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NOGAP B.6; VOLUME 9: HYDROCARBON DETERMINATIONS; MACKENZIE RIVER AND BEAUFORT SEA

by
M.B. Yunker, F.A. McLaughlin, B.R. Fowler,
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Institute of Ocean Sciences
Department of Fisheries and Oceans
Sidney, B.C.

1992

CANADIAN DATA REPORT OF
HYDROGRAPHY AND OCEAN SCIENCES
NO. 60

Fisheries and Oceans
Pêches et Océans

Canada

Canadian Data Report Of Hydrography and Ocean Sciences

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Cat. No. Fs 97 – 16/60 ISSN 0711-6721

Correct citation for this publication:

M.B. Yunker, F.A. McLaughlin, B.R. Fowler, G. Brooks, G. Chiddell, C. Hamilton and R.W. Macdonald, 1992, NOGAP B.6; Volume 9: Hydrocarbon Determinations; Mackenzie River And Beaufort Sea, *Can. Data Rep. Hydrogr. Ocean Sci.:* **60**, 286 pp

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Abstract

M.B. Yunker, F.A. McLaughlin, B.R. Fowler, G. Brooks, G. Chiddell, C. Hamilton and R.W. Macdonald, 1992, NOGAP B.6; Volume 9: Hydrocarbon Determinations; Mackenzie River And Beaufort Sea *Can. Data Rep. Hydrogr. Ocean Sci.:* **60**, 286 pp

As part of the NOGAP B.6 program, with major objectives to determine hydrocarbon pathways and primary productivity of the waters overlying the Mackenzie Shelf, we collected hydrocarbon samples in the Mackenzie Delta, from the Beaufort Sea coast and from repeat sampling of several transects extending from inshore waters to the shelf break. This report describes the analytical results for fractionated samples with concentrations reported for alkanes, alkenes, hopanes and other triterpenes, polycyclic aromatic hydrocarbons, alcohols and sterols.

Key words: Alkane, Alcohol, Beaufort Sea, Hydrocarbon, Hopane, PAH, Sterol, Triterpene

Résumé

M.B. Yunker, F.A. McLaughlin, B.R. Fowler, G. Brooks, G. Chiddell, C. Hamilton and R.W. Macdonald, 1992, NOGAP B.6; Volume 9: Hydrocarbon Determinations; Mackenzie River And Beaufort Sea *Can. Data Rep. Hydrogr. Ocean Sci.:* **60**, 286 pp

Dans le cadre du programme NOGAP B.6, lequel a pour objectifs de déterminer les cheminements des hydrocarbures et la production primaire dans les eaux du plateau Mackenzie, des échantillons ont été prélévés pour l'analyse des hydrocarbures dans le delta du Mackenzie, dans la partie côtière de la mer de Beaufort ainsi que le long de plusieurs transectes allant des eaux intérieures jusqu'à la limite extérieure du plateau, où des prélèvements répétés ont été effectués. Ce rapport décrit les résultats des analyses faites après séparation des échantillons pour déterminer les concentrations des alcanes, des alcènes, des hopanes et d'autres triterpenes, des hydrocarbures aromatiques polycycliques, des alcools et des stérols.

Mots-clés:, Alcane, Alcool, HAP, Hopane, Hydrocarbure, Mer de Beaufort, Stérol, Triterpene

Acknowledgements

This work was funded jointly by **Indian and Northern Affairs, Canada** and **Fisheries and Oceans, Canada** as part of the *Northern Oil and Gas Action Program.* Funding from **Supply and Services, Canada** as part of the **Unsolicited Proposals Program** is also gratefully acknowledged. It is very much due to the patience and continuing encouragement of David Stone, Russ Shearer and Camille Mageau of Indian and Northern Affairs, Canada, that this work has been completed.

We thank Polar Continental Shelf Project (PCSP) for providing logistical support during the spring work, DFO (Winnipeg) for freely sharing their laboratory at Tuktoyaktuk, and the officers and crew of the CSS *John P. Tully* for assistance during the summer open-water field work. Andy Anglin and Jodi Jensen are also thanked for their assistance during the analysis phase of the work. S. Thomson assisted with advice on style and final text-editing of this report.

1 INTRODUCTION

As part of a major inter-disciplinary study (NOGAP-B.6) to measure the transport and fate of hydrocarbons over the Beaufort Shelf and the primary productivity of these coastal waters we conducted spring and summer sampling programs in 1987. The spring program was operated out of Tuktoyaktuk, Polar Continental Shelf Project, and used fixed-wing and rotary-wing support vehicles to carry out the sampling. The Mackenzie River Delta sampling, performed by Seakem Oceanography Ltd., was carried out during two 10-day trips from Inuvik in June and July using the "R-28", a 10 m aluminum workboat. To complete the field program, a cruise was carried out on the C.S.S. *John P. Tully* in the summer of 1987. The primary logistic goals (1987) for the work done by Institute of Ocean Sciences staff were as follows:

- Collect time series measurements from late winter through to late summer for physical, chemical and biological properties on a transect extending from Kugmallit Bay (Mackenzie River) to the Shelf edge. This includes short-term sediment trap and current meter moorings, and *in situ* pump deployments.
- Deploy and recover moorings at the shelf edge (4 sites) to measure currents, % transmission (light), and sedimentation throughout the entire season (March 1987 - March 1988).
- Make measurements to delineate plume structure in the near-shore zone with and without ice-cover.

These measurements are augmented with satellite imagery, and Mackenzie River source functions for water flow, sediment discharge, and hydrocarbon content.

In this document we report on methods used to collect and analyze the hydrocarbon samples and the results of hydrocarbon analyses for Mackenzie River and Beaufort Sea samples. For complete and detailed descriptions of sampling and analysis the reader is referred to a companion document [*Yunker et al.*, 1990]. Here, we focus on information specific to the determinations summarized in this data report.

A brief overview of the samples collected from the ice and ship is given below: **bold** font is used for the data reported here, normal font is used for data which have been collected concurrently and are, or will be, available elsewhere. NOGAP B.6 reports currently available in the *Canadian Data Reports of Hydrography and Ocean Sciences* series are listed inside the back cover.

- Water samples (hydrocasts, pumping); salinity, dissolved oxygen, nutrients (reactive silicate, phosphate, nitrate plus nitrite), oxygen isotopes, total suspended solids, particulate organic carbon and nitrogen, chlorophyll *a*, pigments by HPLC, ^{14}C productivity, total carbon dioxide, total organic carbon, phytoplankton, particle identification by scanning electron microscopy, and particulate organic carbon and nitrogen, isotopic composition (^{13}C, ^{15}N) (see also *Macdonald et al.* [1988 a,b]).
- Hydrocarbon samples which include:
  1. **Water (Seastar *In situ* Pump, large volume filtration and Sedisamp); particulate and dissolved hydrocarbon components.**
  2. **Sediment grab samples for hydrocarbons from the** Mackenzie River and **Beaufort Sea.**
  3. **Beaufort Sea shoreline peat samples for hydrocarbons.**

4. **Zooplankton samples for hydrocarbons collected using undulating oblique tows**
5. **Sediment trap (Multi-Trap) samples for hydrocarbons**
6. **Ice algae samples for hydrocarbons**
7. Atmospheric samples for hydrocarbons from Mould Bay, NWT.

- Zooplankton (vertical net hauls; 300 μm mesh, 0.45 m diameter, 1.5 m length, preserved in buffered formalin).
- Conductivity, temperature, % transmission and pressure; Applied Microsystem and Guildline CTTD systems [*McCullough et al.*, 1988].
- Light intensity; Photosynthetically Active Radiation (PAR) was measured continuously at PCSP, Tuktoyaktuk (LI-COR quantum sensor LI-192SA), and with vertical under-ice profiles (LI-COR underwater spherical quantum sensor LI-193SB) and albedo of the ice.
- Ice algae
- Hole melted (75 cm diam.) ice cores for particulate and dissolved hydrocarbons.
- Ice cores for salinity and δ^{18}O measurements [*Macdonald and Carmack*, 1991].
- Satellite imagery; temperature, turbidity, and ice distribution.
- Short-term (5-day) sediment trap (bongo) moorings.
- AML (vector averaging) current meter, R.D. Instruments doppler current meter measurements.
- Wind and weather records (logged at Tuktoyaktuk and at a fixed station on the ice).

1.1 Stations

1.2 Station Nomenclature

Each station has been given a two-part designation; xP-yQ, where x and y are numbers and P and Q are letters. The alpha-numeric *before* the hyphen refers to location; this is simply a number for planned stations on the main transect(s) across the shelf and a number followed by a letter for stations which were added on site (to trace interesting water features or substituted due to inability to land at the chosen site). For a few stations, the letter precedes the number; these are either the 4 'SS' stations at which we placed sequential trap/current meter moorings or near-shore transects which were added to the program in the field to delineate the plume structure (mostly CTTD work). The Mackenzie River Delta samples are named according to the channel where the sampling took place: MM, MR, and ME refer to sampling in the Middle, Reindeer and East Channels respectively. The alpha-numeric *after* the hyphen refers to time period (see itemized list below) and sequential visit to a station within time period (letter). An example of a typical station number would be 5A-2B; this refers to station 5A (close to station 5), the second sampling period (late April), and the third time within that period that we visited the station. Dates and locations for all stations are given in the Table headers. Data collection periods for the 1987 NOGAP B.6 arctic program are listed below, with **bold** font used for the results presented in this report.

1. **March 30 - April 11** (ice work)
2. **April 23 - May 6** (ice work)
3. **May 21 - June 1** (ice work)
4. June 2 - July 30 (ice work (CTD only), **Mackenzie River sampling**)
5. **July 31 - August 30** (C.S.S. *John P. Tully*, **shoreline peat sampling**)
6. **Aug 31 - Sept 9** (C.S.S. *John P. Tully*)

1.3 Station Locations

Figures 1 and 2 show the station locations for the various sampling periods included in this report. The main station locations were predetermined using hydrographic charts and modified in the field where required. During the spring ice work, the pilot would navigate to the chosen area for each site using a Global Navigation GNS 500 VLF/Omega positioning system. Past experience shows that these avionics can place the aircraft inside a radius of 1000m from the true position. The avionics were shut down with the aircraft and re-initialized after start-up when sampling was complete.

On the *John P. Tully*, stations were located with a transit Satellite Navigator by the ship's officers. The majority of positions are expected to be within 1 km of the true position [*Huggett and Mortimer*, 1971]. (This appears to be a reasonable estimate of the error ellipse since we were able to relocate all of our bottom moorings by navigating to within 2 km, the range of the acoustic transponders. A further verification was available in position fixes from the ARGOS drifters when they were stored on the after-deck.)

1.4 Hydrocarbon Sample Nomenclature

A key to the sample ID codes used to identify the sample type and analyte state is given in Table 1. Samples IPRM1, FPRM6, FPRM12, RM6, RM7 and RM10 are replicate digestions of a Reference Material homogenate prepared from suspended particulate material collected from the East Channel of the Mackenzie River in June 1987. The first three samples listed had glass fibre filters added to the digestion flask.

2 METHODS

2.1 Sample Collection, Extraction and Fractionation

Details of sample collection procedures and extraction methods have been provided in *Yunker et al.*, [1989, 1990, 1991]. For this phase of the work, hydrocarbon samples (except the *in situ* dissolved samples – see following) were separated into three fractions on a silica gel column (1 x 10 cm). This column was slurry packed in pentane with 5% deactivated silica gel (Biosil 100-200 mesh, 6.5 g), capped with 1 cm of sodium sulfate and cleaned with pentane (15 mL). The sample was quantitatively transferred to the top of the column with pentane (3 x 1 mL rinse), and eluted with pentane (25 mL), dichloromethane (18 mL) and 1:1 dichloromethane/methanol (16 mL) into fractions F1, F2 and F3, containing respectively the alkanes, PAH and alcohols/sterols. The three fractions were spiked with [$^2H_{10}$]fluoranthene and 100 μL CCl_4 and reduced to 0.5 mL using a Kuderna-Danish concentrator (50 ^{o}C). Each fraction was then transferred to a 0.8 mL microvial, blown down to 100 μL with dry nitrogen, capped and stored at -20 ^{o}C until GC/MS analysis.

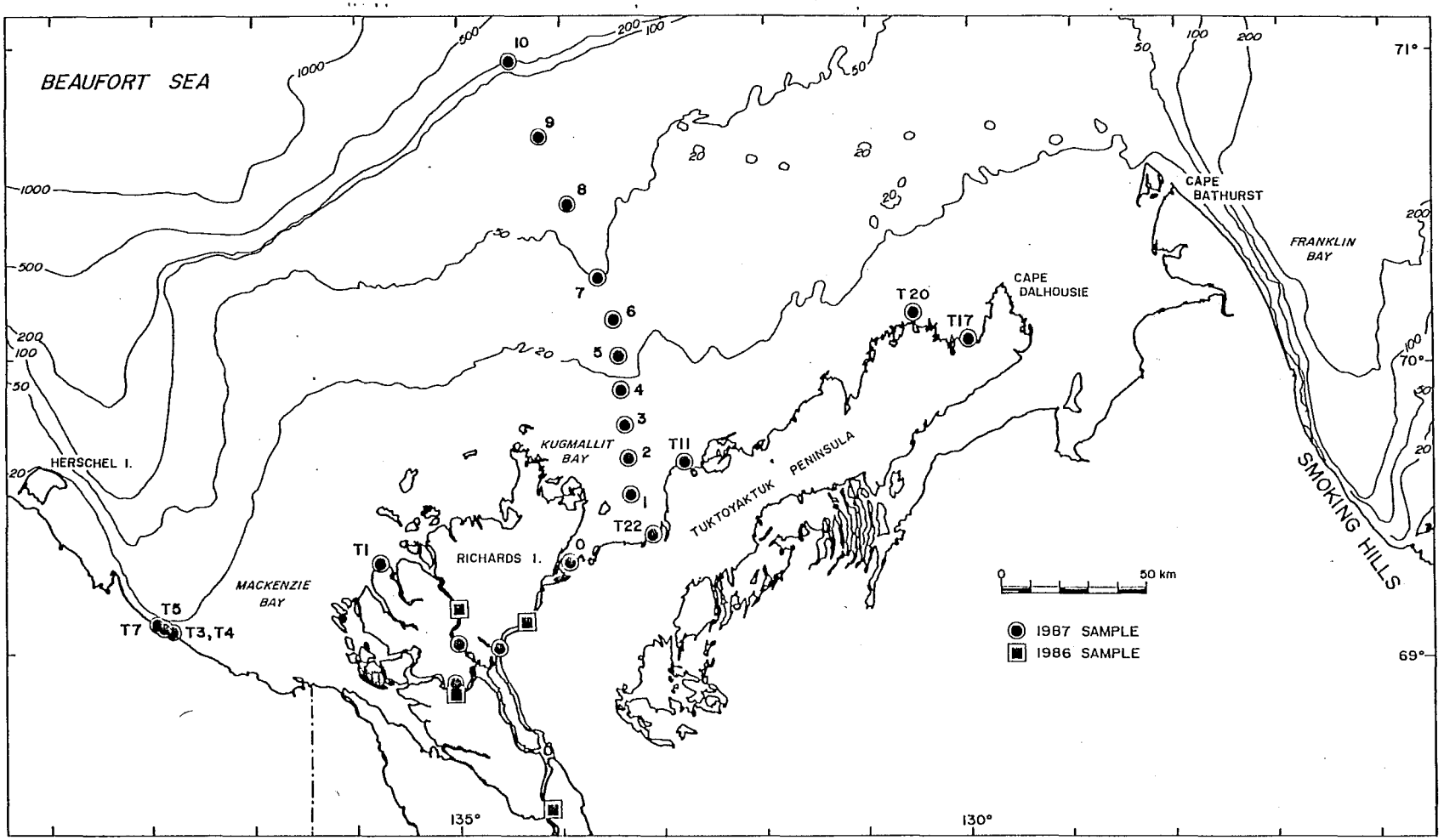

Figure 1: Station locations; 1986 samples refer to *Erickson and Fowler*, [1987].

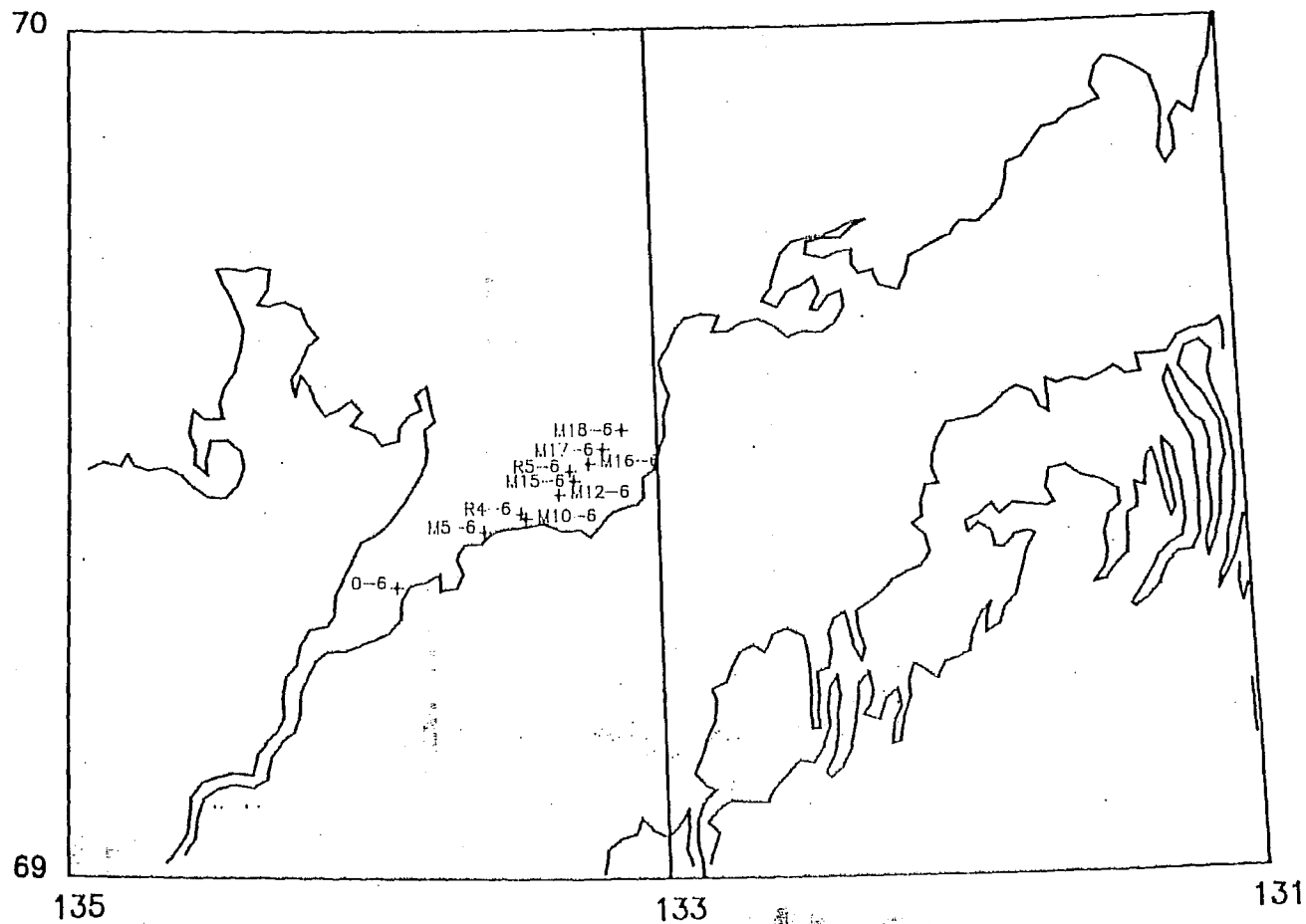

Figure 2: Station locations in Kugmallit Bay - Mackenzie River

Table 1: Sample ID Codes by Sample Type

Sampled Phase	Sampling Method	Analyte State	Code
Water	*In situ* water sampler	dissolved	ID
		particulate	IP
	Cross-flow filtration	dissolved	XD
		colloidal	XC
		particulate	XP
	Filtered water	dissolved	FD
		particulate	FP
	Sedisamp continuous Centrifuge	particulate	S
Ice	Ice cores	dissolved	CD
		particulate	CP
Biota	Peat		T
	Zooplankton		Z
	Phytoplankton		P
Sediment	Sediment trap (multi-trap)		M
	Sediment grab		G
	Sediment core		CS
Air	High volume air sampler	vapour	AC
		particulate	AP

A selected group of samples including nineteen particulate, sediment and zooplankton samples, two blanks and three *in situ* dissolved samples were split gravimetrically and fractionated separately for analysis of hydrocarbons (described herein) and chlorinated analytes (reported elsewhere). These three *in situ* dissolved samples were the only ones separated into F1, F2 and F3 fractions; all others were analyzed without fractionation or spiking with $[^2H_{10}]$fluoranthene.

2.2 Analysis

Samples were analyzed using a Finnigan Incos 50B GC/MS coupled to a Varian 3400 GC with a CTC A200S autosampler and a 30 m DB-5 capillary column (J & W Scientific, 0.25 mm i.d./0.25 μm film). The outlet of the column was inserted directly into the ion source. The carrier gas was helium with an injector pressure of 97 kPa (14 psi). The spectrometer was tuned to unit mass resolution, electron energy set to 40 eV, and mass calibrated prior to each suite of samples using perfluorotributylamine (FC43). The mass spectrometer was set to acquire data by scanning from 45 to 600 amu in 0.802 sec and storing to disk mass peaks greater than 50 counts. Data were archived on 9-track magnetic tape as discrete files after each run.

Samples (typically 0.5-2.5 μL from 100 μL) were injected using a 2 minute splitless injection with the injector at 260 °C and transfer line at 300 °C. The oven was held at 50 °C for 2 minutes, heated at 50 C°/min to 100 °C, held again for 2 minutes, temperature programmed at 6 C°/minute to 300 °C, and held for a further 8.7 minutes. The filament and multiplier were turned on after 5.2 minutes and data were acquired for 47 minutes.

Two GC calibration standards were run at minimum every 12 hours and used to obtain retention times and relative response factors. The F1/F2 standard (designated HMAXa) contained most of

the F1 and F2 target compounds and surrogates (47 hydrocarbons and 13 perdeuterated internal standards). The F3 standard (designated HOL) contained nine sterols, four alcohols and several alkenes. A fragmentation standard (decafluorotriphenylphosphine, DFTPP) was also run every 12 hours to ensure that the system met the accepted ion abundance criteria for this compound [*Eichelberger et al.*, 1975]. Solvent blanks were generally run at the same frequency as standards.

2.3 Quantitation

The Finnigan AUTOQUAN TCA (Target Compound Analysis) procedure was used to locate and quantify target compounds. A reference sample (Mackenzie River suspended particulate sample RM6) containing most of the compounds of interest was run at the beginning of a set of analyses to establish retention times – these times changed each time the column was shortened. For those compounds not present in RM6 the retention time was calculated based on other analyses. These retention times were used to update library entries and create a TCA table of scan numbers. The TCA program then used retention times predicted from the scanlist file, and a reverse library search of library mass spectra to locate internal standards and target compounds within a 3 second window. Generally the TCA procedure was run on archived data files. Hard-copy chromatograms of confirmation ions for every standard and target were used to verify the TCA assignments in each sample.

The peak area quantitation lists generated by the TCA procedure were transferred from the GC/MS data system to files on a personal computer using a terminal emulation program (Finnigan EM4105). These files were imported into Lotus 123 spreadsheet files, validated and areas edited where necessary. Separate files for the F1, F2 and F3 fractions for each sample were then combined in one master spreadsheet for calculation of a blank corrected concentration from each peak area (see following). After assembly into the spreadsheet, all data were independently reverified against the original chromatograms to eliminate errors and check for consistency of peak assignments.

In some samples, chromatography problems, interferences or overloading of a few components required area estimates to be made based on the response of a higher m/z ion or a similar sample which had no interferences. For a number of samples, the alcohol peak areas in the F3 fraction were estimated using a rerun of the same sample after dilution of the extract. All area estimates are flagged with a "c" in the data tables in Appendix 1.

Samples were analyzed in batches over a period of a few days. Data from calibration runs were imported into spreadsheet files in the same manner as the samples. A separate spreadsheet was used to convert peak areas into relative response factor tables for each time period. Where possible, the concentrations of the internal standard components were calibrated using a 1:10 dilution of the National Bureau of Standards (NBS) SRM-1647a standard mixture of PAH in dichloromethane/acetonitrile (9:1). Mean response factors obtained from daily calibration runs for each batch of samples are presented in Appendix 2.

To eliminate zero values in the data set (which arose when a target compound was undetectable), a minimum peak area was estimated at the detection limit and used to calculate a nominal concentration. Minimum peak areas for each batch were determined using representative chromatograms for which there was measurable noise in a quantification channel. To do this, the height of the noise relative to the full scale height on the chromatogram was converted to a peak area using the area-to-height ratio of the full scale peak and multiplied by three to obtain the minimum area.

2.4 Blank Correction

Hydrocarbon data were blank corrected using an extension of the standard protocol [*Keith et al.*, 1983] outlined in Figure 3. If a blank corrected concentration (before volume or weight correction)

was an amount less than three times the standard deviation of the mean blank it was regarded as not detected; if the amount was less than ten standard deviations it was regarded as detected but not quantified. The mean blank from five double Chromosorb T columns [*Yunker et al.*, 1989] was used to blank correct the dissolved hydrocarbon samples, and the mean procedural blank from six particulate extractions (two with added glass fibre filter papers) was used to correct the sediment and filtered particulate samples (Appendix 3). The data flags shown in Figure 3 document the status of each hydrocarbon measurement and are used in the data tables in Appendix 1.

2.5 Hydrocarbons Quantified

Hydrocarbons and hydrocarbon derivatives quantified in the F1, F2 and F3 fractions are listed in Tables 2 to 4, along with the compound used to calculate each relative response factor (RRF), the quantitation and confirming ions, and the reference perdeuterated standard. Mass spectra of non-standard compounds are given in Appendix 4 (i.e. alkanes and most PAH are not given) and notable features are discussed below.

F1 Fraction (Alkanes, triterpenes and alkenes) In this fraction, all compounds were quantified relative to [$^2H_{50}$]tetracosane. [$^2H_{26}$]dodecane and [$^2H_{74}$]hexatriacontane (also quantified relative to [$^2H_{50}$]tetracosane) were used to monitor volatility losses and high molecular weight compound transfer onto the GC column respectively, and [$^2H_{10}$]fluoranthene was used as a surrogate recovery standard. The authentic alkane standards used to calculate response factors are listed in Table 2. The n- alkanes from C_{11} to C_{36} plus seven isoprenoids were the principal compounds quantified in the F1 fraction. Twelve pentacyclic hopane triterpenes, one non-hopane triterpene and three alkenes were also included (Table 2), and are described further in the following.

Authentic standards of 17α(H)-22,29,30-trisnorhopane ($C_{27}\alpha$, Tm), neohop-13(18)-ene, 17β(H), 21β(H)-hopane (C30$\beta\beta$) and diploptene (17β(H), 21β(H)-hop-22(29)-ene; all Chiron, Norway) were used as reference points for assigning compound identities for the pentacyclic triterpanes; all except neohop-13(18)-ene were found in samples and were added to the target list (Table 2). Identities of other saturated hopanes and moretanes used as target compounds ($C_{27}\beta$, $C_{29}\alpha\beta$, $C_{29}\beta\alpha$, $C_{30}\alpha\beta$, and R- and S-$C_{31}\alpha\beta$ and R- and S-$C_{32}\alpha\beta$) were then confirmed based on published GC traces and mass spectra [*Philp*, 1985; *Seifert and Moldowan*, 1978]. In all cases the two major fragment ions (m/z 191 and either 149, 177, 191, 205 or 219; *Philp*, [1985]) were present in the correct ratio; in most cases the molecular ion was also present. The assignment of hop-17(21)-ene (Kovats 3120) was based on a published GC trace and the characteristic m/z 231, 367 and 410 ions in the mass spectrum [*ten Haven and Rullkotter*, 1988; *Philp*, 1985].

One further non-hopane MW 410 triterpene was added to the target list because it was present in peat samples in an amount which can exceed nC_{33} (tritriacontane). This compound had m/z 218 as a major ion in the mass spectrum, suggesting olean-12-ene or urs-12-ene [*Ogunkoya*, 1981; *Budzikiewicz et al.*, 1963], however the retention time (between the S- and R-isomers of 17α(H), 21β(H)-homohopane ($C_{31}\alpha\beta$) and just before nC_{33}; Kovats 3277) precluded either assignment [*ten Haven and Rullkotter*, 1988]. The compound is listed as a triterpene in the compound list (Table 2). Three alkenes were selected as targets from a number of alkenes present in a Beaufort Sea suspended particulate sample (FP27; Stn. 4-3, 29 May 1987, 3.5 m). Two of the alkenes eluted just prior to nC_{17} (Kovats 1676 and 1693) and had molecular ions indicating a heptadecadiene and a heptadecene, and the other (Kovats 1879) eluted just before nC_{19} and had a molecular ion indicating a nonadecene. The heptadecadiene and nonadecene had retention indexes close to those given by *Albaiges et al.* [1984] for a heptadecadiene and nonadec-1-ene (respectively 1671 and 1875 on DB-5).

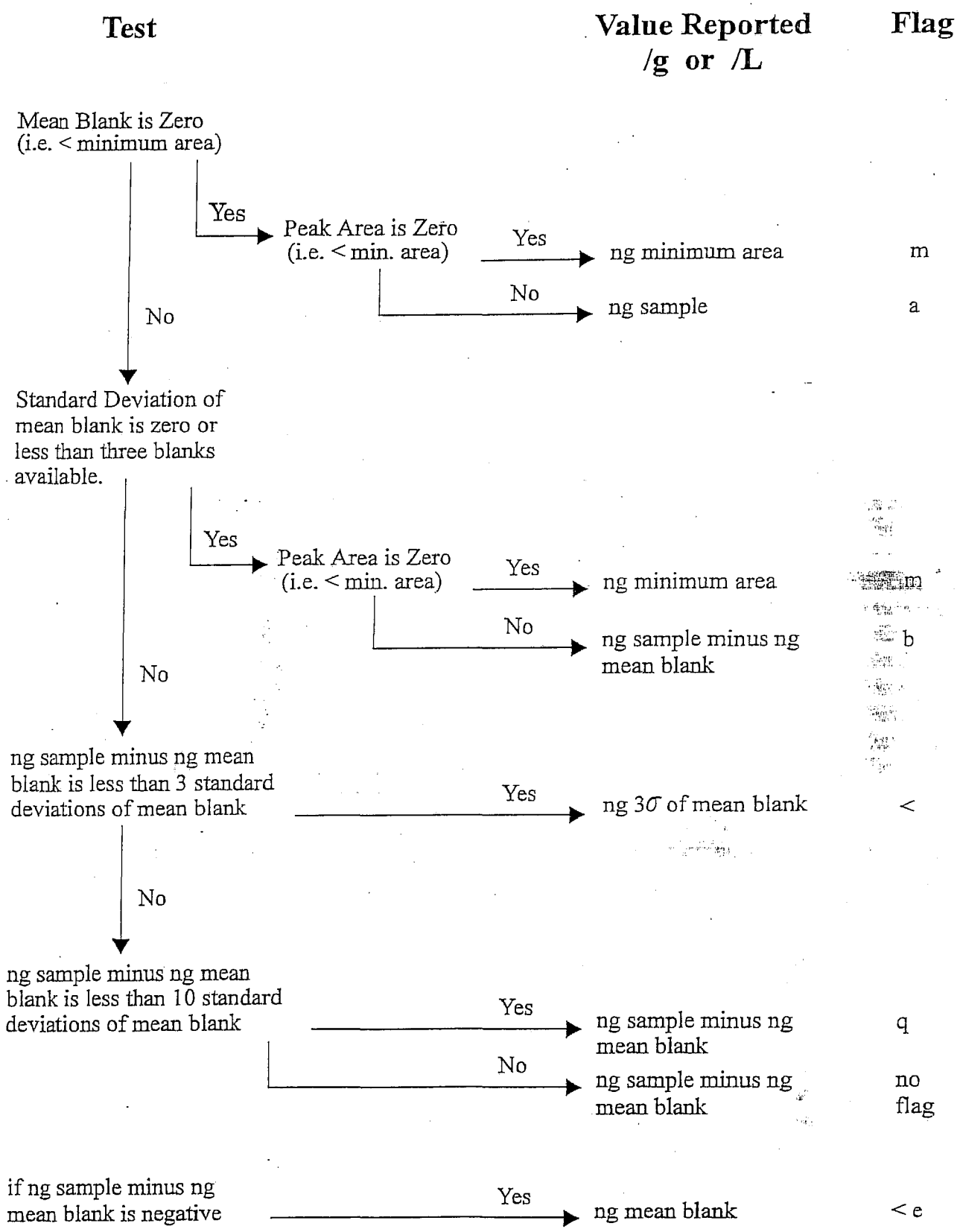

Figure 3: Protocol for blank correction of hydrocarbon data

Table 2: Hydrocarbons Quantified in the F1 Fraction

Compound	Basis for RRF	Quantitation/ Confirming ions		D_x Standard
Undecane	authentic	57		$[^2H_{50}]$tetracosane
Dodecane	authentic	57		$[^2H_{50}]$tetracosane
Tridecane	authentic	57		$[^2H_{50}]$tetracosane
Tetradecane	authentic	57		$[^2H_{50}]$tetracosane
Pentadecane	authentic	57		$[^2H_{50}]$tetracosane
Hexadecane	authentic	57		$[^2H_{50}]$tetracosane
Heptadecane	authentic	57		$[^2H_{50}]$tetracosane
Octadecane	authentic	57		$[^2H_{50}]$tetracosane
Nonadecane	authentic	57		$[^2H_{50}]$tetracosane
Eicosane	authentic	57		$[^2H_{50}]$tetracosane
Heneicosane	authentic	57		$[^2H_{50}]$tetracosane
Docosane	authentic	57		$[^2H_{50}]$tetracosane
Tricosane	authentic	57		$[^2H_{50}]$tetracosane
Tetracosane	authentic	57		$[^2H_{50}]$tetracosane
Pentacosane	authentic	57		$[^2H_{50}]$tetracosane
Hexacosane	authentic	57		$[^2H_{50}]$tetracosane
Heptacosane	mean nC_{26} and nC_{28}	57		$[^2H_{50}]$tetracosane
Octacosane	authentic	57		$[^2H_{50}]$tetracosane
Nonacosane	mean nC_{28} and nC_{30}	57		$[^2H_{50}]$tetracosane
Triacontane	authentic	57		$[^2H_{50}]$tetracosane
Untriacontane	mean nC_{30} and nC_{32}	57		$[^2H_{50}]$tetracosane
Dotriacontane	authentic	57		$[^2H_{50}]$tetracosane
Tritriacontane	mean nC_{32} and nC_{34}	57		$[^2H_{50}]$tetracosane
Tetratriacontane	authentic	57		$[^2H_{50}]$tetracosane
Pentatriacontane	mean nC_{34} and nC_{36}	57		$[^2H_{50}]$tetracosane
Hexatriacontane	authentic	57		$[^2H_{50}]$tetracosane
2,6-Dimethyl Undecane	mean nC_{12} and nC_{13}	57		$[^2H_{50}]$tetracosane
Norfarnesane	mean nC_{12} and nC_{13}	57		$[^2H_{50}]$tetracosane
Farnesane	mean nC_{13} and nC_{14}	57		$[^2H_{50}]$tetracosane
2,6,10-Trimethyl Tridecane	mean nC_{14} and nC_{15}	57		$[^2H_{50}]$tetracosane
Norpristane	mean nC_{16} and nC_{17}	57		$[^2H_{50}]$tetracosane
Pristane	mean nC_{17} and nC_{18}	57		$[^2H_{50}]$tetracosane
Phytane	mean nC_{18} and nC_{19}	57		$[^2H_{50}]$tetracosane
17α(H)-Trisnorhopane ($C_{27}\alpha$,Tm)	authentic	191	149,370	$[^2H_{50}]$tetracosane
17β(H)-Trisnorhopane ($C_{27}\beta$)	17α(H)-trisnorhopane	191	149,370	$[^2H_{50}]$tetracosane
17α(H),21β(H)-Norhopane ($C_{29}\alpha\beta$)	17α(H)-trisnorhopane	191	177,398	$[^2H_{50}]$tetracosane
Hop-17(21)-ene	diploptene	189	231,410	$[^2H_{50}]$tetracosane

Table 2 Cont.: Hydrocarbons Quantified in the F1 Fraction

Compound	Basis for RRF	Quantitation/ Confirming ions		D_x Standard
17β(H), 21α(H)-Normoretane ($C_{29}\beta\alpha$)	17α(H)-trisnorhopane	191	177,398	[$^2H_{50}$]tetracosane
17α(H), 21β(H)-Hopane ($C_{30}\alpha\beta$)	17β(H),21β(H)-hopane	191	412	[$^2H_{50}$]tetracosane
S-17α(H), 21β(H)-Homohopane ($C_{31}\alpha\beta$)	17β(H),21β(H)-hopane	191	205,426	[$^2H_{50}$]tetracosane
R-17α(H), 21β(H)-Homohopane ($C_{31}\alpha\beta$)	17β(H),21β(H)-hopane	191	205,426	[$^2H_{50}$]tetracosane
Triterpene	diploptene	218	410	[$^2H_{50}$]tetracosane
17β(H), 21β(H)-Hopane ($C_{30}\beta\beta$)	authentic	191	412	[$^2H_{50}$]tetracosane
Diploptene	authentic	189	191,410	[$^2H_{50}$]tetracosane
S-17α(H), 21β(H)-Bishomohopane ($C_{32}\alpha\beta$)	17β(H),21β(H)-hopane	191		[$^2H_{50}$]tetracosane
R-17α(H), 21β(H)-Bishomohopane ($C_{32}\alpha\beta$)	17β(H),21β(H)-hopane	191		[$^2H_{50}$]tetracosane
Heptadecadiene	heptadecane	83	69,97	[$^2H_{50}$]tetracosane
Heptadecene	heptadecane	83	69,97	[$^2H_{50}$]tetracosane
Nonadecene	nonadecane	83	69,97	[$^2H_{50}$]tetracosane

F2 Fraction (PAH and alkenes) For the F2 fraction, internal standards [$^2H_8$]naphthalene, 1-methyl [$^2H_{10}$]naphthalene, [$^2H_8$]acenaphthylene, [$^2H_{10}$]acenaphthene, [$^2H_{10}$]anthracene, [$^2H_{10}$]-pyrene, [$^2H_{12}$]chrysene, [$^2H_{12}$]benzo(k)fluoranthene, [$^2H_{12}$]benzo(a)pyrene and [$^2H_{14}$]dibenz(a,h)-anthracene were available for use as quantitation standards. This wide range of perdeuterated standards allowed problems to be identified with specific analytes, and adjustments to be made as required. The specific perdeuterated PAH used to quantify each target compound is indicated in Table 3.

Perylene was found to be prone to oxidative losses during the base digestion step that was employed for the extraction of suspended particulate, sediment and peat samples. An additional standard containing [$^2H_{10}$]biphenyl and [$^2H_{12}$]perylene was added to most of these samples to monitor these losses [*Yunker et al.*, 1990]. Perdeuterated [$^2H_{10}$]fluoranthene was also added to samples as a surrogate recovery standard.

Nineteen parent PAH ranging from naphthalene to benzo(ghi)perylene were referenced to authentic standards and included in the target list (Table 3). Authentic standards were also available for 2-methyl and 1-methyl naphthalene, cadalene, retene (the later two from Chiron) and squalene, and these compounds were also included on the list. Simonellite was identified by its approximate retention time (Kovats 2145 versus literature 2154 on SE-54; *Simoneit and Mazurek*, [1982]) and the characteristic m/z 252 and 237 ions in its mass spectrum (*Simoneit and Mazurek*, [1982]; *Philp*, [1985]) and also added. Simonellite and pimanthrene (1, 7-dimethyl phenanthrene) were subsequently confirmed by coinjection with authentic standards (Simoneit, pers. commun.).

A selection of the major alkyl PAH constituents of Mackenzie River suspended sediment was also chosen for quantitation as indicator compounds. These compounds have been denoted on the selected ion GC/MS traces at the beginning of Appendix 4. Alkyl naphthalenes included three dimethyl naphthalenes (N-C_2a to N-C_2c) and two trimethyl and two tetramethyl naphthalenes (N-C_3a, N-C_3b, N-C_4a and N-C_4b). Alkyl phenanthrene/anthracenes included the four resolved monomethyl constituents (3-, 2-, 9/4- and 1-methyl), pimanthrene and a single trimethyl derivative (P/A-C_3a). Derivatives of fluoranthene/pyrene (two monomethyl and one dimethyl; F/P- C_1a, F/P-C_1b and F/P-C_2a) were also selected.

Alkyl PAH series were determined by integrating the parent ion profiles for each homologue within the expected retention time range (see Appendix 4 ion traces). Peaks were not added if their mass spectra did not correspond to the compounds of interest [*Sporstol et al.*, 1983] or if the appropriate confirming ion (usually the molecular ion minus 15) was not present.

A range of standards was used to calibrate the alkyl PAH determinations. The two methyl naphthalenes and 2,6/3,5-dimethyl phenanthrene, 1,2,5/1,2,7-trimethyl phenanthrene and 1,2,6,9-tetramethyl phenanthrene (methyl phenanthrenes from Chiron) were available when samples were being analyzed but could only be used to calibrate portions of the alkyl series. Subsequent to completing analyses, the additional alkyl PAH standards 2-methyl anthracene and 3,6-dimethyl phenanthrene (respectively Aldrich and Ultra) became available. With these new standards a monomethyl phenanthrene response factor could be referenced to phenanthrene and 2,6/3,5-dimethyl phenanthrene response factors to calibrate fully the alkyl phenanthrene/anthracene (P/A) series. The dimethyl naphthalene response could also then be referenced to 1-methyl naphthalene and trends in the P/A series used to adjust the response factors in the rest of alkyl naphthalene series (N). The P/A series response factors were used for the fluoranthene/pyrene (F/P) series without adjustment.

Heneicosahexaene (most likely the all-cis methylene interrupted 3,6,9,12,15,18-ene) was identified by comparison of the relative retention time (Kovats 2058) to the published value (2056; *de Lappe et al.*, [1983]) and by comparison to literature mass spectra [*Thompson and Eglinton*, 1979; *Lee et al.*, 1970]. The mass spectrum obtained (Appendix 4) was identical to the spectrum given by *Thompson and Eglinton* [1979], with the exception of a slightly lower intensity of m/z 108.

Table 3: Hydrocarbons Quantified in the F2 Fraction

Compound	Basis for RRF	Quantitation/ Confirming ions		D_x Standard
Naphthalene	authentic	128		$[^2H_8]$naphthalene
2-Methyl Naphthalene	1-methyl naphthalene	142		1-methyl $[^2H_{10}]$naphthalene
1-Methyl Naphthalene	authentic	142		1-methyl $[^2H_{10}]$naphthalene
Dimethyl Naphthalene (N-C_2a)	1-methyl naphthalene	156		$[^2H_{10}]$acenaphthene
Dimethyl Naphthalene (N-C_2b)	1-methyl naphthalene	156		$[^2H_{10}]$acenaphthene
Dimethyl Naphthalene (N-C_2c)	1-methyl naphthalene	156		$[^2H_{10}]$acenaphthene
Acenaphthylene	authentic	152		$[^2H_8]$acenaphthylene
Acenaphthene	authentic	154		$[^2H_{10}]$acenaphthene
Trimethyl Naphthalene (N-C_3a)	1-methyl naphthalene	170		$[^2H_{10}]$acenaphthene
Trimethyl Naphthalene (N-C_3b)	1-methyl naphthalene	170		$[^2H_{10}]$acenaphthene
Fluorene	authentic	166		$[^2H_{10}]$acenaphthene
Tetramethyl Naphthalene (N-C_4a)	1-methyl naphthalene	184		$[^2H_{10}]$acenaphthene
Tetramethyl Naphthalene (N-C_4b)	1-methyl naphthalene	184		$[^2H_{10}]$acenaphthene
Cadalene	authentic	183	198	$[^2H_{10}]$acenaphthene
Phenanthrene	authentic	178		$[^2H_{10}]$anthracene
Anthracene	authentic	178		$[^2H_{10}]$anthracene
3-Methyl Phenanthrene	C_0/C_2 phenanthrene	192		$[^2H_{10}]$anthracene
2-Methyl Phenanthrene	C_0/C_2 phenanthrene	192		$[^2H_{10}]$anthracene
9/4-Methyl Phenanthrene	C_0/C_2 phenanthrene	192		$[^2H_{10}]$anthracene
1-Methyl Phenanthrene	C_0/C_2 phenanthrene	192		$[^2H_{10}]$anthracene
Pimanthrene	dimethyl phenanthrene	206		$[^2H_{10}]$pyrene
Heneicosahexaene	eicosene*	79	91,105	$[^2H_{10}]$anthracene
Fluoranthene	authentic	202		$[^2H_{10}]$pyrene
Pyrene	authentic	202		$[^2H_{10}]$pyrene
Simonellite	retene	237		$[^2H_{10}]$pyrene
Trimethyl Phenanthrene (P/A-C_3a)	trimethyl phenanthrene	220		$[^2H_{10}]$pyrene
Retene	authentic	219	234	$[^2H_{10}]$pyrene
Tricosapolyene	eicosene*	79	91,105	$[^2H_{10}]$pyrene
Methyl Pyrene (F/P-C_1a)	dimethyl phenanthrene	216		$[^2H_{10}]$pyrene
Methyl Pyrene (F/P-C_1b)	dimethyl phenanthrene	216		$[^2H_{10}]$pyrene
Dimethyl Pyrene (F/P-C_2a)	dimethyl phenanthrene	230		$[^2H_{10}]$pyrene
Pentacosapolyene	eicosene*	79	91,105	$[^2H_{10}]$pyrene
Benz(a)anthracene	authentic	228		$[^2H_{12}]$chrysene
Chrysene	authentic	228		$[^2H_{12}]$chrysene
Heptacosapolyene	eicosene*	79	91,105	$[^2H_{12}]$chrysene
Benzo(b/j/k)fluoranthene	authentic	252		$[^2H_{12}]$benzo(k)fluoranthene
Benzo(a)fluoranthene	authentic	252		$[^2H_{12}]$benzo(k)fluoranthene

Table 3 Cont.: Hydrocarbons Quantified in the F2 Fraction

Compound	Basis for RRF	Quantitation/ Confirming ions		D_X Standard
Benzo(e)pyrene	authentic	252		$[^2H_{12}]$benzo(k)fluoranthene
Benzo(a)pyrene	authentic	252		$[^2H_{12}]$benzo(a)pyrene
Perylene	authentic	252		$[^2H_{12}]$benzo(a)pyrene
Squalene	authentic*	69		$[^2H_{12}]$benzo(k)fluoranthene
Dibenz(a,h)anthracene	authentic	278		$[^2H_{14}]$dibenz(a,h)anthracene
Indeno(1,2,3,cd)pyrene	authentic	276		$[^2H_{14}]$dibenz(a,h)anthracene
Benzo(ghi)perylene	authentic	276		$[^2H_{14}]$dibenz(a,h)anthracene

* The RRF was calculated relative to $[^2H_{10}]$fluoranthene using eicosene and squalene in the F3 standard.

Alkyl PAH Totals

Naphthalene C_0	authentic	128		$[^2H_8]$naphthalene
Naphthalene C_1	1-methyl naphthalene	142		1-methyl $[^2H_{10}]$naphthalene
Naphthalene C_2	1-methyl naphthalene	156	141	$[^2H_{10}]$acenaphthene
Naphthalene C_3	1-methyl naphthalene	170	155	$[^2H_{10}]$acenaphthene
Naphthalene C_4	1-methyl naphthalene	184	169	$[^2H_{10}]$acenaphthene
Naphthalene C_5	cadalene	198	183	$[^2H_{10}]$acenaphthene
Phenanthrene/Anthracene C_0	authentic	178		$[^2H_{10}]$anthracene
Phenanthrene/Anthracene C_1	dimethyl phenanthrene	192		$[^2H_{10}]$anthracene
Phenanthrene/Anthracene C_2	dimethyl phenanthrene	206	191	$[^2H_{10}]$pyrene
Phenanthrene/Anthracene C_3	trimethyl phenanthrene	220	205	$[^2H_{10}]$pyrene
Phenanthrene/Anthracene C_4	retene	234	219	$[^2H_{10}]$pyrene
Phenanthrene/Anthracene C_5	tetramethyl phenanthrene	248	233	$[^2H_{10}]$pyrene
Fluoranthene/Pyrene C_0	authentic	202		$[^2H_{10}]$pyrene
Fluoranthene/Pyrene C_1	dimethyl phenanthrene	216	215,108	$[^2H_{10}]$pyrene
Fluoranthene/Pyrene C_2	dimethyl phenanthrene	230	215	$[^2H_{10}]$pyrene
Fluoranthene/Pyrene C_3	trimethyl phenanthrene	244	229	$[^2H_{12}]$chrysene
Fluoranthene/Pyrene C_4	tetramethyl phenanthrene	258	243	$[^2H_{12}]$chrysene
Fluoranthene/Pyrene C_5	tetramethyl phenanthrene	272	257	$[^2H_{12}]$chrysene

Note: the dimethyl, trimethyl and tetramethyl phenanthrene standards referred to are respectively 2,6/3,5-dimethyl phenanthrene, 1,2,5/1,2,7-trimethyl phenanthrene and 1,2,6,9-tetramethyl phenanthrene.

The dominant ion in the spectrum published by *Lee et al.* [1970] was m/z 108, and its intensity is likely very dependent on mass spectral conditions.

A series of three other compounds from marine samples had mass spectra very similar to heneicosahexaene and eluted just before the C_{23}, C_{25} and C_{27} n-alkanes (respective Kovats 2269, 2457 and 2669). These compounds were tentatively identified as C_{23}, C_{25} and C_{27} polyenes and are listed as such in Table 3. No molecular ions were observed and the degree of unsaturation is unknown. Response factors for heneicosahexaene and the three longer chain polyenes were corrected for the abundance of the quantifying ion relative to the total ion current for each compound.

Additional isomers with mass spectra identical to those of the four polyenes were sometimes observed in the GC/MS traces. This was most prevalent in zooplankton: sample Z6 for example contained five major isomers of the heptacosapolyene. These additional compounds were assumed to have arisen from isomerization of the rather labile natural polyenes, and all peaks with the same mass spectrum which eluted close to each parent polyene were summed. Initial results had suggested that the heptacosapolyene might also be present in the F3 fraction; it was added to the F3 target list but was not detectable in any sample and does not appear in the Appendix tables.

A number of additional F2 fraction compounds appear as entries in Appendix 2 but were not reported for samples. These include the alkyl PAH 2,6/3,5-dimethyl phenanthrene, 1,2,5/1,2,7-trimethyl phenanthrene and 1,2,6,9-tetramethyl phenanthrene which were minor constituents in samples and whose presence could not be positively confirmed. Two further compounds present in the F2 fraction of peat material were initially included in the target list, but were not reported because identification in non-peat samples was unreliable. These were an alkene of unknown mass (approximate Kovats 3124) and a MW 412 triterpane (approximate Kovats 3405). Mass spectra are given in Appendix 4.

F3 Fraction (Alcohols, sterols and triterpenoids) Target compounds in the F3 fraction included a homologous series of n-alcohols, the common (major) sterols and three triterpenoids which were present in major amounts in peat samples (Table 4). All compounds were quantified relative to $[^2H_{10}]$fluoranthene in the fractionated samples; unfractionated *in situ* dissolved samples were quantified relative to $[^2H_{10}]$pyrene. Response factors for compounds lacking authentic standards were corrected for the abundance of the quantifying ion relative to the total ion current of each compound.

The even-carbon saturated n-alkanols from C_{14} to C_{30} (most likely alkan-1-ols) were referenced to authentic standard nC_{18}, nC_{22} and nC_{28} alcohols and quantified. Other alcohols quantified included phytol (referenced to authentic) and the nC_{16} to nC_{24} unsaturated, even carbon n-alkenols. These latter compounds were identified by their relative retention times (elution just before the corresponding n-alkanol) and on the basis of their mass spectra (major ions at m/z 55, 67, 82, 96 and 109 as compared to m/z 57, 69, 83, 97 and 111 for the n-alkanols). See Appendix 4 for mass spectra.

For each alcohol a single peak at the expected retention time was quantified and no information is available for other possible positional isomers. For a few high concentration sediment trap and shallow water samples, alcohol concentrations have been interpolated using a higher ion or a lower concentration run of the same sample. Data for these samples are indicated as an estimate with a "c" in Appendix 1; these interpolations had little or no effect on Principal Components Analysis projections. The odd-carbon alcohols were only very minor constituents and were not quantified.

All sterols quantified were referenced to authentic (terrestrial plant) standards except for 24-nor-cholesta-5, 22E-dien-3β-ol, cholesta-5, 22E-dien-3β-ol, 24-methyl-cholesta-5,24(28)-dien-3β-ol and 24-ethyl-cholesta-5,24(28)Z-dien-3β-ol. The identity of these compounds was confirmed by their retention times relative to authentic sterols [*Volkman*, 1986; *Volkman et al.*, 1981; *Lee et*

Table 4: Hydrocarbon Derivatives Quantified in the F3 Fraction

Compound	Basis for RRF	Quantitation/ Confirming ions		D_X Standard
Tetradecanol	octadecanol	97	83,111	$[^2H_{10}]$fluoranthene
Hexadecenol	octadecanol	96	82,109	$[^2H_{10}]$fluoranthene
Hexadecanol	octadecanol	97	83,111	$[^2H_{10}]$fluoranthene
Octadecenol	octadecanol	96	82,109	$[^2H_{10}]$fluoranthene
Octadecanol	authentic	97	83,111	$[^2H_{10}]$fluoranthene
Phytol	authentic	71	123	$[^2H_{10}]$fluoranthene
Eicosenol	docosanol	96	82,109	$[^2H_{10}]$fluoranthene
Eicosanol	docosanol	97	83,111	$[^2H_{10}]$fluoranthene
Docosenol	docosanol	96	82,109	$[^2H_{10}]$fluoranthene
Docosanol	authentic	97	83,111	$[^2H_{10}]$fluoranthene
Tetracosenol	docosanol	96	82,109	$[^2H_{10}]$fluoranthene
Tetracosanol	docosanol	97	83,111	$[^2H_{10}]$fluoranthene
Hexacosanol	docosanol	97	83,111	$[^2H_{10}]$fluoranthene
24-Norcholesta-5,22E-dien-3β-ol	cholest-5-en-3β-ol	97	255,300,370	$[^2H_{10}]$fluoranthene
Cholesta-5,22E-dien-3β-ol	cholest-5-en-3β-ol	159		$[^2H_{10}]$fluoranthene
Octacosanol*	docosanol	97	83,111	$[^2H_{10}]$fluoranthene
Cholest-5-en-3β-ol	authentic	145	275	$[^2H_{10}]$fluoranthene
5α-Cholestan-3β-ol	authentic	215	233	$[^2H_{10}]$fluoranthene
Cholesta-5,24E-dien-3β-ol	authentic	69	271	$[^2H_{10}]$fluoranthene
24-Methylcholesta-5,22E-dien-3β-ol*	cholesta-5,24E-dien-3β-ol	69	255,300	$[^2H_{10}]$fluoranthene
24-Methylcholesta-5,24(28)-dien-3β-ol	cholesta-5,24E-dien-3β-ol	271	69,107	$[^2H_{10}]$fluoranthene
24-Methylcholest-5-en-3β-ol	authentic	289	69,107	$[^2H_{10}]$fluoranthene
24-Ethylcholesta-5,22E-dien-3β-ol*	authentic	83	271,300,412	$[^2H_{10}]$fluoranthene
Triacontanol	docosanol	97	83,111	$[^2H_{10}]$fluoranthene
24-Ethylcholest-5-en-3β-ol*	24-methylcholest-5-en-3β-ol	303	396	$[^2H_{10}]$fluoranthene
24-Ethylcholesta-5,24(28)E-dien-3β-ol*	stigmasterol[1]	314	299	$[^2H_{10}]$fluoranthene
24-Ethylcholesta-5,24(28)Z-dien-3β-ol	stigmasterol[1]	314	299	$[^2H_{10}]$fluoranthene
β-Amyrin (Olean-12-en-3β-ol)	α-amyrin[2]	218	203	$[^2H_{10}]$fluoranthene
α-Amyrin (Urs-12-en-3β-ol)	authentic[2]	218	203	$[^2H_{10}]$fluoranthene
24-Ethylcholesta-3,5-dien-7-one	α-amyrin[2]	174	269,410	$[^2H_{10}]$fluoranthene

* Indicates that the identity was confirmed by authentic standard.

[1] 24-ethylcholesta-5,22E-dien-3β-ol.

[2] The RRF was calculated by coinjection of α-amyrin and then referenced to cholest-5-en-3β-ol.

al., 1979] and by matching the molecular ion and high mass fragments in the their mass spectra [*Carlson*, 1977]. In most samples cholesta-5,24E-dien-3β-ol was a minor constituent which was obscured by 24-methyl-cholesta-5,22E-dien-3β-ol and data presented for cholesta-5,24E-dien-3β-ol should be used with caution; only 24-methyl-cholesta-5,22E-dien-3β-ol was used for geochemical interpretation.

For the three plant triterpenoids (Table 4), α-amyrin was confirmed by reference to the authentic compound and β-amyrin was assigned based on the expected retention time [*Volkman et al.*, 1987] and the mass spectrum [*Philp*, 1985]. The third triterpenoid showed a base peak at m/z 174 and a molecular weight of 410 (Appendix 4), and fit the spectral characteristics of 24-ethylcholest-3,5-dien-7-one [*Cranwell*, 1982; *Simoneit*, pers. commun.].

2.6 Additional Hydrocarbon Samples Reported

GC/MS data for the peat samples originally reported in *Yunker et al.* [1990] were reverified and quantified for a number of additional compounds, principally the hopanes, alkyl naphthalenes (including cadalene), mono- and dimethyl phenanthrenes, simonellite and retene. Because authentic standards were not available when the samples were acquired, response factors for these new compounds are estimates and peat data which use these estimates are flagged with a "r" in the data tables at the end of Appendix 1. Note that a corrected response factor for 2-methyl naphthalene has been used to report data for these peat samples and benzo(e)pyrene has been referenced to [$^2H_{12}$]benzo(k)fluoranthene not [$^2H_{12}$]benzo(a)pyrene (as was done in previous work; *Yunker et al.*, [1990]).

Hydrocarbon data for suspended particulate samples collected through the ice at Norman Wells N.W.T. in April, 1987 are also presented at the end of Appendix 1. These data were previously reported in an unpublished manuscript [*Fowler et al.*, 1987] and are included here for completeness. PAH data for these samples are plotted in Appendix 8.

Summary statistics and plots for the alkane and PAH results for the Mackenzie River delta in February, 1986 [*Erickson and Fowler*, 1987] are given in Appendices 6 and 8, but full data have not been presented. Similarly, statistics and plots of PAH data for the > 1.2 μm, 0.2-1.2 μm and < 0.2 μm fractions of a number of Mackenzie River and shelf suspended particulate samples [*Whitehouse*, 1988] are presented in Appendix 8.

2.7 Comparison to Previous Hydrocarbon Results

The results of an intercomparison between samples of homogenate analyzed in this work after fractionation on silica gel (part A) and analyzed previously [*Yunker et al.*, 1990] are presented in Table 5. The samples analyzed are not identical, but all samples were drawn from the same homogenate of suspended particulate obtained from the East channel of the Mackenzie delta in June, 1987. A two sample t-test (H_0: $\mu_1 = \mu_2$, $\alpha = 0.05$), comparing the concentrations of each individual hydrocarbon, generally shows close agreement between analyses. Significant differences are found for the most volatile alkanes due to losses in the later samples. Other differences can be attributed to changes in quantitation procedures. In *Yunker et al.* [1990], benzo(e)pyrene was referenced to [$^2H_{12}$]benzo(a)pyrene not [$^2H_{12}$]benzo(k)fluoranthene (as is done here; Table 3) and the higher value for benzo(e)pyrene obtained in earlier work is due to poorer recovery of [$^2H_{12}$]benzo(a)pyrene during sample extraction.

In part B of Table 5, the PAH results for this work (given in part A) are compared to the results of an independent extraction and analysis of a sample of the East channel homogenate (performed by Axys Analytical Ltd. (formerly Seakem)). The quantitative agreement between results is not as good as in part A, however the PAH distributions remain the same.

Hydrocarbon results for individual samples from this work are compared with previous results for the same samples before fractionation on silica gel [*Yunker et al.*, 1990] in Appendix 5. For the few particulate samples where a direct comparison may be made, agreement is quite good. Results for *in situ* dissolved samples demonstrate more variation, consistent with the lower concentrations present, but agreement is still reasonable.

2.8 Graphs, Totals and Ratios of Key Hydrocarbon Parameters

To facilitate the interpretation and discussion of the hydrocarbon geochemistry of the Mackenzie River and Shelf, graphs, totals and ratios for key hydrocarbon parameters have been presented in Appendices 6 to 10. These five Appendices include respectively the alkanes and alkenes, hopane triterpenes, PAH, sterols and triterpenoids and alcohols. A common format is employed in each appendix with a graph shown for each sample given in Appendix 1, along with geochemically useful totals and ratios. The Appendices were prepared using Lotus 123 Ver. 3.1, with each appendix maintained in a separate file and an active link maintained to the primary Appendix 1 data file.

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Table 5: Comparison of Analytical Results for Homogenized Mackenzie River Suspended Particulate

A. Hydrocarbon results from this work and *Yunker et al.* [1990].

	This Work n=6 Mean ng/g	sd	*Yunker et al.* [1990] n=9 Mean ng/g	sd	*t Test*
F1 Fraction					
Undecane	214		305	134	
Dodecane	309		369	112	
Tridecane	229	126	561	142	y
Tetradecane	402	277	572	101	n
Pentadecane	591	470	698	93	n
Hexadecane	637	519	672	69	n
Heptadecane	766	522	829	81	n
Octadecane	631	444	629	52	n
Nonadecane	659	398	695	69	n
Eicosane	577	319	660	52	n
Heneicosane	647	279	725	69	n
Docosane	572	193	628	51	n
Tricosane	664	192	753	63	n
Tetracosane	521	104	550	53	n
Pentacosane	884	338	789	130	n
Hexacosane	504	187	437	57	n
Heptacosane	1180	583	1140	179	n
Octacosane	456	260	288	27	n
Nonacosane	1160	884	687	119	n
Triacontane	398	262	208	35	y
Untriacontane	916	702	455	94	n
Dotriacontane	201	121	159	85	n
Tritriacontane	382	229	181	70	y
Tetratriacontane	160	100	78	31	y
Pentatriacontane	150	88	75	54	n
Hexatriacontane	47	43	30	15	n
2,6-Dimethyl Undecane	39	41	148	40	y
Norfarnesane	65	41	193	39	y
Farnesane	96	65	141	26	n
2,6,10-Trimethyl Tridecane	240	163	290	35	n
Norpristane	343	240	343	28	n
Pristane	779	652	746	90	n
Phytane	450	317	456	40	n
F2 Fraction					
Naphthalene	148	87	170	16	n
2-Methyl Naphthalene	259	25	282	34	n
1-Methyl Naphthalene	251	47	226	22	n
Acenaphthylene	0.94	2.1	1.1	0.55	n
Acenaphthene	7.9	4.9	8.7	3.9	n
Fluorene	48	8.2	27	23	n
Phenanthrene	295	56	269	85	n
Anthracene	7.3	6.0	9.9	12	n

Table 5 Cont.: Comparison of Analytical Results for Homogenized Mackenzie River Suspended Particulate

	This Work n=6 Mean ng/g	sd	*Yunker et al.* [1990] n=9 Mean ng/g	sd	*t Test*
Fluoranthene	46	12	32	6.4	y
Pyrene	69	8.1	60	8.8	n
Benz(a)anthracene	24	9.3	29	4.9	n
Chrysene	106	13	142	38	n
Benzo(b/j/k)fluoranthene	100	14	93	38	n
Benzo(a)fluoranthene	1.7	2.3	3.8	2.0	n
Benzo(e)pyrene	145	26	341	141	y
Benzo(a)pyrene	41	24	43	27	n
Perylene	89	137	185	99	n
Dibenz(a,h)anthracene	16	17	32	17	n
Indeno(1,2,3-cd)pyrene	23	17	50	25	n
Benzo(ghi)perylene	194	15	348	117	y

B. Hydrocarbon results from this work and independent analysis by Axys Analytical Ltd.

	This Work n=6 Mean	sd	Axys Analytical
F2 Fraction			
Naphthalene	148	87	160
Acenaphthylene	0.94	2.1	<0.9 r
Acenaphthene	7.9	4.9	<8.6 r
Fluorene	48	8.2	35
Phenanthrene	295	56	140
Anthracene	7.3	6.0	13
Fluoranthene	46	12	79
Pyrene	69	8.1	79
Benz(a)anthracene	24	9.3	37
Chrysene	106	13	85
Benzo(b/j/k)fluoranthene	100	14	82
Benzo(e)pyrene	145	26	87
Benzo(a)pyrene	41	24	46
Perylene	89	137	210
Dibenz(a,h)anthracene	16	17	12
Indeno(1,2,3-cd)pyrene	23	17	33
Benzo(ghi)perylene	194	15	99

r: ratio to confirming ion differs from standard.

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APPENDIX 1; HYDROCARBON CONCENTRATIONS WITH QA/QC STATISTICS AND SUMMARY CONCENTRATIONS

Sample	IPRM1	FPRM6	FPRM12	RM6	RM7
Location/Depth	ME–East	ME–East	ME–East	ME–East	ME–East
Date	23/6/87	23/6/87	23/6/87	23/6/87	23/6/87
Analytical Unit	3.17 g	2.92 g	6.87 g	6.60 g	5.94 g
Conversion Factor	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L
Derived Unit	15.50 L	14.27 L	33.54 L	32.23 L	28.99 L
RRF	JZ	LZ	JZ	PZ	HZ
	ng/g	ng/g	ng/g	ng/g	ng/g
F1 Fraction					
Undecane	<19	<21	<8.8	214	20 q
Dodecane	35 a	11 a	<6.4 m	309 a	51 a
Tridecane	165 a	148 a	317 a	448 a	156 a
Tetradecane	226 a	344 a	919 a	499 a	236 a
Pentadecane	219 a	675 a	1470 a	610 a	312 a
Hexadecane	391 a	738 a	1600 a	647 a	187 a
Heptadecane	562 a	979 a	1690 a	754 a	301 a
Octadecane	470 a	791 a	1430 a	592 a	196 a
Nonadecane	512 b	826 b	1340 b	698 b	268 b
Eicosane	341	766	1110	607	305
Heneicosane	539	806	1090	704	357
Docosane	516	613	842	726	353
Tricosane	603	712	854	898	420
Tetracosane	566	440	589	674	428
Pentacosane	884	700	822	1550	651
Hexacosane	588	313	369	834	456
Heptacosane	1280	830	866	2320	819
Octacosane	463	224	190	914	439
Nonacosane	1120	577	454	2880	840
Triacontane	421	134 q	103	821	429
Untriacontane	972	360	231	2200	751
Dotriacontane	245	68 q	33 q	319	250
Tritriacontane	462	132	62	602	469
Tetratriacontane	192	48	24	247	192
Pentatriacontane	213	59	18	219	188
Hexatriacontane	100 a	<36 m	<76 m	28 a	68 a
2,6–Dimethyl Undecane	21 a	<8.6 m	41 a	119 a	30 a
Norfarnesane	47 a	22 a	113 a	121 a	49 a
Farnesane	61 a	71 a	218 a	117 a	56 a
2,6,10–Trimethyl Tridecane	153 a	224 a	562 a	227 a	154 a
Norpristane	229 b	370 b	811 b	284 b	198 b
Pristane	362	1100	1930	743	249
Phytane	312 b	532 b	1050 b	374 b	205 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	31 a	52 a	21 a	107 a	62 a
17ß(H)–Trisnorhopane (C_{27}ß)	14 a	22 a	6.3 a	48 a	26 a
17a(H),21ß(H)–Norhopane (C_{29}aß)	81 a	89 a	42 a	202 a	147 a
Hop–17(21)–ene	7 a	<133 m	<89 m	29 a	18 a
17ß(H),21a(H)–Normoretane (C_{29}ßa)	24 a	26 a	8.2 a	79 a	40 a
17a(H),21ß(H)–Hopane (C_{30}aß)	183 a	271 a	97 a	437 a	314 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	78 a	83 a	36 a	161 a	130 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	80 a	94 a	43 a	185 a	149 a
Triterpene	39 a	<133 m	51 ac	48 a	37 a
17ß(H),21ß(H)–Hopane (C_{30}ßß)	58 a	42 a	20 a	111 a	83 a
Diploptene	235 a	308 a	160 a	507 a	311 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	33 a	34 ac	7.5 a	91 a	58 a
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	29 a	38 a	11 a	70 a	53 a
Heptadecadiene	1.7 a	2.6 a	8 a	<3.0 m	1.1 a
Heptadecene	<0.74 m	15 a	13 a	11 a	6.3 a
Nonadecene	1.6 a	7.6 a	7.6 a	7.5 a	0.23 a
F2 Fraction					
Naphthalene	184 b	<267 m	229 b	165 b	
2–Methyl Naphthalene	263 a	227 a	250 a	258 a	
1–Methyl Naphthalene	282 a	219 a	304 a	188 a	
Dimethyl Naphthalene (N–C_2a)	78 a	55 a	76 a	74 a	
Dimethyl Naphthalene (N–C_2b)	111 a	69 a	102 a	90 a	
Dimethyl Naphthalene (N–C_2c)	95 a	65 a	91 a	67 a	

Sample	IPRM1	FPRM6	FPRM12	RM6	RM7
Location/Depth	ME−East	ME−East	ME−East	ME−East	ME−East
Date	23/6/87	23/6/87	23/6/87	23/6/87	23/6/87
Analytical Unit	3.17 g	2.92 g	6.87 g	6.60 g	5.94 g
Conversion Factor	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L
Derived Unit	15.50 L	14.27 L	33.54 L	32.23 L	28.99 L
RRF	JZ	LZ	JZ	PZ	HZ
	ng/g	ng/g	ng/g	ng/g	ng/g
Acenaphthylene	<12 m	<31 m	<15 m	4.7 a	
Acenaphthene	10 a	<36 m	12 a	6.7 a	
Trimethyl Naphthalene (N−C_3a)	89 a	75 a	101 a	61 a	
Trimethyl Naphthalene (N−C_3b)	88 a	76 a	111 a	60 a	
Fluorene	57 a	45 a	50 a	35 a	
Tetramethyl Naphthalene (N−C_4a)	27 a	19 a	22 a	15 a	
Tetramethyl Naphthalene (N−C_4b)	16 a	51 a	76 a	46 a	
Cadalene	67 a	57 a	74 a	54 a	
Phenanthrene	329 a	255 a	240 a	277 a	
Anthracene	3.9 a	18 a	5 a	4.5 a	
3−Methyl Phenanthrene	194 a	209 a	166 a	181 a	
2−Methyl Phenanthrene	292 a	293 a	210 a	216 a	
9/4−Methyl Phenanthrene	286 a	286 a	234 a	270 a	
1−Methyl Phenanthrene	241 a	237 a	175 a	174 a	
Pimanthrene (1,7−dimethyl phenanthrene)	94 a	86 a	83 a	66 a	
Heneicosahexaene	662 a	885 a	560 a	1890 a	
Fluoranthene	41 a	59 a	37 a	43 a c	
Pyrene	66 a	83 a	65 a	67 a	
Simonellite	167 a	151 a	133 a	110 a	
Trimethyl Phenanthrene (P/A−C_3a)	99 a	90 a	107 a	75 a	
Retene	246 a	261 a	259 a	291 a	
Tricosapolyene	<82 m	<191 m	21 a	7.6 a	
Methyl Pyrene (F/P−C_1a)	64 a	58 a	81 a	52 a	
Methyl Pyrene (F/P−C_1b)	42 a	28 a	39 a	27 a	
Dimethyl Pyrene (F/P−C_2a)	33 a c	23 a	48 a	75 a	
Pentacosapolyene	<86 m	<199 m	27 a	28 a	
Benz(a)anthracene	14 a	38 a	29 a	21 a	
Chrysene	102 a	119 a	115 a	107 a	
Heptacosapolyene	<137 m	<232 m	<68 m	<18 m	
Benzo(b/j/k)fluoranthene	98 b	117 b	108 b	79 b	
Benzo(a)fluoranthene	<39 m	<68 m	<17 m	3.6 a	
Benzo(e)pyrene	129 a	165 a	136 a	180 a	
Benzo(a)pyrene	<156 m	48 a	56 a	43 a	
Perylene	<146 m	<146 m	327 a	81 a	
Squalene	<85 m	<66 m	<501 e	<521 e	
Dibenz(a,h)anthracene	<57 m	<104 m	17 a	40 a	
Indeno(1,2,3−cd)pyrene	16 a	<98 m	40 a	23 a	
Benzo(ghi)perylene	212 a	192 a	184 a	177 a	
F3 Fraction					
Tetradecanol	236 a	131 a	177 a	279 a	199 a
Hexadecenol	355 a	77 a	354 a	544 a	301 a
Hexadecanol	359	520	591	708	514
Octadecenol	21 a	97 a	62 a	50 a	62 a
Octadecanol	<213	<231	374	441	230 q
Phytol	2210 b	2190 b	7310 b	6740 b	1670 b
Eicosenol	17 a	62 a	158 a	172 a	9.6 a
Eicosanol	1170 b	291 b	1710 b	1130 b	296 b
Docosenol	61 b	88 b	201 b	373 b	6.7 b
Docosanol	3560 b	1390 b	5650 b	3200 b	882 b
Tetracosenol	<51 m	<29 m	28 a	5.9 a	<7.5 m
Tetracosanol	2690 a	1160 a	4030 a	2300 a	545 a
Hexacosanol	2730 a	1300 a	4250 a	2190 a	358 a
24−Norcholesta−5,22E−dien−3ß−ol	255 b	386 b	226 b	251 b	68 b
Cholesta−5,22E−dien−3ß−ol	283 a	1010 a	1370 a	2800 a	332 a
Octacosanol	2100 b	11 b	3530 b	1610 b	160 b
Cholest−5−en−3ß−ol	1950	922	1800	3500	205
5a−Cholestan−3ß−ol	345 b	207 b	235 b	392 b	34 b
Cholesta−5,24E−dien−3ß−ol	<31 m	<41 m	<7.5 m	<29 m	<12 m
24−Methylcholesta−5,22E−dien−3ß−ol	1490 a	665 a	1540 a	1510 a	152 a
24−Methylcholesta−5,24(28)−dien−3ß−ol	1680 a	280 a	763 a	406 a	126 a

Sample	IPRM1	FPRM6	FPRM12	RM6	RM7
Location/Depth	ME–East	ME–East	ME–East	ME–East	ME–East
Date	23/6/87	23/6/87	23/6/87	23/6/87	23/6/87
Analytical Unit	3.17 g	2.92 g	6.87 g	6.60 g	5.94 g
Conversion Factor	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L
Derived Unit	15.50 L	14.27 L	33.54 L	32.23 L	28.99 L
RRF	JZ	LZ	JZ	PZ	HZ
	ng/g	ng/g	ng/g	ng/g	ng/g
24–Methylcholest–5–en–3ß–ol	612 a	192 a	414 a	1020 a	67 a
24–Ethylcholesta–5,22E–dien–3ß–ol	1190 a	431 a	840 a	1070 a	182 a
Triacontanol	23 a c	<37 m	68 a	118 a	<9.4 m
24–Ethylcholest–5–en–3ß–ol	3850 b	1590 b	2990 b	3770 b	343 b
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	2920 a	203 a	2510 a	775 a	420 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	468 a	219 a	186 a	<126 m	32 a
ß–Amyrin (Olean–12–en–3ß–ol)	2370 a	1390 a	2950 a	2430 a	320 a
a–Amyrin (Urs–12–en–3ß–ol)	3620 a	2050 a	4150 a	4020 a	416 a
24–Ethylcholesta–3,5–dien–7–one	1090 a	1270 a	2270 a	1530 a	139 a
Alkyl PAH Totals					
Naphthalene C_0	184 b	<267 m		165 b	
Naphthalene C_1	544 a	445 a		446 a	
Naphthalene C_2	396 a	259 a		325 a	
Naphthalene C_3	648 a	437 a		366 a	
Naphthalene C_4	232 a	238 a		174 a	
Naphthalene C_5	67 a	57 a		54 a	
Phenanthrene/Anthracene C_0	333 a	272 a		282 a	
Phenanthrene/Anthracene C_1	1010 a	1020 a		841 a	
Phenanthrene/Anthracene C_2	498 a	383 a		394 a	
Phenanthrene/Anthracene C_3	379 a	268 a		350 a	
Phenanthrene/Anthracene C_4	246 a	261 a		291 a	
Phenanthrene/Anthracene C_5	<29 m	<66 m		41 a	
Fluoranthene/Pyrene C_0	106 a	141 a		111 a c a	
Fluoranthene/Pyrene C_1	257 a	213 a		228 a	
Fluoranthene/Pyrene C_2	183 a	68 a		255 a	
Fluoranthene/Pyrene C_3	220 a	108 a		227 a	
Fluoranthene/Pyrene C_4	<49 m	<80 m		152 a	
Fluoranthene/Pyrene C_5	<49 m	<80 m		172 a	
QA/QC Statistics					
F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	3.7 %	1.8 %	0.0 %	42.5 %	11.4 %
Tetracosane–D_{50} Area	775448	58228	31536	98294	650580
Hexatriacontane–D_{74} / Tetracosane D_{50}	195.1 %	92.9 %	15.9 %	224.9 %	158.4 %
Fluoranthene–D_{10} Area	128439	3699080	10000	0	0
Tetracosane–D_{50} / Fluoranthene–D_{10}	209.9 %	33.5 %	109.7 %	0.0 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	10.8 %	4.1 % <c	2.6 %	38.9 %	0.0 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	53.1 %	14.5 %	20.2 %	42.0 %	0.0 %
Acenaphthylene–D_8 / Pyrene–D_{10}	87.7 %	49.6 %	51.2 %	52.9 %	0.0 %
Acenaphthene–D_{10} / Pyrene–D_{10}	117.5 %	67.0 %	67.4 %	62.2 %	0.0 %
Anthracene–D_{10} / Pyrene–D_{10}	77.9 %	59.0 %	78.5 %	42.8 %	0.0 %
Chrysene–D_{12} / Pyrene–D_{10}	60.3 %	82.4 %	89.6 %	98.0 %	0.0 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	53.0 %	83.0 %	90.7 %	211.6 %	0.0 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	13.0 %	34.1 %	58.8 %	291.7 %	0.0 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	46.4 %	72.8 %	39.3 %	184.4 %	0.0 %
Pyrene–D_{10} Area	191472	112274	119324	402091	0
Fluoranthene–D_{10} Area	9244	1357000	5794	4003660	0
Pyrene–D_{10} / Fluoranthene–D_{10}	89.1 %	40.5 %	88.6 %	49.2 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.0 %	137.7 %	66.9 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	30132	2526720	56915	1344930	1414080

Sample	IPRM1	FPRM6	FPRM12	RM6	RM7
Location/Depth	ME–East	ME–East	ME–East	ME–East	ME–East
Date	23/6/87	23/6/87	23/6/87	23/6/87	23/6/87
Analytical Unit	3.17 g	2.92 g	6.87 g	6.60 g	5.94 g
Conversion Factor	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L
Derived Unit	15.50 L	14.27 L	33.54 L	32.23 L	28.99 L
RRF	JZ	LZ	JZ	PZ	HZ
	ng/g	ng/g	ng/g	ng/g	ng/g
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	12100	11300	16400	21300	9140
Total $nC_{11}-C_{19}$	2580	4510	8770	4770	1730
Total $nC_{20}-C_{29}$	6900	5980	7190	12100	5070
Total $nC_{30}-C_{36}$	2610	801	471	4440	2350
Total $nC_{15}-C_{19}$	2150	4010	7530	3300	1260
Total $nC_{23}-C_{33}$	7600	4490	4570	14000	5950
Total isoprenoids	1190	2320	4730	1990	941
Farnesane–Phytane	1120	2300	4570	1750	862
Total nC_{11}–Phytane	13300	13600	21100	23300	10100
Total hopanes	853	1060	452	2030	1390
Total Naphthalene–Benzo(ghi)perylene*	1810	1590	1880	1720	0
Naphthalene–Fluorene*	796	491	845	657	0
Phenanthrene–Chrysene	556	572	491	520	0
Higher PAH (Perylene excluded)	455	522	541	546	0
Total polyenes	662	885	608	1930	0
Total alcohols	15500	7320	28500	19900	5230
Total sterols	15000	6110	12900	15500	1960
OEP at C_{17}	1.19	1.21	1.07	1.18	1.56
OEP at C_{25}	1.56	1.91	1.74	2.08	1.46
OEP at C_{27}	2.30	2.91	2.89	2.62	1.79
OEP at C_{29}	2.54	3.25	3.26	3.14	1.90
Pristane/Phytane	1.16	2.07	1.84	1.99	1.21
Derived Summary Concentrations	ng/L	ng/L	ng/L	ng/L	ng/L
Total *n*–alkanes, $nC_{11}-C_{36}$	2480	2310	3360	4370	1870
Total $nC_{11}-C_{19}$	528	924	1800	977	354
Total $nC_{20}-C_{29}$	1410	1220	1470	2480	1040
Total $nC_{30}-C_{36}$	534	164	96	908	481
Total $nC_{15}-C_{19}$	441	821	1540	676	259
Total $nC_{23}-C_{33}$	1560	920	937	2870	1220
Total isoprenoids	243	475	968	407	193
Farnesane–Phytane	229	470	936	357	177
Total nC_{11}–Phytane	2720	2790	4330	4780	2060
Total hopanes	175	217	93	415	285
Total Naphthalene–Benzo(ghi)perylene*	370	325	385	353	0
Naphthalene–Fluorene*	163	101	173	135	0
Phenanthrene–Chrysene	114	117	101	106	0
Higher PAH (Perylene excluded)	93	107	111	112	0
Total polyenes	136	181	125	394	0
Total alcohols	3180	1500	5840	4070	1070
Total sterols	3080	1250	2640	3170	402

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	RM10	FP302	ID71	ID73	FP304
Location/Depth	ME–East	ME–East	ME–East	ME–East	MM–Middle
Date	23/6/87	26/6/87	23/6/87	23/6/87	25/6/87
Analytical Unit	6.77 g	17.47 L	345.78 L	445.78 L	22.55 L
Conversion Factor	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L	188.9 mg/L
Derived Unit	33.07 L	3.58 g			4.26 g
RRF	IZ	HZ	NZ	JZ	PZ
	ng/g	ng/L	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	<8.9	18	0.13 b	1.6 b	<2.7
Dodecane	32 a	34 a	0.69 b	2.7 b	0.36 a
Tridecane	140 a	59 a	0.39 b	1.2 b	5.5 a
Tetradecane	188 a	70 a	<0.36	<0.28	34 a
Pentadecane	259 a	106 a	<1.1	<0.82	84 a
Hexadecane	256 a	109 a	<1.1	<0.87	84 a
Heptadecane	312 a	151 a	0.79 q	1 q	138 a
Octadecane	304 a	112 a	0.5	0.58	97 a
Nonadecane	307 b	124 b	0.61 b	0.42 b	131 b
Eicosane	335	114	0.49 b	0.44 b	131
Heneicosane	386	129	0.88	0.89	141
Docosane	381	100	0.6	0.8	138
Tricosane	499	126	1.1	1.4	154
Tetracosane	429	79	0.44 q	1.2	136
Pentacosane	696	131	1	1.8	281
Hexacosane	466	57	0.3 q	1.5	146
Heptacosane	986	177	1.2	3.3	546
Octacosane	504	48	0.31 q	1.2	126
Nonacosane	1080	137	0.92 q	3	398
Triacontane	480	38	<0.39	1.4	91
Untriacontane	984	96	0.58 q	3	259
Dotriacontane	293	22	<0.26	0.58 q	45
Tritriacontane	567	40	0.24 q	0.59	112
Tetratriacontane	256	17	0.078 b	0.41 b	44
Pentatriacontane	205	12	0.078 b	1.3 b	41
Hexatriacontane	84 a c	<3.1 m	<0.20 m	<0.57 m	<2.3 m
2,6–Dimethyl Undecane	24 a	16 a	<0.048 m	<0.056 m	<0.76 m
Norfarnesane	39 a	17 a	<0.048 m	<0.056 m	0.28 a
Farnesane	50 a	17 a	<0.043 e c	0.042 b	6.6 a
2,6,10–Trimethyl Tridecane	121 a	37 a	0.077 b	<0.054 m	25 a
Norpristane	165 b	51 b	<0.44	<0.34	50 b
Pristane	290	141	<0.32	<0.25	177
Phytane	224 b	77 b	0.22 b	0.25 b	75 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	86 a	8.4 a	0.11 b	<0.12 m	17 a
17ß(H)–Trisnorhopane (C_{27}ß)	40 a	4.4 a	0.058 a c	<0.12 m	10 a
17a(H),21ß(H)–Norhopane (C_{29}aß)	215 a	17 a	0.3 b	0.17 b c	40 a
Hop–17(21)–ene	16 a	3.2 a	0.21 a	<0.67 m	11 a c
17ß(H),21a(H)–Normoretane (C_{29}ßa)	55 a	6.3 a	0.092 a	<0.12 m	11 a
17a(H),21ß(H)–Hopane (C_{30}aß)	451 a	42 a	0.47 b	0.34 b	73 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	197 a	13 a	0.34 a	<0.20 m	30 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	228 a	18 a	0.42 a	<0.20 m	33 a
Triterpene	62 a	6.6 a	<0.74 m	<0.67 m	9.7 a
17ß(H),21ß(H)–Hopane (C_{30}ßß)	123 a	13 a	<0.31 m	<0.20 m	20 a
Diploptene	220 a	60 a	2.2 a	2.1 a	41 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	100 a	5.1 a	0.15 a c	<0.20 m	25 a
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	88 a	7 a	0.16 a	<0.20 m	19 a
Heptadecadiene	2.2 a	0.63 a	0.029 a	0.13 a	0.89 a
Heptadecene	4.8 a	7.7 a	0.17 a	0.23 a	6.3 a
Nonadecene	1.4 a	0.67 a	<0.064 m	0.3 a	<1.0 m
F2 Fraction					
Naphthalene	161 b	19 b	1.4 b	0.095 b	<34 m
2–Methyl Naphthalene	296 a	37 a	<1.4 m	0.22 a	22 a
1–Methyl Naphthalene	260 a	32 a	<1.4 m	0.19 a	52 a
Dimethyl Naphthalene (N–C_2a)	81 a	9.5 a	<0.63 m	0.045 a	6.4 a
Dimethyl Naphthalene (N–C_2b)	104 a	12 a	0.3 a c	0.11 a	8.4 a
Dimethyl Naphthalene (N–C_2c)	86 a	9.6 a	0.25 a c	0.032 a	6.6 a
Acenaphthylene	<3.5 m	<3.9 m	<0.95 m	<0.12 m	1 a
Acenaphthene	11 a	1.4 a	<0.91 m	<0.17 m	0.78 a
Trimethyl Naphthalene (N–C_3a)	77 a	10 a	<0.68 m	0.18 a	14 a

Sample	RM10	FP302	ID71	ID73	FP304
Location/Depth	ME–East	ME–East	ME–East	ME–East	MM–Middle
Date	23/6/87	26/6/87	23/6/87	23/6/87	25/6/87
Analytical Unit	6.77 g	17.47 L	345.78 L	445.78 L	22.55 L
Conversion Factor	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L	188.9 mg/L
Derived Unit	33.07 L	3.58 g			4.26 g
RRF	IZ	HZ	NZ	JZ	PZ
	ng/g	ng/L	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	81 a	9 a	<0.68 m	0.073 a	17 a
Fluorene	51 a	5.5 a	<0.91 m	<0.16 m	10 a
Tetramethyl Naphthalene (N–C_4a)	13 a	3 a	<0.56 m	0.07 a	4.9 a
Tetramethyl Naphthalene (N–C_4b)	69 a	7.8 a	0.19 a	0.12 a	13 a
Cadalene	52 a	8 a	0.58 a	0.26 a	13 a
Phenanthrene	374 a	47 a	0.83 b	0.43 b	45 a
Anthracene	5.1 a	3.5 a	0.18 a	<0.14 m	0.24 a
3–Methyl Phenanthrene	194 a	40 a	1.6 a	0.95 a	36 a
2–Methyl Phenanthrene	227 a	53 a	3 a	0.85 a	34 a
9/4–Methyl Phenanthrene	281 a	55 a	3 a	1.5 a	48 a
1–Methyl Phenanthrene	203 a	47 a	3.8 a	0.75 a	36 a
Pimanthrene (1,7–dimethyl phenanthrene)	63 a	12 a	0.25 a	0.62 a	9.9 a
Heneicosahexaene	542 a	228 a	<0.47 m	1.3 a	82 a
Fluoranthene	52 a c	7.9 a	0.092 b c	0.17 b	7.1 a c
Pyrene	63 a	12 a	0.086 b	0.22 b	11 a
Simonellite	121 a	23 a	0.15 a	0.24 a	19 a
Trimethyl Phenanthrene (P/A–C_3a)	58 a	13 a	0.2 a	0.78 a	10 a
Retene	180 a	35 a	0.21 a	0.76 a	46 a
Tricosapolyene	11 a	<22 m	<0.074 m	0.37 a	<3.4 m
Methyl Pyrene (F/P–C_1a)	50 a	8.2 a	0.092 a	0.17 a	8.1 a
Methyl Pyrene (F/P–C_1b)	25 a	4.5 a	0.034 a	0.089 a	4.7 a
Dimethyl Pyrene (F/P–C_2a)	55 a	4.8 a	0.013 a	0.17 a	13 a
Pentacosapolyene	23 a	<23 m	<0.078 m	<0.69 m	<3.6 m
Benz(a)anthracene	20 a	5.6 a	<0.035 e	<0.12 m	2.1 a
Chrysene	87 a	19 a	0.059 b	0.15 b	20 a
Heptacosapolyene	<15 m	<26 m	<0.072 m	<0.50 m	2.3 a
Benzo(b/j/k)fluoranthene	96 b	18 b	0.1 b	<0.12 m	15 b
Benzo(a)fluoranthene	4.8 a	<6.3 m	0.0074 a	<0.13 m	0.52 a
Benzo(e)pyrene	117 a	22 a	0.073 b	<0.14 m	25 a
Benzo(a)pyrene	59 a	9.9 a c	<1.1 m	<1.2 m	8.8 a
Perylene	38 a	<36 m	<1.2 m	<1.1 m	19 a
Squalene	<3.6 m	<6.1 m	<16	<13	<153 e
Dibenz(a,h)anthracene	21 a	4.3 a	0.04 a	<0.22 m	10 a
Indeno(1,2,3–cd)pyrene	38 a	<9.0 m	0.043 a	<0.22 m	3.3 a
Benzo(ghi)perylene	206 a	28 a	0.044 a	<0.28 m	30 a
F3 Fraction					
Tetradecanol	151 a	39 a	0.13 b	1.3 b	57 a
Hexadecenol	265 a	24 a	<0.19 m	<0.88 m	52 a
Hexadecanol	387	88	0.45 b	3.2 b	136
Octadecenol	51 a	17 a	<0.13 m	<0.61 m	17 a
Octadecanol	214 q	<39	2 b	8.2 b	78 q
Phytol	523 b	1150 b	0.3 b	3.8 b	1270 b
Eicosenol	4.4 a	26 a	<0.15 m	<2.0 m	252 a
Eicosanol	315 b	59 b	0.19 a	4.3 a	238 b
Docosenol	<4.6 e	31 b	<0.15 m	<2.0 m	637 b
Docosanol	1070 b	188 b	0.25 a	7.4 a	765 b
Tetracosenol	<11 m	<4.5 m	<0.12 m	<1.6 m	7.5 a
Tetracosanol	668 a	106 a	0.12 a	4 a	446 a
Hexacosanol	400 a	103 a	0.21 b	9.5 b	363 a
24–Norcholesta–5,22E–dien–3ß–ol	26 b	28 b	0.34 b	1.3 b c	57 b
Cholesta–5,22E–dien–3ß–ol	238 a	149 a	4.5 a	36 a	309 a
Octacosanol	122 b	85 b	0.2 a	16 a	235 b
Cholest–5–en–3ß–ol	175	126	<23	20 q	349
5a–Cholestan–3ß–ol	50 b	16 b	0.73 a	4.5 a	51 b
Cholesta–5,24E–dien–3ß–ol	<17 m	<7.0 m	<0.19 m	<0.98 m	<9.4 m
24–Methylcholesta–5,22E–dien–3ß–ol	110 a	74 a	1.8 a	13 a	132 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	150 a	72 a	4 a	8.1 a	39 a
24–Methylcholest–5–en–3ß–ol	55 a	60 a	1.1 a	4.8 a	92 a
24–Ethylcholesta–5,22E–dien–3ß–ol	70 a	87 a	4 a	24 a	85 a
Triacontanol	<13 m	6.4 a	<0.15 m	<2.0 m	11 a

Sample	RM10	FP302	ID71	ID73	FP304
Location/Depth	ME–East	ME–East	ME–East	ME–East	MM–Middle
Date	23/6/87	26/6/87	23/6/87	23/6/87	25/6/87
Analytical Unit	6.77 g	17.47 L	345.78 L	445.78 L	22.55 L
Conversion Factor	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L	188.9 mg/L
Derived Unit	33.07 L	3.58 g			4.26 g
RRF	IZ	HZ	NZ	JZ	PZ
	ng/g	ng/L	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	261 b	448 b	22 a	62 a	434 b
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	293 a	511 a	9.7 a	22 a	5 a c
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	<96 m	53 a	<1.1 m	<6.9 m	1.9 a c
ß–Amyrin (Olean–12–en–3ß–ol)	334 a	322 a	1.8 a	3.4 a	440 a
a–Amyrin (Urs–12–en–3ß–ol)	561 a	489 a	1.9 a	3.9 a	605 a
24–Ethylcholesta–3,5–dien–7–one	152 a	333 a	0.14 a	<2.6 m	437 a

Alkyl PAH Totals

Naphthalene C_0	161 b				<34 m
Naphthalene C_1	557 a				74 a
Naphthalene C_2	417 a				32 a
Naphthalene C_3	576 a				91 a
Naphthalene C_4	252 a				57 a
Naphthalene C_5	52 a				13 a
Phenanthrene/Anthracene C_0	380 a				45 a
Phenanthrene/Anthracene C_1	905 a				153 a
Phenanthrene/Anthracene C_2	386 a				49 a
Phenanthrene/Anthracene C_3	279 a				63 a
Phenanthrene/Anthracene C_4	183 a				46 a
Phenanthrene/Anthracene C_5	42 a				3.4 a
Fluoranthene/Pyrene C_0	115 a c a				18 a c a
Fluoranthene/Pyrene C_1	231 a				31 a
Fluoranthene/Pyrene C_2	183 a				38 a
Fluoranthene/Pyrene C_3	114 a				42 a
Fluoranthene/Pyrene C_4	70 a				43 a
Fluoranthene/Pyrene C_5	<5.3 m				19 a

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	4.1 %	28.8 %	5.2 %	17.6 %	0.0 %
Tetracosane–D_{50} Area	426009	112886	88346	64350	99990
Hexatriacontane–D_{74} / Tetracosane D_{50}	167.4 %	111.1 %	131.8 %	342.3 %	233.2 %
Fluoranthene–D_{10} Area	4291320	4532370	5200950	0	0
Tetracosane–D_{50} / Fluoranthene–D_{10}	211.1 %	53.0 %	36.1 %	0.0 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	29.3 %	24.3 %	1.4 %	29.0 %	0.7 % <c
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	45.3 %	31.9 %	2.1 %	42.6 %	0.9 %
Acenaphthylene–D_8 / Pyrene–D_{10}	63.4 %	45.5 %	2.4 %	68.9 %	14.7 %
Acenaphthene–D_{10} / Pyrene–D_{10}	85.2 %	57.3 %	3.9 %	79.2 %	27.5 %
Anthracene–D_{10} / Pyrene–D_{10}	51.7 %	43.9 %	9.8 %	72.6 %	38.2 %
Chrysene–D_{12} / Pyrene–D_{10}	91.6 %	87.2 %	104.1 %	132.2 %	82.2 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	102.7 %	105.0 %	90.4 %	128.1 %	176.1 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	36.6 %	16.3 %	2.9 %	13.4 %	199.3 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	79.6 %	92.1 %	83.6 %	99.1 %	133.1 %
Pyrene–D_{10} Area	237372	160578	1303860	168409	613269
Fluoranthene–D_{10} Area	1526390	1647370	38000000 c	0	5188690
Pyrene–D_{10} / Fluoranthene–D_{10}	76.2 %	47.7 %	16.8 %	0.0 %	57.9 %
Perylene–D_{12} / Biphenyl–D_{10}	2.5 %	0.0 %	0.0 %	0.0 %	431.3 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	1725150	1587580	2988540	168409	1208380

Sample	RM10	FP302	ID71	ID73	FP304
Location/Depth	ME–East	ME–East	ME–East	ME–East	MM–Middle
Date	23/6/87	26/6/87	23/6/87	23/6/87	25/6/87
Analytical Unit	6.77 g	17.47 L	345.78 L	445.78 L	22.55 L
Conversion Factor	204.8 mg/L	204.8 mg/L	204.8 mg/L	204.8 mg/L	188.9 mg/L
Derived Unit	33.07 L	3.58 g			4.26 g
RRF	IZ	HZ	NZ	JZ	PZ
	ng/g	ng/L	ng/L	ng/L	ng/L
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	10400	2110	11	30	3360
Total $nC_{11}-C_{19}$	1800	783	3.1	7.5	574
Total $nC_{20}-C_{29}$	5760	1100	7.2	16	2200
Total $nC_{30}-C_{36}$	2870	225	0.98	7.3	592
Total $nC_{15}-C_{19}$	1440	602	1.9	2	534
Total $nC_{23}-C_{33}$	6980	951	6.1	19	2290
Total isoprenoids	913	356	0.3	0.29	334
Farnesane–Phytane	850	323	0.3	0.29	334
Total nC_{11}–Phytane	11300	2470	11	30	3690
Total hopanes	1820	197	4.5	2.6	330
Total Naphthalene–Benzo(ghi)perylene*	1920	272	2.9	1.5	264
Naphthalene–Fluorene*	779	95	1.4	0.51	86
Phenanthrene–Chrysene	601	95	1.2	0.97	85
Higher PAH (Perylene excluded)	542	82	0.31	0	93
Total polyenes	576	228	0	1.7	84
Total alcohols	4170	1920	3.9	58	4560
Total sterols	1430	1620	48	196	1550
OEP at C_{17}	1.09	1.29			1.44
OEP at C_{25}	1.58	2.00	2.80	1.44	2.12
OEP at C_{27}	1.98	3.17	3.74	2.28	3.64
OEP at C_{29}	2.15	3.18		2.34	3.68
Pristane/Phytane	1.29	1.83			2.36
Derived Summary Concentrations	ng/L	ng/g			ng/g
Total *n*–alkanes, $nC_{11}-C_{36}$	2140	10300			17800
Total $nC_{11}-C_{19}$	368	3820			3040
Total $nC_{20}-C_{29}$	1180	5360			11600
Total $nC_{30}-C_{36}$	588	1100			3130
Total $nC_{15}-C_{19}$	295	2940			2830
Total $nC_{23}-C_{33}$	1430	4640			12100
Total isoprenoids	187	1740			1770
Farnesane–Phytane	174	1580			1770
Total nC_{11}–Phytane	2330	12000			19600
Total hopanes	373	964			1750
Total Naphthalene–Benzo(ghi)perylene*	394	1330			1400
Naphthalene–Fluorene*	160	463			454
Phenanthrene–Chrysene	123	464			452
Higher PAH (Perylene excluded)	111	401			490
Total polyenes	118	1110			446
Total alcohols	854	9390			24200
Total sterols	292	7930			8230

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	ID76	FP307	ID84	FP310	ID82
Location/Depth	MM−Middle	ME−East	ME−East	MM−Middle	MM−Middle
Date	28/6/87	29/7/87	29/7/87	27/7/87	27/7/87
Analytical Unit	227.88 L	57.53 L	408.34 L	49.6 L	202.96 L
Conversion Factor	188.9 mg/L	50.6 mg/L	50.6 mg/L	103 mg/L	103 mg/L
Derived Unit		2.91 g		5.13 g	
RRF	JZ	HZ	JZ	OZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	<0.068 m	<1.0	<0.067 m	23	<0.23 e
Dodecane	<0.082 m	2.5 a	<0.081 m	37 a	0.0063 b
Tridecane	<0.11 m	9.5 a	<0.11 m	60 a	<0.13 e
Tetradecane	<0.55	16 a	<0.31	55 a	<0.62
Pentadecane	<1.6	39 a	<0.89	77 a	<1.8
Hexadecane	<1.7	29 a	<0.95	82 a	<1.9
Heptadecane	<0.68	92 a	<0.38	117 a	<0.77
Octadecane	0.54	29 a	0.054 q	85 a	0.24
Nonadecane	0.6 b	32 b	0.21 b	87 b	0.55 b
Eicosane	0.75 b	31	0.19 b	83	1.1 b
Heneicosane	1.2	39	0.33	92	1.2
Docosane	1.2	28	0.33	79	1.4
Tricosane	2.3	37	0.74	91	2.2
Tetracosane	1.6	21	0.78	65	2.1
Pentacosane	2.7	35	1.1	110	2.7
Hexacosane	1.5	15	0.62 q	51	2.2
Heptacosane	3.9	43	1	146	4.4
Octacosane	1.5 q	11	0.59 q	33	1.7 q
Nonacosane	4.6	31	1.3	89	3.3
Triacontane	2	7.5 q	0.37 q	22	1 q
Untriacontane	3.6	21	0.92 q	61	3.7
Dotriacontane	0.8 q	3.4 q	0.46 q	11	1.1 q
Tritriacontane	0.58 q	6.5	0.45 q	22	0.7 q
Tetratriacontane	7 b	<0.64	0.24 b	7.2	0.25 b
Pentatriacontane	0.85 b	1.3	0.18 b	5.1	1.9 b
Hexatriacontane	<0.96 m	<1.7 m	<0.95 m	2.3 a	<1.2 m
2,6−Dimethyl Undecane	<0.095 m	1.3 a c	<0.093 m	18 a	<0.12 m
Norfarnesane	<0.095 m	2 a	<0.093 m	19 a	<0.12 m
Farnesane	<0.098 m	3.4 a	<0.097 m	15 a	<0.12 m
2,6,10−Trimethyl Tridecane	0.048 b	8.4 a	<0.090 m	29 a	<0.12 m
Norpristane	<0.66	13 b	<0.37	40 b	<0.74
Pristane	<0.49	32	<0.27	92	<0.54
Phytane	0.28 b	18 b	0.042 b	54 b	0.14 b
17a(H)−Trisnorhopane (C_{27}a,Tm)	0.065 b	1.7 a	<0.20 m	2.3 a	<0.26 m
17ß(H)−Trisnorhopane (C_{27}ß)	<0.20 m	1.2 a	<0.20 m	1.5 a	<0.26 m
17a(H),21ß(H)−Norhopane (C_{29}aß)	0.26 b	2.6 a	<0.20 m	5.3 a	<0.26 m
Hop−17(21)−ene	<1.1 m	<6.4 m	<1.1 m	<3.6 m	<1.4 m
17ß(H),21a(H)−Normoretane (C_{29}ßa)	<0.20 m	0.82 a	<0.20 m	1.6 a	<0.26 m
17a(H),21ß(H)−Hopane (C_{30}aß)	0.64 b	7.1 a	<0.33 m	14 a	0.21 b
S−17a(H),21ß(H)−Homohopane (C_{31}aß)	0.38 a c	3.1 a	<0.33 m	5.5 a	<0.42 m
R−17a(H),21ß(H)−Homohopane (C_{31}aß)	0.43 a	5.8 a	<0.33 m	5.3 a	<0.42 m
Triterpene	<1.1 m	<6.4 m	<1.1 m	5.2 a	<1.4 m
17ß(H),21ß(H)−Hopane (C_{30}ßß)	0.35 a	1.6 a	<0.33 m	3.9 a	<0.42 m
Diploptene	2.4 a	14 a	0.54 a	32 a	1.7 a
S−17a(H),21ß(H)−Bishomohopane (C_{32}aß)	<0.33 m	1.9 a	<0.33 m	4.3 a	<0.42 m
R−17a(H),21ß(H)−Bishomohopane (C_{32}aß)	<0.33 m	1.8 a c	<0.33 m	2.9 a	<0.42 m
Heptadecadiene	0.12 a	2.1 a	0.053 a	1.2 a	0.12 a
Heptadecene	0.18 a	3.4 a	0.16 a	2.5 a	0.24 a
Nonadecene	0.23 a	<0.55 m	0.25 a	0.33 a	0.32 a
F2 Fraction					
Naphthalene	<7.4 m	5.2 b	<12 m	11 b	0.56 b
2−Methyl Naphthalene	<6.6 m	8.9 a	<11 m	27 a	0.8 a
1−Methyl Naphthalene	<6.6 m	7 a	<11 m	20 a	<0.85 m
Dimethyl Naphthalene (N−C_2a)	<1.7 m	2.4 a	<3.2 m	7.9 a	<0.33 m
Dimethyl Naphthalene (N−C_2b)	<1.7 m	2.8 a	<3.2 m	9.9 a	0.11 a
Dimethyl Naphthalene (N−C_2c)	<1.7 m	2.5 a	<3.2 m	7.8 a	<0.33 m
Acenaphthylene	<2.8 m	<1.3 m	<4.5 m	<3.3 m	<0.36 m
Acenaphthene	<2.3 m	<1.7 m	<4.3 m	<4.8 m	<0.45 m
Trimethyl Naphthalene (N−C_3a)	<2.5 m	2.5 a	<4.6 m	6.6 a	0.2 a

Sample	ID76	FP307	ID84	FP310	ID82
Location/Depth	MM−Middle	ME−East	ME−East	MM−Middle	MM−Middle
Date	28/6/87	29/7/87	29/7/87	27/7/87	27/7/87
Analytical Unit	227.88 L	57.53 L	408.34 L	49.6 L	202.96 L
Conversion Factor	188.9 mg/L	50.6 mg/L	50.6 mg/L	103 mg/L	103 mg/L
Derived Unit		2.91 g		5.13 g	
RRF	JZ	HZ	JZ	OZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N−C_3b)	<2.5 m	2.3 a	<4.6 m	6.4 a	<0.48 m
Fluorene	<2.2 m	1.3 a	<4.1 m	3.2 a	<0.43 m
Tetramethyl Naphthalene (N−C_4a)	<2.0 m	0.5 a	<3.8 m	1.7 a	<0.40 m
Tetramethyl Naphthalene (N−C_4b)	<2.0 m	1.9 a	<3.8 m	3.7 a	<0.40 m
Cadalene	1.5 a	1.9 a	<3.5 m	4.3 a	0.1 a
Phenanthrene	1.3 b	10 a	0.25 b	21 a	0.42 b
Anthracene	<0.62 m	0.63 a	<0.24 m	<4.3 m	<0.32 m
3−Methyl Phenanthrene	1.8 a	9.6 a	0.39 a	16 a	0.47 a
2−Methyl Phenanthrene	1.8 a	14 a	0.3 a	19 a	0.61 a
9/4−Methyl Phenanthrene	2.6 a	13 a	0.63 a	21 a	0.76 a
1−Methyl Phenanthrene	1.9 a	11 a	0.47 a	19 a	0.43 a
Pimanthrene (1,7−dimethyl phenanthrene)	0.31 a	3.6 a	0.15 a	9.2 a	0.25 a
Heneicosahexaene	<2.4 m	68 a	<0.92 m	20 a	<1.3 m
Fluoranthene	0.081 b	3.1 a	0.098 b	2.8 a	0.045 b
Pyrene	0.13 b	3.7 a	0.26 b	5.6 a	0.098 b
Simonellite	0.23 a c	4.2 a	<0.72 m	8.8 a	<0.95 m
Trimethyl Phenanthrene (P/A−C_3a)	0.27 a	3.4 a	0.38 a	8.7 a	0.32 a
Retene	0.56 a	9.2 a	0.43 a	21 a	0.58 a
Tricosapolyene	<0.88 m	<8.6 m	<0.85 m	<25 m	<1.1 m
Methyl Pyrene (F/P−C_1a)	<0.31 m	2.1 a	<0.29 m	4.8 a	<0.38 m
Methyl Pyrene (F/P−C_1b)	<0.31 m	1.3 a	<0.29 m	<8.5 m	<0.38 m
Dimethyl Pyrene (F/P−C_2a)	<0.27 m	<2.1 m	<0.26 m	<7.4 m	<0.33 m
Pentacosapolyene	<0.92 m	2.5 a	<0.89 m	<26 m	<1.2 m
Benz(a)anthracene	<0.19 m	2.1 a	<0.17 m	<11 m	<0.25 m
Chrysene	0.13 b	6.1 a	0.037 b	11 a	0.036 b
Heptacosapolyene	<0.83 m	<12 m	<0.75 m	<48 m	<1.1 m
Benzo(b/j/k)fluoranthene	<0.19 m	5.9 b	<0.17 m	<15 m	<0.23 m
Benzo(a)fluoranthene	<0.21 m	<3.9 m	<0.18 m	<16 m	<0.24 m
Benzo(e)pyrene	<0.21 m	6.1 a	<0.19 m	12 a	<0.25 m
Benzo(a)pyrene	<4.1 m	<9.6 m	<1.2 m	<35 m	<1.3 m
Perylene	<3.9 m	<8.6 m	<1.1 m	<33 m	<1.2 m
Squalene	<25	<3.8 m	<14	<69 e	<28
Dibenz(a,h)anthracene	<0.36 m	<6.2 m	<0.36 m	<79 m	<0.44 m
Indeno(1,2,3−cd)pyrene	<0.37 m	<5.8 m	<0.36 m	<80 m	<0.45 m
Benzo(ghi)perylene	<0.46 m	3.6 a	<0.45 m	<101 m	<0.57 m
F3 Fraction					
Tetradecanol	<1.2 m	17 a	<1.2 m	3.1 a	<1.5 m
Hexadecenol	<1.2 m	7 a	<1.1 m	2.7 a	<1.5 m
Hexadecanol	1.8 b	19	1.1 b	16	1.3 b
Octadecenol	<0.81 m	2.8 a	<0.78 m	0.69 a	<1.0 m
Octadecanol	3.6 b	<12	0.55 b	21 q	2.5 b
Phytol	0.67 b	465 b	1.7 b	779 b c	2.4 b
Eicosenol	<2.7 m	5.8 a	<2.6 m	1.8 a	<3.4 m
Eicosanol	3.9 a	19 b	3.3 a	45 b	5.4 a
Docosenol	<2.7 m	6.3 b	<2.6 m	2.3 b	<3.4 m
Docosanol	7.9 a	75 b	4.2 a	103 b	10 a
Tetracosenol	<2.2 m	<1.3 m	<2.1 m	1.5 a	<2.7 m
Tetracosanol	6.4 a	38 a	4.1 a	64 a	5.9 a
Hexacosanol	14 b	31 a	3 b	72 a	8.8 b
24−Norcholesta−5,22E−dien−3ß−ol	3.8 b	5.3 b	4.5 b	25 b	10 b
Cholesta−5,22E−dien−3ß−ol	22 a	56 a	12 a	58 a	28 a
Octacosanol	18 a	23 b	5.6 a	<0.38 e	14 a
Cholest−5−en−3ß−ol	<36	28	<20	38	<40
5a−Cholestan−3ß−ol	3 a	5.8 b	<2.1 m	14 b	1.6 a
Cholesta−5,24E−dien−3ß−ol	<1.3 m	<1.9 m	<1.3 m	<0.12 m	<1.6 m
24−Methylcholesta−5,22E−dien−3ß−ol	13 a	36 a	9.8 a	48 a	16 a
24−Methylcholesta−5,24(28)−dien−3ß−ol	<12 m	42 a	<11 m	17 a	<15 m
24−Methylcholest−5−en−3ß−ol	3.3 a	22 a	<4.0 m	19 a	2.8 a
24−Ethylcholesta−5,22E−dien−3ß−ol	21 a	33 a	18 a	39 a	71 a
Triacontanol	<2.7 m	1.6 a	<2.6 m	<0.11 m	<3.4 m

Sample	ID76	FP307	ID84	FP310	ID82
Location/Depth	MM–Middle	ME–East	ME–East	MM–Middle	MM–Middle
Date	28/6/87	29/7/87	29/7/87	27/7/87	27/7/87
Analytical Unit	227.88 L	57.53 L	408.34 L	49.6 L	202.96 L
Conversion Factor	188.9 mg/L	50.6 mg/L	50.6 mg/L	103 mg/L	103 mg/L
Derived Unit		2.91 g		5.13 g	
RRF	JZ	HZ	JZ	OZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	34 a	93 b	11 a	106 b	36 a
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	<29 m	82 a	<28 m	24 a	<36 m
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	<9.1 m	5 a	<8.8 m	11 a	<11 m
ß–Amyrin (Olean–12–en–3ß–ol)	5.5 a	79 a	<6.0 m	87 a	3 a
a–Amyrin (Urs–12–en–3ß–ol)	5.8 a	161 a	<5.2 m	114 a	4.4 a
24–Ethylcholesta–3,5–dien–7–one	<3.5 m	87 a	<3.4 m	89 a	<4.4 m

Alkyl PAH Totals

Naphthalene C_0		5.2 b			
Naphthalene C_1		16 a			
Naphthalene C_2		11 a			
Naphthalene C_3		13 a			
Naphthalene C_4		5.8 a			
Naphthalene C_5		1.9 a			
Phenanthrene/Anthracene C_0		11 a			
Phenanthrene/Anthracene C_1		47 a			
Phenanthrene/Anthracene C_2		15 a			
Phenanthrene/Anthracene C_3		11 a			
Phenanthrene/Anthracene C_4		9.2 a			
Phenanthrene/Anthracene C_5		<3.0 m			
Fluoranthene/Pyrene C_0		6.8 a			
Fluoranthene/Pyrene C_1		7.2 a			
Fluoranthene/Pyrene C_2		3.6 a			
Fluoranthene/Pyrene C_3		1.4 a			
Fluoranthene/Pyrene C_4		<4.1 m			
Fluoranthene/Pyrene C_5		<4.1 m			

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	0.9 %	8.8 %	0.0 %	41.6 %	8.7 %
Tetracosane–D_{50} Area	74556	61530	42410	108105	66620
Hexatriacontane–D_{74} / Tetracosane D_{50}	342.8 %	61.4 %	325.9 %	84.5 %	287.9 %
Fluoranthene–D_{10} Area	0	3856960	0	21446	0
Tetracosane–D_{50} / Fluoranthene–D_{10}	0.0 %	33.9 %	0.0 %	175.3 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	1.2 % <c	11.8 %	0.8 % <c	92.5 %	12.2 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	2.4 % <c	28.5 %	1.4 % <c	82.0 %	23.4 %
Acenaphthylene–D_8 / Pyrene–D_{10}	4.1 %	53.6 %	2.4 %	96.2 %	39.6 %
Acenaphthene–D_{10} / Pyrene–D_{10}	7.8 %	66.0 %	4.0 %	105.4 %	50.5 %
Anthracene–D_{10} / Pyrene–D_{10}	22.5 %	55.7 %	56.7 %	89.4 %	54.0 %
Chrysene–D_{12} / Pyrene–D_{10}	106.4 %	72.4 %	114.3 %	51.8 %	103.9 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	109.1 %	66.1 %	119.8 %	39.7 %	115.5 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	5.3 %	26.0 %	17.9 %	17.3 %	21.3 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	78.5 %	55.1 %	76.8 %	10.0 %	80.6 %
Pyrene–D_{10} Area	247962	126308	143806	41022	221235
Fluoranthene–D_{10} Area	0	1497560	0	2292	0
Pyrene–D_{10} / Fluoranthene–D_{10}	0.0 %	41.3 %	0.0 %	77.0 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	247962	1728020	143806	215198	221235

Sample	ID76	FP307	ID84	FP310	ID82
Location/Depth	MM−Middle	ME−East	ME−East	MM−Middle	MM−Middle
Date	28/6/87	29/7/87	29/7/87	27/7/87	27/7/87
Analytical Unit	227.88 L	57.53 L	408.34 L	49.6 L	202.96 L
Conversion Factor	188.9 mg/L	50.6 mg/L	50.6 mg/L	103 mg/L	103 mg/L
Derived Unit		2.91 g		5.13 g	
RRF	JZ	HZ	JZ	OZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Summary Concentrations					
Total *n*−alkanes, $nC_{11}-C_{36}$	37	580	9.9	1590	32
Total $nC_{11}-C_{19}$	1.1	249	0.26	623	0.8
Total $nC_{20}-C_{29}$	21	291	7	839	22
Total $nC_{30}-C_{36}$	15	40	2.6	131	8.7
Total $nC_{15}-C_{19}$	1.1	221	0.26	448	0.79
Total $nC_{23}-C_{33}$	25	231	8.3	701	25
Total isoprenoids	0.33	78	0.042	267	0.14
Farnesane−Phytane	0.33	75	0.042	230	0.14
Total nC_{11}−Phytane	37	658	9.9	1860	32
Total hopanes	4.5	42	0.54	79	1.9
Total Naphthalene−Benzo(ghi)perylene*	1.6	64	0.65	113	2
Naphthalene−Fluorene*	0	22	0	61	1.4
Phenanthrene−Chrysene	1.6	26	0.65	40	0.6
Higher PAH (Perylene excluded)	0	16	0	12	0
Total polyenes	0	71	0	20	0
Total alcohols	56	711	24	1110	50
Total sterols	100	408	55	399	165
OEP at C_{17}		2.69		1.30	
OEP at C_{25}	1.81	2.01	1.49	1.93	1.33
OEP at C_{27}	2.56	3.12	1.74	3.20	2.08
OEP at C_{29}	2.51	3.38	2.53	3.37	2.58
Pristane/Phytane		1.78		1.7	
Derived Summary Concentrations		ng/g		ng/g	
Total *n*−alkanes, $nC_{11}-C_{36}$		11500		15400	
Total $nC_{11}-C_{19}$		4920		6030	
Total $nC_{20}-C_{29}$		5750		8120	
Total $nC_{30}-C_{36}$		785		1260	
Total $nC_{15}-C_{19}$		4370		4340	
Total $nC_{23}-C_{33}$		4570		6780	
Total isoprenoids		1540		2580	
Farnesane−Phytane		1480		2230	
Total nC_{11}−Phytane		13000		18000	
Total hopanes		823		761	
Total Naphthalene−Benzo(ghi)perylene*		1260		1100	
Naphthalene−Fluorene*		443		592	
Phenanthrene−Chrysene		507		391	
Higher PAH (Perylene excluded)		308		116	
Total polyenes		1390		194	
Total alcohols		14000		10800	
Total sterols		8070		3860	

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction − the mean blank is used
- m: peak area is 0 − minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1− and 2−methyl naphthalene and exclude perylene.

Sample	FP311	ID78	T4	G1	G6
Location/Depth	MR–Reindeer	MR–Reindeer	Sabine Pt	Stn 1–5	Stn 4–5
Date	27/7/87	26/7/87	16/8/87	31/7/87	2/8/87
Analytical Unit	37.1 L	202.96 L	4.73 g	8.64 g	7.38 g
Conversion Factor	176 mg/L	176 mg/L	0.448 dry/wet	0.823 dry/wet	0.647 dry/wet
Derived Unit	6.53 g				
RRF	OZ	RZ	YZ	HZ	IZ
	ng/L	ng/L	ng/g	ng/g	ng/g
F1 Fraction					
Undecane	<1.6	2.1 b	55	67	66
Dodecane	0.98 a	0.92 b	43 a	94 a	94 a
Tridecane	9.6 a	0.68 b	69 a	161 a	166 a
Tetradecane	23 a	<0.62	112 a	195 a	197 a
Pentadecane	52 a	<1.8	153 a	196 a	182 a
Hexadecane	71 a	<1.9	162 a	200 a	192 a
Heptadecane	109 a	3.1	240 a	339 a	362 a
Octadecane	102 a	0.7	211 a	271 a	288 a
Nonadecane	101 b	0.95 b	340 b	306 b	292 b
Eicosane	102	0.82 b	428	325	316
Heneicosane	114	2.1	1560	389	366
Docosane	114	1.5	872	390	361
Tricosane	140	2.2	2130	513	445
Tetracosane	148	2.3	1400	440	381
Pentacosane	246	3.3	4770	688	579
Hexacosane	219	1.9	1470	449	404
Heptacosane	363	3.9	9740	988	827
Octacosane	239	2.2	2060	495	454
Nonacosane	345	2.5	14200	1070	958
Triacontane	251	0.85 q	1610	458	404
Untriacontane	315	<0.57	18600	994	913
Dotriacontane	146	<0.45	1040	210	204
Tritriacontane	140	0.47 q	8500	417	418
Tetratriacontane	62	0.3 b	144	155	152
Pentatriacontane	43	0.046 b	166	132	131
Hexatriacontane	18 a	<0.19 m	<21 m	<2.5 m	<2.0 m
2,6–Dimethyl Undecane	0.43 a	0.32 a	19 a	41 a	42 a
Norfarnesane	2.4 a	0.31 a	18 a	22 a	17 a
Farnesane	7.5 a	0.088 b	31 a	44 a	44 a
2,6,10–Trimethyl Tridecane	21 a	0.21 b	68 a	81 a	79 a
Norpristane	44 b	<0.74	55 b	111 b	113 b
Pristane	97	3.3	196	277	256
Phytane	74 b	0.35 b	78 b	208 b	199 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	4.7 a	0.48 b	21 a	65 a	73 a
17ß(H)–Trisnorhopane (C_{27}ß)	2.3 a	0.068 a	369 a	31 a	35 a
17a(H),21ß(H)–Norhopane (C_{29}aß)	14 a	0.64 b	89 a	136 a	153 a
Hop–17(21)–ene	2 a c	<0.62 m	451 a	35 a	13 a
17ß(H),21a(H)–Normoretane (C_{29}ßa)	3 a	0.33 a	171 a	40 a	40 a
17a(H),21ß(H)–Hopane (C_{30}aß)	28 a	0.83 b	103 a	364 a	410 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	10 a	0.51 a	<31 m	164 a	181 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	11 a	0.53 a	<31 m	149 a	172 a
Triterpene	8.8 a	<0.62 m	8390 a	115 a	95 a
17ß(H),21ß(H)–Hopane (C_{30}ßß)	7.7 a	0.18 a	184 a	79 a	87 a
Diploptene	52 a	3.1 a	17300 a	310 a	295 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	5.5 a	0.36 a c	<31 m	72 a	80 a
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	3.7 a	0.28 a	<31 m	57 a	66 a
Heptadecadiene	1 a	0.63 a	<5.4 m	0.19 a	<0.52 m
Heptadecene	2.6 a	0.76 a	<5.4 m	<0.66 m	4.4 a c
Nonadecene	0.4 a	0.72 a	<6.5 m	<0.80 m	2.2 a
F2 Fraction					
Naphthalene	20 b	1.3 b	52 b	116 b	123 b
2–Methyl Naphthalene	28 a	4.4 a	50 a	227 a	240 a
1–Methyl Naphthalene	32 a	0.97 a	46 a	178 a	206 a
Dimethyl Naphthalene (N–C_2a)	7.6 a	0.36 a	19 a	60 a	75 a
Dimethyl Naphthalene (N–C_2b)	16 a c	0.27 a	23 a	75 a	92 a
Dimethyl Naphthalene (N–C_2c)	5.3 a c	0.16 a	17 a	61 a	79 a
Acenaphthylene	<0.35 m	<0.063 m	0.97 a	5.2 a	3.8 a
Acenaphthene	1.6 a	<0.071 m	1.8 a	7.1 a	12 a
Trimethyl Naphthalene (N–C_3a)	6.3 a	0.46 a	14 a	50 a	88 a

Sample	FP311	ID78	T4	G1	G6
Location/Depth	MR–Reindeer	MR–Reindeer	Sabine Pt	Stn 1–5	Stn 4–5
Date	27/7/87	26/7/87	16/8/87	31/7/87	2/8/87
Analytical Unit	37.1 L	202.96 L	4.73 g	8.64 g	7.38 g
Conversion Factor	176 mg/L	176 mg/L	0.448 dry/wet	0.823 dry/wet	0.647 dry/wet
Derived Unit	6.53 g				
RRF	OZ	RZ	YZ	HZ	IZ
	ng/L	ng/L	ng/g	ng/g	ng/g
Trimethyl Naphthalene (N–C_3b)	6.3 a	0.083 a	13 a	53 a	91 a
Fluorene	7.9 a	0.049 a	7.2 a	29 a	53 a
Tetramethyl Naphthalene (N–C_4a)	1 a	0.21 a	2.6 a	12 a	24 a
Tetramethyl Naphthalene (N–C_4b)	11 a	0.13 a	6.5 a	35 a	81 a
Cadalene	10 a	0.31 a	12 a	40 a	60 a
Phenanthrene	36 a	0.55 b	64 a	262 a	282 a
Anthracene	0.11 a	0.029 a	3.5 a	3.7 a	15 a
3–Methyl Phenanthrene	40 a	1.5 a	39 a	182 a	168 a
2–Methyl Phenanthrene	20 a	1.4 a	52 a	230 a	197 a
9/4–Methyl Phenanthrene	52 a	1.6 a	46 a	262 a	216 a
1–Methyl Phenanthrene	18 a	0.98 a	37 a	218 a	181 a
Pimanthrene (1,7–dimethyl phenanthrene)	1.9 a	0.99 a	17 a	62 a	70 a
Heneicosahexaene	68 a	<0.64 m	9.5 a	44 a	170 a
Fluoranthene	4.9 a	0.28 bc	10 a	28 a	29 a
Pyrene	10 a	0.26 b	12 a	47 a	53 a
Simonellite	3.9 a	0.21 a	29 a	99 a	97 a
Trimethyl Phenanthrene (P/A–C_3a)	9.2 a	0.92 a	18 a	70 a	67 a
Retene	38 a	1.1 a	58 a	173 a	184 a
Tricosapolyene	0.89 a	<0.56 m	<37 m	<46 m	8 a
Methyl Pyrene (F/P–C_1a)	12 a	0.24 a	9.6 a	38 a	59 a
Methyl Pyrene (F/P–C_1b)	4.3 a	0.11 a	5.7 a	19 a	31 a
Dimethyl Pyrene (F/P–C_2a)	11 a	0.057 a	7.4 a	41 a	64 a
Pentacosapolyene	0.19 a	<0.59 m	<38 m	<48 m	<23 m
Benz(a)anthracene	4.9 a	0.027 b	6.9 a	17 a	12 a
Chrysene	18 a	0.16 b	32 a	100 a	85 a
Heptacosapolyene	<1.1 m	<0.81 m	<53 m	<74 m	<24 m
Benzo(b/j/k)fluoranthene	14 b	<0.095 e	31 b	80 b	84 b
Benzo(a)fluoranthene	0.27 a	<0.20 m	<15 m	<26 m	<9.5 m
Benzo(e)pyrene	17 a	0.058 b	31 a	130 a	118 a
Benzo(a)pyrene	3.9 a	<0.93 m	<26 m	42 a	22 a
Perylene	10 a	<0.93 m	<24 m	<68 m	9.4 a
Squalene	69 b	<28	332 b	<398 e	<466 e
Dibenz(a,h)anthracene	2.7 a	<0.16 m	<26 m	<47 m	18 a
Indeno(1,2,3–cd)pyrene	4.9 a	<0.16 m	<24 m	<44 m	28 a
Benzo(ghi)perylene	27 a	<0.29 m	11 a	174 a	207 a
F3 Fraction					
Tetradecanol	17 a	2 b	802 a	30 a	110 a
Hexadecenol	7.4 a	<0.43 m	323 a	34 a	409 a
Hexadecanol	46	2.6 b	52500 c	247	506
Octadecenol	16 a	<0.29 m	326 a	21 a	110 a
Octadecanol	<18	4 b	30200 c	355	362
Phytol	318 b	2.8 b	47800 bc	546 b	715 b
Eicosenol	9.4 a	<0.50 m	321 a	7.3 a	32 a
Eicosanol	14 b	2.5 a	51100 bc	543 b	460 b
Docosenol	4.9 b	<0.51 m	7520 b	18 b	61 b
Docosanol	40 b	3.2 a	99000 bc	1270 b	1110 b
Tetracosenol	<1.9 m	<0.41 m	21600 a	<8.1 m	5.7 a
Tetracosanol	4.1 a	4.5 a	42100 ac	605 a	500 a
Hexacosanol	13 a	1.6 b	19000 ac	352 a	292 a
24–Norcholesta–5,22E–dien–3ß–ol	9.2 b	0.6 b	<48 m	20 b	121 b
Cholesta–5,22E–dien–3ß–ol	13 a	10 a	680 a	50 a	100 a
Octacosanol	<2.4 m	3 a	8370 bc	115 b	104 b
Cholest–5–en–3ß–ol	13 q	<40	894	56 q	44 q
5a–Cholestan–3ß–ol	1.2 b	<1.2 m	268 b	33 b	41 b
Cholesta–5,24E–dien–3ß–ol	<2.7 m	0.34 a	<29 m	<12 m	<16 m
24–Methylcholesta–5,22E–dien–3ß–ol	11 a	3.2 a	4750 a	90 a	137 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	<25 m	<3.7 m	862 a	170 a	406 a
24–Methylcholest–5–en–3ß–ol	<16 m	<6.0 m	4670 a	29 a	38 a
24–Ethylcholesta–5,22E–dien–3ß–ol	6.5 a	6.3 a	4030 a	21 a	36 a
Triacontanol	<2.4 m	<0.51 m	2400 a	<10 m	<13 m

Sample	FP311	ID78	T4	G1	G6
Location/Depth	MR–Reindeer	MR–Reindeer	Sabine Pt	Stn 1–5	Stn 4–5
Date	27/7/87	26/7/87	16/8/87	31/7/87	2/8/87
Analytical Unit	37.1 L	202.96 L	4.73 g	8.64 g	7.38 g
Conversion Factor	176 mg/L	176 mg/L	0.448 dry/wet	0.823 dry/wet	0.647 dry/wet
Derived Unit	6.53 g				
RRF	OZ	RZ	YZ	HZ	IZ
	ng/L	ng/L	ng/g	ng/g	ng/g
24–Ethylcholest–5–en–3ß–ol	23 b	8.8 a	8810 b	214 b	216 b
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	<47 m	<6.5 m	<473 m	93 a	129 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	<15 m	<2.0 m	8550 a	<72 m	55 a
ß–Amyrin (Olean–12–en–3ß–ol)	24 a	0.58 a	72800 a c	379 a	404 a
a–Amyrin (Urs–12–en–3ß–ol)	39 a	<1.3 m	177000 a c	738 a	620 a
24–Ethylcholesta–3,5–dien–7–one	20 a	<0.83 m	48900 a c	113 a	145 a
Alkyl PAH Totals					
Naphthalene C_0	20 b		52 b	116 b	123 b
Naphthalene C_1	60 a		97 a	405 a	445 a
Naphthalene C_2	46 a		15 a	268 a	371 a
Naphthalene C_3	79 a c		22 a	331 a c	590 a c
Naphthalene C_4	35 a		6.8 a	181 a	347 a
Naphthalene C_5	10 a		12 a	40 a	64 a
Phenanthrene/Anthracene C_0	36 a		68 a	266 a	297 a
Phenanthrene/Anthracene C_1	129 a		174 a	892 a	761 a
Phenanthrene/Anthracene C_2	57 a		<9.0 m	313 a	381 a
Phenanthrene/Anthracene C_3	66 a		<13 m	322 a	346 a
Phenanthrene/Anthracene C_4	40 a		58 a	173 a	202 a
Phenanthrene/Anthracene C_5	16 a		<13 m	<16 m	59 a
Fluoranthene/Pyrene C_0	15 a		22 a	75 a	82 a
Fluoranthene/Pyrene C_1	41 a		<9.6 m	150 a	254 a
Fluoranthene/Pyrene C_2	33 a		<9.0 m	117 a	215 a
Fluoranthene/Pyrene C_3	62 a		<19 m	191 a	173 a
Fluoranthene/Pyrene C_4	50 a		<18 m	62 a	94 a
Fluoranthene/Pyrene C_5	<0.41 m		<18 m	<26 m	<8.5 m
QA/QC Statistics					
F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	0.6 %	74.8 %	29.0 %	21.2 %	19.8 %
Tetracosane–D_{50} Area	223985	133946	63022	283029	417324
Hexatriacontane–D_{74} / Tetracosane D_{50}	83.6 %	199.2 %	110.1 %	164.6 %	146.5 %
Fluoranthene–D_{10} Area	42067	1478	1965820	4787490	4990080
Tetracosane–D_{50} / Fluoranthene–D_{10}	185.1 %	0.0 %	68.2 %	125.7 %	177.9 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	0.8 %	79.2 %	17.8 %	82.7 %	15.3 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	10.9 %	69.3 %	65.3 %	93.2 %	33.7 %
Acenaphthylene–D_8 / Pyrene–D_{10}	34.8 %	78.8 %	117.2 %	82.9 %	36.5 %
Acenaphthene–D_{10} / Pyrene–D_{10}	45.5 %	83.2 %	131.8 %	128.5 %	63.6 %
Anthracene–D_{10} / Pyrene–D_{10}	60.0 %	53.9 %	108.4 %	63.6 %	64.0 %
Chrysene–D_{12} / Pyrene–D_{10}	84.2 %	70.1 %	69.7 %	61.9 %	91.5 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	80.9 %	83.1 %	72.9 %	51.4 %	96.5 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	47.1 %	14.0 %	40.4 %	17.4 %	42.6 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	37.4 %	89.0 %	56.6 %	38.7 %	77.6 %
Pyrene–D_{10} Area	1399870	413286	362188	158858	135620
Fluoranthene–D_{10} Area	12568	6380780	1626070	1660070	1025630
Pyrene–D_{10} / Fluoranthene–D_{10}	479.3 %	0.0 %	109.1 %	46.9 %	64.8 %
Perylene–D_{12} / Biphenyl–D_{10}	46.4 %	0.0 %	0.3 %	0.0 %	1.3 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	13187 c	413286	1110700	1795570	1601540

Sample	FP311	ID78	T4	G1	G6
Location/Depth	MR–Reindeer	MR–Reindeer	Sabine Pt	Stn 1–5	Stn 4–5
Date	27/7/87	26/7/87	16/8/87	31/7/87	2/8/87
Analytical Unit	37.1 L	202.96 L	4.73 g	8.64 g	7.38 g
Conversion Factor	176 mg/L	176 mg/L	0.448 dry/wet	0.823 dry/wet	0.647 dry/wet
Derived Unit	6.53 g				
RRF	OZ	RZ	YZ	HZ	IZ
	ng/L	ng/L	ng/g	ng/g	ng/g
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	3470	33	70100	9940	9150
Total $nC_{11}-C_{19}$	469	8.5	1390	1830	1840
Total $nC_{20}-C_{29}$	2030	23	38600	5750	5090
Total $nC_{30}-C_{36}$	975	1.7	30100	2370	2220
Total $nC_{15}-C_{19}$	435	4.8	1110	1310	1320
Total $nC_{23}-C_{33}$	2550	20	65500	6720	5990
Total isoprenoids	246	4.6	465	784	750
Farnesane–Phytane	244	3.9	428	721	691
Total nC_{11}–Phytane	3720	38	70600	10700	9900
Total hopanes	144	7.3	18700	1500	1610
Total Naphthalene–Benzo(ghi)perylene*	234	8.1	359	1450	1590
Naphthalene–Fluorene*	90	6.7	158	562	638
Phenanthrene–Chrysene	74	1.3	128	458	476
Higher PAH (Perylene excluded)	70	0.058	73	426	477
Total polyenes	69	0	9.5	44	178
Total alcohols	490	26	383000	4140	4780
Total sterols	77	29	33500	776	1320
OEP at C_{17}	1.17		1.30	1.35	1.38
OEP at C_{25}	1.35	1.54	3.53	1.58	1.51
OEP at C_{27}	1.51	1.78	5.48	2.04	1.89
OEP at C_{29}	1.40		7.73	2.20	2.18
Pristane/Phytane	1.31	9.43	2.51	1.33	1.29

Derived Summary Concentrations	ng/g
Total *n*–alkanes, $nC_{11}-C_{36}$	19800
Total $nC_{11}-C_{19}$	2660
Total $nC_{20}-C_{29}$	11500
Total $nC_{30}-C_{36}$	5540
Total $nC_{15}-C_{19}$	2470
Total $nC_{23}-C_{33}$	14500
Total isoprenoids	1400
Farnesane–Phytane	1380
Total nC_{11}–Phytane	21200
Total hopanes	818
Total Naphthalene–Benzo(ghi)perylene*	1330
Naphthalene–Fluorene*	509
Phenanthrene–Chrysene	420
Higher PAH (Perylene excluded)	397
Total polyenes	393
Total alcohols	2790
Total sterols	437

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	G7	G12	G9	G10	Amauligak Oil
Location/Depth	Stn 5–5	Stn 9–5	Stn 10–5	Stn 10–5	
Date	3/8/87	5/8/87	5/8/87	5/8/87	Standard B6
Analytical Unit	5.05 g	3.97 g	5.20 g	5.32 g	1.019 mg oil
Conversion Factor	0.446 dry/wet	0.372 dry/wet	0.473 dry/wet	0.479 dry/wet	
Derived Unit					
RRF	IZ	HZ	XZ	TZ	VZ
	ng/g	ng/g	ng/g	ng/g	ng/mg oil
F1 Fraction					
Undecane	<12	56	52	165	<59
Dodecane	4.1 a	102 a	85 a	159 a	485 a
Tridecane	54 a	197 a	166 a	127 a	1280 a
Tetradecane	142 a	237 a	225 a	121 a	1770 a
Pentadecane	134 a	383 a	386 a	198 a	2230 a
Hexadecane	182 a	382 a	319 a	253 a	1890 a
Heptadecane	323 a	468 a	416 a	500 a	1770 a
Octadecane	226 a	418 a	307 a	499 a	1540 a
Nonadecane	250 b	463 b	395 b	392 b	1150 b
Eicosane	327	415	365	273	1220
Heneicosane	416	432	435	378	882
Docosane	412	340	387	383 c	682
Tricosane	511	398	505	399	620
Tetracosane	393	255	375	203	555
Pentacosane	613	368	773	1140 c	485
Hexacosane	518	192	472	489 c	283 q
Heptacosane	944	435	1380	1910	217
Octacosane	481	161	449	894 c	<113
Nonacosane	1040	482	1760	1980	<156
Triacontane	487	135	336	213 c	<140
Untriacontane	980	395	1490	255	<132
Dotriacontane	292	75	137	44 q	<70
Tritriacontane	524	178	382	92	<45
Tetratriacontane	221	60	133	62	<36
Pentatriacontane	227	80	154	36	<17
Hexatriacontane	67 a	27 a	<5.1 m	69 a	<31 m
2,6–Dimethyl Undecane	2 a	58 a	40 a	62 a	1410 a
Norfarnesane	9 a	60 a	46 a	41 a	674 a
Farnesane	28 a	64 a	51 a	28 a	4890 a
2,6,10–Trimethyl Tridecane	101 a	142 a	125 a	67 a	5580 a
Norpristane	106 b	207 b	174 b	136 b	5690 b
Pristane	240	597	481	340	8430
Phytane	188 b	279 b	228 b	238 b	3800 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	52 a	23 a	61 a	47 a	71 a
17ß(H)–Trisnorhopane (C_{27}ß)	28 a	17 a	36 a	26 a	<79 m
17a(H),21ß(H)–Norhopane (C_{29}aß)	108 a	58 a	136 a	49 a	210 a
Hop–17(21)–ene	14 a	<27 m	55 a	<66 m	<706 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	30 a	16 a	47 a	9.7 a	40 a
17a(H),21ß(H)–Hopane (C_{30}aß)	296 a	122 a	264 a	132 a	484 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	143 a	60 a	121 a	65 a	120 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	126 a	58 a	131 a	65 a	92 a
Triterpene	55 a	<27 m	28 a	18 a	<706 m
17ß(H),21ß(H)–Hopane (C_{30}ßß)	76 a	35 a	66 a	50 a	<108 m
Diploptene	376 a	180 a	176 a	199 a	<706 m
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	62 a	29 a	96 a	23 a c	75 a
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	50 a	30 a	50 a	23 a c	45 a
Heptadecadiene	<0.41 m	1.9 a	2.5 a	<4.7 m	<22 m
Heptadecene	0.54 a	6.2 a	5.3 a	61 a	<22 m
Nonadecene	<0.50 m	8.5 a	<2.2 m	1.8 a	<22 m
F2 Fraction					
Naphthalene	<68 m	55 b	45 b	45 b	1460. b
2–Methyl Naphthalene	225 a	121 a	89 a	105 a	2090 a
1–Methyl Naphthalene	260 a	102 a	78 a	90 a	1620 a
Dimethyl Naphthalene (N–C_2a)	68 a	35 a	33 a	32 a	994 a
Dimethyl Naphthalene (N–C_2b)	92 a	43 a	40 a	40 a	1340 a
Dimethyl Naphthalene (N–C_2c)	85 a	35 a	28 a	30 a	295 a
Acenaphthylene	<15 m	3.2 a	3.1 a	<15 m	52 a
Acenaphthene	16 a	4.6 a	2.7 a	5.7 a	64 a
Trimethyl Naphthalene (N–C_3a)	106 a	36 a	24 a	41 a	568 a

Sample	G7	G12	G9	G10	Amauligak Oil
Location/Depth	Stn 5–5	Stn 9–5	Stn 10–5	Stn 10–5	
Date	3/8/87	5/8/87	5/8/87	5/8/87	Standard B6
Analytical Unit	5.05 g	3.97 g	5.20 g	5.32 g	1.019 mg oil
Conversion Factor	0.446 dry/wet	0.372 dry/wet	0.473 dry/wet	0.479 dry/wet	
Derived Unit					
RRF	IZ	HZ	XZ	TZ	VZ
	ng/g	ng/g	ng/g	ng/g	ng/mg oil
Trimethyl Naphthalene (N–C_3b)	109 a	33 a	28 a	35 a	501 a
Fluorene	77 a	23 a	15 a	21 a	185 a
Tetramethyl Naphthalene (N–C_4a)	35 a	9.5 a	6.3 a	4.8 a	426 a
Tetramethyl Naphthalene (N–C_4b)	101 a	24 a	17 a	34 a	180 a
Cadalene	77 a	25 a	20 a	42 a	438 a
Phenanthrene	315 a	155 a	103 a	149 a	209 a
Anthracene	6.4 a	6.6 a	3.2 a	15 a	3.5 a
3–Methyl Phenanthrene	196 a	137 a	94 a	159 a	159 a
2–Methyl Phenanthrene	305 a	177 a	93 a	212 a	81 a
9/4–Methyl Phenanthrene	294 a	187 a	128 a	191 a	248 a
1–Methyl Phenanthrene	217 a	153 a	74 a	140 a	69 a
Pimanthrene (1,7–dimethyl phenanthrene)	69 a	40 a	30 a	39 a	101 a
Heneicosahexaene	831 a	1020 a	213 a	5600 a	<4.6 m
Fluoranthene	33 a	25 a	25 a c	50 a	27 a
Pyrene	56 a	38 a	38 a	76 a	19 a
Simonellite	119 a	59 a	43 a	66 a	454 a
Trimethyl Phenanthrene (P/A–C_3a)	63 a	58 a	34 a	60 a	115 a
Retene	224 a	130 a	114 a	141 a	577 a
Tricosapolyene	113 a	38 a	31 a	132 a	<7.5 m
Methyl Pyrene (F/P–C_1a)	56 a	34 a	30 a	37 a	31 a
Methyl Pyrene (F/P–C_1b)	37 a	18 a	12 a	21 a	11 a
Dimethyl Pyrene (F/P–C_2a)	64 a	55 a	39 a	26 a	20 a
Pentacosapolyene	31 a	18 a	18 a	<72 m	<7.8 m
Benz(a)anthracene	21 a	15 a	15 a	31 a	<1.7 m
Chrysene	116 a	85 a	71 a	91 a	20 a
Heptacosapolyene	<36 m	<34 m	<14 m	<78 m	<6.8 m
Benzo(b/j/k)fluoranthene	98 b	75 b	51 b	119 b	8.9 b
Benzo(a)fluoranthene	<14 m	<8.8 m	1.9 a	8.6 a	<1.7 m
Benzo(e)pyrene	155 a	105 a	63 a	102 a	5 a
Benzo(a)pyrene	45 a	38 a	20 a	88 a	15 a
Perylene	91 a	<25 m	2.2 a	59 a	129 a
Squalene	<681 e	<866 e	<661 e	<647 e	<3380 e
Dibenz(a,h)anthracene	18 a	15 a	27 a	21 a	3.6 a
Indeno(1,2,3–cd)pyrene	37 a	24 a	14 a	31 a	<1.8 m
Benzo(ghi)perylene	266 a	110 a	103 a	106 a	5.8 a
F3 Fraction					
Tetradecanol	473 a	219 a	198 a	57 a	<30 m
Hexadecenol	3120 a	638 a	256 a	72 a	<29 m
Hexadecanol	1280	721	507	349	<53
Octadecenol	136 a	72 a	44 a	25 a	<20 m
Octadecanol	417 q	<170	150 q	181 q	<663
Phytol	4830 b	2280 b	436 b	108 b	<12 m
Eicosenol	62 a	24 a	333 a	15 a	<33 m
Eicosanol	354 b	151 b	296 b	263 b	<34 m
Docosenol	102 b	42 b	608 b	7.5 b	<34 m
Docosanol	956 b	409 b	869 b	810 b c	<34 m
Tetracosenol	<16 m	3.8 a	11 a	<96 m	<27 m
Tetracosanol	459 a	136 a	596 a	474 a	<29 m
Hexacosanol	273 a	77 a	735 a	480 a	<30 m
24–Norcholesta–5,22E–dien–3ß–ol	472 b	169 b	371 b	26 b	<53 m
Cholesta–5,22E–dien–3ß–ol	197 a	97 a	452 a	59 a	<150 m
Octacosanol	80 b	16 b	537 b	299 b	<34 m
Cholest–5–en–3ß–ol	107 q	<77	443	77 q	<300
5a–Cholestan–3ß–ol	66 b	31 b	108 b	21 b	<28 m
Cholesta–5,24E–dien–3ß–ol	<24 m	<28 m	<12 m	<149 m	<42 m
24–Methylcholesta–5,22E–dien–3ß–ol	429 a	126 a	782 a	137 a	<56 m
24–Methylcholesta–5,24(28)–dien–3ß–ol	1070 a	686 a	3220 a	1180 a	<381 m
24–Methylcholest–5–en–3ß–ol	88 a	21 a	196 a	46 a	<46 m
24–Ethylcholesta–5,22E–dien–3ß–ol	59 a	<70 m	217 a	109 a	<103 m
Triacontanol	<19 m	<22 m	55 a	<120 m	<34 m

Sample	G7	G12	G9	G10	Amauligak Oil
Location/Depth	Stn 5–5	Stn 9–5	Stn 10–5	Stn 10–5	
Date	3/8/87	5/8/87	5/8/87	5/8/87	Standard B6
Analytical Unit	5.05 g	3.97 g	5.20 g	5.32 g	1.019 mg oil
Conversion Factor	0.446 dry/wet	0.372 dry/wet	0.473 dry/wet	0.479 dry/wet	
Derived Unit					
RRF	IZ	HZ	XZ	TZ	VZ
	ng/g	ng/g	ng/g	ng/g	ng/mg oil
24–Ethylcholest–5–en–3ß–ol	226 b	47 b	1030 b	405 b	<62 m
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	839 a	268 a	2670 a	589 a	<738 m
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	301 a	50 a	1060 a	1270 a	<233 m
ß–Amyrin (Olean–12–en–3ß–ol)	313 a	60 a	843 a	797 a	<122 m
a–Amyrin (Urs–12–en–3ß–ol)	548 a	122 a	2150 a	2000 a	<105 m
24–Ethylcholesta–3,5–dien–7–one	98 a	30 a	332 a	404 a	<68 m
Alkyl PAH Totals					
Naphthalene C_0	<68 m	55 b	45 b	45 b	1460 b
Naphthalene C_1	485 a	223 a	167 a	195 a	3720 a
Naphthalene C_2	377 a	154 a	146 a	151 a	3810 a
Naphthalene C_3	739 a c	221 a	182 a	288 a	5770 a
Naphthalene C_4	430 a	141 a	80 a	303 a	2260 a
Naphthalene C_5	77 a	27 a	20 a	42 a	438 a
Phenanthrene/Anthracene C_0	321 a	162 a	106 a	164 a	212 a
Phenanthrene/Anthracene C_1	1010 a	653 a	389 a	702 a	557 a
Phenanthrene/Anthracene C_2	443 a	339 a	300 a	204 a	371 a
Phenanthrene/Anthracene C_3	388 a	285 a	255 a	253 a	448 a
Phenanthrene/Anthracene C_4	304 a	178 a	150 a	141 a	577 a
Phenanthrene/Anthracene C_5	58 a	<11 m	4.3 a	<24 m	134 a
Fluoranthene/Pyrene C_0	90 a	63 a	64 a c a	125 a	46 a
Fluoranthene/Pyrene C_1	271 a	131 a	111 a	148 a	316 a
Fluoranthene/Pyrene C_2	242 a	150 a	151 a	125 a	158 a
Fluoranthene/Pyrene C_3	178 a	133 a	106 a	134 a	113 a
Fluoranthene/Pyrene C_4	166 a	120 a	152 a	79 a	70 a
Fluoranthene/Pyrene C_5	<13 m	<12 m	80 a	<27 m	38 a
QA/QC Statistics					
F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	0.7 %	45.4 %	36.1 %	99.4 %	292.3 %
Tetracosane–D_{50} Area	774044	208516	195714	64206	84092
Hexatriacontane–D_{74} / Tetracosane D_{50}	183.7 %	98.0 %	214.5 %	55.8 %	50.2 %
Fluoranthene–D_{10} Area	5539650	5117460	0	5024710	28446
Tetracosane–D_{50} / Fluoranthene–D_{10}	297.1 %	86.7 %	0.0 %	27.2 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	8.0 % <c	42.2 %	33.9 %	45.1 %	4.0 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	6.9 %	50.3 %	39.2 %	23.9 %	16.2 %
Acenaphthylene–D_8 / Pyrene–D_{10}	35.1 %	67.0 %	52.9 %	37.8 %	53.4 %
Acenaphthene–D_{10} / Pyrene–D_{10}	46.7 %	85.5 %	68.9 %	49.3 %	59.7 %
Anthracene–D_{10} / Pyrene–D_{10}	55.0 %	57.4 %	57.2 %	50.7 %	99.6 %
Chrysene–D_{12} / Pyrene–D_{10}	93.8 %	95.1 %	100.7 %	88.9 %	109.5 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	97.1 %	108.5 %	208.1 %	98.8 %	124.3 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	49.1 %	33.4 %	139.0 %	30.6 %	129.1 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	74.3 %	109.7 %	120.6 %	81.8 %	125.8 %
Pyrene–D_{10} Area	130501	492652	644876	169526	1361320
Fluoranthene–D_{10} Area	1022570	3846040	5392600	4278560	0
Pyrene–D_{10} / Fluoranthene–D_{10}	62.5 %	62.7 %	58.6 %	19.4 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	33.5 %	0.3 %	0.0 %	9.7 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	1598890	1770730	1563320	1334980	1361320

Sample	G7	G12	G9	G10	Amauligak Oil
Location/Depth	Stn 5–5	Stn 9–5	Stn 10–5	Stn 10–5	
Date	3/8/87	5/8/87	5/8/87	5/8/87	Standard B6
Analytical Unit	5.05 g	3.97 g	5.20 g	5.32 g	1.019 mg oil
Conversion Factor	0.446 dry/wet	0.372 dry/wet	0.473 dry/wet	0.479 dry/wet	
Derived Unit					
RRF	IZ	HZ	XZ	TZ	VZ
	ng/g	ng/g	ng/g	ng/g	ng/mg oil
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	9770	7130	11900	11200	17100
Total $nC_{11}-C_{19}$	1320	2710	2350	2410	12100
Total $nC_{20}-C_{29}$	5660	3480	6900	8050	4940
Total $nC_{30}-C_{36}$	2800	950	2630	771	0
Total $nC_{15}-C_{19}$	1120	2110	1820	1840	8580
Total $nC_{23}-C_{33}$	6780	3070	8060	7620	2160
Total isoprenoids	674	1410	1150	912	30500
Farnesane–Phytane	663	1290	1060	809	28400
Total nC_{11}–Phytane	10400	8540	13100	12100	47600
Total hopanes	1360	628	1240	689	1140
Total Naphthalene–Benzo(ghi)perylene*	1740	1000	768	1160	5790
Naphthalene–Fluorene*	578	309	233	267	5470
Phenanthrene–Chrysene	547	325	255	412	279
Higher PAH (Perylene excluded)	619	367	280	476	38
Total polyenes	975	1080	262	5730	0
Total alcohols	12500	4790	5630	3140	0
Total sterols	3850	1500	10500	3920	0
OEP at C_{17}	1.42	1.14	1.31	1.19	1.02
OEP at C_{25}	1.41	1.70	1.93	3.31	1.12
OEP at C_{27}	1.83	2.45	2.94	2.64	
OEP at C_{29}	2.11	3.14	4.28	3.17	
Pristane/Phytane	1.28	2.14	2.11	1.43	2.22

Derived Summary Concentrations

Total *n*–alkanes, $nC_{11}-C_{36}$
Total $nC_{11}-C_{19}$
Total $nC_{20}-C_{29}$
Total $nC_{30}-C_{36}$
Total $nC_{15}-C_{19}$
Total $nC_{23}-C_{33}$
Total isoprenoids
Farnesane–Phytane
Total nC_{11}–Phytane
Total hopanes
Total Naphthalene–Benzo(ghi)perylene*
Naphthalene–Fluorene*
Phenanthrene–Chrysene
Higher PAH (Perylene excluded)
Total polyenes
Total alcohols
Total sterols

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	Norman Wells	FP7	FP5	IP10	ID38 (I10)
Location/Depth	Oil	Stn 1–1, 1.5m	Stn 4–1, 2.6m	Stn 5–1, 3m	Stn 5–1, 3m
Date	Standard B7	11/4/87	10/4/87	7/4–9/4/87	7/4–9/4/87
Analytical Unit	4.320 mg oil	995 L	1860 L	205.01 L	205.01 L
Conversion Factor		2.69 mg/L	0.61 mg/L	0.21 mg/L	0.21 mg/L
Derived Unit		2.68 g	1.13 g	0.04 g	
RRF	VZ	JZ	HZ	JZ	KZ
	ng/mg oil	ng/L	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	<14	<0.061	<0.032	<0.29	1.5 b
Dodecane	153 a	0.049 a	0.029 a	<0.013 m	1.2 b
Tridecane	343 a	0.15 a	0.055 a	<0.018 m	0.75 b
Tetradecane	513 a	0.46 a	0.099 a	0.055 a	0.75 q
Pentadecane	580 a	0.6 a	0.23 a	0.12 a	<1.8
Hexadecane	489 a	0.32 a	0.21 a	0.2 a	<1.9
Heptadecane	373 a	0.64 a	0.82 a	0.26 a	<0.76
Octadecane	314 a	0.32 a	0.27 a	0.22 a	0.41
Nonadecane	261 b	0.41 b	0.34 b	0.15 b	0.37 b
Eicosane	256	0.34	0.3	<0.16	3.6 b
Heneicosane	202	0.46	0.61	<0.24	0.41
Docosane	191	0.44	0.29	<0.18	0.79
Tricosane	143	0.59	0.49	<0.20	0.98
Tetracosane	121	0.47	0.2	<0.22	1.3
Pentacosane	126	0.78	0.41	0.33 q	2
Hexacosane	82	0.74	0.15 q	<0.43	1.8
Heptacosane	60	1	0.46	<0.28	1.9
Octacosane	41 q	0.39	0.12 q	<0.56	1.6 q
Nonacosane	43 q	0.8	0.37	<0.78	1.6 q
Triacontane	<33	0.33 q	0.091 q	<0.70	1.3 q
Untriacontane	<31	0.63	0.26	<0.65	1.9
Dotriacontane	26 q	0.12 q c	0.064 q	<0.35	0.82 q
Tritriacontane	35 q	0.2	0.11	<0.23	0.59 q
Tetratriacontane	12 q	0.1 q	0.046 q	<0.18	0.36 b
Pentatriacontane	8.7 q	0.11	0.039	0.1 q	0.31 b
Hexatriacontane	7.8 a	0.076 a	0.018 a	0.09 a c	0.053 b c
2,6–Dimethyl Undecane	281 a	0.023 a	0.012 a	<0.015 m	0.65 a
Norfarnesane	332 a	0.037 a	0.017 a	<0.015 m	0.032 a
Farnesane	301 a	0.075 a	0.03 a	<0.016 m	0.42 b
2,6,10–Trimethyl Tridecane	345 a	0.039 a	0.066 a	0.036 a	0.26 b
Norpristane	507 b	0.18 b	0.13 b	0.17 b	<0.74
Pristane	501	0.29	1.1	0.72	<0.54
Phytane	313 b	0.22 b	0.19 b	0.15 b	0.28 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	3 a c	0.021 a	0.022 a	<0.033 m	<0.032 m
17ß(H)–Trisnorhopane (C_{27}ß)	<19 m	0.0088 a	0.017 a	<0.033 m	<0.032 m
17a(H),21ß(H)–Norhopane (C_{29}aß)	4.3 a	0.065 a	0.043 a	0.032 a	0.062 b
Hop–17(21)–ene	<165 m	<0.076 m	0.033 a	<0.18 m	<0.28 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	<19 m	0.011 a	0.0075 a	<0.033 m	0.014 a
17a(H),21ß(H)–Hopane (C_{30}aß)	16 a	0.13 a	0.088 a	0.071 a	0.24 b
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	3.9 a	0.054 a	0.064 a	0.035 a	0.035 a c
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	1.6 a c	0.05 a	0.059 a	0.031 a	0.034 a
Triterpene	<165 m	0.0091 a	0.037 a	0.073 a	<0.28 m
17ß(H),21ß(H)–Hopane (C_{30}ßß)	<25 m	0.03 a	0.028 a	<0.053 m	<0.043 m
Diploptene	<165 m	1.3 a	2.1 a	1.1 a	0.44 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<25 m	0.033 a	0.038 a c	0.015 a c	<0.043 m
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<25 m	0.018 a	0.031 a c	0.019 a	<0.043 m
Heptadecadiene	<5.2 m	0.012 a	0.048 a	<0.017 m	<0.0088 m
Heptadecene	<5.2 m	0.017 a	0.038 a	<0.017 m	0.042 a
Nonadecene	<5.2 m	0.015 a	0.11 a	0.038 a	0.014 a
F2 Fraction					
Naphthalene	29 b	0.12 b	0.052 b	<0.60 m	0.25 b
2–Methyl Naphthalene	34 a	0.12 a	0.065 a	<0.33 m	0.23 a
1–Methyl Naphthalene	37 a	0.1 a	0.048 a	<0.33 m	0.14 a
Dimethyl Naphthalene (N–C_2a)	25 a	0.056 a	0.022 a	<0.13 m	0.2 a
Dimethyl Naphthalene (N–C_2b)	46 a	0.12 a c	0.024 a	<0.13 m	0.1 a c
Dimethyl Naphthalene (N–C_2c)	21 a	0.08 a c	0.02 a	<0.13 m	0.16 a c
Acenaphthylene	1.5 a	<0.028 m	0.0013 a	<0.12 m	<0.025 m
Acenaphthene	0.84 a	<0.039 m	0.0034 a	<0.17 m	0.028 a
Trimethyl Naphthalene (N–C_3a)	83 a	0.04 a	0.024 a	<0.18 m	0.44 a

Sample	Norman Wells Oil	FP7	FP5	IP10	ID38 (I10)
Location/Depth		Stn 1–1, 1.5m	Stn 4–1, 2.6m	Stn 5–1, 3m	Stn 5–1, 3m
Date	Standard B7	11/4/87	10/4/87	7/4–9/4/87	7/4–9/4/87
Analytical Unit	4.320 mg oil	995 L	1860 L	205.01 L	205.01 L
Conversion Factor		2.69 mg/L	0.61 mg/L	0.21 mg/L	0.21 mg/L
Derived Unit		2.68 g	1.13 g	0.04 g	
RRF	VZ	JZ	HZ	JZ	KZ
	ng/mg oil	ng/L	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	112 a	0.23 a	0.018 a	<0.18 m	0.031 a
Fluorene	12 a	0.018 a	0.021 a	<0.16 m	0.061 a
Tetramethyl Naphthalene (N–C_4a)	42 a	0.0069 a	0.0022 a	<0.15 m	0.057 a
Tetramethyl Naphthalene (N–C_4b)	41 a	0.022 a	0.014 a	<0.15 m	0.025 a
Cadalene	<0.48 m	0.018 a	0.016 a	<0.14 m	0.15 a
Phenanthrene	32 a	0.1 a	0.073 a	<0.12 m	0.32 b
Anthracene	<0.32 m	0.018 a c	0.0027 a	<0.13 m	<0.034 m
3–Methyl Phenanthrene	41 a	0.15 a	0.063 a	<0.28 m	0.31 a
2–Methyl Phenanthrene	38 a	0.071 a	0.14 a	<0.28 m	0.47 a
9/4–Methyl Phenanthrene	55 a	0.11 a	0.095 a	<0.28 m	0.47 a
1–Methyl Phenanthrene	306 a	0.061 a	0.069 a	<0.28 m	0.35 a
Pimanthrene (1,7–dimethyl phenanthrene)	30 a	0.037 a	0.03 a	<0.14 m	0.015 a
Heneicosahexaene	<1.0 m	0.15 a	4.3 a	0.95 a	<0.050 m
Fluoranthene	<0.35 m	0.013 a	0.019 a	<0.12 m	1 b
Pyrene	2.9 a	0.024 a	0.026 a	<0.12 m	0.72 b
Simonellite	<1.1 m	0.051 a	0.05 a	<0.62 m	0.015 a
Trimethyl Phenanthrene (P/A–C_3a)	36 a	0.046 a	0.038 a	<0.31 m	0.093 a
Retene	<1.1 m	0.083 a	0.091 a	<0.62 m	0.31 a
Tricosapolyene	<2.0 m	<0.10 m	0.16 a	<0.72 m	0.053 a
Methyl Pyrene (F/P–C_1a)	5.2 a	0.037 a	0.02 a	<0.25 m	0.07 a
Methyl Pyrene (F/P–C_1b)	2 a	0.014 a	0.011 a	<0.25 m	0.046 a
Dimethyl Pyrene (F/P–C_2a)	1.6 a	0.0082 a	0.017 a	<0.22 m	0.064 a
Pentacosapolyene	<2.1 m	<0.11 m	0.076 a	<0.76 m	<0.052 m
Benz(a)anthracene	<0.57 m	0.0069 a c	0.0089 a	<0.28 m	0.32 b
Chrysene	9.4 a	0.048 a	0.048 a	<0.27 m	0.33 b
Heptacosapolyene	<2.3 m	<0.092 m	0.043 a	<1.2 m	<0.051 m
Benzo(b/j/k)fluoranthene	5.9 b	0.043 b	0.042 b	<0.40 m	0.46 b
Benzo(a)fluoranthene	<0.56 m	<0.019 m	<0.0066 m	<0.43 m	<0.032 m
Benzo(e)pyrene	<0.56 m	0.048 a	0.055 a	<0.45 m	0.13 b
Benzo(a)pyrene	<0.53 m	0.02 a c	0.016 a	<2.3 m	0.042 a
Perylene	<0.52 m	<0.053 m	<0.011 m	<2.2 m	<0.12 m
Squalene	<0.85 m	<3.5 e	<1.8 e	<0.93 m	<28
Dibenz(a,h)anthracene	<0.51 m	0.0098 a	0.0058 a	<0.84 m	0.046 a
Indeno(1,2,3–cd)pyrene	<0.45 m	0.0098 a	0.014 a	<0.85 m	0.13 a
Benzo(ghi)perylene	0.17 a	0.06 a	0.058 a	<1.1 m	0.089 a
F3 Fraction					
Tetradecanol	<8.2 m	0.21 a	3.1 a	103 a	0.48 b
Hexadecenol	<7.8 m	0.35 a	3.5 a	1.2 a	<0.054 m
Hexadecanol	<13	0.31	6	127	1 b
Octadecenol	<5.4 m	0.045 a	1.1 a	25 a	<0.037 m
Octadecanol	<156	0.86 q	<0.36	<3.3	0.41 b
Phytol	<3.2 m	13 b	65 b c	72 b	0.059 b
Eicosenol	<9.1 m	0.31 a	4.4 a	43 a	<0.044 m
Eicosanol	<9.2 m	1.3 b	0.29 b	2.3 b	<0.044 m
Docosenol	<9.2 m	0.058 b	5.8 b	52 b	<0.044 m
Docosanol	<9.2 m	4.7 b	6.7 b	3.2 b	<0.044 m
Tetracosenol	<7.3 m	0.072 a	<0.020 m	3.2 a	<0.035 m
Tetracosanol	<7.9 m	0.63 a	0.96 a	0.66 a	<0.038 m
Hexacosanol	<8.2 m	<0.22 m	0.17 a	<1.1 m	<0.039 m
24–Norcholesta–5,22E–dien–3ß–ol	<14 m	<0.25 m	10 b	30 b	3.5 b
Cholesta–5,22E–dien–3ß–ol	<41 m	1.5 a	4.5 a	15 a	1.1 a
Octacosanol	<9.1 m	<0.25 m	0.13 b	<1.2 m	<0.044 m
Cholest–5–en–3ß–ol	<71	1.7	1.5	17	<40
5a–Cholestan–3ß–ol	<7.7 m	0.36 b	0.26 b	1.7 b	0.2 a
Cholesta–5,24E–dien–3ß–ol	<11 m	<0.12 m	<0.030 m	<0.56 m	<0.049 m
24–Methylcholesta–5,22E–dien–3ß–ol	<15 m	1.2 a	2 a	18 a	0.87 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	<103 m	0.54 a	8.6 a	43 a	0.96 a
24–Methylcholest–5–en–3ß–ol	<12 m	0.41 a	0.29 a	1.6 a	<0.29 m
24–Ethylcholesta–5,22E–dien–3ß–ol	<28 m	0.74 a	0.078 a	0.68 a	0.073 a
Triacontanol	<9.1 m	<0.25 m	<0.024 m	<1.2 m	<0.044 m

Sample	Norman Wells Oil	FP7	FP5	IP10	ID38 (I10)
Location/Depth		Stn 1–1, 1.5m	Stn 4–1, 2.6m	Stn 5–1, 3m	Stn 5–1, 3m
Date	Standard B7	11/4/87	10/4/87	7/4–9/4/87	7/4–9/4/87
Analytical Unit	4.320 mg oil	995 L	1860 L	205.01 L	205.01 L
Conversion Factor		2.69 mg/L	0.61 mg/L	0.21 mg/L	0.21 mg/L
Derived Unit		2.68 g	1.13 g	0.04 g	
RRF	VZ	JZ	HZ	JZ	KZ
	ng/mg oil	ng/L	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	<17 m	2 b	0.59 b	3.3 b	1.1 a
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	<200 m	7.9 a	5.6 a	23 a	0.64 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	<63 m	0.91 a c	0.58 a	14 a	0.18 a
ß–Amyrin (Olean–12–en–3ß–ol)	<33 m	1.9 a	0.21 a	<2.7 m	<0.24 m
a–Amyrin (Urs–12–en–3ß–ol)	<28 m	2.4 a	0.27 a	0.81 a	<0.21 m
24–Ethylcholesta–3,5–dien–7–one	<18 m	0.23 a	0.29 a	<1.5 m	<0.14 m

Alkyl PAH Totals

Naphthalene C_0	29 b
Naphthalene C_1	71 a
Naphthalene C_2	123 a
Naphthalene C_3	655 a
Naphthalene C_4	280 a
Naphthalene C_5	32 a
Phenanthrene/Anthracene C_0	32 a <m
Phenanthrene/Anthracene C_1	440 a
Phenanthrene/Anthracene C_2	168 a
Phenanthrene/Anthracene C_3	183 a
Phenanthrene/Anthracene C_4	55 a
Phenanthrene/Anthracene C_5	17 a
Fluoranthene/Pyrene C_0	<3.3 m a
Fluoranthene/Pyrene C_1	17 a
Fluoranthene/Pyrene C_2	13 a
Fluoranthene/Pyrene C_3	23 a
Fluoranthene/Pyrene C_4	9.3 a
Fluoranthene/Pyrene C_5	<0.67 m

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	177.4 %	9.6 %	11.0 %	0.3 %	62.8 %
Tetracosane–D_{50} Area	84610	254900	365488	516474	2097790
Hexatriacontane–D_{74} / Tetracosane D_{50}	73.1 %	154.9 %	94.8 %	107.9 %	156.0 %
Fluoranthene–D_{10} Area	39673	91624	4924360	87880	0
Tetracosane–D_{50} / Fluoranthene–D_{10}	0.0 %	96.7 %	157.8 %	204.4 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	4.7 %	6.8 %	28.6 %	12.6 %	41.1 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	10.4 %	20.1 %	41.5 %	39.1 %	51.0 %
Acenaphthylene–D_8 / Pyrene–D_{10}	47.0 %	47.1 %	59.3 %	80.2 %	61.6 %
Acenaphthene–D_{10} / Pyrene–D_{10}	58.9 %	53.7 %	72.9 %	87.2 %	74.4 %
Anthracene–D_{10} / Pyrene–D_{10}	120.6 %	68.8 %	73.1 %	90.4 % c	60.8 %
Chrysene–D_{12} / Pyrene–D_{10}	87.6 %	110.9 %	91.6 %	60.2 %	97.1 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	99.4 %	138.9 %	116.6 %	42.7 %	68.6 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	108.5 %	43.7 %	60.7 %	7.7 %	19.9 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	139.2 %	162.8 %	122.7 %	27.8 %	58.5 %
Pyrene–D_{10} Area	1184680	492911	1311860	336023	3296990
Fluoranthene–D_{10} Area	0	20606	5097420	11182	0
Pyrene–D_{10} / Fluoranthene–D_{10}	0.0 %	102.9 %	126.1 %	129.3 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.5 %	0.0 %	0.0 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	1184680	25000	1739230	25481	3296990

Sample	Norman Wells Oil	FP7 Stn 1–1, 1.5m	FP5 Stn 4–1, 2.6m	IP10 Stn 5–1, 3m	ID38 (I10) Stn 5–1, 3m
Location/Depth					
Date	Standard B7	11/4/87	10/4/87	7/4–9/4/87	7/4–9/4/87
Analytical Unit	4.320 mg oil	995 L	1860 L	205.01 L	205.01 L
Conversion Factor		2.69 mg/L	0.61 mg/L	0.21 mg/L	0.21 mg/L
Derived Unit		2.68 g	1.13 g	0.04 g	
RRF	VZ	JZ	HZ	JZ	KZ
	ng/mg oil	ng/L	ng/L	ng/L	ng/L
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	4380	11	6.1	1.5	26
Total $nC_{11}-C_{19}$	3030	2.9	2.1	1	5
Total $nC_{20}-C_{29}$	1270	6	3.4	0.33	16
Total $nC_{30}-C_{36}$	90	1.6	0.63	0.19	5.3
Total $nC_{15}-C_{19}$	2020	2.3	1.9	0.95	0.78
Total $nC_{23}-C_{33}$	677	6.1	2.7	0.33	16
Total isoprenoids	2580	0.86	1.5	1.1	1.6
Farnesane–Phytane	1970	0.8	1.5	1.1	0.96
Total nC_{11}–Phytane	6960	12	7.6	2.6	28
Total hopanes	29	1.7	2.5	1.3	0.83
Total Naphthalene–Benzo(ghi)perylene*	164	0.76	0.56	0	4.3
Naphthalene–Fluorene*	114	0.36	0.19	0	0.71
Phenanthrene–Chrysene	44	0.21	0.18	0	2.7
Higher PAH (Perylene excluded)	6.1	0.19	0.19	0	0.9
Total polyenes	0	0.15	4.6	0.95	0.053
Total alcohols	0	22	97	433	1.9
Total sterols	0	17	34	167	8.6
OEP at C_{17}	0.96	1.89	2.86	1.09	
OEP at C_{25}	1.18	1.30	2.44		1.20
OEP at C_{27}	1.08	1.68	3.28		1.10
OEP at C_{29}		2.23	3.48		1.16
Pristane/Phytane	1.6	1.32	5.79	4.8	
Derived Summary Concentrations		ng/g	ng/g	ng/g	
Total *n*–alkanes, $nC_{11}-C_{36}$		3910	9970	7260	
Total $nC_{11}-C_{19}$		1100	3370	4790	
Total $nC_{20}-C_{29}$		2230	5570	1570	
Total $nC_{30}-C_{36}$		582	1030	905	
Total $nC_{15}-C_{19}$		851	3070	4520	
Total $nC_{23}-C_{33}$		2250	4470	1570	
Total isoprenoids		321	2530	5120	
Farnesane–Phytane		299	2490	5120	
Total nC_{11}–Phytane		4230	12500	12400	
Total hopanes		640	4150	6200	
Total Naphthalene–Benzo(ghi)perylene*		282	917	0	
Naphthalene–Fluorene*		133	313	0	
Phenanthrene–Chrysene		78	291	0	
Higher PAH (Perylene excluded)		71	313	0	
Total polyenes		56	7510	4520	
Total alcohols		8120	159000	2060000	
Total sterols		6420	55700	797000	

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	FP2	FP1	IP3	ID34 (I3)	FP13
Location/Depth	Stn 5–1, 10m	Stn 9–1, 10m	Stn 10–1, 120m	Stn 10–1, 120m	Stn 1–2, 1.3m
Date	5/4/87	4/4/87	30/3–1/4/87	30/3–1/4/87	5/5/87
Analytical Unit	1370 L	1348 L	159.40 L	159.40 L	217.8 L
Conversion Factor	0.38 mg/L	0.09 mg/L	0.09 mg/L	0.09 mg/L	2.79 mg/L
Derived Unit	0.52 g	0.12 g	0.01 g		0.61 g
RRF	OZ	LZ	JZ	JZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	<0.044	<0.045	<0.38	8.5 b	<0.28
Dodecane	0.05 a	<0.0038 m	0.0099 a	0.81 b	0.019 a
Tridecane	0.16 a	<0.0044 m	<0.026 m	0.2 b	0.072 a
Tetradecane	0.23 a	0.0067 a	0.019 a	<0.79	0.14 a
Pentadecane	0.36 a	0.014 a	0.031 a	<2.3	0.41 a
Hexadecane	0.4 a	0.017 a	0.064 a	<2.4	0.4 a
Heptadecane	7.1 a c	0.034 a	0.17 a	<0.98	1.5 a
Octadecane	0.43 a	0.022 a	0.044 a	0.25 q	0.78 a
Nonadecane	0.47 b	0.015 b	<0.055 e	0.22 b	1.1 b
Eicosane	0.36	<0.024	<0.21	0.067 b	1.2
Heneicosane	0.44	<0.036	<0.31	0.22 q	2
Docosane	0.36	<0.027	<0.23	0.48 q	1.6
Tricosane	0.41	<0.030	<0.25	1.1	2.3
Tetracosane	0.32	<0.033	<0.28	0.96 q	1.4
Pentacosane	0.5	0.034 q	<0.28	2	2.9
Hexacosane	0.3	<0.066	<0.56	2.8	1.3 q
Heptacosane	0.63	<0.043	<0.37	2.7	3.5
Octacosane	0.2 q	<0.086	<0.72	1.9 q	0.81 q
Nonacosane	0.55	<0.12	<1.00	2.9 q	2.4 q
Triacontane	0.16 q	<0.11	<0.90	1.8 q	0.67 q
Untriacontane	0.44	<0.099	<0.84	1.3 q	1.7 q
Dotriacontane	0.11 q	<0.053	<0.44	0.58 q	0.33 q
Tritriacontane	0.2	<0.034	<0.29	0.53 q	0.65 q
Tetratriacontane	0.076 q	<0.027	<0.23	0.56 b c	0.29 q
Pentatriacontane	0.21	0.027 q	0.18 q	0.23 b c	0.28
Hexatriacontane	0.062 a	0.018 a	<0.22 m	<1.7 m	0.24 a
2,6–Dimethyl Undecane	0.03 a	<0.0041 m	<0.022 m	0.31 a	0.015 a
Norfarnesane	0.048 a	<0.0041 m	<0.022 m	0.15 a	0.031 a
Farnesane	0.064 a	0.0021 a	<0.023 m	<0.093 e	0.07 a
2,6,10–Trimethyl Tridecane	0.15 a	0.0047 a	0.044 a	<0.043 e	0.034 a
Norpristane	0.24 b	0.0096 b	0.025 b	<0.95	0.45 b
Pristane	5.9 c	2.9	2.3	<0.69	1.8
Phytane	0.29 b	0.0088 b	0.027 b	<0.048 e	0.98 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	0.019 a	<0.018 m	<0.047 m	<0.36 m	0.1 a
17ß(H)–Trisnorhopane (C_{27}ß)	0.0099 a	<0.018 m	<0.047 m	<0.36 m	0.066 a
17a(H),21ß(H)–Norhopane (C_{29}aß)	0.042 a	<0.018 m	<0.047 m	<0.36 m	0.31 a
Hop–17(21)–ene	0.023 a	<0.063 m	<0.26 m	<2.0 m	<0.42 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	0.014 a	<0.018 m	<0.047 m	<0.36 m	0.094 a
17a(H),21ß(H)–Hopane (C_{30}aß)	0.11 a	<0.026 m	<0.076 m	<0.58 m	0.55 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.047 a	<0.026 m	<0.076 m	<0.58 m	0.29 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.047 a	<0.026 m	<0.076 m	<0.58 m	0.25 a
Triterpene	0.082 a	<0.063 m	<0.26 m	<2.0 m	0.24 a
17ß(H),21ß(H)–Hopane (C_{30}ßß)	0.034 a	<0.026 m	<0.076 m	<0.58 m	0.17 a
Diploptene	0.89 a	0.19 a	0.25 a	<2.0 m	5.5 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	0.039 a	<0.026 m	<0.076 m	<0.58 m	0.25 a
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	0.026 a	<0.026 m	<0.076 m	<0.58 m	0.22 a
Heptadecadiene	0.0042 a	<0.0045 m	<0.025 m	<0.19 m	0.04 a
Heptadecene	<0.0020 m	<0.0045 m	<0.025 m	<0.19 m	0.023 a
Nonadecene	0.019 a	0.0077 a	<0.029 m	<0.22 m	0.098 a
F2 Fraction					
Naphthalene	0.093 b	<1.2 m	0.016 b	0.023 b	0.44 b
2–Methyl Naphthalene	0.16 a	<0.20 m	0.035 a	<0.53 m	0.48 a
1–Methyl Naphthalene	0.13 a	<0.20 m	0.018 a	<0.53 m	0.36 a
Dimethyl Naphthalene (N–C_2a)	0.096 a c	<0.035 m	<0.050 m	<0.33 m	0.26 a
Dimethyl Naphthalene (N–C_2b)	0.098 a c	<0.035 m	<0.050 m	<0.33 m	0.57 a c
Dimethyl Naphthalene (N–C_2c)	0.065 a	<0.035 m	<0.050 m	<0.33 m	0.38 a c
Acenaphthylene	<0.012 m	<0.046 m	<0.046 m	<0.33 m	<0.25 m
Acenaphthene	<0.018 m	<0.054 m	<0.067 m	<0.45 m	<0.35 m
Trimethyl Naphthalene (N–C_3a)	0.049 a	<0.052 m	<0.071 m	<0.47 m	0.11 a

Sample	FP2	FP1	IP3	ID34 (I3)	FP13
Location/Depth	Stn 5−1, 10m	Stn 9−1, 10m	Stn 10−1, 120m	Stn 10−1, 120m	Stn 1−2, 1.3m
Date	5/4/87	4/4/87	30/3−1/4/87	30/3−1/4/87	5/5/87
Analytical Unit	1370 L	1348 L	159.40 L	159.40 L	217.8 L
Conversion Factor	0.38 mg/L	0.09 mg/L	0.09 mg/L	0.09 mg/L	2.79 mg/L
Derived Unit	0.52 g	0.12 g	0.01 g		0.61 g
RRF	OZ	LZ	JZ	JZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N−C_3b)	0.11 a	<0.052 m	<0.071 m	<0.47 m	0.18 a
Fluorene	0.017 a	<0.052 m	0.067 a	<0.42 m	0.094 a
Tetramethyl Naphthalene (N−C_4a)	0.014 a	<0.050 m	<0.059 m	<0.39 m	<0.30 m
Tetramethyl Naphthalene (N−C_4b)	0.026 a	<0.050 m	<0.059 m	<0.39 m	0.12 a
Cadalene	0.022 a	<0.050 m	<0.054 m	<0.36 m	0.08 a
Phenanthrene	0.14 a	0.027 a	0.15 a	0.13 b	0.49 a
Anthracene	<0.011 m	<0.019 m	<0.26 m	<0.38 m	<0.20 m
3−Methyl Phenanthrene	0.084 a	0.046 a	<0.57 m	<0.82 m	0.47 a
2−Methyl Phenanthrene	0.037 a	0.056 a c	<0.57 m	<0.82 m	0.48 a
9/4−Methyl Phenanthrene	0.059 a c	0.055 a	<0.57 m	<0.82 m	0.72 a
1−Methyl Phenanthrene	0.06 a	0.05 a	<0.57 m	<0.82 m	0.51 a
Pimanthrene (1,7−dimethyl phenanthrene)	0.038 a	0.013 a	<0.049 m	<0.33 m	0.19 a
Heneicosahexaene	5.5 a	33 a	0.69 a	<1.5 m	1.7 a
Fluoranthene	0.019 a	0.04 a c	<0.041 m	<0.28 m	0.089 a
Pyrene	0.046 a	0.04 a	<0.040 m	<0.27 m	0.15 a
Simonellite	0.049 a	<0.065 m	<0.21 m	<1.4 m	0.33 a c
Trimethyl Phenanthrene (P/A−C_3a)	<0.023 m	<0.029 m	<0.11 m	<0.72 m	0.24 a
Retene	0.12 a	<0.065 m	<0.21 m	<1.4 m	0.54 a
Tricosapolyene	21 a	2.1 a	0.098 a	<1.7 m	<0.57 m
Methyl Pyrene (F/P−C_1a)	0.049 a	0.0097 a	<0.086 m	<0.58 m	<0.20 m
Methyl Pyrene (F/P−C_1b)	0.024 a	<0.021 m	<0.086 m	<0.58 m	<0.20 m
Dimethyl Pyrene (F/P−C_2a)	0.034 a	<0.020 m	<0.075 m	<0.51 m	0.27 a
Pentacosapolyene	6.1 a	1.3 a	<0.26 m	1.6 a	<0.60 m
Benz(a)anthracene	0.014 a	0.032 a	<0.066 m	<0.32 m	0.04 a
Chrysene	0.074 a	0.039 a	<0.064 m	<0.32 m	0.31 a
Heptacosapolyene	4.4 a	0.7 a	<0.28 m	0.77 a	<0.53 m
Benzo(b/j/k)fluoranthene	0.059 b	0.049 b	0.058 b	<0.30 m	0.27 b
Benzo(a)fluoranthene	0.0056 a c	<0.024 m	<0.066 m	<0.33 m	<0.12 m
Benzo(e)pyrene	0.091 a	0.023 a	<0.068 m	<0.34 m	0.27 a c
Benzo(a)pyrene	0.027 a	0.078 a	<14 m	<1.8 m	0.13 a c
Perylene	<0.023 m	0.03 a	<13 m	<1.7 m	<0.33 m
Squalene	<2.5 e	<2.6 e	<22 e	<36	<16 e
Dibenz(a,h)anthracene	0.0097 a	0.014 a	<0.058 m	<0.60 m	<0.24 m
Indeno(1,2,3−cd)pyrene	0.005 a	0.02 a	<0.059 m	<0.61 m	0.068 a
Benzo(ghi)perylene	0.093 a	0.018 a	<0.074 m	<0.77 m	0.31 a
F3 Fraction					
Tetradecanol	380 a c	6.3 a	18 a	<2.3 m	3.5 a
Hexadecenol	0.46 a	1.7 a	2.2 a	<2.2 m	4.4 a
Hexadecanol	223 c	9.7	26	<1.9 m	16
Octadecenol	9.5 a	4 a	3.3 a	<1.5 m	3.3 a
Octadecanol	16 c	<0.50	<4.2	<1.8 m	15
Phytol	1.4 b	6.6 b	3.2 b	<1.0 m	393 b
Eicosenol	51 a	58 a	212 a	<5.1 m	132 a
Eicosanol	1.3 b	<0.15 m	<1.9 m	<5.2 m	<2.3 m
Docosenol	69 b	14 b	192 b	<5.2 m	47 b
Docosanol	1.8 b	<0.15 m	<1.9 m	<5.2 m	61 b
Tetracosenol	9.2 a	0.075 a	1.8 a	<4.1 m	<1.8 m
Tetracosanol	0.39 a	<0.13 m	<1.6 m	<4.4 m	<2.0 m
Hexacosanol	0.037 a	<0.13 m	<1.7 m	<4.6 m	<2.0 m
24−Norcholesta−5,22E−dien−3ß−ol	9.2 b	2.5 b	8.4 b	<5.2 m	0.71 b
Cholesta−5,22E−dien−3ß−ol	14 a	1.2 a	5.8 a	<15 m	4.8 a
Octacosanol	0.042 b	<0.15 m	<1.9 m	<5.1 m	<2.3 m
Cholest−5−en−3ß−ol	18 c	0.93	3.7 q	<51	15
5a−Cholestan−3ß−ol	1.7 b c	<0.33 m	<1.5 m	<4.2 m	2.6 b
Cholesta−5,24E−dien−3ß−ol	<0.012 m	<0.16 m	<0.90 m	<2.5 m	<1.1 m
24−Methylcholesta−5,22E−dien−3ß−ol	10 a	1.2 a	4 a	<3.3 m	7.3 a
24−Methylcholesta−5,24(28)−dien−3ß−ol	5.7 a	<1.5 m	3.4 a	<23 m	<9.9 m
24−Methylcholest−5−en−3ß−ol	0.58 a	<0.98 m	<2.9 m	<7.9 m	1.8 a
24−Ethylcholesta−5,22E−dien−3ß−ol	0.76 a	<0.39 m	<2.8 m	<7.7 m	2.5 a
Triacontanol	<0.011 m	<0.15 m	<1.9 m	<5.1 m	<2.3 m

Sample	FP2	FP1	IP3	ID34 (I3)	FP13
Location/Depth	Stn 5–1, 10m	Stn 9–1, 10m	Stn 10–1, 120m	Stn 10–1, 120m	Stn 1–2, 1.3m
Date	5/4/87	4/4/87	30/3–1/4/87	30/3–1/4/87	5/5/87
Analytical Unit	1370 L	1348 L	159.40 L	159.40 L	217.8 L
Conversion Factor	0.38 mg/L	0.09 mg/L	0.09 mg/L	0.09 mg/L	2.79 mg/L
Derived Unit	0.52 g	0.12 g	0.01 g		0.61 g
RRF	OZ	LZ	JZ	JZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	1.7 b	<1.3 m	<3.9 m	<11 m	6.8 b c
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	2.3 a	<2.8 m	<20 m	<55 m	8.9 a c
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	0.63 a	<0.89 m	<6.3 m	<17 m	<7.7 m
ß–Amyrin (Olean–12–en–3ß–ol)	0.25 a	<0.81 m	<4.3 m	<12 m	13 a
a–Amyrin (Urs–12–en–3ß–ol)	0.64 a	<0.69 m	<3.7 m	<10 m	16 a
24–Ethylcholesta–3,5–dien–7–one	0.4 a	<0.45 m	<2.4 m	<6.7 m	7.4 a

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	10.6 %	0.6 %	23.9 %	38.5 %	1.0 %
Tetracosane–D_{50} Area	659145	266262	465098	60896	209810
Hexatriacontane–D_{74} / Tetracosane D_{50}	185.8 %	113.3 %	153.5 %	306.8 %	131.5 %
Fluoranthene–D_{10} Area	130151	5455540	78938	0	49487
Tetracosane–D_{50} / Fluoranthene–D_{10}	176.1 %	103.8 %	204.9 %	0.0 %	147.4 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	13.5 %	0.4 %	53.9 %	49.8 %	4.1 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	32.4 %	4.1 %	54.3 %	56.5 %	13.2 %
Acenaphthylene–D_8 / Pyrene–D_{10}	55.1 %	14.2 %	68.7 %	65.8 %	29.4 %
Acenaphthene–D_{10} / Pyrene–D_{10}	60.4 %	19.1 %	76.1 %	77.4 %	34.1 %
Anthracene–D_{10} / Pyrene–D_{10}	74.7 %	42.9 %	15.0 %	70.6 %	46.2 %
Chrysene–D_{12} / Pyrene–D_{10}	114.7 %	89.0 %	87.7 %	121.5 %	109.2 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	129.4 %	99.9 %	96.5 %	131.1 %	117.8 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	51.9 %	26.3 %	0.4 %	22.6 %	40.5 % c
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	154.9 %	98.6 %	138.0 %	90.3 %	77.9 %
Pyrene–D_{10} Area	689266	576814	1258510	185654	398792
Fluoranthene–D_{10} Area	26392	4722080	49226	0	20750
Pyrene–D_{10} / Fluoranthene–D_{10}	112.4 %	59.8 %	110.0 %	0.0 %	82.7 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	10.6 %	0.0 %	0.0 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	79850	687004	20600	185654	12396

Sample	FP2	FP1	IP3	ID34 (I3)	FP13
Location/Depth	Stn 5–1, 10m	Stn 9–1, 10m	Stn 10–1, 120m	Stn 10–1, 120m	Stn 1–2, 1.3m
Date	5/4/87	4/4/87	30/3–1/4/87	30/3–1/4/87	5/5/87
Analytical Unit	1370 L	1348 L	159.40 L	159.40 L	217.8 L
Conversion Factor	0.38 mg/L	0.09 mg/L	0.09 mg/L	0:09 mg/L	2.79 mg/L
Derived Unit	0.52 g	0.12 g	0.01 g		0.61 g
RRF	OZ	LZ	JZ	JZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	15	0.19	0.52	30	28
Total $nC_{11}-C_{19}$	9.2	0.11	0.34	10	4.4
Total $nC_{20}-C_{29}$	4.1	0.034	0	15	19
Total $nC_{30}-C_{36}$	1.3	0.045	0.18	5	4.2
Total $nC_{15}-C_{19}$	8.8	0.1	0.31	0.47	4.2
Total $nC_{23}-C_{33}$	3.8	0.034	0	19	18
Total isoprenoids	6.7	2.9	2.4	0.46	3.4
Farnesane–Phytane	6.6	2.9	2.4	0	3.3
Total nC_{11}–Phytane	22	3.1	2.9	30	31
Total hopanes	1.3	0.19	0.25	0	7.8
Total Naphthalene–Benzo(ghi)perylene*	0.98	0.38	0.35	0.15	3.5
Naphthalene–Fluorene*	0.4	0	0.14	0.023	1.4
Phenanthrene–Chrysene	0.29	0.18	0.15	0.13	1.1
Higher PAH (Perylene excluded)	0.29	0.2	0.058	0	1
Total polyenes	37	37	0.79	2.4	1.7
Total alcohols	763	100	459	0	675
Total sterols	65	5.8	25	0	50
OEP at C_{17}	13.08	1.49			2.23
OEP at C_{25}	1.63			1.05	2.15
OEP at C_{27}	2.42			1.12	3.12
OEP at C_{29}	3.03			1.45	3.31
Pristane/Phytane	20	330	85		1.84
Derived Summary Concentrations	ng/g	ng/g	ng/g		ng/g
Total *n*–alkanes, $nC_{11}-C_{36}$	38200	2090	5750		10000
Total $nC_{11}-C_{19}$	24200	1210	3750		1580
Total $nC_{20}-C_{29}$	10700	378	0		6960
Total $nC_{30}-C_{36}$	3310	500	2000		1490
Total $nC_{15}-C_{19}$	23100	1130	3430		1500
Total $nC_{23}-C_{33}$	10100	378	0		6440
Total isoprenoids	17700	32500	26600		1210
Farnesane–Phytane	17500	32500	26600		1190
Total nC_{11}–Phytane	55900	34600	32400		11200
Total hopanes	3420	2110	2780		2800
Total Naphthalene–Benzo(ghi)perylene*	2590	4220	3820		1260
Naphthalene–Fluorene*	1050	0	1510		492
Phenanthrene–Chrysene	771	1980	1670		387
Higher PAH (Perylene excluded)	764	2240	644		376
Total polyenes	97400	412000	8760		609
Total alcohols	2010000	1120000	5090000		242000
Total sterols	170000	64800	281000		18100

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	FP17	M11	IP22	IP23	ID55 (I22)
Location/Depth	Stn 4–2, 1.9m	Stn 4–1/2, 10m	Stn 4–2, 11.4m	Stn 4–2, 11.4m	Stn 4–2, 11m
Date	7/5/87	9/4–6/5/87	6/5–7/5/87	6–7/5/87	6/5–7/5/87
Analytical Unit	1402 L	0.356 g	156.59 L	238.49 L	156.59 L
Conversion Factor	0.4 mg/L	5.57 Cups	2 mg/L	2 mg/L	2 mg/L
Derived Unit	0.56 g	1.04 m^2d	0.31 g	0.48 g	
RRF	HZ	LZ	JZ	HZ	SZ
	ng/L	ng/g	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	<0.043	<169	<0.38	<0.25	0.092 b
Dodecane	<0.012 m	110 a	<0.019 m	0.046 a	0.46 b
Tridecane	0.023 a	249 a	<0.026 m	0.11 a	0.35 b
Tetradecane	0.059 a	299 a	0.041 a	0.4 a	<0.80
Pentadecane	0.16 a	496 a	0.068 a	1 a	<2.3
Hexadecane	0.14 a	561 a	0.14 a	1.4 a	<2.5
Heptadecane	0.56 a	730 a	0.41 a	2.1 a	<0.99
Octadecane	0.19 a	609 a	0.47 a	1.8 a	0.36
Nonadecane	0.26 b	622 b	0.83 b	2 b	0.39 b
Eicosane	0.22	559	0.97	2.1	0.31 b
Heneicosane	0.55	699	1.3	2.3	0.3 q
Docosane	0.23	568	1.1	2	0.44 q
Tricosane	0.43	718	1.3	2.4	0.66
Tetracosane	0.17	505	1.1	1.6	1.1 q
Pentacosane	0.35	814	1.6	2.4	1 q
Hexacosane	0.15 q	358 q	0.9 q	1.4	1.1 q
Heptacosane	0.35	987	2	2.7	1.1 q
Octacosane	0.11 q	<325	<0.74	0.84 q	0.89 q
Nonacosane	0.31 q	881 q	1.6 q	2.3	<0.92
Triacontane	0.12 q	<402	<0.91	0.71 q	<0.86
Untriacontane	0.24 q	661 q	1.3 q	1.6 q	<0.73
Dotriacontane	0.057 q	<199	<0.45	0.33 q	<0.58
Tritriacontane	0.08 q	<130	0.52 q	0.64 q	<0.48
Tetratriacontane	0.036 q	<104	<0.24	0.29 q	<0.29 e
Pentatriacontane	0.039 q c	<49	0.39	0.27 c	0.033 b
Hexatriacontane	<0.055 m	<112 m	0.18 a	0.17 a c	<0.24 m
2,6–Dimethyl Undecane	<0.013 m	35 a	<0.022 m	0.014 a c	0.29 a
Norfarnesane	<0.013 m	41 a	<0.022 m	0.014 a c	0.71 a
Farnesane	0.013 a	77 a	<0.023 m	0.07 a	0.33 b
2,6,10–Trimethyl Tridecane	0.053 a	183 a	0.053 a	0.31 a	0.12 b
Norpristane	0.092 b	347 b	0.17 b	0.79 b	<0.96
Pristane	0.3	11500	0.56 q	2.2	<0.71
Phytane	0.14 b	412 b	0.47 b	1.2 b	0.068 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	0.018 a	81 a	0.062 a	0.29 a	<0.076 m
17ß(H)–Trisnorhopane (C_{27}ß)	0.0072 a	35 a	0.02 a	0.28 a	<0.076 m
17a(H),21ß(H)–Norhopane (C_{29}aß)	0.032 a	115 a	0.17 a	0.27 a	<0.076 m
Hop–17(21)–ene	<0.20 m	<415 m	<0.26 m	<0.38 m	<0.39 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	0.02 a	43 a	0.072 a	0.24 a	<0.076 m
17a(H),21ß(H)–Hopane (C_{30}aß)	0.092 a	208 a	0.4 a	0.78 a	<0.12 m
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.049 a	61 a	0.22 a	0.27 a	<0.12 m
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.059 a c	93 a	0.17 a	0.34 a	<0.12 m
Triterpene	<0.20 m	225 a	0.22 a	0.39 a	<0.39 m
17ß(H),21ß(H)–Hopane (C_{30}ßß)	<0.084 m	17 a	0.12 a	0.19 a	<0.12 m
Diploptene	2.2 a	923 a	1.7 a	1.8 a	<0.39 m
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	0.028 a	40 a	0.1 a	0.13 a	<0.12 m
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	0.023 a c	33 a	0.061 a	0.13 a	<0.12 m
Heptadecadiene	0.034 a	<29 m	<0.025 m	<0.027 m	0.019 a
Heptadecene	0.028 a	8.1 a	<0.025 m	0.014 a	<0.055 m
Nonadecene	0.071 a	47 a	<0.030 m	0.033 a	0.093 a
F2 Fraction					
Naphthalene	<4.0 m	159 b	<4.6 m	1.1 b	0.061 b
2–Methyl Naphthalene	<1.9 m	267 a	<2.8 m	0.79 a	0.32 a
1–Methyl Naphthalene	<1.9 m	290 a	<2.8 m	0.65 a	0.16 a
Dimethyl Naphthalene (N–C_2a)	<0.064 m	76 a	<0.72 m	0.17 a	0.47 a
Dimethyl Naphthalene (N–C_2b)	0.017 a	114 a	<0.72 m	0.23 a	0.25 a
Dimethyl Naphthalene (N–C_2c)	<0.064 m	111 a	<0.72 m	0.19 a	0.33 a
Acenaphthylene	<0.091 m	<209 m	<1.7 m	<0.075 m	<0.041 m
Acenaphthene	<0.097 m	<306 m	<0.97 m	<0.097 m	<0.073 m
Trimethyl Naphthalene (N–C_3a)	<0.094 m	78 a	0.35 a	0.22 a	0.35 a

Sample	FP17	M11	IP22	IP23	ID55 (I22)
Location/Depth	Stn 4–2, 1.9m	Stn 4–1/2, 10m	Stn 4–2, 11.4m	Stn 4–2, 11.4m	Stn 4–2, 11m
Date	7/5/87	9/4–6/5/87	6/5–7/5/87	6–7/5/87	6/5–7/5/87
Analytical Unit	1402 L	0.356 g	156.59 L	238.49 L	156.59 L
Conversion Factor	0.4 mg/L	5.57 Cups	2 mg/L	2 mg/L	2 mg/L
Derived Unit	0.56 g	1.04 m^2d	0.31 g	0.48 g	
RRF	HZ	LZ	JZ	HZ	SZ
	ng/L	ng/g	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	<0.094 m	<296 m	<1.0 m	0.21 a	0.059 a
Fluorene	<0.095 m	<299 m	0.28 a	0.19 a	0.12 a
Tetramethyl Naphthalene (N–C_4a)	<0.090 m	<284 m	<0.85 m	0.062 a	0.032 a
Tetramethyl Naphthalene (N–C_4b)	<0.090 m	<284 m	<0.85 m	0.17 a	0.046 a
Cadalene	0.026 a	<286 m	0.79 a	0.16 a	0.063 a
Phenanthrene	0.087 a	345 a	1.6 a	0.83 a	0.073 b
Anthracene	<0.052 m	69 a	<0.22 m	0.076 a	<0.037 m
3–Methyl Phenanthrene	0.088 a	336 a	1.4 a	0.74 a	0.049 a
2–Methyl Phenanthrene	0.15 a	541 a	1.6 a	0.98 a	0.064 a
9/4–Methyl Phenanthrene	0.14 a	544 a	1.9 a c	1 a	0.053 a
1–Methyl Phenanthrene	0.1 a	339 a	1.7 a	0.86 a	0.033 a
Pimanthrene (1,7–dimethyl phenanthrene)	0.024 a	204 a	0.22 a	0.25 a	0.093 a
Heneicosahexaene	5.2 a	494 a	0.62 a	1.5 a	<0.12 m
Fluoranthene	0.032 a	517 a	0.082 a	0.17 a	<0.053 e
Pyrene	0.037 a	478 a	0.18 a	0.25 a	0.014 b
Simonellite	<0.22 m	<1180 m	0.24 a c	0.35 a	0.025 a
Trimethyl Phenanthrene (P/A–C_3a)	<0.100 m	<531 m	0.23 a	0.32 a	0.065 a
Retene	0.055 a	<1180 m	0.42 a	0.6 a	0.12 a
Tricosapolyene	0.09 a	<1460 m	<0.24 m	0.13 a	0.56 a
Methyl Pyrene (F/P–C_1a)	<0.072 m	<386 m	0.15 a	0.14 a	<0.082 m
Methyl Pyrene (F/P–C_1b)	<0.072 m	<386 m	0.069 a	0.089 a	<0.082 m
Dimethyl Pyrene (F/P–C_2a)	<0.068 m	<360 m	0.076 a	0.12 a	<0.061 m
Pentacosapolyene	<0.29 m	<1530 m	<0.25 m	<0.52 m	1.2 a
Benz(a)anthracene	<0.071 m	210 a	0.083 a	0.089 a	<0.056 m
Chrysene	0.043 a	477 a	0.29 a	0.4 a	<0.051 m
Heptacosapolyene	<0.32 m	<2070 m	<0.27 m	<0.60 m	<0.23 m
Benzo(b/j/k)fluoranthene	0.021 b	666 b	0.26 b	0.35 b	<0.12 e
Benzo(a)fluoranthene	<0.11 m	<709 m	<0.067 m	<0.17 m	<0.066 m
Benzo(e)pyrene	0.031 a	207 a	0.4 a	0.47 a	<0.053 e
Benzo(a)pyrene	<0.34 m	<2810 m	<5.3 m	<0.47 m	<0.16 m
Perylene	<0.31 m	<2510 m	<4.9 m	<0.42 m	<0.15 m
Squalene	<2.5 e	<9670 e	<22 e	<14 e	<36
Dibenz(a,h)anthracene	<0.16 m	<1120 m	0.043 a	<0.22 m	<0.13 m
Indeno(1,2,3–cd)pyrene	<0.15 m	<1060 m	0.074 a	<0.20 m	<0.11 m
Benzo(ghi)perylene	<0.19 m	<1300 m	0.13 a	0.55 a	<0.15 m
F3 Fraction					
Tetradecanol	760 a	7920 a	12 a	6.2 a	<0.91 m
Hexadecenol	42 a	21900 a	2.7 a	1.9 a	<0.87 m
Hexadecanol	709	39200	26	12	0.95 b
Octadecenol	128 a	10500 a	6.6 a	5 a	<0.60 m
Octadecanol	15	<1900	<4.3	<2.8	0.047 b
Phytol	2050 b c	26700 b	0.78 b	27 b	<0.36 m
Eicosenol	78 a	125000 a	30 a	9.1 a	<1.0 m
Eicosanol	5.7 b	350 b c	0.94 b	1.6 b	<1.0 m
Docosenol	54 b	92200 b	4.1 b	1.1 b	<1.0 m
Docosanol	169 b	586 b c	4.9 b	5.7 b	<1.0 m
Tetracosenol	6.1 a	<390 m	<1.1 m	0.29 a	<0.81 m
Tetracosanol	28 a	512 a c	3.1 a	2.7 a	<0.87 m
Hexacosanol	4.5 a	511 a	2.2 a	2.4 a	<0.91 m
24–Norcholesta–5,22E–dien–3ß–ol	1250 b	7160 b	24 b	32 b	4 b
Cholesta–5,22E–dien–3ß–ol	554 a	6370 a	3.5 a	24 a	2.8 a
Octacosanol	3 b	15 b	1.8 b c	2.1 b	<1.0 m
Cholest–5–en–3ß–ol	91	5410	8.7	12	<52
5a–Cholestan–3ß–ol	25 b	<1110 m	1.4 b	2.1 b	0.28 a
Cholesta–5,24E–dien–3ß–ol	<3.1 m	<541 m	<0.64 m	<0.32 m	<1.3 m
24–Methylcholesta–5,22E–dien–3ß–ol	350 a	5720 a	6.9 a	16 a	1 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	1340 a	4240 a	18 a	40 a	7.4 a
24–Methylcholest–5–en–3ß–ol	40 a	<3260 m	0.74 a	3.5 a	0.31 a c
24–Ethylcholesta–5,22E–dien–3ß–ol	65 a	<1300 m	3 a	7.9 a	0.61 a
Triacontanol	<2.5 m	<486 m	<1.3 m	<0.26 m	<1.0 m

Sample	FP17	M11	IP22	IP23	ID55 (I22)
Location/Depth	Stn 4–2, 1.9m	Stn 4–1/2, 10m	Stn 4–2, 11.4m	Stn 4–2, 11.4m	Stn 4–2, 11m
Date	7/5/87	9/4–6/5/87	6/5–7/5/87	6–7/5/87	6/5–7/5/87
Analytical Unit	1402 L	0.356 g	156.59 L	238.49 L	156.59 L
Conversion Factor	0.4 mg/L	5.57 Cups	2 mg/L	2 mg/L	2 mg/L
Derived Unit	0.56 g	1.04 m^2d	0.31 g	0.48 g	
RRF	HZ	LZ	JZ	HZ	SZ
	ng/L	ng/g	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	104 b	<4430 m	8.5 b	23 b	1.2 a
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	1580 a	<9370 m	20 a	58 a	11 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	1490 a	<2960 m	<4.5 m	18 a	3.6 a
ß–Amyrin (Olean–12–en–3ß–ol)	54 a	<2690 m	4.5 a	12 a	<3.7 m
a–Amyrin (Urs–12–en–3ß–ol)	53 a	<2320 m	9.6 a	21 a	<3.2 m
24–Ethylcholesta–3,5–dien–7–one	35 a	<1500 m	1.5 a	6 a	<2.0 m

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	1.6 %	23.1 %	0.0 %	1.9 %	18.3 %
Tetracosane–D_{50} Area	79088	76768	465214	252280	211798
Hexatriacontane–D_{74} / Tetracosane D_{50}	98.3 %	54.2 %	159.4 %	106.6 %	95.4 %
Fluoranthene–D_{10} Area	3939160	4593200	80776	5068630	0
Tetracosane–D_{50} / Fluoranthene–D_{10}	42.7 %	71.1 %	200.3 %	105.8 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	0.4 % <c	21.9 %	0.5 % <c	5.2 %	52.6 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	1.4 %	38.0 %	1.5 % <c	22.4 %	77.2 %
Acenaphthylene–D_8 / Pyrene–D_{10}	24.1 %	56.3 %	1.8 %	52.9 %	101.6 %
Acenaphthene–D_{10} / Pyrene–D_{10}	36.0 %	61.0 %	5.0 %	65.2 %	85.0 %
Anthracene–D_{10} / Pyrene–D_{10}	52.7 %	76.3 %	17.0 %	55.3 %	116.8 %
Chrysene–D_{12} / Pyrene–D_{10}	87.5 %	70.8 %	89.1 %	83.1 %	99.2 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	76.3 %	61.6 %	89.8 %	85.2 %	93.4 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	23.3 %	15.2 %	1.1 %	30.9 %	40.7 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	67.3 %	51.7 %	141.0 %	90.2 %	61.0 %
Pyrene–D_{10} Area	162330	60038	1348300	528890	589015
Fluoranthene–D_{10} Area	1868740	1478540	59382	3894820	0
Pyrene–D_{10} / Fluoranthene–D_{10}	42.6 %	39.8 %	97.7 %	66.5 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.0 %	0.0 %	0.6 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	44464	1561580	29392	2527420	589015

Sample	FP17	M11	IP22	IP23	ID55 (I22)
Location/Depth	Stn 4–2, 1.9m	Stn 4–1/2, 10m	Stn 4–2, 11.4m	Stn 4–2, 11.4m	Stn 4–2, 11m
Date	7/5/87	9/4–6/5/87	6/5–7/5/87	6–7/5/87	6/5–7/5/87
Analytical Unit	1402 L	0.356 g	156.59 L	238.49 L	156.59 L
Conversion Factor	0.4 mg/L	5.57 Cups	2 mg/L	2 mg/L	2 mg/L
Derived Unit	0.56 g	1.04 m^2d	0.31 g	0.48 g	
RRF	HZ	LZ	JZ	HZ	SZ
	ng/L	ng/g	ng/L	ng/L	ng/L
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	4.8	10400	16	33	8.6
Total $nC_{11}-C_{19}$	1.4	3680	2	8.9	1.7
Total $nC_{20}-C_{29}$	2.9	6090	12	20	6.9
Total $nC_{30}-C_{36}$	0.57	661	2.4	4	0.033
Total $nC_{15}-C_{19}$	1.3	3020	1.9	8.3	0.75
Total $nC_{23}-C_{33}$	2.4	4920	10	17	5.9
Total isoprenoids	0.6	12600	1.3	4.6	1.5
Farnesane–Phytane	0.6	12500	1.3	4.6	0.52
Total nC_{11}–Phytane	5.4	23000	17	38	10
Total hopanes	2.5	1650	3.1	4.7	0
Total Naphthalene–Benzo(ghi)perylene*	0.25	3690	3.4	5.9	0.75
Naphthalene–Fluorene*	0	716	0.28	2.7	0.66
Phenanthrene–Chrysene	0.2	2100	2.2	1.8	0.087
Higher PAH (Perylene excluded)	0.052	873	0.91	1.4	0
Total polyenes	5.3	494	0.62	1.6	1.8
Total alcohols	4050	325000	95	77	1
Total sterols	6890	28900	95	237	32
OEP at C_{17}	2.86	1.17	1.38	1.22	
OEP at C_{25}	2.25	1.91	1.61	1.63	0.88
OEP at C_{27}	2.65			2.33	
OEP at C_{29}	2.66			2.92	
Pristane/Phytane	2.14	28	1.19	1.83	
Derived Summary Concentrations	ng/g	ng/m^2d	ng/g	ng/g	
Total *n*–alkanes, $nC_{11}-C_{36}$	12100	3570	8110	16500	
Total $nC_{11}-C_{19}$	3480	1260	980	4430	
Total $nC_{20}-C_{29}$	7180	2080	5940	10000	
Total $nC_{30}-C_{36}$	1430	226	1200	2010	
Total $nC_{15}-C_{19}$	3280	1030	959	4150	
Total $nC_{23}-C_{33}$	5920	1680	5160	8460	
Total isoprenoids	1500	4310	627	2300	
Farnesane–Phytane	1500	4280	627	2290	
Total nC_{11}–Phytane	13600	7880	8740	18800	
Total hopanes	6320	564	1550	2360	
Total Naphthalene–Benzo(ghi)perylene*	628	1260	1710	2960	
Naphthalene–Fluorene*	0	245	140	1370	
Phenanthrene–Chrysene	498	717	1120	908	
Higher PAH (Perylene excluded)	130	299	454	685	
Total polyenes	13200	169	310	815	
Total alcohols	1E+07	111000	47600	38500	
Total sterols	2E+07	9880	47400	118000	

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	ID56 (I23)	FP15	IP16	IP19	ID49 (I16)
Location/Depth	Stn 4–2, 11.4m	Stn 5–2, 1.6m	Stn 5–2, 15m	Stn 5–2, 15m	Stn 5–2, 15m
Date	6–7/5/87	5/5/87	29/4–5/5/87	29/4–5/5/87	29/4–5/5/87
Analytical Unit	238.49 L	955.2 L	283.33 L	273.45 L	283.33 L
Conversion Factor	2 mg/L	0.15 mg/L	0.34 mg/L	0.34 mg/L	0.34 mg/L
Derived Unit		0.14 g	0.10 g	0.09 g	
RRF	HZ	TZ	IZ	JZ	KZ
	ng/L	ng/L	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	5.9 b	<0.063	<0.21	<0.22	2.6 b
Dodecane	1.4 b	0.01 a	<0.0069 m	<0.012 m	1 b
Tridecane	0.6 b	0.029 a	0.016 a	0.024 a	0.2 b
Tetradecane	<0.53	0.05 a	0.055 a	0.046 a	<0.44
Pentadecane	<1.5	0.094 a	0.15 a	0.14 a	<1.3
Hexadecane	<1.6	0.094 a	0.22 a	0.23 a	<1.4
Heptadecane	<0.65	0.18 a	0.34 a	0.37 a	<0.55
Octadecane	0.61	0.13 a	0.31 a	0.32 a	0.71
Nonadecane	0.54 b	0.16 b	0.32 b	0.29 b	0.52 b
Eicosane	0.72 b	0.14	0.34 q	0.28 q	0.58 b
Heneicosane	1.3	0.19	0.37 q	0.32 q	0.84
Docosane	1.6	0.14	0.3 q	0.26 q	0.86
Tricosane	2.2	0.19	0.34 q	0.31 q	1.1
Tetracosane	2.2	0.12 q	0.25 q	0.24 q	0.9
Pentacosane	3.2	0.23	0.39 q	0.39 q	2.1
Hexacosane	2.2	0.11 q	<0.31	<0.33	1.9
Heptacosane	4.5	0.23	0.46 q	0.48 q	2
Octacosane	2.3	<0.12	<0.41	<0.42	1.6
Nonacosane	5.1	0.2 q	<0.56	<0.58	1.6 q
Triacontane	2.4	<0.15	<0.50	<0.52	1.6
Untriacontane	4.7	0.2 q	<0.47	<0.49	1.9
Dotriacontane	1.3	<0.074	<0.25	<0.26	1.4
Tritriacontane	1.7	0.065 q	0.25 q	<0.17	0.79 q
Teiratriacontane	0.081 b	<0.039	0.18 q	<0.14	0.5 b
Pentatriacontane	0.045 b	0.046 q	0.19 q	0.13 q	0.5 b
Hexatriacontane	<0.69 m	0.027 a	0.096 a	0.042 a	0.3 b
2,6–Dimethyl Undecane	0.55 a c	<0.0036 m	<0.0075 m	<0.014 m	0.77 a
Norfarnesane	0.14 a c	0.011 a	<0.0075 m	<0.014 m	<0.034 m
Farnesane	0.062 b	0.026 a	0.021 a	0.015 a	<0.032 m
2,6,10–Trimethyl Tridecane	0.13 b	0.049 a	0.069 a	0.056 a	0.21 b
Norpristane	<0.63	0.079 b	0.26 b	0.17 b	<0.53
Pristane	<0.46	7.9	3.9	0.59	<0.39
Phytane	0.23 b	0.091 b	0.26 b	0.21 b	0.32 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	<0.73 m	0.018 a	0.026 a	0.046 a	<0.093 m
17ß(H)–Trisnorhopane (C_{27}ß)	<0.73 m	0.011 a	0.0046 a c	0.012 a	0.021 a
17a(H),21ß(H)–Norhopane (C_{29}aß)	<0.73 m	0.02 a	0.059 a	0.057 a	0.038 b
Hop–17(21)–ene	<2.6 m	<0.056 m	<0.12 m	<0.17 m	<0.82 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	<0.73 m	<0.016 m	0.021 a	0.014 a	0.073 a
17a(H),21ß(H)–Hopane (C_{30}aß)	0.43 b c	0.047 a	0.1 a	0.12 a	0.16 b
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	<1.1 m	0.016 a	0.029 a	0.069 a	0.11 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	<1.1 m	0.019 a	0.026 a	0.034 a	0.1 a c
Triterpene	<2.6 m	0.06 a	0.033 a	0.13 a	<0.82 m
17ß(H),21ß(H)–Hopane (C_{30}ßß)	<1.1 m	0.012 a	0.052 a	0.025 a	<0.13 m
Diploptene	4.5 a	0.64 a	0.4 a	1.3 a	0.4 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<1.1 m	<0.023 m	0.011 a	0.013 a	<0.13 m
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<1.1 m	<0.023 m	0.013 a c	0.018 a	<0.13 m
Heptadecadiene	<0.18 m	0.014 a	0.026 a	<0.016 m	<0.026 m
Heptadecene	<0.18 m	0.014 a	0.02 a	0.0046 a c	0.13 a
Nonadecene	<0.22 m	0.015 a	0.02 a	0.0041 a	0.038 a
F2 Fraction					
Naphthalene	<0.13 e	0.032 b	0.11 b	0.15 b	0.44 b
2–Methyl Naphthalene	<0.57 m	0.043 a	0.16 a	0.18 a	0.31 a
1–Methyl Naphthalene	<0.57 m	0.032 a	0.15 a	0.13 a	0.2 a
Dimethyl Naphthalene (N–C_2a)	<0.35 m	0.016 a	0.055 a	0.045 a	0.21 a
Dimethyl Naphthalene (N–C_2b)	<0.35 m	0.018 a	0.075 a	0.063 a	0.11 a
Dimethyl Naphthalene (N–C_2c)	<0.35 m	0.013 a	0.061 a	0.044 a	0.18 a
Acenaphthylene	<0.37 m	<0.0075 m	<0.022 m	<0.040 m	<0.070 m
Acenaphthene	<0.52 m	<0.010 m	0.021 a	<0.054 m	<0.092 m
Trimethyl Naphthalene (N–C_3a)	<0.51 m	0.015 a	0.055 a	0.052 a	0.16 a

Sample	ID56 (I23)	FP15	IP16	IP19	ID49 (I16)
Location/Depth	Stn 4–2, 11.4m	Stn 5–2, 1.6m	Stn 5–2, 15m	Stn 5–2, 15m	Stn 5–2, 15m
Date	6–7/5/87	5/5/87	29/4–5/5/87	29/4–5/5/87	29/4–5/5/87
Analytical Unit	238.49 L	955.2 L	283.33 L	273.45 L	283.33 L
Conversion Factor	2 mg/L	0.15 mg/L	0.34 mg/L	0.34 mg/L	0.34 mg/L
Derived Unit		0.14 g	0.10 g	0.09 g	
RRF	HZ	TZ	IZ	JZ	KZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	<0.51 m	0.0097 a	0.048 a	0.053 a	0.021 a
Fluorene	<0.51 m	0.0089 a	0.047 a	0.024 a	0.056 a
Tetramethyl Naphthalene (N–C_4a)	<0.49 m	0.003 a	0.0077 a	<0.048 m	0.038 a
Tetramethyl Naphthalene (N–C_4b)	<0.49 m	0.007 a	0.03 a	<0.048 m	<0.057 m
Cadalene	<0.49 m	0.0074 a	0.031 a	0.018 a	0.066 a
Phenanthrene	0.26 b	0.046 a	1.5 a	0.27 a	0.29 b
Anthracene	<0.38 m	0.006 a	0.2 a	<0.083 m	<0.20 m
3–Methyl Phenanthrene	0.26 a	0.035 a c	0.57 a	0.17 a	0.24 a
2–Methyl Phenanthrene	0.39 a	0.041 a c	0.97 a	0.27 a	0.49 a
9/4–Methyl Phenanthrene	0.44 a	0.041 a	0.76 a	0.33 a	0.69 a
1–Methyl Phenanthrene	0.25 a	0.035 a	0.7 a	0.28 a	0.56 a
Pimanthrene (1,7–dimethyl phenanthrene)	<0.41 m	0.011 a	0.052 a	0.044 a	0.042 a
Heneicosahexaene	<2.4 m	1 a	1 a	0.61 a	<0.30 m
Fluoranthene	0.48 b c	0.0073 a	0.081 a c	0.027 a	0.065 b
Pyrene	0.25 b	0.016 a	0.12 a	0.038 a	0.19 b
Simonellite	<2.1 m	0.0097 a	0.053 a	0.045 a	0.033 a
Trimethyl Phenanthrene (P/A–C_3a)	<0.93 m	0.0027 a	0.072 a	0.033 a	0.054 a
Retene	<2.1 m	0.025 a	0.18 a	0.09 a	0.15 a
Tricosapolyene	<2.6 m	3.9 a	0.072 a	0.053 a	<0.13 m
Methyl Pyrene (F/P–C_1a)	<0.67 m	0.0084 a	0.056 a	0.022 a	0.033 a
Methyl Pyrene (F/P–C_1b)	<0.67 m	0.0033 a	0.025 a	<0.055 m	<0.11 m
Dimethyl Pyrene (F/P–C_2a)	<0.63 m	0.015 a	0.089 a	<0.048 m	0.065 a
Pentacosapolyene	<2.7 m	0.37 a	<0.094 m	<0.17 m	0.55 a
Benz(a)anthracene	<0.64 m	0.0052 a c	0.064 a	<0.045 m	0.0014 b
Chrysene	<0.67 m	0.018 a c	0.11 a	0.067 a	0.029 b
Heptacosapolyene	<2.9 m	0.17 a	<0.075 m	<0.20 m	0.084 a
Benzo(b/j/k)fluoranthene	<0.71 m	0.023 b	0.15 b	0.043 b	0.024 b
Benzo(a)fluoranthene	<0.77 m	<0.0073 m	0.011 a	<0.045 m	<0.049 m
Benzo(e)pyrene	<0.83 m	0.027 a	0.13 a	0.073 a	0.024 b
Benzo(a)pyrene	<4.1 m	<0.013 m	0.65 a	<0.20 m	0.049 a
Perylene	<3.7 m	<0.012 m	0.4 a	<0.19 m	<0.33 m
Squalene	<24	<3.6 e	<12 e	<13 e	<20
Dibenz(a,h)anthracene	<1.3 m	0.0062 a	0.02 a	<0.045 m	0.044 a
Indeno(1,2,3–cd)pyrene	<1.2 m	0.0096 a	0.038 a	<0.046 m	0.019 a
Benzo(ghi)perylene	<1.5 m	0.017 a	0.071 a	0.097 a	0.045 a
F3 Fraction					
Tetradecanol	1.5 b	480 a c	2.9 a	4.9 a	<0.15 m
Hexadecenol	<4.0 m	8.4 a	1.4 a	0.47 a	<0.15 m
Hexadecanol	4.7 b	388 c	5.3	5.7	<0.12 m
Octadecenol	<2.8 m	36 a c	5.9 a	0.92 a	<0.10 m
Octadecanol	3.4 b	14	<2.4	<2.5	0.48 b
Phytol	4.4 b	44 b	19 b	25 b	0.29 b
Eicosenol	<3.2 m	46 a	58 a	55 a	<0.12 m
Eicosanol	<3.2 m	23 b	0.85 b	2.3 b	<0.12 m
Docosenol	<3.2 m	44 b	4.8 b	9.1 b	<0.12 m
Docosanol	<3.2 m	23 b	2.3 b	2.4 b	<0.12 m
Tetracosenol	<2.6 m	28 a	0.53 a	0.44 a	<0.095 m
Tetracosanol	<2.8 m	20 a c	0.87 a	0.87 a	<0.10 m
Hexacosanol	<2.9 m	<0.94 m	0.6 a	0.36 a	<0.11 m
24–Norcholesta–5,22E–dien–3ß–ol	14 b	24 b	41 b	20 b	3.9 b
Cholesta–5,22E–dien–3ß–ol	7.3 a	47 a	26 a	3.7 a	1.1 a
Octacosanol	<3.2 m	<1.0 m	0.37 b	0.072 b	<0.12 m
Cholest–5–en–3ß–ol	<34	23	9.9	5.9	<29
5a–Cholestan–3ß–ol	<4.9 m	0.74 b	1.3 b	1.1 b	0.17 a
Cholesta–5,24E–dien–3ß–ol	<3.9 m	<1.3 m	<0.16 m	<0.23 m	<0.13 m
24–Methylcholesta–5,22E–dien–3ß–ol	<5.3 m	44 a	19 a	10 a	2.6 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	22 a	105 a	63 a	26 a	2.3 a
24–Methylcholest–5–en–3ß–ol	3.2 a	0.98 a	1.6 a	1.1 a	<0.79 m
24–Ethylcholesta–5,22E–dien–3ß–ol	9.4 a	0.34 a	3.9 a	2.4 a	0.76 a
Triacontanol	<3.2 m	<1.0 m	<0.13 m	<0.47 m	<0.12 m

Sample	ID56 (I23)	FP15	IP16	IP19	ID49 (I16)
Location/Depth	Stn 4–2, 11.4m	Stn 5–2, 1.6m	Stn 5–2, 15m	Stn 5–2, 15m	Stn 5–2, 15m
Date	6–7/5/87	5/5/87	29/4–5/5/87	29/4–5/5/87	29/4–5/5/87
Analytical Unit	238.49 L	955.2 L	283.33 L	273.45 L	283.33 L
Conversion Factor	2 mg/L	0.15 mg/L	0.34 mg/L	0.34 mg/L	0.34 mg/L
Derived Unit		0.14 g	0.10 g	0.09 g	
RRF	HZ	TZ	IZ	JZ	KZ
	ng/L	ng/L	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	17 a	2.6 b	7.7 b	3.8 b	0.63 a
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	35 a	60 a	42 a	27 a	1.6 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	28 a	13 a	12 a	10 a	0.93 a
ß–Amyrin (Olean–12–en–3ß–ol)	12 a	0.76 a c	1.7 a	1 a	<0.65 m
a–Amyrin (Urs–12–en–3ß–ol)	16 a	1.4 a	3.9 a	2.2 a	0.14 a
24–Ethylcholesta–3,5–dien–7–one	4 a	1.2 a	1.7 a	0.7 a	0.17 a

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	46.5 %	10.2 %	0.6 %	0.1 %	28.9 %
Tetracosane–D_{50} Area	37008	421316	691118	415978	517604
Hexatriacontane–D_{74} / Tetracosane D_{50}	66.1 %	97.1 %	86.0 %	143.1 %	151.8 %
Fluoranthene–D_{10} Area	4009980	4907820	5977850	111731	0
Tetracosane–D_{50} / Fluoranthene–D_{10}	19.6 %	182.6 %	245.9 %	129.5 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	56.5 %	14.0 %	24.2 %	6.4 %	47.1 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	44.3 %	23.0 %	53.7 %	25.0 %	52.0 %
Acenaphthylene–D_8 / Pyrene–D_{10}	54.7 %	33.6 %	64.6 %	50.7 %	59.0 %
Acenaphthene–D_{10} / Pyrene–D_{10}	62.1 %	38.8 %	91.3 %	60.3 %	69.0 %
Anthracene–D_{10} / Pyrene–D_{10}	66.7 %	43.9 %	15.7 %	30.4 %	27.4 %
Chrysene–D_{12} / Pyrene–D_{10}	89.7 %	101.7 %	119.9 %	82.1 %	127.9 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	99.6 %	128.5 %	114.6 %	89.5 %	120.9 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	18.0 %	70.2 %	4.8 %	19.7 %	19.6 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	78.4 %	149.1 %	129.3 %	113.7 %	72.9 %
Pyrene–D_{10} Area	102656	2071950	870023	1140040	884370
Fluoranthene–D_{10} Area	2762470	5112740	3027460	50116	0
Pyrene–D_{10} / Fluoranthene–D_{10}	18.2 %	198.5 %	140.8 %	97.9 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.3 %	0.0 %	1.0 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	206177	426436	2090820	47184	884370

Sample	ID56 (I23)	FP15	IP16	IP19	ID49 (I16)
Location/Depth	Stn 4–2, 11.4m	Stn 5–2, 1.6m	Stn 5–2, 15m	Stn 5–2, 15m	Stn 5–2, 15m
Date	6–7/5/87	5/5/87	29/4–5/5/87	29/4–5/5/87	29/4–5/5/87
Analytical Unit	238.49 L	955.2 L	283.33 L	273.45 L	283.33 L
Conversion Factor	2 mg/L	0.15 mg/L	0.34 mg/L	0.34 mg/L	0.34 mg/L
Derived Unit		0.14 g	0.10 g	0.09 g	
RRF	HZ	TZ	IZ	JZ	KZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Summary Concentrations					
Total n–alkanes, nC_{11}–C_{36}	45	2.6	4.6	3.9	26
Total nC_{11}–C_{19}	9.1	0.75	1.4	1.4	5
Total nC_{20}–C_{29}	25	1.6	2.5	2.3	13
Total nC_{30}–C_{36}	10	0.34	0.72	0.17	7
Total nC_{15}–C_{19}	1.2	0.66	1.3	1.4	1.2
Total nC_{23}–C_{33}	32	1.3	1.7	1.4	17
Total isoprenoids	1.1	8.2	4.5	1	1.3
Farnesane–Phytane	0.42	8.1	4.5	1	0.53
Total nC_{11}–Phytane	46	11	9.1	4.9	27
Total hopanes	4.9	0.78	0.74	1.7	0.9
Total Naphthalene–Benzo(ghi)perylene*	0.99	0.3	3.7	1.1	1.8
Naphthalene–Fluorene*	0	0.12	0.49	0.48	1
Phenanthrene–Chrysene	0.99	0.099	2.1	0.4	0.58
Higher PAH (Perylene excluded)	0	0.083	1.1	0.21	0.21
Total polyenes	0	5.4	1.1	0.66	0.63
Total alcohols	14	1150	103	108	0.77
Total sterols	136	321	227	111	14
OEP at C_{17}		1.49	1.18	1.20	
OEP at C_{25}	1.47	1.96			1.40
OEP at C_{27}	1.96				1.12
OEP at C_{29}	2.12				1.05
Pristane/Phytane		87	15	2.81	

Derived Summary Concentrations	ng/g	ng/g	ng/g
Total n–alkanes, nC_{11}–C_{36}	17600	13500	11400
Total nC_{11}–C_{19}	4980	4150	4180
Total nC_{20}–C_{29}	10300	7210	6710
Total nC_{30}–C_{36}	2250	2110	506
Total nC_{15}–C_{19}	4390	3940	3970
Total nC_{23}–C_{33}	8970	4970	4180
Total isoprenoids	54400	13300	3060
Farnesane–Phytane	54300	13300	3060
Total nC_{11}–Phytane	72000	26800	14500
Total hopanes	5220	2180	5020
Total Naphthalene–Benzo(ghi)perylene*	1980	10700	3230
Naphthalene–Fluorene*	773	1440	1420
Phenanthrene–Chrysene	657	6100	1180
Higher PAH (Perylene excluded)	552	3150	626
Total polyenes	36300	3150	1950
Total alcohols	7700000	302000	316000
Total sterols	2140000	669000	326000

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	ID52 (I19)	FP11	M9	IP17	IP18
Location/Depth	Stn 5–2, 15m	Stn 5–2, 16m	Stn 5–1/2, 20m	Stn 5–2, 27m	Stn 5–2, 27m
Date	29/4–5/5/87	28/4/87	7/4–29/4/87	29/4–5/5/87	29/4–5/5/87
Analytical Unit	273.45 L	1358 L	0.235 g	383.51 L	288.12 L
Conversion Factor	0.34 mg/L	0.34 mg/L	5.62 Cups	0.64 mg/L	0.64 mg/L
Derived Unit		0.46 g	0.858 m^2d	0.25 g	0.18 g
RRF	SZ	HZ	JZ	IZ	JZ
	ng/L	ng/L	ng/g	ng/L	ng/L
F1 Fraction					
Undecane	0.22 b	<0.044	<256	<0.16	<0.21
Dodecane	0.72 b	0.06 a	6.4 a	0.39 a	0.21 a
Tridecane	0.61 b	0.15 a	44 a	0.83 a	0.43 a
Tetradecane	0.7 q	0.23 a	194 a	1.2 a	0.57 a
Pentadecane	<1.3	0.37 a	499 a	1.6 a	0.96 a
Hexadecane	<1.4	0.35 a	713 a	1.5 a	1.2 a
Heptadecane	1.3 q	0.44 a	126000 a c	1.6 a	1.7 a
Octadecane	1.2	0.34 a	890 a	1.3 a	1.5 a
Nonadecane	0.84 b	0.35 b	716 b	1.4 b	1.7 b
Eicosane	0.57 b	0.32	710	1.3	1.4
Heneicosane	0.57	0.38	729	1.2	1.7
Docosane	0.82	0.29	651	0.95	1.4
Tricosane	1.2	0.33	735	1.1	1.7
Tetracosane	1.6	0.2	588 q	0.74	1.4
Pentacosane	2.1	0.32	911	1	2.1
Hexacosane	2.3	0.16 q	496 q	0.5 q	1.3
Heptacosane	2.7	0.35	983	1.1	2.7
Octacosane	3.6	0.12 q	<492	0.44 q	0.89 q
Nonacosane	2	0.3 q	683 q	1 q	2.3
Triacontane	1.5 q	0.11 q	<609	0.41 q	0.71 q
Untriacontane	1.1 q	0.25 q	625 q	0.79 q	1.9
Dotriacontane	0.6 q	0.076 q	<302	0.23 q	0.44 q
Tritriacontane	<0.28	0.098 q	281 q	0.38 q	0.88
Tetratriacontane	0.13 b	0.043 q	323 q	0.22 q	0.4 q
Pentatriacontane	0.21 b	0.053	257	0.33	0.82
Hexatriacontane	<0.098 m	<0.036 m	199 a	0.11 a	0.24 a
2,6–Dimethyl Undecane	0.55 a	0.024 a c	<23 m	0.2 a	0.1 a
Norfarnesane	0.32 a	0.036 a	<23 m	0.25 a	0.12 a
Farnesane	0.6 b	0.066 a	57 a	0.29 a	0.13 a
2,6,10–Trimethyl Tridecane	0.44 b	0.14 a	37 a	0.65 a	0.35 a
Norpristane	<0.55	0.22 b	552 b	0.82 b	0.67 b
Pristane	0.42 q	5.4	83700 c	3.5	1.7
Phytane	0.41 b	0.25 b	586 b	0.91 b	0.92 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	0.0031 b	0.028 a	41 a	0.06 a	0.077 a
17ß(H)–Trisnorhopane (C_{27}ß)	<0.031 m	0.017 a	19 a	0.043 a	0.046 a
17a(H),21ß(H)–Norhopane (C_{29}aß)	0.017 b	0.04 a	91 a	0.14 a	0.26 a
Hop–17(21)–ene	<0.16 m	0.035 a	<271 m	<0.097 m	0.068 a
17ß(H),21a(H)–Normoretane (C_{29}ßa)	<0.031 m	0.0048 a	53 a	0.039 a	0.068 a
17a(H),21ß(H)–Hopane (C_{30}aß)	0.05 b	0.1 a	221 a	0.29 a	0.58 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	<0.047 m	0.053 a	121 a	0.087 a	0.24 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	<0.047 m	0.043 a	110 a	0.09 a	0.22 a
Triterpene	<0.16 m	0.096 a	<271 m	0.11 a	0.45 a
17ß(H),21ß(H)–Hopane (C_{30}ßß)	<0.047 m	0.015 a c	50 a	0.067 a c	0.17 a
Diploptene	0.12 a	0.91 a	671 a	0.55 a	2.3 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.047 m	0.02 a	49 a	0.056 a	0.14 a
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.047 m	0.0076 a c	49 a	0.058 a	0.11 a
Heptadecadiene	<0.022 m	0.0012 a	<26 m	0.0089 a	0.0045 a
Heptadecene	0.071 a	0.0052 a	<26 m	0.014 a	0.0069 a
Nonadecene	0.067 a	0.012 a	16 a	0.013 a	0.025 a
F2 Fraction					
Naphthalene	1 b	0.11 b	<313 m	0.37 b	0.44 b
2–Methyl Naphthalene	0.52 a	0.13 a	<308 m	0.53 a	0.61 a
1–Methyl Naphthalene	0.28 a	0.1 a	<308 m	0.4 a	0.5 a
Dimethyl Naphthalene (N–C_2a)	0.32 a	0.045 a	54 a	0.2 a	0.19 a
Dimethyl Naphthalene (N–C_2b)	0.3 a	0.047 a	109 a	0.26 a	0.26 a
Dimethyl Naphthalene (N–C_2c)	0.14 a	0.05 a	50 a	0.19 a	0.18 a
Acenaphthylene	<0.012 m	<0.042 m	<166 m	0.0037 a	<0.026 m
Acenaphthene	0.03 a	<0.058 m	<184 m	0.03 a	0.023 a
Trimethyl Naphthalene (N–C_3a)	0.22 a	0.035 a	120 a	0.18 a	0.17 a

Sample	ID52 (I19)	FP11	M9	IP17	IP18
Location/Depth	Stn 5–2, 15m	Stn 5–2, 16m	Stn 5–1/2, 20m	Stn 5–2, 27m	Stn 5–2, 27m
Date	29/4–5/5/87	28/4/87	7/4–29/4/87	29/4–5/5/87	29/4–5/5/87
Analytical Unit	273.45 L	1358 L	0.235 g	383.51 L	288.12 L
Conversion Factor	0.34 mg/L	0.34 mg/L	5.62 Cups	0.64 mg/L	0.64 mg/L
Derived Unit		0.46 g	0.858 m^2d	0.25 g	0.18 g
RRF	SZ	HZ	JZ	IZ	JZ
	ng/L	ng/L	ng/g	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	0.024 a	0.028 a	79 a	0.14 a	0.18 a
Fluorene	0.089 a	0.02 a	41 a	0.14 a	0.13 a
Tetramethyl Naphthalene (N–C_4a)	<0.018 m	<0.053 m	29 a	0.038 a	0.062 a
Tetramethyl Naphthalene (N–C_4b)	0.024 a	0.017 a	92 a	0.12 a	0.13 a
Cadalene	0.081 a	0.018 a	61 a	0.097 a	0.13 a
Phenanthrene	0.39 b	0.14 a	411 a	0.84 a	0.53 a
Anthracene	<0.018 m	0.017 a	20 a	0.032 a	0.023 a
3–Methyl Phenanthrene	0.084 a	0.16 a	279 a	0.44 a	0.36 a
2–Methyl Phenanthrene	0.12 a	0.21 a c	317 a	0.58 a	0.45 a
9/4–Methyl Phenanthrene	0.13 a	0.19 a	388 a	0.57 a	0.55 a
1–Methyl Phenanthrene	0.039 a	0.14 a	284 a	0.44 a	0.46 a
Pimanthrene (1,7–dimethyl phenanthrene)	0.02 a	0.054 a	102 a	0.18 a	0.19 a
Heneicosahexaene	0.18 a	0.4 a	9850 a	0.75 a	1.2 a
Fluoranthene	0.023 b	0.084 a	192 a	0.19 a c	0.095 a
Pyrene	0.056 b	0.092 a	189 a	0.27 a	0.16 a
Simonellite	0.044 a	<0.28 m	88 a	0.22 a	0.24 a
Trimethyl Phenanthrene (P/A–C_3a)	<0.027 m	0.035 a	86 a	0.2 a	0.24 a
Retene	0.2 a	0.082 a	211 a	0.52 a	0.5 a
Tricosapolyene	<0.077 m	1.2 a	407 a	0.19 a	0.19 a
Methyl Pyrene (F/P–C_1a)	<0.028 m	<0.090 m	95 a	0.15 a	0.16 a
Methyl Pyrene (F/P–C_1b)	<0.028 m	<0.090 m	40 a	0.1 a	0.091 a
Dimethyl Pyrene (F/P–C_2a)	<0.021 m	<0.084 m	19 a	0.18 a	0.11 a c
Pentacosapolyene	0.53 a	0.15 a	594 a	0.24 a	<0.14 m
Benz(a)anthracene	<0.021 m	0.026 a	91 a	0.089 a	0.065 a
Chrysene	0.023 b	0.1 a	175 a	0.34 a	0.32 a
Heptacosapolyene	<0.085 m	<0.43 m	<366 m	0.02 a	<0.16 m
Benzo(b/j/k)fluoranthene	0.003 b	0.065 b	200 b	0.36 b	0.24 b
Benzo(a)fluoranthene	<0.027 m	<0.15 m	<87 m	0.033 a	0.013 a
Benzo(e)pyrene	<0.028 m	0.091 a	193 a	0.34 a	0.4 a
Benzo(a)pyrene	<0.053 m	<0.49 m	<607 m	0.64 a	0.13 a
Perylene	<0.051 m	<0.44 m	<565 m	0.49 a	0.022 a
Squalene	<21	<2.5 e	<14600 e	<9.0 e	<12 e
Dibenz(a,h)anthracene	<0.047 m	<0.24 m	<109 m	0.017 a	0.062 a
Indeno(1,2,3–cd)pyrene	<0.041 m	<0.23 m	44 a	0.03 a	0.094 a
Benzo(ghi)perylene	<0.055 m	<0.28 m	178 a	0.1 a	0.55 a
F3 Fraction					
Tetradecanol	<0.31 m	33 a	371000 a	2.7 a	3.4 a
Hexadecenol	<0.30 m	4.6 a	194000 a	1.9 a	2.4 a
Hexadecanol	<0.25 m	38	613000 c	5.8	5.9
Octadecenol	<0.20 m	10 a	114000 a	0.81 a	0.76 a
Octadecanol	<0.23 m	<0.50	23400	<1.8	<2.3
Phytol	<0.12 m	3.1 b	112000 b	18 b	56 b
Eicosenol	<0.34 m	47 a	2430000 a	1.8 a	5.1 a
Eicosanol	<0.35 m	0.044 b	13000 b	3.1 b	4.6 b
Docosenol	<0.35 m	23 b	5630000 b c	3.2 b	5.7 b
Docosanol	<0.35 m	0.26 b	6290 b	6.6 b	12 b
Tetracosenol	<0.28 m	0.33 a	77500 a	0.58 a	0.81 a
Tetracosanol	<0.30 m	0.09 a	2100 a	3.3 a	4.4 a
Hexacosanol	<0.31 m	0.15 a	1310 a	2.7 a	3.1 a
24–Norcholesta–5,22E–dien–3ß–ol	4.7 b	3.5 b	72800 b	35 b	30 b
Cholesta–5,22E–dien–3ß–ol	2 a	3.2 a	33500 a	28 a	19 a
Octacosanol	<0.35 m	<0.082 m	<914 m	2.2 b	<0.87 m
Cholest–5–en–3ß–ol	<30	1.9	129000	13	12
5a–Cholestan–3ß–ol	0.18 a	0.17 b	3840 b	2 b	3.1 b
Cholesta–5,24E–dien–3ß–ol	<0.43 m	<0.10 m	<441 m	<0.058 m	<0.42 m
24–Methylcholesta–5,22E–dien–3ß–ol	1.7 a	2.9 a	99900 a	22 a	28 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	10 a	5.3 a	112000 a	42 a	45 a
24–Methylcholest–5–en–3ß–ol	0.11 a	0.16 a	3870 a	2.2 a	3.9 a
24–Ethylcholesta–5,22E–dien–3ß–ol	0.98 a	<0.26 m	1610 a	5 a	7.3 a
Triacontanol	<0.35 m	<0.082 m	<914 m	0.13 a	<0.87 m

Sample	ID52 (I19)	FP11	M9	IP17	IP18
Location/Depth	Stn 5–2, 15m	Stn 5–2, 16m	Stn 5–1/2, 20m	Stn 5–2, 27m	Stn 5–2, 27m
Date	29/4–5/5/87	28/4/87	7/4–29/4/87	29/4–5/5/87	29/4–5/5/87
Analytical Unit	273.45 L	1358 L	0.235 g	383.51 L	288.12 L
Conversion Factor	0.34 mg/L	0.34 mg/L	5.62 Cups	0.64 mg/L	0.64 mg/L
Derived Unit		0.46 g	0.858 m^2d	0.25 g	0.18 g
RRF	SZ	HZ	JZ	IZ	JZ
	ng/L	ng/L	ng/g	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	0.72 a	0.73 b	4100 b	13 b	17 b
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	3.6 a	5 a	31900 a	58 a	95 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	0.51 a	2.1 a	7920 a	6.3 a	36 a
ß–Amyrin (Olean–12–en–3ß–ol)	<1.3 m	0.34 a	2560 a	3.8 a	6.4 a
a–Amyrin (Urs–12–en–3ß–ol)	<1.1 m	0.76 a	4500 a	7.4 a c	12 a
24–Ethylcholesta–3,5–dien–7–one	<0.70 m	0.38 a	<1190 m	2.2 a c	3.7 a

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	20.5 %	22.0 %	0.0 %	39.7 %	13.6 %
Tetracosane–D_{50} Area	300931	125570	150584	610571	646245
Hexatriacontane–D_{74} / Tetracosane D_{50}	121.8 %	67.8 %	89.7 %	94.4 %	212.2 %
Fluoranthene–D_{10} Area	0	5011580	47036	5517340	147065
Tetracosane–D_{50} / Fluoranthene–D_{10}	0.0 %	53.3 %	222.6 %	235.3 %	152.8 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	50.8 %	22.3 %	11.6 % <c	66.8 %	42.7 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	94.3 %	41.5 %	20.2 % <c	87.0 %	44.8 %
Acenaphthylene–D_8 / Pyrene–D_{10}	114.9 %	64.4 %	26.9 %	89.2 %	66.0 %
Acenaphthene–D_{10} / Pyrene–D_{10}	95.7 %	75.3 %	38.9 %	107.4 %	67.2 %
Anthracene–D_{10} / Pyrene–D_{10}	80.8 %	62.5 %	49.5 %	70.6 %	69.6 %
Chrysene–D_{12} / Pyrene–D_{10}	91.0 %	78.6 %	95.8 %	103.0 %	85.1 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	77.1 %	67.0 %	102.5 %	101.8 %	104.0 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	41.8 %	20.1 %	14.2 %	9.5 %	63.8 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	57.3 %	55.0 %	103.5 %	348.8 % <c	132.7 %
Pyrene–D_{10} Area	984716	135410	303817	873097	1315320
Fluoranthene–D_{10} Area	0	1550170	22404	2964490	51316
Pyrene–D_{10} / Fluoranthene–D_{10}	0.0 %	42.8 %	116.7 %	144.3 %	110.3 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.0 %	0.0 %	27.4 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	984716	1403280	28422	4358530	24299

Sample	ID52 (I19)	FP11	M9	IP17	IP18
Location/Depth	Stn 5–2, 15m	Stn 5–2, 16m	Stn 5–1/2, 20m	Stn 5–2, 27m	Stn 5–2, 27m
Date	29/4–5/5/87	28/4/87	7/4–29/4/87	29/4–5/5/87	29/4–5/5/87
Analytical Unit	273.45 L	1358 L	0.235 g	383.51 L	288.12 L
Conversion Factor	0.34 mg/L	0.34 mg/L	5.62 Cups	0.64 mg/L	0.64 mg/L
Derived Unit		0.46 g	0.858 m^2d	0.25 g	0.18 g
RRF	SZ	HZ	JZ	IZ	JZ
	ng/L	ng/L	ng/g	ng/L	ng/L
Summary Concentrations					
Total n–alkanes, nC_{11}–C_{36}	27	5.7	137000	22	31
Total nC_{11}–C_{19}	5.6	2.3	129000	9.8	8.3
Total nC_{20}–C_{29}	17	2.8	6490	9.3	17
Total nC_{30}–C_{36}	3.5	0.63	1690	2.5	5.4
Total nC_{15}–C_{19}	3.3	1.9	129000	7.4	7.1
Total nC_{23}–C_{33}	19	2.3	5300	7.7	16
Total isoprenoids	2.7	6.1	84900	6.6	4
Farnesane–Phytane	1.9	6.1	84900	6.2	3.8
Total nC_{11}–Phytane	30	12	222000	29	35
Total hopanes	0.19	1.3	1480	1.5	4.3
Total Naphthalene–Benzo(ghi)perylene*	2.4	0.98	1740	4.8	4.4
Naphthalene–Fluorene*	1.9	0.36	41	1.5	1.7
Phenanthrene–Chrysene	0.49	0.46	1080	1.8	1.2
Higher PAH (Perylene excluded)	0.003	0.16	615	1.5	1.5
Total polyenes	0.71	1.8	10900	1.2	1.4
Total alcohols	0	160	9590000	53	104
Total sterols	25	25	500000	227	296
OEP at C_{17}		1.22	118.09	1.13	1.19
OEP at C_{25}	1.06	1.81	1.66	1.65	1.57
OEP at C_{27}	0.86	2.43		2.29	2.35
OEP at C_{29}	0.77	2.61		2.32	2.88
Pristane/Phytane	1.02	22	143	3.85	1.85
Derived Summary Concentrations		ng/g	ng/m^2d	ng/g	ng/g
Total n–alkanes, nC_{11}–C_{36}		16700	37600	33800	47700
Total nC_{11}–C_{19}		6740	35300	15300	12900
Total nC_{20}–C_{29}		8150	1780	14600	26400
Total nC_{30}–C_{36}		1850	461	3860	8420
Total nC_{15}–C_{19}		5440	35300	11600	11000
Total nC_{23}–C_{33}		6810	1450	12000	25500
Total isoprenoids		18000	23200	10300	6230
Farnesane–Phytane		17900	23200	9640	5890
Total nC_{11}–Phytane		34700	60800	44100	53900
Total hopanes		3750	404	2310	6690
Total Naphthalene–Benzo(ghi)perylene*		2870	474	7430	6850
Naphthalene–Fluorene*		1060	11	2300	2660
Phenanthrene–Chrysene		1350	295	2750	1860
Higher PAH (Perylene excluded)		459	168	2380	2330
Total polyenes		5150	2970	1880	2170
Total alcohols		469000	2620000	82500	163000
Total sterols		73400	137000	354000	463000

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	ID50 (I17)	ID51 (I18)	IP13	ID59 (I13)	IP12
Location/Depth	Stn 5–2, 27m	Stn 5–2, 27m	Stn 9–2, 9m	Stn 9–2, 9m	Stn 9–2, 19m
Date	29/4–5/5/87	29/4–5/5/87	23–25/4/87	23/4–25/4/87	23/4–25/4/87
Analytical Unit	383.51 L	288.12 L	120.53 L	120.53 L	397.96 L
Conversion Factor	0.64 mg/L	0.64 mg/L	0.04 mg/L	0.04 mg/L	0.04 mg/L
Derived Unit			0.005 g		0.02 g
RRF	SZ	KZ	IZ	KZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	0.51 b	0.52 b	<0.50	0.11 b	<0.15
Dodecane	0.67 b	0.52 b	<0.015 m	1.3 b	<0.0073 m
Tridecane	0.72 b	0.37 b	<0.018 m	0.94 b	<0.0099 m
Tetradecane	0.75 q	0.44 q	<0.016 m	1.5 q	0.014 a
Pentadecane	<0.95	<1.3	0.03 a	<3.0	0.023 a
Hexadecane	<1.0	<1.3	0.053 a	<3.2	0.048 a
Heptadecane	0.46 q	<0.54	0.075 a	<1.3	0.062 a
Octadecane	0.19	0.17	0.057 a	1	0.064 a
Nonadecane	0.32 b	0.038 b	<0.073 e	0.74 b	0.025 b
Eicosane	0.36 b	0.17 b	<0.27	0.95 b	<0.083
Heneicosane	0.49	0.26	<0.40	1	<0.12
Docosane	0.63	0.37	<0.30	1.3	<0.091
Tricosane	1.1	0.58	<0.33	2.5	<0.10
Tetracosane	1.1	0.99	<0.37	2.9	<0.11
Pentacosane	1.6	0.77 q	<0.37	3.8	<0.11
Hexacosane	1.8	0.67 q	<0.74	3.7	<0.22
Heptacosane	1.8	0.97 q	<0.48	3.8	<0.15
Octacosane	2.4	0.84 q	<0.96	3.8	<0.29
Nonacosane	1.9	0.96 q	<1.3	3.5 q	<0.40
Triacontane	1.9	1.3 q	<1.2	3 q	<0.36
Untriacontane	1.7	1.7	<1.1	3 q	<0.34
Dotriacontane	1.1	1.2	<0.59	1.8 q	<0.18 c
Tritriacontane	0.78	0.87 q	<0.38	1.6 q	<0.12 c
Tetratriacontane	0.51 b	0.49 b	<0.31	0.97 b	<0.093 c
Pentatriacontane	0.37 b	0.49 b	<0.14 c	0.91 b	<0.044 c
Hexatriacontane	0.15 b	0.32 b	0.038 a c	0.52 b	<0.085 m
2,6–Dimethyl Undecane	0.33 a	0.29 a	<0.016 m	0.32 a	<0.0084 m
Norfarnesane	0.41 a	0.15 a	<0.016 m	0.5 a	<0.0084 m
Farnesane	0.67 b	0.46 b	<0.017 m	1.1 b	0.014 a
2,6,10–Trimethyl Tridecane	0.061 b	0.18 b	<0.016 m	1.1 b	0.02 a
Norpristane	<0.39	<0.52	0.013 b	<1.3	0.04 b
Pristane	<0.29	<0.38	2.8	<0.92	1
Phytane	0.19 b	0.054 b	<0.067 e	0.32 b	0.032 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	<0.027 m	<0.086 m	<0.071 m	0.025 b	<0.018 m
17ß(H)–Trisnorhopane (C_{27}ß)	<0.027 m	<0.086 m	<0.071 m	0.018 a c	<0.018 m
17a(H),21ß(H)–Norhopane (C_{29}aß)	0.00006 b	0.013 b	<0.071 m	0.022 b	<0.018 m
Hop–17(21)–ene	<0.14 m	<0.77 m	<0.25 m	<0.54 m	<0.100 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	<0.027 m	<0.086 m	<0.071 m	<0.060 m	<0.018 m
17a(H),21ß(H)–Hopane (C_{30}aß)	0.0027 b	0.037 b c	<0.10 m	0.2 b	<0.029 m
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	<0.041 m	<0.12 m	<0.10 m	0.043 a	<0.029 m
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	<0.041 m	<0.12 m	<0.10 m	0.042 a	<0.029 m
Triterpene	<0.14 m	<0.77 m	<0.25 m	<0.54 m	<0.100 m
17ß(H),21ß(H)–Hopane (C_{30}ßß)	<0.041 m	<0.12 m	<0.10 m	<0.083 m	<0.029 m
Diploptene	0.018 a	0.34 a	0.16 a	0.37 a c	0.41 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.041 m	<0.12 m	<0.10 m	<0.083 m	<0.029 m
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.041 m	<0.12 m	<0.10 m	<0.083 m	<0.029 m
Heptadecadiene	0.059 a	<0.024 m	0.014 a	<0.017 m	<0.0095 m
Heptadecene	0.018 a	<0.024 m	<0.018 m	<0.017 m	<0.0095 m
Nonadecene	0.033 a	0.087 a	0.16 a	<0.017 m	0.032 a
F2 Fraction					
Naphthalene	0.59 b	6.4 b	<0.53 m	0.31 b	<0.57 m
2–Methyl Naphthalene	0.44 a	6.5 a	<0.15 m	0.37 a	<0.14 m
1–Methyl Naphthalene	0.29 a	4.5 a	<0.15 m	0.19 a	<0.14 m
Dimethyl Naphthalene (N–C_2a)	0.27 a	4.4 a	0.012 a	0.54 a	<0.033 m
Dimethyl Naphthalene (N–C_2b)	0.26 a	1.6 a	0.013 a	0.25 a	<0.033 m
Dimethyl Naphthalene (N–C_2c)	0.13 a	3.7 a	0.015 a	0.3 a	0.0062 a
Acenaphthylene	<0.011 m	<1.2 m	<0.029 m	<0.045 m	<0.031 m
Acenaphthene	0.05 a	<1.8 m	<0.052 m	0.018 a	<0.045 m
Trimethyl Naphthalene (N–C_3a)	0.26 a	3.2 a	0.027 a	0.33 a	<0.048 m

Sample	ID50 (I17)	ID51 (I18)	IP13	ID59 (I13)	IP12
Location/Depth	**Stn 5–2, 27m**	**Stn 5–2, 27m**	**Stn 9–2, 9m**	**Stn 9–2, 9m**	**Stn 9–2, 19m**
Date	29/4–5/5/87	29/4–5/5/87	23–25/4/87	23/4–25/4/87	23/4–25/4/87
Analytical Unit	383.51 L	288.12 L	120.53 L	120.53 L	397.96 L
Conversion Factor	0.64 mg/L	0.64 mg/L	0.04 mg/L	0.04 mg/L	0.04 mg/L
Derived Unit			0.005 g		0.02 g
RRF	SZ	KZ	IZ	KZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	0.031 a	0.84 a	<0.048 m	0.056 a	<0.048 m
Fluorene	0.09 a	0.62 a	0.069 a	0.091 a	0.02 a
Tetramethyl Naphthalene (N–C_4a)	<0.016 m	0.96 a	<0.044 m	0.027 a	<0.040 m
Tetramethyl Naphthalene (N–C_4b)	0.03 a	0.76 a	<0.044 m	0.011 a	<0.040 m
Cadalene	0.094 a	1 a	<0.037 m	0.12 a	<0.036 m
Phenanthrene	0.39 b	0.11 b	0.37 a	0.42 b	0.034 a
Anthracene	0.0099 a c	<0.092 m	0.027 a	<0.085 m	<0.043 m
3–Methyl Phenanthrene	0.12 a	0.088 a	0.11 a	0.27 a	<0.093 m
2–Methyl Phenanthrene	0.11 a	0.15 a	0.14 a c	0.23 a	<0.093 m
9/4–Methyl Phenanthrene	0.23 a	0.11 a	0.12 a	0.51 a	0.03 a
1–Methyl Phenanthrene	0.079 a	0.18 a	0.11 a	0.47 a	<0.093 m
Pimanthrene (1,7–dimethyl phenanthrene)	0.07 a	0.012 a	0.003 a	0.015 a	<0.019 m
Heneicosahexaene	0.33 a	<0.14 m	5.8 a	<0.13 m	1.2 a
Fluoranthene	0.044 b	0.0067 b	0.022 a c	<0.069 e	0.0047 a
Pyrene	0.13 b	0.011 b	0.021 a	<0.087 e	<0.016 m
Simonellite	0.016 a	0.018 a	<0.081 m	<0.11 m	<0.082 m
Trimethyl Phenanthrene (P/A–C_3a)	<0.021 m	0.051 a	<0.035 m	<0.069 m	<0.041 m
Retene	0.19 a	0.16 a	0.073 a	0.067 a	<0.082 m
Tricosapolyene	0.55 a	0.19 a	0.25 a	<0.094 m	0.097 a
Methyl Pyrene (F/P–C_1a)	<0.022 m	<0.12 m	<0.034 m	<0.079 m	<0.033 m
Methyl Pyrene (F/P–C_1b)	<0.022 m	<0.12 m	<0.034 m	<0.079 m	<0.033 m
Dimethyl Pyrene (F/P–C_2a)	<0.017 m	<0.091 m	<0.028 m	<0.063 m	<0.029 m
Pentacosapolyene	<0.064 m	<0.14 m	0.19 a	<0.098 m	<0.10 m
Benz(a)anthracene	<0.016 m	0.013 b	<0.024 m	<0.034 m	<0.027 m
Chrysene	0.02 b	<0.048 e	0.023 a	<0.031 m	<0.027 m
Heptacosapolyene	<0.066 m	<0.099 m	<0.11 m	<0.079 m	<0.12 m
Benzo(b/j/k)fluoranthene	<0.050 e	0.0094 b	<0.056 e	<0.040 m	0.01 b
Benzo(a)fluoranthene	<0.021 m	<0.047 m	<0.030 m	<0.043 m	<0.028 m
Benzo(e)pyrene	<0.022 e	0.0061 b	<0.033 m	<0.043 m	0.008 a
Benzo(a)pyrene	<0.051 m	<0.14 m	<0.15 m	<0.19 m	<0.14 m
Perylene	<0.049 m	<0.15 m	<0.16 m	<0.21 m	<0.13 m
Squalene	<15	<20	<29 e	<47	<8.6 e
Dibenz(a,h)anthracene	<0.037 m	0.091 a	<0.029 m	<0.062 m	<0.027 m
Indeno(1,2,3–cd)pyrene	<0.032 m	<0.082 m	<0.028 m	<0.056 m	<0.028 m
Benzo(ghi)perylene	<0.043 m	<0.11 m	<0.041 m	<0.075 m	<0.035 m
F3 Fraction					
Tetradecanol	0.74 b	0.15 b	5.3 a	0.24 b	10 a
Hexadecenol	<0.24 m	<0.15 m	0.92 a	<0.10 m	1.3 a
Hexadecanol	<0.20 m	0.28 b	6.5	0.11 b	14
Octadecenol	<0.16 m	<0.10 m	2.9 a	<0.071 m	5.1 a
Octadecanol	<0.19 m	0.67 b	<5.6	<0.081 m	<1.7
Phytol	<0.098 m	0.2 b	41 b	0.14 b	37 b
Eicosenol	<0.27 m	<0.12 m	32 a	<0.083 m	298 a
Eicosanol	<0.28 m	<0.12 m	<0.74 e	<0.084 m	1.1 b
Docosenol	<0.28 m	<0.12 m	5.4 b	<0.083 m	33 b
Docosanol	<0.28 m	<0.12 m	0.09 b	<0.084 m	0.29 b
Tetracosenol	<0.22 m	<0.096 m	0.33 a	<0.067 m	1.7 a
Tetracosanol	<0.24 m	<0.10 m	0.12 a	<0.072 m	0.2 a
Hexacosanol	<0.25 m	<0.11 m	<0.19 m	<0.075 m	<0.43 m
24–Norcholesta–5,22E–dien–3ß–ol	2.3 b	3.4 b	30 b	3.1 b	18 b
Cholesta–5,22E–dien–3ß–ol	0.63 a	1.9 a	20 a	1.2 a	7.9 a
Octacosanol	<0.27 m	<0.12 m	<0.22 m	<0.083 m	<0.48 m
Cholest–5–en–3ß–ol	<21	<28	6.6 q	<67 c	6.9
5a–Cholestan–3ß–ol	0.08 a	0.27 a	0.75 b	0.093 a c	0.94 b
Cholesta–5,24E–dien–3ß–ol	<0.34 m	1.6 a	<0.27 m	1.6 a	<0.23 m
24–Methylcholesta–5,22E–dien–3ß–ol	0.94 a	<0.18 m	21 a	<0.12 m	9.2 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	2.5 a	0.76 a	84 a	2.4 a	25 a
24–Methylcholest–5–en–3ß–ol	<0.37 m	<0.81 m	1.8 a	<0.56 m	1.1 a
24–Ethylcholesta–5,22E–dien–3ß–ol	<0.83 m	0.72 a	2.5 a	<0.22 m	1.5 a
Triacontanol	<0.27 m	<0.12 m	<0.22 m	<0.083 m	<0.48 m

Sample	ID50 (I17)	ID51 (I18)	IP13	ID59 (I13)	IP12
Location/Depth	Stn 5–2, 27m	Stn 5–2, 27m	Stn 9–2, 9m	Stn 9–2, 9m	Stn 9–2, 19m
Date	29/4–5/5/87	29/4–5/5/87	23–25/4/87	23/4–25/4/87	23/4–25/4/87
Analytical Unit	383.51 L	288.12 L	120.53 L	120.53 L	397.96 L
Conversion Factor	0.64 mg/L	0.64 mg/L	0.04 mg/L	0.04 mg/L	0.04 mg/L
Derived Unit			0.005 g		0.02 g
RRF	SZ	KZ	IZ	KZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	0.38 a	0.84 a	8.4 b	1.3 a	3.9 b
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	5.2 a	2.9 a	25 a	0.45 a	14 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	1.8 a	0.62 a	26 a	0.45 a	12 a
ß–Amyrin (Olean–12–en–3ß–ol)	<0.99 m	<0.66 m	<1.2 m	<0.46 m	<1.1 m
a–Amyrin (Urs–12–en–3ß–ol)	<0.85 m	<0.57 m	0.42 a	<0.40 m	<0.96 m
24–Ethylcholesta–3,5–dien–7–one	<0.55 m	<0.37 m	0.8 a	<0.26 m	<0.62 m

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	17.3 %	0.5 %	0.1 % c	26.3 %	0.1 %
Tetracosane–D_{50} Area	245616	544822	751187 c	1864590	482256
Hexatriacontane–D_{74} / Tetracosane D_{50}	223.0 %	180.1 %	75.4 % c	198.0 %	124.7 %
Fluoranthene–D_{10} Area	0	0	1841270	0	94082
Tetracosane–D_{50} / Fluoranthene–D_{10}	0.0 %	0.0 %	867.6 % c	0.0 %	178.2 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	48.3 %	2.5 %	2.8 % c	30.5 %	1.7 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	74.1 %	2.4 %	15.7 % c	49.1 %	12.4 %
Acenaphthylene–D_8 / Pyrene–D_{10}	101.7 %	3.4 %	49.0 % c	64.6 %	39.8 %
Acenaphthene–D_{10} / Pyrene–D_{10}	84.9 %	3.5 %	49.4 % c	81.7 %	43.5 %
Anthracene–D_{10} / Pyrene–D_{10}	71.0 %	61.4 %	35.3 % c	45.5 %	35.5 %
Chrysene–D_{12} / Pyrene–D_{10}	92.5 %	138.9 %	85.4 % c	119.8 %	82.1 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	78.0 %	126.9 %	122.9 % c	97.1 %	87.4 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	33.9 %	42.0 %	26.4 % c	21.1 %	16.4 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	58.0 %	79.9 %	299.1 % c	80.3 %	113.8 %
Pyrene–D_{10} Area	888822	853593	2037581 c	2955490	1308110
Fluoranthene–D_{10} Area	0	0	9155582	0	50190
Pyrene–D_{10} / Fluoranthene–D_{10}	0.0 %	0.0 %	109.0 % c	0.0 %	112.1 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.0 %	0.0 % c	0.0 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	888822	853593	3017220	2955490	32159

Sample	ID50 (I17)	ID51 (I18)	IP13	ID59 (I13)	IP12
Location/Depth	Stn 5–2, 27m	Stn 5–2, 27m	Stn 9–2, 9m	Stn 9–2, 9m	Stn 9–2, 19m
Date	29/4–5/5/87	29/4–5/5/87	23–25/4/87	23/4–25/4/87	23/4–25/4/87
Analytical Unit	383.51 L	288.12 L	120.53 L	120.53 L	397.96 L
Conversion Factor	0.64 mg/L	0.64 mg/L	0.04 mg/L	0.04 mg/L	0.04 mg/L
Derived Unit			0.005 g		0.02 g
RRF	SZ	KZ	IZ	KZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	23	15	0.25	45	0.24
Total $nC_{11}-C_{19}$	3.6	2.1	0.22	5.6	0.24
Total $nC_{20}-C_{29}$	13	6.6	0	27	0
Total $nC_{30}-C_{36}$	6.5	6.4	0.038	12	0
Total $nC_{15}-C_{19}$	0.97	0.21	0.22	1.7	0.22
Total $nC_{23}-C_{33}$	17	11	0	33	0
Total isoprenoids	1.7	1.1	2.8	3.3	1.1
Farnesane–Phytane	0.92	0.69	2.8	2.5	1.1
Total nC_{11}–Phytane	25	16	3.1	48	1.3
Total hopanes	0.021	0.39	0.16	0.72	0.41
Total Naphthalene–Benzo(ghi)perylene*	2.1	18	0.53	1.4	0.077
Naphthalene–Fluorene*	1.5	18	0.069	0.98	0.02
Phenanthrene–Chrysene	0.59	0.14	0.46	0.42	0.039
Higher PAH (Perylene excluded)	0	0.11	0	0	0.018
Total polyenes	0.88	0.19	6.2	0	1.3
Total alcohols	0.74	1.3	95	0.49	402
Total sterols	14	13	226	11	100
OEP at C_{17}					0.94
OEP at C_{25}	1.08	0.93		1.10	
OEP at C_{27}	0.85	1.25		1.00	
OEP at C_{29}	0.87	0.98		1.02	
Pristane/Phytane					31

Derived Summary Concentrations	ng/g	ng/g
Total *n*–alkanes, $nC_{11}-C_{36}$	6330	5900
Total $nC_{11}-C_{19}$	5380	5900
Total $nC_{20}-C_{29}$	0	0
Total $nC_{30}-C_{36}$	950	0
Total $nC_{15}-C_{19}$	5380	5550
Total $nC_{23}-C_{33}$	0	0
Total isoprenoids	70300	27700
Farnesane–Phytane	70300	27700
Total nC_{11}–Phytane	76600	33600
Total hopanes	4000	10300
Total Naphthalene–Benzo(ghi)perylene*	13300	1920
Naphthalene–Fluorene*	1730	500
Phenanthrene–Chrysene	11600	968
Higher PAH (Perylene excluded)	0	450
Total polyenes	156000	32400
Total alcohols	2360000	1E+07
Total sterols	5650000	2510000

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	ID60 (I12)	M3	FP9	FP29	FP32
Location/Depth	Stn 9–2, 19m	Stn 9–1/2, 40m	Stn 10–2, 15m	Stn 1–3, 1.0m	Stn 4–3, 1m
Date	23/4–25/4/87	4/4–29/4/87	25/4/87	30/5/87	1/6/87
Analytical Unit	397.96 L	0.020 g	1317 L	12.4 L	964 L
Conversion Factor	0.04 mg/L	5.49 Cups	0.02 mg/L	64.55 mg/L	0.81 mg/L
Derived Unit		1.01 m^2d	0.03 g	0.80 g	0.78 g
RRF	SZ	JZ	HZ	WZ	OZ
	ng/L	ng/g	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	<0.12 e	<3090	<0.046	<4.9	0.16 q
Dodecane	<0.0059 m	<234 m	<0.0018 m	7.2 a	0.2 a
Tridecane	<0.068 e	<317 m	0.0078 a	13 a	0.25 a
Tetradecane	<0.32	<250 m	0.035 a	16 a	0.39 a
Pentadecane	<0.91	370 a	0.087 a	25 a	0.8 a
Hexadecane	<0.97	926 a	0.09 a	27 a	0.77 a
Heptadecane	<0.39	29600 a	0.11 a	39 a	1.6 a
Octadecane	0.23	888 a	0.059 a	36 a	0.76 a
Nonadecane	0.22 b	82 b	0.028 b	40 b	0.76 b
Eicosane	0.23 b	<1690	<0.025	43	0.67
Heneicosane	0.2	<2500	<0.037	49	1.2
Docosane	0.23 q	<1860	<0.027	49	1
Tricosane	0.4	<2060	<0.031	61	1.5
Tetracosane	0.52 q	<2270	<0.034	52	1.2
Pentacosane	0.58 q	<2300	<0.034	77	1.7
Hexacosane	0.78 q	<4570	<0.068	59	1.2
Heptacosane	0.84 q	<2990	<0.044	100	1.9
Octacosane	1.8	<5920	<0.088	53	0.63
Nonacosane	0.73 q	<8170	<0.12	101	1.3
Triacontane	0.6 q	<7330	<0.11	50	0.4 q
Untriacontane	0.41 q	<6880	<0.10	93	0.94
Dotriacontane	<0.23	<3640	<0.054	36	0.96
Tritriacontane	<0.19	<2370	<0.035	67	0.22
Tetratriacontane	<0.028 m	<1900	<0.028	30	0.085 q
Pentatriacontane	0.05 b	1120 q	0.029 q	35	0.079
Hexatriacontane	0.0014 b	<2740 m	<0.0079 m	18 a	<0.085 m
2,6–Dimethyl Undecane	0.0062 a	<269 m	<0.0019 m	3.8 a	0.1 a
Norfarnesane	0.1 a	<269 m	<0.0019 m	4.9 a	0.082 a
Farnesane	0.025 b	<280 m	0.018 a	17 a	0.12 a
2,6,10–Trimethyl Tridecane	0.016 b	<261 m	0.044 a	12 a	0.24 a
Norpristane	<0.38	848 b	0.082 b	24 b	0.42 b
Pristane	<0.28	150000	1.9	35	0.87
Phytane	0.028 b	524 b	0.041 b	33 b	0.46 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	<0.0031 e	<581 m	<0.0083 m	7.7 a	0.038 a
17ß(H)–Trisnorhopane (C_{27}ß)	<0.011 m	<581 m	<0.0083 m	3.5 a	0.022 a
17a(H),21ß(H)–Norhopane (C_{29}aß)	<0.0067 e	<581 m	<0.0083 m	15 a	0.086 a
Hop–17(21)–ene	<0.054 m	<3210 m	<0.029 m	5.8 a	0.039 a
17ß(H),21a(H)–Normoretane (C_{29}ßa)	<0.011 m	<581 m	<0.0083 m	5.4 a	0.017 a
17a(H),21ß(H)–Hopane (C_{30}aß)	0.0027 b	190 a	<0.012 m	22 a	0.21 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	<0.017 m	<945 m	<0.012 m	8.7 a	0.086 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	<0.017 m	<945 m	<0.012 m	9.9 a	0.084 a
Triterpene	<0.054 m	<3210 m	<0.029 m	4.9 a	0.057 a
17ß(H),21ß(H)–Hopane (C_{30}ßß)	<0.017 m	<945 m	<0.012 m	7.9 a	0.051 a
Diploptene	0.0081 a	3370 a	0.14 a	85 a	3.6 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.017 m	<945 m	<0.012 m	5.2 a	0.064 a
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.017 m	<945 m	<0.012 m	6 a	0.032 a
Heptadecadiene	0.0034 a	<306 m	<0.0021 m	0.22 a	0.067 a
Heptadecene	0.0018 a	<306 m	<0.0021 m	0.74 a	0.049 a
Nonadecene	0.013 a	<363 m	0.0056 a c	0.65 a	0.049 a
F2 Fraction					
Naphthalene	<0.079 e	<51400 m	0.45 b	12 b	0.14 b
2–Methyl Naphthalene	0.052 a	<51400 m	0.0083 a	20 a	0.18 a
1–Methyl Naphthalene	0.039 a	<51400 m	0.01 a	21 a	0.15 a
Dimethyl Naphthalene (N–C_2a)	0.068 a	<8960 m	0.0032 a	3.7 a	0.069 a
Dimethyl Naphthalene (N–C_2b)	0.059 a	<8960 m	0.0055 a	4.9 a	0.086 a c
Dimethyl Naphthalene (N–C_2c)	0.029 a	<8960 m	0.0036 a	4.2 a	0.043 a c
Acenaphthylene	<0.0071 m	<27500 m	0.0025 a	<6.4 m	<0.012 m
Acenaphthene	<0.010 m	<12100 m	0.0021 a	<4.4 m	0.007 a
Trimethyl Naphthalene (N–C_3a)	0.11 a	<12800 m	0.0053 a	6.1 a	0.034 a

Sample	ID60 (I12)	M3	FP9	FP29	FP32
Location/Depth	Stn 9–2, 19m	Stn 9–1/2, 40m	Stn 10–2, 15m	Stn 1–3, 1.0m	Stn 4–3, 1m
Date	23/4–25/4/87	4/4–29/4/87	25/4/87	30/5/87	1/6/87
Analytical Unit	397.96 L	0.020 g	1317 L	12.4 L	964 L
Conversion Factor	0.04 mg/L	5.49 Cups	0.02 mg/L	64.55 mg/L	0.81 mg/L
Derived Unit		1.01 m^2d	0.03 g	0.80 g	0.78 g
RRF	SZ	JZ	HZ	WZ	OZ
	ng/L	ng/g	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	0.006 a	<12800 m	<0.0062 m	8.2 a	0.047 a
Fluorene	0.018 a	<11500 m	0.008 a	5.5 a	0.024 a
Tetramethyl Naphthalene (N–C_4a)	<0.0084 m	<10600 m	<0.0059 m	3.2 a	0.018 a
Tetramethyl Naphthalene (N–C_4b)	0.01 a	<10600 m	<0.0059 m	11 a	0.046 a
Cadalene	0.025 a	<9710 m	0.0025 a	10 a	0.02 a
Phenanthrene	<0.030 e	619 a	0.014 a	24 a	0.18 a
Anthracene	<0.0056 m	<1500 m	0.0071 a	0.49 a	0.011 a
3–Methyl Phenanthrene	0.022 a	<3280 m	0.0079 a	21 a	0.16 a
2–Methyl Phenanthrene	0.033 a	<3280 m	0.008 a c	27 a	0.11 a
9/4–Methyl Phenanthrene	0.025 a	<3280 m	0.0082 a	28 a	0.21 a
1–Methyl Phenanthrene	0.038 a	<3280 m	0.0062 a	21 a	0.09 a
Pimanthrene (1,7–dimethyl phenanthrene)	0.015 a	<508 m	<0.0039 m	5 a	0.068 a
Heneicosahexaene	<0.018 m	21800 a	4.7 a	29 a	50 a
Fluoranthene	<0.021 e	121 a	0.01 a c	5.4 a c	0.068 a
Pyrene	<0.026 e	192 a	0.01 a	5.6 a	0.053 a
Simonellite	0.014 a c	<2210 m	<0.020 m	7.6 a	0.12 a
Trimethyl Phenanthrene (P/A–C_3a)	<0.0099 m	<1110 m	<0.0089 m	6.6 a	0.074 a
Retene	0.043 a	<2210 m	<0.020 m	21 a	0.27 a
Tricosapolyene	<0.028 m	<2590 m	0.81 a	<5.7 m	0.74 a
Methyl Pyrene (F/P–C_1a)	<0.010 m	<898 m	<0.0065 m	3.7 a	0.078 a
Methyl Pyrene (F/P–C_1b)	<0.010 m	<898 m	<0.0065 m	3.1 a	0.038 a
Dimethyl Pyrene (F/P–C_2a)	<0.0077 m	<778 m	<0.0060 m	8.8 a	0.047 a c
Pentacosapolyene	<0.029 m	<2710 m	0.74 a	<5.9 m	0.83 a
Benz(a)anthracene	<0.0090 m	<621 m	0.0068 a c	2 a	0.057 a
Chrysene	<0.0081 m	186 a	0.016 a c	13 a	0.13 a
Heptacosapolyene	<0.037 m	<2680 m	0.84 a	<6.7 m	0.56 a
Benzo(b/j/k)fluoranthene	<0.048 e	<579 m	0.019 b	6.3 b	0.11 b
Benzo(a)fluoranthene	<0.010 m	<625 m	0.0023 a	<1.0 m	0.0039 a
Benzo(e)pyrene	<0.010 m	<647 m	0.011 a	7.8 a	0.12 a
Benzo(a)pyrene	<0.014 m	<147000 m	0.015 a	2.8 a	0.055 a
Perylene	<0.013 m	<136000 m	0.0067 a	0.74 a	0.027 a
Squalene	<14	<176000 e	<2.6 e	<278 e	1.6 b
Dibenz(a,h)anthracene	<0.014 m	<649 m	0.012 a	2.9 a	0.028 a
Indeno(1,2,3–cd)pyrene	<0.013 m	<658 m	0.013 a	2.7 a	0.036 a
Benzo(ghi)perylene	<0.017 m	<828 m	0.0091 a	23 a	0.18 a
F3 Fraction					
Tetradecanol	<0.11 m	1170000 a	5.5 a	33600 a c	1.6 a
Hexadecenol	<0.11 m	221000 a	4.1 a	75600 a	5.4 a
Hexadecanol	<0.092 m	1510000	12	59100 c	12
Octadecenol	<0.075 m	153000 a	4.3 a	7770 a	<0.36 m
Octadecanol	<0.086 m	90600 q	<0.51	5310	0.75 q
Phytol	<0.045 m	1760000 b	7.9 b	814 b	784 b c
Eicosenol	<0.13 m	5870000 a	108 a	87300 a c	<0.42 m
Eicosanol	<0.13 m	<20300 m	0.22 b	528 b c	0.37 b
Docosenol	<0.13 m	8820000 b	16 b	81100 b c	<0.43 m
Docosanol	<0.13 m	<20300 m	0.067 b	882 b c	6.7 b
Tetracosenol	<0.10 m	<16100 m	0.41 a	6820 a	<0.34 m
Tetracosanol	<0.11 m	<17300 m	0.044 a	279 a	<0.37 m
Hexacosanol	<0.11 m	<18000 m	0.017 a	48 a	<0.38 m
24–Norcholesta–5,22E–dien–3ß–ol	0.21 b	324000 b	2.2 b	589 b	13 b
Cholesta–5,22E–dien–3ß–ol	0.16 a	108000 a	1.5 a	707 a	8 a
Octacosanol	<0.13 m	<20000 m	<0.039 m	<2.9 m	<0.43 m
Cholest–5–en–3ß–ol	<20	219000	0.9	9090	4.2
5a–Cholestan–3ß–ol	0.033 a	17500 b	0.076 b	380 b	<0.98 m
Cholesta–5,24E–dien–3ß–ol	<0.16 m	<9660 m	<0.048 m	<2.3 m	<0.47 m
24–Methylcholesta–5,22E–dien–3ß–ol	0.15 a	336000 a	1.8 a	11500 a	16 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	1.1 a	622000 a	2.4 a	582 a	9.3 a
24–Methylcholest–5–en–3ß–ol	<0.17 m	11600 a	0.11 a	81 a	<2.9 m
24–Ethylcholesta–5,22E–dien–3ß–ol	<0.39 m	<29900 m	<0.12 m	14 a	0.21 a
Triacontanol	<0.13 m	<20000 m	<0.039 m	<2.9 m	<0.43 m

Sample	ID60 (I12)	M3	FP9	FP29	FP32
Location/Depth	Stn 9–2, 19m	Stn 9–1/2, 40m	Stn 10–2, 15m	Stn 1–3, 1.0m	Stn 4–3, 1m
Date	23/4–25/4/87	4/4–29/4/87	25/4/87	30/5/87	1/6/87
Analytical Unit	397.96 L	0.020 g	1317 L	12.4 L	964 L
Conversion Factor	0.04 mg/L	5.49 Cups	0.02 mg/L	64.55 mg/L	0.81 mg/L
Derived Unit		1.01 m^2d	0.03 g	0.80 g	0.78 g
RRF	SZ	JZ	HZ	WZ	OZ
	ng/L	ng/g	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	0.1 a	30400 b	0.12 b	37 b	0.69 b
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	0.076 a	<215000 m	0.72 a	28 a	28 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	0.47 a	26100 a	2.5 a	82 a	<2.6 m
ß–Amyrin (Olean–12–en–3ß–ol)	<0.46 m	<46600 m	<0.22 m	3.9 a	0.58 a
a–Amyrin (Urs–12–en–3ß–ol)	<0.40 m	<40200 m	<0.19 m	18 a	1.4 a
24–Ethylcholesta–3,5–dien–7–one	<0.26 m	<26000 m	0.19 a	14 a	1 a

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	15.4 %	0.0 %	1.3 %	10.6 %	24.1 %
Tetracosane–D_{50} Area	592937	153158	586154	1841030	199655
Hexatriacontane–D_{74} / Tetracosane D_{50}	204.2 %	103.8 %	86.2 %	287.0 %	51.0 %
Fluoranthene–D_{10} Area	0	39883	6381450	8709490	23568
Tetracosane–D_{50} / Fluoranthene–D_{10}	0.0 %	267.1 %	195.3 %	291.3 %	294.6 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	31.2 %	0.5 % <c	0.2 %	1.4 %	25.5 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	69.1 %	0.9 % <c	9.4 %	3.6 %	39.2 %
Acenaphthylene–D_8 / Pyrene–D_{10}	73.0 %	1.2 %	38.2 %	7.8 %	60.9 %
Acenaphthene–D_{10} / Pyrene–D_{10}	77.6 %	4.4 %	49.2 %	13.5 %	63.5 %
Anthracene–D_{10} / Pyrene–D_{10}	96.8 %	27.2 %	67.4 %	31.4 %	77.6 %
Chrysene–D_{12} / Pyrene–D_{10}	77.5 %	97.2 %	91.6 %	84.9 %	81.3 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	76.2 %	105.5 %	190.2 %	168.0 %	102.8 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	58.7 %	0.4 %	96.7 %	97.6 %	67.2 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	68.6 %	128.7 %	240.6 %	96.7 %	97.6 %
Pyrene–D_{10} Area	1847796	493520	1934640	672914	878380
Fluoranthene–D_{10} Area	0	37654	6041950	5176580	37600
Pyrene–D_{10} / Fluoranthene–D_{10}	0.0 %	112.8 %	156.9 %	63.7 %	100.5 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	16.3 %	0.0 %	0.0 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	1847796	15630	1543860	5337460	2883

Sample	ID60 (I12)	M3	FP9	FP29	FP32
Location/Depth	Stn 9–2, 19m	Stn 9–1/2, 40m	Stn 10–2, 15m	Stn 1–3, 1.0m	Stn 4–3, 1m
Date	23/4–25/4/87	4/4–29/4/87	25/4/87	30/5/87	1/6/87
Analytical Unit	397.96 L	0.020 g	1317 L	12.4 L	964 L
Conversion Factor	0.04 mg/L	5.49 Cups	0.02 mg/L	64.55 mg/L	0.81 mg/L
Derived Unit		1.01 m^2d	0.03 g	0.80 g	0.78 g
RRF	SZ	JZ	HZ	WZ	OZ
	ng/L	ng/g	ng/L	ng/L	ng/L
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	7.8	33000	0.45	1180	21
Total $nC_{11}-C_{19}$	0.45	31900	0.42	203	5.7
Total $nC_{20}-C_{29}$	6.3	0	0	644	12
Total $nC_{30}-C_{36}$	1.1	1120	0.029	329	2.7
Total $nC_{15}-C_{19}$	0.45	31900	0.37	167	4.7
Total $nC_{23}-C_{33}$	6.7	0	0	749	12
Total isoprenoids	0.18	151000	2.1	130	2.3
Farnesane–Phytane	0.069	151000	2.1	121	2.1
Total nC_{11}–Phytane	8	184000	2.6	1310	23
Total hopanes	0.011	3560	0.14	182	4.3
Total Naphthalene–Benzo(ghi)perylene*	0.11	1120	0.63	155	1.5
Naphthalene–Fluorene*	0.11	0	0.48	59	0.5
Phenanthrene–Chrysene	0	1120	0.064	50	0.5
Higher PAH (Perylene excluded)	0	0	0.081	46	0.53
Total polyenes	0	21800	7.1	29	52
Total alcohols	0	2E+07	159	359000	811
Total sterols	2.3	1690000	12	23100	79
OEP at C_{17}		24.54	1.30	1.19	1.82
OEP at C_{25}	0.91			1.40	1.42
OEP at C_{27}	0.62			1.74	1.97
OEP at C_{29}	0.59			1.94	2.58
Pristane/Phytane		286	46	1.06	1.89
Derived Summary Concentrations		ng/m^2d	ng/g	ng/g	ng/g
Total *n*–alkanes, $nC_{11}-C_{36}$		638	22300	18200	25500
Total $nC_{11}-C_{19}$		616	20800	3150	7020
Total $nC_{20}-C_{29}$		0	0	9980	15200
Total $nC_{30}-C_{36}$		22	1450	5100	3310
Total $nC_{15}-C_{19}$		616	18700	2590	5790
Total $nC_{23}-C_{33}$		0	0	11600	14800
Total isoprenoids		2930	104000	2010	2830
Farnesane–Phytane		2930	104000	1870	2600
Total nC_{11}–Phytane		3570	126000	20200	28300
Total hopanes		69	7000	2820	5340
Total Naphthalene–Benzo(ghi)perylene*		22	31300	2390	1890
Naphthalene–Fluorene*		0	24000	906	619
Phenanthrene–Chrysene		22	3200	782	616
Higher PAH (Perylene excluded)		0	4070	705	658
Total polyenes		421	355000	449	64400
Total alcohols		379000	7930000	5560000	1000000
Total sterols		32800	616000	358000	98000

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available .
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	FP27	FP26	M13	P2	FP25
Location/Depth	Stn 4–3, 3.5m	Stn 4–3, 8.5m	Stn 4–2/3, 10m	Stn 4–3	Stn 5–3, 6.4m
Date	29/5/87	29/5/87	6/5–31/5/87	31/5/87	28/5/87
Analytical Unit	616 L	723 L	0.727 g	2.65 L	1072.0 L
Conversion Factor	0.29 mg/L	2.81 mg/L	5.19 Cups		0.80 mg/L
Derived Unit	0.18 g	2.03 g	0.909 m^2d		0.86 g
RRF	QZ	JZ	RZ	JZ	JZ
	ng/L	ng/L	ng/g	ng/L	ng/L
F1 Fraction					
Undecane	<0.098	0.65	368	<23	<0.056
Dodecane	0.086 a	1 a	410 a	0.54 a	0.055 a
Tridecane	0.14 a	2 a	598 a	19 a	0.18 a
Tetradecane	0.21 a	2.3 a	664 a	541 a	0.25 a
Pentadecane	0.45 a	3.2 a	845 a	959 a	0.42 a
Hexadecane	0.34 a	3.5 a	886 a	1760 a	0.54 a
Heptadecane	1 a	4.2 a	1110 a	2010 a	0.77 a
Octadecane	0.4 a	3.5 a	935 a	1020 a	0.58 a
Nonadecane	0.5 b	3.5 b	1100 b	661 b	0.53 b
Eicosane	0.43	3	862	480	0.46
Heneicosane	0.79	3.3	851	335	0.55
Docosane	0.47	2.7	786	489	0.44
Tricosane	0.81	2.8	869	637	0.51
Tetracosane	0.4	2.1	567	867	0.36
Pentacosane	0.71	2.8	972	998	0.57
Hexacosane	0.31 q	1.5	604	932	0.27 q
Heptacosane	0.83	3	1600	779	0.55
Octacosane	0.21 q	0.78	465 q	544	0.15 q
Nonacosane	0.62 q	1.9	1330	474	0.32 q
Triacontane	<0.23	0.43 q	394 q	348	<0.13
Untriacontane	0.43 q	1.1	974	299	0.18 q
Dotriacontane	<0.12	0.19 q	256 q	172	<0.066
Tritriacontane	0.16 q	0.45	405	142	<0.043
Tetratriacontane	0.074 q	0.055 q	206	142	<0.035
Pentatriacontane	0.1	<0.024	267	121	0.072
Hexatriacontane	0.043 a	<0.27 m	<73 m	54 a	<0.14 m
2,6–Dimethyl Undecane	0.034 a	0.57 a	217 a	<1.0 m	0.033 a
Norfarnesane	0.049 a	0.66 a	184 a	3.1 a	0.059 a
Farnesane	0.063 a	0.64 a	168 a	137 a	0.083 a
2,6,10–Trimethyl Tridecane	0.13 a	1.3 a	318 a	846 a	0.2 a
Norpristane	0.22 b	2.1 b	608 b	2150 b	0.38 b
Pristane	0.55	6.4	25500	1640	3.1
Phytane	0.29 b	2.7 b	654 b	1230 b	0.45 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	0.043 a	0.1 a	115 a	1.4 a	0.019 a
17ß(H)–Trisnorhopane (C_{27}ß)	0.048 a	0.032 a	53 a	1.4 a	0.017 a
17a(H),21ß(H)–Norhopane (C_{29}aß)	0.088 a	0.13 a	172 a	8.8 a	0.075 a
Hop–17(21)–ene	0.046 a	<0.32 m	<239 m	9.7 a	<0.16 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	0.028 a	0.032 a	76 a	4.4 a	0.012 a
17a(H),21ß(H)–Hopane (C_{30}aß)	0.14 a	0.57 a	388 a	32 a	0.13 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.08 a	0.18 a	194 a	13 a	0.03 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.071 a	0.15 a	185 a	10 a	0.025 a
Triterpene	0.055 a	0.19 a	<239 m	<12 m	0.075 a
17ß(H),21ß(H)–Hopane (C_{30}ßß)	0.037 a	0.082 a	132 a	6.9 a	0.017 a
Diploptene	3.2 a	1.4 a	341 a	5.2 a c	0.64 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	0.069 a	0.074 a	189 a	6.1 a c	0.019 a
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	0.076 a	0.055 a	73 a	5.4 a	0.014 a
Heptadecadiene	0.26 a	0.01 a	89 a	124 a	0.015 a
Heptadecene	0.048 a	0.011 a	36 a	4.9 a	0.0041 a
Nonadecene	0.64 a	0.014 a	101 a	<1.4 m	0.017 a
F2 Fraction					
Naphthalene	0.1 b	0.41 b	155 b	<3550 m	0.11 b
2–Methyl Naphthalene	0.13 a	0.9 a	250 a	<26 m	0.15 a
1–Methyl Naphthalene	0.12 a	0.71 a	226 a	<26 m	0.12 a
Dimethyl Naphthalene (N–C_2a)	0.048 a	0.27 a	86 a	6.1 a	0.087 a
Dimethyl Naphthalene (N–C_2b)	0.055 a	0.45 a	127 a	9.5 a	0.13 a c
Dimethyl Naphthalene (N–C_2c)	0.039 a	0.15 a	119 a	5.1 a	0.063 a c
Acenaphthylene	<0.016 m	<0.016 m	<34 m	<5.4 m	<0.0071 m
Acenaphthene	<0.023 m	0.036 a	<37 m	<6.7 m	0.004 a
Trimethyl Naphthalene (N–C_3a)	0.043 a	0.2 a	88 a	17 a	0.051 a

Sample	FP27	FP26	M13	P2	FP25
Location/Depth	Stn 4–3, 3.5m	Stn 4–3, 8.5m	Stn 4–2/3, 10m	Stn 4–3	Stn 5–3, 6.4m
Date	29/5/87	29/5/87	6/5–31/5/87	31/5/87	28/5/87
Analytical Unit	616 L	723 L	0.727 g	2.65 L	1072.0 L
Conversion Factor	0.29 mg/L	2.81 mg/L	5.19 Cups		0.80 mg/L
Derived Unit	0.18 g	2.03 g	0.909 m^2d		0.86 g
RRF	QZ	JZ	RZ	JZ	JZ
	ng/L	ng/L	ng/g	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	0.037 a	0.22 a	98 a	2.5 a	0.064 a
Fluorene	0.042 a	0.097 a	44 a	4.7 a	0.023 a
Tetramethyl Naphthalene (N–C_4a)	0.011 a	0.097 a	21 a	3 a	0.022 a
Tetramethyl Naphthalene (N–C_4b)	0.025 a	0.2 a	67 a	18 a	0.057 a
Cadalene	0.03 a	0.2 a	59 a	4.3 a	0.043 a
Phenanthrene	0.14 a	0.72 a	245 a	31 a	0.11 a
Anthracene	0.007 a	0.015 a	<23 m	<6.5 m	0.0012 a
3–Methyl Phenanthrene	0.16 a	0.71 a	184 a	8.4 a	0.12 a
2–Methyl Phenanthrene	0.21 a	0.43 a	245 a	22 a	0.095 a
9/4–Methyl Phenanthrene	0.22 a	0.76 a	333 a	14 a	0.11 a
1–Methyl Phenanthrene	0.14 a	0.4 a	209 a	9.9 a	0.072 a
Pimanthrene (1,7–dimethyl phenanthrene)	0.041 a	0.24 a	135 a	<3.7 m	0.035 a
Heneicosahexaene	16 a	2.1 a	1540 a	13200 a	6.8 a
Fluoranthene	0.037 a	0.09 a	62 a c	0.83 a c	0.021 a
Pyrene	0.051 a	0.16 a	65 a	1 a	0.032 a
Simonellite	0.051 a	0.3 a	80 a	<16 m	0.045 a
Trimethyl Phenanthrene (P/A–C_3a)	0.066 a	0.23 a	94 a	<8.2 m	0.051 a
Retene	0.15 a	0.75 a	262 a	<16 m	0.097 a
Tricosapolyene	0.36 a	4.4 a	<170 m	427 a	3.9 a
Methyl Pyrene (F/P–C_1a)	0.049 a	0.22 a	60 a	<6.6 m	0.05 a
Methyl Pyrene (F/P–C_1b)	0.017 a	0.092 a	29 a	<6.6 m	0.027 a
Dimethyl Pyrene (F/P–C_2a)	0.019 a	0.31 a	53 a	<5.7 m	0.064 a
Pentacosapolyene	0.67 a	2.9 a	<178 m	<20 m	0.65 a
Benz(a)anthracene	0.014 a	0.085 a	22 a	<4.3 m	0.014 a
Chrysene	0.11 a	0.37 a	135 a	<4.2 m	0.075 a
Heptacosapolyene	0.3 a	3.3 a	<235 m	<18 m	0.25 a
Benzo(b/j/k)fluoranthene	0.063 b	0.31 b	72 b	<3.6 m	0.058 b
Benzo(a)fluoranthene	<0.038 m	0.0052 a	<64 m	<3.9 m	<0.0068 m
Benzo(e)pyrene	0.072 a	0.51 a	197 a	<4.0 m	0.093 a
Benzo(a)pyrene	<0.091 m	0.097 a	34 a c	<17 m	0.024 a
Perylene	<0.094 m	0.035 a	<113 m	<16 m	0.0033 a
Squalene	<5.6 e	<4.8 e	<4730 e	<1300 e	<3.2 e
Dibenz(a,h)anthracene	<0.12 m	0.05 a	<66 m	<4.1 m	0.013 a
Indeno(1,2,3–cd)pyrene	<0.11 m	0.096 a	35 a c	<4.1 m	0.027 a
Benzo(ghi)perylene	0.015 a	0.76 a	273 a	<5.2 m	0.11 a
F3 Fraction					
Tetradecanol	35 a	72 a	3750 a	478 a	137 a c
Hexadecenol	106 a	5.4 a	6210 a	5640 a	3.1 a
Hexadecanol	121	77	10100	1280	100 c
Octadecenol	25 a	16 a	1530 a	72 a	30 a
Octadecanol	3 q	3.2	<929	472 q	1.5 q
Phytol	412 b	34 b	7170 b	33700 b	50 b
Eicosenol	363 a	232 a	37000 a	30 a	66 a
Eicosanol	2 b	6.5 b	31300 b	<61 m	1.2 b
Docosenol	432 b	72 b	105000 b	<61 m	14 b
Docosanol	14 b	20 b	9980 b	<61 m	5.6 b
Tetracosenol	0.98 a	3.3 a	1920 a	<48 m	7.3 a
Tetracosanol	2.5 a	8.4 a	2180 a	<52 m	1.5 a
Hexacosanol	<1.2 m	6.8 a	3690 a	<54 m	0.96 a
24–Norcholesta–5,22E–dien–3ß–ol	41 b	27 b	1020 b	3490 b	31 b
Cholesta–5,22E–dien–3ß–ol	<11 m	17 a	2060 a	3990 a	5.5 a
Octacosanol	<1.3 m	0.37 b	1200 b c	<60 m	0.19 b
Cholest–5–en–3ß–ol	7.7	12	2480	2350	9.6
5a–Cholestan–3ß–ol	<5.3 m	1.2 b	160 b	356 b	0.45 b
Cholesta–5,24E–dien–3ß–ol	18 a	<0.14 m	<61 m	<29 m	<0.060 m
24–Methylcholesta–5,22E–dien–3ß–ol	<2.2 m	22 a	1750 a	32400 a	30 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	<15 m	16 a	1400 a	29000 a	27 a
24–Methylcholest–5–en–3ß–ol	<25 m	2.1 a	669 a	1080 a	0.94 a
24–Ethylcholesta–5,22E–dien–3ß–ol	<3.2 m	5.1 a	1970 a	260 a	1.7 a
Triacontanol	<1.3 m	<0.29 m	650 a	<60 m	<0.12 m

Sample	FP27	FP26	M13	P2	FP25
Location/Depth	Stn 4–3, 3.5m	Stn 4–3, 8.5m	Stn 4–2/3, 10m	Stn 4–3	Stn 5–3, 6.4m
Date	29/5/87	29/5/87	6/5–31/5/87	31/5/87	28/5/87
Analytical Unit	616 L	723 L	0.727 g	2.65 L	1072.0 L
Conversion Factor	0.29 mg/L	2.81 mg/L	5.19 Cups		0.80 mg/L
Derived Unit	0.18 g	2.03 g	0.909 m^2d		0.86 g
RRF	QZ	JZ	RZ	JZ	JZ
	ng/L	ng/L	ng/g	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	<17 m	7.1 b	3760 b	1240 b	2.3 b
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	<23 m	12 a	465 a	3980 a	21 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	<7.3 m	5.4 a	355 a	1840 a	8.4 a
ß–Amyrin (Olean–12–en–3ß–ol)	<8.7 m	8 a	3220 a	<140 m	0.66 a
a–Amyrin (Urs–12–en–3ß–ol)	<7.5 m	14 a	6530 a	91 a	2.2 a
24–Ethylcholesta–3,5–dien–7–one	<4.8 m	6.9 a	37300 a	179 a	0.78 a

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	20.4 %	40.8 %	64.4 %	1.9 %	18.1 %
Tetracosane–D_{50} Area	548143	82784	48376	604013	111918
Hexatriacontane–D_{74} / Tetracosane D_{50}	99.5 %	45.8 %	206.6 %	112.8 %	45.4 %
Fluoranthene–D_{10} Area	3386730	15000	0	91256	17113
Tetracosane–D_{50} / Fluoranthene–D_{10}	223.0 %	191.9 %	0.0 %	230.2 %	227.4 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	29.6 %	37.8 %	15.1 %	0.1 %	17.3 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	41.8 %	42.3 %	32.4 %	12.8 %	28.8 %
Acenaphthylene–D_8 / Pyrene–D_{10}	60.7 %	57.5 %	43.8 %	45.2 %	49.2 %
Acenaphthene–D_{10} / Pyrene–D_{10}	67.2 %	64.6 %	48.1 %	58.6 %	28.8 %
Anthracene–D_{10} / Pyrene–D_{10}	62.8 %	73.4 %	69.0 %	46.0 %	66.4 %
Chrysene–D_{12} / Pyrene–D_{10}	88.7 %	93.6 %	72.6 %	103.9 %	93.9 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	100.2 %	104.7 %	79.0 %	124.0 %	102.1 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	43.6 %	67.2 %	34.7 %	27.7 %	51.9 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	72.2 %	111.0 %	63.7 %	150.4 %	115.1 %
Pyrene–D_{10} Area	744722	987289	190726	991651	1706124
Fluoranthene–D_{10} Area	2417890	42512	4468250	34458	17382
Pyrene–D_{10} / Fluoranthene–D_{10}	150.9 %	99.9 %	41.8 %	123.8 %	422.4 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.0 %	0.0 %	0.6 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	249096	28821	3475280	38280	46116

Sample	FP27	FP26	M13	P2	FP25
Location/Depth	Stn 4–3, 3.5m	Stn 4–3, 8.5m	Stn 4–2/3, 10m	Stn 4–3	Stn 5–3, 6.4m
Date	29/5/87	29/5/87	6/5–31/5/87	31/5/87	28/5/87
Analytical Unit	616 L	723 L	0.727 g	2.65 L	1072.0 L
Conversion Factor	0.29 mg/L	2.81 mg/L	5.19 Cups		0.80 mg/L
Derived Unit	0.18 g	2.03 g	0.909 m^2d		0.86 g
RRF	QZ	JZ	RZ	JZ	JZ
	ng/L	ng/L	ng/g	ng/L	ng/L
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	9.5	50	18300	14800	7.8
Total $nC_{11}-C_{19}$	3.1	24	6920	6970	3.3
Total $nC_{20}-C_{29}$	5.6	24	8910	6540	4.2
Total $nC_{30}-C_{36}$	0.81	2.2	2500	1280	0.25
Total $nC_{15}-C_{19}$	2.7	18	4880	6410	2.8
Total $nC_{23}-C_{33}$	4.5	17	8440	6190	2.9
Total isoprenoids	1.3	14	27600	6010	4.3
Farnesane–Phytane	1.3	13	27200	6000	4.2
Total nC_{11}–Phytane	11	64	45900	20800	12
Total hopanes	3.9	2.8	1920	104	1
Total Naphthalene–Benzo(ghi)perylene*	0.9	5.4	1820	38	0.99
Naphthalene–Fluorene*	0.39	2.2	675	4.7	0.41
Phenanthrene–Chrysene	0.36	1.4	529	33	0.25
Higher PAH (Perylene excluded)	0.15	1.8	611	0	0.33
Total polyenes	17	13	1540	13600	12
Total alcohols	1520	557	222000	41700	418
Total sterols	67	127	16100	80000	138
OEP at C_{17}	2.35	1.14	1.18	1.23	1.24
OEP at C_{25}	2.08	1.57	1.77	1.03	1.78
OEP at C_{27}	3.03	2.49	2.78	1.04	2.49
OEP at C_{29}		3.20	3.07	1.10	
Pristane/Phytane	1.9	2.37	39	1.33	6.89
Derived Summary Concentrations	ng/g	ng/g	ng/m^2d		ng/g
Total *n*–alkanes, $nC_{11}-C_{36}$	32800	17800	14700		9700
Total $nC_{11}-C_{19}$	10800	8490	5530		4160
Total $nC_{20}-C_{29}$	19200	8500	7120		5230
Total $nC_{30}-C_{36}$	2780	792	2000		315
Total $nC_{15}-C_{19}$	9280	6370	3900		3550
Total $nC_{23}-C_{33}$	15400	6070	6750		3640
Total isoprenoids	4610	5110	22100		5380
Farnesane–Phytane	4320	4680	21800		5270
Total nC_{11}–Phytane	37400	22900	36800		15100
Total hopanes	13500	998	1530		1250
Total Naphthalene–Benzo(ghi)perylene*	3110	1930	1450		1230
Naphthalene–Fluorene*	1350	766	540		509
Phenanthrene–Chrysene	1240	512	423		317
Higher PAH (Perylene excluded)	517	651	489		406
Total polyenes	59800	4520	1230		14500
Total alcohols	5230000	198000	177000		523000
Total sterols	230000	45200	12900		172000

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	IP33	ID70 (I33)	M5	M10	IP31
Location/Depth	Stn 5–3, 9m	Stn 5–3, 9m	Stn 5–2/3, 15m	Stn 5–2/3, 20m	Stn 5–3, 21m
Date	26–28/5/87	26/5–28/5/87	29/4–27/5/87	29/4–27/5/87	26/5–28/5/87
Analytical Unit	407.75 L	407.75 L	0.168 g	0.496 g	250.88 L
Conversion Factor	0.8 mg/L	0.8 mg/L	5.44 Cups	5.53 Cups	1.32 mg/L
Derived Unit	0.33 g		1.06 m^2d	1.08 m^2d	0.33 g
RRF	IZ	SZ	LZ	JZ	JZ
	ng/L	ng/L	ng/g	ng/g	ng/L
F1 Fraction					
Undecane	<0.15	0.0016 b	<358	<121	<0.24
Dodecane	0.082 a	0.088 b	<55 m	42 a	<0.015 m
Tridecane	0.15 a	0.04 b	<64 m	130 a	0.029 a
Tetradecane	0.22 a	<0.31	69 a	222 a	0.044 a
Pentadecane	0.45 a	<0.89	296 a	408 a	0.13 a
Hexadecane	0.55 a	<0.95	463 a	513 a	0.18 a
Heptadecane	0.71 a	<0.38	746 a	15000 a c	1.4 a
Octadecane	0.54 a	<0.033	727 a	623 a	0.26 a
Nonadecane	0.55 b	0.0052 b	833 b	552 b	0.27 b
Eicosane	0.5	0.019 b	788	559	0.24 q
Heneicosane	0.53	0.066 q	1120	610	0.24 q
Docosane	0.41	0.078 q	878	570	0.24 q
Tricosane	0.49	0.28	1340	666	0.28 q
Tetracosane	0.32 q	0.31 q	980	566	<0.18
Pentacosane	0.49	0.38 q	2060	886	0.36 q
Hexacosane	0.24 q	0.36 q	938 q	541 q	<0.36
Heptacosane	0.53	0.37 q	3270	1090	0.32 q
Octacosane	<0.28	0.71 q	951 q	374 q	<0.46
Nonacosane	0.39 q	<0.35	3740	889 q	<0.63
Triacontane	<0.35	<0.33	907 q	421 q	<0.57
Untriacontane	<0.33	<0.28	3380	897 q	<0.53
Dotriacontane	<0.17	0.24 q	565 q	393 q	<0.28
Tritriacontane	0.12 q	<0.19	847 q	497	<0.18
Tetratriacontane	<0.091	0.1 b	288 q	302	<0.15
Pentatriacontane	0.098 q	0.082 b	338 q	320	<0.070
Hexatriacontane	0.049 a	0.018 b	<247 m	226 a	0.026 a c
2,6–Dimethyl Undecane	0.04 a	0.082 a	<59 m	<12 m	<0.017 m
Norfarnesane	0.045 a	0.17 a	<59 m	46 a	0.023 a
Farnesane	0.054 a	0.058 b	<61 m	89 a	0.015 a
2,6,10–Trimethyl Tridecane	0.14 a	<0.017 e	72 a	212 a	0.0066 a
Norpristane	0.31 b	<0.37	334 b	467 b	0.11 b
Pristane	2.9	<0.27	13500	15100 c	8.5
Phytane	0.37 b	<0.025 m	579 b	511 b	0.15 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	0.02 a	<0.033 m	183 a	22 a c	0.025 a
17ß(H)–Trisnorhopane (C_{27}ß)	0.0069 a	<0.033 m	135 a	11 a	0.014 a
17a(H),21ß(H)–Norhopane (C_{29}aß)	0.055 a	<0.033 m	222 a	69 a	0.035 a
Hop–17(21)–ene	<0.091 m	<0.17 m	<915 m	40 a c	<0.21 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	0.0071 a	<0.033 m	75 a	18 a	0.0073 a
17a(H),21ß(H)–Hopane (C_{30}aß)	0.12 a	0.0028 b	567 a	185 a	0.092 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.04 a	<0.051 m	223 a	92 a	0.07 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.042 a c	<0.051 m	187 a	73 a	0.056 a
Triterpene	<0.091 m	<0.17 m	1540 a	97 a	<0.21 m
17ß(H),21ß(H)–Hopane (C_{30}ßß)	0.029 a	<0.051 m	<378 m	74 a	0.028 a
Diploptene	0.61 a	0.036 a	3640 a	604 a	0.94 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	0.029 a	<0.051 m	74 a c	29 a c	0.014 a c
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	0.021 a	<0.051 m	74 a c	29 a c	0.013 a
Heptadecadiene	0.013 a	0.053 a	<65 m	6.4 a	<0.020 m
Heptadecene	0.0076 a	<0.024 m	<65 m	6.5 a	<0.020 m
Nonadecene	0.033 a c	0.038 a	19 a	9.5 a	0.015 a
F2 Fraction					
Naphthalene	0.14 b	0.091 b	<2510 m	134 b	<1.8 m
2–Methyl Naphthalene	0.17 a	0.098 a	<2510 m	193 a	<0.40 m
1–Methyl Naphthalene	0.16 a	0.063 a	<2510 m	187 a	<0.40 m
Dimethyl Naphthalene (N–C_2a)	0.071 a	0.074 a	<910 m	73 a	<0.14 m
Dimethyl Naphthalene (N–C_2b)	0.084 a	0.086 a	<910 m	94 a	<0.14 m
Dimethyl Naphthalene (N–C_2c)	0.073 a	0.037 a	<910 m	69 a	<0.14 m
Acenaphthylene	0.0038 a	<0.017 m	<1360 m	<75 m	<0.13 m
Acenaphthene	0.016 a	<0.021 m	<1380 m	<89 m	<0.19 m
Trimethyl Naphthalene (N–C_3a)	0.073 a	0.075 a	<1340 m	69 a	<0.20 m

Sample	IP33	ID70 (I33)	M5	M10	IP31
Location/Depth	Stn 5–3, 9m	Stn 5–3, 9m	Stn 5–2/3, 15m	Stn 5–2/3, 20m	Stn 5–3, 21m
Date	26–28/5/87	26/5–28/5/87	29/4–27/5/87	29/4–27/5/87	26/5–28/5/87
Analytical Unit	407.75 L	407.75 L	0.168 g	0.496 g	250.88 L
Conversion Factor	0.8 mg/L	0.8 mg/L	5.44 Cups	5.53 Cups	1.32 mg/L
Derived Unit	0.33 g		1.06 m^2d	1.08 m^2d	0.33 g
RRF	IZ	SZ	LZ	JZ	JZ
	ng/L	ng/L	ng/g	ng/g	ng/L
Trimethyl Naphthalene (N–C_3b)	0.043 a	0.0095 a	<1340 m	60 a	<0.20 m
Fluorene	0.083 a	0.019 a	<1350 m	51 a	<0.18 m
Tetramethyl Naphthalene (N–C_4a)	0.015 a	0.015 a	<1280 m	19 a	<0.17 m
Tetramethyl Naphthalene (N–C_4b)	0.038 a	<0.018 m	<1280 m	36 a	<0.17 m
Cadalene	0.039 a	0.048 a	<1290 m	38 a	<0.16 m
Phenanthrene	0.45 a	0.13 b	766 a	658 a	0.21 a
Anthracene	0.051 a	<0.047 m	113 a	58 a	<0.34 m
3–Methyl Phenanthrene	0.18 a	0.11 a	626 a	284 a	<0.74 m
2–Methyl Phenanthrene	0.24 a	0.13 a	1080 a	327 a	<0.74 m
9/4–Methyl Phenanthrene	0.25 a	0.12 a	739 a	315 a	<0.74 m
1–Methyl Phenanthrene	0.2 a	0.11 a	823 a	277 a	<0.74 m
Pimanthrene (1,7–dimethyl phenanthrene)	0.058 a	0.0095 a	263 a	85 a	<0.14 m
Heneicosahexaene	3.1 a	<0.15 m	6270 a	2130 a	7.4 a
Fluoranthene	0.1 a	0.00093 b	1110 a	373 a	<0.12 m
Pyrene	0.11 a	0.0043 b	965 a	317 a	<0.12 m
Simonellite	0.088 a	0.025 a	<1900 m	47 a	<0.61 m
Trimethyl Phenanthrene (P/A–C_3a)	0.06 a	<0.026 m	<850 m	65 a	<0.31 m
Retene	0.21 a	0.11 a	477 a	160 a	<0.61 m
Tricosapolyene	0.75 a	<0.073 m	<2340 m	86 a	<0.72 m
Methyl Pyrene (F/P–C_1a)	0.058 a	<0.027 m	<618 m	83 a	<0.25 m
Methyl Pyrene (F/P–C_1b)	0.028 a	<0.027 m	<618 m	45 a	<0.25 m
Dimethyl Pyrene (F/P–C_2a)	0.096 a	<0.020 m	<577 m	98 a	<0.21 m
Pentacosapolyene	0.11 a	<0.076 m	<2450 m	89 a	<0.75 m
Benz(a)anthracene	0.029 a	<0.020 m	540 a	170 a	<0.25 m
Chrysene	0.15 a	<0.034 e	894 a	307 a	<0.24 m
Heptacosapolyene	<0.071 m	<0.083 m	<2890 m	<239 m	<1.1 m
Benzo(b/j/k)fluoranthene	0.13 b	<0.047 e	730 b	318 b	<0.30 m
Benzo(a)fluoranthene	<0.029 m	<0.021 m	<961 m	<50 m	<0.33 m
Benzo(e)pyrene	0.14 a	<0.021 m	603 a	249 a	<0.34 m
Benzo(a)pyrene	0.33 a	<0.061 m	1210 a	149 a	<13 m
Perylene	<0.55 m	<0.058 m	<4210 m	<188 m	<12 m
Squalene	<8.4 e	<14	<930 m	<6940 e	<14 e
Dibenz(a,h)anthracene	<0.071 m	<0.037 m	<1530 m	41 a	<0.45 m
Indeno(1,2,3–cd)pyrene	<0.069 m	<0.032 m	<1440 m	149 a	<0.45 m
Benzo(ghi)perylene	0.073 a	<0.042 m	<1770 m	282 a	<0.57 m
F3 Fraction					
Tetradecanol	184 a	0.55 b	4730 a	32100 a	56 a
Hexadecenol	3.3 a	<0.28 m	2270 a	14300 a	92 a
Hexadecanol	133	0.17 b	18900	60800	108
Octadecenol	56 a	<0.19 m	1410 a	13200 a	22 a
Octadecanol	3.4 q	0.022 b	<4010	2620 q	3.5 q
Phytol	70 bc	0.52 b	24700 b	79500 b	126 b
Eicosenol	18 a	<0.33 m	3800 a	173000 a	333 a
Eicosanol	0.76 b	<0.33 m	2240 b	<427 m	3.2 b
Docosenol	8 b	<0.33 m	31200 b	402000 b	173 b
Docosanol	3.7 b	<0.33 m	4290 b	<427 m	3.6 b
Tetracosenol	5 a	<0.26 m	<1950 m	7340 a	4.7 a
Tetracosanol	1.2 a	<0.28 m	1540 a	<364 m	1.3 a
Hexacosanol	0.7 a	<0.29 m	1730 a	<379 m	0.41 a
24–Norcholesta–5,22E–dien–3ß–ol	28 b	3 b	10200 b	18900 b	83 b
Cholesta–5,22E–dien–3ß–ol	21 a	1.4 a	16500 a	9440 a	38 a
Octacosanol	0.58 b	<0.33 m	262 b	<421 m	<0.81 m
Cholest–5–en–3ß–ol	9.4	<20	22400	28200	20
5a–Cholestan–3ß–ol	0.58 b	0.15 a	<5560 m	1590 b	2.7 b
Cholesta–5,24E–dien–3ß–ol	<0.065 m	<0.41 m	3930 a	<203 m	<0.39 m
24–Methylcholesta–5,22E–dien–3ß–ol	19 a	1.6 a	<3630 m	15900 a	55 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	45 a	6.9 a	<24600 m	34700 a	99 a
24–Methylcholest–5–en–3ß–ol	0.88 a	0.072 a	<16300 m	1350 a	3.1 a
24–Ethylcholesta–5,22E–dien–3ß–ol	1.4 a	<1.00 m	<6510 m	<629 m	6.5 a
Triacontanol	0.055 a	<0.33 m	<2430 m	<421 m	<0.81 m

Sample	IP33	ID70 (I33)	M5	M10	IP31
Location/Depth	Stn 5–3, 9m	Stn 5–3, 9m	Stn 5–2/3, 15m	Stn 5–2/3, 20m	Stn 5–3, 21m
Date	26–28/5/87	26/5–28/5/87	29/4–27/5/87	29/4–27/5/87	26/5–28/5/87
Analytical Unit	407.75 L	407.75 L	0.168 g	0.496 g	250.88 L
Conversion Factor	0.8 mg/L	0.8 mg/L	5.44 Cups	5.53 Cups	1.32 mg/L
Derived Unit	0.33 g		1.06 m^2d	1.08 m^2d	0.33 g
RRF	IZ	SZ	LZ	JZ	JZ
	ng/L	ng/L	ng/g	ng/g	ng/L
24–Ethylcholest–5–en–3ß–ol	3.8 b	0.6 a	<22200 m	1860 b	10 b
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	24 a	2.6 a	<46900 m	8010 a	105 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	7.6 a	<2.3 m	<14800 m	2540 a	46 a
ß–Amyrin (Olean–12–en–3ß–ol)	1.9 a	<1.2 m	<13400 m	1370 a	<1.9 m
a–Amyrin (Urs–12–en–3ß–ol)	4.2 a	<1.0 m	<11600 m	3260 a	2.9 a
24–Ethylcholesta–3,5–dien–7–one	2 a	<0.66 m	<7510 m	1380 a	1.5 a

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	25.1 %	14.4 %	0.0 %	5.7 %	0.1 %
Tetracosane–D_{50} Area	612276	188211	73498	139966	368044
Hexatriacontane–D_{74} / Tetracosane D_{50}	95.4 %	133.2 %	79.4 %	151.6 %	124.1 %
Fluoranthene–D_{10} Area	8835280	128575	5150720	55482	95876
Tetracosane–D_{50} / Fluoranthene–D_{10}	147.4 %	0.0 %	60.7 %	175.4 %	133.5 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	70.1 %	52.8 %	5.3 % <c	15.7 %	4.2 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	81.9 %	83.0 %	9.2 % <c	27.1 %	31.9 %
Acenaphthylene–D_8 / Pyrene–D_{10}	92.5 %	81.2 %	13.8 %	36.5 %	69.1 %
Acenaphthene–D_{10} / Pyrene–D_{10}	104.6 %	94.7 %	21.6 %	49.3 %	75.9 %
Anthracene–D_{10} / Pyrene–D_{10}	63.0 %	30.2 %	60.9 %	46.2 %	33.3 %
Chrysene–D_{12} / Pyrene–D_{10}	98.4 %	88.3 %	81.3 %	89.5 %	66.9 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	99.6 %	94.3 %	72.8 %	108.3 %	55.9 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	5.8 %	34.4 %	14.5 %	26.0 %	1.3 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	95.7 %	69.9 %	60.7 %	108.3 %	51.7 %
Pyrene–D_{10} Area	777896	697612	79240	235880	277700
Fluoranthene–D_{10} Area	2729600	0	2037380	22172	9668
Pyrene–D_{10} / Fluoranthene–D_{10}	139.6 %	0.0 %	38.1 %	91.6 %	123.6 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	3666400	697612	659376	29244	30118

Sample	IP33	ID70 (I33)	M5	M10	IP31
Location/Depth	Stn 5–3, 9m	Stn 5–3, 9m	Stn 5–2/3, 15m	Stn 5–2/3, 20m	Stn 5–3, 21m
Date	26–28/5/87	26/5–28/5/87	29/4–27/5/87	29/4–27/5/87	26/5–28/5/87
Analytical Unit	407.75 L	407.75 L	0.168 g	0.496 g	250.88 L
Conversion Factor	0.8 mg/L	0.8 mg/L	5.44 Cups	5.53 Cups	1.32 mg/L
Derived Unit	0.33 g		1.06 m^2d	1.08 m^2d	0.33 g
RRF	IZ	SZ	LZ	JZ	JZ
	ng/L	ng/L	ng/g	ng/g	ng/L
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	7.4	3.1	25500	27300	4
Total $nC_{11}-C_{19}$	3.3	0.13	3130	17500	2.3
Total $nC_{20}-C_{29}$	3.9	2.6	16100	6750	1.7
Total $nC_{30}-C_{36}$	0.27	0.44	6330	3060	0.026
Total $nC_{15}-C_{19}$	2.8	0.0052	3070	17100	2.2
Total $nC_{23}-C_{33}$	2.6	2.7	19000	7220	0.96
Total isoprenoids	3.9	0.31	14500	16400	8.8
Farnesane–Phytane	3.8	0.058	14500	16400	8.8
Total nC_{11}–Phytane	11	3.4	40000	43700	13
Total hopanes	0.98	0.039	5380	1250	1.3
Total Naphthalene–Benzo(ghi)perylene*	2.1	0.41	6930	3640	0.21
Naphthalene–Fluorene*	0.57	0.27	0	565	0
Phenanthrene–Chrysene	0.89	0.14	4390	1880	0.21
Higher PAH (Perylene excluded)	0.67	0	2540	1190	0
Total polyenes	4	0	6270	2310	7.4
Total alcohols	488	1.3	97100	785000	927
Total sterols	161	16	53000	122000	468
OEP at C_{17}	1.21		1.18	20.02	5.00
OEP at C_{25}	1.77	1.09	2.21	1.60	
OEP at C_{27}			3.36	2.27	
OEP at C_{29}			3.91	2.30	
Pristane/Phytane	7.84		23	30	57
Derived Summary Concentrations	ng/g		ng/m^2d	ng/m^2d	ng/g
Total *n*–alkanes, $nC_{11}-C_{36}$	9270		4040	12500	3040
Total $nC_{11}-C_{19}$	4070		496	8010	1750
Total $nC_{20}-C_{29}$	4880		2540	3090	1270
Total $nC_{30}-C_{36}$	334		1000	1400	20
Total $nC_{15}-C_{19}$	3500		485	7830	1700
Total $nC_{23}-C_{33}$	3230		3000	3310	727
Total isoprenoids	4820		2290	7530	6670
Farnesane–Phytane	4720		2290	7500	6650
Total nC_{11}–Phytane	14100		6330	20000	9710
Total hopanes	1220		851	571	981
Total Naphthalene–Benzo(ghi)perylene*	2670		1100	1670	159
Naphthalene–Fluorene*	716		0	259	0
Phenanthrene–Chrysene	1110		694	863	159
Higher PAH (Perylene excluded)	841		402	544	0
Total polyenes	4950		992	1060	5610
Total alcohols	610000		15400	360000	702000
Total sterols	201000		8390	56100	355000

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	ID68 (I31)	FP24	P5	FP21	IP28
Location/Depth	Stn 5–3, 21m	Stn 5–3, 23m	McKinley Bay	Stn 9–3, 17m	Stn 9–3, 19m
Date	26/5–28/5/87	26/5/87	2/6/87	24/5/87	24/5–25/5/87
Analytical Unit	250.88 L	720.5 L	14.5 L	1070 L	151.74 L
Conversion Factor	1.32 mg/L	1.32 mg/L		0.07 mg/L	0.07 mg/L
Derived Unit		0.95 g		0.07 g	0.01 g
RRF	SZ	JZ	RZ	HZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	0.56 b	0.22 q	<4.2	<0.056	<0.40
Dodecane	0.33 b	0.29 a	2.3 a	<0.013 m	<0.035 m
Tridecane	0.45 b	0.64 a	7.6 a	0.021 a	<0.047 m
Tetradecane	<0.50	0.83 a	12 a	0.043 a	<0.037 m
Pentadecane	<1.4	1.3 a	13 a	0.11 a	0.04 a
Hexadecane	<1.5	1.6 a	11 a	0.084 a	0.15 a
Heptadecane	<0.62	1.9 a	16 a	0.11 a	0.24 a
Octadecane	0.41	1.6 a	12 a	0.078 a	0.16 a
Nonadecane	0.07 b	1.4 b	11 b	0.047 b	0.018 b
Eicosane	0.053 b	1.3	15	<0.031	<0.22
Heneicosane	0.14 q	1.4	35	<0.046	<0.32
Docosane	0.29 q	1.2	35	0.037 q	<0.24
Tricosane	0.6	1.3	60	0.048 q	<0.26
Tetracosane	1.1	1	114	<0.041	<0.29
Pentacosane	1.9	1.4	213	0.073 q	<0.30
Hexacosane	2.4	0.84	245	<0.083	<0.59
Heptacosane	2.5	1.5	157	0.088 q	<0.38
Octacosane	3.5	0.49 q	232	<0.11	<0.76
Nonacosane	2.3	1.1	308	<0.15	<1.0 c
Triacontane	1.6 q	0.28 q	306	<0.13	<0.94 c
Untriacontane	1.1 q	0.64	295	<0.13	<0.88 c
Dotriacontane	0.7 q	0.16 q	271	<0.066	<0.47 c
Tritriacontane	0.39 q	0.24	227	<0.043	<0.30
Tetratriacontane	0.19 b	0.11 q	83	<0.035	<0.24 c
Pentatriacontane	0.13 b	0.27	25	<0.016	<0.11 c
Hexatriacontane	0.039 b	0.082 a	<0.47 m	<0.058 m	<0.41 m
2,6–Dimethyl Undecane	0.26 a	0.17 a	1.7 a	<0.014 m	<0.040 m
Norfarnesane	0.31 a	0.21 a	2.9 a	<0.014 m	<0.040 m
Farnesane	0.3 b	0.27 a	5.8 a	0.022 a	<0.042 m
2,6,10–Trimethyl Tridecane	0.13 b	0.53 a	7 a	0.047 a	<0.039 m
Norpristane	<0.60	1 b	9.7 b	0.08 b	0.22 b
Pristane	<0.44	17	16	26	2.1
Phytane	<0.031 e	1.2 b	9.5 b	0.055 b	0.14 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	<0.040 m	0.044 a	63 a	<0.061 m	<0.087 m
17ß(H)–Trisnorhopane (C_{27}ß)	<0.040 m	0.033 a c	7.7 a	<0.061 m	<0.087 m
17a(H),21ß(H)–Norhopane (C_{29}aß)	<0.040 m	0.14 a	200 a	<0.061 m	<0.087 m
Hop–17(21)–ene	<0.20 m	<0.25 m	<1.5 m	<0.22 m	<0.48 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	<0.040 m	0.022 a	12 a	<0.061 m	<0.087 m
17a(H),21ß(H)–Hopane (C_{30}aß)	<0.062 m	0.26 a	194 a	<0.089 m	0.06 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	<0.062 m	0.18 a	30 a	<0.089 m	<0.14 m
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	<0.062 m	0.15 a	25 a	<0.089 m	<0.14 m
Triterpene	<0.20 m	0.12 a	7.4 a	<0.22 m	<0.48 m
17ß(H),21ß(H)–Hopane (C_{30}ßß)	<0.062 m	0.047 a	2.6 a	<0.089 m	<0.14 m
Diploptene	<0.20 m	1 a	0.8 a	0.33 a	0.27 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.062 m	0.13 a	9.5 a	<0.089 m	<0.14 m
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.062 m	0.1 a	6.7 a	<0.089 m	<0.14 m
Heptadecadiene	0.054 a	0.016 a	0.22 a	0.0099 a	<0.046 m
Heptadecene	<0.029 m	0.023 a	0.43 a	<0.015 m	<0.046 m
Nonadecene	0.044 a	0.025 a	5.5 a	0.057 a	<0.054 m
F2 Fraction					
Naphthalene	0.25 b	0.18 b	3.7 b	<0.22 m	<44 m
2–Methyl Naphthalene	0.19 a	0.36 a	5.7 a	<0.21 m	<5.2 m
1–Methyl Naphthalene	0.13 a	0.31 a	3.4 a	<0.21 m	<5.2 m
Dimethyl Naphthalene (N–C_2a)	0.17 a	0.12 a	3.4 a	<0.090 m	<0.77 m
Dimethyl Naphthalene (N–C_2b)	0.22 a	0.18 a	3.7 a	<0.090 m	<0.77 m
Dimethyl Naphthalene (N–C_2c)	0.091 a	0.082 a	2.7 a	<0.090 m	<0.77 m
Acenaphthylene	<0.019 m	<0.017 m	<1.0 m	<0.10 m	<1.6 m
Acenaphthene	<0.027 m	0.0098 a	<0.97 m	<0.14 m	<1.0 m
Trimethyl Naphthalene (N–C_3a)	0.13 a	0.097 a	2.9 a	<0.13 m	<1.1 m

Sample	ID68 (I31)	FP24	P5	FP21	IP28
Location/Depth	Stn 5–3, 21m	Stn 5–3, 23m	McKinley Bay	Stn 9–3, 17m	Stn 9–3, 19m
Date	26/5–28/5/87	26/5/87	2/6/87	24/5/87	24/5–25/5/87
Analytical Unit	250.88 L	720.5 L	14.5 L	1070 L	151.74 L
Conversion Factor	1.32 mg/L	1.32 mg/L		0.07 mg/L	0.07 mg/L
Derived Unit		0.95 g		0.07 g	0.01 g
RRF	SZ	JZ	RZ	HZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	0.013 a	0.11 a	1.1 a	<0.13 m	<1.1 m
Fluorene	0.047 a	0.07 a	0.73 a	<0.13 m	<0.99 m
Tetramethyl Naphthalene (N–C_4a)	<0.023 m	0.043 a	<1.1 m	<0.13 m	<0.92 m
Tetramethyl Naphthalene (N–C_4b)	0.021 a	0.085 a	0.41 a	<0.13 m	<0.92 m
Cadalene	0.097 a	0.088 a	0.35 a	<0.13 m	<0.84 m
Phenanthrene	1.3 b	0.3 a	6.5 a	0.11 a	<0.23 m
Anthracene	<0.12 m	0.0083 a	<1.4 m	<0.13 m	<0.24 m
3–Methyl Phenanthrene	0.35 a	0.22 a	12 a	0.13 a	<0.52 m
2–Methyl Phenanthrene	0.37 a	0.24 a	24 a	0.2 a c	<0.52 m
9/4–Methyl Phenanthrene	0.82 a	0.27 a	16 a	0.2 a	<0.52 m
1–Methyl Phenanthrene	0.38 a	0.17 a	10 a	0.13 a	<0.52 m
Pimanthrene (1,7–dimethyl phenanthrene)	0.086 a	0.13 a	6.8 a	0.075 a	<0.086 m
Heneicosahexaene	<0.40 m	2.7 a	3640 a	30 a	46 a
Fluoranthene	0.035 b	0.064 a	3.9 a c	0.16 a	<0.072 m
Pyrene	0.0074 b	0.12 a	4.1 a	0.16 a	<0.071 m
Simonellite	0.043 a	0.15 a	2.5 a	<0.76 m	<0.37 m
Trimethyl Phenanthrene (P/A–C_3a)	<0.033 m	0.17 a	169 a	<0.34 m	<0.19 m
Retene	0.14 a	0.35 a	7.9 a	<0.76 m	<0.37 m
Tricosapolyene	<0.094 m	6.6 a	30 a	5 a	0.072 a
Methyl Pyrene (F/P–C_1a)	<0.034 m	0.16 a	1.2 a	<0.25 m	<0.15 m
Methyl Pyrene (F/P–C_1b)	<0.034 m	0.077 a	0.69 a	<0.25 m	<0.15 m
Dimethyl Pyrene (F/P–C_2a)	<0.026 m	0.17 a	1.5 a	<0.23 m	<0.13 m
Pentacosapolyene	<0.098 m	4.7 a	7.6 a	5.7 a	<0.46 m
Benz(a)anthracene	<0.023 m	0.039 a	1.1 a	0.086 a	<0.11 m
Chrysene	<0.055 e	0.22 a	3.7 a	0.13 a	<0.10 m
Heptacosapolyene	<0.094 m	3.3 a	5 a	4.7 a	<0.45 m
Benzo(b/j/k)fluoranthene	<0.077 e	0.13 b	2.9 b	<0.56 m	0.005 b
Benzo(a)fluoranthene	<0.028 m	0.0049 a	0.69 a	<0.60 m	<0.13 m
Benzo(e)pyrene	<0.029 m	0.2 a	5.7 a	<0.66 m	<0.13 m
Benzo(a)pyrene	<0.40 m	0.057 a	1.5 a	<0.48 m	<8.4 m
Perylene	<0.39 m	0.013 a	0.37 a	<0.43 m	<7.8 m
Squalene	<23	<4.8 e	235 b	<0.59 m	<23 e
Dibenz(a,h)anthracene	<0.048 m	0.04 a	1.3 a	<0.92 m	<0.12 m
Indeno(1,2,3–cd)pyrene	<0.042 m	0.06 a	0.75 a	<0.87 m	<0.13 m
Benzo(ghi)perylene	<0.056 m	0.29 a	3.5 a	<1.1 m	<0.16 m
F3 Fraction					
Tetradecanol	0.48 b	98 a	1320 a	49 a	9.7 a
Hexadecenol	<0.36 m	38 a	896 a	133 a	1.2 a
Hexadecanol	<0.31 m	94	2540	126	13
Octadecenol	<0.25 m	22 a	222 a	23 a	2.6 a
Octadecanol	<0.29 m	3 q	412	3.4	7.2 q
Phytol	<0.15 m	41 b	91300 b c	38 b	237 b
Eicosenol	<0.42 m	206 a	2510 a	433 a c	178 a
Eicosanol	<0.43 m	3 b	305 b	1.6 b	<2.2 m
Docosenol	<0.43 m	276 b	4120 b	408 b c	7.6 b
Docosanol	<0.43 m	6.4 b	299 b	1.3 b	<2.2 m
Tetracosenol	<0.34 m	9 a	65 a	5.9 a	<1.8 m
Tetracosanol	<0.37 m	2.4 a	138 a	0.17 a	<1.9 m
Hexacosanol	<0.38 m	1.7 a	80 a	0.033 a	<2.0 m
24–Norcholesta–5,22E–dien–3ß–ol	5.2 b	39 b	1410 b	29 b	19 b
Cholesta–5,22E–dien–3ß–ol	1.7 a	25 a	1700 a	22 a	9.4 a
Octacosanol	<0.42 m	0.73 b	36 b c	<0.10 m	<2.2 m
Cholest–5–en–3ß–ol	<32	17	4200	8.8	3.1 q
5a–Cholestan–3ß–ol	0.18 a	1.5 b	96 b	0.59 b	<1.8 m
Cholesta–5,24E–dien–3ß–ol	<0.53 m	<0.12 m	351 a	<0.13 m	<1.1 m
24–Methylcholesta–5,22E–dien–3ß–ol	1.6 a	36 a	1380 a	33 a	17 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	14 a	33 a	7230 a	56 a	21 a
24–Methylcholest–5–en–3ß–ol	0.063 a	1.4 a	232 a	1.2 a	<3.4 m
24–Ethylcholesta–5,22E–dien–3ß–ol	<1.3 m	7.7 a	227 a	0.61 a	3.5 a
Triacontanol	<0.42 m	<0.25 m	<30 m	<0.10 m	<2.2 m

Sample	ID68 (I31)	FP24	P5	FP21	IP28
Location/Depth	Stn 5–3, 21m	Stn 5–3, 23m	McKinley Bay	Stn 9–3, 17m	Stn 9–3, 19m
Date	26/5–28/5/87	26/5/87	2/6/87	24/5/87	24/5–25/5/87
Analytical Unit	250.88 L	720.5 L	14.5 L	1070 L	151.74 L
Conversion Factor	1.32 mg/L	1.32 mg/L		0.07 mg/L	0.07 mg/L
Derived Unit		0.95 g		0.07 g	0.01 g
RRF	SZ	JZ	RZ	HZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	0.52 a	6 b	398 b	4.1 b	<4.6 m
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	10 a	35 a	1350 a	30 a	<24 m
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	2.9 a	14 a	311 a	95 a	36 a
ß–Amyrin (Olean–12–en–3ß–ol)	<1.5 m	2.3 a	25 a	0.35 a	<5.1 m
a–Amyrin (Urs–12–en–3ß–ol)	<1.3 m	4.9 a	75 a	0.8 a	<4.4 m
24–Ethylcholesta–3,5–dien–7–one	<0.86 m	2.2 a	128 a	0.55 a	<2.9 m

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	14.6 %	31.3 %	11.6 %	13.1 %	0.0 %
Tetracosane–D_{50} Area	251169	105666	765352	97978	263244
Hexatriacontane–D_{74} / Tetracosane D_{50}	177.0 %	85.4 %	7.3 %	61.7 %	116.4 %
Fluoranthene–D_{10} Area	0	20781	0	4363160	53479
Tetracosane–D_{50} / Fluoranthene–D_{10}	0.0 %	176.8 %	0.0 %	47.8 %	171.2 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	43.6 %	39.9 %	35.6 %	24.1 %	0.1 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	82.8 %	46.7 %	42.4 %	43.3 %	1.5 % <c
Acenaphthylene–D_8 / Pyrene–D_{10}	92.0 %	68.7 %	44.2 %	74.5 %	3.5 %
Acenaphthene–D_{10} / Pyrene–D_{10}	95.3 %	73.9 %	54.5 %	87.1 %	8.6 %
Anthracene–D_{10} / Pyrene–D_{10}	14.6 %	91.1 %	32.6 %	71.6 %	28.8 %
Chrysene–D_{12} / Pyrene–D_{10}	100.1 %	108.6 %	106.2 %	65.0 %	97.2 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	91.1 %	141.8 %	193.1 %	46.4 %	87.2 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	6.7 %	90.0 %	120.2 %	56.9 % <c	1.3 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	68.5 %	150.8 %	401.6 %	40.4 %	113.5 %
Pyrene–D_{10} Area	878080	749668	646144	62250	748529
Fluoranthene–D_{10} Area	0	33062	6907820	918333	32902
Pyrene–D_{10} / Fluoranthene–D_{10}	0.0 %	97.6 %	45.8 %	33.2 %	97.9 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.0 %	1.1 %	0.0 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	878080	33544	446866	1400430	18270

Sample	ID68 (I31)	FP24	P5	FP21	IP28
Location/Depth	Stn 5–3, 21m	Stn 5–3, 23m	McKinley Bay	Stn 9–3, 17m	Stn 9–3, 19m
Date	26/5–28/5/87	26/5/87	2/6/87	24/5/87	24/5–25/5/87
Analytical Unit	250.88 L	720.5 L	14.5 L	1070 L	151.74 L
Conversion Factor	1.32 mg/L	1.32 mg/L		0.07 mg/L	0.07 mg/L
Derived Unit		0.95 g		0.07 g	0.01 g
RRF	SZ	JZ	RZ	HZ	JZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Summary Concentrations					
Total n–alkanes, nC_{11}–C_{36}	21	23	2710	0.74	0.61
Total nC_{11}–C_{19}	1.8	9.8	85	0.49	0.61
Total nC_{20}–C_{29}	15	12	1410	0.25	0
Total nC_{30}–C_{36}	4.1	1.8	1210	0	0
Total nC_{15}–C_{19}	0.48	7.8	63	0.43	0.61
Total nC_{23}–C_{33}	18	9	2430	0.21	0
Total isoprenoids	1	20	53	26	2.5
Farnesane–Phytane	0.43	20	48	26	2.5
Total nC_{11}–Phytane	22	43	2760	27	3.1
Total hopanes	0	2.1	551	0.33	0.33
Total Naphthalene–Benzo(ghi)perylene*	1.9	2.5	49	0.65	0.005
Naphthalene–Fluorene*	0.62	0.93	14	0	0
Phenanthrene–Chrysene	1.3	0.75	19	0.65	0
Higher PAH (Perylene excluded)	0	0.78	16	0	0.005
Total polyenes	0	17	3680	45	46
Total alcohols	0.48	801	104000	1220	456
Total sterols	36	216	18900	280	109
OEP at C_{17}		1.10	1.30	1.26	1.21
OEP at C_{25}	1.04	1.52	1.04		
OEP at C_{27}	0.81	2.16	0.77		
OEP at C_{29}	0.85	2.84	1.07		
Pristane/Phytane		14	1.68	473	15
Derived Summary Concentrations		ng/g		ng/g	ng/g
Total n–alkanes, nC_{11}–C_{36}		17500		10600	8690
Total nC_{11}–C_{19}		7410		7040	8690
Total nC_{20}–C_{29}		8730		3510	0
Total nC_{30}–C_{36}		1350		0	0
Total nC_{15}–C_{19}		5910		6130	8690
Total nC_{23}–C_{33}		6780		2990	0
Total isoprenoids		15400		374000	35100
Farnesane–Phytane		15200		374000	35100
Total nC_{11}–Phytane		32900		385000	43800
Total hopanes		1600		4710	4710
Total Naphthalene–Benzo(ghi)perylene*		1870		9230	71
Naphthalene–Fluorene*		704		0	0
Phenanthrene–Chrysene		569		9230	0
Higher PAH (Perylene excluded)		592		0	71
Total polyenes		13100		649000	658000
Total alcohols		607000		2E+07	6520000
Total sterols		163000		4000000	1560000

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	ID65 (I28)	FP22	M6	IP29	ID66 (I29)
Location/Depth	Stn 9–3, 19m	Stn 9–3, 38m	Stn 9–2/3, 40m	Stn 9–3, 50m	Stn 9–3, 50m
Date	24–25/5/87	25/5/87	29/4–24/5/87	24/5–25/5/87	24/4–25/5/87
Analytical Unit	151.74 L	1949 L	0.083 g	181.00 L	181.00 L
Conversion Factor	0.07 mg/L	0.07 mg/L	5.52 Cups	0.21 mg/L	
Derived Unit		0.14 g	0.956 m^2d	0.04 g	
RRF	MZ	OZ	JZ	JZ	KZ
	ng/L	ng/L	ng/g	ng/L	ng/L
F1 Fraction					
Undecane	<0.10 m	<0.031	<728	<0.33	0.35 b
Dodecane	<0.12 m	0.0026 a	<51 m	<0.015 m	0.43 b
Tridecane	<0.13 m	0.011 a	<70 m	<0.020 m	0.17 b
Tetradecane	<0.83	0.02 a	<55 m	<0.016 m	<0.69
Pentadecane	<2.4	0.041 a	47 a	0.0098 a c	<2.0
Hexadecane	<2.6	0.05 a	149 a	0.031 a	<2.1
Heptadecane	<1.0	8.9 a c	2240 a	0.074 a	<0.86
Octadecane	<0.089	0.048 a	248 a	0.096 a	0.15 q
Nonadecane	<0.095 m	0.028 b	217 b	0.021 b	0.13 b
Eicosane	<0.095 m	0.027 q	<399	<0.18	0.12 b
Heneicosane	<0.11	0.036 q	<589	<0.27	0.096 q
Docosane	<0.19	0.034 q	<437	<0.20	0.23 q
Tricosane	0.25 q	0.047 q	<486	<0.22	0.42 q
Tetracosane	<0.42	0.044 q	<535	<0.24	0.5 q c
Pentacosane	<0.55	0.084	941 q	<0.25	0.58 q
Hexacosane	<0.66	<0.046	<1080	<0.49	<0.55
Heptacosane	<0.70	0.088 q	<704	<0.32	<0.58
Octacosane	<0.70	<0.059	<1400	<0.64	<0.59
Nonacosane	<0.95	0.082 q	<1920	<0.88	<0.79
Triacontane	<0.88	<0.073	<1730	<0.79	<0.74
Untriacontane	<0.76	<0.069	<1620	<0.74	<0.63
Dotriacontane	<0.60	<0.036	<857	<0.39	0.86 q
Tritriacontane	<0.50	0.028 q	<559	<0.26	<0.42
Tetratriacontane	<0.30 e	<0.019	<447	<0.20	0.65 b
Pentatriacontane	0.11 b	0.082	<211 c	<0.096 c	0.31 b
Hexatriacontane	0.17 b	0.0084 a	174 a c	0.05 a c	0.049 b
2,6–Dimethyl Undecane	<0.13 m	0.0024 a	<59 m	<0.017 m	<0.018 m
Norfarnesane	<0.13 m	0.0041 a	<59 m	<0.017 m	0.1 a
Farnesane	<0.12 m	0.012 a	<61 m	<0.017 m	0.19 b
2,6,10–Trimethyl Tridecane	<0.11 m	0.026 a	34 a	<0.016 m	0.19 b
Norpristane	<1.00	0.047 b	341 b	0.037 b	<0.83
Pristane	<0.73	7.9 c	16300	0.48 q	<0.61
Phytane	<0.096 m	0.031 b	446 b	0.049 b	0.031 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	<0.34 m	0.0017 a	<128 m	0.0053 a	<0.049 m
17ß(H)–Trisnorhopane (C_{27}ß)	<0.34 m	0.0013 a	<128 m	<0.036 m	<0.049 m
17a(H),21ß(H)–Norhopane (C_{29}aß)	<0.34 m	0.0051 a	55 a c	0.012 a	<0.049 m
Hop–17(21)–ene	<3.1 m	0.017 a	<706 m	<0.20 m	<0.44 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	<0.34 m	0.00091 a	<128 m	<0.036 m	<0.049 m
17a(H),21ß(H)–Hopane (C_{30}aß)	<0.47 m	0.012 a	162 a c	0.033 a	<0.068 m
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	<0.47 m	0.0043 a	<208 m	<0.059 m	<0.068 m
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	<0.47 m	0.0039 a	<208 m	<0.059 m	<0.068 m
Triterpene	<3.1 m	0.014 a	<706 m	<0.20 m	<0.44 m
17ß(H),21ß(H)–Hopane (C_{30}ßß)	<0.47 m	0.0034 a	<208 m	<0.059 m	<0.068 m
Diploptene	<3.1 m	0.39 a	1180 a	0.47 a	<0.44 m
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.47 m	0.0016 a c	<208 m	<0.059 m	<0.068 m
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.47 m	0.0016 a	<208 m	<0.059 m	<0.068 m
Heptadecadiene	<0.096 m	0.0019 a	<67 m	0.0067 a	<0.014 m
Heptadecene	<0.096 m	<0.00088 m	<67 m	<0.019 m	0.01 a
Nonadecene	<0.095 m	0.0067 a	158 a	<0.023 m	0.3 a
F2 Fraction					
Naphthalene	<0.99 m	0.018 b	<3740 m	<20 m	0.11 b
2–Methyl Naphthalene	<1.3 m	0.018 a	<3750 m	<4.5 m	0.17 a
1–Methyl Naphthalene	<1.3 m	0.016 a	<3750 m	<4.5 m	0.11 a
Dimethyl Naphthalene (N–C_2a)	<0.76 m	0.006 a	<1080 m	<0.12 m	0.089 a
Dimethyl Naphthalene (N–C_2b)	<0.76 m	0.01 a	<1080 m	<0.12 m	0.04 a
Dimethyl Naphthalene (N–C_2c)	<0.76 m	0.0056 a	<1080 m	<0.12 m	0.057 a
Acenaphthylene	<0.93 m	<0.0059 m	<1990 m	<0.10 m	<0.050 m
Acenaphthene	<1.2 m	<0.0089 m	<1460 m	<0.16 m	0.015 a
Trimethyl Naphthalene (N–C_3a)	<1.1 m	0.0066 a	<1540 m	<0.17 m	0.094 a

Sample	ID65 (I28)	FP22	M6	IP29	ID66 (I29)
Location/Depth	Stn 9–3, 19m	Stn 9–3, 38m	Stn 9–2/3, 40m	Stn 9–3, 50m	Stn 9–3, 50m
Date	24–25/5/87	25/5/87	29/4–24/5/87	24/5–25/5/87	24/4–25/5/87
Analytical Unit	151.74 L	1949 L	0.083 g	181.00 L	181.00 L
Conversion Factor	0.07 mg/L	0.07 mg/L	5.52 Cups	0.21 mg/L	
Derived Unit		0.14 g	0.956 m^2d	0.04 g	
RRF	MZ	OZ	JZ	JZ	KZ
	ng/L	ng/L	ng/g	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	<1.1 m	0.0021 a	<1540 m	<0.17 m	0.02 a
Fluorene	<1.1 m	0.0042 a	<1390 m	0.053 a	0.058 a
Tetramethyl Naphthalene (N–C_4a)	<1.1 m	<0.0078 m	<1280 m	<0.14 m	<0.032 m
Tetramethyl Naphthalene (N–C_4b)	<1.1 m	<0.0078 m	<1280 m	<0.14 m	<0.032 m
Cadalene	<1.1 m	<0.0071 m	<1170 m	<0.13 m	0.035 a
Phenanthrene	1.3 b	0.013 a	454 a	0.053 a	2 b
Anthracene	<1.9 m	<0.0057 m	<453 m	<0.15 m	<0.42 m
3–Methyl Phenanthrene	1.4 a	0.01 a	166 a	<0.33 m	<0.85 m
2–Methyl Phenanthrene	3.5 a	0.015 a	132 a c	<0.33 m	<0.85 m
9/4–Methyl Phenanthrene	2.3 a	0.014 a	193 a	<0.33 m	<0.85 m
1–Methyl Phenanthrene	1.7 a	0.0093 a	185 a c	<0.33 m	<0.85 m
Pimanthrene (1,7–dimethyl phenanthrene)	0.31 a	0.0046 a	<174 m	<0.057 m	<0.035 m
Heneicosahexaene	<12 m	4.5 a	8490 a	1.5 a	<0.63 m
Fluoranthene	1.9 b	0.0047 a	186 a	<0.048 m	<0.046 e
Pyrene	1.4 b	0.0037 a	156 a	<0.047 m	<0.058 e
Simonellite	<5.0 m	<0.025 m	<756 m	<0.25 m	<0.096 m
Trimethyl Phenanthrene (P/A–C_3a)	<2.2 m	<0.012 m	<382 m	<0.12 m	<0.059 m
Retene	<5.0 m	0.0096 a	<756 m	<0.25 m	<0.096 m
Tricosapolyene	<6.1 m	2 a	<888 m	<0.29 m	<0.081 m
Methyl Pyrene (F/P–C_1a)	<1.6 m	0.0023 a	<308 m	<0.10 m	<0.068 m
Methyl Pyrene (F/P–C_1b)	<1.6 m	<0.010 m	<308 m	<0.10 m	<0.068 m
Dimethyl Pyrene (F/P–C_2a)	<1.5 m	0.0015 a	<267 m	<0.087 m	<0.054 m
Pentacosapolyene	<6.4 m	2.5 a	<927 m	<0.30 m	<0.084 m
Benz(a)anthracene	0.65 b	0.0019 a	<199 m	<0.075 m	<0.066 e c
Chrysene	0.9 b	0.0073 a	192 a	<0.073 m	<0.076 e
Heptacosapolyene	<8.0 m	2.1 a	<859 m	<0.32 m	<0.072 m
Benzo(b/j/k)fluoranthene	0.7 b	0.0063 b	196 b	<0.077 m	<0.11 e
Benzo(a)fluoranthene	<2.6 m	<0.0054 m	<195 m	<0.083 m	<0.048 m
Benzo(e)pyrene	<2.8 m	0.0062 a	140 a	<0.086 m	<0.046 e
Benzo(a)pyrene	<19 m	<0.017 m	<3450 m	<2.8 m	<0.73 m
Perylene	<17 m	<0.016 m	<3220 m	<2.6 m	<0.81 m
Squalene	<38	<1.8 e	<41600 e	<19 e	<31
Dibenz(a,h)anthracene	<4.1 m	0.0019 a	<218 m	<0.088 m	<0.079 m
Indeno(1,2,3–cd)pyrene	<3.9 m	<0.0061 m	<221 m	<0.089 m	<0.072 m
Benzo(ghi)perylene	<4.7 m	0.0074 a	<278 m	<0.11 m	<0.096 m
F3 Fraction					
Tetradecanol	19 b	3 a	14400 a	161 a	0.029 b
Hexadecenol	<37 m	0.76 a	24800 a	5 a	<0.088 m
Hexadecanol	48 b	2.6	61800	78	0.92 b
Octadecenol	<25 m	0.42 a	7100 a	1.9 a	<0.061 m
Octadecanol	9.7 b	<0.35	12100 q	12 q	0.77 b
Phytol	8.8 b	1.6 b	705000 b	40 b	0.068 b
Eicosenol	<29 m	2.3 a	112000 a	49 a	<0.071 m
Eicosanol	<30 m	<0.046 e	<3720 m	5.8 b	<0.072 m
Docosenol	<29 m	1.3 b	153000 b	7.6 b	<0.072 m
Docosanol	<30 m	0.0056 b	<3720 m	0.52 b	<0.072 m
Tetracosenol	<23 m	0.038 a	<2950 m	1.1 a	<0.057 m
Tetracosanol	<25 m	<0.0054 m	<3170 m	0.83 a	<0.061 m
Hexacosanol	<26 m	<0.0056 m	<3300 m	<1.3 m	<0.064 m
24–Norcholesta–5,22E–dien–3ß–ol	125 b	0.15 b	128000 b	23 b	1.4 b
Cholesta–5,22E–dien–3ß–ol	<200 m	0.2 a	36900 a	13 a	0.6 a
Octacosanol	<29 m	<0.0062 m	<3670 m	<1.5 m	<0.071 m
Cholest–5–en–3ß–ol	<53	<0.16	28600	7.6	<45
5a–Cholestan–3ß–ol	<45 m	0.0068 b	5230 b	2.9 b	0.09 a
Cholesta–5,24E–dien–3ß–ol	50 a	<0.0069 m	<1770 m	<0.70 m	0.41 a
24–Methylcholesta–5,22E–dien–3ß–ol	279 a	0.21 a	98300 a	23 a	<0.11 m
24–Methylcholesta–5,24(28)–dien–3ß–ol	201 a	0.076 a	196000 a	25 a	0.8 a
24–Methylcholest–5–en–3ß–ol	7.4 a	<0.042 m	7030 a	2 a	<0.48 m
24–Ethylcholesta–5,22E–dien–3ß–ol	<92 m	<0.017 m	4950 a	1.6 a	<0.19 m
Triacontanol	<29 m	<0.0062 m	<3670 m	<1.5 m	<0.071 m

Sample	ID65 (I28)	FP22	M6	IP29	ID66 (I29)
Location/Depth	Stn 9–3, 19m	Stn 9–3, 38m	Stn 9–2/3, 40m	Stn 9–3, 50m	Stn 9–3, 50m
Date	24–25/5/87	25/5/87	29/4–24/5/87	24/5–25/5/87	24/4–25/5/87
Analytical Unit	151.74 L	1949 L	0.083 g	181.00 L	181.00 L
Conversion Factor	0.07 mg/L	0.07 mg/L	5.52 Cups	0.21 mg/L	
Derived Unit		0.14 g	0.956 m^2d	0.04 g	
RRF	MZ	OZ	JZ	JZ	KZ
	ng/L	ng/L	ng/g	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	73 a	<0.057 m	19000 b	5.8 b	0.3 a
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	385 a	<0.12 m	55900 a	<16 m	0.45 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	364 a	0.059 a	9520 a	13 a	0.16 a
ß–Amyrin (Olean–12–en–3ß–ol)	<163 m	<0.034 m	<8540 m	<3.4 m	<0.39 m
a–Amyrin (Urs–12–en–3ß–ol)	<140 m	<0.030 m	<7360 m	<2.9 m	<0.34 m
24–Ethylcholesta–3,5–dien–7–one	<91 m	<0.019 m	<4770 m	<1.9 m	<0.22 m

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	0.0 %	3.9 %	0.0 %	0.0 %	20.8 %
Tetracosane–D_{50} Area	260538	1068880	164257	528358	1515630
Hexatriacontane–D_{74} / Tetracosane D_{50}	82.7 %	130.8 %	125.4 %	123.3 %	189.2 %
Fluoranthene–D_{10} Area	9439000 c	173105	56165	106394	0
Tetracosane–D_{50} / Fluoranthene–D_{10}	24.5 %	214.7 %	203.4 %	172.7 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	35.5 %	6.8 %	2.5 % <c	0.1 % <c	36.1 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	47.4 %	27.9 %	4.2 % <c	1.1 %	48.2 %
Acenaphthylene–D_8 / Pyrene–D_{10}	52.9 %	62.5 %	5.7 %	36.4 %	49.9 %
Acenaphthene–D_{10} / Pyrene–D_{10}	67.9 %	67.0 %	12.5 %	37.0 %	73.5 %
Anthracene–D_{10} / Pyrene–D_{10}	32.2 %	80.6 %	30.9 %	30.0 %	7.8 %
Chrysene–D_{12} / Pyrene–D_{10}	77.2 %	115.8 %	103.7 %	89.6 %	112.3 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	71.1 %	135.9 %	115.8 %	88.2 %	74.3 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	9.3 %	42.7 %	6.3 %	2.5 %	4.8 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	59.3 %	155.7 %	131.4 %	106.0 %	53.8 %
Pyrene–D_{10} Area	67186	883752	339508	952675	2296160
Fluoranthene–D_{10} Area	1504030	39976	28392	33444	0
Pyrene–D_{10} / Fluoranthene–D_{10}	21.9 %	95.1 %	102.9 %	122.6 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.0 %	0.0 %	2.0 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	35514	97910	20100	23236	2296160

Sample	ID65 (I28)	FP22	M6	IP29	ID66 (I29)
Location/Depth	Stn 9–3, 19m	Stn 9–3, 38m	Stn 9–2/3, 40m	Stn 9–3, 50m	Stn 9–3, 50m
Date	24–25/5/87	25/5/87	29/4–24/5/87	24/5–25/5/87	24/4–25/5/87
Analytical Unit	151.74 L	1949 L	0.083 g	181.00 L	181.00 L
Conversion Factor	0.07 mg/L	0.07 mg/L	5.52 Cups	0.21 mg/L	
Derived Unit		0.14 g	0.956 m^2d	0.04 g	
RRF	MZ	OZ	JZ	JZ	KZ
	ng/L	ng/L	ng/g	ng/L	ng/L
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	0.53	9.7	4020	0.28	5
Total $nC_{11}-C_{19}$	0	9.1	2900	0.23	1.2
Total $nC_{20}-C_{29}$	0.25	0.44	941	0	1.9
Total $nC_{30}-C_{36}$	0.28	0.12	174	0.05	1.9
Total $nC_{15}-C_{19}$	0	9.1	2900	0.23	0.28
Total $nC_{23}-C_{33}$	0.25	0.37	941	0	2.4
Total isoprenoids	0	8	17100	0.57	0.51
Farnesane–Phytane	0	8	17100	0.57	0.41
Total nC_{11}–Phytane	0.53	18	21100	0.85	5.5
Total hopanes	0	0.44	1400	0.52	0
Total Naphthalene–Benzo(ghi)perylene*	6.9	0.11	1320	0.11	2.5
Naphthalene–Fluorene*	0	0.056	0	0.053	0.46
Phenanthrene–Chrysene	6.2	0.031	988	0.053	2
Higher PAH (Perylene excluded)	0.7	0.022	336	0	0
Total polyenes	0	11	8490	1.5	0
Total alcohols	86	12	1090000	363	1.8
Total sterols	1480	0.7	589000	117	4.2
OEP at C_{17}		136.40	8.63	0.93	
OEP at C_{25}					
OEP at C_{27}					
OEP at C_{29}					
Pristane/Phytane		255	37	9.8	
Derived Summary Concentrations		ng/g	ng/m^2d	ng/g	
Total *n*–alkanes, $nC_{11}-C_{36}$		138000	348	1340	
Total $nC_{11}-C_{19}$		130000	251	1100	
Total $nC_{20}-C_{29}$		6310	81	0	
Total $nC_{30}-C_{36}$		1690	15	238	
Total $nC_{15}-C_{19}$		130000	251	1100	
Total $nC_{23}-C_{33}$		5330	81	0	
Total isoprenoids		115000	1480	2700	
Farnesane–Phytane		115000	1480	2700	
Total nC_{11}–Phytane		253000	1830	4040	
Total hopanes		6330	121	2480	
Total Naphthalene–Benzo(ghi)perylene*		1550	115	504	
Naphthalene–Fluorene*		803	0	252	
Phenanthrene–Chrysene		437	86	252	
Higher PAH (Perylene excluded)		311	29	0	
Total polyenes		159000	735	7140	
Total alcohols		172000	94400	1730000	
Total sterols		10000	51000	557000	

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	FP20	IP27	ID64 (I27)	IP26	ID63 (I26)
Location/Depth	Stn 10−3, 16m	Stn 10−3, 18m	Stn 10−3, 18m	Stn 10−3, 120m	Stn 10−3, 120m
Date	23/5/87	23−25/5/87	23−25/5/87	23/5−25/5/87	23/5−25/5/87
Analytical Unit	1902 L	330.74 L	330.74 L	126.61 L	126.61 L
Conversion Factor	0.11 mg/L	0.11 mg/L	0.11 mg/L	0.10 mg/L	
Derived Unit	0.21 g	0.04 g		0.01 g	
RRF	RZ	HZ	RZ	JZ	KZ
	ng/L	ng/L	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	<0.032	<0.18	0.28 b	<0.48	0.038 b
Dodecane	0.013 a	<0.052 m	0.12 b	<0.033 m	0.2 b
Tridecane	0.0093 a	<0.061 m	0.034 b	0.043 a	<0.21 e
Tetradecane	0.036 a	0.083 a	<0.38	0.043 a	<0.99
Pentadecane	0.11 a	0.18 a	<1.1	0.05 a	<2.9
Hexadecane	0.094 a	0.18 a	<1.2	0.072 a	<3.1
Heptadecane	7.7 a	0.34 a	<0.47	0.16 a c	<1.2
Octadecane	0.087 a	0.25 a	<0.041	0.047 a	<0.11
Nonadecane	0.044 b	0.33 b	0.01 b	<0.070 e	0.04 b
Eicosane	0.039 q	0.27 q	<0.038 e	<0.26	0.1 b
Heneicosane	0.031 q	0.47 q	<0.051	<0.38	0.4 q
Docosane	0.072	0.38	0.17 q	<0.29	0.35 q
Tricosane	0.065 q	0.56	0.092 q	<0.32	0.59 q
Tetracosane	0.062 q	0.49	0.47 q	<0.35	<0.50
Pentacosane	0.088	0.86	0.4 q	<0.35	0.95 q
Hexacosane	0.067 q	0.33 q	<0.30	<0.70	<0.79
Heptacosane	0.076 q	1.4	0.46 q	<0.46	<0.84
Octacosane	<0.061	0.35 q	<0.32	<0.91	0.88 q
Nonacosane	0.1 q	1.4 q	<0.43	<1.3	<1.1
Triacontane	<0.075	<0.43	<0.41	<1.1	<1.1
Untriacontane	0.084 q	1.3 q	<0.35	<1.1	0.93 q
Dotriacontane	0.073 q	<0.21	<0.27	<0.56	<0.72
Tritriacontane	0.038 q	0.3 q	<0.23	<0.37	<0.60
Tetratriacontane	0.061 q	<0.11 c	<0.14 e	<0.29	0.078 b
Pentatriacontane	0.14	<0.053 c	<0.059 e	0.37 q	0.35 b
Hexatriacontane	<0.026 m	<0.23 m	<0.020 m	<0.38 m	0.054 b
2,6−Dimethyl Undecane	0.006 a	<0.056 m	0.093 a	<0.038 m	<0.059 m
Norfarnesane	0.0025 a	<0.056 m	0.034 a	<0.038 m	0.11 a
Farnesane	0.014 a	0.024 a	<0.045 e	0.045 a	<0.12 e
2,6,10−Trimethyl Tridecane	0.023 a	0.061 a	0.018 b	0.026 a	0.19 b
Norpristane	0.058 b	0.17 b	<0.46	0.013 b	<1.2
Pristane	108 c	19	<0.33	0.52 q	<0.87
Phytane	0.064 b	0.16 b	0.027 b	<0.064 e	0.0073 b
17a(H)−Trisnorhopane (C_{27}a,Tm)	<0.028 m	0.068 a	<0.021 m	<0.082 m	<0.16 m
17ß(H)−Trisnorhopane (C_{27}ß)	<0.028 m	0.075 a	<0.021 m	<0.082 m	<0.16 m
17a(H),21ß(H)−Norhopane (C_{29}aß)	<0.028 m	0.12 a	<0.021 m	<0.082 m	<0.16 m
Hop−17(21)−ene	<0.086 m	<0.86 m	<0.065 m	<0.45 m	<1.4 m
17ß(H),21a(H)−Normoretane (C_{29}ßa)	<0.028 m	<0.24 m	<0.021 m	<0.082 m	<0.16 m
17a(H),21ß(H)−Hopane (C_{30}aß)	<0.033 m	0.35 a	<0.025 m	0.066 a	0.17 b
S−17a(H),21ß(H)−Homohopane (C_{31}aß)	<0.033 m	<0.36 m	<0.025 m	<0.13 m	<0.22 m
R−17a(H),21ß(H)−Homohopane (C_{31}aß)	<0.033 m	<0.36 m	<0.025 m	<0.13 m	<0.22 m
Triterpene	<0.086 m	0.92 a	<0.065 m	<0.45 m	<1.4 m
17ß(H),21ß(H)−Hopane (C_{30}ßß)	<0.033 m	<0.36 m	<0.025 m	<0.13 m	<0.22 m
Diploptene	0.14 a	2 a	0.2 a	0.38 a	0.24 a
S−17a(H),21ß(H)−Bishomohopane (C_{32}aß)	<0.033 m	<0.36 m	<0.025 m	<0.13 m	<0.22 m
R−17a(H),21ß(H)−Bishomohopane (C_{32}aß)	<0.033 m	<0.36 m	<0.025 m	<0.13 m	<0.22 m
Heptadecadiene	0.023 a	0.052 a	0.011 a	<0.043 m	<0.044 m
Heptadecene	0.0055 a	0.011 a	0.0036 a	<0.043 m	<0.044 m
Nonadecene	0.1 a	0.12 a	0.02 a	<0.051 m	0.047 a
F2 Fraction					
Naphthalene	0.24 b	0.019 b	<0.095 e	<8.8 m	0.18 b
2−Methyl Naphthalene	<0.11 m	0.037 a	0.07 a	<0.42 m	0.3 a
1−Methyl Naphthalene	<0.11 m	0.021 a	0.049 a	<0.42 m	0.29 a
Dimethyl Naphthalene (N−C_2a)	<0.028 m	0.011 a	0.051 a	<0.083 m	0.19 a
Dimethyl Naphthalene (N−C_2b)	<0.028 m	<0.041 m	0.053 a	<0.083 m	0.086 a
Dimethyl Naphthalene (N−C_2c)	<0.028 m	0.013 a	0.036 a	<0.083 m	0.14 a
Acenaphthylene	<0.039 m	<0.052 m	0.028 a	<0.23 m	<0.14 m
Acenaphthene	<0.033 m	<0.063 m	<0.050 m	<0.11 m	<0.17 m
Trimethyl Naphthalene (N−C_3a)	<0.037 m	<0.061 m	0.05 a	<0.12 m	0.14 a

Sample	FP20	IP27	ID64 (I27)	IP26	ID63 (I26)
Location/Depth	Stn 10–3, 16m	Stn 10–3, 18m	Stn 10–3, 18m	Stn 10–3, 120m	Stn 10–3, 120m
Date	23/5/87	23–25/5/87	23–25/5/87	23/5–25/5/87	23/5–25/5/87
Analytical Unit	1902 L	330.74 L	330.74 L	126.61 L	126.61 L
Conversion Factor	0.11 mg/L	0.11 mg/L	0.11 mg/L	0.10 mg/L	
Derived Unit	0.21 g	0.04 g		0.01 g	
RRF	RZ	HZ	RZ	JZ	KZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	<0.037 m	<0.061 m	<0.055 m	<0.12 m	<0.12 m
Fluorene	0.023 a	<0.061 m	0.12 a	0.046 a	<0.17 m
Tetramethyl Naphthalene (N–C_4a)	<0.039 m	<0.058 m	<0.058 m	<0.099 m	<0.10 m
Tetramethyl Naphthalene (N–C_4b)	<0.039 m	<0.058 m	<0.058 m	<0.099 m	<0.10 m
Cadalene	<0.039 m	<0.059 m	0.087 a	<0.090 m	<0.12 m
Phenanthrene	0.0069 a	<1.7 m	2.9 b	<0.71 m	0.22 b
Anthracene	<0.0082 m	<1.7 m	0.4 a	<0.75 m	<0.37 m
3–Methyl Phenanthrene	<0.026 m	<4.3 m	0.7 a	<1.6 m	<0.74 m
2–Methyl Phenanthrene	<0.026 m	<4.3 m	0.99 a	<1.6 m	<0.74 m
9/4–Methyl Phenanthrene	0.0093 a	<4.3 m	0.92 a	<1.6 m	<0.74 m
1–Methyl Phenanthrene	<0.026 m	<4.3 m	0.85 a	<1.6 m	<0.74 m
Pimanthrene (1,7–dimethyl phenanthrene)	<0.011 m	<0.095 m	0.086 a	<0.067 m	<0.098 m
Heneicosahexaene	127 a c	873 a	<1.7 m	<2.9 m	<0.55 m
Fluoranthene	<0.0082 m c	<0.079 m	<0.025 e c	<0.056 m	0.056 b
Pyrene	<0.0076 m	<0.080 m	<0.032 e	<0.055 m	<0.082 e
Simonellite	<0.055 m	<0.48 m	0.066 a	<0.29 m	<0.27 m
Trimethyl Phenanthrene (P/A–C_3a)	<0.022 m	<0.21 m	<0.064 m	<0.15 m	<0.16 m
Retene	<0.055 m	<0.48 m	0.17 a	<0.29 m	0.26 a
Tricosapolyene	15 a	1 a	0.68 a	<0.34 m	<0.22 m
Methyl Pyrene (F/P–C_1a)	0.008 a	<0.16 m	0.013 a	<0.12 m	<0.19 m
Methyl Pyrene (F/P–C_1b)	<0.014 m	<0.16 m	<0.041 m	<0.12 m	<0.19 m
Dimethyl Pyrene (F/P–C_2a)	<0.017 m	<0.14 m	<0.049 m	<0.10 m	<0.15 m
Pentacosapolyene	9.7 a	0.34 a	1 a	<0.36 m	<0.23 m
Benz(a)anthracene	<0.012 m	<0.14 m	<0.014 m	<0.081 m	<0.083 m
Chrysene	<0.010 m	<0.15 m	0.037 b	<0.079 m	<0.11 e
Heptacosapolyene	0.54 a	<0.64 m	0.32 a	<0.35 m	<0.19 m
Benzo(b/j/k)fluoranthene	<0.0087 m	<0.19 m	<0.058 e	<0.053 e	0.0058 b
Benzo(a)fluoranthene	<0.016 m	<0.21 m	0.014 a	<0.11 m	<0.094 m
Benzo(e)pyrene	<0.017 m	<0.22 m	<0.025 e	<0.11 m	<0.065 e
Benzo(a)pyrene	<0.022 m	<0.82 m	0.025 a	<18 m	<0.57 m
Perylene	0.012 a	<0.73 m	0.028 a	<17 m	<0.63 m
Squalene	8.4 b	<0.20 m	<17	<27 e	<45
Dibenz(a,h)anthracene	<0.013 m	<0.35 m	<0.23 m	<0.11 m	<0.18 m
Indeno(1,2,3–cd)pyrene	<0.014 m	<0.33 m	<0.24 m	<0.11 m	<0.16 m
Benzo(ghi)perylene	<0.024 m	<0.41 m	<0.42 m	<0.14 m	<0.22 m
F3 Fraction					
Tetradecanol	20 a c	60 a	<0.11 m	12 a	<0.26 m
Hexadecenol	35 a c	26 a	<0.11 m	1.1 a	<0.25 m
Hexadecanol	52 c	103	0.16 b	13	<0.21 m
Octadecenol	7.1 a c	19 a	<0.075 m	0.16 a	<0.17 m
Octadecanol	2.4 c	3.6 q	0.61 b	<5.3	0.41 b
Phytol	178 b c	293 b c	1.1 b	1.3 b	0.5 b
Eicosenol	179 a c	752 a c	<0.13 m	32 a	<0.20 m
Eicosanol	0.93 b c	5.2 b	<0.13 m	1 b	<0.20 m
Docosenol	154 b c	2530 b c	<0.13 m	12 b	<0.20 m
Docosanol	0.63 b c	7.6 b	<0.13 m	<1.5 m	<0.20 m
Tetracosenol	0.94 a c	25 a	<0.10 m	<1.2 m	<0.16 m
Tetracosanol	<0.010 m c	0.17 a	<0.11 m	<1.3 m	<0.17 m
Hexacosanol	0.012 a	0.057 a	<0.12 m	<1.4 m	<0.18 m
24–Norcholesta–5,22E–dien–3ß–ol	1.5 b	76 b	9.5 b	0.92 b	3 b
Cholesta–5,22E–dien–3ß–ol	1.3 a	43 a	3 a	2.4 a	1 a
Octacosanol	<0.012 m	<0.21 m	<0.13 m	<1.5 m	<0.20 m
Cholest–5–en–3ß–ol	9.7	14	<24	<2.4	<64
5a–Cholestan–3ß–ol	0.25 b	1 b	0.22 a	0.2 b	0.36 a
Cholesta–5,24E–dien–3ß–ol	<0.0094 m	<0.26 m	0.078 a	<0.72 m	<0.22 m
24–Methylcholesta–5,22E–dien–3ß–ol	35 a	69 a	4.4 a	1.3 a	2.2 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	2.3 a	111 a	2.2 a	3.6 a	0.98 a
24–Methylcholest–5–en–3ß–ol	0.3 a	2.1 a	0.82 a c	<2.3 m	<1.3 m
24–Ethylcholesta–5,22E–dien–3ß–ol	0.026 a c	1.3 a	2.2 a	<2.2 m	<0.53 m
Triacontanol	<0.012 m	<0.21 m	<0.13 m	<1.5 m	<0.20 m

Sample	FP20	IP27	ID64 (I27)	IP26	ID63 (I26)
Location/Depth	Stn 10–3, 16m	Stn 10–3, 18m	Stn 10–3, 18m	Stn 10–3, 120m	Stn 10–3, 120m
Date	23/5/87	23–25/5/87	23–25/5/87	23/5–25/5/87	23/5–25/5/87
Analytical Unit	1902 L	330.74 L	330.74 L	126.61 L	126.61 L
Conversion Factor	0.11 mg/L	0.11 mg/L	0.11 mg/L	0.10 mg/L	
Derived Unit	0.21 g	0.04 g		0.01 g	
RRF	RZ	HZ	RZ	JZ	KZ
	ng/L	ng/L	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	0.14 b	8.3 b	3.3 a	<3.1 m	1.5 a
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	0.28 a	90 a	<1.6 m	<16 m	1.8 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	3.7 a	263 a	1.6 a	<5.1 m	0.96 a
ß–Amyrin (Olean–12–en–3ß–ol)	0.031 a	<1.2 m	<0.38 m	<3.5 m	<1.1 m
a–Amyrin (Urs–12–en–3ß–ol)	0.073 a	0.94 a	<0.33 m	<3.0 m	<0.94 m
24–Ethylcholesta–3,5–dien–7–one	0.21 a	0.79 a	<0.21 m	<2.0 m	<0.61 m

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	0.0 %	27.5 %	6.4 %	0.0 %	12.5 %
Tetracosane–D_{50} Area	103074	79386	783924	336291	675374
Hexatriacontane–D_{74} / Tetracosane D_{50}	184.9 %	38.2 %	47.4 %	123.9 %	149.8 %
Fluoranthene–D_{10} Area	0	4555430	19520	91020	0
Tetracosane–D_{50} / Fluoranthene–D_{10}	0.0 %	37.1 %	0.0 %	128.5 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	0.5 %	56.7 %	27.1 %	0.4 %	23.4 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	4.7 %	81.8 %	27.1 %	14.5 %	41.5 %
Acenaphthylene–D_8 / Pyrene–D_{10}	11.2 %	90.8 %	14.8 %	19.0 %	51.4 %
Acenaphthene–D_{10} / Pyrene–D_{10}	15.6 %	119.8 %	30.1 %	62.4 %	64.7 %
Anthracene–D_{10} / Pyrene–D_{10}	55.4 %	3.5 %	5.3 %	7.2 %	25.1 %
Chrysene–D_{12} / Pyrene–D_{10}	83.2 %	92.7 %	210.8 %	97.8 %	117.3 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	92.6 %	85.5 %	127.1 %	82.1 %	105.2 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	52.8 %	21.1 % <c	34.7 %	0.5 %	17.0 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	94.7 %	66.0 %	15.5 %	103.0 %	66.8 %
Pyrene–D_{10} Area	499502	321178	998656	1154480	1179550
Fluoranthene–D_{10} Area	4467290	2969350	1305600 c	52958	0
Pyrene–D_{10} / Fluoranthene–D_{10}	54.8 %	53.0 %	0.0 %	93.8 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	0.0 %	0.0 %	19.8 %	0.0 %	0.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	8687475 c	2234430	998656	32112	1179550

Sample	FP20	IP27	ID64 (I27)	IP26	ID63 (I26)
Location/Depth	Stn 10–3, 16m	Stn 10–3, 18m	Stn 10–3, 18m	Stn 10–3, 120m	Stn 10–3, 120m
Date	23/5/87	23–25/5/87	23–25/5/87	23/5–25/5/87	23/5–25/5/87
Analytical Unit	1902 L	330.74 L	330.74 L	126.61 L	126.61 L
Conversion Factor	0.11 mg/L	0.11 mg/L	0.11 mg/L	0.10 mg/L	
Derived Unit	0.21 g	0.04 g		0.01 g	
RRF	RZ	HZ	RZ	JZ	KZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	9.1	9.5	2	0.79	5
Total $nC_{11}-C_{19}$	8.1	1.4	0.44	0.42	0.28
Total $nC_{20}-C_{29}$	0.6	6.5	1.6	0	3.3
Total $nC_{30}-C_{36}$	0.4	1.6	0	0.37	1.4
Total $nC_{15}-C_{19}$	8	1.3	0.01	0.33	0.04
Total $nC_{23}-C_{33}$	0.65	7	1.4	0	3.4
Total isoprenoids	108	19	0.17	0.6	0.31
Farnesane–Phytane	108	19	0.045	0.6	0.2
Total nC_{11}–Phytane	117	29	2.2	1.4	5.3
Total hopanes	0.14	2.6	0.2	0.45	0.41
Total Naphthalene–Benzo(ghi)perylene*	0.27	0.077	3.6	0.046	1.1
Naphthalene–Fluorene*	0.26	0.077	0.27	0.046	0.77
Phenanthrene–Chrysene	0.0069	0	3.3	0	0.28
Higher PAH (Perylene excluded)	0	0	0.039	0	0.0058
Total polyenes	152	874	2	0	0
Total alcohols	630	3820	1.9	73	0.91
Total sterols	54	679	27	8.4	12
OEP at C_{17}	64.02	1.48			
OEP at C_{25}	1.30	2.17			
OEP at C_{27}		3.92			
OEP at C_{29}					
Pristane/Phytane	1690	119			
Derived Summary Concentrations	ng/g	ng/g		ng/g	
Total *n*–alkanes, $nC_{11}-C_{36}$	82600	86100		7850	
Total $nC_{11}-C_{19}$	73600	12400		4150	
Total $nC_{20}-C_{29}$	5450	59200		0	
Total $nC_{30}-C_{36}$	3600	14500		3700	
Total $nC_{15}-C_{19}$	73000	11600		3290	
Total $nC_{23}-C_{33}$	5940	63500		0	
Total isoprenoids	983000	177000		6040	
Farnesane–Phytane	983000	177000		6040	
Total nC_{11}–Phytane	1070000	263000		13900	
Total hopanes	1270	23800		4460	
Total Naphthalene–Benzo(ghi)perylene*	2450	700		460	
Naphthalene–Fluorene*	2390	700		460	
Phenanthrene–Chrysene	63	0		0	
Higher PAH (Perylene excluded)	0	0		0	
Total polyenes	1380000	7950000		0	
Total alcohols	5730000	3E+07		726000	
Total sterols	495000	6170000		84200	

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	FP163	FP170	FP168	FP159	FP158
Location/Depth	Stn 0–6, 0.5m	M15–6, 0.5m	M15–6, 3m	Stn 5–6, 3m	Stn 5–6, 15m
Date	6/9/87	7/9/87	7/9/87	4/9/87	4/9/87
Analytical Unit	34.19 L	77.57 L	77.14 L	470 L	1392 L
Conversion Factor	120.95 mg/L	21.36 mg/L	38.67 mg/L	0.163 mg/L	0.261 mg/L
Derived Unit	4.14 g	1.66 g	2.98 g	0.08 g	0.36 g
RRF	HZ	IZ	HZ	UZ	UZ
	ng/L	ng/L	ng/L	ng/L	ng/L
F1 Fraction					
Undecane	<1.8	0.99 q	<0.78	<0.13	<0.043
Dodecane	<0.20 m	2.4 a	0.67 a	0.17 a	<0.012 m
Tridecane	0.21 a	6.2 a	4.9 a	0.57 a	<0.017 m
Tetradecane	2.9 a	9.5 a	8.8 a	1.3 a	<0.013 m
Pentadecane	29 a	19 a	14 a	3.4 a	0.091 a
Hexadecane	48 a	17 a	14 a	6 a	0.32 a
Heptadecane	88 a	30 a	19 a	10 a	0.91 a
Octadecane	67 a	19 a	17 a	9.1 a	0.75 a
Nonadecane	75 b	20 b	17 b	9.2 b	0.84 b
Eicosane	73	19	18	8.5	0.68
Heneicosane	76	21	20	9.5	0.8
Docosane	63	16	19	7.8	0.69
Tricosane	78	20	24	8.2	0.79
Tetracosane	48	12	20	5.9	0.55
Pentacosane	79	19	31	7.9	0.86
Hexacosane	37	9.2	21	4.2	0.47
Heptacosane	107	23	39	7.7	1.1
Octacosane	30	7.8	22	2.4	0.3
Nonacosane	84	20	45	5.1	0.7
Triacontane	23	6.1 q	22	1.5	0.18 q
Untriacontane	61	16	44	3.2	0.5
Dotriacontane	12	3.7	14	0.68	0.083 q
Tritriacontane	26	7.5	27	1.1	0.12
Tetratriacontane	9.9	3.2	12	0.48	<0.027
Pentatriacontane	8.8	3.3	11	0.34	0.019 q
Hexatriacontane	3.9 a	1.4 a	4.1 a	0.11 a	<0.15 m
2,6–Dimethyl Undecane	<0.22 m	1.3 a	0.48 a	0.2 a	<0.014 m
Norfarnesane	<0.22 m	1.9 a	1.1 a	0.33 a	<0.014 m
Farnesane	0.28 a	2.4 a	2.3 a	0.48 a	<0.015 m
2,6,10–Trimethyl Tridecane	5.6 a	6.1 a	7.1 a	1.4 a	0.0085 a
Norpristane	31 b	9.5 b	10 b	4.1 b	0.29 b
Pristane	180	35	20	12	4.3
Phytane	55 b	14 b	13 b	6.8 b	0.54 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	4.4 a	1.2 a	3.5 a	0.37 a	0.037 a
17ß(H)–Trisnorhopane (C_{27}ß)	2 a	0.88 a	1.6 a	0.18 a	0.045 a
17a(H),21ß(H)–Norhopane (C_{29}aß)	10 a	2.6 a	8.1 a	0.85 a c	0.064 a
Hop–17(21)–ene	0.47 a	<0.89 m	0.86 a	0.55 a	<0.17 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	3.8 a	1 a	2 a	0.21 a	0.0037 a
17a(H),21ß(H)–Hopane (C_{30}aß)	23 a	5.7 a	18 a	2 a	0.12 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	9 a	2.2 a	7 a	0.96 a	0.042 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	7.8 a	2.4 a	7 a	0.84 a	0.049 a
Triterpene	4.4 a	2.5 a	3 a	0.87 a	<0.17 m
17ß(H),21ß(H)–Hopane (C_{30}ßß)	5.3 a	1.6 a	4 a	0.54 a	0.02 a
Diploptene	30 a	5.4 a	12 a	2.3 a	0.21 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	4.1 a	1.2 a	3.3 a	0.43 a	0.017 a
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	3.5 a	0.89 a	3 a	0.47 a	0.02 a
Heptadecadiene	0.98 a	0.5 a	0.15 a	0.037 a	0.0097 a
Heptadecene	0.59 a	0.25 a	0.1 a	0.2 a	<0.016 m
Nonadecene	1.3 a	0.25 a	<0.025 m	0.29 a	<0.019 m
F2 Fraction					
Naphthalene	35 b	3.6 b	7 b	1.3 b	<1.7 m
2–Methyl Naphthalene	34 a	3.5 a	12 a	1.9 a	<1.1 m
1–Methyl Naphthalene	<119 m	4.8 a	11 a	2.2 a	<1.1 m
Dimethyl Naphthalene (N–C_2a)	2.4 a	1.4 a	3.6 a	0.55 a	<0.23 m
Dimethyl Naphthalene (N–C_2b)	4 a	2.1 a	5.2 a	1.1 a	<0.23 m
Dimethyl Naphthalene (N–C_2c)	3.8 a	1.7 a	3.3 a	0.43 a	<0.23 m
Acenaphthylene	<3.2 m	<0.13 m	0.38 a	<0.14 m	<0.38 m
Acenaphthene	1.5 a	0.37 a	0.52 a	0.061 a	<0.31 m
Trimethyl Naphthalene (N–C_3a)	18 a	2.2 a	3.9 a	0.75 a	<0.33 m

Sample	FP163	FP170	FP168	FP159	FP158
Location/Depth	Stn 0–6, 0.5m	M15–6, 0.5m	M15–6, 3m	Stn 5–6, 3m	Stn 5–6, 15m
Date	6/9/87	7/9/87	7/9/87	4/9/87	4/9/87
Analytical Unit	34.19 L	77.57 L	77.14 L	470 L	1392 L
Conversion Factor	120.95 mg/L	21.36 mg/L	38.67 mg/L	0.163 mg/L	0.261 mg/L
Derived Unit	4.14 g	1.66 g	2.98 g	0.08 g	0.36 g
RRF	HZ	IZ	HZ	UZ	UZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)	25 a	2.1 a	4.1 a	1.1 a	0.33 a
Fluorene	12 a	1.7 a	2.9 a	0.56 a	0.12 a
Tetramethyl Naphthalene (N–C_4a)	9 a	0.52 a	1.2 a	0.47 a	0.16 a
Tetramethyl Naphthalene (N–C_4b)	27 a	1.7 a	3.3 a	1.1 a	0.45 a
Cadalene	31 a	1.7 a	3.6 a	1.2 a	0.31 a
Phenanthrene	31 a	17 a	15 a	2.4 a	0.2 a
Anthracene	0.51 a	0.49 a	0.17 a	0.012 a	0.0063 a
3–Methyl Phenanthrene	25 a	6.7 a	14 a	2 a	0.2 a
2–Methyl Phenanthrene	30 a	7.9 a	13 a	2 a	0.21 a
9/4–Methyl Phenanthrene	35 a	8.5 a	18 a	2.7 a	0.28 a
1–Methyl Phenanthrene	27 a	6.4 a	11 a	1.7 a	0.18 a
Pimanthrene (1,7–dimethyl phenanthrene)	7.8 a	1.9 a	4 a	0.94 a	0.068 a
Heneicosahexaene	85 a	40 a	40 a	12 a	20 a
Fluoranthene	4.8 a	2.5 a	2.4 a	0.38 a	0.047 a
Pyrene	7.3 a	2.8 a	4.1 a	0.66 a	0.053 a
Simonellite	13 a	3.1 a	7.6 a	1.3 a	0.085 a
Trimethyl Phenanthrene (P/A–C_3a)	8.7 a	2.1 a	5 a	0.93 a	0.1 a
Rétene	28 a	7.2 a	19 a	2.6 a	0.22 a
Tricosapolyene	3.8 a	<0.48 m	2.9 a	0.16 a	3.5 a
Methyl Pyrene (F/P–C_1a)	6.8 a	1.8 a	4.9 a	0.79 a	0.075 a
Methyl Pyrene (F/P–C_1b)	3.5 a	1 a	2 a	0.44 a	0.046 a
Dimethyl Pyrene (F/P–C_2a)	8.1 a	2.2 a	6.9 a	0.94 a	0.1 a
Pentacosapolyene	<2.6 m	<0.50 m	0.29 a	<0.31 m	3.5 a
Benz(a)anthracene	2.3 a	0.98 a	1.9 a	0.29 a	0.035 a
Chrysene	12 a	3.5 a	8.3 a	1.3 a	0.11 a
Heptacosapolyene	<2.5 m	<0.52 m	<0.23 m	<0.29 m	<0.082 m
Benzo(b/j/k)fluoranthene	15 b	5.6 b	8.9 b	1 b	0.083 b
Benzo(a)fluoranthene	1.2 a	0.75 a	0.25 a	0.036 a	<0.020 m
Benzo(e)pyrene	17 a	6 a	13 a	1.5 a	0.13 a
Benzo(a)pyrene	4.6 a	3.3 a	2.2 a	0.45 a	0.062 a
Perylene	9.1 a	1.9 a	2.8 a	1.3 a	0.12 a
Squalene	<0.63 m	<0.18 m	<45 e	<7.3 e	<2.5 e
Dibenz(a,h)anthracene	2.9 a	1.1 a	1.1 a c	0.27 a	0.018 a
Indeno(1,2,3–cd)pyrene	5 a	1.5 a	1.5 a c	0.5 a	0.029 a
Benzo(ghi)perylene	24 a	7.1 a	11 a c	2 a	0.16 a
F3 Fraction					
Tetradecanol	4.7 a	2.3 a	19 a	1.4 a	4.8 a
Hexadecenol	1.6 a	1.7 a	4.8 a	0.54 a	2 a
Hexadecanol	12	9.2	45	3.2	12
Octadecenol	4.1 a	2.8 a	4.4 a	0.3 a	2.3 a
Octadecanol	<20	<8.7	10 q	<1.4	1.9
Phytol	57 b	1.3 b	14 b	21 b	23 b
Eicosenol	1.9 a	0.8 a	7.1 a	1.6 a	5.4 a
Eicosanol	19 b	17 b	28 b	1 b	0.63 b
Docosenol	0.99 b	1.6 b	4.6 b c	1.6 b	9.9 b
Docosanol	68 b	55 b	89 b	3.8 b	2.1 b
Tetracosenol	<0.90 m	0.18 a	<0.59 m	0.099 a	0.76 a
Tetracosanol	39 a	31 a	57 a	1.8 a	1.4 a
Hexacosanol	39 a	33 a	59 a	1.6 a	0.89 a
24–Norcholesta–5,22E–dien–3ß–ol	3.9 b	45 b	135 b	9.6 b	24 b
Cholesta–5,22E–dien–3ß–ol	43 a	57 a	133 a	17 a	33 a
Octacosanol	27 b	31 b	55 b	1.6 b	0.8 b
Cholest–5–en–3ß–ol	14 q	20	30	3.2	7.4
5a–Cholestan–3ß–ol	5.1 b	5.8 b	13 b	1.2 b	1.2 b
Cholesta–5,24E–dien–3ß–ol	<1.4 m	<0.70 m	20 a	<0.22 m	<0.16 m
24–Methylcholesta–5,22E–dien–3ß–ol	26 a	34 a	81 a	21 a	49 a
24–Methylcholesta–5,24(28)–dien–3ß–ol	29 a	55 a	195 a	67 a	340 a
24–Methylcholest–5–en–3ß–ol	10 a	10 a	18 a	1.2 a	2.2 a
24–Ethylcholesta–5,22E–dien–3ß–ol	12 a	17 a	28 a	5.9 a	11 a
Triacontanol	1.6 a	3.6 a	6.6 a	<0.18 m	<0.13 m

Sample	FP163	FP170	FP168	FP159	FP158
Location/Depth	Stn 0–6, 0.5m	M15–6, 0.5m	M15–6, 3m	Stn 5–6, 3m	Stn 5–6, 15m
Date	6/9/87	7/9/87	7/9/87	4/9/87	4/9/87
Analytical Unit	34.19 L	77.57 L	77.14 L	470 L	1392 L
Conversion Factor	120.95 mg/L	21.36 mg/L	38.67 mg/L	0.163 mg/L	0.261 mg/L
Derived Unit	4.14 g	1.66 g	2.98 g	0.08 g	0.36 g
RRF	HZ	IZ	HZ	UZ	UZ
	ng/L	ng/L	ng/L	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol	123 b	69 b	130 b	5.5 b	9.2 b
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	36 a	79 a	273 a	32 a	87 a
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	19 a	31 a	198 a	74 a	257 a
ß–Amyrin (Olean–12–en–3ß–ol)	144 a	79 a	137 a	4.4 a	0.73 a
a–Amyrin (Urs–12–en–3ß–ol)	248 a	158 a	259 a	6.8 a	1.3 a
24–Ethylcholesta–3,5–dien–7–one	148 a	74 a	116 a	7.1 a	2.3 a

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	0.0 %	15.7 %	1.3 %	2.2 %	0.0 %
Tetracosane–D_{50} Area	197724	326644	999956	67768	80971
Hexatriacontane–D_{74} / Tetracosane D_{50}	110.5 %	129.8 %	195.0 %	55.3 %	47.3 %
Fluoranthene–D_{10} Area	4384170	4391430	6403360	22217	25000 c
Tetracosane–D_{50} / Fluoranthene–D_{10}	95.9 %	158.2 %	332.1 %	106.1 %	112.6 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	0.1 %	8.4 %	5.4 %	4.7 %	0.5 % <c
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	0.2 %	34.3 %	23.7 %	13.1 %	1.4 % <c
Acenaphthylene–D_8 / Pyrene–D_{10}	6.2 %	59.7 %	41.1 %	26.9 %	2.8 %
Acenaphthene–D_{10} / Pyrene–D_{10}	17.0 %	76.4 %	58.8 %	36.0 %	5.5 %
Anthracene–D_{10} / Pyrene–D_{10}	49.1 %	52.6 %	56.3 %	66.7 %	54.8 %
Chrysene–D_{12} / Pyrene–D_{10}	99.0 %	92.7 %	140.1 %	100.8 %	102.7 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	112.8 %	69.4 %	169.6 %	106.9 %	105.4 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	70.1 %	31.0 %	121.3 %	53.9 %	45.3 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	117.4 %	78.9 %	117.4 % <c	71.9 %	70.3 %
Pyrene–D_{10} Area	745008	596284	2569080	359628	427696
Fluoranthene–D_{10} Area	3815550	2045010	7609150	37736	26786
Pyrene–D_{10} / Fluoranthene–D_{10}	95.6 %	142.8 %	165.4 %	41.0 %	68.7 %
Perylene–D_{12} / Biphenyl–D_{10}	522.8 %	1.5 %	24.6 %	119.5 %	3939.6 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	2051260	1780620	1391940	44329	20750

Sample	FP163	FP170	FP168	FP159	FP158
Location/Depth	Stn 0–6, 0.5m	M15–6, 0.5m	M15–6, 3m	Stn 5–6, 3m	Stn 5–6, 15m
Date	6/9/87	7/9/87	7/9/87	4/9/87	4/9/87
Analytical Unit	34.19 L	77.57 L	77.14 L	470 L	1392 L
Conversion Factor	120.95 mg/L	21.36 mg/L	38.67 mg/L	0.163 mg/L	0.261 mg/L
Derived Unit	4.14 g	1.66 g	2.98 g	0.08 g	0.36 g
RRF	HZ	IZ	HZ	UZ	UZ
	ng/L	ng/L	ng/L	ng/L	ng/L
Summary Concentrations					
Total n–alkanes, $nC_{11}-C_{36}$	1130	332	488	114	11
Total $nC_{11}-C_{19}$	310	124	95	40	2.9
Total $nC_{20}-C_{29}$	675	167	259	67	6.9
Total $nC_{30}-C_{36}$	145	41	134	7.4	0.9
Total $nC_{15}-C_{19}$	307	105	81	38	2.9
Total $nC_{23}-C_{33}$	585	144	309	48	5.7
Total isoprenoids	272	70	54	25	5.1
Farnesane–Phytane	272	67	52	25	5.1
Total nC_{11}–Phytane	1400	402	542	139	16
Total hopanes	103	25	70	9.7	0.63
Total Naphthalene–Benzo(ghi)perylene*	211	66	104	17	1.1
Naphthalene–Fluorene*	83	14	34	6	0.12
Phenanthrene–Chrysene	58	27	32	5	0.45
Higher PAH (Perylene excluded)	70	25	38	5.8	0.48
Total polyenes	89	40	43	12	27
Total alcohols	276	190	404	40	68
Total sterols	321	423	1250	238	821
OEP at C_{17}	1.37	1.52	1.17	1.20	1.49
OEP at C_{25}	1.94	1.85	1.52	1.57	1.73
OEP at C_{27}	3.00	2.60	1.80	2.24	2.65
OEP at C_{29}	3.17	2.86	2.01	2.66	3.02
Pristane/Phytane	3.27	2.5	1.54	1.76	7.96
Derived Summary Concentrations	ng/g	ng/g	ng/g	ng/g	ng/g
Total n–alkanes, $nC_{11}-C_{36}$	9340	15600	12600	702000	41200
Total $nC_{11}-C_{19}$	2560	5810	2470	244000	11200
Total $nC_{20}-C_{29}$	5580	7820	6700	412000	26600
Total $nC_{30}-C_{36}$	1200	1930	3470	45500	3460
Total $nC_{15}-C_{19}$	2540	4920	2090	231000	11200
Total $nC_{23}-C_{33}$	4840	6760	7990	294000	21700
Total isoprenoids	2250	3290	1400	155000	19700
Farnesane–Phytane	2250	3140	1360	152000	19700
Total nC_{11}–Phytane	11600	18900	14000	857000	60900
Total hopanes	855	1170	1820	59500	2400
Total Naphthalene–Benzo(ghi)perylene*	1740	3120	2680	103000	4040
Naphthalene–Fluorene*	682	654	874	36900	460
Phenanthrene–Chrysene	479	1280	824	30900	1730
Higher PAH (Perylene excluded)	576	1190	981	35300	1850
Total polyenes	734	1870	1120	74600	103000
Total alcohols	2280	8920	10400	243000	260000
Total sterols	2650	19800	32400	1460000	3150000

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	FP151	FP152	Z2	Z3	Z6
Location/Depth	Stn 9–6, 5m	Stn 9–6, 31m	Stn 4–5	Stn 5–5	Stn 7–5
Date	1–2/9/87	1/9–2/9/87	2/8/87	3/8/87	6/8/87
Analytical Unit	4024 L	3508 L	0.89 g	0.76 g	1.11 g
Conversion Factor	0.18 mg/L	0.51 mg/L	0.069 dry/wet	0.054 dry/wet	0.079 dry/wet
Derived Unit	0.72 g	1.79 g			
RRF	LZ	JZ	ZZ	HZ	HZ
	ng/L	ng/L	ng/g	ng/g	ng/g
F1 Fraction					
Undecane	<0.015	<0.017	87 q	<80	<54
Dodecane	0.012 a	0.00065 a	25 a	26 a	20 a
Tridecane	0.076 a	0.029 a	27 a	53 a	32 a
Tetradecane	0.058 a	0.039 a	31 a	45 a	28 a
Pentadecane	0.39 a	0.27 a	60 a	91 a	84 a
Hexadecane	0.028 a	0.033 a	21 a	61 a	33 a
Heptadecane	0.35 a	0.42 a	143000 a c	9130 a c	247000 a c
Octadecane	0.073 a	0.11 a	27 a	66 a	72 a
Nonadecane	0.087 b	0.12 b	6.8 b	71 b	94 b
Eicosane	0.056	0.057	<37	75 q	111
Heneicosane	0.15	0.11	100 q	96 q	157
Docosane	0.12	0.089	125 q	83 q	172
Tricosane	0.25	0.14	194	99 q	248
Tetracosane	0.1	0.097	232	116 q	266
Pentacosane	0.25	0.2	263	137 q	507
Hexacosane	0.083	0.11	222 q	<118	482
Heptacosane	0.37	0.25	219	222 q	769
Octacosane	0.11	0.079 q	216 q	<153	559
Nonacosane	0.33	0.2	264 q	237 q	1040
Triacontane	0.046 q	<0.041	223 q	<189	657
Untriacontane	0.41	0.22	185 q	225 q	1140
Dotriacontane	0.025 q	0.026 q	129 q	115 q	501
Tritriacontane	0.12	0.055	118 q	111 q	560
Tetratriacontane	0.013 q	0.011 q	91 q	117 q	424
Pentatriacontane	0.014 q	0.017	46 q	52 q	253
Hexatriacontane	0.0085 a	<0.025 m	<19 m	62 a	152 a
2,6–Dimethyl Undecane	<0.00078 m	<0.0025 m	44 a	<7.1 m	<6.4 m
Norfarnesane	0.002 a	0.0011 a	29 a	12 a	5.2 a
Farnesane	0.0089 a	0.011 a	20 a	18 a	22 a
2,6,10–Trimethyl Tridecane	0.021 a	0.0079 a	73 a	66 a	63 a
Norpristane	0.0087 b	0.018 b	8.5 b	17 b	8.8 b
Pristane	1.6	2.6	409000 c	563000 c	450000 c
Phytane	0.015 b	0.03 b	5.9 b	40 b	39 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	0.0052 a	0.0019 a	<20 m	30 a	79 a
17ß(H)–Trisnorhopane (C_{27}ß)	0.0035 a	<0.0054 m	<20 m	4.5 a	<28 m
17a(H),21ß(H)–Norhopane (C_{29}aß)	0.004 a	0.0047 a	<20 m	26 a	65 a
Hop–17(21)–ene	<0.012 m	<0.030 m	<70 m	<109 m	<98 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	0.0019 a c	0.0014 a	<20 m	<31 m	<28 m
17a(H),21ß(H)–Hopane (C_{30}aß)	0.0081 a	0.012 a	35 a	53 a	142 a
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.0038 a	0.0071 a	<29 m	33 a	53 a
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.0033 a	0.006 a	<29 m	18 a	43 a
Triterpene	<0.012 m	<0.030 m	<70 m	<109 m	112 a
17ß(H),21ß(H)–Hopane (C_{30}ßß)	0.0028 a c	0.0063 a	<29 m	<45 m	<41 m
Diploptene	0.038 a	0.033 a	<70 m	152 a	382 a
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.0050 m	0.0032 a	<29 m	<45 m	27 a
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<0.0050 m	0.0023 a	<29 m	<45 m	22 a
Heptadecadiene	0.027 a	0.0072 a	<5.0 m	<7.8 m	<7.0 m
Heptadecene	0.0054 a	0.002 a	<5.0 m	<7.8 m	<7.0 m
Nonadecene	0.049 a	0.14 a	95 a	126 a	131 a
F2 Fraction					
Naphthalene	0.0098 b	<0.62 m	3.8 b	11 b	10 b
2–Methyl Naphthalene	0.0075 a	<0.066 m	6 a	25 a	8.7 a
1–Methyl Naphthalene	0.005 a	<0.066 m	3.1 a	19 a	7.5 a
Dimethyl Naphthalene (N–C_2a)	0.0022 a	<0.024 m	<9.8 m	<13 m	<9.5 m
Dimethyl Naphthalene (N–C_2b)	0.0026 a	<0.024 m	<9.8 m	<13 m	3.7 a
Dimethyl Naphthalene (N–C_2c)	0.0016 a	<0.024 m	<9.8 m	<13 m	2.7 a
Acenaphthylene	0.00063 a	<0.024 m	<10 m	<14 m	<11 m
Acenaphthene	0.00076 a	<0.032 m	<11 m	<20 m	<14 m
Trimethyl Naphthalene (N–C_3a)	0.0015 a	<0.034 m	<13 m	<19 m	<14 m

Sample	FP151	FP152	Z2	Z3	Z6
Location/Depth	Stn 9–6, 5m	Stn 9–6, 31m	Stn 4–5	Stn 5–5	Stn 7–5
Date	1–2/9/87	1/9–2/9/87	2/8/87	3/8/87	6/8/87
Analytical Unit	4024 L	3508 L	0.89 g	0.76 g	1.11 g
Conversion Factor	0.18 mg/L	0.51 mg/L	0.069 dry/wet	0.054 dry/wet	0.079 dry/wet
Derived Unit	0.72 g	1.79 g			
RRF	LZ	JZ	ZZ	HZ	HZ
	ng/L	ng/L	ng/g	ng/g	ng/g
Trimethyl Naphthalene (N–C_3b)	0.0012 a	<0.034 m	<13 m	<19 m	<14 m
Fluorene	0.0027 a	<0.031 m	9.4 a	11 a	8.7 a
Tetramethyl Naphthalene (N–C_4a)	<0.0023 m	<0.028 m	<13 m	<18 m	<13 m
Tetramethyl Naphthalene (N–C_4b)	<0.0023 m	<0.028 m	<13 m	<18 m	<13 m
Cadalene	0.0019 a	<0.026 m	<13 m	<18 m	<13 m
Phenanthrene	0.013 a	0.0044 a	22 a	34 a	142 a
Anthracene	0.0053 a	<0.024 m	<13 m	<23 m	29 a
3–Methyl Phenanthrene	0.014 a	<0.052 m	116 a	35 a	125 a
2–Methyl Phenanthrene	0.017 a c	<0.052 m	101 a c	47 a c	96 a
9/4–Methyl Phenanthrene	0.018 a	<0.052 m	98 a	47 a	96 a c
1–Methyl Phenanthrene	0.014 a	<0.052 m	45 a	35 a	145 a
Pimanthrene (1,7–dimethyl phenanthrene)	0.0045 a	<0.024 m	5 a	14 a	<14 m
Heneicosahexaene	11 a	7.5 a	571000 a c	1200000 a c	1850000 a c
Fluoranthene	0.015 a	0.0064 a	7.6 a c	18 a c	32 a c
Pyrene	0.018 a	<0.020 m	8 a	18 a	31 a
Simonellite	0.0073 a	<0.10 m	<38 m	<135 m	<71 m
Trimethyl Phenanthrene (P/A–C_3a)	0.0071 a	<0.052 m	<15 m	<60 m	<32 m
Retene	0.022 a	0.041 a	<38 m	<135 m	<71 m
Tricosapolyene	1 a	2.8 a	58000 a c	6720 a	127000 a
Methyl Pyrene (F/P–C_1a)	0.0033 a	<0.042 m	<9.9 m	<44 m	<23 m
Methyl Pyrene (F/P–C_1b)	0.0018 a	<0.042 m	<9.9 m	<44 m	<23 m
Dimethyl Pyrene (F/P–C_2a)	0.0019 a	<0.036 m	<12 m	<41 m	<22 m
Pentacosapolyene	0.62 a	1.6 a	102000 a c	4600 a	50900 a
Benz(a)anthracene	0.014 a	<0.032 m	2.8 a	<37 m	8.7 a
Chrysene	0.019 a	<0.031 m	5 a	19 a c	18 a
Heptacosapolyene	1.1 a	0.5 a c	238 a	4210 a	3710 a
Benzo(b/j/k)fluoranthene	0.027 b	<0.035 m	<7.6 e	7.5 b	26 b
Benzo(a)fluoranthene	0.0058 a	<0.038 m	<12 m	<36 m	<10 m
Benzo(e)pyrene	0.016 a	<0.039 m	<13 m	21 a	16 a
Benzo(a)pyrene	0.03 a	<0.069 m	<18 m	<359 m	82 a
Perylene	0.023 a	<0.065 m	<18 m	<320 m	48 a
Squalene	0.11 b	1.6 b	2130 b	<4550 e	<3110 e
Dibenz(a,h)anthracene	0.013 a	<0.20 m	<16 m	<46 m	7.5 a
Indeno(1,2,3–cd)pyrene	0.015 a	<0.21 m	<17 m	<43 m	9 a
Benzo(ghi)perylene	0.018 a	<0.26 m	<29 m	<53 m	14 a
F3 Fraction					
Tetradecanol	10 a	75 a	2E+07 a c		
Hexadecenol	5.2 a	10 a	2E+07 a c		
Hexadecanol	26	69	1E+07 c		
Octadecenol	2.5 a	15 a	2570000 a c		
Octadecanol	2.1	2.5	515000 c		
Phytol	53 b c	94 b	112000 b c		
Eicosenol	10 a	494 a	2E+07 a c		
Eicosanol	0.29 b	<0.15 m	148000 b c		
Docosenol	8.1 b	94 b	1E+07 b c		
Docosanol	0.59 b	0.16 b	93600 b c		
Tetracosenol	0.25 a	4.3 a	5980 a		
Tetracosanol	0.075 a	<0.13 m	12 a		
Hexacosanol	0.054 a	<0.13 m	53 a		
24–Norcholesta–5,22E–dien–3ß–ol	12 b	61 b	728 b		
Cholesta–5,22E–dien–3ß–ol	7.1 a	32 a	1020 a		
Octacosanol	<0.051 m	<0.15 m	57 b		
Cholest–5–en–3ß–ol	2.3	13	16500		
5a–Cholestan–3ß–ol	0.37 b	1.8 b	246 b		
Cholesta–5,24E–dien–3ß–ol	<0.056 m	<0.072 m	<14 m		
24–Methylcholesta–5,22E–dien–3ß–ol	9.2 a	52 a	26800 a		
24–Methylcholesta–5,24(28)–dien–3ß–ol	13 a	252 a	685 a		
24–Methylcholest–5–en–3ß–ol	0.4 a	2.9 a	<210 m		
24–Ethylcholesta–5,22E–dien–3ß–ol	2.3 a	3.9 a	46 a		
Triacontanol	<0.051 m	<0.15 m	<18 m		

Sample	FP151	FP152	Z2	Z3	Z6
Location/Depth	Stn 9–6, 5m	Stn 9–6, 31m	Stn 4–5	Stn 5–5	Stn 7–5
Date	1–2/9/87	1/9–2/9/87	2/8/87	3/8/87	6/8/87
Analytical Unit	4024 L	3508 L	0.89 g	0.76 g	1.11 g
Conversion Factor	0.18 mg/L	0.51 mg/L	0.069 dry/wet	0.054 dry/wet	0.079 dry/wet
Derived Unit	0.72 g	1.79 g			
RRF	LZ	JZ	ZZ	HZ	HZ
	ng/L	ng/L	ng/g	ng/g	ng/g
24–Ethylcholest–5–en–3ß–ol	3.2 b	7.2 b	<285 m		
24–Ethylcholesta–5,24(28)E–dien–3ß–ol	5.7 a	50 a	<228 m		
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	14 a	117 a	151 a		
ß–Amyrin (Olean–12–en–3ß–ol)	<0.28 m	0.13 a c	<52 m		
a–Amyrin (Urs–12–en–3ß–ol)	<0.24 m	0.49 a	<45 m		
24–Ethylcholesta–3,5–dien–7–one	1.3 a	0.96 a	<29 m		

Alkyl PAH Totals

Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					

QA/QC Statistics

F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	17.7 %	3.1 %	42.8 %	53.6 %	44.3 %
Tetracosane–D_{50} Area	464182	184116	363214	273856	208064
Hexatriacontane–D_{74} / Tetracosane D_{50}	102.7 %	70.5 %	231.1 %	235.5 %	217.2 %
Fluoranthene–D_{10} Area	5249720	22000 c	3589220	0	3945280
Tetracosane–D_{50} / Fluoranthene–D_{10}	188.0 %	291.0 %	215.2 %	0.0 %	112.2 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	33.7 %	2.0 %	23.0 %	68.9 %	44.5 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	50.8 %	32.6 %	25.7 %	79.3 %	53.0 %
Acenaphthylene–D_8 / Pyrene–D_{10}	68.6 %	63.7 %	29.9 %	98.5 %	62.4 %
Acenaphthene–D_{10} / Pyrene–D_{10}	84.7 %	77.3 %	31.5 %	108.7 %	77.9 %
Anthracene–D_{10} / Pyrene–D_{10}	60.2 %	80.0 %	23.4 %	73.3 %	37.4 %
Chrysene–D_{12} / Pyrene–D_{10}	89.0 %	89.0 %	460.1 % c	101.4 %	170.4 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	122.7 %	81.3 %	82.5 %	136.8 %	260.8 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	49.0 %	43.1 %	43.7 %	13.5 %	29.7 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	108.4 %	19.1 %	53.1 %	142.9 %	308.2 %
Pyrene–D_{10} Area	930293	117376	1540210	496502	644242
Fluoranthene–D_{10} Area	3553900	5304	17172230 c	5460270 c	6036400 c
Pyrene–D_{10} / Fluoranthene–D_{10}	128.2 %	95.2 %	43.9 %	44.5 %	52.3 %
Perylene–D_{12} / Biphenyl–D_{10}	1.2 %	31.4 %	0.8 %	0.4 %	1.4 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	662704	11600	12212220	0	0

Sample	FP151	FP152	Z2	Z3	Z6
Location/Depth	Stn 9–6, 5m	Stn 9–6, 31m	Stn 4–5	Stn 5–5	Stn 7–5
Date	1–2/9/87	1/9–2/9/87	2/8/87	3/8/87	6/8/87
Analytical Unit	4024 L	3508 L	0.89 g	0.76 g	1.11 g
Conversion Factor	0.18 mg/L	0.51 mg/L	0.069 dry/wet	0.054 dry/wet	0.079 dry/wet
Derived Unit	0.72 g	1.79 g			
RRF	LZ	JZ	ZZ	HZ	HZ
	ng/L	ng/L	ng/g	ng/g	ng/g
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	3.5	2.7	146000	11300	255000
Total $nC_{11}-C_{19}$	1.1	1	143000	9540	247000
Total $nC_{20}-C_{29}$	1.8	1.3	1840	1070	4310
Total $nC_{30}-C_{36}$	0.64	0.33	792	682	3690
Total $nC_{15}-C_{19}$	0.93	0.95	143000	9420	247000
Total $nC_{23}-C_{33}$	2.1	1.4	2270	1260	6730
Total isoprenoids	1.7	2.7	409000	563000	450000
Farnesane–Phytane	1.7	2.7	409000	563000	450000
Total nC_{11}–Phytane	5.2	5.4	555000	574000	705000
Total hopanes	0.071	0.078	35	317	813
Total Naphthalene–Benzo(ghi)perylene*	0.23	0.011	67	184	451
Naphthalene–Fluorene*	0.026	0	22	66	35
Phenanthrene–Chrysene	0.084	0.011	45	89	261
Higher PAH (Perylene excluded)	0.12	0	0	29	155
Total polyenes	14	12	731000	1220000	2030000
Total alcohols	118	858	8E+07	0	0
Total sterols	70	593	46200	0	0
OEP at C_{17}	6.38	5.09	4469.10	108.15	3529.00
OEP at C_{25}	2.90	1.92	1.10		1.36
OEP at C_{27}	3.63	2.51	1.05		1.48
OEP at C_{29}	4.42		1.13		1.68
Pristane/Phytane	107	87	69300	14100	11500

Derived Summary Concentrations	ng/g	ng/g
Total *n*–alkanes, $nC_{11}-C_{36}$	19600	5260
Total $nC_{11}-C_{19}$	5970	2000
Total $nC_{20}-C_{29}$	10100	2610
Total $nC_{30}-C_{36}$	3540	645
Total $nC_{15}-C_{19}$	5160	1870
Total $nC_{23}-C_{33}$	11600	2700
Total isoprenoids	9200	5230
Farnesane–Phytane	9190	5230
Total nC_{11}–Phytane	28800	10500
Total hopanes	392	153
Total Naphthalene–Benzo(ghi)perylene*	1310	21
Naphthalene–Fluorene*	147	0
Phenanthrene–Chrysene	468	21
Higher PAH (Perylene excluded)	693	0
Total polyenes	76200	24300
Total alcohols	656000	1680000
Total sterols	387000	1160000

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	Z5	Z4
Location/Depth	Stn 9–5	Stn 10–5
Date	5/8/87	4/8/87
Analytical Unit	0.76 g	1.06 g
Conversion Factor	0.053 dry/wet	0.078 dry/wet
Derived Unit		
RRF	HZ	ZZ
	ng/g	ng/g
F1 Fraction		
Undecane	<79	208
Dodecane	12 a	71 a
Tridecane	29 a	82 a
Tetradecane	23 a	47 a
Pentadecane	119 a	425 a
Hexadecane	57 a	81 a
Heptadecane	98200 a c	1760000 a c
Octadecane	110 a	139 a
Nonadecane	113 b	164 b
Eicosane	147	151
Heneicosane	145 q	203
Docosane	141 q	141
Tricosane	169 q	168
Tetracosane	228	223
Pentacosane	463	205
Hexacosane	441	88 q
Heptacosane	406	109 q
Octacosane	439 q	<109
Nonacosane	602 q	<150
Triacontane	499 q	<135
Untriacontane	590	<126
Dotriacontane	381	<67
Tritriacontane	313	<44
Tetratriacontane	375	<35
Pentatriacontane	333	<16
Hexatriacontane	157 a	<104 m
2,6–Dimethyl Undecane	<5.5 m	<25 m
Norfarnesane	<5.5 m	<25 m
Farnesane	21 a	51 a
2,6,10–Trimethyl Tridecane	51 a	131 a
Norpristane	6.3 b	30 b
Pristane	360000 c	1800000 c
Phytane	44 b	79 b
17a(H)–Trisnorhopane (C_{27}a,Tm)	41 a	<109 m
17ß(H)–Trisnorhopane (C_{27}ß)	<24 m	<109 m
17a(H),21ß(H)–Norhopane (C_{29}aß)	68 a	<109 m
Hop–17(21)–ene	<85 m	<385 m
17ß(H),21a(H)–Normoretane (C_{29}ßa)	<24 m	<109 m
17a(H),21ß(H)–Hopane (C_{30}aß)	196 a	<159 m
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	39 a c	<159 m
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	32 a	<159 m
Triterpene	<85 m	<385 m
17ß(H),21ß(H)–Hopane (C_{30}ßß)	<35 m	<159 m
Diploptene	<85 m	<385 m
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<35 m	<159 m
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	<35 m	<159 m
Heptadecadiene	<6.0 m	138 a
Heptadecene	<6.0 m	<27 m
Nonadecene	791 a	2350 a
F2 Fraction		
Naphthalene	18 b	12 b
2–Methyl Naphthalene	14 a	6.8 a
1–Methyl Naphthalene	9.7 a	6.7 a
Dimethyl Naphthalene (N–C_2a)	4.2 a	<7.7 m
Dimethyl Naphthalene (N–C_2b)	4.5 a	<7.7 m
Dimethyl Naphthalene (N–C_2c)	3.5 a	<7.7 m
Acenaphthylene	<11 m	<9.0 m
Acenaphthene	<15 m	<9.0 m
Trimethyl Naphthalene (N–C_3a)	<15 m	<10 m

Sample	Z5	Z4
Location/Depth	Stn 9–5	Stn 10–5
Date	5/8/87	4/8/87
Analytical Unit	0.76 g	1.06 g
Conversion Factor	0.053 dry/wet	0.078 dry/wet
Derived Unit		
RRF	HZ	ZZ
	ng/g	ng/g
Trimethyl Naphthalene (N–C_3b)	<15 m	<10 m
Fluorene	13 a	4.8 a
Tetramethyl Naphthalene (N–C_4a)	<14 m	<11 m
Tetramethyl Naphthalene (N–C_4b)	<14 m	<11 m
Cadalene	<14 m	<11 m
Phenanthrene	57 a	23 a
Anthracene	4.5 a	3.7 a
3–Methyl Phenanthrene	28 a c	25 a
2–Methyl Phenanthrene	40 a c	69 a c
9/4–Methyl Phenanthrene	40 a	101 a
1–Methyl Phenanthrene	28 a	38 a
Pimanthrene (1,7–dimethyl phenanthrene)	20 a	<7.8 m
Heneicosahexaene	1030000 a c	917000 a c
Fluoranthene	11 a c	7.5 a c
Pyrene	11 a	7.9 a c
Simonellite	<86 m	<38 m
Trimethyl Phenanthrene (P/A–C_3a)	<39 m	<16 m
Retene	<86 m	<38 m
Tricosapolyene	81700 a	18900 a c
Methyl Pyrene (F/P–C_1a)	<28 m	<10 m
Methyl Pyrene (F/P–C_1b)	<28 m	<10 m
Dimethyl Pyrene (F/P–C_2a)	<26 m	<12 m
Pentacosapolyene	41400 a	3210 a c
Benz(a)anthracene	7.2 a	0.45 a c
Chrysene	15 a	3.2 a c
Heptacosapolyene	6780 a	14900 a
Benzo(b/j/k)fluoranthene	16 b	1.3 b
Benzo(a)fluoranthene	<11 m	<9.3 m
Benzo(e)pyrene	4.7 a	2.9 a
Benzo(a)pyrene	<34 m	7.7 a
Perylene	<30 m	21 a
Squalene	<4510 e	3720 b
Dibenz(a,h)anthracene	<14 m	<41 m
Indeno(1,2,3–cd)pyrene	4.2 a	<43 m
Benzo(ghi)perylene	<16 m	<76 m
F3 Fraction		
Tetradecanol		2E+07 a c
Hexadecenol		1E+07 a c
Hexadecanol		1E+07 c
Octadecenol		1830000 a c
Octadecanol		243000 c
Phytol		187000 b c
Eicosenol		2E+07 a c
Eicosanol		80700 b c
Docosenol		1E+07 b c
Docosanol		17500 b c
Tetracosenol		3800 a
Tetracosanol		8770 a
Hexacosanol		13 a
24–Norcholesta–5,22E–dien–3ß–ol		240 b
Cholesta–5,22E–dien–3ß–ol		123 a c
Octacosanol		<18 e
Cholest–5–en–3ß–ol		724 q
5a–Cholestan–3ß–ol		87 b
Cholesta–5,24E–dien–3ß–ol		739 a
24–Methylcholesta–5,22E–dien–3ß–ol		2870 a
24–Methylcholesta–5,24(28)–dien–3ß–ol		61 a
24–Methylcholest–5–en–3ß–ol		<163 m
24–Ethylcholesta–5,22E–dien–3ß–ol		28 a
Triacontanol		<14 m

Sample	Z5	Z4
Location/Depth	Stn 9–5	Stn 10–5
Date	5/8/87	4/8/87
Analytical Unit	0.76 g	1.06 g
Conversion Factor	0.053 dry/wet	0.078 dry/wet
Derived Unit		
RRF		
	HZ	ZZ
	ng/g	ng/g
24–Ethylcholest–5–en–3ß–ol		<221 m
24–Ethylcholesta–5,24(28)E–dien–3ß–ol		<176 m
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol		45 a
ß–Amyrin (Olean–12–en–3ß–ol)		<41 m
a–Amyrin (Urs–12–en–3ß–ol)		21 a
24–Ethylcholesta–3,5–dien–7–one		65 a

Alkyl PAH Totals

Naphthalene C_0
Naphthalene C_1
Naphthalene C_2
Naphthalene C_3
Naphthalene C_4
Naphthalene C_5
Phenanthrene/Anthracene C_0
Phenanthrene/Anthracene C_1
Phenanthrene/Anthracene C_2
Phenanthrene/Anthracene C_3
Phenanthrene/Anthracene C_4
Phenanthrene/Anthracene C_5
Fluoranthene/Pyrene C_0
Fluoranthene/Pyrene C_1
Fluoranthene/Pyrene C_2
Fluoranthene/Pyrene C_3
Fluoranthene/Pyrene C_4
Fluoranthene/Pyrene C_5

QA/QC Statistics

F1 Fraction		
Dodecane–D_{26} / Tetracosane–D_{50}	36.4 %	69.8 %
Tetracosane–D_{50} Area	350354	55462
Hexatriacontane–D_{74} / Tetracosane D_{50}	238.4 %	62.8 %
Fluoranthene–D_{10} Area	0	1327430
Tetracosane–D_{50} / Fluoranthene–D_{10}	0.0 %	88.9 %
F2 Fraction		
Naphthalene–D_8 / Pyrene–D_{10}	44.4 %	17.8 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	59.5 %	25.1 %
Acenaphthylene–D_8 / Pyrene–D_{10}	79.3 %	33.8 %
Acenaphthene–D_{10} / Pyrene–D_{10}	88.8 %	40.4 %
Anthracene–D_{10} / Pyrene–D_{10}	85.1 %	43.2 %
Chrysene–D_{12} / Pyrene–D_{10}	176.2 %	279.9 % c
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	278.1 %	111.3 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	92.3 %	113.0 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	308.2 % c	20.8 %
Pyrene–D_{10} Area	770919	1281600
Fluoranthene–D_{10} Area	8447250 c	0 c
Pyrene–D_{10} / Fluoranthene–D_{10}	44.7 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	0.6 %	141.4 %
F3 Fraction		
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	0	13287170 c

Sample	Z5	Z4
Location/Depth	Stn 9–5	Stn 10–5
Date	5/8/87	4/8/87
Analytical Unit	0.76 g	1.06 g
Conversion Factor	0.053 dry/wet	0.078 dry/wet
Derived Unit		
RRF	HZ	ZZ
	ng/g	ng/g
Summary Concentrations		
Total n–alkanes, $nC_{11}-C_{36}$	104000	1760000
Total $nC_{11}-C_{19}$	98700	1760000
Total $nC_{20}-C_{29}$	3180	1290
Total $nC_{30}-C_{36}$	2650	0
Total $nC_{15}-C_{19}$	98600	1760000
Total $nC_{23}-C_{33}$	4530	793
Total isoprenoids	360000	1800000
Farnesane–Phytane	360000	1800000
Total nC_{11}–Phytane	464000	3560000
Total hopanes	376	0
Total Naphthalene–Benzo(ghi)perylene*	186	88
Naphthalene–Fluorene*	55	30
Phenanthrene–Chrysene	106	46
Higher PAH (Perylene excluded)	25	12
Total polyenes	1160000	954000
Total alcohols	0	7E+07
Total sterols	0	4920
OEP at C_{17}	882.38	12000.67
OEP at C_{25}	1.25	1.21
OEP at C_{27}	0.99	
OEP at C_{29}	1.23	
Pristane/Phytane	8180	22800

Derived Summary Concentrations

Total n–alkanes, $nC_{11}-C_{36}$
Total $nC_{11}-C_{19}$
Total $nC_{20}-C_{29}$
Total $nC_{30}-C_{36}$
Total $nC_{15}-C_{19}$
Total $nC_{23}-C_{33}$
Total isoprenoids
Farnesane–Phytane
Total nC_{11}–Phytane
Total hopanes
Total Naphthalene–Benzo(ghi)perylene*
Naphthalene–Fluorene*
Phenanthrene–Chrysene
Higher PAH (Perylene excluded)
Total polyenes
Total alcohols
Total sterols

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	T1	T3	T5	T7	T11
Location/Depth	Mackenzie Dt.	Sabine Pt.	King/Sabine Pt	King Pt.	Toker Pt.
Date	16/8/87	16/8/87	16/8/87	16/8/87	17/8/87
Analytical Unit	8.49 g	2.85 g	3.69 g	2.53 g	7.15 g
Conversion Factor	0.749 dry/wet	0.304 dry/wet	0.369 dry/wet	0.244 dry/wet	0.684 dry/wet
Derived Unit					
RRF	GZ	GZ	GZ	GZ	GZ
	ng/g	ng/g	ng/g	ng/g	ng/g
F1 Fraction					
Undecane	<39	<116	216 q	<131	<46
Dodecane	61 q	<121	634	<137	<48
Tridecane	131	76 q	1980	142 q	32 q
Tetradecane	136	96 q	1340	163 q	<23
Pentadecane	192	155	2550	259	41
Hexadecane	190	184	5240	363	73
Heptadecane	247	330	6540	683	103
Octadecane	252	193	5460	1350	100
Nonadecane	260	352	5060	2120	148
Eicosane	233	435	3190	1740	172
Heneicosane	254	1700	18800	5560	702
Docosane	215	1080	6820	3160	382
Tricosane	256	2990	28800	8840	2350
Tetracosane	190	1300	7450	4400	570
Pentacosane	254	5020	27300	13300	1910
Hexacosane	168	1920	8770	4730	600
Heptacosane	371	22300	55100	34400	5890
Octacosane	127	2510	7460	4640	1070
Nonacosane	388	38800	104000	46700	20400
Triacontane	144	2260	6170	5210	942
Untriacontane	531	43000	101000	91100	14200
Dotriacontane	<115	1420	2880	3970	608
Tritriacontane	128 q	12300	18000	30900	4350
Tetratriacontane	27 q	212 q	695	197 q	198
Pentatriacontane	29 q	376	2110	552	283
Hexatriacontane	<13	78 q	492	315	467
2,6–Dimethyl Undecane	28 q	<28	549	151	<11
Norfarnesane	38	<23	1720	107	19 q
Farnesane	32	<23	640	66 q	<9.0
2,6,10–Trimethyl Tridecane	64 q	<65	801	113 q	29 q
Norpristane	94	60 q	301	135	40
Pristane	227	232	3030	215	45
Phytane	135	56	2230	181	33
17a(H)–Trisnorhopane (C_{27}a,Tm)	9.4 ar	<6.5 mr	131 ar	<11 mr	<6.1 mr
17ß(H)–Trisnorhopane (C_{27}ß)	4.7 ar	241 ar	1390 ar	1200 ar	305 ar
17a(H),21ß(H)–Norhopane (C_{29}aß)	21 ar	<6.5 mr	1070 ar	<11 mr	<6.1 mr
Hop–17(21)–ene	<1.0 mr	491 ar	5570 ar	1050 ar	107 ar
17ß(H),21a(H)–Normoretane (C_{29}ßa)	6.8 ar	130 ar	1010 ar	400 ar	82 ar
17a(H),21ß(H)–Hopane (C_{30}aß)	40 ar	<7.6 mr	<37 mr	<13 mr	<7.2 mr
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	15 ar	<7.6 mr	<37 mr	<13 mr	<7.2 mr
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	14 ar	<7.6 mr	<37 mr	<13 mr	<7.2 mr
Triterpene	9.3 ar	1190 ar	5230 ar	20100 ar	2200 ar
17ß(H),21ß(H)–Hopane (C_{30}ßß)	7.9 ar	121 ar	987 ar	345 ar	<7.2 mr
Diploptene	57 ar	12300 ar	5150 ar	36000 ar	6060 ar
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	6.9 ar	<7.6 mr	<37 mr	<13 mr	<7.2 mr
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	4.8 ar	<7.6 mr	<37 mr	<13 mr	<7.2 mr
Heptadecadiene					
Heptadecene					
Nonadecene					
F2 Fraction					
Naphthalene	21 q	<41	57 q	<47	<16
2–Methyl Naphthalene	25 b	<41 e	54 b	<46 e	<16 e
1–Methyl Naphthalene	25 q	<69	<53	<78	<27
Dimethyl Naphthalene (N–C_2a)	9.5 ar			12 ar	2.3 ar
Dimethyl Naphthalene (N–C_2b)	13 ar			15 ar	2.2 ar
Dimethyl Naphthalene (N–C_2c)	13 ar			14 ar	2.1 ar
Acenaphthylene	0.17 a	<3.0 m	0.8 a	<0.67 m	0.59 a
Acenaphthene	0.34 b	<3.8 m	2 b	<4.1 e	0.22 b
Trimethyl Naphthalene (N–C_3a)	13 ar			17 ar	2.3 ar

Sample	T1	T3	T5	T7	T11
Location/Depth	**Mackenzie Dt.**	**Sabine Pt.**	**King/Sabine Pt**	**King Pt.**	**Toker Pt.**
Date	16/8/87	16/8/87	16/8/87	16/8/87	17/8/87
Analytical Unit	8.49 g	2.85 g	3.69 g	2.53 g	7.15 g
Conversion Factor	0.749 dry/wet	0.304 dry/wet	0.369 dry/wet	0.244 dry/wet	0.684 dry/wet
Derived Unit					
RRF	GZ	GZ	GZ	GZ	GZ
	ng/g	ng/g	ng/g	ng/g	ng/g
Trimethyl Naphthalene (N−C_3b)	13 a r			19 a r	<0.37 m r
Fluorene	8.8 b	<3.9 m	2.9 b	61 b	<1.2 e
Tetramethyl Naphthalene (N−C_4a)	4 a r				
Tetramethyl Naphthalene (N−C_4b)	8.5 a r				
Cadalene	9.4 a		177 a	19 a	1.8 a
Phenanthrene	52 a	43 a	63 a	68 a	5.3 a
Anthracene	2.3 a	<3.7 m	2.5 a	6.6 a	1.2 a
3−Methyl Phenanthrene	48 a r			71 a r	8.6 a r
2−Methyl Phenanthrene	67 a r			80 a r	5.7 a r
9/4−Methyl Phenanthrene	65 a r			72 a r	8.3 a r
1−Methyl Phenanthrene	53 a r			69 a r	4.7 a r
Pimanthrene (1,7−dimethyl phenanthrene)	16 a r			17 a r	<0.25 m r
Heneicosahexaene					
Fluoranthene	7.1 a	<4.1 m	21 a	19 a	2.6 a
Pyrene	15 a	4 a	24 a	25 a	4 a
Simonellite	22 a r			21 a r	<1.3 m r
Trimethyl Phenanthrene (P/A−C_3a)					
Retene	60 a r			84 a r	<1.3 m r
Tricosapolyene					
Methyl Pyrene (F/P−C_1a)					
Methyl Pyrene (F/P−C_1b)					
Dimethyl Pyrene (F/P−C_2a)					
Pentacosapolyene					
Benz(a)anthracene	3.4 b	<7.3 m	9.8 b	10 b	0.94 b
Chrysene	28 b	<8.2 m	49 b	47 b	4.8 b
Heptacosapolyene					
Benzo(b/j/k)fluoranthene	17 a	<9.5 m	67 a	37 a	6.3 a
Benzo(a)fluoranthene	2.3 a	<11 m	4.4 a	6.1 a	0.43 a
Benzo(e)pyrene	27 a	<9.6 m	47 a	22 a	3.2 a
Benzo(a)pyrene	8.3 a	<25 m	30 a	12 a	4 a
Perylene	0.5 a	<26 m	514 a	256 a	34 a
Squalene					
Dibenz(a,h)anthracene	3.6 a	<18 m	4.2 a	5.1 a	6.4 a
Indeno(1,2,3−cd)pyrene	<0.26 m	<14 m	<2.0 m	<1.1 m	0.57 a
Benzo(ghi)perylene	37 a	<21 m	31 a	17 a	3.3 a
F3 Fraction					
Tetradecanol					
Hexadecenol					
Hexadecanol					
Octadecenol					
Octadecanol					
Phytol					
Eicosenol					
Eicosanol					
Docosenol					
Docosanol					
Tetracosenol					
Tetracosanol					
Hexacosanol					
24−Norcholesta−5,22E−dien−3ß−ol					
Cholesta−5,22E−dien−3ß−ol					
Octacosanol					
Cholest−5−en−3ß−ol					
5a−Cholestan−3ß−ol					
Cholesta−5,24E−dien−3ß−ol					
24−Methylcholesta−5,22E−dien−3ß−ol					
24−Methylcholesta−5,24(28)−dien−3ß−ol					
24−Methylcholest−5−en−3ß−ol					
24−Ethylcholesta−5,22E−dien−3ß−ol					
Triacontanol					

Sample	T1	T3	T5	T7	T11
Location/Depth	**Mackenzie Dt.**	**Sabine Pt.**	**King/Sabine Pt**	**King Pt.**	**Toker Pt.**
Date	16/8/87	16/8/87	16/8/87	16/8/87	17/8/87
Analytical Unit	8.49 g	2.85 g	3.69 g	2.53 g	7.15 g
Conversion Factor	0.749 dry/wet	0.304 dry/wet	0.369 dry/wet	0.244 dry/wet	0.684 dry/wet
Derived Unit					
RRF	GZ	GZ	GZ	GZ	GZ
	ng/g	ng/g	ng/g	ng/g	ng/g
24–Ethylcholest–5–en–3ß–ol					
24–Ethylcholesta–5,24(28)E–dien–3ß–ol					
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol					
ß–Amyrin (Olean–12–en–3ß–ol)					
a–Amyrin (Urs–12–en–3ß–ol)					
24–Ethylcholesta–3,5–dien–7–one					
Alkyl PAH Totals					
Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					
QA/QC Statistics					
F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	47.6 %	92.6 %	84.2 %	72.3 %	65.1 %
Tetracosane–D_{50} Area	37061	5587	886	3598	2357
Hexatriacontane–D_{74} / Tetracosane D_{50}	83.5 %	89.9 %	76.8 %	106.2 %	115.3 %
Fluoranthene–D_{10} Area	0	0	0	0	0
Tetracosane–D_{50} / Fluoranthene–D_{10}	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	37.7 %	72.3 %	63.7 %	45.6 %	29.3 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	51.5 %	88.0 %	85.2 %	62.3 %	48.3 %
Acenaphthylene–D_8 / Pyrene–D_{10}	66.4 %	98.6 %	92.6 %	67.4 %	60.3 %
Acenaphthene–D_{10} / Pyrene–D_{10}	78.2 %	111.2 %	105.2 %	74.7 %	60.5 %
Anthracene–D_{10} / Pyrene–D_{10}	56.0 %	110.1 %	89.5 %	82.0 %	79.9 %
Chrysene–D_{12} / Pyrene–D_{10}	97.4 %	68.6 %	83.1 %	99.5 %	90.1 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	122.3 %	76.2 %	100.8 %	131.5 %	117.9 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	26.7 %	29.6 %	29.9 %	49.9 %	26.7 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	110.2 %	62.0 %	95.2 %	114.6 %	114.4 %
Pyrene–D_{10} Area	87669	8934	30587	66271	69362
Fluoranthene–D_{10} Area	0	0	0	0	0
Pyrene–D_{10} / Fluoranthene–D_{10}	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	30.6 %	0.0 %	7.9 %	50.5 %	4.0 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	0	0	0	0	0

Sample	T1	T3	T5	T7	T11
Location/Depth	**Mackenzie Dt.**	**Sabine Pt.**	**King/Sabine Pt**	**King Pt.**	**Toker Pt.**
Date	16/8/87	16/8/87	16/8/87	16/8/87	17/8/87
Analytical Unit	8.49 g	2.85 g	3.69 g	2.53 g	7.15 g
Conversion Factor	0.749 dry/wet	0.304 dry/wet	0.369 dry/wet	0.244 dry/wet	0.684 dry/wet
Derived Unit					
RRF	GZ	GZ	GZ	GZ	GZ
	ng/g	ng/g	ng/g	ng/g	ng/g
Summary Concentrations					
Total *n*–alkanes, $nC_{11}-C_{36}$	4780	139000	428000	265000	55600
Total $nC_{11}-C_{19}$	1470	1390	29000	5080	497
Total $nC_{20}-C_{29}$	2460	78100	268000	127000	34000
Total $nC_{30}-C_{36}$	859	59600	131000	132000	21000
Total $nC_{15}-C_{19}$	1140	1210	24900	4780	465
Total $nC_{23}-C_{33}$	2560	134000	367000	248000	52900
Total isoprenoids	618	348	9270	968	166
Farnesane–Phytane	552	348	7000	710	147
Total nC_{11}–Phytane	5400	139000	437000	266000	55800
Total hopanes	188	13300	15300	39000	6550
Total Naphthalene–Benzo(ghi)perylene*	283	47	470	336	44
Naphthalene–Fluorene*	80	0	117	61	0.81
Phenanthrene–Chrysene	108	47	169	176	19
Higher PAH (Perylene excluded)	95	0	184	99	24
Total polyenes	0	0	0	0	0
Total alcohols	0	0	0	0	0
Total sterols	0	0	0	0	0
OEP at C_{17}	1.09	1.65	1.09	0.95	1.17
OEP at C_{25}	1.50	4.30	3.82	3.37	4.21
OEP at C_{27}	2.43	10.02	7.11	7.11	8.63
OEP at C_{29}	2.98	15.62	14.31	10.30	17.71
Pristane/Phytane	1.68	4.14	1.36	1.19	1.36

Derived Summary Concentrations

Total *n*–alkanes, $nC_{11}-C_{36}$
Total $nC_{11}-C_{19}$
Total $nC_{20}-C_{29}$
Total $nC_{30}-C_{36}$
Total $nC_{15}-C_{19}$
Total $nC_{23}-C_{33}$
Total isoprenoids
Farnesane–Phytane
Total nC_{11}–Phytane
Total hopanes
Total Naphthalene–Benzo(ghi)perylene*
Naphthalene–Fluorene*
Phenanthrene–Chrysene
Higher PAH (Perylene excluded)
Total polyenes
Total alcohols
Total sterols

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	T12	T15	T17	T20	T22
Location/Depth	Toker Pt.	Hutchinson B.	Russel Inlet	Nuvorak Pt.	W. Tuktoyaktuk
Date	17/8/87	17/8/87	17/8/87	17/8/87	17/8/87
Analytical Unit	5.19 g	7.99 g	3.09 g	4.79 g	4.43 g
Conversion Factor	0.464 dry/wet	0.665 dry/wet	0.292 dry/wet	0.431 dry/wet	0.482 dry/wet
Derived Unit					
RRF	GZ	GZ	GZ	GZ	GZ
	ng/g	ng/g	ng/g	ng/g	ng/g
F1 Fraction					
Undecane	<64	<41	4340	<69	<75
Dodecane	<67	<43	13800	<72	<78
Tridecane	<40	<26	1830	<44	<47
Tetradecane	<31	27 q	1910	<34	<37
Pentadecane	45	64	4710	81	87
Hexadecane	55	45	9750	163	183
Heptadecane	64 q	69	13700	396	222
Octadecane	70	68	10600	394	201
Nonadecane	174	240	7680	1130	394
Eicosane	347	356	3100	1310	550
Heneicosane	1160	2120	4260	6760	5800
Docosane	797	838	1940	3350	902
Tricosane	2040	2340	5040	9540	3110
Tetracosane	873	1350	2250	4180	1530
Pentacosane	2660	4370	9090	11600	6320
Hexacosane	790	1430	1500	3580	2200
Heptacosane	7180	8450	12800	17200	21200
Octacosane	666	2030	846	3900	4130
Nonacosane	7350	30400	6560	38100	76400
Triacontane	349	2480	375	4490	6390
Untriacontane	6270	53900	5140	47800	102000
Dotriacontane	<188	1850	<316	2700	4750
Tritriacontane	1590	16800	1690	21000	46600
Tetratriacontane	<39	156	<66	363	295
Pentatriacontane	96	371	74 q	463	794
Hexatriacontane	<22	<14	136	31 q	72 q
2,6–Dimethyl Undecane	<15	<10.0	67 q	<17	<18
Norfarnesane	<13	12 q	1630	21 q	39 q
Farnesane	13 q	14 q	1200	17 q	67
2,6,10–Trimethyl Tridecane	<36	<23	589	<39	109 q
Norpristane	23 q	34	4540	58	71
Pristane	41 q	38	5390	123	91
Phytane	7.4 q	19	4130	71	63
17a(H)–Trisnorhopane (C_{27}a,Tm)				<3.8 m r	<8.6 m r
17ß(H)–Trisnorhopane (C_{27}ß)				86 a r	152 a r
17a(H),21ß(H)–Norhopane (C_{29}aß)				<3.8 m r	<8.6 m r
Hop–17(21)–ene				2330 a r	672 a r
17ß(H),21a(H)–Normoretane (C_{29}ßa)				485 a r	<8.6 m r
17a(H),21ß(H)–Hopane (C_{30}aß)				<4.5 m r	<10 m r
S–17a(H),21ß(H)–Homohopane (C_{31}aß)				<4.5 m r	<10 m r
R–17a(H),21ß(H)–Homohopane (C_{31}aß)				<4.5 m r	<10 m r
Triterpene				34000 a r	17800 a r
17ß(H),21ß(H)–Hopane (C_{30}ßß)				214 a r	36 a r
Diploptene				13900 a r	4840 a r
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)				<4.5 m r	<10 m r
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)				<4.5 m r	<10 m r
Heptadecadiene					
Heptadecene					
Nonadecene					
F2 Fraction					
Naphthalene	<23	<15	<38	<25	<26
2–Methyl Naphthalene	<22 e	<15 e	<38 e	<24 e	<26 e
1–Methyl Naphthalene	<38	<25	<64	<41	<44
Dimethyl Naphthalene (N–C_2a)				2.3 a r	4.3 a r
Dimethyl Naphthalene (N–C_2b)				4.6 a r	5 a r
Dimethyl Naphthalene (N–C_2c)				4.5 a r	3.8 a r
Acenaphthylene	<1.4 m	<0.51 m	4.2 a	<0.73 m	0.48 a
Acenaphthene	1.9 b	<1.3 e	7.4 b	<2.2 e	0.54 b
Trimethyl Naphthalene (N–C_3a)				1.1 a r	5.1 a r

Sample	T12	T15	T17	T20	T22
Location/Depth	Toker Pt.	Hutchinson B.	Russel Inlet	Nuvorak Pt.	W. Tuktoyaktuk
Date	17/8/87	17/8/87	17/8/87	17/8/87	17/8/87
Analytical Unit	5.19 g	7.99 g	3.09 g	4.79 g	4.43 g
Conversion Factor	0.464 dry/wet	0.665 dry/wet	0.292 dry/wet	0.431 dry/wet	0.482 dry/wet
Derived Unit					
RRF	GZ	GZ	GZ	GZ	GZ
	ng/g	ng/g	ng/g	ng/g	ng/g
Trimethyl Naphthalene (N−C_3b)				<0.92 m r	4.2 a r
Fluorene	<0.55 m	2.6 b	5.4 b	1.8 b	12 b
Tetramethyl Naphthalene (N−C_4a)				<0.88 m	<0.38 m
Tetramethyl Naphthalene (N−C_4b)				<0.88 m	<0.38 m
Cadalene				9.9 a	12 a
Phenanthrene	3.6 a	4 a	19 a	23 a	20 a
Anthracene	<0.41 m	<0.78 m	4.9 a	6.6 a	3.7 a
3−Methyl Phenanthrene				3.3 a r	25 a r
2−Methyl Phenanthrene				12 a r c	15 a r
9/4−Methyl Phenanthrene				12 a r	18 a r
1−Methyl Phenanthrene				7.3 a r	12 a r
Pimanthrene (1,7−dimethyl phenanthrene)				<1.0 m r	4.9 a r
Heneicosahexaene					
Fluoranthene	<0.37 m	<0.73 m	3.9 a	4.7 a	6.5 a
Pyrene	0.38 a	<0.69 m	4.7 a	7.8 a	10 a
Simonellite				<5.1 m r	<2.3 m r
Trimethyl Phenanthrene (P/A−C_3a)					
Retene				<5.1 m r	17 a r
Tricosapolyene					
Methyl Pyrene (F/P−C_1a)					
Methyl Pyrene (F/P−C_1b)					
Dimethyl Pyrene (F/P−C_2a)					
Pentacosapolyene					
Benz(a)anthracene	0.32 b	<0.92 m	1.5 b	0.92 b	4.1 b
Chrysene	0.72 b	0.87 b	9.6 b	6.9 b	16 b
Heptacosapolyene					
Benzo(b/j/k)fluoranthene	2.2 a	<1.0 m	15 a	11 a	18 a
Benzo(a)fluoranthene	2.6 a	<1.2 m	5.2 a	<1.6 m	13 a
Benzo(e)pyrene	<0.51 m	<1.0 m	2.6 a	1.6 a	14 a
Benzo(a)pyrene	<2.0 m	<4.8 m	<9.9 m	<2.6 m	10 a
Perylene	81 a	142 a	170 a	237 a	232 a
Squalene					
Dibenz(a,h)anthracene	0.92 a	<1.6 m	11 a	<2.6 m	1.6 a
Indeno(1,2,3−cd)pyrene	1.4 a	<1.2 m	4.9 a	<2.0 m	3.1 a
Benzo(ghi)perylene	2.2 a	4.3 a	24 a	21 a	17 a
F3 Fraction					
Tetradecanol					
Hexadecenol					
Hexadecanol					
Octadecenol					
Octadecanol					
Phytol					
Eicosenol					
Eicosanol					
Docosenol					
Docosanol					
Tetracosenol					
Tetracosanol					
Hexacosanol					
24−Norcholesta−5,22E−dien−3ß−ol					
Cholesta−5,22E−dien−3ß−ol					
Octacosanol					
Cholest−5−en−3ß−ol					
5a−Cholestan−3ß−ol					
Cholesta−5,24E−dien−3ß−ol					
24−Methylcholesta−5,22E−dien−3ß−ol					
24−Methylcholesta−5,24(28)−dien−3ß−ol					
24−Methylcholest−5−en−3ß−ol					
24−Ethylcholesta−5,22E−dien−3ß−ol					
Triacontanol					

Sample	T12	T15	T17	T20	T22
Location/Depth	Toker Pt.	Hutchinson B.	Russel Inlet	Nuvorak Pt.	W. Tuktoyaktuk
Date	17/8/87	17/8/87	17/8/87	17/8/87	17/8/87
Analytical Unit	5.19 g	7.99 g	3.09 g	4.79 g	4.43 g
Conversion Factor	0.464 dry/wet	0.665 dry/wet	0.292 dry/wet	0.431 dry/wet	0.482 dry/wet
Derived Unit					
RRF	GZ	GZ	GZ	GZ	GZ
	ng/g	ng/g	ng/g	ng/g	ng/g
24–Ethylcholest–5–en–3ß–ol					
24–Ethylcholesta–5,24(28)E–dien–3ß–ol					
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol					
ß–Amyrin (Olean–12–en–3ß–ol)					
a–Amyrin (Urs–12–en–3ß–ol)					
24–Ethylcholesta–3,5–dien–7–one					
Alkyl PAH Totals					
Naphthalene C_0					
Naphthalene C_1					
Naphthalene C_2					
Naphthalene C_3					
Naphthalene C_4					
Naphthalene C_5					
Phenanthrene/Anthracene C_0					
Phenanthrene/Anthracene C_1					
Phenanthrene/Anthracene C_2					
Phenanthrene/Anthracene C_3					
Phenanthrene/Anthracene C_4					
Phenanthrene/Anthracene C_5					
Fluoranthene/Pyrene C_0					
Fluoranthene/Pyrene C_1					
Fluoranthene/Pyrene C_2					
Fluoranthene/Pyrene C_3					
Fluoranthene/Pyrene C_4					
Fluoranthene/Pyrene C_5					
QA/QC Statistics					
F1 Fraction					
Dodecane–D_{26} / Tetracosane–D_{50}	70.6 %	60.0 %	85.2 %	39.8 %	24.9 %
Tetracosane–D_{50} Area	4493	1461	1064	5665	2687
Hexatriacontane–D_{74} / Tetracosane D_{50}	73.0 %	135.6 %	98.8 %	86.8 %	112.8 %
Fluoranthene–D_{10} Area	0	0	0	0	0
Tetracosane–D_{50} / Fluoranthene–D_{10}	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
F2 Fraction					
Naphthalene–D_8 / Pyrene–D_{10}	55.3 %	65.2 %	47.5 %	51.8 %	29.0 %
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}	68.4 %	90.5 %	70.9 %	57.9 %	51.5 %
Acenaphthylene–D_8 / Pyrene–D_{10}	18.8 %	104.2 %	102.3 %	84.2 %	72.7 %
Acenaphthene–D_{10} / Pyrene–D_{10}	72.3 %	116.9 %	113.8 %	97.1 %	103.4 %
Anthracene–D_{10} / Pyrene–D_{10}	89.0 %	91.2 %	88.4 %	90.3 %	92.1 %
Chrysene–D_{12} / Pyrene–D_{10}	102.9 %	96.5 %	90.8 %	84.8 %	86.1 %
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}	131.2 %	125.7 %	107.7 %	105.5 %	98.3 %
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}	34.3 %	27.8 %	22.9 %	59.1 %	49.0 %
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}	114.2 %	123.8 %	103.2 %	87.4 %	81.5 %
Pyrene–D_{10} Area	53816	17937	27197	25871	61197
Fluoranthene–D_{10} Area	0	0	0	0	0
Pyrene–D_{10} / Fluoranthene–D_{10}	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Perylene–D_{12} / Biphenyl–D_{10}	1.6 %	21.1 %	4.9 %	12.6 %	10.3 %
F3 Fraction					
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)	0	0	0	0	0

Sample	T12	T15	T17	T20	T22
Location/Depth	**Toker Pt.**	**Hutchinson B.**	**Russel Inlet**	**Nuvorak Pt.**	**W. Tuktoyaktuk**
Date	17/8/87	17/8/87	17/8/87	17/8/87	17/8/87
Analytical Unit	5.19 g	7.99 g	3.09 g	4.79 g	4.43 g
Conversion Factor	0.464 dry/wet	0.665 dry/wet	0.292 dry/wet	0.431 dry/wet	0.482 dry/wet
Derived Unit					
RRF	GZ	GZ	GZ	GZ	GZ
	ng/g	ng/g	ng/g	ng/g	ng/g
Summary Concentrations					
Total n–alkanes, $nC_{11}-C_{36}$	32600	130000	123000	179000	284000
Total $nC_{11}-C_{19}$	408	513	68300	2160	1090
Total $nC_{20}-C_{29}$	23900	53700	47400	99500	122000
Total $nC_{30}-C_{36}$	8310	75600	7420	76800	161000
Total $nC_{15}-C_{19}$	408	486	46400	2160	1090
Total $nC_{23}-C_{33}$	29800	125000	45300	164000	275000
Total isoprenoids	84	117	17500	290	440
Farnesane–Phytane	84	105	15800	269	401
Total nC_{11}–Phytane	32700	130000	141000	179000	284000
Total hopanes	0	0	0	17000	5700
Total Naphthalene–Benzo(ghi)perylene*	16	12	124	86	150
Naphthalene–Fluorene*	1.9	2.6	17	1.8	13
Phenanthrene–Chrysene	5	4.9	44	50	60
Higher PAH (Perylene excluded)	9.3	4.3	63	34	77
Total polyenes	0	0	0	0	0
Total alcohols	0	0	0	0	0
Total sterols	0	0	0	0	0
OEP at C_{17}	1.21	1.59	1.16	1.61	1.18
OEP at C_{25}	3.79	3.33	4.83	3.10	4.17
OEP at C_{27}	9.12	6.18	9.85	5.11	8.29
OEP at C_{29}	14.17	13.57	11.73	8.75	13.82
Pristane/Phytane	5.54	2	1.31	1.73	1.44

Derived Summary Concentrations

Total n–alkanes, $nC_{11}-C_{36}$
Total $nC_{11}-C_{19}$
Total $nC_{20}-C_{29}$
Total $nC_{30}-C_{36}$
Total $nC_{15}-C_{19}$
Total $nC_{23}-C_{33}$
Total isoprenoids
Farnesane–Phytane
Total nC_{11}–Phytane
Total hopanes
Total Naphthalene–Benzo(ghi)perylene*
Naphthalene–Fluorene*
Phenanthrene–Chrysene
Higher PAH (Perylene excluded)
Total polyenes
Total alcohols
Total sterols

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

Sample	Norman Wells	Norman Wells
Location/Depth	NTCL Dock	Esso Ice Road
Date	1–4/4/87	4–7/4/87
Analytical Unit	998 L	1640 L
Conversion Factor	3 mg/L	4 mg/L
Derived Unit	2.99 g	6.56 g
RRF		
	ng/L	ng/L
F1 Fraction		
Undecane	0.12	0.11
Dodecane	0.15	0.15
Tridecane	0.22	0.22
Tetradecane	1.1	1.2
Pentadecane	0.4	0.49
Hexadecane	1.4	1.6
Heptadecane	0.4	0.42
Octadecane	0.45	0.49
Nonadecane		
Eicosane	0.45	0.26
Heneicosane	0.29	0.2
Docosane	0.49	0.35
Tricosane	0.21	0.12
Tetracosane	0.36	0.27
Pentacosane	0.15	0.09
Hexacosane	0.5	0.37
Heptacosane	0.13	0.074
Octacosane	0.35	0.3
Nonacosane	<0.064	<0.025
Triacontane	0.24	0.17
Untriacontane	<0.067	<0.026
Dotriacontane	<0.068	<0.027
Tritriacontane	<0.069	<0.027
Tetratriacontane	<0.082	<0.032
Pentatriacontane	<0.082	<0.032
Hexatriacontane		
2,6–Dimethyl Undecane		
Norfarnesane		
Farnesane		
2,6,10–Trimethyl Tridecane		
Norpristane		
Pristane		
Phytane		
17a(H)–Trisnorhopane (C_{27}a,Tm)		
17ß(H)–Trisnorhopane (C_{27}ß)		
17a(H),21ß(H)–Norhopane (C_{29}aß)		
Hop–17(21)–ene		
17ß(H),21a(H)–Normoretane (C_{29}ßa)		
17a(H),21ß(H)–Hopane (C_{30}aß)		
S–17a(H),21ß(H)–Homohopane (C_{31}aß)		
R–17a(H),21ß(H)–Homohopane (C_{31}aß)		
Triterpene		
17ß(H),21ß(H)–Hopane (C_{30}ßß)		
Diploptene		
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)		
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)		
Heptadecadiene		
Heptadecene		
Nonadecene		
F2 Fraction		
Naphthalene	0.062	0.07
2–Methyl Naphthalene		
1–Methyl Naphthalene		
Dimethyl Naphthalene (N–C_2a)		
Dimethyl Naphthalene (N–C_2b)		
Dimethyl Naphthalene (N–C_2c)		
Acenaphthylene		
Acenaphthene		
Trimethyl Naphthalene (N–C_3a)		

Sample	**Norman Wells**	**Norman Wells**
Location/Depth	**NTCL Dock**	**Esso Ice Road**
Date	1–4/4/87	4–7/4/87
Analytical Unit	998 L	1640 L
Conversion Factor	3 mg/L	4 mg/L
Derived Unit	2.99 g	6.56 g
RRF		
	ng/L	ng/L
Trimethyl Naphthalene (N–C_3b)		
Fluorene	0.032	0.031
Tetramethyl Naphthalene (N–C_4a)		
Tetramethyl Naphthalene (N–C_4b)		
Cadalene		
Phenanthrene	0.11	0.11
Anthracene	<0.002	<0.002
3–Methyl Phenanthrene		
2–Methyl Phenanthrene		
9/4–Methyl Phenanthrene		
1–Methyl Phenanthrene		
Pimanthrene (1,7–dimethyl phenanthrene)		
Heneicosahexaene		
Fluoranthene	0.019	0.016
Pyrene	0.034	0.026
Simonellite		
Trimethyl Phenanthrene (P/A–C_3a)		
Retene		
Tricosapolyene		
Methyl Pyrene (F/P–C_1a)		
Methyl Pyrene (F/P–C_1b)		
Dimethyl Pyrene (F/P–C_2a)		
Pentacosapolyene		
Benz(a)anthracene	0.012	0.011
Chrysene	0.056	0.053
Heptacosapolyene		
Benzo(b/j/k)fluoranthene	0.061	0.06
Benzo(a)fluoranthene		
Benzo(e)pyrene	0.11	0.092
Benzo(a)pyrene	0.037	0.028
Perylene	0.059	0.053
Squalene		
Dibenz(a,h)anthracene	0.009	0.013
Indeno(1,2,3–cd)pyrene	0.02	0.015
Benzo(ghi)perylene	0.096	0.083
F3 Fraction		
Tetradecanol		
Hexadecenol		
Hexadecanol		
Octadecenol		
Octadecanol		
Phytol		
Eicosenol		
Eicosanol		
Docosenol		
Docosanol		
Tetracosenol		
Tetracosanol		
Hexacosanol		
24–Norcholesta–5,22E–dien–3ß–ol		
Cholesta–5,22E–dien–3ß–ol		
Octacosanol		
Cholest–5–en–3ß–ol		
5a–Cholestan–3ß–ol		
Cholesta–5,24E–dien–3ß–ol		
24–Methylcholesta–5,22E–dien–3ß–ol		
24–Methylcholesta–5,24(28)–dien–3ß–ol		
24–Methylcholest–5–en–3ß–ol		
24–Ethylcholesta–5,22E–dien–3ß–ol		
Triacontanol		

Sample	**Norman Wells**	**Norman Wells**
Location/Depth	**NTCL Dock**	**Esso Ice Road**
Date	1–4/4/87	4–7/4/87
Analytical Unit	998 L	1640 L
Conversion Factor	3 mg/L	4 mg/L
Derived Unit	2.99 g	6.56 g
RRF		
	ng/L	ng/L
24–Ethylcholest–5–en–3ß–ol		
24–Ethylcholesta–5,24(28)E–dien–3ß–ol		
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol		
ß–Amyrin (Olean–12–en–3ß–ol)		
a–Amyrin (Urs–12–en–3ß–ol)		
24–Ethylcholesta–3,5–dien–7–one		

Alkyl PAH Totals

Naphthalene C_0
Naphthalene C_1
Naphthalene C_2
Naphthalene C_3
Naphthalene C_4
Naphthalene C_5
Phenanthrene/Anthracene C_0
Phenanthrene/Anthracene C_1
Phenanthrene/Anthracene C_2
Phenanthrene/Anthracene C_3
Phenanthrene/Anthracene C_4
Phenanthrene/Anthracene C_5
Fluoranthene/Pyrene C_0
Fluoranthene/Pyrene C_1
Fluoranthene/Pyrene C_2
Fluoranthene/Pyrene C_3
Fluoranthene/Pyrene C_4
Fluoranthene/Pyrene C_5

QA/QC Statistics

F1 Fraction
Dodecane–D_{26} / Tetracosane–D_{50}
Tetracosane–D_{50} Area
Hexatriacontane–D_{74} / Tetracosane D_{50}
Fluoranthene–D_{10} Area
Tetracosane–D_{50} / Fluoranthene–D_{10}

F2 Fraction
Naphthalene–D_8 / Pyrene–D_{10}
1–Methyl Naphthalene–D_{10} / Pyrene–D_{10}
Acenaphthylene–D_8 / Pyrene–D_{10}
Acenaphthene–D_{10} / Pyrene–D_{10}
Anthracene–D_{10} / Pyrene–D_{10}
Chrysene–D_{12} / Pyrene–D_{10}
Benzo(k)fluoranthene–D_{12} / Pyrene–D_{10}
Benzo(a)pyrene–D_{12} / Pyrene–D_{10}
Dibenz(a,h)anthracene–D_{14} / Pyrene–D_{10}
Pyrene–D_{10} Area
Fluoranthene–D_{10} Area
Pyrene–D_{10} / Fluoranthene–D_{10}
Perylene–D_{12} / Biphenyl–D_{10}

F3 Fraction
Fluoranthene–D_{10} Area (Pyrene–D_{10} for unfractionated *in situ* dissolved samples)

Sample	Norman Wells	Norman Wells
Location/Depth	NTCL Dock	Esso Ice Road
Date	1–4/4/87	4–7/4/87
Analytical Unit	998 L	1640 L
Conversion Factor	3 mg/L	4 mg/L
Derived Unit	2.99 g	6.56 g
RRF		
	ng/L	ng/L
Summary Concentrations		
Total *n*–alkanes, $nC_{11}-C_{36}$	7.4	6.9
Total $nC_{11}-C_{19}$	4.2	4.7
Total $nC_{20}-C_{29}$	2.9	2
Total $nC_{30}-C_{36}$	0.24	0.17
Total $nC_{15}-C_{19}$	3.8	4.2
Total $nC_{23}-C_{33}$	2.4	1.7
Total isoprenoids		
Farnesane–Phytane		
Total nC_{11}–Phytane	7.4	6.9
Total hopanes		
Total Naphthalene–Benzo(ghi)perylene*	0.65	0.61
Naphthalene–Fluorene*	0.094	0.1
Phenanthrene–Chrysene	0.23	0.22
Higher PAH (Perylene excluded)	0.33	0.29
Total polyenes		
Total alcohols		
Total sterols		
OEP at C_{17}	3.11	3.10
OEP at C_{25}	2.19	2.79
OEP at C_{27}	3.31	4.25
OEP at C_{29}		
Pristane/Phytane		
Derived Summary Concentrations	ng/g	ng/g
Total *n*–alkanes, $nC_{11}-C_{36}$	2470	1720
Total $nC_{11}-C_{19}$	1410	1170
Total $nC_{20}-C_{29}$	977	509
Total $nC_{30}-C_{36}$	80	43
Total $nC_{15}-C_{19}$	1250	1050
Total $nC_{23}-C_{33}$	810	436
Total isoprenoids		
Farnesane–Phytane		
Total nC_{11}–Phytane	2470	1720
Total hopanes		
Total Naphthalene–Benzo(ghi)perylene*	219	152
Naphthalene–Fluorene*	31	25
Phenanthrene–Chrysene	77	54
Higher PAH (Perylene excluded)	111	73
Total polyenes		
Total alcohols		
Total sterols		

Explaination of Abbreviations:

- <: less than 3 *sigma* of the mean blank
- a: the mean blank is zero
- b: the blank standard deviation is zero or less than three blanks available
- c: estimated or calculated peak area
- e: negative after blank correction – the mean blank is used
- m: peak area is 0 – minumum area used
- q: less than 10 *sigma* of the mean blank

* Parent PAH totals include 1– and 2–methyl naphthalene and exclude perylene.

APPENDIX 2; RELATIVE RESPONSE FACTORS

Sequence Number	**RRF6***	**RRF7**	**RRF8**	**RRF9**	**RRF10**	**RRF11**	**RRF12**
RRF	**GZ**	**HZ**	**IZ**	**JZ**	**KZ**	**LZ**	**MZ**
F1 Minimum Area	50	3595	3595	3456	4900	3595	4900
F2 Minimum Area	50	4010	1690	3740	5000	4010	4010
F3 Minimum Area	50	1690	1690	2742	4100	4100	1690
F1 Fraction/ Date	*OCT88*	*MAR90*	*MAR90*	*SEPT90*	*JAN91*	*MAR90*	*JAN91*
Dodecane−D_{26}	1.069	2.018	2.018	2.250	0.930	2.018	0.930
Tetracosane−D_{50}	1.050	0.517	0.517	0.278	1.240	0.517	1.240
Hexatriacontane−D_{74}	0.667	0.401	0.401	0.242	0.694	0.401	0.694
Fluoranthene−D_{10}		0.517	0.517	0.278	1.240	0.517	1.240
Undecane	0.941	2.646	2.646	2.898	1.200	2.646	1.200
Dodecane	0.988	2.578	2.578	2.409	0.998	2.578	0.998
Tridecane	0.880	2.190	2.190	1.775	0.904	2.190	0.904
Tetradecane	1.045	2.446	2.446	2.246	1.133	2.446	1.133
Pentadecane	1.084	2.301	2.301	2.066	1.125	2.301	1.125
Hexadecane	1.000	2.259	2.259	1.821	1.198	2.259	1.198
Heptadecane	0.938	2.172	2.172	1.841	1.262	2.172	1.262
Octadecane	0.916	1.993	1.993	1.530	1.257	1.993	1.257
Nonadecane	0.912	1.793	1.793	1.548	1.263	1.793	1.263
Eicosane	0.895	1.596	1.596	1.437	1.275	1.596	1.275
Heneicosane	0.906	1.508	1.508	1.319	1.240	1.508	1.240
Docosane	0.893	1.405	1.405	1.147	1.247	1.405	1.247
Tricosane	0.908	1.362	1.362	1.153	1.257	1.362	1.257
Tetracosane	0.893	1.308	1.308	0.958	1.212	1.308	1.212
Pentacosane	0.892	1.170	1.170	0.860	1.184	1.170	1.184
Hexacosane	0.798	1.140	1.140	0.756	1.207	1.140	1.207
Heptacosane	0.813	1.016	1.016	0.732	1.159	1.016	1.159
Octacosane	0.829	0.891	0.891	0.708	1.110	0.891	1.110
Nonacosane	0.775	0.796	0.796	0.639	1.053	0.796	1.053
Triacontane	0.722	0.701	0.701	0.570	0.996	0.701	0.996
Untriacontane	0.732	0.689	0.689	0.531	0.964	0.689	0.964
Dotriacontane	0.743	0.677	0.677	0.493	0.931	0.677	0.931
Tritriacontane	0.683	0.590	0.590	0.424	0.906	0.590	0.906
Tetratriacontane	0.624	0.503	0.503	0.356	0.881	0.503	0.881
Pentatriacontane	0.597	0.478	0.478	0.280	0.883	0.478	0.883
Hexatriacontane	0.569	0.572	0.572	0.205	0.886	0.572	0.886
2,6−Dimethyl Undecane	0.934	2.384	2.384	2.092	0.951	2.384	0.951
Norfarnesane	0.934	2.384	2.384	2.092	0.951	2.384	0.951
Farnesane	0.963	2.318	2.318	2.011	1.019	2.318	1.019
2,6,10−Trimethyl Tridecane	1.065	2.373	2.373	2.156	1.129	2.373	1.129
Norpristane	1.042	2.216	2.216	1.831	1.230	2.216	1.230
Pristane	0.927	2.083	2.083	1.686	1.259	2.083	1.259
Phytane	0.914	1.893	1.893	1.539	1.260	1.893	1.260
17a(H)−Trisnorhopane (C_{27}a,Tm)	0.473	0.546	0.546	0.968	0.351	0.546	0.351
17ß(H)−Trisnorhopane (C_{27}ß)	0.473	0.546	0.546	0.968	0.351	0.546	0.351
17a(H),21ß(H)−Norhopane (C_{29}aß)	0.473	0.546	0.546	0.968	0.351	0.546	0.351
Hop−17(21)−ene	0.154	0.154	0.154	0.175	0.039	0.154	0.039
17ß(H),21a(H)−Normoretane (C_{29}ßa)	0.473	0.546	0.546	0.968	0.351	0.546	0.351
17a(H),21ß(H)−Hopane (C_{30}aß)	0.400	0.373	0.373	0.595	0.257	0.373	0.257
S−17a(H),21ß(H)−Homohopane (C_{31}aß)	0.400	0.373	0.373	0.595	0.257	0.373	0.257
R−17a(H),21ß(H)−Homohopane (C_{31}aß)	0.400	0.373	0.373	0.595	0.257	0.373	0.257
Triterpene	0.154	0.154	0.154	0.175	0.039	0.154	0.039
17ß(H),21ß(H)−Hopane (C_{30}ßß)	0.400	0.373	0.373	0.595	0.257	0.373	0.257
Diploptene	0.154	0.154	0.154	0.175	0.039	0.154	0.039
S−17a(H),21ß(H)−Bishomohopane (C_{32}aß)	0.400	0.373	0.373	0.595	0.257	0.373	0.257
R−17a(H),21ß(H)−Bishomohopane (C_{32}aß)	0.400	0.373	0.373	0.595	0.257	0.373	0.257
Heptadecadiene		2.172	2.172	1.841	1.262	2.172	1.262
Heptadecene		2.172	2.172	1.841	1.262	2.172	1.262
Nonadecene		1.793	1.793	1.548	1.263	1.793	1.263

* Triterpene, C_1 phenanthrene and C_2 and higher alkyl PAH response factors for RRF6 are based on December 1989 RRFs for F1 and March 1990 RRFs for F2.

Sequence Number RRF	RRF6* GZ	RRF7 HZ	RRF8 IZ	RRF9 JZ	RRF10 KZ	RRF11 LZ	RRF12 MZ
F2 Fraction/ Date	*OCT88*	*MAR90*	*MAY90*	*SEPT90*	*JAN91*	*MAR90*	*MAR90*
Naphthalene−D_8	1.766	2.508	1.013	1.612	1.428	2.508	2.508
1−Methyl Naphthalene−D_{10}	0.713	0.956	0.529	0.668	0.628	0.956	0.956
Acenaphthylene−D_8	1.421	1.677	1.025	1.260	1.011	1.677	1.677
Acenaphthene−D_{10}	0.827	0.954	0.657	0.747	0.604	0.954	0.954
Anthracene−D_{10}	0.899	1.217	0.866	0.861	0.692	1.217	1.217
Pyrene−D_{10}	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Biphenyl−D_{10}	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Chrysene−D_{12}	0.613	0.579	0.640	0.666	0.696	0.579	0.579
Benzo(k)fluoranthene−D_{12}	0.489	0.585	0.537	0.755	0.856	0.585	0.585
Benzo(a)pyrene−D_{12}	0.468	0.464	0.375	0.603	0.691	0.464	0.464
Perylene−D_{12}	0.500	0.500	0.500	0.500	0.500	0.500	0.500
Dibenz(a,h)anthracene−D_{14}	0.295	0.337	0.187	0.491	0.602	0.337	0.337
Fluoranthene−D_{10}		0.932	0.932	0.932	0.932	0.932	0.932
Naphthalene	1.094	1.045	1.089	1.051	1.181	1.045	1.045
2−Methyl Naphthalene	1.619	1.588	1.325	1.474	1.430	1.588	1.588
1−Methyl Naphthalene	1.619	1.588	1.325	1.474	1.430	1.588	1.588
Dimethyl Naphthalene (N−C_2a)	1.876	1.876	1.257	1.549	1.762	1.876	1.876
Dimethyl Naphthalene (N−C_2b)	1.876	1.876	1.257	1.549	1.762	1.876	1.876
Dimethyl Naphthalene (N−C_2c)	1.876	1.876	1.257	1.549	1.762	1.876	1.876
Acenaphthylene	1.087	1.118	1.092	1.086	1.115	1.118	1.118
Acenaphthene	1.334	1.235	0.963	1.146	1.215	1.235	1.235
Trimethyl Naphthalene (N−C_3a)	1.275	1.275	1.024	1.087	1.629	1.275	1.275
Trimethyl Naphthalene (N−C_3b)	1.275	1.275	1.024	1.087	1.629	1.275	1.275
Fluorene	1.284	1.265	1.014	1.207	1.216	1.265	1.265
Tetramethyl Naphthalene (N−C_4a)	1.332	1.332	1.117	1.307	1.979	1.332	1.332
Tetramethyl Naphthalene (N−C_4b)	1.332	1.332	1.117	1.307	1.979	1.332	1.332
Cadalene	1.319	1.319	1.351	1.431	1.644	1.319	1.319
Phenanthrene	1.650	1.217	1.194	1.357	1.229	1.217	1.217
Anthracene	1.273	1.235	1.120	1.294	1.224	1.235	1.235
3−Methyl Phenanthrene	0.489	0.489	0.546	0.593	0.609	0.489	0.489
2−Methyl Phenanthrene	0.489	0.489	0.546	0.593	0.609	0.489	0.489
9/4−Methyl Phenanthrene	0.489	0.489	0.546	0.593	0.609	0.489	0.489
1−Methyl Phenanthrene	0.489	0.489	0.546	0.593	0.609	0.489	0.489
Pimanthrene (1,7−dimethyl phenanthrene)	0.611	0.611	0.570	0.585	0.525	0.611	0.611
Heneicosahexaene		0.200	0.336	0.331	0.819	0.200	0.200
Fluoranthene	1.123	1.121	1.061	1.068	1.076	1.121	1.121
Pyrene	1.177	1.110	1.060	1.081	1.107	1.110	1.110
2,6/3,5−Dimethyl Phenanthrene		0.611	0.570	0.585	0.525	0.611	0.611
Simonellite	0.186	0.186	0.198	0.206	0.294	0.186	0.186
Trimethyl Phenanthrene (P/A−C_3a)		0.414	0.464	0.409	0.478	0.414	0.414
1,2,5/1,2,7−Trimethyl Phenanthrene		0.414	0.464	0.409	0.478	0.414	0.414
Retene	0.186	0.186	0.198	0.206	0.294	0.186	0.186
Tricosapolyene		0.150	0.179	0.176	0.349	0.150	0.150
Methyl Pyrene (F/P−C_1a)		0.570	0.472	0.507	0.414	0.570	0.570
Methyl Pyrene (F/P−C_1b)		0.570	0.472	0.507	0.414	0.570	0.570
1,2,6,9−Tetramethyl Phenanthrene		0.433	0.506	0.490	0.578	0.433	0.433
Dimethyl Pyrene (F/P−C_2a)		0.611	0.570	0.585	0.525	0.611	0.611
Pentacosapolyene		0.144	0.172	0.168	0.334	0.144	0.144
Benz(a)anthracene	1.504	1.153	1.205	1.132	1.158	1.153	1.153
Chrysene	1.330	1.101	1.118	1.160	1.257	1.101	1.101
Heptacosapolyene		0.259	0.279	0.263	0.500	0.259	0.259
Benzo(b/j/k)fluoranthene	1.299	0.923	0.972	0.986	0.999	0.923	0.923
Benzo(a)fluoranthene	1.136	0.860	0.804	0.914	0.930	0.860	0.860
Benzo(e)pyrene	1.282	0.790	0.743	0.883	0.921	0.790	0.790
Benzo(a)pyrene	1.317	1.110	1.105	1.179	1.168	1.110	1.110
Perylene	1.297	1.244	1.041	1.266	1.062	1.244	1.244
Squalene		0.888	1.253	0.425	0.960	0.888	0.888
Dibenz(a,h)anthracene	1.404	1.127	0.981	1.109	1.105	1.127	1.127
Indeno(1,2,3−cd)pyrene	1.836	1.197	1.018	1.095	1.211	1.197	1.197
Benzo(ghi)perylene	1.190	0.973	0.711	0.870	0.906	0.973	0.973

* Triterpene, C_1 phenanthrene and C_2 and higher alkyl PAH response factors for RRF6 are based on December 1989 RRFs for F1 and March 1990 RRFs for F2.

Sequence Number	RRF6	RRF7	RRF8	RRF9	RRF10	RRF11	RRF12
RRF	GZ	HZ	IZ	JZ	KZ	LZ	MZ
F3 Fraction/ Date		*MAY90*	*MAY90*	*SEPT90*	*JAN91*	*JAN91*	*MAY90*
Fluoranthene−D_{10}		1.000	1.000	1.000	1.000	1.000	1.000
Tetradecanol		0.174	0.174	0.093	0.251	0.251	0.174
Hexadecenol		0.182	0.182	0.097	0.262	0.262	0.182
Hexadecanol		0.216	0.216	0.115	0.311	0.311	0.216
Octadecenol		0.265	0.265	0.141	0.382	0.382	0.265
Octadecanol		0.231	0.231	0.123	0.333	0.333	0.231
Phytol		0.514	0.514	0.214	0.620	0.620	0.514
Eicosenol		0.231	0.231	0.042	0.326	0.326	0.231
Eicosanol		0.227	0.227	0.042	0.321	0.321	0.227
Docosenol		0.229	0.229	0.042	0.323	0.323	0.229
Docosanol		0.227	0.227	0.042	0.321	0.321	0.227
Tetracosenol		0.287	0.287	0.053	0.405	0.405	0.287
Tetracosanol		0.266	0.266	0.049	0.376	0.376	0.266
Hexacosanol		0.256	0.256	0.047	0.361	0.361	0.256
24−Norcholesta−5,22E−dien−3ß−ol		0.094	0.094	0.041	0.134	0.134	0.094
Cholesta−5,22E−dien−3ß−ol		0.033	0.033	0.015	0.048	0.048	0.033
Octacosanol		0.230	0.230	0.042	0.325	0.325	0.230
Cholest−5−en−3ß−ol		0.038	0.038	0.017	0.054	0.054	0.038
5a−Cholestan−3ß−ol		0.151	0.151	0.051	0.142	0.142	0.151
Cholesta−5,24E−dien−3ß−ol		0.187	0.187	0.088	0.292	0.292	0.187
24−Methylcholesta−5,22E−dien−3ß−ol		0.139	0.139	0.065	0.217	0.217	0.139
24−Methylcholesta−5,24(28)−dien−3ß−ol		0.021	0.021	0.010	0.032	0.032	0.021
24−Methylcholest−5−en−3ß−ol		0.081	0.081	0.028	0.048	0.048	0.081
24−Ethylcholesta−5,22E−dien−3ß−ol		0.073	0.073	0.028	0.121	0.121	0.073
Triacontanol		0.230	0.230	0.042	0.325	0.325	0.230
24−Ethylcholest−5−en−3ß−ol		0.060	0.060	0.020	0.036	0.036	0.060
24−Ethylcholesta−5,24(28)E−dien−3ß−ol		0.010	0.010	0.004	0.017	0.017	0.010
24−Ethylcholesta−5,24(28)Z−dien−3ß−ol		0.032	0.032	0.012	0.053	0.053	0.032
ß−Amyrin (Olean−12−en−3ß−ol)		0.041	0.041	0.018	0.059	0.059	0.041
a−Amyrin (Urs−12−en−3ß−ol)		0.048	0.048	0.021	0.068	0.068	0.048
24−Ethylcholesta−3,5−dien−7−one		0.074	0.074	0.032	0.105	0.105	0.074

RRF	HZ	IZ	JZ	KZ	LZ	MZ
F2 Alkyl PAH	*MAR90*	*MAY90*	*SEPT90*	*JAN91*	*MAR90*	*MAR90*
Naphthalene C_2	1.876	1.257	1.549	1.762	1.876	1.876
Naphthalene C_3	1.275	1.024	1.087	1.629	1.275	1.275
Naphthalene C_4	1.332	1.117	1.307	1.979	1.332	1.332
Naphthalene C_5	3.351	3.430	3.634	4.176	3.351	3.351
Phenanthrene/Anthracene C_2	0.611	0.570	0.585	0.525	0.611	0.611
Phenanthrene/Anthracene C_3	0.414	0.464	0.409	0.478	0.414	0.414
Phenanthrene/Anthracene C_4	0.327	0.348	0.363	0.517	0.327	0.327
Phenanthrene/Anthracene C_5	0.433	0.506	0.490	0.578	0.433	0.433
Fluoranthene/Pyrene C_1	0.570	0.472	0.507	0.414	0.570	0.570
Fluoranthene/Pyrene C_2	0.611	0.570	0.585	0.525	0.611	0.611
Fluoranthene/Pyrene C_3	0.718	0.725	0.616	0.689	0.718	0.718
Fluoranthene/Pyrene C_4	0.748	0.791	0.736	0.828	0.748	0.748
Fluoranthene/Pyrene C_5	0.748	0.791	0.736	0.828	0.748	0.748

Sequence Number	**RRF13**	**RRF14**	**RRF15**	**RRF16**	**RRF17**	**RRF18**	**RRF19**
RRF	**NZ**	**OZ**	**PZ**	**QZ**	**RZ**	**SZ**	**TZ**
F1 Minimum Area	3595	3456	2660	2660	2660	2979	3595
F2 Minimum Area	5000	3740	3375	3375	3375	1676	4010
F3 Minimum Area	1690	4100	2440	2440	2440	2849	2849
F1 Fraction/ Date	*MAR90*	*SEPT90*	*DEC89*	*JAN90*	*DEC89*	*AUG91*	*MAR90*
Dodecane–D_{26}	2.018	2.250	1.604	2.024	1.604	1.480	2.018
Tetracosane–D_{50}	0.517	0.278	0.549	0.799	0.549	0.229	0.517
Hexatriacontane–D_{74}	0.401	0.242	0.400	0.391	0.400	0.394	0.401
Fluoranthene–D_{10}	0.517	0.278	0.549	0.799	0.549	0.229	0.517
Undecane	2.646	2.898	1.836	2.696	1.836	1.949	2.646
Dodecane	2.578	2.409	1.624	2.736	1.624	2.089	2.578
Tridecane	2.190	1.775	1.384	2.309	1.384	1.354	2.190
Tetradecane	2.446	2.246	1.606	2.522	1.606	1.638	2.446
Pentadecane	2.301	2.066	1.554	2.359	1.554	1.612	2.301
Hexadecane	2.259	1.821	1.558	2.325	1.558	1.609	2.259
Heptadecane	2.172	1.841	1.313	2.223	1.313	1.595	2.172
Octadecane	1.993	1.530	1.343	2.049	1.343	1.552	1.993
Nonadecane	1.793	1.548	1.132	1.838	1.132	1.466	1.793
Eicosane	1.596	1.437	1.140	1.698	1.140	1.423	1.596
Heneicosane	1.508	1.319	1.109	1.512	1.109	1.303	1.508
Docosane	1.405	1.147	0.897	1.410	0.897	1.184	1.405
Tricosane	1.362	1.153	1.010	1.347	1.010	1.122	1.362
Tetracosane	1.308	0.958	0.898	1.322	0.898	0.995	1.308
Pentacosane	1.170	0.860	0.845	1.276	0.845	0.885	1.170
Hexacosane	1.140	0.756	0.722	1.205	0.722	0.755	1.140
Heptacosane	1.016	0.732	0.740	1.133	0.740	0.710	1.016
Octacosane	0.891	0.708	0.740	1.062	0.740	0.665	0.891
Nonacosane	0.796	0.639	0.740	0.998	0.740	0.626	0.796
Triacontane	0.701	0.570	0.758	0.934	0.758	0.586	0.701
Untriacontane	0.689	0.531	0.773	0.861	0.773	0.574	0.689
Dotriacontane	0.677	0.493	0.787	0.788	0.787	0.562	0.677
Tritriacontane	0.590	0.424	0.647	0.719	0.647	0.500	0.590
Tetratriacontane	0.503	0.356	0.506	0.650	0.506	0.439	0.503
Pentatriacontane	0.478	0.280	0.500	0.544	0.500	0.398	0.478
Hexatriacontane	0.572	0.205	0.500	0.438	0.500	0.357	0.572
2,6–Dimethyl Undecane	2.384	2.092	1.504	2.523	1.504	1.722	2.384
Norfarnesane	2.384	2.092	1.504	2.523	1.504	1.722	2.384
Farnesane	2.318	2.011	1.495	2.416	1.495	1.496	2.318
2,6,10–Trimethyl Tridecane	2.373	2.156	1.580	2.441	1.580	1.625	2.373
Norpristane	2.216	1.831	1.436	2.274	1.436	1.602	2.216
Pristane	2.083	1.686	1.328	2.136	1.328	1.574	2.083
Phytane	1.893	1.539	1.237	1.944	1.237	1.509	1.893
17a(H)–Trisnorhopane (C_{27}a,Tm)	0.546	0.968	0.473	0.610	0.473	1.153	0.546
17ß(H)–Trisnorhopane (C_{27}ß)	0.546	0.968	0.473	0.610	0.473	1.153	0.546
17a(H),21ß(H)–Norhopane (C_{29}aß)	0.546	0.968	0.473	0.610	0.473	1.153	0.546
Hop–17(21)–ene	0.154	0.175	0.154	0.102	0.154	0.226	0.154
17ß(H),21a(H)–Normoretane (C_{29}ßa)	0.546	0.968	0.473	0.610	0.473	1.153	0.546
17a(H),21ß(H)–Hopane (C_{30}aß)	0.373	0.595	0.400	0.643	0.400	0.744	0.373
S–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.373	0.595	0.400	0.643	0.400	0.744	0.373
R–17a(H),21ß(H)–Homohopane (C_{31}aß)	0.373	0.595	0.400	0.643	0.400	0.744	0.373
Triterpene	0.154	0.175	0.154	0.102	0.154	0.226	0.154
17ß(H),21ß(H)–Hopane (C_{30}ßß)	0.373	0.595	0.400	0.643	0.400	0.744	0.373
Diploptene	0.154	0.175	0.154	0.102	0.154	0.226	0.154
S–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	0.373	0.595	0.400	0.643	0.400	0.744	0.373
R–17a(H),21ß(H)–Bishomohopane (C_{32}aß)	0.373	0.595	0.400	0.643	0.400	0.744	0.373
Heptadecadiene	2.172	1.841	1.313	2.223	1.313	1.595	2.172
Heptadecene	2.172	1.841	1.313	2.223	1.313	1.595	2.172
Nonadecene	1.793	1.548	1.132	1.838	1.132	1.466	1.793

Sequence Number RRF	RRF13 NZ	RRF14 OZ	RRF15 PZ	RRF16 QZ	RRF17 RZ	RRF18 SZ	RRF19 TZ
F2 Fraction/ Date	*JAN91*	*SEPT90*	*DEC89*	*JAN90*	*DEC89*	*AUG91*	*MAR90*
Naphthalene−D_8	1.428	1.612	2.403	2.077	2.403	1.087	2.508
1−Methyl Naphthalene−D_{10}	0.628	0.668	0.872	0.864	0.872	0.625	0.956
Acenaphthylene−D_8	1.011	1.260	1.964	1.481	1.964	1.005	1.677
Acenaphthene−D_{10}	0.604	0.747	1.044	0.868	1.044	0.601	0.954
Anthracene−D_{10}	0.692	0.861	1.152	1.124	1.152	0.853	1.217
Pyrene−D_{10}	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Biphenyl−D_{10}	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Chrysene−D_{12}	0.696	0.666	0.724	0.586	0.724	0.663	0.579
Benzo(k)fluoranthene−D_{12}	0.856	0.755	0.851	0.394	0.851	0.686	0.585
Benzo(a)pyrene−D_{12}	0.691	0.603	0.457	0.350	0.457	0.567	0.464
Perylene−D_{12}	0.500	0.500	0.500	0.500	0.500	0.500	0.500
Dibenz(a,h)anthracene−D_{14}	0.602	0.491	0.602	0.157	0.602	0.470	0.337
Fluoranthene−D_{10}	0.932	0.932	0.932	0.932	0.932	0.932	0.932
Naphthalene	1.181	1.051	1.057	1.113	1.057	1.046	1.045
2−Methyl Naphthalene	1.430	1.474	1.805	1.578	1.805	1.192	1.588
1−Methyl Naphthalene	1.430	1.474	1.805	1.578	1.805	1.192	1.588
Dimethyl Naphthalene (N−C_2a)	1.762	1.549	1.795	1.836	1.795	1.481	1.876
Dimethyl Naphthalene (N−C_2b)	1.762	1.549	1.795	1.836	1.795	1.481	1.876
Dimethyl Naphthalene (N−C_2c)	1.762	1.549	1.795	1.836	1.795	1.481	1.876
Acenaphthylene	1.115	1.086	0.972	1.164	0.972	1.021	1.118
Acenaphthene	1.215	1.146	1.534	1.307	1.534	1.146	1.235
Trimethyl Naphthalene (N−C_3a)	1.629	1.087	1.376	1.302	1.376	1.140	1.275
Trimethyl Naphthalene (N−C_3b)	1.629	1.087	1.376	1.302	1.376	1.140	1.275
Fluorene	1.216	1.207	1.347	1.310	1.347	1.220	1.265
Tetramethyl Naphthalene (N−C_4a)	1.979	1.307	1.312	1.311	1.312	1.371	1.332
Tetramethyl Naphthalene (N−C_4b)	1.979	1.307	1.312	1.311	1.312	1.371	1.332
Cadalene	1.644	1.431	1.309	1.232	1.309	2.257	1.319
Phenanthrene	1.229	1.357	1.445	1.225	1.445	1.182	1.217
Anthracene	1.224	1.294	1.583	1.290	1.583	1.152	1.235
3−Methyl Phenanthrene	0.609	0.593	0.501	0.526	0.501	0.607	0.489
2−Methyl Phenanthrene	0.609	0.593	0.501	0.526	0.501	0.607	0.489
9/4−Methyl Phenanthrene	0.609	0.593	0.501	0.526	0.501	0.607	0.489
1−Methyl Phenanthrene	0.609	0.593	0.501	0.526	0.501	0.607	0.489
Pimanthrene (1,7−dimethyl phenanthrene)	0.525	0.585	0.486	0.659	0.486	0.694	0.611
Heneicosahexaene	0.819	0.331	0.236	0.511	0.236	0.360	0.200
Fluoranthene	1.076	1.068	1.019	1.151	1.019	1.084	1.121
Pyrene	1.107	1.081	1.097	1.212	1.097	0.994	1.110
2,6/3,5−Dimethyl Phenanthrene	0.525	0.585	0.486	0.659	0.486	0.694	0.611
Simonellite	0.294	0.206	0.151	0.208	0.151	0.340	0.186
Trimethyl Phenanthrene (P/A−C_3a)	0.478	0.409	0.373	0.467	0.373	0.540	0.414
1,2,5/1,2,7−Trimethyl Phenanthrene	0.478	0.409	0.373	0.467	0.373	0.540	0.414
Retene	0.294	0.206	0.151	0.208	0.151	0.340	0.186
Tricosapolyene	0.349	0.176	0.167	0.354	0.167	0.189	0.150
Methyl Pyrene (F/P−C_1a)	0.414	0.507	0.578	0.586	0.578	0.519	0.570
Methyl Pyrene (F/P−C_1b)	0.414	0.507	0.578	0.586	0.578	0.519	0.570
1,2,6,9−Tetramethyl Phenanthrene	0.578	0.490	0.352	0.470	0.352	0.651	0.433
Dimethyl Pyrene (F/P−C_2a)	0.525	0.585	0.486	0.659	0.486	0.694	0.611
Pentacosapolyene	0.334	0.168	0.160	0.339	0.160	0.181	0.144
Benz(a)anthracene	1.158	1.132	1.136	1.352	1.136	1.159	1.153
Chrysene	1.257	1.160	1.325	1.253	1.325	1.282	1.101
Heptacosapolyene	0.500	0.263	0.230	0.603	0.230	0.285	0.259
Benzo(b/j/k)fluoranthene	0.999	0.986	1.215	1.174	1.215	1.102	0.923
Benzo(a)fluoranthene	0.930	0.914	0.663	1.138	0.663	1.006	0.860
Benzo(e)pyrene	0.921	0.883	0.620	1.057	0.620	0.997	0.790
Benzo(a)pyrene	1.168	1.179	1.584	1.248	1.584	1.170	1.110
Perylene	1.062	1.266	1.589	1.198	1.589	1.211	1.244
Squalene	0.960	0.425	0.997	2.797	0.997	0.665	0.888
Dibenz(a,h)anthracene	1.105	1.109	1.134	1.281	1.134	1.145	1.127
Indeno(1,2,3−cd)pyrene	1.211	1.095	1.070	1.337	1.070	1.309	1.197
Benzo(ghi)perylene	0.906	0.870	0.611	1.091	0.611	0.992	0.973

Sequence Number	RRF13	RRF14	RRF15	RRF16	RRF17	RRF18	RRF19
RRF	NZ	OZ	PZ	QZ	RZ	SZ	TZ
F3 Fraction/ Date	*MAY90*	*JAN91*	*JAN90*	*JAN90*	*DEC89*	*AUG91*	*AUG91*
Fluoranthene−D_{10}	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Tetradecanol	0.174	0.251	0.153	0.153	0.152	0.080	0.080
Hexadecenol	0.182	0.262	0.160	0.160	0.159	0.083	0.083
Hexadecanol	0.216	0.311	0.189	0.189	0.188	0.099	0.099
Octadecenol	0.265	0.382	0.233	0.233	0.231	0.121	0.121
Octadecanol	0.231	0.333	0.203	0.203	0.202	0.106	0.106
Phytol	0.514	0.620	0.380	0.380	0.335	0.201	0.201
Eicosenol	0.231	0.326	0.129	0.129	0.135	0.072	0.072
Eicosanol	0.227	0.321	0.127	0.127	0.133	0.071	0.071
Docosenol	0.229	0.323	0.128	0.128	0.134	0.071	0.071
Docosanol	0.227	0.321	0.127	0.127	0.133	0.071	0.071
Tetracosenol	0.287	0.405	0.160	0.160	0.168	0.089	0.089
Tetracosanol	0.266	0.376	0.149	0.149	0.156	0.083	0.083
Hexacosanol	0.256	0.361	0.143	0.143	0.150	0.080	0.080
24−Norcholesta−5,22E−dien−3ß−ol	0.094	0.134	0.045	0.045	0.104	0.045	0.045
Cholesta−5,22E−dien−3ß−ol	0.033	0.048	0.016	0.016	0.037	0.016	0.016
Octacosanol	0.230	0.325	0.129	0.129	0.134	0.072	0.072
Cholest−5−en−3ß−ol	0.038	0.054	0.018	0.018	0.042	0.018	0.018
5a−Cholestan−3ß−ol	0.151	0.142	0.032	0.032	0.058	0.084	0.084
Cholesta−5,24E−dien−3ß−ol	0.187	0.292	0.102	0.102	0.169	0.057	0.057
24−Methylcholesta−5,22E−dien−3ß−ol	0.139	0.217	0.076	0.076	0.126	0.043	0.043
24−Methylcholesta−5,24(28)−dien−3ß−ol	0.021	0.032	0.011	0.011	0.019	0.006	0.006
24−Methylcholest−5−en−3ß−ol	0.081	0.048	0.007	0.007	0.011	0.052	0.052
24−Ethylcholesta−5,22E−dien−3ß−ol	0.073	0.121	0.053	0.053	0.076	0.023	0.023
Triacontanol	0.230	0.325	0.129	0.129	0.134	0.072	0.072
24−Ethylcholest−5−en−3ß−ol	0.060	0.036	0.010	0.010	0.008	0.039	0.039
24−Ethylcholesta−5,24(28)E−dien−3ß−ol	0.010	0.017	0.007	0.007	0.011	0.003	0.003
24−Ethylcholesta−5,24(28)Z−dien−3ß−ol	0.032	0.053	0.023	0.023	0.033	0.010	0.010
ß−Amyrin (Olean−12−en−3ß−ol)	0.041	0.059	0.020	0.020	0.046	0.020	0.020
a−Amyrin (Urs−12−en−3ß−ol)	0.048	0.068	0.023	0.023	0.053	0.023	0.023
24−Ethylcholesta−3,5−dien−7−one	0.074	0.105	0.035	0.035	0.082	0.035	0.035

RRF	NZ	OZ	PZ	QZ	RZ	SZ	TZ
F2 Alkyl PAH	*JAN91*	*SEPT90*	*DEC89*	*JAN90*	*DEC89*	*AUG91*	*MAR90*
Naphthalene C_2	1.762	1.549	1.795	1.836	1.795	1.481	1.876
Naphthalene C_3	1.629	1.087	1.376	1.302	1.376	1.140	1.275
Naphthalene C_4	1.979	1.307	1.312	1.311	1.312	1.371	1.332
Naphthalene C_5	4.176	3.634	3.325	3.129	3.325	5.732	3.351
Phenanthrene/Anthracene C_2	0.525	0.585	0.486	0.659	0.486	0.694	0.611
Phenanthrene/Anthracene C_3	0.478	0.409	0.373	0.467	0.373	0.540	0.414
Phenanthrene/Anthracene C_4	0.517	0.363	0.266	0.366	0.266	0.598	0.327
Phenanthrene/Anthracene C_5	0.578	0.490	0.352	0.470	0.352	0.651	0.433
Fluoranthene/Pyrene C_1	0.414	0.507	0.578	0.586	0.578	0.519	0.570
Fluoranthene/Pyrene C_2	0.525	0.585	0.486	0.659	0.486	0.694	0.611
Fluoranthene/Pyrene C_3	0.689	0.616	0.501	0.804	0.501	0.818	0.718
Fluoranthene/Pyrene C_4	0.828	0.736	0.435	0.815	0.435	0.979	0.748
Fluoranthene/Pyrene C_5	0.828	0.736	0.435	0.815	0.435	0.979	0.748

Sequence Number	**RRF20**	**RRF21**	**RRF22**	**RRF23**	**RRF24**	**RRF25**
RRF	**UZ**	**VZ**	**WZ**	**XZ**	**YZ**	**ZZ**
F1 Minimum Area	3456	4900	2660	2660	3595	3595
F2 Minimum Area	3740	1676	3375	3375	4010	3375
F3 Minimum Area	2849	2849	2440	1690	2440	2440
F1 Fraction/ Date	*SEPT90*	*JAN91*	*JAN90*	*DEC89*	*MAR90*	*MAR90*
Dodecane−D_{26}	2.250	0.930	2.024	1.604	2.018	2.018
Tetracosane−D_{50}	0.278	1.240	0.799	0.549	0.517	0.517
Hexatriacontane−D_{74}	0.242	0.694	0.391	0.400	0.401	0.401
Fluoranthene−D_{10}	0.278	1.240	0.799	0.549	0.517	0.517
Undecane	2.898	1.200	2.696	1.836	2.646	2.646
Dodecane	2.409	0.998	2.736	1.624	2.578	2.578
Tridecane	1.775	0.904	2.309	1.384	2.190	2.190
Tetradecane	2.246	1.133	2.522	1.606	2.446	2.446
Pentadecane	2.066	1.125	2.359	1.554	2.301	2.301
Hexadecane	1.821	1.198	2.325	1.558	2.259	2.259
Heptadecane	1.841	1.262	2.223	1.313	2.172	2.172
Octadecane	1.530	1.257	2.049	1.343	1.993	1.993
Nonadecane	1.548	1.263	1.838	1.132	1.793	1.793
Eicosane	1.437	1.275	1.698	1.140	1.596	1.596
Heneicosane	1.319	1.240	1.512	1.109	1.508	1.508
Docosane	1.147	1.247	1.410	0.897	1.405	1.405
Tricosane	1.153	1.257	1.347	1.010	1.362	1.362
Tetracosane	0.958	1.212	1.322	0.898	1.308	1.308
Pentacosane	0.860	1.184	1.276	0.845	1.170	1.170
Hexacosane	0.756	1.207	1.205	0.722	1.140	1.140
Heptacosane	0.732	1.159	1.133	0.740	1.016	1.016
Octacosane	0.708	1.110	1.062	0.740	0.891	0.891
Nonacosane	0.639	1.053	0.998	0.740	0.796	0.796
Triacontane	0.570	0.996	0.934	0.758	0.701	0.701
Untriacontane	0.531	0.964	0.861	0.773	0.689	0.689
Dotriacontane	0.493	0.931	0.788	0.787	0.677	0.677
Tritriacontane	0.424	0.906	0.719	0.647	0.590	0.590
Tetratriacontane	0.356	0.881	0.650	0.506	0.503	0.503
Pentatriacontane	0.280	0.883	0.544	0.500	0.478	0.478
Hexatriacontane	0.205	0.886	0.438	0.500	0.572	0.572
2,6−Dimethyl Undecane	2.092	0.951	2.523	1.504	2.384	2.384
Norfarnesane	2.092	0.951	2.523	1.504	2.384	2.384
Farnesane	2.011	1.019	2.416	1.495	2.318	2.318
2,6,10−Trimethyl Tridecane	2.156	1.129	2.441	1.580	2.373	2.373
Norpristane	1.831	1.230	2.274	1.436	2.216	2.216
Pristane	1.686	1.259	2.136	1.328	2.083	2.083
Phytane	1.539	1.260	1.944	1.237	1.893	1.893
17a(H)−Trisnorhopane (C_{27}a,Tm)	0.968	0.351	0.610	0.473	0.546	0.546
17ß(H)−Trisnorhopane (C_{27}ß)	0.968	0.351	0.610	0.473	0.546	0.546
17a(H),21ß(H)−Norhopane (C_{29}aß)	0.968	0.351	0.610	0.473	0.546	0.546
Hop−17(21)−ene	0.175	0.039	0.102	0.154	0.154	0.154
17ß(H),21a(H)−Normoretane (C_{29}ßa)	0.968	0.351	0.610	0.473	0.546	0.546
17a(H),21ß(H)−Hopane (C_{30}aß)	0.595	0.257	0.643	0.400	0.373	0.373
S−17a(H),21ß(H)−Homohopane (C_{31}aß)	0.595	0.257	0.643	0.400	0.373	0.373
R−17a(H),21ß(H)−Homohopane (C_{31}aß)	0.595	0.257	0.643	0.400	0.373	0.373
Triterpene	0.175	0.039	0.102	0.154	0.154	0.154
17ß(H),21ß(H)−Hopane (C_{30}ßß)	0.595	0.257	0.643	0.400	0.373	0.373
Diploptene	0.175	0.039	0.102	0.154	0.154	0.154
S−17a(H),21ß(H)−Bishomohopane (C_{32}aß)	0.595	0.257	0.643	0.400	0.373	0.373
R−17a(H),21ß(H)−Bishomohopane (C_{32}aß)	0.595	0.257	0.643	0.400	0.373	0.373
Heptadecadiene	1.841	1.262	2.223	1.313	2.172	2.172
Heptadecene	1.841	1.262	2.223	1.313	2.172	2.172
Nonadecene	1.548	1.263	1.838	1.132	1.793	1.793

Sequence Number RRF	RRF20 UZ	RRF21 VZ	RRF22 WZ	RRF23 XZ	RRF24 YZ	RRF25 ZZ
F2 Fraction/ Date	*SEPT90*	*AUG91*	*DEC89*	*DEC89*	*MAR90*	*DEC89*
Naphthalene−D_8	1.612	1.087	2.403	2.403	2.508	2.403
1−Methyl Naphthalene−D_{10}	0.668	0.625	0.872	0.872	0.956	0.872
Acenaphthylene−D_8	1.260	1.005	1.964	1.964	1.677	1.964
Acenaphthene−D_{10}	0.747	0.601	1.044	1.044	0.954	1.044
Anthracene−D_{10}	0.861	0.853	1.152	1.152	1.217	1.152
Pyrene−D_{10}	1.000	1.000	1.000	1.000	1.000	1.000
Biphenyl−D_{10}	1.000	1.000	1.000	1.000	1.000	1.000
Chrysene−D_{12}	0.666	0.663	0.724	0.724	0.579	0.724
Benzo(k)fluoranthene−D_{12}	0.755	0.686	0.851	0.851	0.585	0.851
Benzo(a)pyrene−D_{12}	0.603	0.567	0.457	0.457	0.464	0.457
Perylene−D_{12}	0.500	0.500	0.500	0.500	0.500	0.500
Dibenz(a,h)anthracene−D_{14}	0.491	0.470	0.602	0.602	0.337	0.602
Fluoranthene−D_{10}	0.932	0.932	0.932	0.932	0.932	0.932
Naphthalene	1.051	1.046	1.057	1.057	1.045	1.057
2−Methyl Naphthalene	1.474	1.192	1.805	1.805	1.588	1.805
1−Methyl Naphthalene	1.474	1.192	1.805	1.805	1.588	1.805
Dimethyl Naphthalene (N−C_2a)	1.549	1.481	1.795	1.795	1.876	1.795
Dimethyl Naphthalene (N−C_2b)	1.549	1.481	1.795	1.795	1.876	1.795
Dimethyl Naphthalene (N−C_2c)	1.549	1.481	1.795	1.795	1.876	1.795
Acenaphthylene	1.086	1.021	0.972	0.972	1.118	0.972
Acenaphthene	1.146	1.146	1.534	1.534	1.235	1.534
Trimethyl Naphthalene (N−C_3a)	1.087	1.140	1.376	1.376	1.275	1.376
Trimethyl Naphthalene (N−C_3b)	1.087	1.140	1.376	1.376	1.275	1.376
Fluorene	1.207	1.220	1.347	1.347	1.265	1.347
Tetramethyl Naphthalene (N−C_4a)	1.307	1.371	1.312	1.312	1.332	1.312
Tetramethyl Naphthalene (N−C_4b)	1.307	1.371	1.312	1.312	1.332	1.312
Cadalene	1.431	2.257	1.309	1.309	1.319	1.309
Phenanthrene	1.357	1.182	1.445	1.445	1.217	1.445
Anthracene	1.294	1.152	1.583	1.583	1.235	1.583
3−Methyl Phenanthrene	0.593	0.607	0.501	0.501	0.489	0.501
2−Methyl Phenanthrene	0.593	0.607	0.501	0.501	0.489	0.501
9/4−Methyl Phenanthrene	0.593	0.607	0.501	0.501	0.489	0.501
1−Methyl Phenanthrene	0.593	0.607	0.501	0.501	0.489	0.501
Pimanthrene (1,7−dimethyl phenanthrene)	0.585	0.694	0.486	0.486	0.611	0.486
Heneicosahexaene	0.331	0.360	0.236	0.236	0.200	0.236
Fluoranthene	1.068	1.084	1.019	1.019	1.121	1.019
Pyrene	1.081	0.994	1.097	1.097	1.110	1.097
2,6/3,5−Dimethyl Phenanthrene	0.585	0.694	0.486	0.486	0.611	0.486
Simonellite	0.206	0.340	0.151	0.151	0.186	0.151
Trimethyl Phenanthrene (P/A−C_3a)	0.409	0.540	0.373	0.373	0.414	0.373
1,2,5/1,2,7−Trimethyl Phenanthrene	0.409	0.540	0.373	0.373	0.414	0.373
Retene	0.206	0.340	0.151	0.151	0.186	0.151
Tricosapolyene	0.176	0.189	0.167	0.167	0.150	0.167
Methyl Pyrene (F/P−C_1a)	0.507	0.519	0.578	0.578	0.570	0.578
Methyl Pyrene (F/P−C_1b)	0.507	0.519	0.578	0.578	0.570	0.578
1,2,6,9−Tetramethyl Phenanthrene	0.490	0.651	0.352	0.352	0.433	0.352
Dimethyl Pyrene (F/P−C_2a)	0.585	0.694	0.486	0.486	0.611	0.486
Pentacosapolyene	0.168	0.181	0.160	0.160	0.144	0.160
Benz(a)anthracene	1.132	1.159	1.136	1.136	1.153	1.136
Chrysene	1.160	1.282	1.325	1.325	1.101	1.325
Heptacosapolyene	0.263	0.285	0.230	0.230	0.259	0.230
Benzo(b/j/k)fluoranthene	0.986	1.102	1.215	1.215	0.923	1.215
Benzo(a)fluoranthene	0.914	1.006	0.663	0.663	0.860	0.663
Benzo(e)pyrene	0.883	0.997	0.620	0.620	0.790	0.620
Benzo(a)pyrene	1.179	1.170	1.584	1.584	1.110	1.584
Perylene	1.266	1.211	1.589	1.589	1.244	1.589
Squalene	0.425	0.665	0.997	0.997	0.888	0.997
Dibenz(a,h)anthracene	1.109	1.145	1.134	1.134	1.127	1.134
Indeno(1,2,3−cd)pyrene	1.095	1.309	1.070	1.070	1.197	1.070
Benzo(ghi)perylene	0.870	0.992	0.611	0.611	0.973	0.611

Sequence Number	RRF20	RRF21	RRF22	RRF23	RRF24	RRF25
RRF	UZ	VZ	WZ	XZ	YZ	ZZ
F3 Fraction/ Date	*AUG91*	*AUG91*	*DEC89*	*MAY90*	*DEC89*	*DEC89*
Fluoranthene−D_{10}	1.000	1.000	1.000	1.000	1.000	1.000
Tetradecanol	0.080	0.080	0.152	0.174	0.152	0.152
Hexadecenol	0.083	0.083	0.159	0.182	0.159	0.159
Hexadecanol	0.099	0.099	0.188	0.216	0.188	0.188
Octadecenol	0.121	0.121	0.231	0.265	0.231	0.231
Octadecanol	0.106	0.106	0.202	0.231	0.202	0.202
Phytol	0.201	0.201	0.335	0.514	0.335	0.335
Eicosenol	0.072	0.072	0.135	0.231	0.135	0.135
Eicosanol	0.071	0.071	0.133	0.227	0.133	0.133
Docosenol	0.071	0.071	0.134	0.229	0.134	0.134
Docosanol	0.071	0.071	0.133	0.227	0.133	0.133
Tetracosenol	0.089	0.089	0.168	0.287	0.168	0.168
Tetracosanol	0.083	0.083	0.156	0.266	0.156	0.156
Hexacosanol	0.080	0.080	0.150	0.256	0.150	0.150
24−Norcholesta−5,22E−dien−3ß−ol	0.045	0.045	0.104	0.094	0.104	0.104
Cholesta−5,22E−dien−3ß−ol	0.016	0.016	0.037	0.033	0.037	0.037
Octacosanol	0.072	0.072	0.134	0.230	0.134	0.134
Cholest−5−en−3ß−ol	0.018	0.018	0.042	0.038	0.042	0.042
5a−Cholestan−3ß−ol	0.084	0.084	0.058	0.151	0.058	0.058
Cholesta−5,24E−dien−3ß−ol	0.057	0.057	0.169	0.187	0.169	0.169
24−Methylcholesta−5,22E−dien−3ß−ol	0.043	0.043	0.126	0.139	0.126	0.126
24−Methylcholesta−5,24(28)−dien−3ß−ol	0.006	0.006	0.019	0.021	0.019	0.019
24−Methylcholest−5−en−3ß−ol	0.052	0.052	0.011	0.081	0.011	0.011
24−Ethylcholesta−5,22E−dien−3ß−ol	0.023	0.023	0.076	0.073	0.076	0.076
Triacontanol	0.072	0.072	0.134	0.230	0.134	0.134
24−Ethylcholest−5−en−3ß−ol	0.039	0.039	0.008	0.060	0.008	0.008
24−Ethylcholesta−5,24(28)E−dien−3ß−ol	0.003	0.003	0.011	0.010	0.011	0.011
24−Ethylcholesta−5,24(28)Z−dien−3ß−ol	0.010	0.010	0.033	0.032	0.033	0.033
ß−Amyrin (Olean−12−en−3ß−ol)	0.020	0.020	0.046	0.041	0.046	0.046
a−Amyrin (Urs−12−en−3ß−ol)	0.023	0.023	0.053	0.048	0.053	0.053
24−Ethylcholesta−3,5−dien−7−one	0.035	0.035	0.082	0.074	0.082	0.082

RRF	UZ	VZ	WZ	XZ	YZ	ZZ
F2 Alkyl PAH	*SEPT90*	*AUG91*	*DEC89*	*DEC89*	*MAR90*	*DEC89*
Naphthalene C_2	1.549	1.481	1.795	1.795	1.876	1.795
Naphthalene C_3	1.087	1.140	1.376	1.376	1.275	1.376
Naphthalene C_4	1.307	1.371	1.312	1.312	1.332	1.312
Naphthalene C_5	3.634	5.732	3.325	3.325	3.351	3.325
Phenanthrene/Anthracene C_2	0.585	0.694	0.486	0.486	0.611	0.486
Phenanthrene/Anthracene C_3	0.409	0.540	0.373	0.373	0.414	0.373
Phenanthrene/Anthracene C_4	0.363	0.598	0.266	0.266	0.327	0.266
Phenanthrene/Anthracene C_5	0.490	0.651	0.352	0.352	0.433	0.352
Fluoranthene/Pyrene C_1	0.507	0.519	0.578	0.578	0.570	0.578
Fluoranthene/Pyrene C_2	0.585	0.694	0.486	0.486	0.611	0.486
Fluoranthene/Pyrene C_3	0.616	0.818	0.501	0.501	0.718	0.501
Fluoranthene/Pyrene C_4	0.736	0.979	0.435	0.435	0.748	0.435
Fluoranthene/Pyrene C_5	0.736	0.979	0.435	0.435	0.748	0.435

APPENDIX 3; PARTICULATE AND DISSOLVED PHASE BLANKS

	Suspended Particulate and Sediment			Chromosorb T, Dissolved		
	Mean Blank ng	Std. Dev. ng	No. of non-zero blanks n	Mean Blank ng	Std. Dev. ng	No. of non-zero blanks n
F1 Fraction						
Undecane	13	20	3	47		2
Dodecane				11		1
Tridecane				27		1
Tetradecane				57	42	3
Pentadecane				129	121	4
Hexadecane				131	129	5
Heptadecane				66	52	5
Octadecane				18	4.5	4
Nonadecane	8.8		1	7.6		2
Eicosane	9.0	11	3	12		2
Heneicosane	11	16	4	20	5.6	3
Docosane	12	12	5	24	9.4	4
Tricosane	15	13	5	34	8.1	4
Tetracosane	17	15	5	47	21	4
Pentacosane	18	15	6	49	28	3
Hexacosane	32	30	6	59	33	4
Heptacosane	31	19	6	59	35	4
Octacosane	47	39	6	61	35	4
Nonacosane	66	53	6	75	48	4
Triacontane	54	48	6	75	45	4
Untriacontane	53	45	6	73	38	4
Dotriacontane	31	24	6	59	30	4
Tritriacontane	27	15	6	45	25	4
Tetratriacontane	19	12	6	46		2
Pentatriacontane	9.0	5.8	3	20		1
Hexatriacontane				10		1
2,6-Dimethyl Undecane						
Norfarnesane						
Farnesane				15		1
2,6,10-Trimethyl Tridecane				6.8		1
Norpristane	3.3		2	72	50	4
Pristane	16	12	4	84	37	4
Phytane	8.1		2	7.7		2
17a(H)-Trisnorhopane (C_{27}a,Tm)				1.2		1
17ß(H)-Trisnorhopane (C_{27}ß)						
17a(H),21ß(H)-Norhopane (C_{29}aß)				2.7		1
Hop-17(21)-ene						
17ß(H),21a(H)-Normoretane (C_{29}ßa)						
17a(H),21ß(H)-Hopane (C_{30}aß)				3.1		1
S-17a(H),21ß(H)-Homohopane (C_{31}aß)						
R-17a(H),21ß(H)-Homohopane (C_{31}aß)						
Triterpene						
17ß(H),21ß(H)-Hopane (C_{30}ßß)						
Diploptene						
S-17a(H),21ß(H)-Bishomohopane (C_{32}aß)						
R-17a(H),21ß(H)-Bishomohopane (C_{32}aß)						
Heptadecadiene						
Heptadecene						
Nonadecene						

	Suspended Particulate and Sediment			Chromosorb T, Dissolved		
	Mean Blank ng	Std. Dev. ng	No. of non-zero blanks n	Mean Blank ng	Std. Dev. ng	No. of non-zero blanks n
F2 Fraction						
Naphthalene	5.6		1	31		2
2-Methyl Naphthalene						
1-Methyl Naphthalene						
Dimethyl Naphthalene (N-C_2a)						
Dimethyl Naphthalene (N-C_2b)						
Dimethyl Naphthalene (N-C_2c)						
Acenaphthylene						
Acenaphthene						
Trimethyl Naphthalene (N-C_3a)						
Trimethyl Naphthalene (N-C_3b)						
Fluorene						
Tetramethyl Naphthalene (N-C_4a)						
Tetramethyl Naphthalene (N-C_4b)						
Cadalene						
Phenanthrene				12		1
Anthracene						
3-Methyl Phenanthrene						
2-Methyl Phenanthrene						
9/4-Methyl Phenanthrene						
1-Methyl Phenanthrene						
Pimanthrene (1,7-dimethyl phenanthrene)						
Heneicosahexaene						
Fluoranthene				8.3		1
Pyrene				10		1
Simonellite						
Trimethyl Phenanthrene (P/A-C_3a)						
Retene						
Tricosapolyene						
Methyl Pyrene (F/P-C_1a)						
Methyl Pyrene (F/P-C_1b)						
Dimethyl Pyrene (F/P-C_2a)						
Pentacosapolyene						
Benz(a)anthracene				12		1
Chrysene				14		1
Heptacosapolyene						
Benzo(b/j/k)fluoranthene	6.8		1	19		1
Benzo(a)fluoranthene						
Benzo(e)pyrene				8.2		1
Benzo(a)pyrene						
Perylene						
Squalene	3439		2	2050	1900	4
Dibenz(a,h)anthracene						
Indeno(1,2,3-cd)pyrene						
Benzo(ghi)perylene						

	Suspended Particulate and Sediment			Chromosorb T, Dissolved		
	Mean Blank ng	Std. Dev. ng	No. of non-zero blanks n	Mean Blank ng	Std. Dev. ng	No. of non-zero blanks n
F3 Fraction						
Tetradecanol				46		1
Hexadecenol				20		1
Hexadecanol	22	18	6	50		1
Octadecenol				79		1
Octadecanol	226	225	6	23		2
Phytol	96		2	4.1		1
Eicosenol						
Eicosanol	89		1			
Docosenol	31		1			
Docosanol	5.2		1			
Tetracosenol						
Tetracosanol						
Hexacosanol				12		1
24-Norcholesta-5,22E-dien-3ß-ol	96		1	71		1
Cholesta-5,22E-dien-3ß-ol						
Octacosanol	19		1			
Cholest-5-en-3ß-ol	157	102	5	2185	2700	3
5a-Cholestan-3ß-ol	3.0		1			
Cholesta-5,24E-dien-3ß-ol						
24-Methylcholesta-5,22E-dien-3ß-ol						
24-Methylcholesta-5,24(28)-dien-3ß-ol						
24-Methylcholest-5-en-3ß-ol						
24-Ethylcholesta-5,22E-dien-3ß-ol						
Triacontanol						
24-Ethylcholest-5-en-3ß-ol	8.4		1			
24-Ethylcholesta-5,24(28)E-dien-3ß-ol						
24-Ethylcholesta-5,24(28)Z-dien-3ß-ol						
ß-Amyrin (Olean-12-en-3ß-ol)						
a-Amyrin (Urs-12-en-3ß-ol)						
24-Ethylcholesta-3,5-dien-7-one						

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APPENDIX 4; ALKYL PAH SELECTED ION TRACES AND MASS SPECTRA OF NON–STANDARD COMPOUNDS

In the first part of this Appendix GC/MS selected ion traces are presented for a sample of Mackenzie River suspended particulate from the East channel, in June, 1987 (RM6). The C_0 to C_5 homologous series of alkyl PAH are shown for the naphthalenes, phenanthrene/anthracenes and fluoranthene/pyrenes. Specific peaks labeled on the traces refer to the compound list in Appendix 1. Ions given for each series are:

Naphthalenes:	m/z 128, 136, 142, 156, 170, 184, 198 and the RIC
Phenanthrene/anthracenes:	m/z 178, 188, 192, 206, 220, 234, 248 and the RIC
Fluoranthene/pyrenes:	m/z 202, 212, 216, 230, 244, 258, 272 and the RIC

In addition, mass spectra are given for the following compounds:

F1 Fraction

17a(H)–Trisnorhopane (C_{27}a,Tm)
17ß(H)–Trisnorhopane (C_{27}ß)
17a(H),21ß(H)–Norhopane (C_{29}aß)
17ß(H),21a(H)–Normoretane (C_{29}ßa)
17a(H),21ß(H)–Hopane (C_{30}aß)
S–17a(H),21ß(H)–Homohopane (C_{31}aß)
R–17a(H),21ß(H)–Homohopane (C_{31}aß)
Triterpene
17ß(H),21ß(H)–Hopane (C_{30}ßß)
Diploptene
Heptadecadiene
Heptadecene
Nonadecene

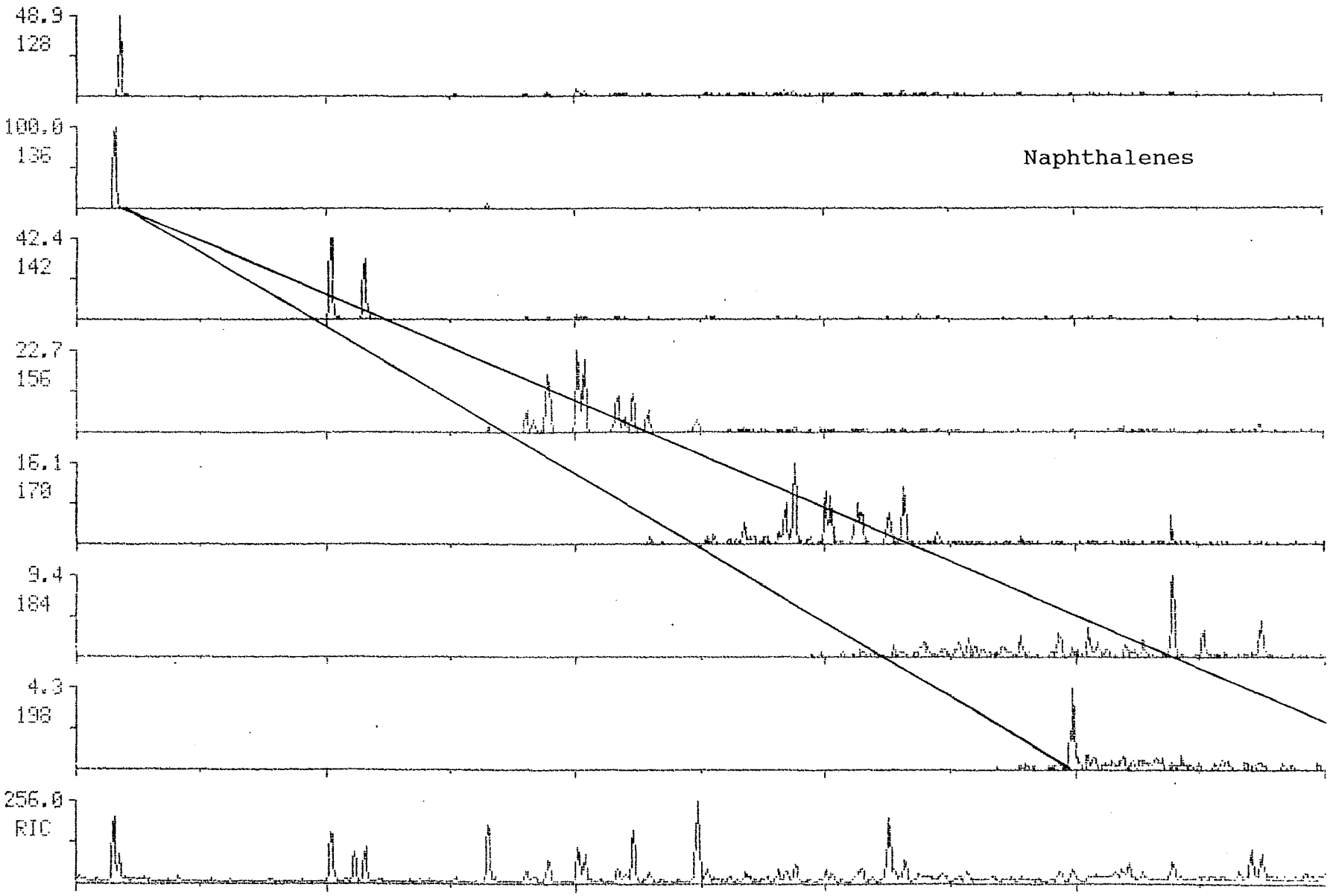
F2 Fraction

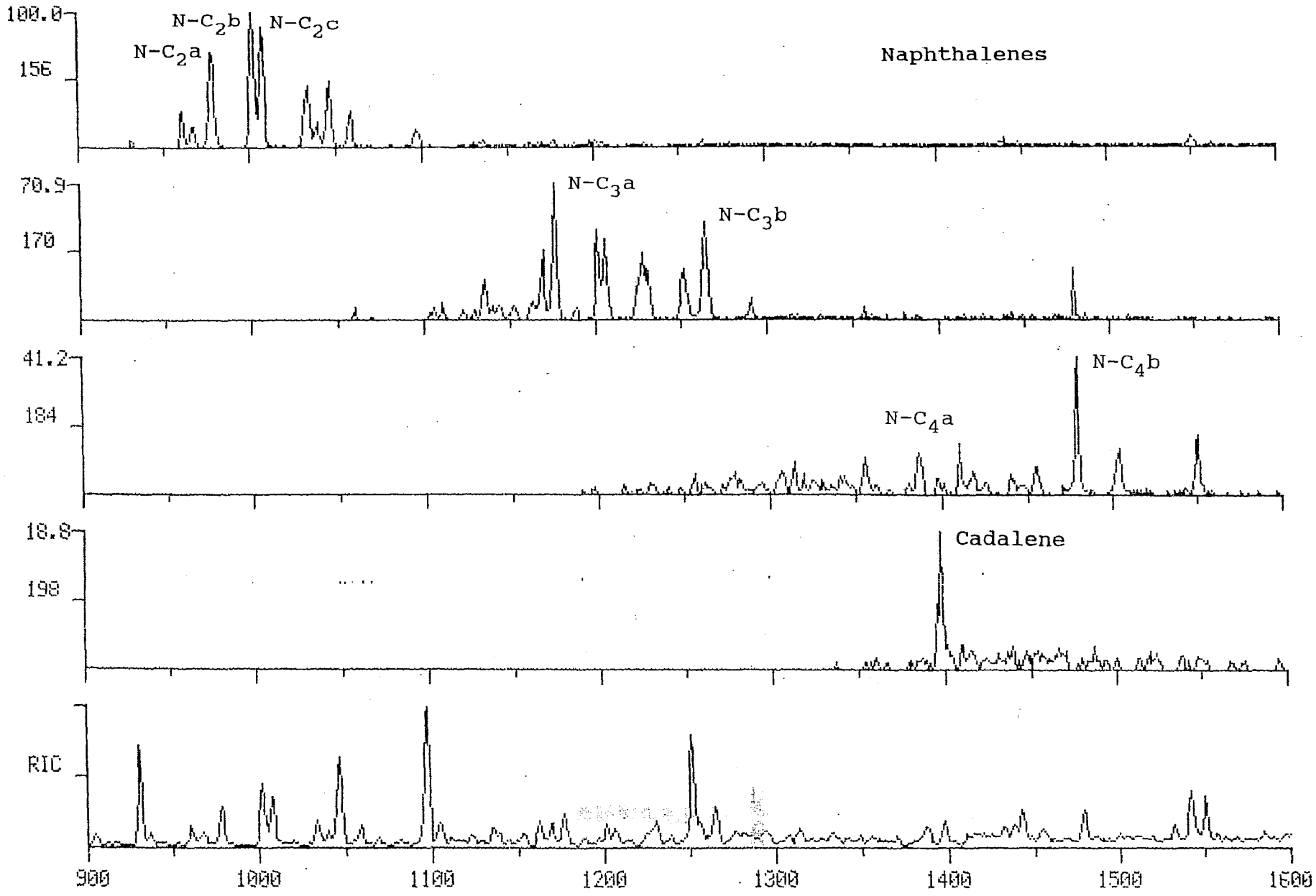
Cadalene
3–Methyl Phenanthrene
2–Methyl Phenanthrene
9/4–Methyl Phenanthrene
1–Methyl Phenanthrene
Pimanthrene (1,7–dimethyl phenanthrene)
Heneicosahexaene
Simonellite
Retene
Tricosapolyene
Pentacosapolyene
Heptacosapolyene
Squalene
Alkene*
Triterpane (mw 412)*

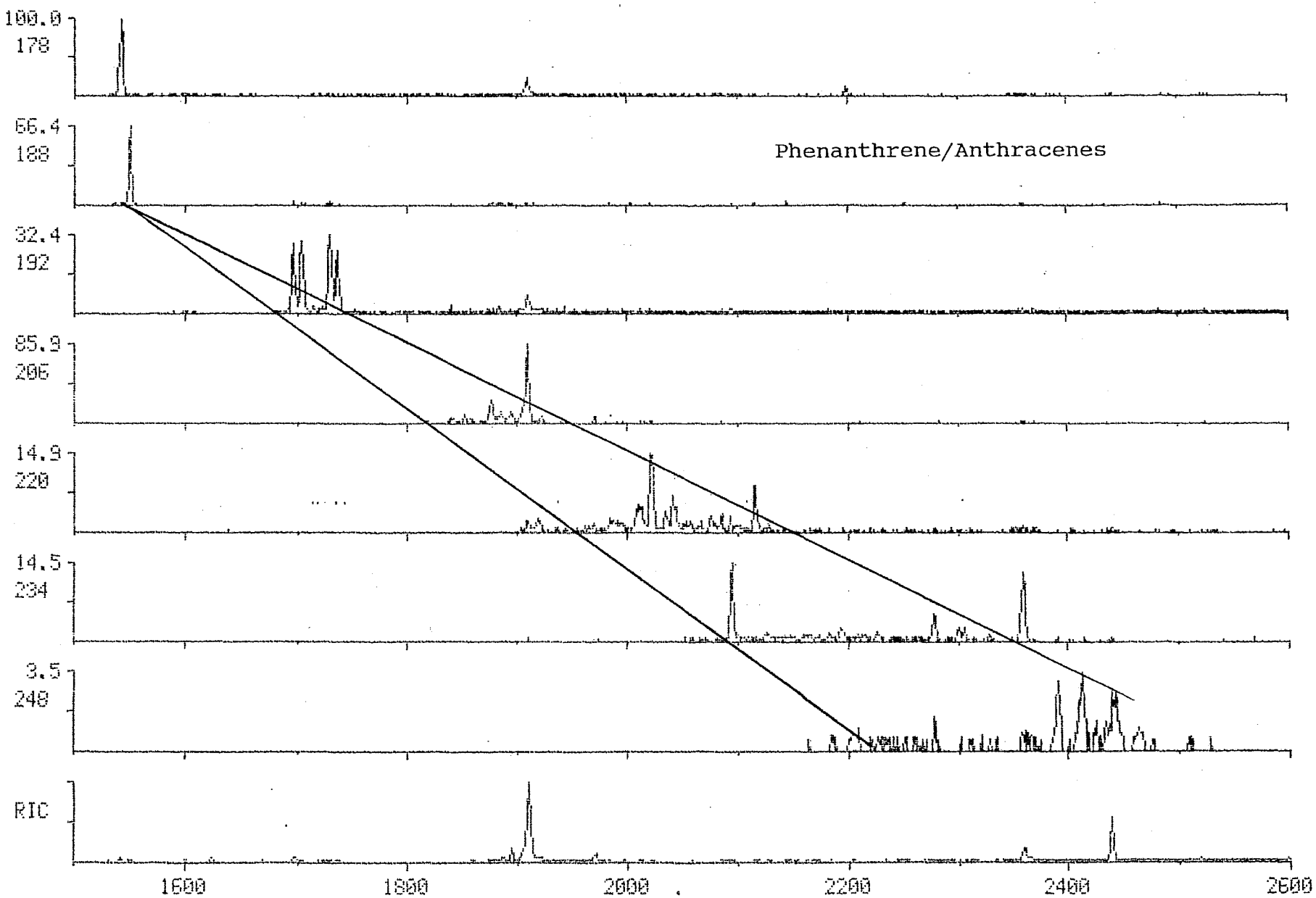
*Data are not given in Appendix 1.

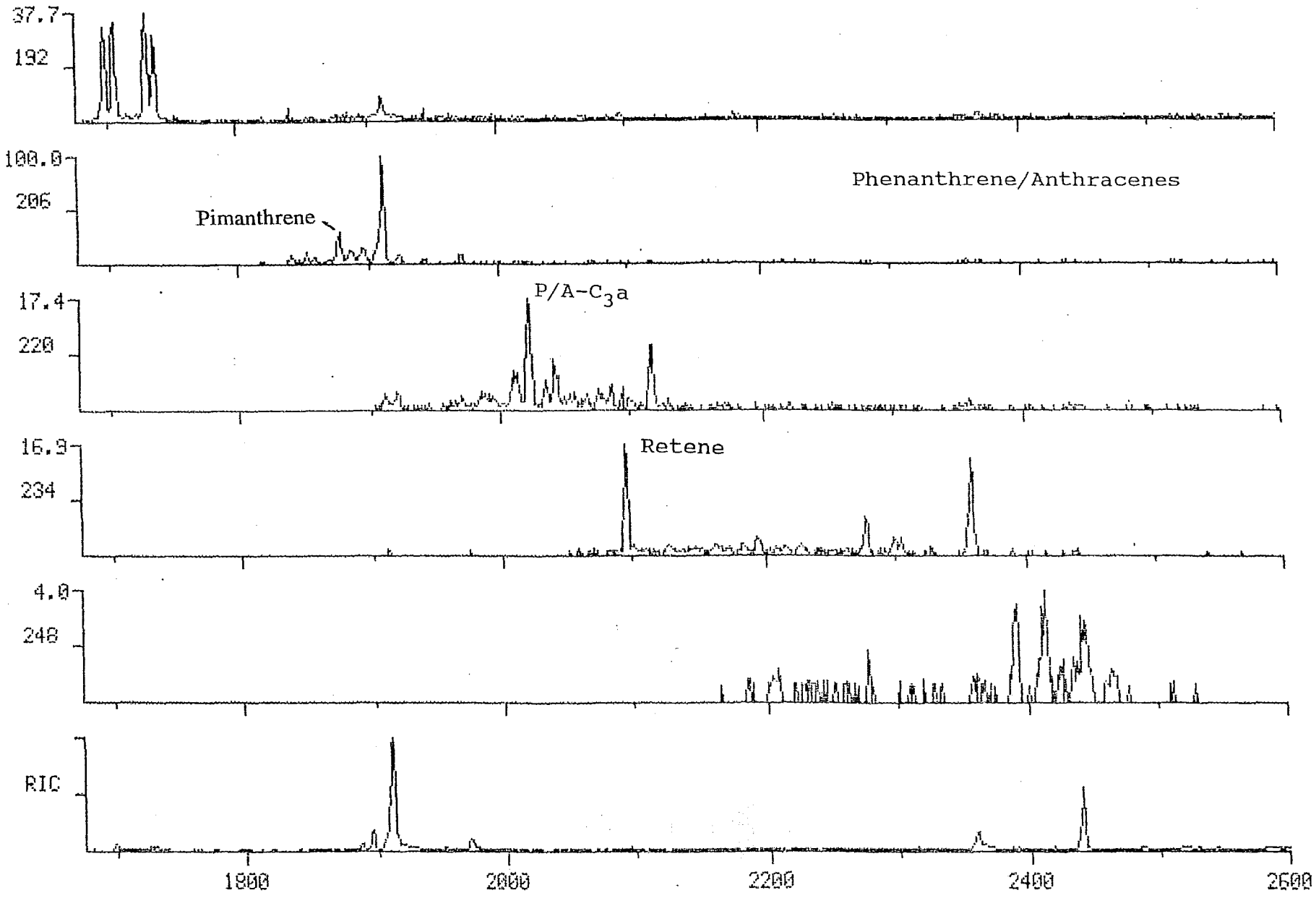
F3 Fraction

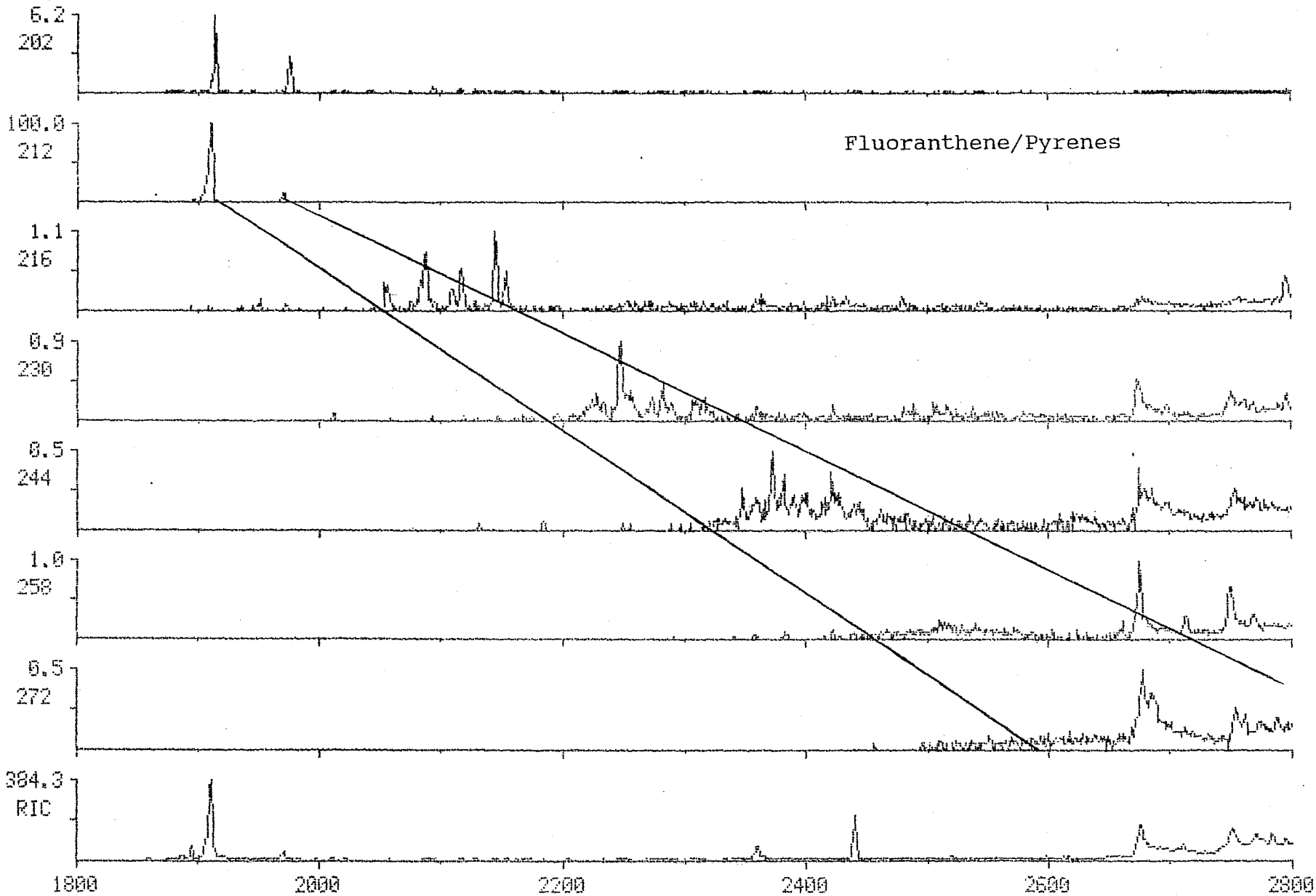
Tetradecanol
Hexadecenol
Hexadecanol
Octadecenol
Octadecanol
Phytol
Eicosenol
Eicosanol
Docosenol
Docosanol
Tetracosenol
Tetracosanol
Hexacosanol
24–Norcholesta–5,22E–dien–3ß–ol
Cholesta–5,22E–dien–3ß–ol
Octacosanol
Cholest–5–en–3ß–ol
5a–Cholestan–3ß–ol
Cholesta–5,24E–dien–3ß–ol
24–Methylcholesta–5,22E–dien–3ß–ol
24–Methylcholesta–5,24(28)–dien–3ß–ol
24–Methylcholest–5–en–3ß–ol
24–Ethylcholesta–5,22E–dien–3ß–ol
Triacontanol
24–Ethylcholest–5–en–3ß–ol
24–Ethylcholesta–5,24(28)E–dien–3ß–ol
24–Ethylcholesta–5,24(28)Z–dien–3ß–ol
ß–Amyrin (Olean–12–en–3ß–ol)
a–Amyrin (Urs–12–en–3ß–ol)
24–Ethylcholesta–3,5–dien–7–one

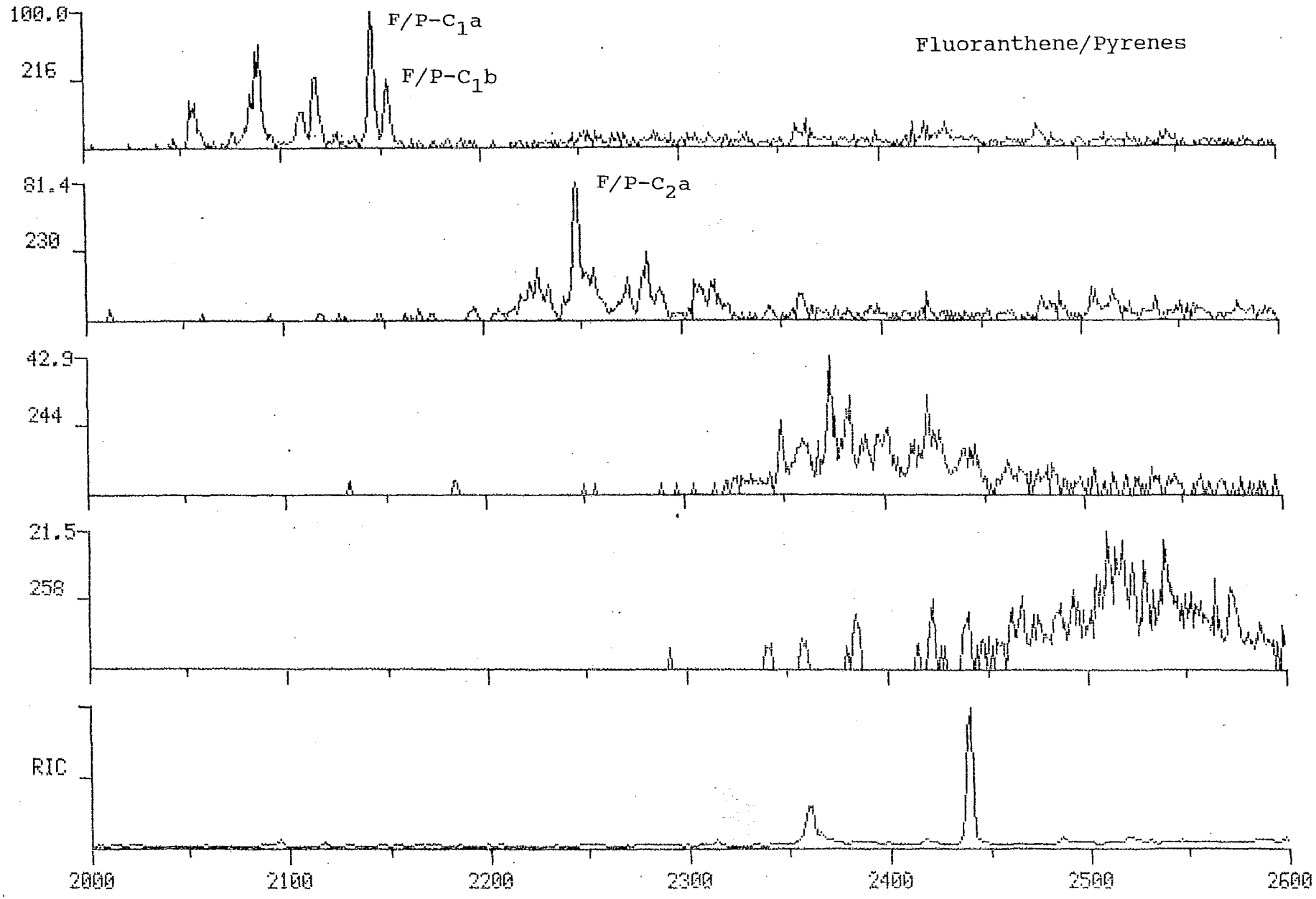

48.9
128
100.0
136
Naphthalenes
42.4
142
22.7
156
16.1
170
9.4
184
4.3
198
256.0
RIC

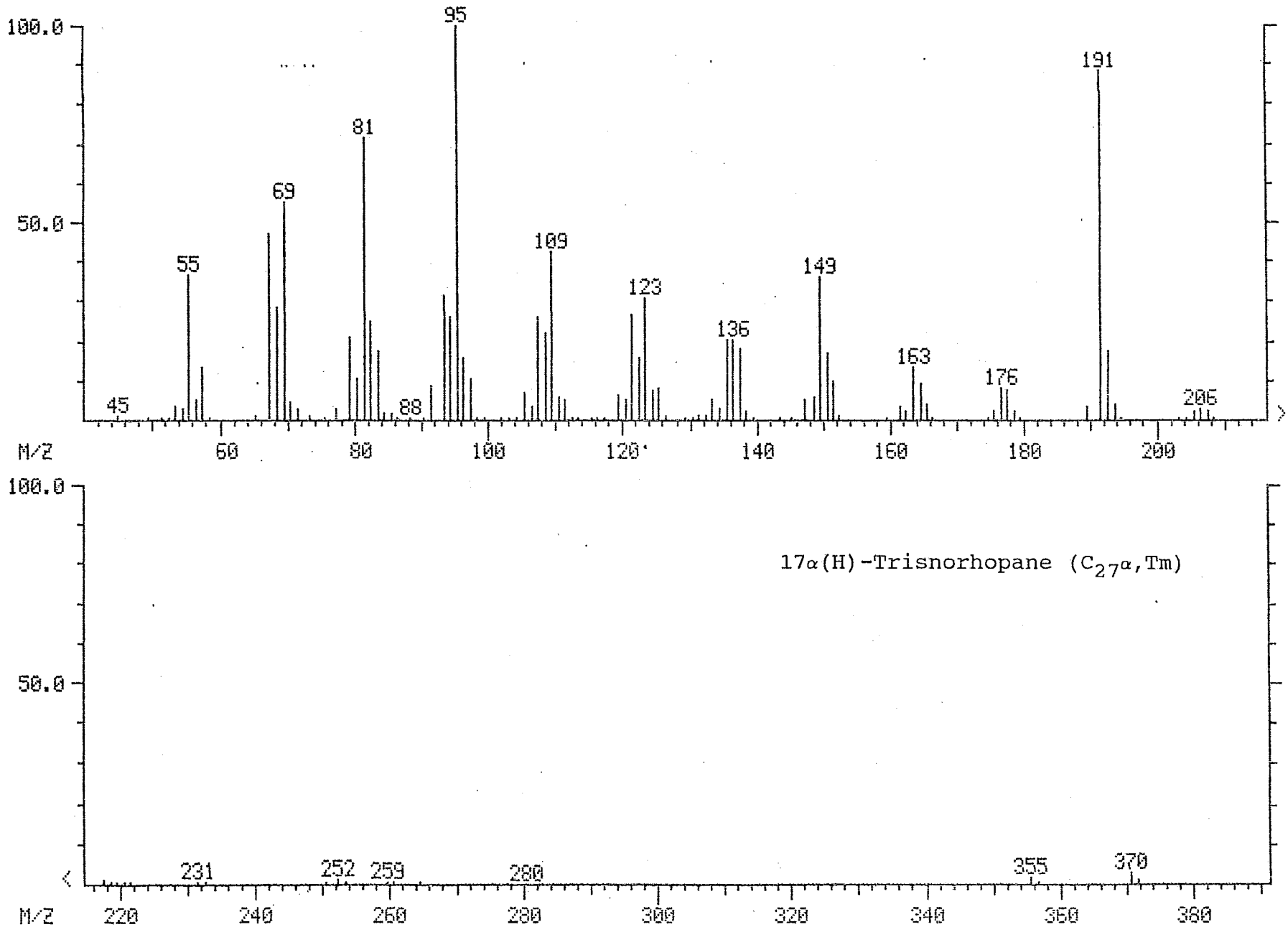

100.0
156
N-C2a
N-C2b
N-C2c
Naphthalenes
70.9
170
N-C3a
N-C3b
41.2
184
N-C4a
N-C4b
18.8
198
Cadalene
RIC
900
1000
1100
1200
1300
1400
1500
1600


100.0
178
66.4
188
Phenanthrene/Anthracenes
32.4
192
85.9
206
14.9
220
14.5
234
3.5
248
RIC
1600
1800
2000
2200
2400
2600


37.7
192
100.0
206
Pimanthrene
Phenanthrene/Anthracenes
17.4
220
P/A-C3a
16.9
234
Retene
4.0
248
RIC
1800
2000
2200
2400
2600


Fluoranthene/Pyrenes
6.2
202
100.0
212
1.1
216
0.9
230
0.5
244
1.0
258
0.5
272
384.3
RIC
1800
2000
2200
2400
2600
2800


Fluoranthene/Pyrenes
100.0
216
F/P-C1a
F/P-C1b
81.4
230
F/P-C2a
42.9
244
21.5
258
RIC
2000
2100
2200
2300
2400
2500
2600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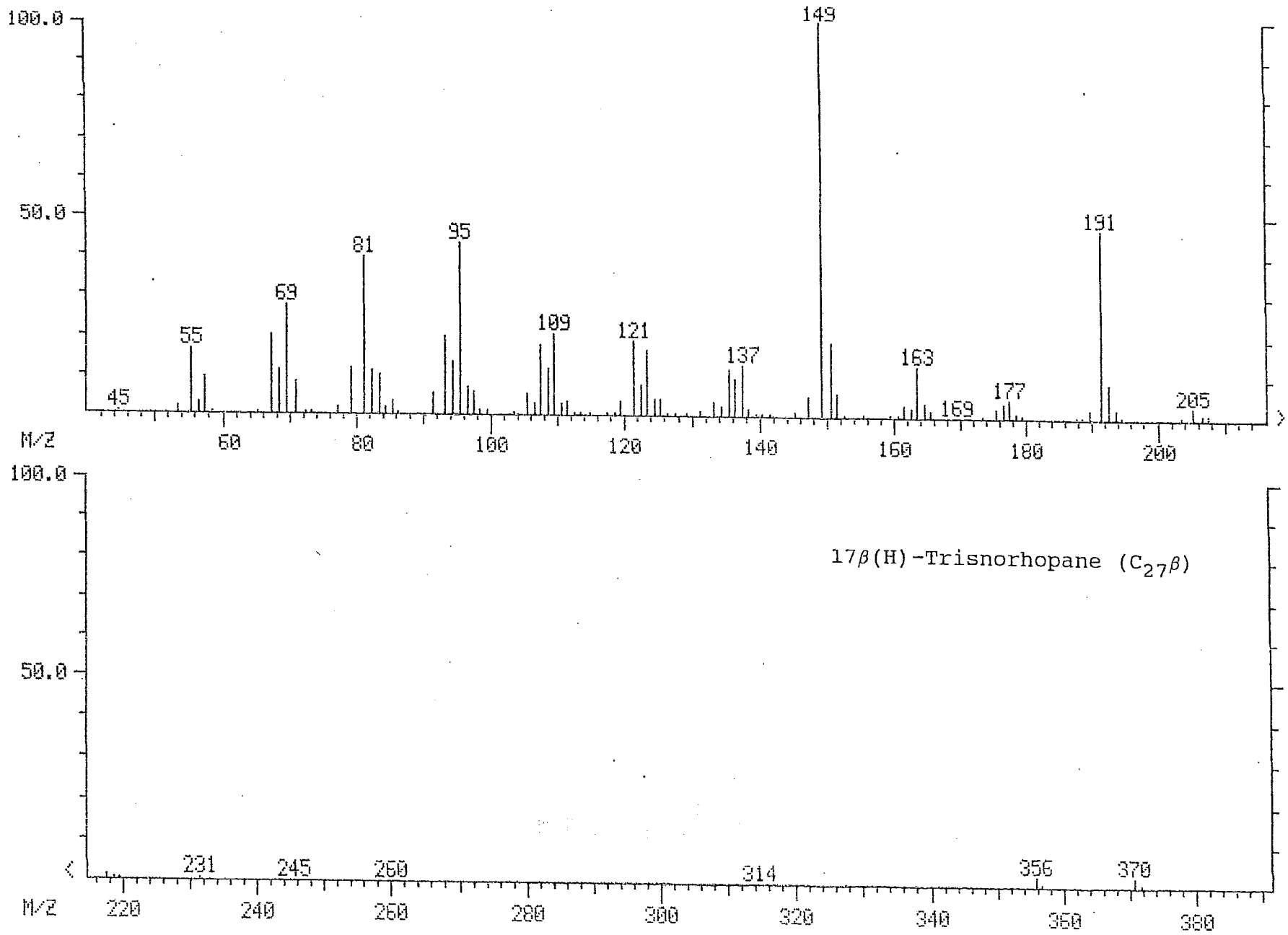
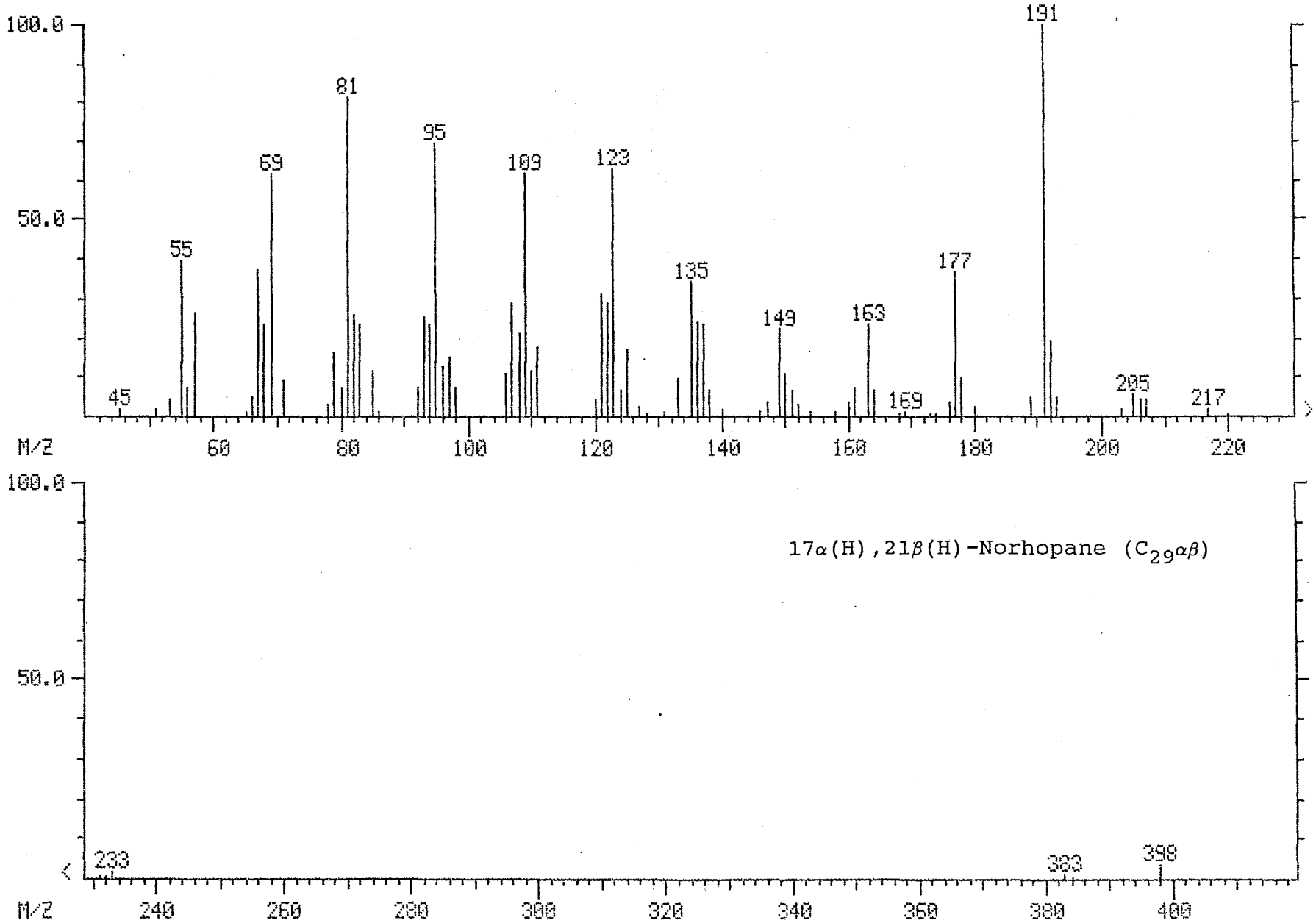
50.0
95
191
81
69
109
55
149
123
136
163
176
206
45
88
M/Z
60
80
100
120
140
160
180
200
100.0
50.0
17α(H)-Trisnorhopane ($C_{27}\alpha$,Tm)
231
252
259
280
355
370
M/Z
220
240
260
280
300
320
340
360
380


100.0
50.0
149
191
95
81
69
55
45
109
121
137
163
169
177
205
M/Z
60
80
100
120
140
160
180
200
100.0
50.0
17β(H)-Trisnorhopane (C27β)
231
245
260
314
356
370
M/Z
220
240
260
280
300
320
340
360
380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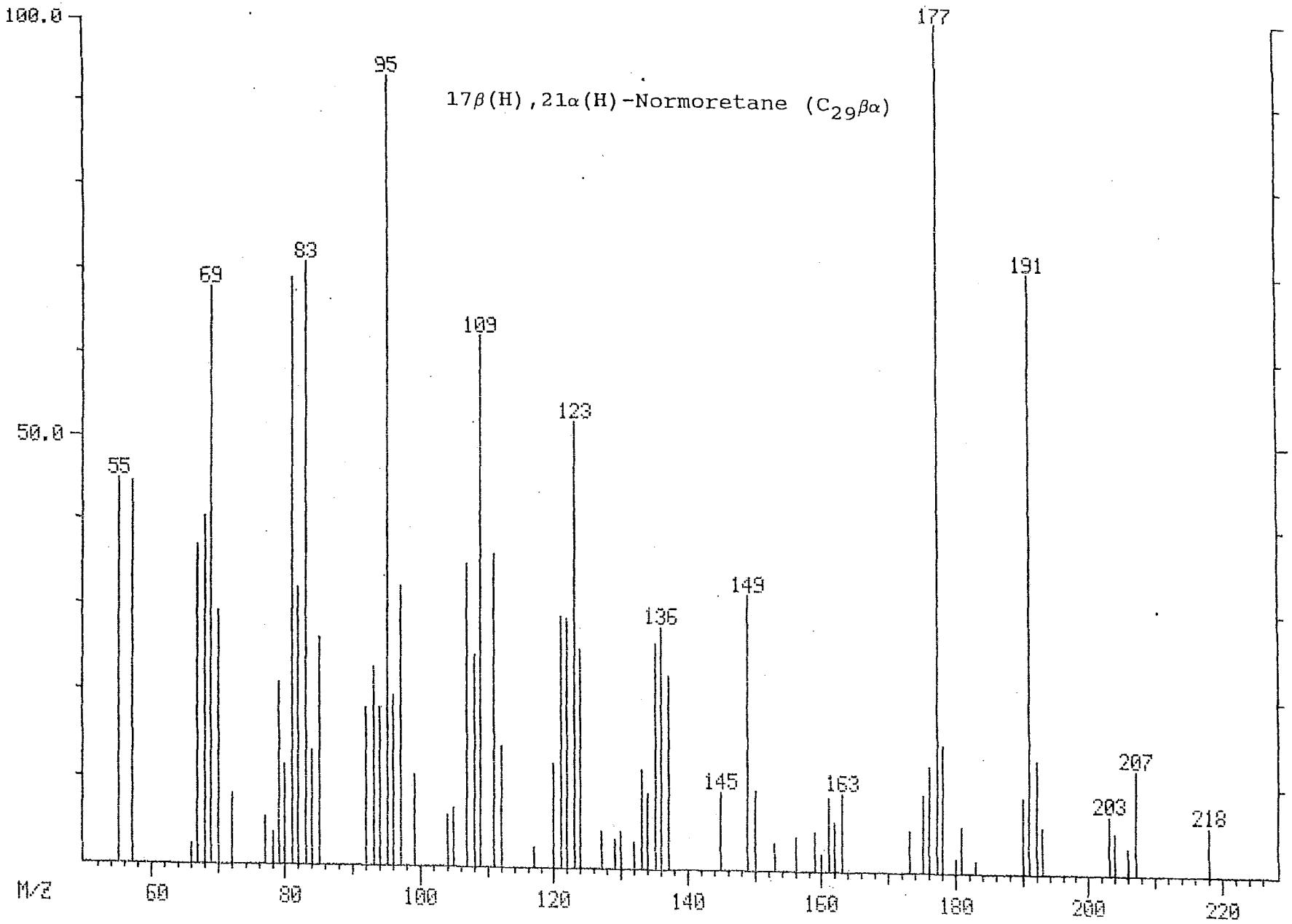
50.0
M/Z
45
55
69
81
95
109
123
135
149
163
169
177
191
205
217
60
80
100
120
140
160
180
200
220
233
303
398
240
260
280
300
320
340
360
380
400
17α(H),21β(H)-Norhopane ($C_{29\alpha\beta}$)


17β(H),21α(H)-Normoretane ($C_{29}\beta\alpha$)
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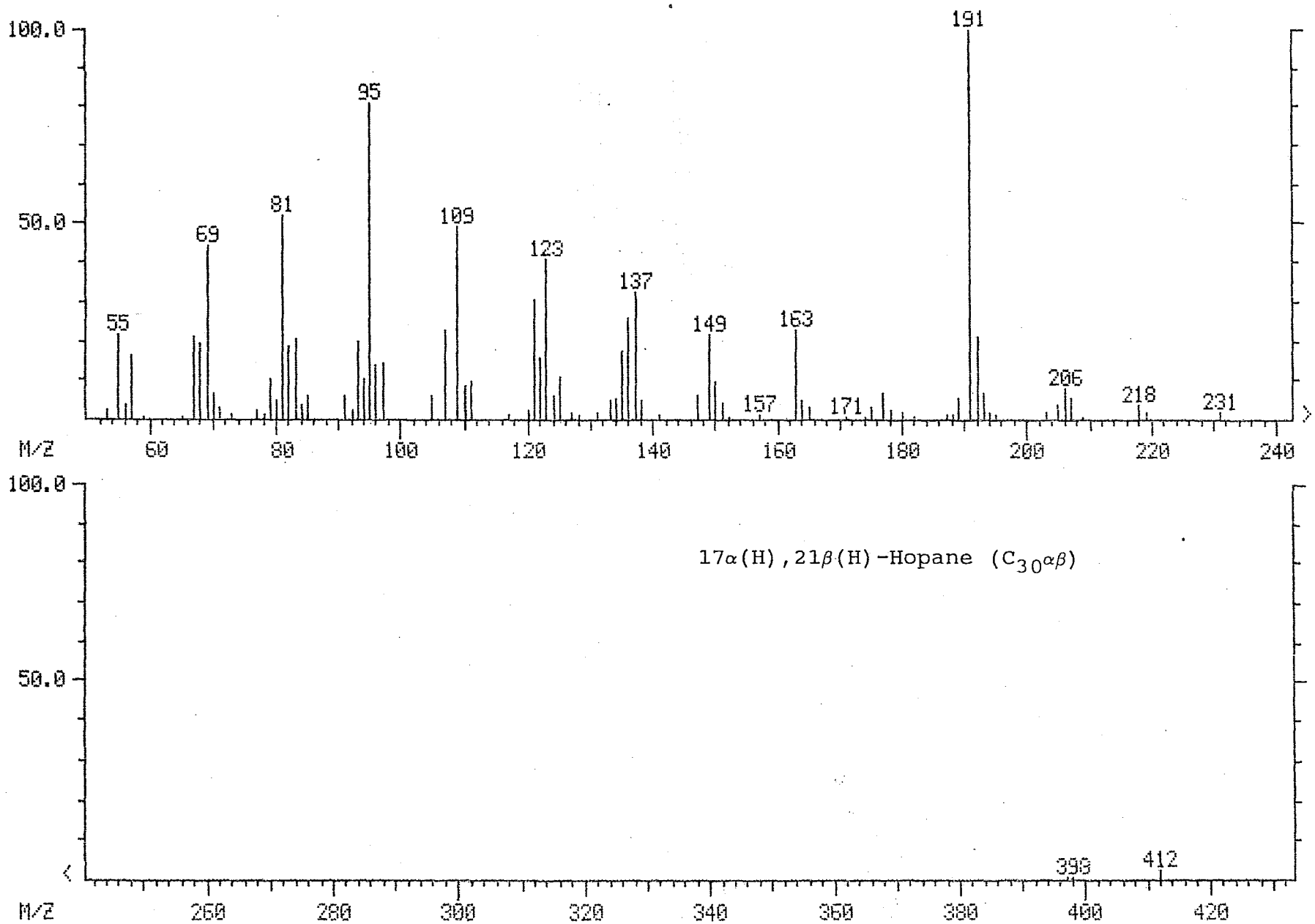
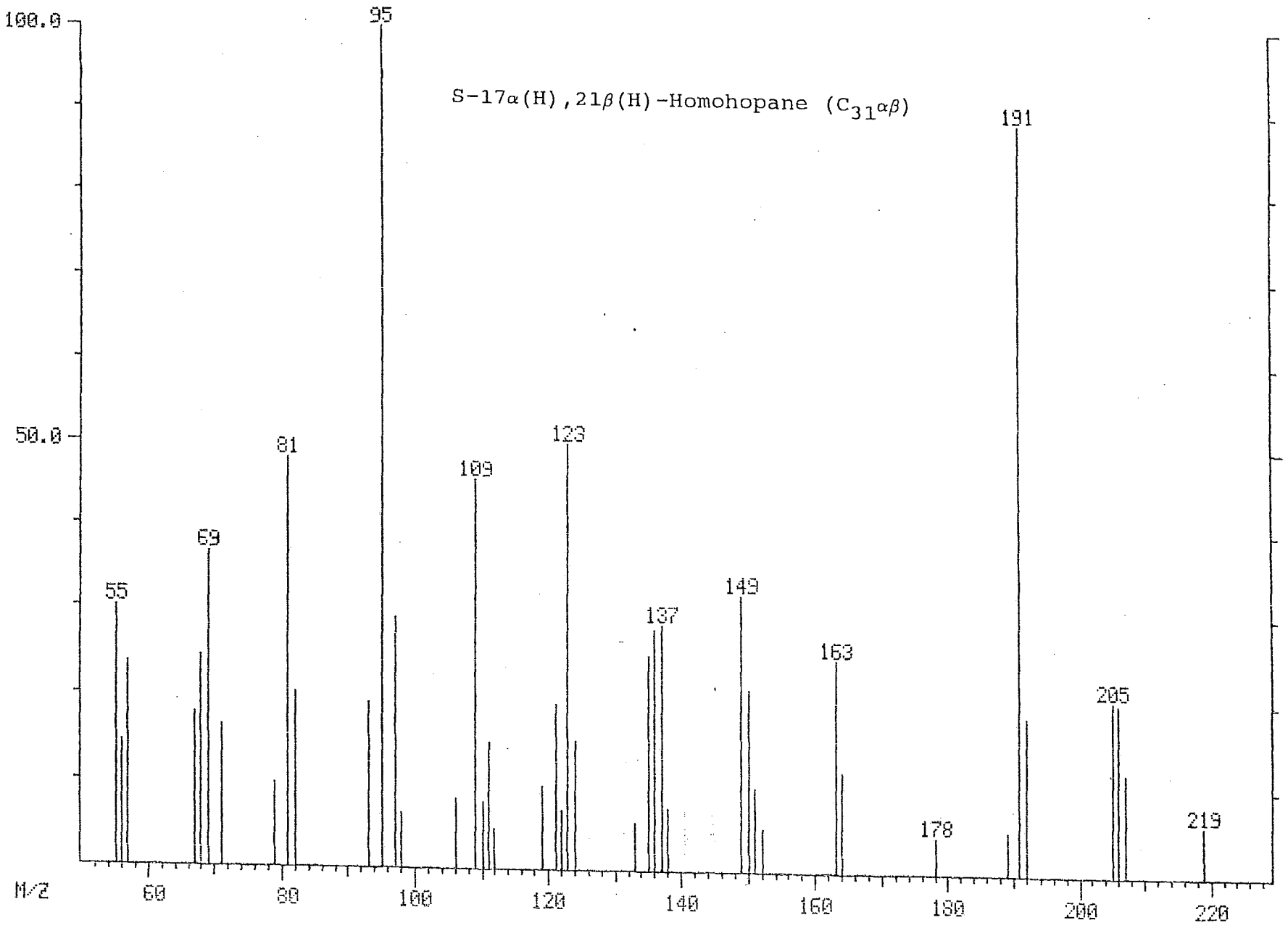
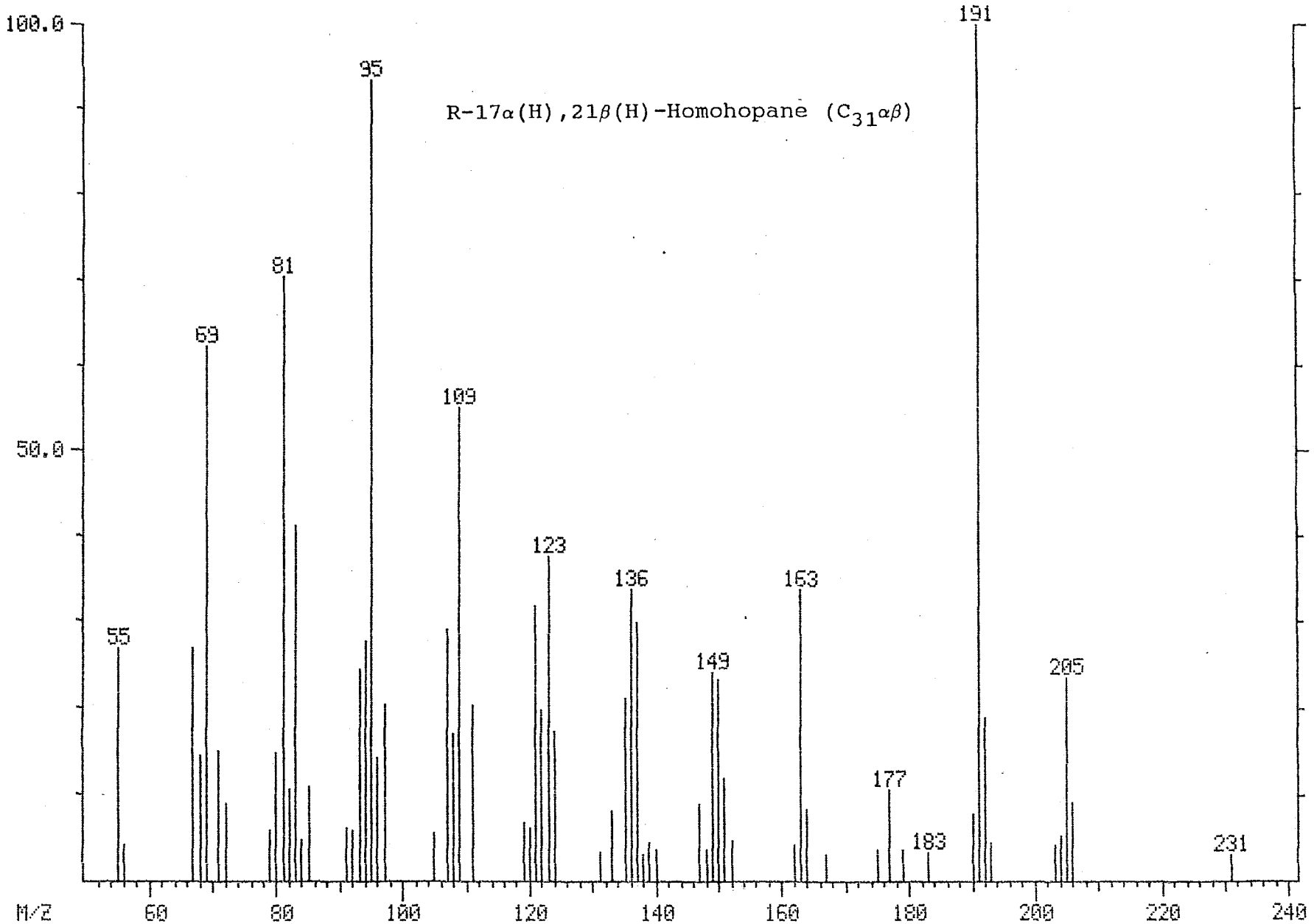
50.0
M/Z
55
69
83
95
109
123
135
145
149
163
177
191
203
207
218
60
80
100
120
140
160
180
200
220


100.0
50.0
M/Z
55
69
81
95
109
123
137
149
157
163
171
191
206
218
231
60
80
100
120
140
160
180
200
220
240
100.0
50.0
M/Z
390
412
260
280
300
320
340
360
380
400
420
17α(H),21β(H)-Hopane ($C_{30}\alpha\beta$)


S-17α(H),21β(H)-Homohopane ($C_{31\alpha\beta}$)
100.0
50.0
M/Z
55
69
81
95
109
123
137
149
163
178
191
205
219
60
80
100
120
140
160
180
200
220


R-17α(H),21β(H)-Homohopane ($C_{31}\alpha\beta$)
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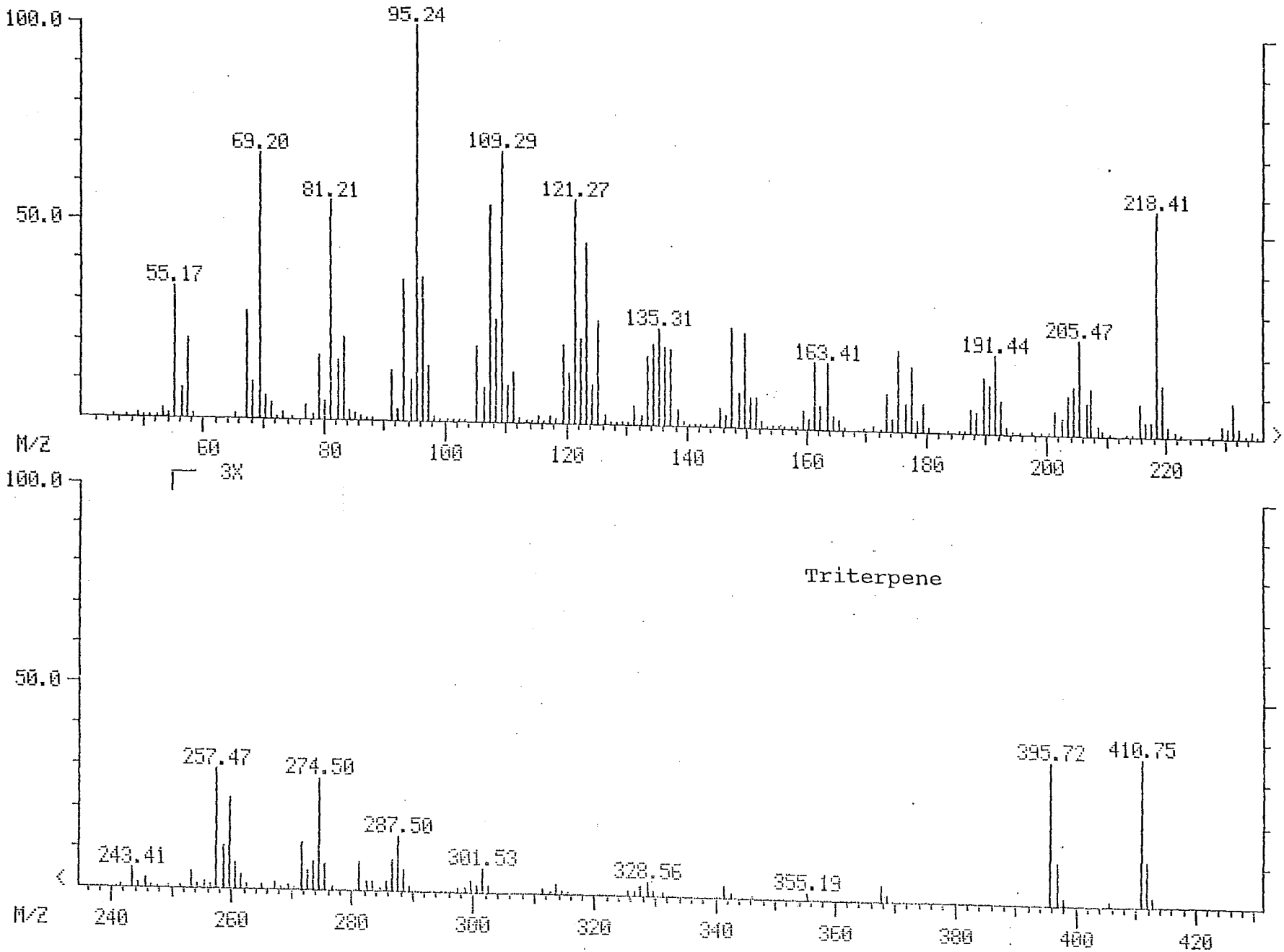
50.0
M/Z
60
80
100
120
140
160
180
200
220
240
55
69
81
95
109
123
136
149
163
177
183
191
205
231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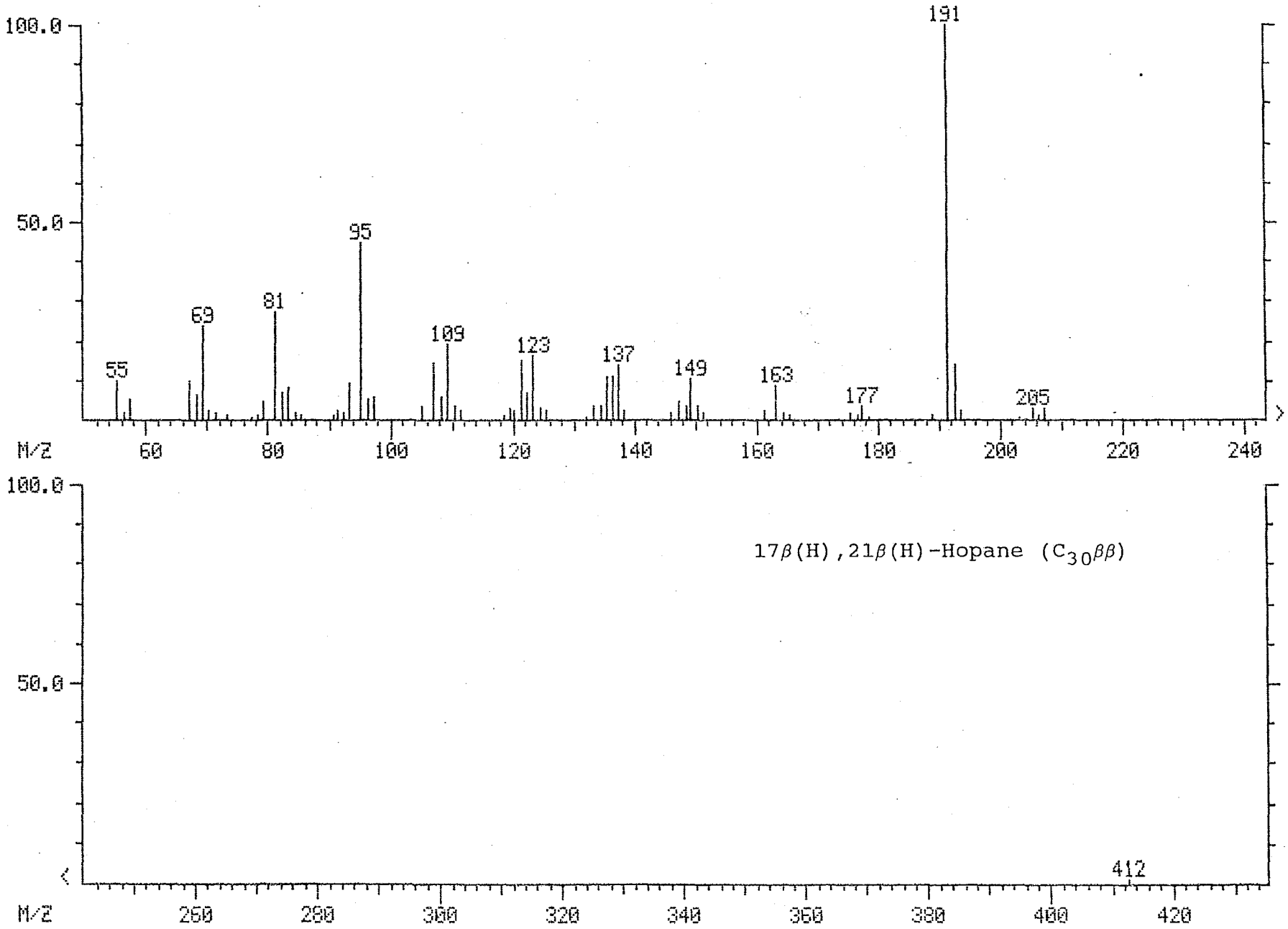
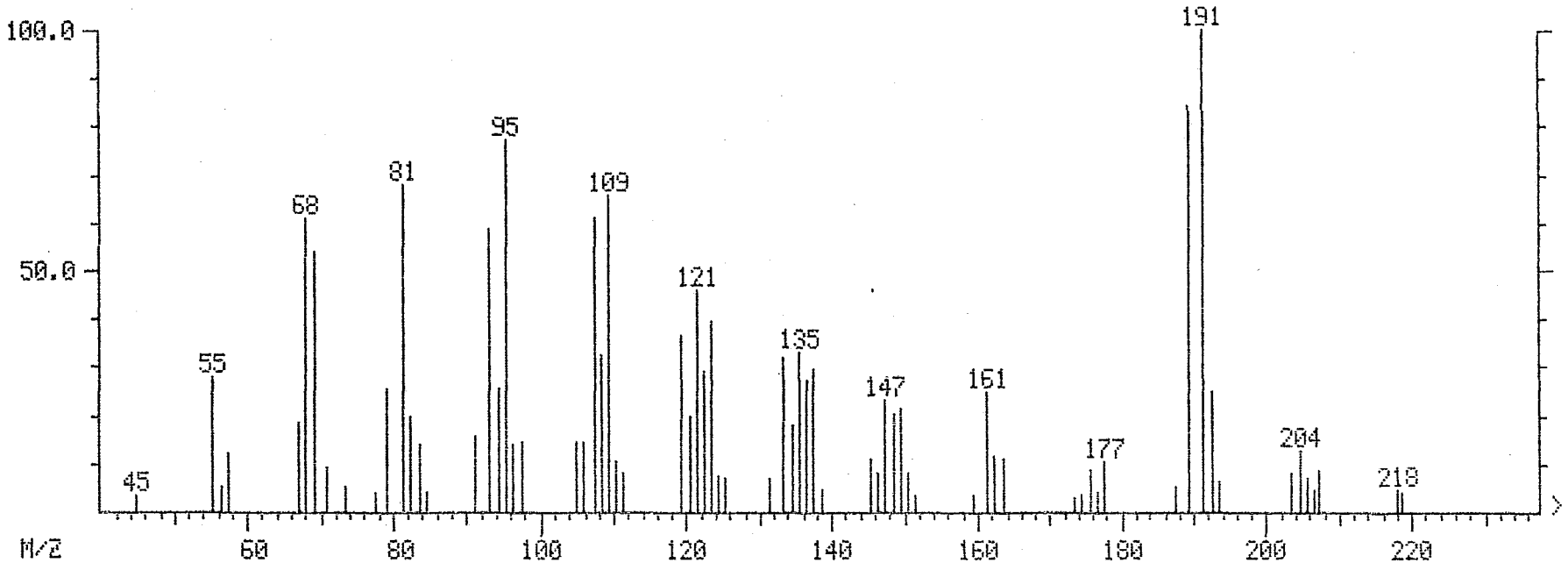
50.0
95.24
69.20
109.29
81.21
121.27
218.41
55.17
135.31
205.47
163.41
191.44
M/Z
60
80
100
120
140
160
180
200
220
3X
100.0
Triterpene
50.0
257.47
274.50
395.72
410.75
287.50
243.41
301.53
328.56
355.19
M/Z
240
260
280
300
320
340
360
380
400
420


100.0
50.0
191
95
81
69
109
123
137
149
163
177
205
55
M/Z
60
80
100
120
140
160
180
200
220
240
100.0
50.0
17β(H),21β(H)-Hopane ($C_{30}\beta\beta$)
412
M/Z
260
280
300
320
340
360
380
400
420


100.0
50.0
M/Z
45
55
68
81
95
109
121
135
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177
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204
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60
80
100
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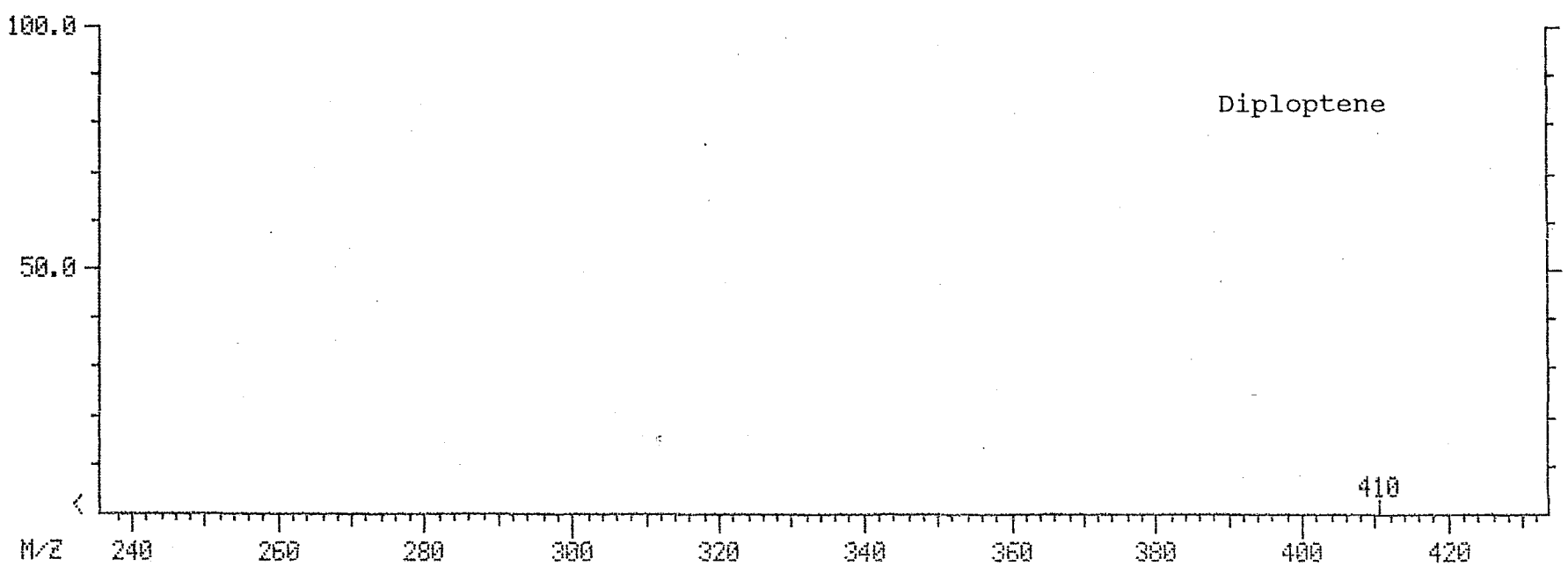
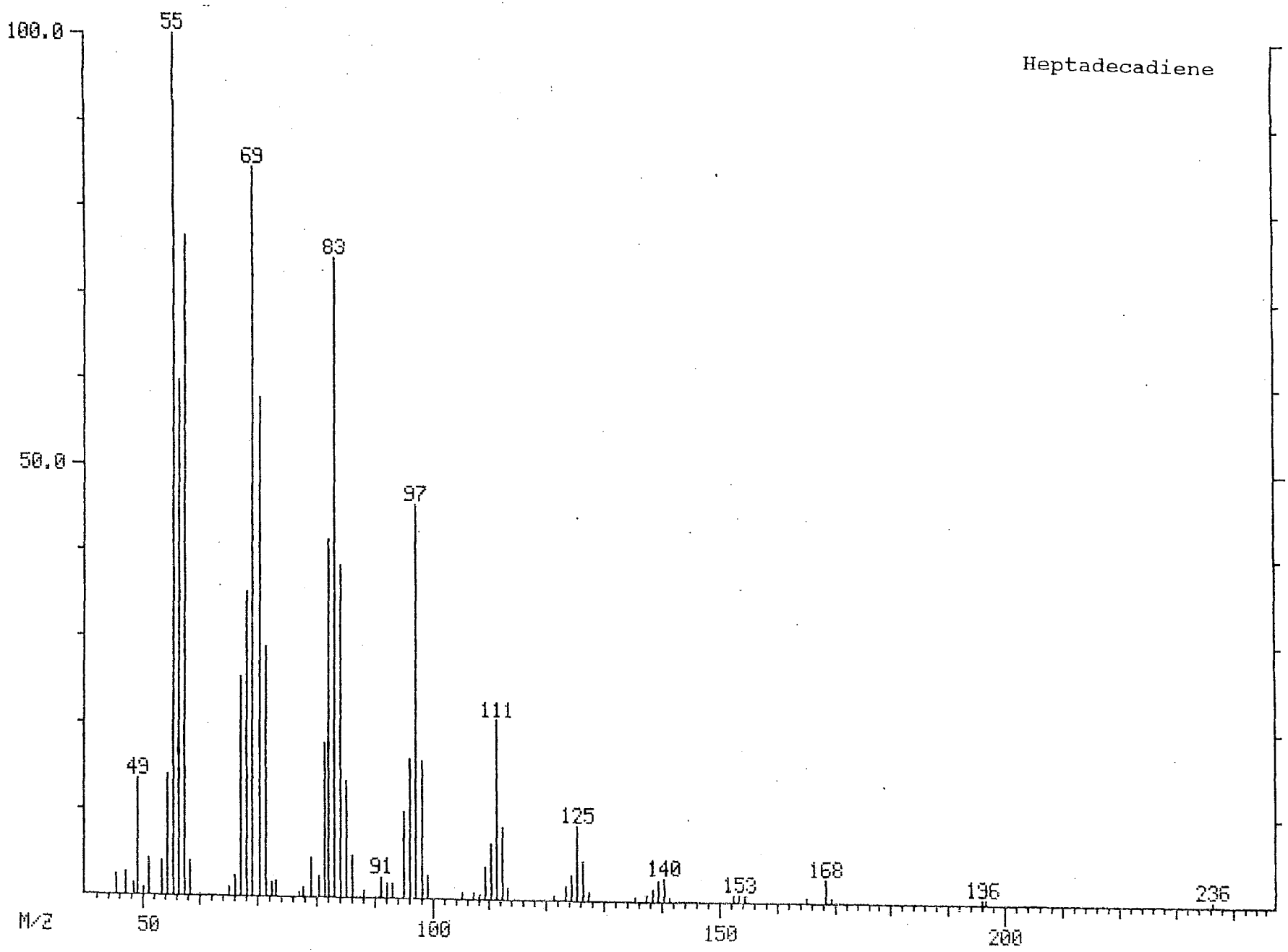
180
200
220


100.0
50.0
Diploptene
410
M/Z
240
260
280
300
320
340
360
380
400
420


Heptadecadiene
100.0
50.0
55
69
83
97
111
125
140
153
168
196
236
49
91
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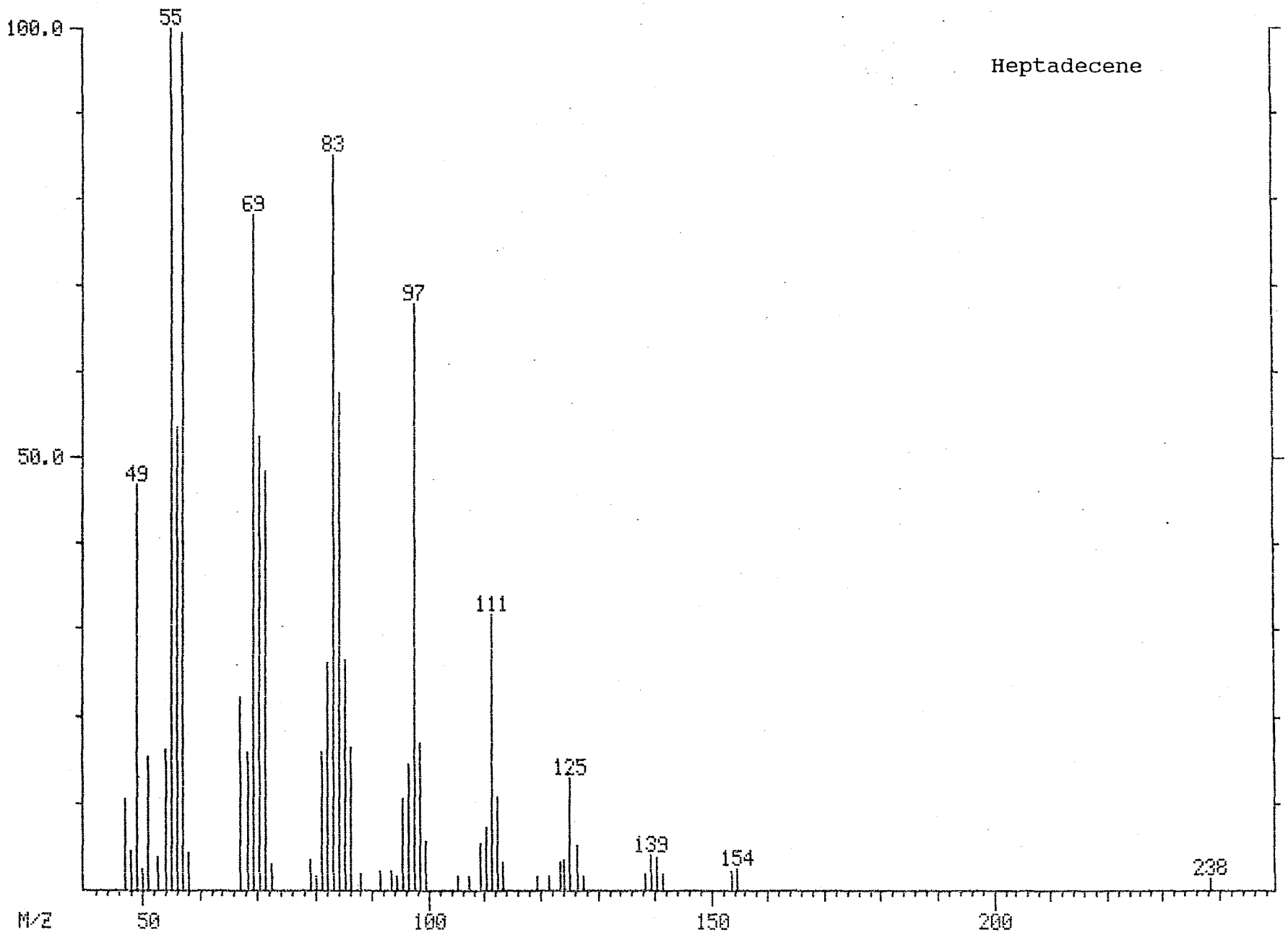
Heptadecene
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154
238
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M/Z
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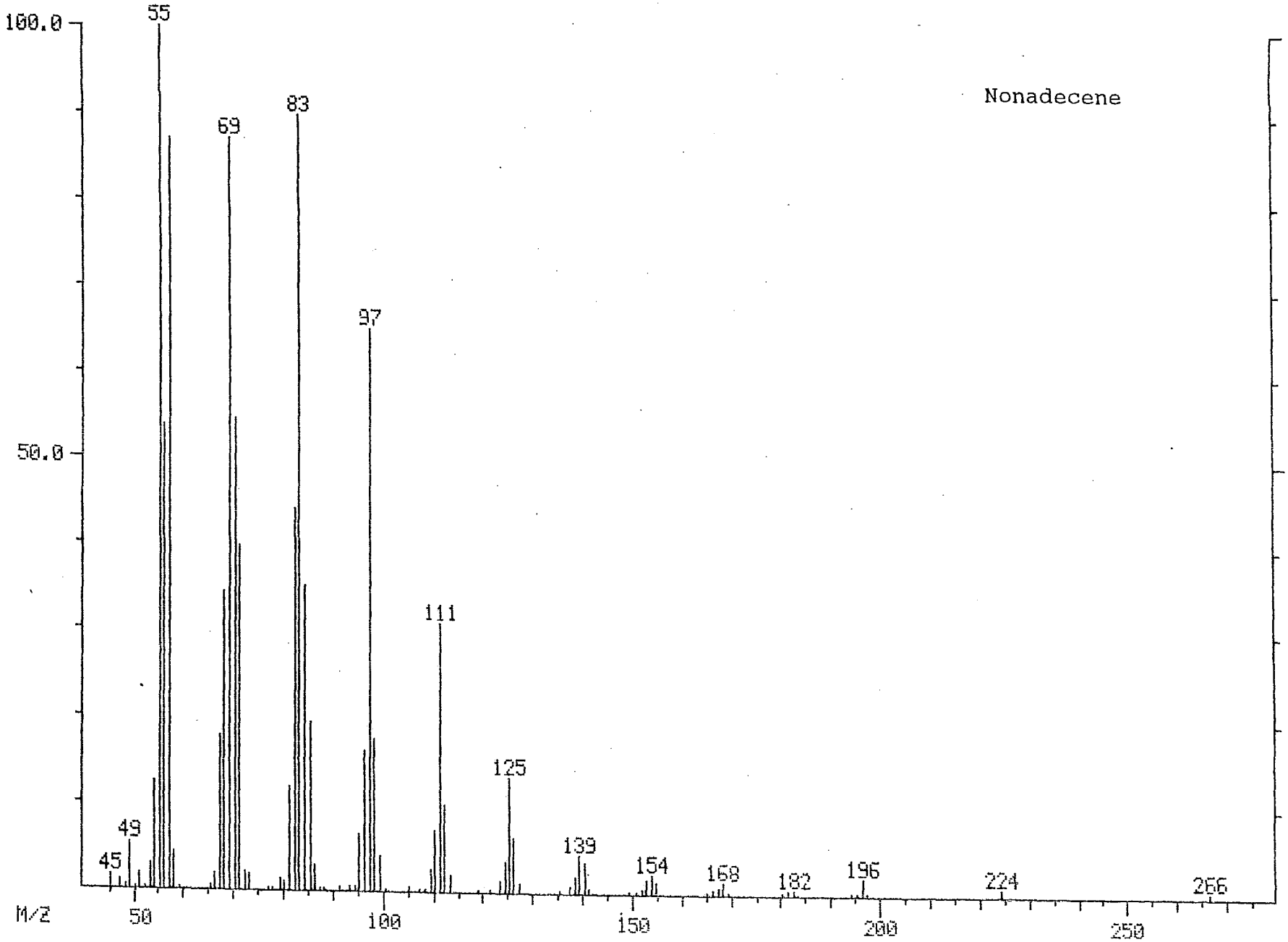
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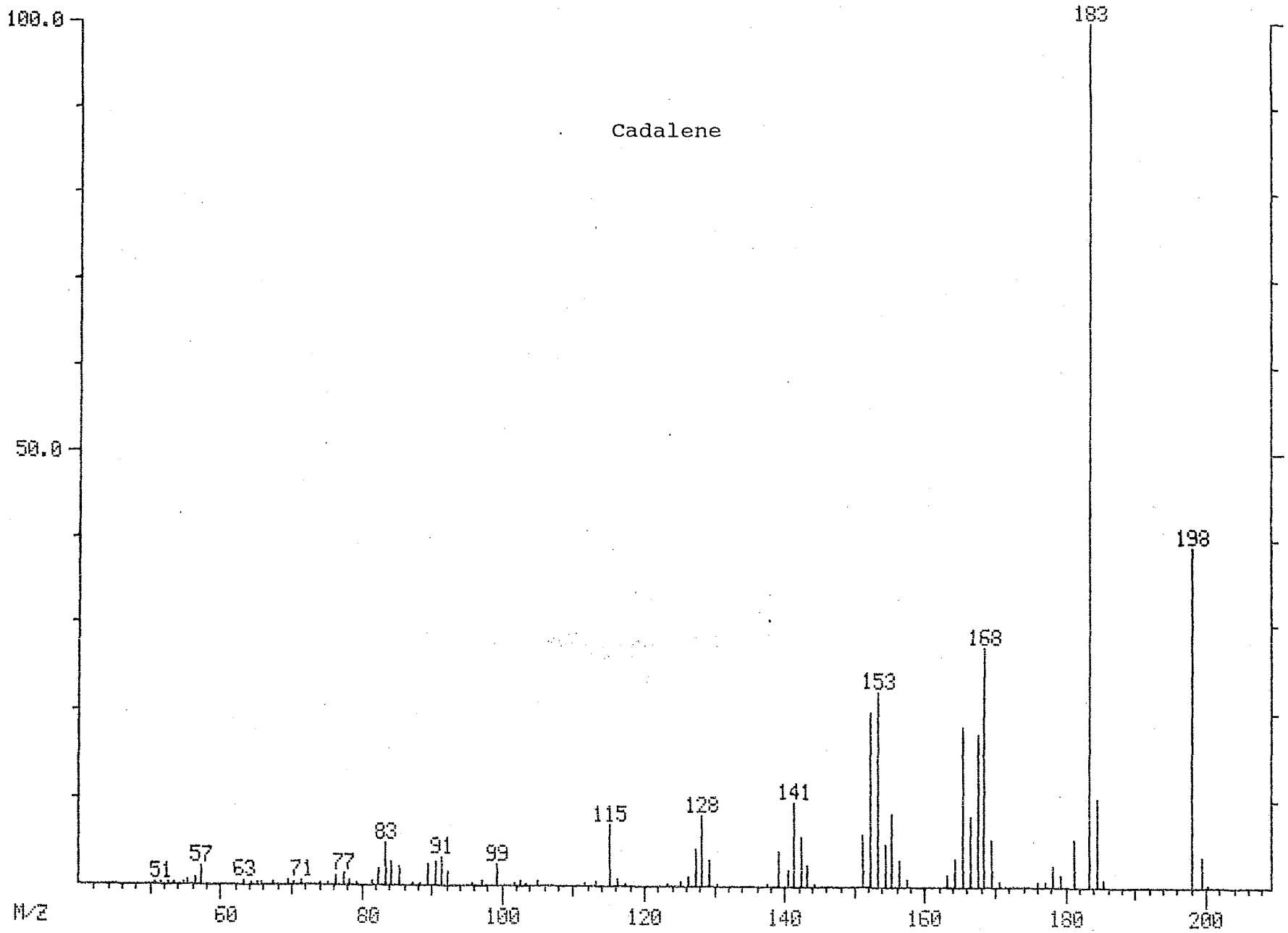
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M/Z
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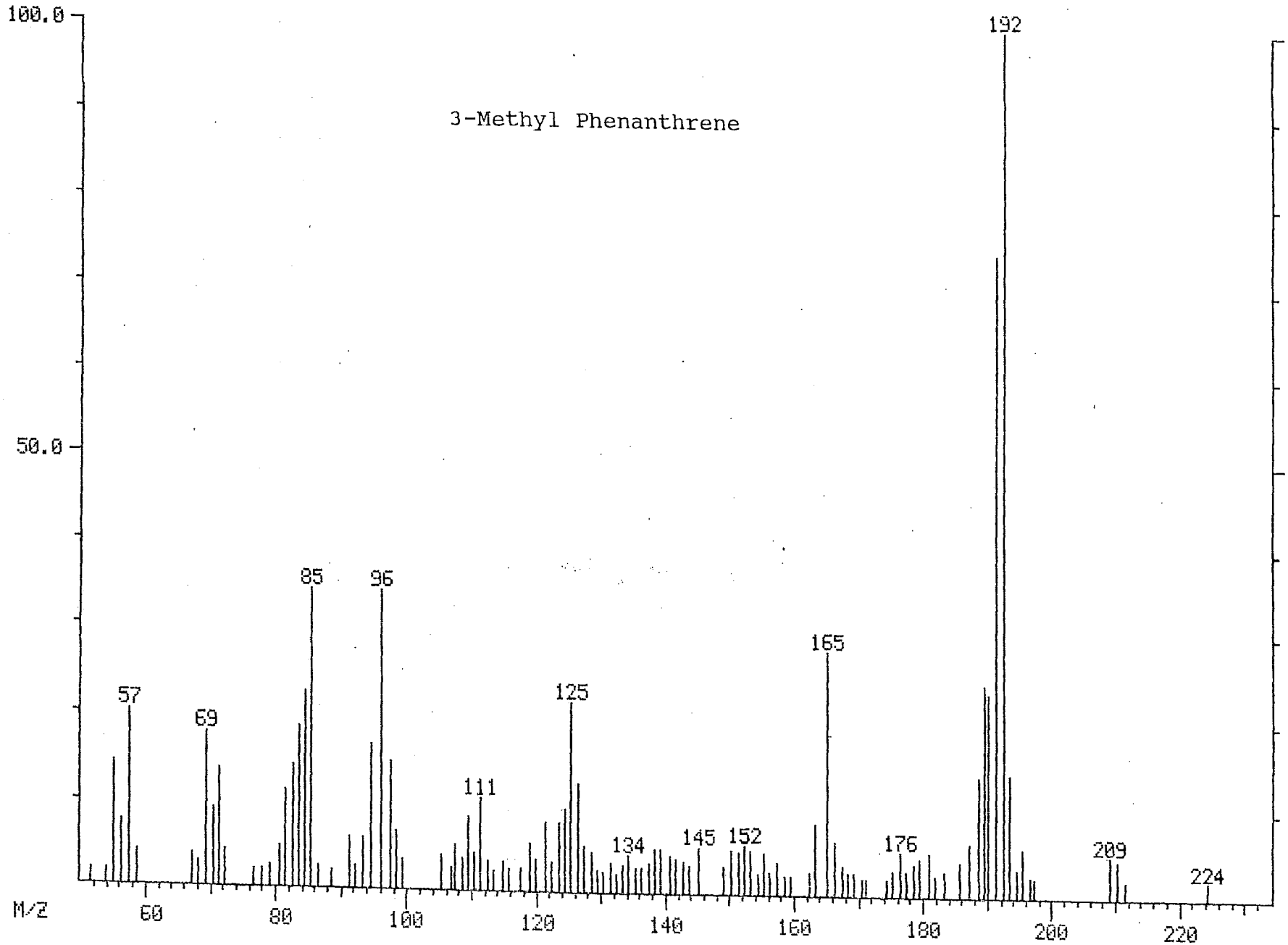
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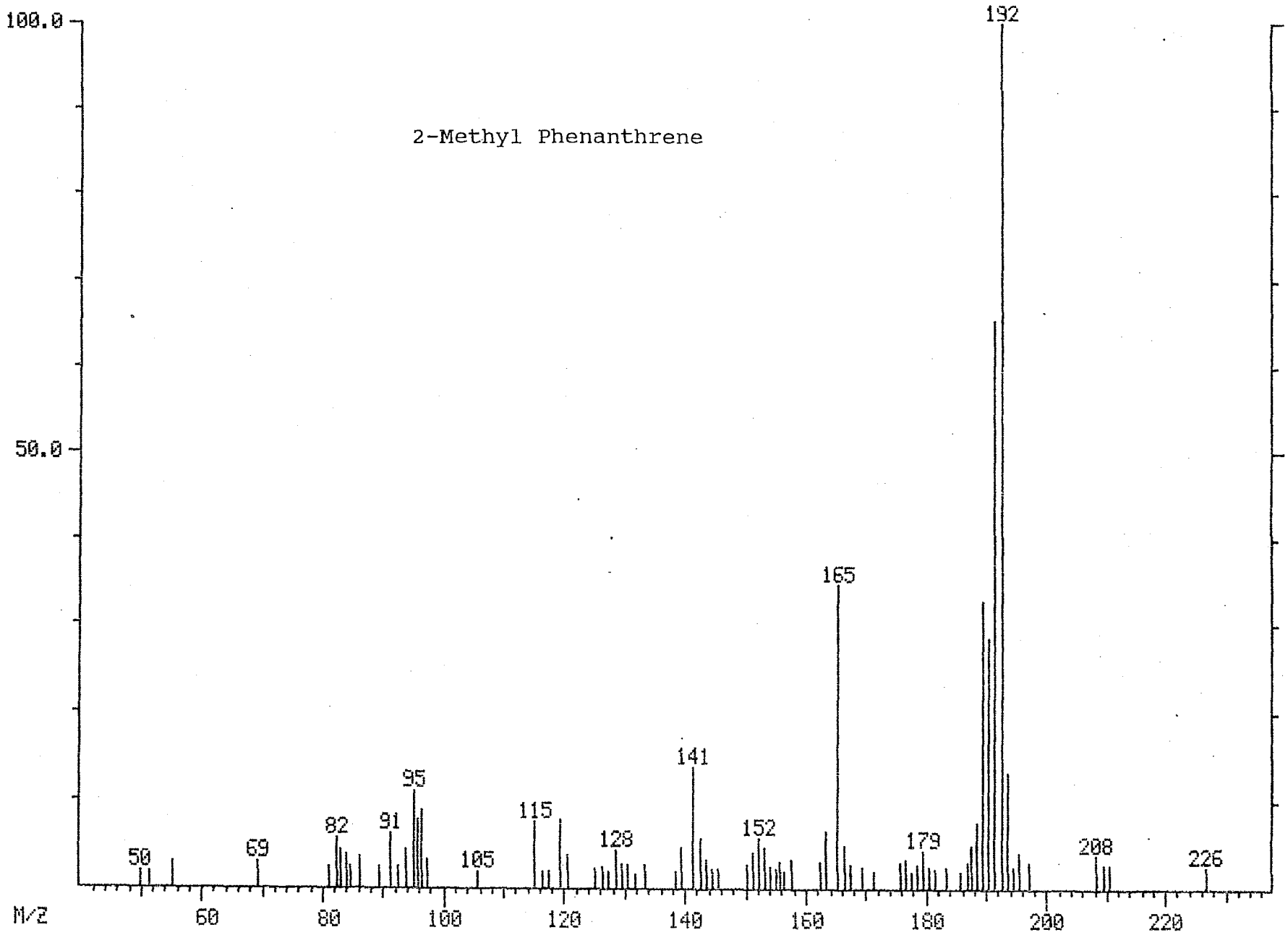
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M/Z
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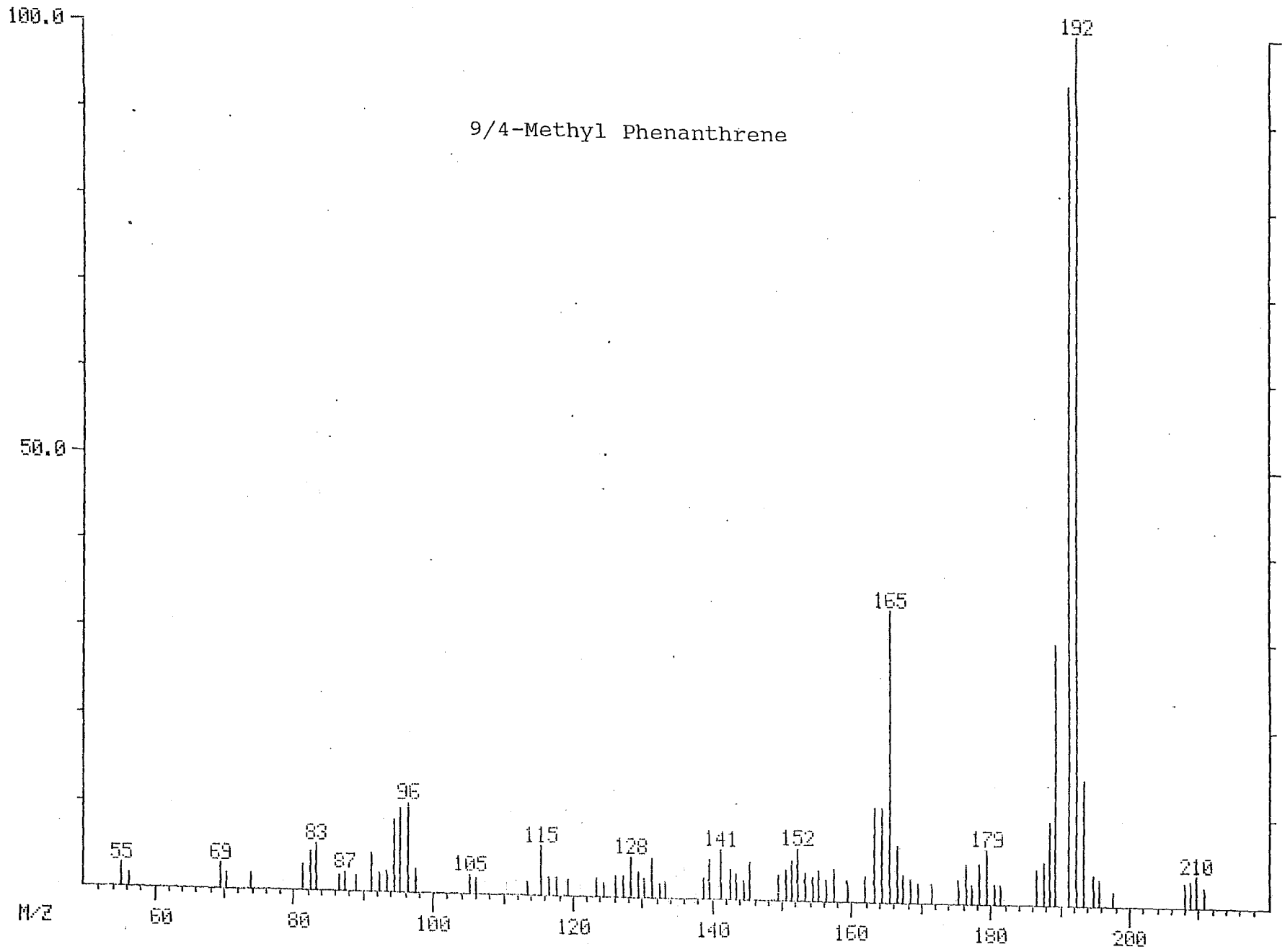
9/4-Methyl Phenanthrene
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192
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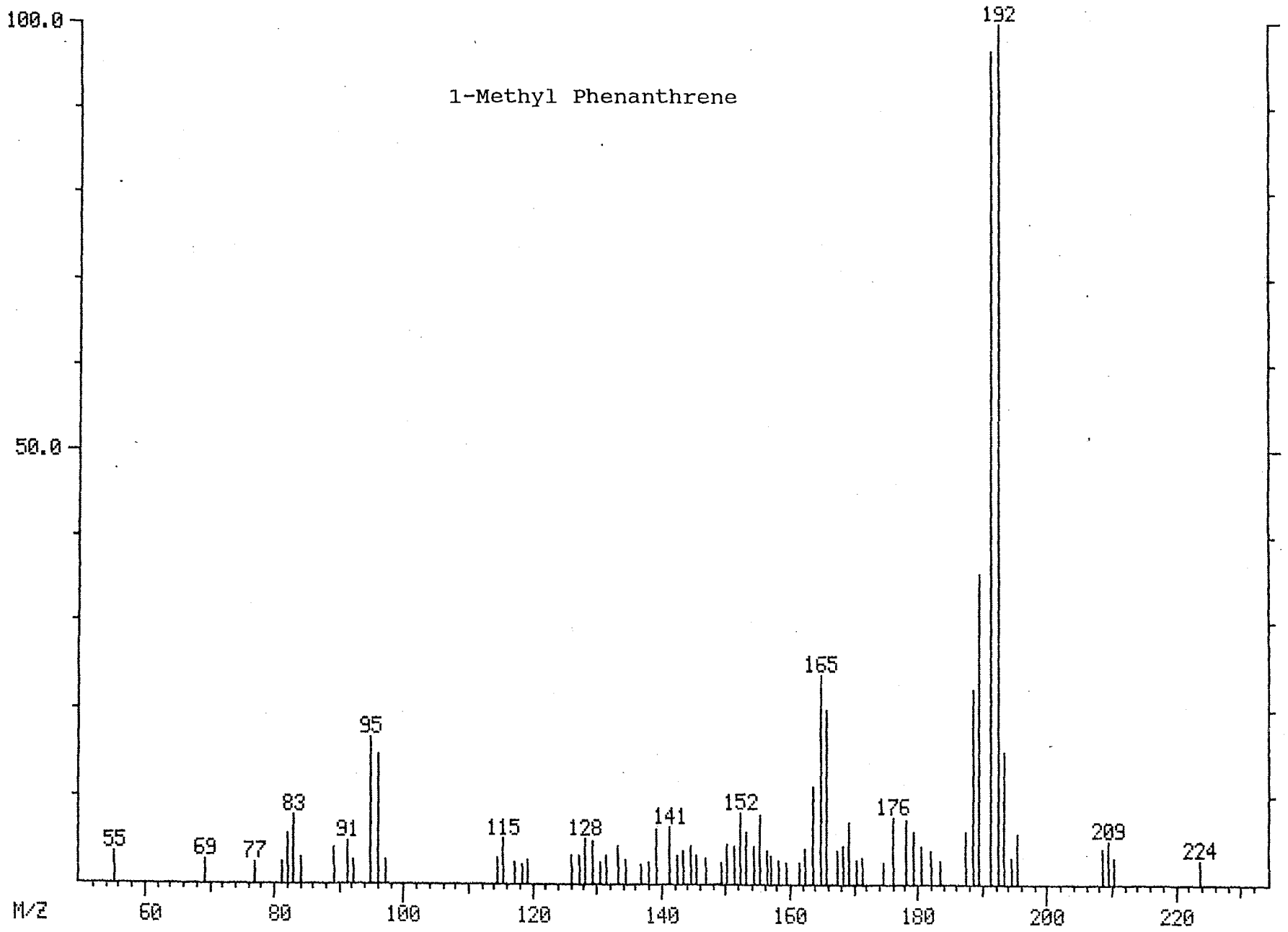
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100.0
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M/Z
60
80
100
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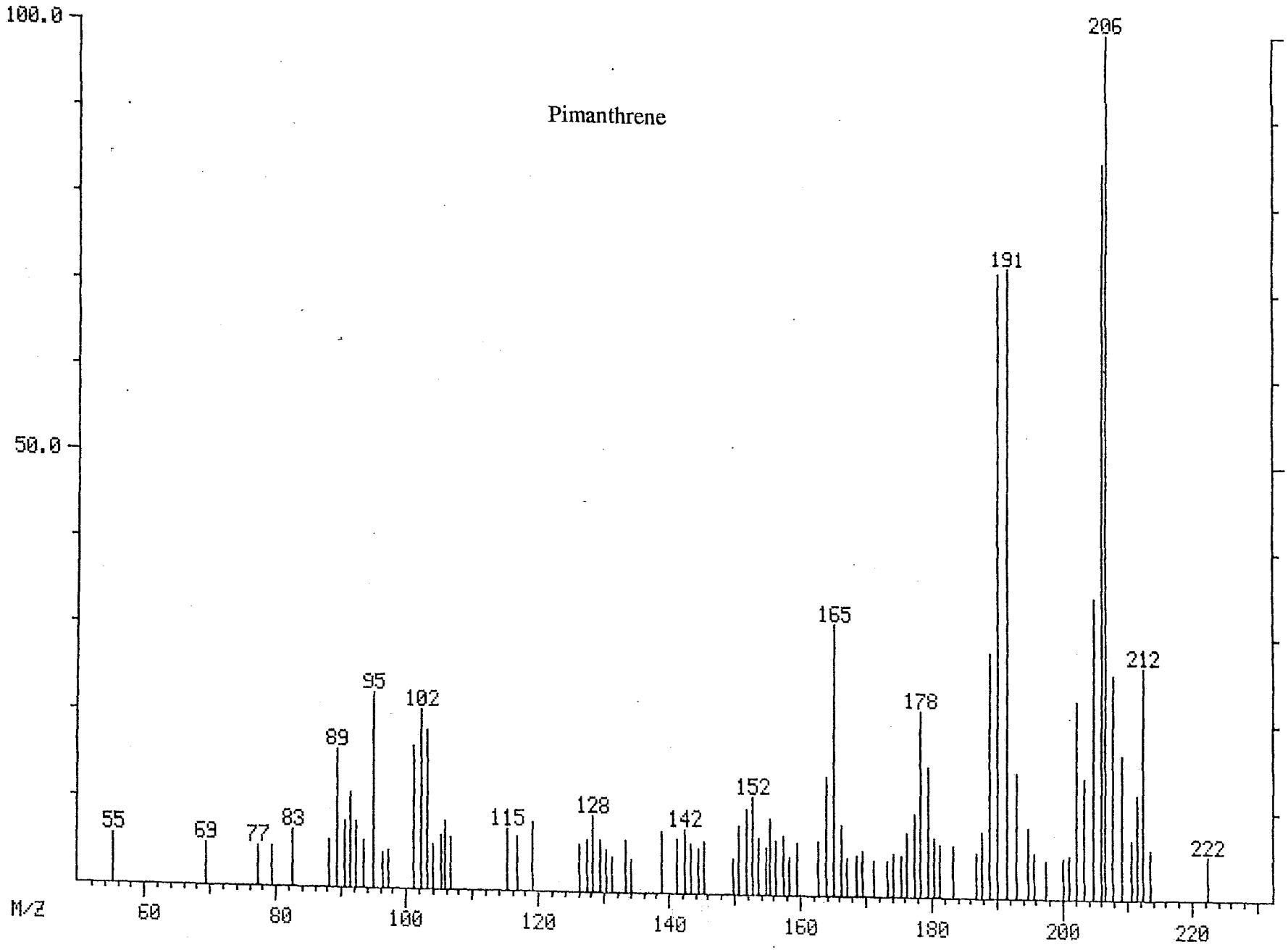
Pimanthrene
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M/Z
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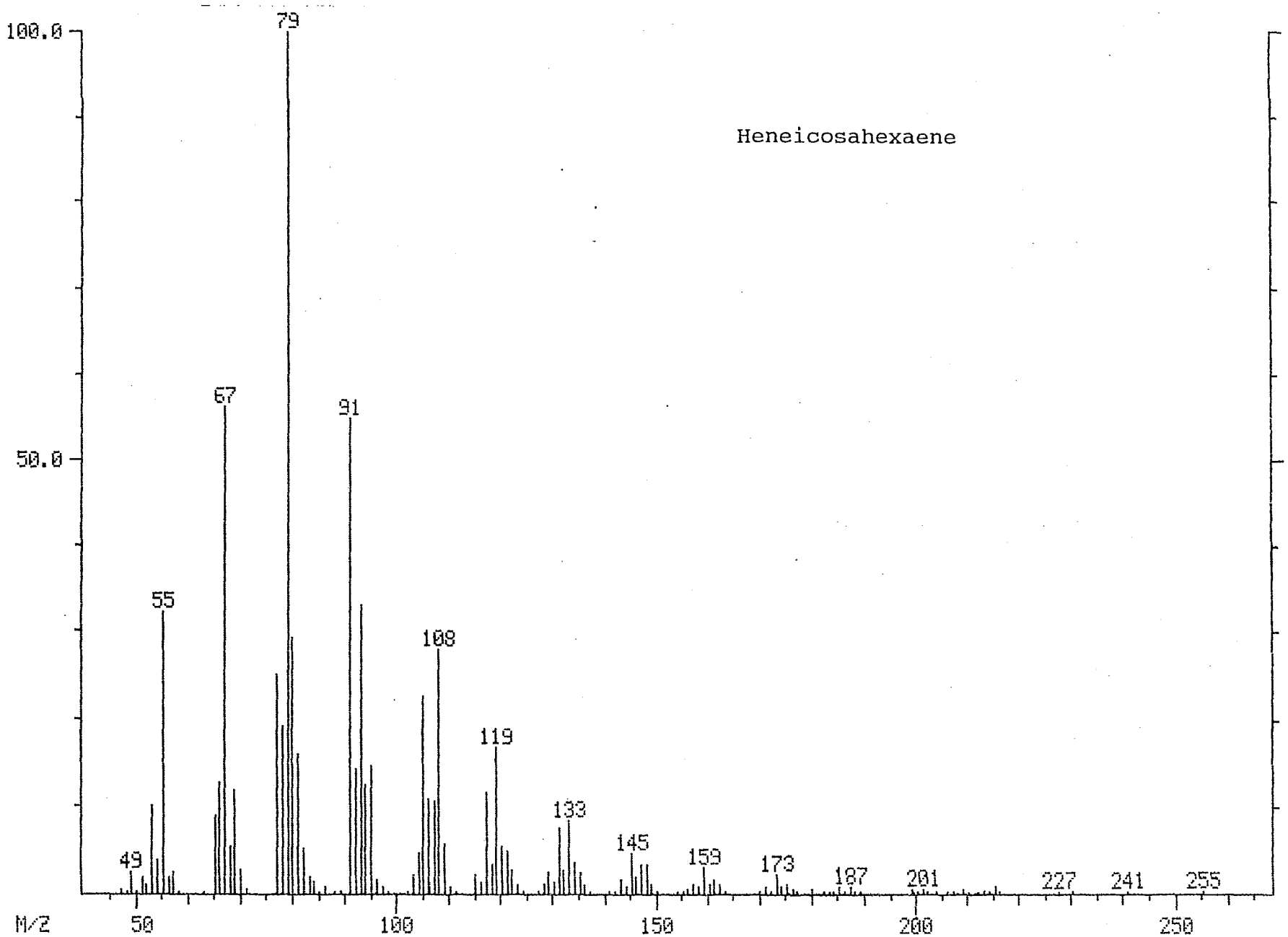
Heneicosahexaene
100.0
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M/Z
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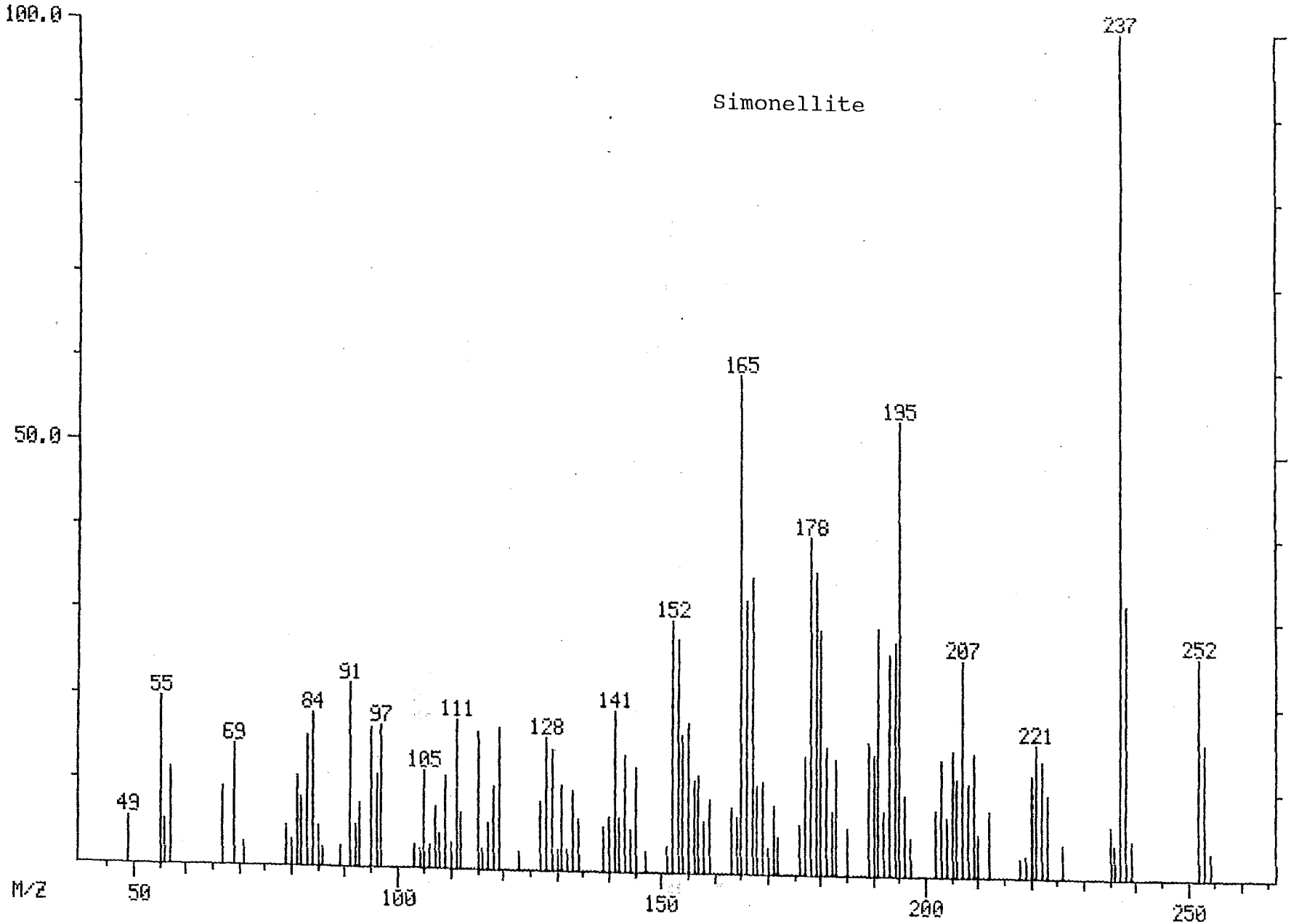
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50.0
M/Z
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100
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105
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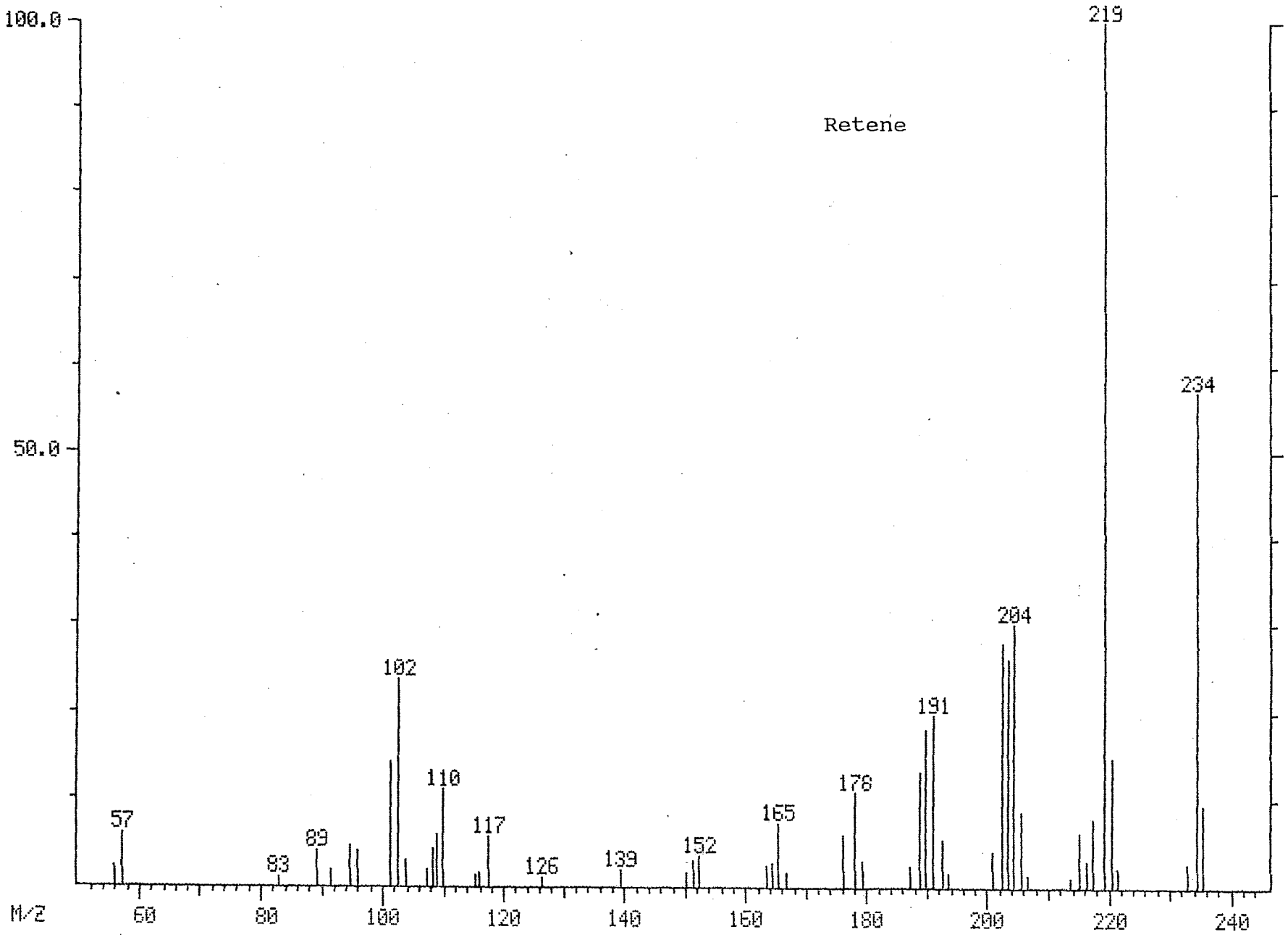
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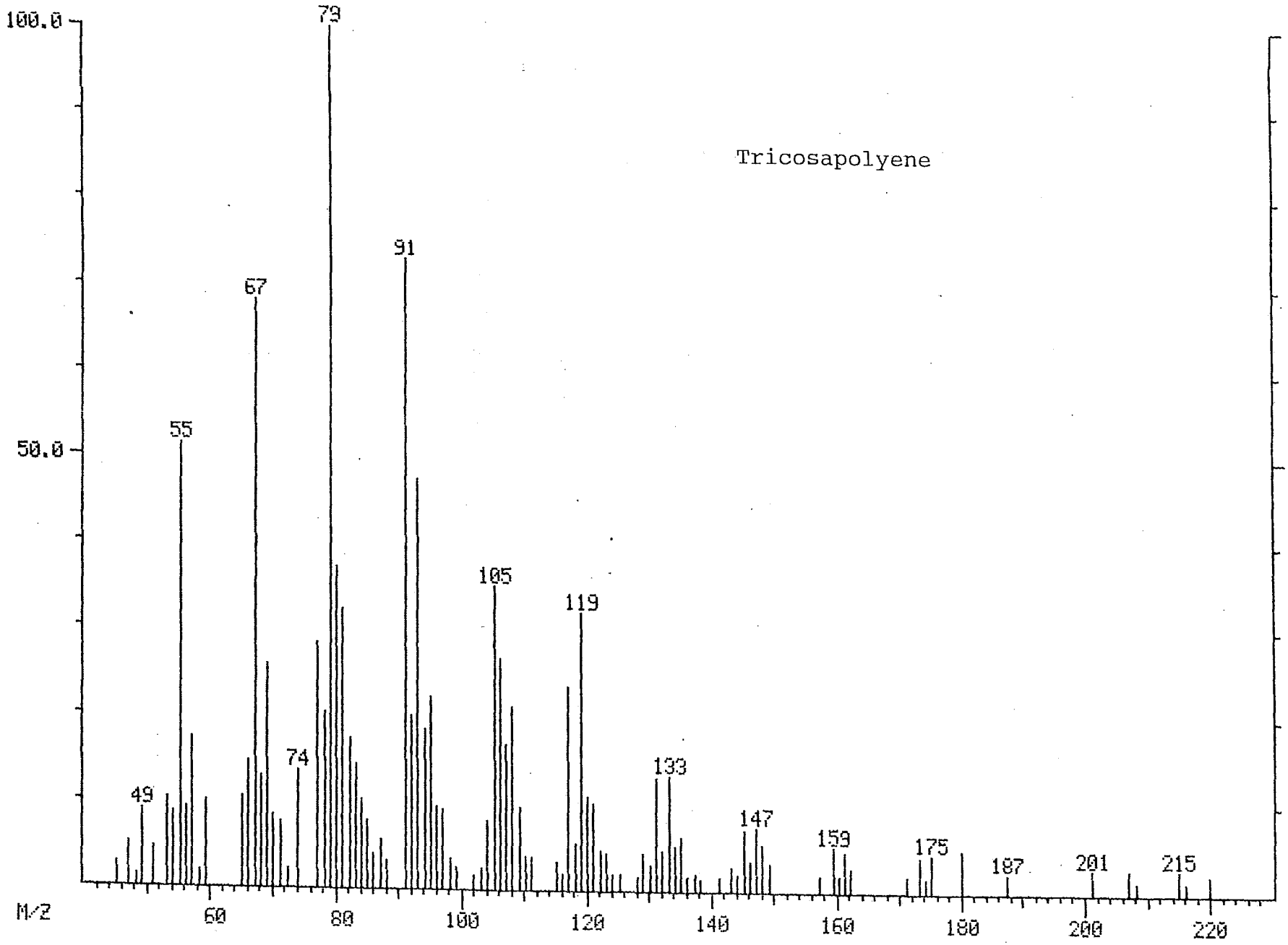
Tricosapolyene
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M/Z
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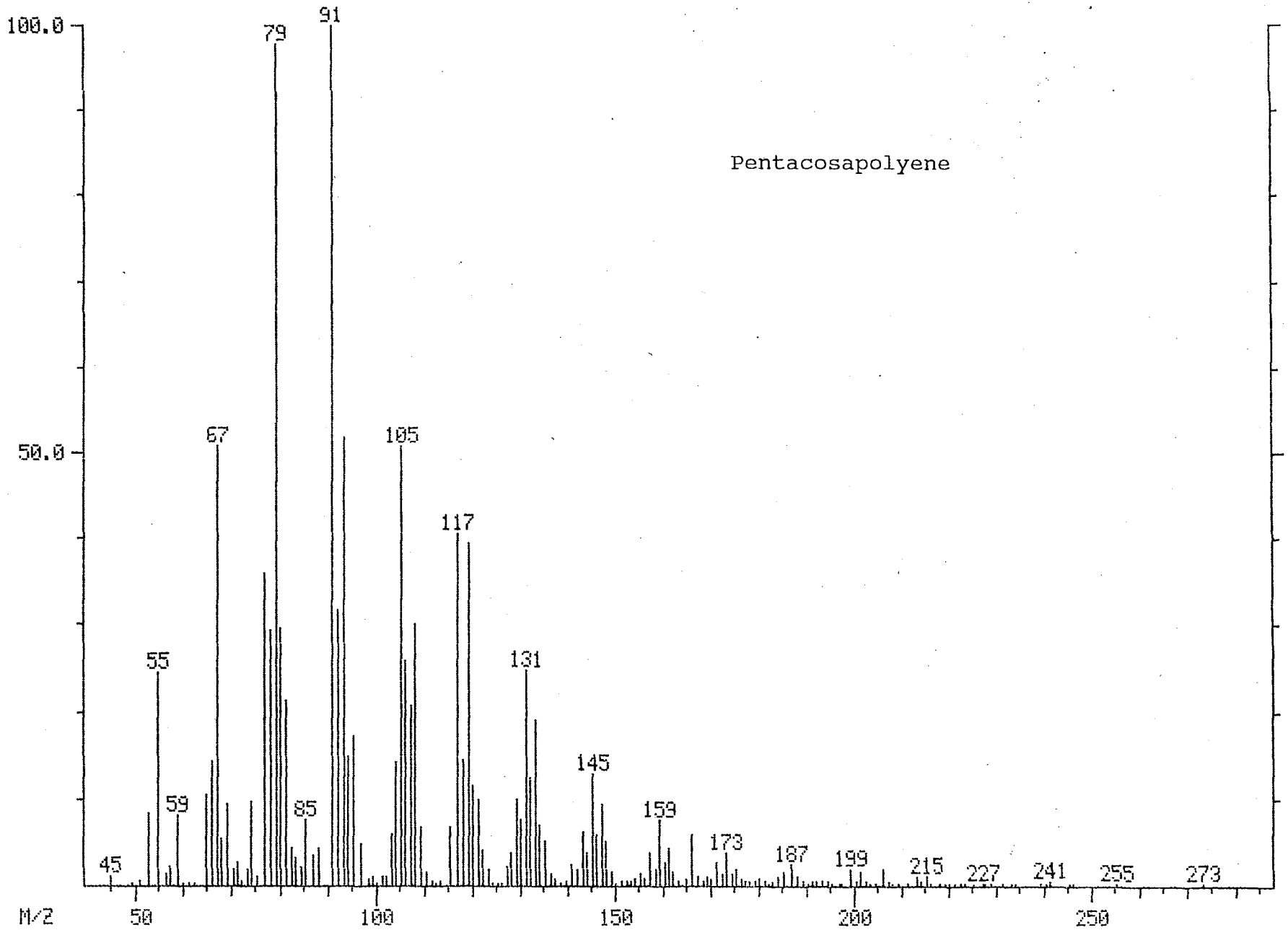
Pentacosapolyene
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M/Z
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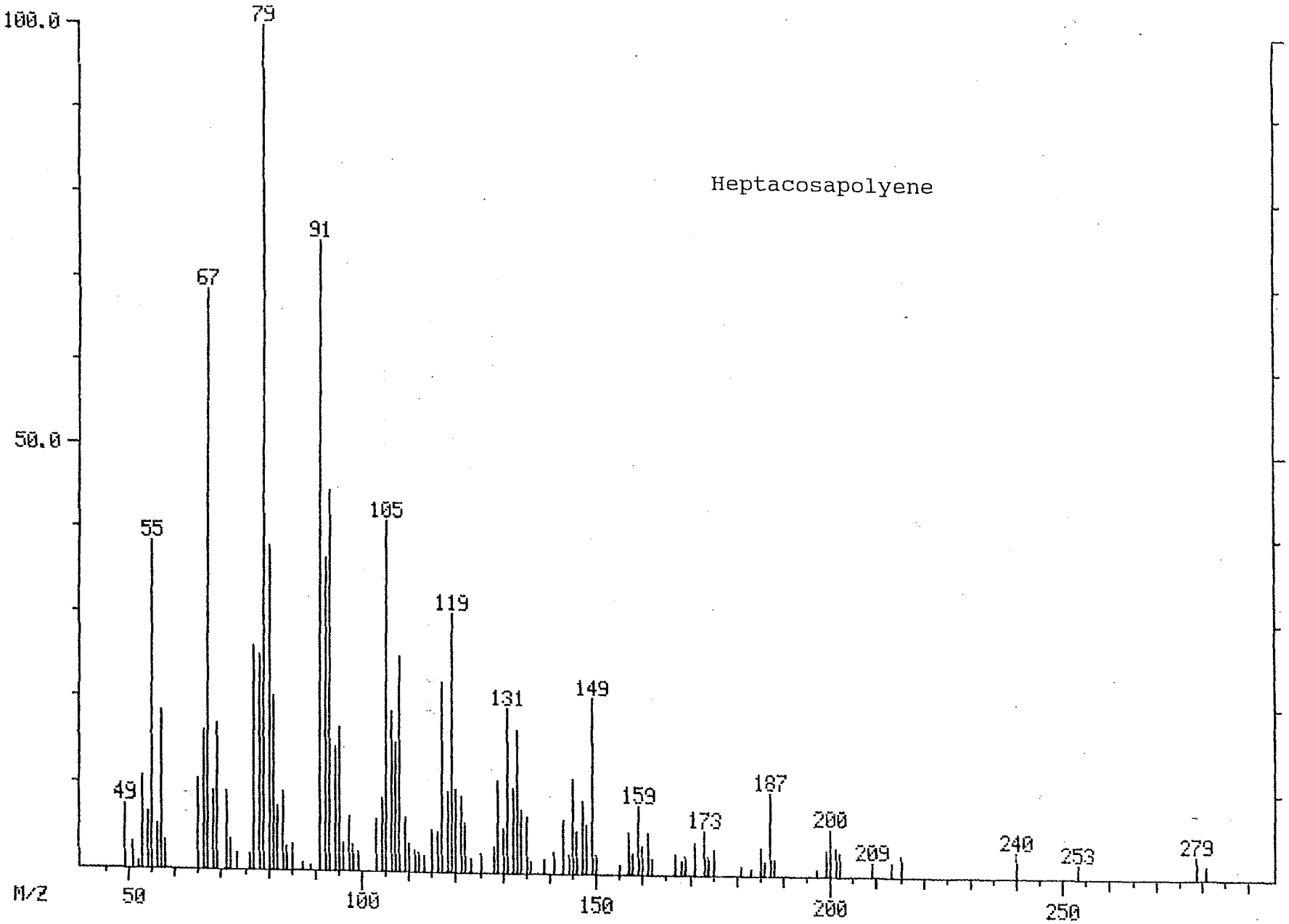
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100.0
50.0
M/Z
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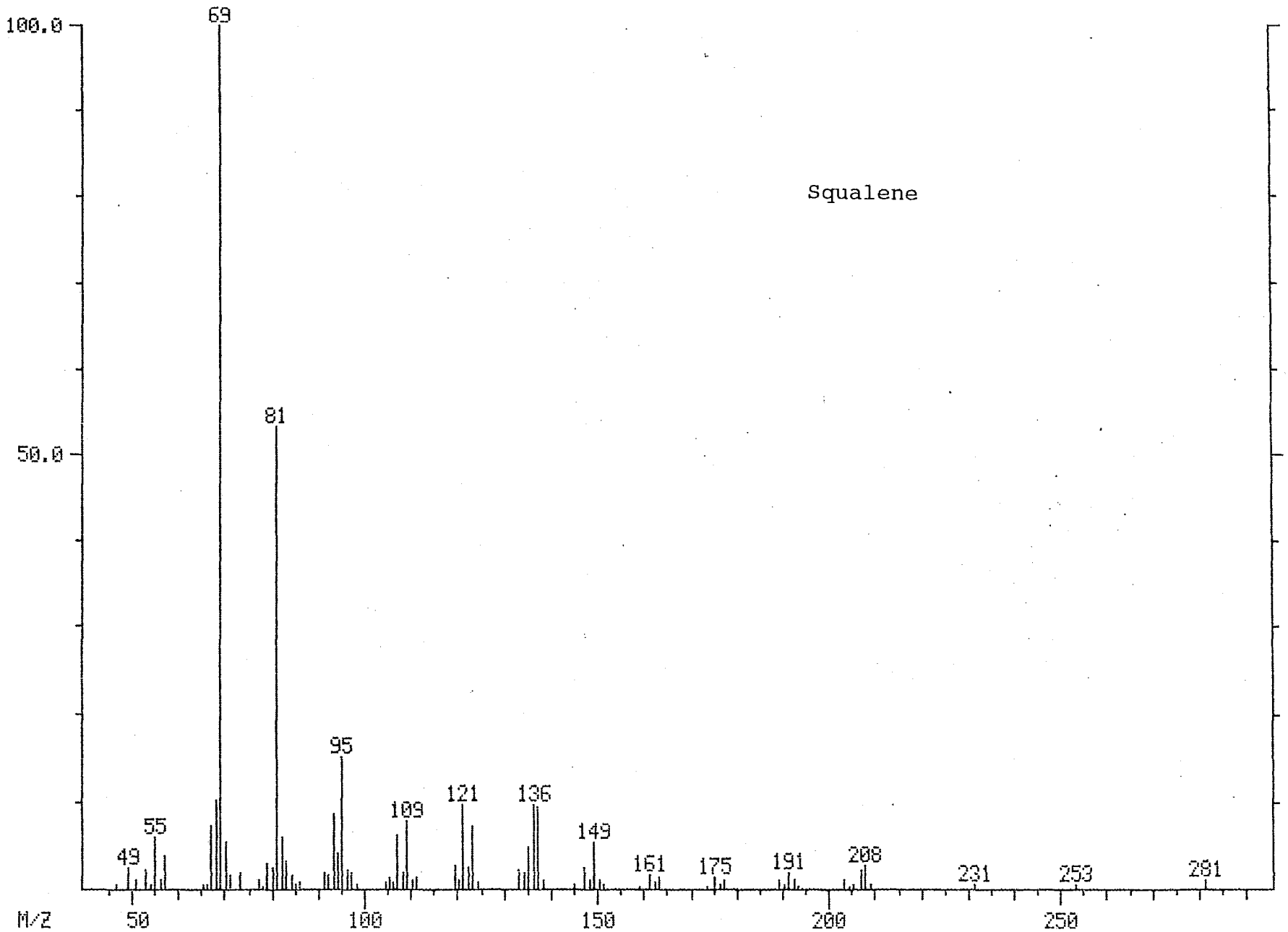
Squalene
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55
M/Z
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100
150
200
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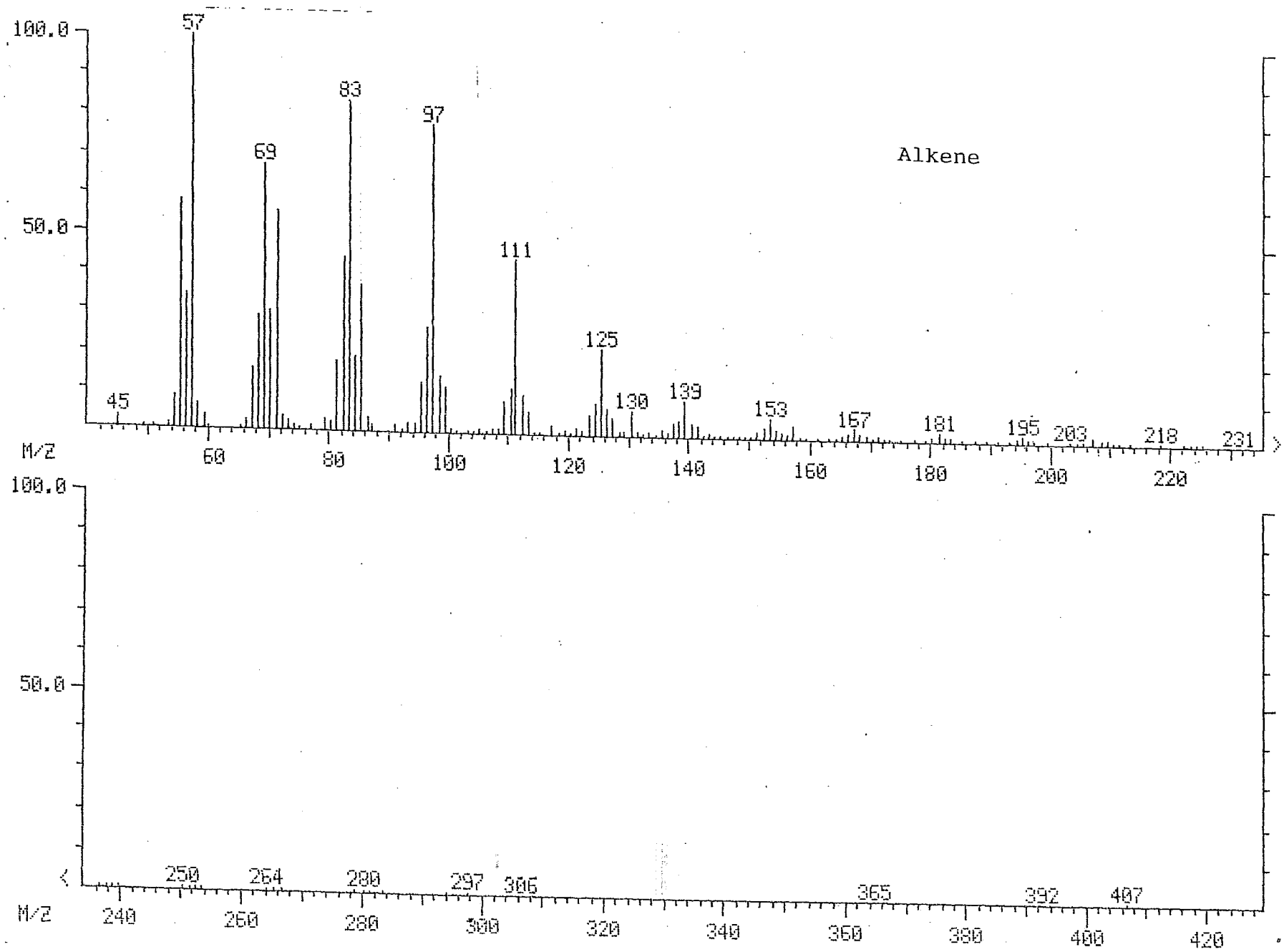
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111
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195
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218
231
45
M/Z
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100
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160
180
200
220
100.0
50.0
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M/Z
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400
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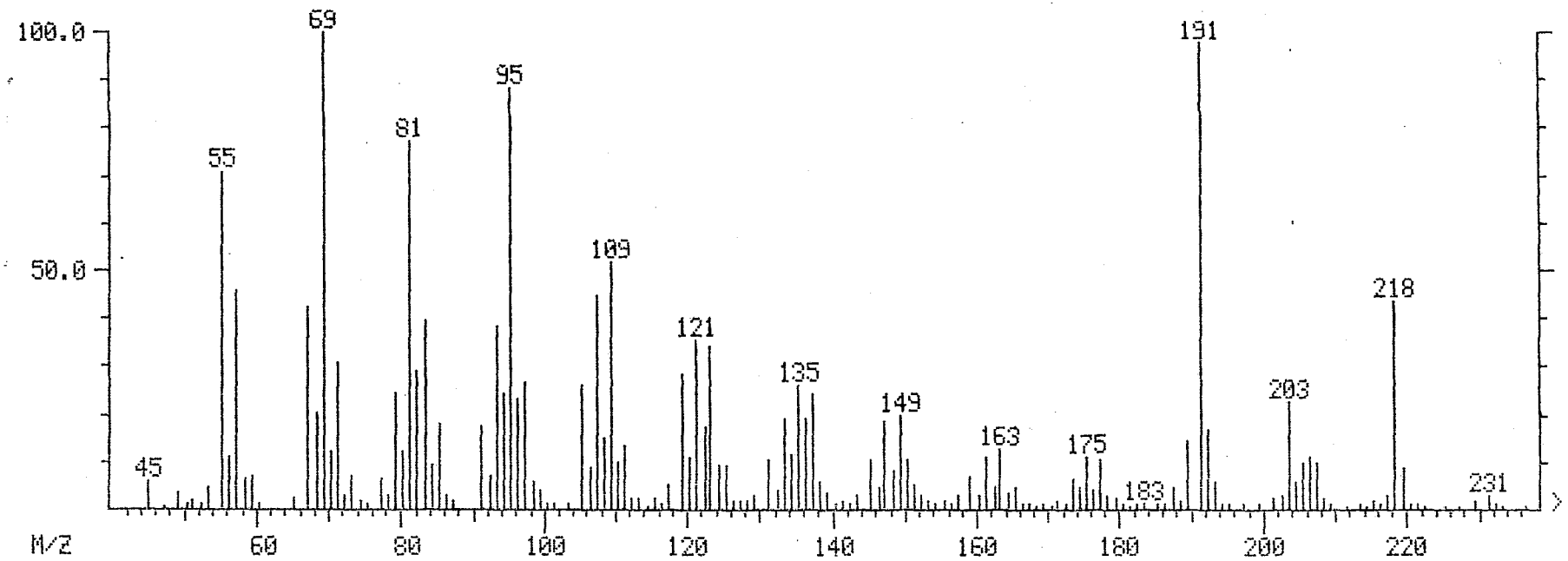
100.0
50.0
M/Z
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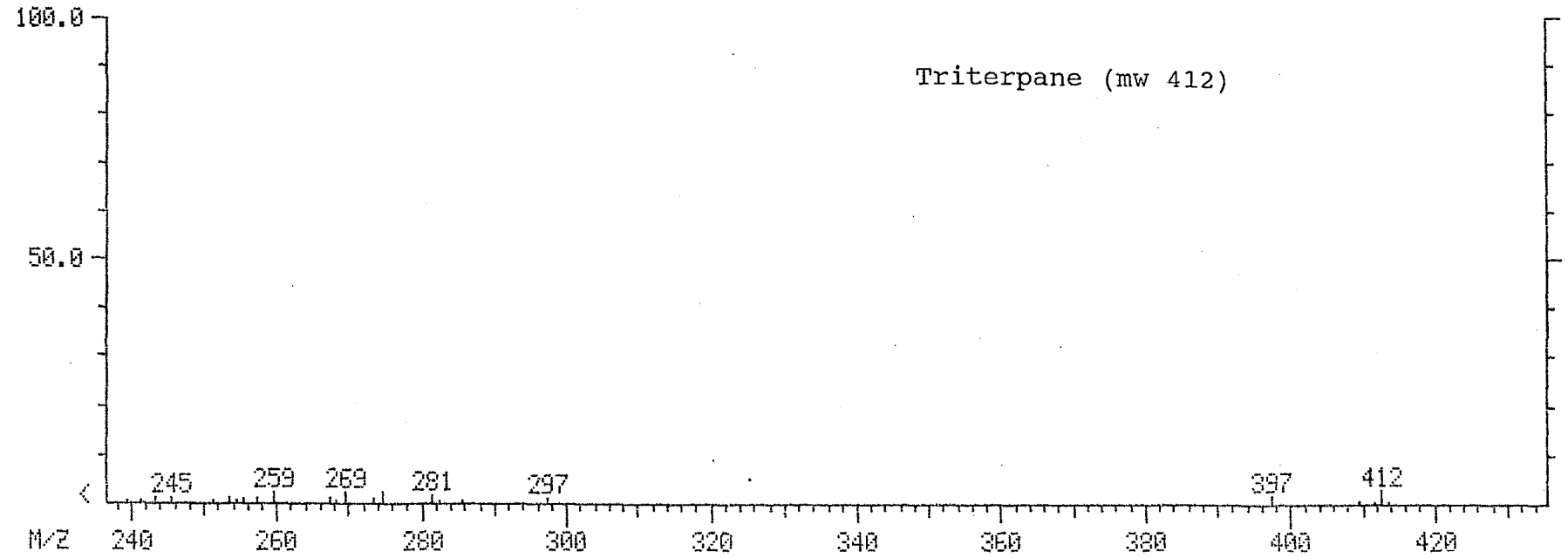
Triterpane (mw 412)
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M/Z
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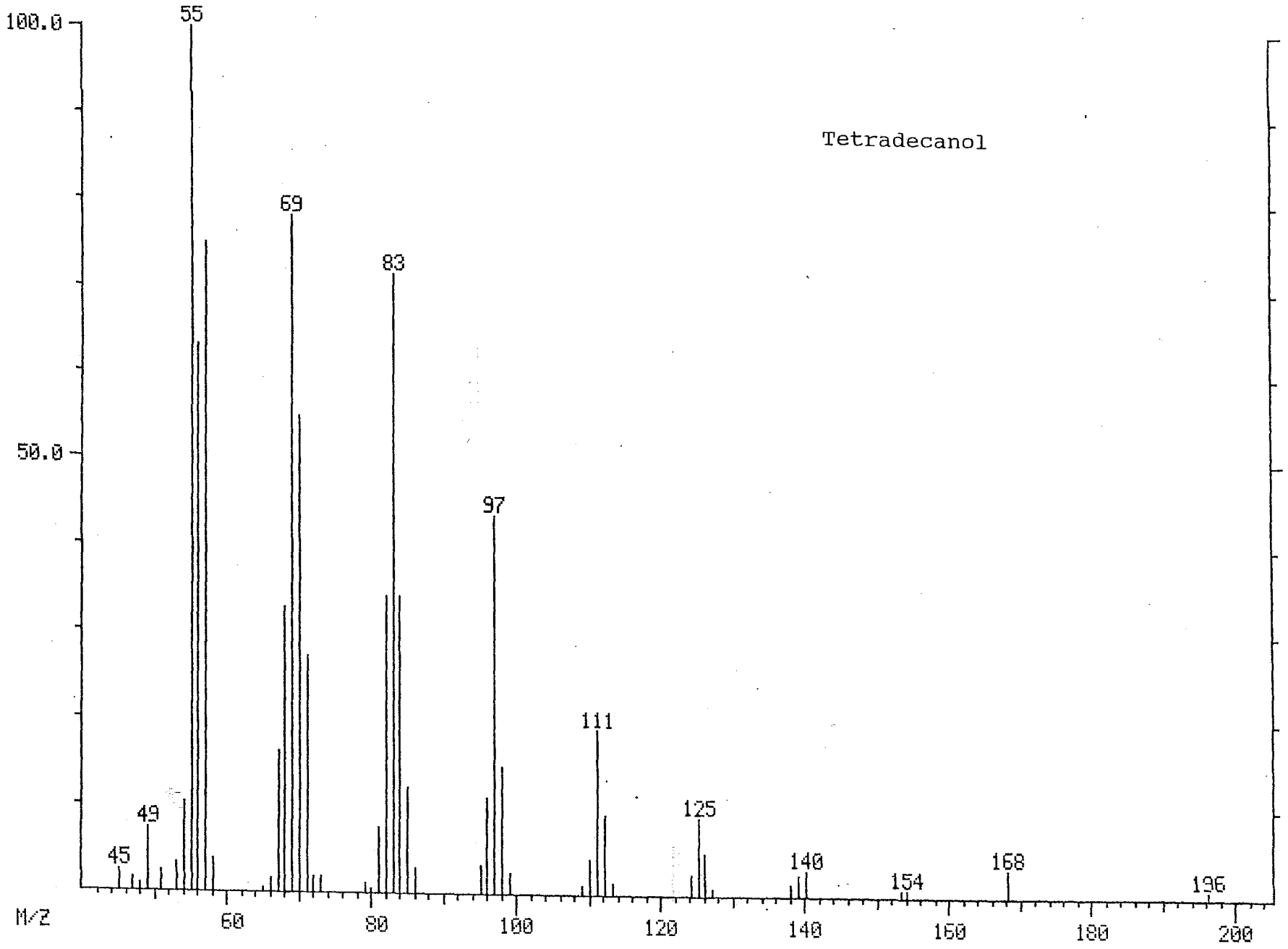
Tetradecanol
100.0
50.0
M/Z
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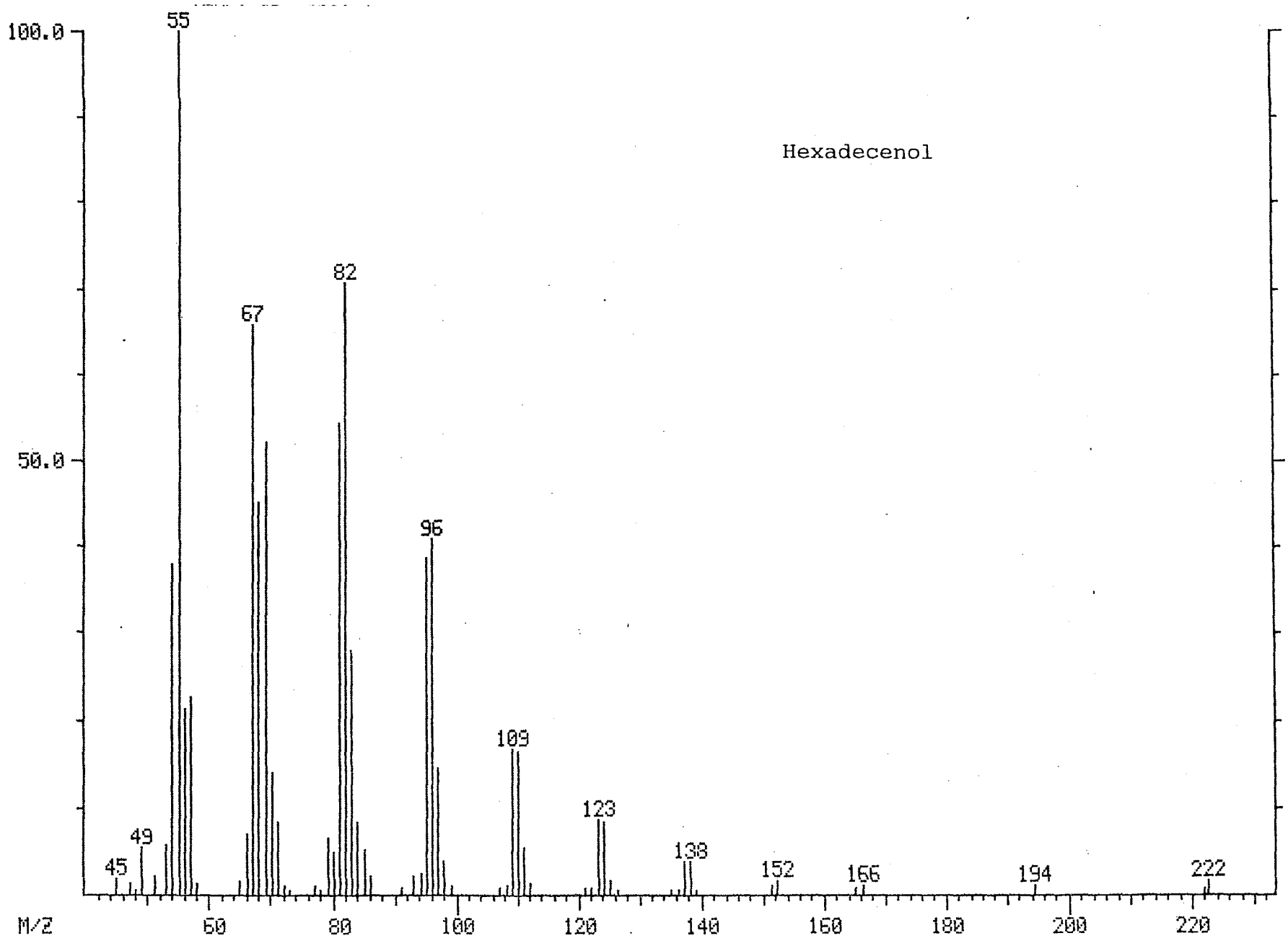
Hexadecenol
100.0
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M/Z
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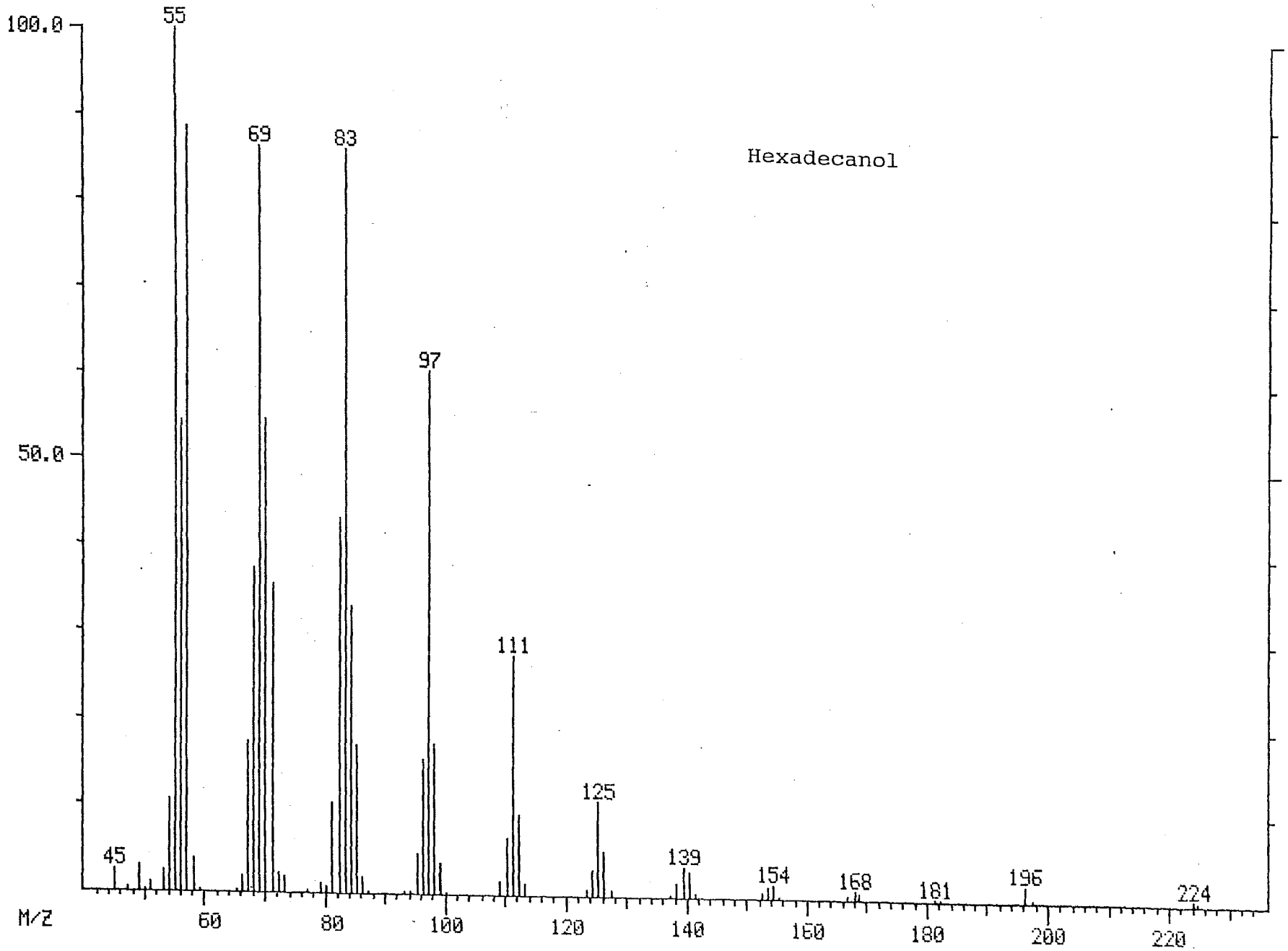
Hexadecanol
100.0
50.0
M/Z
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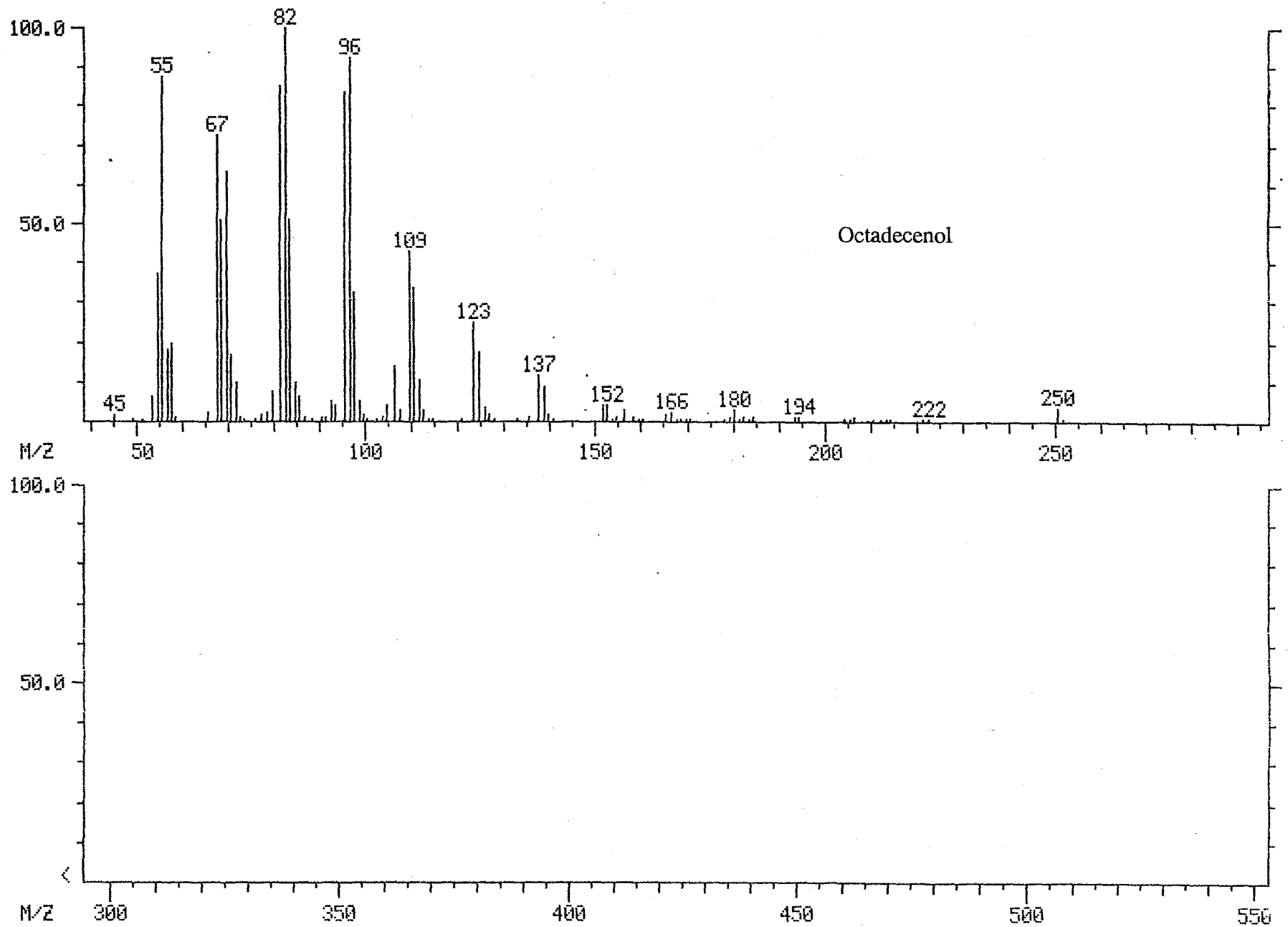
Octadecenol
100.0
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M/Z
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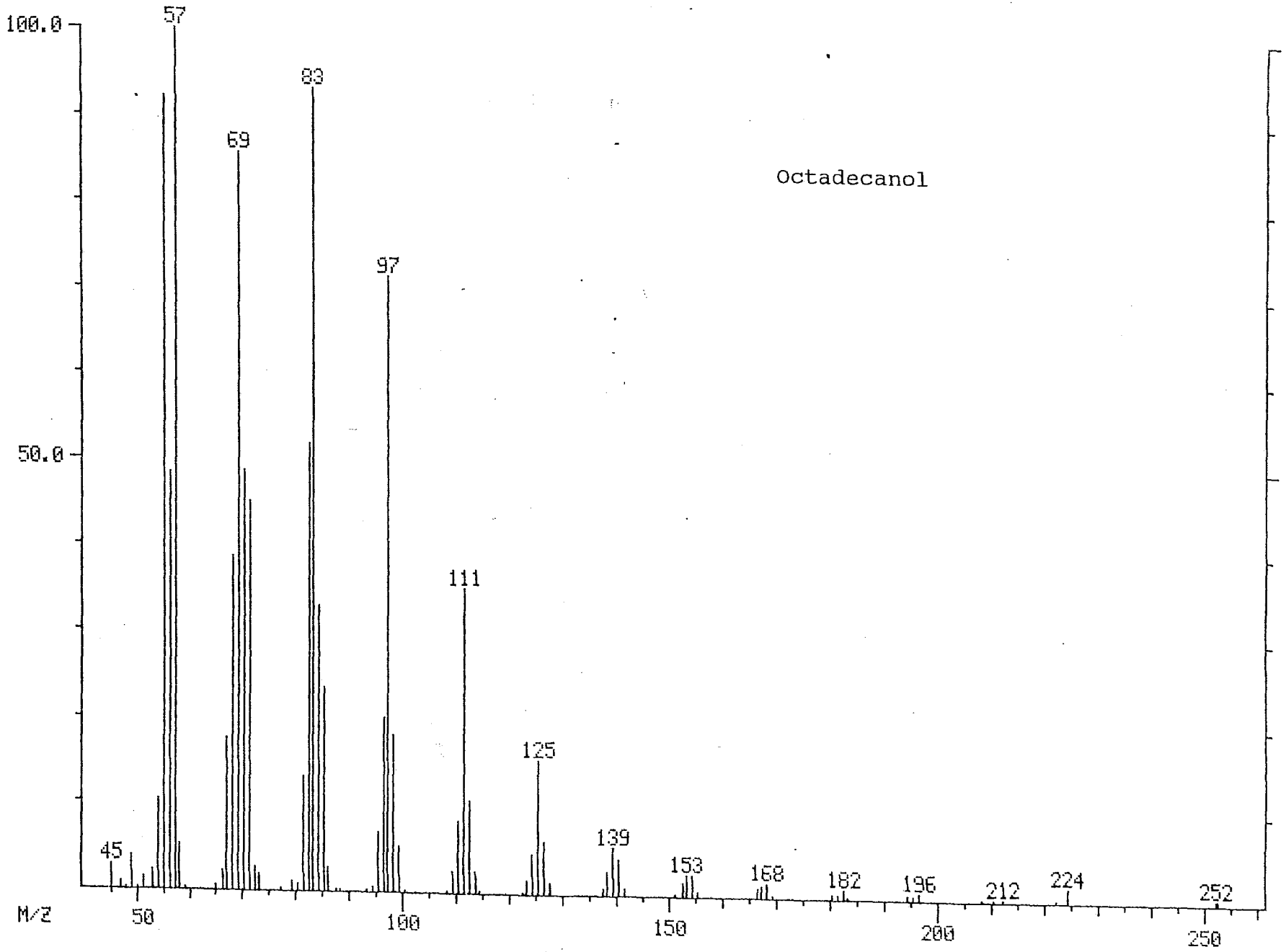
Octadecanol
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M/Z
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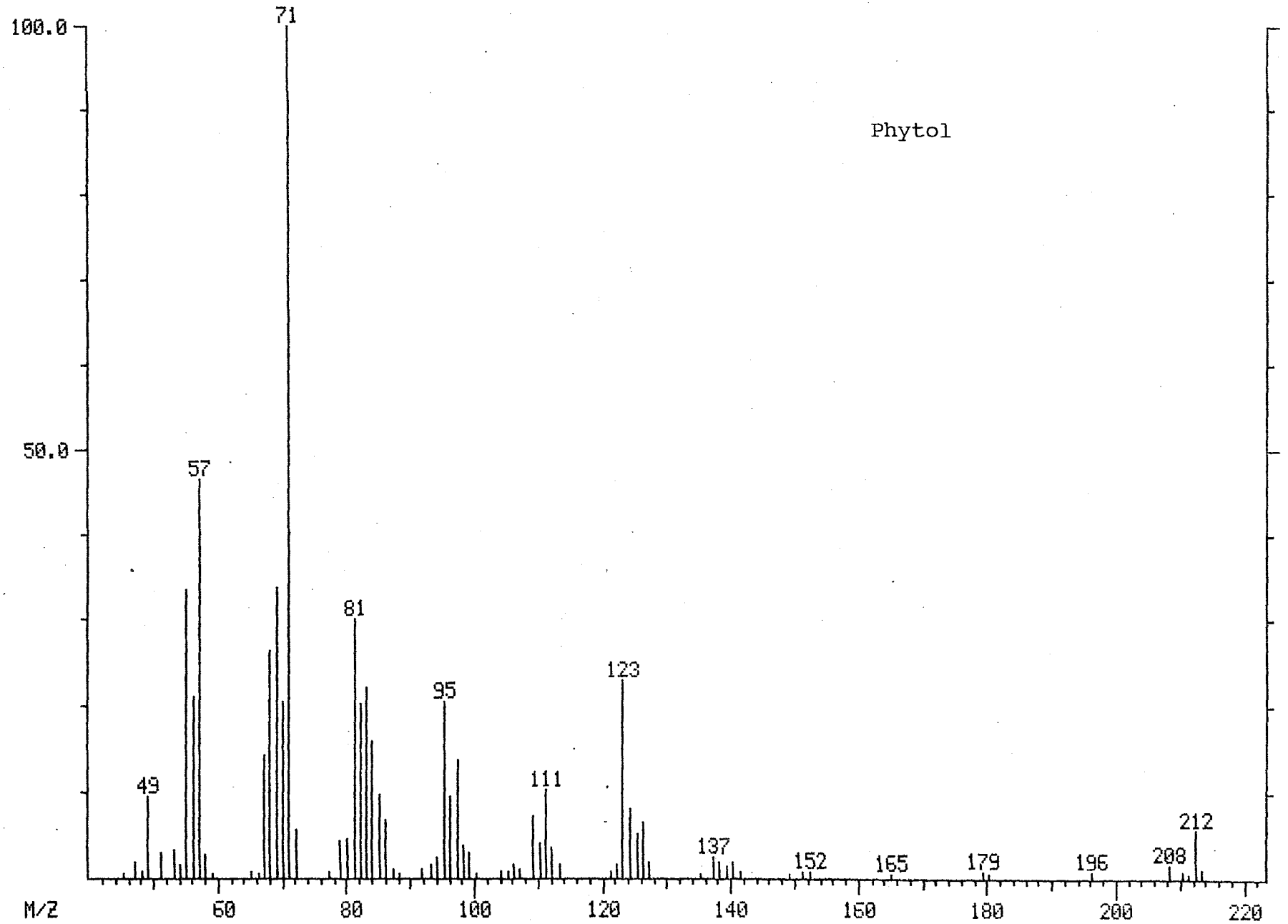
Phytol
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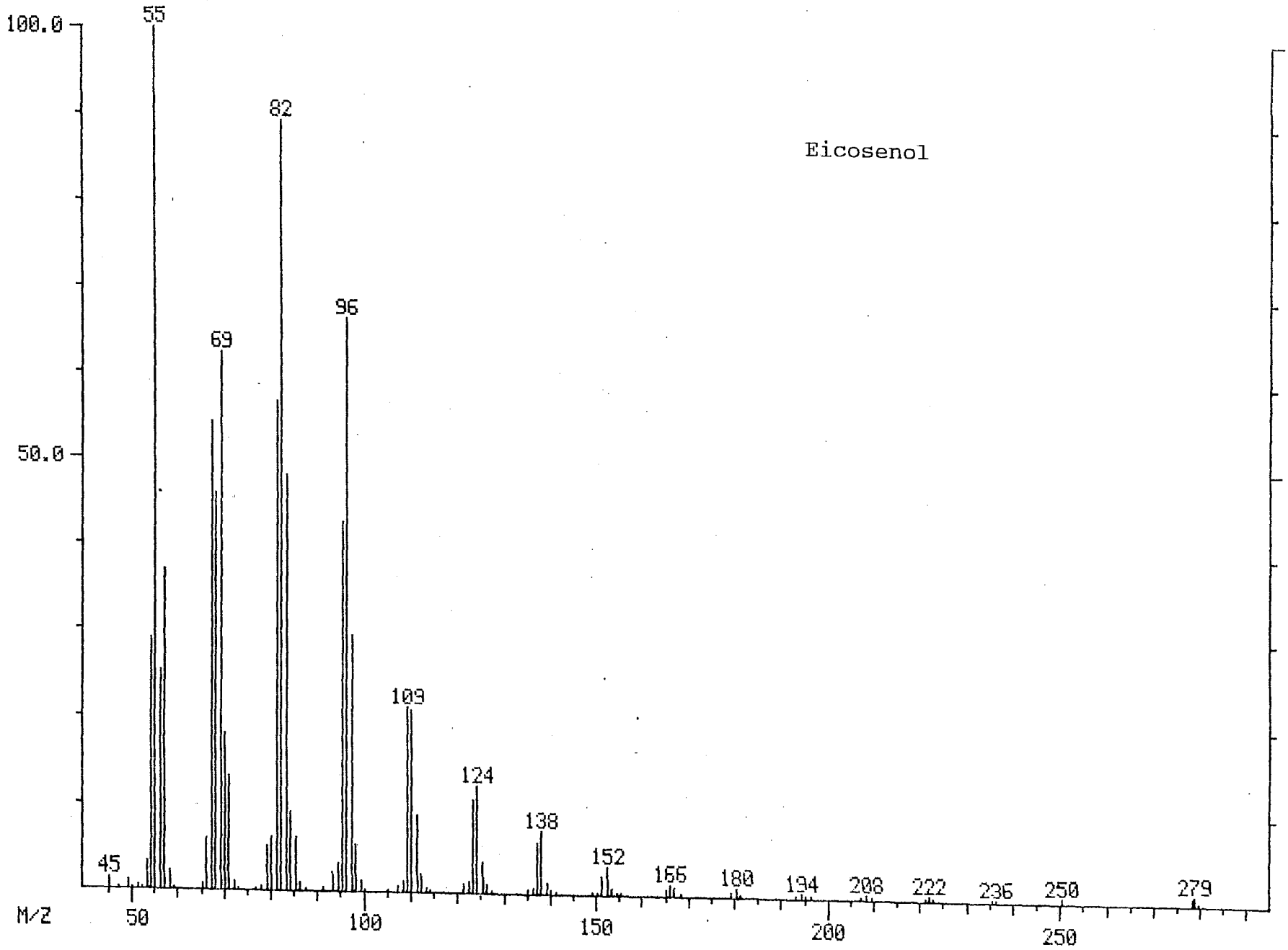
Eicosenol
100.0
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208
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M/Z
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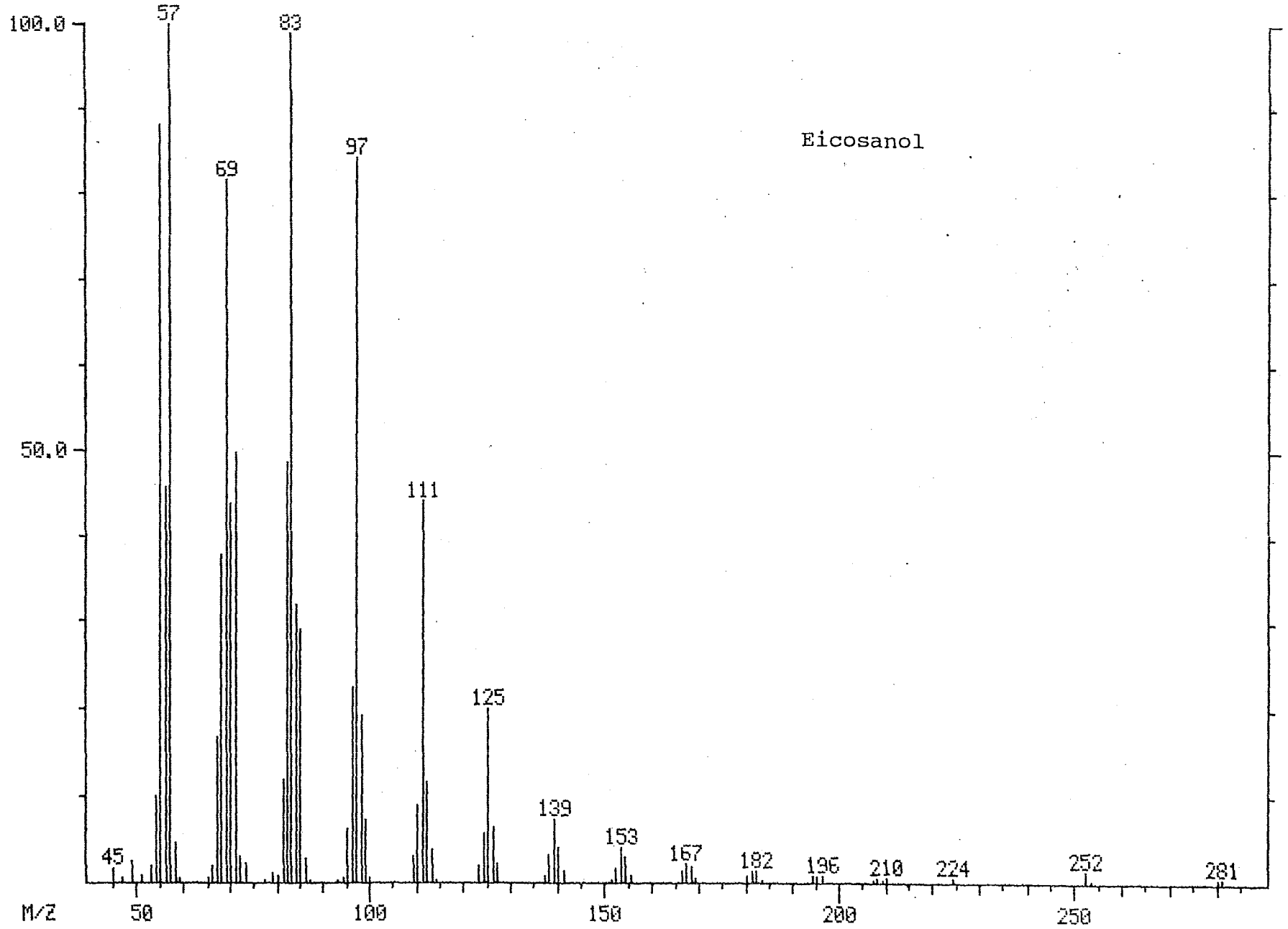
200
250


Eicosanol
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224
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281
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M/Z
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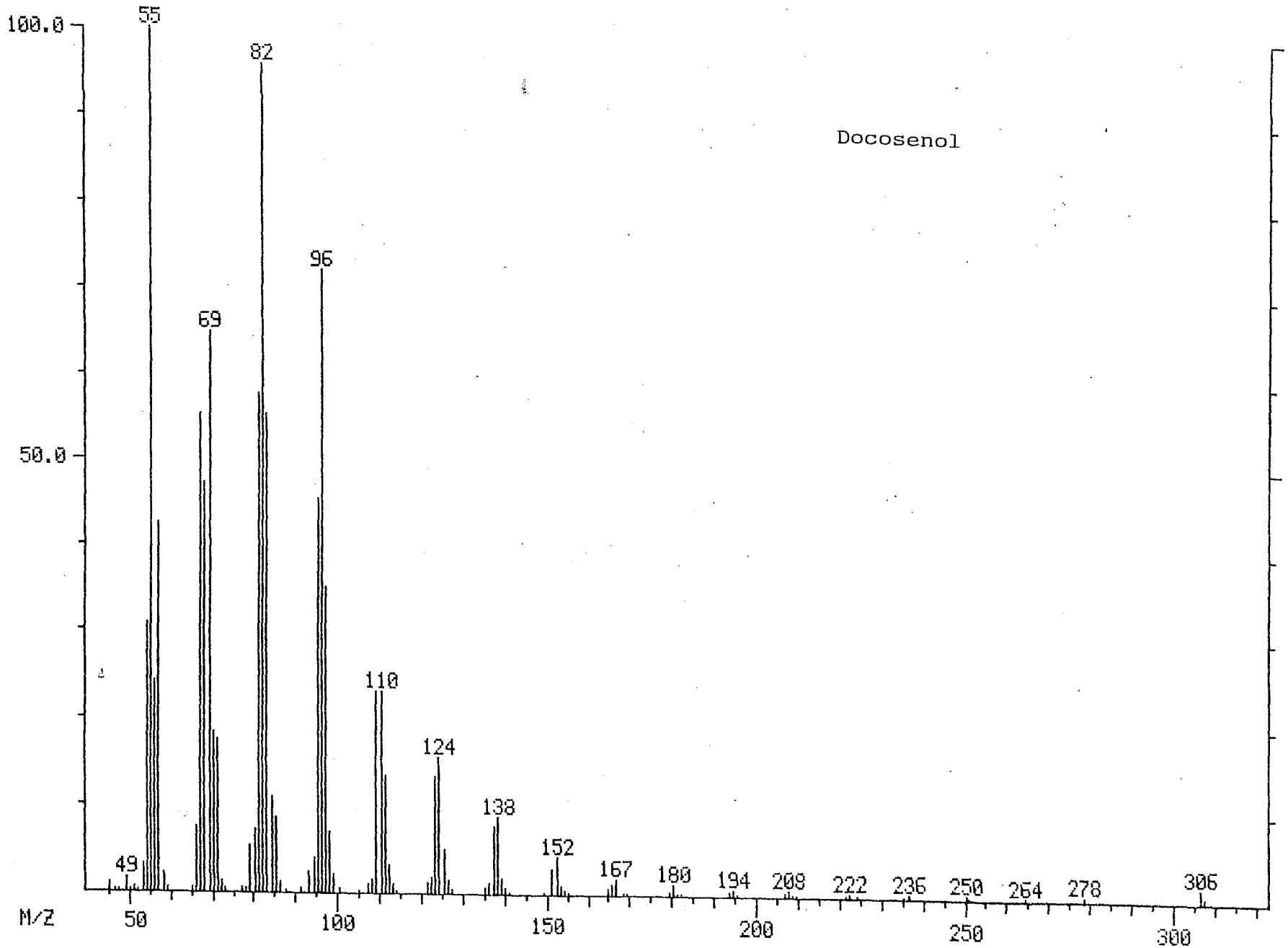
Docosenol
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M/Z
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306
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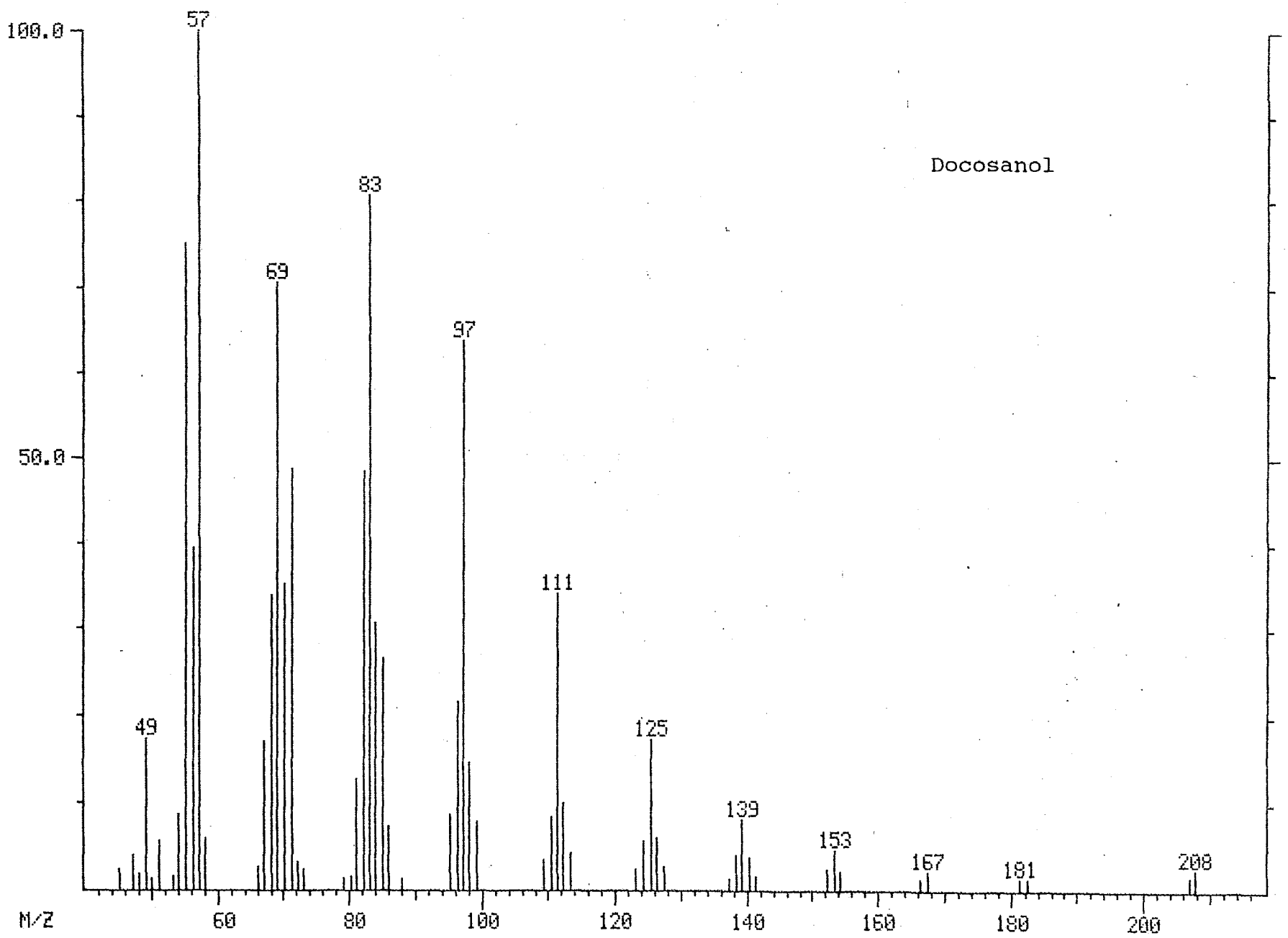
300


Docosanol
100.0
50.0
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M/Z
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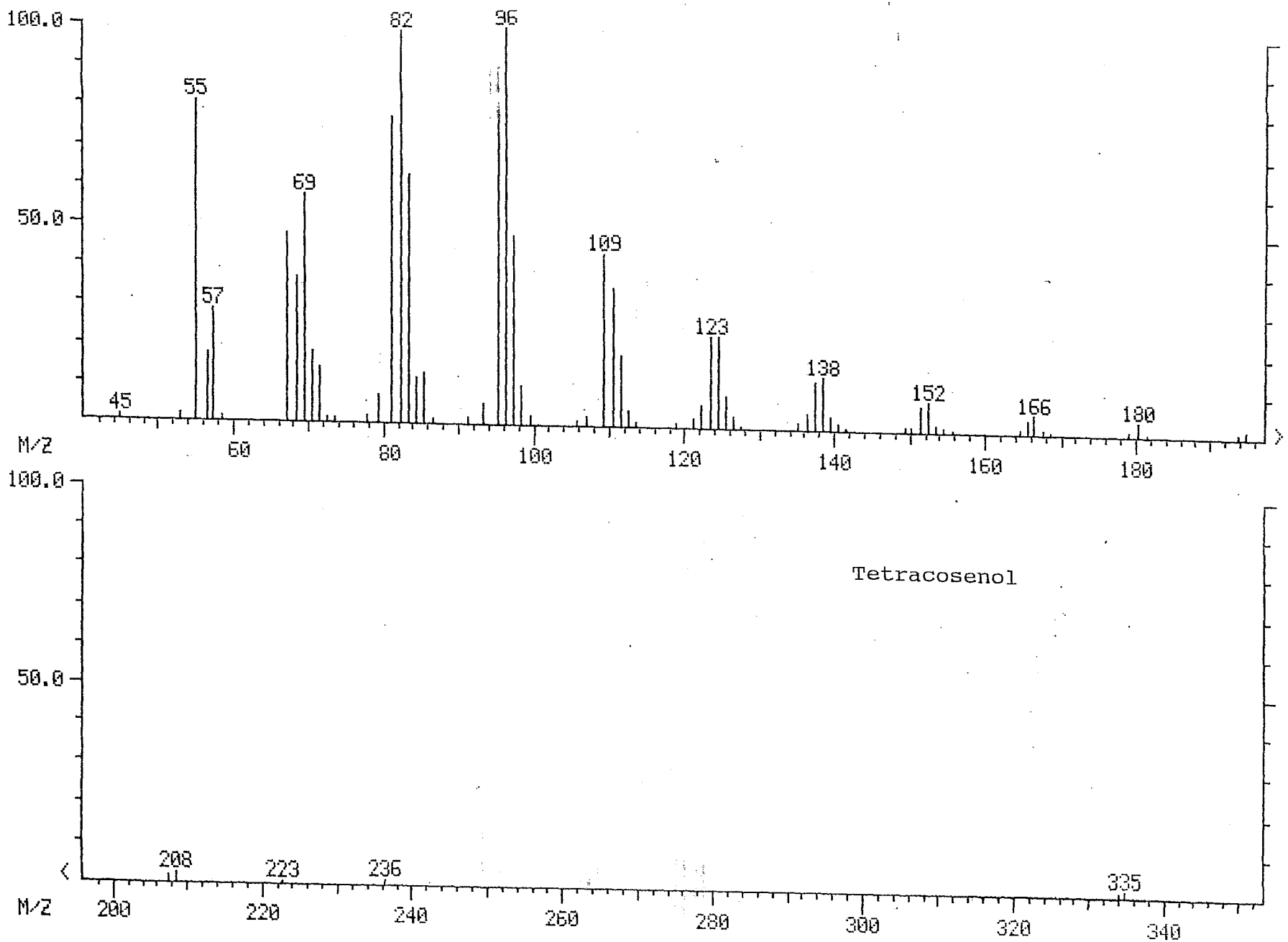
100.0
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M/Z
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180
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180
Tetracosenol
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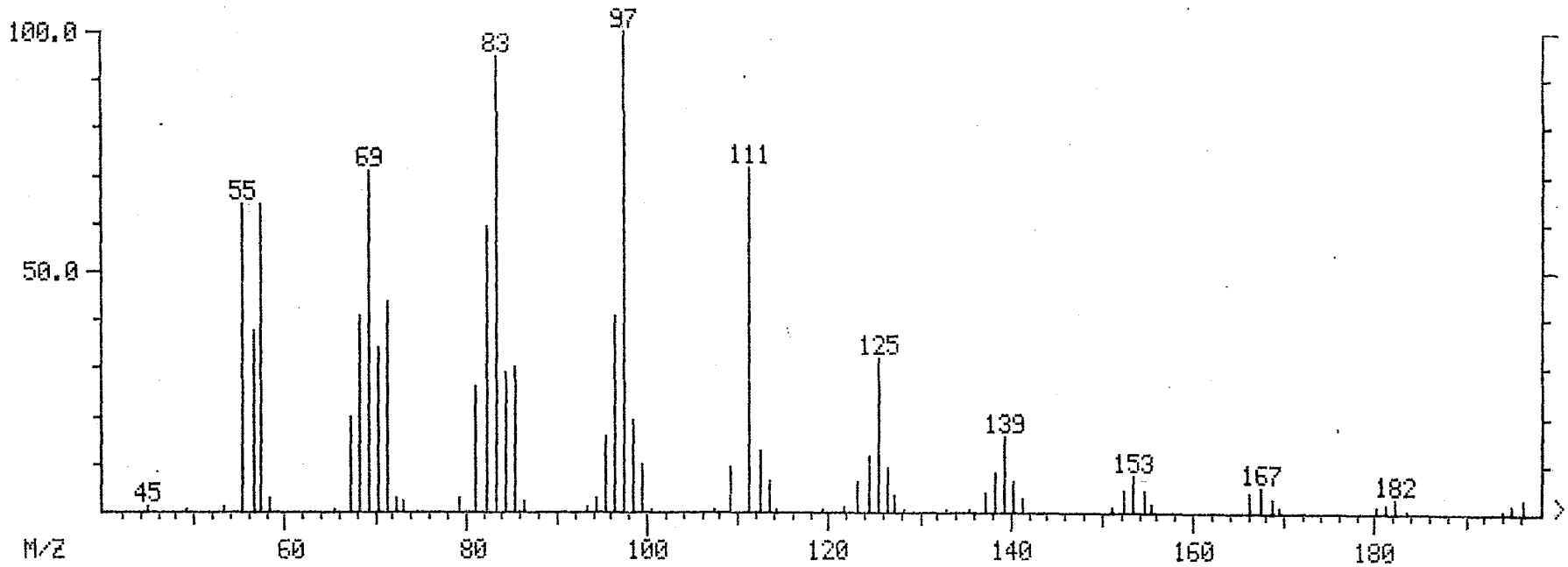
100.0
50.0
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55
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111
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153
167
182
M/Z
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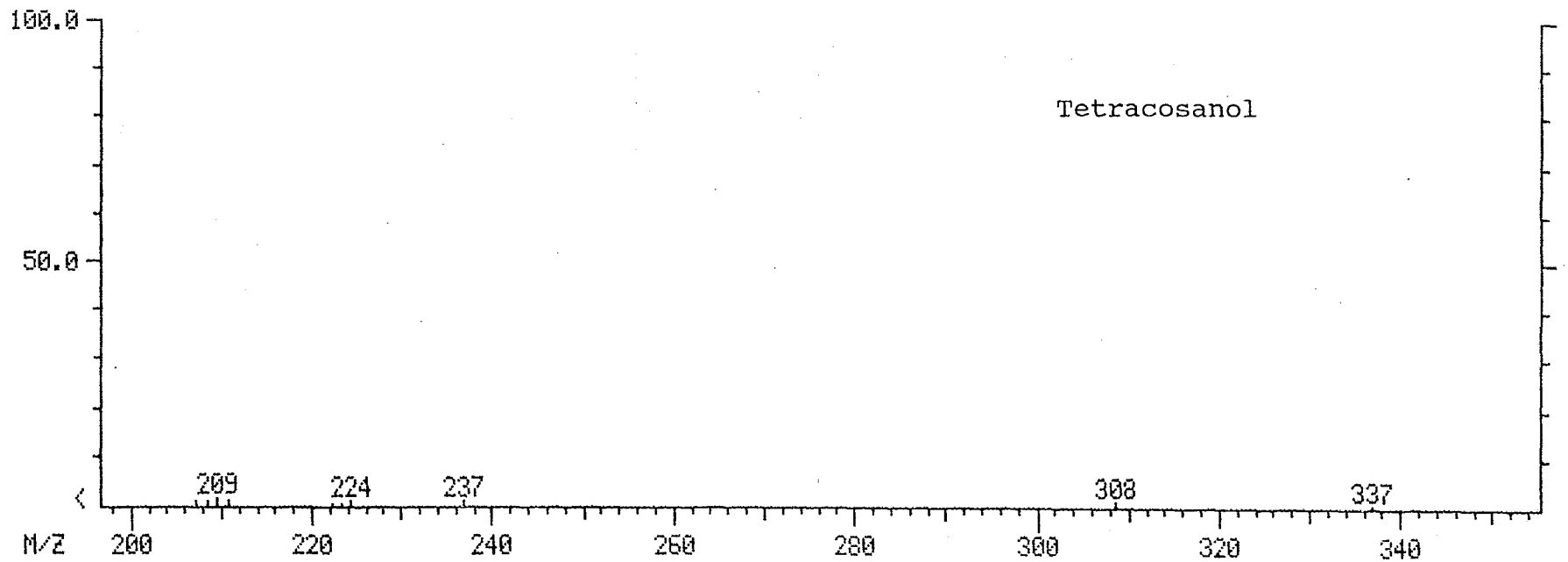
160
180


Tetracosanol
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308
337
M/Z
200
220
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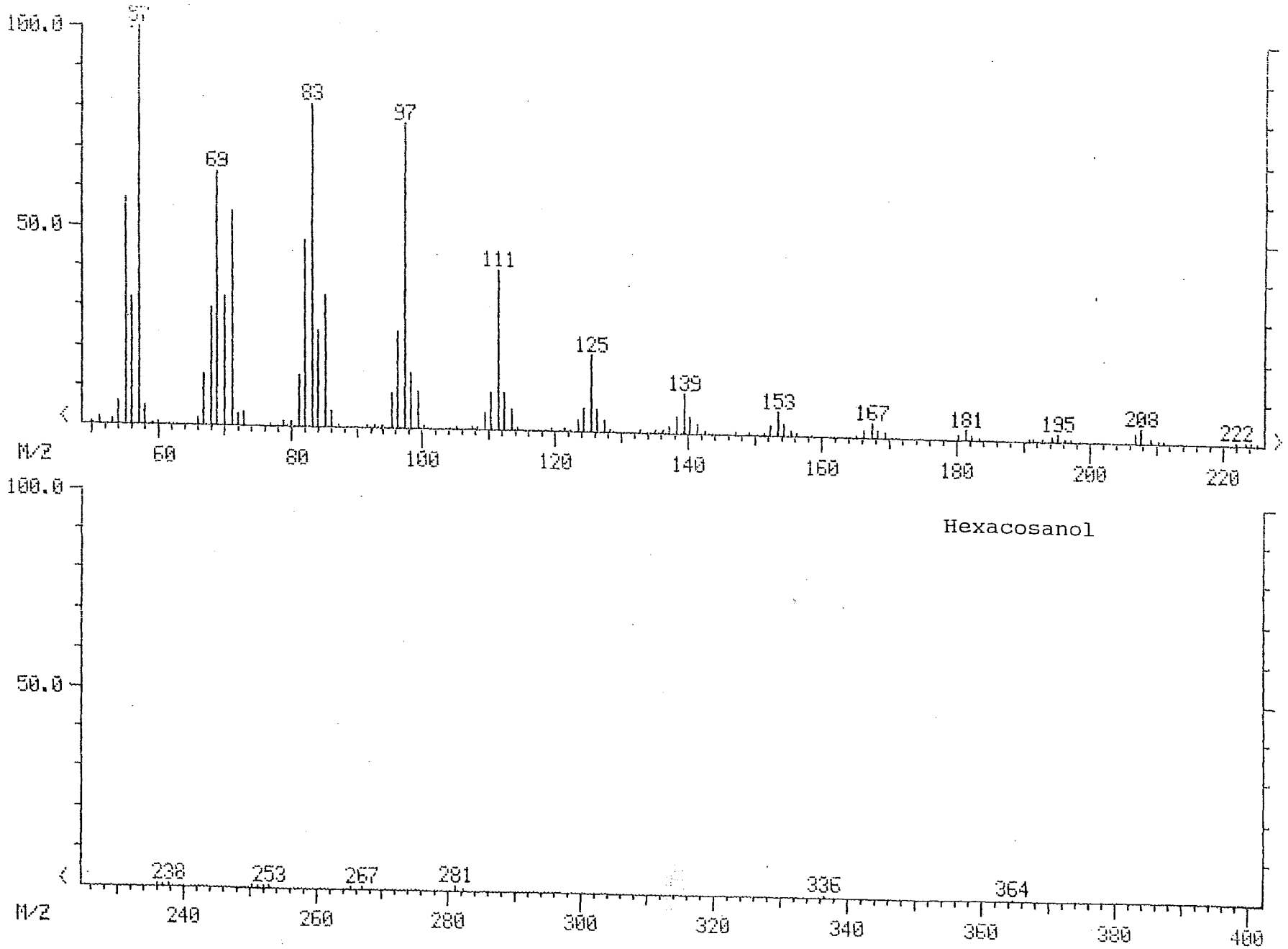
340


100.0
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181
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208
222
M/Z
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80
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140
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Hexacosanol
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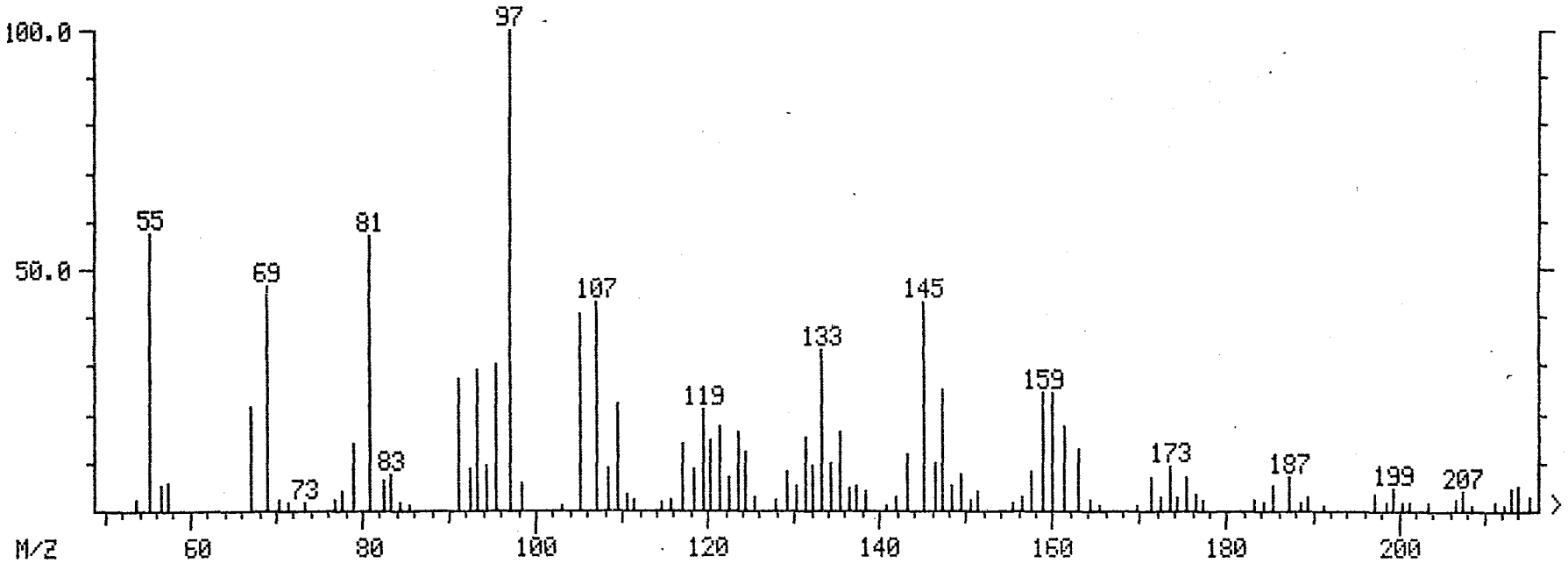
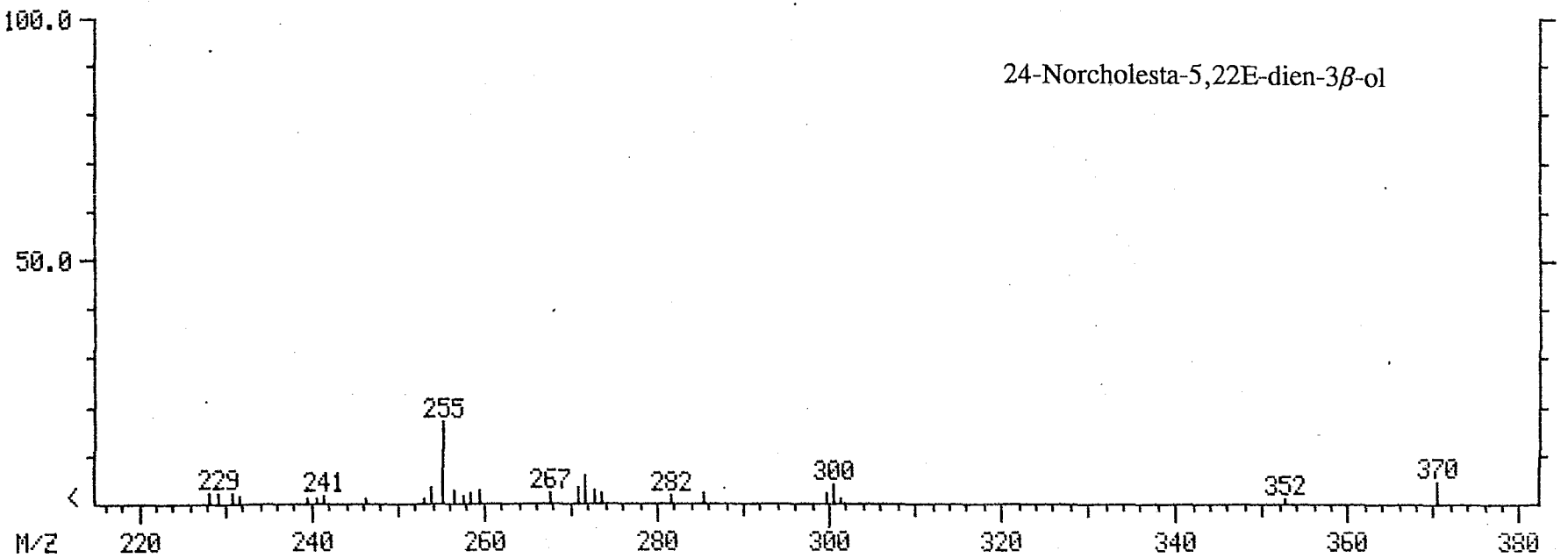
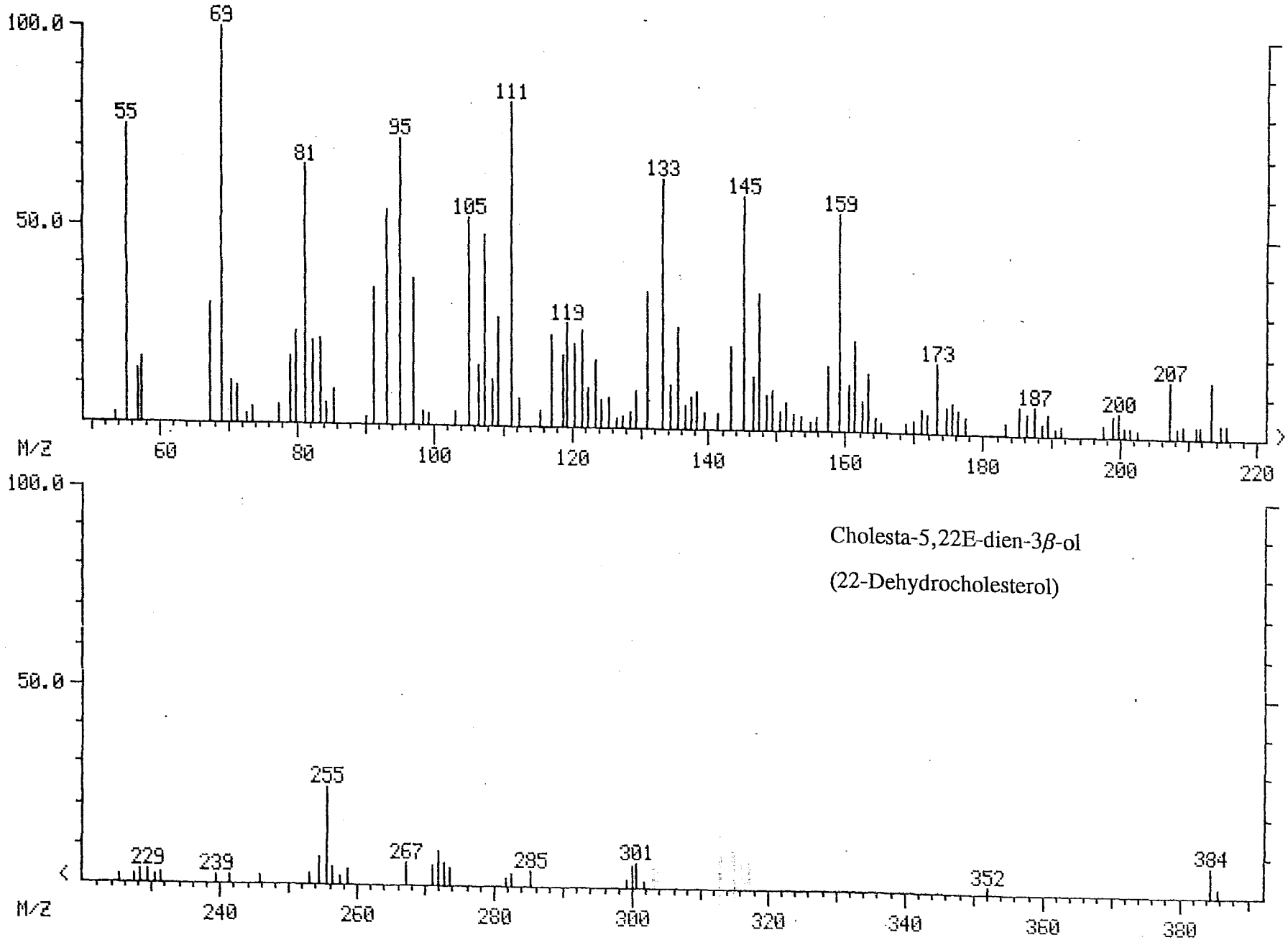


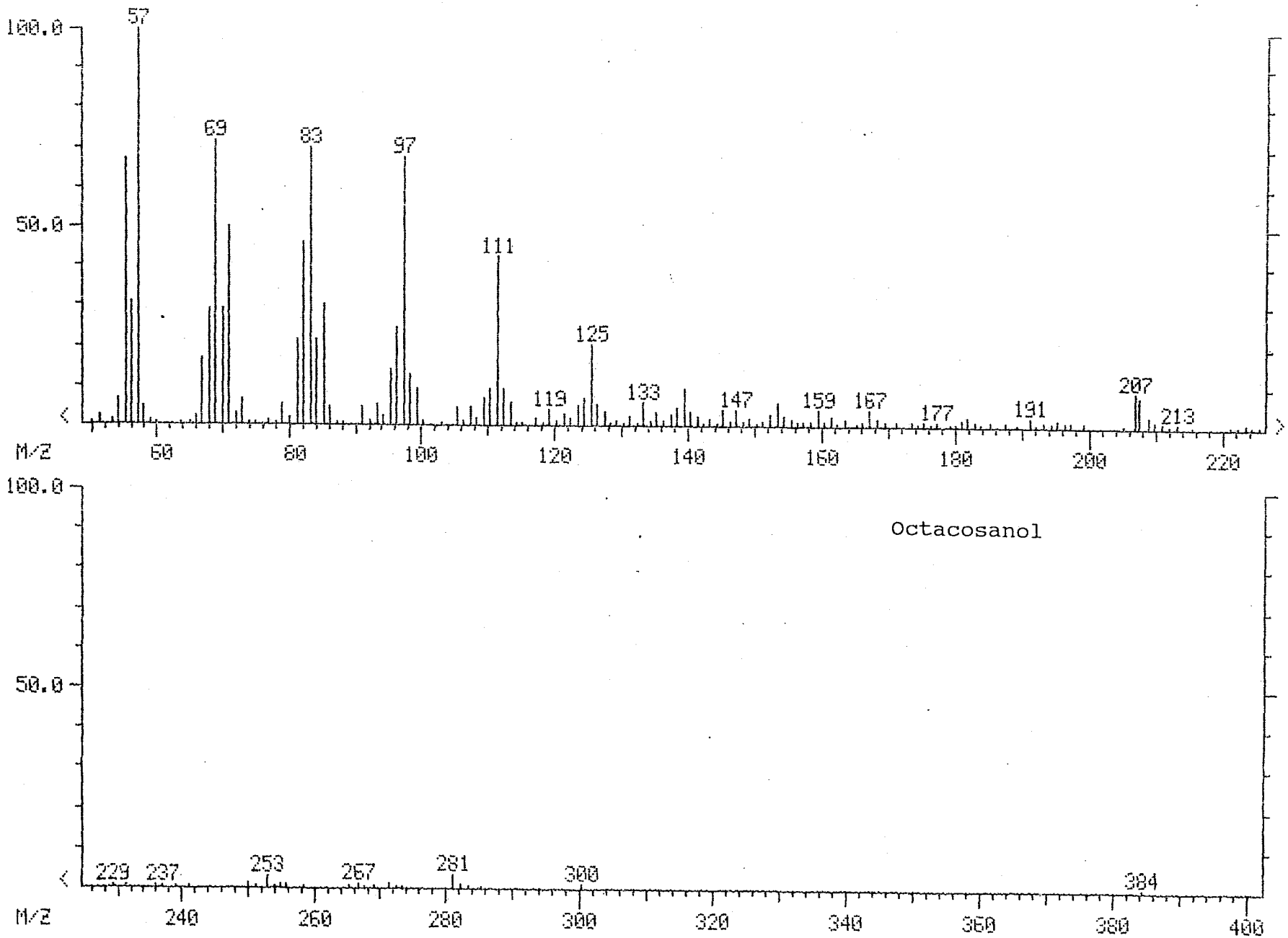


24-Norcholesta-5,22E-dien-3β-ol



Cholesta-5,22E-dien-3β-ol

(22-Dehydrocholesterol)


100.0
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M/Z
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200
220
100.0
50.0
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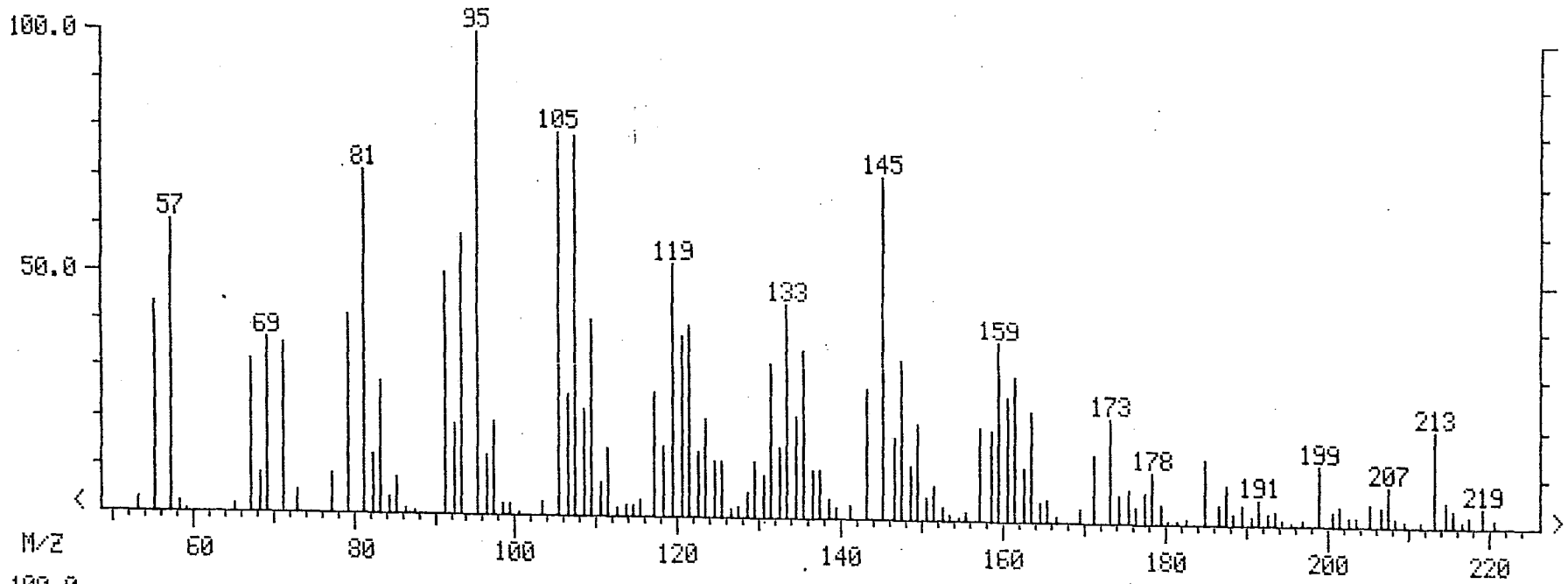
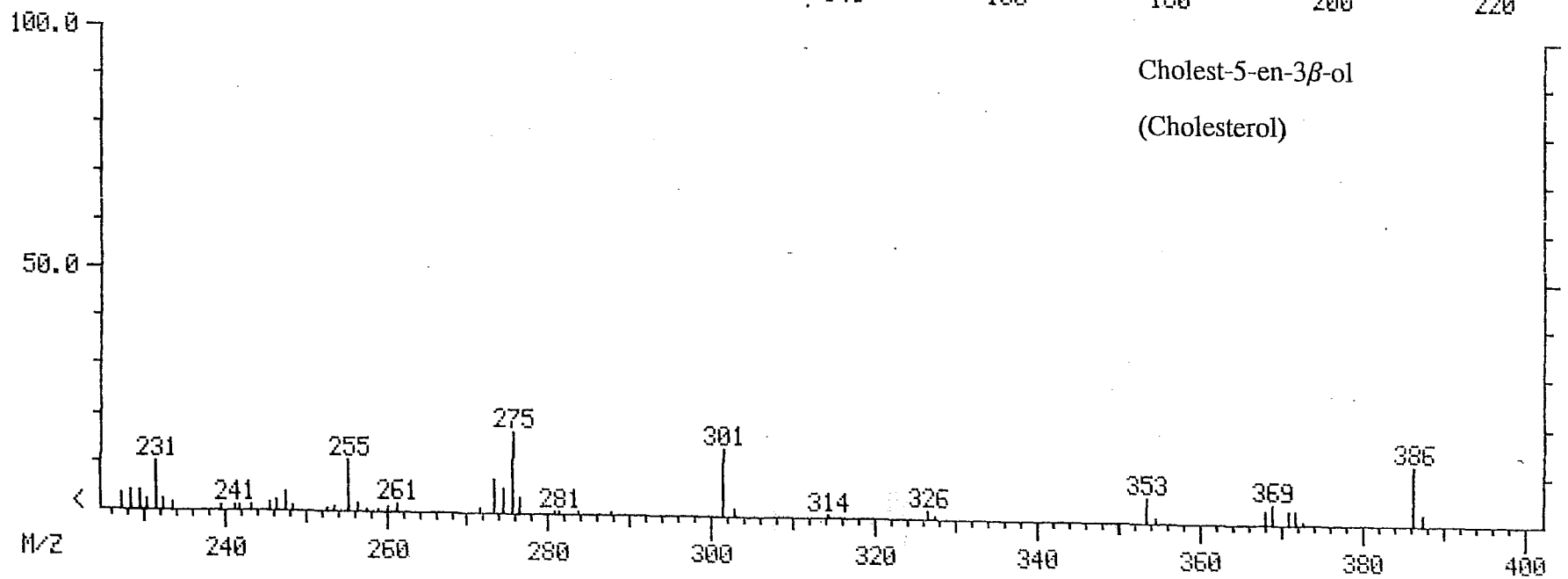
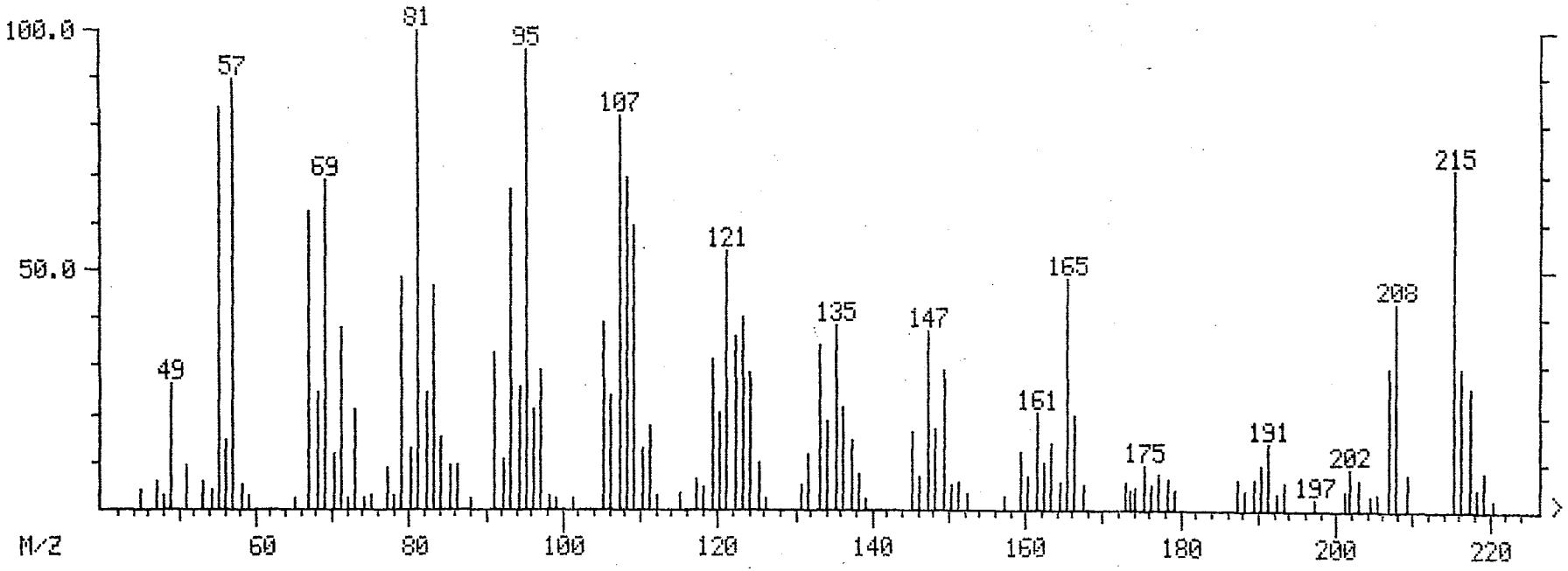
400

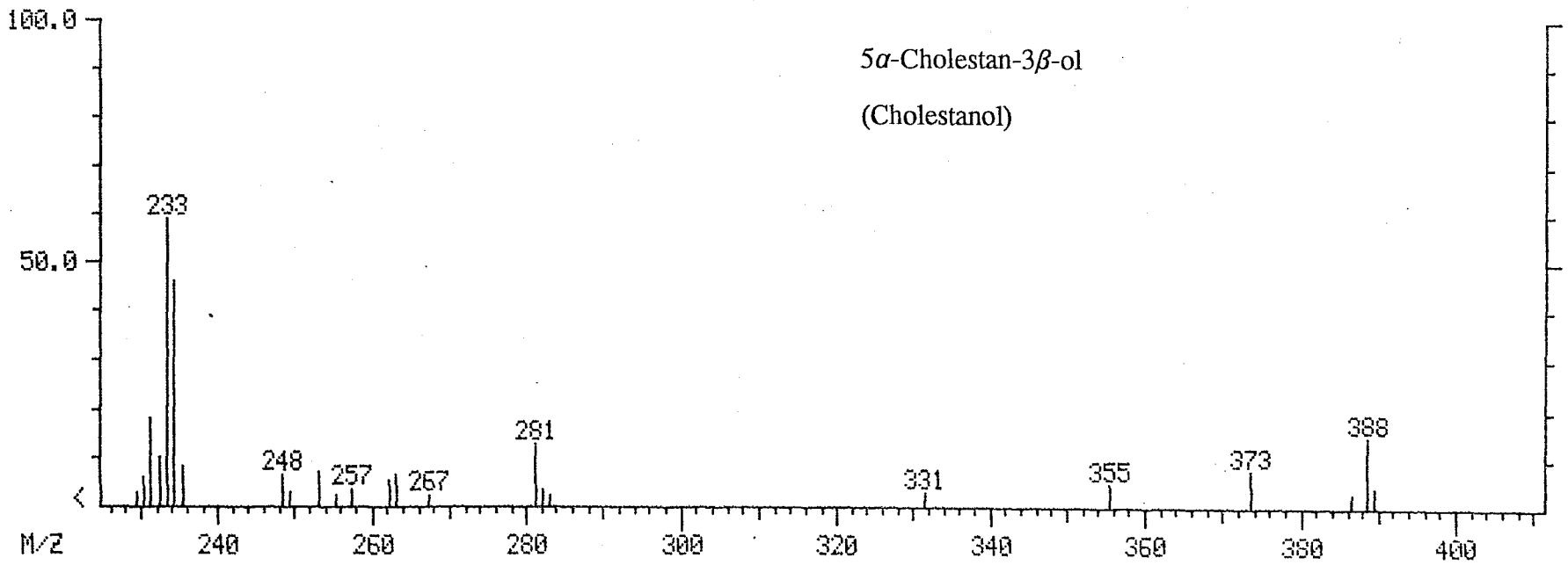




Cholest-5-en-3β-ol

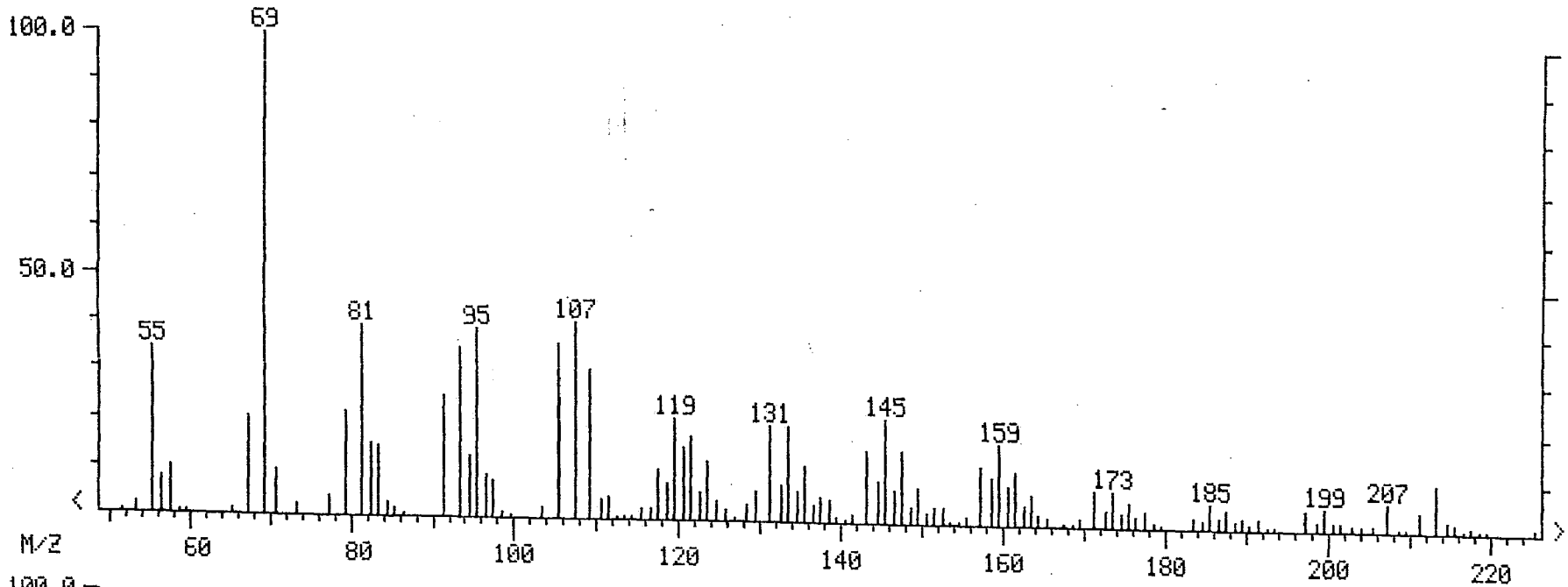
(Cholesterol)

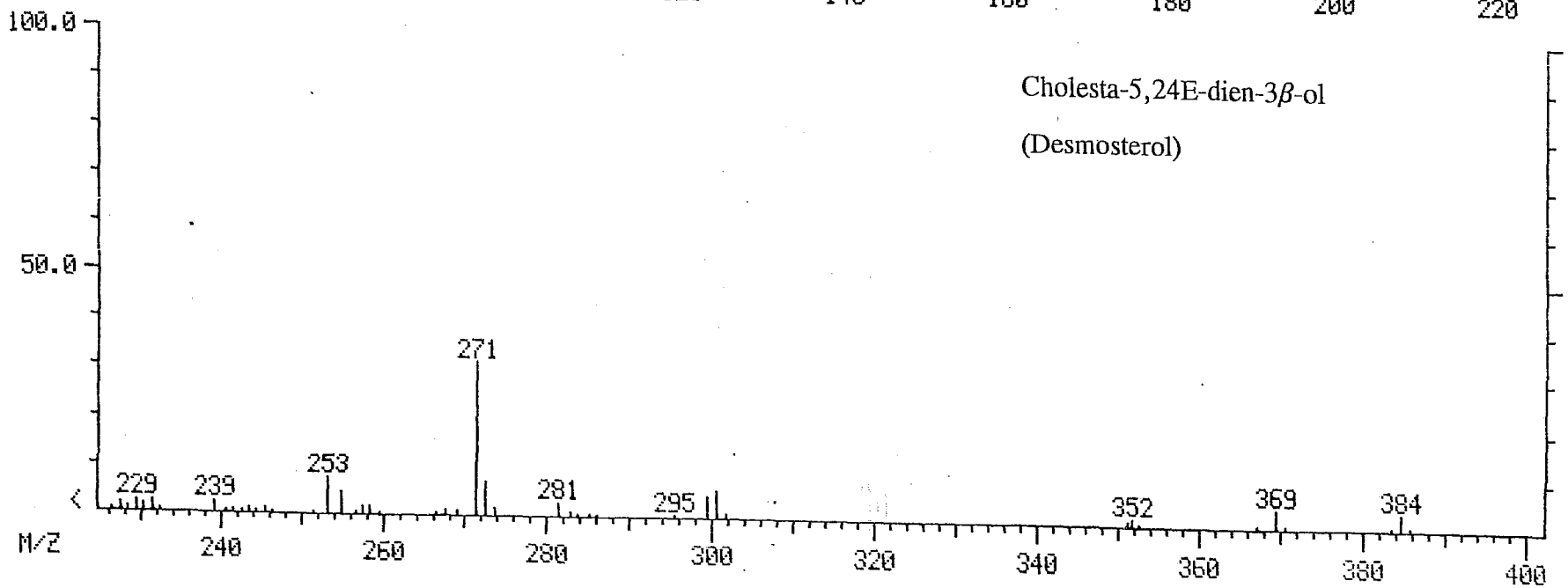




5α-Cholestan-3β-ol

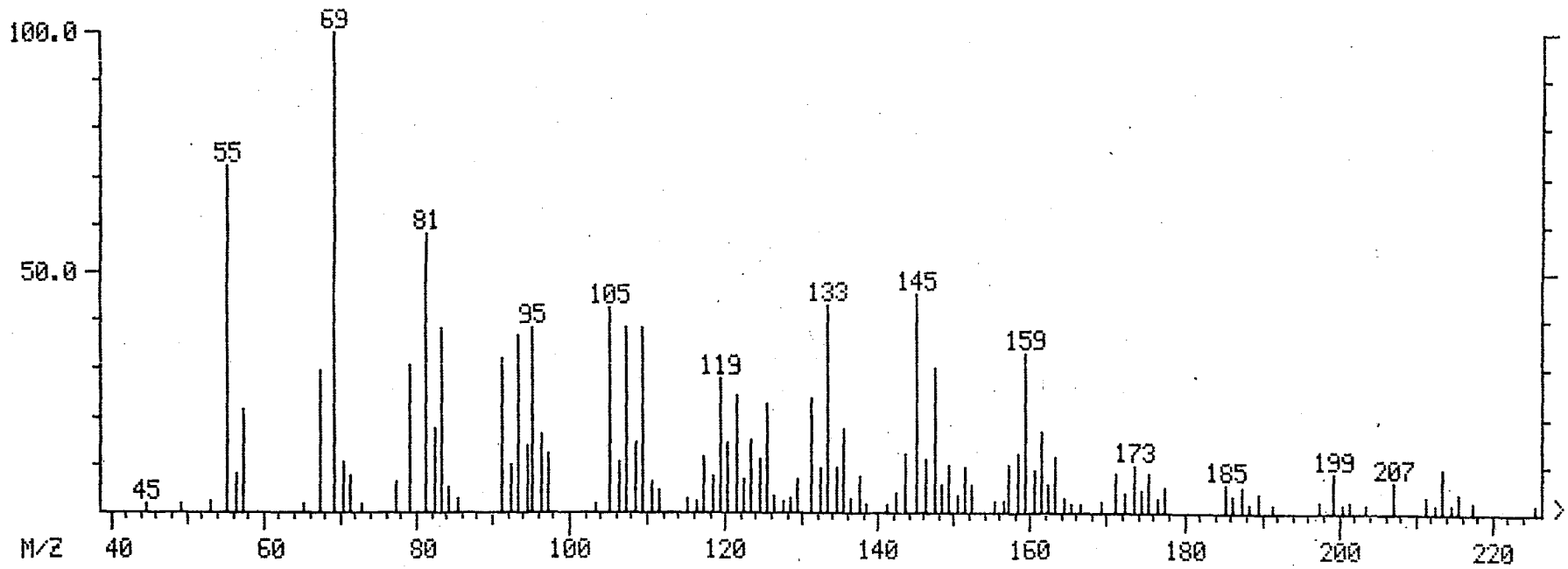
(Cholestanol)

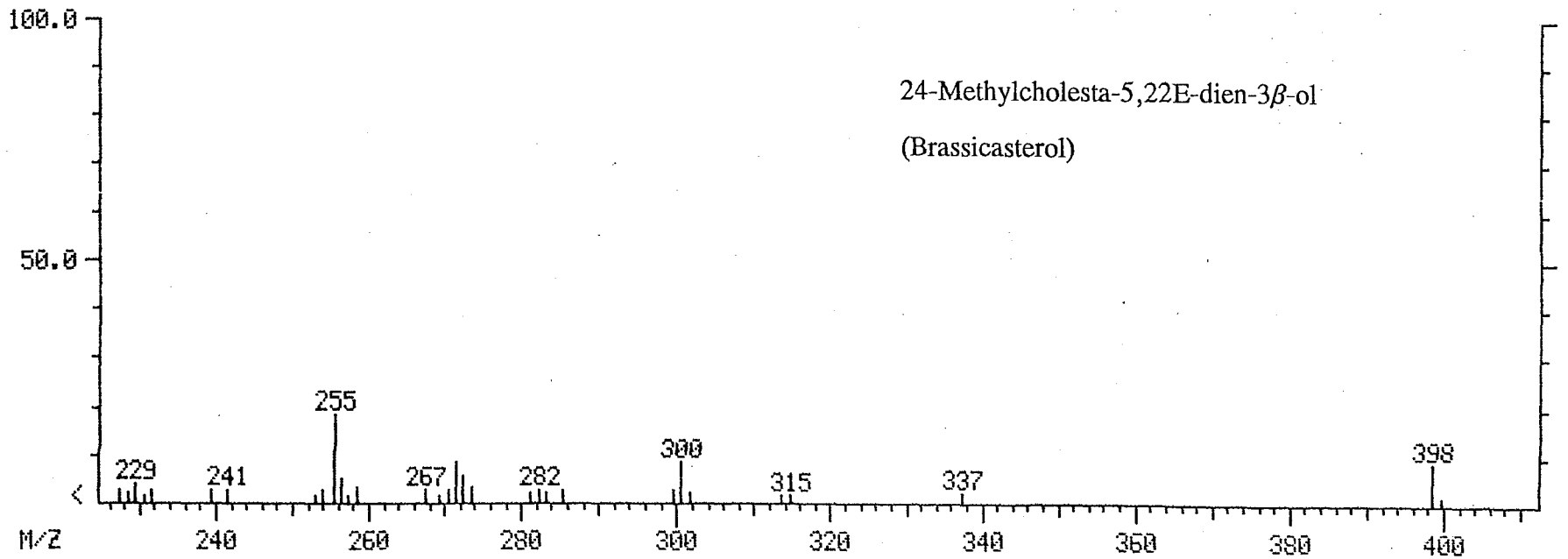




Cholesta-5,24E-dien-3β-ol

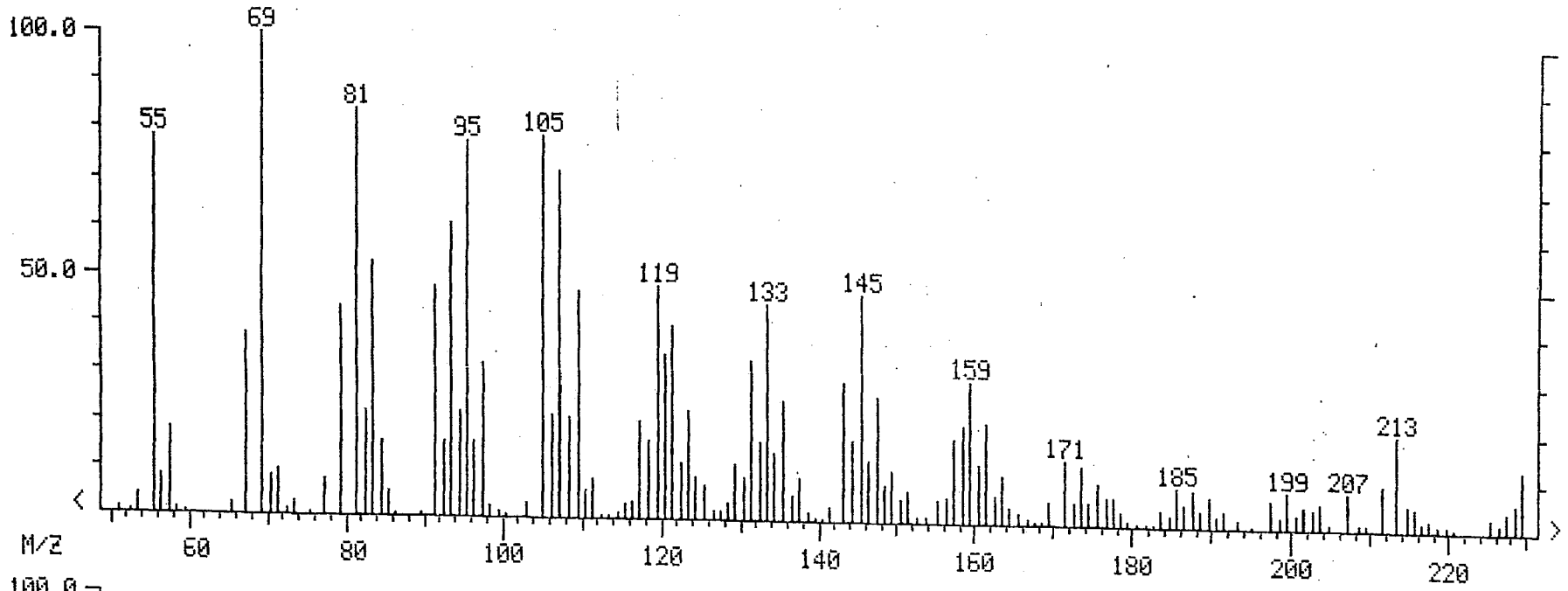
(Desmosterol)

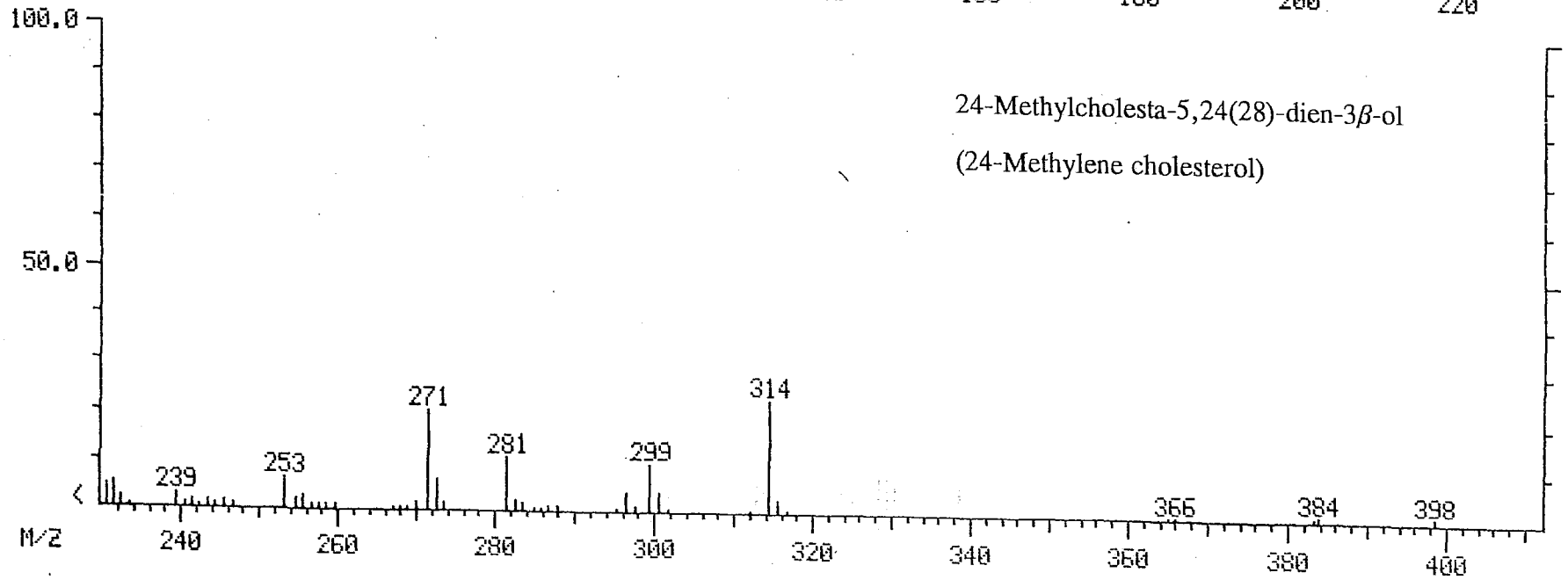




24-Methylcholesta-5,22E-dien-3β-ol

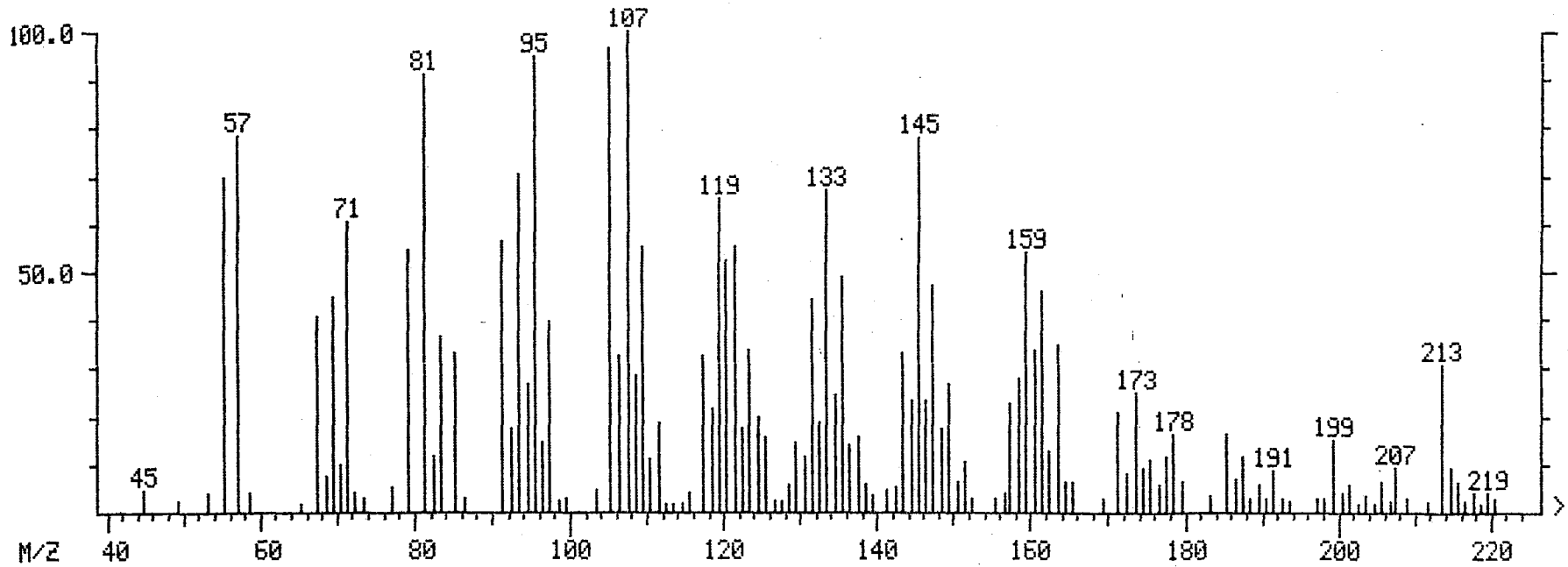
(Brassicasterol)

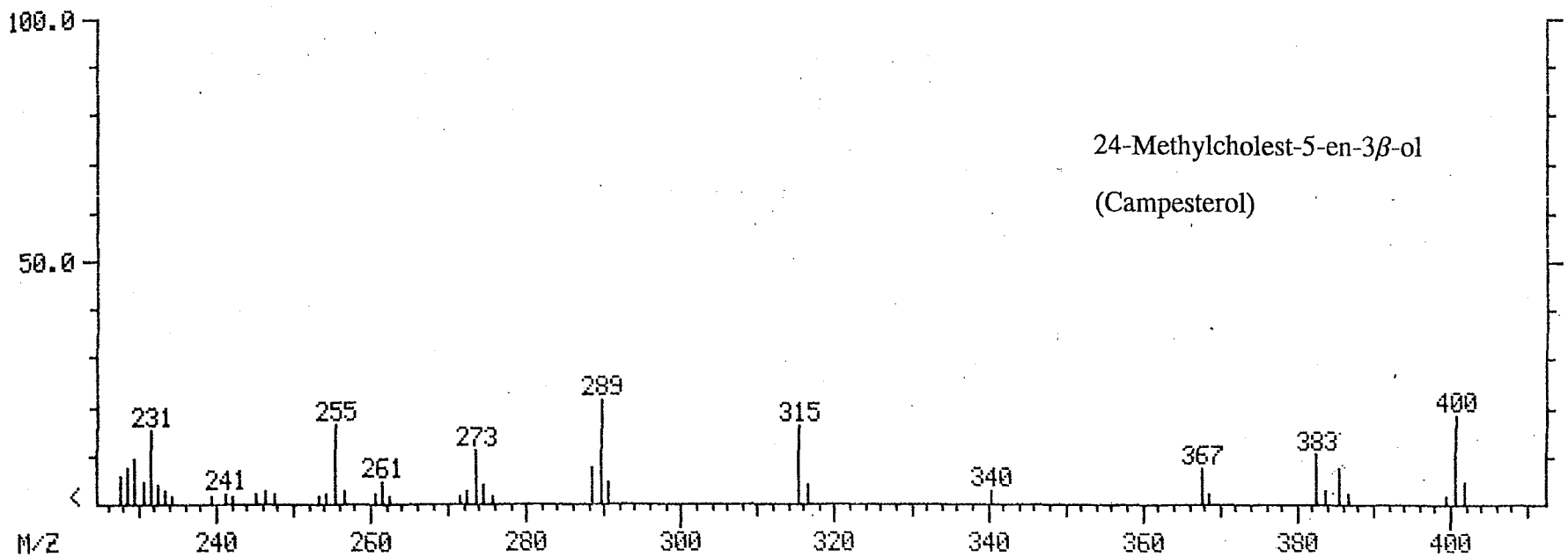




24-Methylcholesta-5,24(28)-dien-3β-ol

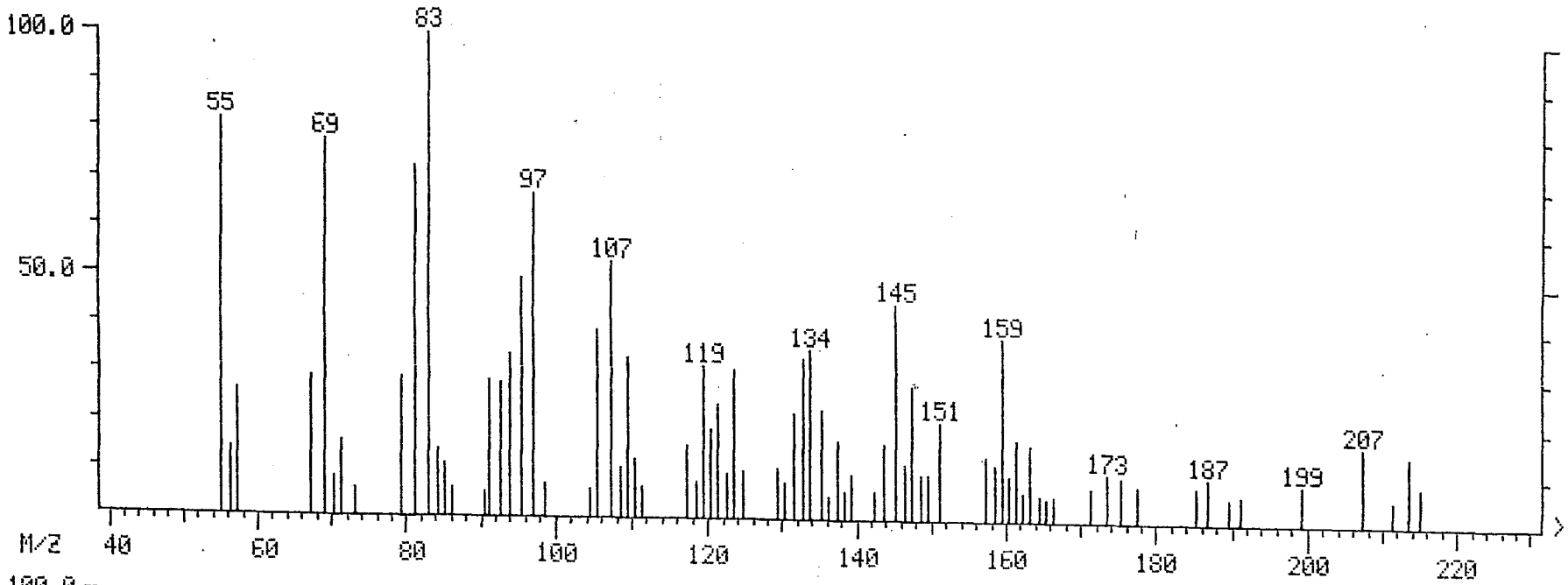
(24-Methylene cholesterol)

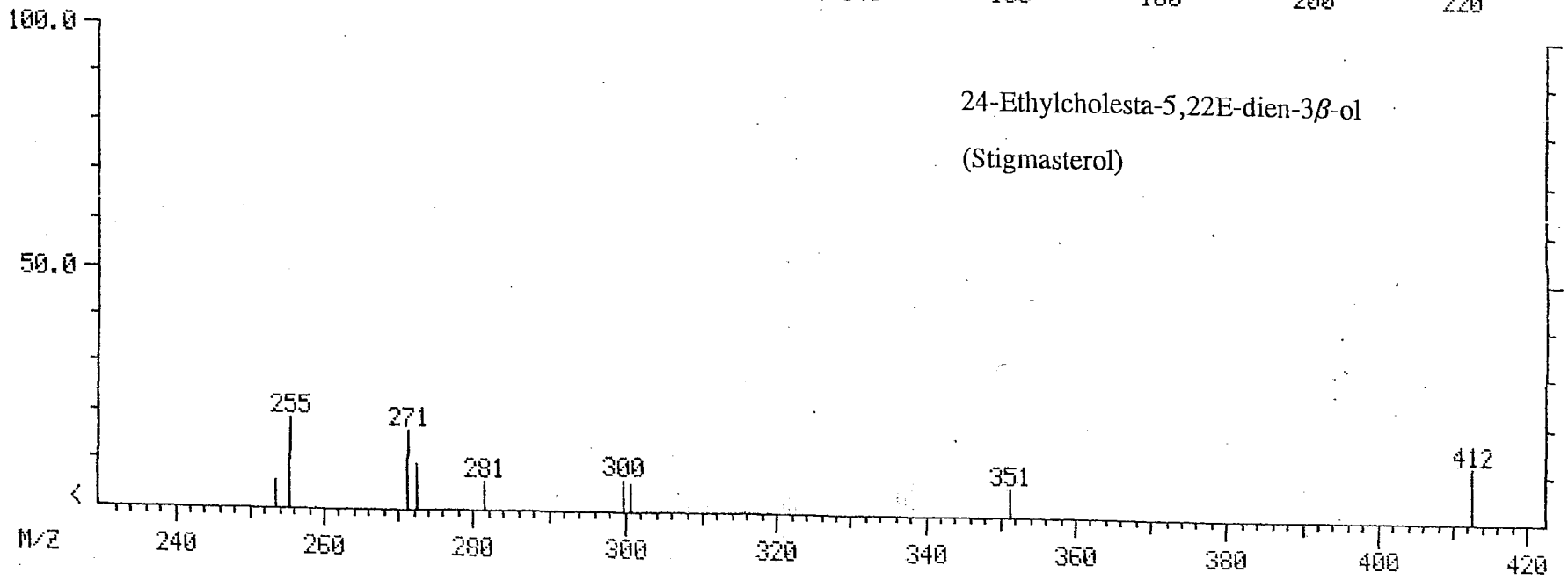




24-Methylcholest-5-en-3β-ol

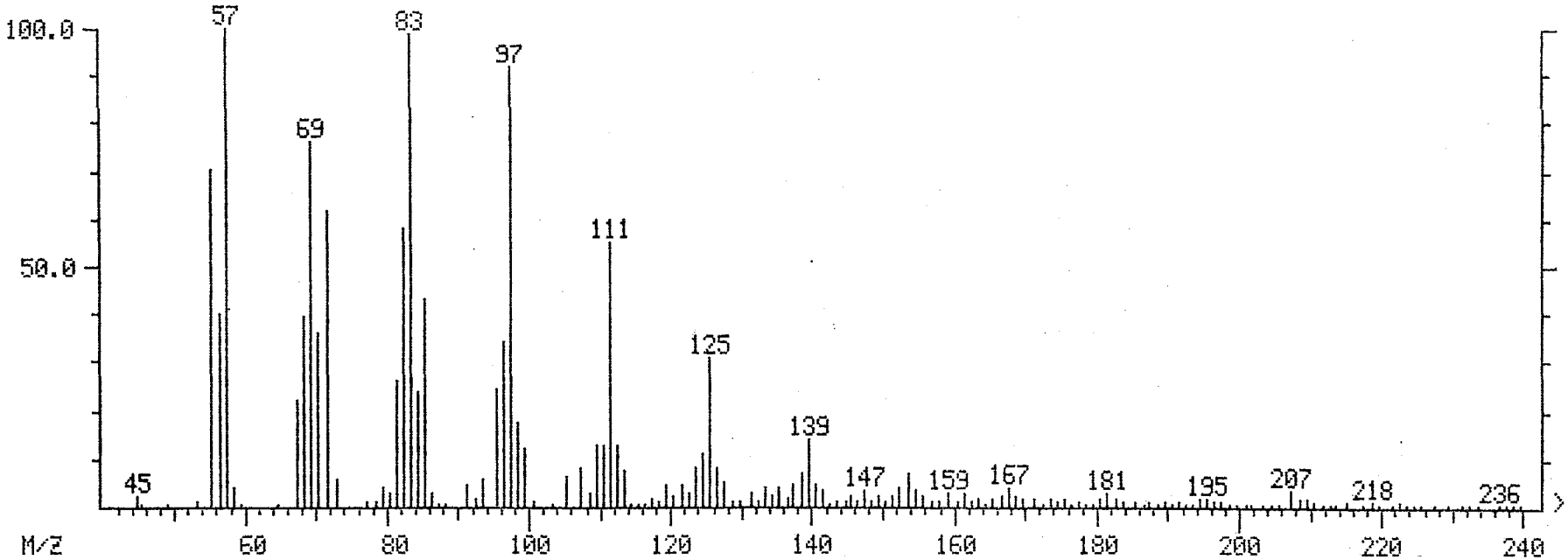
(Campesterol)





24-Ethylcholesta-5,22E-dien-3β-ol

(Stigmasterol)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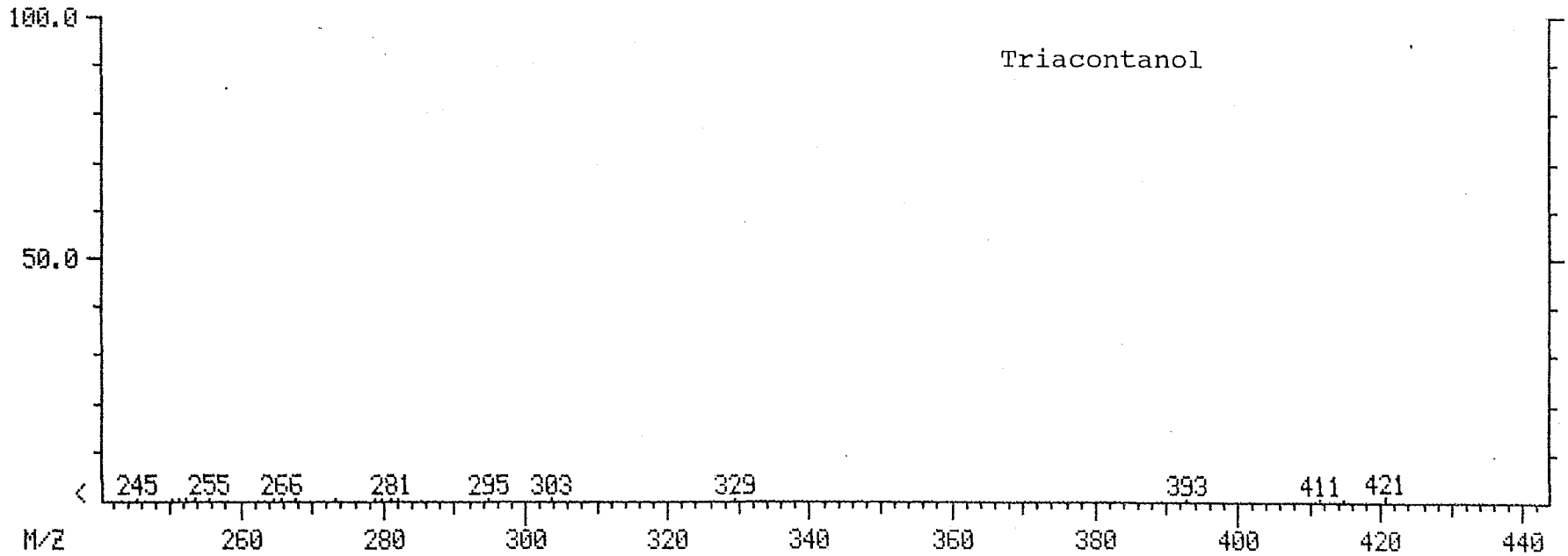
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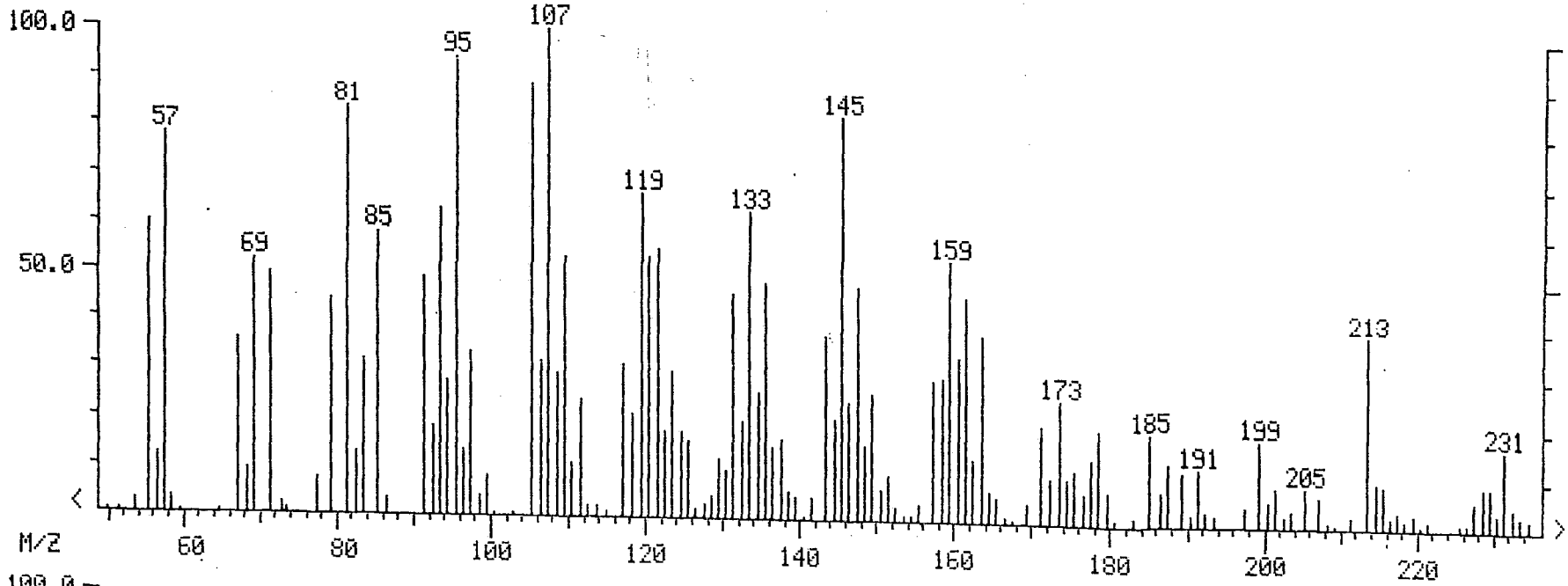
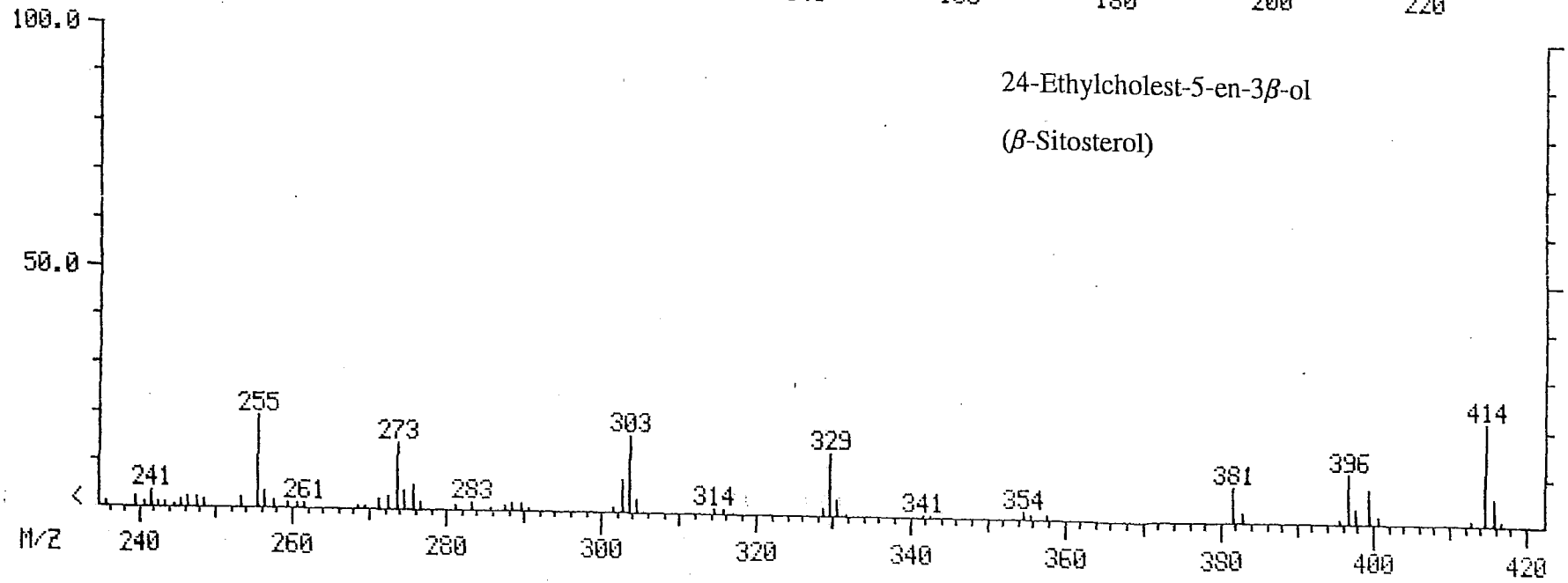
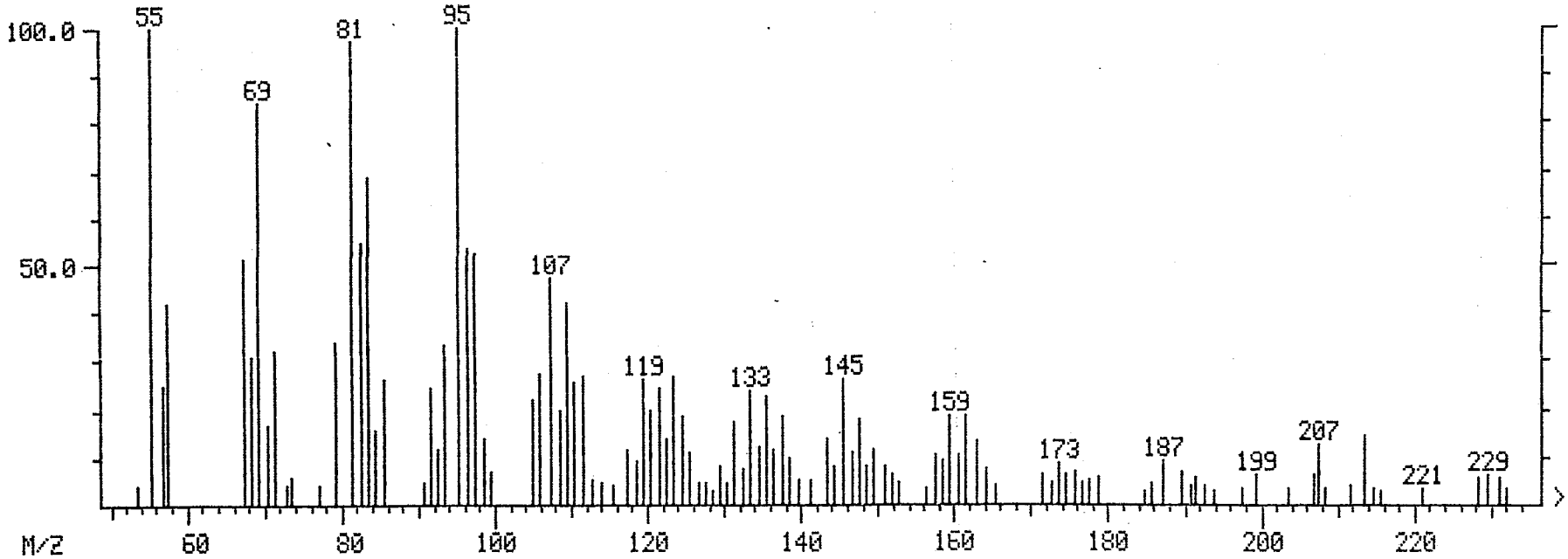
440

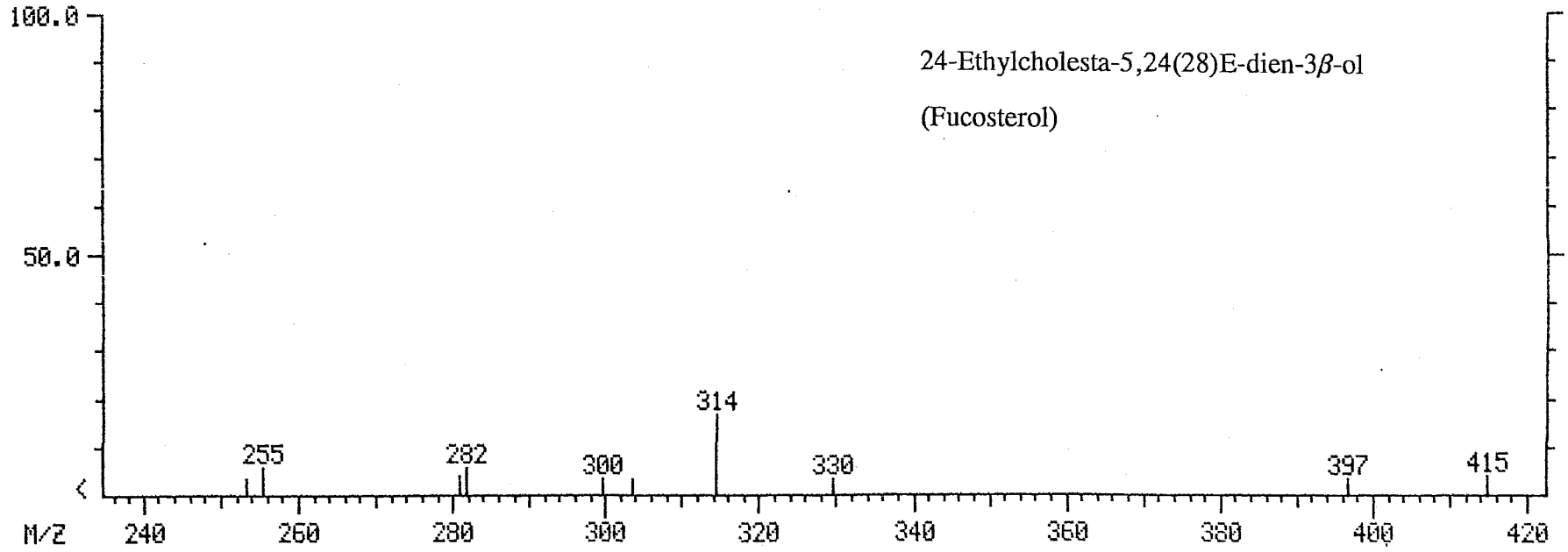




24-Ethylcholest-5-en-3β-ol

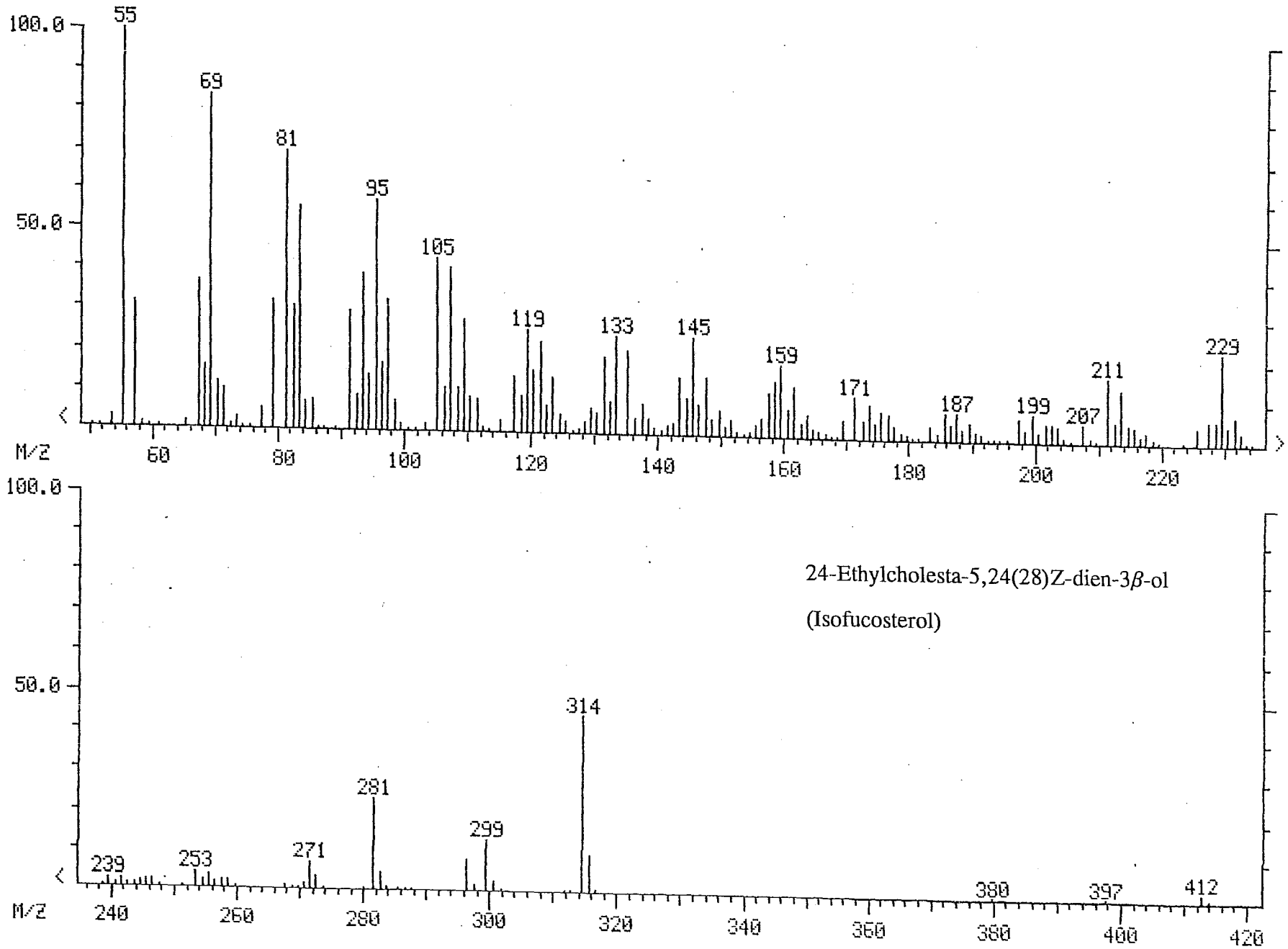
(β-Sitosterol)





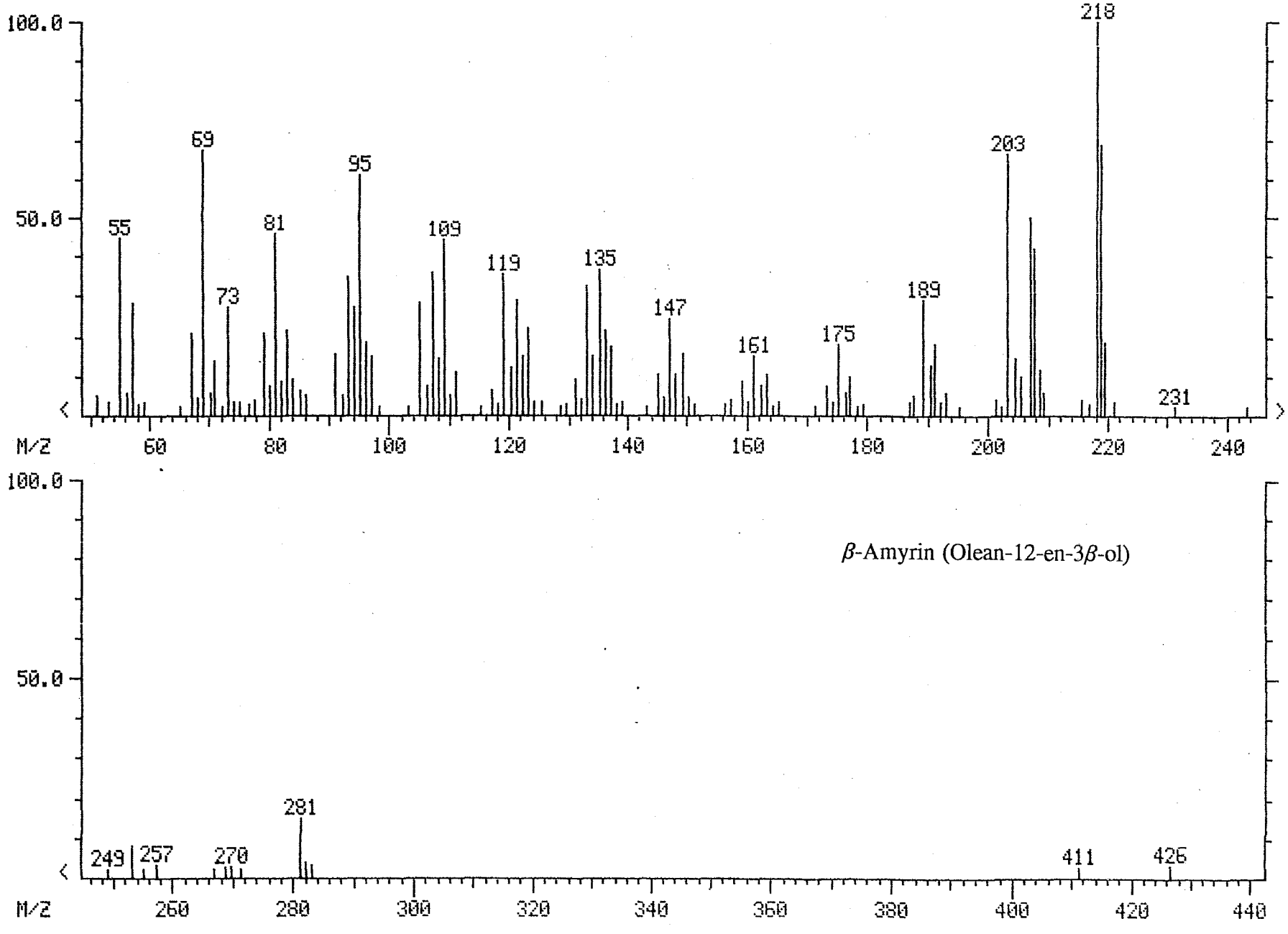
24-Ethylcholesta-5,24(28)E-dien-3β-ol

(Fucosterol)

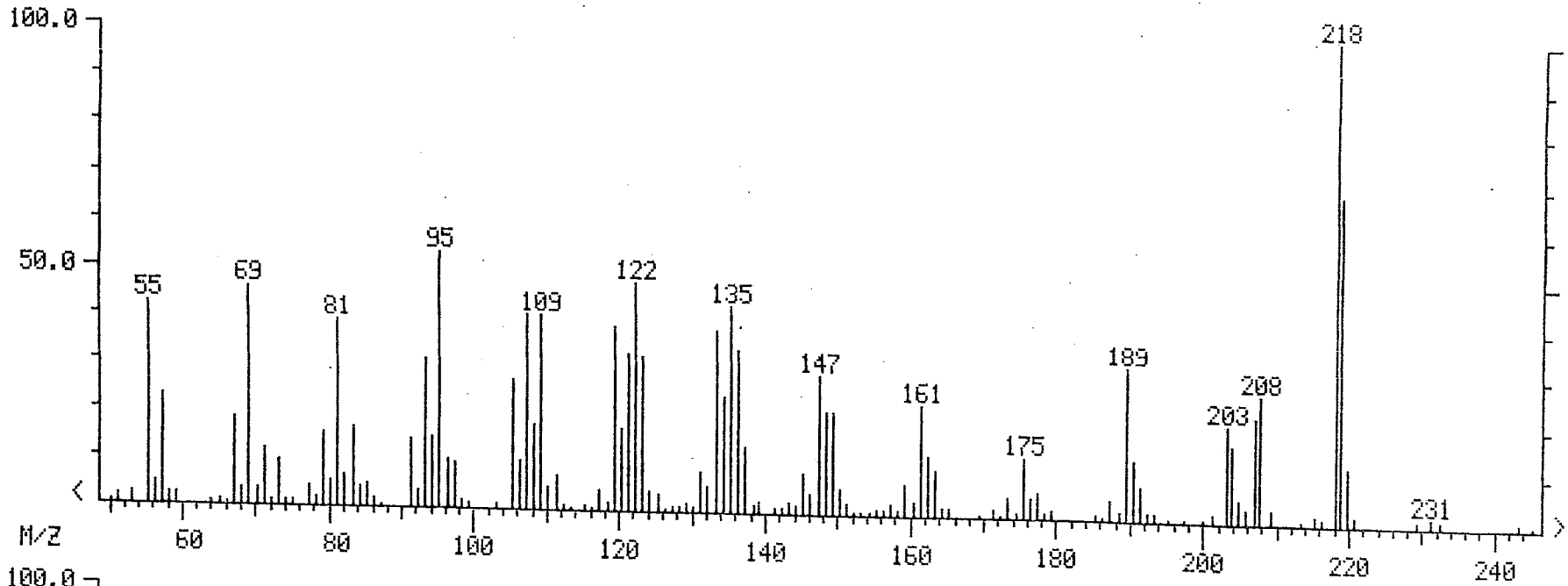


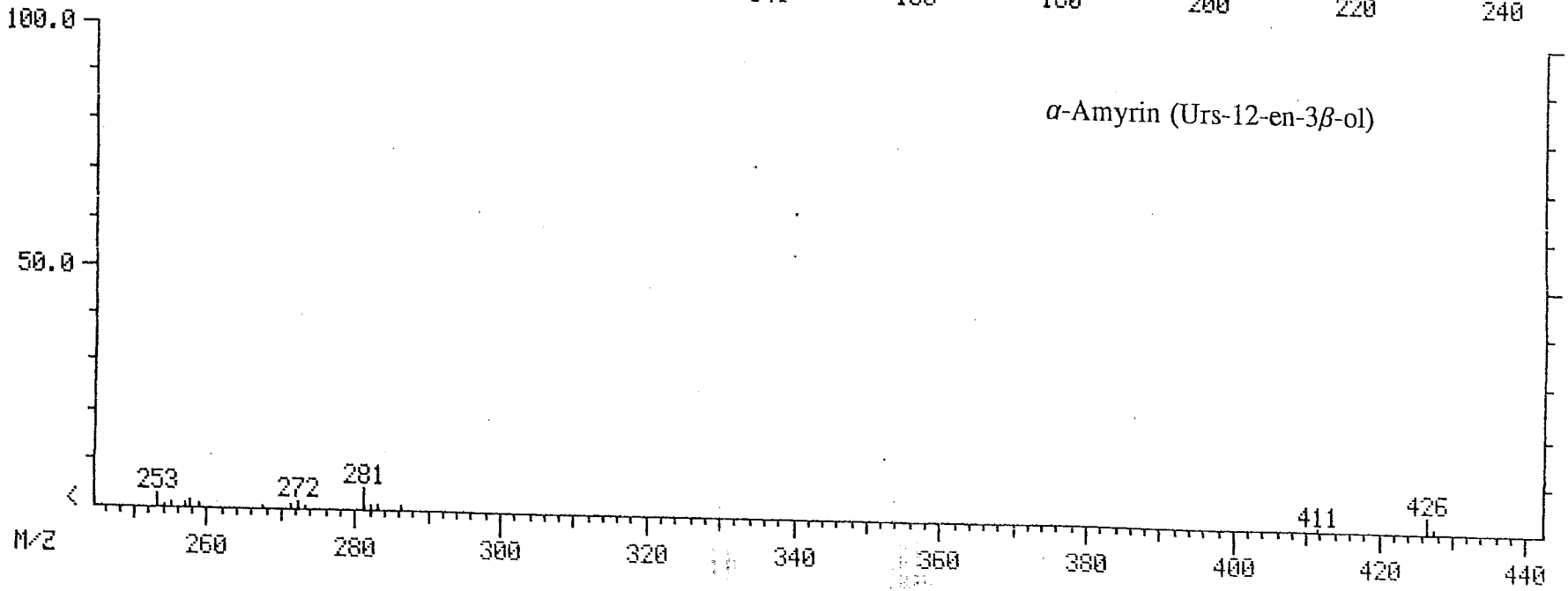
24-Ethylcholesta-5,24(28)Z-dien-3β-ol

(Isofucosterol)

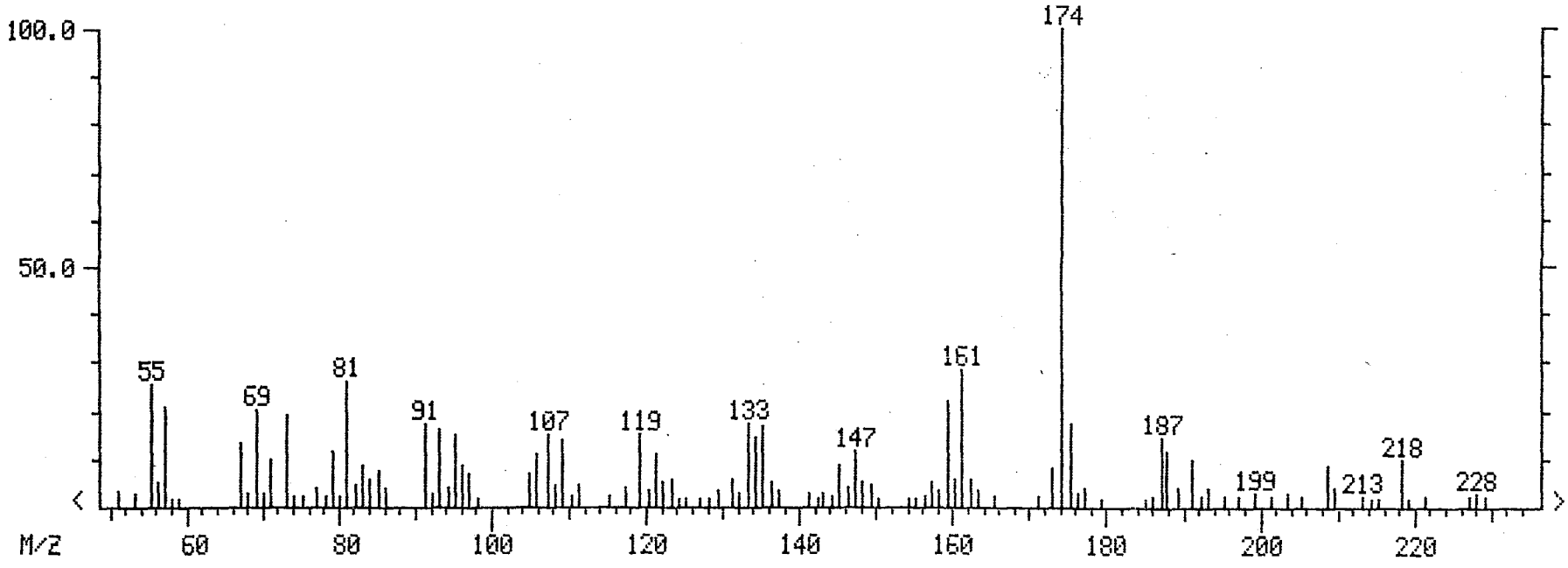


β-Amyrin (Olean-12-en-3*β*-ol)





α-Amyrin (Urs-12-en-3*β*-ol)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161
187
199
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228
M/Z
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80
100
120
140
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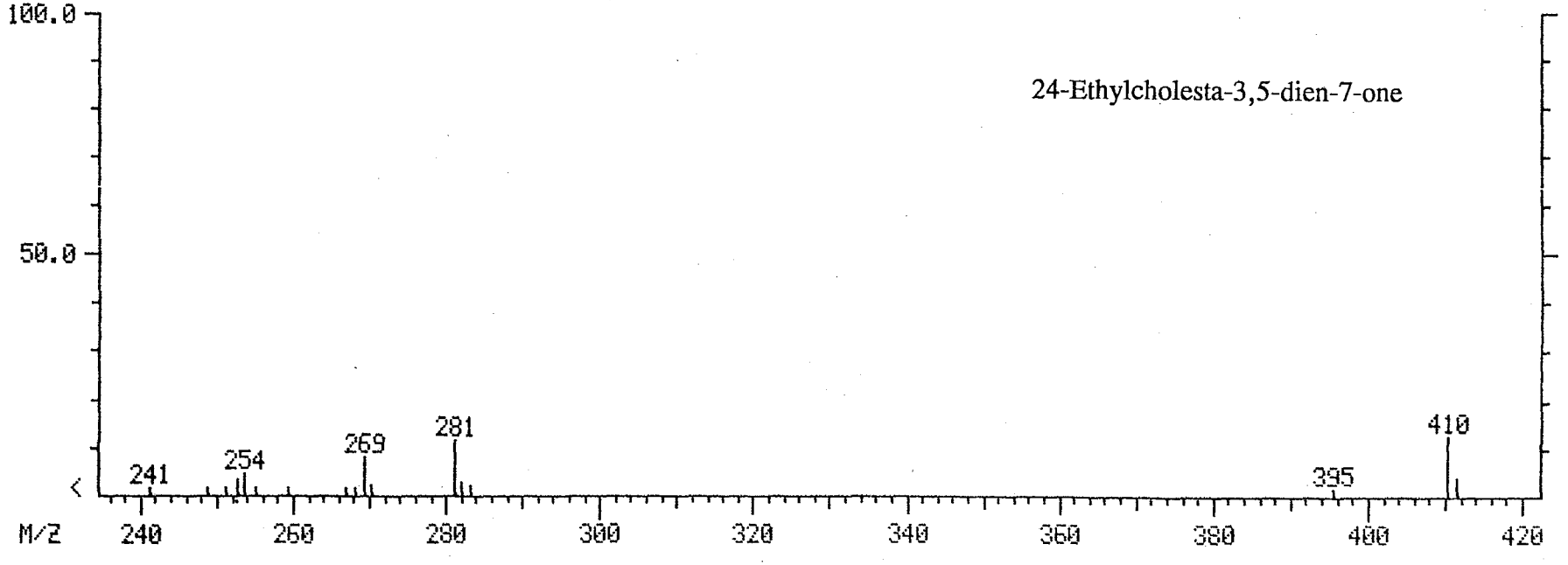
180
200
220


100.0
50.0
24-Ethylcholesta-3,5-dien-7-one
241
254
269
281
395
410
M/Z
240
260
280
300
320
340
360
380
400
420

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APPENDIX 5; DATA COMPARISON OF PARTICULATE AND DISSOLVED PHASE SAMPLES BETWEEN THIS WORK AND *YUNKER ET AL.* [1990]

Sample	FPRM6 New	FPRM6 Old	FP302 New	FP302 Old
Location/Depth	East Ch		East Ch	East
Date	23/6/87		26/6/87	26 June 1987
Analytical Unit	2.92 g	2.92	17.47 L	17.47
Conversion Factor	204.8 mg/L	0.614	204.8 mg/L	204.8
Derived Unit	14.27 L	4.76	3.58 g	3.58
RRF	LZ	BZ	HZ	BZ
	ng/g	ng/g	ng/L	ng/L
F1 Fraction	New	Old	New	Old
Undecane	<21	300	18	39
Dodecane	11 a	309 q	34 a	45 q
Tridecane	148 a	515	59 a	73
Tetradecane	344 a	542	70 a	80
Pentadecane	675 a	635	106 a	92
Hexadecane	738 a	616	109 a	89
Heptadecane	979 a	730	151 a	119
Octadecane	791 a	650	112 a	93
Nonadecane	826 b	689	124 b	112
Eicosane	766	637	114	102
Heneicosane	806	659	129	110
Docosane	613	617	100	96
Tricosane	712	753	126	128
Tetracosane	440	535	79	86
Pentacosane	700	–	131	–
Hexacosane	313	–	57	–
Heptacosane	830	–	177	–
Octacosane	224	–	48	–
Nonacosane	577	–	137	–
Triacontane	134 q	–	38	–
Untriacontane	360	–	96	–
Dotriacontane	68 q	–	22	–
Tritriacontane	132	–	40	–
Tetratriacontane	48	56 q	17	28
Pentatriacontane	59	57 q	12	32
Hexatriacontane	<36 m	<11	<3.1 m	12
2,6–Dimethyl Undecane	<8.6 m	136	16 a	20
Norfarnesane	22 a	162 q	17 a	23 q
Farnesane	71 a	129	17 a	18
2,6,10–Trimethyl Tridecane	224 a	263	37 a	34
Norpristane	370 b	347	51 b	46
Pristane	1100	723	141	104
Phytane	532 b	437	77 b	64
F2 Fraction				
Naphthalene	<267 m	155	19 b	22
2–Methyl Naphthalene	227 a	241	37 a	34
1–Methyl Naphthalene	219 a	219	32 a	28
Acenaphthylene	<31 m	<2.6 m	<3.9 m	<0.39 m
Acenaphthene	<36 m	<4.9 m	1.4 a	0.81 b
Fluorene	45 a	38	5.5 a	<0.52
Phenanthrene	255 a	219 b	47 a	34 b
Anthracene	18 a	<3.7 m	3.5 a	3.3 a
Fluoranthene	59 a	39 a	7.9 a	5 a
Pyrene	83 a	67 b	12 a	10 b
Benz(a)anthracene	38 a	<9.4 m	5.6 a	<1.1 m
Chrysene	119 a	129 b	19 a	23 b
Benzo(b/j/k)fluoranthene	117 b	62 a	18 b	16 a
Benzo(a)fluoranthene	<68 m	<14 m	<6.3 m	<1.6 m
Benzo(e)pyrene	165 a	281 a	22 a	74 a
Benzo(a)pyrene	48 a	<17 m	9.9 a c	9.9 a
Perylene	<146 m	<17 m	<36 m	16 a
Dibenz(a,h)anthracene	<104 m	<20 m	4.3 a	<3.4 m
Indeno(1,2,3–cd)pyrene	<98 m	<15 m	<9.0 m	<2.5 m
Benzo(ghi)perylene	192 a	<21 m	28 a	79 a

Sample	FP307 New	FP307 Old	ID71 New	ID71 Old	ID71a Old
Location/Depth	East Ch	East	East Ch	East Ch	East Ch
Date	29/7/87	29 July 1987	23/6/87	23/6/87	23/6/87
Analytical Unit	57.53 L	57.53	345.78 L	345.78 L	345.78 L
Conversion Factor	50.6 mg/L	50.6	204.8 mg/L		
Derived Unit	2.91 g	2.91			
RRF	HZ	DZ	NZ		
	ng/L New	ng/L Old	ng/L New	ng/L Old	ng/L Old
F1 Fraction					
Undecane	<1.0	1.4 q	0.13 b	5.9	3.7
Dodecane	2.5 a	<6.8	0.69 b	4.6	3.2
Tridecane	9.5 a	13	0.39 b	1.7	1.1
Tetradecane	16 a	19	<0.36	0.42	0.25 q
Pentadecane	39 a	37	<1.1	0.44	0.34
Hexadecane	29 a	26	<1.1	0.49	0.34
Heptadecane	92 a	63	0.79 q	0.66 a	0.06 a
Octadecane	29 a	25	0.5	0.3	0.27
Nonadecane	32 b	27 c	0.61 b	0.24 b	0.22 b
Eicosane	31	25 c	0.49 b	<0.22	<0.22
Heneicosane	39	33 c	0.88	0.43	0.94
Docosane	28	30 c	0.6	0.29	0.29
Tricosane	37	42 c	1.1	0.68	0.72
Tetracosane	21	29 c	0.44 q	0.38	0.42
Pentacosane	35	42 c	1	0.74	0.52
Hexacosane	15	22 c	0.3 q	0.25 q	0.21 q
Heptacosane	43	64 c	1.2	1	0.64
Octacosane	11	18	0.31 q	<0.22	<0.22
Nonacosane	31	49	0.92 q	0.42 q	0.37 q
Triacontane	7.5 q	13	<0.39	0.29 q	<0.19
Untriacontane	21	43	0.58 q	0.23 q	<0.18
Dotriacontane	3.4 q	11	<0.26	<0.17	<0.17
Tritriacontane	6.5	19	0.24 q	<0.12	0.17 q
Tetratriacontane	<0.64	22	0.078 b	0.18 q	<0.088
Pentatriacontane	1.3	17	0.078 b	0.092 q	<0.043
Hexatriacontane	<1.7 m	4.5	<0.20 m	0.039 q	<0.024
2,6−Dimethyl Undecane	1.3 a c	2.7	<0.048 m	0.045 q	<0.033
Norfarnesane	2 a	<6.6	<0.048 m	0.11 b	0.052 b
Farnesane	3.4 a	3.7 q	<0.043 e c	0.14	0.051
2,6,10−Trimethyl Tridecane	8.4 a	9.7	0.077 b	0.11	0.054
Norpristane	13 b	1.4 q	<0.44	0.14 b	0.12 b
Pristane	32	22	<0.32	0.21 a	0.51 a
Phytane	18 b	13	0.22 b	0.093 q	0.083 q
F2 Fraction					
Naphthalene	5.2 b	6.1	1.4 b	<0.17	<0.17
2−Methyl Naphthalene	8.9 a	8.7	<1.4 m	0.092 a	0.15 a
1−Methyl Naphthalene	7 a	8	<1.4 m	<0.0099 m	0.076 a
Acenaphthylene	<1.3 m	<0.069 m	<0.95 m	<0.0072 m	<0.0025 m
Acenaphthene	<1.7 m	0.026 b	<0.91 m	<0.0092 m	0.0038 a
Fluorene	1.3 a	1.6	<0.91 m	<0.010 m	0.013 a
Phenanthrene	10 a	11 b	0.83 b	0.17 a	0.33 a
Anthracene	0.63 a	1.1 a	0.18 a	<0.013 m	0.0088 a
Fluoranthene	3.1 a	2.4 a	0.092 b c	<0.0086 m	0.092 a
Pyrene	3.7 a	3.7 b	0.086 b	<0.0080 m	0.12 a
Benz(a)anthracene	2.1 a	1.4 a	<0.035 e	<0.014 m	<0.0051 m
Chrysene	6.1 a	7 b	0.059 b	<0.014 m	0.07 a
Benzo(b/j/k)fluoranthene	5.9 b	4.4 a	0.1 b	0.02	0.039 a
Benzo(a)fluoranthene	<3.9 m	<0.16 m	0.0074 a	<0.020 m	<0.0066 m
Benzo(e)pyrene	6.1 a	11 a	0.073 b	<0.25 m	0.61 a
Benzo(a)pyrene	<9.6 m	4.3 a	<1.1 m	<0.25 m	<0.16 m
Perylene	<8.6 m	1.8 a	<1.2 m	<0.25 m	<0.16 m
Dibenz(a,h)anthracene	<6.2 m	0.99 a	0.04 a	<0.035 m	<0.010 m
Indeno(1,2,3−cd)pyrene	<5.8 m	0.76 a	0.043 a	<0.026 m	<0.0079 m
Benzo(ghi)perylene	3.6 a	9.9 a	0.044 a	<0.033 m	0.0012 a

Sample	ID73 New	ID73 Old	ID76 New	ID76 Old
Location/Depth	East Ch	East Ch	Middle Ch	Middle Ch
Date	23/6/87	23/6/87	28/6/87	28/6/87
Analytical Unit	445.78 L	445.78 L	227.88 L	227.88 L
Conversion Factor	204.8 mg/L		188.9 mg/L	
Derived Unit				
RRF	JZ		JZ	
	ng/L	ng/L	ng/L	ng/L
F1 Fraction	New	Old	New	Old
Undecane	1.6 b	<0.21	<0.068 m	<0.41
Dodecane	2.7 b	<0.048	<0.082 m	0.35
Tridecane	1.2 b	0.063	<0.11 m	0.52
Tetradecane	<0.28	<0.072	<0.55	0.38 q
Pentadecane	<0.82	0.49	<1.6	0.71
Hexadecane	<0.87	0.41	<1.7	0.63
Heptadecane	1 q	0.75 a	<0.68	1.1 a
Octadecane	0.58	0.32	0.54	0.48
Nonadecane	0.42 b	0.31 b	0.6 b	0.43 b
Eicosane	0.44 b	0.24 q	0.75 b	0.38 q
Heneicosane	0.89	0.52	1.2	0.72
Docosane	0.8	0.34	1.2	0.49
Tricosane	1.4	0.97	2.3	1.2
Tetracosane	1.2	0.53	1.6	0.63
Pentacosane	1.8	0.93	2.7	1.1
Hexacosane	1.5	0.44	1.5	0.51 q
Heptacosane	3.3	1.1	3.9	1.3
Octacosane	1.2	0.3 q	1.5 q	<0.33
Nonacosane	3	0.51	4.6	0.64 q
Triacontane	1.4	0.29 q	2	0.34 q
Untriacontane	3	0.33 q	3.6	0.43 q
Dotriacontane	0.58 q	<0.13	0.8 q	<0.25
Tritriacontane	0.59	<0.096	0.58 q	<0.19
Tetratriacontane	0.41 b	<0.068	7 b	<0.13
Pentatriacontane	1.3 b	0.18	0.85 b	<0.065
Hexatriacontane	<0.57 m	<0.019	<0.96 m	<0.037
2,6–Dimethyl Undecane	<0.056 m	<0.026	<0.095 m	0.095 q
Norfarnesane	<0.056 m	1 b	<0.095 m	0.2 b
Farnesane	0.042 b	0.4	<0.098 m	0.23
2,6,10–Trimethyl Tridecane	<0.054 m	0.1	0.048 b	0.16
Norpristane	<0.34	0.16 b	<0.66	0.22 b
Pristane	<0.25	0.25 a	<0.49	0.37 a
Phytane	0.25 b	0.094 q	0.28 b	0.18 q
F2 Fraction				
Naphthalene	0.095 b	<0.13	<7.4 m	<0.26
2–Methyl Naphthalene	0.22 a	0.082 a	<6.6 m	0.33 a
1–Methyl Naphthalene	0.19 a	0.062 a	<6.6 m	0.16 a
Acenaphthylene	<0.12 m	<0.0043 m	<2.8 m	<0.0094 m
Acenaphthene	<0.17 m	<0.0058 m	<2.3 m	<0.011 m
Fluorene	<0.16 m	<0.0064 m	<2.2 m	<0.013 m
Phenanthrene	0.43 b	0.2 a	1.3 b	0.4 a
Anthracene	<0.14 m	<0.0051 m	<0.62 m	<0.021 m
Fluoranthene	0.17 b	0.1 a	0.081 b	<0.013 m
Pyrene	0.22 b	0.14 a	0.13 b	0.08 a
Benz(a)anthracene	<0.12 m	<0.0084 m	<0.19 m	<0.021 m
Chrysene	0.15 b	0.068 a	0.13 b	<0.021 m
Benzo(b/j/k)fluoranthene	<0.12 m	<0.011 m	<0.19 m	<0.028 m
Benzo(a)fluoranthene	<0.13 m	<0.011 m	<0.21 m	<0.028 m
Benzo(e)pyrene	<0.14 m	<0.10 m	<0.21 m	<0.39 m
Benzo(a)pyrene	<1.2 m	<0.10 m	<4.1 m	<0.39 m
Perylene	<1.1 m	<0.10 m	<3.9 m	<0.38 m
Dibenz(a,h)anthracene	<0.22 m	<0.015 m	<0.36 m	<0.039 m
Indeno(1,2,3–cd)pyrene	<0.22 m	<0.011 m	<0.37 m	<0.030 m
Benzo(ghi)perylene	<0.28 m	<0.015 m	<0.46 m	<0.037 m

Sample	ID78 New	ID78 Old	ID82 New	ID82 Old
Location/Depth	Reindeer Ch	Reindeer Ch	Middle Ch	Middle Ch
Date	26/7/87	26/7/87	27/7/87	27/7/87
Analytical Unit	202.96 L	202.96 L	202.96 L	202.96 L
Conversion Factor	176 mg/L		103 mg/L	
Derived Unit				
RRF	RZ		JZ	
	ng/L	ng/L	ng/L	ng/L
F1 Fraction	New	Old	New	Old
Undecane	2.1 b	<0.20	<0.23 e	<0.46
Dodecane	0.92 b	0.27	0.0063 b	<0.11
Tridecane	0.68 b	0.3	<0.13 e	<0.035
Tetradecane	<0.62	0.18 q	<0.62	<0.16
Pentadecane	<1.8	0.39	<1.8	0.29
Hexadecane	<1.9	0.33	<1.9	0.31
Heptadecane	3.1	0.81 a	<0.77	0.88 a
Octadecane	0.7	0.25	0.24	0.31
Nonadecane	0.95 b	0.24 b	0.55 b	0.29 b
Eicosane	0.82 b	0.22 q	1.1 b	<0.38
Heneicosane	2.1	0.45	1.2	0.8
Docosane	1.5	0.3	1.4	0.58
Tricosane	2.2	0.52	2.2	1
Tetracosane	2.3	0.41	2.1	0.87
Pentacosane	3.3	0.43	2.7	1.1
Hexacosane	1.9	0.27 q	2.2	0.72
Heptacosane	3.9	0.46	4.4	1
Octacosane	2.2	<0.16	1.7 q	0.37 q
Nonacosane	2.5	0.2 q	3.3	0.56 q
Triacontane	0.85 q	<0.15	1 q	<0.33
Untriacontane	<0.57	<0.14	3.7	<0.31
Dotriacontane	<0.45	<0.13	1.1 q	<0.28
Tritriacontane	0.47 q	<0.094	0.7 q	0.25 q
Tetratriacontane	0.3 b	0.26	0.25 b	<0.15
Pentatriacontane	0.046 b	0.038 q	1.9 b	<0.073
Hexatriacontane	<0.19 m	0.33	<1.2 m	<0.041
2,6−Dimethyl Undecane	0.32 a	0.086	<0.12 m	0.14 q
Norfarnesane	0.31 a	0.03 b	<0.12 m	0.013 b
Farnesane	0.088 b	0.16	<0.12 m	0.036
2,6,10−Trimethyl Tridecane	0.21 b	0.12	<0.12 m	0.086
Norpristane	<0.74	0.14 b	<0.74	0.18 b
Pristane	3.3	0.98 a	<0.54	0.72 a
Phytane	0.35 b	0.09 q	0.14 b	0.14 q
F2 Fraction				
Naphthalene	1.3 b	0.31 q	0.56 b	<0.29
2−Methyl Naphthalene	4.4 a	0.86 a	0.8 a	0.35 a
1−Methyl Naphthalene	0.97 a	0.24 a	<0.85 m	<0.017 m
Acenaphthylene	<0.063 m	<0.0063 m	<0.36 m	<0.010 m
Acenaphthene	<0.071 m	<0.0077 m	<0.45 m	<0.011 m
Fluorene	0.049 a	<0.0085 m	<0.43 m	<0.012 m
Phenanthrene	0.55 b	0.068 a	0.42 b	0.21 a
Anthracene	0.029 a	<0.0077 m	<0.32 m	<0.013 m
Fluoranthene	0.28 b c	<0.0072 m	0.045 b	<0.010 m
Pyrene	0.26 b	0.065 a	0.098 b	0.087 a
Benz(a)anthracene	0.027 b	<0.014 m	<0.25 m	<0.021 m
Chrysene	0.16 b	<0.014 m	0.036 b	<0.021 m
Benzo(b/j/k)fluoranthene	<0.095 e	<0.016 m	<0.23 m	<0.025 m
Benzo(a)fluoranthene	<0.20 m	<0.016 m	<0.24 m	<0.026 m
Benzo(e)pyrene	0.058 b	<0.030 m	<0.25 m	<0.075 m
Benzo(a)pyrene	<0.93 m	<0.030 m	<1.3 m	<0.075 m
Perylene	<0.93 m	<0.030 m	<1.2 m	<0.074 m
Dibenz(a,h)anthracene	<0.16 m	<0.025 m	<0.44 m	<0.080 m
Indeno(1,2,3−cd)pyrene	<0.16 m	<0.019 m	<0.45 m	<0.061 m
Benzo(ghi)perylene	<0.29 m	<0.024 m	<0.57 m	<0.077 m

Sample	ID84 New	ID84 Old
Location/Depth	East Ch	East Ch
Date	29/7/87	29/7/87
Analytical Unit	408.34 L	408.34 L
Conversion Factor	50.6 mg/L	
Derived Unit		
RRF	JZ	
	ng/L	ng/L
F1 Fraction	**New**	**Old**
Undecane	<0.067 m	<0.23
Dodecane	<0.081 m	0.075 q
Tridecane	<0.11 m	0.075
Tetradecane	<0.31	<0.079
Pentadecane	<0.89	0.29
Hexadecane	<0.95	0.12 q
Heptadecane	<0.38	0.086 a
Octadecane	0.054 q	0.099
Nonadecane	0.21 b	0.091 b
Eicosane	0.19 b	<0.19
Heneicosane	0.33	0.21
Docosane	0.33	0.14
Tricosane	0.74	0.42
Tetracosane	0.78	0.25 q
Pentacosane	1.1	0.38
Hexacosane	0.62 q	0.11 q
Heptacosane	1	0.26 q
Octacosane	0.59 q	<0.19
Nonacosane	1.3	<0.14
Triacontane	0.37 q	<0.17
Untriacontane	0.92 q	<0.16
Dotriacontane	0.46 q	<0.14
Tritriacontane	0.45 q	<0.11
Tetratriacontane	0.24 b	<0.075
Pentatriacontane	0.18 b	<0.037
Hexatriacontane	<0.95 m	<0.021
2,6−Dimethyl Undecane	<0.093 m	<0.028
Norfarnesane	<0.093 m	0.014 b
Farnesane	<0.097 m	0.02
2,6,10−Trimethyl Tridecane	<0.090 m	0.013 q
Norpristane	<0.37	0.024 b
Pristane	<0.27	0.055 a
Phytane	0.042 b	<0.049
F2 Fraction		
Naphthalene	<12 m	<0.14
2−Methyl Naphthalene	<11 m	0.19 a
1−Methyl Naphthalene	<11 m	0.071 a
Acenaphthylene	<4.5 m	<0.0028 m
Acenaphthene	<4.3 m	<0.0035 m
Fluorene	<4.1 m	<0.0039 m
Phenanthrene	0.25 b	0.23 a
Anthracene	<0.24 m	0.025 a
Fluoranthene	0.098 b	0.061 a
Pyrene	0.26 b	0.15 a
Benz(a)anthracene	<0.17 m	<0.0059 m
Chrysene	0.037 b	0.092 a
Benzo(b/j/k)fluoranthene	<0.17 m	<0.0078 m
Benzo(a)fluoranthene	<0.18 m	<0.0080 m
Benzo(e)pyrene	<0.19 m	<0.023 m
Benzo(a)pyrene	<1.2 m	<0.023 m
Perylene	<1.1 m	<0.023 m
Dibenz(a,h)anthracene	<0.36 m	<0.020 m
Indeno(1,2,3−cd)pyrene	<0.36 m	<0.015 m
Benzo(ghi)perylene	<0.45 m	<0.020 m

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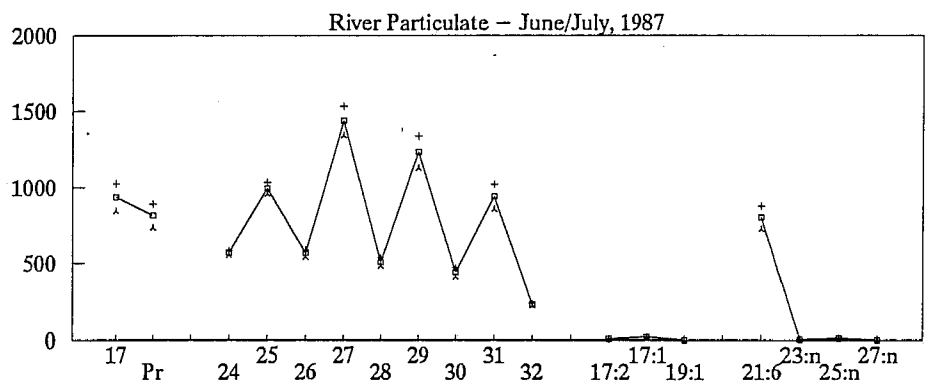
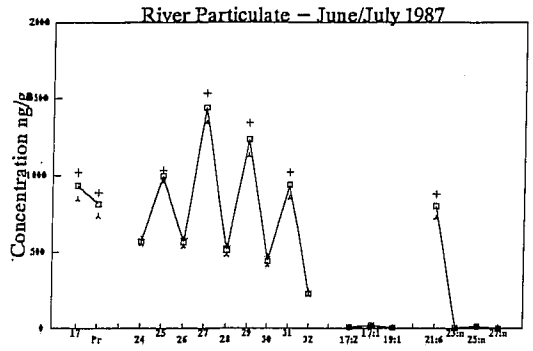
APPENDIX 6; KEY ALKANE AND ALKENE INDICATORS PRESENTED AS GRAPHS, TOTALS AND RATIOS

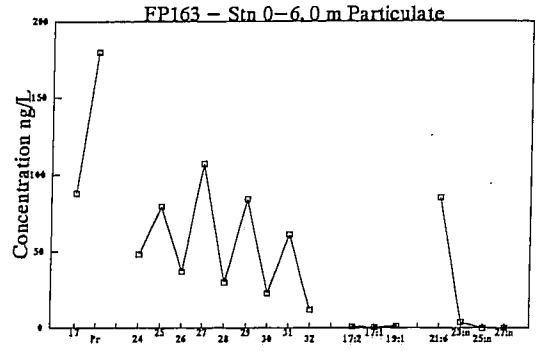
Explanation of Variables Graphed (uncertainties are plus or minus one standard error of the normalized concentrations)

Abbreviation	Explanation	Abbreviation	Explanation
17	Heptacosane	17:2	Heptadecadiene
Pr	Pristane	17:1	Heptadecene
24	Tetracosane	19:1	Nonadecene
25	Pentacosane	21:6	Heneicosahexaene
26	Hexacosane	23:n	Tricosapolyene
27	Heptacosane	25:n	Pentacosapolyene
28	Octacosane	27:n	Heptacosapolyene
29	Nonacosane		
30	Triacontane		
31	Untriacontane		
32	Dotriacontane		



Concentrations and Ratios	Explanation
$nC_{15}-C_{19}$	Total pentadecane to nonadecane
$nC_{23}-C_{33}$	Total tricosane to tritriacontane
Pristane	Pristane
OEP C_{17}	Odd/even predominance centered at C_{17}
OEP C_{25}	Odd/even predominance centered at C_{25}
OEP C_{27}	Odd/even predominance centered at C_{27}
OEP C_{29}	Odd/even predominance centered at C_{29}
Pr/Ph	Pristane/phytane
$nC_{21:6}$	Heneicosahexaene
$nC_{23:n}-C_{27:n}$	Total tricosapolyene to heptacosapolyene
$C_{15-19}/_{15-33}$	$nC_{15}-C_{19}/C_{23}-C_{33}$
$H/H+C_{23-33}$	Heneicosahexaene/heneicosahexaene $+nC_{23}-C_{33}$





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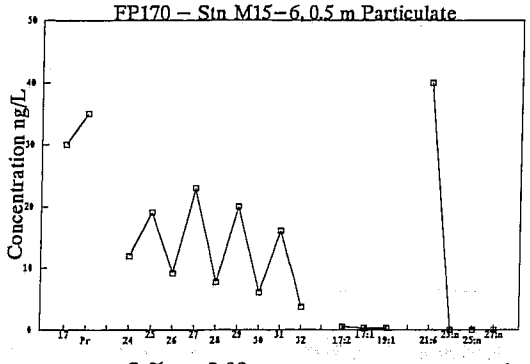

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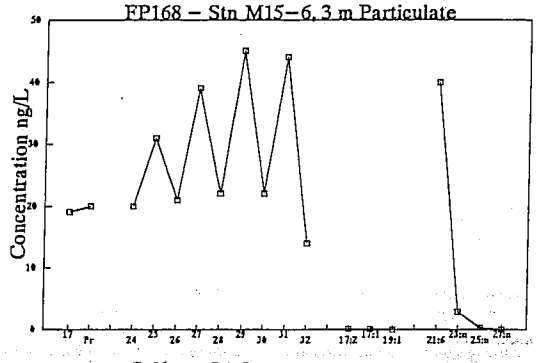
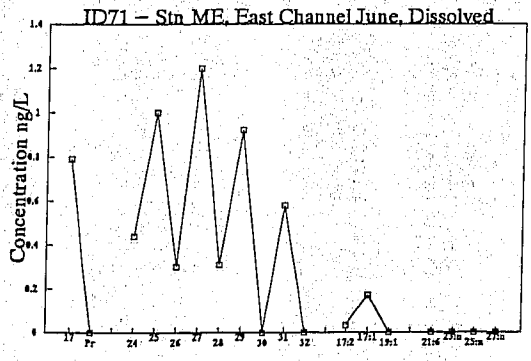
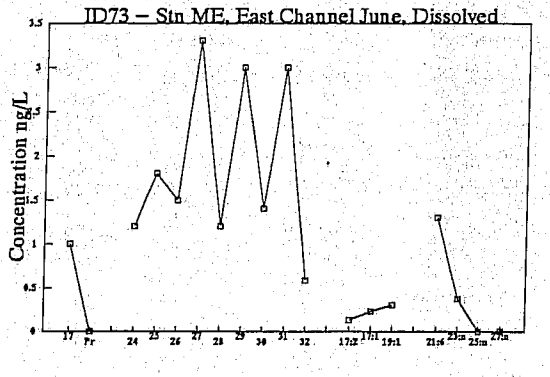
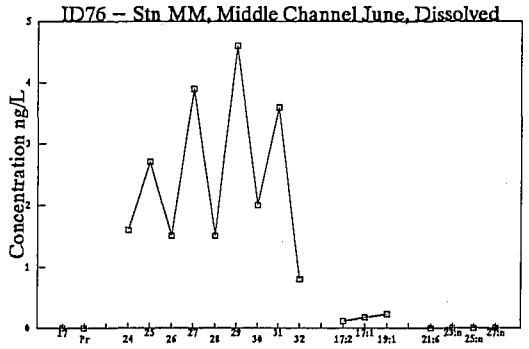


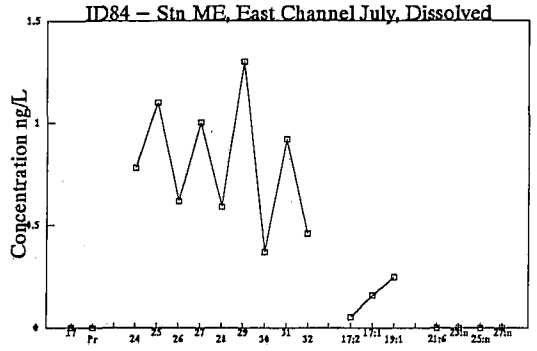
S ‰ = 21.3

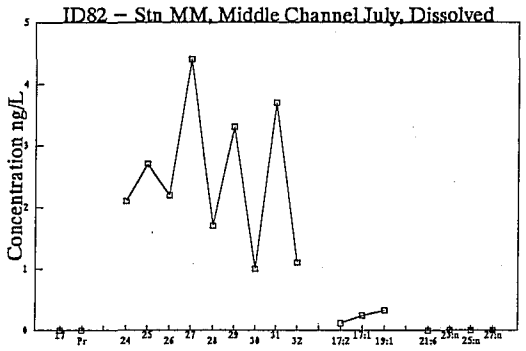
	River 6–7/87 Mean ng/L	River 6–7/87 sd	River 6–7/87 Mean ng/g	River 6–7/87 sd	FP163 Stn 0–6	FP170 Stn M15–6	FP168 Stn M15–6
$nC_{15}-C_{19}$	601	373	3538	1696	307	105	81
$nC_{23}-C_{33}$	1444	868	8023	4012	585	144	309
Pristane	145	106	812	465	180	35	20
OEP C_{17}	1.36	0.48	1.36	0.48	1.37	1.52	1.17
OEP C_{25}	1.83	0.26	1.83	0.26	1.94	1.85	1.52
OEP C_{27}	2.73	0.64	2.73	0.64	3.00	2.60	1.80
OEP C_{29}	2.93	0.70	2.93	0.70	3.17	2.86	2.01
Pr/Ph	1.73	0.38	1.73	0.38	3.27	2.50	1.54
$nC_{21:6}$	140	105	801	517	85	40	40
$nC_{23:n}-C_{27:n}$	3.0	3.7	18.5	20.9	3.8	0.0	3.2
$C_{15-19}/_{15-33}$	0.27	0.13	0.27	0.13	0.28	0.34	0.18
$H/H+C_{23-33}$	0.11	0.07	0.11	0.07	0.13	0.22	0.11

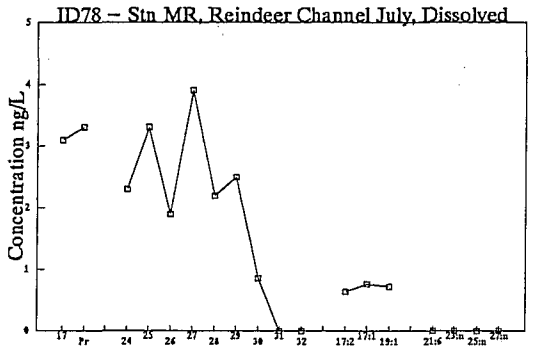


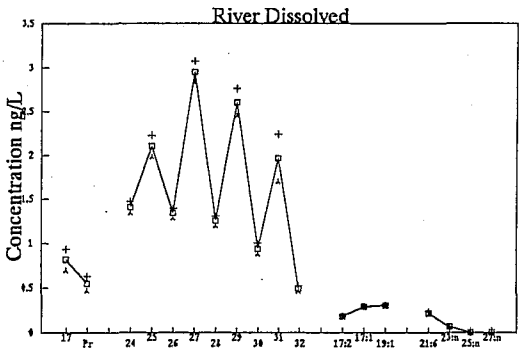


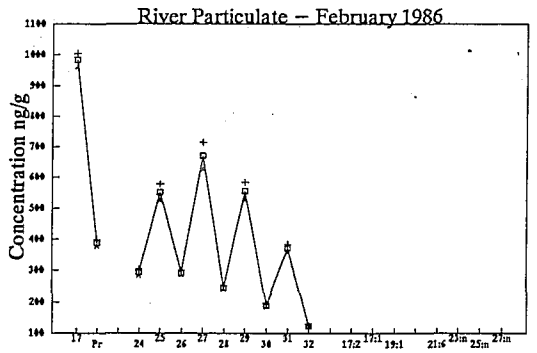








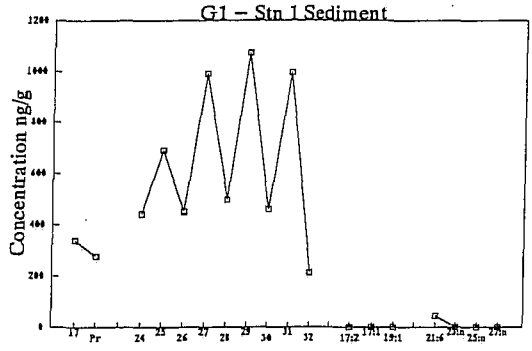


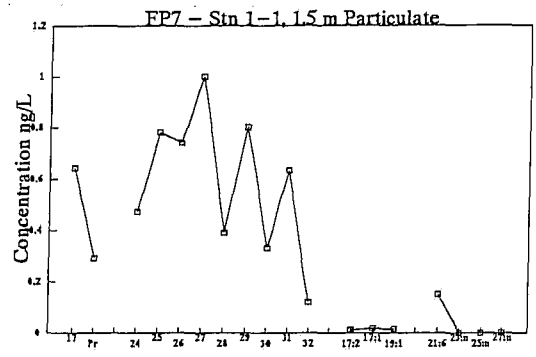


Erickson and Fowler, 1987.

	ID71 ME–East	ID73 ME–East	ID76 MM–Mid	ID84 ME–East	ID82 MM–Mid	ID78 MR–Rein	River 6–7/87 Mean	River 6–7/87 sd
$nC_{15}-C_{19}$	1.9	2.0	1.1	0.3	0.8	4.8	1.8	1.6
$nC_{23}-C_{33}$	6.1	19.0	25.0	8.3	25.0	20.0	17.2	8.2
Pristane	<0.32	<0.25	<0.49	<0.27	<0.54	3.3	0.6	1.3
OEP C_{17}							0.00	0.00
OEP C_{25}	2.80	1.44	1.81	1.49	1.33	1.54	1.73	0.55
OEP C_{27}	3.74	2.28	2.56	1.74	2.08	1.78	2.36	0.74
OEP C_{29}		2.34	2.51	2.53	2.58		2.49	0.11
Pr/Ph						9.43	9.43	
$nC_{21:6}$	<0.47	1.3	<2.4	<0.92	<1.3	<0.64	0.22	0.53
$nC_{23:n}-C_{27:n}$	0.0	0.4	0.0	0.0	0.0	0.0	0.06	0.15
$C_{15-19}/_{15-33}$	0.19	0.09	0.04	0.03	0.03	0.17	0.09	0.07
$H/H+C_{23-33}$	0.00	0.06	0.00	0.00	0.00	0.00	0.01	0.03

Peat/Station 1





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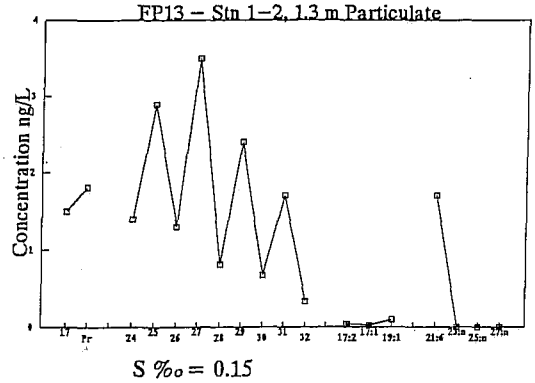

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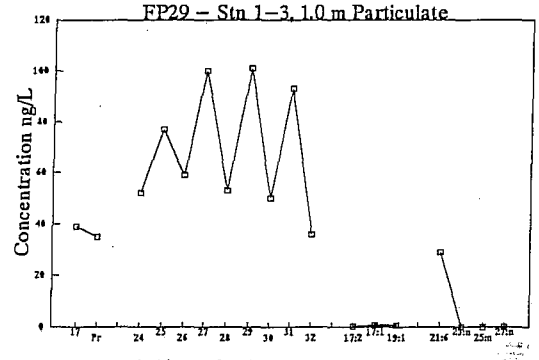

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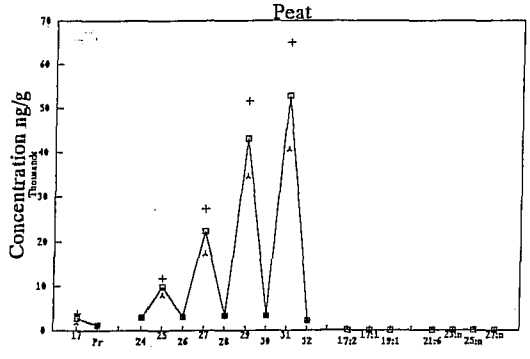
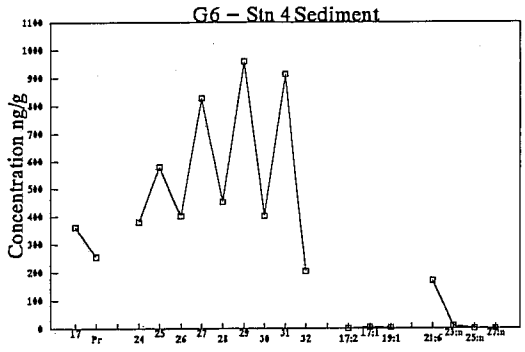
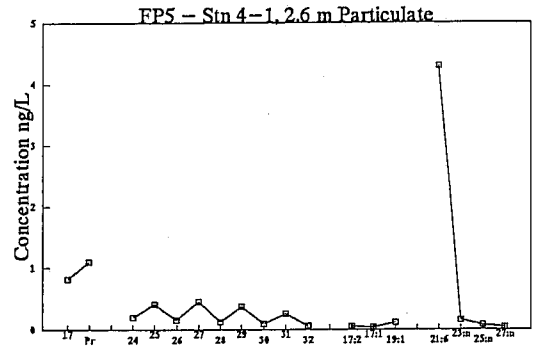


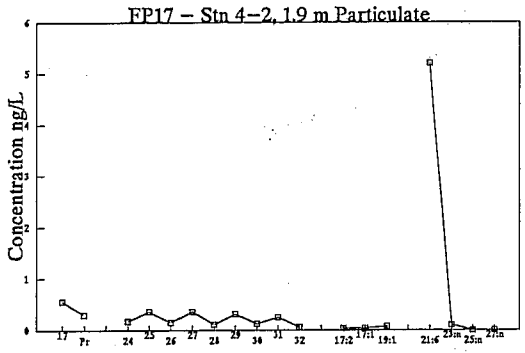
	G1 Stn 1	FP7 Stn 1–1	FP13 Stn 1–2	FP29 Stn 1–3	River 2/86 Mean ng/g	River 2/86 sd	Peat Mean ng/g	Peat sd
$nC_{15}-C_{19}$	1310	2.3	4.2	167.0	2104	1347	10264	16741
$nC_{23}-C_{33}$	6720	6.1	18.0	749.0	3928	929	168963	117973
Pristane	277	0.29	1.8	35	384	208	1165	1983
OEP C_{17}	1.35	1.89	2.23	1.19	1.85	0.22	1.26	0.25
OEP C_{25}	1.58	1.30	2.15	1.40	1.87	0.19	3.92	0.57
OEP C_{27}	2.04	1.68	3.12	1.74	2.42	0.27	7.70	1.83
OEP C_{29}	2.20	2.23	3.31	1.94	2.55	0.26	12.50	3.47
Pr/Ph	1.33	1.32	1.84	1.06	1.16	0.13	1.88	1.00
$nC_{21:6}$	44	0.15	1.70	29.0			0.00	0.00
$nC_{23:n}-C_{27:n}$	0.0	0.00	0.00	0.0			0.00	0.00
$C_{15-19}/_{15-33}$	0.14	0.24	0.16	0.16			0.07	0.16
$H/H+C_{23-33}$	0.01	0.02	0.09	0.04			0.00	

Station 4

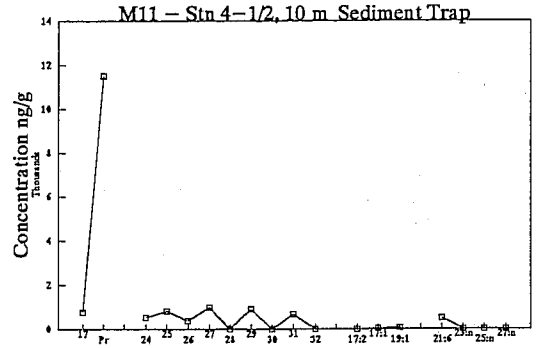


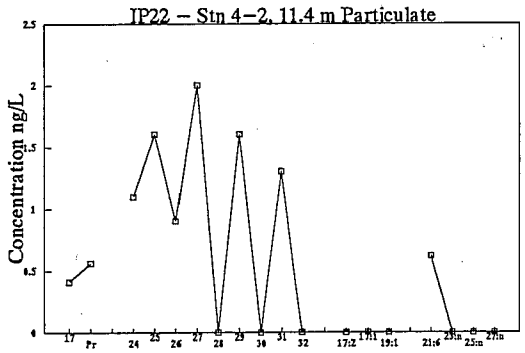


S ‰ = 13.3

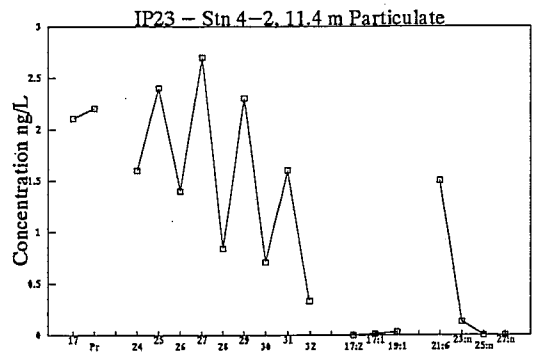


S ‰ = 10





S ‰ = 30.8



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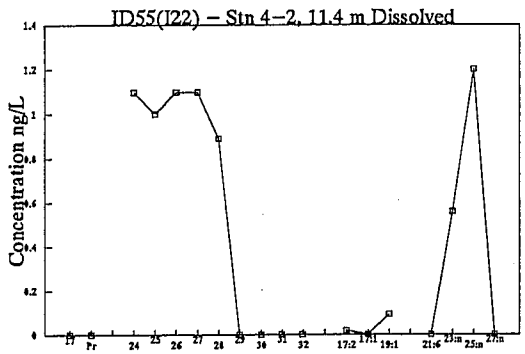

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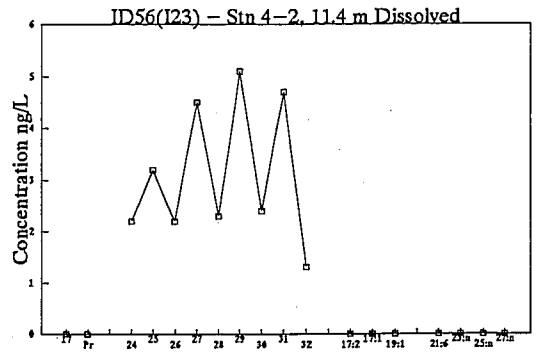

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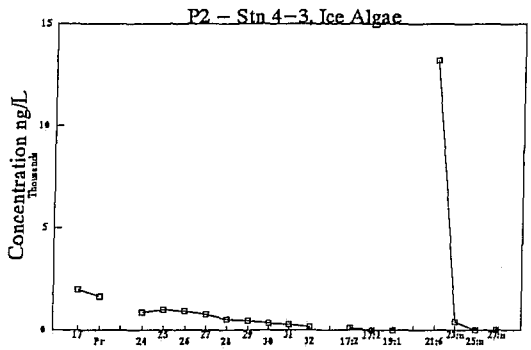
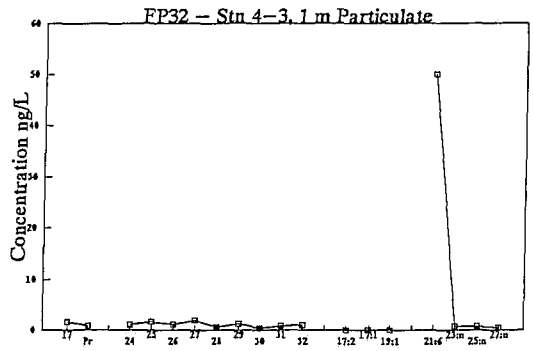
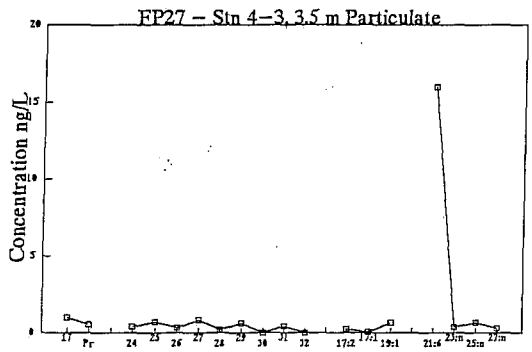
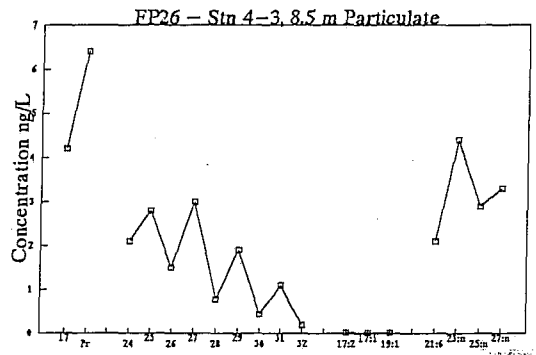




S ‰ = 6.2



S ‰ = 6.7



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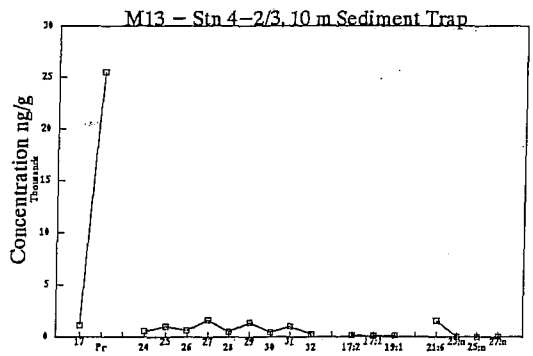
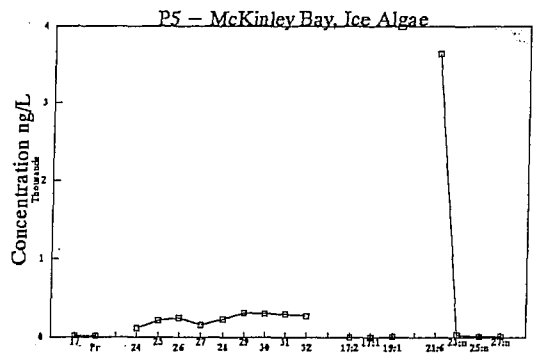
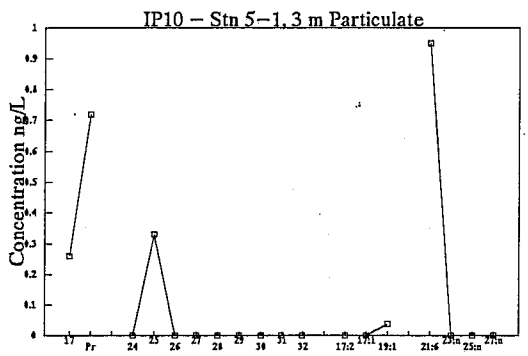




	G6 Stn 4	FP5 Stn 4–1	FP17 Stn 4–2	M11 Stn 4–1/2	IP22 Stn 4–2	IP23 Stn 4–2	ID55 (I22) Stn 4–2	ID56 (I23) Stn 4–2
$nC_{15}-C_{19}$	1320	1.90	1.30	3020	1.90	8.30	0.75	1.20
$nC_{23}-C_{33}$	5990	2.70	2.40	4920	10.00	17.00	5.90	32.00
Pristane	256	1.10	0.30	11500	0.56	2.20	<0.71	<0.46
OEP C_{17}	1.38	2.86	2.86	1.17	1.38	1.22		
OEP C_{25}	1.51	2.44	2.25	1.91	1.61	1.63	0.88	1.47
OEP C_{27}	1.89	3.28	2.65			2.33		1.96
OEP C_{29}	2.18	3.48	2.66			2.92		2.12
Pr/Ph	1.29	5.79	2.14	28	1.19	1.83		
$nC_{21:6}$	170	4.30	5.20	494	0.62	1.50	<0.12	<2.4
$nC_{23:n}-C_{27:n}$	8.00	0.28	0.09	0.0	0.00	0.13	1.76	0.00
$C_{15-19}/_{15-33}$	0.16	0.32	0.28	0.31	0.12	0.26	0.10	0.03
$H/H+C_{23-33}$	0.03	0.61	0.68	0.09	0.06	0.08	0.00	0.00

	FP32	FP27	FP26	M13	P2	P5
	Stn 4–3	Stn 4–3	Stn 4–3	Stn 4–2/3	Stn 4–3	McKinley Bay
$nC_{15}-C_{19}$	4.7	2.7	18	4880	6410	63
$nC_{23}-C_{33}$	12	4.5	17	8440	6190	2430
Pristane	0.87	0.55	6.4	25500	1640	16
OEP C_{17}	1.82	2.35	1.14	1.18	1.23	1.30
OEP C_{25}	1.42	2.08	1.57	1.77	1.03	1.04
OEP C_{27}	1.97	3.03	2.49	2.78	1.04	0.77
OEP C_{29}	2.58		3.20	3.07	1.10	1.07
Pr/Ph	1.89	1.90	2.4	39	1.33	1.68
$nC_{21:6}$	50	16.0	2.1	1540	13200	3640
$nC_{23:n}-C_{27:n}$	2.1	1.3	10.6	0.0	427	43
$C_{15-19}/_{15-33}$	0.24	0.30	0.41	0.31	0.46	0.02
$H/H+C_{23-33}$	0.81	0.78	0.11	0.15	0.68	0.60

Station 5



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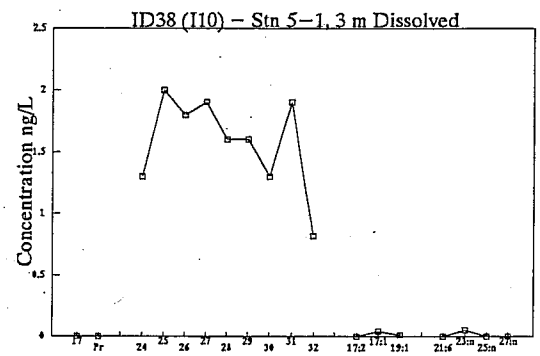
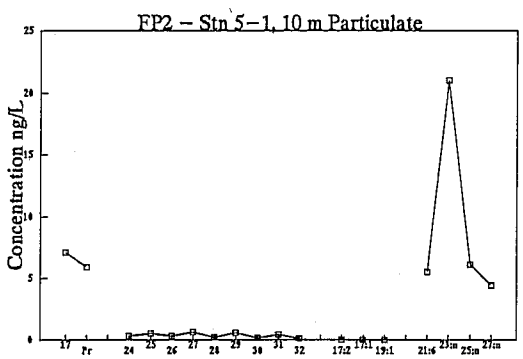


S ‰ = 30.1



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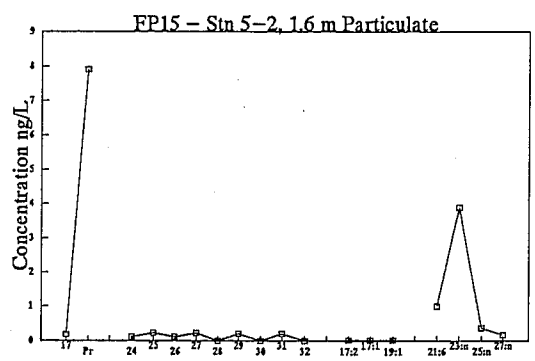

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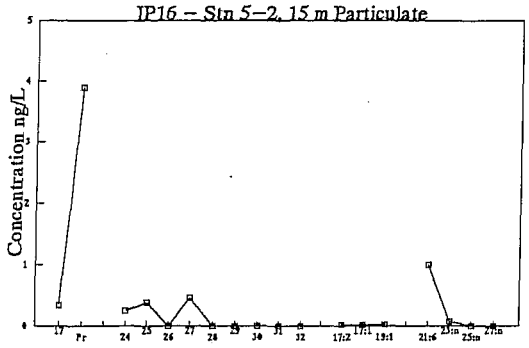

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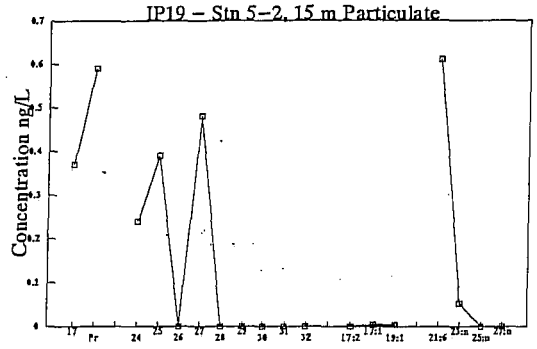

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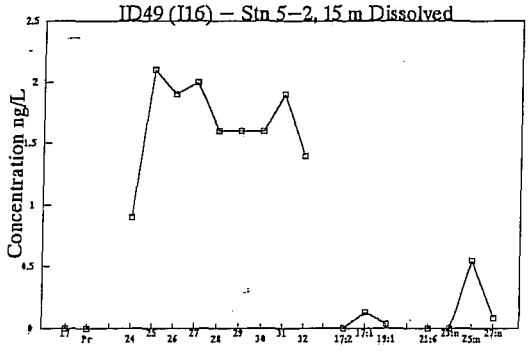

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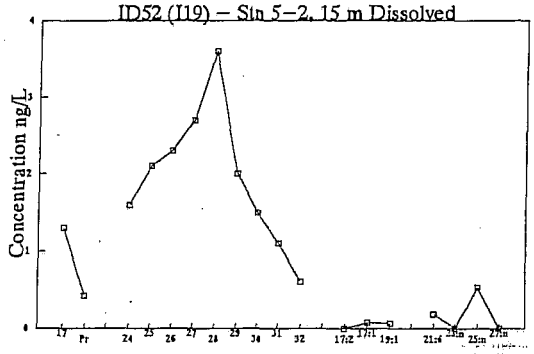

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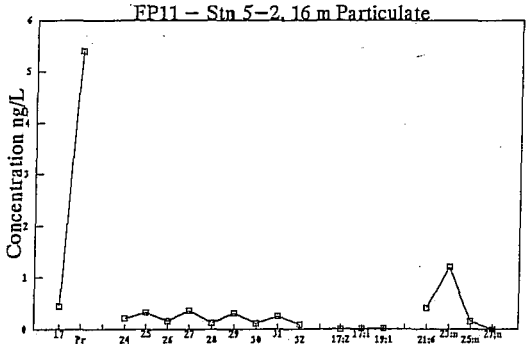

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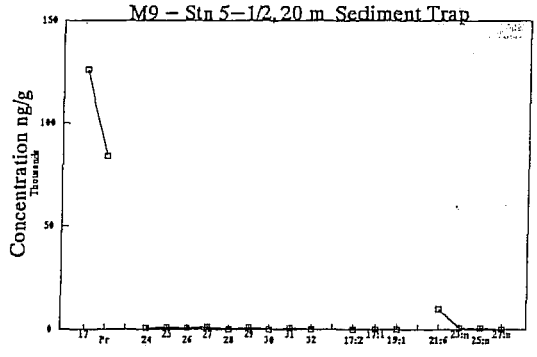

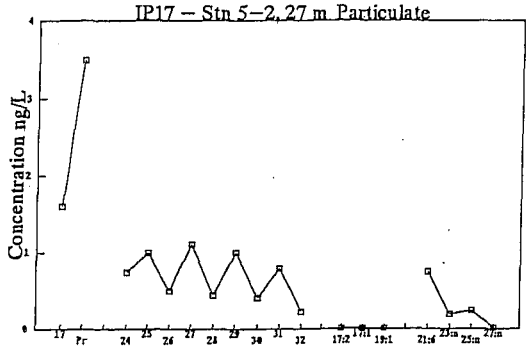

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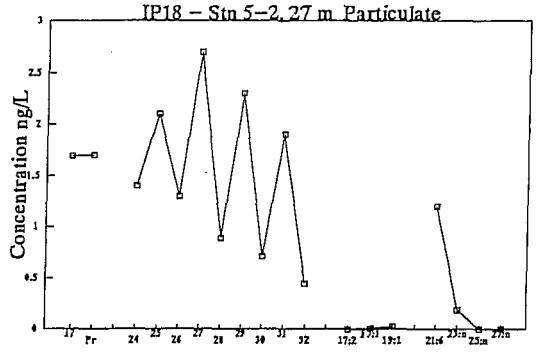

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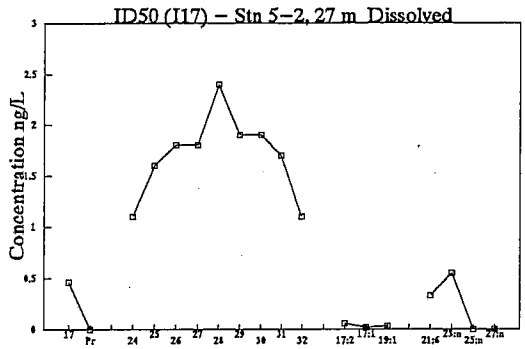

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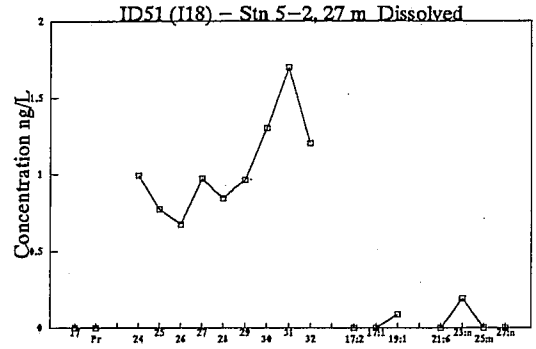

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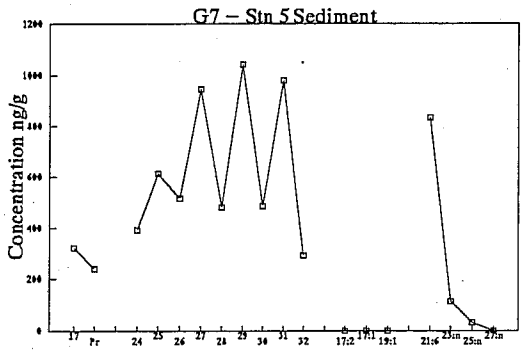

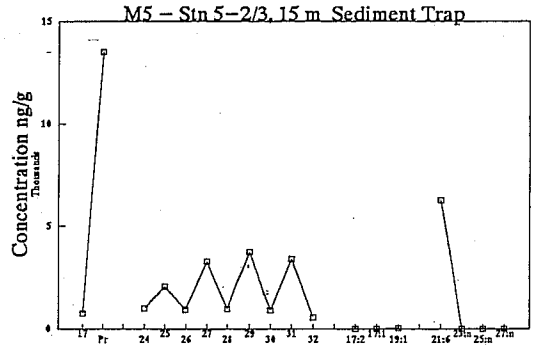

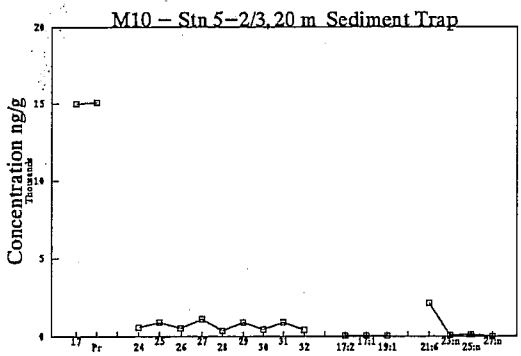

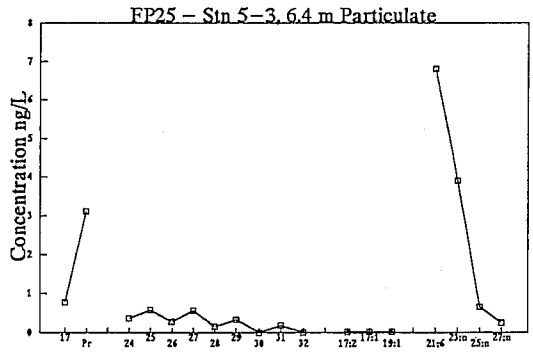

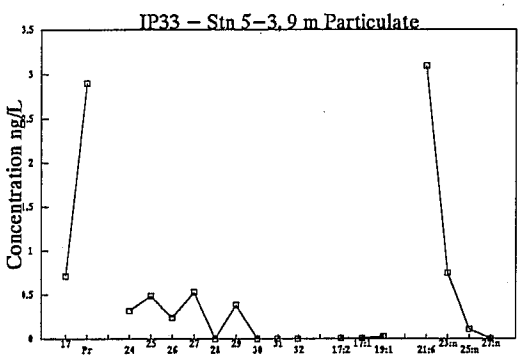

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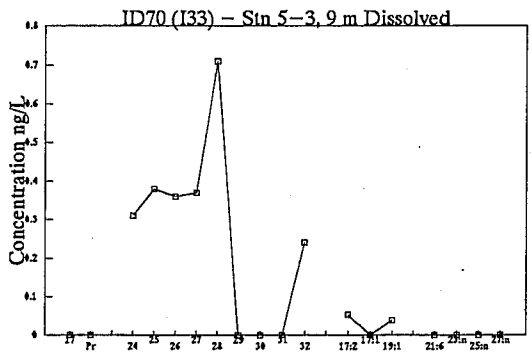

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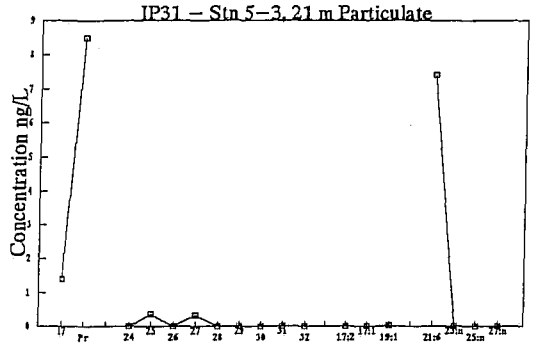

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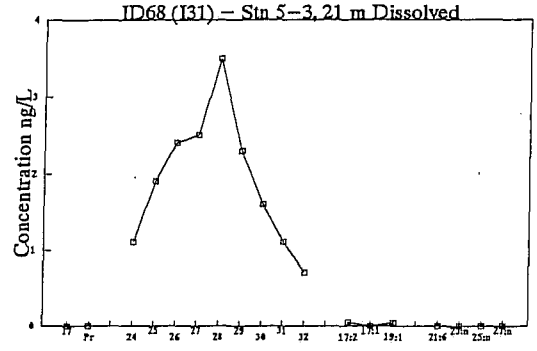

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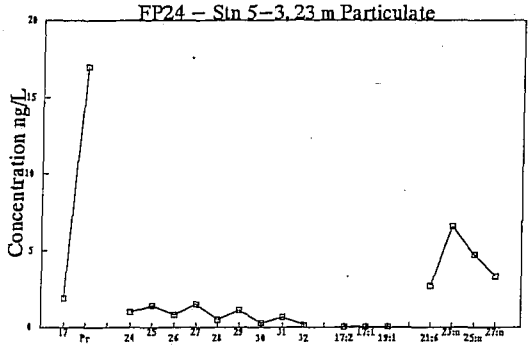

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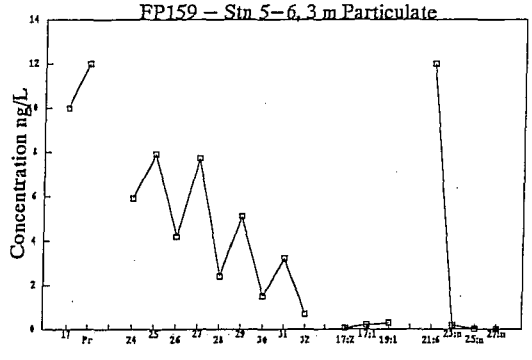
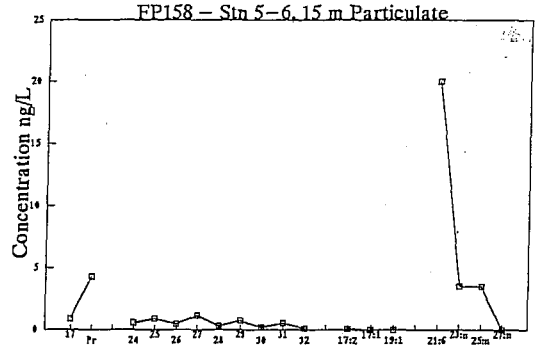


S ‰ = 21.4



S ‰ = 27.9

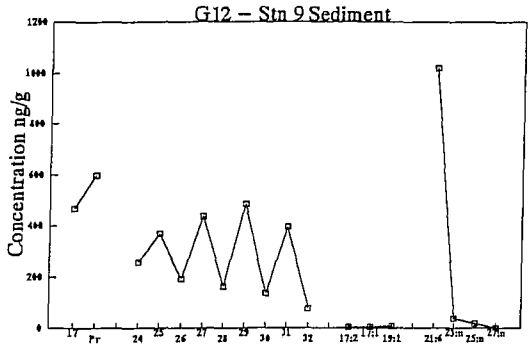
	IP10 Stn 5–1	ID38 (I10) Stn 5–1	FP2 Stn 5–1	FP15 Stn 5–2	IP16 Stn 5–2	IP19 Stn 5–2	ID49 (I16) Stn 5–2	ID52 (I19) Stn 5–2
$nC_{15}-C_{19}$	0.95	0.78	8.80	0.66	1.30	1.40	1.20	3.30
$nC_{23}-C_{33}$	0.33	16.0	3.80	1.30	1.70	1.40	17.0	19.0
Pristane	0.72	<0.54	5.90	7.90	3.90	0.59	<0.39	0.4
OEP C_{17}	1.09		13.08	1.49	1.18	1.20		
OEP C_{25}		1.20	1.63	1.96			1.40	1.06
OEP C_{27}		1.10	2.42				1.12	0.86
OEP C_{29}		1.16	3.03				1.05	0.77
Pr/Ph	4.80		20	87	15	2.81		1.02
$nC_{21:6}$	0.95	<0.050	5.5	1.0	1.00	0.61	<0.30	0.2
$nC_{23:n}-C_{27:n}$	0.00	0.1	31.5	4.4	0.07	0.05	0.6	0.5
$C_{15-19}/_{15-33}$	0.74	0.04	0.64	0.27	0.33	0.37	0.06	0.14
$H/H+C_{23-33}$	0.74	0.00	0.59	0.43	0.37	0.30	0.00	0.01

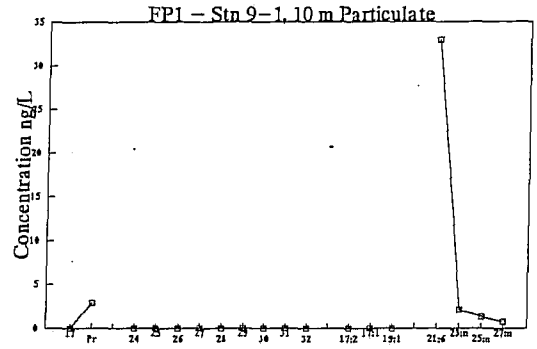
	G7	M9	FP11	IP17	IP18	ID50 (I17)	ID51 (I18)	FP25
	Stn 5	Stn 5−1/2	Stn 5−2	Stn 5−2	Stn 5−2	Stn 5−2	Stn 5−2	Stn 5−3
$nC_{15}-C_{19}$	1120	129000	1.90	7.40	7.10	0.97	0.21	2.80
$nC_{23}-C_{33}$	6780	5300	2.30	7.70	16.00	17.0	11.0	2.90
Pristane	240	83700	5.40	3.50	1.70	<0.29	<0.38	3.10
OEP C_{17}	1.42	118.09	1.22	1.13	1.19			1.24
OEP C_{25}	1.41	1.66	1.81	1.65	1.57	1.08	0.93	1.78
OEP C_{27}	1.83		2.43	2.29	2.35	0.85	1.25	2.49
OEP C_{29}	2.11		2.61	2.32	2.88	0.87	0.98	
Pr/Ph	1.28	143	22	3.85	1.85			6.89
$nC_{21:6}$	831	9850	0.40	0.75	1.20	0.33	<0.14	6.8
$nC_{23:n}-C_{27:n}$	144	1001	1.35	0.45	0.19	0.55	0.19	4.8
$C_{15-19}/_{15-33}$	0.12	0.95	0.36	0.40	0.25	0.05	0.02	0.39
$H/H+C_{23-33}$	0.11	0.65	0.15	0.09	0.07	0.02	0.00	0.70

	IP33	ID70 (I33)	M5	M10	IP31	ID68 (I31)	FP24
	Stn 5−3	Stn 5−3	Stn 5−2/3	Stn 5−2/3	Stn 5−3	Stn 5−3	Stn 5−3
$nC_{15}-C_{19}$	2.80	0.01	3070	17100	2.20	0.48	7.80
$nC_{23}-C_{33}$	2.60	2.70	19000	7220	0.96	18.00	9.00
Pristane	2.90	<0.27	13500	15100	8.5	<0.44	17
OEP C_{17}	1.21		1.18	20.02	5.00		1.10
OEP C_{25}	1.77	1.09	2.21	1.60		1.04	1.52
OEP C_{27}			3.36	2.27		0.81	2.16
OEP C_{29}			3.91	2.30		0.85	2.84
Pr/Ph	7.84		23	30	57		14
$nC_{21:6}$	3.1	<0.15	6270	2130	7.4	<0.40	2.7
$nC_{23:n}-C_{27:n}$	0.86	0.00	0.0	175	0.00	0.00	14.6
$C_{15-19}/_{15-33}$	0.41	0.00	0.12	0.66	0.57	0.03	0.38
$H/H+C_{23-33}$	0.54	0.00	0.25	0.23	0.89	0.00	0.23

	FP159	FP158
	Stn 5−6, 3 m	Stn 5−6, 15 m
$nC_{15}-C_{19}$	38	2.9
$nC_{23}-C_{33}$	48	5.7
Pristane	12	4.3
OEP C_{17}	1.20	1.49
OEP C_{25}	1.57	1.73
OEP C_{27}	2.24	2.65
OEP C_{29}	2.66	3.02
Pr/Ph	1.76	7.96
$nC_{21:6}$	12	20
$nC_{23:n}-C_{27:n}$	0.16	7.0
$C_{15-19}/_{15-33}$	0.34	0.27
$H/H+C_{23-33}$	0.20	0.78

Station 9





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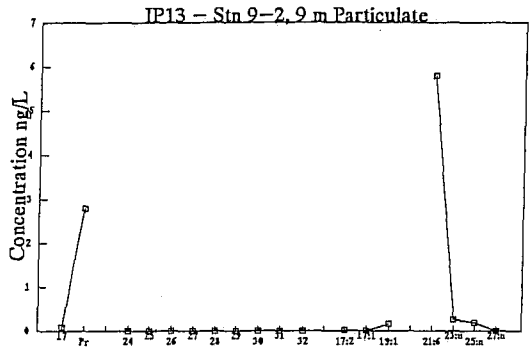

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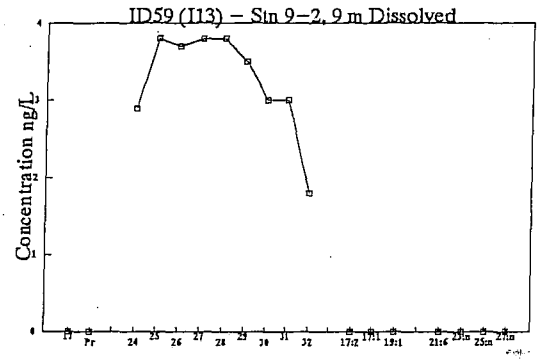

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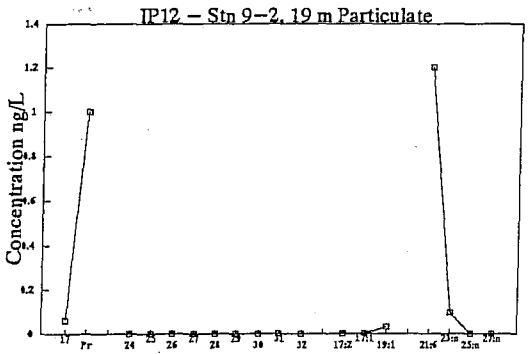

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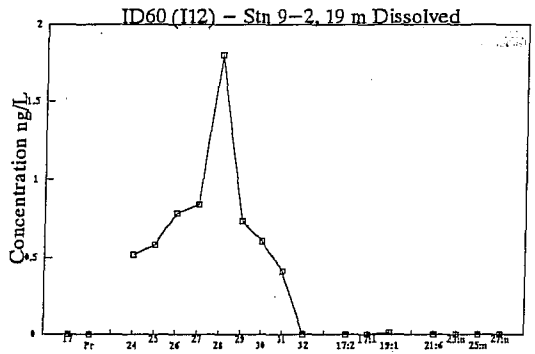

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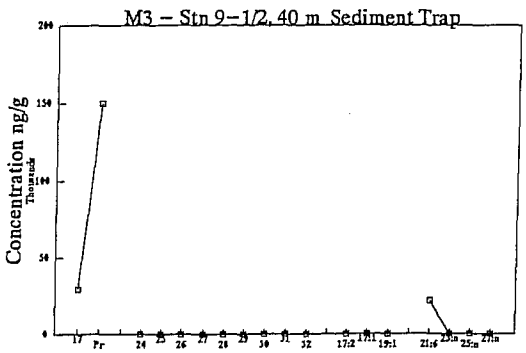
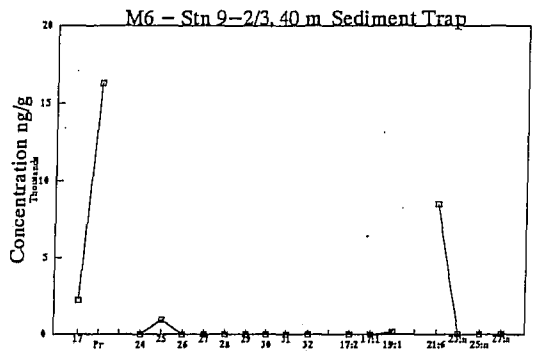
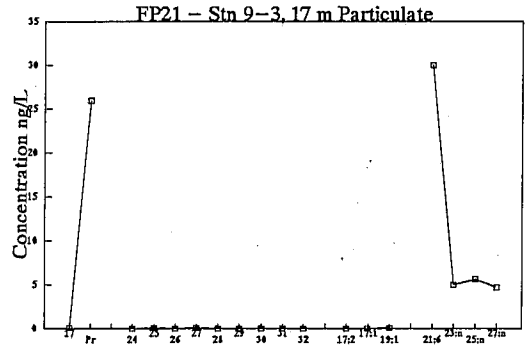


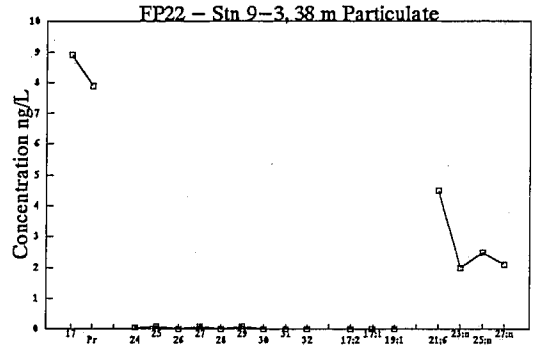


FP21 – Stn 9–3, 17 m Particulate



S ‰ = 31.1

FP22 – Stn 9–3, 38 m Particulate



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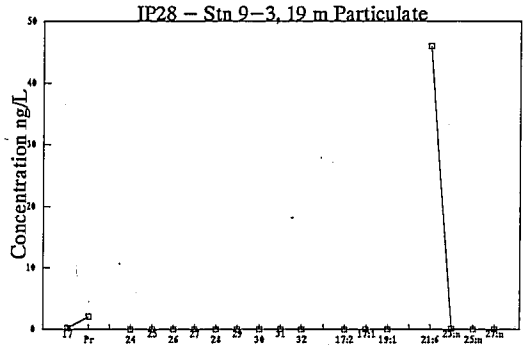
IP28 – Stn 9–3, 19 m Particulate



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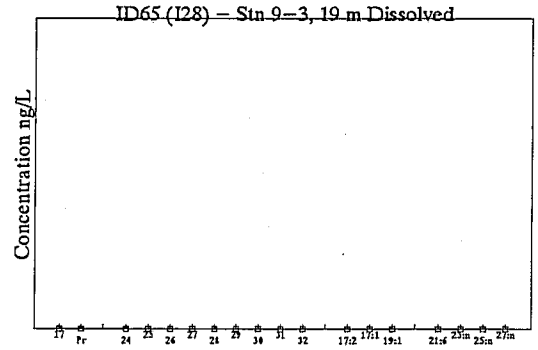
ID65 (I28) – Stn 9–3, 19 m Dissolved



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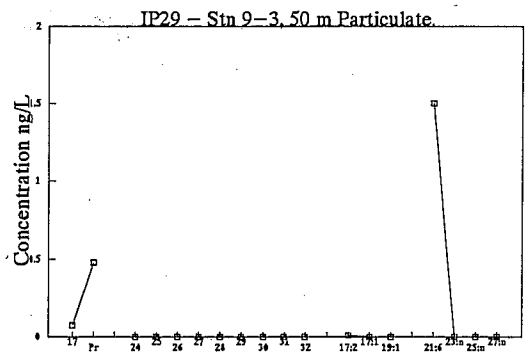
IP29 – Stn 9–3, 50 m Particulate.



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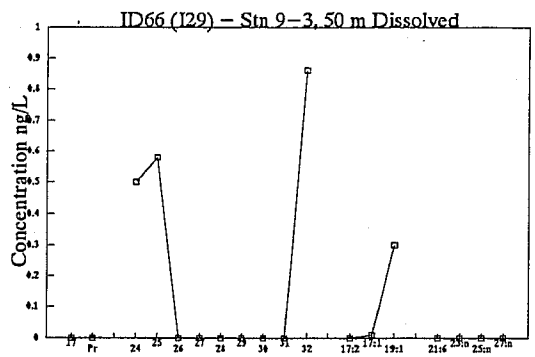
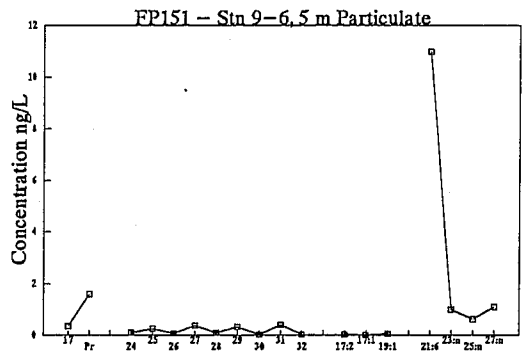
ID66 (I29) – Stn 9–3, 50 m Dissolved



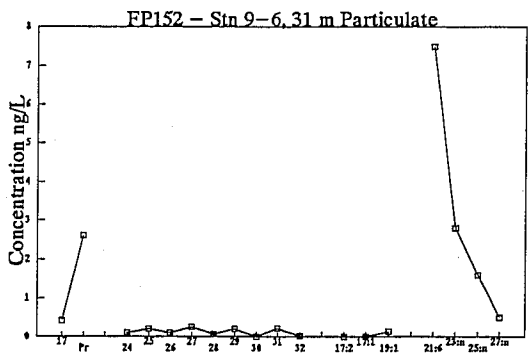
S ‰ = 32.0

FP151 – Stn 9–6, 5 m Particulate



S ‰ = 29.5

FP152 – Stn 9–6, 31 m Particulate

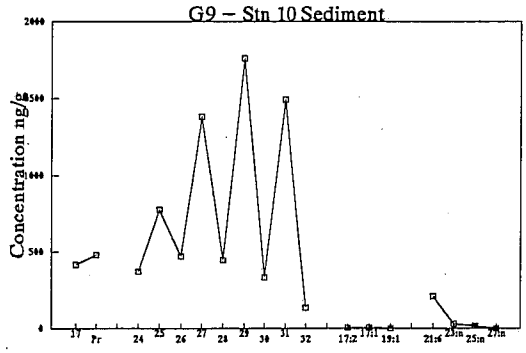


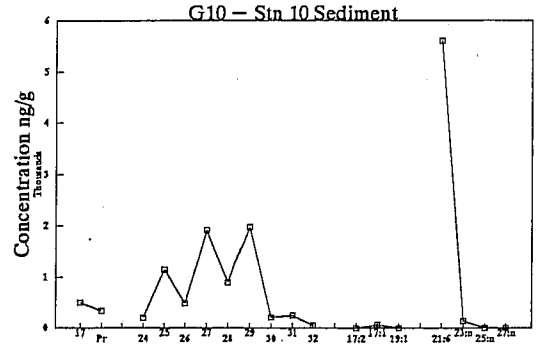
S ‰ = 31.8

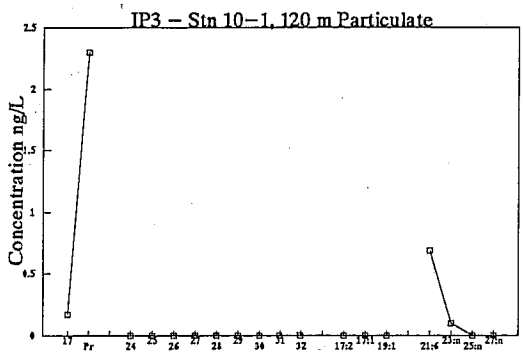
	G12	FP1	IP13	ID59 (I13)	IP12	ID60 (I12)	M3	FP21
	Stn 9	Stn 9−1	Stn 9−2	Stn 9−2, 9 m	Stn 9−2	Stn 9−2	Stn 9−1/2	Stn 9−3
$nC_{15}-C_{19}$	2110	0.10	0.22	1.70	0.22	0.45	31900	0.43
$nC_{23}-C_{33}$	3070	0.03	0.00	33.0	0.00	6.70	0.00	0.21
Pristane	597	2.9	2.8	<0.92	1.00	<0.28	150000	26
OEP C_{17}	1.14	1.49			0.94		24.54	1.26
OEP C_{25}	1.70			1.10		0.91		
OEP C_{27}	2.45			1.00		0.62		
OEP C_{29}	3.14			1.02		0.59		
Pr/Ph	2.14	330			31		286	473
$nC_{21:6}$	1020	33	5.8	<0.13	1.20	<0.018	21800	30
$nC_{23:n}-C_{27:n}$	56	4.1	0.44	0.00	0.10	0.00	0.00	15
$C_{15-19}/_{15-33}$	0.33	0.75	1.00	0.05	1.00	0.06	1.00	0.64
$H/H+C_{23-33}$	0.25	1.00	1.00	0.00	1.00	0.00	1.00	0.99

	IP28	ID65 (I28)	FP22	M6	IP29	ID66 (I29)	FP151	FP152
	Stn 9−3	Stn 9−3	Stn 9−3	Stn 9−2/3	Stn 9−3	Stn 9−3	Stn 9−6, 5 m	Stn 9−6, 31 m
$nC_{15}-C_{19}$	0.61	0.00	9.10	2900	0.23	0.28	0.93	0.95
$nC_{23}-C_{33}$	0.00	0.25	0.37	941	0.00	2.4	2.1	1.4
Pristane	2.1	<0.73	7.9	16300	0.48	<0.61	1.6	2.6
OEP C_{17}	1.21		136.40	8.63	0.93		6.38	5.09
OEP C_{25}							2.90	1.92
OEP C_{27}							3.63	2.51
OEP C_{29}							4.42	
Pr/Ph	15		255	37	9.80		107	87
$nC_{21:6}$	46	<12	4.5	8490	1.50	<0.63	11.0	7.5
$nC_{23:n}-C_{27:n}$	0.07	0.00	6.6	0.0	0.00	0.00	2.7	4.9
$C_{15-19}/_{15-33}$	1.00	0.00	0.95	0.76	1.00	0.09	0.28	0.37
$H/H+C_{23-33}$	1.00	0.00	0.92	0.90	1.00	0.00	0.84	0.84

Station 10







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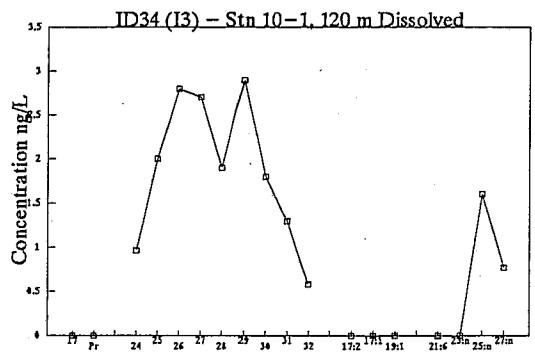

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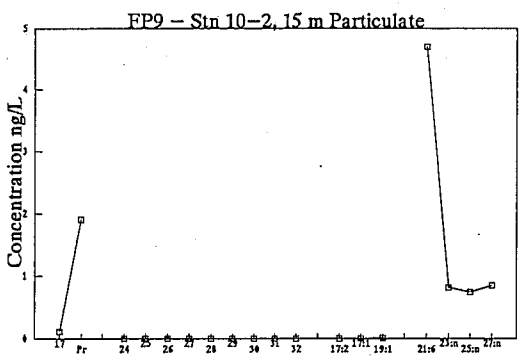

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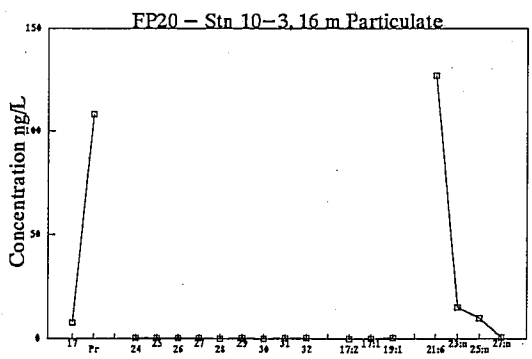

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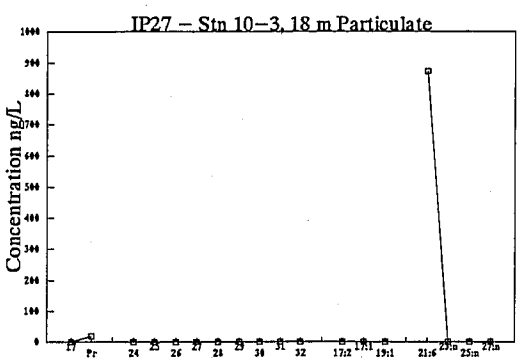

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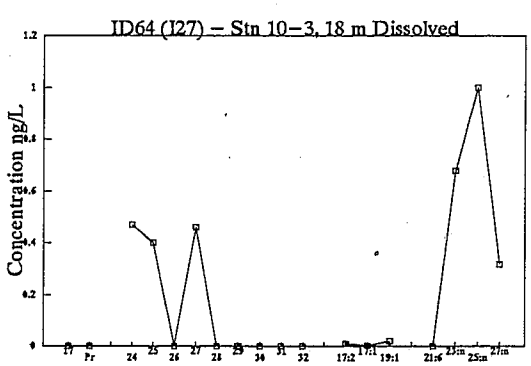

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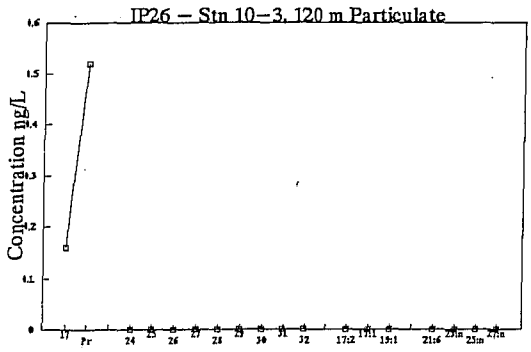

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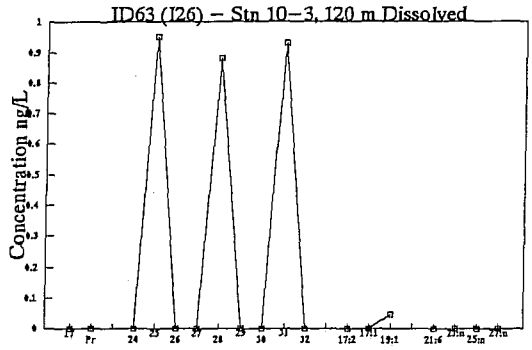
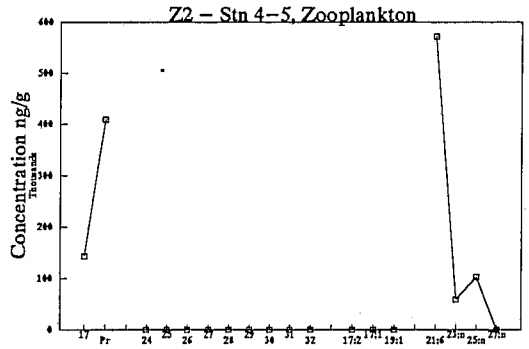


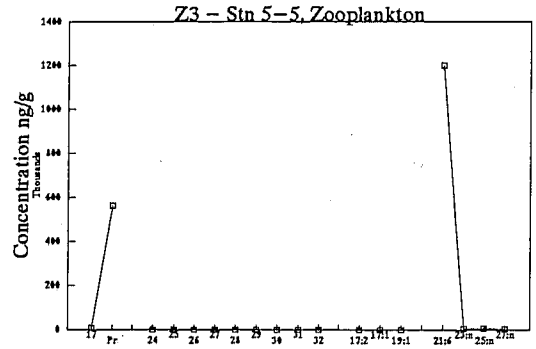
S ‰ = 33.2

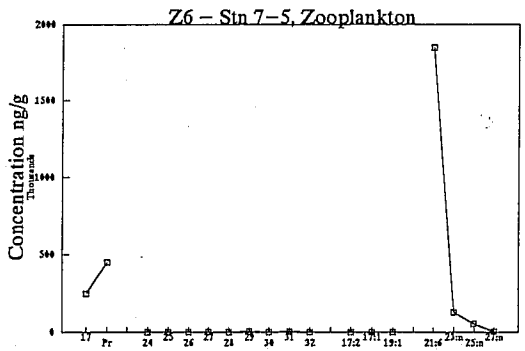
	G9 Stn 10	G10 Stn 10	IP3 Stn 10–1	ID34 (I3) Stn 10–1	FP9 Stn 10–2	FP20 Stn 10–3	IP27 Stn 10–3	ID64 (I27) Stn 10–3
$nC_{15}-C_{19}$	1820	1840	0.31	0.47	0.37	8.00	1.30	0.01
$nC_{23}-C_{33}$	8060	7620	0.00	19.0	0.00	0.65	7.00	1.40
Pristane	481	340	2.3	<0.69	1.9	108	19	<0.33
OEP C_{17}	1.31	1.19			1.30	64.02	1.48	
OEP C_{25}	1.93	3.31		1.05		1.30	2.17	
OEP C_{27}	2.94	2.64		1.12			3.92	
OEP C_{29}	4.28	3.17		1.45				
Pr/Ph	2.11	1.43	85		46	1690	119	
$nC_{21:6}$	213	5600	0.69	<1.5	4.7	127	873	<1.7
$nC_{23:n}-C_{27:n}$	49	132	0.10	2.37	2.4	25	1.3	2.0
$C_{15-19}/_{15-33}$	0.16	0.18	1.00	0.02	1.00	0.91	0.14	0.01
$H/H+C_{23-33}$	0.03	0.42	1.00	0.00	1.00	0.99	0.99	0.00

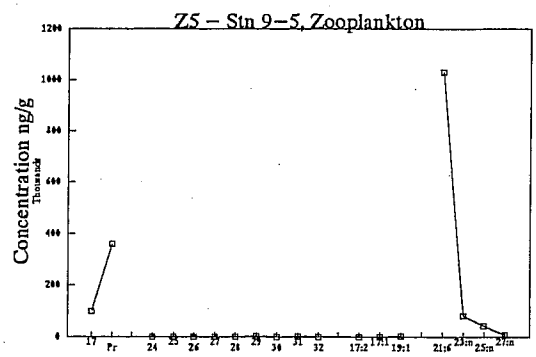
	IP26 Stn 10–3	ID63 (I26) Stn 10–3
$nC_{15}-C_{19}$	0.33	0.04
$nC_{23}-C_{33}$	0.00	3.40
Pristane	0.52	<0.87
OEP C_{17}		
OEP C_{25}		
OEP C_{27}		
OEP C_{29}		
Pr/Ph		
$nC_{21:6}$	<2.9	<0.55
$nC_{23:n}-C_{27:n}$	0.00	0.00
$C_{15-19}/_{15-33}$	1.00	0.01
$H/H+C_{23-33}$		0.00

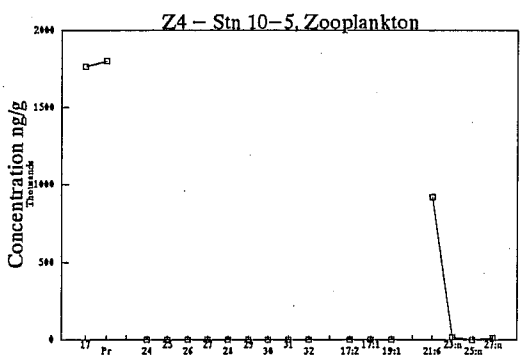
Zooplankton











	Z2 Stn 4–5	Z3 Stn 5–5	Z6 Stn 7–5	Z5 Stn 9–5	Z4 Stn 10–5
$nC_{15}-C_{19}$	143000	9420	247000	98600	1760000
$nC_{23}-C_{33}$	2270	1260	6730	4530	793
Pristane	409000	563000	450000	360000	1800000
OEP C_{17}	4469	108	3529	882	12001
OEP C_{25}	1.10		1.36	1.25	1.21
OEP C_{27}	1.05		1.48	0.99	
OEP C_{29}	1.13		1.68	1.23	
Pr/Ph	69300	14100	11500	8180	22800
$nC_{21:6}$	571000	1200000	1850000	1030000	917000
$nC_{23:n}-C_{27:n}$	160238	15530	181610	129880	37010
$C_{15-19}/_{15-33}$	0.98	0.86	0.97	0.95	1.00
$H/H+C_{23-33}$	1.00	1.00	1.00	1.00	1.00

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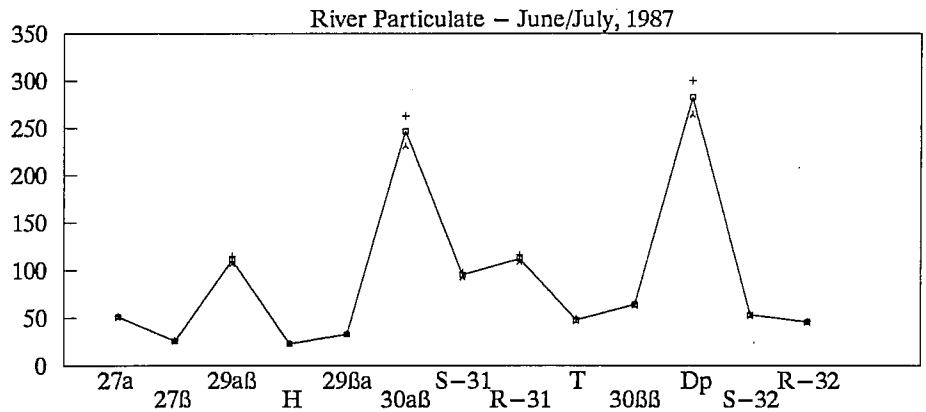
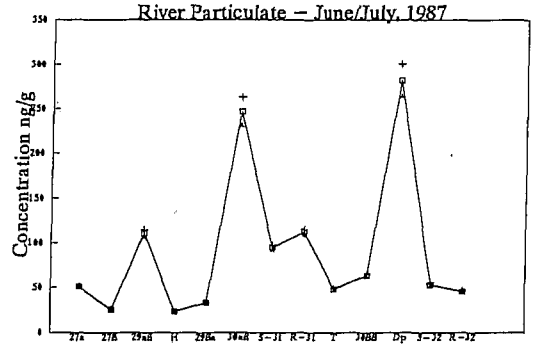
APPENDIX 7; KEY TRITERPENE INDICATORS PRESENTED AS GRAPHS, TOTALS AND RATIOS

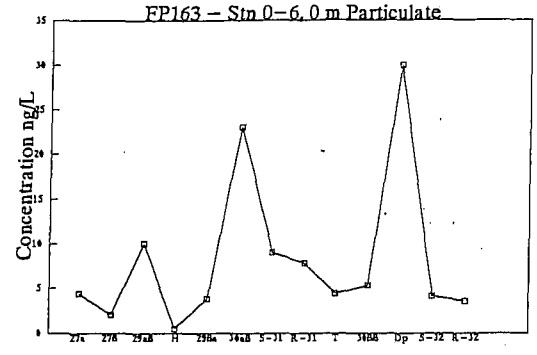
Explanation of Variables Graphed (uncertainties are plus or minus one standard error of the normalized concentrations)

Abbreviation	Explanation
27a	17a(H)−Trisnorhopane (C_{27}a,Tm)
27ß	17ß(H)−Trisnorhopane (C_{27}ß)
29aß	17a(H),21ß(H)−Norhopane (C_{29}aß)
H	Hop−17(21)−ene
29ßa	17ß(H),21a(H)−Normoretane (C_{29}ßa)
30aß	17a(H),21ß(H)−Hopane (C_{30}aß)
S−31	S−17a(H),21ß(H)−Homohopane (C_{31}aß)
R−31	R−17a(H),21ß(H)−Homohopane (C_{31}aß)
T	Triterpene
30ßß	17ß(H),21ß(H)−Hopane (C_{30}ßß)
Dp	Diploptene
S−32	S−17a(H),21ß(H)−Bishomohopane (C_{32}aß)
R−32	R−17a(H),21ß(H)−Bishomohopane (C_{32}aß)



Concentrations and Ratios	Explanation
Diploptene	Diploptene
Diag Hop S	Diagenetic hopanes. Total of 17a(H), 21ß(H)−hopanes with 27, 29, 30, 31 and 32 carbons and 17ß(H), 21a(H)−moretane
Satur Hop S	Saturated hopanes. Diagenetic hopanes plus the 27 and 30 carbon 17ß(H), 21ß(H)−hopanes.
Dp/Dp+DH	Diploptene/(diploptene + diagenetic hopanes)
Dp/C_{27-31}	Diploptene/(diploptene + $nC_{27}-C_{31}$ odd alkanes)
DH/C_{27-31}	Diagenetic hopanes/(diagenetic hopanes + $nC_{27}-C_{31}$ odd alkanes)
31 S/(S+R)	S/(S+R)−17a(H),21ß(H)−Homohopanes





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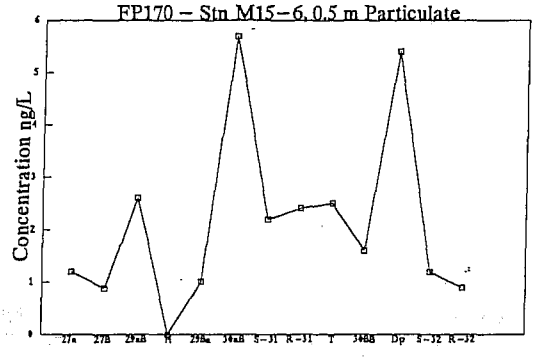

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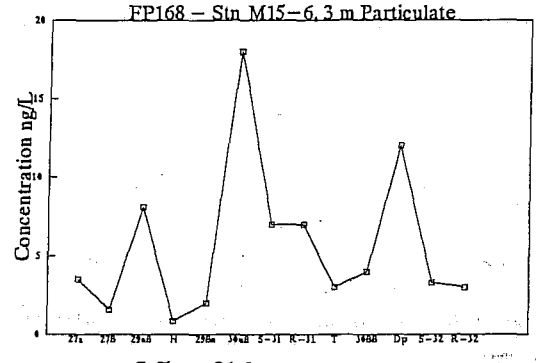
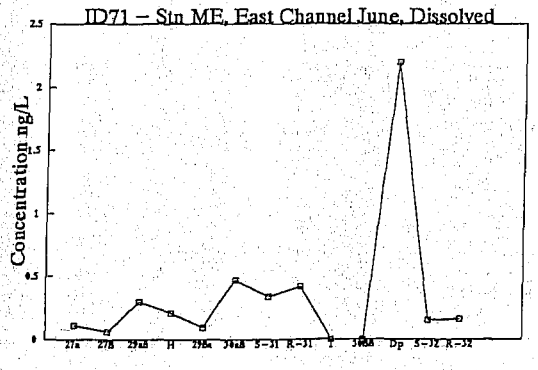
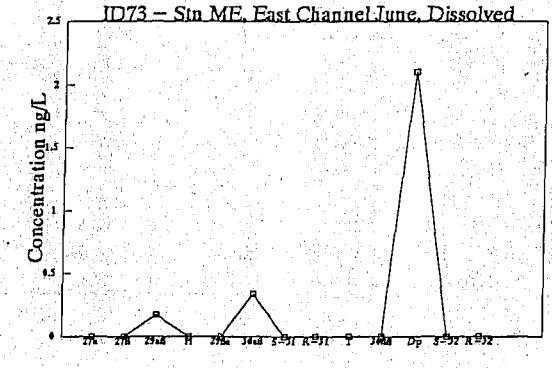
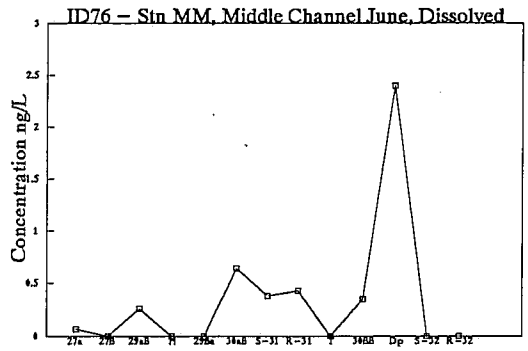


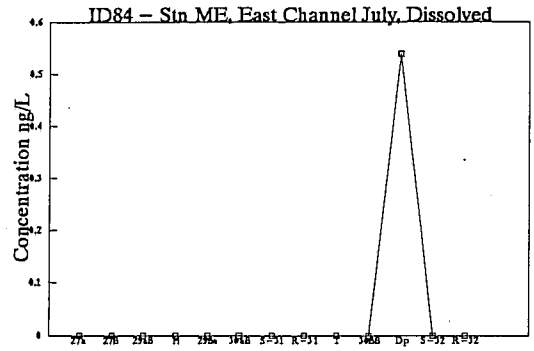
S ‰ = 21.3

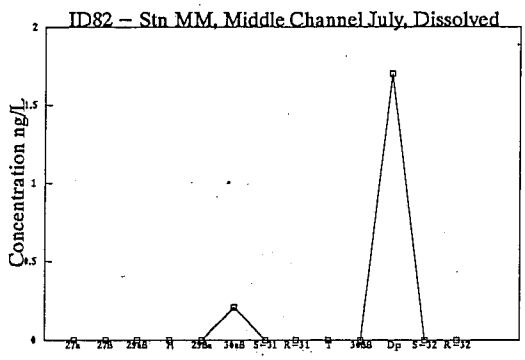
	River 6–7/87 Mean ng/L	River 6–7/87 sd	River 6–7/87 Mean ng/g	River 6–7/87 sd	FP163 Stn 0–6	FP170 Stn M15–6	FP168 Stn M15–6
Diploptene	49	24	282	93	30.0	5.4	12.0
Diag Hop S	138	99	747	434	65.6	17.2	51.9
Satur Hop S	154	110	836	485	72.9	19.7	57.5
Dp/Dp+DH	0.31	0.10	0.31	0.10	0.31	0.24	0.19
Dp/C_{27-31}	0.09	0.04	0.09	0.04	0.11	0.08	0.09
DH/C_{27-31}	0.39	0.23	0.39	0.23	0.21	0.23	0.29
31 S/(S+R)	0.48	0.02	0.48	0.02	0.54	0.48	0.50

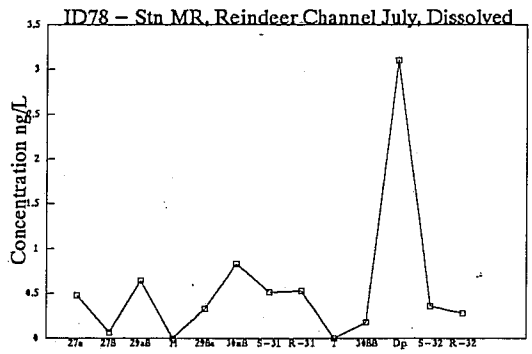


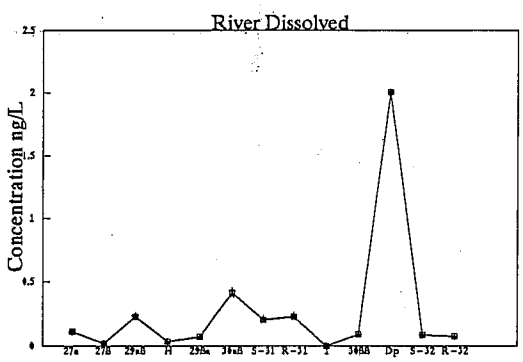


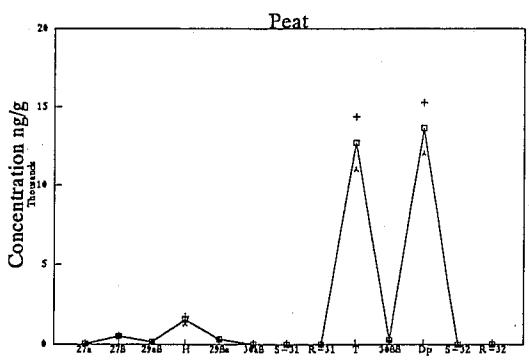






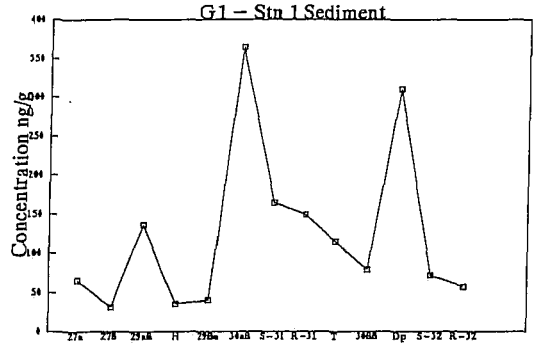


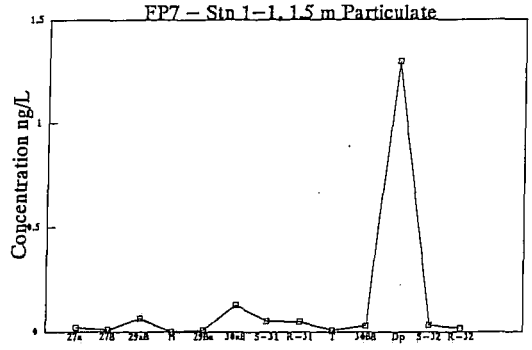




	ID71 ME–East	ID73 ME–East	ID76 MM–Mid	ID84 ME–East	ID82 MM–Mid	ID78 MR–Rein	River 6–7/87 Mean	River 6–7/87 sd
Diploptene	2.20	2.10	2.40	0.54	1.70	3.10	2.01	0.85
Diag Hop S	2.04	0.51	1.78	0.00	0.21	3.96	1.42	1.50
Satur Hop S	2.10	0.51	2.13	0.00	0.21	4.21	1.53	1.61
Dp/Dp+DH	0.52	0.80	0.57	1.00	0.89	0.44	0.70	0.23
Dp/C_{27-31}	0.45	0.18	0.17	0.14	0.13	0.33	0.23	0.13
DH/C_{27-31}	0.43	0.05	0.13	0.00	0.02	0.38	0.17	0.19
31 S/(S+R)	0.45		0.47			0.49	0.47	0.02

Station 1





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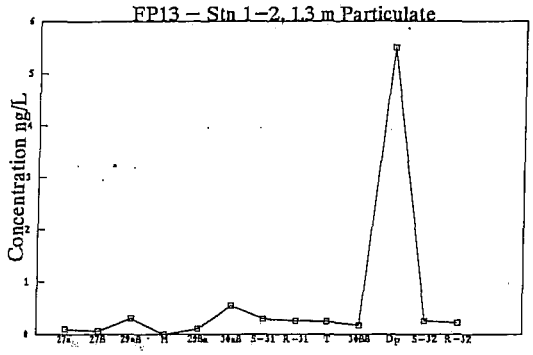

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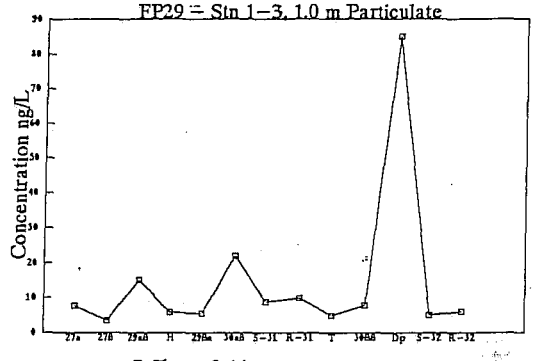
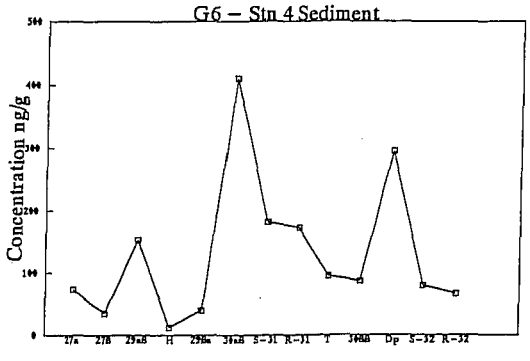
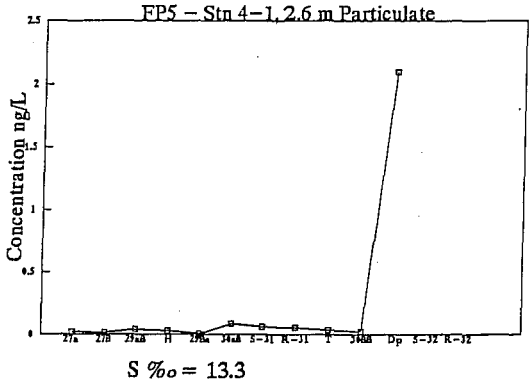


S ‰ = 0.11

	G1 Stn 1	FP7 Stn 1–1	FP13 Stn 1–2	FP29 Stn 1–3	T4 Sabine Pt	Peat Mean	sd
Diploptene	310	1.30	5.50	85	17300	13650	10971
Diag Hop S	1047	0.38	2.06	80	384	527	765
Satur Hop S	1157	0.42	2.30	91	937	1332	1546
Dp/Dp+DH	0.23	0.77	0.73	0.52	0.98	0.94	0.11
Dp/C_{27-31}	0.09	0.35	0.42	0.22	0.29	0.12	0.09
DH/C_{27-31}	0.26	0.14	0.21	0.21	0.009	0.004	0.004
31 S/(S+R)	0.52	0.52	0.54	0.47			

Station 4





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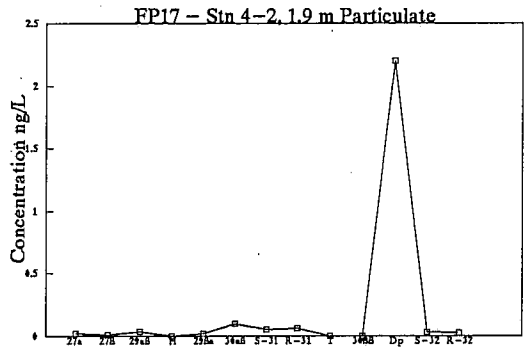
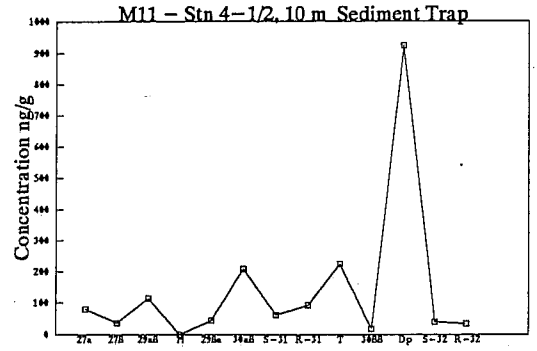
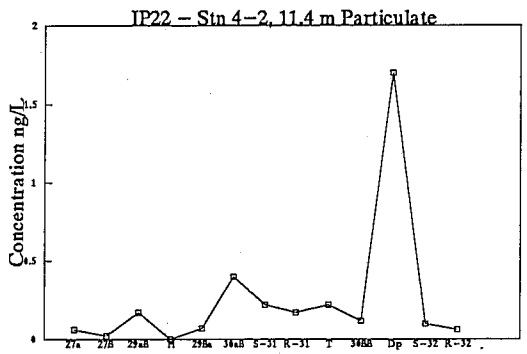


S ‰ = 10





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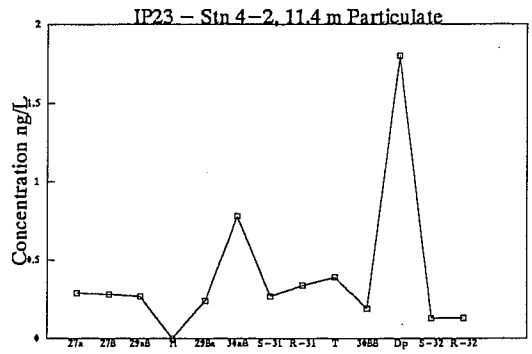

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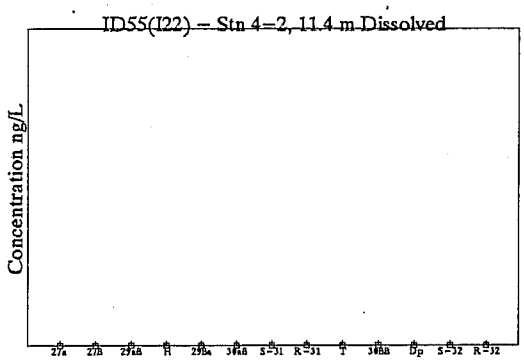

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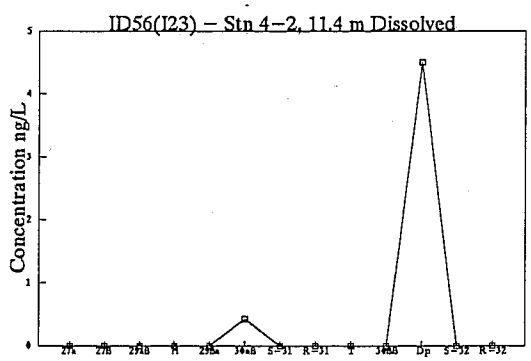

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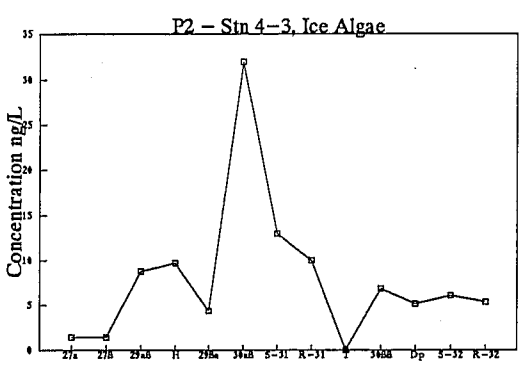

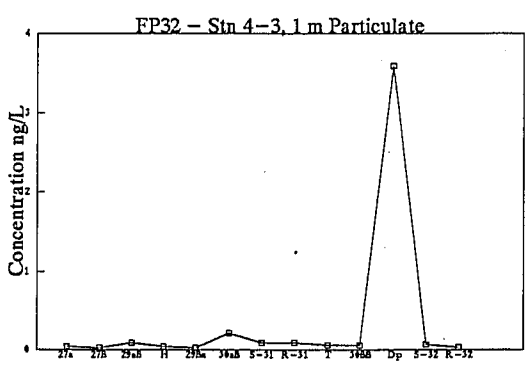

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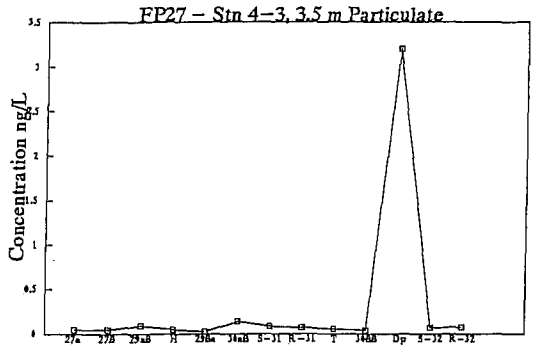

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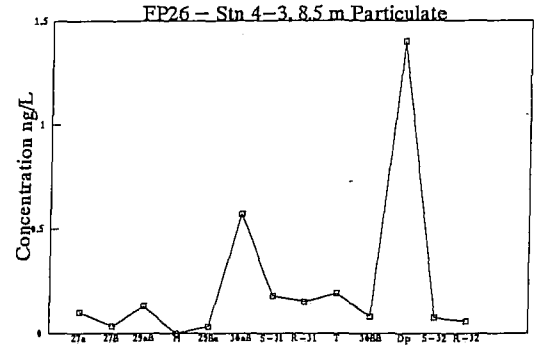

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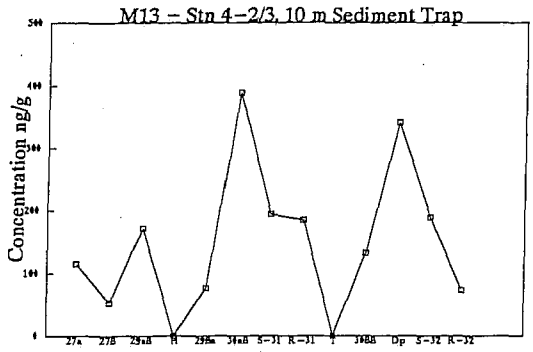
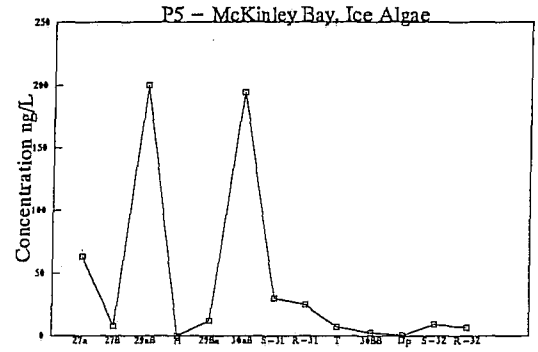
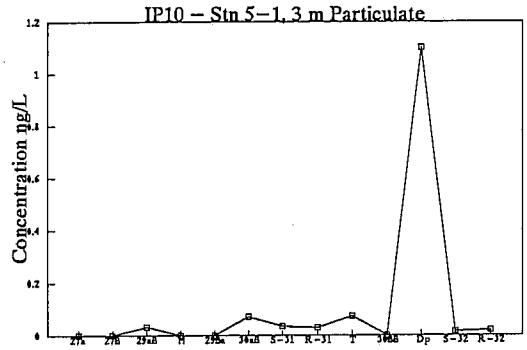




	G6	FP5	FP17	M11	IP22	IP23	ID55 (I22)	ID56 (I23)
	Stn 4	Stn 4–1	Stn 4–2	Stn 4–1/2	Stn 4–2	Stn 4–2	Stn 4–2	Stn 4–2
Diploptene	295	2.10	2.20	923	1.70	1.80	<0.39	4.50
Diag Hop S	1175	0.35	0.32	674	1.26	2.45	0.00	0.43
Satur Hop S	1297	0.40	0.33	726	1.40	2.92	0.00	0.43
Dp/Dp+DH	0.20	0.86	0.87	0.58	0.58	0.42		0.91
Dp/C_{27-31}	0.10	0.66	0.71	0.27	0.26	0.21	0.00	0.24
DH/C_{27-31}	0.30	0.24	0.26	0.21	0.20	0.27	0.00	0.03
31 S/(S+R)	0.51	0.52	0.45	0.40	0.56	0.44		

	FP32	FP27	FP26	M13	P2	P5
	Stn 4–3	Stn 4–3	Stn 4–3	Stn 4–2/3	Stn 4–3	McKinley Bay
Diploptene	3.60	3.20	1.40	341	5.20	0.80
Diag Hop S	0.62	0.60	1.29	1392	81	540
Satur Hop S	0.69	0.68	1.41	1577	89	551
Dp/Dp+DH	0.85	0.84	0.52	0.20	0.06	0.00
Dp/C_{27-31}	0.47	0.63	0.19	0.08	0.00	0.00
DH/C_{27-31}	0.13	0.24	0.18	0.26	0.05	0.42
31 S/(S+R)	0.51	0.53	0.55	0.51	0.57	0.55

Station 5



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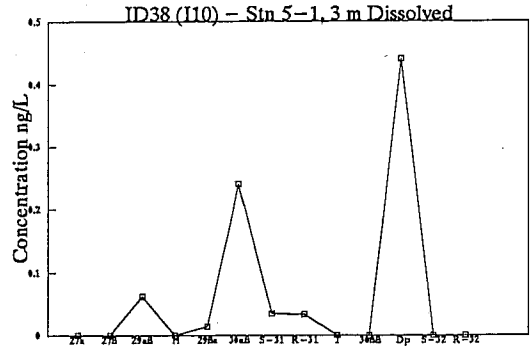

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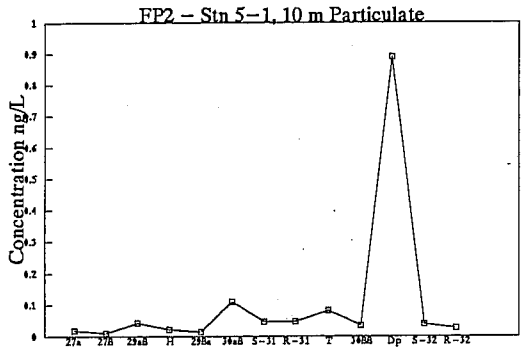

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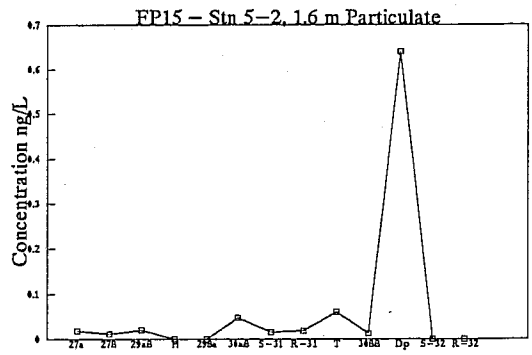

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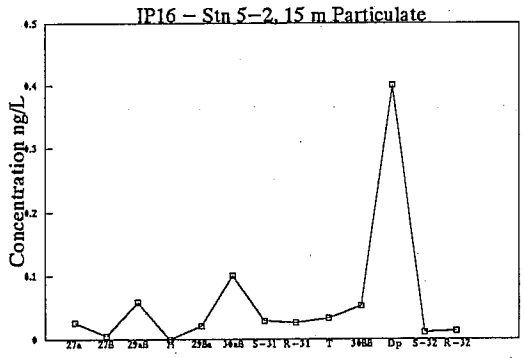

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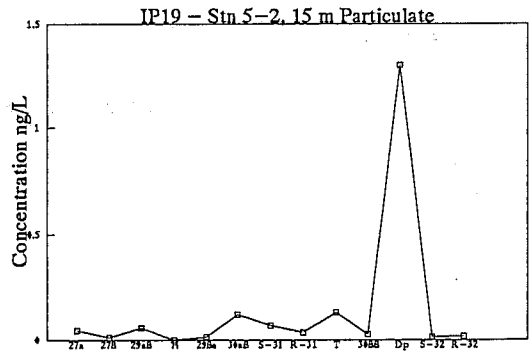

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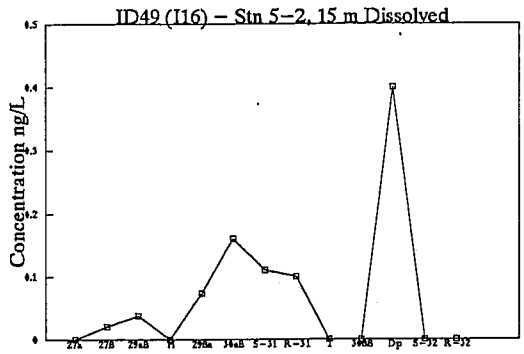

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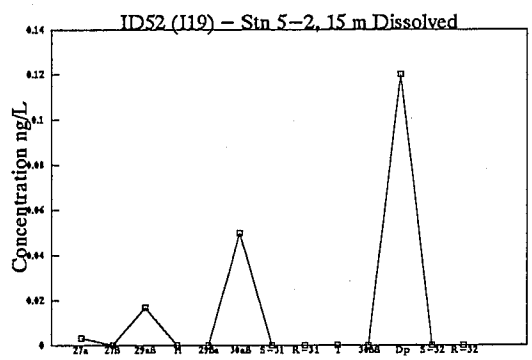

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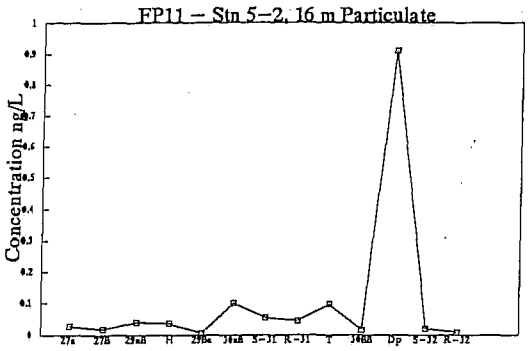

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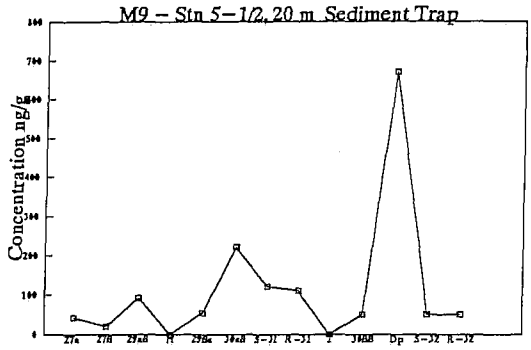

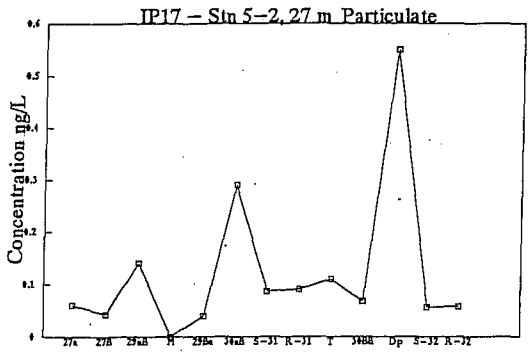

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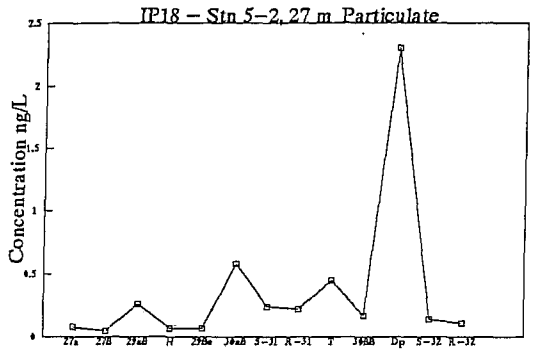

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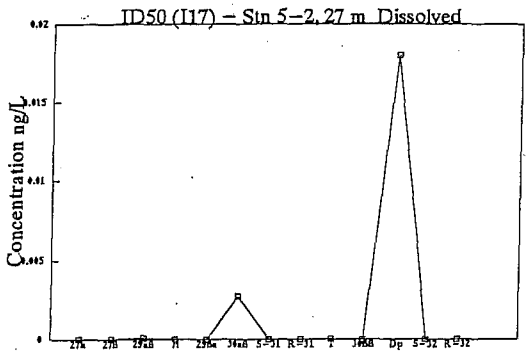

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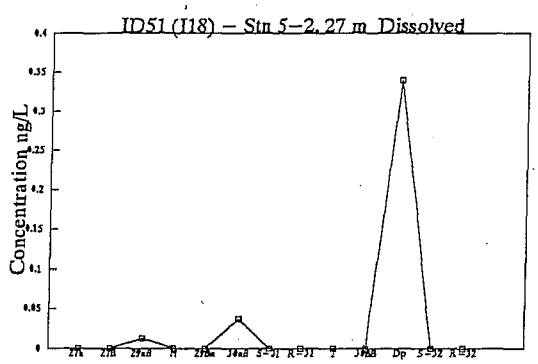

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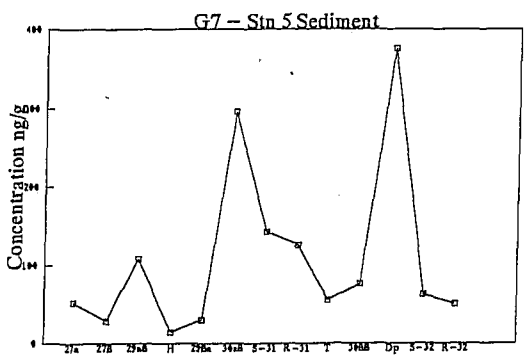
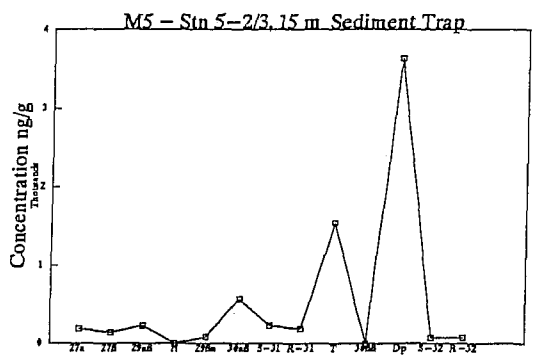
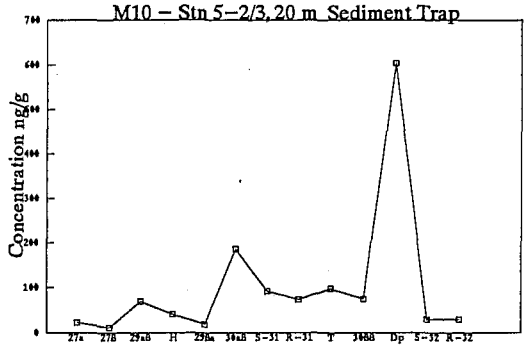
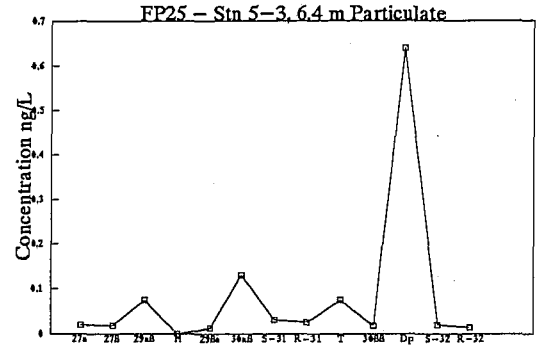




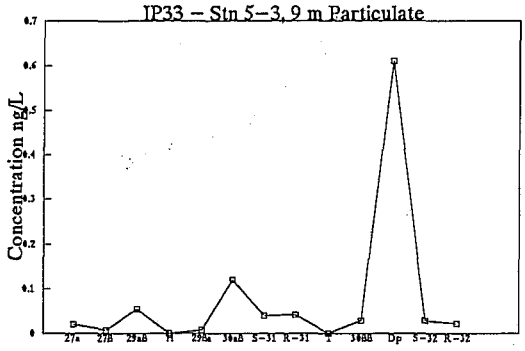
M10 – Stn 5–2/3, 20 m Sediment Trap



FP25 – Stn 5–3, 6.4 m Particulate

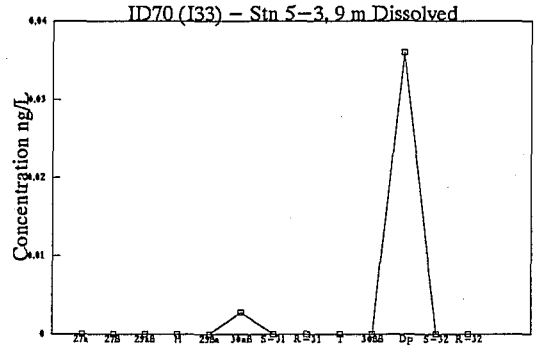


IP33 – Stn 5–3, 9 m Particulate



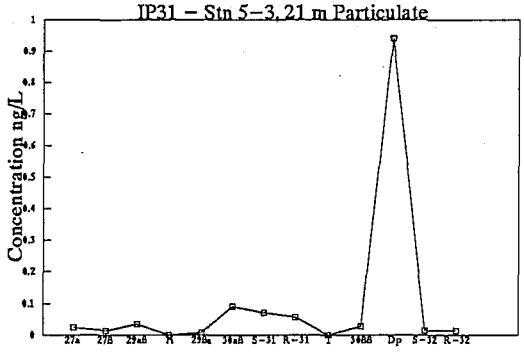
S ‰ = 29.7

ID70 (I33) – Stn 5–3, 9 m Dissolved



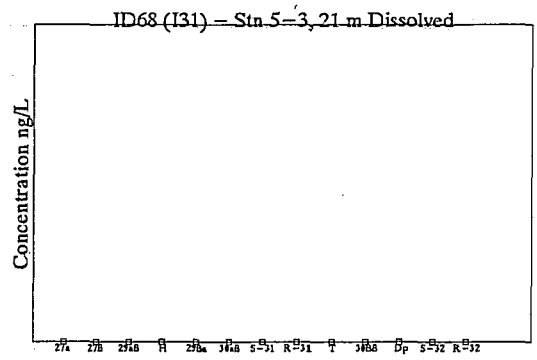
S ‰ = 29.7

IP31 – Stn 5–3, 21 m Particulate



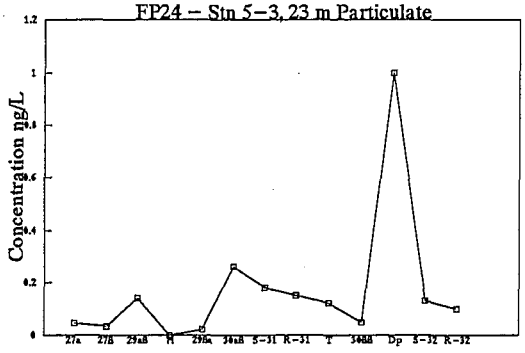
S ‰ = 31.6

ID68 (I31) – Stn 5–3, 21 m Dissolved

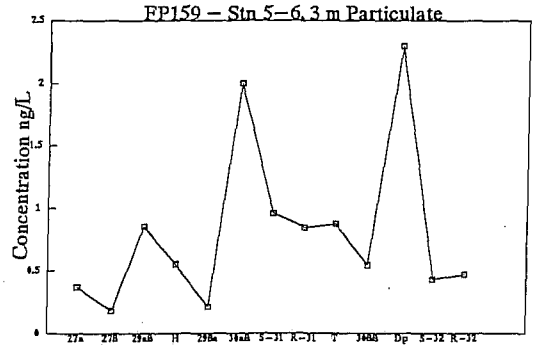


S ‰ = 31.6

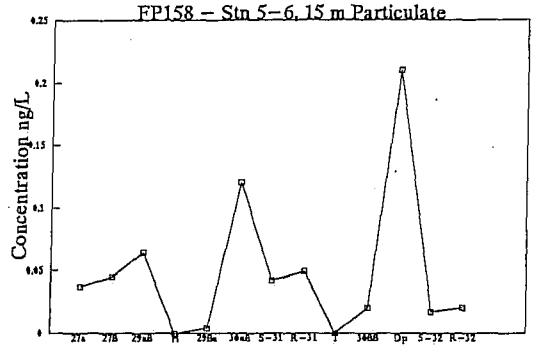
FP24 – Stn 5–3, 23 m Particulate



S ‰ = 31.9



S ‰ = 21.4



S ‰ = 27.9

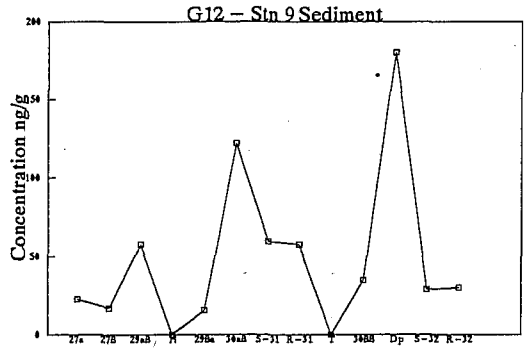
	IP10 Stn 5–1	ID38 (I10) Stn 5–1	FP2 Stn 5–1	FP15 Stn 5–2	IP16 Stn 5–2	IP19 Stn 5–2	ID49 (I16) Stn 5–2	ID52 (I19) Stn 5–2
Diploptene	1.10	0.44	0.89	0.64	0.40	1.30	0.40	0.12
Diag Hop S	0.20	0.39	0.34	0.12	0.29	0.37	0.48	0.07
Satur Hop S	0.20	0.39	0.39	0.14	0.34	0.41	0.50	0.07
Dp/Dp+DH	0.84	0.53	0.72	0.84	0.58	0.78	0.45	0.63
Dp/C_{27-31}	1.00	0.08	0.35	0.50	0.47	0.73	0.07	0.02
DH/C_{27-31}	1.00	0.07	0.18	0.16	0.38	0.44	0.08	0.01
31 S/(S+R)	0.53	0.51	0.50	0.46	0.53	0.67	0.52	

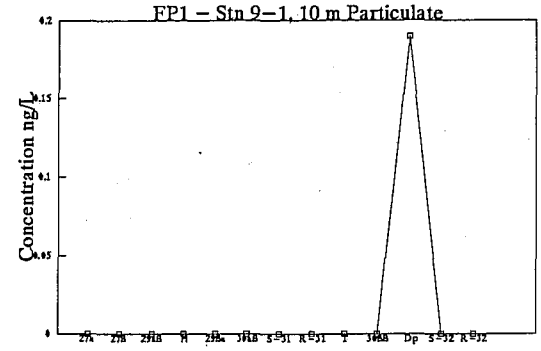
	G7 Stn 5	M9 Stn 5–1/2	FP11 Stn 5–2	IP17 Stn 5–2	IP18 Stn 5–2	ID50 (I17) Stn 5–2	ID51 (I18) Stn 5–2	FP25 Stn 5–3
Diploptene	376	671	0.91	0.55	2.30	0.02	0.34	0.64
Diag Hop S	867	735	0.30	0.82	1.70	0.00	0.05	0.32
Satur Hop S	971	804	0.33	0.93	1.91	0.00	0.05	0.36
Dp/Dp+DH	0.30	0.48	0.75	0.40	0.58	0.87	0.87	0.66
Dp/C_{27-31}	0.11	0.23	0.50	0.16	0.25	0.00	0.09	0.38
DH/C_{27-31}	0.23	0.24	0.25	0.22	0.20	0.00	0.01	0.24
31 S/(S+R)	0.53	0.52	0.55	0.49	0.52			0.55

	IP33 Stn 5–3	ID70 (I33) Stn 5–3	M5 Stn 5–2/3	M10 Stn 5–2/3	IP31 Stn 5–3	ID68 (I31) Stn 5–3	FP24 Stn 5–3
Diploptene	0.61	0.04	3640	604	0.94	<0.20	1.00
Diag Hop S	0.33	0.00	1605	517	0.31	0.00	1.03
Satur Hop S	0.37	0.00	1740	602	0.35	0.00	1.11
Dp/Dp+DH	0.65	0.93	0.69	0.54	0.75		0.49
Dp/C_{27-31}	0.40	0.09	0.26	0.17	0.75	0.00	0.24
DH/C_{27-31}	0.27	0.01	0.13	0.15	0.49	0.00	0.24
31 S/(S+R)	0.49		0.54	0.56	0.56		0.55

	FP159 Stn 5–6, 3 m	FP158 Stn 5–6, 15 m
Diploptene	2.30	0.21
Diag Hop S	6.13	0.35
Satur Hop S	6.85	0.42
Dp/Dp+DH	0.27	0.37
Dp/C_{27-31}	0.13	0.08
DH/C_{27-31}	0.28	0.13
31 S/(S+R)	0.53	0.46

Station 9





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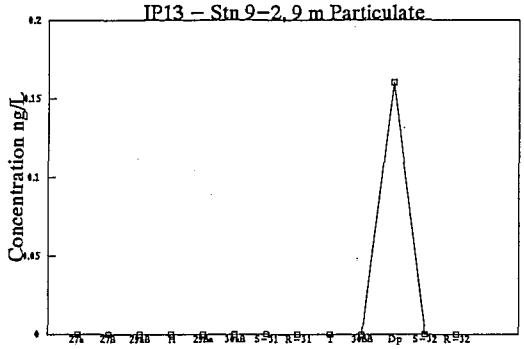
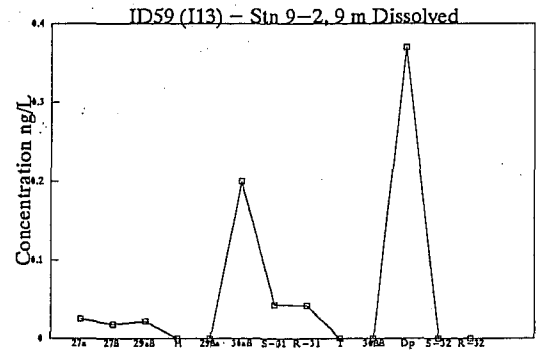


S ‰ = 30.9



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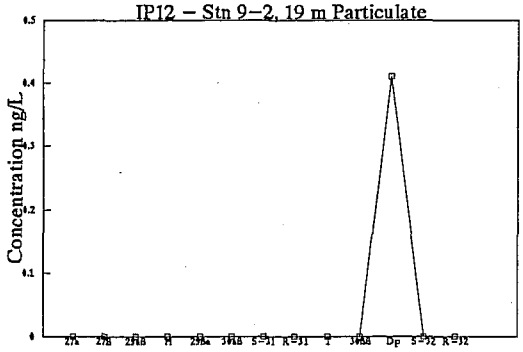

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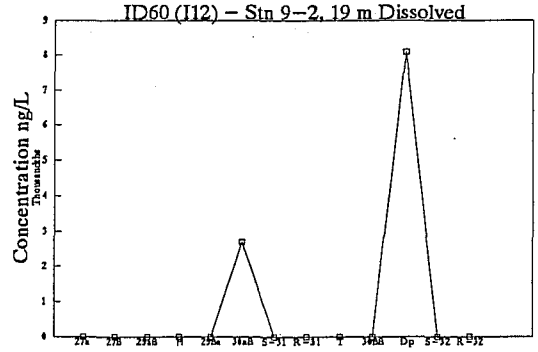

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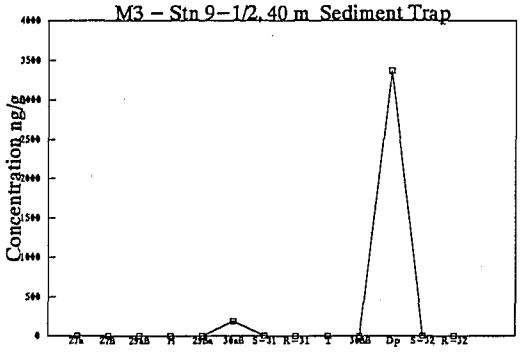
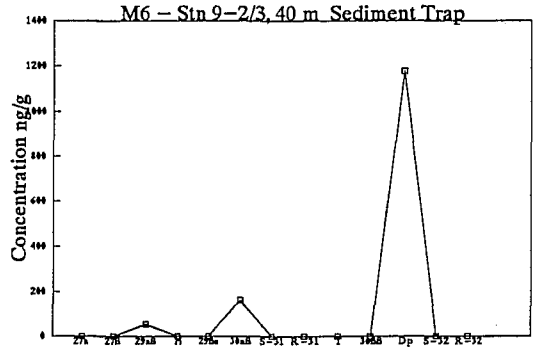
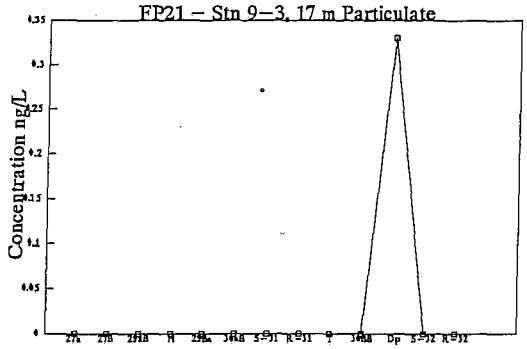


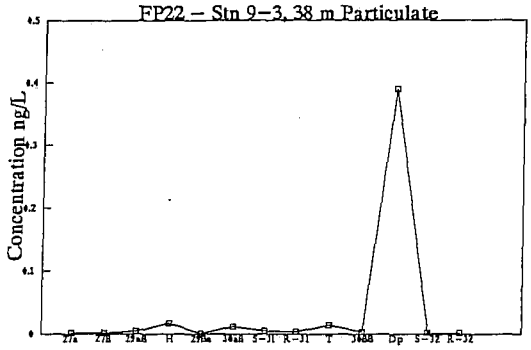


FP21 – Stn 9–3, 17 m Particulate



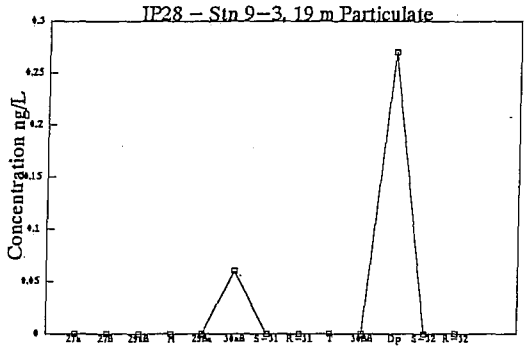
S ‰ = 31.1

FP22 – Stn 9–3, 38 m Particulate



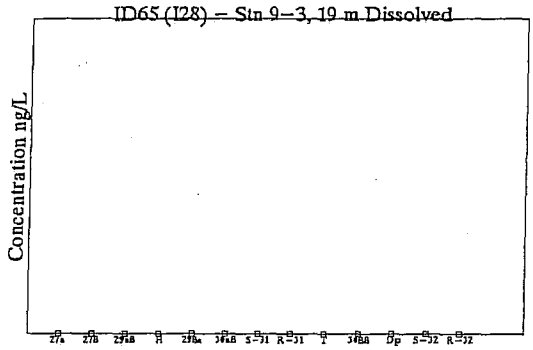
S ‰ = 31.2

IP28 – Stn 9–3, 19 m Particulate



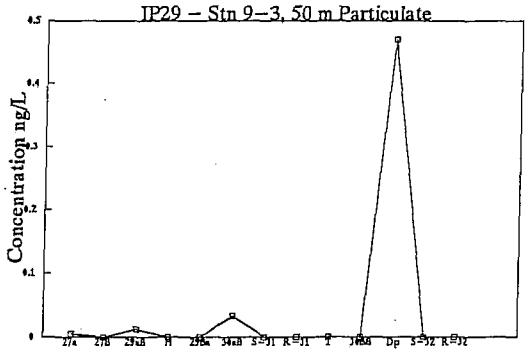
S ‰ = 31.1

ID65 (I28) – Stn 9–3, 19 m Dissolved



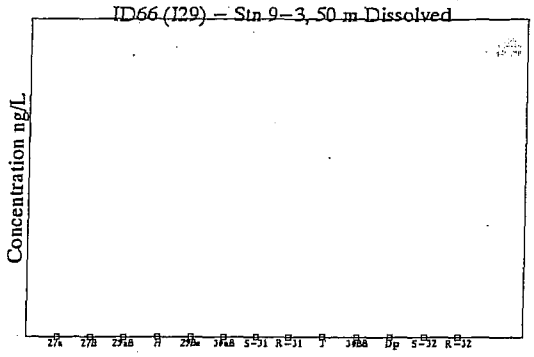
S ‰ = 31.1

IP29 – Stn 9–3, 50 m Particulate



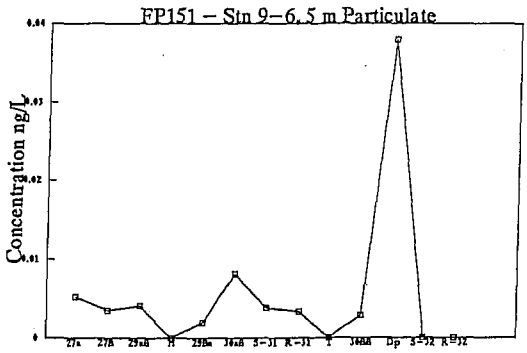
S ‰ = 32.0

ID66 (I29) – Stn 9–3, 50 m Dissolved



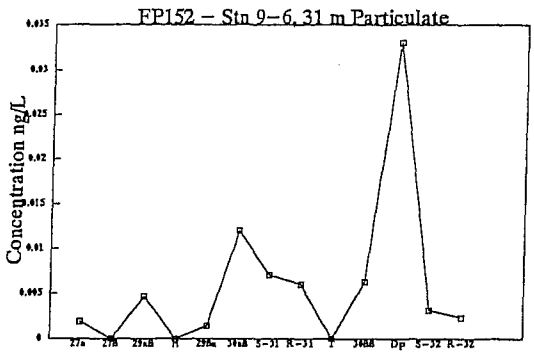
S ‰ = 32.0

FP151 – Stn 9–6, 5 m Particulate



S ‰ = 29.5

FP152 – Stn 9–6, 31 m Particulate

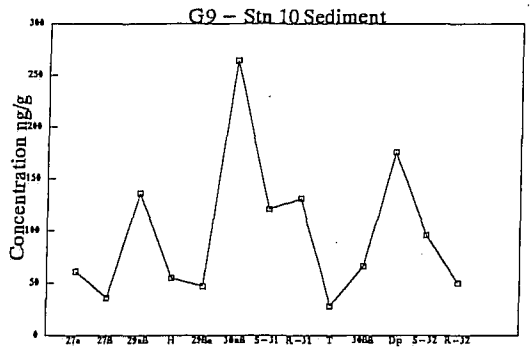


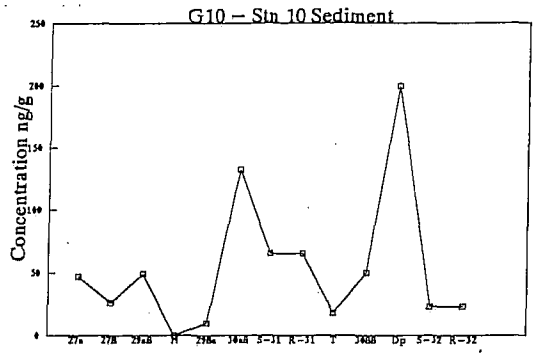
S ‰ = 31.8

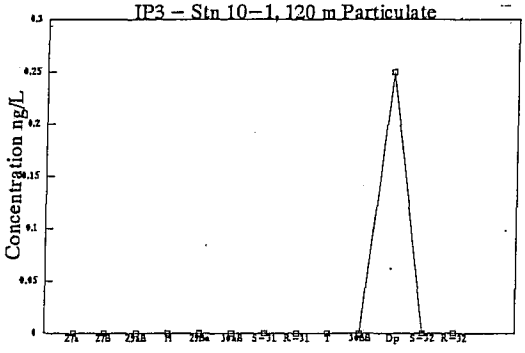
	G12	FP1	IP13	ID59 (I13)	IP12	ID60 (I12)	M3	FP21
	Stn 9	Stn 9−1	Stn 9−2	Stn 9−2, 9 m	Stn 9−2	Stn 9−2	Stn 9−1/2	Stn 9−3
Diploptene	180	0.19	0.16	0.37	0.41	0.01	3370	0.33
Diag Hop S	396	0.00	0.00	0.33	0.00	0.00	190	0.00
Satur Hop S	448	0.00	0.00	0.35	0.00	0.00	190	0.00
Dp/Dp+DH	0.31	1.00	1.00	0.53	1.00	0.75	0.95	1.00
Dp/C_{27-31}	0.12	1.00	1.00	0.03	1.00	0.00	1.00	0.79
DH/C_{27-31}	0.23			0.03		0.00	1.00	0.00
31 S/(S+R)	0.51			0.51				

	IP28	ID65 (I28)	FP22	M6	IP29	ID66 (I29)	FP151	FP152
	Stn 9−3	Stn 9−3	Stn 9−3	Stn 9−2/3	Stn 9−3	Stn 9−3	Stn 9−6, 5 m	Stn 9−6, 31 m
Diploptene	0.27	<3.1	0.39	1180	0.47	<0.44	0.04	0.03
Diag Hop S	0.06	0.00	0.03	217	0.05	0.00	0.03	0.04
Satur Hop S	0.06	0.00	0.04	217	0.05	0.00	0.03	0.04
Dp/Dp+DH	0.82		0.93	0.84	0.90		0.59	0.46
Dp/C_{27-31}	1.00		0.70	1.00	1.00		0.03	0.05
DH/C_{27-31}	1.00		0.15	1.00	1.00		0.02	0.05
31 S/(S+R)			0.52				0.54	0.54

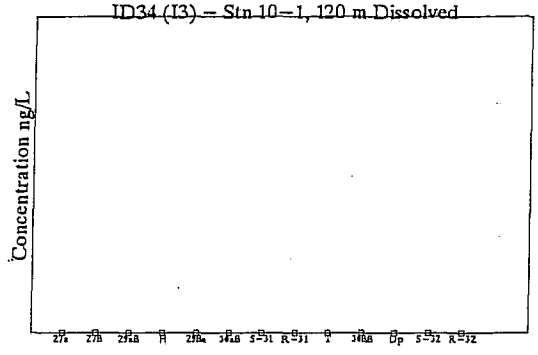
Station 10



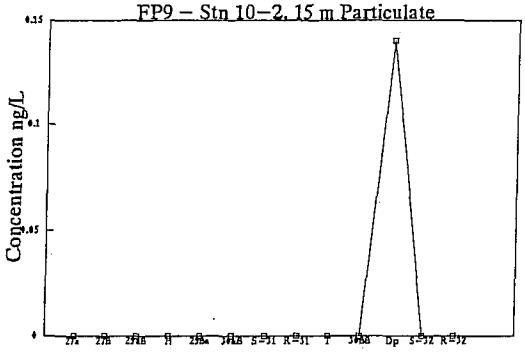




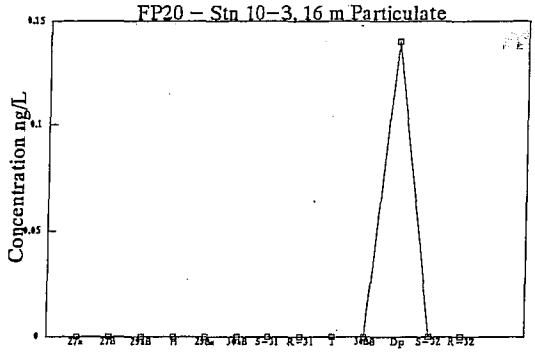
S ‰ = 32.5



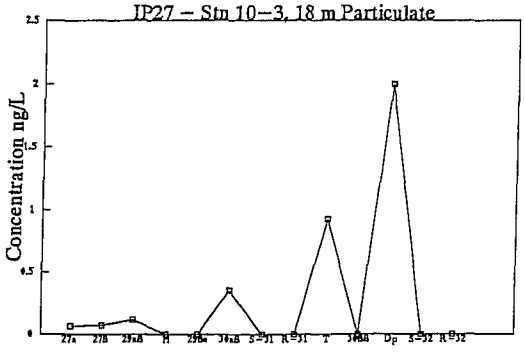
S ‰ = 32.5



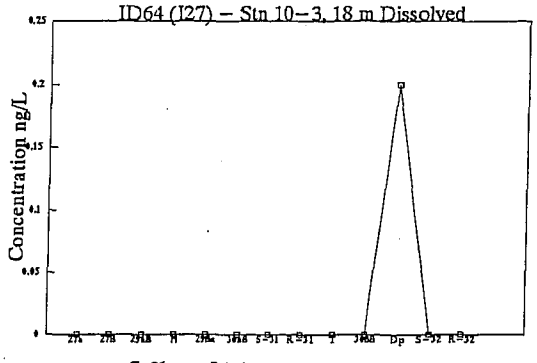
S ‰ = 31.1



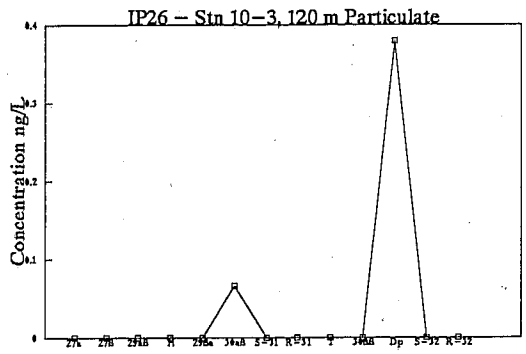
S ‰ = 31.3



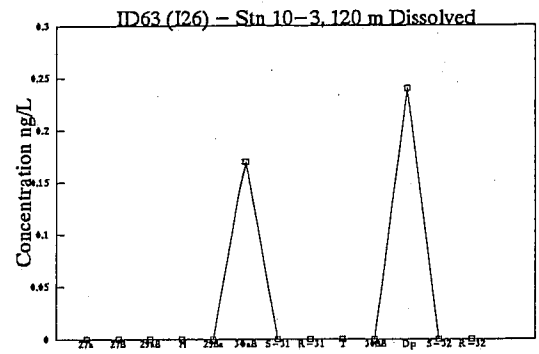
S ‰ = 31.1



S ‰ = 31.1



S ‰ = 33.2

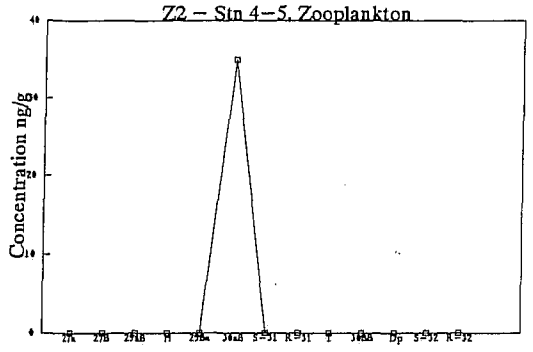


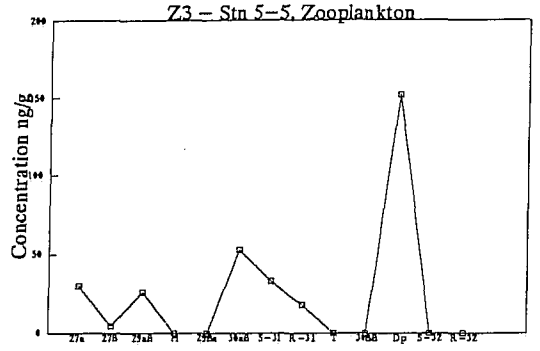
S ‰ = 33.2

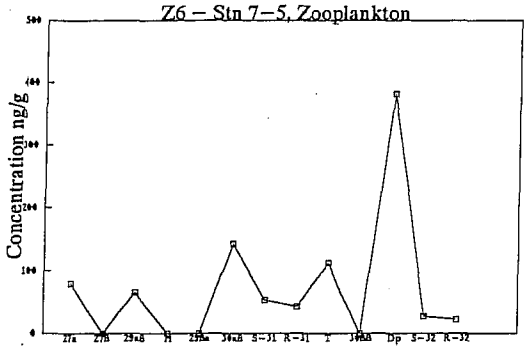
	G9 Stn 10	G10 Stn 10	IP3 Stn 10–1	ID34 (I3) Stn 10–1	FP9 Stn 10–2	FP20 Stn 10–3	IP27 Stn 10–3	ID64 (I27) Stn 10–3
Diploptene	176	199	0.25	<2.0	0.14	0.14	2.00	0.20
Diag Hop S	906	414	0.00	0.00	0.00	0.00	0.54	0.00
Satur Hop S	1008	490	0.00	0.00	0.00	0.00	0.61	0.00
Dp/Dp+DH	0.16	0.32	1.00		1.00	1.00	0.79	1.00
Dp/C_{27-31}	0.04	0.05	1.00	0.00	1.00	0.35	0.33	0.30
DH/C_{27-31}	0.16	0.09		0.00		0.00	0.12	0.00
31 S/(S+R)	0.48	0.50						

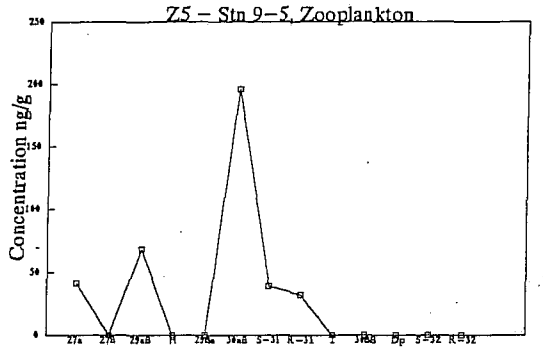
	IP26 Stn 10–3	ID63 (I26) Stn 10–3
Diploptene	0.38	0.24
Diag Hop S	0.07	0.17
Satur Hop S	0.07	0.17
Dp/Dp+DH	0.85	0.59
Dp/C_{27-31}	1.00	0.21
DH/C_{27-31}	1.00	0.15
31 S/(S+R)		

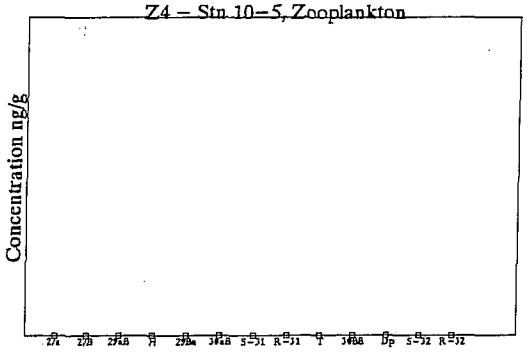
Zooplankton









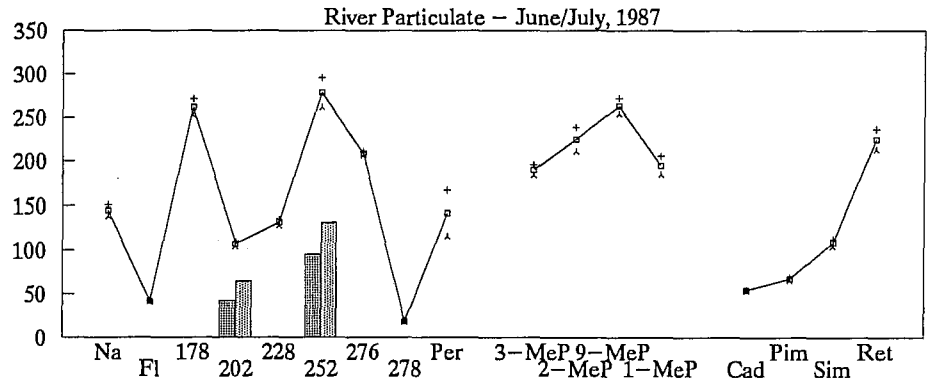


	Z2 Stn 4–5	Z3 Stn 5–5	Z6 Stn 7–5	Z5 Stn 9–5	Z4 Stn 10–5
Diploptene	<70	152	382	<85	<385
Diag Hop S	35	160	431	376	0.0
Satur Hop S	35	165	431	376	0.0
Dp/Dp+DH	0.00	0.49	0.47	0.00	
Dp/C_{27-31}	0.00	0.18	0.11	0.00	0.00
DH/C_{27-31}	0.05	0.19	0.13	0.19	0.00
31 S/(S+R)		0.65	0.55	0.55	

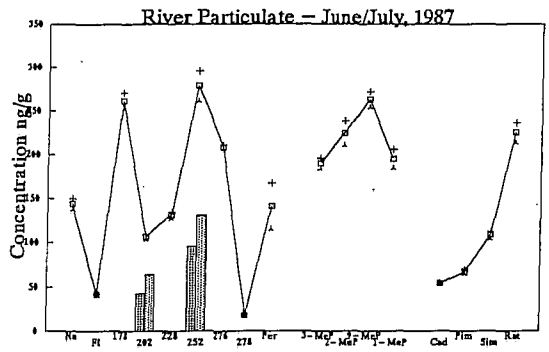
APPENDIX 8; KEY PAH INDICATORS PRESENTED AS GRAPHS, TOTALS AND RATIOS

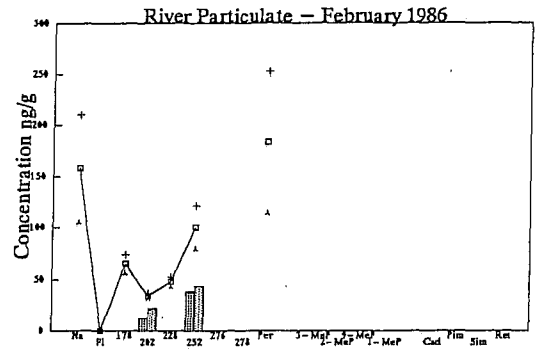
Explanation of Variables Graphed (uncertainties are plus or minus one standard error of the normalized concentrations)

Abbreviation	Explanation
Na	Naphthalene
Fl	Fluorene
178	Anthracene + phenanthrene
202	Fluoranthene + pyrene (respectively also shown as bars)
228	Benz(a)anthracene + chrysene + triphenylene
252	Benzo(b/ j/ k)fluoranthene (first bar) + benzo(a)fluoranthene + benzo(e)pyrene (second bar) + benzo(a)pyrene
276	Indeno(1,2,3−cd)pyrene + benzo(ghi)perylene
278	Dibenz(a,h)anthracene
Per	Perylene
3−MP	3−Methyl Phenanthrene
2−MP	2−Methyl Phenanthrene
9−MP	9/4−Methyl Phenanthrene
1−MP	1−Methyl Phenanthrene
Cad	Cadalene
Pim	Pimanthrene (1,7−dimethyl phenanthrene)
Sim	Simonellite
Ret	Retene

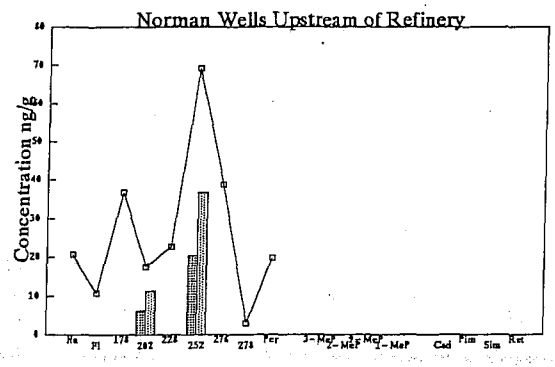


Concentrations and Ratios	Explanation
Anth/178	Anthracene/(anthracene + phenanthrene)
Fluor/202	Fluoranthene/(fluoranthene + pyrene)
B(a)A/228	Benz(a)anthracene/(benz(a)anthracene + chrysene + triphenylene)
BaP/(Be+aP)	Benzo(a)pyrene/(benzo(a)pyrene + benzo(e)pyrene)
InPyr/276	Indeno(1,2,3−cd)pyrene/(indeno(1,2,3−cd)pyrene + benzo(ghi)perylene)
1+9MP/MPS	1 + 9/4−Methyl Phenanthrene/(3+2+9/4+1−methyl phenanthrenes)
178/(178+MP)	178/(178 + 3+2+9/4+1−methyl phenanthrenes)
178/(178+252)	178/(178+252)
178 to 278	PAH sum, 178 to 278 (perylene excluded)
Retene	Retene
R/R+PAH S	Retene/(retene + PAH sum)

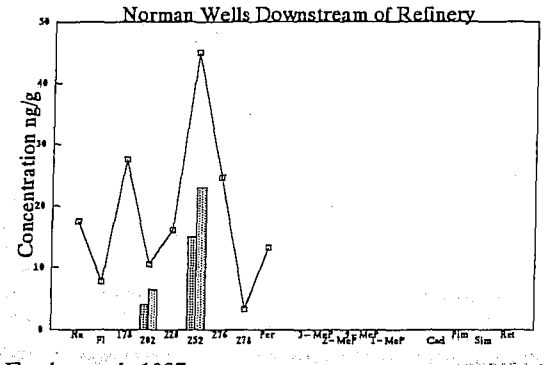




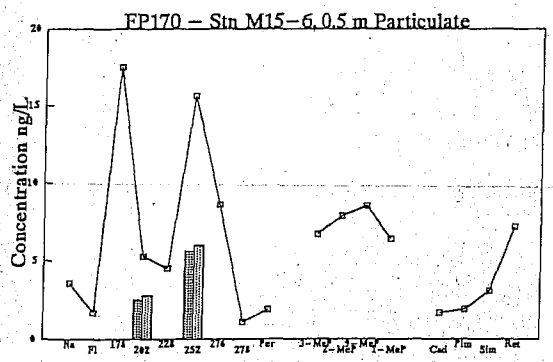
Erickson and Fowler, 1987



Fowler et al., 1987.



Fowler et al., 1987.



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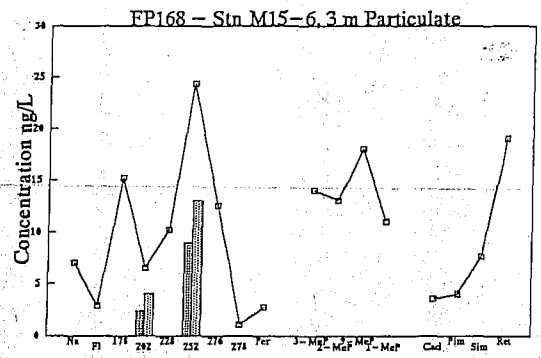
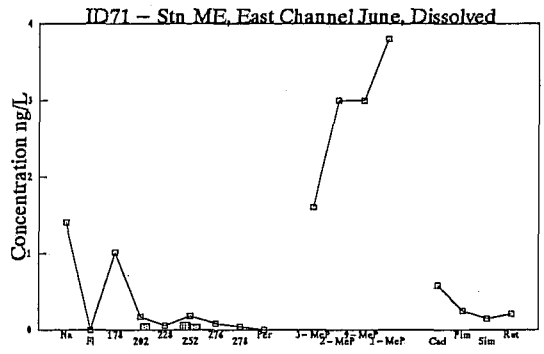
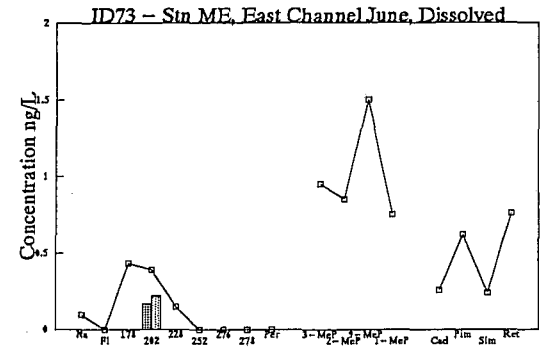
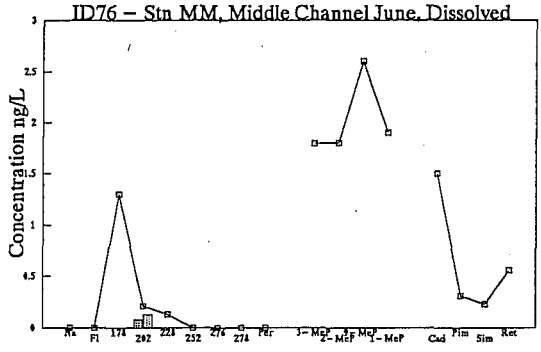


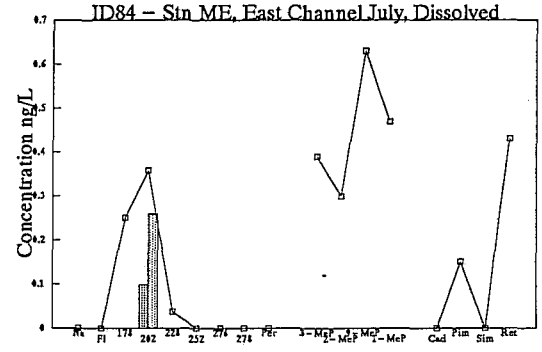
S ‰ = 21.3

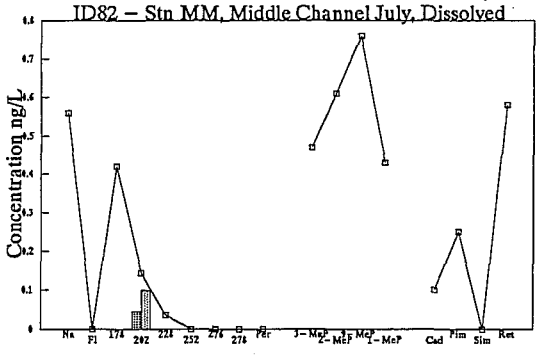
	River 6–7/87	River 6–7/87	River 6–7/87	River 6–7/87	River 2/86	River 2/86	FP170	FP168
	Mean ng/L	sd	Mean ng/g	sd	Mean ng/g	sd	Stn M15–6	Stn M15–6
Anth/178	0.03	0.03	0.03	0.03	0.13	0.04	0.03	0.01
Fluor/202	0.38	0.05	0.38	0.05	0.36	0.02	0.47	0.37
B(a)A/228	0.19	0.05	0.19	0.05	0.16	0.02	0.22	0.19
BaP/(Be+aP)	0.25	0.06	0.25	0.06	0.27	0.13	0.35	0.14
InPyr/276	0.13	0.04	0.13	0.04			0.17	
1+9MP/MPS	0.53	0.01	0.53	0.01			0.51	0.52
178/(178+MP)	0.23	0.03	0.23	0.03			0.37	0.21
178/(178+252)	0.49	0.05	0.49	0.05	0.40	0.04	0.53	0.38
178 to 278	169	70	929	188			53	70
Retene	40	16	225	41			7	19
R/R+PAH S	0.20	0.04	0.20	0.04			0.12	0.21

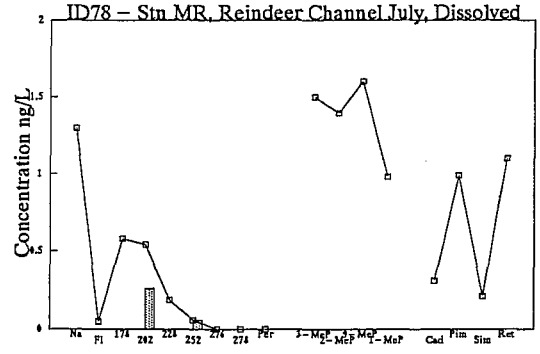


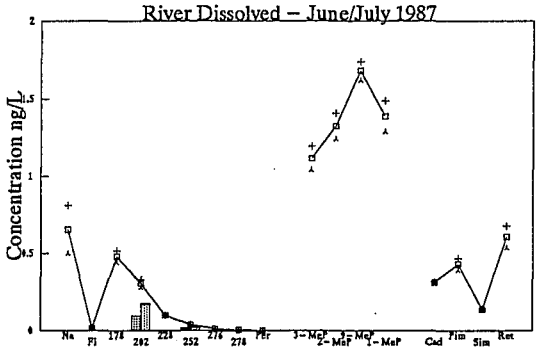


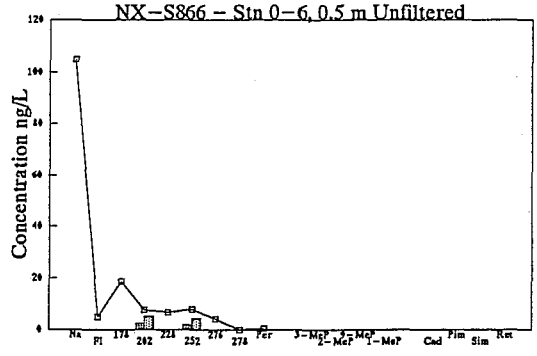








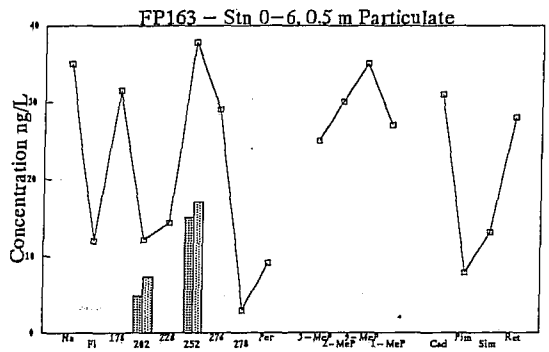




Whitehouse, 1988. S ‰ = 0.13 Sept 6, 1987

	ID71 ME−East	ID73 ME−East	ID76 MM−Mid	ID84 ME−East	ID82 MM−Mid	ID78 MR−Rein	River 6−7/87 Mean	River 6−7/87 sd
Anth/178		0.00			0.00	0.05	0.02	0.03
Fluor/202	0.52	0.44	0.38	0.27	0.31	0.52	0.41	0.10
B(a)A/228	0.00	0.00	0.00	0.00	0.00	0.14	0.02	0.06
BaP/(Be+aP)	0.00					0.00	0.00	0.00
InPyr/276	0.49						0.49	
1+9MP/MPS	0.60	0.56	0.56	0.61	0.52	0.47	0.55	0.05
178/(178+MP)	0.08	0.10	0.14	0.12	0.16	0.10	0.11	0.03
178/(178+252)	0.85	1.00	1.00	1.00	1.00	0.91	0.96	0.07
178 to 278	1.55	0.97	1.64	0.65	0.60	1.36	1.13	0.46
Retene	0.21	0.76	0.56	0.43	0.58	1.10	0.61	0.30
R/R+PAH S	0.12	0.44	0.25	0.40	0.49	0.45	0.36	0.14

Station 0



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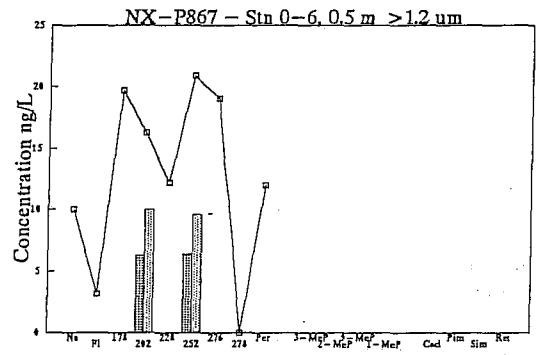
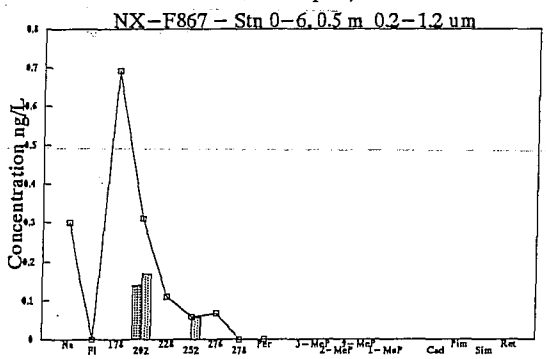
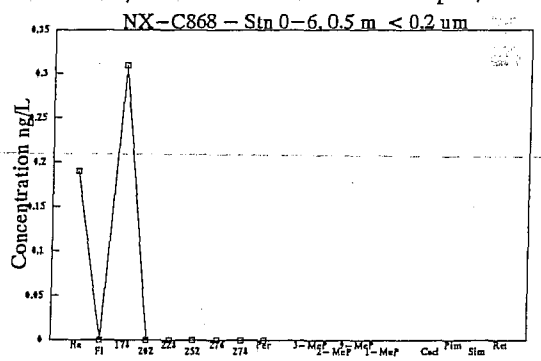


Whitehouse, 1988. S ‰ = 0.13 Sept 6, 1987



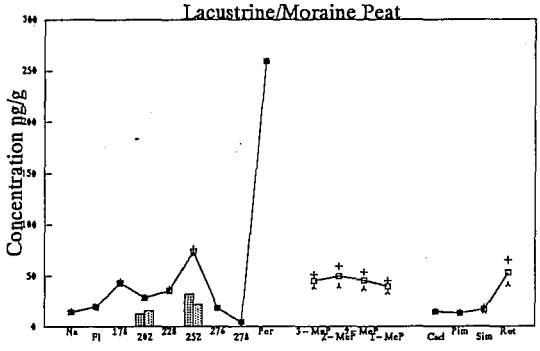
Whitehouse, 1988.

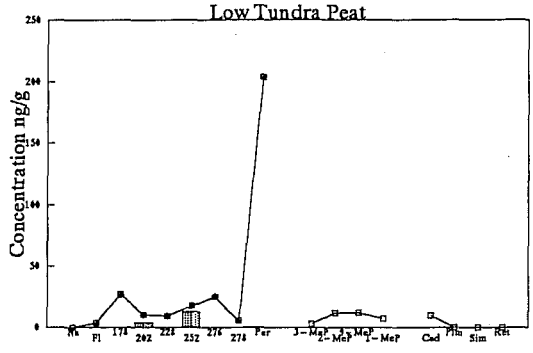


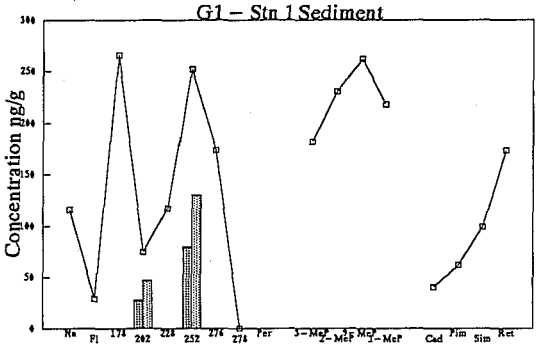
Whitehouse, 1988.

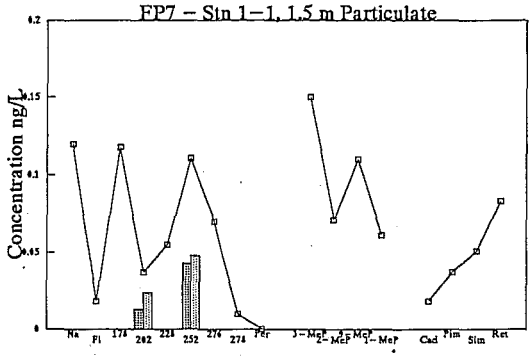
	FP163 Stn 0–6	NX–S866 Stn 0–6	NX–P867 Stn 0–6	NX–F867 Stn 0–6	NX–C868B Stn 0–6
Anth/178	0.02	0.03	0.04	0.06	0.00
Fluor/202	0.40	0.32	0.39	0.45	
B(a)A/228	0.16	0.11	0.10	0.00	
BaP/(Be+aP)	0.21	0.21	0.34	0.00	
InPyr/276	0.17	0.00	0.00	0.00	
1+9MP/MPS	0.53				
178/(178+MP)	0.21				
178/(178+252)	0.45	0.70	0.49	0.92	1.00
178 to 278	128	45	88	1.2	0.31
Retene	28				
R/R+PAH S	0.18				

Peat/Station 1









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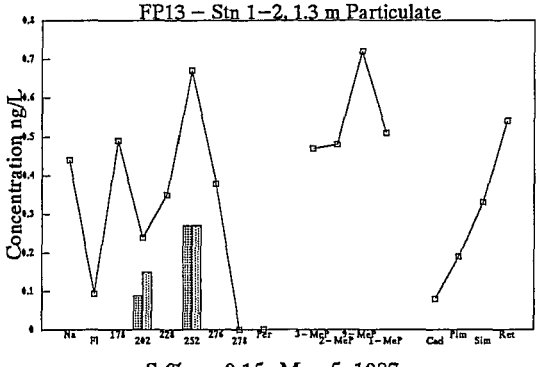

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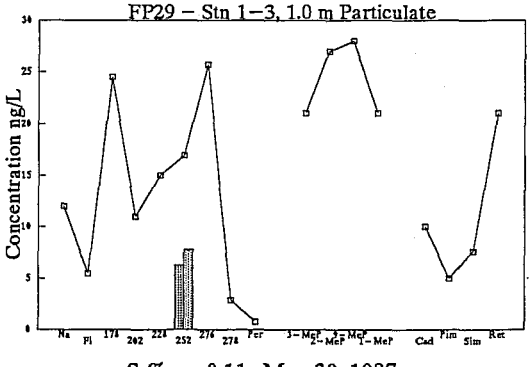
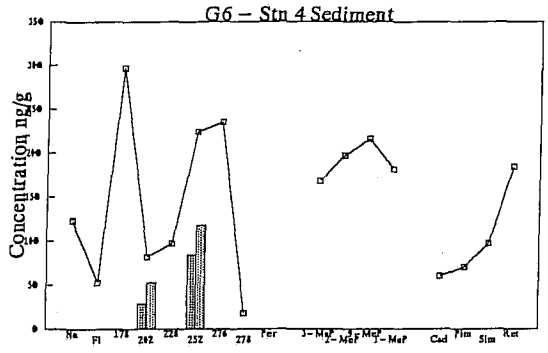
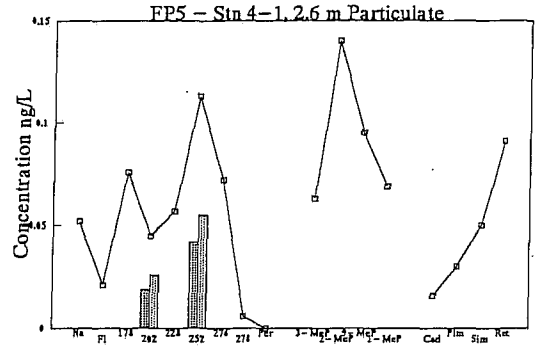


S ‰ = 0.11 May 30, 1987

	G1	FP7	FP13	FP29	Lacustrine/Moraine Peat		Low Tundra Peat	
	Stn 1	Stn 1–1	Stn 1–2	Stn 1–3	Mean	sd	Mean	sd
Anth/178	0.01		0.00	0.02	0.14	0.05	0.21	0.01
Fluor/202	0.37	0.35	0.37	0.49	0.42	0.03	0.41	0.05
B(a)A/228	0.15		0.11	0.13	0.18	0.02	0.13	0.01
BaP/(Be+aP)	0.24			0.26	0.39	0.03	0.00	0.00
InPyr/276		0.14	0.18	0.11	0.08	0.09	0.08	0.12
1+9MP/MPS	0.54	0.44	0.56	0.51	0.46	0.03	0.56	0.00
178/(178+MP)	0.23	0.23	0.18	0.20	0.22	0.03	0.46	0.00
178/(178+252)	0.51	0.52	0.42	0.59	0.35	0.09	0.61	0.13
178 to 278	884	0.40	2.1	96	202	139	95	16
Retene	173	0.08	0.54	21	53	34	<5.1	
R/R+PAH S	0.16	0.17	0.20	0.18	0.19	0.07	0.00	

Station 4





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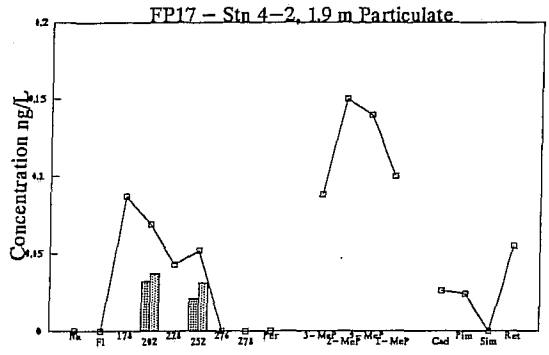

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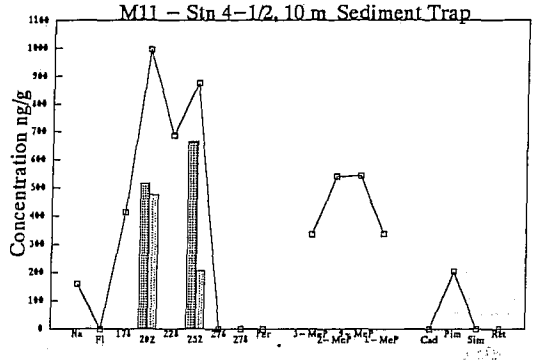

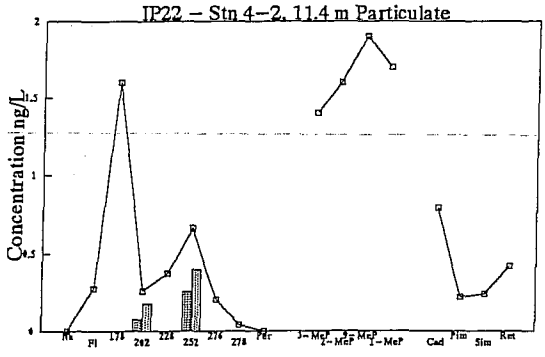

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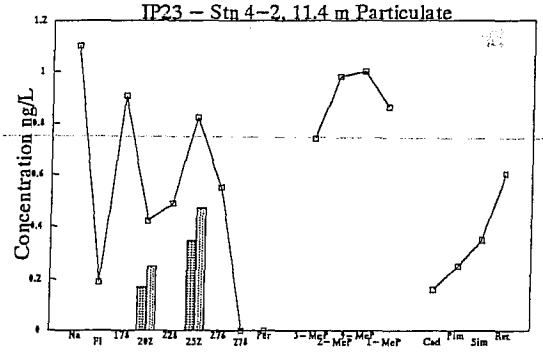

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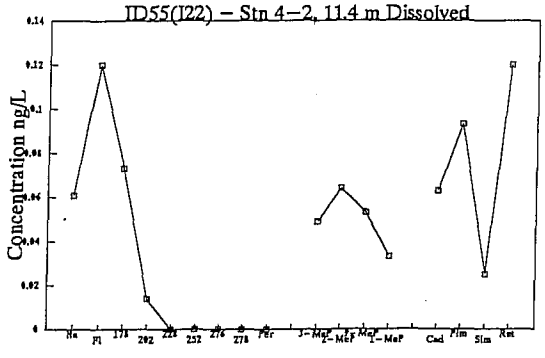

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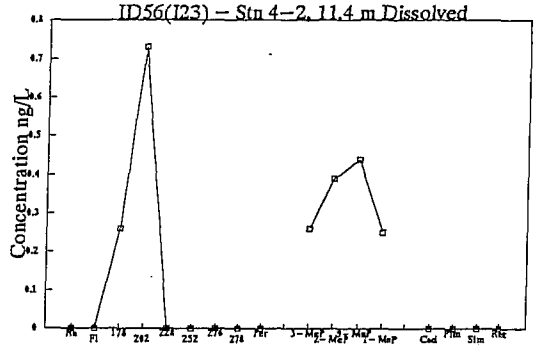

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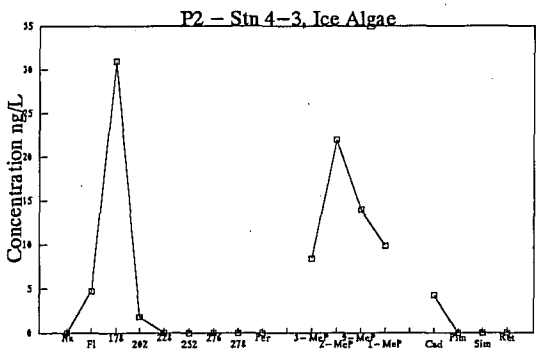
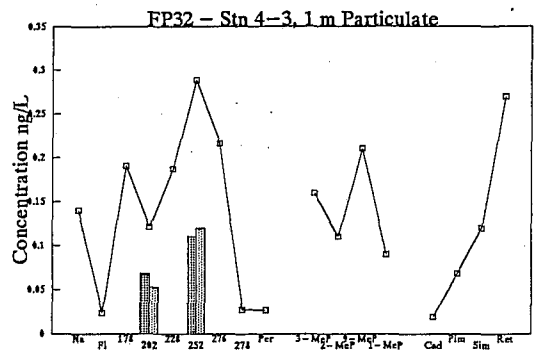
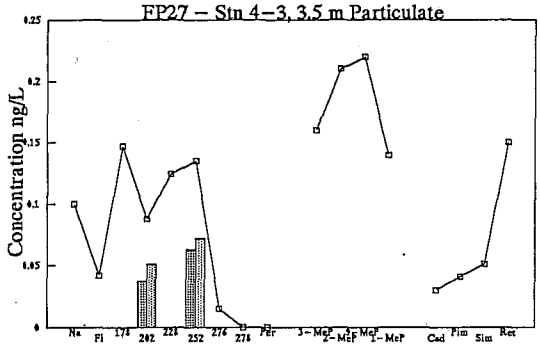
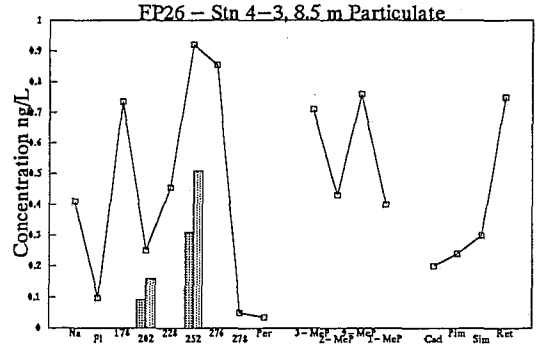




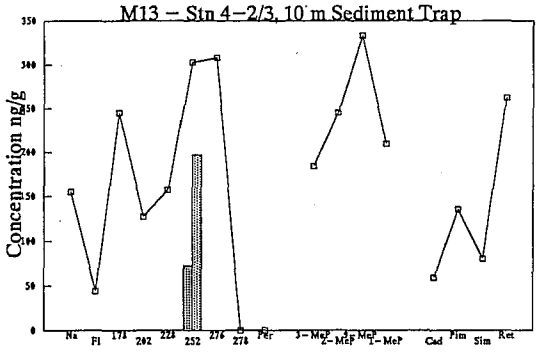
S ‰ = 6.2

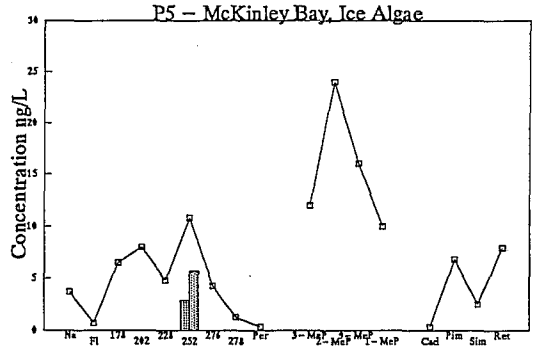


S ‰ = 6.7



S ‰ = 29.2

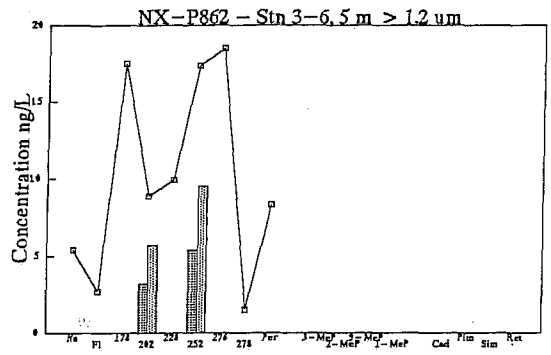




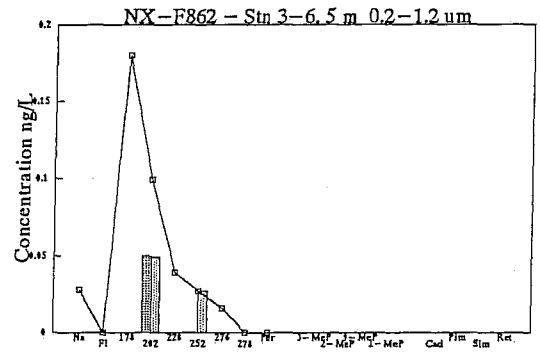
	G6 Stn 4	FP5 Stn 4–1	FP17 Stn 4–2	M11 Stn 4–1/2	IP22 Stn 4–2	IP23 Stn 4–2	ID55 (I22) Stn 4–2	ID56 (I23) Stn 4–2
Anth/178	0.05	0.04	0.00	0.17	0.00	0.08	0.00	0.00
Fluor/202	0.35	0.42	0.46	0.52	0.31	0.40	0.00	0.66
B(a)A/228	0.12	0.16	0.00	0.31	0.22	0.18		
BaP/(Be+aP)	0.16	0.23	0.00	0.00	0.00	0.00		
InPyr/276	0.12	0.19			0.36	0.00		
1+9MP/MPS	0.52	0.45	0.50	0.50		0.52	0.43	0.51
178/(178+MP)	0.28	0.17	0.15	0.19	0.20	0.20	0.27	0.16
178/(178+252)	0.57	0.40	0.63	0.32	0.71	0.52	1.00	1.00
178 to 278	953	0.37	0.251	2969	3.1	3.2	0.087	0.99
Retene	184	0.09	0.055	<1180	0.42	0.60	0.12	<2.1
R/R+PAH S	0.16	0.20	0.18	0.00	0.12	0.16	0.58	0.00

	FP32 Stn 4−3	FP27 Stn 4−3	FP26 Stn 4−3	M13 Stn 4−2/3	P2 Stn 4−3	P5 McKinley Bay
Anth/178	0.06	0.05	0.02	0.00	0.00	0.00
Fluor/202	0.56	0.42	0.36			
B(a)A/228	0.30	0.11	0.19	0.14		0.23
BaP/(Be+aP)	0.31	0.00	0.16	ca 0.15		0.21
InPyr/276	0.17	0.00	0.11	ca 0.11		0.18
1+9MP/MPS	0.53	0.49	0.50	0.56	0.44	0.42
178/(178+MP)	0.25	0.17	0.24	0.20	0.36	0.09
178/(178+252)	0.40	0.52	0.44	0.45	1.00	0.38
178 to 278	1.0	0.51	3.3	1140	33	36
Retene	0.27	0.15	0.75	262	<16	7.9
R/R+PAH S	0.21	0.23	0.19	0.19	0.00	0.18

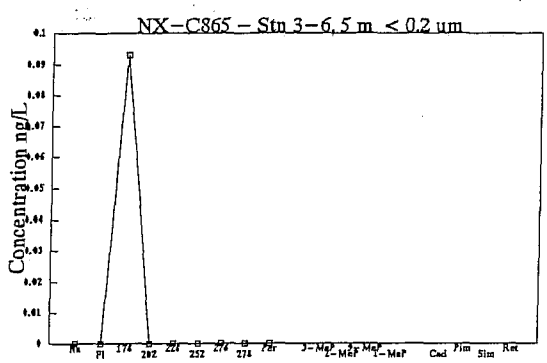
Station 3−6



Whitehouse, 1988. S ‰ = 23



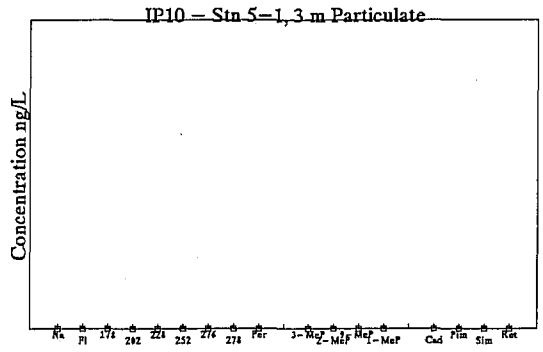
Whitehouse, 1988. S ‰ = 23



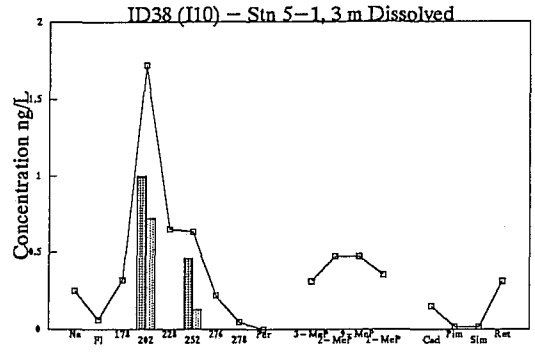
Whitehouse, 1988.

	NX−P862 Stn 3−6	NX−F862 Stn 3−6	NX−C865 Stn 3−6
Anth/178	0.03	0.00	0.00
Fluor/202	0.36	0.51	
B(a)A/228	0.13	0.00	
BaP/(Be+aP)	0.19	0.00	
InPyr/276	0.08	0.00	
1+9MP/MPS			
178/(178+252)	0.50	0.87	1.00
178 to 278	74	0.361	0.093
Retene			
R/R+PAH S			

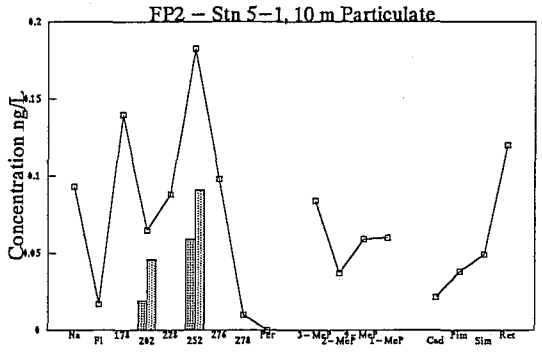
Station 5



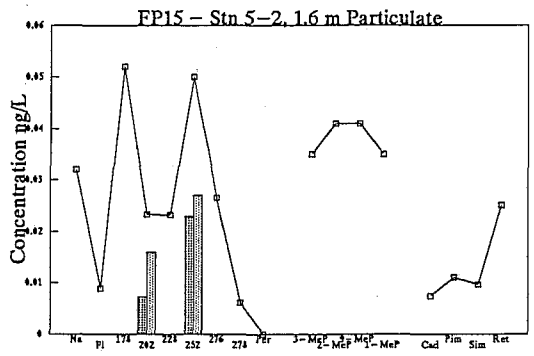
S ‰ = 30.1



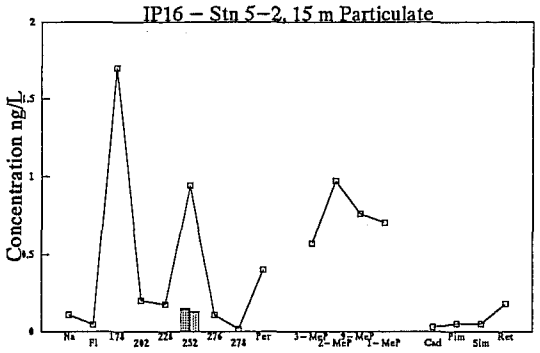
S ‰ = 30.1



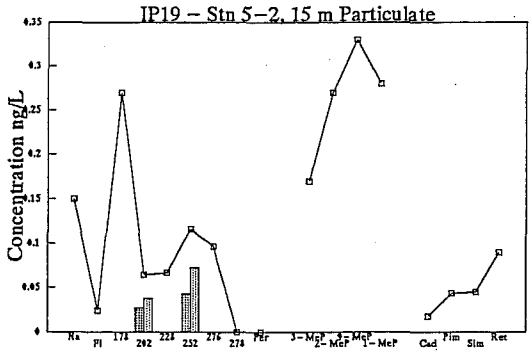
S ‰ = 30.7



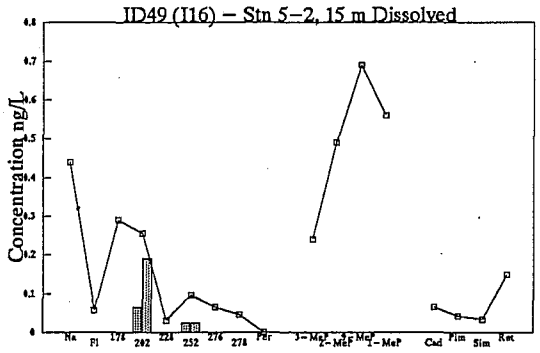
S ‰ = 29.6



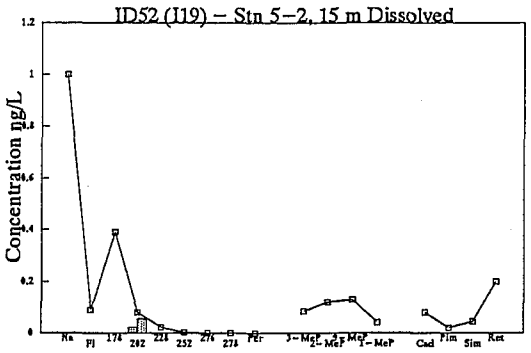
S ‰ = 31.3



S ‰ = 31.3

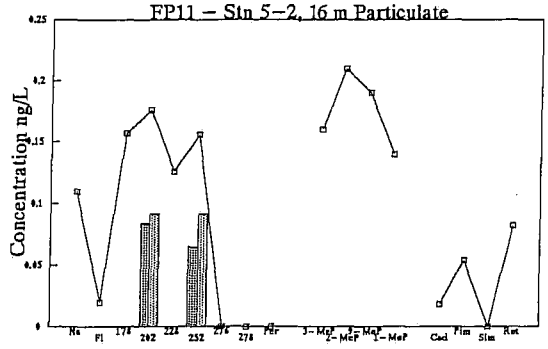


S ‰ = 31.3



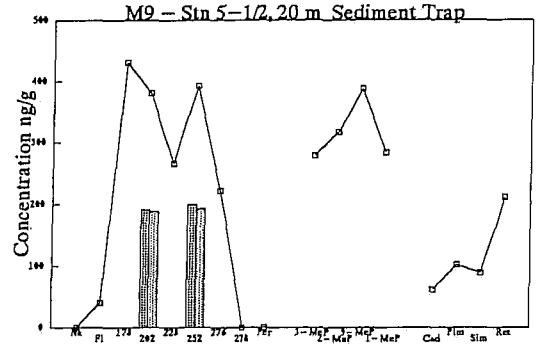
S ‰ = 31.3

FP11 – Stn 5–2, 16 m Particulate

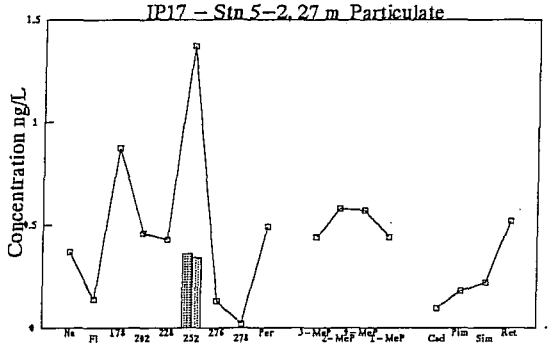


S ‰ = 31.3

M9 – Stn 5–1/2, 20 m Sediment Trap

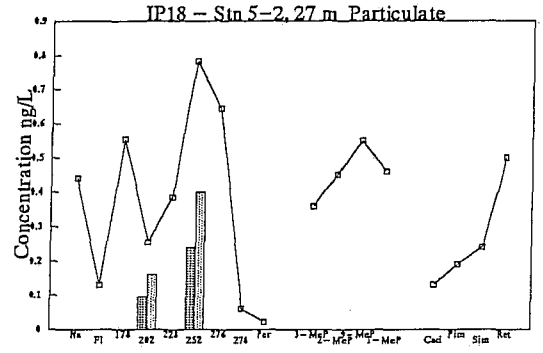


IP17 – Stn 5–2, 27 m Particulate



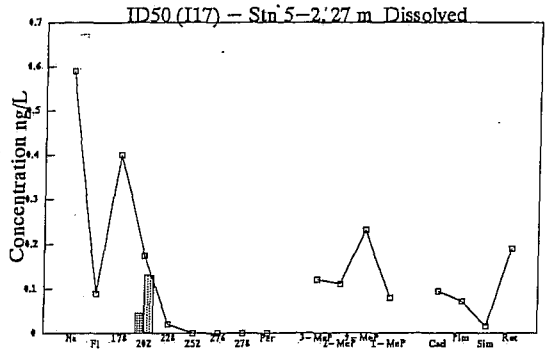
S ‰ = 31.6

IP18 – Stn 5–2, 27 m Particulate



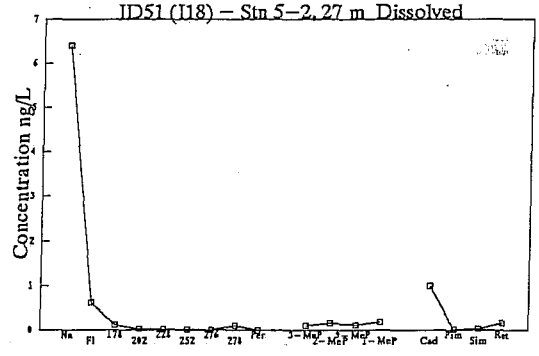
S ‰ = 31.6

ID50 (I17) – Stn 5–2, 27 m Dissolved



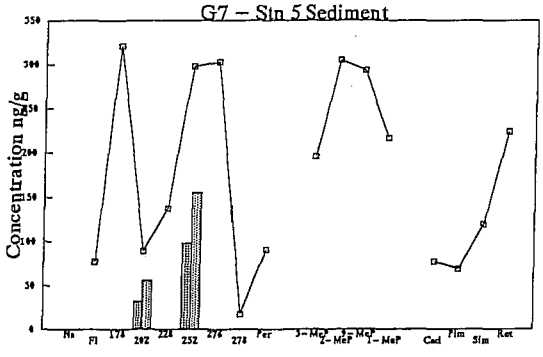
S ‰ = 31.6

ID51 (I18) – Stn 5–2, 27 m Dissolved

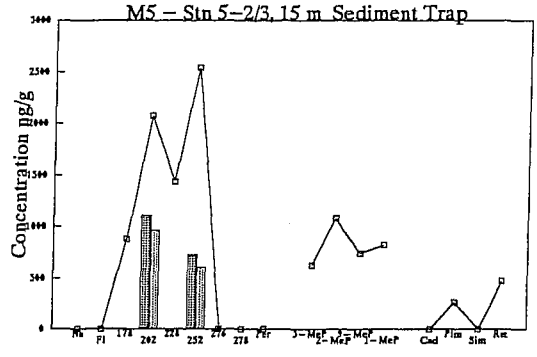


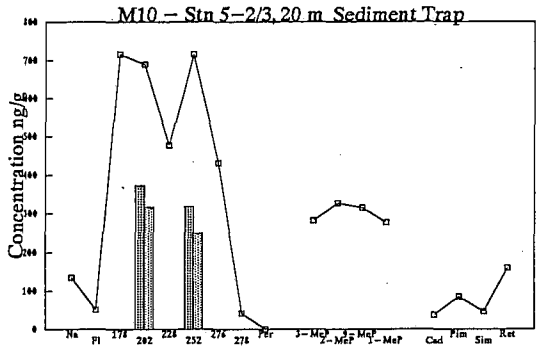
S ‰ = 31.6

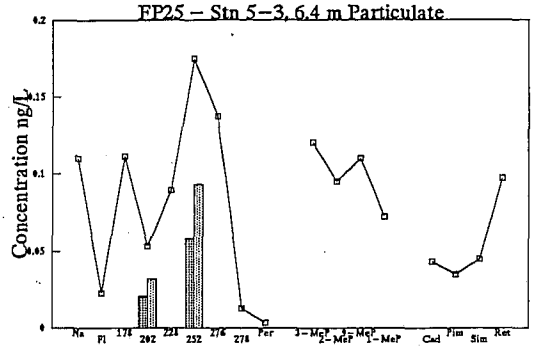
G7 – Stn 5 Sediment

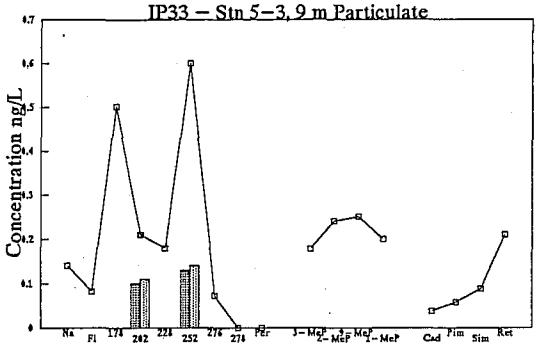


M5 – Stn 5–2/3, 15 m Sediment Trap

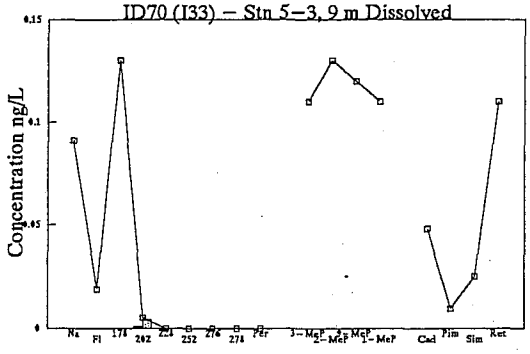




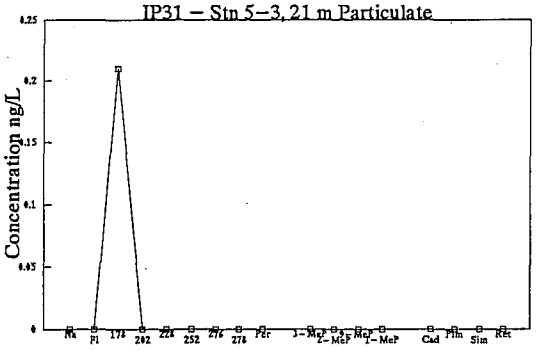




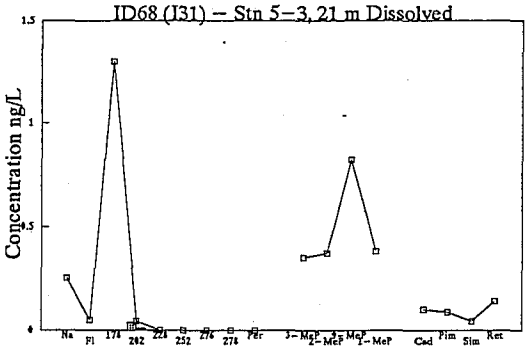
S ‰ = 29.7



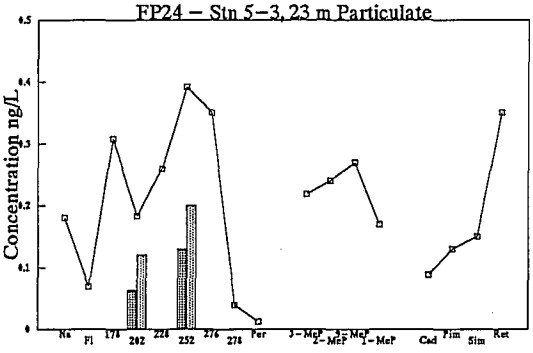
S ‰ = 29.7



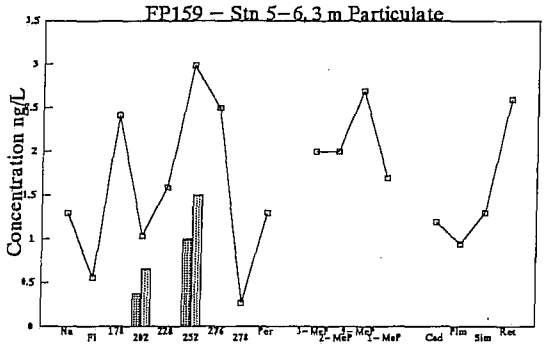
S ‰ = 31.6



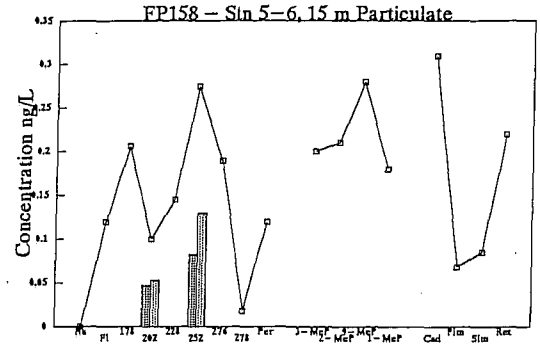
S ‰ = 31.6



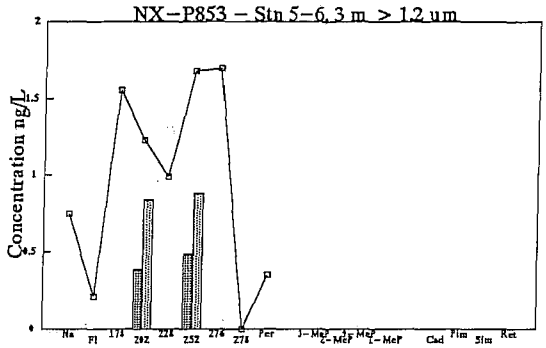
S ‰ = 31.9



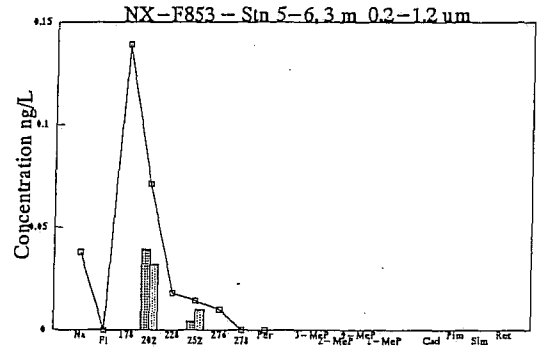
S ‰ = 21.4



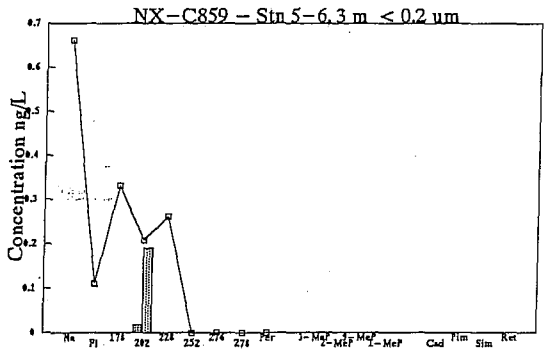
S ‰ = 27.9



Whitehouse, 1988. S ‰ = 21.4



Whitehouse, 1988. S ‰ = 21.4



Whitehouse, 1988.

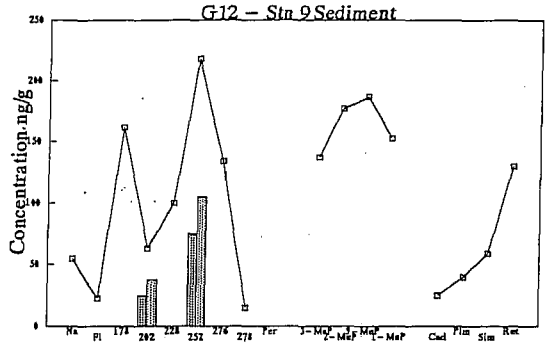
	IP10 Stn 5–1	ID38 (I10) Stn 5–1	FP2 Stn 5–1	FP15 Stn 5–2	IP16 Stn 5–2	IP19 Stn 5–2	ID49 (I16) Stn 5–2	ID52 (I19) Stn 5–2
Anth/178		0.00	0.00	0.12	0.12	0.00	0.00	0.00
Fluor/202		0.58	0.29	0.31		0.42	0.25	0.29
B(a)A/228		0.49	0.16		0.37	0.00	0.05	
BaP/(Be+aP)		0.24	0.23	0.00	0.83	0.00	0.67	
InPyr/276		0.59	0.05	0.36	0.35	0.00	0.30	0.00
1+9MP/MPS		0.51			0.49	0.58	0.63	0.45
178/(178+MP)		0.17	0.37	0.25	0.36	0.20	0.13	0.51
178/(178+252)		0.34	0.43	0.51	0.64	0.70	0.75	0.99
178 to 278	0.00	3.59	0.58	0.18	3.15	0.62	0.78	0.50
Retene	<0.62	0.31	0.12	0.03	0.18	0.09	0.15	0.20
R/R+PAH S		0.08	0.17	0.12	0.05	0.13	0.16	0.29

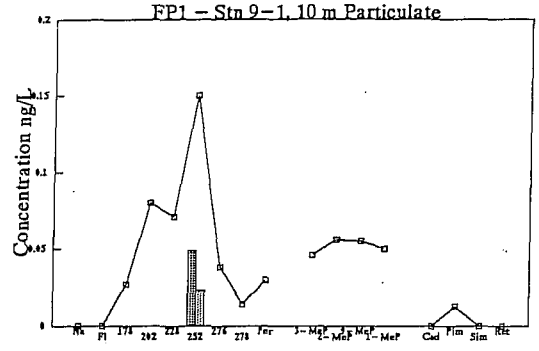
	G7	M9	FP11	IP17	IP18	ID50 (I17)	ID51 (I18)	FP25
	Stn 5	Stn 5−1/2	Stn 5−2	Stn 5−2	Stn 5−2	Stn 5−2	Stn 5−2	Stn 5−3
Anth/178	0.02	0.05	0.11	0.04	0.04	0.02	0.00	0.01
Fluor/202	0.37	0.50	0.48		0.37	0.25	0.38	0.40
B(a)A/228	0.15	0.34	0.21	0.21	0.17	0.00	1.00	0.16
BaP/(Be+aP)	0.23	0.00	0.00	0.65	0.25		0.00	0.21
InPyr/276	0.12	0.20		0.23	0.15			0.20
1+9MP/MPS	0.50	0.53		0.50	0.55	0.57	0.55	0.46
178/(178+MP)	0.24	0.25	0.18	0.30	0.23	0.43	0.17	0.22
178/(178+252)	0.52	0.52	0.50	0.39	0.41	1.00	0.88	0.39
178 to 278	1166	1693	0.62	3.3	2.7	0.59	0.25	0.58
Retene	224	211	0.08	0.52	0.50	0.19	0.16	0.10
R/R+PAH S	0.16	0.11	0.12	0.14	0.16	0.24	0.39	0.14

	IP33	ID70 (I33)	M5	M10	IP31	ID68 (I31)	FP24
	Stn 5−3	Stn 5−3	Stn 5−2/3	Stn 5−2/3	Stn 5−3	Stn 5−3	Stn 5−3
Anth/178	0.10	0.00	0.13	0.08		0.00	0.03
Fluor/202	0.48	0.18	0.53	0.54		0.83	0.35
B(a)A/228	0.16		0.38	0.36			0.15
BaP/(Be+aP)	0.70		0.67	0.37			0.22
InPyr/276	0.00			0.35			0.17
1+9MP/MPS	0.52	0.49	0.48	0.49		0.63	0.49
178/(178+MP)	0.37	0.22	0.21	0.37	1.00	0.40	0.26
178/(178+252)	0.46	1.00	0.26	0.50	1.00	1.00	0.44
178 to 278	1.6	0.14	6931	3071	0.21	1.3	1.5
Retene	0.21	0.11	477	160	<0.61	0.14	0.35
R/R+PAH S	0.12	0.45	0.06	0.05	0.00	0.09	0.19

	FP159	FP158	NX−P853	NX−F853	NX−C859
	Stn 5−6	Stn 5−6	Stn 5−6	Stn 5−6	Stn 5−6
Anth/178	0.00	0.03	0.04	0.07	1.00
Fluor/202	0.37	0.47	0.32	0.55	0.08
B(a)A/228	0.18	0.24	0.00	0.00	1.00
BaP/(Be+aP)	0.23	0.32	0.26	0.00	
InPyr/276	0.20	0.15	0.00	0.00	
1+9MP/MPS	0.52	0.53			
178/(178+MP)	0.22	0.19			
178/(178+252)	0.45	0.43	0.48	0.91	1.00
178 to 278	10.8	0.93	7.2	0.25	0.80
Retene	2.6	0.22			
R/R+PAH S	0.19	0.19			

Station 9





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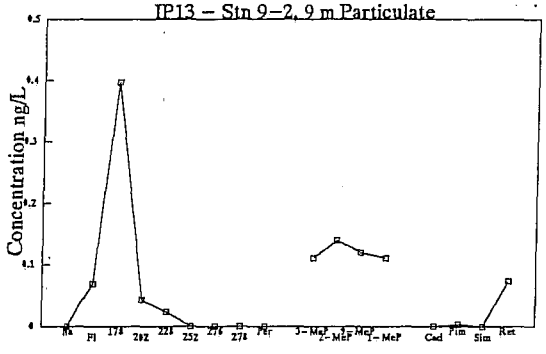

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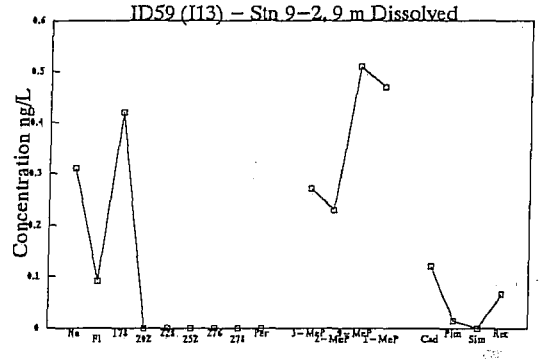

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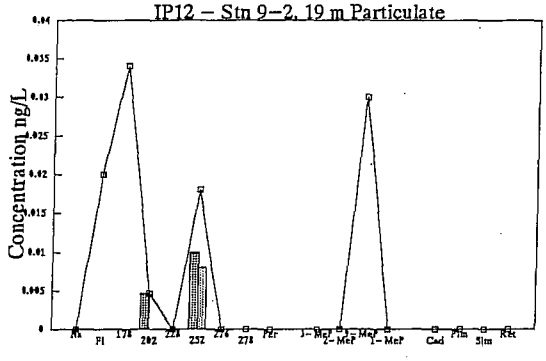

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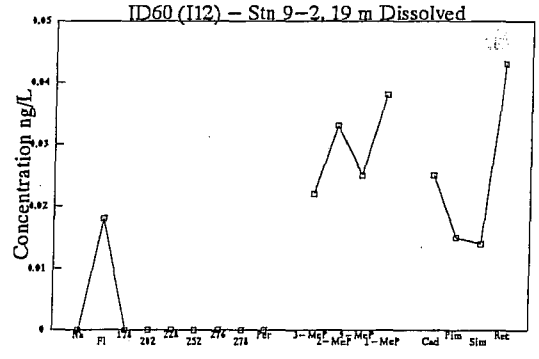

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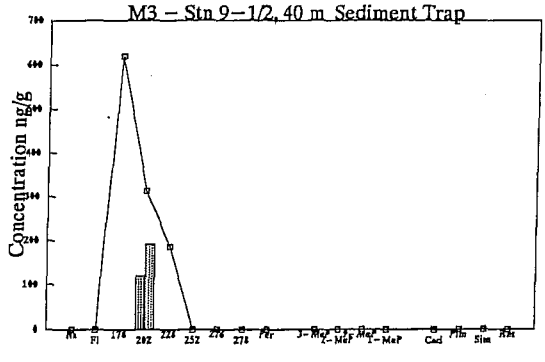
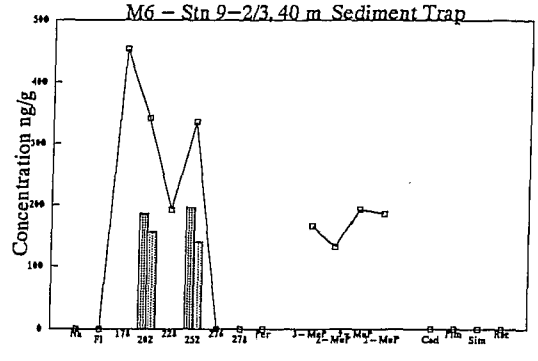
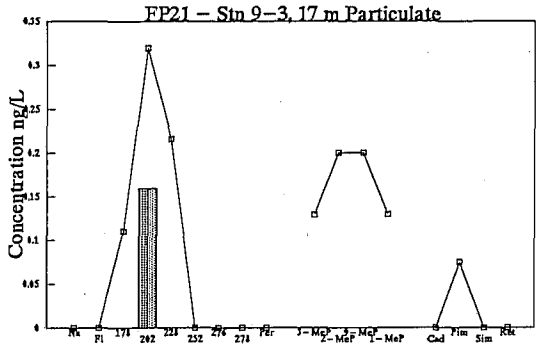




FP21 – Stn 9–3, 17 m Particulate



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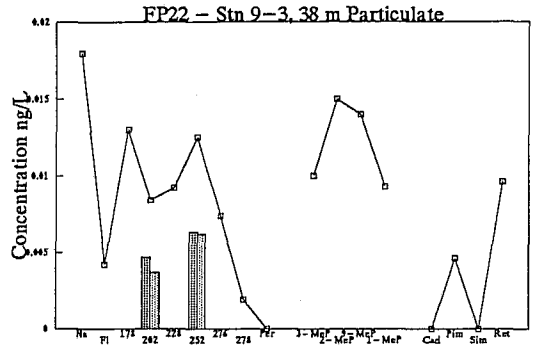
FP22 – Stn 9–3, 38 m Particulate



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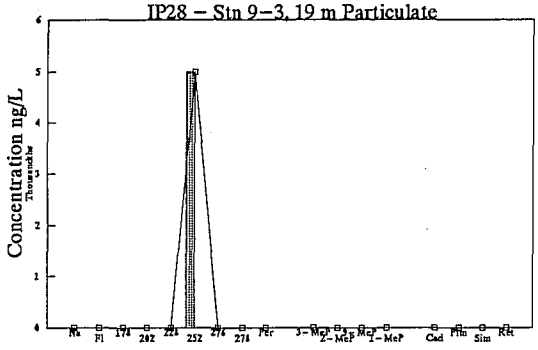
IP28 – Stn 9–3, 19 m Particulate



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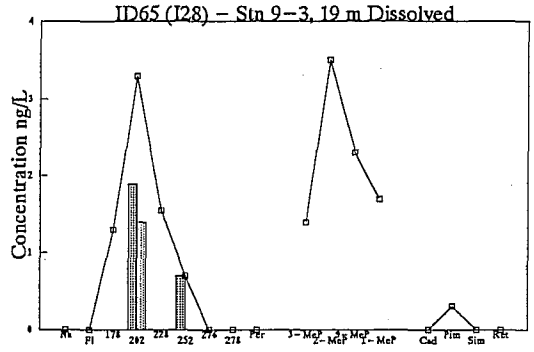
ID65 (I28) – Stn 9–3, 19 m Dissolved



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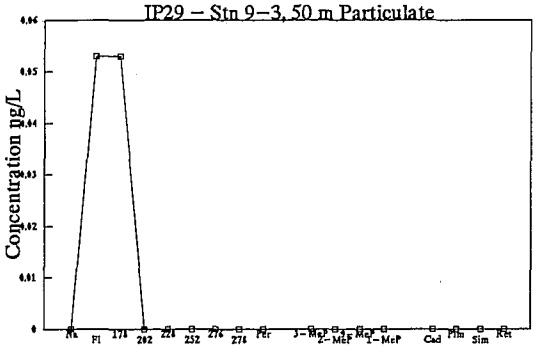
IP29 – Stn 9–3, 50 m Particulate



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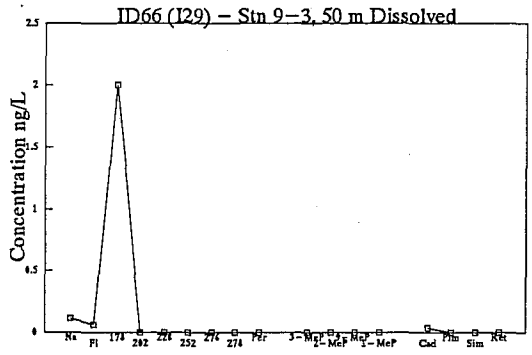

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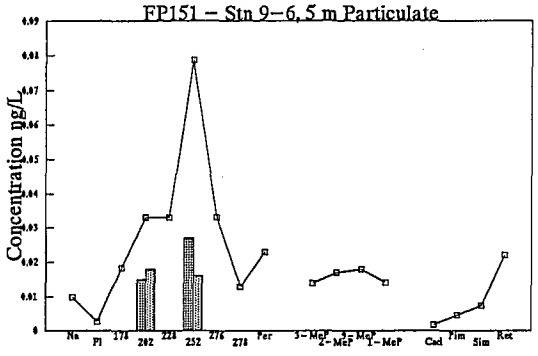
FP151 – Stn 9–6, 5 m Particulate



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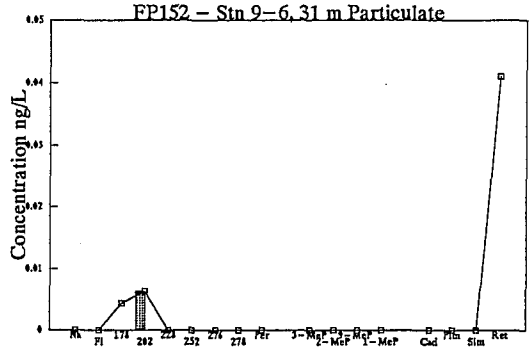
FP152 – Stn 9–6, 31 m Particulate

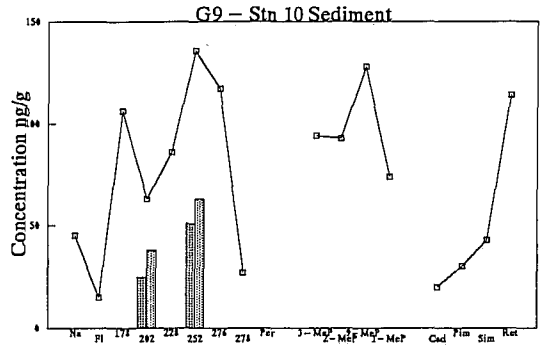


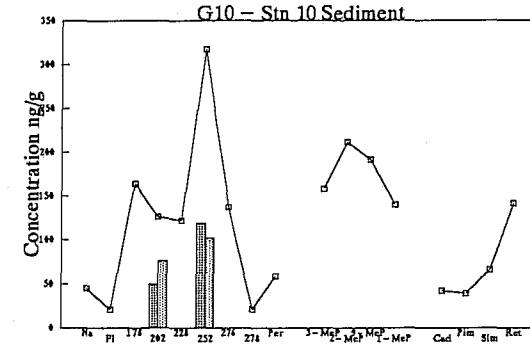
S ‰ = 31.8

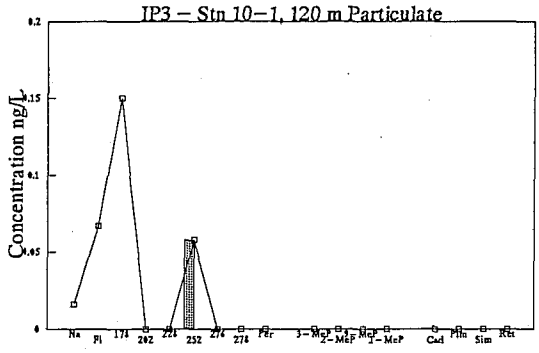
	G12	FP1	IP13	ID59 (I13)	IP12	ID60 (I12)	M3	FP21
	Stn 9	Stn 9−1	Stn 9−2	Stn 9−2, 9 m	Stn 9−2	Stn 9−2	Stn 9−1/2	Stn 9−3
Anth/178	0.04	0.00	0.07	0.00	0.00		0.00	0.00
Fluor/202	0.40	0.50			1.00		0.39	0.50
B(a)A/228	0.15	0.45	0.00				0.00	0.40
BaP/(Be+aP)	0.27	0.77			0.00			
InPyr/276	0.18	0.53						
1+9MP/MPS	0.52	0.51	0.48	0.66	1.00	0.53		
178/(178+MP)	0.20	0.12	0.45	0.22	0.53	0.00	1.00	0.14
178/(178+252)	0.43	0.15	1.00	1.00	0.65		1.00	1.00
178 to 278	692	0.38	0.46	0.42	0.057	0.00	1118	0.65
Retene	130	<0.065	0.07	0.07	<0.082	0.043	<2210	<0.76
R/R+PAH S	0.16	0.00	0.14	0.14	0.00	1.00	0.00	0.00

	IP28	ID65 (I28)	FP22	M6	IP29	ID66 (I29)	FP151	FP152
	Stn 9−3	Stn 9−3	Stn 9−3	Stn 9−2/3	Stn 9−3	Stn 9−3	Stn 9−6, 5 m	Stn 9−6, 31 m
Anth/178		0.00	0.00	0.00		0.00	0.29	0.00
Fluor/202		0.58	0.56	0.54			0.45	1.00
B(a)A/228		0.42	0.21	0.00			0.42	
BaP/(Be+aP)			0.00	0.00			0.65	
InPyr/276			0.00				0.45	
1+9MP/MPS		0.45	0.48					
178/(178+MP)		0.13	0.21	0.40	1.00	1.00	0.23	1.00
178/(178+252)	0.00	0.65	0.51	0.57	1.00	1.00	0.19	1.00
178 to 278	0.005	6.9	0.052	1324	0.053	2.00	0.21	0.011
Retene	<0.37	<5.0	0.010	<756	<0.25	<0.096	0.02	0.041
R/R+PAH S	0.00	0.00	0.15	0.00	0.00	0.00	0.10	0.79

Station 10







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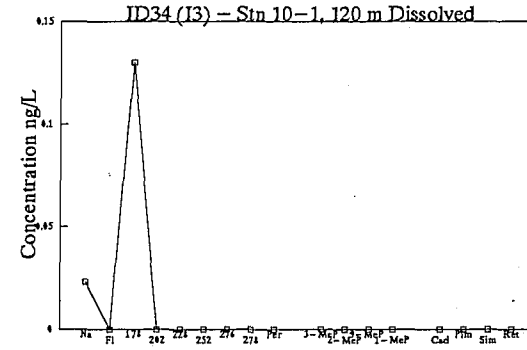

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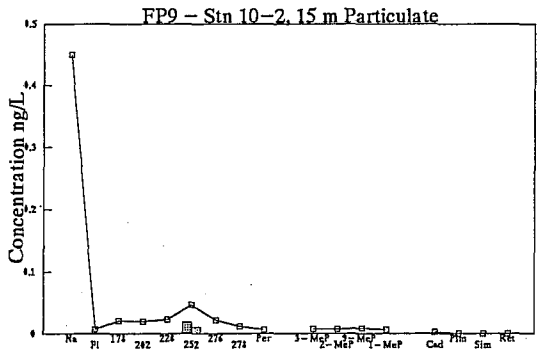

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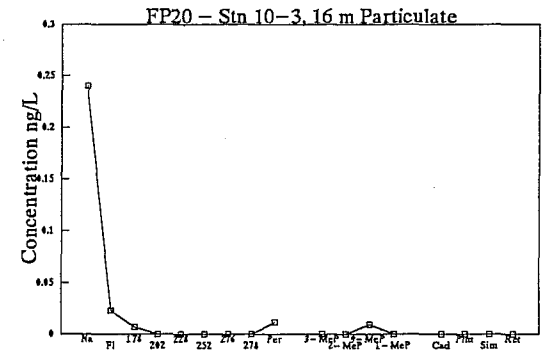

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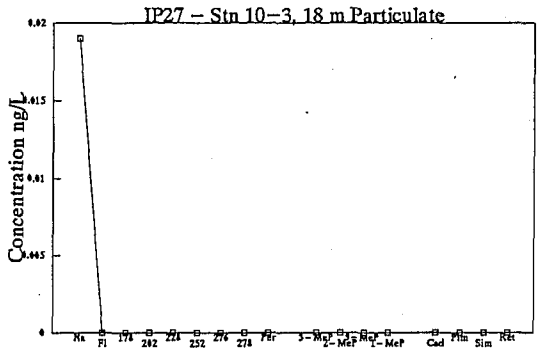

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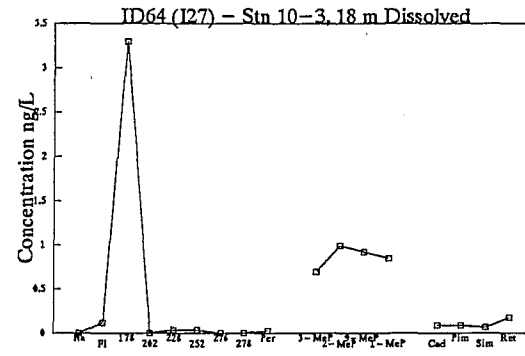

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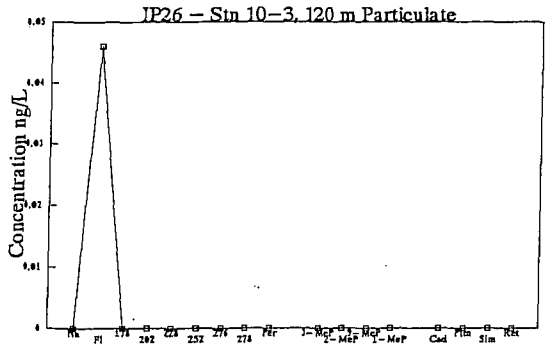

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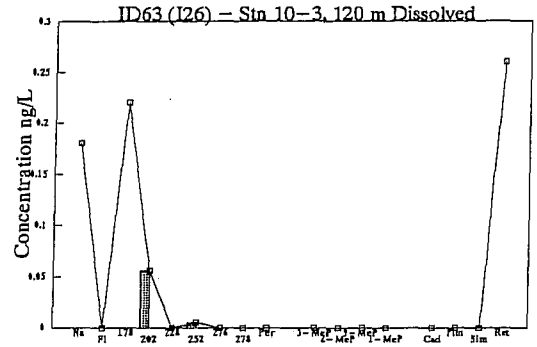
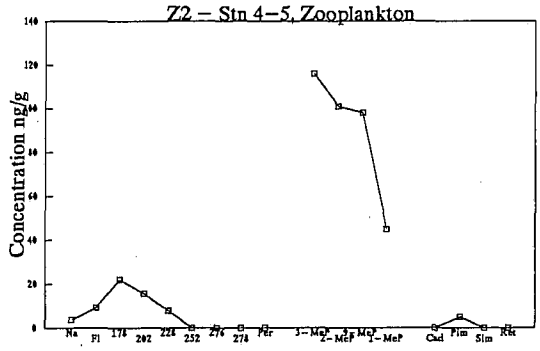


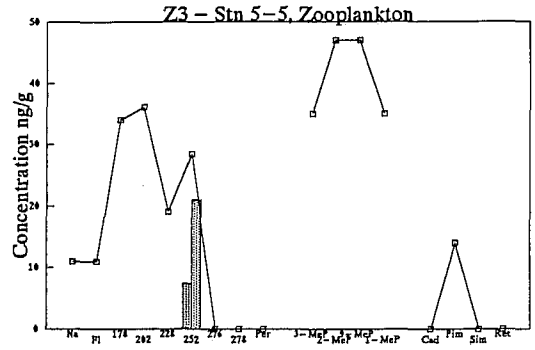
S ‰ = 33.2

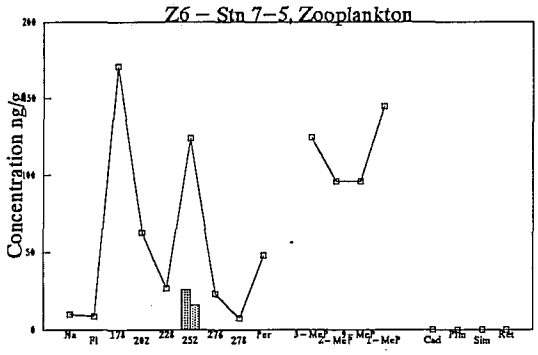
	G9 Stn 10	G10 Stn 10	IP3 Stn 10–1	ID34 (I3) Stn 10–1	FP9 Stn 10–2	FP20 Stn 10–3	IP27 Stn 10–3	ID64 (I27) Stn 10–3
Anth/178	0.03	0.09			0.34	0.00		0.12
Fluor/202	0.40	0.40			0.50			
B(a)A/228	0.17	0.25			0.30			0.00
BaP/(Be+aP)	0.24	0.46			0.58			1.00
InPyr/276	0.12	0.23			0.59			
1+9MP/MPS	0.52	0.47			0.48			0.51
178/(178+MP)	0.21	0.19	1.00	1.00	0.41	0.43		0.49
178/(178+252)	0.44	0.34	0.72	1.00	0.31	1.00		0.99
178 to 278	535	888	0.21	0.13	0.15	0.007	0.00	3.4
Retene	114	141	<0.21	<1.4	<0.020	<0.055	<0.48	0.17
R/R+PAH S	0.18	0.14	0.00	0.00	0.00	0.00		0.05

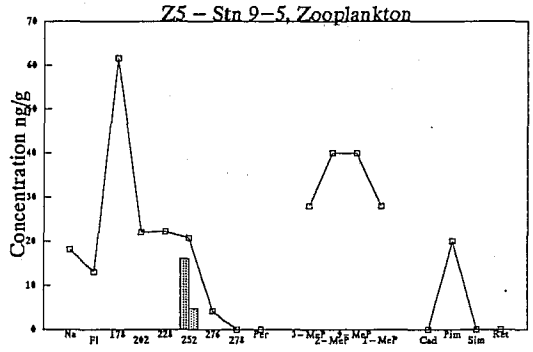
	IP26 Stn 10–3	ID63 (I26) Stn 10–3
Anth/178		
Fluor/202		
B(a)A/228		
BaP/(Be+aP)		
InPyr/276		
1+9MP/MPS		
178/(178+MP)		1.00
178/(178+252)		0.97
178 to 278	0	0.28
Retene	<0.29	0.26
R/R+PAH S		0.48

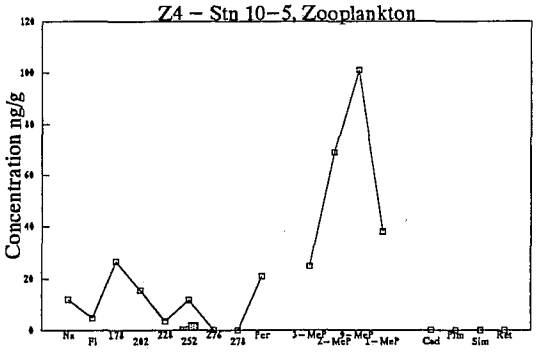
Zooplankton











	Z2 Stn 4–5	Z3 Stn 5–5	Z6 Stn 7–5	Z5 Stn 9–5	Z4 Stn 10–5
Anth/178	0.00	0.00	0.17	0.07	0.14
Fluor/202					
B(a)A/228	0.36	-	0.33	0.32	
BaP/(Be+aP)		0.00	0.84	0.00	0.73
InPyr/276			0.39	1.00	
1+9MP/MPS					
178/(178+MP)	0.06	0.17	0.27	0.31	0.10
178/(178+252)	1.00	0.54	0.58	0.75	0.69
178 to 278	45	118	415	131	58
Retene	<38	<135	<71	<86	<38
R/R+PAH S	0.00	0.00	0.00	0.00	0.00

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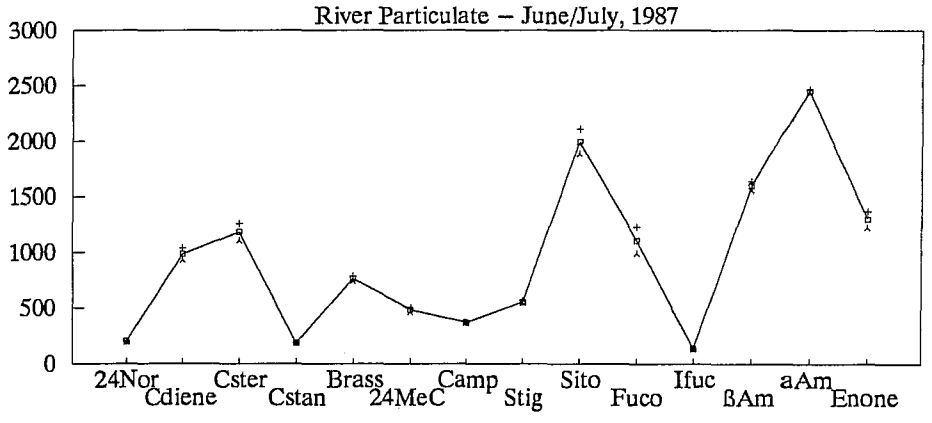
APPENDIX 9; KEY STEROL AND TRITERPENOID INDICATORS PRESENTED AS GRAPHS, TOTALS AND RATIOS

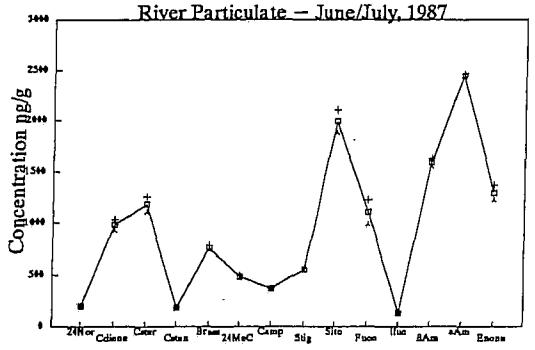
Explanation of Variables Graphed (uncertainties are plus or minus one standard error of the normalized concentrations)

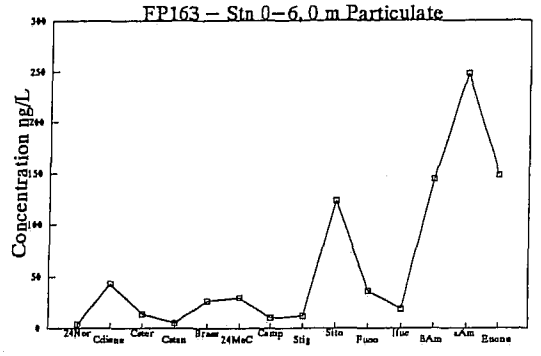
Abbreviation	Class	Explanation	Common Name*
24Nor	M	24–Norcholesta–5,22E–dien–3ß–ol	24–Nor–cholesterol
Cdiene	M	Cholesta–5,22E–dien–3ß–ol	22–Dehydro–cholesterol
Cster	M	Cholest–5–en–3ß–ol	Cholesterol
Cstan	P	5a–Cholestan–3ß–ol	Cholestanol
Brass	M	24–Methylcholesta–5,22E–dien–3ß–ol	Brassicasterol
24MeC	M	24–Methylcholesta–5,24(28)–dien–3ß–ol	24–Methylene–cholesterol
Camp	P	24–Methylcholest–5–en–3ß–ol	Campesterol
Stig	P	24–Ethylcholesta–5,22E–dien–3ß–ol	Stigmasterol
Sito	P	24–Ethylcholest–5–en–3ß–ol	Sitosterol
Fuco	M	24–Ethylcholesta–5,24(28)E–dien–3ß–ol	Fucosterol
Ifuc	M	24–Ethylcholesta–5,24(28)Z–dien–3ß–ol	Isofucosterol
ßAm	T	Olean–12–en–3ß–ol	ß–Amyrin
aAm	T	Urs–12–en–3ß–ol	a–Amyrin
Enone	T	24–Ethylcholesta–3,5–dien–7–one	



Concentrations and Ratios	Explanation
Marine ster	Autochthonous, primarily marine sterols classified M above
Plant ster	Allochthonous, plant sterols classified P above
% Plant ster	Plant sterols/(marine sterols + plant sterols)
Triterpenoids	Triterpenoids (of plant origin) classified T above
% Triterp	Triterpenoids/(triterpenoids + total sterols)

* Most of the sterol common names are names given to higher plant derived sterols with a specific C–24 sterochemistry. These names are used for abbreviations because of their familiarity, but do not imply a specific sterochemistry.





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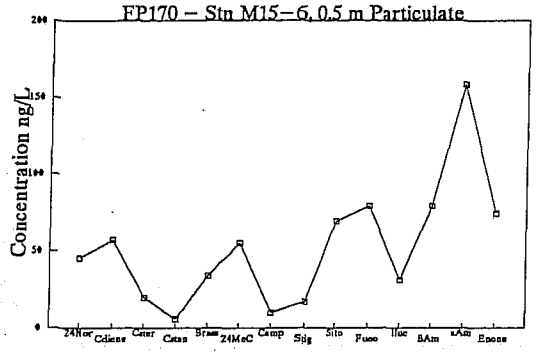

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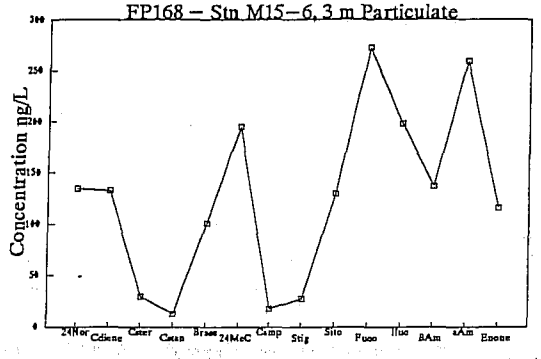
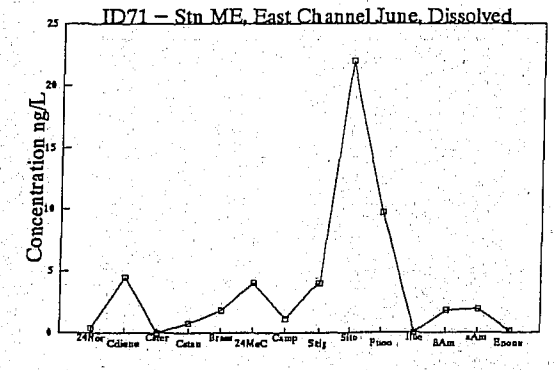
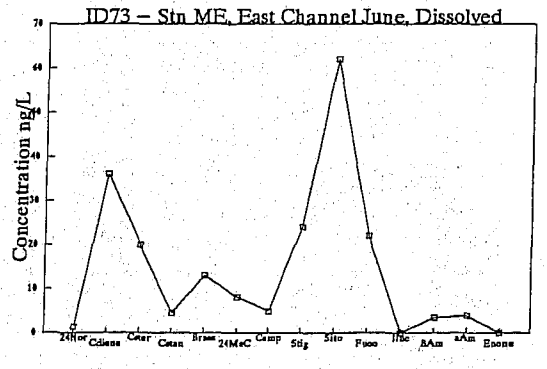
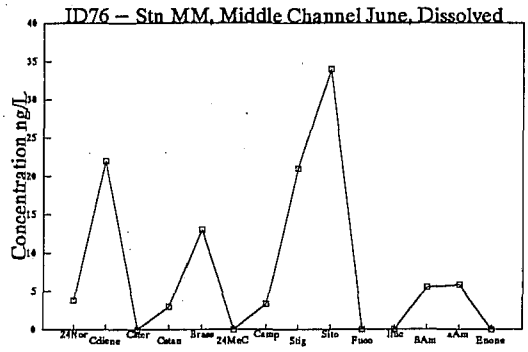


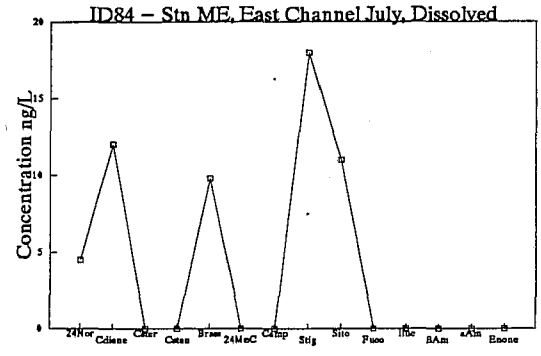
S ‰ = 21.3

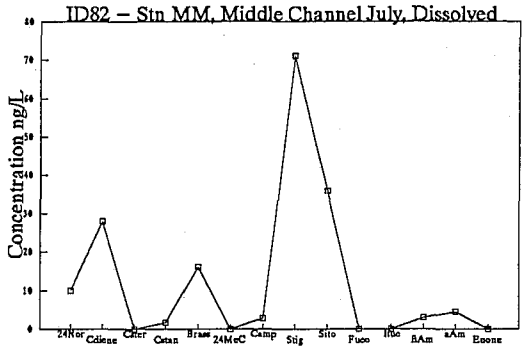
	River Mean, ng/L	River sd	River Mean, ng/g	River sd	FP163 Stn 0–6	FP170 Stn M15–6	FP168 Stn M15–6	T4 (ng/g) Sabine Pt
Marine ster	885	722	4846	3234	171	321	1065	15736
Plant ster	565	462	3101	2066	150	102	189	17778
% Plant ster	38.8	4.0	38.8	4.0	46.8	24.1	15.1	53.0
Triterpenoids	951	674	5336	3033	540	311	512	298700
% Triterp	42.3	5.9	42.3	5.9	62.7	42.4	29.0	89.9

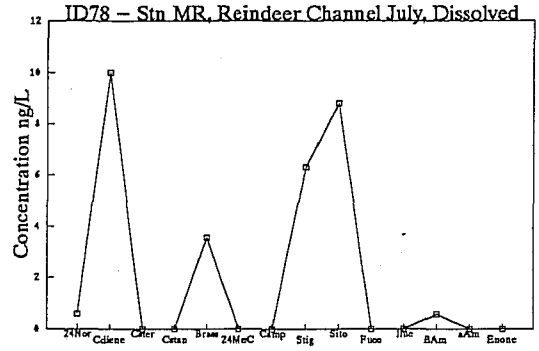


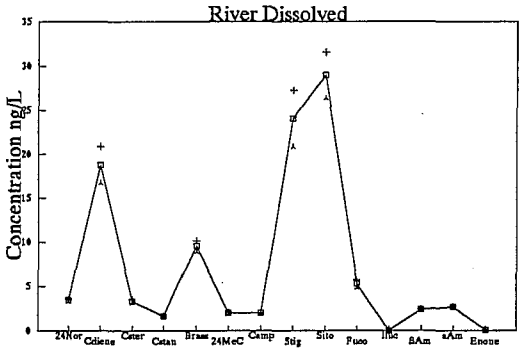


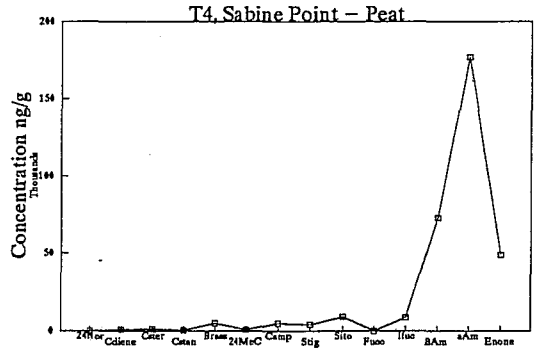






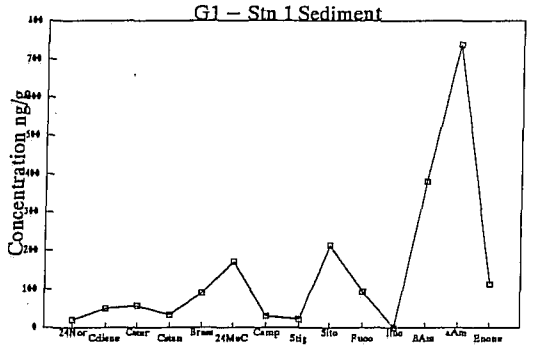


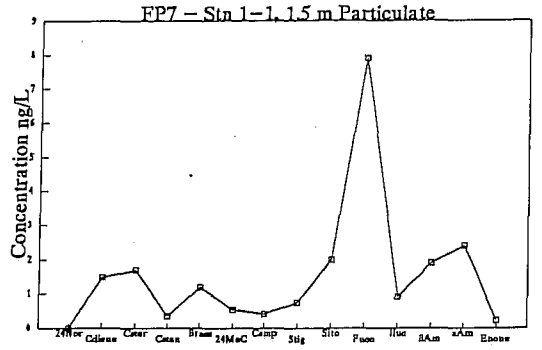




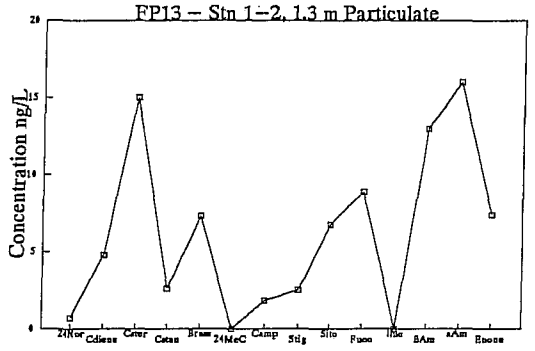
	ID71 ME–East	ID73 ME–East	ID76 MM–Mid	ID84 ME–East	ID82 MM–Mid	ID78 MR–Rein	River Mean	River sd
Marine ster	20	100	39	26	54	14	42	32
Plant ster	28	95	61	29	111	15	57	40
% Plant ster	57.8	48.7	61.2	52.4	67.4	51.6	56.5	7.0
Triterpenoids	3.8	7.3	11	0.0	7.4	0.6	5.1	4.4
% Triterp	7.4	3.6	10	0.0	4.3	1.9	4.6	3.7

Station 1





S ‰ = 0.16



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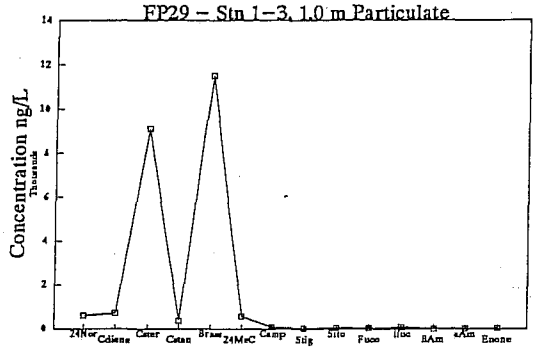
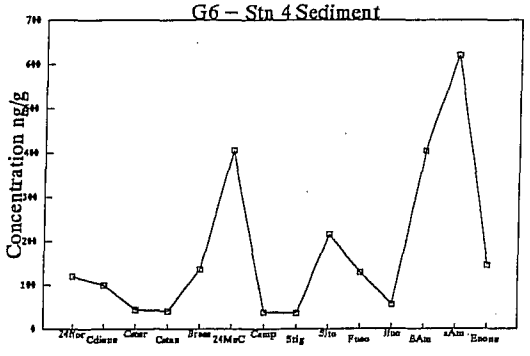
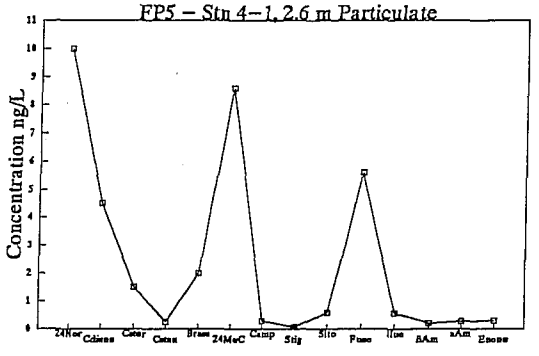


S ‰ = 0.11

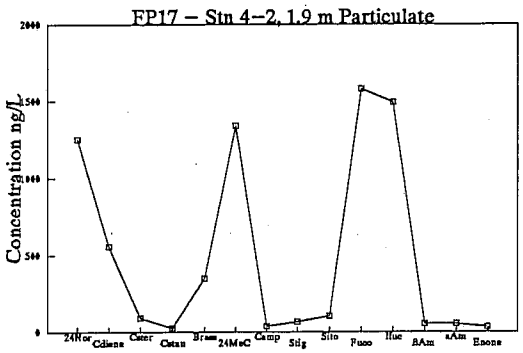
	G1 Stn 1	FP7 Stn 1–1	FP13 Stn 1–2	FP29 Stn 1–3
Marine ster	479	14	37	22578
Plant ster	297	3.5	14	512
% Plant ster	38.3	20.3	27.2	2.2
Triterpenoids	1230	4.5	36	36
% Triterp	61.3	20.8	41.9	0.2

Station 4

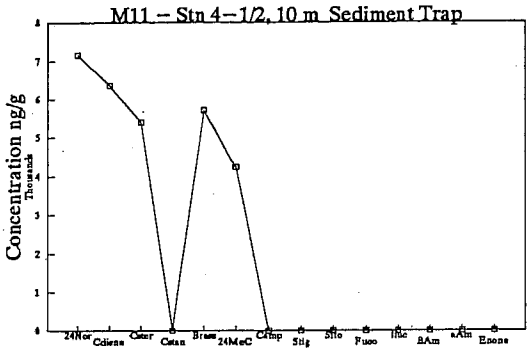


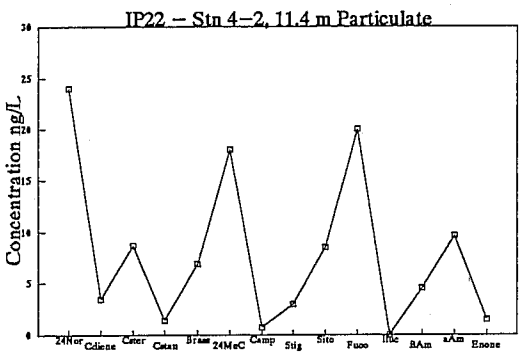


S ‰ = 13.3

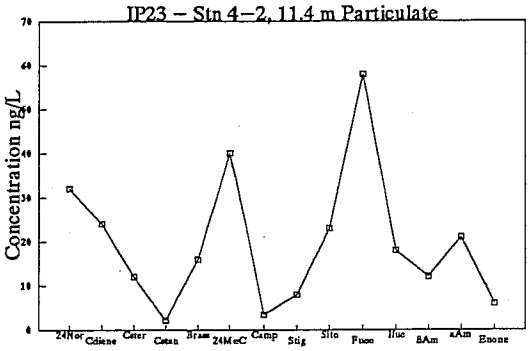


S ‰ = 10





S ‰ = 30.8



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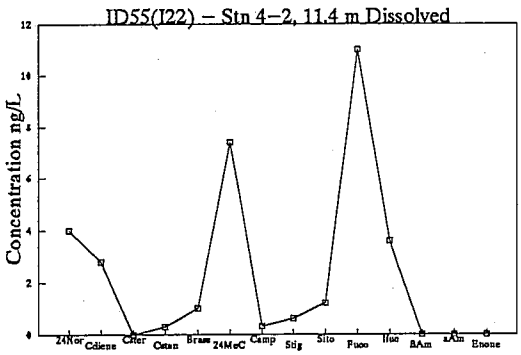

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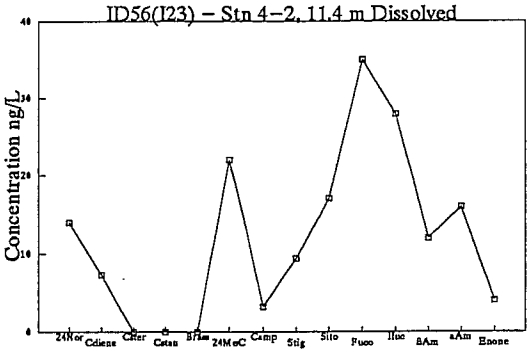

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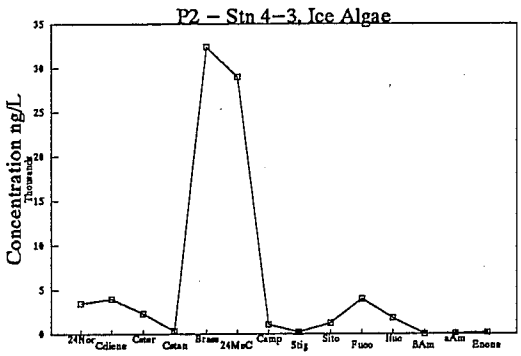
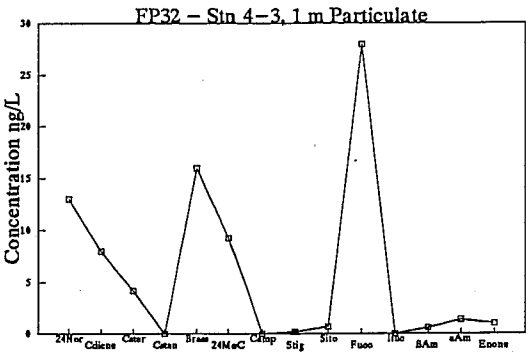
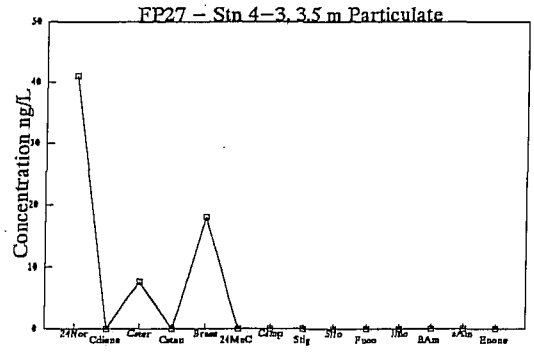
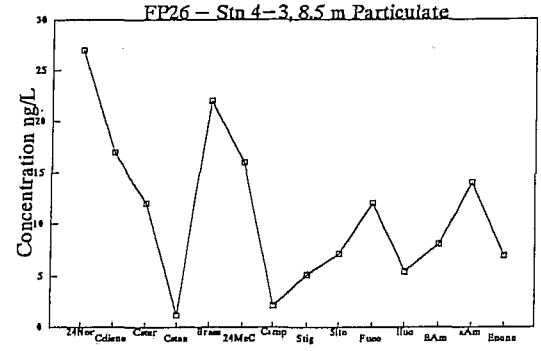




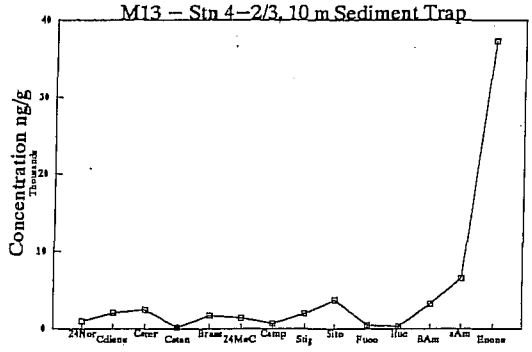
S ‰ = 6.2

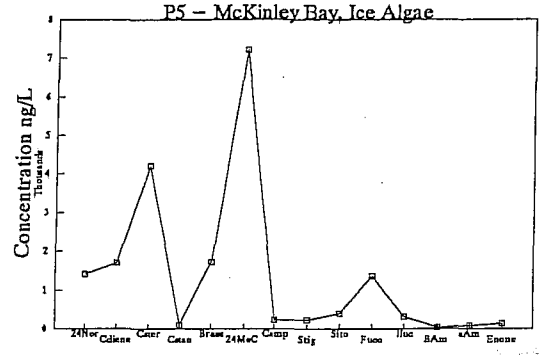


S ‰ = 6.7



S ‰ = 29.2

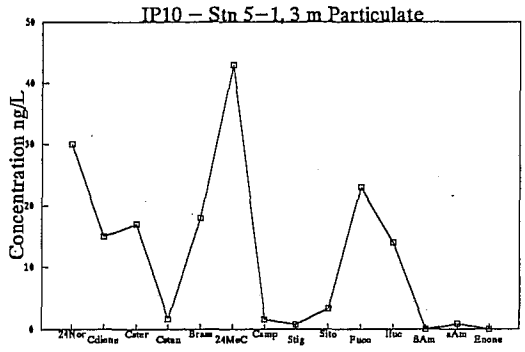




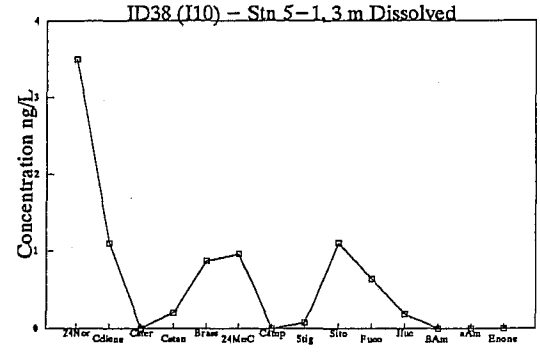
	G6 Stn 4	FP5 Stn 4–1	FP17 Stn 4–2	M11 Stn 4–1/2	IP22 Stn 4–2	IP23 Stn 4–2	ID55 (I22) Stn 4–2	ID56 (I23) Stn 4–2
Marine ster	992	33	6655	28900	81	200	30	106
Plant ster	331	1.2	234	0.0	14	37	2.4	30
% Plant ster	25.0	3.6	3.4	0.0	14.4	15.4	7.5	21.8
Triterpenoids	1169	0.8	142	0.0	16	39	0.00	32
% Triterp	46.9	2.2	2.0	0.0	14.1	14.2	0.0	19.1

	FP32 Stn 4–3	FP27 Stn 4–3	FP26 Stn 4–3	M13 Stn 4–2/3	P2 Stn 4–3	P5 McKinley Bay
Marine ster	79	67	111	9530	77050	17932
Plant ster	0.9	0.0	16	6559	2936	953
% Plant ster	1.1	0.0	12.2	40.8	3.7	5.0
Triterpenoids	3.0	0.0	29	47050	270	228
% Triterp	3.6	0.0	18.5	74.5	0.3	1.2

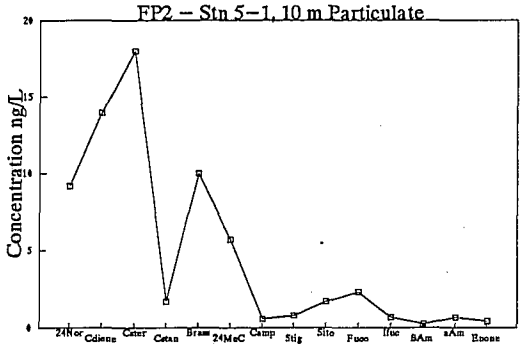
Station 5



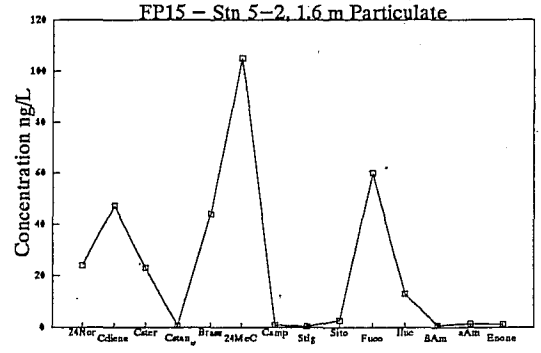
S ‰ = 30.1



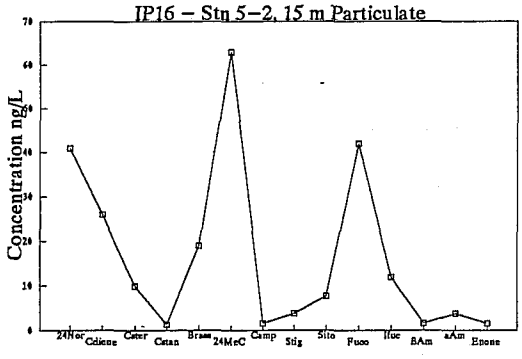
S ‰ = 30.1



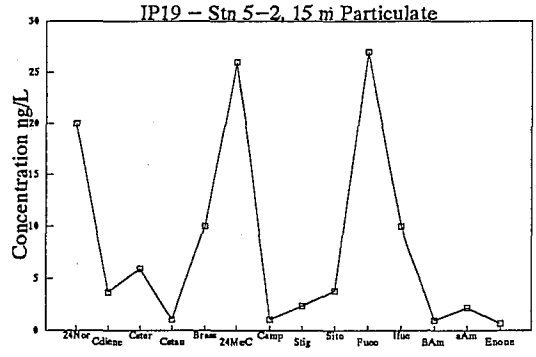
S ‰ = 30.7



S ‰ = 29.6



S ‰ = 31.3



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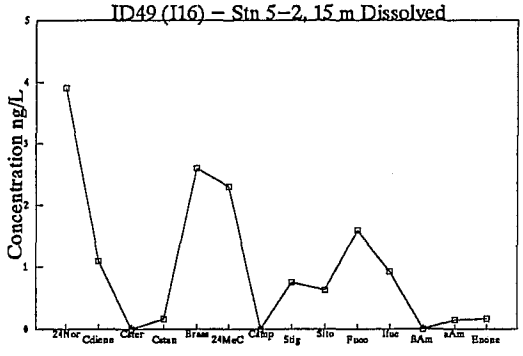

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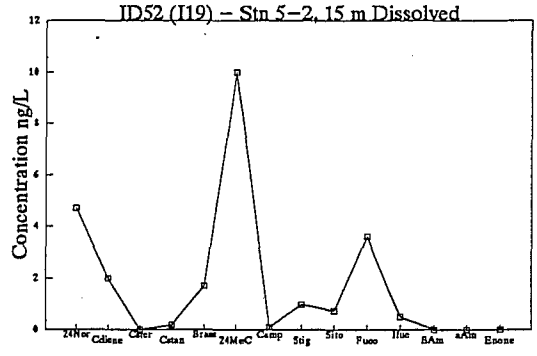
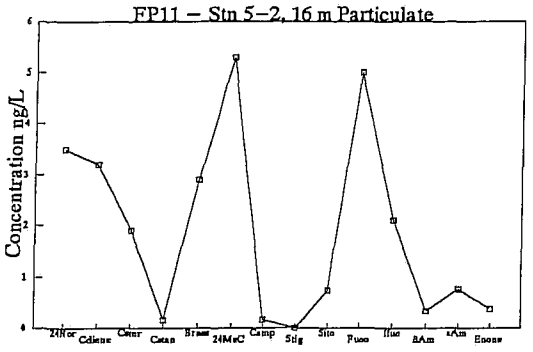


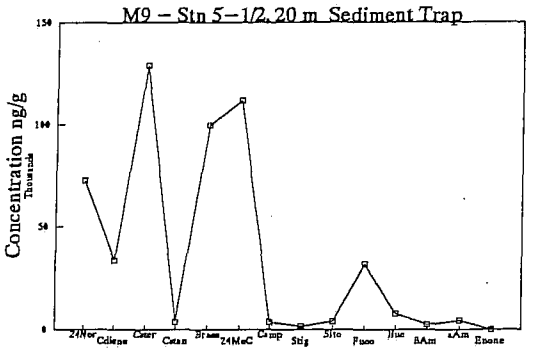
S ‰ = 31.3

FP11 – Stn 5–2, 16 m Particulate

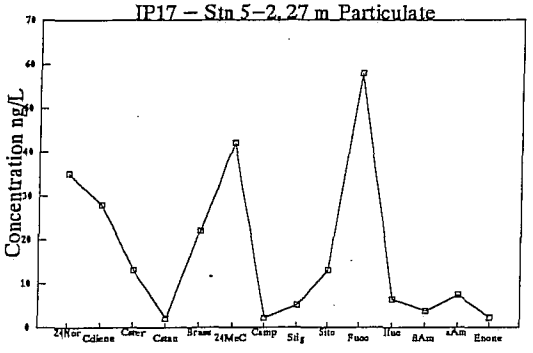


S ‰ = 31.3

M9 – Stn 5–1/2, 20 m Sediment Trap

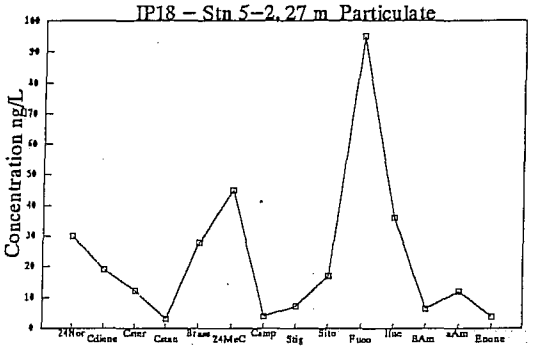


IP17 – Stn 5–2, 27 m Particulate



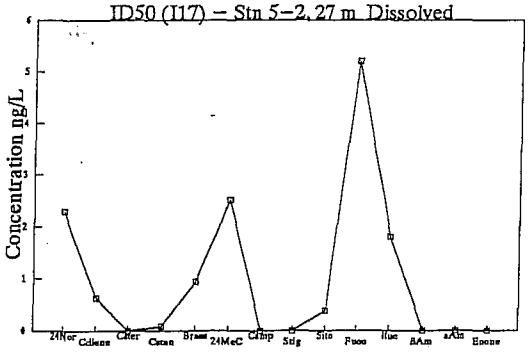
S ‰ = 31.6

IP18 – Stn 5–2, 27 m Particulate



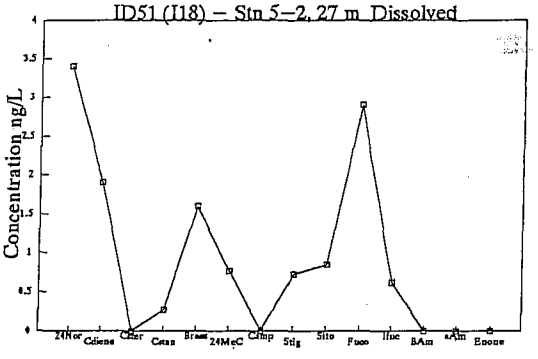
S ‰ = 31.6

ID50 (I17) – Stn 5–2, 27 m Dissolved



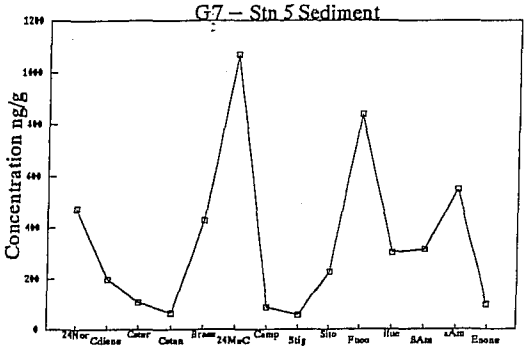
S ‰ = 31.6

ID51 (I18) – Stn 5–2, 27 m Dissolved

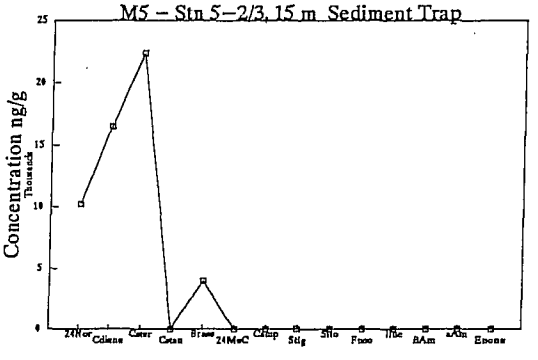


S ‰ = 31.6

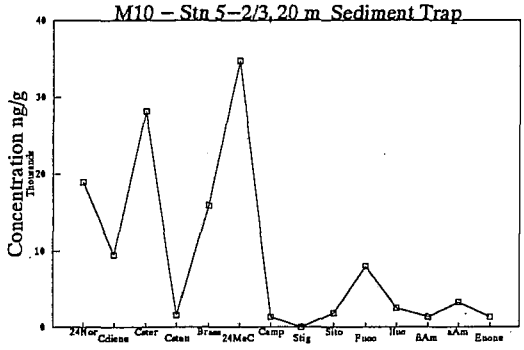
G7 – Stn 5 Sediment



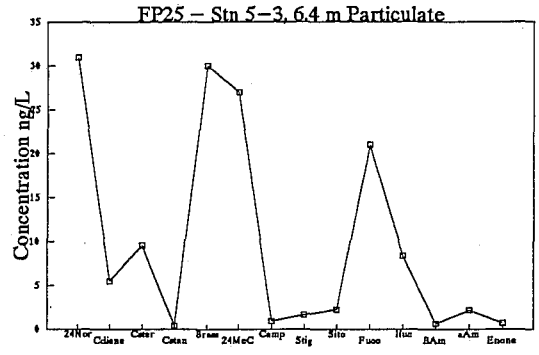
M5 – Stn 5–2/3, 15 m Sediment Trap



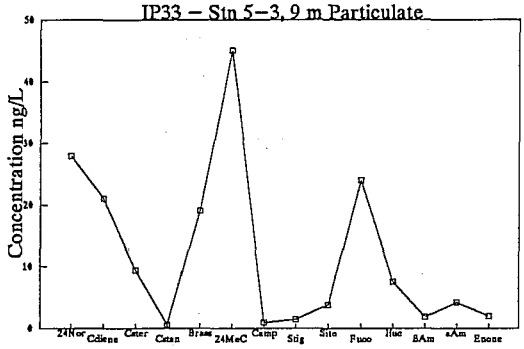
M10 – Stn 5–2/3, 20 m Sediment Trap



FP25 – Stn 5–3, 6.4 m Particulate

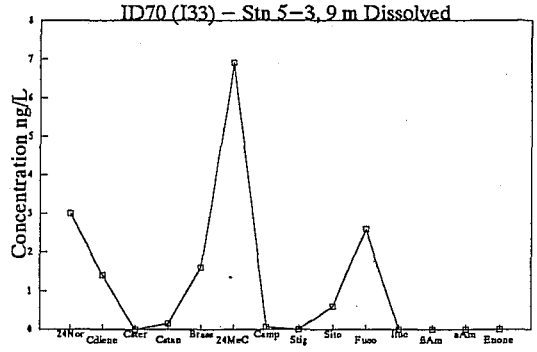


IP33 – Stn 5–3, 9 m Particulate



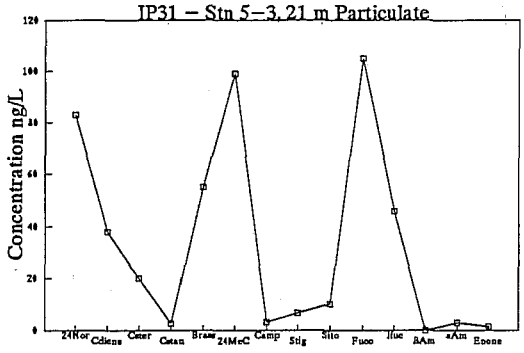
S ‰ = 29.7

ID70 (I33) – Stn 5–3, 9 m Dissolved



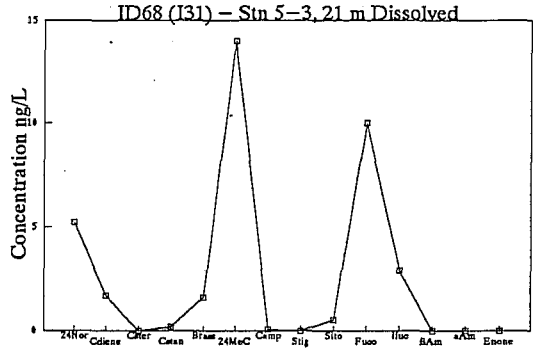
S ‰ = 29.7

IP31 – Stn 5–3, 21 m Particulate



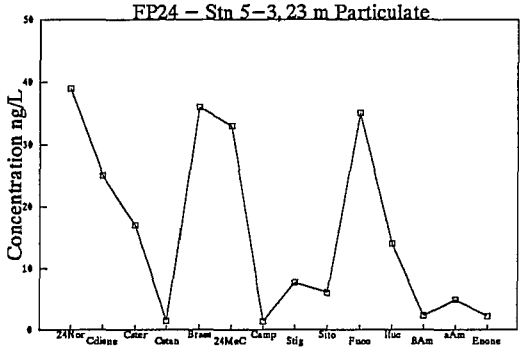
S ‰ = 31.6

ID68 (I31) – Stn 5–3, 21 m Dissolved



S ‰ = 31.6

FP24 – Stn 5–3, 23 m Particulate



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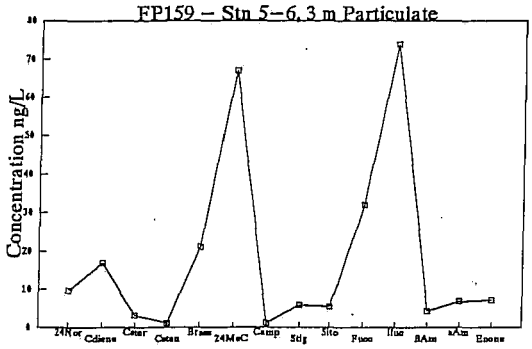

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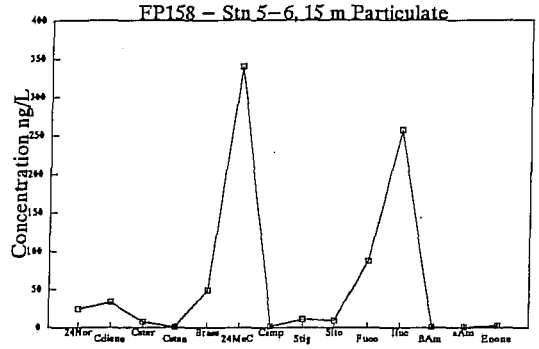

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	IP10 Stn 5–1	ID38 (I10) Stn 5–1	FP2 Stn 5–1	FP15 Stn 5–2	IP16 Stn 5–2	IP19 Stn 5–2	ID49 (I16) Stn 5–2	ID52 (I19) Stn 5–2
Marine ster	160	7.3	60	316	213	103	12	23
Plant ster	7.3	1.4	4.7	4.7	15	8.4	1.6	2.0
% Plant ster	4.4	15.9	7.3	1.5	6.4	7.6	11.2	8.1
Triterpenoids	0.8	0.0	1.3	3.4	7.3	3.9	0.3	0.0
% Triterp	0.5	0.0	2.0	1.0	3.1	3.4	2.2	0.0

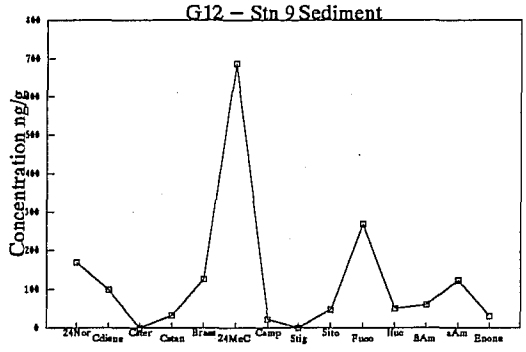
	G7 Stn 5	M9 Stn 5–1/2	FP11 Stn 5–2	IP17 Stn 5–2	IP18 Stn 5–2	ID50 (I17) Stn 5–2	ID51 (I18) Stn 5–2	FP25 Stn 5–3
Marine ster	3415	487020	24	204	265	13	11	133
Plant ster	439	13420	1.1	22	31	0.46	1.8	5.4
% Plant ster	11.4	2.7	4.2	9.8	10.6	3.3	14.1	3.9
Triterpenoids	959	7060	1.5	13	22	0.00	0.0	3.6
% Triterp	19.9	1.4	5.6	5.6	6.9	0.0	0.0	2.6

	IP33 Stn 5–3	ID70 (I33) Stn 5–3	M5 Stn 5–2/3	M10 Stn 5–2/3	IP31 Stn 5–3	ID68 (I31) Stn 5–3	FP24 Stn 5–3
Marine ster	154	16	53030	117690	446	35	199
Plant ster	6.7	0.82	0.0	4800	22	0.8	17
% Plant ster	4.1	5.0	0.0	3.9	4.8	2.1	7.7
Triterpenoids	8.1	0.0	0.0	6010	4.4	0.0	9.4
% Triterp	4.8	0.0	0.0	4.7	0.9	0.0	4.2

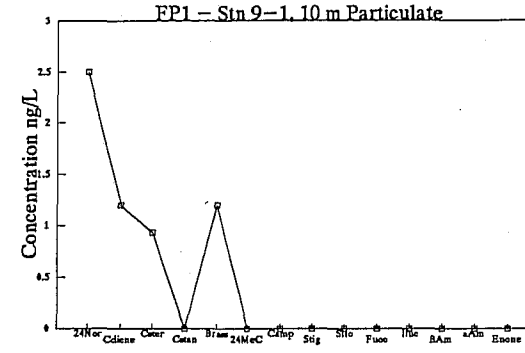
	FP159 Stn 5–6, 3 m	FP158 Stn 5–6, 15 m
Marine ster	224	797
Plant ster	14	24
% Plant ster	5.8	2.9
Triterpenoids	18	4.3
% Triterp	7.2	0.5

Station 9

G12 – Stn 9 Sediment



FP1 – Stn 9–1, 10 m Particulate



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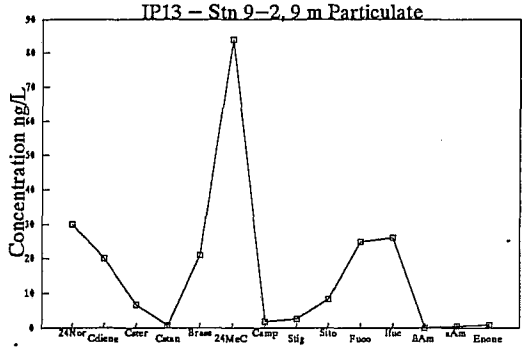
IP13 – Stn 9–2, 9 m Particulate



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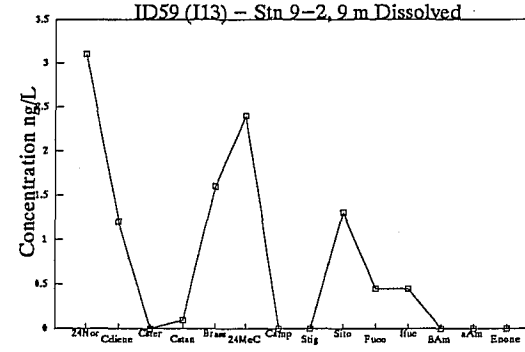
ID59 (I13) – Stn 9–2, 9 m Dissolved



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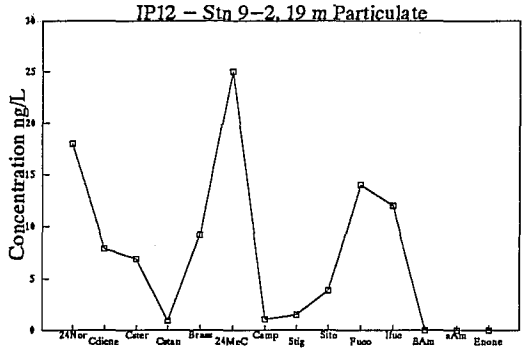
IP12 – Stn 9–2, 19 m Particulate



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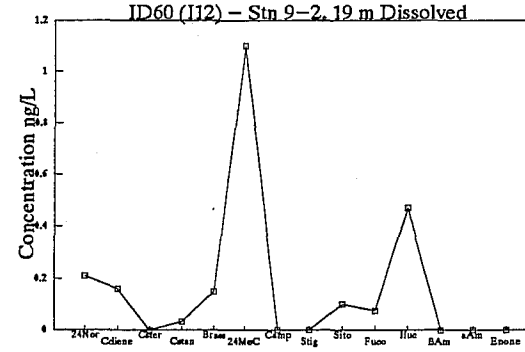

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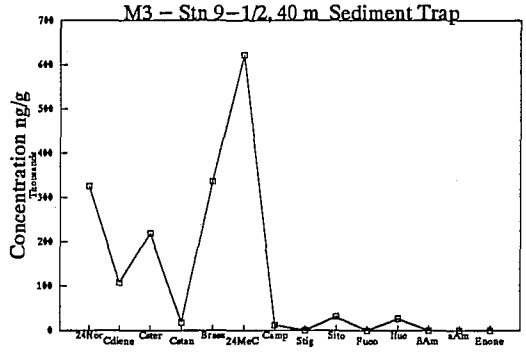
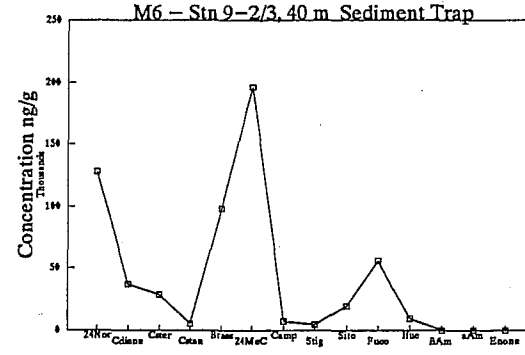
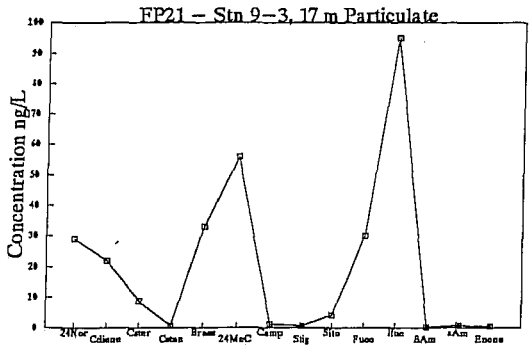
M3 – Stn 9–1/2, 40 m Sediment Trap



M6 – Stn 9–2/3, 40 m Sediment Trap





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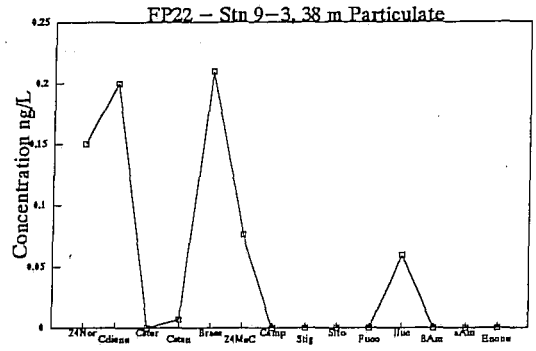

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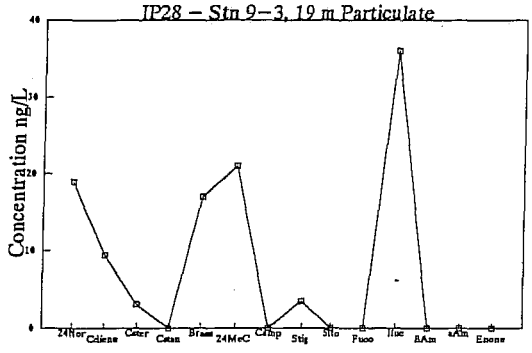

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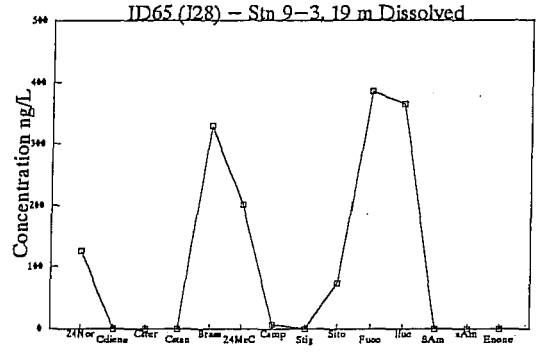

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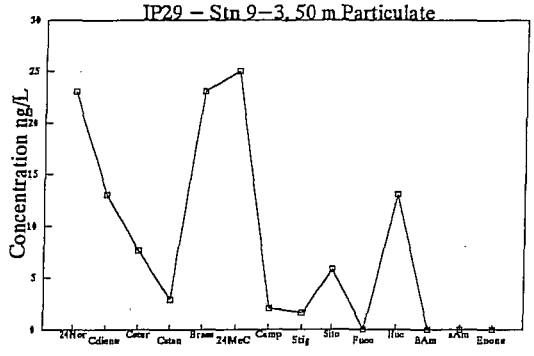

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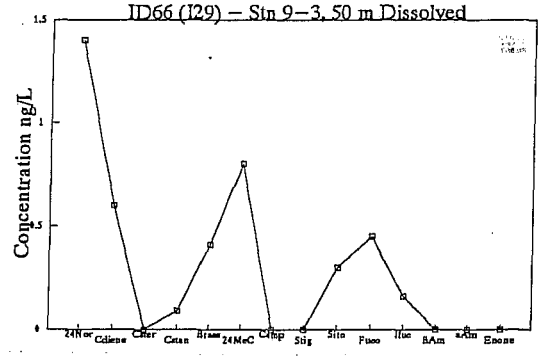

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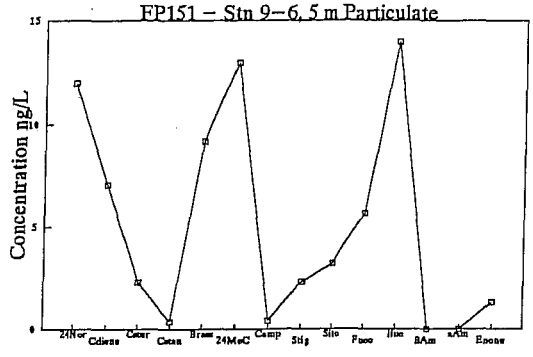

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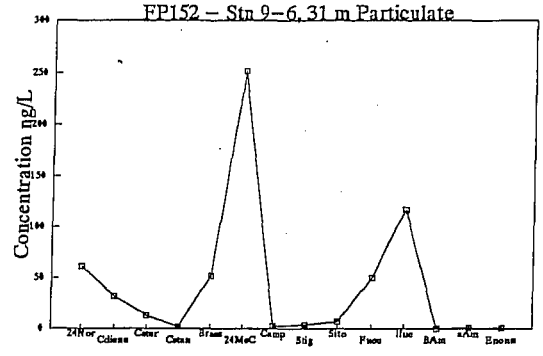


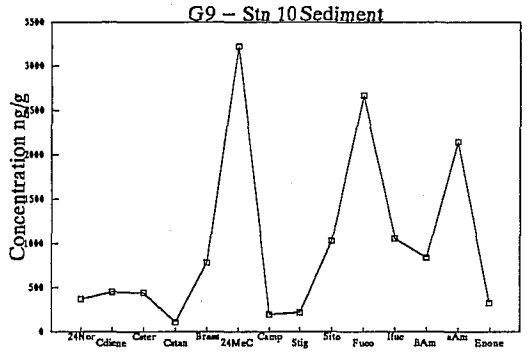
S ‰ = 31.8

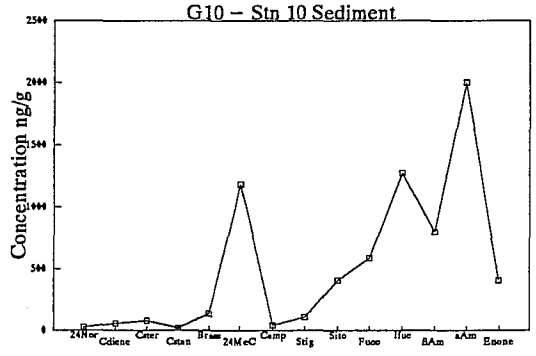
	G12	FP1	IP13	ID59 (I13)	IP12	ID60 (I12)	M3	FP21
	Stn 9	Stn 9−1	Stn 9−2	Stn 9−2, 9 m	Stn 9−2	Stn 9−2	Stn 9−1/2	Stn 9−3
Marine ster	1396	5.8	213	9.2	93	2.2	1635100	274
Plant ster	99	0.0	13	1.4	7.4	0.13	59500	6.5
% Plant ster	6.6	0.0	6.0	13.2	7.4	5.8	3.5	2.3
Triterpenoids	212	0.0	1.2	0.00	0.0	0.00	0	1.7
% Triterp	12.4	0.0	0.5	0.0	0.0	0.0	0.0	0.6

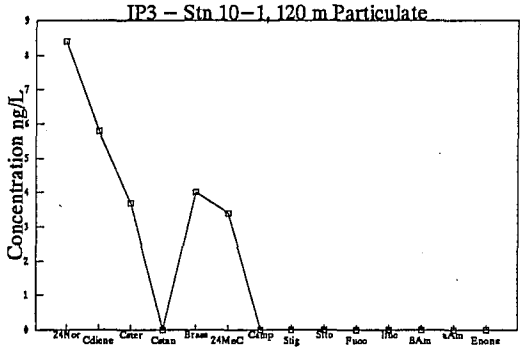
	IP28	ID65 (I28)[1]	FP22[2]	M6	IP29	ID66 (I29)	FP151	FP152
	Stn 9−3	Stn 9−3	Stn 9−3	Stn 9−2/3	Stn 9−3	Stn 9−3	Stn 9−6, 5 m	Stn 9−6, 31 m
Marine ster	106	1404	0.70	553220	105	3.8	63	577
Plant ster	3.5	80	0.01	36210	12	0.39	6.3	16
% Plant ster	3.2	5.4	1.0	6.1	10.5	9.3	9.0	2.7
Triterpenoids	0.0	0	0.00	0	0.0	0.00	1.3	1.6
% Triterp	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.3

Notes:
1. ID65: very high concentrations likely indicate particulate material on the Chromosorb T column.
2. FP22: very low concentrations may possibly be due to a hole in the filter paper.

Station 10







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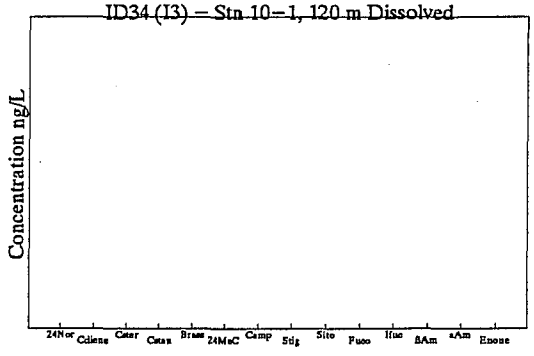

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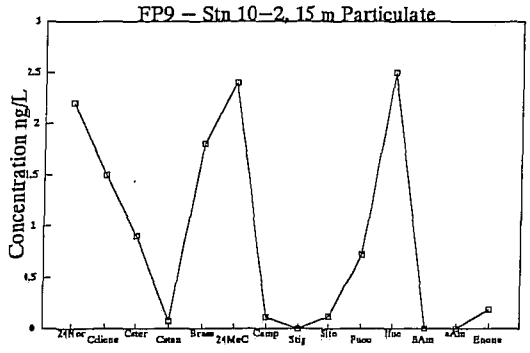

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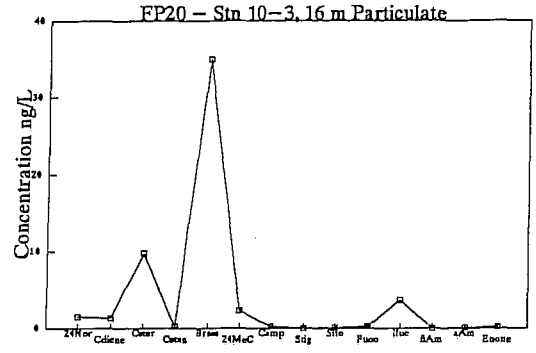

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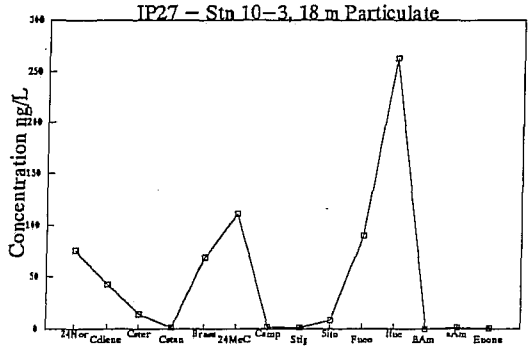

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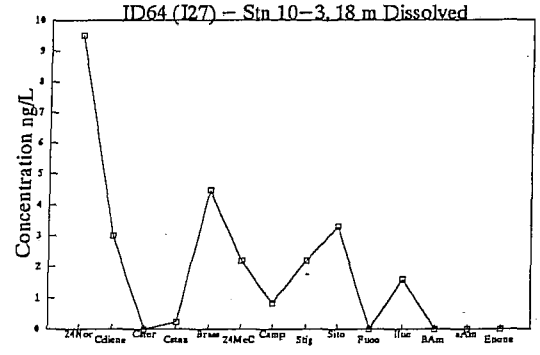

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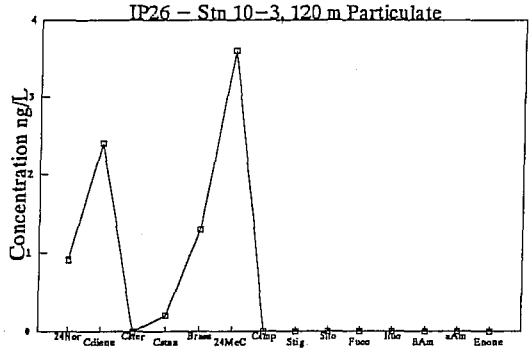

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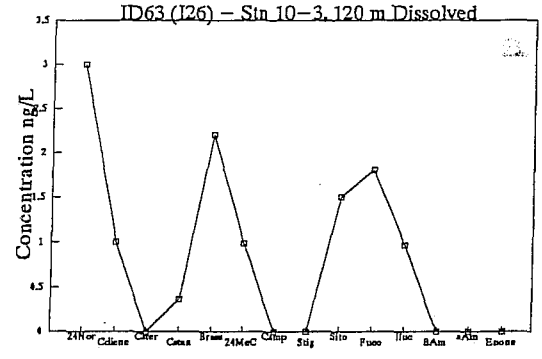
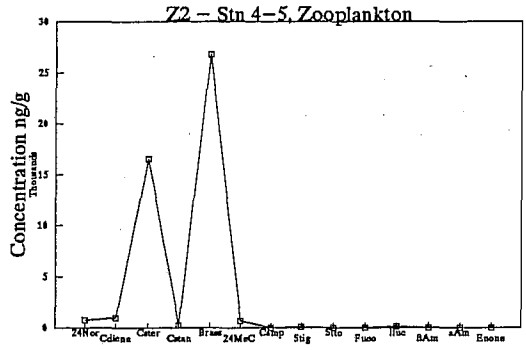


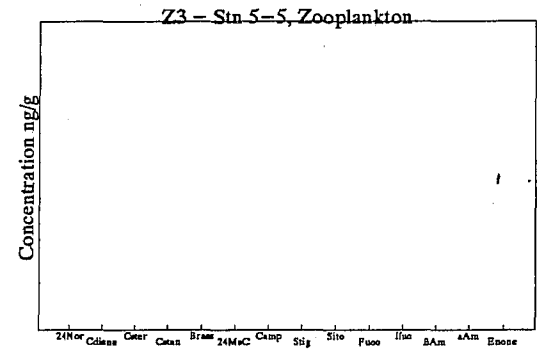
S ‰ = 33.2

	G9 Stn 10	G10 Stn 10	IP3 Stn 10–1	ID34 (I3) Stn 10–1	FP9 Stn 10–2	FP20 Stn 10–3	IP27 Stn 10–3	ID64 (I27) Stn 10–3
Marine ster	8998	3338	25	0.0	12	54	666	21
Plant ster	1551	581	0.0	0.0	0.3	0.7	13	6.5
% Plant ster	14.7	14.8	0.0		2.5	1.3	1.9	23.9
Triterpenoids	3325	3201	0.0	0.0	0.2	0.3	1.7	0
% Triterp	24.0	45.0	0.0		1.5	0.6	0.3	0.0

	IP26 Stn 10–3	ID63 (I26) Stn 10–3
Marine ster	8.2	9.9
Plant ster	0.20	1.9
% Plant ster	2.4	15.8
Triterpenoids	0.00	0.0
% Triterp	0.0	0.0

Zooplankton





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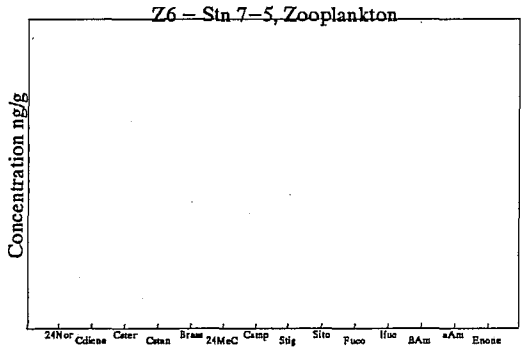

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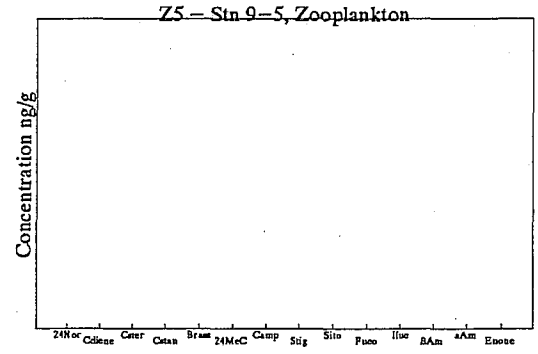

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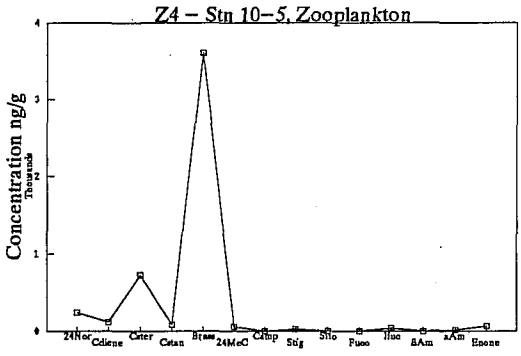

	Z2	Z3	Z6	Z5	Z4
	Stn 4–5	Stn 5–5	Stn 7–5	Stn 9–5	Stn 10–5
Marine ster	45884				4802
Plant ster	292				115
% Plant ster	0.6				2.3
Triterpenoids	0.0				86
% Triterp	0.0				1.7

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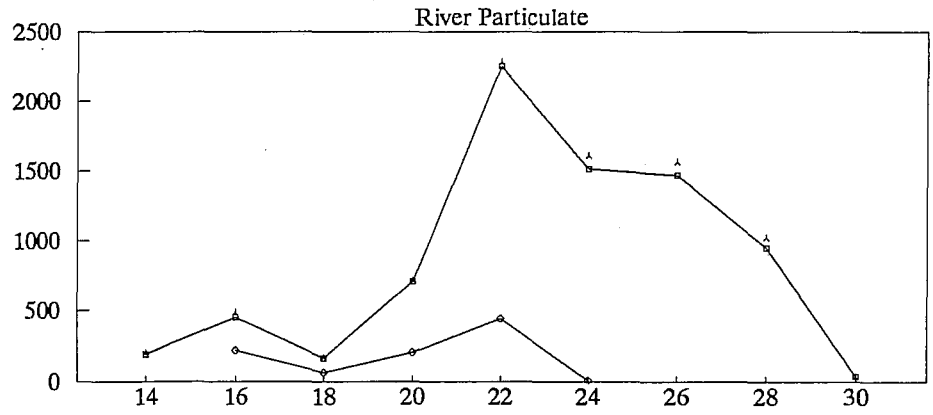
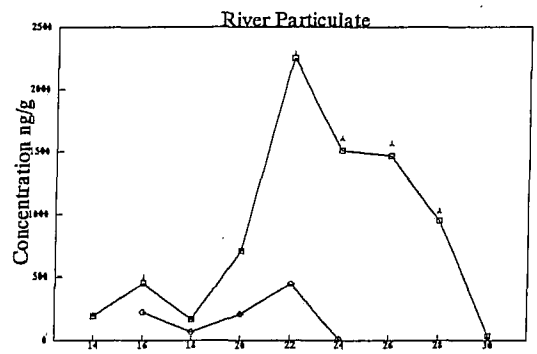
APPENDIX 10; KEY ALKANOL AND ALKENOL INDICATORS PRESENTED AS GRAPHS, TOTALS AND RATIOS

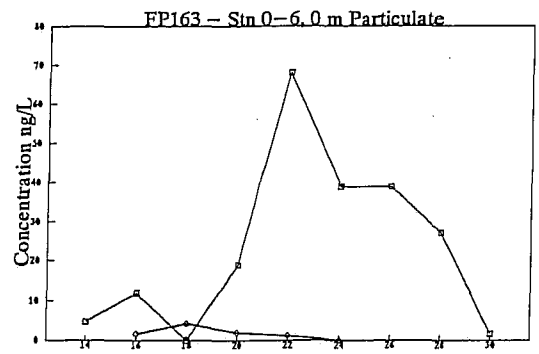
Explanation of Variables Graphed (uncertainties are plus one standard error of the normalized concentrations)

Abbreviation	Explanation "Square" symbol	"Diamond" symbol
14	Tetradecanol (14:0)	
16	Hexadecanol (16:0)	Hexadecenol (16:1)
18	Octadecanol (18:0)	Octadecenol (18:1)
20	Eicosanol (20:0)	Eicosenol (20:1)
22	Docosanol (22:0)	Docosenol (22:1)
24	Tetracosanol (24:0)	Tetracosenol (24:1)
26	Hexacosanol (26:0)	
28	Octacosanol (28:0)	
30	Triacontanol (30:0)	



Concentrations and Ratios	Explanation
$nC_{14}-C_{18}$ ol	Even carbon sum, tetradecanol to octadecanol
$nC_{20}-C_{30}$ ol	Even carbon sum, eicosanol to triacontanol
nC_{16-24} enol	Even carbon sum, hexadecenol to tetracosenol
C_{16-24}en/ane	Even 16 to 24 carbon alkenols/ 16 to 24 carbon alkenols + alkanols
$C_{14-18}/_{14-30}$	$C_{14}-C_{18}$ ol / $C_{14}-C_{30}$ ol





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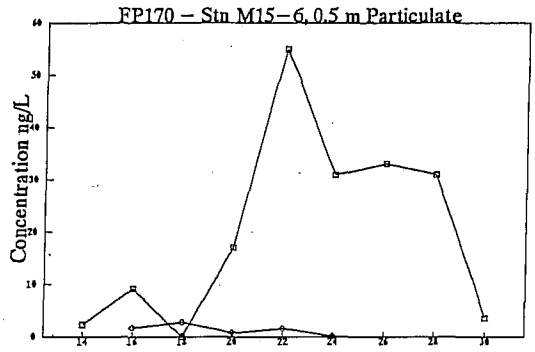

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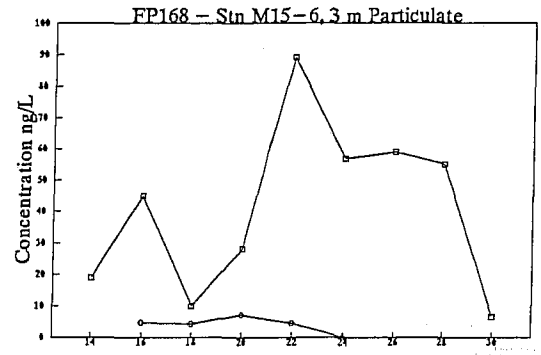
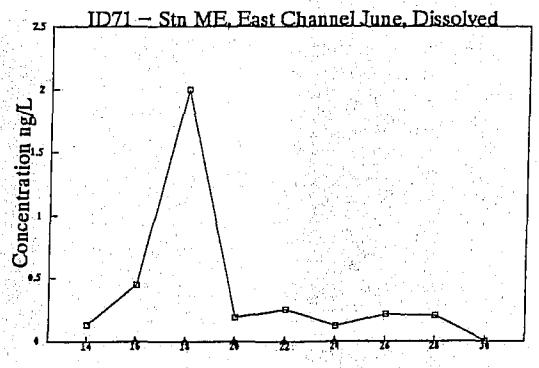
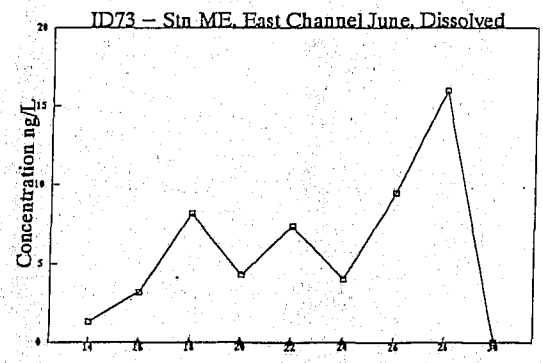


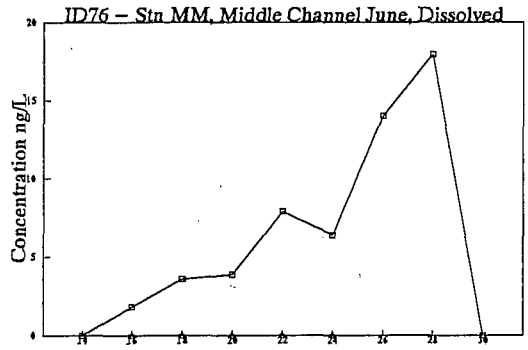
S ‰ = 21.3

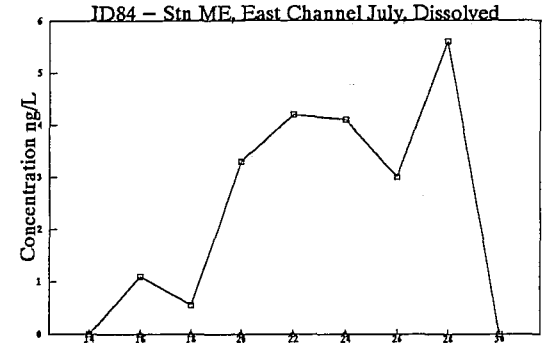
	River Mean, ng/L	River sd	River Mean, ng/g	River sd	FP163 Stn 0–6	FP170 Stn M15–6	FP168 Stn M15–6	T4 (ng/g) Sabine Pt
$nC_{14}-C_{18}$ ol	147	92	808	392	17	12	74	83502
$nC_{20}-C_{30}$ ol	1141	943	6196	4238	194	171	295	221970
nC_{16-24} enol	176	319	937	1671	8.6	7.1	21	30090
C_{16-24}en/ane	0.14	0.10	0.14	0.10	0.06	0.06	0.08	0.10
$C_{14-18}/_{14-30}$	0.16	0.12	0.16	0.12	0.08	0.06	0.20	0.27

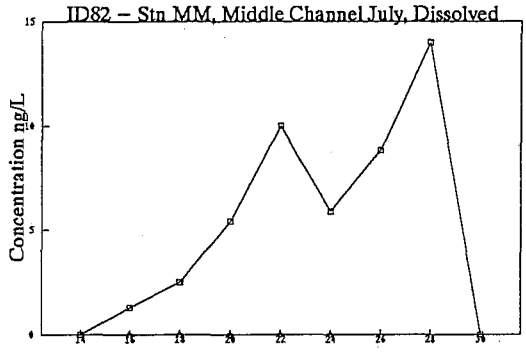
FPRM12 and FP311 not included in River mean for C_{20-30} ol

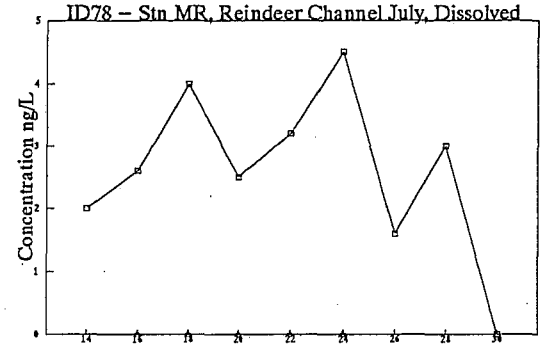


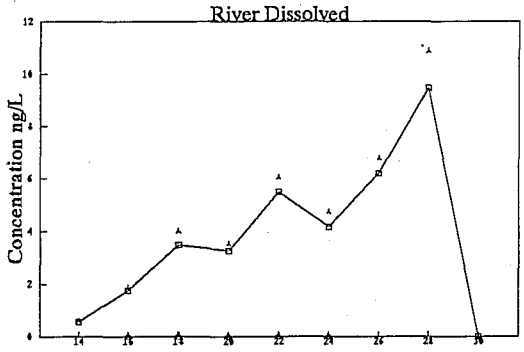


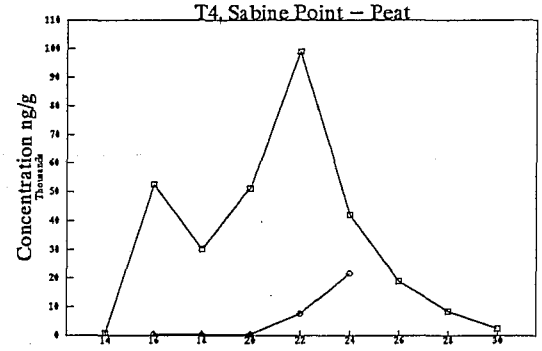






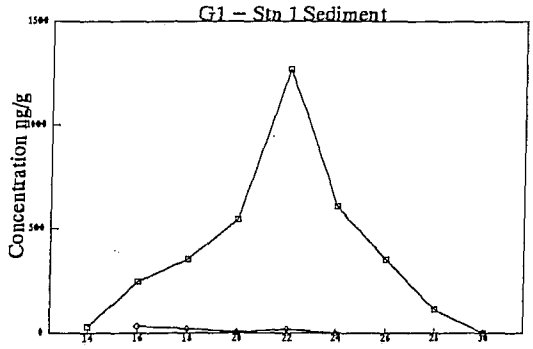


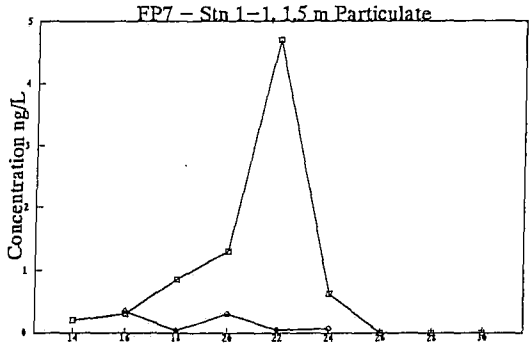




	ID71 ME–East	ID73 ME–East	ID76 MM–Mid	ID84 ME–East	ID82 MM–Mid	ID78 MR–Rein	River Mean	River sd
$nC_{14}-C_{18}$ ol	2.6	12.7	5.4	1.7	3.8	8.6	5.8	4.2
$nC_{20}-C_{30}$ ol	1.0	41	50	20	44	15	29	19
nC_{16-24} enol	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0
C_{16-24}en/ane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$C_{14-18}/_{14-30}$	0.73	0.24	0.10	0.08	0.08	0.37	0.26	0.25

Station 1





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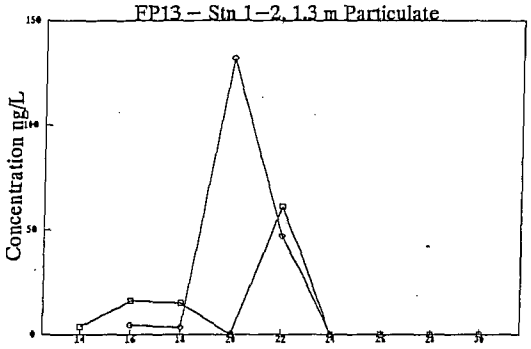

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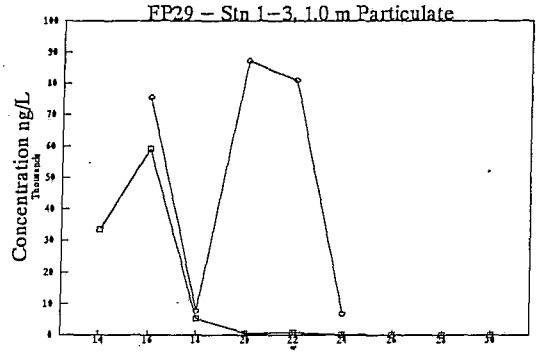

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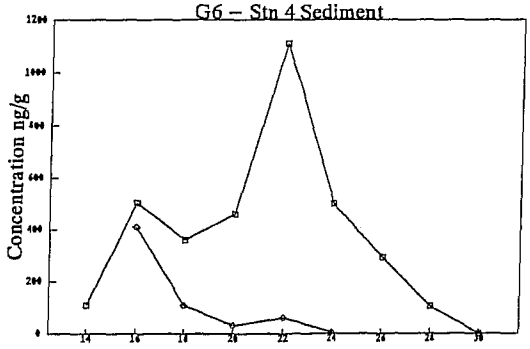
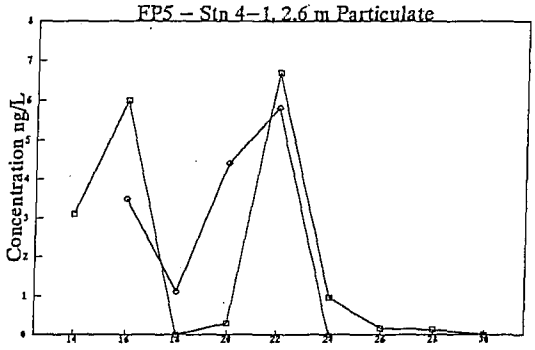
	G1 Stn 1	FP7 Stn 1–1	FP13 Stn 1–2	FP29 Stn 1–3
$nC_{14}-C_{18}$ ol	632	1.4	35	98010
$nC_{20}-C_{30}$ ol	2885	6.6	61	1737
nC_{16-24} enol	80	0.8	187	258590
C_{16-24}en/ane	0.03	0.10	0.67	0.80
$C_{14-18}/_{14-30}$	0.18	0.17	0.36	0.98

Station 4





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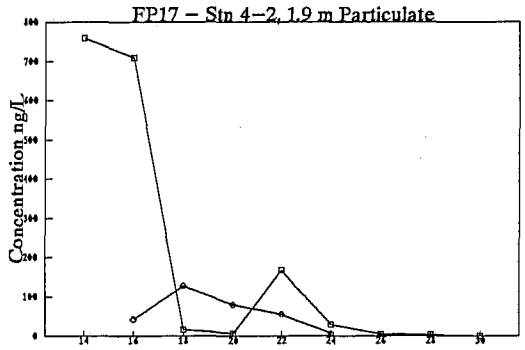

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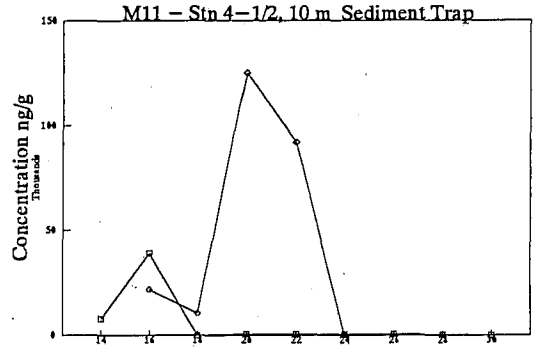

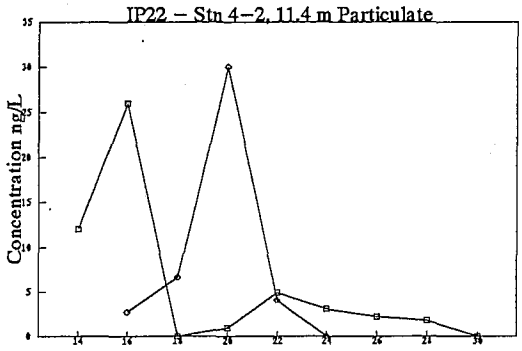

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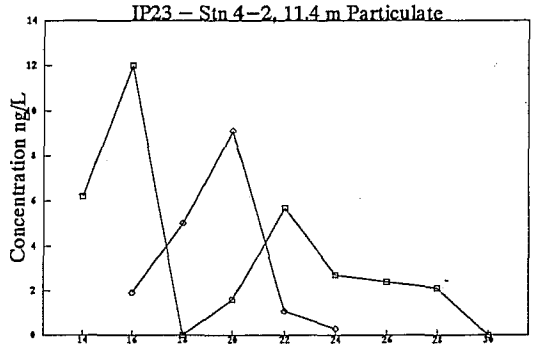

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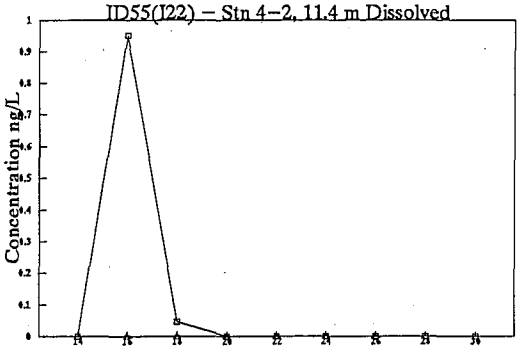

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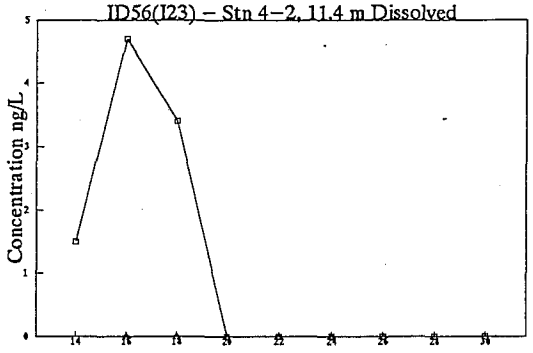

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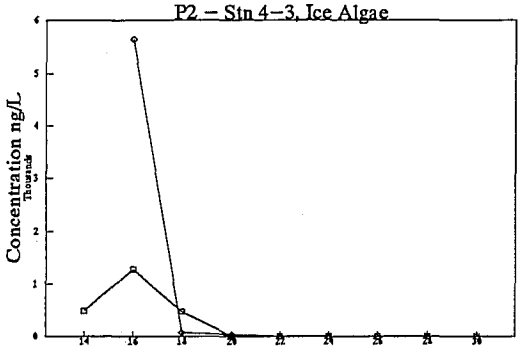

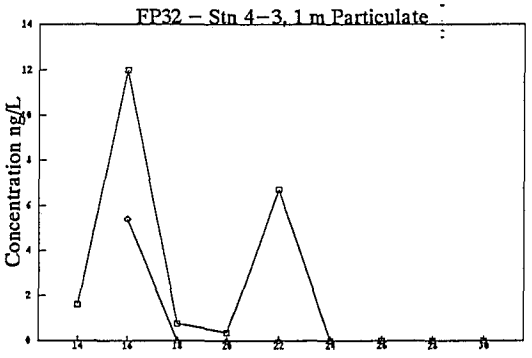

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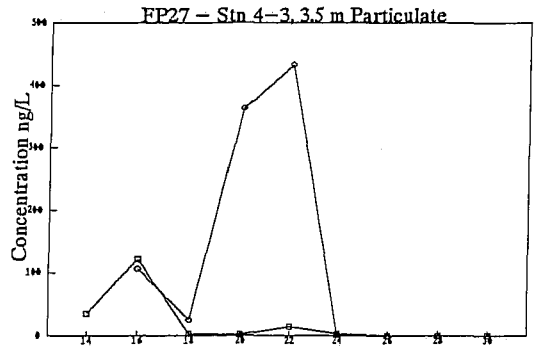

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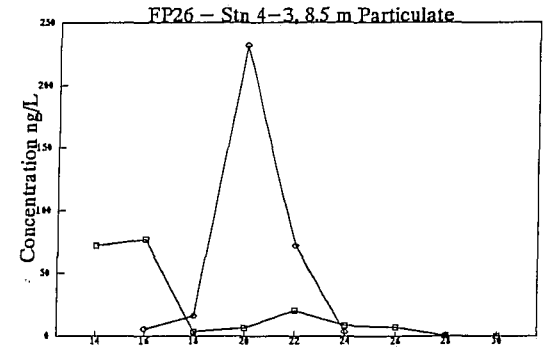

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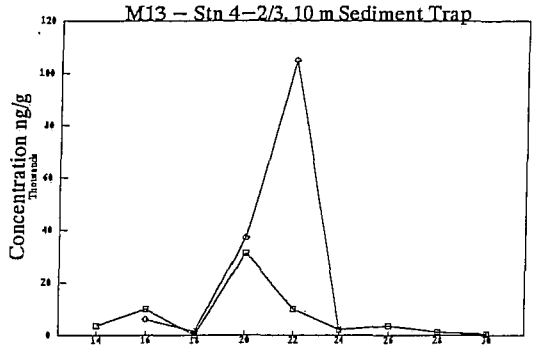
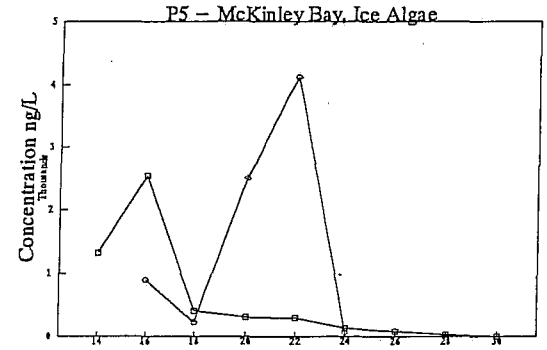
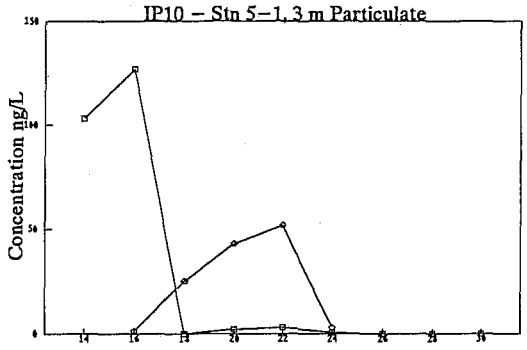




	G6	FP5	FP17	M11	IP22	IP23	ID55 (I22)	ID56 (I23)
	Stn 4	Stn 4–1	Stn 4–2	Stn 4–1/2	Stn 4–2	Stn 4–2	Stn 4–2	Stn 4–2
$nC_{14}-C_{18}$ ol	978	9.1	1484	47120	38	18	1.00	9.6
$nC_{20}-C_{30}$ ol	2466	8.3	210	1974	13	15	0.0	0.0
nC_{16-24} enol	618	15	308	249600	43	17	0.0	0.0
C_{16-24}en/ane	0.17	0.51	0.25	0.86	0.55	0.44	0.00	0.00
$C_{14-18}/_{14-30}$	0.28	0.52	0.88	0.96	0.75	0.56	1.00	1.00

	FP32	FP27	FP26	M13	P2	P5
	Stn 4–3	Stn 4–3	Stn 4–3	Stn 4–2/3	Stn 4–3	McKinley Bay
$nC_{14}-C_{18}$ ol	14	159	152	13850	2230	4272
$nC_{20}-C_{30}$ ol	7.1	19	42	49000	0.0	858
nC_{16-24} enol	5.4	927	329	151660	5742	7813
C_{16-24}en/ane	0.21	0.87	0.74	0.74	0.77	0.68
$C_{14-18}/_{14-30}$	0.67	0.90	0.78	0.22	1.00	0.83

Station 5



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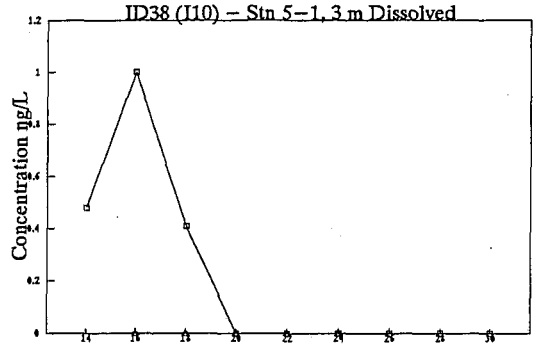

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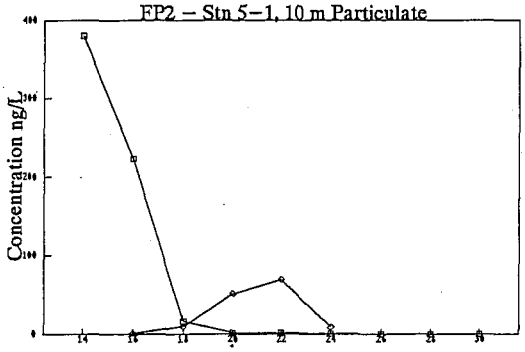

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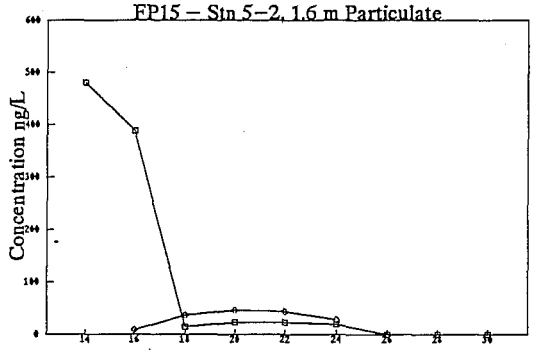

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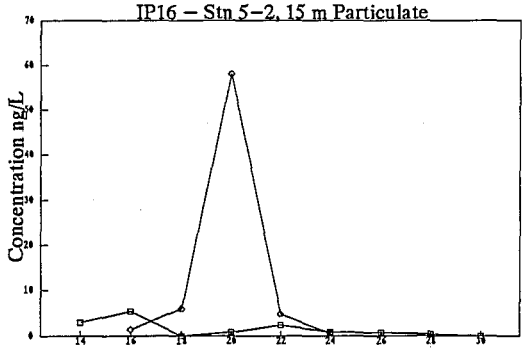

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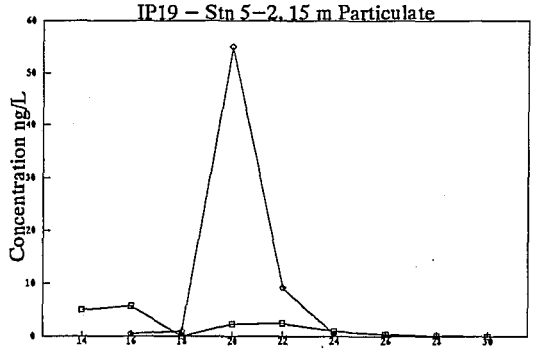

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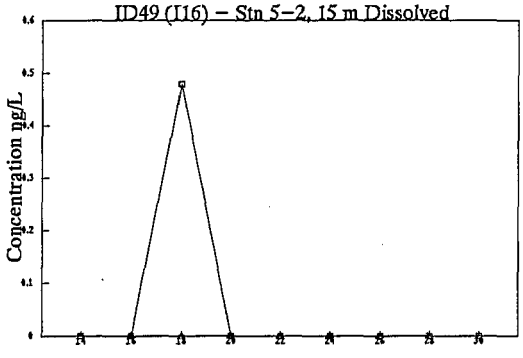

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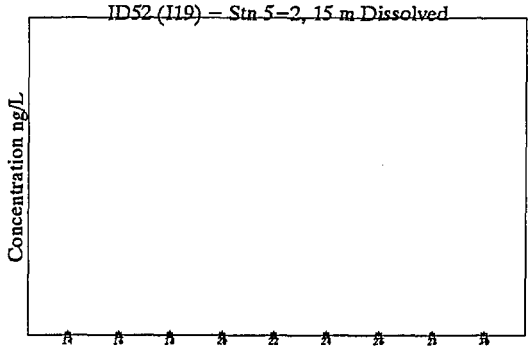

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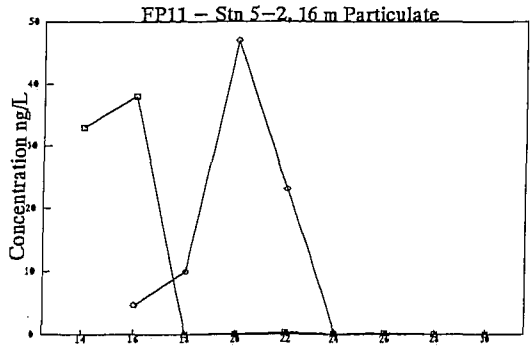

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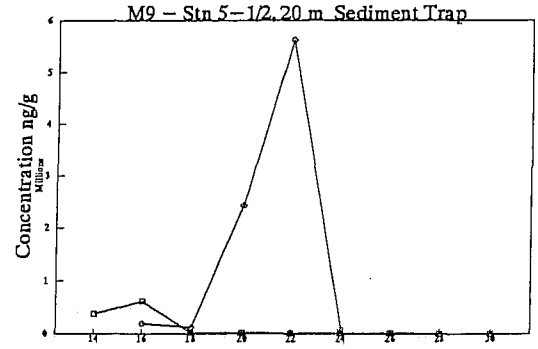

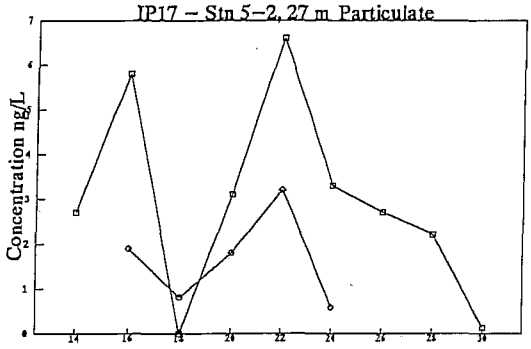

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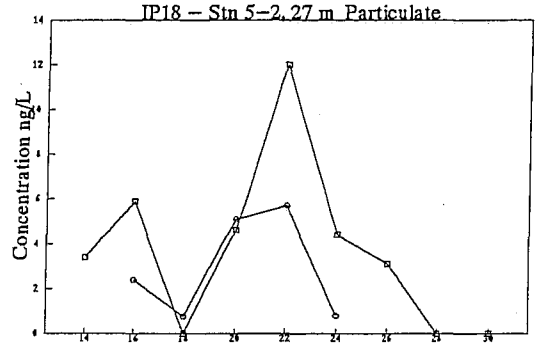

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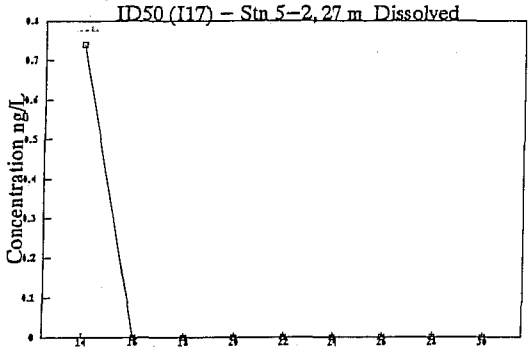

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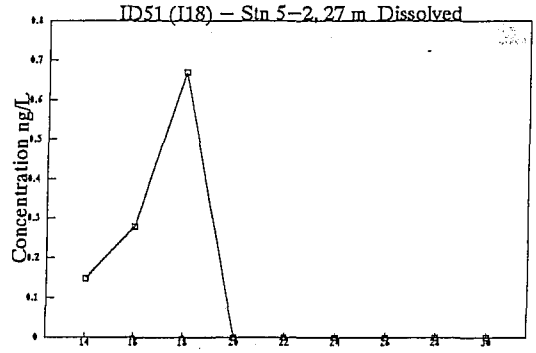

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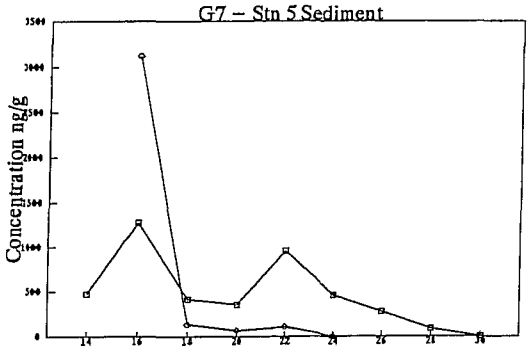

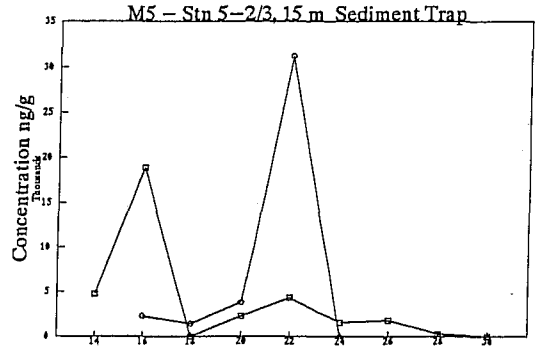

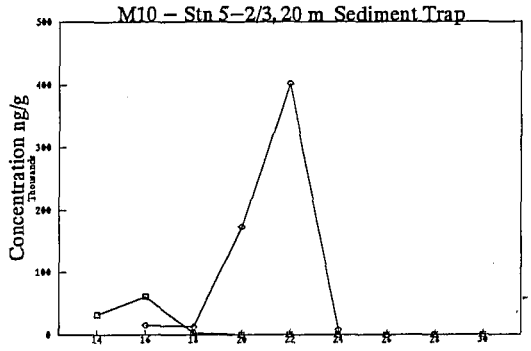

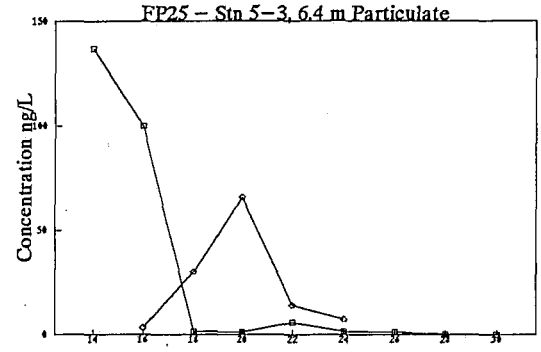

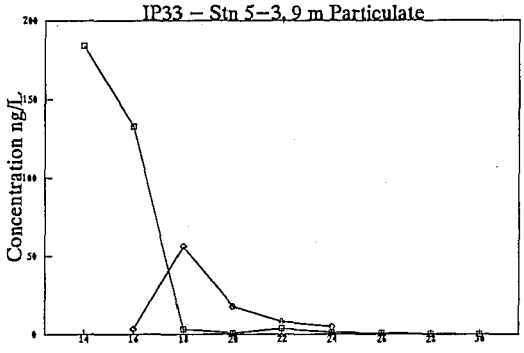

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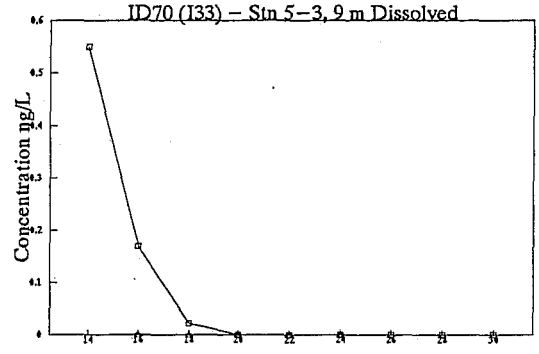

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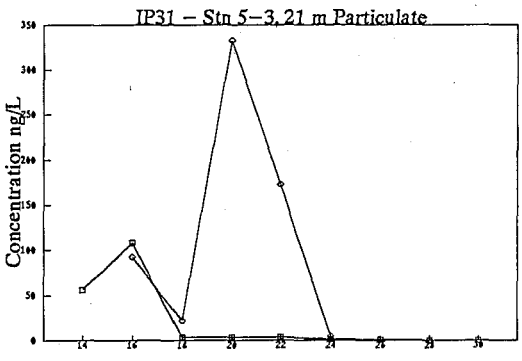

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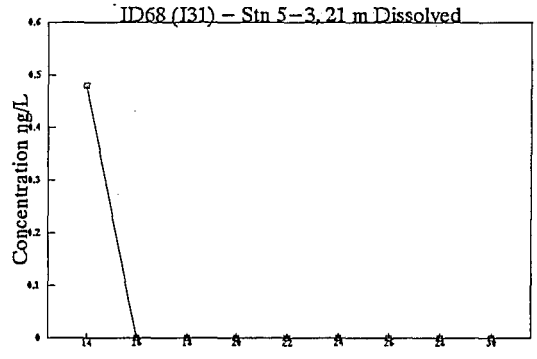

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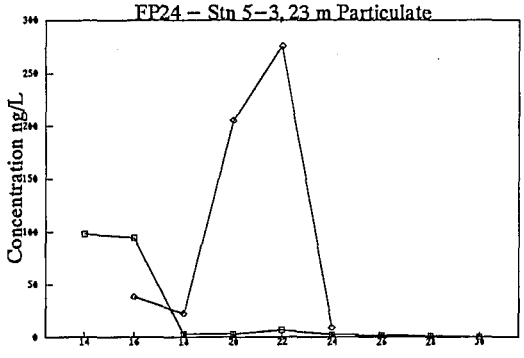

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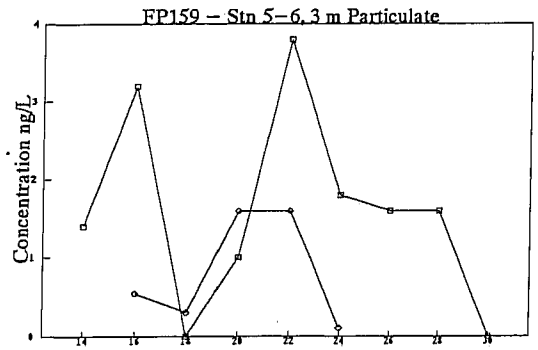

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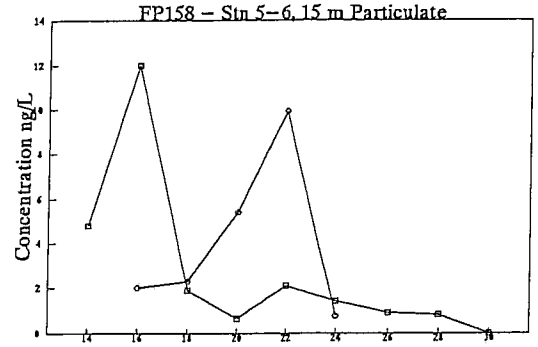

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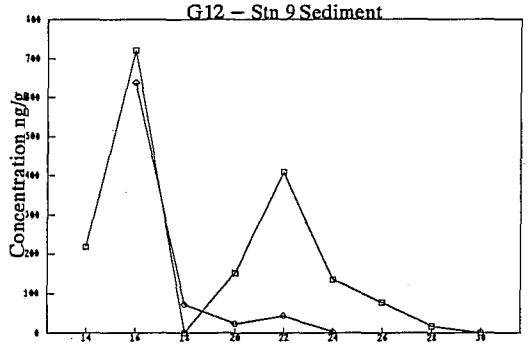
	IP10 Stn 5–1	ID38 (I10) Stn 5–1	FP2 Stn 5–1	FP15 Stn 5–2	IP16 Stn 5–2	IP19 Stn 5–2	ID49 (I16) Stn 5–2	ID52 (I19) Stn 5–2
$nC_{14}-C_{18}$ ol	230	1.9	619	882	8.2	10.6	0.48	0.00
$nC_{20}-C_{30}$ ol	6.2	0.0	3.6	66	5.0	6.0	0.0	0.0
nC_{16-24} enol	124	0.0	139	162	71	66	0.0	0.0
C_{16-24}en/ane	0.48	0.00	0.36	0.26	0.88	0.85	0.00	
$C_{14-18}/_{14-30}$	0.97	1.00	0.99	0.93	0.62	0.64	1.00	

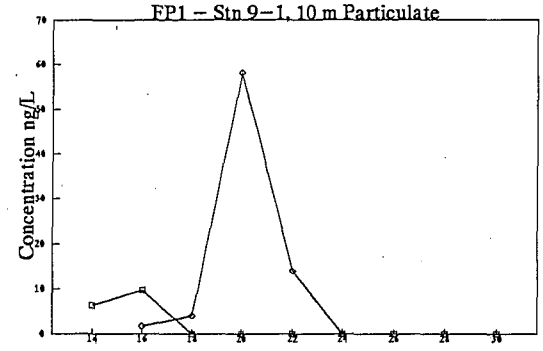
	G7 Stn 5	M9 Stn 5–1/2	FP11 Stn 5–2	IP17 Stn 5–2	IP18 Stn 5–2	ID50 (I17) Stn 5–2	ID51 (I18) Stn 5–2	FP25 Stn 5–3
$nC_{14}-C_{18}$ ol	2170	1007400	71	8.5	9.3	0.74	1.10	239
$nC_{20}-C_{30}$ ol	2122	22700	0.54	18	24	0.00	0.00	9.5
nC_{16-24} enol	3420	8445500	85	8.3	15	0.00	0.0	120
C_{16-24}en/ane	0.50	0.93	0.69	0.31	0.35		0.00	0.52
$C_{14-18}/_{14-30}$	0.51	0.98	0.99	0.32	0.28	1.00	1.00	0.96

	IP33 Stn 5–3	ID70 (I33) Stn 5–3	M5 Stn 5–2/3	M10 Stn 5–2/3	IP31 Stn 5–3	ID68 (I31) Stn 5–3	FP24 Stn 5–3
$nC_{14}-C_{18}$ ol	320	0.74	23630	95520	168	0.48	195
$nC_{20}-C_{30}$ ol	7.0	0.00	10062	0.0	8.5	0.0	14
nC_{16-24} enol	90	0.00	38680	609840	625	0.00	551
C_{16-24}en/ane	0.39	0.00	0.59	0.91	0.84		0.84
$C_{14-18}/_{14-30}$	0.98	1.00	0.70	1.00	0.95	1.00	0.93

	FP159 Stn 5–6, 3 m	FP158 Stn 5–6, 15 m
$nC_{14}-C_{18}$ ol	4.6	19
$nC_{20}-C_{30}$ ol	10	5.8
nC_{16-24} enol	4.1	20
C_{16-24}en/ane	0.30	0.53
$C_{14-18}/_{14-30}$	0.32	0.76

Station 9





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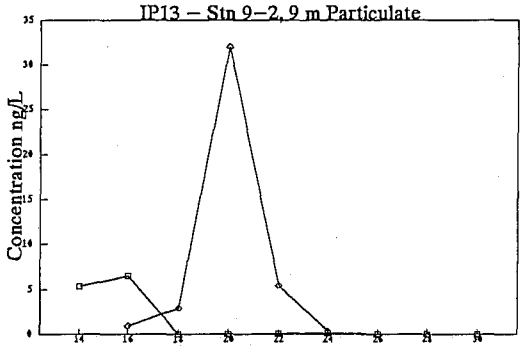

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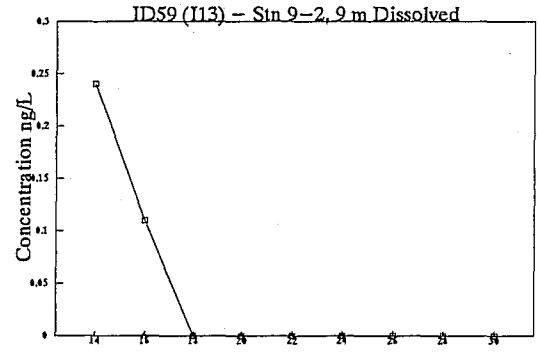

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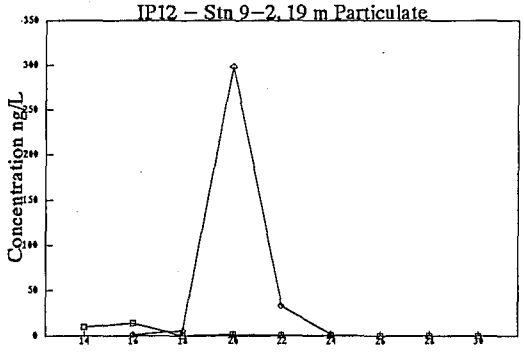

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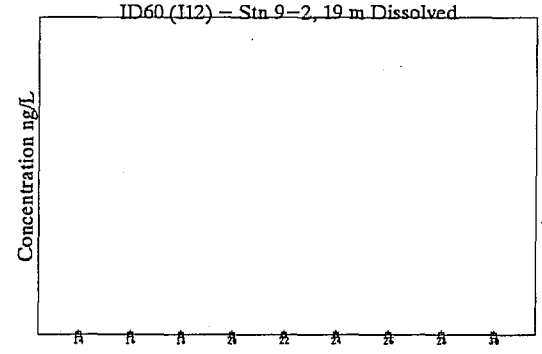

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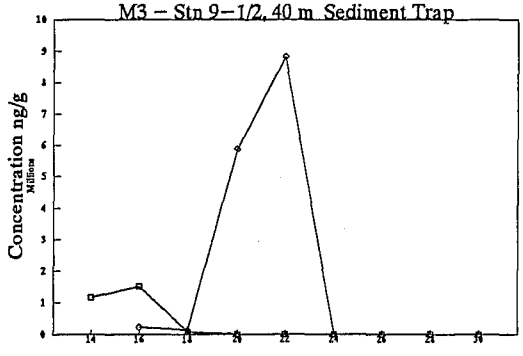

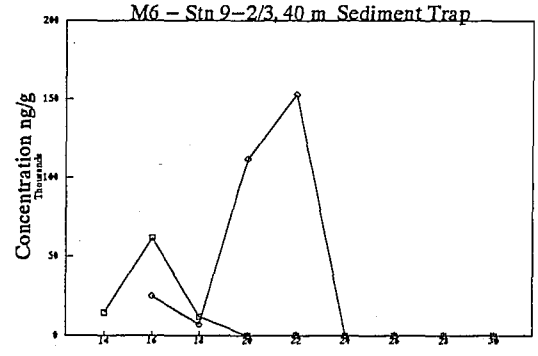

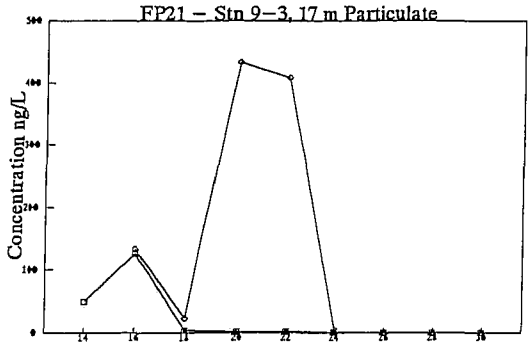

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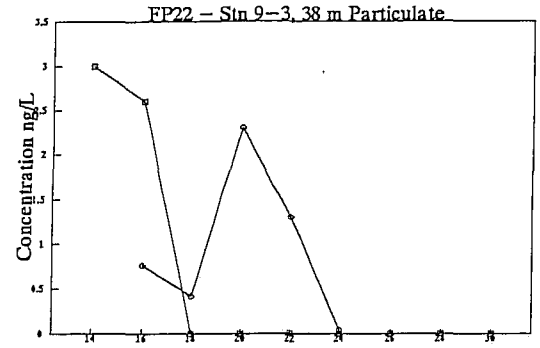

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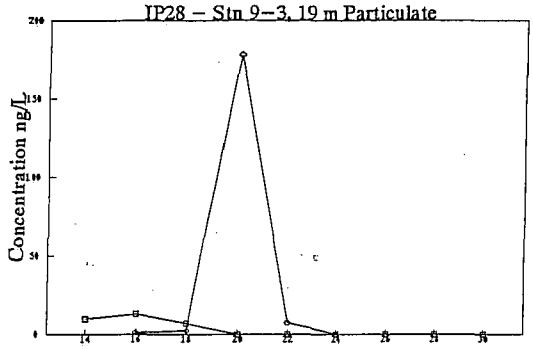

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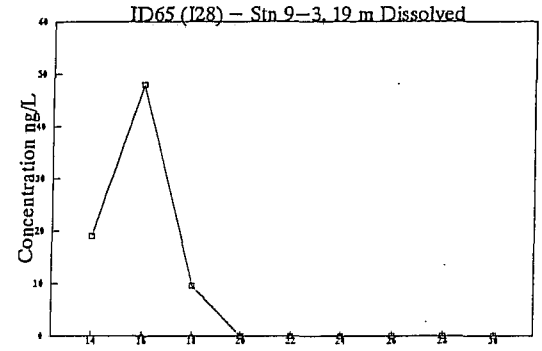

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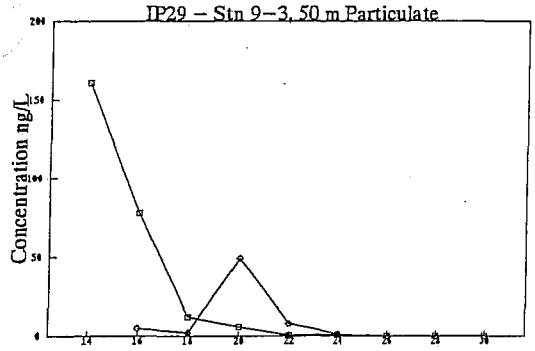

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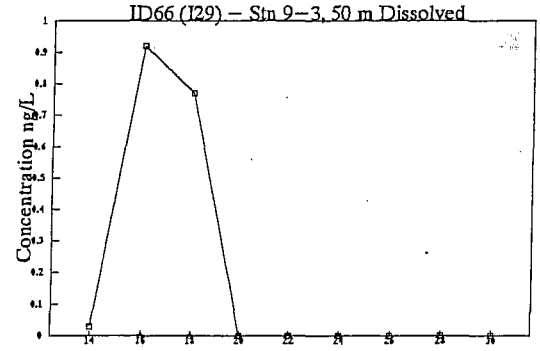

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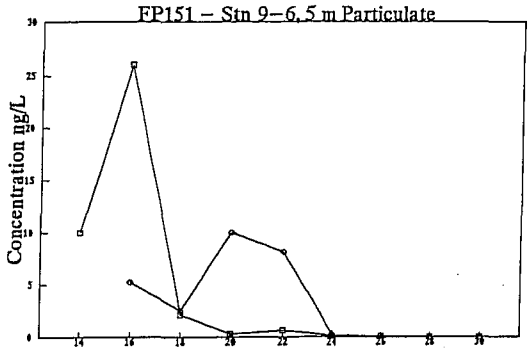

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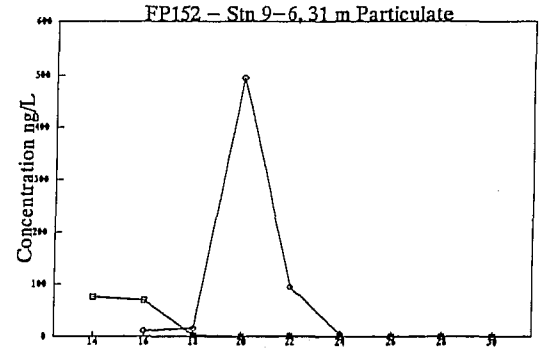


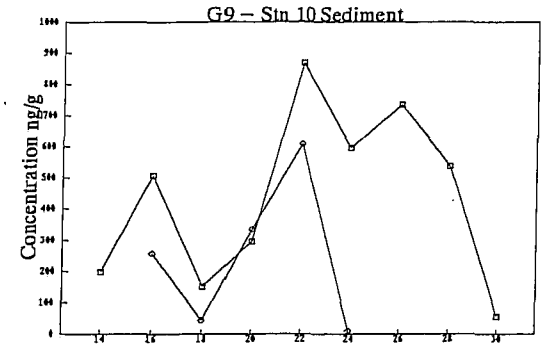
S ‰ = 31.8

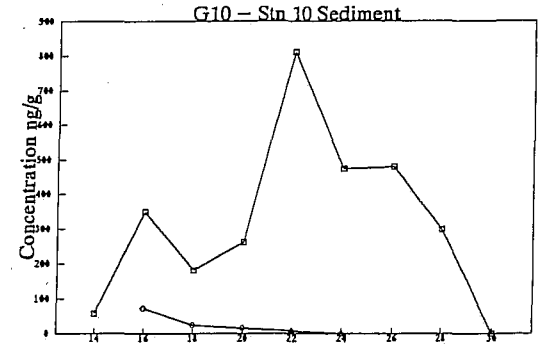
	G12	FP1	IP13	ID59 (I13)	IP12	ID60 (I12)	M3	FP21
	Stn 9	Stn 9–1	Stn 9–2	Stn 9–2, 9 m	Stn 9–2	Stn 9–2	Stn 9–1/2	Stn 9–3
$nC_{14}-C_{18}$ ol	940	16	12	0.35	24	0.0	2770600	178
$nC_{20}-C_{30}$ ol	789	0.0	0.21	0.00	1.6	0.0	0.0	3.1
nC_{16-24} enol	780	78	42	0.00	339	0.0	15064000	1003
C_{16-24}en/ane	0.35	0.89	0.86	0.00	0.96		0.90	0.88
$C_{14-18}/_{14-30}$	0.54	1.00	0.98	1.00	0.94		1.00	0.98

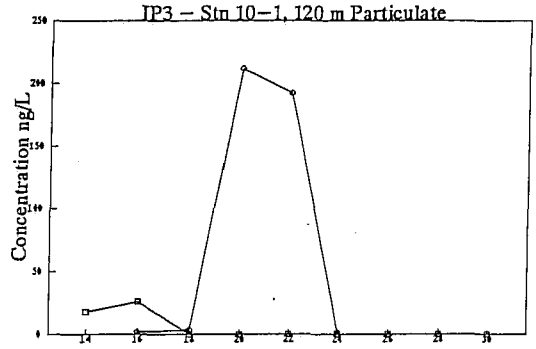
	IP28	ID65 (I28)[1]	FP22[2]	M6	IP29	ID66 (I29)	FP151	FP152
	Stn 9–3	Stn 9–3	Stn 9–3	Stn 9–2/3	Stn 9–3	Stn 9–3	Stn 9–6, 5 m	Stn 9–6, 31 m
$nC_{14}-C_{18}$ ol	30	77	5.6	88300	251	1.72	38	147
$nC_{20}-C_{30}$ ol	0.00	0.0	0.0	0.0	7.2	0.00	1.0	0.16
nC_{16-24} enol	189	0.0	4.8	296900	65	0.00	26	617
C_{16-24}en/ane	0.90	0.00	0.65	0.80	0.40	0.00	0.47	0.90
$C_{14-18}/_{14-30}$	1.00	1.00	1.00	1.00	0.97	1.00	0.97	1.00

Notes:
1. ID65: very high concentrations likely indicate particulate material on the Chromosorb T column.
2. FP22: very low concentrations may possibly be due to a hole in the filter paper.

Station 10







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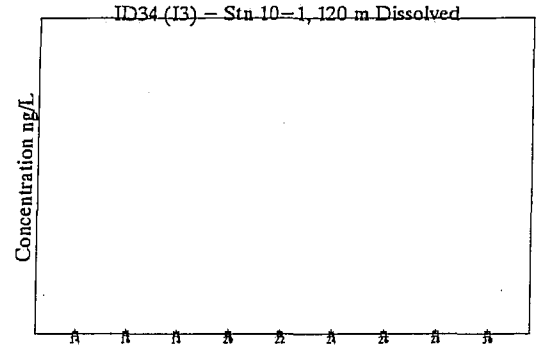

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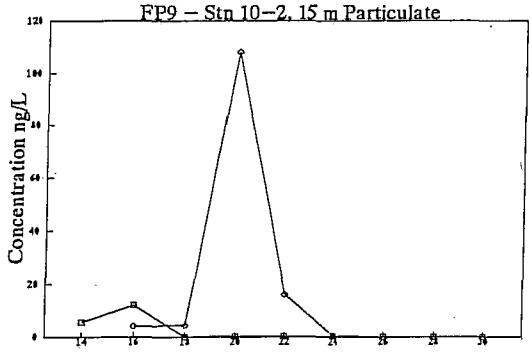

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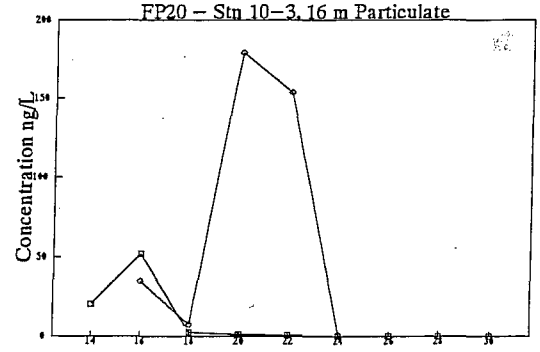

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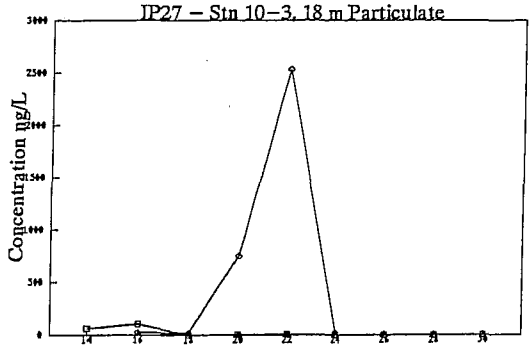

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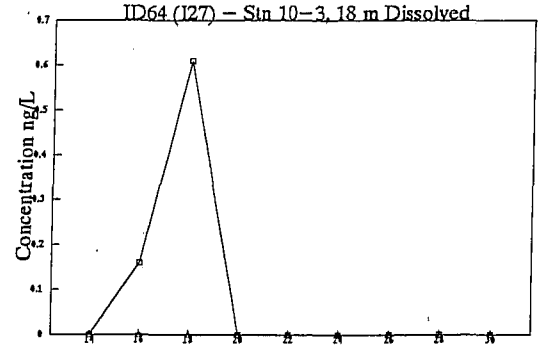

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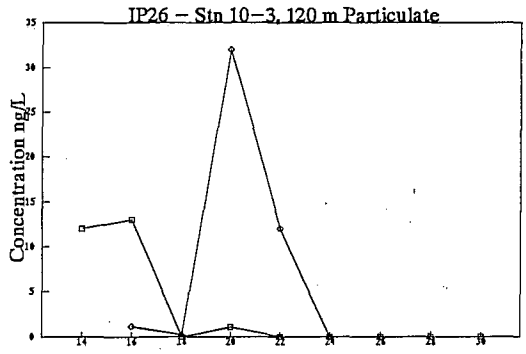

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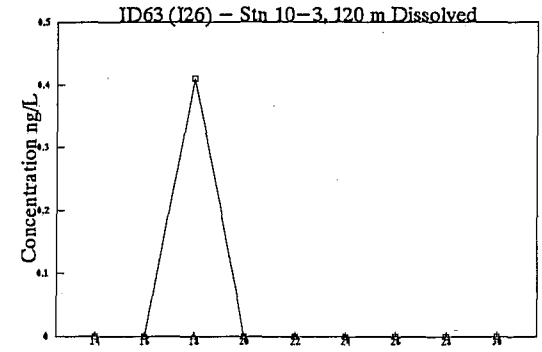
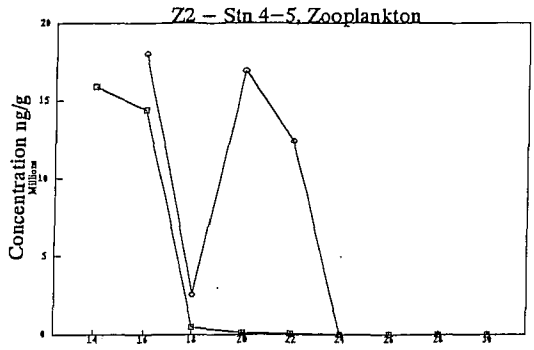


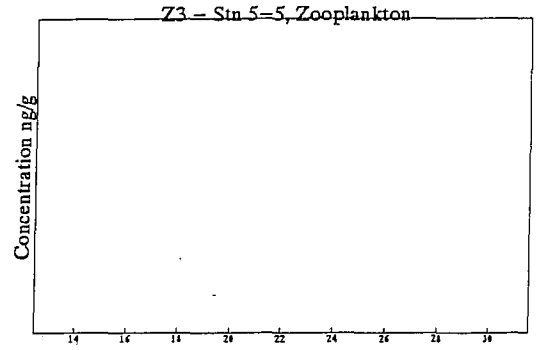
S ‰ = 33.2

	G9 Stn 10	G10 Stn 10	IP3 Stn 10–1	ID34 (I3) Stn 10–1	FP9 Stn 10–2	FP20 Stn 10–3	IP27 Stn 10–3	ID64 (I27) Stn 10–3
$nC_{14}-C_{18}$ ol	855	587	44	0.0	18	74	167	0.77
$nC_{20}-C_{30}$ ol	3088	2326	0.0	0.0	0.35	1.6	13	0.0
nC_{16-24} enol	1252	120	411	0.0	133	376	3352	0.0
C_{16-24}en/ane	0.34	0.05	0.94		0.92	0.87	0.97	0.00
$C_{14-18}/_{14-30}$	0.22	0.20	1.00		0.98	0.98	0.93	1.00

	IP26 Stn 10–3	ID63 (I26) Stn 10–3
$nC_{14}-C_{18}$ ol	25	0.41
$nC_{20}-C_{30}$ ol	1.00	0.00
nC_{16-24} enol	45	0.00
C_{16-24}en/ane	0.76	0.00
$C_{14-18}/_{14-30}$	0.96	1.00

Zooplankton





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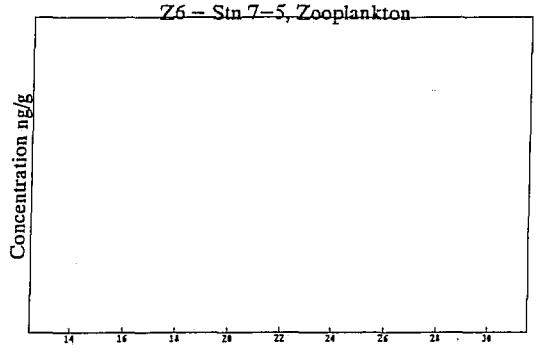

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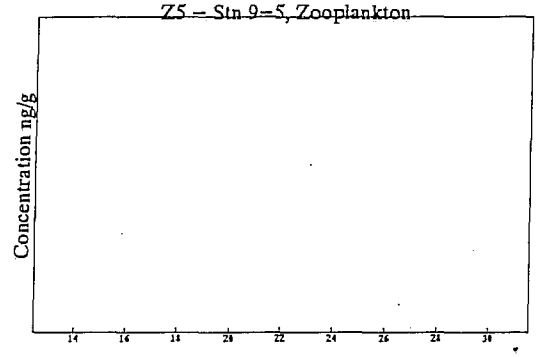

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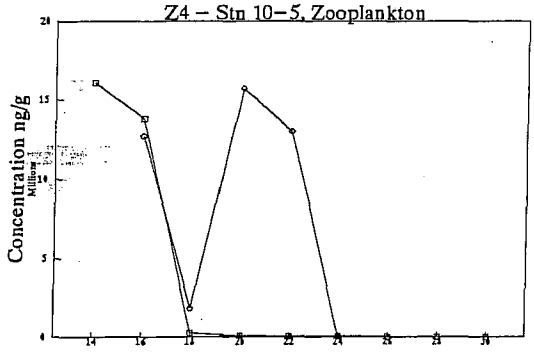

	Z2	Z3	Z6	Z5	Z4
	Stn 4–5	Stn 5–5	Stn 7–5	Stn 9–5	Stn 10–5
$nC_{14}-C_{18}$ ol	30815000				30143000
$nC_{20}-C_{30}$ ol	241722	No data	No data	No data	106983
nC_{16-24} enol	49875980				43233800
C_{16-24}en/ane	0.77				0.75
$C_{14-18}/_{14-30}$	0.99				1.00

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Macdonald, R.W., K. Iseki, E.C. Carmack, D.M. Macdonald, M.C. O'Brien, and F.A. McLaughlin, 1988. Data Report: NOGAP B.6; Beaufort Sea Oceanography, September, 1986. *Can. Data Rep. Hydrogr. Ocean Sci.:* **58**, 68pp.

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