

U-289

3



GEOCHEMICAL SERVICE REPORT

Prepared for

SAGA PETROLEUM A.S.

SA 82-2543-1

GEOCHEMICAL EVALUATION OF SAGA'S 6507/12-2 WELL,
HALTEN BANK, OFFSHORE NORWAY

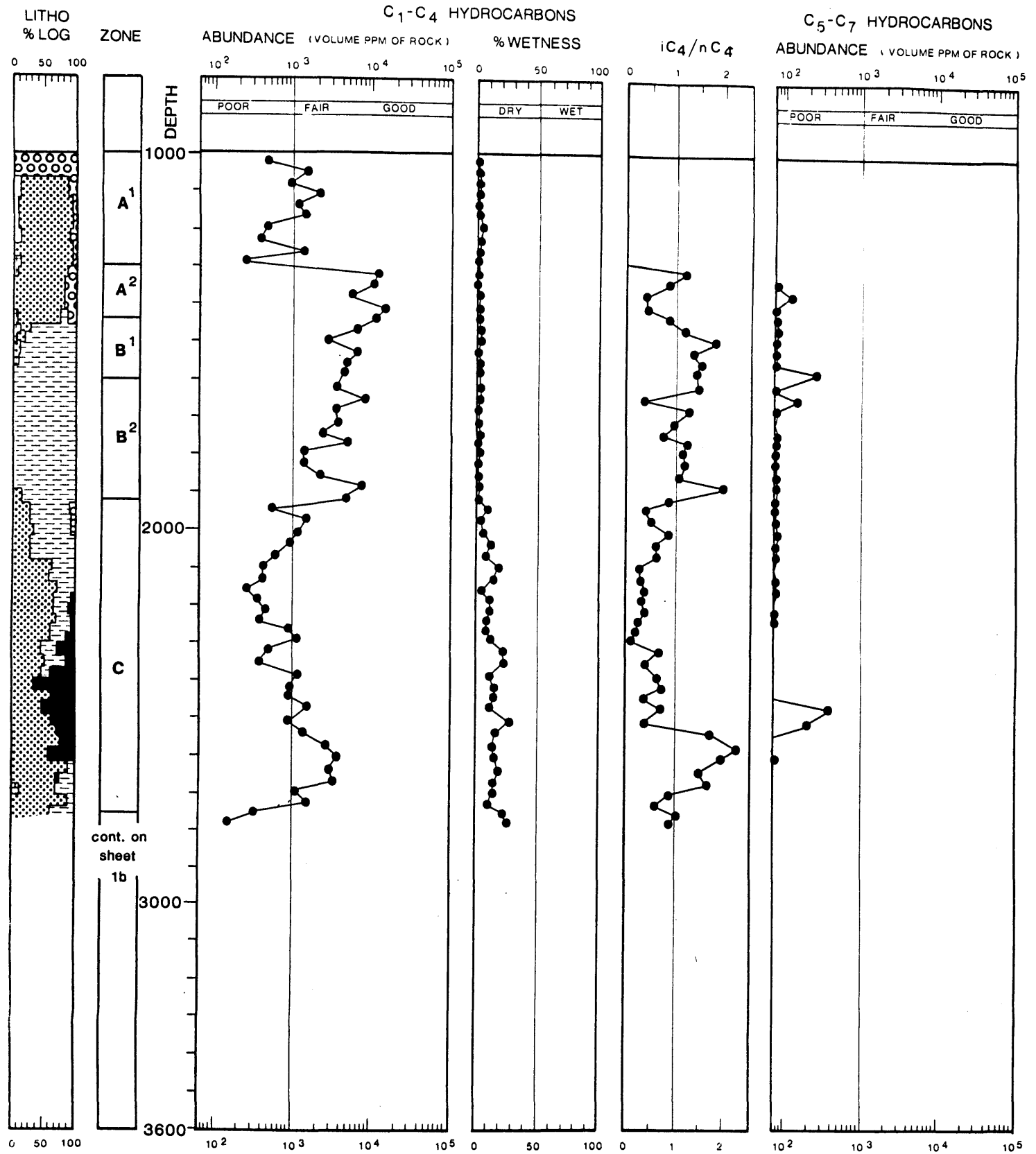
APPENDIX ONE - FIGURES

3

April 1982

CHESTER STREET · CHESTER CH4 8RD · ENGLAND

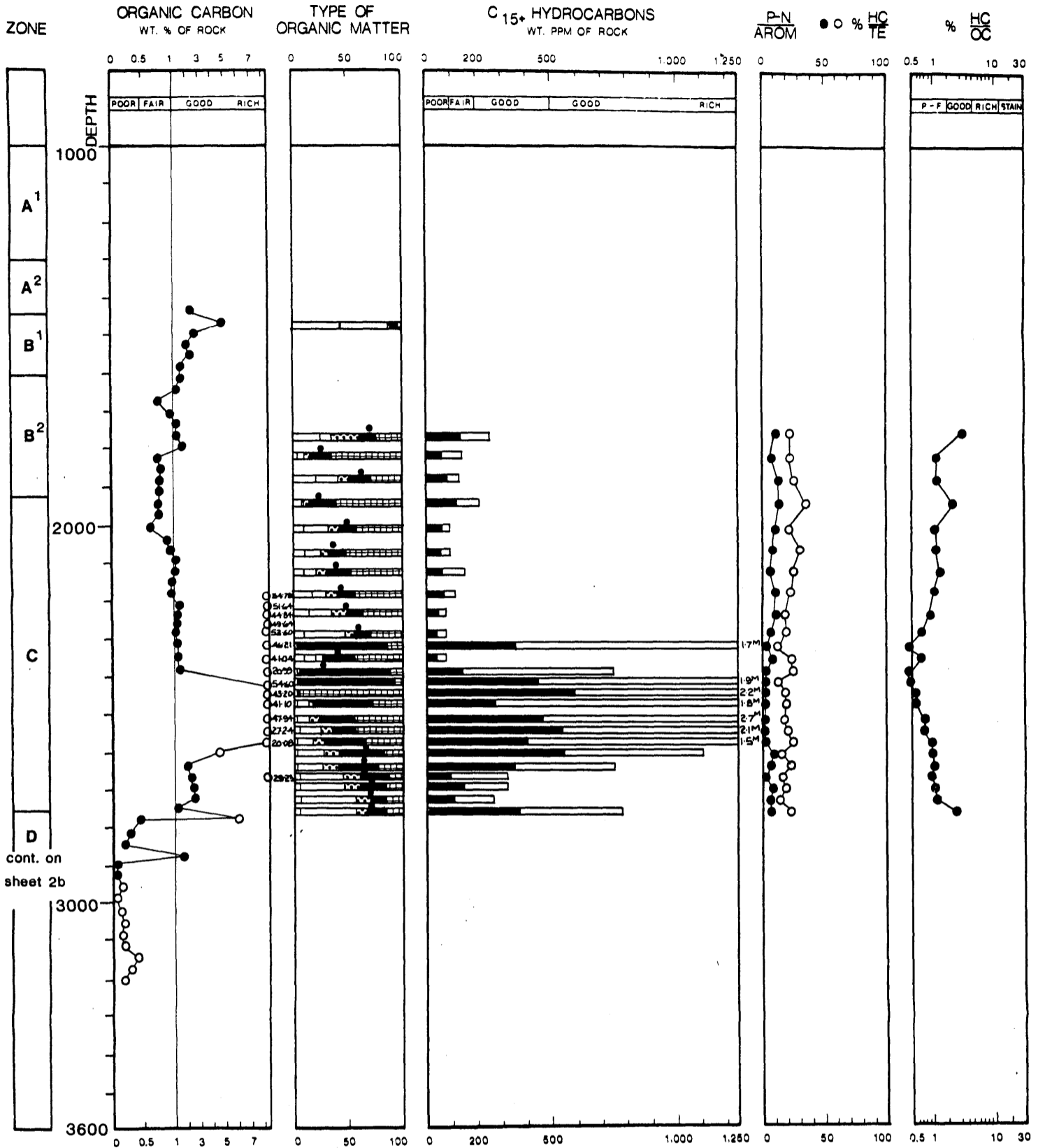
COMPANY PROPRIETARY



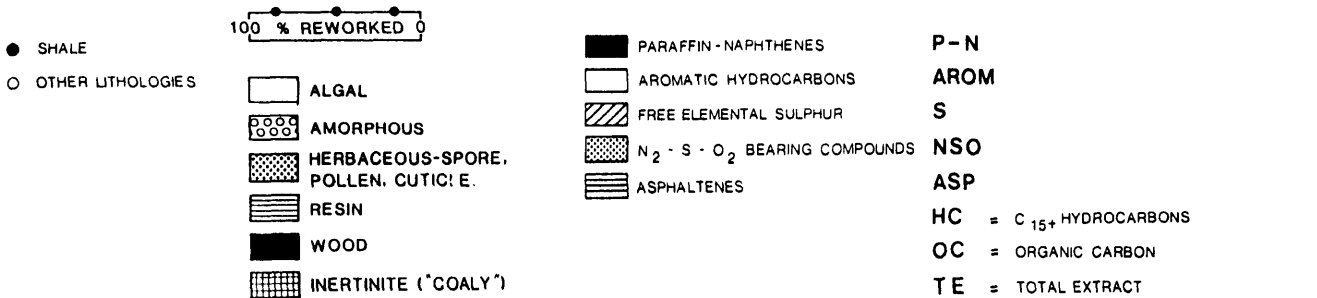
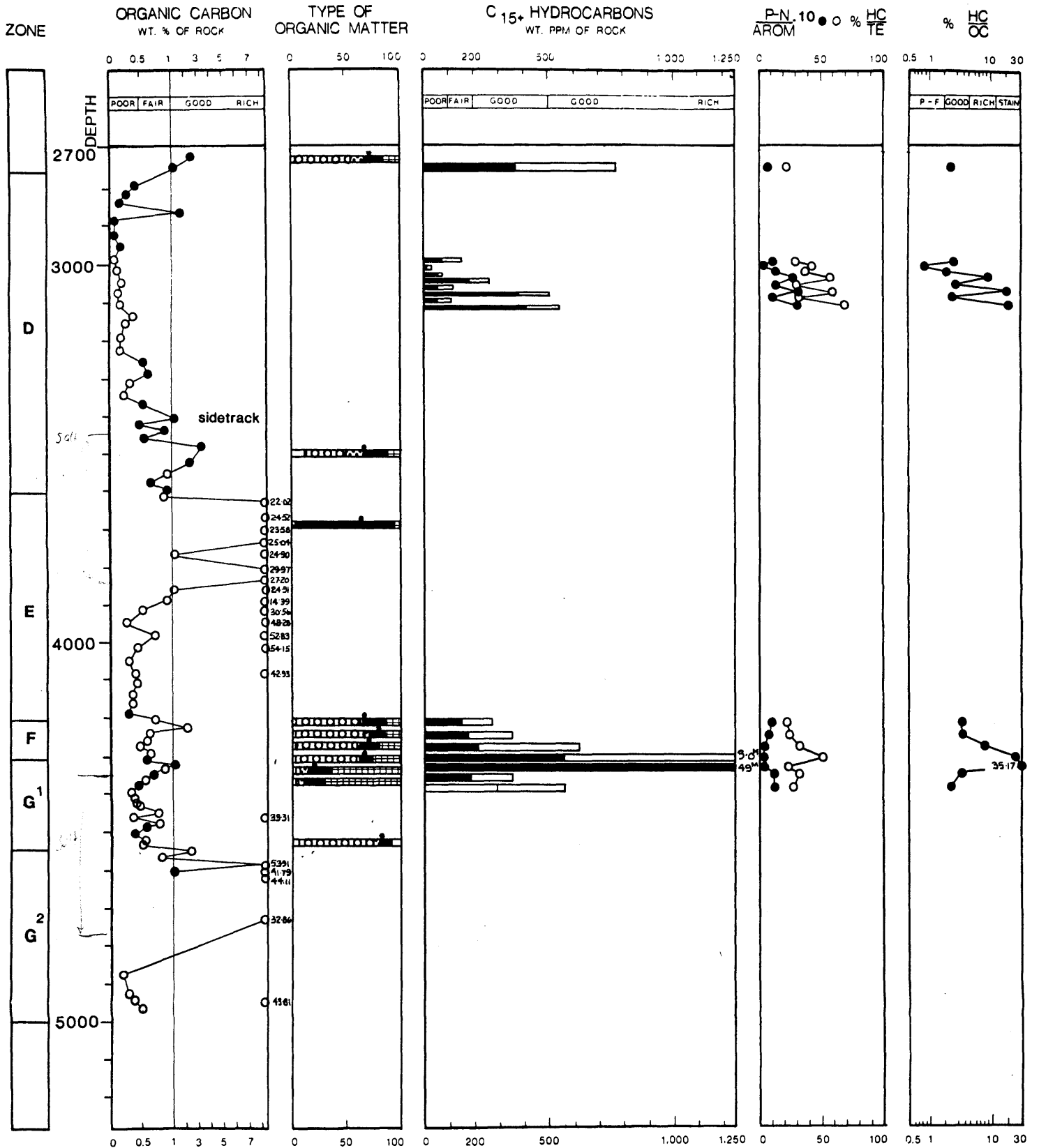
LITHOLOGIES

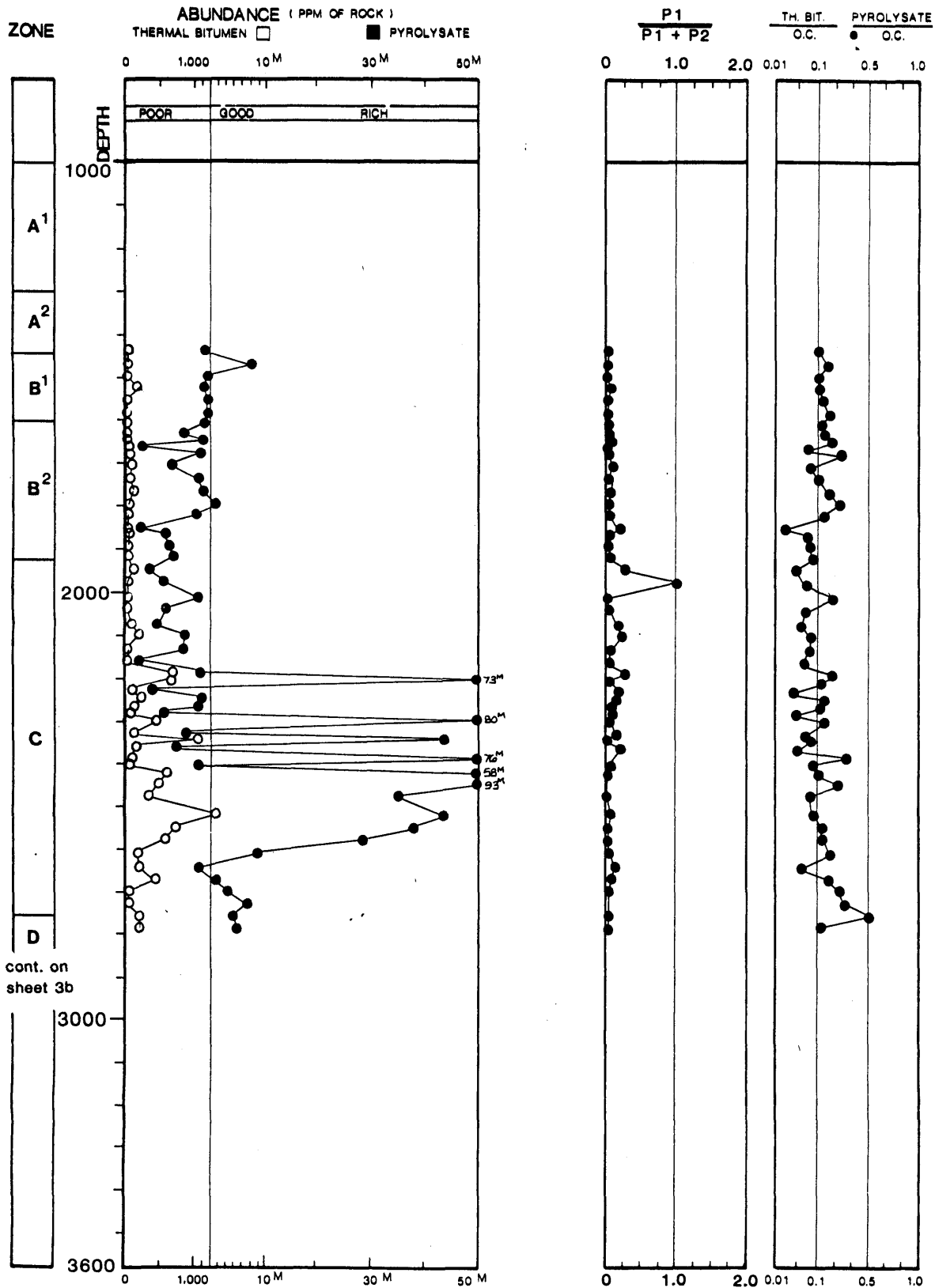
- | | | |
|------------------|------------------|---------------------------|
| CARBONATE | SANDSTONE / SAND | EVAPORITE |
| SHALE / MUDSTONE | COAL | LOST CIRCULATION MATERIAL |
| SILTSTONE | IGNEOUS | |

iC₄ - ISOBUTANE
nC₄ - NORMAL BUTANE



- SHALE
- OTHER LITHOLOGIES
- 100 % REWORKED ○
- ALGAL
- AMORPHOUS
- HERBACEOUS-SPORE, POLLEN, CUTICLE.
- RESIN
- WOOD
- INERTINITE ('COALY')
- PARAFFIN-NAPHTHENES
- AROMATIC HYDROCARBONS
- FREE ELEMENTAL SULPHUR
- N₂-S-O₂ BEARING COMPOUNDS
- ASPHALTENES
- P-N AROM
- S
- NSO
- ASP
- HC ■ C₁₅₊ HYDROCARBONS
- OC ■ ORGANIC CARBON
- TE ■ TOTAL EXTRACT

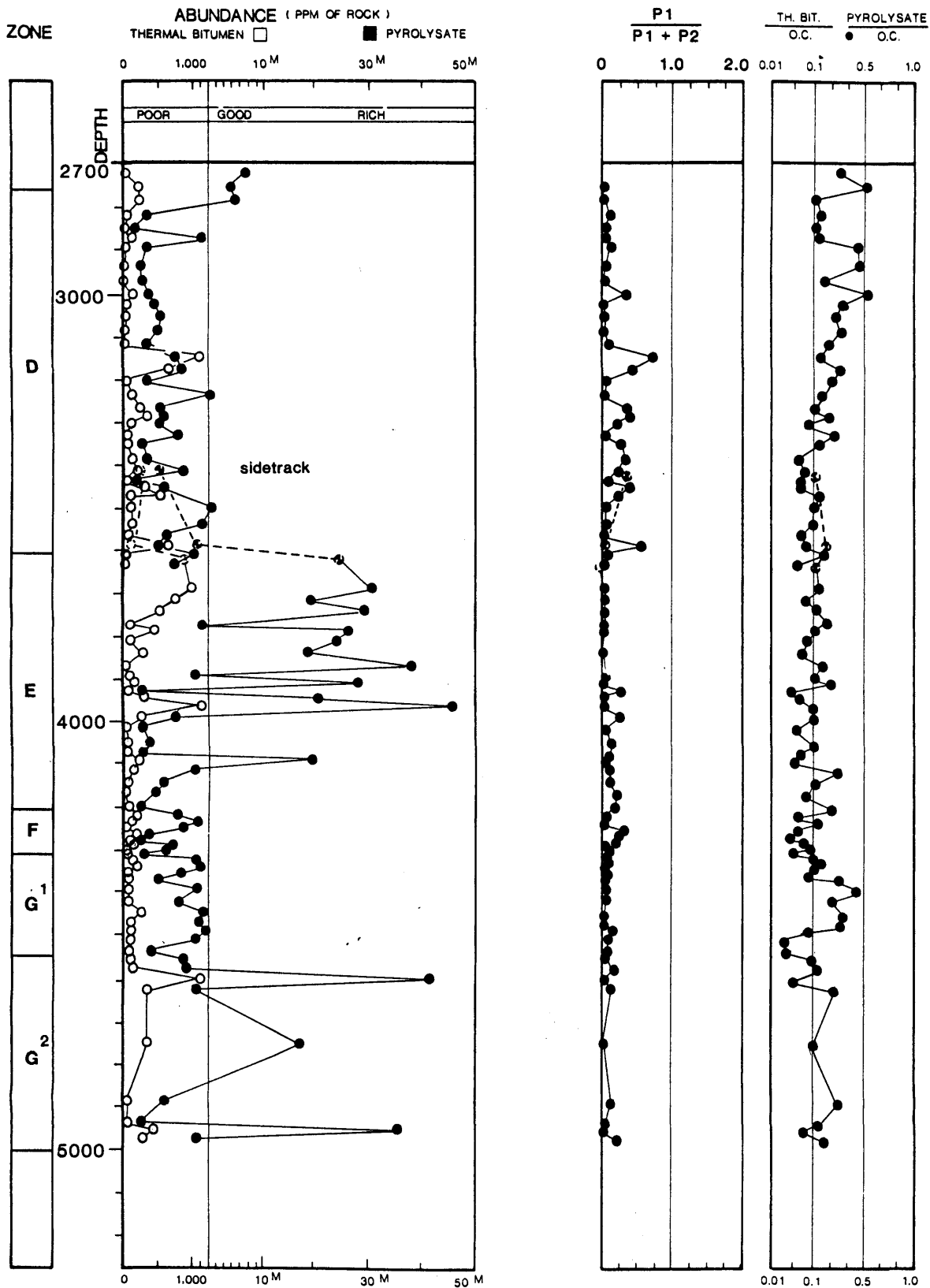




cont. on sheet 3b

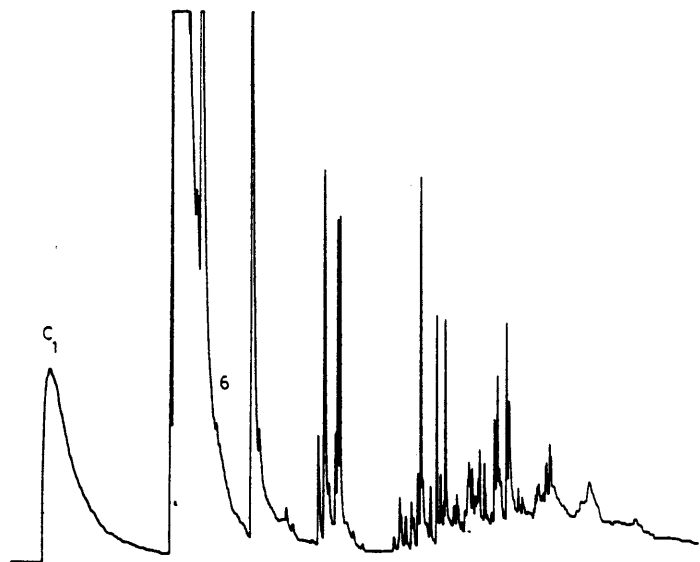
M = 10³

P1 - THERMAL BITUMEN P2 - PYROLYSATE O.C. = ORGANIC CARBON

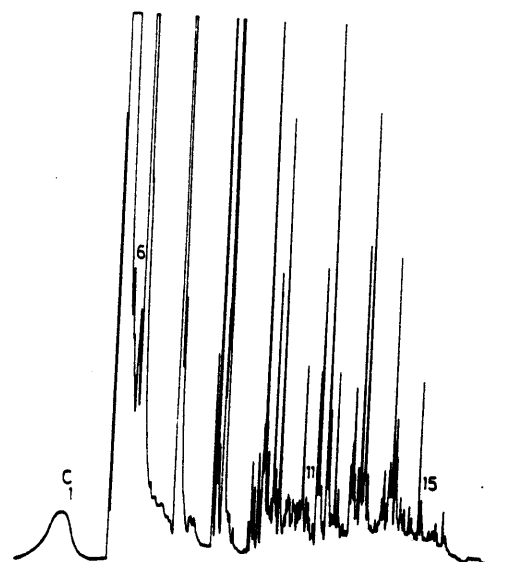


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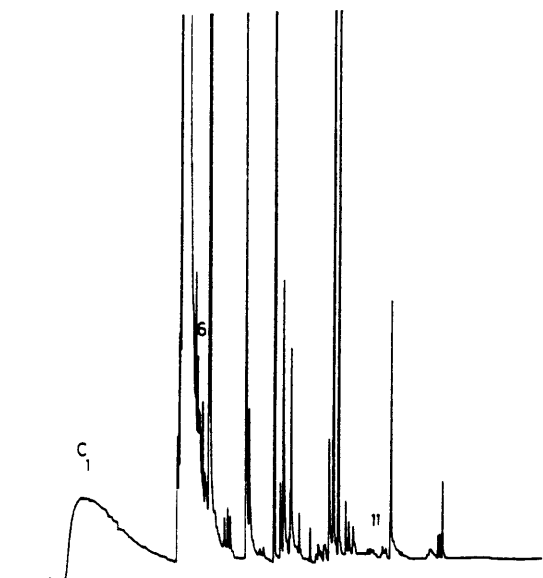
P1 - THERMAL BITUMEN O.C. = ORGANIC CARBON
 P2 - PYROLYSATE



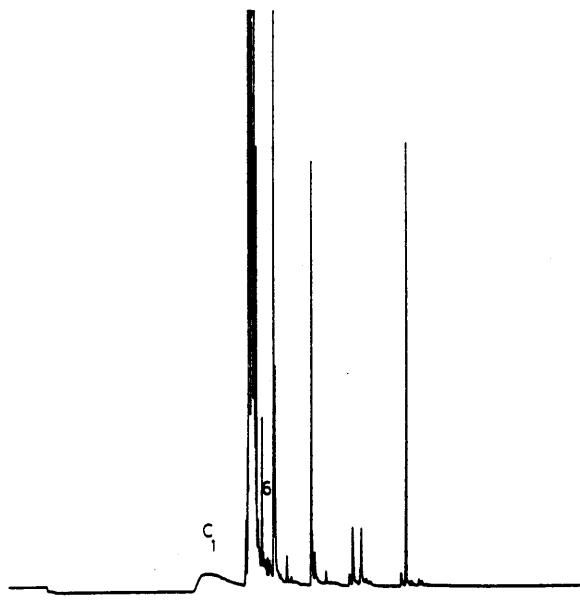
1450-1480m A



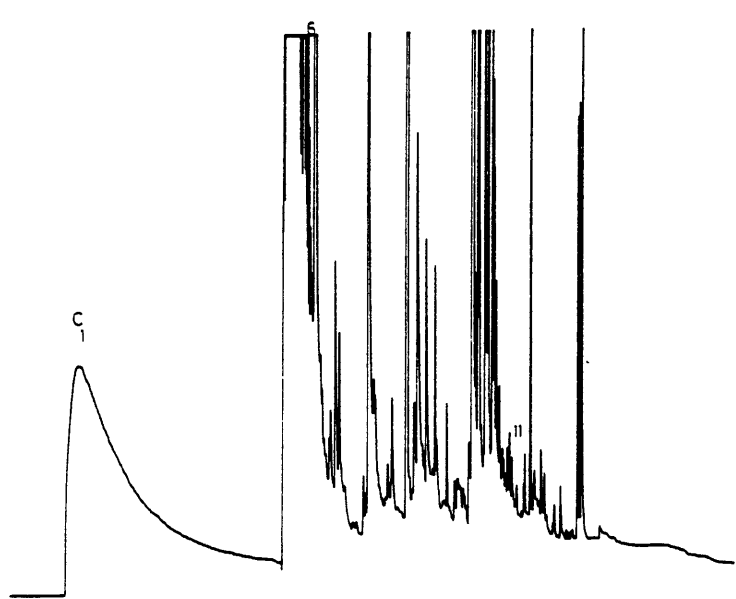
1540-1570m A



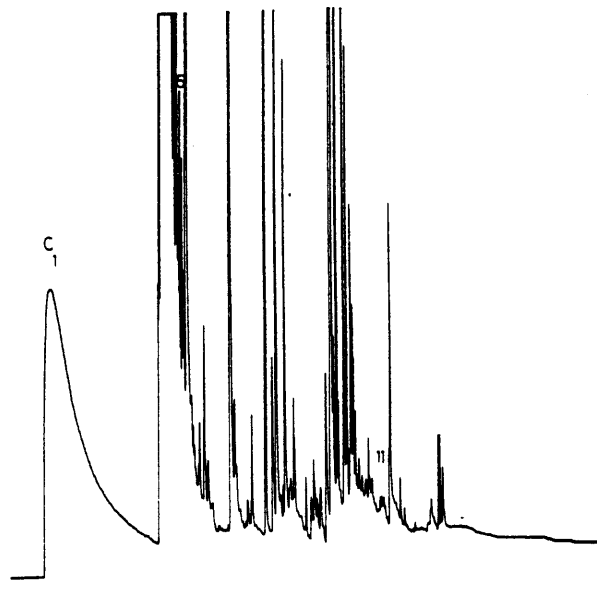
1750-1780m A



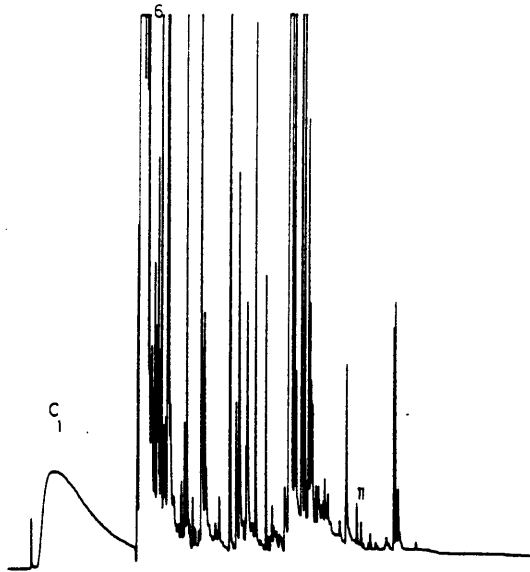
1810-1840m A



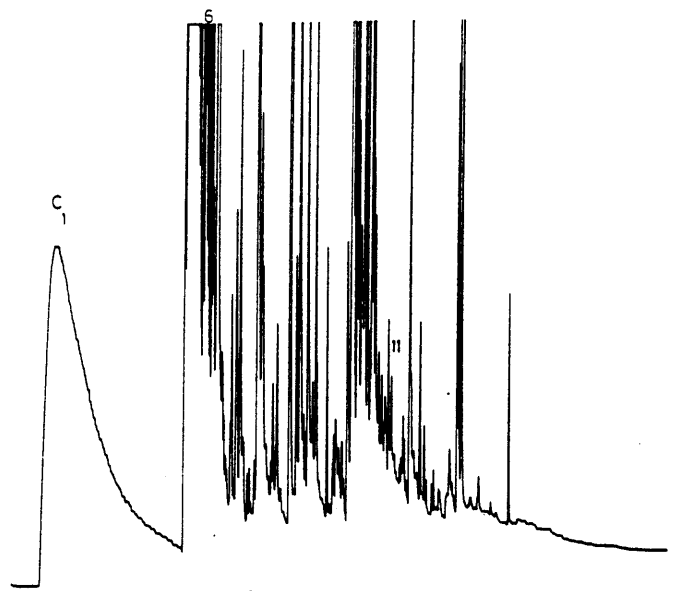
1870-1900m A



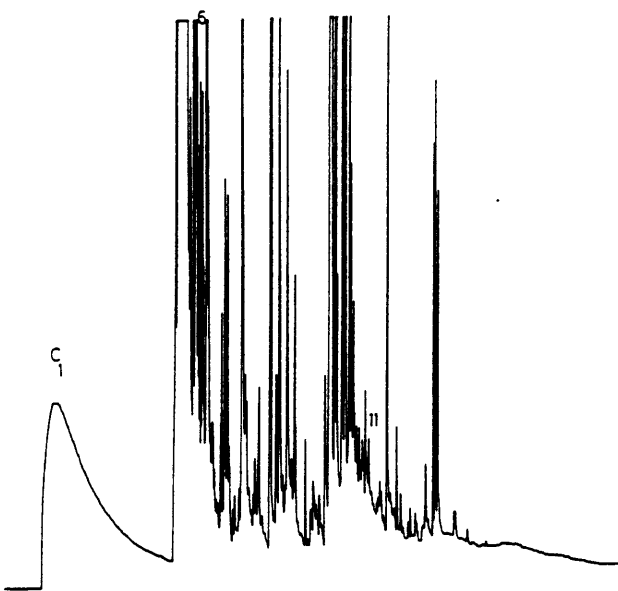
1930-1960m A



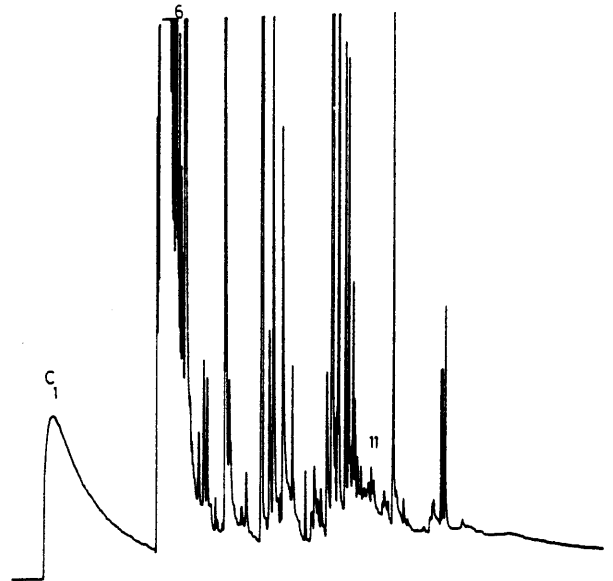
1990-2020m A



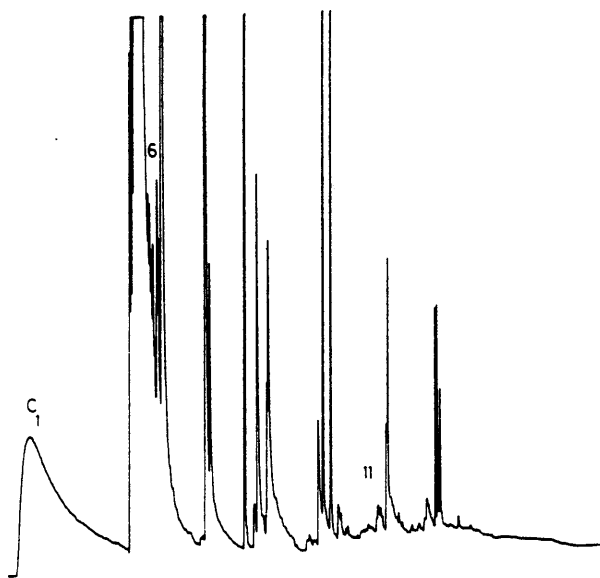
2050-2080m A



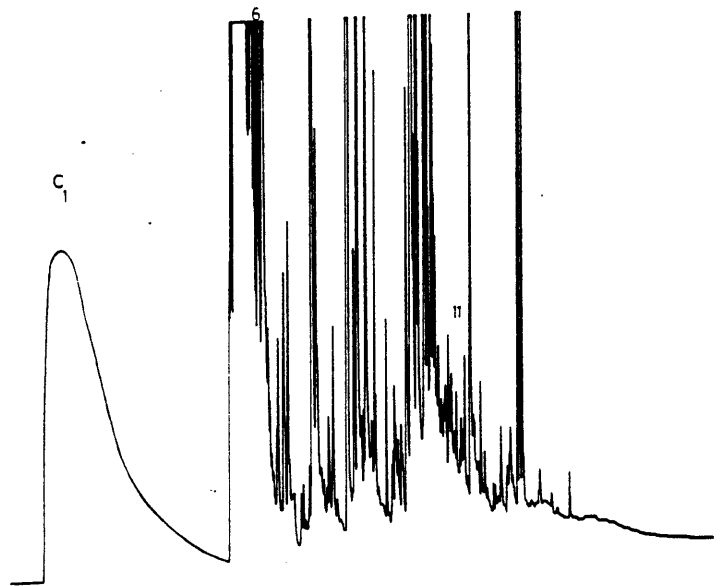
2110-2140m B



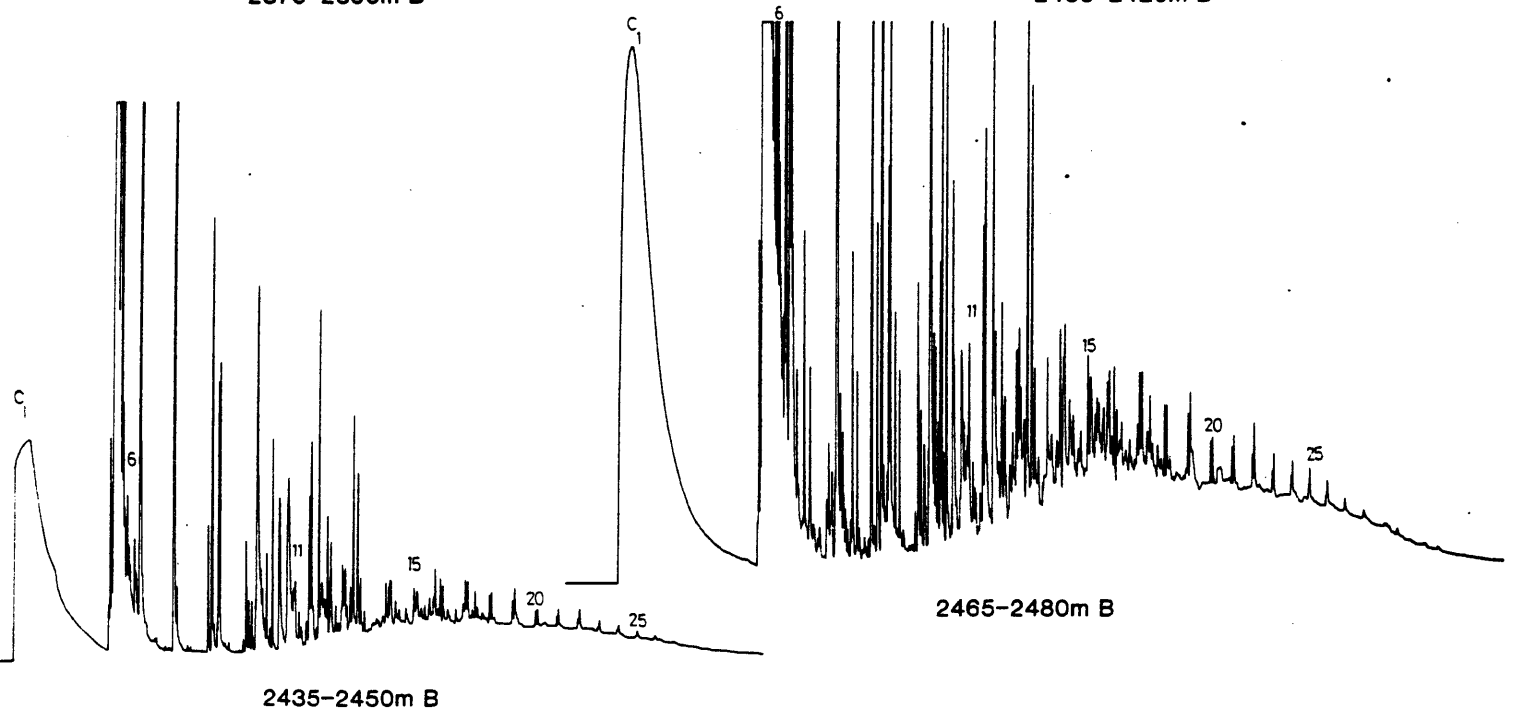
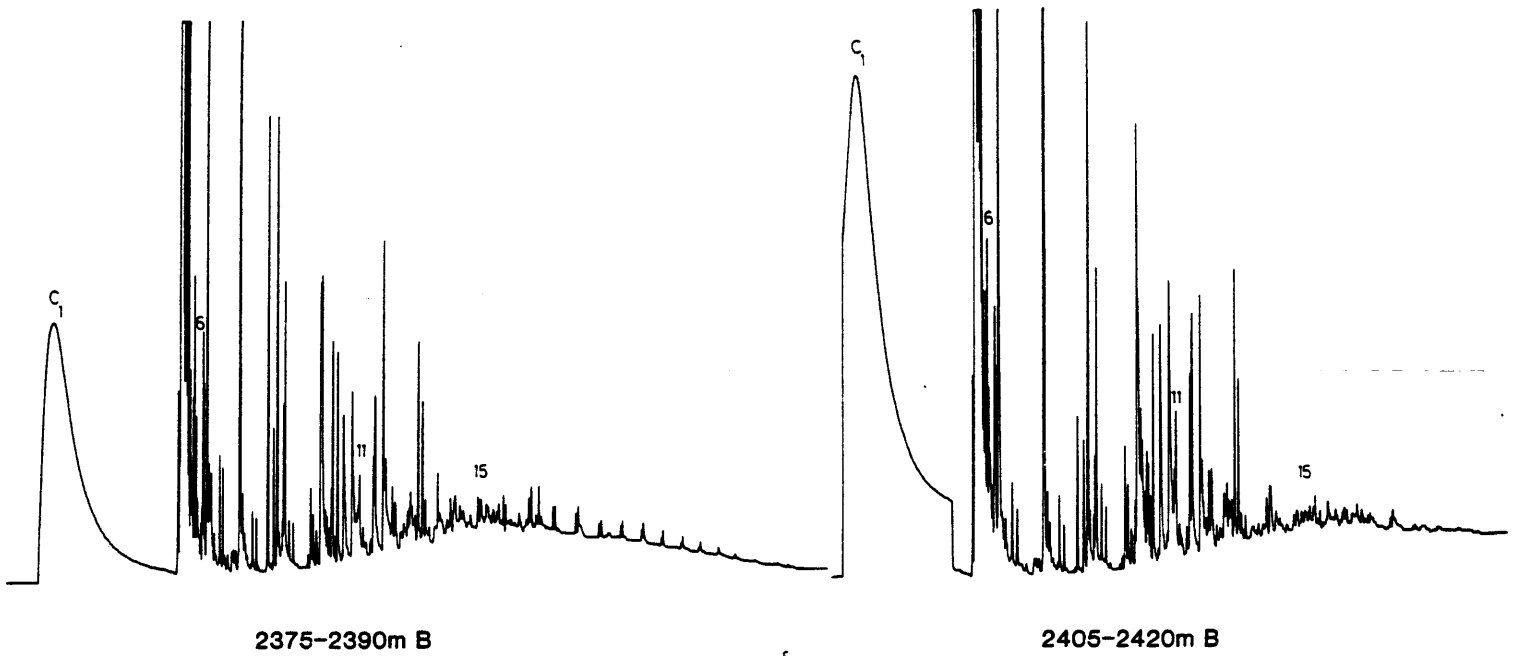
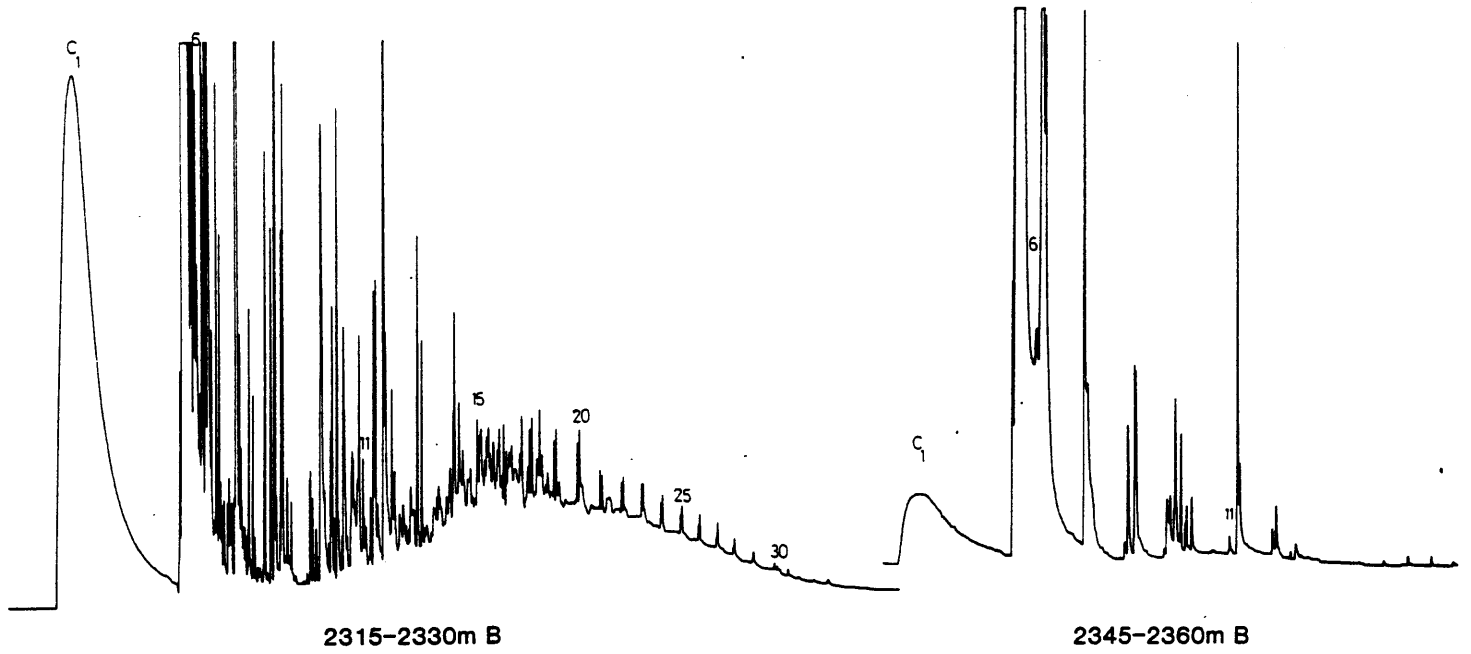
2170-2200m B

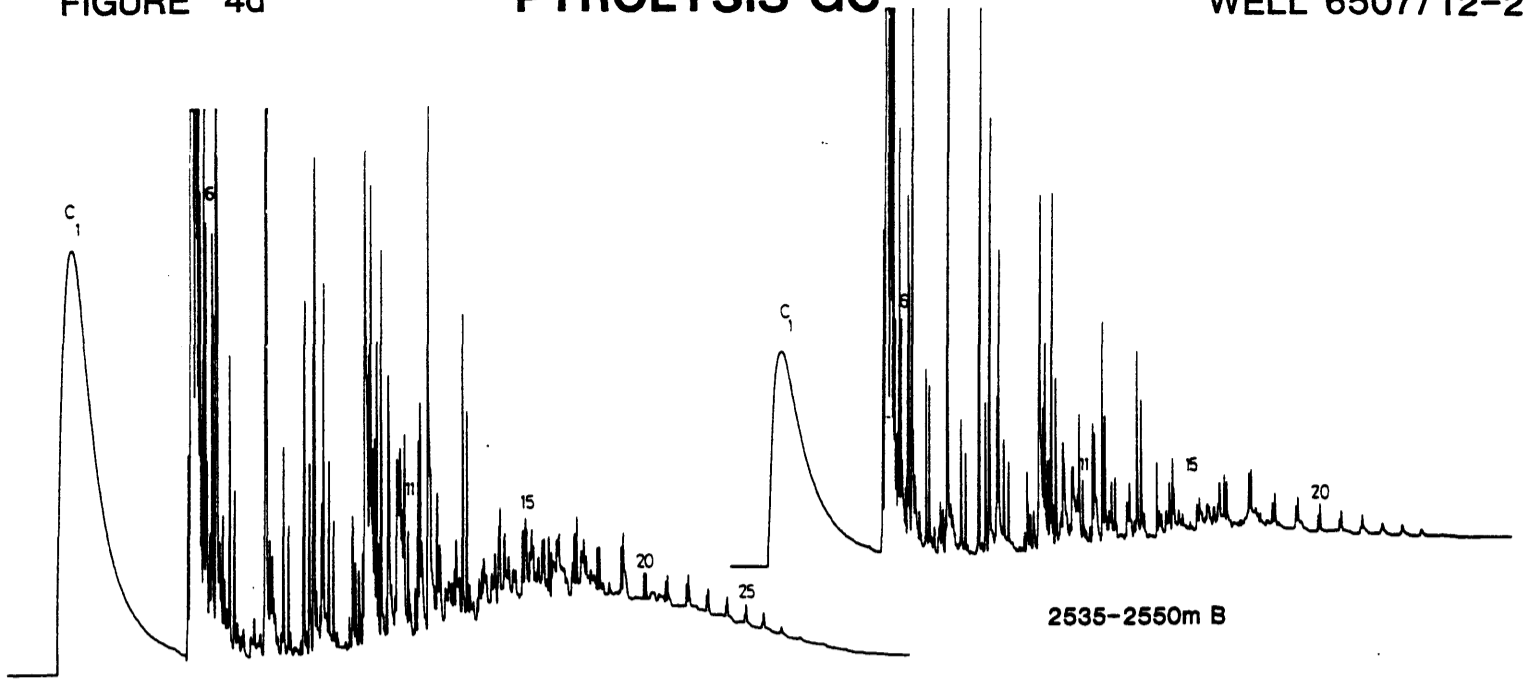


2230-2250m B

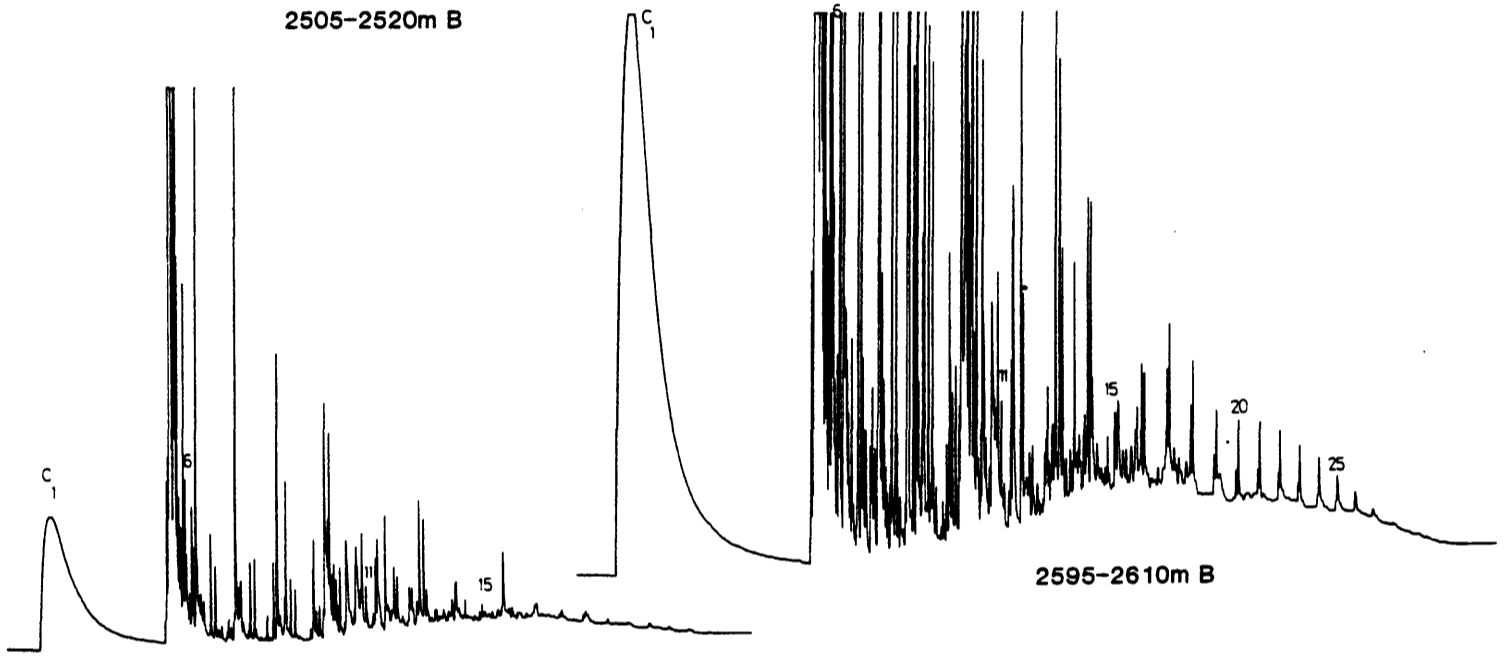


2285-2300m B

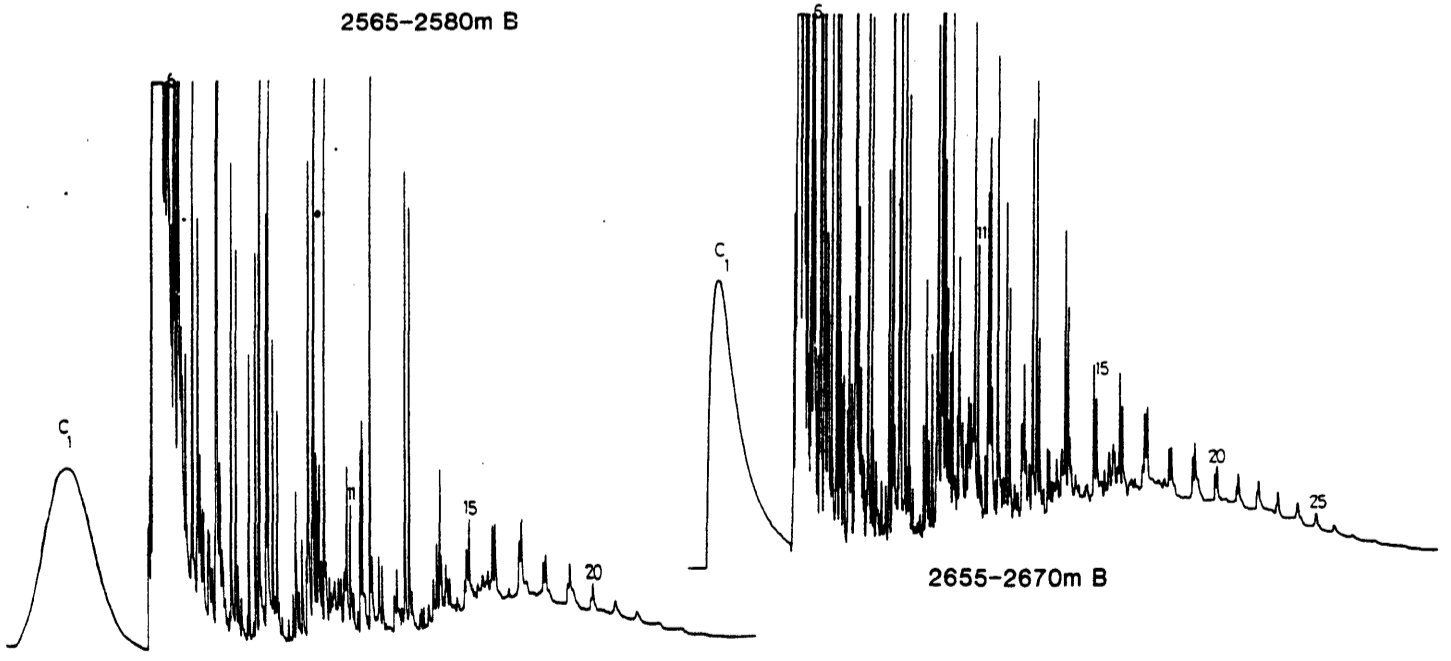




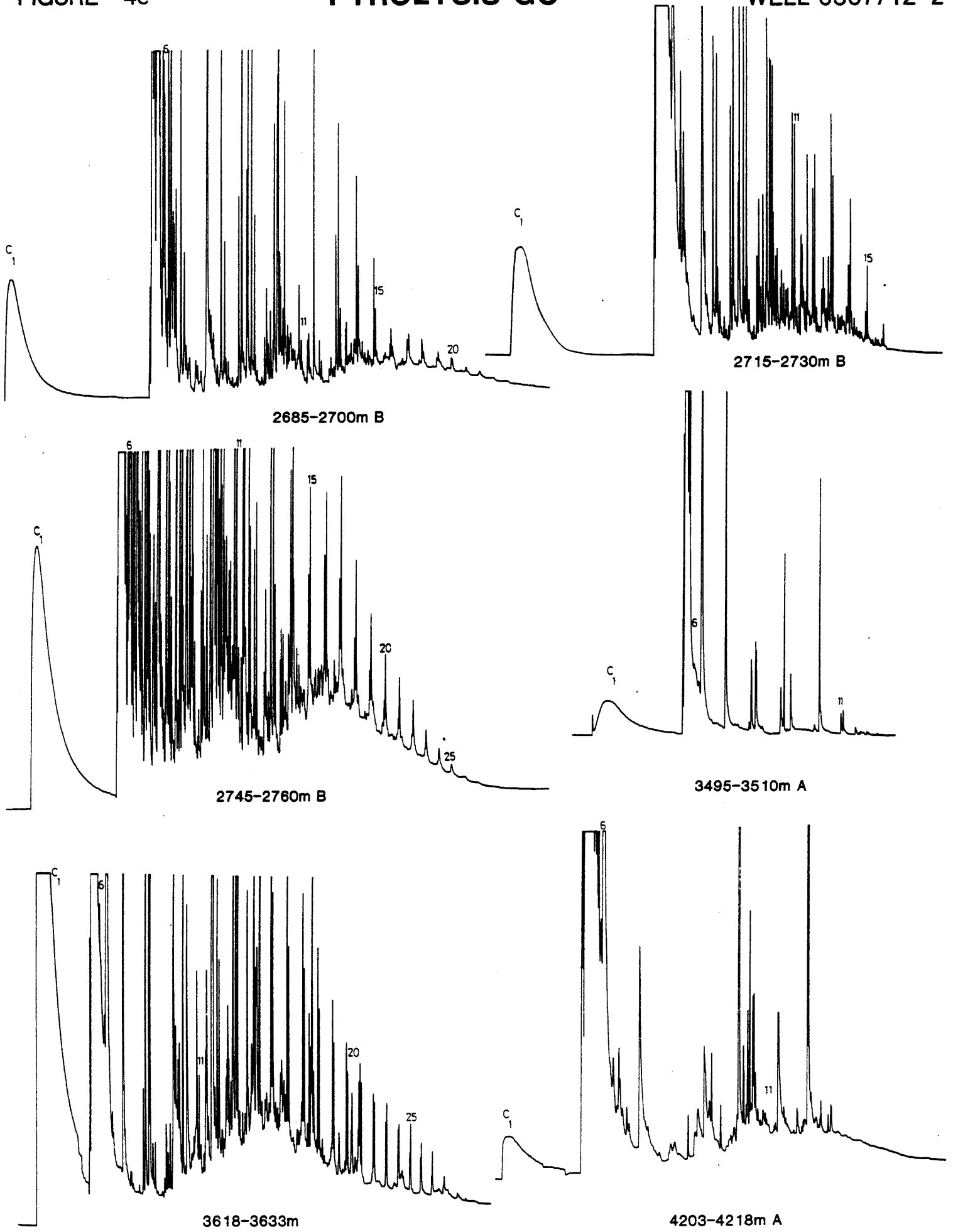
2505-2520m B

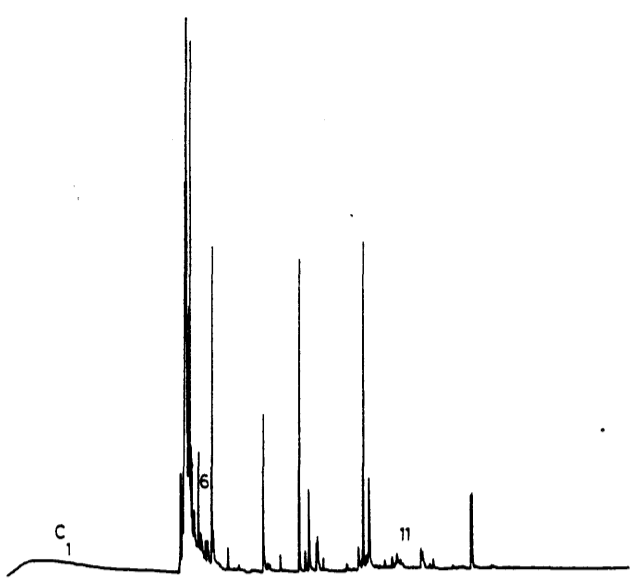


2565-2580m B

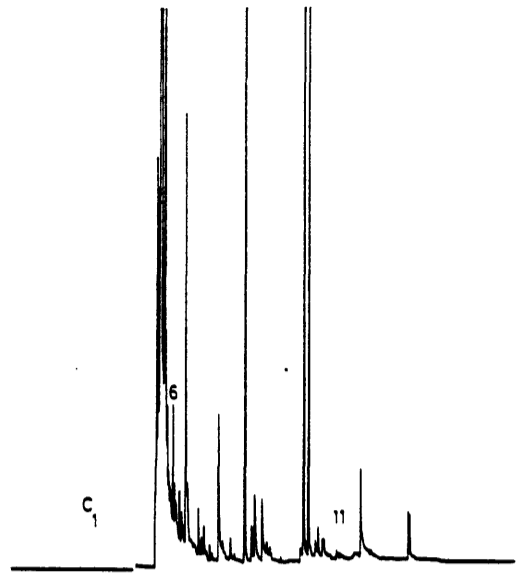


2625-2640m B

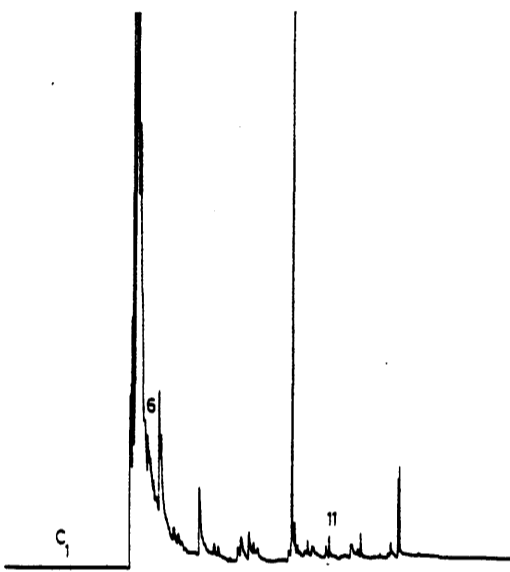




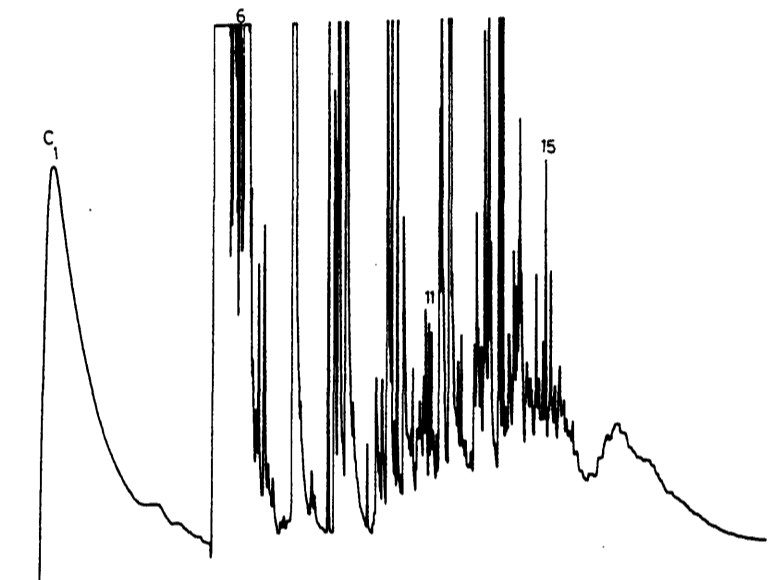
4218-4233m B



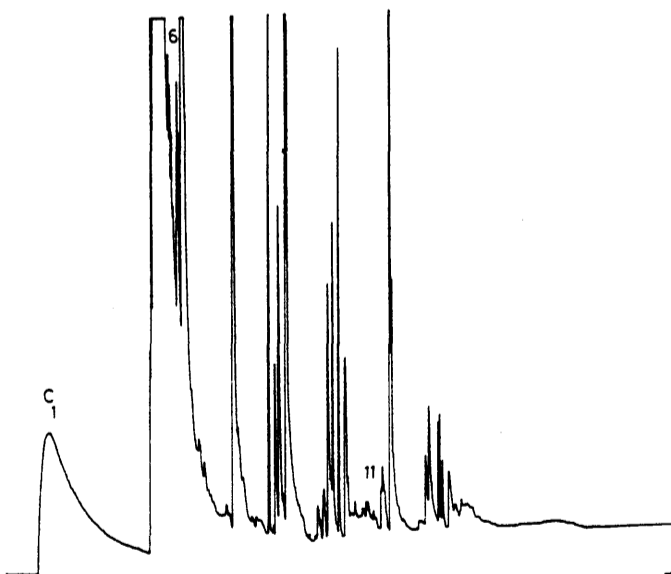
4233-4248m B



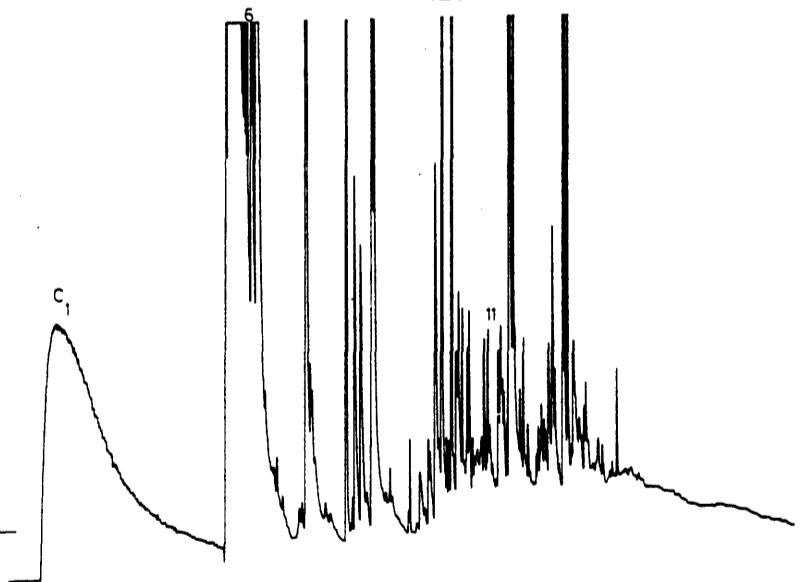
4266-4281m A



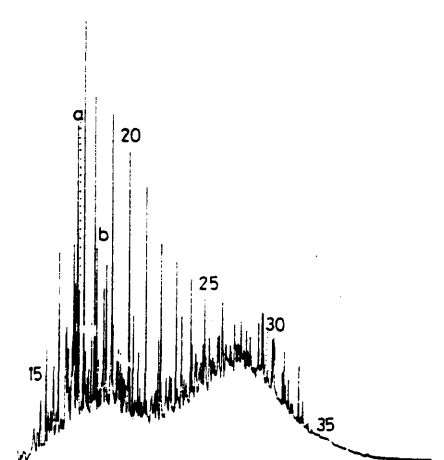
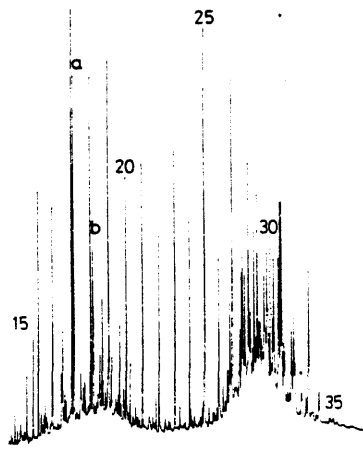
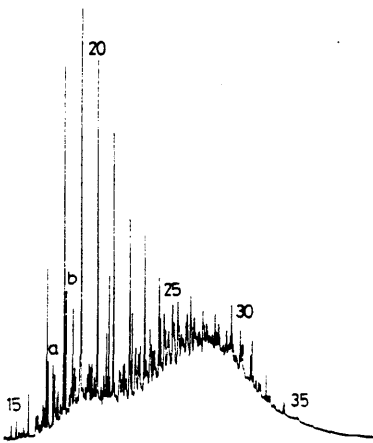
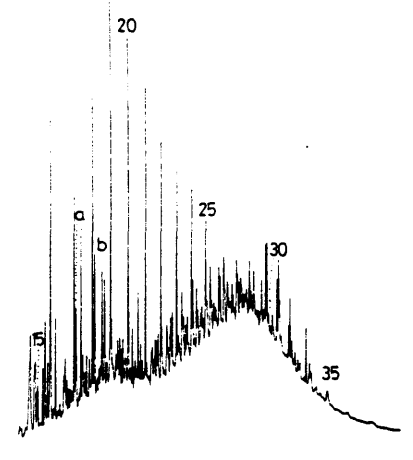
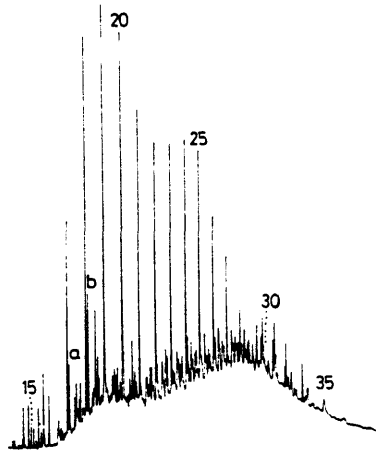
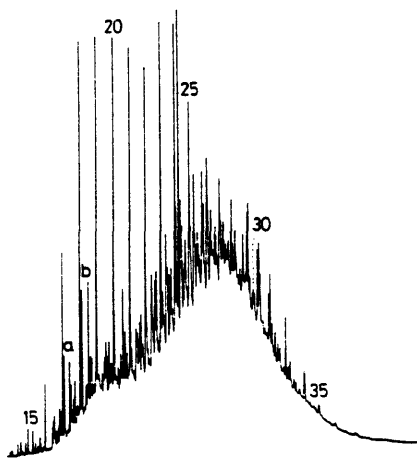
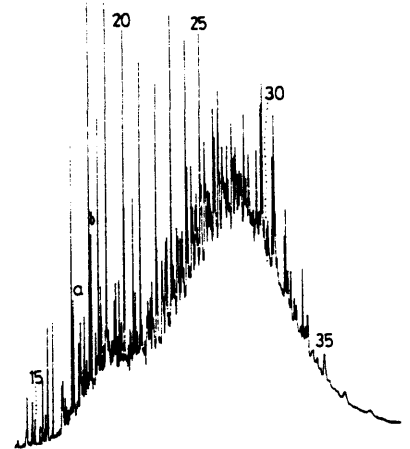
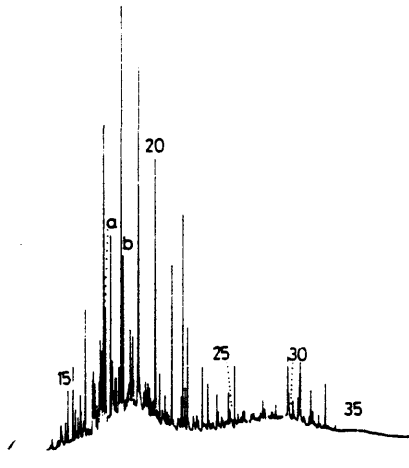
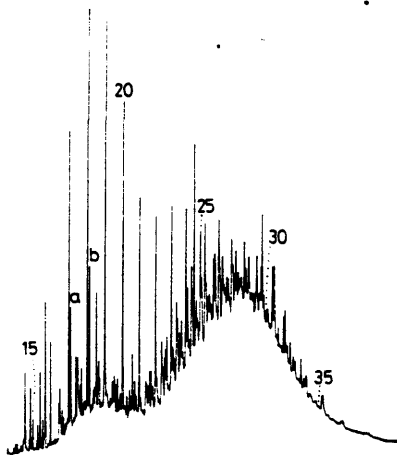
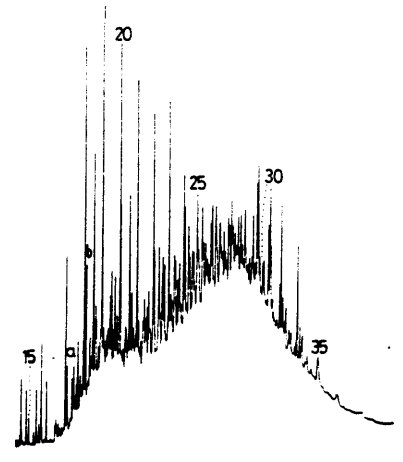
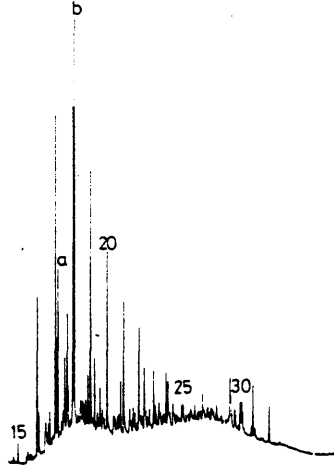
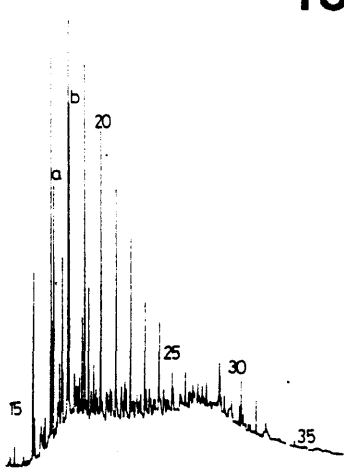
4296-4311m A



4326-4341m A



4356-4371m A



= RISTANE
= RUSTANE

2285-2300m B

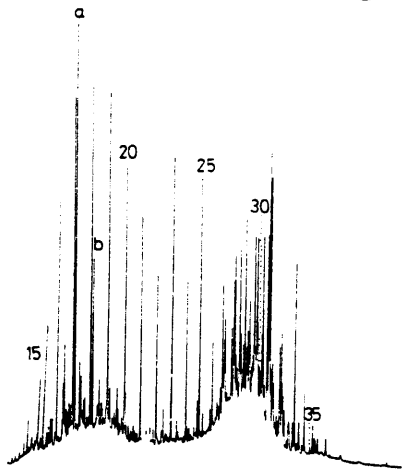
2315-2330m B

2345-2360m B

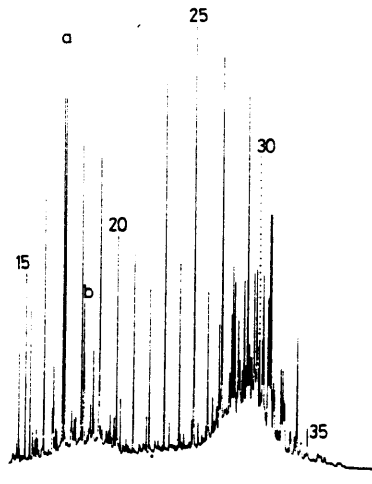
FIGURE 5b

C₁₅₊ PARAFFIN NAPHTHENES

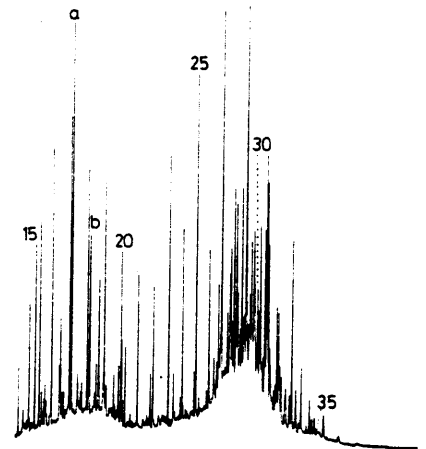
WELL 6507/12-2



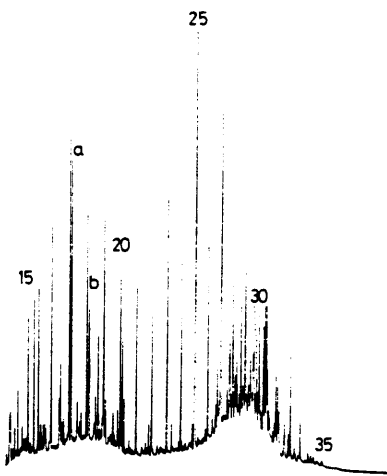
2375-2390m B



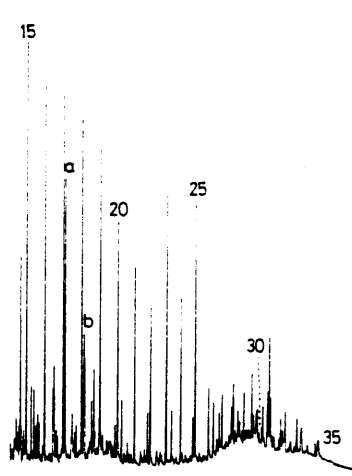
2405-2420m A



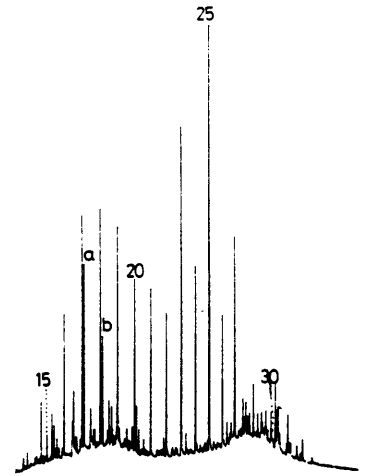
2435-2450m



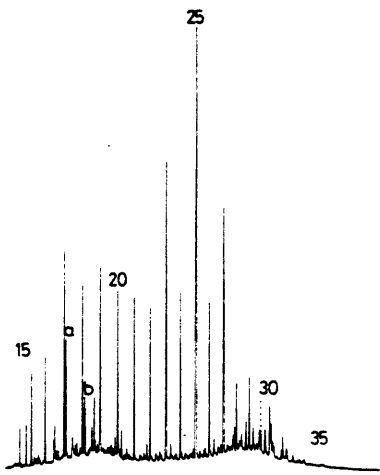
2465-2480m B



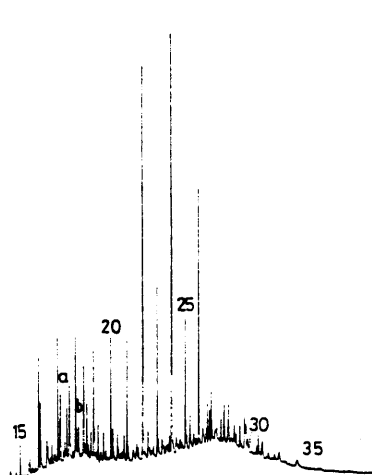
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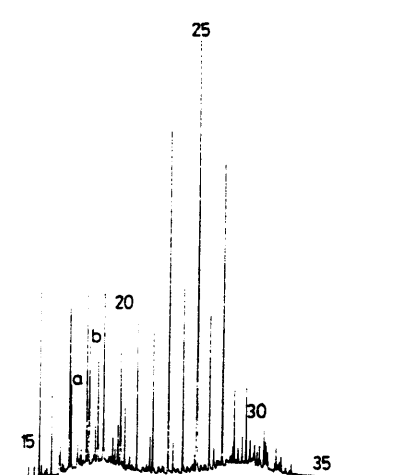
2535-2550m B



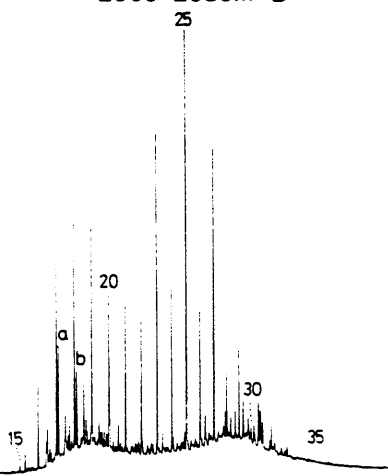
2565-2580m B



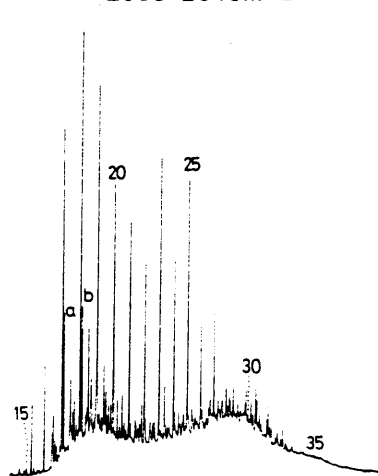
2595-2610m B



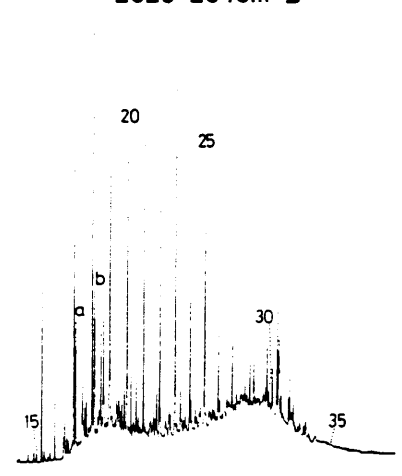
2625-2640m B



2655-2670m B

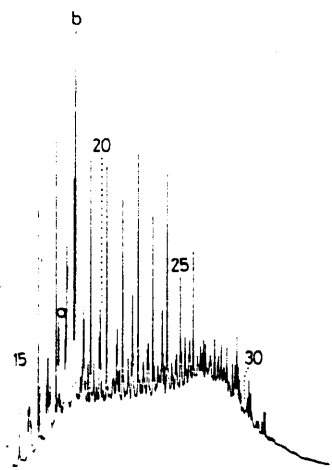


2685-2700m B

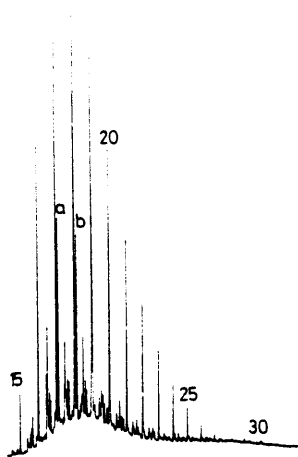


2715-2730m B

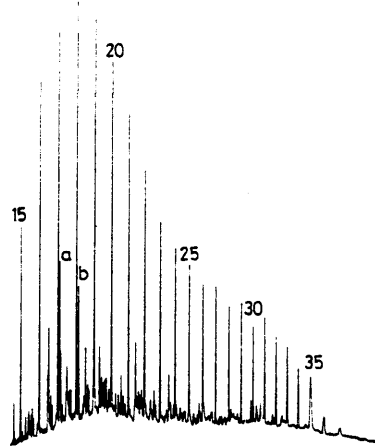
1 = PRISTANE



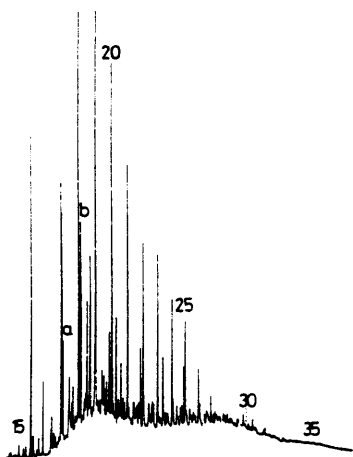
2745-2760m B



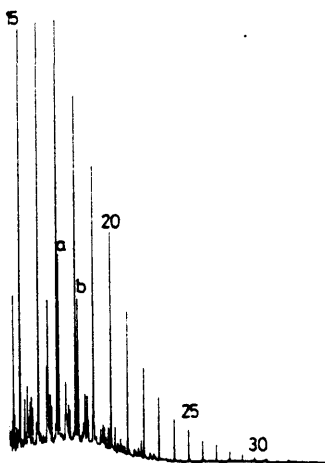
2985-3000m



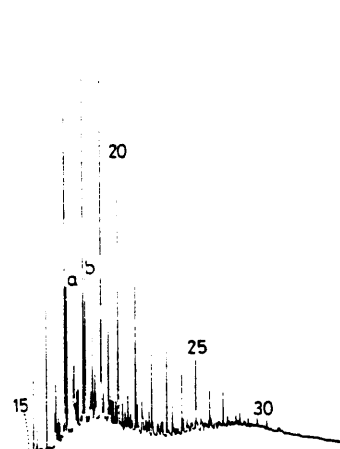
3000-3015m



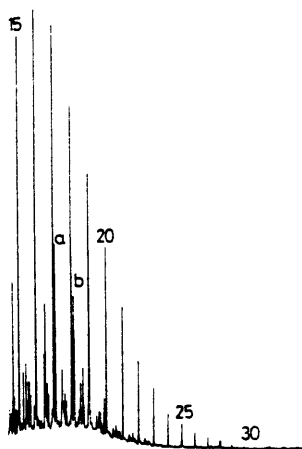
3015-3030m



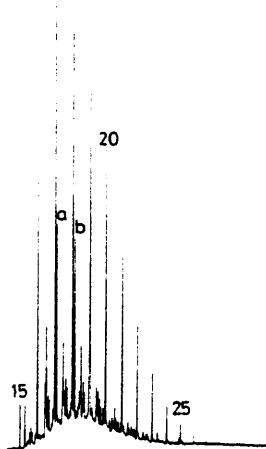
3030-3045m



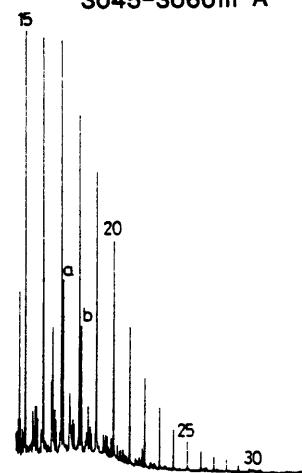
3045-3060m A



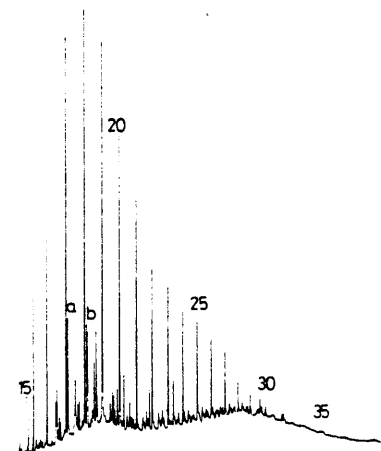
3060-3075m



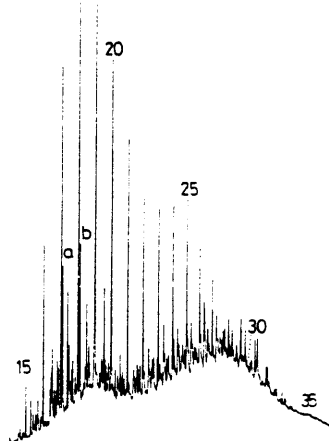
3075-3090m A



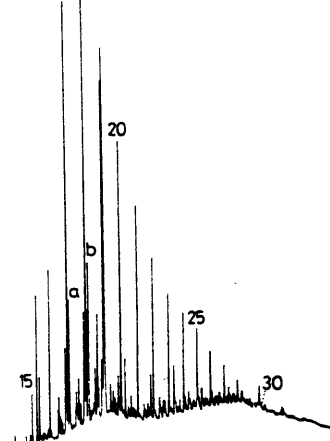
3090-3105m



4203-4218m A



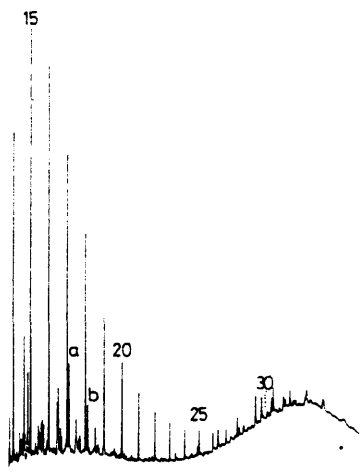
4233-4248m A



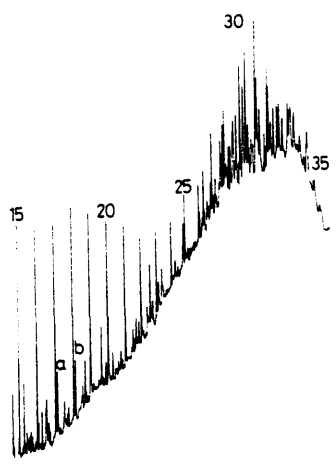
4266-4281m A

a = PRISTANE

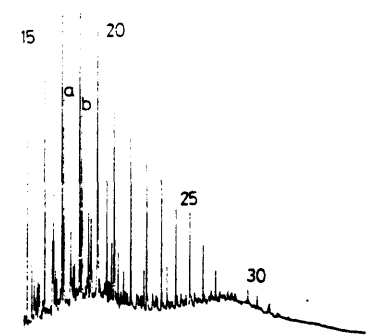
CARBON NUMBERS OF NORMAL PARAFFINS INDICATED BY DOTTED LINES



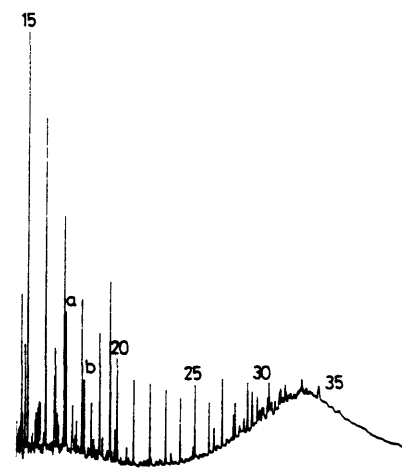
4296-4311m A



4296-4311m C



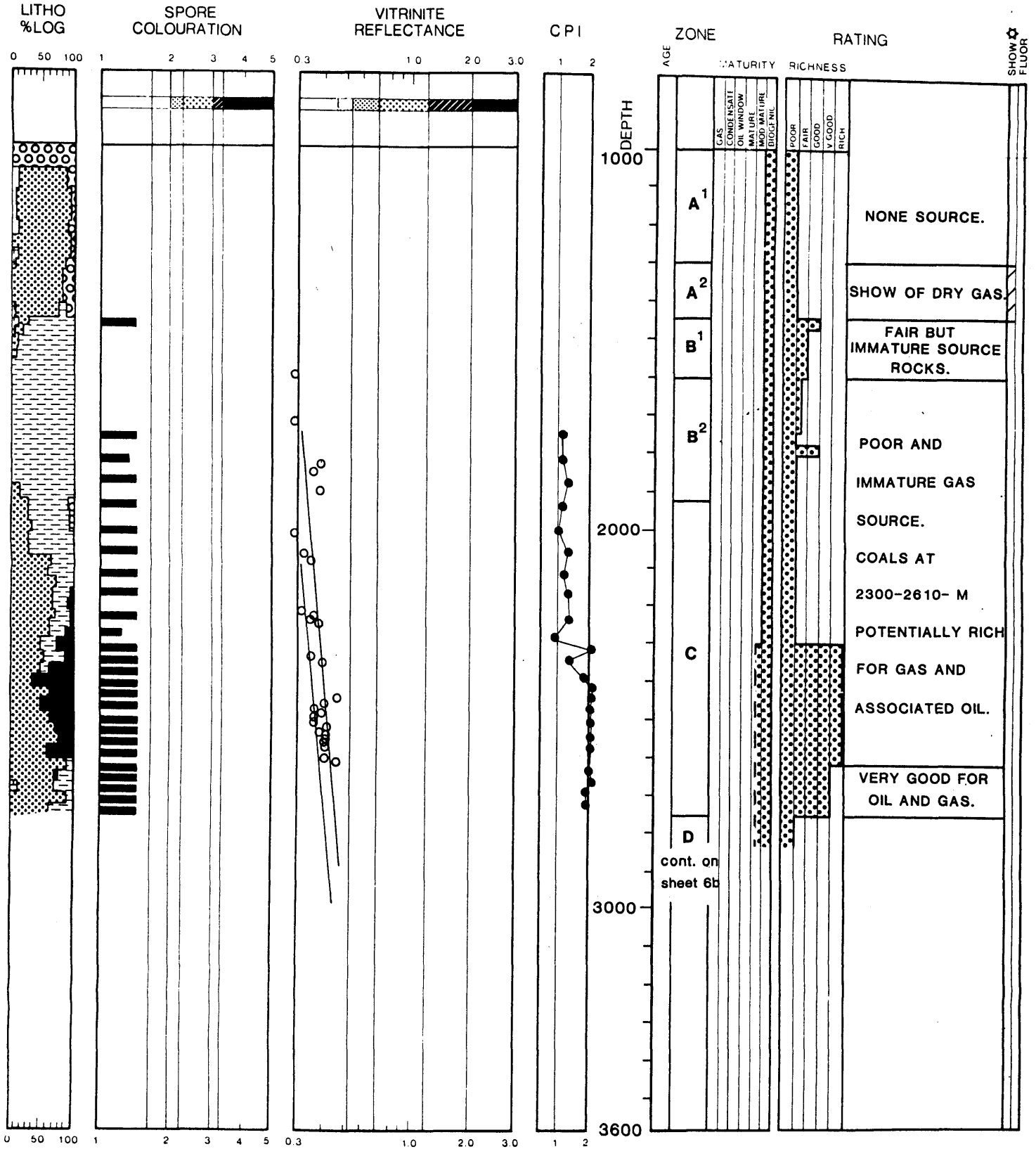
4326-4341m A



4356-4371m

PRISTANE
= PHYTANE

CARBON NUMBERS OF NORMAL PARAFFINS INDICATED (20 = nC₂₀)



LITHOLOGIES

- CARBONATE
- SAND
- SHALE/MUDSTONE
- COAL
- SILTSTONE
- IGNEOUS
- EVAPORITE
- LOST CIRCULATION MATERIAL

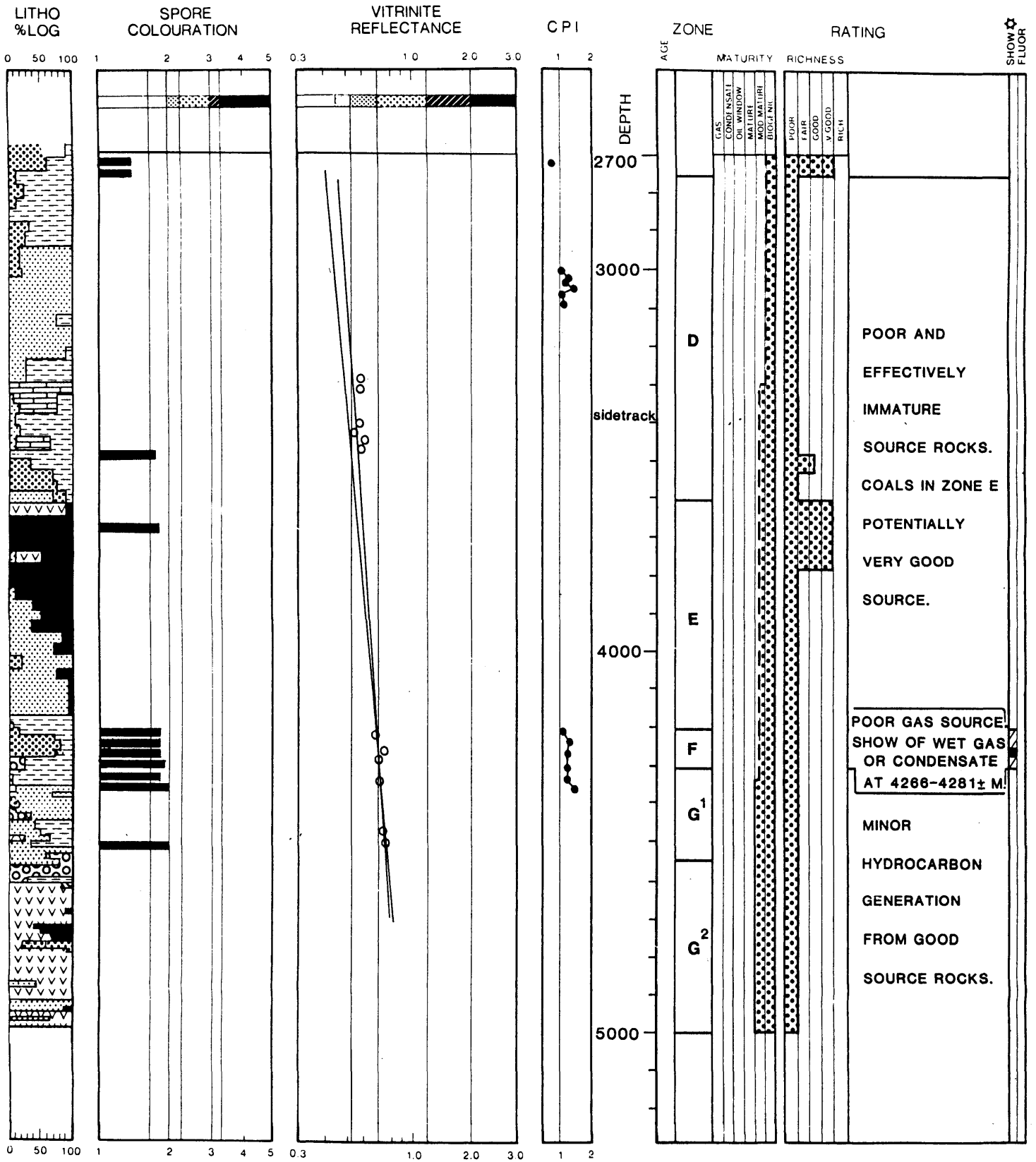
- RECALCULATED VALUE
- CORE
- PREFERRED TREND

CPI CARBON PREFERENCE INDEX

SPORE COLOURATION

2 ⁻	2	2 to 2 ⁺	3	3 ⁺
IMMATURE	MARG. MATURE	MATURE	OIL WINDOW	COND. EOMETA
	0.53	0.7	1.2	2.0
REFLECTIVITY				

☆ GEOCHEMICAL



LITHOLOGIES

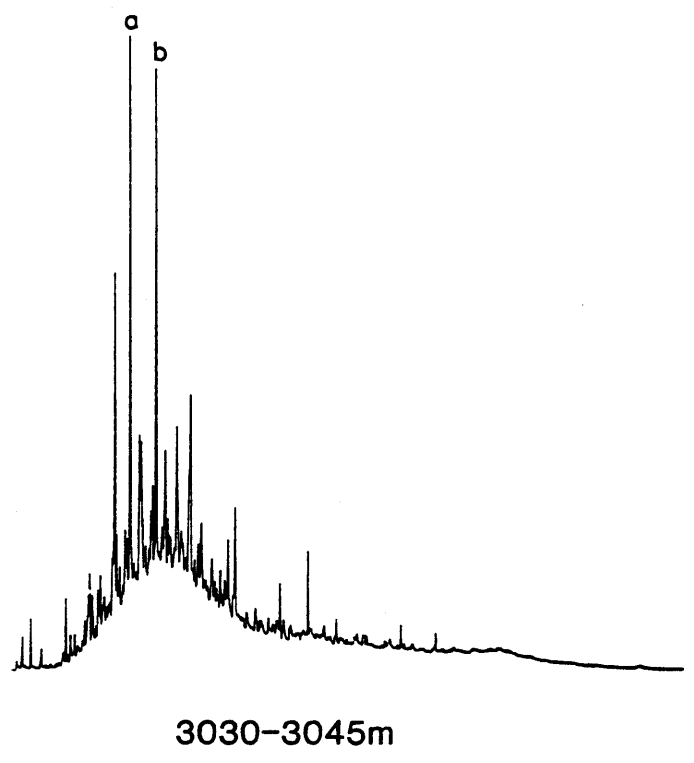
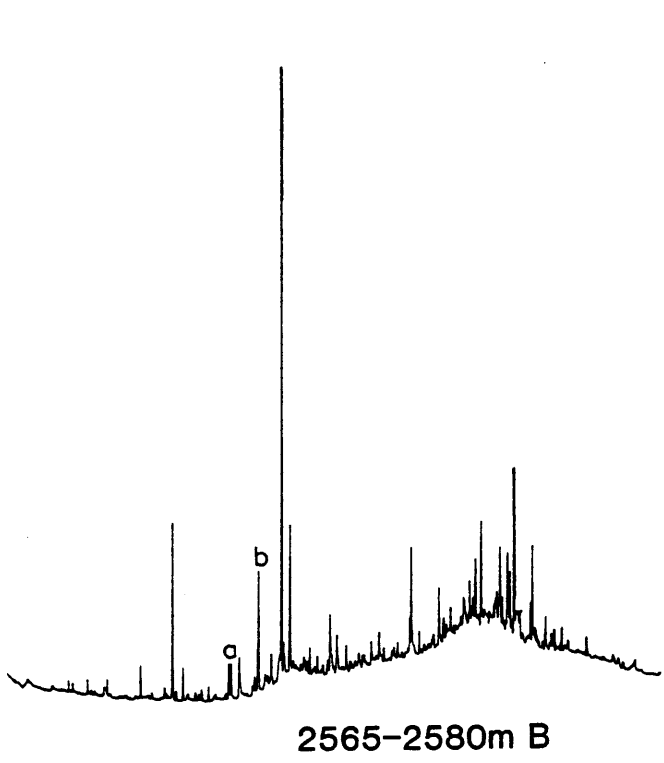
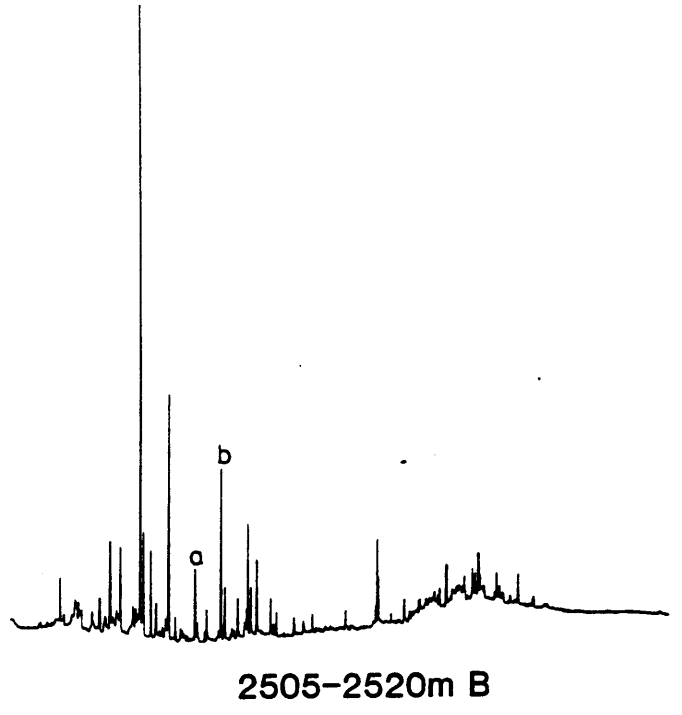
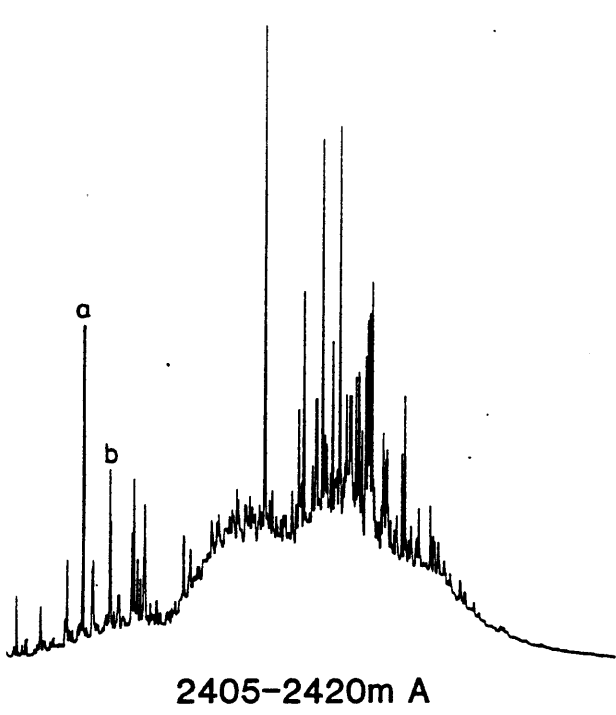
- CARBONATE
- SHALE/MUDSTONE
- SILTSTONE
- EVAPORITE
- LOST CIRCULATION MATERIAL
- SAND
- COAL
- IGNEOUS

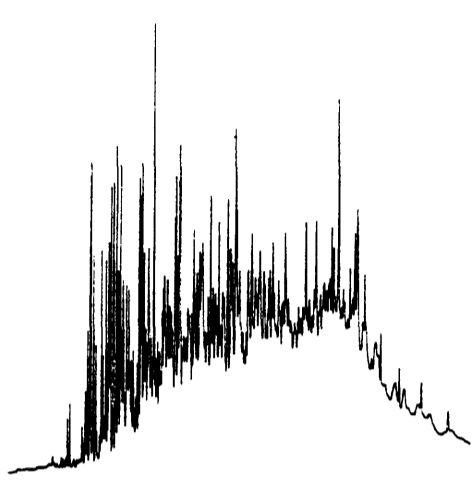
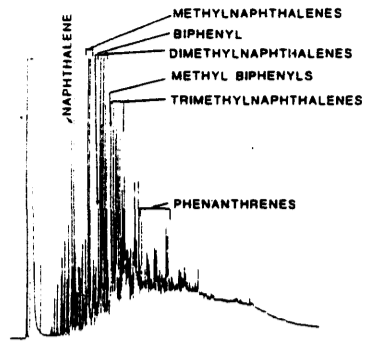
- RECALCULATED VALUE
- CORE
- PREFERRED TREND

CPI CARBON PREFERENCE INDEX

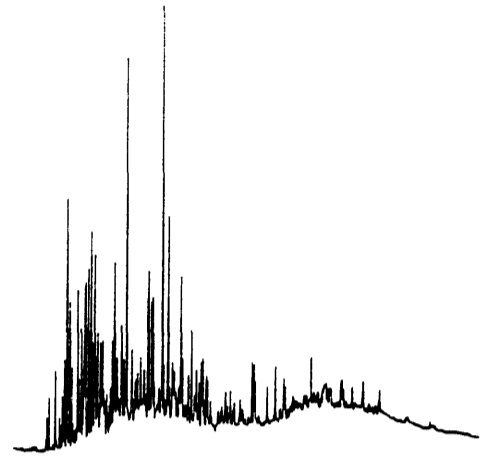
SPORE COLOURATION					
2-	2	2 to 2+	3	3+	
IMMATURE	MARG. MATURE	MATURE	OIL WINDOW	COND.	EOMETA
REFLECTIVITY					
	0.53	0.7	1.2	2.0	

☆ GEOCHEMICAL

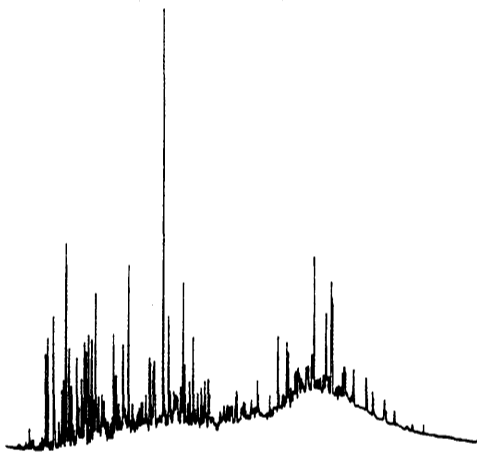




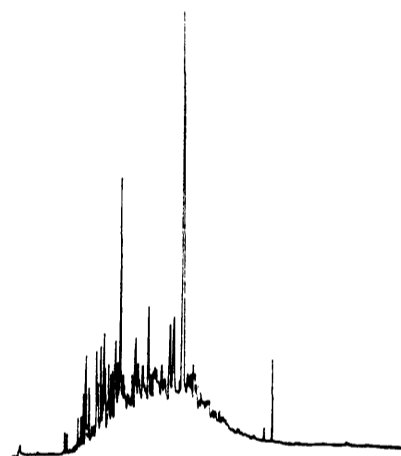
2405-2420m A



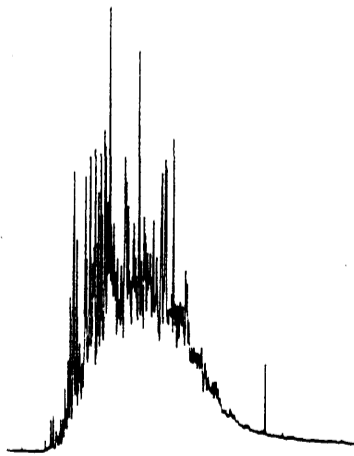
2505-2520m B



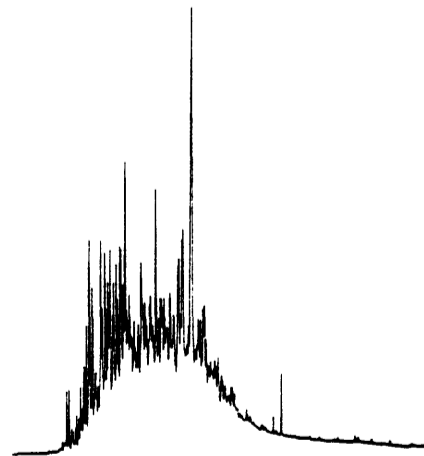
2565-2580m B



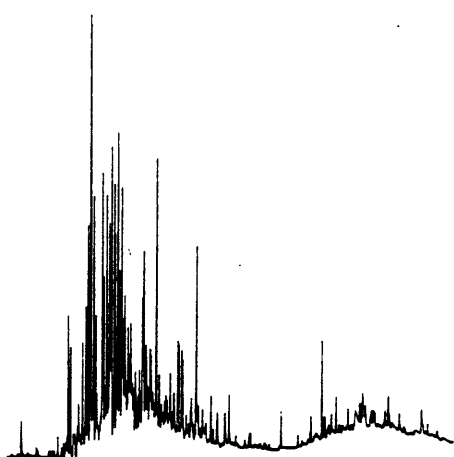
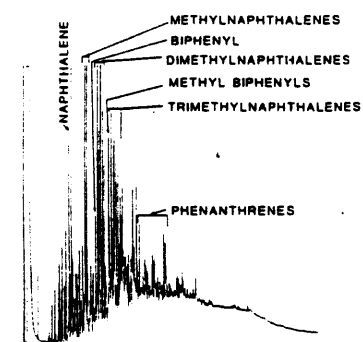
3030-3045m



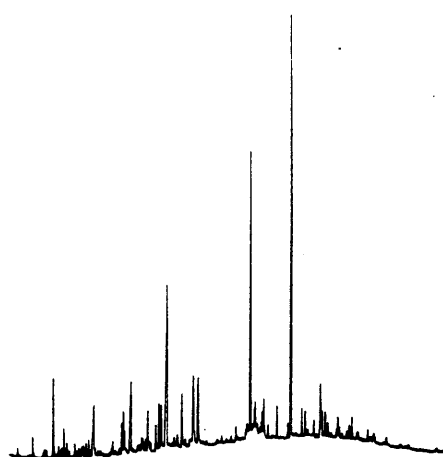
3060-3075m



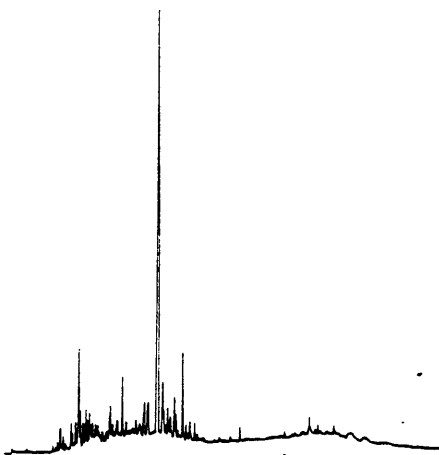
3090-3105m



4296-4311m A



4296-4311m C



4356-4371m

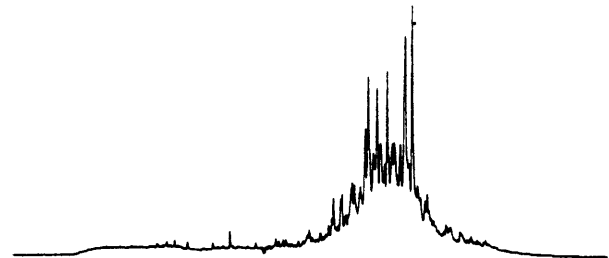
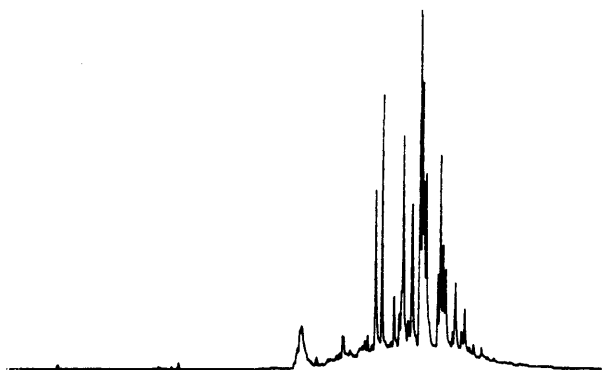
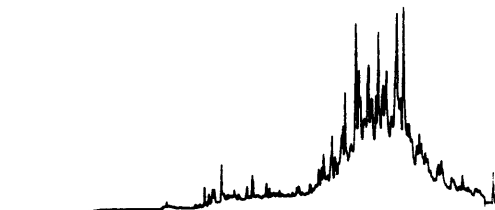
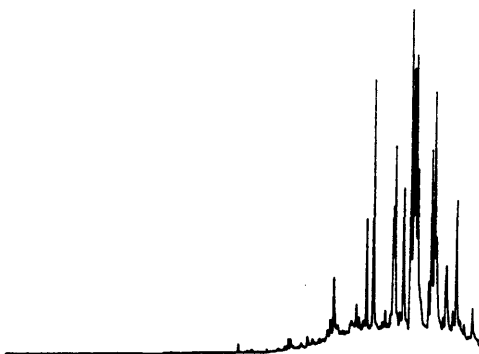
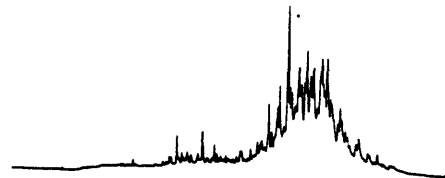
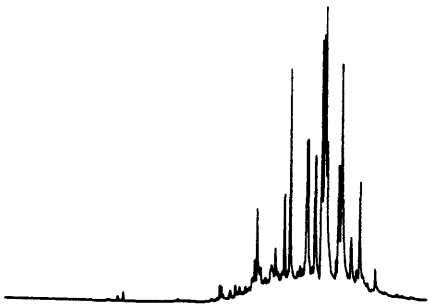
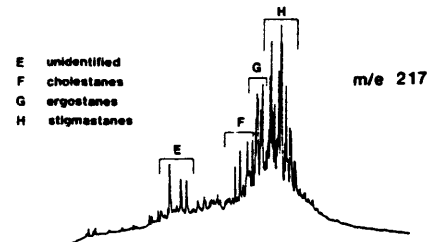
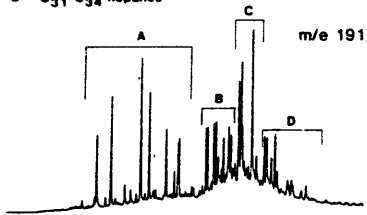
FIGURE 9a

MASSFRAGMENTOGRAMS

WELL 6507/12-2

TERPANES & STERANES

- A tricyclic terpanes
- C₂₇-28 tris norhopanes
- 17 α & 17 β norhopanes
- 17 α H C₃₀ norhopane
- D C₃₁-C₃₄ hopanes



2565-2580m B

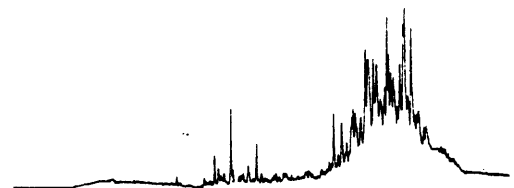
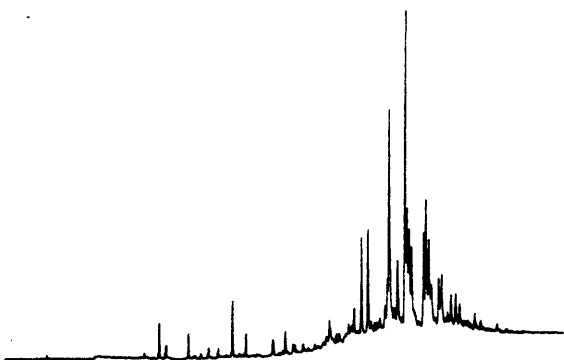
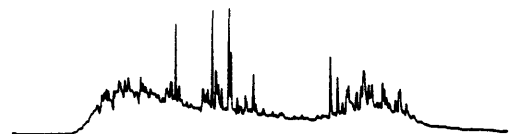
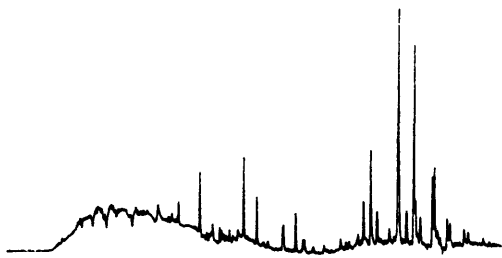
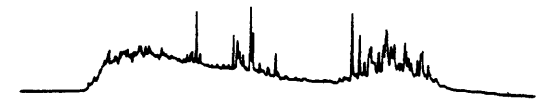
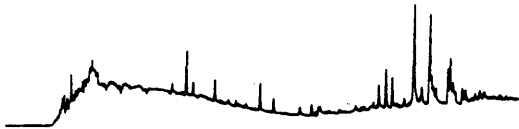
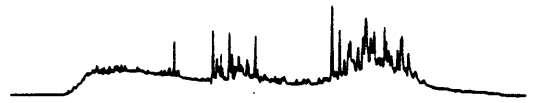
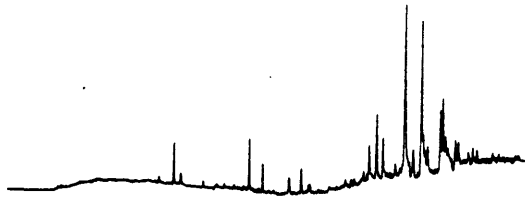
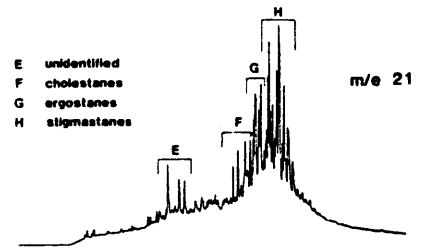
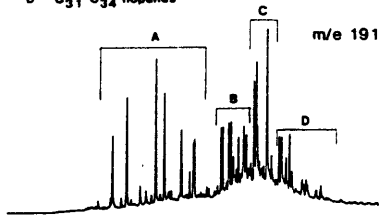
FIGURE 9b

MASSFRAGMENTOGRAMS

WELL 6507/12-2

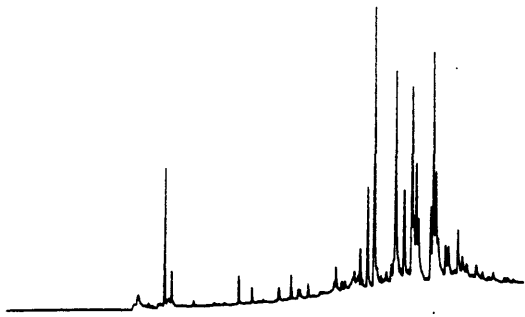
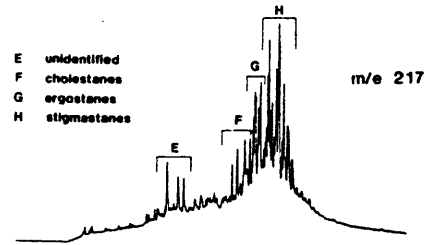
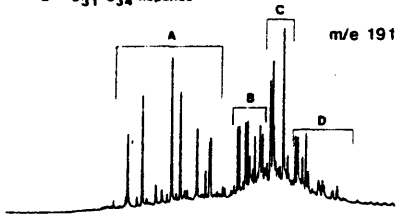
TERPANES & STERANES

- A tricyclic terpanes
- B C₂₇₋₂₈ tris norhopanes
- C 17 α & 17 β norhopanes
- D C_{31-C34} hopanes



4296-4311m

- A tricyclic terpanes
- B C₂₇-28 tris norhopanes
- C 17 α & 17 β norhopanes
- D C₃₁-C₃₄ hopanes

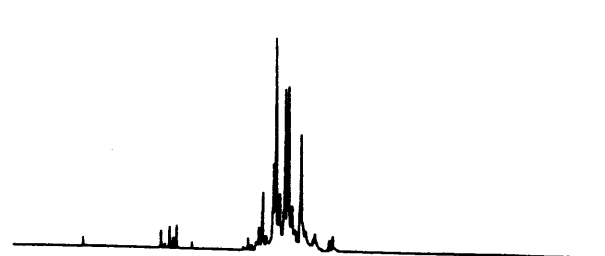
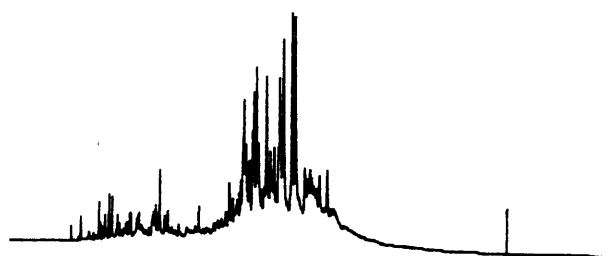


4356-4371m

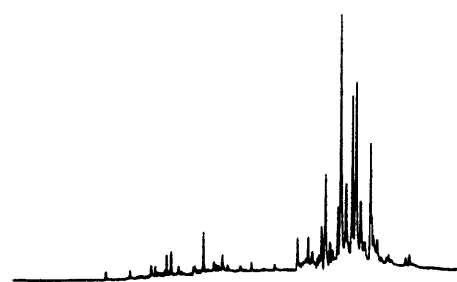
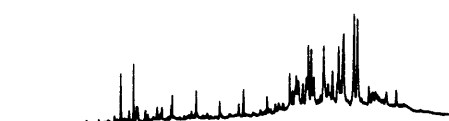
m/e239

STERANES

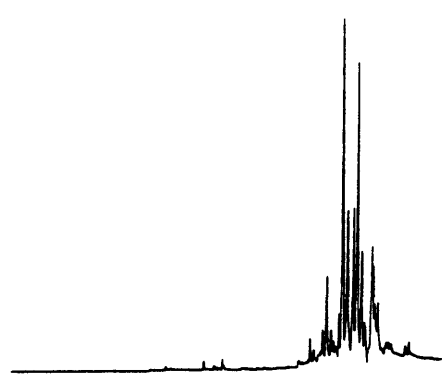
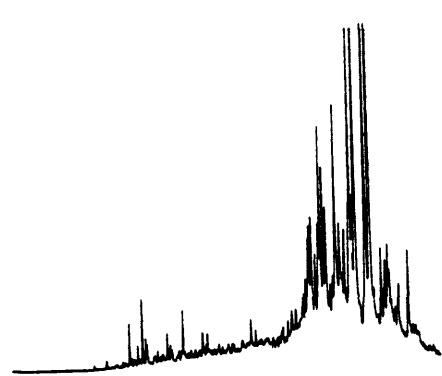
m/e253



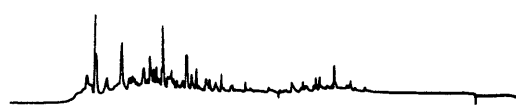
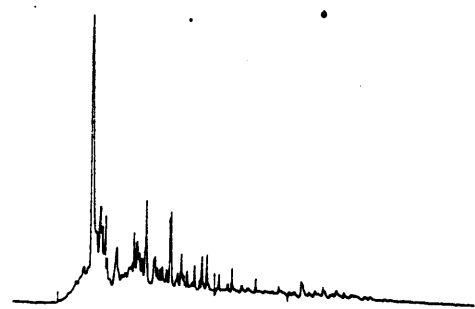
2405-2420m A



2505-2520m B



2565-2580m B



3060-3075m

FIGURE 9e

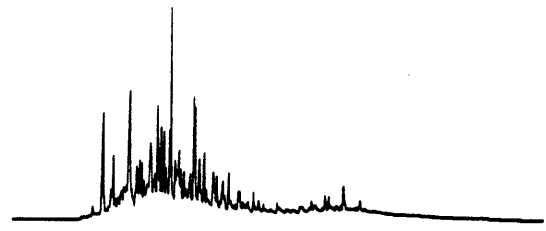
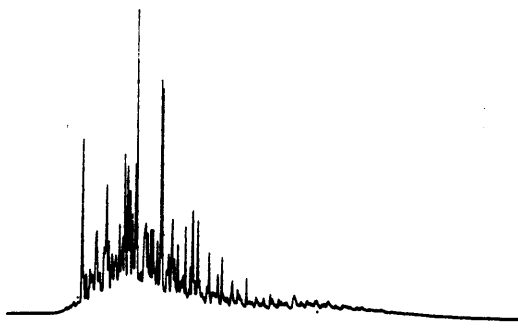
MASSFRAGMENTOGRAMS

WELL 6507/12-2

m/e239

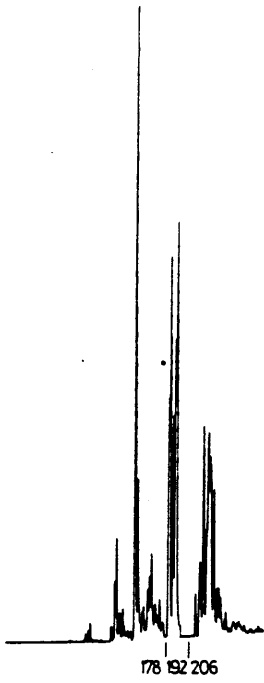
STERANES

m/e253

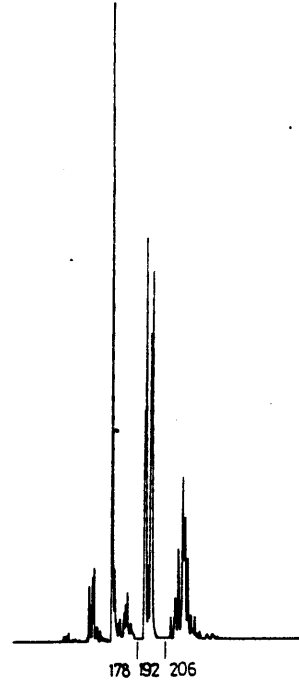


3090-3105m

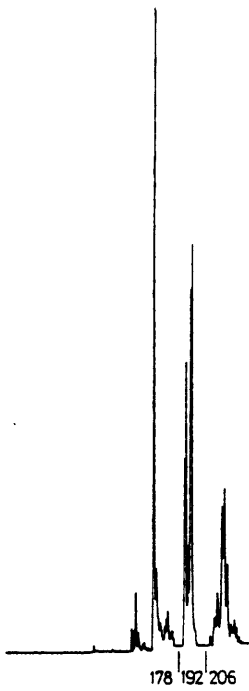
PHENANTHRENES



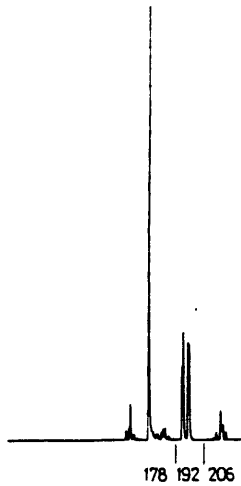
2405-2420m A



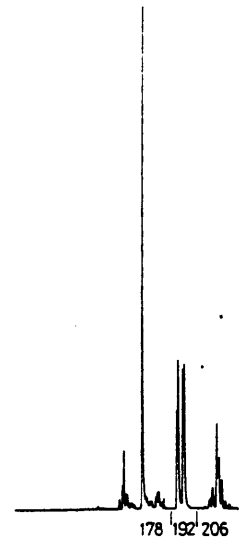
2505-2520m



2565-2580m B



4296-4311m A



4356-4371m