DRESSER NORWAY A.S.
MAGCOBAR

Statoil - 7120/7-3

MATERIAL CONSUPTIONS BY INTERVAL

Depth 281 - 331 m
36" Hole - 30"casing

PRODUCT	UNIT SIZE	UNIT COST	COST
Barite	23 M/T	$ 148.90	$ 3424.70
Bentonite	37 M/T	$ 405.56	$ 15005.72
Caustic	11 25 kg/sx	$ 22.05	$ 242.55
Soda Ash	11 50 kg/sx	$ 22.81	$ 250.91
			$ 18923.88

Total cost: $ 18923.88
Per meter : $ 378.48
Meters drilled: 50

DRESSER NORWAY A.S.
MAGCOBAR

Statoil - 7120/7-3

MATERIAL CONSUMPTION BY INTERVAL

Depth 331 - 715
26" Hole - 20" Casing

PRODUCT	UNIT SIZE	UNIT COST	COST
Barite	317 M/T	$ 148.90	$ 47201.30
Bentonite	38 M/T	$ 405.56	$ 15411.28
Caustic	67 25 kg/sx	$ 22.05	$ 1477.35
Soda Ash	10 50 kg/sx	$ 22.81	$ 228.10
Spersene	60 25 kg/sx	$ 21.90	$ 1314.00
Unical	2 25 kg/sx	$ 21.90	$ 43.80
Celpol Reg.	11 25 kg/sx	$ 198.50	$ 2183.50
Gyp	10 40 kg/sx	$ 10.90	$ 109.00
			$ 67968.33

Total cost: $ 67968.33
Per meter: $ 177.00
Meters drelled: 384

DRESSER NORWAY A.S.
MAGCOBAR

Statoil 7120/7-3

MATERIAL CONSUMPTION BY INTERVAL

Depth 7115 - 1720 m
17½" Hole - 13 3/8 Casing

PRODUCT	UNIT SIZE	UNIT COST	COST
Barite	104 M/T	$ 148.90	$ 15 485.60
Bentonite	7 M/T	405.56	2 838.92
Bentonite (SK)	38 50 kg/sx	20.30	771.40
Unical	14 25 kg/sx	21.90	306.60
Sapp	8 50 kg/sx	22.81	182.48
Celpol (Reg.)	151 25 kg/sx	198.50	29 973.50
Celpol (SL)	142 25 kg/sx	208.00	29 536.00
Gyp	407 40 kg/sx	10.90	4 436.30
Xc-Polymer	20 25 kg/sx	397.20	7 944.00
Caustic	158 25 kg/sx	22.05	3 483.90
			$ 94 958.70

Total cost:	$ 94 958.70
Cost-per meter:	$ 94.49
Meters drilled:	1005

DRESSER NORWAY A.S.
MAGCOBAR

Statoil - 7120/73

MATERIAL CONSUMPTION BY INTERVAL 12 1/4"

Depth 1720 m - 2625 m
12 1/4" Hole - 9 5/8" Casing

PRODUCT	UNIT COST $	UNIT $ SIZE	COST $
Barite (bulk)	$ 148.90	433 - M/T	$ 64,473.70
Bentonite (bulk)	405.56	21 - M/T	8,516.76
Caustic Soda	22.05	242 - 25 kg/sx	5,336.10
Soda Ash	22.81	12 - 50 kg/sx	273.72
Sperence	21.90	373 - 25 kg/sx	8,168.70
XP - 20	33.76	105 - 50 £ /sx	3,544.80
Unical	21.90	158 - 25 kg/sx	3,460.20
Gypsum	10.90	464 - 40 kg/sx	5,057.60
Celpol Regular	198.50	134 - 25 kg/sx	26,599.00
Celpol S.L.	208.00	38 - 25 kg/sx	7,904.00
Sapp	22.81	12 - 50 kg/sx	273.72
XCD Polymer	397.20	3 - 25 kg/sx	1,192.60
Ligcon	33.76	146 - 25 kg/sx	4,928.96
Drispac S.L.	208.00	4 - 25 kg/sx	832.00
Bentonite (SX)	23.51	38 - 25 kg/sx	893.38
Milpolymer 302	397.20	14 - 25 kg/sx	5,560,80

Total cost (interval 1 1/4"): $ 147,016.04
Meters drilled : 1720 m - 2625 m = 905 m
Cost per meter : $ 162,45

DRESSER NORWAY A.S.
MAGCOBAR
Statoil - 7120/7-3

MATERIALS CONSUMPTION BY 8½" HOLE INTERVAL

Depth 2625 - 3062 m
8 i" Hole

PRODUCT	UNIT SIZE	UNITS	$ UNIT COST	$ COST
Barite	M/T	110	$ 148.90	$ 16,379.00
Bentonite	M/T	14	405.56	5,677.84
Caustic	25 kg/sx	30	22.05	661.50
Soda Ash	50 kg/sx	16	22.81	346.96
Bicarb.	50 kg/sx	2	22.81	45.62
Sapp	50 kg/sx	9	22.81	205.29
Celpol. Reg.	25 kg/sx	66	198.50	13,101.00
Celpol. SL	25 kg/sx	19	208.00	3,952.00
XP-20	50 lbs	166	33.76	5,604.16
Spersene	25 kg/sx	94	21.90	2,058.60
XCD - Polymer	25 kg/sx	1	397.20	397.20
				$ 48,447.17

Total cost: $ 48,447.17
Cost per meters : $ 110.86
Meter drilled: 437 m

RFT PRESSURE RECORDS.

Depth mRKB	Formation pressure kPa	gm/cc	Comments
2887.0	-	-	Tight
2888.0	-	-	Tight
2889.5	31472.5	1.12	Low permeability
2890.0	31500.1	1.12	Fair
2891 .0	31486.3	1.11	Unstable, low perm
2892.0	31520.8	1.11	Very low permeability
2899.0	-	-	Tight
2901 .7	-	-	Tight
2907.0	-	-	Tight
2910.0	-	-	Tight
2916.0	-	-	Tight
2917.0	-	-	Tight
2918.5	-	-	Tight
2928.0	31893.1	1.11	Fair permeability
2937.0	-	-	Tight
2937.5	-	-	Tight
2973.5	32375.7	1.11	Good permeability
2991.8	-	-	Tight
2998.5	-	-	Tight

Segregated sample at 2889.5 mRKB

Opened 2 3/4 gallon chamber offshore, contained 3800 cc filtrate/fluid.
1 gallon chamber sent ashore for transfer/analysis.

1 GALLON CHAMBER ***CONTENT:***

DISSOLVED SOLIDS:

CATIONS	mg/1	me/1
Sodium,Na(calc)	**9.269**	403
Calcium,Ca	135	7
Magnesium,Mg	4,6	-
Barium,Ba	0,7	-
Iron,Fe	1.5	-
Strontium	5,9	-
Potassium	739	19
ANIONS		
Chloride,Cl	10.650	300
Sulfate,SO_4	5.500	115
Carbonate,CO_3	0	-
Bicarbonate HC03	867	14
Hydroxide	0	-
Total Dissolved Solids(calc.)	**27.173** ==========	mg/1

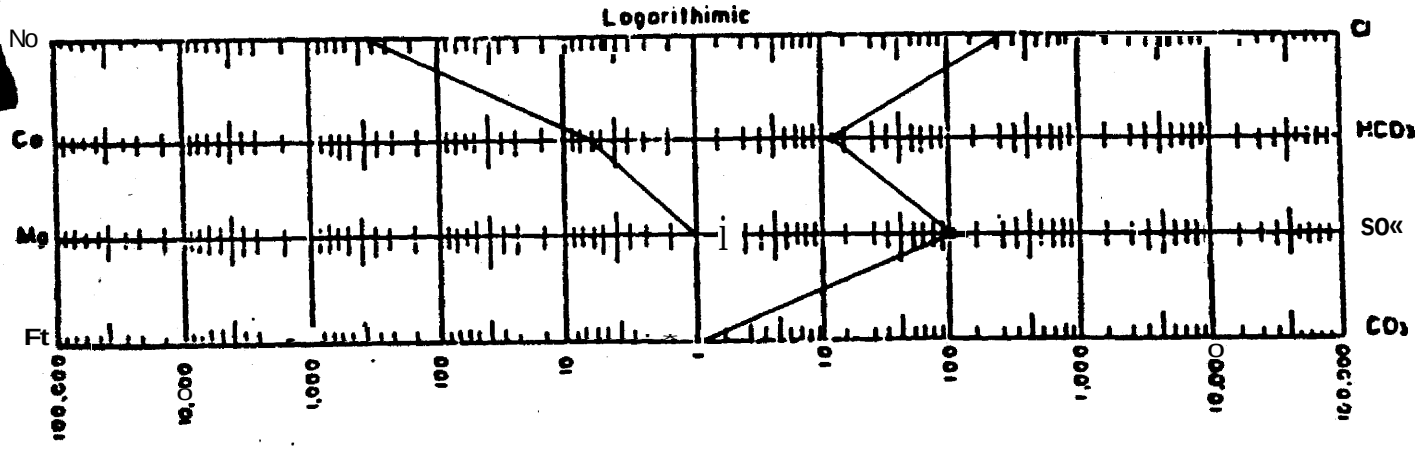
OTHER PROPERTIES:

pH	7,46	20°C
Specific Grav. 60/60 F	**1,021**	
Resistivity(ohm-meters)	0,280	20°C
Sulfide as H_2S mg/1		
Suspended solids mg/1	735,3	

REMARKS & RECOMMENDATIONS

Analyses by: T.F. / **A.M.I.L.**

WATER PATTERNS _____ me/1



statoil
Den norske stats oljeselskap a.s

Classification

Requested by

Steinar Westre

Subtitle

Co-workers

H. Irwin, E. Berge, A.E. Gilje, E.M. Carlsen

Title

U-408

SOURCE ROCK EVALUATION OF STATOIL 7120/7-3 WELL

STATOIL
EXPLORATION & PRODUCTION
LABORATORY

BY

KJELL ØYGARD

MARCH -85.

LAB 85.106

Prepared

19.03.85 Kjell Øygard

Approved

Derek South

Derek South

9.03.21 A

INTRODUCTION

This report presents a geochemical evaluation of well 7120/7-3, (see location map) which is terminated in the T-2 Formation at 3064 m and is recorded dry. The aims of the project were to identify and evaluate potential source rock intervals and to document shows of hydrocarbons. The interval between 1350 m and 3060 m was investigated according to the following analytical programme.

TABLE I. ANALYTICAL PROGRAMME

	CUTTINGS	SWC	CORE	TOTAL
Headspace and occluded gas	37			37
Total organic carbon	10	43	1	54
Rock eval pyrolyse	10	43	1	54
Pyrolysis GC of kerogen	9			9 t
Vitrinite reflectance		20		20 } IKU
Kerogen description and TAI		20		20 }
Extraction	10		6	16
MPLC and GC	10		1	11

Most of the analyses were carried out at Statoils laboratory.The vitrinite reflectance and kerogen description were done at IKU.

Maturity was assessed using vitrinite reflectance, TAI, Tmax, headspace and occluded gas amounts and extraction data. Table II defines the interpretation of maturity used in this report.

TABLE II. INTERPRETATION OF MATURITY PARAMETERS.

MATURITY	PARAMETERS		
	Ro.	TAI	Tmax
Marginal mature	0.45	2-	430
Early oil generation	0.50	2	435(= Signif. mature)
Peak oil generation	0.75	2	
Condensate window	1.00	3-	450
Dry gas	2.00	3	

Source rock potential is based on TOC, rock eval pyrolysis, visual kerogen analysis, pyrolysis-GC and gas chromatograms of saturate components. Table III defines the interpretation of source rock potential used in this report.

TABLE III. INTERPRETATION OF SOURCE POTENTIAL PARAMETERS.

QUALITY	TOC	S1+S2	HC(ppm)
Poor source rock	0.5%	1	100
Fair source rock	0.5- 1%	1- 5	100-250
Medium good source rock	1- 2%	5-10	
Good source rock	2- 4%	10-25	250-500
Very good source rock	4-12%	25-50	>500
Oil shale or Coal	>12%	>50	

Migrated hydrocarbons were identified using headspace and occluded gas results, extraction data, and rock eval pyrolysis data.

- LITHOLOGY AND TOTAL ORGANIC CARBON MEASUREMENTS -

- TABLE 1a - CANNED CUTTINGS -

SAMPLE	DEPTH		TOC	LITHOLOGY
S125	1470	m	0.49	90% CLYST: pa gry-pa grn, med gry, gry brn wh. sft-frm, occ mod.hd non calc blky, slty-v.silty in part 10% SST: lt gry-wh, vfn, grding to sltst fri, light, calc glauc occ lse clr gtz, cvs v.cvs. tr: DOL, PYR, GLAU, CALCITE
S130	1710 •	m	0.73	100% CLYST: med dk-gry, olv gn blky-subfiss shaley e tr: DOL/LST A/A
S133	1860	m	0.97	80% CLYST/SH: med gry sl vslty + RM-mod HD,blky-subfiss non-si calc in most slty parts, pyr occ glauc, micromica tr: DOL/LST 10% SLTST: lt gry, mod hd, si-mod calc occ w/blk org specks ,grding to clyst/sh tr: DOL/LST PYR 10% SST: clr wh qzt, fn-crs, subang, mod hd-fri, mod silica and calc tr: PYR as nodules and diss
S137	2055	m	1.13	100% CLYST: med gry ,occ dk gry hd-mod hd blky subfiss non calc, micromic, pyr in part occ sl shly and dk gry tr: LST

WELL 7120/7-3

SAMPLE	DEPTH		TOC	LITHOLOGY
S140	2190	m	1.29	90% CLYST: med-dk gry,occ dk brngry, mod hd-hd, non calc micromic, pyr,blky, subfiss sl slty tr: brn-buff,hd, occ arg 10% brn-buff,hd, occ arg occ sucrosic tr: PYR
S142	2265	m	2.40	100% CLYST/SLTST: med dk-gry, dk gry, dk brn, occ lt gry mod hd-hd, non calc, micromic, pyr blky, subfiss grong to sltst,occ tr of orange tr: SD, PYR
S146	2460	m	2.08	100% CLYST/SLTST: brnish gry, med dk-gry, occ lt gry, occ clr-wh in most slty parts, mod hd-hd,micromic blky, occ subfiss, sl calc calc in most slty parts, occ carb tr: LST, PYR
S149	2580	m	2.42	100% CLYST: med-dk brn, dk brn g gry, blky subfiss, frm, occ mod hd, shaley, pyritic, sl carb, mod calc, slty tr: LST, SST, PYR
S152	2715	m	1.46	100% SH/CLYST: red brn med gry-stky blky, frm-mod hd, micromic non cal tr: LST/DOL SD PYR
S155	2850	m	5.65	95% CLYST: dk brn gry, frm-mod hd, blky-brit brk, blky-subfiss, Sl slty-slty, non calc, sl micromic 5% CLYST: slty, occ sl sdy, lt-med gry, mod hd, brit brk non calc, occ grding to sltst tr: LST, PYR NODS

- LITHOLOGY AND TOTAL ORGANIC CARBON MEASUREMENTS -

- TABLE 1b - SIDEWALL CORES -

SAMPLE	DEPTH		TOC	LITHOLOGY
S80	1350	m	0.97	CLYST: dk gry-drk brn gry,frm sub fiss in past. v.slty s/micromic, non calc
S81	1387	m	0.94	CLYST: olv gry-v.pagn gry,sft, sl waxy, non calc
S82	1429	m	0.96	CLYST: med- dk gry, dk benish gry, frm, blky, slty,pyrite (diss), non calc
S83	1495	m	0.99	CLYST: with sltst grding to v f f sst streaks med gry, frm, with sit/sst pa gry wh, vfn, fri,sub ang-sub and, glau non calc s/micromic
S84	1557	m	0.85	CLYST: dk gry-blk, dk brn,fiss, frm, sl slty, sl calc, locally mod calc.
S85	1600	m	1.18	CLYST: medd gry,dk brnish gry, sl sub fiss, wh-pa gry, slty streaks , sl calc-mod calc.
S86	1650	m	1.40	CLYST: dk benish gry,sft-frm sl sub fiss, v. sl micromic non calc
S87	1707	m	0.70	CLYST: dk brnish gry, frm-sft,
S88	1820	m	1.39	CLYST: med gry-dk gry, slty, frm-med hd, pyritic sl-mod calc occ fiss.
S89	1860.5	m	1.27	CLYST: slty, pa gry,-med gry frm ,sl sub fiss micromic pyr, sl calc.

WELL 7120/7-3

SAMPLE	DEPTH	TOC	LITHOLOGY
S90	1901 m	1.34	CLYST: med-dk gry, sl frm, massive sl slty, v.micromic sl pyr non-sl calc.
S91	1954 m	1.10	CLYST: med gry, frm, sl subfiss micromic, sl calc.
S92	2002.5 m	1.16	CLYST: pa-med gry, frm, sl slty sl sub fiss, sl calc.
S93	2055 m	1.35	SHL: dk gry, frm, massive to sl sub fiss, non calc, v.sl micromic.
S94	2111 m	0.63	SLTY SST: pa gry -pa brn gry, frm, sl micromic, mod calc
S95	2138 m	0.69	SLTY CLYST: lt-med brn gry, frm, mostly frm, med calc, sl micromic.
S96	2178 m	3.25	CLYST/SHL: predom. med gry-pa gry in part, frm-hd,micromic, vsl calc,tr slt.
S97	2215,5 m	4.56	CLYST: med gry-dk gry, sl shly in part occ mod gry, frm-mod hd, blky, sl calc, sl micromic, sl slty in part.
S98	2275 m	3.50	CLYST: dk gry-dk brn gry, frm massiv ,mod micromic, mod hd mod calc.
S99	2308.5 m	2.66	CLYST: finely banded light brn gry and med-dk gry, sl sub fiss, sl slty, micromic med calc.
S100	2341.5 m	3.23	CLYST: med-dk gry brn, massive, frm, non-v.sl calc.
S101	2417 m	2.58	CLYST: dk gry, brnish, frm-mod hd massive, mod calc
S102	2463 m	3.03	CLYST: dk brnish gry, frm, slty few strks sst calc cmtd, micromic.

WELL 7120/7-3

SAMPLE	DEPTH		TOC	LITHOLOGY
S103	2513	m	3.04	SLTY/CLYST: med dk ben grey, frm- mod hd, subfiss- fiss in part, micromic, mod-sl calc.
S104	2556	m	2.06	CLYST: v.dk brn blk, shly, frm, subfiss-fiss, sl micromic, sl calc.
S105	2607	m	1.62	SHL/CLYST: pred med gry with pa gry streaks, splintery, subfiss frm-mod hd, sl slty in part non-sl calc
S106	2648	m	0.92	CLYST: dk gry, blky, mod hd, non sl-calc
S107	2698	m	1.14	SHL/CLYST: dk gry, hd, subfiss, sl calc.
S108	2751	m	0.78	CLYST: v calc, lt-med gry, hd
S109	2755	m	5.65	SHL: gry blk, subfiss-fiss hd, non-sl calc.
sno	2758	m	4.87	SHL: brnish blk, subfiss-fiss hd, micromic, noncalc.
S111	2780	m	4.61	SHL: A/A
S112	2800	m	3.20	SHL: A/A
S113	2812	m	4.23	SHL: A/A, but more gry blk
S114	2828	m	6.27	SHL: A/A
S115	2830	m	6.13	SHL: A/A, no vis pyr
S116	2841	m	10.91	SHL: A/A, w/pyr in thin streaks
S117	2853	m	11.35	SHL: A/A
S118	2859	m	11.49	SHL: A/A
S119	2924	m	1.07	SST: slty-argyl med gry, fn subang-subrnd poor srdt, silica cmntd

WELL 7120/7-3

SAMPLE	DEPTH		TOC	LITHOLOGY
S120	2934	m	1.10	CLYST: slty-sdy,dk gry, mod hd-hd non calc.
S121	2941	m	1.02	CLYST: A/A
S122	3055	m	1.88	CLYST: slty-sdy dk brnish gry, mod hd, non-si calc.

- LITHOLOGY AND TOTAL ORGANIC CARBON MEASUREMENTS -

- TABLE 1c - CORE SAMPLES -

SAMPLE	DEPTH		TOC	LITHOLOGY
S179	2885	m	0.63	95% CLYST: med-dk gry, sl slty blky-subfiss, hd sl calc occ mod calc, abun micromic abun pyr

TABLE 2 CONCENTRATION (u L GAS/KG ROCK) OF C1-C7 HYDROCARBONS.

DEPTH	C1	C2	C3	IC4	NC4	C5+	IC4/NC4	WETNESS
T5 1351-1498 M								
1395	6788	282	221	136	94	174	1.4	9.7
1425	7915	242	214	140	123	249	1.1	8.3
1470	20884	648	496	422	210	292	2.0	7.8
T4-4 1498-2090 M								
1515	13543	453	375	364	215	377	1.7	9.4
1560	26804	870	571	547	354	781	1.5	8.0
1620	13399	425	255	229	153	366	1.5	7.3
1665	18808	721	419	263	150	284	1.8	7.6
1710	13345	567	408	276	183	417	1.5	9.7
1770	13010	1179	817	415	202	684	2.1	16.7
1815	3511	502	373	182	108	224	1.7	24.9
1860	5812	543	417	213	130	280	1.6	18.3
1905	1281	363	514	240	145	328	1.7	49.6
1950	8509	960	577	189	132	218	1.4	17.9
1995	10476	1727	1059	210	153	225	1.4	23.1
2055	32080	4410	2302	230	168	125	1.4	18.1
T4-3 2090-2570 M								
2100	3369	570	920	154	145	133	1.1	34.7
2145	2859	831	977	187	179	159	1.0	43.2
2190	5071	1442	2030	289	342	225	.8	44.7
2235	804	1045	3727	538	772	474	.7	88.3
2265	27885	8643	11701	1332	1615	888	.8	45.5
2325	26468	8021	11910	1467	1968	1307	.7	46.9
2370	16455	4651	6496	1257	1084	624	1.2	45.0
2415	39646	17714	23717	4919	3341	1459	1.5	55.6
2460	17577	7383	10742	2078	1867	938	1.1	55.7
2490	2900	4968	14016	2967	3315	1799	.9	89.7
2535	38617	24019	46902	8715	14914	10956	.6	71.0

WELL 7120/7-3

DEPTH	C1	C2	C3	IC4	NC4	C5+	IC4/NC4	WETNESS
T4-2 2570 - 2679								
2580	27951	26055	57207	21418	29280	58246	.7	82.7
2625	2815	2486	9354	2284	5489	9335	.4	87.4
2670	8664	5860	5043	493	1214	911	.4	59.3
T4-1 2679-2754 M								
2715	11550	4379	1434	164	190	244	.9	34.8
T3-2 2754-2863 M								
2760	3864	6671	10370	2118	5791	6939	.4	86.6
2805	18314	32831	63969	15988	45078	53259	.4	89.6
2850	26827	44633	77889	16616	44338	40340	.4	87.2
T2 2889-3062 M								
2895	977	7373	19799	3926	16241	22755	.2	98.0
2955	915	968	2777	656	2303	6269	.3	88.0
3000	1786	1719	2790	639	2359	7956	.3	80.8
3060	2538	2063	4403	1056	3455	13998	.3	81.2

TABLE 3 DATA FROM ROCK EVAL PYROLYSE

DEPTH.	Sl	S2	S3	TOC	HI	OI	PP	PI	TMAX
T5 1351-1498 M									
1350	.04	.96		.97	98		1.0	.04	438
1387	.01	.44	.10	.94	46	10	.4	.02	446
1429	.32	1.09		.96	113		1.4	.23	431
1478	.06	.10	.35	.49	20	71	.2	.38	430
1495	.06	1.25	1.97	.99	126	198	1.3	.05	430
T4-4 1498-2090 M									
1557	.19	1.08	.05	.85	127	5	1.3	.15	429
1600	.18	1.50	.29	1.18	127	24	1.7	.11	438
1650	.14	1.31	.24	1.40	93	17	1.4	.10	438
1707	.15	.98	.16	.70	139	22	1.1	.13	446
1710	.08	.22	.30	.73	30	41	.3	.27	429
1820	.18	1.45		1.39	104		1.6	.11	439
1860	.08	.43	.10	.97	44	10	.5	.16	440
1860	.21	1.52		1.27	119		1.7	.12	437
1901	.20	1.80	.70	1.34	134	52	2.0	.10	439
1954	.13	1.32	.01	1.10	120		1.4	.09	443
2002	.08	1.19		1.16	102		1.3	.06	444
2055	.08	.38	.21	1.13	33	18	.5	.17	447
2055	.12	1.66	.26	1.35	122	19	1.8	.07	443
T4-3 2090-2570 M									
2111	.09	.81		.63	128		.9	.10	457
2138	.25	.69	.02	.69	100	2	.9	.27	430
2178	.32	3.98	.40	3.25	122	12	4.3	.07	446
2190	.10	.56	.17	1.29	43	13	.7	.15	446
2215	.45	4.61	.70	4.56	101	15	5.1	.09	445
2265	.22	1.28	.78	2.40	53	32	1.5	.15	446
2275	.42	3.93	1.09	3.50	112	31	4.3	.10	448
2308	.26	1.58	.63	2.66	59	23	1.8	.14	446

WELL 7120/7-3

DEPTH	S1	S2	S3	TOC	HI	OI	PP	PI	TMAX
2341	.34	2.58	2.18	3.23	79	67	2.9	.12	445
2417	.20	1.62	2.84	2.58	62	110.	1.8	.11	450
2460	.23	1.31	.32	2.08	62	15	1.5	.15	447
2463	.37	2.37	1.38	3.03	78	45	2.7	.14	448
2513	.44	1.86	1.90	3.04	61	62	2.3	.19	451
2566	.43	1.41	.43	2.05	68	20	1.8	.23	453
T4-2 2570 - 2679									
2580	.93	2.65	.15	2.42	109	6	3.6	.26	448
2607	.23	1.01		1.62	62		1.2	.19	454
2648	.07	.31	.10	.92	33	10	.4	.18	468
T4-1 2679-2754 M									
2698	.06	.43		1.14	37		.5	.12	476
2715	.15	.50	.20	1.46	34	13	.6	.23	469
2751	.11	.29	.57	.78	37	73	.4	.27	453
T3-2 2754-2863 M									
2755	1.78	5.55	.21	5.65	98	3	7.3	.24	458
2758	1.87	5.51	.21	4.87	113	4	7.4	.25	456
2780	2.68	5.22	.36	4.61	113	7	7.9	.34	459
2800	2.35	3.46	.58	3.20	108	18	5.8	.40	457
2812	2.37	3.79	.64	4.23	89	15	6.2	.38	458
2828	3.26	5.46	.87	6.27	87	13	8.7	.37	463
2830	3.54	6.30	.99	6.13	102	16	9.8	.36	462
2841	4.35	8.74	.18	10.91	80	1	13.1	.33	465
2850	1.70	3.60	.06	5.65	63	1	5.3	.32	469
2853	4.51	10.24	.89	11.35	90	7	14.7	.31	465
2859	3.66	14.49	.97	11.49	126	8	18.1	.20	468
T3-1 2863-2889 M									
2885	2.33	.77	7.60	.63	122	1206	3.1	.75	390
T2 2889-3062 M									
2924	.10	1.18	.69	1.07	110	64	1.3	.08	466
2934	.10	.98	.32	1.10	89	29	1.1	.09	458
2941	.11	.58	.83	1.02	56	81	.7	.16	457
3055	.63	1.70	1.25	1.88	90	66	2.3	.27	458

WELL 7120/7-3

- TABLE 4 - AMOUNT OF EOM AND CHROMATOGRAPHIC FRACTIONS -

- (IN PPM OF ROCK)

DEPTH	EOM	HYDROCARBONS SAT	ARO	HC	NON.HC	TOC
T5 1351-1498 M						
1470	163	66	11	77	87	.49
T4-4 1498-2090 M						
1710	718	487	95	582	136	.73
1860	102	63	17	80	22	.97
2055	541	388	50	438	103	1.13
T4-3 20.90-2570 M						
2190	344	83	59	142	202	1.29
2265	567	121	299	420	146	2.40
2460	276	58	112	170	107	2.08
T4-2 2570 - 2679						
2580	2419	994	293	1287	1130	2.42
T4-1 2679-2754 M						
2715	279	85	89	174	105	1.46
T3-2 2754-2863 M						
2850	3488	1660	680	2340	1151	5.65
T3-1 2863-2889 M						
2885	7586	5537	1305	6842	743	

WELL 7120/7-3

- TABLE 5 - AMOUNT OF EOM AND CHROMATOGRAPHIC FRACTIONS -

- (IN MG/G TOC) -

DEPTH	EOM	HYDROCARBONS SAT	ARO	HC	NON HC
T5 1351-1498M					
1470	33.3	13.5	**2.2**	15.7	17.76
T4-4 1498-2090 M					
1710	98.4	66.7	13.0	79.7	18.63
1860	10.5	6.5	1.8	8.2	2.27
2055	47.9	34.3	4.4	38.8	9.12
T4-3 2090-2570 M					
2190	26.7	6.4	4.6	11.0	15.66
2265	23.6	5.0	12.5	17.5	6.08
2460	13.3	2.8	5.4	8.2	5.14
T4-2 2570 - 2679					
2580	100.0	**41.1**	12.1	53.2	46.69
T4-1 2679-2754 M					
2715	19.1	5.8	6.1	11.9	7.19
T3-2 2754-2863 M					
2850	61.7	**29.4**	12.0	41.4	20.37

WELL 7120/7-3

TABLE 6 COMPOSITION OF EXTRACTED MATERIAL

DEPTH	% SAT	% ARO	% HC	% NON HC	SAT/ARO	HC/NHC
T5 1351-1498 M						
1470	40.5	6.7	47.2	53.4	6.0	.9
T4-4 1498-2090 M						
1710	67.8	13.2	81.1	18.9	5.1	4.3
1860	61.8	16.7	78.4	21.6	3.7	3.6
2055	71.7	9.2	81.0	19.0	7.8	4.3
T4-3 2090-2570 M						
2190	24.1	17.2	41.3	58.7	1.4	.7
2265	21.3	52.7	74.1	25.7	.4	2.9
2460	21.0	40.6	61.6	38.8	.5	1.6
T4-2 2570 - 2679						
2580	41.1	12.1	53.2	46.7	3.4	1.1
T4-1 2679-2754 M						
2715	30.5	31.9	62.4	37.6	1.0	1.7
T3-2 2754-2863 M						
2850	47.6	19.5	67.1	33.0	2.4	**2.0**
T3-1 2863-2889 M						
2885	73.0	17.2	90.2	9.8	4.2	**9.2**

TABLE 7 TABULATION OF PYROLYSIS DATA

Normalised Percentage

SAMPLE	DEPTH	C1	C2-C5	C6-C14	C15+?
T4-4 1498-2090 M					
S130	1710	2.5	6.3	28.5	62.6
S133	1860	3.6	7.5	31.9	56.9
S137	2055	4.8	7.0	26.4	61.9
T4-3 2090-2570 M					
S140	2190	3.2	6.2	24.5	66.2
S142	2265	6.1	8.2	31.1	54.6
S146	2460	5.0	3.9	37.7	53.3
T4-2 2570-2679 M					
S149	2580	3.4	8.5	30.4	57.2
T4-1 2679-2754 M					
S152	2715	3.6	4.5	34.8	55.0
T3-2 2754-2863					
S155	2850	3.2	4.5	43.1	48.1

TABLE 8 TABULATION OF DATA FROM GASCHROMATOGRAMS

PRØVE	DYBDE	CPI	PRIS/PHY	PRIS/C-17	PHY/C-18
T5 1351-1498 M					
S125	1470	1.5	1.7	.8	.36
T4-4 1498-2090 M					
S130	1710	1.5	1.8	.8	.36
S133	1860	1.5	2.5	.9	.42
S137	2055	1.3	2.1	.8	.46
T4-3 2090-2570 M					
S140	2190	1.4	3.8	1.2	.40
S142	2265	1.3	1.9	1.0	.51
S146	2460	1.3	3.7	1.2	.38
T4-2 2570-2679 M					
S149	2580	1.1	2.0	1.1	.46
T4-1 2679-2754 M					
S152	2715	1.2	2.7	.5	.22
T3-2 2754-2863					
S155	2850	1.1	2.7	.9	.45
S179	2885		3.5	1.0	

TABLE 9 VITRJNITE REFLECTANCE AND MATURATION INDEX

SAMPLE NO.	DEPTH (M)	VITRINITE REFLECTANCE	THERMAL MATURATION INDEX
T5 1351-1498 M			
S80	1350	.68	1+/2-
S81	1387	.75	1+
S82	1429	.58	1+/2-,2-/2
T4-4 1498-2090 M			
S85	1600	.65	1+/2-
S87	1707	.60	1+/2-
S89	1860	.67	1+/2-
S9i	1954	.75	2-/2,2+/2-
S93	2055	.64	1+/2-,2
T4-3 2090-2570 M			
S94	2111	.66	2-/2,2,2/2+
S98	2275	.68	1+/2-,2
S101	2417	.73	2
S104	2566	.68	2-,2-/2
T4-2 2570 - 2679			
S106	2648	.79	2
T4-1 2679-2754 M			
S107	2698	.72	2
T3-2 2754-2863 M			
S109	2755	.69	2-/2
S111	2780	.70	2-/2
S112	2800	.65	2-/2
S115	2830	.64	2
S117	2853	.78	2
T2 2889-3062 M			
S122	3055	.76	2-/2,2

MICROSCOPIC ANALYSIS - REFLECTED LIGHT (NORMAL + U.V)

Table no.: 10

Well no.: 7120/7-3

IKU No.	Depth m/ft	Dominant lithology	Ro value (%)	Population size	Dominant maceraltype	Liptinites		Additive	Bitumen	Cave
						UV Fluorescence	Content			
B-4580	1350.0	Kerogen Isolate	0.68	10	Amorphous + Reworked Vit.	3-4	Trace			
B-4581	1387.0	Kerogen Isolate	0.75	1	Reworked Vit.	-	Absent			
B-4582	1495.0	Kerogen Isolate	0.58	3	Reworked Vit.	4-5	Trace			
B-4583	1600.0	Kerogen Isolate	0.65	3	Reworked Vit.	4	Trace			
B-4584	1707.0	Kerogen Isolate	0.60	3	Reworked Vit. + Amorphous	Indeter-minate	Trace			
B-4585	1860.5	Kerogen Isolate	0.67	8	Reworked Vit. + Amorphous	5	Trace			
B-4586	1954.0	Kerogen Isolate	0.75	8	Reworked Vit. + Amorphous	Indeter-minate	Trace			
B-4587	2055.0	Kerogen Isolate	0.64	6	Reworked Vit. + Amorphous	2-4 (Densospore)	Trace			
B-4588	2111.0	Kerogen Isolate	0.66	2	Reworked Vit. + Inertinite	-	Absent			
B-4589	2275.0	Kerogen Isolate	0.68	12	Reworked Vit. Inertinite + Amorphous	-	Absent			
B-4590	2417.0	Kerogen Isolate	0.73	11	Reworked Vit. + Amorphous	-	Absent			
B-4591	2566.5	Kerogen Isolate	0.68	9	Reworked Vit. + Vitrinite	-	Absent			
B-4592	2648.0	Kerogen Isolate	0.79	1	Reworked Vit.	-	Absent			
B-4593	2690.0	Kerogen Isolate	0.72	1	Reworked Vit.	-	Absent			
B-4594	2755.0	Kerogen Isolate	0.69	16	Amorphous + Vitrinite	-	Absent			
B-4595	2780.0	Kerogen Isolate	0.70	6	Vitrinite + Amorphous	-	Absent			
B-4596	2800.0	Kerogen Isolate	0.65	4	Amorphous	4-5	Trace			

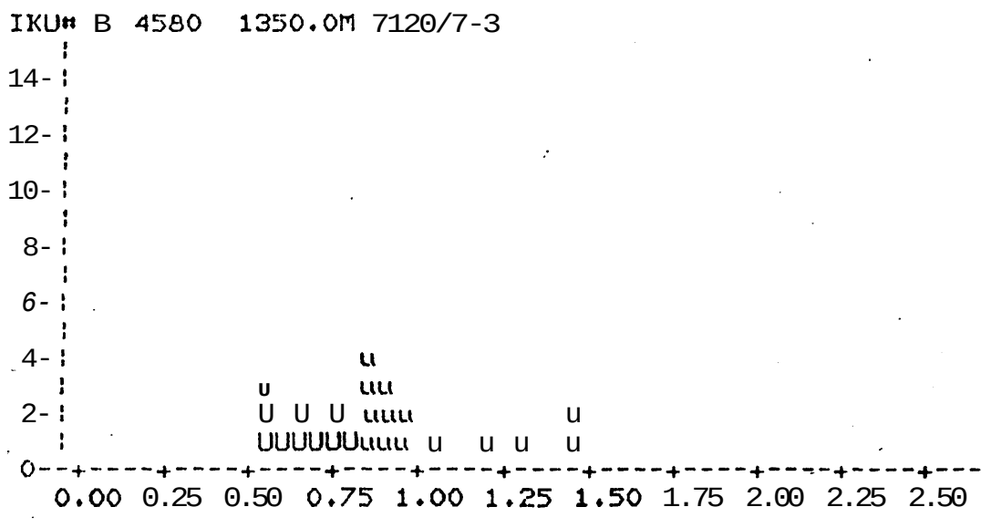
MICROSCOPIC ANALYSIS - REFLECTED LIGHT (NORMAL + U.V)

Table no.: 1 0

Well no.: 7120/7-3

IKU No.	Depth m/ft	Dominant lithology	Ro value (%)	Population size	Dominant maceral type	Liptinites		Additive	Bitumen	Ove
						UV Fluorescence	Content			
B-4597	2830.0	Kerogen Isolate	0.64	3	Amorphous	-	Absent			
B-4598	2853.0	Kerogen Isolate	0.78	7	Reworked Vit.	Absent				
B-4599	3055.0	Kerogen Isolate	0.76	19	Amorphous + Vitrinite (reworked?)	-	Absent			

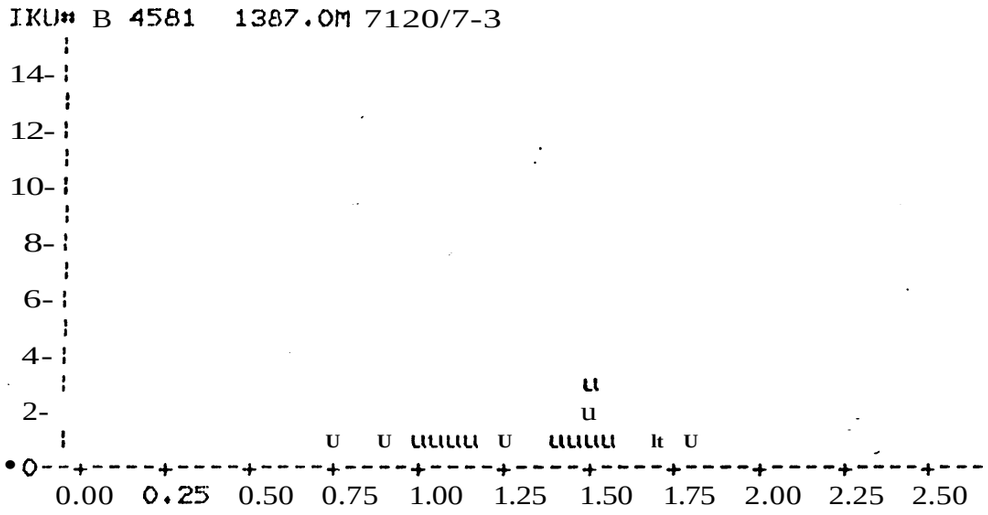
139/h/ah/2



PP	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0.56	0.81	ALL	10	0.68	0.09
			OVERALL	24	0.89	0.25

ORDERED VALUES FOLLOW:

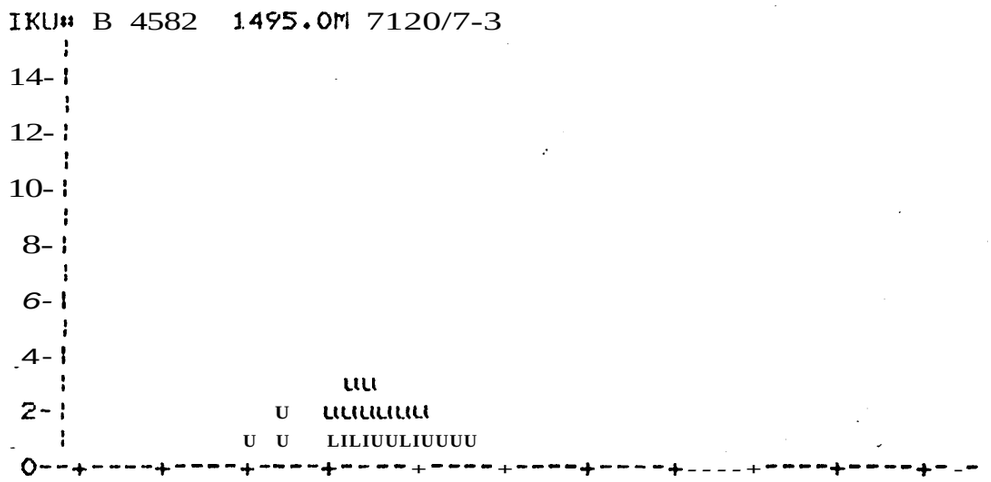
0.56U 0.57U 0.58U 0.63U 0.66U 0.68U 0.73U 0.78U 0.79U 0.80U 0.85u 0.85u 0.87u
0.88u 0.90u 0.90u 0.94u 0.95u 0.96u 1.08u 1.22u 1.30u 1.45u 1.46u



FF LOW HIGH LIT #VAL MEAN STDV
Y 0.75 0.76 ALL 15 0.75 0.00
OVERALL 15 1.32 0.31

ORDERED VALUES FOLLOW:

0.75U 0.93u 1.01u 1.09u 1.11u 1.15u 1.26u 1.40u 1.48u 1.51u 1.52u 1.53u 1.57u
1.72u 1.82u

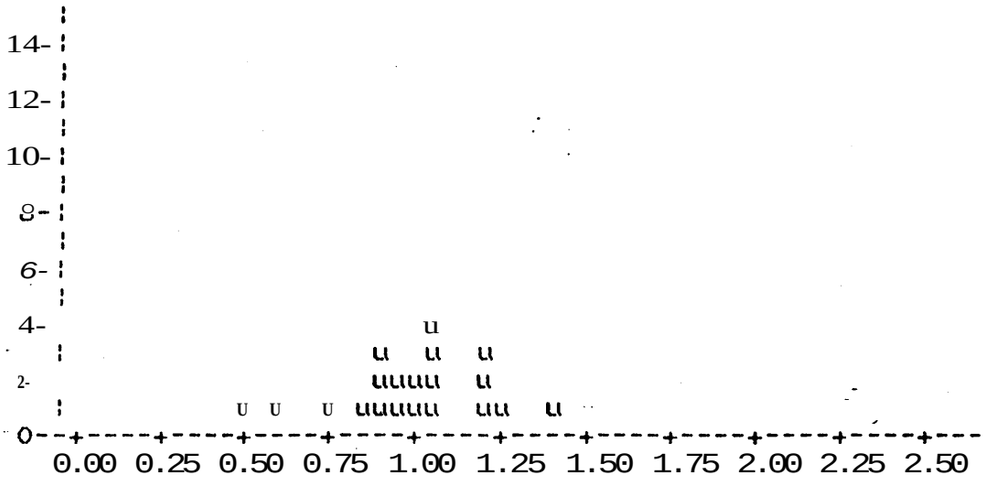


PP	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0.50	0.65	ALL	3	0.58	0.07
N	0.75	1.02	ALL	14	0.89	0.08
			OVERALL	20	0*88	0.17

ORDERED VALUES FOLLOW:

0.50U 0.60U 0.64U 0.75u 0.78u 0.83u 0.83u 0.84u 0.85u 0.86u 0.87u 0.90u 0.94u
0.95u 0.98u 1.00u 1.01u 1.09u 1.14u 1.18u

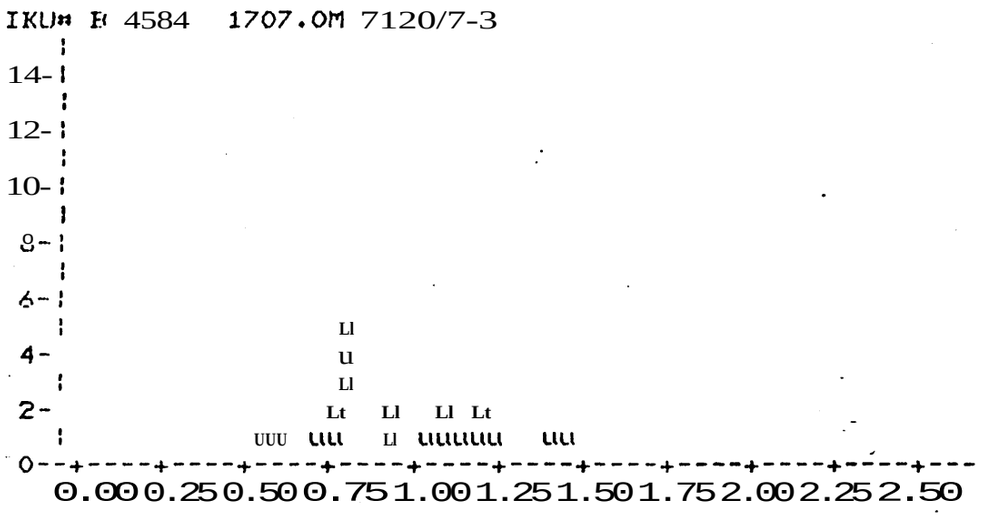
IKU# B 4583 1600.0M 7120/7-3



PP	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0.54	0.80	ALL	3	0.65	0.13
N	0.85	1*09	ALL	12	0.99	0.07
			OVERALL	20	1.00	0.21

ORDERED VALUES FOLLOW:

0.54U 0.62U 0.79U 0.85u 0.90u 0.92u 0.92u 0.98u 0.99u 1.00u 1.03u 1.05u 1.06u
1.06u 1.08u 1.20u 1.20u 1.20u 1.25u 1.40u

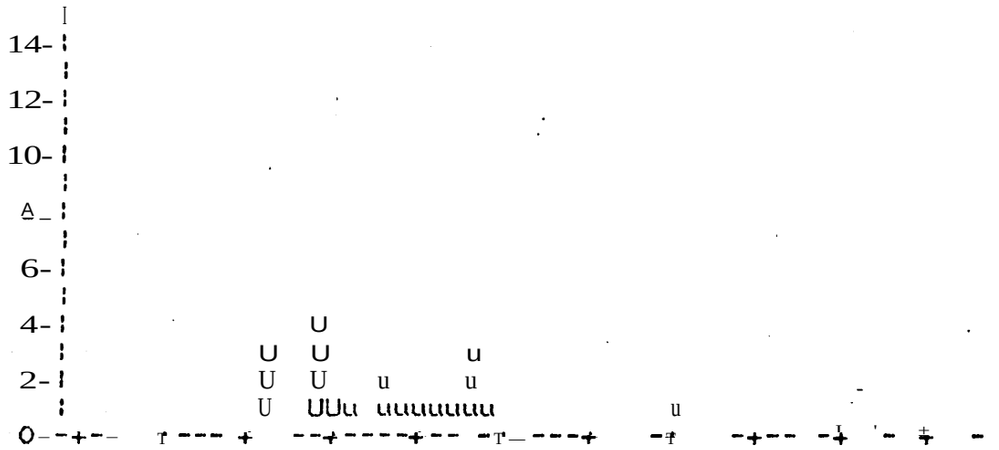


PP	LOW	HIGH	LIT	«VAL	MEAN	STDV
Y	0.55	0.66	ALL	3	0.60	0.05
N	0.76	0.97	ALL	8	0.85	0.07
			OVERALL	20	0.98	0.27

ORDERED VALUES FOLLOW:

0.55U 0.60U 0.65U 0.76u 0.80u 0.81u 0.83u 0.84u 0.84u 0.96u 0.96u 1.05u 1.10u
1.12u 1.18u 1.21u 1.22u 1.29u 1.44u 1.48u

IKU# B 4585 1860.5M 7120/7-3

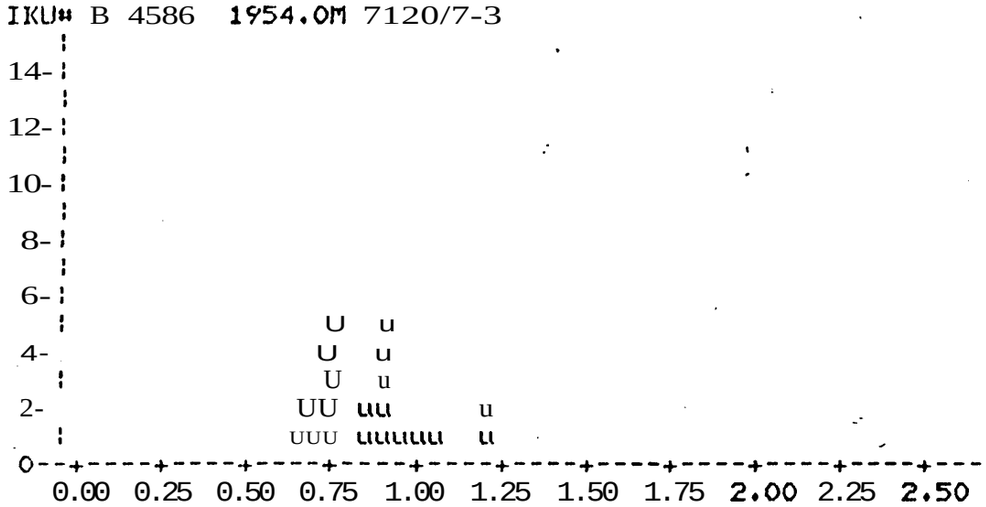


PP LOW HIGH LIT «VAL MEAN STDV
Y 0.55 0.78 ALL 8 0.67 0.09
OVERALL 20 0.94 0.30

ORDERED VALUES FOLLOW:

0.55U 0.56U 0.59U 0.70U 0.71U 0.73U 0.74U 0.77U 0.84u 0.90u 0.94u 0.99u 1.03u
1.09u 1.14u 1.15u 1.16u 1.19u 1.23u 1.77u

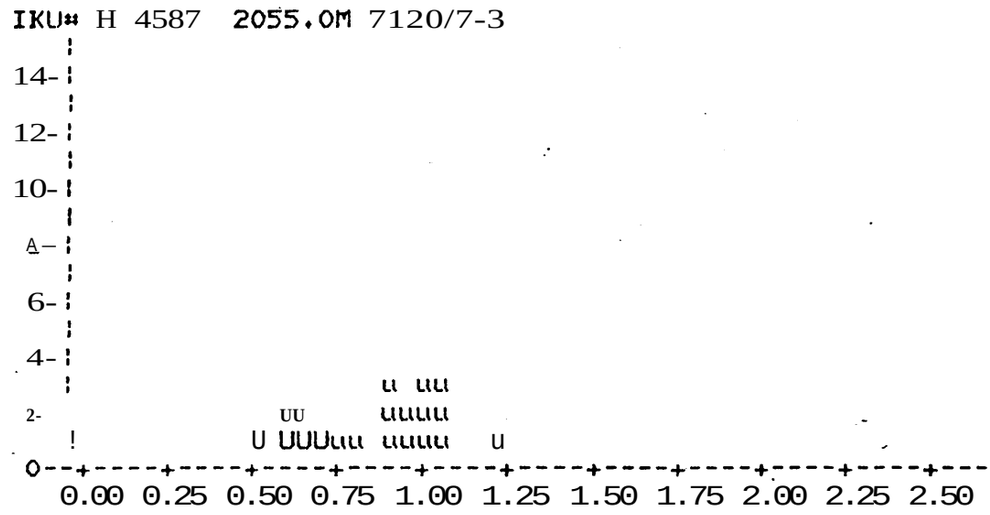
IKU# B 4586 1954.0M 7120/7-3



PP	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0.69	0.79	ALL	8	0.75	0.04
			OVERALL	20	0.89	0.16

ORDERED VALUES FOLLOW:

0.69U 0.70U 0.72U 0.76U 0.77U 0.77U 0.78U 0.78U 0.86u 0.86u 0.90u 0.92u 0.92u
0.93u 0.93u 0.95u 1.01u 1.08u 1.21u 1.24u

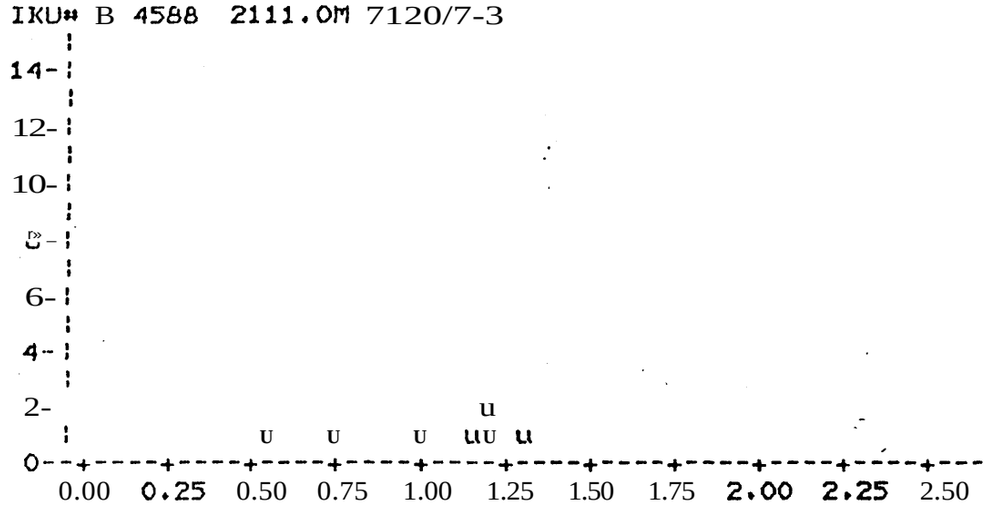


PP LOW HIGH LIT #VAL MEAN STDV
Y 0.53 0.71 ALL 6 0.64 0.06
OVERALL 20 0,88 0.19

ORDERED VALUES FOLLOW:

0.53U 0.63U 0.64U 0.67U 0.69U 0.70U 0.77u 0.82u 0.90u 0.93u 0.94u 0.96u 0.97u
l.Olu l.Olu 1.02u 1.05u 1.07u 1.09u 1.21u

IKU# B 4588 2111.0M 7120/7-3



FF	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0.55	0.78	ALL	2	0.66	0.16
			OVERALL	7	1.04	0.28

ORDERED VALUES FOLLOW:

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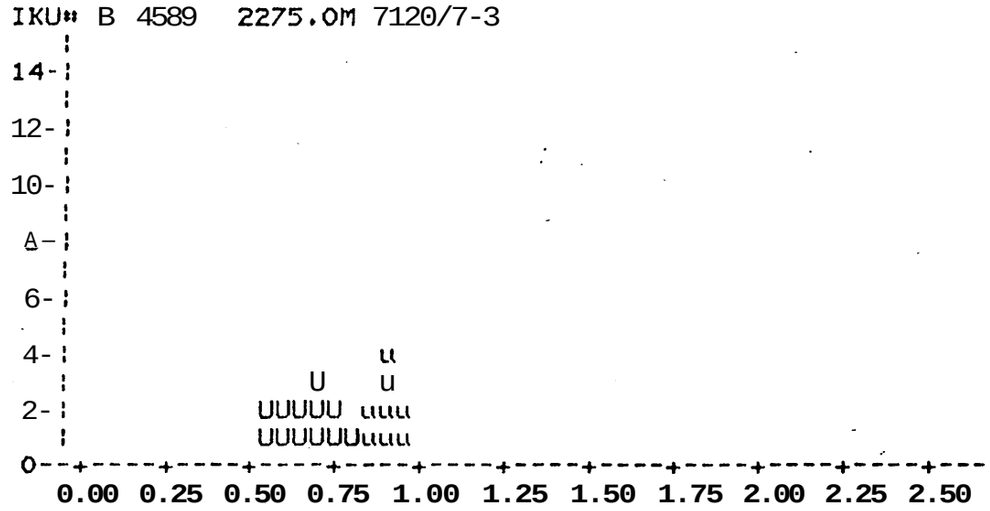
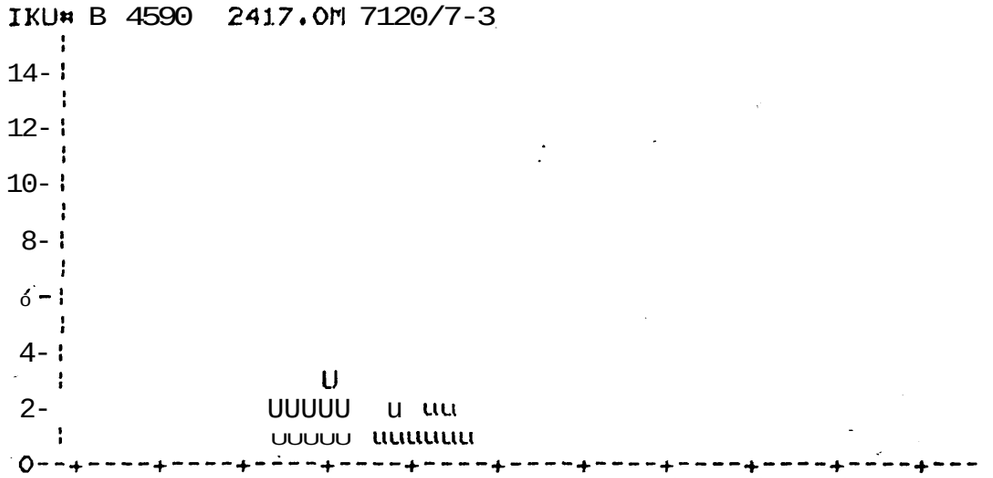


PP	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0.57	0.81	ALL	12	0.68	0.08
			OVERALL	20	0.78	0.14

ORDERED VALUES FOLLOW:

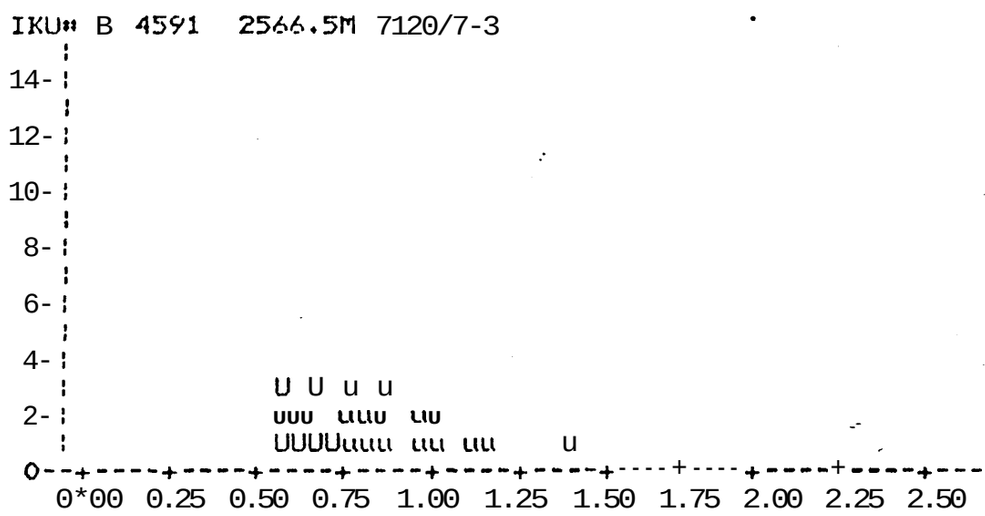
0.57U 0.58U 0.61U 0.62U 0.65U 0.66U **0.70U 0.72U 0.72U** 0.75U **0.78U** 0.80U 0.85u
0.89u 0.91u 0.92u 0.94u 0.94u 0.98u 0.99u



PP	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0*60	0*85	ALL	11	0.73	0*08
			OVERALL	20	0*87	0*18

ORDERED VALUES FOLLOW:

0.60U 0*61U 0.67U 0*67U 0*72U 0*72U 0*76U 0*79U O*79U 0*83U 0*84U 0.91u 0.96u
0.99u 1.01u 1.06u 1.08u 1.12u 1.14u 1.16u

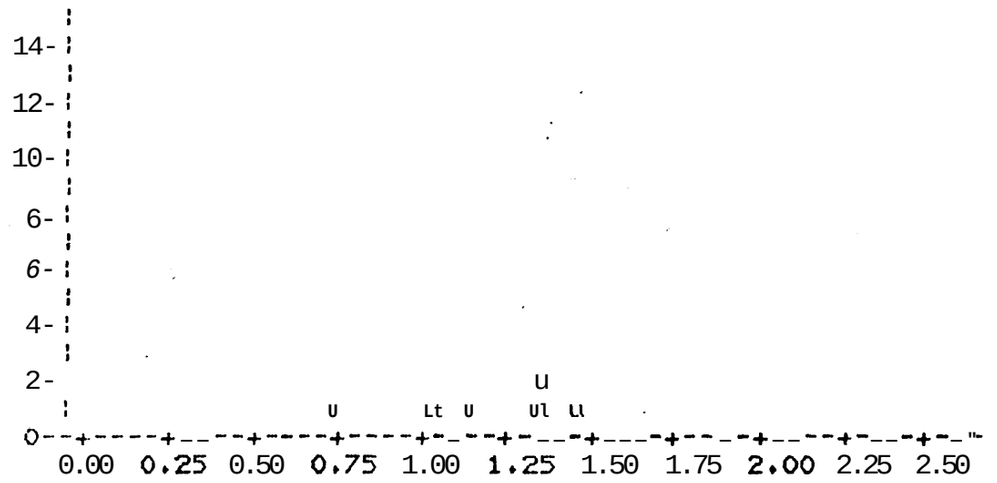


PP LOW HIGH LIT #VAL MEAN STDV
Y 0.60 0.76 ALL 9 0.68 0.06
OVERALL 24 0.88 0.21

ORDERED VALUES FOLLOW:

0.60U 0.61U 0.64U 0.67U 0.67U 0.71U 0.71U 0.74U 0.77U 0.80u 0.81u 0.84u 0.86u
0.88u 0.90u 0.92u 0.93u 1.02u 1.04u 1.05u 1.08u 1.17u 1.23u 1.46u

IKU# B 4592 2648.ON 7120/7-3



PP	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0.79	0*80	ALL	l	0.79	0.00
			OVERALL	6	1.20	0.25

ORDERED VALUES FOLLOW:

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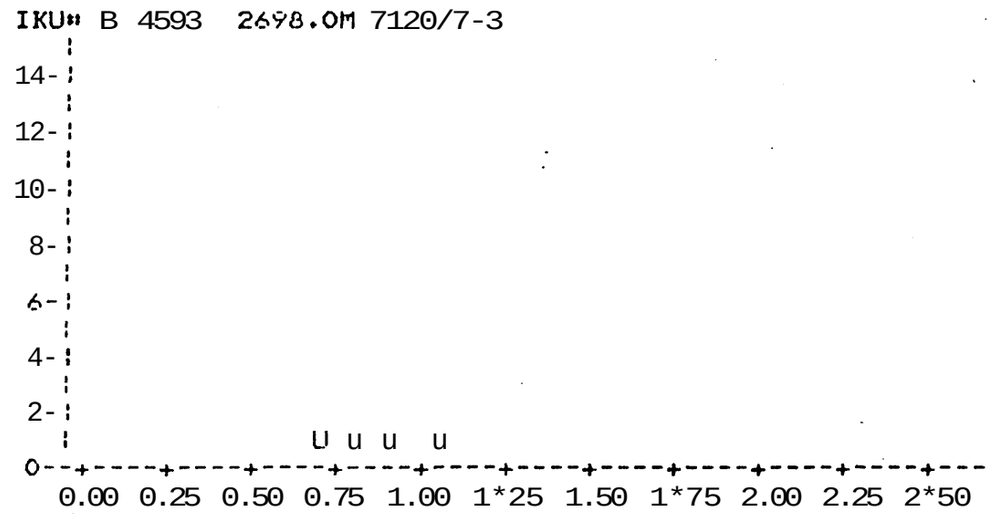

PP LOW HIGH LIT «VAL MEAN STDV
Y 0.72 0.73 ALL l 0.72 0.00
OVERALL 4 0.89 0.15

ORDERED VALUES FOLLOW:

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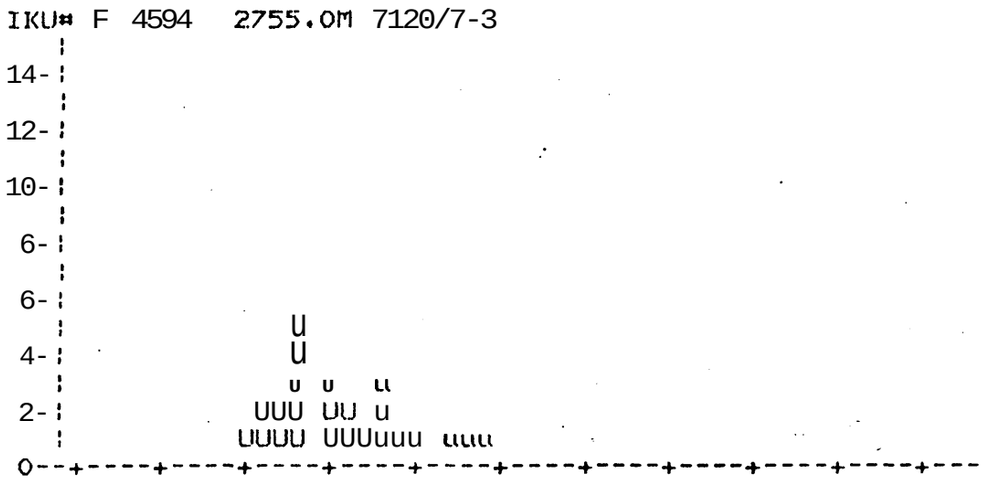
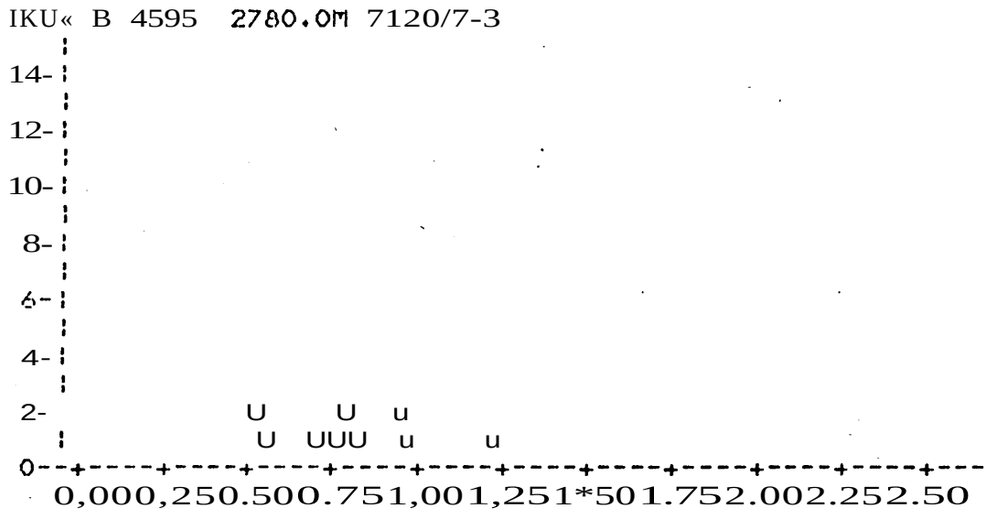


PP LOW HIGH LIT «VAL MEAN STDV
Y 0.51 0.87 ALL 16 0.69 0.10
OVERALL 24 0.80 0.20

ORDERED VALUES FOLLOW:

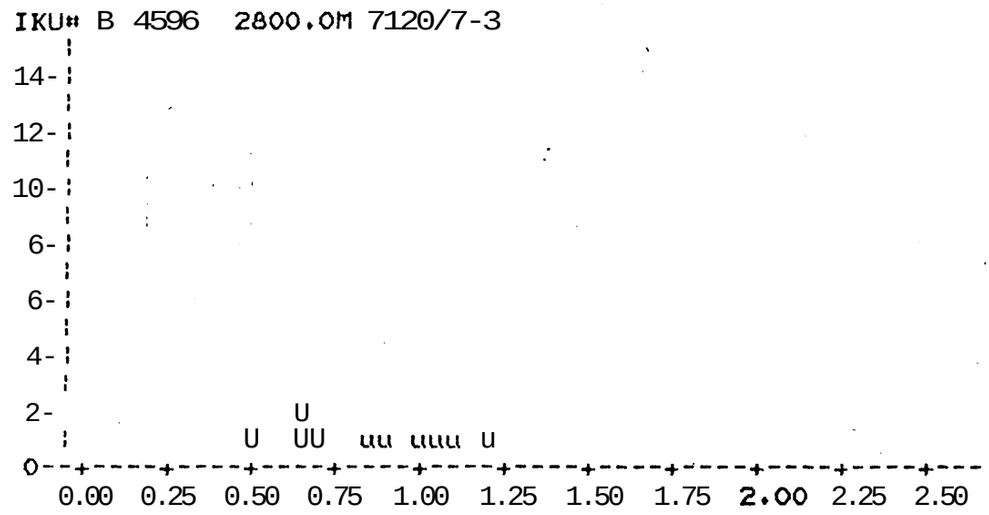
0.51U 0.55U 0.59U 0.60U 0.60U 0.65U 0.68U 0.68U 0.69U 0.69U 0.76U 0.76U 0.79U
0.81U 0.82U 0.86U 0.90u 0.93u 0.94u 0.99u 1.04u 1.10u 1.15u 1.22u



PP LOW HIGH LIT «VAL MEAN STDV
Y 0.55 0.82 ALL 6 0.70 0.12
OVERALL 9 0.81 0.21

ORDERED VALUES FOLLOW:

0.55U 0.56U 0.71U 0.75U 0.80U 0.81U 0.95u 0.96u 1.22u

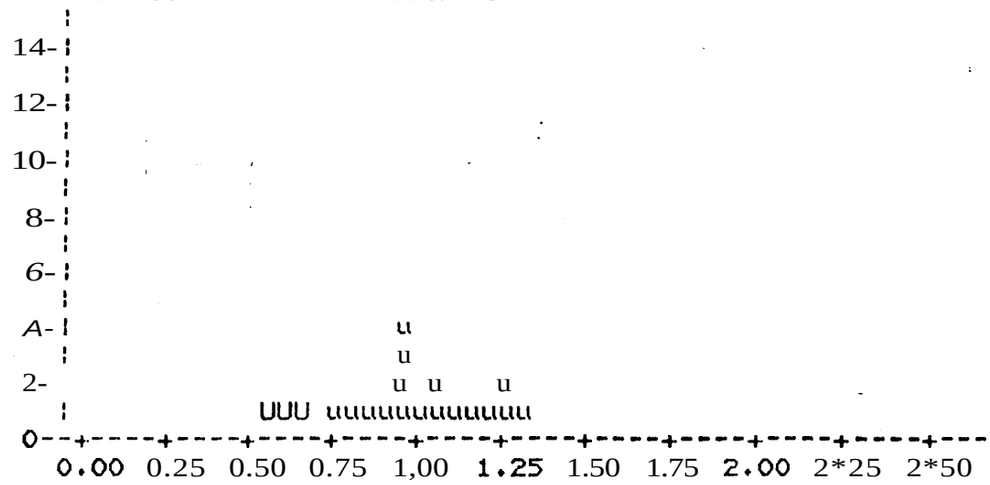


FF	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0.52	0.72	ALL	4	0.65	0.09
			OVERALL	10	0.88	0.23

ORDERED VALUES FOLLOW:

0.52U 0.66U 0.69U 0.71U 0.87u 0.91u 1.03u 1.08u 1.14u 1.22u

IKU# B 4597 2830.0M 7120/7-3

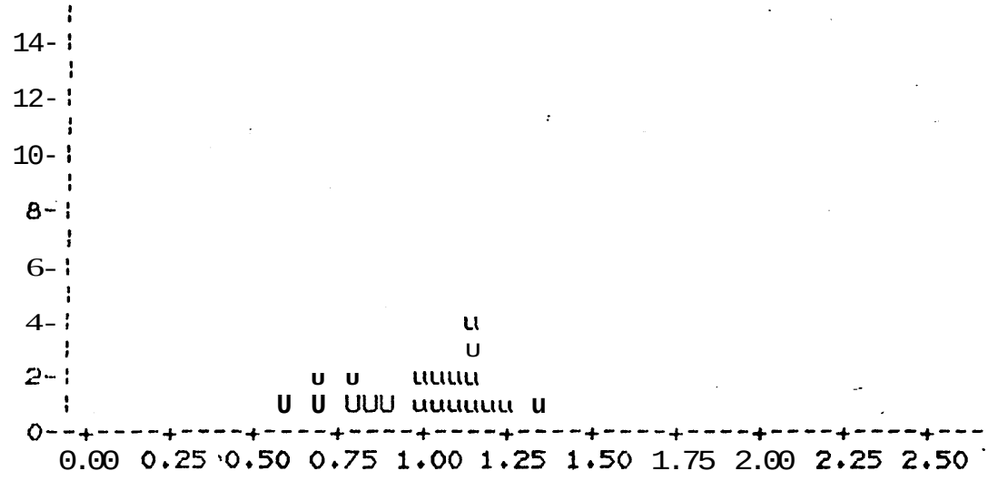


PP	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0.56	0.70	ALL	3	0.64	0.06
N	0.78	1*13	ALL	12	0.96	0.10
			OVERALL	20	0.99	0.21

ORDERED VALUES FOLLOW:

0.58U 0.64U 0.69U 0.78u 0.81u 0.88u 0.94u 0.95u 0.96u 0.98u 0.99u 1.00u 1.06u
1.08u 1.12u 1.18u 1.20u 1.27u 1.27u 1.34u

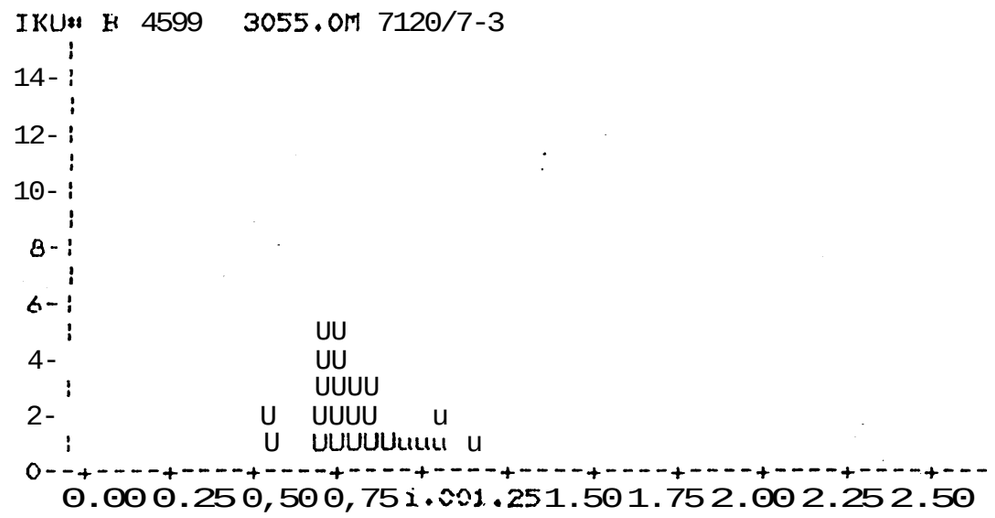
IKU# E 4598 2853.0M 7120/7-3



PP	LOW	HIGH	LIT	#VAL	MEAN	STDV
Y	0.61	0.92	ALL	7	0.78	0.11
			OVERALL	20	1.02	0.21

ORDERED VALUES FOLLOW:

0.61U 0.70U 0.71U 0.81U 0.81U 0.89U 0.91U 1.03u 1.03u 1.05u 1.09u 1.11u 1.14u
1.15u 1.16u 1.18u 1.18u 1.23u 1.27u 1.37u



PP LOW HIGH LIT #VAL MEAN STDV
Y 0.55 0.92 ALL 19 0.76 0.09
OVERALL 24 0.83 0.15

ORDERED VALUES FOLLOW:

0.55U 0.58U 0.70U 0.71U 0.72U 0.73U 0.73U 0.76U 0.77U 0.77U 0.78U 0.78U 0.81U
0.82U 0.83U 0.85U 0.85U 0.88U 0.91U 0.97u 1.04u 1.06u 1.09u 1.15u

IKU

Visual Kerogen Analysis

TABLE NO.: 11
WELL NO.: 7120/7-3

Sample	Depth (m)	Composition of residue	Particle size	Preservation palynomorphs	Thermal maturation index	Remarks
B-4580	1350 SWC	Am,Algal/W	F-M		1+/2-	Material as small aggregates of discrete particles. Pyrite framboids. Grey amorphous. Relative proportions are tentative.
B-4581	1387 SWC	Am,Algal/W,WR!	F-M	fair to good	1+	Small aggregates of degraded material. Dinoflagellate cysts. Acid resistant minerals disturb. Relative proportions are tentative.
B-4582	1429/1495 SWC	Algal,Am,Cy/W,P	F-M-L	fair to good	1+/2-,2-/2	Algal/bacterial (<10µm) material dominates.
B-4583	1600 SWC	Am,Algal,Cy/W,WR!,Cut,P	F-M	good	1+/2-	Grey amorphous material embeds more fresh looking particles of structured wood, cuticles and palynomorphs. Algae includes <10µm bodies and tasmanitids/cysts.

ABBREVATIONS

Am	Amorphous	Cy	Cysts, algae	W	Woody material	F	Fine
Me	Herbaceous	P	Pollen grains	C	Coal	M	Medium
Cut	Cuticles	S	Spores	R!	Reworked	L	Large

57

IKU

Visual Kerogen Analysis

TABLE NO.: 11
WELL NO.: 7120/7-3

Sample	Depth (m)	Composition of residue	Particle size	Preservation palynomorphs	Thermal maturation index	Remarks
B-4584	1707 SWC	Am,Algal,Cy/W,WR!	F-M	fair	1+/2-	As above: grey amorphous material. Palynomorphs and woody remains are thin walled.
B-4585	1860.5 SWC	W,WR!,P/Am,Algal,Cy	F-M-L	fair	1+/2-	As above but relative increase of woody material especially structured particles.
B-4586	1954 SWC	Algal,Am,Cy/W,WR!,P	F-M	fair	2-/2,2+/2-	Grey amorphous embedding algal/bacterial remains as above, fairly thinwalled (etched) woody cells and palynomorphs.
B-4587	2055 SWC	W,WR!,P/Algal,Am	F-M-L	fair	1+/2-,2	Grey amorphous as above. Variably coloured woody cell fragments seem larger than at 1954m.
B-4588	2111 SWC	WR!,W,S/Algal,Am	F-M-L	fair to good	2-/2,2,2/2+	As above. Dark woody fragments dominate.

ABBREVATIONS

Am	Amorphous	Cy	Cysts, algae	W	Woody material	F	Fine
He	Herbaceous	P	Pollen grains	C	Coal	M	Medium
Cut	Cuticles	S	Spores	R!	Reworked	L	Large

IKU

Visual Kerogen Analysis

TABLE NO.: 11
WELL NO.: 7120/7-3

Sample	Depth (m)	Composition of residue	Particle size	Preservation palynomorphs	Thermal maturation index	Remarks
B-4594	2755 SWC	Algal,Am/?W	F-M-L	poor	(tentative1y)2-/2	More fresh-looking than samples above. Abundant pyrite framboids. Dense granulate to spongeous aggregates evaluated as composed mainly of algae/bacteria: sheets breaking into irregular fragments. Well preserved woody material is obscured or rare.
B-4595	2780 SWC	Algal,Am/?W	F-M-L	poor	(tentatively)2-/2	Similar to 2755m above.
B-4596	2800	Algal,Am/?W	F-M-L	poor	(tentatively)2-/2	As above.
B-4597	2830m	Algal,Am/W	F-M-L	poor	(tentatively)2	As above slightly darker material.
B-4598	2853 SWC	Algae	F-M-L	poor	2	Dense aggregates, partly embedding very light-coloured algal material in addition to the matrix of algae/bacteriae and small irregular fragments.

ABBREVATIONS

Am	Amorphous	Cy	Cysts, algae	W	Woody material	F	Fine
He	Herbaceous	P	Pollen grains	C	. Coal	M	Medium
Cut	Cuticles	S	Spores	R!	Reworked	L	Largp

IKU

Visual Kerogen Analysis

TABLE NO.: 11
WELL NO.: 7120/7-3

Sample	Depth (m)	Composition of residue	Particle size	Preservation palynomorphs	Thermal maturation index	Remarks
B-4589	2275 SWC	W,WR!,Cut?/Algal	F-M-L	fair to poor	1+/2-,2	Structured woody matter (semifusinite) and algal/bacterial remains dominate. Tentatively some thin cuticular remains.
B-4590	2417 SWC	Algal,Am/W	F-M-L	poor to fair	2	Algal/bacteria and very thin strongly degraded sheets of organic material. Palynomorphs seem stained.
B-4591	2566.5 SWC	WR!,W,P/Algal,Am	F-M-L	poor	2-,2-/2	
B-4592	2648 SWC	Algal,Am/WR!	F-M-L	poor	2	Large acid resistant minerals. "Grey amorphous" material embeds small dark woody fragments.
B-4593	2698 SWC	Algal,Am,Cy/WR!	F-M	variable	2	Algal/bacterial remains, strongly degraded material and dark woody fragments. Stained palynomorphs.

ABBREVATIONS

Am	Amorphous	Cy	Cysts, algae	W	Woody material	F	Fine
He	Herbaceous	P	Pollen grains	C	Coal	M	Medium
Cut	Cuticles	S	Spores	R!	Reworked	L	Large

IKU

Visual Kerogen Analysis

TABLE NO.: 11
WELL NO.: 7120/7-3

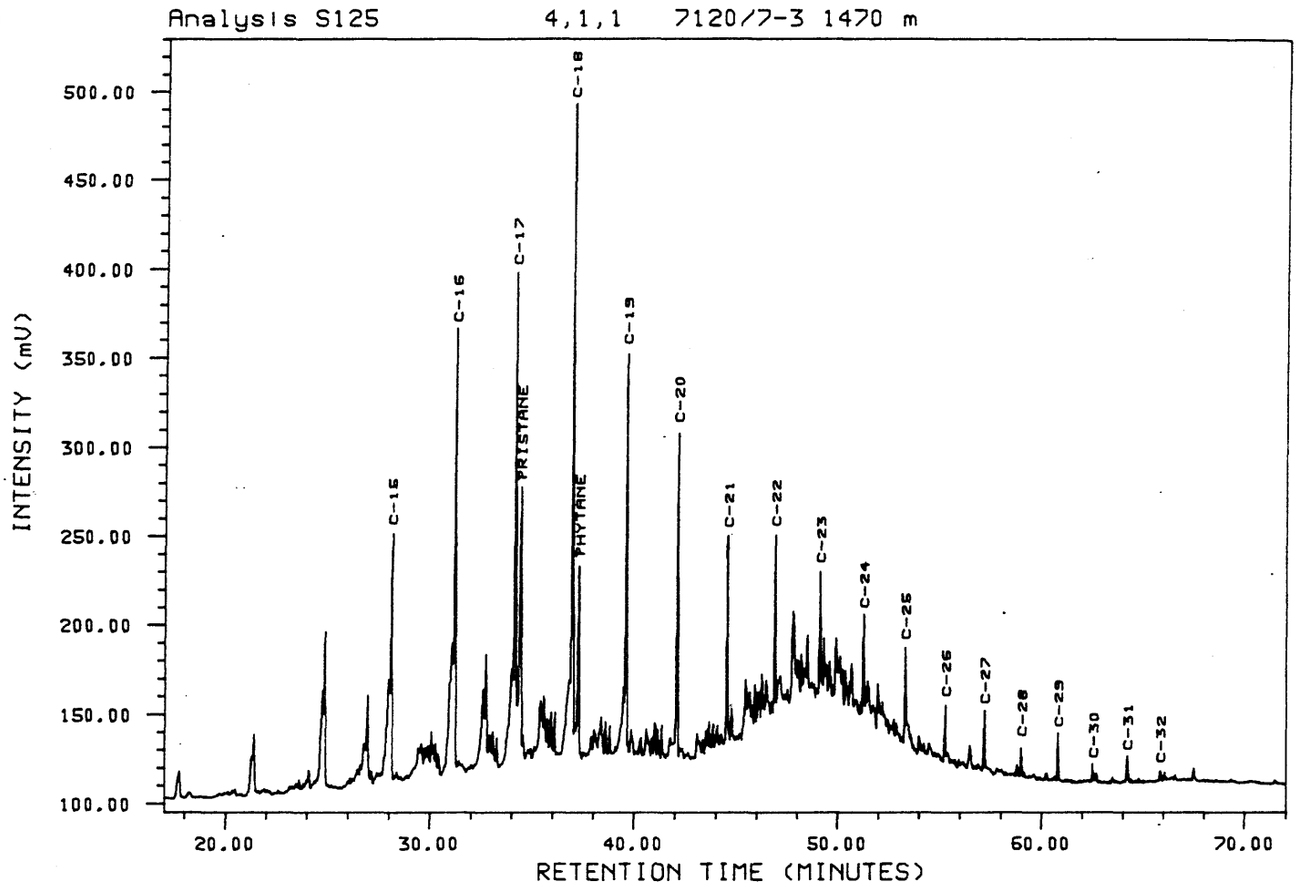
Sample	Depth (m)	Composition of residue	Particle size	Preservation palynomorphs	Thermal maturation index	Remarks
B-4599	3055 SWC	Algal,Am/Cut,W	F-M-L	fair	2-/2,2	Fairly large sheets evaluated as cuticles. Mineral growth has caused loss of primary structures.

ABBREVATIONS

Am	Amorphous	Cy	Cysts, algae	W	Woody material	F	Fine
Me	Herbaceous	P	Pollen grains	C	Coal	M	Medium
Cut	Cuticles	S	Spores	R!	Reworked	L	Large

FIGURE 5 Chromatogram of C15+ saturates T5 (a) and T4-4 (b) formations

a)



b)

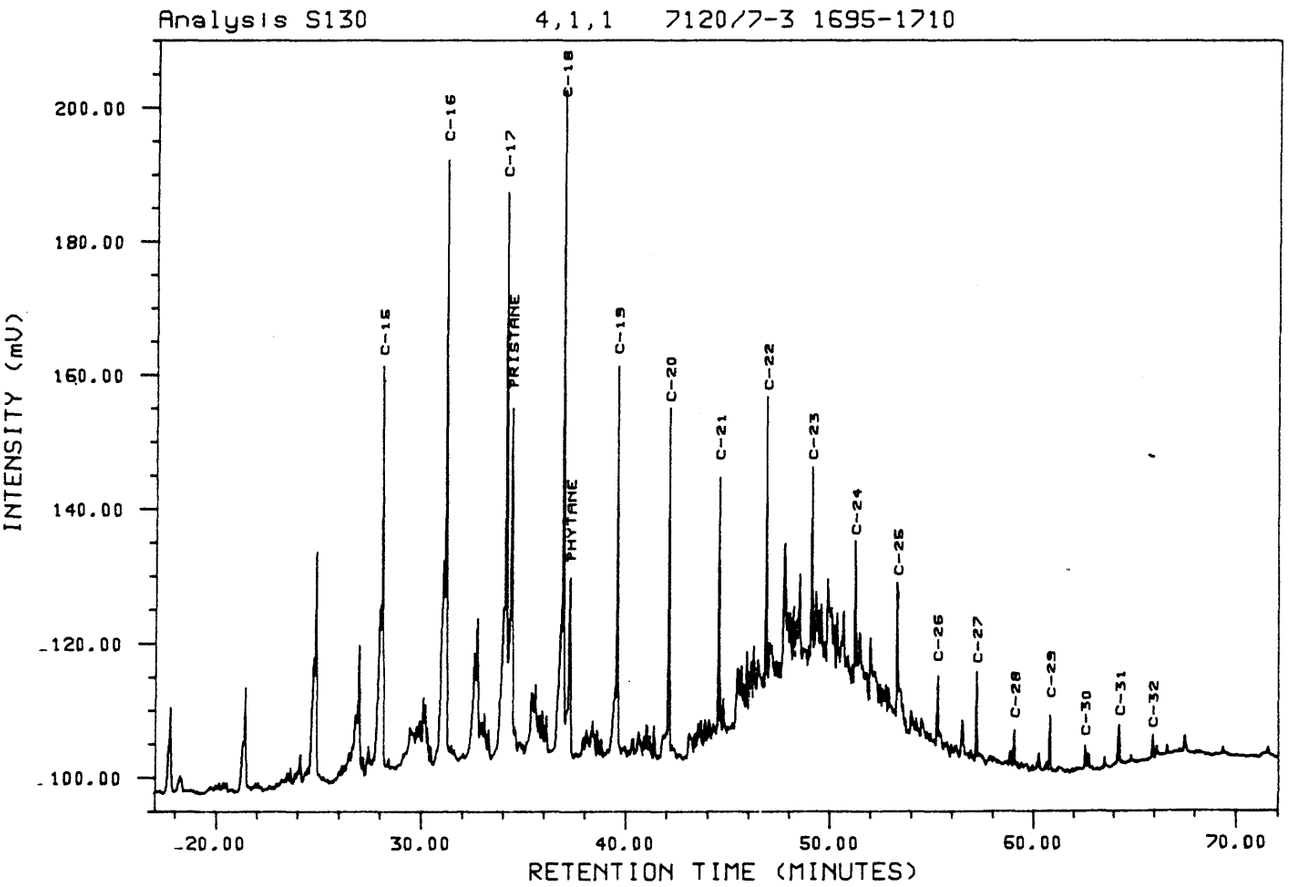
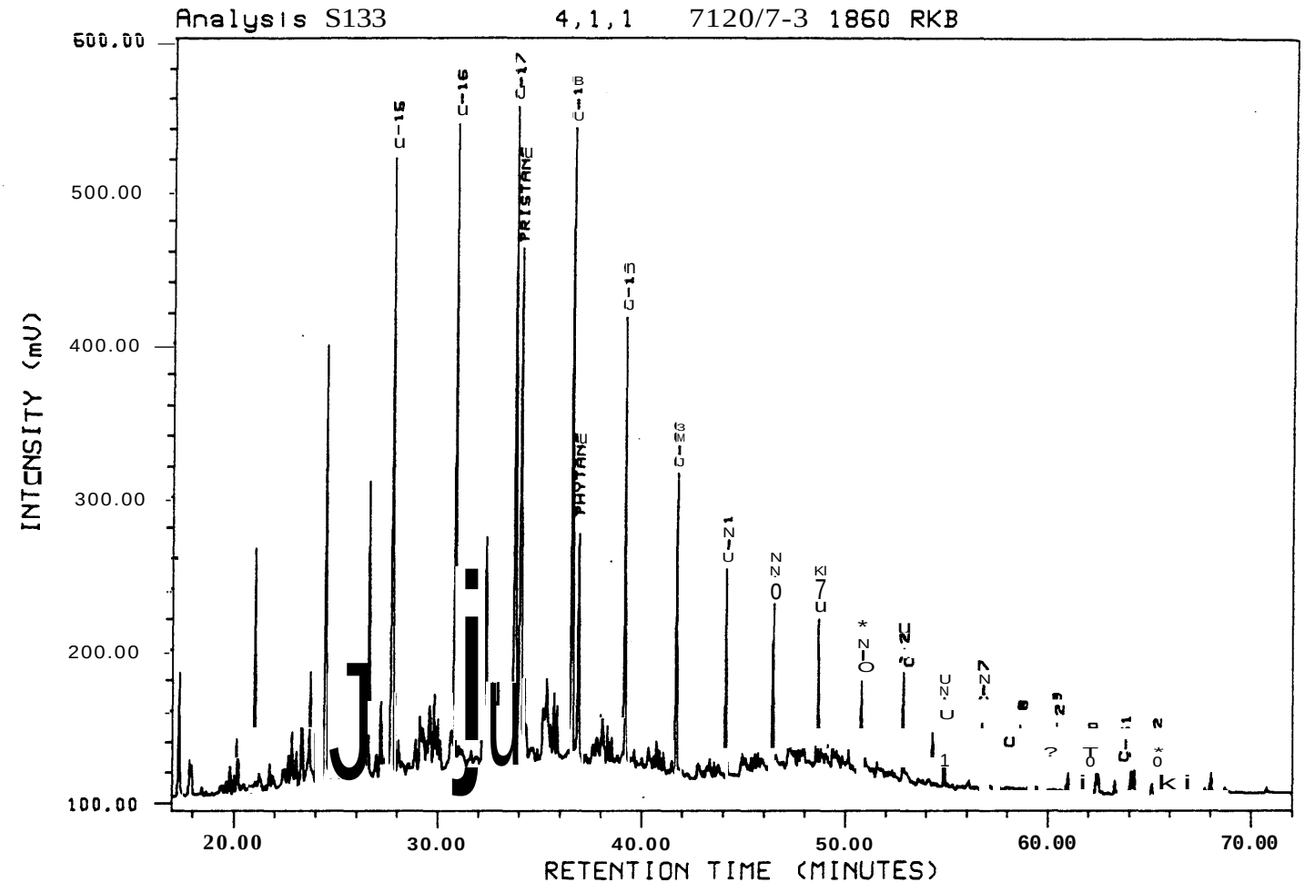


FIGURE 6 Chromatogram of C15+ saturates T4-4 formation



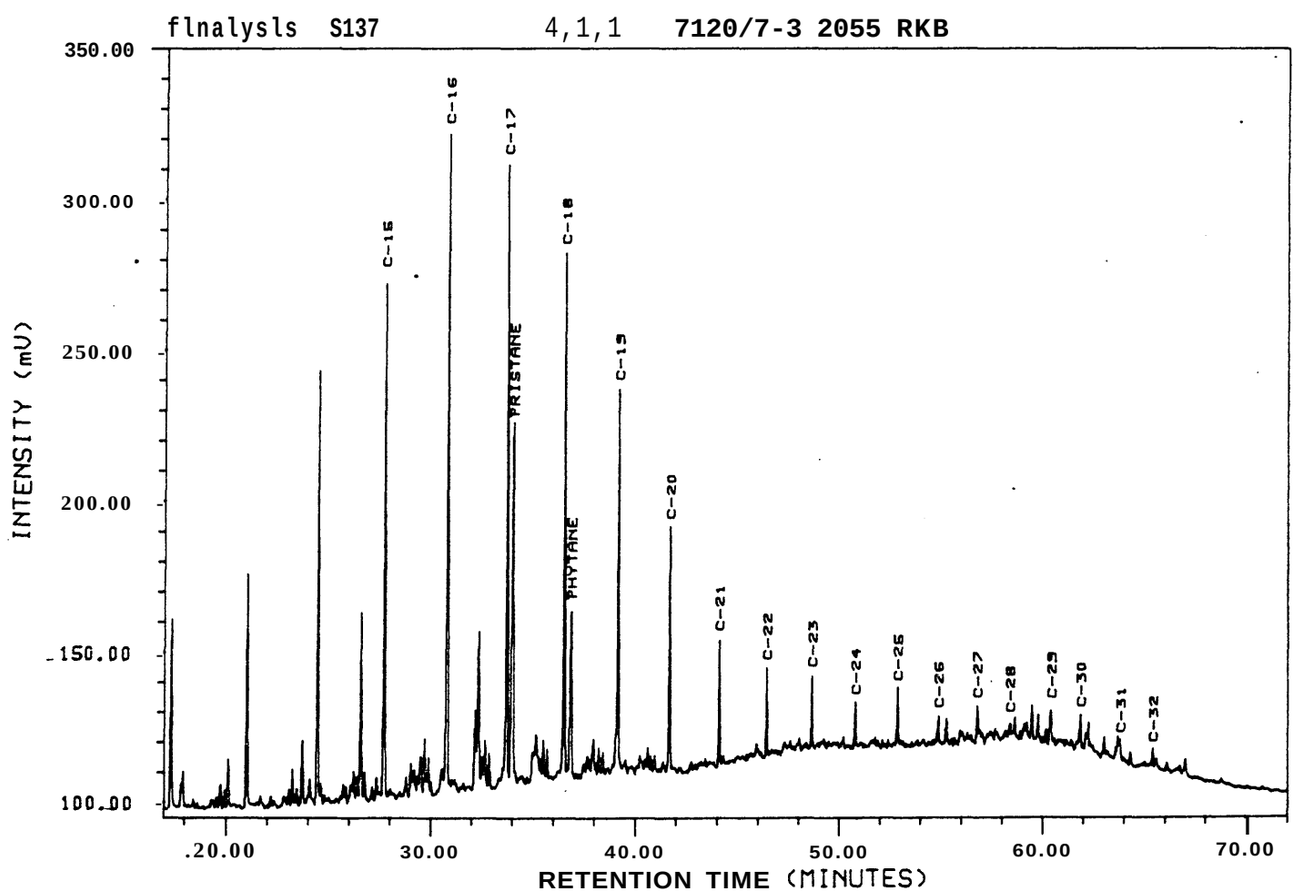
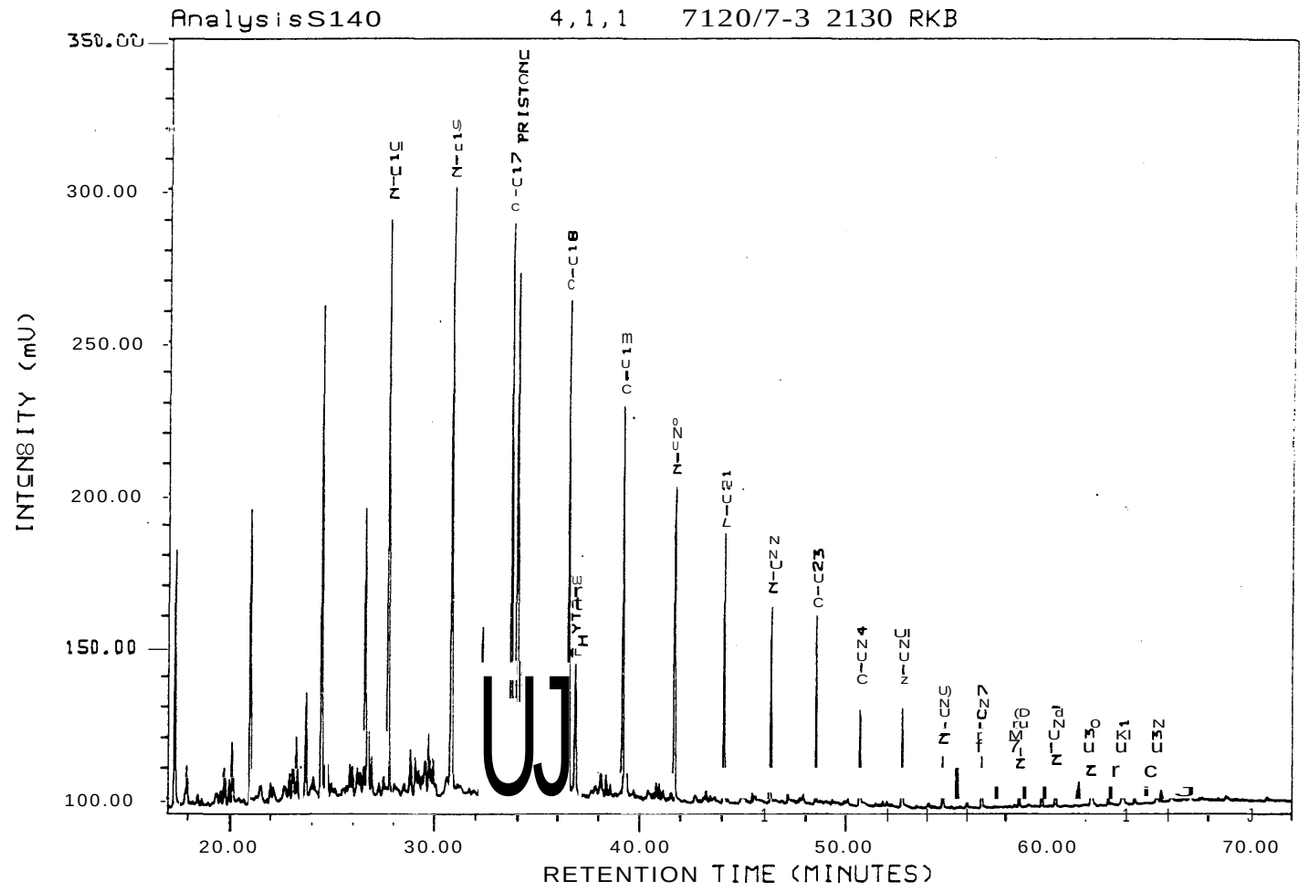


FIGURE 7 Chromatogram of C15+ saturates T4-3 formation



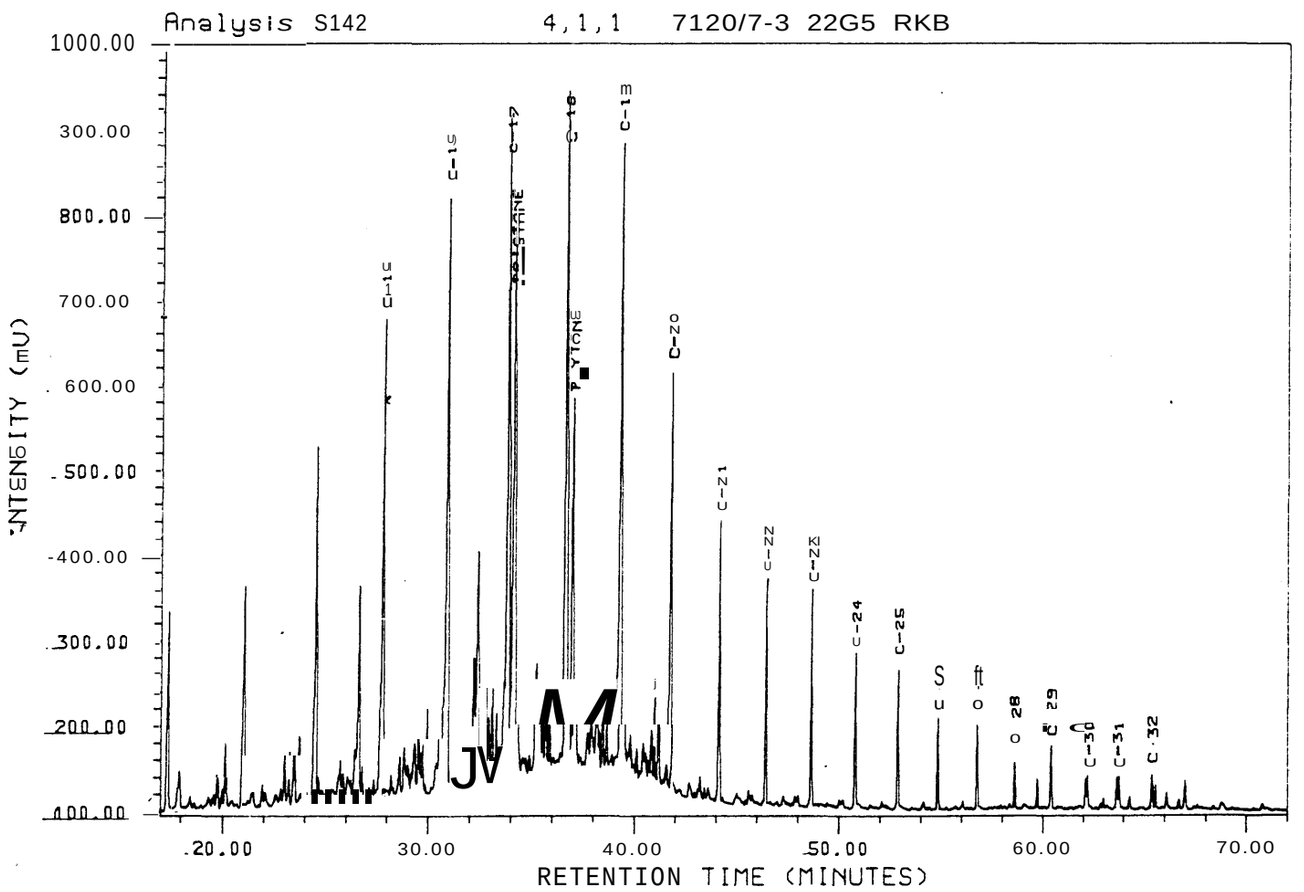
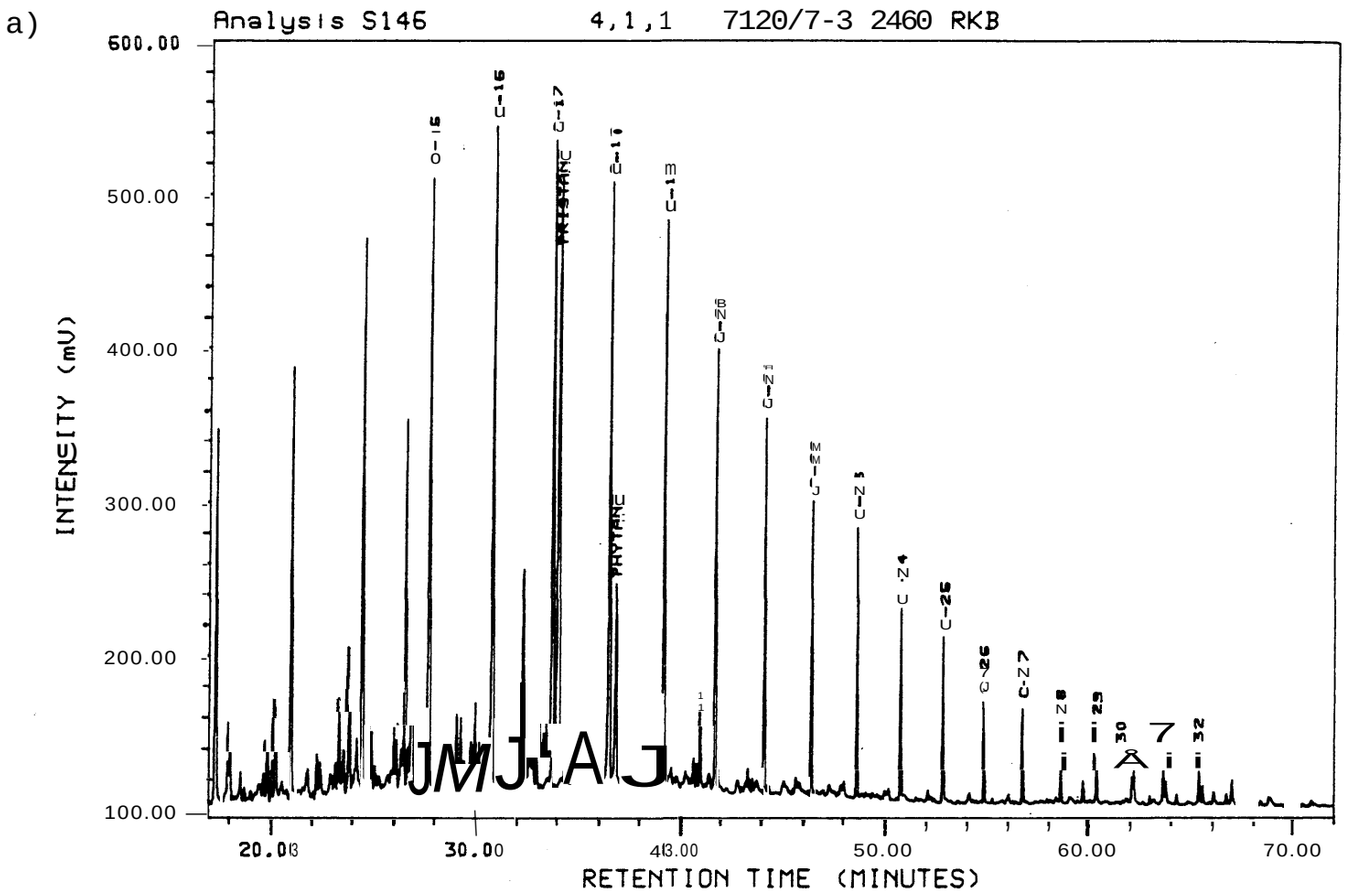


FiGURE 8 Chromatogram of C15+ saturates T4-3 (a) and T4-2 (b) formations



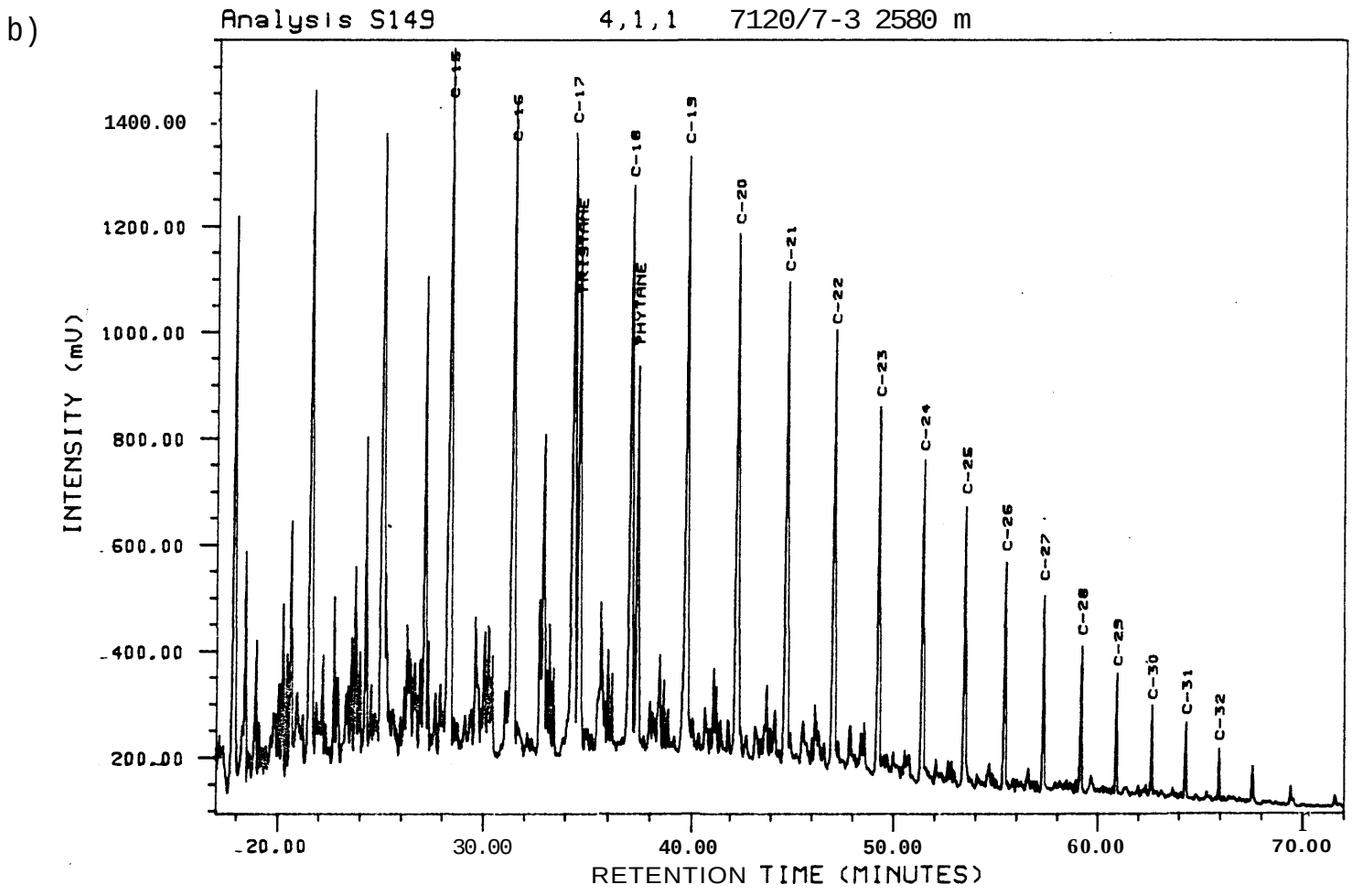
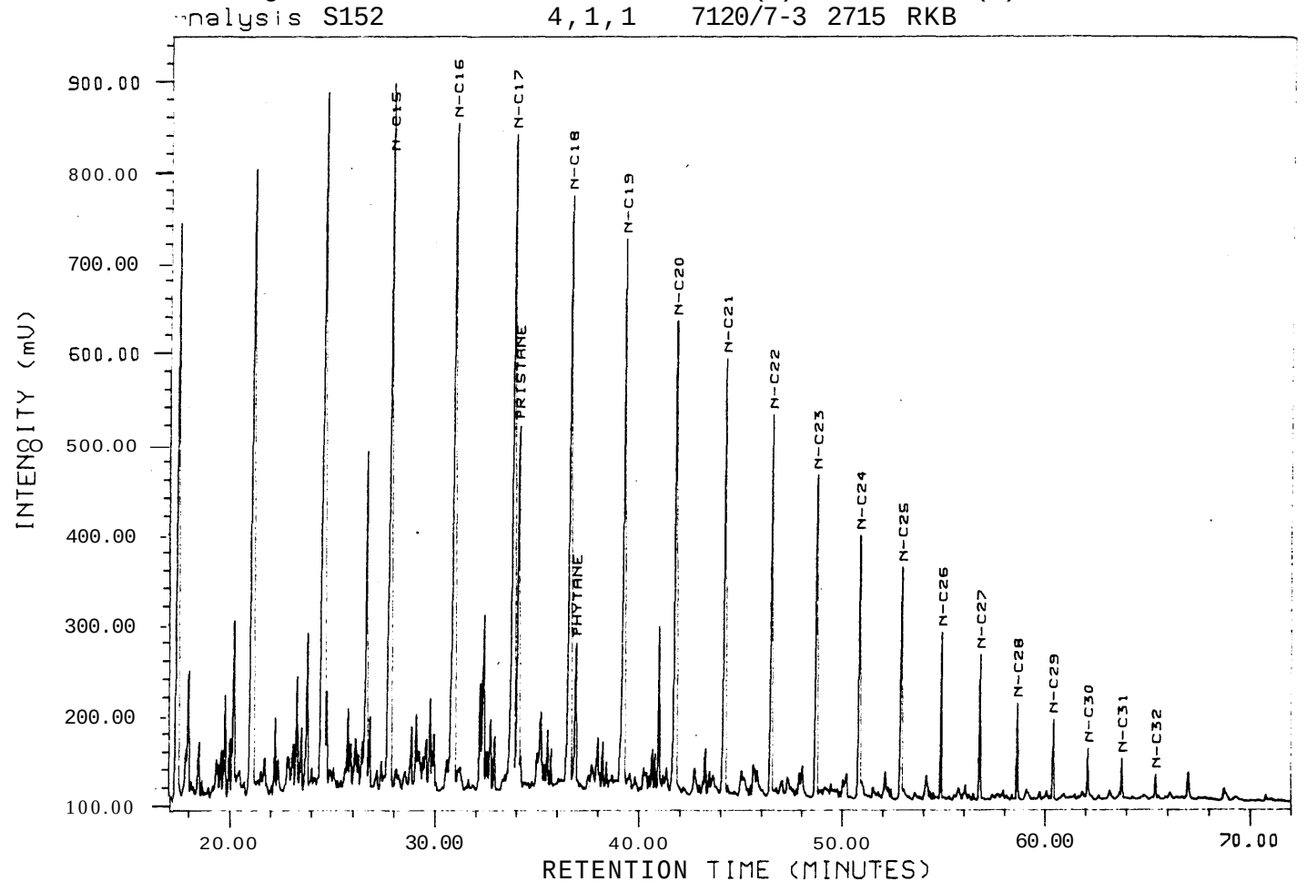


FIGURE 9 Chromatogram of C1$+ saturates T4-1 (a) and T3-2 (b) formations

a)



b)

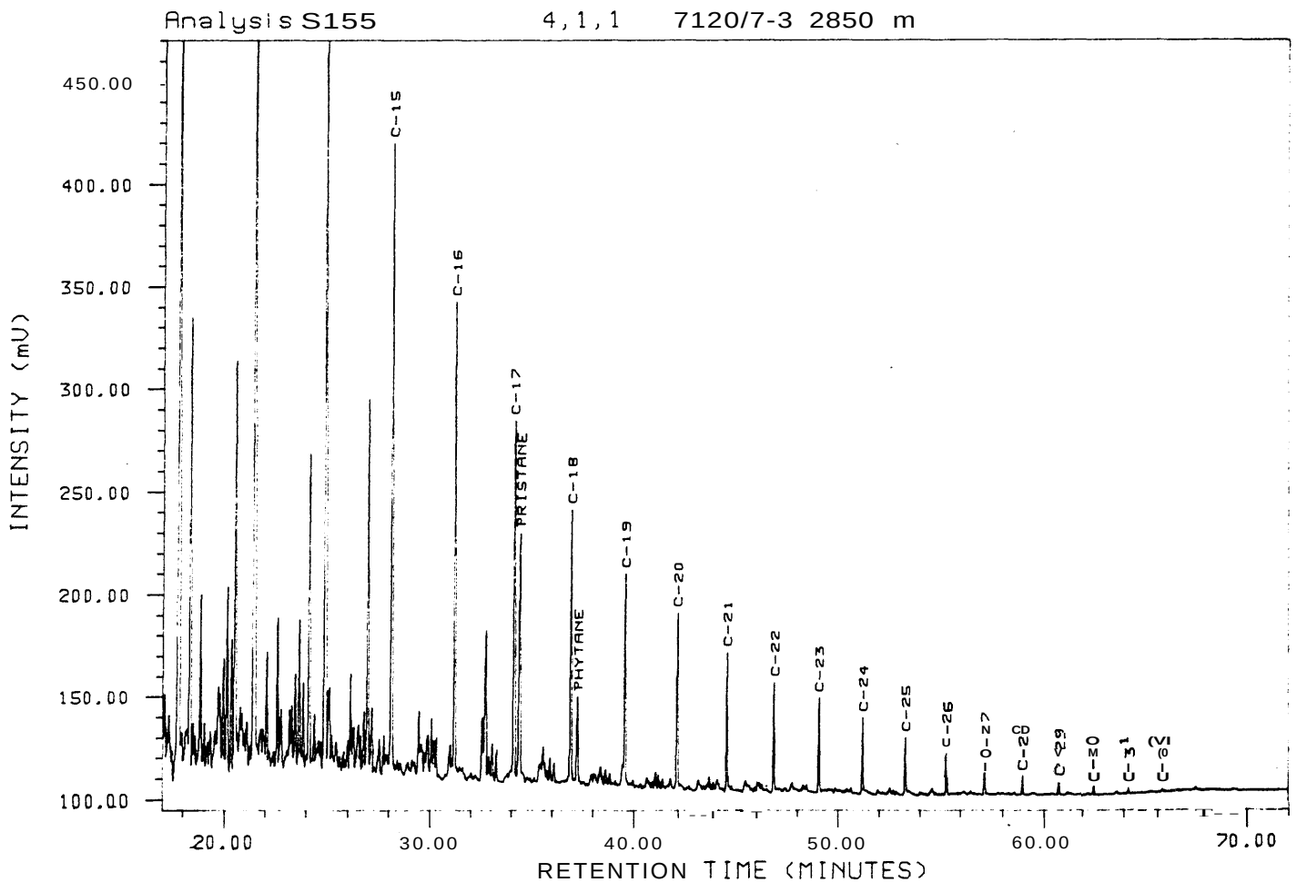


FIGURE 10 Chromatogram of C15+ saturates T3-1 formation

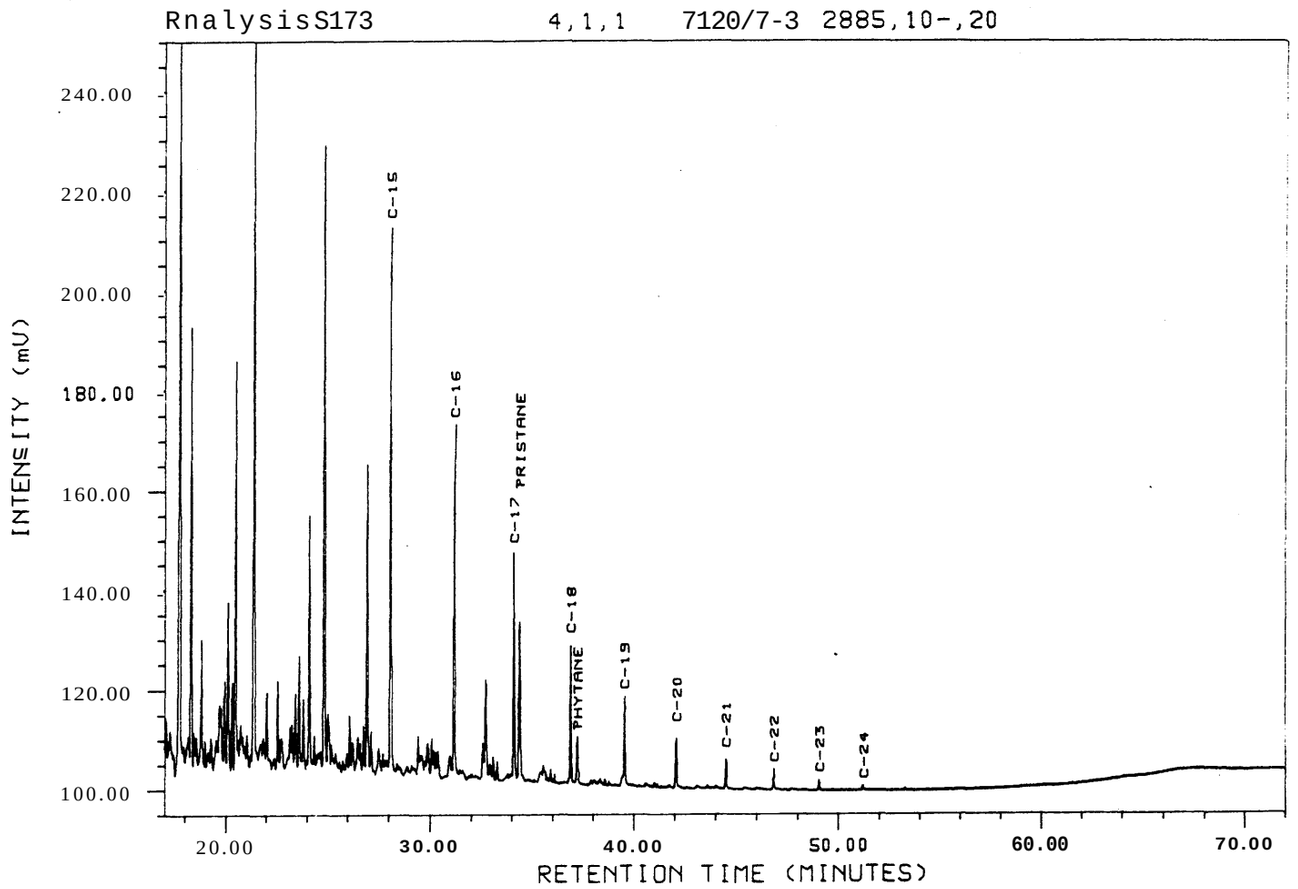
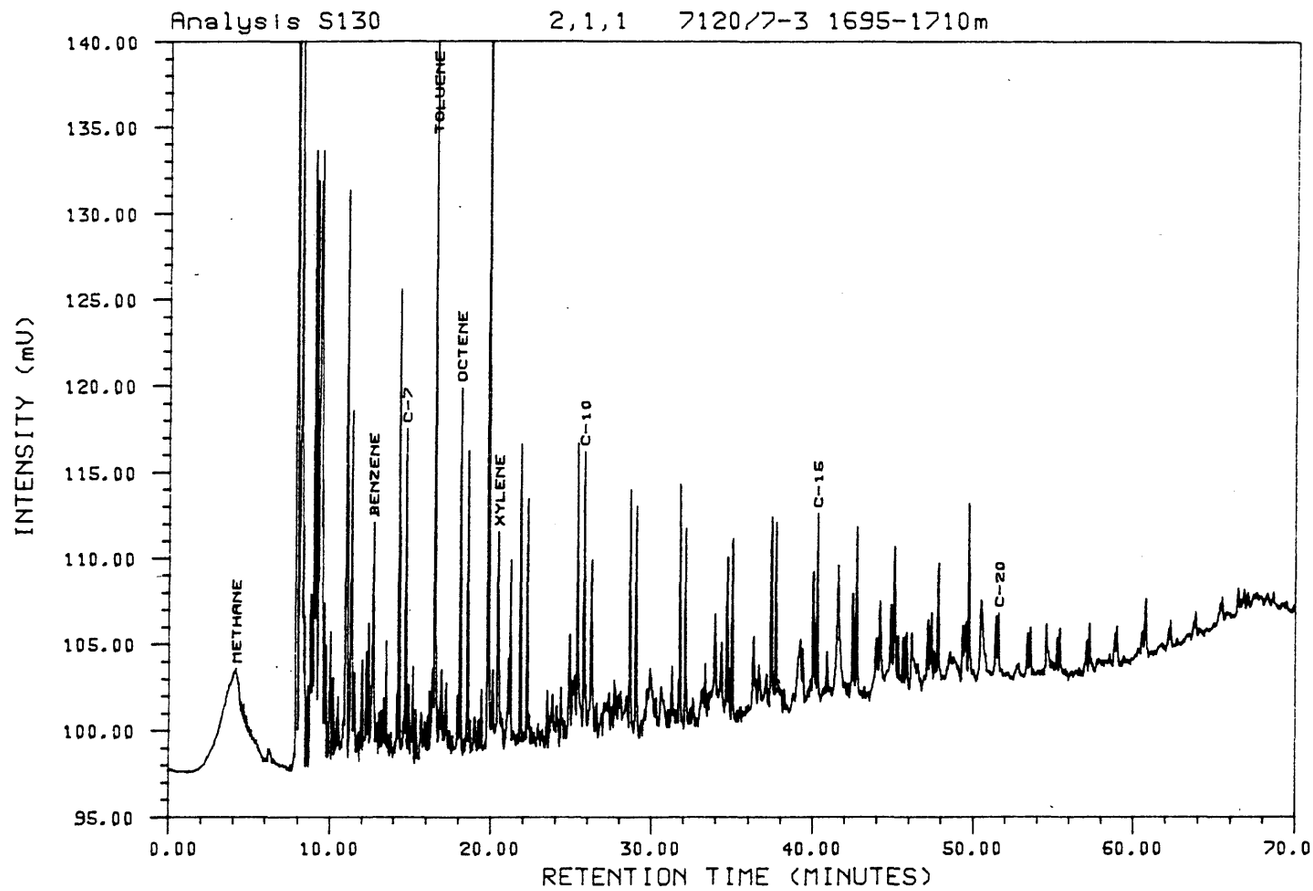


FIGURE 11 Pyrolysis chromatogram of rock T4-4 formation



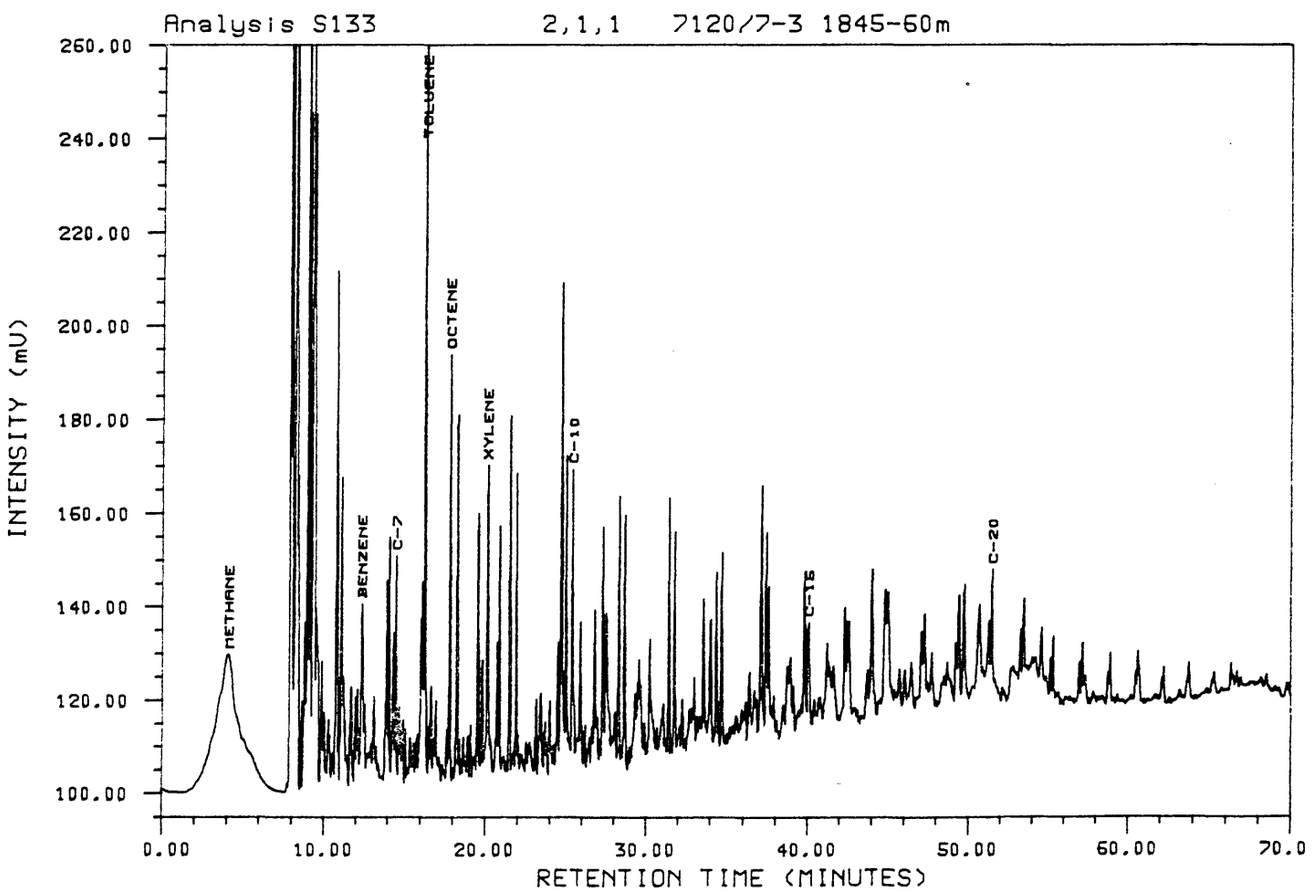
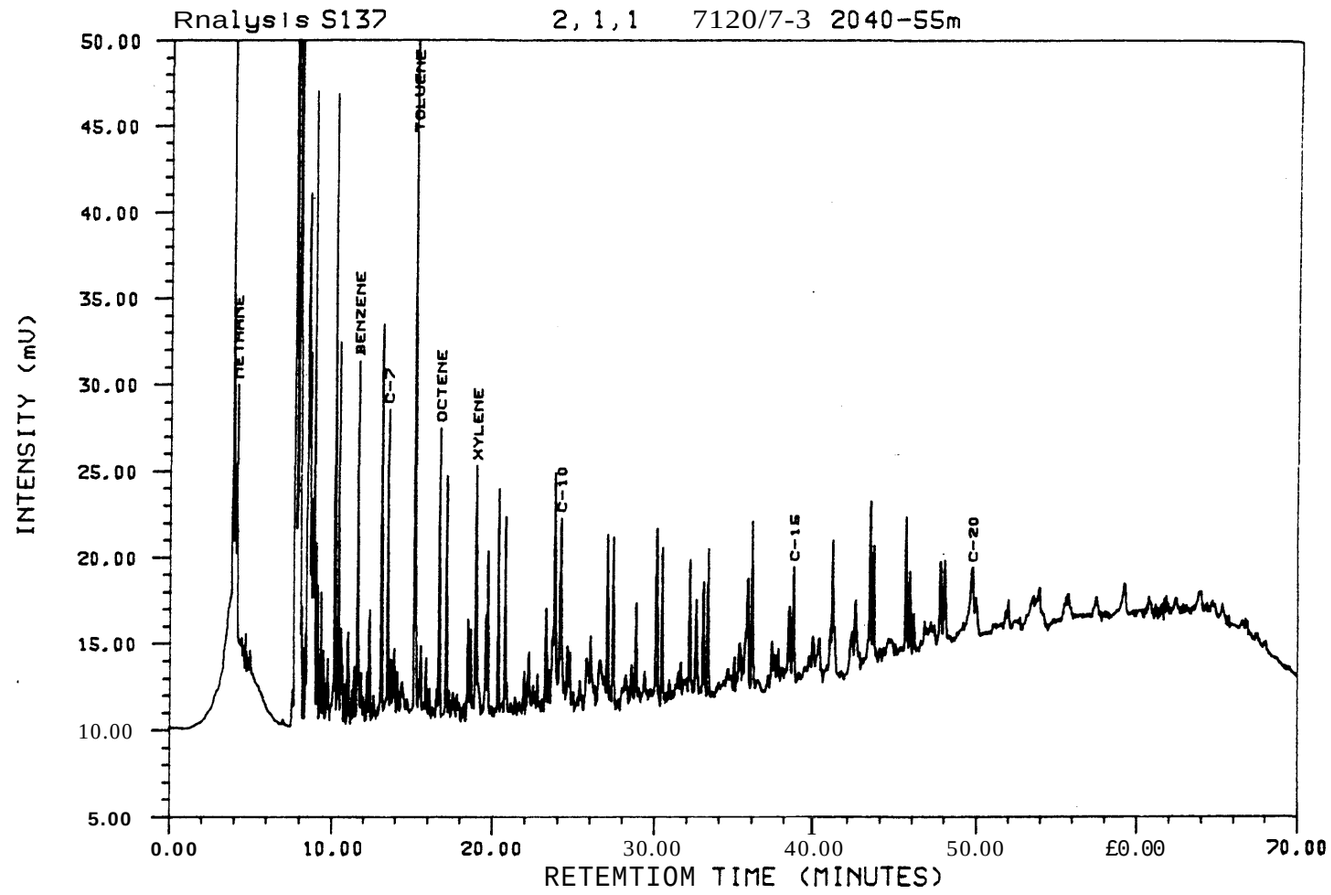


FIGURE 12 Pyrolysis chromatogram of rock T4-4 (a) and T4-3 (b) formations

a)



b)

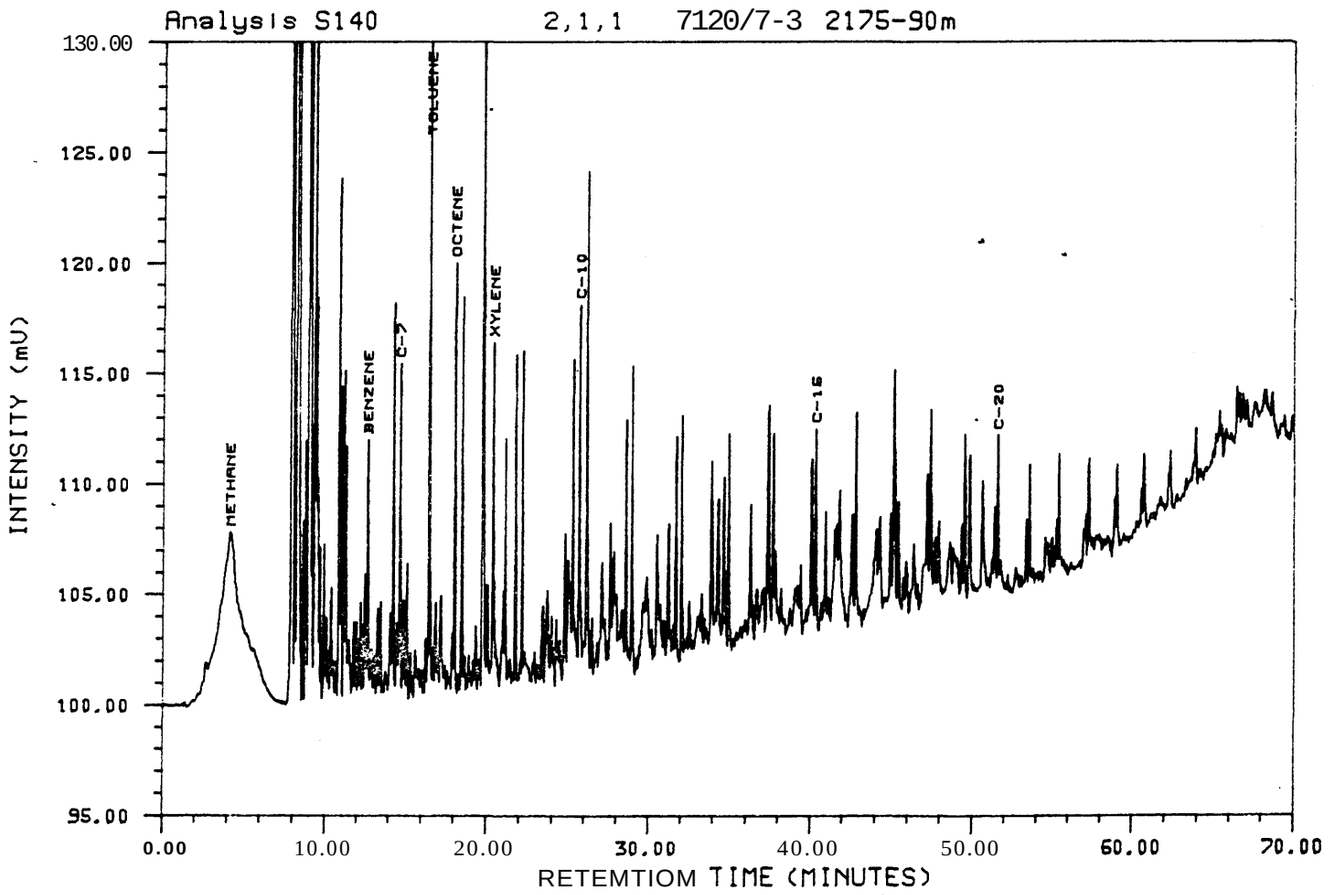
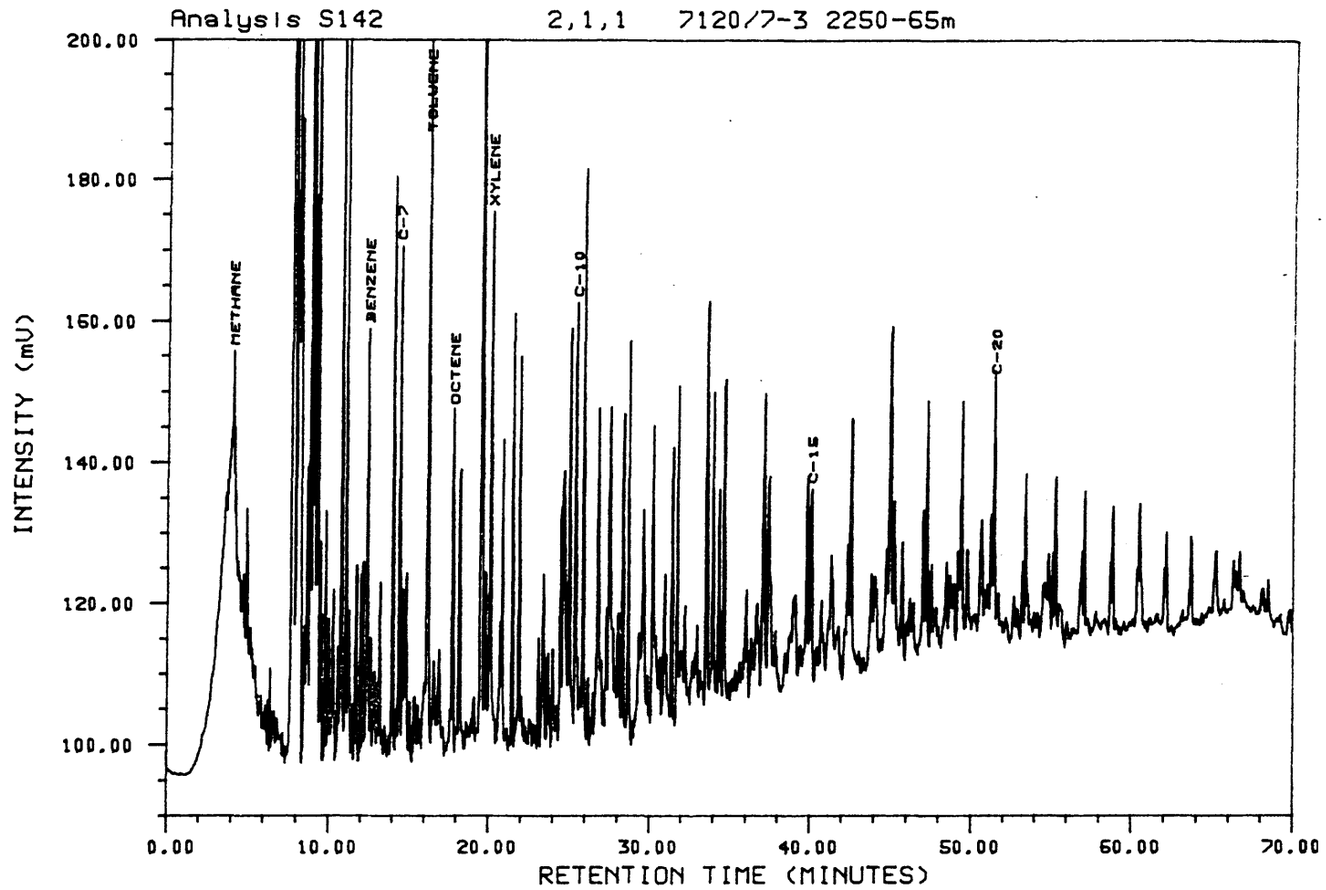
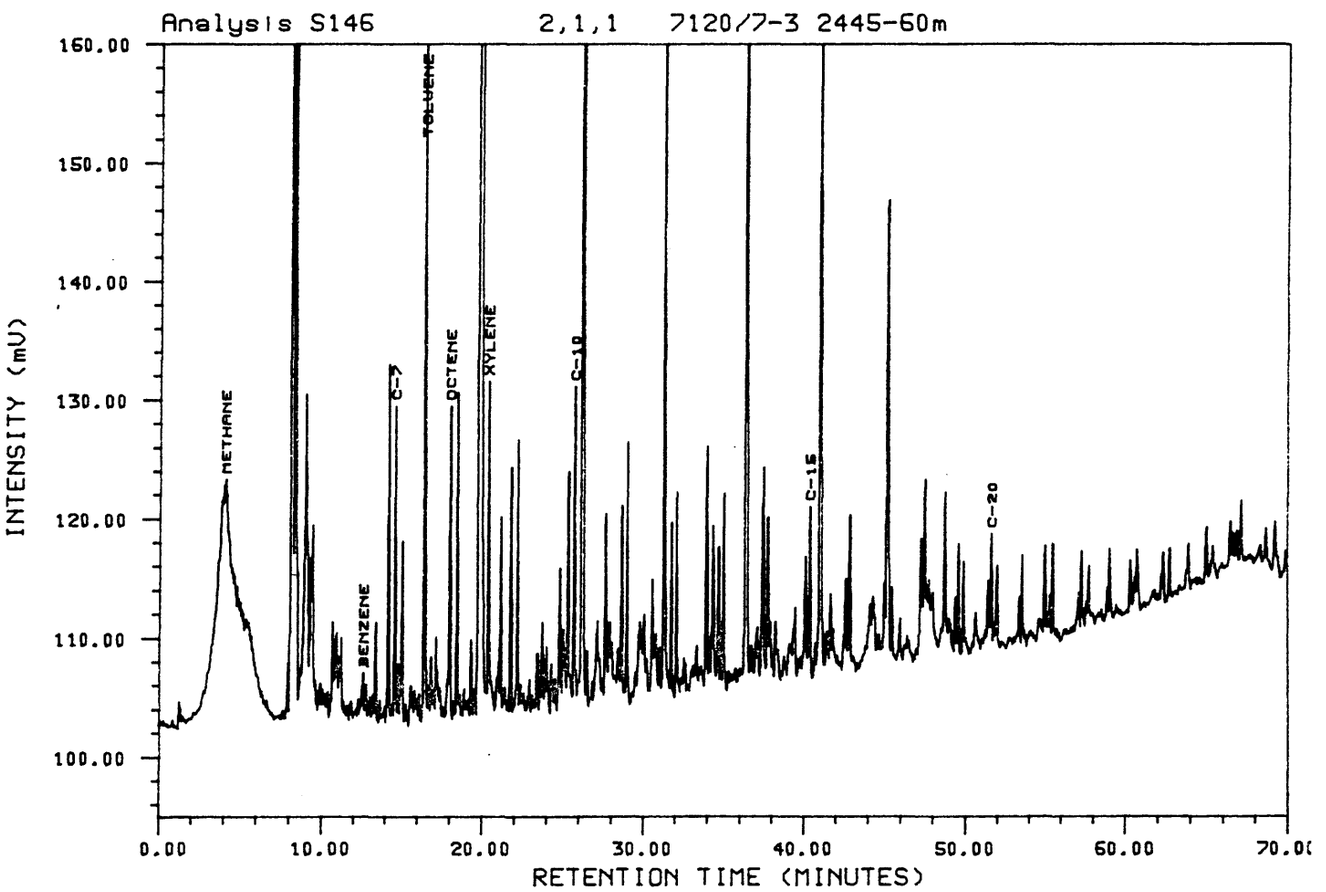


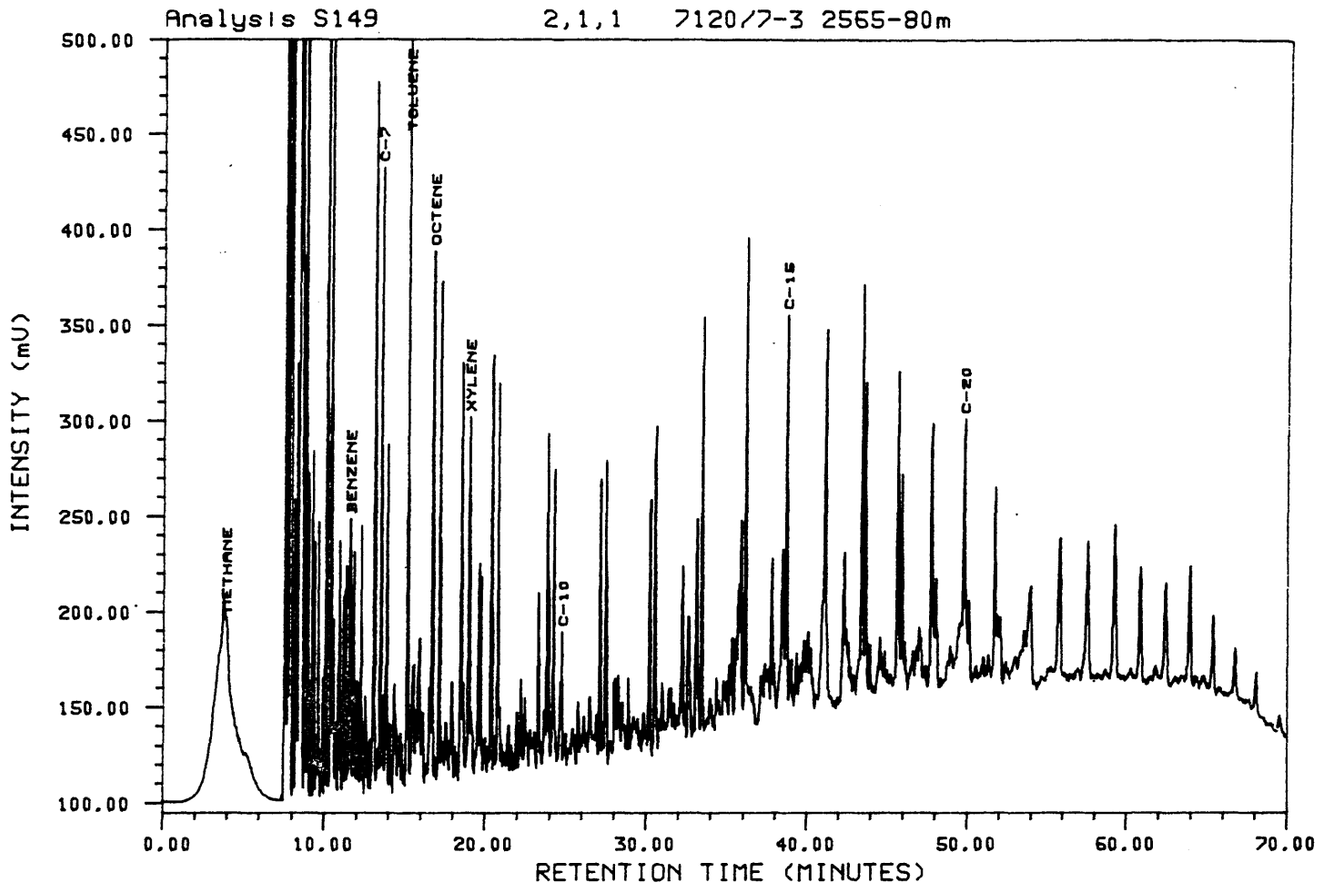
FIGURE 13 Pyrolysis chromatogram of rock T4-3 formation





FIGRE 14 Pyrolysis chromatogram of rock T4-2 (a) and T4-1 (b) formations

a)



b)

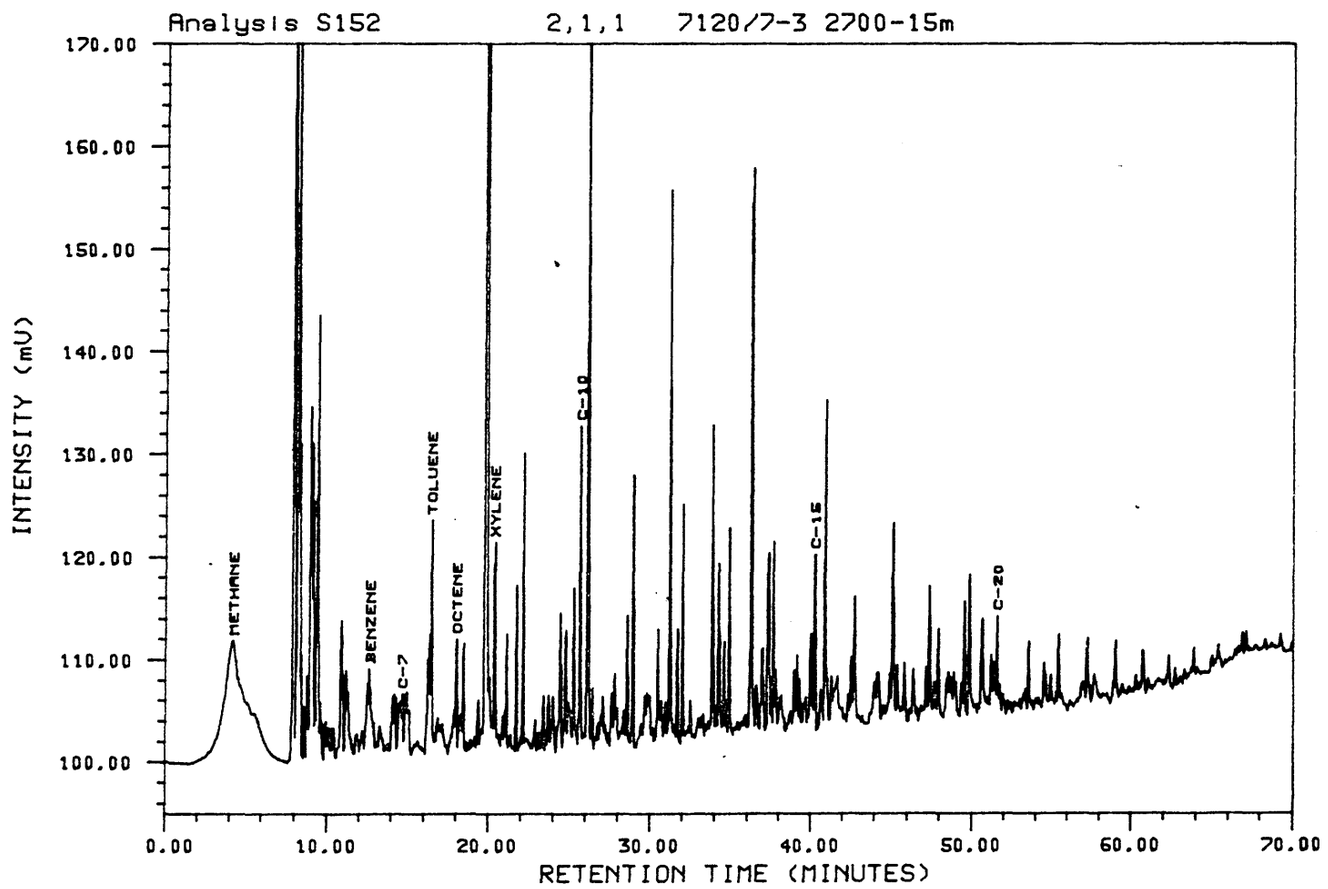
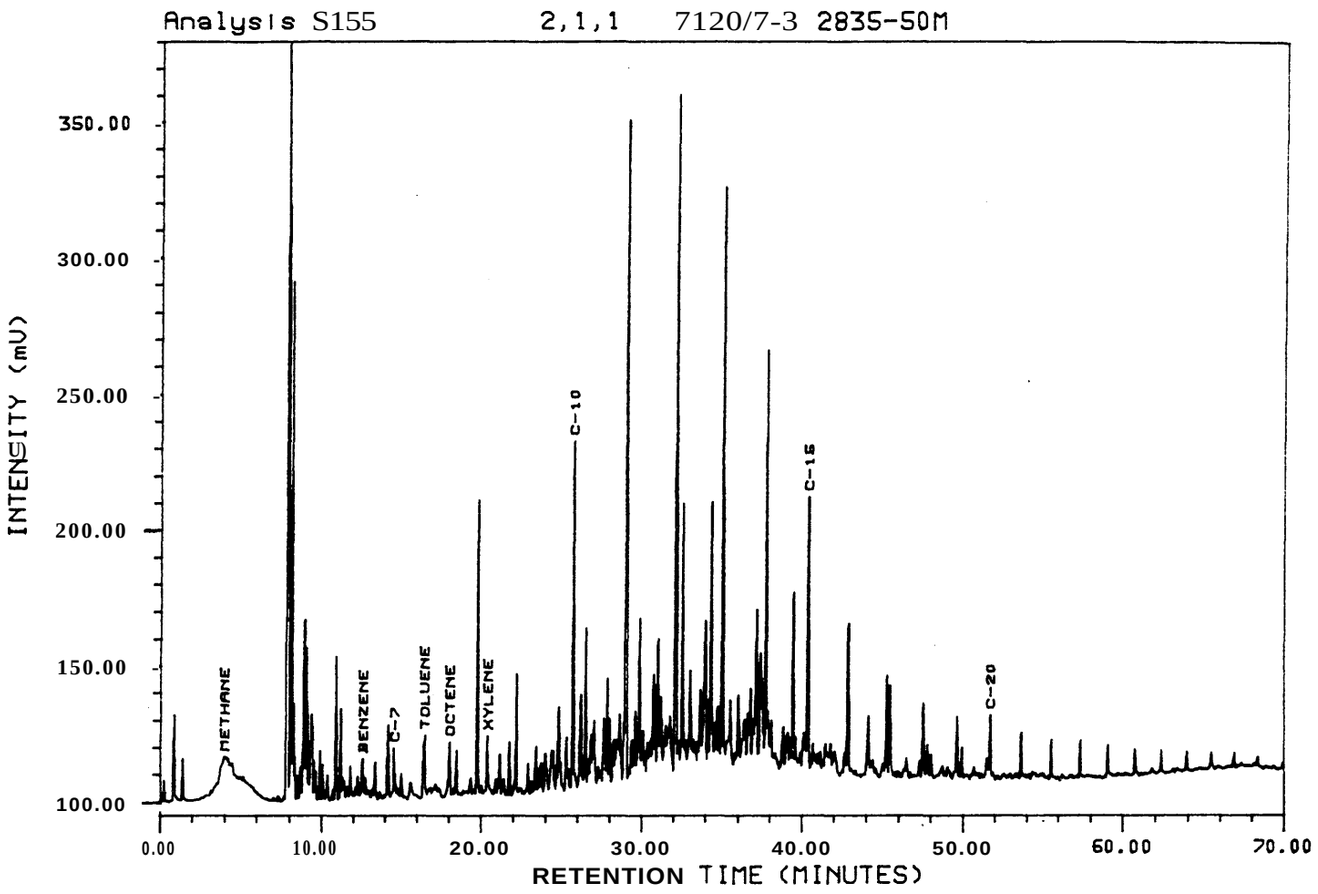


FIGURE 15 Pyrolysis chromatogram of rock T3-2 formation



APPENDIX

ANALYTICAL PROCEDURES

C_1 - C_7 LIGHT HYDROCARBON ANALYSIS

a) Headspace gas analysis

1.5 ml of the gas in each of the cans was analysed for light hydrocarbons, C_1 up to n-C_4 in separate peaks and C_5^+ as one peak.

The gas was analysed on a Perkin Elmer Sigma 3B, equipped with two column and backflush of the first column after n-C_4 had passed through.

Chromatographic conditions:

Column	:	The first column is 1.5 m and the second is 9.1 m long. Both with 30 % DC-200 on Chromosorb P,A/W, 60-80.
Carrier gas	:	Helium, 33 ml/min.
Detector	:	Flame ionisation, temp. 170°C.
Injector	:	1.5 ml loop injection.
Temp. program:		120°C isothermal.

The cans were opened and the volume of gas determined. The cuttings were washed with temperate water on 4, 2 and 0.125 mm sieves to remove drilling mud and thereafter dried at 35°C and weighed. Using an external standard the hydrocarbons in the cans are reported in concentration as µl gas/kg rock.

b) Occluded gas

Before drying about 20 g of the 2-4 mm fraction of each samples was crushed for 10 min. in water using a airtight ball mill. 2 ml of the headspace was analysed under some conditions as the headspace gas analysis.

TOTAL ORGANIC CARBON (TOC)

The samples were crushed in a centrifugal mill for 30 seconds, weighed in Leco crucibles and treated with HC1 to remove the carbonate. Afterwards they were washed with distilled water several times and dried. The samples were then analysed in a stream of oxygen by a LECO EC12 carbon analyser. The total organic carbon results are presented in weight percent.

ROCK-EVAL PYROLYSIS

Approximately 100 mg crushed samples were weighed and analysed in platinum crucibles by a Rock-Eval pyrolyser.
Conditions (cycle 1)

- purged with preheating to 450°C and cooled down to 300°C within 3-5 minutes.
- 300° C initial isotherm for 3 minutes.
- 25°C/min. temperature gradient.
- 390°C CO_2 trap shut off.
- 550°C isotherm for 2 minute.

EXTRACTABLE ORGANIC MATTER (EOM)

About 100 g fine crushed rock, 500 ml dichloromethane and a few mg copper were added to a stainless steel flask. The solution was extracted using a high speed mixer, 9000 RPM, for 10 min. The sample was then centrifuged, filtered, through a 0.5 µm filter, rotavaporated and dried under N_2-stream. The sample was then weighed.

CLASS SEPARATION

Asphaltene

Precipitation of asphaltenes was done by adding 40 times as much pentane as material, vibrated in an ultrabath for three min. and left to stand at room-temperature for at least 8 hours. The solution was then filtered through a preweighed 0.5 µm filter and washed several times. After air-drying, the filter was weighed and the differences in weight taken to be the amount of asphaltene.

Saturates aromatics and NSO-compounds

To separate the extract into saturates, aromatics and NSO-compounds the samples were diluted with hexane to 1 ml and the whole amount was injected into a medium pressure liquid chromatograph (Radke, M. et al., Anal. Chem., 52, 406-411, 1980). The fractions were rotavaporated and dried under vacuum before weighing.

Gas chromatography

The saturated fractions were analysed on a Perkin Elmer Sigma 2000 gas chromatograph under following conditions:

Column	:	Vitreous silica bonded phase BP 1 from SGE.
Temp. program:		50°C isothermal in 4 min., 4°C/min. to 300°C and isothermal in 20 min.
Injector	:	Splittless injection, temp. 320°C.
Detector	:	Flame ionisation, temp. 320°C.