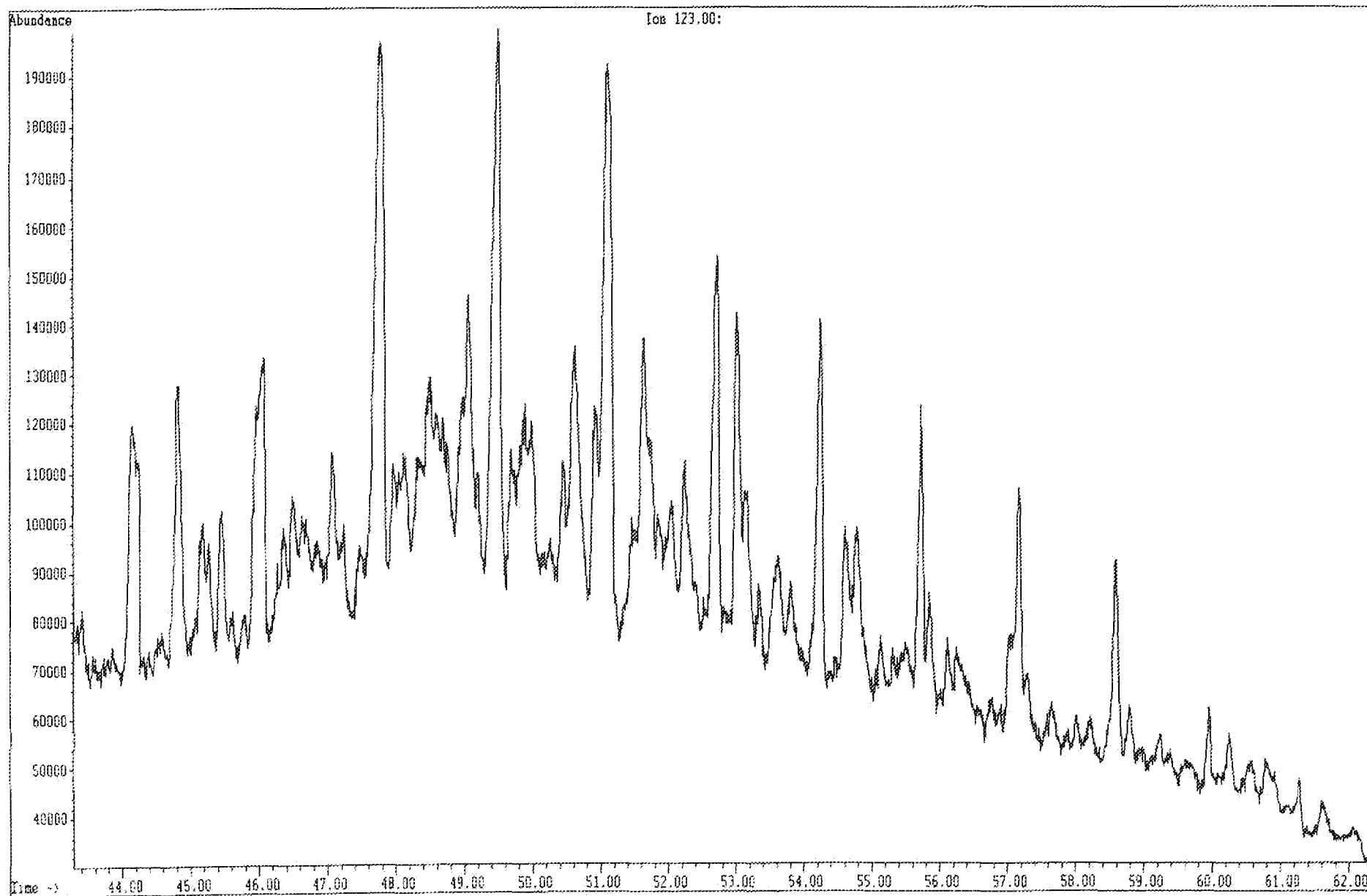
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Operator:
Date Acquired: 14 Dec 90 3:23 pm
Method File Name: E10M.M
Sample Name: 4131-001
Misc Info: WELL 33/9-8 2689.7M
Bottle Number: 25

13.1g



File: C:\CHEMPC\DATA\2501004.D
Operator:
Date Acquired: 14 Dec 90 3:23 pm
Method File Name: B10M.M
Sample Name: 4131-001
Misc Info: WELF 33/9-8 2689.7M
Bottle Number: 25

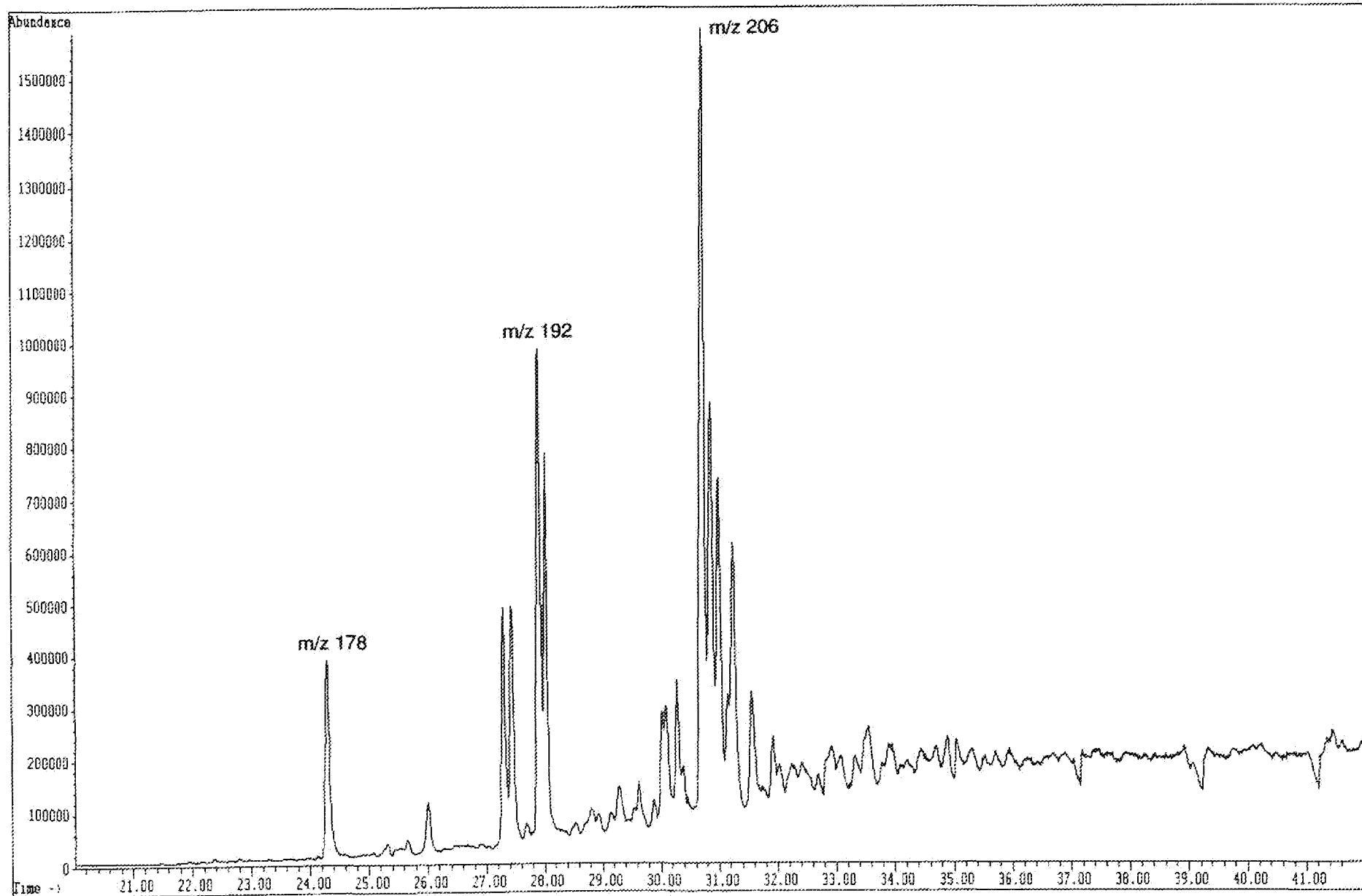
13.1h



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Operator:
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Sample Name: 4131-001
Misc Info: WELL 33/9-8 2689.7M
Bottle Number: 92

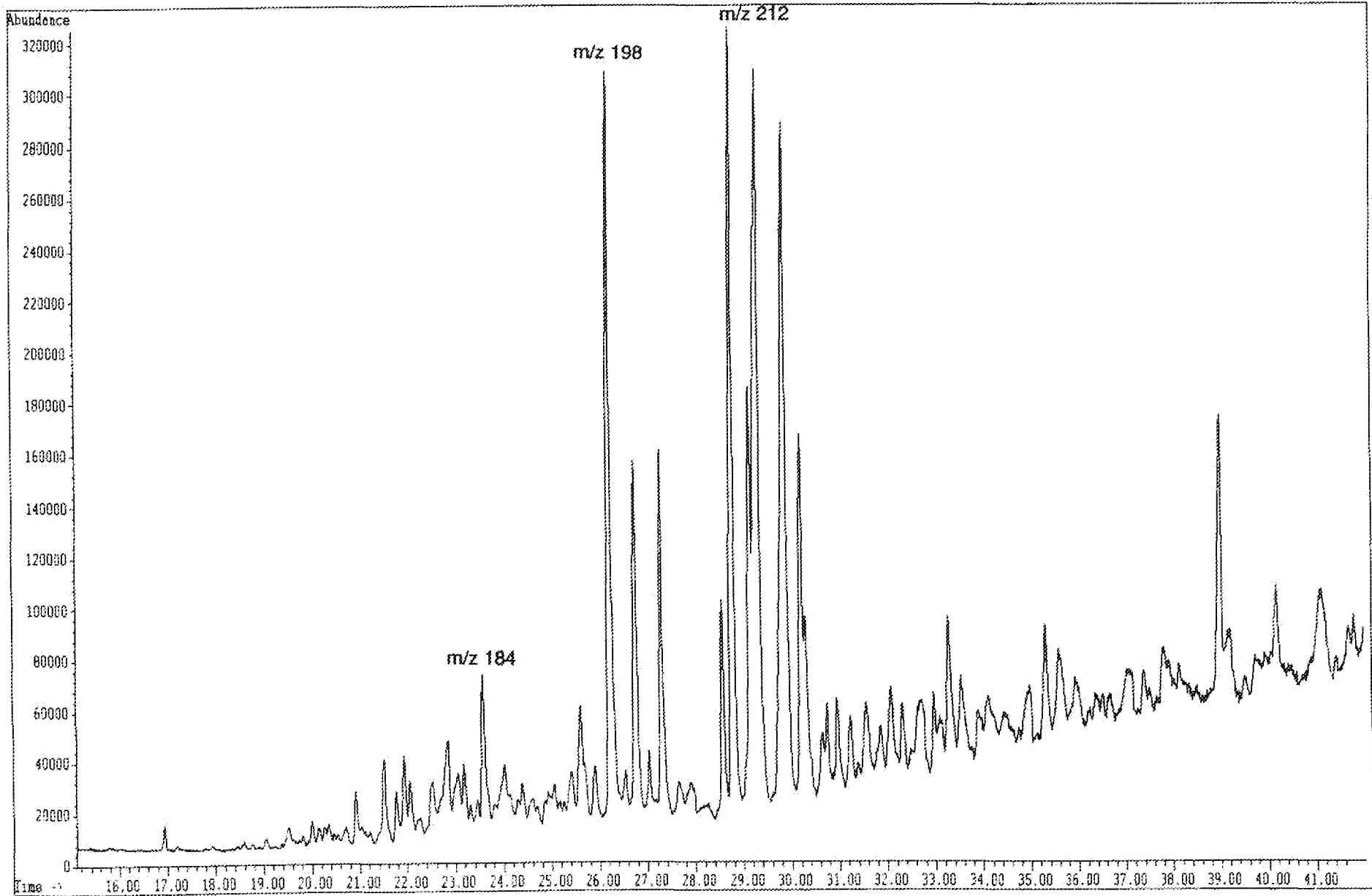
13.1i

Phenanthrenes

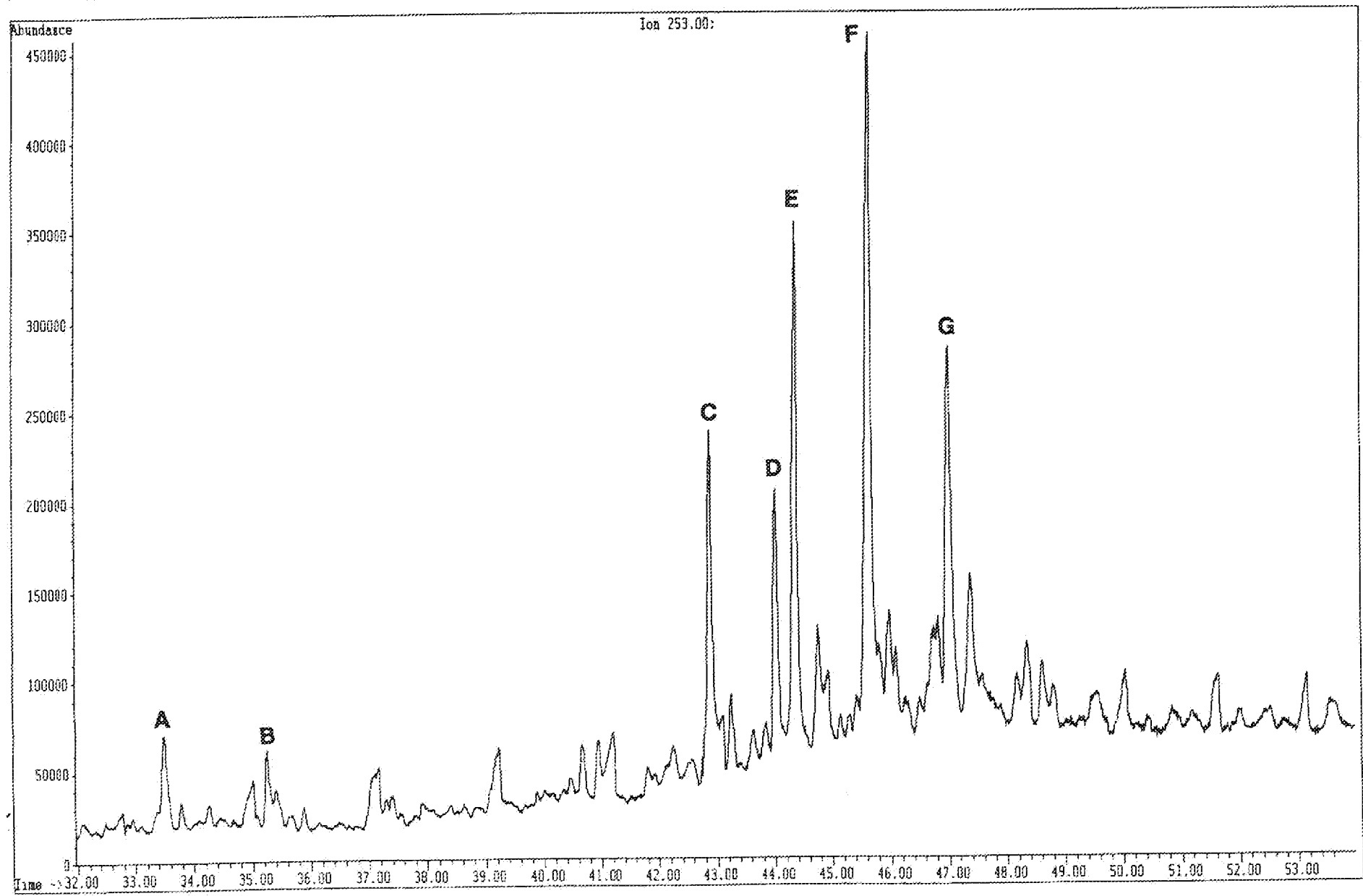


File: C:\CHEMPC\DATA\9201014.D
Operator:
Date Acquired: 11 Dec 90 5:06 pm
Method File Name: BICOMY.M
Sample Name: 4131-001
Misc Info: WELL 33/9-8 2689.7M
Bottle Number: 92

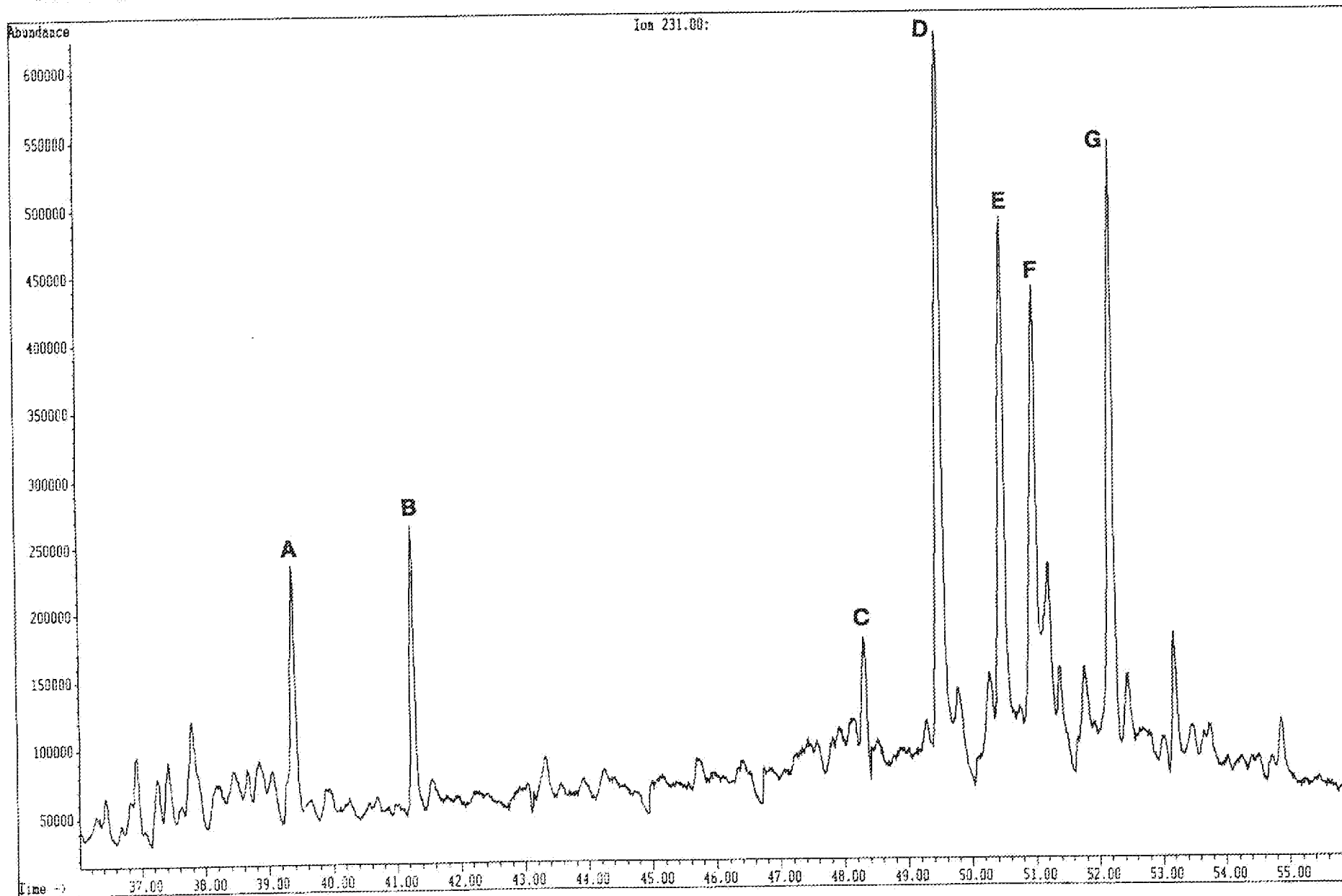
Dibenzothiophene



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Operator:
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Method File Name: BLOWY.M
Sample Name: 4131-001
Misc Info: WELL 33/9-B 2609.7M
Bottle Number: 92

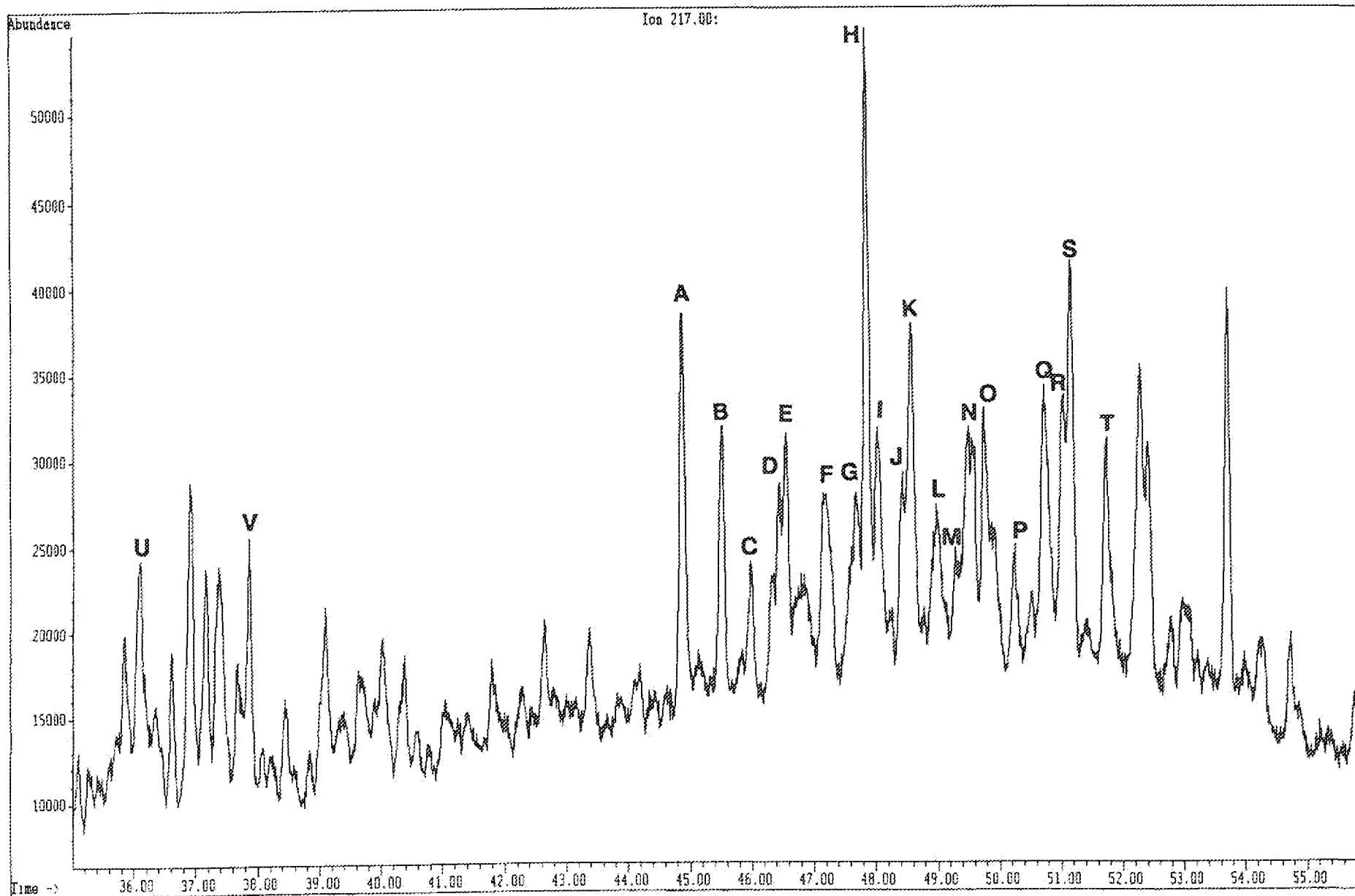


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Operator:
Date Acquired: 11 Dec 90 5:06 pm
Method file Name: BIOMY.M
Sample Name: 4131-001
Misc Info: WELL 33/9-8 2689.7M
Bottle Number: 92



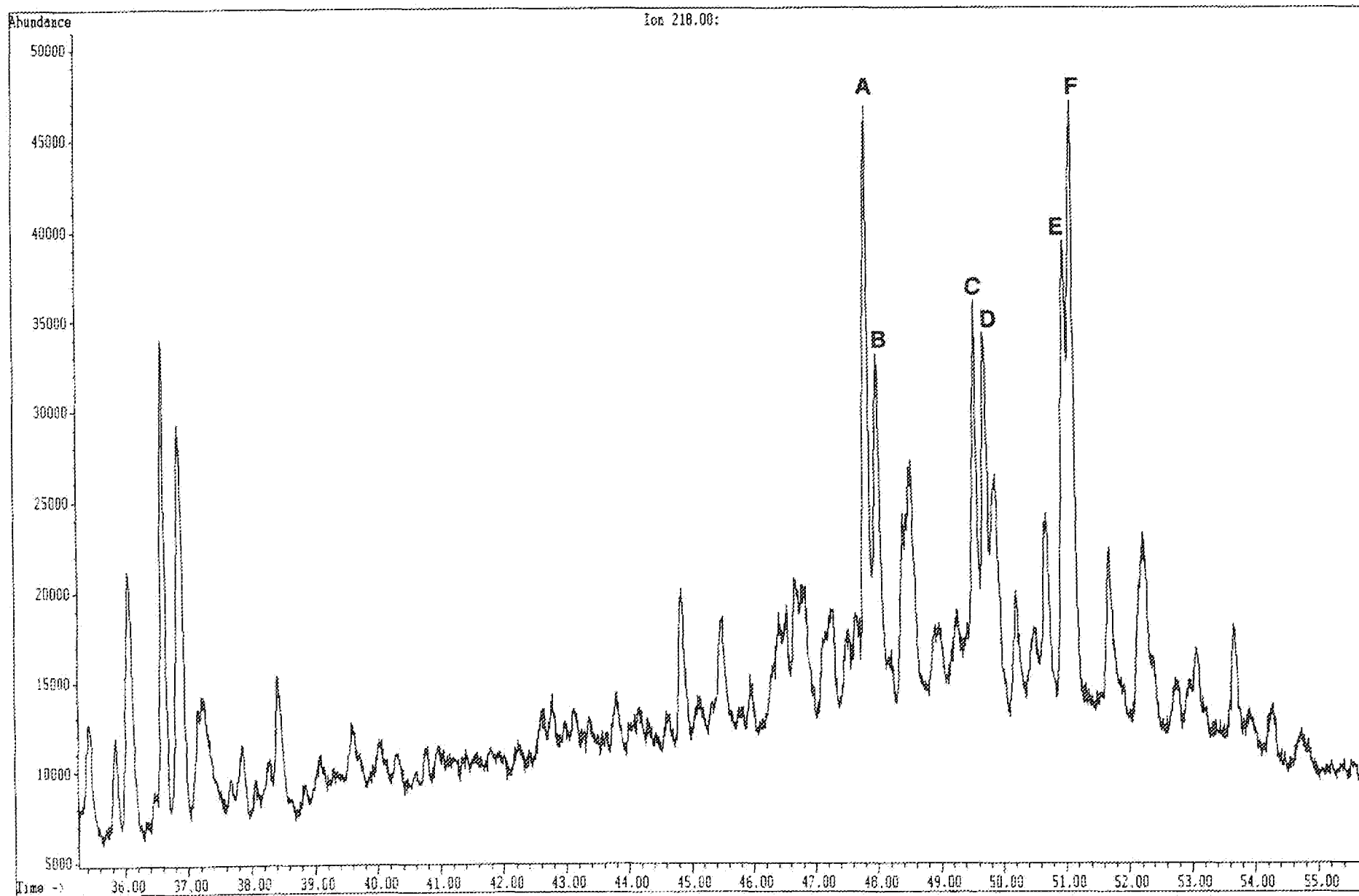
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Operator:
Date Acquired: 14 Dec 90 4:33 pm
Method File Name: BIOM.W
Sample Name: 4131-002
Misc Info: WELL 33/9-B 2696.SM
Bottle Number: 26

13.2a



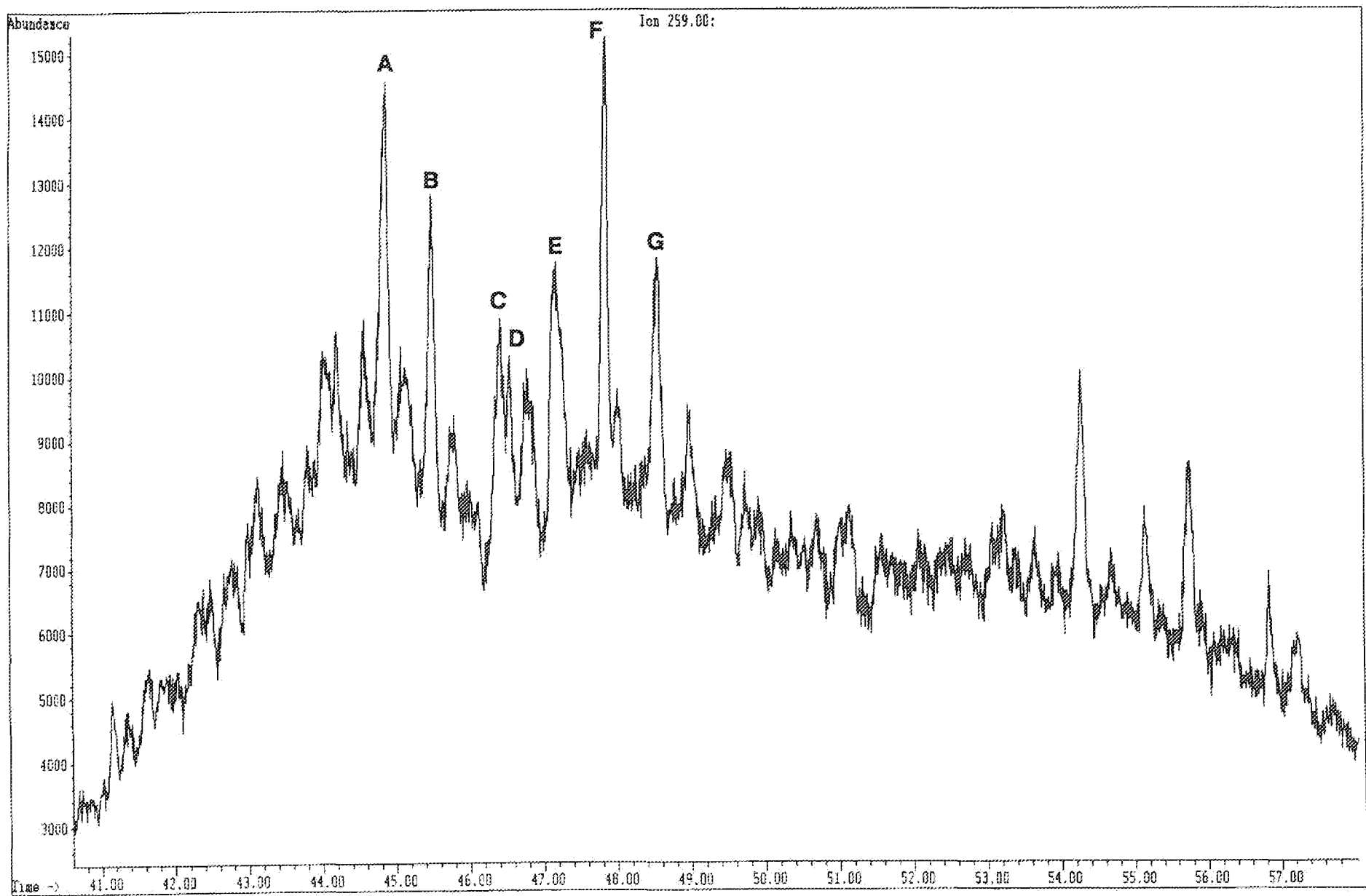
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Operator:
Date Acquired: 14 Dec 90 4:33 pm
Method File Name: BIOM.M
Sample Name: 4131-002
Misc Info: WELL 33/9-B 2696.5M
Bottle Number: 26

13.2b

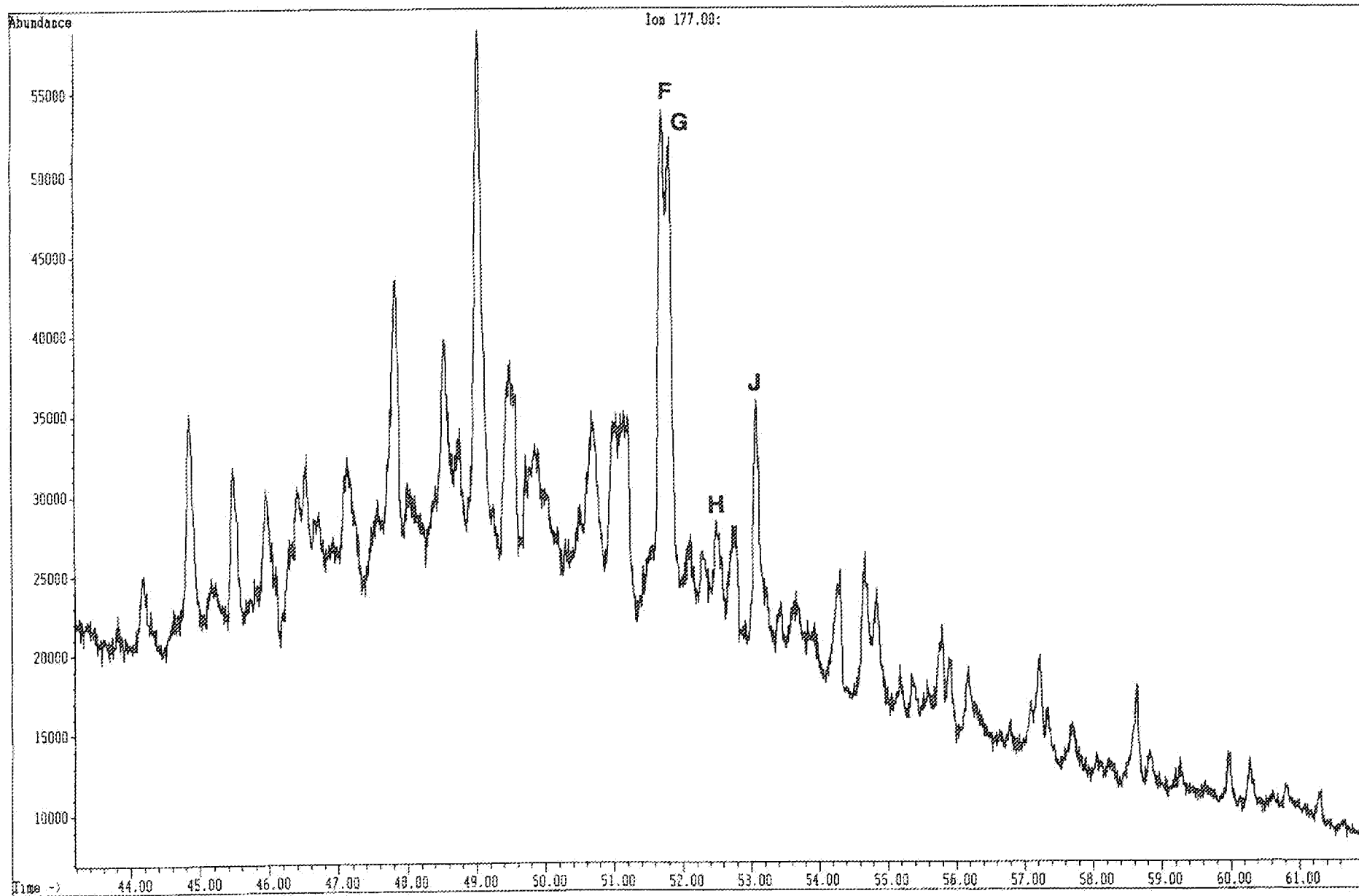


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Operator:
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Method File Name: BIOM.M
Sample Name: 4131-002
Misc Info: WELL 33/9-0 2696.5M
Bottle Number: 26

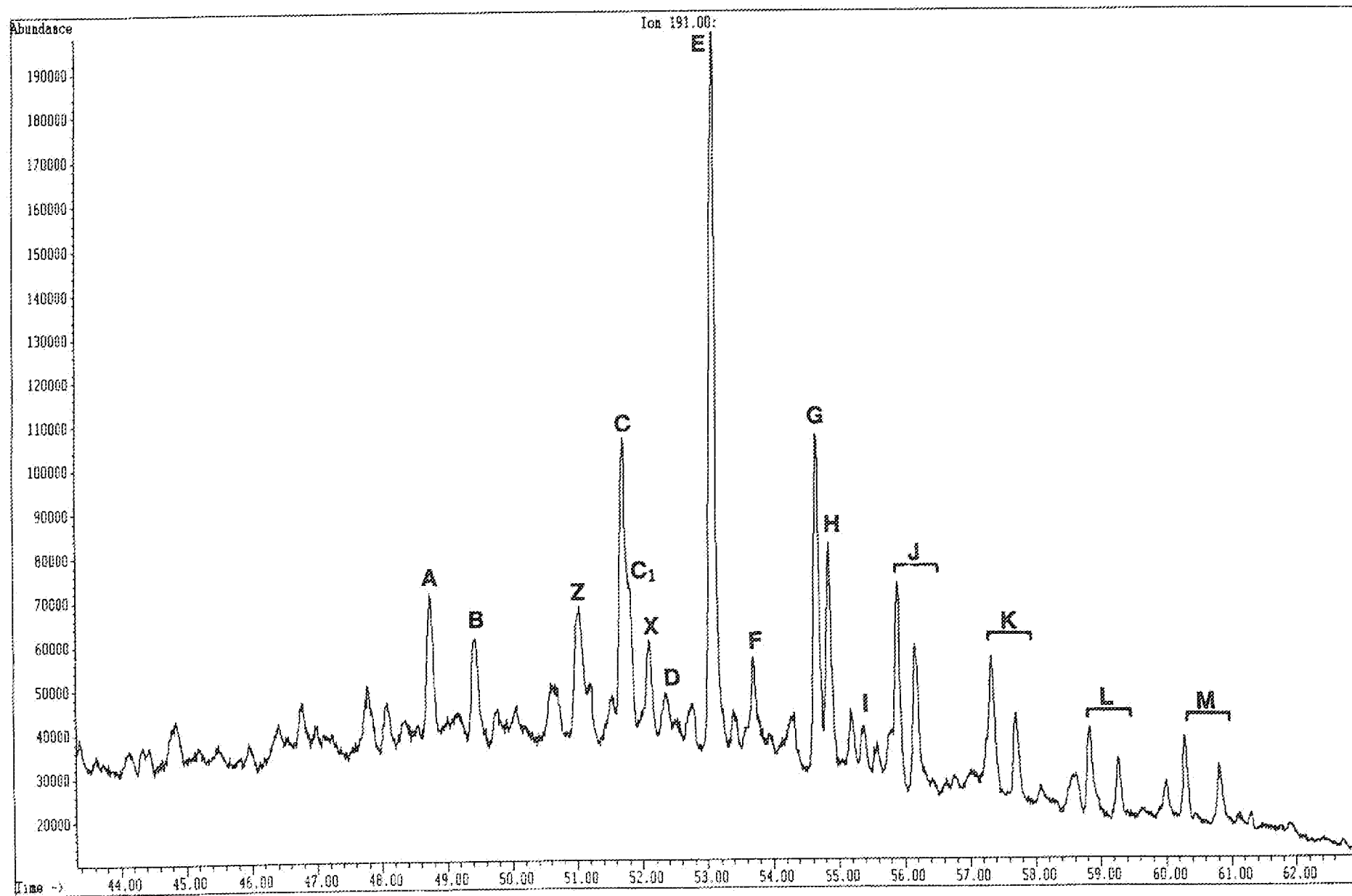
13.2c



File: C:\CHEMPC\DATA\2601085.D
Operator:
Date Acquired: 14 Dec 90 4:33 pm
Method File Name: BIOM.M
Sample Name: 4131-002
Misc Info: WELL 33/9-8 2696.5M
Bottle Number: 26

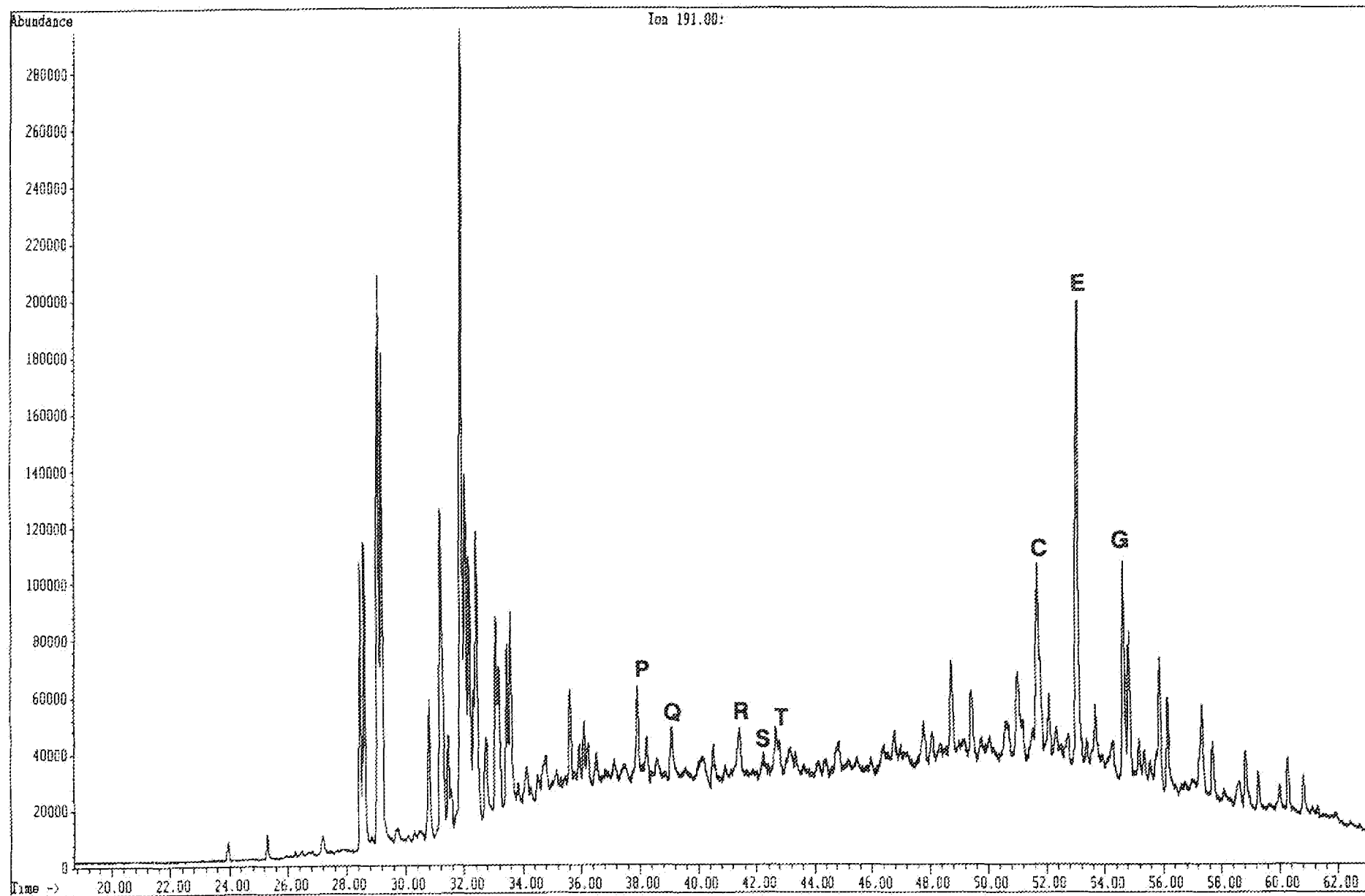


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Method File Name: BIOM.M
Sample Name: 4131-002
Misc Info: WELL 33/9-8 2696.SM
Bottle Number: 26



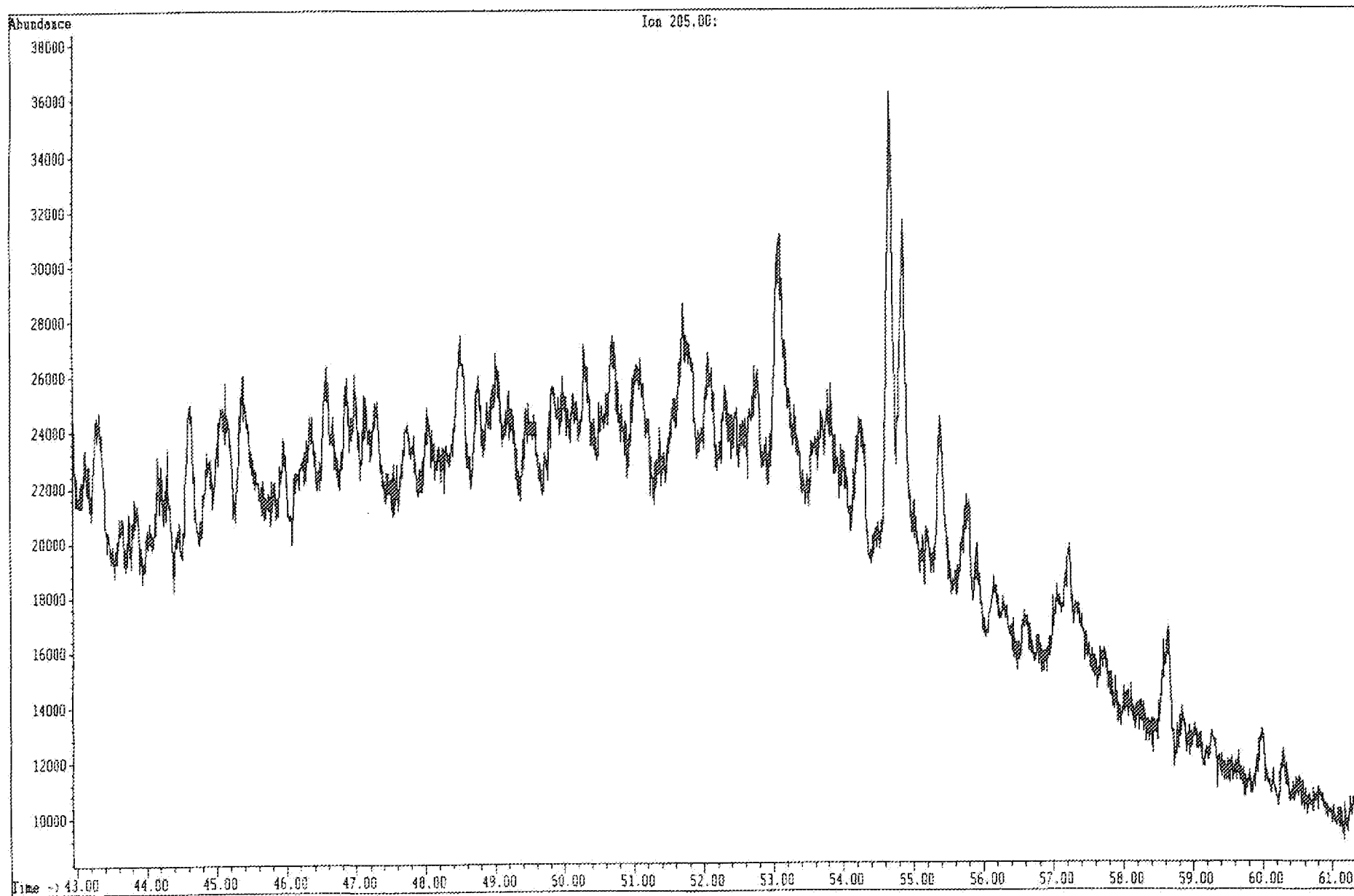
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Sample Name: 4131-002
Misc Info: WELL 33/9-B 2696.5M
Bottle Number: 26

13.2f



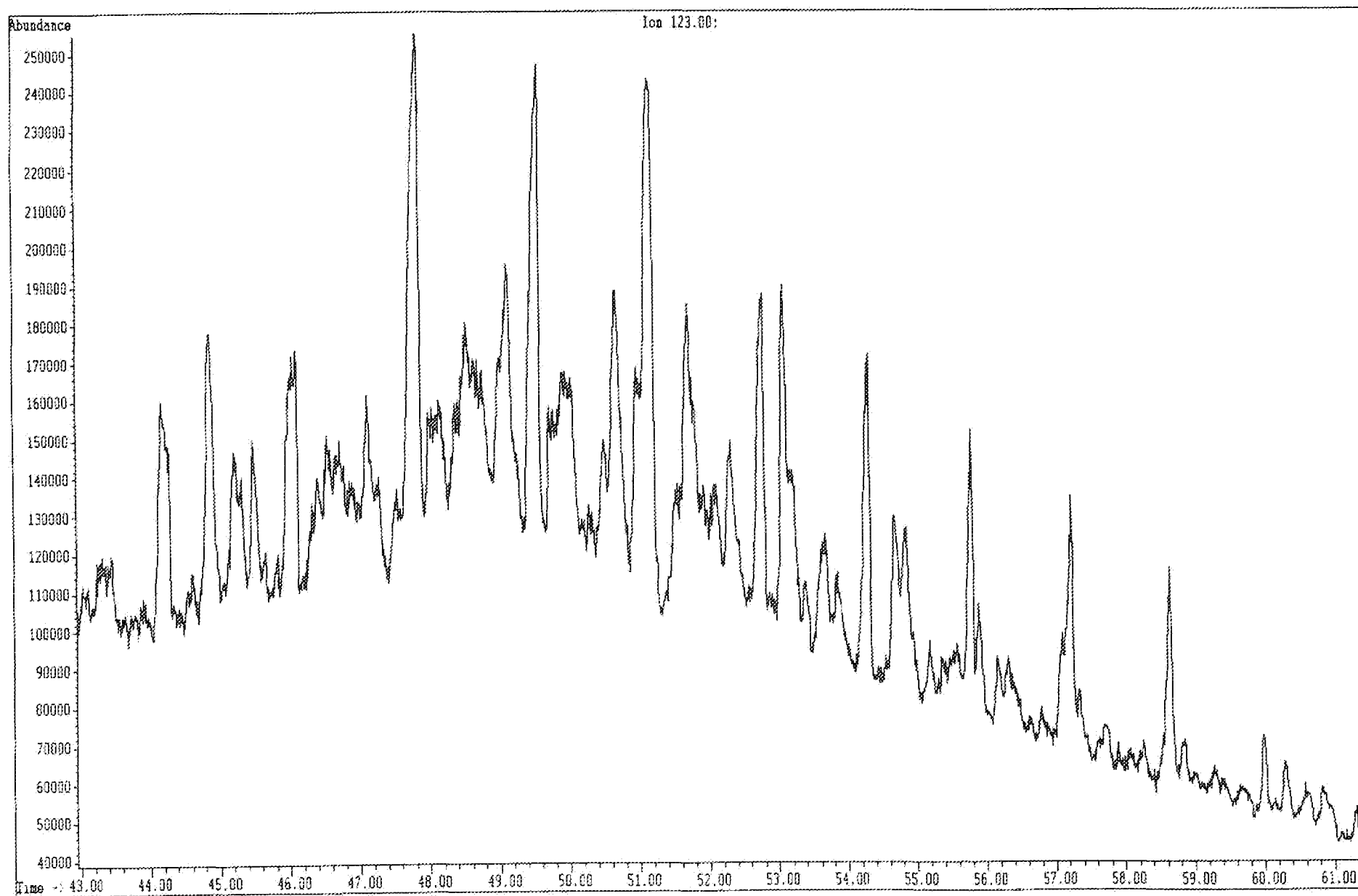
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Method File Name: BION.M
Sample Name: 4131-002
Misc Info: WELL 93/9-8 2696.5M
Bottle Number: 26

13.2g



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Operator:
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Method File Name: BIOM.M
Sample Name: 4131-002
Misc Info: WELL 33/9-8 2696.5M
Bottle Number: 26

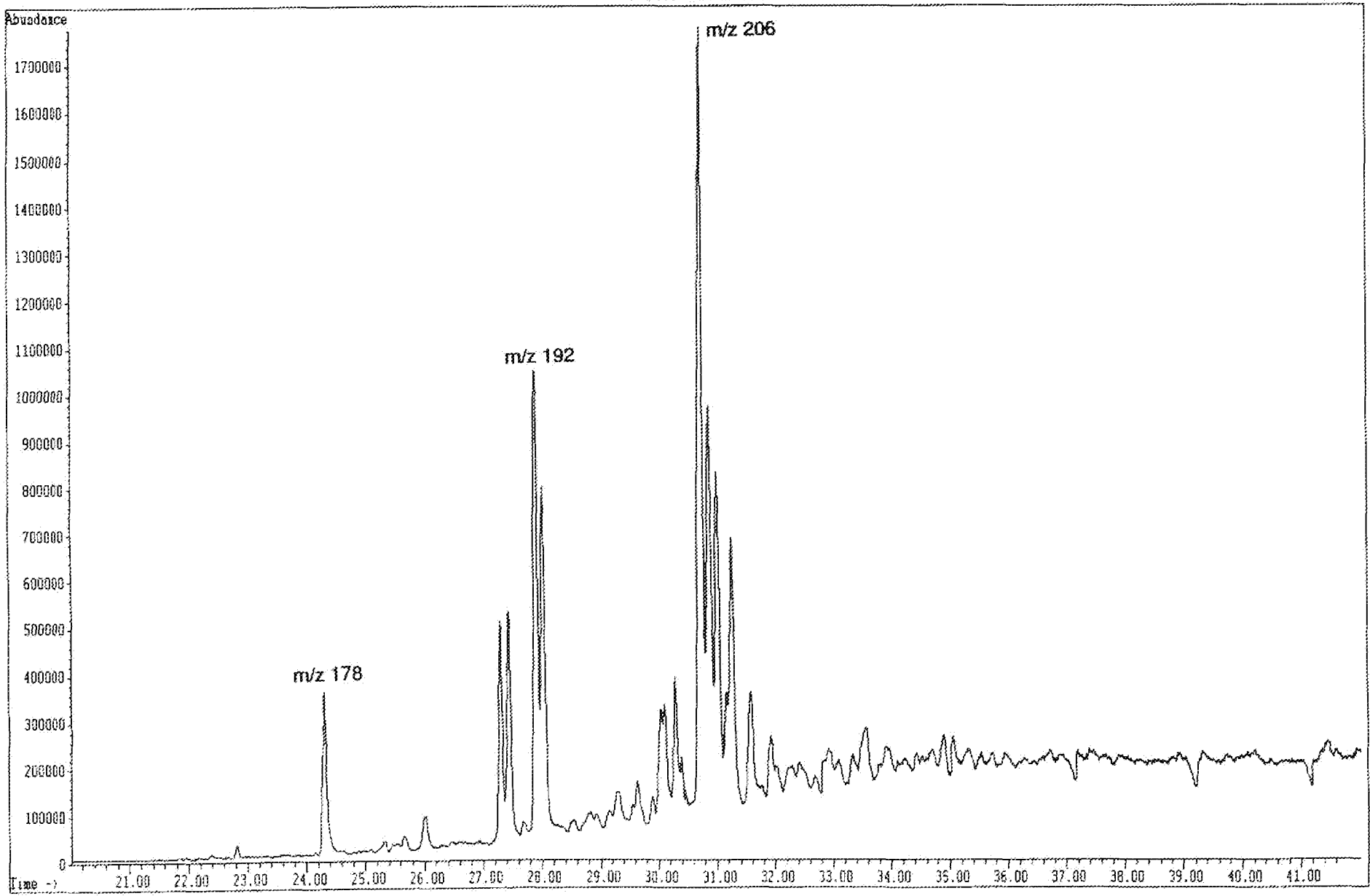
13.2h



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Operator:
Date Acquired: 11 Dec 90 6:14 pm
Method File Name: BIOMY.M
Sample Name: 4131-002
Misc Info: WELL 33/9-8 2696.SM
Bottle Number: 93

13.2i

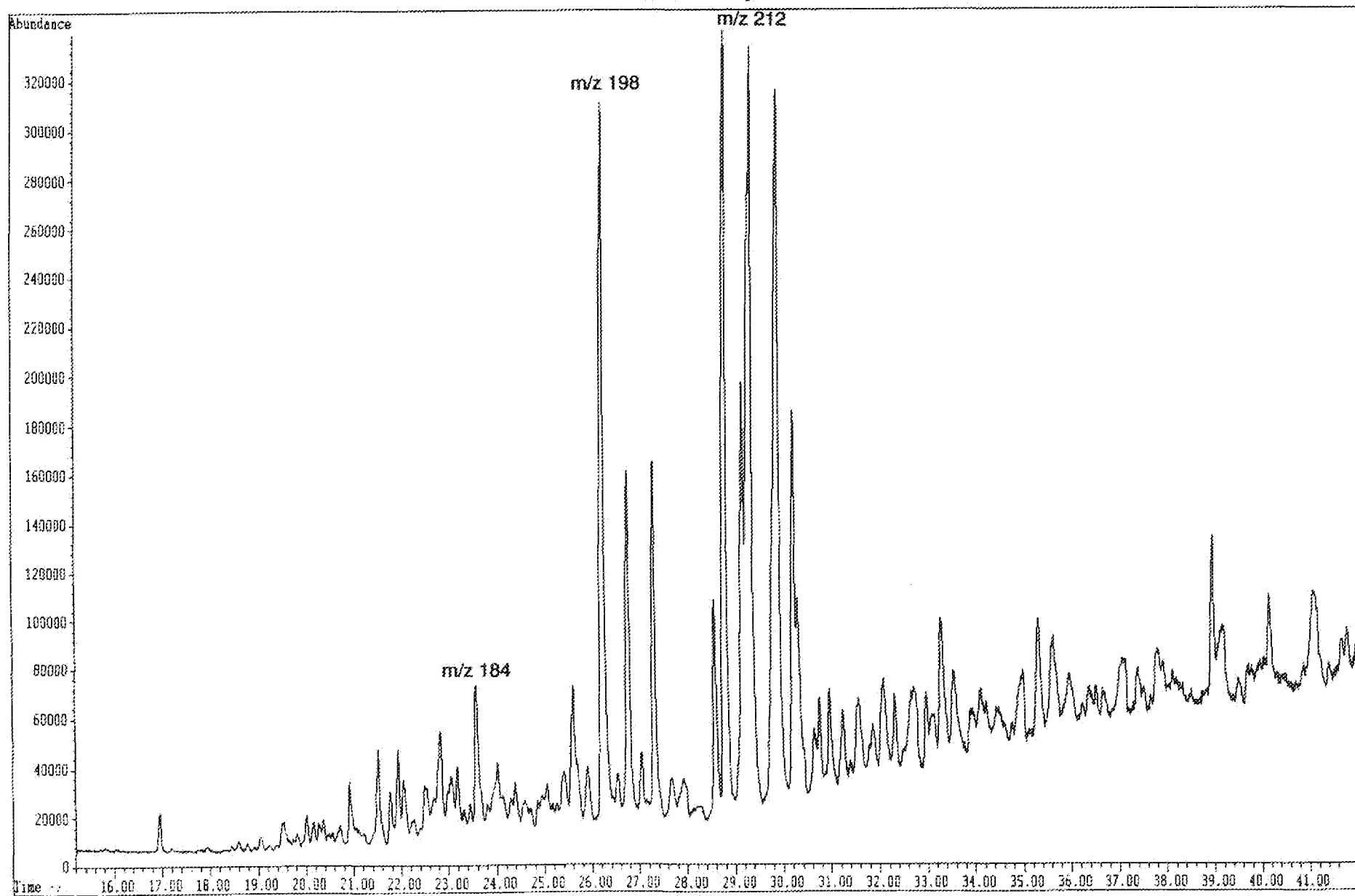
Phenanthrene



File: C:\CHEMPC\DATA\9301015.D
Operator:
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Method File Name: BICOMY.M
Sample Name: 4131-002
Misc Info: WELL 33/9-8 2686.5M
Bottle Number: 93

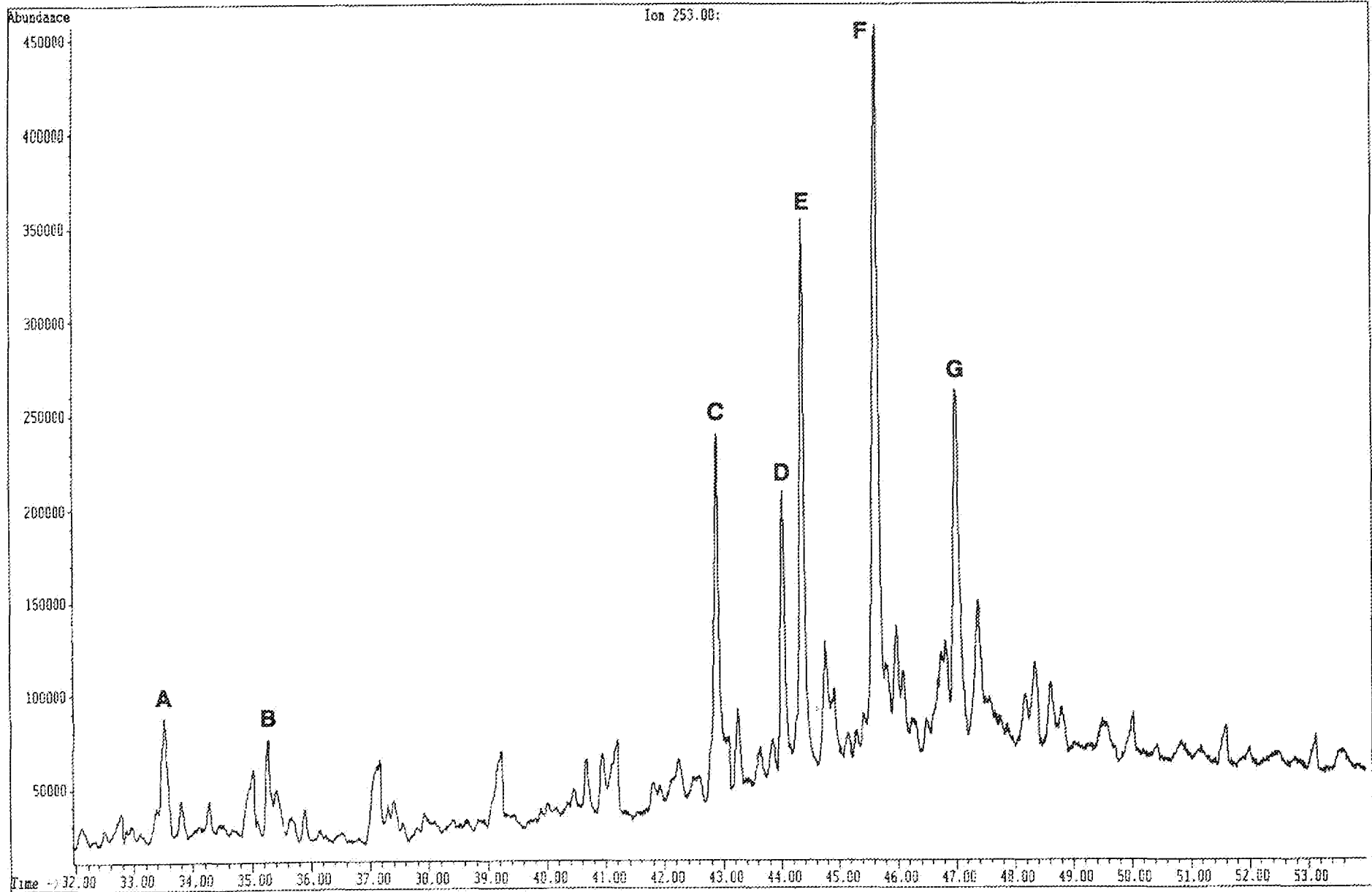
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Dibenzothiophenes

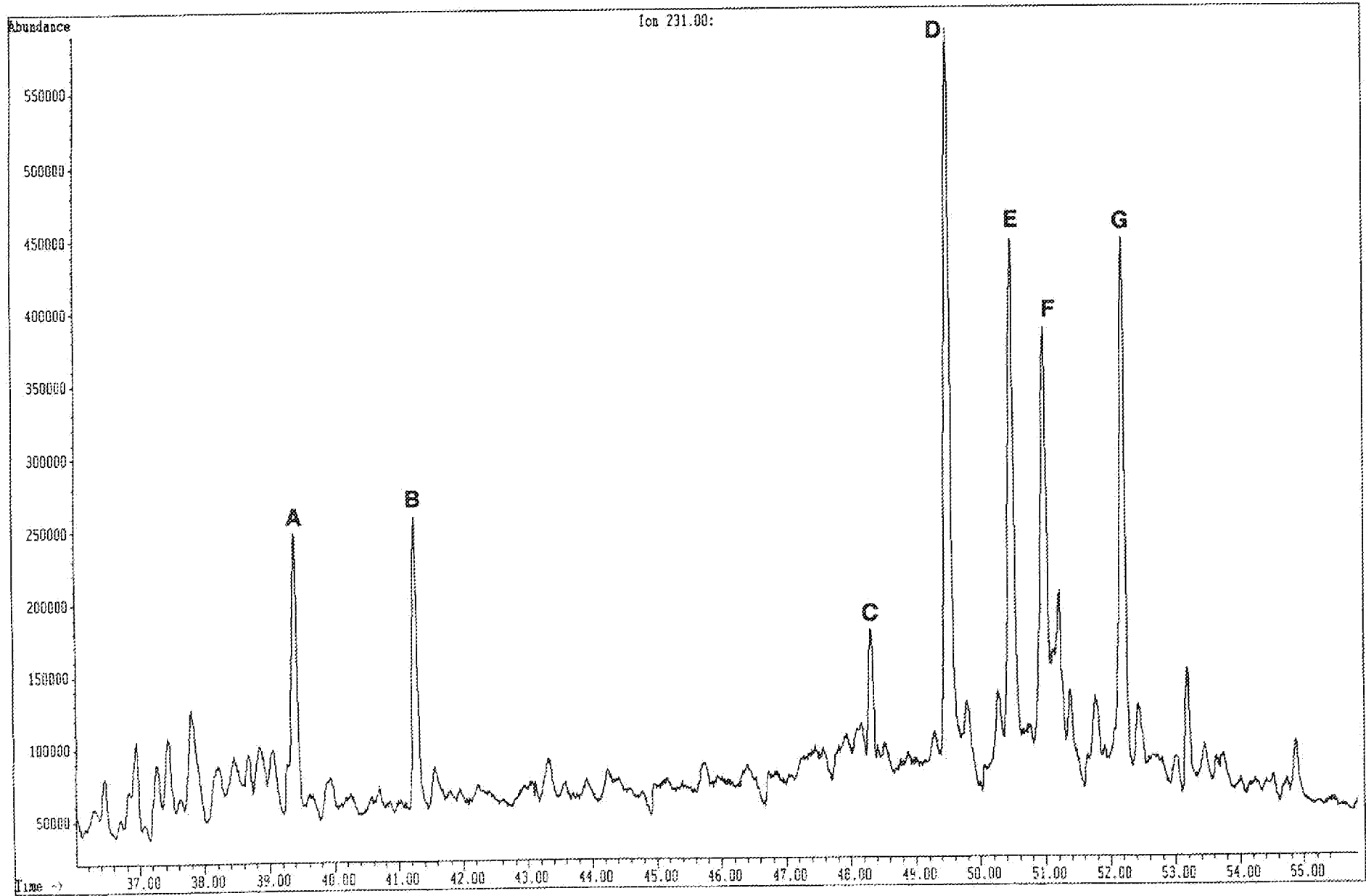


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Date Acquired: 11 Dec 90 6:14 pm
Method File Name: BIOMY.M
Sample Name: 4131-002
Misc Info: WELL 33/9-8 2696.5M
Bottle Number: 93

13.2k



File: C:\CHEMPC\DATA\9301015.D
Operator:
Date Acquired: 11 Dec 90 6:14 pm
Method File Name: B10MY.M
Sample Name: 4131-002
Misc Info: WELL 33/9-B 2696.5M
Bottle Number: 93



33/9-7

TABLE J1
ORGANIC CARBON RESULTS AND GROSS LITHOLOGIC DESCRIPTIONS

| JOB 4132 | | | | |
|-----------------------------|--------------------|------------------------------|-------------------------|---------------------------------------|
| GEOCHEM SAMPLE NUMBER | DEPTH/ IDENTITY | GROSS LITHOLOGIC DESCRIPTION | G S A COLOUR CODE | TOTAL ORGANIC CARBON (Wt. %) |

WELL: 33/9-7

| | | | | |
|----------|---------|---|---------|--|
| 4132-001 | 2479.2m | A100% SANDSTONE - med grained, blocky, mod soft, sl micaceous, dull yellow F, rapid blooming milky cut, dark yellowish brown. | 10YR4/2 | |
| 4132-002 | 2483.1m | A100% SANDSTONE - med grained, blocky, v soft and friable, sl micaceous, dull yellow F, rapid blooming milky cut, dark yellowish brown. | 10YR4/2 | |

Abbreviations = arenaceous, argillaceous, calcareous, Cut, dolomite, Fluorescence, foraminifera fossiliferous, Lost Circulation Material, moderately, occasionally, slightly, very

TABLE J2
 CONCENTRATION (PPM) OF EXTRACTED C₁₅₊ MATERIAL IN ROCK

| JOB 4132 | LITHO | DEPTH/ IDENTITY | TOTAL EXTRACT | HYDROCARBONS | | | NON HYDROCARBONS | | | |
|----------|-------|--------------------|------------------|--------------|-----------|-------|--------------------------|-----------------|---------------------|-------|
| | | | | Saturates | Aromatics | TOTAL | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's | TOTAL |

WELL: 33/9-7

| | | | | | | | | | | |
|----------|--|---------|-------|------|------|------|-----|------|----|------|
| 4132-001 | | 2479.2m | 9365 | 7366 | 824 | 8190 | 305 | 833 | 37 | 1175 |
| 4132-002 | | 2483.1m | 11804 | 8827 | 1095 | 9922 | 742 | 1106 | 34 | 1882 |

TABLE J3
COMPOSITION (NORMALISED %) OF C₁₅₊ MATERIAL

| JOB 4132 | L I T H O | DEPTH/ IDENTITY | HYDROCARBONS | | NON HYDROCARBONS | | |
|-----------------------------|-----------------------|--------------------|--------------|-----------|--------------------------|-----------------|---------------------|
| GEOCHEM SAMPLE NUMBER | | | Saturates | Aromatics | Preciptd. Asphaltenes | Eluted NSO's | Non-Eluted NSO's |

WELL: 33/9-7

| | | | | | | | |
|----------|--|---------|-------|------|------|------|------|
| 4132-001 | | 2479.2m | 78.65 | 8.80 | 3.26 | 8.90 | 0.39 |
| 4132-002 | | 2483.1m | 74.78 | 9.28 | 6.29 | 9.37 | 0.29 |

TABLE J4
SIGNIFICANT C₁₅₊ RATIOS

| JOB 4132 | L I T H O | DEPTH/ IDENTITY | TOC (%) | mg/g TOC | | | | | | HYDROCARBONS % TOTAL EXTRACT | SATURATES AROMATIC |
|----------|-----------------------|--------------------|------------|------------------|-----------|----------|-----------------------|-----------------|-------------|------------------------------------|-----------------------|
| | | | | TOTAL EXTRACT | SATURATES | AROMATIC | TOTAL HYDROCARBONS | ELUTED NSO's | ASPHALTENES | | |

WELL: 33/9-7

| | | | | | | | | | | |
|----------|---------|------|---------|---------|--------|---------|--------|--------|-------|------|
| 4132-001 | 2479.2m | 0.33 | 2837.94 | 2232.05 | 249.78 | 2481.83 | 252.55 | 92.45 | 87.45 | 8.94 |
| 4132-002 | 2483.1m | 0.35 | 3372.65 | 2522.05 | 312.86 | 2834.91 | 315.90 | 212.00 | 84.06 | 8.06 |

TABLE J5
C₁₅₊ CHROMATOGRAPHY WEIGHTS (grams)

| JOB 4132 | L I T H O | DEPTH/ IDENTITY | ROCK EXTRACTED | TOTAL EXTRACT | PRECIPTD. ASPHALTENES | NC5 | SATURATES | AROMATICS | ELUTED NSO's | NON-ELUTED NSO's |
|----------|-----------------------|--------------------|-------------------|------------------|--------------------------|-----|-----------|-----------|-----------------|---------------------|
|----------|-----------------------|--------------------|-------------------|------------------|--------------------------|-----|-----------|-----------|-----------------|---------------------|

WELL: 33/9-7

| | | | | | | | | | | |
|-----------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 4132-001A | | 2479.2m | 17.4700 | 0.16361 | 0.00533 | 0.14402 | 0.12868 | 0.00014 | 0.01456 | 0.00064 |
| 4132-002A | | 2483.1m | 12.2100 | 0.14413 | 0.00906 | 0.13507 | 0.10778 | 0.01337 | 0.01350 | 0.00042 |

TABLE J6
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

| GEOCHEM SAMPLE NUMBER | 001 | 002 |
|-----------------------|---------|---------|
| DEPTH | 2479.2m | 2483.1m |
| SAMPLE TYPE | | |
| nC15 | 1.89 | 0.99 |
| nC16 | 4.97 | 2.49 |
| nC17 | 6.48 | 4.42 |
| nC18 | 8.10 | 6.68 |
| nC19 | 8.97 | 7.99 |
| nC20 | 9.14 | 8.98 |
| nC21 | 8.43 | 9.44 |
| nC22 | 7.60 | 9.41 |
| nC23 | 7.43 | 7.86 |
| nC24 | 6.93 | 8.92 |
| nC25 | 6.58 | 7.34 |
| nC26 | 5.83 | 6.15 |
| nC27 | 4.58 | 4.87 |
| nC28 | 3.79 | 3.94 |
| nC29 | 3.12 | 3.53 |
| nC30 | 2.14 | 2.44 |
| nC31 | 1.50 | 1.72 |
| nC32 | 0.86 | 1.03 |
| nC33 | 0.71 | 0.80 |
| nC34 | 0.59 | 0.61 |
| nC35 | 0.36 | 0.40 |
| Paraffin | 15.93 | 15.38 |
| Isoprenoid | 1.96 | 1.77 |
| Naphthene | 82.11 | 82.85 |
| CPI 1 Index | 1.02 | 0.96 |
| CPI 2 Index | 1.05 | 1.05 |
| CPI 3 Index | 0.95 | 0.97 |
| Prist/Phytane | 1.09 | 1.04 |
| Prist/nC17 | 0.86 | 0.97 |
| Phytane/nC18 | 0.64 | 0.62 |

Job Number : 4132

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{26} + C_{28}}$$

CT - ditch cuttings CD - core SWC - sidewall core

TABLE J7
METHYLPHENANTHRENE INDICES (MPI)

| JOB 4132 | DEPTH/ IDENTITY | SAMPLE TYPE | MPI 1 | | Rcalc | | MPI 2 | |
|-----------------------------|--------------------|----------------|-------|--------|-------|--------|-------|--------|
| GEOCHEM SAMPLE NUMBER | | | AREA | HEIGHT | AREA | HEIGHT | AREA | HEIGHT |

WELL: 33/9-7

| | | | | | | | | |
|----------|---------|--|------|------|--|--|------|------|
| 4132-001 | 2479.2m | | 0.60 | 0.64 | | | 0.63 | 0.64 |
| 4132-002 | 2483.1m | | 0.58 | 0.61 | | | 0.61 | 0.60 |

$$\text{MPI 1} = \frac{1.5(2\text{-MP} + 3\text{-MP})}{\text{P} + 1\text{-MP} + 9\text{-MP}} \quad \text{MPI 2} = \frac{3(2\text{-MP})}{\text{P} + 1\text{-MP} + 9\text{-MP}}$$

$$\text{Rcalc} = \begin{cases} 0.60(\text{MPI 1}) + 0.40 & \text{(if } R_o < 1.35\% \text{)} \\ -0.60(\text{MPI 1}) + 2.30 & \text{(if } R_o > 1.35\% \text{)} \end{cases}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE J8

AROMATIC HYDROCARBONS RATIOS (MSD, PEAK AREA DATA)

| SAMPLE NUMBER | DEPTH (m) | 2MP/ 1MP | RATIO 1 | RATIO 2 | RATIO 3 |
|---------------|-----------|-------------|---------|---------|---------|
|---------------|-----------|-------------|---------|---------|---------|

WELL: 33/9-7

| | | | | | |
|-----------|--------|------|------|------|------|
| 4132-001A | 2479.2 | 0.61 | 0.21 | 0.56 | 0.12 |
| 4132-002A | 2483.1 | 0.60 | 0.21 | 0.55 | 0.09 |

RATIO 1 = $A(231)/A(231) + G(231)$

RATIO 2 = $E(253)/E(253) + G(253)$

RATIO 3 = $A(253)/B(231) + E(253)$

TABLE J9
 CARBON ISOTOPE COMPOSITIONS (‰, PDB)

| JOB 4132 | DEPTH/ IDENTITY | TOTAL EXTRACT WHOLE OIL | SATURATES | AROMATICS | NSO | ASPHALTENES | KEROGEN | PYROLYSATE (S2) |
|-----------------------------|--------------------|----------------------------|-----------|-----------|-----|-------------|---------|--------------------|
| GEOCHEM SAMPLE NUMBER | | | | | | | | |

WELL: 33/9-7

| | | | | | | | | |
|----------|---------|--------|--------|--------|--------|--------|--|--|
| 4132-001 | 2479.2m | -29.48 | -29.78 | -28.97 | -29.76 | -29.45 | | |
|----------|---------|--------|--------|--------|--------|--------|--|--|

TABLE J10
BIOMARKER MOLECULAR RATIOS

WELL: 33/9-7

| SAMPLE NUMBER | DEPTH (m) | Steranes (m/z 217) | | | Steranes (m/z 218) | | |
|------------------|--------------|--------------------|-------------------|---------------------------|-------------------------|-----|-----|
| | | <u>A</u> (A+J) | <u>Q</u> (Q+T) | <u>(R+S)</u> (Q+R+S+T) | NORMALISED COMPOSITION: | | |
| | | | | | B | D | F |
| 4132-001A | 2479.2 | 0.54 | 0.50 | 0.48 | 27% | 30% | 43% |
| 4132-002A | 2483.1 | 0.55 | 0.53 | 0.50 | 26% | 31% | 43% |

TABLE J11
BIOMARKER MOLECULAR RATIOS

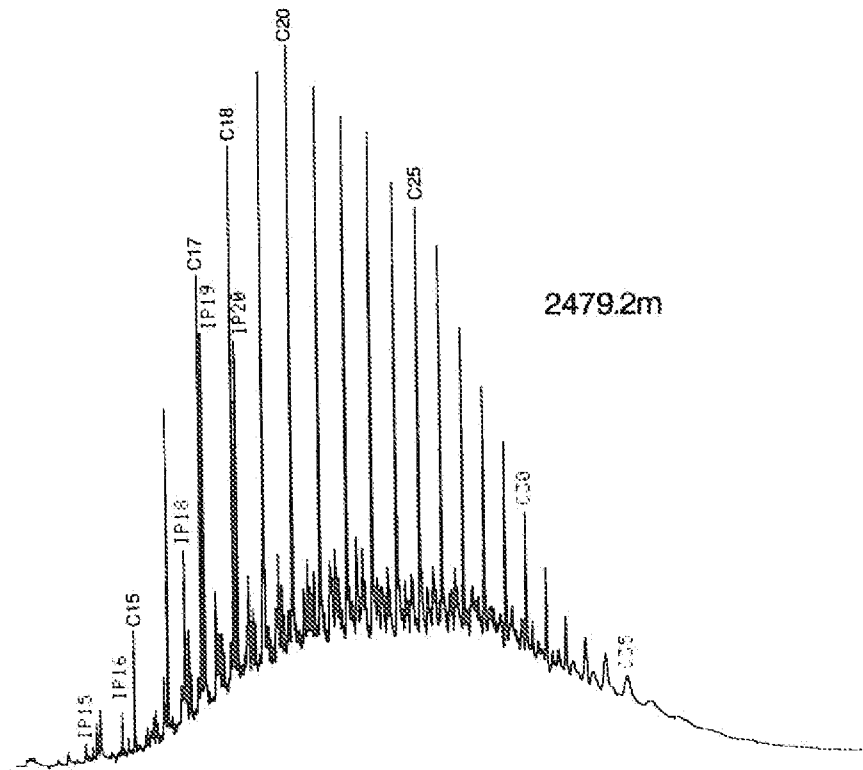
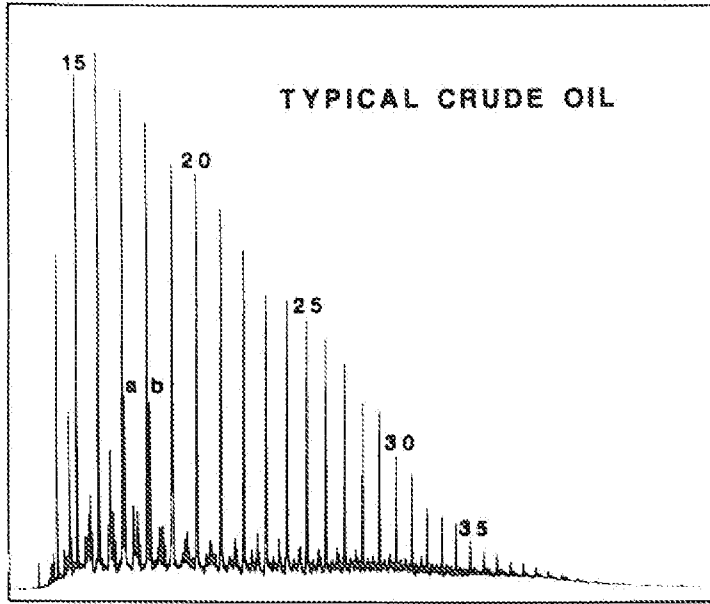
WELL 33/9-7

Terpanes (m/z 191)

| SAMPLE NUMBER | DEPTH (m) | A/B | Z/E | Z/C | <u>Z</u> (Z+E) | <u>C</u> (C+E) | %22S for J | <u>E</u> (E+F) | <u>X</u> (X+D) | Q/E |
|---------------|-----------|------|------|------|-------------------|-------------------|---------------|-------------------|-------------------|------|
| 4132-001A | 2479.2 | 0.95 | 0.33 | 0.75 | 0.25 | 0.31 | 58% | 0.89 | 0.69 | 0.09 |
| 4132-002A | 2483.1 | 1.07 | 0.33 | 0.66 | 0.25 | 0.33 | 53% | 0.88 | 0.57 | 0.07 |

FIGURE J1.1 **C₁₅₊ SATURATES CHROMATOGRAMS**

WELL 33/9-7

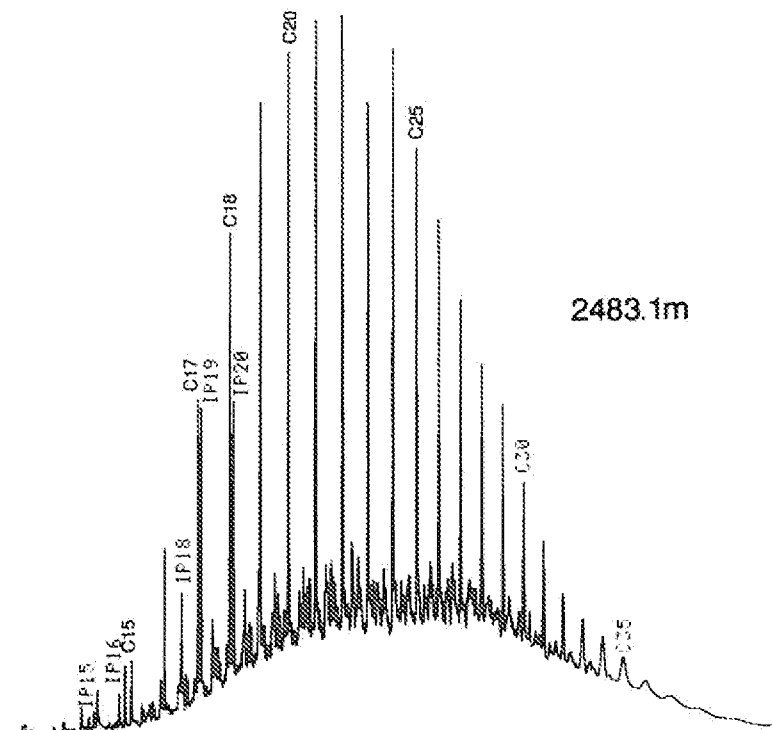


a - PRISTANE
b - PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20-nC₂₀)

FIGURE J1.2 **C₁₅+ SATURATES CHROMATOGRAMS**

WELL 33/9-7



a - PRISTANE
b - PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20 - nC₂₀)

FIGURE J2.1

C₁₅+ AROMATIC CHROMATOGRAMS

WELL 33/9-7

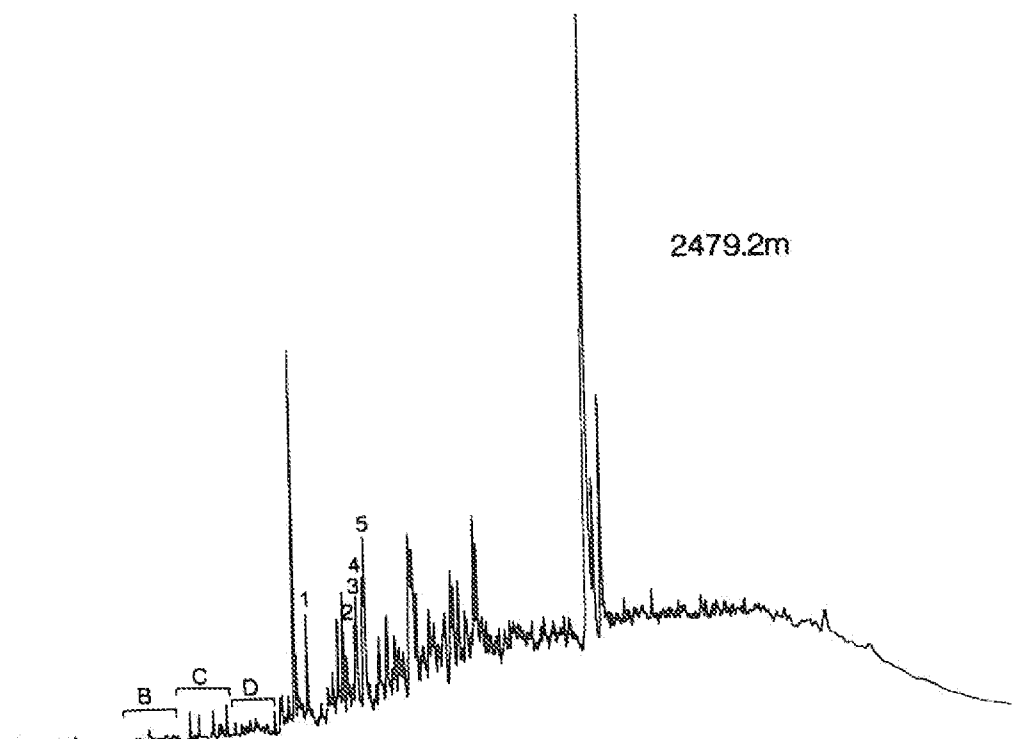
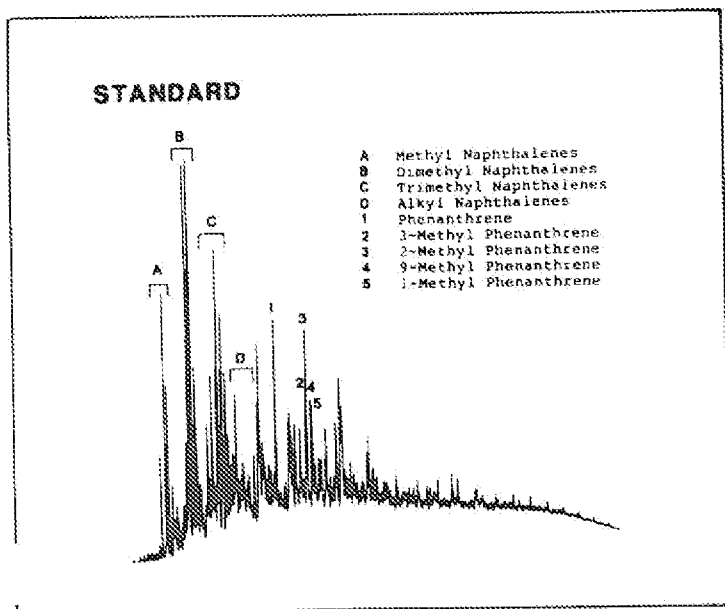
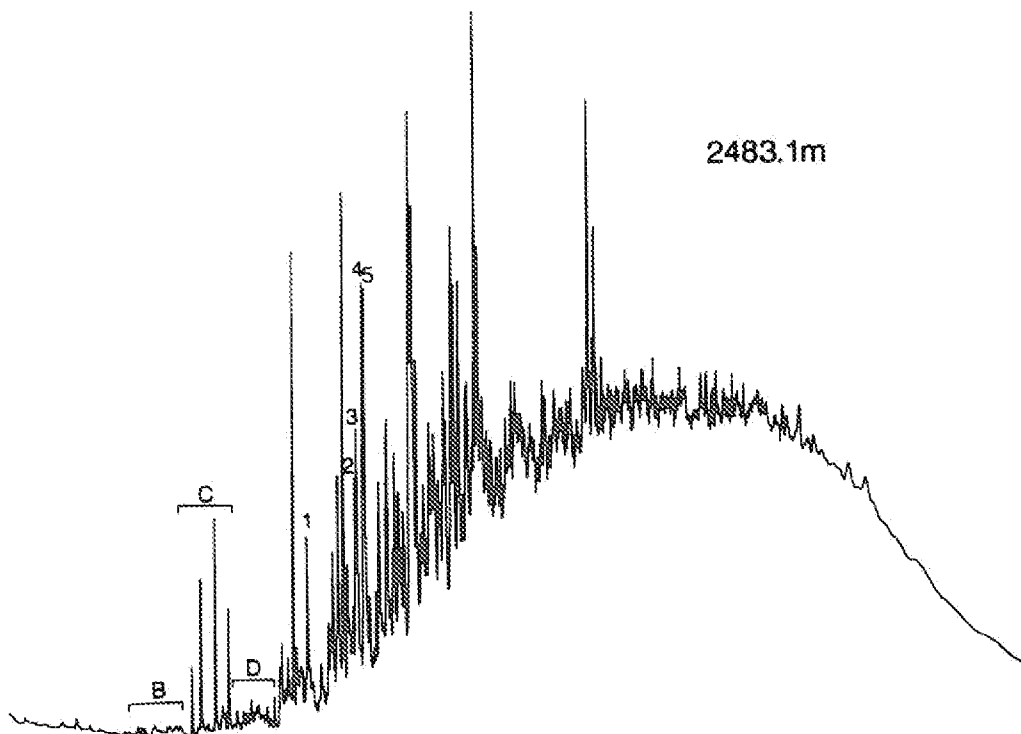


FIGURE J22

C₁₅+ AROMATIC CHROMATOGRAMS

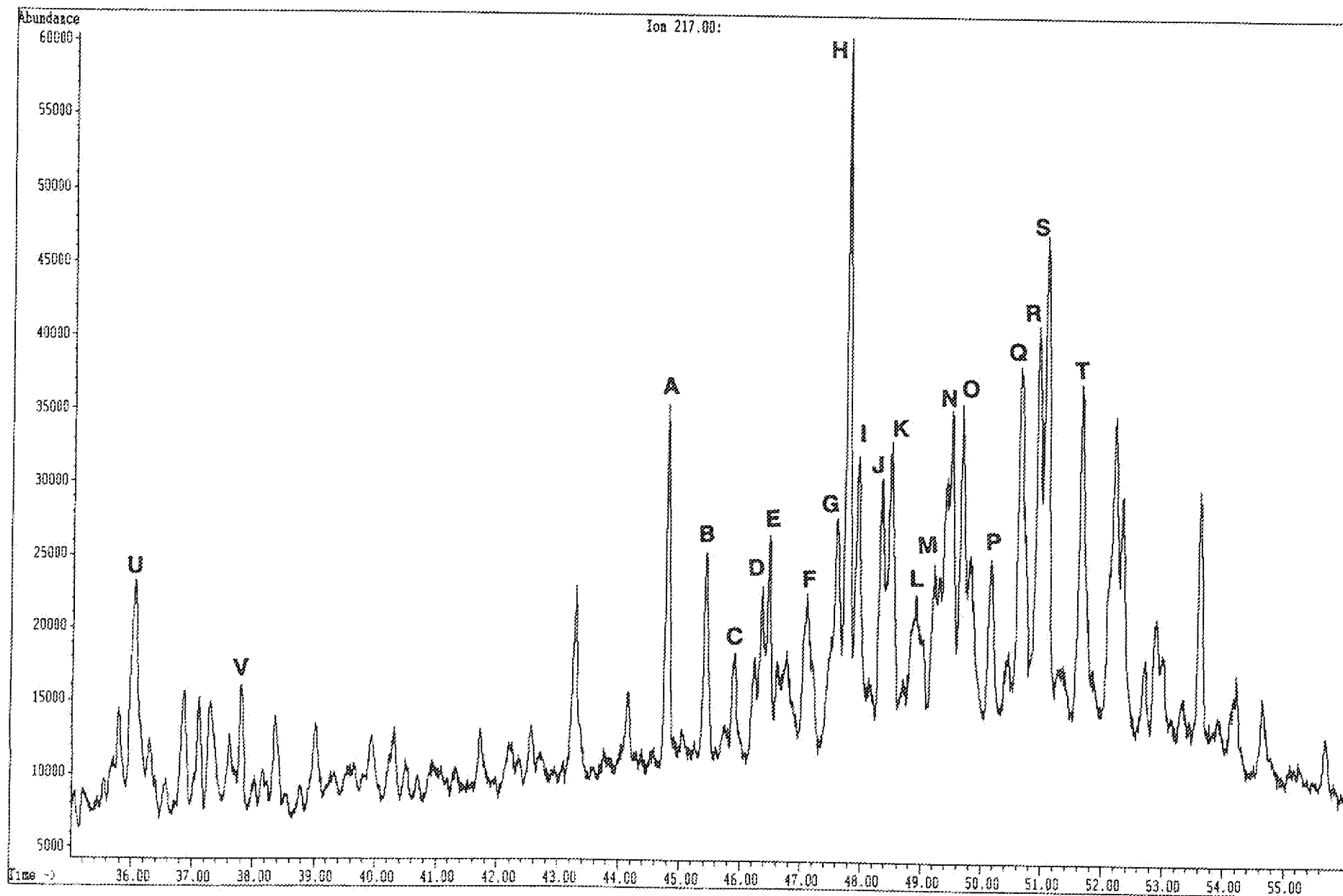
WELL 33/9-7



PEAK IDENTIFICATION ON FIRST SHEET

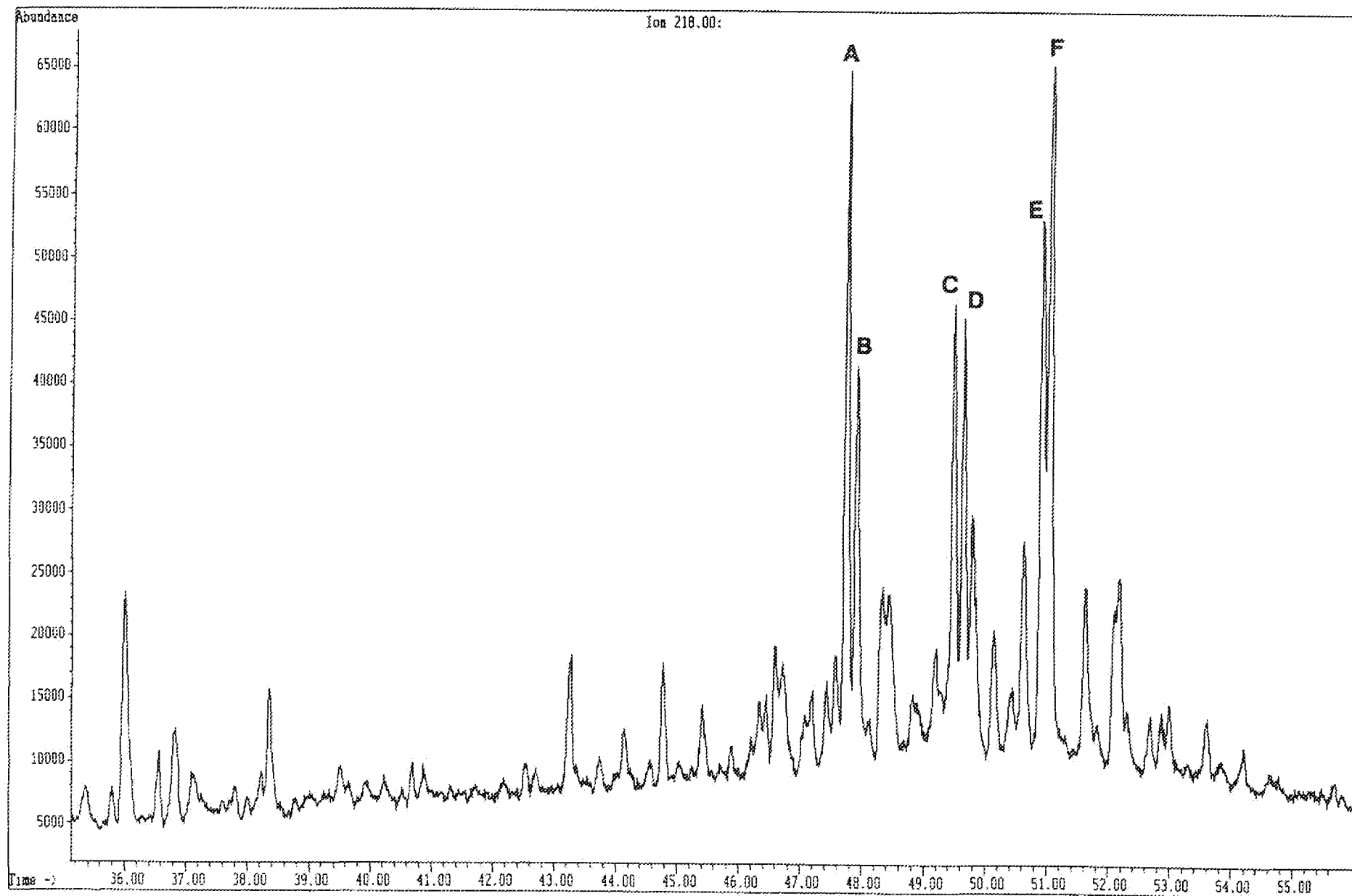
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Date Acquired: 14 Dec 90 5:43 pm
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Sample Name: 4132-001
Misc Info: WELL 33/9-7 2479.2M
Bottle Number: 27

J3.1a

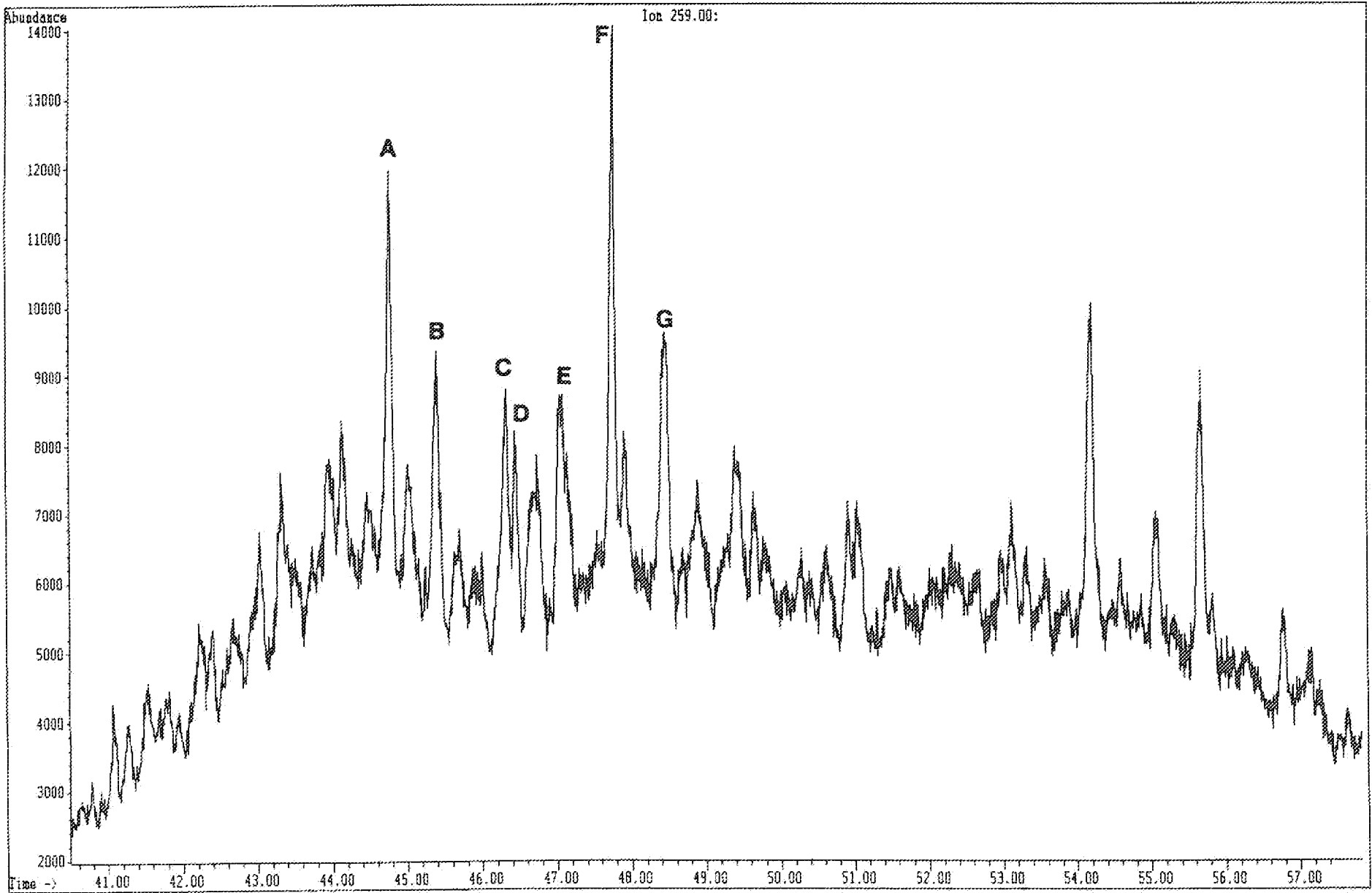


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Method File Name: BICM.M
Sample Name: 4132-BU1
Misc Info: WELL 33/9-7 2479.ZM
Bottle Number: 27

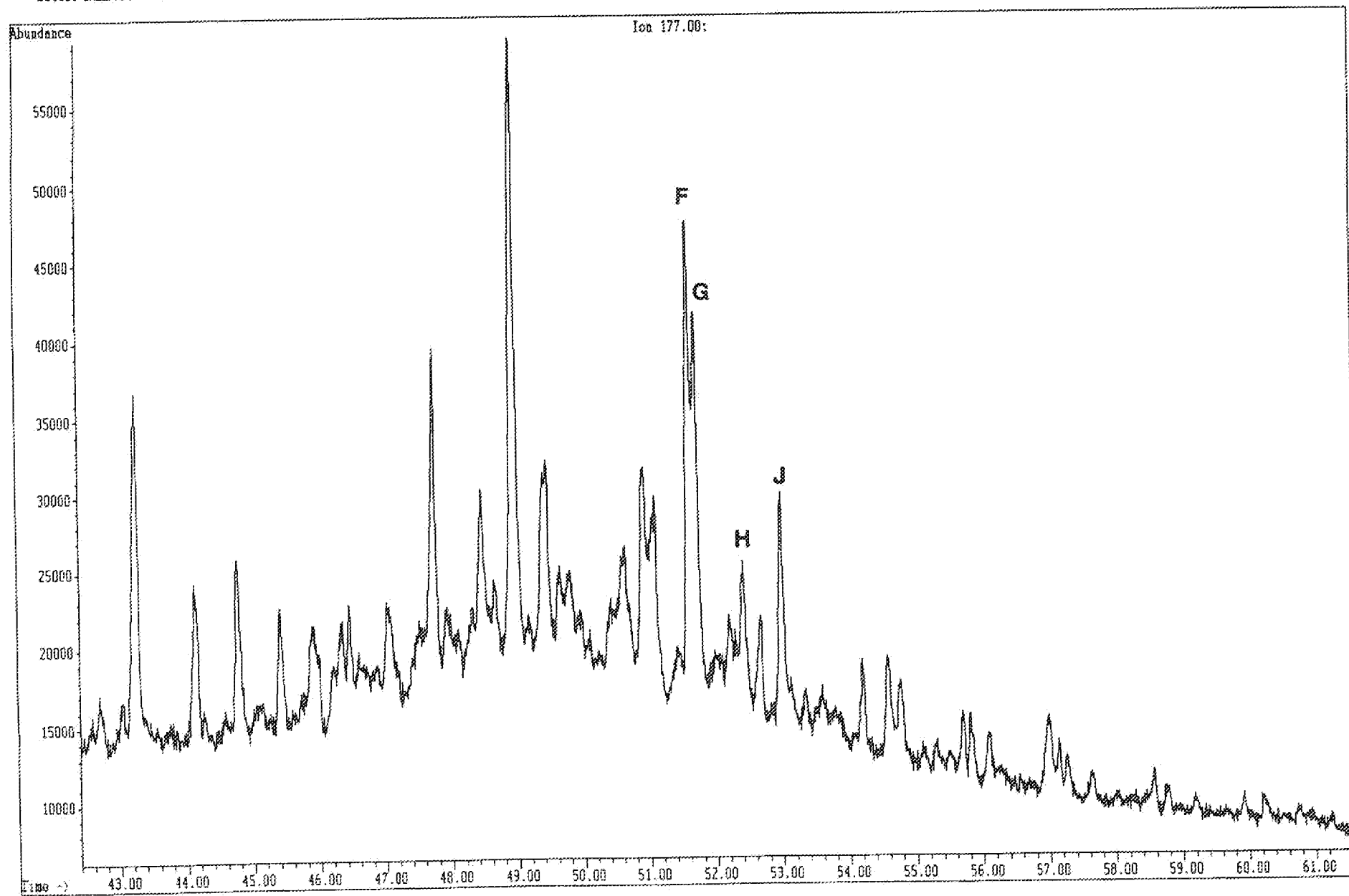
J3.1b



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Operator:
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Method File Name: BIOM.M
Sample Name: 4132-001
Misc Info: WELL 33/9-7 2479.ZM
Bottle Number: 27

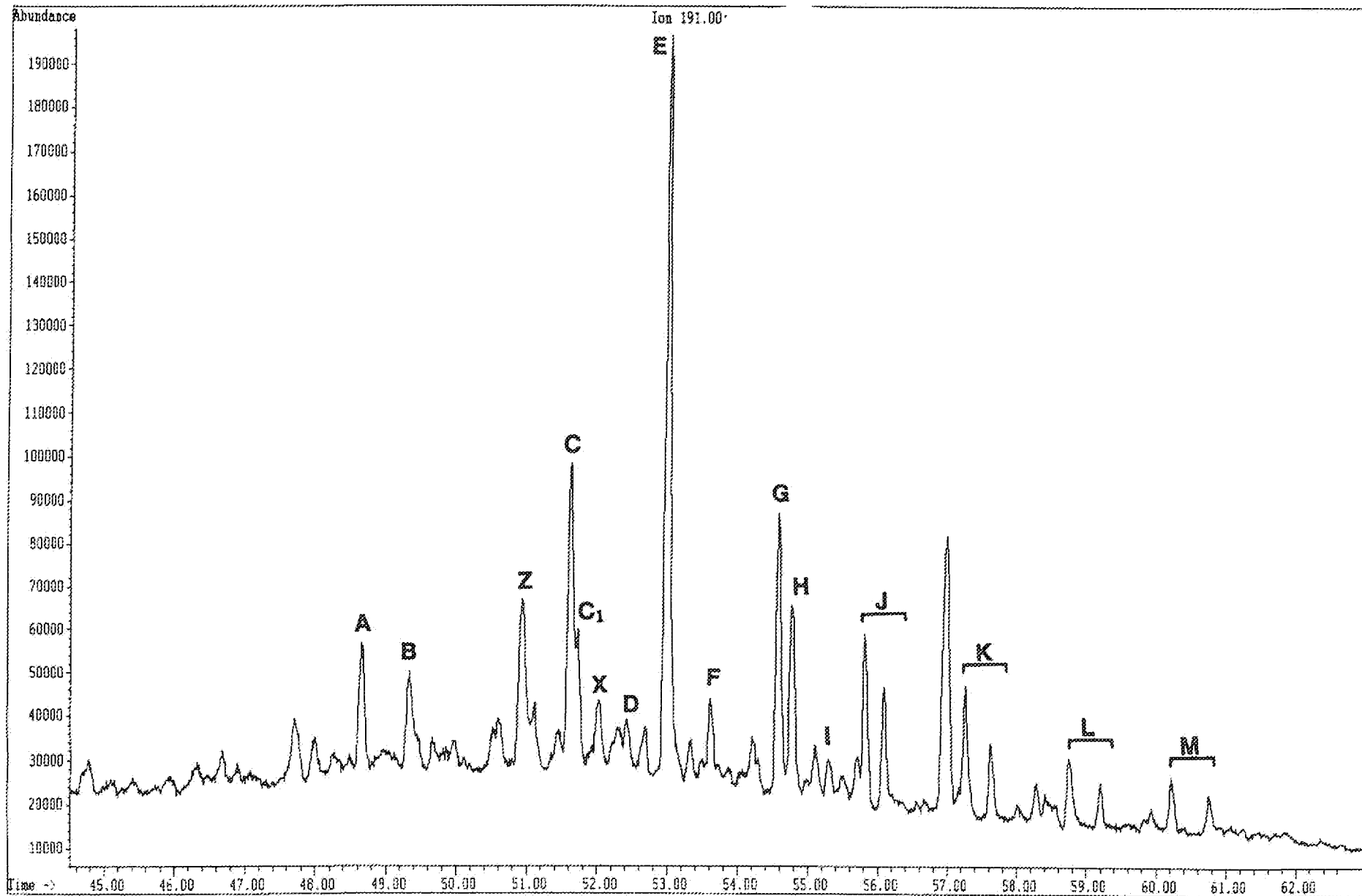


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Bottle Number: 27

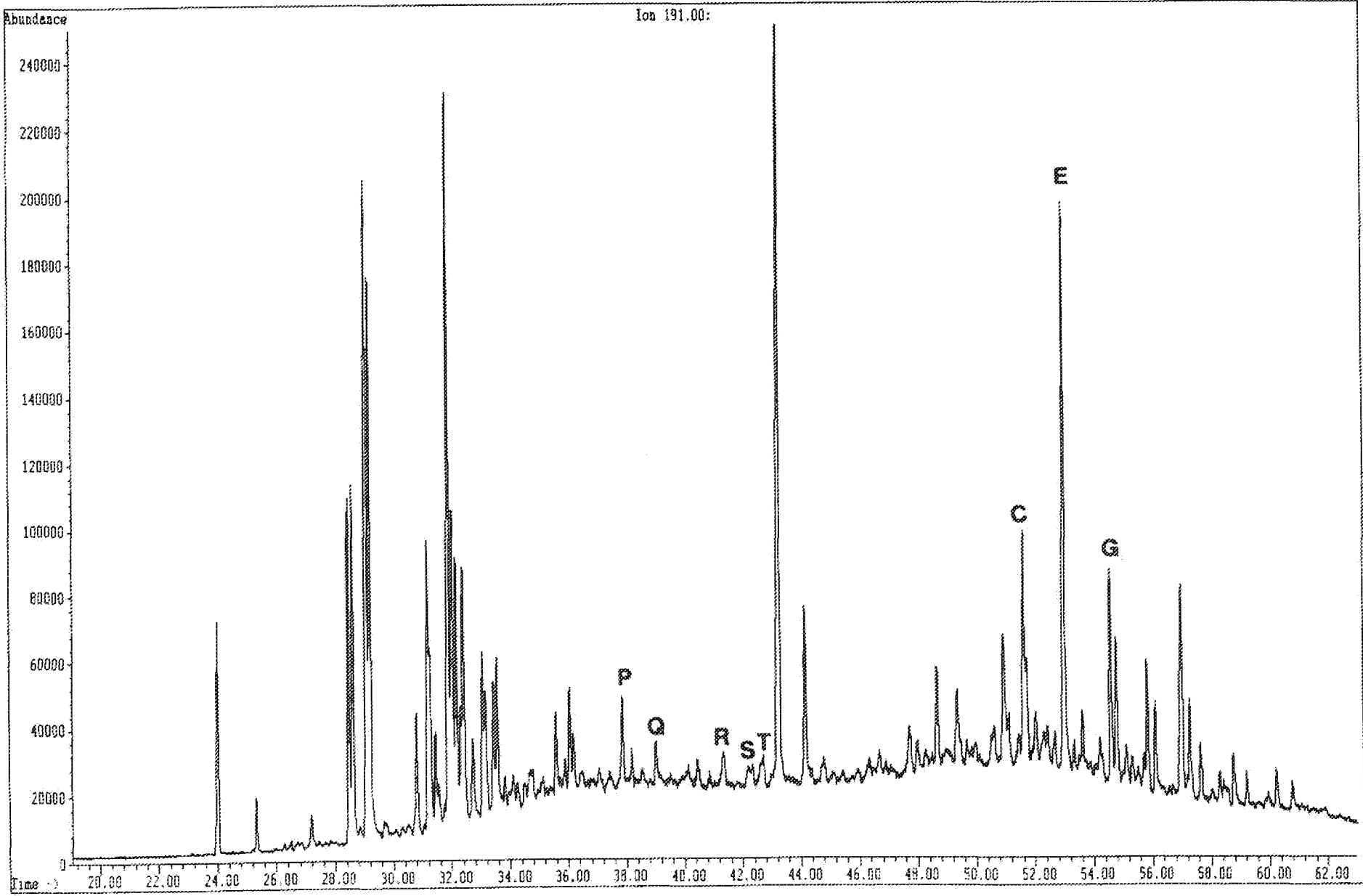


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Method File Name: B10M.M
Sample Name: 4132-001
Misc Info: WELL 33/9-7 2479.ZM
Bottle Number: 27

J3.1e

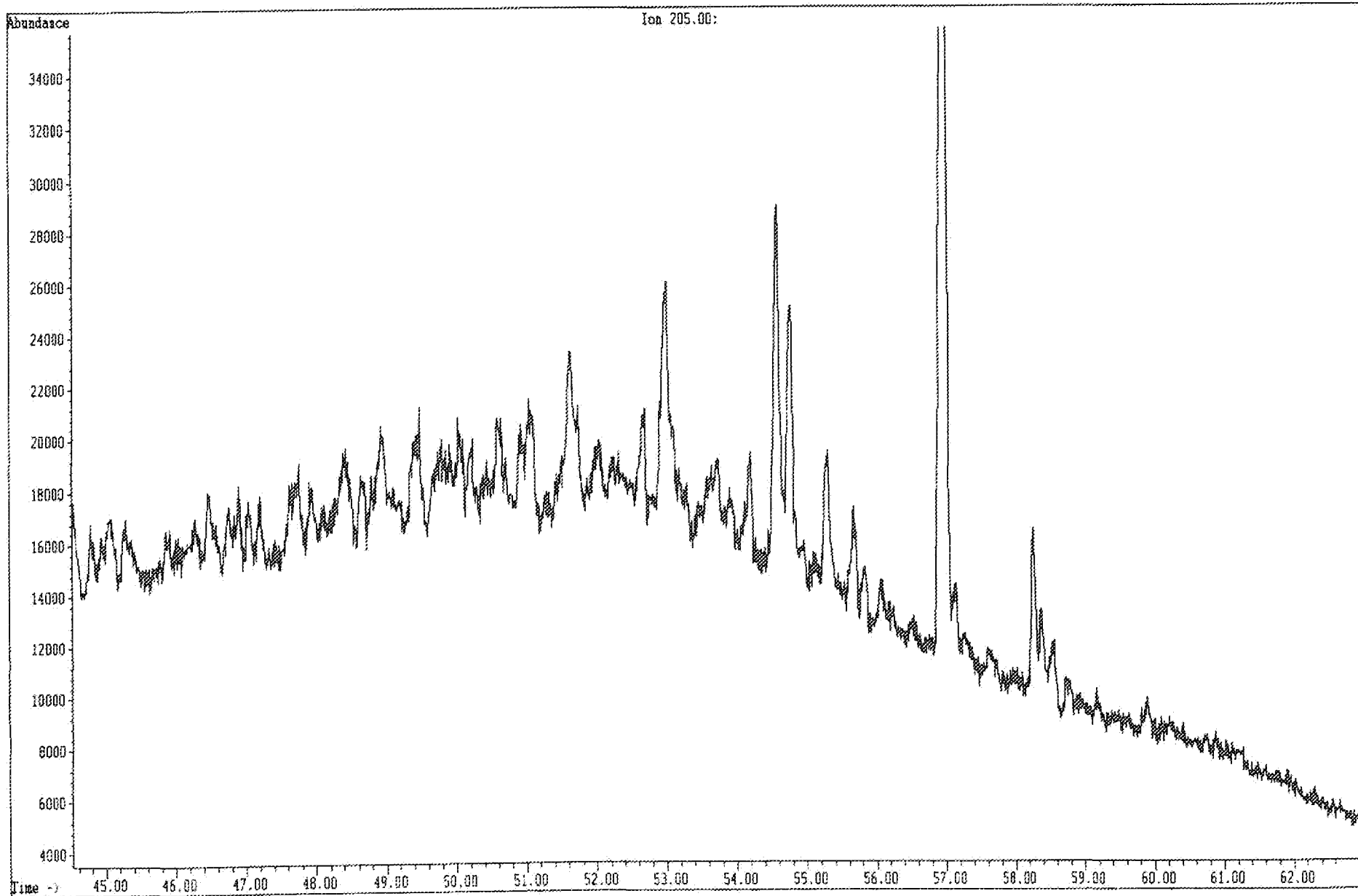


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Operator:
Date Acquired: 14 Dec 90 5:43 pm
Method File Name: BLOW.M
Sample Name: 4132-001
Misc Info: WELL 33/9-7 2479.2M
Bottle Number: 27

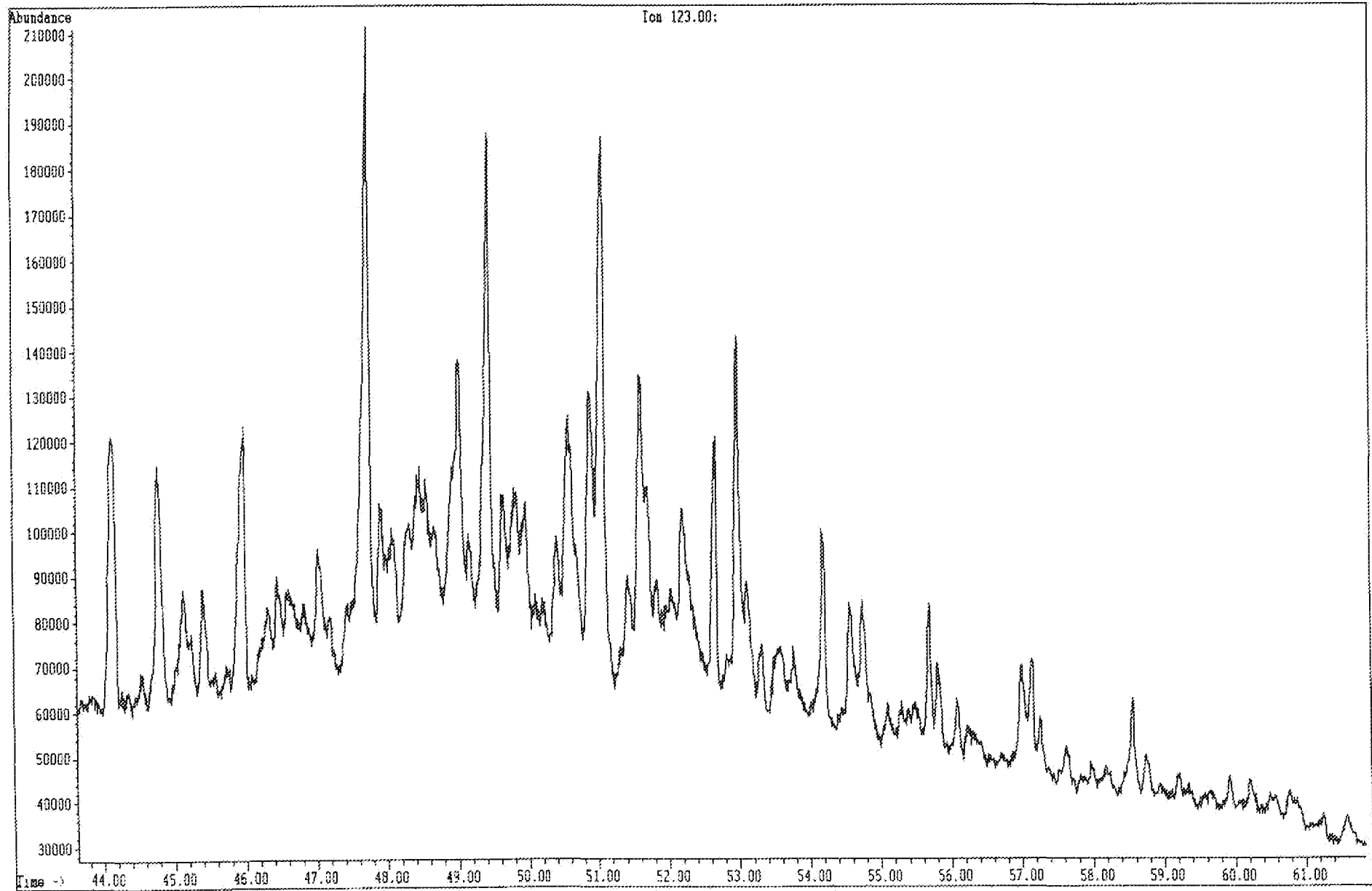


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Operator:
Date Acquired: 14 Dec 90 5:43 pm
Method File Name: BICH.M
Sample Name: 4132-001
Misc Info: WELL 33/9-7 2479.2M
Bottle Number: 27

J3.1g

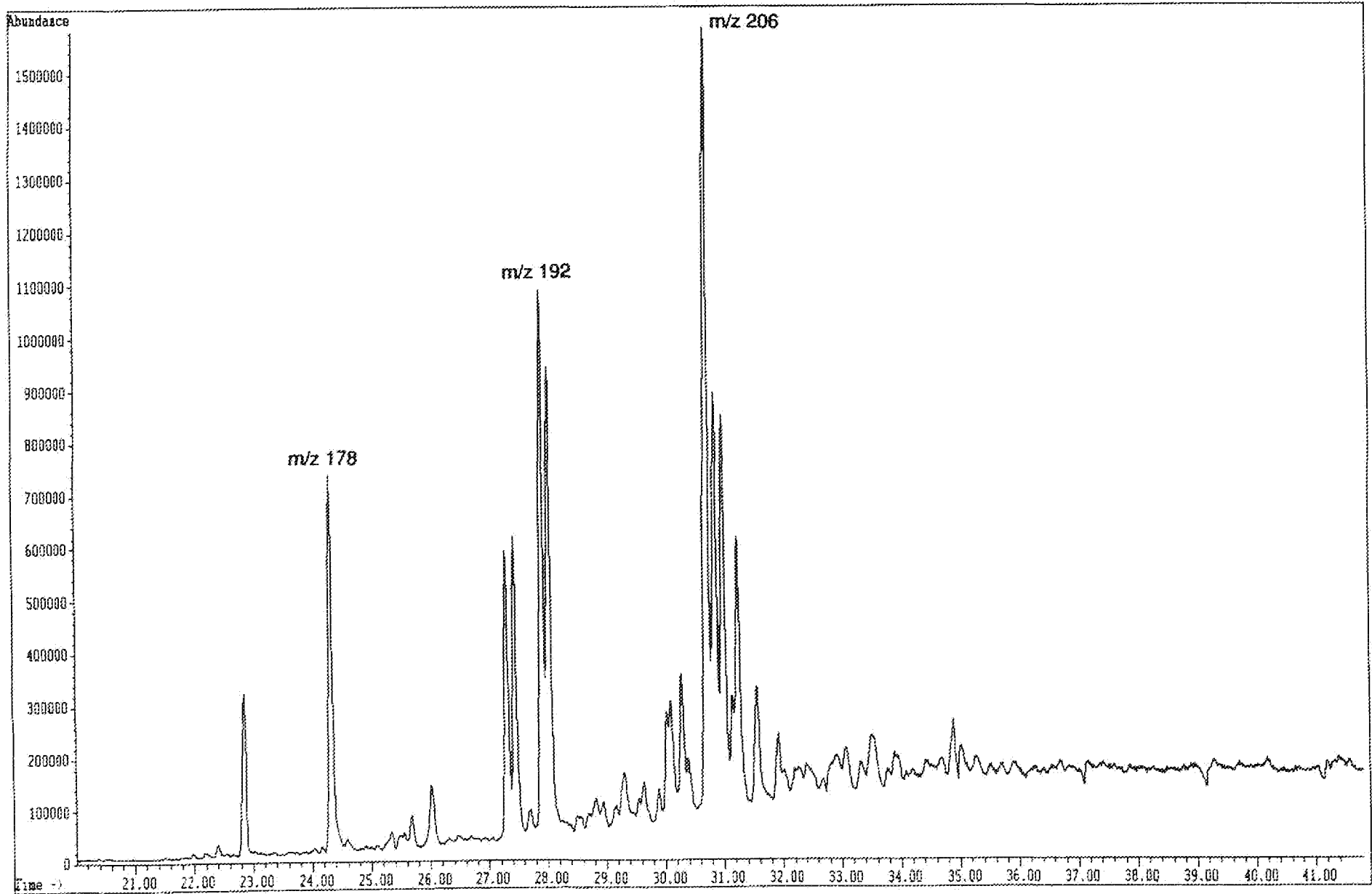


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Method File Name: BIOM.M
Sample Name: 4132-001
Misc Info: WELL 33/9-7 2479.ZM
Bottle Number: 27



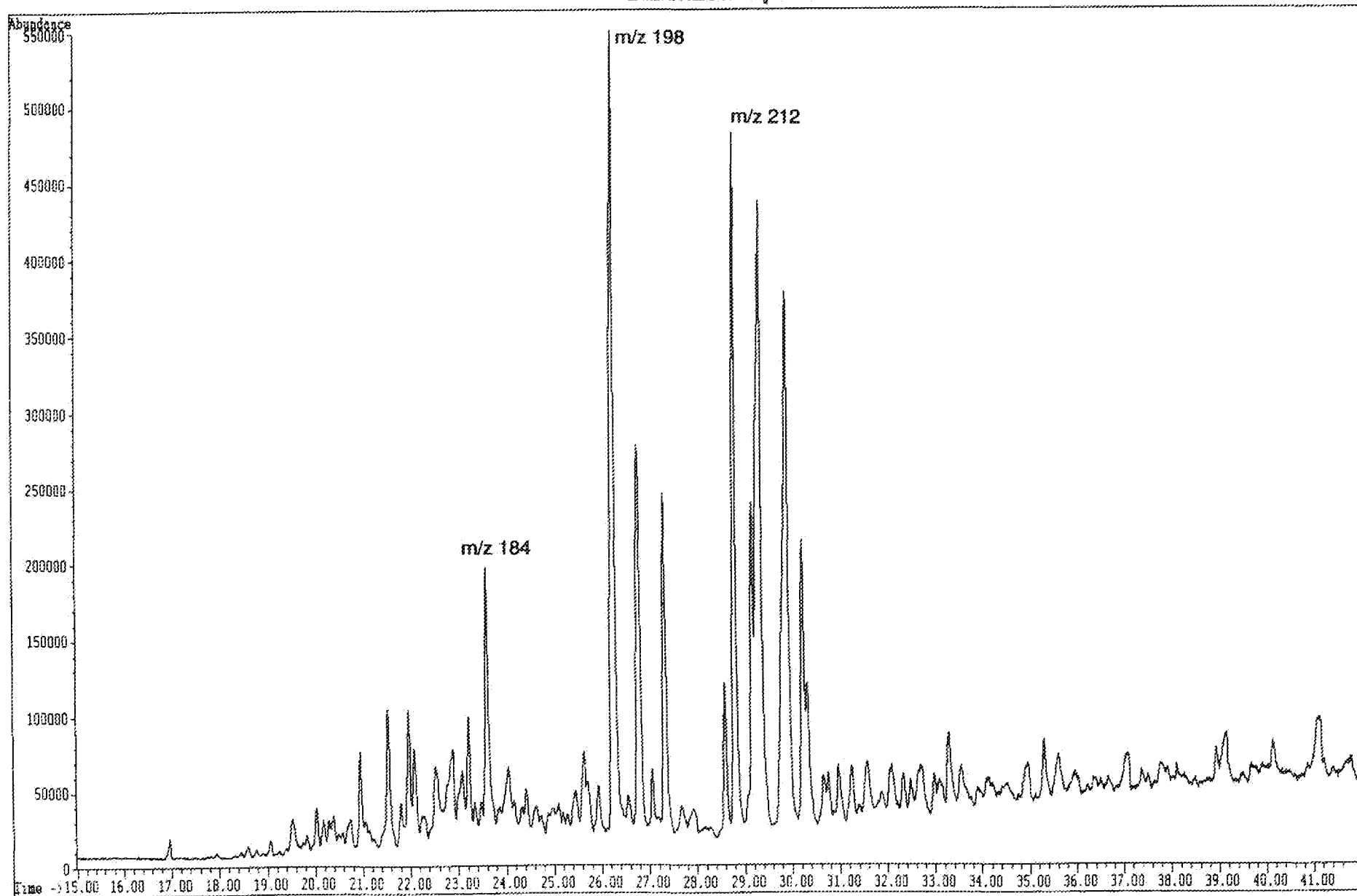
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Bottle Number: 94

Phenanthrene s

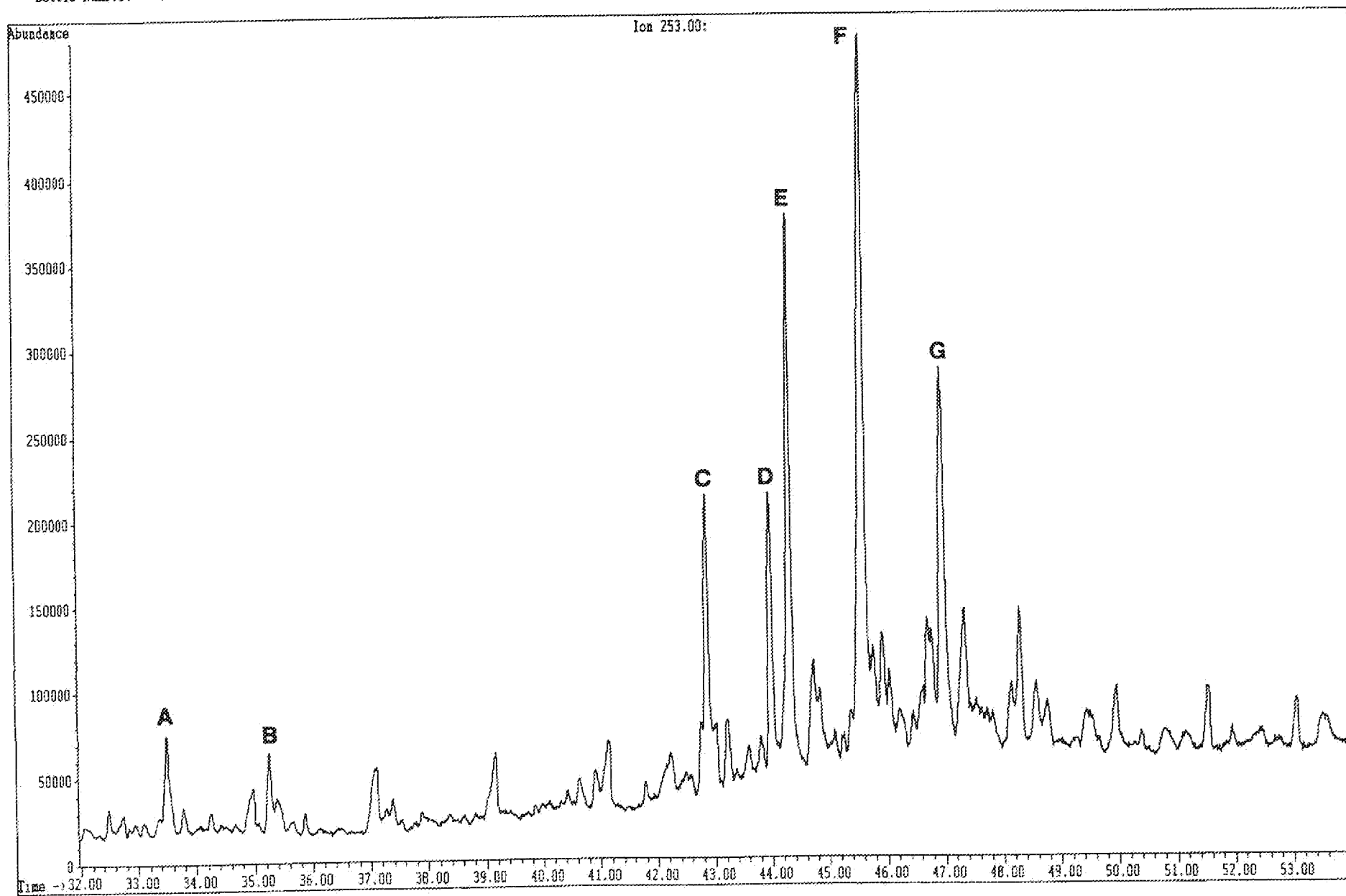


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Date Acquired: 11 Dec 90 7:22 pm
Method File Name: BICOMY.M
Sample Name: 4132-001
Misc Info: WELL 33/9-7 2479.2M
Bottle Number: 94

Dibenzothiophenes

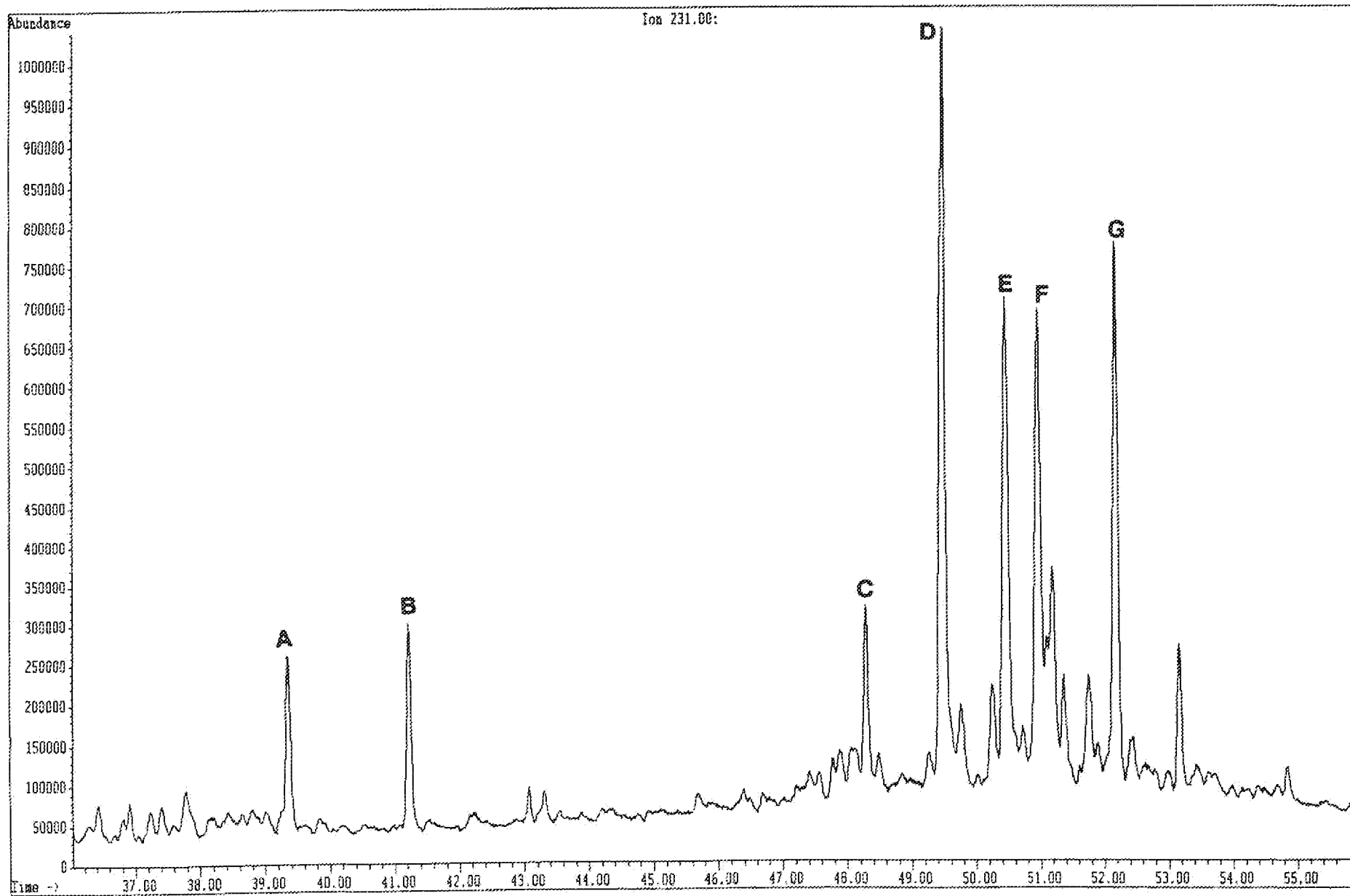


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Method File Name: B10HY.M
Sample Name: 4132-001
Misc Info: WELL 33/9-7 2479.2M
Bottle Number: 94



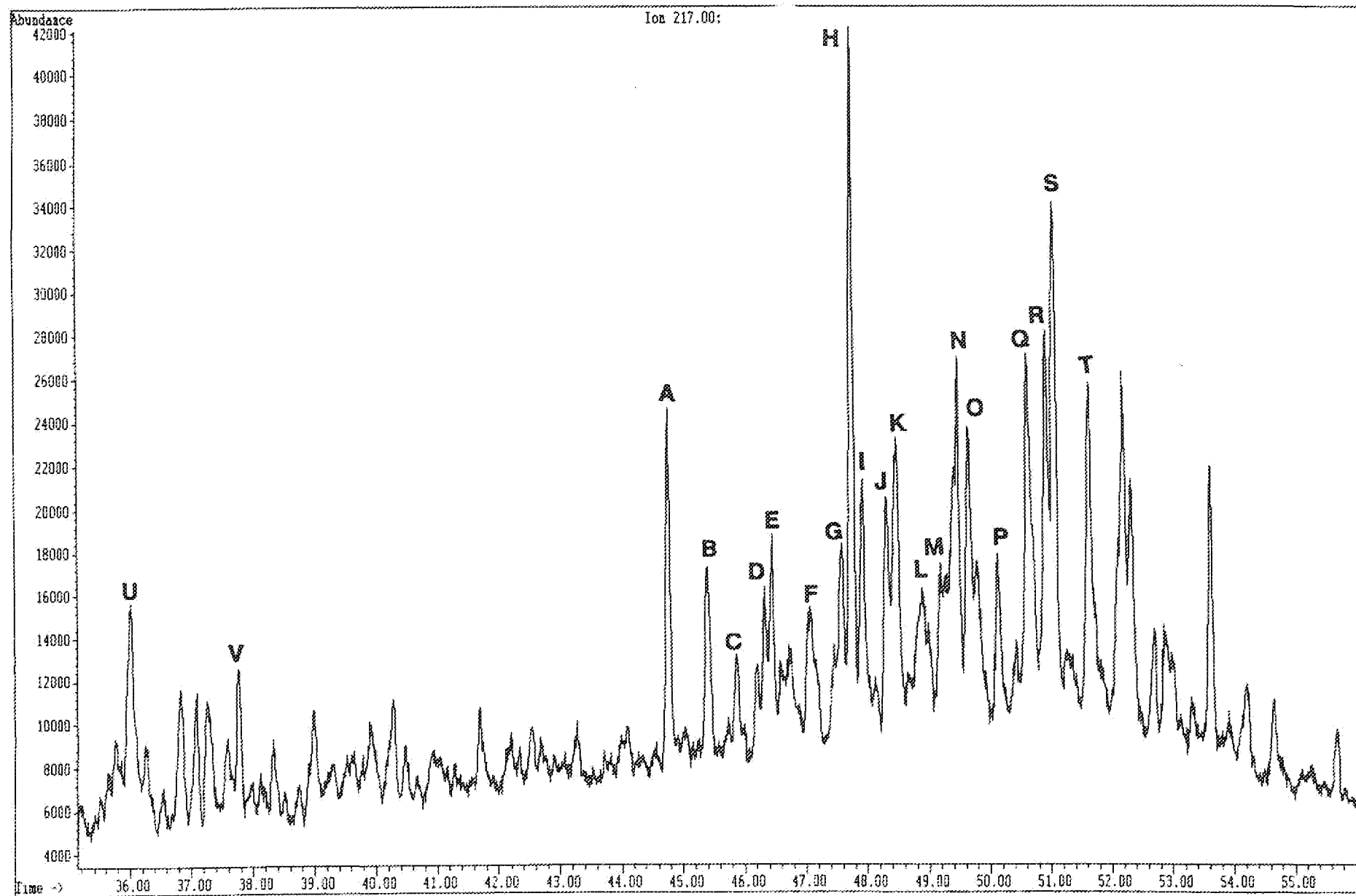
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Operator:
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Method File Name: BIOMY.M
Sample Name: 4132-001
Misc Info: WELL 33/9-7 2479.2M
Bottle Number: 94

J3.11



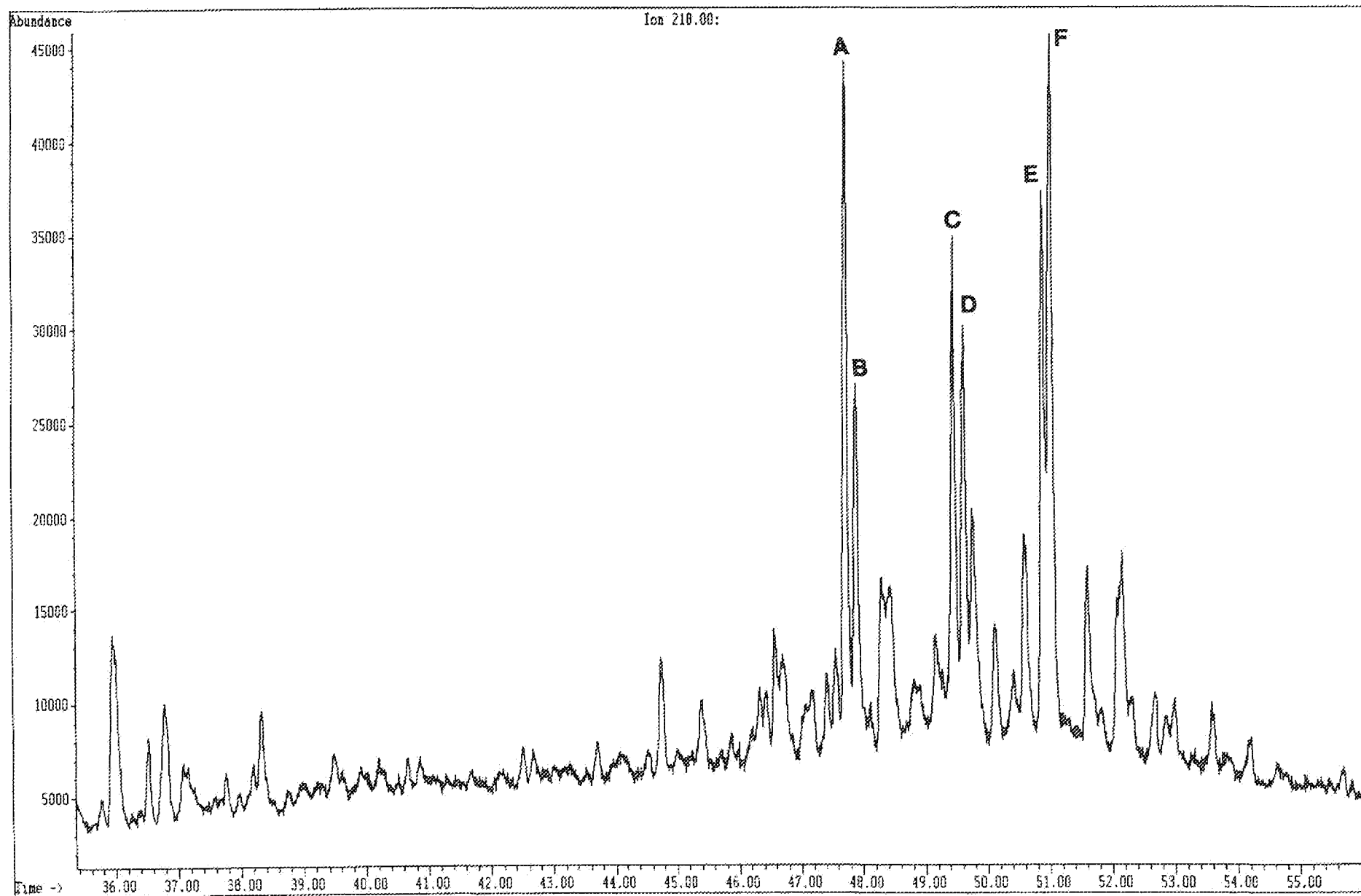
File: C:\CHEMPC\DATA\2801007.D
Operator:
Date Acquired: 14 Dec 90 6:53 pm
Method File Name: BIOM.M
Sample Name: 4132-002
Misc Info: WELL 33/9-7 2483.LM
Bottle Number: ZB

J3.2a

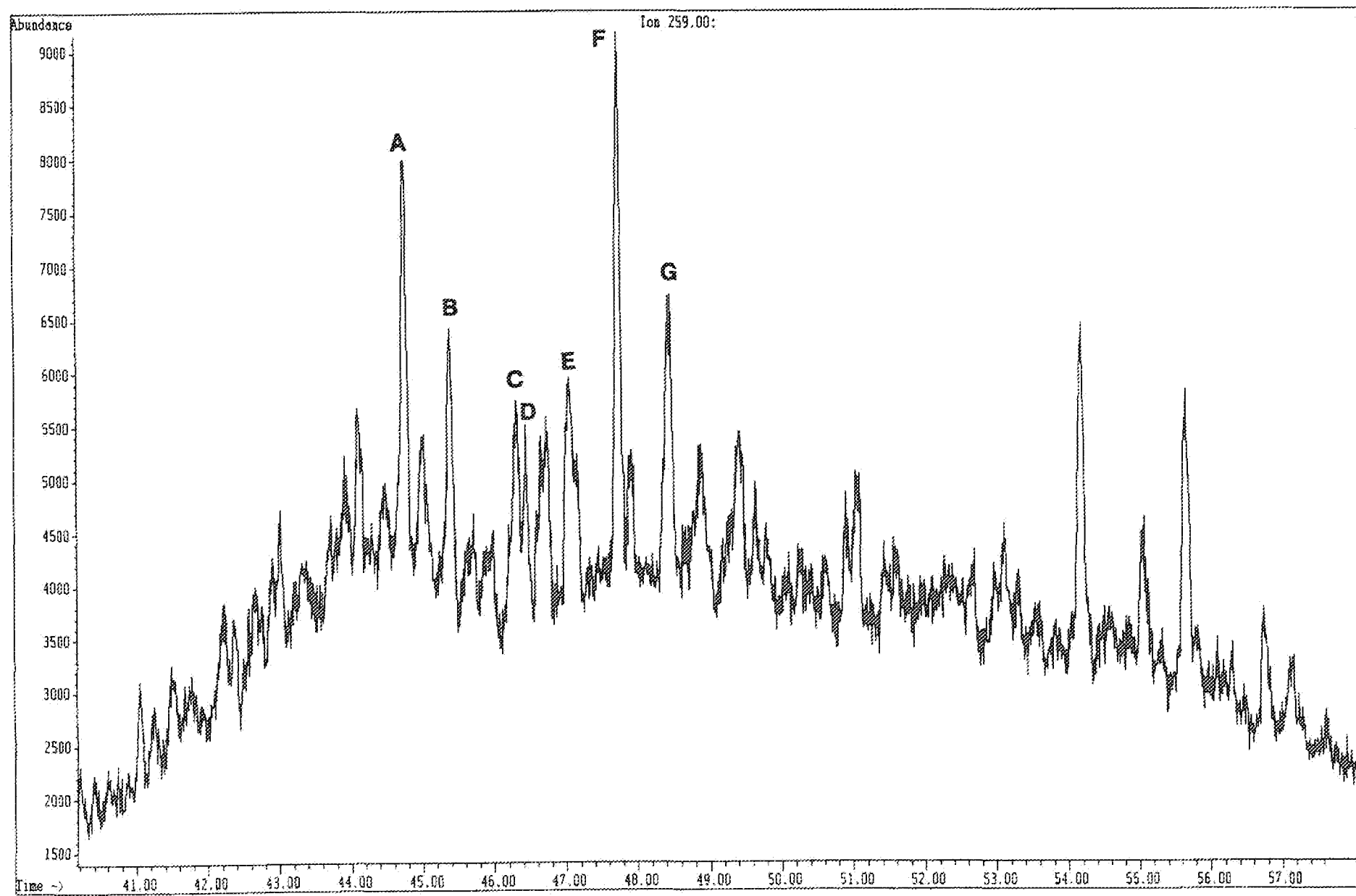


File: C:\CHEMPC\DATA\2801007.D
Operator:
Date Acquired: 14 Dec 90 6:53 pm
Method File Name: BIOM.M
Sample Name: 4132-002
Misc Info: WELL 33/9-7 2483.1M
Bottle Number: 28

J3.2b

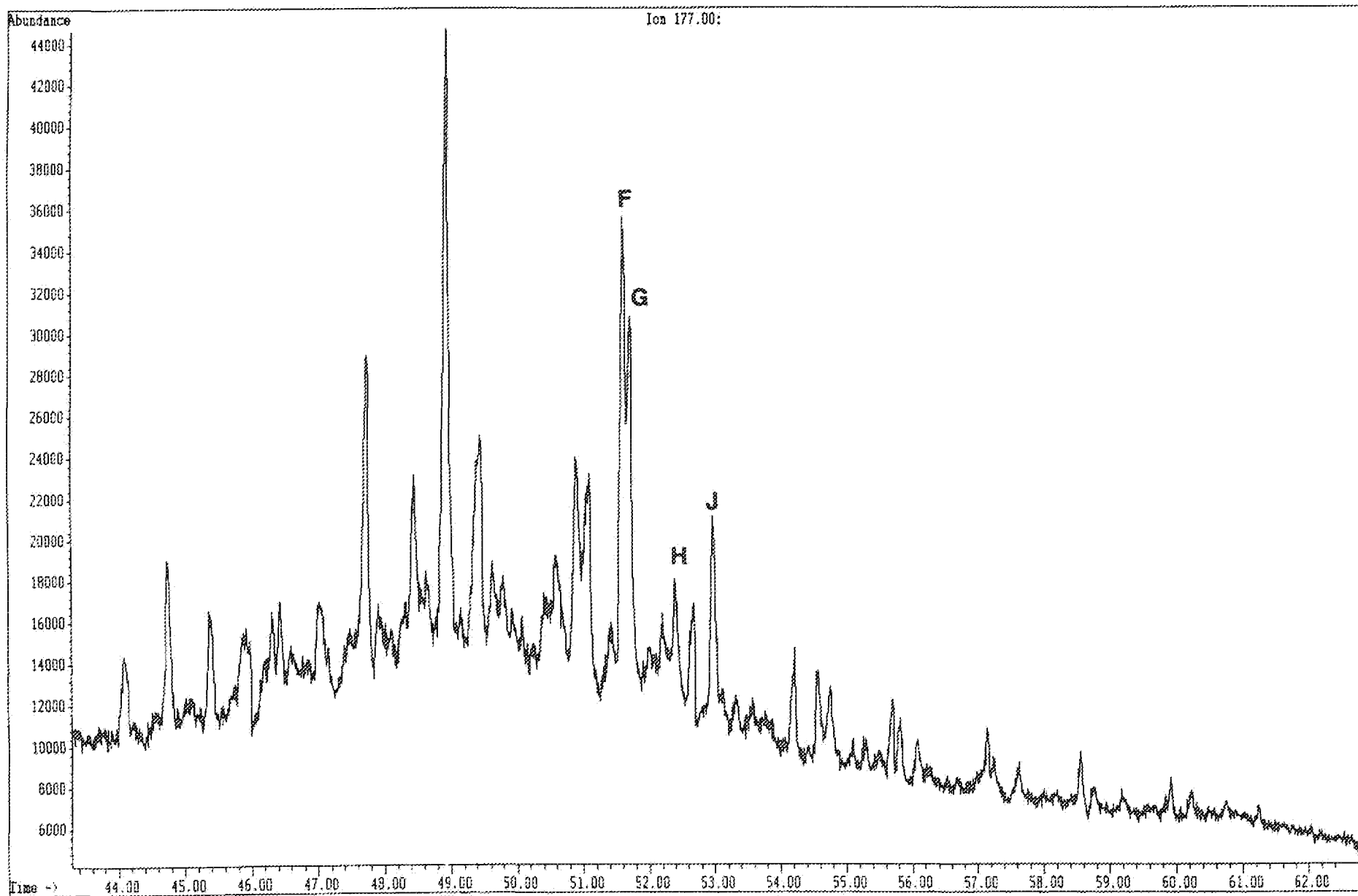


File: C:\CHEMPC\DATA\2001007.D
Operator:
Date Acquired: 14 Dec 90 6:53 pm
Method File Name: B10M.M
Sample Name: 4132-002
Misc Info: WELL 33/9-7 2483.1M
Bottle Number: 28



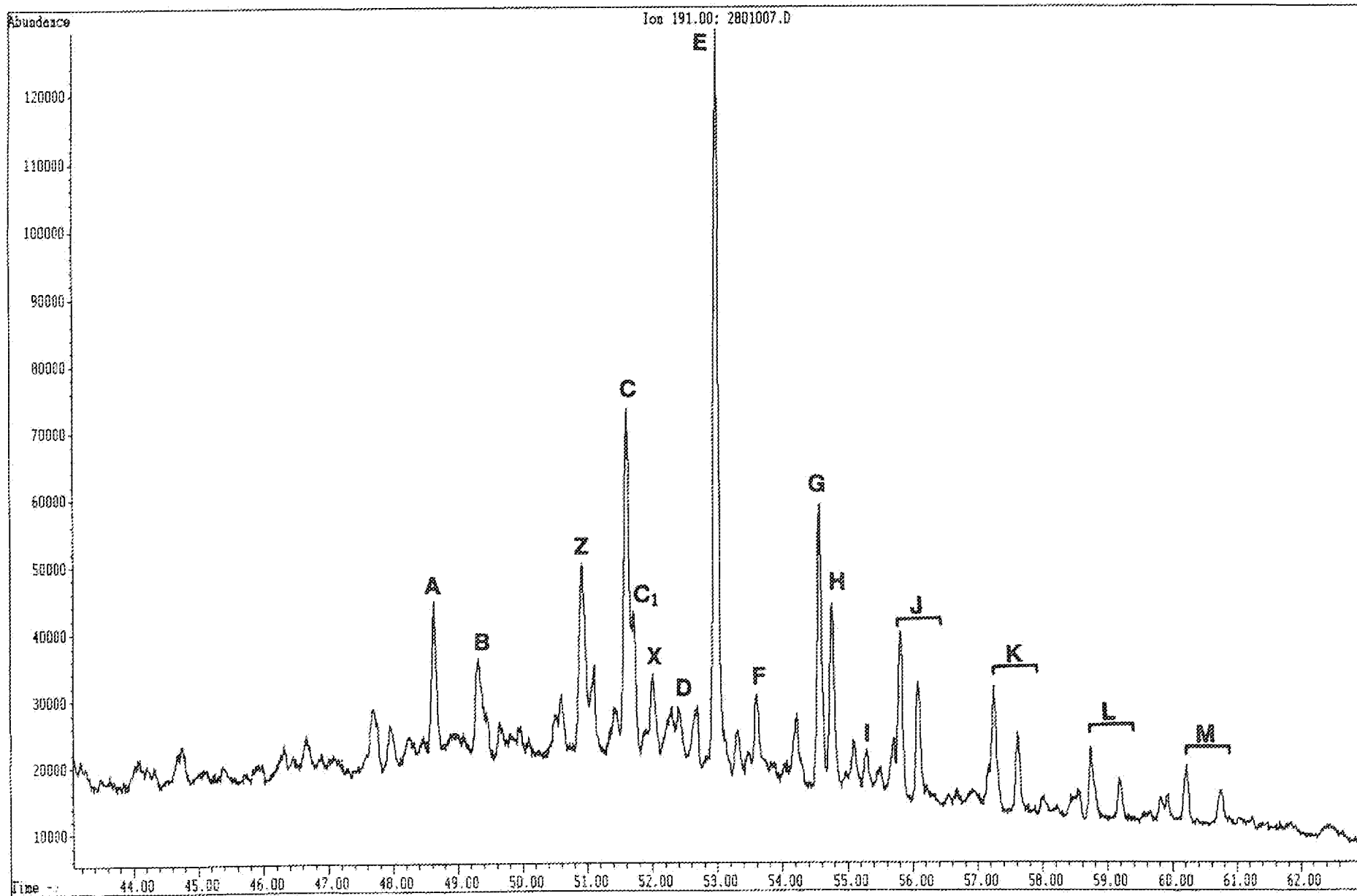
File: C:\CHEMPC\DATA\2601087.D
Operator:
Date Acquired: 14 Dec 90 6:53 pm
Method File Name: BIOM.M
Sample Name: 4132-002
Misc Info: WELL 33/9-7 2483.1M
Bottle Number: 29

J3.2d

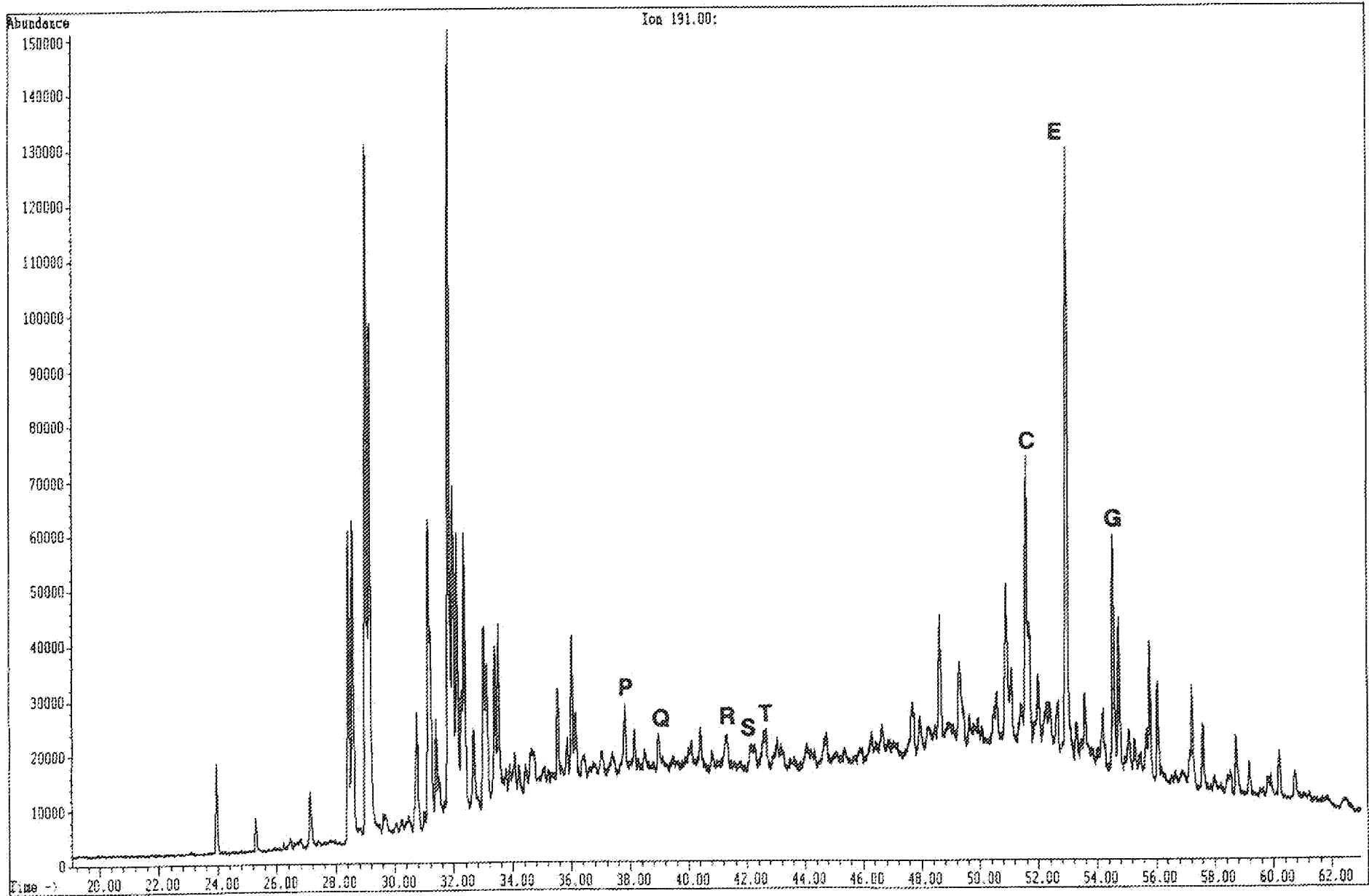


File: C:\CHEMPC\DATA\2801007.D
Operator:
Date Acquired: 14 Dec 90 6:53 pm
Method File Name: BTOM.M
Sample Name: 4132-802
Misc Info: WELL 33/9-7 2483.1M
Bottle Number: 28

J3.2e

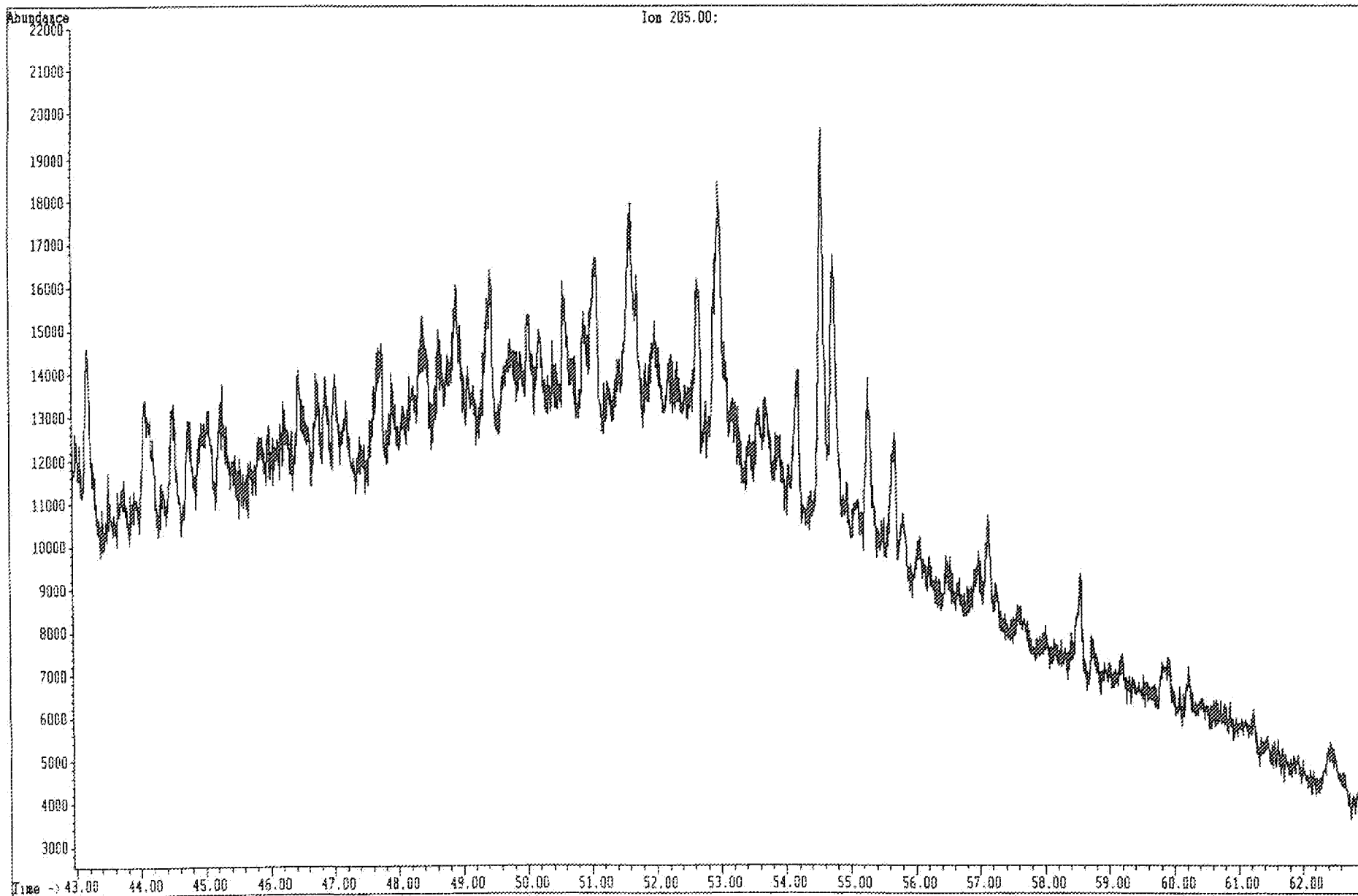


File: C:\CHEMPC\DATA\2801007.D
Operator:
Date Acquired: 14 Dec 90 6:53 pm
Method File Name: EIGM.M
Sample Name: 4132-002
Misc info: WELL 33/9-7 2483.1M
Bottle Number: 28



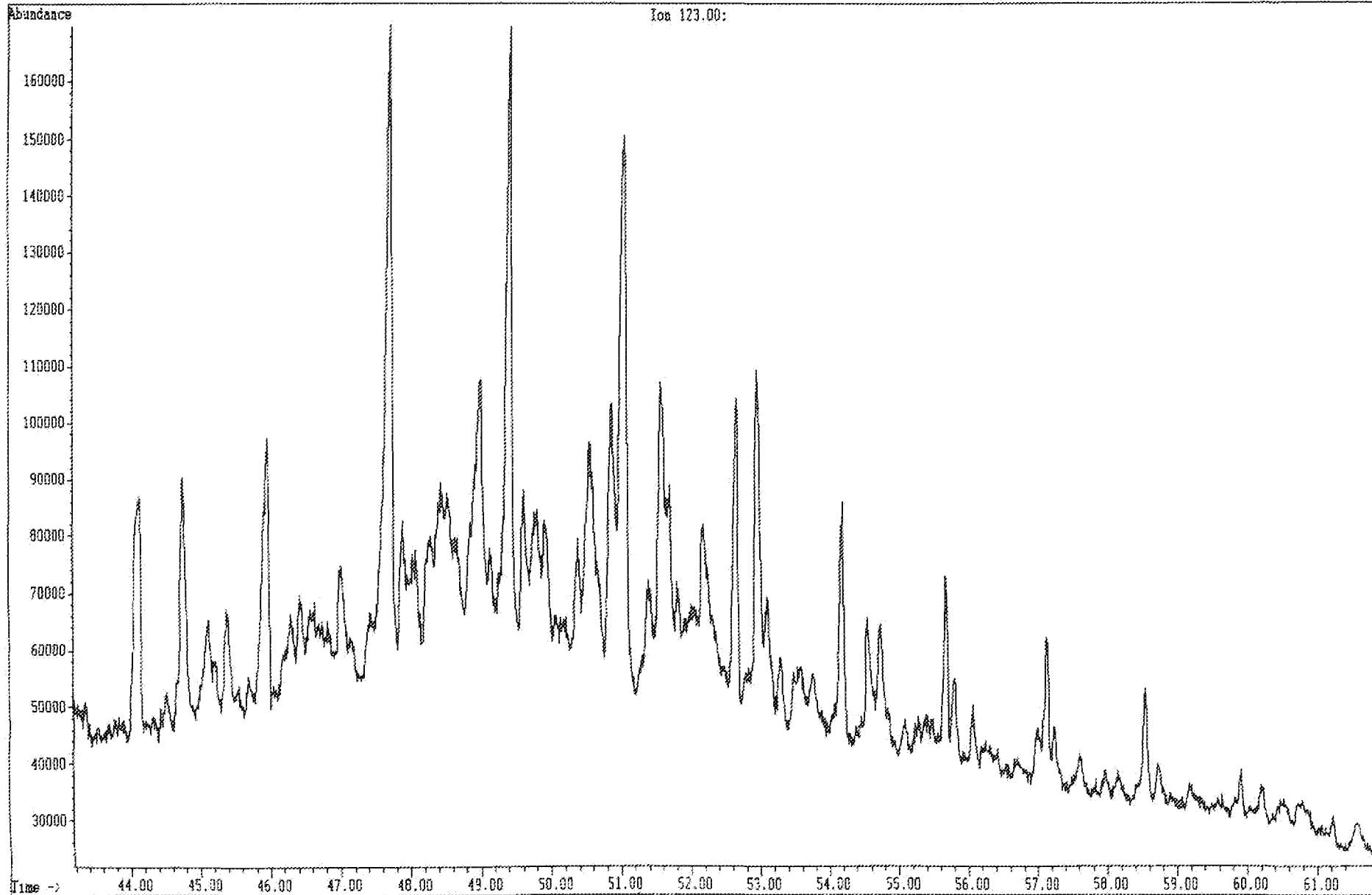
File: C:\CHEMPC\DATA\2801007.D
Operator:
Date Acquired: 14 Dec 90 6:53 pm
Method File Name: BIOM.M
Sample Name: 4132-082
Misc Info: WELL 33/9-7 2483.1M
Bottle Number: 28

J3.2g



File: C:\CHEMPC\DATA\2801007.D
Operator:
Date Acquired: 14 Dec 90 6:53 pm
Method File Name: BIGM.M
Sample Name: 4132-002
Misc Info: WELL 33/9-7 2483.1M
Bottle Number: 28

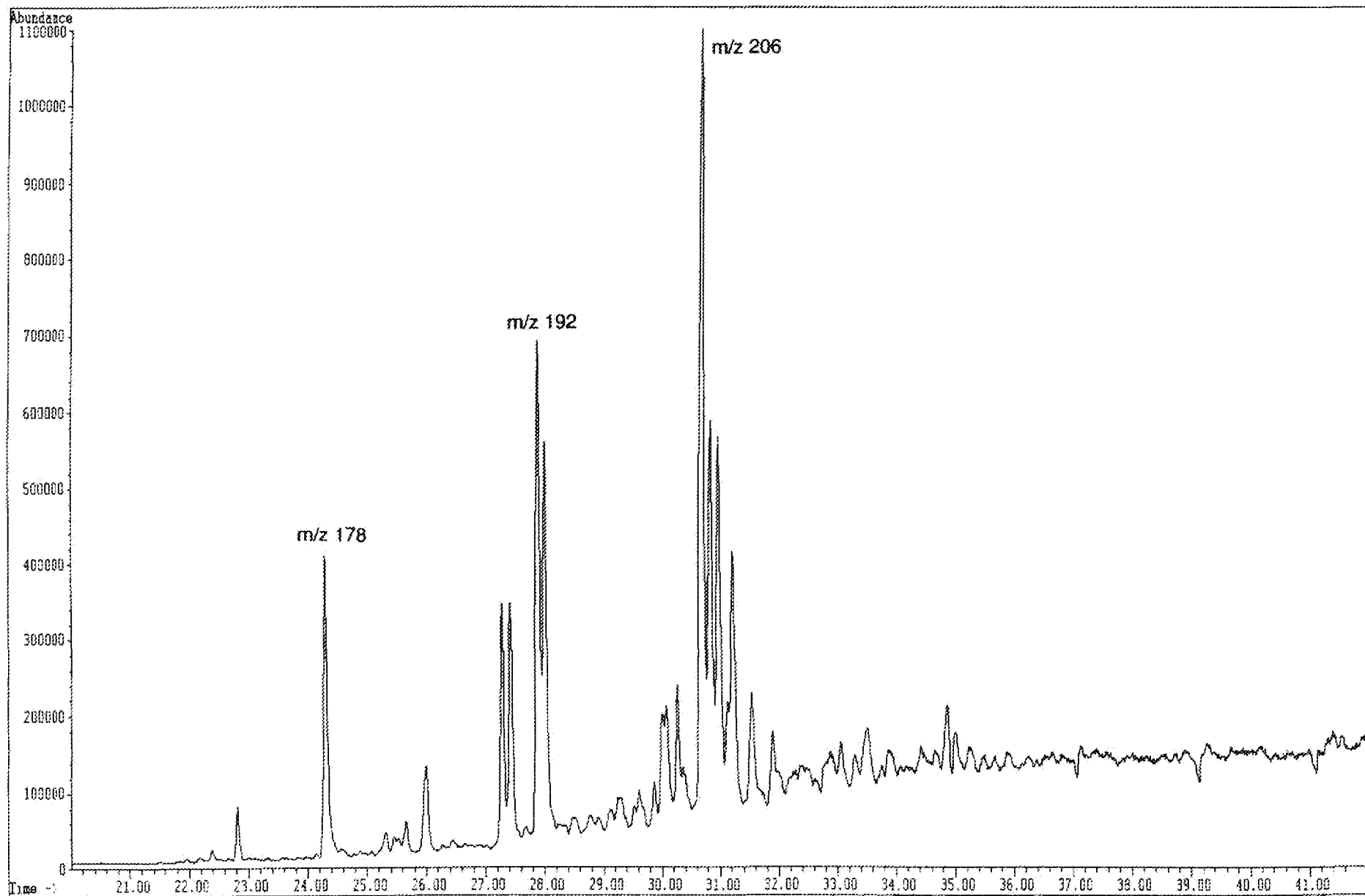
J3.2h



File: C:\CHEMPC\DATA\9501017.D
Operator:
Date Acquired: 11 Dec 90 8:31 pm
Method File Name: BIOMY.M
Sample Name: 4132-002
Misc Info: WELL 33/9-7 2483.1M
Bottle Number: 95

J3.2i

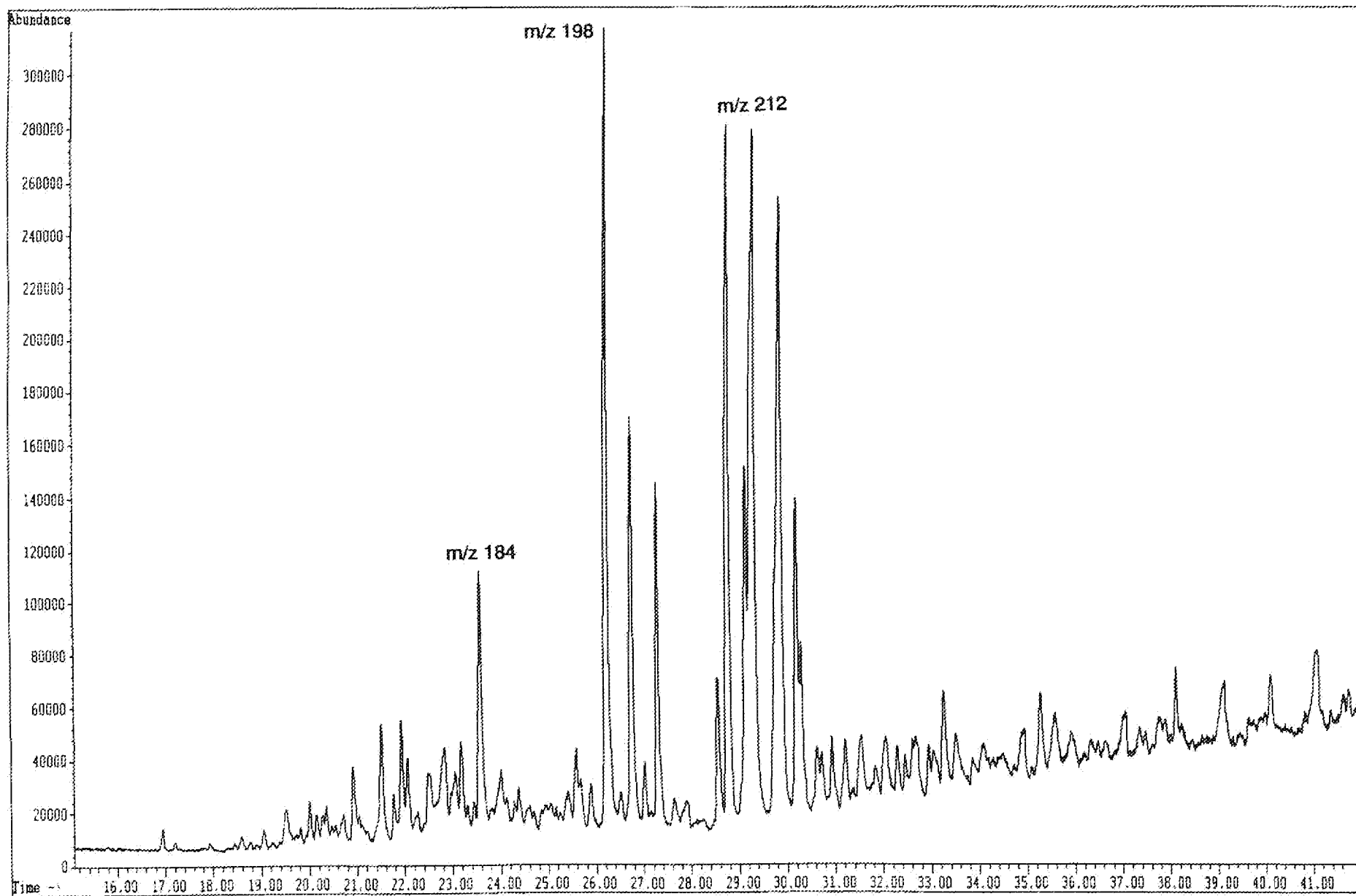
Phenanthrenes



File: C:\CHEMPC\DATA\9501017.D
Operator:
Date Acquired: 11 Dec 90 8:31 pm
Method File Name: BIOMY.M
Sample Name: 4132-002
Misc Info: WELL 33/9-7 2483.1M
Bottle Number: 95

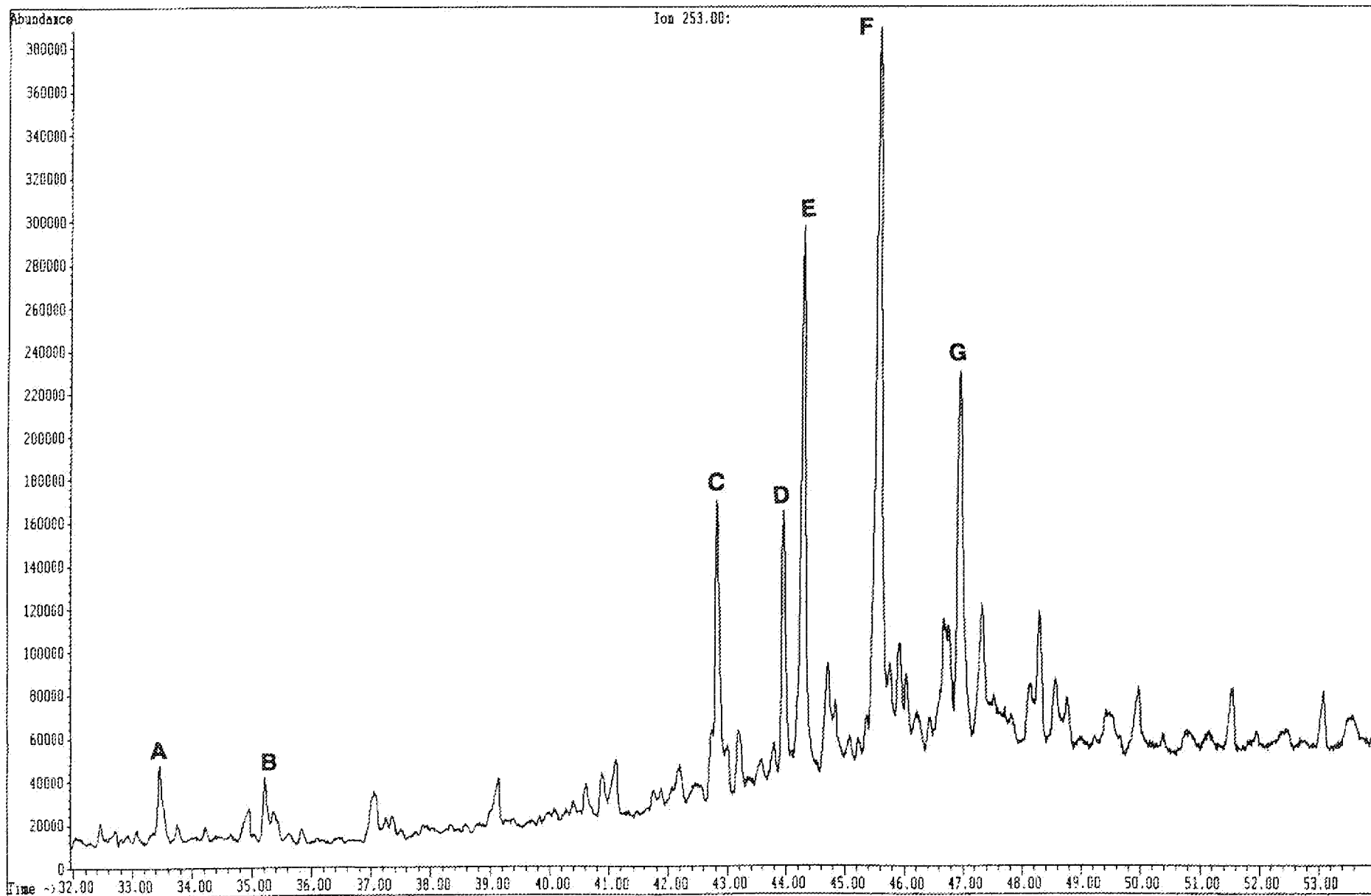
J3.2j

Dibenzothiophenes



File: C:\CHEMPC\DATA\9501017.D
Operator:
Date Acquired: 11 Dec 90 8:31 pm
Method File Name: BIONY.M
Sample Name: 4132-002
Misc Info: WELL 33/9-7 2403.1M
Bottle Number: 95

J3.2k



File: C:\CHEMPC\DATA\9501017.D
Operator:
Date Acquired: 11 Dec 90 8:31 pm
Method File Name: BIOMY.M
Sample Name: 4132-002
Misc Info: WELL 33/9-7 2483.1M
Bottle Number: 95

J3.21

