

Petroleum Geochemistry Data Report -
Reservoir Study 7228/7-1 A, 7228/7-1
B and 7228/7-1 ST3



Applied Petroleum Technology AS
P. O. Box 123
2027 Kjeller
Norway

Address: Applied Petroleum Technology AS P.O.Box 123 2027 Kjeller Telephone: +47 63 80 60 00 Telefax: +47 63 80 11 38	
Report number APT01-149	Classification Confidential
Report Title Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3	Submitted
Client Statoil	Service Order
Client Reference APT2001-06/Turid Heide	Number of pages 235
Distribution Statoil (5) APT (1)	

Authors

Nigel Mills

Kjell Urdal

Per Erling Johansen

	Name	Date	Signature
Reviewed by	Nigel Mills	2001-11-29	
Approved by	Tore Haaland	2001-11-29	

Contents

Summary	2
Table 1. Lithology Description	3
Table 2. GC of saturated compounds (parameters)	4
Table 3. GCMS SIR of saturated compounds (parameters)	5
Table 4. GCMS SIR of aromatic compounds (parameters)	6
Table 5. Extraction, Asphaltene precipitation and Iatroscan data	7
Table 6. GC of saturated compounds (peak area)	9
Table 7. GC of saturated compounds (amounts in ng/g)	12
Table 8. GC of aromatic compounds (peak area)	15
Table 9. GCMS SIR of saturated compounds (peak height)	16
Table 10. GCMS SIR of saturated compounds (amounts in ng/g)	23
Table 11. GCMS SIR of aromatic compounds (peak height)	30
Table 12. Isotopes of fractions, $\delta^{13}\text{C}$ (‰ PDB)	35
GC Chromatograms of EOM	36
GC Chromatograms of Saturated Hydrocarbons	58
GC Chromatograms of Aromatic Hydrocarbons	74
GC-MS Chromatograms of Saturated Hydrocarbons	90
GC-MS Chromatograms of Aromatic Hydrocarbons	171
Experimental Procedures	232

Summary

This report is a data report on work performed under the Statoil project number APT2001-06. 3 drill cuttings samples, 7 side well cores and 32 core samples were included in this study. In addition, some samples that were analysed earlier in project APT2001-01, are also included in this report.

The numbers of different sample types and of analyses performed are shown below:

Analysis	Cuttings	SWC	Core Earlier+New	Total Earlier+New
Lithology Descriptions	3	7	3+32	3+42
Solvent Extraction	3	7	3+32	3+42
Asphaltene Precipitation	3	7	3+32	3+42
Iatroscan	2	4	2+20	2+26
MPLC	2	4	4+18	4+24
Carbon Isotopes	1	2	16	19
EOM GC	3	7	31	41
Saturates GC	2	4	4+18	4+24
Aromatics GC	2	4	4+18	4+24
Saturates GCMS	1	2	2+14	2+17
Aromatics GCMS	1	2	2+14	2+17

Table 1. Lithology Description

Well	Sample type	Upper Depth	Lower Depth	API ID	%	Lithology	Remarks
7228/7-1 ST3	COCH	1367.38	1367.40	11309	100 %	SST	f-m
7228/7-1 ST3	COCH	1377.00	1377.05	11786	100 %	SST	f-m
7228/7-1 ST3	COCH		1386.45	11787	100 %	SST	f-m-c
7228/7-1 ST3	COCH		1394.00	11788	100 %	SST	f-m-c
7228/7-1 ST3	DC		1719.00	11789A	70 %	SST	f-m
7228/7-1 ST3	DC		1719.00	11789B	20 %	CLYST	ltgy
7228/7-1 ST3	DC		1719.00	11789C	10 %	CLYST	dkgy
7228/7-1 ST3	DC		1911.00	11790A	80 %	SST	f-m
7228/7-1 ST3	DC		1911.00	11790B	20 %	CLYST	dkgy
7228/7-1 ST3	DC		1914.00	11791A	80 %	SST	f-m
7228/7-1 ST3	DC		1914.00	11791B	20 %	CLYST	dkgy
7228/7-1 B	SWC		1381.50	11792	100 %	SLST	clayey
7228/7-1 B	SWC		2132.00	11848	100 %	CLYST	sandy
7228/7-1 B	SWC		2136.50	11849	100 %	CLYST	sandy
7228/7-1 B	SWC		2139.00	11850	100 %	SST	f-m-c, clayey
7228/7-1 B	SWC		2152.00	11851	100 %	SST	f-m, clayey
7228/7-1 B	SWC		2158.00	11793	100 %	SLST	clayey
7228/7-1 B	SWC		2165.50	11852			
7228/7-1 A	COCH	2060.33	2060.35	11020	100 %	SST	f-m gy, sl calc
7228/7-1 A	COCH		2066.50	11794	100 %	SST	f-m-c
7228/7-1 A	COCH		2071.45	11795	100 %	SST	f-m-c
7228/7-1 A	COCH		2077.30	11796	100 %	SST	f-m-c
7228/7-1 A	COCH		2082.70	11797	100 %	SST	f-m-c, clayey slt lam dkgy
7228/7-1 A	COCH		2084.75	11798	100 %	SST	f-m
7228/7-1 A	COCH		2086.50	11799	100 %	SST	f-m
7228/7-1 A	COCH		2087.00	11800	100 %	SST	f-m
7228/7-1 A	COCH		2087.30	11801	100 %	SST	f-m
7228/7-1 A	COCH		2088.95	11802	100 %	SST	f-m
7228/7-1 A	COCH		2088.95	11803	100 %	SST	f-m
7228/7-1 A	COCH		2090.90	11804	100 %	SST	f-m-c
7228/7-1 A	COCH		2091.30	11805	100 %	SST	f-m-c
7228/7-1 A	COCH		2092.80	11806	100 %	SST	f-m-c
7228/7-1 A	COCH	2093.52	2093.54	11021	100 %	SST	m, gr-gy
7228/7-1 A	COCH		2093.80	11807	100 %	SST	f-m-c
7228/7-1 A	COCH		2095.00	11808	100 %	SST	f-m-c
7228/7-1 A	COCH		2096.00	11809	100 %	SST	f-m-c
7228/7-1 A	COCH		2097.00	11810	100 %	SST	f-m-c
7228/7-1 A	COCH		2098.30	11811	100 %	SST	f-m
7228/7-1 A	COCH		2099.30	11812	100 %	SST	f-m
7228/7-1 A	COCH		2100.95	11813	100 %	SST	f-m, clayey slt lam
7228/7-1 A	COCH		2101.25	11814	100 %	SST	f-m-c
7228/7-1 A	COCH		2101.90	11815	100 %	SST	f-m
7228/7-1 A	COCH		2102.25	11816	100 %	SST	f-m
7228/7-1 A	COCH		2102.50	11817	100 %	SST	f-m, slty-clayey dkgy
7228/7-1 A	COCH	2833.00	2833.02	11024A	100%	SST	slt-f gy, calc
7228/7-1 A	COCH	2833.00	2833.02	11024B	trace	COAL	lam

Well	Sample type	Upper Depth	Lower Depth	API ID	%	Lithology	Remarks
7228/7-1 A	COCH		2835.25	11818	100 %	CLYST	slty dkgy-ltgy
7228/7-1 A	COCH		2846.25	11819	100 %	SST	c-m-f
7228/7-1 A	COCH		2853.15	11820	100 %	SST	c-m-f
7228/7-1 A	COCH		2858.70	11821	100 %	SST	f-m, clayey dkgy-ltgy

Table 2. GC of saturated compounds (parameters)

Well	Sample type	Upper Depth	Lower Depth	API ID	Prn C17	Prn C18	API C17 (Prn C17)	Prn C18	API C18 (Prn C18)
7228/7-1 ST3	COCH	1367.38	1367.40	11309	0.53	0.63	0.85	0.75	1.00
7228/7-1 ST3	DC		1719	11789	0.55	0.32	1.72	1.92	0.88
7228/7-1 ST3	DC		1911	11790	0.61	0.25	2.42	3.37	0.88
7228/7-1 B	SWC	1381.50	1381.50	11792	0.82	0.51	1.61	1.57	0.75
7228/7-1 B	SWC	2139.00	2139	11850	0.46	0.30	1.54	1.35	0.67
7228/7-1 B	SWC	2152.00	2152	11851	0.65	0.39	1.67	1.68	0.69
7228/7-1 B	SWC	2165.50	2165.50	11852	0.39	0.26	1.49	1.50	0.76
7228/7-1 A	COCH	2060.33	2060.35	11020	0.46	0.31	1.50	1.54	0.72
7228/7-1 A	COCH	2066.50	2066.50	11794	0.46	0.31	1.50	1.46	0.71
7228/7-1 A	COCH	2071.45	2071.45	11795	0.47	0.30	1.53	1.46	0.69
7228/7-1 A	COCH	2082.70	2082.70	11797	0.43	0.29	1.48	1.53	0.75
7228/7-1 A	COCH	2086.50	2086.50	11799	0.46	0.31	1.51	1.54	0.74
7228/7-1 A	COCH	2087.00	2087	11800	0.47	0.49	0.96	0.82	1.00
7228/7-1 A	COCH	2087.30	2087.30	11801	0.45	0.30	1.52	1.54	0.73
7228/7-1 A	COCH	2088.95	2088.95	11802	0.45	0.30	1.50	1.53	0.74
7228/7-1 A	COCH	2088.95	2088.95	11803	0.45	0.29	1.55	1.57	0.74
7228/7-1 A	COCH	2091.30	2091.30	11805	0.43	0.29	1.50	1.54	0.74
7228/7-1 A	COCH	2093.52	2093.54	11021	0.45	0.30	1.49	1.59	0.73
7228/7-1 A	COCH	2093.80	2093.80	11807	0.43	0.30	1.44	1.45	0.75
7228/7-1 A	COCH	2095.00	2095	11808	0.42	0.32	1.34	1.35	0.76
7228/7-1 A	COCH	2096.00	2096	11809	0.46	0.32	1.44	1.41	0.74
7228/7-1 A	COCH	2097.00	2097	11810	0.46	0.36	1.29	1.24	0.76
7228/7-1 A	COCH	2098.30	2098.30	11811	0.46	0.30	1.54	1.54	0.73
7228/7-1 A	COCH	2099.30	2099.30	11812	0.45	0.30	1.49	1.51	0.73
7228/7-1 A	COCH	2101.25	2101.25	11814	0.43	0.29	1.49	1.50	0.74
7228/7-1 A	COCH	2102.25	2102.25	11816	0.43	0.29	1.47	1.49	0.73
7228/7-1 A	COCH	2102.50	2102.50	11817	0.43	0.27	1.57	1.54	0.73
7228/7-1 A	COCH	2833.00	2833.02	11024	0.50	0.57	0.87	0.67	1.00

Table 3. GCMS SIR of saturated compounds (parameters)

Well	Sample Type	Depth (m)	Depth (ft)	APIID	%C ₁₅	%C ₁₆	%C ₁₇	%C ₁₈	%C ₁₉	%C ₂₀	%C ₂₁	%C ₂₂	%C ₂₃	%C ₂₄	%C ₂₅
7228/7-1 ST3	COCH	1367.38	1367.40	11309	61.84	9.63	7.95	72.48	55.23	28.84	53.39	56.82	69.32	49.86	28.11
7228/7-1 ST3	DC		1719	11789	4.51	5.20	4.91	11.11	59.74	9.19	53.75	44.91	49.18	26.04	52.41
7228/7-1 B	SWC	2139.00	2139	11850	20.98	3.88	10.23	33.65	59.67	16.95	53.41	52.32	62.55	32.26	43.06
7228/7-1 B	SWC	2165.50	2165.50	11852	40.24	9.31	11.89	51.77	60.97	26.28	59.45	52.57	51.85	35.39	40.92
7228/7-1 A	COCH	2066.50	2066.50	11794	38.80	5.76	10.60	47.66	58.80	19.29	54.81	53.79	66.53	39.78	37.10
7228/7-1 A	COCH	2071.45	2071.45	11795	24.49	3.66	11.64	33.11	58.24	17.03	55.50	51.51	64.01	32.11	45.71
7228/7-1 A	COCH	2082.70	2082.70	11797	22.83	4.24	11.68	31.79	58.98	17.33	50.78	47.49	62.97	30.36	46.33
7228/7-1 A	COCH	2086.50	2086.50	11799	23.80	4.80	11.14	34.75	59.24	16.93	50.47	50.45	65.75	30.57	44.89
7228/7-1 A	COCH	2087.30	2087.30	11801	21.97	3.87	12.10	32.39	60.43	16.54	53.41	50.19	68.00	29.60	46.95
7228/7-1 A	COCH	2088.95	2088.95	11802	21.39	3.53	11.42	32.21	59.57	15.98	49.82	48.77	69.15	30.03	46.53
7228/7-1 A	COCH	2088.95	2088.95	11803	21.18	4.56	11.79	32.45	59.07	15.92	51.05	48.24	71.44	29.27	46.68
7228/7-1 A	COCH	2093.80	2093.80	11807	20.82	3.94	11.78	33.71	59.61	16.05	50.58	48.21	70.23	29.72	46.55
7228/7-1 A	COCH	2097.00	2097	11810	59.10	9.02	7.67	71.37	59.75	26.62	60.02	59.76	71.56	48.49	27.99
7228/7-1 A	COCH	2098.30	2098.30	11811	21.72	4.38	11.41	31.99	60.18	15.96	49.63	48.72	69.75	29.80	45.71
7228/7-1 A	COCH	2099.30	2099.30	11812	21.84	4.57	11.56	32.68	59.74	15.82	51.75	47.81	69.36	30.32	46.60
7228/7-1 A	COCH	2101.25	2101.25	11814	22.60	3.87	11.99	32.13	59.82	16.97	51.02	48.22	70.64	29.23	46.61
7228/7-1 A	COCH	2102.25	2102.25	11816	28.23	4.43	11.68	40.44	59.10	17.98	51.04	50.60	70.77	34.81	41.21
7228/7-1 A	COCH	2102.50	2102.50	11817	23.16	4.30	11.87	33.75	59.93	16.43	51.30	48.22	69.24	31.00	44.87
7228/7-1 A	COCH	2833.00	2833.02	11024	63.51	10.76	6.84	75.08	58.56	28.29	60.68	61.01	72.69	48.93	27.82

%C_{23/3} $23/3/(23/3+30\alpha\beta)*100$

%C_{28αβ} $28\alpha\beta/(28\alpha\beta+30\alpha\beta)*100$

%C_{30D} $30D/(30D+30\alpha\beta)*100$

%C_{28Ts} $27Ts/(27Ts+27Tm)*100$

%C_{22S} $(32\alpha\beta S/(32\alpha\beta S+32\alpha\beta R))*100$

%C_{29Ts} $(29Ts/29Ts+30\alpha\beta)*100$

%C_{20S} $(29\alpha\alpha S/29\alpha\alpha S+29\alpha\alpha R)*100$

%C_{ββ} $(29\beta\beta(R+S)/(29\beta\beta(R+S)+29\alpha\alpha(R+S))*100$

%C_{27dβS} $27d\beta S/(27d\beta S+27\alpha\alpha(R+S))*100$

%C₂₇ $(27\beta\beta(R+S)/(27\beta\beta(R+S)+28\beta\beta(R+S)+29\beta\beta(R+S))*100$

%C₂₉ $(29\beta\beta(R+S)/(27\beta\beta(R+S)+28\beta\beta(R+S)+29\beta\beta(R+S))*100$

Table 4. GCMS SIR of aromatic compounds (parameters)

Well	Sample	Upper Depth	Lower Depth	API	AROM	Crack1	Crack2	MA2	MA3	MA4	MA5	MA6	MA7	MA8	MA9
7228/7-1 ST3	COCH	1367.38	1367.40	11309	0.338	0.593	0.286	0.313	2.775	0.367	1.603	2.537	0.707	0.122	1.136
7228/7-1 ST3	DC		1719	11789	0.735	0.350	0.211	0.312	2.044	0.433	1.859	4.516	0.442	0.085	3.118
7228/7-1 B	SWC	2139.00	2139	11850	0.752	0.646	0.389	0.329	4.260	0.435	1.144	3.433	0.868	0.100	6.613
7228/7-1 B	SWC	2165.50	2165.50	11852	0.975	0.862	0.581		4.312	0.357	1.369	4.904	0.769	0.089	32.479
7228/7-1 A	COCH	2066.50	2066.50	11794	0.768	0.762	0.526	0.402	5.073	0.427	1.197	4.338	0.834	0.104	7.337
7228/7-1 A	COCH	2071.45	2071.45	11795	0.794	0.740	0.501	0.415	4.601	0.430	1.275	5.166	0.770	0.105	7.525
7228/7-1 A	COCH	2082.70	2082.70	11797	0.900	0.828	0.619	0.520	4.672	0.436	1.825	7.451	0.689	0.102	10.314
7228/7-1 A	COCH	2086.50	2086.50	11799	0.749	0.698	0.445	0.381	4.883	0.440	1.208	5.236	0.801	0.109	6.496
7228/7-1 A	COCH	2087.30	2087.30	11801	0.723	0.642	0.393	0.372	4.710	0.448	1.387	6.445	0.812	0.111	6.021
7228/7-1 A	COCH	2088.95	2088.95	11802	0.714	0.626	0.377	0.349	4.623	0.456	1.393	6.162	0.845	0.111	5.760
7228/7-1 A	COCH	2088.95	2088.95	11803	0.713	0.592	0.354	0.337	4.635	0.447	1.420	6.451	0.818	0.110	5.810
7228/7-1 A	COCH	2093.80	2093.80	11807	0.731	0.613	0.372	0.328	4.678	0.449	1.475	6.019	0.834	0.109	6.393
7228/7-1 A	COCH	2097.00	2097	11810	0.769	0.675	0.420	0.406	5.704	0.436	1.380	6.027	0.819	0.106	6.520
7228/7-1 A	COCH	2098.30	2098.30	11811	0.731	0.621	0.374	0.349	4.738	0.452	1.488	6.625	0.837	0.108	5.963
7228/7-1 A	COCH	2099.30	2099.30	11812	0.738	0.617	0.365	0.364	4.855	0.454	1.497	6.434	0.841	0.107	6.083
7228/7-1 A	COCH	2101.25	2101.25	11814	0.775	0.665	0.420	0.377	4.856	0.443	1.783	7.627	0.770	0.100	7.465
7228/7-1 A	COCH	2102.25	2102.25	11816	0.720	0.588	0.349	0.334	4.734	0.441	1.498	6.395	0.908	0.102	5.909
7228/7-1 A	COCH	2102.50	2102.50	11817	0.742	0.636	0.390	0.348	4.723	0.442	1.640	6.253	0.853	0.098	6.746
7228/7-1 A	COCH	2833.00	2833.02	11024	0.818	1.000	1.000		9.303	0.459	1.327	3.947	1.107	0.038	60.087

AROM2: $(C_{20}TA+C_{21}TA+SC_{26}TA+RC_{27}TA+SC_{28}TA+RC_{27}TA+RC_{28}TA)/(C_{20}TA+C_{21}TA+SC_{26}TA+RC_{27}TA+SC_{28}TA+RC_{27}TA+RC_{28}TA+C_{21}MA+C_{22}MA+\beta SC_{27}MA+\beta RC_{27}MA+\beta RC_{27}DMA+\alpha SC_{27}MA+\beta SC_{28}MA+\beta SC_{28}DMA+\alpha RC_{27}DMA+\alpha SC_{27}DMA+\alpha RC_{27}MA+\alpha SC_{28}MA+\alpha SC_{29}MA+\alpha RC_{29}MA)$

Crack1: $(C_{20}TA)/(C_{20}TA+RC_{28}TA)$

Crack2: $(C_{20}TA+C_{21}TA)/(C_{20}TA+C_{21}TA+SC_{26}TA+RC_{27}TA+SC_{28}TA+RC_{27}TA+RC_{28}TA)$

MA2: $(C_{21}MA+C_{22}MA)/(C_{21}MA+C_{22}MA+\beta SC_{27}MA+\beta RC_{27}MA+\beta RC_{27}DMA+\alpha SC_{27}MA+\beta SC_{28}MA+\beta SC_{28}DMA+\alpha RC_{27}DMA+\alpha SC_{27}DMA+\alpha RC_{27}MA+\alpha SC_{28}MA+\alpha SC_{29}MA+\alpha RC_{29}MA)$

MA3: 4-MDBT/1-MDBT

MA4: $(2-MP+3-MP)/(1-MP+2-MP+3-MP+9-MP)$

MA5: 2-MN/1-MN

MA6: $(2,6-DMN+2,7-DMN)/1,5-DMN$

MA7: 4-MDBT/DBT

MA8: DBT/P

MA9: 3-MP/Retene

Table 5. Extraction, Asphaltene precipitation and Iatroscan data

Well	Sample Type	Upper Depth	Lower Depth	App ID	Rock Weight (g)	ECM (mg)	ECM (mg/kg Rock)	Sol (mg/kg Rock)	ARO (mg/kg Rock)	POL (mg/kg Rock)	ASP (mg/kg Rock)	SAT (wt% of ECM)	ARO (wt% of ECM)	POL (wt% of ECM)	ASP (wt% of ECM)	HC (wt% of ECM)
7228/7-1 ST3	COCH	1367.38	1367.40	11309	12.510	30	2398	1831	16	320	232	76.3	0.7	13.3	9.7	77.0
7228/7-1 ST3	COCH	1377.00	1377.05	11786	14.310	26	1817				797				43.8	
7228/7-1 ST3	COCH		1386.45	11787	12.330	8	649				292				45.0	
7228/7-1 ST3	COCH		1394.00	11788	15.130	22	1454				152				10.5	
7228/7-1 ST3	DC		1719.00	11789	16.030	48	2994	234	35	2563	162	7.8	1.2	85.6	5.4	9.0
7228/7-1 ST3	DC		1911.00	11790	16.620	45	2708	90	31	2496	90	3.3	1.2	92.2	3.3	4.5
7228/7-1 ST3	DC		1914.00	11791	15.610	29	1858				115				6.2	
7228/7-1 B	SWC		1381.50	11792	15.900	74	4654	87	6	4171	390	1.9	0.1	89.6	8.4	2.0
7228/7-1 B	SWC		2132.00	11848	8.950	80	8939				1162				13.0	
7228/7-1 B	SWC		2136.50	11849	10.210	116	11361				1469				12.9	
7228/7-1 B	SWC		2139.00	11850	7.940	121	15239	9746	697	3574	1222	64.0	4.6	23.5	8.0	68.5
7228/7-1 B	SWC		2152.00	11851	5.070	59	11637	327	0	10600	710	2.8	0.0	91.1	6.1	2.8
7228/7-1 B	SWC		2158.00	11793	11.480	79	6882				357				5.2	
7228/7-1 B	SWC		2165.50	11852	9.860	118	11968	3876	661	6813	619	32.4	5.5	56.9	5.2	37.9
7228/7-1 A	COCH	2060.33	2060.35	11020	14.640	53	3620	1275	50	553	1742	35.2	1.4	15.3	48.1	36.6
7228/7-1 A	COCH		2066.50	11794	14.750	44	2983	1075	71	1470	366	36.0	2.4	49.3	12.3	38.4
7228/7-1 A	COCH		2071.45	11795	16.830	41	2436	1223	83	982	149	50.2	3.4	40.3	6.1	53.6
7228/7-1 A	COCH		2077.30	11796	16.460	30	1823				425				23.3	
7228/7-1 A	COCH		2082.70	11797	15.480	84	5426	3192	786	964	484	58.8	14.5	17.8	8.9	73.3
7228/7-1 A	COCH		2084.75	11798	15.340	67	4368				326				7.5	
7228/7-1 A	COCH		2086.50	11799	14.900	45	3020	1599	112	973	336	52.9	3.7	32.2	11.1	56.7
7228/7-1 A	COCH		2087.00	11800	15.500	262	16903	15906	3	168	826	94.1	0.0	1.0	4.9	94.1
7228/7-1 A	COCH		2087.30	11801	15.110	100	6618	5564	377	466	212	84.1	5.7	7.0	3.2	89.8
7228/7-1 A	COCH		2088.95	11802	15.080	207	13727	12163	738	481	345	88.6	5.4	3.5	2.5	94.0
7228/7-1 A	COCH		2088.95	11803	13.440	128	9524	8886	459	0	179	93.3	4.8	0.0	1.9	98.1
7228/7-1 A	COCH		2090.90	11804	15.190	6	395				145				36.7	
7228/7-1 A	COCH		2091.30	11805	14.400	157	10903	9579	502	460	361	87.9	4.6	4.2	3.3	92.5
7228/7-1 A	COCH		2092.80	11806	14.150	137	9682				226				2.3	

Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3

Well	Sample type	Upper Depth	Lower Depth	API ID	Rock Weight (g)	FOI (wt%)	FOI (wt%) of Rock	SAT (wt%) of Rock	API (wt%) of Rock	FOI (wt%) of Rock	ASP (wt%) of Rock	SAT (wt%) of Rock	API (wt%) of Rock	FOI (wt%) of Rock	ASP (wt%) of Rock	FOI (wt%) of Rock
7228/7-1 A	COCH	2093.52	2093.54	11021	21.820	342	15674	12811	1459	803	600	81.7	9.3	5.1	3.8	91.0
7228/7-1 A	COCH		2093.80	11807	14.760	196	13279	11543	761	0	976	86.9	5.7	0.0	7.3	92.7
7228/7-1 A	COCH		2095.00	11808	14.940	359	24029	23110	544	0	375	96.2	2.3	0.0	1.6	98.4
7228/7-1 A	COCH		2096.00	11809	14.610	295	20192	18976	477	0	739	94.0	2.4	0.0	3.7	96.3
7228/7-1 A	COCH		2097.00	11810	15.140	97	6407	6101	52	168	86	95.2	0.8	2.6	1.3	96.0
7228/7-1 A	COCH		2098.30	11811	14.340	82	5718	4752	325	467	174	83.1	5.7	8.2	3.0	88.8
7228/7-1 A	COCH		2099.30	11812	14.610	104	7118	6336	440	172	171	89.0	6.2	2.4	2.4	95.2
7228/7-1 A	COCH		2100.95	11813	14.930	75	5023				362				7.2	
7228/7-1 A	COCH		2101.25	11814	15.360	67	4362	3756	232	172	202	86.1	5.3	3.9	4.6	91.4
7228/7-1 A	COCH		2101.90	11815	14.540	70	4814				89				1.9	
7228/7-1 A	COCH		2102.25	11816	16.260	86	5289	4402	254	80	554	83.2	4.8	1.5	10.5	88.0
7228/7-1 A	COCH		2102.50	11817	14.770	81	5484	4704	265	265	251	85.8	4.8	4.8	4.6	90.6
7228/7-1 A	COCH	2833.00	2833.02	11024	8.733	92	10535	10042	11	126	355	95.3	0.1	1.2	3.4	95.4
7228/7-1 A	COCH		2835.25	11818	16.030	8	499				125				25.0	
7228/7-1 A	COCH		2846.25	11819	12.410	29	2337				177				7.6	
7228/7-1 A	COCH		2853.15	11820	16.370	40	2443				116				4.8	
7228/7-1 A	COCH		2858.70	11821	14.110	3	213				113				53.3	

Table 6. GC of saturated compounds (peak area)

Well	Sample type	Upper Depth	Lower Depth	API ID	n-C10	n-C11	n-C12	n-C13	n-C14	n-C15	n-C16	n-C17	n-C18	n-C19	n-C20	n-C21	n-C22
7228/7-1 ST3	COCH	1367.38	1367.40	11309	3.05e2	8.12e2	1.24e3	2.48e2	2.73e2	2.33e3	9.82e2	7.29e3	4.13e3	1.48e4	2.22e4	9.01e3	2.36e4
7228/7-1 ST3	DC		1719.00	11789	6.88e3	7.06e3	1.51e4	3.59e3	4.85e3	4.18e4	1.31e4	8.60e4	3.85e4	1.36e5	1.54e5	5.79e4	1.54e5
7228/7-1 ST3	DC		1911.00	11790	7.08e3	5.93e3	5.78e3	1.12e3	1.02e3	7.11e3	2.02e3	1.11e4	6.27e3	1.59e4	1.45e4	6.72e3	1.47e4
7228/7-1 B	SWC		1381.50	11792	8.37e3	6.42e2	1.60e3	7.62e2	7.52e2	2.88e3	8.97e2	2.76e3	1.38e3	2.22e3	2.37e3	1.80e3	3.28e3
7228/7-1 B	SWC		2139.00	11850	4.06e2	7.47e2	1.47e3	4.69e2	3.49e2	2.39e3	4.48e3	3.67e4	3.84e4	1.79e5	3.43e5	1.39e5	4.72e5
7228/7-1 B	SWC		2152.00	11851	1.91e3	1.75e3	1.75e3	3.74e2	3.20e2	1.52e3	4.77e2	1.90e3	1.31e3	4.49e3	5.95e3	2.53e3	6.04e3
7228/7-1 B	SWC		2165.50	11852	1.59e3	2.32e3	4.54e3	1.17e3	2.50e3	2.77e4	9.41e3	6.87e4	2.85e4	1.09e5	1.25e5	4.03e4	1.33e5
7228/7-1 A	COCH	2060.33	2060.35	11020	0.00e0	3.69e2	4.85e3	1.59e3	3.14e3	2.66e4	8.54e3	5.66e4	2.30e4	8.53e4	9.53e4	3.31e4	1.00e5
7228/7-1 A	COCH		2066.50	11794	2.59e2	2.37e2	1.75e3	7.56e2	1.96e3	1.77e4	8.76e3	5.64e4	2.98e4	1.03e5	1.34e5	4.98e4	1.52e5
7228/7-1 A	COCH		2071.45	11795	2.66e3	3.72e3	9.64e3	3.04e3	6.29e3	4.86e4	1.77e4	1.13e5	4.91e4	1.71e5	2.06e5	7.40e4	2.27e5
7228/7-1 A	COCH		2082.70	11797	1.90e4	4.65e4	1.65e5	3.66e4	3.87e4	3.13e5	6.32e4	4.03e5	1.38e5	4.71e5	4.80e5	1.46e5	4.74e5
7228/7-1 A	COCH		2086.50	11799	1.05e3	1.17e3	1.46e4	5.39e3	1.25e4	9.97e4	3.58e4	2.19e5	9.23e4	3.07e5	3.33e5	1.15e5	3.42e5
7228/7-1 A	COCH		2087.00	11800	6.11e3	8.14e3	2.39e4	6.19e3	7.56e3	5.63e4	1.25e4	7.37e4	2.74e4	8.96e4	1.05e5	4.42e4	1.26e5
7228/7-1 A	COCH		2087.30	11801	2.70e3	6.80e3	1.09e5	3.10e4	4.38e4	3.32e5	8.56e4	5.38e5	2.05e5	7.07e5	7.64e5	2.60e5	7.76e5
7228/7-1 A	COCH		2088.95	11802	2.05e3	2.77e4	1.48e5	3.90e4	4.86e4	3.58e5	9.22e4	5.70e5	2.09e5	7.68e5	8.41e5	2.79e5	8.71e5
7228/7-1 A	COCH		2088.95	11803	3.37e3	7.91e3	1.25e5	3.61e4	5.34e4	4.18e5	1.14e5	7.11e5	2.70e5	9.60e5	1.06e6	3.64e5	1.10e6
7228/7-1 A	COCH		2091.30	11805	5.38e3	1.13e4	9.09e4	2.55e4	3.57e4	2.70e5	7.19e4	4.59e5	1.77e5	6.22e5	6.76e5	2.24e5	6.88e5
7228/7-1 A	COCH	2093.52	2093.54	11021	6.98e3	2.80e4	6.14e4	1.42e4	1.34e4	9.70e4	2.12e4	1.33e5	4.68e4	1.64e5	1.66e5	5.49e4	1.65e5
7228/7-1 A	COCH		2093.80	11807	2.28e3	1.93e4	1.27e5	3.42e4	4.45e4	3.46e5	9.27e4	5.90e5	2.43e5	8.52e5	9.95e5	3.28e5	1.03e6
7228/7-1 A	COCH		2095.00	11808	2.34e3	3.54e4	1.60e5	4.06e4	4.42e4	3.19e5	7.37e4	4.51e5	1.70e5	5.78e5	6.31e5	2.11e5	6.49e5
7228/7-1 A	COCH		2096.00	11809	5.02e3	7.74e3	3.54e4	9.94e3	1.40e4	1.07e5	3.20e4	2.07e5	8.83e4	3.19e5	3.81e5	1.34e5	4.09e5
7228/7-1 A	COCH		2097.00	11810	5.47e2	5.03e3	3.79e4	1.09e4	1.49e4	1.12e5	3.05e4	1.84e5	7.35e4	2.50e5	2.77e5	9.64e4	2.90e5
7228/7-1 A	COCH		2098.30	11811	1.00e3	1.49e4	1.54e5	4.42e4	5.91e4	4.31e5	1.14e5	6.71e5	2.68e5	8.84e5	9.76e5	3.44e5	1.02e6
7228/7-1 A	COCH		2099.30	11812	3.02e3	2.13e4	1.68e5	4.36e4	5.37e4	4.17e5	1.02e5	6.36e5	2.43e5	8.25e5	8.91e5	3.01e5	9.06e5
7228/7-1 A	COCH		2101.25	11814	8.58e3	1.64e4	1.20e5	3.12e4	4.65e4	3.77e5	1.01e5	6.36e5	2.49e5	8.58e5	9.39e5	3.14e5	9.65e5
7228/7-1 A	COCH		2102.25	11816	2.69e3	6.04e3	8.68e4	2.42e4	3.84e4	3.02e5	8.57e4	5.47e5	2.22e5	7.83e5	8.91e5	2.96e5	9.24e5
7228/7-1 A	COCH		2102.50	11817	2.18e3	9.07e3	5.60e4	1.50e4	2.31e4	1.79e5	5.57e4	3.63e5	1.59e5	5.85e5	7.18e5	2.56e5	7.97e5
7228/7-1 A	COCH	2833.00	2833.02	11024	5.00e2	4.58e2	8.86e2	2.09e2	1.92e2	1.77e3	3.99e2	2.79e3	1.41e3	6.41e3	1.10e4	5.03e3	1.43e4

Table 6. continued, GC of saturated compounds (peak area)

Well	Sample type	Top of Cond	Core Depth	API ID	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	C ₈	C ₉	C ₁₀	C ₁₁	C ₁₂	C ₁₃	C ₁₄	C ₁₅	C ₁₆	C ₁₇	C ₁₈	C ₁₉	C ₂₀	C ₂₁	C ₂₂	C ₂₃	C ₂₄	C ₂₅	C ₂₆	C ₂₇	C ₂₈	C ₂₉	C ₃₀	C ₃₁	C ₃₂	C ₃₃	C ₃₄	C ₃₅	C ₃₆	C ₃₇	C ₃₈	C ₃₉	C ₄₀	C ₄₁	C ₄₂	C ₄₃	C ₄₄	C ₄₅	C ₄₆	C ₄₇	C ₄₈	C ₄₉	C ₅₀	C ₅₁	C ₅₂	C ₅₃	C ₅₄	C ₅₅	C ₅₆	C ₅₇	C ₅₈	C ₅₉	C ₆₀	C ₆₁	C ₆₂	C ₆₃	C ₆₄	C ₆₅	C ₆₆	C ₆₇	C ₆₈	C ₆₉	C ₇₀	C ₇₁	C ₇₂	C ₇₃	C ₇₄	C ₇₅	C ₇₆	C ₇₇	C ₇₈	C ₇₉	C ₈₀	C ₈₁	C ₈₂	C ₈₃	C ₈₄	C ₈₅	C ₈₆	C ₈₇	C ₈₈	C ₈₉	C ₉₀	C ₉₁	C ₉₂	C ₉₃	C ₉₄	C ₉₅	C ₉₆	C ₉₇	C ₉₈	C ₉₉	C ₁₀₀	C ₁₀₁	C ₁₀₂	C ₁₀₃	C ₁₀₄	C ₁₀₅	C ₁₀₆	C ₁₀₇	C ₁₀₈	C ₁₀₉	C ₁₁₀	C ₁₁₁	C ₁₁₂	C ₁₁₃	C ₁₁₄	C ₁₁₅	C ₁₁₆	C ₁₁₇	C ₁₁₈	C ₁₁₉	C ₁₂₀	C ₁₂₁	C ₁₂₂	C ₁₂₃	C ₁₂₄	C ₁₂₅	C ₁₂₆	C ₁₂₇	C ₁₂₈	C ₁₂₉	C ₁₃₀	C ₁₃₁	C ₁₃₂	C ₁₃₃	C ₁₃₄	C ₁₃₅	C ₁₃₆	C ₁₃₇	C ₁₃₈	C ₁₃₉	C ₁₄₀	C ₁₄₁	C ₁₄₂	C ₁₄₃	C ₁₄₄	C ₁₄₅	C ₁₄₆	C ₁₄₇	C ₁₄₈	C ₁₄₉	C ₁₅₀	C ₁₅₁	C ₁₅₂	C ₁₅₃	C ₁₅₄	C ₁₅₅	C ₁₅₆	C ₁₅₇	C ₁₅₈	C ₁₅₉	C ₁₆₀	C ₁₆₁	C ₁₆₂	C ₁₆₃	C ₁₆₄	C ₁₆₅	C ₁₆₆	C ₁₆₇	C ₁₆₈	C ₁₆₉	C ₁₇₀	C ₁₇₁	C ₁₇₂	C ₁₇₃	C ₁₇₄	C ₁₇₅	C ₁₇₆	C ₁₇₇	C ₁₇₈	C ₁₇₉	C ₁₈₀	C ₁₈₁	C ₁₈₂	C ₁₈₃	C ₁₈₄	C ₁₈₅	C ₁₈₆	C ₁₈₇	C ₁₈₈	C ₁₈₉	C ₁₉₀	C ₁₉₁	C ₁₉₂	C ₁₉₃	C ₁₉₄	C ₁₉₅	C ₁₉₆	C ₁₉₇	C ₁₉₈	C ₁₉₉	C ₂₀₀	C ₂₀₁	C ₂₀₂	C ₂₀₃	C ₂₀₄	C ₂₀₅	C ₂₀₆	C ₂₀₇	C ₂₀₈	C ₂₀₉	C ₂₁₀	C ₂₁₁	C ₂₁₂	C ₂₁₃	C ₂₁₄	C ₂₁₅	C ₂₁₆	C ₂₁₇	C ₂₁₈	C ₂₁₉	C ₂₂₀	C ₂₂₁	C ₂₂₂	C ₂₂₃	C ₂₂₄	C ₂₂₅	C ₂₂₆	C ₂₂₇	C ₂₂₈	C ₂₂₉	C ₂₃₀	C ₂₃₁	C ₂₃₂	C ₂₃₃	C ₂₃₄	C ₂₃₅	C ₂₃₆	C ₂₃₇	C ₂₃₈	C ₂₃₉	C ₂₄₀	C ₂₄₁	C ₂₄₂	C ₂₄₃	C ₂₄₄	C ₂₄₅	C ₂₄₆	C ₂₄₇	C ₂₄₈	C ₂₄₉	C ₂₅₀	C ₂₅₁	C ₂₅₂	C ₂₅₃	C ₂₅₄	C ₂₅₅	C ₂₅₆	C ₂₅₇	C ₂₅₈	C ₂₅₉	C ₂₆₀	C ₂₆₁	C ₂₆₂	C ₂₆₃	C ₂₆₄	C ₂₆₅	C ₂₆₆	C ₂₆₇	C ₂₆₈	C ₂₆₉	C ₂₇₀	C ₂₇₁	C ₂₇₂	C ₂₇₃	C ₂₇₄	C ₂₇₅	C ₂₇₆	C ₂₇₇	C ₂₇₈	C ₂₇₉	C ₂₈₀	C ₂₈₁	C ₂₈₂	C ₂₈₃	C ₂₈₄	C ₂₈₅	C ₂₈₆	C ₂₈₇	C ₂₈₈	C ₂₈₉	C ₂₉₀	C ₂₉₁	C ₂₉₂	C ₂₉₃	C ₂₉₄	C ₂₉₅	C ₂₉₆	C ₂₉₇	C ₂₉₈	C ₂₉₉	C ₃₀₀	C ₃₀₁	C ₃₀₂	C ₃₀₃	C ₃₀₄	C ₃₀₅	C ₃₀₆	C ₃₀₇	C ₃₀₈	C ₃₀₉	C ₃₁₀	C ₃₁₁	C ₃₁₂	C ₃₁₃	C ₃₁₄	C ₃₁₅	C ₃₁₆	C ₃₁₇	C ₃₁₈	C ₃₁₉	C ₃₂₀	C ₃₂₁	C ₃₂₂	C ₃₂₃	C ₃₂₄	C ₃₂₅	C ₃₂₆	C ₃₂₇	C ₃₂₈	C ₃₂₉	C ₃₃₀	C ₃₃₁	C ₃₃₂	C ₃₃₃	C ₃₃₄	C ₃₃₅	C ₃₃₆	C ₃₃₇	C ₃₃₈	C ₃₃₉	C ₃₄₀	C ₃₄₁	C ₃₄₂	C ₃₄₃	C ₃₄₄	C ₃₄₅	C ₃₄₆	C ₃₄₇	C ₃₄₈	C ₃₄₉	C ₃₅₀	C ₃₅₁	C ₃₅₂	C ₃₅₃	C ₃₅₄	C ₃₅₅	C ₃₅₆	C ₃₅₇	C ₃₅₈	C ₃₅₉	C ₃₆₀	C ₃₆₁	C ₃₆₂	C ₃₆₃	C ₃₆₄	C ₃₆₅	C ₃₆₆	C ₃₆₇	C ₃₆₈	C ₃₆₉	C ₃₇₀	C ₃₇₁	C ₃₇₂	C ₃₇₃	C ₃₇₄	C ₃₇₅	C ₃₇₆	C ₃₇₇	C ₃₇₈	C ₃₇₉	C ₃₈₀	C ₃₈₁	C ₃₈₂	C ₃₈₃	C ₃₈₄	C ₃₈₅	C ₃₈₆	C ₃₈₇	C ₃₈₈	C ₃₈₉	C ₃₉₀	C ₃₉₁	C ₃₉₂	C ₃₉₃	C ₃₉₄	C ₃₉₅	C ₃₉₆	C ₃₉₇	C ₃₉₈	C ₃₉₉	C ₄₀₀	C ₄₀₁	C ₄₀₂	C ₄₀₃	C ₄₀₄	C ₄₀₅	C ₄₀₆	C ₄₀₇	C ₄₀₈	C ₄₀₉	C ₄₁₀	C ₄₁₁	C ₄₁₂	C ₄₁₃	C ₄₁₄	C ₄₁₅	C ₄₁₆	C ₄₁₇	C ₄₁₈	C ₄₁₉	C ₄₂₀	C ₄₂₁	C ₄₂₂	C ₄₂₃	C ₄₂₄	C ₄₂₅	C ₄₂₆	C ₄₂₇	C ₄₂₈	C ₄₂₉	C ₄₃₀	C ₄₃₁	C ₄₃₂	C ₄₃₃	C ₄₃₄	C ₄₃₅	C ₄₃₆	C ₄₃₇	C ₄₃₈	C ₄₃₉	C ₄₄₀	C ₄₄₁	C ₄₄₂	C ₄₄₃	C ₄₄₄	C ₄₄₅	C ₄₄₆	C ₄₄₇	C ₄₄₈	C ₄₄₉	C ₄₅₀	C ₄₅₁	C ₄₅₂	C ₄₅₃	C ₄₅₄	C ₄₅₅	C ₄₅₆	C ₄₅₇	C ₄₅₈	C ₄₅₉	C ₄₆₀	C ₄₆₁	C ₄₆₂	C ₄₆₃	C ₄₆₄	C ₄₆₅	C ₄₆₆	C ₄₆₇	C ₄₆₈	C ₄₆₉	C ₄₇₀	C ₄₇₁	C ₄₇₂	C ₄₇₃	C ₄₇₄	C ₄₇₅	C ₄₇₆	C ₄₇₇	C ₄₇₈	C ₄₇₉	C ₄₈₀	C ₄₈₁	C ₄₈₂	C ₄₈₃	C ₄₈₄	C ₄₈₅	C ₄₈₆	C ₄₈₇	C ₄₈₈	C ₄₈₉	C ₄₉₀	C ₄₉₁	C ₄₉₂	C ₄₉₃	C ₄₉₄	C ₄₉₅	C ₄₉₆	C ₄₉₇	C ₄₉₈	C ₄₉₉	C ₅₀₀	C ₅₀₁	C ₅₀₂	C ₅₀₃	C ₅₀₄	C ₅₀₅	C ₅₀₆	C ₅₀₇	C ₅₀₈	C ₅₀₉	C ₅₁₀	C ₅₁₁	C ₅₁₂	C ₅₁₃	C ₅₁₄	C ₅₁₅	C ₅₁₆	C ₅₁₇	C ₅₁₈	C ₅₁₉	C ₅₂₀	C ₅₂₁	C ₅₂₂	C ₅₂₃	C ₅₂₄	C ₅₂₅	C ₅₂₆	C ₅₂₇	C ₅₂₈	C ₅₂₉	C ₅₃₀	C ₅₃₁	C ₅₃₂	C ₅₃₃	C ₅₃₄	C ₅₃₅	C ₅₃₆	C ₅₃₇	C ₅₃₈	C ₅₃₉	C ₅₄₀	C ₅₄₁	C ₅₄₂	C ₅₄₃	C ₅₄₄	C ₅₄₅	C ₅₄₆	C ₅₄₇	C ₅₄₈	C ₅₄₉	C ₅₅₀	C ₅₅₁	C ₅₅₂	C ₅₅₃	C ₅₅₄	C ₅₅₅	C ₅₅₆	C ₅₅₇	C ₅₅₈	C ₅₅₉	C ₅₆₀	C ₅₆₁	C ₅₆₂	C ₅₆₃	C ₅₆₄	C ₅₆₅	C ₅₆₆	C ₅₆₇	C ₅₆₈	C ₅₆₉	C ₅₇₀	C ₅₇₁	C ₅₇₂	C ₅₇₃	C ₅₇₄	C ₅₇₅	C ₅₇₆	C ₅₇₇	C ₅₇₈	C ₅₇₉	C ₅₈₀	C ₅₈₁	C ₅₈₂	C ₅₈₃	C ₅₈₄	C ₅₈₅	C ₅₈₆	C ₅₈₇	C ₅₈₈	C ₅₈₉	C ₅₉₀	C ₅₉₁	C ₅₉₂	C ₅₉₃	C ₅₉₄	C ₅₉₅	C ₅₉₆	C ₅₉₇	C ₅₉₈	C ₅₉₉	C ₆₀₀	C ₆₀₁	C ₆₀₂	C ₆₀₃	C ₆₀₄	C ₆₀₅	C ₆₀₆	C ₆₀₇	C ₆₀₈	C ₆₀₉	C ₆₁₀	C ₆₁₁	C ₆₁₂	C ₆₁₃	C ₆₁₄	C ₆₁₅	C ₆₁₆	C ₆₁₇	C ₆₁₈	C ₆₁₉	C ₆₂₀	C ₆₂₁	C ₆₂₂	C ₆₂₃	C ₆₂₄	C ₆₂₅	C ₆₂₆	C ₆₂₇	C ₆₂₈	C ₆₂₉	C ₆₃₀	C ₆₃₁	C ₆₃₂	C ₆₃₃	C ₆₃₄	C ₆₃₅	C ₆₃₆	C ₆₃₇	C ₆₃₈	C ₆₃₉	C ₆₄₀	C ₆₄₁	C ₆₄₂	C ₆₄₃	C ₆₄₄	C ₆₄₅	C ₆₄₆	C ₆₄₇	C ₆₄₈	C ₆₄₉	C ₆₅₀	C ₆₅₁	C ₆₅₂	C ₆₅₃	C ₆₅₄	C ₆₅₅	C ₆₅₆	C ₆₅₇	C ₆₅₈	C ₆₅₉	C ₆₆₀	C ₆₆₁	C ₆₆₂	C ₆₆₃	C ₆₆₄	C ₆₆₅	C ₆₆₆	C ₆₆₇	C ₆₆₈	C ₆₆₉	C ₆₇₀	C ₆₇₁	C ₆₇₂	C ₆₇₃	C ₆₇₄	C ₆₇₅	C ₆₇₆	C ₆₇₇	C ₆₇₈	C ₆₇₉	C ₆₈₀	C ₆₈₁	C ₆₈₂	C ₆₈₃	C ₆₈₄	C ₆₈₅	C ₆₈₆	C ₆₈₇	C ₆₈₈	C ₆₈₉	C ₆₉₀	C ₆₉₁	C ₆₉₂	C ₆₉₃	C ₆₉₄	C ₆₉₅	C ₆₉₆	C ₆₉₇	C ₆₉₈	C ₆₉₉	C ₇₀₀	C ₇₀₁	C ₇₀₂	C ₇₀₃	C ₇₀₄	C ₇₀₅	C ₇₀₆	C ₇₀₇	C ₇₀₈	C ₇₀₉	C ₇₁₀	C ₇₁₁	C ₇₁₂	C ₇₁₃	C ₇₁₄	C ₇₁₅	C ₇₁₆	C ₇₁₇	C ₇₁₈	C ₇₁₉	C ₇₂₀	C ₇₂₁	C ₇₂₂	C ₇₂₃	C ₇₂₄	C ₇₂₅	C ₇₂₆	C ₇₂₇	C ₇₂₈	C ₇₂₉	C ₇₃₀	C ₇₃₁	C ₇₃₂	C ₇₃₃	C ₇₃₄	C ₇₃₅	C ₇₃₆	C ₇₃₇	C ₇₃₈	C ₇₃₉	C ₇₄₀	C ₇₄₁	C ₇₄₂	C ₇₄₃	C ₇₄₄	C ₇₄₅	C ₇₄₆	C ₇₄₇	C ₇₄₈	C ₇₄₉	C ₇₅₀	C ₇₅₁	C ₇₅₂	C ₇₅₃	C ₇₅₄	C ₇₅₅	C ₇₅₆	C ₇₅₇	C ₇₅₈	C ₇₅₉	C ₇₆₀	C ₇₆₁	C ₇₆₂	C ₇₆₃	C ₇₆₄	C ₇₆₅	C ₇₆₆	C ₇₆₇	C ₇₆₈	C ₇₆₉	C ₇₇₀	C ₇₇₁	C ₇₇₂	C ₇₇₃	C ₇₇₄	C ₇₇₅	C ₇₇₆	C ₇₇₇	C ₇₇₈	C ₇₇₉	C ₇₈₀	C ₇₈₁	C ₇₈₂	C ₇₈₃	C ₇₈₄	C ₇₈₅	C ₇₈₆	C ₇₈₇	C ₇₈₈	C ₇₈₉	C ₇₉₀	C ₇₉₁	C ₇₉₂	C ₇₉₃	C ₇₉₄	C ₇₉₅	C ₇₉₆	C ₇₉₇	C ₇₉₈	C ₇₉₉	C ₈₀₀	C ₈₀₁	C ₈₀₂	C ₈₀₃	C ₈₀₄	C ₈₀₅	C ₈₀₆	C ₈₀₇	C ₈₀₈	C ₈₀₉	C ₈₁₀	C ₈₁₁	C ₈₁₂	C ₈₁₃	C ₈₁₄	C ₈₁₅	C ₈₁₆	C ₈₁₇	C ₈₁₈	C ₈₁₉	C ₈₂₀	C ₈₂₁	C ₈₂₂	C ₈₂₃	C ₈₂₄	C ₈₂₅	C ₈₂₆	C ₈₂₇	C ₈₂₈	C ₈₂₉	C ₈₃₀	C ₈₃₁	C ₈₃₂	C ₈₃₃	C ₈₃₄	C ₈₃₅	C ₈₃₆	C ₈₃₇	C ₈₃₈	C ₈₃₉	C ₈₄₀	C ₈₄₁	C ₈₄₂	C ₈₄₃	C ₈₄₄	C ₈₄₅	C ₈₄₆	C ₈₄₇	C ₈₄₈	C ₈₄₉	C ₈₅₀	C ₈₅₁	C ₈₅₂	C ₈₅₃	C ₈₅₄	C ₈₅₅	C ₈₅₆	C ₈₅₇	C ₈₅₈	C ₈₅₉	C ₈₆₀	C ₈₆₁	C ₈₆₂	C ₈₆₃	C ₈₆₄	C ₈₆₅	C ₈₆₆	C ₈₆₇	C ₈₆₈	C ₈₆₉	C ₈₇₀	C ₈₇₁	C ₈₇₂	C ₈₇₃	C ₈₇₄	C ₈₇₅	C ₈₇₆	C ₈₇₇	C ₈₇₈	C ₈₇₉	C ₈₈₀	C ₈₈₁	C ₈₈₂	C ₈₈₃	C ₈₈₄	C ₈₈₅	C ₈₈₆	C ₈₈₇	C ₈₈₈	C ₈₈₉	C ₈₉₀	C ₈₉₁	C ₈₉₂	C ₈₉₃	C ₈₉₄	C ₈₉₅	C ₈₉₆	C ₈₉₇	C ₈₉₈	C ₈₉₉	C ₉₀₀	C ₉₀₁	C ₉₀₂	C ₉₀₃	C ₉₀₄	C ₉₀₅	C ₉₀₆	C ₉₀₇	C ₉₀₈	C ₉₀₉	C ₉₁₀	C ₉₁₁	C ₉₁₂	C ₉₁₃	C ₉₁₄	C ₉₁₅	C ₉₁₆	C ₉₁₇	C ₉₁₈	C ₉₁₉	C ₉₂₀	C ₉₂₁	C ₉₂₂	C ₉₂₃	C ₉₂₄	C ₉₂₅	C ₉₂₆	C ₉₂₇	C ₉₂₈	C ₉₂₉	C ₉₃₀	C ₉₃₁	C ₉₃₂	C ₉₃₃	C ₉₃₄	C ₉₃₅	C ₉₃₆	C ₉₃₇	C ₉₃₈	C ₉₃₉	C ₉₄₀	C ₉₄₁
------	-------------	-------------	------------	--------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------

Table 6. continued, GC of saturated compounds (peak area)

Well	Sample No.	Core Depth	Core Depth	API ID	C ₁₅ H ₃₂	C ₁₆ H ₃₄	C ₁₇ H ₃₆	C ₁₈ H ₃₈	C ₁₉ H ₄₀	C ₂₀ H ₄₂	C ₂₁ H ₄₄	C ₂₂ H ₄₆
7228/7-1 ST3	COCH	1367.38	1367.40	11309	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
7228/7-1 ST3	DC		1719.00	11789	1.37e4	8.36e3	9.15e3	3.78e3	3.47e3	1.61e3	6.76e2	2.18e2
7228/7-1 ST3	DC		1911.00	11790	1.84e3	9.61e2	1.34e3	3.76e2	3.74e2	0.00e0	0.00e0	0.00e0
7228/7-1 B	SWC		1381.50	11792	9.14e2	5.44e2	1.23e3	1.86e2	5.20e2	0.00e0	0.00e0	0.00e0
7228/7-1 B	SWC		2139.00	11850	1.32e5	9.00e4	6.75e4	3.86e4	3.22e4	2.87e4	1.31e4	8.61e3
7228/7-1 B	SWC		2152.00	11851	2.03e3	1.40e3	2.11e3	7.99e2	8.36e2	4.17e2	0.00e0	2.00e-1
7228/7-1 B	SWC		2165.50	11852	2.36e4	1.65e4	1.19e4	6.97e3	5.47e3	4.53e3	1.94e3	1.31e3
7228/7-1 A	COCH	2060.33	2060.35	11020	2.61e4	1.93e4	1.50e4	9.54e3	8.86e3	8.58e3	5.05e3	2.88e3
7228/7-1 A	COCH		2066.50	11794	3.55e4	2.56e4	1.93e4	1.14e4	8.84e3	7.27e3	3.71e3	2.15e3
7228/7-1 A	COCH		2071.45	11795	6.05e4	4.26e4	3.25e4	1.99e4	1.49e4	1.28e4	6.30e3	3.90e3
7228/7-1 A	COCH		2082.70	11797	8.86e4	6.31e4	4.74e4	2.89e4	2.14e4	1.82e4	9.92e3	6.17e3
7228/7-1 A	COCH		2086.50	11799	7.22e4	5.06e4	3.83e4	2.33e4	1.95e4	1.60e4	8.14e3	5.10e3
7228/7-1 A	COCH		2087.00	11800	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
7228/7-1 A	COCH		2087.30	11801	1.62e5	1.07e5	8.08e4	4.76e4	3.75e4	3.11e4	1.59e4	9.80e3
7228/7-1 A	COCH		2088.95	11802	1.63e5	1.12e5	8.12e4	4.73e4	3.44e4	2.93e4	1.55e4	1.05e4
7228/7-1 A	COCH		2088.95	11803	2.24e5	1.53e5	1.14e5	6.81e4	4.85e4	3.78e4	2.01e4	1.30e4
7228/7-1 A	COCH		2091.30	11805	1.40e5	9.55e4	7.13e4	4.15e4	3.13e4	2.85e4	1.38e4	9.53e3
7228/7-1 A	COCH	2093.52	2093.54	11021	3.92e4	2.81e4	2.19e4	1.44e4	1.32e4	1.40e4	7.57e3	4.80e3
7228/7-1 A	COCH		2093.80	11807	1.84e5	1.20e5	8.66e4	4.95e4	3.25e4	3.03e4	1.43e4	8.72e3
7228/7-1 A	COCH		2095.00	11808	1.11e5	7.68e4	5.85e4	3.30e4	2.37e4	1.96e4	1.02e4	6.72e3
7228/7-1 A	COCH		2096.00	11809	7.53e4	5.28e4	4.04e4	2.27e4	1.89e4	1.87e4	8.18e3	5.12e3
7228/7-1 A	COCH		2097.00	11810	5.44e4	4.08e4	3.09e4	1.85e4	1.47e4	1.28e4	7.07e3	4.61e3
7228/7-1 A	COCH		2098.30	11811	2.01e5	1.34e5	9.66e4	5.72e4	4.25e4	3.46e4	1.78e4	1.01e4
7228/7-1 A	COCH		2099.30	11812	1.92e5	1.31e5	9.85e4	5.85e4	4.17e4	3.31e4	1.84e4	1.20e4
7228/7-1 A	COCH		2101.25	11814	1.90e5	1.26e5	9.23e4	5.41e4	3.64e4	3.00e4	1.58e4	1.02e4
7228/7-1 A	COCH		2102.25	11816	1.90e5	1.25e5	9.14e4	5.40e4	3.75e4	3.21e4	1.67e4	1.11e4
7228/7-1 A	COCH		2102.50	11817	1.60e5	1.06e5	7.71e4	4.50e4	3.18e4	2.86e4	1.36e4	9.18e3
7228/7-1 A	COCH	2833.00	2833.02	11024	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0

Table 7. GC of saturated compounds (amounts in ng/g)

Well	Sample type	Depth (m)	Depth (m)	API ID	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23
7228/7-1 ST3	COCH	1367.38	1367.40	11309	9.21e3	2.45e4	3.75e4	7.48e3	8.24e3	7.02e4	2.97e4	2.20e5	1.25e5	4.48e5	6.71e5	2.72e5	7.12e5	
7228/7-1 ST3	DC		1719.00	11789	4.58e4	4.70e4	1.01e5	2.39e4	3.23e4	2.78e5	8.72e4	5.72e5	2.56e5	9.08e5	1.03e6	3.86e5	1.03e6	
7228/7-1 ST3	DC		1911.00	11790	4.76e4	3.99e4	3.89e4	7.56e3	6.83e3	4.78e4	1.36e4	7.46e4	4.22e4	1.07e5	9.74e4	4.52e4	9.88e4	
7228/7-1 B	SWC		1381.50	11792	6.71e4	5.14e3	1.28e4	6.11e3	6.03e3	2.31e4	7.19e3	2.21e4	1.11e4	1.78e4	1.90e4	1.44e4	2.63e4	
7228/7-1 B	SWC		2139.00	11850	3.06e3	5.63e3	1.11e4	3.54e3	2.63e3	1.80e4	3.38e4	2.76e5	2.90e5	1.35e6	2.58e6	1.05e6	3.56e6	
7228/7-1 B	SWC		2152.00	11851	1.69e4	1.54e4	1.55e4	3.31e3	2.83e3	1.34e4	4.22e3	1.68e4	1.16e4	3.97e4	5.27e4	2.24e4	5.34e4	
7228/7-1 B	SWC		2165.50	11852	1.65e4	2.40e4	4.70e4	1.21e4	2.59e4	2.87e5	9.75e4	7.12e5	2.95e5	1.13e6	1.29e6	4.17e5	1.38e6	
7228/7-1 A	COCH	2060.33	2060.35	11020	0.00e0	2.04e4	2.68e5	8.81e4	1.73e5	1.47e6	4.72e5	3.13e6	1.27e6	4.71e6	5.26e6	1.83e6	5.52e6	
7228/7-1 A	COCH		2066.50	11794	2.47e3	2.26e3	1.67e4	7.21e3	1.87e4	1.69e5	8.36e4	5.39e5	2.84e5	9.87e5	1.28e6	4.75e5	1.45e6	
7228/7-1 A	COCH		2071.45	11795	2.65e4	3.70e4	9.59e4	3.03e4	6.25e4	4.84e5	1.76e5	1.12e6	4.88e5	1.70e6	2.05e6	7.36e5	2.26e6	
7228/7-1 A	COCH		2082.70	11797	1.78e5	4.34e5	1.54e6	3.42e5	3.62e5	2.93e6	5.90e5	3.77e6	1.29e6	4.40e6	4.48e6	1.37e6	4.43e6	
7228/7-1 A	COCH		2086.50	11799	1.02e4	1.14e4	1.42e5	5.26e4	1.22e5	9.74e5	3.50e5	2.14e6	9.03e5	3.00e6	3.25e6	1.12e6	3.34e6	
7228/7-1 A	COCH		2087.00	11800	5.89e4	7.85e4	2.31e5	5.97e4	7.30e4	5.43e5	1.21e5	7.11e5	2.64e5	8.65e5	1.01e6	4.27e5	1.21e6	
7228/7-1 A	COCH		2087.30	11801	2.94e4	7.40e4	1.19e6	3.37e5	4.76e5	3.61e6	9.32e5	5.85e6	2.24e6	7.69e6	8.32e6	2.83e6	8.45e6	
7228/7-1 A	COCH		2088.95	11802	2.41e4	3.25e5	1.74e6	4.58e5	5.71e5	4.21e6	1.08e6	6.70e6	2.46e6	9.03e6	9.88e6	3.28e6	1.02e7	
7228/7-1 A	COCH		2088.95	11803	2.90e4	6.82e4	1.07e6	3.11e5	4.60e5	3.60e6	9.82e5	6.13e6	2.33e6	8.28e6	9.18e6	3.14e6	9.44e6	
7228/7-1 A	COCH		2091.30	11805	5.91e4	1.25e5	9.99e5	2.80e5	3.92e5	2.97e6	7.90e5	5.04e6	1.95e6	6.83e6	7.42e6	2.46e6	7.56e6	
7228/7-1 A	COCH	2093.52	2093.54	11021	5.99e5	2.40e6	5.27e6	1.22e6	1.15e6	8.33e6	1.82e6	1.14e7	4.02e6	1.41e7	1.43e7	4.71e6	1.42e7	
7228/7-1 A	COCH		2093.80	11807	2.75e4	2.32e5	1.53e6	4.12e5	5.36e5	4.16e6	1.12e6	7.10e6	2.93e6	1.03e7	1.20e7	3.95e6	1.24e7	
7228/7-1 A	COCH		2095.00	11808	2.45e4	3.71e5	1.67e6	4.26e5	4.64e5	3.35e6	7.74e5	4.73e6	1.79e6	6.07e6	6.62e6	2.21e6	6.81e6	
7228/7-1 A	COCH		2096.00	11809	7.54e4	1.16e5	5.32e5	1.49e5	2.10e5	1.60e6	4.81e5	3.11e6	1.33e6	4.79e6	5.72e6	2.01e6	6.13e6	
7228/7-1 A	COCH		2097.00	11810	5.84e3	5.37e4	4.05e5	1.17e5	1.59e5	1.19e6	3.26e5	1.96e6	7.85e5	2.66e6	2.96e6	1.03e6	3.09e6	
7228/7-1 A	COCH		2098.30	11811	8.57e3	1.28e5	1.32e6	3.79e5	5.07e5	3.69e6	9.74e5	5.76e6	2.30e6	7.58e6	8.37e6	2.95e6	8.71e6	
7228/7-1 A	COCH		2099.30	11812	2.78e4	1.96e5	1.54e6	4.01e5	4.94e5	3.83e6	9.35e5	5.85e6	2.23e6	7.59e6	8.20e6	2.77e6	8.33e6	
7228/7-1 A	COCH		2101.25	11814	8.15e4	1.56e5	1.14e6	2.96e5	4.41e5	3.57e6	9.58e5	6.04e6	2.37e6	8.14e6	8.92e6	2.98e6	9.16e6	
7228/7-1 A	COCH		2102.25	11816	2.79e4	6.28e4	9.03e5	2.52e5	3.99e5	3.14e6	8.91e5	5.69e6	2.31e6	8.14e6	9.27e6	3.07e6	9.61e6	
7228/7-1 A	COCH		2102.50	11817	2.52e4	1.05e5	6.49e5	1.74e5	2.67e5	2.08e6	6.45e5	4.20e6	1.85e6	6.77e6	8.30e6	2.97e6	9.23e6	
7228/7-1 A	COCH	2833.00	2833.02	11024	5.18e4	4.75e4	9.18e4	2.16e4	1.99e4	1.83e5	4.13e4	2.89e5	1.46e5	6.63e5	1.14e6	5.21e5	1.48e6	

Table 7. continued, GC of saturated compounds (amounts in ng/g)

Well	Sample type	Unresolved	Unresolved	API no	n-C ₁₅	n-C ₁₆	n-C ₁₇	n-C ₁₈	n-C ₁₉	n-C ₂₀	n-C ₂₁	n-C ₂₂	n-C ₂₃	n-C ₂₄	n-C ₂₅	n-C ₂₆	n-C ₂₇	n-C ₂₈
7228/7-1 ST3	COCH	1367.38	1367.40	11309	3.80e5	8.00e5	5.03e5	8.39e5	9.48e5	7.31e5	5.44e5	3.39e5	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
7228/7-1 ST3	DC		1719.00	11789	5.66e5	9.19e5	2.94e5	7.14e5	5.48e5	3.88e5	2.83e5	2.54e5	1.75e5	1.90e5	1.20e5	1.43e5	9.17e4	
7228/7-1 ST3	DC		1911.00	11790	6.03e4	7.11e4	1.79e4	5.60e4	4.77e4	3.61e4	3.48e4	4.05e4	2.09e4	2.13e4	1.48e4	1.41e4	1.08e4	
7228/7-1 B	SWC		1381.50	11792	2.16e4	2.69e4	1.37e4	2.08e4	2.23e4	1.67e4	1.51e4	3.42e4	1.17e4	1.50e4	8.97e3	8.66e3	7.74e3	
7228/7-1 B	SWC		2139.00	11850	1.64e6	4.07e6	1.22e6	4.17e6	4.12e6	3.80e6	3.42e6	3.11e6	2.71e6	2.48e6	1.91e6	1.75e6	1.23e6	
7228/7-1 B	SWC		2152.00	11851	3.46e4	5.32e4	2.05e4	5.02e4	5.18e4	4.07e4	3.72e4	5.37e4	3.02e4	2.90e4	2.30e4	2.35e4	1.73e4	
7228/7-1 B	SWC		2165.50	11852	5.39e5	1.37e6	3.61e5	1.32e6	1.26e6	1.10e6	9.82e5	8.73e5	7.14e5	6.30e5	5.04e5	4.33e5	3.09e5	
7228/7-1 A	COCH	2060.33	2060.35	11020	2.55e6	5.37e6	1.65e6	4.91e6	4.39e6	3.69e6	3.21e6	2.86e6	2.56e6	2.61e6	2.23e6	2.15e6	1.58e6	
7228/7-1 A	COCH		2066.50	11794	6.65e5	1.49e6	4.56e5	1.48e6	1.44e6	1.28e6	1.15e6	1.04e6	8.80e5	8.03e5	6.28e5	5.94e5	4.13e5	
7228/7-1 A	COCH		2071.45	11795	1.06e6	2.38e6	7.23e5	2.35e6	2.28e6	2.07e6	1.90e6	1.74e6	1.51e6	1.39e6	1.11e6	1.02e6	7.19e5	
7228/7-1 A	COCH		2082.70	11797	1.90e6	4.31e6	1.25e6	4.03e6	3.76e6	3.32e6	2.96e6	2.66e6	2.28e6	2.03e6	1.58e6	1.47e6	1.03e6	
7228/7-1 A	COCH		2086.50	11799	1.55e6	3.27e6	1.01e6	3.06e6	2.88e6	2.51e6	2.26e6	2.06e6	1.78e6	1.62e6	1.27e6	1.19e6	8.46e5	
7228/7-1 A	COCH		2087.00	11800	5.70e5	1.42e6	6.93e5	1.72e6	2.22e6	1.91e6	1.18e6	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	
7228/7-1 A	COCH		2087.30	11801	3.78e6	8.34e6	2.46e6	7.97e6	7.59e6	6.77e6	6.09e6	5.43e6	4.81e6	4.31e6	3.39e6	3.09e6	2.14e6	
7228/7-1 A	COCH		2088.95	11802	4.56e6	1.01e7	2.98e6	9.67e6	9.21e6	8.07e6	7.17e6	6.47e6	5.72e6	5.09e6	3.86e6	3.51e6	2.45e6	
7228/7-1 A	COCH		2088.95	11803	4.27e6	9.33e6	2.73e6	9.18e6	8.44e6	7.48e6	6.65e6	5.98e6	5.40e6	4.63e6	3.66e6	3.39e6	2.36e6	
7228/7-1 A	COCH		2091.30	11805	3.29e6	7.38e6	2.14e6	7.17e6	6.91e6	6.13e6	5.53e6	5.05e6	4.32e6	3.74e6	2.88e6	2.69e6	1.91e6	
7228/7-1 A	COCH	2093.52	2093.54	11021	6.36e6	1.33e7	4.01e6	1.22e7	1.09e7	9.23e6	8.15e6	7.41e6	6.74e6	6.76e6	5.71e6	5.31e6	3.76e6	
7228/7-1 A	COCH		2093.80	11807	5.35e6	1.23e7	3.68e6	1.22e7	1.13e7	1.00e7	8.97e6	8.06e6	6.95e6	6.20e6	4.75e6	4.23e6	2.81e6	
7228/7-1 A	COCH		2095.00	11808	2.89e6	6.77e6	2.15e6	6.77e6	6.74e6	5.99e6	5.56e6	4.34e6	3.56e6	3.22e6	2.18e6	2.18e6	1.48e6	
7228/7-1 A	COCH		2096.00	11809	2.81e6	6.29e6	2.00e6	6.28e6	6.44e6	5.58e6	5.19e6	4.12e6	3.45e6	3.24e6	2.05e6	2.14e6	1.49e6	
7228/7-1 A	COCH		2097.00	11810	1.42e6	3.21e6	1.14e6	3.30e6	3.55e6	3.09e6	2.33e6	1.99e6	1.47e6	1.53e6	8.08e5	9.85e5	6.51e5	
7228/7-1 A	COCH		2098.30	11811	3.99e6	8.68e6	2.59e6	8.67e6	8.07e6	7.21e6	6.44e6	5.79e6	5.13e6	4.42e6	3.45e6	3.15e6	2.12e6	
7228/7-1 A	COCH		2099.30	11812	3.72e6	8.21e6	2.46e6	7.91e6	7.49e6	6.60e6	5.87e6	5.30e6	4.78e6	4.19e6	3.25e6	3.08e6	2.18e6	
7228/7-1 A	COCH		2101.25	11814	3.92e6	9.11e6	2.61e6	8.99e6	8.38e6	7.49e6	6.69e6	6.02e6	5.36e6	4.62e6	3.60e6	3.25e6	2.23e6	
7228/7-1 A	COCH		2102.25	11816	4.14e6	9.53e6	2.78e6	9.55e6	8.92e6	7.96e6	7.07e6	6.30e6	5.62e6	4.81e6	3.84e6	3.50e6	2.41e6	
7228/7-1 A	COCH		2102.50	11817	3.97e6	9.42e6	2.58e6	9.26e6	8.80e6	7.93e6	7.06e6	6.26e6	5.45e6	4.86e6	3.75e6	3.33e6	2.31e6	
7228/7-1 A	COCH	2833.00	2833.02	11024	7.41e5	1.94e6	1.11e6	2.49e6	3.35e6	2.80e6	2.14e6	9.92e5	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	

Table 7. continued, GC of saturated compounds (amounts in ng/g)

Well	Sample No.	Depth (m)	Depth (ft)	n-C ₁₀	n-C ₁₁	n-C ₁₂	n-C ₁₃	n-C ₁₄	n-C ₁₅	n-C ₁₆	n-C ₁₇	n-C ₁₈
7228/7-1 ST3	COCH	1367.38	1367.40	11309	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
7228/7-1 ST3	DC		1719.00	11789	9.13e4	5.57e4	6.09e4	2.52e4	2.31e4	1.07e4	4.50e3	1.45e3
7228/7-1 ST3	DC		1911.00	11790	1.24e4	6.46e3	9.03e3	2.53e3	2.52e3	0.00e0	0.00e0	0.00e0
7228/7-1 B	SWC		1381.50	11792	7.33e3	4.36e3	9.84e3	1.49e3	4.17e3	0.00e0	0.00e0	0.00e0
7228/7-1 B	SWC		2139.00	11850	9.93e5	6.79e5	5.08e5	2.91e5	2.43e5	2.16e5	9.89e4	6.49e4
7228/7-1 B	SWC		2152.00	11851	1.80e4	1.23e4	1.86e4	7.07e3	7.39e3	3.69e3	0.00e0	1.77e0
7228/7-1 B	SWC		2165.50	11852	2.45e5	1.71e5	1.23e5	7.22e4	5.67e4	4.69e4	2.01e4	1.36e4
7228/7-1 A	COCH	2060.33	2060.35	11020	1.44e6	1.06e6	8.30e5	5.27e5	4.89e5	4.74e5	2.79e5	1.59e5
7228/7-1 A	COCH		2066.50	11794	3.38e5	2.45e5	1.84e5	1.09e5	8.43e4	6.94e4	3.54e4	2.05e4
7228/7-1 A	COCH		2071.45	11795	6.02e5	4.23e5	3.24e5	1.98e5	1.48e5	1.28e5	6.27e4	3.88e4
7228/7-1 A	COCH		2082.70	11797	8.28e5	5.90e5	4.43e5	2.70e5	2.00e5	1.70e5	9.28e4	5.77e4
7228/7-1 A	COCH		2086.50	11799	7.06e5	4.94e5	3.75e5	2.28e5	1.91e5	1.56e5	7.95e4	4.98e4
7228/7-1 A	COCH		2087.00	11800	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
7228/7-1 A	COCH		2087.30	11801	1.76e6	1.17e6	8.80e5	5.18e5	4.08e5	3.39e5	1.73e5	1.07e5
7228/7-1 A	COCH		2088.95	11802	1.91e6	1.31e6	9.54e5	5.56e5	4.04e5	3.45e5	1.82e5	1.24e5
7228/7-1 A	COCH		2088.95	11803	1.93e6	1.32e6	9.80e5	5.87e5	4.18e5	3.26e5	1.73e5	1.12e5
7228/7-1 A	COCH		2091.30	11805	1.54e6	1.05e6	7.84e5	4.56e5	3.43e5	3.13e5	1.52e5	1.05e5
7228/7-1 A	COCH	2093.52	2093.54	11021	3.36e6	2.41e6	1.88e6	1.23e6	1.13e6	1.20e6	6.50e5	4.12e5
7228/7-1 A	COCH		2093.80	11807	2.22e6	1.45e6	1.04e6	5.96e5	3.91e5	3.64e5	1.73e5	1.05e5
7228/7-1 A	COCH		2095.00	11808	1.17e6	8.05e5	6.13e5	3.46e5	2.48e5	2.06e5	1.07e5	7.05e4
7228/7-1 A	COCH		2096.00	11809	1.13e6	7.92e5	6.07e5	3.41e5	2.84e5	2.80e5	1.23e5	7.68e4
7228/7-1 A	COCH		2097.00	11810	5.81e5	4.35e5	3.30e5	1.97e5	1.56e5	1.37e5	7.54e4	4.92e4
7228/7-1 A	COCH		2098.30	11811	1.72e6	1.15e6	8.29e5	4.91e5	3.65e5	2.97e5	1.52e5	8.70e4
7228/7-1 A	COCH		2099.30	11812	1.77e6	1.21e6	9.06e5	5.38e5	3.84e5	3.05e5	1.69e5	1.10e5
7228/7-1 A	COCH		2101.25	11814	1.80e6	1.20e6	8.76e5	5.14e5	3.45e5	2.85e5	1.50e5	9.67e4
7228/7-1 A	COCH		2102.25	11816	1.97e6	1.30e6	9.51e5	5.61e5	3.90e5	3.34e5	1.74e5	1.15e5
7228/7-1 A	COCH		2102.50	11817	1.85e6	1.22e6	8.92e5	5.20e5	3.69e5	3.31e5	1.58e5	1.06e5
7228/7-1 A	COCH	2833.00	2833.02	11024	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0

Table 8. GC of aromatic compounds (peak area)

Well	Sample type	Core Depth	Flow Depth	API ID	2-MP	3-MP	4-MP	5-MP	6-MP	7-MP	8-MP
7228/7-1 ST3	COCH	1367.38	1367.40	11309	19375	14116	5588	1692	1905	4213	2052
7228/7-1 ST3	DC		1719.00	11789	40322	23483	17304	6195	8026	9640	6243
7228/7-1 ST3	DC		1911.00	11790	23846	12029	22951	10753	13615	10393	7440
7228/7-1 B	SWC		1381.50	11792	3607	2740	2882	961	971	1534	958
7228/7-1 B	SWC		2139.00	11850	3601	3111	22536	14159	17654	20521	17606
7228/7-1 B	SWC		2152.00	11851	4561	2699	2482	1115	1388	2014	1241
7228/7-1 B	SWC		2165.50	11852	32274	25570	19672	6496	8320	15564	11333
7228/7-1 A	COCH	2060.33	2060.35	11020	11938	10944	9601	6986	7357	10998	9401
7228/7-1 A	COCH		2066.50	11794	7164	6515	10624	5944	7537	10319	8131
7228/7-1 A	COCH		2071.45	11795	20826	18175	20110	10983	15315	17265	14916
7228/7-1 A	COCH		2082.70	11797	247332	166628	85121	38412	50895	66503	43229
7228/7-1 A	COCH		2086.50	11799	15889	14702	16152	11109	12100	15104	12839
7228/7-1 A	COCH		2087.00	11800	7989	7474	2538	1578	1915	2381	1918
7228/7-1 A	COCH		2087.30	11801	46425	41968	24902	17165	24429	23281	22293
7228/7-1 A	COCH		2088.95	11802	36924	33678	19397	14145	21095	18992	17889
7228/7-1 A	COCH		2088.95	11803	45830	41186	28777	19641	28243	26269	23794
7228/7-1 A	COCH		2091.30	11805	23594	21898	15455	10462	14909	15646	13655
7228/7-1 A	COCH	2093.52	2093.54	11021	46970	38069	10835	8404	11973	12507	12067
7228/7-1 A	COCH		2093.80	11807	69125	56038	41995	28020	40782	38023	34698
7228/7-1 A	COCH		2095.00	11808	44391	40647	20294	13753	14048	18718	17634
7228/7-1 A	COCH		2096.00	11809	12048	11166	13533	8718	10689	11764	11640
7228/7-1 A	COCH		2097.00	11810	21078	18373	8723	5617	7348	8598	7772
7228/7-1 A	COCH		2098.30	11811	82919	69257	32487	21668	33358	31104	29031
7228/7-1 A	COCH		2099.30	11812	69376	56977	26866	18589	25517	23919	23360
7228/7-1 A	COCH		2101.25	11814	161940	111731	52937	27025	39046	40712	33361
7228/7-1 A	COCH		2102.25	11816	55655	48109	36459	26145	37637	35877	34402
7228/7-1 A	COCH		2102.50	11817	92445	65952	48222	29793	35189	42887	42178
7228/7-1 A	COCH	2833.00	2833.02	11024	3071	3419	883	685	882	1513	980

Table 9. GCMS SIR of saturated compounds (peak height)

m/e		177		191													
Well	Sample type	Upper Depth	Lower Depth	API ID	251m/280e5	251m/20e5	203	213	223	243	253e5	256e5	274	263e5	266e5	283e5	285e5
7228/7-1 ST3	COCH	1367.38	1367.40	11309	1.06e6	5.41e5	2.68e6	4.40e6	1.92e7	9.72e6	4.48e6	3.90e6	1.63e7	2.95e6	2.85e6	2.03e6	1.82e6
7228/7-1 ST3	DC		1719.00	11789	0.00e0	0.00e0	5.20e4	4.89e4	6.53e4	1.19e5	2.03e4	1.95e4	1.11e5	2.21e4	1.58e4	1.63e4	1.39e4
7228/7-1 B	SWC		2139.00	11850	0.00e0	0.00e0	2.83e5	4.82e5	8.20e5	7.39e5	2.40e5	2.48e5	2.81e5	2.64e5	2.38e5	2.43e5	2.36e5
7228/7-1 B	SWC		2165.50	11852	0.00e0	0.00e0	1.30e5	2.30e5	3.22e5	3.58e5	7.77e4	8.08e4	7.88e4	8.16e4	7.91e4	8.12e4	7.87e4
7228/7-1 A	COCH		2066.50	11794	0.00e0	0.00e0	1.62e5	2.86e5	7.22e5	6.27e5	1.73e5	1.71e5	3.09e5	1.42e5	1.33e5	1.05e5	1.12e5
7228/7-1 A	COCH		2071.45	11795	0.00e0	0.00e0	1.81e5	3.13e5	5.06e5	5.11e5	1.28e5	1.38e5	1.41e5	1.52e5	1.41e5	1.53e5	1.48e5
7228/7-1 A	COCH		2082.70	11797	0.00e0	0.00e0	4.14e5	6.75e5	9.53e5	7.84e5	2.35e5	2.59e5	2.84e5	2.67e5	2.38e5	2.61e5	2.56e5
7228/7-1 A	COCH		2086.50	11799	0.00e0	0.00e0	2.53e5	4.26e5	7.07e5	6.63e5	1.86e5	1.95e5	2.21e5	2.06e5	1.88e5	1.95e5	2.00e5
7228/7-1 A	COCH		2087.30	11801	0.00e0	0.00e0	4.87e5	8.40e5	1.33e6	1.18e6	3.82e5	4.06e5	3.84e5	4.30e5	4.12e5	4.44e5	4.39e5
7228/7-1 A	COCH		2088.95	11802	0.00e0	0.00e0	5.37e5	9.19e5	1.48e6	1.31e6	4.02e5	4.13e5	3.95e5	4.74e5	4.33e5	5.00e5	4.74e5
7228/7-1 A	COCH		2088.95	11803	0.00e0	0.00e0	3.66e5	6.23e5	9.57e5	8.00e5	2.91e5	3.14e5	2.72e5	3.52e5	3.07e5	3.52e5	3.51e5
7228/7-1 A	COCH		2093.80	11807	0.00e0	0.00e0	3.91e5	6.74e5	1.02e6	8.44e5	3.13e5	3.42e5	2.99e5	3.75e5	3.41e5	3.71e5	3.76e5
7228/7-1 A	COCH		2097.00	11810	0.00e0	0.00e0	6.69e5	1.48e6	5.39e6	3.25e6	1.16e6	1.14e6	3.05e6	7.63e5	7.68e5	4.79e5	4.46e5
7228/7-1 A	COCH		2098.30	11811	0.00e0	0.00e0	3.55e5	6.07e5	9.37e5	7.77e5	2.78e5	3.00e5	2.67e5	3.26e5	3.07e5	3.31e5	3.36e5
7228/7-1 A	COCH		2099.30	11812	0.00e0	0.00e0	2.50e5	4.30e5	6.79e5	5.77e5	2.02e5	2.23e5	1.88e5	2.31e5	2.19e5	2.36e5	2.44e5
7228/7-1 A	COCH		2101.25	11814	0.00e0	0.00e0	2.99e5	5.22e5	7.91e5	6.69e5	2.32e5	2.48e5	2.23e5	2.78e5	2.72e5	2.89e5	2.81e5
7228/7-1 A	COCH		2102.25	11816	0.00e0	0.00e0	5.11e5	9.24e5	1.83e6	1.33e6	4.84e5	5.00e5	6.86e5	5.23e5	4.75e5	4.98e5	4.89e5
7228/7-1 A	COCH		2102.50	11817	0.00e0	0.00e0	3.73e5	6.93e5	1.09e6	8.75e5	3.26e5	3.36e5	3.34e5	3.74e5	3.60e5	3.85e5	3.87e5
7228/7-1 A	COCH	2833.00	2833.02	11024	9.04e5	0.00e0	2.63e6	5.68e6	2.28e7	1.20e7	5.08e6	4.62e6	1.29e7	3.02e6	2.91e6	1.82e6	1.64e6

Table 9. continued, GCMS SIR of saturated compounds (peak height)

m/e		191															
Well	Sample type	Upper Depth	Lower Depth	API#	29:31	29:35	29:41	29:43	30:32	30:35	30:41	25:29 (0.6)	29:31	29:35	30:41	29:43	30:41
7228/7-1 ST3	COCH	1367.38	1367.40	11309	1.61e6	1.58e6	1.22e7	4.63e6	9.11e5	1.18e6	1.27e6	7.69e5	1.43e7	4.81e6	1.03e6	1.48e6	0.00e0
7228/7-1 ST3	DC		1719.00	11789	0.00e0	0.00e0	9.37e4	7.50e5	0.00e0	0.00e0	7.58e4	0.00e0	1.26e6	1.40e5	7.13e4	1.82e5	0.00e0
7228/7-1 B	SWC		2139.00	11850	2.42e5	2.34e5	4.92e5	9.71e5	1.69e5	2.32e5	1.25e5	0.00e0	2.69e6	6.30e5	3.52e5	4.07e5	0.00e0
7228/7-1 B	SWC		2165.50	11852	6.25e4	6.00e4	1.95e5	1.82e5	5.24e4	1.03e5	4.91e4	0.00e0	4.98e5	1.71e5	6.46e4	8.95e4	0.00e0
7228/7-1 A	COCH		2066.50	11794	1.09e5	1.01e5	3.12e5	3.43e5	6.70e4	1.20e5	6.97e4	0.00e0	1.05e6	2.72e5	1.35e5	1.61e5	0.00e0
7228/7-1 A	COCH		2071.45	11795	1.34e5	1.31e5	2.37e5	4.78e5	9.08e4	1.43e5	5.93e4	0.00e0	1.30e6	3.21e5	2.06e5	2.26e5	0.00e0
7228/7-1 A	COCH		2082.70	11797	2.23e5	2.24e5	5.27e5	1.13e6	1.63e5	2.05e5	1.43e5	0.00e0	2.65e6	6.75e5	4.26e5	4.81e5	0.00e0
7228/7-1 A	COCH		2086.50	11799	1.96e5	1.76e5	3.52e5	6.62e5	1.34e5	1.77e5	1.14e5	0.00e0	1.77e6	4.61e5	2.84e5	3.11e5	0.00e0
7228/7-1 A	COCH		2087.30	11801	4.04e5	3.83e5	6.95e5	1.45e6	2.97e5	3.47e5	1.90e5	0.00e0	3.84e6	9.36e5	6.50e5	6.93e5	0.00e0
7228/7-1 A	COCH		2088.95	11802	4.38e5	4.29e5	7.37e5	1.55e6	2.98e5	3.60e5	2.00e5	0.00e0	4.27e6	1.04e6	7.03e5	7.62e5	0.00e0
7228/7-1 A	COCH		2088.95	11803	3.22e5	3.13e5	4.95e5	1.03e6	2.25e5	2.36e5	1.70e5	0.00e0	2.91e6	6.74e5	4.76e5	5.12e5	0.00e0
7228/7-1 A	COCH		2093.80	11807	3.56e5	3.25e5	5.63e5	1.11e6	2.47e5	2.53e5	1.59e5	0.00e0	3.07e6	7.38e5	5.16e5	5.63e5	0.00e0
7228/7-1 A	COCH		2097.00	11810	4.46e5	4.37e5	2.58e6	1.03e6	2.69e5	3.28e5	3.70e5	0.00e0	4.86e6	1.35e6	3.10e5	4.40e5	0.00e0
7228/7-1 A	COCH		2098.30	11811	3.16e5	2.85e5	4.76e5	1.01e6	2.24e5	2.27e5	1.55e5	0.00e0	2.68e6	6.41e5	4.35e5	4.85e5	0.00e0
7228/7-1 A	COCH		2099.30	11812	2.22e5	2.07e5	3.49e5	7.19e5	1.64e5	1.70e5	1.16e5	0.00e0	1.96e6	4.56e5	3.17e5	3.58e5	0.00e0
7228/7-1 A	COCH		2101.25	11814	2.54e5	2.41e5	3.97e5	8.39e5	1.83e5	2.01e5	1.09e5	0.00e0	2.20e6	5.54e5	3.69e5	3.99e5	0.00e0
7228/7-1 A	COCH		2102.25	11816	4.61e5	4.24e5	9.53e5	1.40e6	3.29e5	3.39e5	2.16e5	0.00e0	3.97e6	1.02e6	6.16e5	6.76e5	0.00e0
7228/7-1 A	COCH		2102.50	11817	3.64e5	3.41e5	5.60e5	1.10e6	2.45e5	2.68e5	1.62e5	0.00e0	2.88e6	7.08e5	4.85e5	5.32e5	0.00e0
7228/7-1 A	COCH	2833.00	2833.02	11024	1.61e6	1.54e6	1.02e7	3.40e6	1.05e6	1.00e6	1.58e6	0.00e0	1.82e7	5.17e6	9.63e5	1.39e6	0.00e0

Table 9. continued, GCMS SIR of saturated compounds (peak height)

m/e		191															
Well	Sample Type	Upper Depth	Lower Depth	API ID	3006	3006	3106S	3106R	306	3206S	3206R	3306S	3306R	3406S	3406R	3506S	3506R
7228/7-1 ST3	COCH	1367.38	1367.40	11309	1.19e7	1.32e6	4.65e6	3.53e6	5.03e5	2.11e6	1.71e6	1.16e6	8.70e5	6.42e5	5.03e5	5.89e5	4.93e5
7228/7-1 ST3	DC		1719.00	11789	1.38e6	2.62e5	6.45e5	4.46e5	6.64e4	3.41e5	2.30e5	1.45e5	9.01e4	1.05e5	7.79e4	1.31e5	9.55e4
7228/7-1 B	SWC		2139.00	11850	3.09e6	6.51e5	1.31e6	9.51e5	1.85e5	8.00e5	5.41e5	4.10e5	2.71e5	2.43e5	1.80e5	1.52e5	9.95e4
7228/7-1 B	SWC		2165.50	11852	4.79e5	9.12e4	2.09e5	1.55e5	6.87e4	1.17e5	7.50e4	6.20e4	4.27e4	3.77e4	2.54e4	3.00e4	2.31e4
7228/7-1 A	COCH		2066.50	11794	1.14e6	2.28e5	4.50e5	3.19e5	6.00e4	2.67e5	1.87e5	1.32e5	8.84e4	7.70e4	5.29e4	4.49e4	3.22e4
7228/7-1 A	COCH		2071.45	11795	1.56e6	3.74e5	6.41e5	4.46e5	8.82e4	3.86e5	2.77e5	1.88e5	1.25e5	1.23e5	8.16e4	5.62e4	3.93e4
7228/7-1 A	COCH		2082.70	11797	3.22e6	7.68e5	1.28e6	9.07e5	1.84e5	7.59e5	5.28e5	3.74e5	2.54e5	2.19e5	1.63e5	9.96e4	6.85e4
7228/7-1 A	COCH		2086.50	11799	2.26e6	4.97e5	9.43e5	6.32e5	1.21e5	5.62e5	3.86e5	2.79e5	1.90e5	1.62e5	1.14e5	8.41e4	6.20e4
7228/7-1 A	COCH		2087.30	11801	4.72e6	1.12e6	1.97e6	1.37e6	2.46e5	1.22e6	7.97e5	5.98e5	4.07e5	3.65e5	2.76e5	1.93e5	1.32e5
7228/7-1 A	COCH		2088.95	11802	5.46e6	1.25e6	2.23e6	1.54e6	2.92e5	1.44e6	9.74e5	6.92e5	4.61e5	4.34e5	2.94e5	2.12e5	1.48e5
7228/7-1 A	COCH		2088.95	11803	3.56e6	8.55e5	1.51e6	1.08e6	1.84e5	9.53e5	6.60e5	4.71e5	3.28e5	3.16e5	2.18e5	1.48e5	1.16e5
7228/7-1 A	COCH		2093.80	11807	3.86e6	9.42e5	1.65e6	1.13e6	2.09e5	1.05e6	7.11e5	5.35e5	3.63e5	3.37e5	2.33e5	1.70e5	1.16e5
7228/7-1 A	COCH		2097.00	11810	3.73e6	4.04e5	1.61e6	1.26e6	1.95e5	8.28e5	5.58e5	4.32e5	2.86e5	2.12e5	1.41e5	1.61e5	9.55e4
7228/7-1 A	COCH		2098.30	11811	3.38e6	7.91e5	1.40e6	9.72e5	1.78e5	9.00e5	5.95e5	4.28e5	3.05e5	2.79e5	1.92e5	1.35e5	9.04e4
7228/7-1 A	COCH		2099.30	11812	2.43e6	5.78e5	1.01e6	6.98e5	1.21e5	6.33e5	4.27e5	3.18e5	2.12e5	2.02e5	1.41e5	9.80e4	7.54e4
7228/7-1 A	COCH		2101.25	11814	2.71e6	6.34e5	1.15e6	7.75e5	1.47e5	7.03e5	4.72e5	3.60e5	2.40e5	2.28e5	1.62e5	1.06e5	7.78e4
7228/7-1 A	COCH		2102.25	11816	4.66e6	9.99e5	1.96e6	1.34e6	2.41e5	1.16e6	8.00e5	6.03e5	4.21e5	3.88e5	2.68e5	1.98e5	1.32e5
7228/7-1 A	COCH		2102.50	11817	3.60e6	8.50e5	1.52e6	1.04e6	1.93e5	9.50e5	6.35e5	4.89e5	3.23e5	2.99e5	2.18e5	1.53e5	1.08e5
7228/7-1 A	COCH	2833.00	2833.02	11024	1.31e7	9.42e5	5.61e6	4.12e6	6.22e5	2.67e6	1.89e6	1.38e6	9.33e5	6.89e5	4.42e5	5.22e5	3.37e5

Table 9. continued, GCMS SIR of saturated compounds (peak height)

m/e		217															
Well	Sample type	Upper Depth	Lower Depth	GC-ID	170	171	172	173	174	175	176	177	178	179	180	181	182
7228/7-1 ST3	COCH	1367.38	1367.40	11309	3.46e6	4.57e6	2.75e6	2.70e6	9.53e6	5.79e6	2.32e6	2.90e6	2.89e6	2.73e6	1.66e6	1.98e6	1.28e6
7228/7-1 ST3	DC		1719.00	11789	3.07e4	3.57e4	2.16e4	2.10e4	6.53e4	3.76e4	1.77e4	1.87e4	3.92e4	3.78e4	2.10e4	2.69e4	1.71e4
7228/7-1 B	SWC		2139.00	11850	1.78e5	1.49e5	1.25e5	6.29e4	4.44e5	2.51e5	1.13e5	1.41e5	2.00e5	1.95e5	1.10e5	1.35e5	9.16e4
7228/7-1 B	SWC		2165.50	11852	6.91e4	5.88e4	3.88e4	2.44e4	9.81e4	5.72e4	2.38e4	3.06e4	3.77e4	4.12e4	2.23e4	2.22e4	1.80e4
7228/7-1 A	COCH		2066.50	11794	1.74e5	2.12e5	1.56e5	9.74e4	3.15e5	1.81e5	7.16e4	9.07e4	1.24e5	1.28e5	6.41e4	7.68e4	5.60e4
7228/7-1 A	COCH		2071.45	11795	1.13e5	8.88e4	7.95e4	3.11e4	2.37e5	1.32e5	5.69e4	7.11e4	1.05e5	1.14e5	6.03e4	7.15e4	4.96e4
7228/7-1 A	COCH		2082.70	11797	2.24e5	1.71e5	1.48e5	5.81e4	3.88e5	2.27e5	1.03e5	1.32e5	1.80e5	1.81e5	1.05e5	1.15e5	7.91e4
7228/7-1 A	COCH		2086.50	11799	1.92e5	1.48e5	1.31e5	5.55e4	3.51e5	2.09e5	7.96e4	1.09e5	1.57e5	1.65e5	8.75e4	9.76e4	6.74e4
7228/7-1 A	COCH		2087.30	11801	3.09e5	2.25e5	2.16e5	8.00e4	6.94e5	4.00e5	1.71e5	2.19e5	3.04e5	3.19e5	1.78e5	2.00e5	1.43e5
7228/7-1 A	COCH		2088.95	11802	3.39e5	2.33e5	2.28e5	7.68e4	7.55e5	4.32e5	1.82e5	2.31e5	3.28e5	3.59e5	1.97e5	2.18e5	1.41e5
7228/7-1 A	COCH		2088.95	11803	2.34e5	1.51e5	1.59e5	5.20e4	5.83e5	3.16e5	1.38e5	1.71e5	2.46e5	2.66e5	1.37e5	1.67e5	1.06e5
7228/7-1 A	COCH		2093.80	11807	2.39e5	1.60e5	1.66e5	5.35e4	6.02e5	3.47e5	1.51e5	1.86e5	2.60e5	2.85e5	1.54e5	1.80e5	1.09e5
7228/7-1 A	COCH		2097.00	11810	1.52e6	1.98e6	1.23e6	1.15e6	2.70e6	1.70e6	6.31e5	7.63e5	9.19e5	8.67e5	5.12e5	5.87e5	3.72e5
7228/7-1 A	COCH		2098.30	11811	2.24e5	1.61e5	1.48e5	5.08e4	5.30e5	3.01e5	1.27e5	1.60e5	2.17e5	2.43e5	1.34e5	1.50e5	9.94e4
7228/7-1 A	COCH		2099.30	11812	1.60e5	1.03e5	1.07e5	3.72e4	3.72e5	2.03e5	8.88e4	1.10e5	1.57e5	1.70e5	9.55e4	1.03e5	7.09e4
7228/7-1 A	COCH		2101.25	11814	1.84e5	1.29e5	1.27e5	4.12e4	4.52e5	2.54e5	1.07e5	1.36e5	1.87e5	2.04e5	1.11e5	1.28e5	8.01e4
7228/7-1 A	COCH		2102.25	11816	4.51e5	4.29e5	3.38e5	1.98e5	1.01e6	5.95e5	2.36e5	2.90e5	3.91e5	4.23e5	2.38e5	2.72e5	1.66e5
7228/7-1 A	COCH		2102.50	11817	2.64e5	1.88e5	1.87e5	6.93e4	6.16e5	3.68e5	1.49e5	1.99e5	2.66e5	2.83e5	1.57e5	1.78e5	1.19e5
7228/7-1 A	COCH	2833.00	2833.02	11024	5.28e6	7.27e6	4.52e6	4.08e6	9.61e6	6.00e6	2.14e6	2.64e6	3.13e6	3.02e6	1.78e6	2.03e6	1.22e6

Table 9. continued, GCMS SIR of saturated compounds (peak height)

m/e		217																
Well	Sample type	Upper Depth	Lower Depth	API ID	276e5	276e5	276e5	276e5	276e5	276e5	276e5	276e5	276e5	276e5	276e5	276e5	276e5	276e5
7228/7-1 ST3	COCH	1367.38	1367.40	11309	2.02e6	3.35e6	2.46e6	9.90e5	2.20e6	2.49e6	1.87e6	3.94e5	1.23e6	1.14e6	1.47e6	6.99e5	1.13e6	
7228/7-1 ST3	DC		1719.00	11789	2.21e4	8.89e4	2.55e4	1.44e4	4.54e4	6.04e4	2.99e4	1.20e4	3.35e4	3.40e4	2.84e4	4.39e4	7.28e4	
7228/7-1 B	SWC		2139.00	11850	1.13e5	3.89e5	1.31e5	8.46e4	1.53e5	2.54e5	1.53e5	4.85e4	1.42e5	9.91e4	1.37e5	8.63e4	1.76e5	
7228/7-1 B	SWC		2165.50	11852	2.86e4	5.76e4	3.14e4	1.60e4	6.25e4	4.01e4	2.99e4	1.09e4	2.07e4	2.20e4	2.71e4	3.17e4	4.14e4	
7228/7-1 A	COCH		2066.50	11794	6.57e4	1.88e5	7.72e4	4.60e4	9.26e4	1.22e5	7.60e4	1.37e4	5.35e4	4.31e4	5.55e4	4.46e4	7.09e4	
7228/7-1 A	COCH		2071.45	11795	5.39e4	2.19e5	5.31e4	4.76e4	7.93e4	1.31e5	8.47e4	2.45e4	7.61e4	4.96e4	5.87e4	5.01e4	8.86e4	
7228/7-1 A	COCH		2082.70	11797	9.67e4	3.68e5	9.25e4	7.85e4	1.32e5	2.36e5	1.58e5	4.01e4	1.34e5	8.58e4	1.05e5	8.26e4	1.59e5	
7228/7-1 A	COCH		2086.50	11799	7.61e4	3.10e5	8.16e4	5.98e4	1.07e5	1.96e5	1.20e5	2.86e4	1.07e5	7.09e4	8.51e4	5.83e4	1.12e5	
7228/7-1 A	COCH		2087.30	11801	1.44e5	6.38e5	1.44e5	1.35e5	1.83e5	4.00e5	2.61e5	5.75e4	2.37e5	1.35e5	1.67e5	1.03e5	2.49e5	
7228/7-1 A	COCH		2088.95	11802	1.47e5	7.24e5	1.56e5	1.41e5	1.90e5	4.49e5	2.82e5	7.10e4	2.63e5	1.43e5	1.99e5	1.17e5	2.60e5	
7228/7-1 A	COCH		2088.95	11803	1.05e5	5.24e5	1.09e5	1.01e5	1.28e5	3.09e5	2.07e5	4.70e4	1.78e5	9.68e4	1.39e5	7.15e4	1.91e5	
7228/7-1 A	COCH		2093.80	11807	1.17e5	5.50e5	1.21e5	1.06e5	1.39e5	3.41e5	2.21e5	4.65e4	2.06e5	1.07e5	1.48e5	8.16e4	2.10e5	
7228/7-1 A	COCH		2097.00	11810	5.61e5	9.98e5	6.78e5	2.66e5	5.10e5	7.16e5	4.59e5	1.28e5	3.19e5	3.33e5	4.36e5	1.77e5	3.29e5	
7228/7-1 A	COCH		2098.30	11811	1.04e5	4.89e5	1.10e5	9.59e4	1.25e5	3.01e5	1.99e5	4.74e4	1.73e5	9.56e4	1.31e5	7.44e4	1.69e5	
7228/7-1 A	COCH		2099.30	11812	7.21e4	3.43e5	7.58e4	6.38e4	9.22e4	2.09e5	1.40e5	3.52e4	1.23e5	6.54e4	9.17e4	5.33e4	1.27e5	
7228/7-1 A	COCH		2101.25	11814	8.27e4	3.83e5	8.76e4	7.87e4	1.05e5	2.41e5	1.56e5	3.64e4	1.47e5	7.88e4	1.03e5	6.11e4	1.45e5	
7228/7-1 A	COCH		2102.25	11816	1.97e5	7.57e5	2.30e5	1.56e5	2.19e5	4.71e5	3.25e5	7.03e4	2.69e5	1.63e5	2.30e5	1.12e5	2.62e5	
7228/7-1 A	COCH		2102.50	11817	1.25e5	5.53e5	1.31e5	1.09e5	1.48e5	3.39e5	2.31e5	5.40e4	1.97e5	1.08e5	1.48e5	8.64e4	2.04e5	
7228/7-1 A	COCH	2833.00	2833.02	11024	1.87e6	3.30e6	2.37e6	9.28e5	1.74e6	2.28e6	1.61e6	4.37e5	1.02e6	1.16e6	1.51e6	6.10e5	1.08e6	

Table 9. continued, GCMS SIR of saturated compounds (peak height)

m/e		217										218						
Well	Sample type	Depth	Depth	APIID	217H	217S	217H	217S	217H	217S	217H	218H	218S	218H	218S	218H	218S	
7228/7-1 ST3	COCH	1367.38	1367.40	11309	1.44e6	1.35e6	9.89e5	3.35e5	3.31e5	1.74e5	1.83e5	4.50e6	3.88e6	1.70e6	2.01e6	2.46e6	2.27e6	
7228/7-1 ST3	DC		1719.00	11789	5.67e4	5.37e4	6.26e4	0.00e0	9.39e3	7.62e3	0.00e0	3.98e4	3.39e4	3.09e4	3.02e4	7.64e4	7.21e4	
7228/7-1 B	SWC		2139.00	11850	1.90e5	1.72e5	1.54e5	0.00e0	4.36e4	4.50e4	2.50e4	2.07e5	1.72e5	1.28e5	1.62e5	2.58e5	2.48e5	
7228/7-1 B	SWC		2165.50	11852	4.05e4	3.66e4	2.82e4	0.00e0	0.00e0	0.00e0	0.00e0	4.61e4	3.75e4	2.64e4	2.96e4	5.15e4	4.52e4	
7228/7-1 A	COCH		2066.50	11794	8.11e4	6.94e4	5.84e4	3.17e4	2.30e4	2.02e4	0.00e0	1.21e5	9.61e4	6.05e4	6.55e4	1.05e5	9.70e4	
7228/7-1 A	COCH		2071.45	11795	8.96e4	8.00e4	7.10e4	0.00e0	1.70e4	2.46e4	0.00e0	7.99e4	6.11e4	4.31e4	5.43e4	1.00e5	1.01e5	
7228/7-1 A	COCH		2082.70	11797	1.53e5	1.29e5	1.54e5	0.00e0	3.67e4	3.89e4	0.00e0	1.36e5	1.13e5	8.51e4	1.07e5	1.97e5	1.84e5	
7228/7-1 A	COCH		2086.50	11799	1.14e5	1.11e5	1.09e5	0.00e0	2.79e4	3.46e4	0.00e0	1.20e5	9.91e4	7.90e4	9.72e4	1.64e5	1.59e5	
7228/7-1 A	COCH		2087.30	11801	2.44e5	2.26e5	2.17e5	0.00e0	6.29e4	7.06e4	0.00e0	2.32e5	1.75e5	1.41e5	1.82e5	3.23e5	3.23e5	
7228/7-1 A	COCH		2088.95	11802	2.57e5	2.40e5	2.62e5	0.00e0	6.67e4	6.65e4	0.00e0	2.59e5	1.94e5	1.50e5	2.03e5	3.73e5	3.29e5	
7228/7-1 A	COCH		2088.95	11803	1.84e5	1.65e5	1.83e5	0.00e0	4.34e4	4.44e4	0.00e0	1.83e5	1.45e5	1.19e5	1.51e5	2.65e5	2.59e5	
7228/7-1 A	COCH		2093.80	11807	2.03e5	1.83e5	2.05e5	0.00e0	4.70e4	4.53e4	0.00e0	2.06e5	1.57e5	1.24e5	1.66e5	2.89e5	2.79e5	
7228/7-1 A	COCH		2097.00	11810	4.29e5	3.86e5	2.19e5	0.00e0	9.09e4	6.21e4	4.76e4	1.19e6	1.01e6	4.96e5	5.72e5	6.60e5	6.11e5	
7228/7-1 A	COCH		2098.30	11811	1.71e5	1.53e5	1.72e5	0.00e0	4.11e4	4.14e4	2.06e4	1.72e5	1.33e5	1.10e5	1.41e5	2.42e5	2.26e5	
7228/7-1 A	COCH		2099.30	11812	1.19e5	1.06e5	1.19e5	0.00e0	3.06e4	3.15e4	1.64e4	1.21e5	9.31e4	6.93e4	9.34e4	1.69e5	1.59e5	
7228/7-1 A	COCH		2101.25	11814	1.40e5	1.24e5	1.39e5	0.00e0	3.24e4	3.57e4	2.24e4	1.39e5	1.07e5	8.92e4	1.14e5	2.03e5	1.89e5	
7228/7-1 A	COCH		2102.25	11816	2.79e5	2.47e5	2.51e5	0.00e0	6.72e4	6.07e4	2.98e4	3.66e5	3.05e5	2.00e5	2.62e5	4.12e5	3.83e5	
7228/7-1 A	COCH		2102.50	11817	1.94e5	1.77e5	1.94e5	0.00e0	4.73e4	4.88e4	2.42e4	2.06e5	1.69e5	1.27e5	1.65e5	2.81e5	2.63e5	
7228/7-1 A	COCH	2833.00	2833.02	11024	1.43e6	1.36e6	7.01e5	3.24e5	3.44e5	1.94e5	1.52e5	4.62e6	3.68e6	1.85e6	2.10e6	2.44e6	2.29e6	

Table 9. continued, GCMS SIR of saturated compounds (peak height)

m/e		218				
Well	Sample type	Peak Height	Peak Height	RT (min)	GCMS	GCMS
7228/7-1 ST3	COCH	1367.38	1367.40	11309	3.34e5	2.83e5
7228/7-1 ST3	DC		1719.00	11789	1.01e4	9.62e3
7228/7-1 B	SWC		2139.00	11850	4.01e4	4.79e4
7228/7-1 B	SWC		2165.50	11852	0.00e0	0.00e0
7228/7-1 A	COCH		2066.50	11794	2.07e4	1.87e4
7228/7-1 A	COCH		2071.45	11795	1.85e4	2.00e4
7228/7-1 A	COCH		2082.70	11797	3.38e4	3.62e4
7228/7-1 A	COCH		2086.50	11799	3.03e4	3.24e4
7228/7-1 A	COCH		2087.30	11801	5.42e4	6.27e4
7228/7-1 A	COCH		2088.95	11802	6.30e4	6.80e4
7228/7-1 A	COCH		2088.95	11803	4.84e4	4.99e4
7228/7-1 A	COCH		2093.80	11807	5.01e4	5.55e4
7228/7-1 A	COCH		2097.00	11810	1.03e5	9.63e4
7228/7-1 A	COCH		2098.30	11811	4.25e4	4.57e4
7228/7-1 A	COCH		2099.30	11812	2.76e4	3.17e4
7228/7-1 A	COCH		2101.25	11814	3.24e4	3.56e4
7228/7-1 A	COCH		2102.25	11816	7.03e4	7.35e4
7228/7-1 A	COCH		2102.50	11817	4.84e4	5.13e4
7228/7-1 A	COCH	2833.00	2833.02	11024	3.82e5	3.15e5

Table 10. GCMS SIR of saturated compounds (amounts in ng/g)

m/e		177		191															
Well	Sample Id	Depth	Depth	APIID	250e3	250e3	250e3	250e3	250e3	250e3	250e3	250e3	250e3	250e3	250e3	250e3	250e3	250e3	250e3
7228/7-1 ST3	COCH	1367.38	1367.40	11309	2.60e3	1.33e3	6.58e3	1.08e4	4.72e4	2.38e4	1.10e4	9.57e3	4.01e4	7.25e3	6.98e3	4.98e3	4.45e3		
7228/7-1 ST3	DC		1719.00	11789	0.00e0	0.00e0	8.65e2	8.12e2	1.09e3	1.98e3	3.37e2	3.24e2	1.85e3	3.68e2	2.63e2	2.71e2	2.31e2		
7228/7-1 B	SWC		2139.00	11850	0.00e0	0.00e0	2.53e3	4.30e3	7.31e3	6.59e3	2.14e3	2.21e3	2.51e3	2.36e3	2.12e3	2.17e3	2.11e3		
7228/7-1 B	SWC		2165.50	11852	0.00e0	0.00e0	1.30e3	2.30e3	3.23e3	3.59e3	7.78e2	8.10e2	7.90e2	8.18e2	7.93e2	8.14e2	7.89e2		
7228/7-1 A	COCH		2066.50	11794	0.00e0	0.00e0	1.37e3	2.42e3	6.12e3	5.31e3	1.46e3	1.45e3	2.62e3	1.20e3	1.13e3	8.87e2	9.48e2		
7228/7-1 A	COCH		2071.45	11795	0.00e0	0.00e0	1.54e3	2.67e3	4.32e3	4.36e3	1.09e3	1.17e3	1.20e3	1.30e3	1.20e3	1.31e3	1.26e3		
7228/7-1 A	COCH		2082.70	11797	0.00e0	0.00e0	3.22e3	5.23e3	7.39e3	6.08e3	1.83e3	2.01e3	2.20e3	2.07e3	1.85e3	2.02e3	1.99e3		
7228/7-1 A	COCH		2086.50	11799	0.00e0	0.00e0	1.92e3	3.24e3	5.38e3	5.05e3	1.42e3	1.48e3	1.69e3	1.57e3	1.43e3	1.49e3	1.53e3		
7228/7-1 A	COCH		2087.30	11801	0.00e0	0.00e0	4.55e3	7.85e3	1.24e4	1.10e4	3.57e3	3.79e3	3.58e3	4.02e3	3.85e3	4.15e3	4.10e3		
7228/7-1 A	COCH		2088.95	11802	0.00e0	0.00e0	5.82e3	9.95e3	1.61e4	1.41e4	4.35e3	4.48e3	4.28e3	5.13e3	4.69e3	5.41e3	5.13e3		
7228/7-1 A	COCH		2088.95	11803	0.00e0	0.00e0	4.98e3	8.46e3	1.30e4	1.09e4	3.95e3	4.27e3	3.70e3	4.78e3	4.17e3	4.78e3	4.77e3		
7228/7-1 A	COCH		2093.80	11807	0.00e0	0.00e0	6.71e3	1.16e4	1.74e4	1.45e4	5.37e3	5.87e3	5.14e3	6.43e3	5.86e3	6.38e3	6.46e3		
7228/7-1 A	COCH		2097.00	11810	0.00e0	0.00e0	9.04e3	2.00e4	7.29e4	4.39e4	1.56e4	1.55e4	4.12e4	1.03e4	1.04e4	6.47e3	6.03e3		
7228/7-1 A	COCH		2098.30	11811	0.00e0	0.00e0	4.97e3	8.49e3	1.31e4	1.09e4	3.89e3	4.20e3	3.74e3	4.56e3	4.29e3	4.63e3	4.70e3		
7228/7-1 A	COCH		2099.30	11812	0.00e0	0.00e0	4.38e3	7.52e3	1.19e4	1.01e4	3.53e3	3.89e3	3.28e3	4.04e3	3.83e3	4.13e3	4.26e3		
7228/7-1 A	COCH		2101.25	11814	0.00e0	0.00e0	5.45e3	9.51e3	1.44e4	1.22e4	4.23e3	4.52e3	4.07e3	5.07e3	4.95e3	5.28e3	5.13e3		
7228/7-1 A	COCH		2102.25	11816	0.00e0	0.00e0	6.18e3	1.12e4	2.22e4	1.61e4	5.86e3	6.05e3	8.31e3	6.33e3	5.75e3	6.04e3	5.92e3		
7228/7-1 A	COCH		2102.50	11817	0.00e0	0.00e0	5.27e3	9.81e3	1.54e4	1.24e4	4.62e3	4.76e3	4.73e3	5.29e3	5.09e3	5.44e3	5.47e3		
7228/7-1 A	COCH	2833.00	2833.02	11024	6.53e2	0.00e0	1.90e3	4.10e3	1.65e4	8.65e3	3.67e3	3.33e3	9.32e3	2.18e3	2.10e3	1.31e3	1.18e3		

Table 10. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e	191																
Well	Sample Type	Compound	Lower Dapn	11309	11309	11309	11309	11309	11309	11309	11309	11309	11309	11309	11309	11309	11309
7228/7-1 ST3	COCH	1367.38	1367.40	11309	3.96e3	3.88e3	2.99e4	1.14e4	2.23e3	2.89e3	3.10e3	1.89e3	3.50e4	1.18e4	2.52e3	3.63e3	0.00e0
7228/7-1 ST3	DC		1719.00	11789	0.00e0	0.00e0	1.56e3	1.25e4	0.00e0	0.00e0	1.26e3	0.00e0	2.09e4	2.32e3	1.19e3	3.03e3	0.00e0
7228/7-1 B	SWC		2139.00	11850	2.15e3	2.08e3	4.39e3	8.66e3	1.50e3	2.07e3	1.11e3	0.00e0	2.39e4	5.62e3	3.14e3	3.63e3	0.00e0
7228/7-1 B	SWC		2165.50	11852	6.26e2	6.01e2	1.96e3	1.82e3	5.26e2	1.04e3	4.92e2	0.00e0	4.99e3	1.71e3	6.48e2	8.97e2	0.00e0
7228/7-1 A	COCH		2066.50	11794	9.26e2	8.52e2	2.64e3	2.90e3	5.67e2	1.02e3	5.90e2	0.00e0	8.87e3	2.31e3	1.14e3	1.36e3	0.00e0
7228/7-1 A	COCH		2071.45	11795	1.14e3	1.12e3	2.02e3	4.08e3	7.74e2	1.22e3	5.05e2	0.00e0	1.11e4	2.73e3	1.75e3	1.92e3	0.00e0
7228/7-1 A	COCH		2082.70	11797	1.73e3	1.74e3	4.09e3	8.78e3	1.26e3	1.59e3	1.11e3	0.00e0	2.06e4	5.24e3	3.30e3	3.73e3	0.00e0
7228/7-1 A	COCH		2086.50	11799	1.49e3	1.34e3	2.68e3	5.04e3	1.02e3	1.35e3	8.69e2	0.00e0	1.35e4	3.51e3	2.16e3	2.37e3	0.00e0
7228/7-1 A	COCH		2087.30	11801	3.78e3	3.58e3	6.49e3	1.36e4	2.77e3	3.24e3	1.78e3	0.00e0	3.59e4	8.74e3	6.07e3	6.48e3	0.00e0
7228/7-1 A	COCH		2088.95	11802	4.75e3	4.65e3	7.98e3	1.68e4	3.22e3	3.90e3	2.16e3	0.00e0	4.62e4	1.12e4	7.61e3	8.25e3	0.00e0
7228/7-1 A	COCH		2088.95	11803	4.38e3	4.25e3	6.72e3	1.40e4	3.06e3	3.21e3	2.31e3	0.00e0	3.95e4	9.17e3	6.47e3	6.96e3	0.00e0
7228/7-1 A	COCH		2093.80	11807	6.11e3	5.58e3	9.67e3	1.90e4	4.24e3	4.35e3	2.72e3	0.00e0	5.28e4	1.27e4	8.86e3	9.67e3	0.00e0
7228/7-1 A	COCH		2097.00	11810	6.03e3	5.90e3	3.48e4	1.40e4	3.64e3	4.43e3	5.00e3	0.00e0	6.56e4	1.83e4	4.19e3	5.95e3	0.00e0
7228/7-1 A	COCH		2098.30	11811	4.42e3	3.99e3	6.67e3	1.42e4	3.13e3	3.17e3	2.17e3	0.00e0	3.74e4	8.98e3	6.08e3	6.78e3	0.00e0
7228/7-1 A	COCH		2099.30	11812	3.88e3	3.63e3	6.11e3	1.26e4	2.87e3	2.98e3	2.04e3	0.00e0	3.44e4	7.99e3	5.56e3	6.26e3	0.00e0
7228/7-1 A	COCH		2101.25	11814	4.63e3	4.40e3	7.24e3	1.53e4	3.33e3	3.67e3	1.99e3	0.00e0	4.02e4	1.01e4	6.73e3	7.27e3	0.00e0
7228/7-1 A	COCH		2102.25	11816	5.58e3	5.13e3	1.15e4	1.70e4	3.98e3	4.10e3	2.61e3	0.00e0	4.81e4	1.24e4	7.46e3	8.19e3	0.00e0
7228/7-1 A	COCH		2102.50	11817	5.15e3	4.82e3	7.92e3	1.55e4	3.47e3	3.80e3	2.29e3	0.00e0	4.07e4	1.00e4	6.86e3	7.53e3	0.00e0
7228/7-1 A	COCH	2833.00	2833.02	11024	1.16e3	1.11e3	7.38e3	2.45e3	7.54e2	7.23e2	1.14e3	0.00e0	1.32e4	3.73e3	6.95e2	1.00e3	0.00e0

Table 10. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e		191															
Well	Sample Type	Upper Depth	Lower Depth	API ID	20e1	30e2	41e3	51e3	60e	72e3	82e3	92e3	10e3	11e3	12e3	13e3	14e3
7228/7-1 ST3	COCH	1367.38	1367.40	11309	2.91e4	3.24e3	1.14e4	8.65e3	1.23e3	5.18e3	4.20e3	2.83e3	2.13e3	1.58e3	1.23e3	1.45e3	1.21e3
7228/7-1 ST3	DC		1719.00	11789	2.30e4	4.35e3	1.07e4	7.42e3	1.10e3	5.67e3	3.82e3	2.42e3	1.50e3	1.74e3	1.30e3	2.17e3	1.59e3
7228/7-1 B	SWC		2139.00	11850	2.75e4	5.80e3	1.17e4	8.48e3	1.65e3	7.14e3	4.82e3	3.66e3	2.42e3	2.16e3	1.60e3	1.35e3	8.88e2
7228/7-1 B	SWC		2165.50	11852	4.80e3	9.14e2	2.09e3	1.56e3	6.89e2	1.17e3	7.52e2	6.21e2	4.28e2	3.78e2	2.54e2	3.00e2	2.32e2
7228/7-1 A	COCH		2066.50	11794	9.65e3	1.93e3	3.81e3	2.70e3	5.08e2	2.26e3	1.58e3	1.12e3	7.49e2	6.52e2	4.48e2	3.80e2	2.72e2
7228/7-1 A	COCH		2071.45	11795	1.33e4	3.19e3	5.46e3	3.80e3	7.52e2	3.29e3	2.36e3	1.61e3	1.06e3	1.05e3	6.95e2	4.79e2	3.35e2
7228/7-1 A	COCH		2082.70	11797	2.50e4	5.96e3	9.95e3	7.04e3	1.43e3	5.89e3	4.10e3	2.91e3	1.97e3	1.70e3	1.27e3	7.73e2	5.31e2
7228/7-1 A	COCH		2086.50	11799	1.72e4	3.78e3	7.18e3	4.81e3	9.25e2	4.28e3	2.94e3	2.12e3	1.44e3	1.23e3	8.72e2	6.40e2	4.72e2
7228/7-1 A	COCH		2087.30	11801	4.41e4	1.05e4	1.84e4	1.28e4	2.30e3	1.14e4	7.45e3	5.59e3	3.80e3	3.41e3	2.58e3	1.80e3	1.24e3
7228/7-1 A	COCH		2088.95	11802	5.91e4	1.35e4	2.41e4	1.66e4	3.17e3	1.55e4	1.05e4	7.49e3	4.99e3	4.70e3	3.19e3	2.30e3	1.60e3
7228/7-1 A	COCH		2088.95	11803	4.84e4	1.16e4	2.05e4	1.47e4	2.50e3	1.29e4	8.97e3	6.40e3	4.46e3	4.29e3	2.96e3	2.01e3	1.58e3
7228/7-1 A	COCH		2093.80	11807	6.63e4	1.62e4	2.83e4	1.94e4	3.60e3	1.80e4	1.22e4	9.19e3	6.23e3	5.79e3	4.00e3	2.91e3	1.98e3
7228/7-1 A	COCH		2097.00	11810	5.04e4	5.46e3	2.17e4	1.70e4	2.63e3	1.12e4	7.54e3	5.84e3	3.86e3	2.87e3	1.90e3	2.17e3	1.29e3
7228/7-1 A	COCH		2098.30	11811	4.73e4	1.11e4	1.96e4	1.36e4	2.50e3	1.26e4	8.33e3	5.99e3	4.27e3	3.90e3	2.68e3	1.89e3	1.27e3
7228/7-1 A	COCH		2099.30	11812	4.25e4	1.01e4	1.77e4	1.22e4	2.11e3	1.11e4	7.47e3	5.56e3	3.72e3	3.54e3	2.47e3	1.71e3	1.32e3
7228/7-1 A	COCH		2101.25	11814	4.94e4	1.16e4	2.10e4	1.41e4	2.68e3	1.28e4	8.61e3	6.57e3	4.38e3	4.16e3	2.95e3	1.94e3	1.42e3
7228/7-1 A	COCH		2102.25	11816	5.64e4	1.21e4	2.37e4	1.63e4	2.92e3	1.40e4	9.70e3	7.30e3	5.10e3	4.70e3	3.25e3	2.40e3	1.59e3
7228/7-1 A	COCH		2102.50	11817	5.10e4	1.20e4	2.15e4	1.48e4	2.73e3	1.34e4	8.99e3	6.92e3	4.57e3	4.23e3	3.08e3	2.16e3	1.53e3
7228/7-1 A	COCH	2833.00	2833.02	11024	9.46e3	6.80e2	4.05e3	2.97e3	4.49e2	1.93e3	1.36e3	9.98e2	6.74e2	4.97e2	3.19e2	3.77e2	2.43e2

Table 10. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e																		
Well	Sample Type	Upper Depth	Lower Depth	API ID	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520	2530
7228/7-1 ST3	COCH	1367.38	1367.40	11309	8.48e3	1.12e4	6.74e3	6.63e3	2.34e4	1.42e4	5.68e3	7.11e3	7.08e3	6.70e3	4.08e3	4.86e3	3.14e3	
7228/7-1 ST3	DC		1719.00	11789	5.10e2	5.93e2	3.59e2	3.49e2	1.08e3	6.26e2	2.95e2	3.12e2	6.51e2	6.28e2	3.49e2	4.46e2	2.84e2	
7228/7-1 B	SWC		2139.00	11850	1.59e3	1.33e3	1.11e3	5.61e2	3.96e3	2.24e3	1.01e3	1.26e3	1.78e3	1.74e3	9.84e2	1.21e3	8.17e2	
7228/7-1 B	SWC		2165.50	11852	6.93e2	5.89e2	3.89e2	2.45e2	9.83e2	5.73e2	2.38e2	3.07e2	3.78e2	4.13e2	2.23e2	2.22e2	1.80e2	
7228/7-1 A	COCH		2066.50	11794	1.48e3	1.80e3	1.32e3	8.24e2	2.66e3	1.53e3	6.06e2	7.68e2	1.05e3	1.09e3	5.43e2	6.50e2	4.74e2	
7228/7-1 A	COCH		2071.45	11795	9.66e2	7.57e2	6.78e2	2.65e2	2.02e3	1.13e3	4.85e2	6.06e2	8.91e2	9.75e2	5.14e2	6.09e2	4.23e2	
7228/7-1 A	COCH		2082.70	11797	1.74e3	1.33e3	1.15e3	4.51e2	3.01e3	1.76e3	7.96e2	1.02e3	1.40e3	1.41e3	8.12e2	8.91e2	6.14e2	
7228/7-1 A	COCH		2086.50	11799	1.46e3	1.13e3	1.00e3	4.23e2	2.67e3	1.59e3	6.06e2	8.29e2	1.20e3	1.26e3	6.66e2	7.43e2	5.13e2	
7228/7-1 A	COCH		2087.30	11801	2.88e3	2.10e3	2.02e3	7.48e2	6.49e3	3.74e3	1.60e3	2.05e3	2.84e3	2.98e3	1.66e3	1.87e3	1.34e3	
7228/7-1 A	COCH		2088.95	11802	3.67e3	2.53e3	2.47e3	8.31e2	8.17e3	4.68e3	1.97e3	2.51e3	3.55e3	3.89e3	2.13e3	2.37e3	1.53e3	
7228/7-1 A	COCH		2088.95	11803	3.18e3	2.05e3	2.16e3	7.07e2	7.93e3	4.30e3	1.87e3	2.33e3	3.34e3	3.62e3	1.86e3	2.26e3	1.45e3	
7228/7-1 A	COCH		2093.80	11807	4.10e3	2.75e3	2.86e3	9.19e2	1.03e4	5.96e3	2.59e3	3.19e3	4.46e3	4.90e3	2.64e3	3.10e3	1.87e3	
7228/7-1 A	COCH		2097.00	11810	2.05e4	2.67e4	1.66e4	1.56e4	3.64e4	2.29e4	8.53e3	1.03e4	1.24e4	1.17e4	6.92e3	7.93e3	5.03e3	
7228/7-1 A	COCH		2098.30	11811	3.13e3	2.25e3	2.07e3	7.11e2	7.41e3	4.21e3	1.78e3	2.23e3	3.03e3	3.41e3	1.88e3	2.10e3	1.39e3	
7228/7-1 A	COCH		2099.30	11812	2.80e3	1.80e3	1.88e3	6.51e2	6.50e3	3.55e3	1.55e3	1.92e3	2.75e3	2.97e3	1.67e3	1.80e3	1.24e3	
7228/7-1 A	COCH		2101.25	11814	3.35e3	2.34e3	2.32e3	7.51e2	8.25e3	4.62e3	1.95e3	2.49e3	3.42e3	3.72e3	2.02e3	2.34e3	1.46e3	
7228/7-1 A	COCH		2102.25	11816	5.47e3	5.20e3	4.10e3	2.40e3	1.22e4	7.20e3	2.86e3	3.52e3	4.74e3	5.13e3	2.89e3	3.30e3	2.01e3	
7228/7-1 A	COCH		2102.50	11817	3.73e3	2.65e3	2.65e3	9.81e2	8.72e3	5.20e3	2.11e3	2.82e3	3.77e3	4.00e3	2.22e3	2.52e3	1.69e3	
7228/7-1 A	COCH	2833.00	2833.02	11024	3.81e3	5.25e3	3.26e3	2.94e3	6.93e3	4.33e3	1.55e3	1.91e3	2.26e3	2.18e3	1.28e3	1.46e3	8.83e2	

Table 10. continued, GCMS SIR of saturated compounds (amounts in ng/g)

		m/e		217													
Well	Sample Type	Upper Depth	Lower Depth	API ID	2706s	2718s-2948s	2718s	2814s	2760s	2908s	2848s	2800s	2914s	2818s	2718s	2814s	2908s
7228/7-1 ST3	COCH	1367.38	1367.40	11309	4.95e3	8.23e3	6.03e3	2.43e3	5.40e3	6.11e3	4.59e3	9.67e2	3.02e3	2.79e3	3.61e3	1.71e3	2.78e3
7228/7-1 ST3	DC		1719.00	11789	3.67e2	1.48e3	4.24e2	2.39e2	7.54e2	1.00e3	4.97e2	1.99e2	5.56e2	5.64e2	4.72e2	7.30e2	1.21e3
7228/7-1 B	SWC		2139.00	11850	1.01e3	3.47e3	1.17e3	7.54e2	1.36e3	2.26e3	1.36e3	4.33e2	1.27e3	8.84e2	1.22e3	7.69e2	1.57e3
7228/7-1 B	SWC		2165.50	11852	2.87e2	5.78e2	3.15e2	1.60e2	6.27e2	4.02e2	3.00e2	1.09e2	2.07e2	2.20e2	2.72e2	3.17e2	4.15e2
7228/7-1 A	COCH		2066.50	11794	5.56e2	1.59e3	6.54e2	3.89e2	7.84e2	1.04e3	6.43e2	1.16e2	4.53e2	3.65e2	4.70e2	3.78e2	6.00e2
7228/7-1 A	COCH		2071.45	11795	4.60e2	1.87e3	4.53e2	4.06e2	6.76e2	1.12e3	7.22e2	2.09e2	6.49e2	4.22e2	5.01e2	4.27e2	7.55e2
7228/7-1 A	COCH		2082.70	11797	7.50e2	2.85e3	7.18e2	6.09e2	1.02e3	1.83e3	1.23e3	3.11e2	1.04e3	6.66e2	8.15e2	6.41e2	1.23e3
7228/7-1 A	COCH		2086.50	11799	5.80e2	2.36e3	6.21e2	4.56e2	8.13e2	1.49e3	9.10e2	2.18e2	8.16e2	5.40e2	6.48e2	4.44e2	8.49e2
7228/7-1 A	COCH		2087.30	11801	1.34e3	5.96e3	1.35e3	1.26e3	1.71e3	3.74e3	2.44e3	5.37e2	2.22e3	1.26e3	1.56e3	9.63e2	2.32e3
7228/7-1 A	COCH		2088.95	11802	1.59e3	7.84e3	1.68e3	1.52e3	2.05e3	4.86e3	3.05e3	7.69e2	2.85e3	1.55e3	2.15e3	1.27e3	2.82e3
7228/7-1 A	COCH		2088.95	11803	1.43e3	7.12e3	1.48e3	1.37e3	1.74e3	4.20e3	2.81e3	6.38e2	2.42e3	1.32e3	1.88e3	9.71e2	2.60e3
7228/7-1 A	COCH		2093.80	11807	2.00e3	9.44e3	2.07e3	1.82e3	2.38e3	5.85e3	3.80e3	7.98e2	3.54e3	1.85e3	2.54e3	1.40e3	3.60e3
7228/7-1 A	COCH		2097.00	11810	7.58e3	1.35e4	9.16e3	3.60e3	6.90e3	9.68e3	6.20e3	1.73e3	4.32e3	4.50e3	5.90e3	2.39e3	4.45e3
7228/7-1 A	COCH		2098.30	11811	1.46e3	6.84e3	1.54e3	1.34e3	1.75e3	4.22e3	2.79e3	6.63e2	2.42e3	1.34e3	1.83e3	1.04e3	2.37e3
7228/7-1 A	COCH		2099.30	11812	1.26e3	6.01e3	1.33e3	1.12e3	1.61e3	3.66e3	2.45e3	6.17e2	2.15e3	1.14e3	1.61e3	9.32e2	2.23e3
7228/7-1 A	COCH		2101.25	11814	1.51e3	6.98e3	1.60e3	1.43e3	1.92e3	4.40e3	2.85e3	6.63e2	2.67e3	1.44e3	1.88e3	1.11e3	2.64e3
7228/7-1 A	COCH		2102.25	11816	2.39e3	9.18e3	2.78e3	1.88e3	2.65e3	5.70e3	3.94e3	8.52e2	3.26e3	1.98e3	2.78e3	1.36e3	3.17e3
7228/7-1 A	COCH		2102.50	11817	1.77e3	7.83e3	1.85e3	1.55e3	2.10e3	4.80e3	3.26e3	7.64e2	2.79e3	1.52e3	2.09e3	1.22e3	2.89e3
7228/7-1 A	COCH	2833.00	2833.02	11024	1.35e3	2.38e3	1.71e3	6.70e2	1.26e3	1.64e3	1.16e3	3.16e2	7.37e2	8.39e2	1.09e3	4.40e2	7.81e2

Table 10. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e		217										218					
Well	Sample type	Depth	Depth	API ID	29BBR	29BBS	29GBR	30GBR	30BBR	30BBS	30GBR	29BBR	29BBS	30BBR	30BBS	30GBR	30BBS
7228/7-1 ST3	COCH	1367.38	1367.40	11309	3.54e3	3.31e3	2.43e3	8.21e2	8.12e2	4.26e2	4.48e2	1.10e4	9.53e3	4.16e3	4.92e3	6.03e3	5.56e3
7228/7-1 ST3	DC		1719.00	11789	9.42e2	8.92e2	1.04e3	0.00e0	1.56e2	1.27e2	0.00e0	6.62e2	5.64e2	5.14e2	5.02e2	1.27e3	1.20e3
7228/7-1 B	SWC		2139.00	11850	1.69e3	1.54e3	1.37e3	0.00e0	3.89e2	4.01e2	2.23e2	1.85e3	1.53e3	1.14e3	1.44e3	2.30e3	2.21e3
7228/7-1 B	SWC		2165.50	11852	4.06e2	3.67e2	2.83e2	0.00e0	0.00e0	0.00e0	0.00e0	4.62e2	3.76e2	2.64e2	2.97e2	5.16e2	4.53e2
7228/7-1 A	COCH		2066.50	11794	6.87e2	5.88e2	4.95e2	2.68e2	1.95e2	1.71e2	0.00e0	1.02e3	8.14e2	5.12e2	5.55e2	8.90e2	8.21e2
7228/7-1 A	COCH		2071.45	11795	7.64e2	6.82e2	6.05e2	0.00e0	1.44e2	2.10e2	0.00e0	6.81e2	5.21e2	3.68e2	4.63e2	8.52e2	8.60e2
7228/7-1 A	COCH		2082.70	11797	1.19e3	1.00e3	1.19e3	0.00e0	2.85e2	3.02e2	0.00e0	1.06e3	8.79e2	6.60e2	8.28e2	1.53e3	1.43e3
7228/7-1 A	COCH		2086.50	11799	8.69e2	8.45e2	8.34e2	0.00e0	2.13e2	2.63e2	0.00e0	9.18e2	7.55e2	6.02e2	7.40e2	1.25e3	1.21e3
7228/7-1 A	COCH		2087.30	11801	2.28e3	2.11e3	2.03e3	0.00e0	5.88e2	6.60e2	0.00e0	2.17e3	1.64e3	1.32e3	1.70e3	3.02e3	3.02e3
7228/7-1 A	COCH		2088.95	11802	2.78e3	2.60e3	2.84e3	0.00e0	7.22e2	7.19e2	0.00e0	2.80e3	2.10e3	1.63e3	2.20e3	4.04e3	3.56e3
7228/7-1 A	COCH		2088.95	11803	2.50e3	2.24e3	2.49e3	0.00e0	5.90e2	6.03e2	0.00e0	2.49e3	1.97e3	1.62e3	2.05e3	3.60e3	3.52e3
7228/7-1 A	COCH		2093.80	11807	3.48e3	3.15e3	3.52e3	0.00e0	8.07e2	7.78e2	0.00e0	3.54e3	2.70e3	2.13e3	2.85e3	4.97e3	4.79e3
7228/7-1 A	COCH		2097.00	11810	5.80e3	5.22e3	2.97e3	0.00e0	1.23e3	8.39e2	6.43e2	1.61e4	1.37e4	6.71e3	7.72e3	8.92e3	8.26e3
7228/7-1 A	COCH		2098.30	11811	2.39e3	2.14e3	2.40e3	0.00e0	5.75e2	5.79e2	2.88e2	2.41e3	1.86e3	1.54e3	1.98e3	3.39e3	3.17e3
7228/7-1 A	COCH		2099.30	11812	2.08e3	1.86e3	2.08e3	0.00e0	5.35e2	5.52e2	2.87e2	2.11e3	1.63e3	1.21e3	1.64e3	2.96e3	2.79e3
7228/7-1 A	COCH		2101.25	11814	2.55e3	2.27e3	2.53e3	0.00e0	5.90e2	6.51e2	4.08e2	2.53e3	1.95e3	1.63e3	2.08e3	3.70e3	3.44e3
7228/7-1 A	COCH		2102.25	11816	3.38e3	2.99e3	3.04e3	0.00e0	8.14e2	7.35e2	3.61e2	4.44e3	3.70e3	2.43e3	3.18e3	4.99e3	4.64e3
7228/7-1 A	COCH		2102.50	11817	2.75e3	2.50e3	2.75e3	0.00e0	6.69e2	6.91e2	3.43e2	2.92e3	2.40e3	1.80e3	2.34e3	3.97e3	3.72e3
7228/7-1 A	COCH	2833.00	2833.02	11024	1.03e3	9.82e2	5.06e2	2.34e2	2.48e2	1.40e2	1.09e2	3.33e3	2.66e3	1.33e3	1.51e3	1.76e3	1.65e3

Table 10. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e		218				
Well	Sample Type	Upper Depth	Lower Depth	API ID	503B2	503B5
7228/7-1 ST3	COCH	1367.38	1367.40	11309	8.18e2	6.95e2
7228/7-1 ST3	DC		1719.00	11789	1.68e2	1.60e2
7228/7-1 B	SWC		2139.00	11850	3.57e2	4.27e2
7228/7-1 B	SWC		2165.50	11852	0.00e0	0.00e0
7228/7-1 A	COCH		2066.50	11794	1.75e2	1.58e2
7228/7-1 A	COCH		2071.45	11795	1.58e2	1.70e2
7228/7-1 A	COCH		2082.70	11797	2.63e2	2.81e2
7228/7-1 A	COCH		2086.50	11799	2.31e2	2.47e2
7228/7-1 A	COCH		2087.30	11801	5.07e2	5.86e2
7228/7-1 A	COCH		2088.95	11802	6.82e2	7.37e2
7228/7-1 A	COCH		2088.95	11803	6.58e2	6.78e2
7228/7-1 A	COCH		2093.80	11807	8.61e2	9.53e2
7228/7-1 A	COCH		2097.00	11810	1.39e3	1.30e3
7228/7-1 A	COCH		2098.30	11811	5.94e2	6.40e2
7228/7-1 A	COCH		2099.30	11812	4.83e2	5.55e2
7228/7-1 A	COCH		2101.25	11814	5.91e2	6.49e2
7228/7-1 A	COCH		2102.25	11816	8.52e2	8.90e2
7228/7-1 A	COCH		2102.50	11817	6.85e2	7.26e2
7228/7-1 A	COCH	2833.00	2833.02	11024	2.76e2	2.28e2

Table 11. GCMS SIR of aromatic compounds (peak height)

m/e					142	156											170
Well	Sample type	Upper Depth	Lower Depth	API ID	2-MN	1-MN	2,6-DN	1,6-N	2,6-DN	2,7-DN	1,2,5,7-DMN	1,6-DMN	1,2,3,4-DMN	1,3-DMN	1,7-DMN	1,8-DMN	1,5,7-DMN
7228/7-1 ST3	COCH	1367.38	1367.40	11309	6.63e7	4.14e7	5.40e6	3.35e6	5.53e6	5.94e6	1.93e7	1.65e7	1.66e7	4.52e6	5.34e6	2.61e5	2.81e6
7228/7-1 ST3	DC		1719.00	11789	6.26e7	3.37e7	5.06e6	2.93e6	7.76e6	8.73e6	2.03e7	1.26e7	1.13e7	3.65e6	4.68e6	1.27e5	4.48e6
7228/7-1 B	SWC		2139.00	11850	4.00e6	3.50e6	6.30e5	4.90e5	3.55e6	3.85e6	1.11e7	6.70e6	4.60e6	2.16e6	2.00e6	6.22e4	1.33e7
7228/7-1 B	SWC		2165.50	11852	4.62e7	3.37e7	2.72e6	2.33e6	1.46e7	1.57e7	3.94e7	2.35e7	1.37e7	6.18e6	5.74e6	3.46e5	1.24e7
7228/7-1 A	COCH		2066.50	11794	6.88e6	5.75e6	1.13e6	7.78e5	4.75e6	4.95e6	1.36e7	7.75e6	4.57e6	2.24e6	1.76e6	4.37e4	8.10e6
7228/7-1 A	COCH		2071.45	11795	1.97e7	1.55e7	2.61e6	1.66e6	1.14e7	1.16e7	3.10e7	1.70e7	9.23e6	4.45e6	3.50e6	9.38e4	1.44e7
7228/7-1 A	COCH		2082.70	11797	9.97e8	5.46e8	5.95e7	3.11e7	2.51e8	2.57e8	5.14e8	3.35e8	1.83e8	6.82e7	6.58e7	1.63e6	1.61e8
7228/7-1 A	COCH		2086.50	11799	1.40e7	1.16e7	2.73e6	1.64e6	1.13e7	1.20e7	3.16e7	1.80e7	9.61e6	4.46e6	3.71e6	9.94e4	1.64e7
7228/7-1 A	COCH		2087.30	11801	7.14e7	5.15e7	9.72e6	5.59e6	4.10e7	4.11e7	9.91e7	5.78e7	2.96e7	1.27e7	1.17e7	3.02e5	4.46e7
7228/7-1 A	COCH		2088.95	11802	7.77e7	5.58e7	1.05e7	5.66e6	4.28e7	4.42e7	1.08e8	6.30e7	3.15e7	1.41e7	1.21e7	3.40e5	5.11e7
7228/7-1 A	COCH		2088.95	11803	8.97e7	6.32e7	1.31e7	7.19e6	5.57e7	5.58e7	1.34e8	7.81e7	4.06e7	1.73e7	1.55e7	4.11e5	6.24e7
7228/7-1 A	COCH		2093.80	11807	1.05e8	7.14e7	1.23e7	6.67e6	4.86e7	5.05e7	1.18e8	7.11e7	3.84e7	1.65e7	1.47e7	3.79e5	5.94e7
7228/7-1 A	COCH		2097.00	11810	2.29e7	1.66e7	2.62e6	1.56e6	1.13e7	1.14e7	2.74e7	1.60e7	8.34e6	3.76e6	3.20e6	7.31e4	1.14e7
7228/7-1 A	COCH		2098.30	11811	1.28e8	8.57e7	1.45e7	7.96e6	5.90e7	5.86e7	1.39e8	7.95e7	4.25e7	1.78e7	1.55e7	4.00e5	5.66e7
7228/7-1 A	COCH		2099.30	11812	1.08e8	7.20e7	1.24e7	6.38e6	5.11e7	5.19e7	1.20e8	7.07e7	3.65e7	1.60e7	1.32e7	3.50e5	5.19e7
7228/7-1 A	COCH		2101.25	11814	2.73e8	1.53e8	1.89e7	1.04e7	8.31e7	8.54e7	1.77e8	1.11e8	5.62e7	2.21e7	2.09e7	5.83e5	6.40e7
7228/7-1 A	COCH		2102.25	11816	7.58e7	5.06e7	1.13e7	6.11e6	4.96e7	4.96e7	1.15e8	6.68e7	3.76e7	1.55e7	1.41e7	4.29e5	5.51e7
7228/7-1 A	COCH		2102.50	11817	1.28e8	7.77e7	1.09e7	5.79e6	4.61e7	4.78e7	1.08e8	6.53e7	3.49e7	1.50e7	1.28e7	3.99e5	4.76e7
7228/7-1 A	COCH	2833.00	2833.02	11024	7.73e6	5.82e6	6.31e5	4.09e5	2.30e6	2.39e6	6.74e6	3.96e6	1.89e6	1.19e6	9.31e5	1.21e4	2.55e6

Table 11. continued, GCMS SIR of aromatic compounds (peak height)

m/e		170										178	192	206				
ref	Sample type	Depth (cm)	Depth (m)	APRIS	170-170 DMP	170-170 DMP	170-170 DMP	170-170 DMP	170-170 DMP	170-170 DMP	170-170 DMP	178-178 DMP	192-192 DMP	192-192 DMP	192-192 DMP	192-192 DMP	192-192 DMP	206-206 DMP
7228/7-1 ST3	COCH	1367.38	1367.40	11309	4.26e6	4.15e6	3.32e6	1.66e6	3.93e6	1.21e6	5.16e6	2.70e7	4.61e6	5.81e6	1.16e7	6.36e6	9.11e5	
7228/7-1 ST3	DC		1719.00	11789	6.09e6	4.61e6	4.39e6	1.51e6	3.93e6	9.15e5	5.27e6	3.31e7	7.20e6	7.38e6	1.14e7	7.67e6	9.88e5	
7228/7-1 B	SWC		2139.00	11850	1.63e7	1.21e7	1.29e7	2.90e6	9.81e6	1.65e6	5.26e6	4.38e7	1.82e7	1.87e7	2.90e7	1.89e7	4.36e6	
7228/7-1 B	SWC		2165.50	11852	1.57e7	1.18e7	1.09e7	2.82e6	9.37e6	1.61e6	4.87e6	3.29e7	8.05e6	9.38e6	1.98e7	1.16e7	1.42e6	
7228/7-1 A	COCH		2066.50	11794	9.02e6	7.15e6	6.65e6	1.56e6	5.24e6	8.20e5	2.54e6	1.49e7	5.65e6	6.02e6	9.50e6	6.14e6	1.28e6	
7228/7-1 A	COCH		2071.45	11795	1.65e7	1.30e7	1.23e7	2.61e6	9.15e6	1.38e6	4.49e6	2.14e7	8.09e6	8.30e6	1.30e7	8.66e6	1.80e6	
7228/7-1 A	COCH		2082.70	11797	2.18e8	1.32e8	1.62e8	3.14e7	1.07e8	1.61e7	5.28e7	4.39e8	1.44e8	1.72e8	2.46e8	1.63e8	2.65e7	
7228/7-1 A	COCH		2086.50	11799	1.95e7	1.42e7	1.34e7	2.98e6	9.97e6	1.58e6	4.91e6	1.77e7	7.05e6	7.28e6	1.12e7	7.05e6	1.69e6	
7228/7-1 A	COCH		2087.30	11801	5.44e7	3.82e7	3.64e7	8.25e6	2.63e7	4.17e6	1.27e7	3.92e7	1.66e7	1.67e7	2.49e7	1.61e7	3.99e6	
7228/7-1 A	COCH		2088.95	11802	6.09e7	4.27e7	4.15e7	9.28e6	3.00e7	4.64e6	1.42e7	4.18e7	1.90e7	1.84e7	2.72e7	1.74e7	4.67e6	
7228/7-1 A	COCH		2088.95	11803	7.51e7	5.26e7	5.05e7	1.11e7	3.65e7	5.68e6	1.74e7	5.35e7	2.31e7	2.29e7	3.46e7	2.21e7	5.71e6	
7228/7-1 A	COCH		2093.80	11807	6.88e7	4.89e7	4.92e7	1.11e7	3.61e7	5.53e6	1.71e7	7.00e7	3.00e7	3.07e7	4.51e7	2.94e7	6.87e6	
7228/7-1 A	COCH		2097.00	11810	1.34e7	9.63e6	9.05e6	2.08e6	6.65e6	1.03e6	3.19e6	9.77e6	3.92e6	3.91e6	6.18e6	3.95e6	9.01e5	
7228/7-1 A	COCH		2098.30	11811	6.61e7	4.78e7	4.63e7	9.72e6	3.36e7	5.03e6	1.56e7	5.05e7	2.14e7	2.18e7	3.15e7	2.08e7	5.01e6	
7228/7-1 A	COCH		2099.30	11812	6.05e7	4.14e7	4.27e7	9.13e6	2.94e7	4.40e6	1.35e7	4.18e7	1.80e7	1.76e7	2.60e7	1.69e7	4.19e6	
7228/7-1 A	COCH		2101.25	11814	8.05e7	5.24e7	5.64e7	1.17e7	3.99e7	5.83e6	1.88e7	8.94e7	3.24e7	3.59e7	5.18e7	3.40e7	6.88e6	
7228/7-1 A	COCH		2102.25	11816	6.65e7	4.62e7	4.50e7	1.03e7	3.32e7	5.09e6	1.58e7	5.19e7	2.28e7	2.26e7	3.51e7	2.23e7	5.47e6	
7228/7-1 A	COCH		2102.50	11817	5.68e7	3.92e7	4.16e7	8.84e6	3.02e7	4.36e6	1.41e7	7.20e7	2.84e7	3.08e7	4.53e7	2.96e7	6.49e6	
7228/7-1 A	COCH	2833.00	2833.02	11024	3.00e6	2.49e6	1.92e6	6.98e5	1.82e6	3.68e5	7.19e5	3.38e6	1.80e6	1.74e6	2.40e6	1.78e6	3.48e5	

Table 11. continued, GCMS SIR of aromatic compounds (peak height)

m/e				206										219	184	198		
Well	Sample Type	Upper Depth	Lower Depth	API ID	1-EB	2-EB	3-EB	4-EB	5-EB	6-EB	7-EB	8-EB	9-EB	10-EB	Refene	DBT	4-MDBT	(3+2)-MDBT
7228/7-1 ST3	COCH	1367.38	1367.40	11309	9.77e5	4.95e5	3.09e6	1.52e6	1.27e6	8.23e5	1.23e6	4.79e5	7.04e5	4.06e6	3.28e6	2.32e6	1.16e6	
7228/7-1 ST3	DC		1719.00	11789	1.13e6	5.65e5	3.77e6	1.75e6	1.82e6	1.06e6	1.21e6	5.84e5	9.47e5	2.31e6	2.81e6	1.24e6	6.29e5	
7228/7-1 B	SWC		2139.00	11850	6.66e6	3.59e6	2.30e7	9.93e6	8.47e6	4.80e6	6.85e6	2.78e6	1.86e6	2.75e6	4.37e6	3.80e6	1.98e6	
7228/7-1 B	SWC		2165.50	11852	2.43e6	1.36e6	1.02e7	4.70e6	3.82e6	2.29e6	4.33e6	1.50e6	1.02e6	2.48e5	2.92e6	2.25e6	7.18e5	
7228/7-1 A	COCH		2066.50	11794	1.91e6	1.08e6	7.22e6	3.07e6	2.61e6	1.43e6	2.12e6	8.33e5	5.37e5	7.70e5	1.55e6	1.29e6	5.90e5	
7228/7-1 A	COCH		2071.45	11795	2.74e6	1.44e6	9.76e6	4.19e6	3.47e6	1.98e6	2.97e6	1.15e6	7.48e5	1.08e6	2.26e6	1.74e6	8.48e5	
7228/7-1 A	COCH		2082.70	11797	4.62e7	2.78e7	1.67e8	7.27e7	6.55e7	3.37e7	4.67e7	2.08e7	1.45e7	1.40e7	4.49e7	3.09e7	1.57e7	
7228/7-1 A	COCH		2086.50	11799	2.44e6	1.31e6	8.84e6	3.74e6	3.04e6	1.72e6	2.52e6	9.85e5	6.33e5	1.08e6	1.93e6	1.54e6	7.35e5	
7228/7-1 A	COCH		2087.30	11801	6.03e6	3.05e6	2.02e7	8.59e6	7.10e6	4.04e6	5.66e6	2.27e6	1.49e6	2.76e6	4.35e6	3.53e6	1.75e6	
7228/7-1 A	COCH		2088.95	11802	6.73e6	3.47e6	2.25e7	9.68e6	8.00e6	4.46e6	6.61e6	2.52e6	1.66e6	3.30e6	4.64e6	3.92e6	2.00e6	
7228/7-1 A	COCH		2088.95	11803	8.66e6	4.34e6	2.84e7	1.21e7	1.00e7	5.64e6	8.12e6	3.12e6	2.10e6	3.97e6	5.90e6	4.83e6	2.52e6	
7228/7-1 A	COCH		2093.80	11807	1.07e7	5.61e6	3.60e7	1.51e7	1.28e7	7.04e6	1.02e7	4.09e6	2.74e6	4.69e6	7.66e6	6.39e6	3.28e6	
7228/7-1 A	COCH		2097.00	11810	1.33e6	7.16e5	4.75e6	2.04e6	1.69e6	9.44e5	1.38e6	5.24e5	3.24e5	6.02e5	1.04e6	8.48e5	3.75e5	
7228/7-1 A	COCH		2098.30	11811	7.67e6	4.00e6	2.55e7	1.08e7	9.25e6	5.20e6	7.31e6	2.91e6	1.91e6	3.58e6	5.45e6	4.56e6	2.25e6	
7228/7-1 A	COCH		2099.30	11812	6.30e6	3.23e6	2.14e7	8.97e6	7.69e6	4.23e6	6.30e6	2.33e6	1.55e6	2.96e6	4.46e6	3.75e6	1.87e6	
7228/7-1 A	COCH		2101.25	11814	1.12e7	6.17e6	3.74e7	1.64e7	1.45e7	7.77e6	1.10e7	4.56e6	3.08e6	4.34e6	8.94e6	6.89e6	3.35e6	
7228/7-1 A	COCH		2102.25	11816	8.33e6	4.24e6	2.82e7	1.18e7	9.78e6	5.66e6	8.54e6	3.27e6	2.08e6	3.85e6	5.31e6	4.82e6	2.24e6	
7228/7-1 A	COCH		2102.50	11817	1.02e7	5.38e6	3.49e7	1.48e7	1.30e7	7.08e6	1.09e7	4.15e6	2.78e6	4.21e6	7.08e6	6.04e6	2.88e6	
7228/7-1 A	COCH	2833.00	2833.02	11024	5.51e5	3.27e5	2.07e6	9.07e5	9.34e5	4.34e5	6.70e5	3.04e5	1.91e5	3.00e4	1.30e5	1.44e5	4.88e4	

Table 11. continued, GCMS SIR of aromatic compounds (peak height)

m/e		198		253															
Well	Sample type	Upper Depth	Lower Depth	API ID	198	253	198	253	198	253	198	253	198	253	198	253	198	253	
7228/7-1 ST3	COCH	1367.38	1367.40	11309	8.36e5	2.62e5	1.43e5	5.76e4	2.39e5	2.26e5	4.52e4	3.49e5	4.52e4	3.32e4	6.31e4	1.98e5	2.21e5		
7228/7-1 ST3	DC		1719.00	11789	6.07e5	9.03e4	5.26e4	9.21e3	5.74e4	4.49e4	9.25e3	1.69e5	3.10e4	0.00e0	1.79e4	1.11e5	3.83e5		
7228/7-1 B	SWC		2139.00	11850	8.91e5	1.69e5	1.23e5	3.37e4	1.20e5	9.11e4	4.35e4	2.13e5	5.29e4	2.78e4	4.81e4	1.30e5	3.21e5		
7228/7-1 B	SWC		2165.50	11852	5.21e5	0.00e0	0.00e0	0.00e0	3.58e3	4.36e3	3.27e3	7.49e3	0.00e0	0.00e0	0.00e0	3.89e3	5.97e3		
7228/7-1 A	COCH		2066.50	11794	2.54e5	2.74e4	1.81e4	4.03e3	1.40e4	1.02e4	4.90e3	2.37e4	6.25e3	4.38e3	4.64e3	1.13e4	3.16e4		
7228/7-1 A	COCH		2071.45	11795	3.78e5	3.93e4	3.02e4	5.17e3	2.13e4	1.66e4	7.24e3	3.25e4	1.03e4	3.77e3	7.03e3	2.01e4	5.81e4		
7228/7-1 A	COCH		2082.70	11797	6.62e6	2.17e5	1.67e5	1.76e4	7.90e4	5.13e4	2.59e4	1.29e5	3.50e4	1.83e4	2.79e4	8.05e4	2.16e5		
7228/7-1 A	COCH		2086.50	11799	3.16e5	5.59e4	3.74e4	8.27e3	3.09e4	2.15e4	1.22e4	5.21e4	1.49e4	6.83e3	1.23e4	2.81e4	8.35e4		
7228/7-1 A	COCH		2087.30	11801	7.50e5	2.11e5	1.54e5	3.08e4	1.38e5	9.47e4	4.55e4	2.22e5	6.28e4	2.48e4	4.25e4	1.27e5	3.51e5		
7228/7-1 A	COCH		2088.95	11802	8.49e5	2.45e5	1.91e5	3.94e4	1.73e5	1.23e5	6.55e4	2.85e5	7.68e4	3.24e4	6.18e4	1.77e5	4.63e5		
7228/7-1 A	COCH		2088.95	11803	1.04e6	2.98e5	2.49e5	5.35e4	2.24e5	1.70e5	8.16e4	3.63e5	1.07e5	4.82e4	8.22e4	2.25e5	5.90e5		
7228/7-1 A	COCH		2093.80	11807	1.37e6	3.04e5	2.45e5	5.40e4	2.36e5	1.60e5	8.79e4	4.01e5	1.06e5	4.53e4	9.35e4	2.38e5	6.23e5		
7228/7-1 A	COCH		2097.00	11810	1.49e5	2.87e4	1.56e4	3.52e3	1.20e4	1.05e4	4.33e3	2.12e4	6.35e3	3.42e3	5.20e3	1.10e4	3.18e4		
7228/7-1 A	COCH		2098.30	11811	9.62e5	2.46e5	1.87e5	4.15e4	1.77e5	1.18e5	6.59e4	2.91e5	7.68e4	3.05e4	5.44e4	1.74e5	4.73e5		
7228/7-1 A	COCH		2099.30	11812	7.72e5	1.97e5	1.56e5	2.90e4	1.38e5	8.72e4	4.99e4	2.17e5	5.86e4	2.84e4	4.76e4	1.35e5	3.64e5		
7228/7-1 A	COCH		2101.25	11814	1.42e6	2.12e5	1.59e5	2.89e4	1.28e5	9.31e4	4.93e4	2.24e5	6.03e4	2.33e4	4.18e4	1.32e5	3.45e5		
7228/7-1 A	COCH		2102.25	11816	1.02e6	3.19e5	2.34e5	5.57e4	2.46e5	1.60e5	8.82e4	3.75e5	1.10e5	4.23e4	8.43e4	2.42e5	5.94e5		
7228/7-1 A	COCH		2102.50	11817	1.28e6	2.68e5	2.18e5	4.67e4	2.13e5	1.42e5	6.78e4	3.24e5	8.72e4	3.73e4	6.61e4	1.89e5	4.89e5		
7228/7-1 A	COCH	2833.00	2833.02	11024	1.54e4	0.00e0	0.00e0	0.00e0	3.24e3	0.00e0	0.00e0	4.12e3	0.00e0	0.00e0	0.00e0	3.34e3	3.78e3		

Table 11. continued, GCMS SIR of aromatic compounds (peak height)

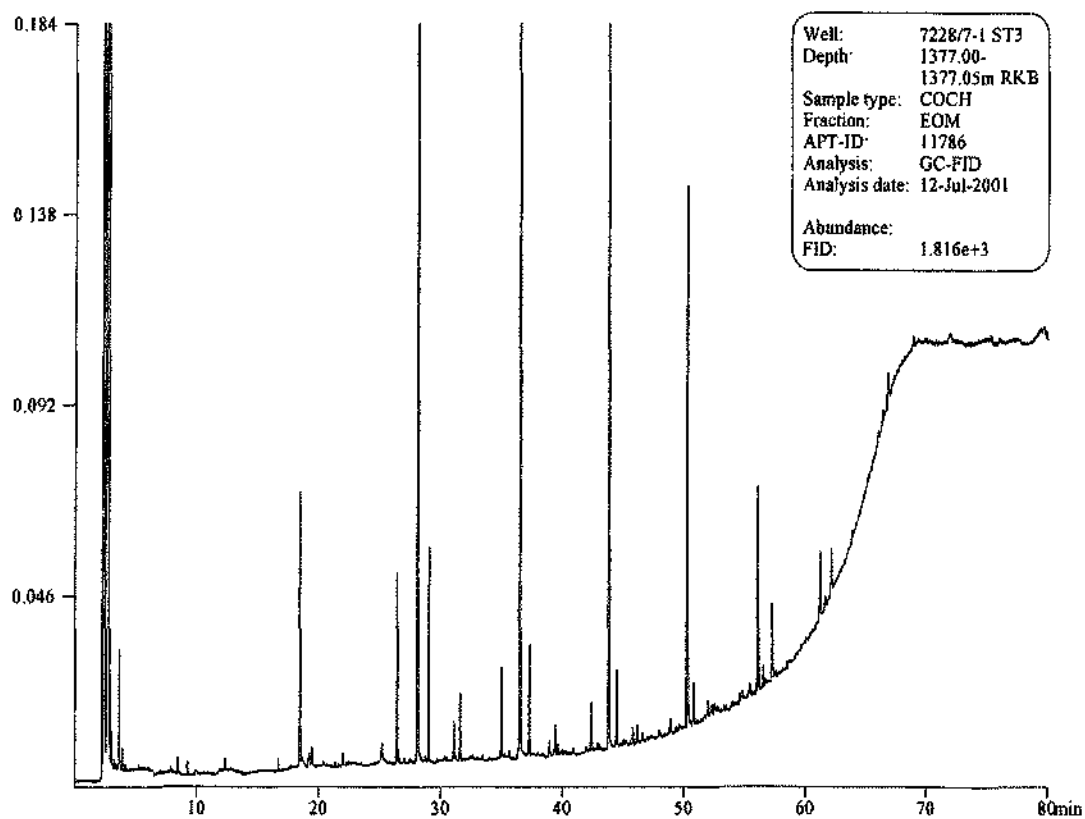
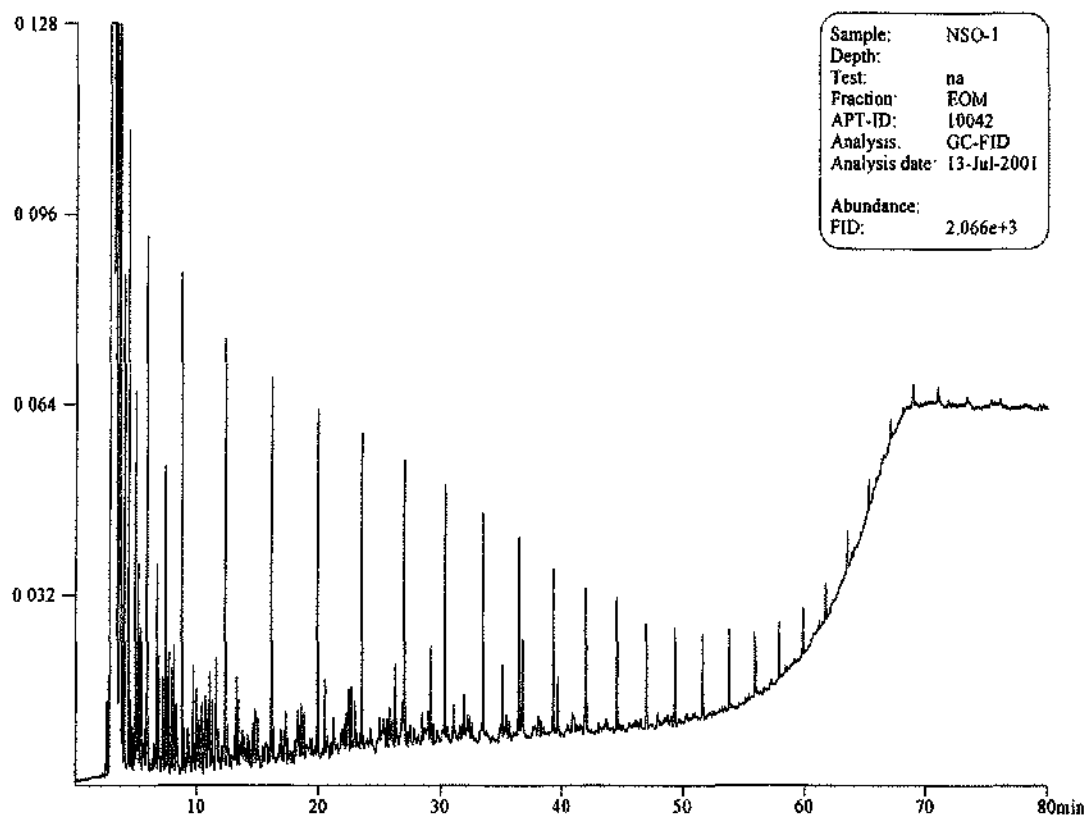
m/e		253					231							
Well	Sample Type	Upper Depth	Lower Depth	API ID	SCC29MA	RC29MA RC29MA-5R RC29MA	SCC29MA	C207A	C210A	SCC207A	RC207A-SC2 07A	SCC207A	RC207A	RC207A
7228/7-1 ST3	COCH	1367.38	1367.40	11309	3.73e4	1.58e5	2.97e4	1.13e5	7.59e4	8.16e4	1.89e5	6.77e4	5.52e4	7.73e4
7228/7-1 ST3	DC		1719.00	11789	2.05e4	2.23e5	1.31e4	1.65e5	1.03e5	6.65e4	2.66e5	2.54e5	1.06e5	3.06e5
7228/7-1 B	SWC		2139.00	11850	4.74e4	1.90e5	3.75e4	6.86e5	3.63e5	1.87e5	4.99e5	3.84e5	2.00e5	3.76e5
7228/7-1 B	SWC		2165.50	11852	0.00e0	3.88e3	0.00e0	2.39e5	9.63e4	3.76e4	1.00e5	3.70e4	2.91e4	3.83e4
7228/7-1 A	COCH		2066.50	11794	4.30e3	2.06e4	5.24e3	1.37e5	6.05e4	2.08e4	5.42e4	4.19e4	1.79e4	4.28e4
7228/7-1 A	COCH		2071.45	11795	8.82e3	3.29e4	6.66e3	2.25e5	9.97e4	3.66e4	9.31e4	8.21e4	3.20e4	7.89e4
7228/7-1 A	COCH		2082.70	11797	2.84e4	1.26e5	2.04e4	2.77e6	1.35e6	3.30e5	7.30e5	6.08e5	2.92e5	5.77e5
7228/7-1 A	COCH		2086.50	11799	1.39e4	4.74e4	9.21e3	2.21e5	1.04e5	4.87e4	1.16e5	1.05e5	3.96e4	9.56e4
7228/7-1 A	COCH		2087.30	11801	5.73e4	2.29e5	3.43e4	6.62e5	3.41e5	1.84e5	4.33e5	4.02e5	1.64e5	3.69e5
7228/7-1 A	COCH		2088.95	11802	7.50e4	2.96e5	5.63e4	7.72e5	4.04e5	2.27e5	5.46e5	5.01e5	2.07e5	4.61e5
7228/7-1 A	COCH		2088.95	11803	9.95e4	3.85e5	7.32e4	9.20e5	5.07e5	2.95e5	7.26e5	6.56e5	2.88e5	6.35e5
7228/7-1 A	COCH		2093.80	11807	1.03e5	3.98e5	7.54e4	1.11e6	5.80e5	3.31e5	7.92e5	7.29e5	3.06e5	7.04e5
7228/7-1 A	COCH		2097.00	11810	6.39e3	1.94e4	4.06e3	1.05e5	4.77e4	2.42e4	6.20e4	5.16e4	2.22e4	5.05e4
7228/7-1 A	COCH		2098.30	11811	7.69e4	2.99e5	5.14e4	8.27e5	4.30e5	2.46e5	5.98e5	5.30e5	2.27e5	5.05e5
7228/7-1 A	COCH		2099.30	11812	5.94e4	2.28e5	3.86e4	6.63e5	3.36e5	2.00e5	4.84e5	4.62e5	1.79e5	4.11e5
7228/7-1 A	COCH		2101.25	11814	5.31e4	2.25e5	3.82e4	9.42e5	4.79e5	2.38e5	5.47e5	4.87e5	2.13e5	4.75e5
7228/7-1 A	COCH		2102.25	11816	1.11e5	3.81e5	7.52e4	9.61e5	5.30e5	3.27e5	7.68e5	7.04e5	3.03e5	6.72e5
7228/7-1 A	COCH		2102.50	11817	8.10e4	3.12e5	5.90e4	1.02e6	5.40e5	2.93e5	6.78e5	6.28e5	2.61e5	5.85e5
7228/7-1 A	COCH	2833.00	2833.02	11024	0.00e0	0.00e0	0.00e0	1.25e4	6.05e3	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0

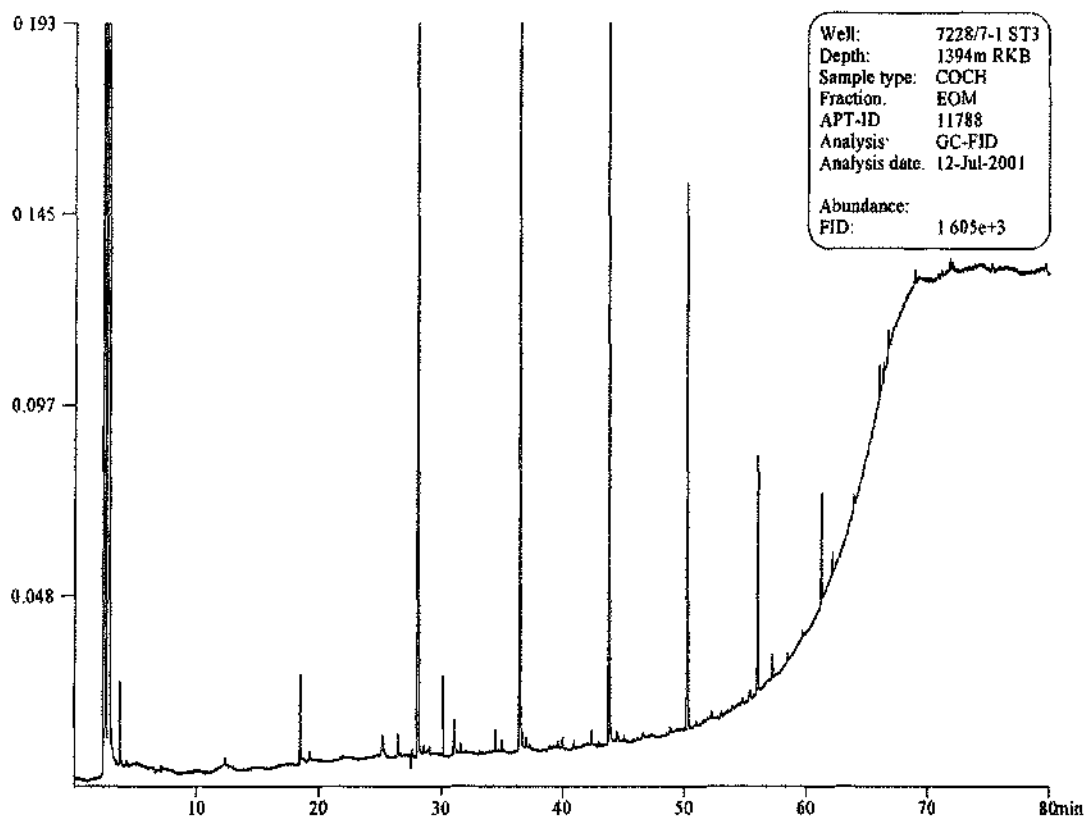
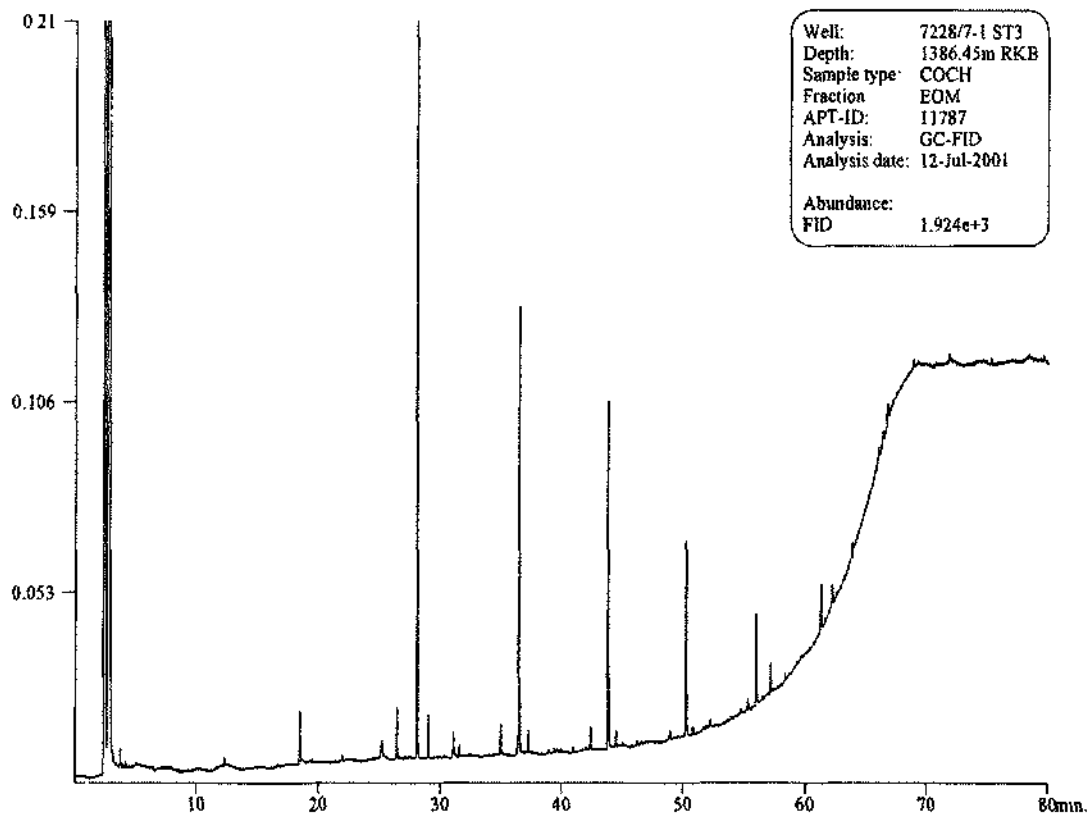
Table 12. Isotopes of fractions, $\delta^{13}\text{C}$ (‰ PDB)

Well	Sample type	Upper Depth	Lower Depth	API ID	CHRON	S ₁	S ₂	S ₃	S ₄
7228/7-1 ST3	COCH	1367.38	1367.40	11309	-28.5	-27.9	-27.1	-29.2	-28.8
7228/7-1 ST3	DC		1719.00	11789	-29.3	-29.1	-27.1	-30.2	-27.8
7228/7-1 B	SWC		2139.00	11850	-29.3	-29.3	-28.4	-30.1	-28.3
7228/7-1 B	SWC		2165.50	11852		-29.3	-28.4	-30.1	-27.6
7228/7-1 A	COCH		2066.50	11794	-29.7	-29.0	-28.2	-30.2	-29.1
7228/7-1 A	COCH		2071.45	11795	-29.5	-29.3	-28.2	-30.1	-29.4
7228/7-1 A	COCH		2082.70	11797	-29.0	-29.4	-27.8	-29.8	-28.6
7228/7-1 A	COCH		2086.50	11799	-29.5	-29.4	-28.4	-30.1	-29.1
7228/7-1 A	COCH		2087.30	11801	-29.3	-29.4	-28.4	-30.4	-29.3
7228/7-1 A	COCH		2088.95	11802	-29.1	-29.4	-28.4	-29.4	-29.5
7228/7-1 A	COCH		2088.95	11803	-29.2	-29.4	-28.4	-29.4	-29.1
7228/7-1 A	COCH		2093.80	11807	-29.2	-29.4	-28.3	-30.1	-29.3
7228/7-1 A	COCH		2097.00	11810	-28.9	-28.7	-28.4	-29.8	-28.4
7228/7-1 A	COCH		2098.30	11811	-29.2	-29.4	-28.4	-30.0	-29.1
7228/7-1 A	COCH		2099.30	11812	-29.1	-29.4	-28.4	-30.2	-29.2
7228/7-1 A	COCH		2101.25	11814	-29.2	-29.4	-28.2	-30.2	-28.8
7228/7-1 A	COCH		2102.25	11816	-29.1	-29.4	-28.4	-29.9	-29.0
7228/7-1 A	COCH		2102.50	11817	-29.1	-29.4	-28.4	-30.1	-28.9
7228/7-1 A	COCH	2833.00	2833.02	11024	-28.3	-28.4	-27.8	-29.5	-29.4



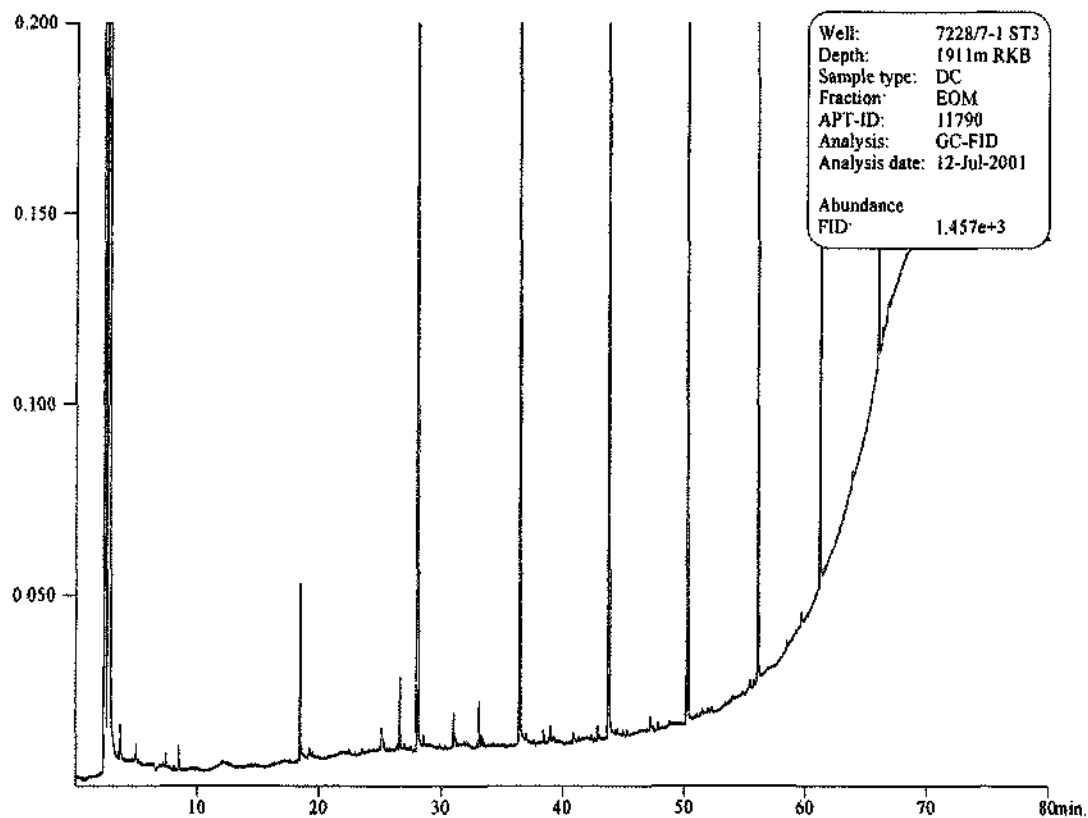
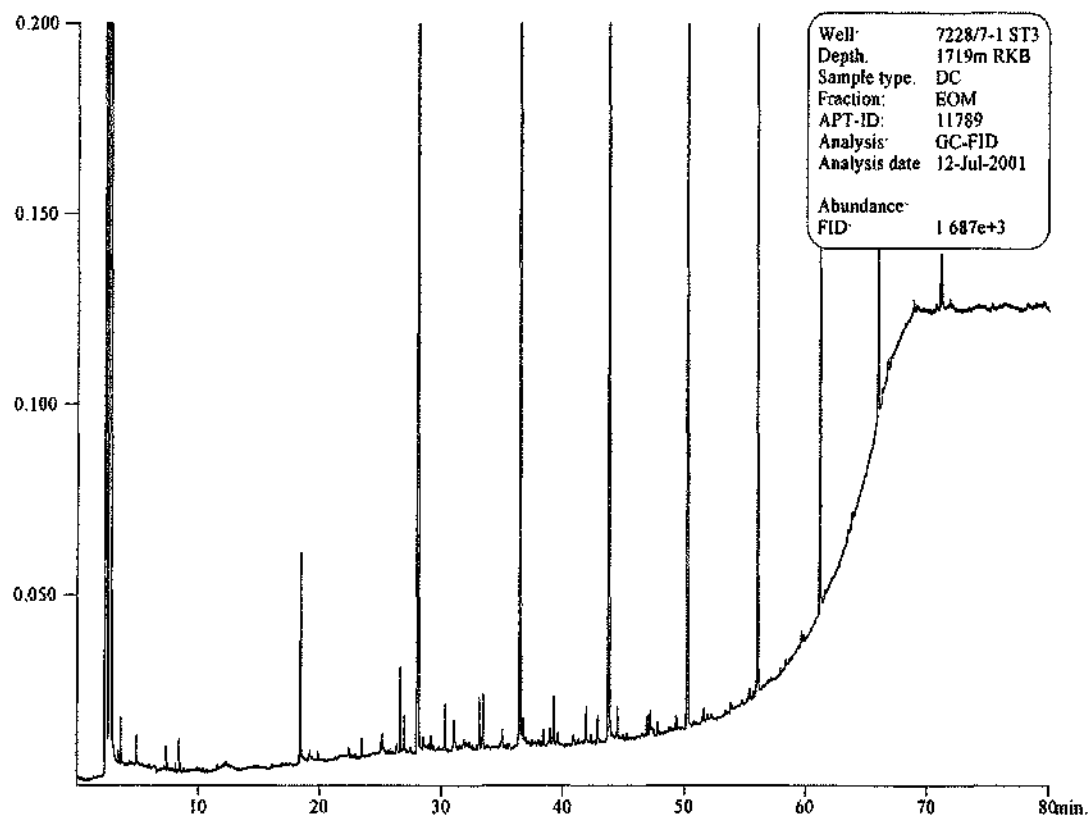
GC Chromatograms of EOM

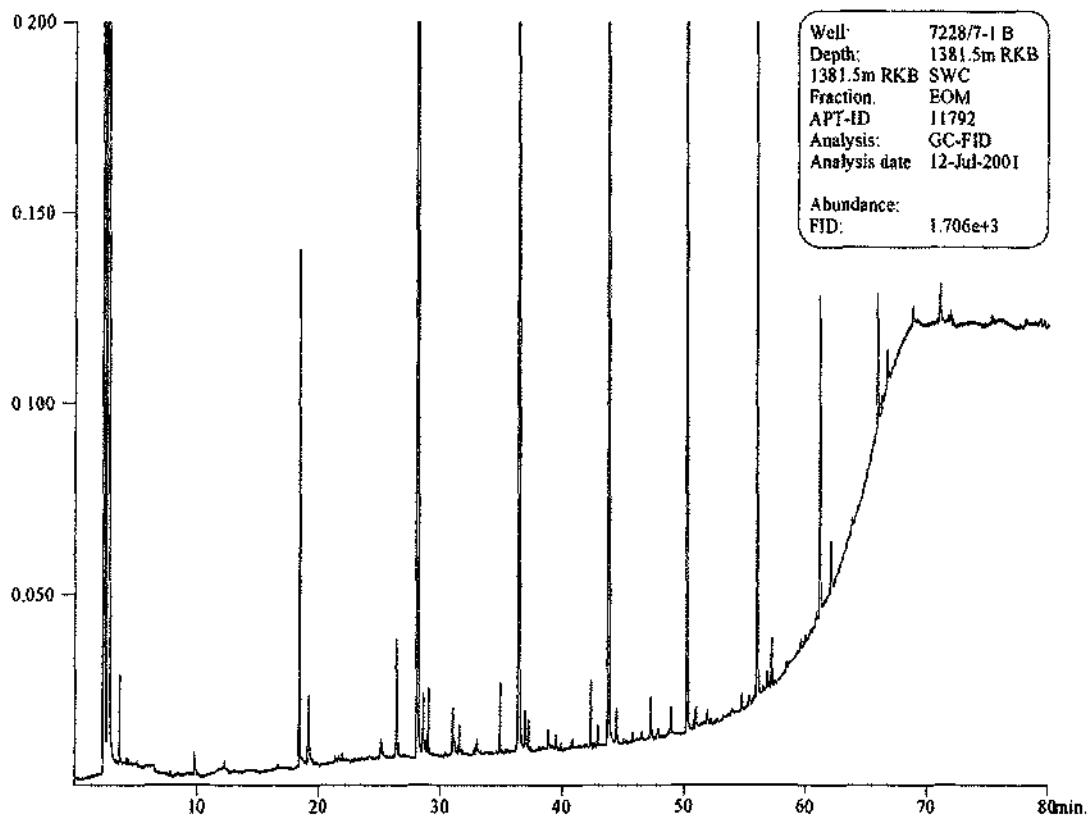
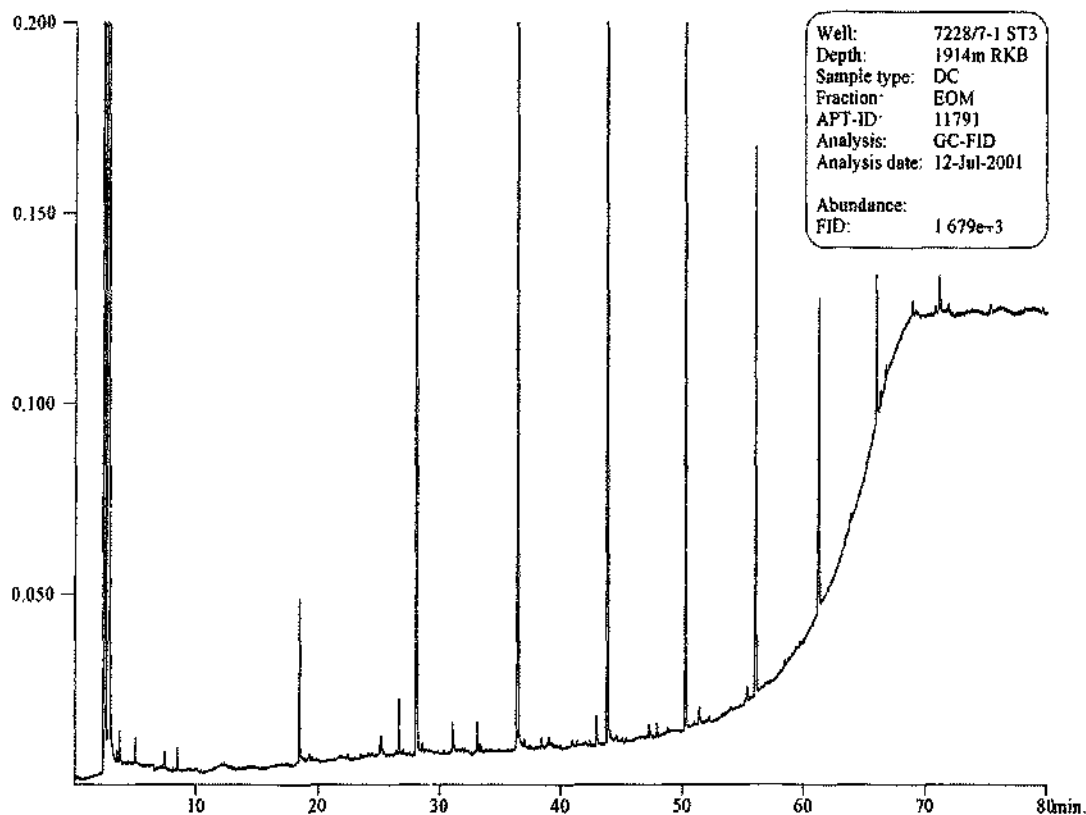






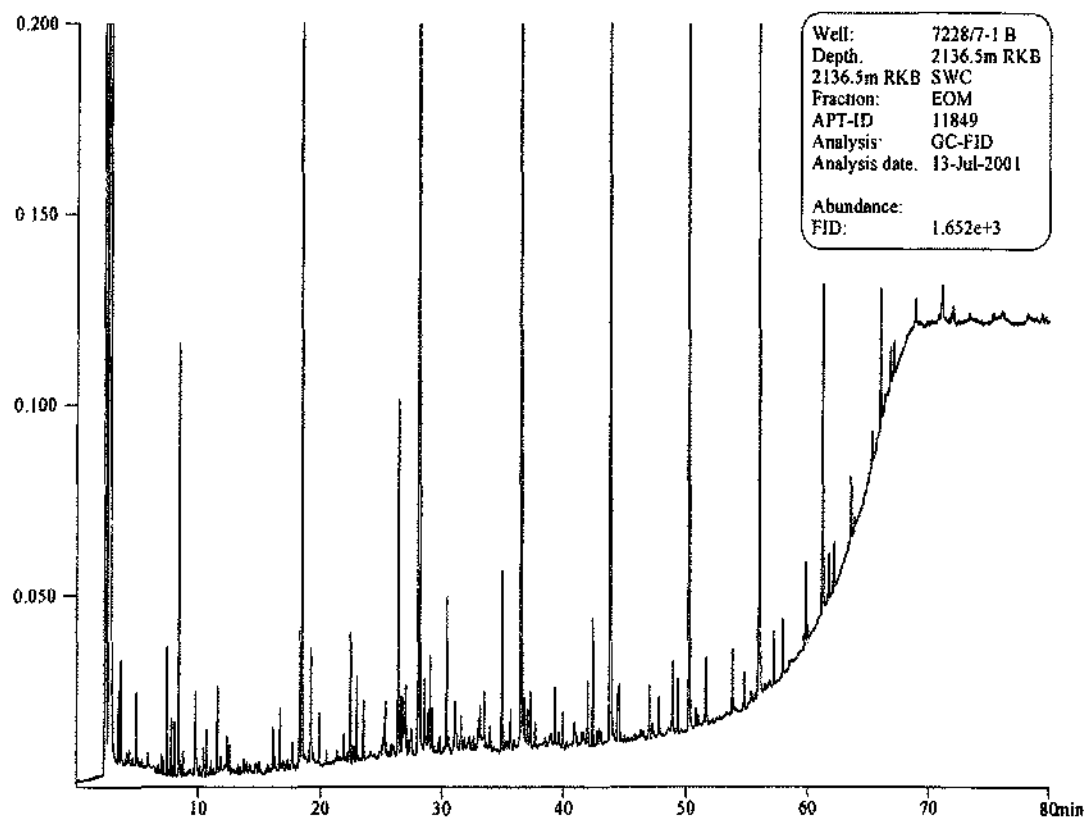
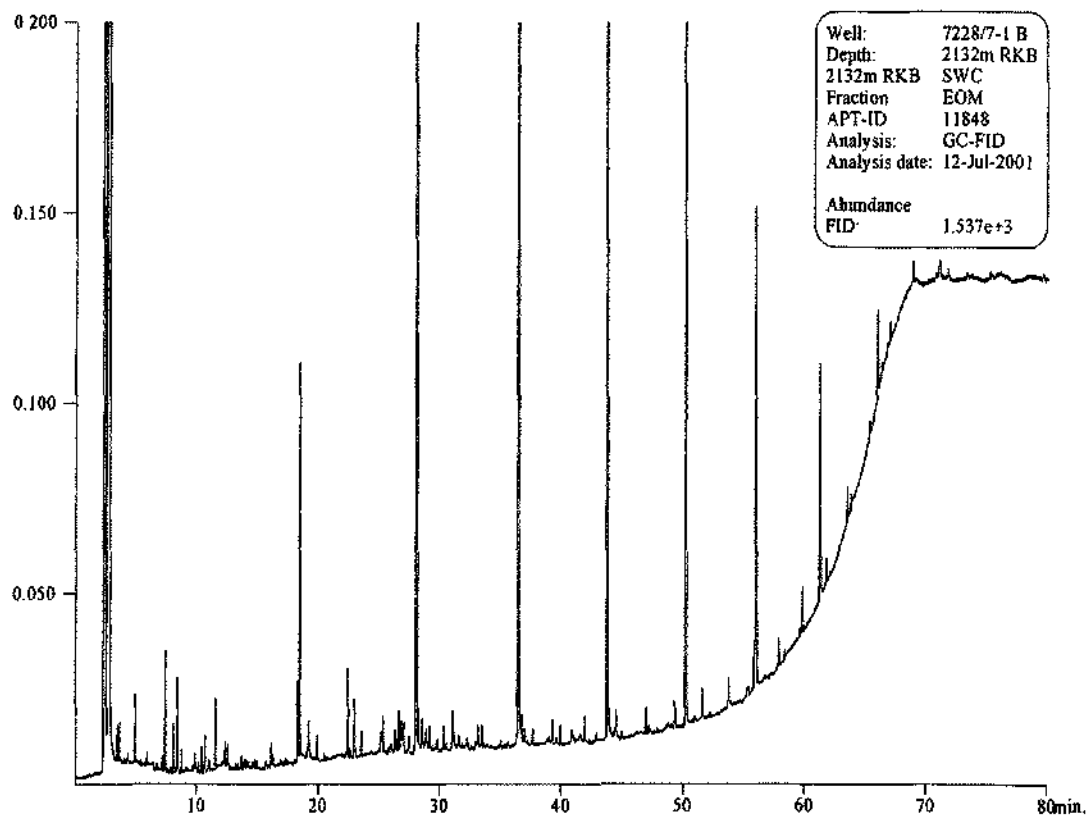
Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3

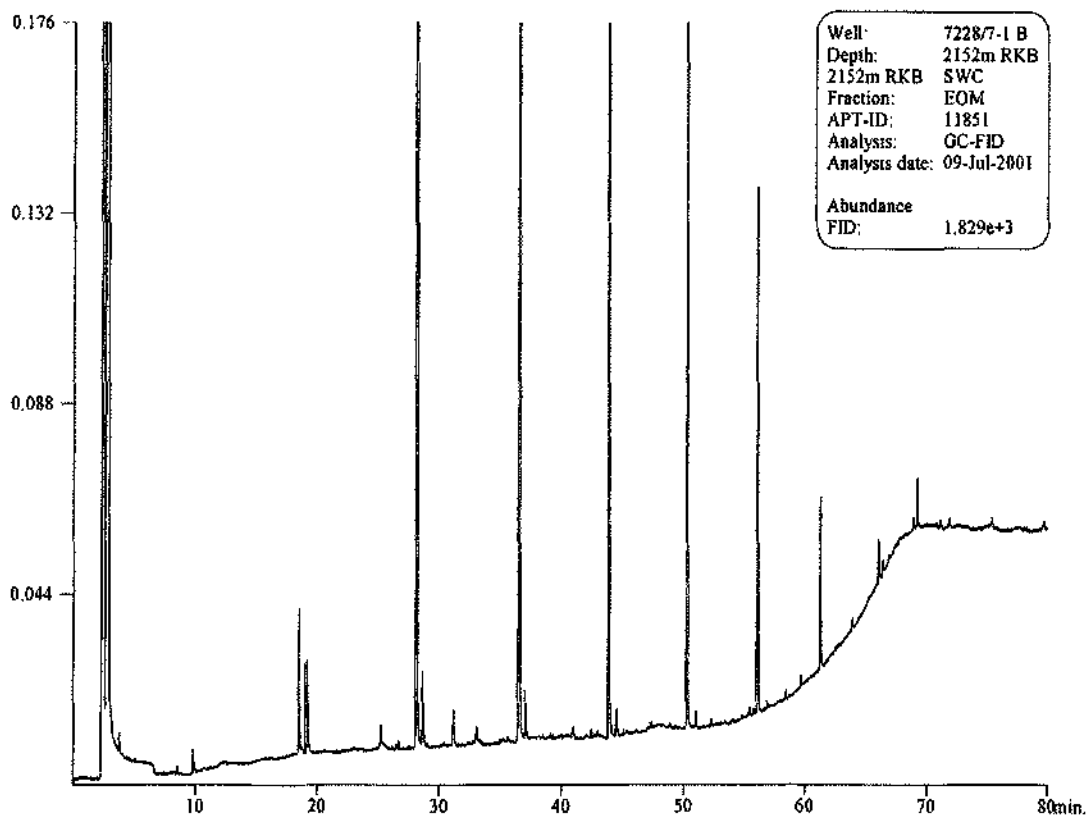
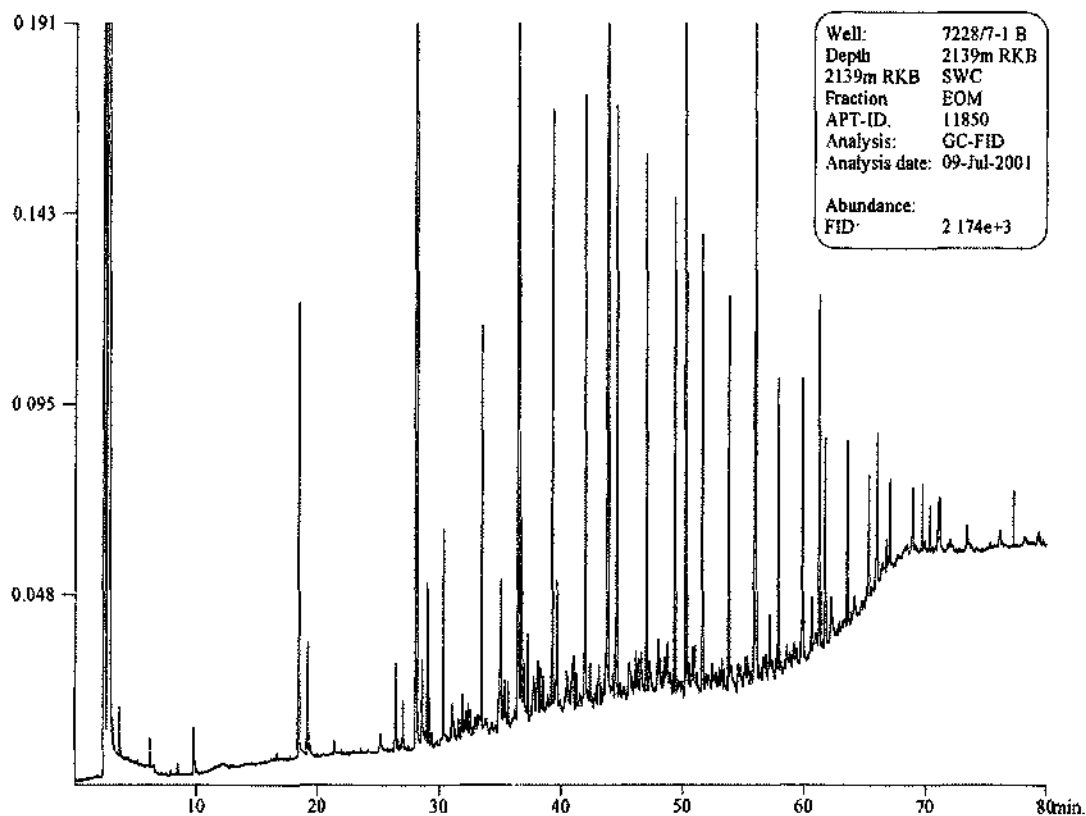


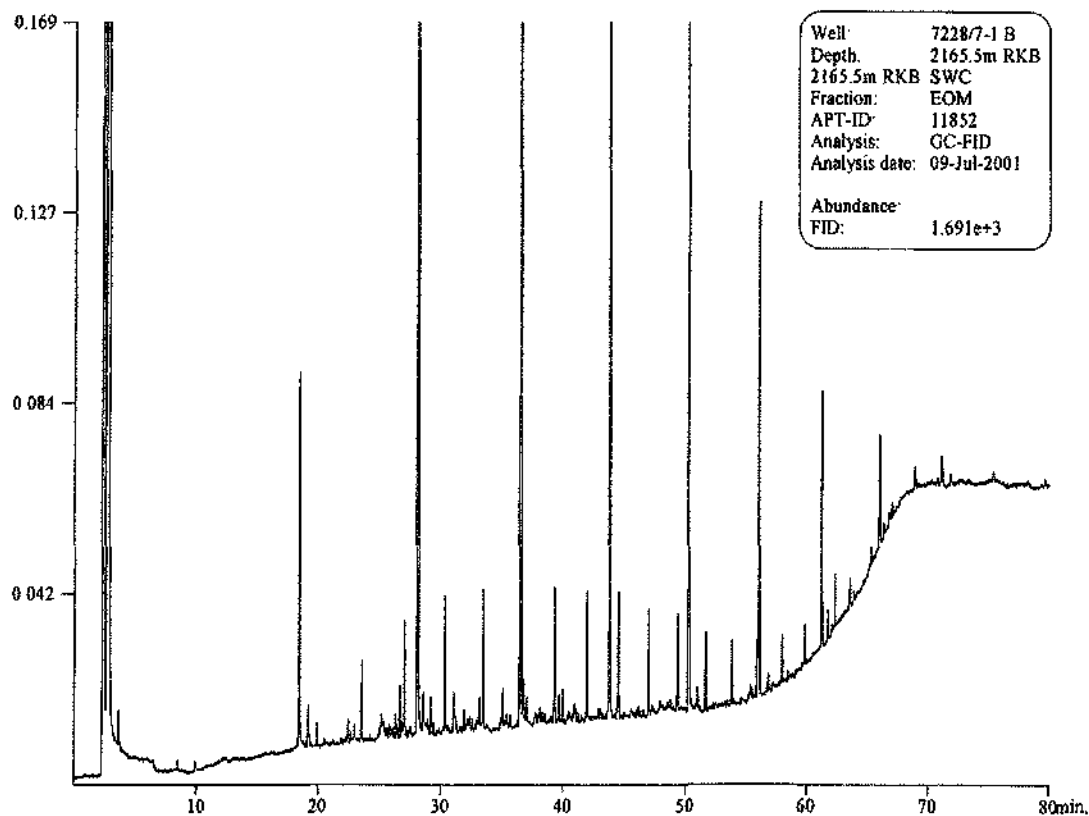
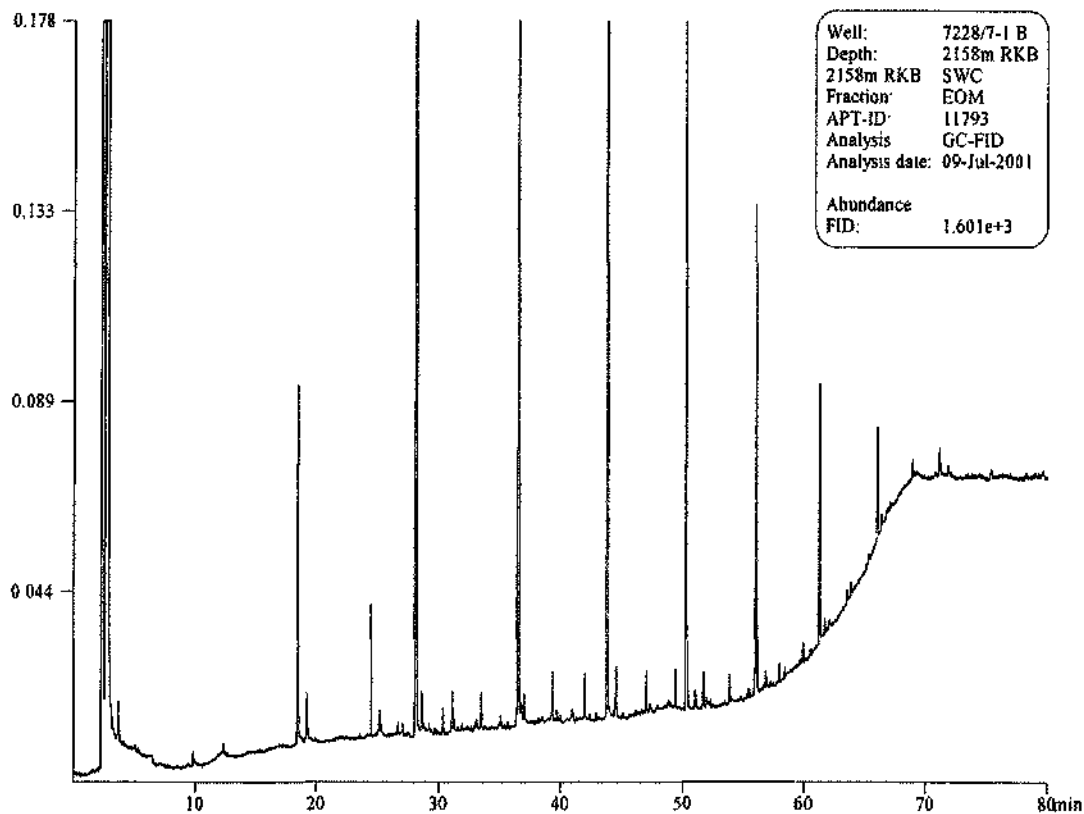


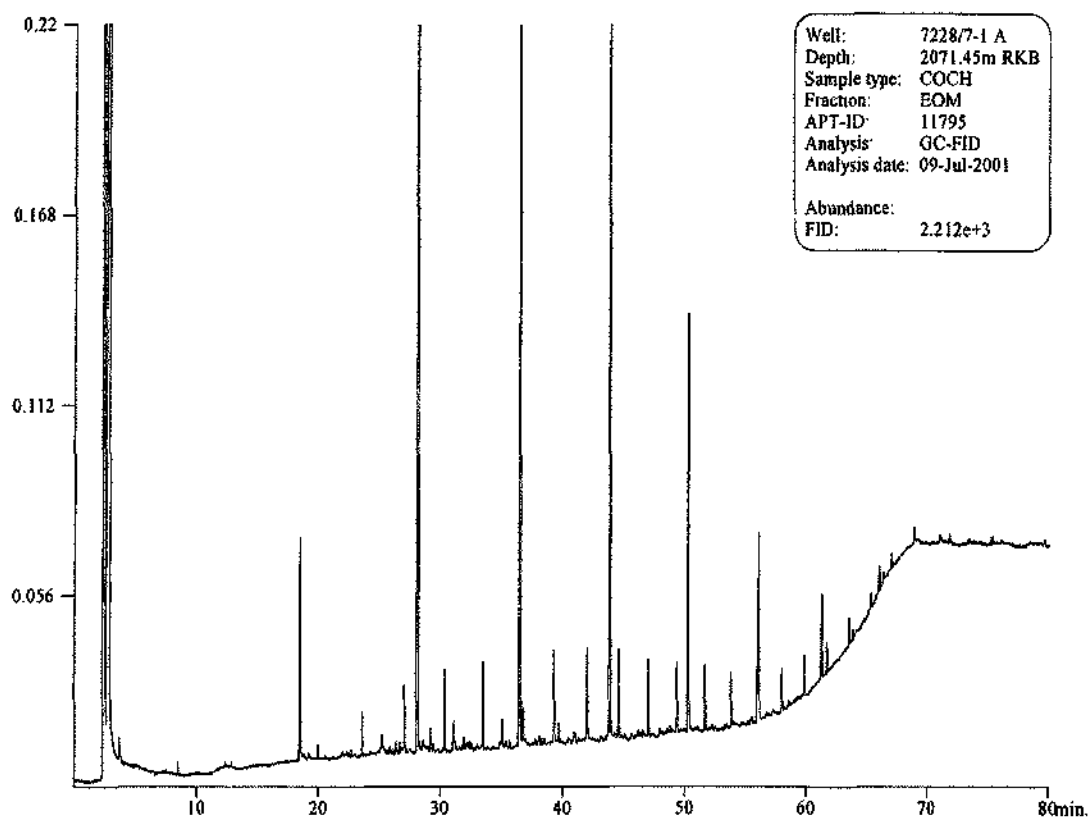
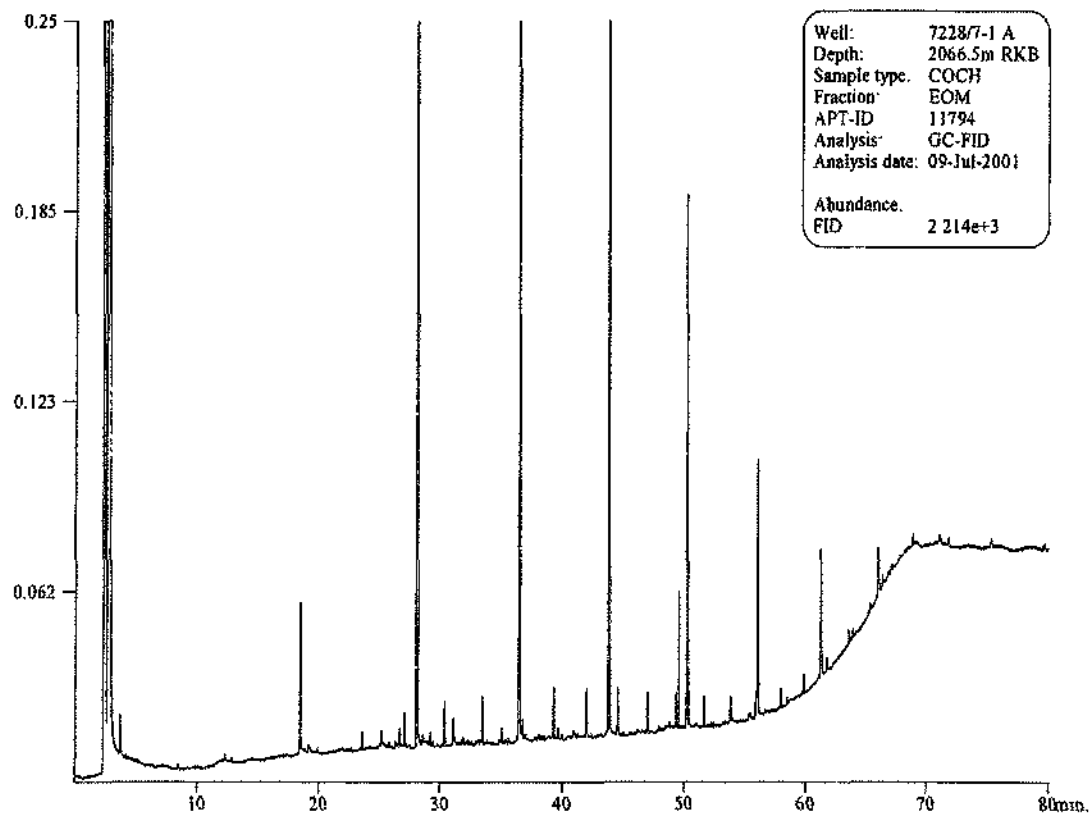


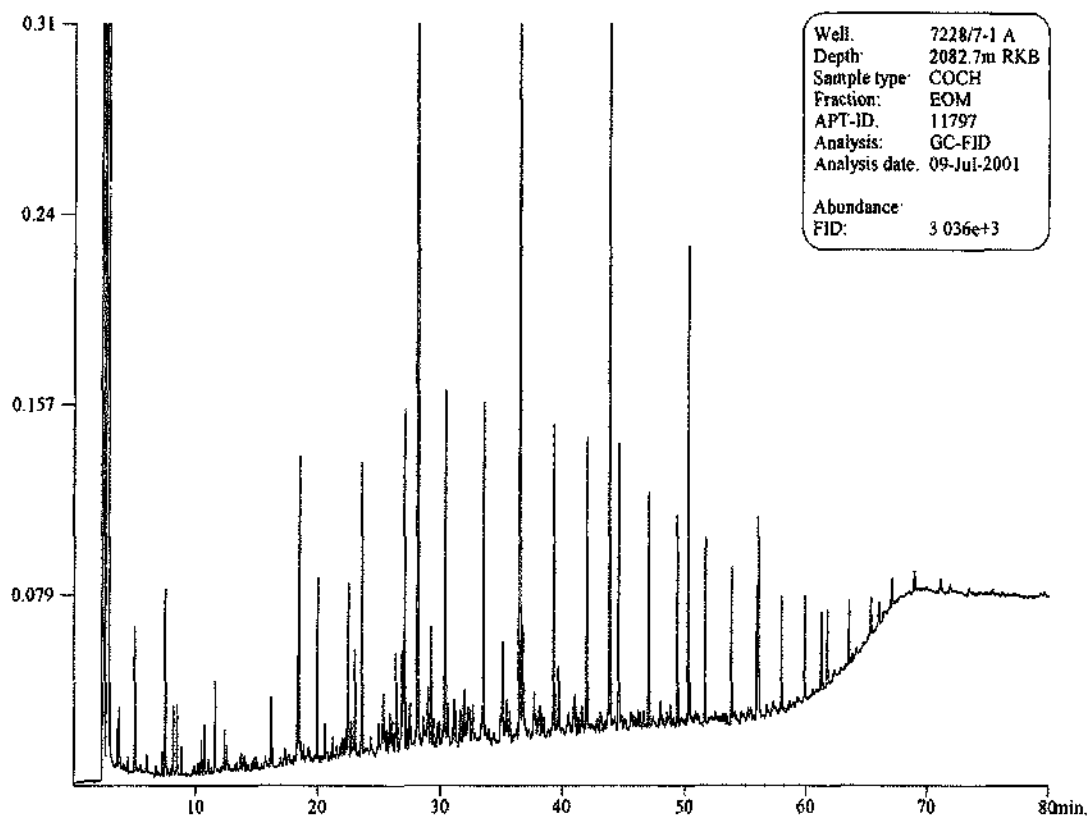
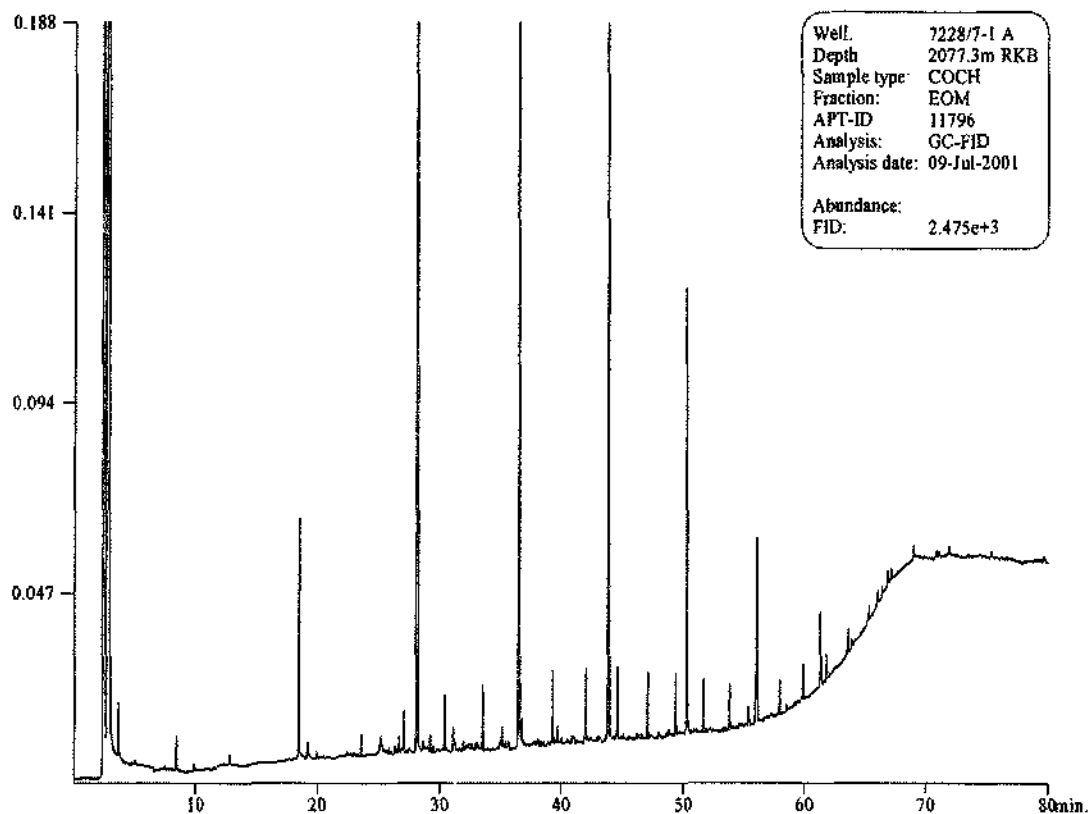
Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3

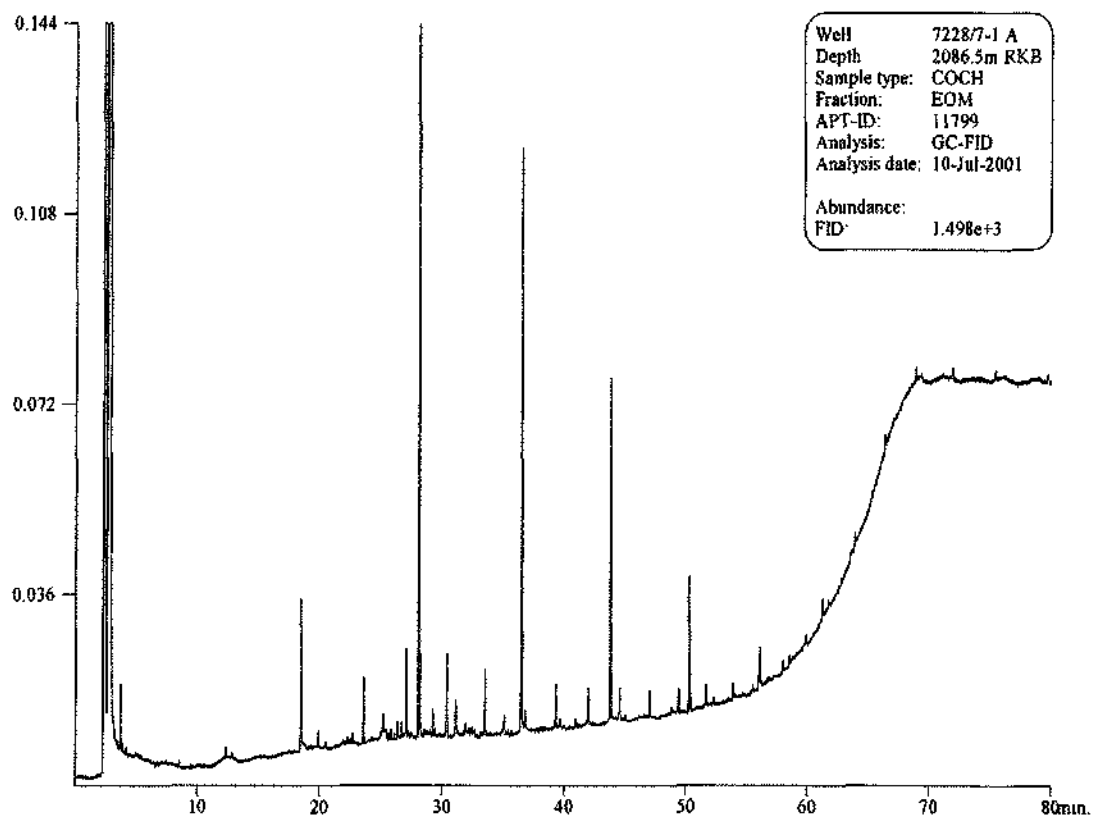
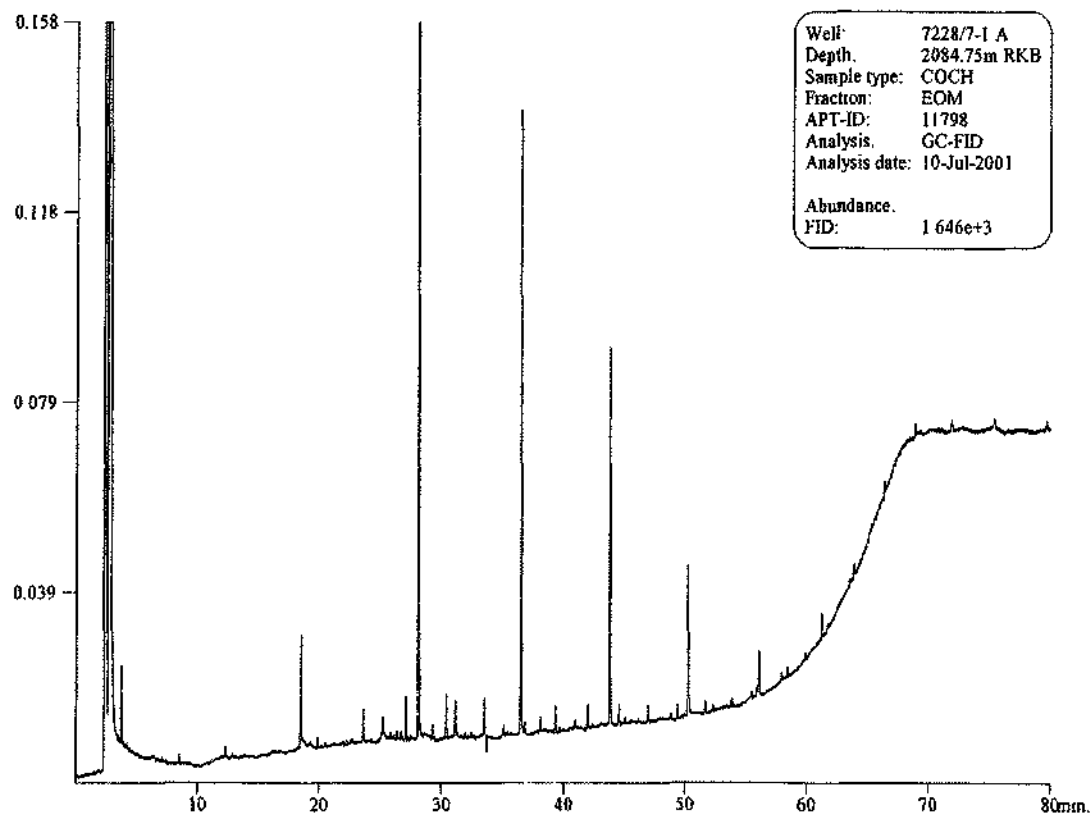


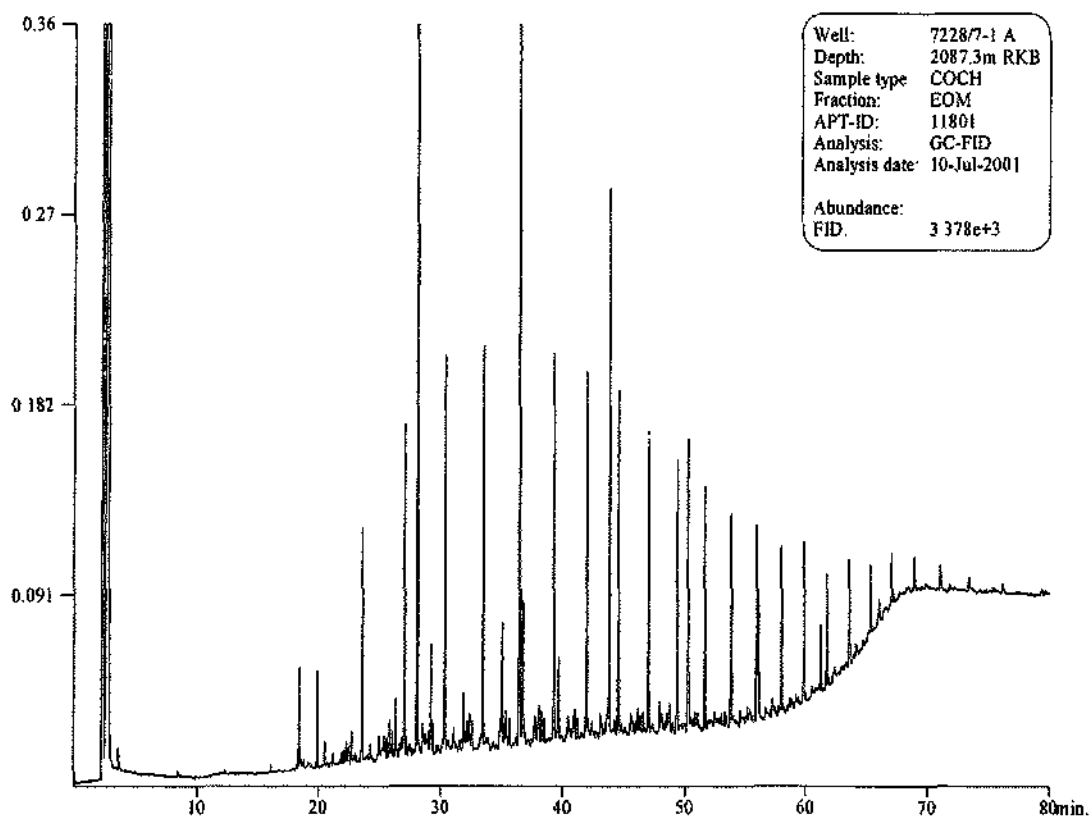
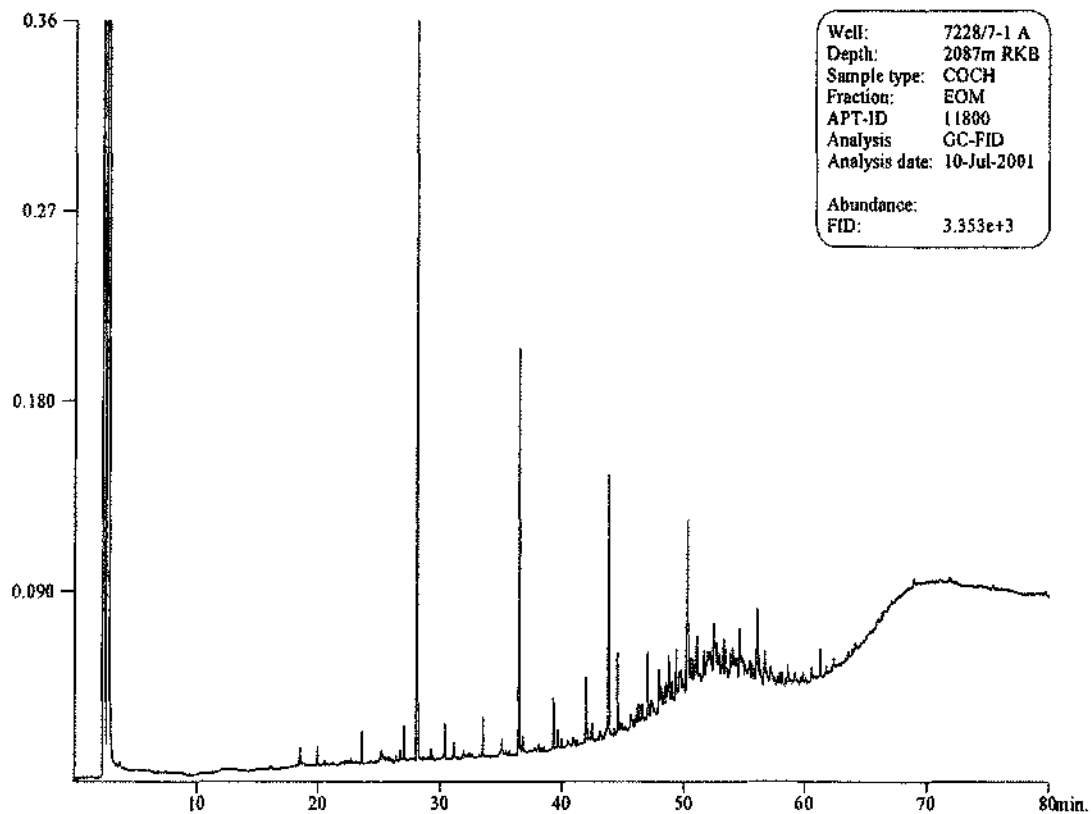


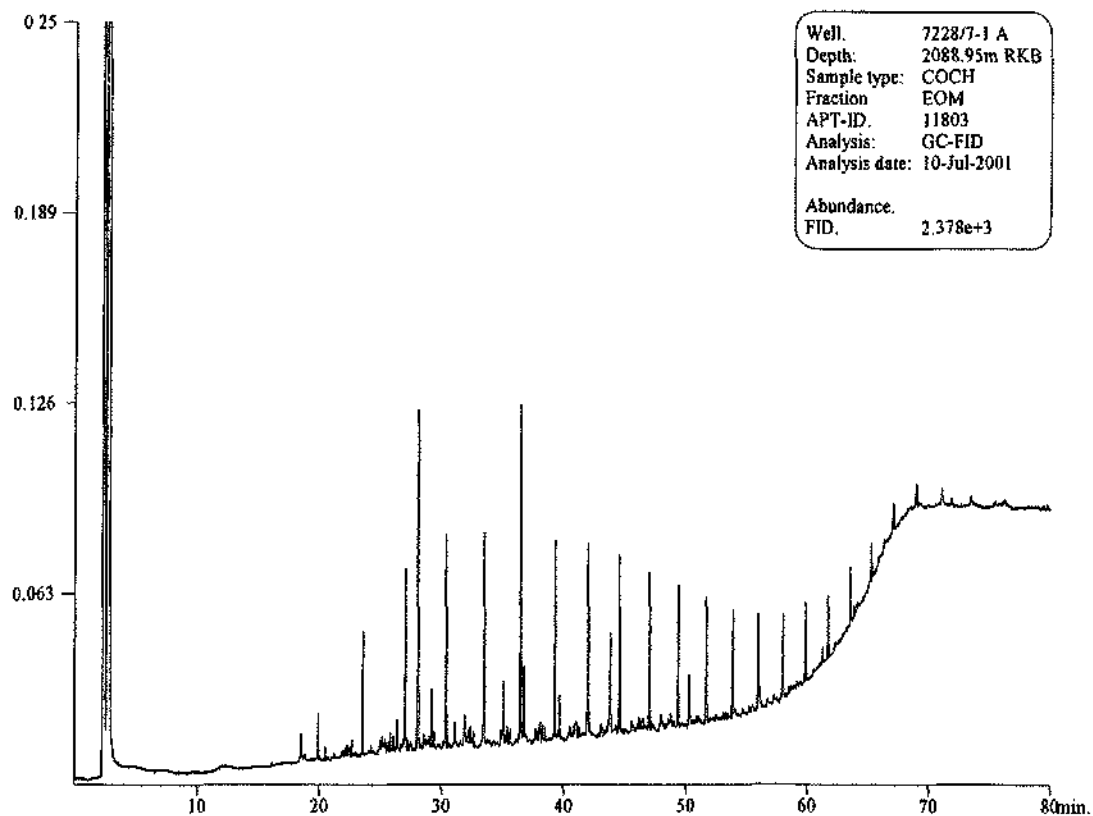
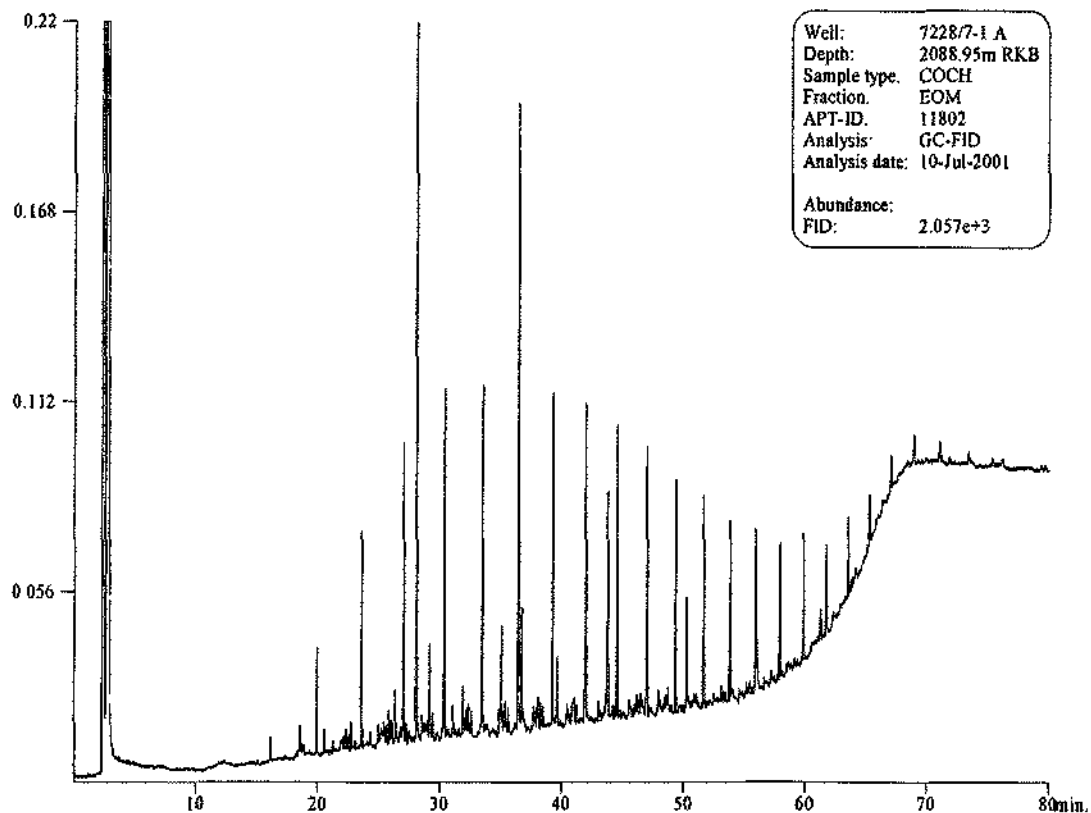


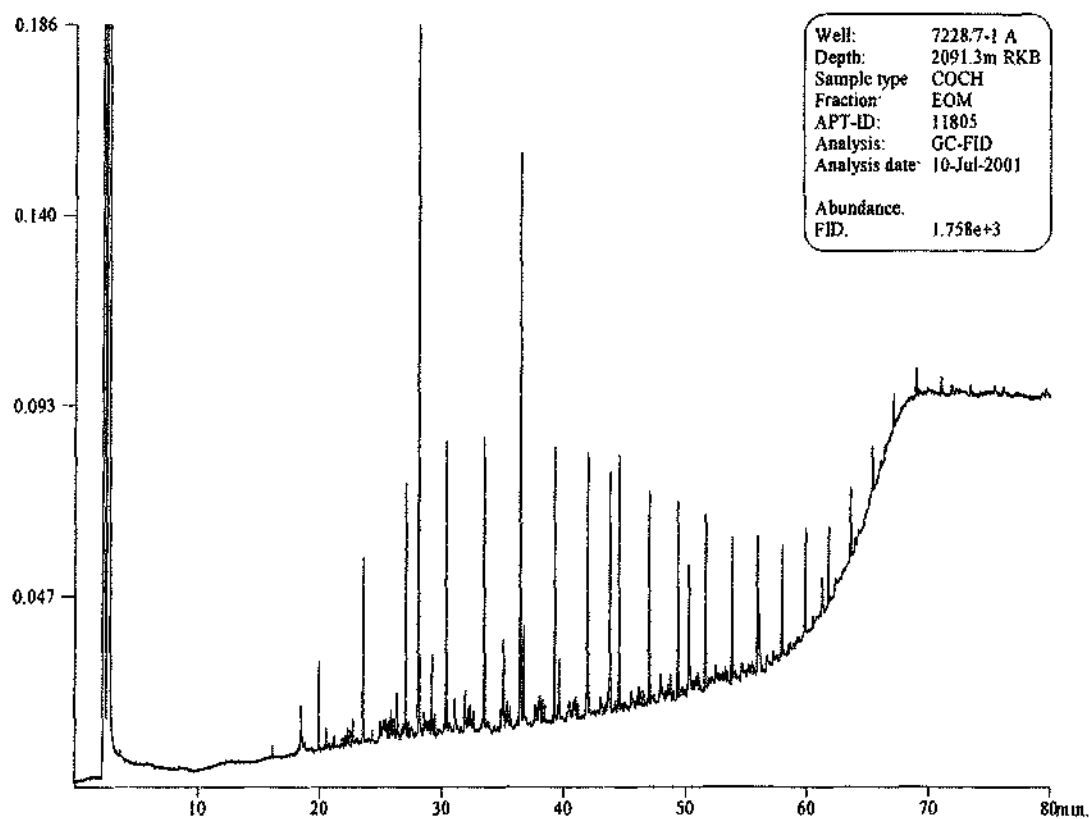
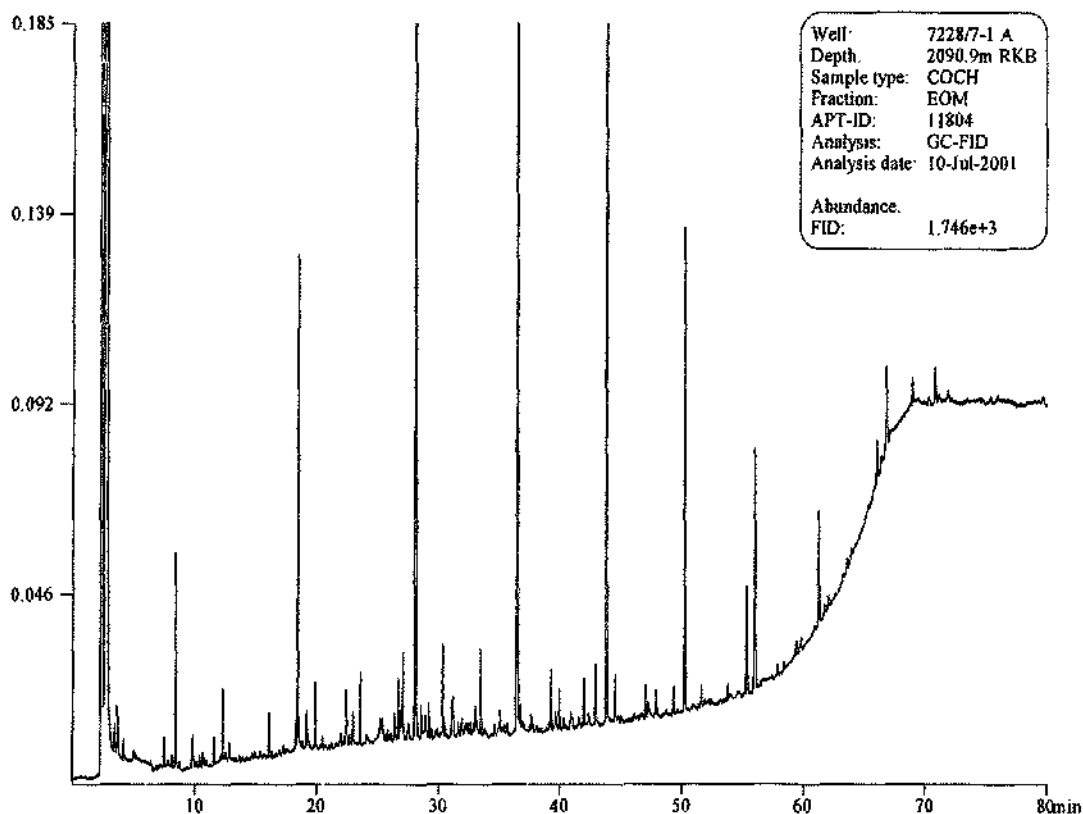






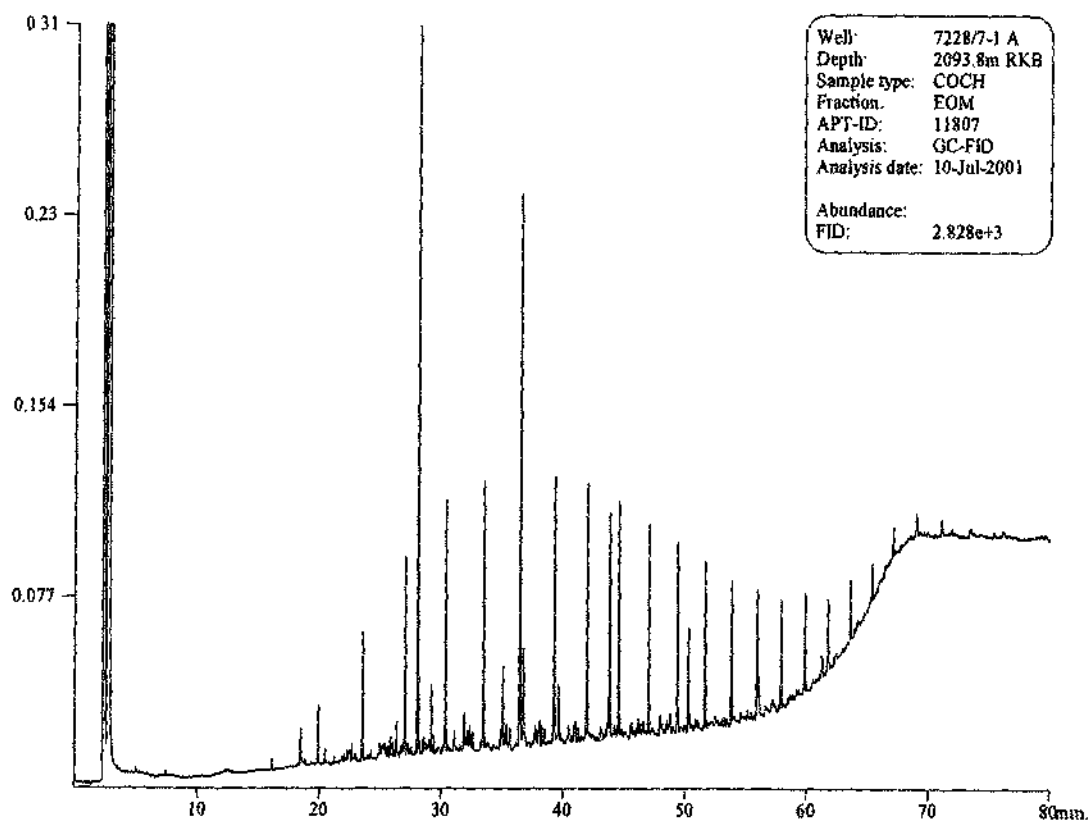
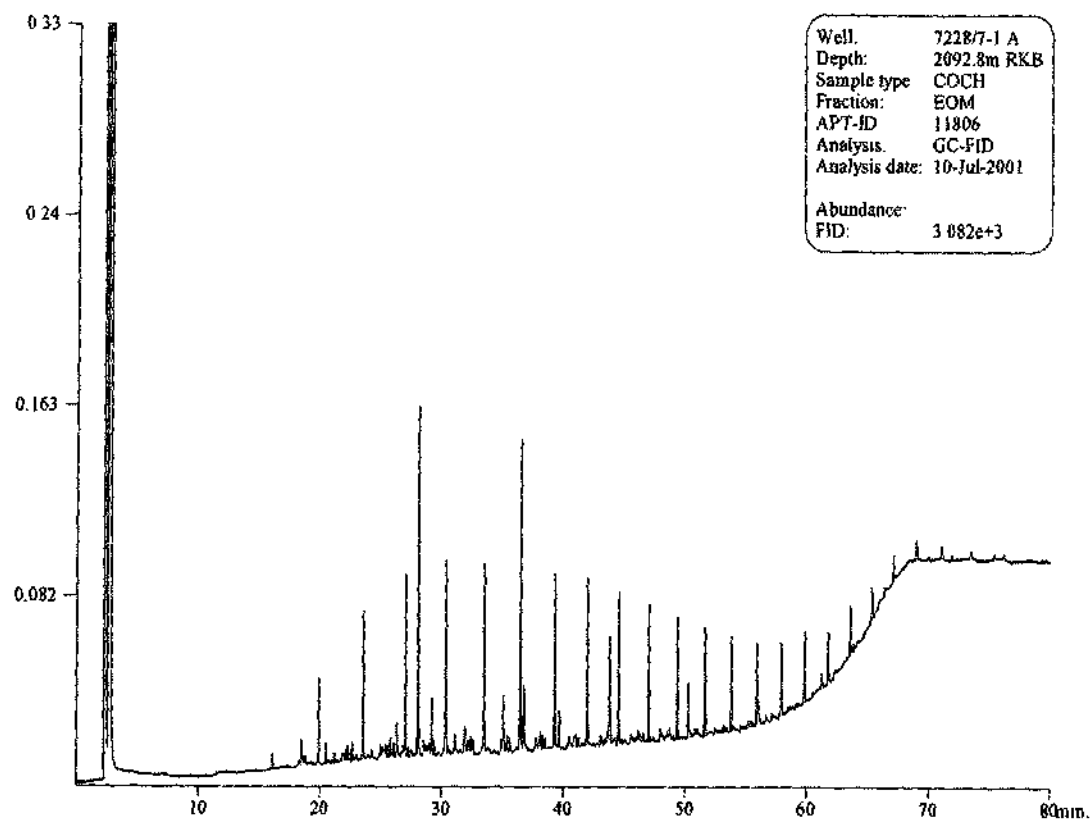


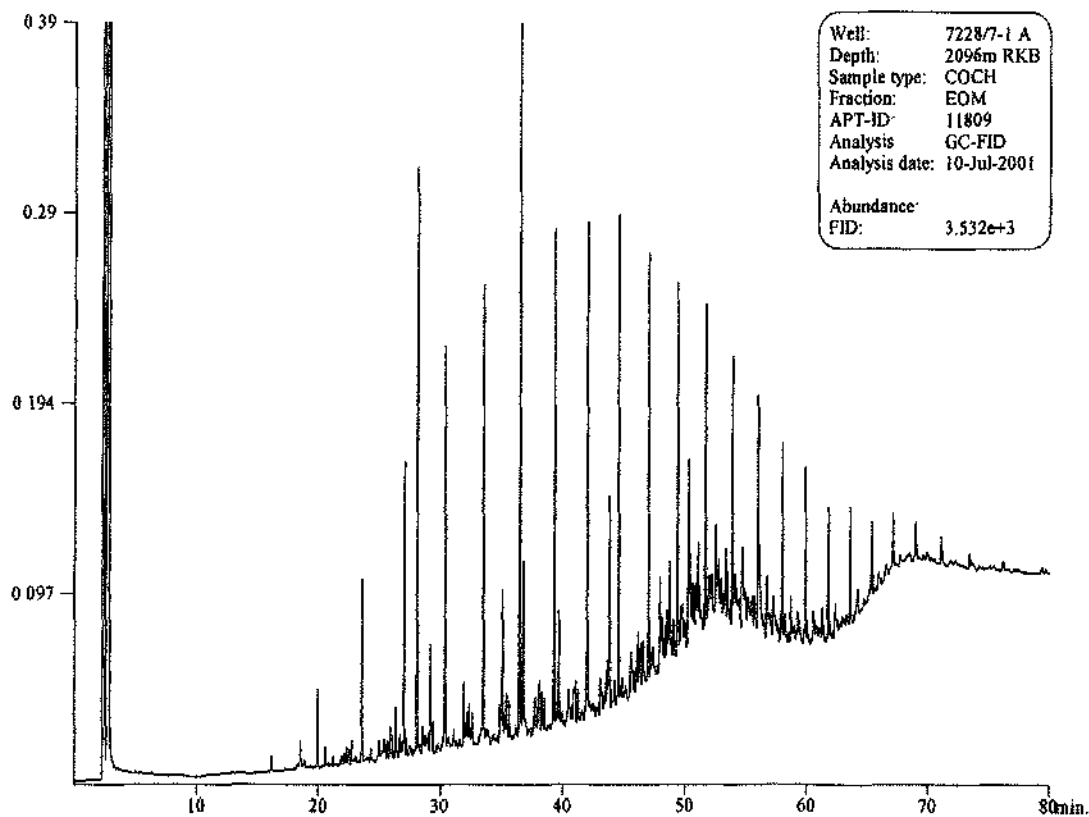
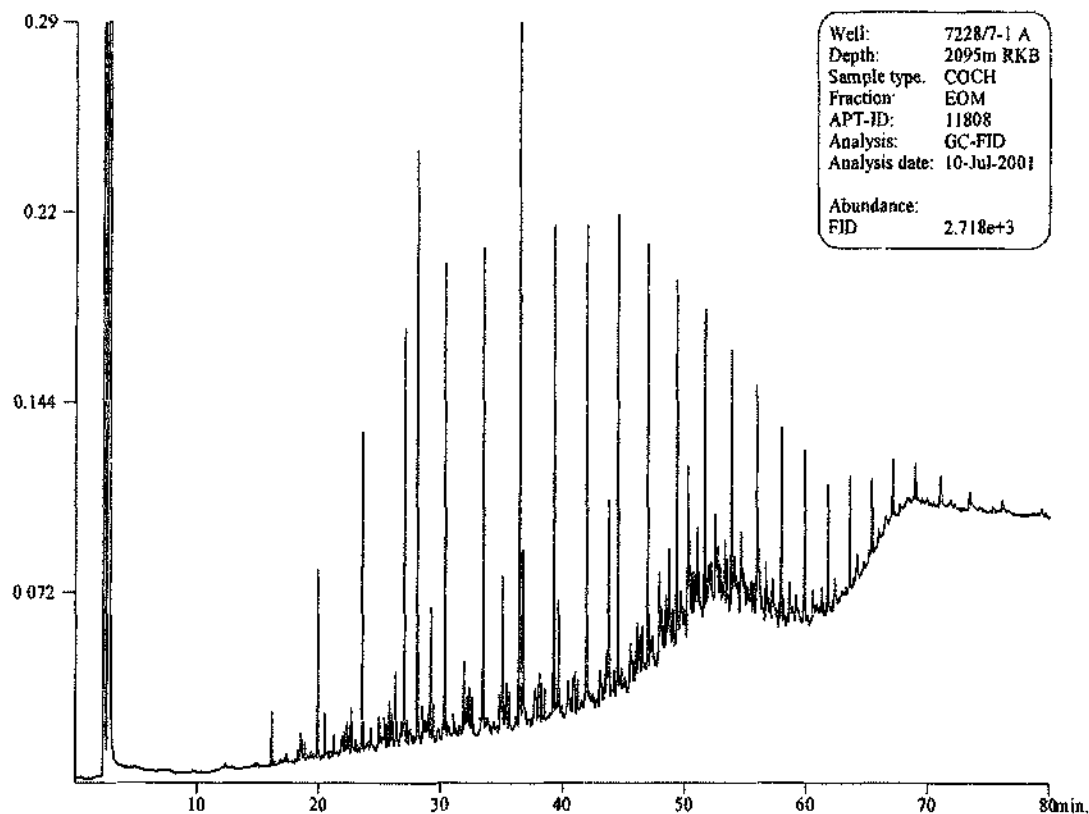


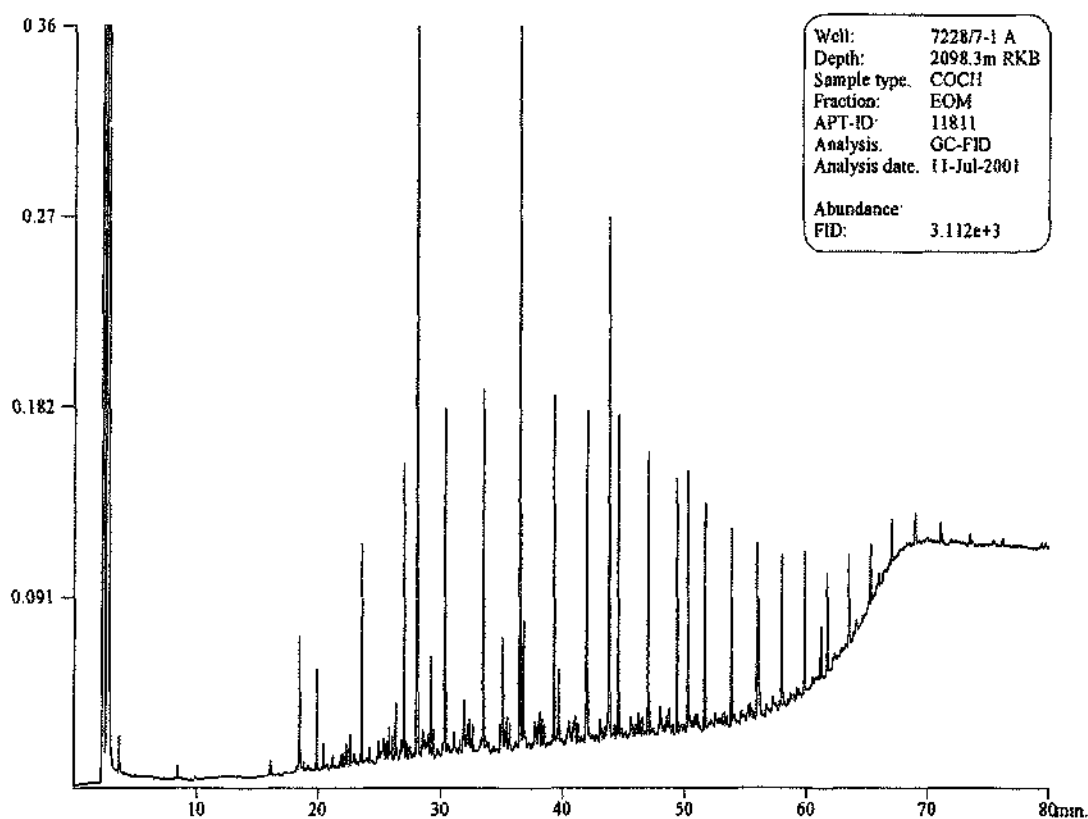
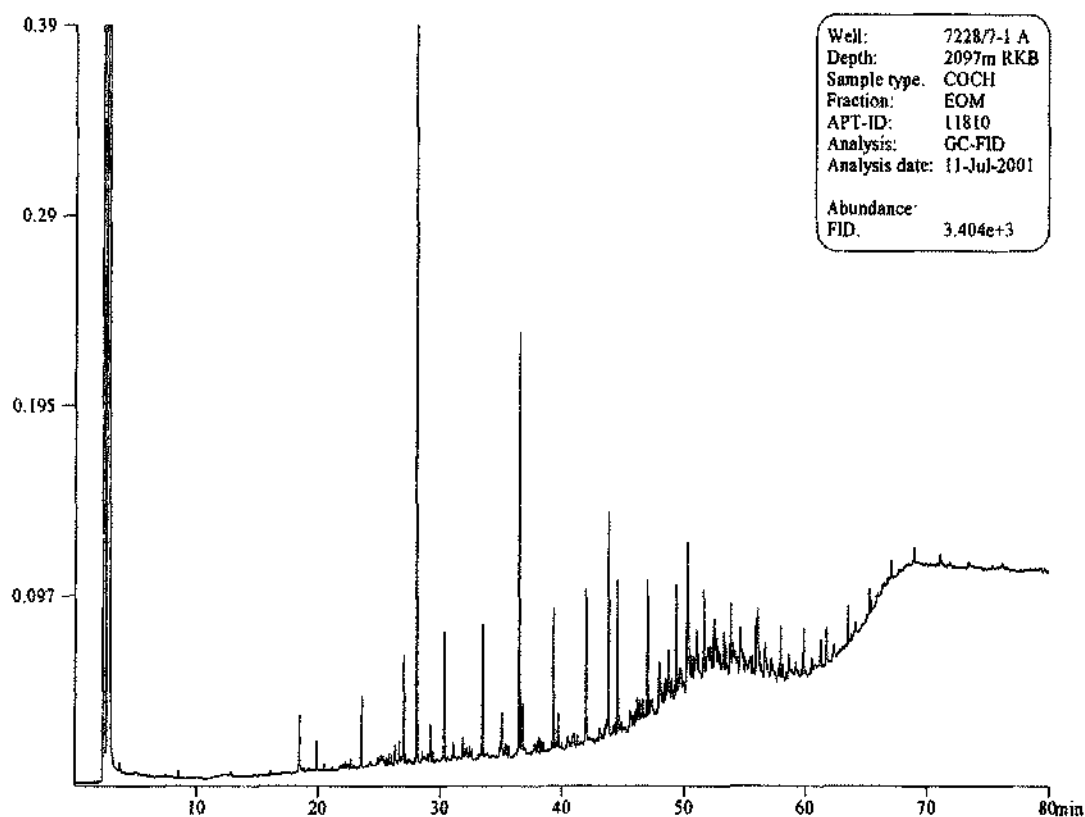




Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3

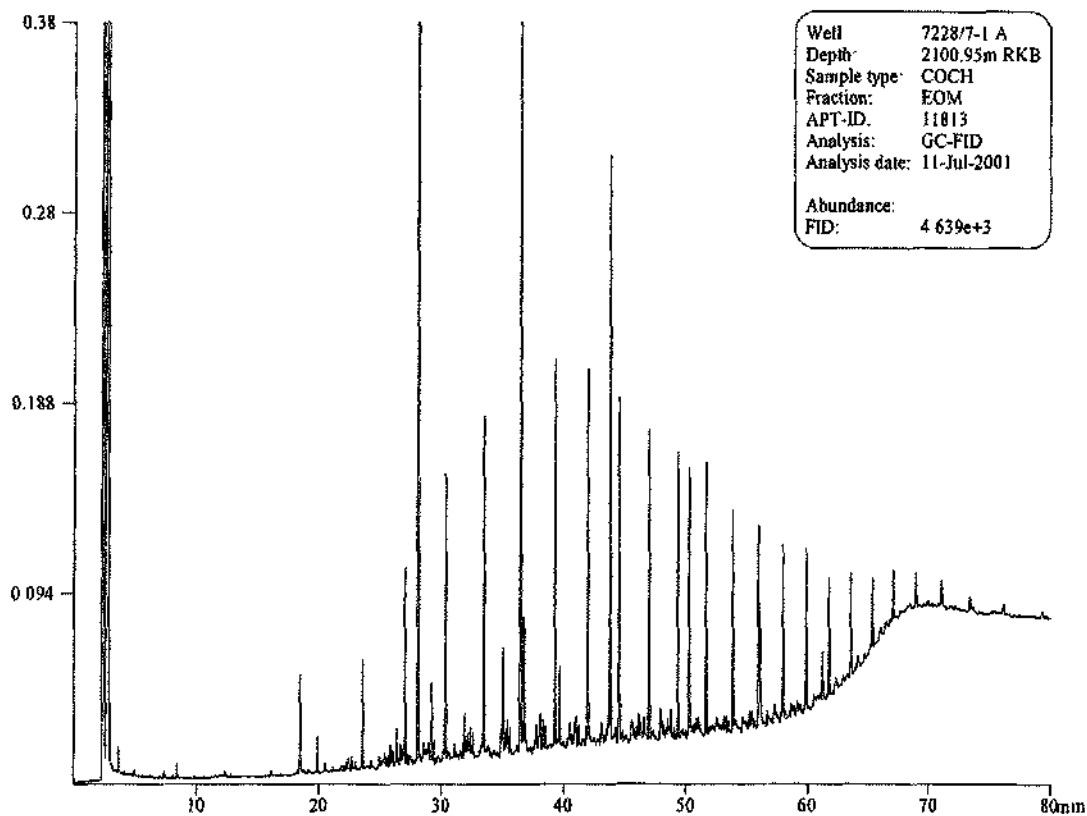
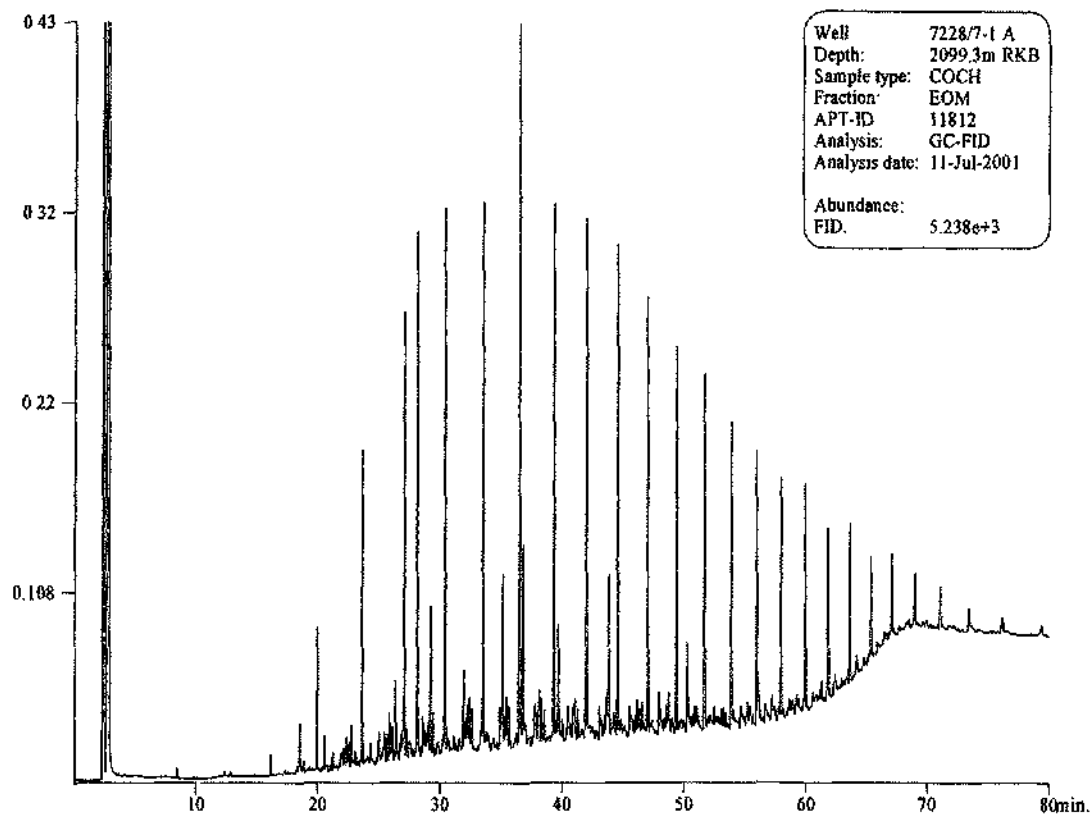






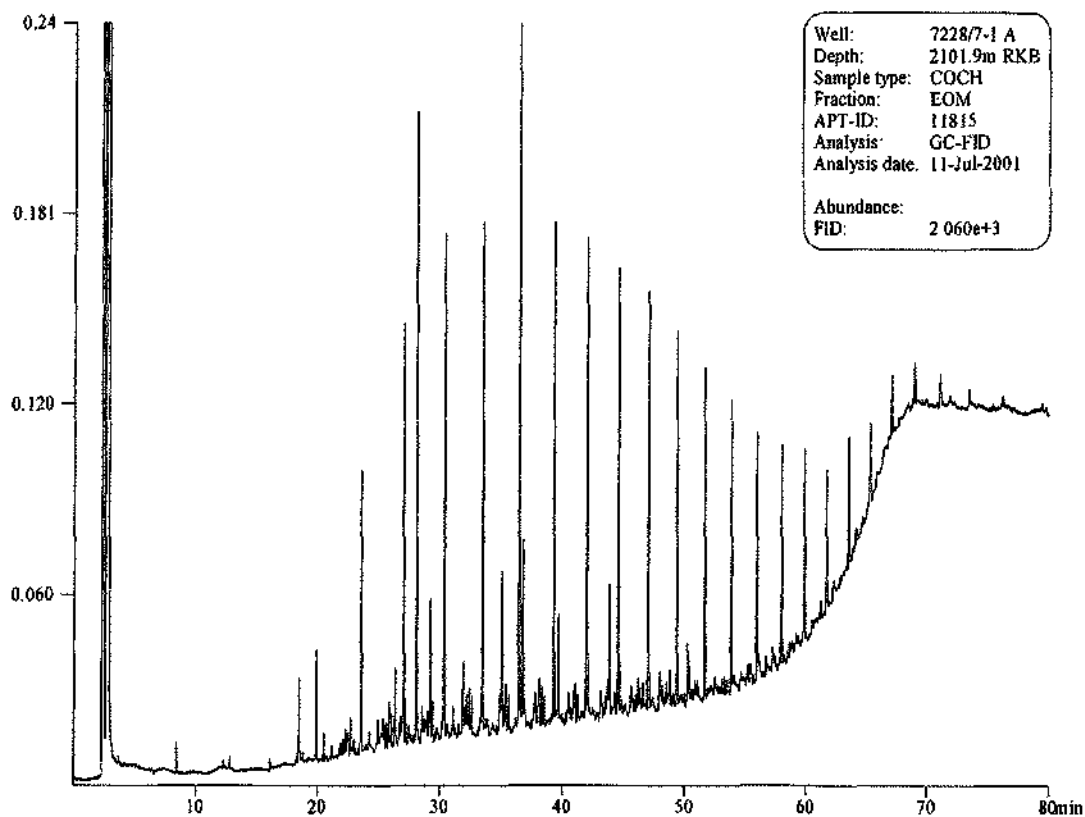
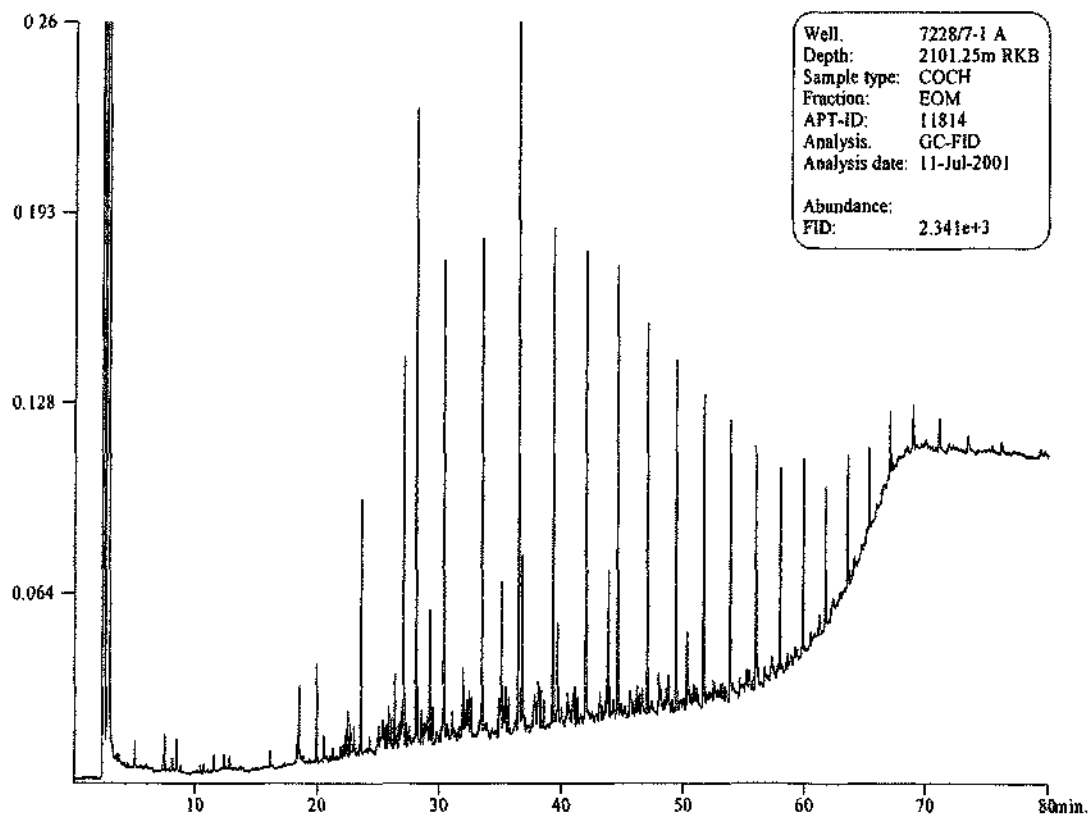


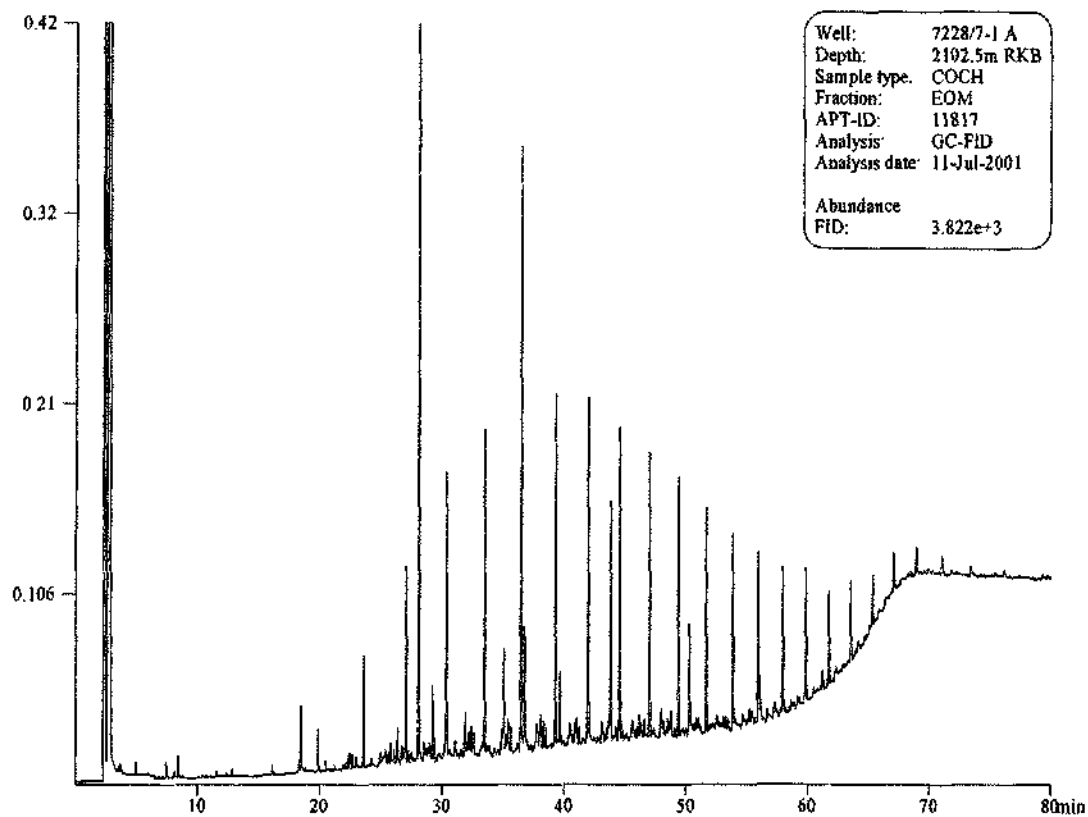
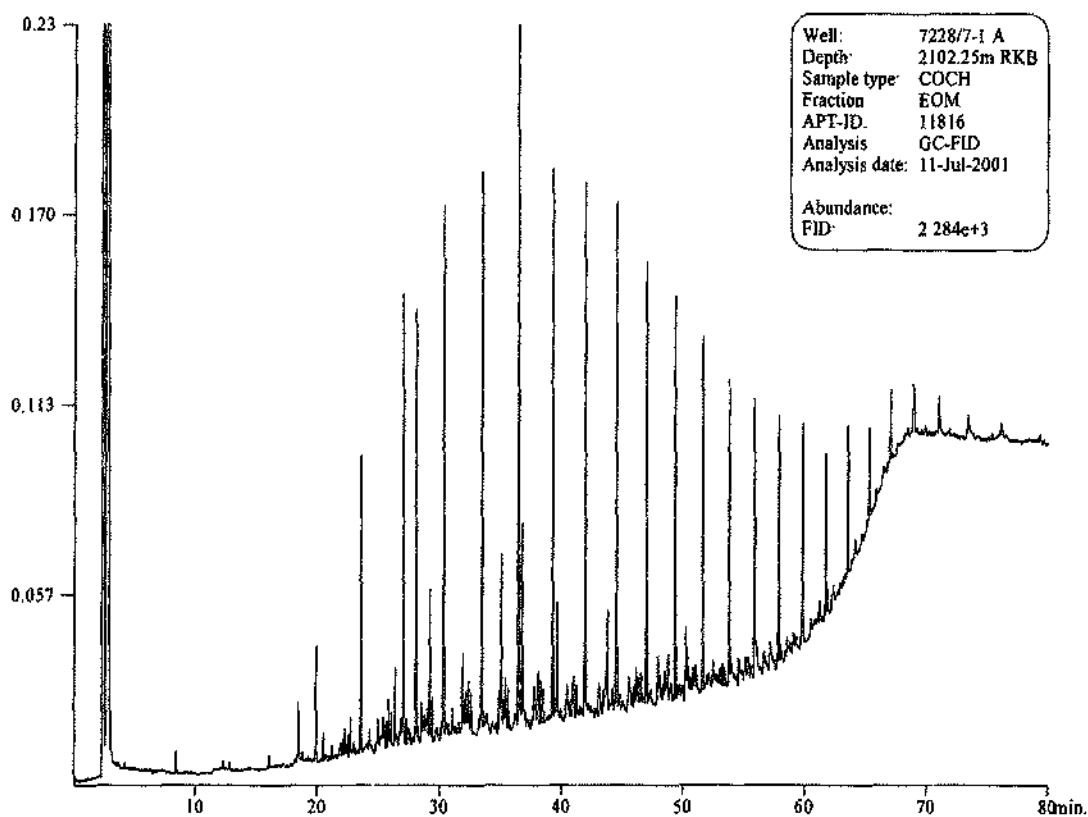
Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3

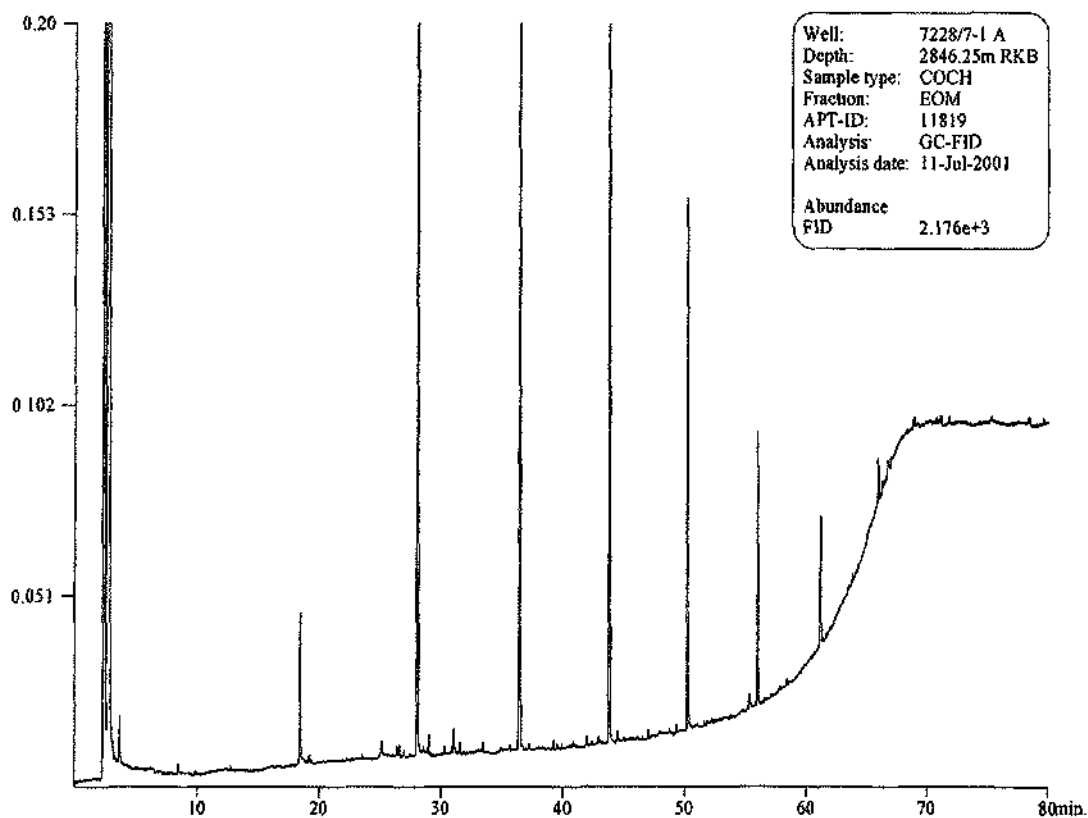
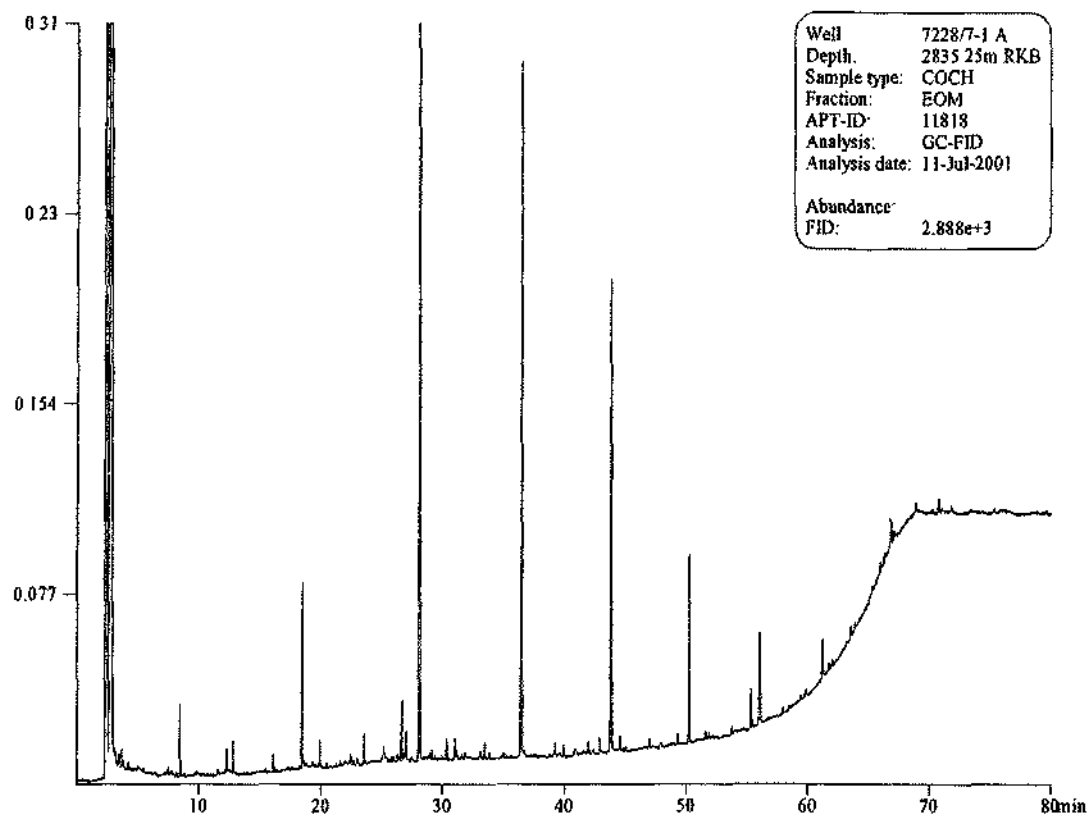


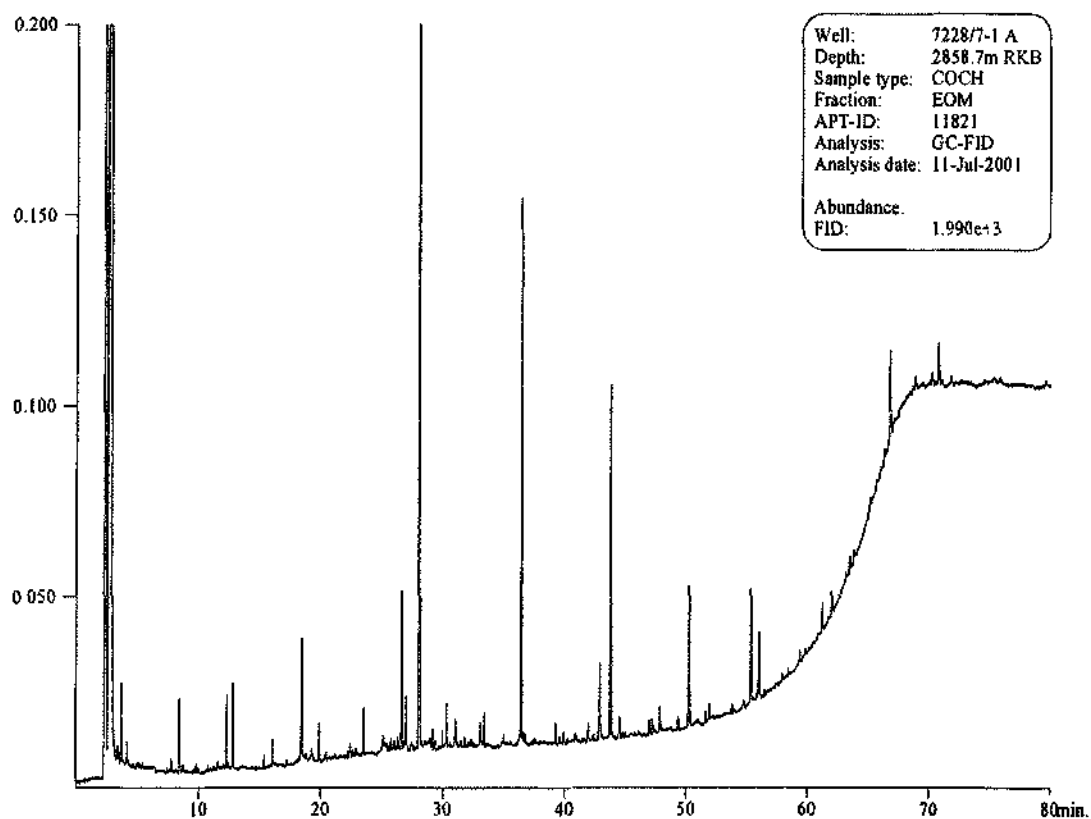
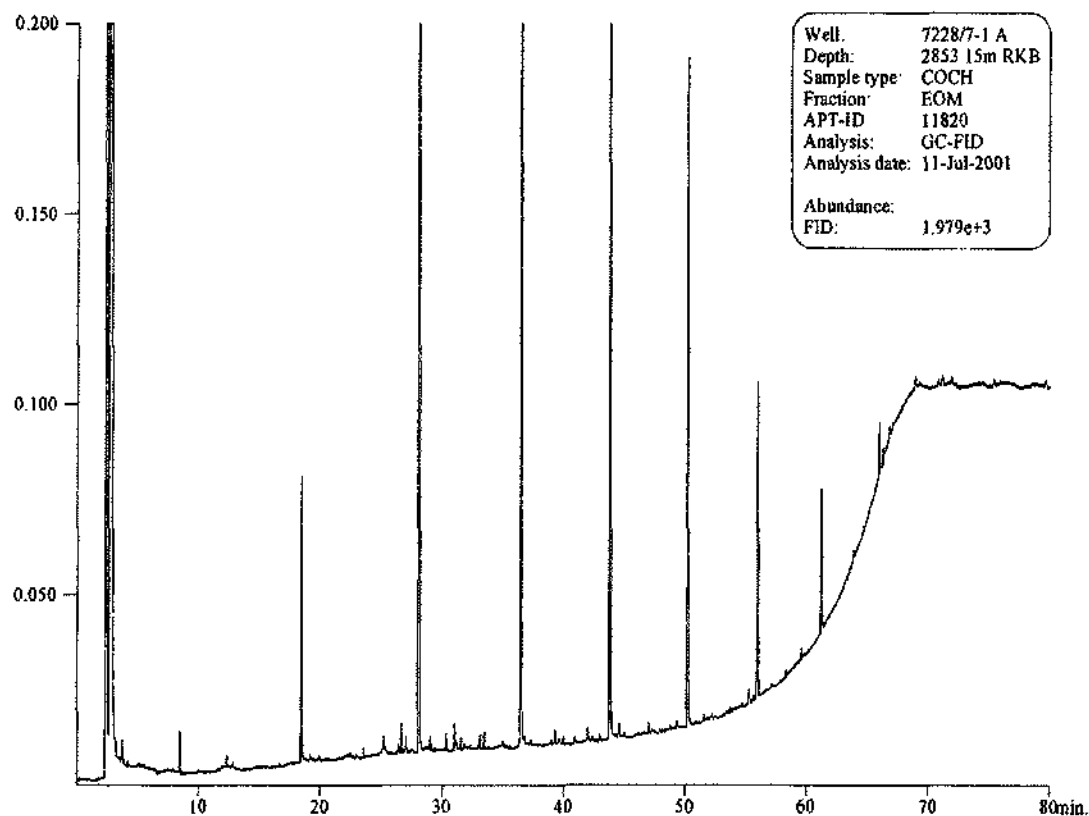


Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3



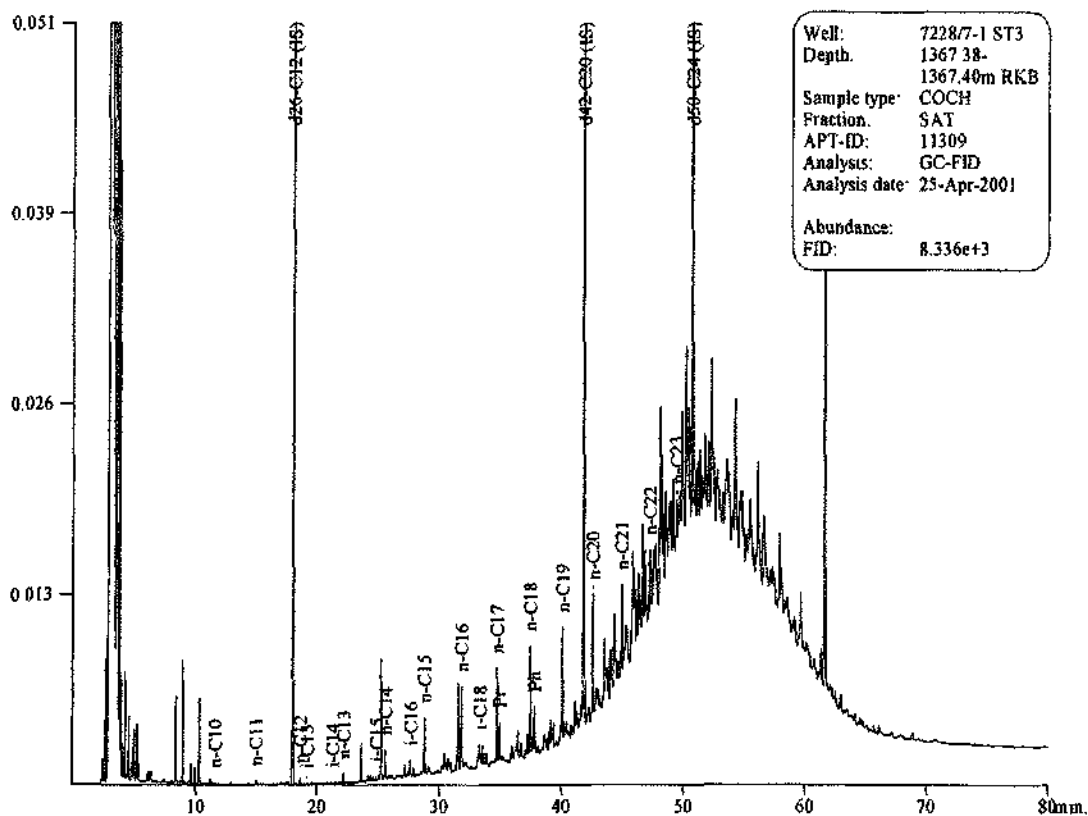
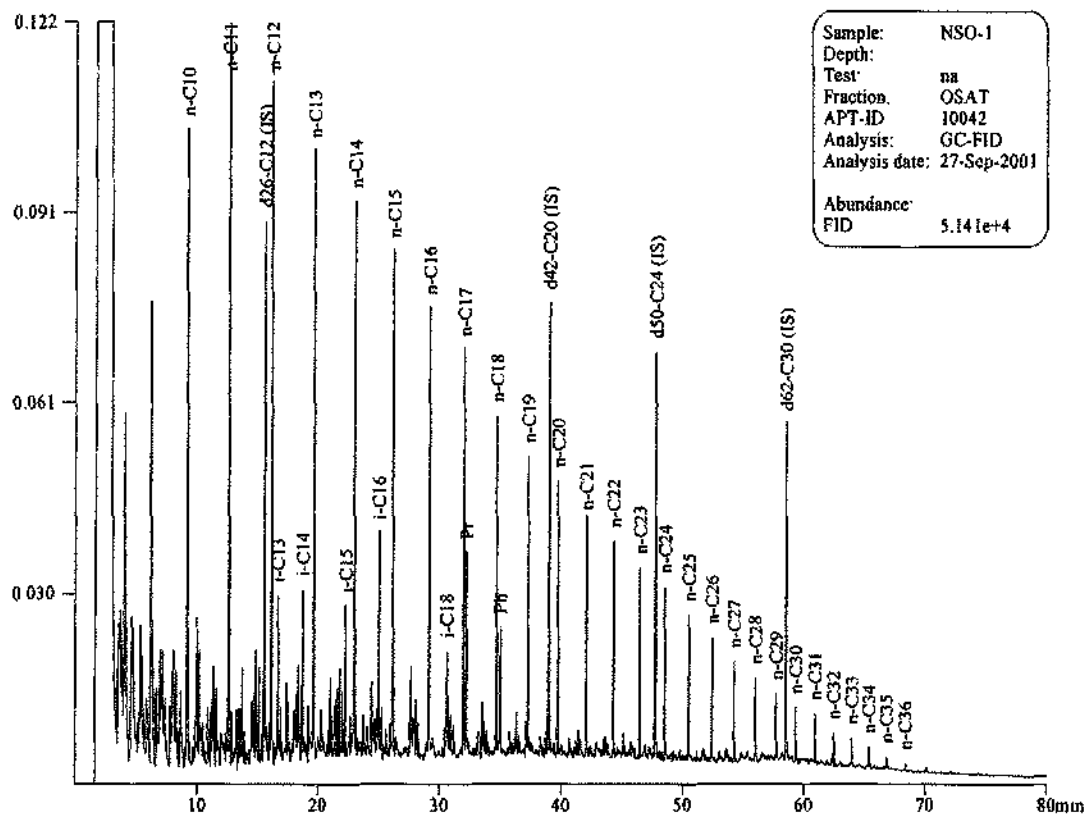


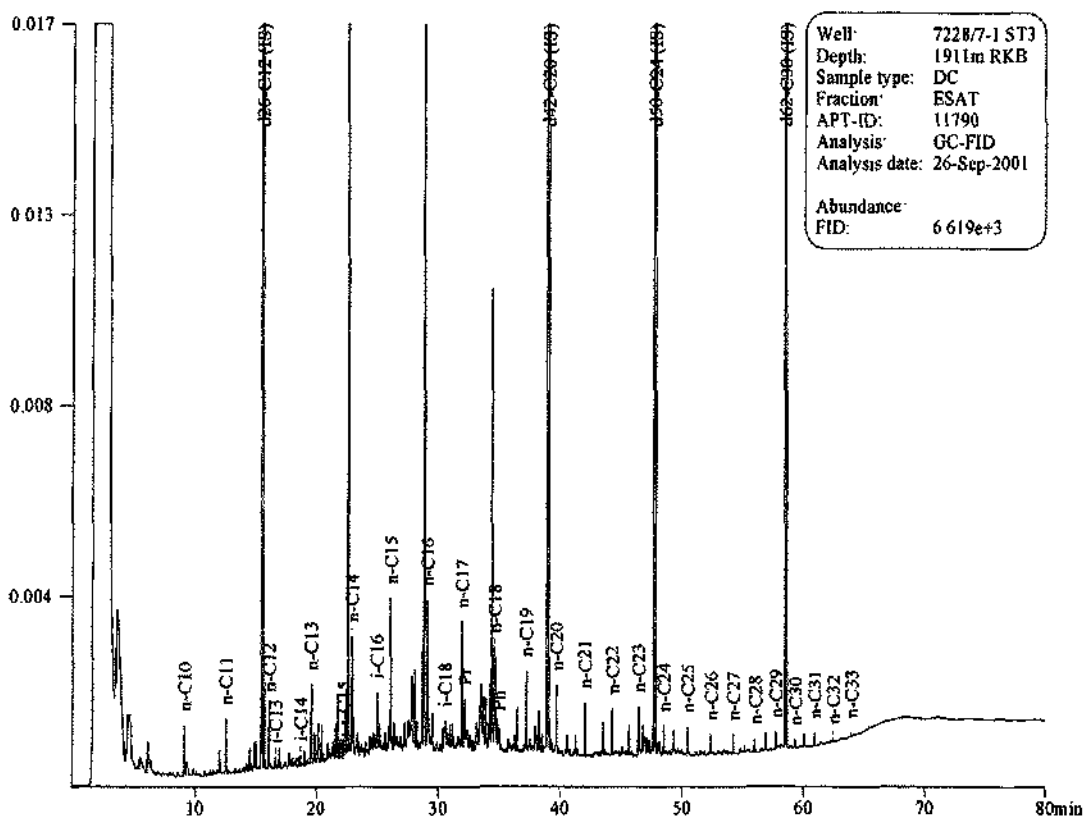
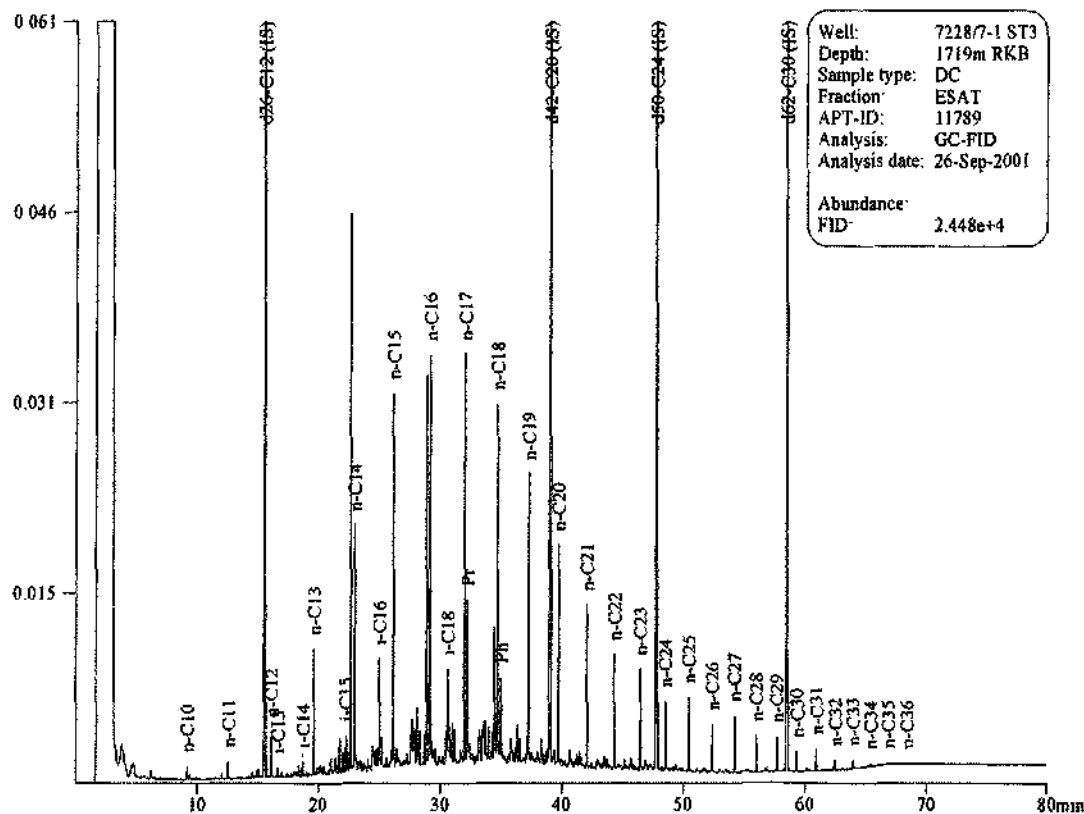


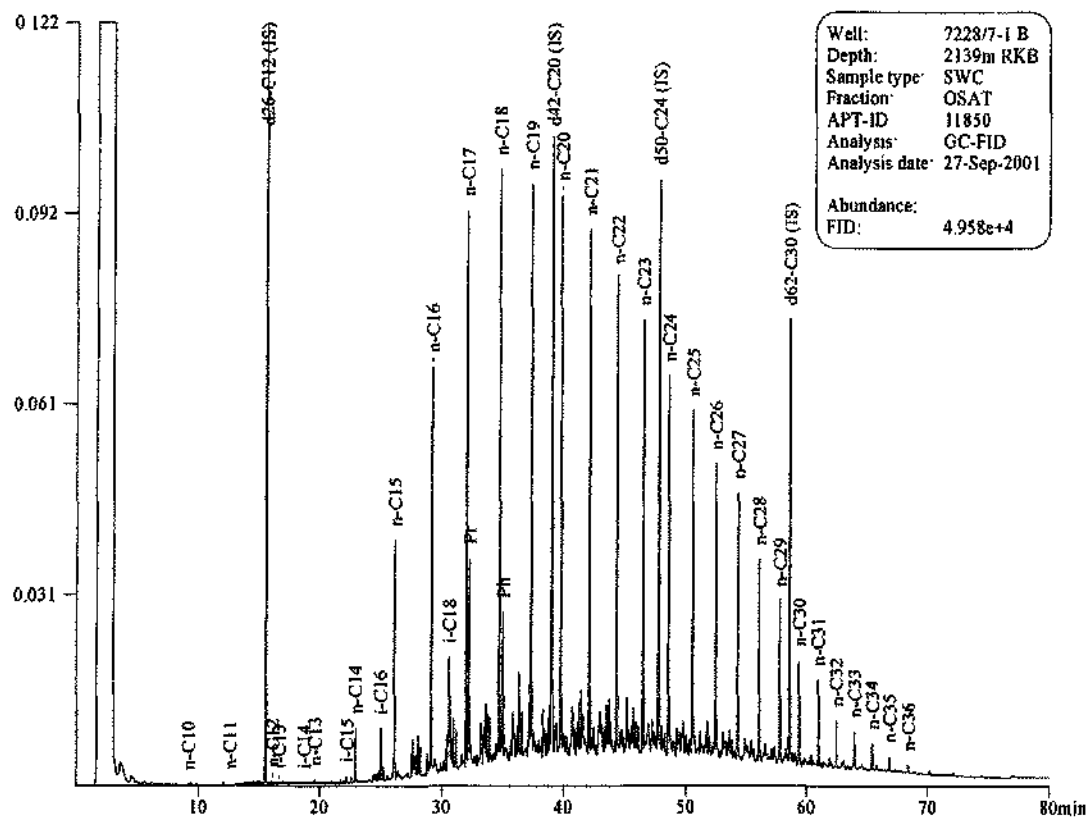
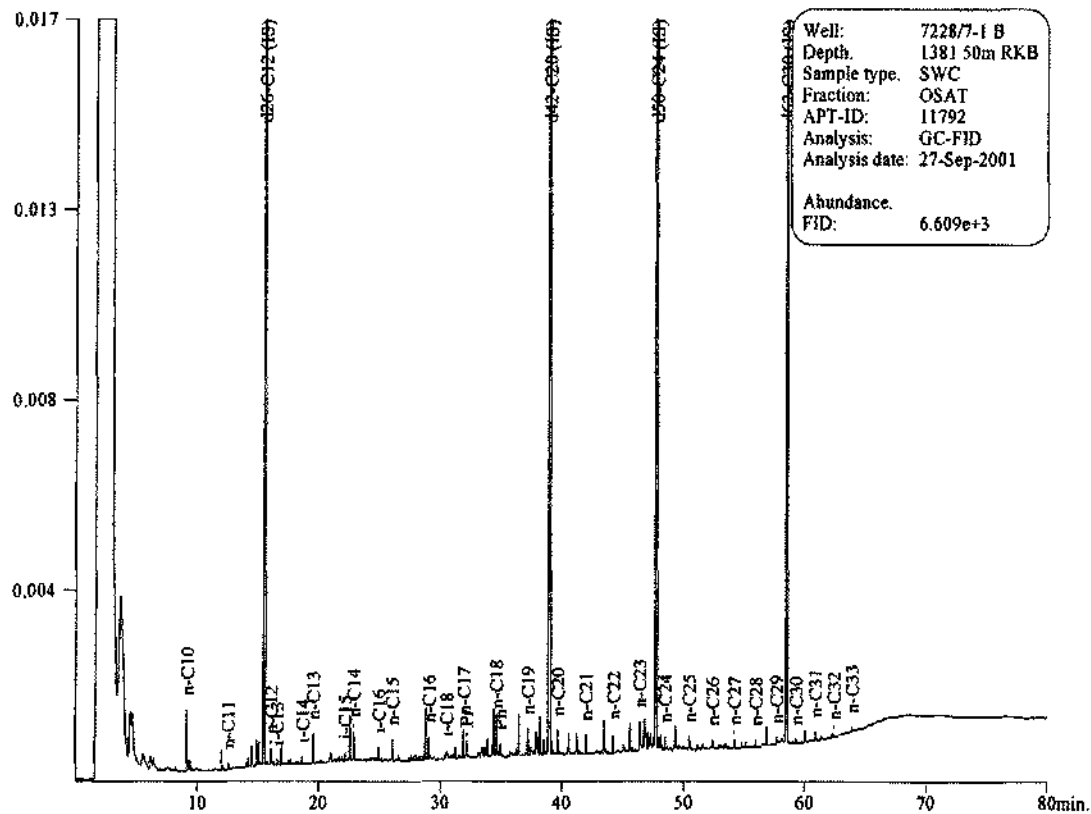


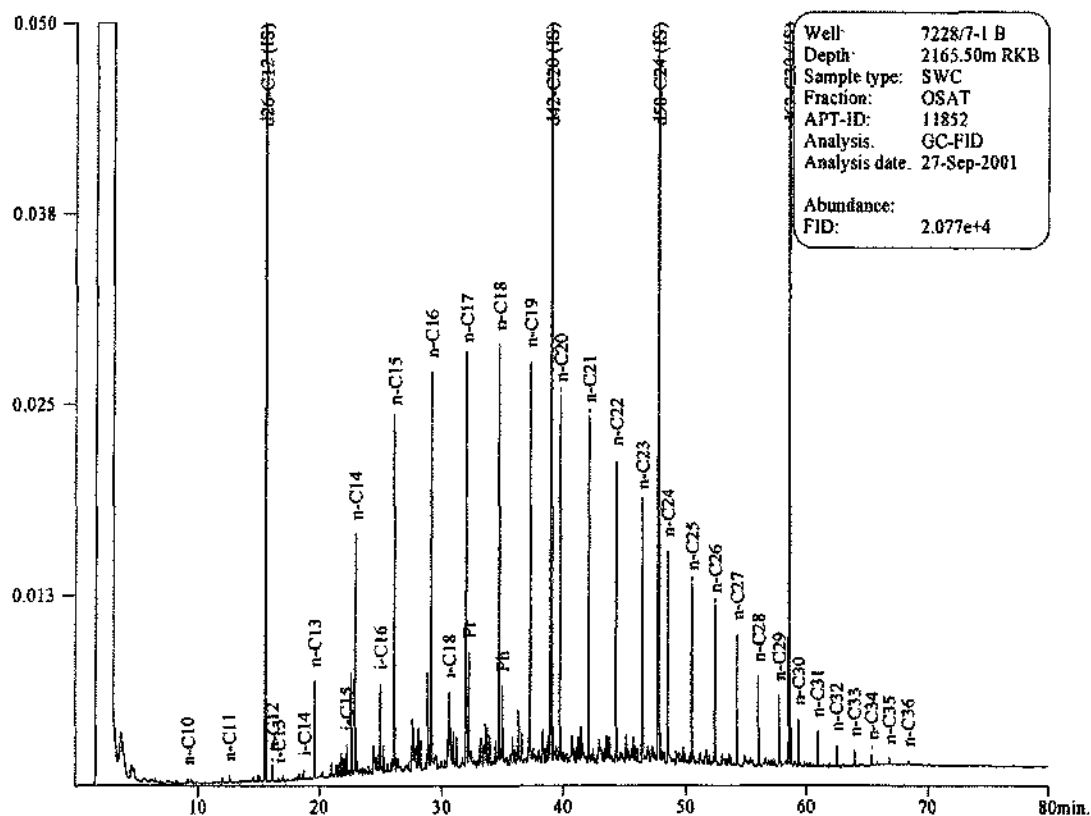
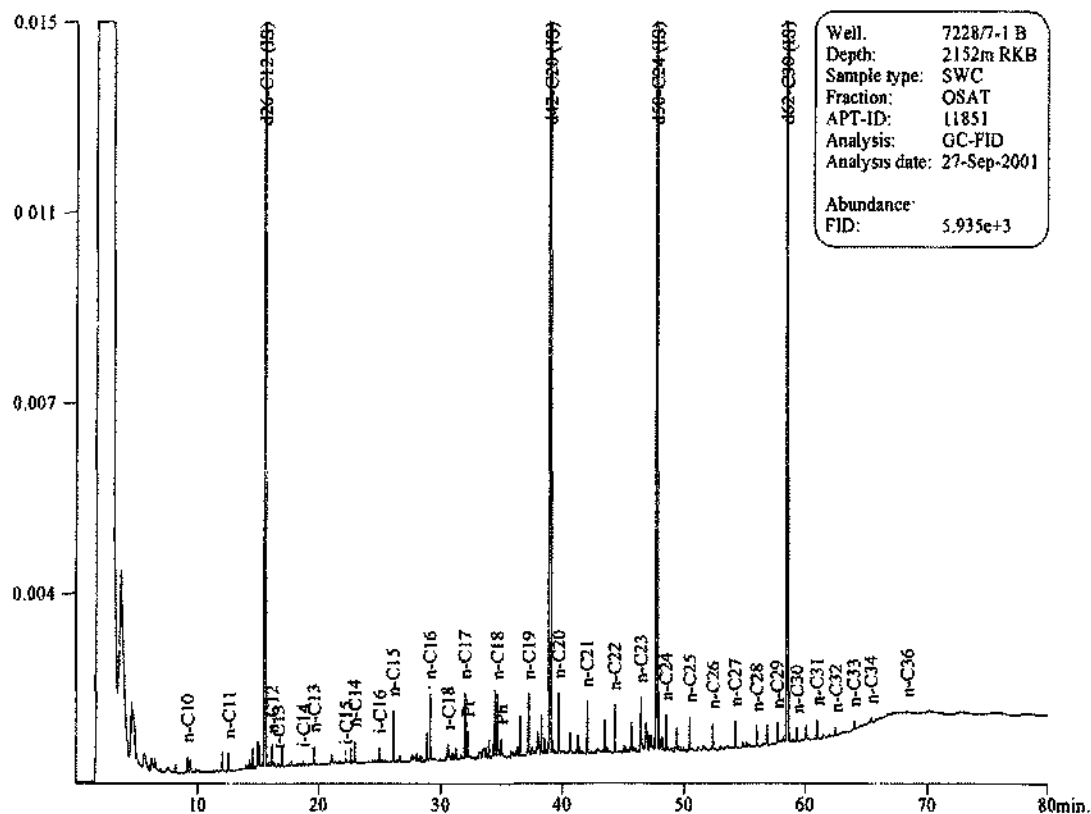


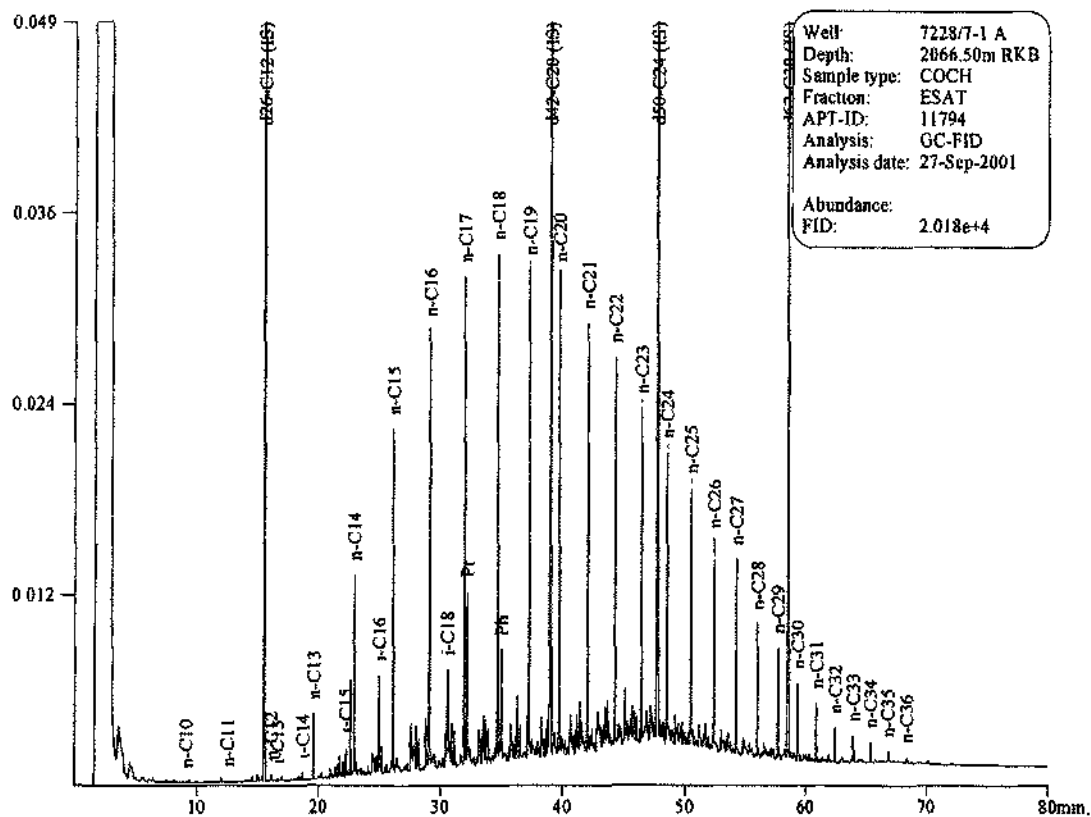
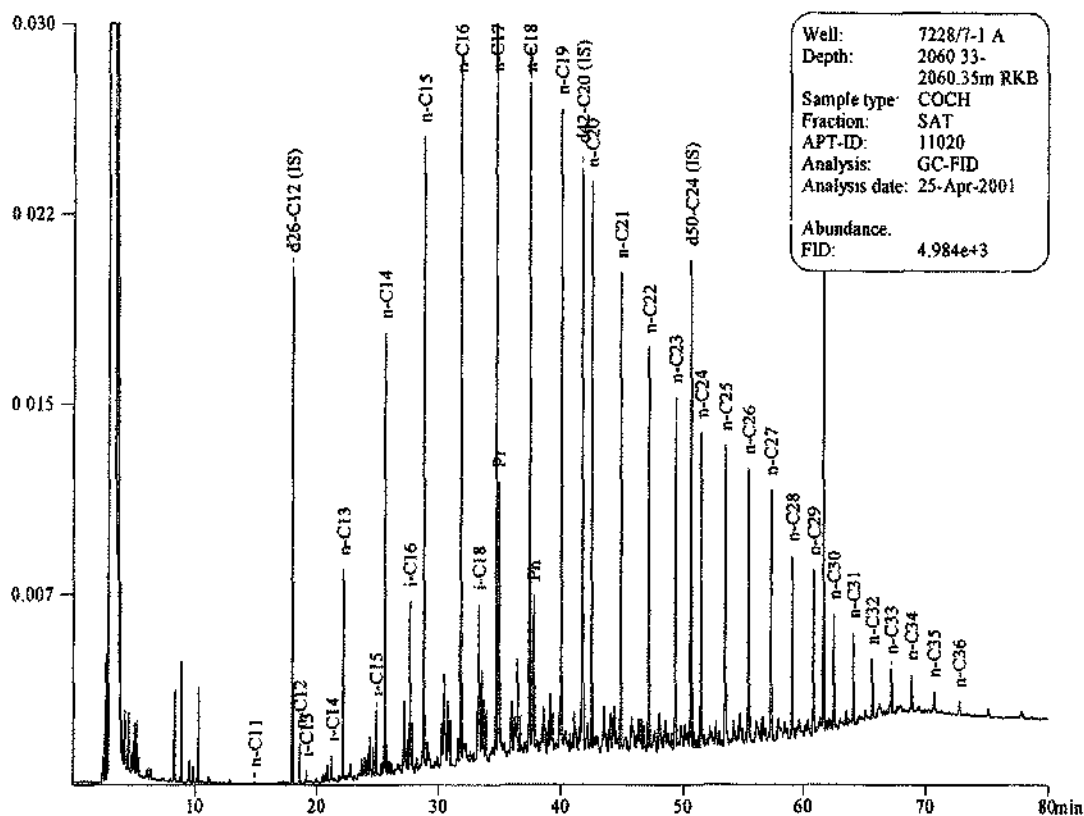
GC Chromatograms of Saturated Hydrocarbons

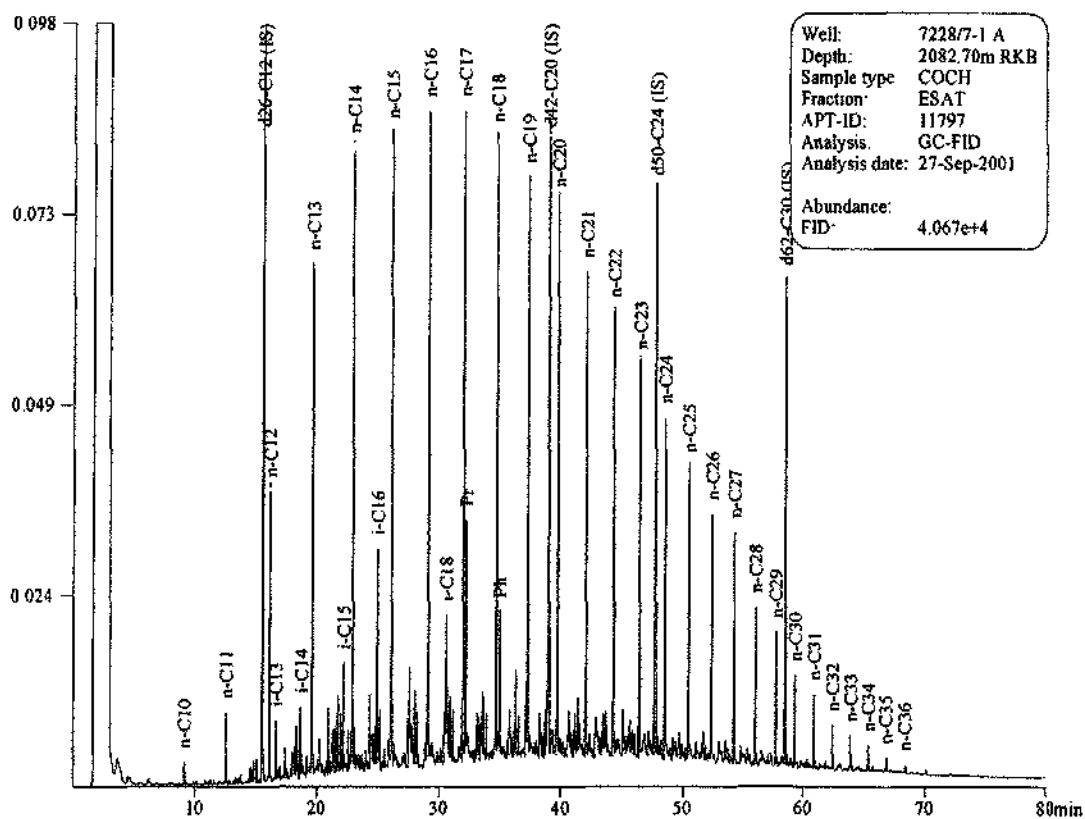
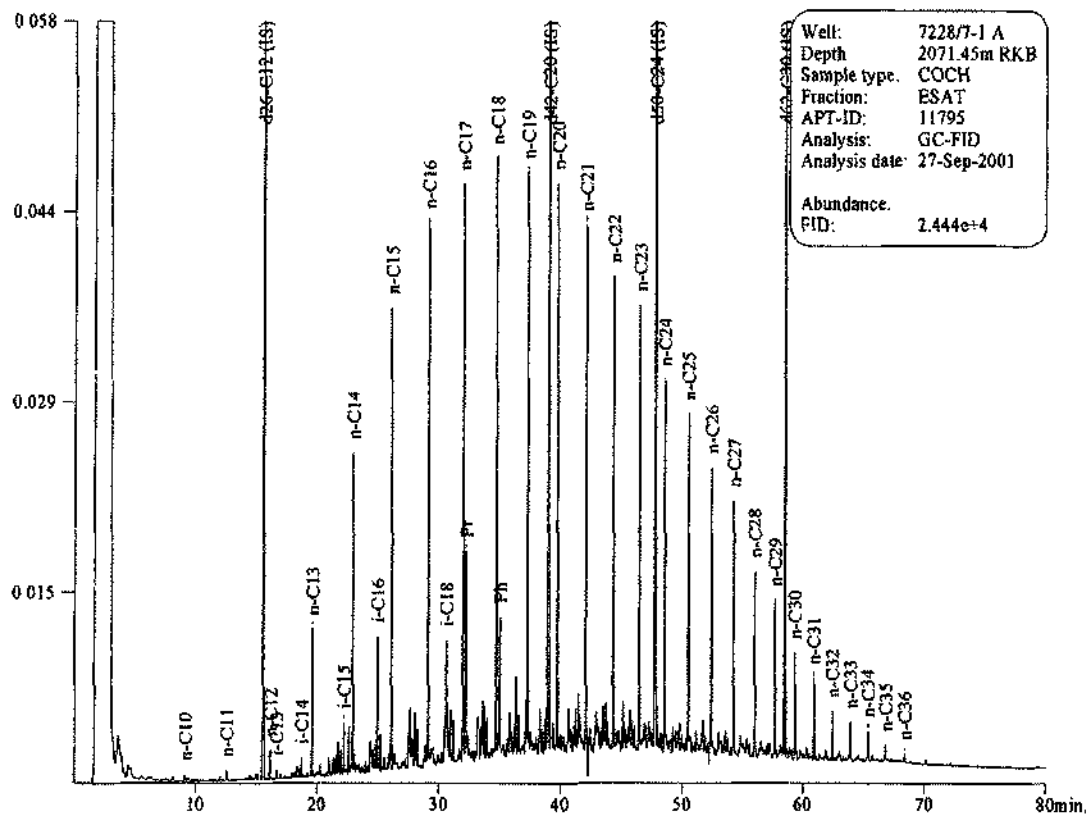


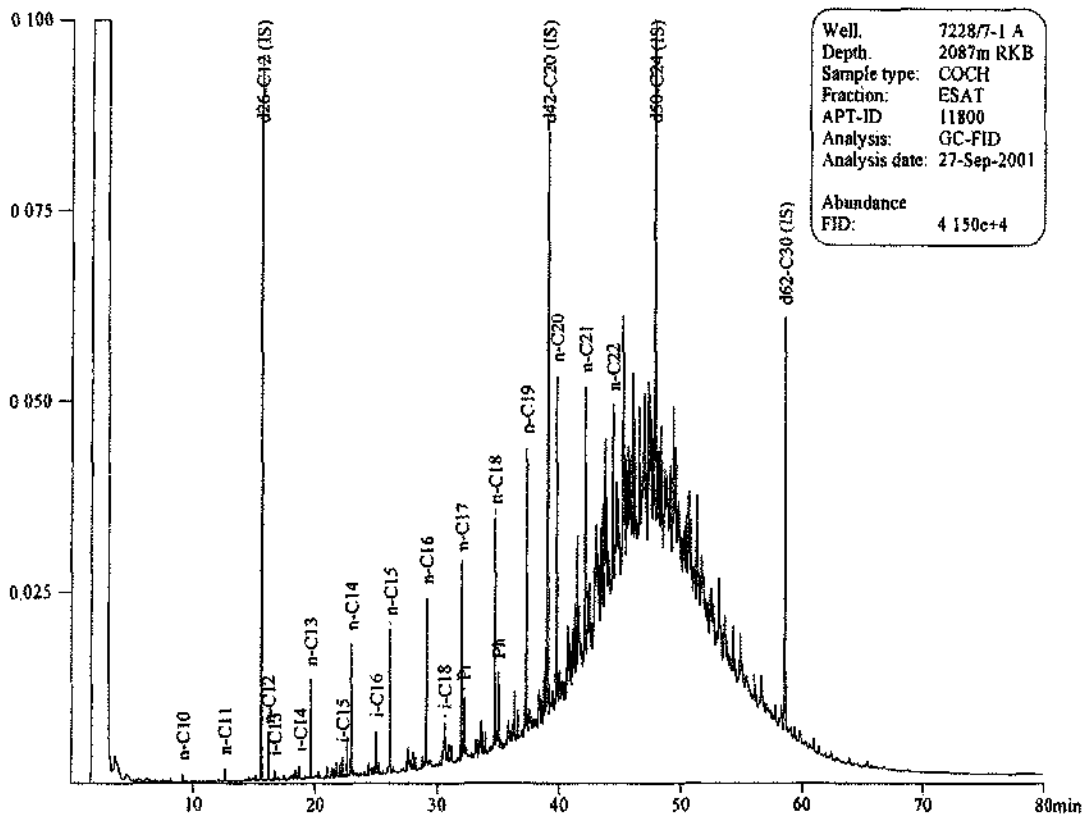
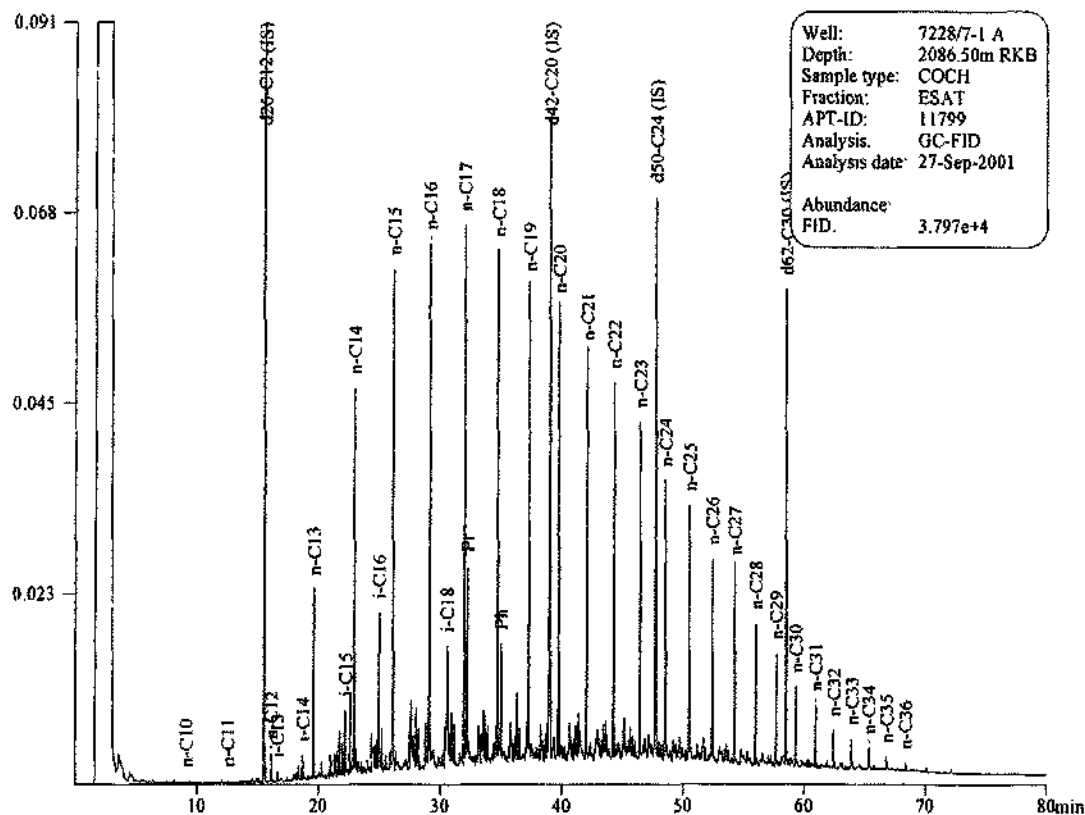


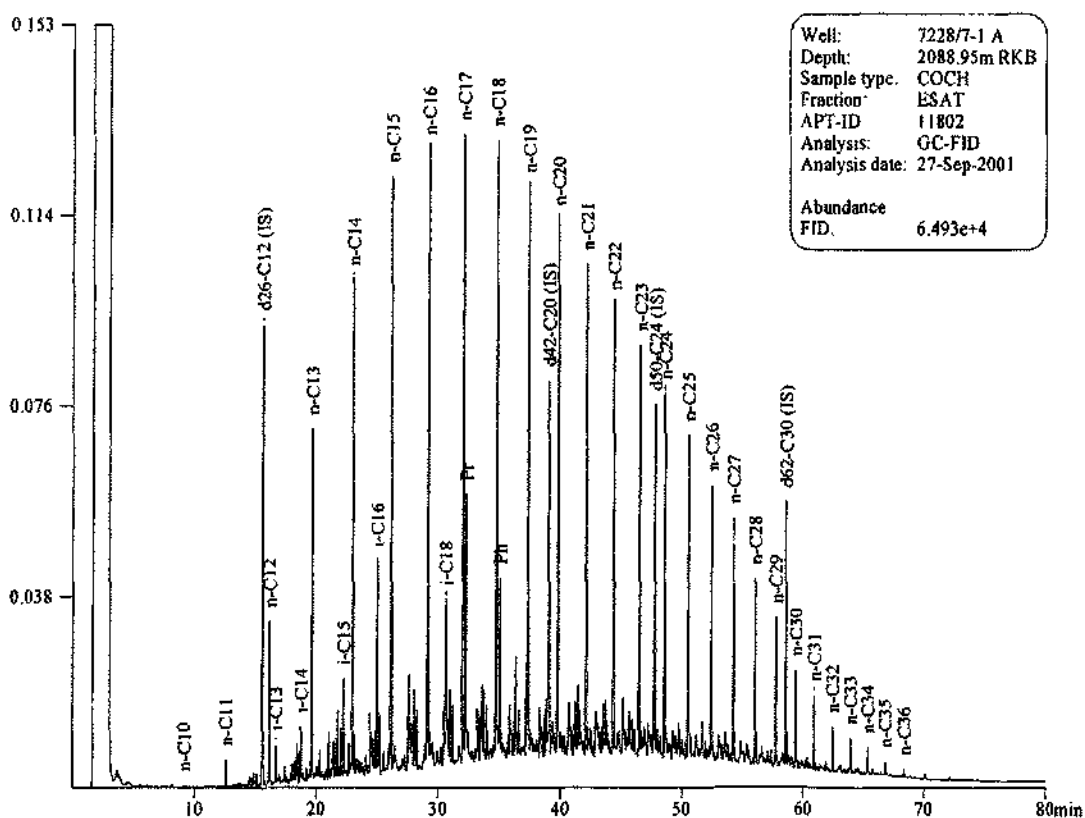
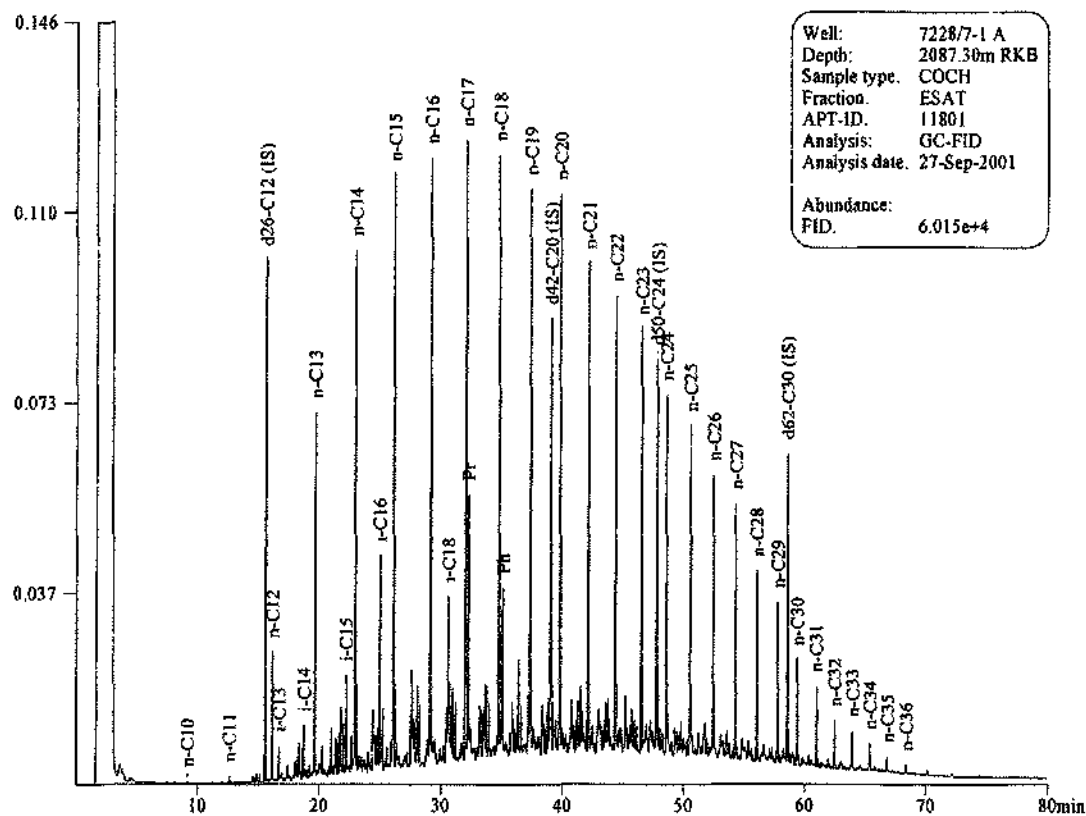


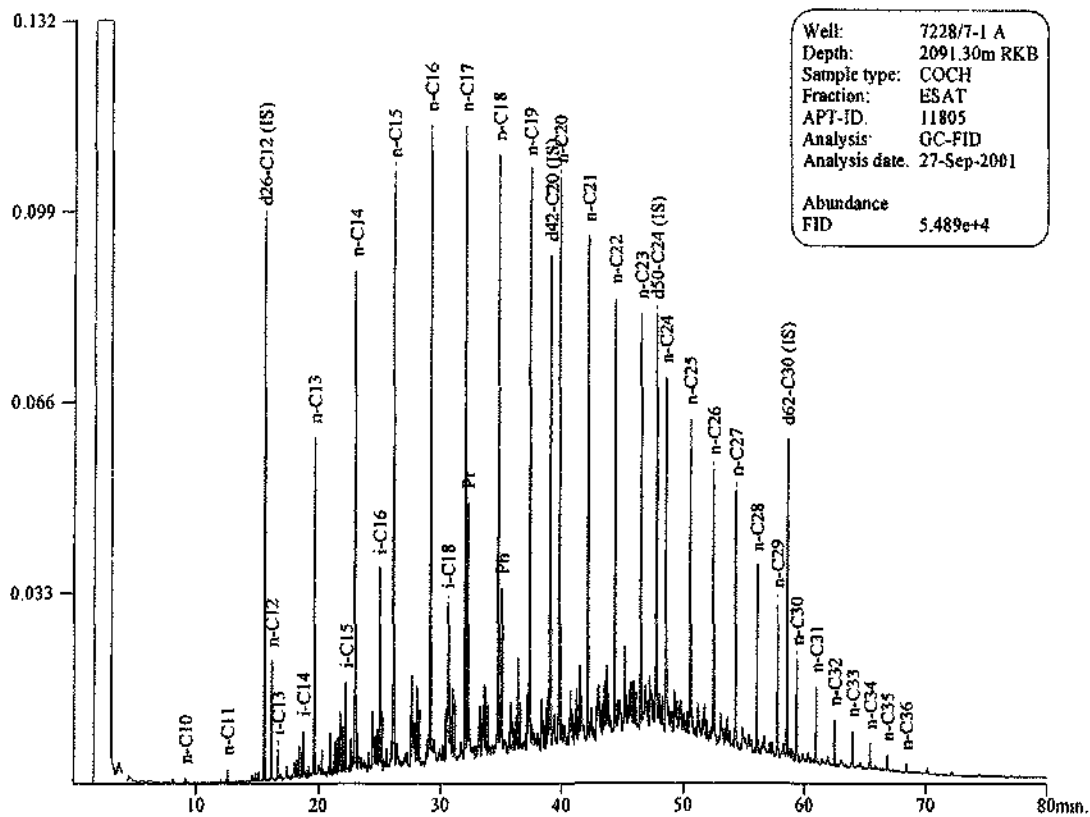
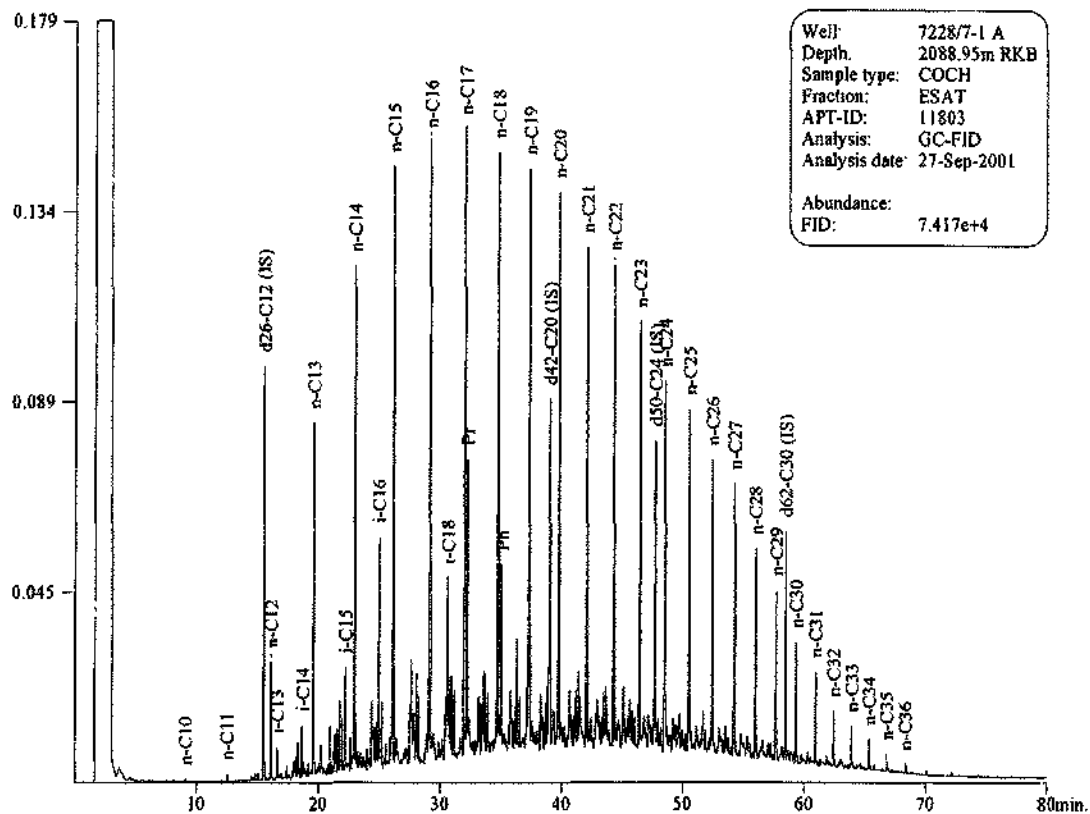


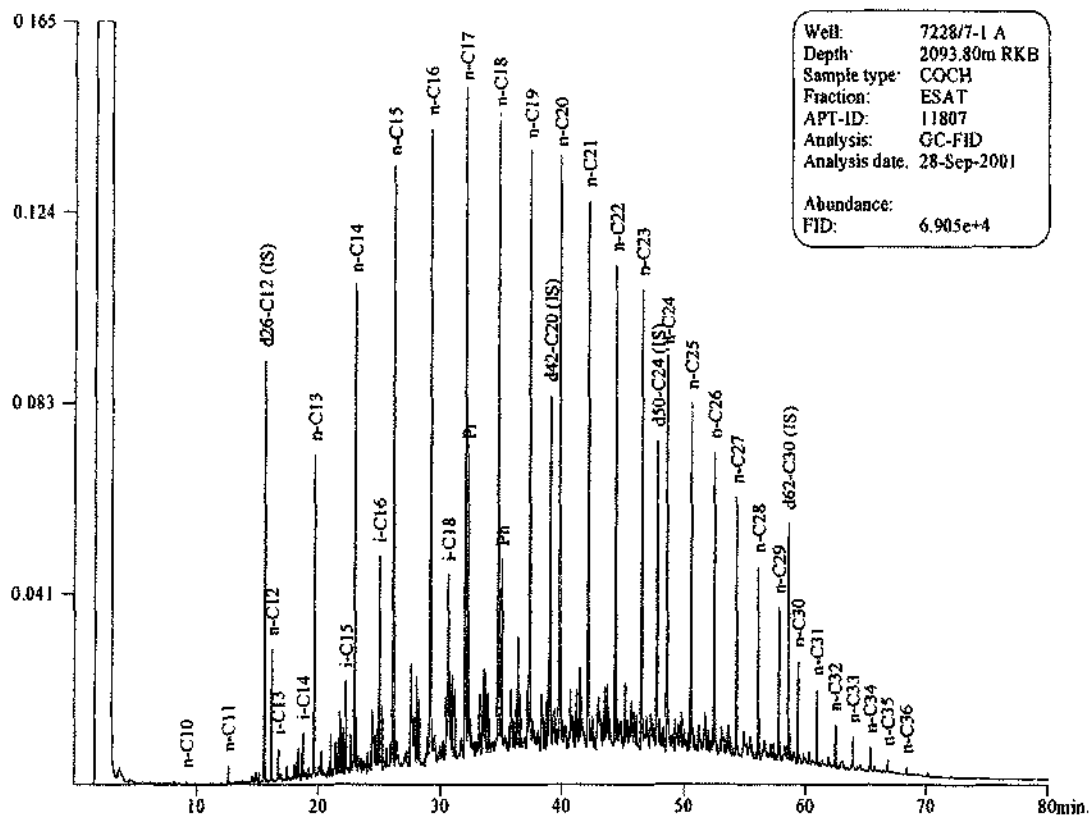
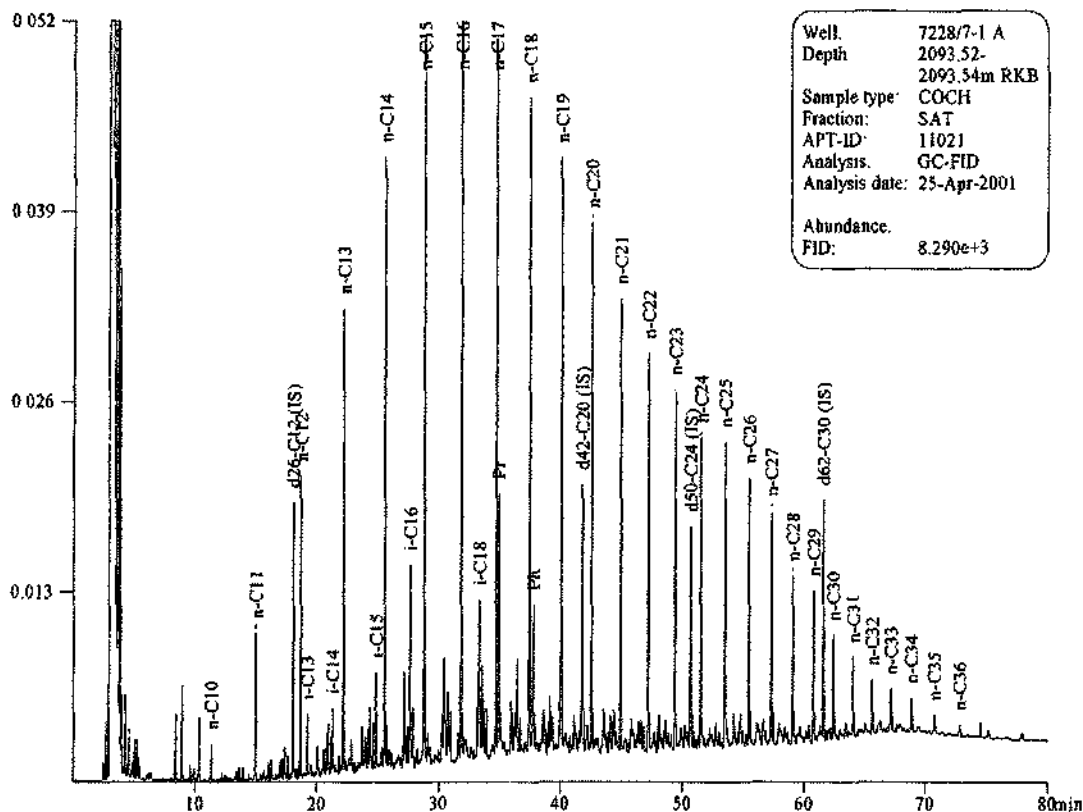




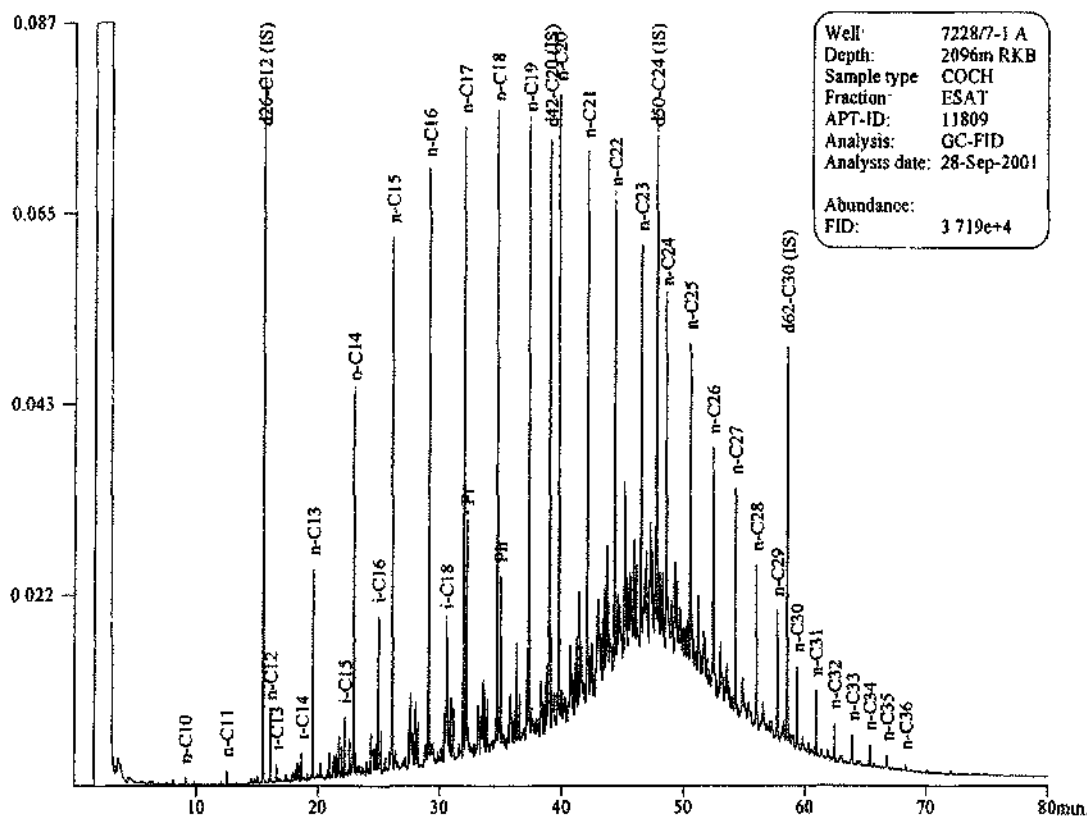
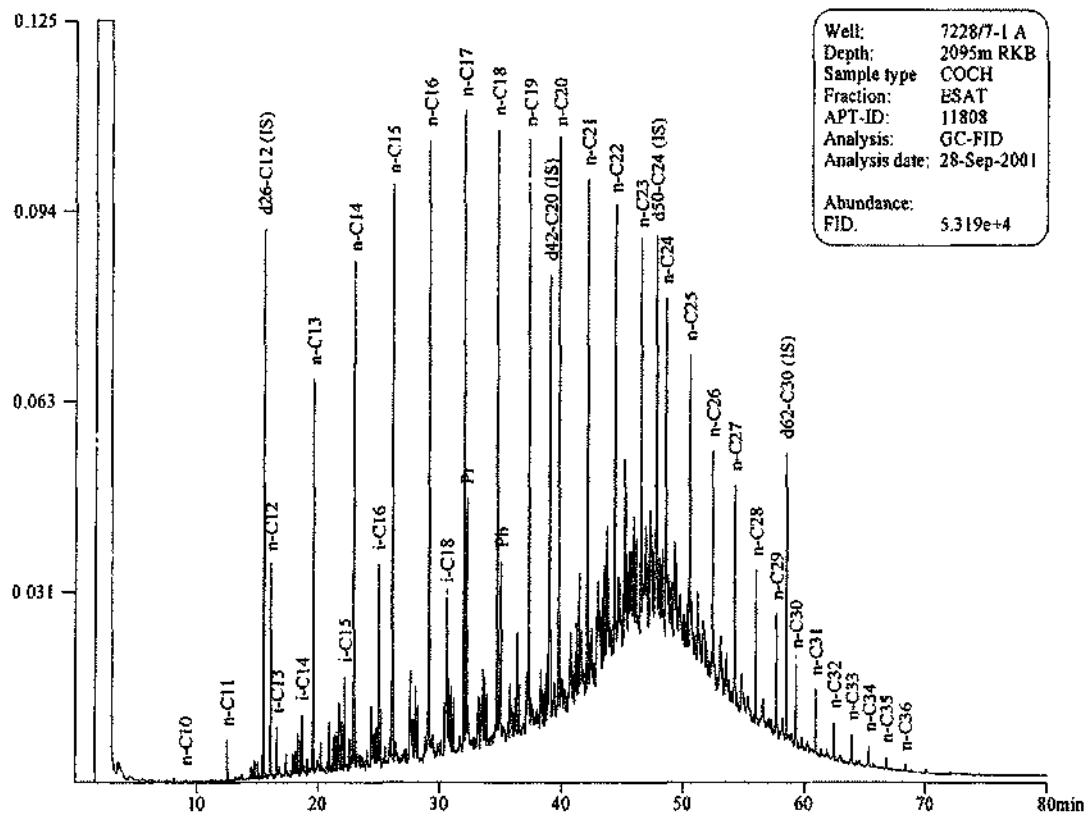


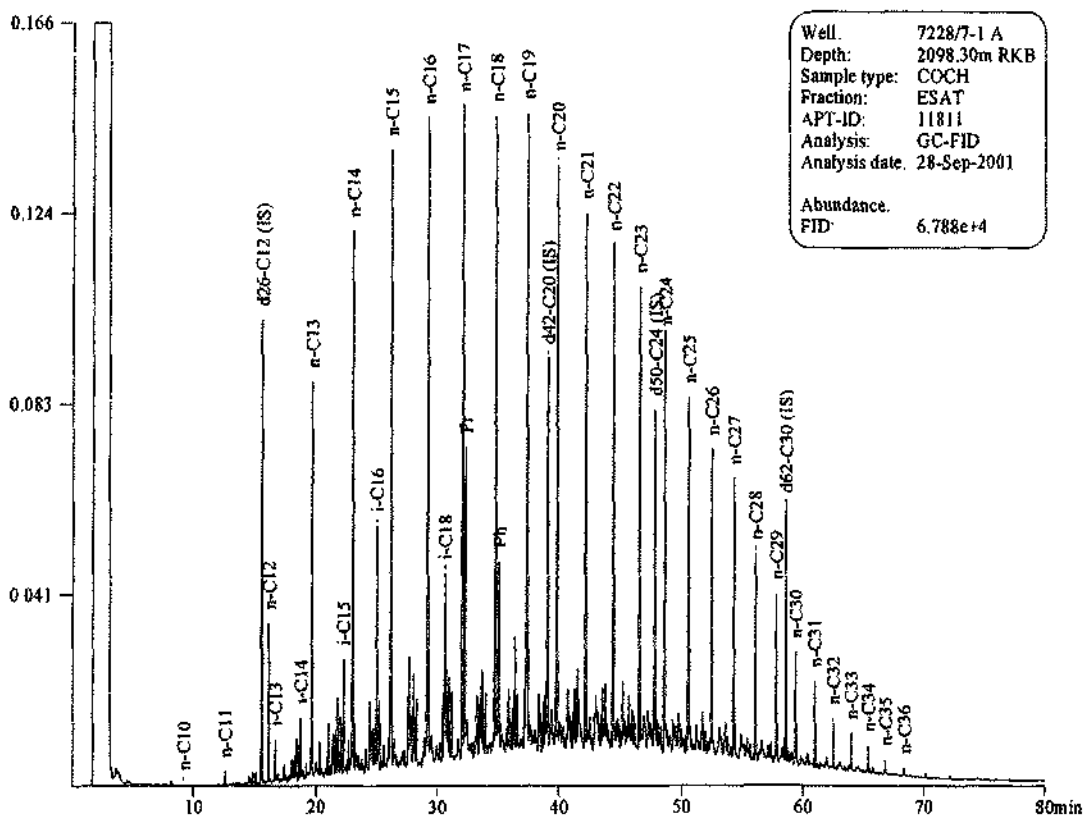
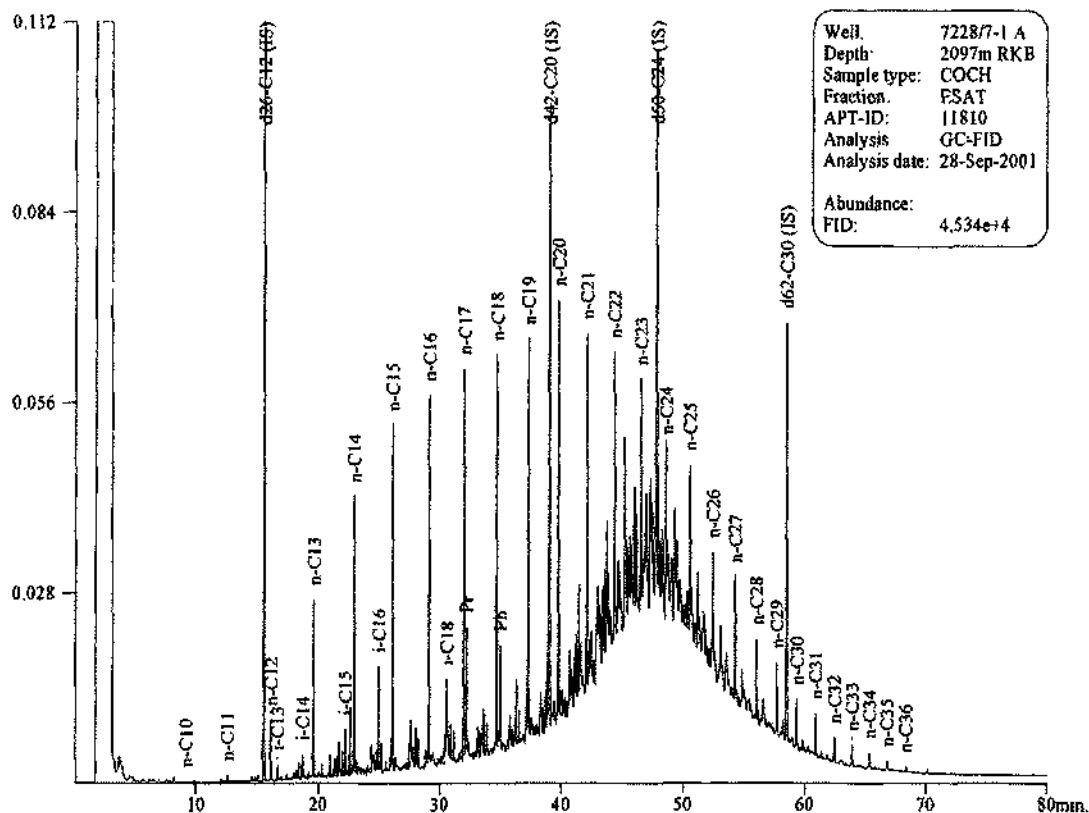


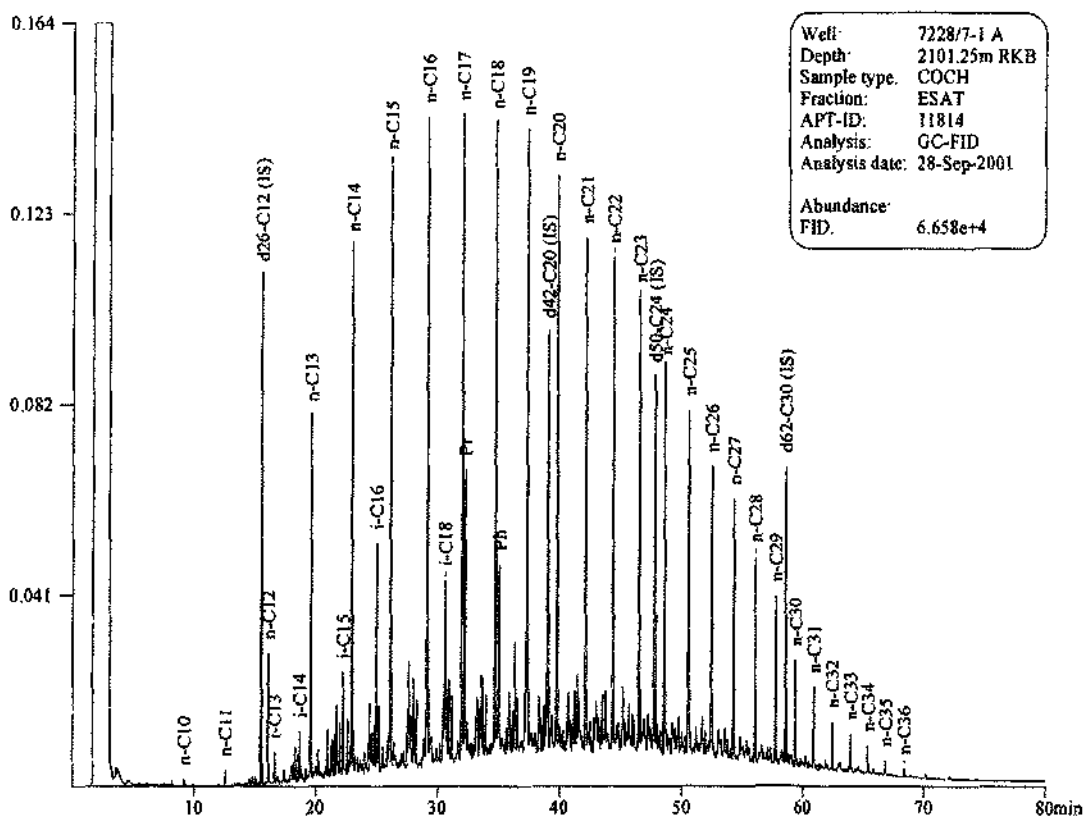
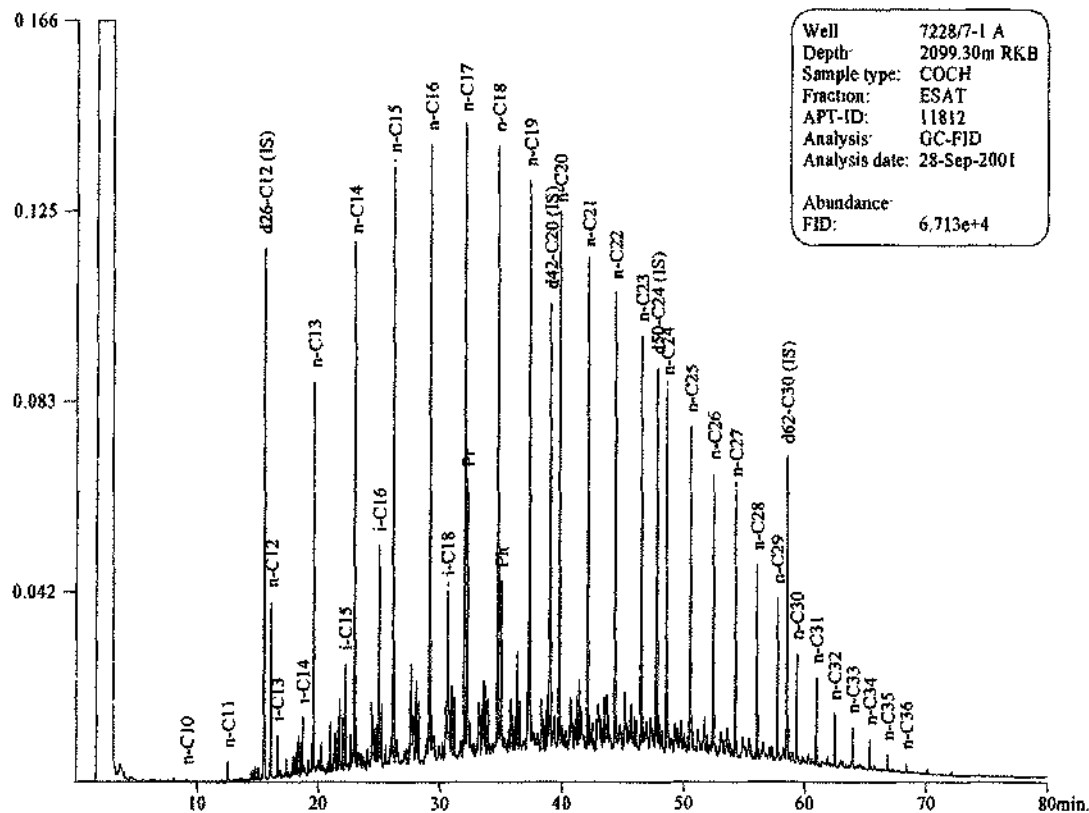


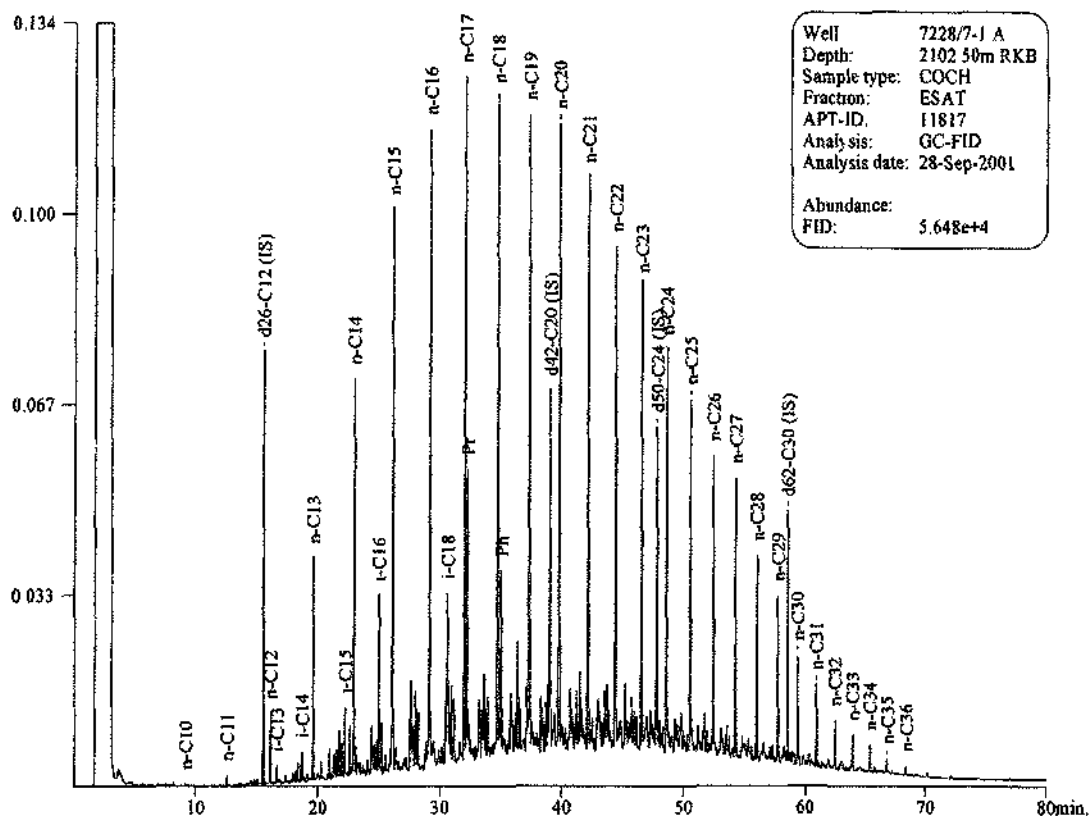
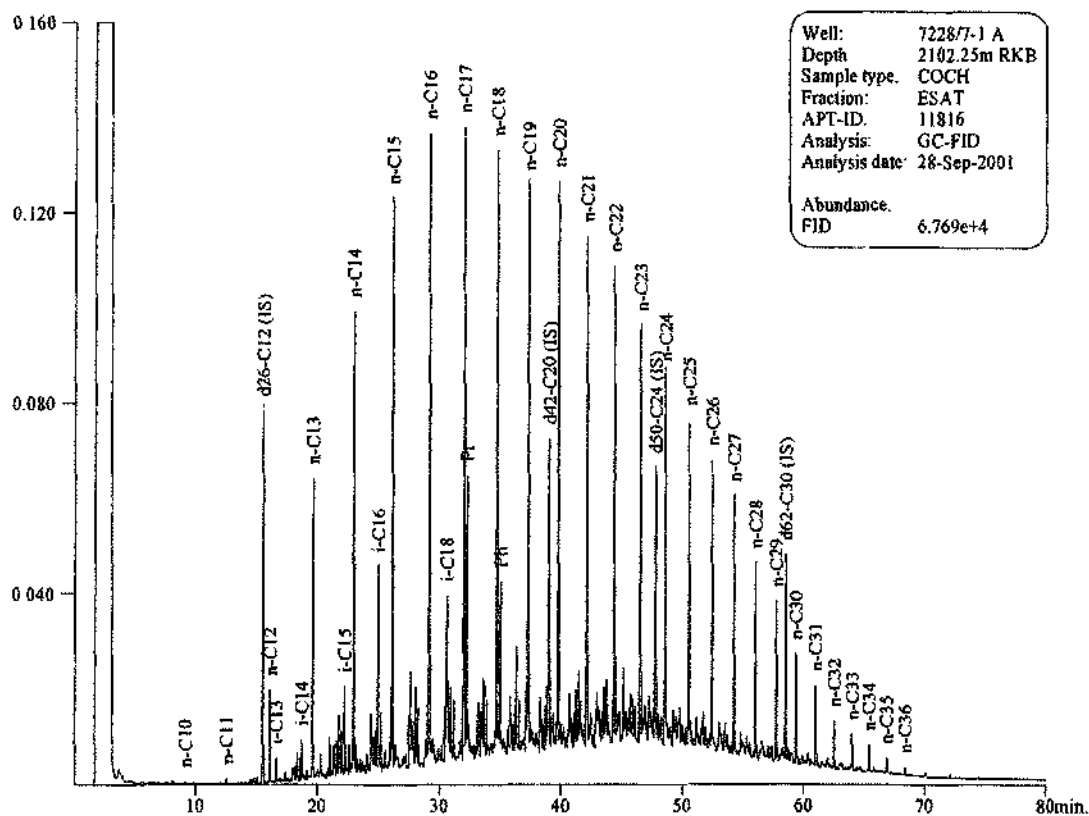


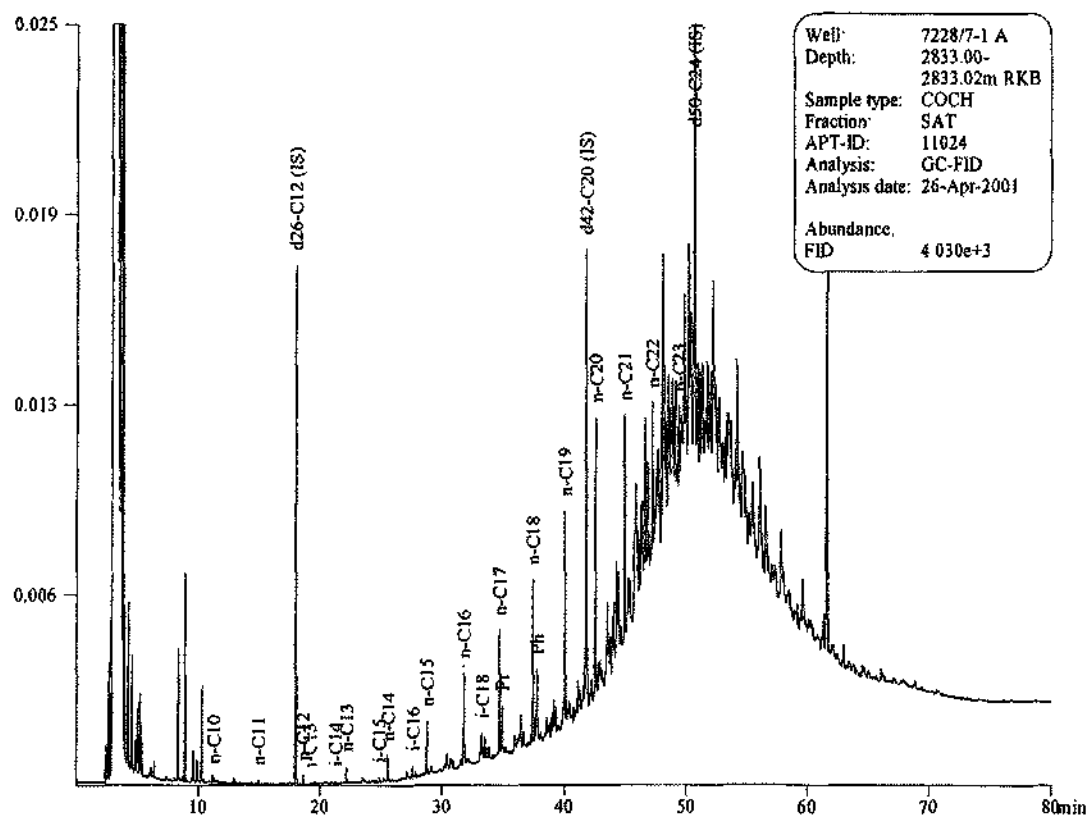
Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3





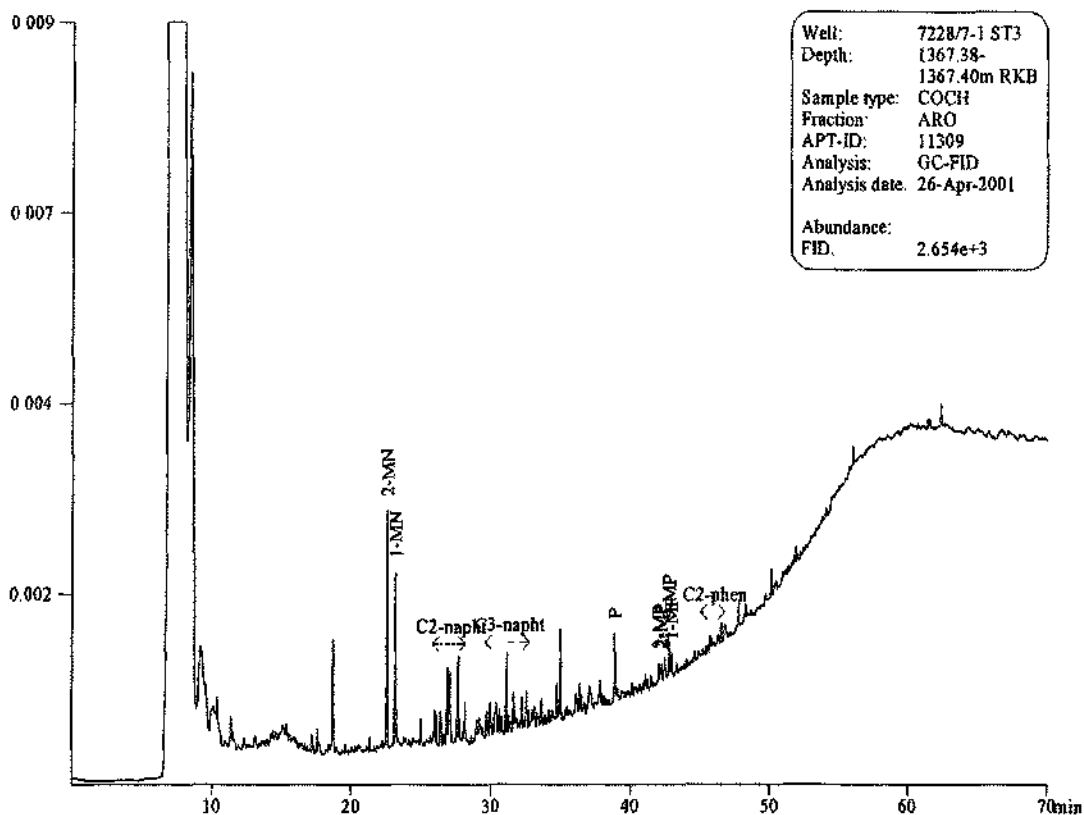
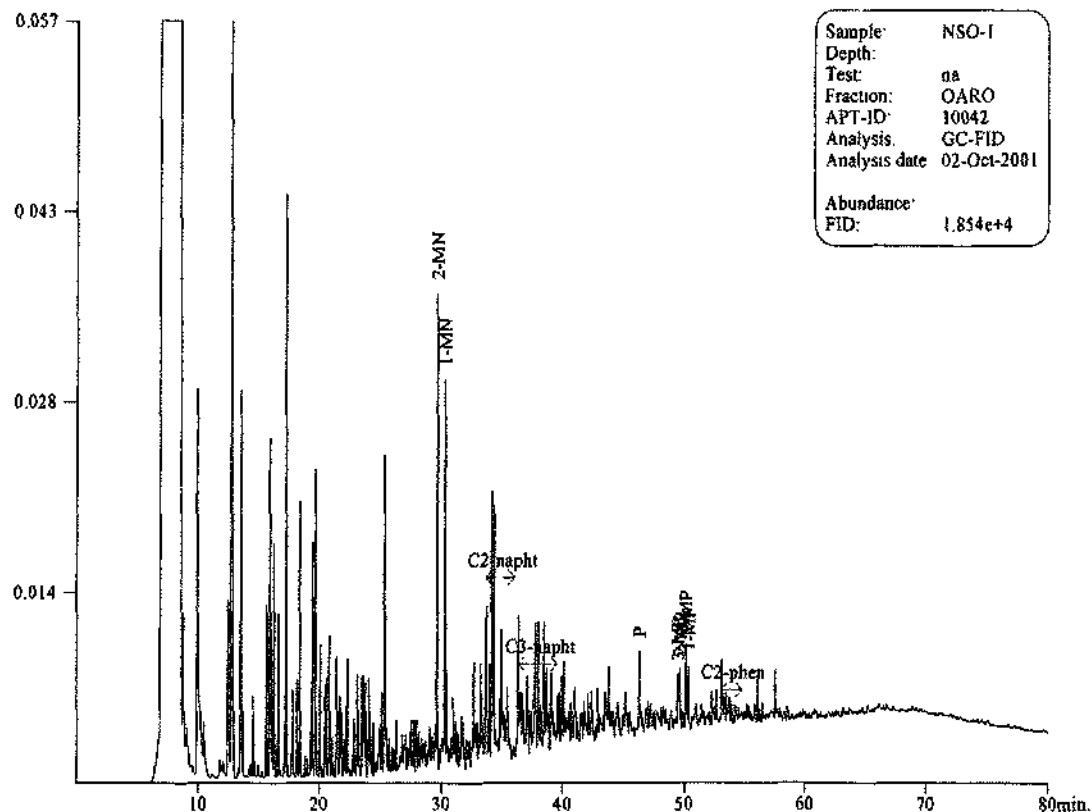


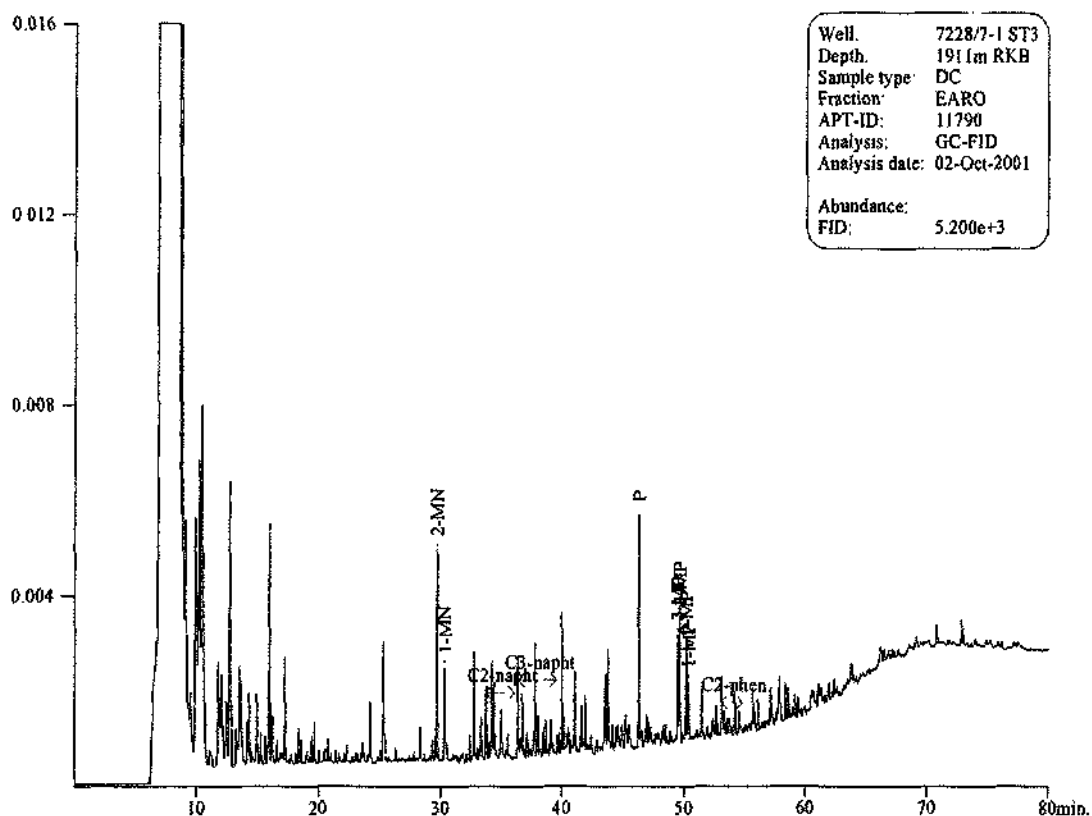
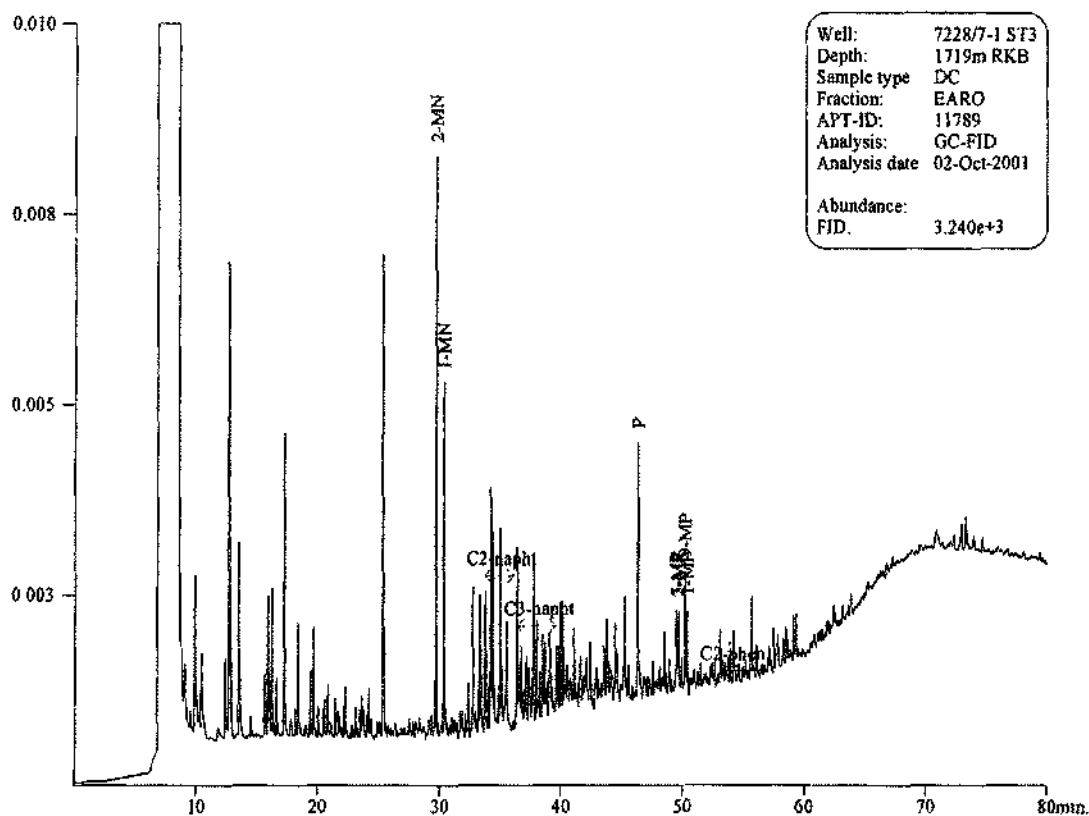


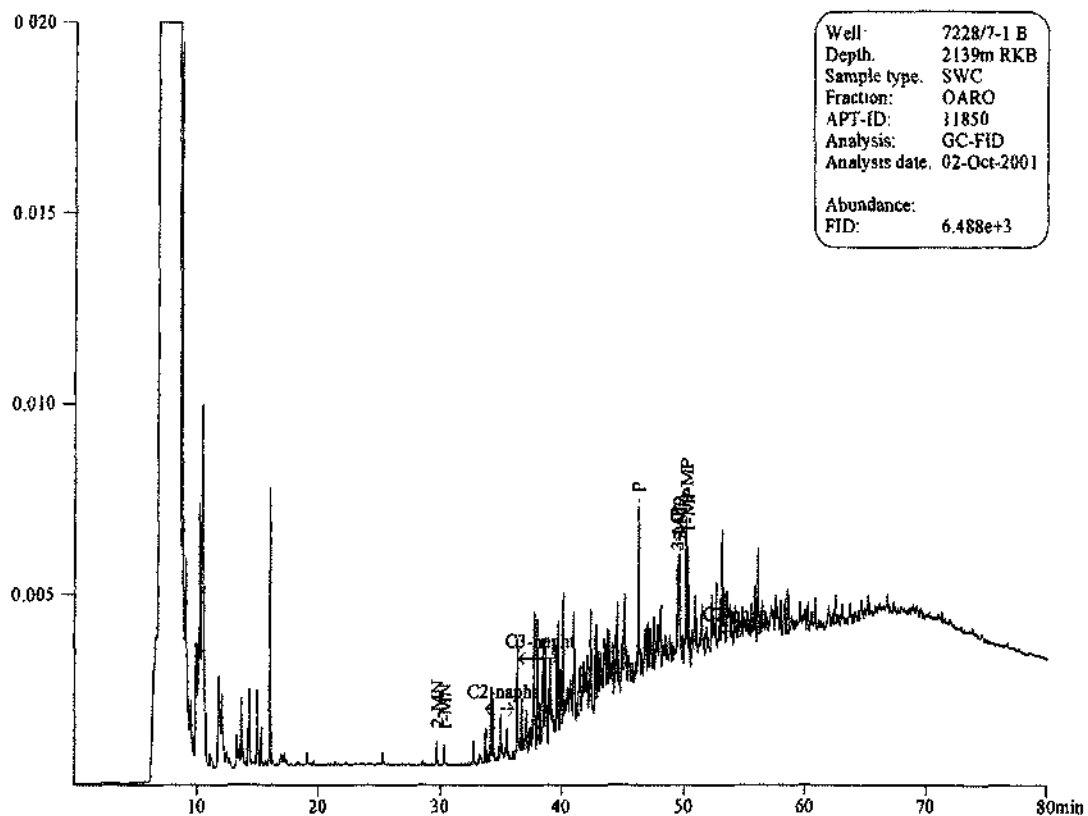
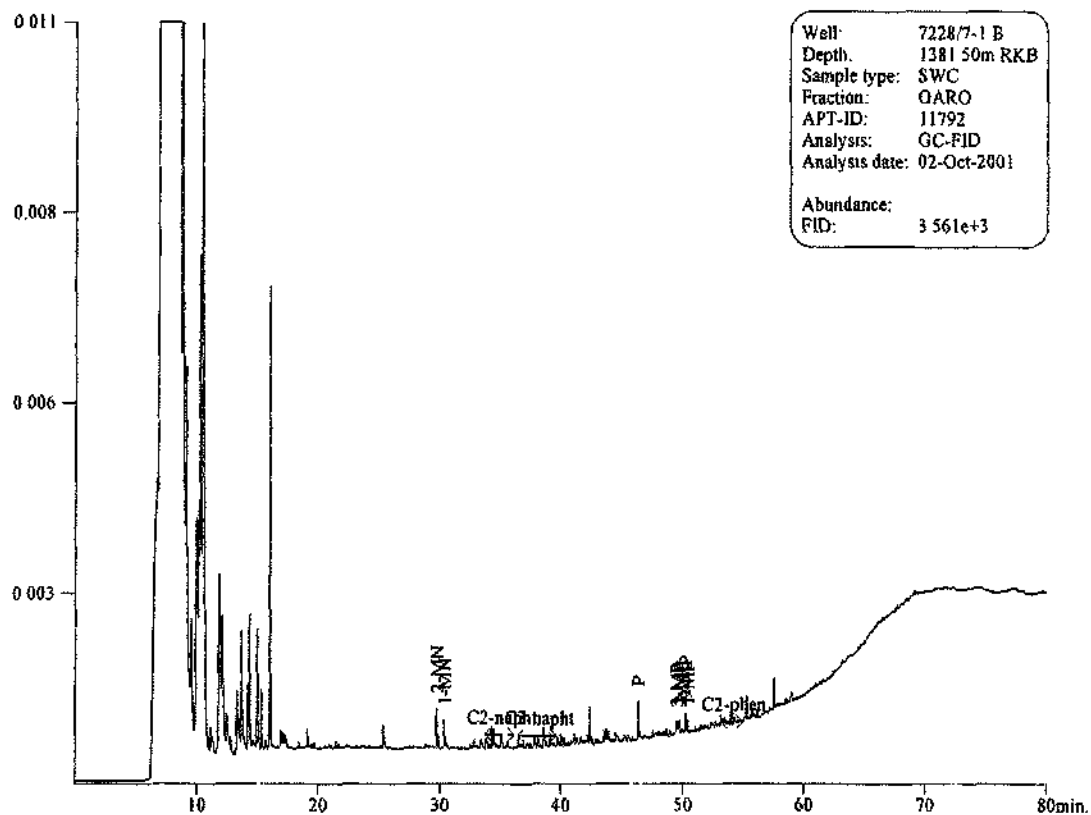


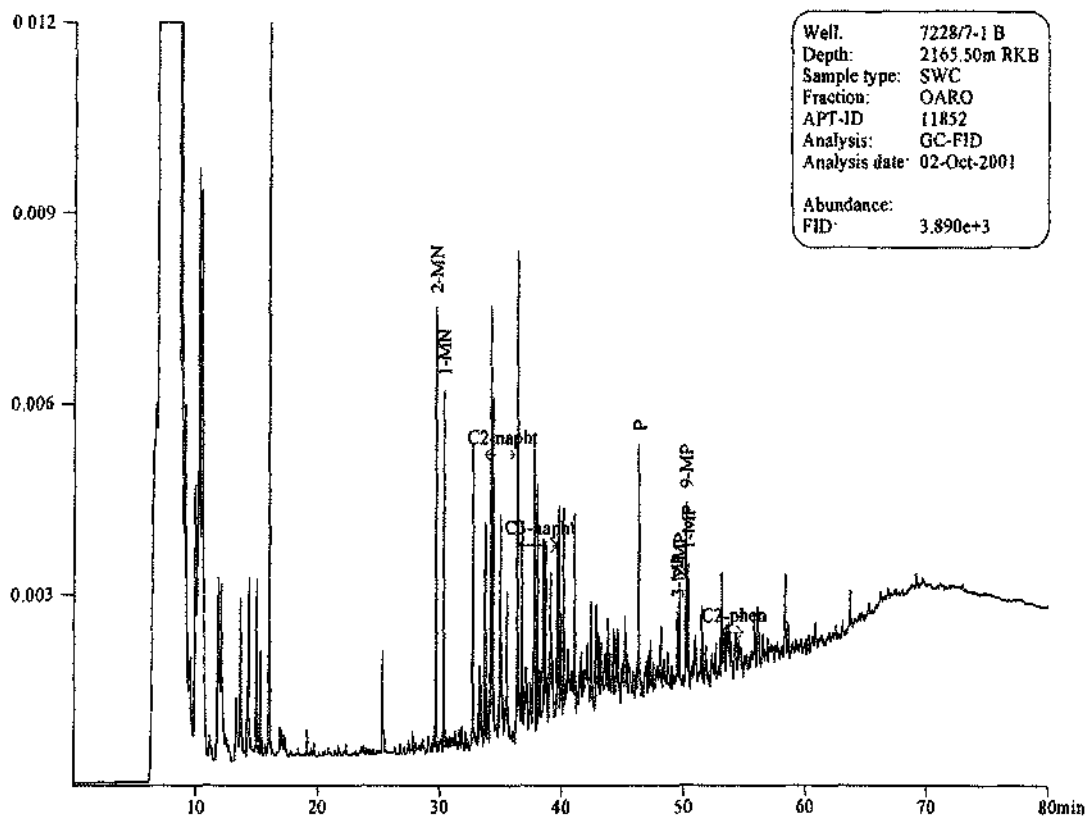
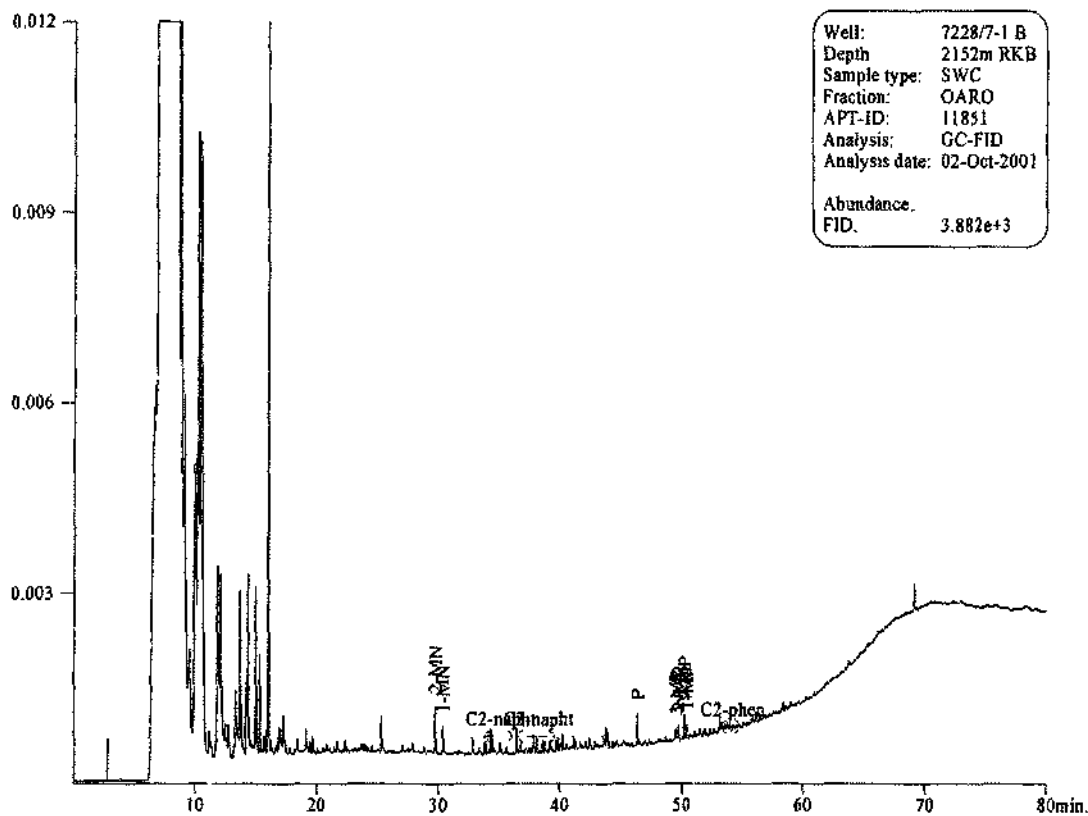


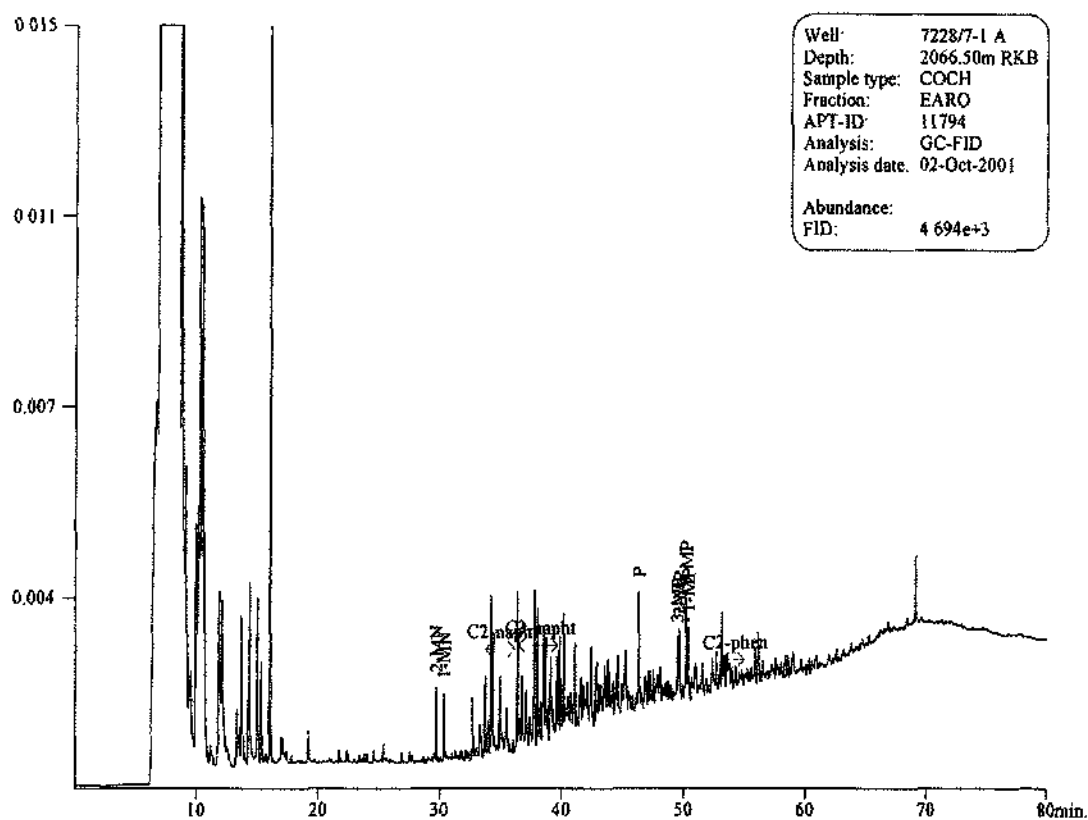
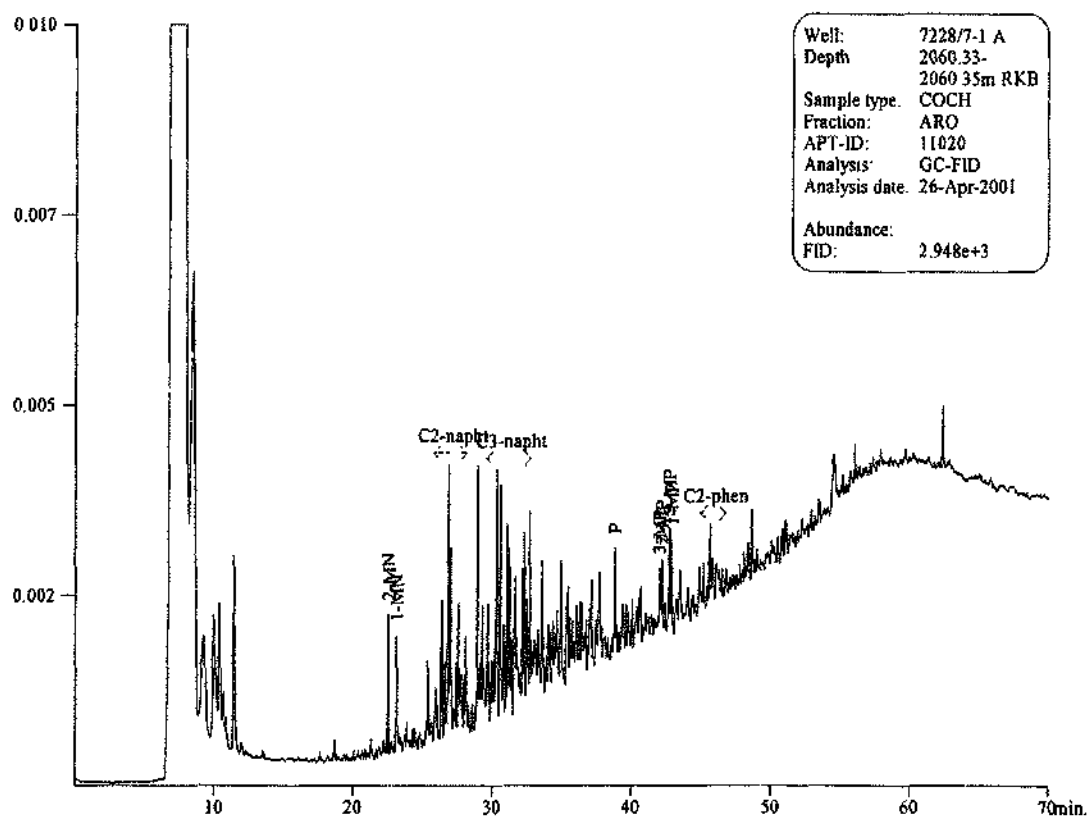
GC Chromatograms of Aromatic Hydrocarbons



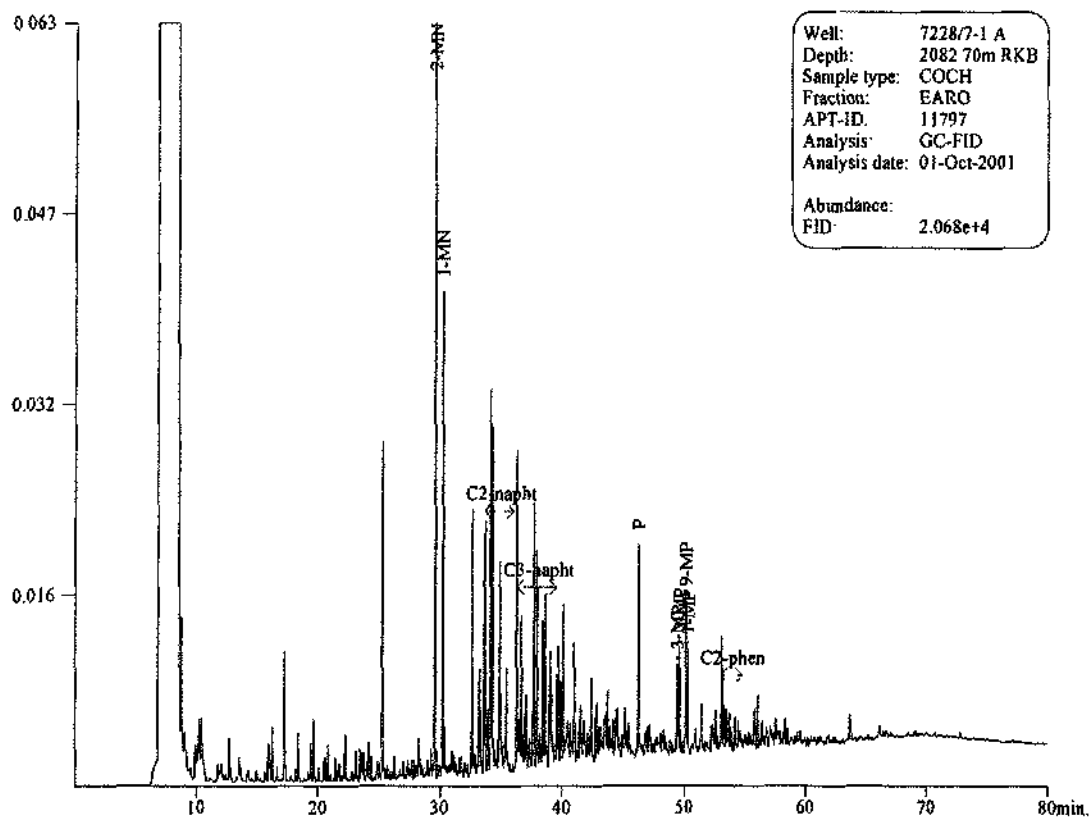
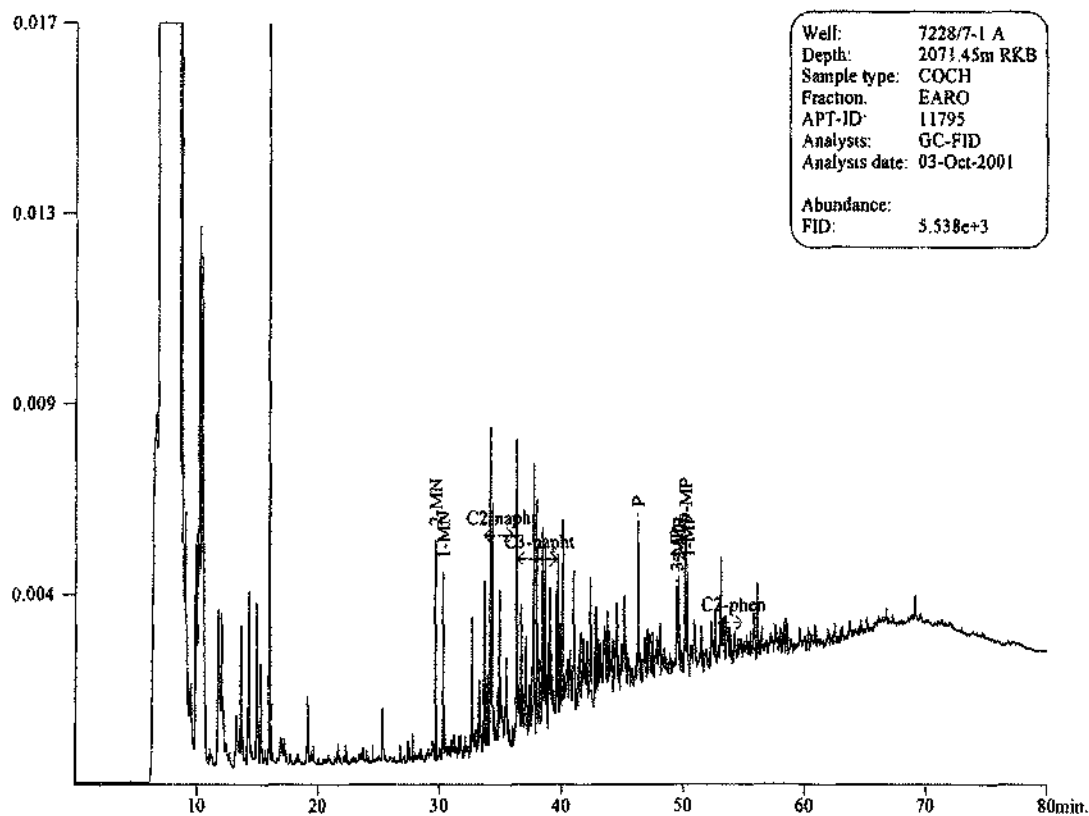


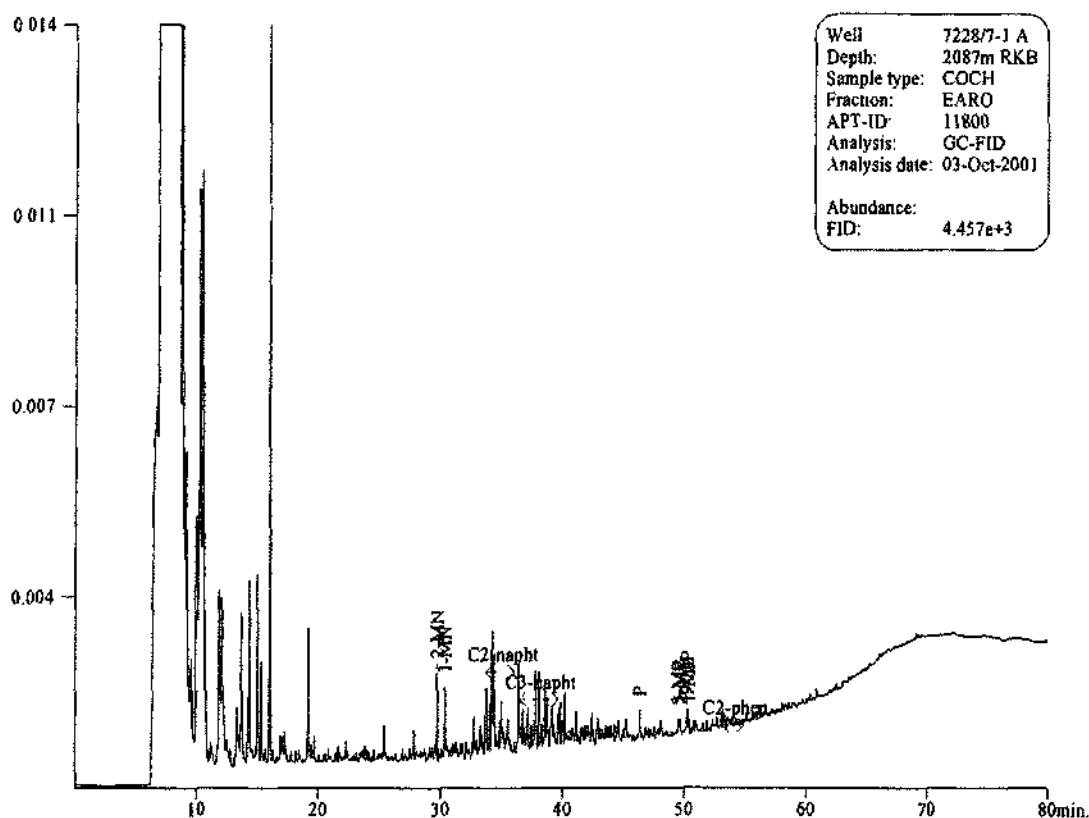
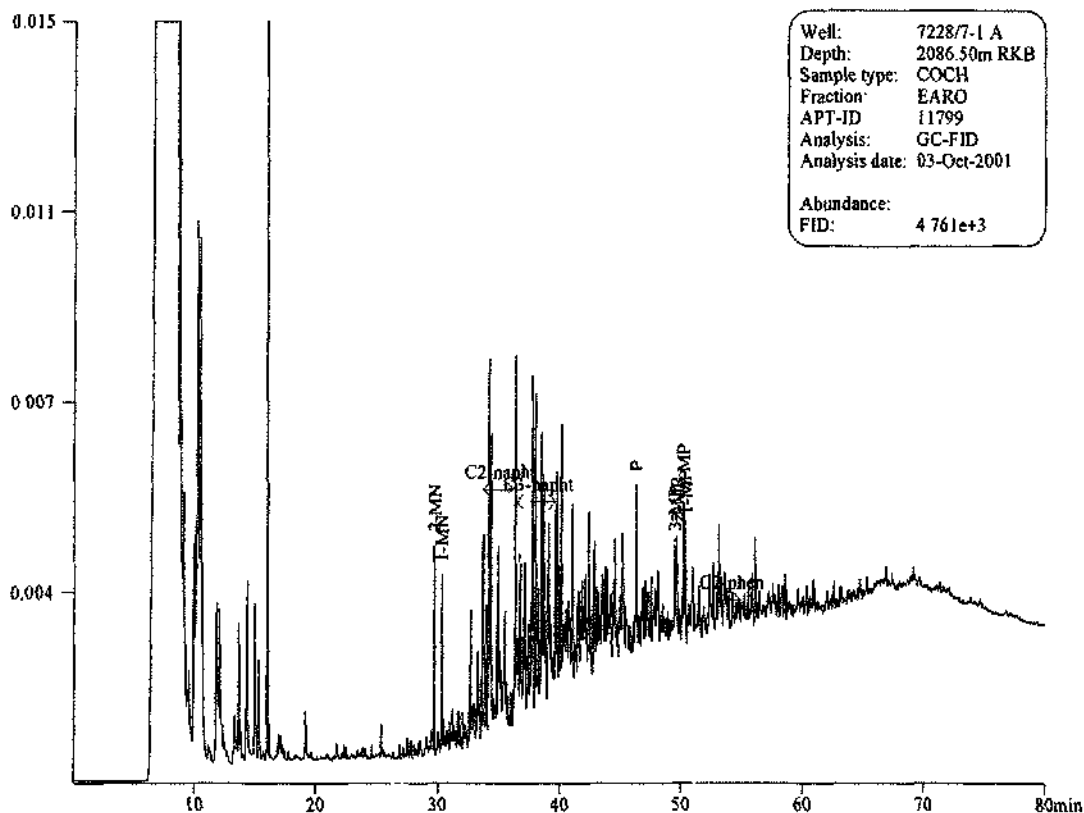


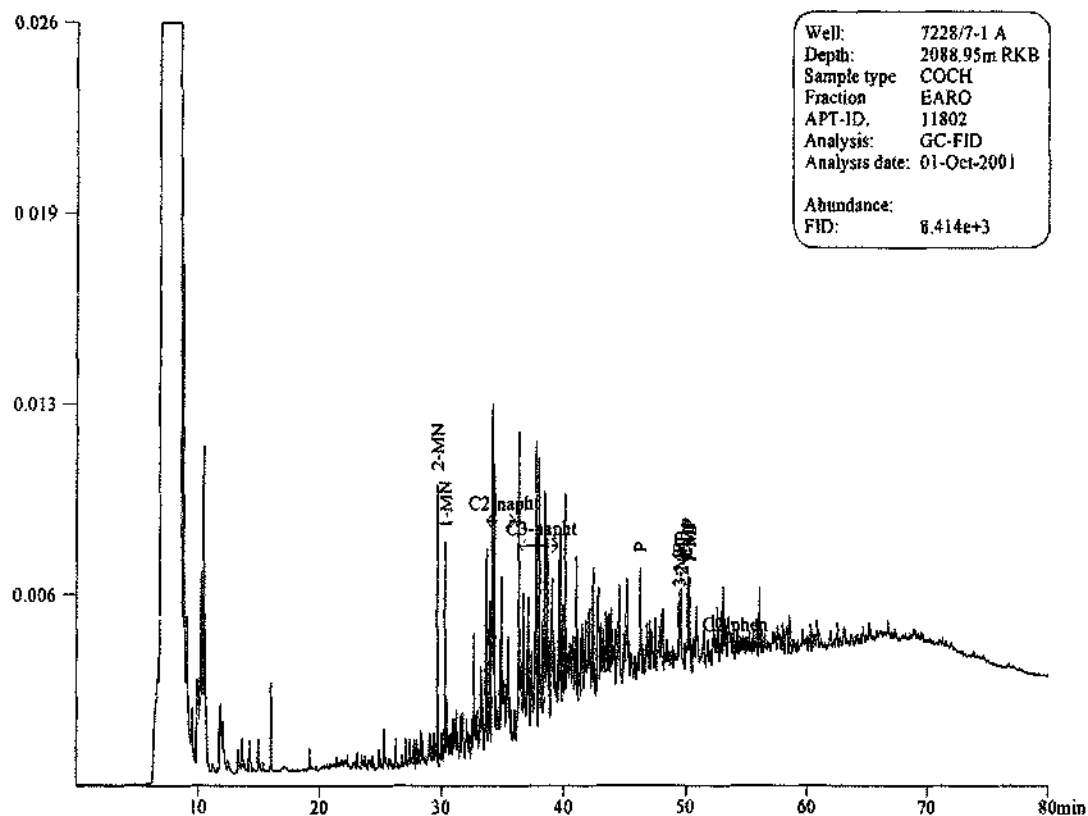
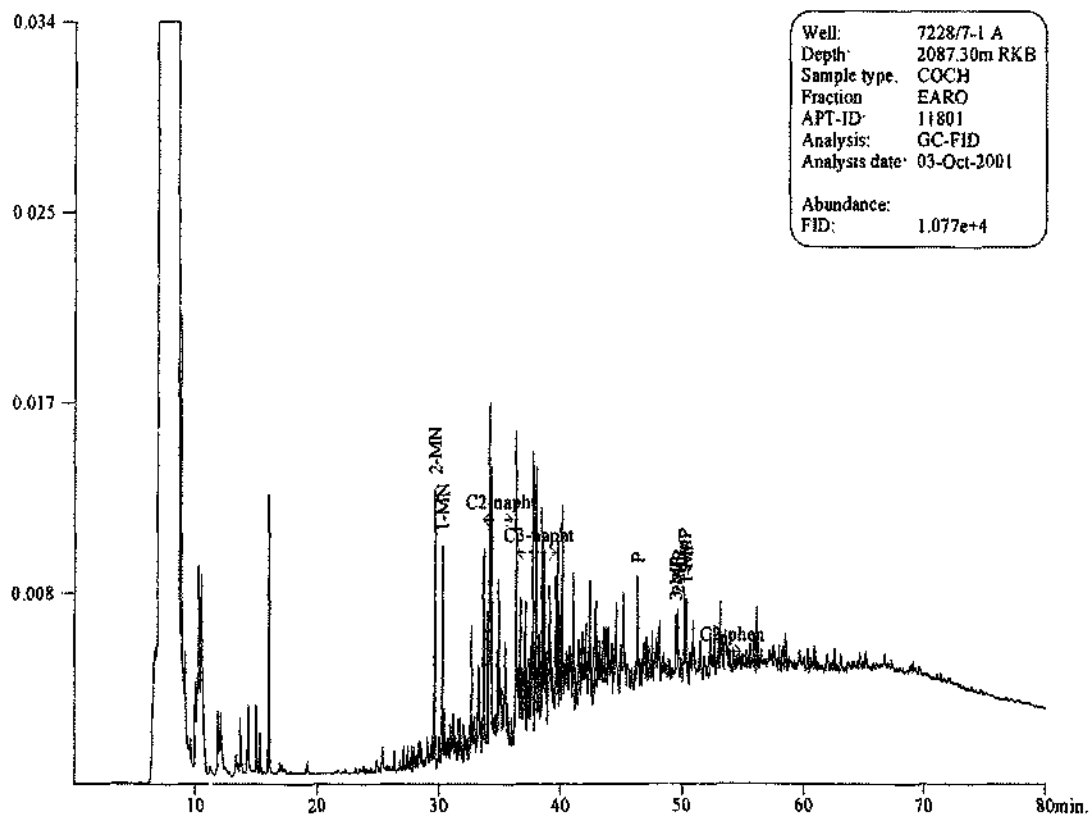




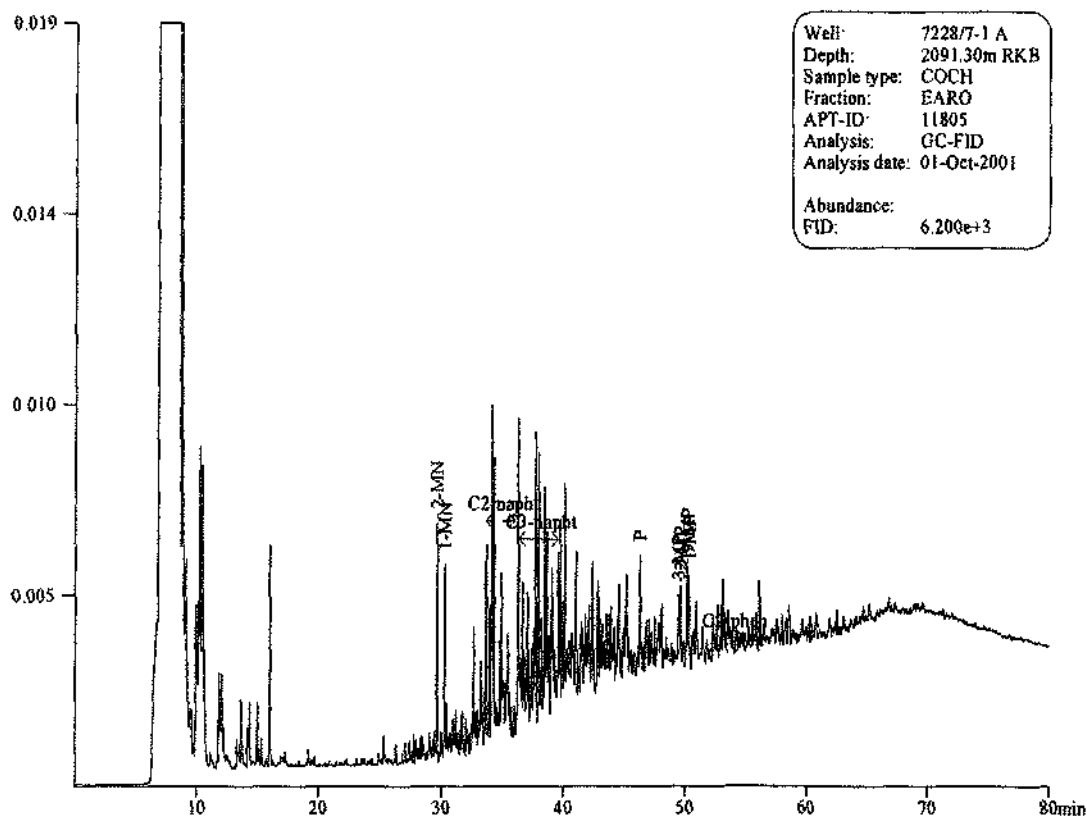
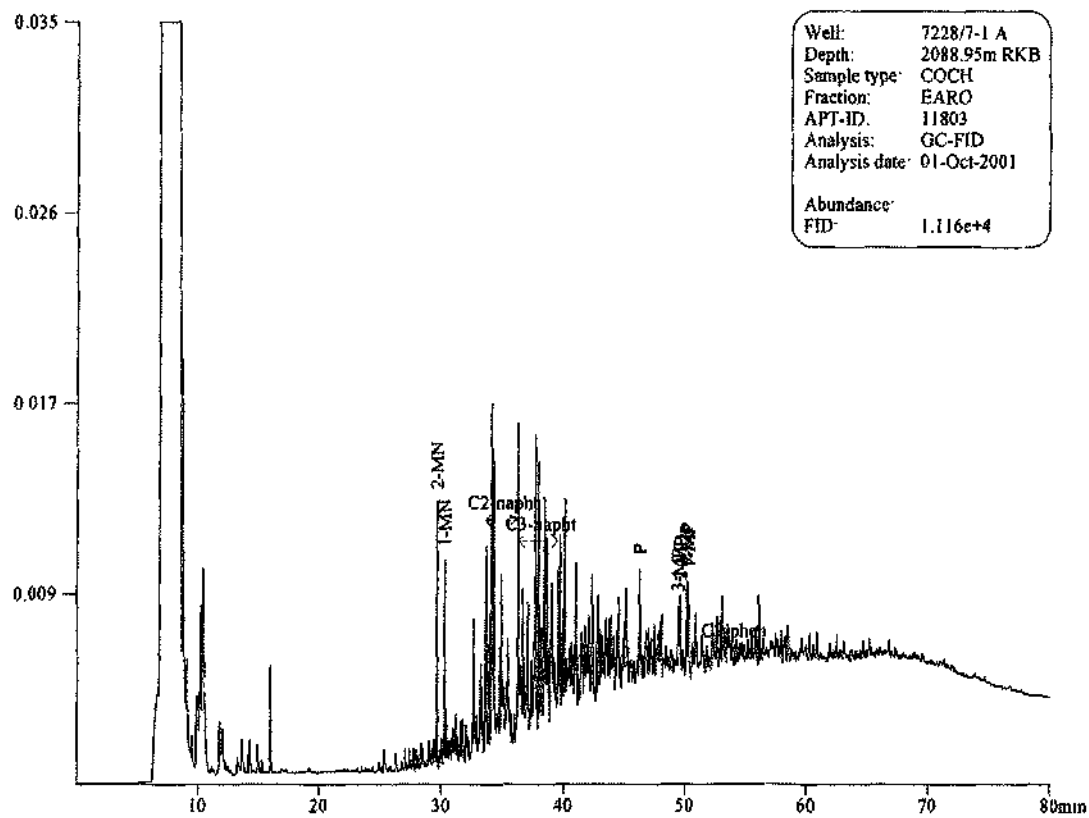
Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3

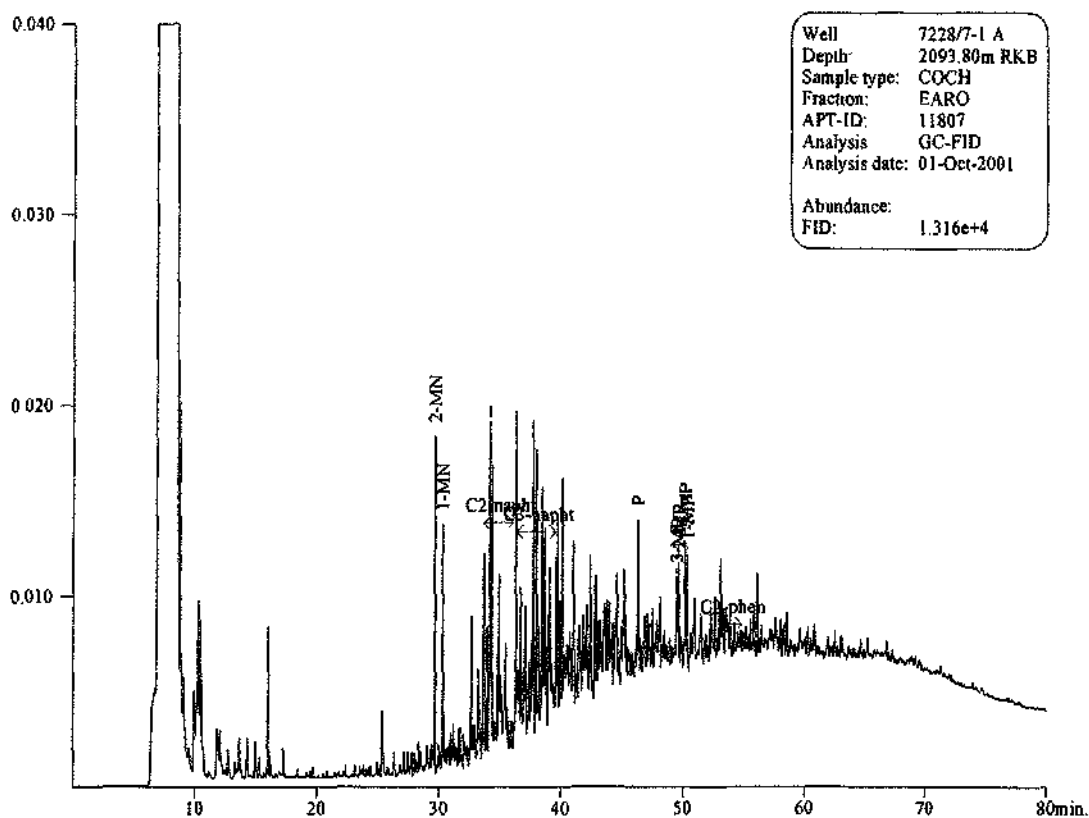
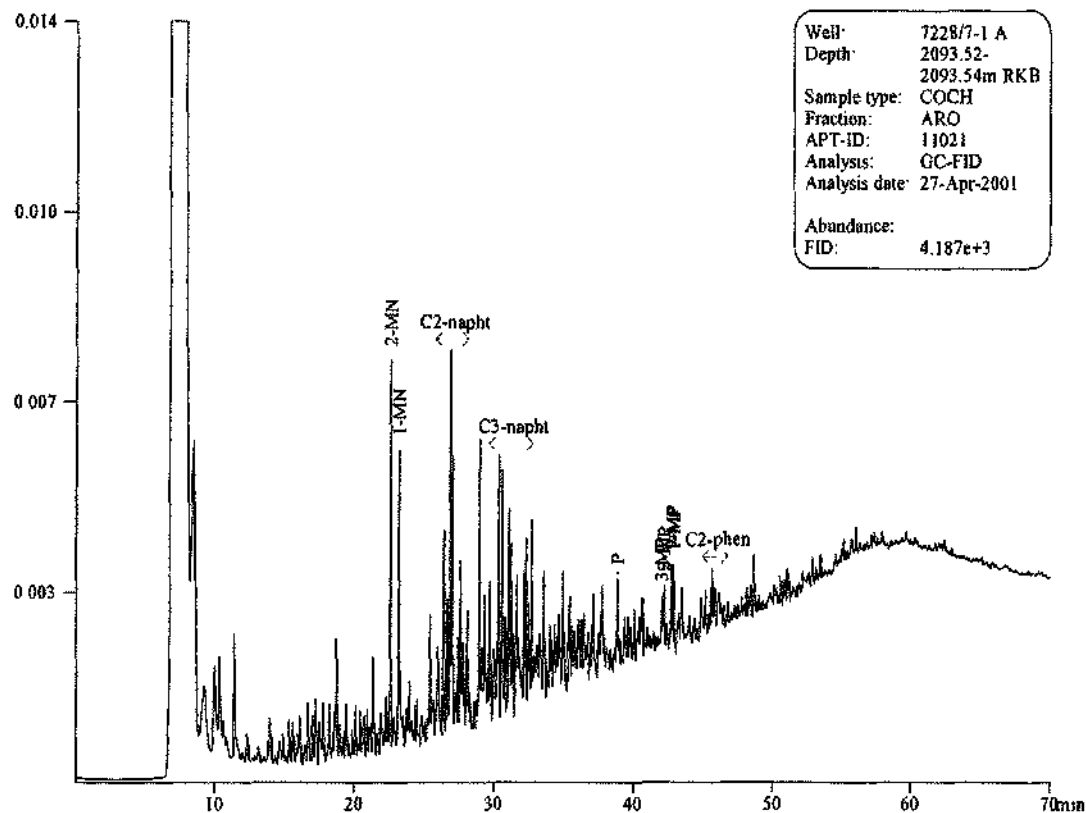






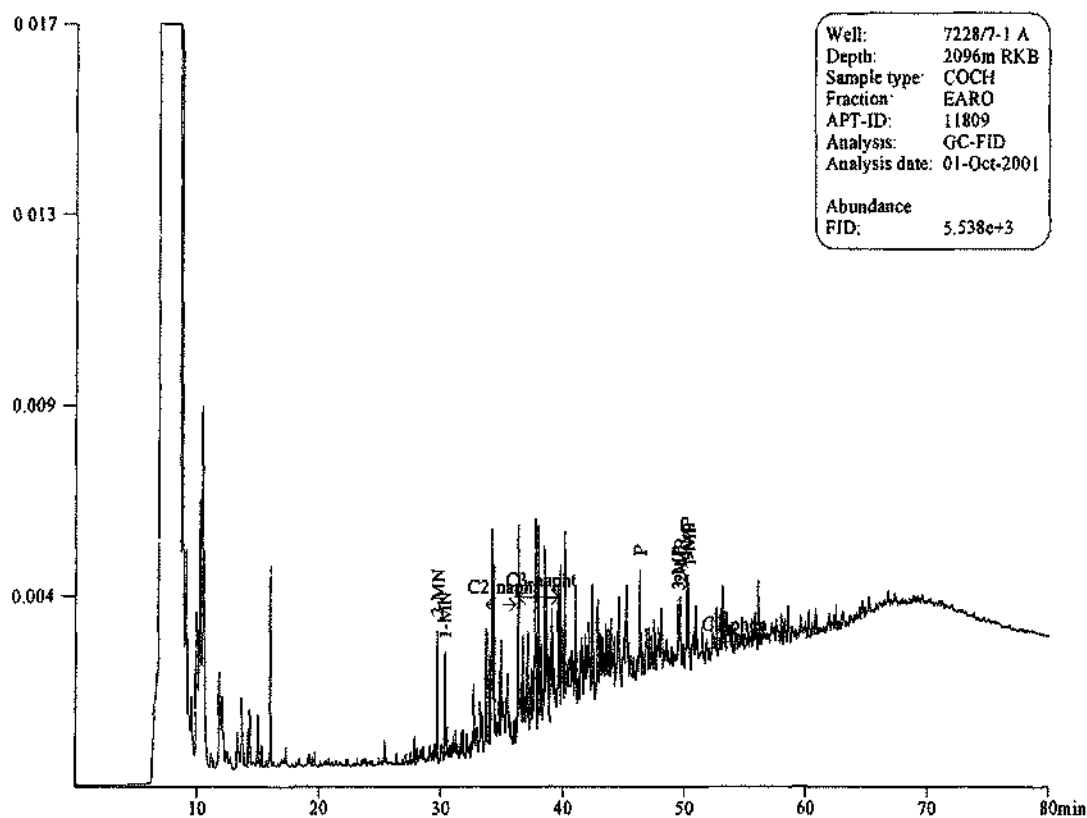
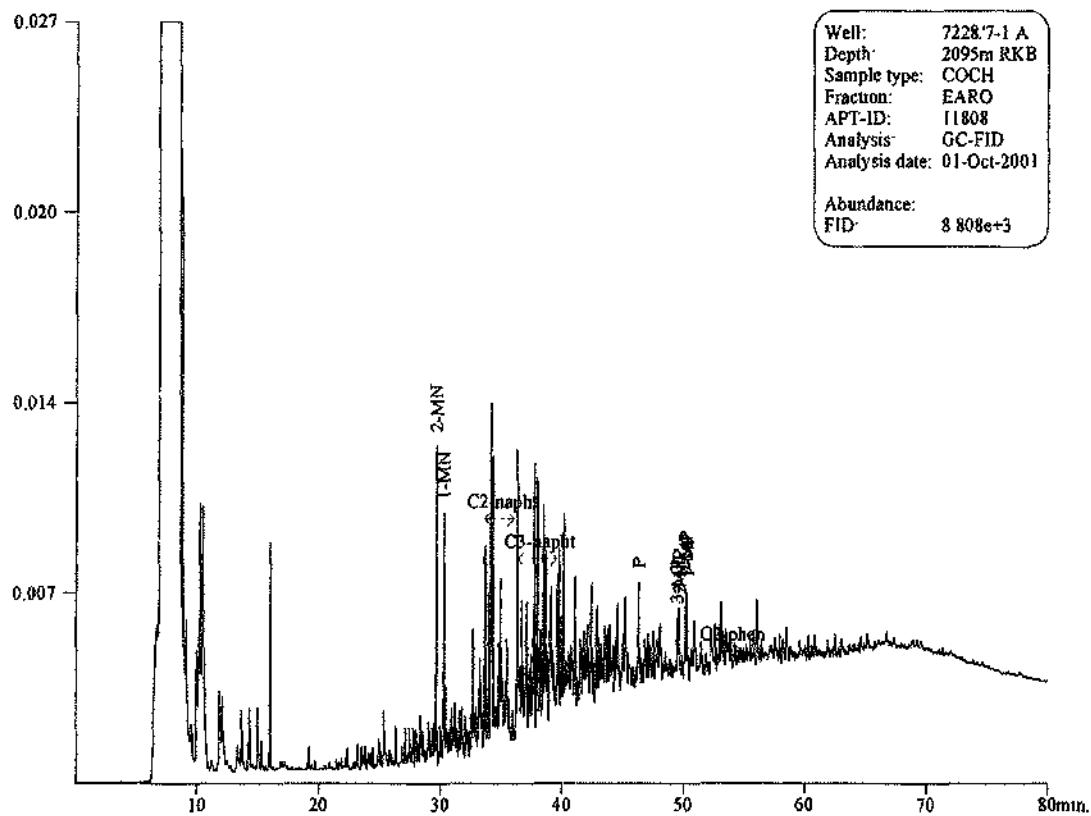
Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3

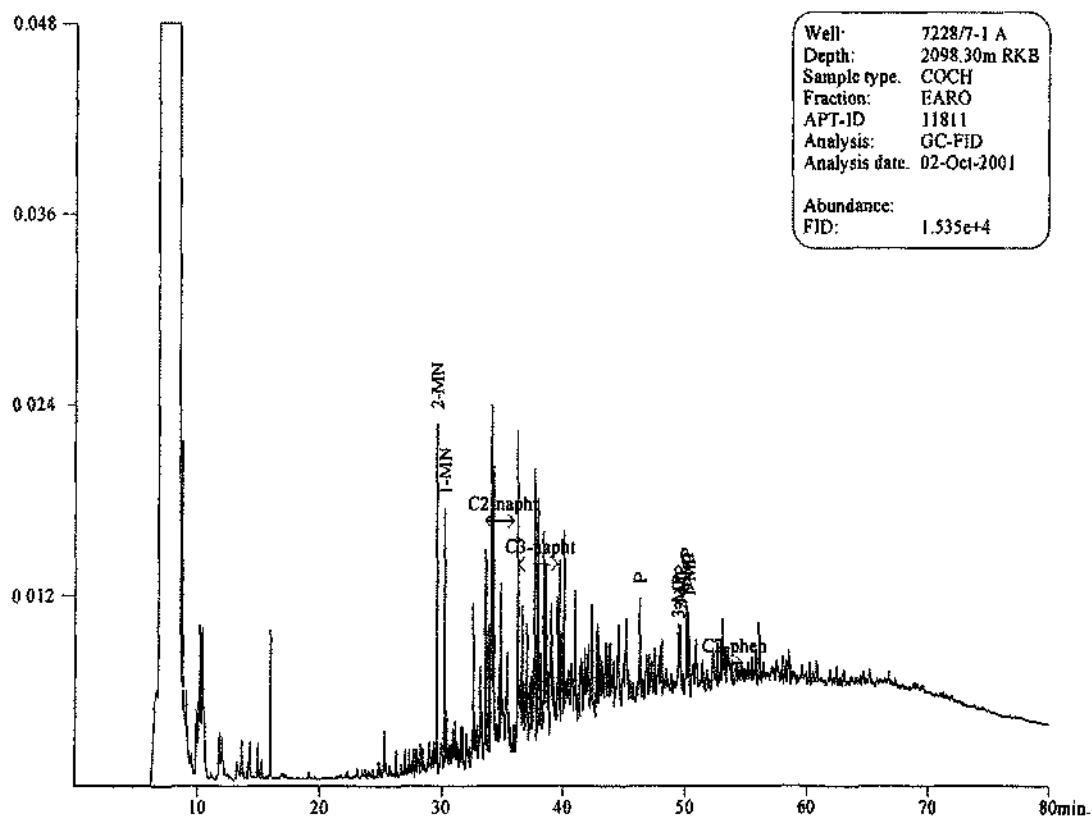
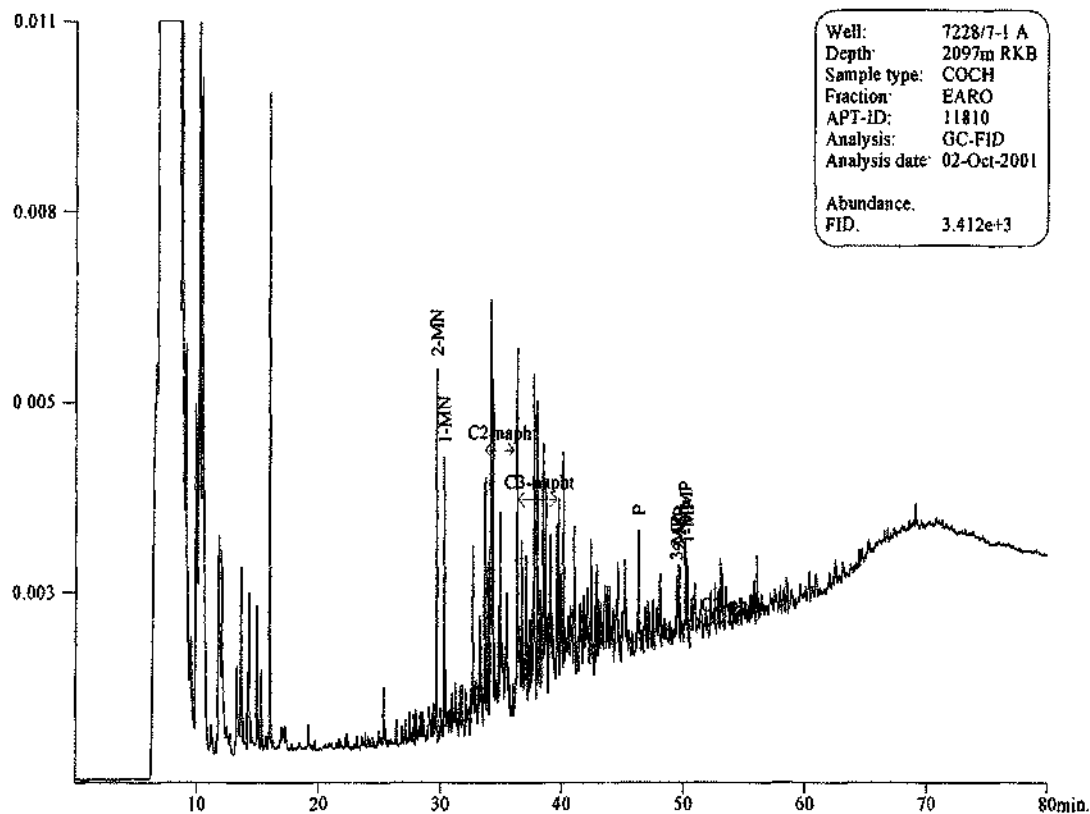


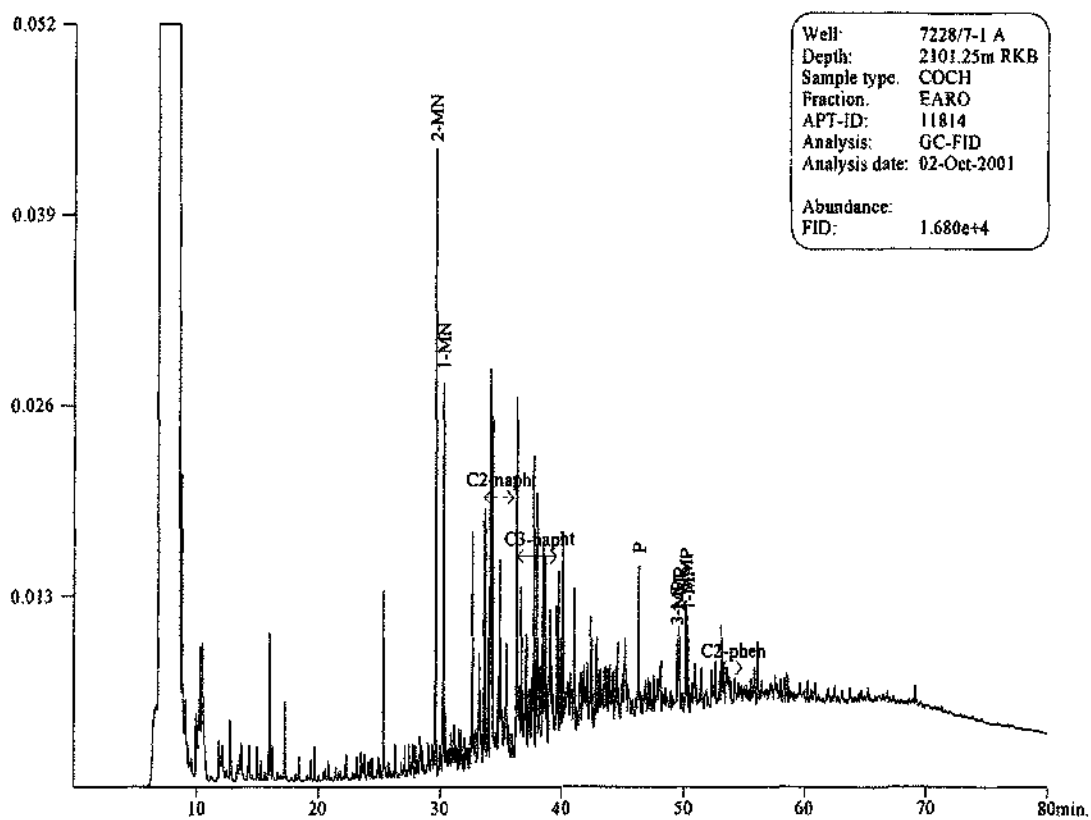
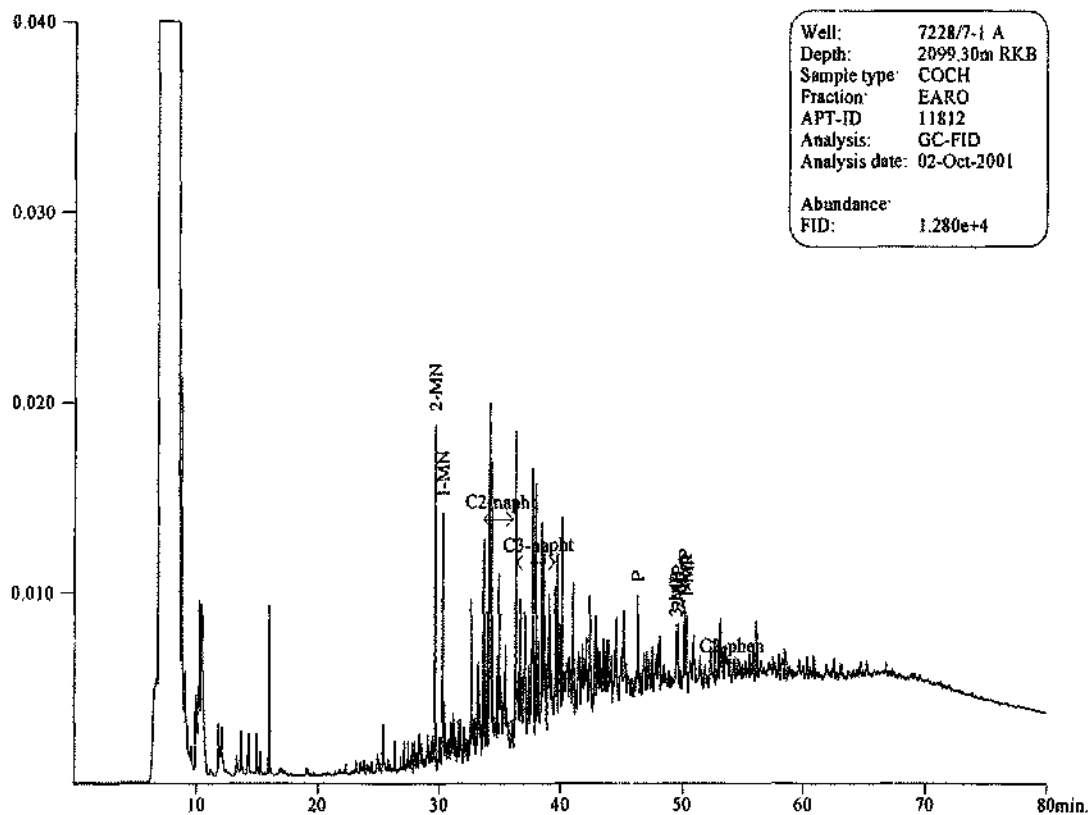


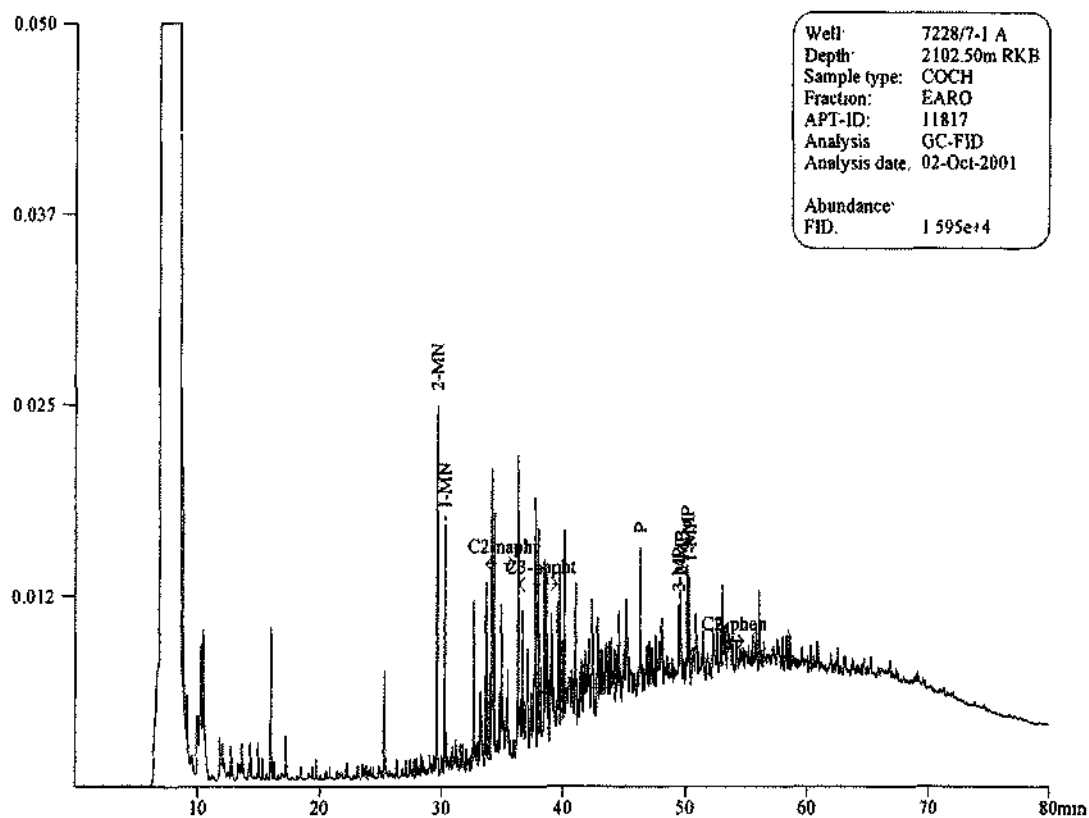
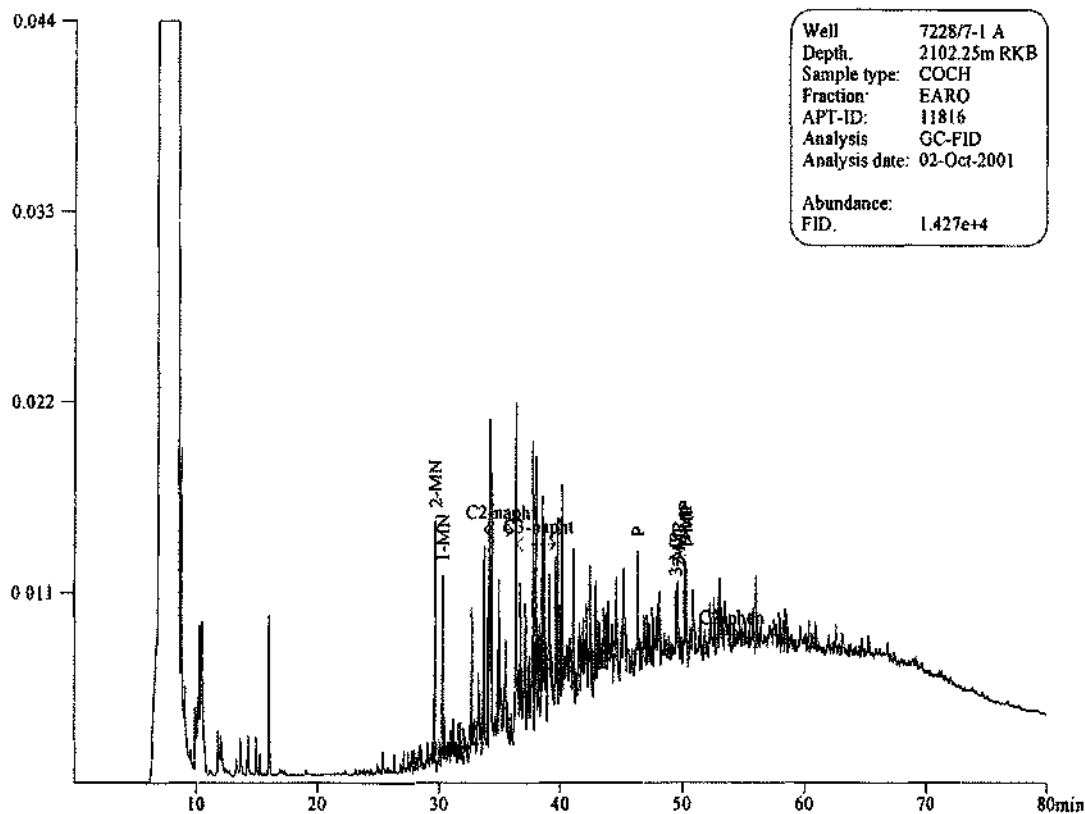


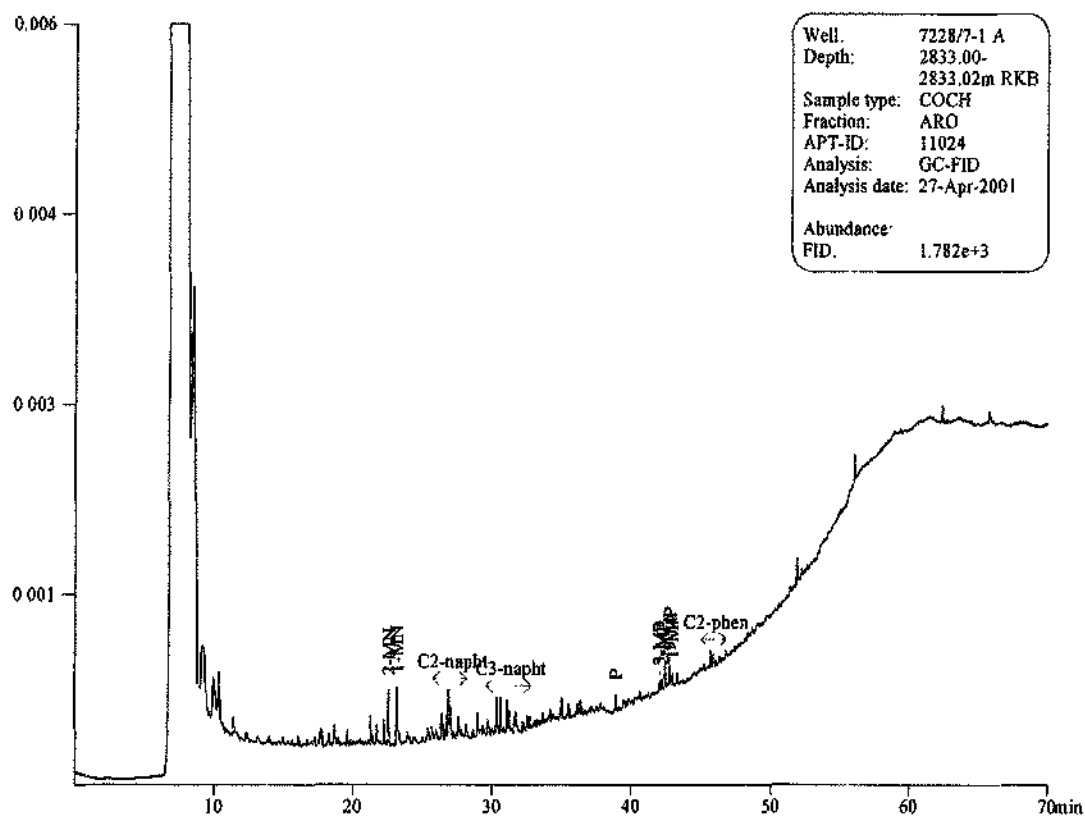
Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3





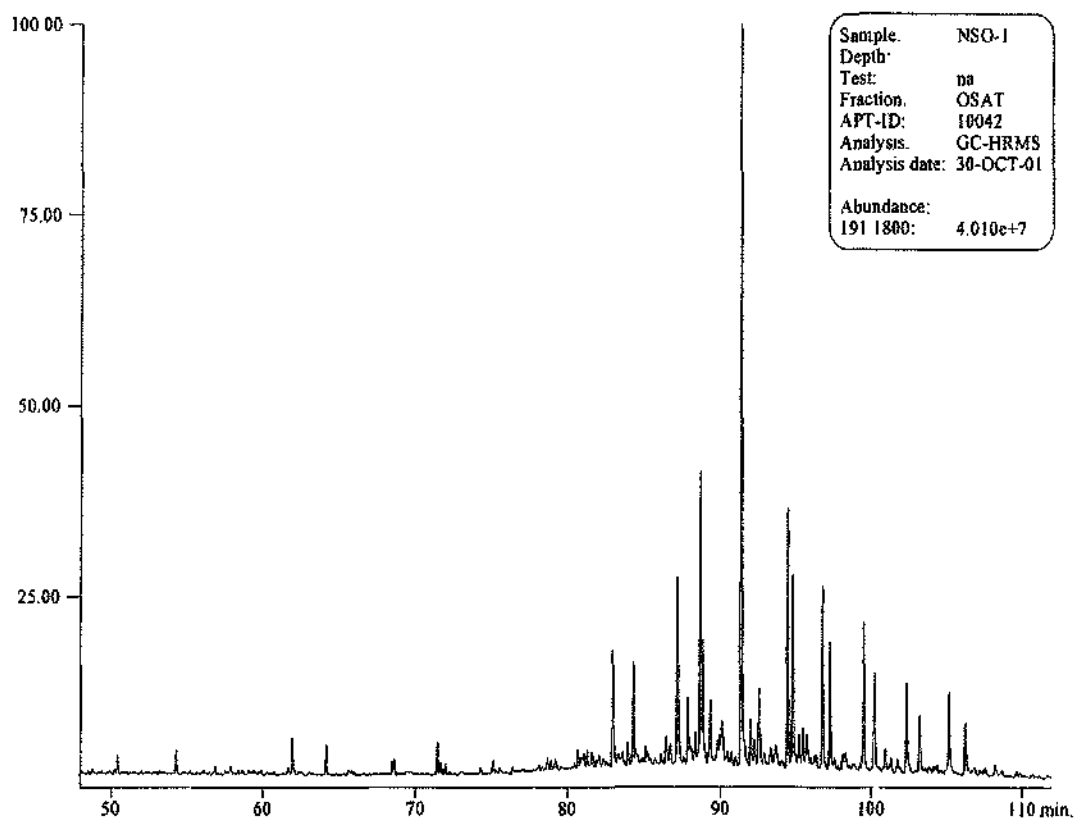
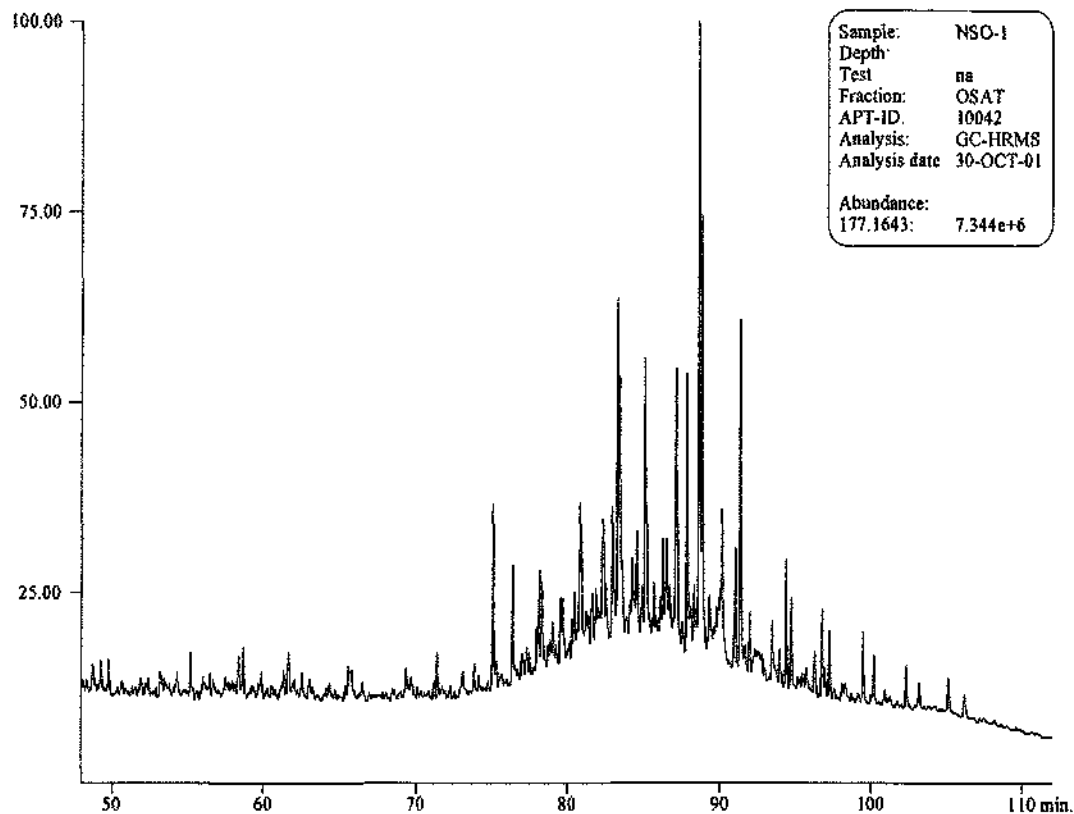


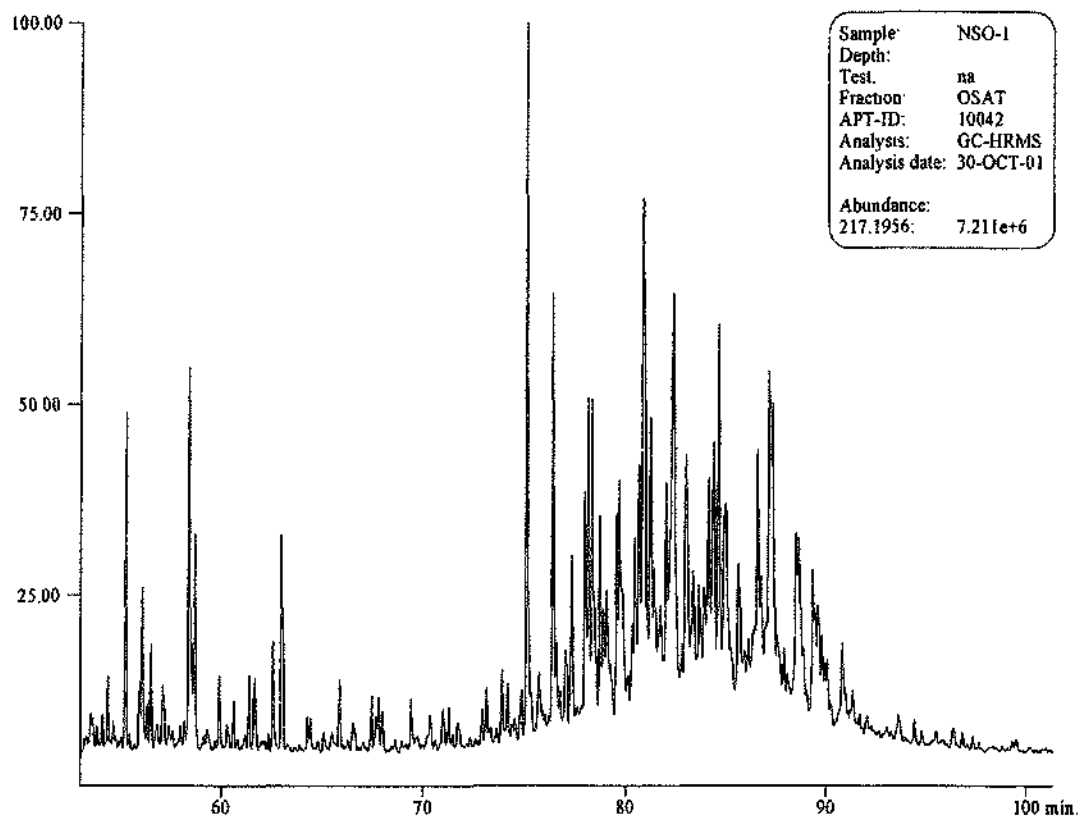
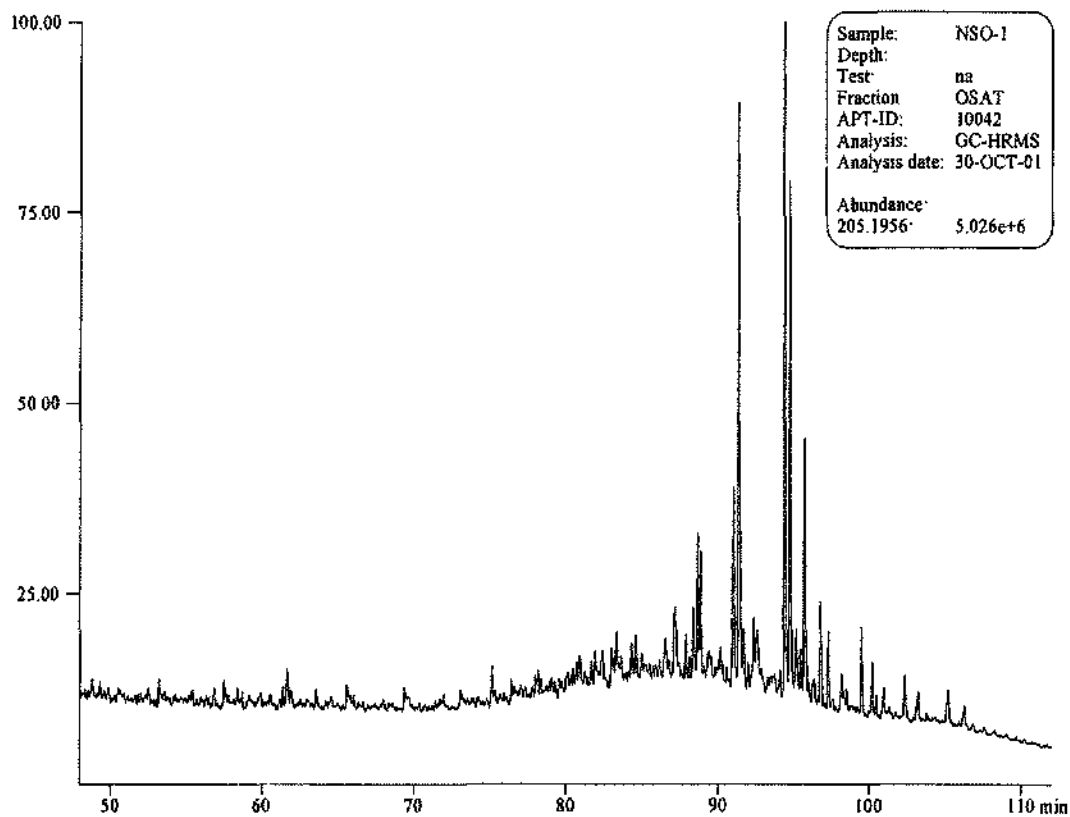


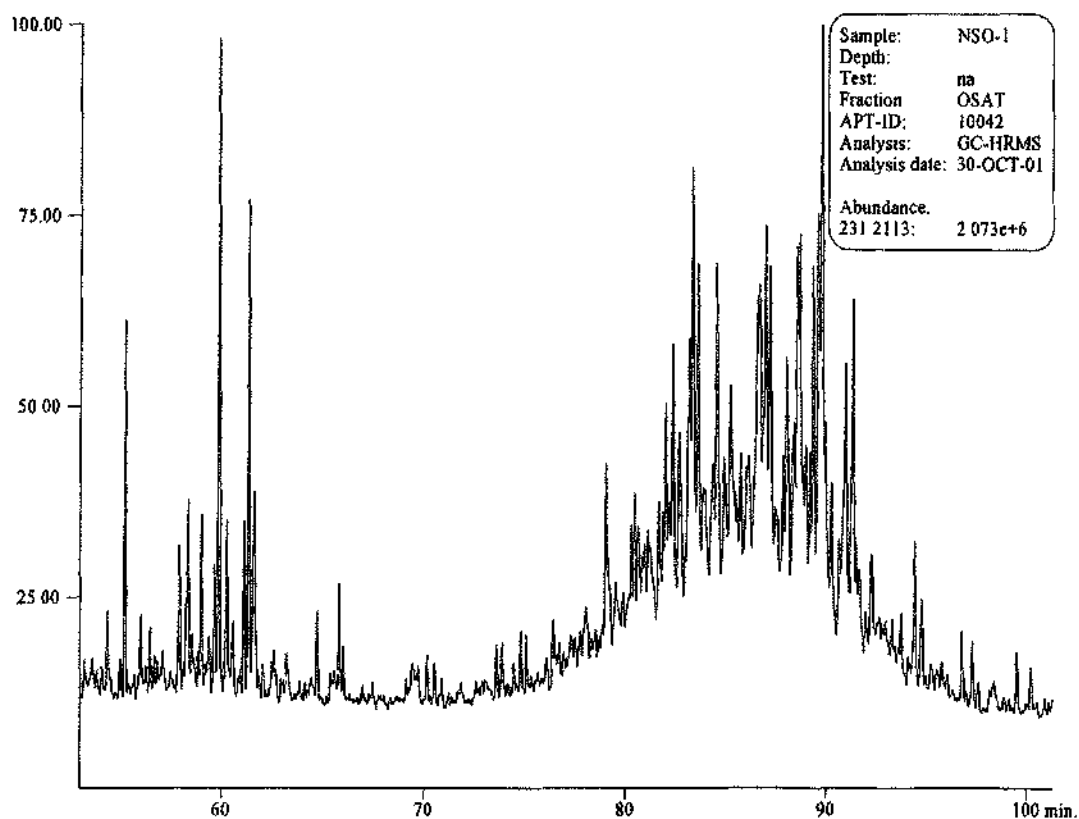
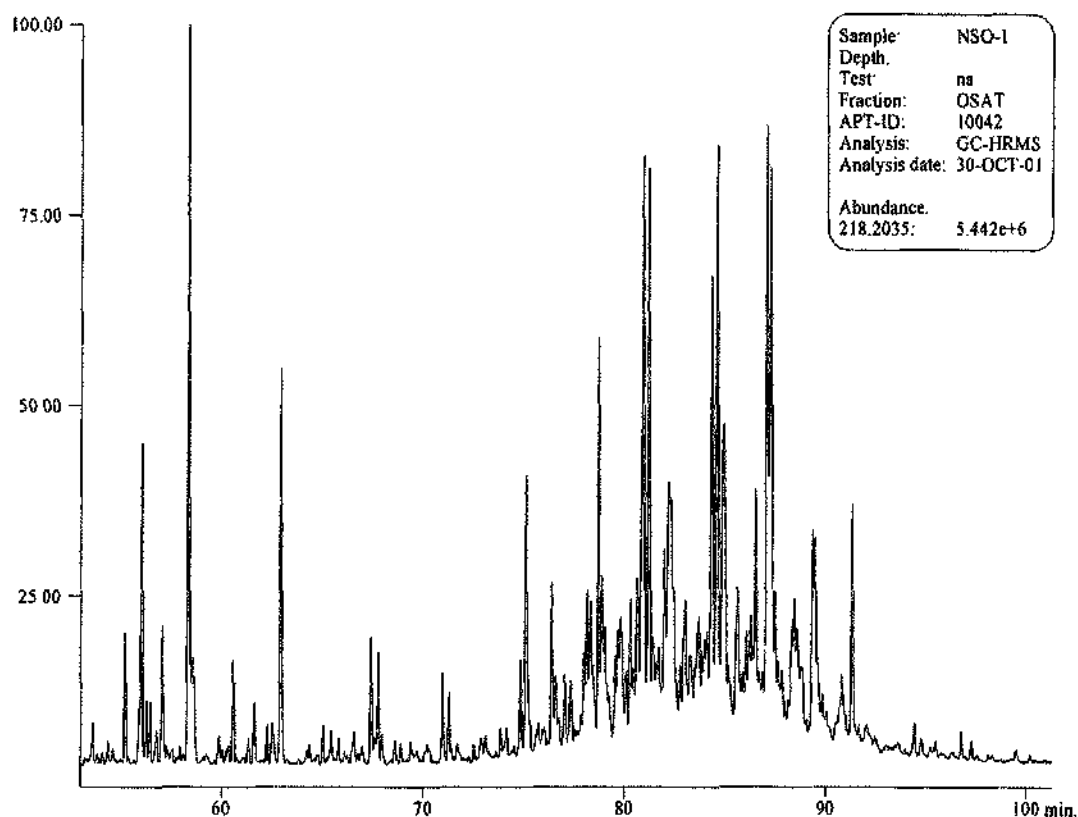




GC-MS Chromatograms of Saturated Hydrocarbons

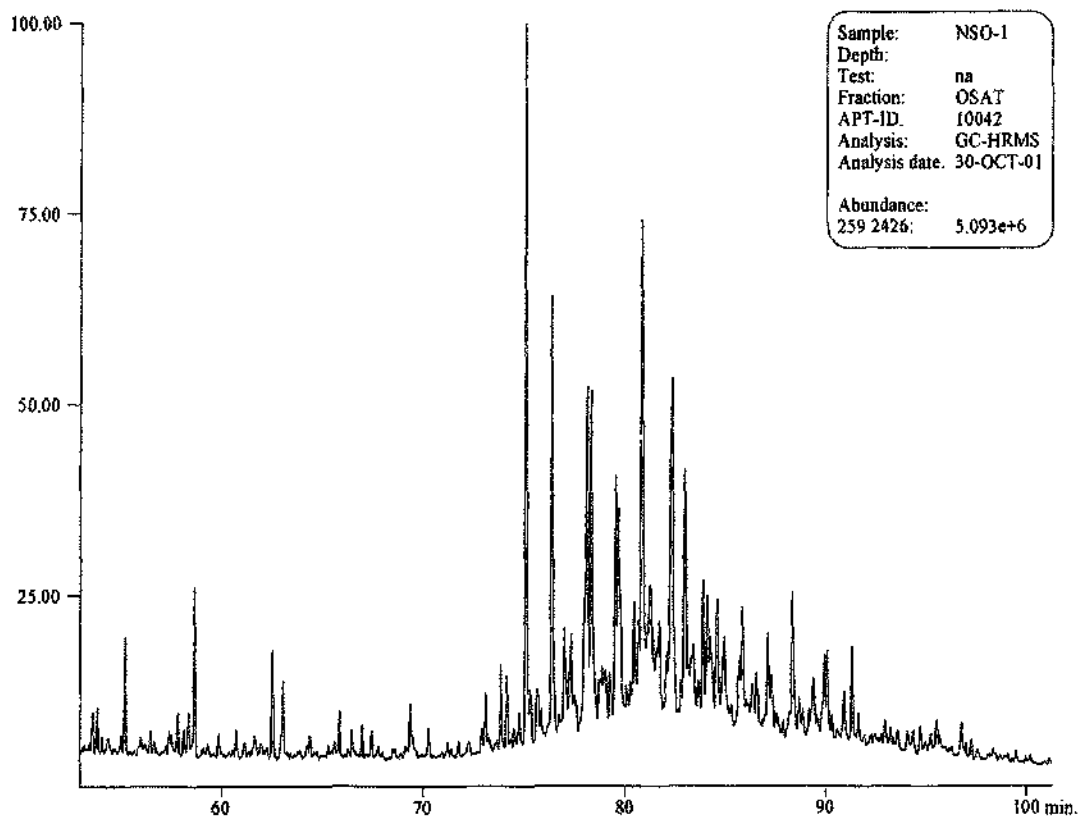
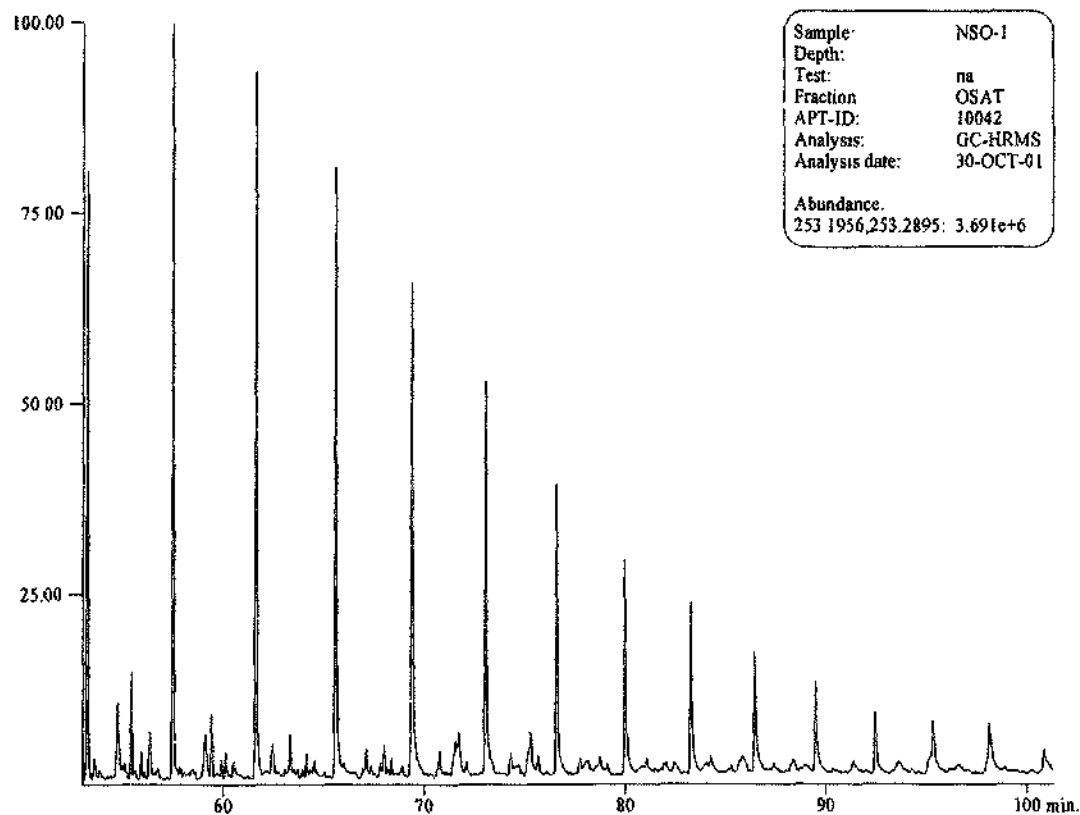


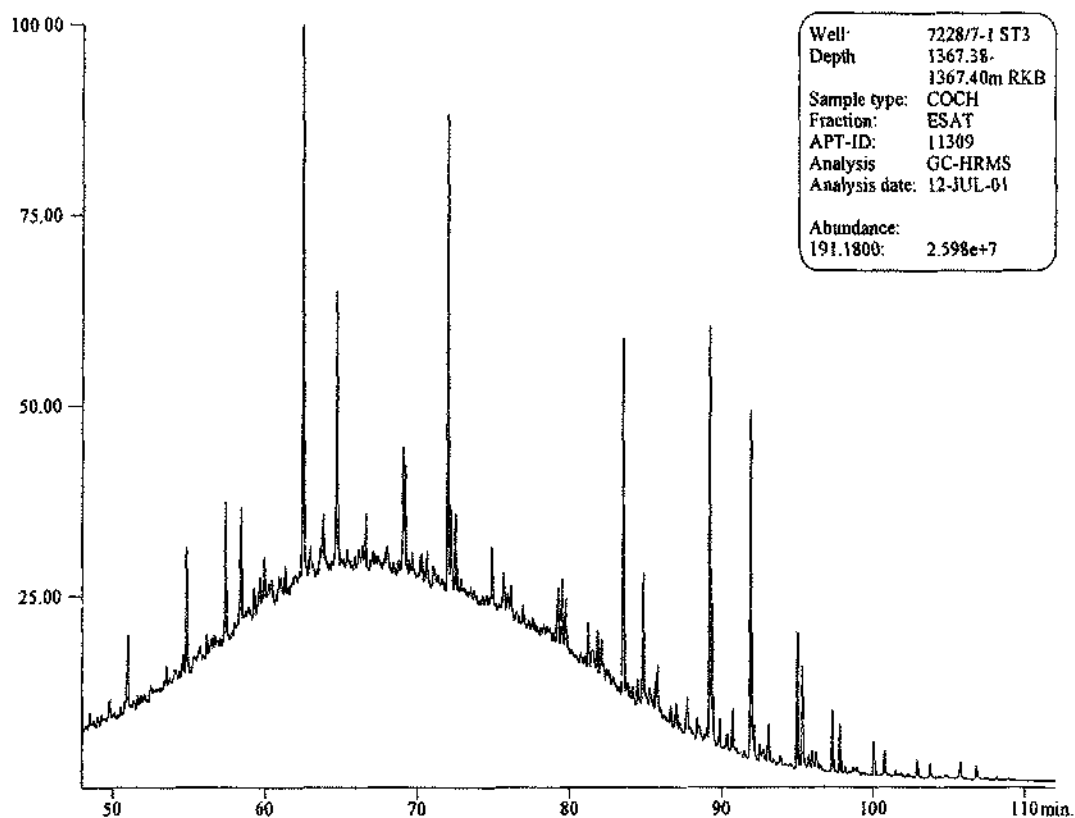
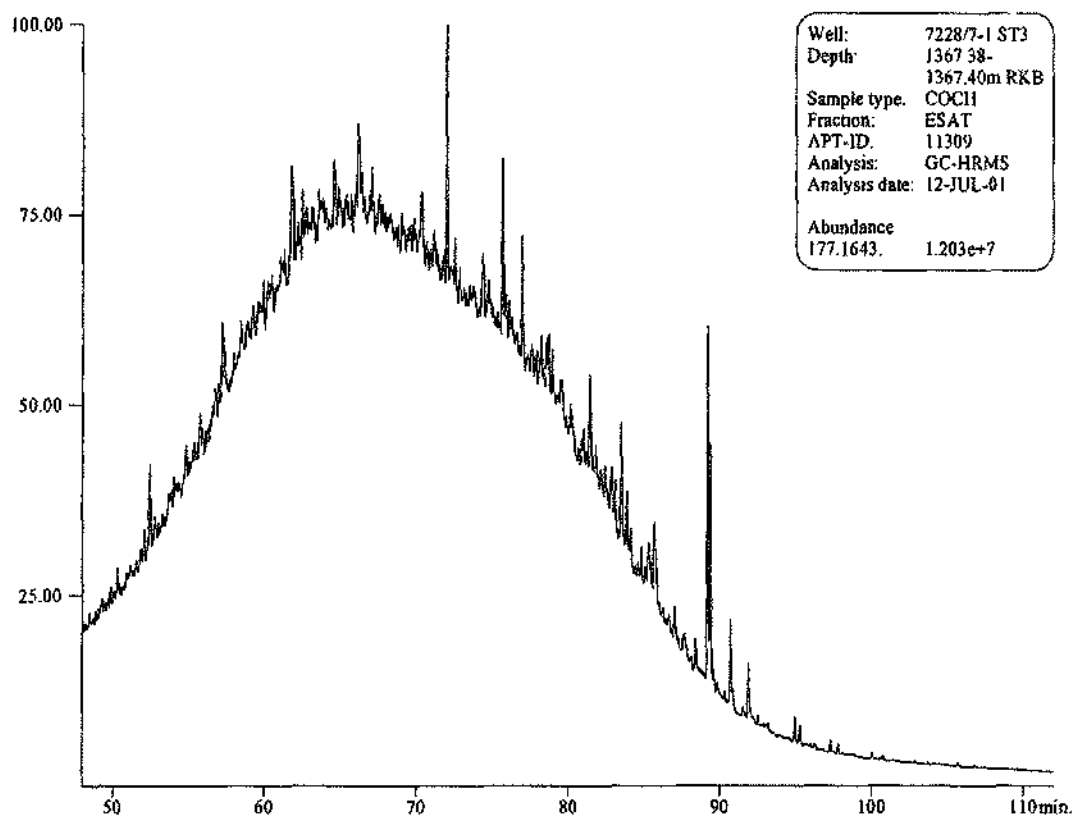


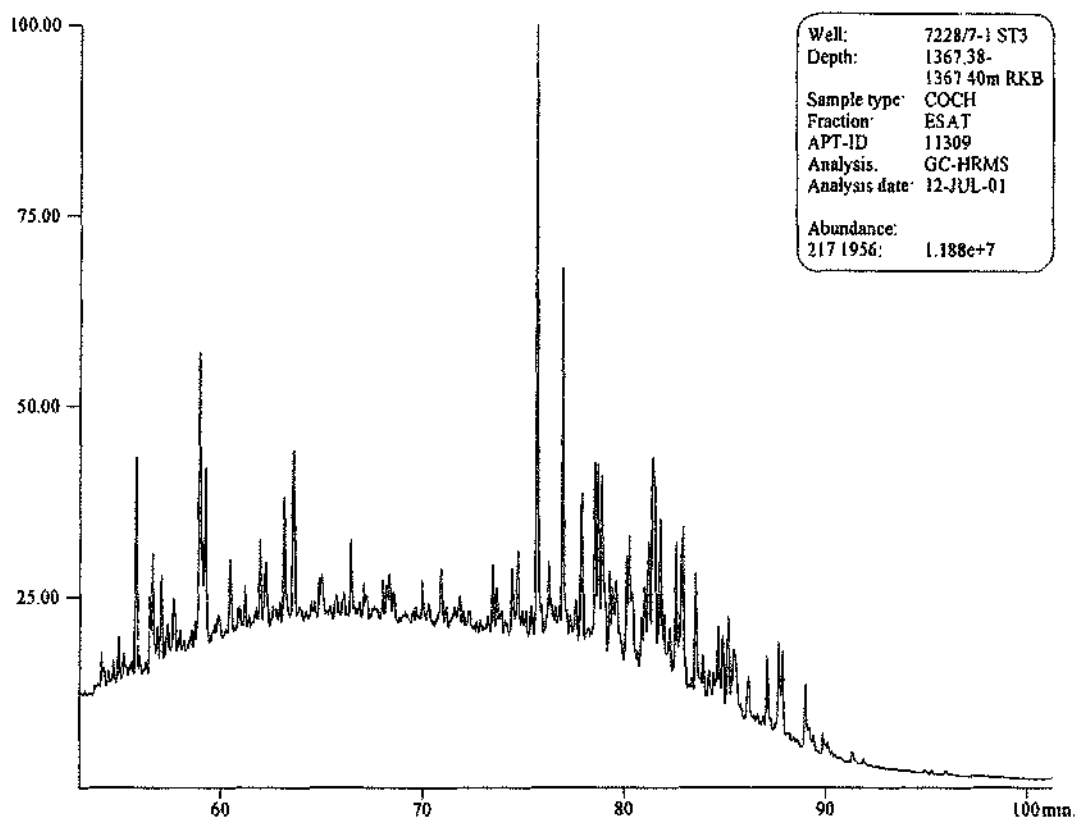
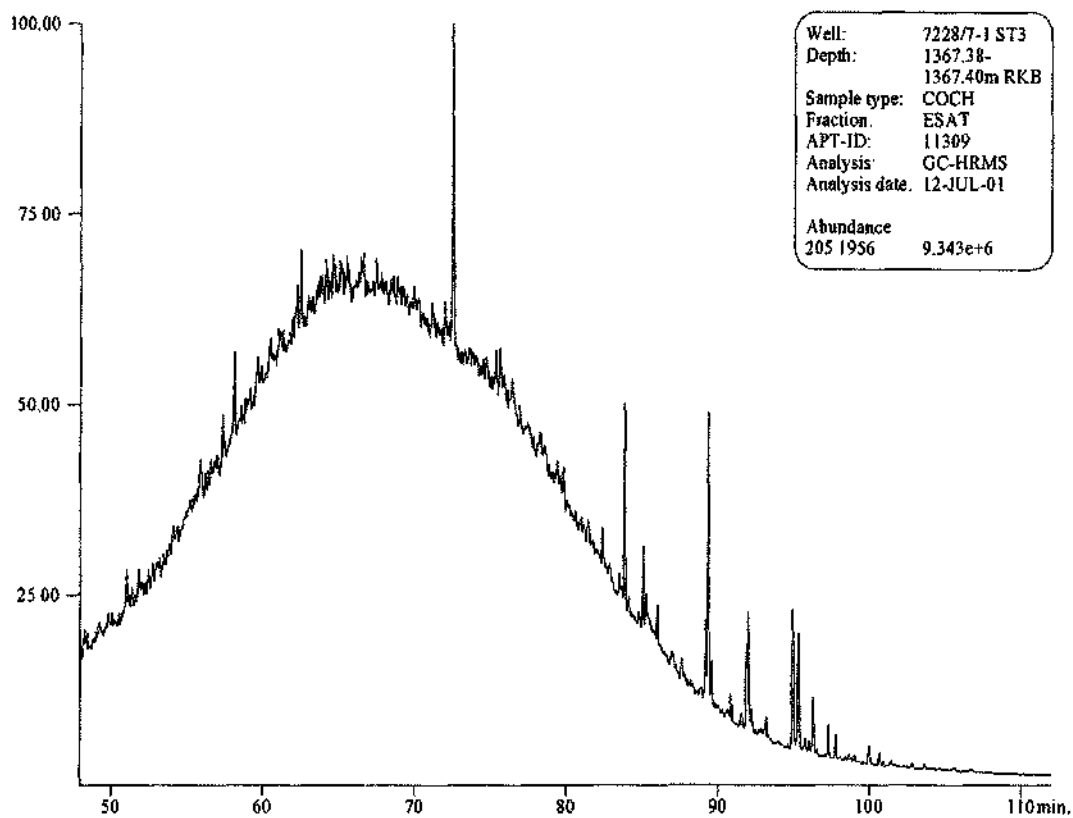


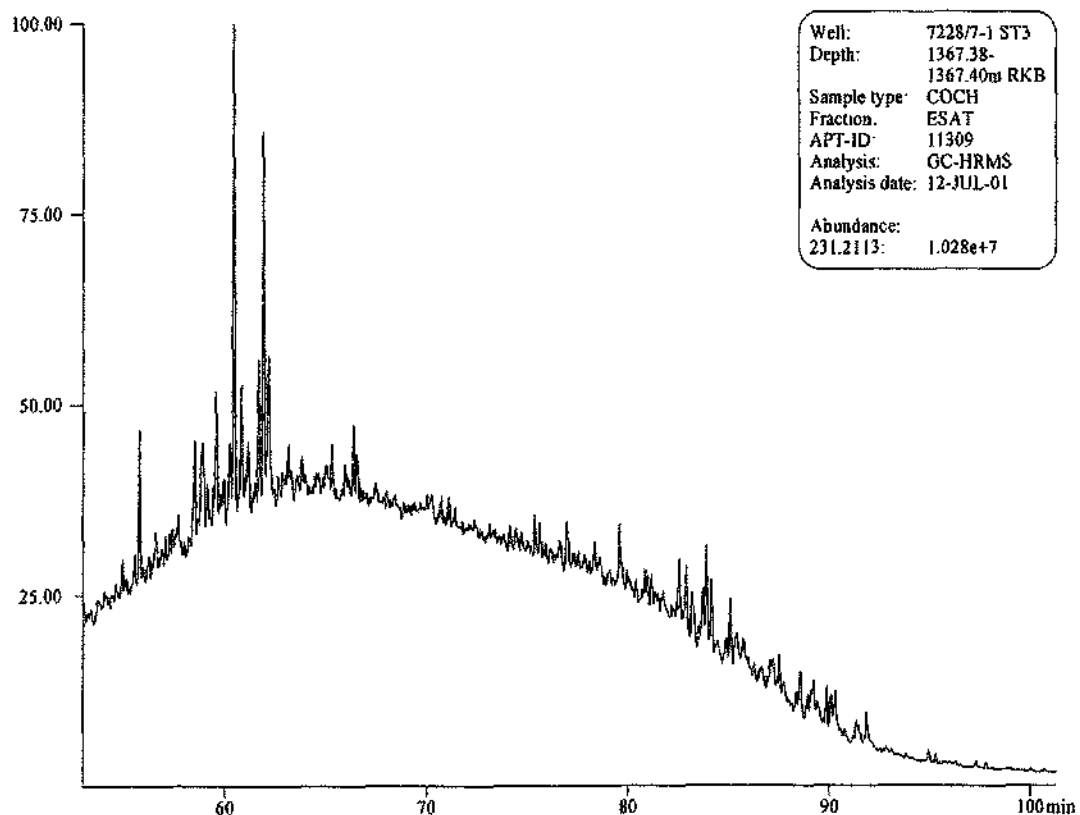
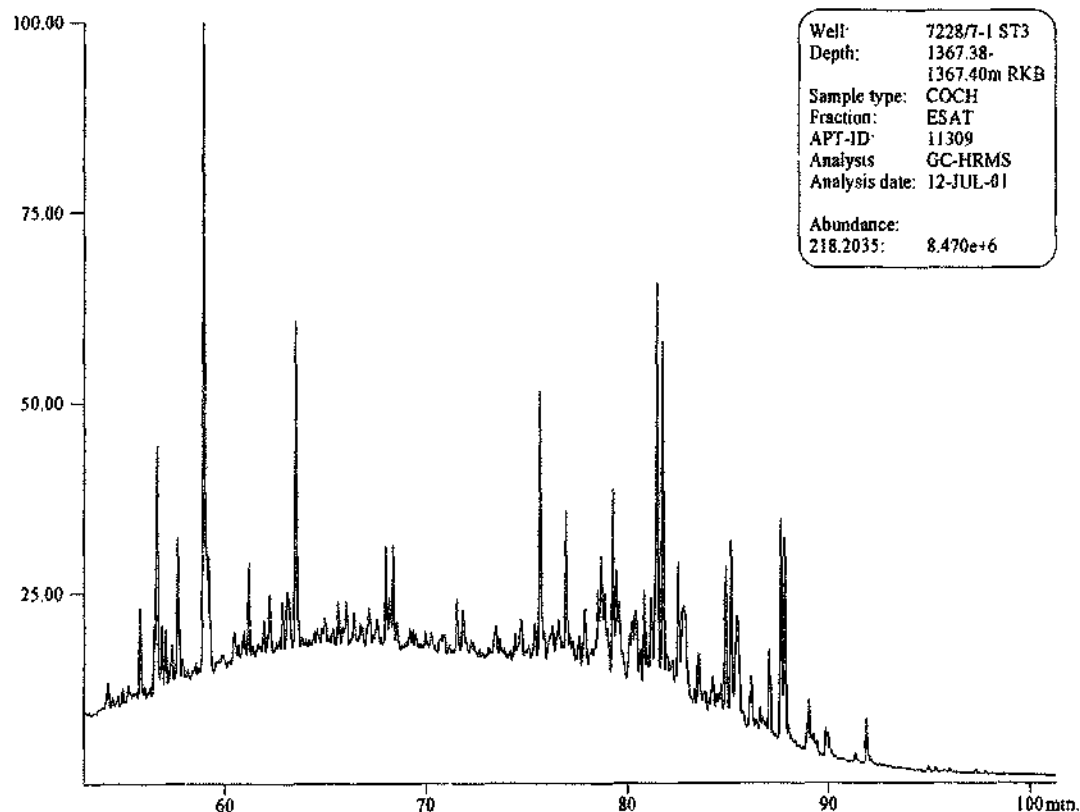


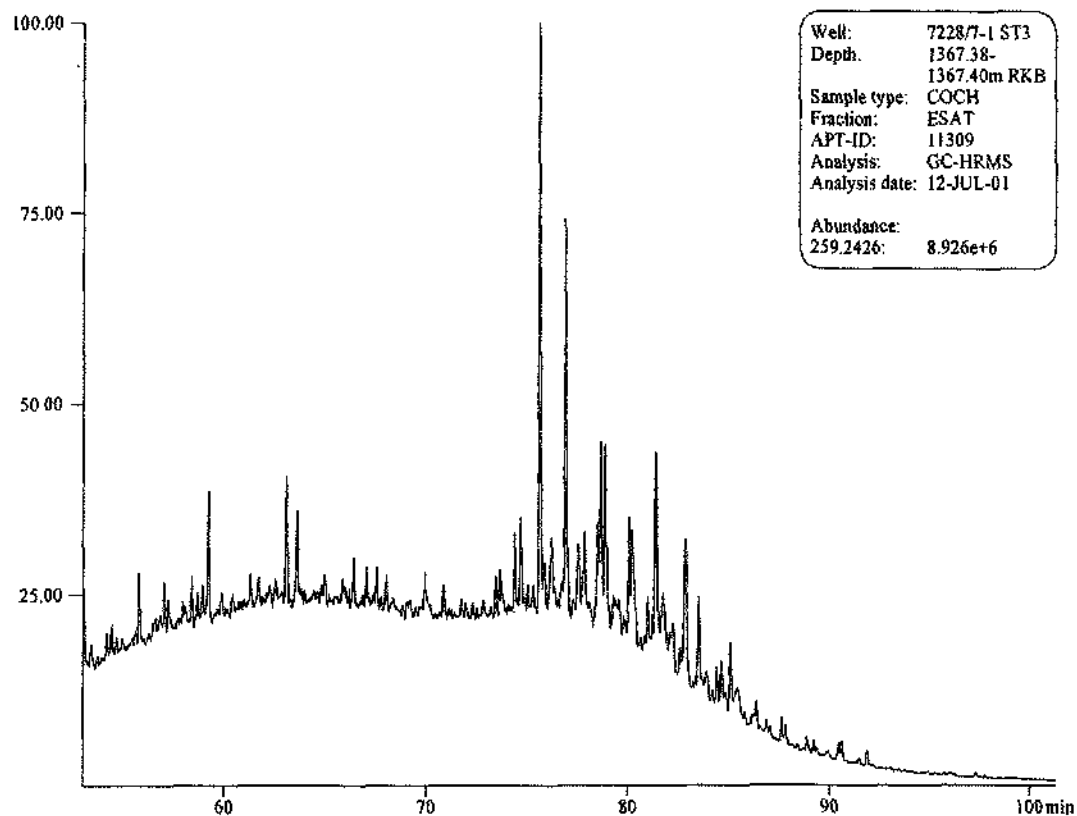
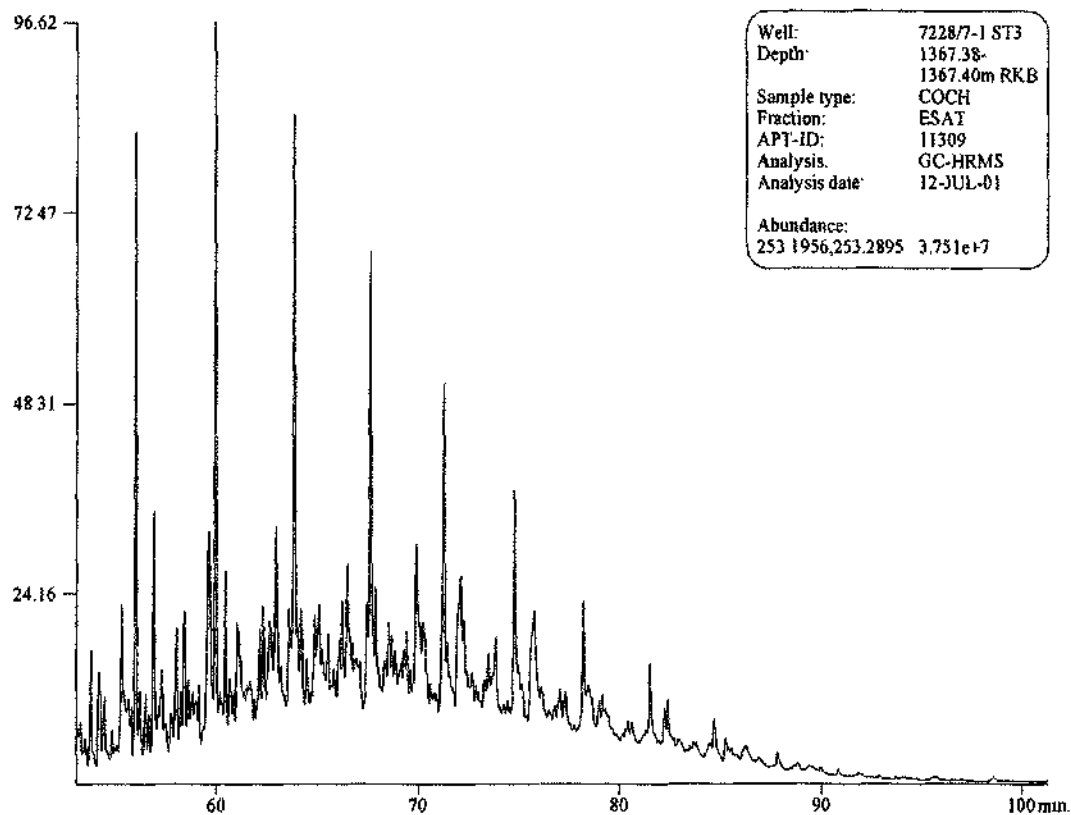
Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3

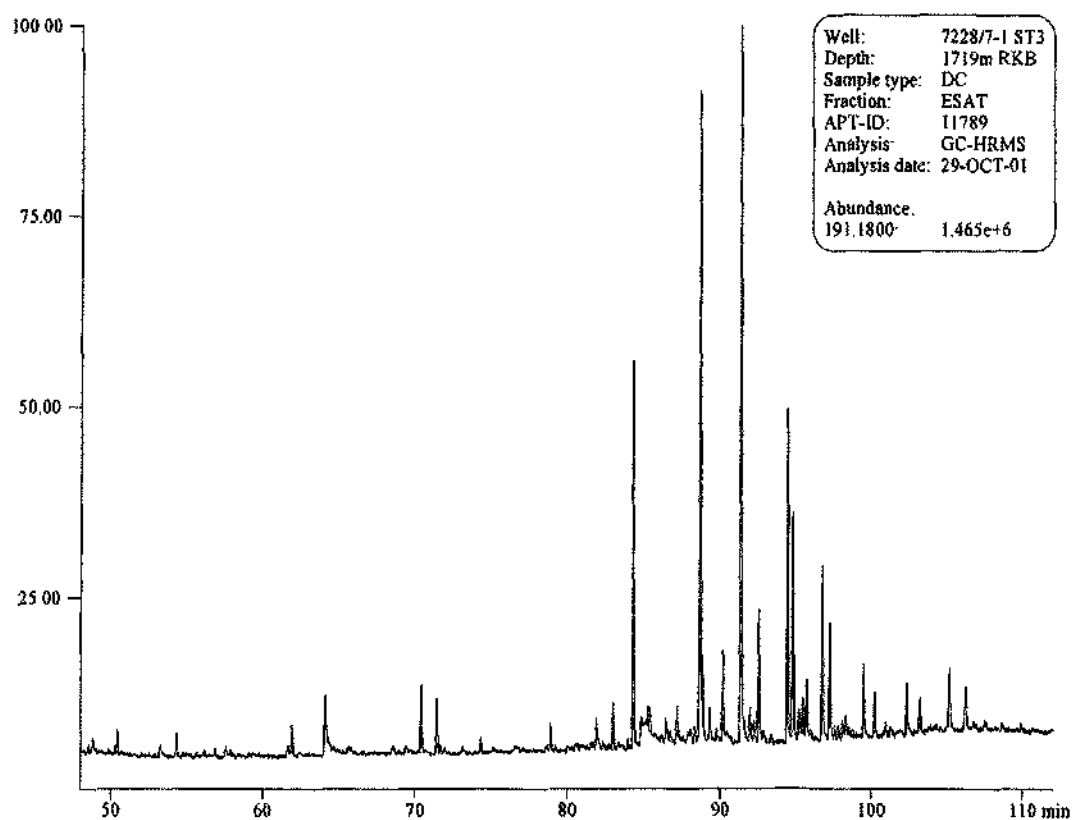
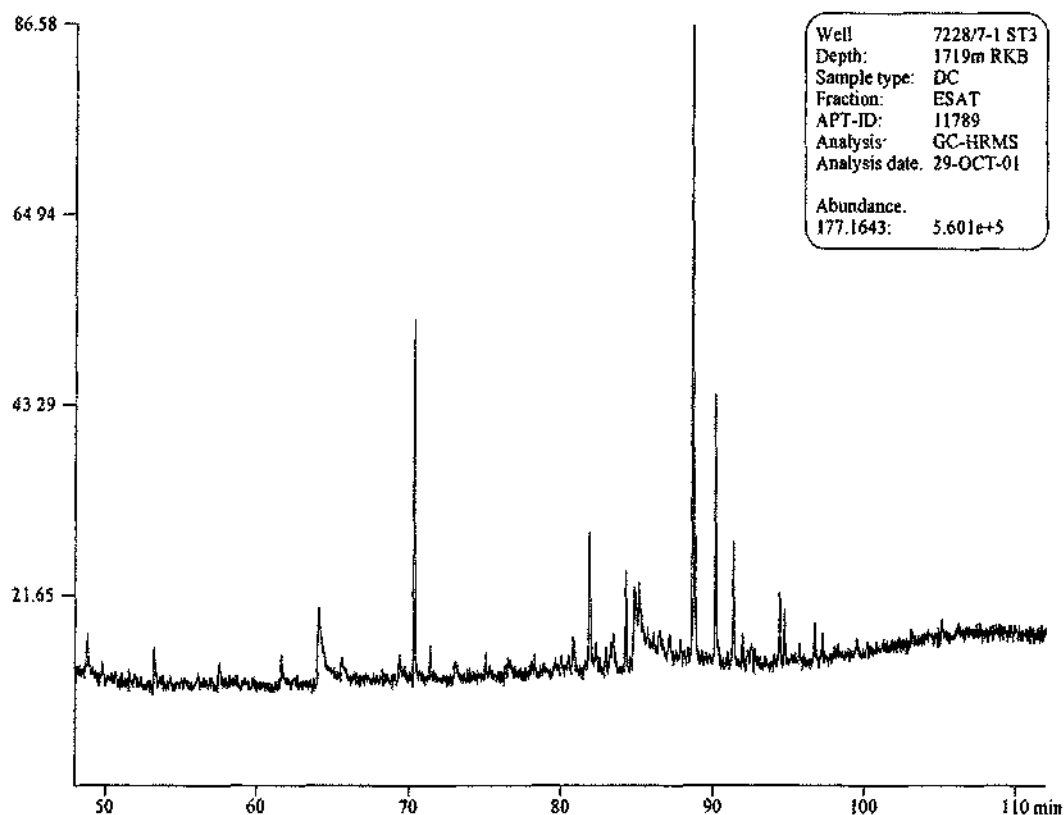


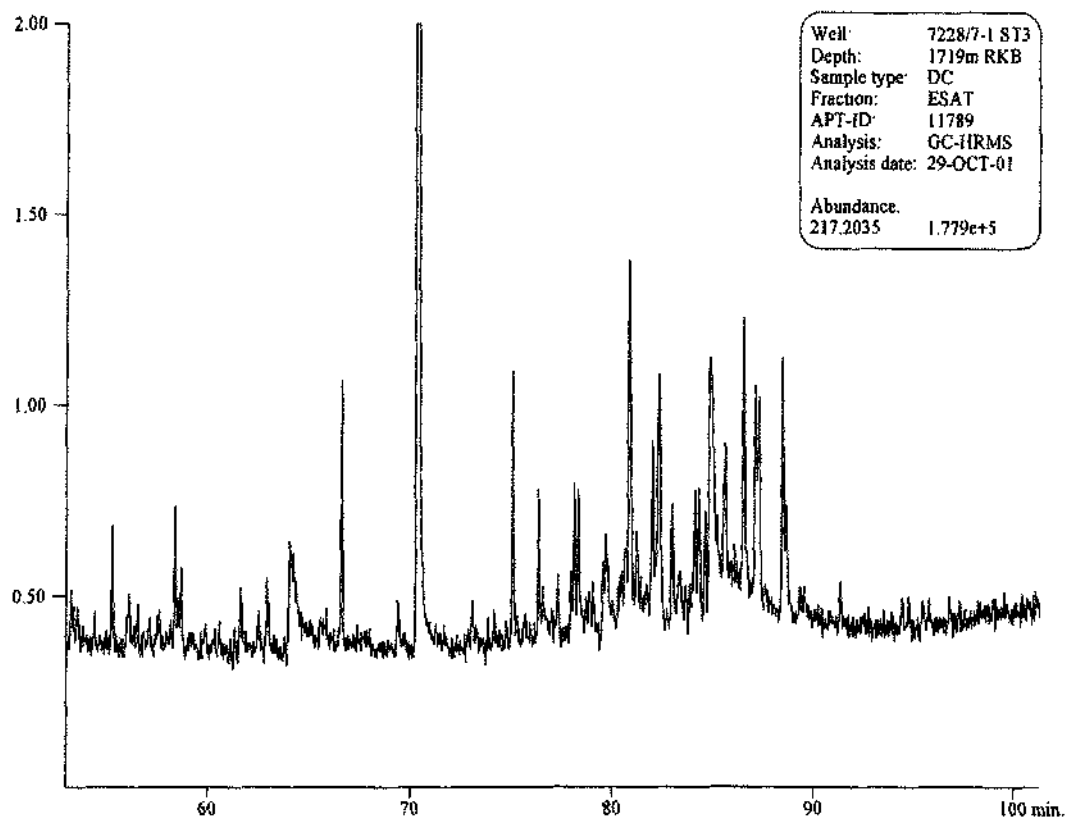
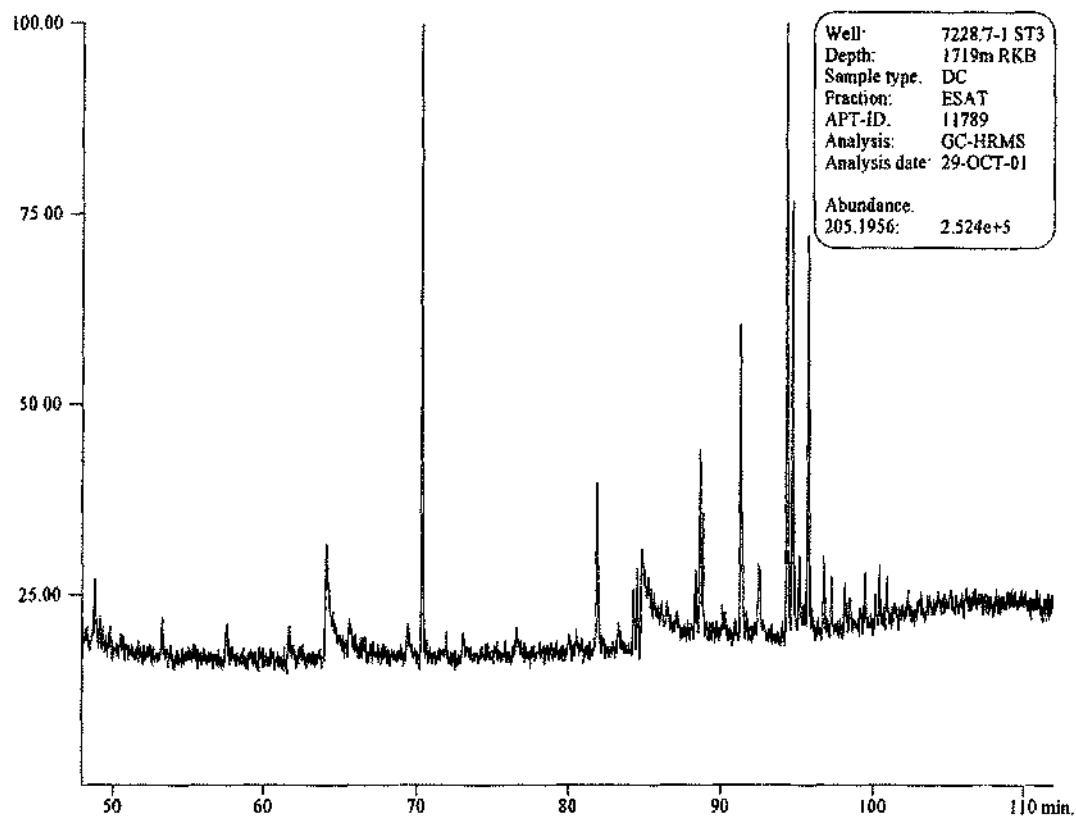


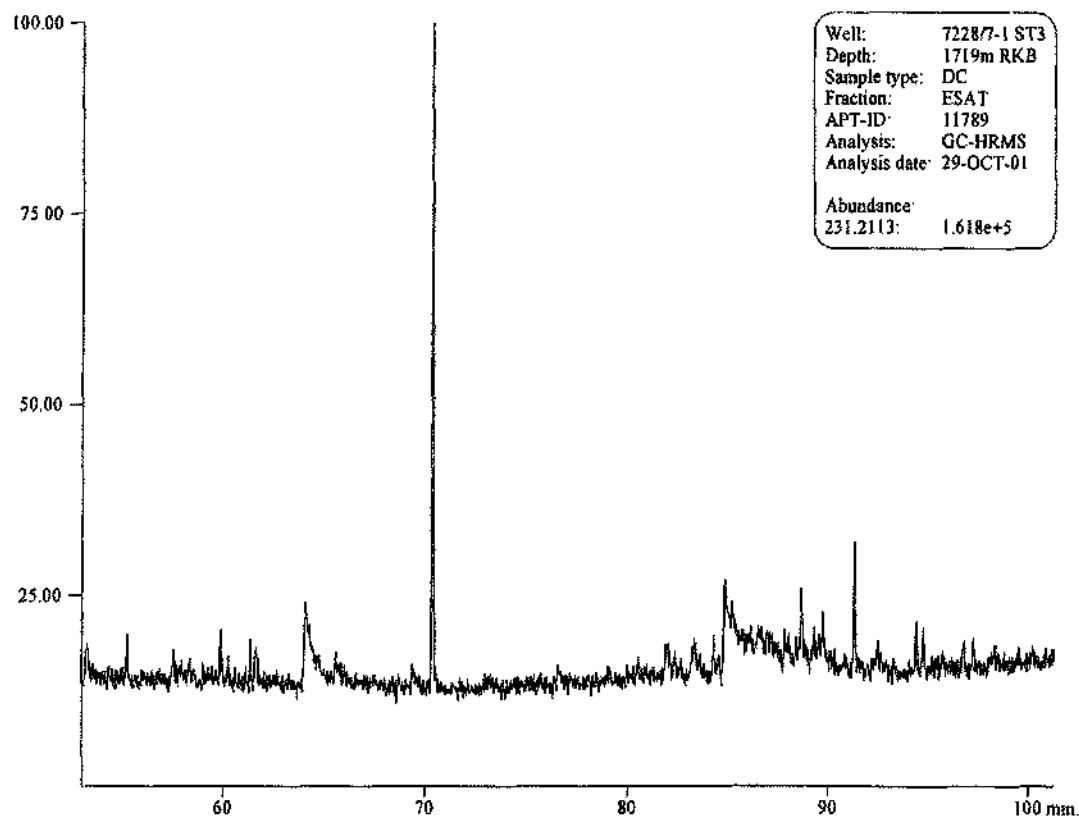
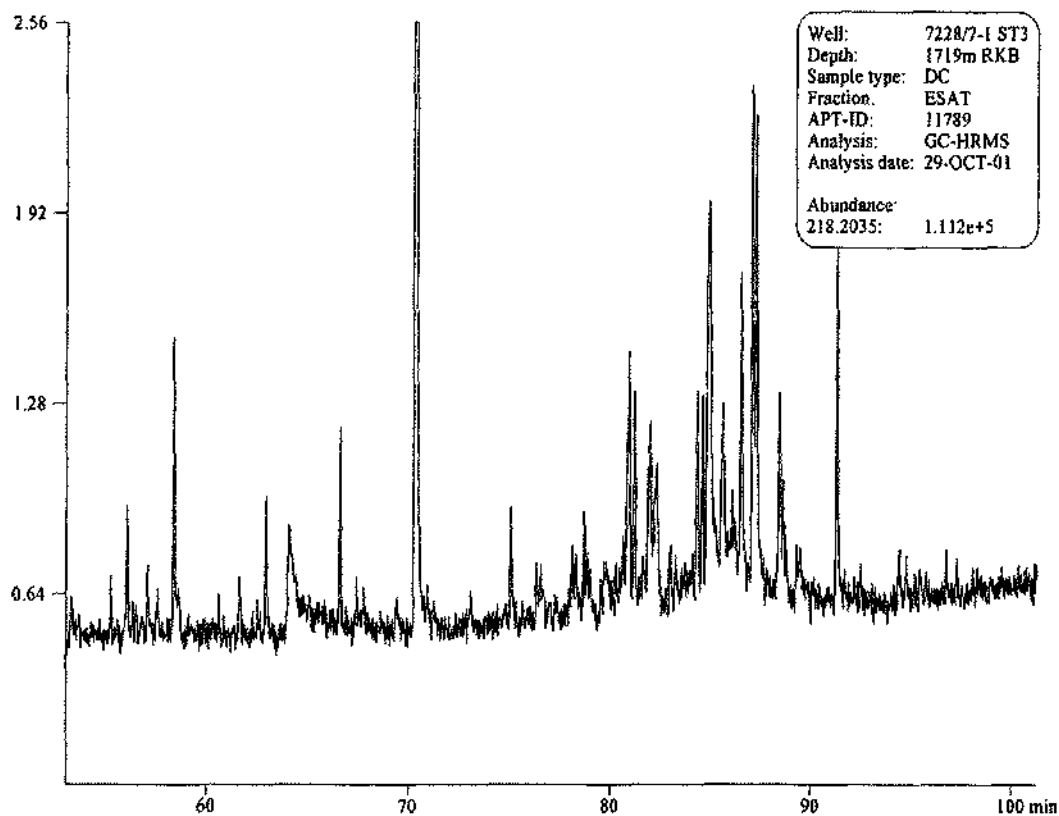


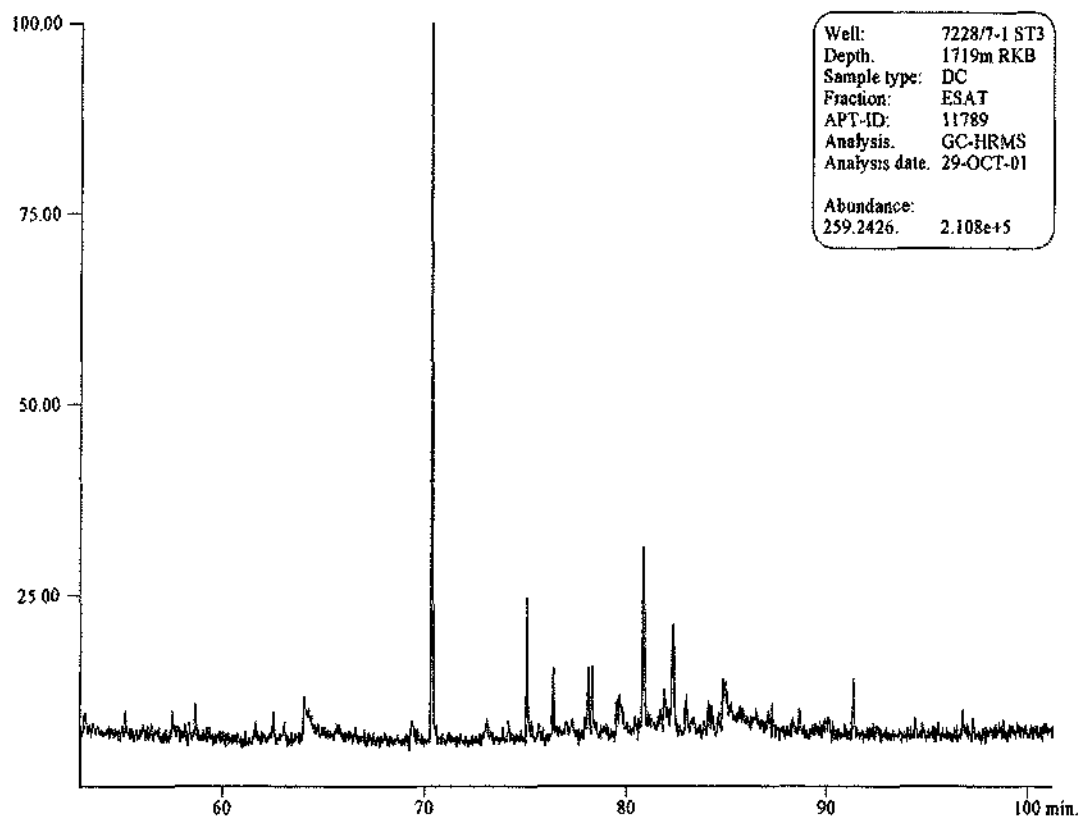
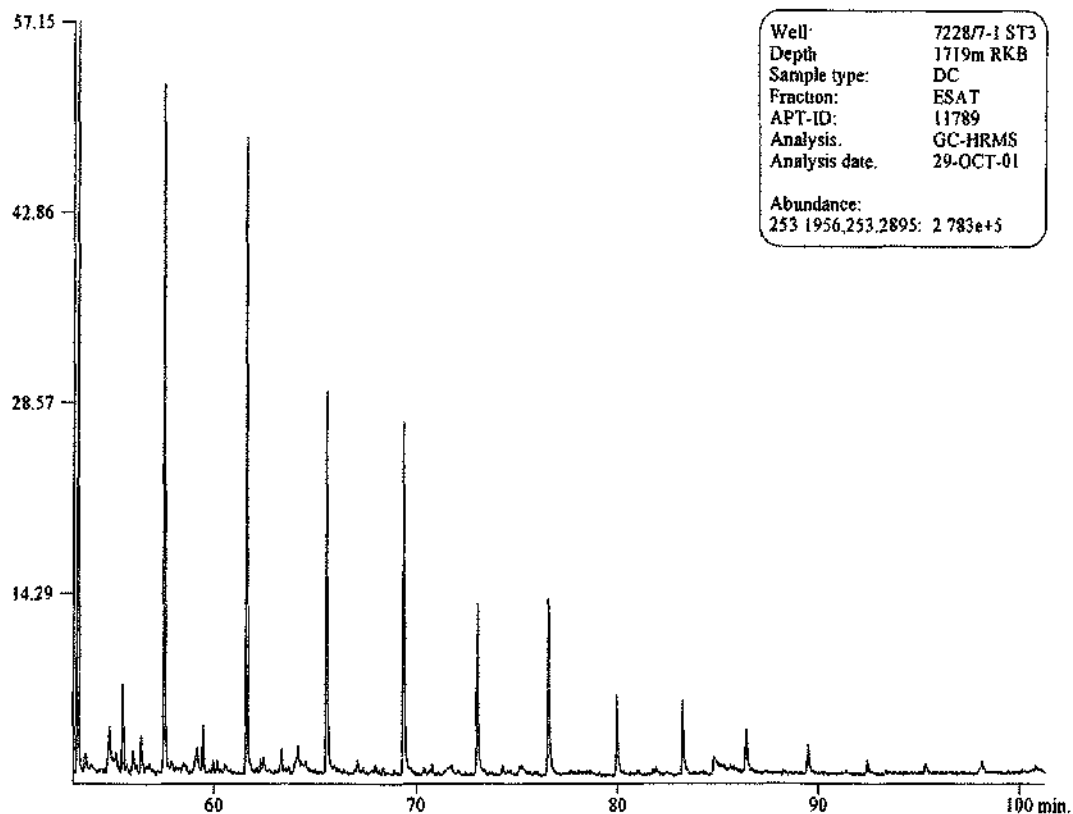


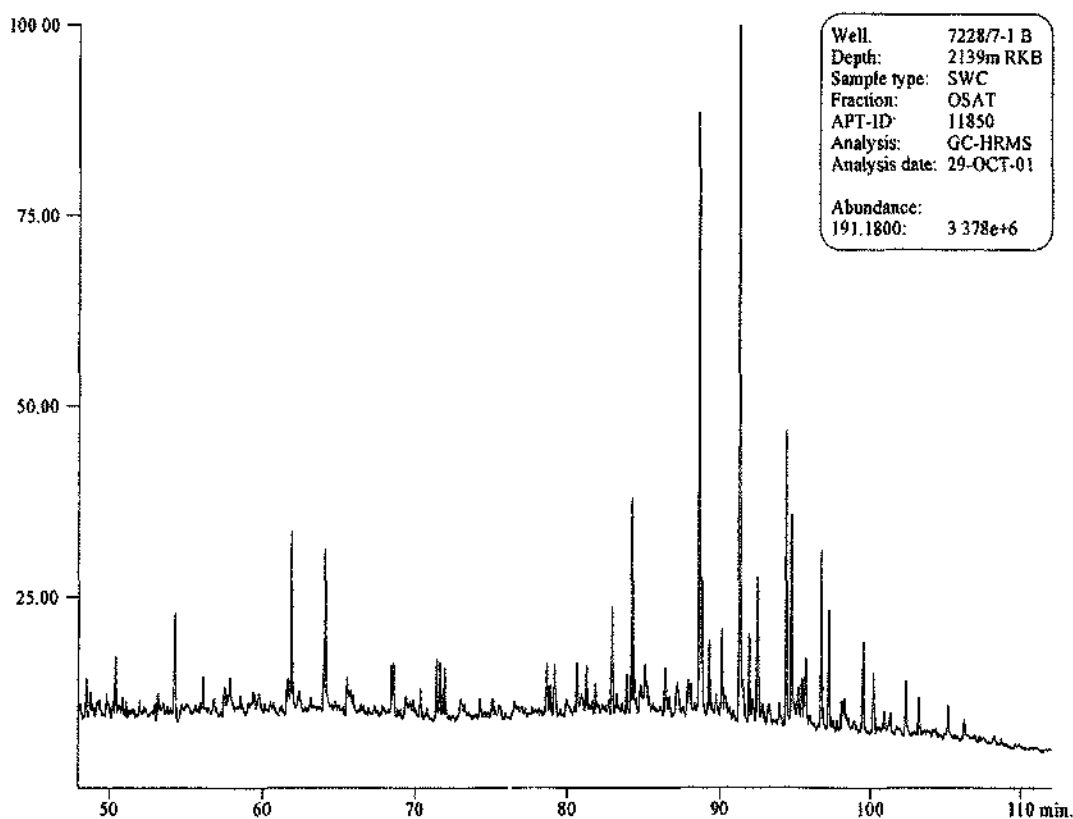
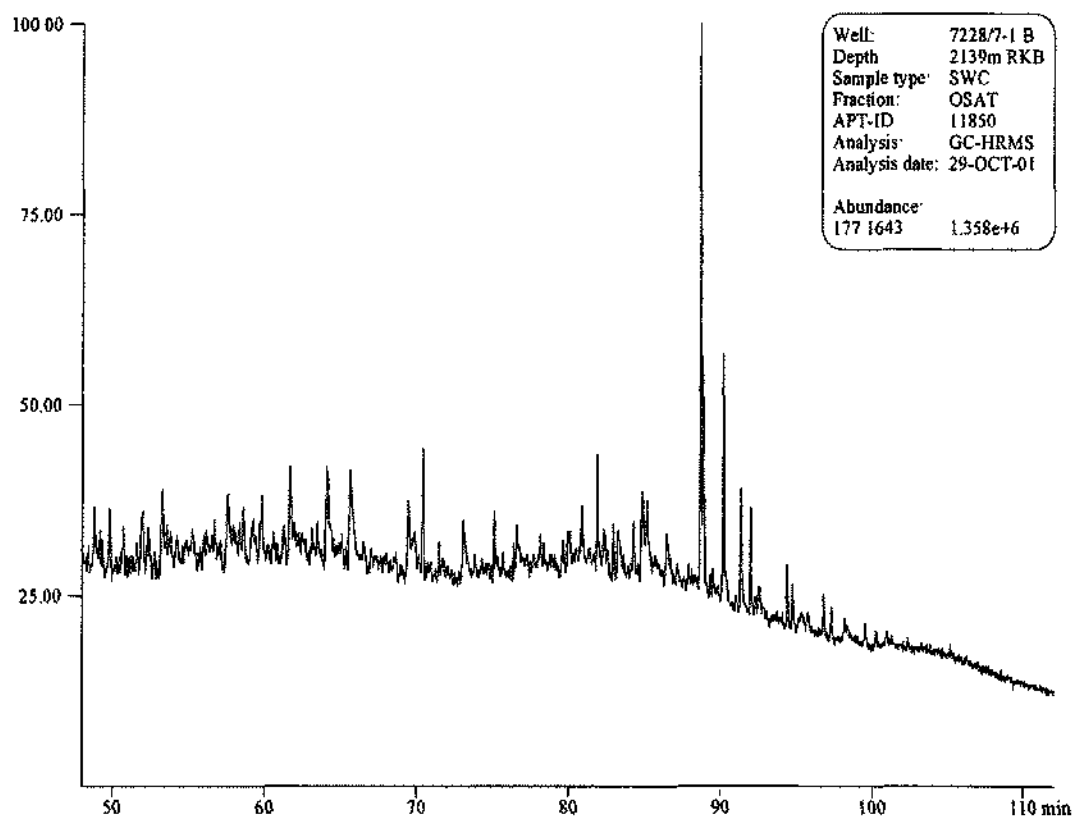


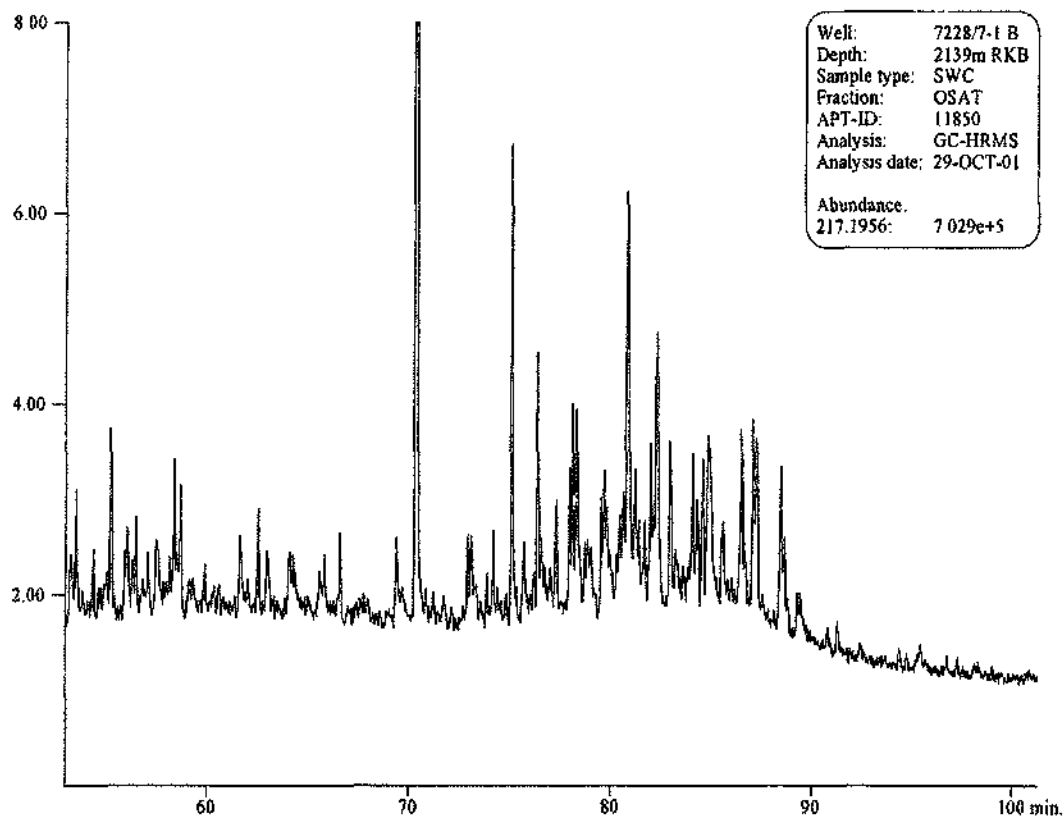
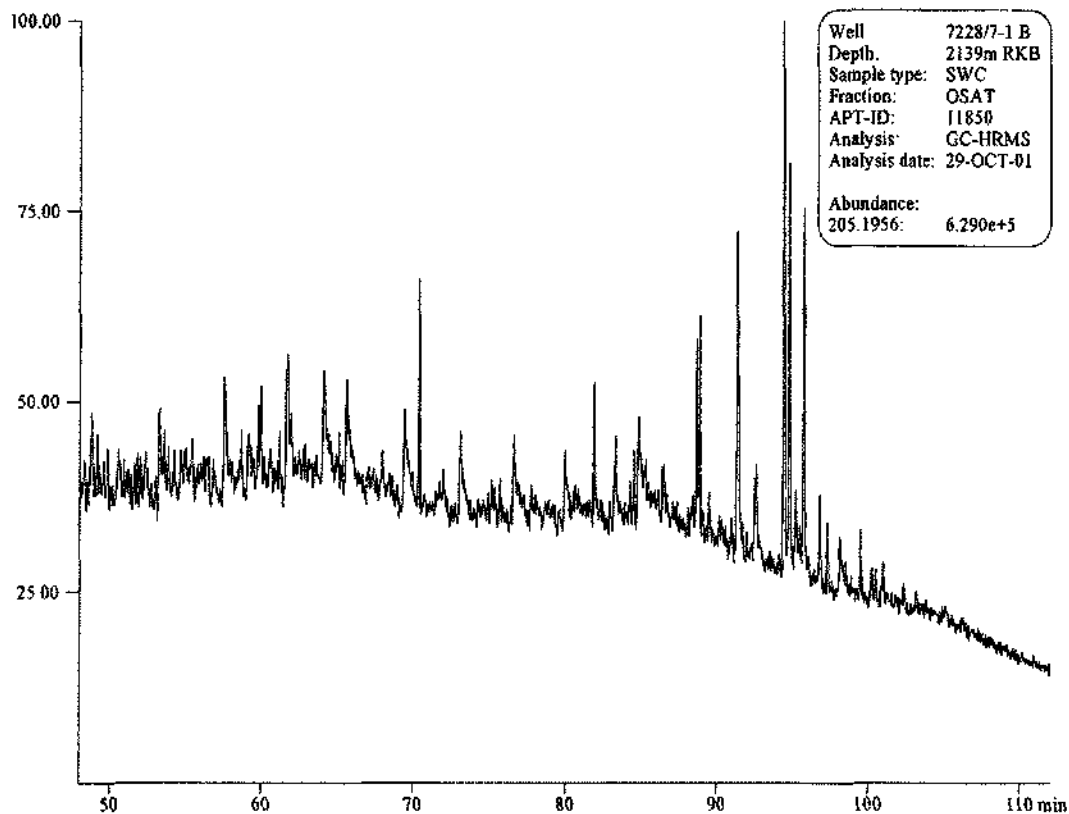


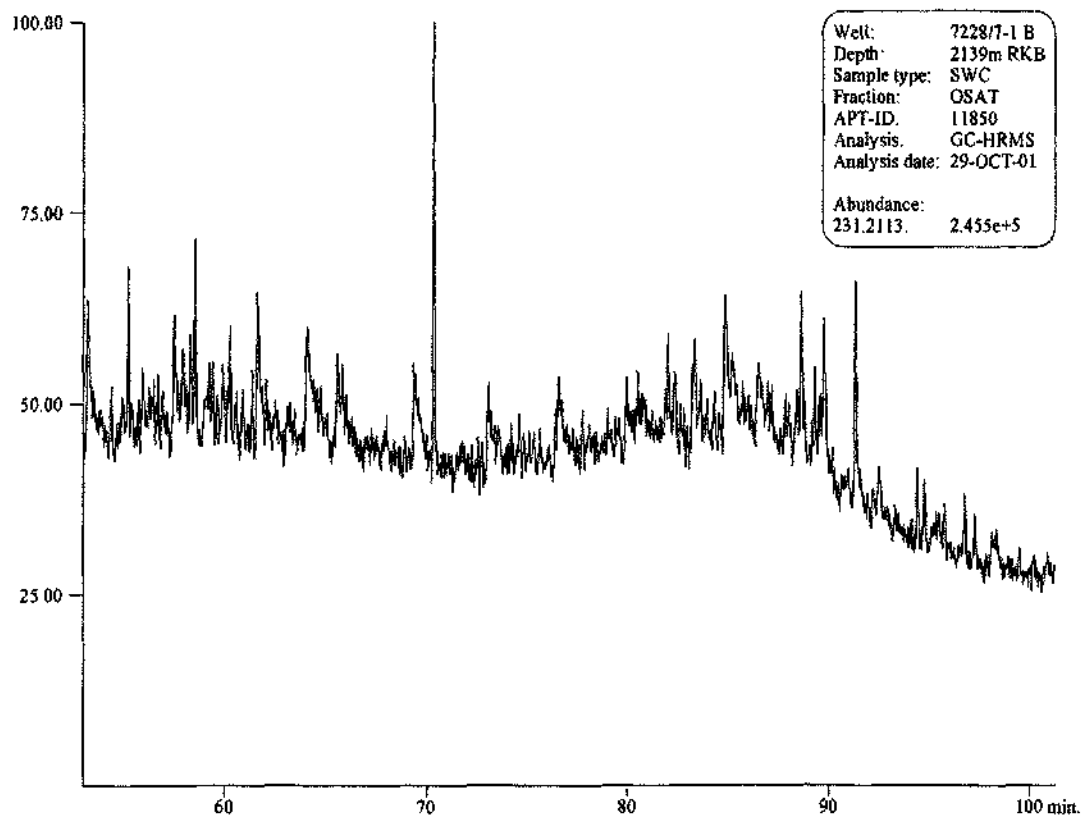
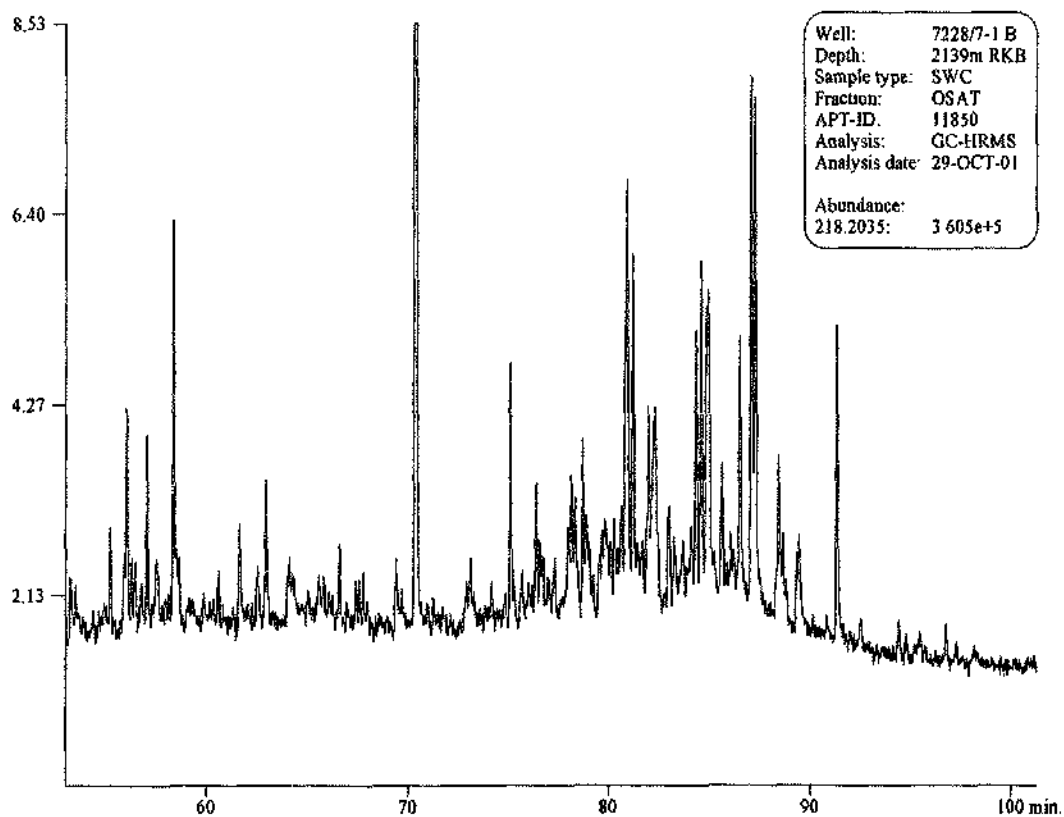






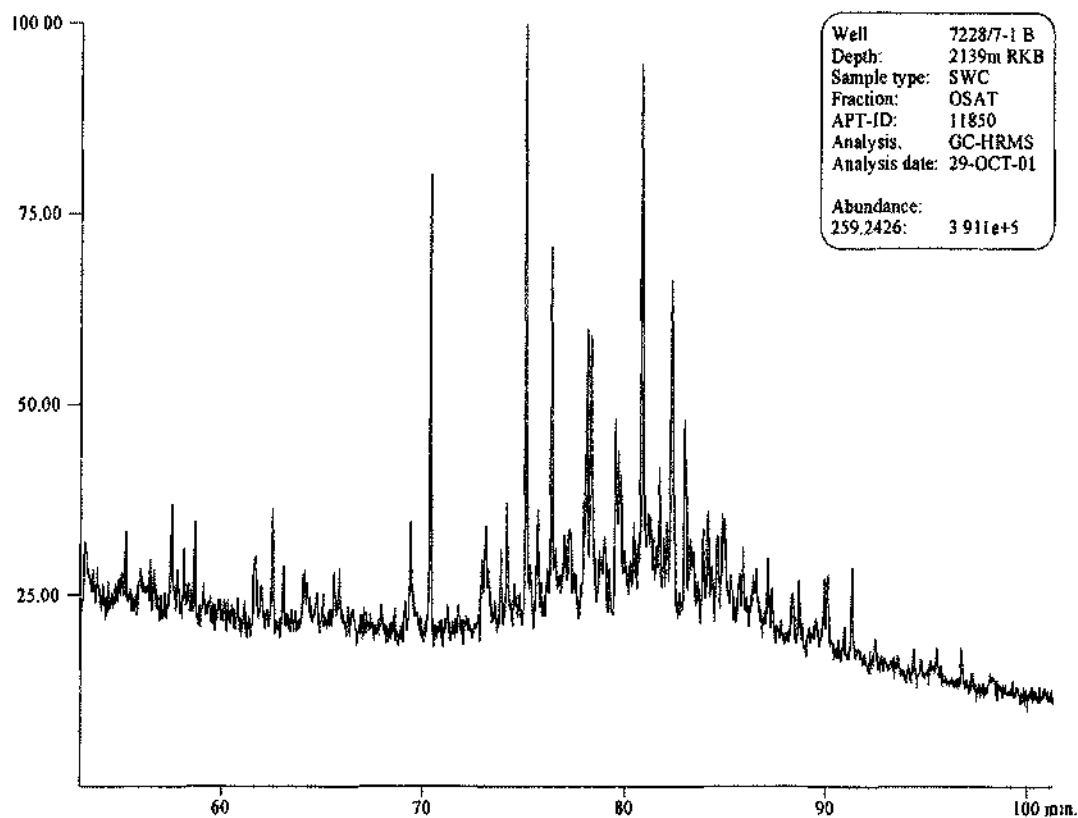
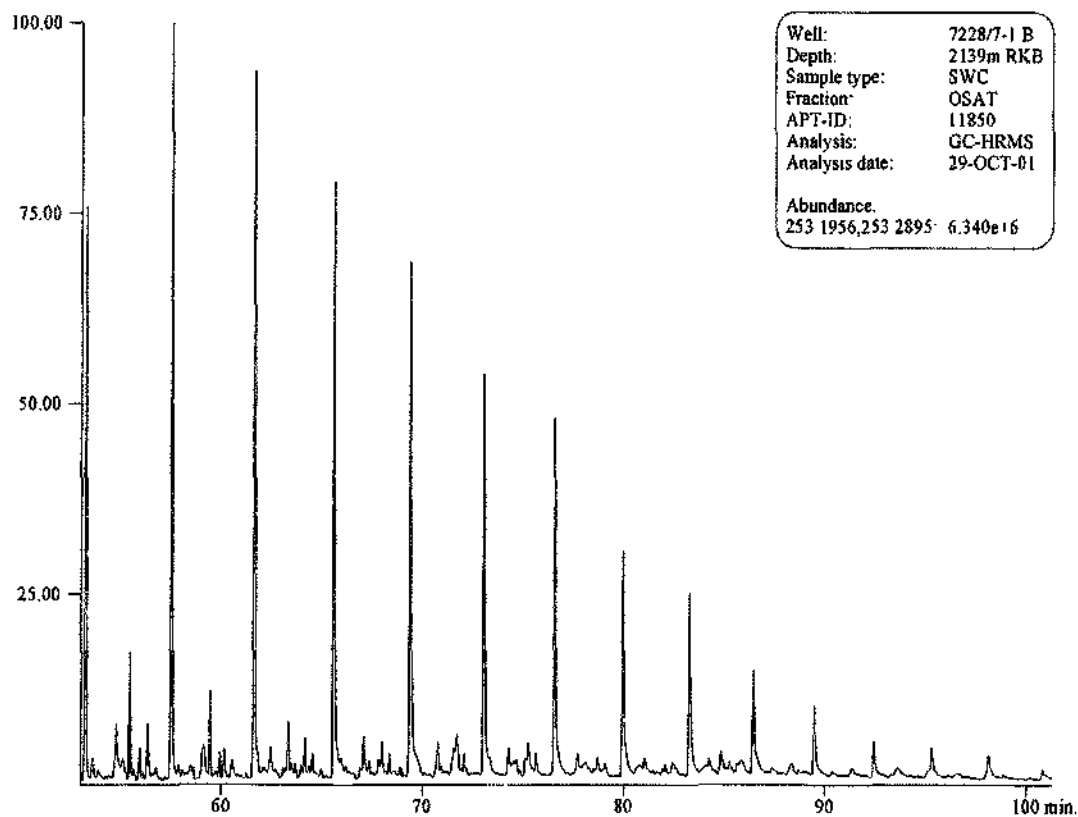


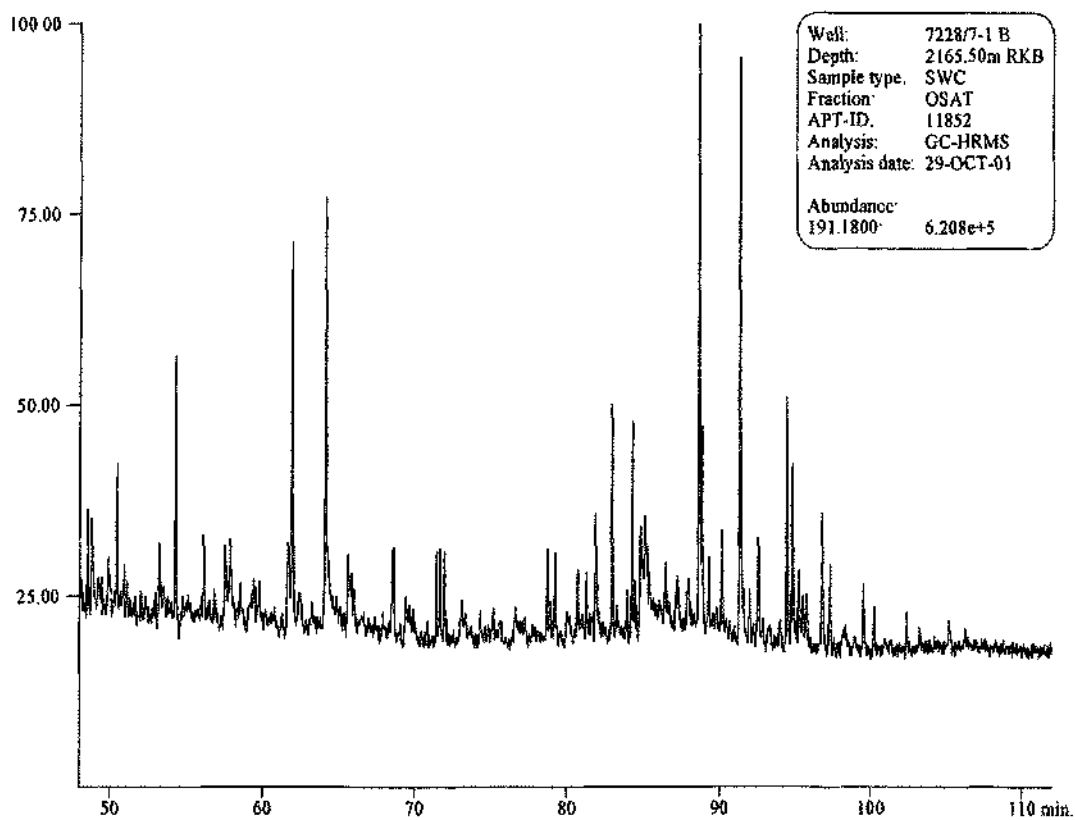
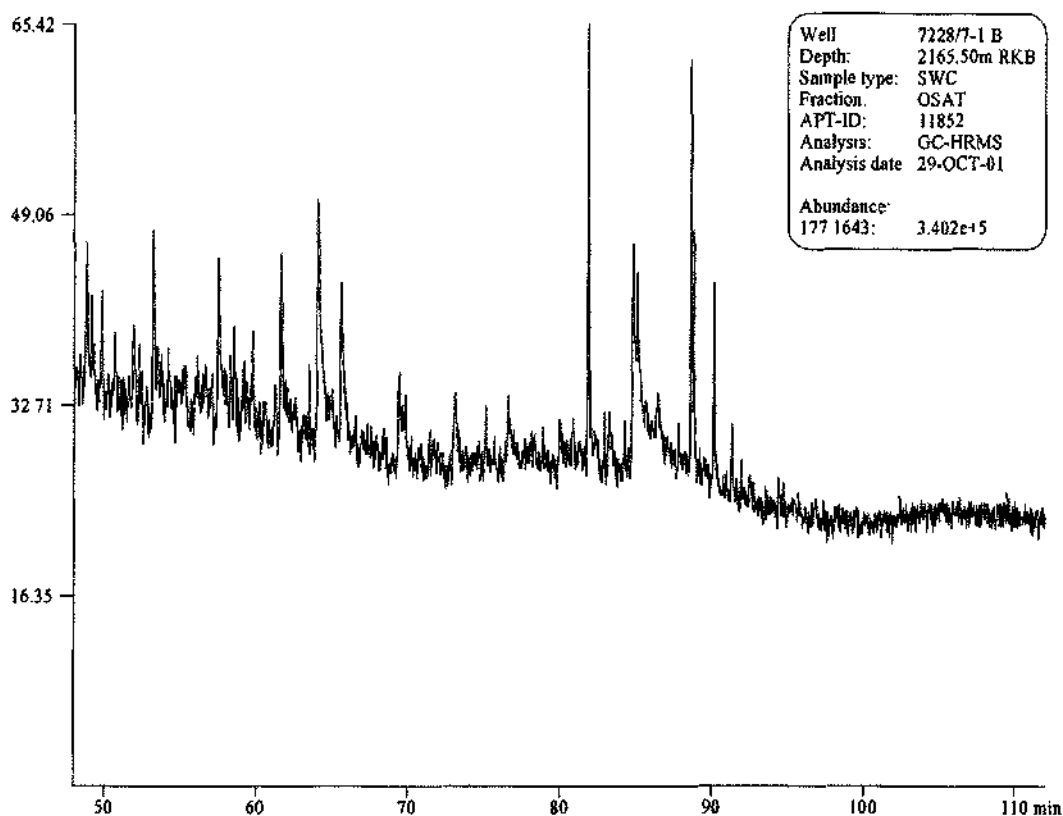


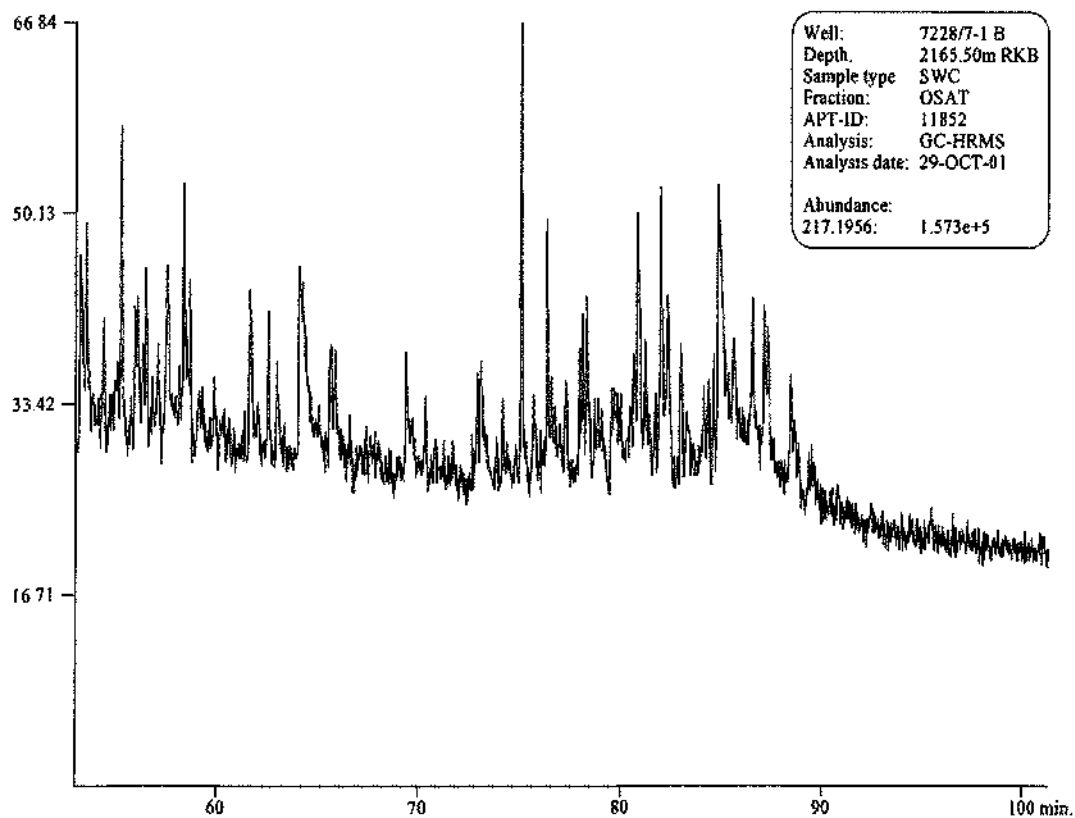
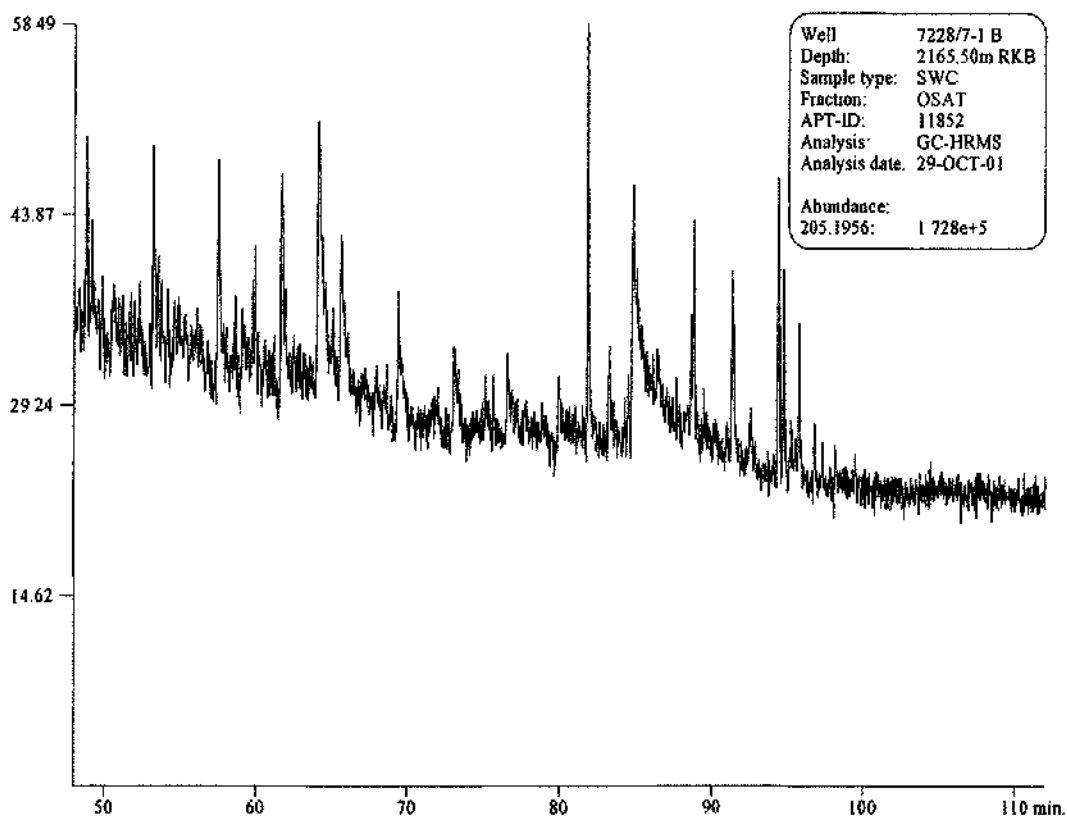


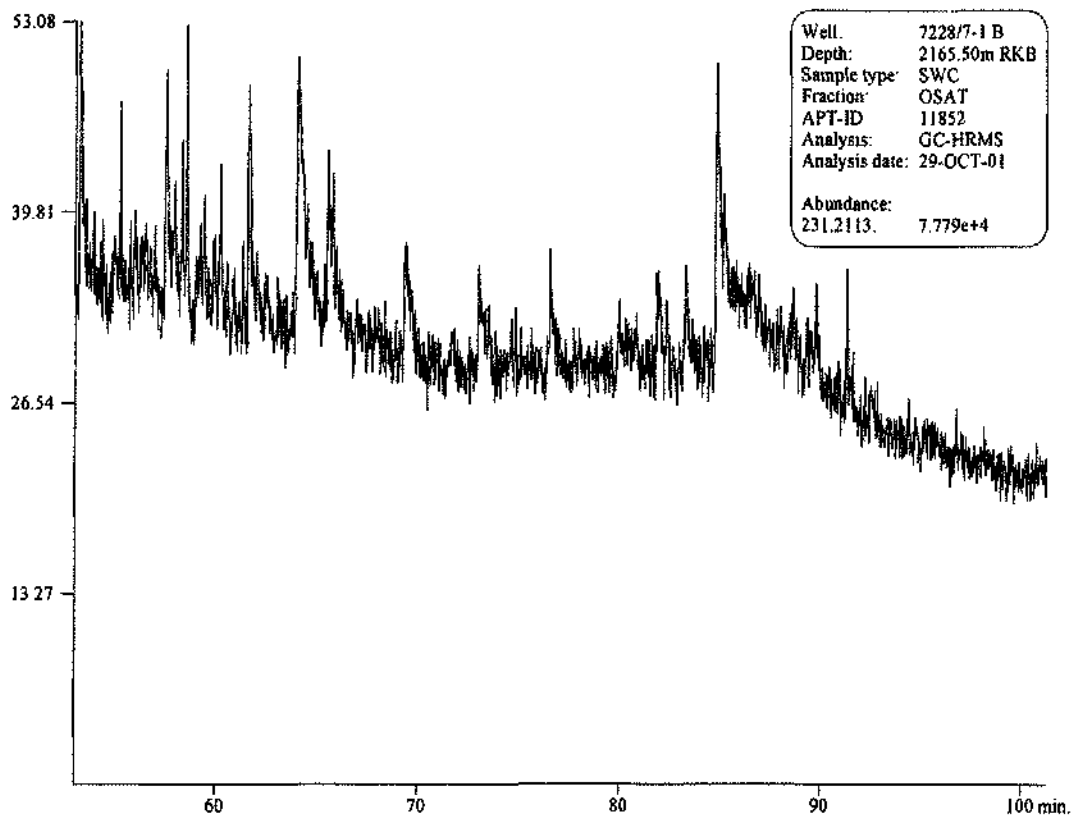
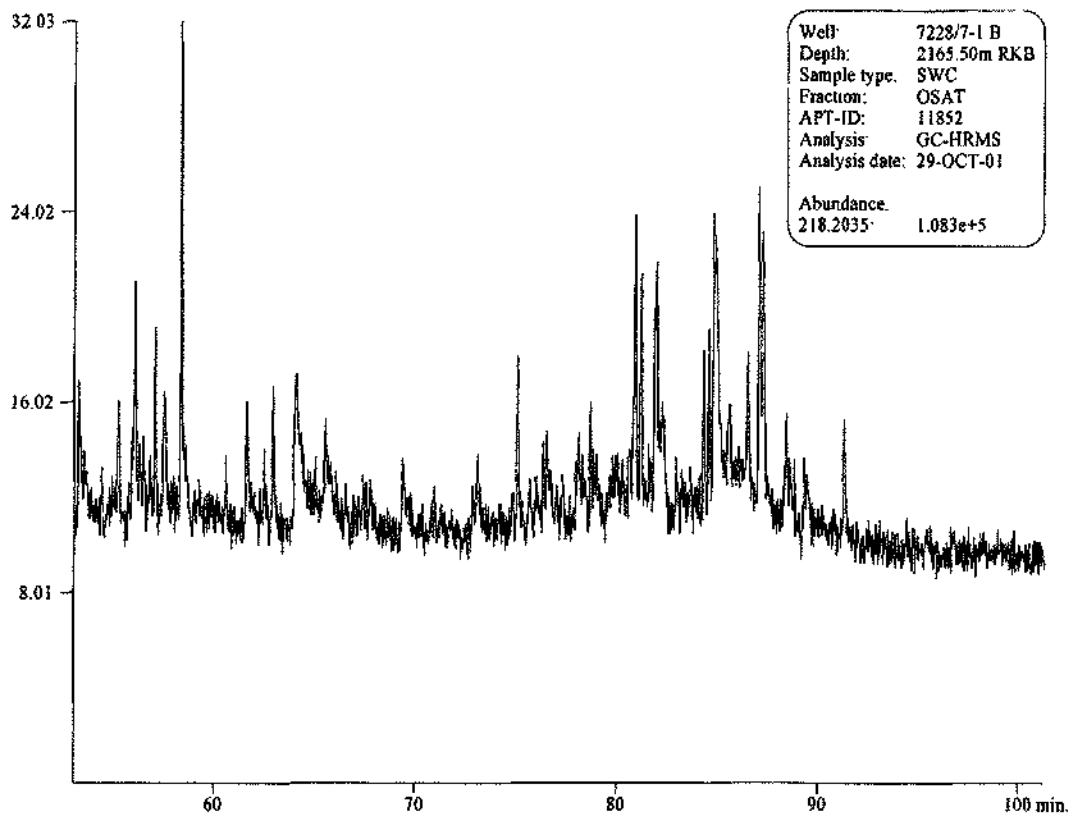


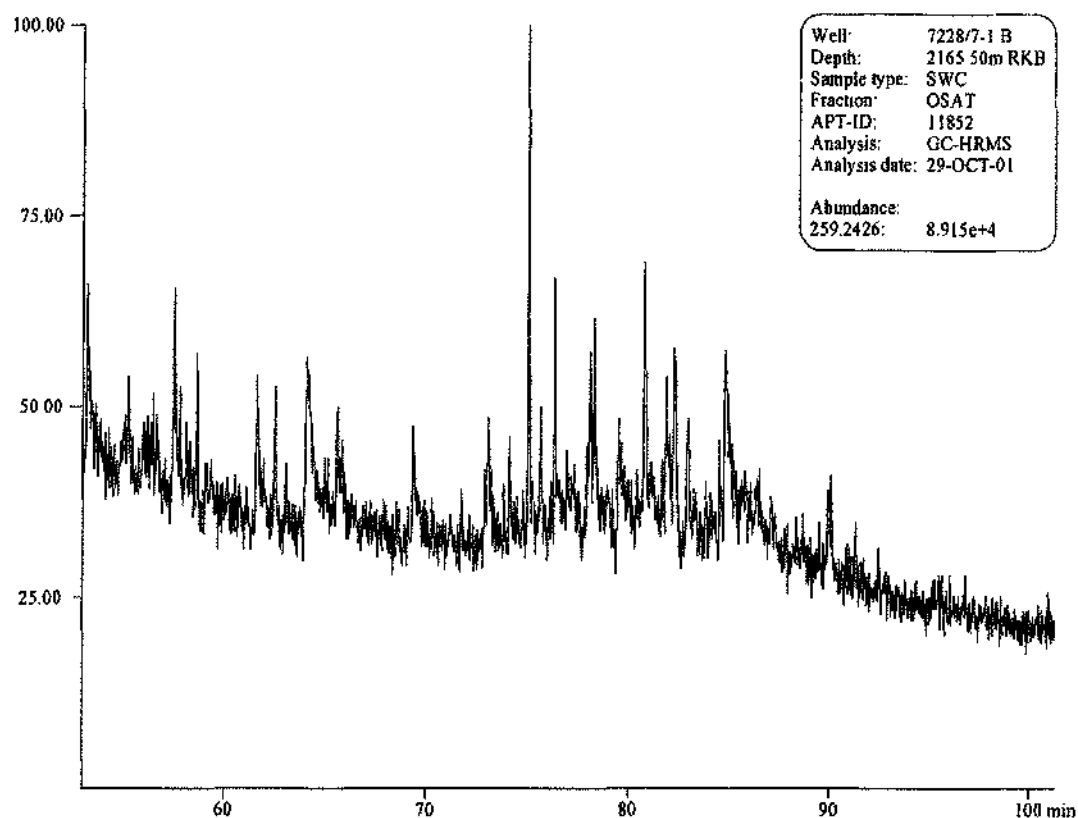
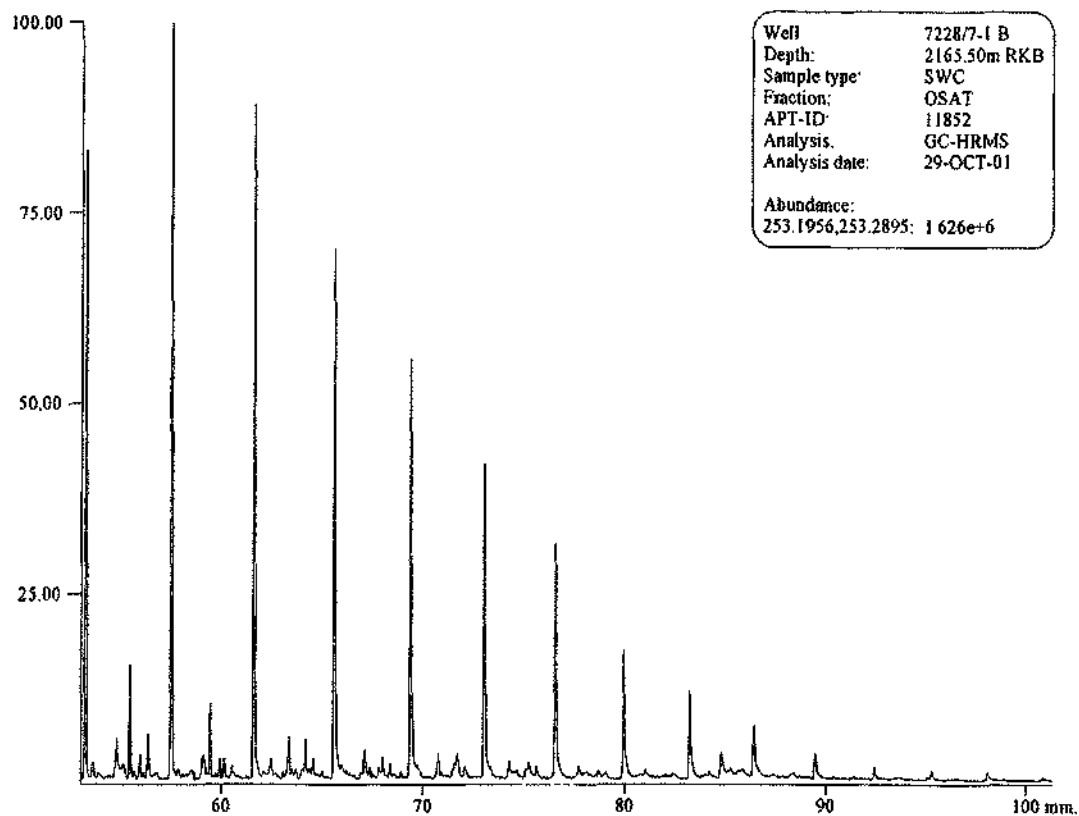
Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3

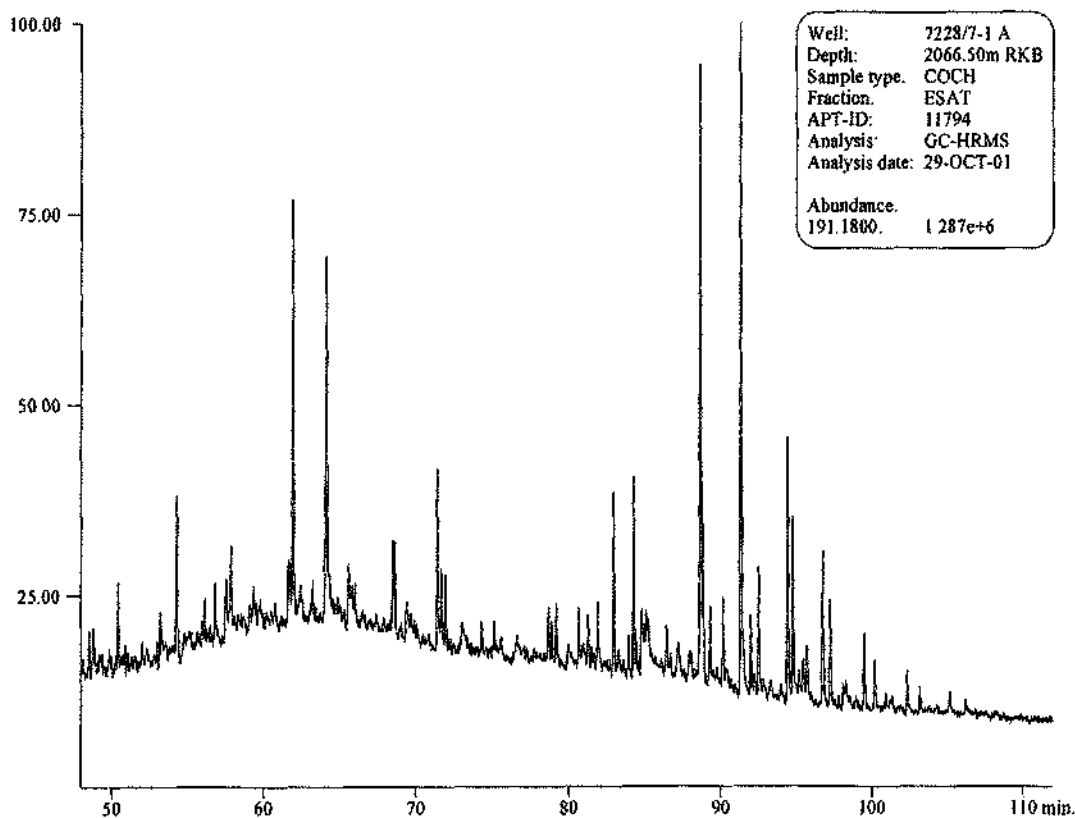
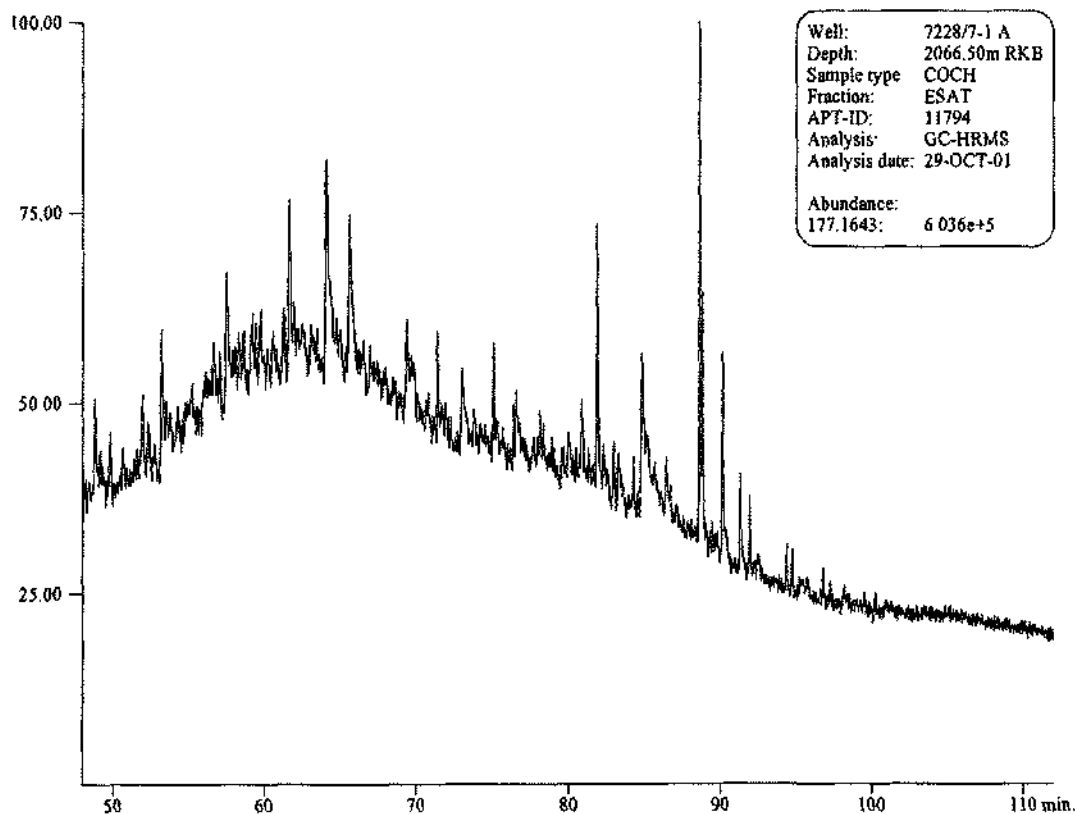


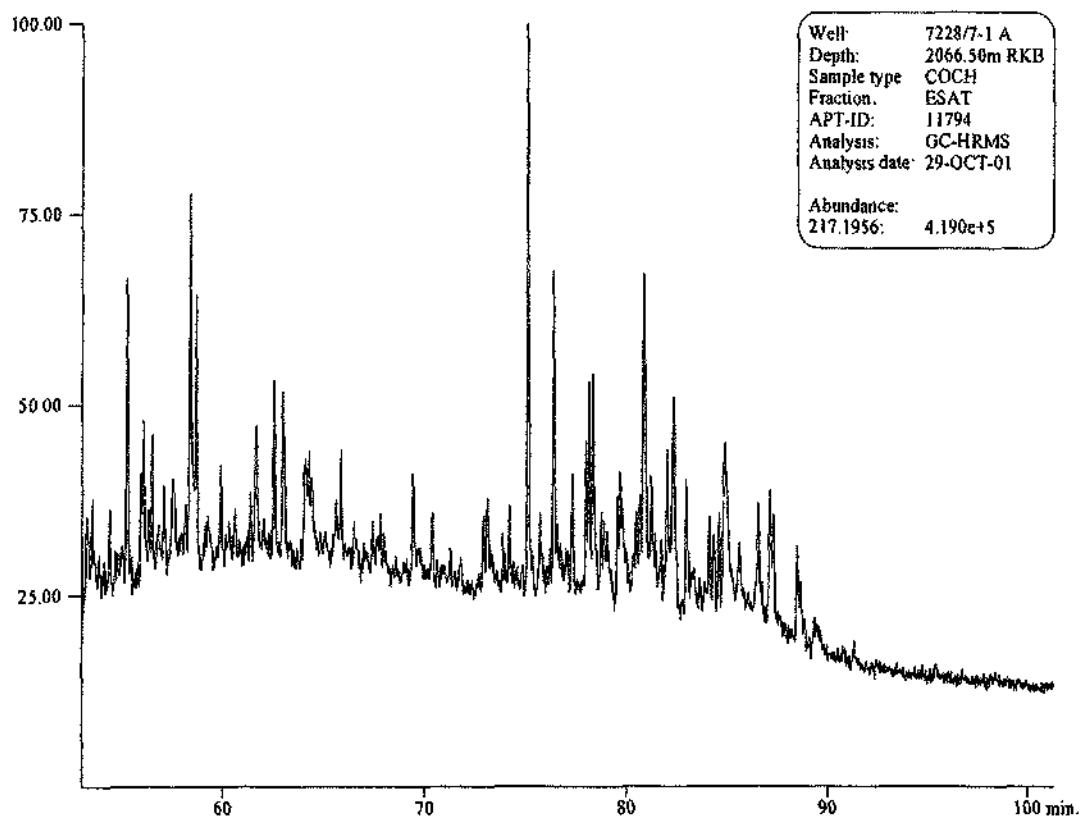
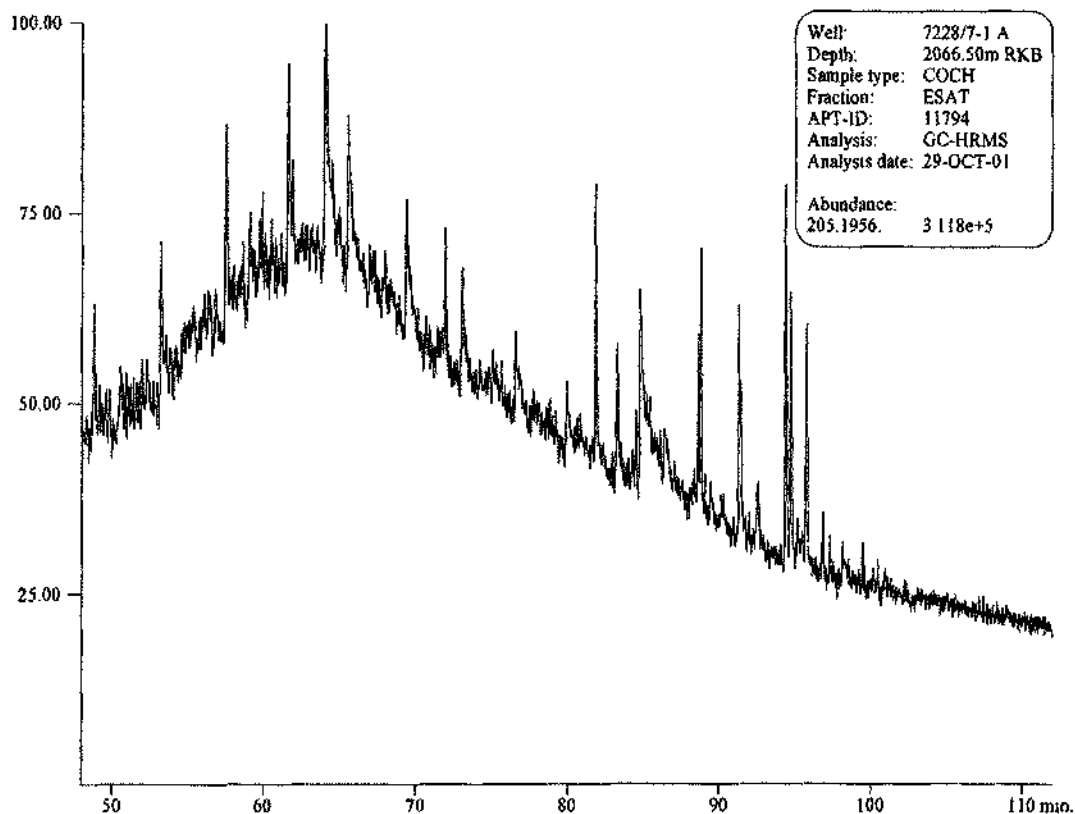


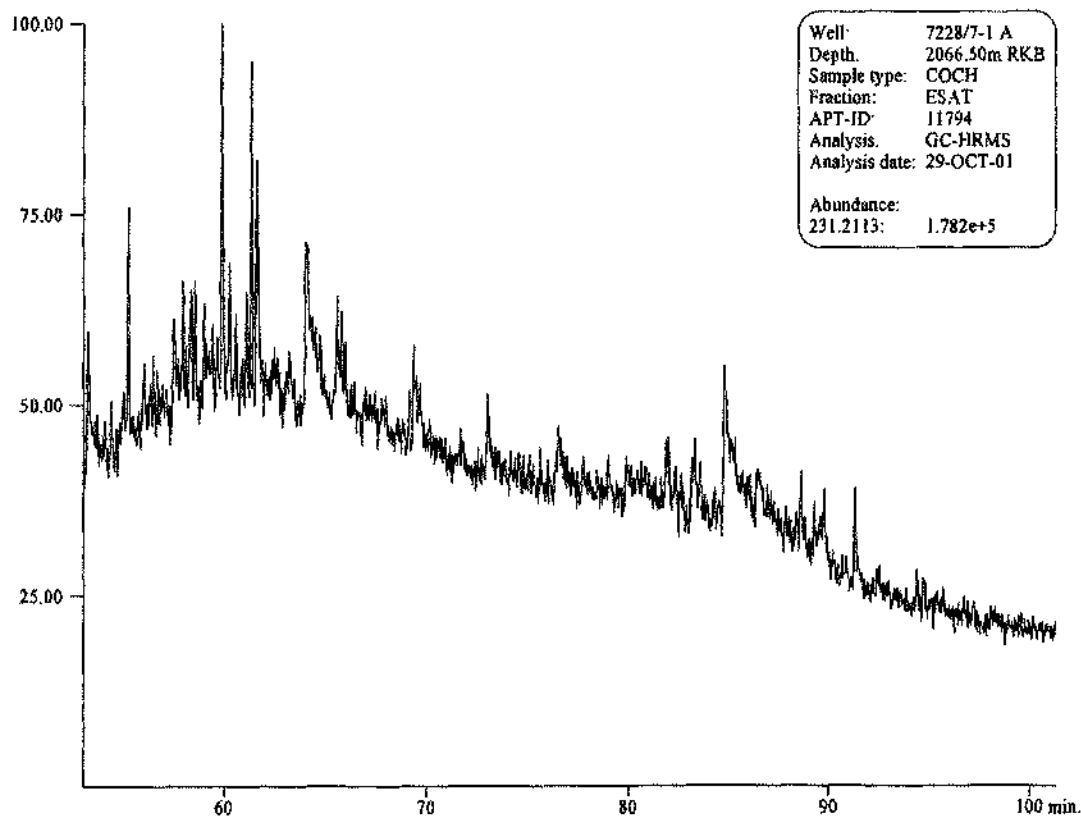
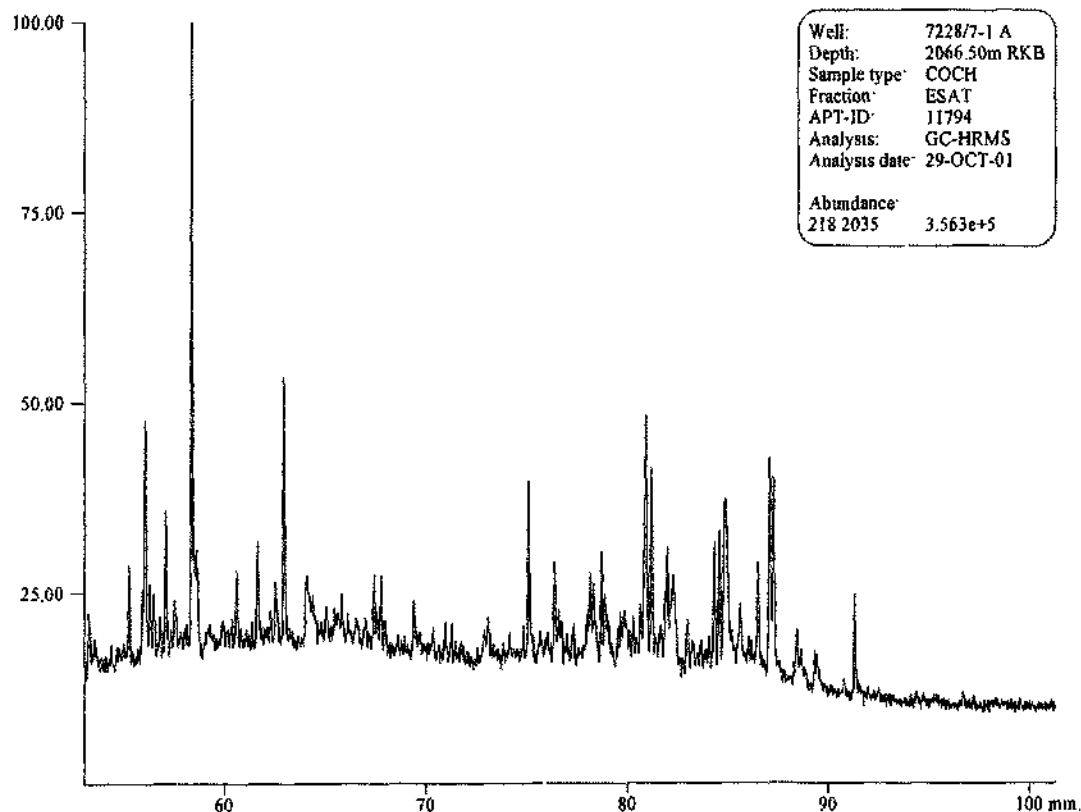


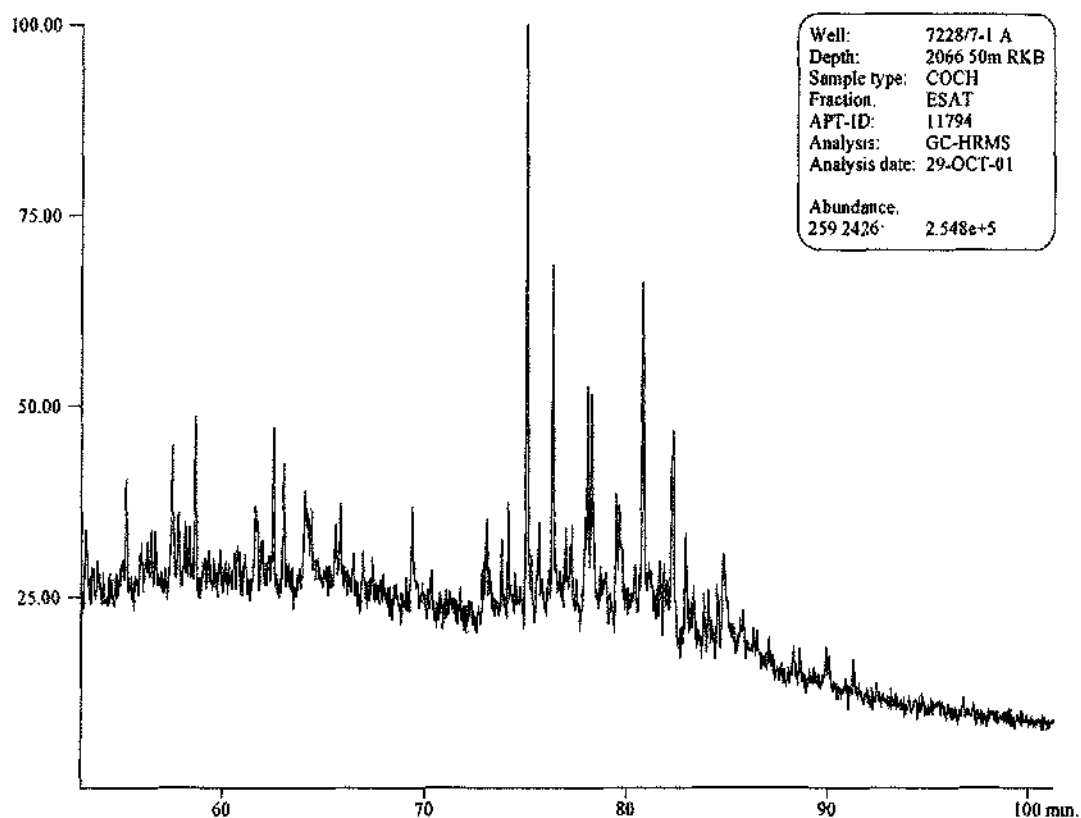
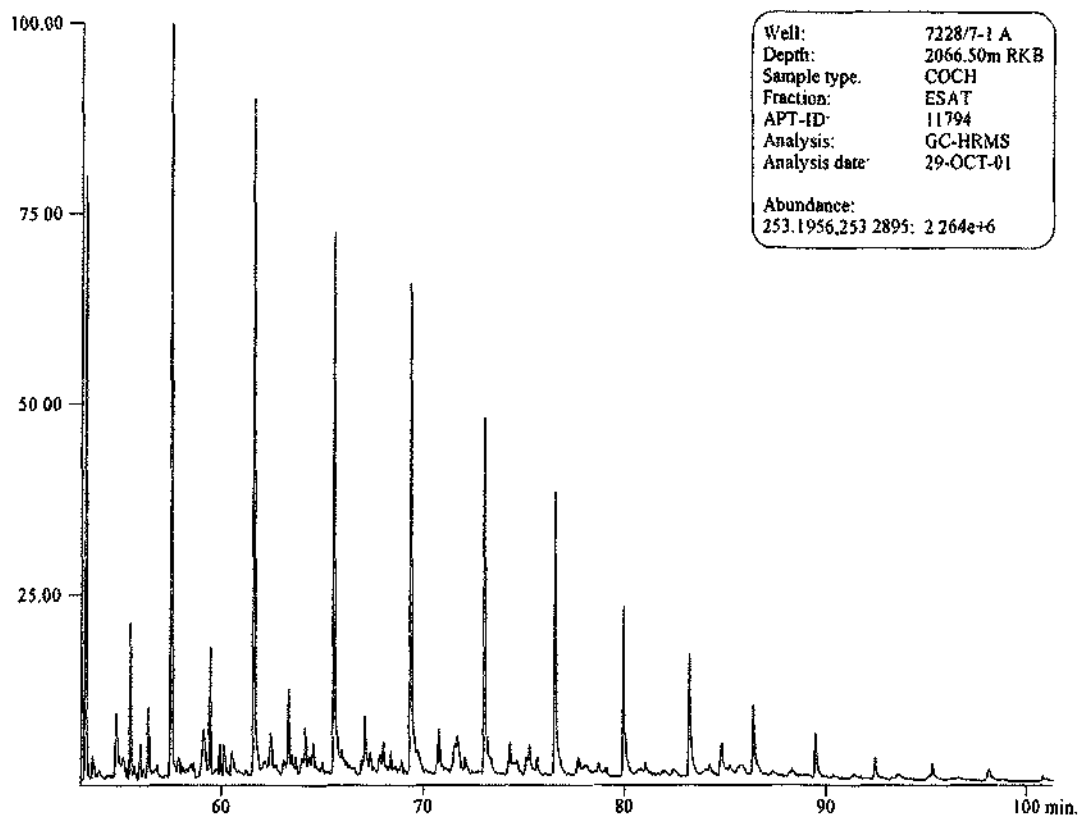


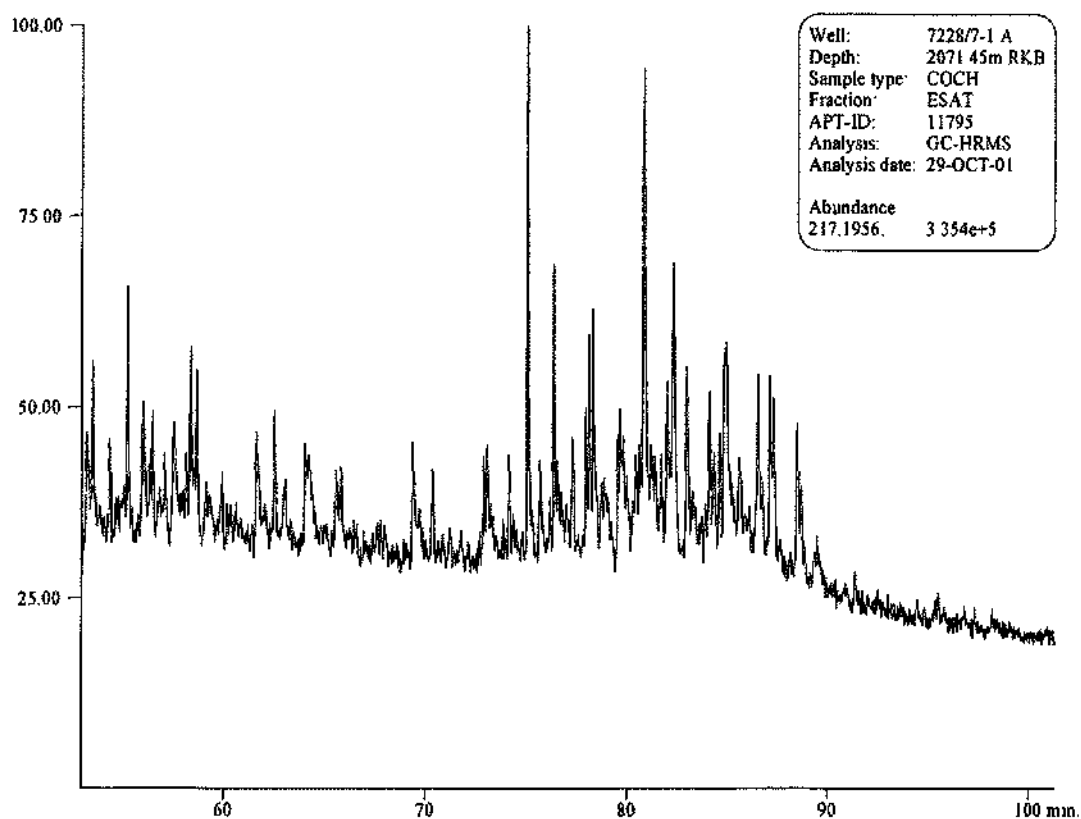
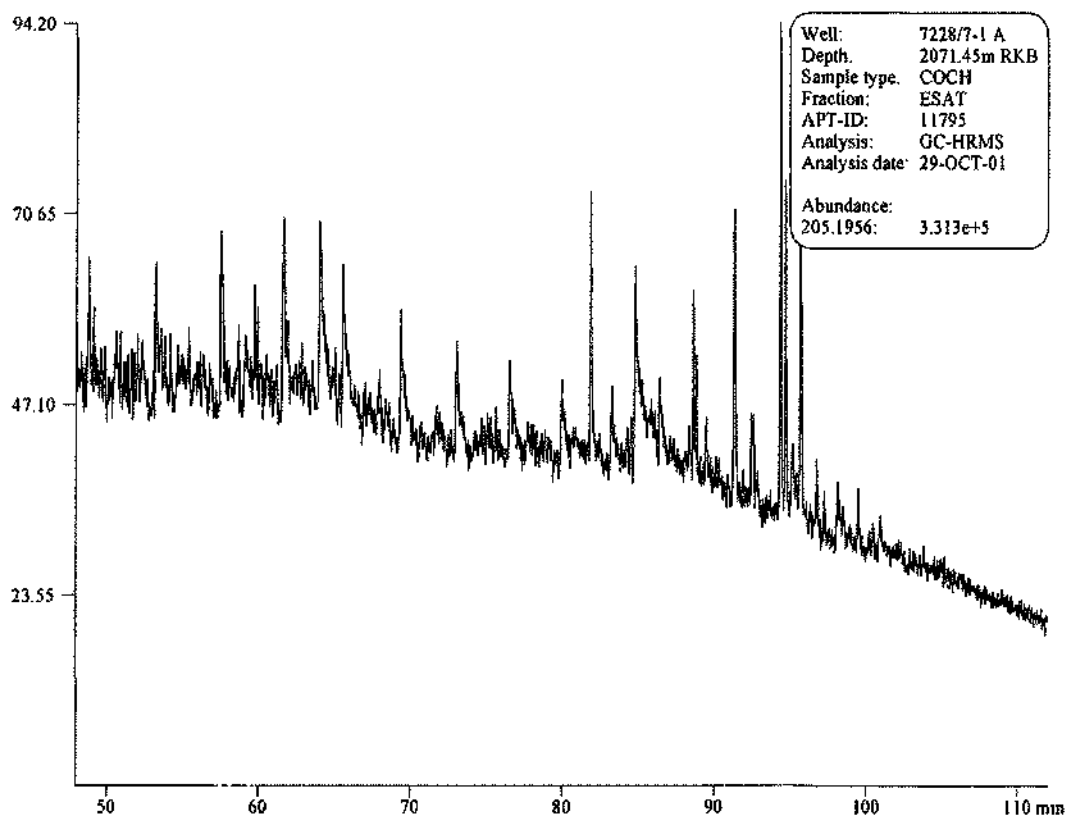


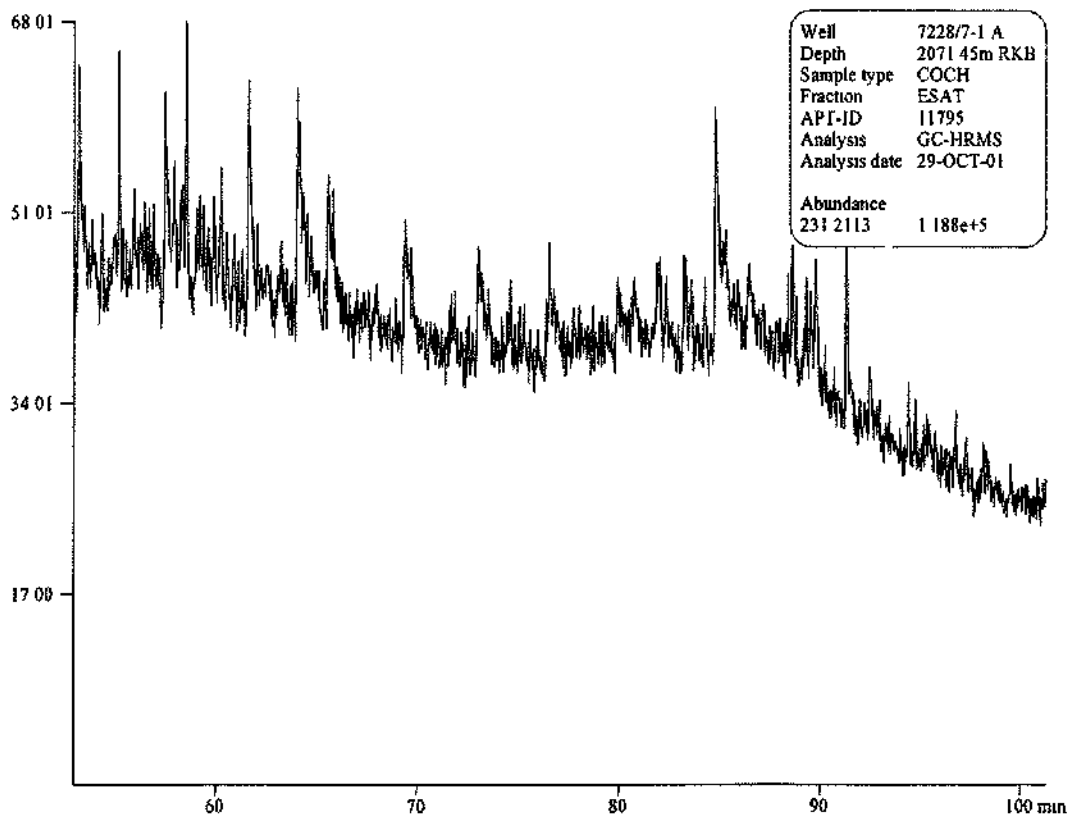
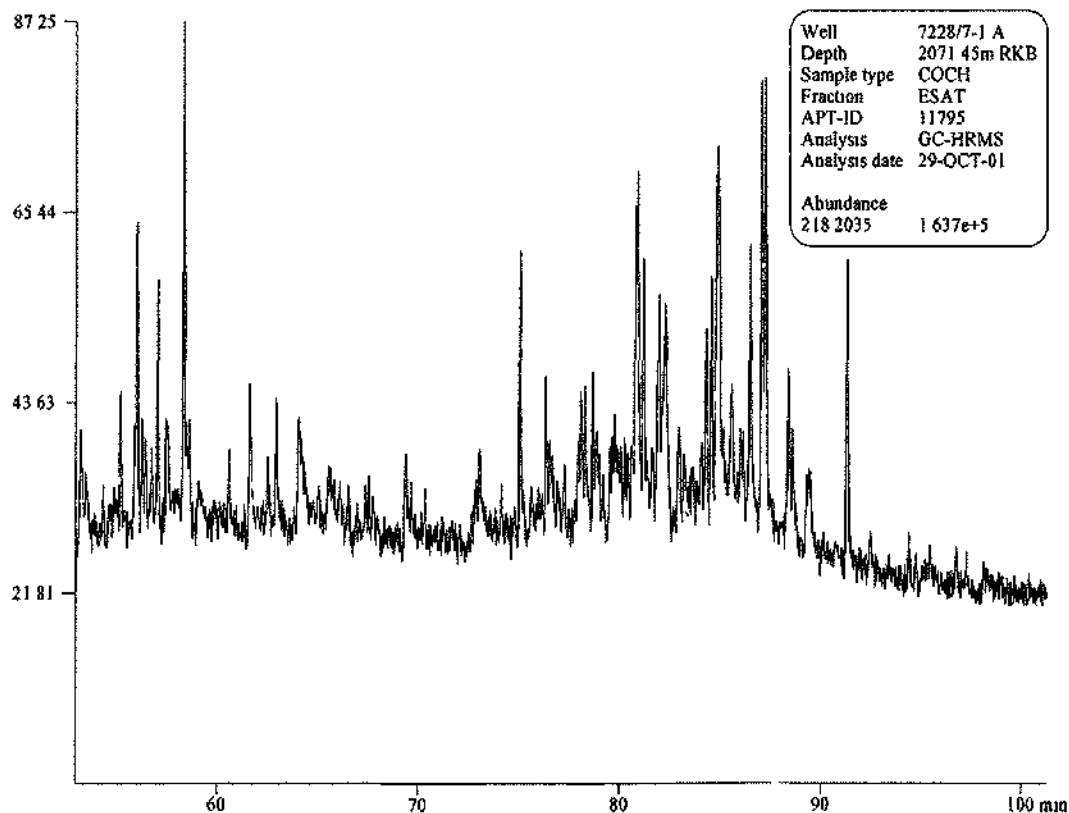


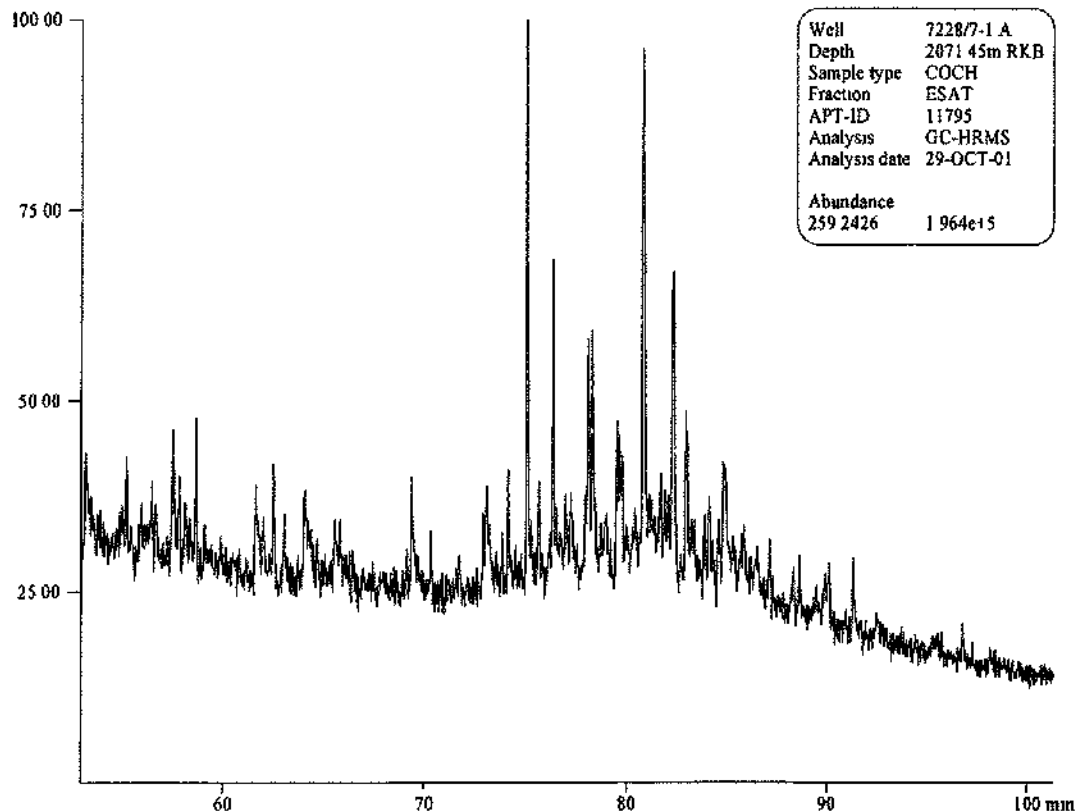
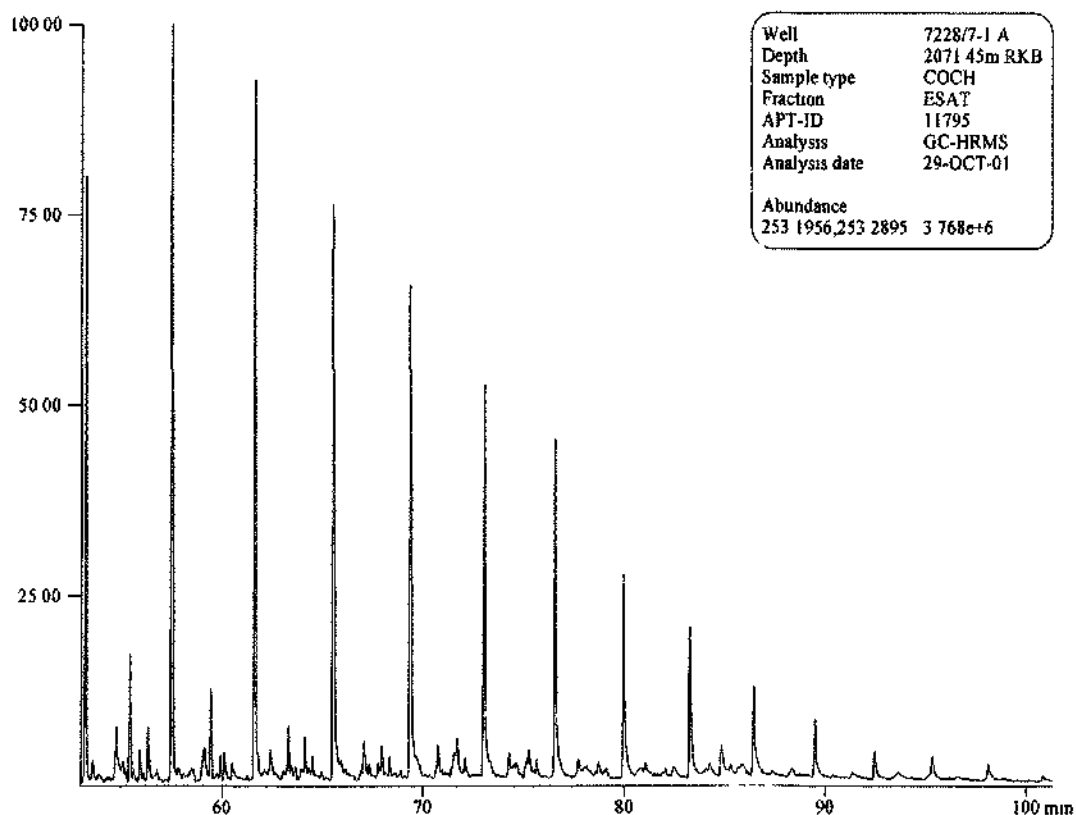


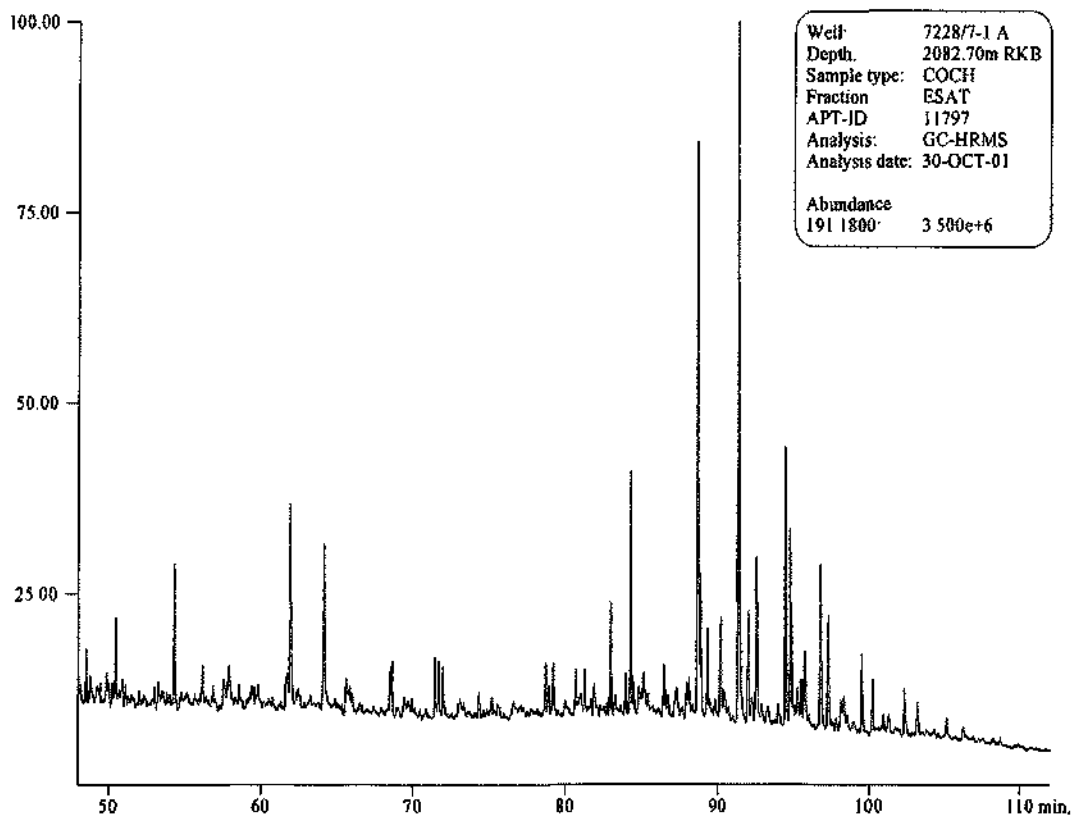
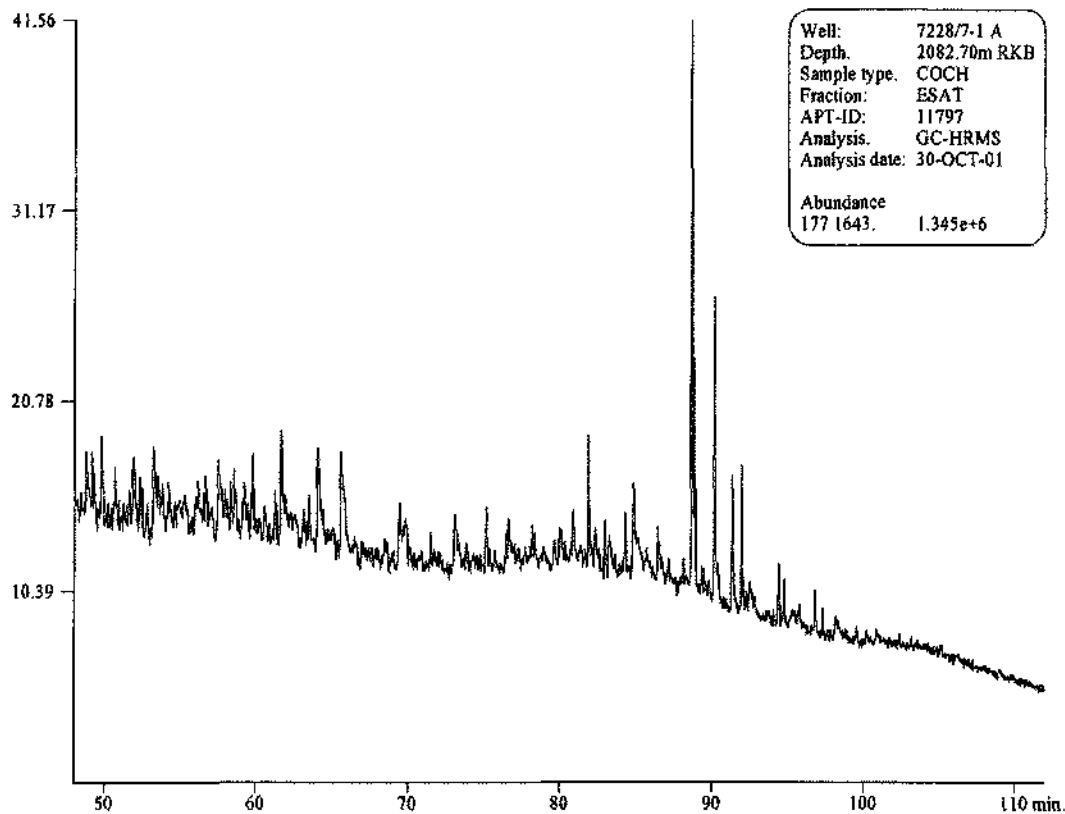


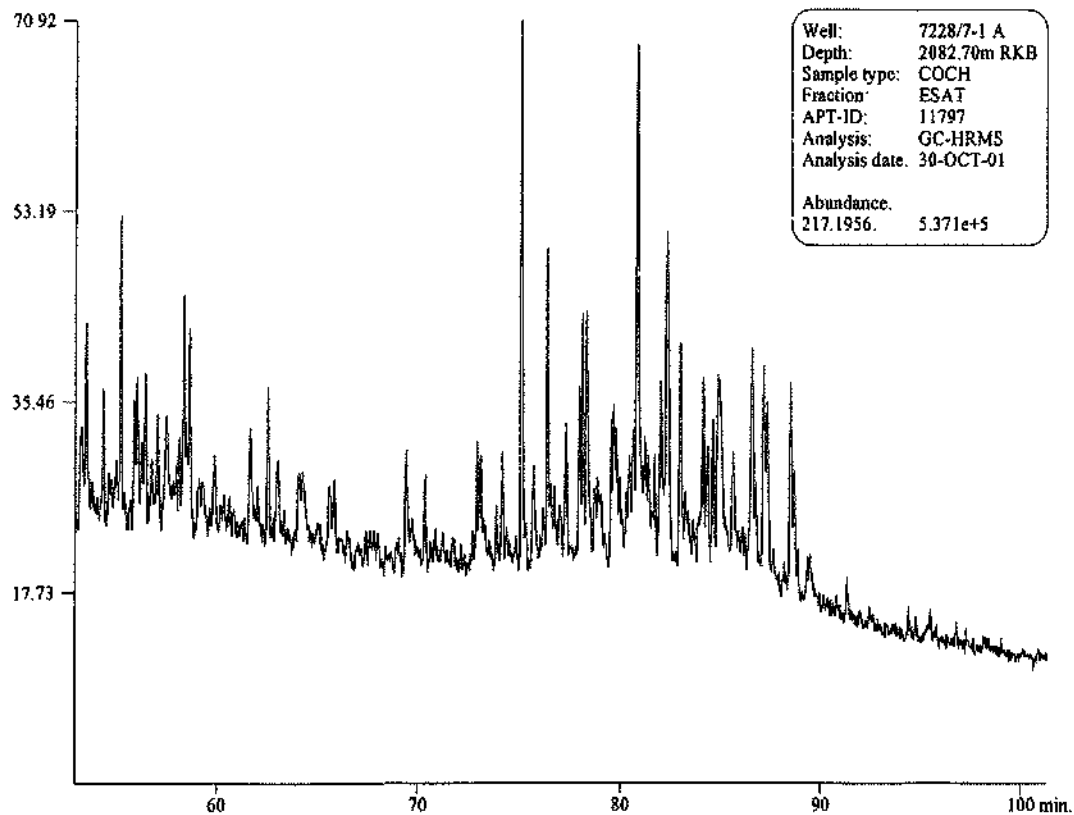
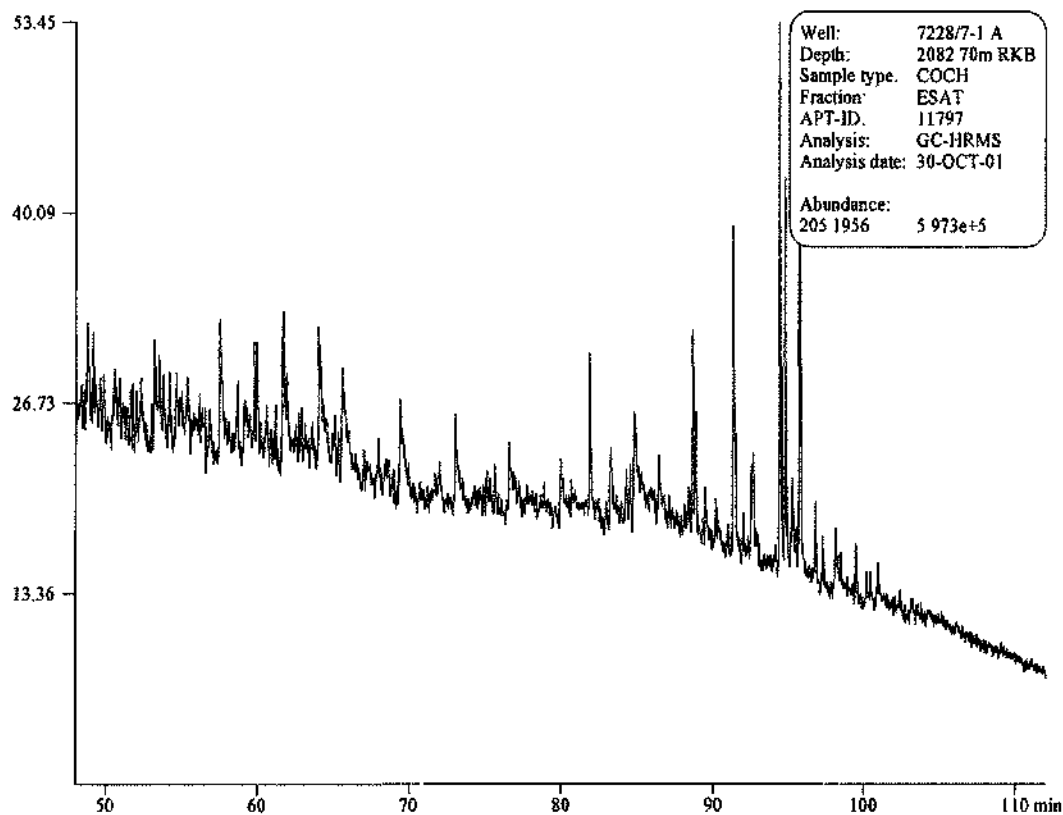


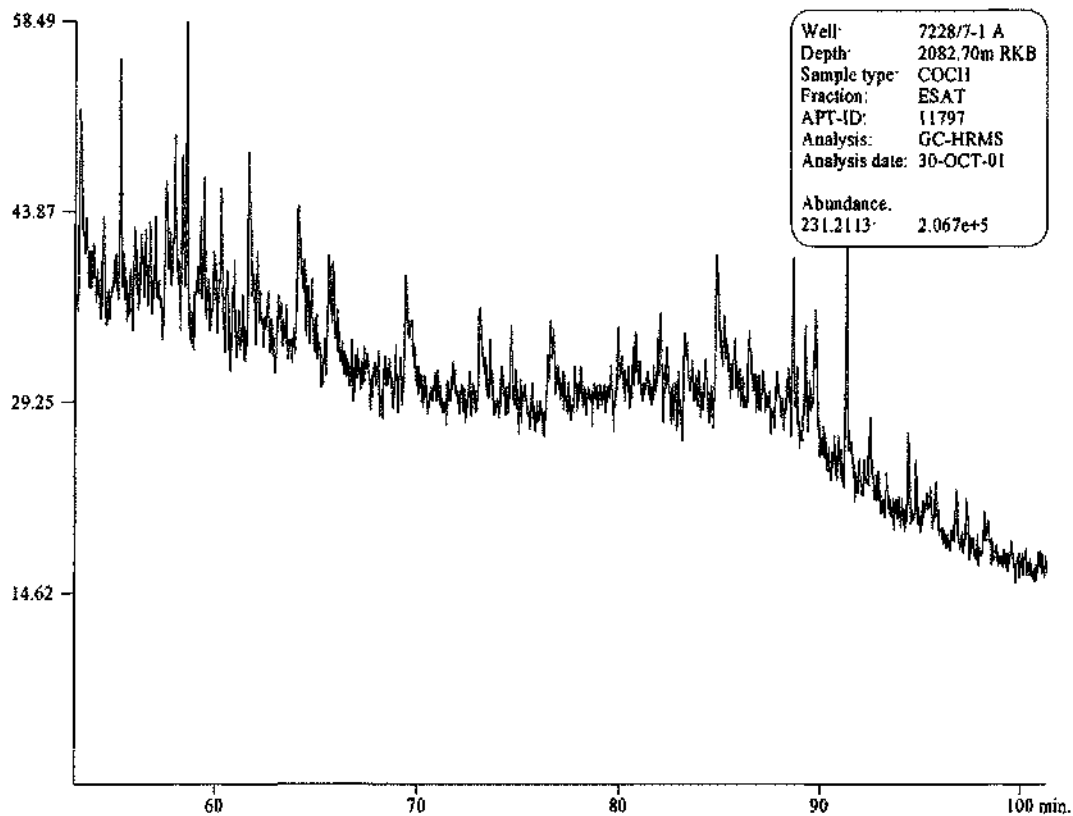
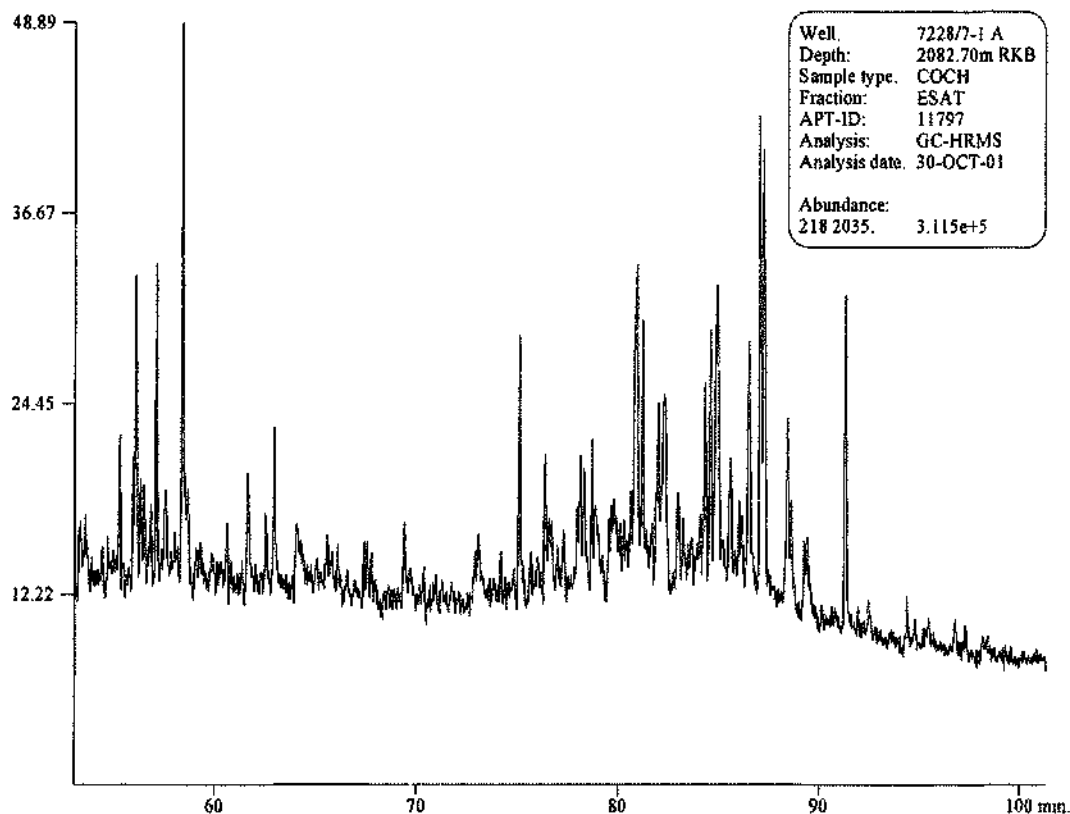


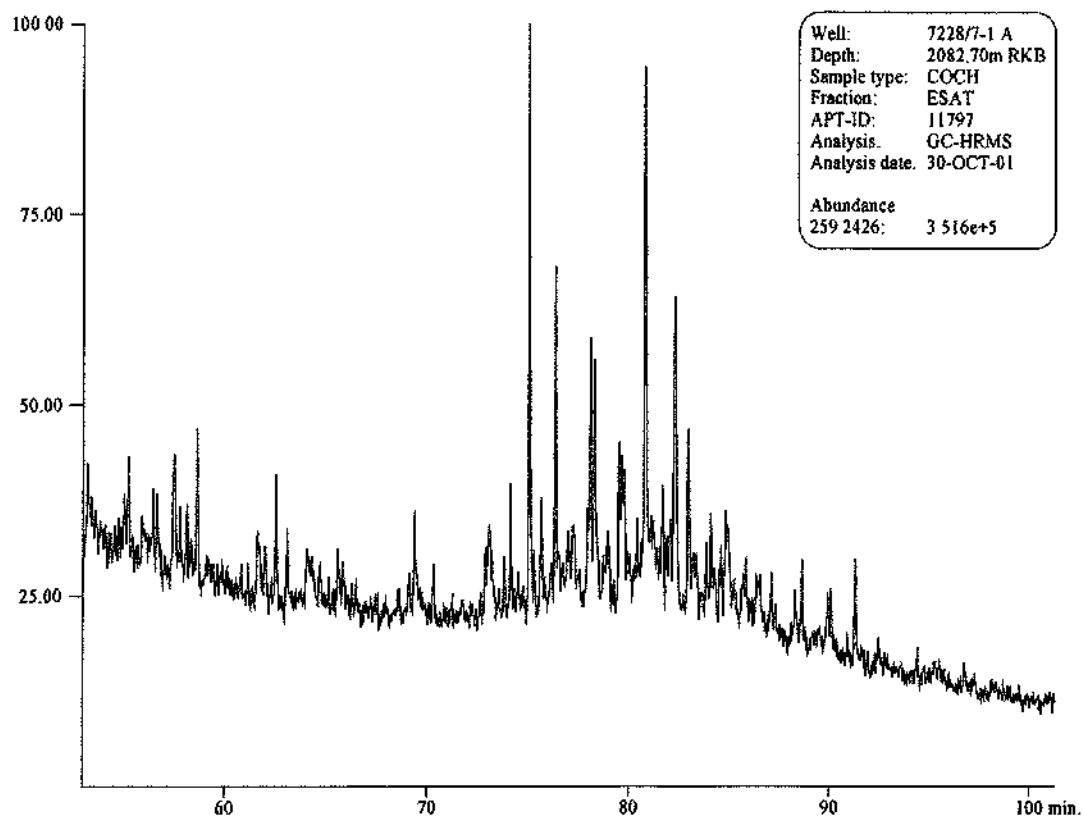
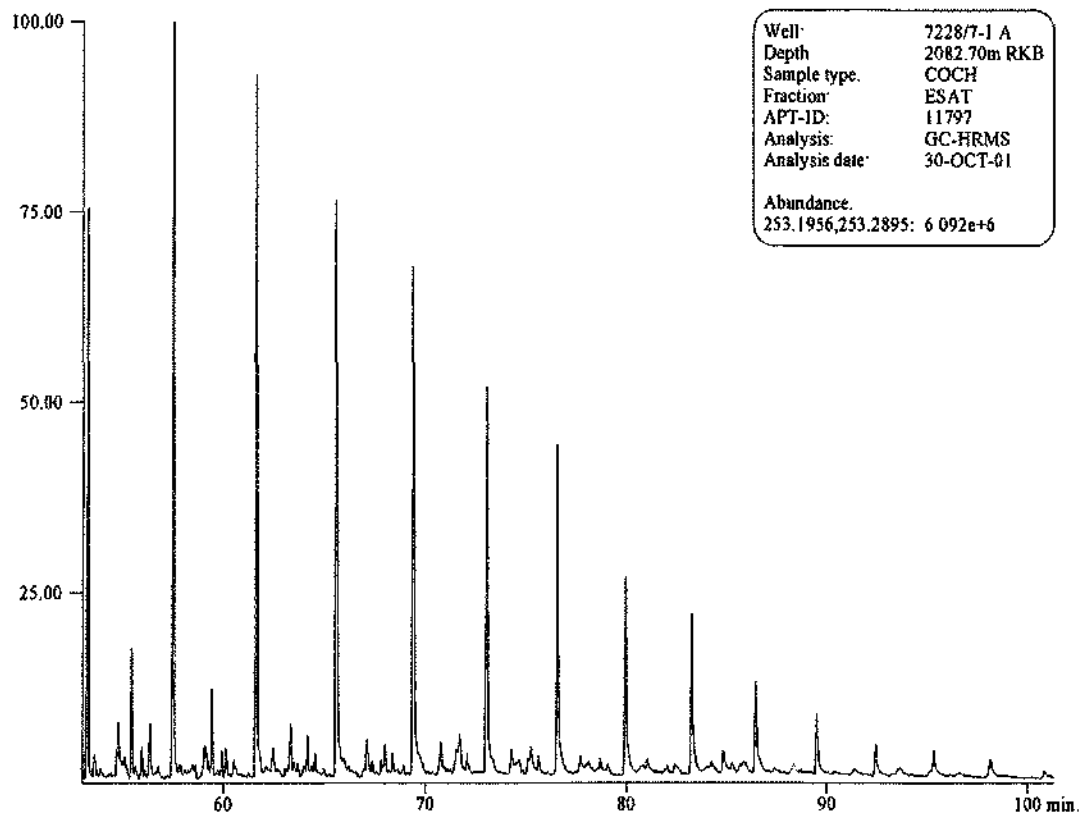


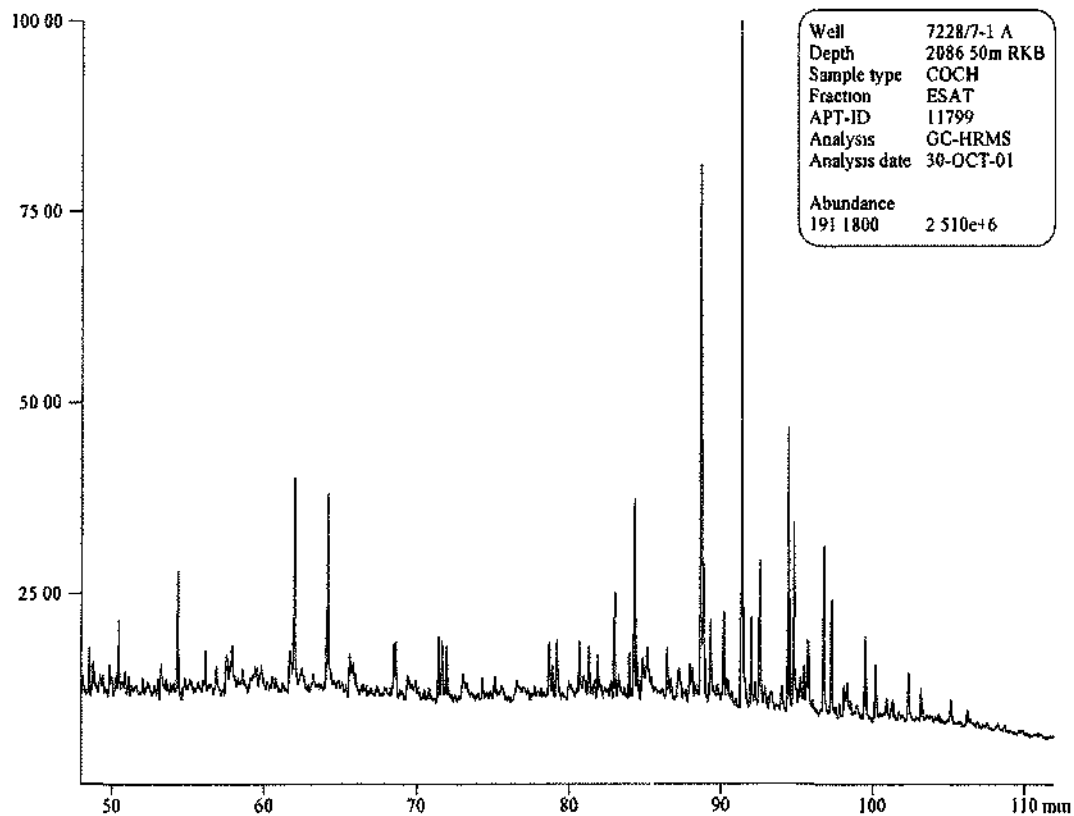
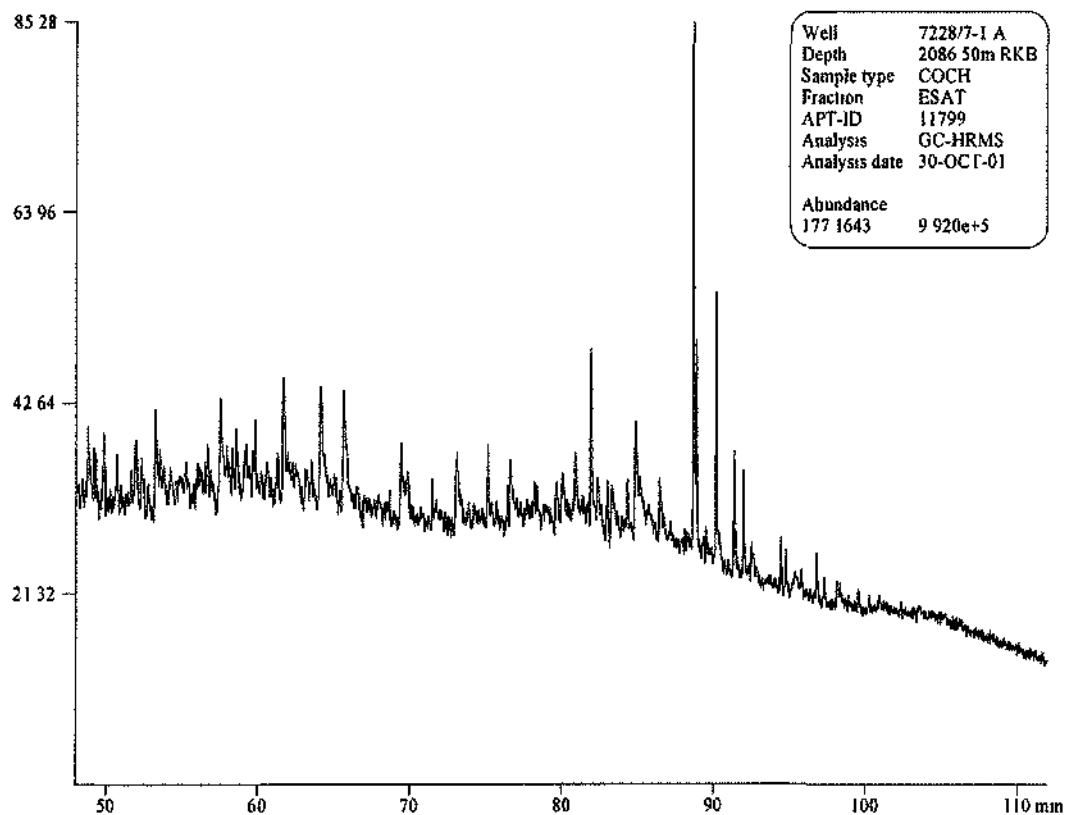


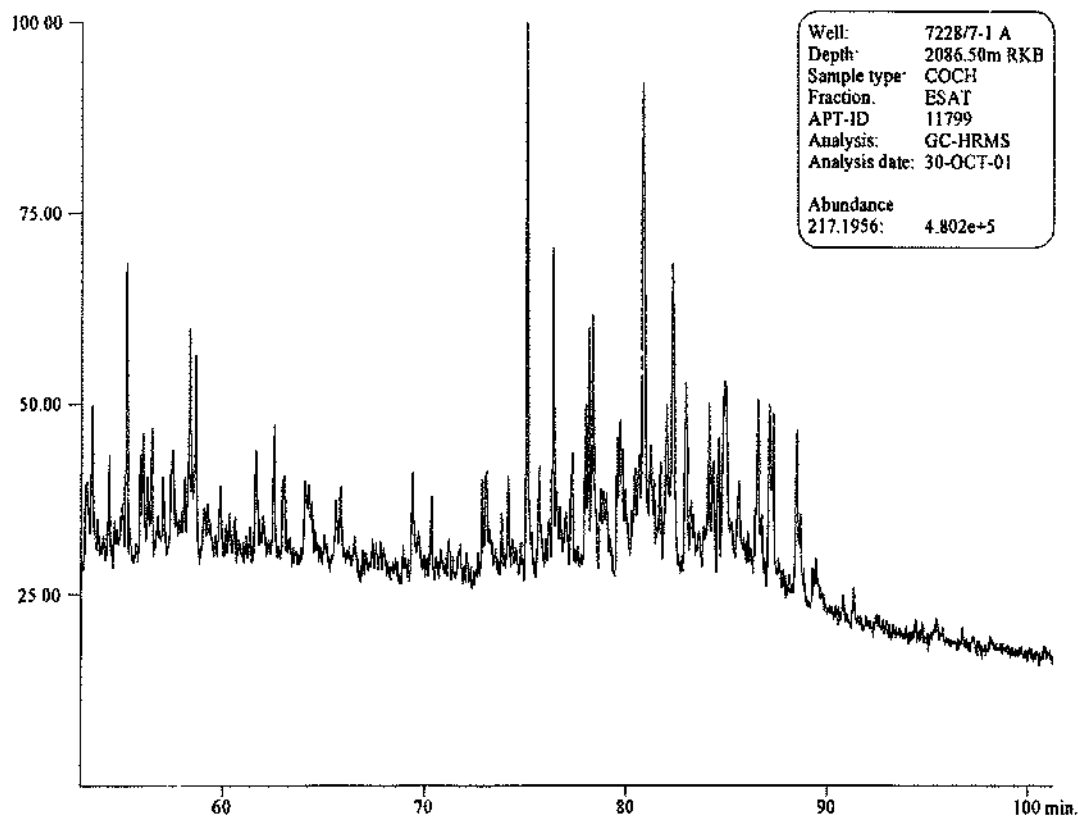
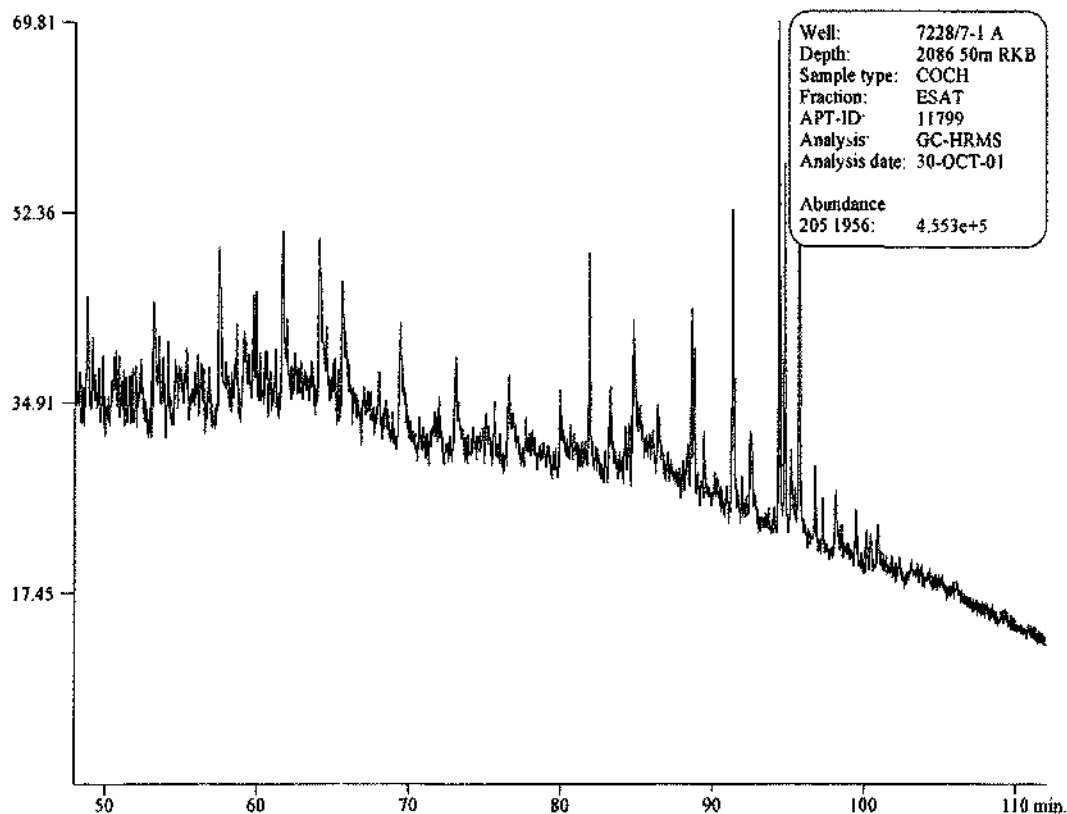


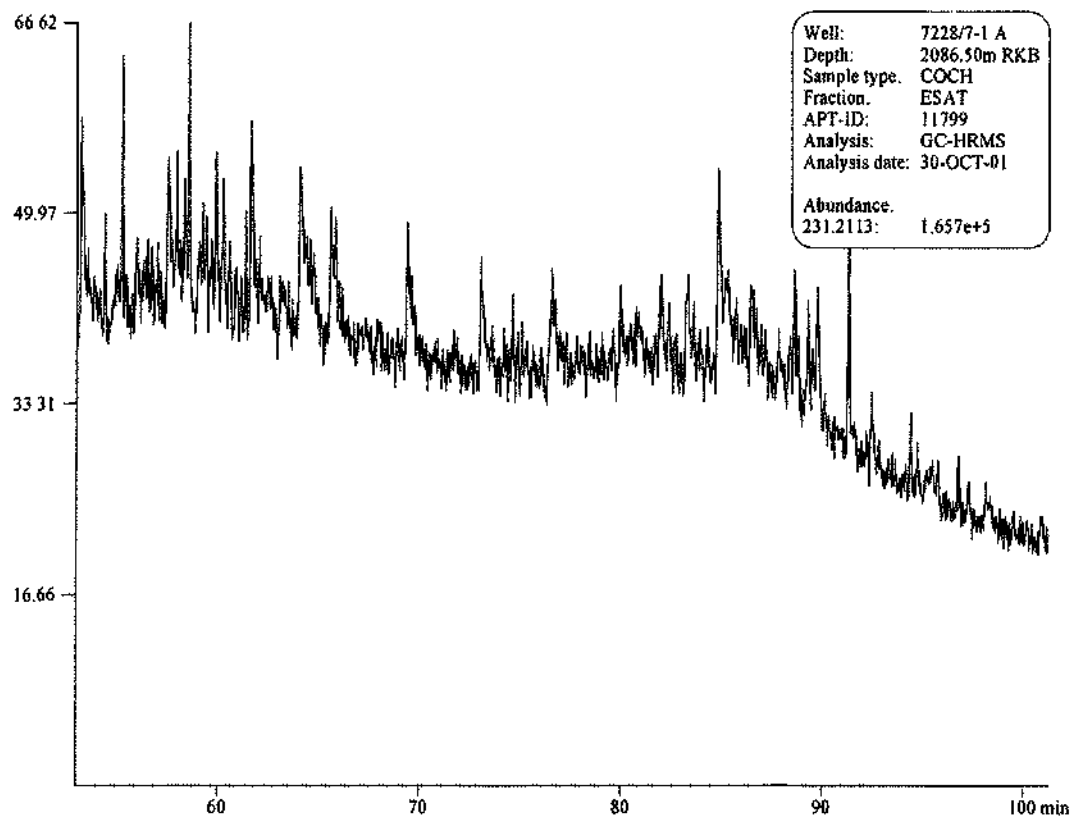
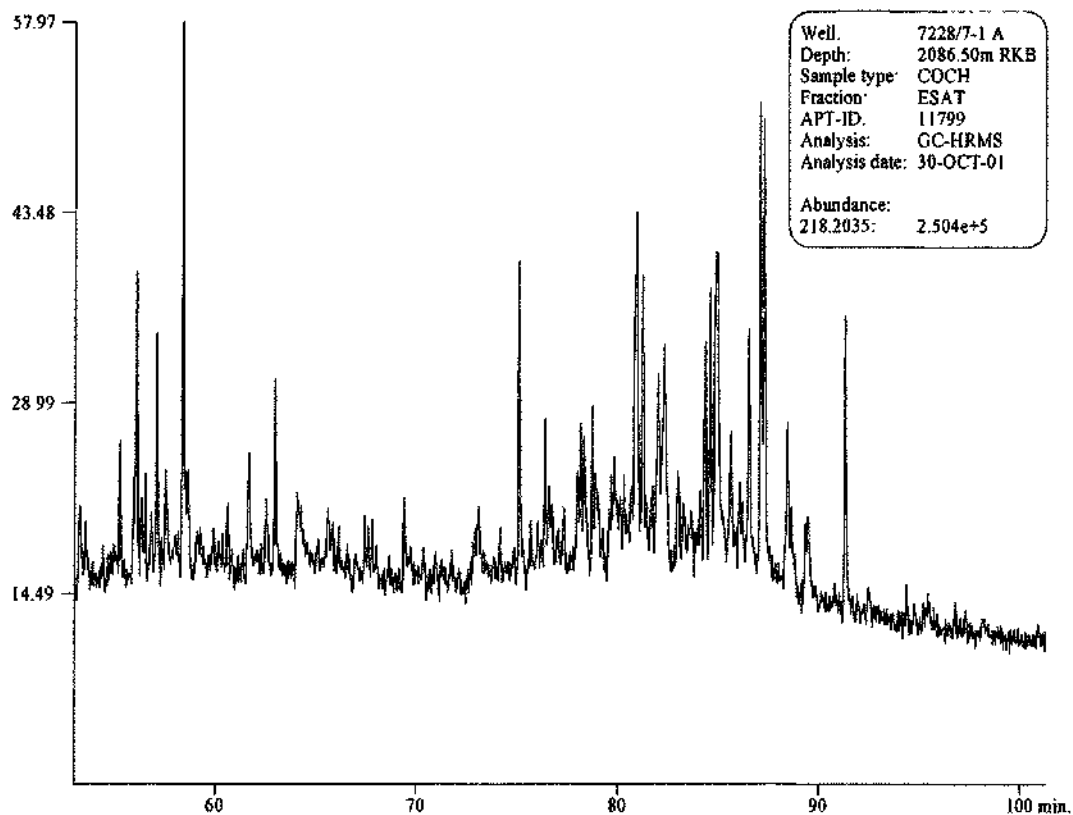


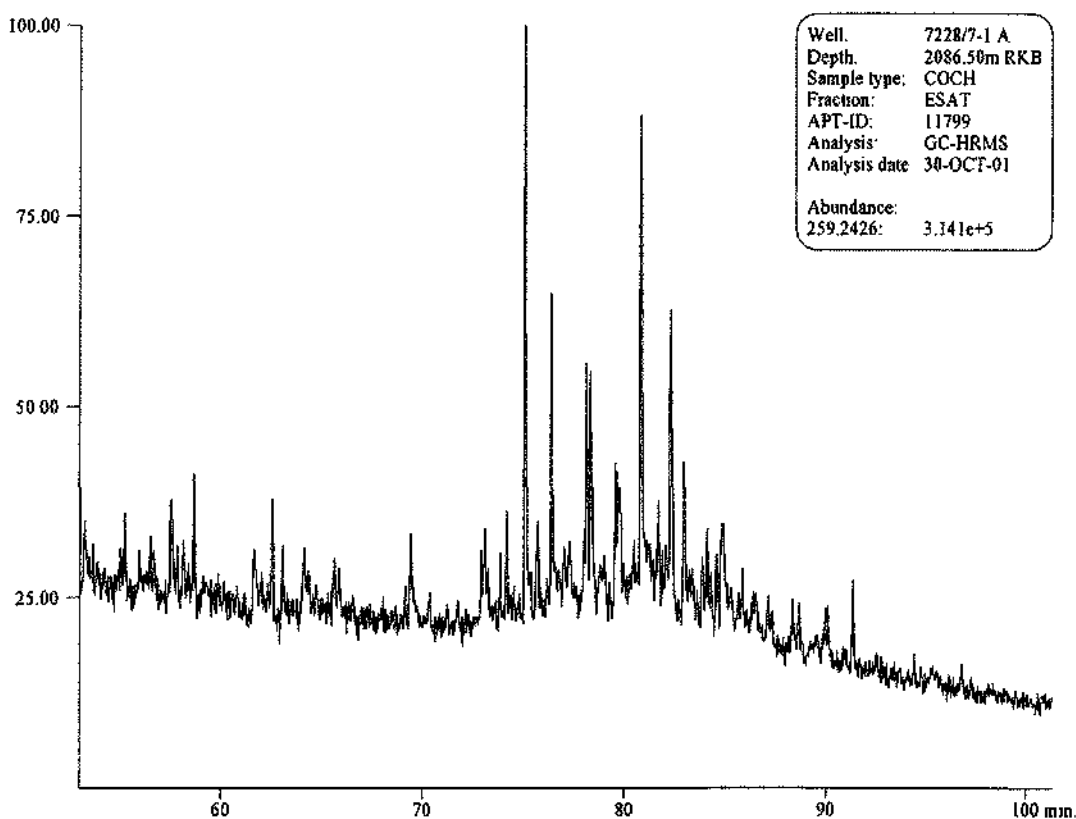
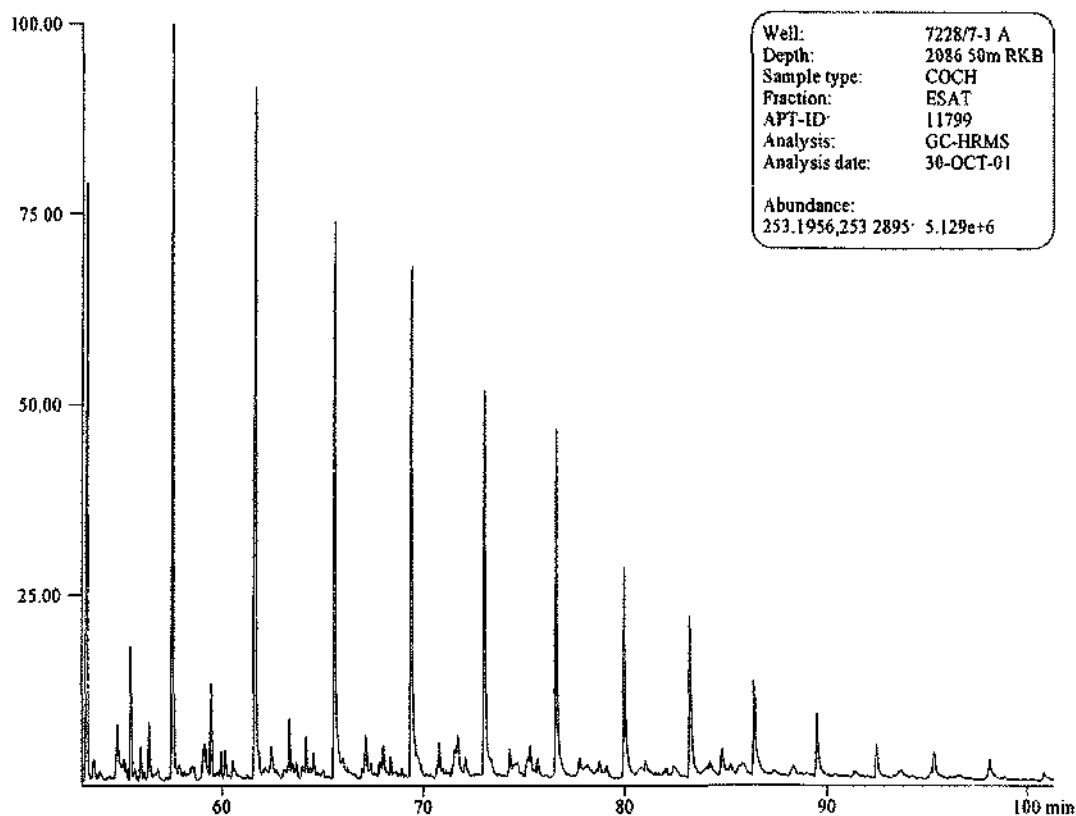


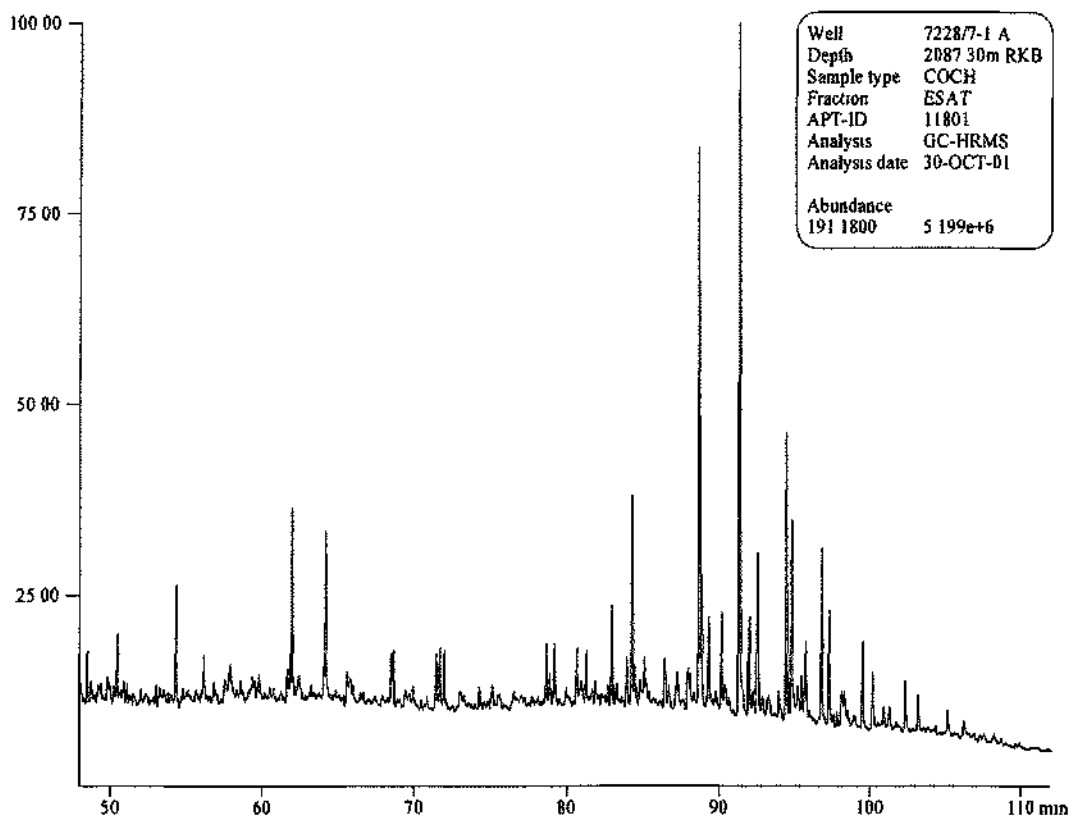
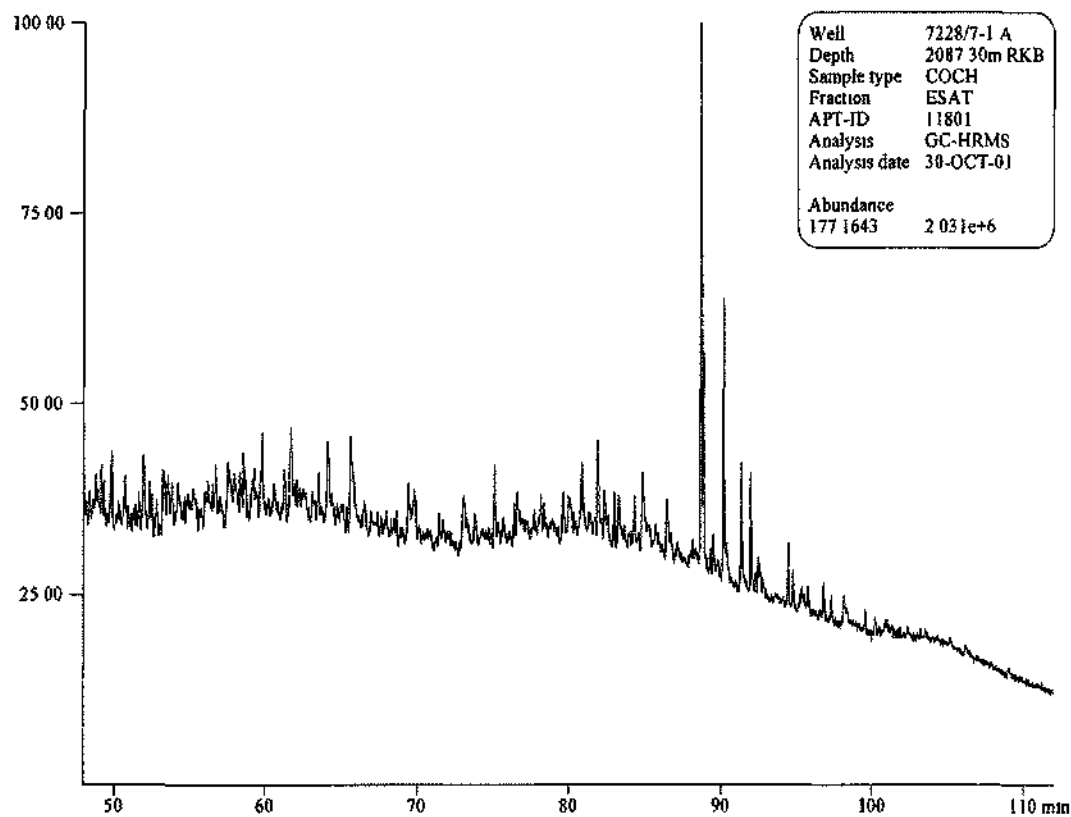


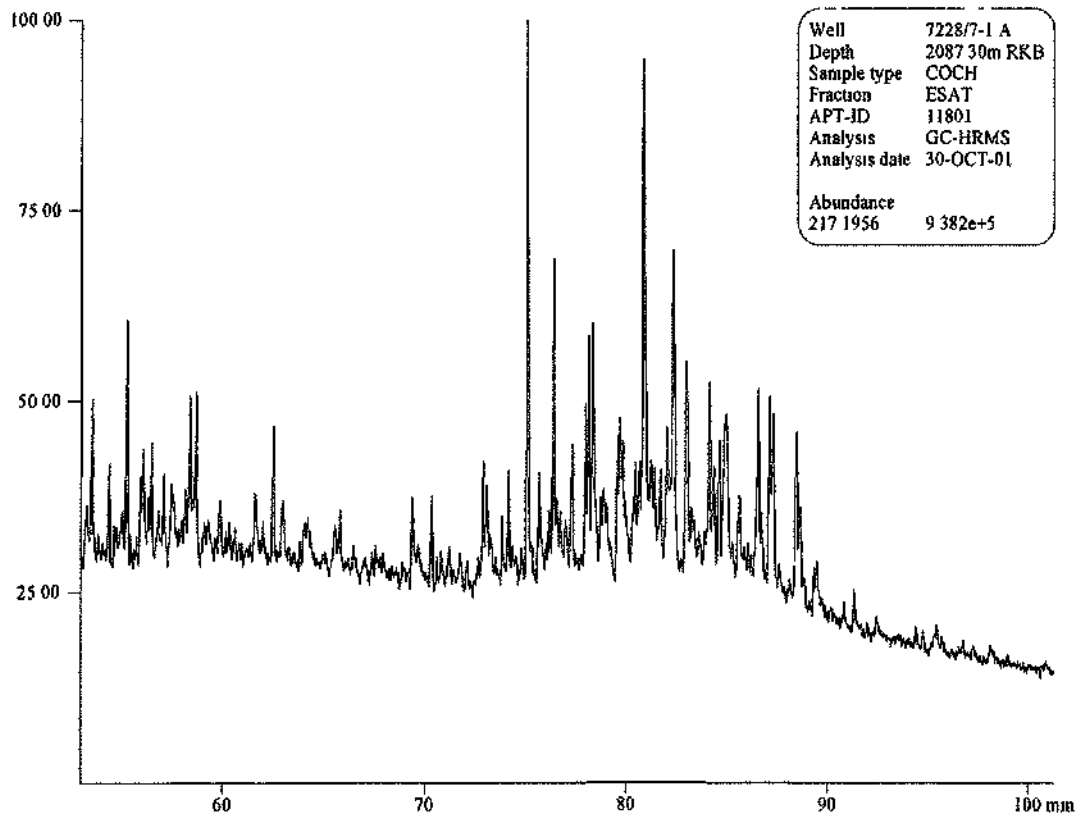
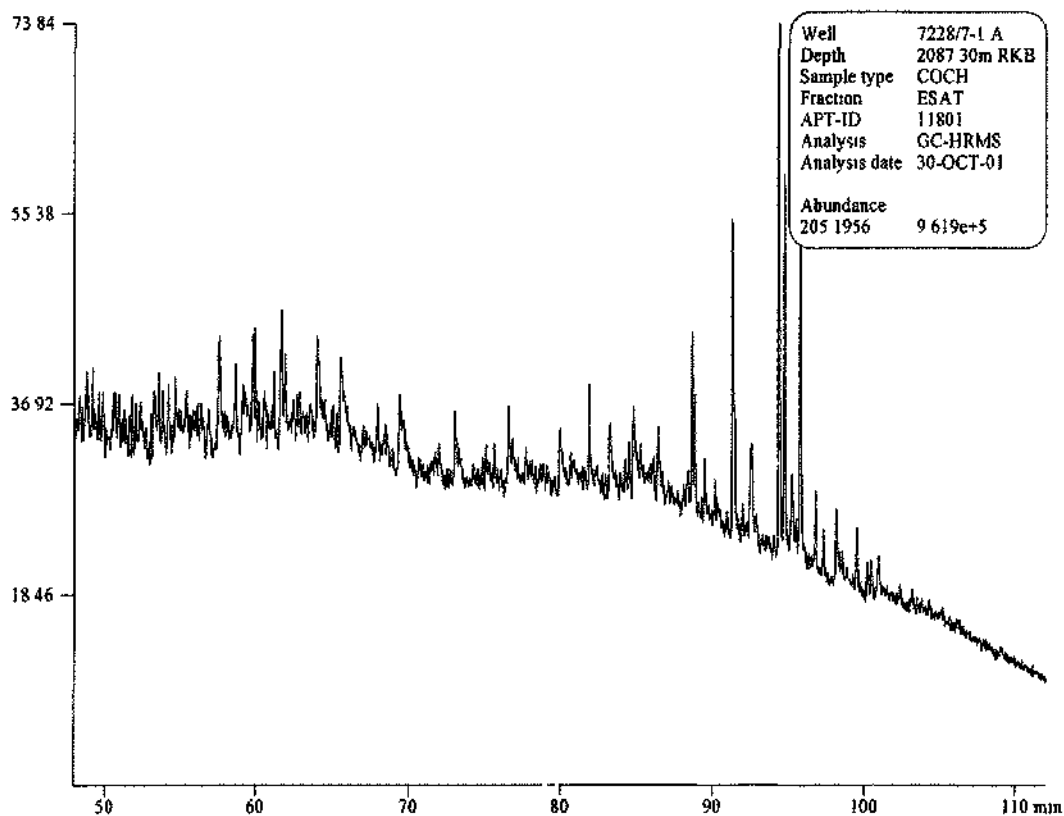


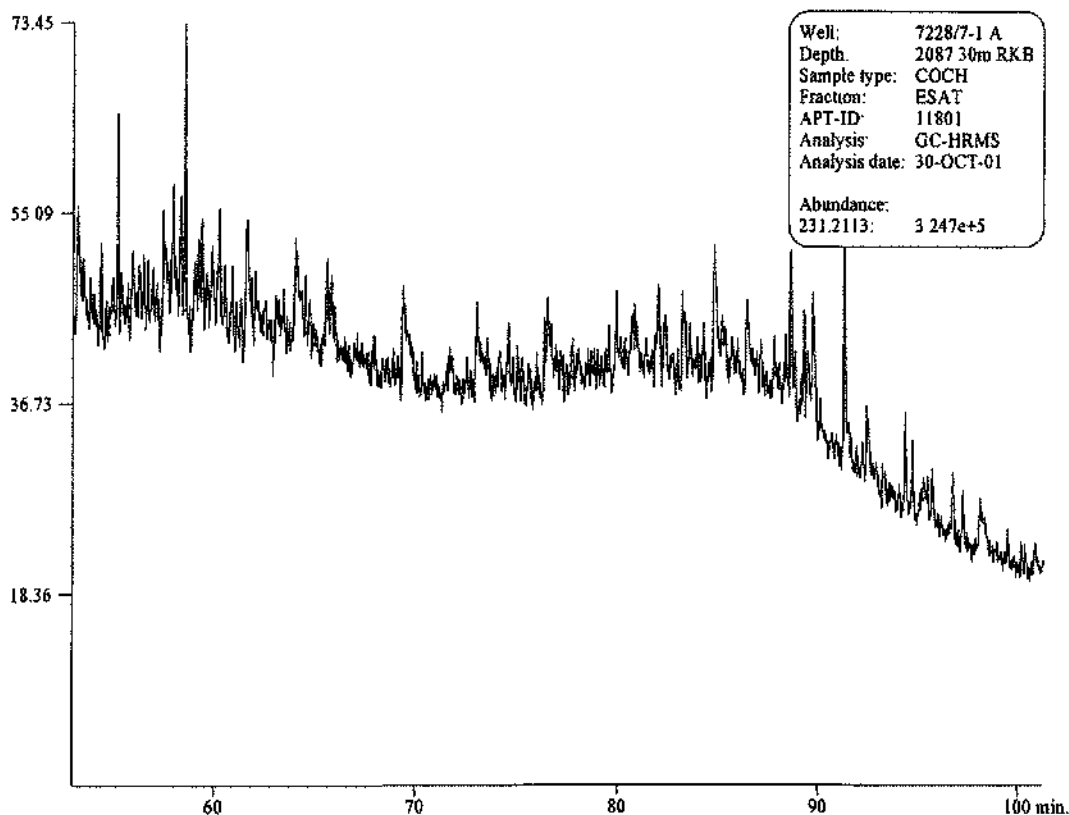
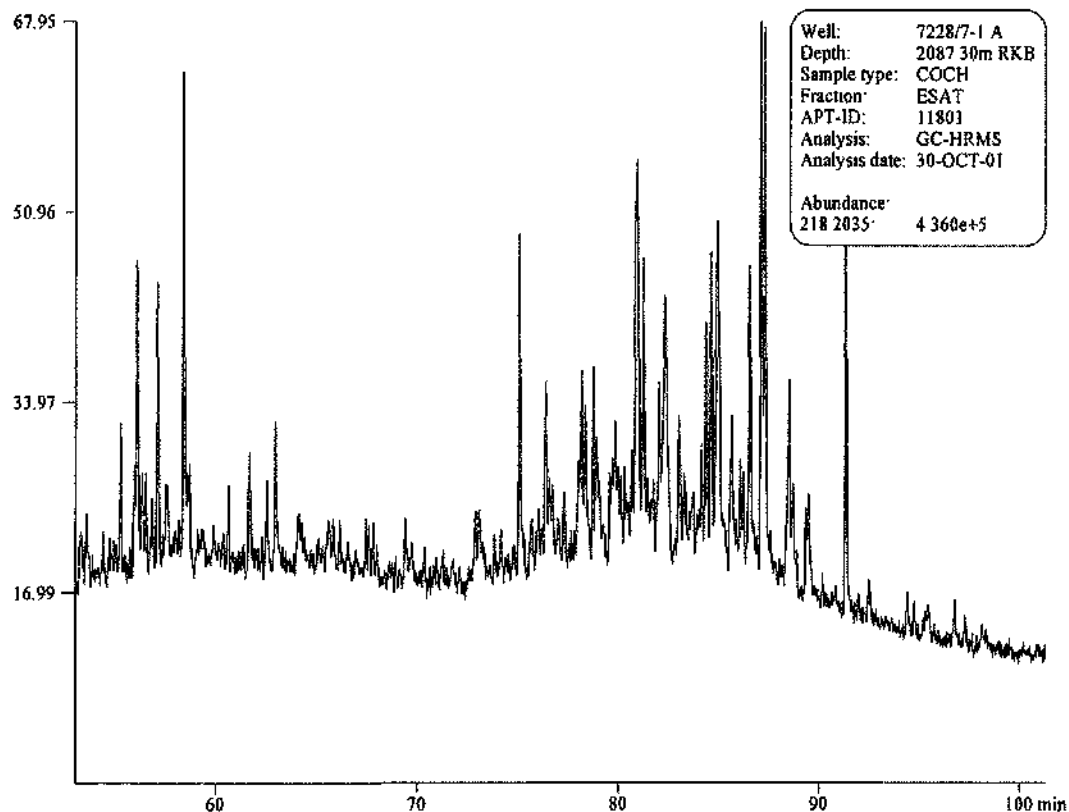


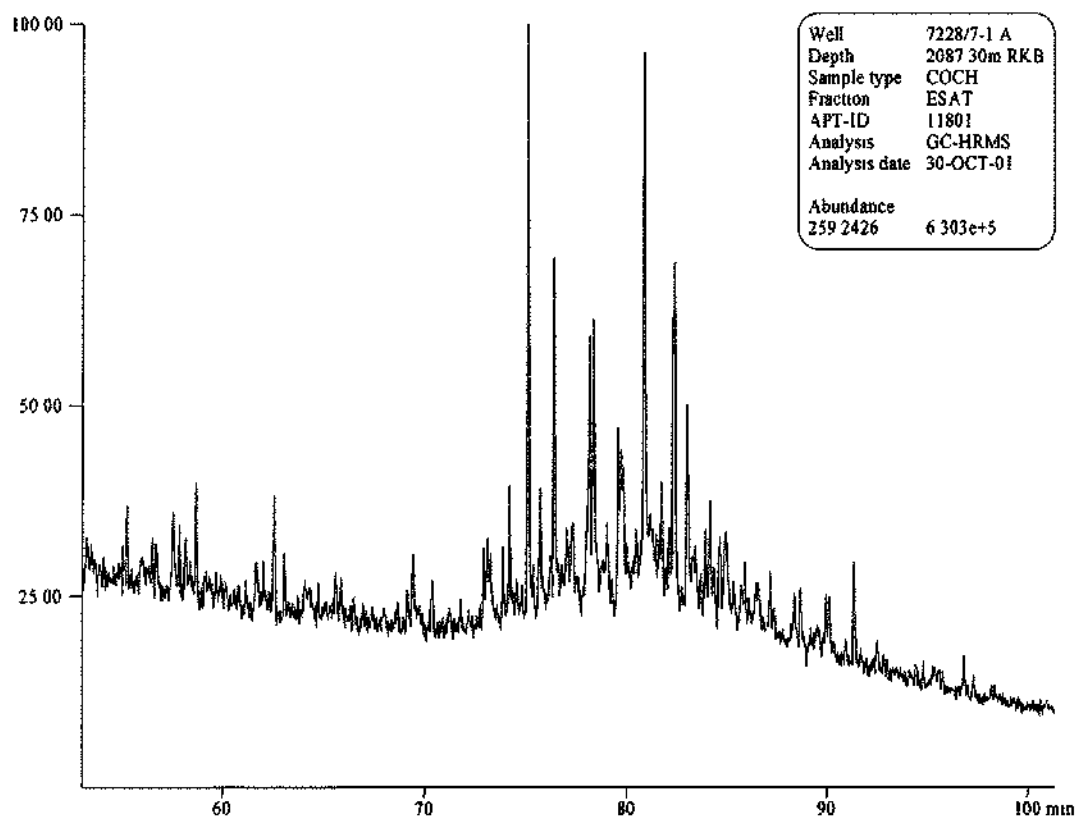
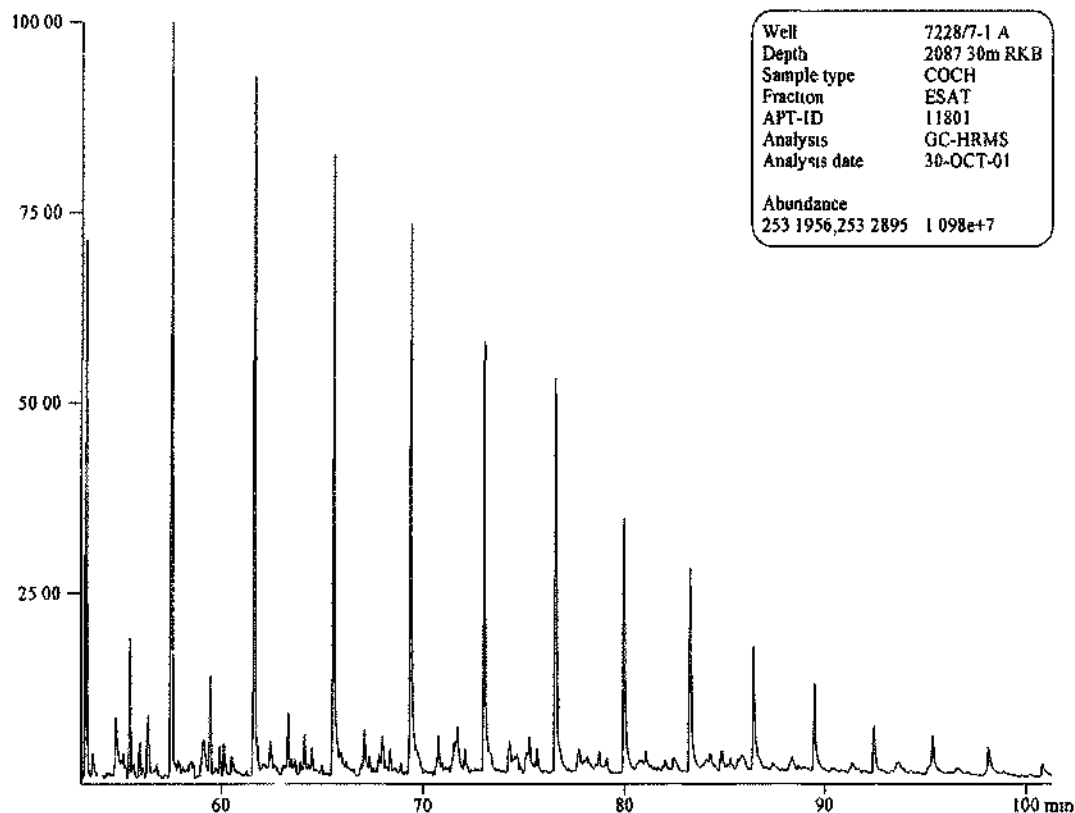


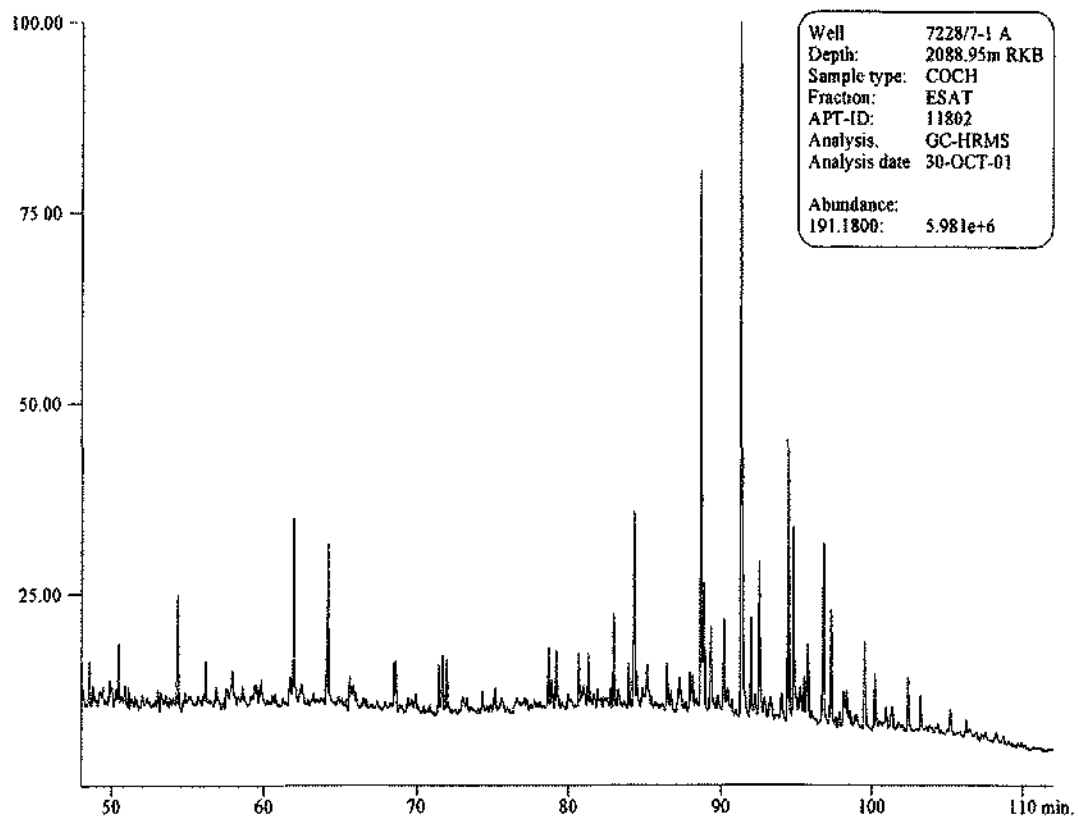
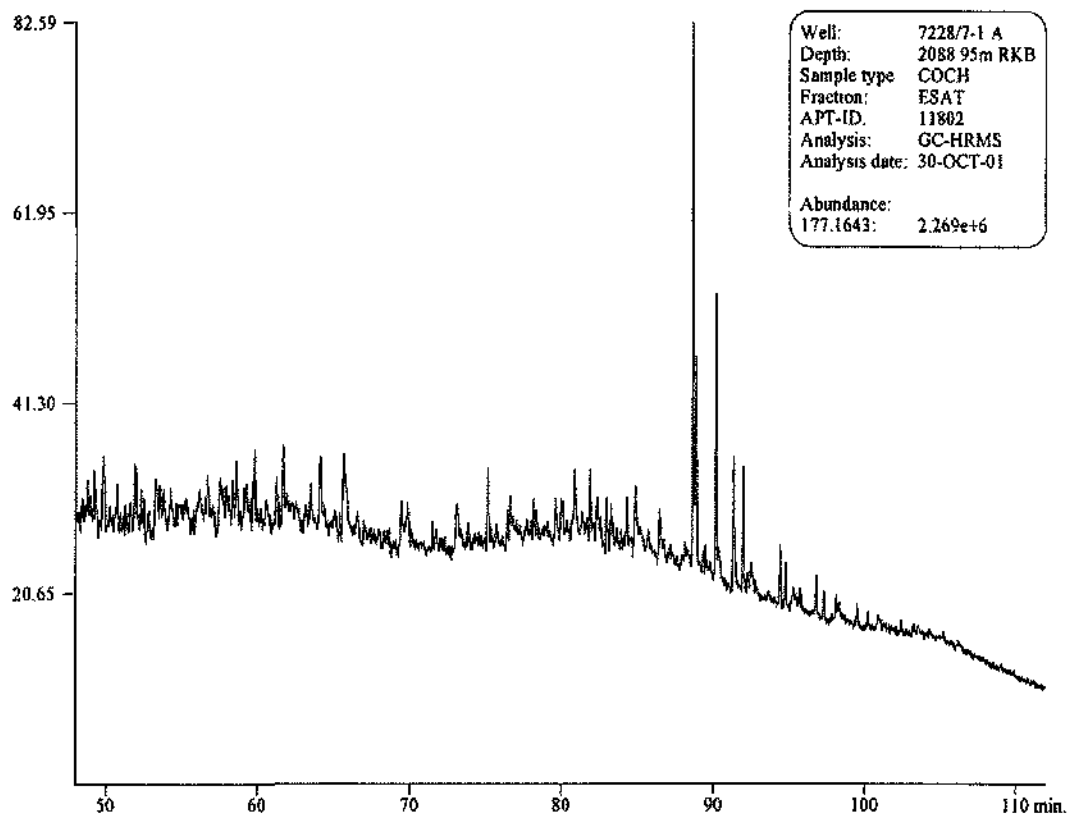


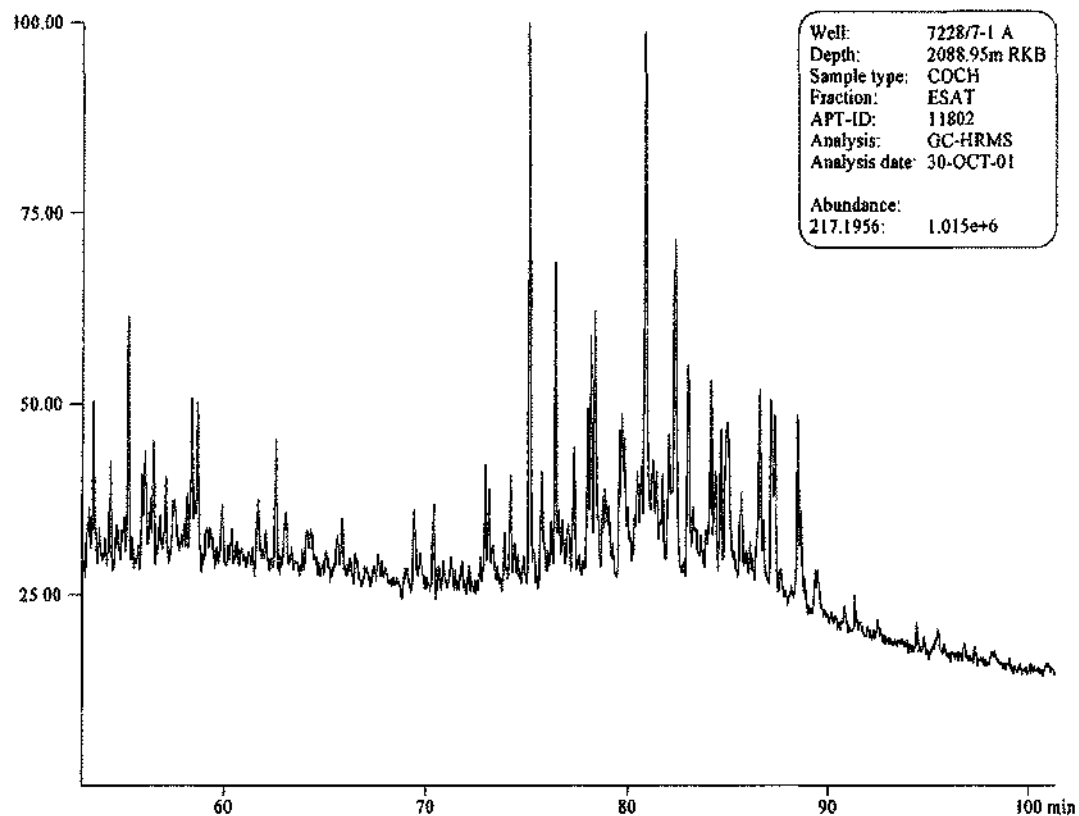
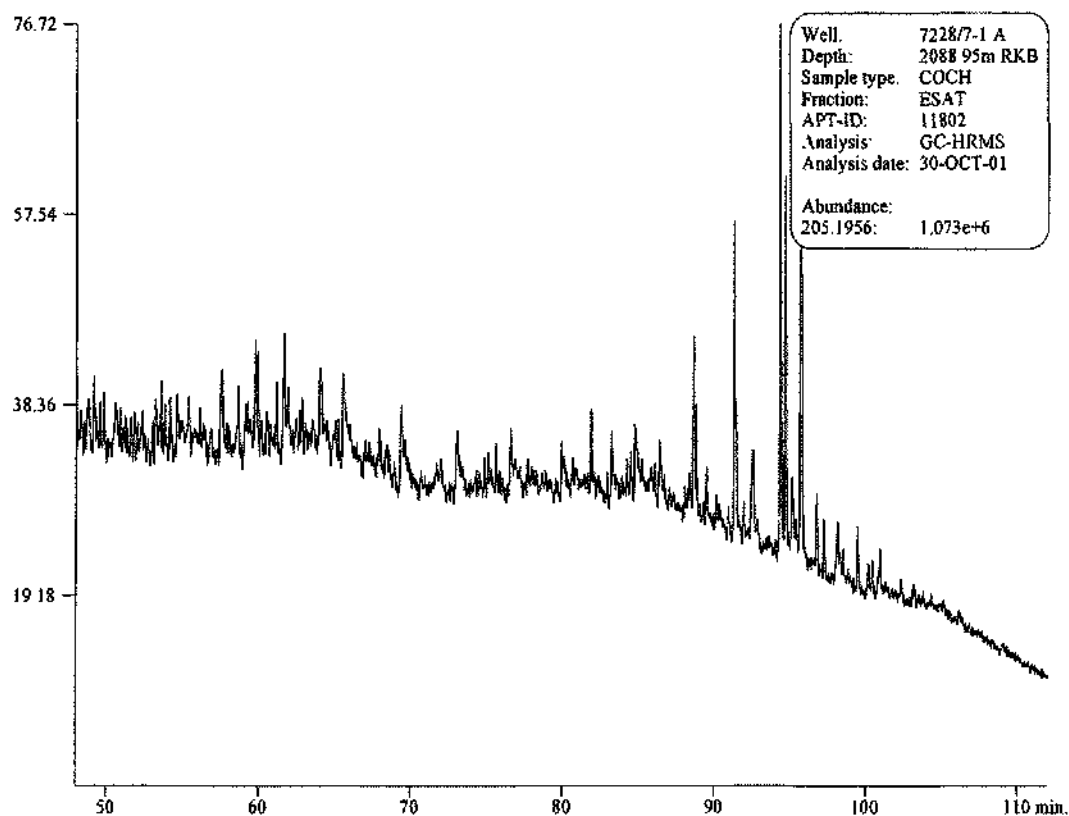


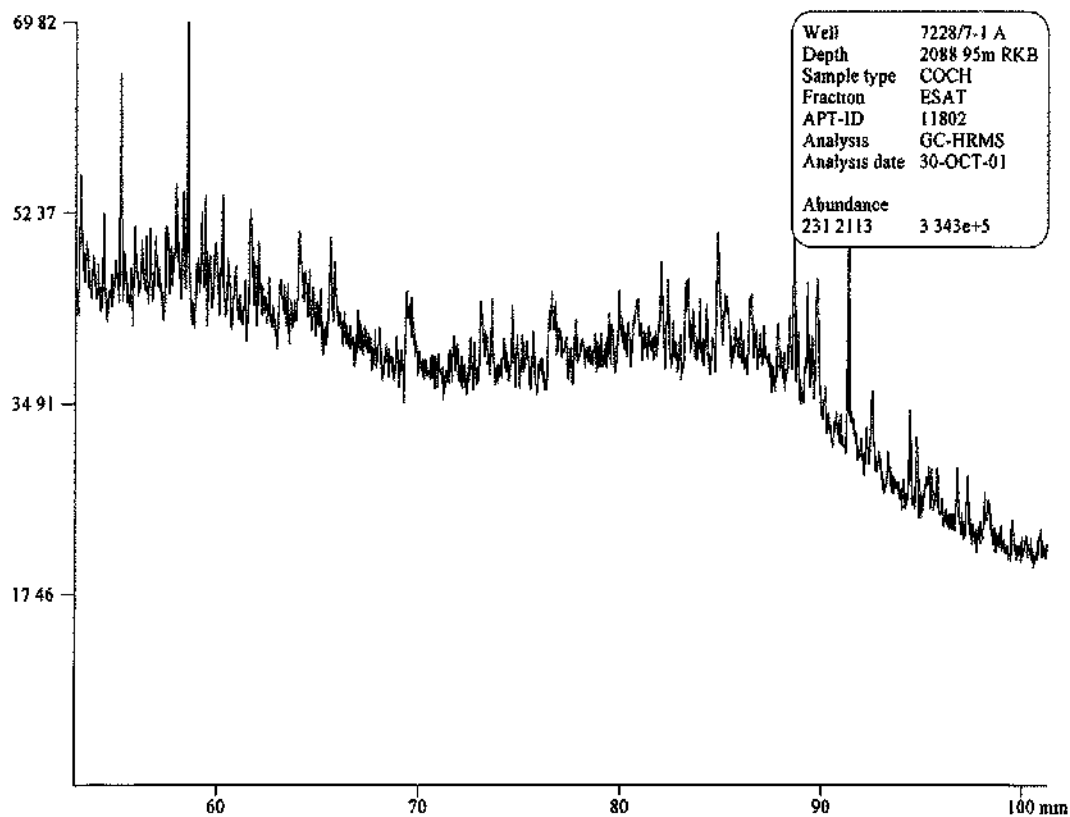
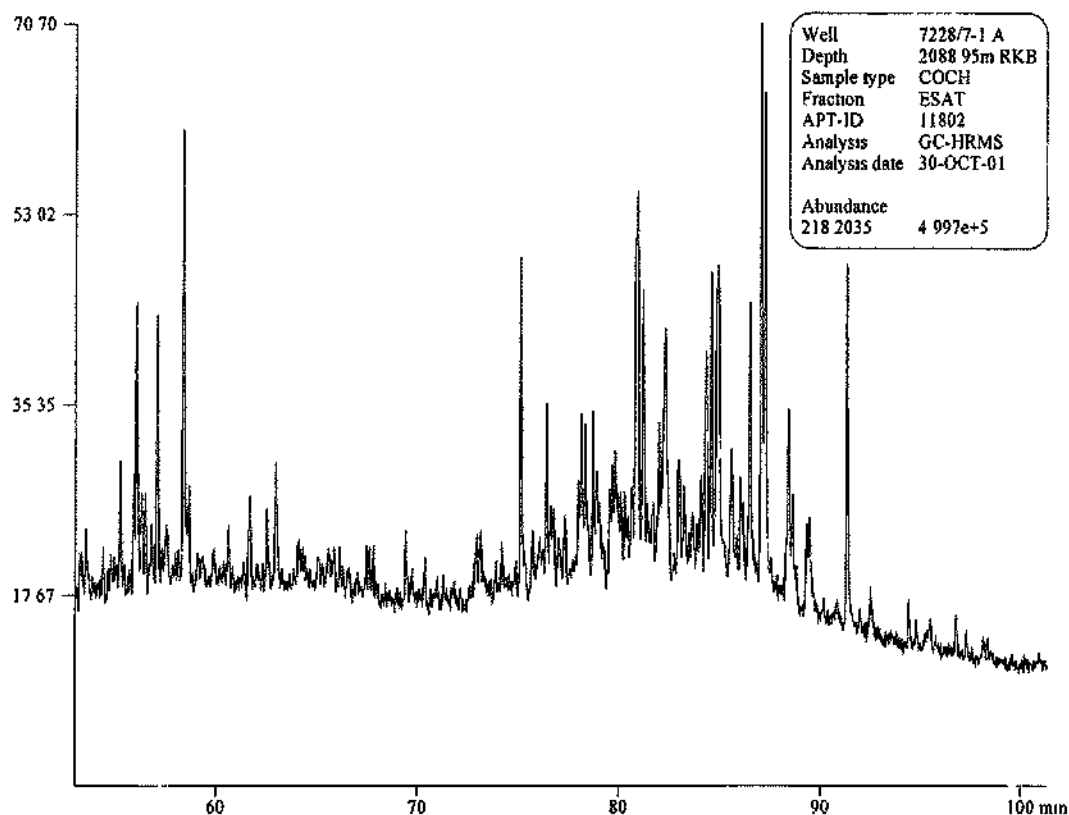


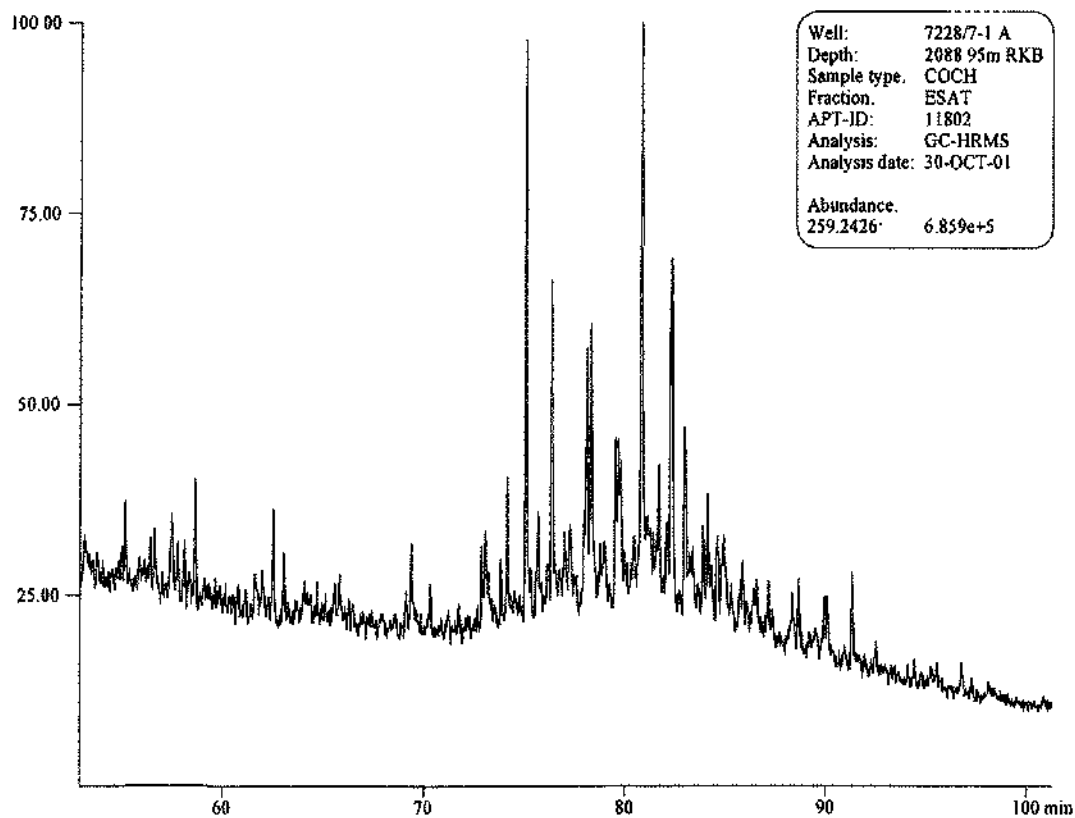
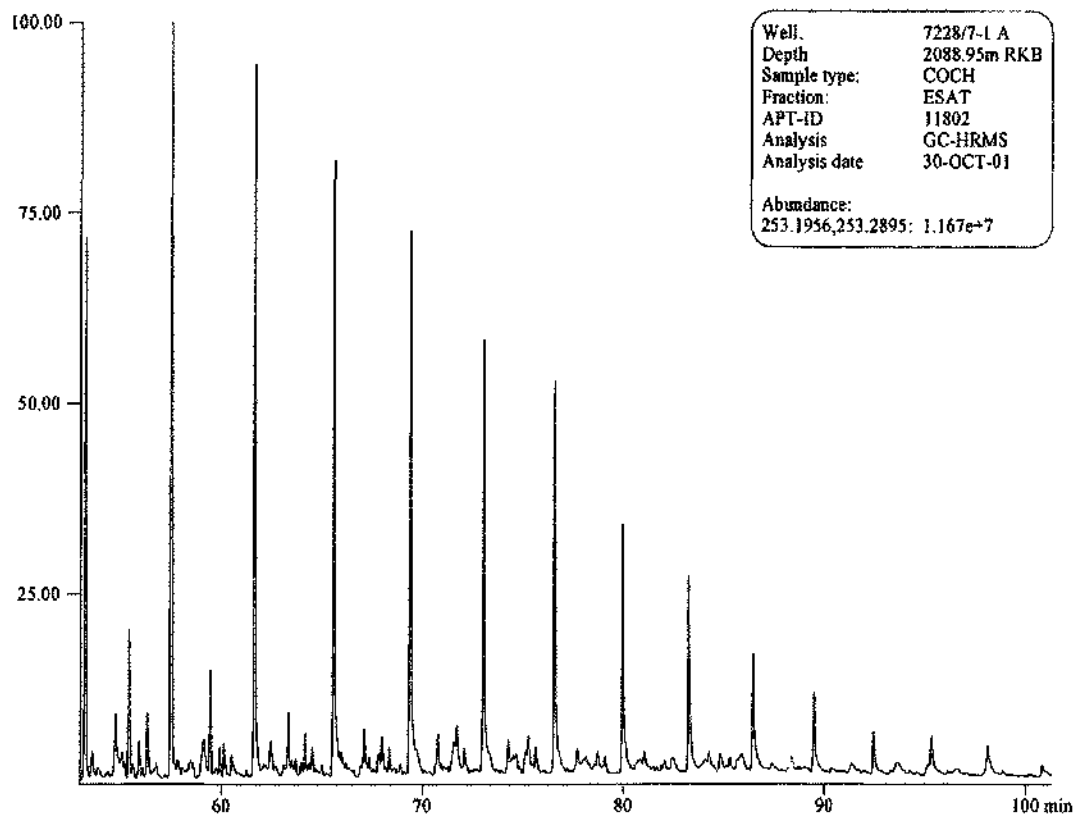


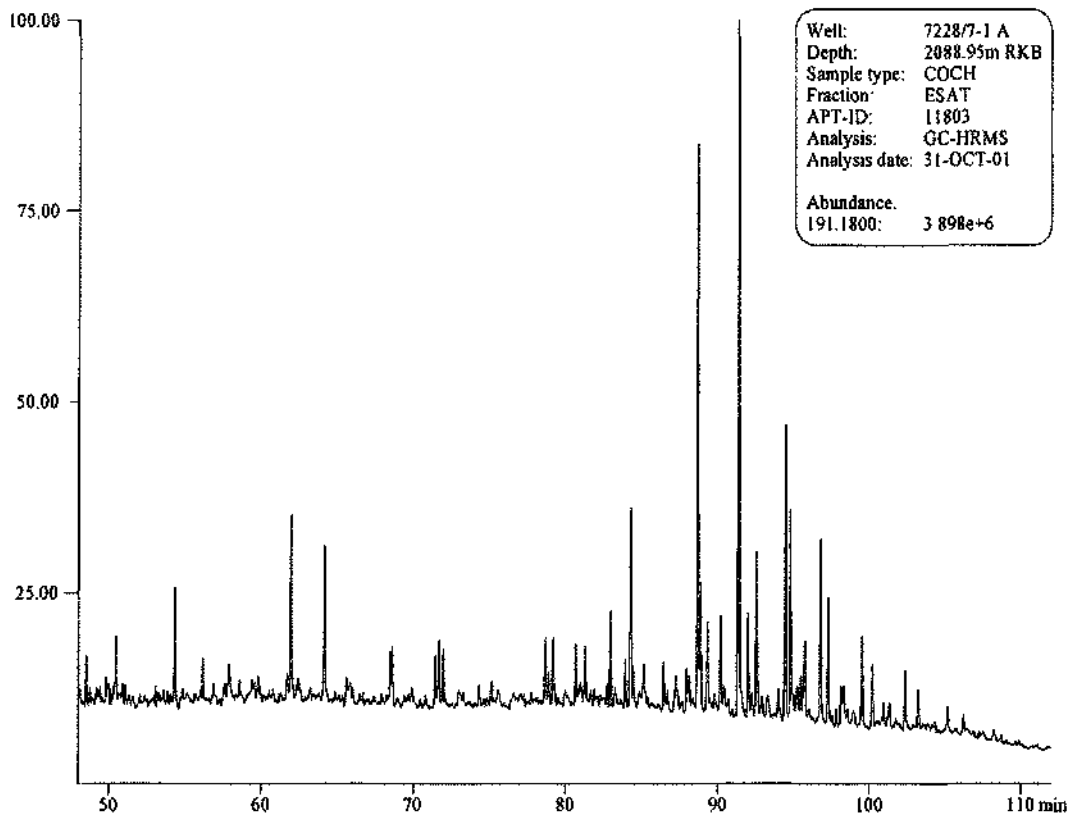
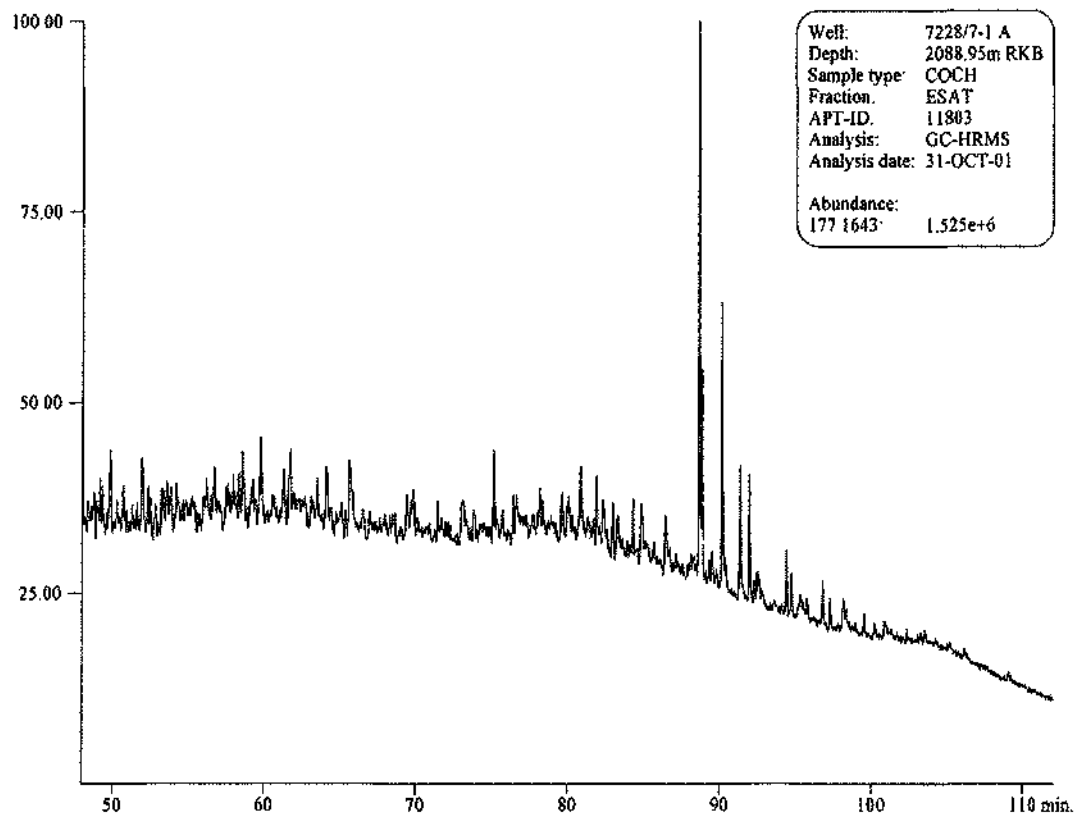


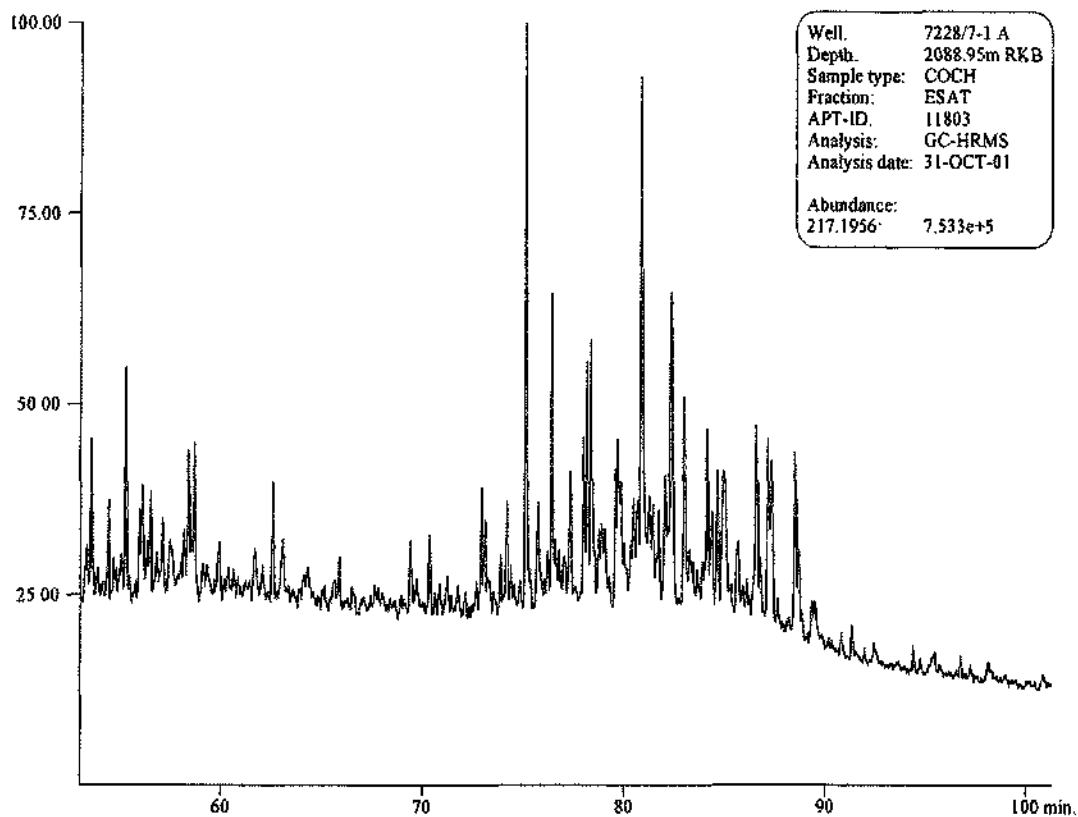
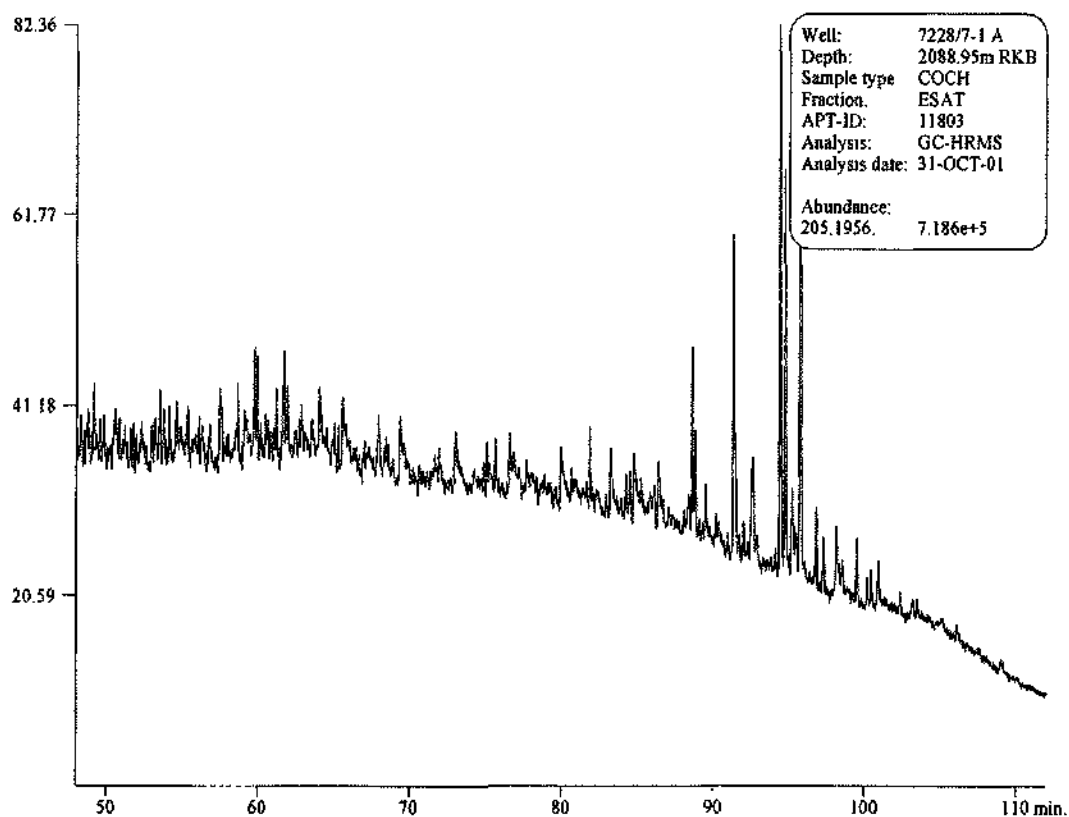


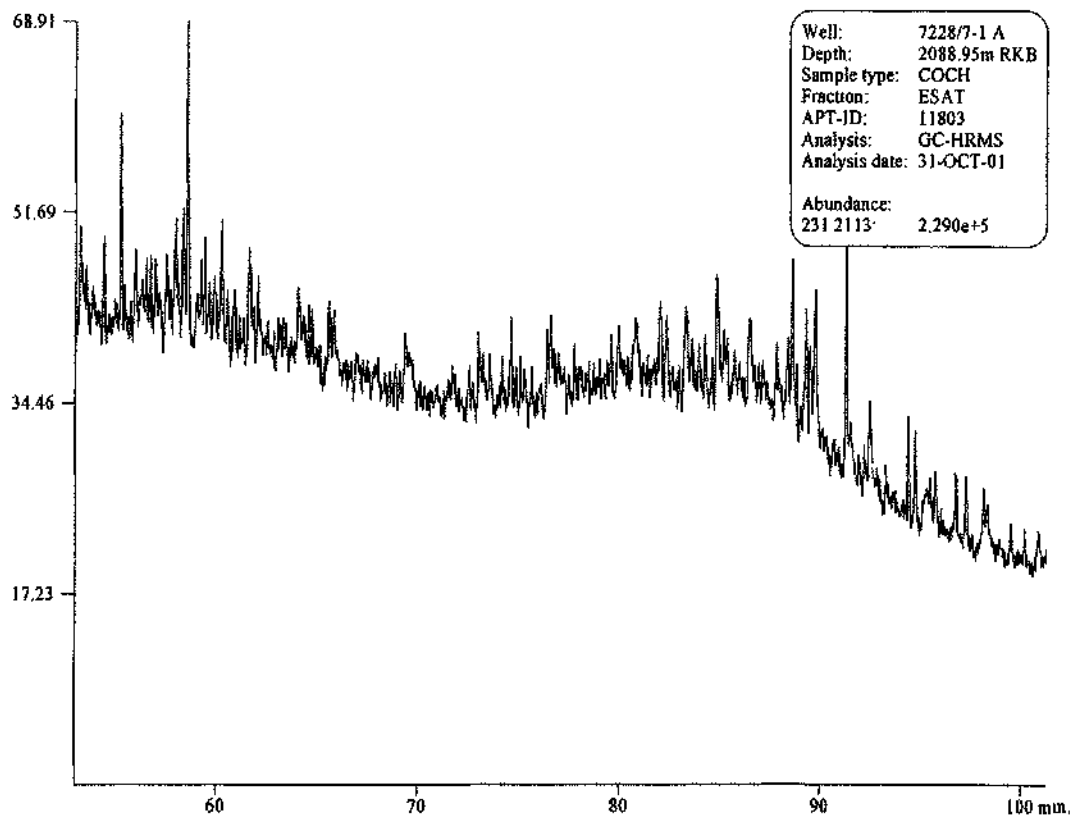
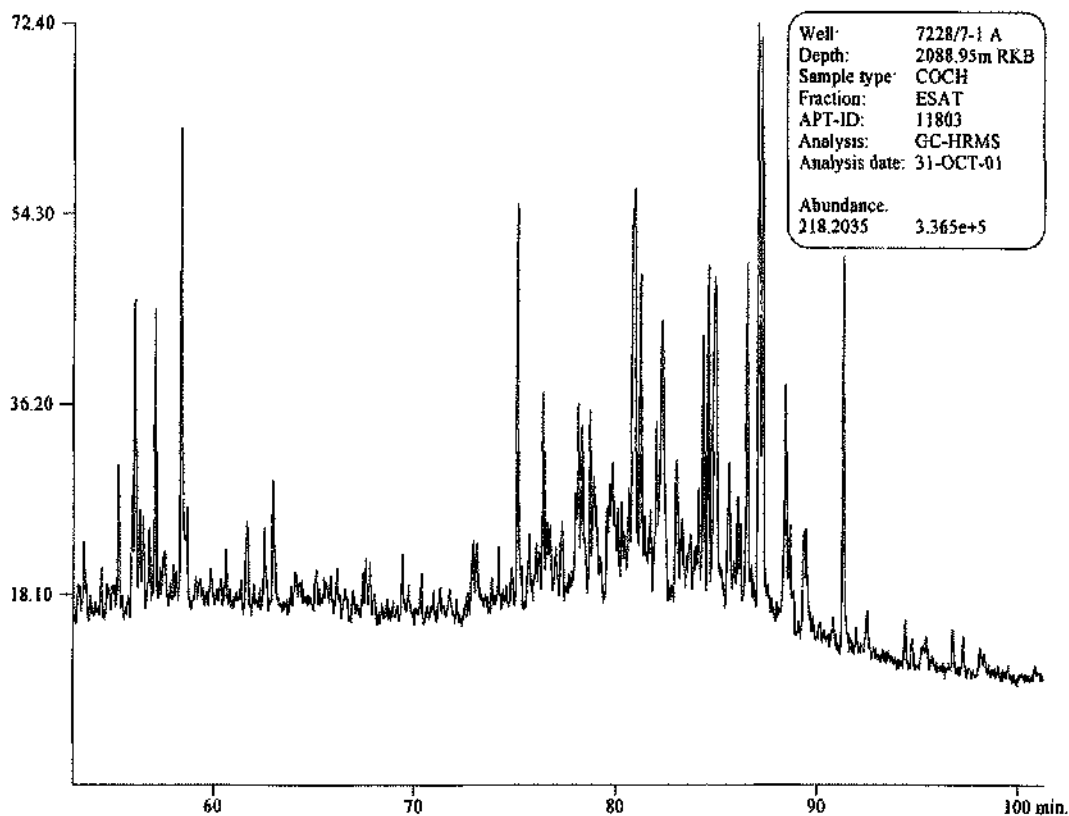


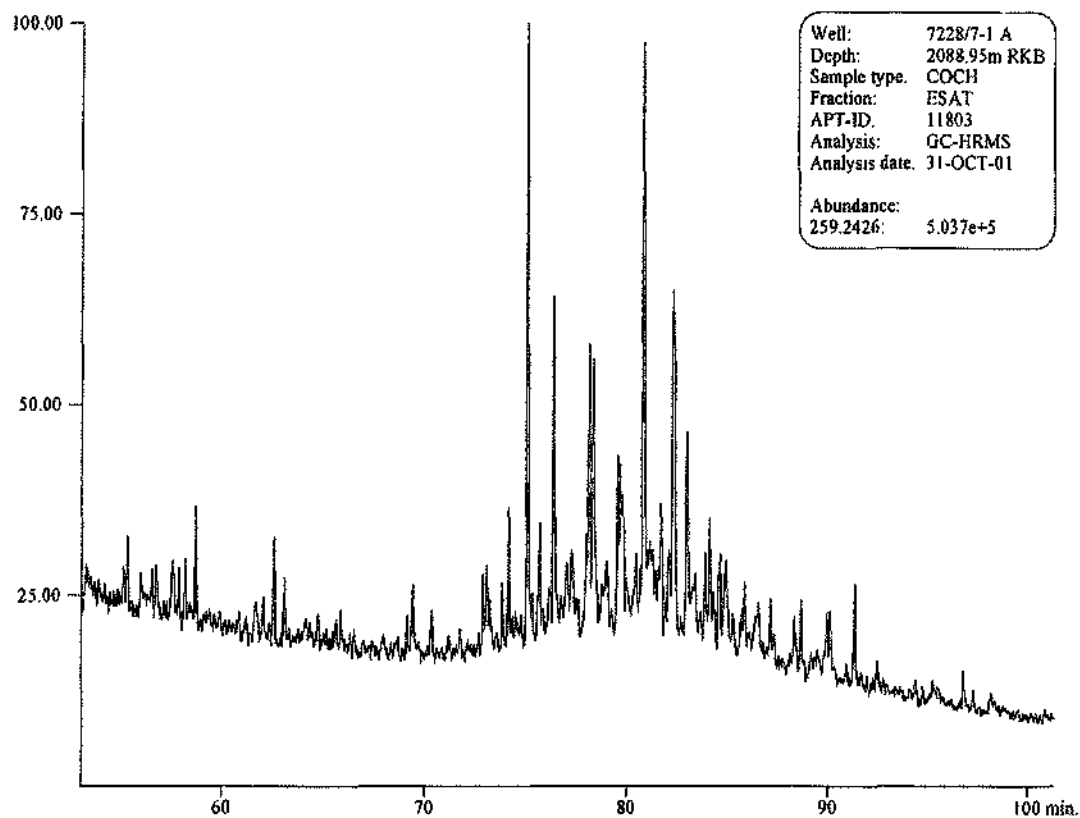
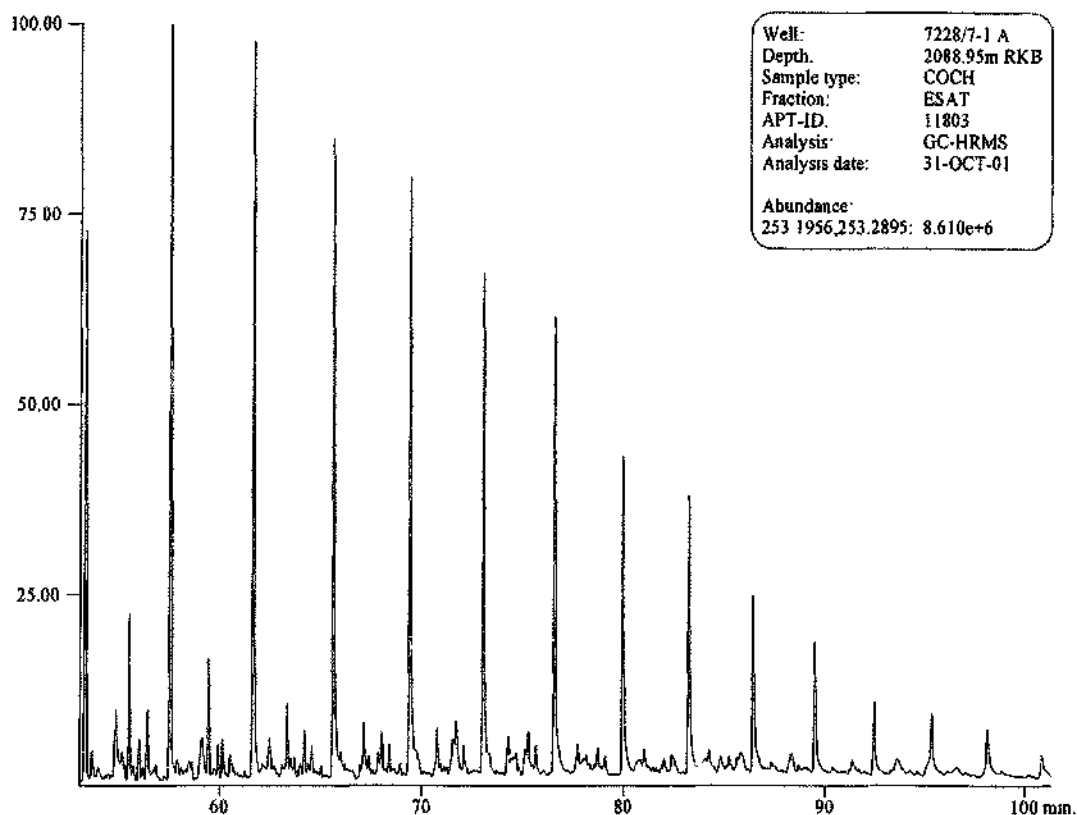


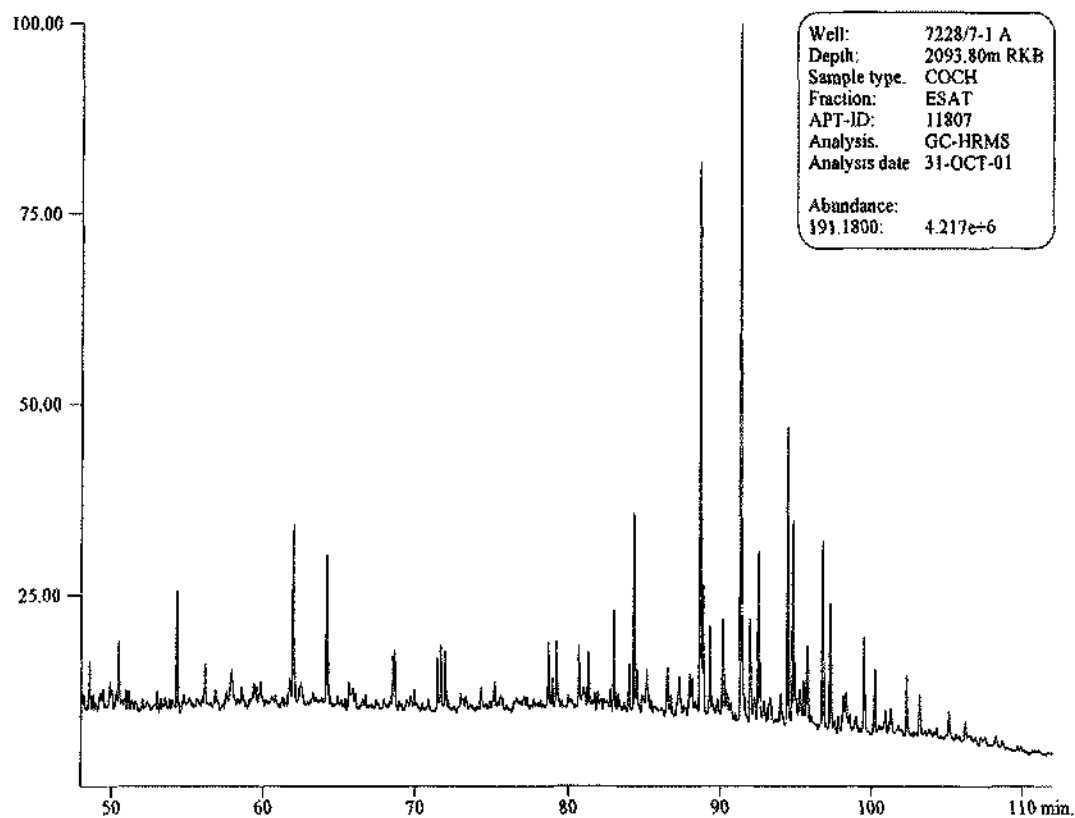
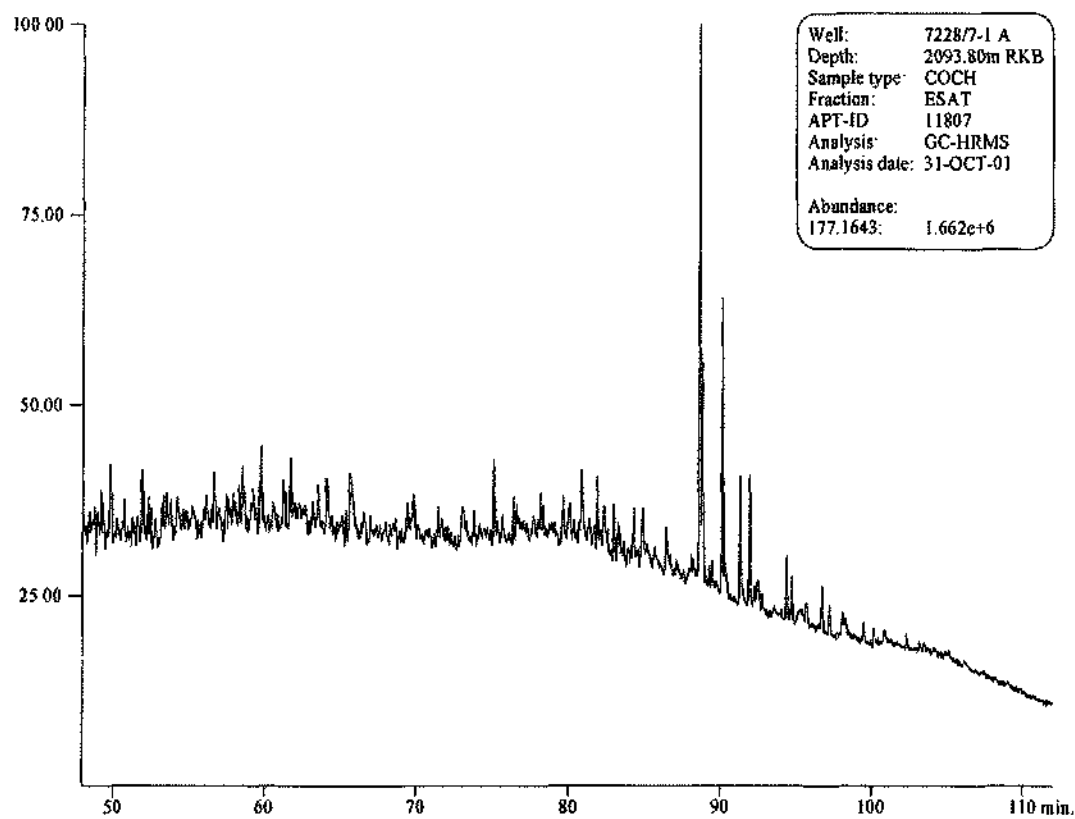


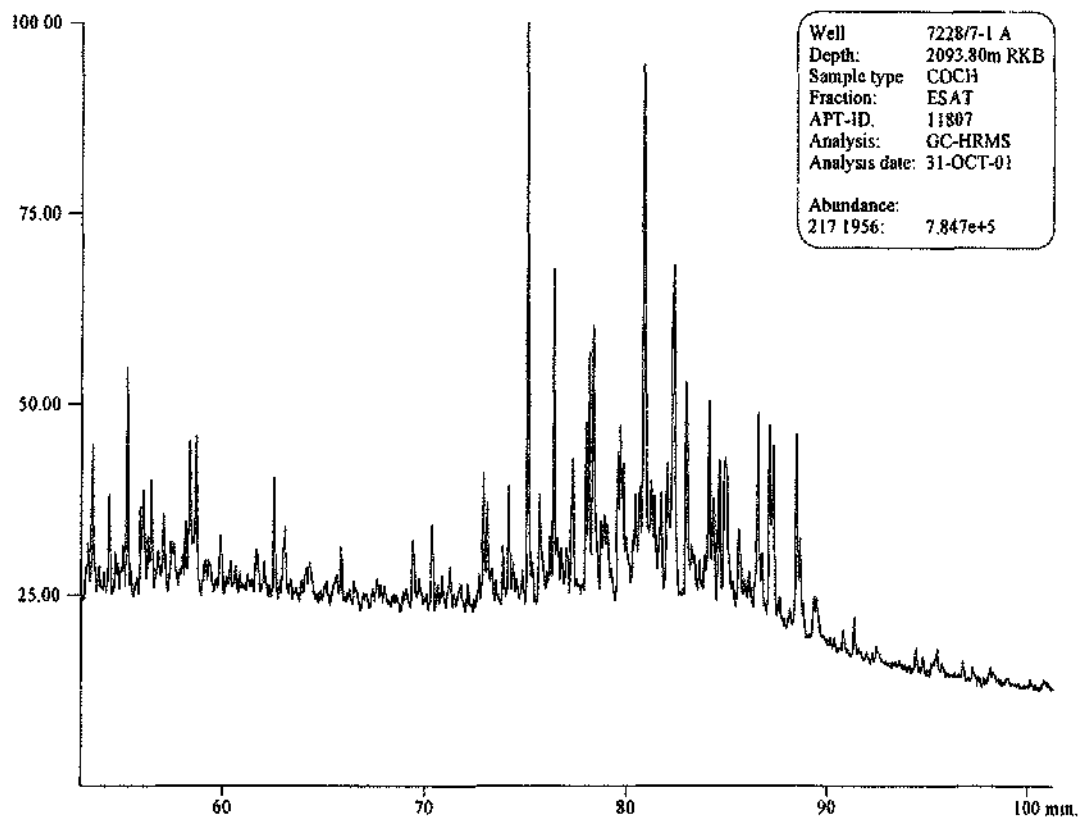
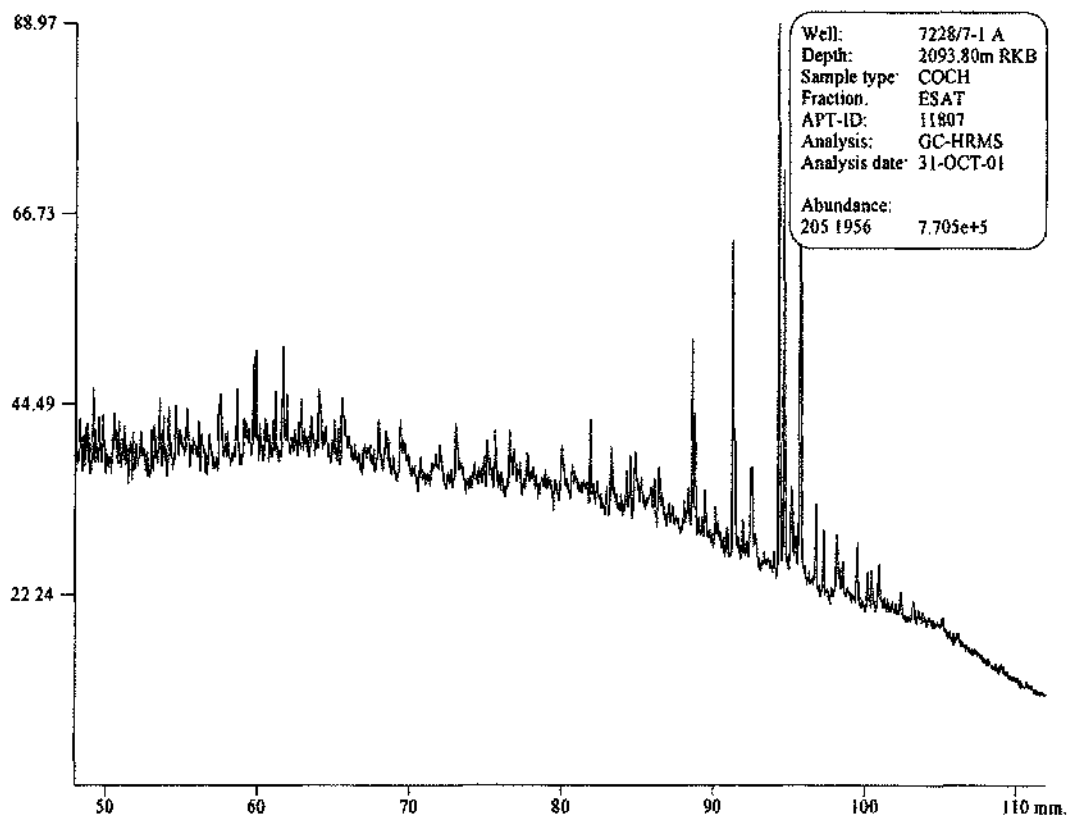


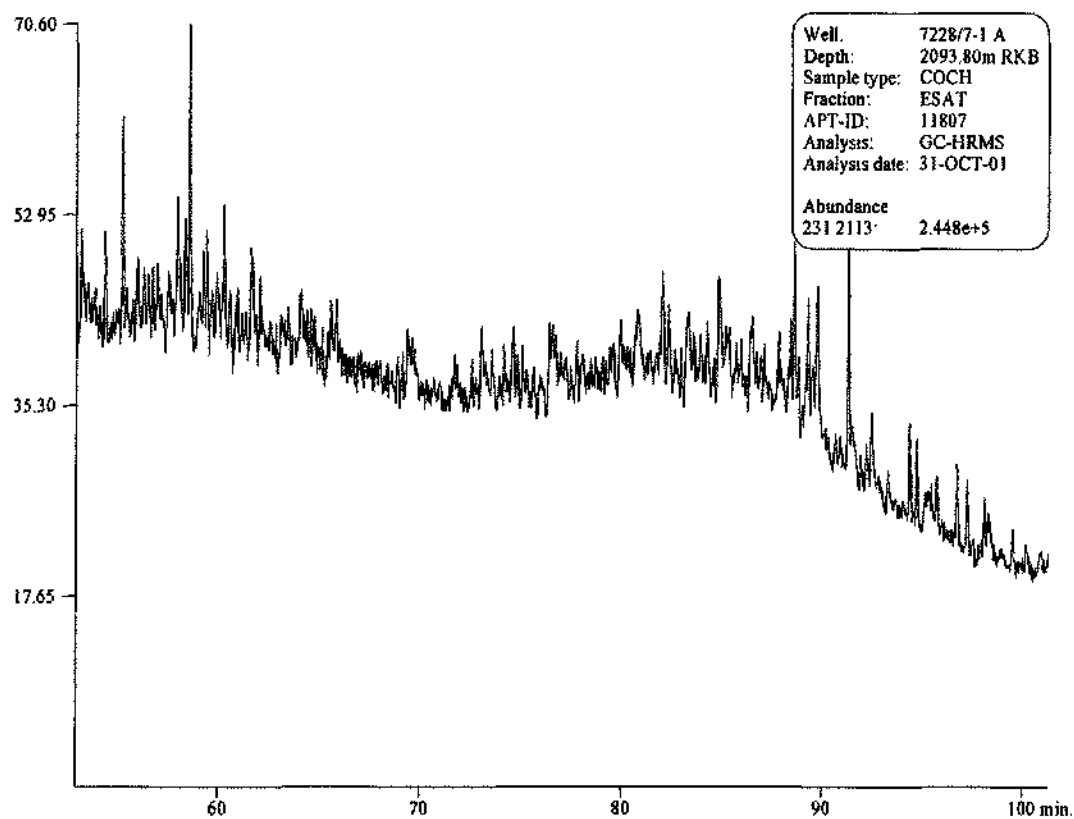
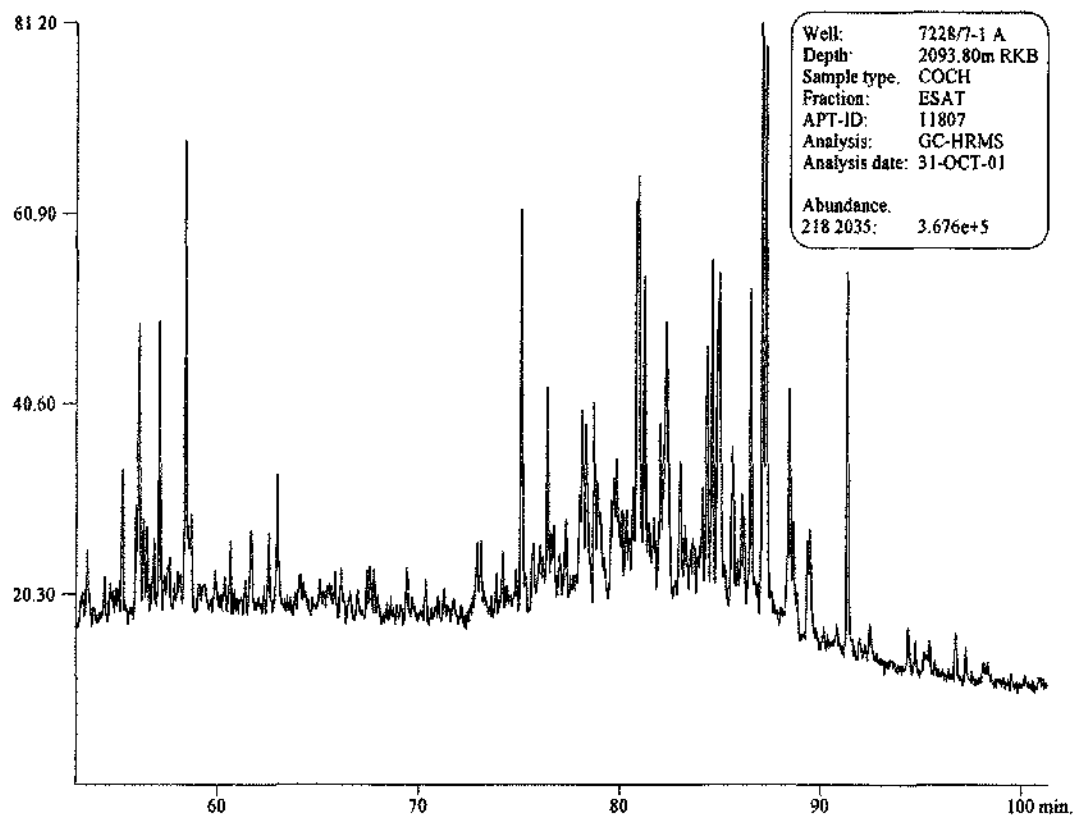


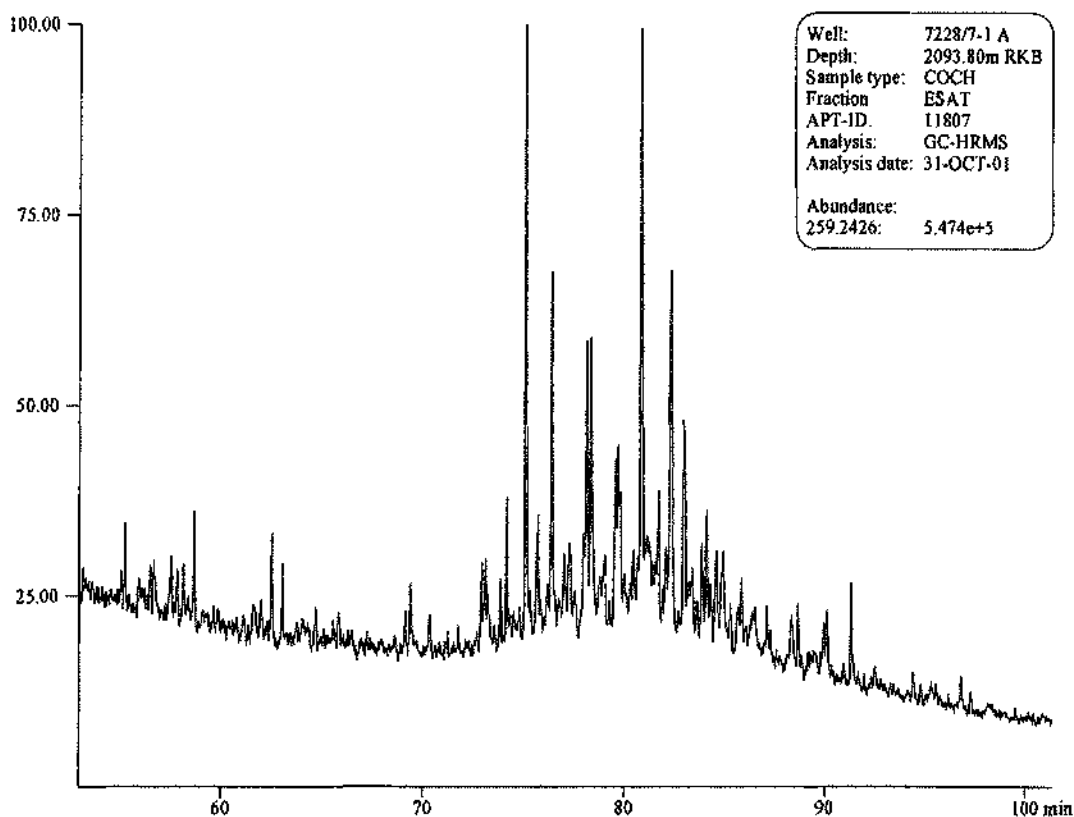
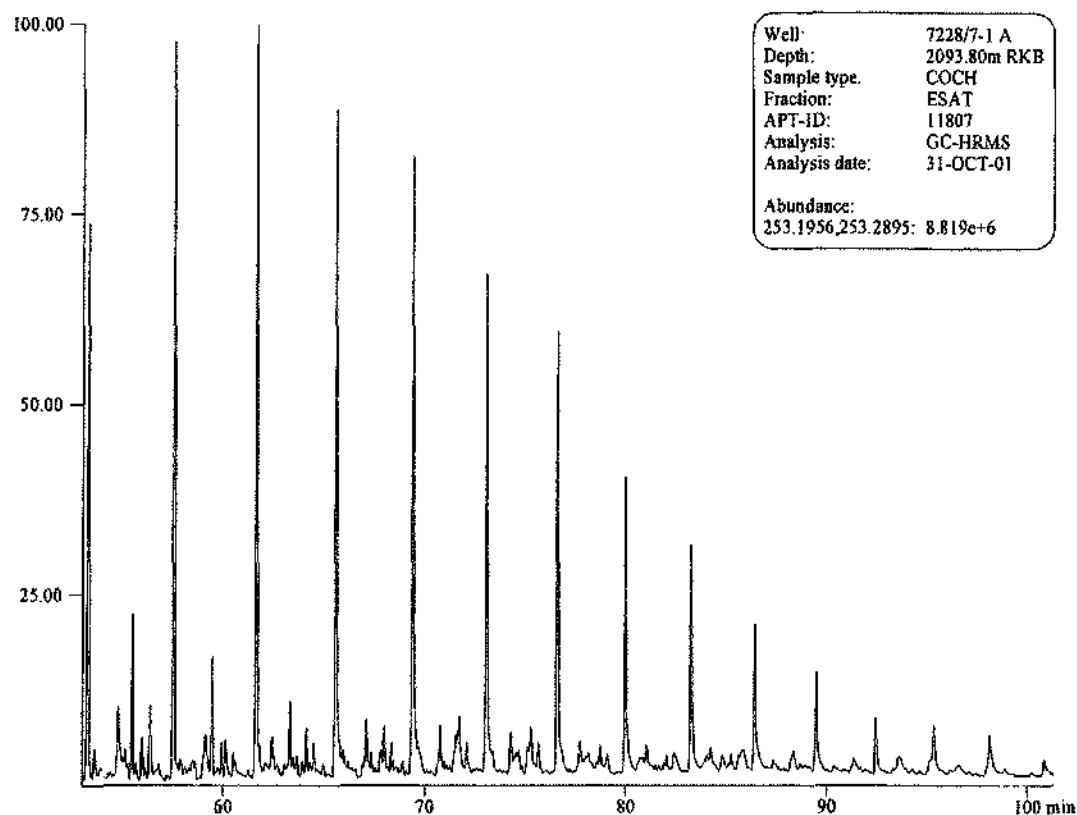


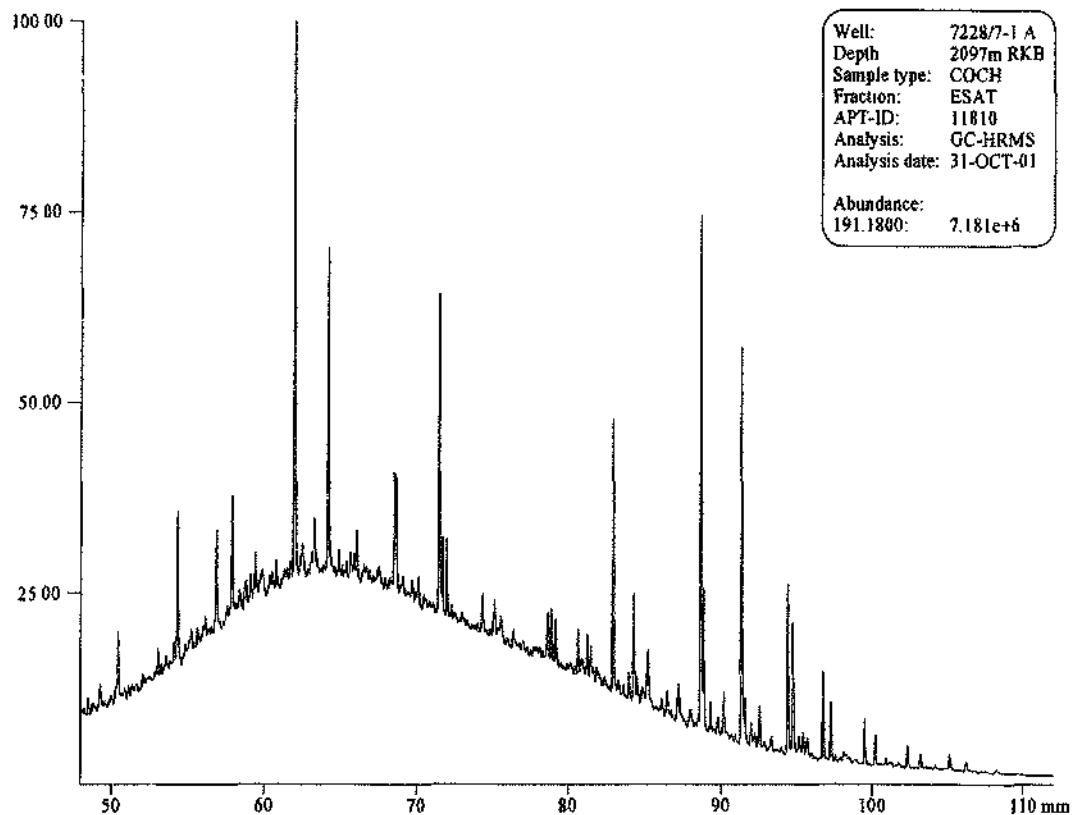
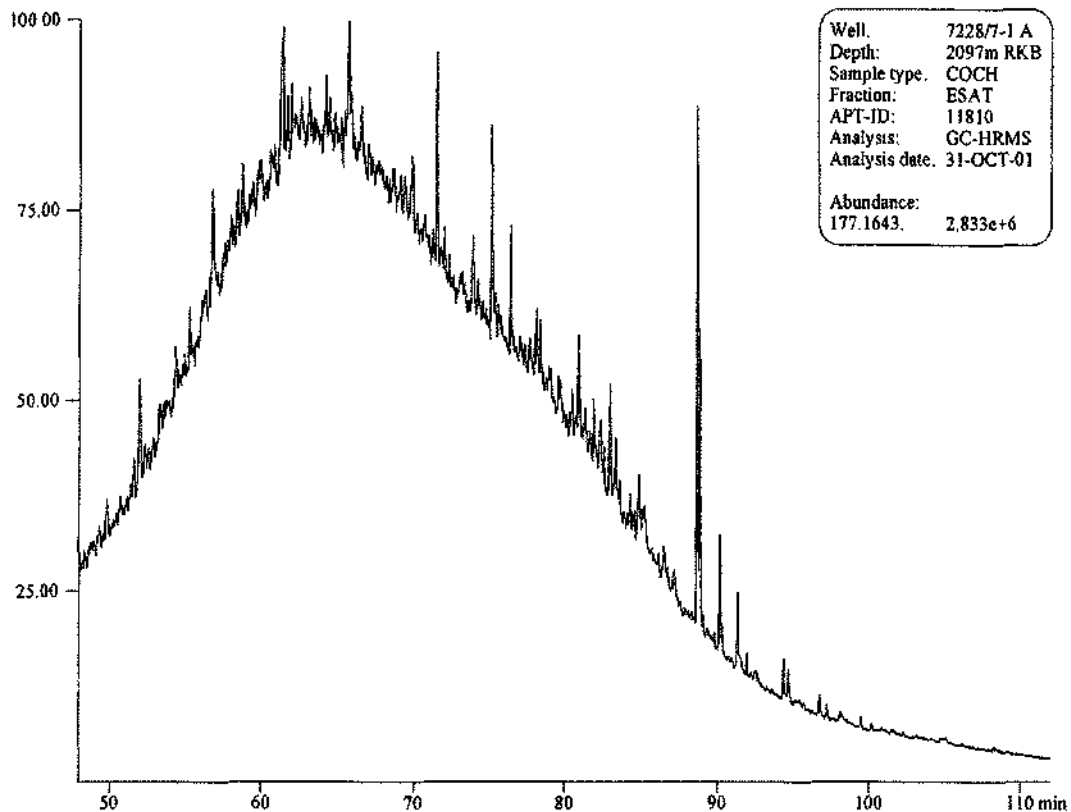


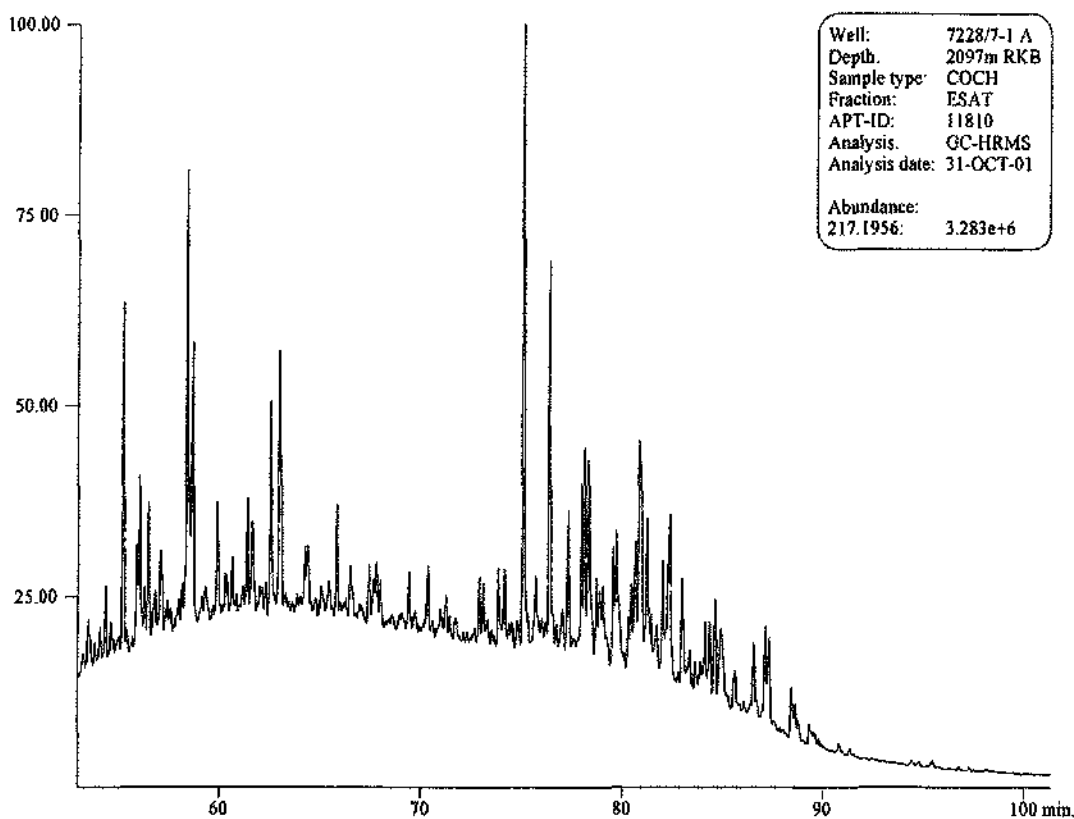
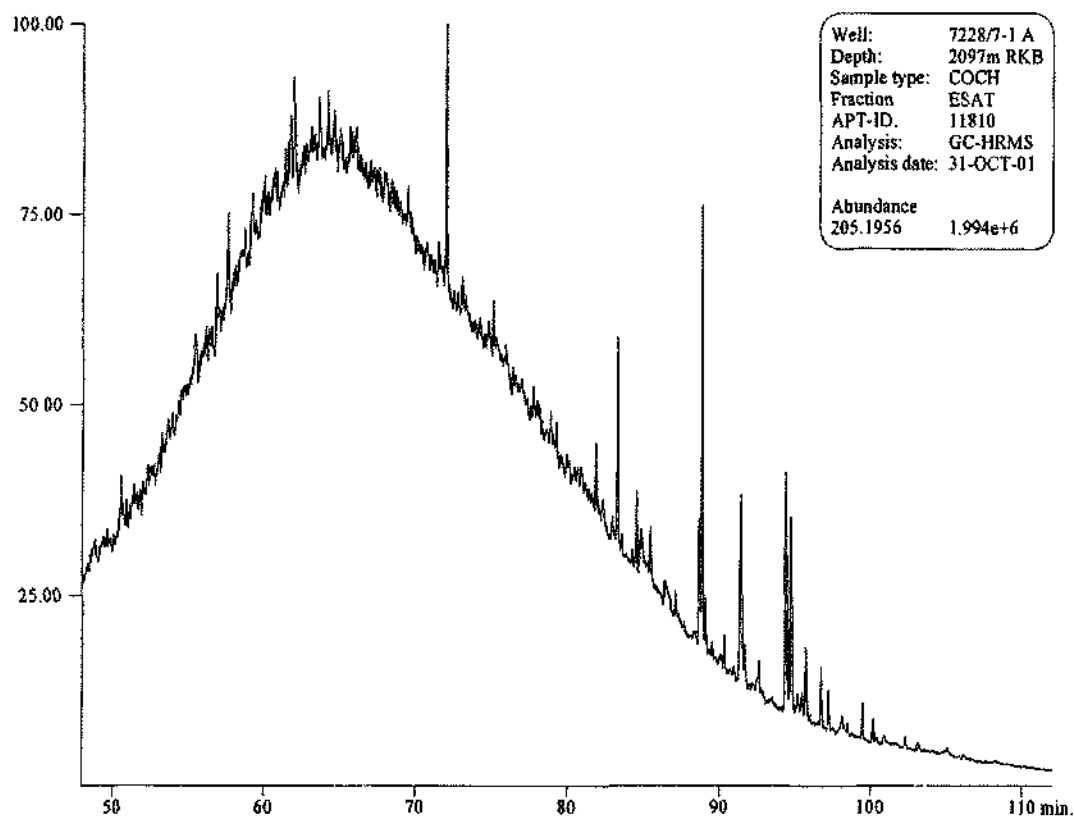


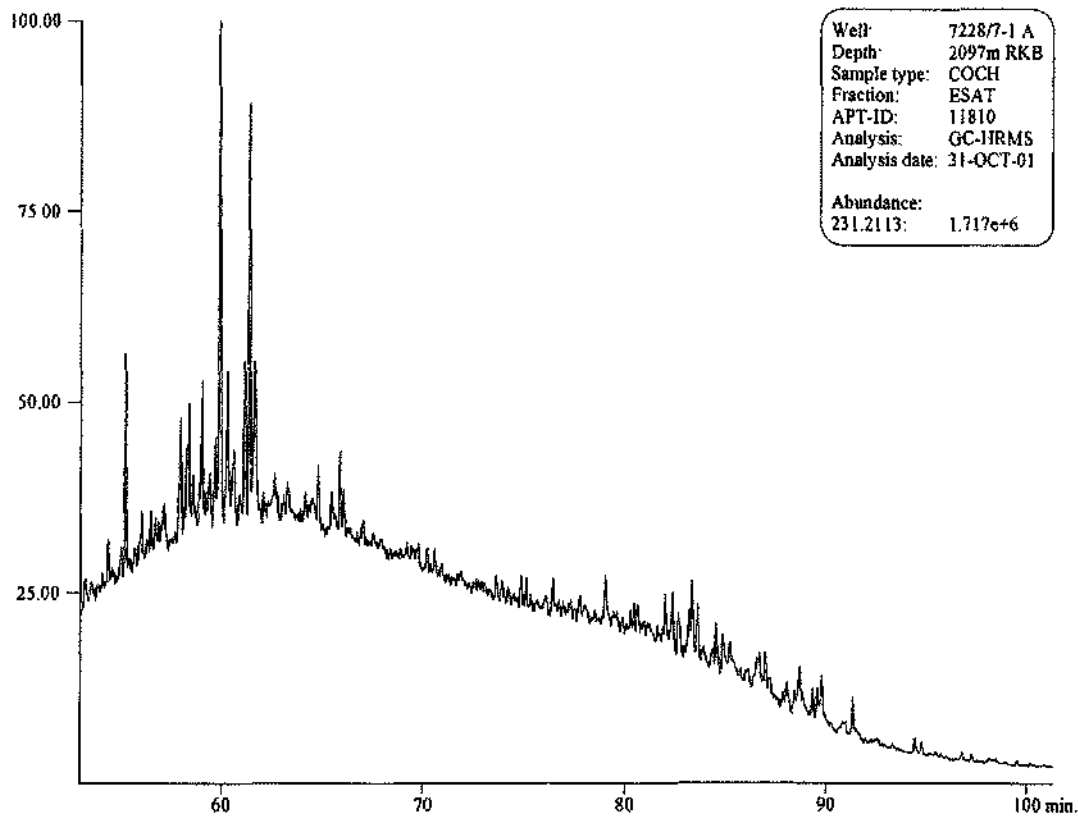
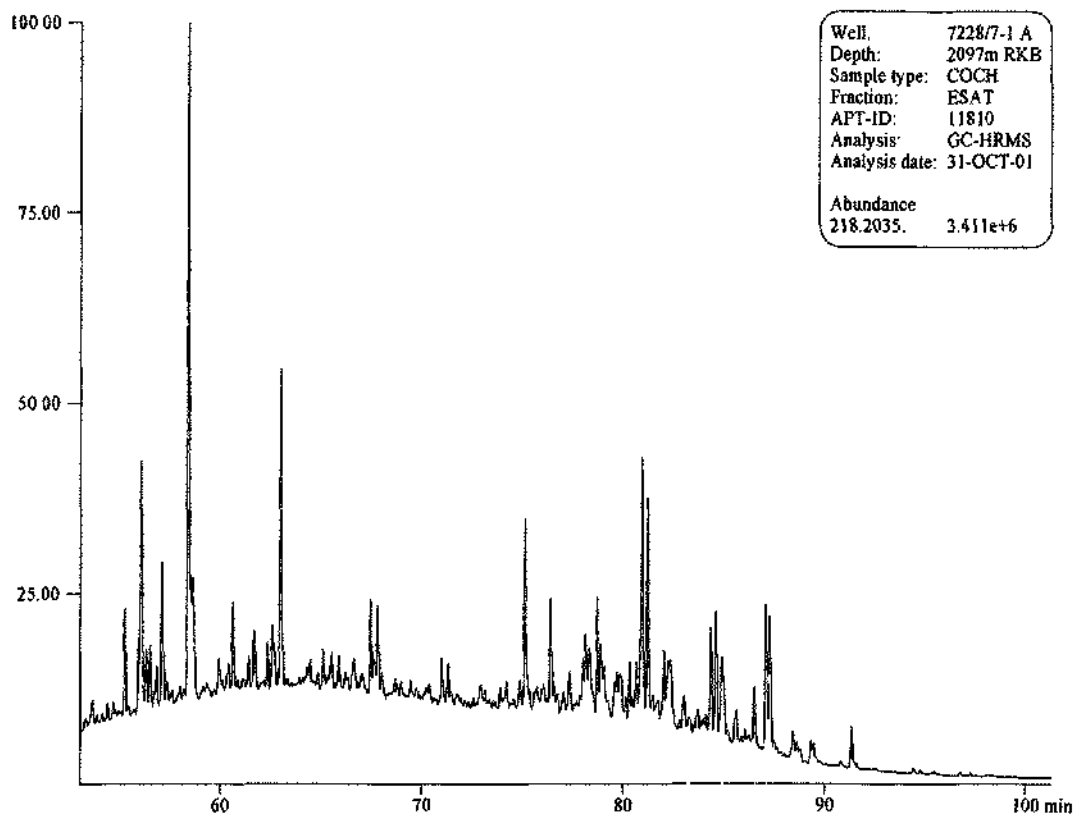


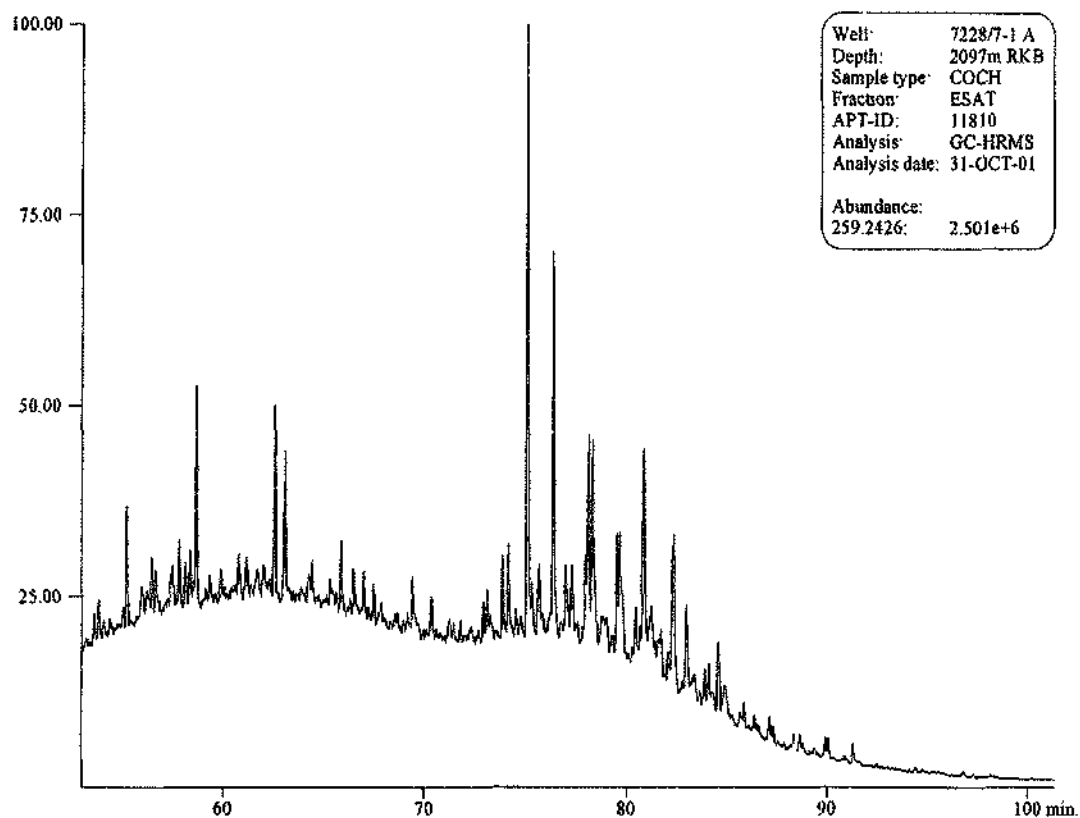
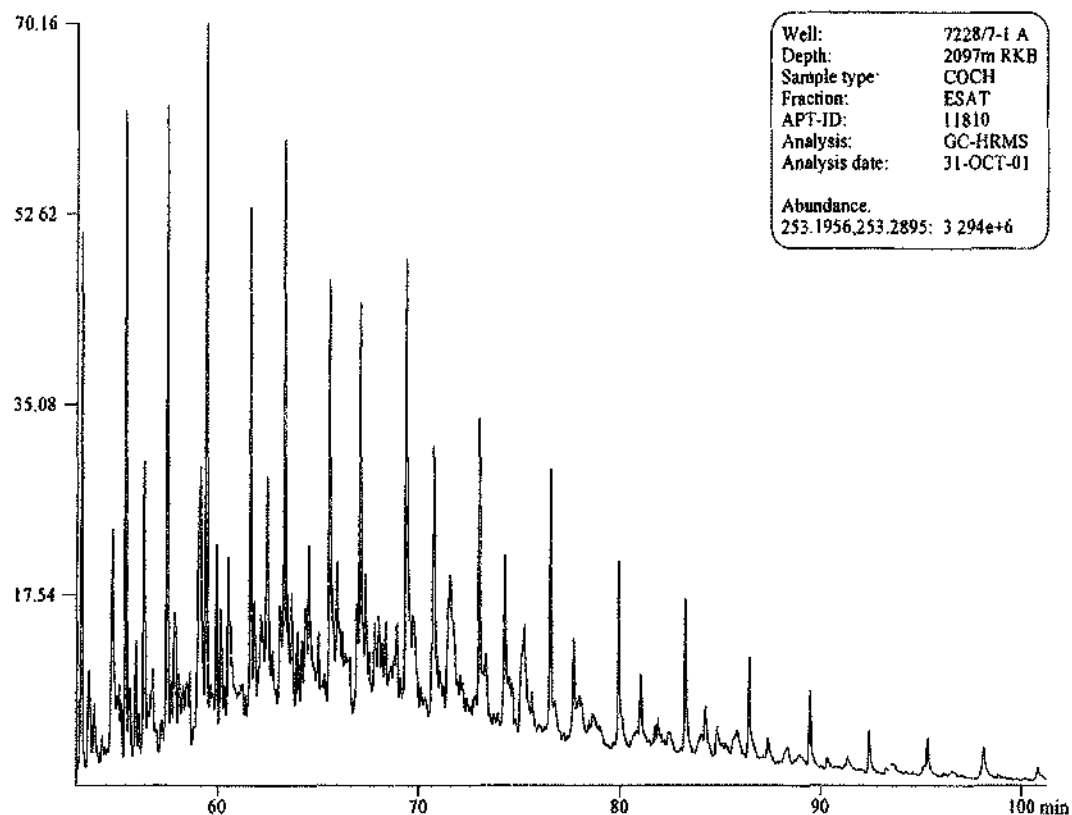


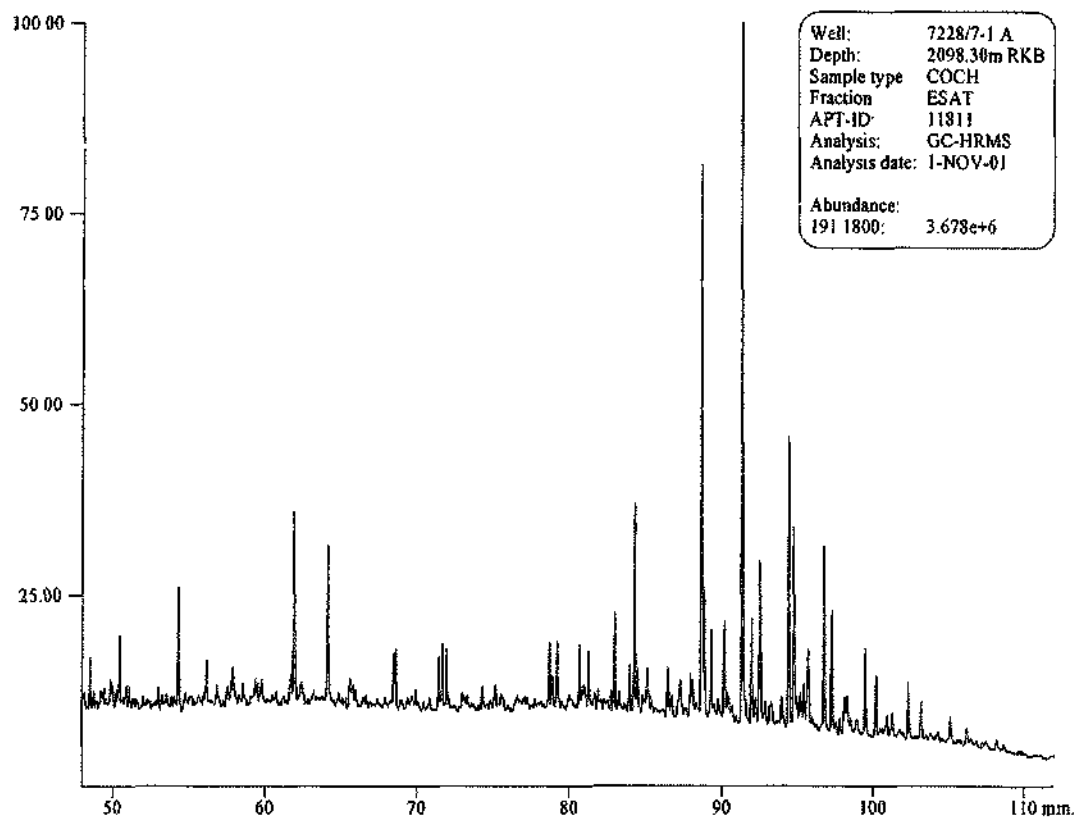
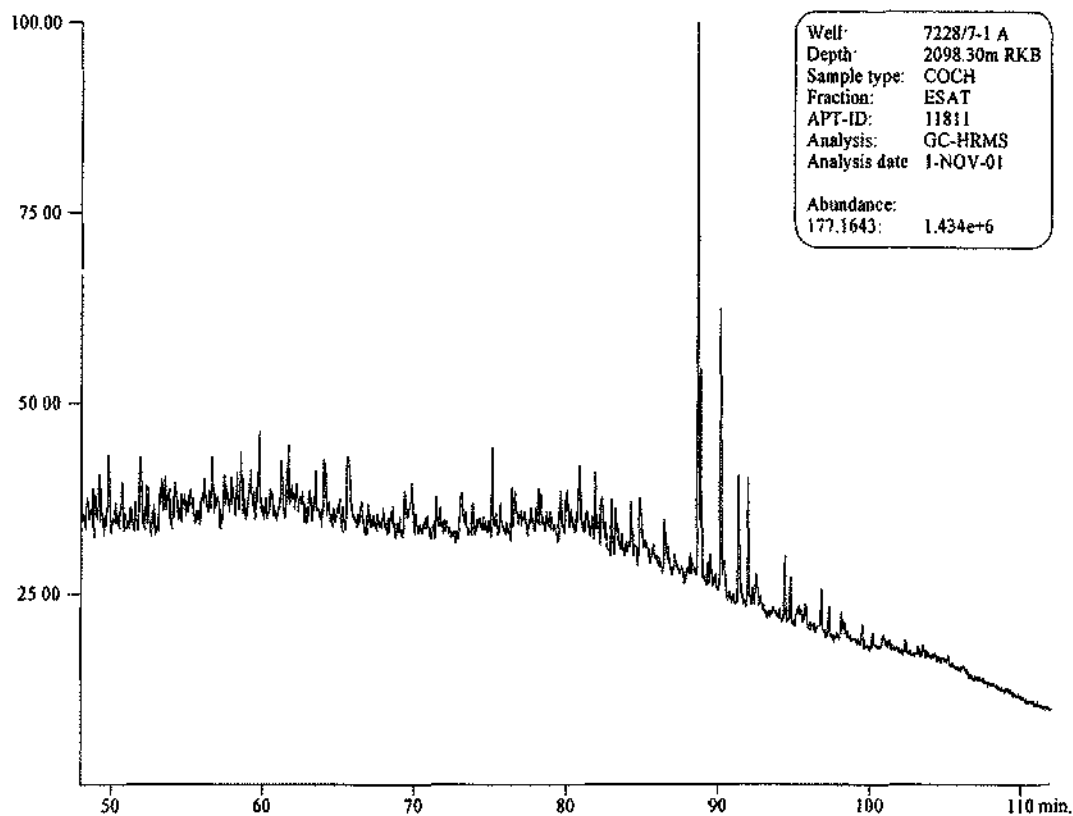


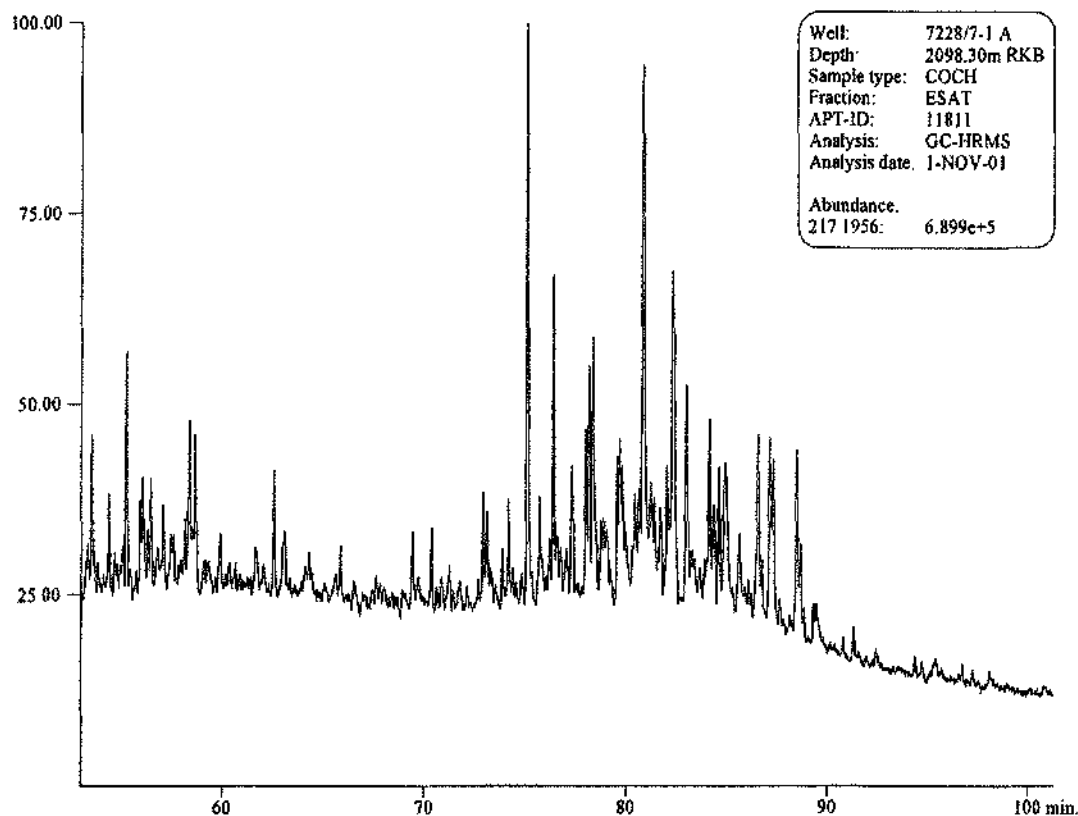
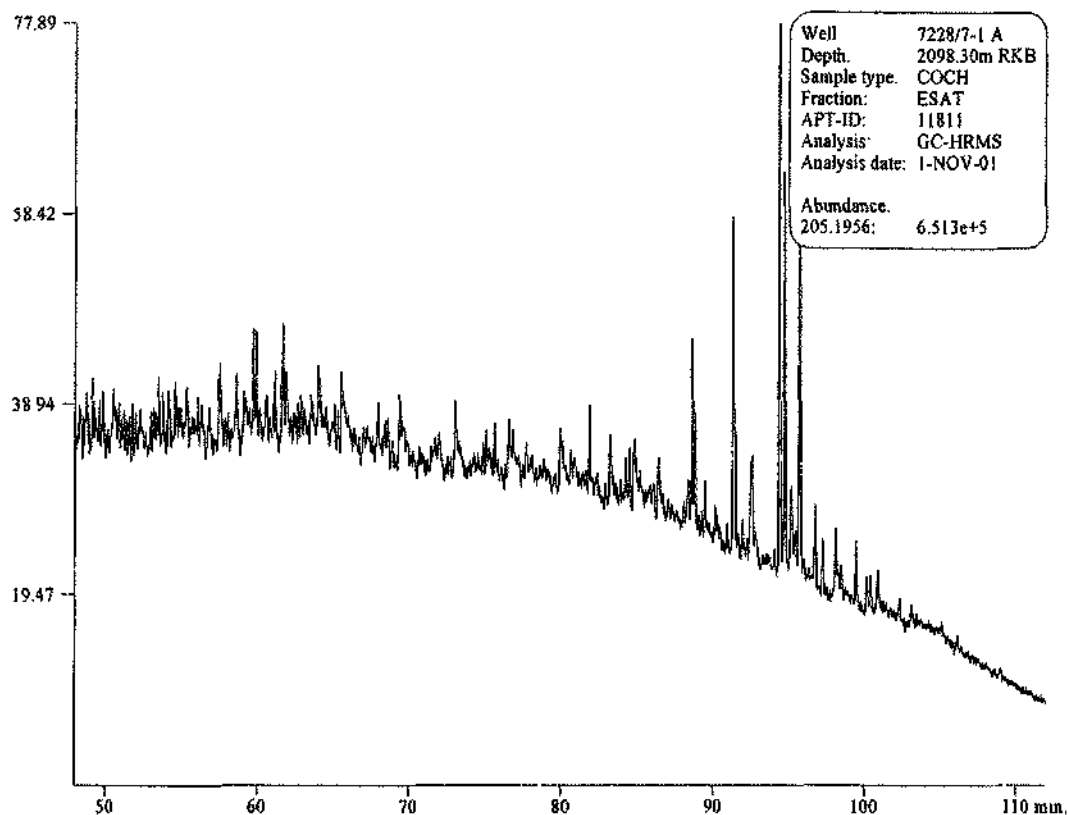


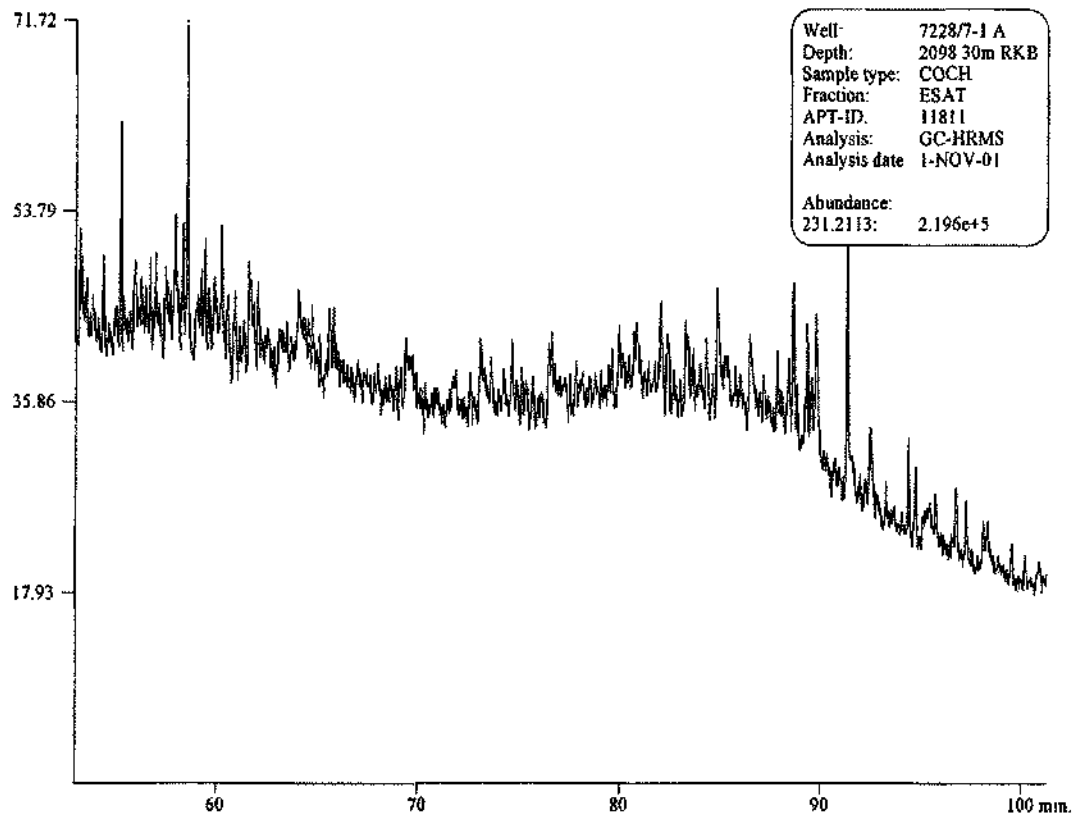
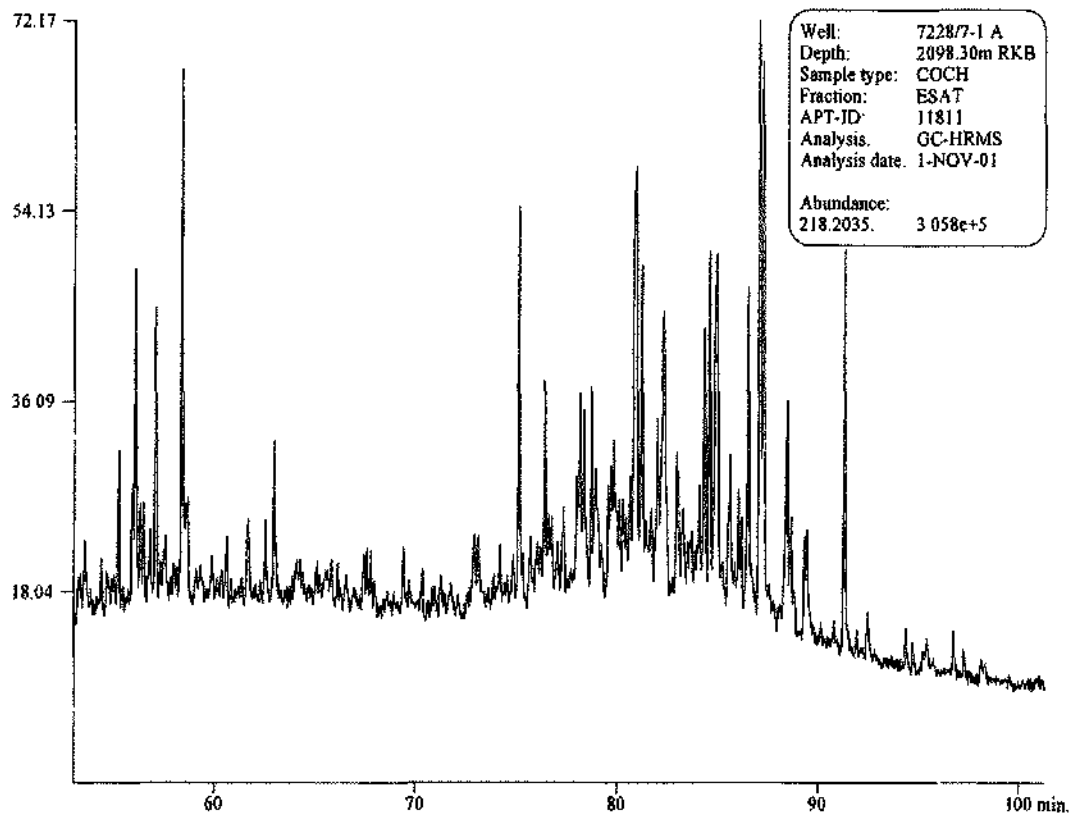


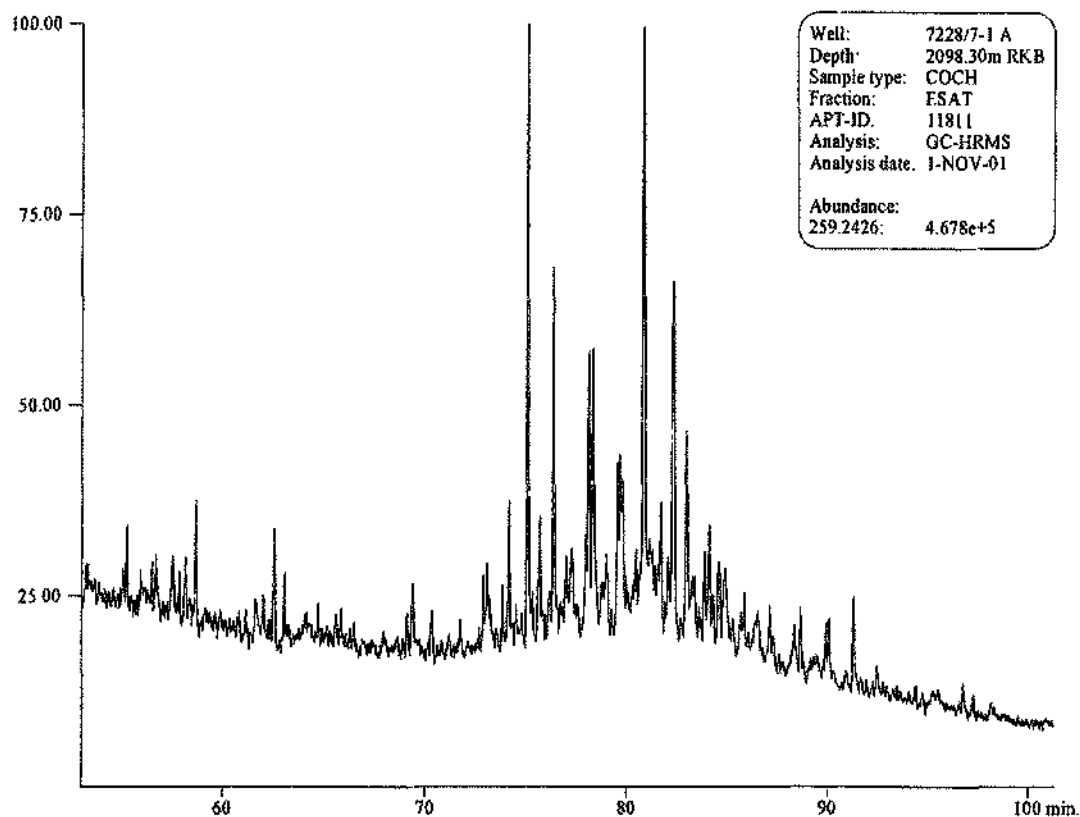
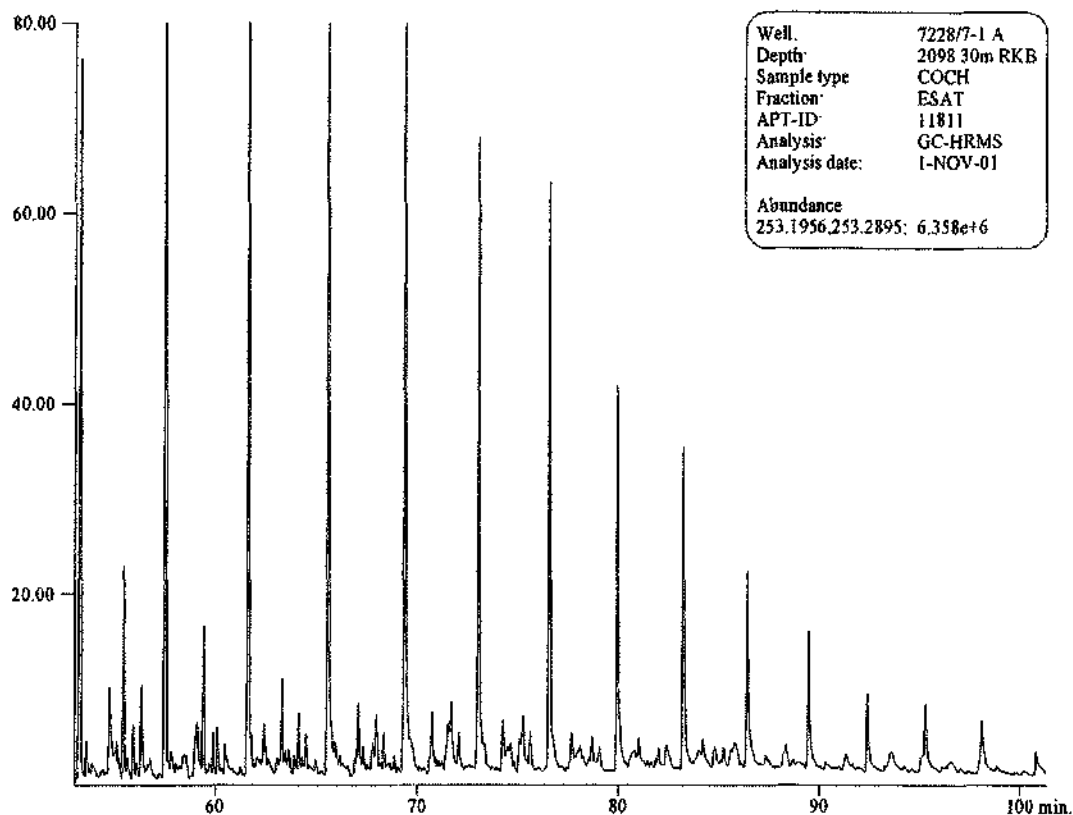


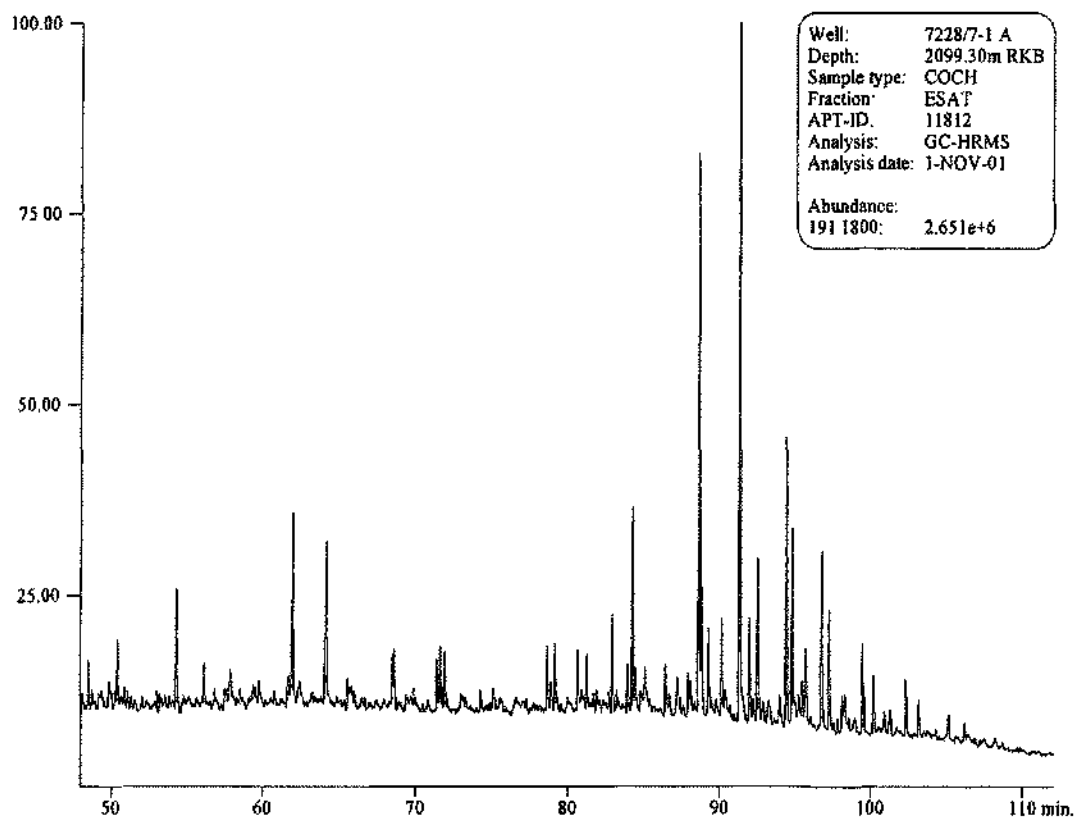
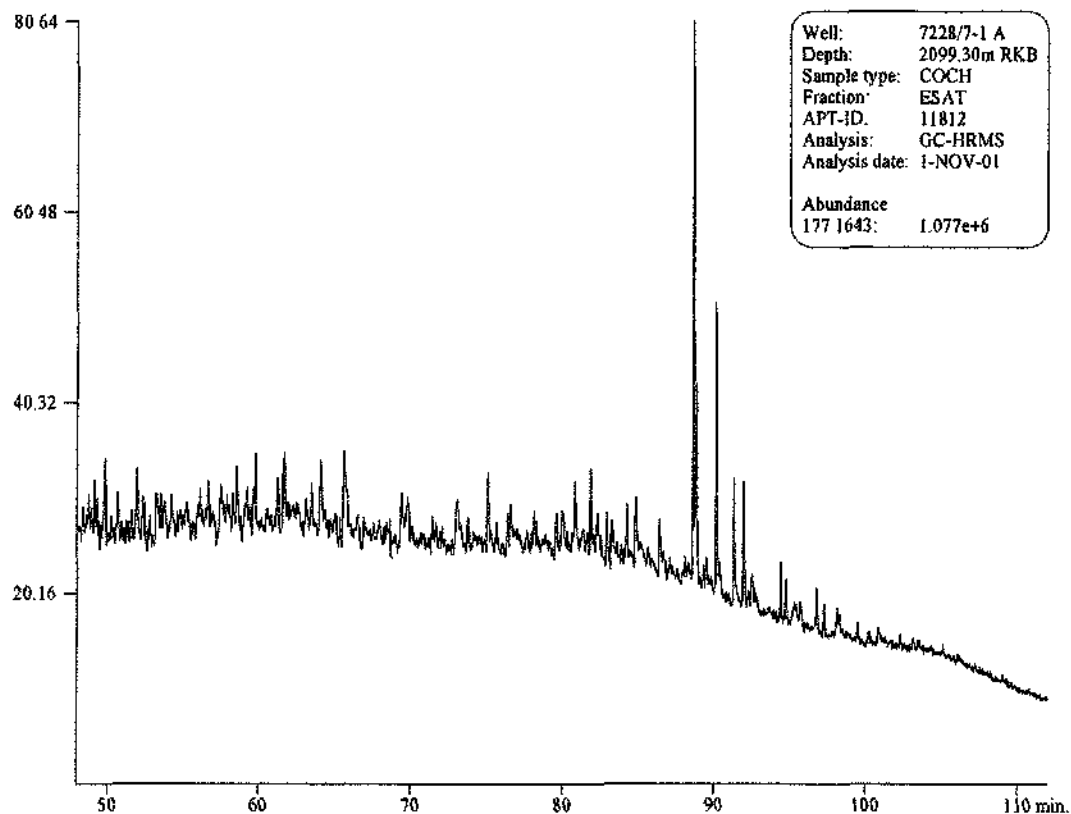


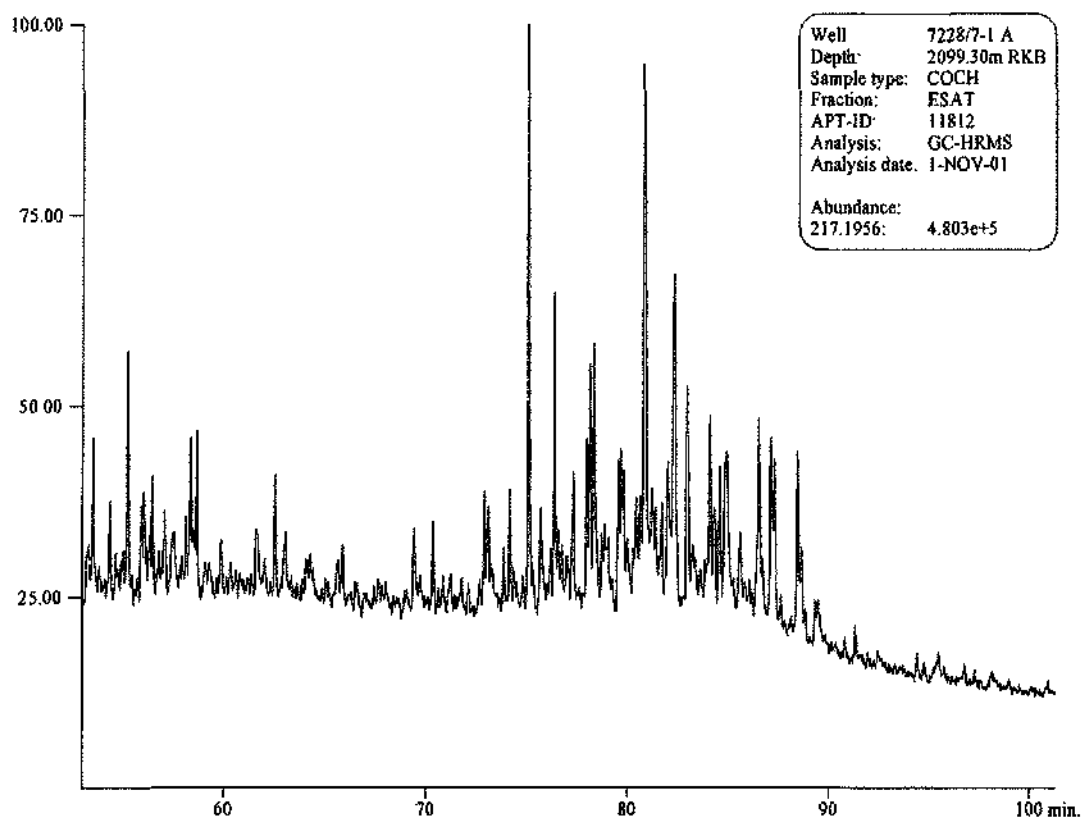
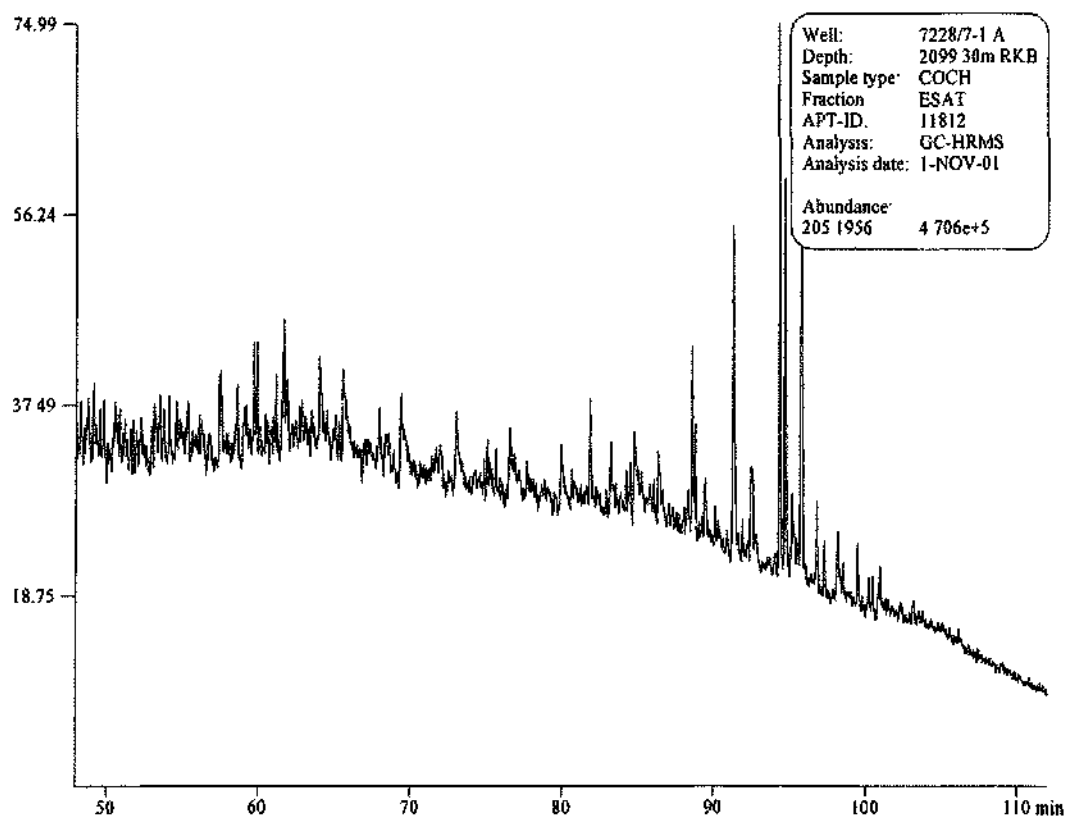


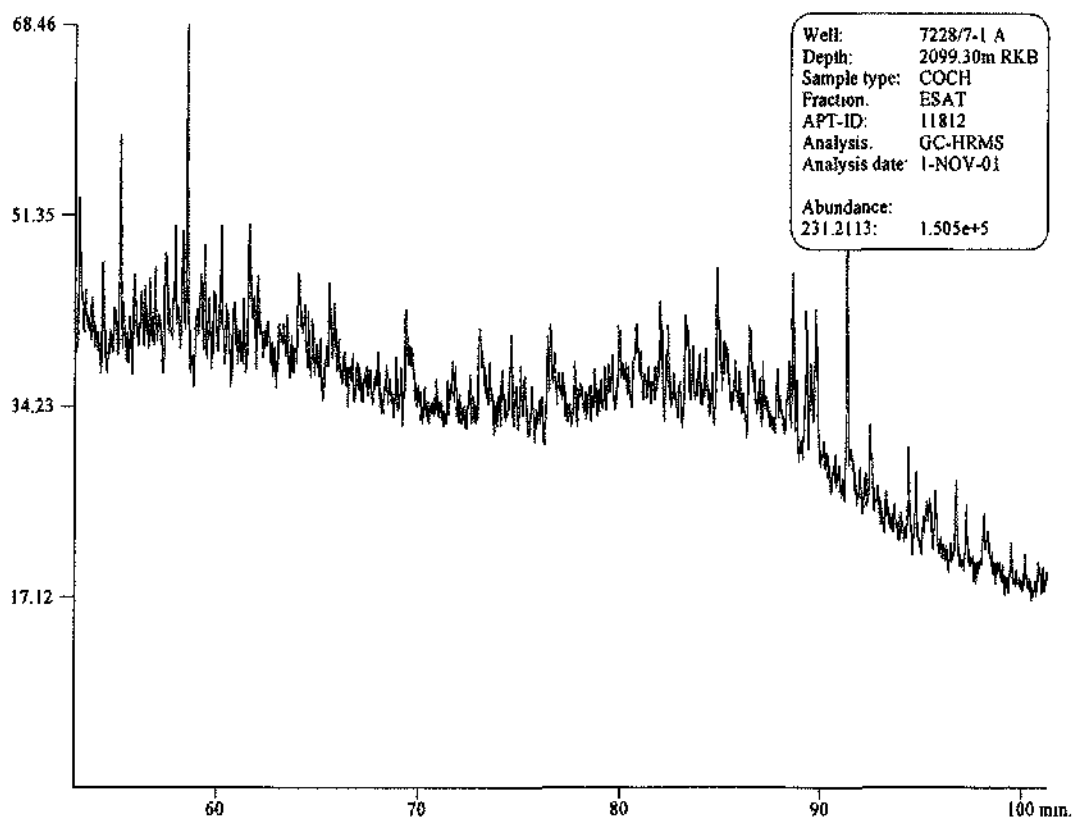
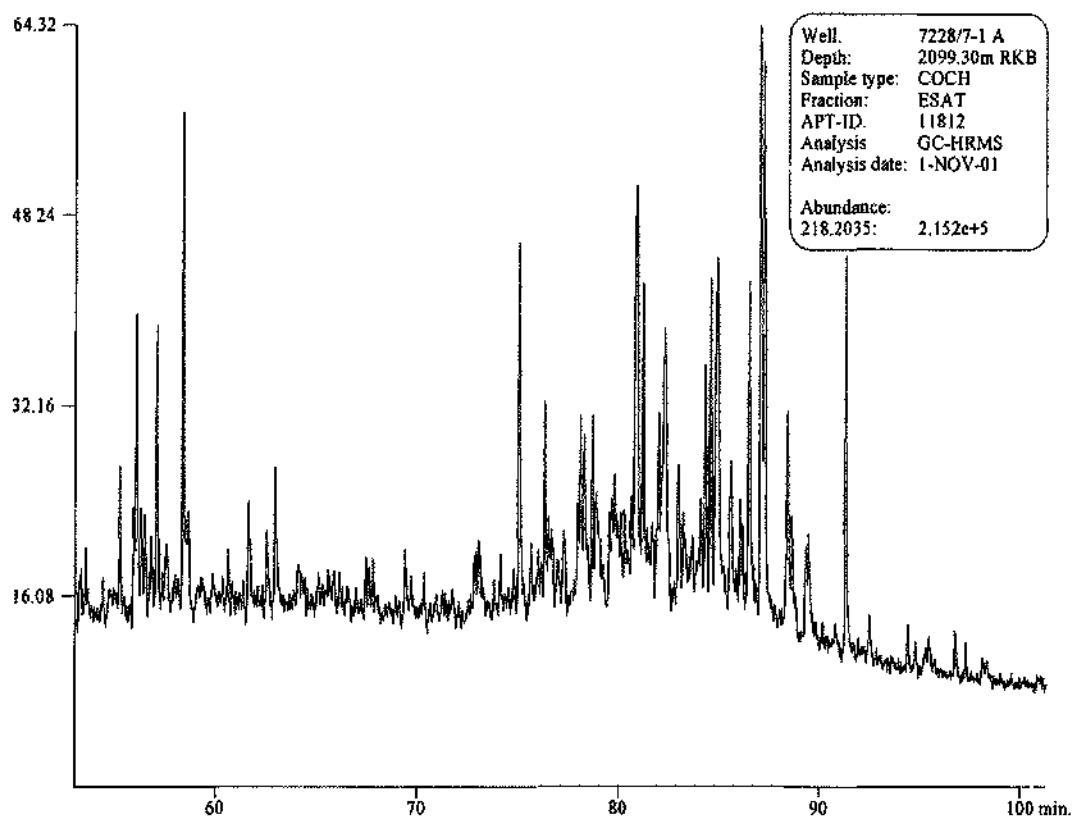


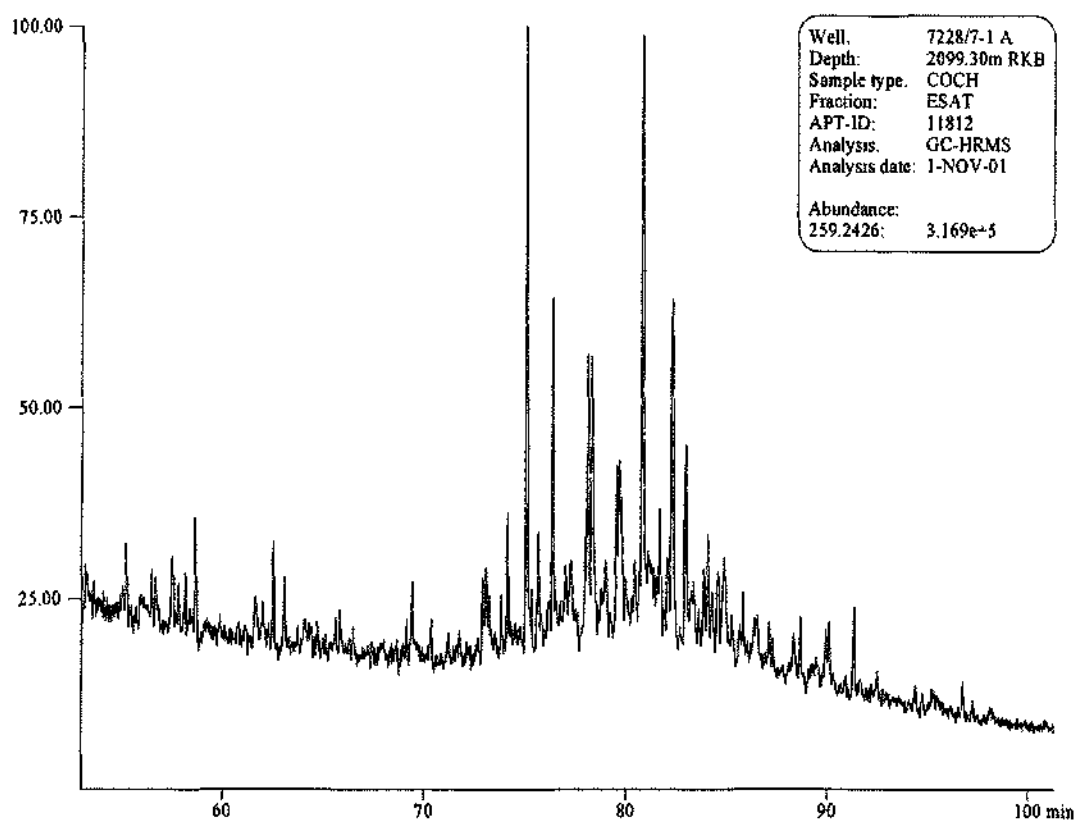
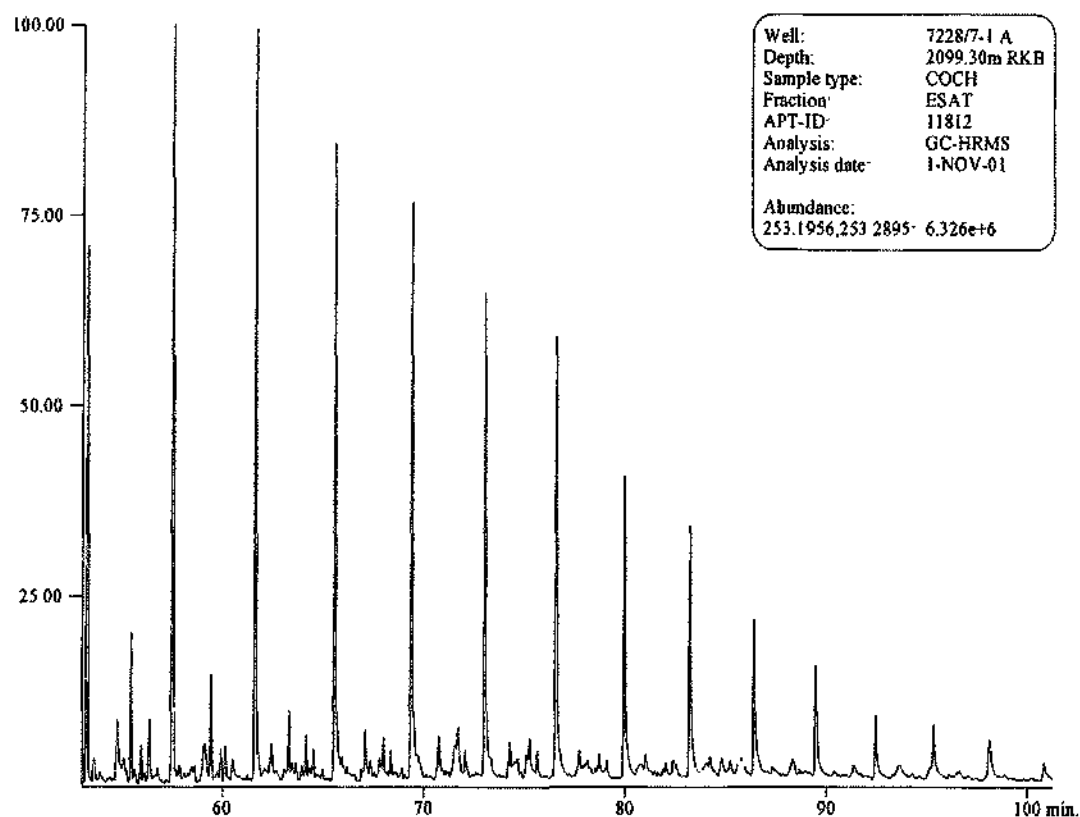


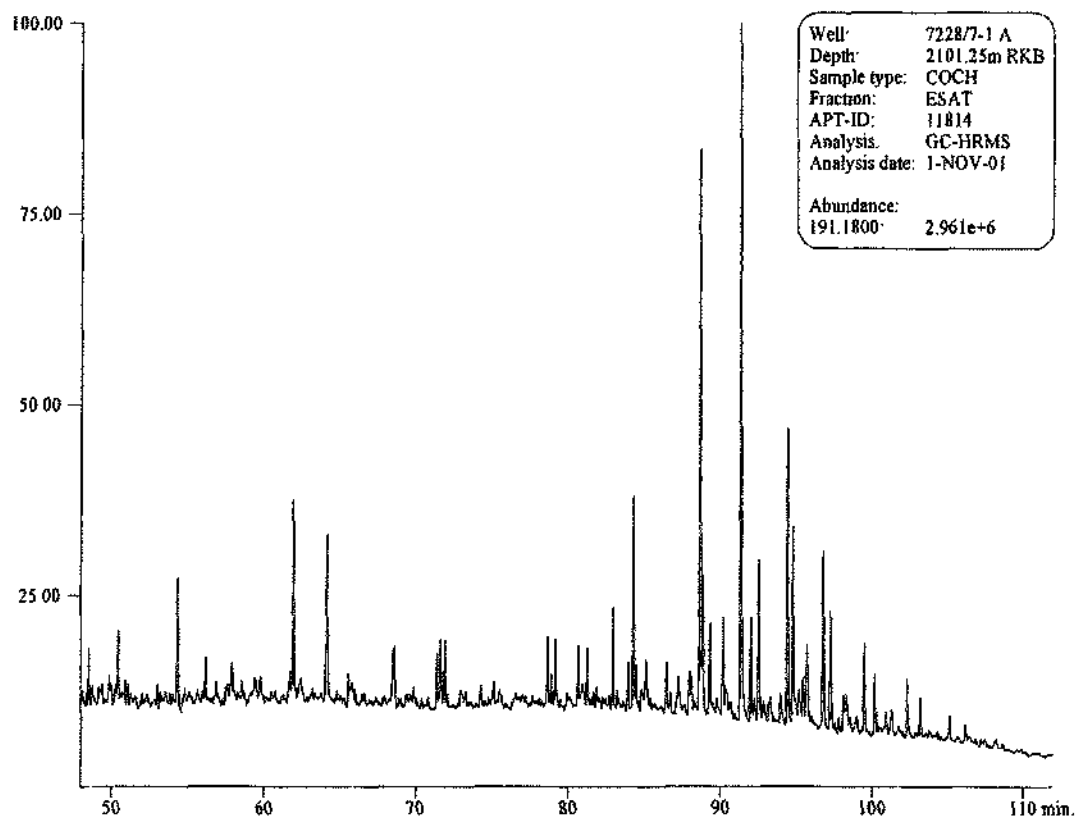
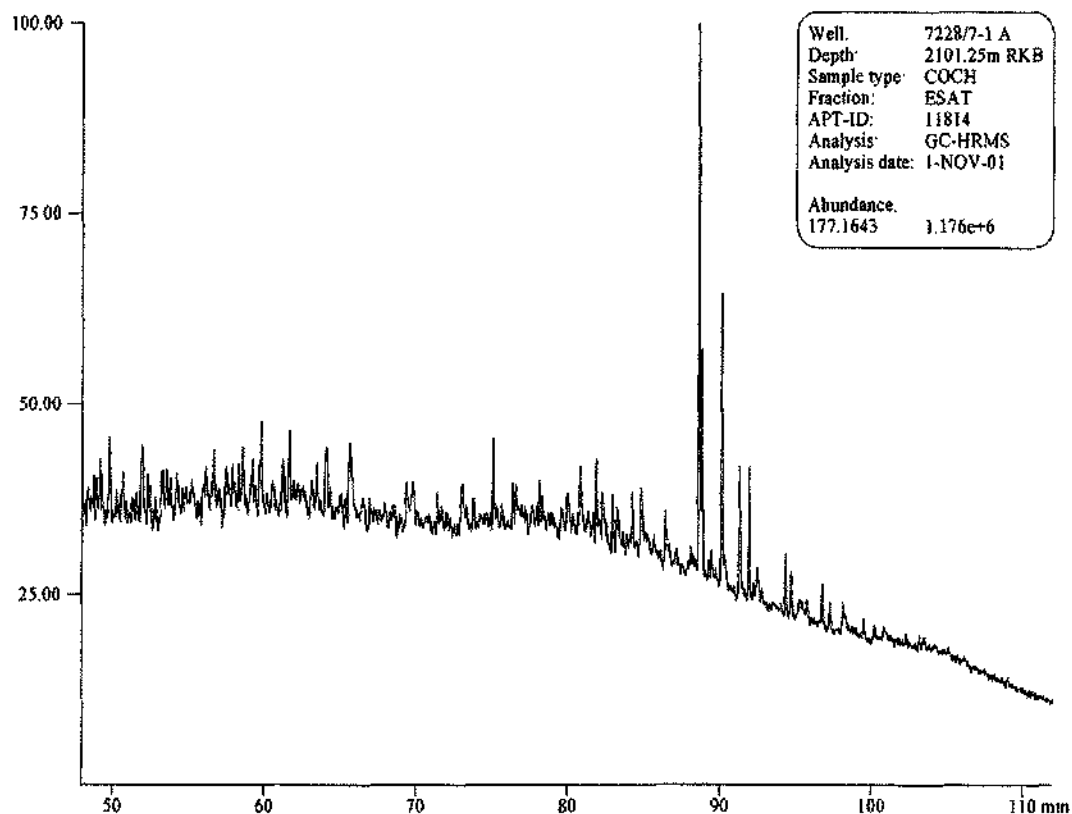


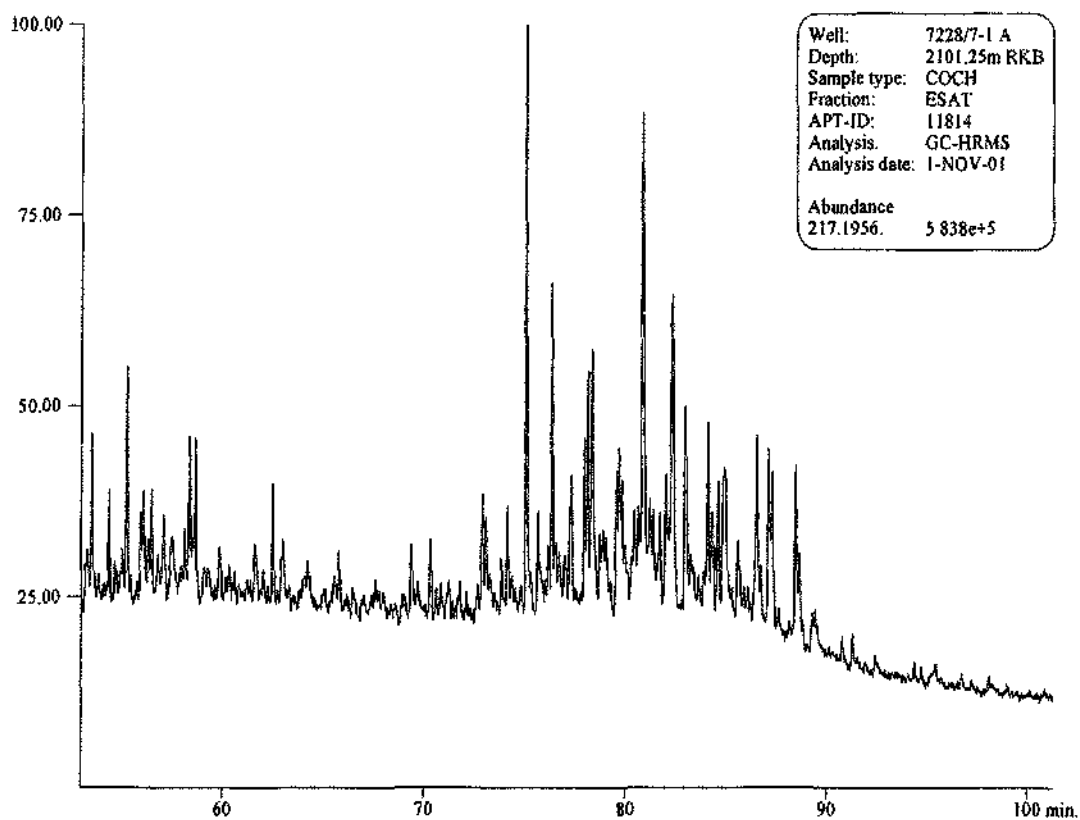
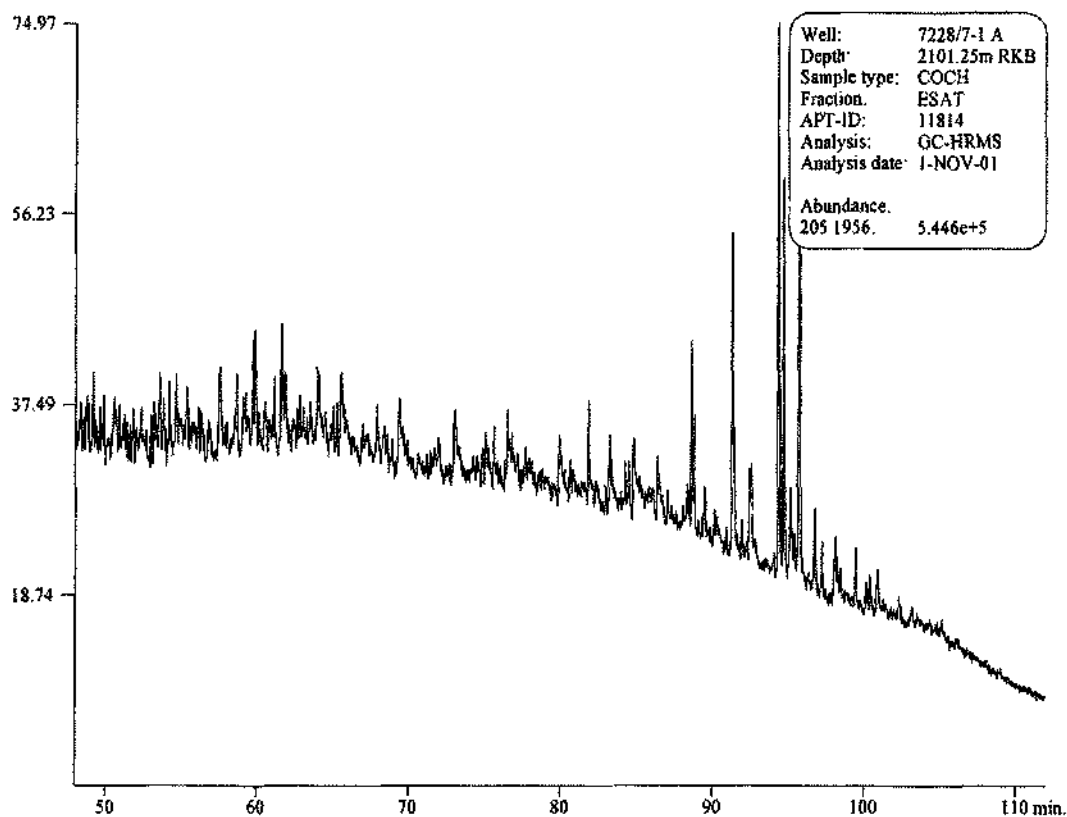


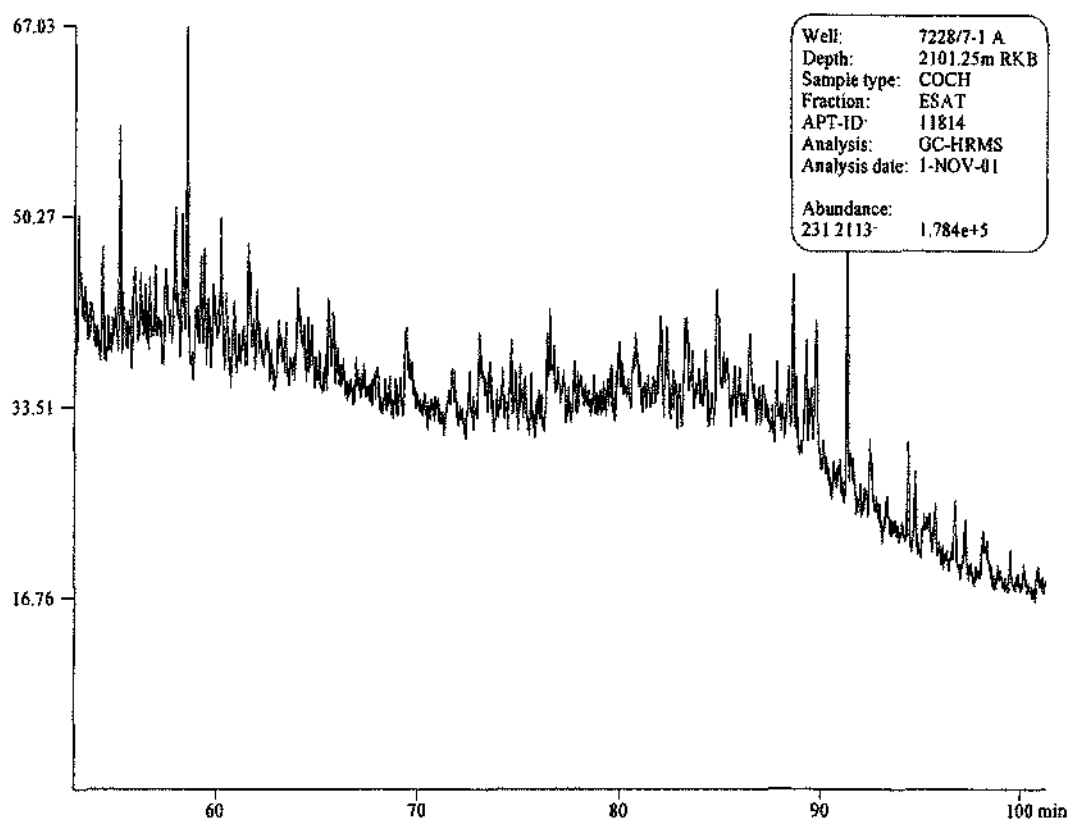
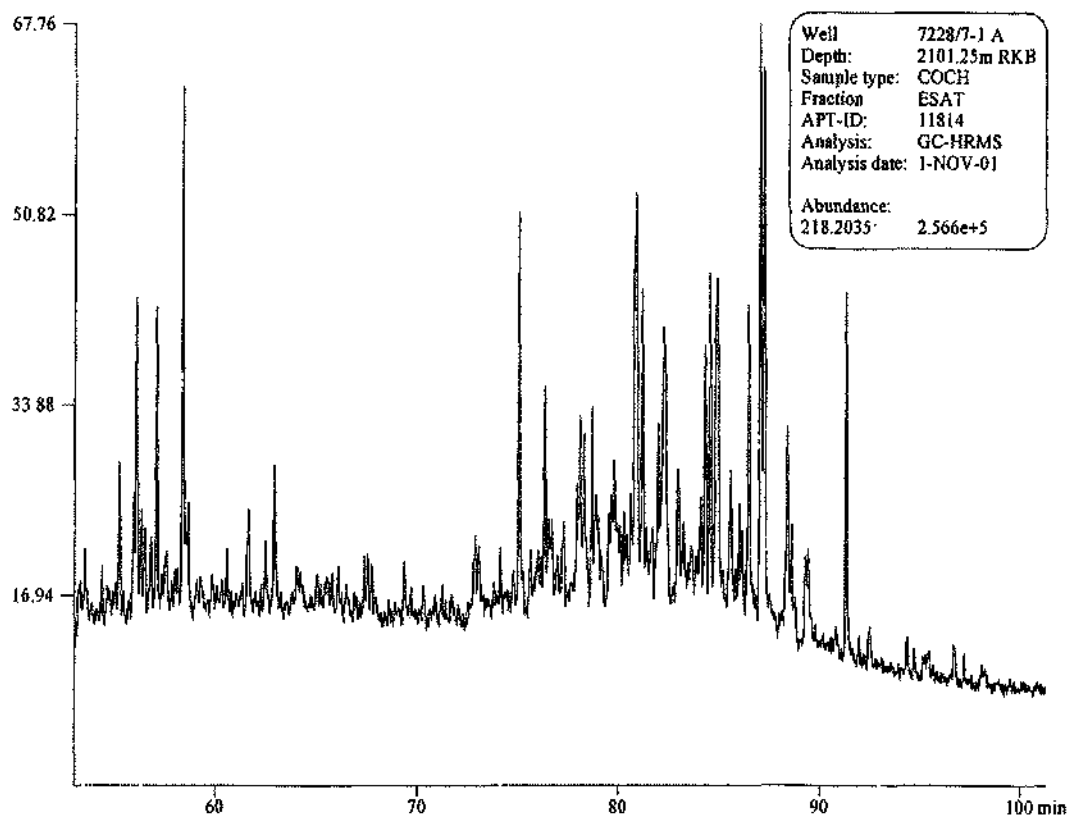


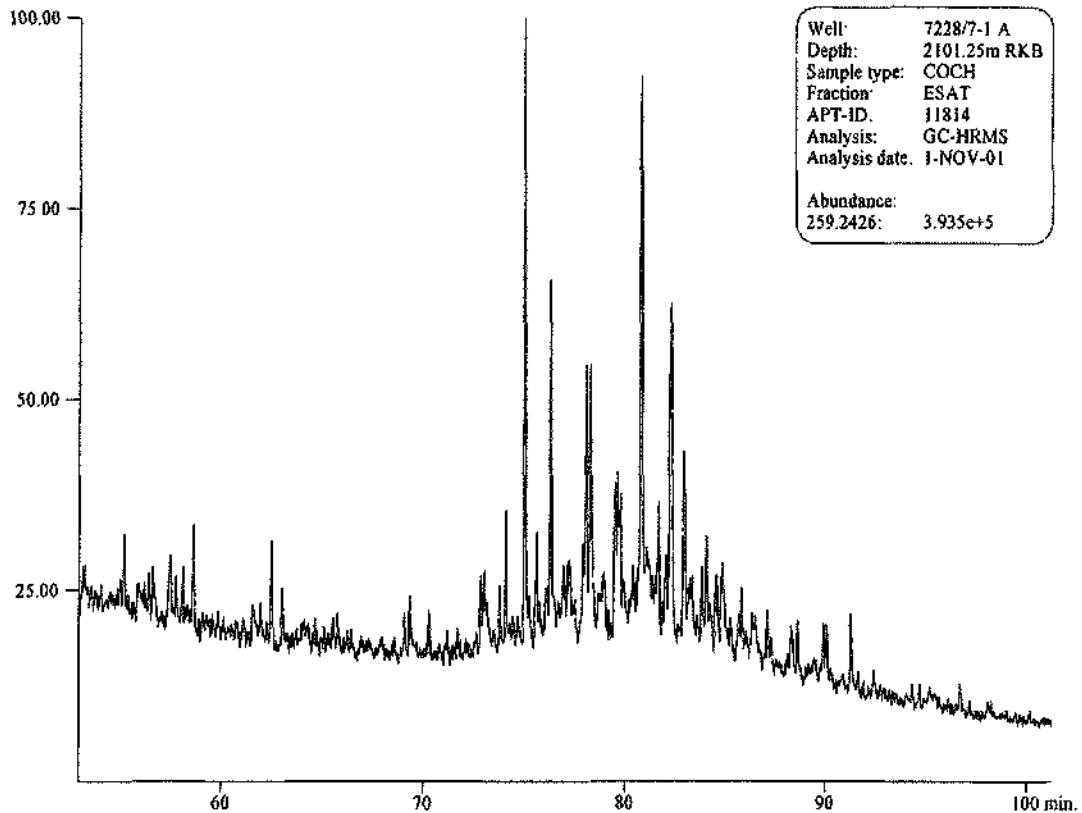
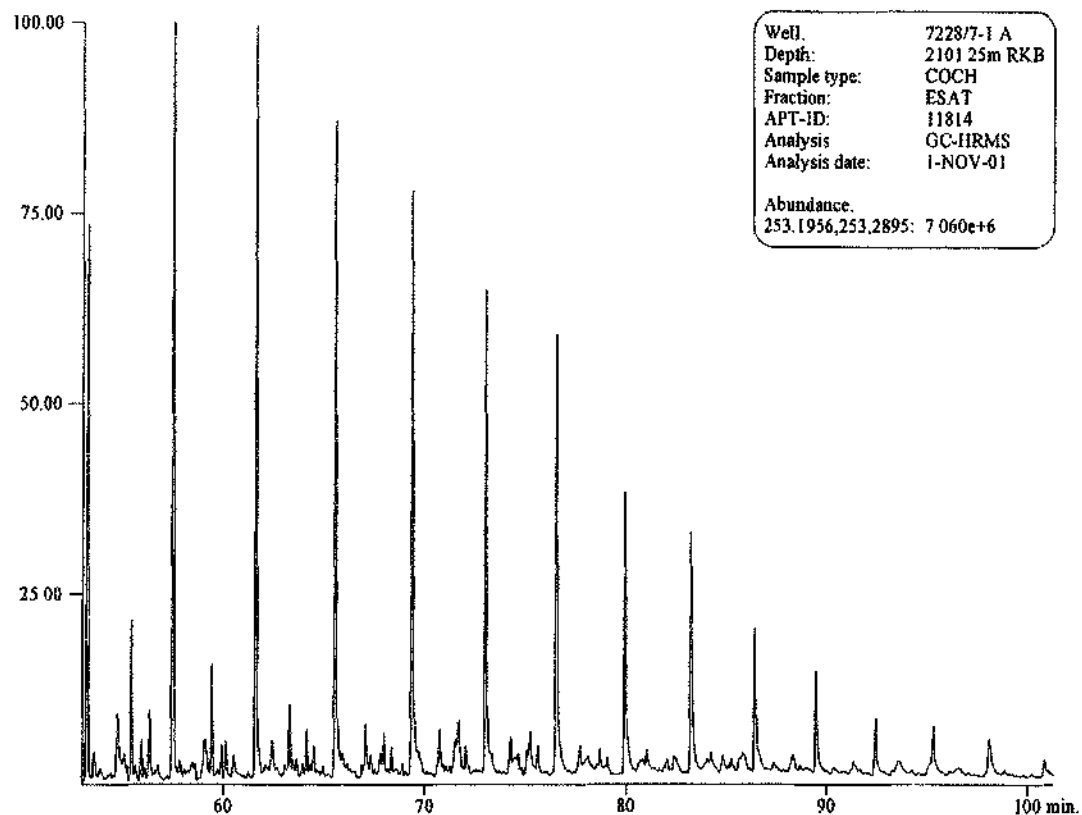


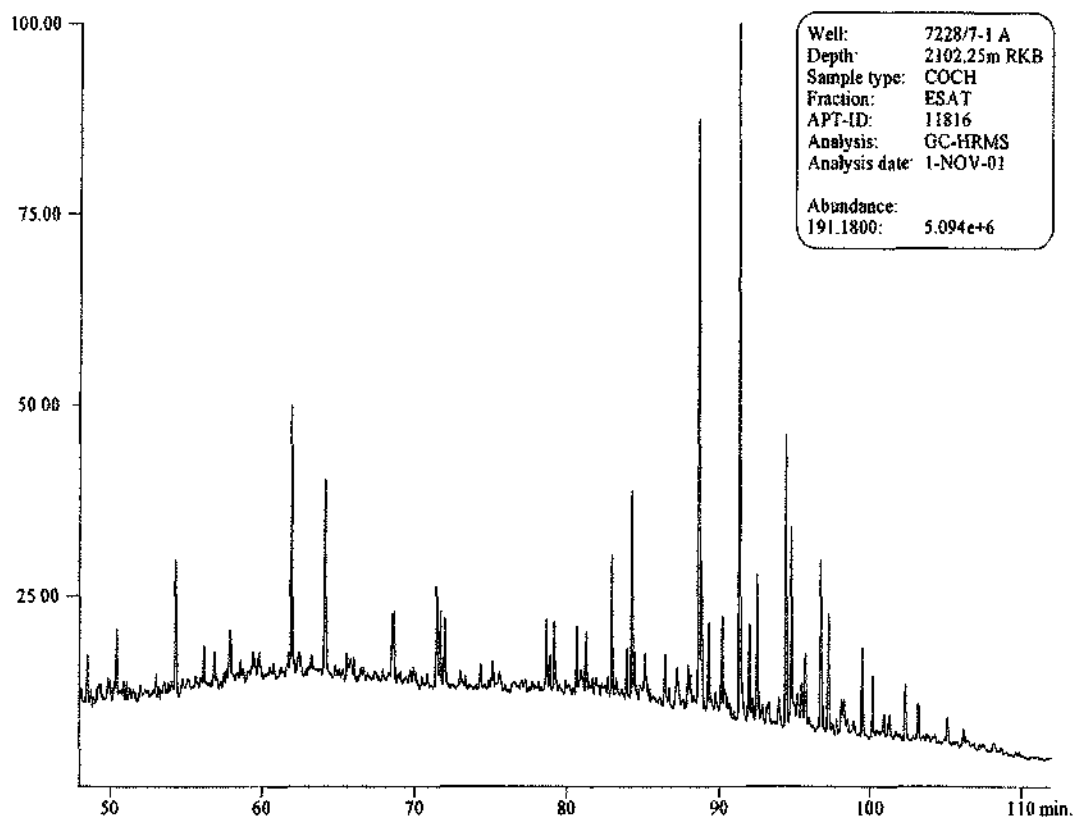
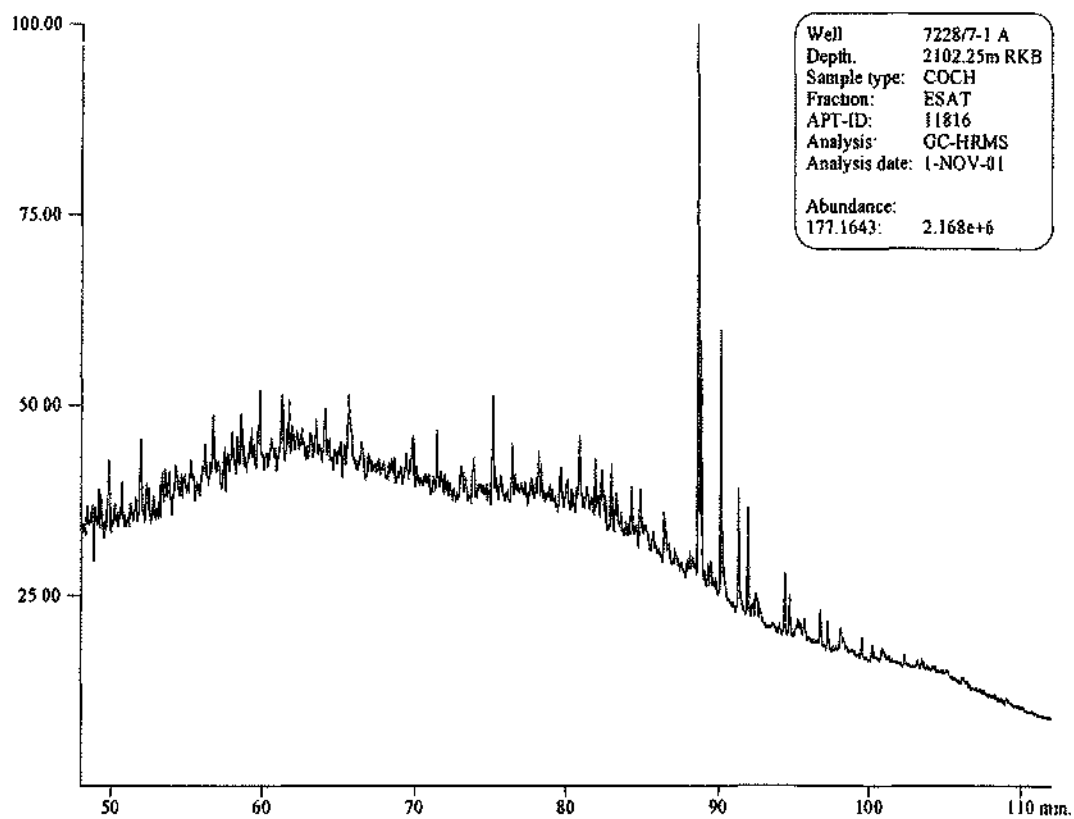


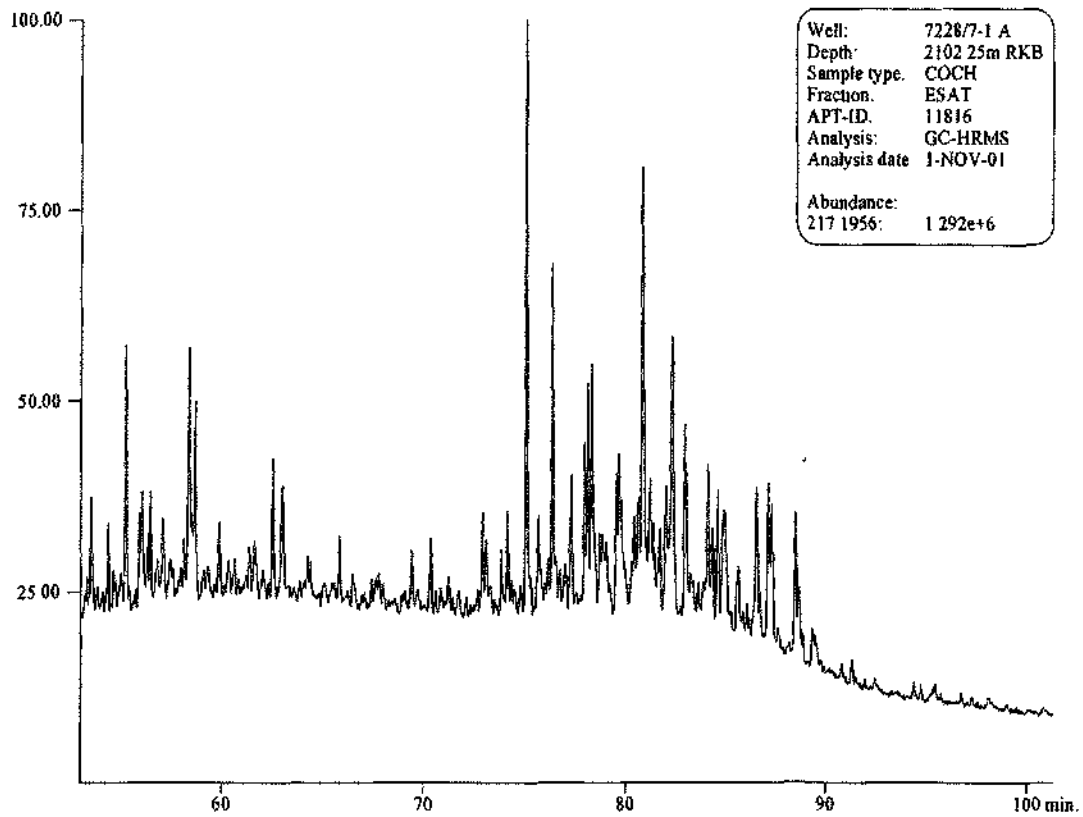
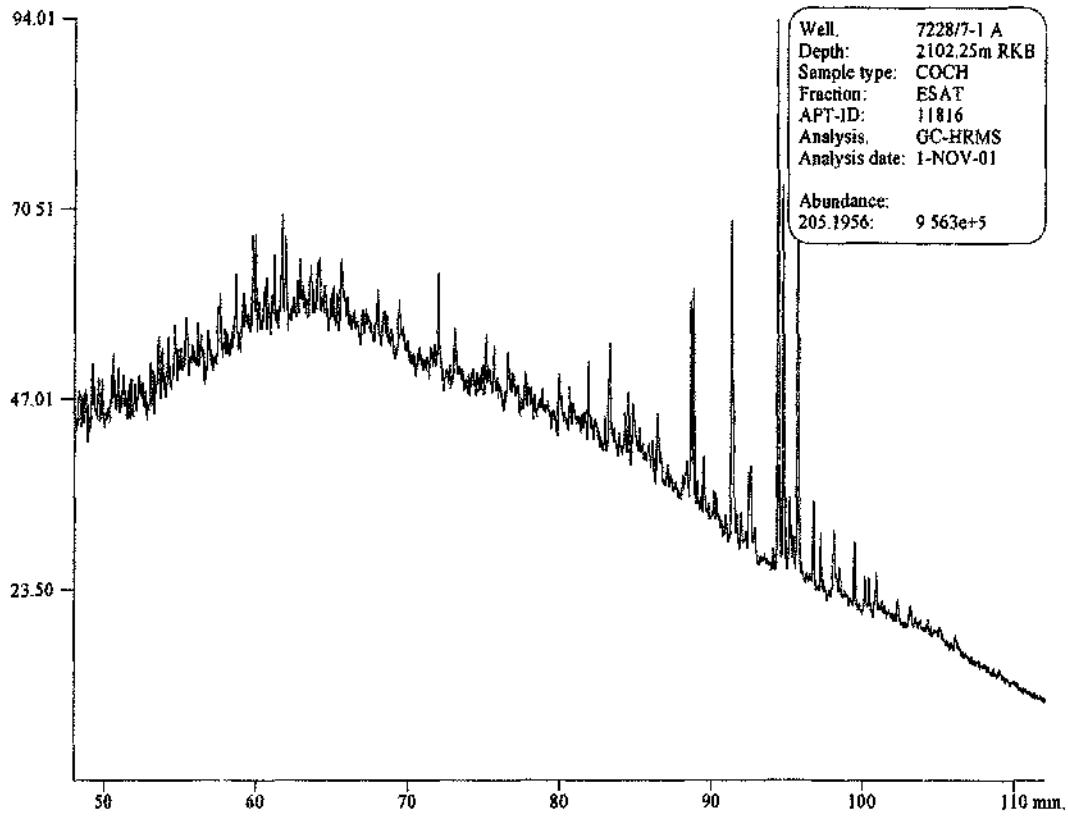


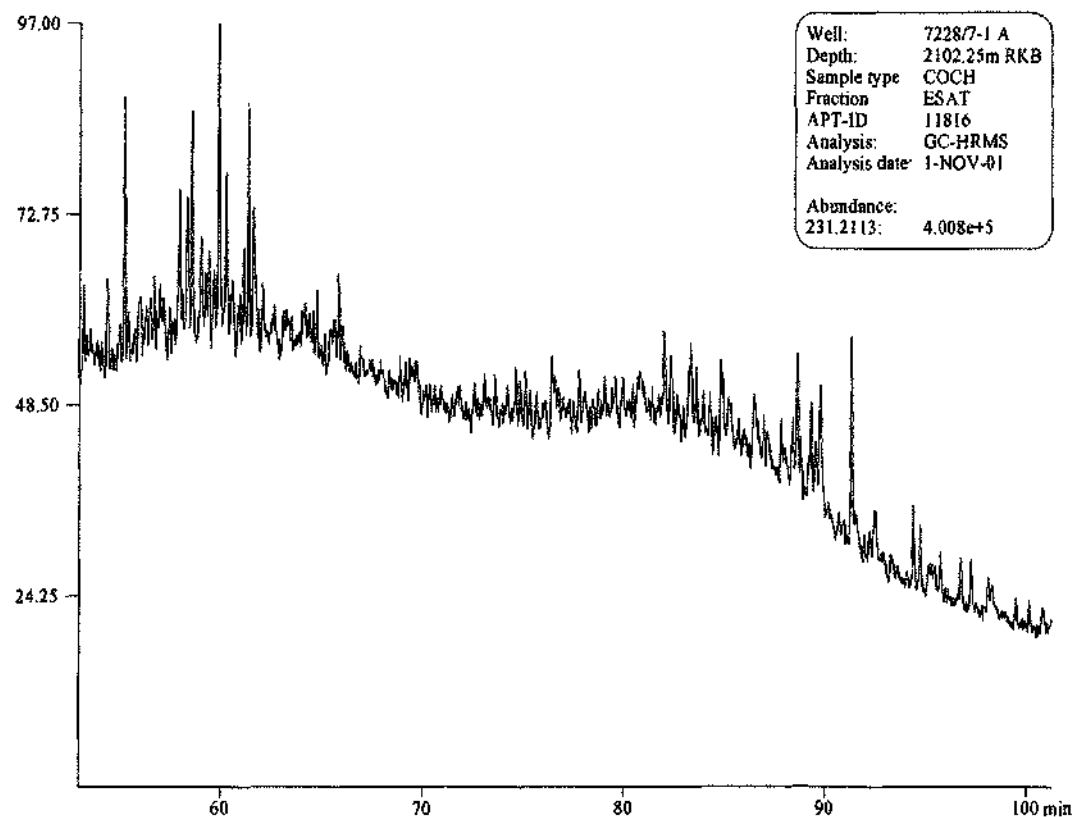
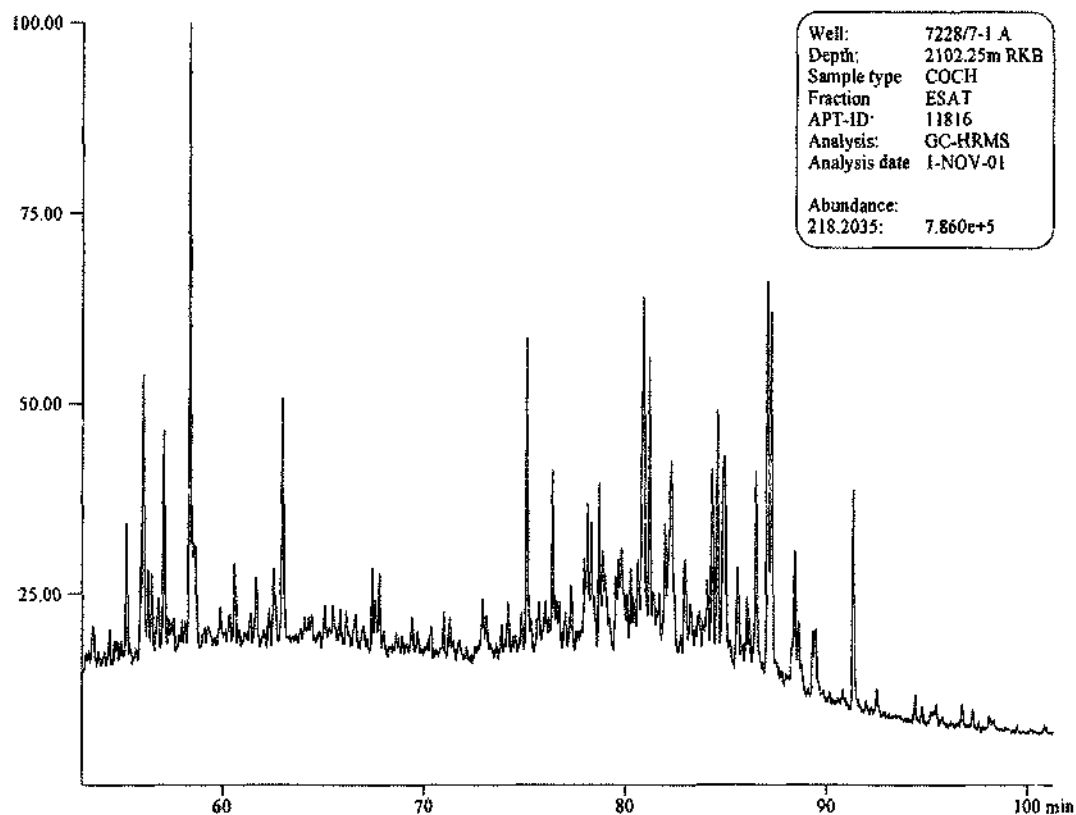


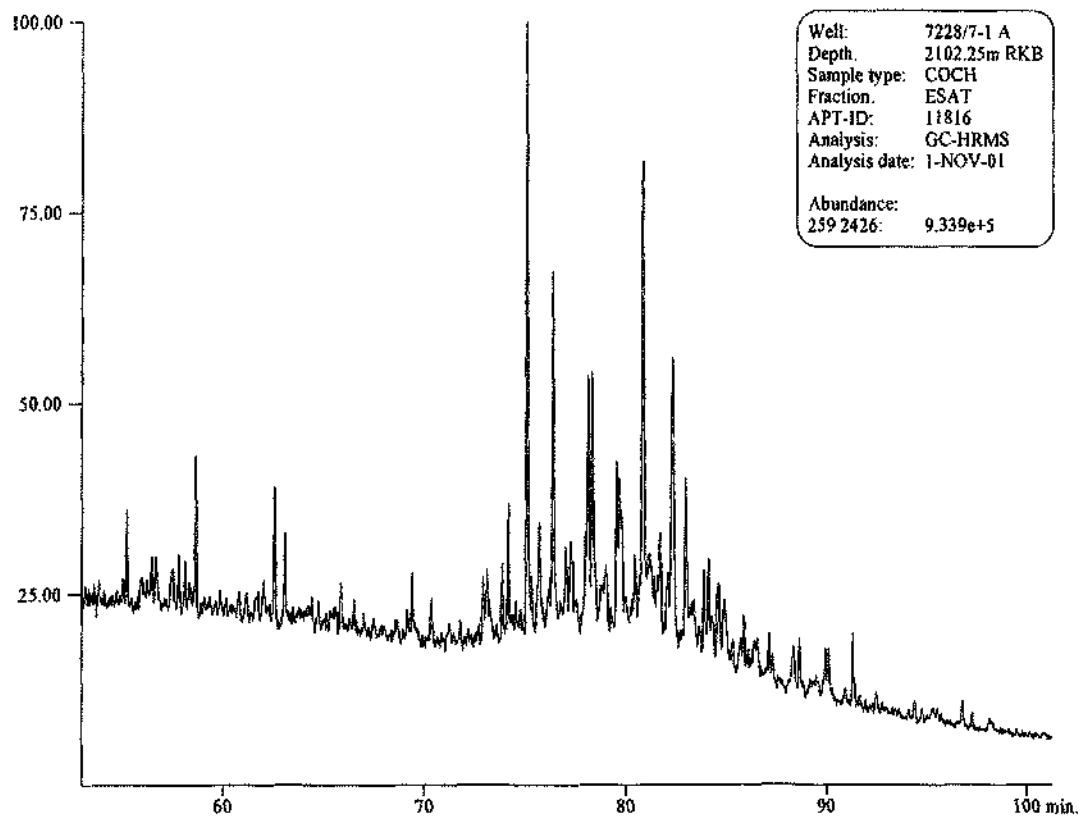
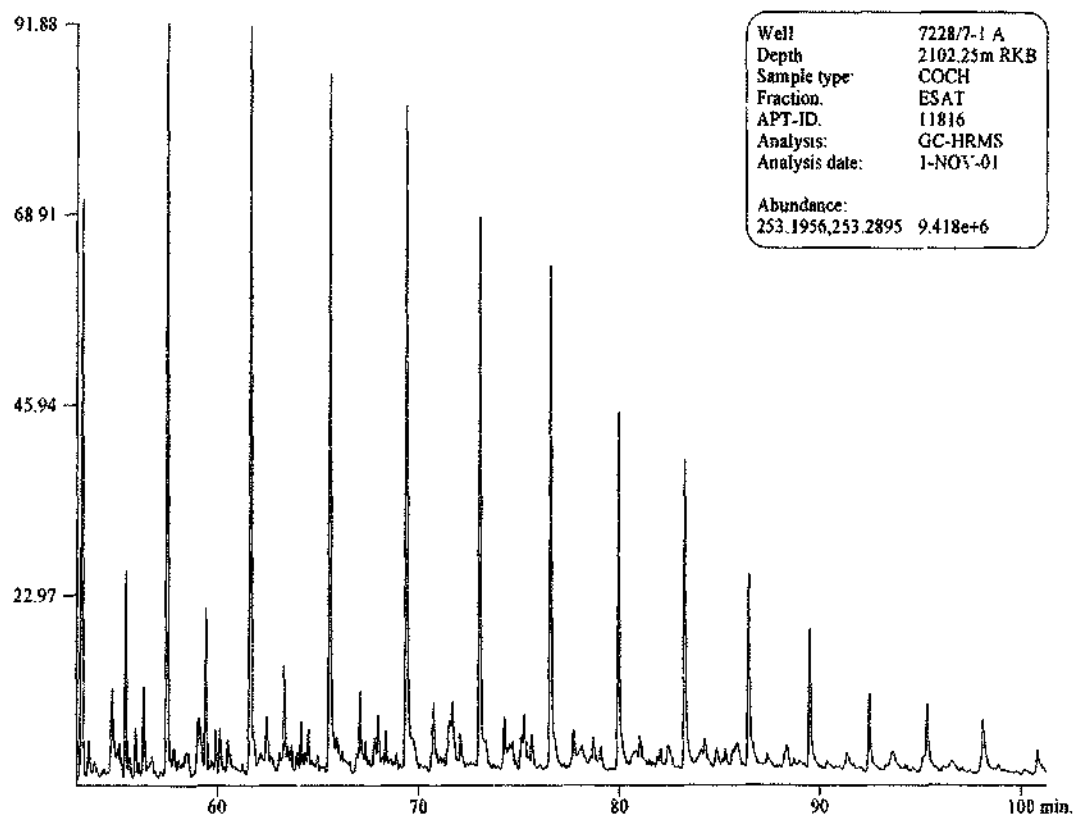


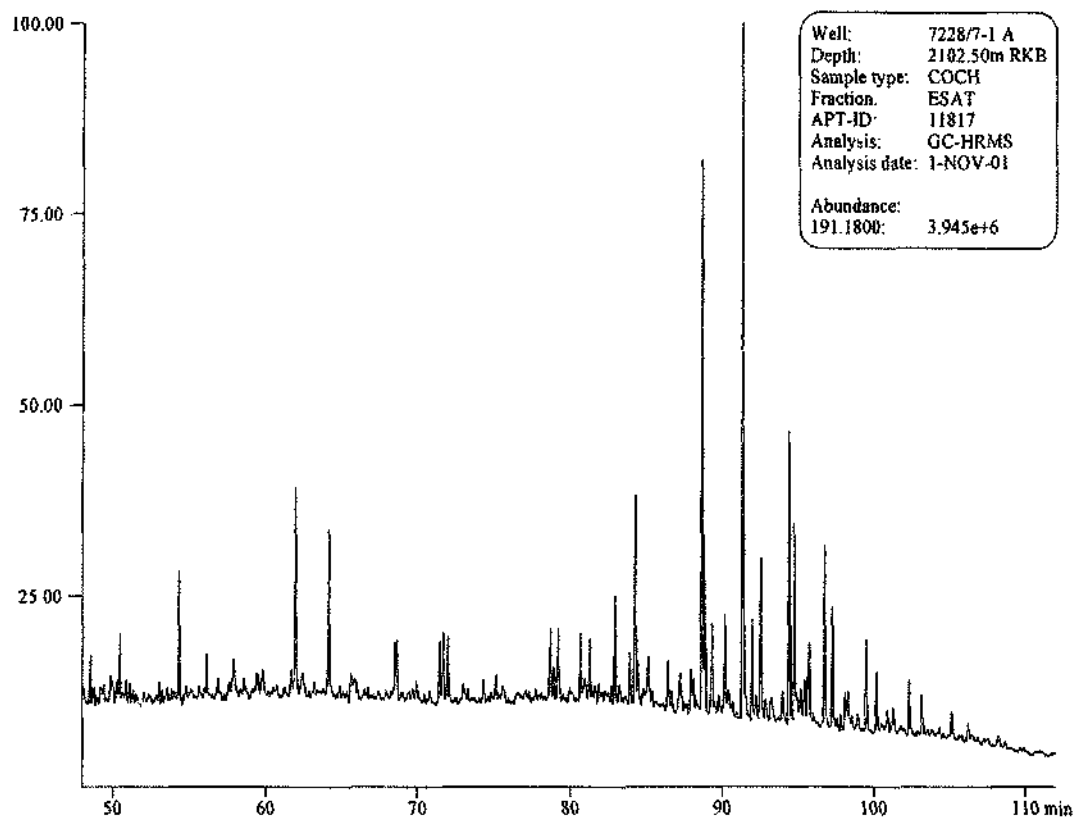
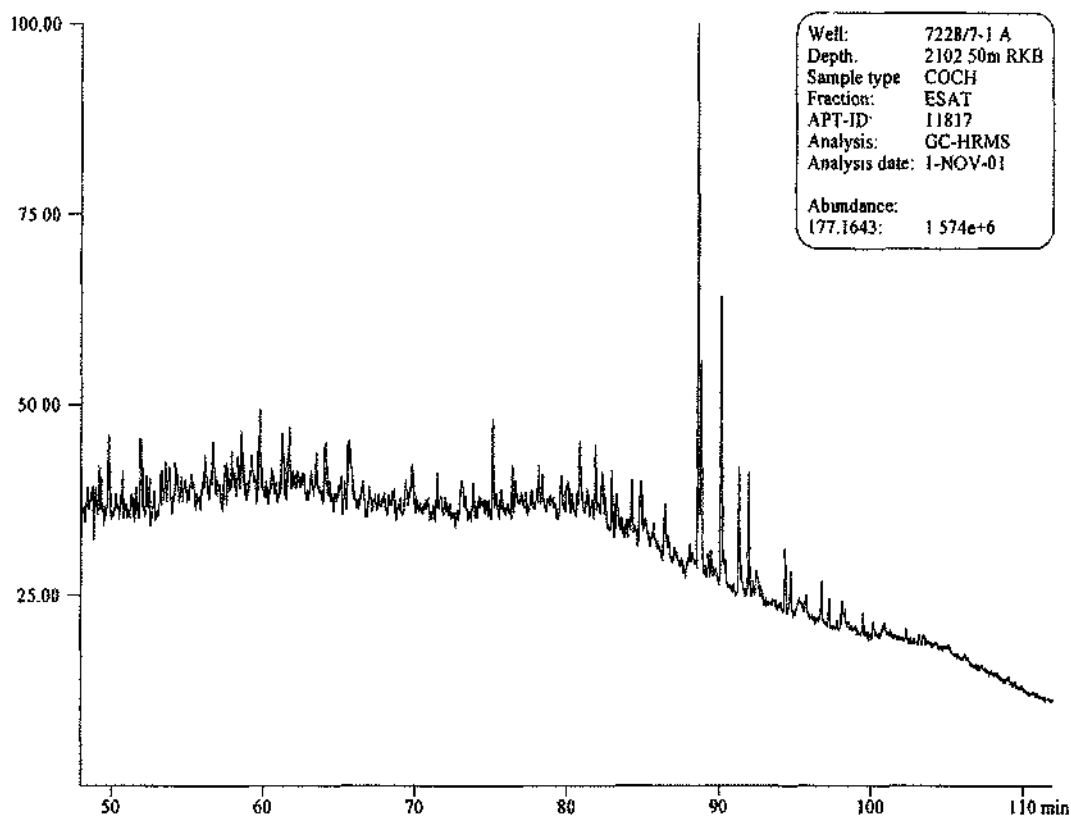


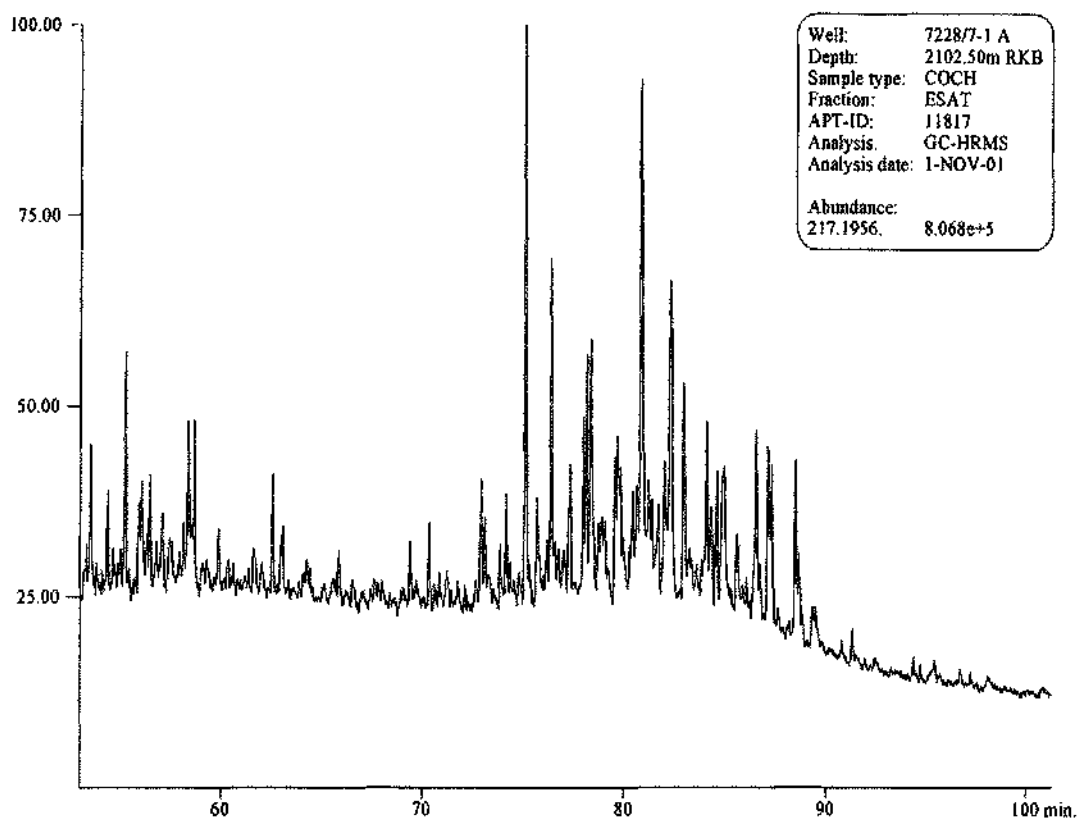
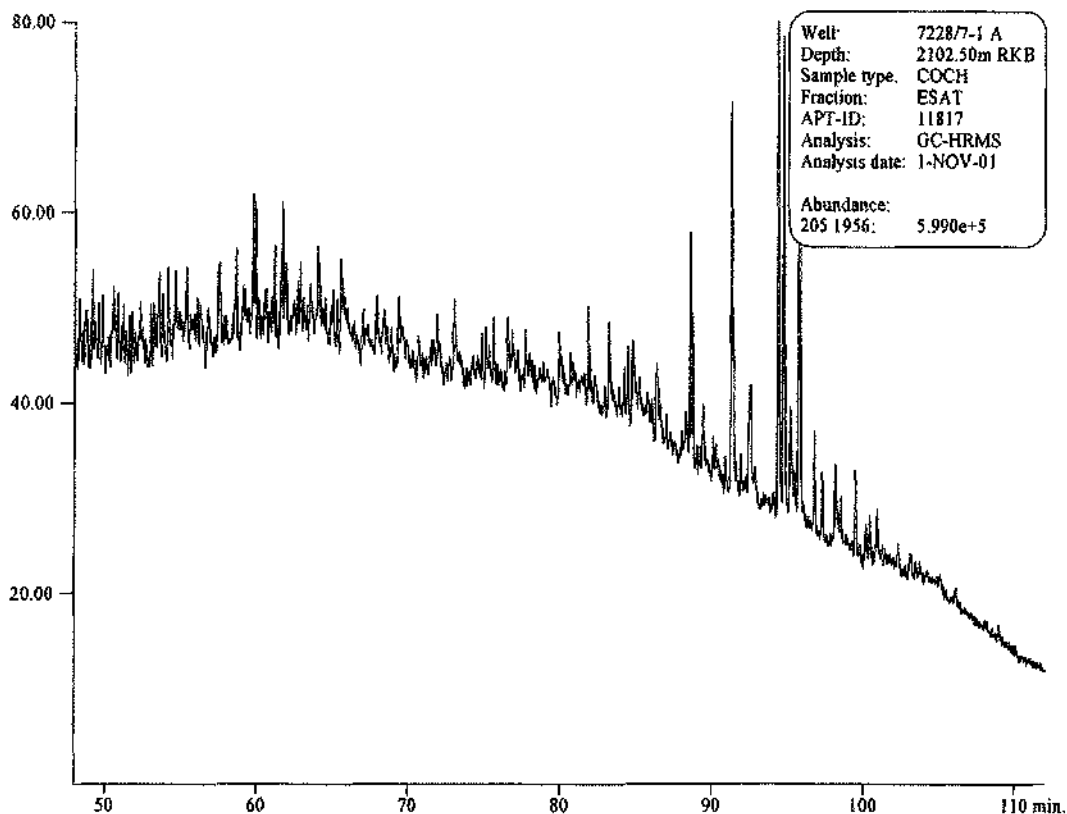


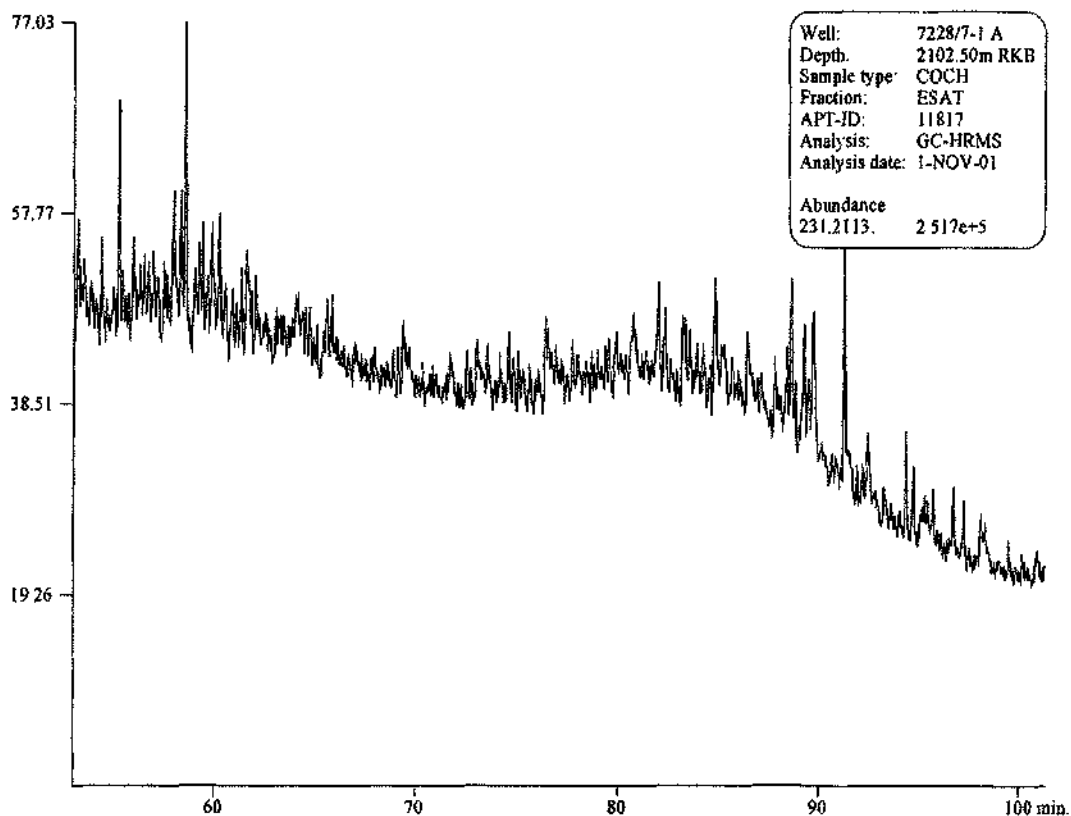
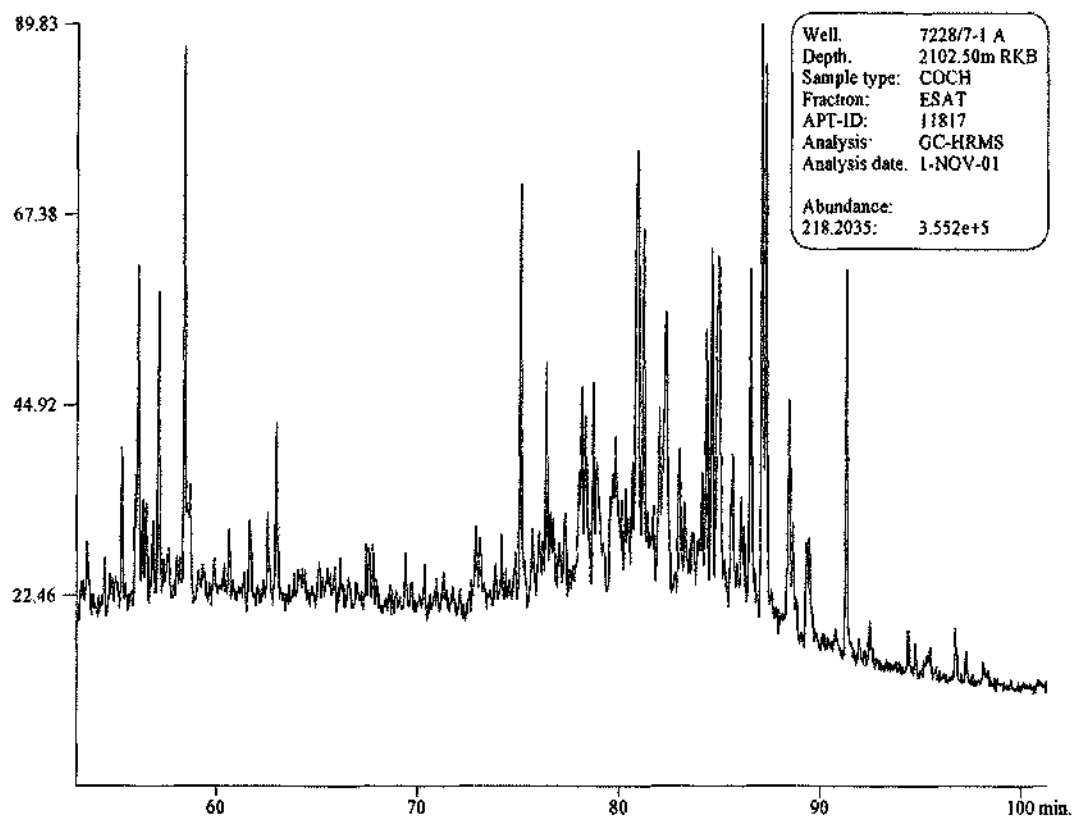


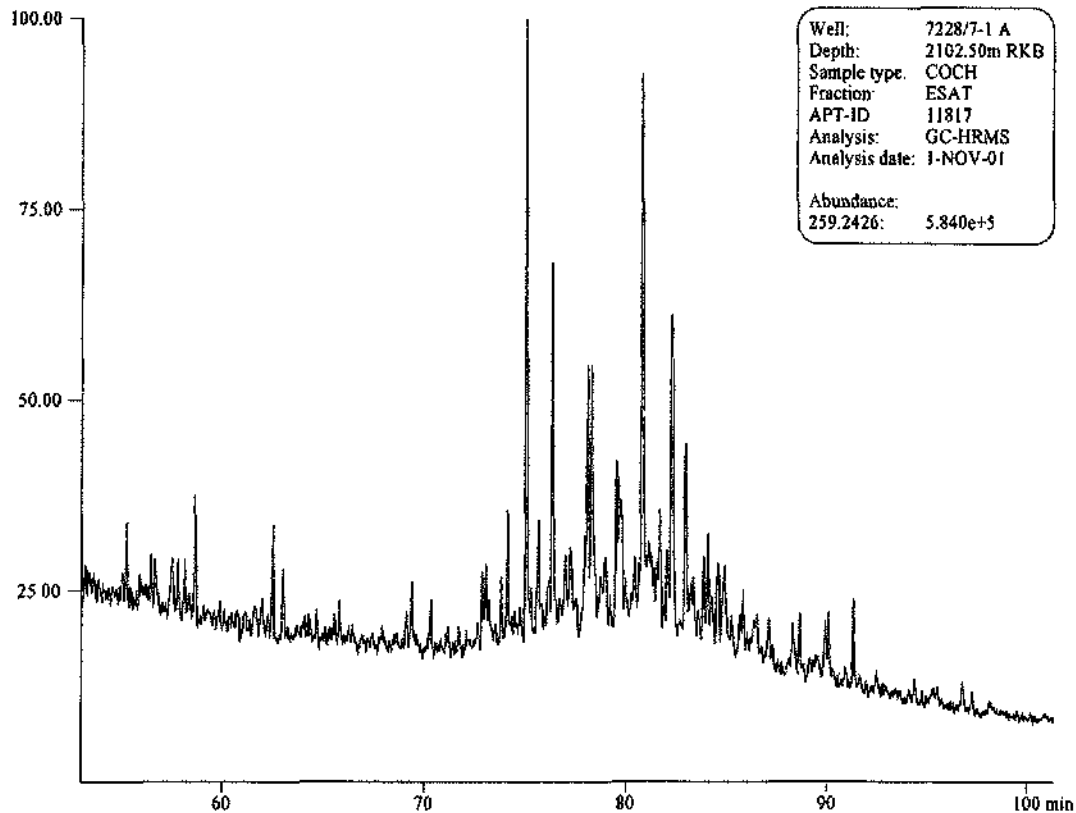
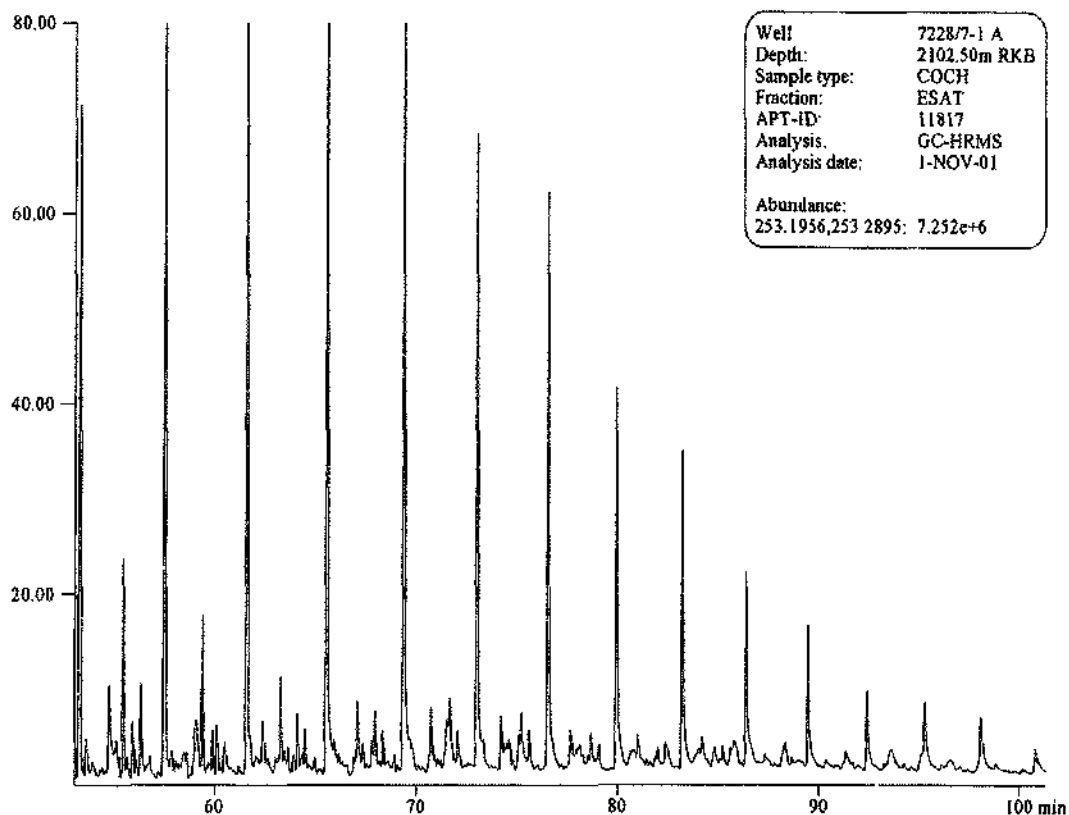


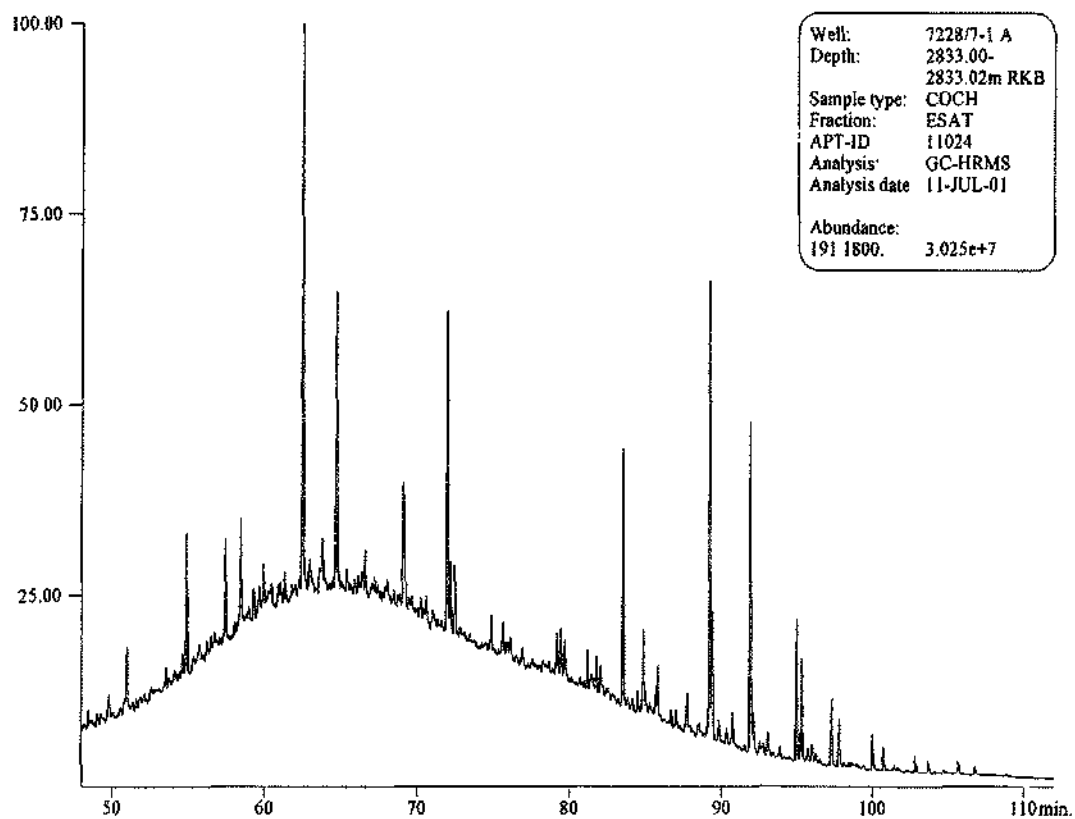
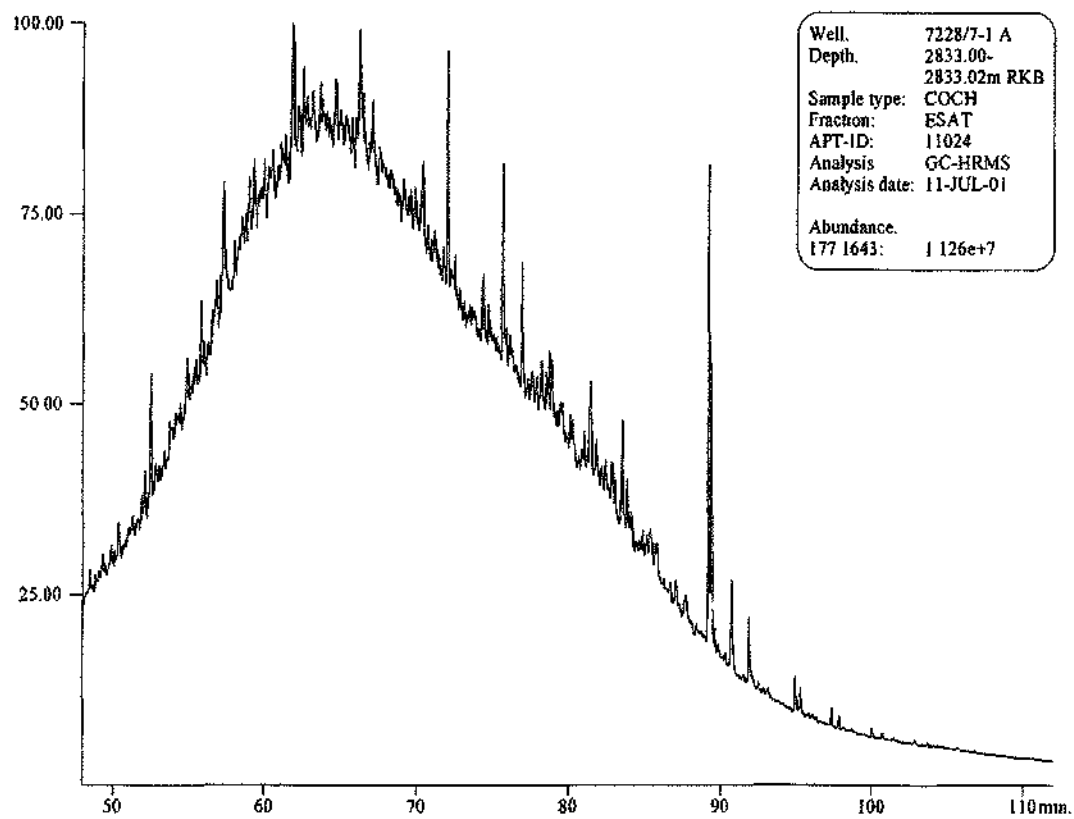


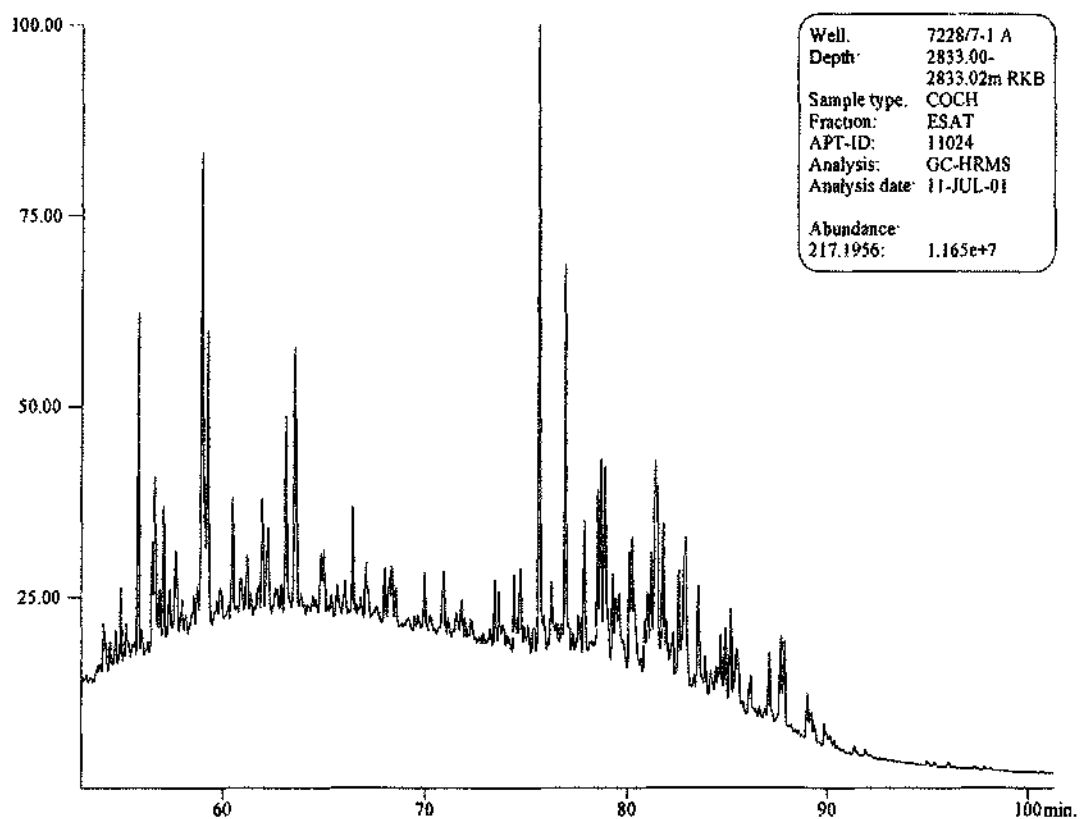
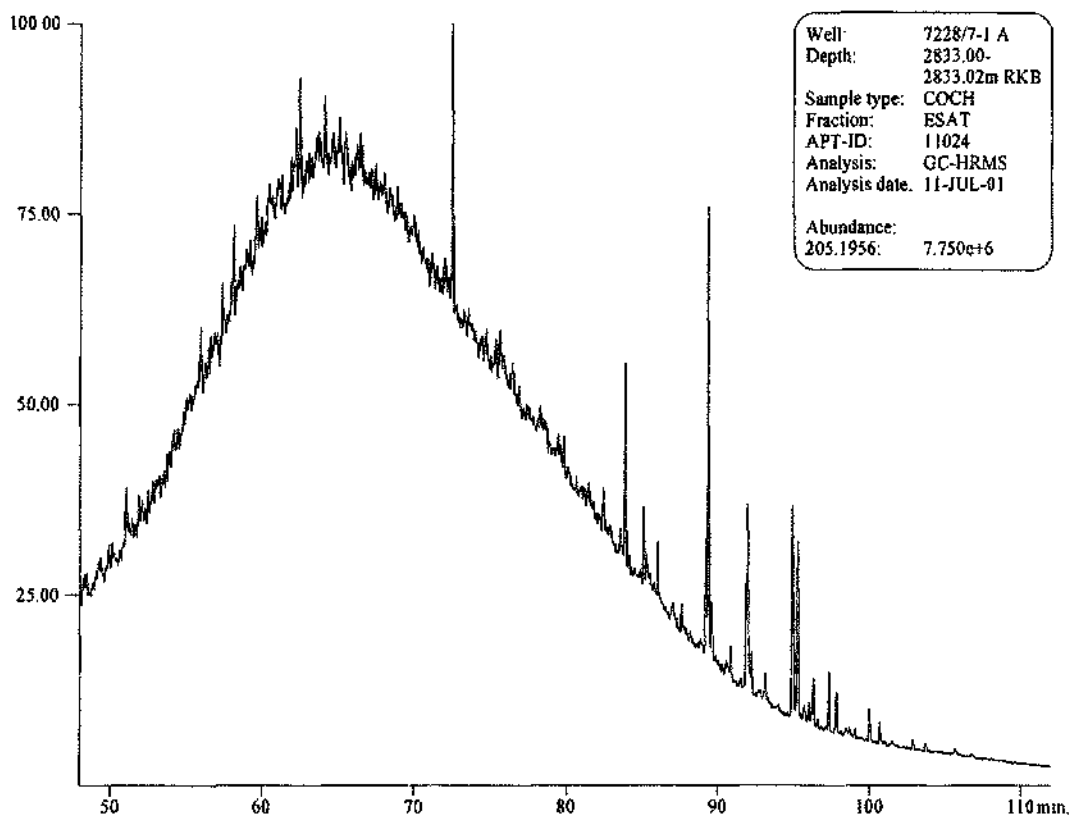


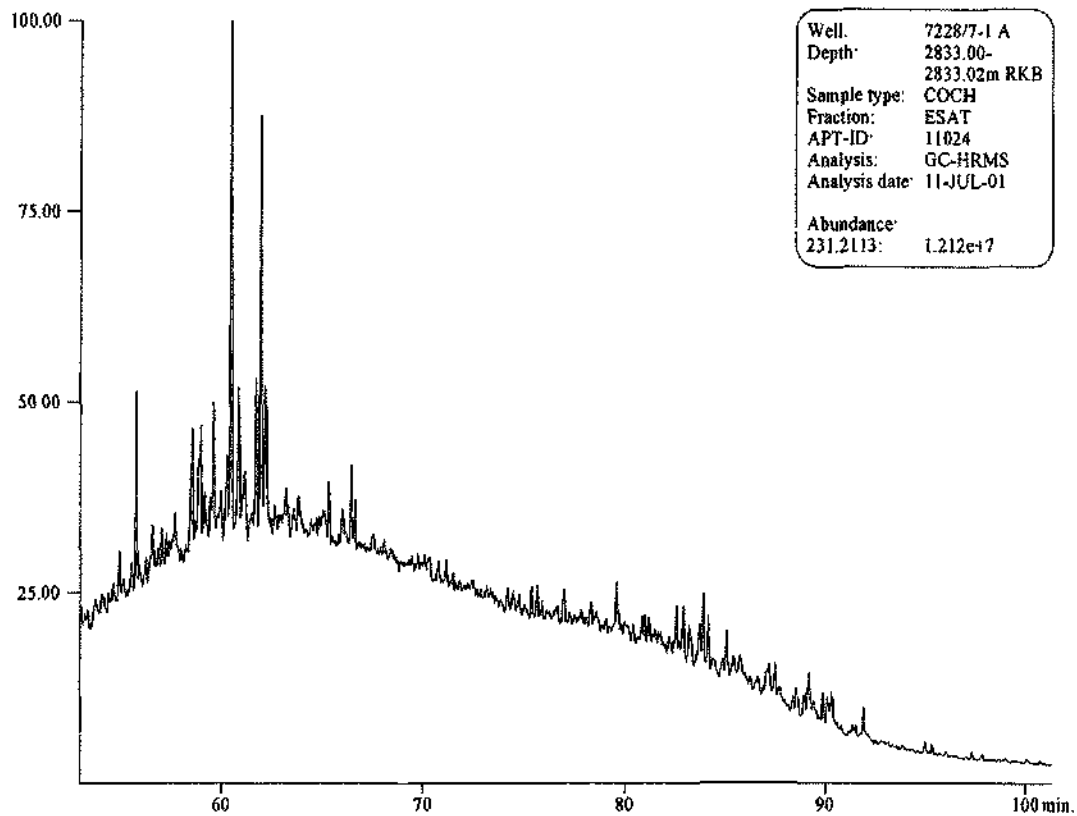
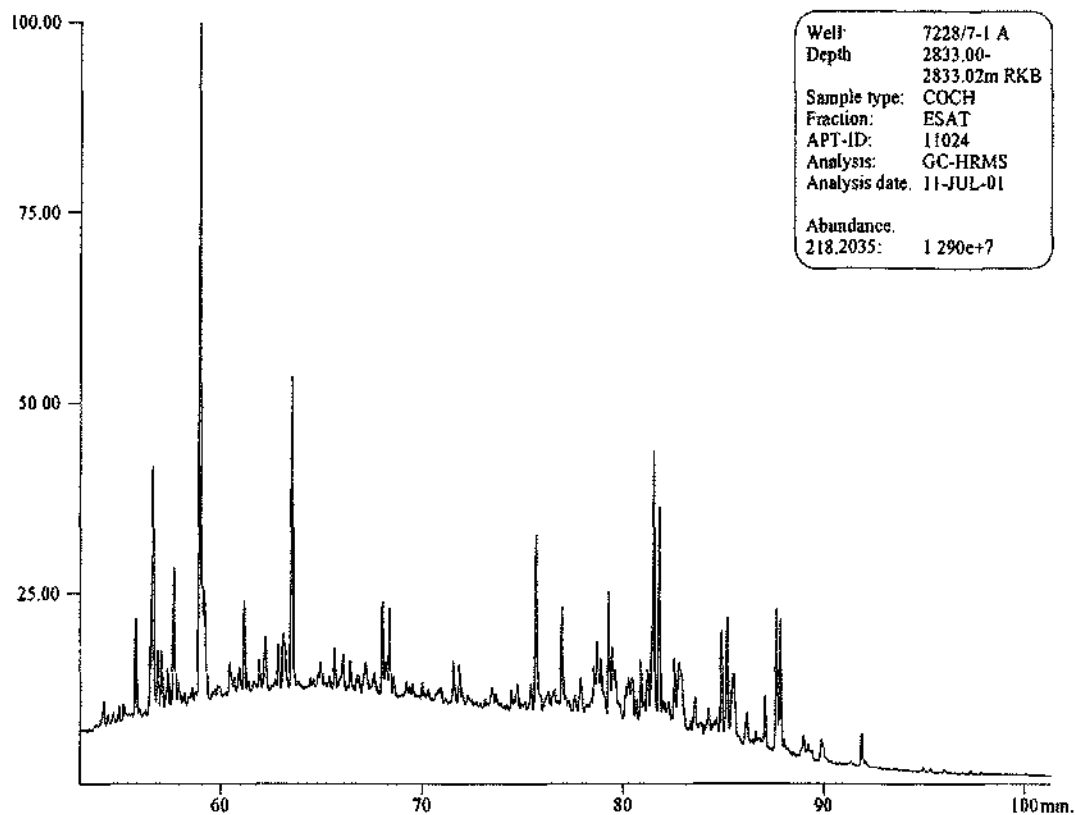


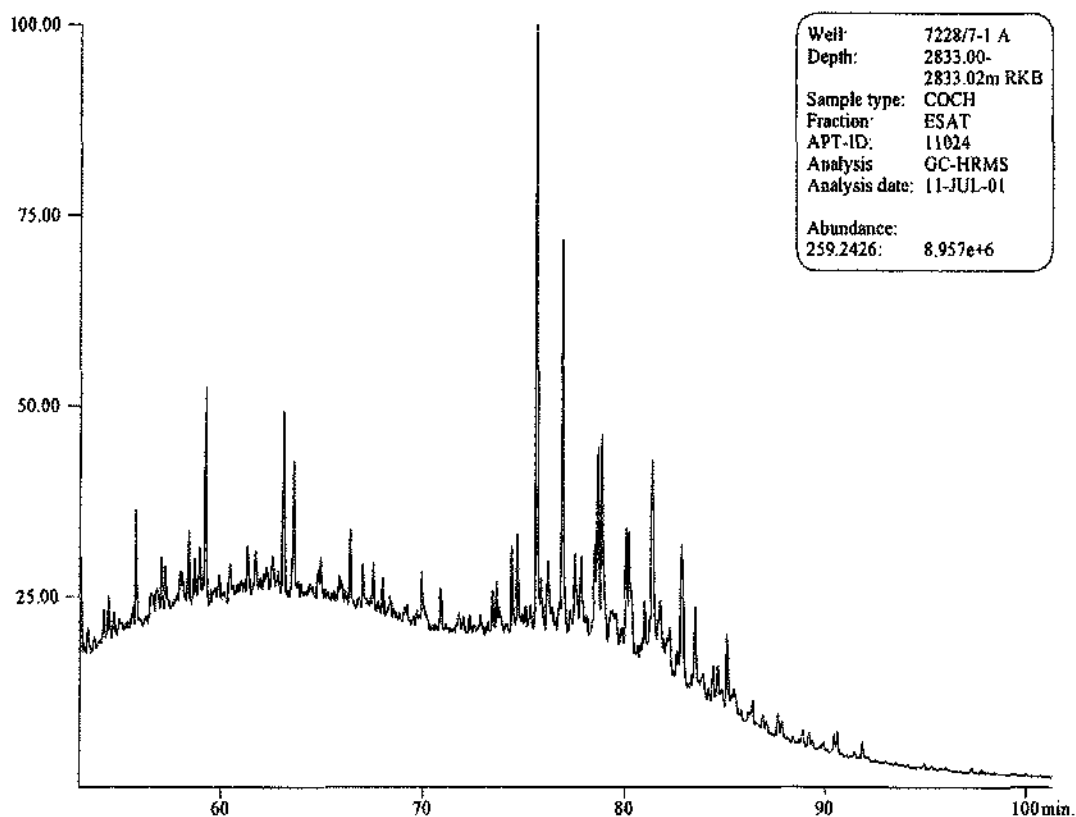
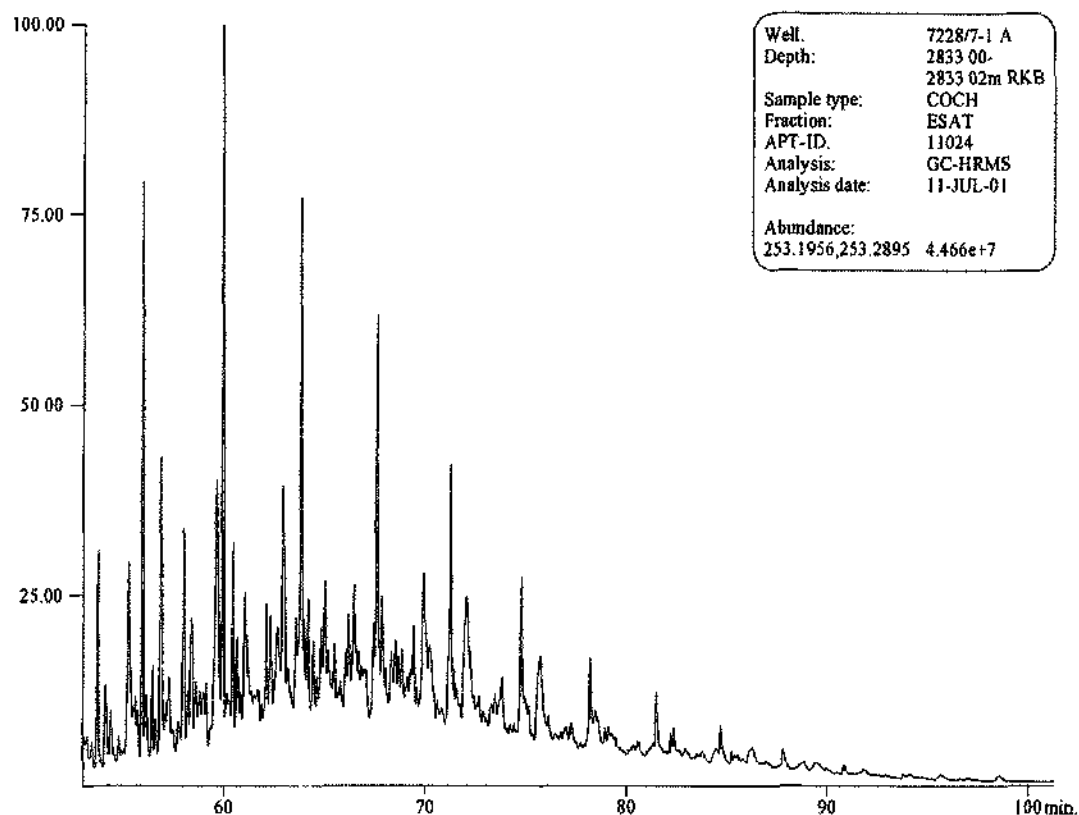






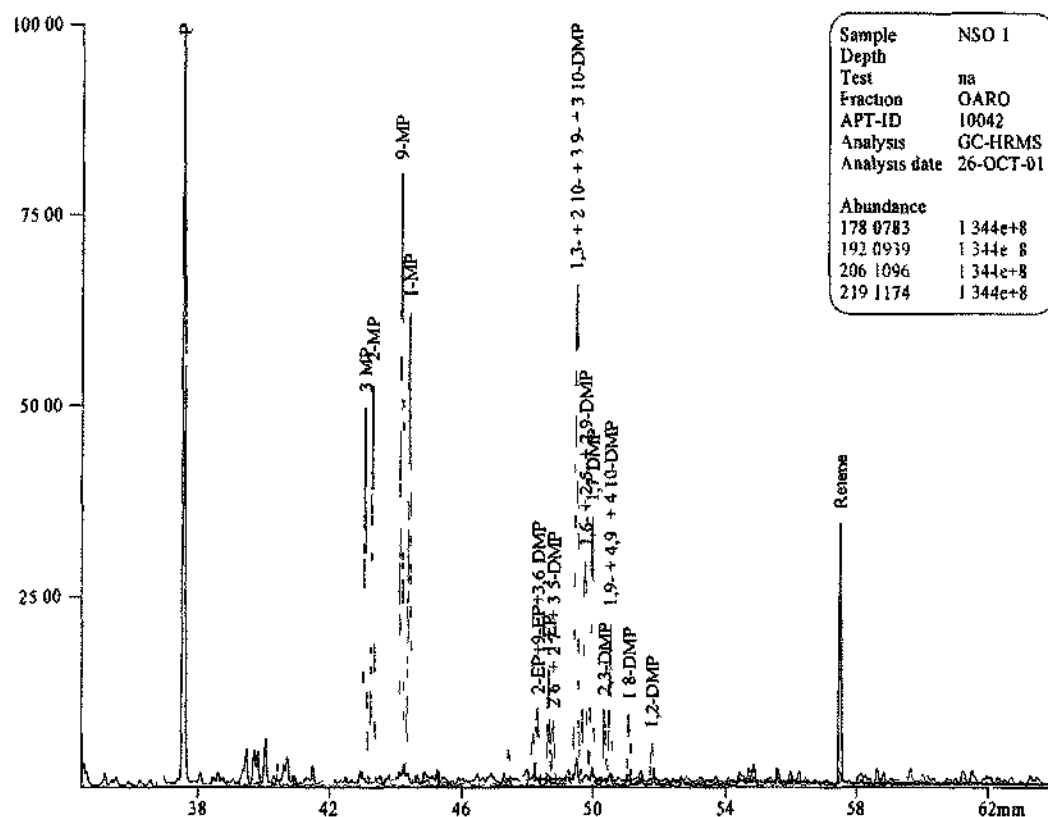
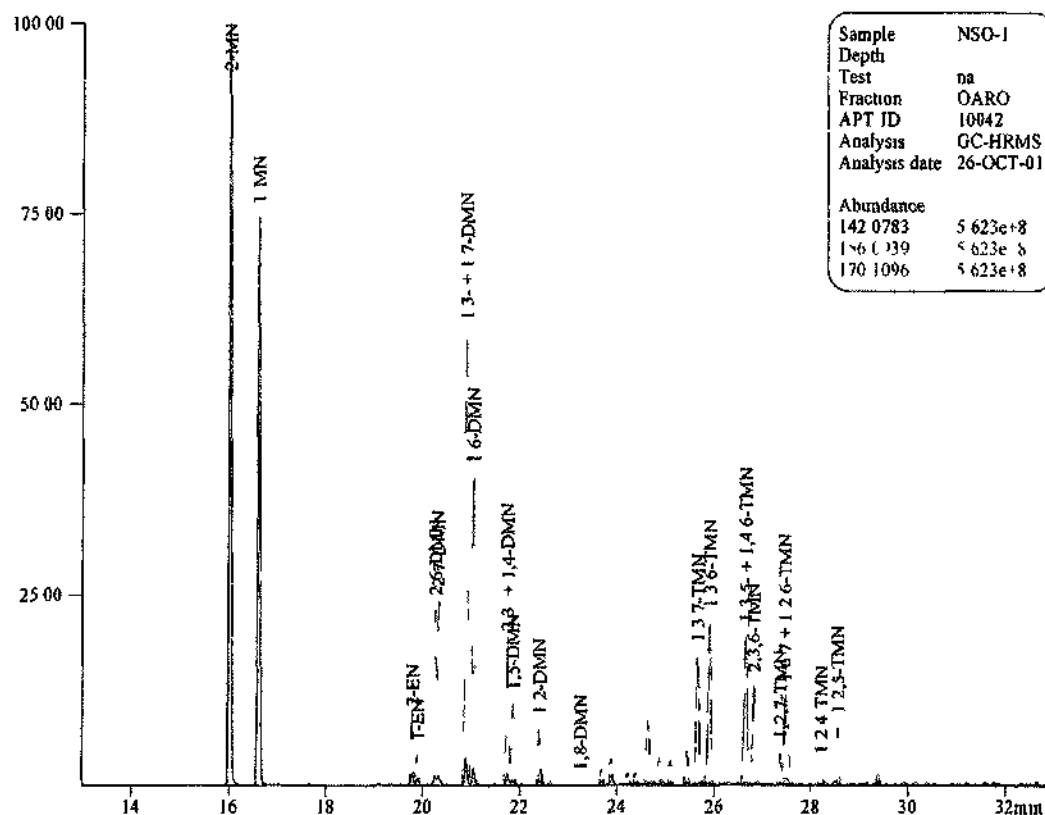


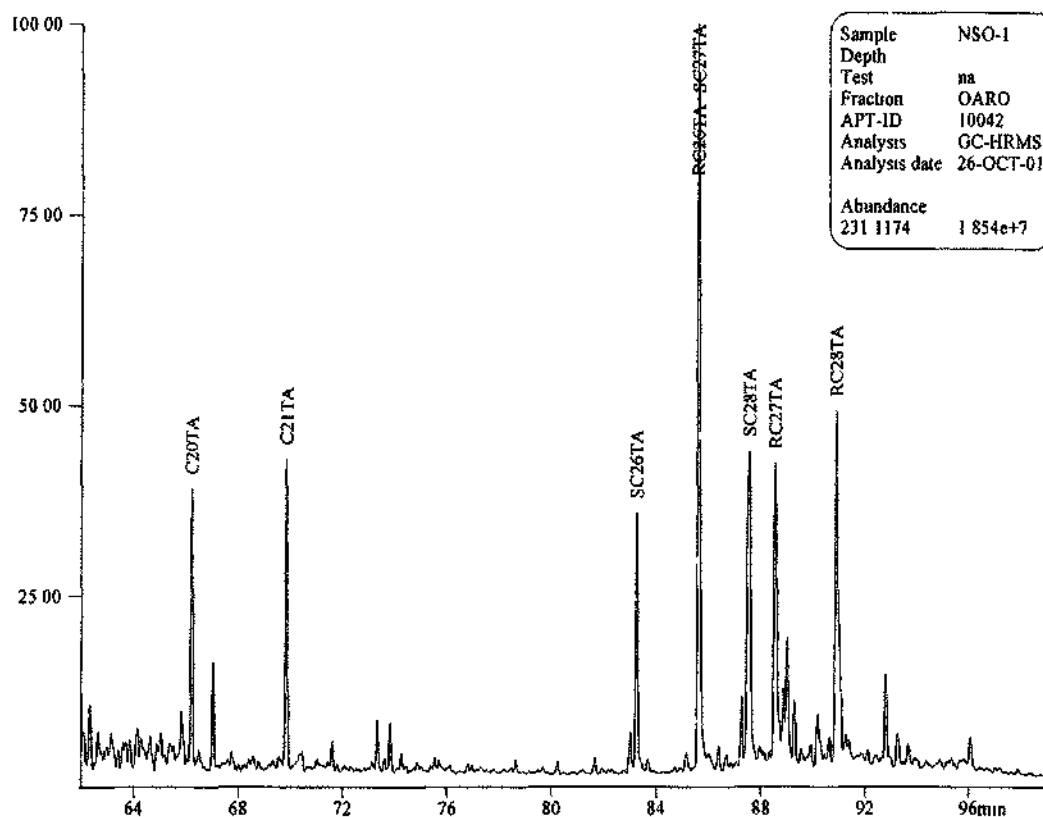
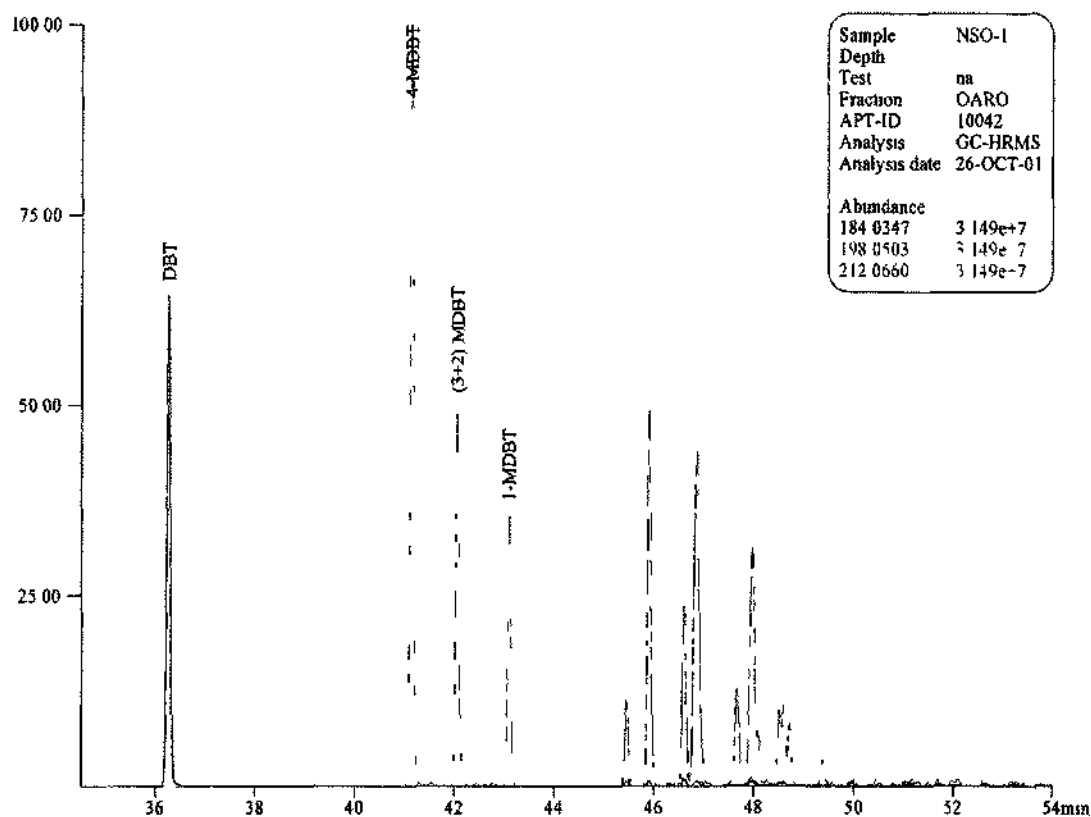


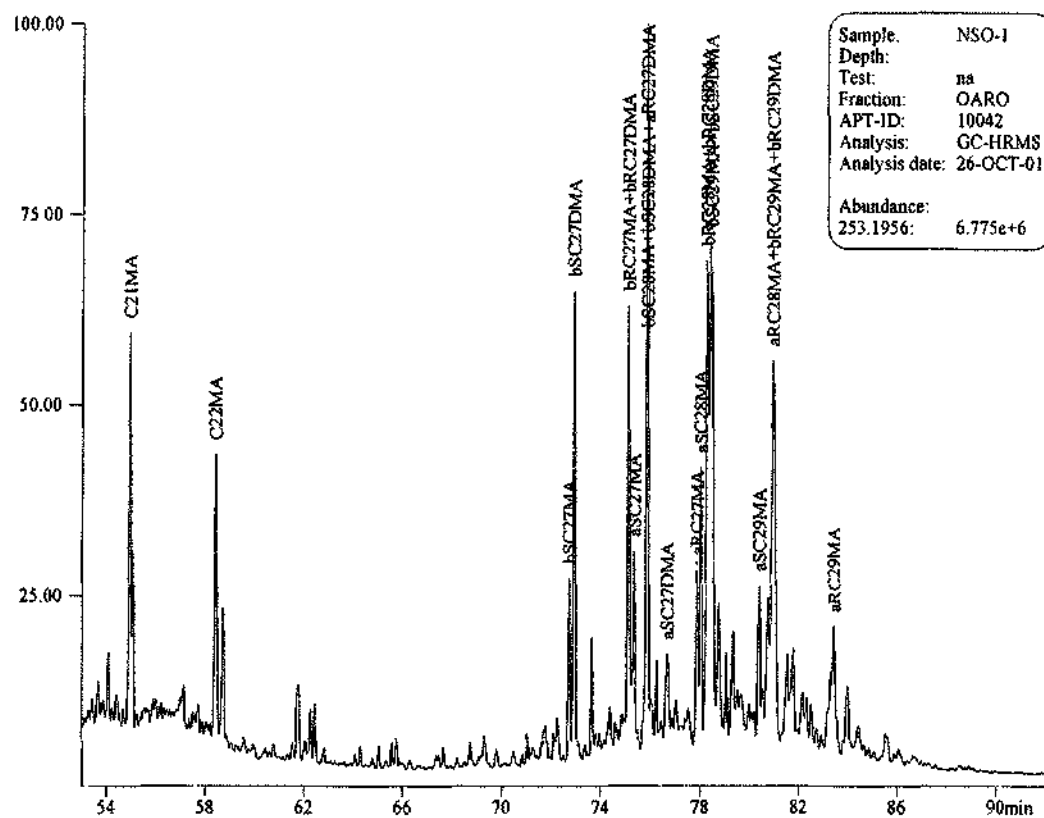


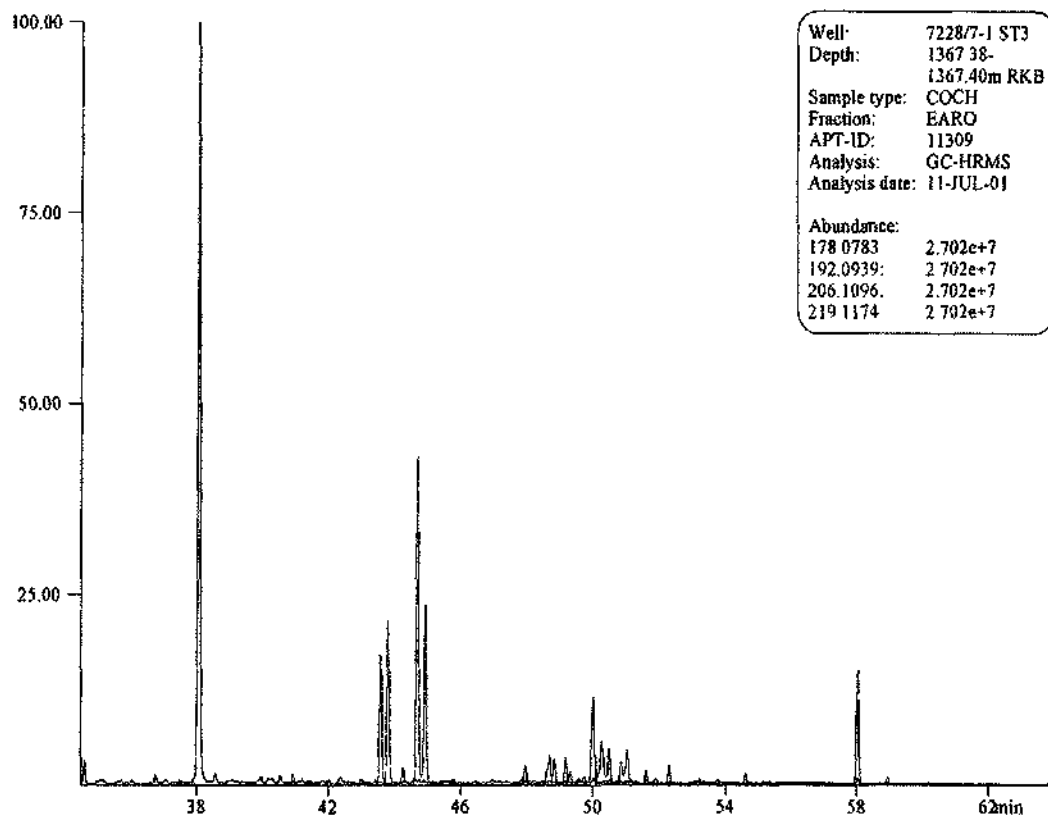
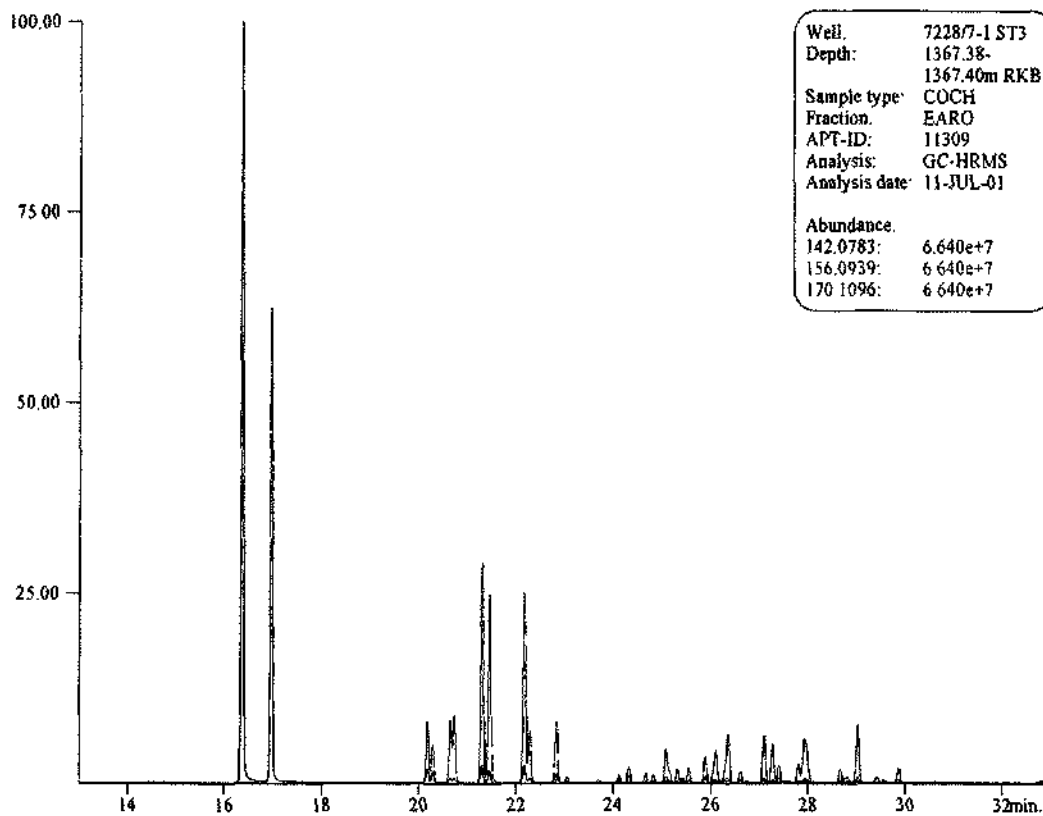


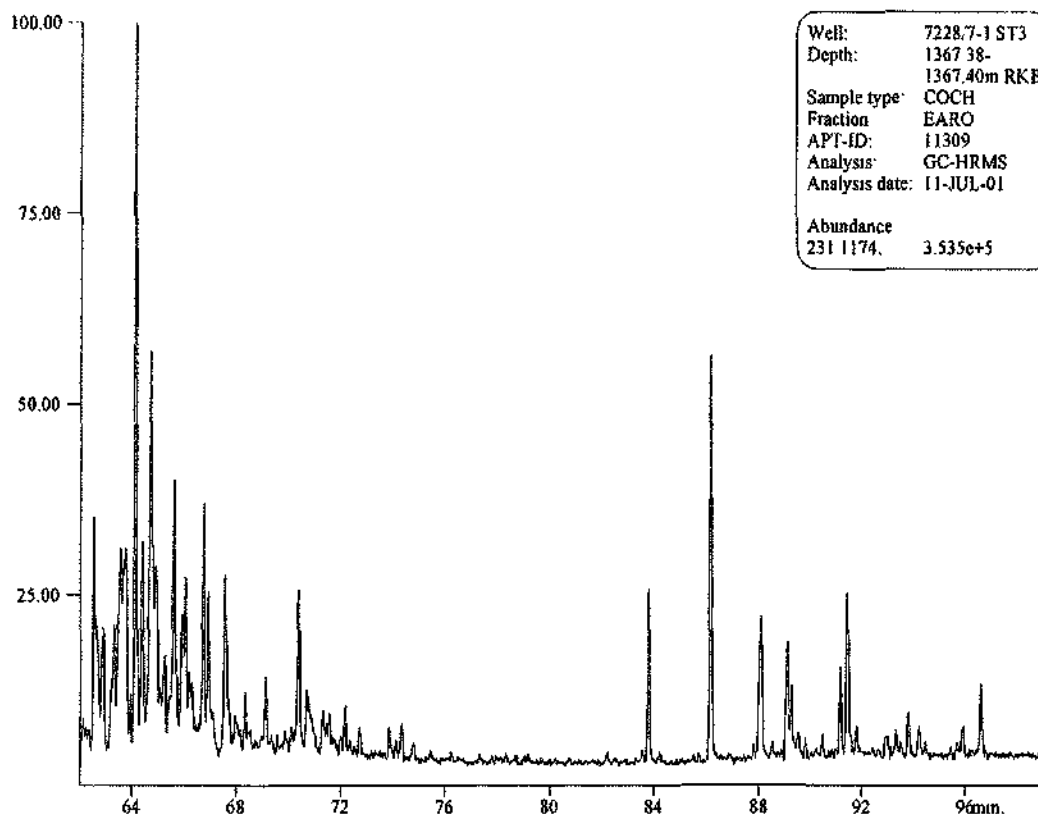
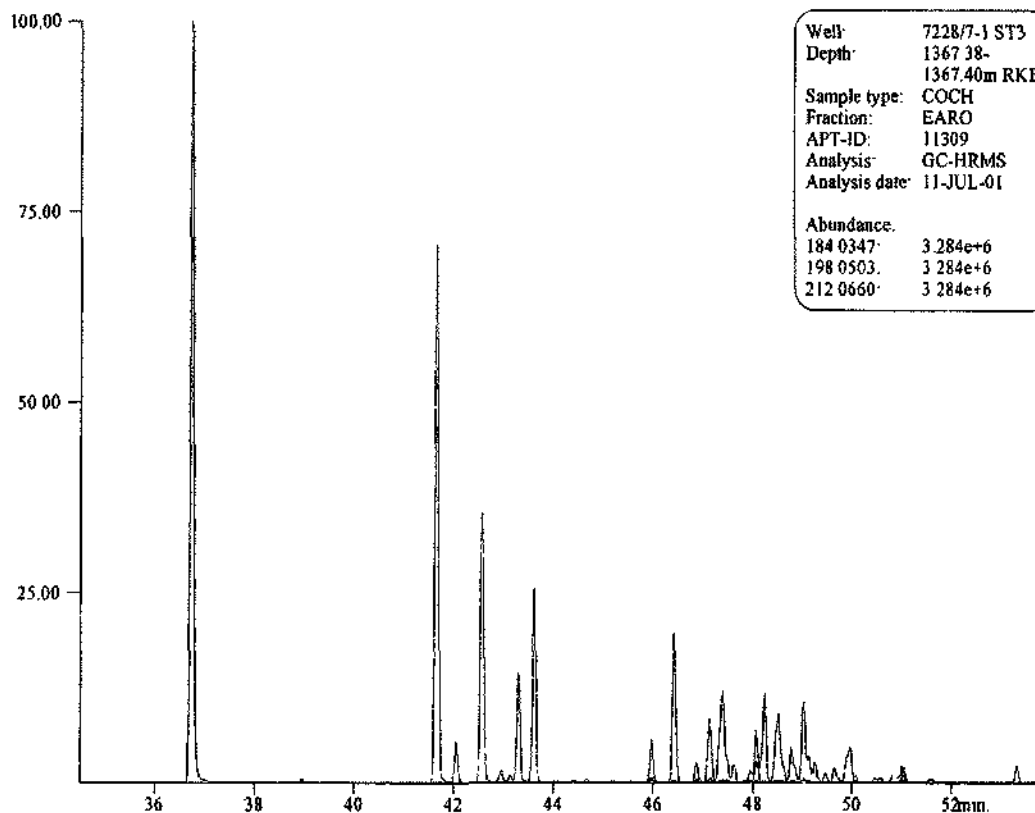
GC-MS Chromatograms of Aromatic Hydrocarbons

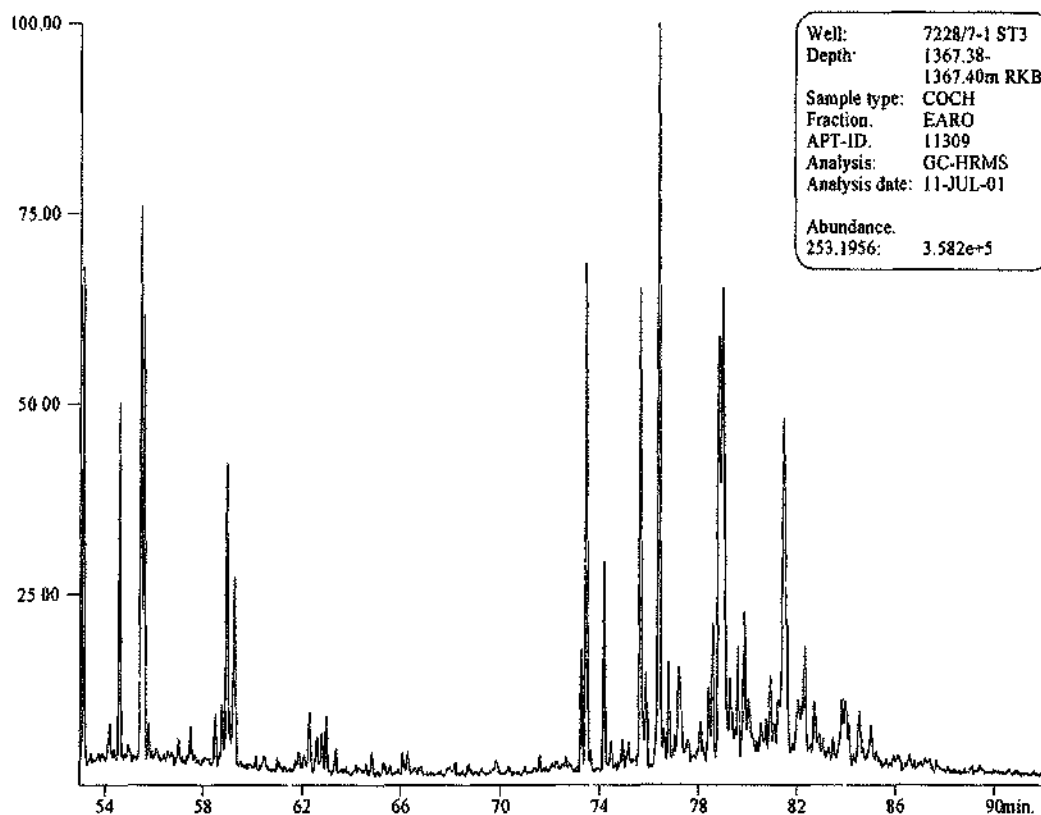


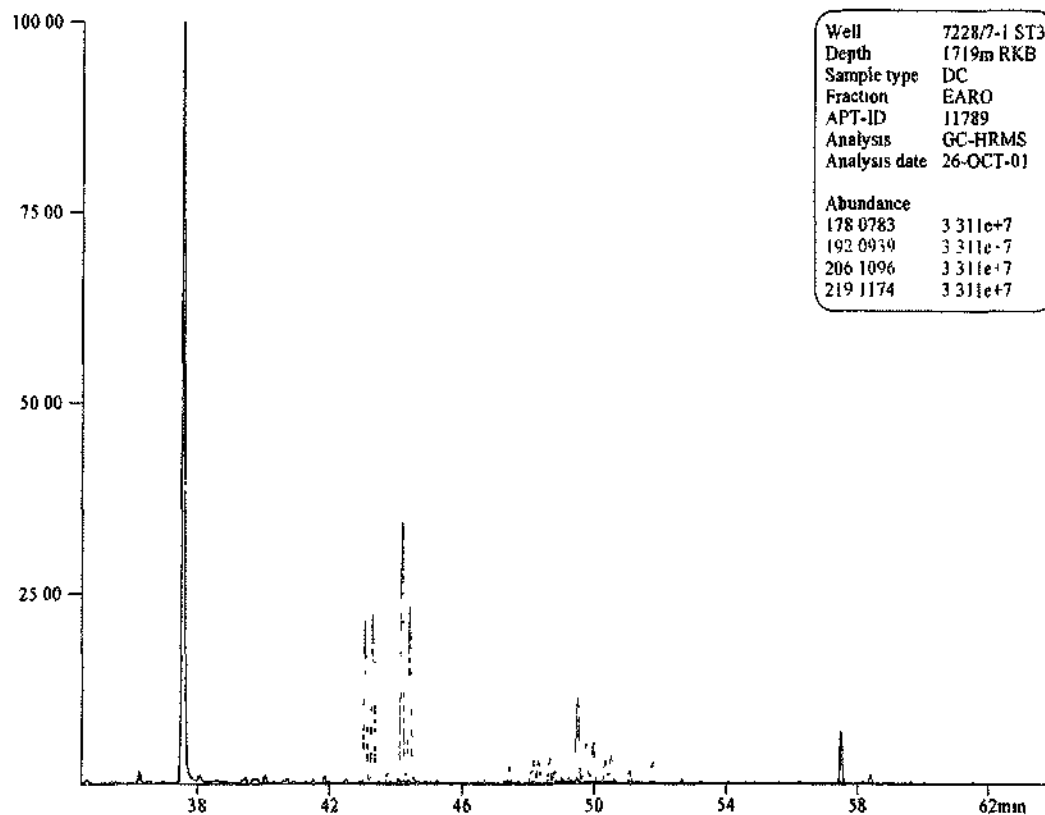
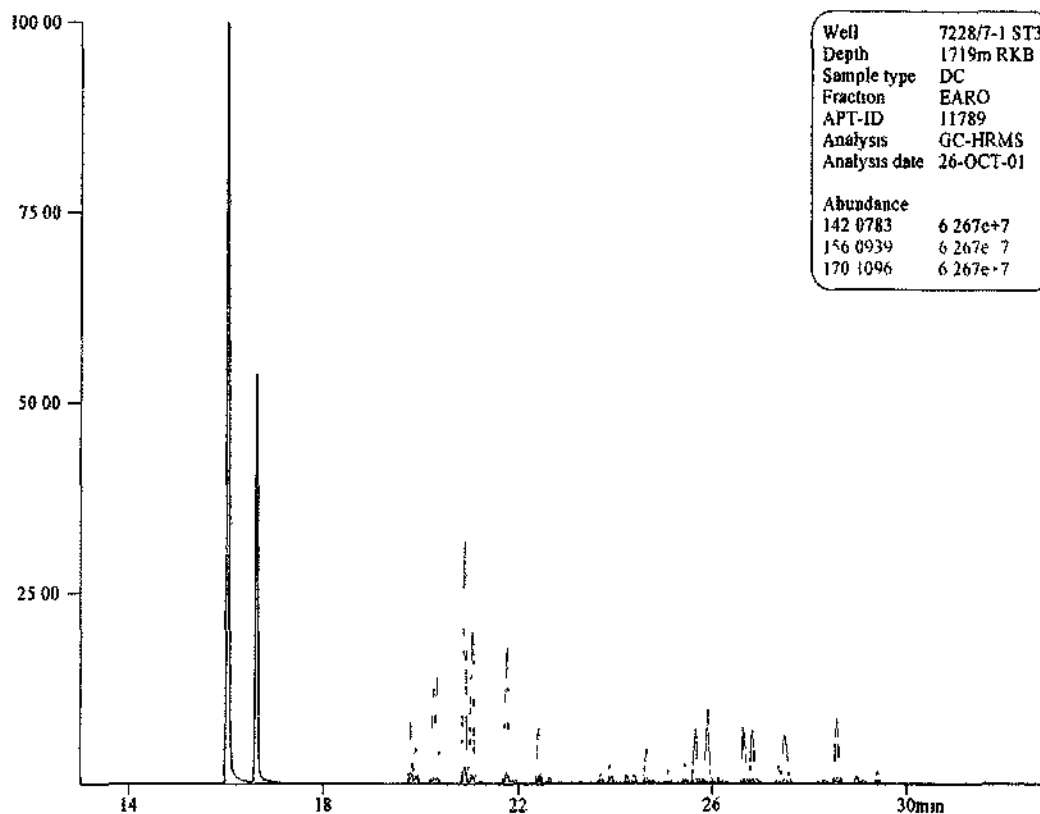


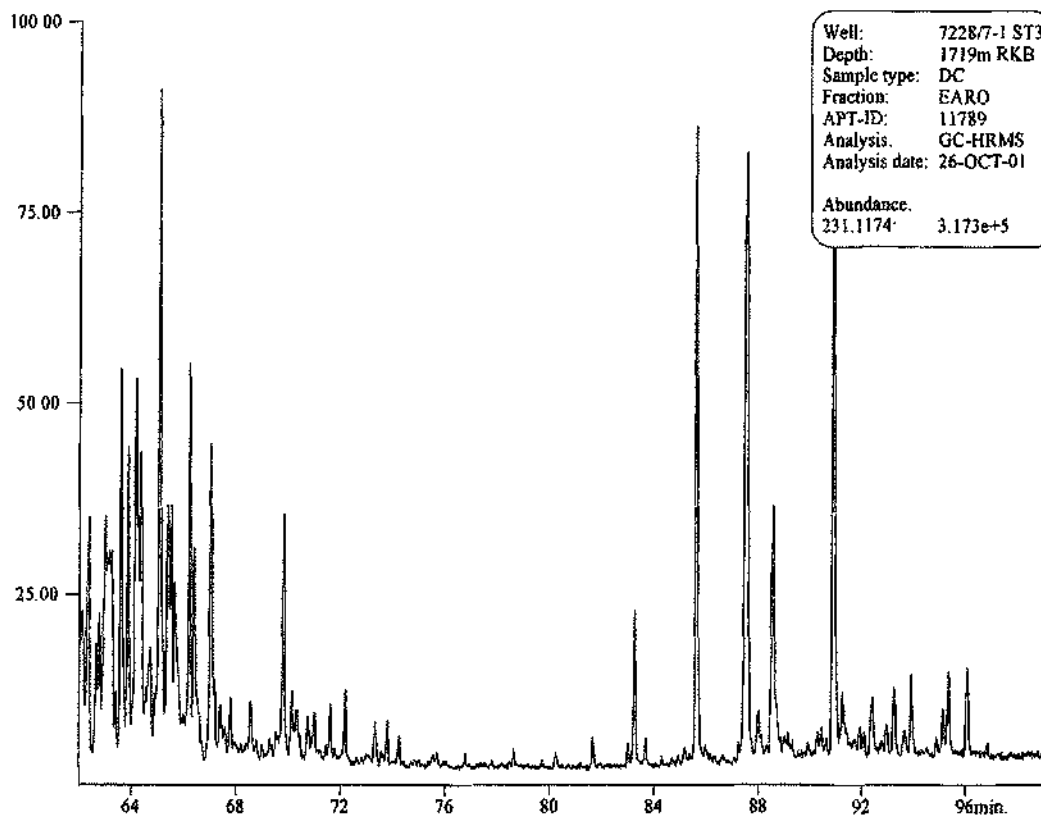
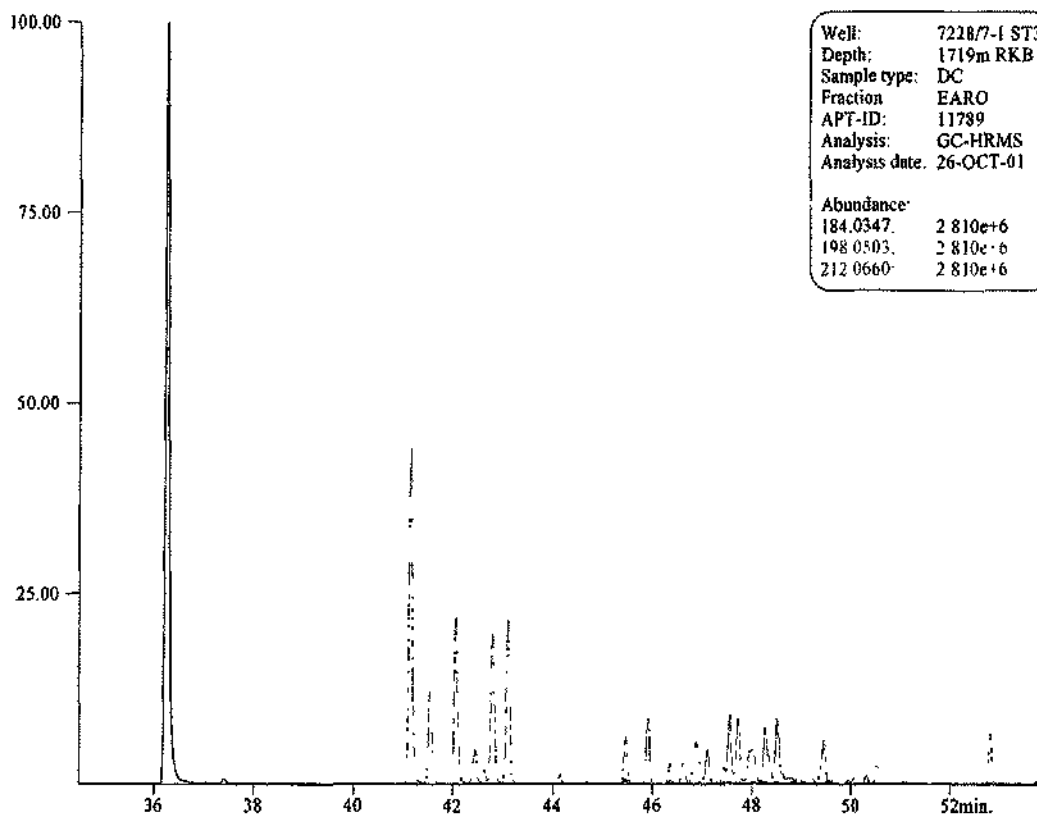


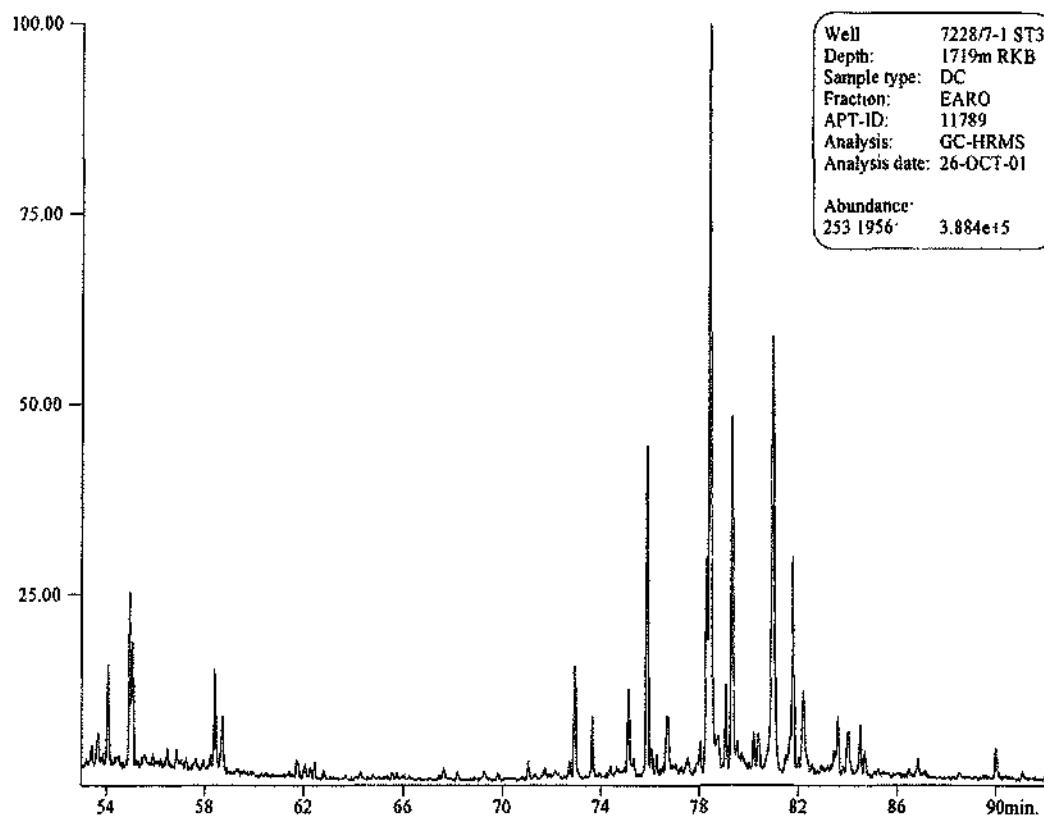


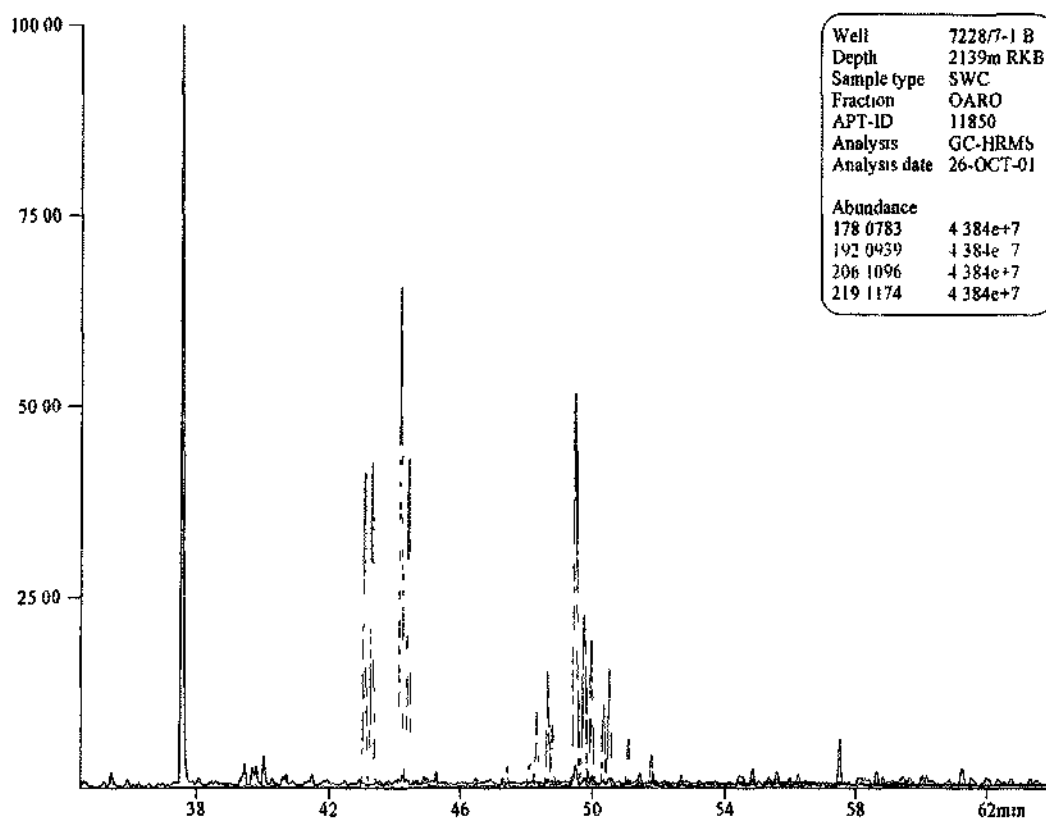
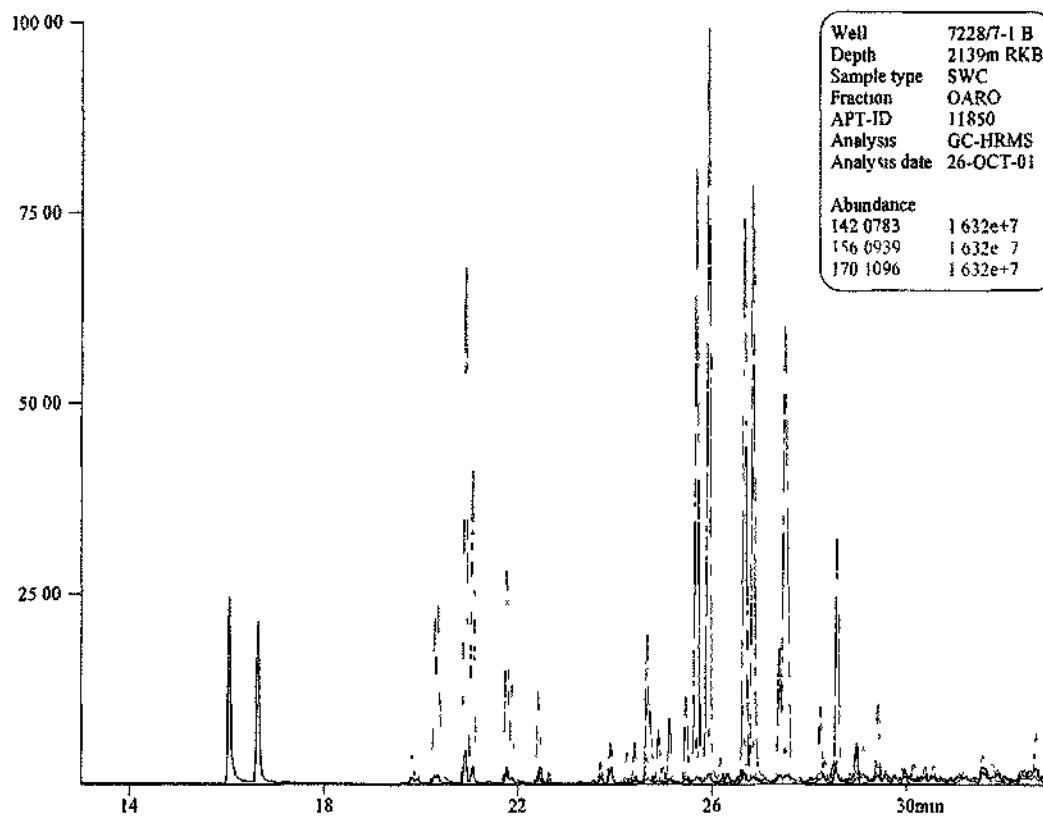


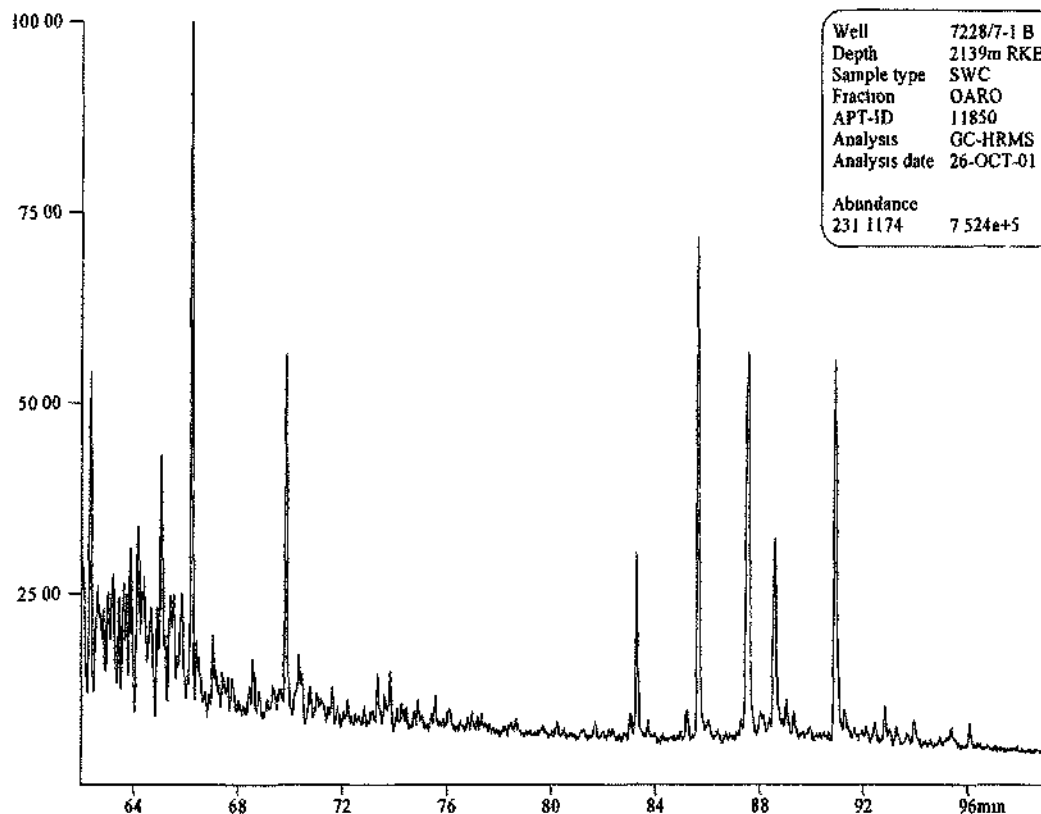
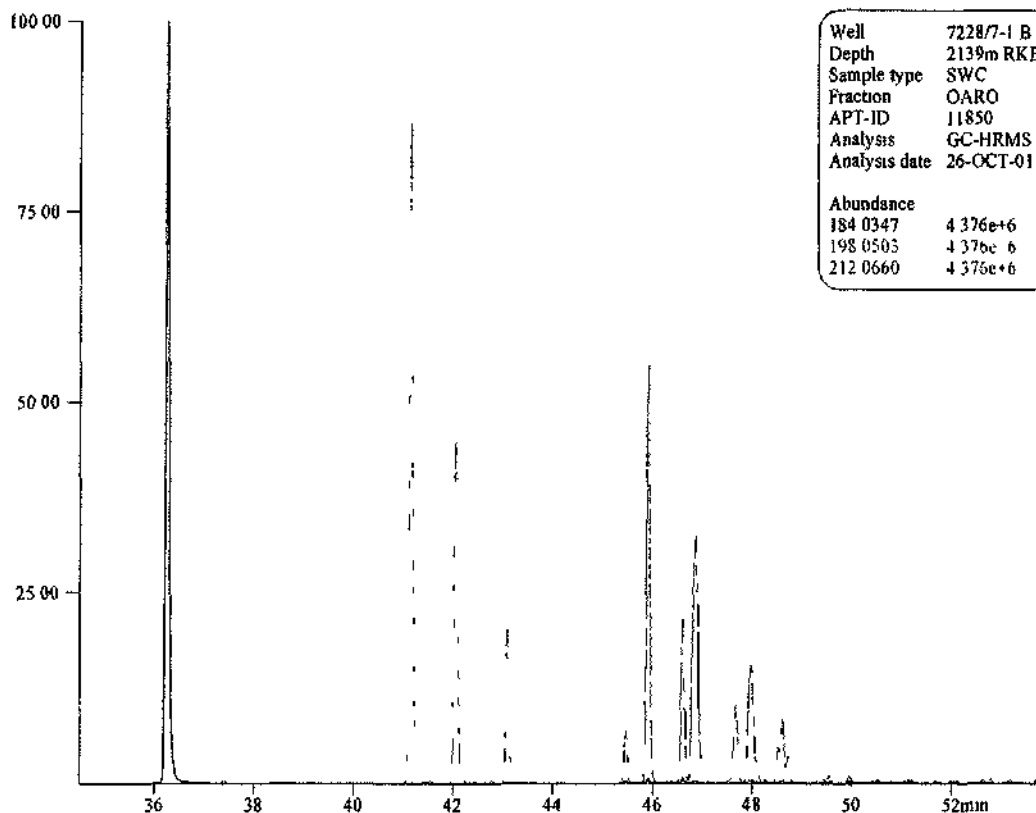


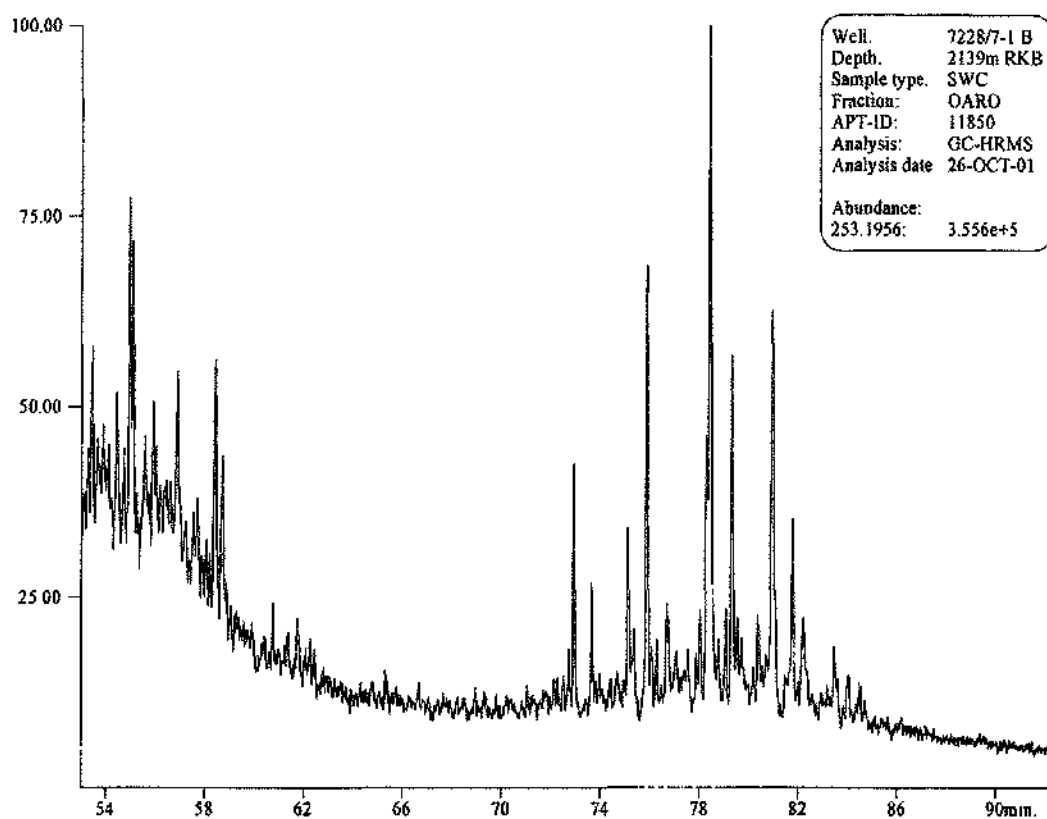


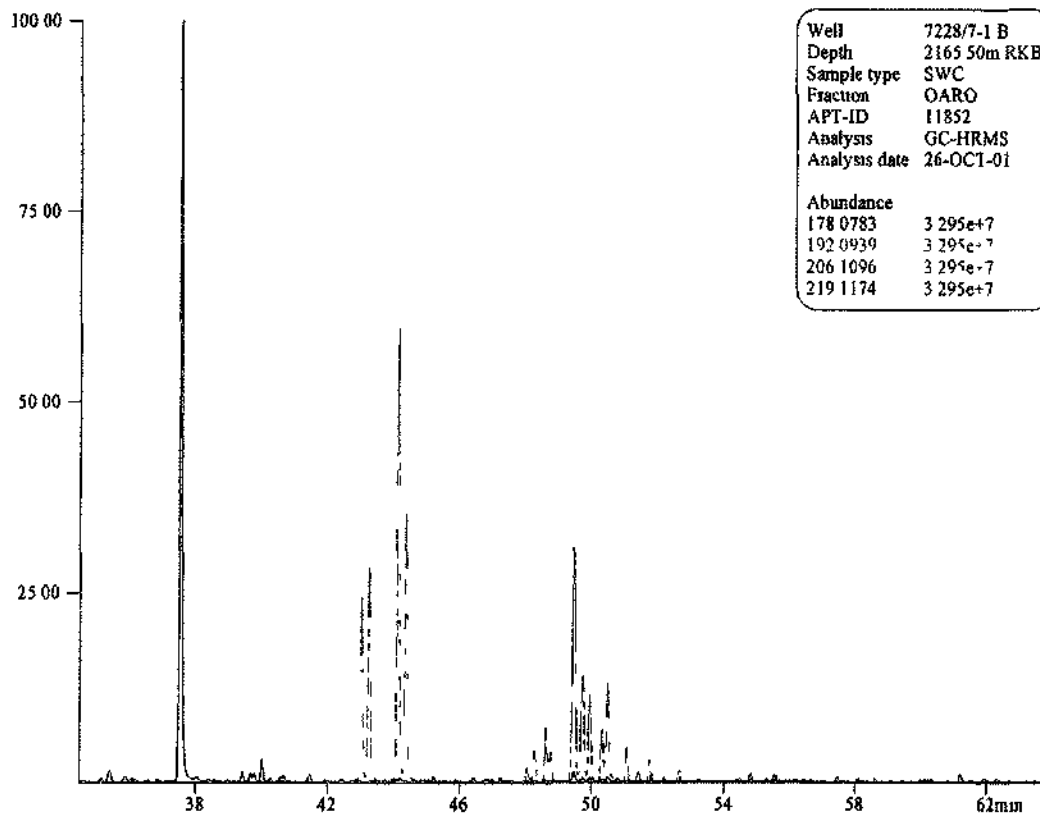
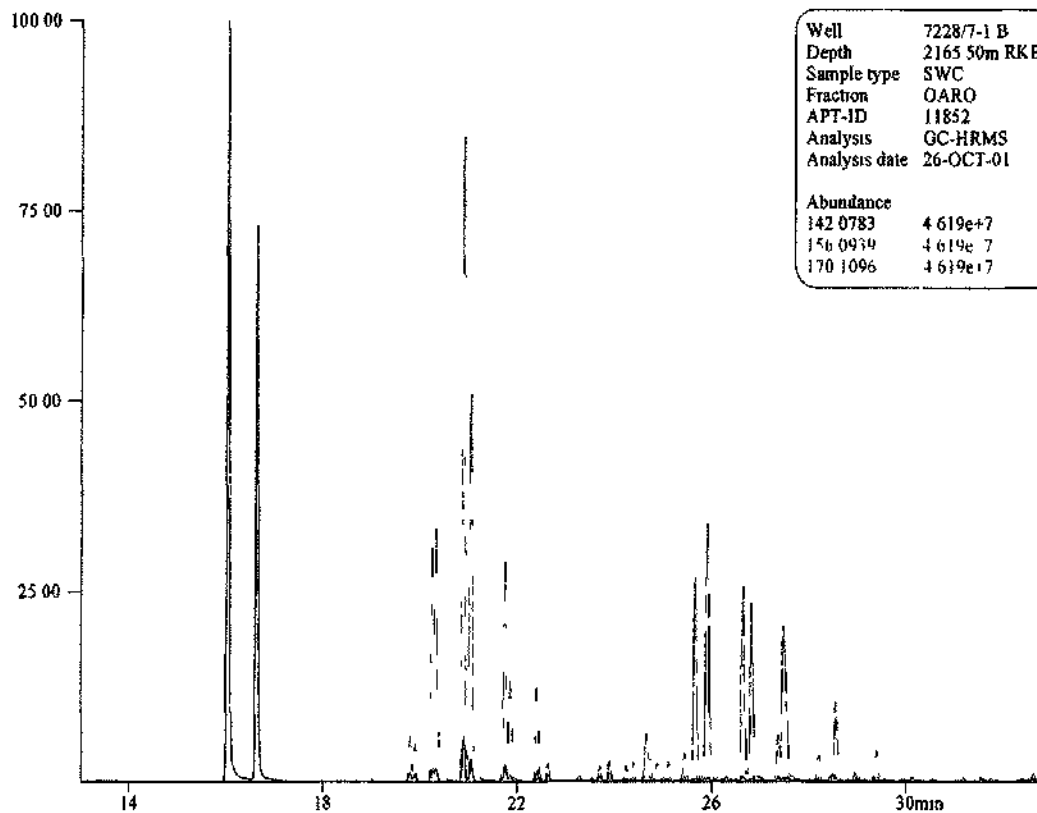


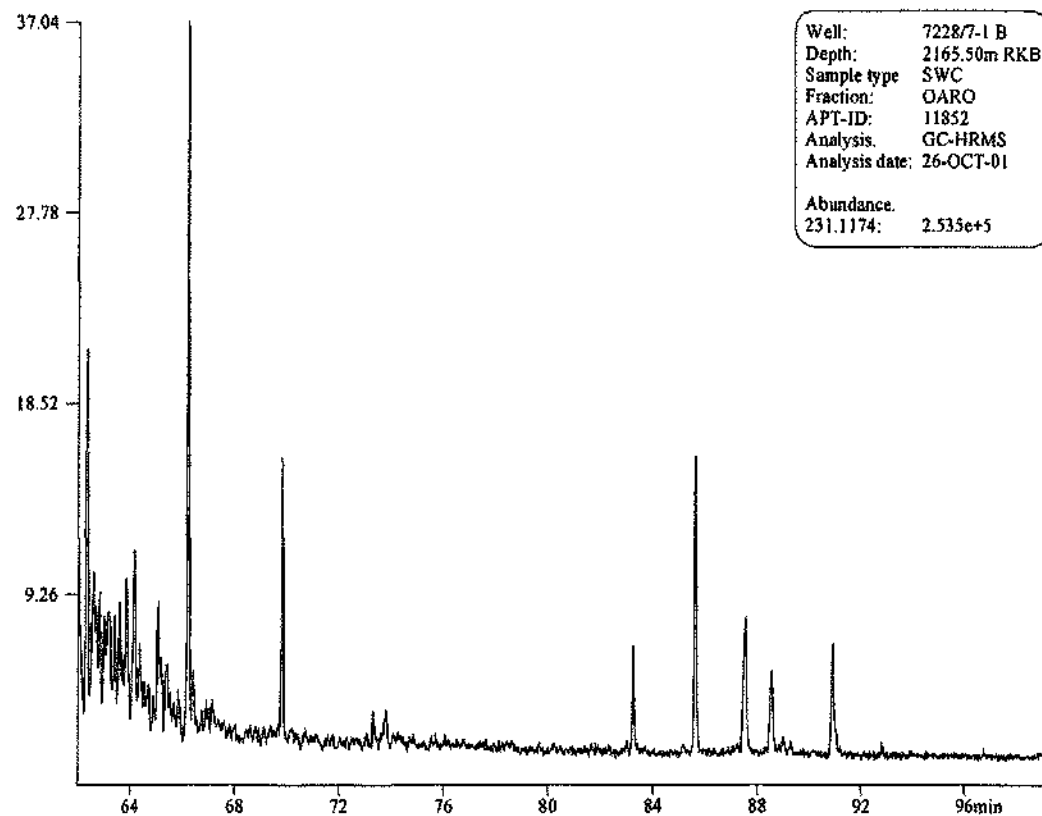
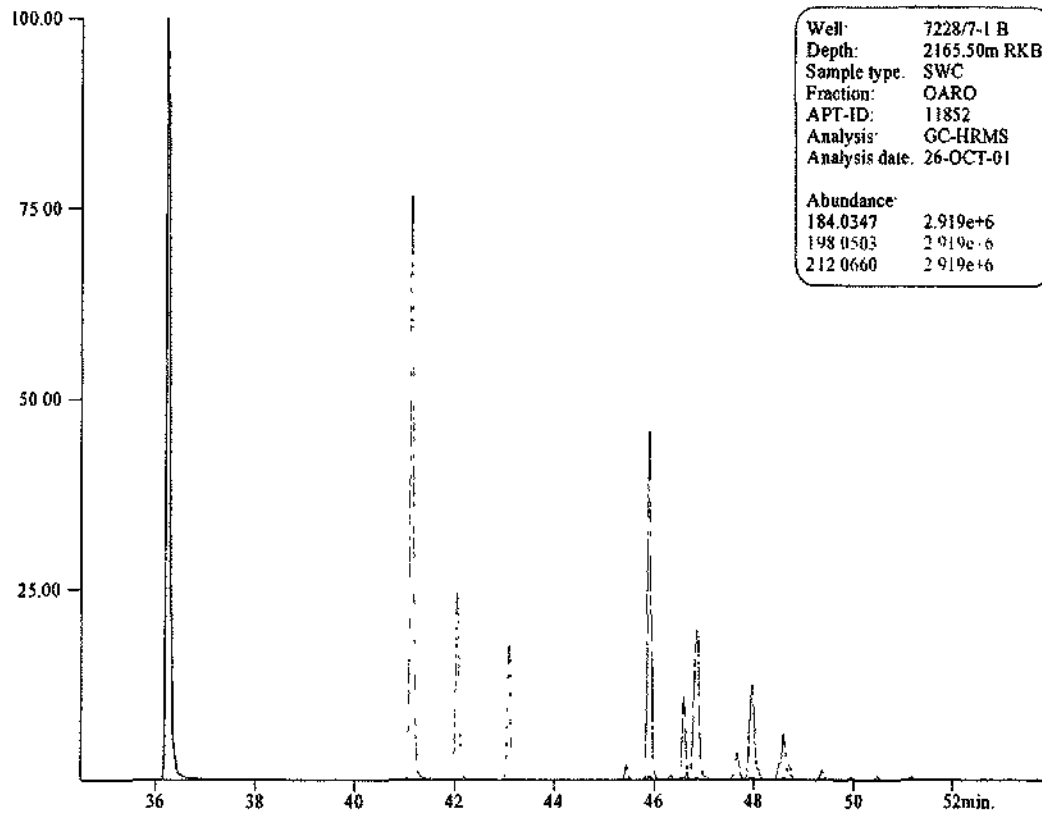


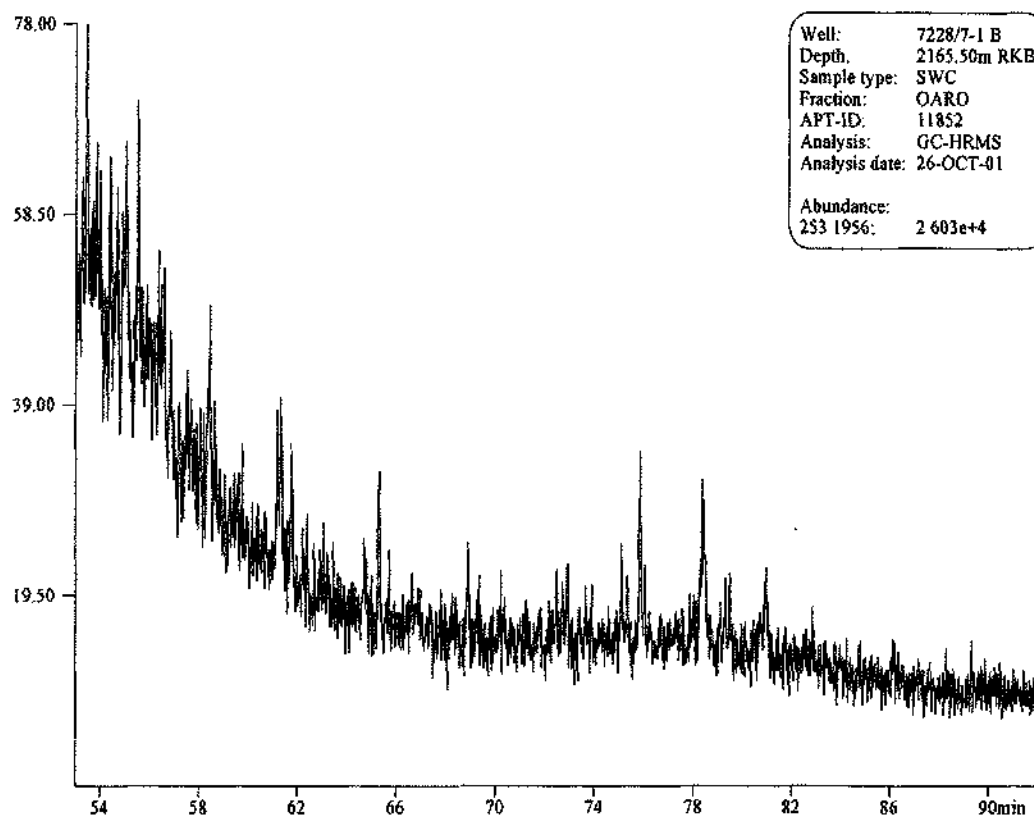


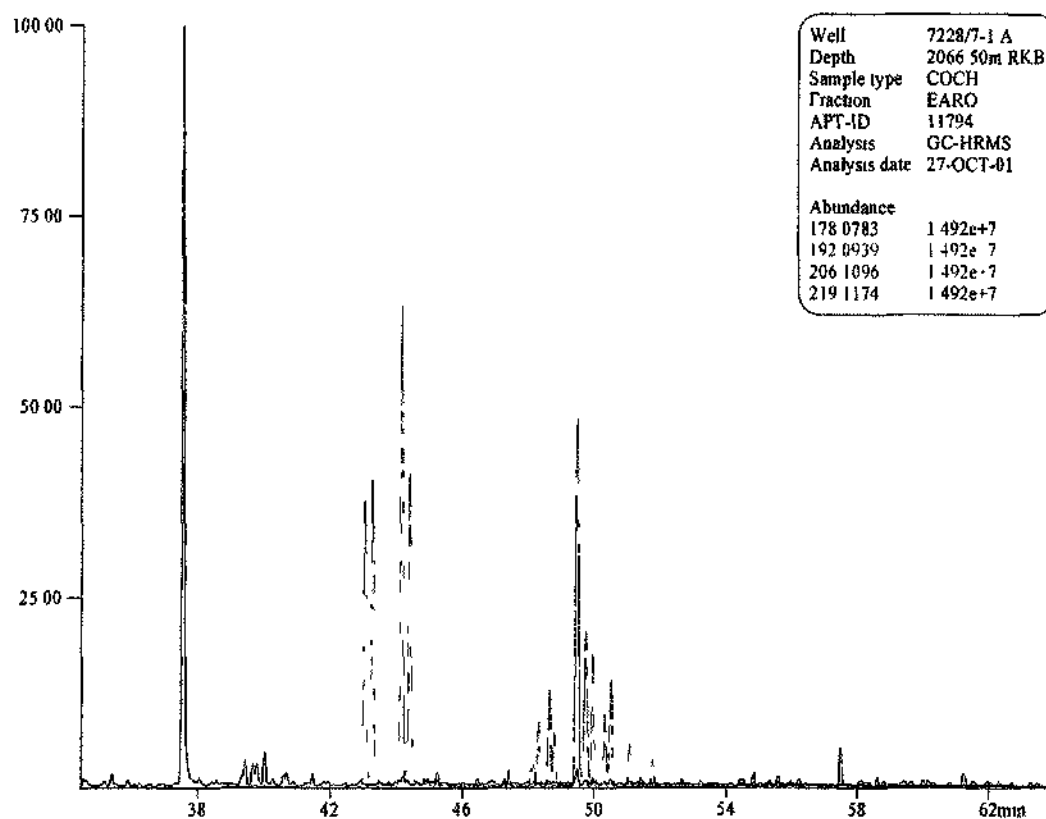
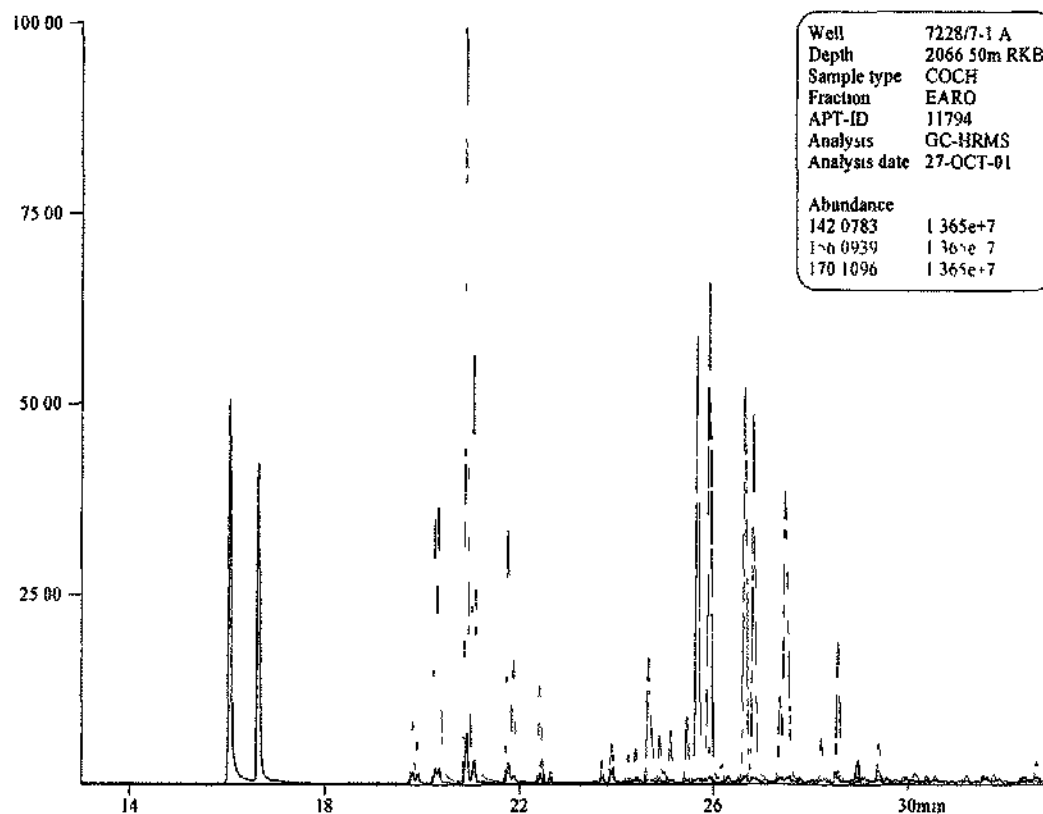


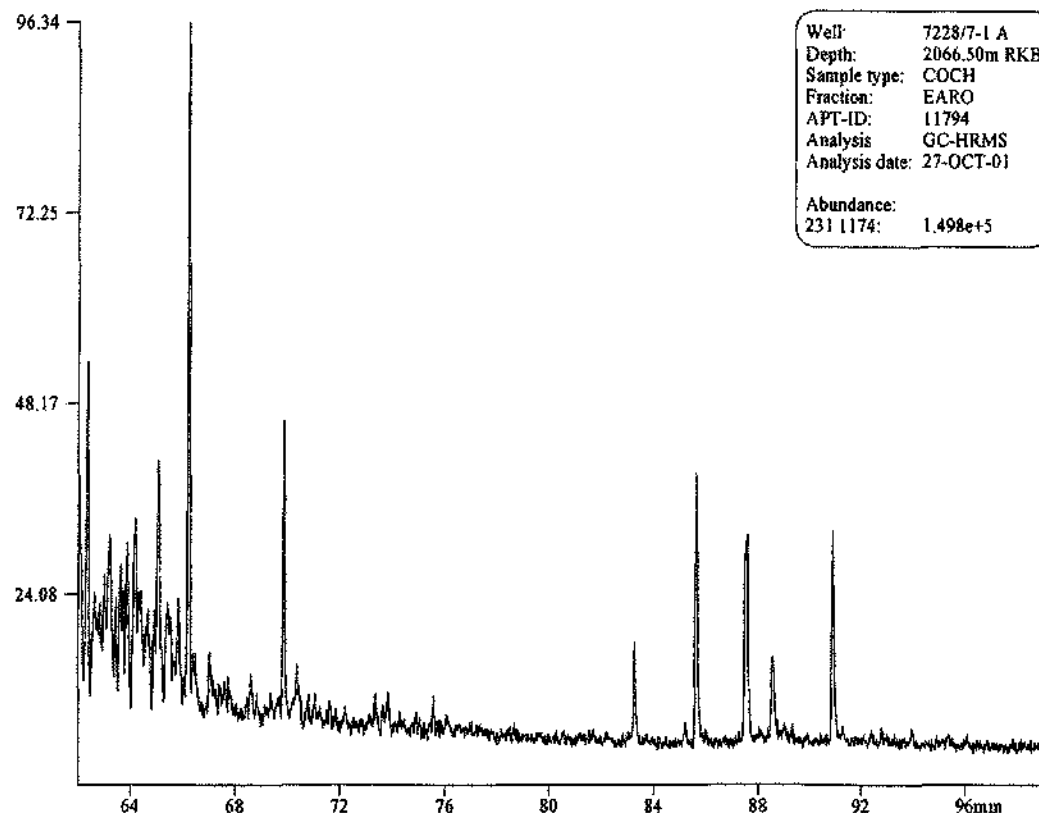
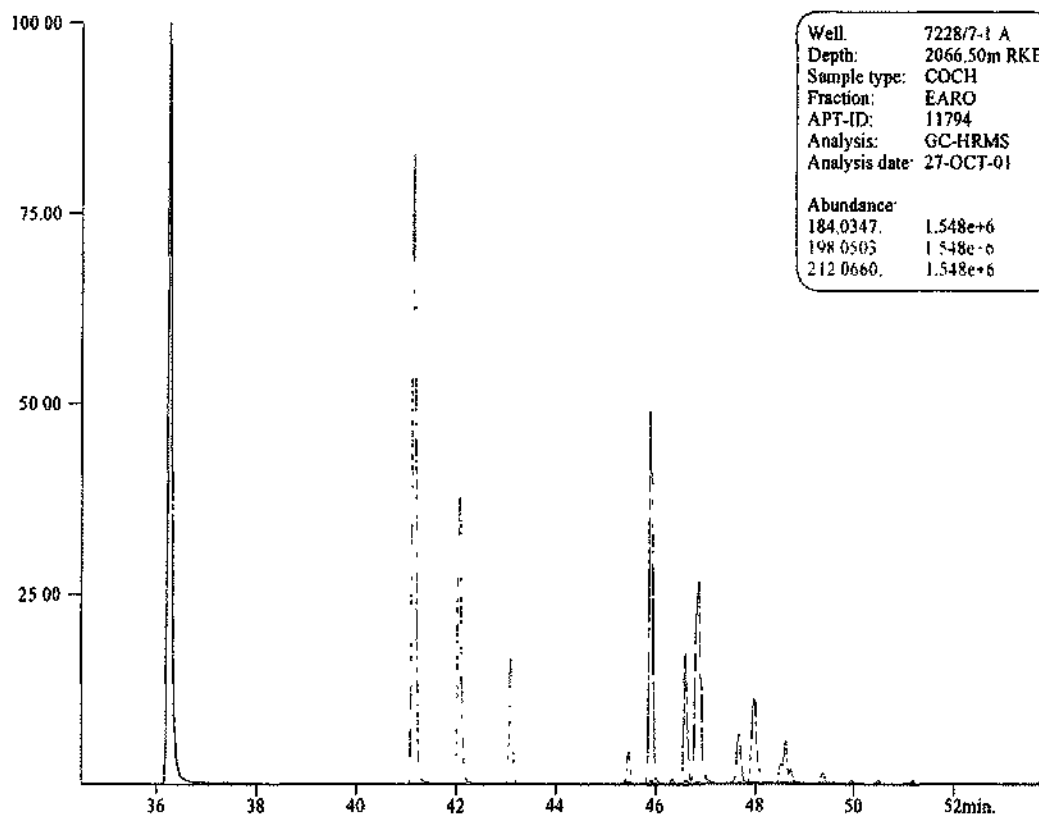


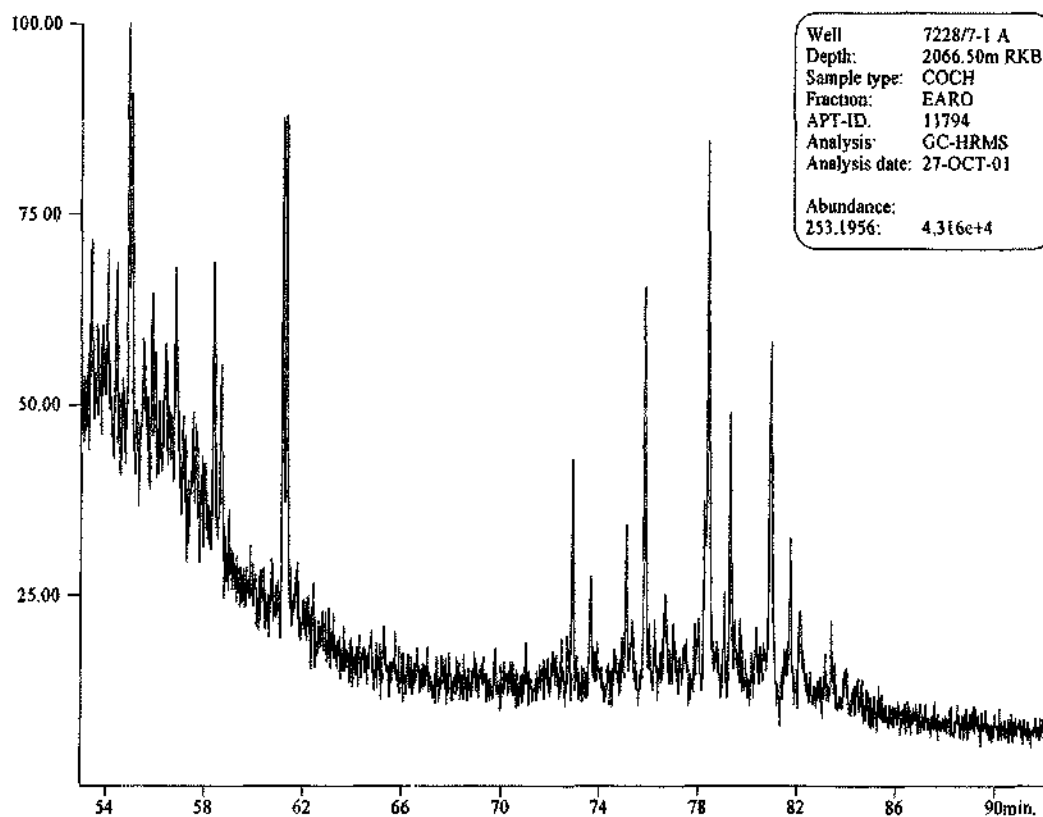


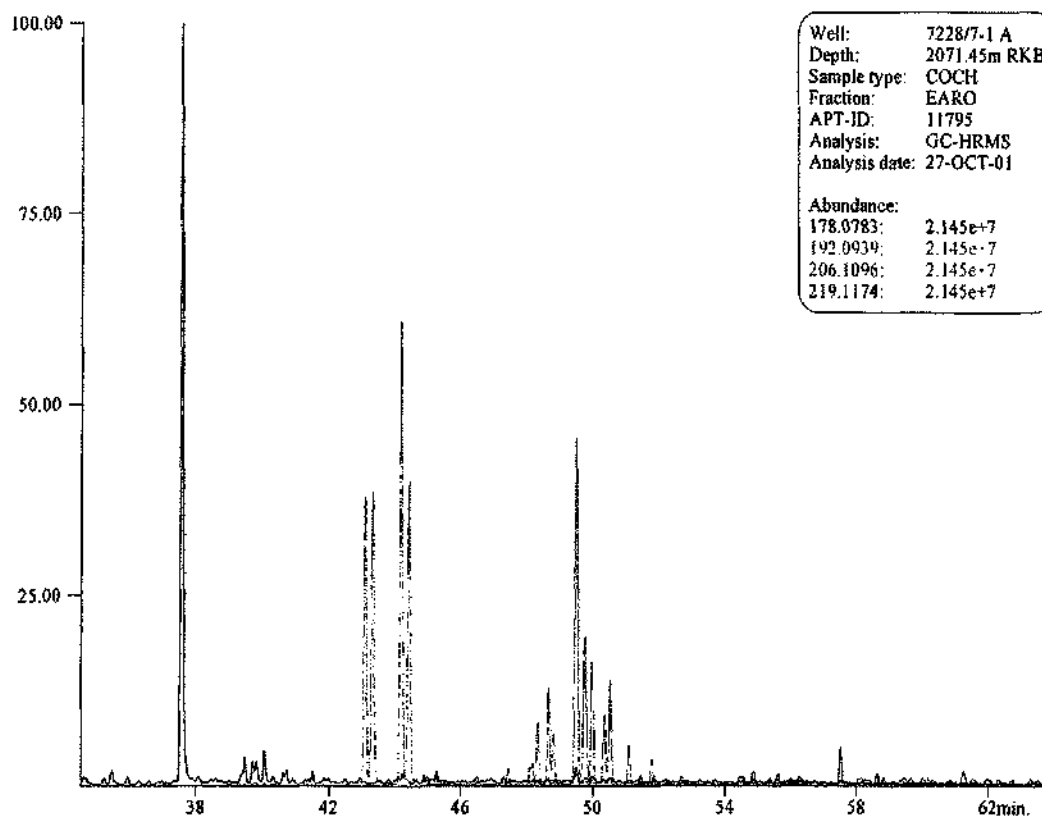
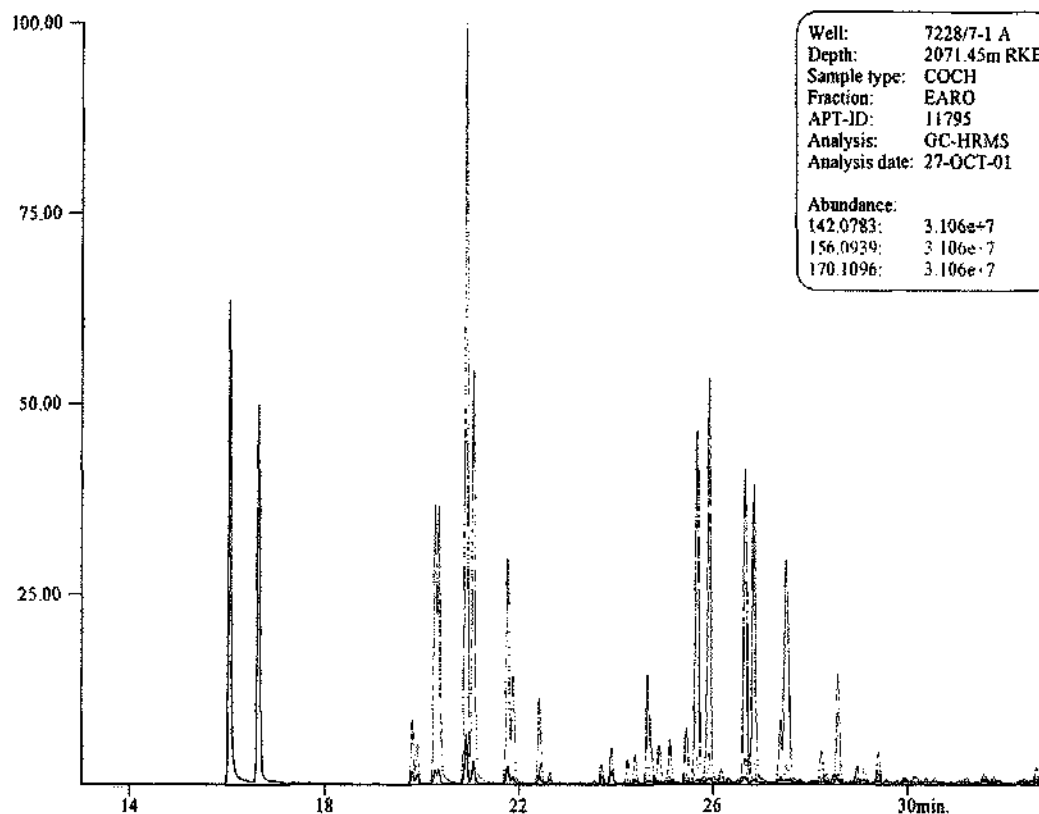


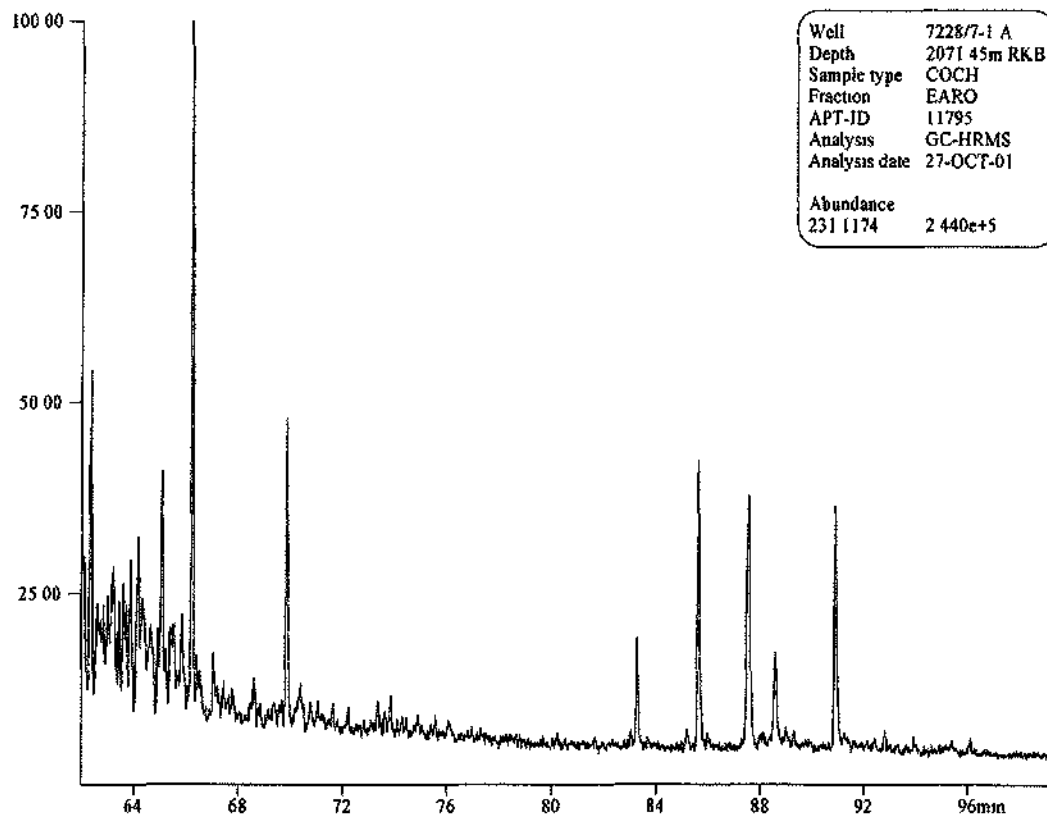
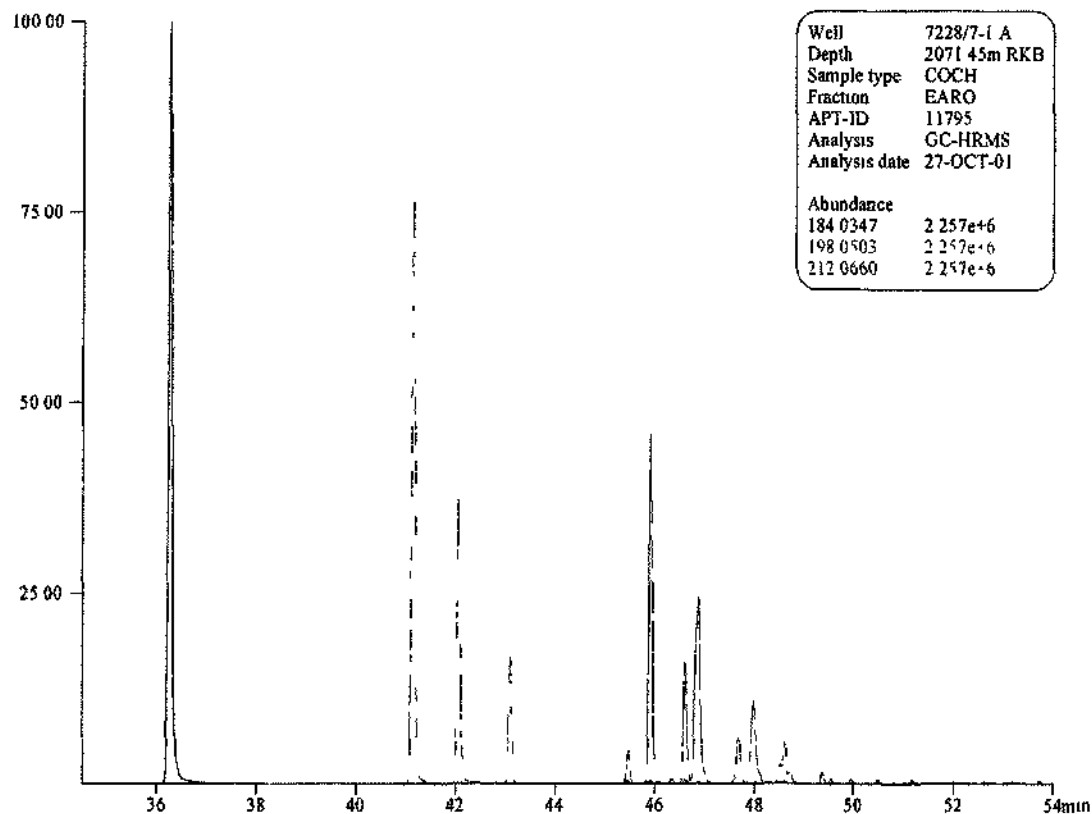


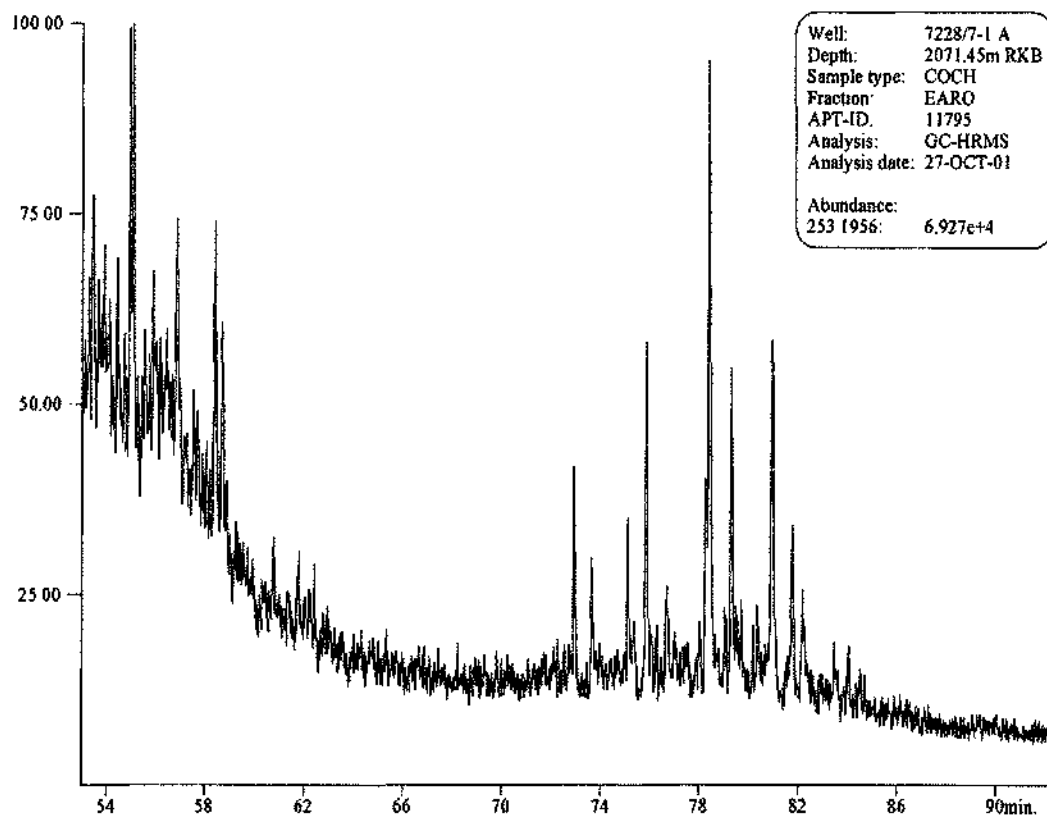


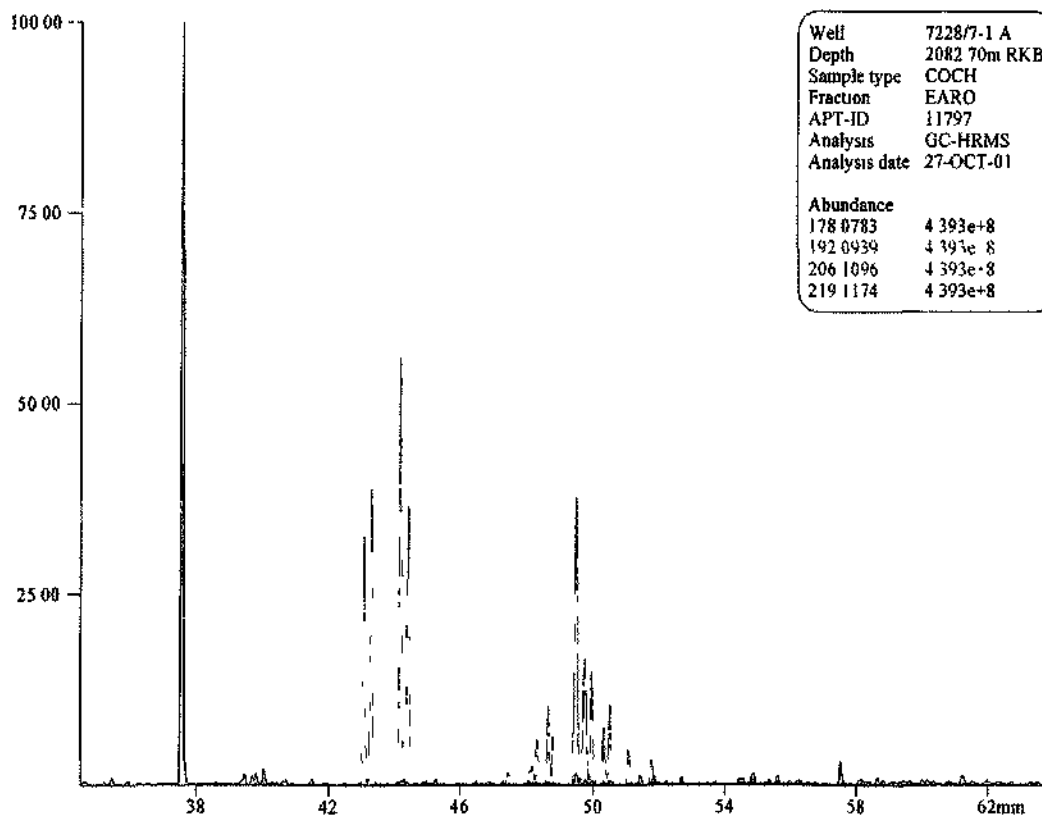
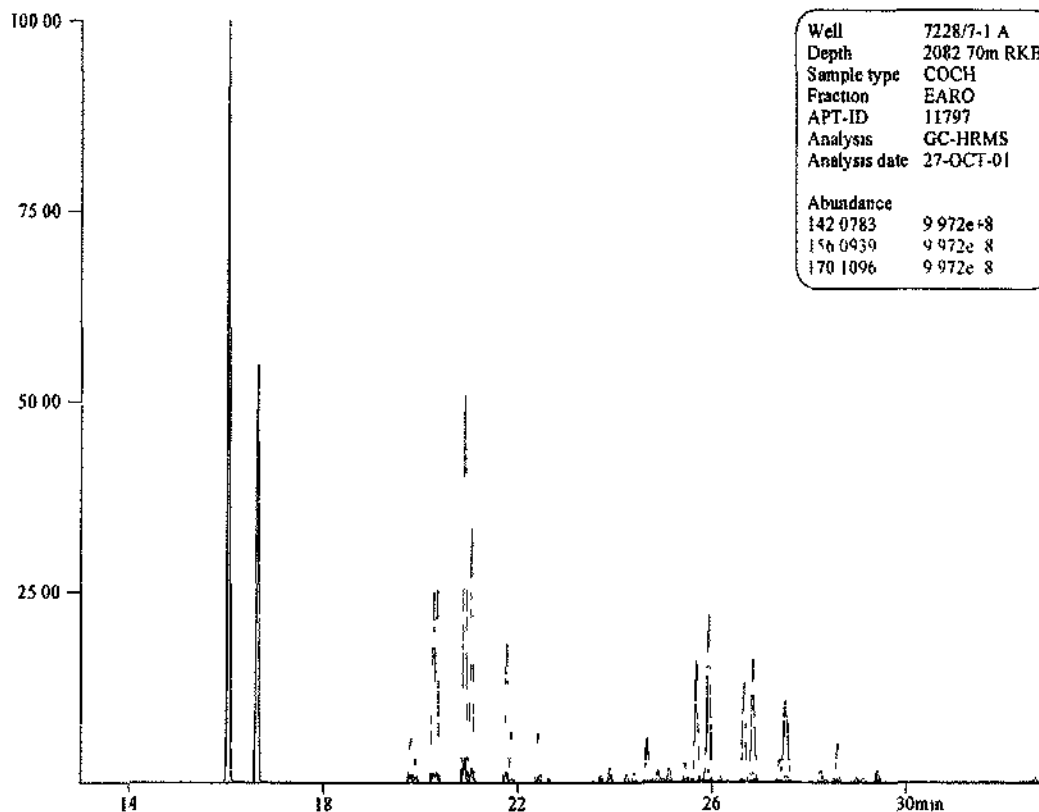


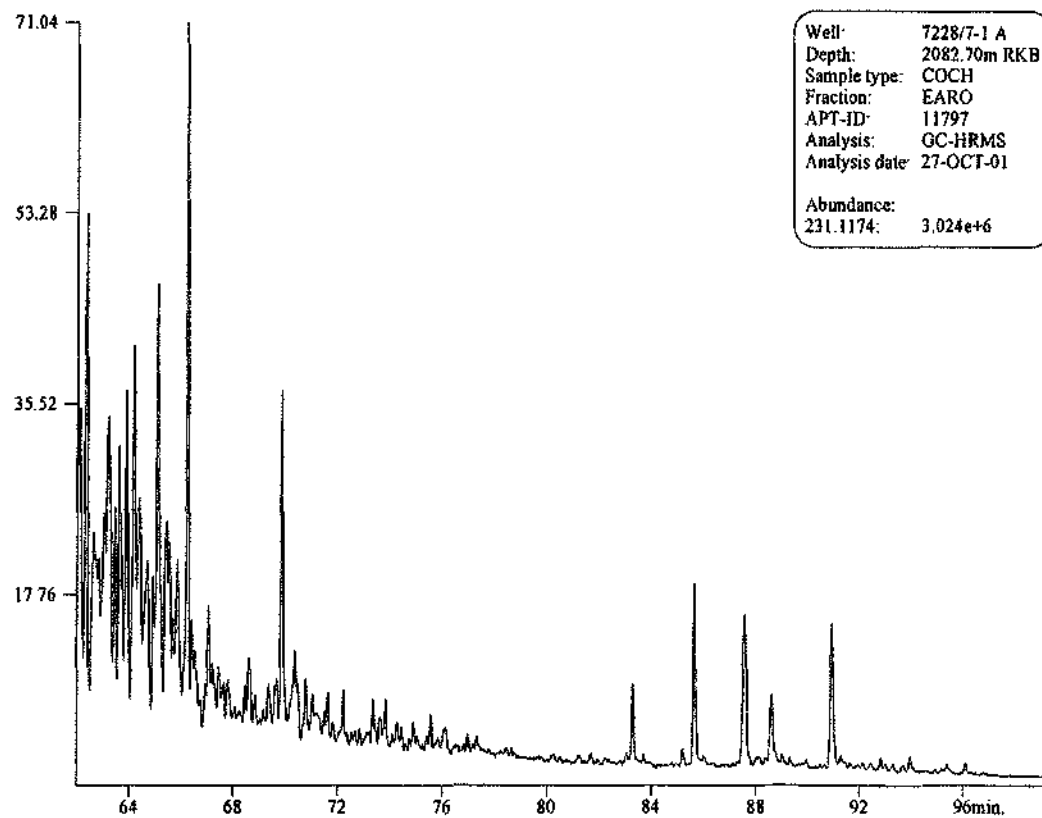
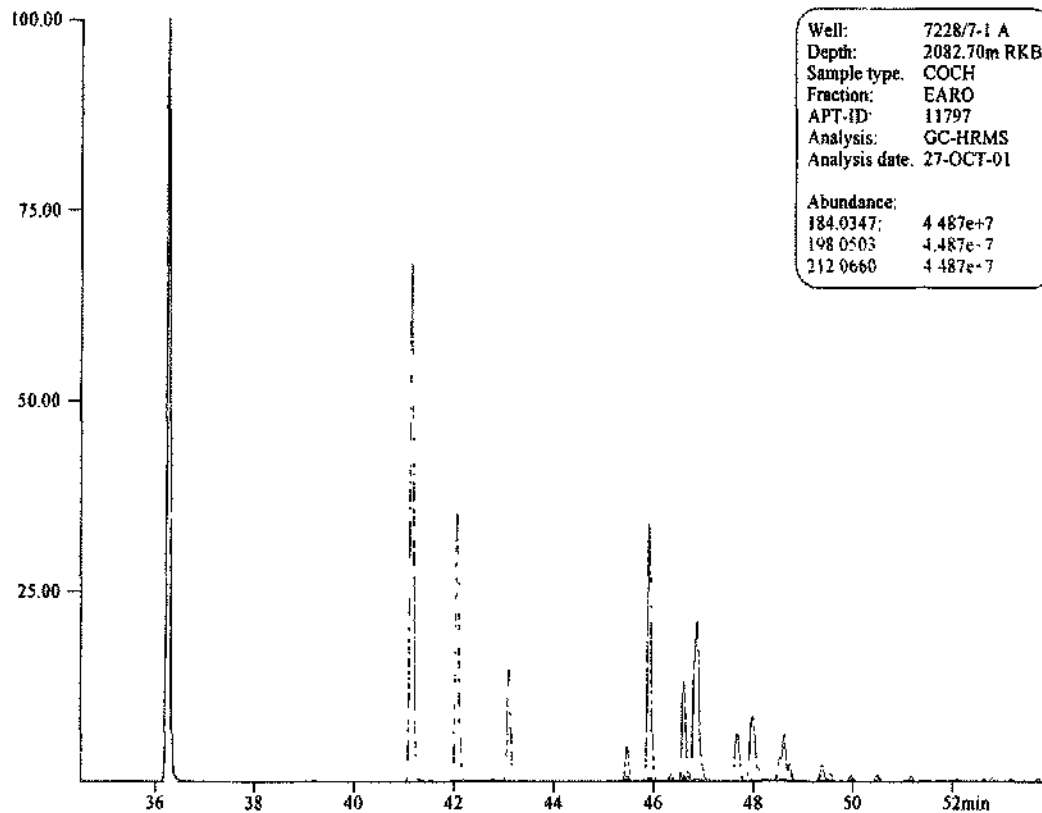


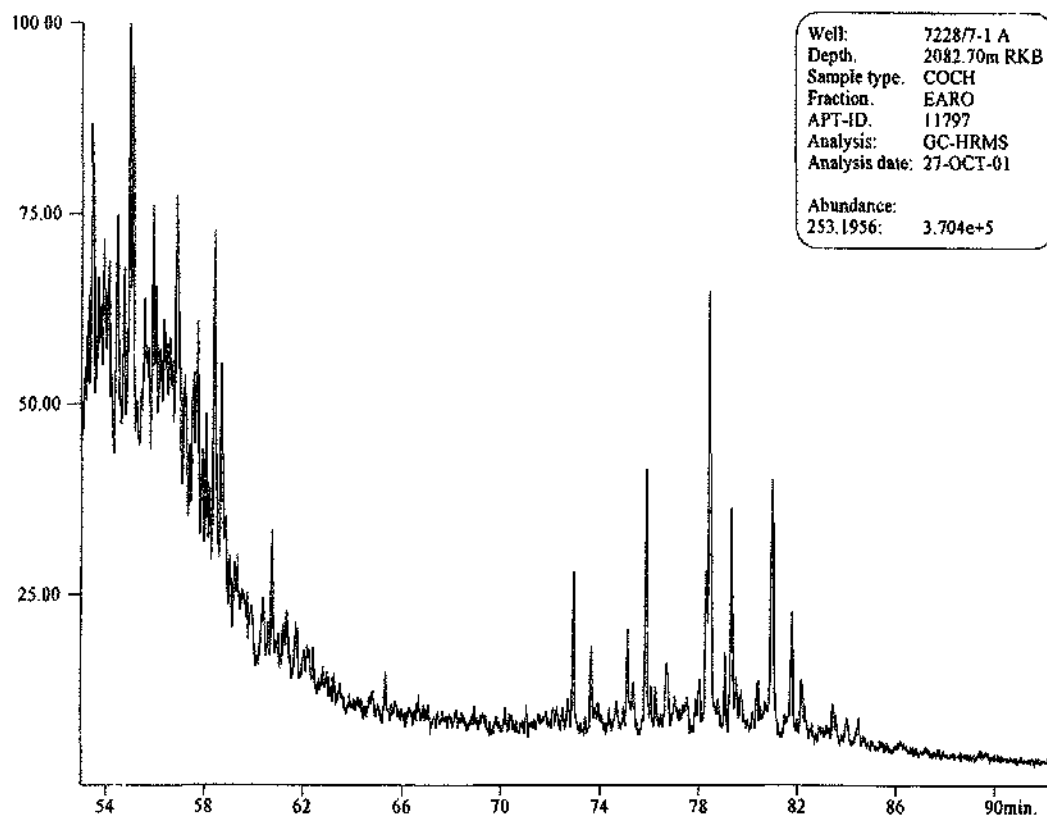


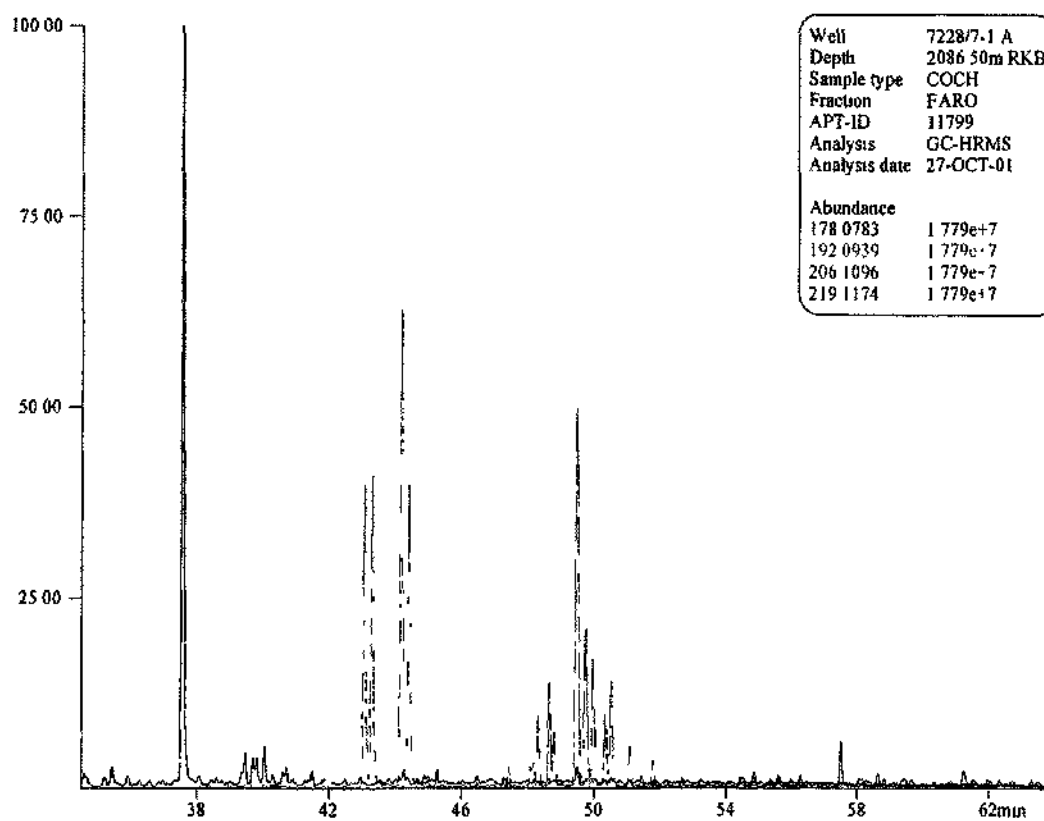
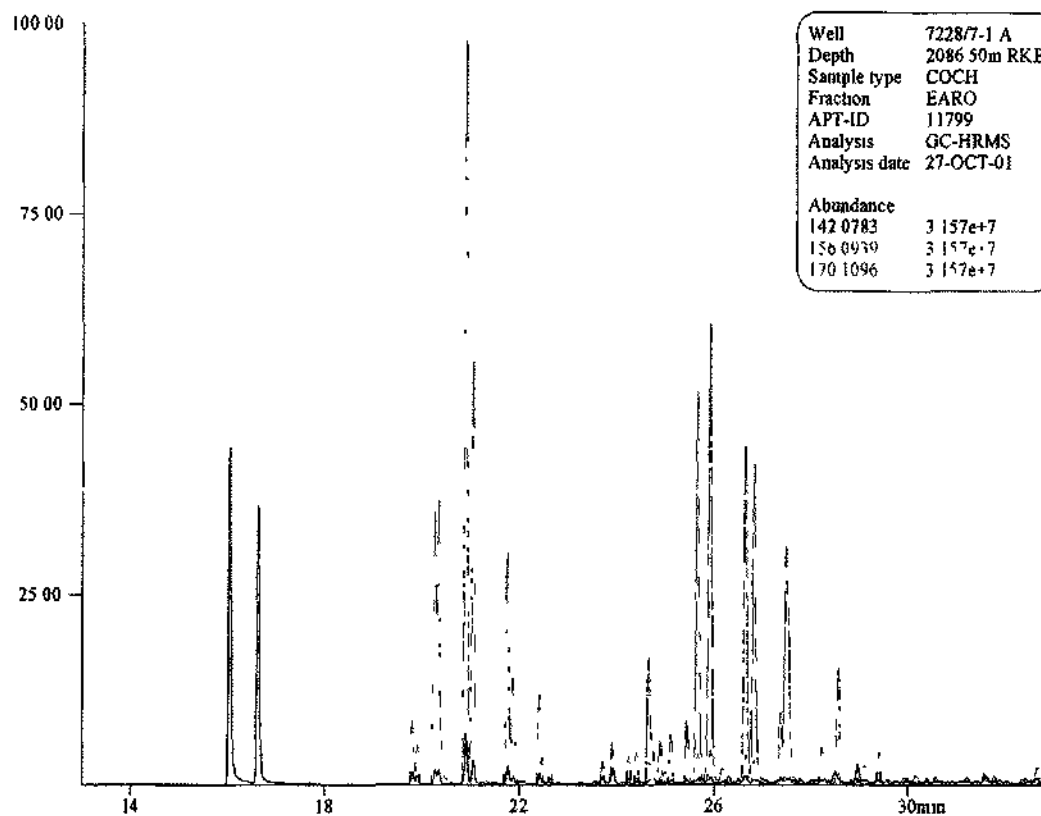


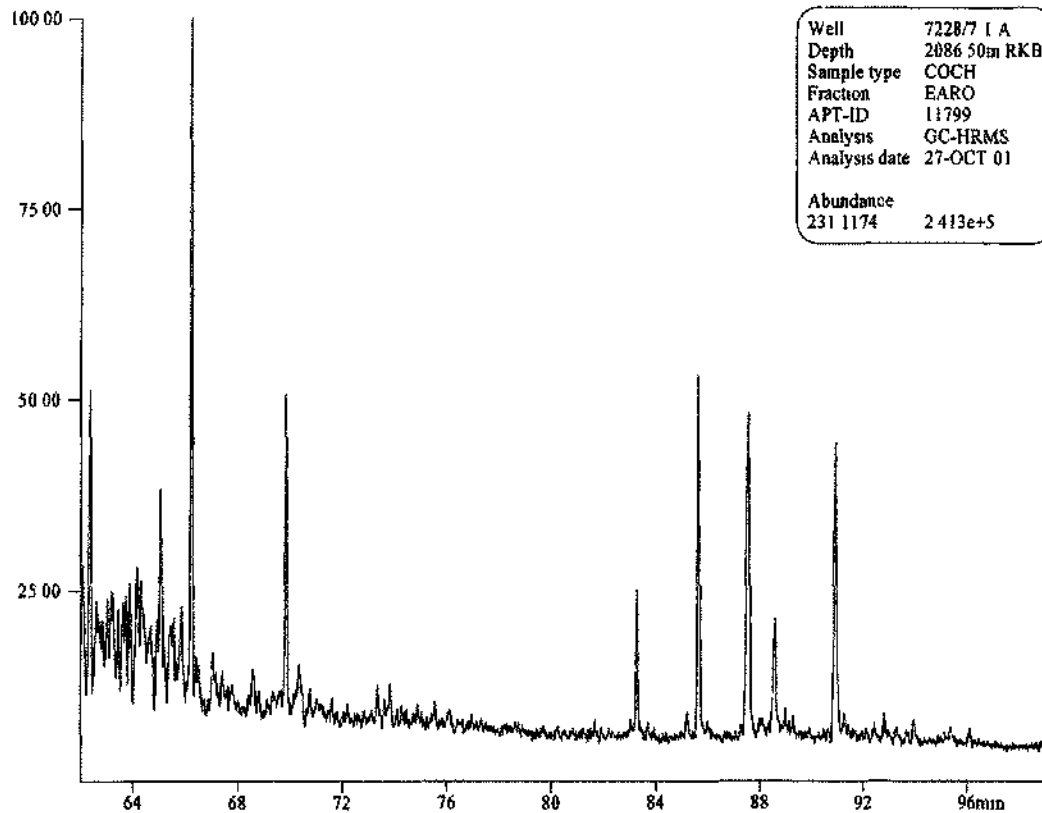
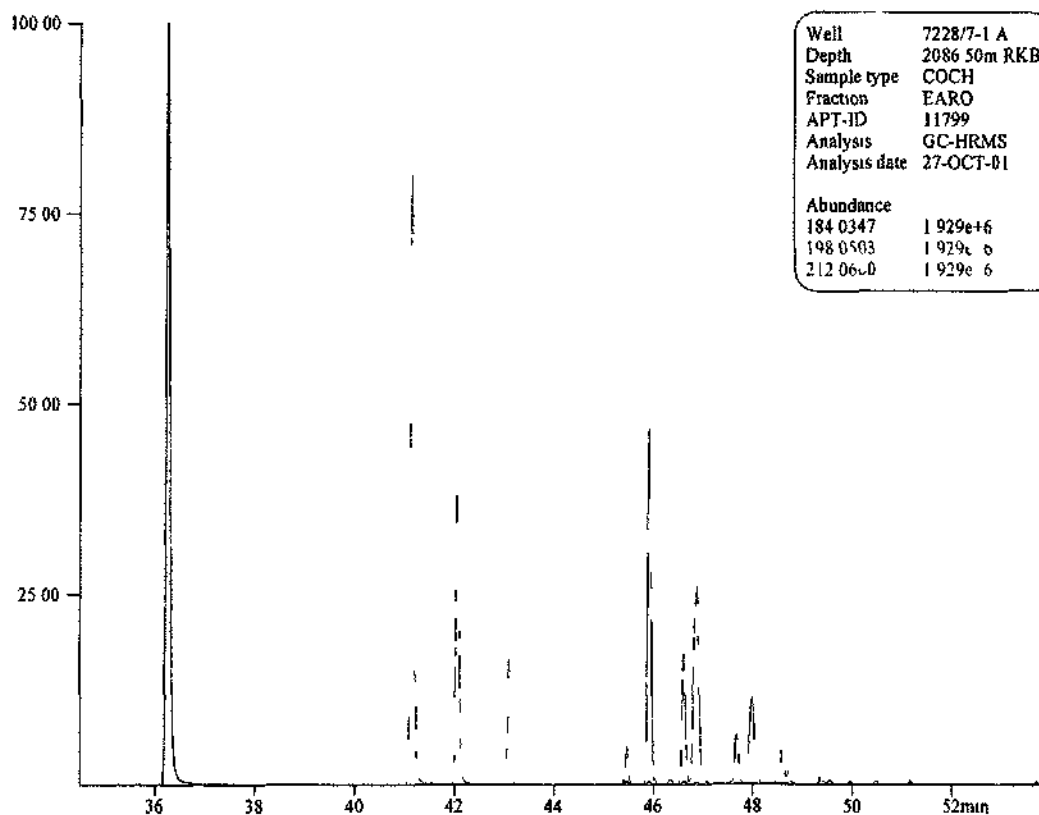


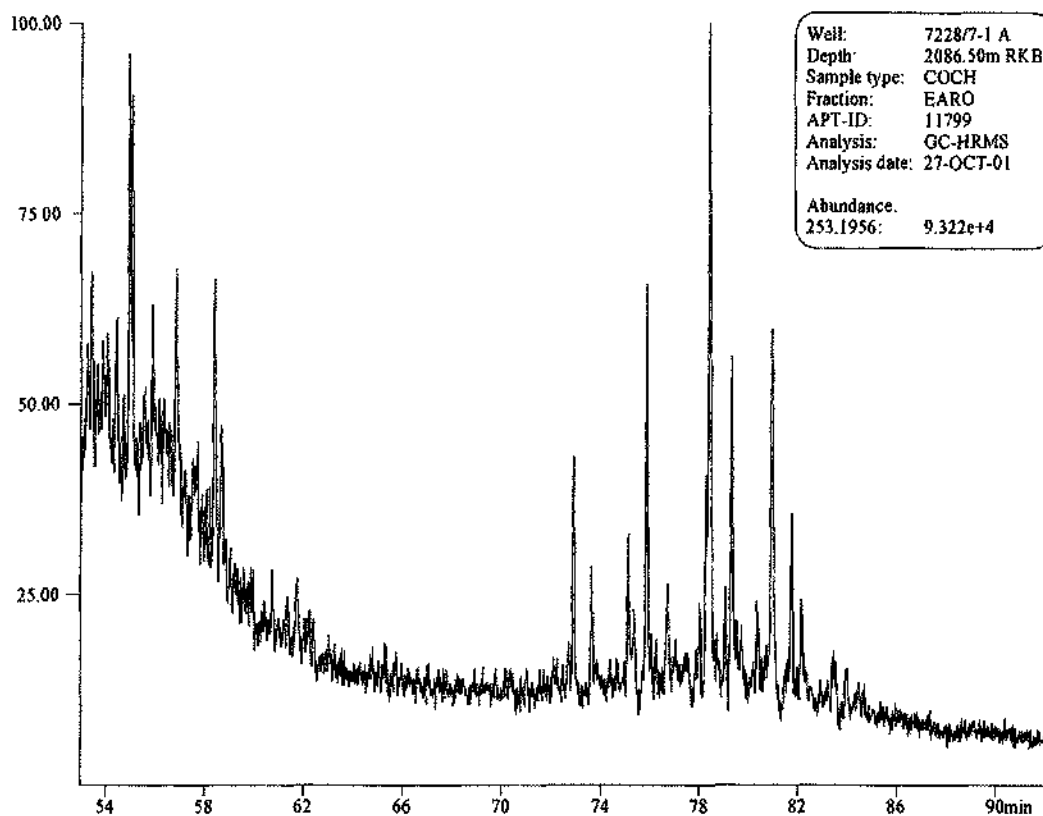


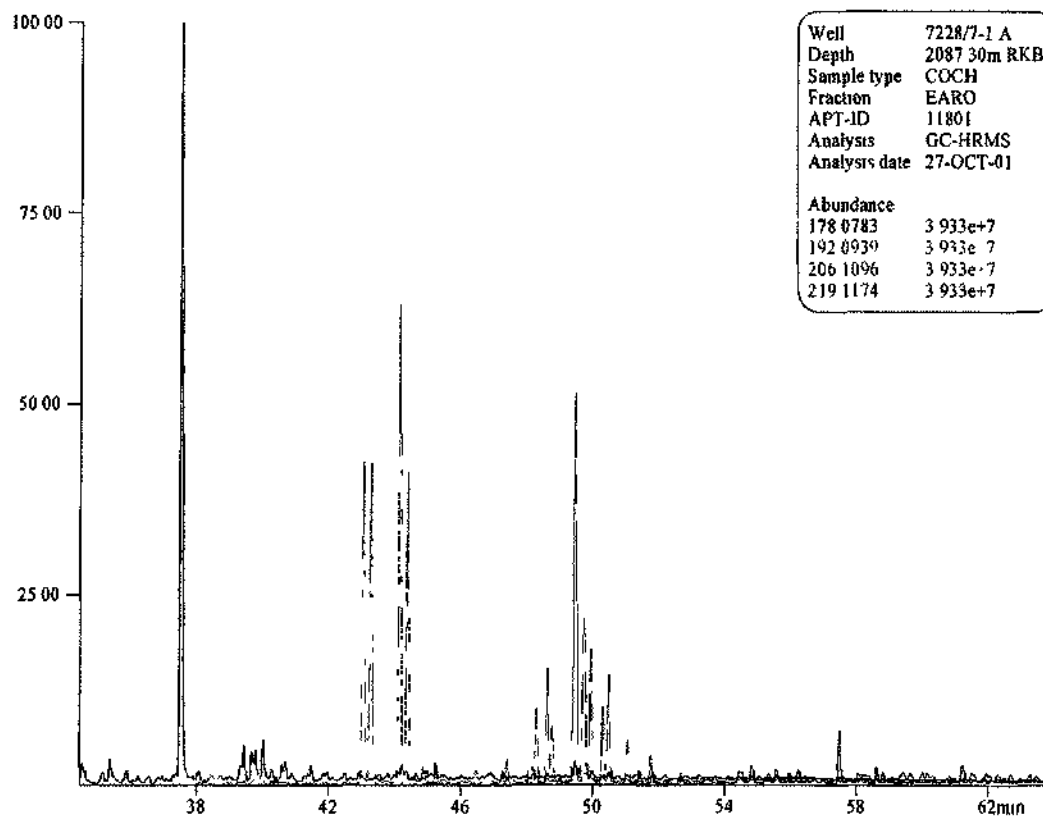
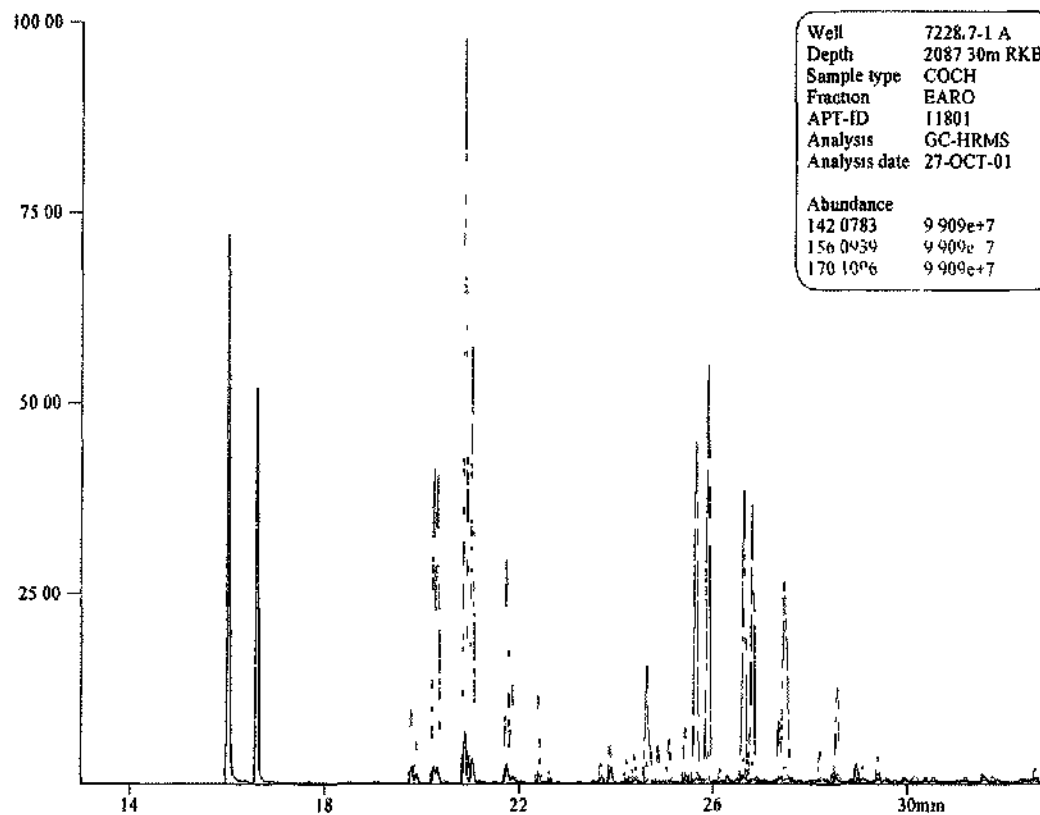


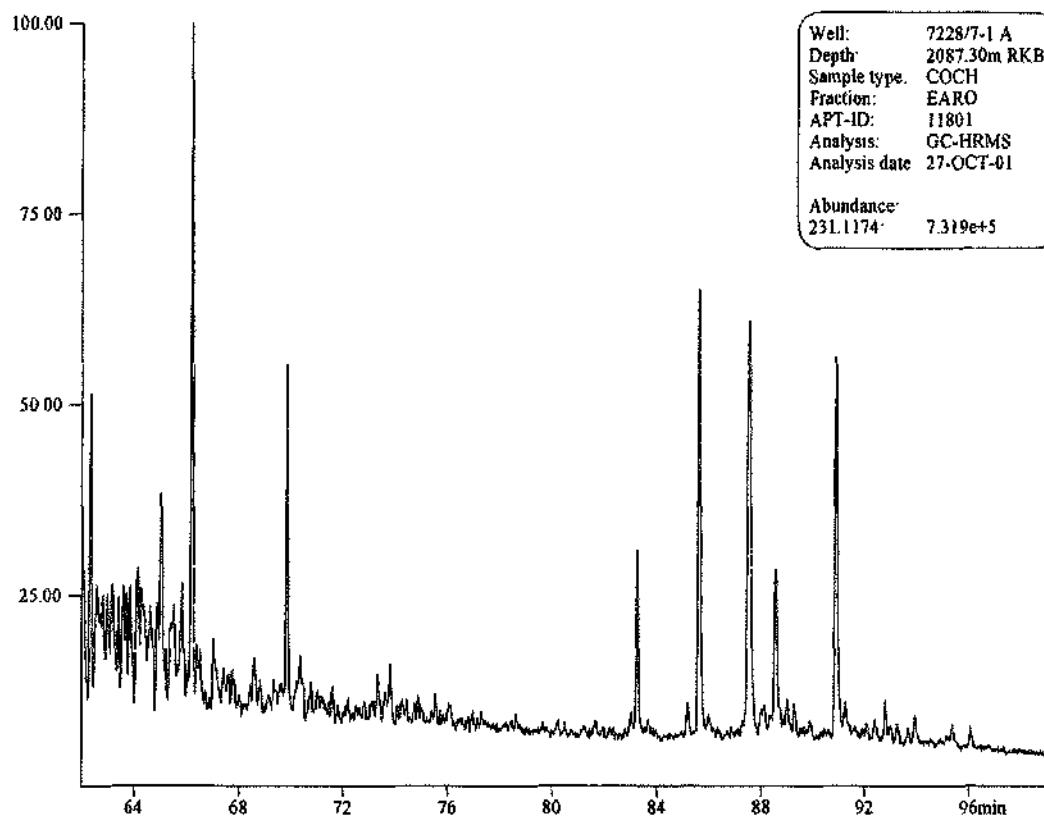
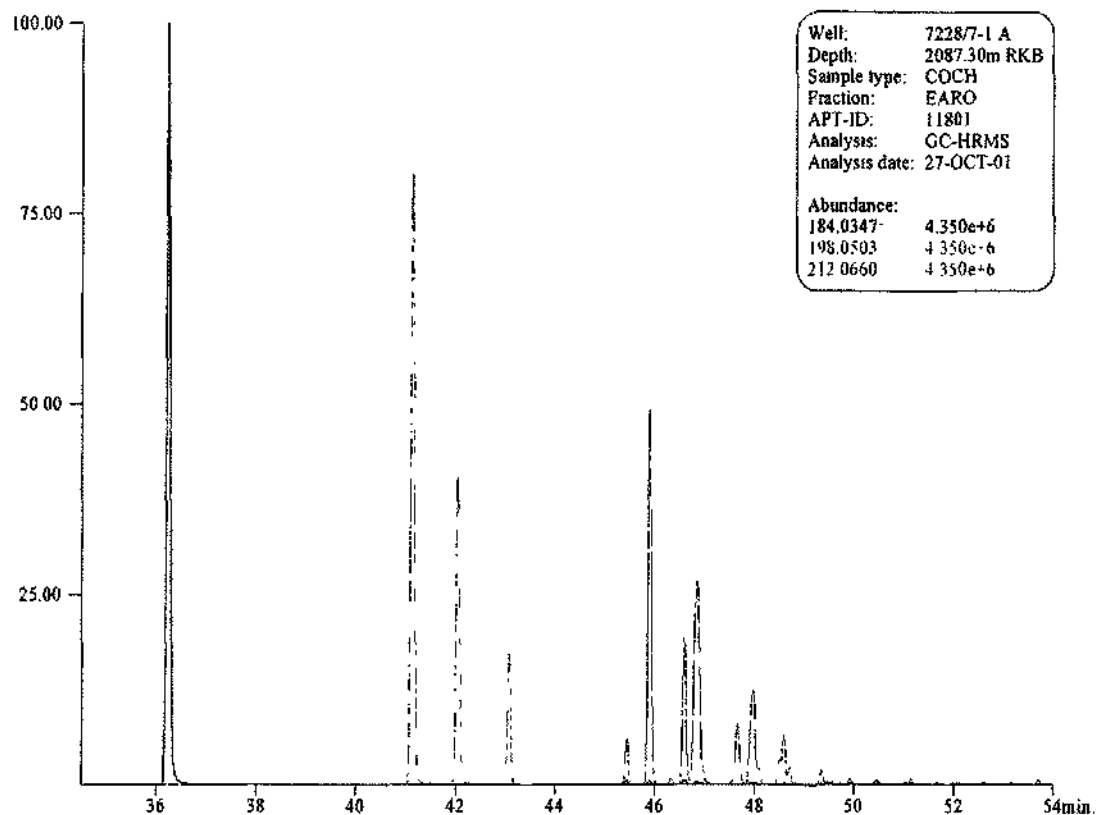


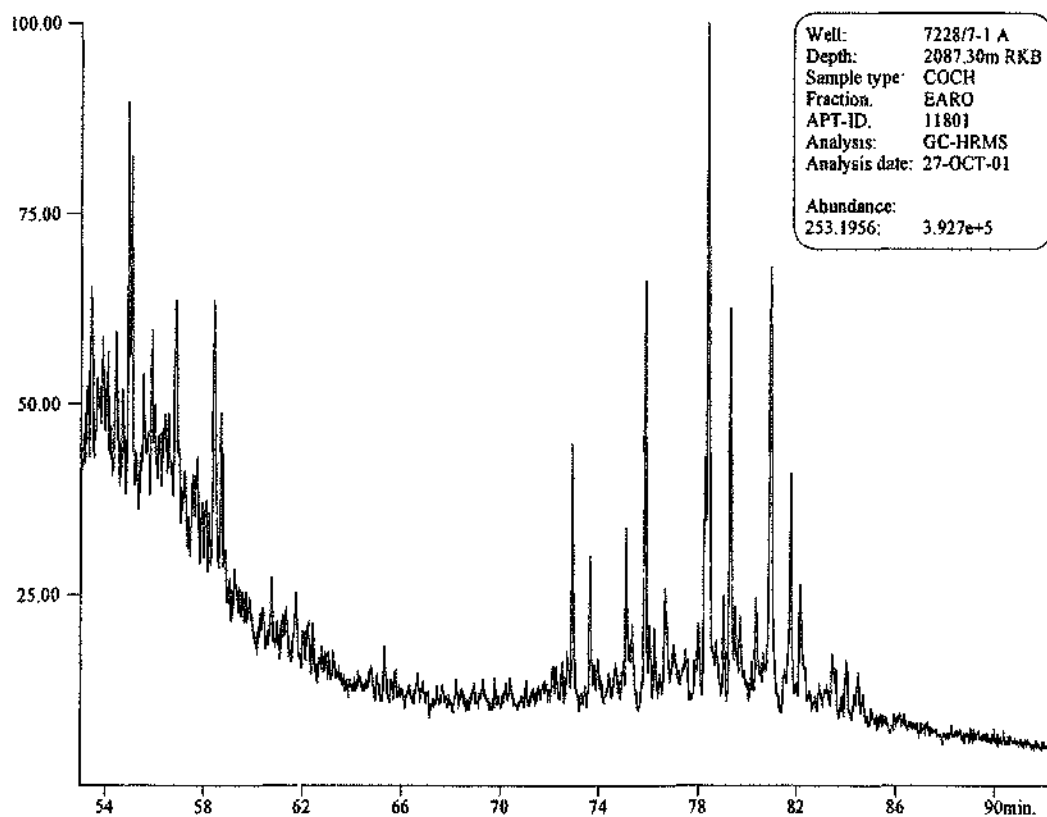


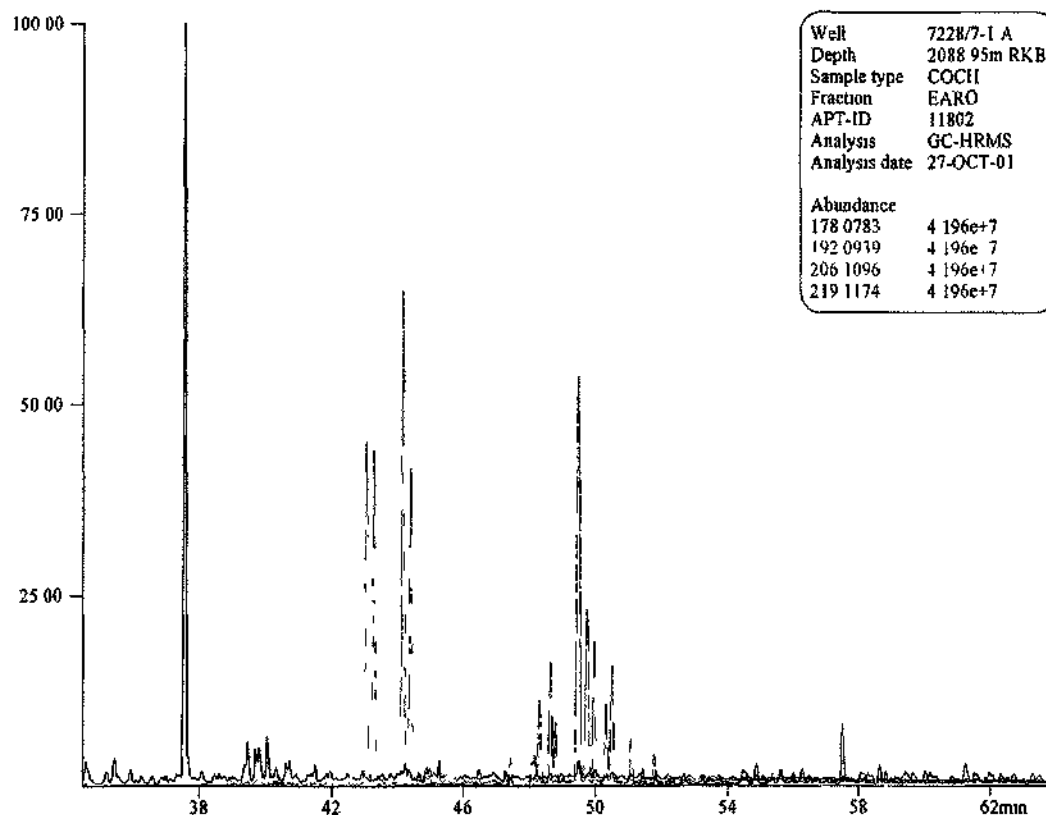
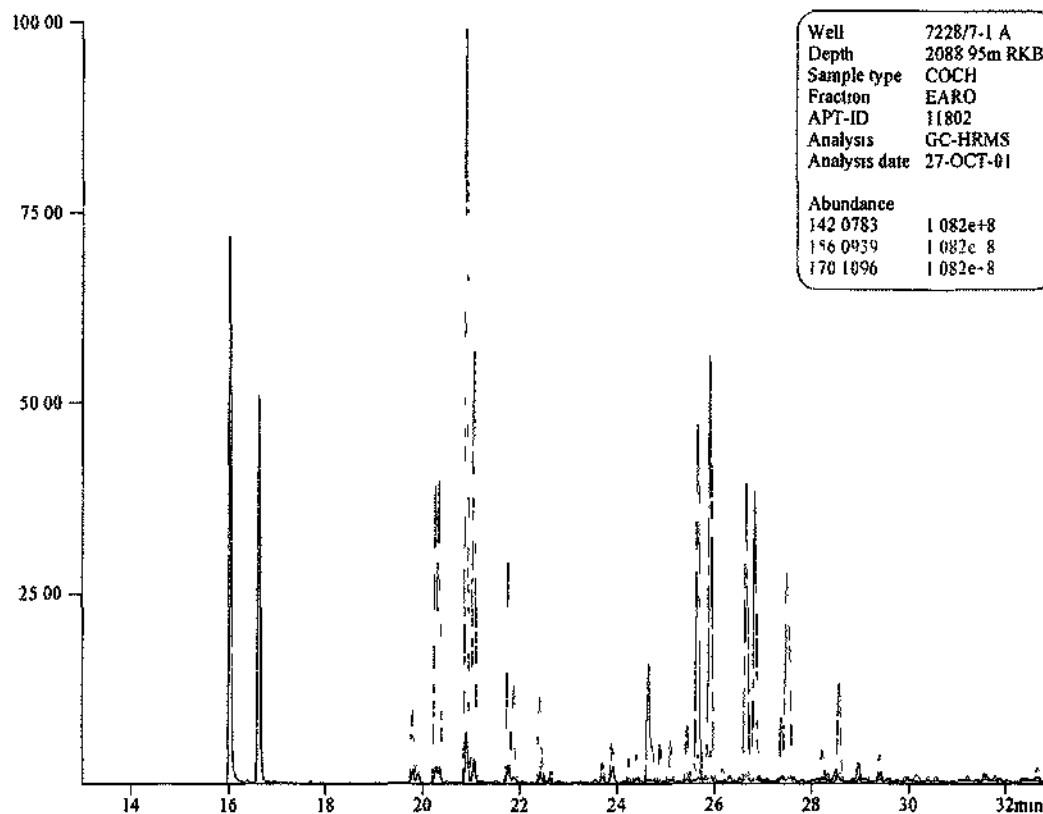


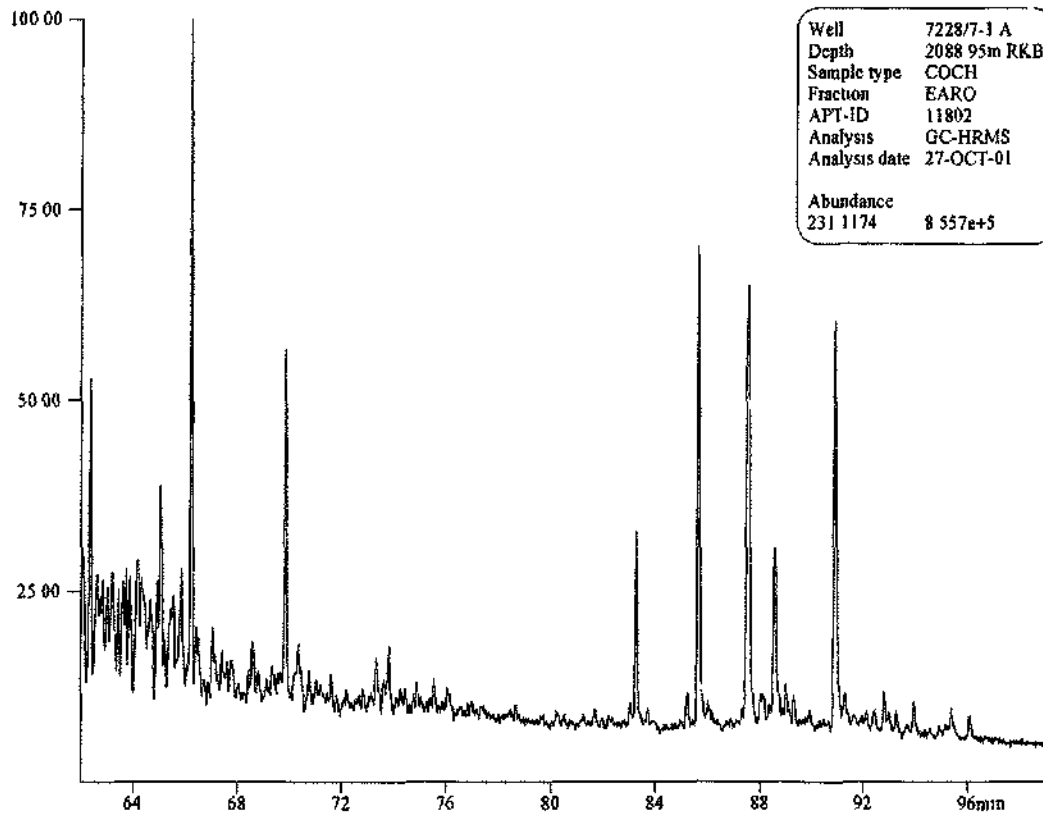
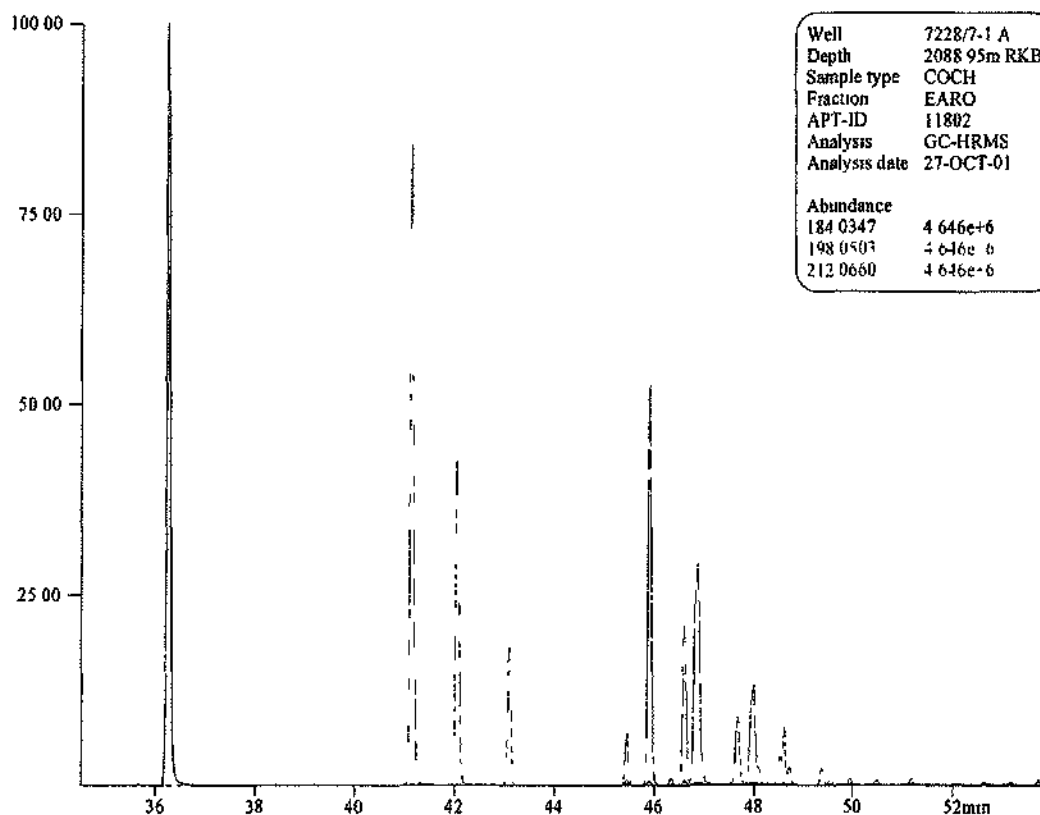


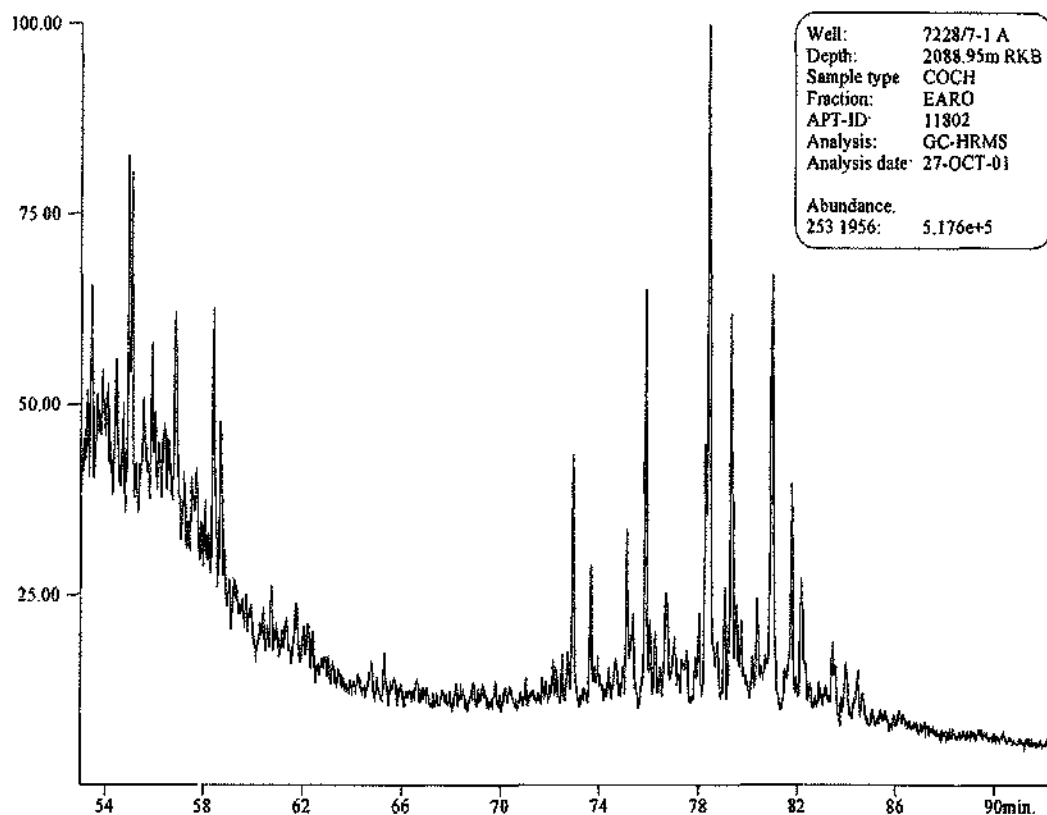


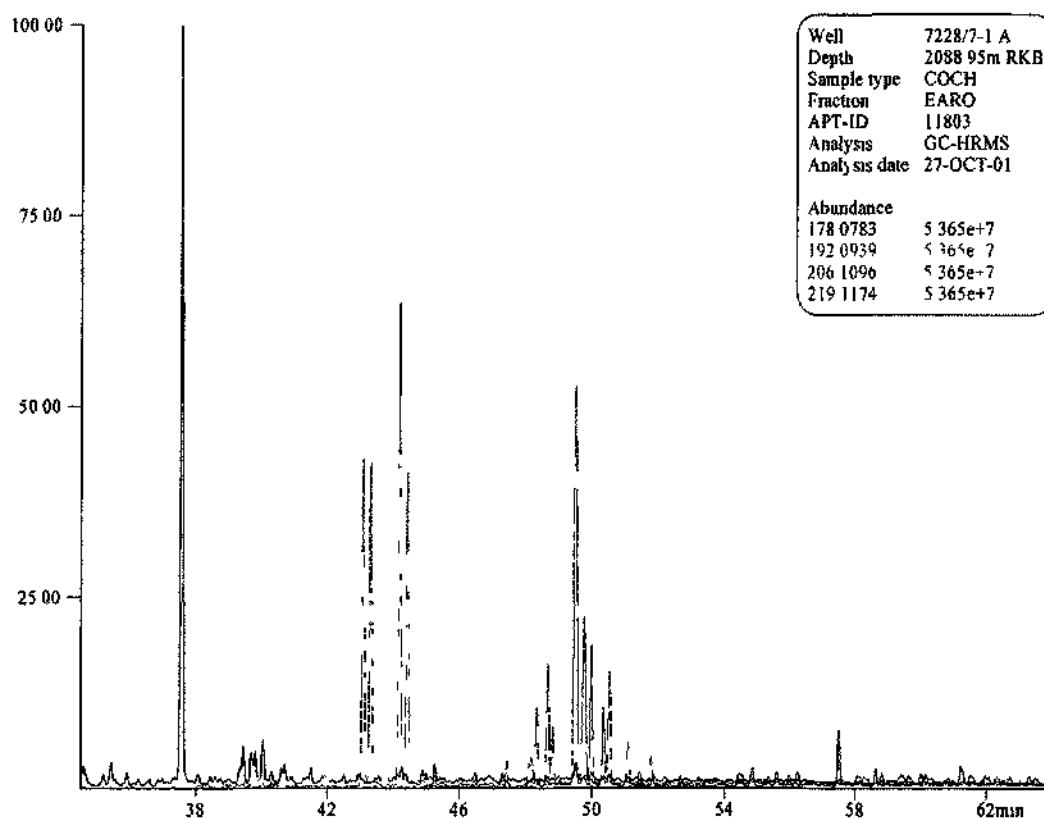
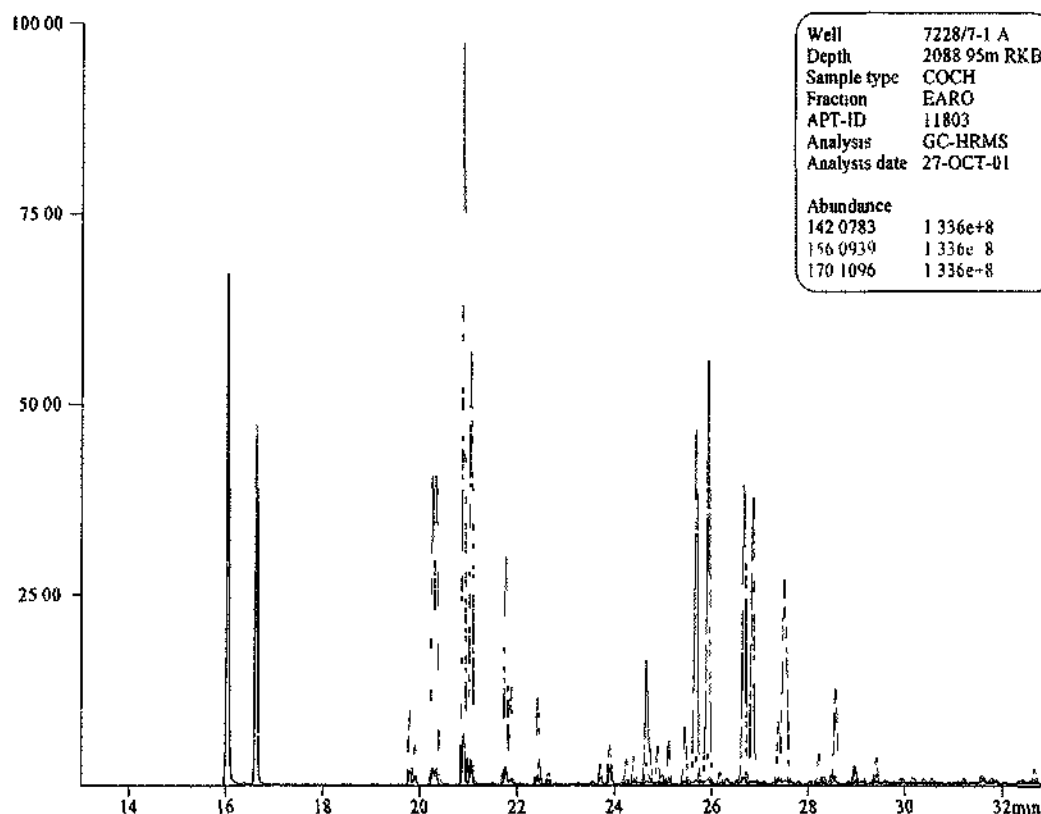


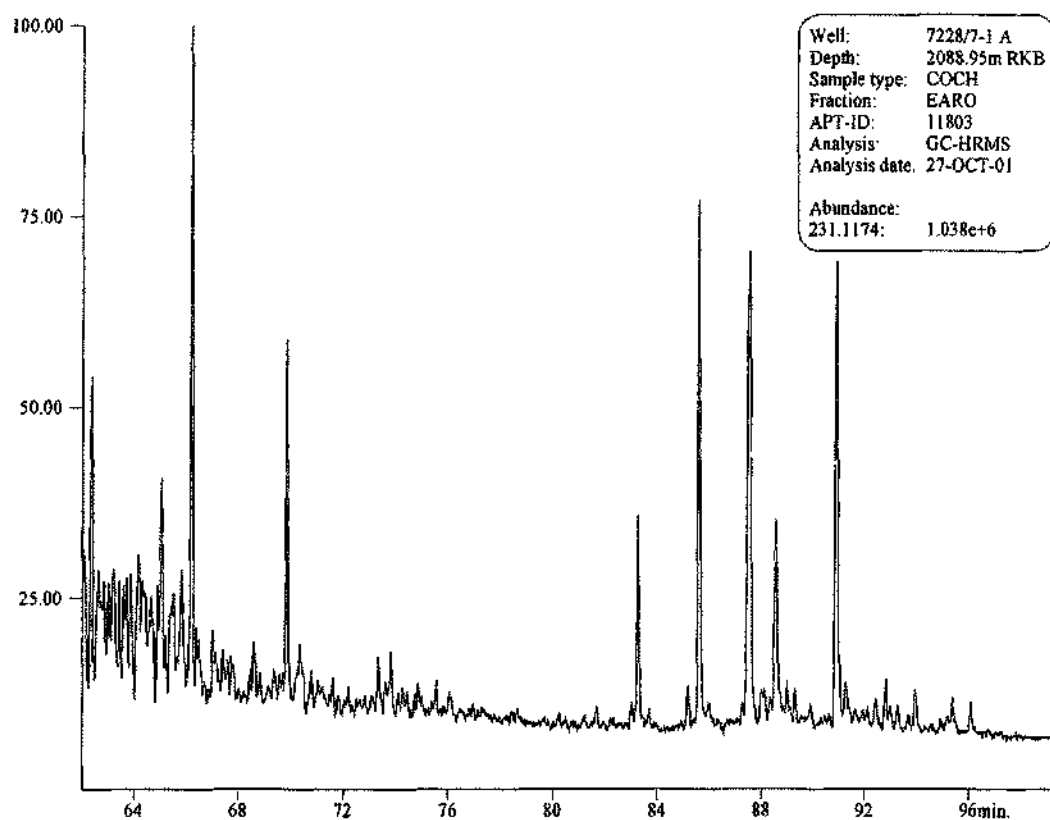
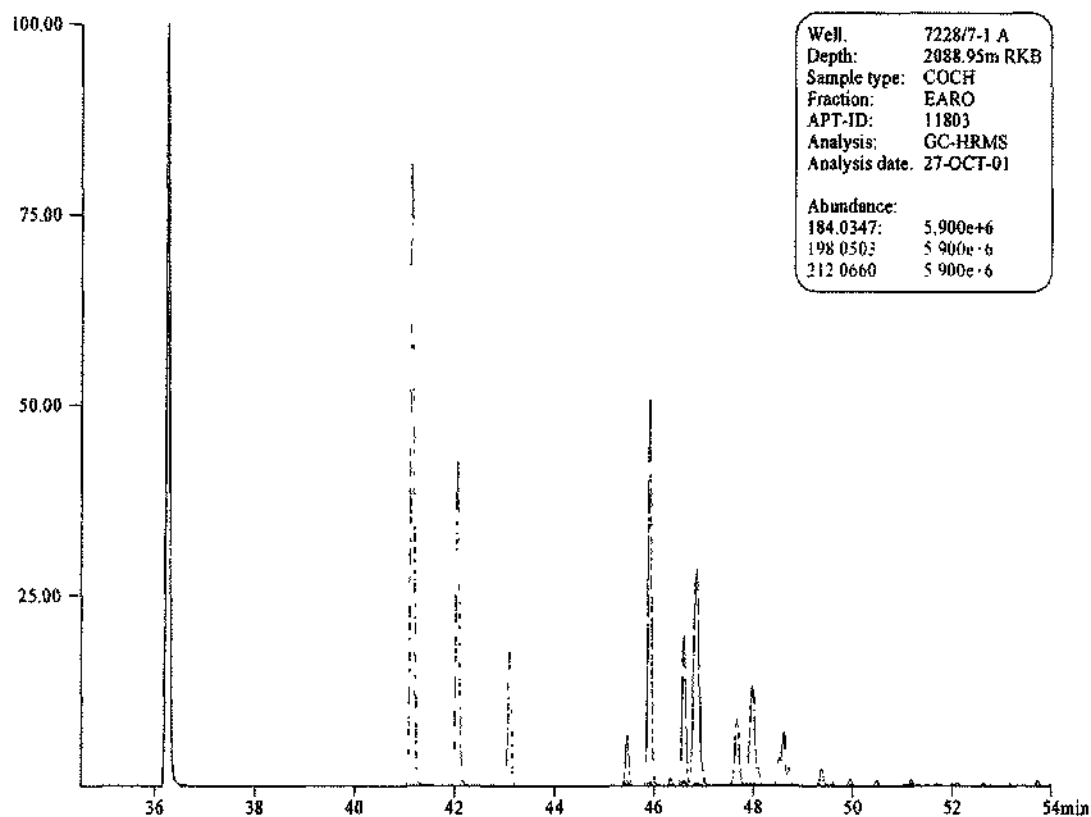


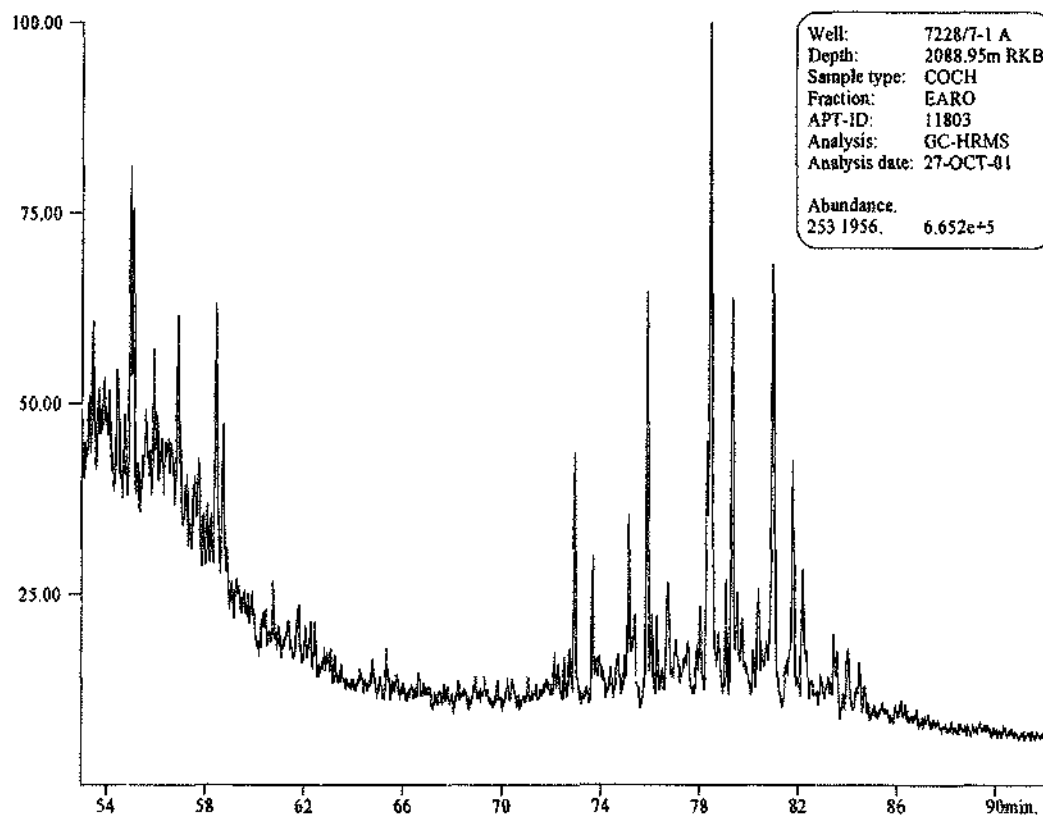


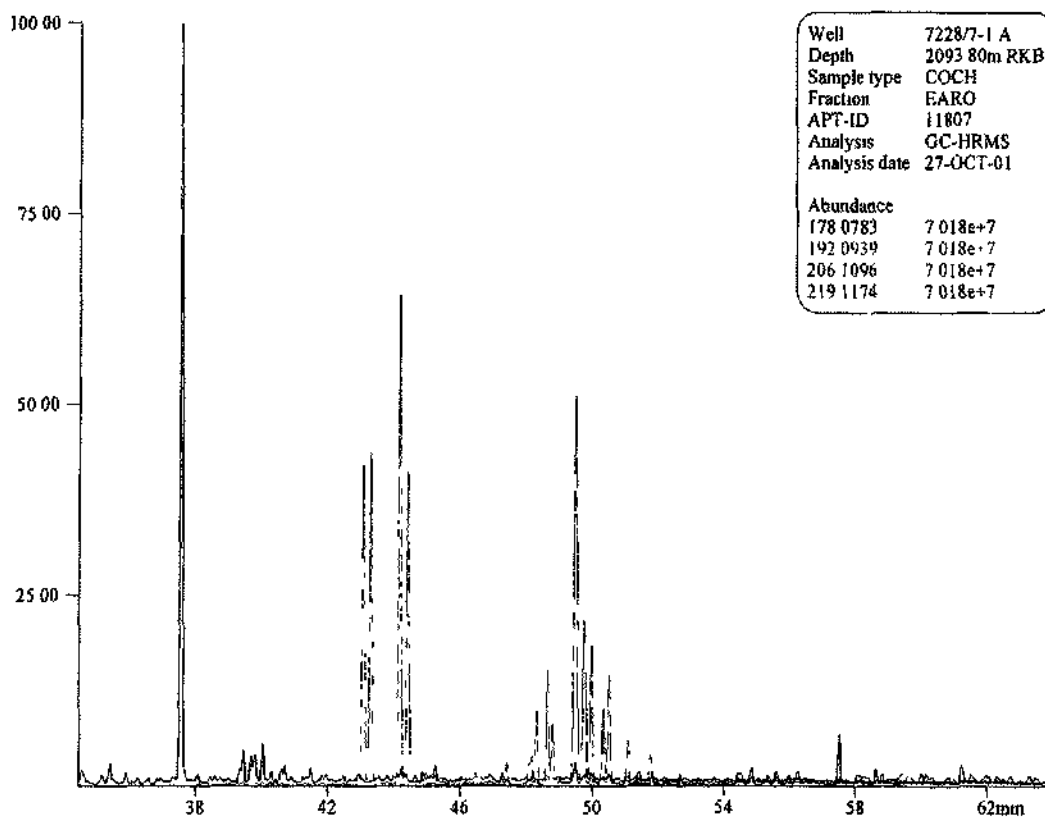
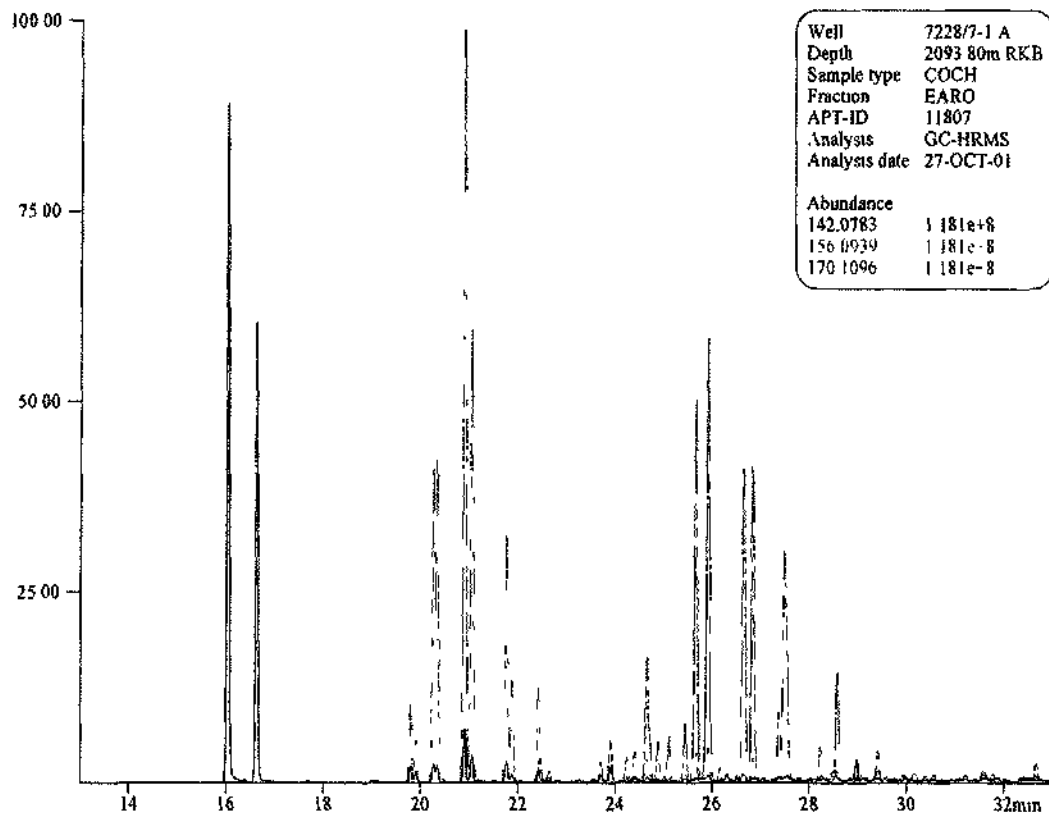


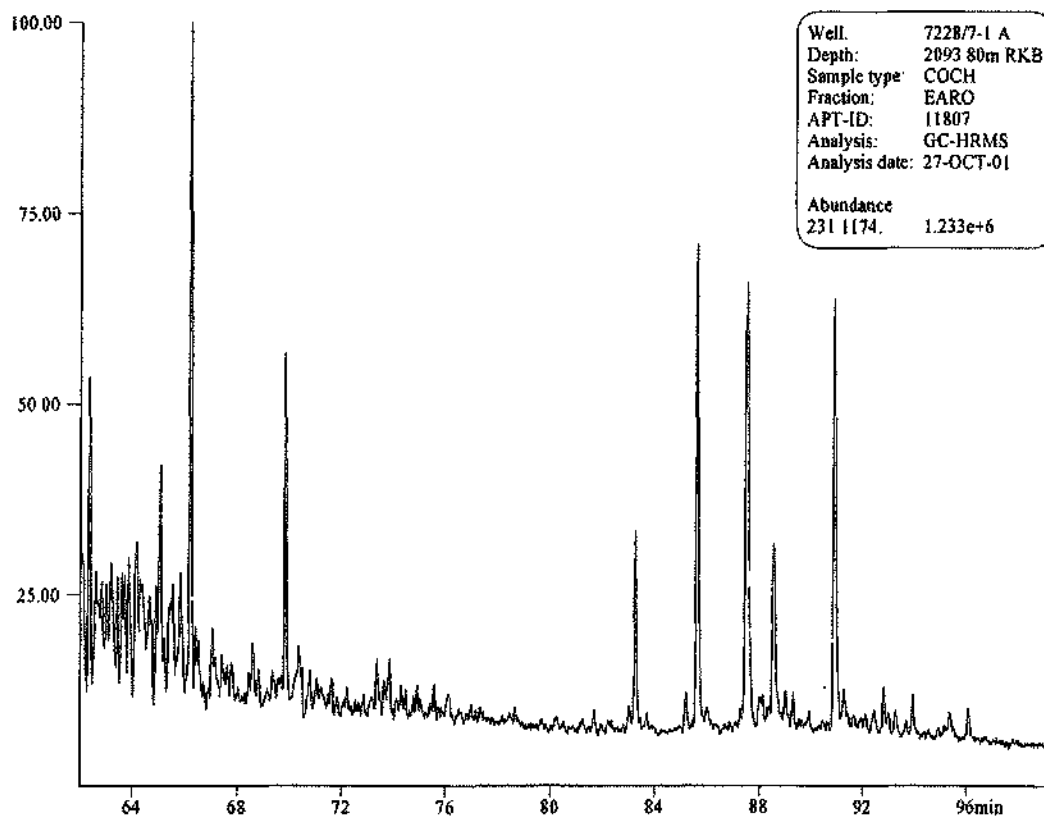
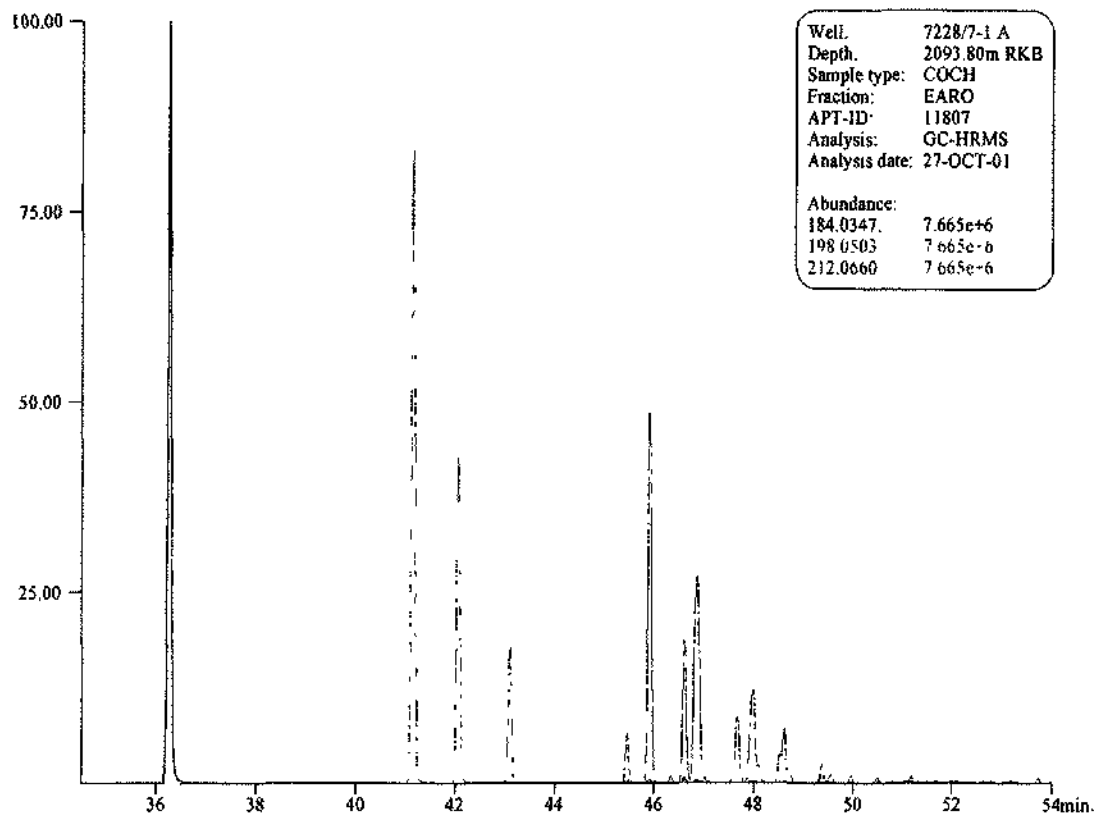


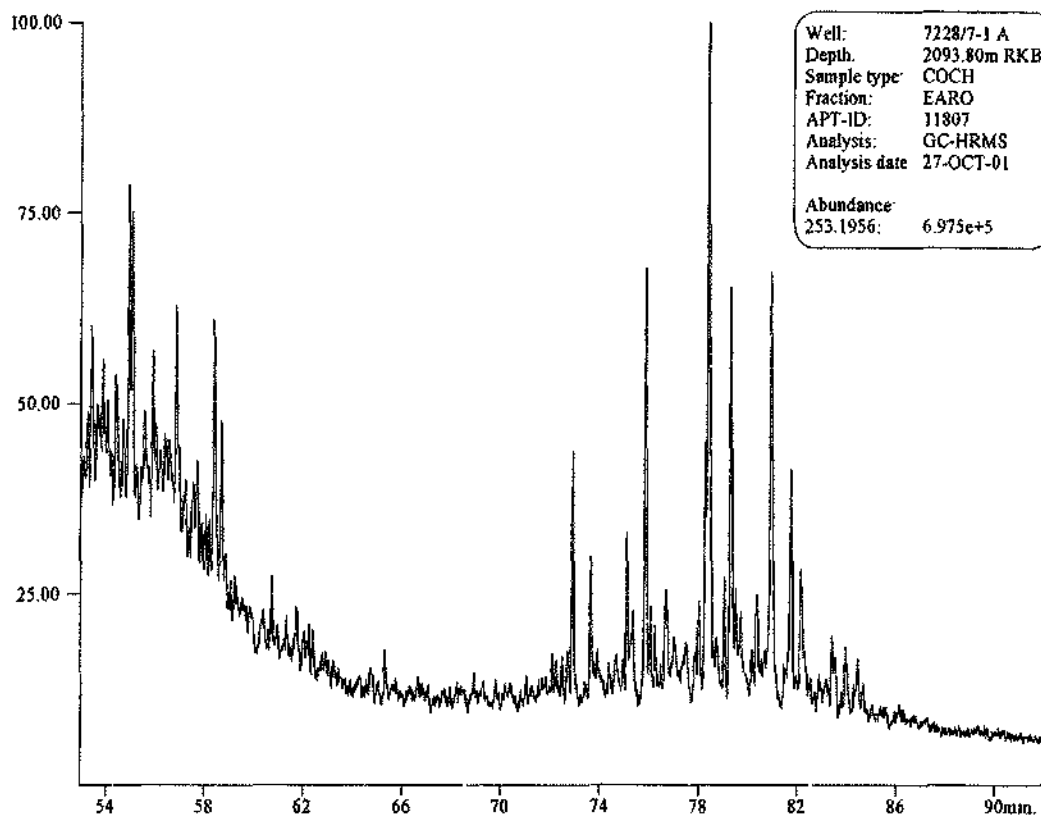


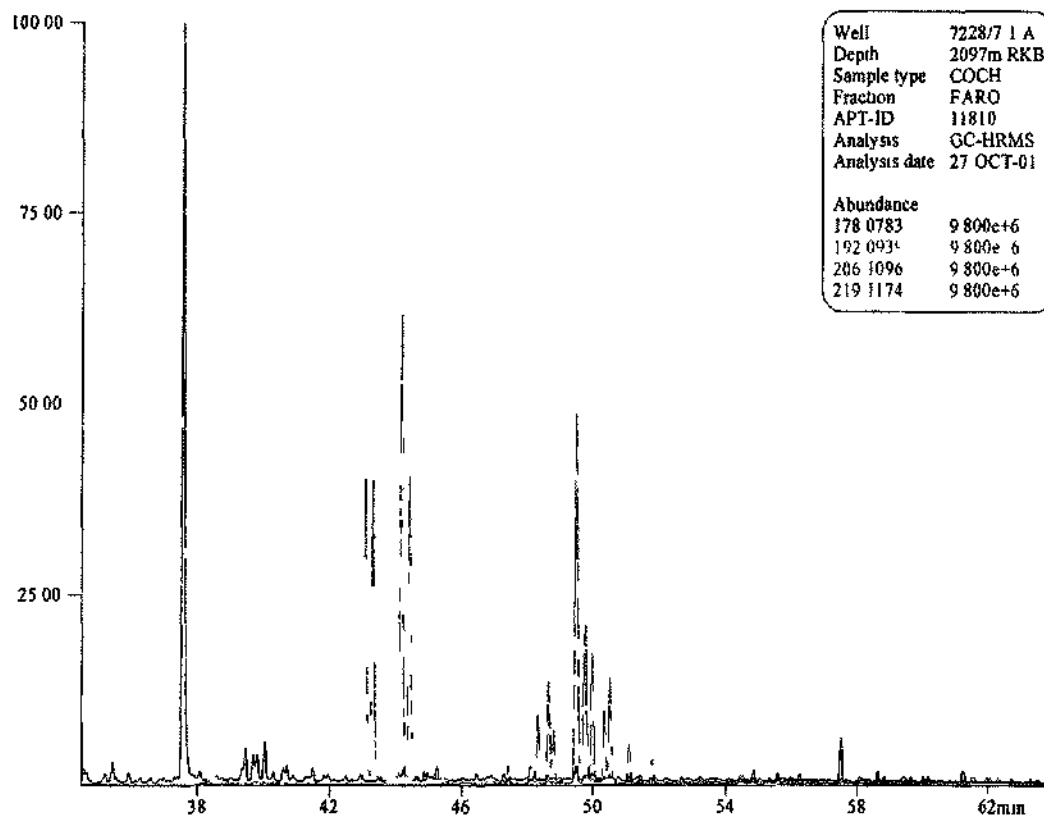
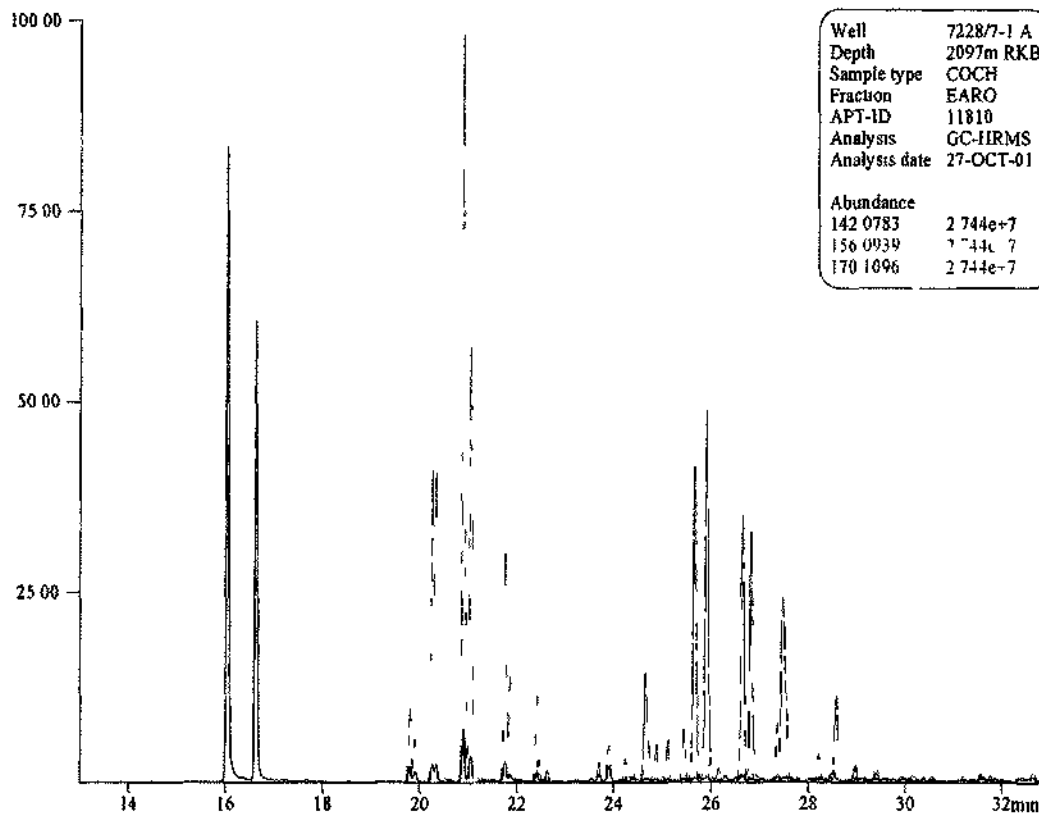


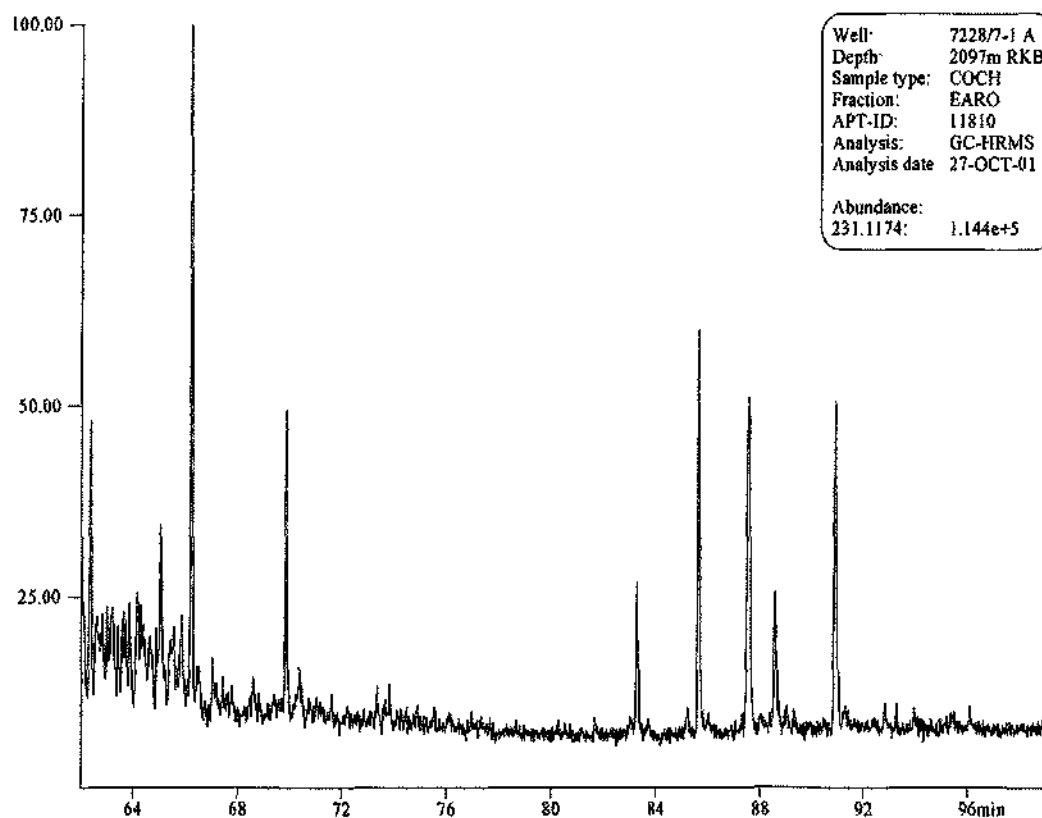
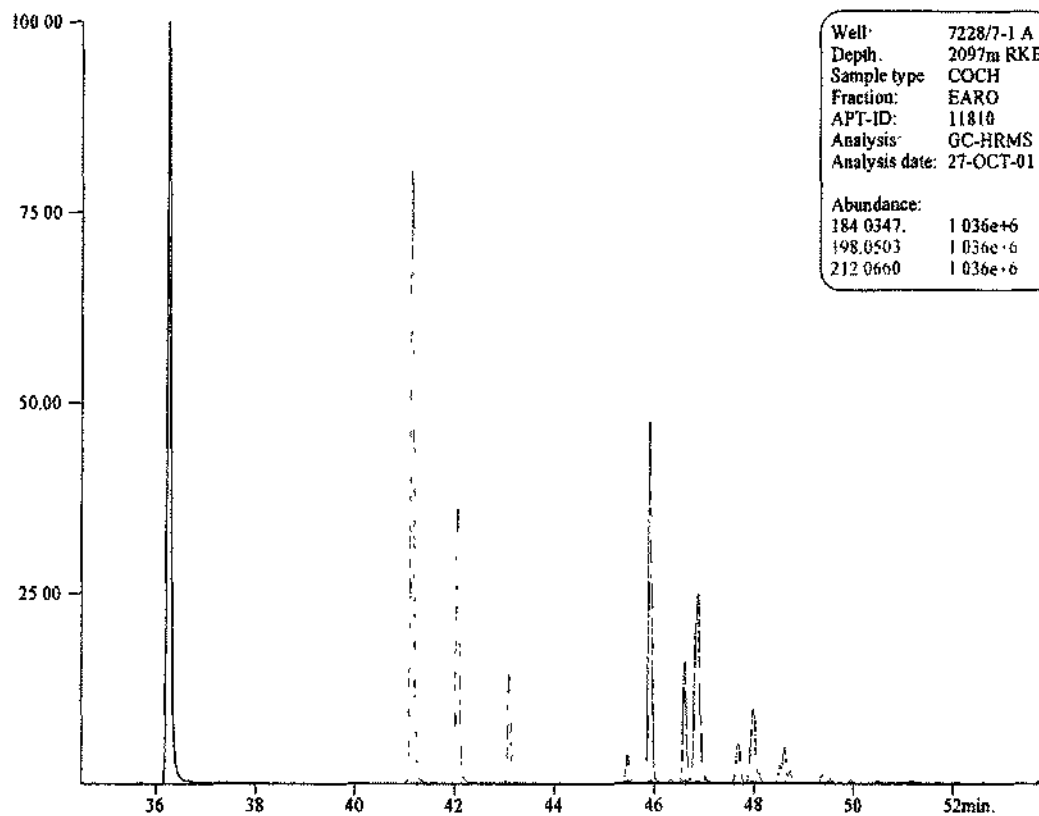


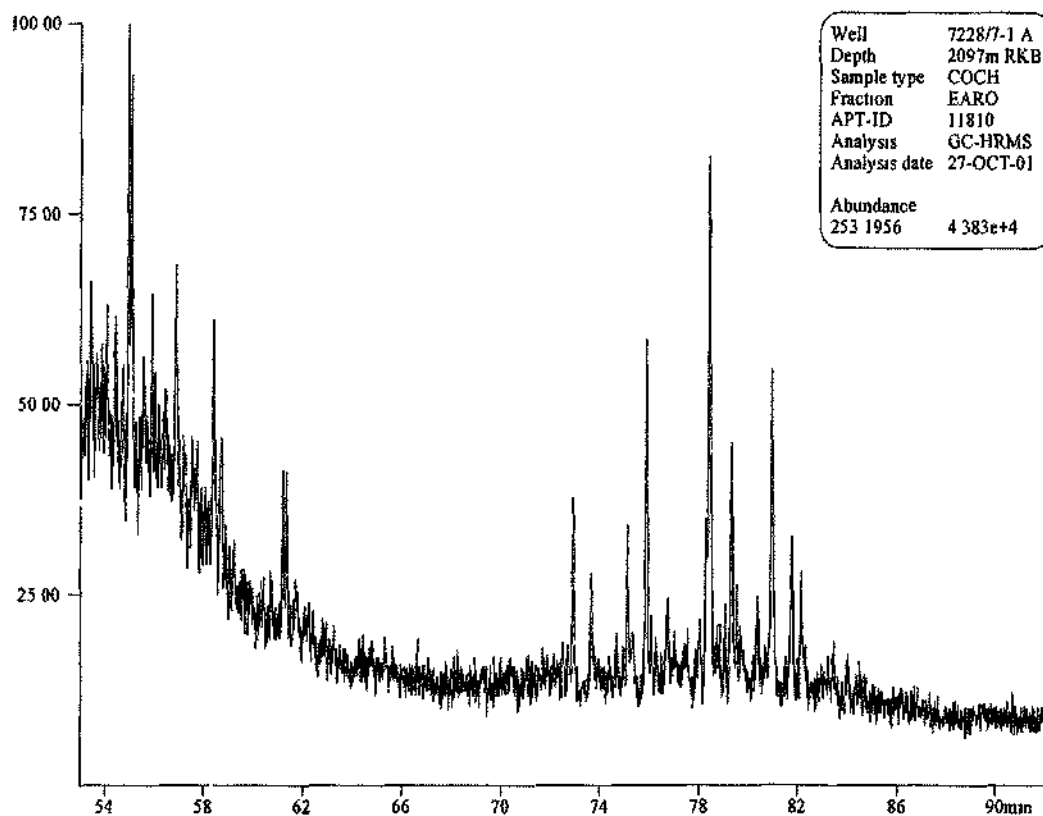


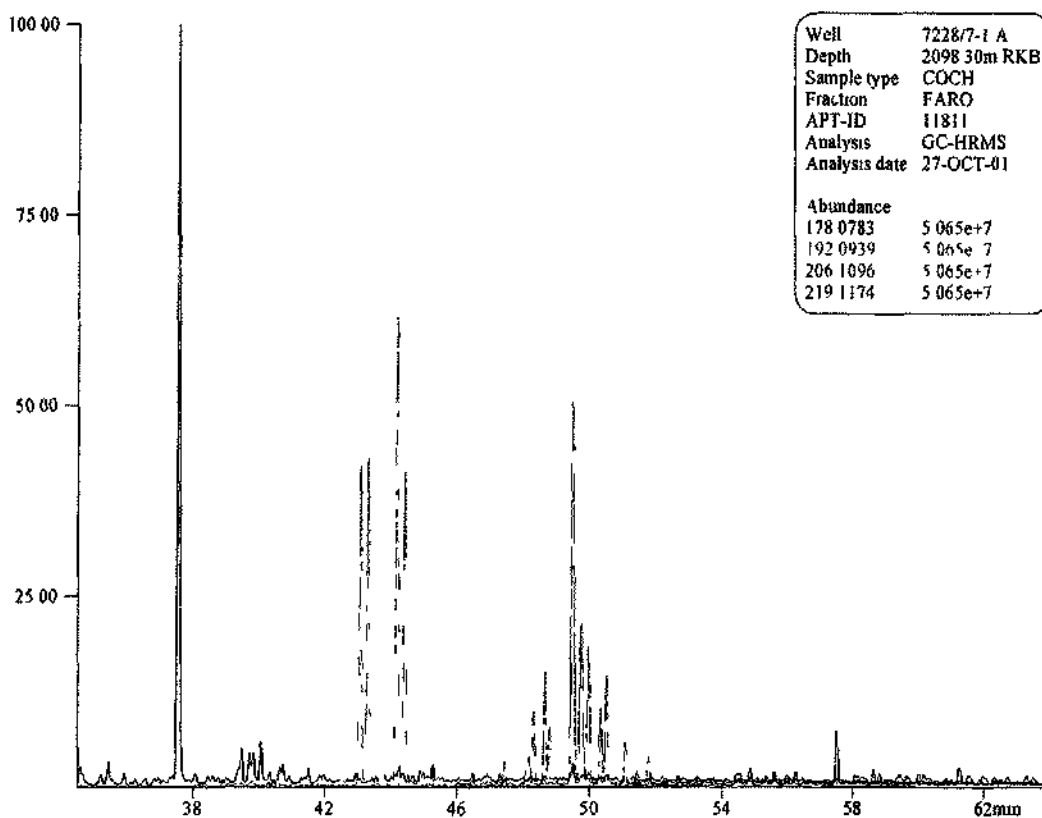
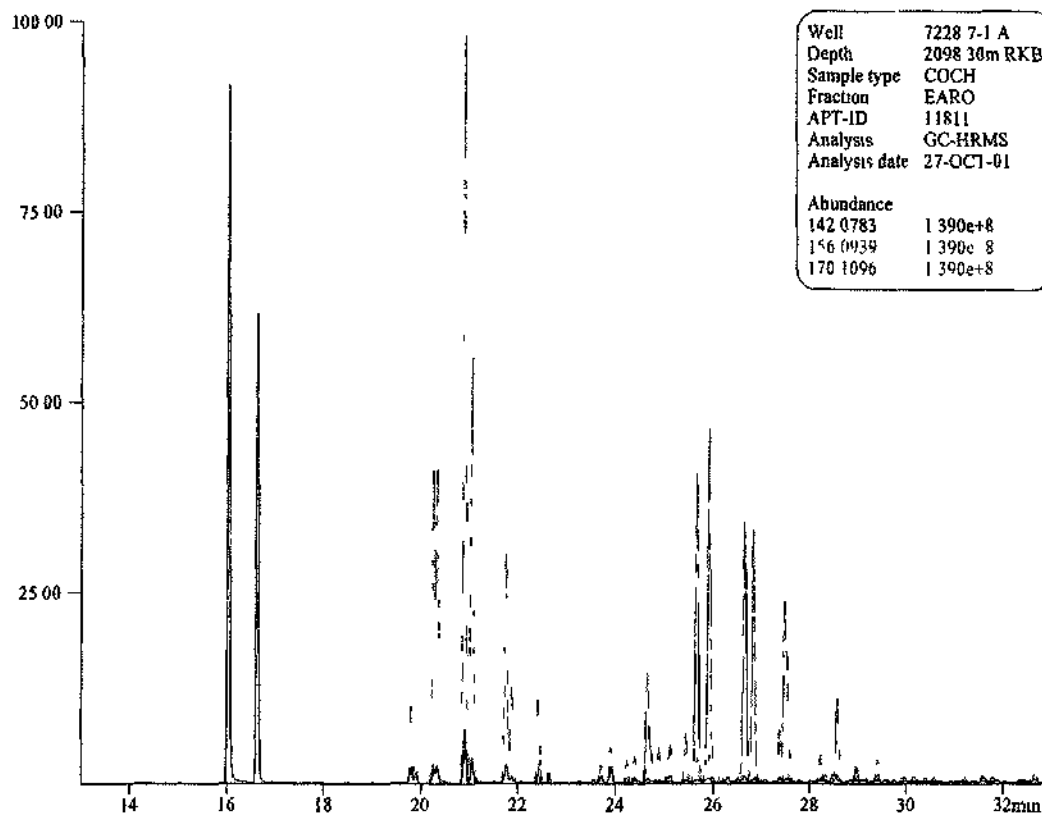


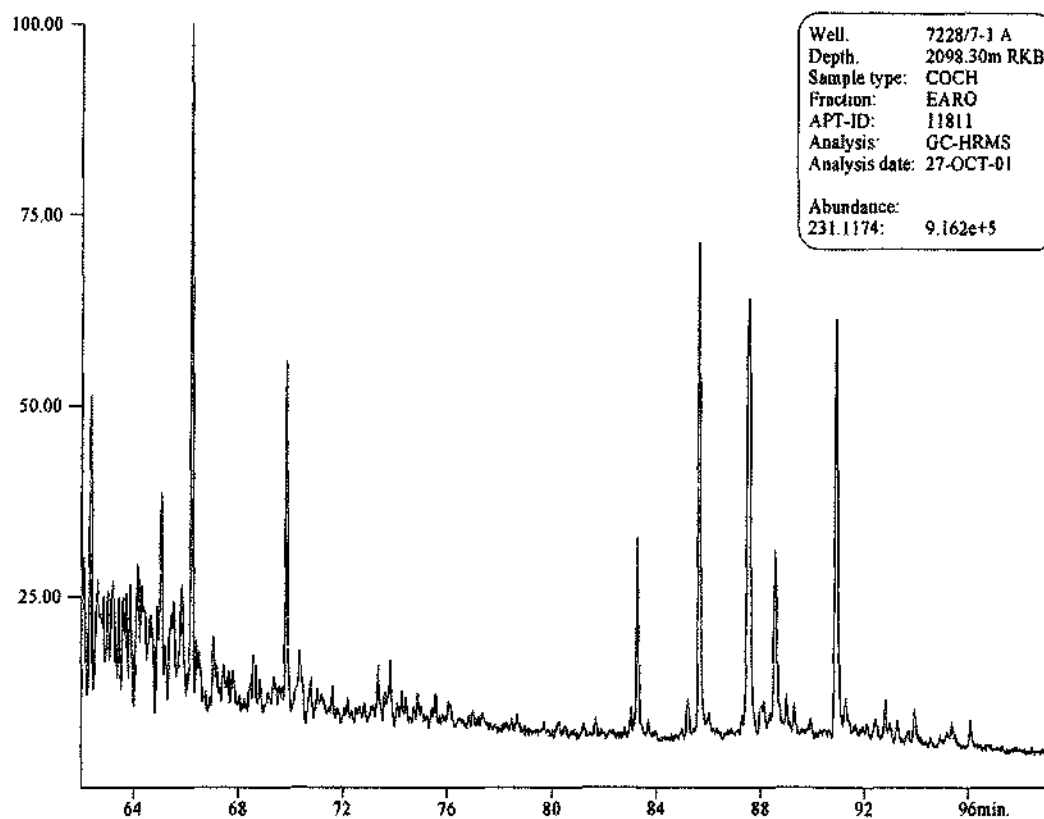
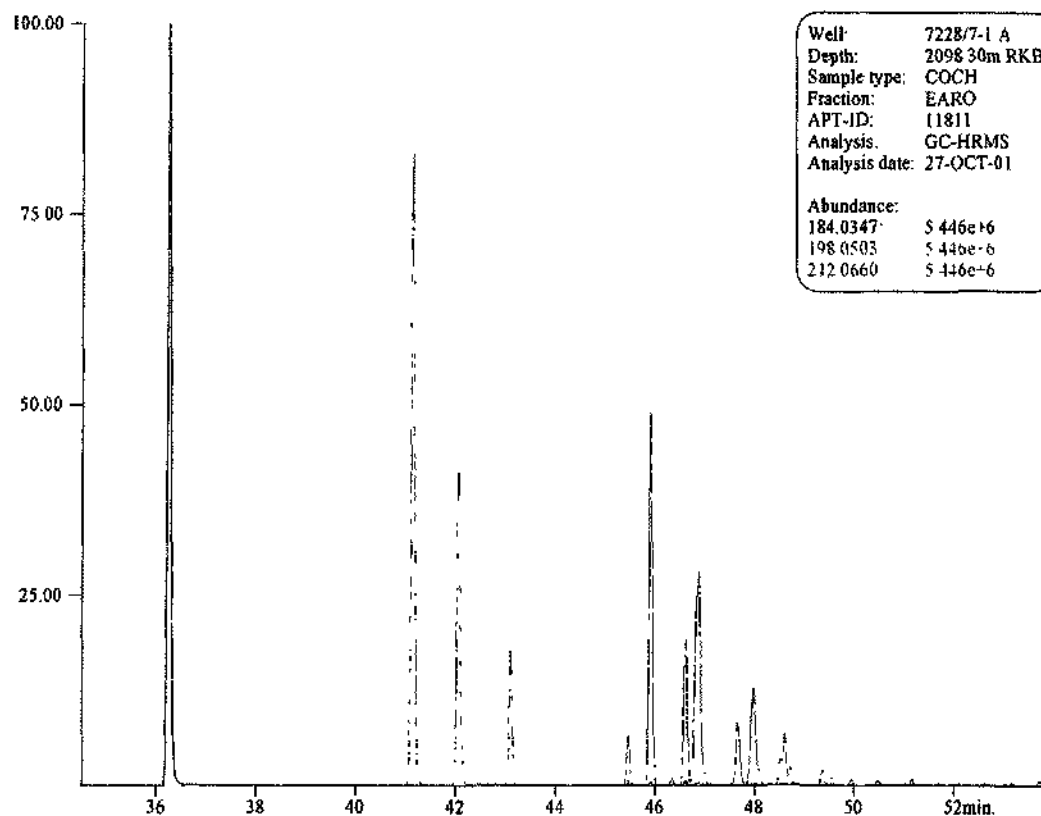


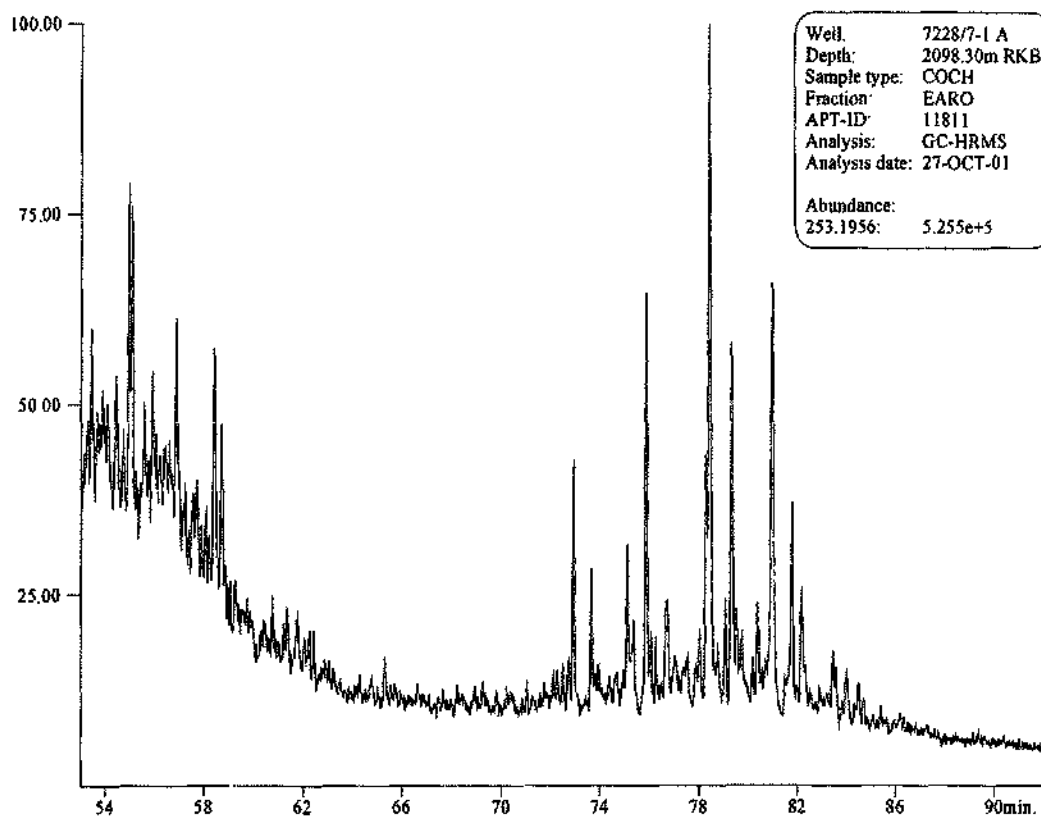


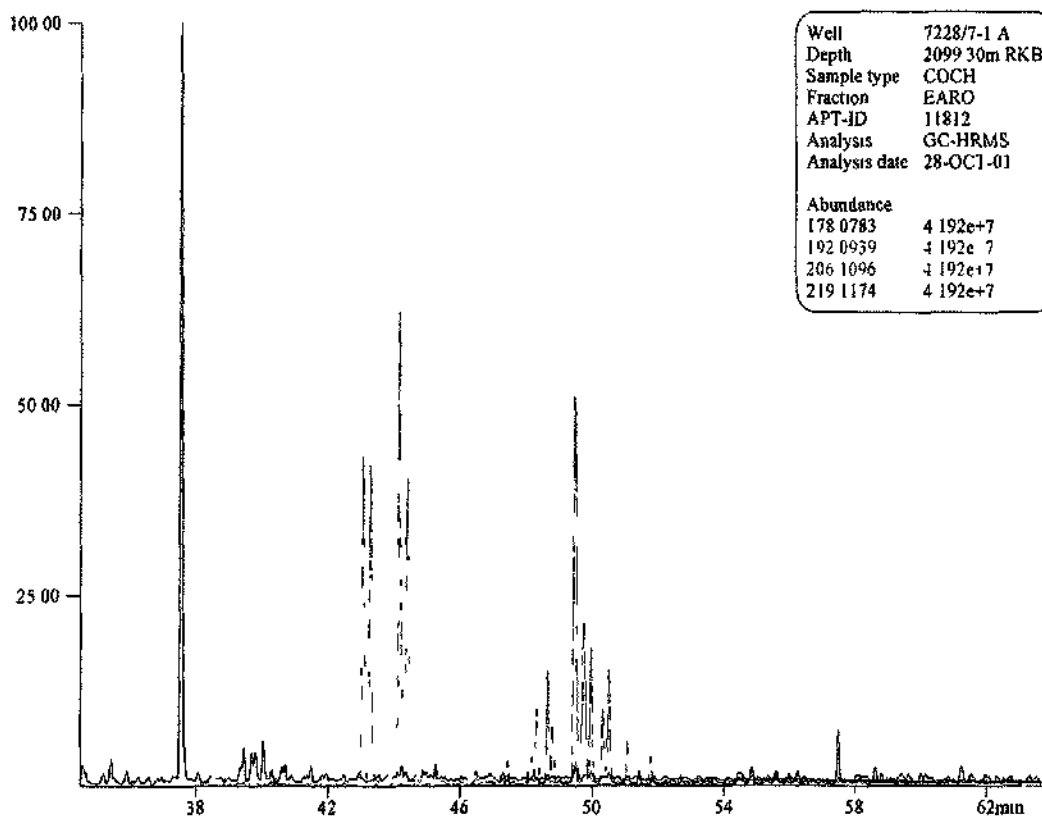
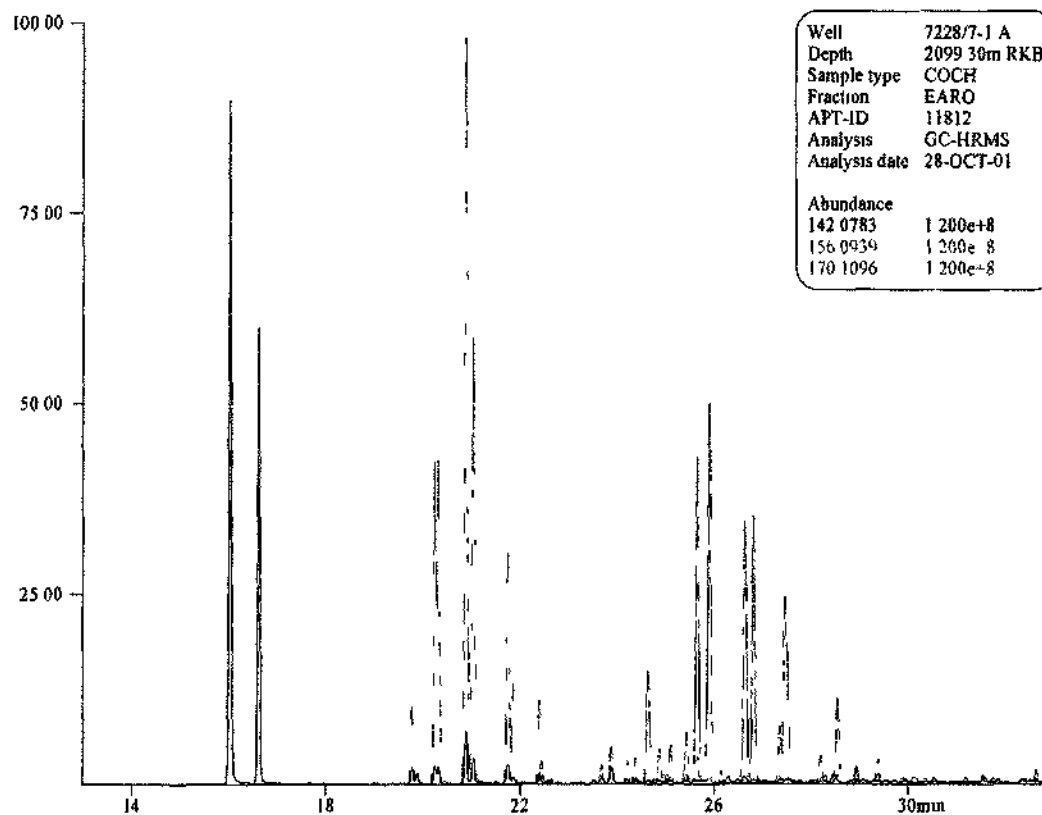


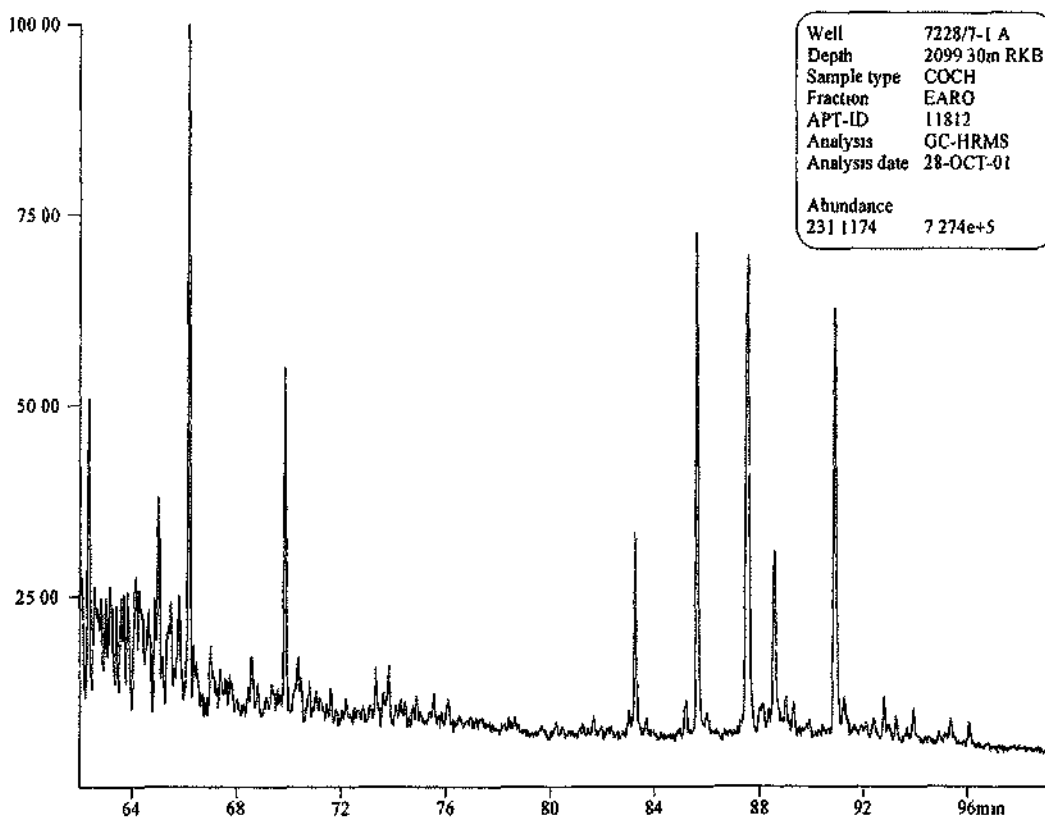
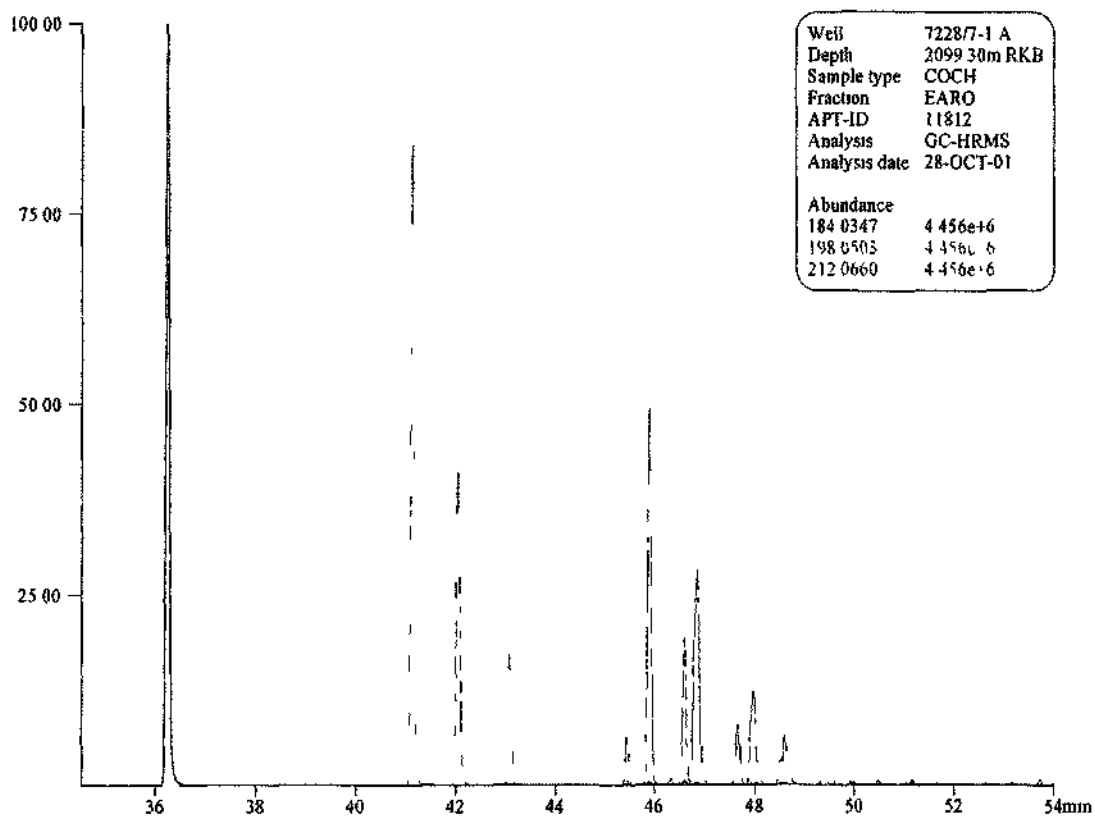


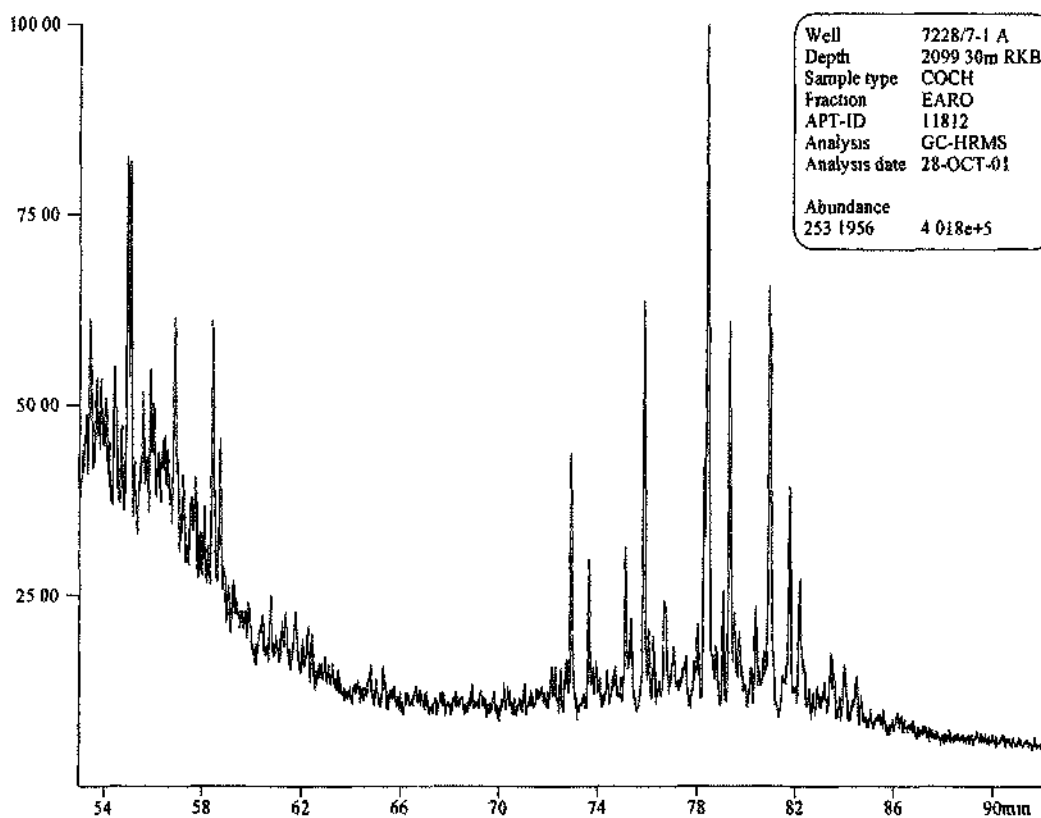


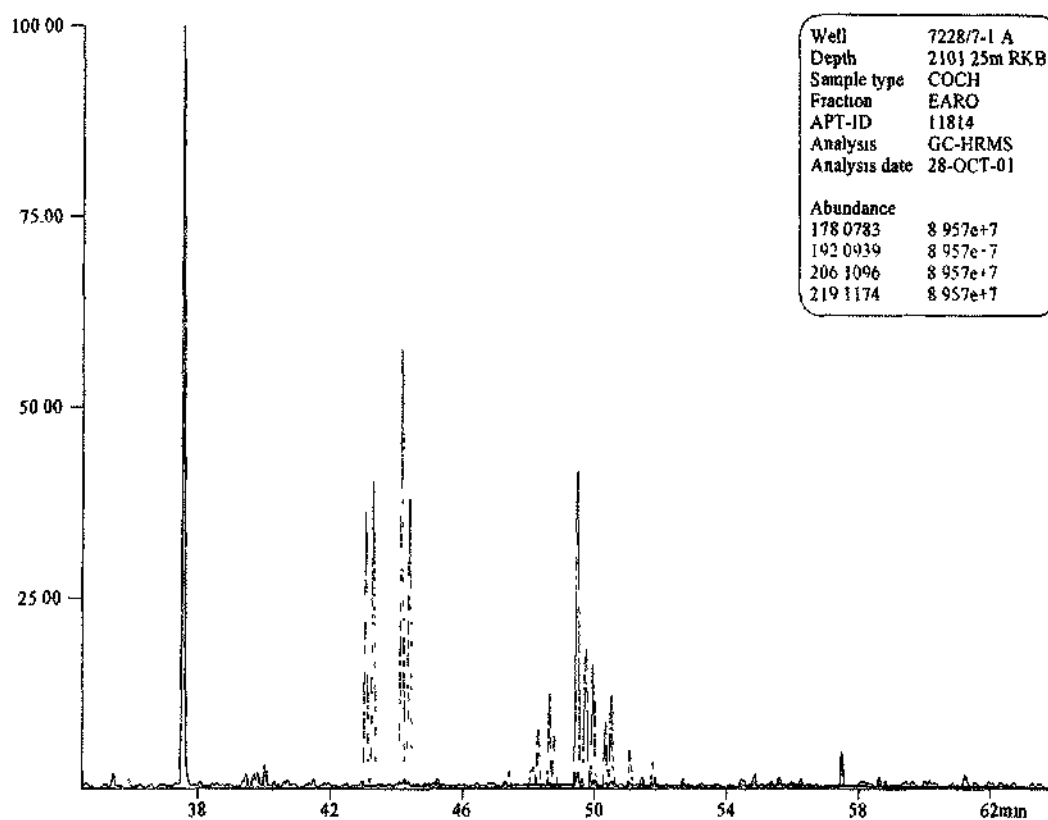
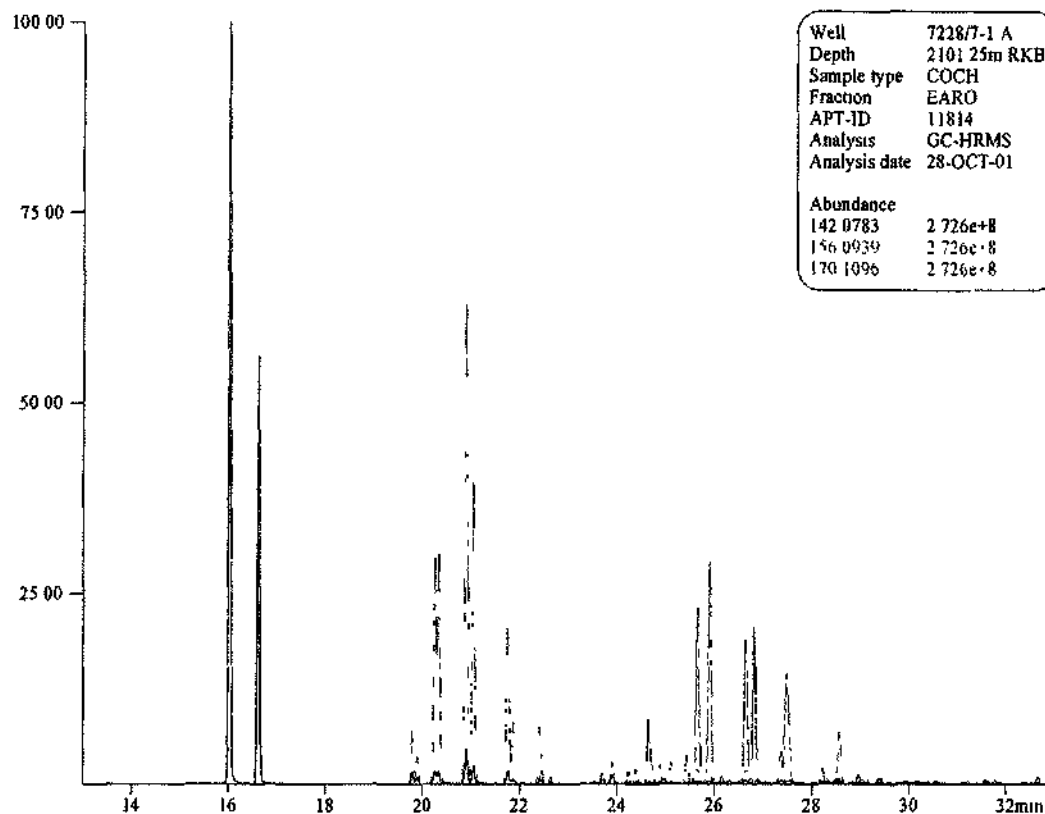


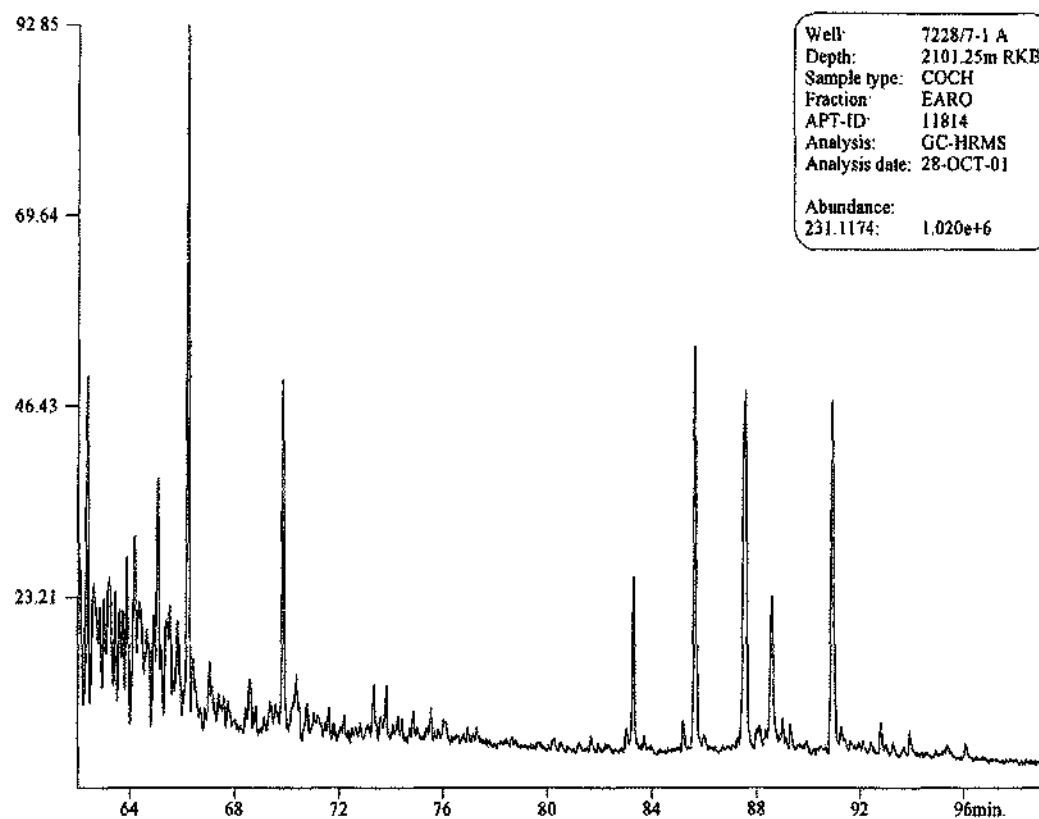
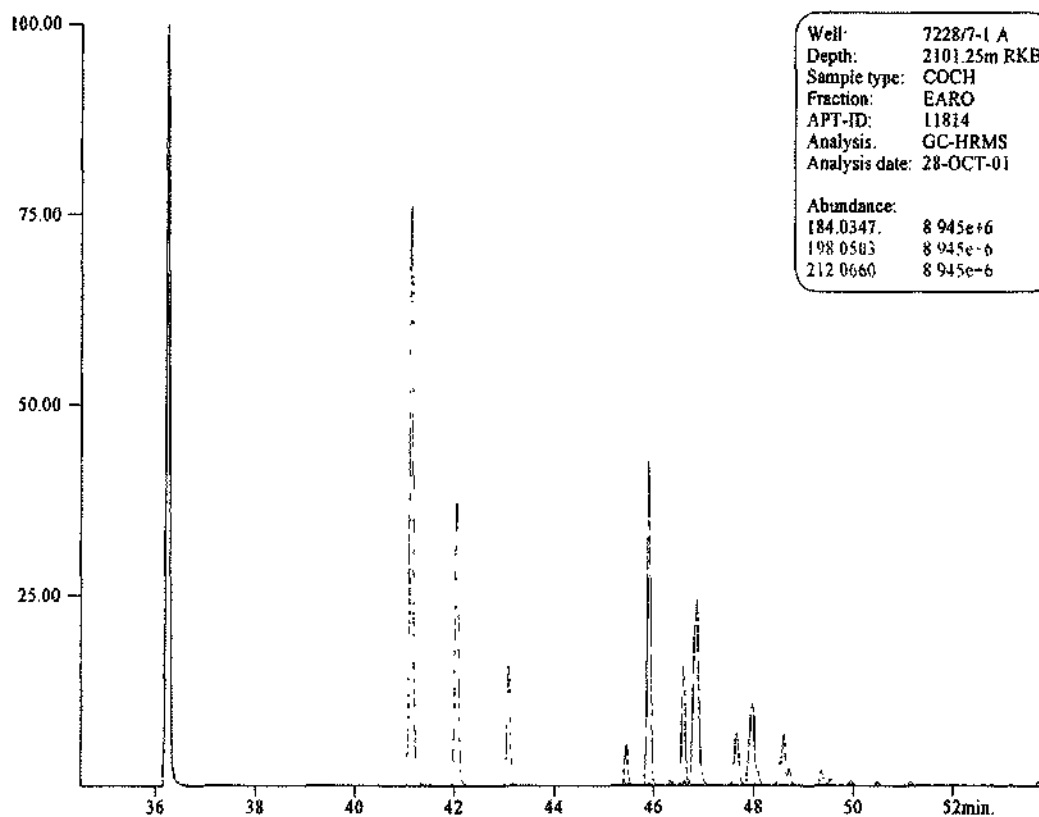


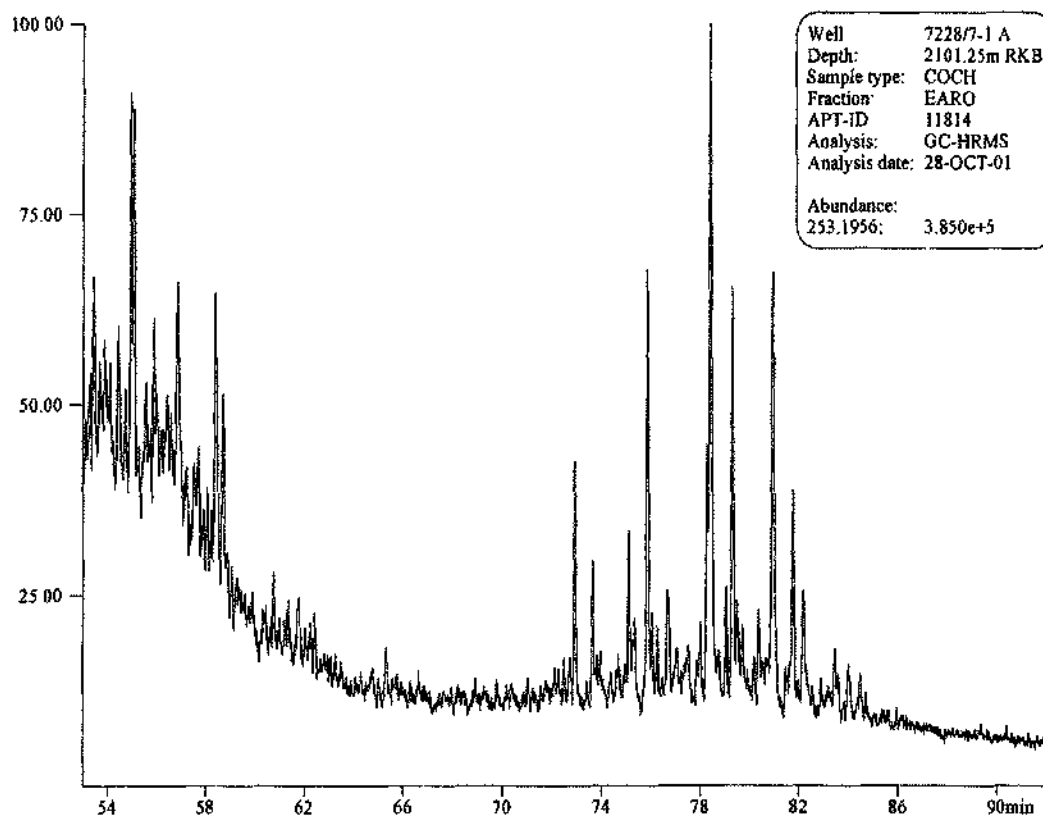


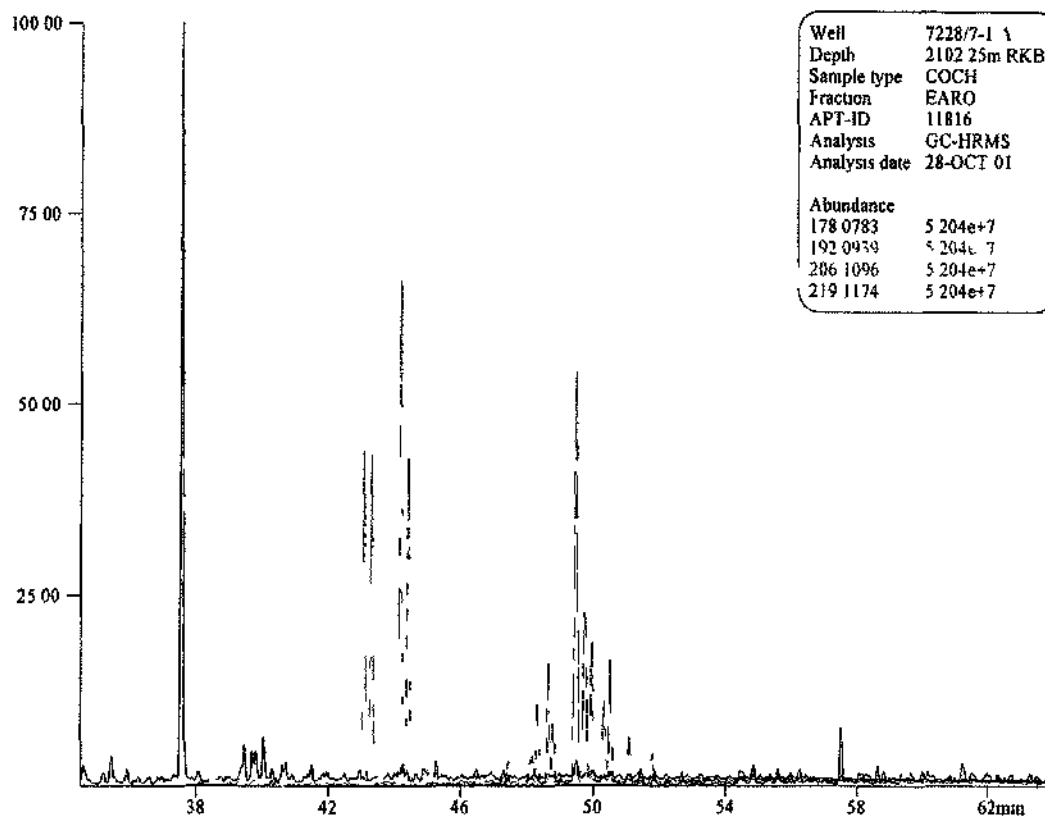
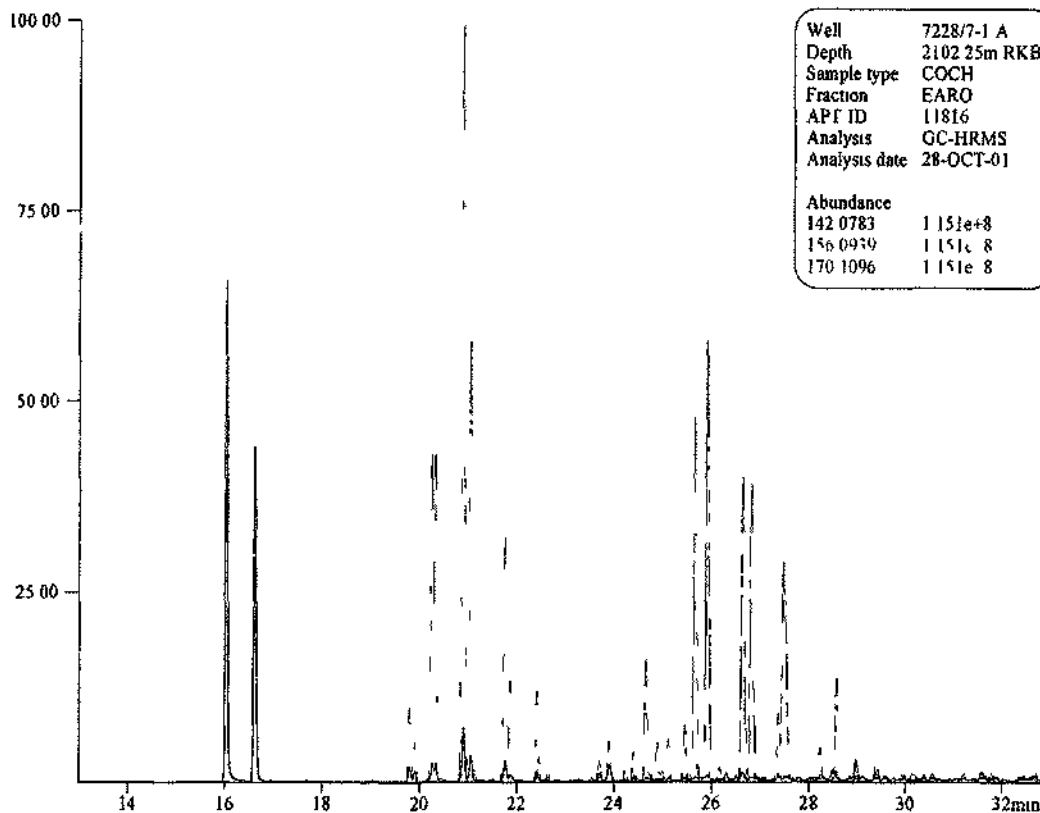


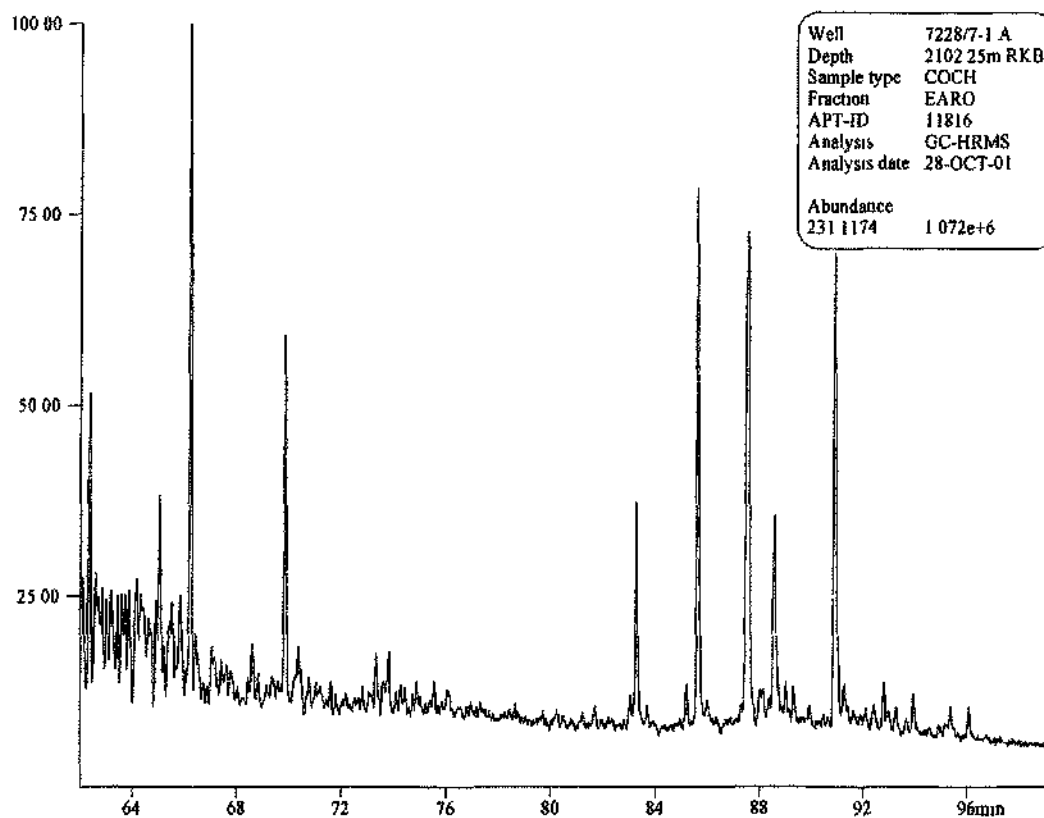
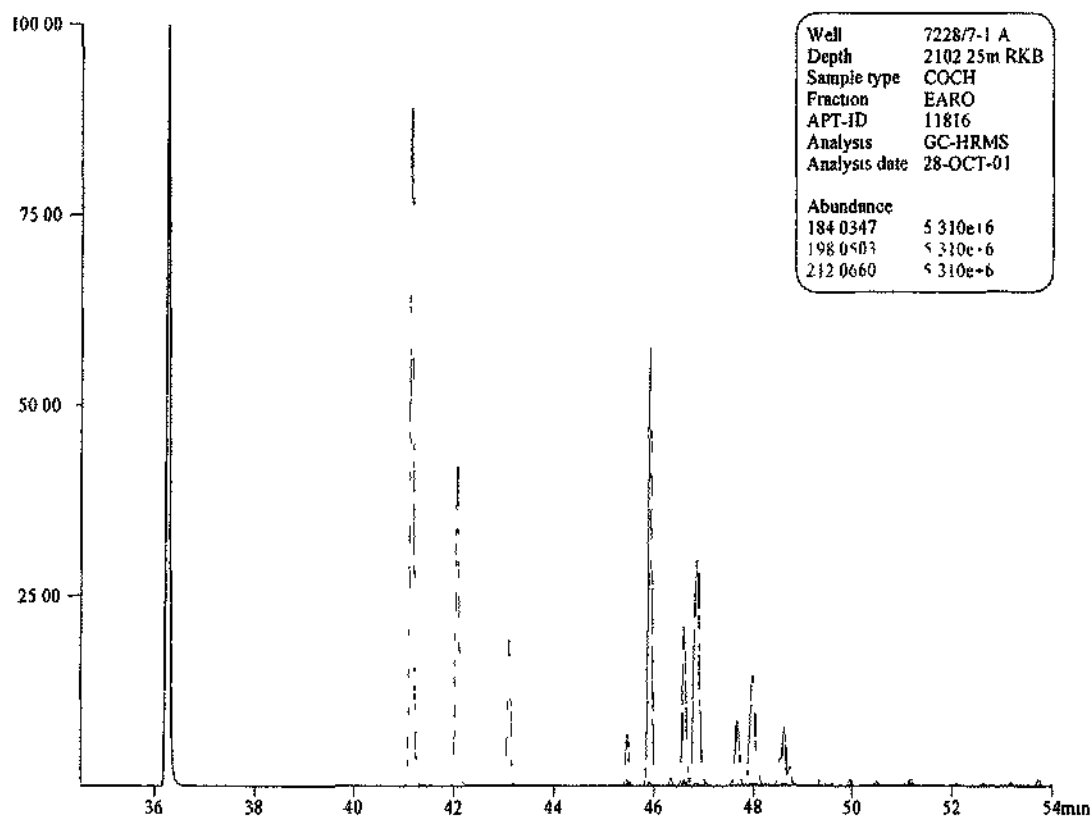


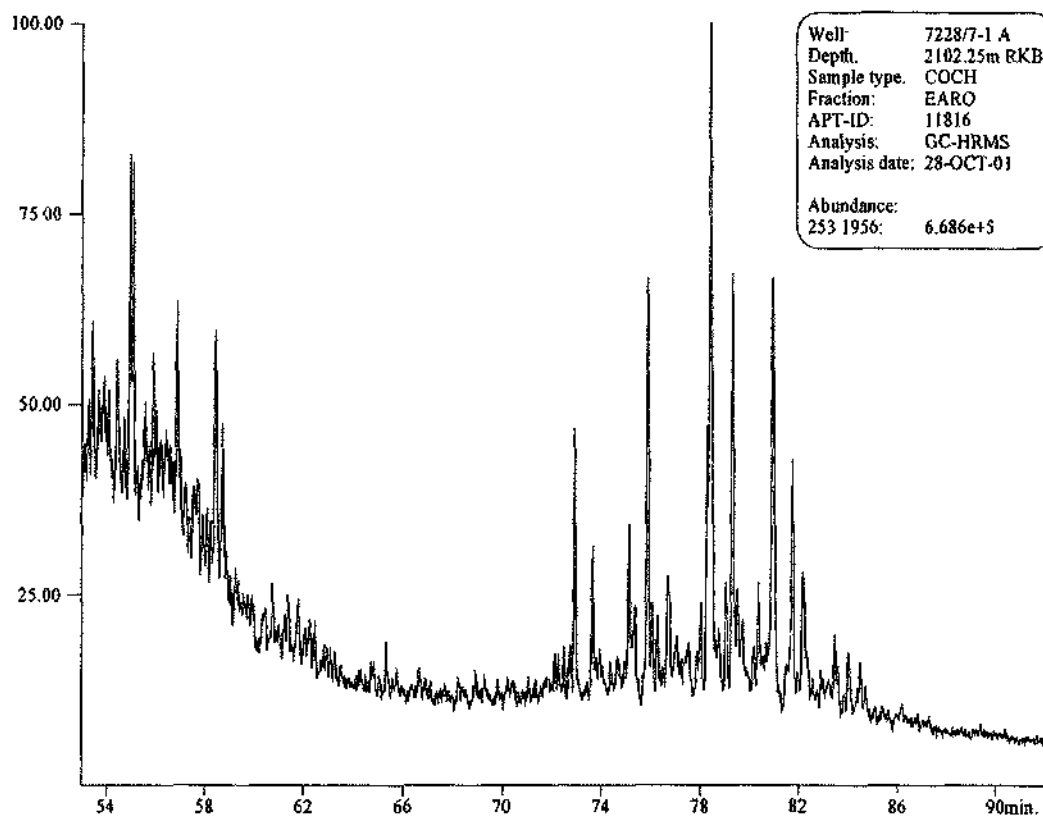


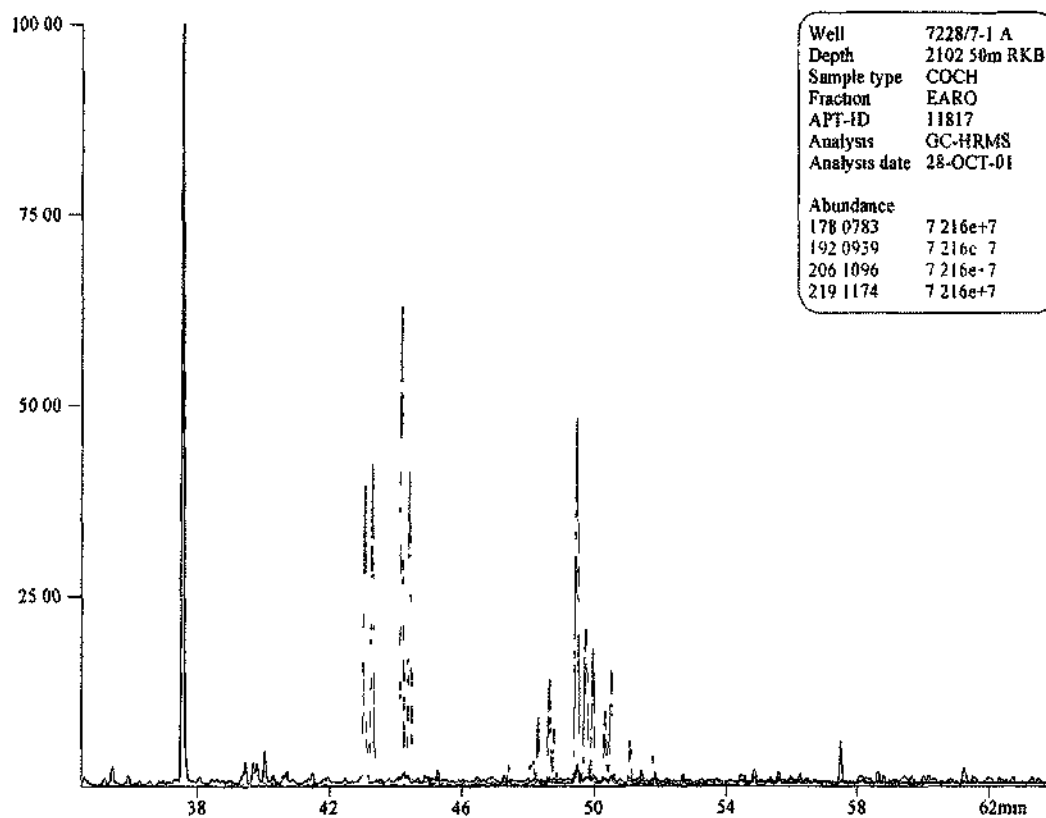
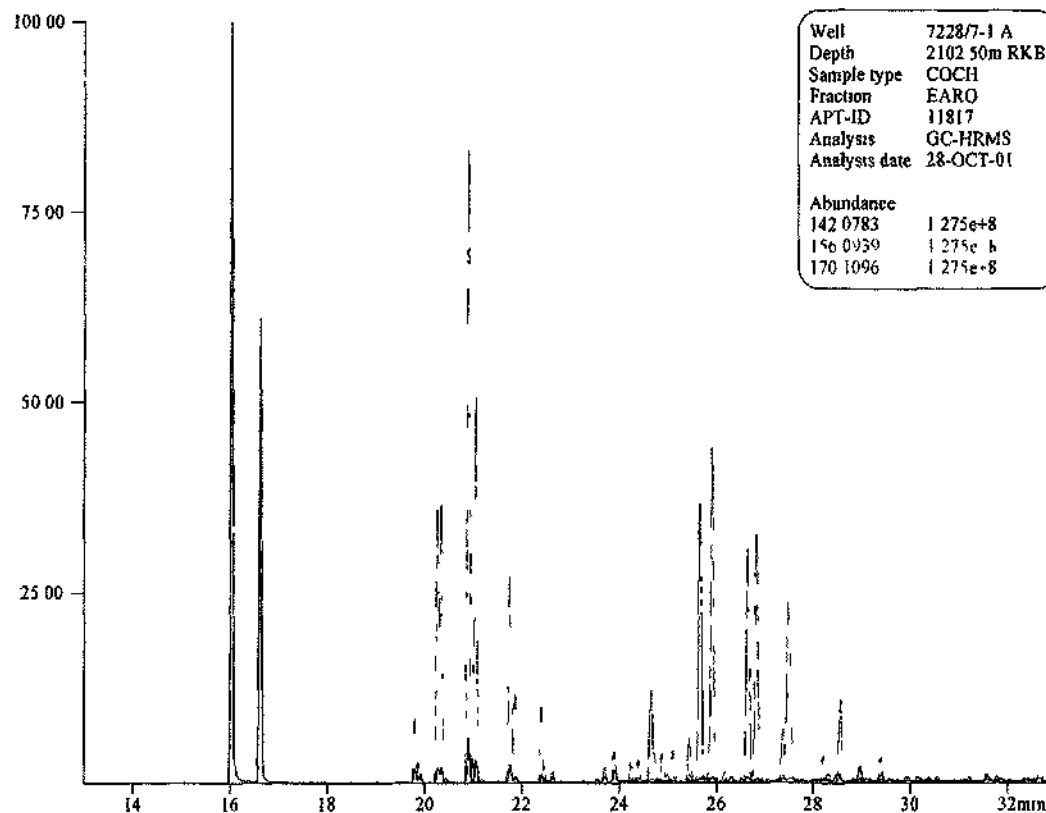


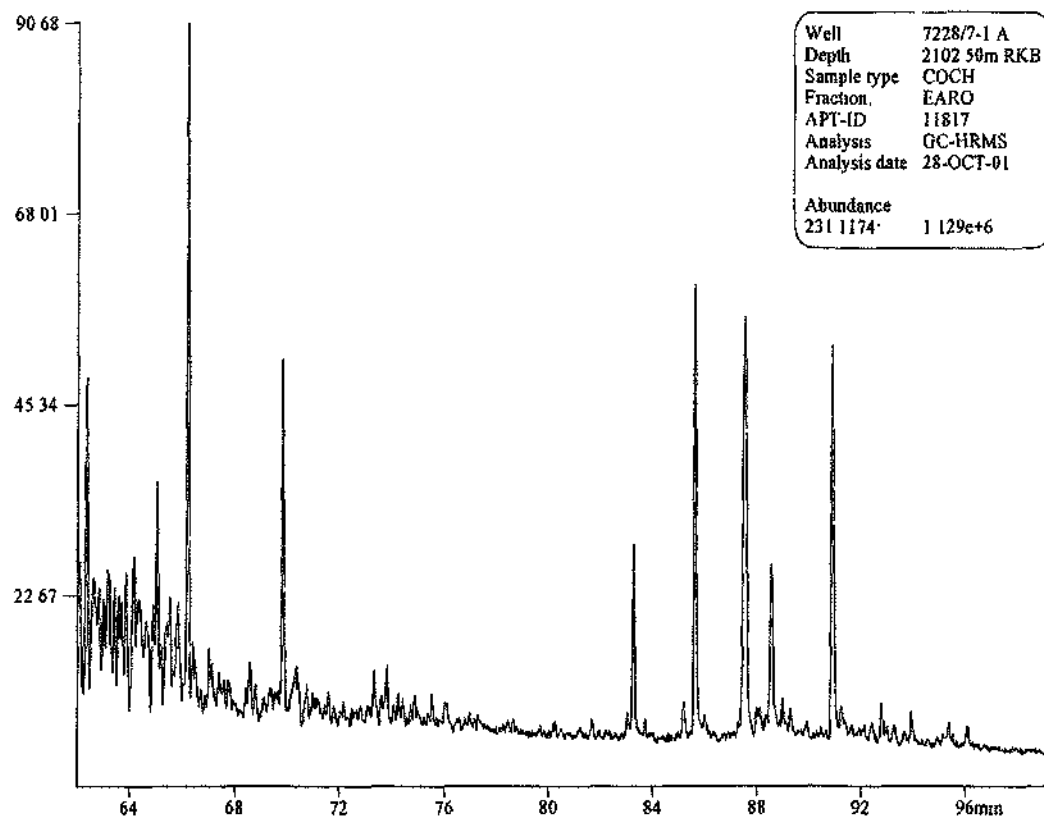
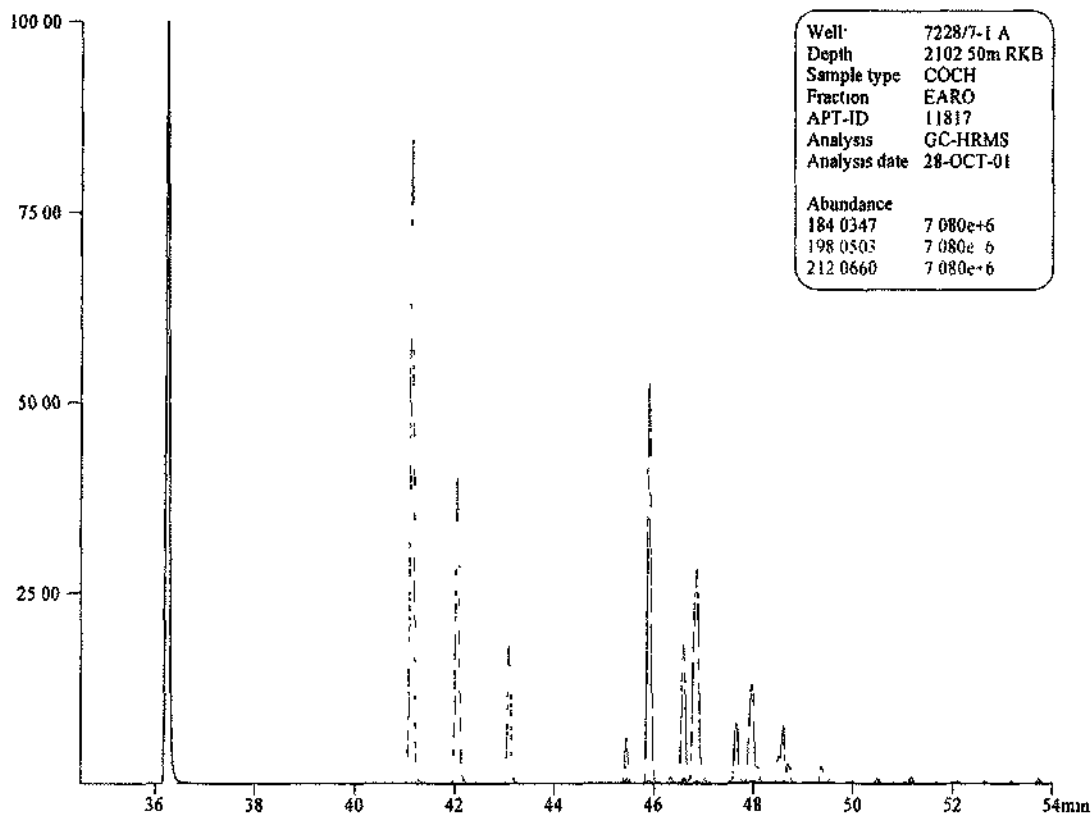


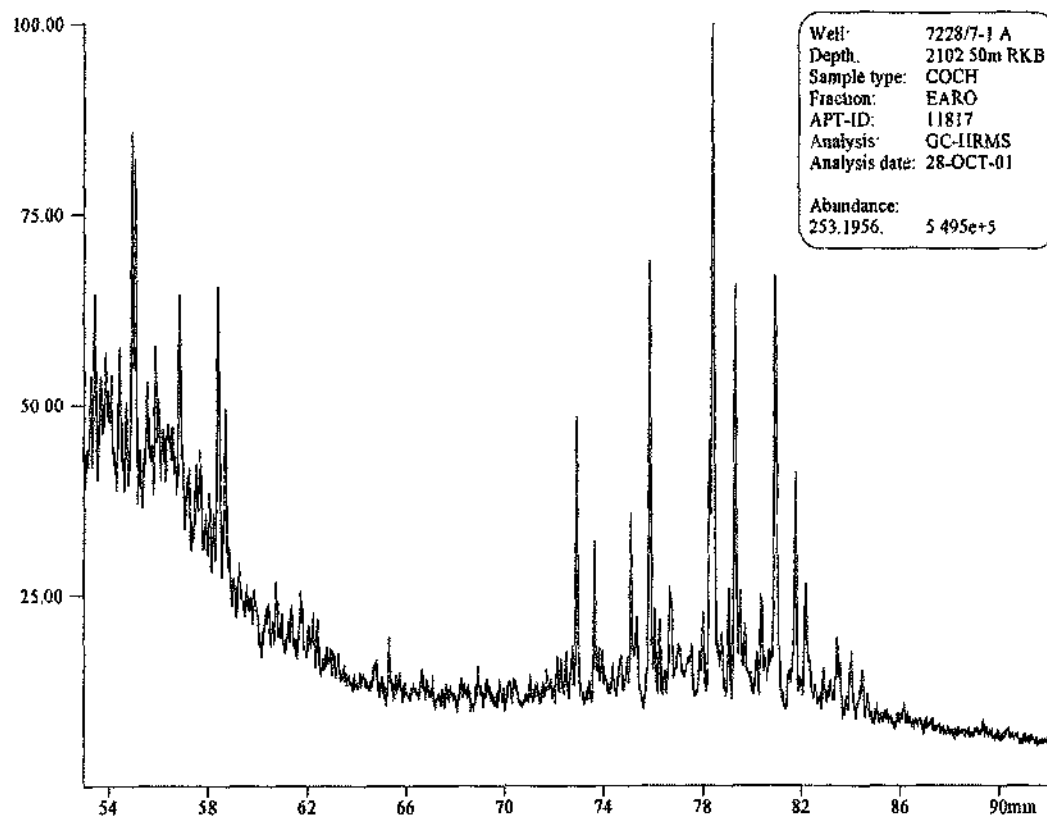


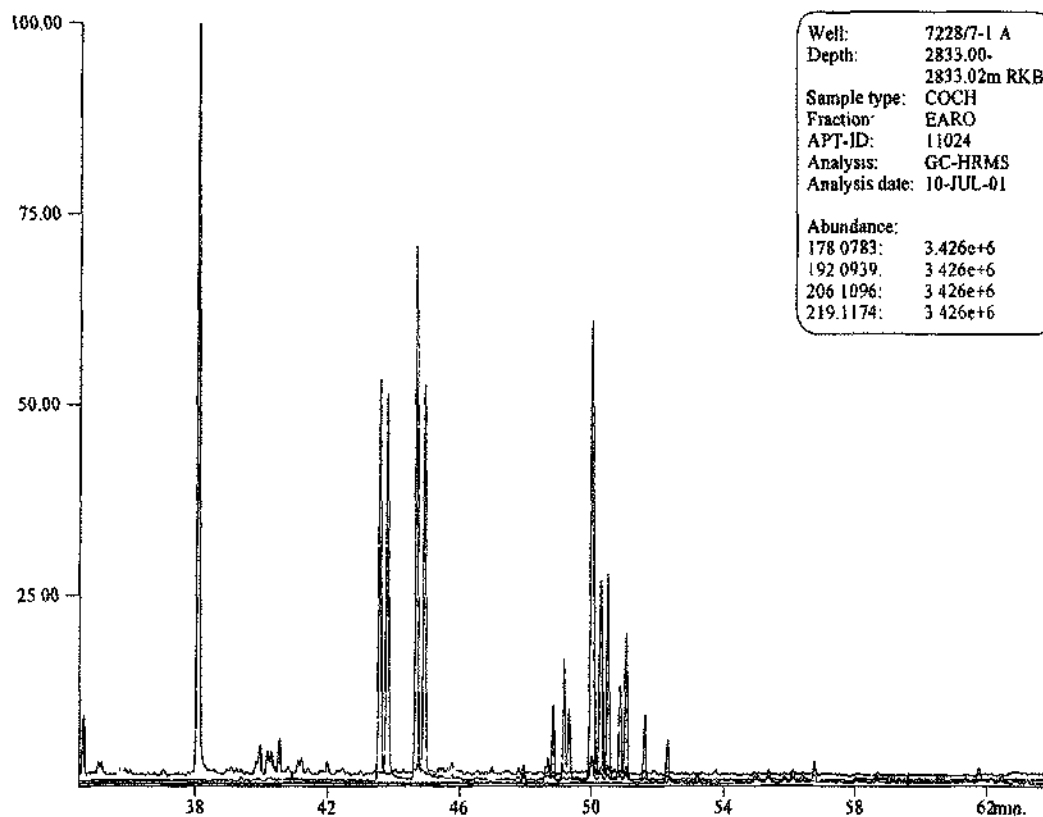
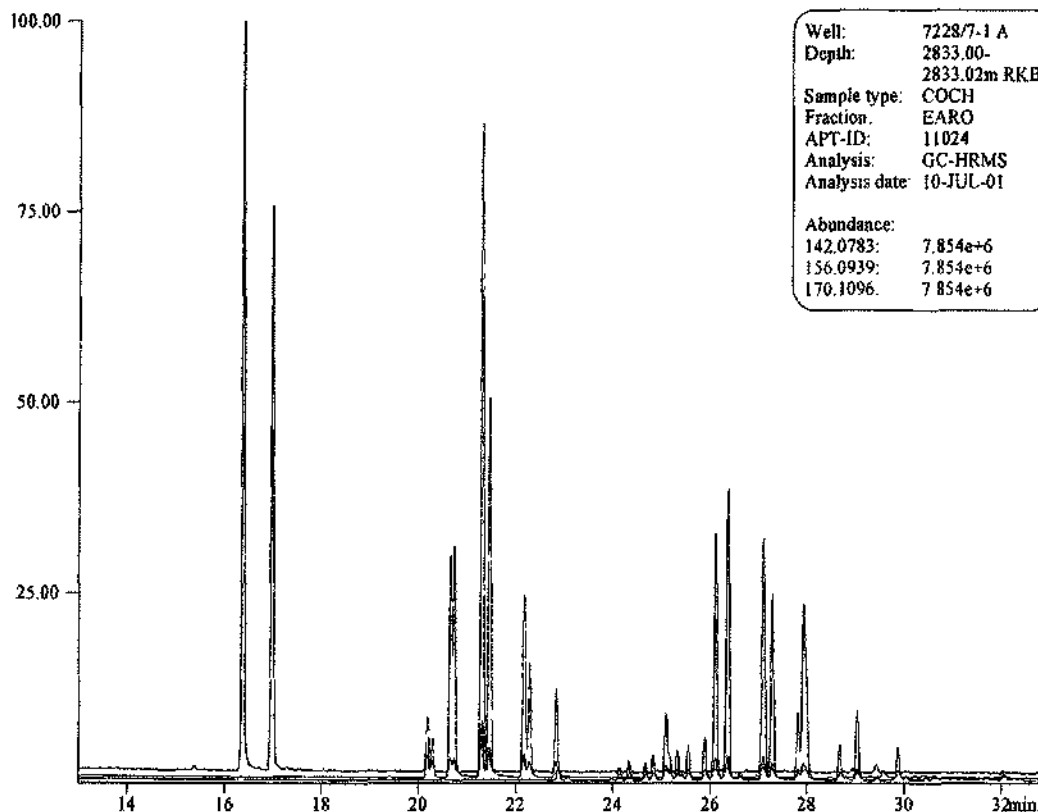


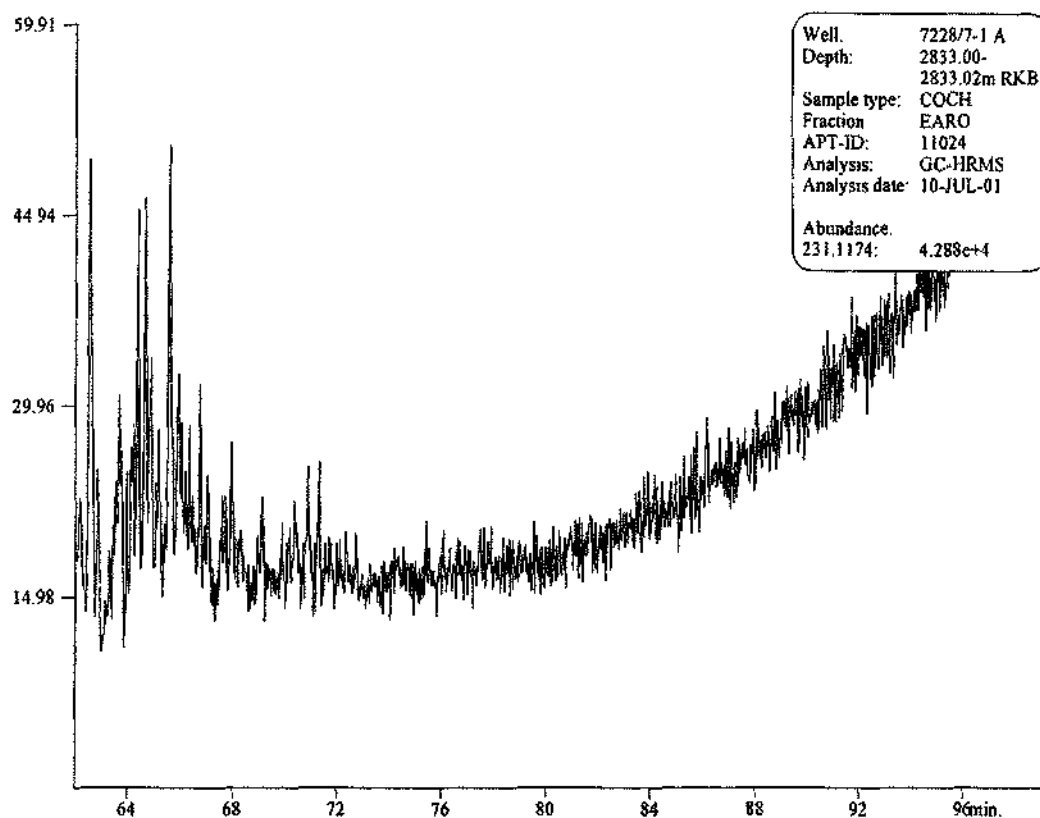
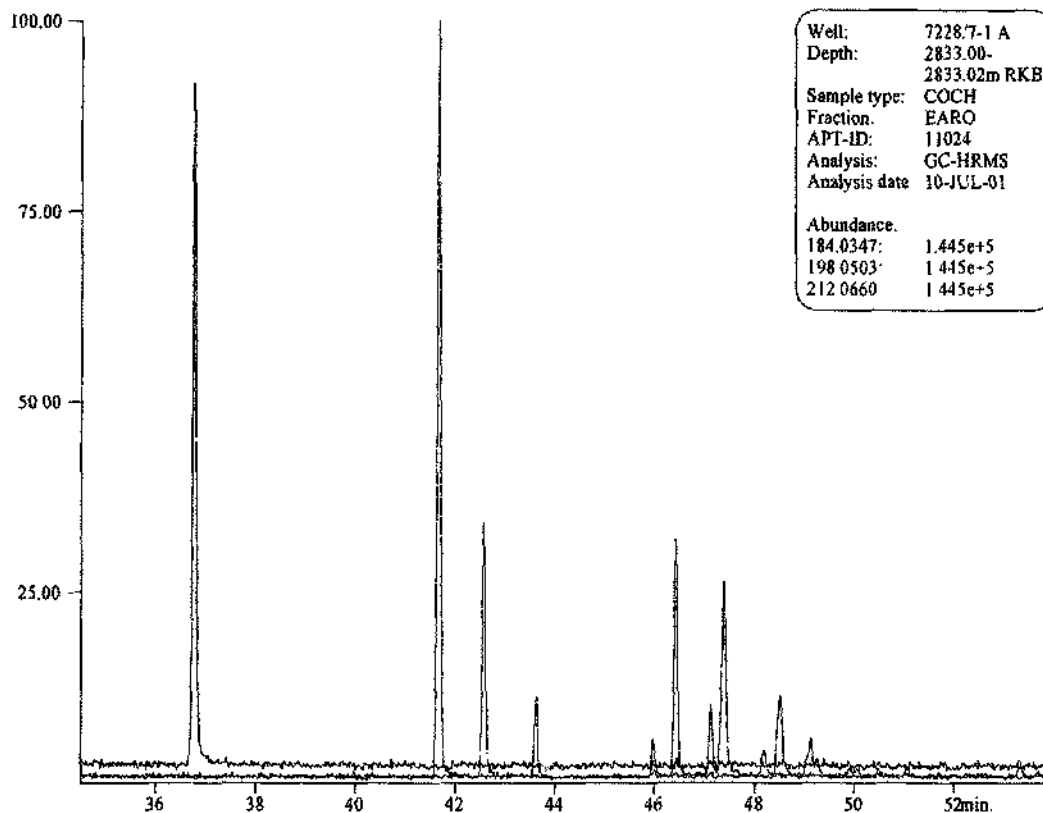






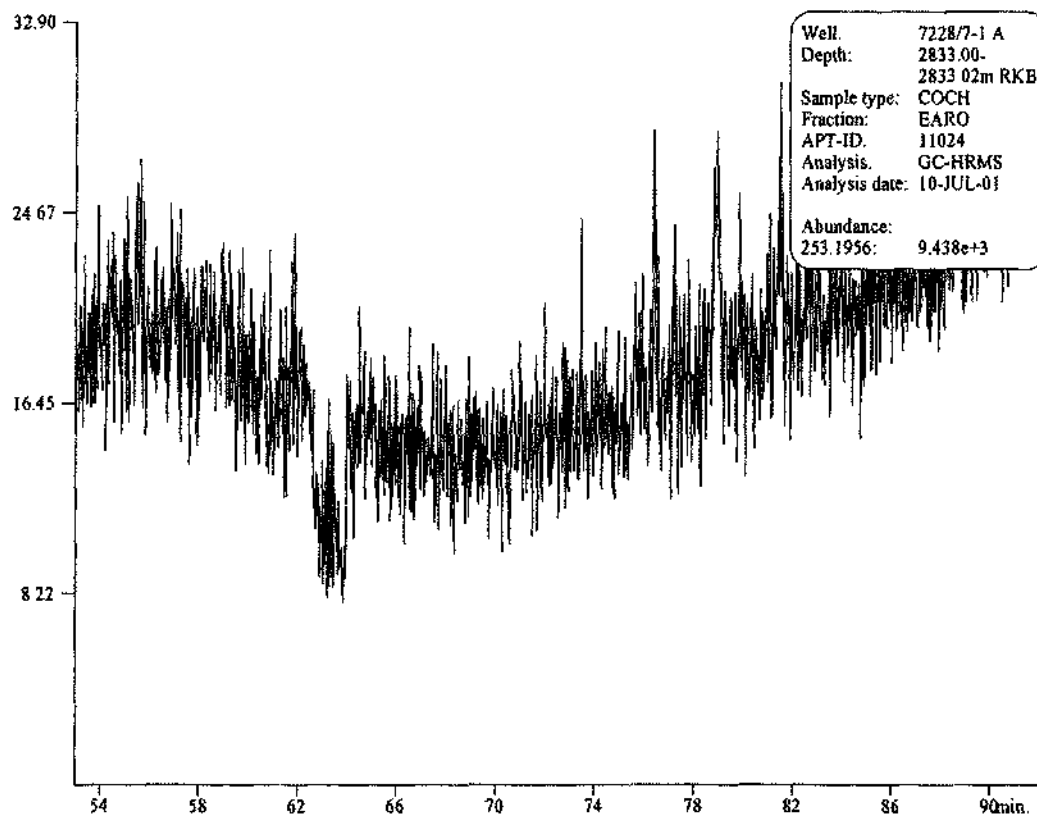








Petroleum Geochemistry Data Report - Reservoir Study 7228/7-1 A, 7228/7-1 B and 7228/7-1 ST3



Experimental Procedures

All procedures follow NIGOGA, 4th Edition. Below are brief descriptions of procedures/analytical conditions.

Sample preparation

Cuttings samples are washed in water to remove mud. When oil based mud is used, soap (Zalo) is added to the sample and the sample is washed thoroughly in warm water to remove mud and soap.

Extraction

A Soxtec Tecator instrument is used. Thimbles are pre extracted in dichloromethane with 7% (vol/vol) methanol, 10 min boiling and 20 min rinsing. The crushed sample is weighed accurately in the pre extracted thimbles and boiled for 1 hour and rinsed for 2 hours in approximately 80 cc of dichloromethane with 7% (vol/vol) methanol. Copper blades activated in concentrated hydrochloric acid are added to the extraction cups to cause free sulphur to react with the copper. An aliquot of 10% of the extract is transferred to a pre weighed bottle and evaporated to dryness. The amount of extractable organic matter is calculated from the weight of this 10% aliquot.

Deasphalting

The extract is evaporated almost to dryness before a small amount of dichloromethane (3 times the amount of EOM) is added. Then pentane is added in excess (40 times the volume of EOM and dichloromethane). The solution is stored for at least 12 hours in a dark place before the solution is filtered or centrifuged and the weight of the asphaltenes measured.

MPLC

The MPLC is constructed as described by Radke et al. (1980). The system includes two HPLC pumps, sample injector, sample collector, RI-detector, UV-detector and two packed columns. The pre column is filled with Kieselgel 100, which is heated at 600 °C for 2 hours to deactivate it. The main column is a LiChroprep Si60, which is heated at 120 °C for 2 hours to make it water free.

Approximately 30 mg of deasphalted oil or EOM diluted in 1 ml hexane is injected and separated into a saturated, an aromatic and a polar fraction.

TOC and Rock-Eval

A Rock-Eval 6 instrument is used. The analysis is performed in two steps, pyrolysis and oxidation, when TOC is measured. Jet-Rock 1 was run as every tenth sample and checked against the acceptable range given in NIGOGA.

Temperature programme

Pyrolysis: 300 °C (3 min.) - 25 °C/min. - 650 °C (0 min.)

Oxidation: 400 °C (3 min.) - 25 °C/min. - 850 °C (5 min.)

Iatroscan

An Iatroscan MK-5 (TLC/FID Analyser) instrument is used. 2 µl of extract or diluted oil is spotted on Chromarod S-III rods before elution in hexane (25 min), toluene (8 min) and dichloromethane with 7 % methanol (vol/vol). The solvent is allowed to evaporate before the rods are placed into the next elution chamber. Before running the rods in the analyser, the rods are heated for 90 sec. in a heating chamber at 60 °C.

GC of whole oil

A HP5890 II instrument is used. The column is a HP PONA, length 50 m, i.d. 0.2 mm, film thickness 0.5 µm. 2,2,4-tri-methane-pentane is used as an internal standard.

Temperature programme

30 °C (10 min.) - 2 °C/min. - 60 °C (10 min.) - 2 °C/min - 240 °C (60 min.)

GC of saturated fraction

A HP5890 II instrument is used. The column is a CP-Sil-5 CB-MS, length 25 m, i.d. 0.25 mm, film thickness 0.25 µm. C12D26, C20D42, C24D50 and C30D62 are used as internal standards.

Temperature programme

50 °C (1 min.) - 4 °C/min. - 310 °C (25 min.)

GC of aromatic fraction

A HP5890 instrument is used. The column is a CP-Sil-8 CB, length 50 m, i.d. 0.25 mm, film thickness 0.25 µm.

Temperature programme

50 °C (1 min.) - 4 °C/min. - 310 °C (25 min.)

PyGC

A HP5890 II instrument with a MSSV injector and a FID is used. The column is a CP-Sil-5 CB-MS, length 25 m, i.d. 0.25 mm, film thickness 0.25 µm.

During the run the pyrolysis oven starts at 330 °C. The tube is then broken and the temperature increased to 600 °C at a rate of 25 °C/min. The pyrolysis products are collected in the cold trap for fourteen minutes.

Temperature programme

30 °C (15 min.) - 5 °C/min. - 310 °C (23 min.)

GCMS of saturated and aromatic fractions

A Micromass ProSpec high resolution instrument is used. The instrument is tuned to a resolution of 3000 and data is acquired in Selected Ion Recording (SIR) mode. The column used is a 60 m CP-Sil-5 CB-MS with an i.d. of 0.25 mm and a film thickness 0.25 µm.

d4-27aaR is used as internal standard when quantitative results are requested for the saturated compounds. The aromatic and aliphatic fractions may be analysed together or separately.

Temperature programme

50 °C (1 min.) - 20 °C/min. - 120 °C - 2 °C/min - 320 °C (20 min.)

Stable isotope analysis of gas compounds

5-10 ml of the gas is sampled with a syringe and then separated into the different gas components by a Carlo Erba 4200 gas chromatograph. The hydrocarbon gas components are oxidised in separate CuO-ovens in order to prevent cross contamination. The combustion products CO₂ and H₂O are frozen into collection vessels and separated.

The combustion water is reduced with zinc metal in sealed quartz tubes to prepare hydrogen for isotopic analysis. The isotopic measurements are performed on a Finnigan MAT 251 and a Finnigan Delta mass spectrometer.

The value for the NBS 22 standard is -29.77 ± 0.06 ‰ PDB. The analytical procedures are tested with a laboratory gas standard mixture. Based on repeated analysis of the gas standard, the reproducibility in the $\delta^{13}\text{C}$ value is better than 0.5 ‰ PDB for all components. The reproducibility in the δD value is likewise better than 10 ‰.

Stable carbon isotope analysis of oil, EOM and kerogen

The samples are dissolved in a known amount of dichloromethane, and 1-2 mg of the sample (or as much as possible) is then transferred to a glass container. The solvent is evaporated in an oven at 50 °C. CuO and some silver wires are added to the containers, which are then sealed by melting in a vacuum. The samples are then combusted in an oven at 550 °C for 1 hour (Sofer, 1980). The combustion products CO₂ and H₂O are separated at -80°C before the isotopic ratio is determined on a Finnigan MAT 251 mass spectrometer.

A standard (NGS NSO-1, topped oil) is analysed for each 10th sample. The $\delta^{13}\text{C}$ value obtained for this standard is -28.73 ‰ PDB. The variation in the isotopic values for the standard by repeated analysis over a period of four years is ± 0.16 ‰.

GC analysis of gas components

Aliquots of 0.2 ml are sampled with a syringe for analysis on a Porabond Q column on a Carlo Erba HRGC 5300 equipped with a flame ionisation (FID) and a thermal conductivity (TCD) detector. The detection limit for the hydrocarbon gas components is 0.001 µl/ml, for CO₂ 0.05 µl/ml.

Vitrinite reflectance analysis

The samples are prepared either as "whole rock" or are treated with hydrochloric and hydrofluoric acid prior to further preparation. The aim of the acid treatment is to avoid soft and expanding mineral phases in order to ensure good polishing quality. The whole rock or the kerogen resulting from the acid treatment is embedded in an epoxy resin to make

briquettes, ground flat and polished using 0.25 micron diamond paste and magnesium oxide as the two final steps.

The analytical equipment used is a Zeiss MPM 03 photometer microscope equipped with an Epiplan-Neofluar 40/0.90 oil objective. The sensitive measuring spot is kept constant for all measurements at about 2.5 micron in diameter. The measurements are made through a green band pass filter (546 nm) and in oil immersion (refractive index 1.515 at 18 °C). The readings are made without a polarizer and using a stationary stage. This procedure is called measurement of random reflectance (%Rm). The photometer is calibrated daily against a standard of known reflectance (%Rm = 0.588) and routinely (daily) checked against two other standards of significant different reflectances (%Rm = 0.879 and 1.696). A deviation from these values of less than ± 0.01 and ± 0.02 respectively is considered acceptable. The calibration is routinely checked during the course of measurements at least every hour, and a deviation of less than ± 0.005 is considered acceptable.

For each sample at least 20 points are measured if possible, and quality ratings are given to various important aspects, which may affect the measurements. These aspects are abundance of vitrinite, uncertainties in the identification of indigenous vitrinite, type of vitrinite, particle size, particle surface quality and abundance of pyrite.