NORSK HYDRO U-P Research Centre, Bergen.
Petroleum Geochemistry Group

AROMATIC HYDROCARBONS

File name (sample):	2033_70.D
File path:	K:\CAP\MSDARKIV\HC_ARO\2425OCA2\
Misc information:	
Sample name:	24/9-6 COCH 2033.70m
Operator:	Lotte 11/11-96
Method:	MSD_A_C
Date:	12-nov-96

P#	Rt	Ion m/z	Compound	Height	Amount
		Int.Std.(if added):			ng/mg
14	11.46	136	d8 N	20770	38
16	17.63	164	d10BP	41609	39
59	28.98	188	d10 P	65968	38
79	44.19	240	d12 C	59510	38
		ARYL ISOPRENOIDS			
1	18.37	133	C13 AI	721	
2	20.44	133	C14 AI	945	
3	23.69	133	C15 AI	3736	
4	26.21	133	C16 AI	1854	
5	28.87	133	C17 AI	1487	
6	31.42	133	C18 AI	1866	
7	32.88	133	C19 AI	2018	
8	34.28	133	C20 AI	4681	
9	35.55	133	C21 AI	1464	
10	37.30	133	C22 AI	1659	
11	38.94	133	C23 AI	3933	
12	52.77	133	C30 AI	416	
13	54.66	133	C31 AI	468	
		NAPHTHALENES			
15	11.55	128	N	12506	22
17	15.07	142	2-MN	36346	46
18	15.60	142	1-MN	5444	7
19	18.18	156	2-EN	4520	5
20	18.29	156	1-EN	1857	2
21	18.51	156	2,6+ 2,7-DMN	24098	27
22	18.96	156	1,3+1,7-DMN	38259	43
23	19.07	156	1,6-DMN	8756	10
24	19.55	156	2,3+1,4-DMN	17229	19
25	19.66	156	1,5-DMN	11216	13
26	20.02	156	1,2-DMN	6516	7
31	21.68	170	C3- N	5188	6
32	22.05	170	C3-N	8302	9
33	22.17	170	1,3,7-TMN	37032	41
34	22.31	170	1,3,6-TMN	51395	58
35	22.78	170	1,3,5+1,4,6-TMN	55700	62
36	22.84	170	2,3,6-TMN	36423	41
37	23.26	170	1,6,7+1,2,7-TMN	35910	40
38	23.31	170	1,2,6-TMN	17624	20
39	23.73	170	1,2,4-TMN	4831	5
40	23.94	170	1,2,5-TMN	22014	25
		BIPHENYLS			
27	17.73	154	BP	15943	13
28	20.97	168	3-MBP	42207	33
29	21.23	168	4-MBP	17816	14
41	21.29	182	2,3'-DMBP	1748	2
42	21.49	182	2,5-DMBP	925	1
43	21.67	182	2,4 & 2,4'-DMBP	1899	2
44	22.27	182	2,3-DMBP	3450	4
45	23.62	182	3-EBP	6970	8
46	23.95	182	3,5-DMBP	16757	19
47	24.06	182	3,3'-DMBP	41512	46
48	24.16	182	4-EBP	3025	3
49	24.33	182	3,4'-DMBP	33868	38
50	24.54	182	4,4'-DMBP	6980	8
52	25.10	182	3,4-DMBP	18686	21

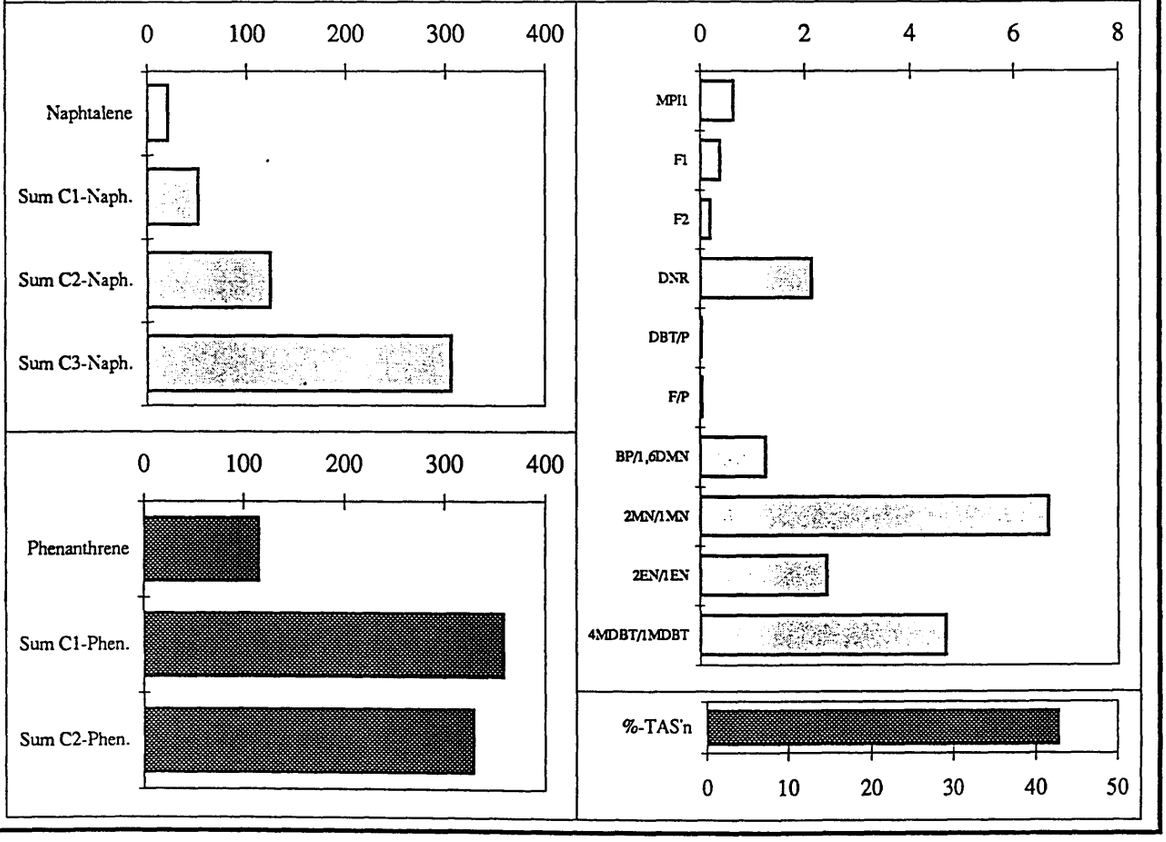
P#	Rt	Ion m/z	Compound	Height	Amount
		DIBENZOFURANES			ng/mg
30	21.84	168	DBF	8963	7
51	24.87	182	MDBF	26089	29
53	25.24	182	MDBF	17956	20
54	25.53	182	MDBF	16140	18
		FLUORENES			
55	23.76	166	F	6844	6
56	27.00	180	C1-F	3079	3
57	27.16	180	C1-F	7829	7
58	27.47	180	1-MF	1186	1
		DIBENZOTHIOPHENES			
60	28.39	184	DBT	34605	5
61	30.97	198	4-MDBT	87600	12
62	31.47	198	3+2-MDBT	21722	3
63	32.05	198	1-MDBT	18608	3
		PHENANTHRENES			
64	29.10	178	P	264522	116
65	32.01	192	3-MP	145771	68
66	32.13	192	2-MP	165657	77
67	32.62	192	9-MP	253127	118
68	32.74	192	1-MP	204416	96
70	34.68	206	2EP+9EP+3,6-DMP	32455	15
71	34.90	206	1EP	55538	25
72	35.01	206	2,6+2,7+3,5-DMP	30408	14
73	35.34	206	1,3+2,10+3,9+3,10-DMP	223009	101
74	35.49	206	1,6+2,5+2,9-DMP	124968	57
75	35.62	206	1,7-DMP	110929	50
76	35.77	206	2,3-DMP	33537	5
77	35.88	206	1,9+4,9+4,10-DMP	79181	36
78	36.17	206	1,8-DMP	35592	16
		RETENE			
69	39.43	219	Retene	29283	13
		TRIAROMATIC STEROIDS			
80	43.83	231	20TA	9788	1
81	45.67	231	21TA	10423	1
82	52.53	231	S26TA	4627	0
83	53.73	231	R26TA/S27TA	11646	1
84	54.70	231	S28TA	6211	1
85	55.20	231	R27TA	5408	1
86	56.39	231	R28TA	6813	1

AROMATIC HYDROCARBONS

File name (sample):	Sample name:
2033_70.D	**24/9-6 COCH 2033.70m**
File path:	Operator: Lotte 11/11-96
K:\CAP\MSDARKIV\HC_ARO\2425OCA2\	Method: MSD_A_C
Misc information:	Date analyzed: 12-nov-96

Ratios based on heights or amounts (ng/mg)	Name	Heights:	Amounts (ng/mg):
Naphthalene	Naphtalene	12506	22
C1 Naphtalenes	Sum C1-Naph.	41790	53
C2 Naphthalenes	Sum C2-Naph.	112451	125
C3 Naphthalenes	Sum C3-Naph.	274419	307
Phenanthrene	Phenanthrene	264522	116
C1 Phenanthrenes	Sum C1-Phen.	768971	360
C2 Phenanthrenes	Sum C2-Phen.	725617	329
3/2*(3MP+2MP)/(P+9MP+1MP)	MPI1	0.6	0.7
(3MP+2MP)/(3MP+2MP+9MP+1MP)	F1	0.4	0.4
2MP/(3MP+2MP+9MP+1MP)	F2	0.2	0.2
(2,6+2,7)DMN/1,5DMN	DNR	2.1	2.1
100*20TA/(20TA+S28TA+R28TA)	%-TAS'n	43	43
DBT/P	DBT/P	0.1	0.0
F/P	F/P	0.0	0.1
BP/1,6DMN	BP/1,6DMN	1.8	1.3
2MN/1MN	2MN/1MN	6.7	6.7
2EN/1EN	2EN/1EN	2.4	2.4
4MDBT/1MDBT	4MDBT/1MDBT	4.7	4.7

Aromatic hydrocarbon parameters, calculated from amounts, ng/mg EOM/oil



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Petroleum Geochemistry Group

AROMATIC HYDROCARBONS

File name (sample):	**2124_30.D**
File path:	K:\CAP\MSDARKIV\HC_ARO\2425OCA2\
Misc information:	
Sample name:	**25/4-3 COCH 2124.30m**
Operator:	Lotte 11/11-96
Method:	MSD_A_C
Date:	12-nov-96

P#	Rt	Ion m/z	Compound	Height	Amount
		Int.Std.(if added):			ng/mg
14	11.46	136	d8 N	15922	32
16	17.65	164	d10P	29051	32
59	28.98	188	d10P	41928	32
79	44.21	240	d12 C	34844	31
			ARYL ISOPRENOIDS		
1	18.39	133	C13 AI	223	
2	20.44	133	C14 AI	286	
3	23.69	133	C15 AI	904	
4	26.21	133	C16 AI	760	
5	28.87	133	C17 AI	1178	
6	31.44	133	C18 AI	1790	
7	32.86	133	C19 AI	1695	
8	34.28	133	C20 AI	4900	
9	35.56	133	C21 AI	1376	
10	37.30	133	C22 AI	1843	
11	38.96	133	C23 AI	5672	
12	52.60	133	C30 AI	1663	
13	54.66	133	C31 AI	559	
			NAPHTHALENES		
15	11.55	128	N	5393	10
17	15.07	142	2-MN	18687	28
18	15.60	142	1-MN	8908	13
19	18.20	156	2-EN	2146	3
20	18.31	156	1-EN	900	1
21	18.53	156	2,6+ 2,7-DMN	13172	18
22	18.98	156	1,3+1,7-DMN	17584	23
23	19.09	156	1,6-DMN	10216	14
24	19.57	156	2,3+1,4-DMN	7422	10
25	19.67	156	1,5-DMN	4243	6
26	20.04	156	1,2-DMN	2617	3
31	21.70	170	C3- N	1340	2
32	22.06	170	C3-N	1908	3
33	22.17	170	1,3,7-TMN	8638	12
34	22.31	170	1,3,6-TMN	13117	18
35	22.78	170	1,3,5+1,4,6-TMN	11739	16
36	22.86	170	2,3,6-TMN	8640	12
37	23.26	170	1,6,7+1,2,7-TMN	8075	11
38	23.31	170	1,2,6-TMN	3879	5
39	23.75	170	1,2,4-TMN	1172	2
40	23.95	170	1,2,5-TMN	4533	6
			BIPHENYLS		
27	17.75	154	BP	10156	10
28	20.99	168	3-MBP	16082	15
29	21.25	168	4-MBP	5443	5
41	21.30	182	2,3'-DMBP	391	1
42	21.51	182	2,5-DMBP	203	0
43	21.67	182	2,4 & 2,4'-DMBP	516	1
44	22.27	182	2,3-DMBP	1012	1
45	23.64	182	3-EBP	1724	2
46	23.97	182	3,5-DMBP	5213	7
47	24.06	182	3,3'-DMBP	13399	18
48	24.16	182	4-EBP	624	1
49	24.35	182	3,4'-DMBP	10250	14
50	24.56	182	4,4'-DMBP	1324	2
52	25.10	182	3,4-DMBP	6596	9

P#	Rt	Ion m/z	Compound	Height	Amount
			DIBENZOFURANES		ng/mg
30	21.86	168	DBF	3989	4
51	24.89	182	MDBF	8348	11
53	25.24	182	MDBF	7196	10
54	25.53	182	MDBF	6583	9
			FLUORENES		
55	23.78	166	F	2164	2
56	27.00	180	C1-F	790	1
57	27.18	180	C1-F	3201	4
58	27.49	180	1-MF	290	0
			DIBENZOTHIOPHENES		
60	28.39	184	DBT	10293	2
61	30.97	198	4-MDBT	64960	12
62	31.49	198	3+2-MDBT	14695	3
63	32.06	198	1-MDBT	14930	3
			PHENANTHRENES		
64	29.10	178	P	129178	74
65	32.01	192	3-MP	170768	105
66	32.15	192	2-MP	197178	121
67	32.63	192	9-MP	292477	179
68	32.76	192	1-MP	259392	159
70	34.71	206	2EP+9EP+3,6-DMP	46736	28
71	34.92	206	1EP	88338	53
72	35.01	206	2,6+2,7+3,5-DMP	54544	32
73	35.36	206	1,3+2,10+3,9+3,10-DMP	297441	177
74	35.49	206	1,6+2,5+2,9-DMP	181184	108
75	35.63	206	1,7-DMP	165636	99
76	35.77	206	2,3-DMP	56572	34
77	35.89	206	1,9+4,9+4,10-DMP	101061	60
78	36.17	206	1,8-DMP	48343	29
			RETENE		
69	39.45	219	Retene	29914	17
			TRIAROMATIC STEROIDS		
80	43.83	231	20TA	6438	1
81	45.67	231	21TA	5540	1
82	52.55	231	S26TA	1340	0
83	53.73	231	R26TA/S27TA	4623	1
84	54.70	231	S28TA	2818	0
85	55.18	231	R27TA	2210	0
86	56.39	231	R28TA	3212	0

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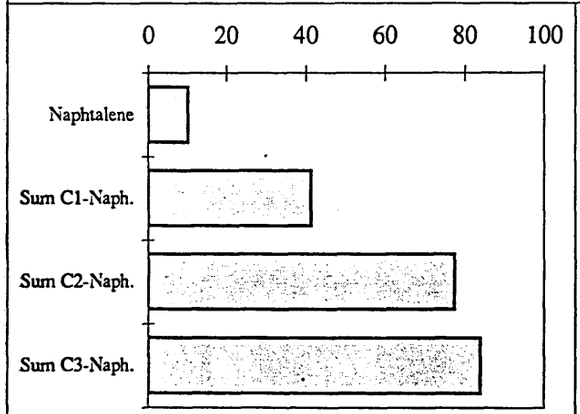
Petroleum Geochemistry Group

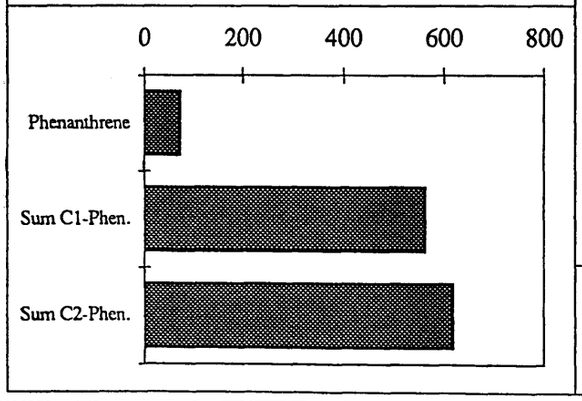
AROMATIC HYDROCARBONS

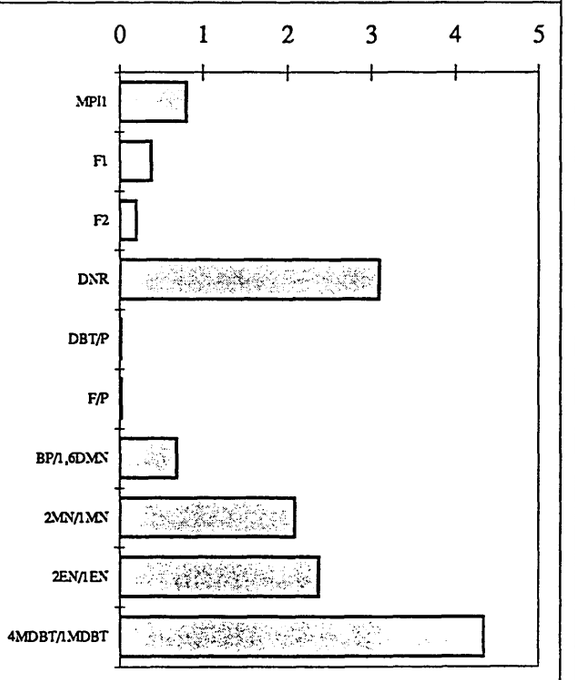
File name (sample):	Sample name:
2124_30.D	**25/4-3 COCH 2124.30m**
File path:	Operator: Lotte 11/11-96
K:\CAP\MSDARKIV\HC_ARO\2425OCA2\	Method: MSD_A_C
Misc information:	Date analyzed: 12-nov-96

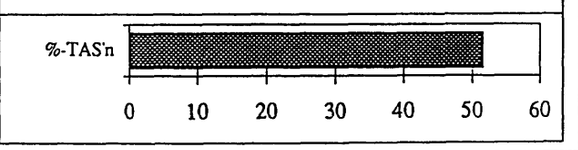
Ratios based on heights or amounts (ng/mg)	Name	Heights:	Amounts (ng/mg):
Naphthalene	Naphtalene	5393	10
C1 Naphtalenes	Sum C1-Naph.	27595	42
C2 Naphthalenes	Sum C2-Naph.	58300	78
C3 Naphthalenes	Sum C3-Naph.	63041	84
Phenanthrene	Phenanthrene	129178	74
C1 Phenanthrenes	Sum C1-Phen.	919815	564
C2 Phenanthrenes	Sum C2-Phen.	1039855	619
3/2*(3MP+2MP)/(P+9MP+1MP)	MPI1	0.8	0.8
(3MP+2MP)/(3MP+2MP+9MP+1MP)	F1	0.4	0.4
2MP/(3MP+2MP+9MP+1MP)	F2	0.2	0.2
(2,6+2,7)DMN/1,5DMN	DNR	3.1	3.1
100*20TA/(20TA+S28TA+R28TA)	%-TAS'n	52	52
DBT/P	DBT/P	0.1	0.0
F/P	F/P	0.0	0.0
BP/1,6DMN	BP/1,6DMN	1.0	0.7
2MN/1MN	2MN/1MN	2.1	2.1
2EN/1EN	2EN/1EN	2.4	2.4
4MDBT/1MDBT	4MDBT/1MDBT	4.4	4.4

Aromatic hydrocarbon parameters, calculated from amounts, ng/mg EOM/oil









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AROMATIC HYDROCARBONS

File name (sample):	2128_50.D
File path:	K:\CAP\MSDARKIV\HC_ARO\2425OCA2\
Misc information:	
Sample name:	25/4-3 COCH 2128.50m
Operator:	Lotte 11/11-96
Method:	MSD_A_C
Date:	12-nov-96

P#	Rt	Ion m/z	Compound	Height	Amount
		Int.Std.(if added):			ng/mg
14	11.46	136	d8 N	9381	32
16	17.65	164	d10P	17680	32
59	28.98	188	d10P	30017	32
79	44.21	240	d12 C	22371	31
		ARYL ISOPRENOIDS			
1	18.70	133	C13 AI	12	
2	20.45	133	C14 AI	82	
3	23.69	133	C15 AI	198	
4	26.21	133	C16 AI	284	
5	28.87	133	C17 AI	591	
6	31.42	133	C18 AI	1062	
7	32.88	133	C19 AI	1111	
8	34.28	133	C20 AI	4306	
9	35.56	133	C21 AI	1143	
10	37.30	133	C22 AI	1286	
11	38.96	133	C23 AI	5164	
12	52.63	133	C30 AI	1476	
13	54.45	133	C31 AI	971	
		NAPHTHALENES			
15	11.55	128	N	3950	13
17	15.07	142	2-MN	11812	29
18	15.60	142	1-MN	6737	17
19	18.20	156	2-EN	1077	2
20	18.31	156	1-EN	421	1
21	18.53	156	2,6+ 2,7-DMN	6674	15
22	18.98	156	1,3+1,7-DMN	9380	20
23	19.09	156	1,6-DMN	6718	15
24	19.57	156	2,3+1,4-DMN	3804	8
25	19.67	156	1,5-DMN	1946	4
26	20.04	156	1,2-DMN	1275	3
31	21.70	170	C3- N	593	1
32	22.06	170	C3-N	851	2
33	22.17	170	1,3,7-TMN	3858	8
34	22.31	170	1,3,6-TMN	5596	12
35	22.78	170	1,3,5+1,4,6-TMN	5083	11
36	22.86	170	2,3,6-TMN	4238	9
37	23.26	170	1,6,7+1,2,7-TMN	3489	8
38	23.31	170	1,2,6-TMN	1740	4
39	23.75	170	1,2,4-TMN	496	1
40	23.95	170	1,2,5-TMN	2028	4
		BIPHENYLS			
27	17.75	154	BP	5534	9
28	20.99	168	3-MBP	7954	12
29	21.25	168	4-MBP	3286	5
41	21.30	182	2,3'-DMBP	136	0
42	21.51	182	2,5-DMBP	64	0
43	21.67	182	2,4 & 2,4'-DMBP	155	0
44	22.27	182	2,3-DMBP	454	1
45	23.64	182	3-EBP	754	2
46	23.97	182	3,5-DMBP	1580	3
47	24.06	182	3,3'-DMBP	4606	10
48	24.16	182	4-EBP	275	1
49	24.35	182	3,4'-DMBP	3816	8
50	24.56	182	4,4'-DMBP	814	2
52	25.10	182	3,4-DMBP	2007	4

P#	Rt	Ion m/z	Compound	Height	Amount
		DIBENZOFURANES			ng/mg
30	21.86	168	DBF	2535	4
51	24.89	182	MDBF	3476	8
53	25.24	182	MDBF	3338	7
54	25.53	182	MDBF	2698	6
		FLUORENES			
55	23.78	166	F	1593	3
56	27.00	180	C1-F	2047	4
57	27.18	180	C1-F	8403	15
58	27.47	180	1-MF	865	2
		DIBENZOTHIOPHENES			
60	28.39	184	DBT	7068	2
61	30.97	198	4-MDBT	26440	7
62	31.49	198	3+2-MDBT	7807	2
63	32.05	198	1-MDBT	6415	2
		PHENANTHRENES			
64	29.10	178	P	84210	67
65	32.01	192	3-MP	74758	64
66	32.13	192	2-MP	89656	77
67	32.62	192	9-MP	132262	113
68	32.74	192	1-MP	102096	87
70	34.70	206	2EP+9EP+3,6-DMP	23252	19
71	34.91	206	1EP	38925	32
72	35.01	206	2,6+2,7+3,5-DMP	23920	20
73	35.34	206	1,3+2,10+3,9+3,10-DMP	154541	128
74	35.49	206	1,6+2,5+2,9-DMP	87819	73
75	35.62	206	1,7-DMP	64473	54
76	35.77	206	2,3-DMP	26993	22
77	35.88	206	1,9+4,9+4,10-DMP	54205	45
78	36.17	206	1,8-DMP	25598	21
		RETENE			
69	39.45	219	Retene	17785	14
		TRIAROMATIC STEROIDS			
80	43.83	231	20TA	9422	2
81	45.68	231	21TA	9857	2
82	52.56	231	S26TA	3666	1
83	53.74	231	R26TA/S27TA	12344	3
84	54.71	231	S28TA	7839	2
85	55.22	231	R27TA	5757	1
86	56.41	231	R28TA	7453	2

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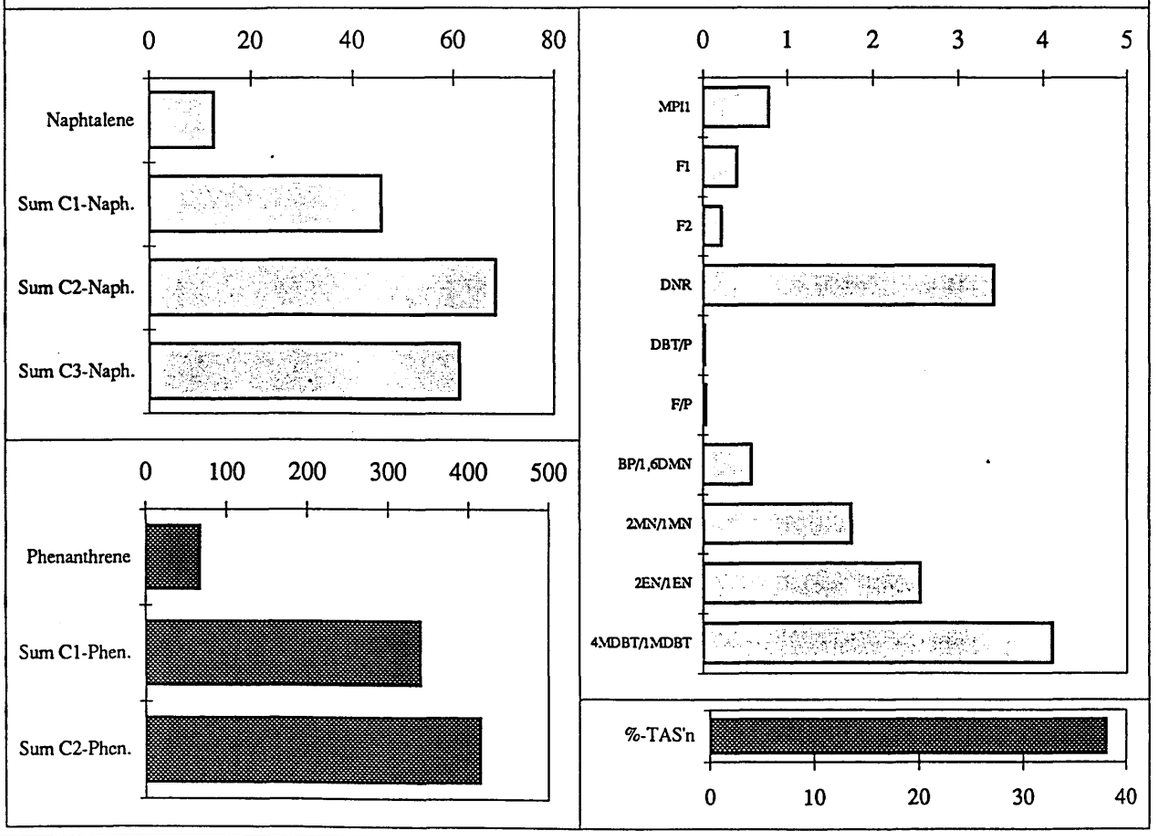
AROMATIC HYDROCARBONS

File name (sample):	Sample name:
2128_50.D	**25/4-3 COCH 2128.50m**
File path:	Operator: Lotte 11/11-96
K:\CAP\MSDARKIV\HC_ARO\2425OCA2\	Method: MSD_A_C
Misc information:	Date analyzed: 12-nov-96

Ratios based on heights or amounts (ng/mg)	Name	Heights:	Amounts (ng/mg):
Naphthalene	Naphtalene	3950	13
C1 Naphtalenes	Sum C1-Naph.	18549	46
C2 Naphthalenes	Sum C2-Naph.	31295	68
C3 Naphthalenes	Sum C3-Naph.	27972	61
Phenanthrene	Phenanthrene	84210	67
C1 Phenanthrenes	Sum C1-Phen.	398772	342
C2 Phenanthrenes	Sum C2-Phen.	499726	415
3/2*(3MP+2MP)/(P+9MP+1MP)	MPI1	0.8	0.8
(3MP+2MP)/(3MP+2MP+9MP+1MP)	F1	0.4	0.4
2MP/(3MP+2MP+9MP+1MP)	F2	0.2	0.2
(2,6+2,7)DMN/1,5DMN	DNR	3.4	3.4
100*20TA/(20TA+S28TA+R28TA)	%-TAS'n	38	38
DBT/P	DBT/P	0.1	0.0
F/P	F/P	0.0	0.0
BP/1,6DMN	BP/1,6DMN	0.8	0.6
2MN/1MN	2MN/1MN	1.8	1.8
2EN/1EN	2EN/1EN	2.6	2.6
4MDBT/1MDBT	4MDBT/1MDBT	4.1	4.1

Aromatic hydrocarbon parameters, calculated from amounts, ng/mg EOM/oil



Appendix V

Datareports on stable isotopes, gas samples from well 25/7-5 (IFE)

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AVAILABILITY
In Confidence

REPORT TYPE

REPORT NO.
IFE/KR/F-97/206

DATE
1997-11-07

REPORT TITLE
DATAREPORT ON STABLE ISOTOPES,
GAS SAMPLE FROM WELL 25/7-5
(ref. IFE no. 2.5.231.97)

DATE OF LAST REV.

REV. NO.

CLIENT
Norsk Hydro a.s

NUMBER OF PAGES
6

CLIENT REF.
FB 82961

NUMBER OF ISSUES
9

SUMMARY

One gas sample from well 25/7-5, DST 1 is analysed for gas and isotopic composition.

The work is done in accordance with the "The Norwegian Industry Guide to Organic Geochemical Analyses", Third Edition 1993.

DISTRIBUTION

Norsk Hydro a.s (3)
Andresen, B.
Bjørnstad, T.
Johansen, H.
Sieglé, S.
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PREPARED BY	Bjørg Andresen Sylviane Sieglé	1997-11-07	Bjørg Andresen Sylviane Sieglé
REVIEWED BY	Kjersti Iden	1997-11-07	Kjersti Iden
APPROVED BY	Tor Bjørnstad	1997-11-07	Tor Bjørnstad

1 Introduction

One gas sample from well 25/7-5; DST 1, 2043 - 2052 m MD RKB is analysed for gas and isotopic composition.

On the sample C_1 - C_5 and CO_2 are quantified. The $\delta^{13}C$ value is measured on methane, ethane, propane, the butanes and CO_2. In addition the δD value is measured on methane.

2 Analytical procedures

Aliquots of 0.5 ml are sampled with a syringe for analysis on a Poraplot Q column connected with flame ionisation (FID) and thermal conductivity (TCD) detectors. The detection limit for the hydrocarbon gas components is 0.01 µl/ml, for CO_2 0.2 µl/ml.

For the isotope analysis 5 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 CO_2 and H_2O are frozen into collection vessels and separated.

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

IFEs value on NBS 22 is -29.77 ± .06‰ PDB.

The uncertainty in the $\delta^{13}C$ value is estimated to be ± 0.3‰ PDB and includes all the different analytical steps. The estimate is based on repeated analysis of a laboratory standard gas mixture. The uncertainty in the δD value is likewise estimated to be ± 5‰.

3 Results

The normalised volume composition of the gas sample is shown in Table 1. The stable isotope composition is shown in Table 2.

The molecular composition related to the carbon isotope variation in methane from the sample are plotted in Figure 1 (Schoell, 1983), the carbon and hydrogen variation in

methane are plotted in Figure 2 (Schoell, 1983) and the carbon isotope variation in ethane related to the carbon isotope variation in methane in Figure 3 (Schoell, 1983).

The $\delta^{13}C$ values of methane ethane and propane are plotted in James maturity diagram (James, 1983), Figure 4. A source LOM of about 11 is indicated for the gas sample.

Table 1 Volume composition of a gas sample (normalised values) from well 25/7-5

Sample	IFE no GEO	C_1 %	C_2 %	C_3 %	iC_4 %	nC_4 %	iC_5 %	nC_5 %	CO_2 %	ΣC_1- C_5 %	Wet-ness	iC_4/ nC_4/
DST 1	971134	87.2	4.9	3.0	0.51	1.2	0.24	0.21	2.8	97.2	0.10	0.43

Table 2 Isotopic composition of a gas sample from well 25/7-5

Sample	IFE no GEO	C_1 $\delta^{13}C$ ‰ PDB	C_1 δ D ‰ SMOW	C_2 $\delta^{13}C$ ‰ PDB	C_3 $\delta^{13}C$ ‰ PDB	iC_4 $\delta^{13}C$ ‰ PDB	nC_4 $\delta^{13}C$ ‰ PDB	CO_2 $\delta^{13}C$ ‰ PDB	CO_2 $\delta^{18}O$ ‰ PDB
DST 1	971134	-43.6	-201	-27.9	-26.1	-25.2	-26.6	8.1	-9.3

4 Literature

James, A.T. (1983). Correlation of natural gas by use of carbon isotopic distribution between hydrocarbon components. *The American Association of Petrcleum Geologists Bulletin*, **67**, 1176-1191.

Robert, P. (1985) methods and meansof paleothermal analysis. *Organic methamorphism and Geothermal History*, Elf-Aquitaine and D. Reidel Publishing Company.

Schoell, M. (1983). Genetic characterisation of natural gases. *The American Association of Petroleum Geologists Bulletin*, **67**,2225-2238.

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		AVAILABILITY In Confidence
REPORT TYPE	**REPORT NO.** IFE/KR/F-97/228	**DATE** 1997-12-08
	REPORT TITLE DATAREPORT ON STABLE ISOTOPES, GAS SAMPLE FROM WELL 25/7-5 (ref. IFE no. 2.5.277.97)	**DATE OF LAST REV.** **REV. NO.**
	CLIENT Norsk Hydro a.s	**NUMBER OF PAGES** 6
	CLIENT REF. FB 82523	**NUMBER OF ISSUES** 9

SUMMARY

One gas sample from well 25/7-5, MDT no. 643, 2116 m, is analysed for gas and isotopic composition.

The work is done in accordance with the "The Norwegian Industry Guide to Organic Geochemical Analyses", Third Edition 1993.

DISTRIBUTION

Norsk Hydro a.s (3)
Andresen, B.
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Johansen, H.
Sieglé, S.
File (2)

KEYWORDS

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PREPARED BY	Bjørg Andresen Sylviane Sieglé	1997-12-08	Bjørg Andresen Sylviane Sieglé
REVIEWED BY	Kjersti Iden	1997-12-08	Kjersti Iden
APPROVED BY	Tor Bjørnstad	1997-12-08	Tor Bjørnstad

1 Introduction

One gas sample from well 25/7-5; MDT no 643, 2116 m is analysed for gas and isotopic composition.

On the sample C_1 - C_5 and CO_2 are quantified. The $\delta^{13}C$ value is measured on methane, ethane, propane, the butanes and CO_2. In addition the δD value is measured on methane.

2 Analytical procedures

Aliquots of 0.5 ml are sampled with a syringe for analysis on a Poraplot Q column connected with flame ionisation (FID) and thermal conductivity (TCD) detectors. The detection limit for the hydrocarbon gas components is 0.01 µl/ml, for CO_2 0.2 µl/ml.

For the isotope analysis 5 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 CO_2 and H_2O are frozen into collection vessels and separated.

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

IFEs value on NBS 22 is -29.77 ± .06‰ PDB.

The uncertainty in the $\delta^{13}C$ value is estimated to be ± 0.3‰ PDB and includes all the different analytical steps. The estimate is based on repeated analysis of a laboratory standard gas mixture. The uncertainty in the δD value is likewise estimated to be ± 5‰.

3 Results

The normalised volume composition of the gas sample is shown in Table 1. The stable isotope composition is shown in Table 2.

The molecular composition related to the carbon isotope variation in methane from the sample are plotted in Figure 1 (Schoell, 1983), the carbon and hydrogen variation in

methane are plotted in Figure 2 (Schoell, 1983) and the carbon isotope variation in ethane related to the carbon isotope variation in methane in Figure 3 (Schoell, 1983).

The $\delta^{13}C$ values of methane ethane and propane are plotted in James maturity diagram (James, 1983), Figure 4. A source LOM between 11 and 12 is indicated for the gas sample.

Table 1 Volume composition of a gas sample (normalised values) from well 25/7-5

Sample	IFE no GEO	C_1 %	C_2 %	C_3 %	iC_4 %	nC_4 %	iC_5 %	nC_5 %	CO_2 %	ΣC_1- C_5 %	Wet-ness	iC_4/ nC_4/
MDT no 643, 2116m	971499	76.6	11.4	7.7	1.1	2.4	0.37	0.39	0.1	99.9	0.23	0.45

Table 2 Isotopic composition of a gas sample from well 25/7-5

Sample	IFE no GEO	C_1 $\delta^{13}C$ ‰ PDB	C_1 δ D ‰ SMOW	C_2 $\delta^{13}C$ ‰ PDB	C_3 $\delta^{13}C$ ‰ PDB	iC_4 $\delta^{13}C$ ‰ PDB	nC_4 $\delta^{13}C$ ‰ PDB	CO_2 $\delta^{13}C$ ‰ PDB	CO_2 $\delta^{18}O$ ‰ PDB
MDT no 643, 2116m	971499	-43.4	-206	-28.3	-26.8	-24.4	-26.7	-8.9	-7.6

4 Literature

James, A.T. (1983). Correlation of natural gas by use of carbon isotopic distribution between hydrocarbon components. *The American Association of Petroleum Geologists Bulletin*, **67**, 1176-1191.

Robert, P. (1985) methods and means of paleothermal analysis. *Organic methamorphism and Geothermal History*, Elf-Aquitaine and D. Reidel Publishing Company.

Schoell, M. (1983). Genetic characterisation of natural gases. *The American Association of Petroleum Geologists Bulletin*, **67**,2225-2238.

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AVAILABILITY
In Confidence

REPORT TYPE

REPORT NO.
IFE/KR/F-97/223

DATE
1997-12-01

REPORT TITLE
DATAREPORT ON STABLE ISOTOPES,
GAS SAMPLE FROM WELL 25/7-5
(ref. IFE no. 2.5.257.97)

DATE OF LAST REV.

REV. NO.

CLIENT
Norsk Hydro a.s

NUMBER OF PAGES
6

CLIENT REF.
FB 97412

NUMBER OF ISSUES
9

SUMMARY

One gas sample from well 25/7-5, 16-8 ST2-4, 2126.7 m, is analysed for gas and isotopic composition.

The work is done in accordance with the "The Norwegian Industry Guide to Organic Geochemical Analyses", Third Edition 1993.

DISTRIBUTION

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Johansen, H.
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REVIEWED BY	Kjersti Iden	1997-12-01	Kjersti Iden
APPROVED BY	Tor Bjørnstad	1997-12-01	Tor Bjørnstad

1 Introduction

One gas sample from well 25/7-5; 16-8ST2-4, 2126.7 m MD RKB is analysed for gas and isotopic composition.

On the sample C_1 - C_5 and CO_2 are quantified. The $\delta^{13}C$ value is measured on methane, ethane, propane, the butanes and CO_2. In addition the δD value is measured on methane.

2 Analytical procedures

Aliquots of 0.5 ml are sampled with a syringe for analysis on a Poraplot Q column connected with flame ionisation (FID) and thermal conductivity (TCD) detectors. The detection limit for the hydrocarbon gas components is 0.01 µl/ml, for CO_2 0.2 µl/ml.

For the isotope analysis 5 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 CO_2 and H_2O are frozen into collection vessels and separated.

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

IFEs value on NBS 22 is -29.77 ± .06‰ PDB.

The uncertainty in the $\delta^{13}C$ value is estimated to be ± 0.3‰ PDB and includes all the different analytical steps. The estimate is based on repeated analysis of a laboratory standard gas mixture. The uncertainty in the δD value is likewise estimated to be ± 5‰.

3 Results

The normalised volume composition of the gas sample is shown in Table 1. The stable isotope composition is shown in Table 2.

The molecular composition related to the carbon isotope variation in methane from the sample are plotted in Figure 1 (Schoell, 1983), the carbon and hydrogen variation in

methane are plotted in Figure 2 (Schoell, 1983) and the carbon isotope variation in ethane related to the carbon isotope variation in methane in Figure 3 (Schoell, 1983).

The $\delta^{13}C$ values of methane ethane and propane are plotted in James maturity diagram (James, 1983), Figure 4. A source LOM between 11 and 12 is indicated for the gas sample.

Table 1 Volume composition of a gas sample (normalised values) from well 25/7-5

Sample	IFE no GEO	C_1 %	C_2 %	C_3 %	iC_4 %	nC_4 %	iC_5 %	nC_5 %	CO_2 %	ΣC_1- C_5 %	Wet-ness	iC_4/ nC_4/
16-8ST2-4, 2126.7m	971330	83.4	8.7	4.9	0.70	1.4	0.31	0.34	0.19	99.8	0.16	0.49

Table 2 Isotopic composition of a gas sample from well 25/7-5

Sample	IFE no GEO	C_1 $\delta^{13}C$ ‰ PDB	C_1 δ D ‰ SMOW	C_2 $\delta^{13}C$ ‰ PDB	C_3 $\delta^{13}C$ ‰ PDB	iC_4 $\delta^{13}C$ ‰ PDB	nC_4 $\delta^{13}C$ ‰ PDB	CO_2 $\delta^{13}C$ ‰ PDB	CO_2 $\delta^{18}O$ ‰ PDB
16-8ST2-4, 2126.7m	971330	-43.6	-208	-28.3	-26.7	-24.3	-26.4	3.8	-9.2

4 Literature

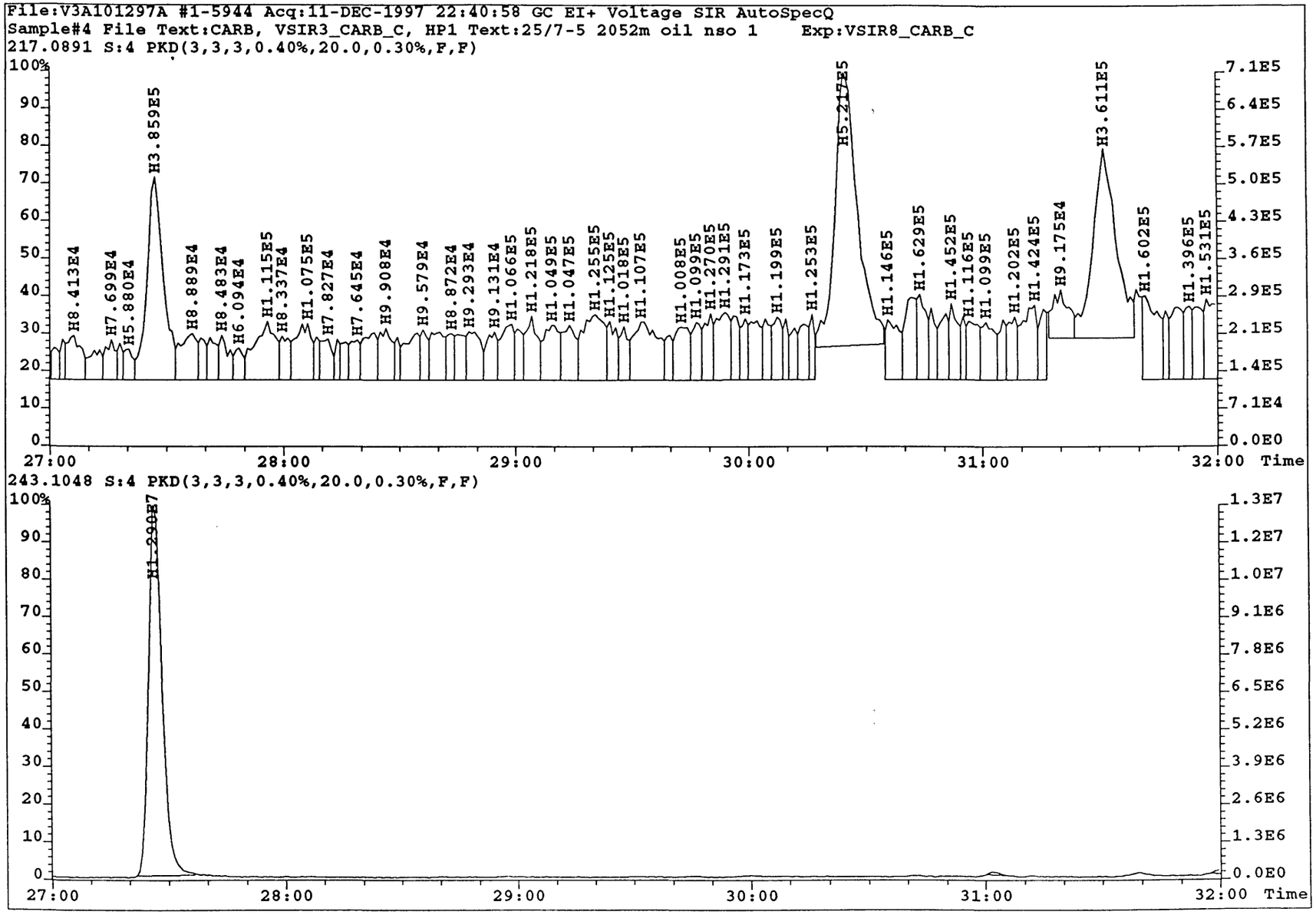
James, A.T. (1983). Correlation of natural gas by use of carbon isotopic distribution between hydrocarbon components. *The American Association of Petroleum Geologists Bulletin*, **67**, 1176-1191.

Robert, P. (1985) methods and meansof paleothermal analysis. *Organic methamorphism and Geothermal History*, Elf-Aquitaine and D. Reidel Publishing Company.

Schoell, M. (1983). Genetic characterisation of natural gases. *The American Association of Petroleum Geologists Bulletin*, **67**,2225-2238.

Appendix VI

Mass chromatograms of benzocarbazoles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H8.413E4
H7.699E4
H5.880E4
H3.859E5
H8.889E4
H8.483E4
H6.094E4
H1.115E5
H8.337E4
H1.075E5
H7.827E4
H7.645E4
H9.908E4
H9.579E4
H8.872E4
H9.293E4
H9.131E4
H1.066E5
H1.218E5
H1.049E5
H1.047E5
H1.255E5
H1.125E5
H1.018E5
H1.107E5
H1.008E5
H1.099E5
H1.270E5
H1.291E5
H1.173E5
H1.199E5
H1.253E5
H5.217E5
H1.146E5
H1.629E5
H1.452E5
H1.116E5
H1.099E5
H1.202E5
H1.424E5
H9.175E4
H3.611E5
H1.602E5
H1.396E5
H1.531E5
100%
90
80
70
60
50
40
30
20
10
0
7.1E5
6.4E5
5.7E5
5.0E5
4.3E5
3.6E5
2.9E5
2.1E5
1.4E5
7.1E4
0.0E0
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28:00
29:00
30:00
31:00
32:00 Time
243.1048 S:4 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H1.290E7
100%
90
80
70
60
50
40
30
20
10
0
1.3E7
1.2E7
1.0E7
9.1E6
7.8E6
6.5E6
5.2E6
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27:00
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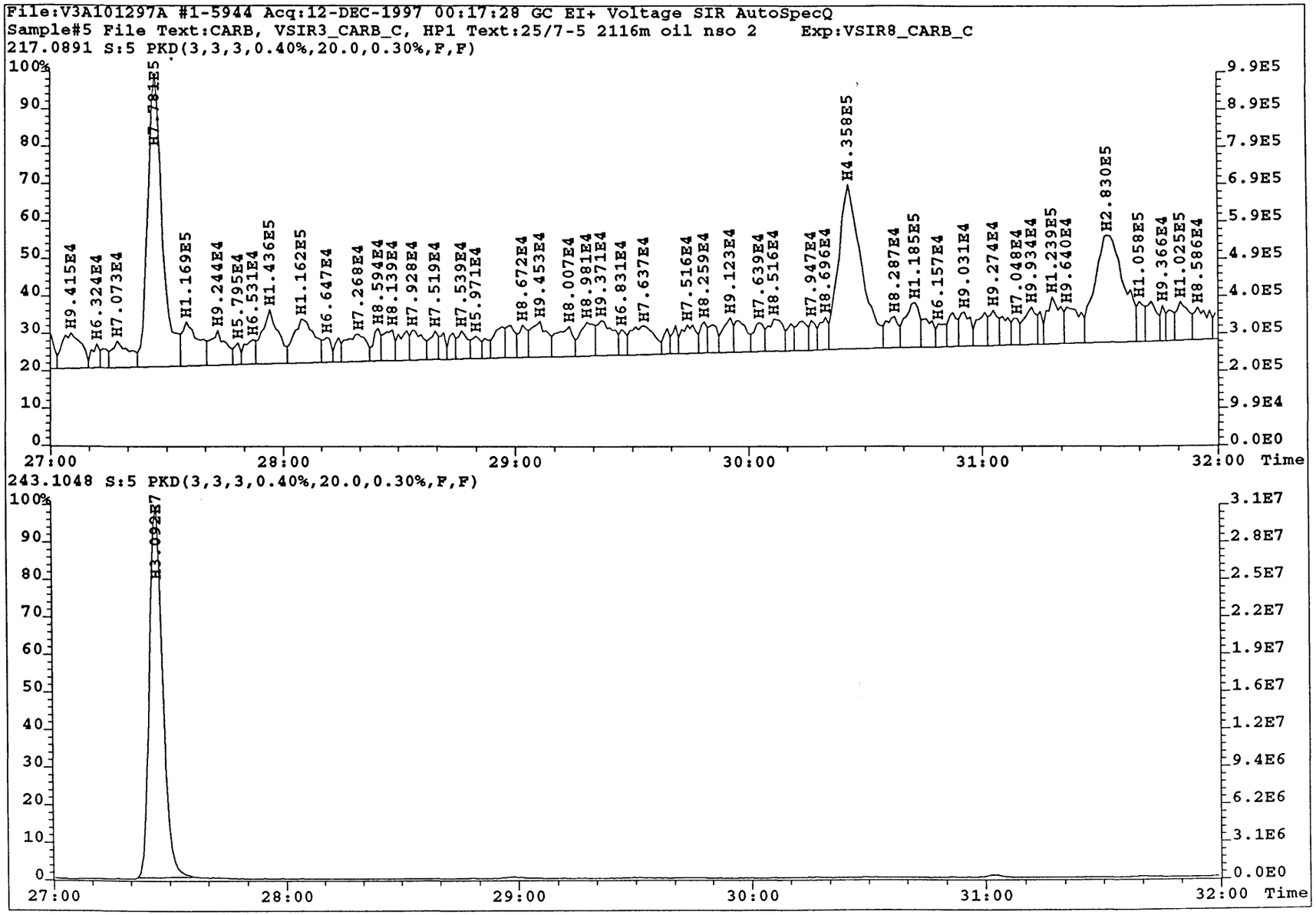
32:00 Time


File:V3A101297A #1-5944 Acq:12-DEC-1997 00:17:28 GC EI+ Voltage SIR AutoSpecQ
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217.0891 S:5 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H9.415E4
H6.324E4
H7.073E4
H7.781E5
H1.169E5
H9.244E4
H5.795E4
H6.531E4
H1.436E5
H1.162E5
H6.647E4
H7.268E4
H8.594E4
H8.139E4
H7.928E4
H7.519E4
H7.539E4
H5.971E4
H8.672E4
H9.453E4
H8.007E4
H8.981E4
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H6.831E4
H7.637E4
H7.516E4
H8.259E4
H9.123E4
H7.639E4
H8.516E4
H7.947E4
H8.696E4
H4.358E5
H8.287E4
H1.185E5
H6.157E4
H9.031E4
H9.274E4
H7.048E4
H9.934E4
H1.239E5
H9.640E4
H2.830E5
H1.058E5
H9.366E4
H1.025E5
H8.586E4
100%
90
80
70
60
50
40
30
20
10
0
9.9E5
8.9E5
7.9E5
6.9E5
5.9E5
4.9E5
4.0E5
3.0E5
2.0E5
9.9E4
0.0E0
27:00
28:00
29:00
30:00
31:00
32:00 Time
243.1048 S:5 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H3.092E7
100%
90
80
70
60
50
40
30
20
10
0
3.1E7
2.8E7
2.5E7
2.2E7
1.9E7
1.6E7
1.2E7
9.4E6
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3.1E6
0.0E0
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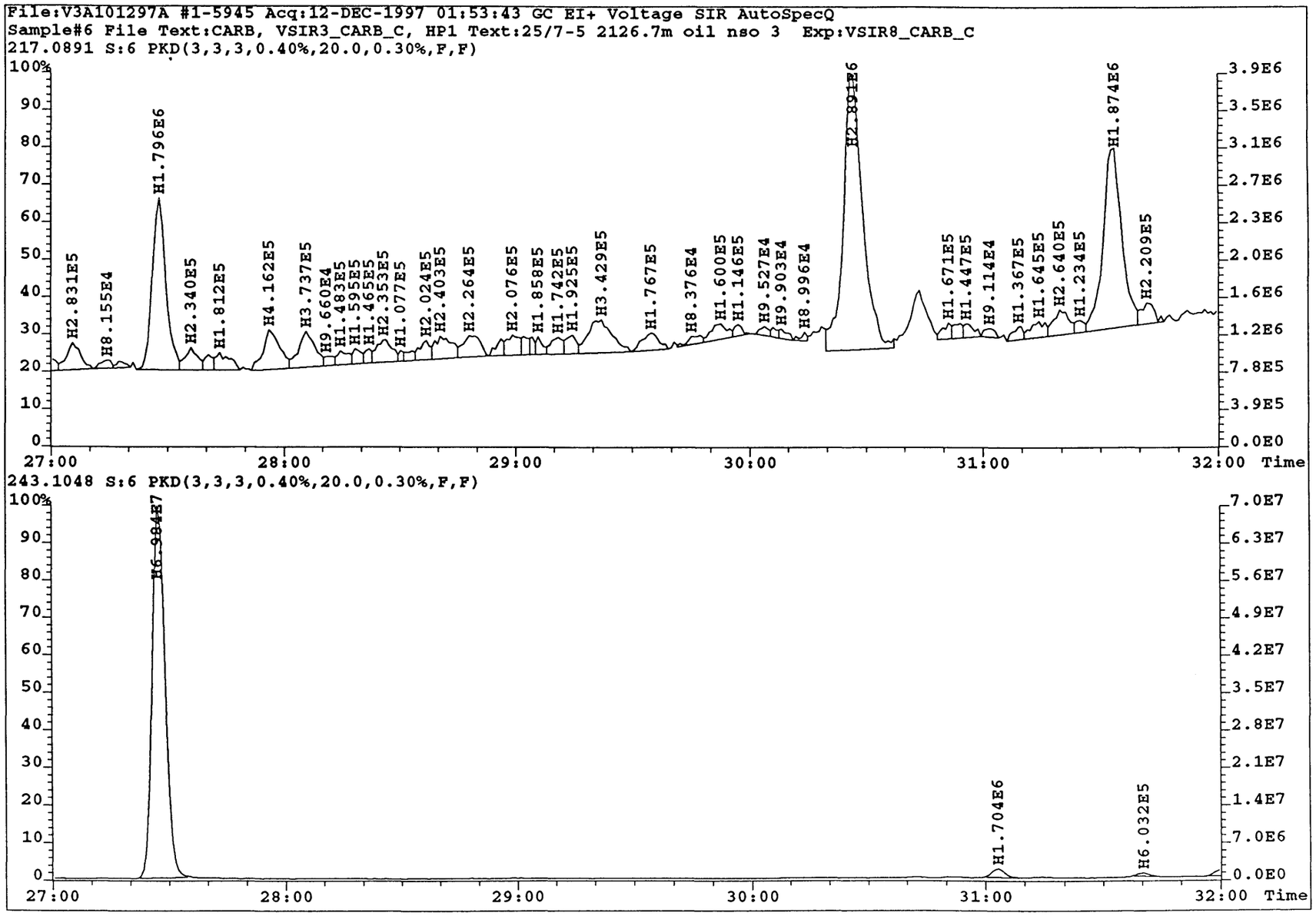
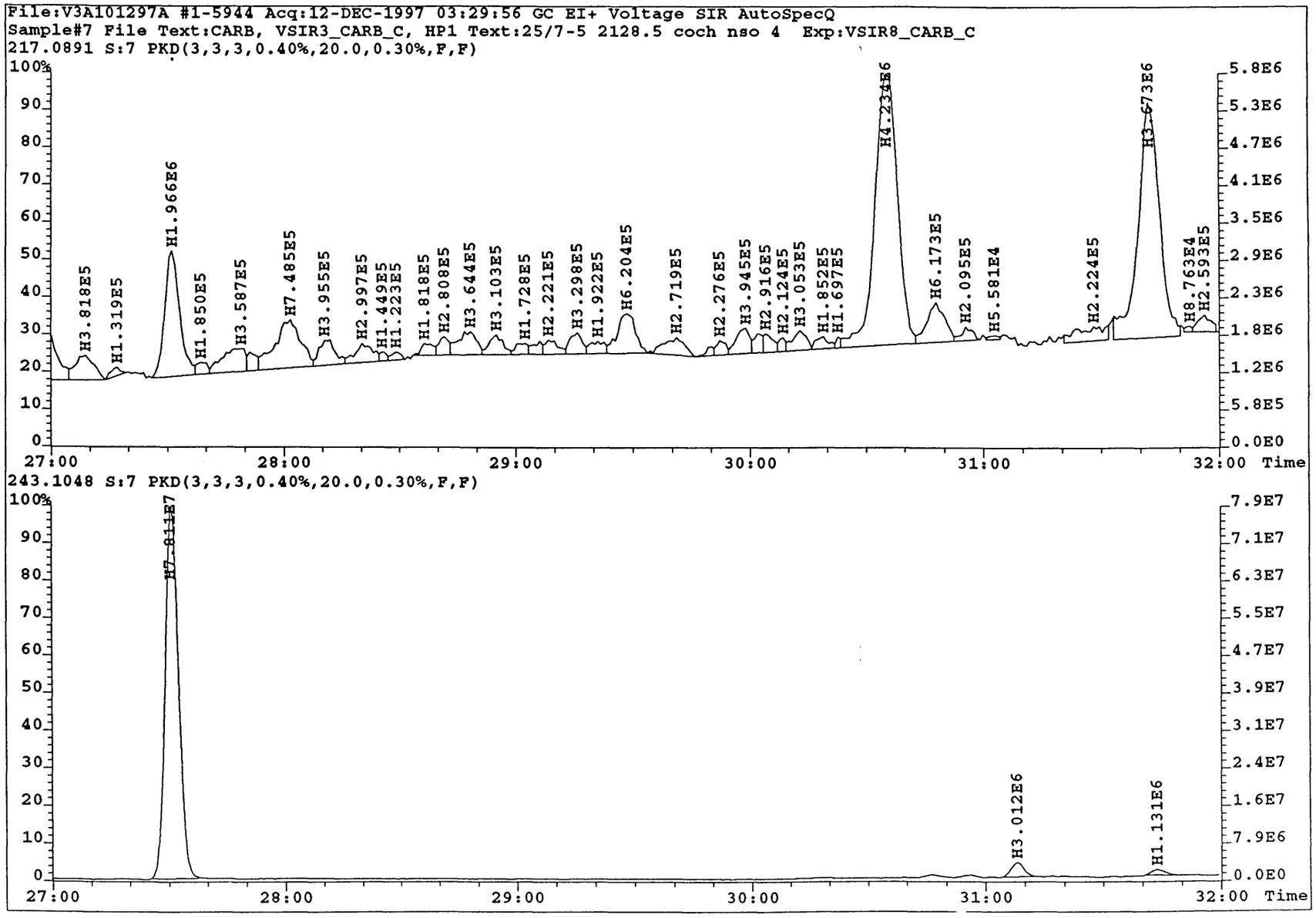
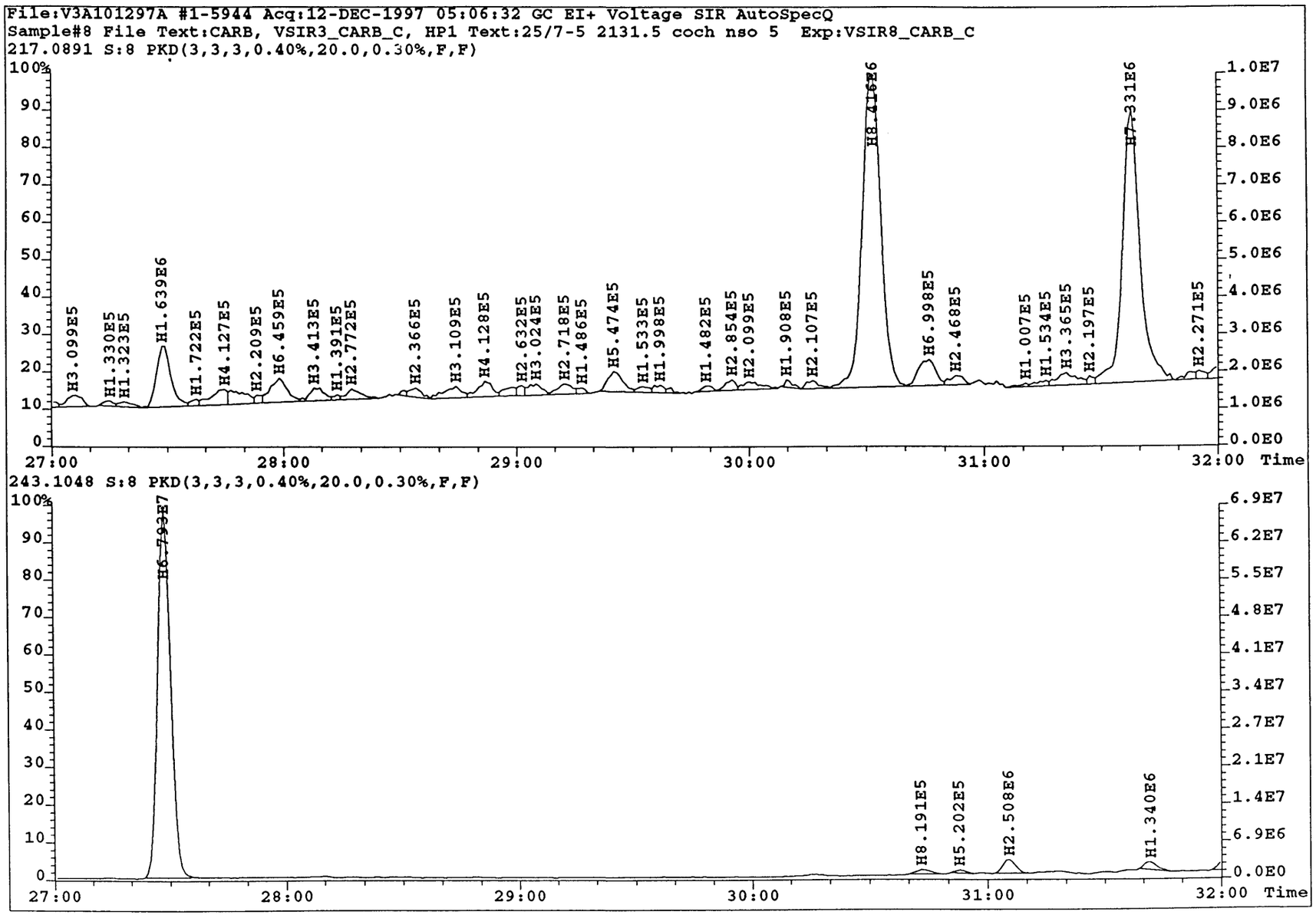
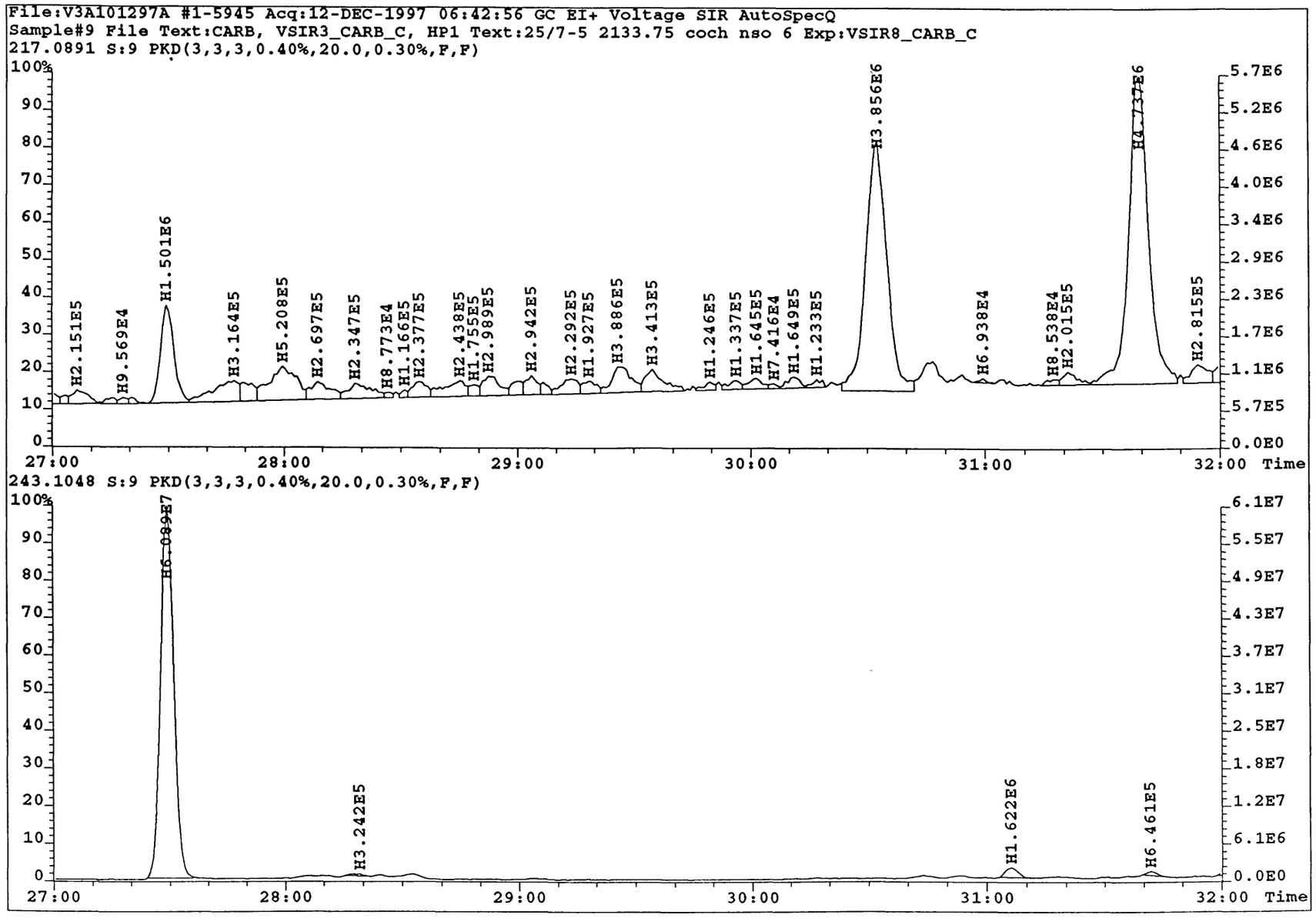
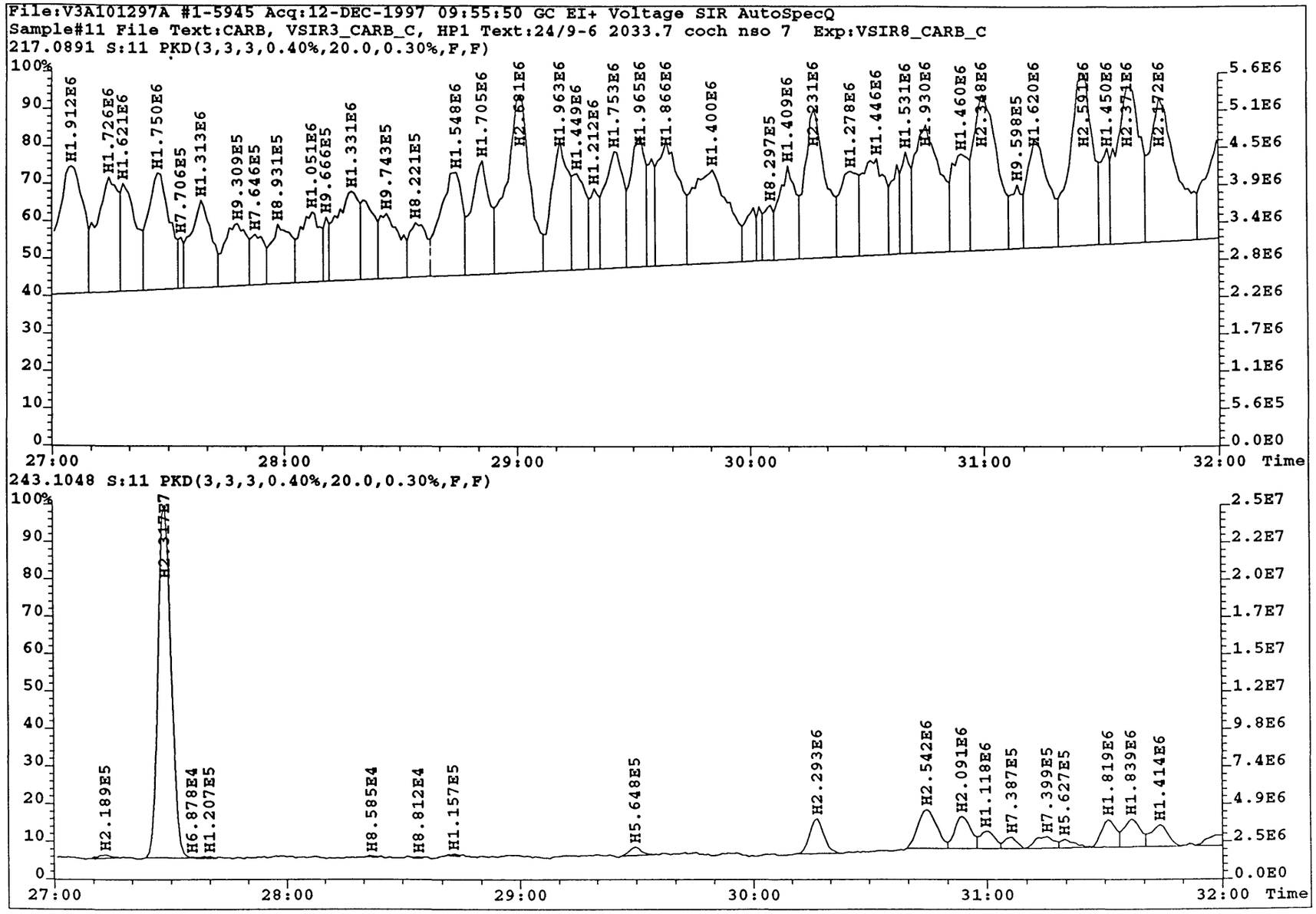
32:00 Time

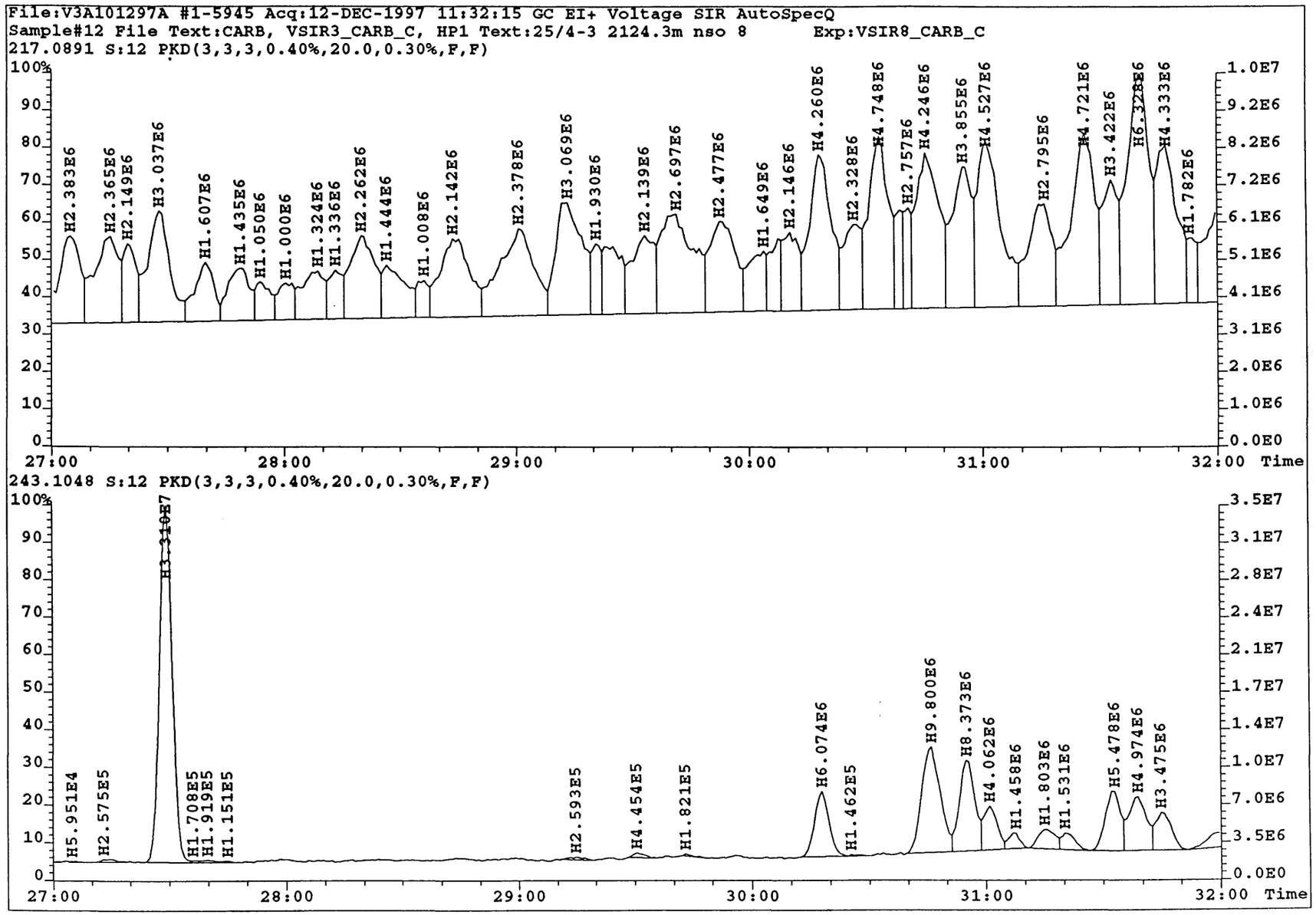

File:V3A101297A #1-5945 Acq:12-DEC-1997 01:53:43 GC EI+ Voltage SIR AutoSpecQ
Sample#6 File Text:CARB, VSIR3_CARB_C, HP1 Text:25/7-5 2126.7m oil nso 3 Exp:VSIR8_CARB_C
217.0891 S:6 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H2.831E5
H8.155E4
H1.796E6
H2.340E5
H1.812E5
H4.162E5
H3.737E5
H9.660E4
H1.483E5
H1.595E5
H1.465E5
H2.353E5
H1.077E5
H2.024E5
H2.403E5
H2.264E5
H2.076E5
H1.858E5
H1.742E5
H1.925E5
H3.429E5
H1.767E5
H8.376E4
H1.600E5
H1.146E5
H9.527E4
H9.903E4
H8.996E4
H1.671E5
H1.447E5
H9.114E4
H1.367E5
H1.645E5
H2.640E5
H1.234E5
H1.874E6
H2.209E5
243.1048 S:6 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H1.704E6
H6.032E5
27:00
28:00
29:00
30:00
31:00
32:00
Time

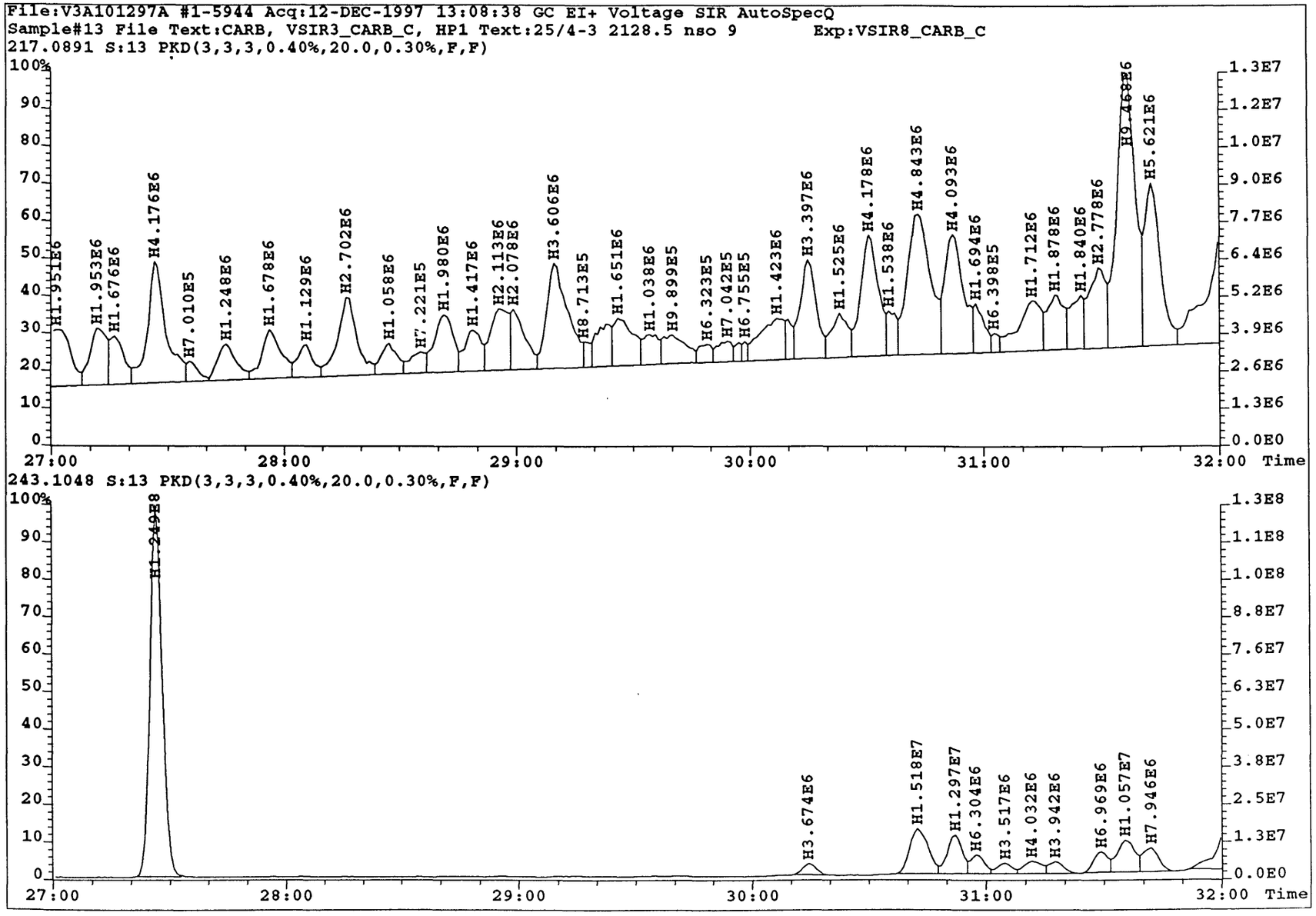

File:V3A101297A #1-5944 Acq:12-DEC-1997 03:29:56 GC EI+ Voltage SIR AutoSpecQ
Sample#7 File Text:CARB, VSIR3_CARB_C, HP1 Text:25/7-5 2128.5 coch nso 4 Exp:VSIR8_CARB_C
217.0891 S:7 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H3.818E5
H1.319E5
H1.966E6
H1.850E5
H3.587E5
H7.485E5
H3.955E5
H2.997E5
H1.449E5
H1.223E5
H1.818E5
H2.808E5
H3.644E5
H3.103E5
H1.728E5
H2.221E5
H3.298E5
H1.922E5
H6.204E5
H2.719E5
H2.276E5
H3.945E5
H2.916E5
H2.124E5
H3.053E5
H1.852E5
H1.697E5
H4.234E6
H6.173E5
H2.095E5
H5.581E4
H2.224E5
H3.673E6
H8.763E4
H2.593E5
243.1048 S:7 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H7.811E7
H3.012E6
H1.131E6
100%
90
80
70
60
50
40
30
20
10
0
27:00
28:00
29:00
30:00
31:00
32:00
Time
5.8E6
5.3E6
4.7E6
4.1E6
3.5E6
2.9E6
2.3E6
1.8E6
1.2E6
5.8E5
0.0E0
7.9E7
7.1E7
6.3E7
5.5E7
4.7E7
3.9E7
3.1E7
2.4E7
1.6E7
7.9E6
0.0E0

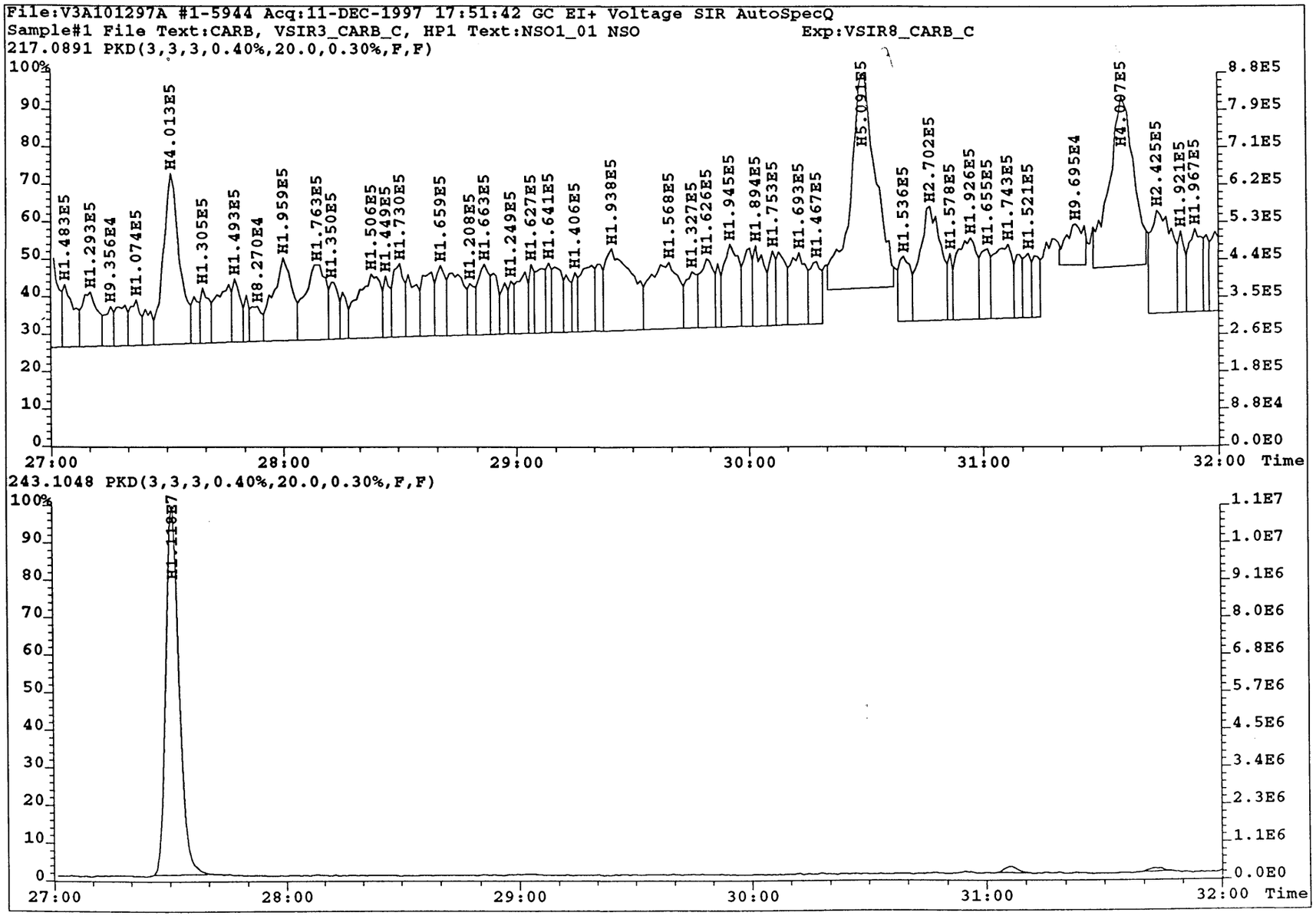

File:V3A101297A #1-5944 Acq:12-DEC-1997 05:06:32 GC EI+ Voltage SIR AutoSpecQ
Sample#8 File Text:CARB, VSIR3_CARB_C, HP1 Text:25/7-5 2131.5 coch nso 5 Exp:VSIR8_CARB_C
217.0891 S:8 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H3.099E5
H1.330E5
H1.323E5
H1.639E6
H1.722E5
H4.127E5
H2.209E5
H6.459E5
H3.413E5
H1.391E5
H2.772E5
H2.366E5
H3.109E5
H4.128E5
H2.632E5
H3.024E5
H2.718E5
H1.486E5
H5.474E5
H1.533E5
H1.998E5
H1.482E5
H2.854E5
H2.099E5
H1.908E5
H2.107E5
H8.416E6
H6.998E5
H2.468E5
H1.007E5
H1.534E5
H3.365E5
H2.197E5
H7.331E6
H2.271E5
243.1048 S:8 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H6.793E7
H8.191E5
H5.202E5
H2.508E6
H1.340E6
100%
90
80
70
60
50
40
30
20
10
0
1.0E7
9.0E6
8.0E6
7.0E6
6.0E6
5.0E6
4.0E6
3.0E6
2.0E6
1.0E6
0.0E0
6.9E7
6.2E7
5.5E7
4.8E7
4.1E7
3.4E7
2.7E7
2.1E7
1.4E7
6.9E6
0.0E0
27:00
28:00
29:00
30:00
31:00
32:00
Time

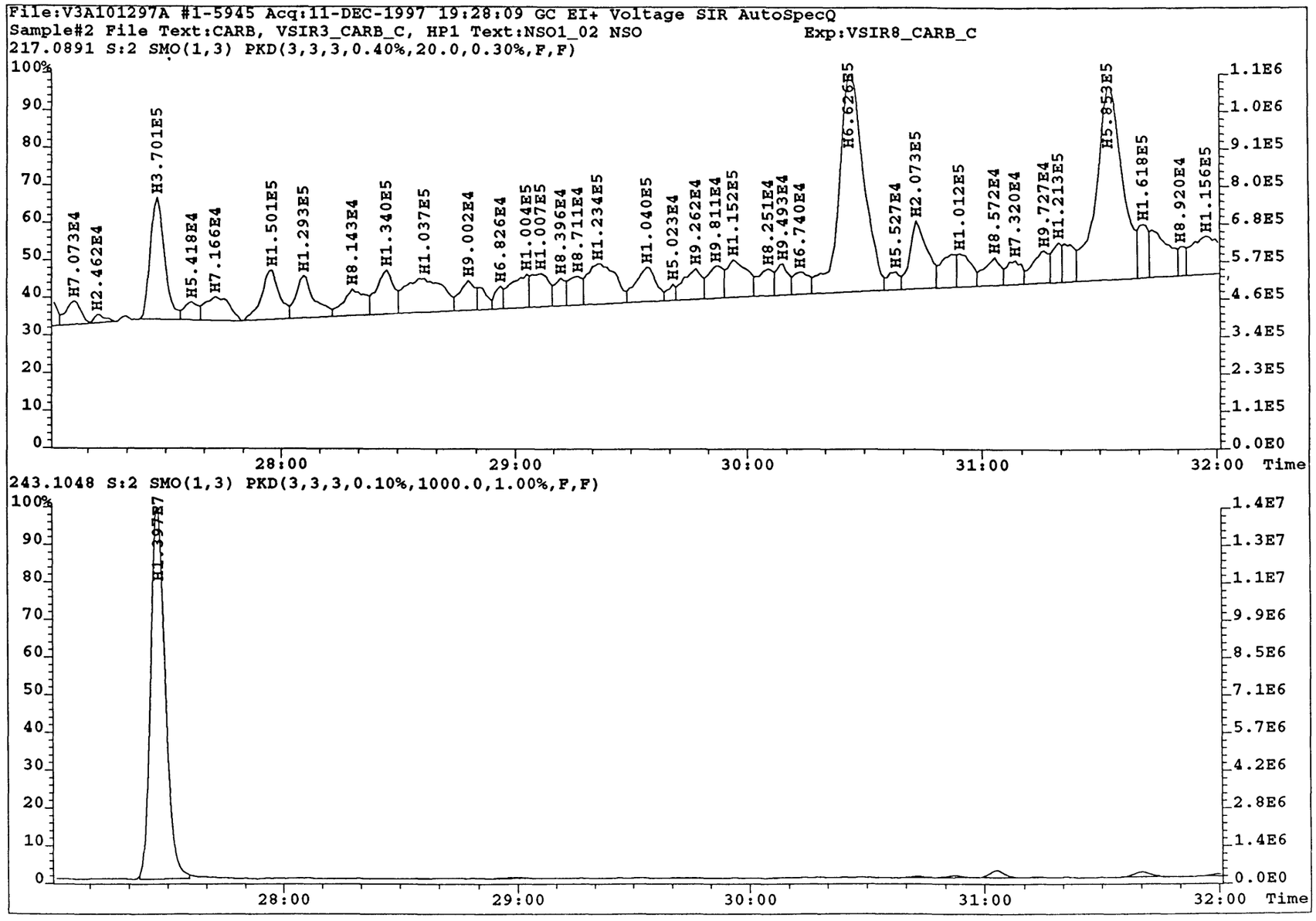

File:V3A101297A #1-5945 Acq:12-DEC-1997 06:42:56 GC EI+ Voltage SIR AutoSpecQ
Sample#9 File Text:CARB, VSIR3_CARB_C, HP1 Text:25/7-5 2133.75 coch nso 6 Exp:VSIR8_CARB_C
217.0891 S:9 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H2.151E5
H9.569E4
H1.501E6
H3.164E5
H5.208E5
H2.697E5
H2.347E5
H8.773E4
H1.166E5
H2.377E5
H2.438E5
H1.755E5
H2.989E5
H2.942E5
H2.292E5
H1.927E5
H3.886E5
H3.413E5
H1.246E5
H1.337E5
H1.645E5
H7.416E4
H1.649E5
H1.233E5
H3.856E6
H6.938E4
H8.538E4
H2.015E5
H4.737E6
H2.815E5
243.1048 S:9 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H6.089E7
H3.242E5
H1.622E6
H6.461E5
100%
90
80
70
60
50
40
30
20
10
0
27:00
28:00
29:00
30:00
31:00
32:00
Time
5.7E6
5.2E6
4.6E6
4.0E6
3.4E6
2.9E6
2.3E6
1.7E6
1.1E6
5.7E5
0.0E0
6.1E7
5.5E7
4.9E7
4.3E7
3.7E7
3.1E7
2.5E7
1.8E7
1.2E7
6.1E6
0.0E0

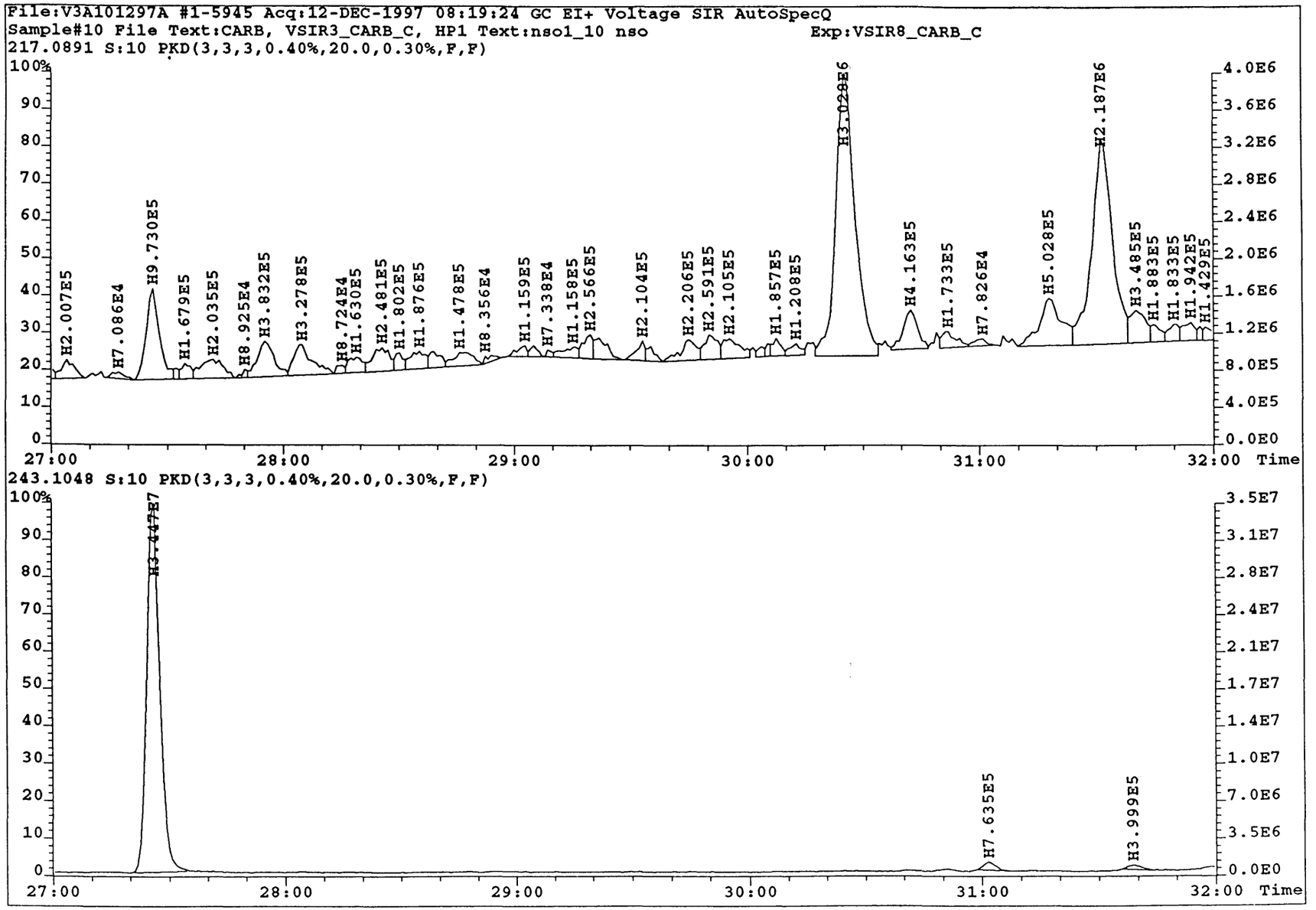

File:V3A101297A #1-5945 Acq:12-DEC-1997 09:55:50 GC EI+ Voltage SIR AutoSpecQ
Sample#11 File Text:CARB, VSIR3_CARB_C, HP1 Text:24/9-6 2033.7 coch nso 7 Exp:VSIR8_CARB_C
217.0891 S:11 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H1.912E6
H1.726E6
H1.621E6
H1.750E6
H7.706E5
H1.313E6
H9.309E5
H7.646E5
H8.931E5
H1.051E6
H9.666E5
H1.331E6
H9.743E5
H8.221E5
H1.548E6
H1.705E6
H2.681E6
H1.963E6
H1.449E6
H1.212E6
H1.753E6
H1.965E6
H1.866E6
H1.400E6
H8.297E5
H1.409E6
H2.231E6
H1.278E6
H1.446E6
H1.531E6
H1.930E6
H1.460E6
H2.348E6
H9.598E5
H1.620E6
H2.591E6
H1.450E6
H2.371E6
H2.172E6
100%
90
80
70
60
50
40
30
20
10
0
5.6E6
5.1E6
4.5E6
3.9E6
3.4E6
2.8E6
2.2E6
1.7E6
1.1E6
5.6E5
0.0E0
27:00
28:00
29:00
30:00
31:00
32:00 Time
243.1048 S:11 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H2.189E5
H2.317E7
H6.878E4
H1.207E5
H8.585E4
H8.812E4
H1.157E5
H5.648E5
H2.293E6
H2.542E6
H2.091E6
H1.118E6
H7.387E5
H7.399E5
H5.627E5
H1.819E6
H1.839E6
H1.414E6
100%
90
80
70
60
50
40
30
20
10
0
2.5E7
2.2E7
2.0E7
1.7E7
1.5E7
1.2E7
9.8E6
7.4E6
4.9E6
2.5E6
0.0E0
27:00
28:00
29:00
30:00
31:00
32:00 Time


File:V3A101297A #1-5945 Acq:12-DEC-1997 11:32:15 GC EI+ Voltage SIR AutoSpecQ
Sample#12 File Text:CARB, VSIR3_CARB_C, HP1 Text:25/4-3 2124.3m nso 8
Exp:VSIR8_CARB_C
217.0891 S:12 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H2.383E6
H2.365E6
H2.149E6
H3.037E6
H1.607E6
H1.435E6
H1.050E6
H1.000E6
H1.324E6
H1.336E6
H2.262E6
H1.444E6
H1.008E6
H2.142E6
H2.378E6
H3.069E6
H1.930E6
H2.139E6
H2.697E6
H2.477E6
H1.649E6
H2.146E6
H4.260E6
H2.328E6
H4.748E6
H2.757E6
H4.246E6
H3.855E6
H4.527E6
H2.795E6
H4.721E6
H3.422E6
H6.328E6
H4.333E6
H1.782E6
243.1048 S:12 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H5.951E4
H2.575E5
H1.708E5
H1.919E5
H1.151E5
H2.593E5
H4.454E5
H1.821E5
H6.074E6
H1.462E5
H9.800E6
H8.373E6
H4.062E6
H1.458E6
H1.803E6
H1.531E6
H5.478E6
H4.974E6
H3.475E6
100%
90
80
70
60
50
40
30
20
10
0
1.0E7
9.2E6
8.2E6
7.2E6
6.1E6
5.1E6
4.1E6
3.1E6
2.0E6
1.0E6
0.0E0
3.5E7
3.1E7
2.8E7
2.4E7
2.1E7
1.7E7
1.4E7
1.0E7
7.0E6
3.5E6
0.0E0
27:00
28:00
29:00
30:00
31:00
32:00
Time


File:V3A101297A #1-5944 Acq:12-DEC-1997 13:08:38 GC EI+ Voltage SIR AutoSpecQ
Sample#13 File Text:CARB, VSIR3_CARB_C, HP1 Text:25/4-3 2128.5 nso 9 Exp:VSIR8_CARB_C
217.0891 S:13 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H1.951E6
H1.953E6
H1.676E6
H4.176E6
H7.010E5
H1.248E6
H1.678E6
H1.129E6
H2.702E6
H1.058E6
H7.221E5
H1.980E6
H1.417E6
H2.113E6
H2.078E6
H3.606E6
H8.713E5
H1.651E6
H1.038E6
H9.899E5
H6.323E5
H7.042E5
H6.755E5
H1.423E6
H3.397E6
H1.525E6
H4.178E6
H1.538E6
H4.843E6
H4.093E6
H1.694E6
H6.398E5
H1.712E6
H1.878E6
H1.840E6
H2.778E6
H5.621E6
27:00
28:00
29:00
30:00
31:00
32:00 Time
243.1048 S:13 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H1.249E8
H3.674E6
H1.518E7
H1.297E7
H6.304E6
H3.517E6
H4.032E6
H3.942E6
H6.969E6
H1.057E7
H7.946E6
27:00
28:00
29:00
30:00
31:00
32:00 Time


File:V3A101297A #1-5944 Acq:11-DEC-1997 17:51:42 GC EI+ Voltage SIR AutoSpecQ
Sample#1 File Text:CARB, VSIR3_CARB_C, HP1 Text:NSO1_01 NSO
Exp:VSIR8_CARB_C
217.0891 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H1.483E5
H1.293E5
H9.356E4
H1.074E5
H4.013E5
H1.305E5
H1.493E5
H8.270E4
H1.959E5
H1.763E5
H1.350E5
H1.506E5
H1.449E5
H1.730E5
H1.659E5
H1.208E5
H1.663E5
H1.249E5
H1.627E5
H1.641E5
H1.406E5
H1.938E5
H1.568E5
H1.327E5
H1.626E5
H1.945E5
H1.894E5
H1.753E5
H1.693E5
H1.467E5
H5.091E5
H1.536E5
H2.702E5
H1.578E5
H1.926E5
H1.655E5
H1.743E5
H1.521E5
H9.695E4
H4.007E5
H2.425E5
H1.921E5
H1.967E5
100%
90
80
70
60
50
40
30
20
10
0
8.8E5
7.9E5
7.1E5
6.2E5
5.3E5
4.4E5
3.5E5
2.6E5
1.8E5
8.8E4
0.0E0
27:00
28:00
29:00
30:00
31:00
32:00
Time
243.1048 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H1.119E7
100%
90
80
70
60
50
40
30
20
10
0
1.1E7
1.0E7
9.1E6
8.0E6
6.8E6
5.7E6
4.5E6
3.4E6
2.3E6
1.1E6
0.0E0
27:00
28:00
29:00
30:00
31:00
32:00
Time


File:V3A101297A #1-5945 Acq:11-DEC-1997 19:28:09 GC EI+ Voltage SIR AutoSpecQ
Sample#2 File Text:CARB, VSIR3_CARB_C, HP1 Text:NSO1_02 NSO
Exp:VSIR8_CARB_C
217.0891 S:2 SMO(1,3) PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H7.073E4
H2.462E4
H3.701E5
H5.418E4
H7.166E4
H1.501E5
H1.293E5
H8.143E4
H1.340E5
H1.037E5
H9.002E4
H6.826E4
H1.004E5
H1.007E5
H8.396E4
H8.711E4
H1.234E5
H1.040E5
H5.023E4
H9.262E4
H9.811E4
H1.152E5
H8.251E4
H9.493E4
H6.740E4
H6.626E5
H5.527E4
H2.073E5
H1.012E5
H8.572E4
H7.320E4
H9.727E4
H1.213E5
H5.853E5
H1.618E5
H8.920E4
H1.156E5
100%
90
80
70
60
50
40
30
20
10
0
1.1E6
1.0E6
9.1E5
8.0E5
6.8E5
5.7E5
4.6E5
3.4E5
2.3E5
1.1E5
0.0E0
28:00
29:00
30:00
31:00
32:00
Time
243.1048 S:2 SMO(1,3) PKD(3,3,3,0.10%,1000.0,1.00%,F,F)
H1.397E7
100%
90
80
70
60
50
40
30
20
10
0
1.4E7
1.3E7
1.1E7
9.9E6
8.5E6
7.1E6
5.7E6
4.2E6
2.8E6
1.4E6
0.0E0
28:00
29:00
30:00
31:00
32:00
Time


File:V3A101297A #1-5945 Acq:12-DEC-1997 08:19:24 GC EI+ Voltage SIR AutoSpecQ
Sample#10 File Text:CARB, VSIR3_CARB_C, HP1 Text:nso1_10 nso
Exp:VSIR8_CARB_C
217.0891 S:10 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H2.007E5
H7.086E4
H9.730E5
H1.679E5
H2.035E5
H8.925E4
H3.832E5
H3.278E5
H8.724E4
H1.630E5
H2.481E5
H1.802E5
H1.876E5
H1.478E5
H8.356E4
H1.159E5
H7.338E4
H1.158E5
H2.566E5
H2.104E5
H2.206E5
H2.591E5
H2.105E5
H1.857E5
H1.208E5
H3.028E6
H4.163E5
H1.733E5
H7.826E4
H5.028E5
H2.187E6
H3.485E5
H1.883E5
H1.833E5
H1.942E5
H1.429E5
243.1048 S:10 PKD(3,3,3,0.40%,20.0,0.30%,F,F)
H3.447E7
H7.635E5
H3.999E5
Time