

Norsk Hydro a.s Bergen

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8. Summary/Conclusion/Recommendation		

BA-94-1486-1

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## Appendix III

Mass chromatograms and summary sheets of  
aromatic hydrocarbons

P#	Rt	Ion m/z	Compound	Height	Amount
<b>Int.Std.(if added):</b>					ng/mg
14	14.48	136.00	d8 N	6291	18
46	32.56	188.00	d10 P	27629	18
66	47.98	240.00	d12 C	34472	18
<b>ARYL ISOPRENOIDS</b>					
1	21.56	133	C13 AI	3791	
2	23.64	133	C14 AI	3804	
3	26.95	133	C15 AI	7093	
4	29.79	133	C16 AI	8781	
5	32.49	133	C17 AI	9950	
6	35.13	133	C18 AI	7281	
7	36.04	133	C19 AI	3669	
8	38.68	133	C20 AI	1629	
9	40.81	133	C21 AI	2051	
10	43.04	133	C22 AI	2949	
11	44.78	133	C23 AI	906	
12	56.16	133	C30AI	1026	
13	57.83	133	C31 AI	1066	
<b>NAPHTALENES</b>					
15	14.56	128	N	373182	971
16	18.32	142	2-MN	1414965	4900
17	18.86	142	1-MN	885361	3066
18	21.47	156	2-EN	218275	671
19	21.60	156	1-EN	68960	212
20	21.89	156	2,6+ 2,7-DMN	1112768	3419
21	22.37	156	1,3+1,7-DMN	854167	2624
22	22.48	156	1,6-DMN	887012	2725
23	22.95	156	2,3+1,4-DMN	464878	1428
24	23.05	156	1,5-DMN	196544	604
25	23.40	156	1,2-DMN	158771	488
29	25.25	170	C3- N	106780	353
30	25.44	170	C3-N	112244	372
31	25.56	170	1,3,7-TMN	506368	1667
32	25.74	170	1,3,6-TMN	708995	2335
33	26.19	170	1,3,5+1,4,6-TMN	361884	1192
34	26.29	170	2,3,6-TMN	588608	1938
35	26.69	170	1,6,7+1,2,7-TMN	332800	1096
36	26.71	170	1,2,6-TMN	273088	899
37	27.19	170	1,2,4-TMN	36628	121
38	27.38	170	1,2,5-TMN	90339	297
<b>BIPHENYLS</b>					
26	20.99	154	BP	451202	1012
27	24.33	168	3-MBP	948032	2126
28	24.57	168	4-MBP	409472	918
39	28.35	182	C2-BP	308181	691
40	28.73	182	C2-BP	311733	699
41	29.03	182	C2-BP	191151	429

  

<b>AROMATICS</b>					
File name (sample):					
<b>2471.D</b>					
File path:					
C:\HPCHEM\1\DATA\ARO\B3009OIL\					
Misc information:					
Sample name:					
30/9-15,11					
Operator: jkb					
Method: MSD_ARO1					
Date analyzed: 08-Apr-94					

  

P#	Rt	Ion m/z	Compound	Height	Amount
<b>FLUORENES</b>					ng/mg
42	27.24	166	F	307392	891
43	30.45	180	C1-F	150272	435
44	30.52	180	C1-F	188383	546
45	30.72	180	1-MF	384553	1115
<b>DIBENZOTHIOPHENES</b>					
47	31.97	184	DBT	49095	9
48	34.59	198	4-MDBT	70452	13
49	35.07	198	3+2-MDBT	38549	7
50	35.70	198	1-MDBT	7959	1
<b>PHENANTRENES</b>					
51	32.72	178	P	776512	425
52	35.63	192	3-MP	490930	282
53	35.78	192	2-MP	555985	320
54	36.29	192	9-MP	437946	252
55	36.41	192	1-MP	331228	191
57	38.31	206	2EP+9EP+3,6-DMP	167543	88
58	38.54	206	1EP	194761	102
59	38.64	206	2,6+2,7+3,5-DMP	92053	48
60	39.01	206	1,3+2,10+3,9+3,10-DMP	422494	222
61	39.16	206	1,6+2,5+2,9-DMP	212160	111
62	39.28	206	1,7-DMP	150954	79
63	39.42	206	2,3-DMP	95514	50
64	39.54	206	1,9+4,9+4,10-DMP	100262	53
65	39.84	206	1,8-DMP	28111	15
<b>RETENE</b>					
56	43.10	219	Retene	31484	17
<b>TRIAMOMATIC STEROIDS</b>					
67	47.41	231	20TA	4990	0.5
68	49.39	231	21TA	1577	0.2
69	56.23	231	S26TA	48	0.0
70	57.38	231	R26TA/S27TA	677	0.1
71	58.35	231	S28TA	626	0.1
72	58.83	231	R27TA	243	0.0
73	60.04	231	R28TA	1618	0.2

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File name (sample): <b>2471.D</b>		Sample name: 30/9-15,11
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\		Operator: jkb
Misc information:		Method: MSD_ARO1
		Date analyzed: 08-Apr-94

<b>AROMATICS</b>		
Ratios based on amounts, ng/mg		
Naphtalene amount (ng/mg)	Naphtalene	971
C1 Naphtalenes amount (ng/mg)	Sum C1-Naph.	7967
C2 Naphtalenes amount (ng/mg)	Sum C2-Naph.	12171
C3 Naphtalenes amount (ng/mg)	Sum C3-Naph.	10270
Phenanthrene amount (ng/mg)	Phenanthrene	425
C1 Phenanthrenes amount (ng/mg)	Sum C1-Phen.	1045
C2 Phenanthrenes amount (ng/mg)	Sum C2-Phen.	769
$3/2*(3MP+2MP)/(P+9MP+1MP)$	MPI1	1.0
$(3MP+2MP)/(3MP+2MP+9MP+1MP)$	F1	0.6
$2MP/(3MP+2MP+9MP+1MP)$	F2	0.3
(2,6+2,7)DMN/1,5DMN	DNR	5.7
$100*20TA/(20TA+S28TA+R28TA)$	%-TAS'n	69
DBT/P	DBT/P	0.0
F/P	F/P	2.1
BP/1,6DMN	BPH/1,6DMN	0.4
2MN/1MN	2MN/1MN	1.6
2EN/1EN	2EN/1EN	3.2
4MDBT/1MDBT	4MDBT/1MDBT	8.9

P#	Rt	Ion m/z	Compound	Height	Amount
<b>Int.Std.(if added):</b>					ng/mg
14	14.46	136.00	d8 N	10764	17
46	32.57	188.00	d10 P	23520	17
66	47.97	240.00	d12 C	26681	17
<b>ARYL ISOPRENOIDS</b>					
1	21.60	133	C13 AI	3185	
2	23.44	133	C14 AI	4374	
3	26.94	133	C15 AI	5899	
4	29.79	133	C16 AI	7897	
5	32.50	133	C17 AI	9849	
6	34.56	133	C18 AI	3438	
7	36.03	133	C19 AI	3210	
8	38.67	133	C20 AI	1705	
9	40.66	133	C21 AI	870	
10	42.72	133	C22 AI	1207	
11	44.77	133	C23 AI	840	
12	56.14	133	C30AI	811	
13	57.96	133	C31 AI	240	
<b>NAPHTALENES</b>					
15	14.57	128	N	333130	495
16	18.31	142	2-MN	1212788	2398
17	18.84	142	1-MN	728593	1441
18	21.48	156	2-EN	186979	328
19	21.58	156	1-EN	52349	92
20	21.86	156	2,6+ 2,7-DMN	933549	1638
21	22.34	156	1,3+1,7-DMN	752950	1321
22	22.45	156	1,6-DMN	782208	1372
23	22.93	156	2,3+1,4-DMN	374727	657
24	23.04	156	1,5-DMN	151936	267
25	23.38	156	1,2-DMN	120817	212
29	25.24	170	C3- N	89324	169
30	25.43	170	C3-N	97596	185
31	25.57	170	1,3,7-TMN	457441	860
32	25.72	170	1,3,6-TMN	596322	1121
33	26.19	170	1,3,5+1,4,6-TMN	309760	582
34	26.28	170	2,3,6-TMN	491841	925
35	26.68	170	1,6,7+1,2,7-TMN	272128	512
36	26.74	170	1,2,6-TMN	142977	269
37	27.18	170	1,2,4-TMN	32871	62
38	27.39	170	1,2,5-TMN	79645	150
<b>BIPHENYLS</b>					
26	20.99	154	BP	351692	450
27	24.32	168	3-MBP	803328	1028
28	24.56	168	4-MBP	314880	403
39	28.34	182	C2-BP	259115	332
40	28.72	182	C2-BP	254075	325
41	29.01	182	C2-BP	151388	194

**AROMATICS**

File name (sample): <b>2465_5.D</b>
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\
Misc information:
Sample name: 30/9-15,13
Operator: jkb
Method: MSD_ARO1
Date analyzed: 08-Apr-94

P#	Rt	Ion m/z	Compound	Height	Amount
<b>FLUORENES</b>					
42	27.23	166	F	220891	366
43	30.43	180	C1-F	108574	179
44	30.50	180	C1-F	133315	221
45	30.71	180	1-MF	294866	488
<b>DIBENZOTHIOPHENES</b>					
47	31.96	184	DBT	41060	8
48	34.58	198	4-MDBT	50662	10
49	35.08	198	3+2-MDBT	27222	6
50	35.69	198	1-MDBT	6643	1
<b>PHENANTRENES</b>					
51	32.70	178	P	635392	399
52	35.62	192	3-MP	393102	260
53	35.77	192	2-MP	421448	278
54	36.26	192	9-MP	338240	223
55	36.38	192	1-MP	242431	160
57	38.30	206	2EP+9EP+3,6-DMP	127680	77
58	38.53	206	1EP	150528	91
59	38.63	206	2,6+2,7+3,5-DMP	72938	44
60	39.00	206	1,3+2,10+3,9+3,10-DMP	339733	205
61	39.13	206	1,6+2,5+2,9-DMP	165121	100
62	39.27	206	1,7-DMP	119063	72
63	39.41	206	2,3-DMP	70438	42
64	39.52	206	1,9+4,9+4,10-DMP	63978	39
65	39.83	206	1,8-DMP	20572	12
<b>RETENE</b>					
56	43.07	219	Retene	26590	17
<b>TRIAROMATIC STEROIDS</b>					
67	47.40	231	20TA	4501	0.6
68	49.37	231	21TA	1306	0.2
69	56.18	231	S26TA	367	0.0
70	57.37	231	R26TA/S27TA	796	0.1
71	58.34	231	S28TA	646	0.1
72	58.86	231	R27TA	259	0.0
73	60.04	231	R28TA	1658	0.2

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File name (sample): <b>2465_5.D</b>		Sample name: 30/9-15,13
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\		Operator: jkb
Misc information:		Method: MSD_ARO1
		Date analyzed: 08-Apr-94

<b>AROMATICS</b>		
Ratios based on amounts, ng/mg		
Naphtalene amount (ng/mg)	Naphtalene	495
C1 Naphtalenes amount (ng/mg)	Sum C1-Naph.	3839
C2 Naphtalenes amount (ng/mg)	Sum C2-Naph.	5886
C3 Naphtalenes amount (ng/mg)	Sum C3-Naph.	4833
Phenanthrene amount (ng/mg)	Phenanthrene	399
C1 Phenanthrenes amount (ng/mg)	Sum C1-Phen.	921
C2 Phenanthrenes amount (ng/mg)	Sum C2-Phen.	681
$3/2 * (3MP+2MP)/(P+9MP+1MP)$	MPI1	1.0
$(3MP+2MP)/(3MP+2MP+9MP+1MP)$	F1	0.6
$2MP/(3MP+2MP+9MP+1MP)$	F2	0.3
(2,6+2,7)DMN/1,5DMN	DNR	6.1
$100 * 20TA / (20TA + S28TA + R28TA)$	%-TAS'n	66
DBT/P	DBT/P	0.0
F/P	F/P	0.9
BP/1,6DMN	BPH/1,6DMN	0.3
2MN/1MN	2MN/1MN	1.7
2EN/1EN	2EN/1EN	3.6
4MDBT/1MDBT	4MDBT/1MDBT	7.6

P#	Rt	Ion m/z	Compound	Height	Amount
<b>Int.Std.(if added):</b>					ng/mg
14	14.46	136.00	d8 N	8746	19
46	32.51	188.00	d10 P	17068	19
66	47.94	240.00	d12 C	18493	19
<b>ARYL ISOPRENOIDS</b>					
1	21.58	133	C13 AI	11926	
2	23.52	133	C14 AI	5699	
3	26.80	133	C15 AI	4121	
4	29.33	133	C16 AI	3007	
5	31.87	133	C17 AI	2339	
6	34.66	133	C18 AI	1875	
7	36.02	133	C19 AI	4666	
8	38.65	133	C20 AI	3045	
9	40.64	133	C21 AI	1375	
10	42.70	133	C22 AI	669	
11	44.75	133	C23 AI	738	
12	56.15	133	C30AI	388	
13	57.83	133	C31 AI	1038	
<b>NAPHTALENES</b>					
15	14.57	128	N	482657	993
16	18.27	142	2-MN	766920	2100
17	18.83	142	1-MN	508525	1393
18	21.44	156	2-EN	81722	199
19	21.58	156	1-EN	38946	95
20	21.81	156	2,6+ 2,7-DMN	353826	860
21	22.29	156	1,3+1,7-DMN	409148	994
22	22.40	156	1,6-DMN	376288	914
23	22.88	156	2,3+1,4-DMN	157548	383
24	23.00	156	1,5-DMN	85721	208
25	23.37	156	1,2-DMN	74449	181
29	25.20	170	C3- N	31630	83
30	25.39	170	C3-N	35238	92
31	25.51	170	1,3,7-TMN	148608	387
32	25.67	170	1,3,6-TMN	202515	527
33	26.14	170	1,3,5+1,4,6-TMN	157760	411
34	26.22	170	2,3,6-TMN	140800	367
35	26.64	170	1,6,7+1,2,7-TMN	107408	280
36	26.71	170	1,2,6-TMN	69608	181
37	27.14	170	1,2,4-TMN	21911	57
38	27.35	170	1,2,5-TMN	77893	203
<b>BIPHENYLS</b>					
26	20.98	154	BP	172372	306
27	24.27	168	3-MBP	221882	393
28	24.53	168	4-MBP	72907	129
39	28.30	182	C2-BP	65224	116
40	28.67	182	C2-BP	53782	95
41	28.98	182	C2-BP	35063	62

**AROMATICS**

File name (sample): <b>2263_5.D</b>
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\
Misc information:
Sample name: 30/9-15, mdt
Operator: jkb
Method: MSD_ARO1
Date analyzed: 08-Apr-94

P#	Rt	Ion m/z	Compound	Height	Amount
<b>FLUORENES</b>					ng/mg
42	27.19	166	F	67649	155
43	30.40	180	C1-F	29288	67
44	30.47	180	C1-F	31008	71
45	30.66	180	1-MF	90552	208
<b>DIBENZOTHIOPHENES</b>					
47	31.92	184	DBT	29120	9
48	34.52	198	4-MDBT	38160	12
49	35.04	198	3+2-MDBT	13926	4
50	35.63	198	1-MDBT	13414	4
<b>PHENANTRENES</b>					
51	32.65	178	P	190563	186
52	35.56	192	3-MP	89686	92
53	35.70	192	2-MP	93892	96
54	36.19	192	9-MP	120211	123
55	36.33	192	1-MP	101143	104
57	38.25	206	2EP+9EP+3,6-DMP	28632	27
58	38.48	206	1EP	25019	23
59	38.58	206	2,6+2,7+3,5-DMP	13215	12
60	38.93	206	1,3+2,10+3,9+3,10-DMP	106607	100
61	39.08	206	1,6+2,5+2,9-DMP	58808	55
62	39.22	206	1,7-DMP	50557	47
63	39.36	206	2,3-DMP	16045	15
64	39.48	206	1,9+4,9+4,10-DMP	31789	30
65	39.79	206	1,8-DMP	12191	11
<b>RETENE</b>					
56	43.05	219	Retene	64889	63
<b>TRIAROMATIC STEROIDS</b>					
67	47.50	231	20TA	8838	1.8
68	49.34	231	21TA	9475	1.9
69	56.18	231	S26TA	10183	2.0
70	57.38	231	R26TA/S27TA	31925	6.4
71	58.37	231	S28TA	16906	3.4
72	58.85	231	R27TA	15385	3.1
73	60.07	231	R28TA	17741	3.6

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File name (sample): <b>2263_5.D</b>	Sample name: 30/9-15, mdt
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\	Operator: jkb
Misc information:	Method: MSD_ARO1
	Date analyzed: 08-Apr-94

<b>AROMATICS</b>		
Ratios based on amounts, ng/mg		
Naphtalene amount (ng/mg)	Naphtalene	993
C1 Naphtalenes amount (ng/mg)	Sum C1-Naph.	3493
C2 Naphtalenes amount (ng/mg)	Sum C2-Naph.	3833
C3 Naphtalenes amount (ng/mg)	Sum C3-Naph.	2587
Phenanthrene amount (ng/mg)	Phenanthrene	186
C1 Phenanthrenes amount (ng/mg)	Sum C1-Phen.	415
C2 Phenanthrenes amount (ng/mg)	Sum C2-Phen.	321
$3/2 \cdot (3MP+2MP)/(P+9MP+1MP)$	MPI1	0.7
$(3MP+2MP)/(3MP+2MP+9MP+1MP)$	F1	0.5
$2MP/(3MP+2MP+9MP+1MP)$	F2	0.2
(2,6+2,7)DMN/1,5DMN	DNR	4.1
$100 \cdot 20TA/(20TA+S28TA+R28TA)$	%-TAS'n	20
DBT/P	DBT/P	0.0
F/P	F/P	0.8
BP/1,6DMN	BPH/1,6DMN	0.3
2MN/1MN	2MN/1MN	1.5
2EN/1EN	2EN/1EN	2.1
4MDBT/1MDBT	4MDBT/1MDBT	2.8



P#	Rt	Ion m/z	Compound	Height	Amount
<b>Int.Std.(if added):</b>					ng/mg
14	14.43	136.00	d8 N	14031	13
46	32.47	188.00	d10 P	29560	13
66	47.93	240.00	d12 C	26260	13
<b>ARYL ISOPRENOIDS</b>					
1	21.53	133	C13 AI	127	
2	23.57	133	C14 AI	675	
3	26.86	133	C15 AI	6106	
4	29.27	133	C16 AI	4355	
5	31.83	133	C17 AI	9537	
6	34.49	133	C18 AI	13566	
7	35.98	133	C19 AI	13870	
8	38.61	133	C20 AI	14375	
9	40.69	133	C21 AI	1935	
10	42.75	133	C22 AI	2401	
11	44.85	133	C23 AI	3579	
12	56.14	133	C30AI	3346	
13	57.82	133	C31 AI	5869	
<b>NAPHTALENES</b>					
15	14.51	128	N	1994	2
16	18.20	142	2-MN	3436	4
17	18.77	142	1-MN	2065	2
18	21.41	156	2-EN	601	1
19	21.53	156	1-EN	289	0
20	21.75	156	2,6+ 2,7-DMN	2167	2
21	22.22	156	1,3+1,7-DMN	4086	4
22	22.33	156	1,6-DMN	2917	3
23	22.83	156	2,3+1,4-DMN	2043	2
24	22.95	156	1,5-DMN	918	1
25	23.33	156	1,2-DMN	1021	1
29	25.15	170	C3- N	1245	1
30	25.34	170	C3-N	1461	2
31	25.46	170	1,3,7-TMN	4925	5
32	25.60	170	1,3,6-TMN	9416	10
33	26.08	170	1,3,5+1,4,6-TMN	10415	11
34	26.17	170	2,3,6-TMN	5813	6
35	26.59	170	1,6,7+1,2,7-TMN	8379	9
36	26.66	170	1,2,6-TMN	4749	5
37	27.11	170	1,2,4-TMN	2451	3
38	27.30	170	1,2,5-TMN	12138	13
<b>BIPHENYLS</b>					
26	20.92	154	BP	1416	1
27	24.21	168	3-MBP	3614	3
28	24.49	168	4-MBP	1081	1
39	28.25	182	C2-BP	9741	7
40	28.61	182	C2-BP	7401	5
41	28.92	182	C2-BP	4396	3

**AROMATICS**

File name (sample): <b>2568_75.D</b>
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\
Misc information:
Sample name: 30/9-11a
Operator: jkb
Method: MSD_ARO1
Date analyzed: 08-Apr-94

P#	Rt	Ion m/z	Compound	Height	Amount
<b>FLUORENES</b>					ng/mg
42	27.31	166	F	1297	1
43	30.36	180	C1-F	1020	1
44	30.43	180	C1-F	1224	1
45	30.60	180	1-MF	4767	5
<b>DIBENZOTHIOPHENES</b>					
47	31.89	184	DBT	4148	1
48	34.49	198	4-MDBT	9842	1
49	35.01	198	3+2-MDBT	3905	0
50	35.42	198	1-MDBT	1768	0
<b>PHENANTRENES</b>					
51	32.60	178	P	62801	23
52	35.53	192	3-MP	29582	12
53	35.66	192	2-MP	36843	14
54	36.15	192	9-MP	53644	21
55	36.29	192	1-MP	39136	15
57	38.23	206	2EP+9EP+3,6-DMP	19827	7
58	38.45	206	1EP	17105	6
59	38.56	206	2,6+2,7+3,5-DMP	8879	3
60	38.89	206	1,3+2,10+3,9+3,10-DMP	57419	21
61	39.04	206	1,6+2,5+2,9-DMP	33360	12
62	39.18	206	1,7-DMP	27489	10
63	39.34	206	2,3-DMP	10010	4
64	39.44	206	1,9+4,9+4,10-DMP	18483	7
65	39.75	206	1,8-DMP	6365	2
<b>RETENE</b>					
56	43.03	219	Retene	115212	43
<b>TRIAROMATIC STEROIDS</b>					
67	47.48	231	20TA	9061	0.8
68	49.33	231	21TA	11059	1.0
69	56.16	231	S26TA	17725	1.7
70	57.37	231	R26TA/S27TA	72627	6.8
71	58.34	231	S28TA	42335	4.0
72	58.83	231	R27TA	36214	3.4
73	60.04	231	R28TA	45804	4.3

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File name (sample): <b>2568_75.D</b>		Sample name: 30/9-11a
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\		Operator: jkb
Misc information:		Method: MSD_ARO1
		Date analyzed: 08-Apr-94

<b>AROMATICS</b>		
Ratios based on amounts, ng/mg		
Naphtalene amount (ng/mg)	Naphtalene	2
C1 Naphtalenes amount (ng/mg)	Sum C1-Naph.	6
C2 Naphtalenes amount (ng/mg)	Sum C2-Naph.	14
C3 Naphtalenes amount (ng/mg)	Sum C3-Naph.	66
Phenanthrene amount (ng/mg)	Phenanthrene	23
C1 Phenanthrenes amount (ng/mg)	Sum C1-Phen.	62
C2 Phenanthrenes amount (ng/mg)	Sum C2-Phen.	71
$3/2 \cdot (3MP+2MP)/(P+9MP+1MP)$	MPI1	0.7
$(3MP+2MP)/(3MP+2MP+9MP+1MP)$	F1	0.4
$2MP/(3MP+2MP+9MP+1MP)$	F2	0.2
(2,6+2,7)DMN/1,5DMN	DNR	2.4
$100 \cdot 20TA/(20TA+S28TA+R28TA)$	%-TAS'n	9
DBT/P	DBT/P	0.0
F/P	F/P	0.1
BP/1,6DMN	BPH/1,6DMN	0.4
2MN/1MN	2MN/1MN	1.7
2EN/1EN	2EN/1EN	2.1
4MDBT/1MDBT	4MDBT/1MDBT	5.6

P#	Rt	Ion m/z	Compound	Height	Amount
<b>Int.Std.(if added):</b>					ng/mg
14	14.48	136.00	d8 N	487	13
46	32.53	188.00	d10 P	19360	13
66	47.97	240.00	d12 C	17524	13
<b>ARYL ISOPRENOIDS</b>					
1	21.56	133	C13 AI	108	
2	23.52	133	C14 AI	454	
3	26.80	133	C15 AI	2138	
4	29.33	133	C16 AI	3613	
5	31.98	133	C17 AI	3651	
6	34.54	133	C18 AI	10890	
7	36.03	133	C19 AI	10842	
8	38.65	133	C20 AI	10513	
9	40.66	133	C21 AI	4557	
10	42.72	133	C22 AI	2689	
11	44.77	133	C23 AI	2160	
12	56.05	133	C30AI	3107	
13	57.87	133	C31 AI	4565	
<b>NAPHTALENES</b>					
15	14.57	128	N	287	7
16	18.26	142	2-MN	4047	128
17	18.81	142	1-MN	2852	91
18	21.46	156	2-EN	950	27
19	21.58	156	1-EN	463	13
20	21.79	156	2,6+ 2,7-DMN	5397	152
21	22.26	156	1,3+1,7-DMN	7848	221
22	22.38	156	1,6-DMN	5754	162
23	22.88	156	2,3+1,4-DMN	3972	112
24	22.99	156	1,5-DMN	1435	40
25	23.37	156	1,2-DMN	1634	46
29	25.20	170	C3- N	1584	48
30	25.39	170	C3-N	1792	54
31	25.51	170	1,3,7-TMN	6672	201
32	25.65	170	1,3,6-TMN	12316	372
33	26.14	170	1,3,5+1,4,6-TMN	11494	347
34	26.21	170	2,3,6-TMN	8639	261
35	26.64	170	1,6,7+1,2,7-TMN	9815	296
36	26.69	170	1,2,6-TMN	4878	147
37	27.14	170	1,2,4-TMN	2378	72
38	27.35	170	1,2,5-TMN	10667	322
<b>BIPHENYLS</b>					
26	20.98	154	BP	2366	49
27	24.27	168	3-MBP	6895	142
28	24.53	168	4-MBP	2340	48
39	28.29	182	C2-BP	10318	212
40	28.67	182	C2-BP	10139	208
41	28.98	182	C2-BP	5416	111

**AROMATICS**

File name (sample): <b>2554_50.D</b>
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\
Misc information:
Sample name: 30/9-11a
Operator: jkb
Method: MSD_ARO1
Date analyzed: 08-Apr-94

P#	Rt	Ion m/z	Compound	Height	Amount
<b>FLUORENES</b>					ng/mg
42	27.20	166	F	3156	84
43	30.40	180	C1-F	2244	60
44	30.47	180	C1-F	3609	96
45	30.64	180	1-MF	11167	297
<b>DIBENZOTHIOPHENES</b>					
47	31.92	184	DBT	6285	1
48	34.54	198	4-MDBT	9942	2
49	35.06	198	3+2-MDBT	4121	1
50	35.65	198	1-MDBT	3434	1
<b>PHENANTRENES</b>					
51	32.65	178	P	69462	39
52	35.56	192	3-MP	27449	16
53	35.72	192	2-MP	33087	19
54	36.21	192	9-MP	46657	27
55	36.33	192	1-MP	33723	20
57	38.27	206	2EP+9EP+3,6-DMP	14589	8
58	38.49	206	1EP	11317	6
59	38.60	206	2,6+2,7+3,5-DMP	6431	3
60	38.94	206	1,3+2,10+3,9+3,10-DMP	43647	23
61	39.10	206	1,6+2,5+2,9-DMP	21528	11
62	39.24	206	1,7-DMP	21345	11
63	39.38	206	2,3-DMP	7406	4
64	39.50	206	1,9+4,9+4,10-DMP	13165	7
65	39.81	206	1,8-DMP	5112	3
<b>RETENE</b>					
56	43.07	219	Retene	98117	54
<b>TRIAROMATIC STEROIDS</b>					
67	47.52	231	20TA	8577	1.2
68	49.39	231	21TA	10878	1.5
69	56.22	231	S26TA	20253	2.8
70	57.43	231	R26TA/S27TA	69845	9.6
71	58.40	231	S28TA	38560	5.3
72	58.89	231	R27TA	40052	5.5
73	60.10	231	R28TA	40798	5.6

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File name (sample): <b>2554_50.D</b>		Sample name: 30/9-11a
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\		Operator: jkb
Misc information:		Method: MSD_ARO1
		Date analyzed: 08-Apr-94

<b>AROMATICS</b>		
Ratios based on amounts, ng/mg		
Naphtalene amount (ng/mg)	Naphtalene	7
C1 Naphtalenes amount (ng/mg)	Sum C1-Naph.	219
C2 Naphtalenes amount (ng/mg)	Sum C2-Naph.	773
C3 Naphtalenes amount (ng/mg)	Sum C3-Naph.	2120
Phenanthrene amount (ng/mg)	Phenanthrene	39
C1 Phenanthrenes amount (ng/mg)	Sum C1-Phen.	82
C2 Phenanthrenes amount (ng/mg)	Sum C2-Phen.	77
$3/2 \cdot (3MP+2MP)/(P+9MP+1MP)$	MPI1	0.6
$(3MP+2MP)/(3MP+2MP+9MP+1MP)$	F1	0.4
$2MP/(3MP+2MP+9MP+1MP)$	F2	0.2
(2,6+2,7)DMN/1,5DMN	DNR	3.8
$100 \cdot 20TA/(20TA+S28TA+R28TA)$	%-TAS'n	10
DBT/P	DBT/P	0.0
F/P	F/P	2.2
BP/1,6DMN	BPH/1,6DMN	0.3
2MN/1MN	2MN/1MN	1.4
2EN/1EN	2EN/1EN	2.1
4MDBT/1MDBT	4MDBT/1MDBT	2.9

P#	Rt	Ion m/z	Compound	Height	Amount
<b>Int.Std.(if added):</b>					ng/mg
14	14.41	136.00	d8 N	3760	18
46	32.48	188.00	d10 P	22784	18
66	47.90	240.00	d12 C	23120	18
<b>ARYL ISOPRENOIDS</b>					
1	21.55	133	C13 AI	9282	
2	23.57	133	C14 AI	5958	
3	26.88	133	C15 AI	9420	
4	29.38	133	C16 AI	1478	
5	32.43	133	C17 AI	11112	
6	35.04	133	C18 AI	9264	
7	35.96	133	C19 AI	4558	
8	39.24	133	C20 AI	3798	
9	40.94	133	C21 AI	2074	
10	43.48	133	C22 AI	2609	
11	45.34	133	C23 AI	2340	
12	56.12	133	C30AI	826	
13	57.78	133	C31 AI	1542	
<b>NAPHTALENES</b>					
15	14.51	128	N	224280	1008
16	18.22	142	2-MN	701258	4199
17	18.78	142	1-MN	451292	2702
18	21.41	156	2-EN	98599	524
19	21.53	156	1-EN	45938	244
20	21.77	156	2,6+ 2,7-DMN	378635	2011
21	22.26	156	1,3+1,7-DMN	440241	2338
22	22.36	156	1,6-DMN	448960	2385
23	22.85	156	2,3+1,4-DMN	185525	985
24	22.97	156	1,5-DMN	96896	515
25	23.33	156	1,2-DMN	91762	487
29	25.17	170	C3- N	38744	221
30	25.36	170	C3-N	46624	267
31	25.48	170	1,3,7-TMN	177280	1009
32	25.64	170	1,3,6-TMN	229788	1308
33	26.10	170	1,3,5+1,4,6-TMN	189888	1081
34	26.19	170	2,3,6-TMN	167488	953
35	26.61	170	1,6,7+1,2,7-TMN	124999	712
36	26.66	170	1,2,6-TMN	81464	464
37	27.11	170	1,2,4-TMN	25080	143
38	27.32	170	1,2,5-TMN	106832	608
<b>BIPHENYLS</b>					
26	20.92	154	BP	176161	683
27	24.23	168	3-MBP	279488	1084
28	24.49	168	4-MBP	92536	359
39	28.25	182	C2-BP	84616	328
40	28.63	182	C2-BP	70432	273
41	28.94	182	C2-BP	37296	145

<b>AROMATICS</b>	
File name (sample):	<b>2409_4.D</b>
File path:	C:\HPCHEM\1\DATA\ARO\B3009OIL\
Misc information:	
Sample name:	30/9-9, dst1
Operator:	jkb
Method:	MSD_ARO1
Date analyzed:	06-Apr-94

P#	Rt	Ion m/z	Compound	Height	Amount
<b>FLUORENES</b>					ng/mg
42	27.16	166	F	82645	414
43	30.35	180	C1-F	31088	156
44	30.42	180	C1-F	31731	159
45	30.61	180	1-MF	101846	511
<b>DIBENZOTHIOPHENES</b>					
47	31.87	184	DBT	19834	4
48	34.49	198	4-MDBT	29752	7
49	34.99	198	3+2-MDBT	10143	2
50	35.58	198	1-MDBT	6802	2
<b>PHENANTRENES</b>					
51	32.60	178	P	191206	131
52	35.51	192	3-MP	92882	67
53	35.67	192	2-MP	99267	72
54	36.15	192	9-MP	122102	88
55	36.28	192	1-MP	94706	68
57	38.22	206	2EP+9EP+3,6-DMP	28797	19
58	38.44	206	1EP	26316	17
59	38.55	206	2,6+2,7+3,5-DMP	15272	10
60	38.87	206	1,3+2,10+3,9+3,10-DMP	100382	66
61	39.03	206	1,6+2,5+2,9-DMP	55904	37
62	39.17	206	1,7-DMP	45526	30
63	39.32	206	2,3-DMP	15682	10
64	39.43	206	1,9+4,9+4,10-DMP	30005	20
65	39.74	206	1,8-DMP	11180	7
<b>RETENE</b>					
56	43.00	219	Retene	59024	41
<b>TRIAMOMATIC STEROIDS</b>					
67	47.45	231	20TA	5433	0.8
68	49.31	231	21TA	6242	0.9
69	56.13	231	S26TA	3943	0.6
70	57.33	231	R26TA/S27TA	14365	2.2
71	58.30	231	S28TA	8626	1.3
72	58.80	231	R27TA	6479	1.0
73	60.00	231	R28TA	9877	1.5

NORSK HYDRO Research Centre, Bergen \_\_\_\_\_ Petroleum Geochemistry Group

File name (sample): <b>2409_4.D</b>		Sample name: 30/9-9, dst1
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\		Operator: jkb
Misc information:		Method: MSD_ARO1
		Date analyzed: 06-Apr-94

<b>AROMATICS</b>		
Ratios based on amounts, ng/mg		
Naphtalene amount (ng/mg)	Naphtalene	1008
C1 Naphtalenes amount (ng/mg)	Sum C1-Naph.	6901
C2 Naphtalenes amount (ng/mg)	Sum C2-Naph.	9490
C3 Naphtalenes amount (ng/mg)	Sum C3-Naph.	6766
Phenanthrene amount (ng/mg)	Phenanthrene	131
C1 Phenanthrenes amount (ng/mg)	Sum C1-Phen.	295
C2 Phenanthrenes amount (ng/mg)	Sum C2-Phen.	217
$3/2 \cdot (3MP+2MP)/(P+9MP+1MP)$	MPI1	0.7
$(3MP+2MP)/(3MP+2MP+9MP+1MP)$	F1	0.5
$2MP/(3MP+2MP+9MP+1MP)$	F2	0.2
(2,6+2,7)DMN/1,5DMN	DNR	3.9
$100 \cdot 20TA/(20TA+S28TA+R28TA)$	%-TAS'n	23
DBT/P	DBT/P	0.0
F/P	F/P	3.2
BP/1,6DMN	BPH/1,6DMN	0.3
2MN/1MN	2MN/1MN	1.6
2EN/1EN	2EN/1EN	2.1
4MDBT/1MDBT	4MDBT/1MDBT	4.4

P#	Rt	Ion m/z	Compound	Height	Amount
<b>Int.Std.(if added):</b>					ng/mg
14	14.43	136.00	d8 N	15587	20
46	32.50	188.00	d10 P	35616	20
66	47.94	240.00	d12 C	38881	20
<b>ARYL ISOPRENOIDS</b>					
1	21.55	133	C13 AI	27409	
2	23.49	133	C14 AI	15880	
3	26.76	133	C15 AI	12253	
4	29.29	133	C16 AI	8729	
5	31.94	133	C17 AI	3705	
6	34.51	133	C18 AI	9947	
7	36.00	133	C19 AI	11120	
8	38.61	133	C20 AI	7703	
9	40.69	133	C21 AI	1075	
10	42.76	133	C22 AI	1258	
11	44.87	133	C23 AI	1219	
12	56.12	133	C30AI	383	
13	57.95	133	C31 AI	219	
<b>NAPHTALENES</b>					
15	14.53	128	N	458449	543
16	18.24	142	2-MN	672915	1061
17	18.79	142	1-MN	585547	923
18	21.43	156	2-EN	90087	126
19	21.55	156	1-EN	45379	63
20	21.79	156	2,6+ 2,7-DMN	407325	570
21	22.26	156	1,3+1,7-DMN	499934	699
22	22.38	156	1,6-DMN	472704	661
23	22.86	156	2,3+1,4-DMN	225610	316
24	22.97	156	1,5-DMN	144320	202
25	23.35	156	1,2-DMN	102363	143
29	25.19	170	C3- N	48154	72
30	25.38	170	C3-N	49506	75
31	25.50	170	1,3,7-TMN	220224	330
32	25.65	170	1,3,6-TMN	298865	448
33	26.12	170	1,3,5+1,4,6-TMN	281024	421
34	26.21	170	2,3,6-TMN	214336	321
35	26.62	170	1,6,7+1,2,7-TMN	168384	252
36	26.68	170	1,2,6-TMN	117144	176
37	27.13	170	1,2,4-TMN	38271	57
38	27.33	170	1,2,5-TMN	121088	181
<b>BIPHENYLS</b>					
26	20.94	154	BP	229694	235
27	24.23	168	3-MBP	241472	247
28	24.51	168	4-MBP	91536	93
39	28.27	182	C2-BP	96746	99
40	28.65	182	C2-BP	62217	64
41	28.96	182	C2-BP	51160	52
<b>AROMATICS</b>					
File name (sample): <b>2645_5.D</b>					
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\					
Misc information:					
Sample name: 30/9-6, dst1					
Operator: jkb					
Method: MSD_ARO1					
Date analyzed: 06-Apr-94					
P#	Rt	Ion m/z	Compound	Height	Amount
<b>FLUORENES</b>					ng/mg
42	27.18	166	F	83018	110
43	30.38	180	C1-F	44248	58
44	30.45	180	C1-F	44593	59
45	30.64	180	1-MF	145498	192
<b>DIBENZOTHIOPHENES</b>					
47	31.91	184	DBT	76140	12
48	34.52	198	4-MDBT	99884	16
49	35.03	198	3+2-MDBT	33981	5
50	35.62	198	1-MDBT	36391	6
<b>PHENANTRENES</b>					
51	32.63	178	P	347308	166
52	35.55	192	3-MP	162753	82
53	35.70	192	2-MP	184433	93
54	36.19	192	9-MP	248887	125
55	36.33	192	1-MP	206779	104
57	38.23	206	2EP+9EP+3,6-DMP	50983	23
58	38.48	206	1EP	49786	23
59	38.56	206	2,6+2,7+3,5-DMP	26445	12
60	38.93	206	1,3+2,10+3,9+3,10-DMP	206061	95
61	39.06	206	1,6+2,5+2,9-DMP	113049	52
62	39.22	206	1,7-DMP	114141	52
63	39.36	206	2,3-DMP	33917	16
64	39.46	206	1,9+4,9+4,10-DMP	71954	33
65	39.78	206	1,8-DMP	29448	14
<b>RETENE</b>					
56	43.03	219	Retene	150718	72
<b>TRIAMOMATIC STEROIDS</b>					
67	47.49	231	20TA	25439	2.5
68	49.34	231	21TA	28996	2.9
69	56.17	231	S26TA	29993	2.9
70	57.36	231	R26TA/S27TA	82470	8.1
71	58.35	231	S28TA	44100	4.3
72	58.84	231	R27TA	41158	4.0
73	60.05	231	R28TA	44604	4.4

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File name (sample): <b>2645_5.D</b>		Sample name: 30/9-6, dst1
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\		Operator: jkb
Misc information:		Method: MSD_ARO1
		Date analyzed: 06-Apr-94

<b>AROMATICS</b>		
Ratios based on amounts, ng/mg		
Naphtalene amount (ng/mg)	Naphtalene	543
C1 Naphtalenes amount (ng/mg)	Sum C1-Naph.	1984
C2 Naphtalenes amount (ng/mg)	Sum C2-Naph.	2781
C3 Naphtalenes amount (ng/mg)	Sum C3-Naph.	2335
Phenanthrene amount (ng/mg)	Phenanthrene	166
C1 Phenanthrenes amount (ng/mg)	Sum C1-Phen.	404
C2 Phenanthrenes amount (ng/mg)	Sum C2-Phen.	320
$3/2*(3MP+2MP)/(P+9MP+1MP)$	MPI1	0.7
$(3MP+2MP)/(3MP+2MP+9MP+1MP)$	F1	0.4
$2MP/(3MP+2MP+9MP+1MP)$	F2	0.2
$(2,6+2,7)DMN/1,5DMN$	DNR	2.8
$100*20TA/(20TA+S28TA+R28TA)$	%-TAS'n	22
DBT/P	DBT/P	0.1
F/P	F/P	0.7
BP/1,6DMN	BPH/1,6DMN	0.4
2MN/1MN	2MN/1MN	1.1
2EN/1EN	2EN/1EN	2.0
4MDBT/1MDBT	4MDBT/1MDBT	2.7



P#	Rt	Ion m/z	Compound	Height	Amount
<b>Int.Std.(if added):</b>					ng/mg
14	14.43	136.00	d8 N	9662	40
46	32.51	188.00	d10 P	32453	40
66	47.90	240.00	d12 C	42568	40
<b>ARYL ISOPRENOIDS</b>					
1	21.56	133	C13 AI	3854	
2	23.49	133	C14 AI	1017	
3	26.90	133	C15 AI	5834	
4	29.40	133	C16 AI	2605	
5	32.01	133	C17 AI	1845	
6	34.66	133	C18 AI	2370	
7	35.98	133	C19 AI	2494	
8	38.61	133	C20 AI	1824	
9	40.69	133	C21 AI	452	
10	42.81	133	C22 AI	170	
11	44.85	133	C23 AI	376	
12	56.12	133	C30AI	346	
13	57.92	133	C31 AI	877	
<b>NAPHTALENES</b>					
15	14.53	128	N	645219	2440
16	18.27	142	2-MN	1633648	8228
17	18.83	142	1-MN	1055633	5317
18	21.43	156	2-EN	226749	1013
19	21.55	156	1-EN	91853	410
20	21.84	156	2,6+ 2,7-DMN	1174583	5248
21	22.31	156	1,3+1,7-DMN	922007	4120
22	22.43	156	1,6-DMN	1033856	4619
23	22.90	156	2,3+1,4-DMN	560168	2503
24	22.99	156	1,5-DMN	240128	1073
25	23.35	156	1,2-DMN	228471	1021
29	25.19	170	C3- N	96183	462
30	25.38	170	C3-N	105578	509
31	25.51	170	1,3,7-TMN	515968	2471
32	25.69	170	1,3,6-TMN	713549	3417
33	26.14	170	1,3,5+1,4,6-TMN	395008	1892
34	26.24	170	2,3,6-TMN	626717	3001
35	26.64	170	1,6,7+1,2,7-TMN	380608	1823
36	26.71	170	1,2,6-TMN	222259	1064
37	27.13	170	1,2,4-TMN	49773	238
38	27.33	170	1,2,5-TMN	170883	818
<b>BIPHENYLS</b>					
26	20.94	154	BP	554434	1808
27	24.28	168	3-MBP	1061888	3463
28	24.53	168	4-MBP	457536	1492
39	28.30	182	C2-BP	407232	1328
40	28.67	182	C2-BP	438557	1430
41	28.98	182	C2-BP	242752	792

**AROMATICS**

File name (sample): <b>2455_8.D</b>
File path: C:\HPCHEM\1\DATA\ARO\B3009OIL\
Misc information:
Sample name: 30/9-5
Operator: jkb
Method: MSD_ARO1
Date analyzed: 06-Apr-94

P#	Rt	Ion m/z	Compound	Height	Amount
<b>FLUORENES</b>					ng/mg
42	27.37	166	F	103970	438
43	30.38	180	C1-F	7375	31
44	30.45	180	C1-F	11976	50
45	30.63	180	1-MF	39859	168
<b>DIBENZOTHIOPHENES</b>					
47	31.91	184	DBT	22952	8
48	34.51	198	4-MDBT	28555	10
49	35.03	198	3+2-MDBT	11405	4
50	35.43	198	1-MDBT	4252	1
<b>PHENANTRENES</b>					
51	32.65	178	P	739839	770
52	35.56	192	3-MP	393152	430
53	35.70	192	2-MP	456320	499
54	36.21	192	9-MP	394240	431
55	36.33	192	1-MP	310592	340
57	38.23	206	2EP+9EP+3,6-DMP	128448	128
58	38.46	206	1EP	137408	137
59	38.56	206	2,6+2,7+3,5-DMP	75304	75
60	38.93	206	1,3+2,10+3,9+3,10-DMP	327040	327
61	39.06	206	1,6+2,5+2,9-DMP	179054	179
62	39.20	206	1,7-DMP	128810	129
63	39.34	206	2,3-DMP	72306	72
64	39.46	206	1,9+4,9+4,10-DMP	75435	75
65	39.76	206	1,8-DMP	26325	26
<b>RETENE</b>					
56	43.02	219	Retene	66100	69
<b>TRIAROMATIC STEROIDS</b>					
67	47.45	231	20TA	3694	0.7
68	49.31	231	21TA	1791	0.3
69	56.12	231	S26TA	823	0.1
70	57.31	231	R26TA/S27TA	2117	0.4
71	58.30	231	S28TA	2079	0.4
72	58.80	231	R27TA	1003	0.2
73	60.00	231	R28TA	3348	0.6