ETC ENVIRONMENTAL TESTING and CERTIFICATION

Technical Report

for

VERTAC CHEMICAL CORPORATION

P.O. BOX 3

VICKSBURG, MS 39180

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTACVICK	WMW8	850523	0900	

Denis C. K. Lin, Ph.D.
Vice President
Research and Operations

This Technical Report is a product of the INSITE System and was generated using LODESTAR Data Management Software.

284 RARITAN CENTER PARKWAY • EDISON, NJ 08837 (201) 225-5600

TABLE OF CONTENTS

Introduction

Table 1: Results and Quality Assurance Data

Table 2: Method Performance Data

Methodology

QA Protocol

Report Appendices

Appendix A 1 - Gas Chromatographic Spectral Data for Quantitated Compounds

Appendix A 2 - Chromatographic Spectral Data for Quantitated Compounds

Appendix A - Mass Spectral Data for Quantitated Compounds

Appendix C 1 - GC/MS Subsidiary Data - Blank Chromatograms

Appendix E - Chain of Custody Forms

Introduction

This report contains the analytical results on your water sample, WMW8 85/05/23 09:00. Per your request, we analyzed for as many Appendix VIII parameters as presently available methodology permits. USEPA instructs that SW846, July, 1982 "Test Methods for Evaluating Solid Waste" is to be followed in the analysis. However, SW846 does not provide sufficient information to analyze for all the parameters in Appendix VIII. We have performed the analysis based on the methodology described in SW846 and divided the parameters into the following categories:

1. Direct Aqueous Injection for water soluble compounds by GC/MS.
2. Purge and Trap GC/MS method for volatile compounds.
3. Extractable Acid/Base/Neutral/Pesticides compounds by GC/MS.
4. Pesticides by GC/EC.
5. Pesticides by GC/FPD.
6. Herbicides by GC/EC.
7. Polar and thermally unstable compounds by HPLC/UV.
8. Metallic and Organometallic compounds by ICAP, AA, and Cold Vapor AA. (Table 4)
9. Conventionals.

Furthermore, there are three categories of compounds that cannot be analyzed directly:

1. Compounds which are unstable in water.
2. Not Otherwise Specified (N.O.S.) classes of compounds.
3. "Exotic" compounds that require special methods.

We analyzed for selected representatives from the N.O.S. classes of compounds.

Results

There are 375 listings in Appendix VIII. To assist you in reviewing the results we have assigned a number to each parameter in the "Grand" Table. Also in the Grand Table we classified the parameters according to their analytical categories and indicated which result table the data and QA data are tabulated on. Depending on the analyses ordered, the quality assurance data may include results from the blank, spiked blank, spiked sample (i.e. matrix spike) and replicate sample as well as results from surrogate compound analyses.

In the results table, when a compound or element is present below published MDL it is reported as BMDL (Below Method Detection Limit). When a compound is not present at any detectable concentrations it is reported as ND (Not Detected). Matrix spike and replicate analyses, where included, were performed on samples randomly chosen within each quality assurance batch and are therefore not necessarily spikes and replicates of this report's sample. Surrogate compound recovery data and instrument calibration data are included in the Method Performance Data Tables.

The procedures used in the analysis of the sample are described in this report's methodology section. All analytical procedures within our laboratory are performed within a strictly enforced Quality Assurance Protocol. A description of this Protocol is included in the report. The report appendices include the chain of custody record for your sample and, where appropriate, the gas chromatograms and mass spectra.

GRAND TABLE

	COMPOUND NAME	FRACTION	TABLE
1	Acetonitrile	P&T	QR27
2	Acetophenone	A/B/N	QR28
3	Warfarin	HPLC	QR31
4	2-Acetylaminofluorene	A/B/N	QR28
5	Acetyl Chloride	UNSTABLE	TBL A
6	1-Acetyl-2-thiourea	HPLC	QR25
7	Acrolein	P&T	QR27
8	Acrylamide	HPLC	QR25
9	Acrylonitrile	P&T	QR27
10	Aflatoxins	CLASS, EXOTIC	TBL B,C
11	Aldrin	PEST/HERB	QR24
12	Allyl alcohol	DIR/INJ	QR26
13	Aluminum Phosphide	INORG,UNSTABLE	TBL D,A
13A	Aluminum	METALS	QR29
14	4-Aminobiphenyl	A/B/N	QR28
15	Mitomycin C	EXOTIC	TBL C
16	5-(Aminomethyl)-3-isoxazolol	A/B/N	QR28
17	Amitrole	HPLC	QR25
18	Aniline	A/B/N	QR28
19	Antimony and Compounds, N.O.S.	CLASS, INORG	TBL B,D
19A	Antimony	METALS	QR29
20	Aramite	A/B/N	QR28
21	Arsenic and Compounds, N.O.S.	CLASS, INORG	TBL B,D
21A	Arsenic	METALS	QR29
22	Arsenic acid (Orthoarsenic acid)	INORG	TBL D
23	Arsenic pentoxide (Arsenic (V) oxide)	INORG	TBL D
24	Arsenic trioxide (Arsenic (III) oxide)	INORG	TBL D
25	Auramine	EXOTIC	TBL C
26	Azaserine	EXOTIC	TBL C
27	Barium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
27A	Barium	METALS	QR29
28	Barium cyanide	INORG	TBL D
29	Benz[c]acridine	A/B/N	QR28
30	Benz[a]anthracene	A/B/N	QR28
31	Benzene	P&T	QR27
32	Benzenearsonic acid	INORG	TBL D
33	Dichloromethyl Benzene	A/B/N	QR28
34	Benzenethiol	A/B/N	QR28
35	Benzidine	HPLC	QR25
36	Benzo[b]fluoranthene	A/B/N	QR28
37	Benzo[j]fluoranthene	A/B/N	QR28
38	Benzo[a]pyrene	A/B/N	QR28
39	p-Benzoquinone	A/B/N	QR28
40	Benzotrichloride	UNSTABLE	TBL A
41	Benzyl chloride	A/B/N	QR28
42	Beryllium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
42A	Beryllium	METALS	QR29
43	bis(2-chloroethoxy)methane	A/B/N	QR28
44	bis(2-chloroethyl) ether	A/B/N	QR28
45	Chlornaphazine	A/B/N	QR28
46	bis(2-chloroisopropyl)ether	A/B/N	QR28
47	bis(chloromethyl)ether	UNSTABLE	TBL A
48	bis(2-ethylhexyl)phthalate	A/B/N	QR28
49	Bromoacetone	UNSTABLE	TBL A
50	Methyl Bromide	P&T	QR27
51	4-Bromophenyl phenyl ether	A/B/N	QR28
52	Brucine	EXOTIC	TBL C
53	2-Butanone peroxide	UNSTABLE	TBL A

	COMPOUND NAME	FRACTION	TABLE
54	Butyl benzyl phthalate	A/B/N	QR28
55	2-sec-Butyl-4,6-dinitrophenol	A/B/N	QR28
56	Cadmium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
56A	Cadmium	METALS	QR29
57	Calcium chromate(Chromic acid,calcium salt)	INORG	TBL D
57A	Calcium	METALS	QR29
58	Calcium cyanide	INORG	TBL D
59	Carbon disulfide	P&T	QR27
60	Carbon oxyfluoride	UNSTABLE	TBL A
61	Chloral	DIR/INJ	QR26
62	Chlorambucil	EXOTIC	TBL C
63	Chlordane	PEST/HERB	QR24
64	Chlorinated Benzenes, N.O.S.	CLASS	TBL B
64A	1,2,3-trichlorobenzene	A/B/N	QR28
64B	2,4,6-trichlorobenzene	A/B/N	QR28
64C	1,2,3,4-tetrachlorobenzene	A/B/N	QR28
64D	1,2,3,5-tetrachlorobenzene	A/B/N	QR28
65	Chlorinated Ethane, N.O.S.	CLASS	TBL B
65A	Chloroethane	P&T	QR27
66	Chlorinated Fluorocarbons, N.O.S.	CLASS	TBL B
66A	Freon TF	P&T	QR27
67	Chlorinated Naphthalene, N.O.S.	CLASS	TBL B
67A	1-chloronaphthalene	A/B/N	QR28
68	Chlorinated Phenol, N.O.S.	CLASS	TBL B
68A	2,3,5,6-tetrachlorophenol	A/B/N	QR28
68B	2,3,4,5-tetrachlorophenol	A/B/N	QR28
69	Chloroacetaldehyde	DIR/INJ	QR26
70	Chloroalkyl Ethers, N.O.S.	CLASS	TBL B
71	p-Chloroaniline	A/B/N	QR28
72	Chlorobenzene	P&T	QR27
73	Chlorobenzilate	PEST/HERB	QR24
74	p-Chloro-m-cresol	A/B/N	QR28
75	1-Chloro-2,3-epoxypropane	UNSTABLE	TBL A
76	2-Chloroethyl vinyl ether	P&T	QR27
77	Chloroform	P&T	QR27
78	Methyl Chloride	P&T	QR27
79	Chloromethyl methyl ether	UNSTABLE	TBL A
80	2-Chloronaphthalene	A/B/N	QR28
81	2-Chlorophenol	A/B/N	QR28
82	1-(o-Chlorophenyl)thiourea	HPLC	QR25
83	3-Chloropropionitrile	DIR/INJ	QR26
84	Chromium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
84A	Chromium	METALS	QR29
85	Chrysene	A/B/N	QR28
86	Citrus red No. 2	EXOTIC	TBL C
87	Coal Tars	CLASS	TBL B
87A	Acenapthene	A/B/N	QR28
87B	Acenaphthalene	A/B/N	QR28
87C	Anthracene	A/B/N	QR28
87D	Benzo(ghi)perylene	A/B/N	QR28
87E	Benzo(k)fluoranthene	A/B/N	QR28
87F	Fluorene	A/B/N	QR28
87G	Phenathrene	A/B/N	QR28
87H	Pyrene	A/B/N	QR28
88	Copper cyanide	INORG	TBL D
88A	Copper	METALS	QR29
89	Creosote	CLASS	TBL B
89A	2,6-Dinitro-O-Cresol	A/B/N	QR28
89B	2,Nitrophenol	A/B/N	QR28
90	Cresols	CLASS	TBL B
90A	o-Cresol	A/B/N	QR28
90B	m+p-Cresol	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
91	Crotonaldehyde	P&T	QR27
92	Cyanides (soluble salts and complexes)N.O.S	CLASS,INORG	TBL B,D
92A	Cyanide, Total	METALS	QR29
93	Cyanogen	DIR/INJ	QR26
94	Cyanogen bromide	INORG	TBL C
95	Cyanogen chloride	INORG	TBL C
96	Cycasin	EXOTIC, UNSTABLE	TBL C, A
97	2-Cyclohexyl-4,6-dinitrophenol	A/B/N	QR28
98	Cyclophosphamide	EXOTIC	TBL C
99	Daunomycin	EXOTIC	TBL C
100	4,4'-DDD	PEST/HERB	QR24
101	4,4'-DDE	PEST/HERB	QR24
102	4,4'-DDT	PEST/HERB	QR24
103	Diallate	EXOTIC	TBL C
104	Dibenz[a,h]acridine	A/B/N	QR28
105	Dibenz[a,j]acridine	A/B/N	QR28
106	Dibenz[a,h]anthracene	A/B/N	QR28
107	7H-Dibenzo[c,g]carbazole	A/B/N	QR28
108	Dibenzo[a,e]pyrene	A/B/N	QR28
109	Dibenzo[a,h]pyrene	A/B/N	QR28
110	Dibenzo[a,i]pyrene	A/B/N	QR28
111	1,2-dibromo-3-chloropropane	P&T	QR27
112	1,2-Dibromoethane	P&T	QR27
113	Dibromomethane	P&T	QR27
114	Di-n-butyl phthalate	A/B/N	QR28
115	1,2-Dichlorobenzene	A/B/N	QR28
116	1,3-Dichlorobenzene	A/B/N	QR28
117	1,4-Dichlorobenzene	A/B/N	QR28
118	Dichlorobenzene, N.O.S.	CLASS	TBL B
119	3,3'-Dichlorobenzidine	HPLC	QR25
120	1,4-Dichloro-2-butene	P&T	QR27
121	Dichlorodifluoromethane	P&T	QR27
122	1,1-Dichloroethane	P&T	QR27
123	1,2-Dichloroethane	P&T	QR27
124	1,2-Trans-dichloroethylene	P&T	QR27
125	Dichloroethylene, N.O.S.	CLASS	TBL B
126	1,1-Dichloroethylene	P&T	QR27
127	Methylene Chloride	P&T	QR27
128	2,4-Dichlorophenol	A/B/N	QR28
129	2,6-Dichlorophenol	A/B/N	QR28
130	2,4-D	PEST/HERB	QR24
131	Dichlorophenylarsine	A/B/N	QR28
132	Dichloropropane, N.O.S.	CLASS	TBL B
132A	1,3-Dichloropropane	P&T	QR27
133	1,2-Dichloropropane	P&T	QR27
134	Dichloropropanol, N.O.S.	CLASS	TBL B
134A	Dichloropropanol	DIR/INJ	QR26
135	2,3-Dichloropropene	P&T	QR27
136A	cis-1,3-Dichloropropene	P&T	QR27
136B	trans-1,3-Dichloropropene	P&T	QR27
137	Dieldrin	PEST/HERB	QR24
138	1,2:3,4-Diepoxybutane	UNSTABLE	TBL A
139	Diethylarsine	P&T	QR27
140	N,N,-Diethylhydrazine	P&T	QR27
141	Carbophenothion	PEST/HERB	QR24
142	0,0-Diethylphosphoric acid, 0-p-nitrophenyl ester	EXOTIC	TBL C
143	Diethyl phthalate	A/B/N	QR28
144	Thionazin	PEST/HERB	QR24
145	Diethylstilbesterol	HPLC	QR25
146	Dihydrosafrole	A/B/N	QR28
147	3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol	EXOTIC	TBL C

	COMPOUND NAME	FRACTION	TABLE
148	Diisopropylfluorophosphate	UNSTABLE	TBL A
149	Dimethoate	PEST/HERB	QR24
150	3,3'-Dimethoxybenzidine	HPLC	QR25
151	p-Dimethylaminoazobenzene	A/B/N	QR28
152	7,12-Dimethylbenz[a]anthracene	A/B/N	QR28
153	3,3'-Dimethylbenzidine	HPLC	QR25
154	Dimethyl carbamoyl chloride	UNSTABLE	TBL A
155	1,1-Dimethylhydrazine	DIR/INJ	QR26
156	1,2-Dimethylhydrazine	DIR/INJ	QR26
157	Thiofanox	A/B/N	QR28
158	alpha-alpha-Dimethylphenethylamine	A/B/N	QR28
159	2,4-Dimethylphenol	A/B/N	QR28
160	Dimethyl phthalate	A/B/N	QR28
161	Dimethyl sulfate	UNSTABLE	TBL A
162	Dinitrobenzene, N.O.S.	CLASS	TBL B
162A	m-Dinitrobenzene	A/B/N	QR28
163	4,6-Dinitro-o-cresol	A/B/N	QR28
164	2,4-Dinitrophenol	A/B/N	QR28
165	2,4-Dinitrotoluene	A/B/N	QR28
166	2,6-Dinitrotoluene	A/B/N	QR28
167	Di-n-octyl phthalate	A/B/N	QR28
168	1,4-Dioxane	DIR/INJ	QR26
169	Diphenylamine	A/B/N	QR28
170	1,2-Diphenylhydrazine	A/B/N	QR28
171	Di-n-propylnitrosamine	A/B/N	QR28
172	Disulfoton	PEST/HERB	QR24
173	2,4-Dithiobiuret	EXOTIC	TBL C
174A	Endosulfan I	PEST/HERB	QR24
174B	Endosulfan II	PEST/HERB	QR24
175	Endrin	PEST/HERB	QR24
176	Ethyl carbamate	HPLC	QR25
177	Ethyl cyanide	DIR/INJ	QR26
178	Ethylenebisdithiocarbamic acid	HPLC	QR25
179	Ethyleneimine	HPLC	QR25
180	Ethylene oxide	DIR/INJ	QR26
181	Ethylenethiourea	HPLC	QR25
182	Ethyl methacrylate	P&T	QR27
183	Ethyl methanesulfonate	A/B/N	QR28
184	Fluoranthene	A/B/N	QR28
185	Fluorine	UNSTABLE	TBL A
186	2-Fluoroacetamide	UNSTABLE	TBL A
187	Fluoroacetic acid	DIR/INJ	QR26
188	Formaldehyde	EXOTIC	TBL C
189	Formic acid	EXOTIC	TBL C
190	Glycidylaldehyde	DIR/INJ	QR26
191	Halomethane, N.O.S.	CLASS	TBL B
191A	Chlorodibromomethane	P&T	QR27
191B	Dichlorobromomethane	P&T	QR27
192	Heptachlor	PEST/HERB	QR24
193	Heptachlor epoxide	PEST/HERB	QR24
194	Hexachlorobenzene	A/B/N	QR28
195	Hexachlorobutadiene	A/B/N	QR28
196A	Alpha-BHC	PEST/HERB	QR24
196B	Beta-BHC	PEST/HERB	QR24
196C	Gamma-BHC	PEST/HERB	QR24
196D	Delta-BHC	PEST/HERB	QR24
197	Hexachlorocyclopentadiene	A/B/N	QR28
198	Hexachloroethane	A/B/N	QR28
199	Hexachlorohexahydro-endo, endo-dimethanonaphthalene	EXOTIC	TBL C
200	Hexachlorophene	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
201	Hexachloropropene	A/B/N	QR28
202	Hexaethyl tetraphosphate	EXOTIC	TBL C
203	Hydrazine	DIR/INJ	QR26
204	Hydrogen cyanide	SEE 92	QR29
205	Hydrofluoric acid	UNSTABLE	TBL A
206	Hydrogen sulfide	P&T	QR27
207	Hydroxydimethylarsine oxide	EXOTIC	TBL C
208	Indeno(1,2,3-cd)pyrene	A/B/N	QR28
209	Iodomethane	P&T	QR27
210	Iron, Dextran	UNSTABLE, EXOTIC	TBL A,C
210A	Iron	METAL	QR29
211	Isocyanic acid, methyl ester	UNSTABLE	TBL A
212	Isobutyl Alcohol	DIR/INJ	QR26
213	Isosafrole	A/B/N	QR28
214	Kepone	PEST/HERB	QR24
215	Laslocarpine	UNSTABLE, EXOTIC	TBL A,C
216	Lead and Compounds, N.O.S.	CLASS, INORG	TBL B,D
216A	Lead	METALS	QR29
217	Lead acetate (Acetic acid, lead salt)	INORG	TBL D
218	Lead phosphate (Phosphoric acid, lead salt)	INORG	TBL D
219	Lead subacetate	INORG	TBL D
220	Maleic anhydride	UNSTABLE	TBL A
221	Maleic hydrazide	HPLC	QR25
222	Malononitrile	HPLC	QR25
223	Melphalan	A/B/N	QR28
224	Mercury fulminate	INORG	TBL D
225	Mercury and Compounds, N.O.S.	CLASS, INORG	TBL B,D
225A	Mercury	METALS	QR29
226	Methacrylonitrile	DIR/INJ	QR26
227	Methanethiol	DIR/INJ	QR26
228	Methapyrilene	A/B/N	QR28
229	Methomyl	HPLC	QR25
230	Methoxychlor	PEST/HERB	QR24
231	2-Methylaziridine	HPLC	QR25
232	3-Methylcholanthrene	A/B/N	QR28
233	Methyl Chlorocarbonate	UNSTABLE	TBL A
234	4,4'-Methylenebis(2-chloroaniline)	A/B/N	QR28
235	Methyl ethyl ketone	P&T	QR27
236	Methyl hydrazine	DIR/INJ	QR26
237	2-Methyllactonitrile	DIR/INJ	QR26
238	Methyl methacrylate	P&T	QR27
239	Methyl methanesulfonate	A/B/N	QR28
240	Aldicarb	A/B/N	QR28
241	N-Methyl-N'-nitrosoguanidine	EXOTIC	TBL C
242	Methyl parathion	PEST/HERB	QR24
243	Methylthiouracil	A/B/N	QR28
244	Mustard gas	UNSTABLE, EXOTIC	TBL A,C
245	Naphthalene	A/B/N	QR28
246	1,4-Naphthoquinone	A/B/N	QR28
247	1-Naphthylamine	A/B/N	QR28
248	2-Naphthylamine	A/B/N	QR28
249	1-Naphthyl-2-thiourea	HPLC	QR25
250	Nickel and Compounds, N.O.S.	CLASS, INORG	TBL B,D
250A	Nickel	METALS	QR29
251	Nickel carbonyl (Nickel tetracarbonyl)	INORG	TBL D
252	Nickel cyanide (Nickel (II)cyanide)	INORG	TBL D
253	Nicotinic acid	HPLC	QR25
254	Nitric Oxide	UNSTABLE, EXOTIC	TBL A,C
255	p-Nitroaniline	A/B/N	QR28
256	Nitrobenzene	A/B/N	QR28
257	Nitrogen Dioxide	UNSTABLE	TBL A
258	Nitrogen mustard and hydrochloride salt	EXOTIC, UNSTABLE	TBL C,A
259	Nitrogen mustard N-Oxide and hydrochloride salt	EXOTIC, UNSTABLE	TBL C,A

	COMPOUND NAME	FRACTION	TABLE
260	Nitroglycerin	HPLC	QR25
261	4-Nitrophenol	A/B/N	QR28
262	4-Nitroquinoline-1-oxide	EXOTIC	TBL C
263	Nitrosamines, N.O.S.	CLASS	TBL B
263A	N-Nitrosodiphenylamine	A/B/N	QR28
264	N-Nitrosodi-n-butylamine	A/B/N	QR28
265	N-Nitrosodiethanolamine	A/B/N	QR28
266	N-Nitrosodiethylamine	A/B/N	QR28
267	N-Nitrosodimethylamine	A/B/N	QR28
268	N-Nitroso-N-ethylurea	HPLC	QR25
269	N-Nitrosomethylethylamine	A/B/N	QR28
270	N-Nitroso-N-methylurea	HPLC	QR25
271	N-Nitroso-N-methylurethane	A/B/N	QR28
272	N-Nitrosomethylvinylamine	A/B/N	QR28
273	N-Nitrosomorpholine	A/B/N	QR28
274	N-Nitrosonornicotine	A/B/N	QR28
275	N-Nitrosopiperidine	A/B/N	QR28
276	N-Nitrosopyrrolidine	DIR/INJ	QR26
277	N-Nitrososarcosine	EXOTIC	TBL C
278	5-Nitro-o-toluidine	A/B/N	QR28
279	Diphosphoramide,octamethyl	EXOTIC	TBL C
280	Osmium tetroxide (Osmium (VIII) oxide)	INORG	TBL D
280A	Osmium	METALS	QR29
281	Endothal	EXOTIC	TBL C
282	Paraldehyde	EXOTIC	TBL C
283	Parathion	PEST/HERB	QR24
284	Pentachlorobenzene	A/B/N	QR28
285	Pentachloroethane	P&T	QR27
286	Pentachloronitrobenzene	A/B/N	QR28
287	Pentachlorophenol	A/B/N	QR28
288	Phenacetin	A/B/N	QR28
289	Phenol	A/B/N	QR28
290A	m-phenylenediamine	HPLC	QR25
290B	o-phenylenediamine	HPLC	QR25
290C	p-phenylenediamine	HPLC	QR25
291	Phenylmercury acetate	INORG	TBL D
292	N-Phenylthiourea	HPLC	QR25
293	Phosgene	UNSTABLE	TBL A
294	Phosphine	EXOTIC	TBL C
295	Phorate	UNSTABLE	TBL A
296	Famphur	PEST/HERB	QR24
297	Phthalic acid esters	CLASS	TBL B
298	Phthalic Anhydride	UNSTABLE	TBL A
299	2-Picoline	A/B/N	QR28
300	Polychlorinated Biphenyl, N.O.S.	CLASS	TBL B
300A	PCB, Aroclors	PCB/GC/EC	QR30
301	Potassium cyanide	INORG	TBL D
301A	Potassium	METAL	QR29
302	Potassium silver cyanide	INORG	TBL D
303	Pronamide	A/B/N	QR28
304	1,3-Propane sultone	EXOTIC	TBL C
305	n-Propylamine	DIR/INJ	QR26
306	Propylthiouracil	EXOTIC	TBL C
307	2-Propyn-1-ol	DIR/INJ	QR26
308	Pyridine	DIR/INJ	QR26
309	Reserpine	HPLC	QR25
310	Resorcinol	A/B/N	QR28
311	Saccharin and salts	EXOTIC	TBL C
312	Safrole	A/B/N	QR28
313	Selenious acid (Selenium dioxide)	INORG	TBL D
314	Selenium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
314A	Selenium	METALS	QR29

	COMPOUND NAME	FRACTION	TABLE
315	Selenium sulfide (Sulfur selenide)	INORG	TBL D
316	Selenourea	EXOTIC	TBL C
317	Silver and Compounds, N.O.S.	CLASS, INORG	TBL B,D
317A	Silver	METALS	QR29
318	Silver cyanide	INORG	TBL D
319	Sodium cyanide	INORG	TBL D
319A	Sodium	METALS	QR29
320	Streptozotocin	EXOTIC	TBL C
321	Strontium sulfide	INORG	TBL D
321A	Strontium	METALS	QR29
322	Strychnine and salts	EXOTIC	TBL C
323	1,2,4,5-Tetrachlorobenzene	A/B/N	QR28
324	2,3,7,8-TCDD	EXOTIC	TBL C
325	Tetrachloroethane	CLASS	TBL B
326	1,1,1,2-Tetrachloroethane	P&T	QR27
327	1,1,2,2-Tetrachloroethane	P&T	QR27
328	Tetrachloroethene	P&T	QR27
329	Carbon Tetrachloride	P&T	QR27
330	2,3,4,6-Tetrachlorophenol	A/B/N	QR28
331	Tetraethyldithiopyrophosphate	UNSTABLE	TBL A
332	Tetraethyl lead	EXOTIC	TBL C
333	Tetraethylpyrophosphate	PEST/HERB	QR24
334	Tetranitromethane	EXOTIC	TBL C
335	Thallium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
335A	Thallium	METALS	QR29
336	Thallic oxide (Thallium (III) oxide)	INORG	TBL D
337	Thallium (I) acetate (Acetic acid, thallium (I) salt)	INORG	TBL D
338	Thallium (I) carbonate	INORG	TBL D
339	Thallium (I) chloride	INORG	TBL D
340	Thallium (I) nitrate	INORG	TBL D
341	Thallium selenite	INORG	TBL D
342	Thallium (I) sulfate	INORG	TBL D
343	Thioacetamide	EXOTIC	TBL C
344	Thiosemicarbazide	EXOTIC	TBL C
345	Thiourea	HPLC	QR25
346	Thiuram	A/B/N	QR28
347	Toluene	P&T	QR27
348	Toluenediamine	CLASS	TBL B
348A	Toluene-2,4-Diamine	HPLC	QR25
349	O-Toluidine hydrochloride	A/B/N	QR28
350	Toluene Diisocyanate	UNSTABLE	TBL A
351	Toxaphene	PEST/HERB	QR24
352	Bromoform	P&T	QR27
353	1,2,4-Trichlorobenzene	A/B/N	QR28
354	1,1,1-Trichloroethane	P&T	QR27
355	1,1,2-Trichloroethane	P&T	QR27
356	Trichloroethylene	P&T	QR27
357	Trichloromethanethiol	P&T	QR27
358	Trichlorofluoromethane	P&T	QR27
359	2,4,5-Trichlorophenol	A/B/N	QR28
360	2,4,6-Trichlorophenol	A/B/N	QR28
361	2,4,5-T	PEST/HERB	QR24
362	2,4,5-TP (Silvex)	PEST/HERB	QR24
363	Trichloropropane, N.O.S.	CLASS	TBL B
363A	1,1,2-trichloropropane	P&T	QR27
363B	1,2,2-trichloropropane	P&T	QR27
364	1,2,3-Trichloropropane	P&T	QR27
365	O,O,O-Triethyl phosphorothioate	A/B/N	QR28
366	sym-Trinitrobenzene	A/B/N	QR28
367	Tris (1-Azridinyl) Phosphine Sulfide	UNSTABLE	TBL A
368	Tris(2,3-dibromopropyl) phosphate	A/B/N	QR28
369	Trypan blue	EXOTIC	TBL C
370	Uracil mustard	EXOTIC	TBL C

	COMPOUND NAME	FRACTION	TABLE
371	Vanadic acid. ammonium salt	INORG	TBL D
372	Vanadium pentoxide (Vandium (V) oxide)	INORG	TBL D
372A	Vanadium	METALS	QR29
373	Vinyl chloride	P&T	QR27
374	Zinc cyanide	INORG	TBL D
374A	Zinc	METALS	QR29
375	Zinc phosphide	INORG	TBL D
		UNSTABLE	TBL A

TABLE A
PARAMETERS WHICH ARE UNSTABLE IN WATER

5 Acetyl Chloride
13 Aluminum Phosphide
40 Benzotrichloride
47 bis (Chloromethyl) ether
49 Bromoacetone
53 2-Butanonce peroxide
60 Carbon oxyfluoride
75 1-Chloro-2,3-epoxypropane
79 Chloromethyl methyl ether
96 Cycasin
138 1,2,3,4-Diepoxybutene
148 Diisopropylfuorophosphate
154 Dimethyl carbamoyl chloride
161 Dimethyl sulfate
185 Fluorine
186 2-Fluoroacetamide
205 Hydrofluoric acid
210 Iron Dextron
211 Isocyanic acid, methyl ester
215 Laslocarpine
220 Maleic anhydride
233 Methyl Chlorocarbonate
244 Mustard gas
254 Nitric Oxide
257 Nitrogen Dioxide
258 Nitrogen mustard and hydrochloride salt
259 Nitrogen mustard N-Oxide and hydrochloride salt
293 Phosgene
294 Phosphine
295 Phorate
298 Phthalic Anhydride
331 Tetraethyldithiopyrophosphate
350 Toluene Diisocyanate
367 Tris (1-Azridinyl) Phosphine Sulfide
375 Zinc phosphide

TABLE B
COMPOUND CLASSES

CLASS	REPRESENTATIVE		TABLE
19 Antimony and Compounds, N.O.S.	19A	Antimony	QR29
21 Arsenic and Compounds, N.O.S.	21A	Arsenic	QR29
27 Barium and Compounds, N.O.S.	27A	Barium	QR29
42 Beryllium and Compounds, N.O.S.	42A	Beryllium	QR29
56 Cadmium and Compounds, N.O.S.	56A	Cadmium	QR29
84 Chromium and Compounds, N.O.S.	84A	Chromium	QR29
216 Lead and Compounds, N.O.S.	216A	Lead	QR29
225 Mercury and Compounds, N.O.S.	225A	Mercury	QR29
250 Nickel and Compounds, N.O.S.	250A	Nickel	QR29
314 Selenium and Compounds, N.O.S.	314A	Selenium	QR29
317 Silver and Compounds, N.O.S.	317A	Silver	QR29
335 Thallium and Compounds, N.O.S.	335A	Thallium	QR29
10 Aflatoxins			
64 Chlorinated Benzenes, N.O.S.	64A	1,2,3-trichlorobenzene	QR28
	64B	2,4,6-trichlorobenzene	QR28
	64C	1,2,3,4-tetrachlorobenzene	QR28
	64D	1,2,3,5-tetrachlorobenzene	QR28
	115	1,2-Dichlorobenzene	QR28
	116	1,3-Dichlorobenzene	QR28
	117	1,4-Dichlorobenzene	QR28
	353	1,2,4-Trichlorobenzene	QR28
65 Chlorinated Ethane, N.O.S.	65A	Chloroethane	QR27
	354	1,1,1-Trichloroethane	QR27
	355	1,1,2-Trichloroethane	QR27
66 Chlorinated Fluorocarbons, N.O.S.	66A	Freon TF	QR27
67 Chlorinated Naphthalene, N.O.S.	67A	1-chloronaphthalene	QR28
68 Chlorinated Phenol, N.O.S.	68A	2,3,5,6-tetrachlorophenol	QR28
	68B	2,3,4,5-tetrachlorophenol	QR28
	128	2,4-Dichlorophenol	QR28
	129	2,6-Dichlorophenol	QR28
	359	2,4,5-Trichlorophenol	QR28
	360	2,4,6-Trichlorophenol	QR28
70 Chloroalkyl Ethers, N.O.S.	44	bis(2-chloroethyl) ether	QR28
87 Coal Tars	46	bis(2-chloroisopropyl)ether	QR28
	76	2-Chloroethyl vinyl ether	QR27
	31	Benzene	QR27
	87A	Acenapthene	QR28
	87B	Acenaphthalene	QR28
	87C	Anthracene	QR28
	87D	3,4-Benzofluoranthene	QR28
	87E	Benzo(ghi)perylene	QR28
	87F	Benzo(k)fluoranthene	QR28
	87G	Fluorene	QR28
	87H	Phenathrene	QR28
	87I	Pyrene	QR28
	90	Cresols	SEE BELOW
	245	Napthalene	QR28
	289	Phenol	QR28
	347	Toluene	QR27

TABLE B (cont'd)
COMPOUND CLASSES

CLASS	REPRESENTATIVE		TABLE
89 Creosote	89A	2,6-Dinitro-O-Cresol	QR28
	89B	2,Nitrophenol	QR28
	90A	o-Cresol	QR28
	90B	m+p Cresol	QR28
90 Cresols	90A	o-Cresol	QR28
	90B	m+p Cresol	QR28
92 Cyanides, N.O.S.	92A	Cyanide, Total	QR29
118 Dichlorobenzene, N.O.S.	115	1,2-Dichlorobenzene	QR28
	116	1,3-Dichlorobenzene	QR28
	117	1,4-Dichlorobenzene	QR28
125 Dichloroethylene, N.O.S.	126	1,1-Dichloroethylene	QR27
132 Dichloropropane, N.O.S.	132A	1,3-Dichloropropane	QR27
	133	1,2-Dichloropropane	QR27
134 Dichloropropanol, N.O.S.	134A	Dichloropropanol	QR26
162 Dinitrobenzene, N.O.S.	162A	m-Dinitrobenzene	QR28
191 Halomethane, N.O.S.	191A	Chlorodibromomethane	QR27
	191B	Dichlorobromoethane	QR27
263 Nitrosamines, N.O.S.	263A	N-Nitrosodiphenylamine	QR28
	264	N-Nitrosodi-n-butylamine	QR28
	265	N-Nitrosodiethanolamine	QR28
	266	N-Nitrosodiethylamine	QR28
	267	N-Nitrosodimethylamine	QR28
	268	N-Nitroso-N-ethylurea	QR25
	269	N-Nitrosomethylethylamine	QR28
	270	N-Nitroso-N-methylurea	QR25
	271	N-Nitroso-N-methylurethane	QR28
	272	N-Nitrosomethylvinylamine	QR28
	273	N-Nitrosomorpholine	QR28
	274	N-Nitrosonornicotine	QR28
	275	N-Nitrosopiperidine	QR28
	276	N-Nitrosopyrrolidine	QR28
	277	N-Nitrososarcosine	TBL C
297 Phthalic acid esters	114	Di-N-Butyl phthalate	QR28
300 Polychlorinated Biphenyl, N.O.S.	300A	PCB, Total	QR28
325 Tetrachloroethane	326	1,1,1,2-Tetrachloroethane	QR27
	327	1,1,2,2-Tetrachloroethane	QR27
348 Toluenediamine	348A	Toluene-2,4-Diamine	QR25
363 Trichloropropane, N.O.S.	363A	1,1,2-trichloropropane	QR27
	363B	1,2,2-Trichloropropane	QR27
	364	1,2,3-Trichloropropane	QR27

TABLE C
"EXOTIC" COMPOUNDS THAT REQUIRE SPECIAL METHODS

10 Aflatoxins
15 Mitomycin C
25 Auramine
26 Azaserine
52 Brucine
86 Citrus red No. 2
96 Cycasin
98 Cyclophosphamide
103 Diallate
142 O,O-Diethylphosphoric acid, O-p-nitrophenyl ester
147 3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol
173 2,4-Dithiobiuret
188 Formaldehyde
189 Formic acid
199 Hexachlorohexahydro-endo,endo-dimethanonaphthalene
200 Hexachlorophene
202 Hexaethyl tetraphosphate
207 Hydroxydimethylarsine oxide
210 Iron Dextran
215 Laslocarpine
241 N-Methyl-N'-nitrosoguanidine
244 Mustard gas
254 Nitric Oxide
258 Nitrogen mustard and hydrochloride salt
259 Nitrogen mustard N-Oxide and hydrochloride salt
262 4-Nitroquinoline-1-oxide
277 N-Nitrososarcosine
279 Diphosphoramide, octamethyl
281 Endothal
282 Paraldehyde
294 Phosphine
304 1,3-Propane sultone
306 Propylthiouracil
311 Saccharin and salts
316 Selenourea
320 Streptozotocin
322 Strychnine and salts
324 2,3,7,8-TCDD
332 Tetraethyl lead
334 Tetranitromethane
343 Thioacetamide
344 Thiosemicarbazide
369 Trypan blue
370 Uracil mustard

ETC ENVIRONMENTAL TESTING and CERTIFICA

EPA 9-13-85

	ICS	REPRESENTATIVE	TABLE
13 Aluminum phosphide	13A	Aluminum	QR29
19 Antimony and Compounds,	19A	Antimony	QR29
21 Arsenic and compounds, N..	21A	Arsenic	QR29
22 Arsenic acid (Orthoarsenic ...)	21A	Arsenic	QR29
23 Arsenic pentoxide (Arsenic (V) oxide)	21A	Arsenic	QR29
24 Arsenic trioxide (Arsenic (III) oxide)	21A	Arsenic	QR29
27 Barium and compounds, N.O.S	27A	Barium	QR29
28 Barium cyanide	27A	Barium, 92A Cyanide, Total	QR29
32 Benzenearsonic acid	21A	Arsenic	QR29
42 Beryllium and compounds, N.O.S.	42A	Beryllium	QR29
56 Cadmium and compounds, N.O.S.	56A	Cadmium	QR29
57 Calcium chromate (Chromic acid, calcium salt)	57A	Calcium, 84A Chromium and compounds, N.O.S.	QR29 QR29
58 Calcium cyanide	57A	Calcium, 92A Cyanide, Total	QR29
84 Chromium and compounds, N.O.S.	84A	Chromium	QR29
88 Copper cyanide	88A	Copper, 92A Cyanide, Total	QR29
92 Cyanides (soluble salts and complexes)	92A	Cyanide, Total	QR29
94 Cyanogen bromide	92A	Cyanide, Total	QR29
95 Cyanogen chloride	92A	Cyanide, Total	QR29
216 Lead and compounds, N.O.S.	216A	Lead	QR29
217 Lead acetate (Acetic acid, lead salt)	216A	Lead	QR29
218 Lead phosphate (Phosphoric acid, lead salt)	216A	Lead	QR29
219 Lead subacetate	216A	Lead	QR29
224 Mercury fulminate (Fulminic acid, mercury salt)	225A	Mercury	QR29
225 Mercury and compounds, N.O.S.	225A	Mercury	QR29
250 Nickel and compounds, N.O.S.	250A	Nickel	QR29
251 Nickel carbonyl (Nickel tetracarbonyl)	250A	Nickel	QR29
252 Nickel cyanide (Nickel (II)cyanide)	250A	Nickel	QR29
280 Osmium tetroxide (Osmium (VIII) oxide)	280A	Osmium	QR29
291 Phenylmercury acetate	225A	Mercury	QR29
301 Potassium cyanide	301A	Potassium, 92A Total	QR29
302 Potassium silver cyanide	301A	Potassium, 317A	QR29
	92A	Cyanide, Total	QR29
313 Selenious acid (Selenium dioxide)	314A	Selenium	QR29
314 Selenium and compounds, N.O.S.	314A	Selenium	QR29
315 Selenium sulfide (Sulfur selenide)	314A	Selenium	QR29
317 Silver and compounds, N.O.S.	317A	Silver	QR29
318 Silver cyanide	317A	Silver, 92A Cyanide, Total	QR29
319 Sodium cyanide	319A	Sodium, 92A Cyanide, Total	QR29
321 Strontium sulfide	321A	Strontium	QR29
335 Thallium and compounds, N.O.S.	335A	Thallium	QR29
336 Thallic oxide (Thallium (III) oxide)	335A	Thallium	QR29
337 Thallium (I) acetate (Acetic acid, thallium (I) salt)	335A	Thallium	QR29
338 Thallium (I) carbonate	335A	Thallium	QR29
339 Thallium (I) chloride	335A	Thallium	QR29
340 Thallium (I) nitrate	335A	Thallium	QR29
341 Thallium selenite	335A	Thallium	QR29
342 Thallium (I) sulfate	335A	Thallium	QR29
371 Vanadic acid, ammonium salt	371A	Vanadium	QR29
372 Vanadium pentoxide (Vandium (V) oxide)	371A	Vanadium	QR29
374 Zinc cyanide	374A	Zinc	QR29
375 Zinc phosphide	374A	Zinc	QR29

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 27, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Dir/Inj Vol Compounds - GC/MS Analysis Data (QR26)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTACVICK WMW8		850523	0900	

	Compound	Results			QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. mg/l	MDL mg/l	A	First mg/l	Second mg/l	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen Added mg/l	% Recov
12	Allyl alcohol	ND	100		ND	ND	ND	0	-	-	0	-
61	Chloral	ND		C	ND	ND	ND	0	-	-	0	-
69	Chloroacetaldehyde	IND		D	IND	IND	IND	0	-	-	0	-
83	3-Chloropropionitrile	IND		D	IND	IND	IND	0	-	-	0	-
93	Cyanogen	ND		C	ND	ND	ND	0	-	-	0	-
134A	Dichloropropanol	ND	100		ND	ND	ND	0	-	-	0	-
155	1,1-Dimethylhydrazine	IND		D	IND	IND	IND	0	-	-	0	-
156	1,2-Dimethylhydrazine	ND		C	ND	ND	ND	0	-	-	0	-
168	1,4-Dioxane	ND	200		ND	ND	ND	0	-	-	0	-
177	Ethyl cyanide	ND	100		ND	ND	ND	0	-	-	0	-
180	Ethylene oxide	ND		C	ND	ND	ND	0	-	-	0	-
187	Fluoroacetic acid	ND		C	ND	ND	ND	0	-	-	0	-
203	Hydrazine	IND		D	IND	IND	IND	0	-	-	0	-
212	Isobutyl Alcohol	ND	100		ND	ND	ND	0	-	-		-
226	Methacrylonitrile	ND	100		ND	ND	ND	0	-	-	0	-
227	Methanethiol	IND		D	IND	IND	IND	0	-	-	0	-
236	Methyl hydrazine	IND		D	IND	IND	IND	0	-	-	0	-
237	2-Methyllactonitrile	IND		D	IND	IND	IND	0	-	-	0	-
276	N-Nitrosopyrrolidine	ND	100		ND	ND	ND	0	-	-	0	-
305	n-Propylamine	IND		D	IND	IND	IND	0	-	-	0	-
307	2-Propyn-1-ol	ND	100		ND	ND	ND	0	-	-	0	-
308	Pyridine	ND		C	ND	ND	ND	0	-	-	0	-

A ETC established Method Detection Limit for this particular sample.

B Standard QA procedures not applicable for samples analyzed by direct injection Method.

C Standard not available. Compound qualitatively searched for.

D IND=Indeterminate; Standard and/or spikes could not be detected at current method levels.

*Standards and reference spectra are not available for: Glycidylaldehyde.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

J 19, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 – Purge & Trap Compounds – GC/MS Analysis Data (QR27)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTAC	VICK WMW8	850523	0900	

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL ug/l a	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1 Acetonitrile	IND	b	IND	IND	IND	50	0	IND	50	0
7 Acrolein	ND	100	ND	ND	ND	800	92	ND	800	110
9 Acrylonitrile	ND	100	ND	ND	ND	80	88	ND	80	109
31 Benzene	ND	10	ND	ND	ND	18	95	ND	18	117
50 Methyl bromide	ND	10	ND	ND	ND	18	96	ND	18	109
59 Carbon disulfide	ND	10	ND	ND	ND	50	92	ND	50	111
65A Chloroethane	ND	10	ND	ND	ND	18	95	ND	18	129
66A Freon TF	ND	10	ND	ND	ND	50	96	ND	50	117
72 Chlorobenzene	ND	10	ND	ND	ND	18	93	ND	18	117
76 2-Chloroethylvinyl ether	ND	10	ND	ND	ND	18	167c	ND	18	181c
77 Chloroform	ND	10	ND	ND	ND	18	91	ND	18	113
78 Methyl chloride	ND	10	ND	ND	ND	18	88	ND	18	103
91 Crotonaldehyde	IND	b	IND	IND	IND	50	0	IND	50	0
111 1,2-dibromo-3-chloropropane	ND	10	ND	ND	ND	50	86	ND	50	155
112 1,2-Dibromoethane	ND	10	ND	ND	ND	50	94	ND	50	115
113 Dibromomethane	ND	10	ND	ND	ND	50	94	ND	50	115
120 1,4-Dichloro-2-butene	ND	10	ND	ND	ND	50	93	ND	50	118
121 Dichlorodifluoromethane	ND	10	ND	ND	ND	18	114	ND	18	146
122 1,1-Dichloroethane	ND	10	ND	ND	ND	18	87	ND	18	108
123 1,2-Dichloroethane	ND	10	ND	ND	ND	18	91	ND	18	111
124 1,2-Trans-dichloroethylene	ND	10	ND	ND	ND	18	83	ND	18	111
126 1,1-Dichloroethylene	ND	10	ND	ND	ND	18	85	ND	18	107
127 Methylene chloride	BMDL	10	10	2	BMDL	18	61	7	18	40
132A 1,3-Dichloropropane	ND	10	ND	ND	ND	50	94	ND	50	115
133 1,2-Dichloropropane	ND	10	ND	ND	ND	18	92	ND	18	113
135 2,3-Dichloropropene	ND	10	ND	ND	ND	50	90	ND	50	111
136A cis-1,3-Dichloropropene	ND	10	ND	ND	ND	18	89	ND	18	111
136B trans-1,3-Dichloropropene	ND	10	ND	ND	ND	18	82	ND	18	107
182 Ethyl methacrylate	ND	10	ND	ND	ND	50	96	ND	50	121
191A Chlorodibromomethane	ND	10	ND	ND	ND	18	90	ND	18	117
191B Dichlorobromomethane	ND	10	ND	ND	ND	18	87	ND	18	113
206 Hydrogen sulfide	ND	b	ND	ND	ND	0	-	ND	0	-

*Standards and reference spectra are not available for: Diethylarsine, N,N-Diethylhydrazine, Trichloromethanethiol.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 19, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Purge & Trap Compounds - GC/MS Analysis Data (QR27)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTACVICK WMW8		850523	0900	

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
209 Iodomethane	ND	10	ND	ND	ND	50	100	ND	50	140
235 Methyl ethyl ketone	ND	10	ND	ND	ND	50	108	ND	50	128
238 Methyl methacrylate	ND	10	ND	ND	ND	50	88	ND	50	107
285 Pentachloroethane	ND	10	ND	ND	ND	50	102	ND	50	129
326 1,1,1,2-Tetrachloroethane	ND	10	ND	ND	ND	50	97	ND	50	120
327 1,1,2,2-Tetrachloroethane	ND	10	ND	ND	ND	18	94	ND	18	122
328 Tetrachloroethene	ND	10	ND	ND	ND	18	79	ND	18	101
329 Carbon tetrachloride	ND	10	ND	ND	ND	18	86	ND	18	114
347 Toluene	ND	10	ND	ND	ND	18	95	ND	18	120
352 Bromoform	ND	10	ND	ND	ND	18	85	ND	18	114
354 1,1,1-Trichloroethane	ND	10	ND	ND	BMDL	18	75	ND	18	122
355 1,1,2-Trichloroethane	ND	10	ND	ND	ND	18	93	ND	18	116
356 Trichloroethylene	ND	10	4	3	ND	18	89	ND	18	122
358 Trichlorofluoromethane	ND	10	ND	ND	ND	18	90	ND	18	120
363A 1,1,2-trichloropropane	ND	10	ND	ND	ND	50	94	ND	50	113
363B 1,2,2-trichloropropane	ND	D	ND	ND	ND	0	-	ND	0	-
364 1,2,3-Trichloropropane	ND	10	ND	ND	ND	50	93	2	50	118
373 Vinyl chloride	ND	10	ND	ND	ND	18	114	ND	18	147

A ETC established Method Detection Limit for this particular sample.

B IND=indeterminate; standard and/or spikescould not be detected at current method levels.

C Recovery normally variable using EPA Protocol Method 624.

D Standard not available, compound qualitatively searched for.

*Standards and reference spectra are not available for: Diethylarsine,N,N-Diethylhydrazine,Trichloromethanethiol.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 2, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTACVICK	WMW8	850523	0900	

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
2 Acetophenone	ND	10	ND	ND	ND	100	72	ND	100	75
4 2-Acetylaminofluorene	ND	10	ND	ND	ND	300	27	ND	300	67
14 4-Aminobiphenyl	ND	10	ND	ND	ND	100	56	ND	100	117
16 5-(Aminomethyl)-3-isoxazolo	IND	B	IND	IND	IND	300	0	IND	300	0
18 Aniline	ND	10	ND	ND	ND	100	66	ND	100	65
30 Benz[a]anthracene	ND	10	ND	ND	ND	100	74	ND	100	94
33 Dichloromethylbenzene	ND	10	ND	ND	ND	100	12	ND	100	23
34 Benzenethiol	ND	10	ND	ND	ND	300	90	ND	300	82
36 Benzo[b]fluoranthene	ND	10	ND	ND	ND	100	56	ND	100	77
38 Benzo(a)pyrene	ND	10	ND	ND	ND	100	54	ND	100	61
39 p-Benzoquinone	ND	10	ND	ND	ND	100	0	ND	100	0
41 Benzyl chloride	ND	10	ND	ND	ND	100	61	ND	100	68
43 bis(2-Chloroethoxy)methane	ND	10	ND	ND	ND	100	74	ND	100	87
44 bis(2-Chloroethyl) ether	ND	10	ND	ND	ND	100	79	ND	100	86
46 bis(2-Chloroisopropyl)ether	ND	10	ND	ND	ND	100	85	ND	100	102
48 bis(2-Ethylhexyl)phthalate	17	10	ND	ND	ND	100	79	ND	100	96
51 4-Bromophenyl phenyl ether	ND	10	ND	ND	ND	100	84	ND	100	110
54 Butyl benzyl phthalate	ND	10	ND	ND	ND	100	75	ND	100	92
55 2-sec-Butyl-4,6-dinitrophen	ND	25	ND	ND	ND	300	20	ND	300	99
64A 1,2,3-Trichlorobenzene	ND	10	ND	ND	ND	100	59	ND	100	67
64B 1,3,5-Trichlorobenzene	ND	10	ND	ND	ND	100	61	ND	100	70
64C 1,2,3,4-tetrachlorobenzene	ND	10	ND	ND	ND	100	110	ND	100	66
64D 1,2,3,5-tetrachlorobenzene	ND	10	ND	ND	ND	100	110	ND	100	66
67A 1-chloronaphthalene	ND	10	ND	ND	ND	100	85	ND	100	88
68A 2,3,5,6-tetrachlorophenol	ND	25	ND	ND	ND	300	16	ND	300	71
68B 2,3,4,5-tetrachlorophenol	ND	25	ND	ND	ND	300	36	ND	300	151
71 p-Chloroaniline	ND	10	ND	ND	ND	300	49	ND	300	60
74 p-Chloro-m-cresol	ND	25	ND	ND	ND	100	51	ND	100	77
80 2-Chloronaphthalene	ND	10	ND	ND	ND	100	93	ND	100	97
81 2-Chlorophenol	ND	25	ND	ND	ND	100	70	ND	100	132
85 Chrysene	ND	10	ND	ND	ND	100	71	ND	100	83
87A Acenaphthene	ND	10	ND	ND	ND	100	75	ND	100	82

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 2, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTAC	VICK WMW8	850523	0900	

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL ug/l *	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
87B Acenaphthalene	ND	10	ND	ND	ND	100	74	ND	100	84
87C Anthracene	ND	10	ND	ND	ND	100	77	ND	100	104
87D Benzo(ghi)perylene	ND	10	ND	ND	ND	0	-	ND	0	-
87E Benzo(k)fluoranthene	ND	10	ND	ND	ND	100	66	ND	100	56
87F Fluorene	ND	10	ND	ND	ND	100	65	ND	100	85
87G Phenanthrene	ND	10	ND	ND	ND	100	81	ND	100	111
87H Pyrene	ND	10	ND	ND	ND	100	57	ND	100	105
89A 2-Nitrophenol	ND	25	ND	ND	ND	100	27	ND	100	59
90A o-Cresol	ND	10	ND	ND	ND	100	74	ND	100	77
90B m+p-Cresol	ND	10	ND	ND	ND	200	68	ND	200	78
105 Dibenz[a,j]acridine	ND	10	ND	ND	ND	100	24	ND	100	65
106 Dibenz[a,h]anthracene	ND	10	ND	ND	ND	0	-	ND	0	-
114 Di-n-butyl phthalate	ND	10	ND	ND	ND	100	76	ND	100	119
115 1,2-Dichlorobenzene	ND	10	ND	ND	ND	100	54	ND	100	70
116 1,3-Dichlorobenzene	ND	10	ND	ND	ND	100	53	ND	100	68
117 1,4-Dichlorobenzene	ND	10	ND	ND	ND	100	55	ND	100	66
128 2,4-Dichlorophenol	ND	25	ND	ND	ND	100	31	ND	100	79
129 2,6-Dichlorophenol	ND	10	ND	ND	ND	100	20	ND	100	72
143 Diethyl phthalate	ND	10	ND	ND	ND	100	65	ND	100	81
151 p-Dimethylaminoazobenzene	ND	10	ND	ND	ND	100	43	ND	100	95
152 7,12-Dimethylbenz[a]anthrac	ND	10	ND	ND	ND	100	28	ND	100	53
157 Thiofanox	IND	B	IND	IND	IND	300	0	IND	300	0
158 a-a-Dimethylphenethylamine	IND	B	IND	IND	IND	100	0	IND	100	0
159 2,4-Dimethylphenol	ND	25	ND	ND	ND	100	70	ND	100	86
160 Dimethyl phthalate	ND	10	ND	ND	ND	100	67	ND	100	80
162A m-Dinitrobenzene	ND	10	ND	ND	ND	100	52	ND	100	77
163 4,6-Dinitro-o-cresol	ND	250	ND	ND	ND	100	0	ND	100	1
164 2,4-Dinitrophenol	ND	250	ND	ND	ND	100	0	ND	100	2
165 2,4-Dinitrotoluene	ND	10	ND	ND	ND	100	59	ND	100	82
166 2,6-Dinitrotoluene	ND	10	ND	ND	ND	100	64	ND	100	90
167 Di-n-octyl phthalate	ND	10	ND	ND	ND	100	68	ND	100	81
169 Diphenylamine	ND	10	ND	ND	ND	100	72	ND	100	84

ETC ENVIRONMENTAL TESTING and CERTIFICATION

2, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTACVICK	WMW8	850523	0900	

	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
170	1,2-Diphenylhydrazine	ND	10	ND	ND	ND	100	79	ND	100	91
171	N-Nitrosodi-n-propylamine	ND	10	ND	ND	ND	100	96	ND	100	106
183	Ethyl methanesulfonate	ND	10	ND	ND	ND	100	56	ND	100	66
184	Fluoranthene	ND	10	ND	ND	ND	100	62	ND	100	103
194	Hexachlorobenzene	ND	10	ND	ND	ND	100	68	ND	100	88
195	Hexachlorobutadiene	ND	10	ND	ND	ND	100	51	ND	100	67
197	Hexachlorocyclopentadiene	ND	10	ND	ND	ND	0	-	ND	0	-
198	Hexachloroethane	ND	10	ND	ND	ND	100	46	ND	100	61
200	Hexachlorophene	ND	10	ND	ND	ND	100	64	ND	100	112
201	Hexachloropropene	ND	10	ND	ND	ND	300	36	ND	300	52
208	Indeno(1,2,3-cd)pyrene	ND	10	ND	ND	ND	0	-	ND	0	-
213	Isosafrole	ND	10	ND	ND	ND	300	104	ND	300	92
223	Melphalan	IND	B	IND	IND	IND	300	0	IND	300	0
232	3-Methylcholanthrene	ND	10	ND	ND	ND	100	25	ND	100	50
234	4,4'-Methylenebis(2-chloroa	ND	10	ND	ND	ND	300	27	ND	300	69
239	Methyl methanesulfonate	ND	10	ND	ND	ND	100	51	ND	100	57
240	Aldicarb	ND	10	ND	ND	ND	100	52	ND	100	47
245	Naphthalene	ND	10	ND	ND	ND	100	67	ND	100	79
246	1,4-Naphthoquinone	ND	10	ND	ND	ND	100	33	ND	100	42
247	1-Naphthylamine	ND	10	ND	ND	ND	100	58	ND	100	73
248	2-Naphthylamine	ND	10	ND	ND	ND	100	49	ND	100	86
255	p-Nitroaniline	ND	10	ND	ND	ND	300	48	ND	300	90
256	Nitrobenzene	ND	10	ND	ND	ND	100	74	ND	100	82
263A	N-Nitrosodiphenylamine	ND	10	ND	ND	ND	100	96	ND	100	106
264	N-Nitrosodi-n-butylamine	ND	10	ND	ND	ND	100	54	ND	100	76
265	N-Nitrosodiethanolamine	IND	B	IND	IND	IND	300	0	IND	300	0
266	N-Nitrosodiethylamine	ND	10	ND	ND	ND	300	61	ND	300	71
267	N-Nitrosodimethylamine	ND	10	ND	ND	ND	0	-	ND	0	-
269	N-Nitrosomethylethylamine	IND	B	IND	IND	IND	100	0	IND	100	0
271	N-Nitroso-N-methylurethane	ND	10	ND	ND	ND	300	30	ND	300	45
273	N-Nitrosomorpholine	ND	10	ND	ND	ND	300	55	ND	300	58
275	N-Nitrosopiperidine	ND	10	ND	ND	ND	100	58	ND	100	78

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 2, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTACVICK	WMW8	850523	0900	

	Compound	Results			QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A		First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
278	5-Nitro-o-toluidine	ND	10		ND	ND	ND	300	58	ND	300	79
284	Pentachlorobenzene	ND	10		ND	ND	ND	100	66	ND	100	73
286	Pentachloronitrobenzene	ND	10		ND	ND	ND	300	48	ND	300	67
287	Pentachlorophenol	ND	25		ND	ND	ND	100	32	ND	100	175
288	Phenacetin	ND	10		ND	ND	ND	100	56	ND	100	99
289	Phenol	ND	25		ND	ND	ND	100	45	ND	100	111
299	2-Picoline	ND	10		ND	ND	ND	100	79	ND	100	86
303	Pronamide	ND	10		ND	ND	ND	100	66	ND	100	104
310	Resorcinol	ND	10		IND	IND	IND	300	0	IND	300	0
312	Safrole	ND	10		ND	ND	ND	300	82	ND	300	71
323	1,2,4,5-Tetrachlorobenzene	ND	10		ND	ND	ND	100	75	ND	100	68
330	2,3,4,6-Tetrachlorophenol	ND	25		ND	ND	ND	300	30	ND	300	121
346	Thiuram	IND		B	IND	IND	IND	300	0	IND	300	0
349	O-Toluidine	ND	10		ND	ND	ND	300	52	ND	300	59
353	1,2,4-Trichlorobenzene	ND	10		ND	ND	ND	100	60	ND	100	73
359	2,4,5-Trichlorophenol	ND	25		ND	ND	ND	100	28	ND	100	84
360	2,4,6-Trichlorophenol	ND	25		ND	ND	ND	100	25	ND	100	82
368	Tris(2,3-dibromopropyl)phos	IND		B	IND	IND	IND	300	0	IND	300	0

A ETC established Method Detection Limit for this particular sample.

B IND=indeterminate; standard and /or spikes could not be detected at current Method levels.

* Standards and references spectra are not available for: Bromite, Benz[c]acridine, Benzo[j] fluoranthene, Chlormephazine, 2-Cyclohexyl-4,6-dinitrophenol, Dibenz[a,h]acridine, 7H-Dibenzo [c,g]carbazole, Dibenzo[a,e]pyrene, Dibenzo[a,h]pyrene, Dibenzo[a,i]pyrene, Dichlorophenyarsine, Dihydrosafrole, Methapyrilene, Methylthiouracil, N-Nitrosomethylvinylamine, N-Nitrosonornicotine, O,O,O-Triethylphosphorothioate, syn-Trinitrobenzene, 2,3,7,8-TCDD not analyzed by this methodology.

ENVIRONMENTAL TESTING and CERTIFICATION

JUN 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Pest & Herb Compounds - GC Analysis Data (QR24)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTACVICK	WMW8	850523	0900	

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL ug/l a	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen Added ug/l	% Recov
11 Aldrin	ND	.1	ND	ND	ND	0.5	78	ND	0.5	90
63 Chlordane	ND	1.0	ND	ND	ND	5.0	83	ND	5.0	120
100 4,4'-DDD	ND	.1	ND	ND	ND	0.5	90	ND	0.5	100
101 4,4'-DDE	ND	.1	ND	ND	ND	0.5	90	ND	0.5	120
102 4,4'-DDT	ND	.1	ND	ND	ND	0.5	54	ND	0.5	100
130 2,4-D	ND	50	ND	ND	ND	100	75	ND	100	70
137 Dieldrin	ND	.1	ND	ND	ND	0.5	80	ND	0.5	120
144 Thionazin	ND	1.0	ND	ND	ND	5	110	ND	5	116
149 Dimethoate	ND	1.0	ND	ND	ND	5	84	ND	5	112
172 Disulfoton	ND	5.0	ND	ND	ND	25	100	ND	25	112
174A Endosulfan I	ND	.1	ND	ND	ND	0.5	118	ND	0.5	126
174B Endosulfan II	ND	.1	ND	ND	ND	0.5	80	ND	0.5	110
175 Endrin	ND	.1	ND	ND	ND	0.5	100	ND	0.5	100
192 Heptachlor	ND	.1	ND	ND	ND	0.5	100	ND	0.5	120
193 Heptachlor epoxide	ND	.1	ND	ND	ND	0.5	78	ND	0.5	130
196A Alpha-BHC	ND	.1	ND	ND	ND	0.5	108	ND	0.5	92
196B Beta-BHC	ND	.1	ND	ND	ND	0.5	100	ND	0.5	100
196C Gamma-BHC	ND	.1	ND	ND	ND	0.5	97	ND	0.5	95
196D Delta-BHC	ND	.1	ND	ND	ND	0.5	110	ND	0.5	100
214 Kepone	ND	2.5	ND	ND	ND	5	190	ND	5	300
230 Methoxychlor	ND	1.0	ND	ND	ND	50	100	ND	50	120
242 Methyl parathion	ND	1.0	ND	ND	ND	5	118	ND	5	110
283 Parathion	ND	1.0	ND	ND	ND	5	115	ND	5	106
296 Famphur	ND	10.0	ND	ND	ND	50	110	ND	50	118
333 Tetraethylpyrophosphate	ND	5.0	ND	ND	ND	25	72	ND	25	84
351 Toxaphene	ND	1.0	25	32	ND	20	67	ND	20	60
361 2,4,5-T	ND	5	ND	ND	ND	10	140	ND	10	130
362 2,4,5-TP (Silvex)	ND	5	ND	ND	ND	10	160	ND	10	168

a ETC established Method Detection Limit for this particular sample.

*Standards and reference spectra are not available for: Chlorobenzilate and Carbophenothion.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - DAI HPLC Compounds - Analysis Data (QR25)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTAC	VICK WMW8	850523	0900	

	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. mg/l	MDL mg/l A	First mg/l	Second mg/l	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen Added mg/l	% Recov
6	1-Acetyl-2-thiourea	BMDL	.5	ND	BMDL	BMDL	5.0	111	ND	5.0	118
8	Acrylamide	ND	.5	BMDL	ND	ND	5.0	99	ND	5.0	99
82	1-(o-Chlorophenyl)thiourea	BMDL	.5	BMDL	BMDL	BMDL	5.0	120	BMDL	5.0	119
181	Ethylenethiourea	BMDL	.5	BMDL	BMDL	ND	5.0	97	BMDL	5.0	108
221	Maleic hydrazide	ND	.5	BMDL	BMDL	BMDL	5.0	104	0.6	5.0	113
229	Methomyl	ND	.5	ND	ND	ND	5.0	24	ND	5.0	39
253	Nicotinic acid	BMDL	.5	1.6	1.1	BMDL	5.0	4	ND	5.0	4
268	N-Nitroso-N-ethylurea	ND	.5	BMDL	BMDL	BMDL	5.0	-B	ND	5.0	-B
270	N-Nitroso-N-methylurea	ND	.5	ND	BMDL	BMDL	5.0	-B	ND	5.0	-B
292	N-Phenylthiourea	BMDL	.5	ND	ND	ND	5.0	93	BMDL	5.0	84
345	Thiourea	ND	.5	ND	ND	ND	5.0	58	ND	5.0	87

A ETC established Method Detection Limit for this particular sample.

B Recovery data not available due to solution degradation.

*Cannot be determined by present methodology: Nitrofen, Diethylstilbestrol, Ethyl carbamic acid, Ethylenimine, malononitrile, 2-Methylaziridine, Nitroglycerin and Reserpine.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 8, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Extractable HPLC Compounds - Analysis Data (QR31)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTACVICK	WMW8	850523	0900	

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
3 Warfarin	ND	25	ND	ND	ND	500	52	ND	500	35
35 Benzidine	BMDL	25	BMDL	BMDL	BMDL	500	106	BMDL	500	104
119 3,3'-Dichlorobenzidine	ND	25	ND	ND	ND	500	103	ND	500	102
150 3,3'-Dimethoxybenzidine	BMDL	25	BMDL	BMDL	ND	500	160	ND	500	140
153 3,3'-Dimethylbenzidine	ND	25	ND	ND	ND	500	106	ND	500	107
249 1-Naphthyl-2-thiourea	ND	25	ND	ND	ND	500	160	ND	500	170
290A m-phenylenediamine	ND	25	ND	ND	ND	500	37	ND	500	43
290B o-phenylenediamine	IND B	25	IND	IND	IND	500	0	IND	500	0
290C p-phenylenediamine	IND B	25	IND	IND	IND	500	0	IND	500	0
348A Toluene-2,4-Diamine	IND B	25	IND	IND	IND	500	0	IND	500	0

A ETC established Method Detection Limit for this particular sample.

B IND=indeterminate due to standard degradation.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 8, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Aroclors - GC Analysis Data (QR30)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTACVICK	WMW8	850523	0900	

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL ug/l a	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
300A Aroclor 1242	BMDL	1.0	ND	ND	ND	0	-	ND	0	-
300B Aroclor 1254	ND	1.0	ND	ND	ND	0	-	ND	0	-
300C Aroclor 1260	ND	1.0	ND	ND	ND	2	115	ND	2	95
300D Aroclor 1248	BMDL	1.0	ND	ND	ND	0	-	ND	0	-
300E Aroclor 1232	ND	1.0	ND	ND	ND	0	-	ND	0	-
300F Aroclor 1221	ND	1.0	ND	ND	ND	0	-	ND	0	-
300G Aroclor 1016	ND	1.0	ND	ND	ND	0	-	ND	0	-

a ETC established Method Detection Limit for this particular sample.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

N 29, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Metals and Cyanides - Analysis Data (QR29)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6065	VERTAC CHEMICAL CORPORATION	VERTACVICK	WMW8	850523	0900	

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL ug/l	First	Second	Blank Data	Concen. Added	% Recov	Unspiked Sample	Concen. Added	% Recov
13A Aluminum	BMDL	100								
19A Antimony	ND	90								
21A Arsenic	80	10								
27A Barium	600	2								
42A Beryllium	ND	1								
56A Cadmium	BMDL	4								
57A Calcium	180000	100								
84A Chromium	ND	30								
88A Copper	BMDL	10								
92A Cyanide, Total	<25	25								
210 Iron	27300	200								
216A Lead	ND	90								
225A Mercury	ND	.2								
250A Nickel	ND	20								
280A Osmium	BMDL	800								
301A Potassium	1300	40								
314A Selenium	ND	5								
317A Silver	BMDL	10								
319A Sodium	45100	90								
321A Strontium	460	50								
335A Thallium	ND	5								
372A Vanadium	ND	10								
374A Zinc	10	5								

ETC ENVIRONMENTAL TESTING and CERTIFICATION

June 18, 1985

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery Water- GC/MS Data (QR20)

Chain of Custody Data Required for ETC Data Management Summary Reports

H6065

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours

Compound	Amount Added ug	% Recovery	Control Limits %	
			Lower	Upper
VOLATILE FRACTION				
Toluene-D8	.250	102	86	119
Bromofluorobenzene	.250	83	85	121
1,2-Dichloroethane-D4	.250	96	77	120
ACID FRACTION				
Phenol-D5	100	25	15	103
2-Fluorophenol	100	24	23	121
2,4,6-Tribromophenol	100	13	10	130
BASE/NEUTRAL FRACTION				
Nitrobenzene-D5	50	63	41	120
2-Fluorobiphenyl	50	67	44	119
Terphenyl-D14	50	78	33	128

* IFB EPA Control Limits.

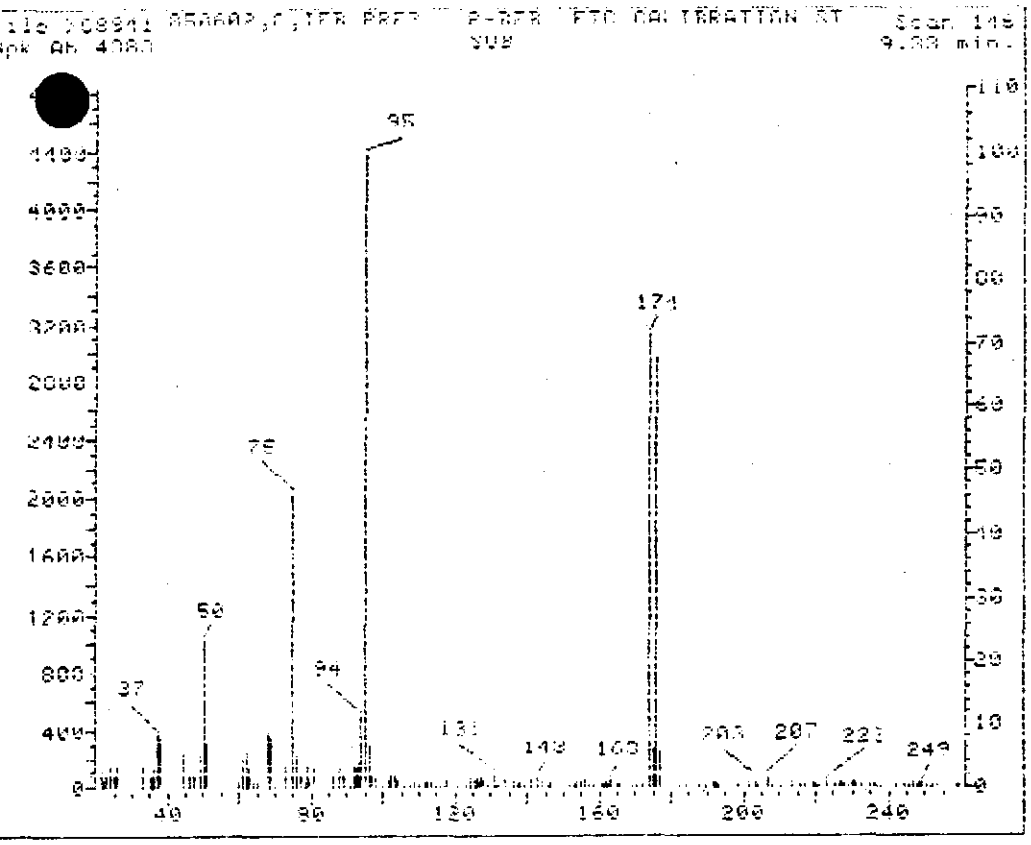


TABLE 2: MS TUNE PERFORMANCE DATA (BFB)

GC/MS Tuning Data - Bromofluorobenzene (BFB) for IAI Volatiles Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	23.41	23.41	OK
75	30-60% of mass 95	46.54	46.54	OK
95	Base peak, 100% relative abundance	100.00	100.00	OK
96	5-9% of mass 95	6.52	6.52	OK
173	Less than 1% of mass 95	0.00	0.00	OK
174	Greater than 50% of mass 95	71.93	71.93	OK
175	5-9% of mass 174	5.78	8.03	OK
176	95-101% of mass 174	67.74	95.13	OK
177	5-9% of mass 176	5.69	7.85	OK

Injection Date: 06/03/85 Analyst: Joseph Quinn
Injection Time: 07:47 Processor: [illegible]
Run No: 108841 GC Batch: QU3340
Spectrum No: 146 Samples: H6065, H6070-H6072
H7523 - H7526

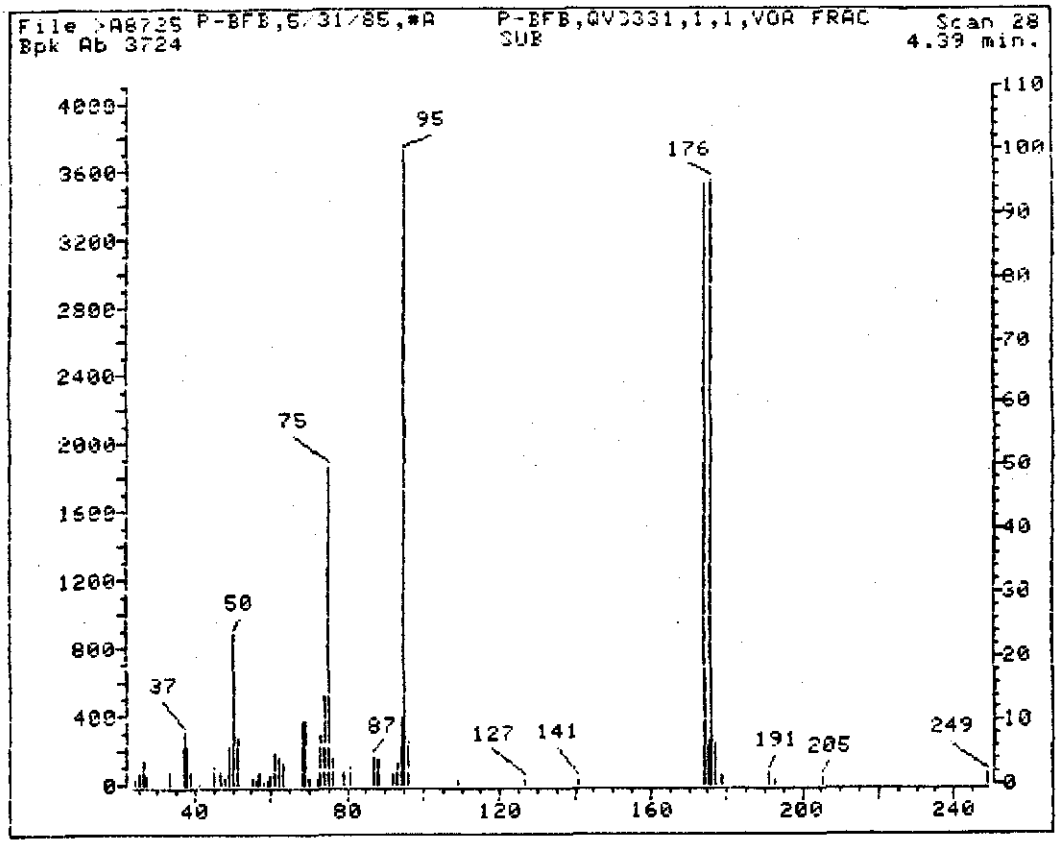


TABLE 2: METHOD PERFORMANCE DATA (QR21)

GC/MS Tuning Data - Bromofluorobenzene (BFB) for Volatiles Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	23.90	23.90	Ok
75	30-60% of mass 95	49.76	49.76	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.63	6.63	Ok
173	Less then 1% of mass 95	0.00	0.00	Ok
174	Greater then 50% of mass 95	94.66	94.66	Ok
175	5-9% of mass 174	6.79	7.18	Ok
176	95-101% of mass 174	95.11	100.48	Ok
177	5-9% of mass 176	6.58	6.92	Ok

Injection Date: 05/31/85 Analyst: [illegible]
Injection Time: 12:42 Processor: G. Ao / [illegible] Ao
Run No: >A8725 QC Batch: QV3331
Spectrun No: 28 Samples: { H6065, H6070-H6072 / H7523 to H7526 }

[illegible]

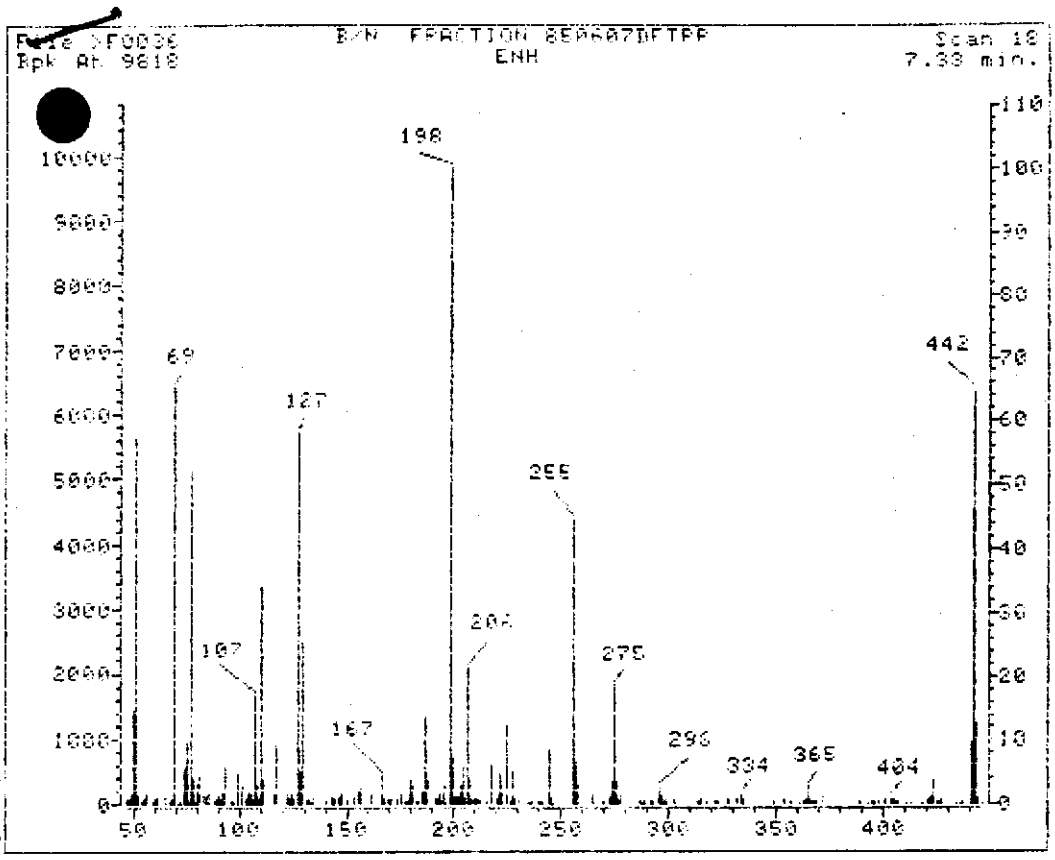


TABLE 2: METHOD PERFORMANCE DATA (QR23)

GC/MS Tuning Data - Decafluorotriphenylphospine (DFTPP) for Base/Neutral Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	57.48	57.48	OK
68	Less then 2% of mass 69	.90	1.38	OK
69	(reference only)	65.48	65.48	OK
70	Less then 2% of mass 69	0.00	0.00	OK
127	40-60% of mass 198	58.32	58.32	OK
197	Less then 1% of mass 198	0.00	0.00	OK
198	Base peak, 100% relative abundance	100.00	100.00	OK
199	5-9% of mass 198	7.02	7.02	OK
275	10-30% of mass 198	18.53	18.53	OK
365	Greater then 1% of mass 198	2.63	2.63	OK
441	Less then mass 443	9.48	75.94	OK
442	Greater then 40% of mass 198	64.55	64.55	OK
443	17-23% of mass 442	12.49	19.35	OK

Injection Date: 06/08/85 Analyst: Pearl Prant
Injection Time: 08:50 Processor: Dan Dan Li
Run No: >F0036 QC Batch: QB3131
Spectrum No: 18 Samples: ~~H5599, [illegible] - H2241~~
H5597 to H5600 H2239 to H2243
H6070 to H6072, H6065

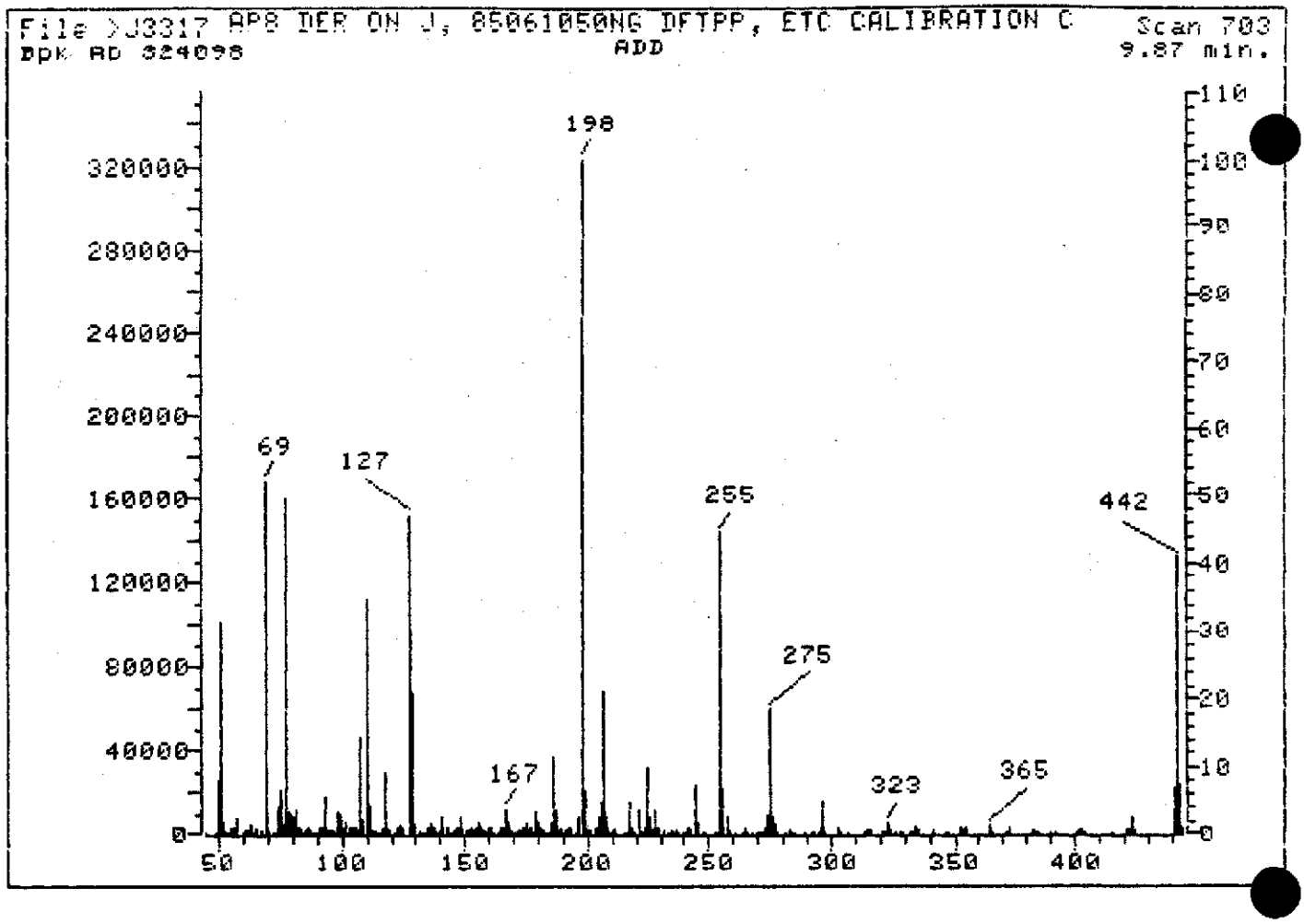


TABLE 2: METHOD PERFORMANCE DATA (QR23)

GC/MS Tuning Data - Decafluorotriphenylphospine (DFTPP) for Base/Neutral Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	31.45	31.45	Ok
68	Less then 2% of mass 69	0.00	0.00	Ok
69	(reference only)	52.02	52.02	Ok
70	Less then 2% of mass 69	.16	.31	Ok
127	40-60% of mass 198	47.01	47.01	Ok
197	Less then 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.04	6.04	Ok
275	10-30% of mass 198	18.47	18.47	Ok
365	Greater then 1% of mass 198	1.38	1.38	Ok
441	Less then mass 443	7.05	95.13	Ok
442	Greater then 40% of mass 198	40.93	40.93	Ok
443	17-23% of mass 442	7.41	18.11	Ok

Injection Date: 06/10/85 Analyst: Thomas M Manson
Injection Time: 16:16 Processor: Wen Wen
Run No: >J3317 QC Batch: QD 3131
Spectrun No: 703 Samples: H2239-H2243, H6065, H6070-H6072, H5597-H5600

Methodology
For
Analysis of Appendix VIII Parameters

The methods employed in the analysis of specific compounds in Appendix VIII are based on the second edition (July 1982) of EPA Manual SW-846 "Test Methods for Evaluating Solid Waste". Since the manual is deficient in details on how the complete analysis of Appendix VIII compounds can be performed, we devised an analytical scheme that divides the compounds into the twelve categories as stated in the introduction. Within the nine categories of compounds that can be specifically analysed, not all the reference standards are readily available. We footnoted those unavailable compounds in our result tables. In the GC/MS analyses we were able to search for the specific compounds that did not have corresponding reference standards by using standard spectra from the literature. In other cases, GC and HPLC, where retention time characteristics are the only means to identify the compounds, we were unable to draw any conclusions on those compounds that corresponding reference standards are not available at the time of analysis.

In each category rigid compliance with the instrument parameters and performance criteria of established EPA methods, such as those in methods 624 and 625, was achieved before any sample analysis was initiated. (Similar criteria do not exist in SW846.) For GC/MS analysis where standards were available, identification was performed using relative retention times, the relative abundance of three characteristic ions and the abundance ratios. The entire mass spectrum was reviewed to confirm each identification. Quantitative analysis was performed using an internal standard with a single characteristic ion. When compounds without corresponding reference standard were identified, they were quantified assuming the same response factor as the internal standard.

Volatile Compounds by Purge and Trap GC/MS

For the analysis of purge and trap Volatile compounds, Methods 8240 and 5030 were used. The analysis can be summarized as follows: Helium is bubbled through a 5 ml water sample contained in a specially designed purging chamber at ambient temperature. The purgeable volatile organic compounds are transferred from the aqueous phase to the vapor phase. The vapor is swept through a sorbent column where the organic components are trapped. After the purge cycle is complete, the sorbent column is heated and backflushed with helium to desorb the organic purgeables onto a gas chromatographic column. The gas chromatograph is temperature programmed to separate the purgeable mixture. The separated purgeable components are then identified and quantitated using a computerized mass spectrometer.

Water Soluble Compounds by Direct Aqueous Injection GC/MS

For the analysis of water soluble compounds, 5 ul of aqueous sample was injected directly into the GC/MS system. The chromatographic column employed in the procedure is the same column used for purge and trap analysis. MS scanning was begun prior to sample injection to capture mass intensity data for early eluting compounds. The GC oven temperature program used was that specified in procedure 8240.

Extractable Acid, Base/Neutral and Pesticide Compounds by GC/MS

For the analysis of the Acid, Base/Neutral and Pesticide compounds in water, Methods 3510 and 8270 were used. The analysis can be summarized as follows: a measured volume of sample, approximately 1 liter, is extracted with an aliquot of methylene chloride without pH adjustment and then the sample is adjusted to a pH greater than 11 and extracted with another aliquot of methylene chloride. These two aliquots were combined. The pH of the sample is then adjusted to a value less than 2 and extracted with another aliquot of methlyene chloride. A separatory funnel or continuous extractor is used to perform the extractions. The two extracts are dried and concentrated to a 1 ml final volume. The extracts are then combined just prior to injection into a GC/MS instrument.

GC Analysis of Herbicides and Pesticides

The methods employed in the analysis of your sample for herbicides and pesticides are established EPA methods taken from the "Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples," June, 1980 and methods 8080, 8140 and 8150.

The herbicide method can be summarized as follows: A measured volume of sample, approximately 500-1000 ml, to which sodium sulfate has been added, is acidified and extracted with methylene chloride. The methylene chloride extract is evaporated to dryness, and the residue is derivatized with diazomethane and injected into a gas chromatograph equipped with a ^{63}Ni electron capture detector.

The pesticide method can be summarized as follows: A measured volume of sample, approximately 500ml, is extracted with methylene chloride. The extract is dried and concentrated to a final volume of 1ml and injected into a gas chromatograph equipped with a ^{63}Ni electron capture detector and Flame Photometric detector in phosphorus mode.

Analysis of Metals

The determination of metals in aqueous samples is performed according to the methods published by EPA in "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March, 1979, and the inorganic methods in SW846. Arsenic, selenium and thallium are determined by furnace AA; silver, aluminum, barium, beryllium, boron, cadmium, calcium, chromium, copper, cobalt, iron, magnesium, manganese, molybdenum, nickel, leak, sodium, antimony, tin, titanium, vanadium, and zinc are determined by ICP emission. The determination of mercury is performed by cold vapor AA.

Analysis by HPLC

The analysis of thermally unstable and polar compounds are based on the HPLC methods 8320 and 8330. The compounds analyzed fall into two catagories: direct aqueous injection and Base/Neutral extractables. Twenty ul of the sample or extract is injected into an HPLC equipped with a reverse phase column. Gradient elution and UV detector at 210 and 250 nm are used.

Conventional

Total cyanide analysis is performed using Method 9010.

Summary of
Quality Assurance/Quality Control Procedures (QA/QC)

ETC bases its quality assurance protocols on the following government guidelines:

. "Handbook for Analytical Quality Control in Water and Wastewater Laboratories", EPA-600/4-79-019, March 1979;

. National Enforcement Investigation Center Policies, and Procedures manual; EPA-330/9/79/001-R, October 1979;

. the recommended guidelines for EPA Methods 624 and 625. (Federal Register, December 3, 1979; updated on Otober 26,1984);

. "Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples," EPA 600/8-80-038, June 1980; and

. "Determination of 2,3,7,8-TCDD in Soil and Sediment" EPA, Region VII, Kansas City, September 1983.

. Organic Analysis: Multi-media, Multi Concentration-IFB WA84-A267

. Dioxin Analysis:Soil/Sediment Matrix; Multi-Concentration; Selected Ion Monitoring with Jar Extration Procedure-IFB WA84-A002

However, we have modified our protocols to provide a higher level of QA/QC than the guidelines require. For example, we analyze a higher than required number of quality control samples and we pay especially careful attention to the certification of the "reference standard" compounds we use in analysis. Below are listed the key QA/QC elements for the methods we used.

Analysis of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry

- Each batch of 13 samples consists of 9 customer samples (at a maximun), one blank sample, one spiked blank, one spiked sample and one replicate sample. This amounts to a 30% quality control factor.

- Three surrogate compounds are added to each sample in the batch of 13.

- A blind quality control sample is introduced to the laboratory for analysis on a weekly basis.

- Each GC/MS is checked and retuned, if necessary, at the beginning of each day to ensure that its performance on bromofluorobenzene (BFB) meets the EPA criteria.

- A calibration curve for quantitation is prepared using a mixture of Volatile Organic Priority Pollutant "standards" at a minimum of 3 different concentrations and using a mixture of 3 internal standards at a constant concentration.

- The calibration curve is verified with a mixture of priority pollutant standards every day. If the response factors factors vary greater than 25%, the instrument must be recalibrated.

Analysis of Organic Compounds Extracted in Acid or Base/Neutral Solutions by Gas Chromatography/Mass Spectrometry

- Each batch of 20 samples consists of 16 customer samples (at a maximum), one blank sample, one spiked blank (for water matrices), one sample spiked with the priority

pollutant standard mixture and a duplicate customer sample. This amounts to a 20% quality control factor.

- Three surrogate compounds are added to each sample in the batch for Base/Neutral analysis.
- Three surrogate compounds are added to each sample in the batch for Acid analysis.
- A blind quality control sample is introduced to the laboratory for analysis on a weekly basis.
- Each GC/MS is checked and retuned, if necessary, at the beginning of each day to ensure that its performance on decafluorotriphenylphosphine (DFTPP) meets the EPA criteria.
- A calibration curve for quantitation is prepared using a mixture of standards composed of either the Organic Acid or Base/Neutral Extractable Compounds at a minimum of 3 concentrations and using five internal standards for quantitation.

Analysis of Metals

All Samples

- New standards are prepared for each batch of samples.
- Normal calibration is performed using a blank sample and four standards that have been through the sample preparation procedure. A regression analysis is used to construct the calibration curve.
- All EP Toxicity samples and all samples determined by furnace atomic absorption are calculated by the "method of additions".
- For each sample analysis that requires the use of the "method of additions" technique, a three point calibration is performed using U.S. EPA "Methods for Chemical Analysis of Water and Wastes, 1979". Results are obtained using linear regression analysis. Any regression with a coefficient of correlation below 0.990 is considered suspect, necessitating review of calibration data or sample re-analysis.
- In constructing the normal calibration curves the lowest concentration levels we use are values greater than or equal to 5 times the Instrumental Detection Limit (IDL).
- All calibration standards are analyzed in duplicate, at a minimum.
- Independent reference standards are used to check the accuracy of calibration standards.
- A check standard is analyzed every ten samples to validate the normal calibration curve.
- One customer sample out of every ten is analyzed in triplicate.

Homogeneous Samples (except for Mercury analysis)

Samples are analyzed in batches of 30 or less. For batches in which the sample matrices are homogeneous, the QC program is a minimum of 25% and consists of analyzing:

- 3 sets of triplicate analyses;
- 2 Replicate spikes;
- 1 independent reference standard;
- 4 Calibration standards (processed using the sample preparation method);
- 4 Calibration standards (without sample preparation); and

- 1 Reagent Blank.

Heterogeneous Samples (except for Mercury analysis)

Samples are analyzed in batches of 30 or less. For batches in which the sample matrices are heterogeneous, the QC program is a minimum of 35% and consists of analyzing:

- 3 sets of triplicate analyses;
- 2 Replicate spikes;
- 1 Replicate independent reference standards;
- 4 Calibration standards (processed using the sample preparation method);
- 1 Procedural Blank;
- 4 Calibration standards (without sample preparation); and
- 1 Reagent Blank.

Analysis of Mercury

To analyze samples for mercury we group them by matrix in batches of 30 or less. Our QC program is a minimum of 30% and consists of analyzing:

- each of the 30 customer samples in duplicate;
- 3 sets of triplicate anaylses;
- 2 Replicate spikes;
- 2 Replicate independent reference standards;
- 10 Calibration standards (processed using the sample preparation method); and
- 2 Procedural Blanks.

Analysis of Pesticides, Herbicides and PCB's by Gas Chromatography

Pesticide, herbicide and PCB samples are grouped in batches of 16 customer samples or less according to the type of analysis to be performed. The QC program for each of these three types of analyses is a minimum of 20% and consists of analyzing:

- 1 procedural blank sample(a reagent blank is analyzed in the case of non-water matrices);
- 1 spiked blank sample (the spiked blank is eliminated in the case of non-water matrices);
- 1 replicate sample;
- 1 replicate spiked sample; and
- 1 known refernece QC sample for at least each 100 samples analyzed.

The instrument is calibrated each run with three standards, and checked every 10 samples.

Analysis of Cyanides, Phenols, Fluoride, Chloride, Nitrate and Nitrite

- All parameters are analyzed using a Technicon Autoanalyzer II GT.

- 3 calibration standards are analyzed at the beginning and end of each batch.
- Each batch (up to 80 samples) consists of analyzing one blank, one spiked blank, one duplicate and spiked sample every 20 samples, and an EPA known reference sample.

Analysis of Total Organic Carbon (TOC)

TOC samples are analyzed on a daily basis with the number of samples analyzed per day dependent on the request for duplicate or quadruplicate analyses. The quality control program is designed to maintain the appropriate amount of QC and consists of the following elements:

- Daily instrument calibration
- One blank
- Standard recalibration every 10 samples
- Spiked samples at a low and high level
- Every sample is run in duplicate at a minimum

Analysis of Total Organic Halide (TOX)

- Blank reagent water for absolute carbon backround must contain less than 5 ug/l of halide (as chloride).
- Using a trichlorophenol standard, the mean adsorption efficiency must be within +/- 15% of the standard value.
- Calibration standards are run every 10 samples.
- Every sample is run in duplicate at a minimum.

Analysis of 2,3,7,8-TCDD (Dioxin) by GC/MS (SIM)

- Each sample is dosed with a known quantity of $^{13}C_{12}$-2,3,7,8-TCDD as internal standard and $^{37}Cl_4$-TCDD as surogate standard. The action limits for surrogate standard results is +/- 40% of the true value. Samples showing surrogate standard results outside of these limits are reextracted and reanalyzed.
- Two laboratory "method blanks" are run along with each set of 24 or fewer samples. The method blank is also dosed with the internal standard and surrrogate standard.
- At least one per set of 24 samples is run in duplicate to determine intralaboratory precision.
- Qualitative Requirements. The following are met in order to confirm the presence of native 2,3,7,8-TCDD:

  a. Isomer specificity must be demonstrated initially and verified once per 8-hour work shift. The verification consists of injecting a mixture containing TCDD isomers which elute close to 2,3,7,8-TCDD. The 2,3,7,8-TCDD must be separated from interferring isomers, with no more than 25% valley relative to the 2,3,7,8-TCDD peak.

  b. The 320/322 ratio is within the range of 0.67 to 0.87.

  c. Ions 320, 322, and 257 are all present and maximize together the signal to mean noise ratio must be 2.5 to 1 or better for all 3 ions.

  d. The retention time is equal (within 3 seconds) the retention time for the isotopically labeled 2,3,7,8-TCDD.

e. At least one of the positives can be *confirmed* by obtaining partial scan spectra from mass 150 to mass 350. The partial scan guidelines are as follows:

. the 320/324 ratio should be 1.58 +/- 0.16

. the 257/259 ratio should be 1.03 +/- 0.10

. the 194/196 ratio should be 1.54 +/- 0.15

- One sample is spiked with native 2,3,7,8-TCDD at a level of 1.0 PPB (for soil) for each set of 24 or fewer samples.
- In cases where no native 2,3,7,8-TCDD is detected, the actual detection limit is estimated and reported based on a signal to noise ratio of 2.5 to 1 at ions 320 and 322.
- For each sample, the internal standard is present with at least a 10 to 1 signal to noise ratio for both mass 332 and mass 334. Also, the internal standard 332/334 ratio must be within the range of 0.67 to 0.87.

Subcontractor QA/QC

Each subcontractoer is required to maintain an appropriate level of quality control. To insure this, each subcontractor is required to submit to ETC the quality control data for all analyses it performs. This data is kept on file at ETC. In general, the amount of quality control required is one duplicate sample with one spiked sample for every ten analyses.

Chain-of-Custody

The chain-of-custody procedure is part of our quality assurance protocol. We believe our chain-of-custody record fully complies with the legal requirements of federal, state and local government agencies and of the courts of law. The record covers:

- labeling of sample bottles, packing the Sample Shuttle and transferring the Shuttle under seal to the custody of a shipper;
- outgoing shipping manifests;
- the chain-of-custody form completed by the person(s) breaking the Shuttle seal, taking the sample, resealing the Shuttle and transferring custody to a shipper;
- incoming shipping manifests;
- breaking the Shuttle's reseal;
- storing each labeled sample bottle in a secured area;
- disposition of each sample to an analyst or technician; and
- the use of the sample in each bottle in a testing procedure appropriate to the intended purpose of the sample.

The records show for each link in this process:

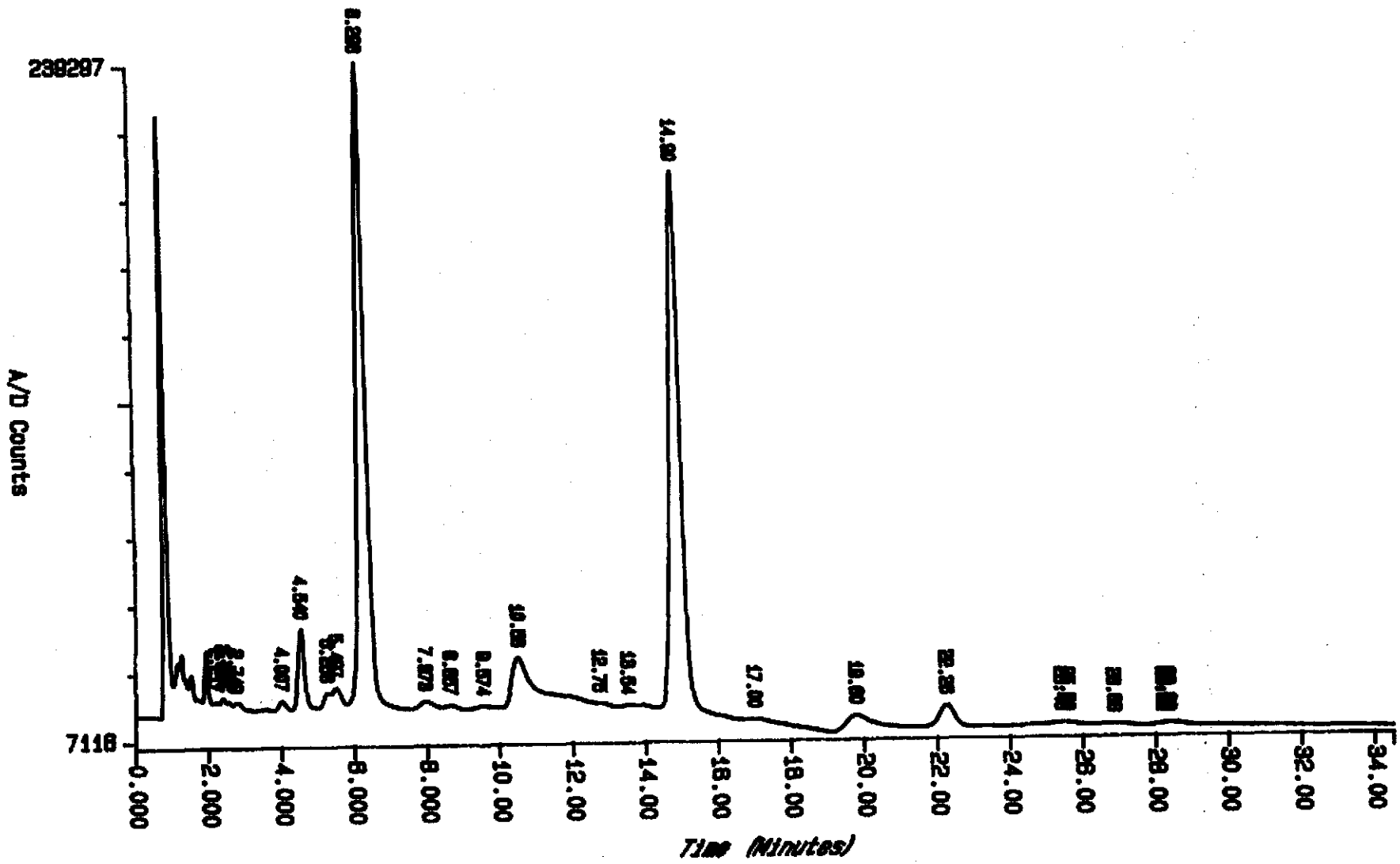
- the person with custody; and
- the time and date each person accepted or relinquished custody.

Appendix A1

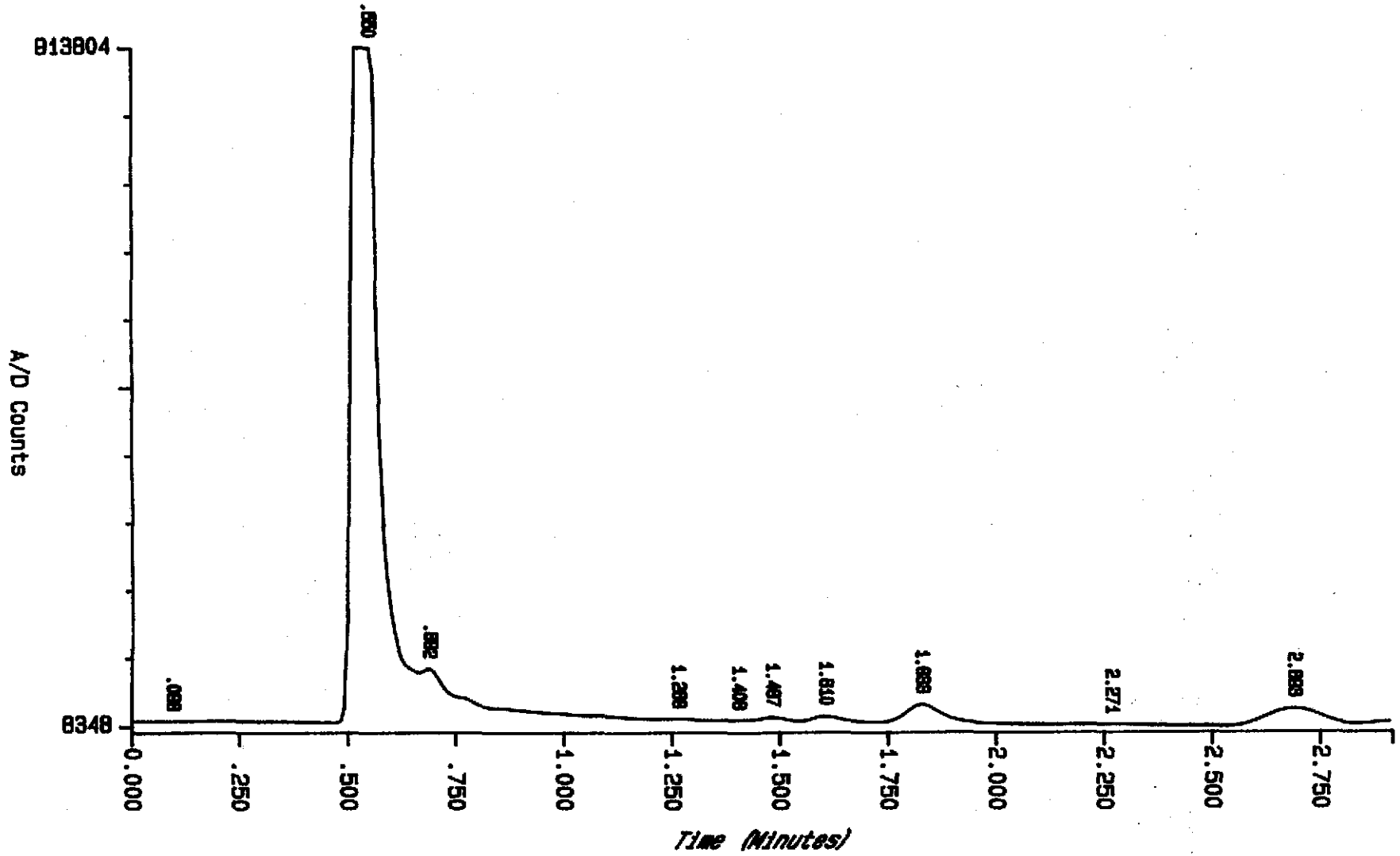
Gas Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed gas chromatogram for each sample analyzed by a GC instrument.

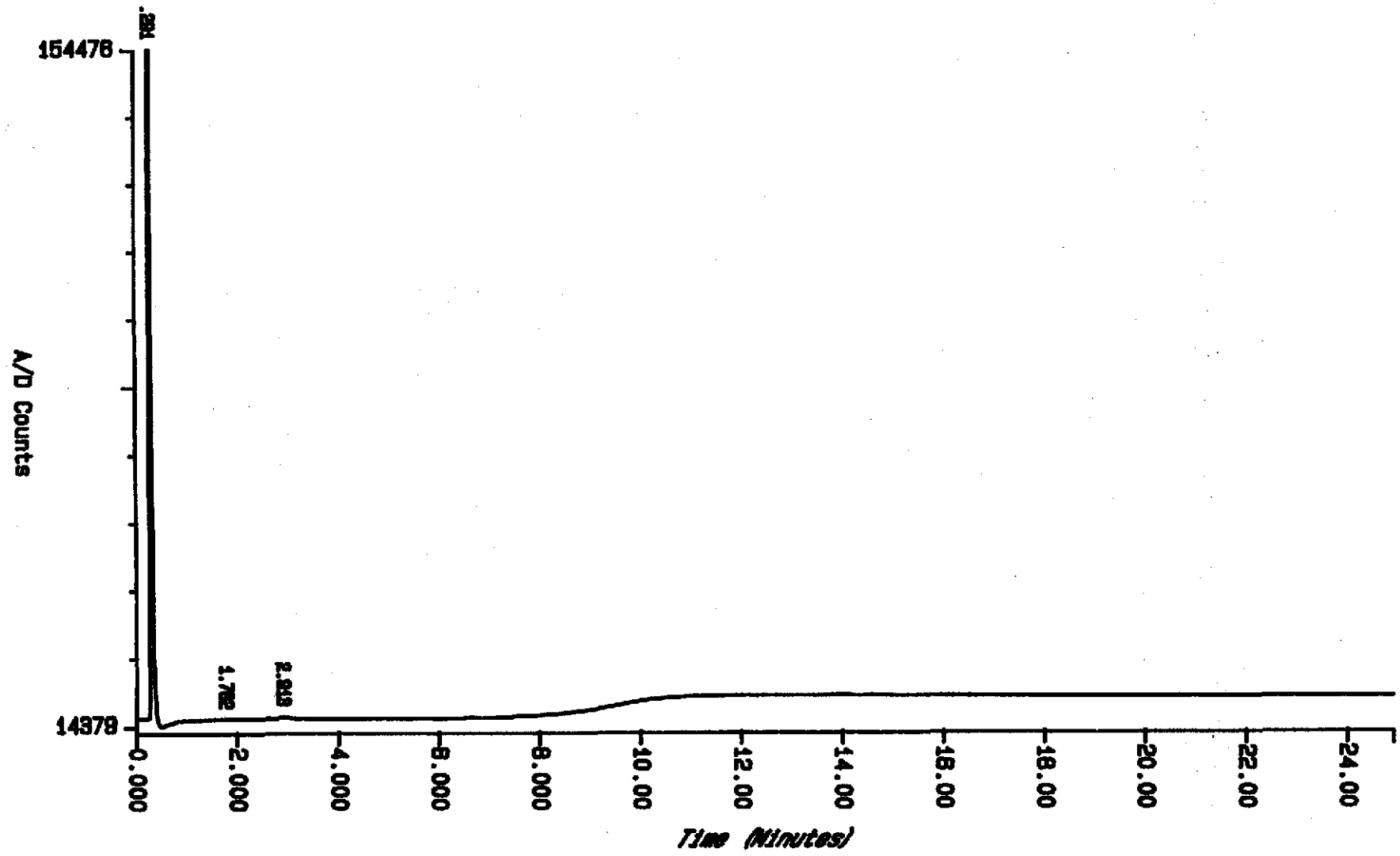
2) A reconstructed gas chromatogram for the appropriate standard compounds analyzed with the same GC under the same operating conditions.



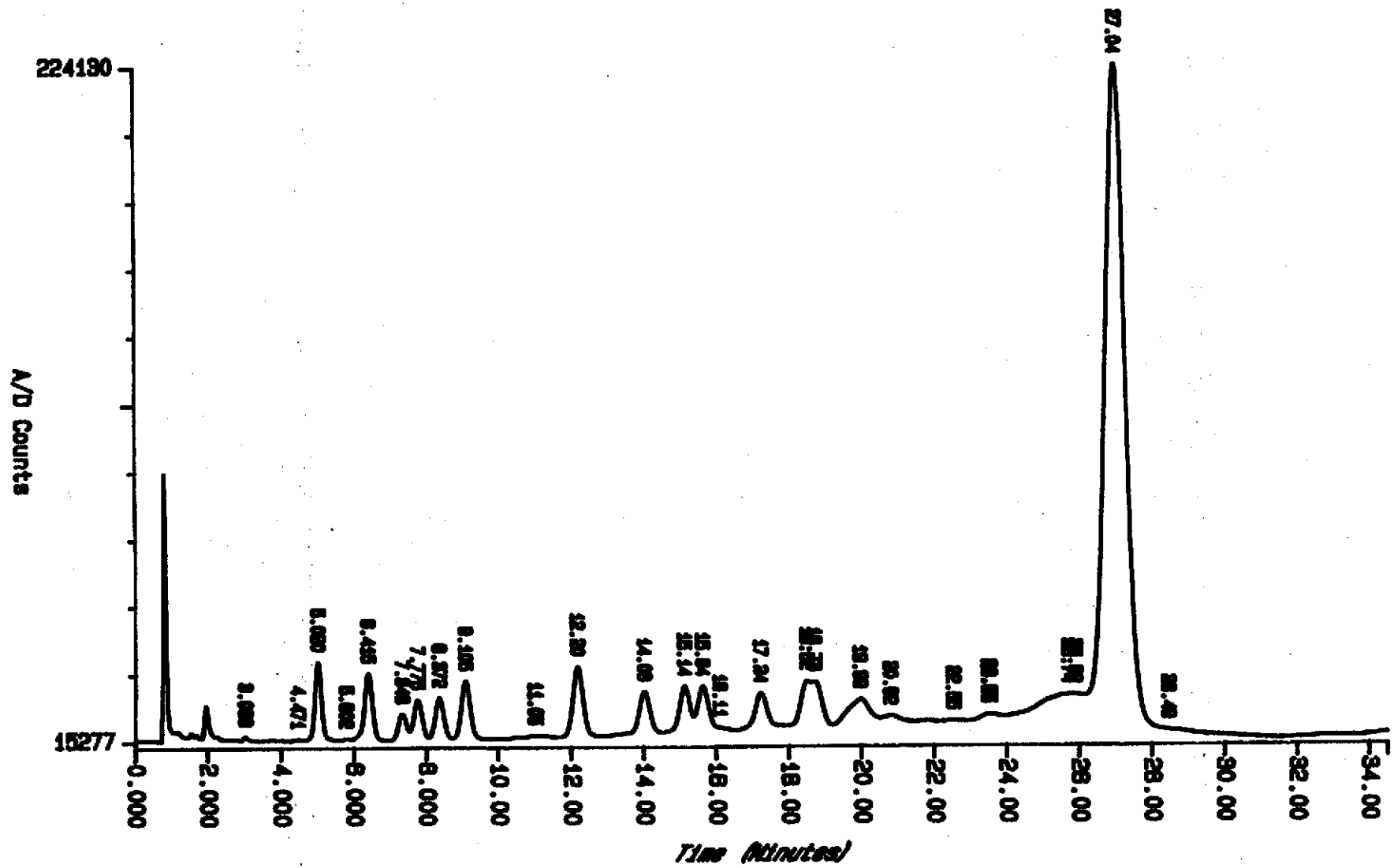
Sample: H8085 Injected at 17:53:00 ON JUN 12, 1985
Raw File: H8085F Proc File: H8085E Method: PPST2
Operator: WENDY KLEIN Case No: 3139
Instrument ID: #1 ul Injected: 1
Column ID: MIXED PHASE



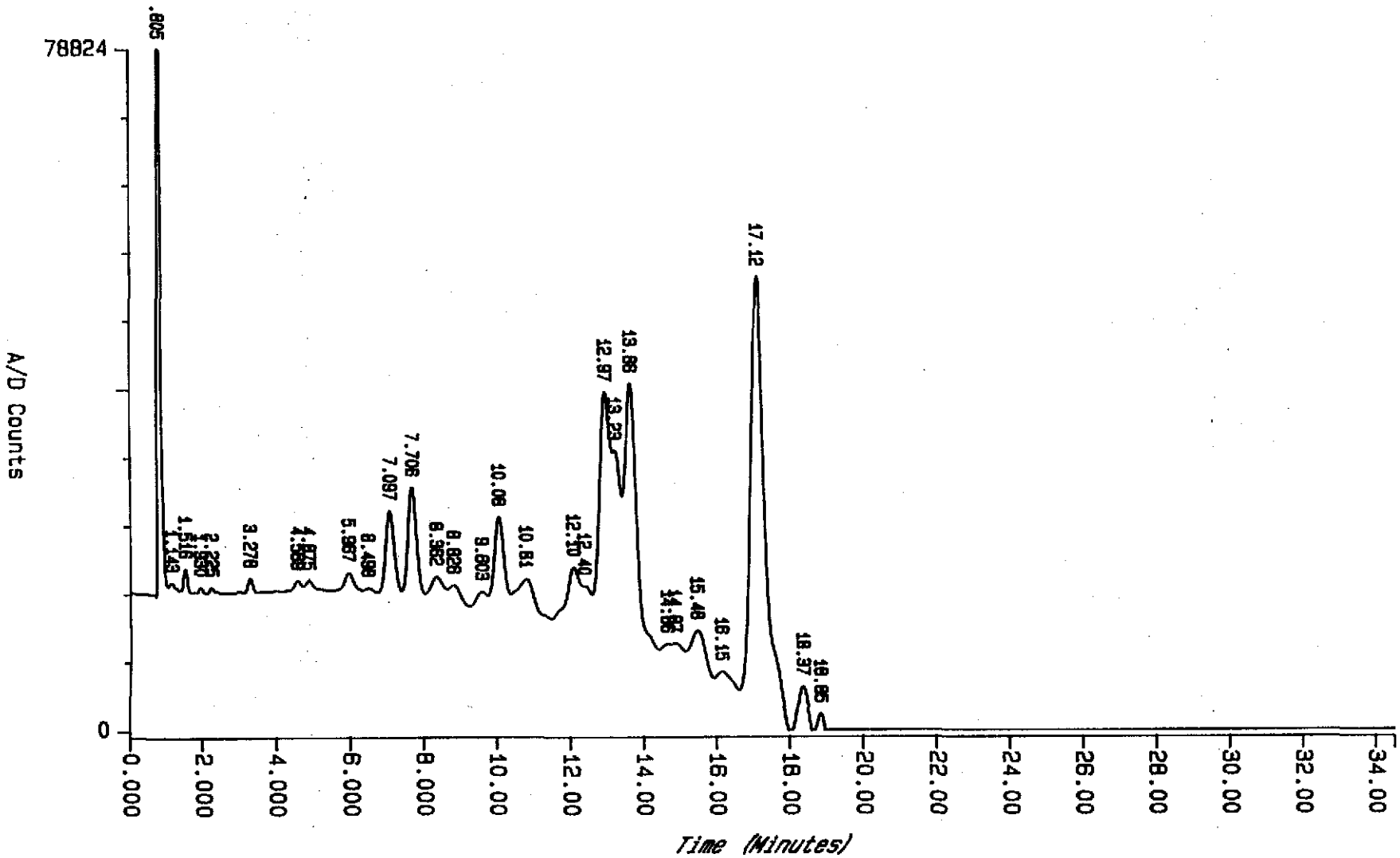
Sample: H G6065 Injected at 10:49:00 ON JUN 13, 1985
Raw File: G6065H Proc File: G6065G Method: HERB8



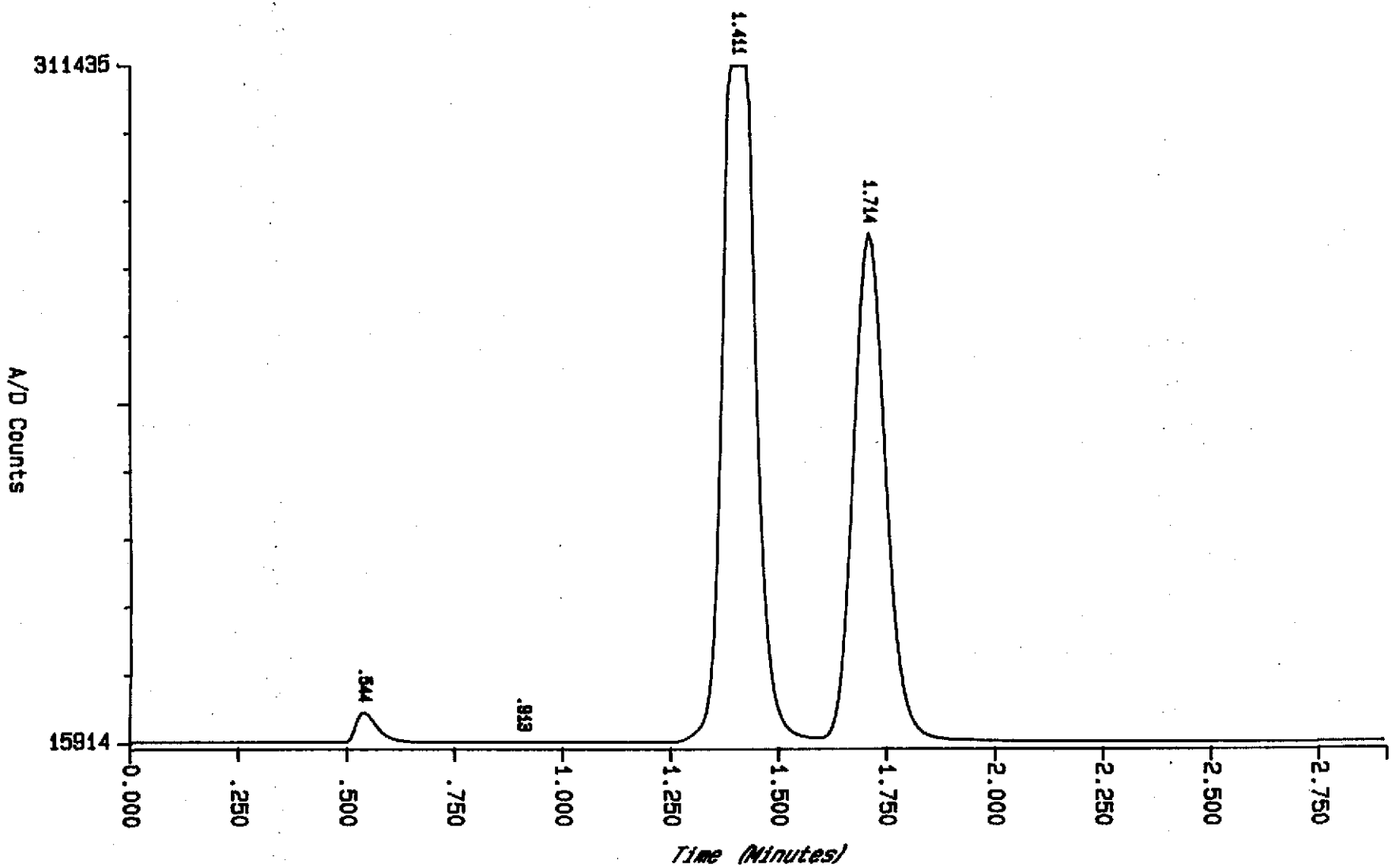
Sample: H6065 Injected at 2:34:47 ON JUN 11, 1985
Raw File: H6065B Proc File: H6065A Method: AP8FPD



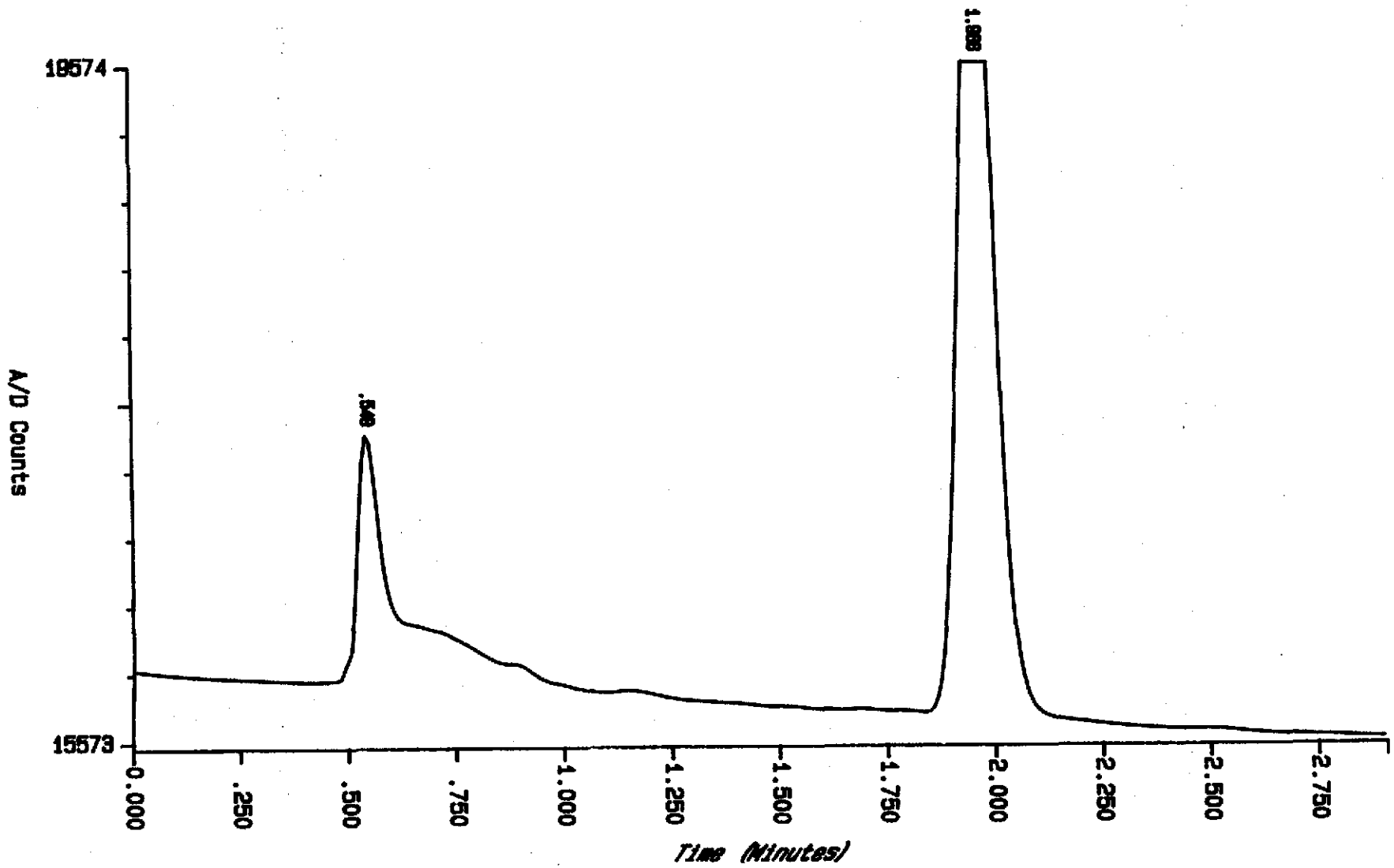
Sample: PEST 0.05 Injected at 17:13:04 ON JUN 12, 1985
Raw File: RW0738 Proc File: PW0738 Method: PPST2
Operator: WENDY KLEIN Case No: 3139
Instrument ID: #1 ul Injected: 1
Column ID: MIXED PHASE



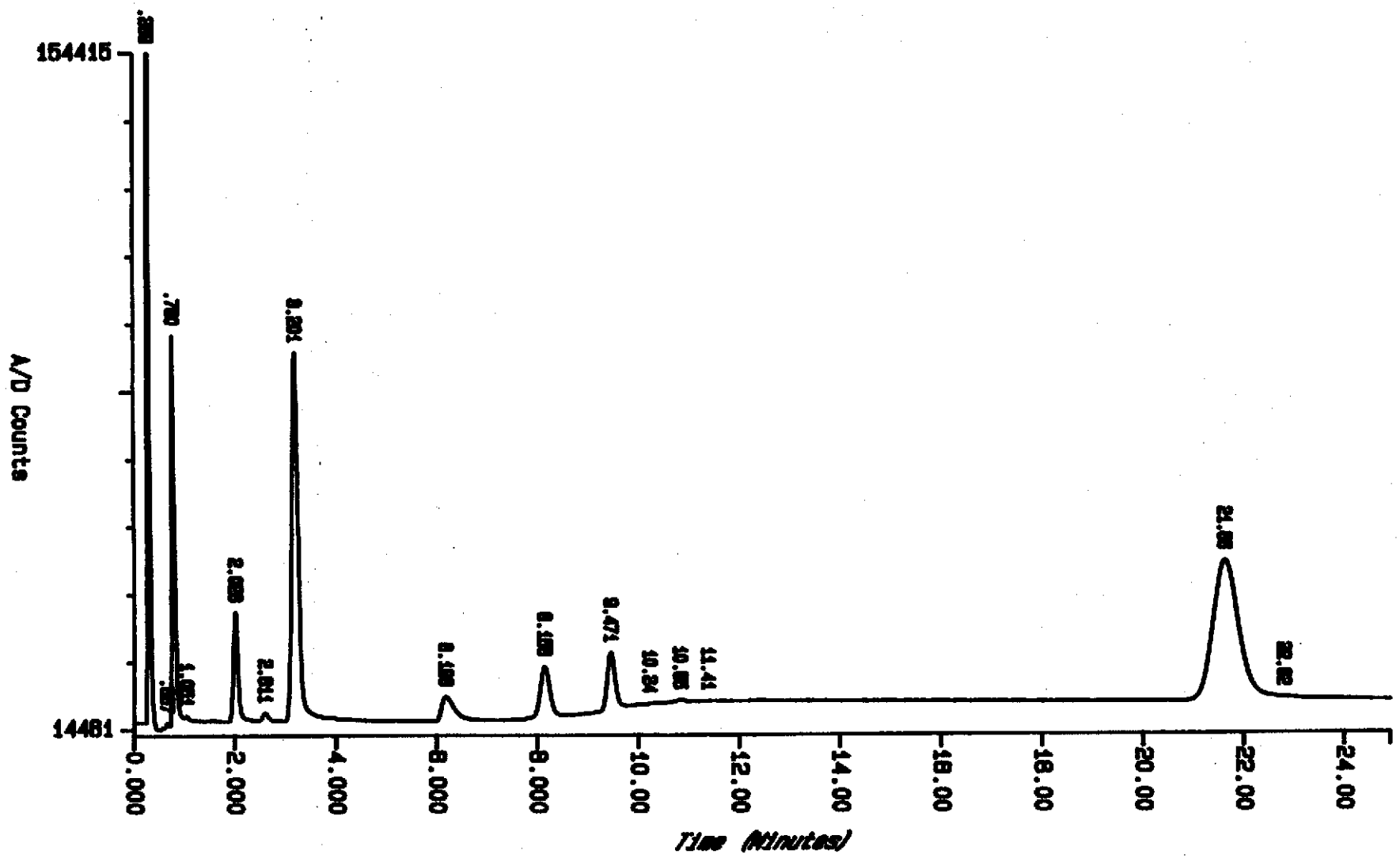
Sample: TCK B Injected at 3:16:23 ON JUN 13, 1985
Raw File: RW0743 Proc File: PW0743 Method: PPST2
Operator: WENDY KLEIN Case No: 3139
Instrument ID: #1 ul Injected: 1
Column ID: MIXED PHASE



Sample: 24D 245TP B Injected at 9:35:18 ON JUN 13, 1985
Raw File: RW0747 Proc File: PW0747 Method: HERB8



Sample: H245T A Injected at 18:51:48 ON JUN 13, 1985
Raw File: RW0752 Proc File: PW0752 Method: HERB8



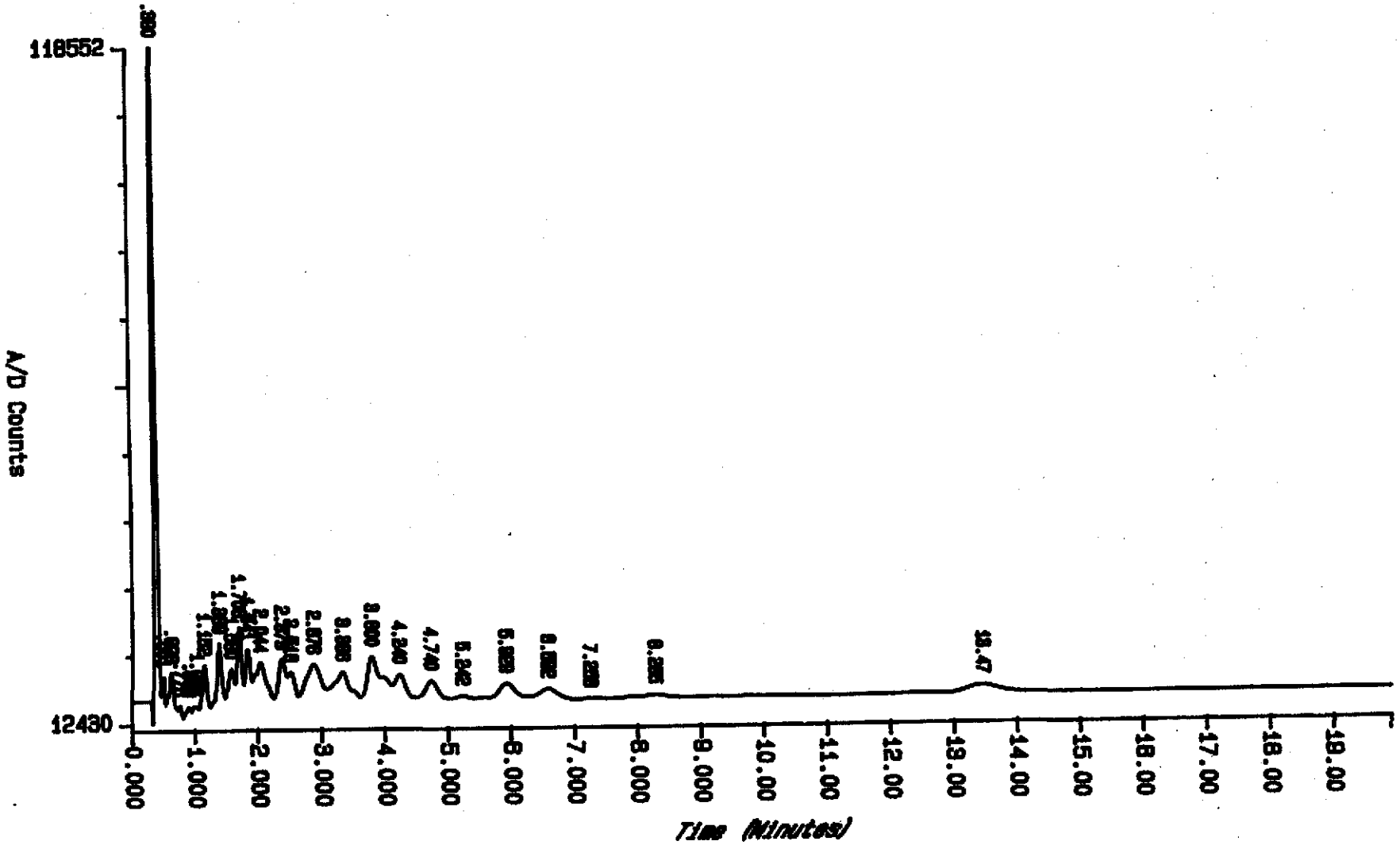
Sample: FPD STD C Injected at 8:03:51 ON JUN 11, 1985
Raw File: RW0713 Proc File: PW0713 Method: AP8FPD

Appendix A1

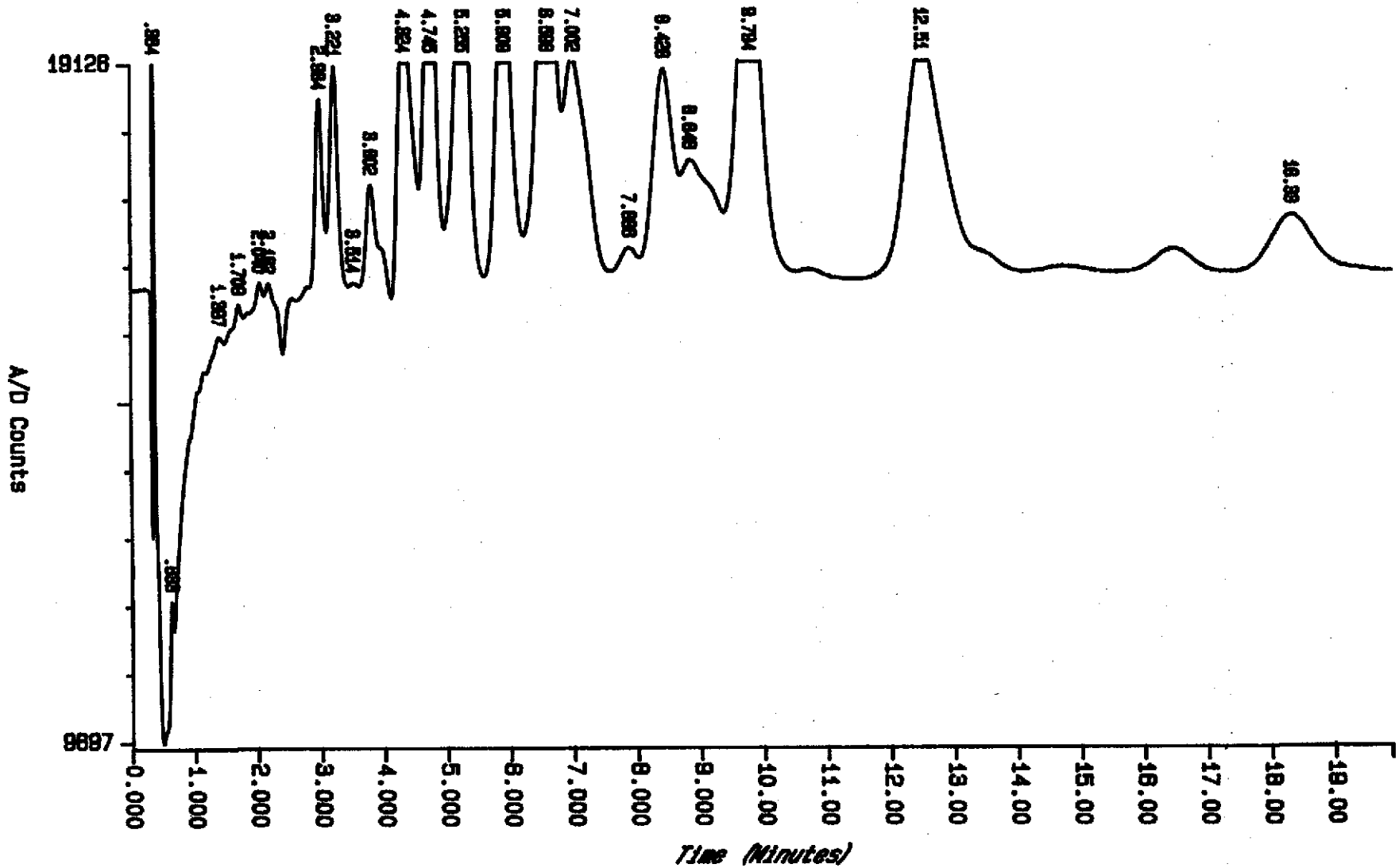
Gas Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed gas chromatogram for each sample analyzed by a GC instrument.

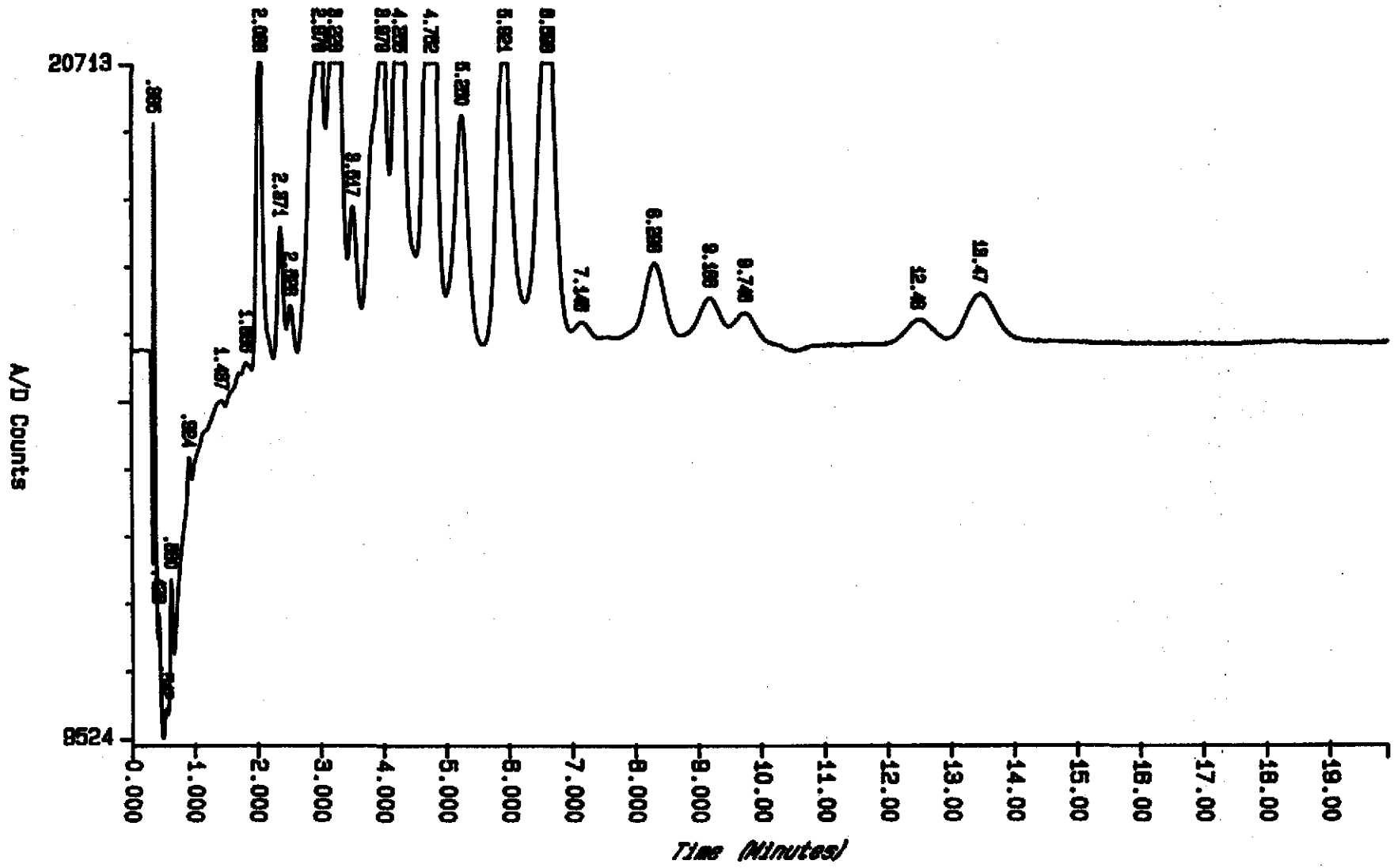
2) A reconstructed gas chromatogram for the appropriate standard compounds analyzed with the same GC under the same operating conditions.



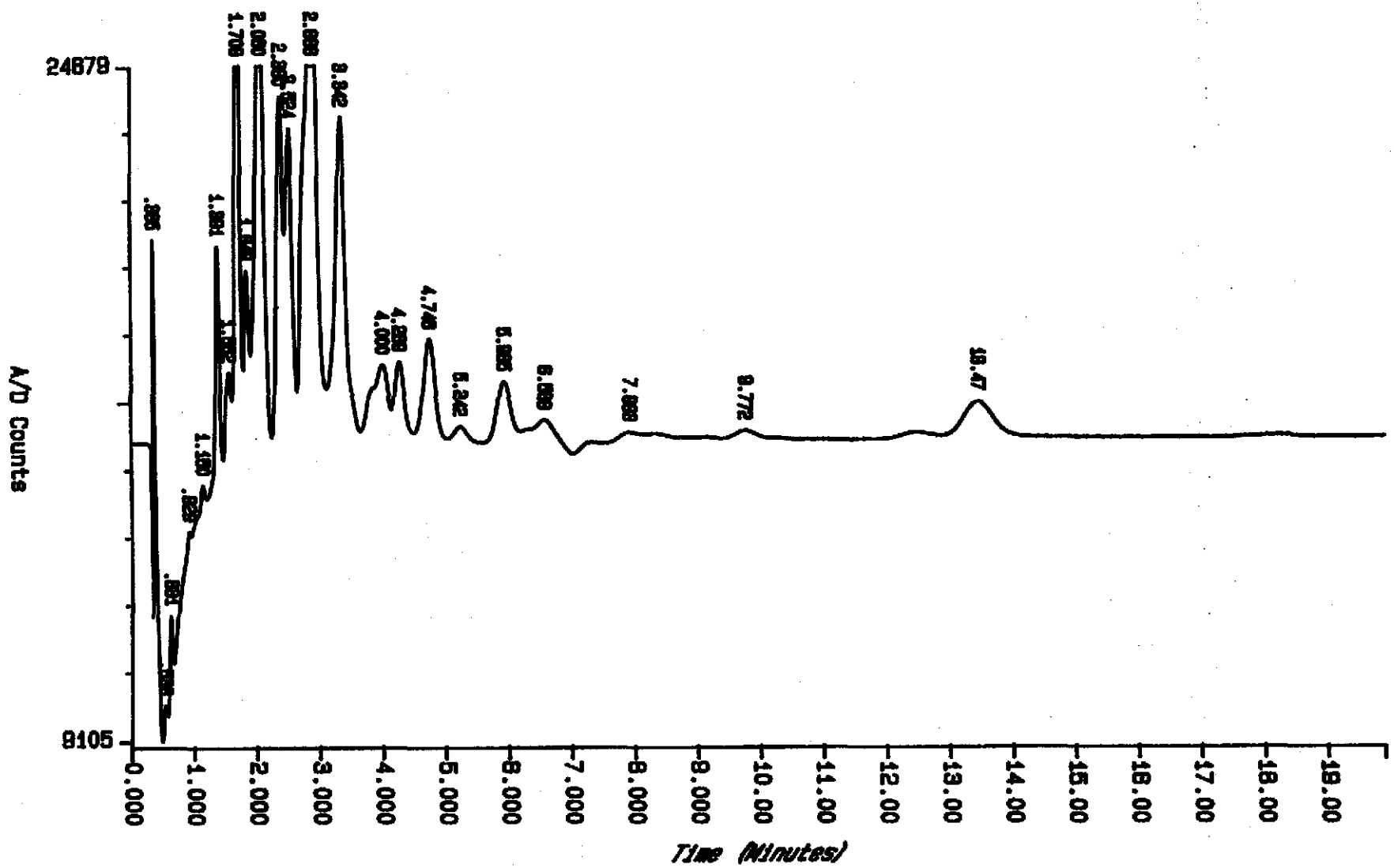
Sample: H6065 Injected at 23:47:10 ON JUN 10, 1985
Raw File: H6065D Proc File: H6065C Method: PCBB5
Operator: KJKUHL Case No: QC3126
Instrument ID: #4 ul Injected: 1



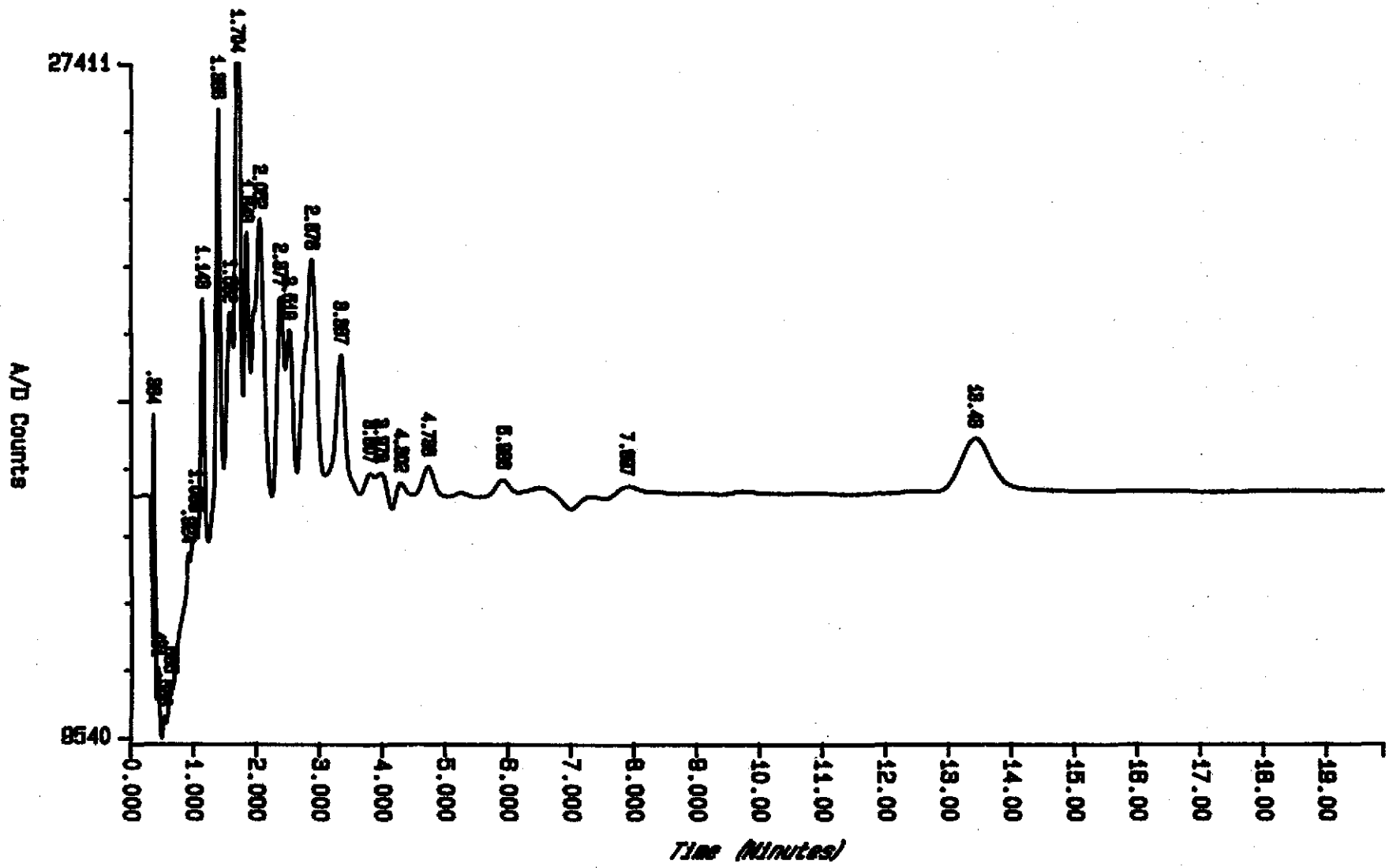
Sample: AR1260 0.5 Injected at 17:51:51 ON JUN 10, 1985
Raw File: RW0715 Proc File: PW0715 Method: PCBB5
Operator: KJKUHL Case No: QC3126
Instrument ID: #4 ul Injected: 1
Column ID: MIXED PHASE



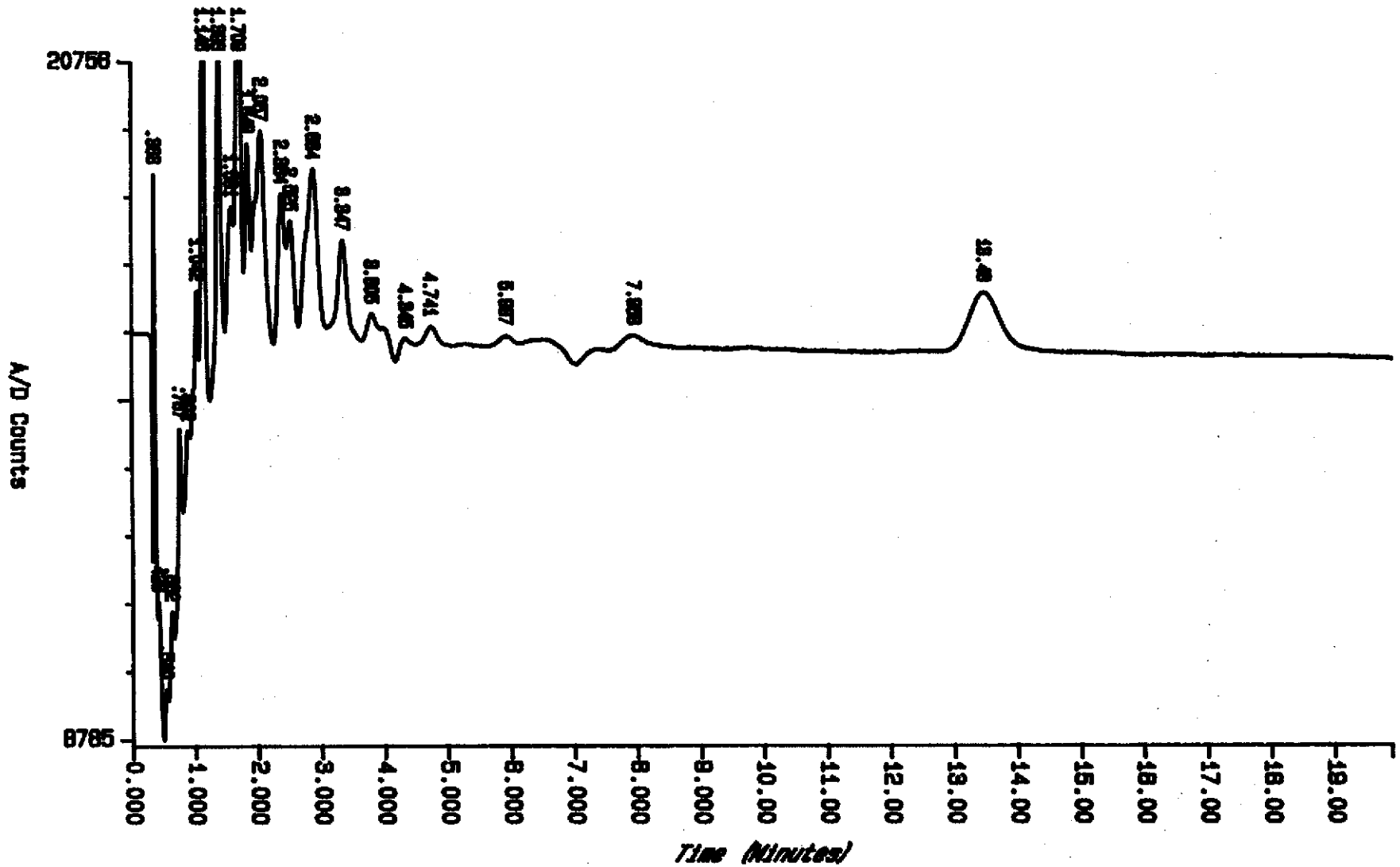
Sample: AR1254 0.5 Injected at 20:35:05 ON JUN 10, 1985
Raw File: RW0719 Proc File: PW0719 Method: PCBB5
Operator: KJKUHL Case No: QC3126
Instrument ID: #4 ul Injected: 1
Column ID: MIXED PHASE



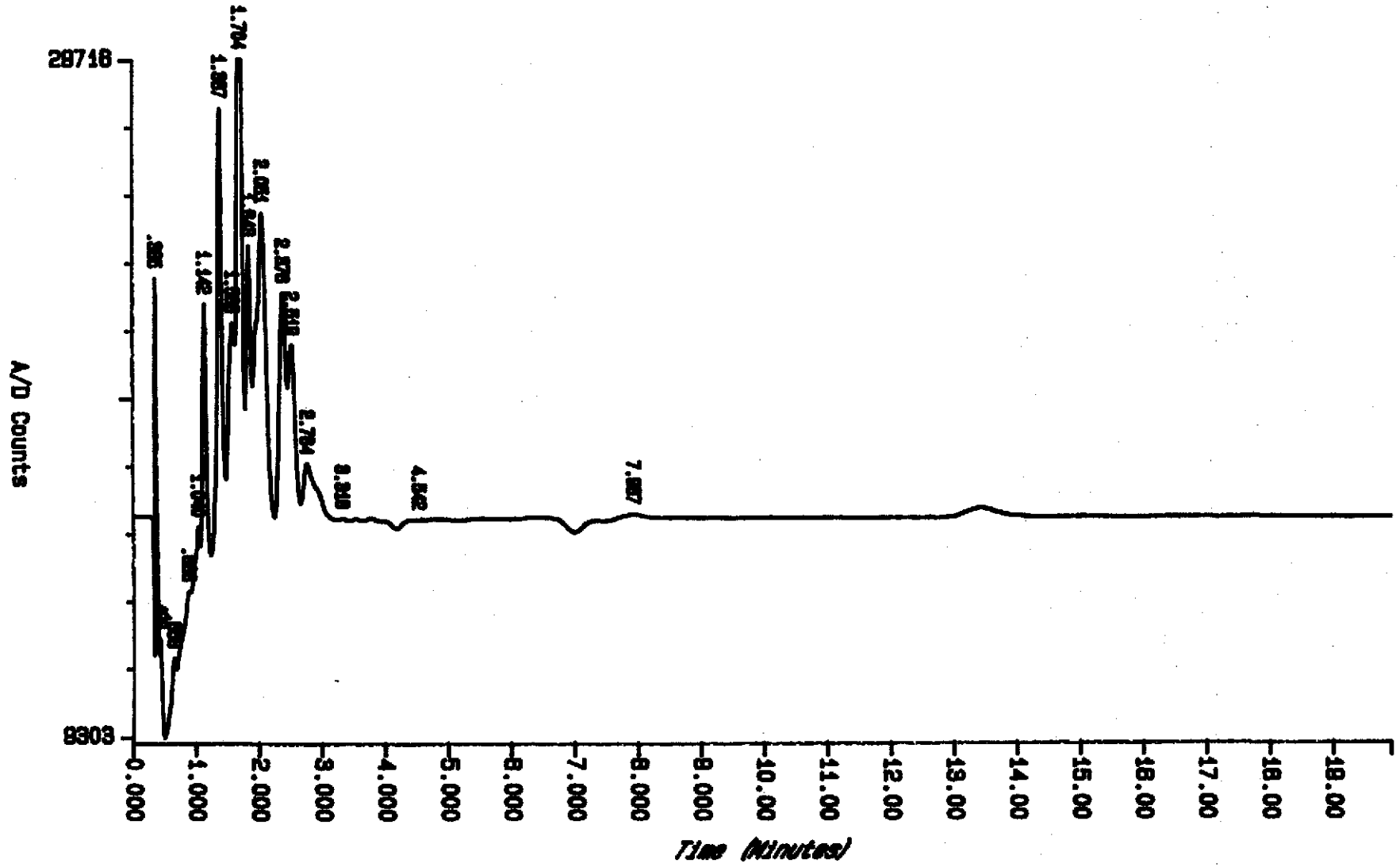
Sample: AR1248 0.5 Injected at 21:02:26 ON JUN 10, 1985
Raw File: RW0720 Proc File: PW0720 Method: PCBB5
Operator: KJKUHL Case No: QC3126
Instrument ID: #4 ul Injected: 1
Column ID: MIXED PHASE



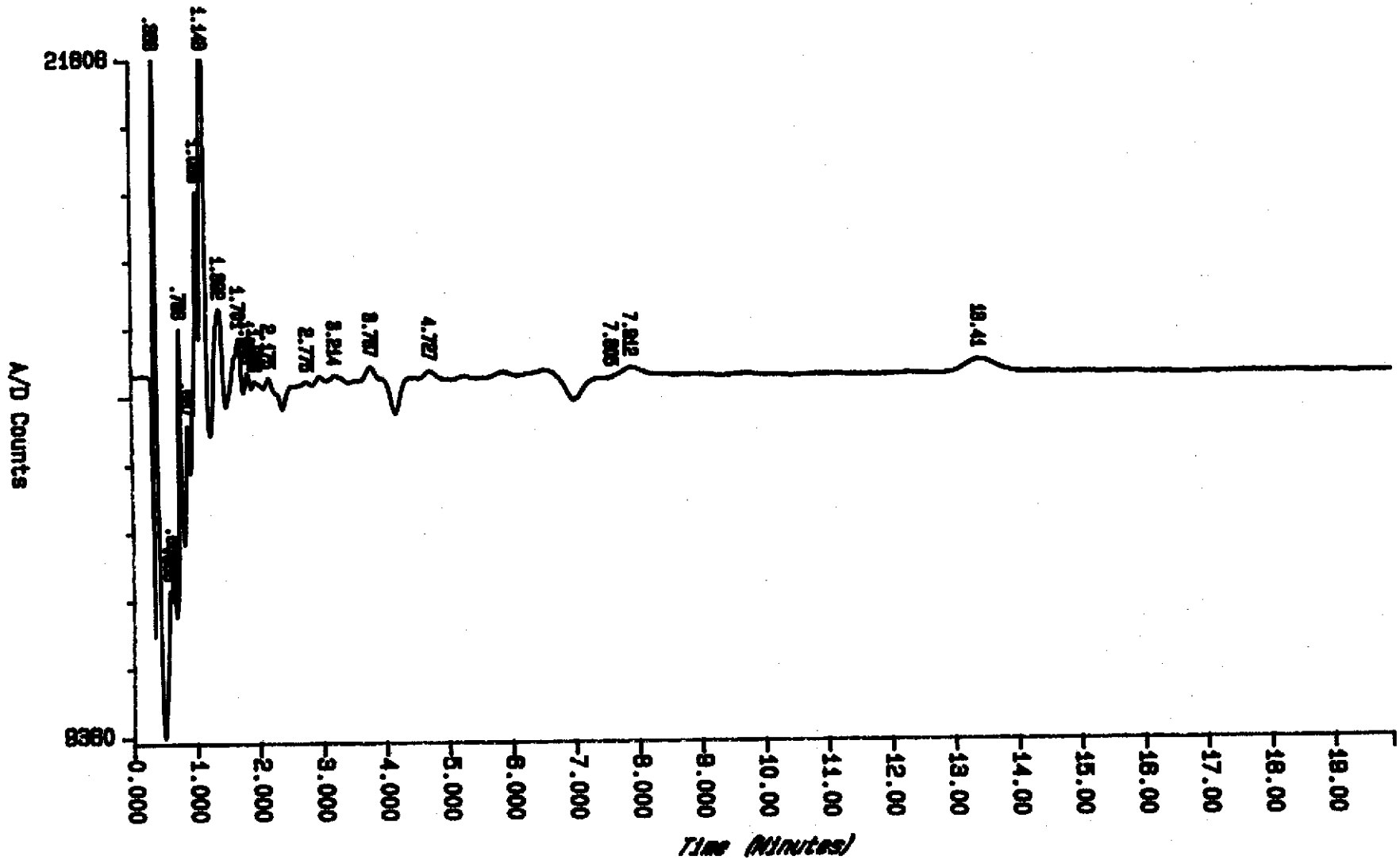
Sample: AR1242 0.5 Injected at 1:10:01 ON JUN 11, 1985
Raw File: AW0721 Proc File: PW0721 Method: PCBB5
Operator: KJKUHL Case No: QC3128
Instrument ID: #4 ul Injected: 1
Column ID: MIXED PHASE



Sample: AR1232 0.5 Injected at 8:18:33 ON JUN 11, 1985
Raw File: RW0728 Proc File: PW0728 Method: PCB85
Operator: KJKUHL Case No: QC3126
Instrument ID: #4 ul Injected: 1
Column ID: MIXED PHASE



Sample: AR1016 0.5 Injected at 11:55:51 ON JUN 11, 1985
Raw File: RW0729 Proc File: PW0729 Method: PCB85
Operator: KJKUHL Case No: QC3126
Instrument ID: #4 ul Injected: 1
Column ID: MIXED PHASE



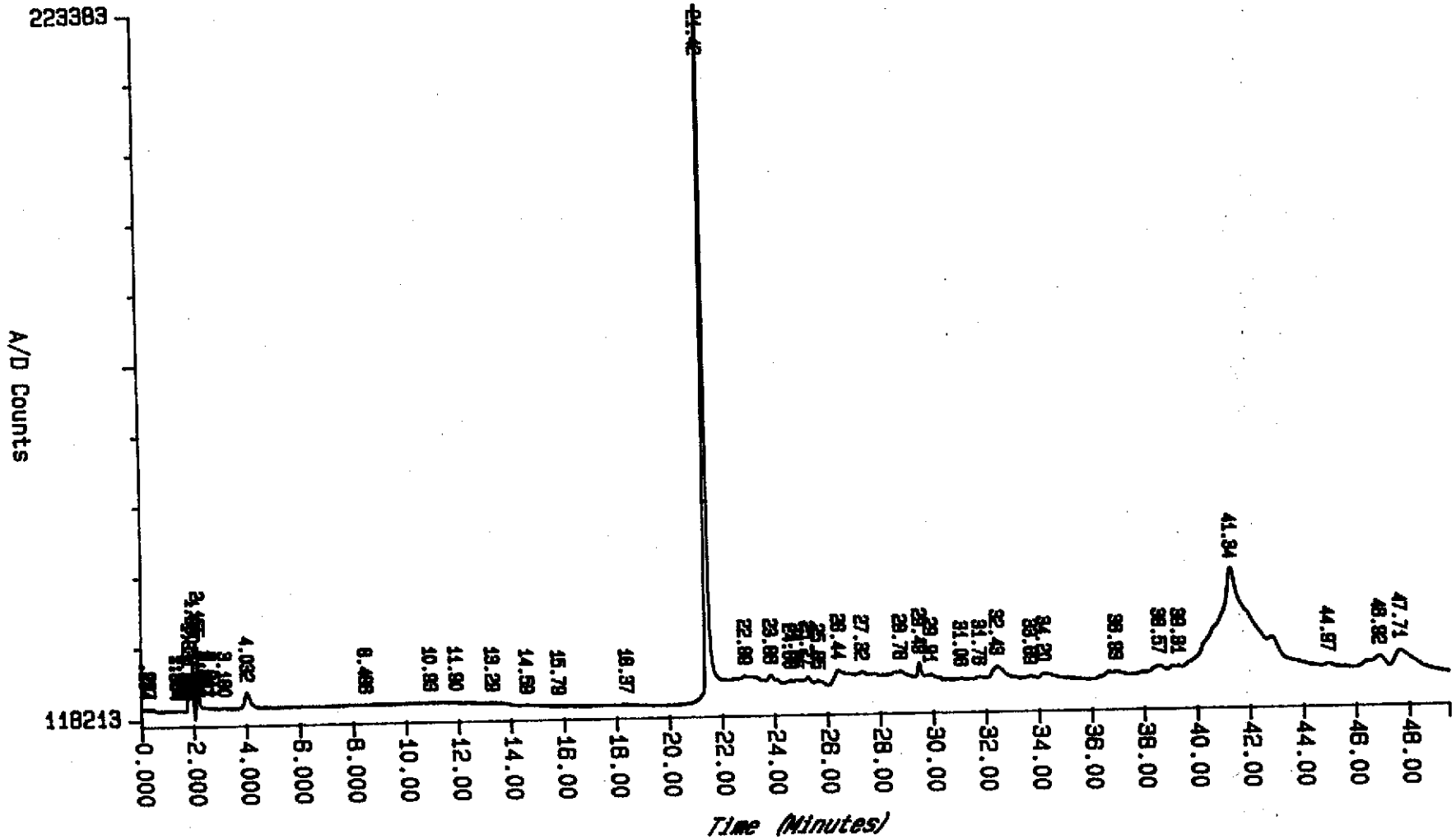
Sample: AR1221 0.5 Injected at 11:27:23 ON JUN 11, 1985
Raw File: RW0728 Proc File: PW0728 Method: PCBB5
Operator: KJKUHL Case No: QC3128
Instrument ID: #4 ul Injected: 1
Column ID: MIXED PHASE

Appendix A2

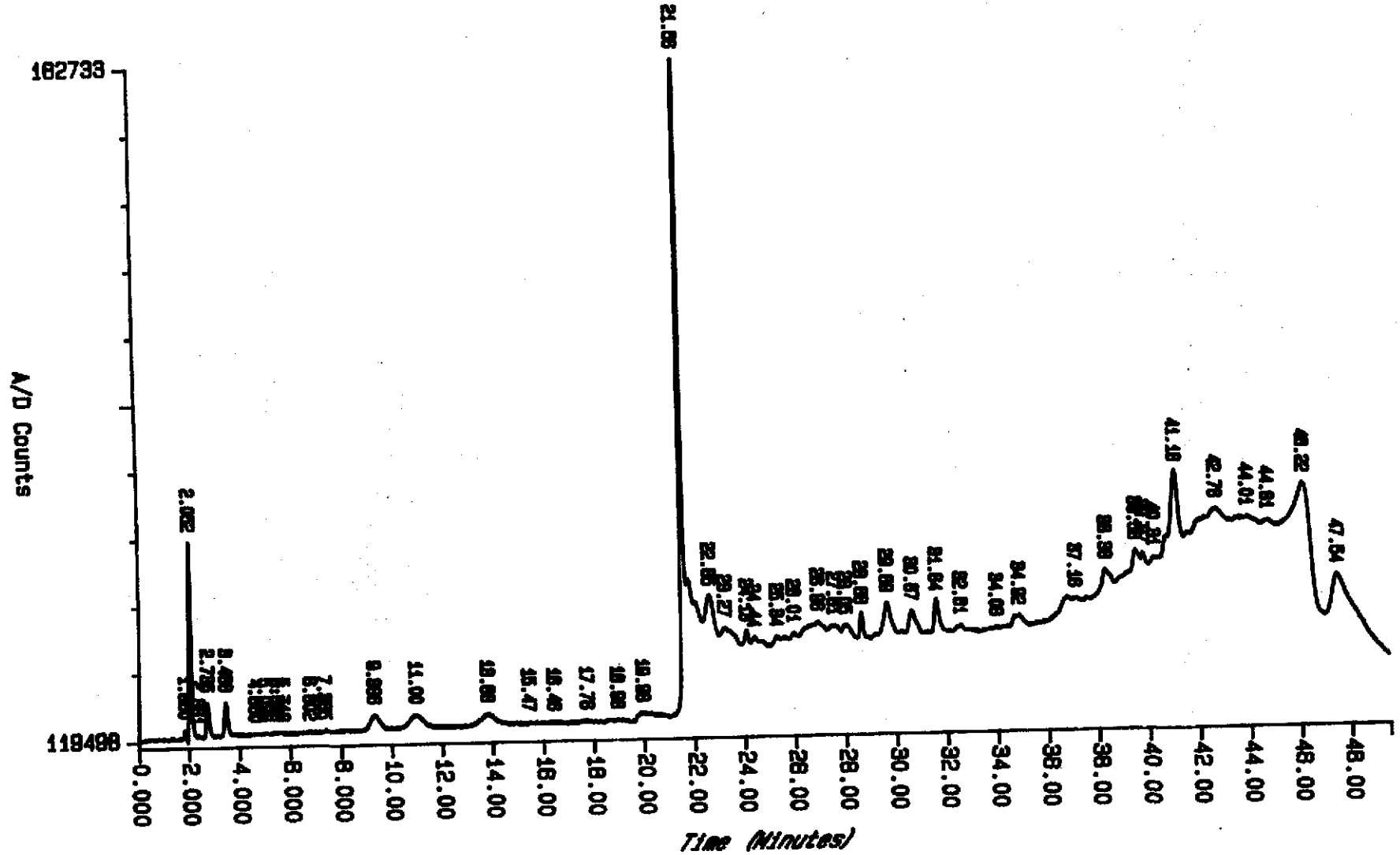
Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed chromatogram for each sample analyzed by an HPLC instrument.

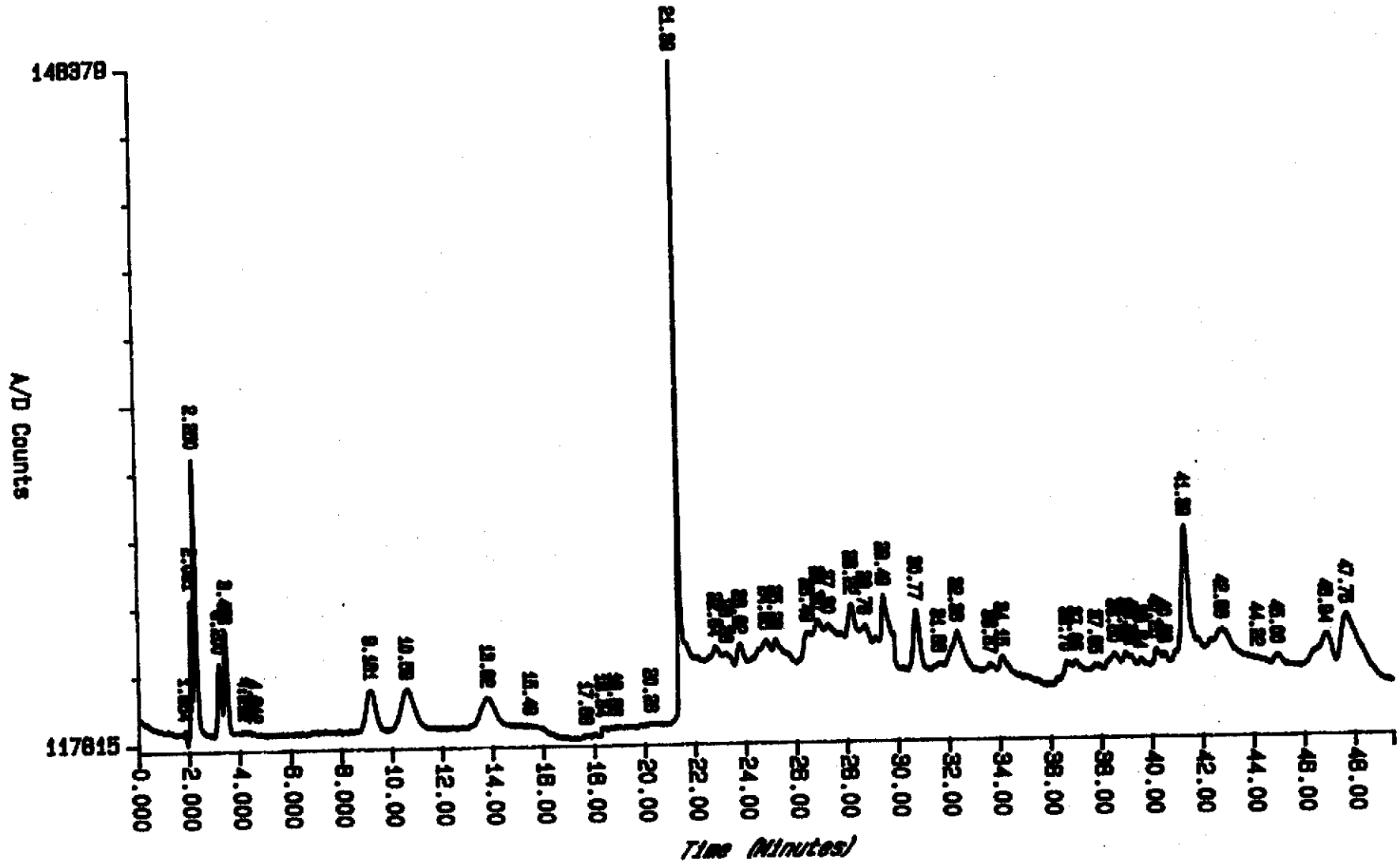
2) A reconstructed chromatogram for the appropriate standard compounds analyzed with the same HPLC under the same operating conditions.



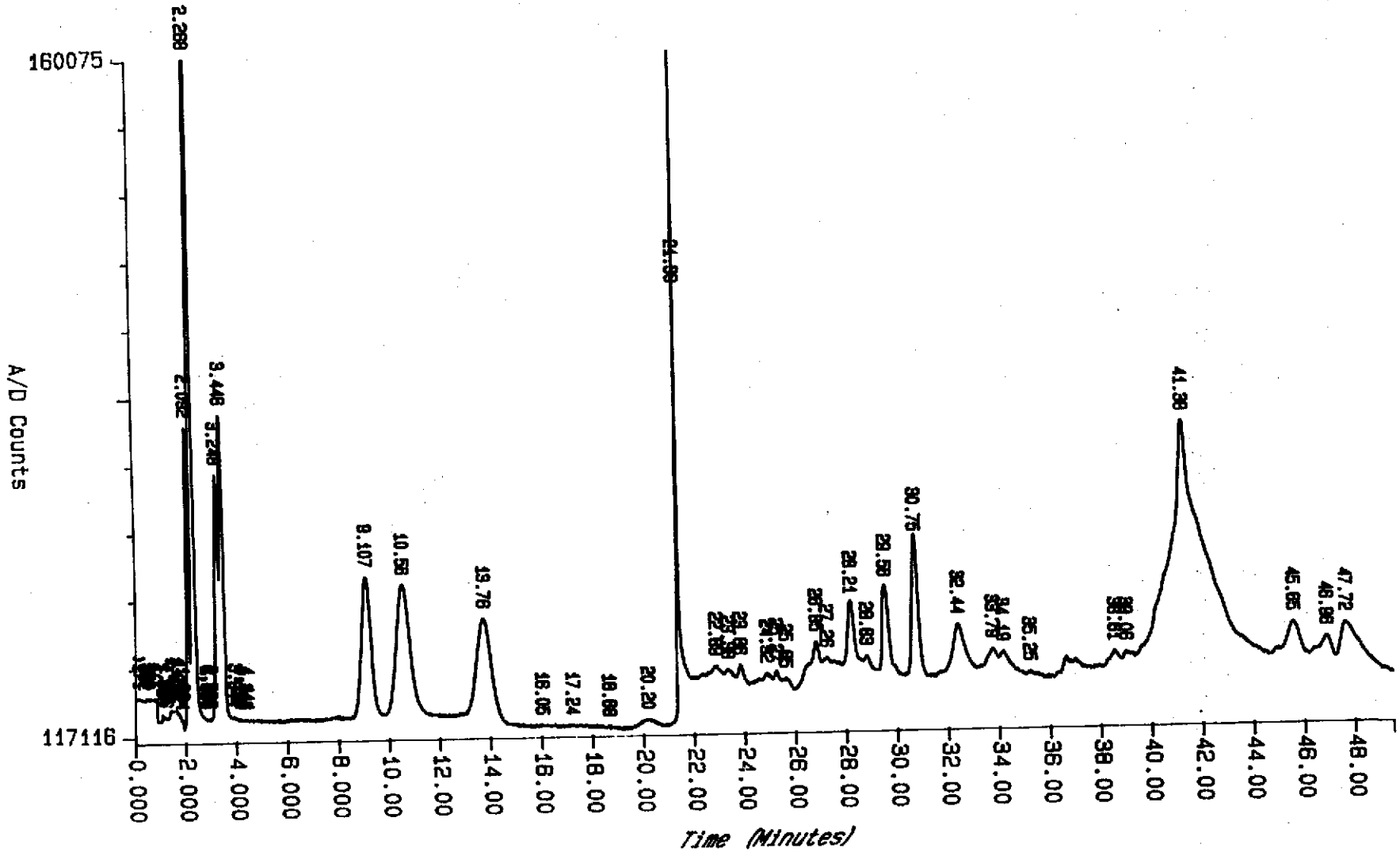
Sample: H6065 Injected at 8:30:42 ON JUN 18, 1985
Raw File: RH2232 Proc File: PH2232 Method: LC210



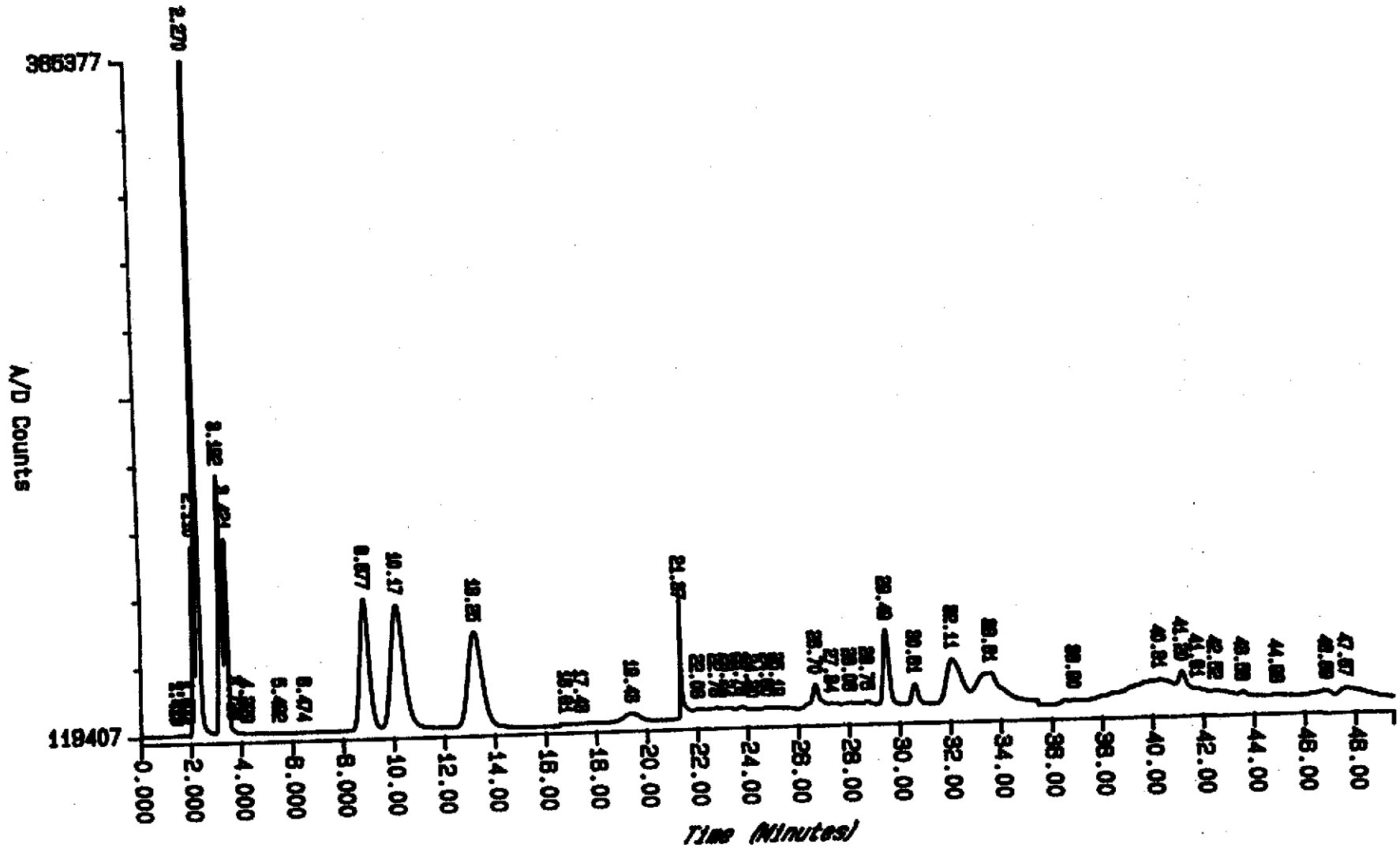
Sample: STD10320-0.5 Injected at 18:37:57 ON JUN 17, 1985
Raw File: AH2217 Proc File PH2217 Method: LC210



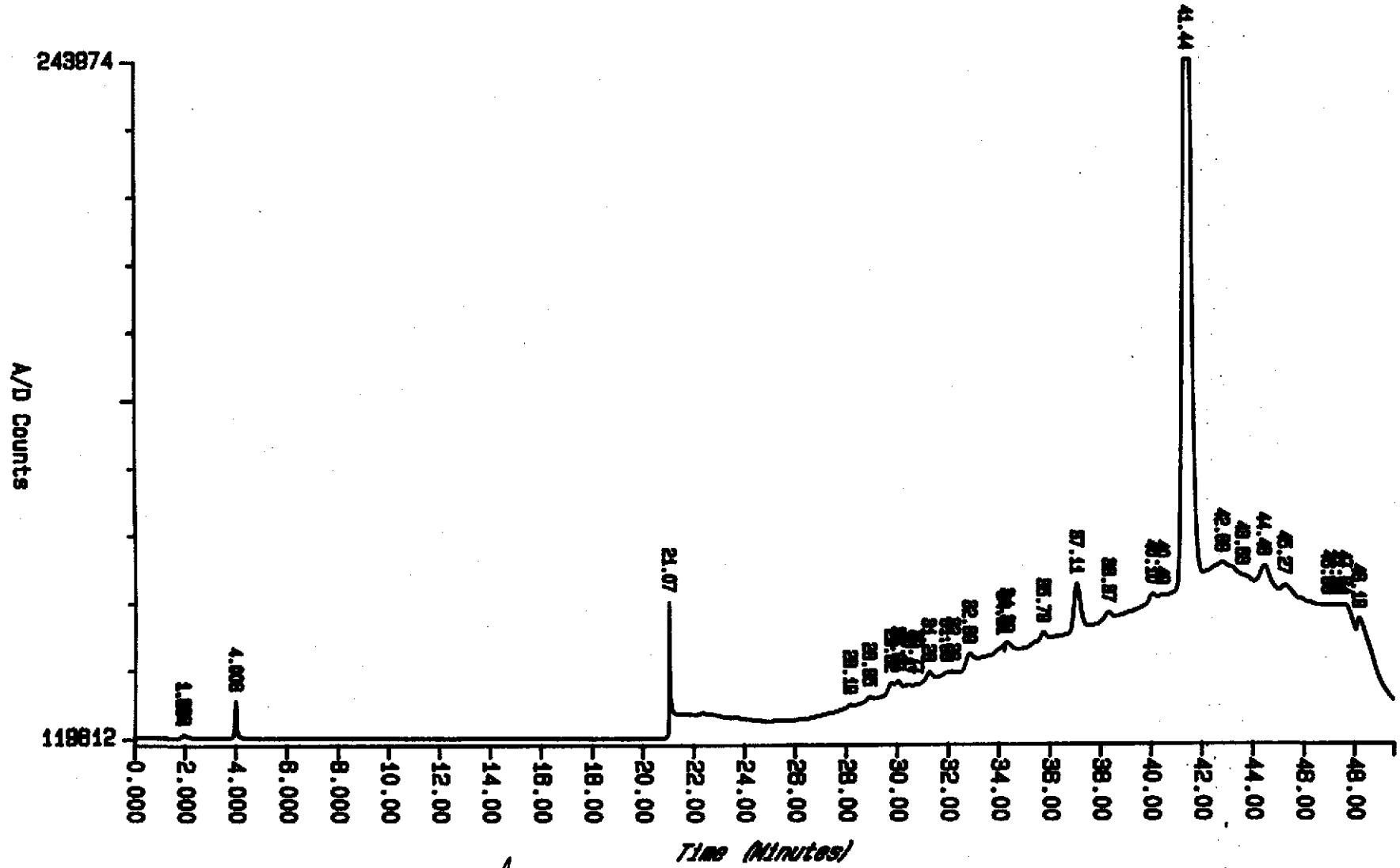
Sample: STD10319-1.0 Injected at 1:06:38 ON JUN 18, 1985
Raw File: RH2224 Proc File: PH2224 Method: LC210



Sample: STD10318-5.0 Injected at 7:35:12 ON JUN 18, 1985
Raw File: RH2231 Proc File: PH2231 Method: LC210

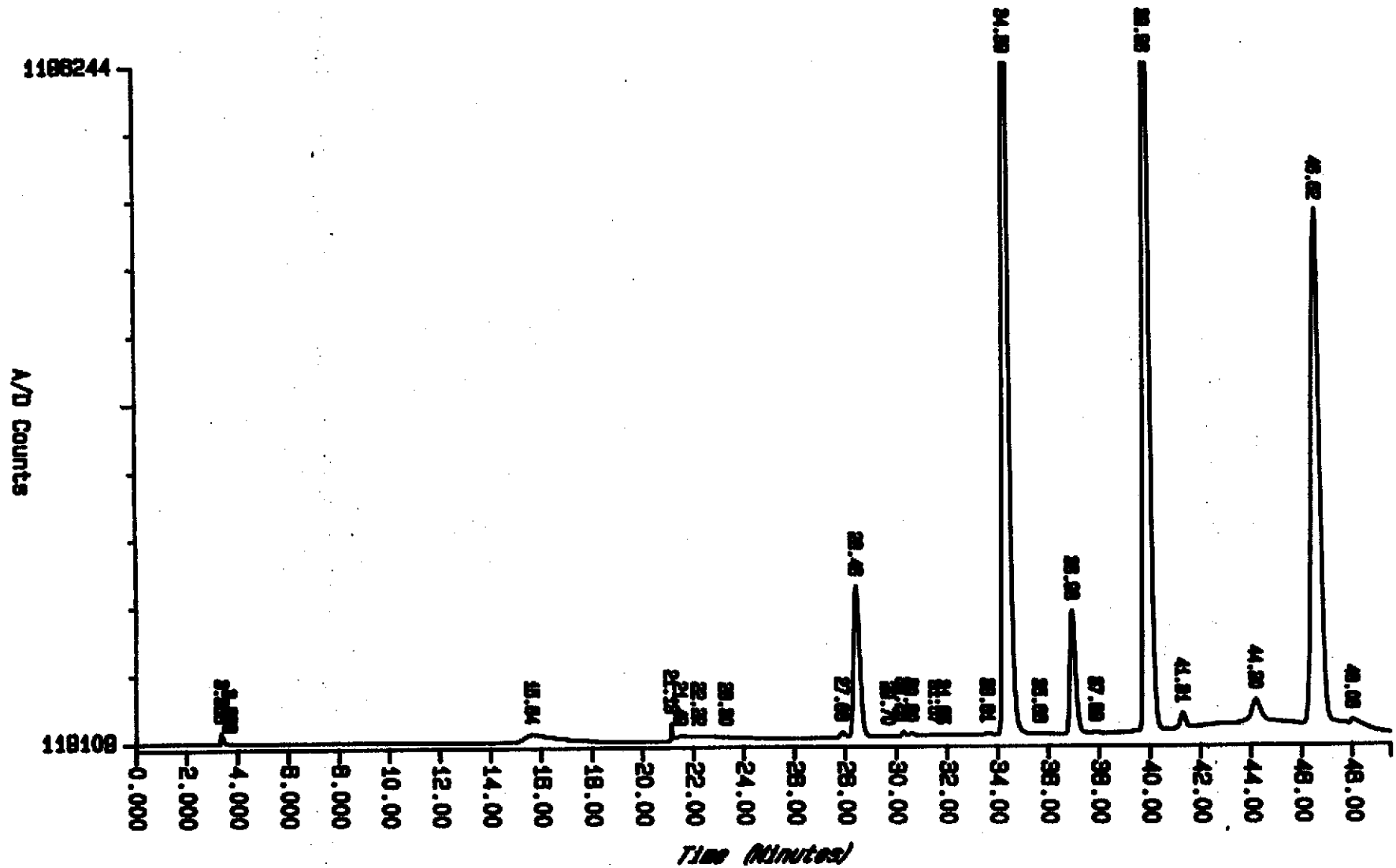


Sample: STD10317-25. Injected at 14:03:50 ON JUN 18, 1985
Raw File: RH2238 Proc File: PH2238 Method: LC210

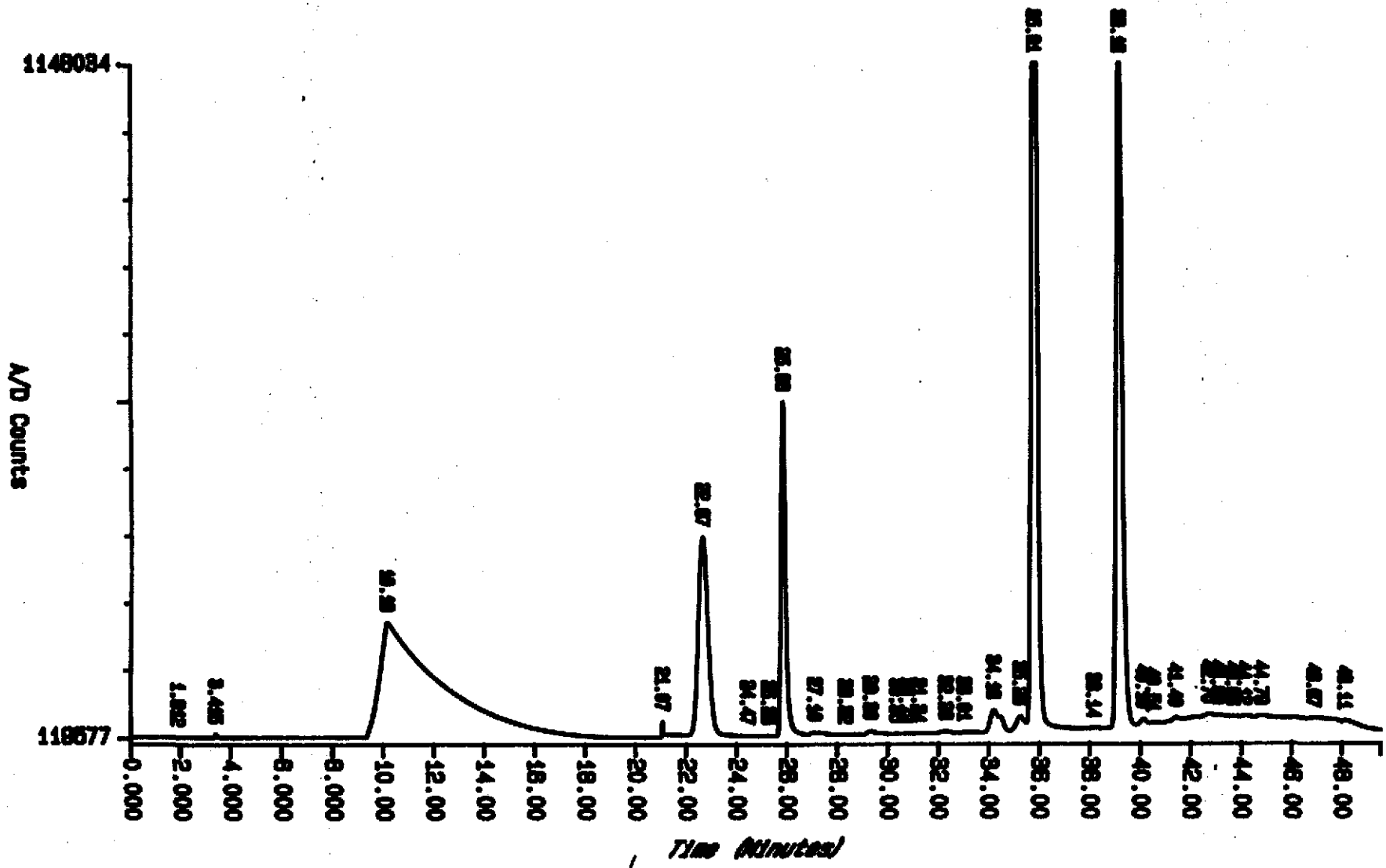


Sample: ~~HB071~~ HL065 Injected at 5:49:35 ON JUN 29, 1985

Raw File: PH7317 Proc File: RH7317 Method: EXT250



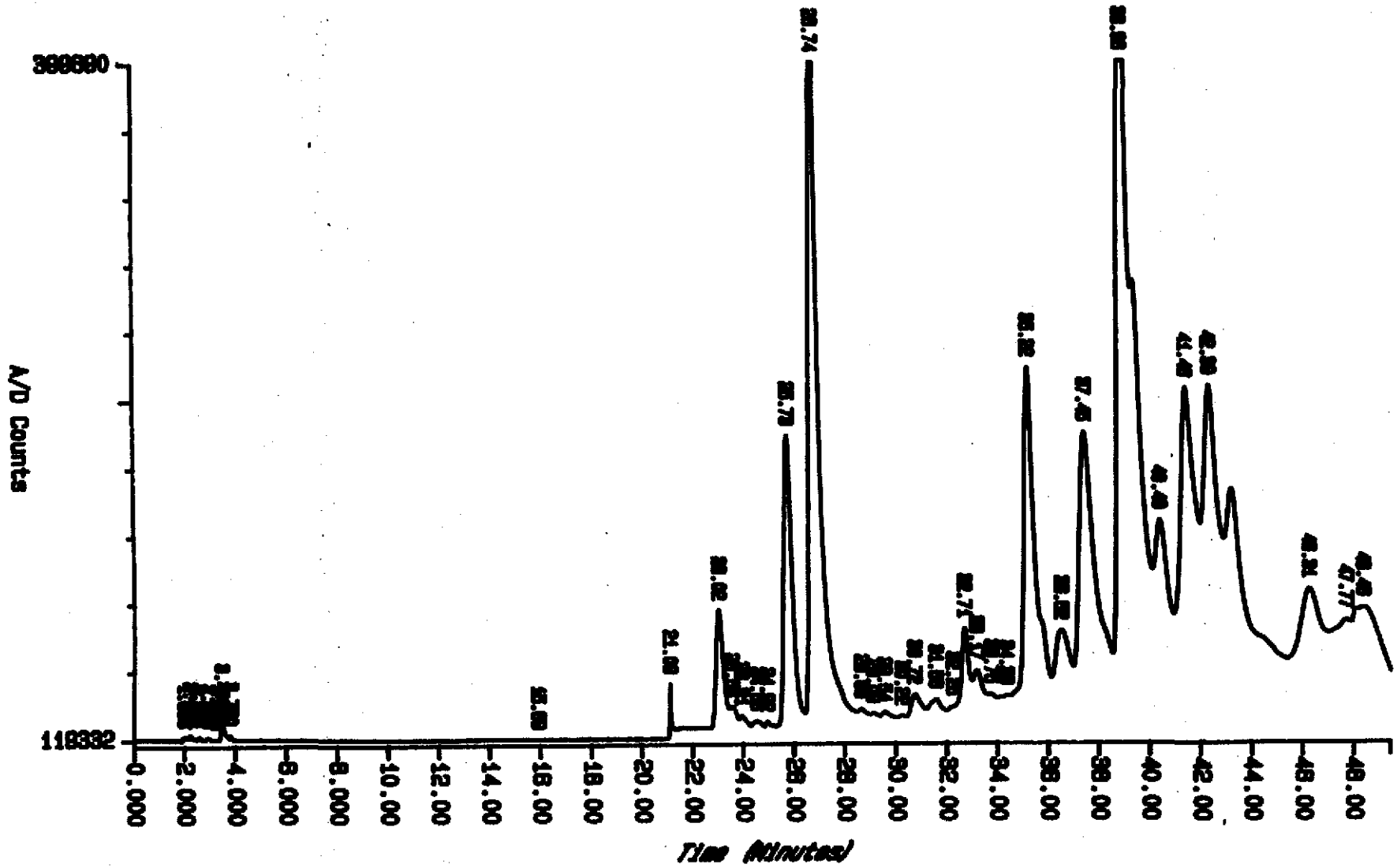
Sample: ~~ST10388-1000~~ STD10388-1000 Injected at 17:10:48 ON JUN 28, 1985
Raw File: PF7305 Proc File: RH7305 Method: EXT250



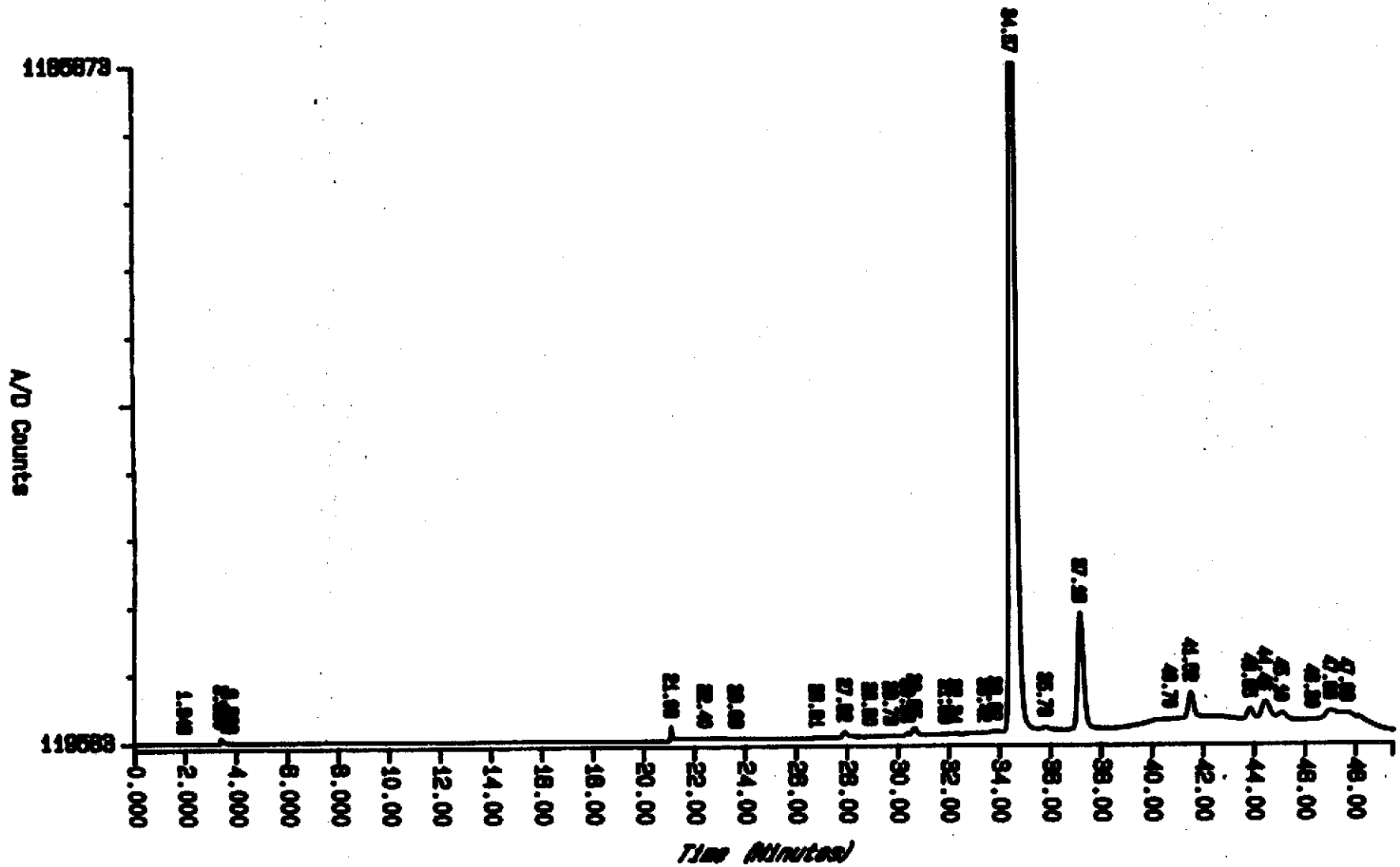
STD 10380-1000

Sample: ~~ST10733-1000~~ Injected at 21:29:48 ON JUN 28, 1985

Raw File: PH7308 Proc File: RH7308 Method: EXT250



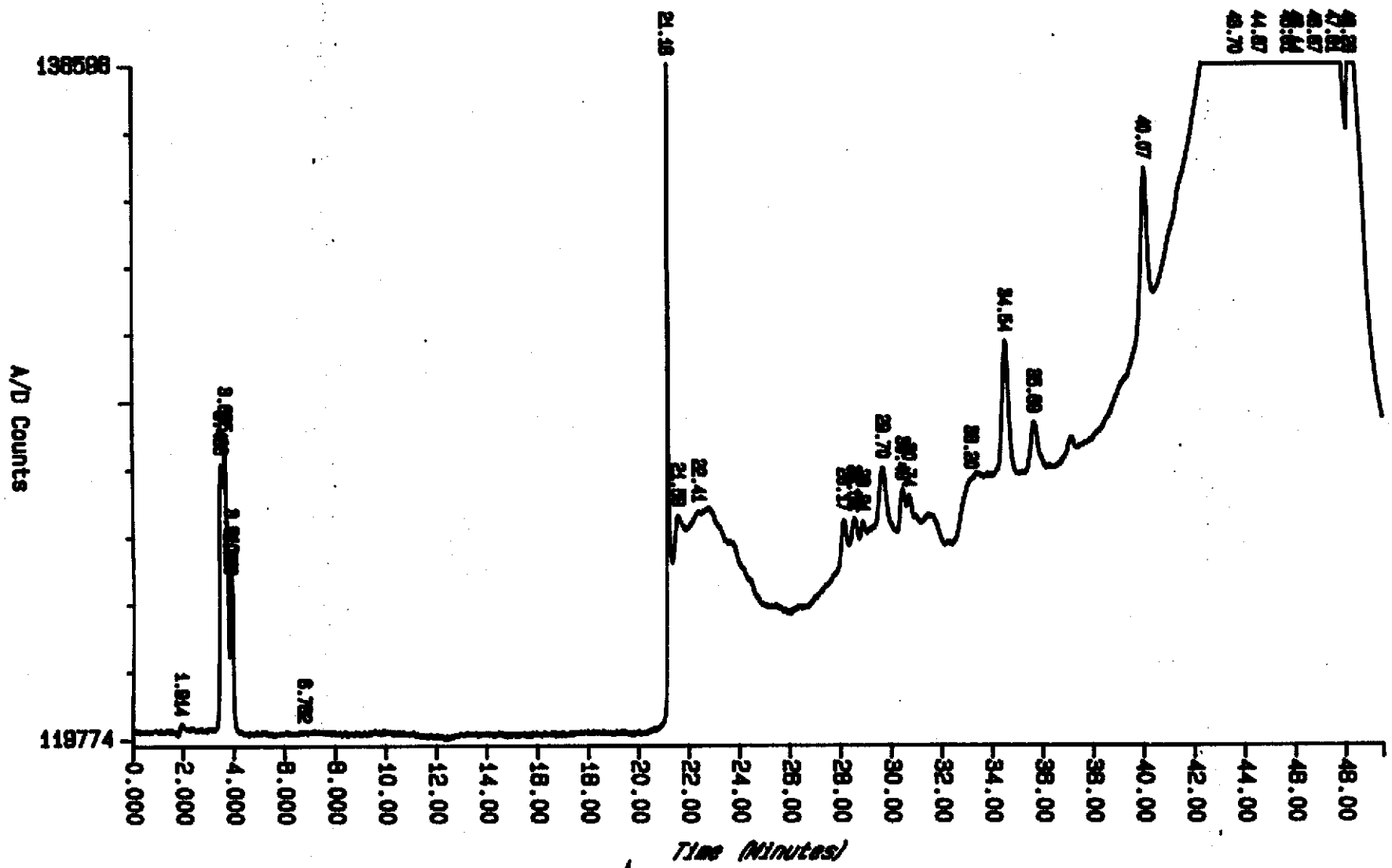
Sample: ~~QC3153~~ STD 10386-1000 Injected at 22:25:21 ON JUN 28, 1985
Raw File: PH7309 Proc File: RH7309 Method: EXT250



STD 10733-1000

Sample: ~~QC31533~~ Injected at 23:20:51 ON JUN 28, 1985

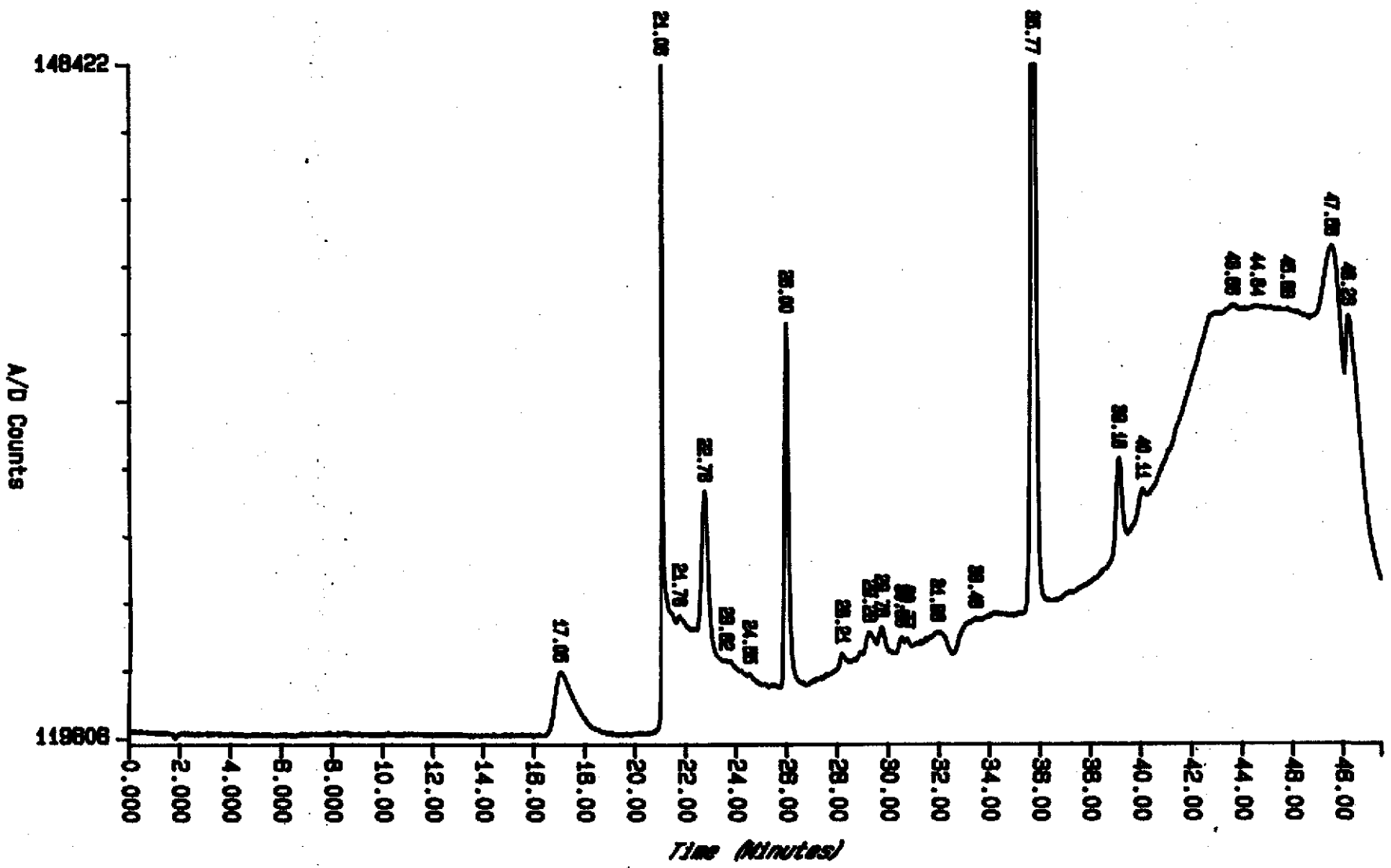
Raw File: PH7310 Proc File: RH7310 Method: EXT250



STD 10849-025

Sample: ~~STD10890-025~~ Injected at 9:58:16 ON JUN 29, 1985

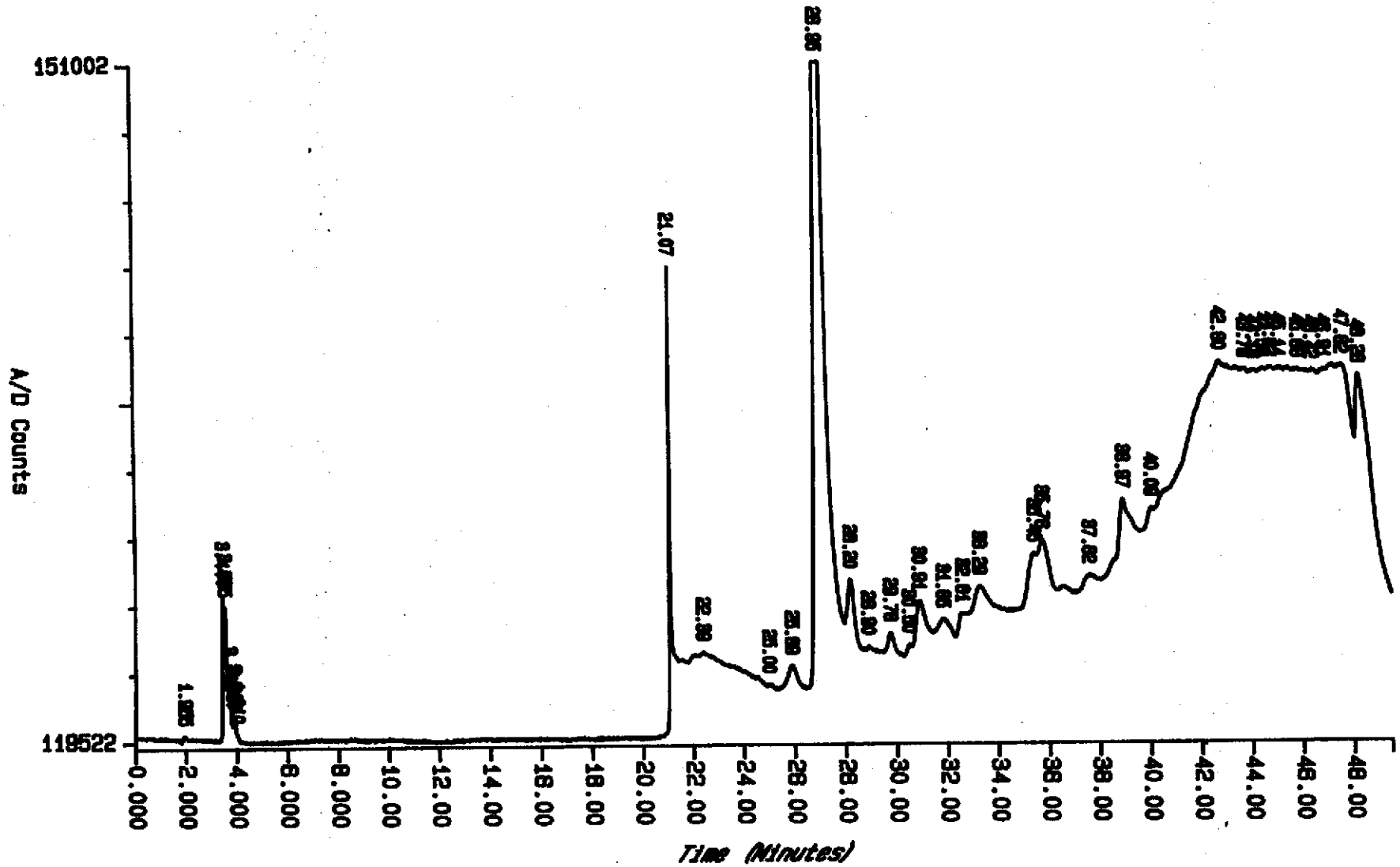
Raw File: PH7342 Proc File: RH7342 Method: EXT250



STD 10392-025

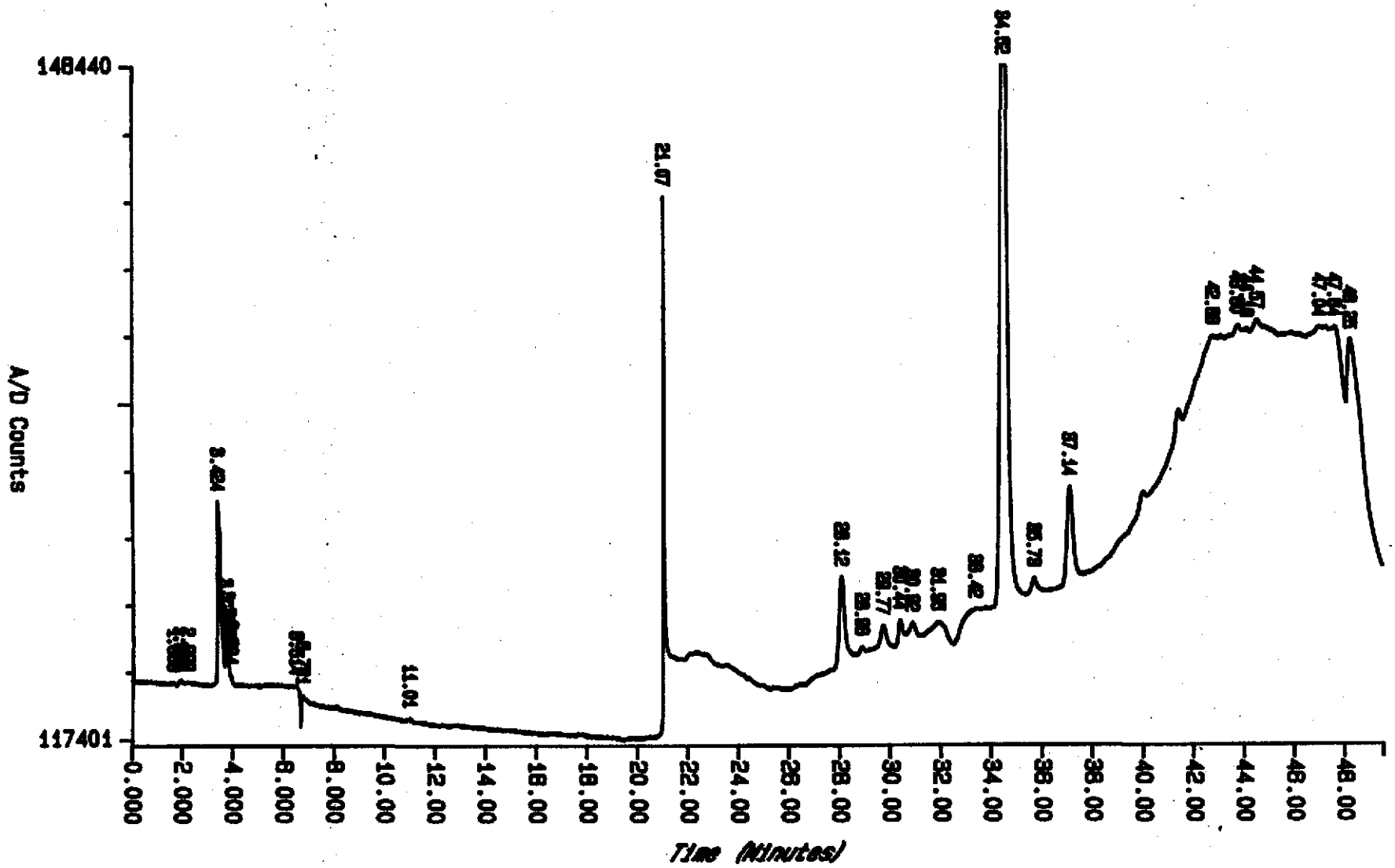
Sample: ~~STD10738~~-025 Injected at 10:53:47 ON JUN 29, 1985

Raw File: PH7321 Proc File: RH7321 Method: EXT250



Sample: ~~H5599~~ STD 10690-025 Injected at 11:49:19 ON JUN 29, 1985

Raw File: PH7322 Proc File: RH7322 Method: EXT250



STD 10736-25

Sample: H5800 Injected at 12:44:52 ON JUN 29, 1985

Raw File: PH7323 Proc File: RH7323 Method: EXT250

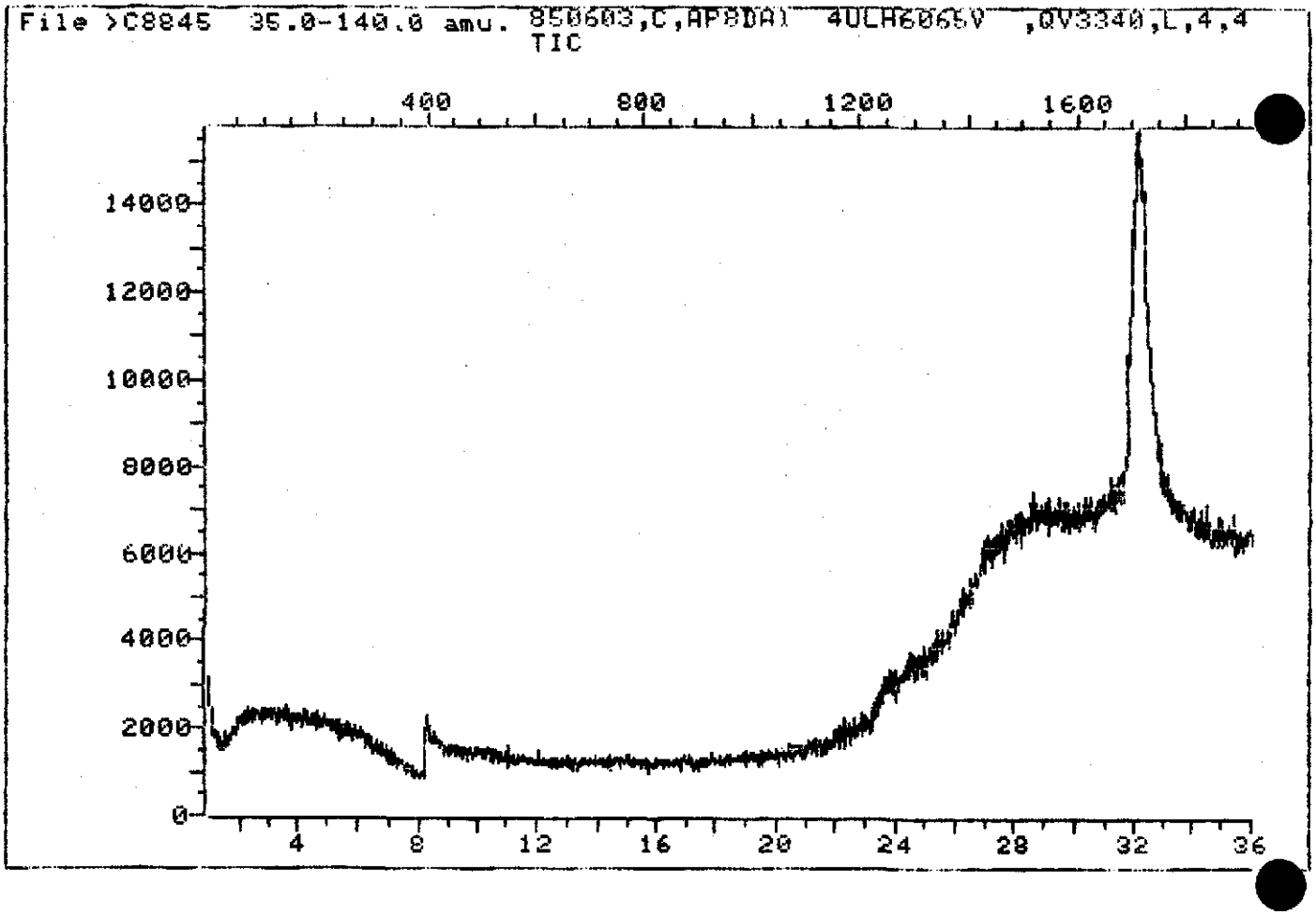
Appendix A

Mass Spectral Data for Quantitated Compounds

1) A total ion chromatogram for each sample analyzed by a GC/MS instrument.

2) A mass spectrum and a reference spectrum for each priority pollutant compound detected in the sample.

TOTAL ION CHROMATOGRAM



Data File: >C8845::U1
Name: 850603,C,AP8DAI 4UL
Misc: H6065V ,QV3340,L,4,4

Id File: CAP8DI
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850603 05:40

Operator ID: J06275
Quant Time: 850603 11:07
Injected at: 850603 06:00

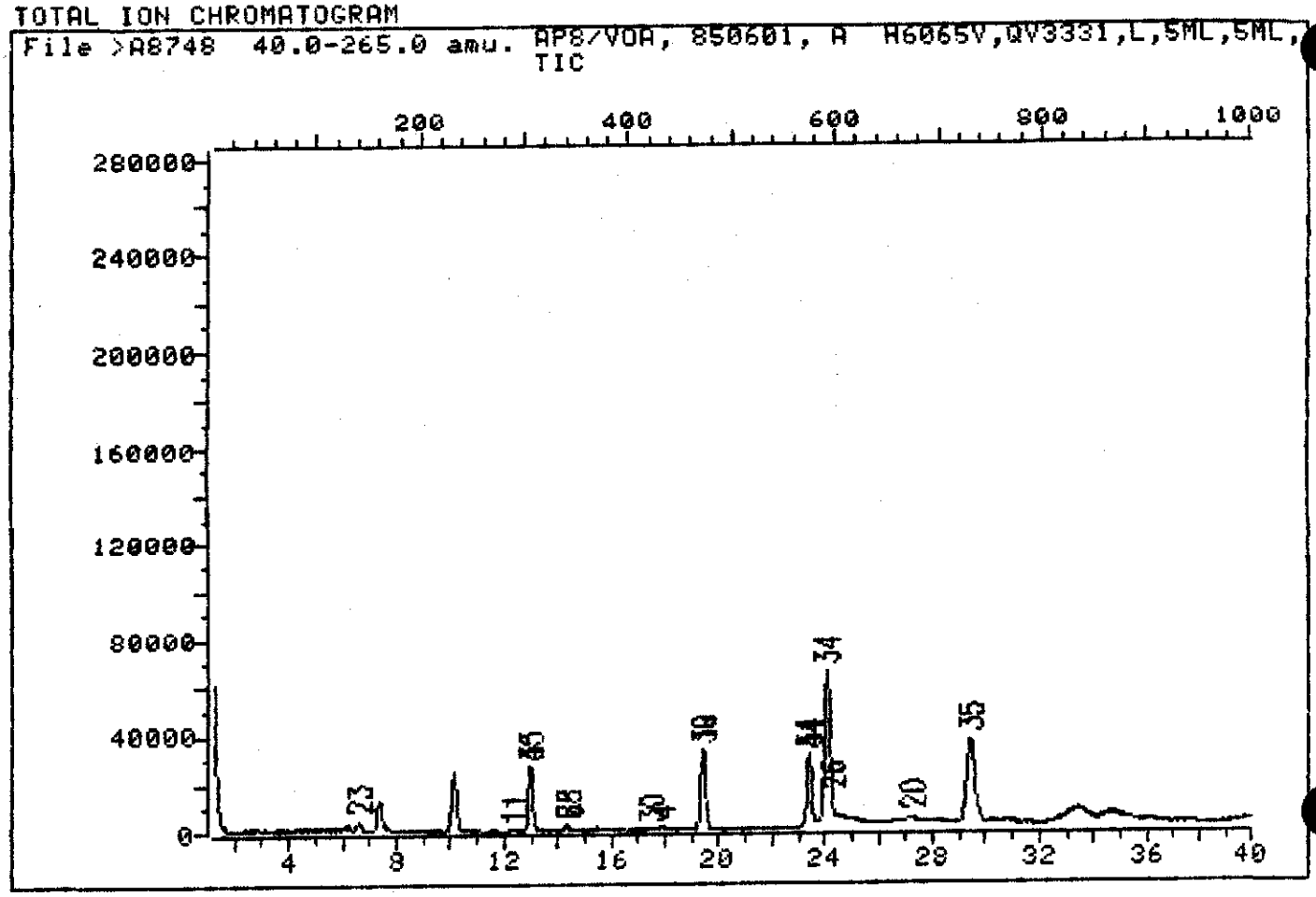
QUANT REPORT

perator ID: JW6275 Quant Rev: 4 Quant Time: 850603 11:07
utput File: ^C8845::AQ Injected at: 850603 06:00
ata File: >C8845::U1 Dilution Factor: 1.00
ame: 850603,C,AP8DA1 4UL
isc: H6065V ,QV3340,L,4,4

D File: CAP8DI
itle: DAI APENDIX 8 ID FILE
ast Calibration: 850603 05:40

Compound	R.T.	Scan#	Area	Conc	Units	q

TOTAL ION CHROMATOGRAM



Data File: >A8748::U3
Name: AP8/VOA, 850601, A
Misc: H6065V,QV3331,L,5ML,5ML,VOA FRACTION

Id File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850531 22:48

Operator ID: DS3476
Quant Time: 850601 21:25
Injected at: 850601 20:45

A161 AX

QUANT REPORT

ator ID: DS3476
ut File: ^A8748::AQ
File: >A8748::U3
: AP8/VOA, 850601, A
: H6065V,QV3331,L,5ML,5ML,VOA FRACTION

Quant Rev: 4
Quant Time: 850601 21:25
Injected at: 850601 20:45
Dilution Factor: 1.00

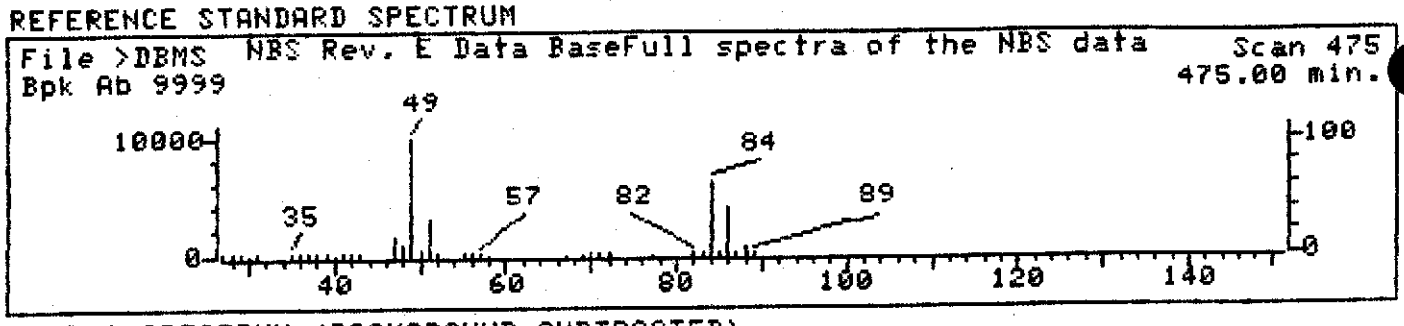
le: AAP8PT
e: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Calibration: 850531 22:48

Compound	R.T.	Scan#	Area	Conc	Units	q
*2-Bromo-1-chloropropane	19.42	472	101546	200.00	NG	98
Benzene	17.92	433	2188	~~1.53~~	NG	77
Carbon tetrachloride	14.40	342	1525	~~4.04~~	NG	91
2-Chloroethylvinyl ether	19.42	472	3159	~~152.53~~	NG	84
Chloroform	12.35	289	2208	~~3.23~~	NG	74
Ethylbenzene	27.23	674	5016	~~3.66~~	NG	78
Methylene chloride	6.60	140	13200	~~39.18~~	NG ZZ	98
Toluene	24.25	597	3481	~~3.15~~	NG	96
1,1,1-Trichloroethane	14.36	341	9067	~~18.84~~	NG	93
Trichloroethylene	17.45	421	739	~~2.53~~	NG	85
1,2-Dichloroethane-D4	12.97	305	54397	~~277.59~~	NG >31	90
Toluene-D8	24.06	592	290209	~~298.49~~	NG >55	90
p-Bromofluorobenzene	29.40	730	108649	~~237.07~~	NG >08	96
1,2-Dibromoethane	19.42	472	5692	~~14.72~~	NG	64
1,4-Dichloro-2-butene	23.40	575	8880	~~25.36~~	NG	100
Methyl-ethyl-ketone	12.97	305	3990	~~72.76~~	NG	62
*1,4-Dichlorobutane	23.40	575	144533	200.00	NG	95

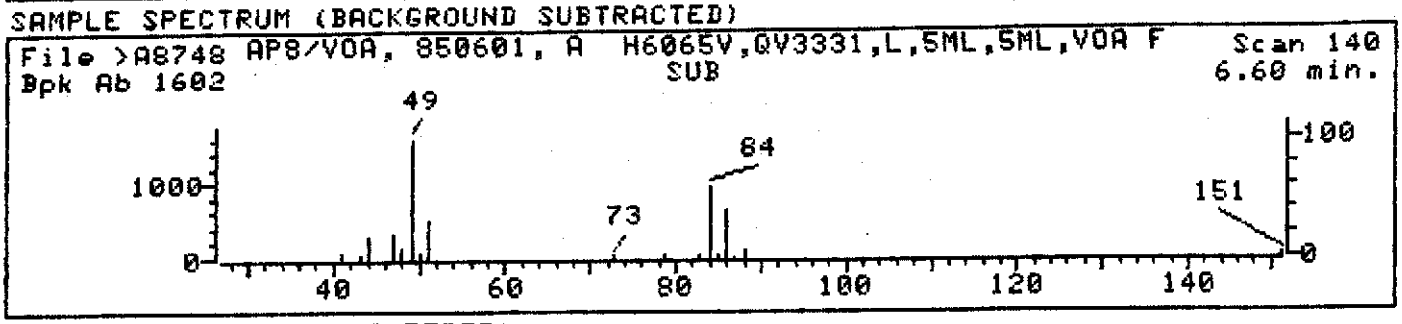
ompound is ISTD

1

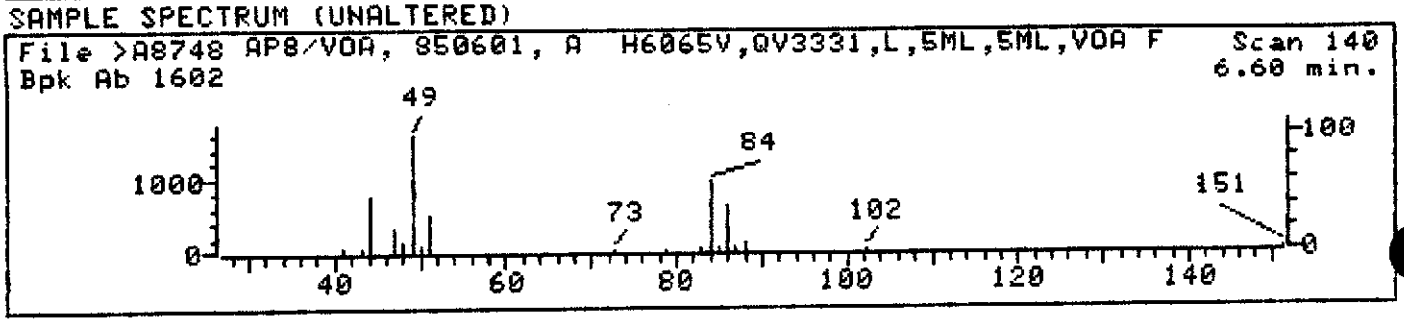
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



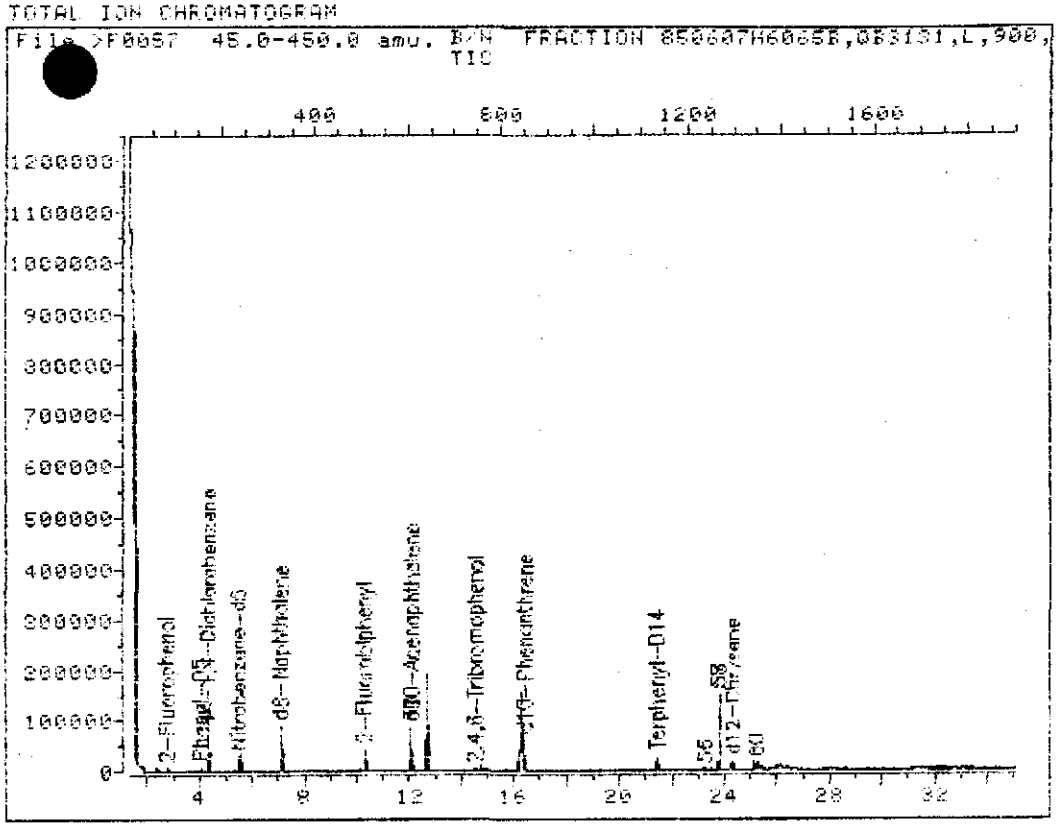
SAMPLE SPECTRUM (UNALTERED)



Data File: >A8748::U3
Name: AP8/VOA, 850601, A
Misc: H6065V,QV3331,L,5ML,5ML,VOA FRACTION
Quant Time: 850601 21:25
Injected at: 850601 20:45

Compound No: 23
Compound Name: Methylene chloride
Scan Number: 140
Retention Time: 6.60 min.
Area: 13200
Concentration: 39.18 NG
q-value: 98

TOTAL ION CHROMATOGRAM



Data File: >F0057::U2
Name: B/N FRACTION 850607
Misc: H6065B,QB3131,L,900,1

BTL#47

Ic File: FBNA
Title: B/N+ACID ID FILE .....MASTER, 850119
Last Calibration: 850608 12:35

Operator ID: FT2050
Quant Time: 850609 00:27
Injected at: 850608 23:50

QUANT REPORT

Operator ID: PT2050 Quant Rev: 4 Quant Time: 850609 00:27
Output File: ^F0057::AQ Injected at: 850608 23:50
Data File: >F0057::U2 Dilution Factor: 1.00
Name: B/N FRACTION 850607
Misc: H6065B,QB3131,L,900,1 BTL#47

ID File: FBNA
Title: B/N+ACID ID FILE .....MASTER, 850119
Last Calibration: 850608 12:39

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	4.33	171	21281	40.00	UG/ML	97
7)	Nitrobenzene-d5	5.48	236	25669	31.67	UG/ML	82
8)	bis(2-Chloroisopropyl)ether	4.33	171	952	~~5.41~~	UG/ML	90
10)	2-Fluorophenol	2.73	81	7219	~~18.82~~	UG/ML >4	55
12)	Phenol-D5	4.03	154	13488	25.14	UG/ML	94
13)	*d8-Naphthalene	7.08	326	90996	40.00	UG/ML	93
14)	2-Fluorobiphenyl	10.28	506	32911	33.24	UG/ML	97
27)	*d10-Acenaphthalene	12.07	607	48532	40.00	UG/ML	97
30)	Dimethyl phthalate	12.07	607	10071	~~5.44~~	UG/ML	70
44)	*d10-Phenanthrene	16.40	851	63869	40.00	UG/ML	96
45)	2,4,6-Tribromophenol	14.50	744	1801	12.80	UG/ML	94
55)	*d12-Chrysene	24.30	1296	16637	40.00	UG/ML	96
56)	Butyl benzyl phthalate	23.24	1236	600	~~1.31~~	UG/ML	69
57)	Benzo(a)anthracene	23.77	1266	6527	~~17.09~~	UG/ML	4
58)	Chrysene	23.77	1266	6527	~~13.07~~	UG/ML	84
60)	bis(2-Ethylhexyl)phthalate	25.21	1347	8494	~~14.82~~	UG/ML	95
68)	Terphenyl-D14	21.41	1133	21901	37.87	UG/ML	95

~~7.02~~
38.9

* Compound is ISTD

QUANT REPORT

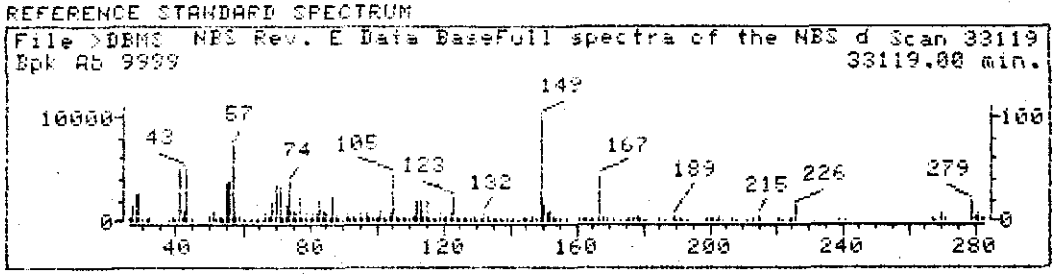
perator ID: PT2050 Quant Rev: 4 Quant Time: 850609 08:14
utput File: AF0057::AQ Injected at: 850608 23:50
ata File: >F0057::U2 Dilution Factor: 1.00
ame: B/N FRACTION 850607
isc: H6065B,DB3131,L,900,1 BTL#47

D File: FAP8E
itle: APPENDIX 8 IDFILE, TSR, F, 850213
ast Calibration: 850608 18:04

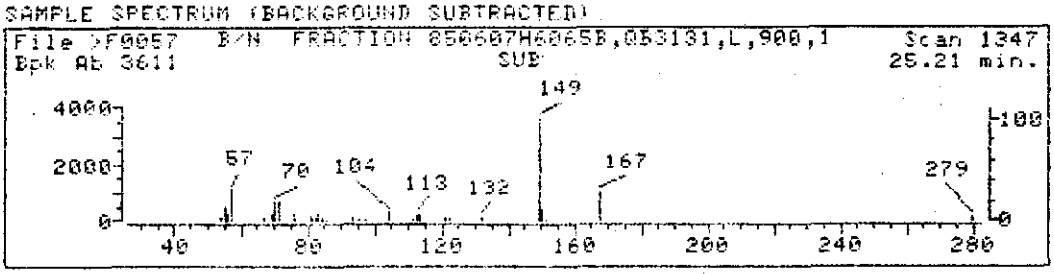
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	4.33	171	33774	40.00	UG/ML	92
5)	*d8-Naphthalene	7.08	326	90996	40.00	UG/ML	96
9)	*d10-Acenaphthalene	12.07	607	48532	40.00	UG/ML	97
6)	*d10-Phenanthrene	16.40	851	63869	40.00	UG/ML	100
4)	Pronamide	16.26	843	18604	~~43.33 UG~~/ML		71

* Compound is ISTD

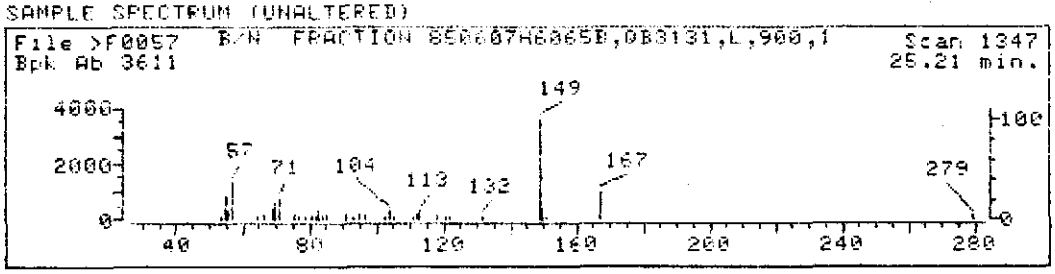
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

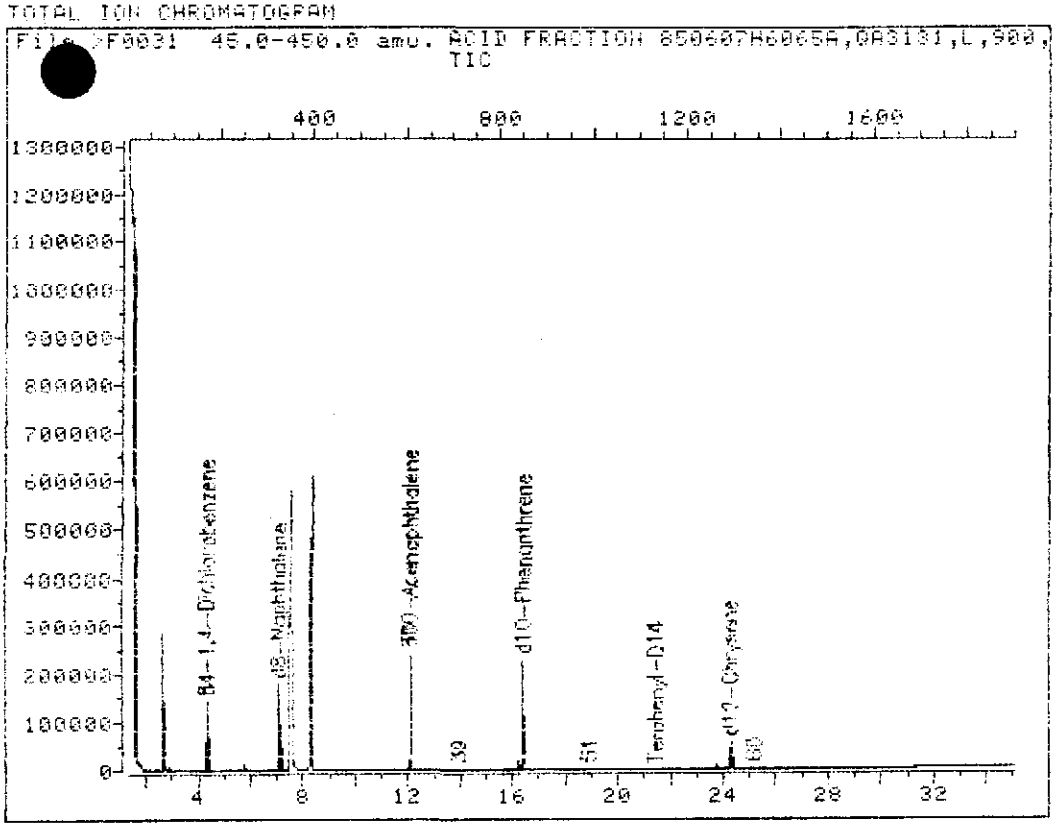


Data File: >F0057::U2
Name: B/N FRACTION 850607
Misc: H6065B,083131,L,900,1
Quant Time: 850609 00:27
Injected at: 850608 23:50

BTL#47

Compound No: 60
Compound Name: bis(2-Ethylhexyl)phthalate
Scan Number: 1347
Retention Time: 25.21 min.
Area: 8494
Concentration: 14.82 UG/ML
q-value: 95

TOTAL ION CHROMATOGRAM



Data File: >F0031::U2
Name: ACID FRACTION 850607
Misc: H6065A,0A3131,L,900,1 BTL#21

Id File: PHNA
Title: B/N+ACID ID FILE .....MASTER, 850119
Last Calibration: 850608 12:39

Operator ID: PT2050
Quant Time: 850608 13:43
Injected at: 850608 05:17

QUANT REPORT

Operator ID: PT2050 Quant Rev: 4 Quant Time: 850608 13:43
Output File: ^F0031::AQ Injected at: 850608 05:17
Data File: >F0031::U2 Dilution Factor: 1.00
Name: ACID FRACTION 850607
Misc: H6065A,QA3131,L,900,1 BTL#21

ID File: FBNA
Title: B/N+ACID ID FILE .....MASTER, 850119
Last Calibration: 850608 12:35

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	4.31	169	42586	40.00	UG/ML	99
8)	bis(2-Chloroisopropyl)ether	4.31	169	1671	~~4.25~~	UG/ML	92
13)	*d8-Naphthalene	7.06	324	182036	40.00	UG/ML	94
27)	*d10-Acenaphthalene	12.07	606	123324	40.00	UG/ML	96
30)	Dimethyl phthalate	12.07	606	22509	~~4.78~~	UG/ML	69
39)	Diethyl phthalate	13.93	711	627	.~~13~~	UG/ML	96
44)	*d10-Phenanthrene	16.40	890	221189	40.00	UG/ML	96
51)	Di-n-butyl phthalate	18.88	990	3680	.~~59~~	UG/ML	96
55)	*d12-Chrysene	24.26	1293	51615	40.00	UG/ML	99
60)	bis(2-Ethylhexyl)phthalate	25.17	1344	1029	~~.58~~	UG/ML	94
68)	Terphenyl-D14	21.42	1133	1839	1.02	UG/ML	87

* Compound is ISTD

QUANT REPORT

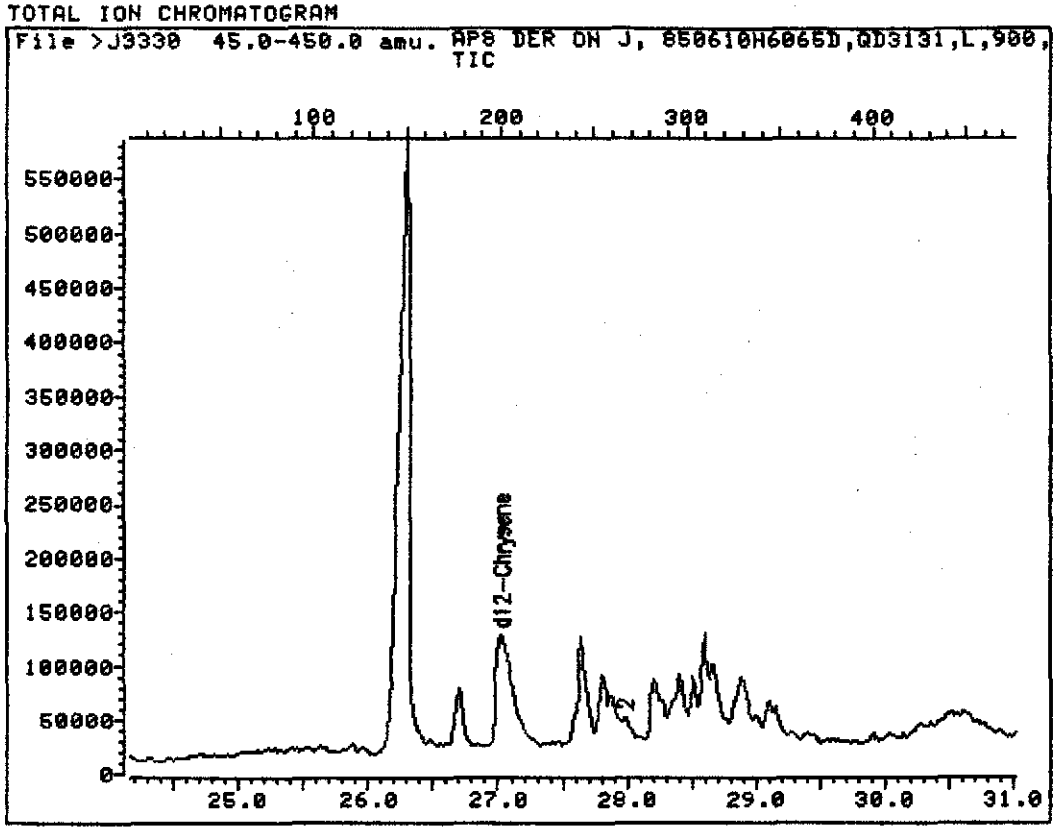
perator ID: PT2050 Quant Rev: 4 Quant Time: 850608 19:25
utput File: AF0031::AD Injected at: 850608 05:17
ata File: >F0031::U2 Dilution Factor: 1.00
ame: ACID FRACTION 850607
isc: H6065A,DA3131,L,900,1 BTL#21

D File: FAP8E
itle: APPENDIX 8 IDFILE, T&R, F, 850213
ast Calibration: 850608 18:04

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	4.31	169	65956	40.00	UG/ML	94
6)	*d8-Naphthalene	7.06	324	182036	40.00	UG/ML	95
5)	p-Chloroaniline	7.54	351	63318	~~40.42~~	UG/ML	47
5)	p-Chloroaniline	8.28	393	44589	~~28.46~~	UG/ML	42
9)	*d10-Acenaphthalene	12.07	606	123324	40.00	UG/ML	96
3)	*d10-Phenanthrene	16.40	850	221189	40.00	UG/ML	100
4)	Pronamide	16.20	839	1631	~~1.11~~	UG/ML	69

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >J3330::U5
Name: AP8 DER ON J, 850610
Misc: H6065D,QD3131,L,900,1

BTL#13

Id File: JDER
Title: DER AP8 IDFILE
Last Calibration: 850610 19:28

Operator ID: TM0576
Quant Time: 850611 01:37
Injected at: 850611 01:04

QUANT REPORT

Operator ID: TM0576 Quant Rev: 4 Quant Time: 850611 01:37
Quant File: ^J3330::AQ Injected at: 850611 01:04
Data File: >J3330::U5 Dilution Factor: 1.00
Name: AP8 DER ON J, 850610
Misc: H6065D,QD3131,L,900,1 BTL#13

ID File: JDER
Title: DER AP8 IDFILE
Last Calibration: 850610 19:28

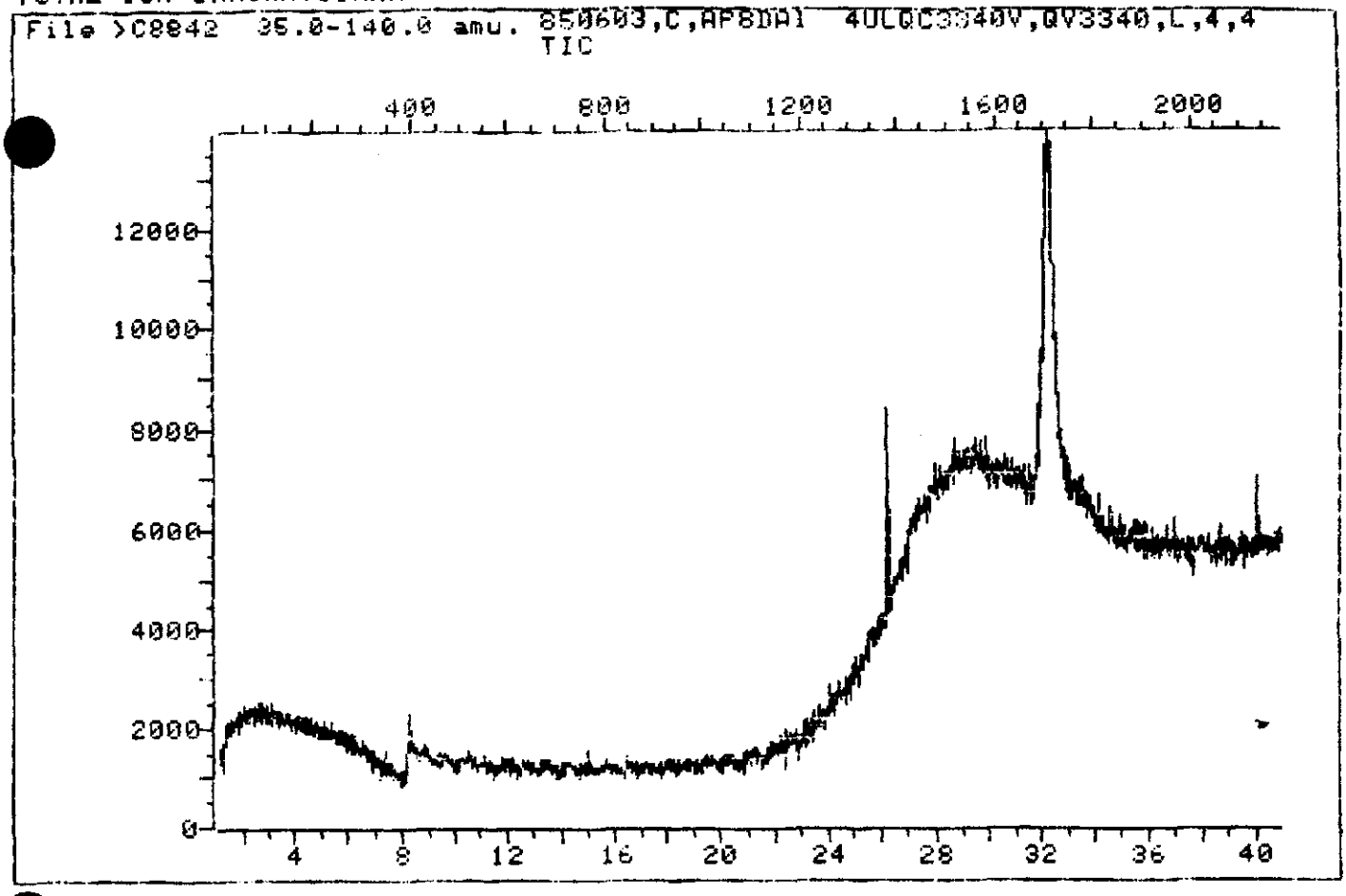
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d12-Chrysene	27.03	200	279102	40.00	UG/ML	100
2)	HEXACHLOROPHENE DER	27.98	266	585	.40	UG/ML	90

* Compound is ISTD

Appendix C1

GC/MS Subsidiary Data

TOTAL ION CHROMATOGRAM



Data File: >C8842::U1
Name: 850603,C,AP8DAI 4UL
Misc: QC3340V,QV3340,L,4,4

Id File: CAP8DI
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850603 05:40

Operator ID: JQ6275
Quant Time: 850603 05:57
Injected at: 850603 03:22

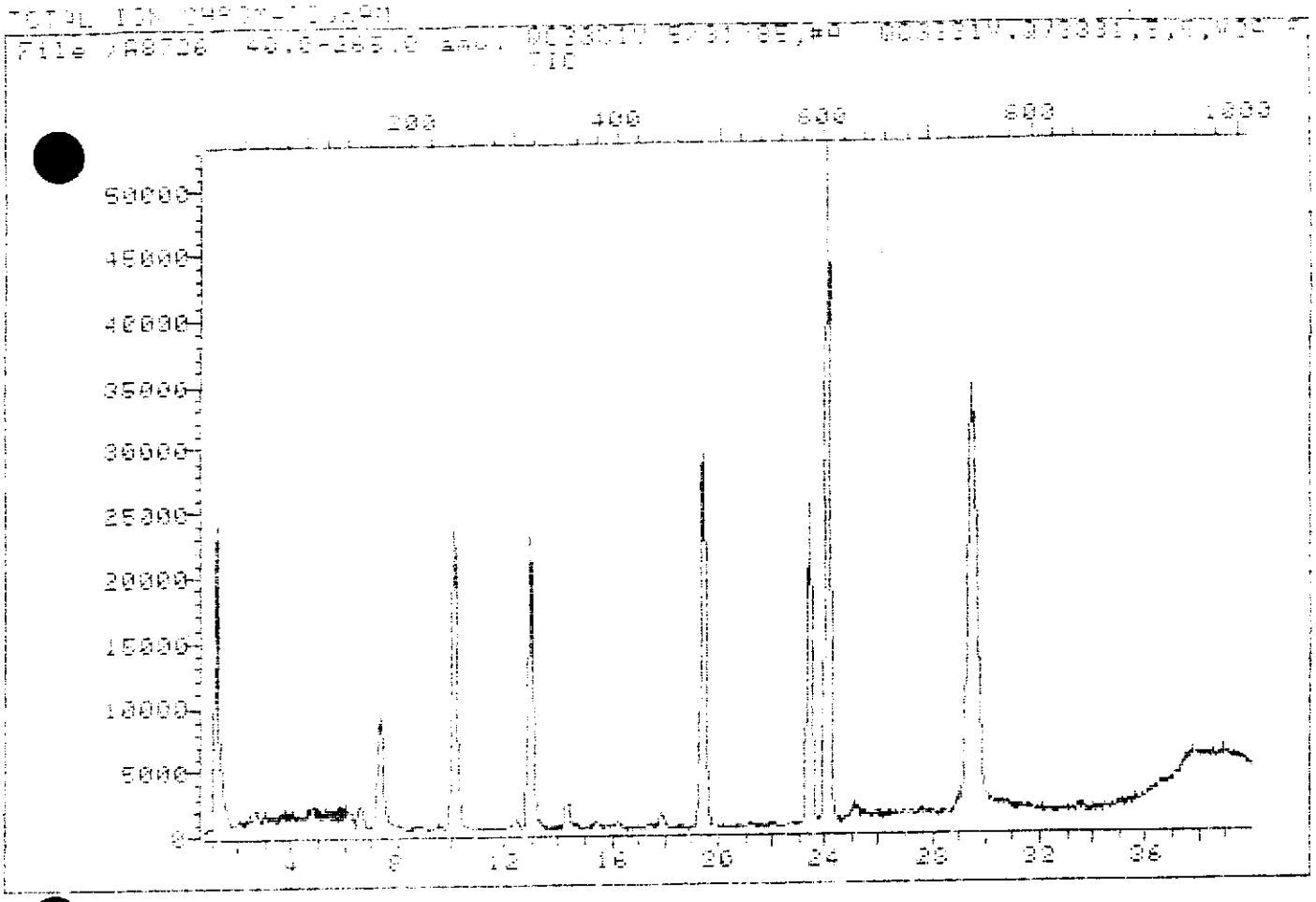
QUANT REPORT

Operator ID: JQ6275
Output File: ^C8842::AQ
Data File: >C8842::U1
Name: 850603,C,AP8DA1 4UL
Misc: QC3340V,QV3340,L,4,4

Quant Rev: 4
Quant Time: 850603 05:57
Injected at: 850603 03:22
Dilution Factor: 1.00

ID File: CAP8D1
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850603 05:40

Compound	R.T.	Scan#	Area	Conc	Units	q



Data File: >AM72b .02
Name: [illegible]
Misc. [illegible]

To File: AAM68
Title: [illegible] PRIORITY POLLUTANTS, [illegible]
Last Calibration: [illegible] 19:35

Operator ID: [illegible]
Quant Time: [illegible]
Injected at: [illegible]

A161A.S

GLAP REPORT

Operator ID: RJ7294 Quant Rev: 4 Quant Time: 850531 20:04
Output File: ^A8716::AQ Injected at: 850531 13:32
Data File: ^A8726::L2 Dilution Factor 1.00
Name: QC333:V 5/31/85,*A
Desc: QC333:V,QV3331,5,5,VOA FRACTION

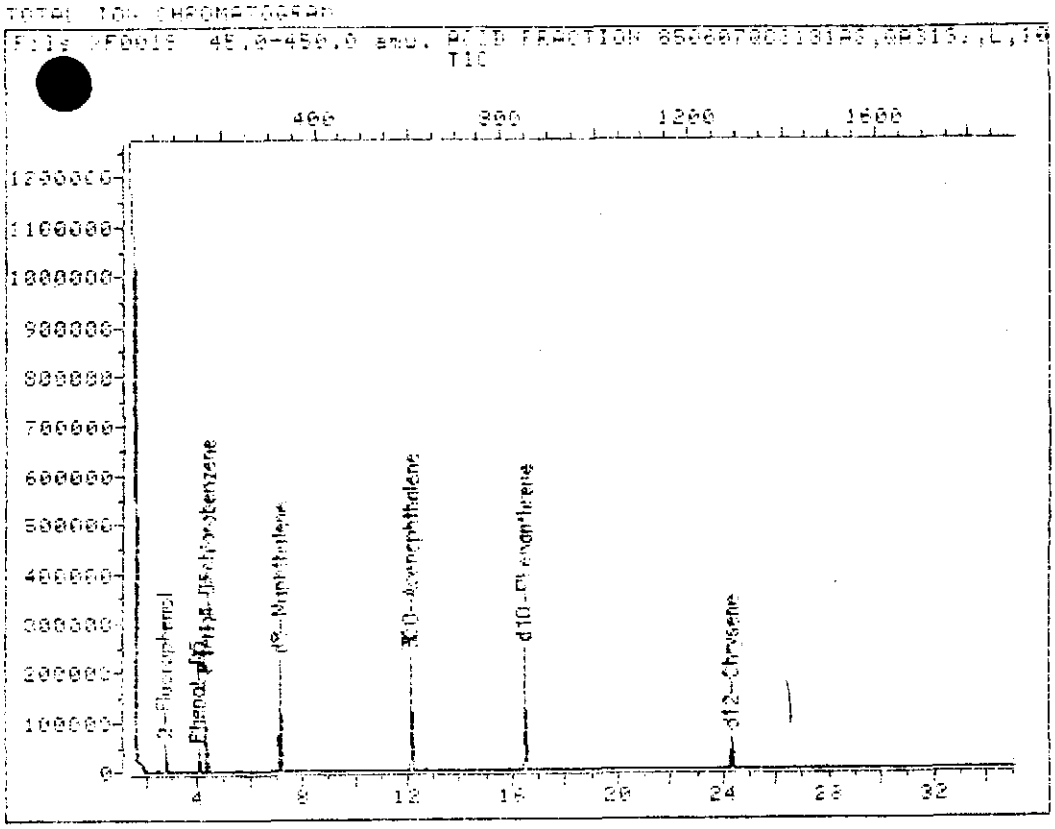
ID File: A8P8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850531 19:35

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*2-Bromo-1-chloropropane	19.43	433	89238	200.00	NG	96
4)	Benzene	17.92	444	885	~~.71~~	~~NG~~	89
6)	Carbon tetrachloride	14.33	351	1275	~~3.85~~	~~NG~~	98
10)	2-Chloroethylvinyl ether	19.43	483	2837	~~455.37~~	~~NG~~	81
11)	Chloroform	12.32	299	1940	~~3.23~~	~~NG~~	62
23)	Methylene chloride	6.57	150	5170	17.46	NG	96
26)	Toluene	24.26	608	1915	~~1.29~~	~~NG~~	95
28)	1,1,1-Trichloroethane	14.37	352	7633	18.05	NG	94
33)	1,2-Dichloroethane-D4	12.93	316	47696	290.34	NG	90
34)	Toluene-D8	24.06	603	243667	292.26	NG	89
35)	p-Bromofluorobenzene	29.44	742	107487	286.77	NG	96
39)	1,2-Dibromoethane	19.43	463	4799	~~14.13~~	~~NG~~	67
40)	Dibromomethane	13.33	325	901	~~3.65~~	~~NG~~	91
41)	1,4-Dichloro-2-butene	23.41	586	7140	~~23.24~~	~~NG~~	100
45)	Methyl-ethyl-ketone	12.98	316	3215	~~65.71~~	~~NG~~	69
54)	*1,4-Dichlorobutane	23.41	586	120626	200.00	NG	95

1.16
5 1.168
1.14

* Compound is INTD

2



Data File: >F0019:02
Name: ACID FRACTION 850607
Misc: 00313145,043131,L,1000,1

Id File: FBNA
Title: B/N+ACID ID FILE .....MASTER, 850119
Last Calibration: 850608 12:35

Operator ID: P12050
Quant Time: 850608 12:54
Injected at: 850607 20:45

BTLA 5

QUANT REPORT

Operator ID: PT2050 Quant Rev: 4 Quant Time: 850608 12:54
Output File: ^F0018::AU Injected at: 850607 20:42
Data File: >F0018::U2 Dilution Factor: 1.00
Name: ACID FRACTION 850607
Misc: ~~DC3131PS~~,DA(13),L,1000,1 BTL# 8

ID File: ~~FENA~~ QA3131
Title: B/N+ACID ID FILE .....MASTER, 850119
Last Calibration: 850608 12:35

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*d4-1,4-Dichlorobenzene	4.33	168	50370	40.00	UG/ML	99
8)	bis(2-Chloroisopropyl)ether	4.33	168	2119	~~5.09~~	UG/ML	99
10)	2-Fluorophenol	2.71	77	27294	20.02	UG/ML	91
12)	Phenol-D5	3.99	149	48066	37.85	UG/ML	86
12)	Phenol-D5	4.33	168	739	.50	UG/ML	91
13)	*d8-Naphthalene	7.11	325	214125	40.00	UG/ML	99
27)	*d10-Acenaphthalene	12.10	606	144327	40.00	UG/ML	9[illegible]
30)	Dimethyl phthalate	12.12	607	26163	~~4.75~~	UG/ML	99
44)	*d10-Phenanthrene	16.43	850	254488	40.00	UG/ML	96
55)	*d12-Chrysene	24.30	1293	57336	40.00	UG/ML	97

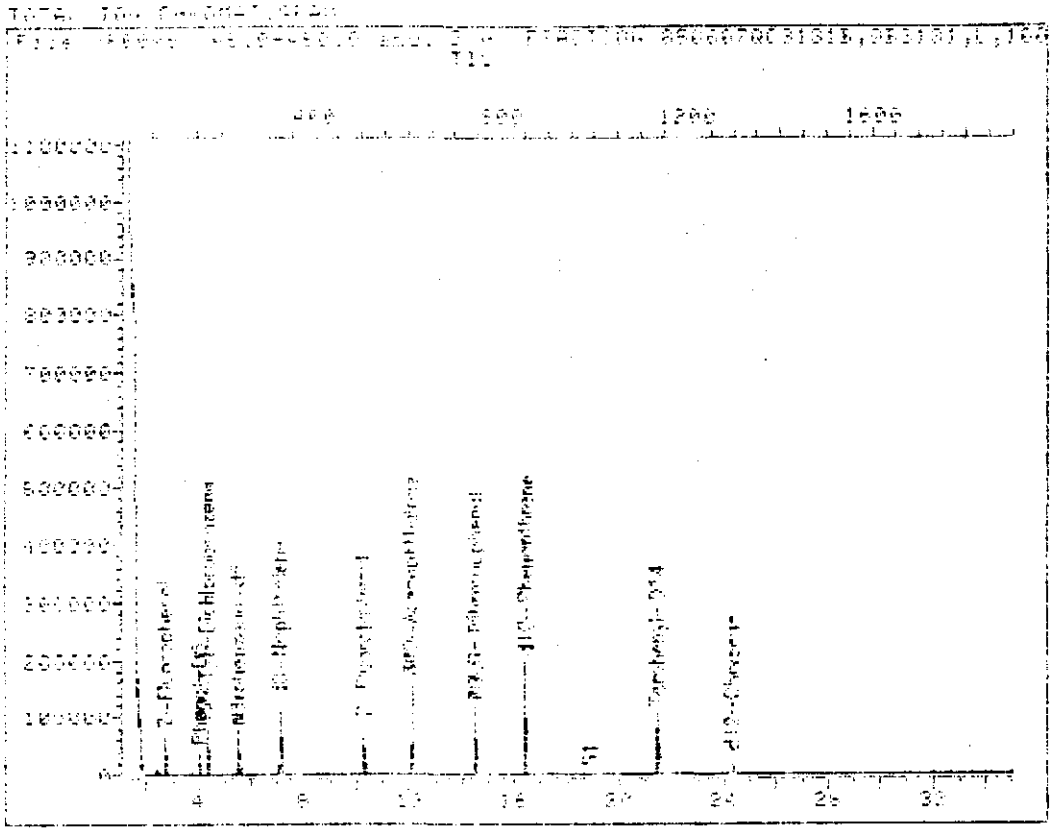
* Compound is ISTD

QUANT REPORT

Operator ID: PT2050 Quant Rev: 4 Quant Time: 850608 18:37
Output File: AF0018::A0 Injected at: 850607 20:42
Data File: >F0018::02 Dilution Factor: 1.00
Name: ACID FRACTION 850607
Disc: ~~DC313RS~~,DC313.L,1000,1 STL# 8
QC313/A
ID File: FAF8E
Title: APPENDIX 8 (DFLE, TSP, F, 850213
Last Calibration: 850608 18:04

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*d4-1,4-Dichlorobenzene	4.33	168	78304	40.00	UG/ML	97
5)	*d8-Naphthalene	7.11	325	214125	40.00	UG/ML	99
7)	*d10-Acenaphthalene	12.10	604	144307	40.00	UG/ML	96
8)	*d10-Phenanthrene	16.43	851	254488	40.00	UG/ML	100

* Compound is ISTD



Data File: [illegible]
Method: [illegible]
Mixer: [illegible]

Page A

Operator: [illegible]
Title: [illegible]
Date(s) Processed: [illegible]

Operator Int: [illegible]
Date Printed: [illegible]
Injected at: [illegible]

QUANT REPORT

System ID: [illegible] Quant Meth: [illegible] Quant Time: [illegible] 12:51
Input File: [illegible] Injected at: [illegible] 1[illegible]:22
[illegible] Dilution Factor: 1.00
[illegible]: B[illegible] F[illegible] [illegible]
[illegible]: [illegible] HTI[illegible]

File: F[illegible]
[illegible]: B[illegible] F[illegible] .....M-ST-R. [illegible]
[illegible] Calibration: [illegible] 12:3[illegible]

	Compound	R.T.	Scan#	Area	Conc	Units	Q
[illegible]	*d4-1,4-Dichlorobenzene	4.31	170	27997	40.00	UG/ML	96
[illegible]	Nitrobenzene-d5	5.49	236	44264	41.[illegible]	UG/ML	88
[illegible]	bis(2-Chloroisopropyl)ether	4.31	170	[illegible]1160	[illegible]	UG/ML	96
[illegible]	2-Fluorophenol	2.[illegible]0	[illegible]	[illegible]972[illegible]	118.46	UG/ML	[illegible]
[illegible]	Phenol-d6	3.99	152	43934	[illegible]	UG/ML	91
[illegible]	*[illegible]naphthalene	7.06	3[illegible]	130818	40.00	UG/ML	94
[illegible]	2-Fluorobiphenyl	10.24	504	63[illegible]94	[illegible]	UG/ML	9[illegible]
[illegible]	2,4,6-Tribromophenol	5.49	2[illegible]	6847	[illegible]	UG/ML	[illegible]
[illegible]	*d10-Acenaphthalene	12.04	605	9[illegible]13[illegible]	40.00	UG/ML	9[illegible]
[illegible]	Terphenyl-d14	12.04	[illegible]	16407	[illegible]	UG/ML	[illegible]
[illegible]	Fluorene	14.4[illegible]	7[illegible]	2197	[illegible]	UG/ML	91
[illegible]	*d12-Chrysene	16.40	8[illegible]	194364	40.00	UG/ML	[illegible]
[illegible]	2,4,6-Tribromophenol	14.4[illegible]	743	3[illegible]0[illegible]6	[illegible]	UG/ML	9[illegible]
[illegible]	[illegible]-Methylphenol	8.97	9[illegible]	4[illegible]19	[illegible]	UG/ML	9[illegible]
[illegible]	*d12-Chrysene	24.28	1246	33053	40.00	UG/ML	9[illegible]
[illegible]	Terphenyl-d14	21.41	117[illegible]	8[illegible]11	[illegible]	UG/ML	9[illegible]

Compound is [illegible]

QUANT REPORT

Operator ID: RT2050
Output File: AF0046::A0
Data File: >F0046::U2
Name: B/N FRACTION 850607
Misc: OC3131B,QB7131,L,1000,1

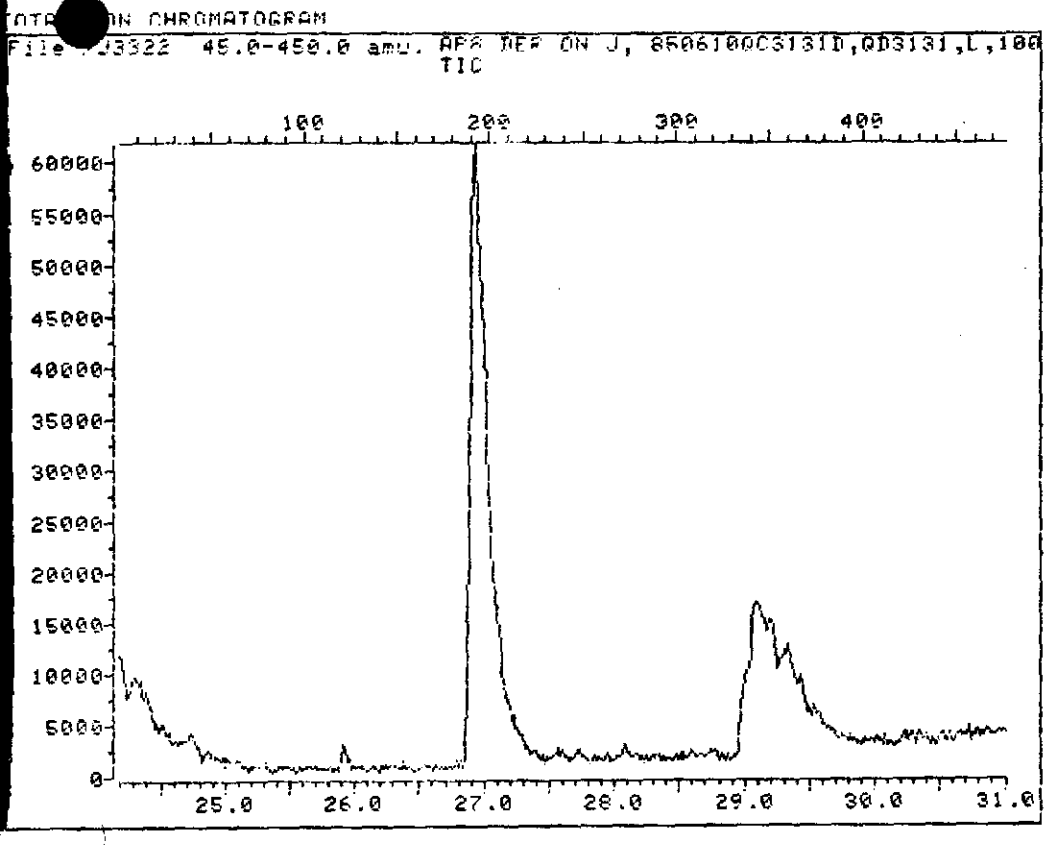
Quant Rev: 4
Quant Time: 850608 20:14
Injected at: 850608 16:22
Dilution Factor: 1.00

BTL#36

ID File: FAPBF
Title: APPENDIX 8 IDFILE, TSR, F, 850213
Last Calibration: 850608 18:04

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*d4-1,4-Dichlorobenzene	4.31	170	41983	40.00	UG/ML	9[illegible]
14)	*d8-Naphthalene	7.06	325	130818	40.00	UG/ML	9[illegible]
29)	*d10-Acenaphthalene	12.04	605	93135	40.00	UG/ML	9[illegible]
46)	*d10-Phenanthrene	16.40	851	194365	40.00	UG/ML	10[illegible]
56)	p-Dimethylaminoazobenzene	21.41	1133	1291	~~1.19~~	UG/ML	4[illegible]

* Compound is ISTD



Data File: >J3322::U4
Name: AP8 DER ON J, 850610
Misc: QC3131D,QD3131,L,1000,1

Id File: JDER
Title: DER AP8 IDFILE
Last Calibration: 850610 19:28

Operator ID: TR9113
Quant Time: 850611 13:22
Injected at: 850610 19:28

HIT # 5

QUANT REPORT

Operator ID: TR9113 Quant Rev: 4 Quant Time: 850611 13:22
Output File: ^J3322::AQ Injected at: 850610 19:28
Data File: >J3322::U4 Dilution Factor: 1.00
Name: AP8 DER ON J, 850610
Misc: QC3131D,QD3131,L,1000,1 Bil# 5

ID File: JDER
Title: DER AP8 IDFILE
Last Calibration: 850610 19:28

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d12-Chrysene	26.94	193	192766	40.00	UG/ML	100

* Compound is ISTD

Appendix E

Chain-of Custody Forms

1) A field Chain-of-Custody form (CC1) is included for all samples shipped by ETC shuttle.

2) An in-house sample Chain-of Custody form is included for the period the sample was in ETC's possession.

3) A subcontractor's Chain-of-Custody form is included for any analytical work not performed within ETC's laboratory.

4) Any additional Chain-of-Custody material provided by a client or by a client's sampling agent is also included.

Shuttle H

ETC ENVIRONMENTAL TESTING and CERTIFICATION

CHAIN OF CUSTODY FORM (CC1)

Seal No. 34567 ETC Job # H6065

Date Sealed 5/7/85 By: Khanna

Company: Vertac Corporation

Attn.: John Hill

Facility/Site:

Phone: ( )

Address: Rifle Range Road
Vicksburg, MS 39180

SAMPLE IDENTIFICATION

Facility: VERTACVICK (Facility/Site Code)

Sample Point: W - MW8 (Source Code (from below); Your Sample Point ID (left justify))

(Optional Sample Point Descriptions): Start Date (YY/MM/DD); Start Time (2400 hr. clock); Elapsed Hours (composite)

278
4

Source Codes:
Well ..(W) Outfall.....(O) Bottom Sediment....(B) Surface Impoundment....(I) Leachate Collection Sys.....(C) Other .....(X)
Soil ...(S) River/Stream..(R) Generation Point ....(G) Treatment Facility .....(T) Lake/Ocean .....(L) Specify

SHUTTLE CONTENTS

BOTTLE No	Type	Size	Preserv.	ANALYSIS	SAMPLER Filt. (Y/N)	SAMPLER Observations	LAB Observations
3	A	1L	Baked	Acid & Bn			✓
1	P/H	1L	Baked	P/H			✓
1	CN	125ml	NaOH	CYANIDE			✓
4	V	40ml	Sod thio	VOA			✓
4	F	40ml	Baked	DAI			✓
1	TB	40ml	GC/MS H_2O	Trip Blank			✓

CHAIN OF CUSTODY CHRONICLE

1. Shuttle Opened By: (print) Date: Time:
Signature: Seal #: Intact:

2. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

3. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

4. Shuttle Sealed By: (print) John Hill Date: 5/23/85 Time: 9 AM
Signature: John Hill Seal #: 0034568 Intact:

ETC USE ONLY Opened By: Date: 5-24-85 Time: 11:00
Seal #: 34567 Condition:

ETC ENVIRONMENTAL TESTING and CERTIFICATION

FIELD PARAMETER FORM (CC2)

ETC JOB # H60165

Sample Point [ ] Source Code [ ] Sample Point ID

FIELD PROCEDURES

PURGE DATE (YY MM DD) | START PURGE (2400 Hr Clock) | ELAPSED HRS | WATER VOL IN CASING (Gallons) | VOLUME PURGED (Gallons)

SAMPLING METHOD: _____

Sampler Type [E] A-Submersible Pump, B-ISCO, C-Bladder Pump, D-Dipper/Bottle, E-Bailer, F-Scoop/Shovel, X-Other _____ (SPECIFY OTHER)

Sampler Material [D] A-Teflon, B-Metal, C-PVC, D-Plastic, X-Other _____ (SPECIFY OTHER)

Tubing Material [ ] A-Teflon, B-Tygon, C-Polyethylene, D-Silicon, X-Other _____ (SPECIFY OTHER)

Sample Composited [Y/N] _____ Procedure/Proportions

FIELD MEASUREMENTS

Well Elevation (ft/msl) [ ]

Depth to Ground water (ft) [ ]

Groundwater Elevation (ft msl) [ ]

Well Depth (ft) [ ]

Sample Depth (non-well) (ft) [ ]

	ph		spec. cond.		(other parameter)	value	units
1st	(STD)	1st	um/cm at 25° C				
2nd	(STD)	2nd	um/cm at 25°C				
3rd	(STD)	3rd	um/cm at 25°C				
4th	(STD)	4th	um/cm at 25°C				

Sample Temp (°C) | Turbidity NTU

FIELD COMMENTS

Sample Appearance: _____

Weather Conditions: _____

Other: _____

FILTERING: Use Chain of Custody (CC1) to indicate which bottles were filtered

Sampler: _____ (Print) Employer: _____

I certify that sampling procedures were in accordance with applicable EPA state and corporate protocols.

_____ (Date) (Signature)

Shuttle 2

ETC ENVIRONMENTAL TESTING and CERTIFICATION

CHAIN OF CUSTODY FORM (CC1)

Seal No. 34565 ETC Job # H6065

Date Sealed 5/7/85 By: Kanna

Company: Vertac Corporation

Attn.: John Hill

Facility/Site:

Phone: ( )

Address: Rifle Range Road
Vicksburg, MS 39180

SAMPLE IDENTIFICATION

422 Facility: VERTACVICK

Facility/Site Code

4 Sample Point: W - MW8

Source Code (from below) — Your Sample Point ID (left justify)

(Optional Sample Point Descriptions)

Start Date (YY/MM/DD): 85 05 23

Start Time (2400 hr clock): 0900

Elapsed Hours (composite):

Source Codes:

Well ..(W) Outfall.....(O) Bottom Sediment ....(B) Surface Impoundment....(I) Leachate Collection Sys.....(C) Other .....

Soil ...(S) River/Stream ..(R) Generation Point ....(G) Treatment Facility .....(T) Lake/Ocean .....(L) Specify

SHUTTLE CONTENTS

BOTTLE				ANALYSIS	SAMPLER		LAB
No	Type	Size	Preserv.		Filt. (Y/N)	Observations	Observations
1	P/H	1L	Baked	Pest/Herb			✓
2	A	1L	Baked	HPLC			✓
1	M	1L	Nitric	Metals			✓

CHAIN OF CUSTODY CHRONICLE

1. Shuttle Opened By: (print) Date: Time:
   Signature: Seal #: Intact:

2. I have received these materials in good condition from the above person.
   Name: Signature:
   Date: Time: Remarks:

3. I have received these materials in good condition from the above person.
   Name: Signature:
   Date: Time: Remarks:

4. Shuttle Sealed By: (print) John Hill Date: ~~5/23/85~~ 5/23/85 Time: 9 am
   Signature: Seal #: 0034566 Intact:

ETC USE ONLY Opened By: Date: 5-24-85 Time: 11-00

Seal #: 34566 Condition: ok

ETC ENVIRONMENTAL TESTING and CERTIFICATION

FIELD PARAMETER FORM (CC2)

ETC JOB # H60065

Sample Point [ ] Source Code [ ] Sample Point ID

FIELD PROCEDURES

PURGE DATE (YY MM DD) | START PURGE (2400 Hr Clock) | ELAPSED HRS | WATER VOL IN CASING (Gallons) | VOLUME PURGED (Gallons)

SAMPLING METHOD: _____

Sampler Type [E] A-Submersible Pump, B-ISCO, C-Bladder Pump, D-Dipper/Bottle, E-Bailer, F-Scoop/Shovel, X-Other _____ (SPECIFY OTHER)

Sampler Material [D] A-Teflon, B-Metal, C-PVC, D-Plastic, X-Other _____ (SPECIFY OTHER)

Tubing Material [ ] A-Teflon, B-Tygon, C-Polyethylene, D-Silicon, X-Other _____ (SPECIFY OTHER)

Sample Composited [Y/N] _____ Procedure/Proportions

FIELD MEASUREMENTS

Well Elevation (ft/msl) [ ]

Depth to Ground water (ft) [ ]

Groundwater Elevation (ft msl) [ ]

Well Depth (ft) [ ]

Sample Depth (non-well) (ft) [ ]

	ph	(STD)		spec. cond.	um/cm at 25° C	(other parameter)	value	units
1st			1st					
2nd			2nd					
3rd			3rd					
4th			4th					

Sample Temp [ ] (°C)

Turbidity [ ] NTU

FIELD COMMENTS

Sample Appearance: _____

Weather Conditions: _____

Other: _____

FILTERING: Use Chain of Custody (CC1) to indicate which bottles were filtered

Sampler: _____ (Print) Employer: _____

I certify that sampling procedures were in accordance with applicable EPA state and corporate protocols.

_____ (Date) (Signature)

GC-MS ANALYSIS CUSTODY LOG

DATE 850603 SHIFT ___
FRACTION DAIVOA
INSTRUMENT C
TUNE FILE APSIO1
SEQUENCE FILE ___
METHOD FILE APBDA1
IDFILE CAPBDI
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s QV3340

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
APBDAI	500	10,315	4
p-BFB		10,273	

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
p-BFB	>C8841	1ul			C-162	2:47	
QC3340V	>C8842	4ul					
QC3340VS	>C8843	4ul			Time=0413	4ul APBDAI STD.	
QC3340VS	>C8844	↓			Time=0504	4ul APBDAI STD.	
H6065V	>C8845	V					
H6070V	>C8846	4ul					
H6071V	>C8847	↓					
H6072V	>C8848	↓					
H6072VR	>C8849	↓					
H8523V	>C8850	↓					
H7524V	>C8851	↓					
H7525V	>C8852	↓					
H7526V	>C8853	↓					

TSR 8-84

Pg 1/2

C-MS ANALYSIS CUSTODY LOG

ATE 5/31/85 SHIFT ___
RACTION VOA
NSTRUMENT A
UNE FILE APEI01
EQUENCE FILE DSA
ETHOD FILE VOAA
DFILE AAPQPT
NALYST(S) [signature]
UPERVISOR [signature]
ATCH #'s QC 3331

(PLEASE INITIAL)

CURRENT CS05 STATUS		STANDARDS UPDATED	
CQ		DATE	
IP	DS	BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
P-BFB	50	10,275	
I.S	40	10,332	
SURR	~~35~~ 40	10567	
a.b.c mix	18	~~10,598~~ →	10,11)
APS	50	10,~~8~~18 →	10,218)

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
P- BFB	>A8725				A00119	OK 1242 HRS	
QC 3331V	>A8726						
QC 3331VS	>A8727		1		OK	5 ul abc + 5 ul APS	
QC 3331 VS	>A8728		2		OK	10 ul abc + 10 ul APS	
QC 3331 VS	>A8729		3		OK	30 ul abc + 30 ul APS	
QC 3331 VS	>A8730				Dont use	30 ul abc + 30 ul APS	
H 6071 VS	>A8731				OK	5 ul abc + 5 ul APS	
H 6071 V	>A8732				OK	~~High Surr~~ DS	
H 6072 V	>A8733				OK		
H6072VR	>A8734				OK		
P-BFB	>A8735				OK	(2321 HRS)	
QC 3331VS	>A8736				(0000HRS) OK	5 ul ABC, 5 ul APS	
~~H6065V~~	~~>A8737~~	~~5ul~~	~~2~~		(NOT RUN)	<DATAC 2 ERROR, Fatal>	
H6070V	>A8738	↓	3			OK ↑	
H7523V	>A8739	50ul	4	1:100	(DS)	(Power Failure)	
H7524V	>A8740		5	1:100			
H7525V	>A8741		6	1:100			
H7526V	>A8742	↓	7	1:100		↓	
~~H6055V~~ BFB	~~>A8743~~				(Batch	set up again + Rerun	
~~QC 3331VS~~	~~>A8744~~				w/ same	data files + sequence)	
Too dilute, Rerun straight, See pg 2							

TSR 8-84

GC-MS ANALYSIS CUSTODY LOG

2 of 2

DATE 6/1/85 SHIFT ___
FRACTION VOA APS
INSTRUMENT A
TUNE FILE APE101
SEQUENCE FILE MMA
METHOD FILE VOA
IDFILE APSPT
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s ___

(PLEASE INITIAL)

CURRENT CSUS STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP	DS	BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
See Page 1			

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
P-BFB	>A8743					OK	
QC 3331 V	>A8744	SMI				OK	Y
QC 3331 V	>A8745						
QC 331 VS	>A8746						
(B) H7523 V	>A8747					OK	
H6065 V	>A8748					OK	
(R) H7524 V	>A8749			1:5		OK	
(R) H7525 V	>A8750			1:5		OK	
(R) H7526 V	>A8751			1:5		Rerun straight	
(R) H7526 V	>A8752					OK	

TSR 8-84

EXTRACTION LOG

QC BATCH 3131

ANALYSIS A-TYPES APB/BN APB/Ac

SEP. FUNNEL ✓ CONTINUOUS

DIST. DATE 6/5/85

NEUTRAL

BASE

ACID

DERIVITIZED BN

MATRIX H_2O

PLE BER	Log Link	DATE PRES.	SAMPLE VOLUME (ml)	EXTRACT VOL (ml) BN	ACID	DER BN	
-39	9178		950	1.0	1.0 ml	1.0	EXTRACTION CONCENTRATION P.R.C.
-Y			980	1.0	1.0 ml	1.0	
241			965	1.0	1.0 ml	1.0	
242			970	1.0	1.0 ml	1.0	
243			960	1.0	1.0 ml	1.0	
005	9689		900	1.0	1.0 ml	1.0	
070			970	1.0	1.0 ml	1.0	
071			930	1.0	1.0 ml	1.0	
072			915	1.0	1.0 ml	1.0	
5217	9454		1000	1.0	1.0 ml	1.0	
5598			980	1.0	1.0 ml	1.0	
5599			1000	1.0	1.0 ml	1.0	
600			1000	1.0	1.0 ml	1.0	
	H2239 R		1000	1.0	1.0 ml	1.0	
	H5599 S		1000	1.0	1.0 ml	1.0	
	QC 3131		1000	1.0	1.0 ml	1.0	
	QC 3131 S		1000	1.0	1.0 ml	1.0	

COMMENTS:

p.s. Paul EXTRACTED & CONCENTRATED WITH MINA.

EXTRACTION: mina grandi 6/5/

BN DER.: Deborah Ka

BN CONC: DKay 6/9/85

ACID CONC: mina grandi 6/9

SUPERVISOR: S Mitchell 6/5/

UPD

FRACTIONS	SPIKES Verified: Sue Arm 6/5/85 Lot No.	Conc.	Amount (ml)	SURROGATES Lot No.	Conc.	Amount (ml)
Mini-Vial				10,686	BN @ 50 mg/ml ACID @ 100 mg/ml	1.0
BN	10,499	100 mg/ml	1.0			
ACID	10,523	100 mg/ml	1.0			
APB BN I	9888	100 mg/ml	1.0			
APB BN II	9890	300 mg/ml	1.0			
APB ACID	9892	100 mg/ml 300 mg/ml	1.0			

B 143

GC-MS ANALYSIS CUSTODY LOG

DATE 6/7/85 SHIFT ___
FRACTION Acid / BN
INSTRUMENT F
TUNE FILE HTF001
SEQUENCE FILE BK
METHOD FILE BNPF
IDFILE FACID, FBNP, FBNA, FA88E
ANALYST(S) P. Trant.

SUPERVISOR [signature]
BATCH #'s QAC 3131

(PLEASE INITIAL)

CURRENT CSUS STATUS		STANDARDS UPDATED	
ACQ	JA	DATE	6/7/85
WIP		BY	BT

STANDARD	CONC PPM	LOT NO.	LOT VOL (ul)
Acid Calib III	300	10528	
II	100	10527	
I	60	10526	
DFT88	25	10610	2
A88 Acid Std	300/500	9893	
	100/300	9898	
	30/100	9899	
Std	400	10293	100
BN Calib Std III	200	10523	
II	100	10776	
I	60	10732	
A88 BN I	30	9895	
	100	9894	
	300	9889	
A88 BN II	100	9897	
	300	9896	
	500	9891	

CBFACD / CBFBNP & CBA88A / CBA88B. 112, 118, 115

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
DFT88	F0010	2			I00197		
Acid Calib III (300)	F0011		1				
II (100)	F0012		2				
I (60)	F0013		3				
A88 Acid Std. 300/500	F0014		4				
100/300	F0015		5				
30/100	F0016		6				
QC3131A	F0017		7				
QC3131AS	F0018		8				
H5599AS	F0019		9				
H2239A	F0020		10				
H2239AR	F0021		11				
H6070A	F0022		12				
H6071A	F0023		13				
H5597A	F0024		14				
H5599A	F0025		15				
H6072A	F0026		16				
DFT88.	F0027		17				
Acid II Calib Std	F0028		18				
H5598A	F0029		19				
H5600A	F0030		20				
H6065A	F0031		21				
H2242A	F0032		22				
H2243A	F0033		23				

TSR 8-84

C-MS ANALYSIS CUSTODY LOG

DATE 6/7/85 SHIFT ___
FRACTION BNA
INSTRUMENT F
TUNE FILE MTF001
SEQUENCE FILE OK
METHOD FILE BNPF
DFILE Inj1
ANALYST(S) R. Trauby
SUPERVISOR [signature]
BATCH #'s DAB313

(PLEASE INITIAL)

CURRENT CSUS STATUS		STANDARDS UPDATED	
CQ		DATE	
IP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
Inj1			

NAME	DATA FILE	UL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
2241A	F0034		24				
2240A	F0035		25				
FT88.	F0036 ✓		26				
C Cal. Std. II (200)	F0037		27				
II (100)	F0038		28				
II (60)	F0039		29				
8BNI 30ppm	F0040		30				
100	F0041		31				
300	F0042		32				
8BNII 100ppm	F0043		33				
300	F0044		34				
500	F0045		35				
C3131B x	F0046		36				
C3131BS x	F0047		37			ABB Quantitation and including	
5599BS ABB.E.	F0048		38				
2239B	F0049		39			Reinject	
2239BR	F0050		40			Reinject	
2240BR	F0051		41				
2241BR	F0052		42				
DF T88.	F0053 ✓		43				
IN Cal. Std II	F0054 ✓		44				
22 B	F0055		45				
2243B	F0056		46				
460658	F0057		47				
460708	F0058		48				

TSR 8-84

GC-MS ANALYSIS CUSTODY LOG

05 ~~4~~ 3 3

DATE 6/7/85 SHIFT ___
FRACTION B/N/A
INSTRUMENT F
TUNE FILE MTF001
SEQUENCE FILE 8K
METHOD FILE BNPF
IDFILE Inst.1
ANALYST(S) ___
SUPERVISOR [signature]
BATCH #'s QAB 3131

(PLEASE INITIAL)

CURRENT CS65 STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
Inst 1			

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
H6072B	F0059		49				
H5597B	F0060		50				
H5598B	F0061		51				
H5599B	F0062		52				
H5600B	F0063		53				
H6071B	F0064		54				
DFT00	F0067	2ul					
H2239B R	F0065		55			} Reinjected.	
H2239B	F0066		56				

TSR 8-84

C-MS ANALYSIS CUSTODY LOG

ATE 850610 SHIFT ___
RACTION DERBN APS
NST[illegible]MENT J
UNE FILE MTJ001
EQUENCE FILE TMJ
ETHOD FILE DERJ
DFILE JDER
NALYST(S) [illegible]
UPERVISOR [illegible]
ATCH #'s 8[illegible]3131

(PLEASE INITIAL)

CURRENT CSUS STATUS		STANDARDS UPDATED	
CQ		DATE	850610
IP		BY	[illegible]

STANDARD	CONC PPM	LOT NO.	LOT VOL
ISTD	400	10293	
DFTPP	25	10610	

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
DFTPP	J3318						
300 ppm Hexa Hexa DER STD	J3318		1				
~~50~~ 150 " "	J3319		2				
50	J3320		3				
H[illegible]99DS	J3321		4				
QC3131D	J3322		5				
QC3131DS	J3323		6				
H2239D	J3324		7				
H2239DR	J3325		8				
H2240D	J3326		9				
H2241D	J3327		10				
H2242D	J3328		11				
H2243D	J3329		12				
H6065D	J3330		13				
H6070D	J3331		14				
H6071D	J3332		15				
H6072D	J3333		16				
H5597D	J3334		17				
H5598D	J3335		18				
H5599D	J3336		19				
H5600D	J3337		20				

TSR 8-84

EXTRACTION LOG

Sample Number	Log Date	Sample Vol (ml)	Extract Vol (ml) BST	Extract Vol (ml) PCB	Comments
H3279	9657			—	
H3280				—	
H3281				—	
H3282				—	
H3283		500		1ml	
H3284				1ml	
H3285					
H3286	9658	500		1ml	
H3287				1ml	
H3288				—	
H3289		500		1ml	
H3290				1ml	
H3291				1ml	
H6065	9689			1ml	
* H6070				1ml	
* H6071				1ml	
QC 3135		500		1ml	
QC 3135 S				1ml	
H3283 - S				1ml	
H3289 - R				1ml	

QC Batch # 3135

Analysis: PP/PCB (GC)
* APS/PCB (GC)

Matrix: H_2O

Turnaround: NORM

Date: 6/7/85

Extraction Method:
- sep funnel ✓
- continuous
- soxhlet
- other

COMMENTS FOR EXTRACT.:
Same as regular PCBs in water for GC.

H3279 - 82 - Dry Well
See log-in. H3285 ↗
H3288 - Dry Well

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
Arochlor 1260	0.1 ml	10 mg/ml	10,529

SURROGATE Amt. (ml)	Conc.	Lot #

Set-up: [illegible] 6/7/85
Conc.: [illegible] 6-7-85
UPD/Supervisor: [illegible] 6/8/85
Spike Var. Deborah Kay 6/10/85

JUN 10, 1985 17:13
SEQUENCE: P35/38 ON CRN 15
CHANNEL 5

SEQUENCE 1

METHOD
PCBB5

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

6/10/85
6/11/85
APB= PCB's

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	QC3135	1,	PW0714:AW,	RW0714:AW,	100.00,	1.0000,	1.0000
2	AR1260 0.5	2,	PW0715:AW,	RW0715:AW,	100.00,	1.0000,	1.0000
3	H3135S	3,	PW0716:AW,	RW0716:AW,	100.00,	1.0000,	1.0000
4	H3283S	4,	PW0717:AW,	RW0717:AW,	100.00,	1.0000,	1.0000
5	H3289R	5,	PW0718:AW,	RW0718:AW,	100.00,	1.0000,	1.0000
6	H3283	6,	H3283C:AW,	H3283D:AW,	100.00,	1.0000,	1.0000
7	H3284	7,	H3284C:AW,	H3284D:AW,	100.00,	1.0000,	1.0000
8	AR1254 0.5	8,	PW0719:AW,	RW0719:AW,	100.00,	1.0000,	1.0000
9	AR1248 0.5	9,	PW0720:AW,	RW0720:AW,	100.00,	1.0000,	1.0000
[illegible]	H3286	10,	H3286C:AW,	H3286D:AW,	100.00,	1.0000,	1.0000
[illegible]	H3287	11,	H3287C:AW,	H3287D:AW,	100.00,	1.0000,	1.0000
12	H3289	12,	H3289C:AW,	H3289D:AW,	100.00,	1.0000,	1.0000
13	H3290	13,	H3290C:AW,	H3290D:AW,	100.00,	1.0000,	1.0000
14	H3291	14,	H3291C:AW,	H3291D:AW,	100.00,	1.0000,	1.0000
15	H6065	15,	H6065C:AW,	H6065D:AW,	100.00,	1.0000,	1.0000
16	H6070	16,	H6070C:AW,	H6070D:AW,	100.00,	1.0000,	1.0000
17	H6071	17,	H6071C:AW,	H6071D:AW,	100.00,	1.0000,	1.0000
18	AR1242 0.5	18,	PW0721:AW,	RW0721:AW,	100.00,	1.0000,	1.0000
19	QC3138	19,	PW0722:AW,	RW0722:AW,	100.00,	1.0000,	1.0000
20	QC3138S	20,	PW0723:AW,	RW0723:AW,	100.00,	1.0000,	1.0000
21	H7099S	21,	PW0724:AW,	RW0724:AW,	100.00,	1.0000,	1.0000
22	H7095R	22,	PW0725:AW,	RW0725:AW,	100.00,	1.0000,	1.0000
23	H5594	23,	H5594C:AW,	H5594D:AW,	100.00,	1.0000,	1.0000
24	H2620	24,	H2620C:AW,	H2620D:AW,	100.00,	1.0000,	1.0000
25	H2238	25,	H2238C:AW,	H2238D:AW,	100.00,	1.0000,	1.0000
26	H2239	26,	H2239C:AW,	H2239D:AW,	100.00,	1.0000,	1.0000
27	H2240	27,	H2240C:AW,	H2240D:AW,	100.00,	1.0000,	1.0000
28	H2241	28,	H2241C:AW,	H2241D:AW,	100.00,	1.0000,	1.0000
29	AR1232 0.5	29,	PW0726:AW,	RW0726:AW,	100.00,	1.0000,	1.0000
30	AR1260 5	30,	PW0727:AW,	RW0727:AW,	100.00,	1.0000,	1.0000
31	H2242	31,	H2242C:AW,	H2242D:AW,	100.00,	1.0000,	1.0000
32	H2243	32,	H2243C:AW,	H2243D:AW,	100.00,	1.0000,	1.0000
33	H7094	33,	H7094C:AW,	H7094D:AW,	100.00,	1.0000,	1.0000
34	H7095	34,	H7095C:AW,	H7095D:AW,	100.00,	1.0000,	1.0000
[illegible]	H7099	35,	H7099C:AW,	H7099D:AW,	100.00,	1.0000,	1.0000
[illegible]	G6805	36,	G6805C:AW,	G6805D:AW,	100.00,	1.0000,	1.0000
37	G6806	37,	G6806C:AW,	G6806D:AW,	100.00,	1.0000,	1.0000
38	H3276	38,	H3276C:AW,	H3276D:AW,	100.00,	1.0000,	1.0000
39	H3278	39,	H3278C:AW,	H3278D:AW,	100.00,	1.0000,	1.0000
40	AR1221 0.5	40,	PW0728:AW,	RW0728:AW,	100.00,	1.0000,	1.0000
41	AR1016 0.5	41,	PW0729:AW,	RW0729:AW,	100.00,	1.0000,	1.0000
[illegible]	[illegible]260 1.0	42,	PW0730:AW,	RW0730:AW,	100.00,	1.0000,	1.0000

APB

QC Batch # 3139

Analysis: APS/PEST (FPD) *
APS/PEST (EC)
* SPEC GC

Matrix: H_2O
Turnaround: NORM
Date: 6/7/8

Extraction Method:
sep funnel ✓
continuous
soxhlet
other

Sample Number	Log Date	Sample Vol (ml)	Extract Vol (ml) EC	Extract Vol (ml) FPD	New number Comments tracking
* H2876	8925	600		5.0	H8771 *
* H2877	↓	500		5.0	H8772 *
* H2878	↓	500		5.0	H8773 *
H2239	9178	500	5.0	5.0	
H2240	↓	500	5.0	5.0	
H2241	↓	500	5.0	5.0	
H2242	↓	500	5.0	5.0	
H2243	↓	500	5.0	50	
H6065	9659	500	5.0	5.0	
H6070	↓	500	5.0	5.0	
~~H6071~~	↓	~~500~~			
H6072	↓	500	5.0	5.0	
H5597	9454	500	5.0	5.0	
H5598	↓	500	5.0	5.0	
H5599	↓	500	5.0	5.0	
~~H6600~~	↓	~~500~~			
H5600	9451	500	5.0	5.0	
H6072-MS1		450	5.0	5.0	
H6071-MS1		470	5.0	5.0	
H5597-MS1		480	5.0	5.0	
QC 3139		500	5.0	5.0	
QC 3139 -S1		500	5.0	5.0	
QC 3139 -S2		500	5.0	5.0	
H5599 R		500	5.0	5.0	
QC 3139 -S3		500	5.0	5.0	

COMMENTS FOR EXTRACT.:
* limited sample volume do not use for QC
All others are for EC & FPD BOTH.

UPD the tracking number for the 1st 3 as SPEC GC: H8771, H8772, H8773

Reported H2876, H6071

COMMENTS FOR GC/MS:
+ (S2): CHLORDANE + KEPONE @ 25 ug/ml
TOXAPHENE @ 100 ug/ml
14 comp @ 2.5 ug/ml
METHOXYCHLOR @ 250 ug/ml

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
(S1) (FPD)	0.2	4 @ 12.5 ug/ml; 2 @ 62.5 ug/ml; 1 @ 1250 ug/ml	10,640
(S2) (EC-ISO)	0.1	+	10,636
(S3) (EC-TEMP)	0.1	#	10,589

SPIKE VERIFIED: [illegible] 6/7/85

SURROGATE Amt. (ml)	Conc.	Lot #

Set-up: Louis Ammirato 6/7/85 UPD/Supervisor: [illegible] 6/8/85
Conc.: [illegible] 6/7/85

EXTRACTION LOG

QC Batch # 3140

Analysis: APS/HERB (EC)

Matrix: H_2O

Turnaround: 10DAY

Date: 6/8/85

Extraction Method:

- sep funnel ✓
- continuous
- soxhlet
- other

Sample Number	Log Date	Sample Vol (ml)	Extract Vol (ml)		Comments
H5594	9384	500 ml	2.5		
H2620	9112	300 ml	2.5		
H2238	9178	500 ml	2.5		
H2239	↓	335 ml	2.5		
H2240		500 ml	2.5		
H2241		500 ml	2.5		
H2242		500 ml	2.5		
H2243	↓	500 ml	2.5		
H6065	9689	500 ml	2.5		
H6070	↓	500 ml	2.5		
H6071		500 ml	2.5		
H6072	↓	500 ml	2.5		
H5597	9454	500 ml	2.5		
H5598	↑	500 ml	2.5		
H5599		500 ml	2.5		
H5600	↓	500 ml	2.5		
QC 3140		500 ml	2.5		
QC 3140 S		500 ml	2.5		
H5597 S		500 ml	2.5		
H5598 R		500 ml	2.5		

COMMENTS FOR EXTRACT.:

COMMENTS FOR GC/MS:

FRACTION	SPIKE		
	Amt (ml)	Conc.	Lot #
~~BLEND~~ 2,4-D	0.5	100 ug/ml	10,595
2,4,5-TP		10 ug/ml	
2,4,5-T	0.5	10 ug/ml	9461

SURROGATE		
Amt. (ml)	Conc.	Lot #

Set-up: Joe Burkart 6/9/85 UPD/Supervisor: S McArthur 6/9/85

Conc.: Rita Sacher 6/9/85 Spikes verified: S McArthur 6/9/85

JUN 11, 1985 8:56
SEQUENCE: AP8/39 ON CRN 15
CHANNEL 2

SUBSEQUENCE 1

METHOD
PPST2

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

Nguyen & Ka — 6/11/85
Nguyen & Ka — 6/12/85
Jane D. Draper 6/17/85
PPST EC

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	QC3139 ,	1,	PW0731:AY,	RW0731:AY,	1000.0,	1.0000,	1.0000
2	PEST 0.01 ,	2,	PW0732:AY,	RW0732:AY,	1000.0,	1.0000,	1.0000
3	QC3139S3 ,	3,	PW0733:AY,	RW0733:AY,	1000.0,	1.0000,	1.0000
4	H5597S3 ,	4,	PW0734:AY,	RW0734:AY,	1000.0,	1.0000,	1.0000
5	H5599R ,	5,	PW0735:AY,	RW0735:AY,	1000.0,	1.0000,	1.0000
6	H2239 ✓ ,	6,	H2239E:AY,	H2239F:AY,	1000.0,	1.0000,	1.0000
7	H2240 ✓ ,	7,	H2240E:AY,	H2240F:AY,	1000.0,	1.0000,	1.0000
8	H2241 ✓ ,	8,	H2241E:AY,	H2241F:AY,	1000.0,	1.0000,	1.0000
9	H2242 ✓ ,	9,	H2242E:AY,	H2242F:AY,	1000.0,	1.0000,	1.0000
10	H2243 ✓ ,	10,	H2243E:AY,	H2243F:AY,	1000.0,	1.0000,	1.0000
11	PEST 0.05 ,	11,	PW0736:AY,	RW0736:AY,	1000.0,	1.0000,	1.0000
12	H6065 ✓ ,	12,	H6065E:AY,	H6065F:AY,	1000.0,	1.0000,	1.0000
13	H6070 ✓ ,	13,	H6070E:AY,	H6070F:AY,	1000.0,	1.0000,	1.0000
14	H6072 ✓ ,	14,	H6072E:AY,	H6072F:AY,	1000.0,	1.0000,	1.0000
15	H5597 ,	15,	H5597E:AY,	H5597F:AY,	1000.0,	1.0000,	1.0000
16	H5598 ✓ ,	16,	H5598E:AY,	H5598F:AY,	1000.0,	1.0000,	1.0000
17	H5599 ✓ ,	17,	H5599E:AY,	H5599F:AY,	1000.0,	1.0000,	1.0000
18	H5600 ✓ ,	18,	H5600E:AY,	H5600F:AY,	1000.0,	1.0000,	1.0000
19	PEST 0.1 ,	19,	PW0737:AY,	RW0737:AY,	1000.0,	1.0000,	1.0000
20	TCK A ,	20,	PW0738:AY,	RW0738:AY,	1000.0,	1.0000,	1.0000
21	QC3139S2 ,	21,	PW0739:AY,	RW0739:AY,	1000.0,	1.0000,	1.0000
22	HEXANE ,	22,	PW0740:AY,	RW0740:AY,	1000.0,	1.0000,	1.0000
23	H6071S2 ,	23,	PW0741:AY,	RW0741:AY,	1000.0,	1.0000,	1.0000
24	HEXANE ,	24,	PW0742:AY,	RW0742:AY,	1000.0,	1.0000,	1.0000
25	TCK B ,	25,	PW0743:AY,	RW0743:AY,	1000.0,	1.0000,	1.0000
26	TCK C ,	26,	PW0744:AY,	RW0744:AY,	1000.0,	1.0000,	1.0000
27	CHLORDANE ,	27,	PW0745:AY,	RW0745:AY,	1000.0,	1.0000,	1.0000
28	TOXAPHENE ,	28,	PW0746:AY,	RW0746:AY,	1000.0,	1.0000,	1.0000
29	/E						

I → ~~H6071~~ H6071

JUN 13, 1985 9:26
SEQUENCE: H3140 ON CRN 15
CHANNEL 8

SUBSEQUENCE 1

METHOD
HERB8

DIALG-PRG PARAM-FILE
/N

#WSHS	#PMPS	STOP
5,	5,	1

ISO	POST-BTL#	POST-#WSHS
NO ,	0,	1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	24D 245TP B ,	1,	PW0747:BC,	RW0747:BC,	100.00,	1.0000,	1.0000
2	QC3140 ,	2,	PW0748:BC,	RW0748:BC,	100.00,	1.0000,	1.0000
3	QC3140S ,	3,	PW0749:BC,	RW0749:BC,	100.00,	1.0000,	1.0000
4	H5597S ,	4,	PW0750:BC,	RW0750:BC,	100.00,	1.0000,	1.0000
5	H5598R ,	5,	PW0751:BC,	RW0751:BC,	100.00,	1.0000,	1.0000
6	H5594 ,	6,	H5594G:BC,	H5594H:BC,	100.00,	1.0000,	1.0000
7	H2620 ,	7,	H2620G:BC,	H2620H:BC,	100.00,	1.0000,	1.0000
8	H2238 ,	8,	H2238G:BC,	H2238H:BC,	100.00,	1.0000,	1.0000
[illegible]	H2240 1:10 ,	9,	H2240G:BC,	H2240H:BC,	100.00,	1.0000,	1.0000
10	H2241 ,	10,	H2241G:BC,	H2241H:BC,	100.00,	1.0000,	1.0000
11	H2242 1:10 ,	11,	H2242G:BC,	H2242H:BC,	100.00,	1.0000,	1.0000
12	24D ~~24D 245TP~~ A ,	12,	PW0752:BC,	RW0752:BC,	100.00,	1.0000,	1.0000
13	H2243 1:10 ,	13,	H2243G:BC,	H2243H:BC,	100.00,	1.0000,	1.0000
14	H G6065 ,	14,	G6065G:BC,	G6065H:BC,	100.00,	1.0000,	1.0000
15	H G6070 ,	15,	G6070G:BC,	G6070H:BC,	100.00,	1.0000,	1.0000
16	H G6071 ,	16,	G6071G:BC,	G6071H:BC,	100.00,	1.0000,	1.0000
17	H G6072 ,	17,	G6072G:BC,	G6072H:BC,	100.00,	1.0000,	1.0000
18	H5597 ,	18,	H5597G:BC,	H5597H:BC,	100.00,	1.0000,	1.0000
19	H5598 ,	19,	H5598G:BC,	H5598H:BC,	100.00,	1.0000,	1.0000
20	H5599 ,	20,	H5599G:BC,	H5599H:BC,	100.00,	1.0000,	1.0000
21	H5600 ,	21,	H5600G:BC,	H5600H:BC,	100.00,	1.0000,	1.0000
22	24D 245TP C ,	22,	PW0753:BC,	RW0753:BC,	100.00,	1.0000,	1.0000
23	~~H2239~~						
24	245T B						
25	24D + 245TP A						
26	245T C						

6/13/85
6/13/85
6/14/85

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	QC3139	1,	PW0702:AI,	RW0702:AI,	100.00,	1.0000,	1.0000
2	FPD STD B	2,	PW0703:AI,	RW0703:AI,	100.00,	1.0000,	1.0000
3	QC3139S	3,	PW0704:AI,	RW0704:AI,	100.00,	1.0000,	1.0000
4	H6072S	4,	PW0705:AI,	RW0705:AI,	100.00,	1.0000,	1.0000
5	H5599R	5,	PW0706:AI,	RW0706:AI,	100.00,	1.0000,	1.000
6	H2876	6,	PW0709:AI,	RW0709:AI,	100.00,	1.0000,	1.000
7	H2877	7,	PW0710:AI,	RW0710:AI,	100.00,	1.0000,	1.0000
8	H2878	8,	PW0711:AI,	RW0711:AI,	100.00,	1.0000,	1.0000
9	H2239	9,	H2239A:AI,	H2239B:AI,	100.00,	1.0000,	1.0000
10	H2240	10,	H2240A:AI,	H2240B:AI,	100.00,	1.0000,	1.0000
11	H2241	11,	H2241A:AI,	H2241B:AI,	100.00,	1.0000,	1.0000
12	H2242	12,	H2242A:AI,	H2242B:AI,	100.00,	1.0000,	1.0000
13	FPD STD A	13,	PW0712:AI,	RW0712:AI,	100.00,	1.0000,	1.0000
14	H2243	14,	H2243A:AI,	H2243B:AI,	100.00,	1.0000,	1.0000
15	H6065	15,	H6065A:AI,	H6065B:AI,	100.00,	1.0000,	1.0000
16	H6070	16,	H6070A:AI,	H6070B:AI,	100.00,	1.0000,	1.0000
17	H6072	17,	H6072A:AI,	H6072B:AI,	100.00,	1.0000,	1.0000
18	H5597	17,	H5597A:AI,	H5597B:AI,	100.00,	1.0000,	1.0000
19	H5598	18,	H5598A:AI,	H5598B:AI,	100.00,	1.0000,	1.0000
20	H5599	19,	H5599A:AI,	H5599B:AI,	100.00,	1.0000,	1.0000
21	H5600	20,	H5600A:AI,	H5600B:AI,	100.00,	1.0000,	1.0000
22	FPD STD C	22,	PW0713:AI,	RW0713:AI,	100.00,	1.0000,	1.0000
23	H6201	23	H6201A	H6201B			

6/19/85

6/13/85

4/14/85

Post FPD

shelf #5.

Sample Number	Log Entry	Sample Vol. (ml)	Extract Vol. (ml)		Comments
25[illegible]	9013	4	Aliquot taken from all samples		
259	↓	4	"		
260		4	"		
261	↓	4	"		
470	9112	9	"		
2617	9113	10	"		
2618	↓	10	"	aliquoted	
2619	↓	10	"		
5593	9384	15.	"		
2241	9178	21/22	"		
2242	↓	"	"		
2243	↓	"	"		
6065	9689	10	"		
6070	↓	"	"		
60[illegible]	↓	"	"		
6072	↓	"	"		
QC 3130			"		
QC 3130 S			5.0	aliquoted	
H2241 S			5.0		
H2243 R			Aliquot		

QC Batch # 3130

Analysis: SPECLC

*APS/DAILC210

*APS/DAILC254

Matrix: H_2O

Turnaround: NORM

Date: 6/5/85

Extraction Method:

sep funnel

continuous

soxhlet

other aliquot

COMMENTS FOR EXTRACT.:

aliquot ~2.0ml into sample vial. Write label w/ magic marker.

Blank + Blank Spike use hydropure water.

Matrix + Blank Spikes: add 1ml of APS/DAILC std. to 5ml ~~volume w/ w~~ volumetric. Bring to 5ml w/ water or sample respectively. Mix. Aliquot into vial as above.

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
APPROPRIATE	1.0	25µg/ml	10317

SURROGATE Amt. (ml)	Conc.	Lot #

Set-up: Amb. 6/6/85

Conc.: na

UPD/Supervisor: [illegible] 6/5/85

spike verified. Deborah Kay

JUN 20, 1985 16:30
SEQUENCE: LCS95 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
LC210

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

6/20/85

K. Bach 6-21-85

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10320-0.5,	0,	PH2217:AU,	RH2217:AU,	100.00,	1.0000,	1.0000
2	H1258 ,	1,	PH2218:AU,	RH2218:AU,	100.00,	1.0000,	1.0000
3	H1259 ,	2,	PH2219:AU,	RH2219:AU,	100.00,	1.0000,	1.0000
4	H1260 ,	3,	PH2220:AU,	RH2220:AU,	100.00,	1.0000,	1.0000
5	H1261 ,	4,	PH2221:AU,	RH2221:AU,	100.00,	1.0000,	1.0000
6	G8470 ,	5,	PH2222:AU,	RH2222:AU,	100.00,	1.0000,	1.0000
7	H2617 ,	6,	PH2223:AU,	RH2223:AU,	100.00,	1.0000,	1.0000
8	STD10319-1.0,	7,	PH2224:AU,	RH2224:AU,	100.00,	1.0000,	1.0000
9	H2618 ,	8,	PH2225:AU,	RH2225:AU,	100.00,	1.0000,	1.0000
10	H2619 ,	9,	PH2226:AU,	RH2226:AU,	100.00,	1.0000,	1.0000
11	H5593 ,	10,	PH2227:AU,	RH2227:AU,	100.00,	1.0000,	1.0000
12	H2241 ,	11,	PH2228:AU,	RH2228:AU,	100.00,	1.0000,	1.0000
13	H2242 ,	12,	PH2229:AU,	RH2229:AU,	100.00,	1.0000,	1.0000
14	H2243 ,	13,	PH2230:AU,	RH2230:AU,	100.00,	1.0000,	1.0000
15	STD10318-5.0,	14,	PH2231:AU,	RH2231:AU,	100.00,	1.0000,	1.0000
16	H6065 ,	15,	PH2232:AU,	RH2232:AU,	100.00,	1.0000,	1.0000
17	H6070 ,	16,	PH2233:AU,	RH2233:AU,	100.00,	1.0000,	1.0000
18	H6071 ,	17,	PH2234:AU,	RH2234:AU,	100.00,	1.0000,	1.0000
19	H6072 ,	18,	PH2235:AU,	RH2235:AU,	100.00,	1.0000,	1.0000
20	QC3130 ,	19,	PH2236:AU,	RH2236:AU,	100.00,	1.0000,	1.0000
21	QC3130S ,	20,	PH2237:AU,	RH2237:AU,	100.00,	1.0000,	1.0000
22	STD10317-25.,	21,	PH2238:AU,	RH2238:AU,	100.00,	1.0000,	1.0000
23	H2241S ,	22,	PH2239:AU,	RH2239:AU,	100.00,	1.0000,	1.0000
24	H2243R ,	23,	PH2240:AU,	RH2240:AU,	100.00,	1.0000,	1.0000
25	/E						

SUBSEQUENCE 2

METHOD
LC280

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

0 , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10394-25 ,	24,	PH2272:AU,	RH2272:AU,	100.00,	1.0000,	1.0000
2	H2757 ,	25,	PH2274:AU,	RH2274:AU,	100.00,	1.0000,	1.0000
3	STD10297-250,	26,	PH2275:AU,	RH2275:AU,	100.00,	1.0000,	1.0000
4	H2756 ,	27,	PH2276:AU,	RH2276:AU,	100.00,	1.0000,	1.0000
5	STD10400-500,	28,	PH2277:AU,	RH2277:AU,	100.00,	1.0000,	1.0000
6	H2756R ,	29,	PH2278:AU,	RH2278:AU,	100.00,	1.0000,	1.0000
7	ST10388-1000,	30,	PH2279:AU,	RH2279:AU,	100.00,	1.0000,	1.0000
8	H4605 ,	31,	PH2280:AU,	RH2280:AU,	100.00,	1.0000,	1.0000
9	/E						

QC Batch # 3153

Analysis: AP8/EXT LC

Matrix: H_2O

Turnaround: NORM

Date: 6/11/85

Extraction Method:

- sep funnel ✓
- continuous
- soxhlet
- other

Sample Number	Log Book	Sample Vol. (ml)	Extract Vol. (ml)		Comments
H6065	9689	950		1.0ml	
H6070	↓	980		1.0	
H6071	↓	960		1.0	
H6072	↓	~~990~~ 950		1.0	
H5599	9454	1000		1.0	
H5600	↓	980		1.0	
H5601	↓	1000		1.0	
H5602	↓	1000		1.0	
H7219	9518	990		1.0	
H7220	↓	990		1.0	
H7221	↓	990		1.0	
H7222	↓	990		1.0	
68452	9516	970		1.0	
H7523	9682	1000		1.0	
H7524	↓	980		1.0	~~GSK~~
H7525	9740	1000	~~UNDER HOOD~~	1.0	~~after procedure~~
QC 3153		1000		1.0ml	
QC 3153 S		1000		1.0	
H7220 S		990		1.0	
H7219 R		990		1.0	

COMMENTS FOR EXTRACT.:

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
AP8 Ext LC I	0.5	1000 ug/ml	10386
AP8 Ext LC II	0.5	1000 ug/ml	10387
AP8 Ext LC III	0.5	1000 ug/ml	10388
1-naphthyl-2 thiourea	0.5	1000 ug/ml	10733

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: J. Hart 6/11/85 UPD/Supervisor: [illegible] 6/12/85

Conc.: J. Angelloni 6-11-85 spike ver: Deborah Kay 6/10/85

JUN 28, 1985 10:57
SEQUENCE: LCS102 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
EXT280

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10849-025,	0,	RH7300:CK,	PH7300:CK,	100.00,	1.0000,	1.0000
2	STD1088-250 ,	1,	RH7301:CK,	PH7301:CK,	100.00,	1.0000,	1.0000
3	H5594 ,	2,	RH7302:CK,	PH7302:CK,	100.00,	1.0000,	1.0000
4	H5597 ,	3,	RH7303:CK,	PH7303:CK,	100.00,	1.0000,	1.0000
5	ST10388-1000,	4,	RH7304:CK,	PH7304:CK,	100.00,	1.0000,	1.0000
6	/E						

SUBSEQUENCE 2

METHOD
EXT250

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	ST10388-1000,	20,	RH7305:CK,	PF7305:CK,	100.00,	1.0000,	1.0000
2	ST10380-1000,	21,	RH7306:CK,	PH7306:CK,	100.00,	1.0000,	1.0000
3	ST10687-1000,	22,	RH7307:CK,	PH7307:CK,	100.00,	1.0000,	1.0000
4	ST10733-1000,	23,	RH7308:CK,	PH7308:CK,	100.00,	1.0000,	1.0000
5	QC3153 ,	24,	RH7309:CK,	PH7309:CK,	100.00,	1.0000,	1.0000
6	QC3153S ,	25,	RH7310:CK,	PH7310:CK,	100.00,	1.0000,	1.0000
7	H7220 ,	26,	RH7311:CK,	PH7311:CK,	100.00,	1.0000,	1.0000
8	H7220S ,	27,	RH7312:CK,	PH7312:CK,	100.00,	1.0000,	1.0000
9	H7219 ,	28,	RH7313:CK,	PH7313:CK,	100.00,	1.0000,	1.0000
10	H7219R ,	29,	RH7314:CK,	PH7314:CK,	100.00,	1.0000,	1.0000
11	H6065 ,	30,	RH7315:CK,	PH7315:CK,	100.00,	1.0000,	1.0000
12	H6070 ,	31,	RH7316:CK,	PH7316:CK,	100.00,	1.0000,	1.0000
13	H6071 ,	32,	RH7317:CK,	PH7317:CK,	100.00,	1.0000,	1.0000
14	H6072 ,	33,	RH7318:CK,	PH7318:CK,	100.00,	1.0000,	1.0000
15	STD10394-025,	34,	RH7319:CK,	PH7319:CK,	100.00,	1.0000,	1.0000

```
16  STD10392-025,  35, RH7320:CK, PH7320:CK, 100.00,  1.0000,  1.0000
17  STD10690-025,  36, RH7342:CK, PH7342:CK, 100.00,  1.0000,  1.0000
18  STD10736-025,  37, RH7321:CK, PH7321:CK, 100.00,  1.0000,  1.0000
19  H5599        ,  38, RH7322:CK, PH7322:CK, 100.00,  1.0000,  1.0000
20  H5600        ,  39, RH7323:CK, PH7323:CK, 100.00,  1.0000,  1.0000
21  H5601        ,  40, RH7324:CK, PH7324:CK, 100.00,  1.0000,  1.0000
22  H5602        ,  41, RH7325:CK, PH7325:CK, 100.00,  1.0000,  1.0000
23  H7219        ,  42, RH7326:CK, PH7326:CK, 100.00,  1.0000,  1.0000
24  H7220        ,  43, RH7327:CK, PH7327:CK, 100.00,  1.0000,  1.0000
25  STD10400-500,  44, RH7328:CK, PH7328:CK, 100.00,  1.0000,  1.0000
26  STD10398-500,  45, RH7329:CK, PH7329:CK, 100.00,  1.0000,  1.0000
27  STD10688-500,  46, RH7330:CK, PH7330:CK, 100.00,  1.0000,  1.0000
28  STD10734-500,  47, RH7331:CK, PH7331:CK, 100.00,  1.0000,  1.0000
29  H7221        ,  48, RH7332:CK, PH7332:CK, 100.00,  1.0000,  1.0000
30  H7222        ,  49, RH7333:CK, PH7333:CK, 100.00,  1.0000,  1.0000
31  G8452        ,  50, RH7334:CK, PH7334:CK, 100.00,  1.0000,  1.0000
32  H7523        ,  51, RH7335:CK, PH7335:CK, 100.00,  1.0000,  1.0000
33  H7524        ,  52, RH7336:CK, PH7336:CK, 100.00,  1.0000,  1.0000
34  H7525        ,  53, RH7337:CK, PH7337:CK, 100.00,  1.0000,  1.0000
35  STD10397-250,  54, RH7338:CK, PH7338:CK, 100.00,  1.0000,  1.0000
36  STD10395-250,  55, RH7339:CK, PH7339:CK, 100.00,  1.0000,  1.0000
37  STD10689-250,  56, RH7340:CK, PH7340:CK, 100.00,  1.0000,  1.0000
38  STD10735-250,  57, RH7341:CK, PH7341:CK, 100.00,  1.0000,  1.0000
39  /E
```

ETC ENVIRONMENTAL TESTING and CERTIFICATION

Log link
9689

Metals Analysis Custody Log

Samples H6065, H6070
H6071, H6072

	Chemist	Date
Hg Prep	Douglas G. Lehfeld	6/25/85
AA/ICAP Prep	Joan Komarek	6/20/85

Lab Supervisor Lidya Wisawor date 6/27/85

TITLE: CYANIDES BOOK NO. CV6 PAGE NO. 38

	SAMPLE #	CONC.
1	H6065	REPEAT
2	H6070	
3	H6071	
4	H6072	
5	H5597	
6	H5598	
7	H5599	
8	H5600	
9	H5601	
10	H5602	
11	H7219	
12	H7220	
13	H7221	
14	H7222	
15	G8452	
16	H7523	
17	H7524	
18	H8542	
19	H8543	
20	H8544	
21	H8545	
22	H3972	
23	H3945	
24	H3953	
25	H4653	
26	H3392	
27	H3393	
28	H4797	
29	H4727	

	SAMPLE #	CONC
30	H4728	REPEAT
31	H4798	
32	H4799	
33	H6695	
34	H4733	
35	H4800	
36	H7270	
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		

UNITS: MG/L Detection limit = 0.025 mg/l

COMMENTS:

< = less than 0.025 mg/l

SAMPLES ARE BEING REPEATED DUE TO LOW RECOVERY OF EPA STD.

Blank Recovery = 0.208/0.2 = 104%

EPA Std. Rec. = 0.180/0.302 = 60%

SPIKE RECOVERY

SAMPLE #:
REPLICATE 1:
REPLICATE 2:
MEAN :
STD. DEV. :

SPIKE VALUE:
REPLICATE 1:
REPLICATE 2:
MEAN :
STD. DEV. :
% RECOVERY :

REPLICATE DATA:

SAMPLE # :
REPLICATE 1:
REPLICATE 2:
MEAN :
STD DEV. :

ANALYST: T. NEWTON
DATE : 5-30-85

VERIFIED BY:

TITLE: Cyanides BOOK NO: CV2 PAGE NO: 37

	SAMPLE #	CONC.
1	H6065	BMDL
2	H6070	0.0724
3	H6071	BMDL
4	H6072	BMDL
5	H5597	BMDL
6	H5598	BMDL
7	H5599	BMDL
8	H5600	BMDL
9	H5601	ND
10	H5602	ND
11	H7219	BMDL
12	H7220	ND
13	H7221	ND
14	H7222	ND
15	C8452	ND
16	H7523	BMDL
17	H7524	BMDL
18	H8542	ND
19	H8543	ND
20	H8544	BMDL
21	H8545	ND
22	H3972	ND
23	H3945	ND
24	H3953	ND
25	H4653	BMDL
26	H3392	1:100 24.6
27	H3393	Recon 1:10
28	H4797	BMDL
29	H4727	0.448

	SAMPLE #	CONC
30	H4728	0.0796
31	H4798	0.0337
32	H4799	BMDL
33	H6695	BMDL
34	H4733	Recon 1:10
35	H4800	BMDL
36	H7270	0.0445
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		

UNITS: MG/L Detection limit = 0.025 mg/l

COMMENTS:

< = less than 0.025 mg/l

ND ≤ 0

Blank Recovery = 0.180/0.2 x 100 = 90%

EPA Std. Rec. = 0.180/0 (NA)

0.240/0.302 = 79%

SPIKE RECOVERY

SAMPLE #:	H5600	H3945	H7270
REPLICATE 1:	0.0212 (BMDL)	ND	0.0445
REPLICATE 2:	0.0220 (BMDL)	ND	0.0459
MEAN :			
STD. DEV. :	0.0216 (BMDL)	ND	0.0452
SPIKE VALUE:	0.2	0.2	0.2
REPLICATE 1:	0.186	0.206	0.235
REPLICATE 2:			
MEAN :			
STD. DEV. :			
% RECOVERY :	93%	103%	118%

REPLICATE DATA:

SAMPLE # :			
REPLICATE 1:			
REPLICATE 2:			
MEAN :			
STD DEV. :			

ANALYST: H. Wagner

DATE : 5-31-85

VERIFIED BY: [signature]

Technical Report

for

VERTAC CHEMICAL CORPORATION

P.O. BOX 3

VICKSBURG, MS 39180

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTACVICK	W005	850610	0900	0024

Denis C. K. Lin, Ph.D.

Vice President
Research and Operations

This Technical Report is a product of the INSITE System and was generated using LODESTAR Data Management Software.

TABLE OF CONTENTS

Introduction

Table 1: Results and Quality Assurance Data

Table 2: Method Performance Data

Methodology

QA Protocol

Report Appendices

Appendix A 1 - Gas Chromatographic Spectral Data for Quantitated Compounds

Appendix A 2 - Chromatographic Spectral Data for Quantitated Compounds

Appendix A - Mass Spectral Data for Quantitated Compounds

Appendix C 1 - GC/MS Subsidiary Data - Blank Chromatograms

Appendix E - Chain of Custody Forms

Introduction

This report contains the analytical results on your water sample, 005 85/07/28. Per your request, we analyzed for as many Appendix VIII parameters as presently available methodology permits. USEPA instructs that SW846, July, 1982 "Test Methods for Evaluating Solid Waste" is to be followed in the analysis. However, SW846 does not provide sufficient information to analyze for all the parameters in Appendix VIII. We have performed the analysis based on the methodology described in SW846 and divided the parameters into the following categories:

1. Direct Aqueous Injection for water soluble compounds by GC/MS.
2. Purge and Trap GC/MS method for volatile compounds.
3. Extractable Acid/Base/Neutral/Pesticides compounds by GC/MS.
4. Pesticides by GC/EC.
5. Pesticides by GC/FPD.
6. Herbicides by GC/EC.
7. Polar and thermally unstable compounds by HPLC/UV.
8. Metallic and Organometallic compounds by ICAP, AA, and Cold Vapor AA. (Table 4)
9. Conventionals.

Furthermore, there are three categories of compounds that cannot be analyzed directly:

1. Compounds which are unstable in water. (Table A)
2. Not Otherwise Specified (N.O.S.) classes of compounds. (Tables B and D)
3. "Exotic" compounds that require special methods. (Table C)

We analyzed for selected representatives from the N.O.S. classes of compounds.

The Appendix VIII Parameters

As proposed on October 1, 1984, (Federal Register, Vol. 49, Page 38786) there are 13 parameters that are unstable in water; and 10 parameters that are exotic in nature and no satisfactory analytical methods are available. Furthermore, for those parameters that have metals in their compositions it is sufficient to analyze for the metal components only. There are 51 parameters that belong to this category. Using the same rationale 14 parameters can be tested as cyanides. Since one exotic, two unstable, and seven cyanide compounds are also classified as metals, the remaining Appendix VIII parameters that need to be addressed in an analytical scheme total 297.

The analytical scheme designed at ETC for the Appendix VIII parameters follows the rationale suggested by SW-846. Various parameters are categorized according to their chemical and physical characteristics and they are grouped together under analytical methods by which they can be quantified at optional method detection limits. We agree with EPA's approach to the unstable, exotic and metallic compounds. We focus our attention on the remaining 297 parameters.

There are 11 parameters among the 297 that ETC believes should also be classified as "unstable in water" (Table 1). EPA, while acknowledging that there are other unstable compounds, suggests that there is some likelihood they can be found in water. Since EPA insists these compounds should be analyzed, we have decided to incorporate them into our analytical scheme but not setting data acceptance critiera for them.

There are another 33 parameters (Table 2) that ETC believes should be classified as exotic compounds and require special or unusual methods for their analysis. Ten of these compounds are antineoplastic agents or other drugs. Five are uncommon compounds where pertinent information is unavailable. Three are alkaloid poisons or mycotoxins. Two are water soluble dyes. One is a very volatile compounds that can explode easily. The remaining 12 compounds, along with the rest of the compounds in this exotic group, possess unusual chemical and physical characteristics which in turn dictate that their analysis at a meaningful detection limit will require individual tailor-made analytical methodology. In most of these cases, EPA recommends to include them in a generalized analytical method without any data to support such recommendations. ETC is obliged to include these parameters into its most

recent Appendix VIII analytical scheme, but strongly urges US EPA to reexamine its position. Perhaps only under unusual circumstances analysis is required for the selected exotic parameters in Table 2.

Among the 297 parameters there are 28 that are listed "N.O.S." (not otherwise specified). These 28 parameters, along with aflatoxins, coal tars, cresote, cresols, phthalic acid esters, tetrachloroethane, and toluenediamine, constitute 35 complex mixtures or classes of compounds (Table B). Since some of these parameters represent thousands of individual compounds it is necessary to select representatives for the analysis of these parameters. In as much as possible, we have chosen "priority pollutants" and commonly available reference standard compounds to represent the 35 parameters (see Table B).

Throughout the development of the analytical scheme one of the major obstacles was the availability of reference standard compounds for the 375 parameters.

Results

There are 375 listings in Appendix VIII. To assist you in reviewing the results we have assigned a number to each parameter in the "Grand" Table. Also in the Grand Table we classified the parameters according to their analytical categories and indicated which result table the data and QA data are tabulated on. Depending on the analyses ordered, the quality assurance data may include results from the blank, spiked blank, spiked sample (i.e. matrix spike) and replicate sample as well as results from surrogate compound analyses.

In the results table, when a compound or element is present below published MDL it is reported as BMDL (Below Method Detection Limit). When a compound is not present at any detectable concentrations it is reported as ND (Not Detected). Matrix spike and replicate analyses, where included, were performed on samples randomly chosen within each quality assurance batch and are therefore not necessarily spikes and replicates of this report's sample. Surrogate compound recovery data and instrument calibration data are included in the Method Performance Data Tables.

The procedures used in the analysis of the sample are described in this report's methodology section. All analytical procedures within our laboratory are performed within a strictly enforced Quality Assurance Protocol. A description of this Protocol is included in the report. The report appendices include the chain of custody record for your sample and, where appropriate, the gas chromatograms and mass spectra.

TABLE 1

PARAMETERS WHICH SHOULD BE UNSTABLE IN WATER

40 Benzotrichloride
53 2-Butanone peroxide
75 1-Chloro-2,3-epoxypropane
79 Chloromethyl methyl ether
138 1,2,3,4-Diepoxybutane
148 Diisopropylfluorophosphate
161 Dimethyl sulfate
220 Maleic anhydride
295 Phorate
298 Phthalic Anhydride
331 Tetraethyldithiopyrophosphate

TABLE 2

"EXOTIC" COMPOUNDS THAT REQUIRE SPECIAL METHODS

10 Aflatoxins
15 Mitomycin C
25 Auramine
26 Azaserine
52 Brucine
62 Chlorambucil
86 Citrus red No. 2
98 Cyclophosphamide
99 Daunomycin
103 Diallate
147 3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol
173 2,4-Dithiobiuret
188 Formaldehyde
189 Formic acid
202 Hexaethyl tetraphosphate
241 N-Methyl-N'-nitrosoguanidine
262 4-Nitroquinoline-1-oxide
277 N-Nitrososarcosine
279 Diphosphoramide, octamethyl
281 Endothal
282 Paraldehyde
304 1,3-Propane sultone
306 Propylthiouracil
311 Saccharin and salts
320 Streptozotocin
322 Strychnine and salts
324 2,3,7,8-TCDD
334 Tetranitromethane
343 Thioacetamide
344 Thiosemicarbazide
367 Tri(1-azoidinyl)phosphine sulfide
369 Trypan blue
370 Uracil mustard

GRAND TABLE

	COMPOUND NAME	FRACTION	TABLE
1	Acetonitrile	P&T	QR27
2	Acetophenone	A/B/N	QR28
3	Warfarin	HPLC	QR31
4	2-Acetylaminofluorene	A/B/N	QR28
5	Acetyl chloride	UNSTABLE	TBL A
6	1-Acetyl-2-thiourea	HPLC	QR25
7	Acrolein	P&T	QR27
8	Acrylamide	HPLC	QR25
9	Acrylonitrile	P&T	QR27
10	Aflatoxins	CLASS	TBL B
10A	Aflatoxins, Total	A/B/N	QR28
11	Aldrin	PEST/HERB	QR24
12	Allyl alcohol	DIR/INJ	QR26
13	Aluminum phosphide	INORG,UNSTABLE	TBL D,A
13A	Aluminum	METALS	QR29
14	4-Aminobiphenyl	A/B/N	QR28
15	Mitomycin C	HPLC	QR31
16	5-(Aminomethyl)-3-isoxazolol	A/B/N	QR28
17	Amitrole	HPLC	QR25
18	Aniline	A/B/N	QR28
19	Antimony and Compounds, N.O.S.	CLASS, INORG	TBL B,D
19A	Antimony	METALS	QR29
20	Aramite	A/B/N	QR28
21	Arsenic and Compounds, N.O.S.	CLASS, INORG	TBL B,D
21A	Arsenic	METALS	QR29
22	Arsenic acid (Orthoarsenic acid)	INORG	TBL D
23	Arsenic pentoxide (Arsenic (V) oxide)	INORG	TBL D
24	Arsenic trioxide (Arsenic (III) oxide)	INORG	TBL D
25	Auramine	A/B/N	QR28
26	Azaserine	HPLC	QR31
27	Barium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
27A	Barium	METALS	QR29
28	Barium cyanide	INORG	TBL D
29	Benz[c]acridine	A/B/N	QR28
30	Benz[a]anthracene	A/B/N	QR28
31	Benzene	P&T	QR27
32	Benzenearsonic acid	INORG	TBL D
33	Dichloromethylbenzene	A/B/N	QR28
34	Benzenethiol	A/B/N	QR28
35	Benzidine	HPLC	QR31
36	Benzo[b]fluoranthene	A/B/N	QR28
37	Benzo[j]fluoranthene	A/B/N	QR28
38	Benzo[a]pyrene	A/B/N	QR28
39	p-Benzoquinone	A/B/N	QR28
40	Benzotrichloride	A/B/N	QR28
41	Benzyl chloride	A/B/N	QR28
42	Beryllium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
42A	Beryllium	METALS	QR29
43	bis(2-Chloroethoxy)methane	A/B/N	QR28
44	bis(2-Chloroethyl) ether	A/B/N	QR28
45	Chlornaphazine	A/B/N	QR28
46	bis(2-Chloroisopropyl)ether	A/B/N	QR28
47	bis(Chloromethyl)ether	UNSTABLE	TBL A
48	bis(2-ethylhexyl)phthalate	A/B/N	QR28
49	Bromoacetone	P&T	QR27
50	Methyl bromide	P&T	QR27
51	4-Bromophenyl phenyl ether	A/B/N	QR28
52	Brucine	A/B/N	QR28
53	2-Butanone peroxide	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
54	Butyl benzyl phthalate	A/B/N	QR28
55	2-sec-Butyl-4,6-dinitrophenol	A/B/N	QR28
56	Cadmium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
56A	Cadmium	METALS	QR29
57	Calcium chromate(Chromic acid,calcium salt)	INORG	TBL D
57A	Calcium	METALS	QR29
58	Calcium cyanide	INORG	TBL D
59	Carbon disulfide	P&T	QR27
60	Carbon oxyfluoride	UNSTABLE	TBL A
61	Chloral	DIR/INJ	QR26
62	Chlorambucil	HPLC	QR31
63	Chlordane	PEST/HERB	QR24
64	Chlorinated Benzenes, N.O.S.	CLASS	TBL B
64A	1,2,3-trichlorobenzene	A/B/N	QR28
64B	2,4,6-trichlorobenzene	A/B/N	QR28
64C	1,2,3,4-tetrachlorobenzene	A/B/N	QR28
64D	1,2,3,5-tetrachlorobenzene	A/B/N	QR28
65	Chlorinated Ethane, N.O.S.	CLASS	TBL B
65A	Chloroethane	P&T	QR27
66	Chlorinated Fluorocarbons, N.O.S.	CLASS	TBL B
66A	Freon TF	P&T	QR27
67	Chlorinated Naphthalene, N.O.S.	CLASS	TBL B
67A	1-chloronaphthalene	A/B/N	QR28
68	Chlorinated Phenol, N.O.S.	CLASS	TBL B
68A	2,3,5,6-tetrachlorophenol	A/B/N	QR28
68B	2,3,4,5-tetrachlorophenol	A/B/N	QR28
69	Chloroacetaldehyde	DIR/INJ	QR26
70	Chloroalkyl Ethers, N.O.S.	CLASS	TBL B
71	p-Chloroaniline	A/B/N	QR28
72	Chlorobenzene	P&T	QR27
73	Chlorobenzilate	PEST/HERB	QR24
74	p-Chloro-m-cresol	A/B/N	QR28
75	1-Chloro-2,3-epoxypropane	P&T	QR27
76	2-Chloroethyl vinyl ether	P&T	QR27
77	Chloroform	P&T	QR27
78	Methyl chloride	P&T	QR27
79	Chloromethyl methyl ether	P&T	QR27
80	2-Chloronaphthalene	A/B/N	QR28
81	2-Chlorophenol	A/B/N	QR28
82	1-(o-Chlorophenyl)thiourea	HPLC	QR25
83	3-Chloropropionitrile	DIR/INJ	QR26
84	Chromium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
84A	Chromium	METALS	QR29
85	Chrysene	A/B/N	QR28
86	Citrus red No. 2	HPLC	QR31
87	Coal Tars	CLASS	TBL B
87A	Acenapthene	A/B/N	QR28
87B	Acenaphthalene	A/B/N	QR28
87C	Anthracene	A/B/N	QR28
87D	Benzo(ghi)perylene	A/B/N	QR28
87E	Benzo(k)fluoranthene	A/B/N	QR28
87F	Fluorene	A/B/N	QR28
87G	Phenathrene	A/B/N	QR28
87H	Pyrene	A/B/N	QR28
88	Copper cyanide	INORG	TBL D
88A	Copper	METALS	QR29
89	Creosote	CLASS	TBL B
89A	2,Nitrophenol	A/B/N	QR28
90	Cresols	CLASS	TBL B
90A	o-Cresol	A/B/N	QR28
90B	m+p-Cresol	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
91	Crotonaldehyde	P&T	QR27
92	Cyanides (soluble salts and complexes)N.O.S	CLASS,INORG	TBL B,D
92A	Cyanide, Total	METALS	QR29
93	Cyanogen	DIR/INJ	QR26
94	Cyanogen bromide	INORG	TBL D
95	Cyanogen chloride	INORG	TBL D
96	Cycasin	EXOTIC, UNSTABLE	TBL C, A
97	2-Cyclohexyl-4,6-dinitrophenol	A/B/N	QR28
98	Cyclophosphamide	EXOTIC	TBL C
99	Daunomycin	HPLC	QR31
100	4,4'-DDD	PEST/HERB	QR24
101	4,4'-DDE	PEST/HERB	QR24
102	4,4'-DDT	PEST/HERB	QR24
103	Diallate	A/B/N	QR28
104	Dibenz[a,h]acridine	A/B/N	QR28
105	Dibenz[a,j]acridine	A/B/N	QR28
106	Dibenz[a,h]anthracene	A/B/N	QR28
107	7H-Dibenzo[c,g]carbazole	A/B/N	QR28
108	Dibenzo[a,e]pyrene	A/B/N	QR28
109	Dibenzo[a,h]pyrene	A/B/N	QR28
110	Dibenzo[a,i]pyrene	A/B/N	QR28
111	1,2-dibromo-3-chloropropane	P&T	QR27
112	1,2-Dibromoethane	P&T	QR27
113	Dibromomethane	P&T	QR27
114	Di-n-butyl phthalate	A/B/N	QR28
115	1,2-Dichlorobenzene	A/B/N	QR28
116	1,3-Dichlorobenzene	A/B/N	QR28
117	1,4-Dichlorobenzene	A/B/N	QR28
118	Dichlorobenzene, N.O.S.	CLASS	TBL B
119	3,3'-Dichlorobenzidine	HPLC	QR31
120	1,4-Dichloro-2-butene	P&T	QR27
121	Dichlorodifluoromethane	P&T	QR27
122	1,1-Dichloroethane	P&T	QR27
123	1,2-Dichloroethane	P&T	QR27
124	1,2-Trans-dichloroethylene	P&T	QR27
125	Dichloroethylene, N.O.S.	CLASS	TBL B
126	1,1-Dichloroethylene	P&T	QR27
127	Methylene chloride	P&T	QR27
128	2,4-Dichlorophenol	A/B/N	QR28
129	2,6-Dichlorophenol	A/B/N	QR28
130	2,4-D	PEST/HERB	QR24
131	Dichlorophenylarsine	A/B/N	QR28
132	Dichloropropane, N.O.S.	CLASS	TBL B
132A	1,3-Dichloropropane	P&T	QR27
133	1,2-Dichloropropane	P&T	QR27
134	Dichloropropanol, N.O.S.	CLASS	TBL B
134A	Dichloropropanol	DIR/INJ	QR26
135	2,3-Dichloropropene	P&T	QR27
136A	cis-1,3-Dichloropropene	P&T	QR27
136B	trans-1,3-Dichloropropene	P&T	QR27
137	Dieldrin	PEST/HERB	QR24
138	1,2,3,4-Diepoxybutane	P&T	QR27
139	Diethylarsine	P&T	QR27
140	N,N,-Diethylhydrazine	P&T	QR27
141	Carbophenothion	PEST/HERB	QR24
142	0,0-Diethylphosphoric acid, 0-p-nitrophenyl ester	A/B/N	QR28
143	Diethyl phthalate	A/B/N	QR28
144	Thionazin	PEST/HERB	QR24
145	Diethylstilbesterol	HPLC	QR25
146	Dihydrosafrole	A/B/N	QR28
147	3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol	HPLC	QR31

	COMPOUND NAME	FRACTION	TABLE
148	Diisopropylfluorophosphate	A/B/N	QR28
149	Dimethoate	PEST/HERB	QR24
150	3,3'-Dimethoxybenzidine	HPLC	QR31
151	p-Dimethylaminoazobenzene	A/B/N	QR28
152	7,12-Dimethylbenz[a]anthracene	A/B/N	QR28
153	3,3'-Dimethylbenzidine	HPLC	QR31
154	Dimethyl carbamoylchloride	UNSTABLE	TBL A
155	1,1-Dimethylhydrazine	DIR/INJ	QR26
156	1,2-Dimethylhydrazine	DIR/INJ	QR26
157	Thiofanox	A/B/N	QR28
158	alpha-alpha-Dimethylphenethylamine	A/B/N	QR28
159	2,4-Dimethylphenol	A/B/N	QR28
160	Dimethyl phthalate	A/B/N	QR28
161	Dimethyl sulfate	A/B/N	QR28
162	Dinitrobenzene, N.O.S.	CLASS	TBL B
162A	m-Dinitrobenzene	A/B/N	QR28
163	4,6-Dinitro-o-cresol	A/B/N	QR28
164	2,4-Dinitrophenol	A/B/N	QR28
165	2,4-Dinitrotoluene	A/B/N	QR28
166	2,6-Dinitrotoluene	A/B/N	QR28
167	Di-n-octyl phthalate	A/B/N	QR28
168	1,4-Dioxane	DIR/INJ	QR26
169	Diphenylamine	A/B/N	QR28
170	1,2-Diphenylhydrazine	A/B/N	QR28
171	N-Nitrosodi-n-propylamine	A/B/N	QR28
172	Disulfoton	PEST/HERB	QR24
173	2,4-Dithiobiuret	A/B/N	QR28
174A	Endosulfan I	PEST/HERB	QR24
174B	Endosulfan II	PEST/HERB	QR24
175	Endrin	PEST/HERB	QR24
176	Ethyl carbamate	HPLC	QR25
177	Ethyl cyanide	DIR/INJ	QR26
178	Ethylenebisdithiocarbamic acid	EXOTIC	TBL C
179	Ethyleneimine	HPLC	QR25
180	Ethylene oxide	DIR/INJ	QR26
181	Ethylenethiourea	HPLC	QR25
182	Ethyl methacrylate	P&T	QR27
183	Ethyl methanesulfonate	A/B/N	QR28
184	Fluoranthene	A/B/N	QR28
185	Fluorine	UNSTABLE	TBL A
186	2-Fluoroacetamide	UNSTABLE, EXOTIC	TBL A, C
187	Fluoroacetic acid	DIR/INJ	QR26
188	Formaldehyde	P&T	QR27
189	Formic acid	A/B/N	QR28
190	Glycidylaldehyde	DIR/INJ	QR26
191	Halomethane, N.O.S.	CLASS	TBL B
191A	Chlorodibromomethane	P&T	QR27
191B	Dichlorobromomethane	P&T	QR27
192	Heptachlor	PEST/HERB	QR24
193	Heptachlor epoxide	PEST/HERB	QR24
194	Hexachlorobenzene	A/B/N	QR28
195	Hexachlorobutadiene	A/B/N	QR28
196A	Alpha-BHC	PEST/HERB	QR24
196B	Beta-BHC	PEST/HERB	QR24
196C	Gamma-BHC	PEST/HERB	QR24
196D	Delta-BHC	PEST/HERB	QR24
197	Hexachlorocyclopentadiene	A/B/N	QR28
198	Hexachloroethane	A/B/N	QR28
199	Hexachlorohexahydro-endo, endo-dimethanonaphthalene	A/B/N	QR28
200	Hexachlorophene	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
201	Hexachloropropene	A/B/N	QR28
202	Hexaethyltetraphosphate	A/B/N	QR28
203	Hydrazine	DIR/INJ	QR26
204	Hydrogen cyanide	SEE 92	TBL B
205	Hydrofluoric acid	UNSTABLE	TBL A
206	Hydrogen sulfide	P&T	QR27
207	Hydroxydimethylarsine oxide	INORG	TBL D
208	Indeno(1,2,3-cd)pyrene	A/B/N	QR28
209	Iodomethane	P&T	QR27
210	Iron dextran	UNSTABLE, EXOTIC	TBL A,C
210A	Iron	METAL	QR29
211	Methyl isocyanate	UNSTABLE	TBL A
212	Isobutyl alcohol	DIR/INJ	QR26
213	Isosafrole	A/B/N	QR28
214	Kepone	PEST/HERB	QR24
215	Lasiocarpine	UNSTABLE, EXOTIC	TBL A,C
216	Lead and Compounds, N.O.S.	CLASS, INORG	TBL B,D
216A	Lead	METALS	QR29
217	Lead acetate (Acetic acid, lead salt)	INORG	TBL D
218	Lead phosphate (Phosphoric acid, lead salt)	INORG	TBL D
219	Lead subacetate	INORG	TBL D
220	Maleic anhydride	A/B/N	QR28
221	Maleic hydrazide	HPLC	QR25
222	Malononitrile	HPLC	QR25
223	Melphalan	A/B/N	QR28
224	Mercury fulminate	INORG	TBL D
225	Mercury and Compounds, N.O.S.	CLASS, INORG	TBL B,D
225A	Mercury	METALS	QR29
226	Methacrylonitrile	DIR/INJ	QR26
227	Methanethiol	DIR/INJ	QR26
228	Methapyrilene	A/B/N	QR28
229	Methomyl	HPLC	QR25
230	Methoxychlor	PEST/HERB	QR24
231	2-Methylaziridine	HPLC	QR25
232	3-Methylcholanthrene	A/B/N	QR28
233	Methyl Chlorocarbonate	UNSTABLE	TBL A
234	4,4'-Methylenebis(2-chloroaniline)	A/B/N	QR28
235	Methyl ethyl ketone	P&T	QR27
236	Methyl hydrazine	DIR/INJ	QR26
237	2-Methyllactonitrile	DIR/INJ	QR26
238	Methyl methacrylate	P&T	QR27
239	Methyl methanesulfonate	A/B/N	QR28
240	Aldicarb	A/B/N	QR28
241	N-Methyl-N'-nitrosoguanidine	A/B/N	QR28
242	Methyl parathion	PEST/HERB	QR24
243	Methylthiouracil	A/B/N	QR28
244	Mustard gas	UNSTABLE, EXOTIC	TBL A,C
245	Naphthalene	A/B/N	QR28
246	1,4-Naphthoquinone	A/B/N	QR28
247	1-Naphthylamine	A/B/N	QR28
248	2-Naphthylamine	A/B/N	QR28
249	1-Naphthyl-2-thiourea	HPLC	QR31
250	Nickel and Compounds, N.O.S.	CLASS, INORG	TBL B,D
250A	Nickel	METALS	QR29
251	Nickel carbonyl (Nickel tetracarbonyl)	INORG	TBL D

	COMPOUND NAME	FRACTION	TABLE
252	Nickel cyanide (Nickel (II)cyanide)	INORG	TBL D
253	Nicotinic acid	HPLC	QR25
254	Nitric oxide	UNSTABLE, EXOTIC	TBL A,C
255	p-Nitroaniline	A/B/N	QR28
256	Nitrobenzene	A/B/N	QR28
257	Nitrogen dioxide	UNSTABLE	TBL A
258	Nitrogen mustard and hydrochloride salt	EXOTIC, UNSTABLE	TBL C,A
259	Nitrogen mustard N-Oxide and hydrochloride salt	EXOTIC, UNSTABLE	TBL C,A
260	Nitroglycerin	HPLC	QR25
261	4-Nitrophenol	A/B/N	QR28
262	4-Nitroquinoline-1-oxide	A/B/N	QR28
263	Nitrosamines, N.O.S.	CLASS	TBL B
263A	N-Nitrosodiphenylamine	A/B/N	QR28
264	N-Nitrosodi-n-butylamine	A/B/N	QR28
265	N-Nitrosodiethanolamine	A/B/N	QR28
266	N-Nitrosodiethylamine	A/B/N	QR28
267	N-Nitrosodimethylamine	A/B/N	QR28
268	N-Nitroso-N-ethylurea	HPLC	QR25
269	N-Nitrosomethylethylamine	A/B/N	QR28
270	N-Nitroso-N-methylurea	HPLC	QR25
271	N-Nitroso-N-methylurethane	A/B/N	QR28
272	N-Nitrosomethylvinylamine	A/B/N	QR28
273	N-Nitrosomorpholine	A/B/N	QR28
274	N-Nitrosonornicotine	A/B/N	QR28
275	N-Nitrosopiperidine	A/B/N	QR28
276	N-Nitrosopyrrolidine	DIR/INJ	QR26
277	N-Nitrososarcosine	A/B/N	QR28
278	5-Nitro-o-toluidine	A/B/N	QR28
279	Octamethylpyrophosphoramide	A/B/N	QR28
280	Osmium tetroxide (Osmium (VIII) oxide)	INORG	TBL D
280A	Osmium	METALS	QR29
281	Endothal	A/B/N	QR28
282	Paraldehyde	P&T	QR27
283	Parathion	PEST/HERB	QR24
284	Pentachlorobenzene	A/B/N	QR28
285	Pentachloroethane	P&T	QR27
286	Pentachloronitrobenzene	A/B/N	QR28
287	Pentachlorophenol	A/B/N	QR28
288	Phenacetin	A/B/N	QR28
289	Phenol	A/B/N	QR28
290A	m-phenylenediamine	HPLC	QR31
290B	o-phenylenediamine	HPLC	QR31
290C	p-phenylenediamine	HPLC	QR31
291	Phenylmercury acetate	INORG	TBL D
292	N-Phenylthiourea	HPLC	QR25
293	Phosgene	UNSTABLE	TBL A
294	Phosphine	EXOTIC, UNSTABLE	TBL C, A
295	Phorate	PEST/HERB	QR24
296	Famphur	PEST/HERB	QR24
297	Phthalic acid esters	CLASS	TBL B
298	Phthalic anhydride	A/B/N	QR28
299	2-Picoline	A/B/N	QR28
300	Polychlorinated Biphenyl, N.O.S.	CLASS	TBL B
300A	Aroclor 1242	PCB/GC/EC	QR30
300B	Aroclor 1254	PCB/GC/EC	QR30
300C	Aroclor 1260	PCB/GC/EC	QR30
300D	Aroclor 1248	PCB/GC/EC	QR30
300E	Aroclor 1232	PCB/GC/EC	QR30
300F	Aroclor 1221	PCB/GC/EC	QR30
300G	Aroclor 1016	PCB/GC/EC	QR30
301	Potassium cyanide	INORG	TBL D
301A	Potassium	METAL	QR29

	COMPOUND NAME	FRACTION	TABLE
302	Potassium silver cyanide	INORG	TBL D
303	Pronamide	A/B/N	QR28
304	1,3-Propane sultone	A/B/N	QR28
305	n-Propylamine	DIR/INJ	QR26
306	Propylthiouracil	A/B/N	QR28
307	2-Propyn-1-ol	DIR/INJ	QR26
308	Pyridine	DIR/INJ	QR26
309	Reserpine	HPLC	QR25
310	Resorcinol	A/B/N	QR28
311	Saccharin and salts	A/B/N	QR28
312	Safrole	A/B/N	QR28
313	Selenious acid (Selenium dioxide)	INORG	TBL D
314	Selenium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
314A	Selenium	METALS	QR29
315	Selenium sulfide (Sulfur selenide)	INORG	TBL D
316	Selenourea	INORG	TBL D
317	Silver and Compounds, N.O.S.	CLASS, INORG	TBL B,D
317A	Silver	METALS	QR29
318	Silver cyanide	INORG	TBL D
319	Sodium cyanide	INORG	TBL D
319A	Sodium	METALS	QR29
320	Streptozotocin	HPLC	QR31
321	Strontium sulfide	INORG	TBL D
321A	Strontium	METALS	QR29
322	Strychnine and salts	EXOTIC	TBL C
323	1,2,4,5-Tetrachlorobenzene	A/B/N	QR28
324	2,3,7,8-TCDD	EXOTIC	TBL C
325	Tetrachloroethane	CLASS	TBL B
326	1,1,1,2-Tetrachloroethane	P&T	QR27
327	1,1,2,2-Tetrachloroethane	P&T	QR27
328	Tetrachloroethylene	P&T	QR27
329	Carbon tetrachloride	P&T	QR27
330	2,3,4,6-Tetrachlorophenol	A/B/N	QR28
331	Tetraethyldithiopyrophosphate	A/B/N	QR28
332	Tetraethyl lead	INORG	TBL D
333	Tetraethylpyrophosphate	PEST/HERB	QR24
334	Tetranitromethane	P&T	QR27
335	Thallium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
335A	Thallium	METALS	QR29
336	Thallic oxide (Thallium (III) oxide)	INORG	TBL D
337	Thallium (I) acetate (Acetic acid, thallium (I) salt)	INORG	TBL D
338	Thallium (I) carbonate	INORG	TBL D
339	Thallium (I) chloride	INORG	TBL D
340	Thallium (I) nitrate	INORG	TBL D
341	Thallium selenite	INORG	TBL D
342	Thallium (I) sulfate	INORG	TBL D
343	Thioacetamide	HPLC	QR31
344	Thiosemicarbazide	HPLC	QR31
345	Thiourea	HPLC	QR25
346	Thiuram	A/B/N	QR28
347	Toluene	P&T	QR27
348	Toluenediamine	CLASS	TBL B
348A	Toluene-2,4-Diamine	HPLC	QR31
349	O-Toluidine hydrochloride	A/B/N	QR28
350	Toluene diisocyanate	UNSTABLE	TBL A
351	Toxaphene	PEST/HERB	QR24

	COMPOUND NAME	FRACTION	TABLE
352	Bromoform	P&T	QR27
353	1,2,4-Trichlorobenzene	A/B/N	QR28
354	1,1,1-Trichloroethane	P&T	QR27
355	1,1,2-Trichloroethane	P&T	QR27
356	Trichloroethylene	P&T	QR27
357	Trichloromethanethiol	P&T	QR27
358	Trichlorofluoromethane	P&T	QR27
359	2,4,5-Trichlorophenol	A/B/N	QR28
360	2,4,6-Trichlorophenol	A/B/N	QR28
361	2,4,5-T	PEST/HERB	QR24
362	2,4,5-TP (Silvex)	PEST/HERB	QR24
363	Trichloropropane, N.O.S.	CLASS	TBL B
363A	1,1,2-trichloropropane	P&T	QR27
363B	1,2,2-trichloropropane	P&T	QR27
364	1,2,3-Trichloropropane	P&T	QR27
365	0,0,0-Triethyl phosphorothioate	A/B/N	QR28
366	sym-Trinitrobenzene	A/B/N	QR28
367	Tris (1-Azridinyl) phosphine sulfide	A/B/N	QR28
368	Tris(2,3-dibromopropyl) phosphate	A/B/N	QR28
369	Trypan blue	HPLC	QR31
370	Uracil mustard	A/B/N	QR28
371	Vanadic acid, ammonium salt	INORG	TBL D
372	Vanadium pentoxide (Vandium (V) oxide)	INORG	TBL D
372A	Vanadium	METALS	QR29
373	Vinyl chloride	P&T	QR27
374	Zinc cyanide	INORG	TBL D
374A	Zinc	METALS	QR29
375	Zinc phosphide	UNSTABLE	TBL A

TABLE A
PARAMETERS WHICH ARE UNSTABLE IN WATER

5 Acetyl chloride
13 Aluminum phosphide
47 bis (Chloromethyl) ether
60 Carbon oxyfluoride
96 Cycasin
154 Dimethyl carbamoylchloride
185 Fluorine
186 2-Fluoroacetamide
205 Hydrofluoric acid
210 Iron dextran
211 Methyl isocyanate
215 Lasiocarpine
233 Methyl chlorocarbonate
244 Mustard gas
254 Nitric oxide
257 Nitrogen dioxide
258 Nitrogen mustard and hydrochloride salt
259 Nitrogen mustard N-Oxide and hydrochloride salt
293 Phosgene
294 Phosphine
350 Toluene diisocyanate
375 Zinc phosphide

TABLE B
COMPOUND CLASSES

CLASS	REPRESENTATIVE		TABLE
19 Antimony and Compounds, N.O.S.	19A	Antimony	QR29
21 Arsenic and Compounds, N.O.S.	21A	Arsenic	QR29
27 Barium and Compounds, N.O.S.	27A	Barium	QR29
42 Beryllium and Compounds, N.O.S.	42A	Beryllium	QR29
56 Cadmium and Compounds, N.O.S.	56A	Cadmium	QR29
84 Chromium and Compounds, N.O.S.	84A	Chromium	QR29
216 Lead and Compounds, N.O.S.	216A	Lead	QR29
225 Mercury and Compounds, N.O.S.	225A	Mercury	QR29
250 Nickel and Compounds, N.O.S.	250A	Nickel	QR29
314 Selenium and Compounds, N.O.S.	314A	Selenium	QR29
317 Silver and Compounds, N.O.S.	317A	Silver	QR29
335 Thallium and Compounds, N.O.S.	335A	Thallium	QR29
10 Aflatoxins	10A	Aflatoxins, Total	QR28
64 Chlorinated Benzenes, N.O.S.	64A	1,2,3-trichlorobenzene	QR28
	64B	2,4,6-trichlorobenzene	QR28
	64C	1,2,3,4-tetrachlorobenzene	QR28
	64D	1,2,3,5-tetrachlorobenzene	QR28
	115	1,2-Dichlorobenzene	QR28
	116	1,3-Dichlorobenzene	QR28
	117	1,4-Dichlorobenzene	QR28
	353	1,2,4-Trichlorobenzene	QR28
65 Chlorinated Ethane, N.O.S.	65A	Chloroethane	QR27
	354	1,1,1-Trichloroethane	QR27
	355	1,1,2-Trichloroethane	QR27
66 Chlorinated Fluorocarbons, N.O.S.	66A	Freon TF	QR27
67 Chlorinated Naphthalene, N.O.S.	67A	1-chloronaphthalene	QR28
68 Chlorinated Phenol, N.O.S.	68A	2,3,5,6-tetrachlorophenol	QR28
	68B	2,3,4,5-tetrachlorophenol	QR28
	128	2,4-Dichlorophenol	QR28
	129	2,6-Dichlorophenol	QR28
	359	2,4,5-Trichlorophenol	QR28
	360	2,4,6-Trichlorophenol	QR28
70 Chloroalkyl Ethers, N.O.S.	44	bis(2-chloroethyl) ether	QR28
	46	bis(2-chloroisopropyl)ether	QR28
	76	2-Chloroethyl vinyl ether	QR27
87 Coal Tars	31	Benzene	QR27
	87A	Acenapthene	QR28
	87B	Acenaphthalene	QR28
	87C	Anthracene	QR28
	87D	3,4-Benzofluoranthene	QR28
	87E	Benzo(ghi)perylene	QR28
	87F	Benzo(k)fluoranthene	QR28
	87G	Fluorene	QR28
	87H	Phenathrene	QR28
	87I	Pyrene	QR28
	90	Cresols	SEE BELOW
	245	Napthalene	QR28
	289	Phenol	QR28
	347	Toluene	QR27

TABLE B (cont'd)
COMPOUND CLASSES

CLASS	REPRESENTATIVE		TABLE
89 Creosote	74	p-Chloro-m-cresol	QR28
	89A	2,Nitrophenol	QR28
	90A	o-Cresol	QR28
	90B	m+p Cresol	QR28
	163	4,6-Dinitro-o-cresol	QR28
	261	4-Nitrophenol	QR28
90 Cresols	90A	o-Cresol	QR28
	90B	m+p Cresol	QR28
92 Cyanides, N.O.S.	92A	Cyanide, Total	QR29
118 Dichlorobenzene, N.O.S.	115	1,2-Dichlorobenzene	QR28
	116	1,3-Dichlorobenzene	QR28
	117	1,4-Dichlorobenzene	QR28
125 Dichloroethylene, N.O.S.	126	1,1-Dichloroethylene	QR27
132 Dichloropropane, N.O.S.	132A	1,3-Dichloropropane	QR27
	133	1,2-Dichloropropane	QR27
134 Dichloropropanol, N.O.S.	134A	Dichloropropanol	QR26
162 Dinitrobenzene, N.O.S.	162A	m-Dinitrobenzene	QR28
191 Halomethane, N.O.S.	191A	Chlorodibromomethane	QR27
	191B	Dichlorobromoethane	QR27
263 Nitrosamines, N.O.S.	263A	N-Nitrosodiphenylamine	QR28
	264	N-Nitrosodi-n-butylamine	QR28
	265	N-Nitrosodiethanolamine	QR28
	266	N-Nitrosodiethylamine	QR28
	267	N-Nitrosodimethylamine	QR28
	268	N-Nitroso-N-ethylurea	QR25
	269	N-Nitrosomethylethylamine	QR28
	270	N-Nitroso-N-methylurea	QR25
	271	N-Nitroso-N-methylurethane	QR28
	272	N-Nitrosomethylvinylamine	QR28
	273	N-Nitrosomorpholine	QR28
	274	N-Nitrosonornicotine	QR28
	275	N-Nitrosopiperidine	QR28
	276	N-Nitrosopyrrolidine	QR28
	277	N-Nitrososarcosine	QR28
297 Phthalic acid esters	48	bis(2-ethylhexyl)phthalate	QR28
	54	Butyl benzyl phthalate	QR28
	114	Di-N-Butyl phthalate	QR28
	143	Diethyl phthalate	QR28
	160	Dimethyl phthalate	QR28
	167	Di-n-octyl phthalate	QR28
300 Polychlorinated Biphenyl, N.O.S.	300A	Aroclor 1242	QR30
	300B	Aroclor 1254	QR30
	300C	Aroclor 1260	QR30
	300D	Aroclor 1248	QR30
	300E	Aroclor 1232	QR30
	300F	Aroclor 1221	QR30
	300G	Aroclor 1016	QR30
325 Tetrachloroethane	326	1,1,1,2-Tetrachloroethane	QR27
	327	1,1,2,2-Tetrachloroethane	QR27
348 Toluenediamine	348A	Toluene-2,4-Diamine	QR25
363 Trichloropropane, N.O.S.	363A	1,1,2-trichloropropane	QR27
	363B	1,2,2-Trichloropropane	QR27
	364	1,2,3-Trichloropropane	QR27

TABLE C
"EXOTIC" COMPOUNDS THAT REQUIRE SPECIAL METHODS

96 Cycasin
98 Cyclophosphamide *
178 Ethylenebisdithiocarbamic acid
186 2-Fluoroacetamide
210 Iron dextran
215 Lasiocarpine
244 Mustard gas
254 Nitric oxide
258 Nitrogen mustard and hydrochloride salt
259 Nitrogen mustard N-Oxide and hydrochloride salt
294 Phosphine
322 Strychnine and salts *
324 2,3,7,8-TCDD **

* No method specified by EPA.
** Method 8280, extra charge required.

TABLE D
INORGANICS

	REPRESENTATIVE	TABLE
13 Aluminum phosphide	13A Aluminum	QR29
19 Antimony and Compounds, N.O.S.	19A Antimony	QR29
21 Arsenic and compounds, N.O.S.	21A Arsenic	QR29
22 Arsenic acid (Orthoarsenic acid)	21A Arsenic	QR29
23 Arsenic pentoxide (Arsenci (V) oxide)	21A Arsenic	QR29
24 Arsenic trioxide (Arsenic (III) oxide)	21A Arsenic	QR29
27 Barium and compounds, N.O.S	27A Barium	QR29
28 Barium cyanide	27A Barium,	QR29
	92A Cyanide, Total	
32 Benzenearsonic acid	21A Arsenic	QR29
42 Beryllium and compounds, N.O.S.	42A Beryllium	QR29
56 Cadmium and compounds, N.O.S.	56A Cadmium	QR29
57 Calcium chromate (Chromic acid, calcium salt)	57A Calcium	QR29
	84A Chromium	QR29
58 Calcium cyanide	57A Calcium,	QR29
	92A Gyanide, Total	
84 Chromium and compounds, N.O.S	84A Chromium	QR29
88 Copper cyanide	88A Copper,	QR29
	92A Cyanide, Total	
92 Cyanides (soluble salts and complexes)	92A Cyanide, Total	QR29
94 Cyanogen bromide	92A Cyanide, Total	QR29
95 Cyanogen chloride	92A Cyanide, Total	QR29
207 Hyroxydimethylarsine oxide	21A Arsenic	QR29
216 Lead and compounds, N.O.S.	216A Lead	QR29
217 Lead acetate (Acetic acid, lead salt)	216A Lead	QR29
218 Lead phosphate (Phosphoric acid, lead salt)	216A Lead	QR29
219 Lead subacetate	216A Lead	QR29
224 Mercury fulminate (Fulminic acid, mercury salt)	225A Mercury	QR29
225 Mercury and compounds, N.O.S.	225A Mercury	QR29
250 Nickel and compounds, N.O.S.	250A Nickel	QR29
251 Nickel carbonyl (Nickel tetracarbonyl)	250A Nickel	QR29
252 Nickel cyanide (Nickel (II)cyanide)	250A Nickel	QR29
280 Osmium tetroxide (Osmium (VIII) oxide)	280A Osmium	QR29
291 Phenylmercury acetate	225A Mercury	QR29
301 Potassium cyanide	301A Potassium	QR29
	92A Cyanide, Total	QR29
302 Potassium silver cyanide	301A Potassium	QR29
	317A Silver	QR29
	92A Cyanide, Total	QR29
313 Selenious acid (Selenium dioxide)	314A Selenium	QR29
314 Selenium and compounds, N.O.S.	314A Selenium	QR29
315 Selenium sulfide (Sulfur selenide)	314A Selenium	QR29
316 Selenourea	314A Selenium	QR29
317 Silver and compounds, N.O.S.	317A Silver	QR29
318 Silver cyanide	317A Silver,	QR29
	92A Cyanide, Total	
319 Sodium cyanide	319A Sodium,	QR29
	92A Cyanide, Toatl	
321 Strontium sulfide	321A Strontium	QR29
332 Tetraethyl lead	216A Lead	QR29
335 Thallium and compounds, N.O.S.	335A Thallium	QR29
336 Thallic oxide (Thallium (III) oxide)	335A Thallium	QR29
337 Thallium (I) acetate (Acetic acid, thallium (I) salt)	335A Thallium	QR29
338 Thallium (I) carbonate	335A Thallium	QR29
339 Thallium (I) chloride	335A Thallium	QR29
340 Thallium (I) nitrate	335A Thallium	QR29
341 Thallium selenite	335A Thallium	QR29
342 Thallium (I) sulfate	335A Thallium	QR29
371 Vanadic acid, ammonium salt	371A Vanadium	QR29
372 Vanadium pentoxide (Vandium (V) oxide)	371A Vanadium	QR29
374 Zinc cyanide	374A Zinc	QR29

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 6, 1985

EPA 9-13-85

TABLE 1: QUANTITATIVE RESULTS and QUALITY AS

RCRA Appendix 8 - Dir/Inj Vol Compounds - GC/MS Ana

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W005	850610	0900	24

	Compound	Results			QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. mg/l	MDL mg/l	a	First mg/l	Second mg/l	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen. Added mg/l	% Recov
12	Allyl alcohol	ND	100		ND	ND	ND	0	-	-	0	-
61	Chloral	ND		c	ND	ND	ND	0	-	-	0	-
69	Chloroacetaldehyde	IND		b	IND	IND	IND	0	-	-	0	-
83	3-Chloropropionitrile	IND		b	IND	IND	IND	0	-	-	0	-
93	Cyanogen	ND		c	ND	ND	ND	0	-	-	0	-
134A	Dichloropropanol	ND	100		ND	ND	ND	0	-	-	0	-
155	1,1-Dimethylhydrazine	IND		b	IND	IND	IND	0	-	-	0	-
156	1,2-Dimethylhydrazine	ND		c	ND	ND	ND	0	-	-	0	-
168	1,4-Dioxane	ND	200		ND	ND	ND	0	-	-	0	-
177	Ethyl cyanide	ND	100		ND	ND	ND	0	-	-	0	-
180	Ethylene oxide	ND		c	ND	ND	ND	0	-	-	0	-
187	Fluoroacetic acid	ND		c	ND	ND	ND	0	-	-	0	-
203	Hydrazine	IND		b	IND	IND	IND	0	-	-	0	-
212	Isobutyl Alcohol	ND	100		ND	ND	ND	0	-	-	0	-
226	Methacrylonitrile	ND	100		ND	ND	ND	0	-	-	0	-
227	Methanethiol	IND		b	IND	IND	IND	0	-	-	0	-
236	Methyl hydrazine	IND		b	IND	IND	IND	0	-	-	0	-
237	2-Methyllactonitrile	IND		b	IND	IND	IND	0	-	-	0	-
276	N-Nitrosopyrrolidine	21.2	100		ND	ND	ND	0	-	-	0	-
305	n-Propylamine	IND		b	IND	IND	IND	0	-	-	0	-
307	2-Propyn-1-ol	ND	100		ND	ND	ND	0	-	-	0	-
308	Pyridine	ND		c	ND	ND	ND	0	-	-	0	-

A ETC established Method Detection Limit for this particular sample.

B Standard QA procedures not applicable for samples analyzed by direct injection method.

C Standard not available. Compound qualitative searched for.

D IND=Indeterminate; Standard and/or spikes could not be detected at current method levels.

*Standards and reference spectra are not available for: Glycidylaldehyde.

ENVIRONMENTAL TESTING and CERTIFICATION

JUL 25, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 – Purge & Trap Compounds – GC/MS Analysis Data (QR27)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W005	850610	0900	24

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1 Acetonitrile	IND		IND	IND	IND	136	0	IND	136	0
7 Acrolein	ND	100	ND	ND	ND	800	110	ND	800	101
9 Acrylonitrile	ND	100	ND	ND	ND	80	101	ND	80	89
31 Benzene	ND	4.4	24	25	ND	18	115	ND	18	102
49 Bromoacetone	-	-	-	-	-	-	-	-	-	-
50 Methyl bromide	ND	10	ND	ND	ND	18	108	ND	18	108
59 Carbon disulfide	ND	10	ND	ND	ND	136	100	ND	136	87
65A Chloroethane	ND	10	ND	ND	ND	18	110	ND	18	101
66A Freon TF	ND	10	ND	ND	ND	136	107	ND	136	85
72 Chlorobenzene	ND	6.0	472	461	ND	18	109	ND	18	107
75 1-Chloro-2,3-epoxypropane	-	-	-	-	-	-	-	-	-	-
76 2-Chloroethylvinyl ether	ND	1.0	ND	ND	ND	18	134	ND	18	35
77 Chloroform	ND	1.6	28	28	ND	18	103	265	18	66
78 Methyl chloride	ND	10	ND	ND	ND	18	112	ND	18	97
79 Chloromethyl methyl ether	-	-	-	-	-	-	-	-	-	-
91 Crotonaldehyde	IND		IND	IND	IND	136	0	IND	136	0
111 1,2-dibromo-3-chloropropane	ND	10	ND	ND	ND	50	99	ND	50	85
112 1,2-Dibromoethane	ND	10	ND	ND	ND	50	103	ND	50	85
113 Dibromomethane	ND	10	ND	ND	ND	50	104	ND	50	102
120 1,4-Dichloro-2-butene	ND	10	ND	ND	ND	50	107	ND	50	103
121 Dichlorodifluoromethane	ND	10	ND	ND	ND	18	118	ND	18	92
122 1,1-Dichloroethane	ND	4.7	ND	ND	ND	18	103	ND	18	93
123 1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	103	ND	18	96
124 1,2-Trans-dichloroethylene	ND	10	ND	ND	ND	18	102	ND	18	89
126 1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	103	ND	18	86
127 Methylene chloride	15	2.8	ND	ND	BMDL	18	128	ND	18	52
132A 1,3-Dichloropropane	ND	10	ND	ND	ND	50	105	ND	50	104
133 1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	111	ND	18	97
135 2,3-Dichloropropene	ND	10	ND	ND	ND	50	102	ND	50	98
136A cis-1,3-Dichloropropene	ND	5.0	ND	ND	ND	18	104	ND	18	92
136B trans-1,3-Dichloropropene	ND	10.0	ND	ND	ND	18	102	ND	18	98
138 1,2,3,4-Diepoxybutene	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" =Indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 25, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Purge & Trap Compounds - GC/MS Analysis Data (QR27)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTACVICK	W005	850610	0900	24

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
139 Diethylarsine	-	-	-	-	-	-	-	-	-	-
140 N,N-Diethylhydrazine	-	-	-	-	-	-	-	-	-	-
182 Ethyl methacrylate	ND	10	ND	ND	ND	50	104	ND	50	103
188 Formaldehyde	-	-	-	-	-	-	-	-	-	-
191A Chlorodibromomethane	ND	3.1	ND	ND	ND	18	100	ND	18	96
191B Dichlorobromomethane	ND	2.2	ND	ND	ND	18	98	ND	18	97
206 Hydrogen sulfide	ND		ND	ND	ND	0	-	ND	0	-
209 Iodomethane	ND	50	ND	ND	ND	50	87	ND	50	56
235 Methyl ethyl ketone	ND	10	ND	ND	ND	140	112	ND	140	106
238 Methyl methacrylate	ND	10	ND	ND	ND	50	101	ND	50	95
282 Paraldehyde	ND		-	-	-	-	-	-	-	-
285 Pentachloroethane	ND	10	ND	ND	ND	50	102	ND	50	93
326 1,1,1,2-Tetrachloroethane	ND	10	ND	ND	ND	50	108	ND	50	106
327 1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	103	ND	18	109
328 Tetrachloroethylene	BMDL	4.1	2	1	ND	18	105	ND	18	97
329 Carbon tetrachloride	ND	2.8	ND	ND	ND	18	99	ND	18	91
334 Tetranitromethane	-	-	-	-	-	-	-	-	-	-
347 Toluene	ND	6.0	ND	ND	BMDL	18	106	ND	18	106
352 Bromoform	ND	4.7	ND	ND	ND	18	96	ND	18	81
354 1,1,1-Trichloroethane	ND	3.8	ND	ND	ND	18	110	ND	18	102
355 1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18	106	ND	18	102
356 Trichloroethylene	ND	1.9	ND	ND	ND	18	104	1	18	99
357 Trichloromethanethiol	-	-	-	-	-	-	-	-	-	-
358 Trichlorofluoromethane	ND	10	ND	ND	ND	18	100	ND	18	87
363A 1,1,2-trichloropropane	ND	10	ND	ND	ND	50	106	ND	50	100
363B 1,2,2-trichloropropane	ND		ND	ND	ND	0	-	ND	0	-
364 1,2,3-Trichloropropane	ND	10	ND	ND	ND	50	107	ND	50	103
373 Vinyl chloride	ND	10	ND	ND	ND	18	118	ND	18	94

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W005	850610	0900	24

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
2	Acetophenone	ND	10	ND	ND	ND	100	60	ND	100	90
4	2-Acetylaminofluorene	ND	10	ND	ND	ND	300	74	ND	300	112
10A	Aflatoxins, Total	-	-	-	-	-	-	-	-	-	-
14	4-Aminobiphenyl	-	-	-	-	-	-	-	-	-	-
16	5-(Aminomethyl)-3-isoxazolo	IND		IND	IND	IND	300	0	IND	300	0
18	Aniline	ND	10	ND	ND	ND	100	82	ND	100	89
20	Aramite	-	-	-	-	-	-	-	-	-	-
25	Auramine	-	-	-	-	-	-	-	-	-	-
29	Benz[c]acridine	-	-	-	-	-	-	-	-	-	-
30	Benz[a]anthracene	ND	10	ND	ND	ND	100	56	ND	100	90
33	Dichloromethylbenzene	ND		ND	ND	ND	100	32	ND	100	79
34	Benzenethiol	ND	10	ND	ND	ND	300	44	ND	300	54
36	Benzo[b]fluoranthene	ND	4.8	ND	ND	ND	100	45	ND	100	72
37	Benzo[j]fluoranthene	-	-	-	-	-	-	-	-	-	-
38	Benzo(a)pyrene	ND	2.5	ND	ND	ND	100	45	ND	100	68
39	p-Benzoquinone	IND		IND	IND	IND	100	0	IND	100	0
40	Benzotrichloride	-	-	-	-	-	-	-	-	-	-
41	Benzyl chloride	ND	10	ND	ND	ND	100	47	ND	100	73
43	bis(2-Chloroethoxy)methane	ND	5.3	ND	ND	ND	100	58	ND	100	84
44	bis(2-Chloroethyl) ether	ND	5.7	ND	ND	ND	100	60	ND	100	72
45	Chlornaphazine	-	-	-	-	-	-	-	-	-	-
46	bis(2-Chloroisopropyl)ether	ND	5.7	ND	ND	ND	100	59	ND	100	86
48	bis(2-Ethylhexyl)phthalate	ND	10	ND	ND	ND	100	75	ND	100	109
51	4-Bromophenyl phenyl ether	ND	1.9	ND	ND	ND	100	99	ND	100	116
52	Brucine	-	-	-	-	-	-	-	-	-	-
53	2-Butanone peroxide	-	-	-	-	-	-	-	-	-	-
54	Butyl benzyl phthalate	ND	10	ND	ND	ND	100	59	ND	100	90
55	2-sec-Butyl-4,6-dinitrophen	ND	10	ND	ND	ND	300	81	ND	300	117
64A	1,2,3-Trichlorobenzene	ND	10	ND	ND	ND	100	51	ND	100	80
64B	1,3,5-Trichlorobenzene	ND	10	ND	ND	ND	100	55	ND	100	86
64C	1,2,3,4-tetrachlorobenzene	ND	10	ND	ND	ND	100	48	ND	100	76
64D	1,2,3,5-tetrachlorobenzene	ND	10	ND	ND	ND	100	40	ND	100	52

*See Grand Table for complete compound name and specifications.
**EPA/ETC established Method detection limit.
"-"specifies no standard or reference spectra available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W005	850610	0900	24

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
67A 1-chloronaphthalene	ND	10	ND	ND	ND	100	107	ND	100	116
68A 2,3,5,6-tetrachlorophenol	ND	10	ND	ND	ND	300	70	ND	300	101
68B 2,3,4,5-tetrachlorophenol	ND	10	ND	ND	ND	300	55	ND	300	99
71 p-Chloroaniline	ND	10	ND	ND	ND	300	54	ND	300	57
74 p-Chloro-m-cresol	ND	3	ND	ND	ND	100	60	ND	100	87
80 2-Chloronaphthalene	ND	1.9	ND	ND	ND	100	77	ND	100	120
81 2-Chlorophenol	ND	3.3	ND	ND	ND	100	56	ND	100	77
85 Chrysene	ND	2.5	ND	ND	ND	100	58	ND	100	86
87A Acenaphthene	ND	1.9	ND	ND	ND	100	60	ND	100	93
87B Acenaphthalene	ND	3.5	ND	ND	ND	100	61	ND	100	90
87C Anthracene	ND	1.9	ND	ND	ND	100	98	ND	100	117
87D Benzo(ghi)perylene	ND	4.1	ND	ND	ND	0	-	ND	0	-
87E Benzo(k)fluoranthene	ND	2.5	ND	ND	ND	100	49	ND	100	69
87F Fluorene	ND	1.9	ND	ND	ND	100	62	ND	100	93
87G Phenanthrene	ND	5.4	ND	ND	ND	100	105	ND	100	124
87H Pyrene	ND	1.9	ND	ND	ND	100	49	ND	100	76
89A 2-Nitrophenol	ND	3.6	ND	ND	ND	100	59	ND	100	91
90A o-Cresol	ND	10	ND	ND	ND	100	73	ND	100	101
90B m+p-Cresol	ND	10	ND	ND	ND	200	76	ND	200	95
97 2-Cyclohexyl-4,6-dinitrophe	-	-	-	-	-	-	-	-	-	-
103 Diallate	-	-	-	-	-	-	-	-	-	-
104 Dibenz[a,h]acridine	-	-	-	-	-	-	-	-	-	-
105 Dibenz[a,j]acridine	ND	10	ND	ND	ND	100	119	ND	100	122
106 Dibenz[a,h]anthracene	ND	2.5	ND	ND	ND	0	-	ND	0	-
107 7H-Dibenzo[c,g]carbazole	-	-	-	-	-	-	-	-	-	-
108 Dibenzo[a,e]pyrene	-	-	-	-	-	-	-	-	-	-
109 Dibenzo[a,h]pyrene	-	-	-	-	-	-	-	-	-	-
110 Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-	-	-
114 Di-n-butyl phthalate	ND	10	ND	ND	BMDL	100	106	ND	100	133
115 1,2-Dichlorobenzene	ND	1.9	ND	ND	ND	100	49	1.2	100	74
116 1,3-Dichlorobenzene	ND	1.9	ND	ND	ND	100	46	ND	100	71
117 1,4-Dichlorobenzene	ND	4.4	ND	ND	ND	100	49	ND	100	77

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W005	850610	0900	24

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
128 2,4-Dichlorophenol	ND	2.7	ND	ND	ND	100	63	ND	100	91
129 2,6-Dichlorophenol	ND	10	ND	ND	ND	100	53	ND	100	70
131 Dichlorophenylarsine	-	-	-	-	-	-	-	-	-	-
142 0,0-Diethylphosphoric acid	-	-	-	-	-	-	-	-	-	-
143 Diethyl phthalate	ND	1.9	ND	ND	ND	100	60	ND	100	89
146 Dihydrosafrole	-	-	-	-	-	-	-	-	-	-
148 Diisopropylfluorophosphate	-	-	-	-	-	-	-	-	-	-
151 p-Dimethylaminoazobenzene	ND	10	ND	ND	ND	100	84	ND	100	102
152 7,12-Dimethylbenz[a]anthrac	ND	10	ND	ND	ND	100	85	ND	100	101
157 Thiofanox	IND		IND	IND	IND	300	0	IND	300	0
158 a-a-Dimethylphenethylamine	IND		IND	IND	IND	100	0	IND	100	0
159 2,4-Dimethylphenol	ND	2.7	ND	ND	ND	100	67	ND	100	90
160 Dimethyl phthalate	ND	10	ND	ND	ND	100	58	ND	100	83
161 Dimethyl sulfate	-	-	-	-	-	-	-	-	-	-
162A m-Dinitrobenzene	ND	10	ND	ND	ND	100	51	ND	100	77
163 4,6-Dinitro-o-cresol	ND	24	ND	ND	ND	100	44	ND	100	76
164 2,4-Dinitrophenol	ND	42	ND	ND	ND	100	126	ND	100	127
165 2,4-Dinitrotoluene	ND	5.7	ND	ND	ND	100	49	ND	100	77
166 2,6-Dinitrotoluene	ND	1.9	ND	ND	ND	100	59	ND	100	89
167 Di-n-octyl phthalate	ND	10	ND	ND	ND	100	74	ND	100	108
169 Diphenylamine	ND	10	ND	ND	ND	100	35	ND	100	46
170 1,2-Diphenylhydrazine	ND	10	ND	ND	ND	100	59	ND	100	89
171 N-Nitrosodi-n-propylamine	ND	10	ND	ND	ND	100	47	ND	100	74
173 2,4-Dithiobiuret	-	-	-	-	-	-	-	-	-	-
183 Ethyl methanesulfonate	ND	10	ND	ND	ND	100	60	ND	100	69
184 Fluoranthene	ND	2.2	ND	ND	ND	100	90	ND	100	109
189 Formic acid	-	-	-	-	-	-	-	-	-	-
194 Hexachlorobenzene	ND	1.9	ND	ND	ND	100	72	ND	100	100
195 Hexachlorobutadiene	ND	.9	ND	ND	ND	100	38	ND	100	65
197 Hexachlorocyclopentadiene	ND	10	ND	ND	ND	0	-	ND	0	-
198 Hexachloroethane	ND	1.6	ND	ND	ND	100	35	ND	100	59
199 Hexachlorohexahydro-endo, e	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" *indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W005	850610	0900	24

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
200 Hexachlorophene	ND		ND	ND	ND	300	60	ND	300	74
201 Hexachloropropene	ND	10	ND	ND	ND	300	46	ND	300	81
202 Hexaethyltetraphosphate	-	-	-	-	-	-	-	-	-	-
208 Indeno(1,2,3-cd)pyrene	ND	3.7	ND	ND	ND	0	-	ND	0	-
213 Isosafrole	ND	10	ND	ND	ND	300	66	ND	300	72
220 Maleic anhydride	-	-	-	-	-	-	-	-	-	-
223 Melphalan	IND		IND	IND	IND	300	0	IND	300	0
228 Methapyrilene	-	-	-	-	-	-	-	-	-	-
232 3-Methylcholanthrene	ND	10	ND	ND	ND	100	109	ND	100	113
234 4,4'-Methylenebis(2-chloroa	ND	10	ND	ND	ND	100	70	ND	300	107
239 Methyl methanesulfonate	ND	10	ND	ND	ND	100	54	ND	100	65
240 Aldicarb	ND	10	ND	ND	ND	100	67	ND	100	95
241 N-Methyl-N'-nitrosoguanidin	-	-	-	-	-	-	-	-	-	-
243 Methylthiouracil	-	-	-	-	-	-	-	-	-	-
245 Naphthalene	ND	1.6	ND	ND	ND	100	55	ND	100	85
246 1,4-Naphthoquinone	ND		ND	ND	ND	100	28	ND	100	46
247 1-Naphthylamine	ND	10	ND	ND	ND	100	52	ND	100	59
248 2-Naphthylamine	ND	10	ND	ND	ND	100	35	ND	100	35
255 p-Nitroaniline	ND	10	ND	ND	ND	300	89	ND	300	112
256 Nitrobenzene	ND	1.9	ND	ND	ND	100	55	ND	100	76
261 4-Nitrophenol	ND	2.4	ND	ND	ND	100	20	ND	100	26
262 4-Nitroquinoline-1-oxide	-	-	-	-	-	-	-	-	-	-
263A N-Nitrosodiphenylamine	ND	1.9	ND	ND	ND	100	52	ND	100	79
264 N-Nitrosodi-n-butylamine	ND	10	ND	ND	ND	100	53	ND	100	79
265 N-Nitrosodiethanolamine	IND		IND	IND	IND	300	0	IND	300	0
266 N-Nitrosodiethylamine	ND	10	ND	ND	ND	300	47	ND	300	61
267 N-Nitrosodimethylamine	ND	10	ND	ND	ND	0	-	ND	0	-
269 N-Nitrosomethylethylamine	IND		IND	IND	IND	100	0	IND	100	0
271 N-Nitroso-N-methylurethane	ND	10	ND	ND	ND	300	35	ND	300	31
272 N-Nitrosomethylvinylamine	-	-	-	-	-	-	-	-	-	-
273 N-Nitrosomorpholine	ND	10	ND	ND	ND	300	57	ND	300	66
274 N-Nitrosonornicotine	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available; compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTACVICK	W005	850610	0900	24

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
275	N-Nitrosopiperidine	ND	10	ND	ND	ND	100	67	ND	100	89
277	N-Nitrososarcosine	-	-	-	-	-	-	-	-	-	-
278	5-Nitro-o-toluidine	ND	10	ND	ND	ND	300	85	ND	300	106
279	Octamethylpyrophosphoramide	-	-	-	-	-	-	-	-	-	-
281	Endothal	-	-	-	-	-	-	-	-	-	-
284	Pentachlorobenzene	ND	10	ND	ND	ND	100	55	ND	100	83
286	Pentachloronitrobenzene	ND	10	ND	ND	ND	300	73	ND	300	104
287	Pentachlorophenol	ND	3.6	ND	ND	ND	100	115	ND	100	121
288	Phenacetin	ND	10	ND	ND	ND	100	94	ND	100	123
289	Phenol	ND	1.5	ND	ND	ND	100	24	ND	100	19
298	Phthalic anhydride	-	-	-	-	-	-	-	-	-	-
299	2-Picoline	ND	10	ND	ND	ND	100	71	ND	100	93
303	Pronamide	ND	10	ND	ND	ND	100	84	ND	100	118
304	1,3-Propane sultone	-	-	-	-	-	-	-	-	-	-
306	Propylthiouracil	-	-	-	-	-	-	-	-	-	-
310	Resorcinol	IND		IND	IND	IND	300	0	IND	300	0
311	Saccharin and salts	-	-	-	-	-	-	-	-	-	-
312	Safrole	ND	10	ND	ND	ND	300	76	ND	300	107
323	1,2,4,5-Tetrachlorobenzene	ND	10	ND	ND	ND	100	53	ND	100	81
330	2,3,4,6-Tetrachlorophenol	ND	10	ND	ND	ND	300	55	ND	300	99
331	Tetraethyldithiopyrophospha	-	-	-	-	-	-	-	-	-	-
346	Thiuram	IND		IND	IND	IND	300	0	IND	300	0
349	O-Toluidine	ND	10	ND	ND	ND	300	48	ND	300	52
353	1,2,4-Trichlorobenzene	ND	1.9	ND	ND	ND	100	46	ND	100	72
359	2,4,5-Trichlorophenol	ND	10	ND	ND	ND	100	64	ND	100	97
360	2,4,6-Trichlorophenol	ND	2.7	ND	ND	ND	100	53	ND	100	84
365	0,0,0-Triethyl phosphorothi	-	-	-	-	-	-	-	-	-	-
366	sym-Trinitrobenzene	-	-	-	-	-	-	-	-	-	-
367	Tris(1-Azridinyl)phosphine	-	-	-	-	-	-	-	-	-	-
368	Tris(2,3-dibromopropyl)phos	IND		IND	IND	IND	100	0	IND	100	0
370	Uracil mustard	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 12, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Pest & Herb Compounds - GC Analysis Data (QR24)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W005	850610	0900	24

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
11	Aldrin	ND	.1	ND	ND	ND	0.5	76	ND	0.5	84
63	Chlordane	ND	1.0	ND	ND	ND	5	71	ND	5	140
73	Chlorobenzilate	-	-	-	-	-	-	-	-	-	-
100	4,4'-DDD	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
101	4,4'-DDE	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
102	4,4'-DDT	ND	.1	ND	ND	ND	0.5	120	ND	0.5	120
130	2,4-D	ND	50	ND	ND	ND	100	40	ND	100	37
137	Dieldrin	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
141	Carbophenothion	-	-	-	-	-	-	-	-	-	-
144	Thionazin	ND	1.0	ND	ND	ND	25	100	ND	25	80
149	Dimethoate	ND	1.0	ND	ND	ND	5	58	ND	5	30
172	Disulfoton	ND	5.0	ND	ND	ND	25	88	ND	25	68
174A	Endosulfan I	ND	.1	ND	ND	ND	0.5	100	ND	0.5	120
174B	Endosulfan II	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
175	Endrin	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
192	Heptachlor	ND	.1	ND	ND	ND	0.5	80	ND	0.5	90
193	Heptachlor epoxide	ND	.1	ND	ND	ND	0.5	100	ND	0.5	120
196A	Alpha-BHC	ND	.1	ND	ND	ND	0.5	100	ND	0.5	114
196B	Beta-BHC	ND	.1	ND	ND	ND	0.5	98	ND	0.5	100
196C	Gamma-BHC	ND	.1	0.05	ND	ND	0.5	100	ND	0.5	360
196D	Delta-BHC	ND	.1	ND	ND	ND	0.5	110	ND	0.5	110
214	Kepone	ND	2.5	ND	ND	ND	5	200	ND	5	184
230	Methoxychlor	ND	1.0	ND	ND	ND	50	100	ND	50	110
242	Methyl parathion	BMDL	1.0	0.70	0.08	ND	5	100	ND	5	80
283	Parathion	ND	1.0	ND	ND	ND	5	110	ND	5	80
295	Phorate	-	-	-	-	-	-	-	-	-	-
296	Famphur	ND	10	ND	ND	ND	50	110	ND	50	76
333	Tetraethylpyrophosphate	ND	5.0	ND	ND	ND	25	72	ND	25	44
351	Toxaphene	ND	1.0	ND	ND	ND	20	38	ND	20	54
361	2,4,5-T	ND	5.0	ND	ND	ND	10	119	3.6	10	160
362	2,4,5-TP (Silvex)	ND	5.0	ND	ND	ND	10	99	ND	10	145

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-" specifies no standard available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.

ENVIRONMENTAL TESTING and CERTIFICATION

JUL 22, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 – DAI HPLC Compounds – Analysis Data (QR25)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W005	850610	0900	24

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. mg/l	MDL** mg/l	First mg/l	Second mg/l	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen Added mg/l	% Recov
6	1-Acetyl-2-thiourea	ND	.5	ND	ND	ND	5.0	110	ND	5.0	116
8	Acrylamide	ND	.5	ND	ND	ND	5 0	102	ND	5.0	105
17	Amitrole	-	-	-	-	-	-	-	-	-	-
82	1-(o-Chlorophenyl)thiourea	ND	.5	ND	ND	ND	5.0	100	ND	5.0	100
145	Diethylstilbesterol	-	-	-	-	-	-	-	-	-	-
176	Ethyl carbamate	-	-	-	-	-	-	-	-	-	-
179	Ethyleneimine	-	-	-	-	-	-	-	-	-	-
181	Ethylenethiourea	ND	.5	BMDL	ND	ND	5.0	96	ND	5.0	99
221	Maleic hydrazide	ND	.5	ND	ND	ND	5 0	99	ND	5.0	96
222	Malononitrile	-	-	-	-	-	-	-	-	-	-
229	Methomyl	ND	.5	ND	ND	ND	0	-B	ND	0	-B
231	2-Methylaziridine	-	-	-	-	-	-	-	-	-	-
253	Nicotinic acid	ND	.5	ND	ND	ND	5.0	83	ND	5.0	80
260	Nitroglycerin	-	-	-	-	-	-	-	-	-	-
268	N-Nitroso-N-ethylurea	BMDL	.5	BMDL	BMDL	ND	5.0	210	BMDL	5.0	99
270	N-Nitroso-N-methylurea	ND	.5	ND	ND	ND	5.0	350	11	5.0	150
292	N-Phenylthiourea	BMDL	.5	ND	ND	ND	5.0	92	BMDL	5.0	94
309	Reserpine	-	-	-	-	-	-	-	-	-	-
345	Thiourea	ND	.5	ND	ND	ND	5.0	105	ND	5.0	107

B Compound erroneously omitted from original spiked and standard solution. New solutions were subsequent prepared to quantitate results for Methomyl

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Extractable HPLC Compounds - Analysis Data (QR31)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W005	850610	0900	24

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
3 Warfarin	ND	26	BMDL	BMDL	BMDL	500	116	BMDL	500	118
35 Benzidine	ND	26	BMDL	BMDL	BMDL	500	85	BMDL	500	100
119 3,3'-Dichlorobenzidine	ND	26	BMDL	BMDL	BMDL	500	84	BMDL	500	101
150 3,3'-Dimethoxybenzidine	ND	26	BMDL	BMDL	ND	500	83	ND	500	99
153 3,3'-Dimethylbenzidine	ND	26	BMDL	ND	ND	500	90	ND	500	107
249 1-Naphthyl-2-thiourea	ND	26	ND	ND	ND	500	85	ND	500	97
290A m-phenylenediamine	BMDL	26	BMDL	BMDL	BMDL	500	46	BMDL	500	55
290B o-phenylenediamine	ND	26	ND	BMDL	ND	500	63	ND	500	69
290C p-phenylenediamine	ND	26	ND	ND	ND	500	19	ND	500	23
348A Toluene-2,4-Diamine	ND	26	BMDL	BMDL	BMDL	500	105	BMDL	500	106

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" =Indeterminate. Standard and/or spikes could not be detected at current method levels.

ENVIRONMENTAL TESTING and CERTIFICATION

JUL 13, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Aroclors -GC Analysis Data (QR30)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTACVICK	W005	850610	0900	24

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
300A Aroclor 1242	ND	1	ND	ND	ND	0	-	ND	0	-
300B Aroclor 1254	1.1 *	1	ND	ND	ND	0	-	ND	0	-
300C Aroclor 1260	ND	1	ND	ND	ND	2	96	ND	2	100
300D Aroclor 1248	ND	1	ND	ND	ND	0	-	ND	0	-
300E Aroclor 1232	ND	1	ND	ND	ND	0	-	ND	0	-
300F Aroclor 1221	ND	1	ND	ND	ND	0	-	ND	0	-
300G Aroclor 1016	ND	1	ND	ND	ND	0	-	32	0	-

* Confirmed by second column.

*See Grand Table for complete compound name and specifications.
**MDL calculated for each sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 15, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Metals and Cyanides - Analysis Data (QR29)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6068	VERTAC CHEMICAL CORPORATION	VERTACVICK	W005	850610	0900	24

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL ug/l	First	Second	Blank Data	Concen. Added	% Recov	Unspiked Sample	Concen. Added	% Recov
13A Aluminum	2800	100								
19A Antimony	ND	100								
21A Arsenic	19	10								
27A Barium	614	4								
42A Beryllium	ND	2								
56A Cadmium	BMDL	4								
57A Calcium	236000	100								
84A Chromium	BMDL	20								
88A Copper	BMDL	10								
92A Cyanide, Total	<25	25								
210 Iron	6000	200								
216A Lead	ND	90								
225A Mercury	.2	.2								
250A Nickel	BMDL	20								
280A Osmium	BMDL	800								
301A Potassium	890	40								
314A Selenium	11	5								
317A Silver	ND	10								
319A Sodium	28100	90								
321A Strontium	470	50								
335A Thallium	ND	5								
372A Vanadium	ND	10								
374A Zinc	60	10								

*See Grand Table for complete compound name and specifications.

ENVIRONMENTAL TESTING and CERTIFICATION

July 19, 1985

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery Water- GC/MS Data (QR20)

Chain of Custody Data Required for ETC Data Management Summary Reports

H6068

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Ela. Hou

Compound	Amount Added ug	% Recovery	Control Limits *	
			Lower	Upper
VOLATILE FRACTION				
Toluene-D8	.250	109	86	119
Bromofluorobenzene	.250	102	85	121
1,2-Dichloroethane-D4	.250	108	77	120
ACID FRACTION				
Phenol-D5	100	53	15	103
2-Fluorophenol	100	74	23	121
2,4,6-Tribromophenol	100	47	10	130
BASE/NEUTRAL FRACTION				
Nitrobenzene-D5	50	74	41	120
2-Fluorobiphenyl	50	67	44	119
Terphenyl-D14	50	106	33	128

* IFB EPA Control Limits.

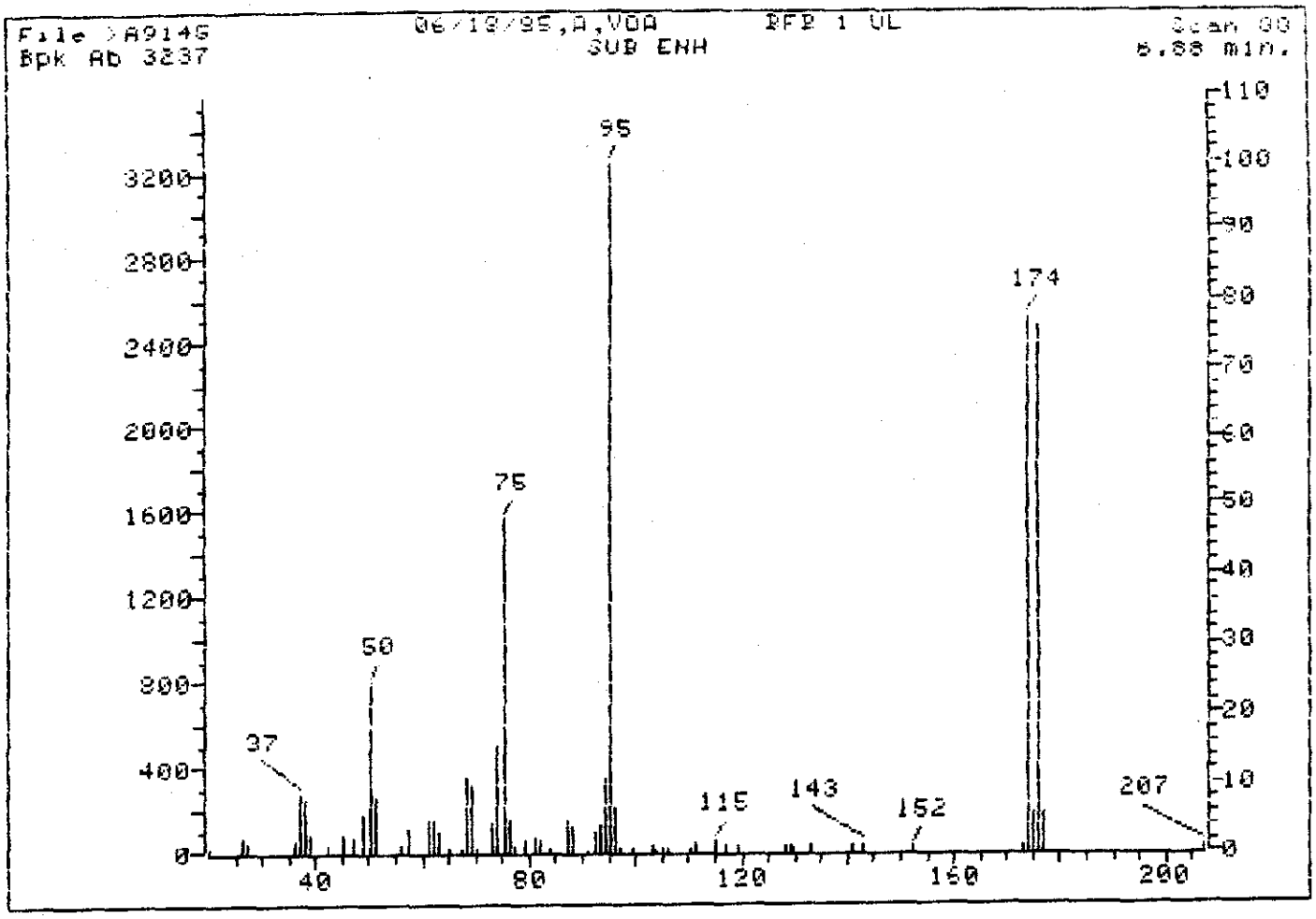


TABLE 2: METHOD PERFORMANCE DATA (QR21)

GC/MS Tuning Data - Bromofluorobenzene (BFB) for Volatiles Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	24.64	24.64	Ok
75	30-60% of mass 95	48.30	48.30	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.76	6.76	Ok
173	Less then 1% of mass 95	.81	.81	Ok
174	Greater then 50% of mass 95	77.55	77.55	Ok
175	5-9% of mass 174	5.67	7.31	Ok
176	95-101% of mass 174	75.78	97.72	Ok
177	5-9% of mass 176	5.38	7.10	Ok

Injection Date: 06/18/85 Analyst: [signature]
Injection Time: 19:44 Processor: [signature] AO
Run No: >A9145 QC Batch: QV3390
Spectrun No: 88 Samples: H6068, H9998, H9999

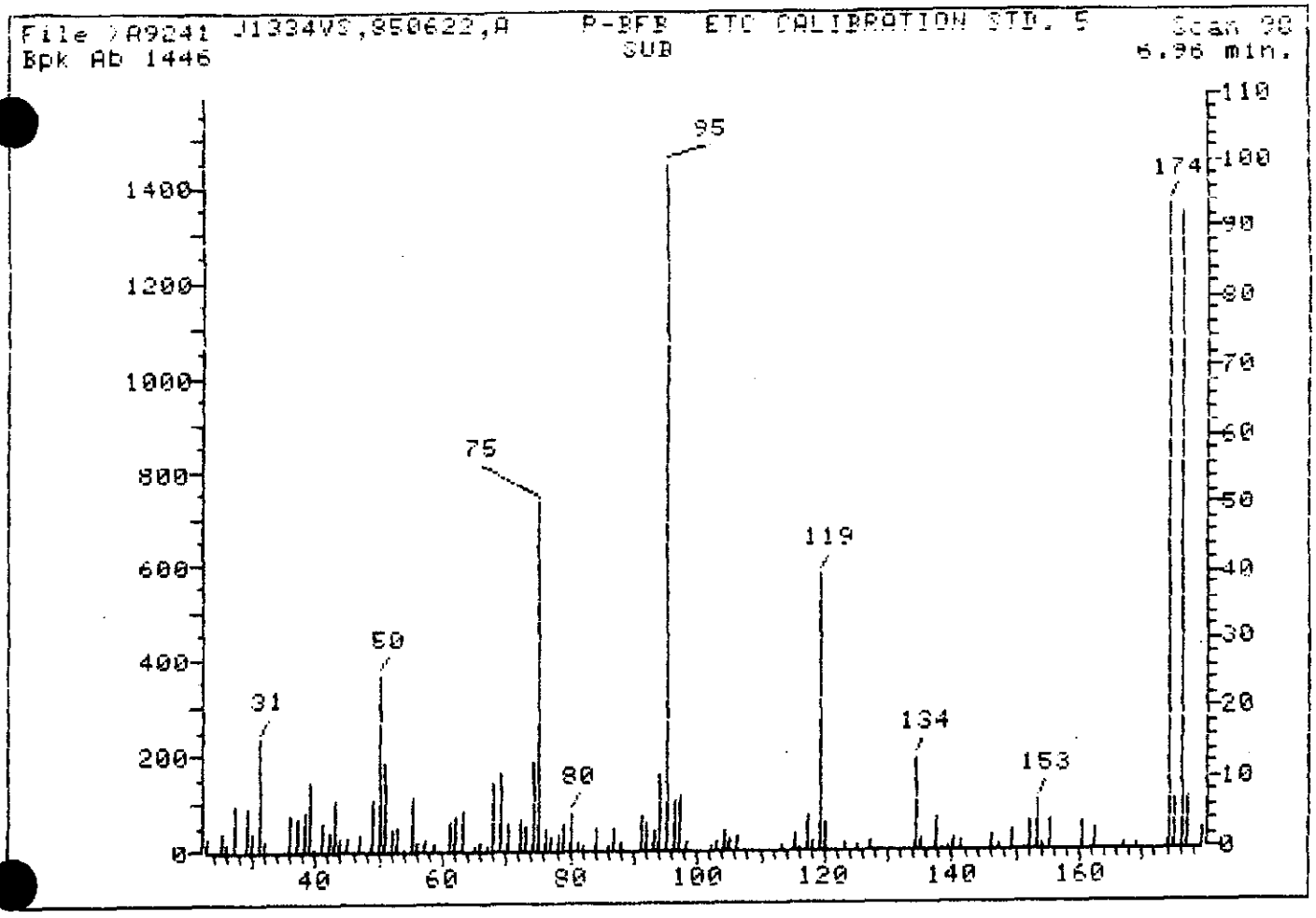


TABLE 2: METHOD PERFORMANCE DATA (QR21)

GC/MS Tuning Data - Bromofluorobenzene (BFB) for Volatiles Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	25.17	25.17	Ok
75	30-60% of mass 95	50.83	50.83	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.78	6.78	Ok
173	Less then 1% of mass 95	0.00	0.00	Ok
174	Greater then 50% of mass 95	93.50	93.50	Ok
175	5-9% of mass 174	6.43	6.88	Ok
176	95-101% of mass 174	92.46	98.89	Ok
177	5-9% of mass 176	6.92	7.48	Ok

Injection Date: 06/22/85 Analyst: [illegible]
Injection Time: 21:49 Processor: [illegible]
Run No: >A9241 QC Batch: QV 3404
Spectrun No: 90 Samples: H9998, H9999, H6068

B

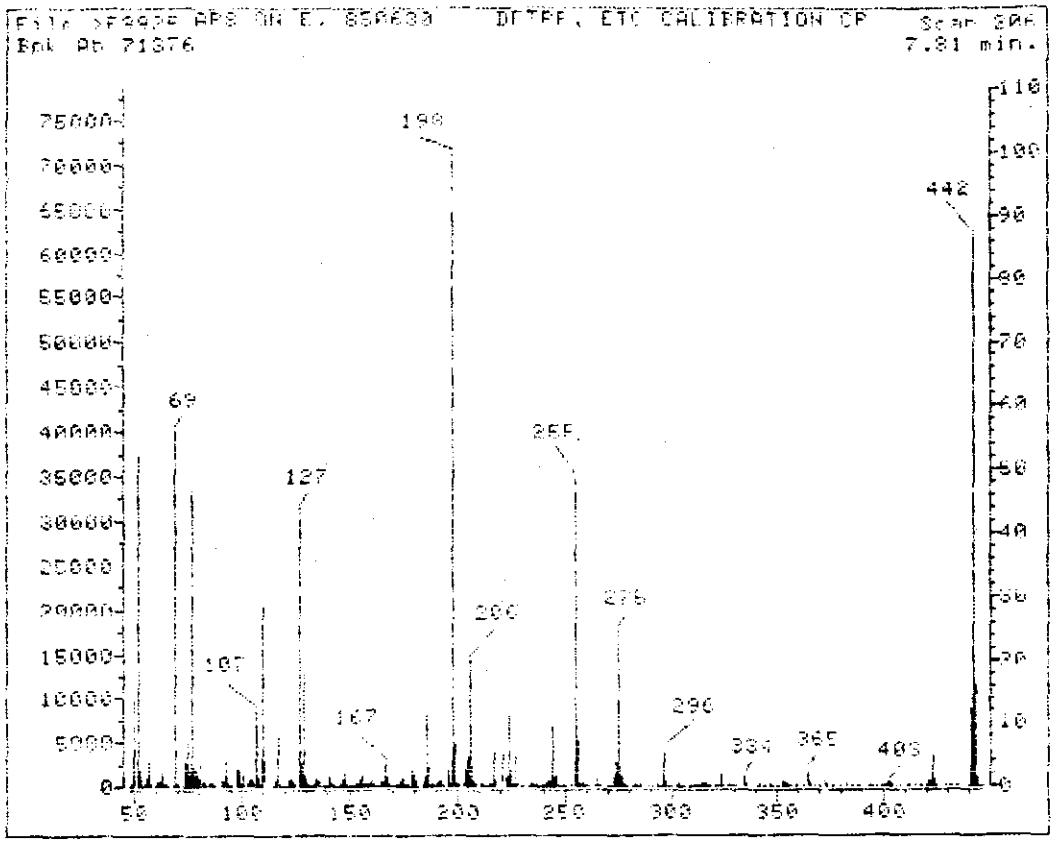


TABLE 2: METHOD PERFORMANCE DATA (GR23)

GC/MS Tuning Data - Decafluorotriphenylphosphine (DFTPP) for ~~Base Neutral~~ ACID Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	52.13	52.13	OK
68	Less than 2% of mass 69	0.00	0.00	OK
69	(reference only)	56.19	56.19	OK
70	Less than 2% of mass 69	.30	.53	OK
127	40-60% of mass 198	43.89	43.89	OK
197	Less than 1% of mass 198	.53	.53	OK
198	Base peak, 100% relative abundance	100.00	100.00	OK
199	5-9% of mass 198	6.93	6.93	OK
275	10-30% of mass 198	24.79	24.79	OK
365	Greater than 1% of mass 198	2.60	2.60	OK
441	Less than mass 443	12.22	77.19	OK
442	Greater than 40% of mass 198	86.84	86.84	OK
443	17-23% of mass 442	15.83	18.23	OK

Injection Date: 06/30/85 Analyst: [signature]
Injection Time: 23:28 Processor: [signature]
Run No: >E9929 QC Batch: QA3211
Spectrum No: 20A Samples: H5601, H5602, H7219, H7220
H7221, H7222, G8452
H7523, H7524, H7525, H7526
H6066 & H6069

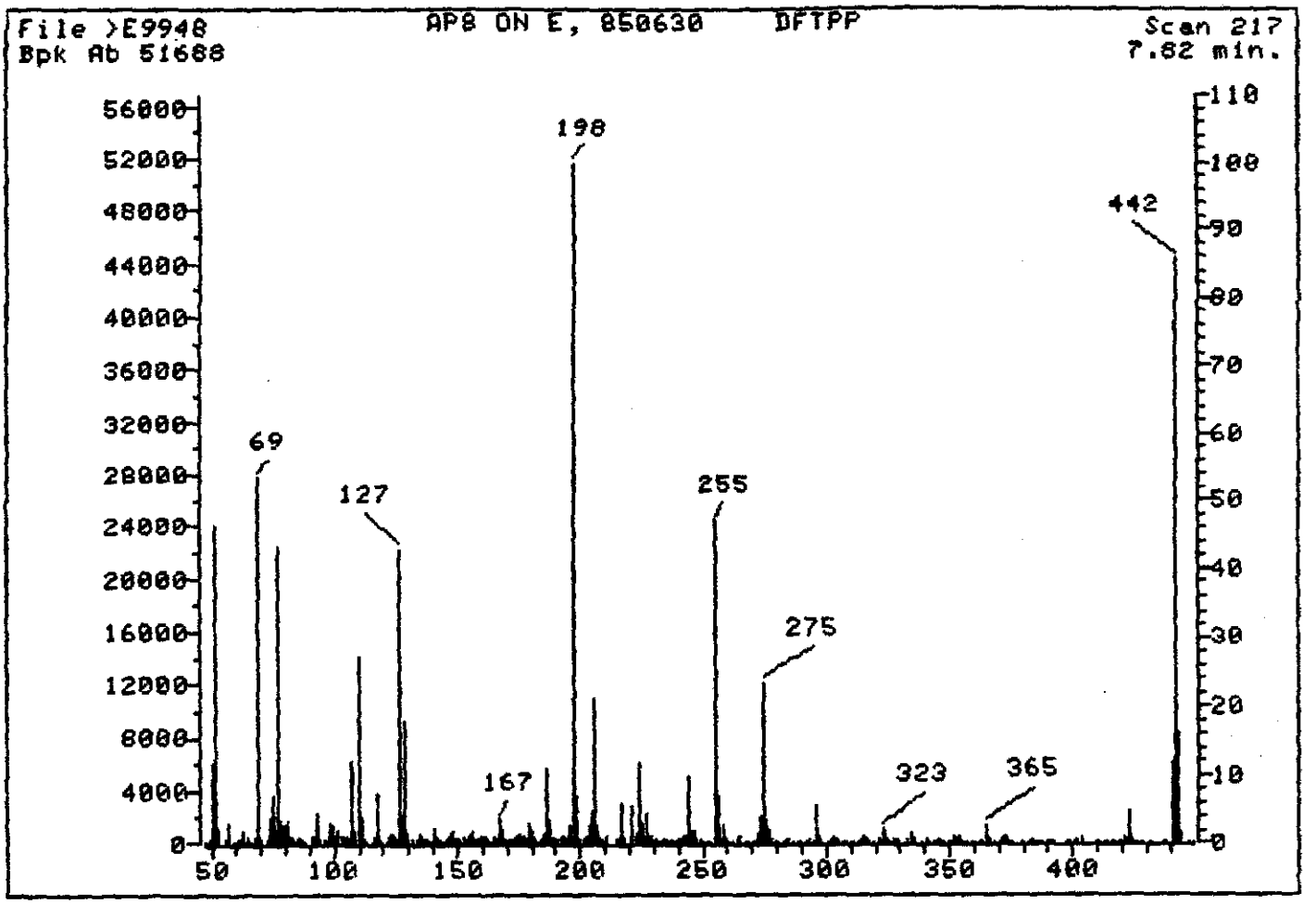


TABLE 2: METHOD PERFORMANCE DATA (QR23)

GC/MS Tuning Data - Decafluorotriphenylphospine (DFTPP) for Base/Neutral Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	46.63	46.63	Ok
68	Less then 2% of mass 69	.71	1.32	Ok
69	(reference only)	53.72	53.72	Ok
70	Less then 2% of mass 69	.28	.53	Ok
127	40-60% of mass 198	43.07	43.07	Ok
197	Less then 1% of mass 198	.50	.50	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.80	6.80	Ok
275	10-30% of mass 198	23.44	23.44	Ok
365	Greater then 1% of mass 198	2.71	2.71	Ok
441	Less then mass 443	11.71	73.80	Ok
442	Greater then 40% of mass 198	85.62	85.62	Ok
443	17-23% of mass 442	15.87	18.53	Ok

Injection Date: 07/01/85 Analyst: [illegible]
Injection Time: 22:20 Processor: [illegible]
Run No: >E9948 QC Batch: QB3211
Spectrun No: 217 Samples: H5601, H5602, H7219, H7220
H7221, H7222, G8452, H7523
H7524 to 26, H6066, 67, 68, 69

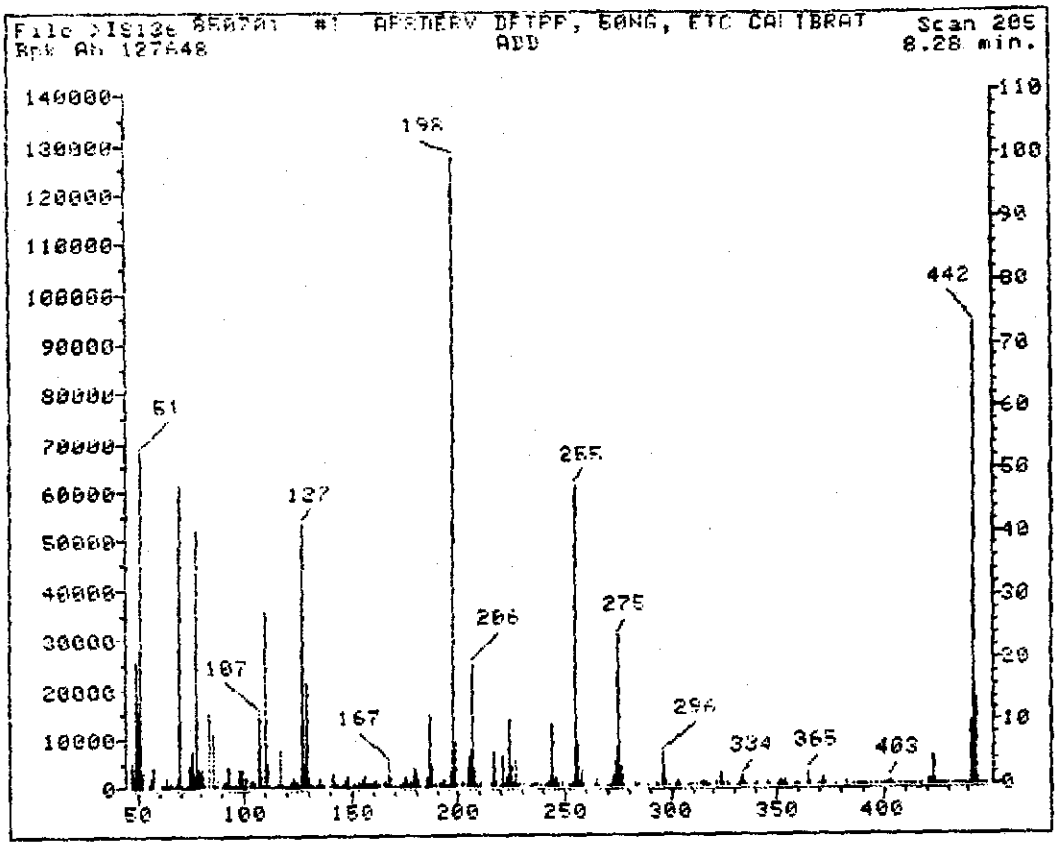


TABLE 2: METHOD PERFORMANCE DATA (QR23)

GC/MS Tuning Data - Decafluorotriphenylphosphine (DFTPP) for Base/Neutral Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	53.37	53.37	Ok
68	Less than 2% of mass 69	.86	1.78	Ok
69	(reference only)	48.17	48.17	Ok
70	Less than 2% of mass 69	.35	.74	Ok
127	40-60% of mass 198	41.78	41.78	Ok
197	Less than 1% of mass 198	.34	.34	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.74	6.74	Ok
275	10-30% of mass 198	23.78	23.78	Ok
365	Greater than 1% of mass 198	2.11	2.11	Ok
441	Less than mass 443	9.98	73.21	Ok
442	Greater than 40% of mass 198	73.13	73.13	Ok
443	17-23% of mass 442	13.63	18.64	Ok

Injection Date: 07/01/85 Analyst: Thomas J Mancuso
Injection Time: 10:16 Processor:
Run No: >18136 QC Batch: QAB3211
Spectrum No: 205 Samples: H60666 to H60669, H5601, H5602, H7219 to H7222, H7523 to H7526, G8453

Methodology
For
Analysis of Appendix VIII Parameters

The methods employed in the analysis of specific compounds in Appendix VIII are based on the second edition (July 1982) of EPA Manual SW-846 "Test Methods for Evaluating Solid Waste". Since the manual is deficient in details on how the complete analysis of Appendix VIII compounds can be performed, we devised an analytical scheme that divides the compounds into the twelve categories as stated in the introduction. Within the nine categories of compounds that can be specifically analysed, not all the reference standards are readily available. We footnoted those unavailable compounds in our result tables. In the GC/MS analyses we were able to search for the specific compounds that did not have corresponding reference standards by using standard spectra from the literature. In other cases, GC and HPLC, where retention time characteristics are the only means to identify the compounds, we were unable to draw any conclusions on those compounds that corresponding reference standards are not available at the time of analysis.

In each category rigid compliance with the instrument parameters and performance criteria of established EPA methods, such as those in methods 624 and 625, was achieved before any sample analysis was initiated. (Similar criteria do not exist in SW846.) For GC/MS analysis where standards were available, identification was performed using relative retention times, the relative abundance of three characteristic ions and the abundance ratios. The entire mass spectrum was reviewed to confirm each identification. Quantitative analysis was performed using an internal standard with a single characteristic ion. When compounds without corresponding reference standard were identified, they were quantified assuming the same response factor as the internal standard.

Volatile Compounds by Purge and Trap GC/MS

For the analysis of purge and trap Volatile compounds, Methods 8240 and 5030 were used. The analysis can be summarized as follows: Helium is bubbled through a 5 ml water sample contained in a specially designed purging chamber at ambient temperature. The purgeable volatile organic compounds are transferred from the aqueous phase to the vapor phase. The vapor is swept through a sorbent column where the organic components are trapped. After the purge cycle is complete, the sorbent column is heated and backflushed with helium to desorb the organic purgeables onto a gas chromatographic column. The gas chromatograph is temperature programmed to separate the purgeable mixture. The separated purgeable components are then identified and quantitated using a computerized mass spectrometer.

Water Soluble Compounds by Direct Aqueous Injection GC/MS

For the analysis of water soluble compounds, 5 ul of aqueous sample was injected directly into the GC/MS system. The chromatographic column employed in the procedure is the same column used for purge and trap analysis. MS scanning was begun prior to sample injection to capture mass intensity data for early eluting compounds. The GC oven temperature program used was that specified in procedure 8240.

Extractable Acid, Base/Neutral and Pesticide Compounds by GC/MS

For the analysis of the Acid, Base/Neutral and Pesticide compounds in water, Methods 3510 and 8270 were used. The analysis can be summarized as follows: a measured volume of sample, approximately 1 liter, is extracted with an aliquot of methylene chloride without pH adjustment and then the sample is adjusted to a pH greater than 11 and extracted with another aliquot of methylene chloride. These two aliquots were combined. The pH of the sample is then adjusted to a value less than 2 and extracted with another aliquot of methlyene chloride. A separatory funnel or continuous extractor is used to perform the extractions. The two extracts are dried and concentrated to a 1 ml final volume. The extracts are then combined just prior to injection into a GC/MS instrument.

GC Analysis of Herbicides and Pesticides

The methods employed in the analysis of your sample for herbicides and pesticides are established EPA methods taken from the "Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples," June, 1980 and methods 8080, 8140 and 8150.

The herbicide method can be summarized as follows: A measured volume of sample, approximately 500-1000 ml, to which sodium sulfate has been added, is acidified and extracted with methylene chloride. The methylene chloride extract is evaporated to dryness, and the residue is derivatized with diazomethane and injected into a gas chromatograph equipped with a ^{63}Ni electron capture detector.

The pesticide method can be summarized as follows: A measured volume of sample, approximately 500ml, is extracted with methylene chloride. The extract is dried and concentrated to a final volume of 1ml and injected into a gas chromatograph equipped with a ^{63}Ni electron capture detector and Flame Photometric detector in phosphorus mode.

Analysis of Metals

The determination of metals in aqueous samples is performed according to the methods published by EPA in "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March, 1979, and the inorganic methods in SW846. Arsenic, selenium and thallium are determined by furnace AA; silver, aluminum, barium, beryllium, boron, cadmium, calcium, chromium, copper, cobalt, iron, magnesium, manganese, molybdenum, nickel; lead, sodium, antimony, tin, titanium, vanadium, and zinc are determined by ICP emission. The determination of mercury is performed by cold vapor AA.

Analysis by HPLC

The analysis of thermally unstable and polar compounds are based on the HPLC methods 8320 and 8330. The compounds analyzed fall into two catagories: direct aqueous injection and Base/Neutral extractables. Twenty ul of the sample or extract is injected into an HPLC equipped with a reverse phase column. Gradient elution and UV detector at 210 and 250 nm are used.

Conventional

Total cyanide analysis is performed using Method 9010.

Summary of
Quality Assurance/Quality Control Procedures (QA/QC)

ETC bases its quality assurance protocols on the following government guidelines:

. "Handbook for Analytical Quality Control in Water and Wastewater Laboratories", EPA-600/4-79-019, March 1979;

. National Enforcement Investigation Center Policies, and ocedures manual; EPA-330/9/79/001-R, October 1979;

. the recommended guidelines for EPA Methods 624 and 625. (Federal Register, December 3, 1979; updated on Otober 26,1984);

. "Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples," EPA 600/8-80-038, June 1980; and

. "Determination of 2,3,7,8-TCDD in Soil and Sediment" EPA, Region VII, Kansas City, September 1983.

. Organic Analysis: Multi-media, Multi Concentration-IFB WA84-A267

. Dioxin Analysis:Soil/Sediment Matrix; Multi-Concentration; Selected Ion Monitoring with Jar Extration Procedure-IFB WA84-A002

However, we have modified our protocols to provide a higher level of QA/QC than the guidelines require. For example, we analyze a higher than required number of quality control samples and we pay especially careful attention to the certification of the "reference standard" compounds we use in analysis. Below are listed the key QA/QC elements for the methods we used.

Analysis of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry

- Each batch of 13 samples consists of 9 customer samples (at a maximun). one blank sample, one spiked blank, one spiked sample and one replicate sample. This amounts to a 30% quality control factor.

- Three surrogate compounds are added to each sample in the batch of 13.

- A blind quality control sample is introduced to the laboratory for analysis on a weekly basis.

- Each GC/MS is checked and retuned, if necessary, at the beginning of each day to ensure that its performance on bromofluorobenzene (BFB) meets the EPA criteria.

- A calibration curve for quantitation is prepared using a mixture of Volatile Organic Priority Pollutant "standards" at a minimum of 3 different concentrations and using a mixture of 3 internal standards at a constant concentration.

- The calibration curve is verified with a mixture of priority pollutant standards every day. If the response factors factors vary greater than 25%, the instrument must be recalibrated.

Analysis of Organic Compounds Extracted in Acid or Base/Neutral Solutions by Gas Chromatography/Mass Spectrometry

- Each batch of 20 samples consists of 16 customer samples (at a maximum), one blank sample, one spiked blank (for water matrices), one sample spiked with the priority

pollutant standard mixture and a duplicate customer sample This amounts to a 20% quality control factor.

- Three surrogate compounds are added to each sample in the batch for Base/Neutral analysis
- Three surrogate compounds are added to each sample in the batch for Acid analysis.
- A blind quality control sample is introduced to the laboratory for analysis on a weekly basis.
- Each GC/MS is checked and retuned, if necessary, at the beginning of each day to ensure that its performance on decafluorotriphenylphosphine (DFTPP) meets the EPA criteria.
- A calibration curve for quantitation is prepared using a mixture of standards composed of either the Organic Acid or Base/Neutral Extractable Compounds at a minimum of 3 concentrations and using five internal standards for quantitation.

Analysis of Metals

All Samples

- New standards are prepared for each batch of samples.
- Normal calibration is performed using a blank sample and four standards that have been through the sample preparation procedure. A regression analysis is used to construct the calibration curve.
- All EP Toxicity samples and all samples determined by furnace atomic absorption are calculated by the "method of additions".
- For each sample analysis that requires the use of the "method of additions" technique, a three point calibration is performed using U.S. EPA "Methods for Chemical Analysis of Water and Wastes, 1979". Results are obtained using linear regression analysis. Any regression with a coefficient of correlation below 0.990 is considered suspect, necessitating review of calibration data or sample re-analysis.
- In constructing the normal calibration curves the lowest concentration levels we use are values greater than or equal to 5 times the Instrumental Detection Limit (IDL).
- All calibration standards are analyzed in duplicate, at a minimum.
- Independent reference standards are used to check the accuracy of calibration standards.
- A check standard is analyzed every ten samples to validate the normal calibration curve.
- One customer sample out of every ten is analyzed in triplicate.

Homogeneous Samples (except for Mercury analysis)

Samples are analyzed in batches of 30 or less. For batches in which the sample matrices are homogeneous, the QC program is a minimum of 25% and consists of analyzing:

- 3 sets of triplicate analyses;
- 2 Replicate spikes;
- 1 independent reference standard;
- 4 Calibration standards (processed using the sample preparation method);
- 4 Calibration standards (without sample preparation); and

- 1 Reagent Blank

Heterogeneous Samples (except for Mercury analysis)

Samples are analyzed in batches of 30 or less. For batches in which the sample matrices are heterogeneous, the QC program is a minimum of 35% and consists of analyzing:

- 3 sets of triplicate analyses;
- 2 Replicate spikes;
- 1 Replicate independent reference standards;
- 4 Calibration standards (processed using the sample preparation method);
- 1 Procedural Blank;
- 4 Calibration standards (without sample preparation); and
- 1 Reagent Blank.

Analysis of Mercury

To analyze samples for mercury we group them by matrix in batches of 30 or less. Our QC program is a minimum of 30% and consists of analyzing:

- each of the 30 customer samples in duplicate;
- 3 sets of triplicate anaylses;
- 2 Replicate spikes;
- 2 Replicate independent reference standards;
- 10 Calibration standards (processed using the sample preparation method); and
- 2 Procedural Blanks.

Analysis of Pesticides, Herbicides and PCB's by Gas Chromatography

Pesticide, herbicide and PCB samples are grouped in batches of 16 customer samples or less according to the type of analysis to be performed. The QC program for each of these three types of analyses is a minimum of 20% and consists of analyzing:

- 1 procedural blank sample(a reagent blank is analyzed in the case of non-water matrices);
- 1 spiked blank sample (the spiked blank is eliminated in the case of non-water matrices);
- 1 replicate sample;
- 1 replicate spiked sample; and
- 1 known refernece QC sample for at least each 100 samples analyzed.

The instrument is calibrated each run with three standards, and checked every 10 samples.

Analysis of Cyanides, Phenols, Fluoride, Chloride, Nitrate and Nitrite

- All parameters are analyzed using a Technicon Autoanalyzer II GT.

- 3 calibration standards are analyzed at the beginning and end of each batch.
- Each batch (up to 80 samples) consists of analyzing one blank, one spiked blank, one duplicate and spiked sample every 20 samples, and an EPA known reference sample.

Analysis of Total Organic Carbon (TOC)

TOC samples are analyzed on a daily basis with the number of samples analyzed per day dependent on the request for duplicate or quadruplicate analyses. The quality control program is designed to maintain the appropriate amount of QC and consists of the following elements:

- Daily instrument calibration
- One blank
- Standard recalibration every 10 samples
- Spiked samples at a low and high level
- Every sample is run in duplicate at a minimum

Analysis of Total Organic Halide (TOX)

- Blank reagent water for absolute carbon backround must contain less than 5 ug/l of halide (as chloride).
- Using a trichlorophenol standard, the mean adsorption efficiency must be within +/- 15% of the standard value.
- Calibration standards are run every 10 samples.
- Every sample is run in duplicate at a minimum.

Analysis of 2,3,7,8-TCDD (Dioxin) by GC/MS (SIM)

- Each sample is dosed with a known quantity of $^{13}C_{12}$-2,3,7,8-TCDD as internal standard and $^{37}Cl_4$-TCDD as surogate standard. The action limits for surrogate standard results is +/- 40% of the true value. Samples showing surrogate standard results outside of these limits are reextracted and reanalyzed.
- Two laboratory "method blanks" are run along with each set of 24 or fewer samples. The method blank is also dosed with the internal standard and surrrogate standard.
- At least one per set of 24 samples is run in duplicate to determine intralaboratory precision.
- Qualitative Requirements. The following are met in order to confirm the presence of native 2,3,7,8-TCDD:

  a. Isomer specificity must be demonstrated initially and verified once per 8-hour work shift. The verification consists of injecting a mixture containing TCDD isomers which elute close to 2,3,7,8-TCDD. The 2,3,7,8-TCDD must be separated from interferring isomers, with no more than 25% valley relative to the 2,3,7,8-TCDD peak.

  b. The 320/322 ratio is within the range of 0.67 to 0.87.

  c. Ions 320, 322, and 257 are all present and maximize together the signal to mean noise ratio must be 2.5 to 1 or better for all 3 ions.

  d. The retention time is equal (within 3 seconds) the retention time for the isotopically labeled 2,3,7,8-TCDD.

e. At least one of the positives can be confirmed by obtaining partial scan spectra from mass 150 to mass 350. The partial scan guidelines are as follows:

. the 320/324 ratio should be 1.58 +/- 0.16

. the 257/259 ratio should be 1.03 +/- 0.10

. the 194/196 ratio should be 1.54 +/- 0.15

- One sample is spiked with native 2,3,7,8-TCDD at a level of 1.0 PPB (for soil) for each set of 24 or fewer samples.

- In cases where no native 2,3,7,8-TCDD is detected, the actual detection limit is estimated and reported based on a signal to noise ratio of 2.5 to 1 at ions 320 and 322.

- For each sample, the internal standard is present with at least a 10 to 1 signal to noise ratio for both mass 332 and mass 334. Also, the internal standard 332/334 ratio must be within the range of 0.67 to 0.87.

Subcontractor QA/QC

Each subcontractoer is required to maintain an appropriate level of quality control. To insure this, each subcontractor is required to submit to ETC the quality control data for all analyses it performs. This data is kept on file at ETC. In general, the amount of quality control required is one duplicate sample with one spiked sample for every ten analyses.

Chain-of-Custody

The chain-of-custody procedure is part of our quality assurance protocol. We believe our chain-of-custody record fully complies with the legal requirements of federal, state and local government agencies and of the courts of law. The record covers:

- labeling of sample bottles, packing the Sample Shuttle and transferring the Shuttle under seal to the custody of a shipper;

- outgoing shipping manifests;

- the chain-of-custody form completed by the person(s) breaking the Shuttle seal, taking the sample, resealing the Shuttle and transferring custody to a shipper;

- incoming shipping manifests;

- breaking the Shuttle's reseal;

- storing each labeled sample bottle in a secured area;

- disposition of each sample to an analyst or technician; and

- the use of the sample in each bottle in a testing procedure appropriate to the intended purpose of the sample.

The records show for each link in this process:

- the person with custody; and

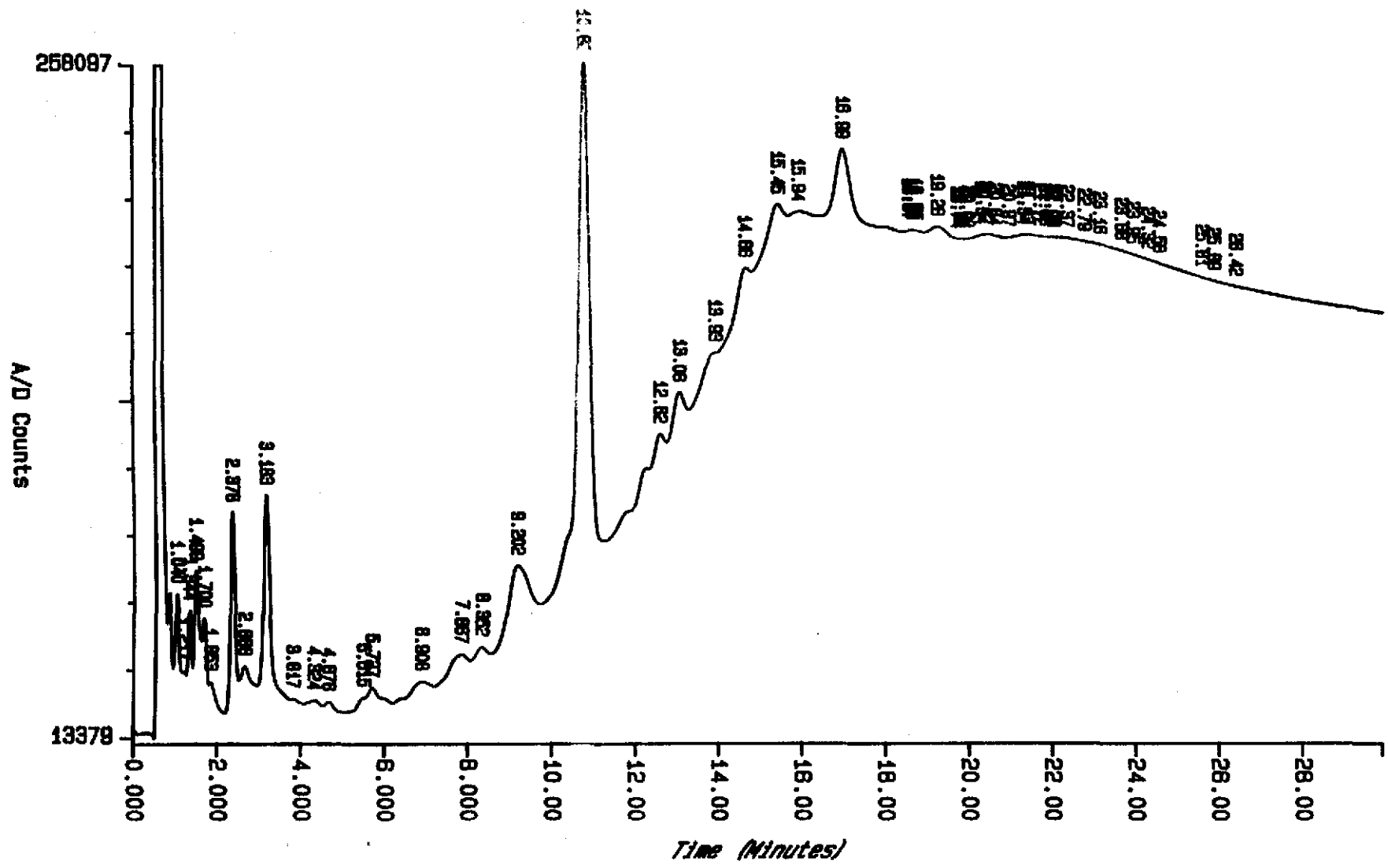
- the time and date each person accepted or relinquished custody.

Appendix A1

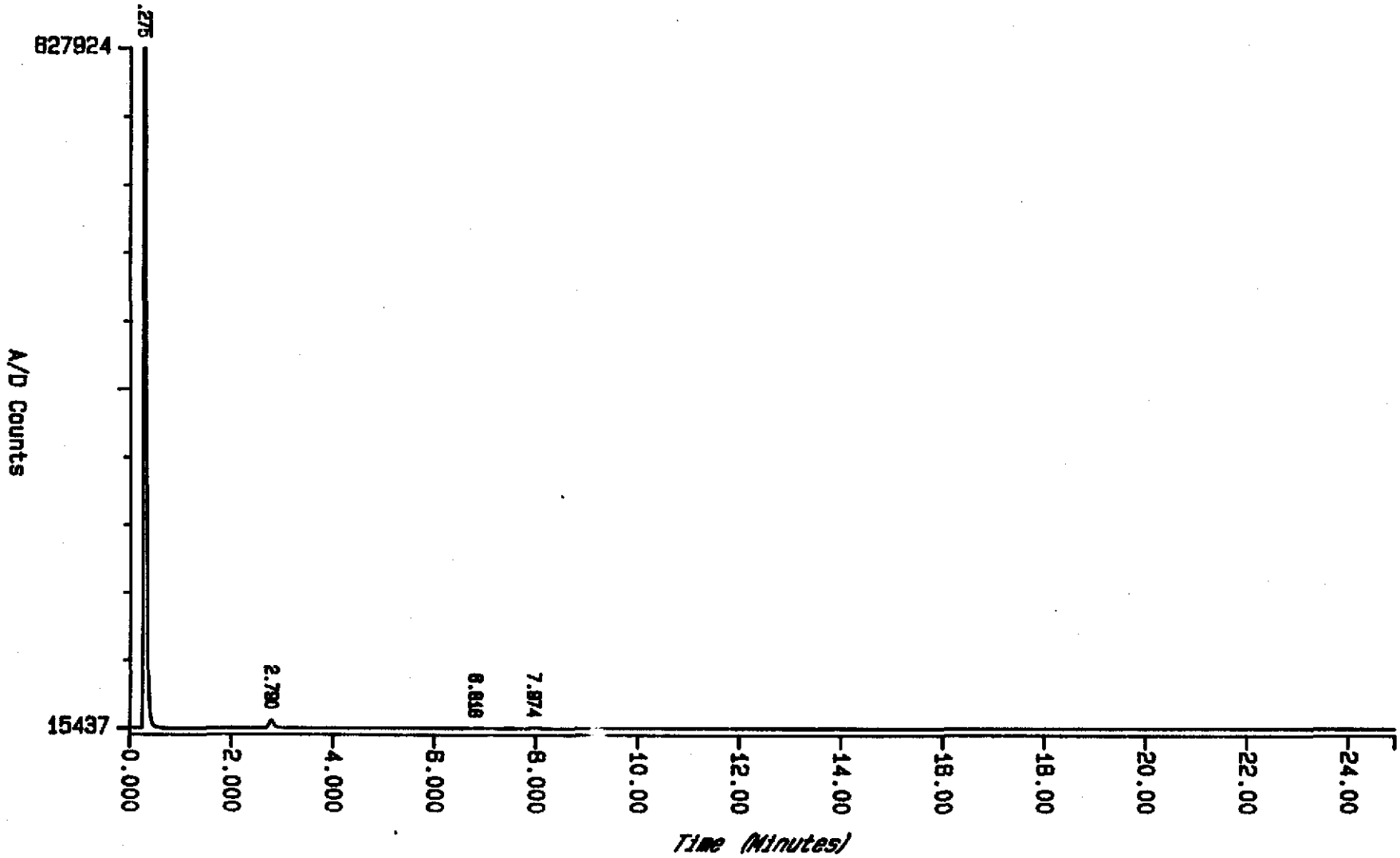
Gas Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed gas chromatogram for each sample analyzed by a GC instrument.

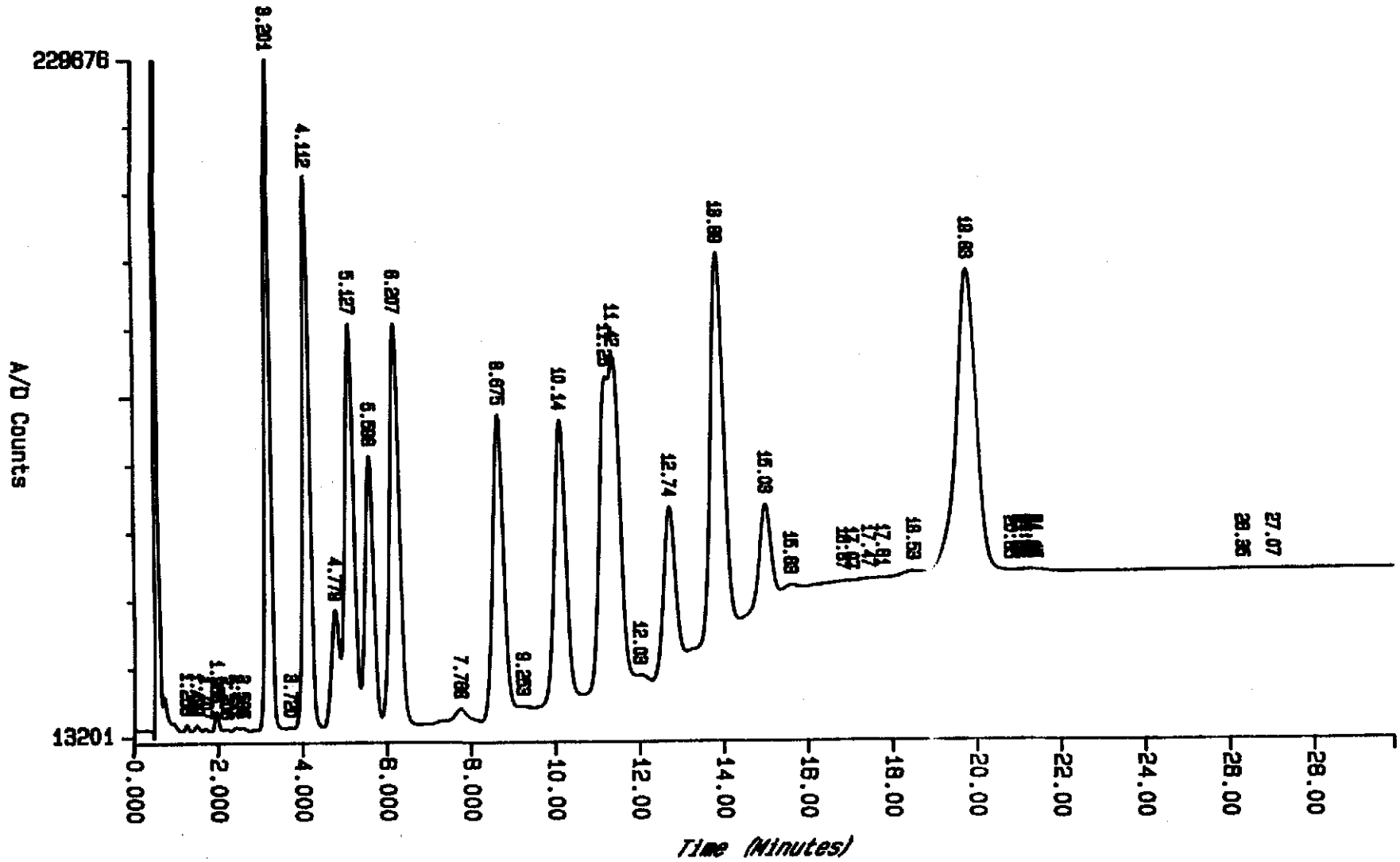
2) A reconstructed gas chromatogram for the appropriate standard compounds analyzed with the same GC under the same operating conditions.



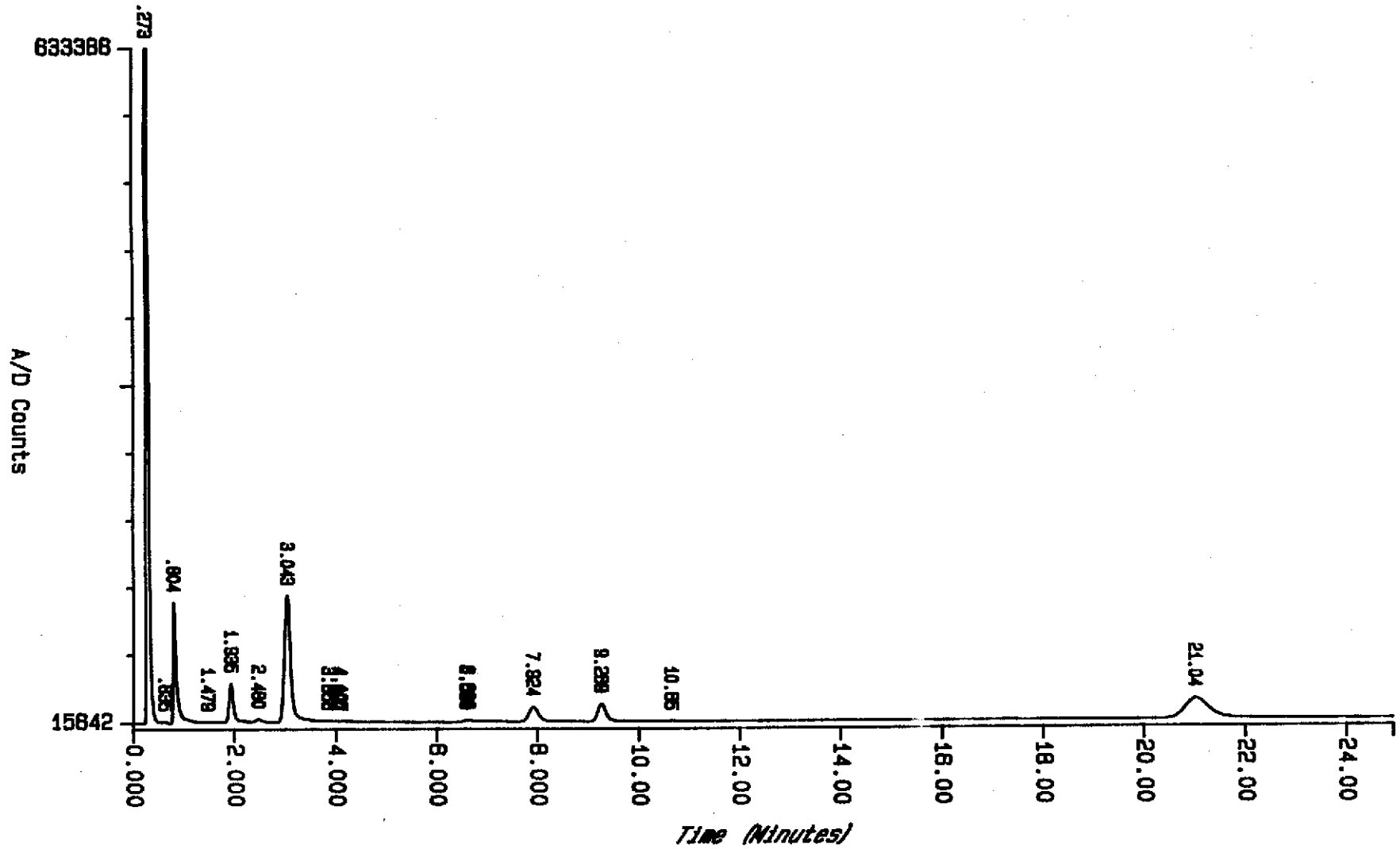
Sample: H6068 Injected at 14:12:55 ON JUN 27, 1985
Raw File: H6069D Proc File: H6068C Method: AP8PST



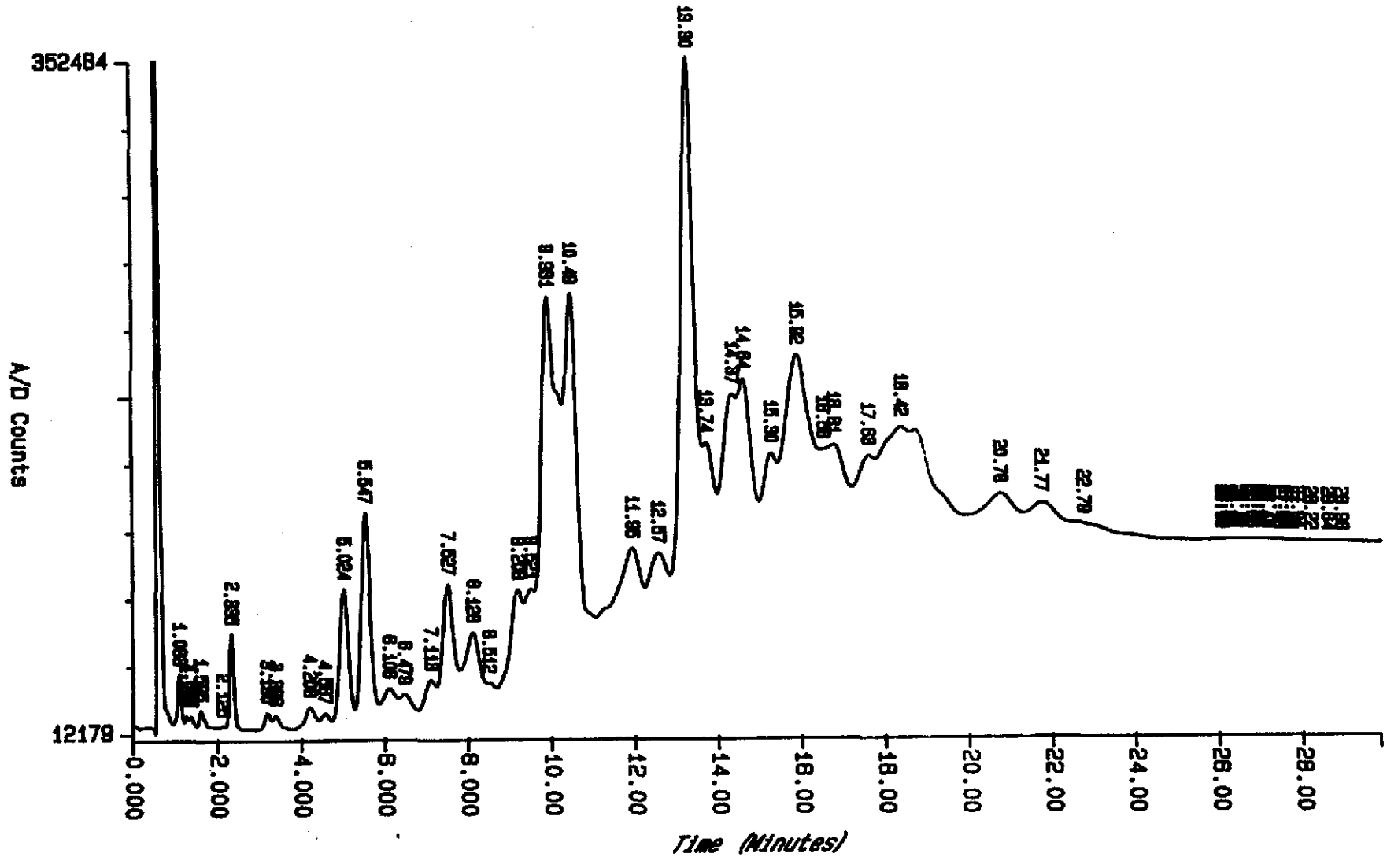
Sample: H6068 Injected at 1:34:13 ON JUN 27, 1985
Raw File: H6068B Proc File: H6068A Method: AP8FPD



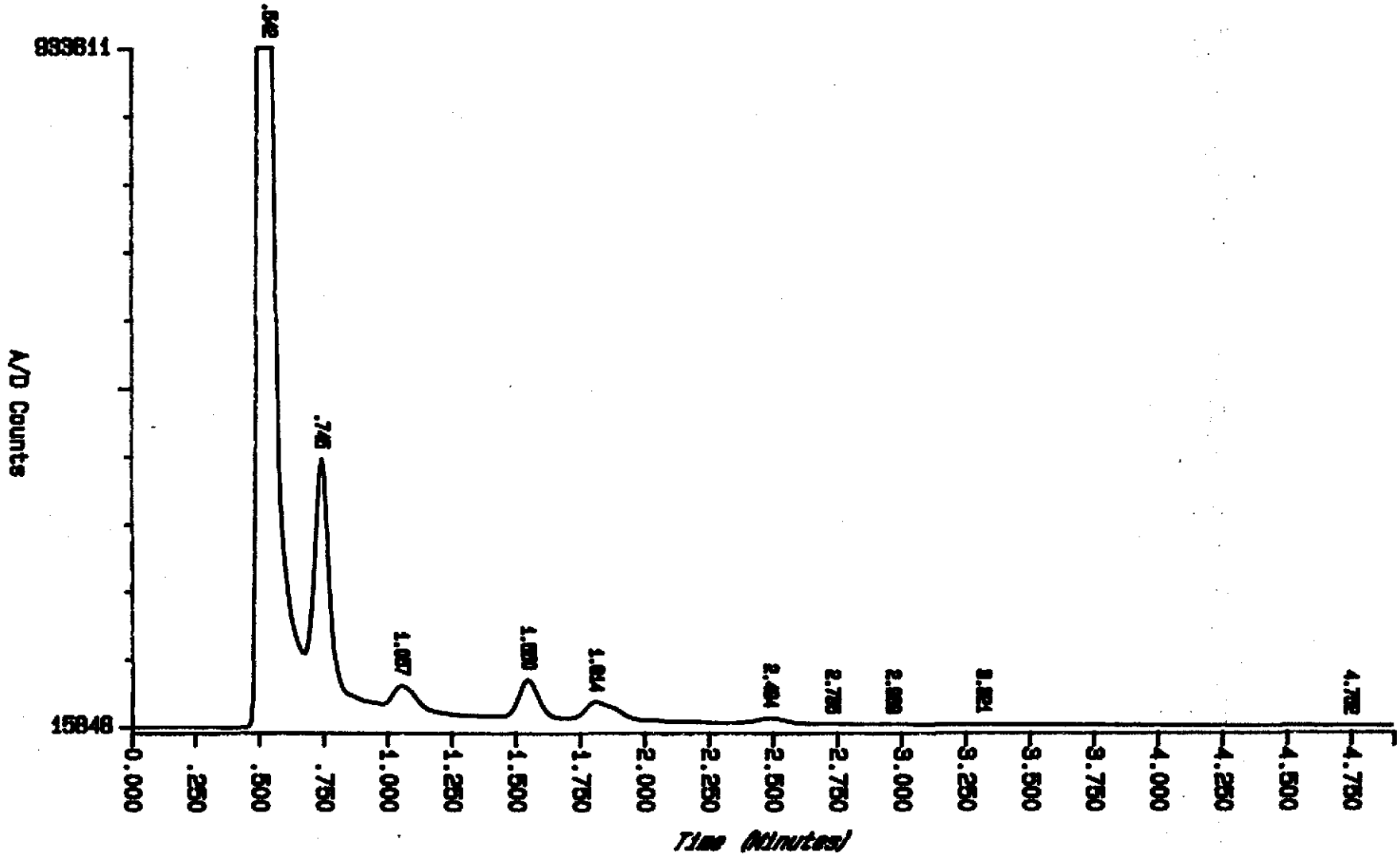
Sample: PEST STDB Injected at 3:03:46 ON JUN 27, 1985
Raw File: RW0797 Proc File: PW0797 Method: AP8PST



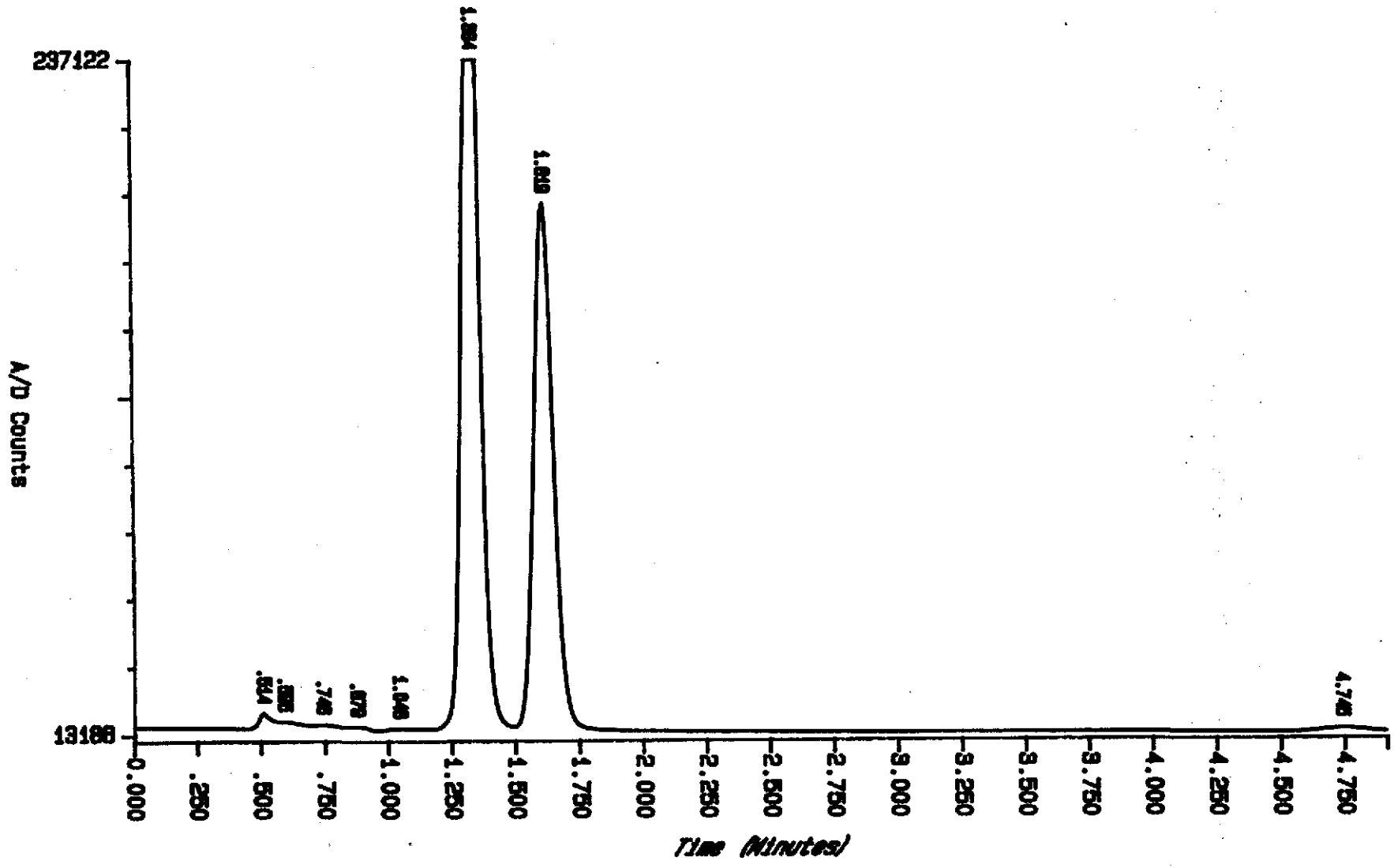
Sample: FPD STDB Injected at 15:50:47 ON JUN 26, 1985
Raw File: RW0790 Proc File: PW0790 Method: AP8FPD



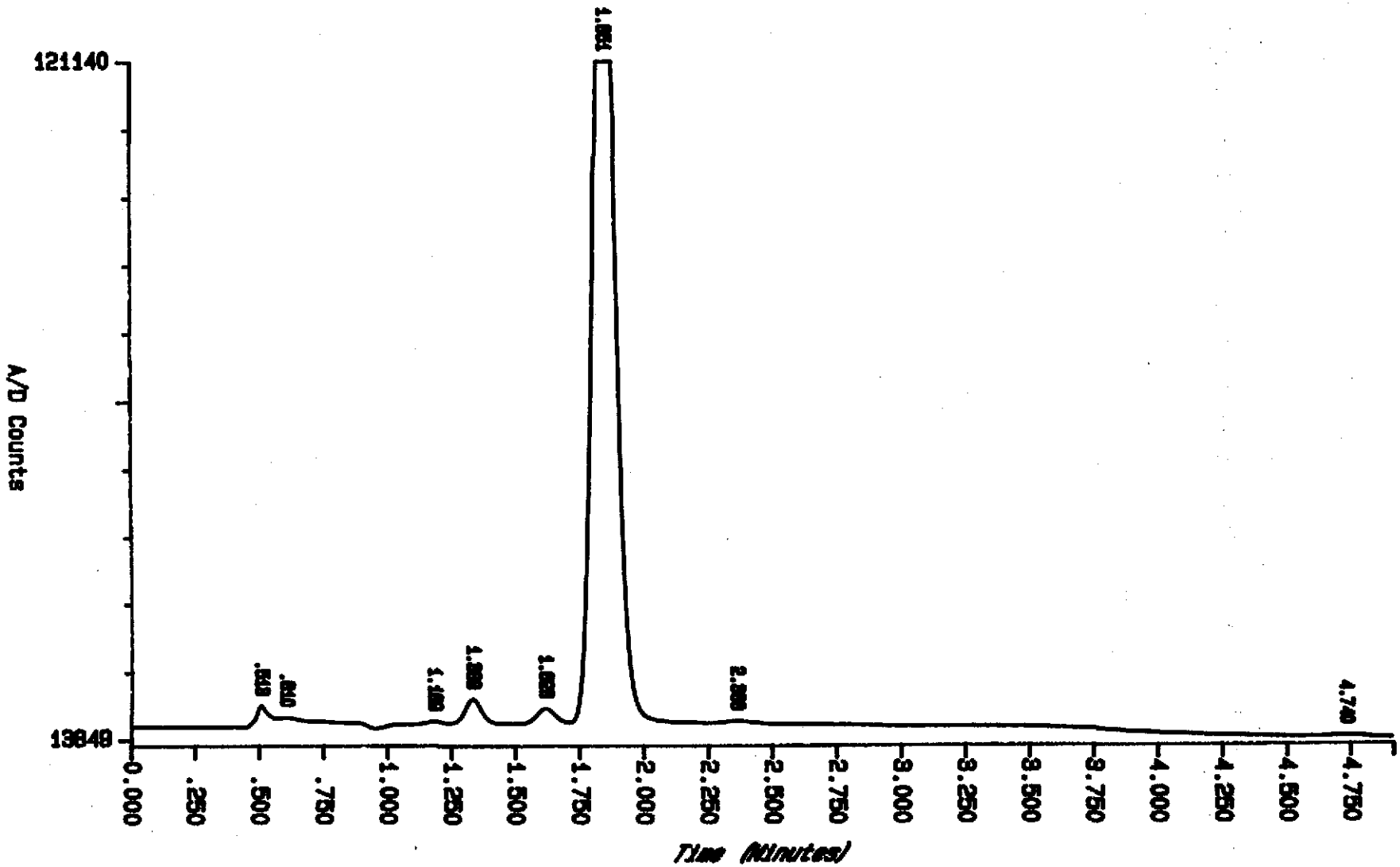
Sample: TCK STD B Injected at 19:33:39 ON JUN 27, 1985
Raw File: RW0810 Proc File: PW0810 Method: AP8PST



Sample: H8068 Injected at 12:14:54 ON JUL 2, 1985
Raw File: H8068N Proc File: H8068M Method: HERB8



Sample: HERBB Injected at 10:21:57 ON JUL 2, 1985
Raw File: RK1530 Proc File: PK1530 Method: HERBB



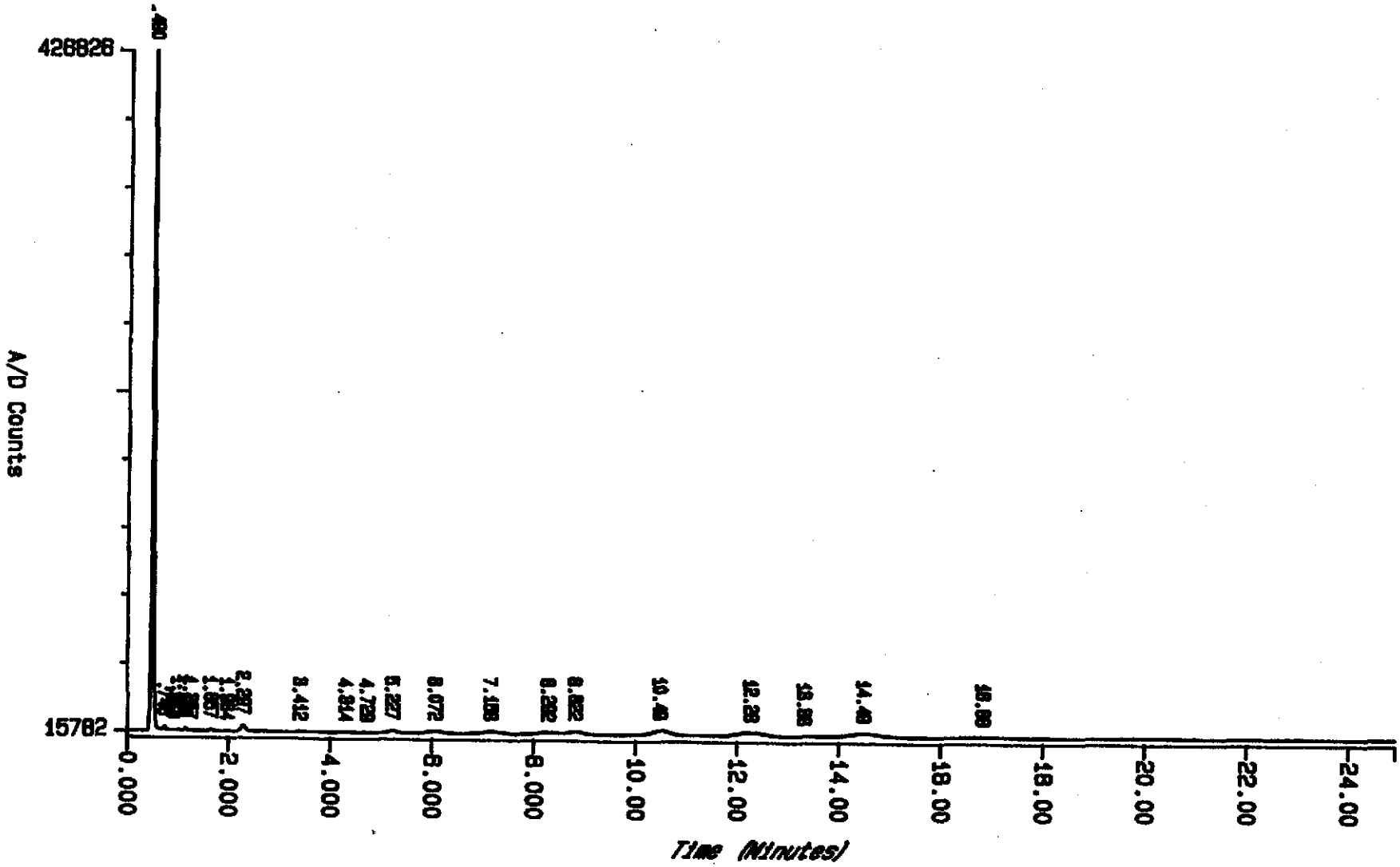
Sample: 245TB Injected at 10:28:29 ON JUL 2, 1985
Raw File: RK1531 Proc File: PK1531 Method: HERBB

Appendix A1

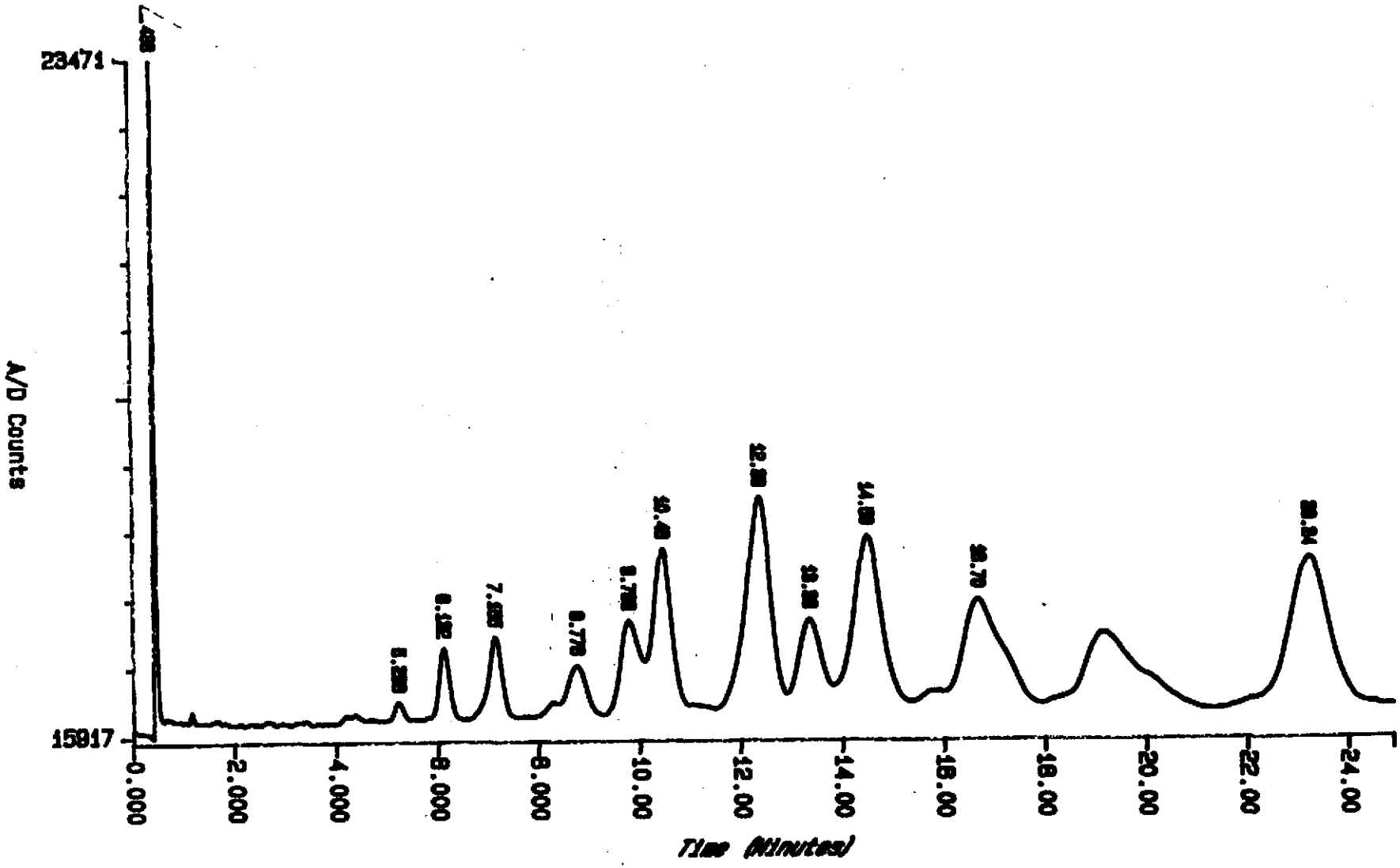
Gas Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed gas chromatogram for each sample analyzed by a GC instrument.

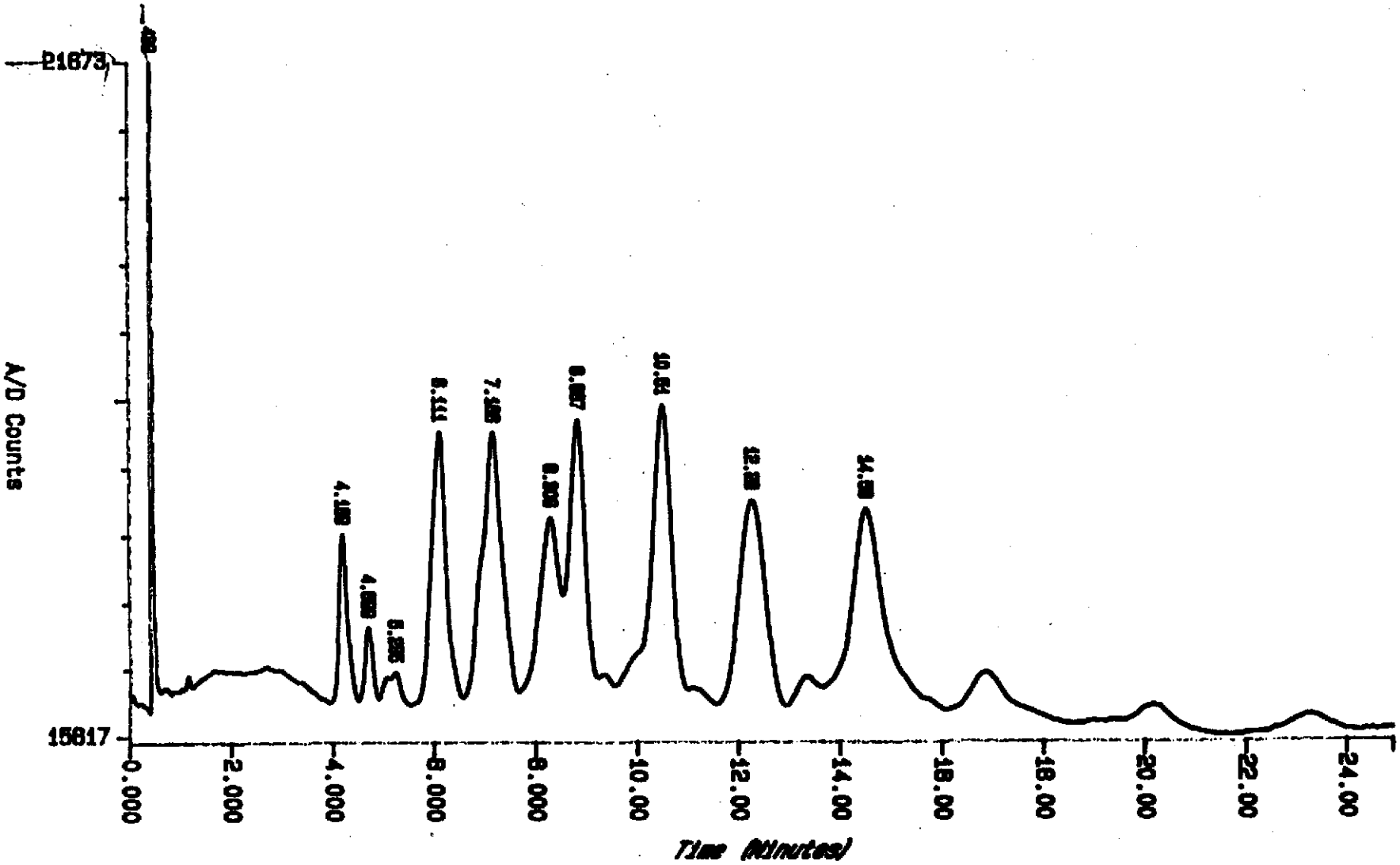
2) A reconstructed gas chromatogram for the appropriate standard compounds analyzed with the same GC under the same operating conditions.



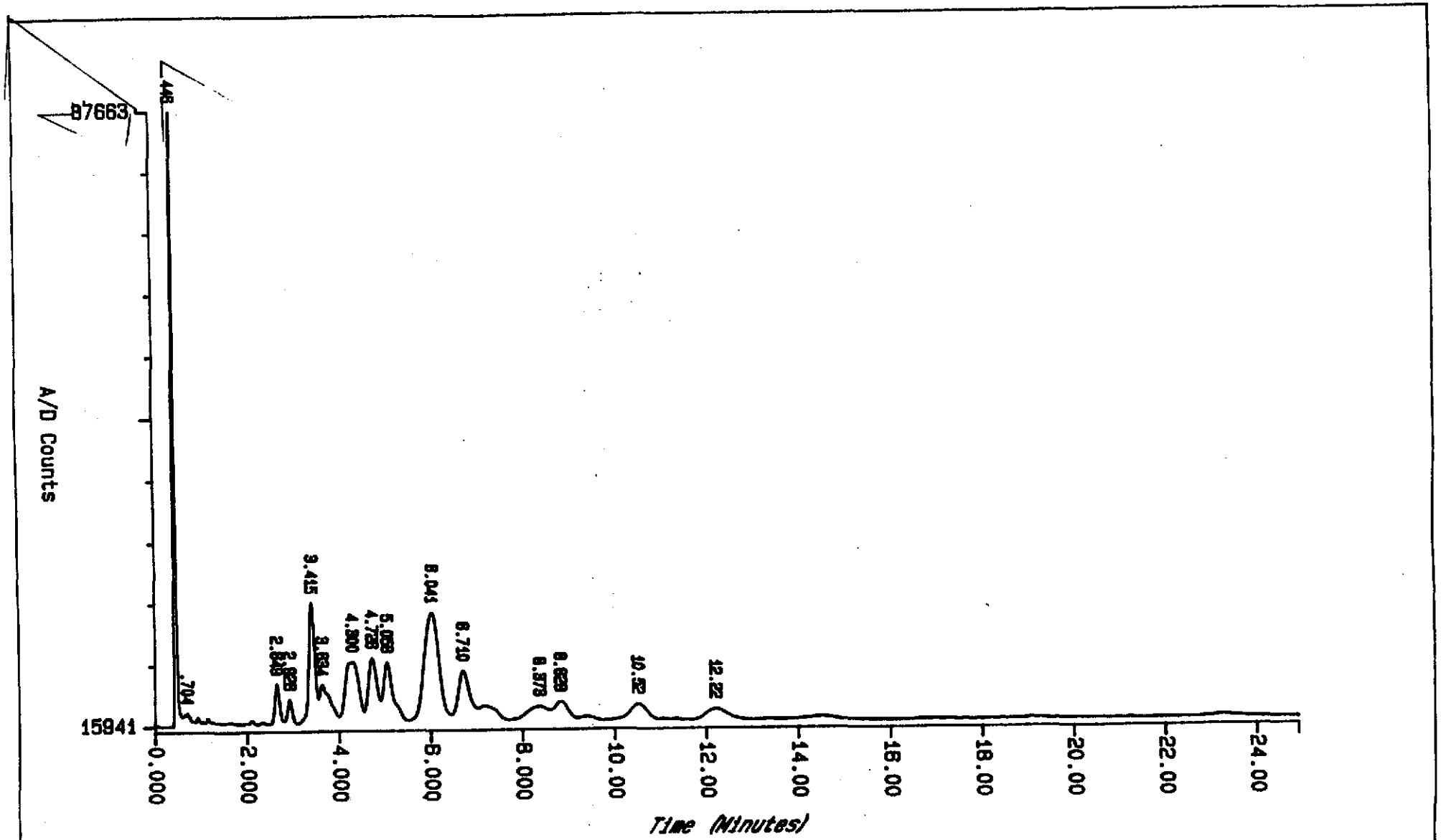
Sample: H6068 Injected at 17:39:33 ON JUL 11, 1985
Raw File: RJ1380 Proc File: PJ1380 Method: PCB80



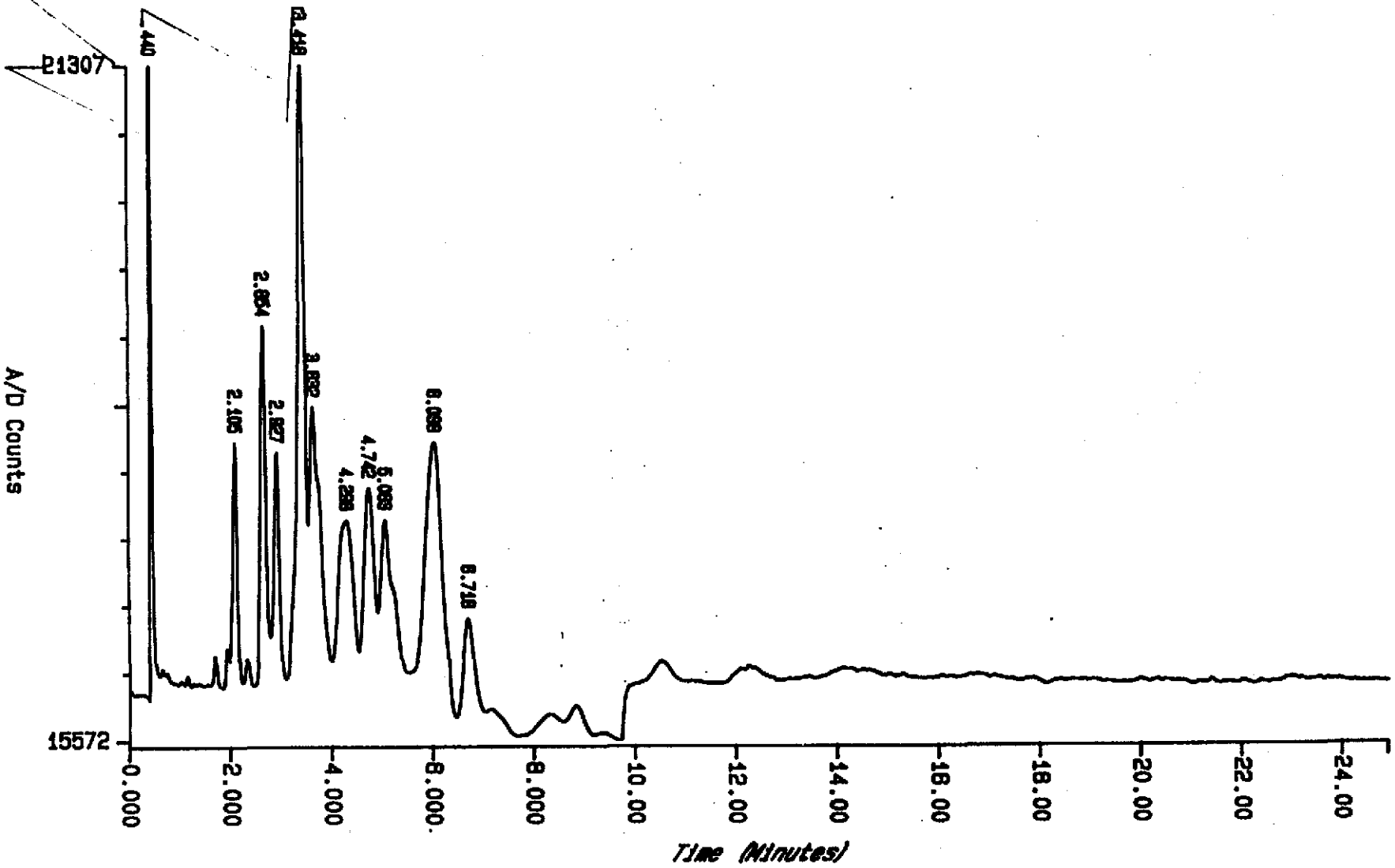
Sample: AR1280-0.5 Injected at 12:23:58 ON JUL 11, 1985
Raw File: RJ1389 Proc File: PJ1389 Method: PCBBO



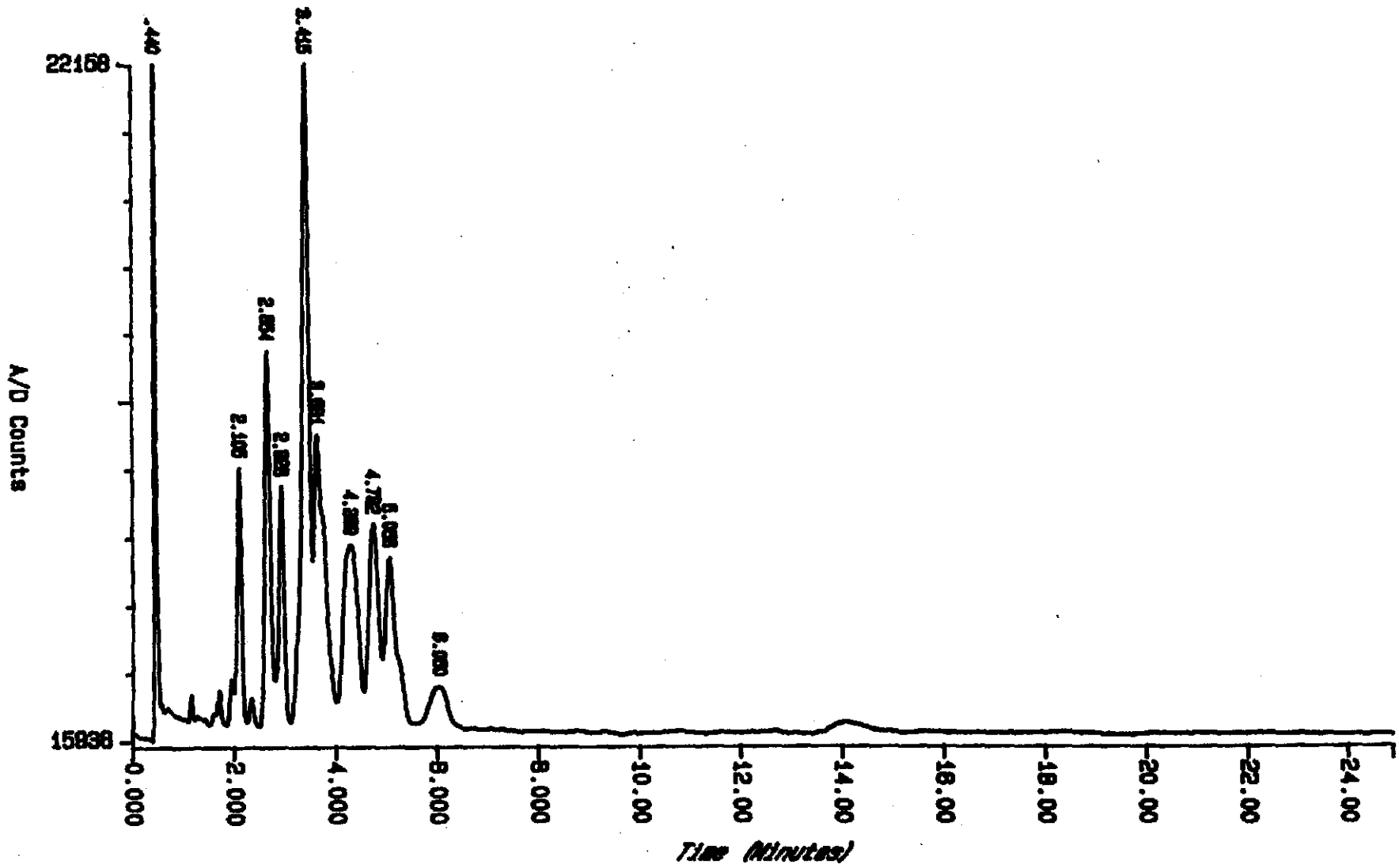
Sample: AR1254-0.5 Injected at 12:52:28 ON JUL 11, 1985
Raw File: RJ1370 Proc File: PJ1370 Method: PCBBO



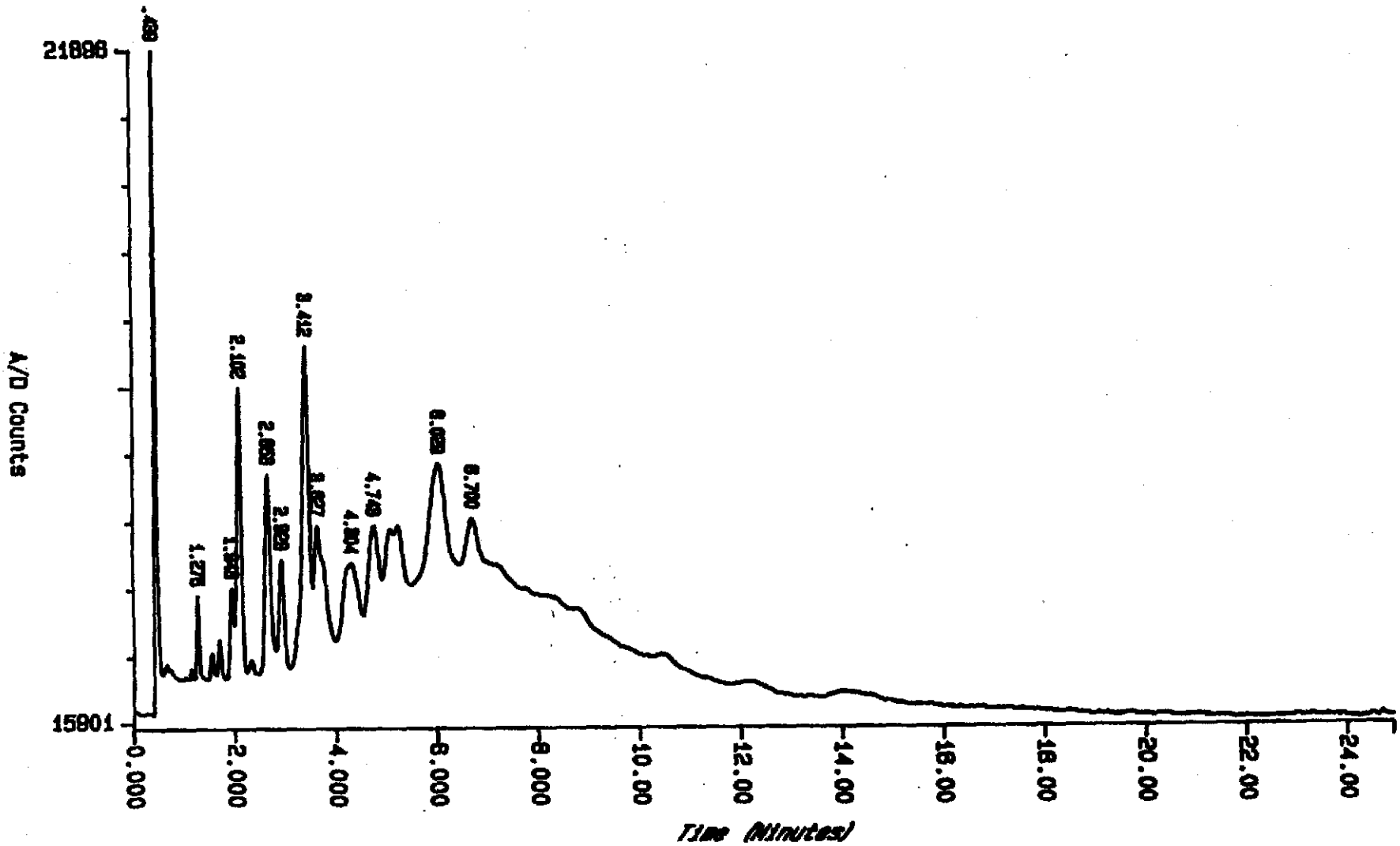
Sample: AR1248-0.5 Injected at 13:20:58 ON JUL 11, 1985
Raw File: RJ1371 Proc File: PJ1371 Method: PCBBO



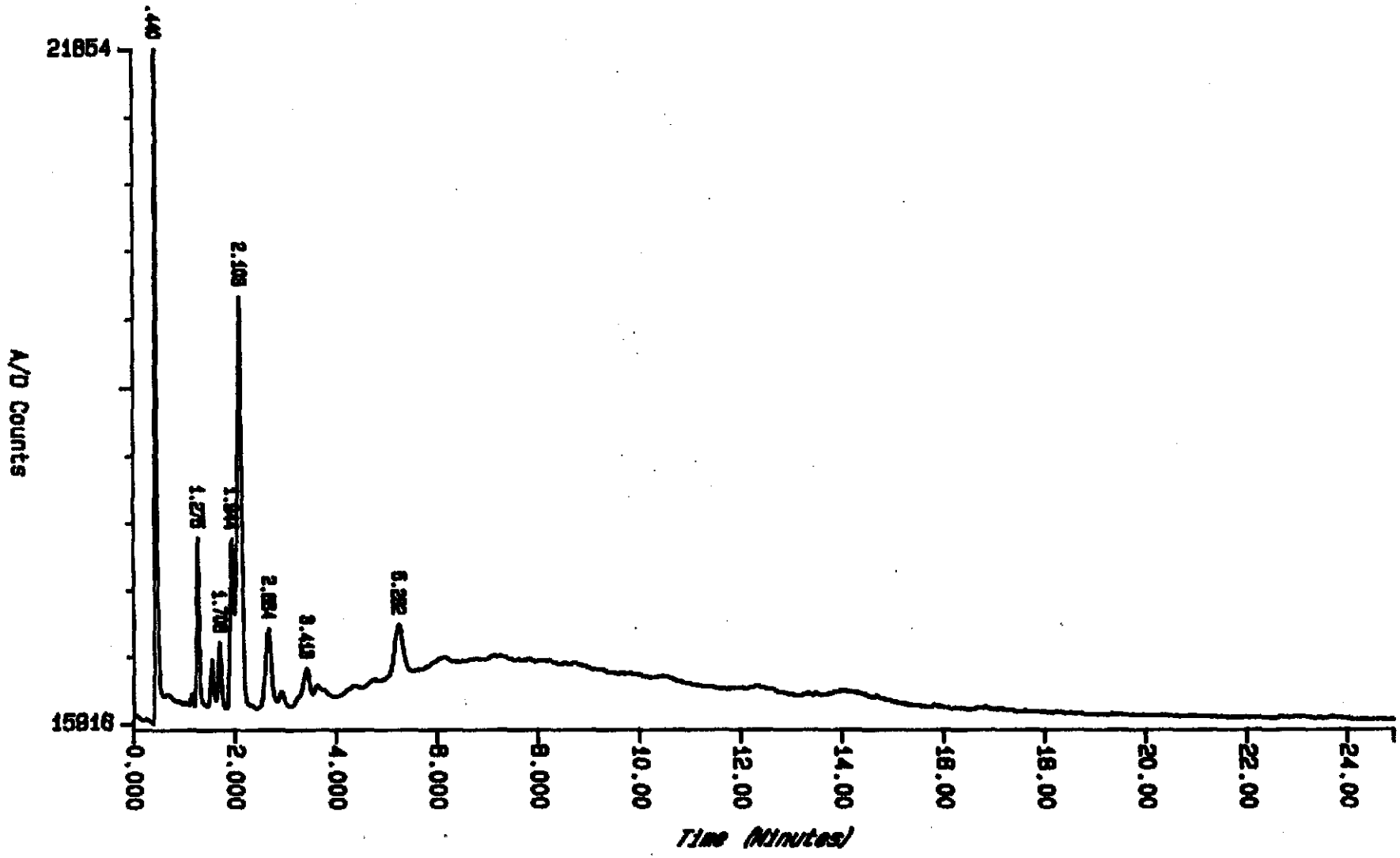
Sample: AR1242-0.5 Injected at 13:49:34 ON JUL 11, 1985
Raw File: RJ1372 Proc File: PJ1372 Method: PCBBO



Sample: AR1016-0.5 Injected at 19:06:21 ON JUL 11, 1985
Raw File: RJ1383 Proc File: PJ1383 Method: PCBBO



Sample: AR1232-0.5 Injected at 18:08:27 ON JUL 11, 1985
Raw File: RJ1381 Proc File: PJ1381 Method: PCBBO



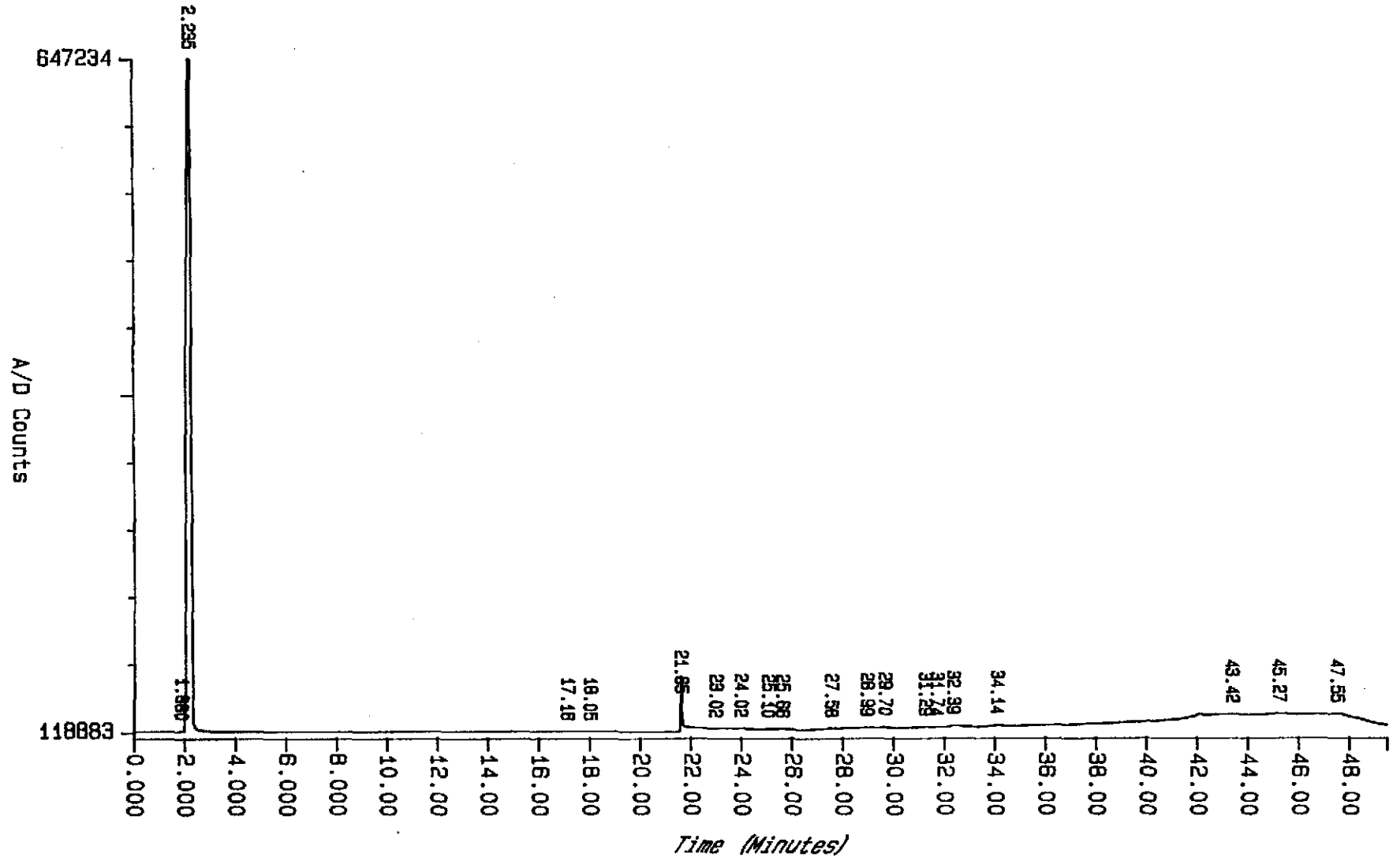
Sample: AR1221-0.5 Injected at 18:37:23 ON JUL 11, 1985
Raw File: RJ1382 Proc File: PJ1382 Method: PCBBO

Appendix A2

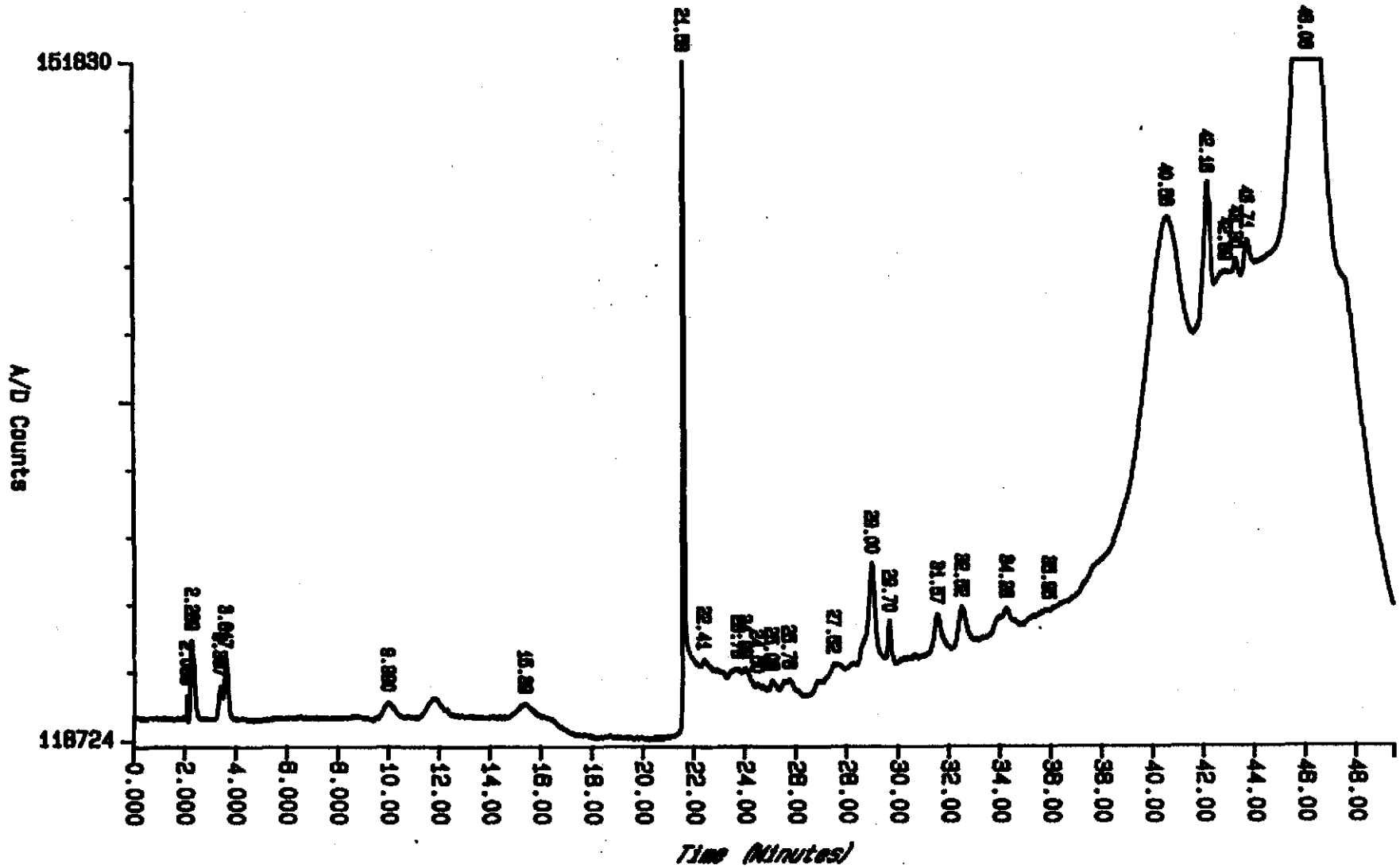
Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed chromatogram for each sample analyzed by an HPLC instrument.

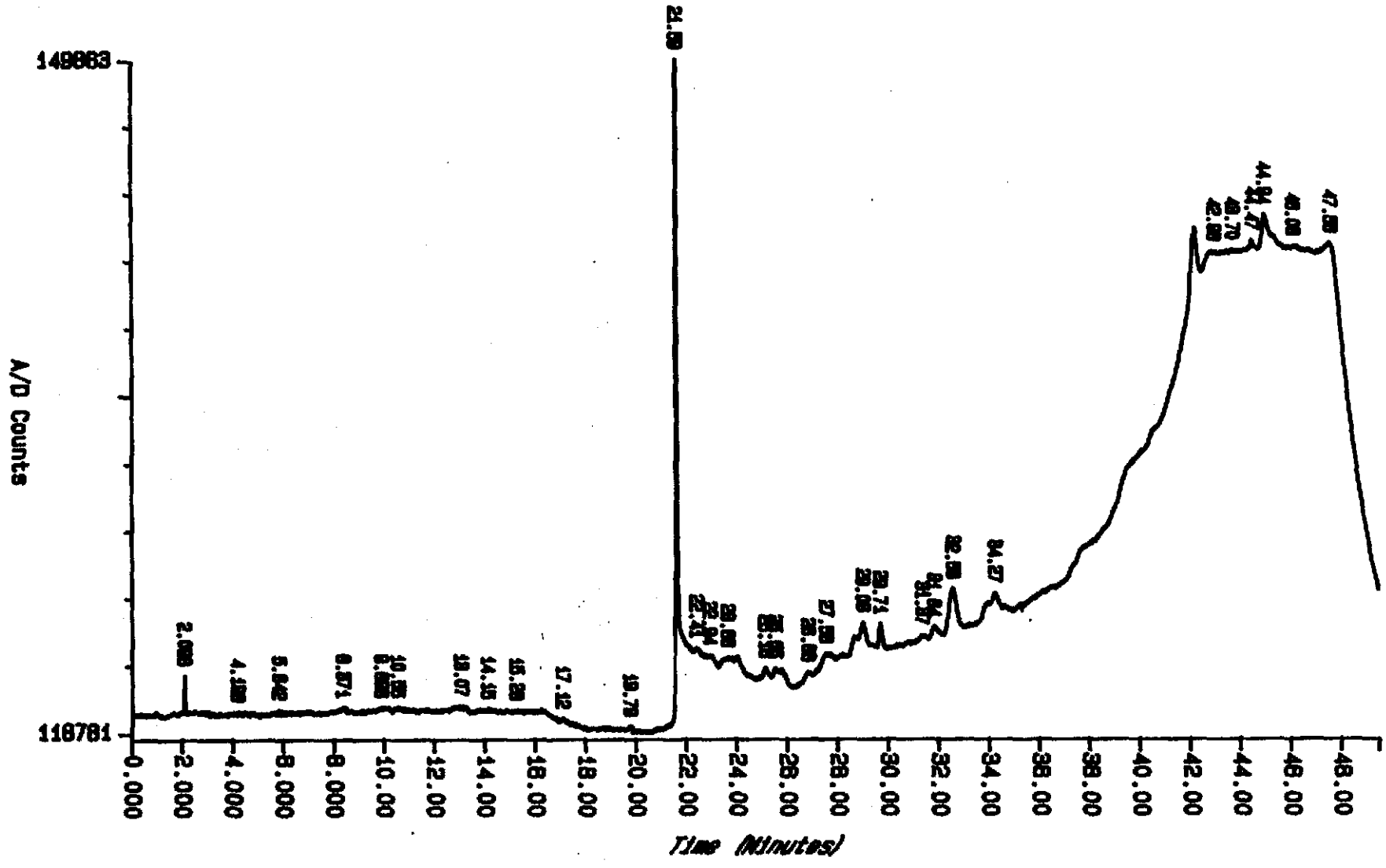
2) A reconstructed chromatogram for the appropriate standard compounds analyzed with the same HPLC under the same operating conditions.



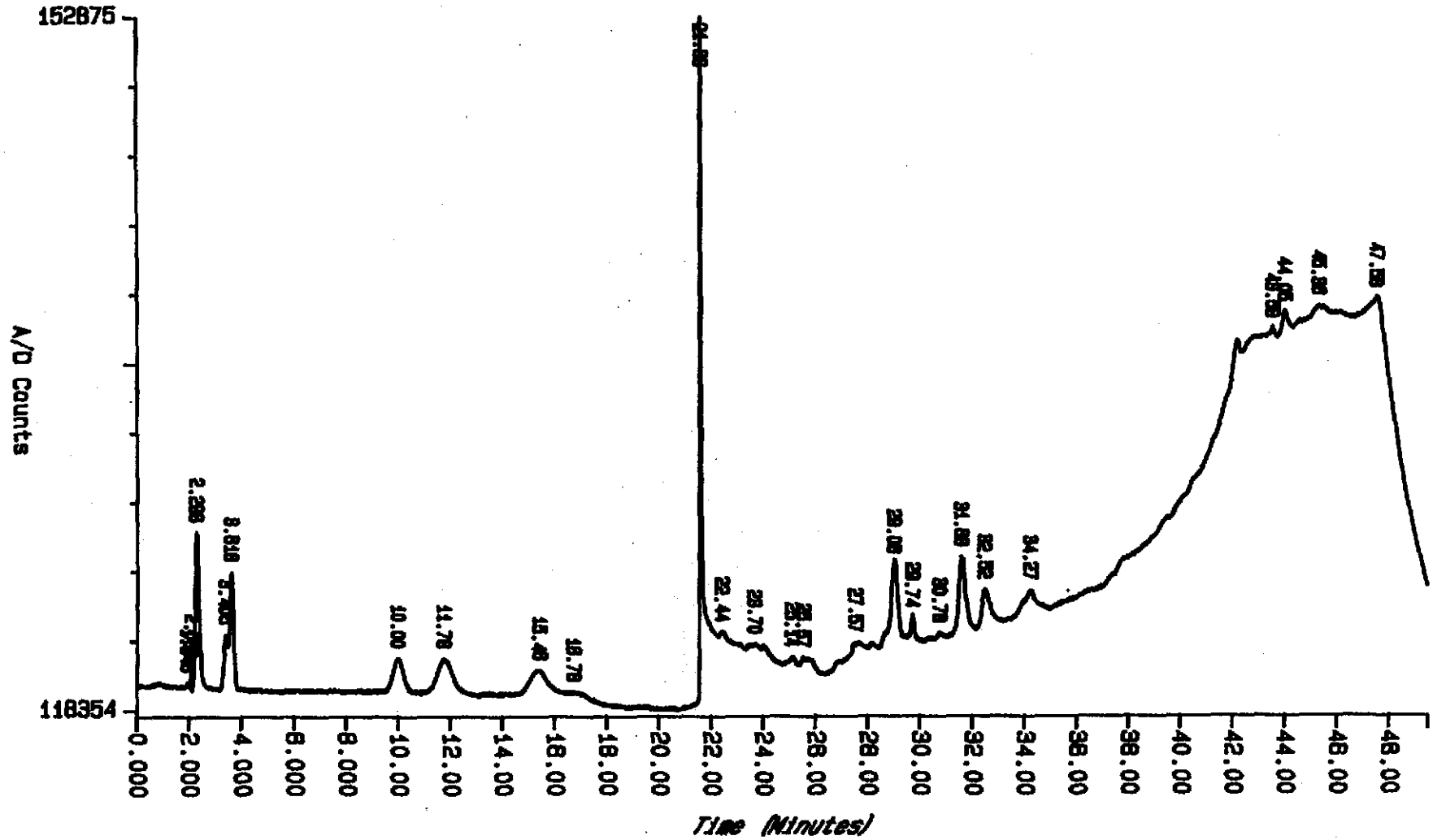
Sample: H6068 Injected at 19:55:56 ON JUL 11, 1985
Raw File: RH1529 Proc File: PH1529 Method: DAI210



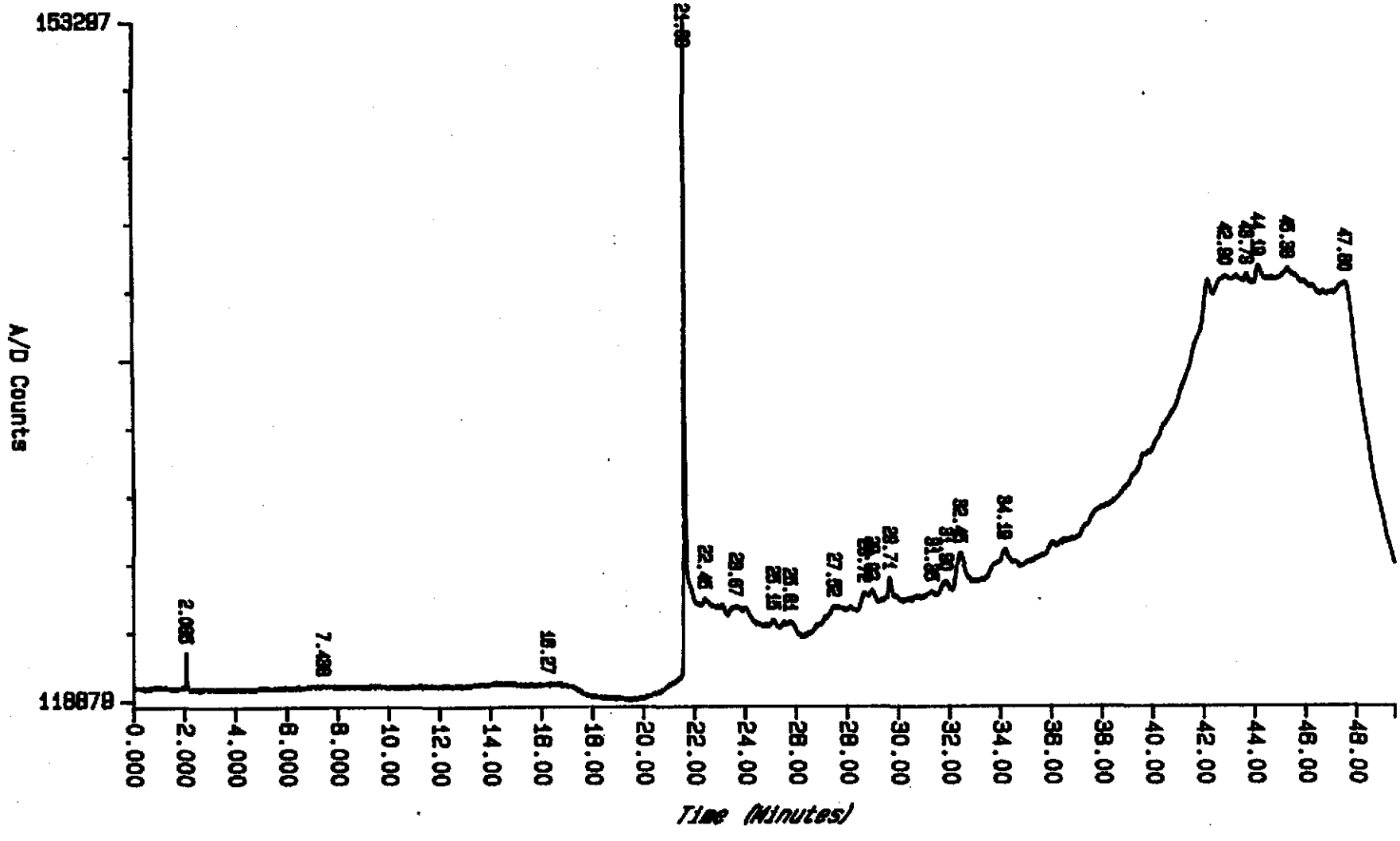
Sample: STD10972-0.5 Injected at 21:28:52 ON JUL 10, 1985
Raw File: RH1505 Proc File: PH1505 Method: DAI210



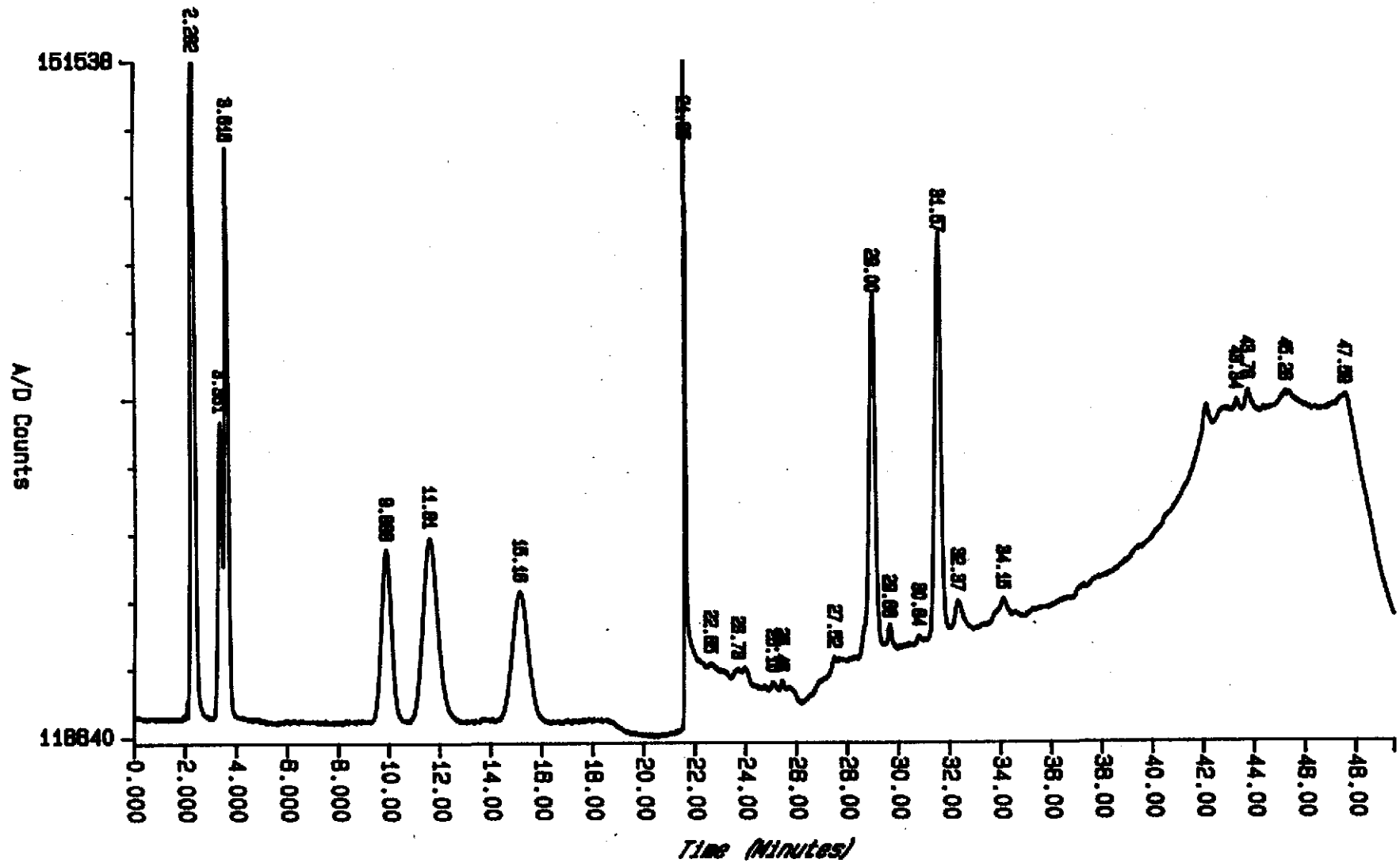
Sample: STD10976-0.5 Injected at 22:24:22 ON JUL 10, 1985
Raw File: RH1506 Proc File: PH1506 Method: DAI210



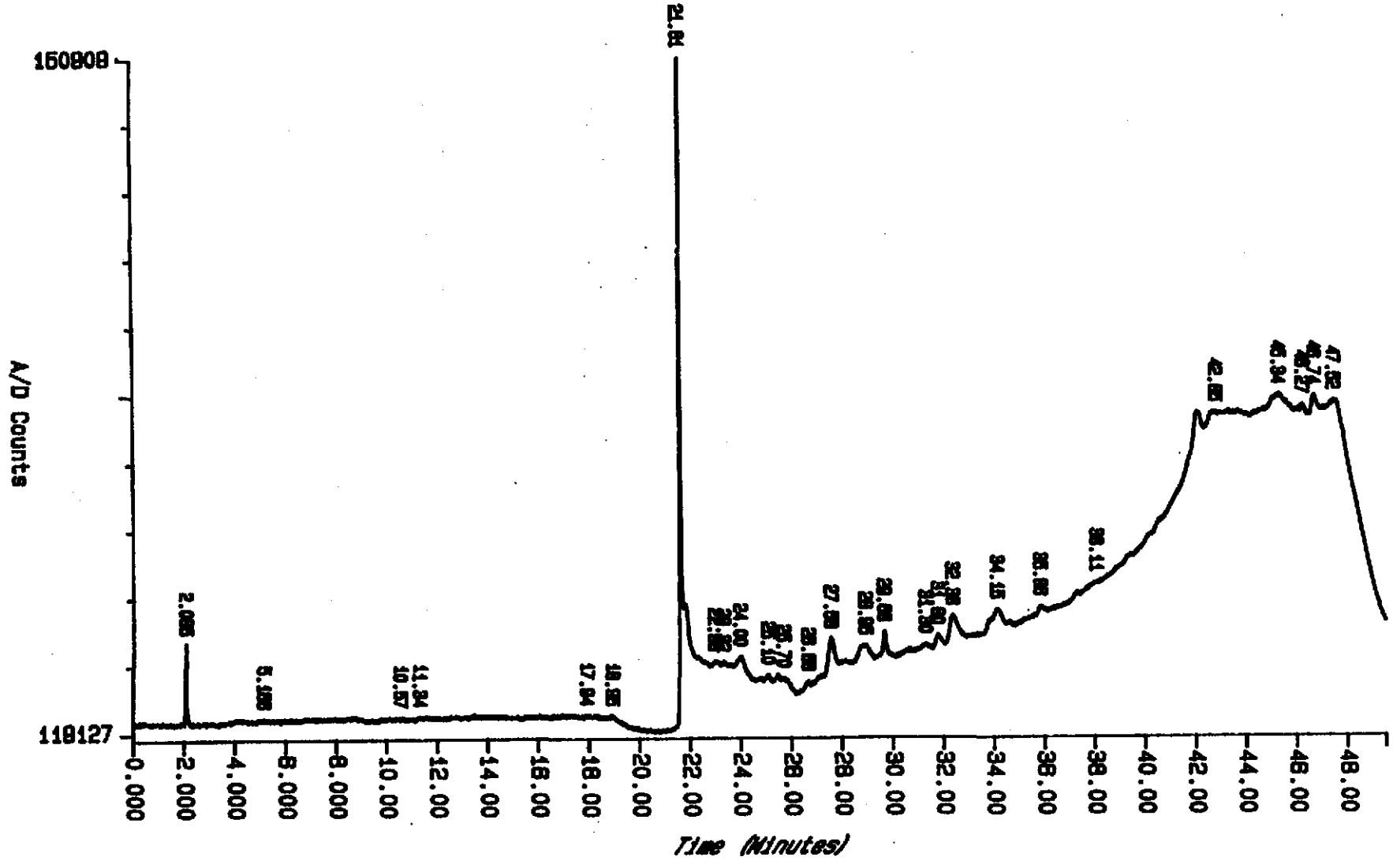
Sample: STD10971-1.0 Injected at 6:44:01 ON JUL 11, 1985
Raw File: RH1515 Proc File: PH1515 Method: DAI210



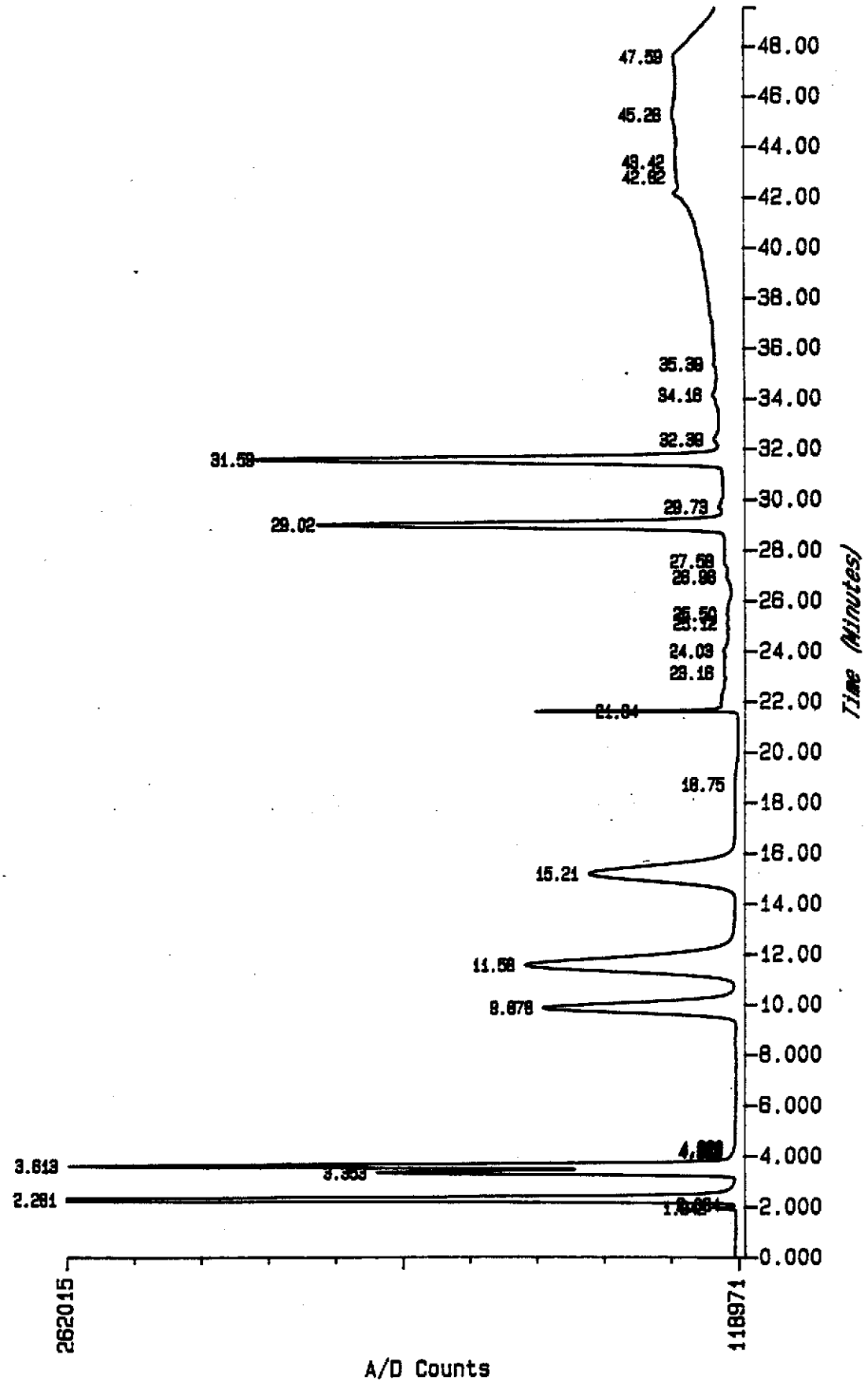
Sample: STD10975-1.0 Injected at 7:39:31 ON JUL 11, 1985
Raw File: RH1516 Proc File: PH1516 Method: DAI210

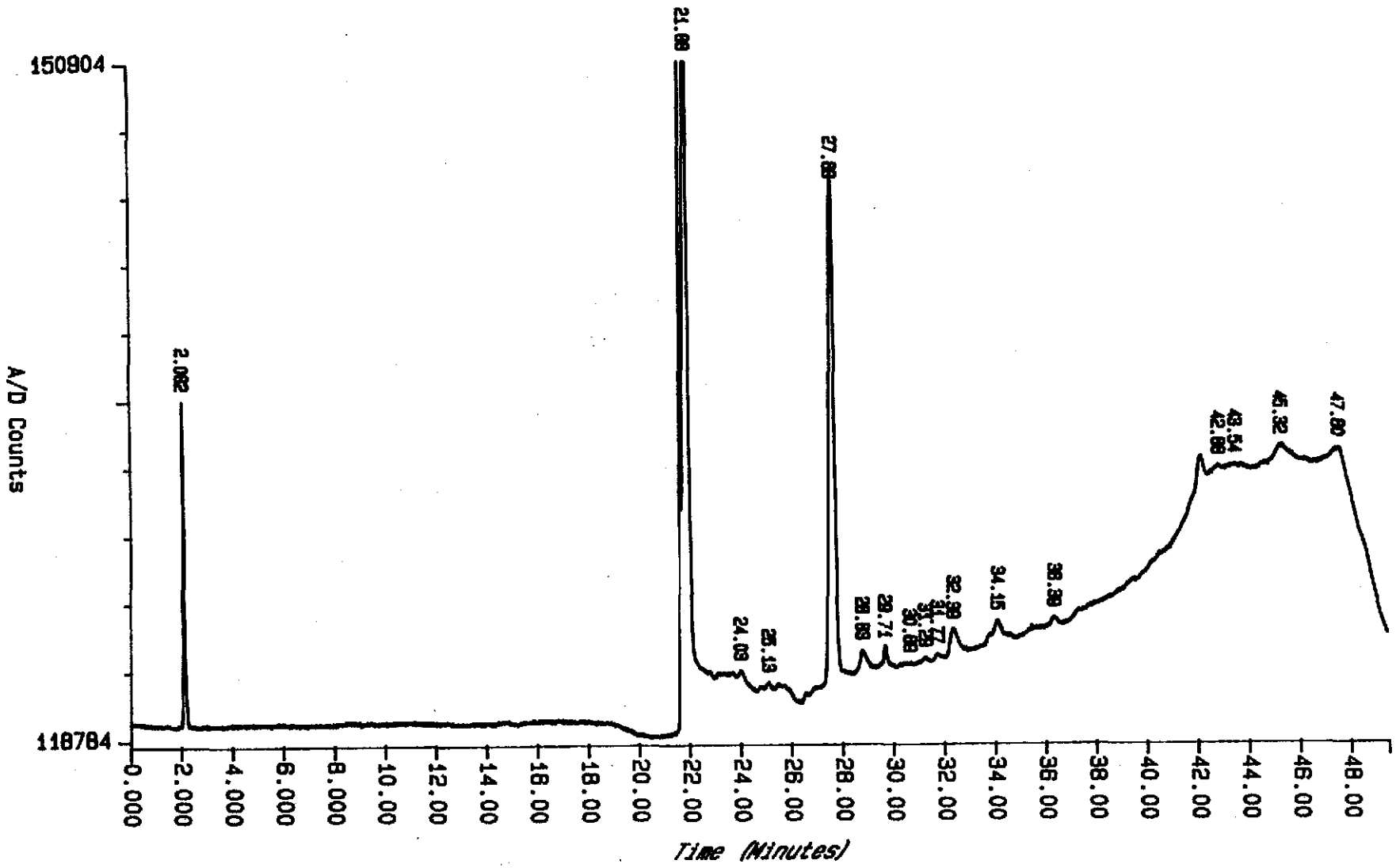


Sample: STD10970-5.0 Injected at 16:13:52 ON JUL 11, 1985
Raw File: RH1525 Proc File: PH1525 Method: DAI210

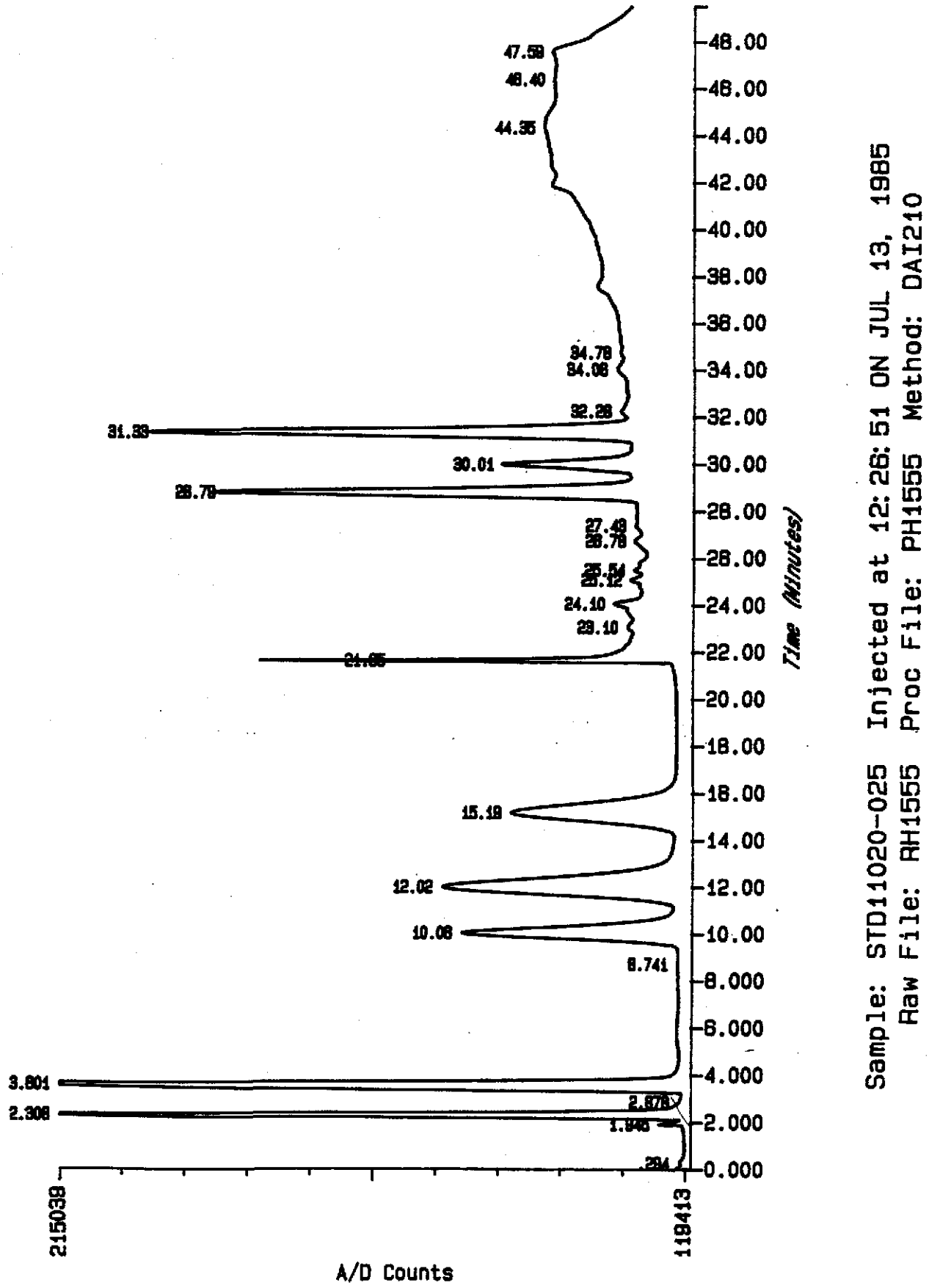


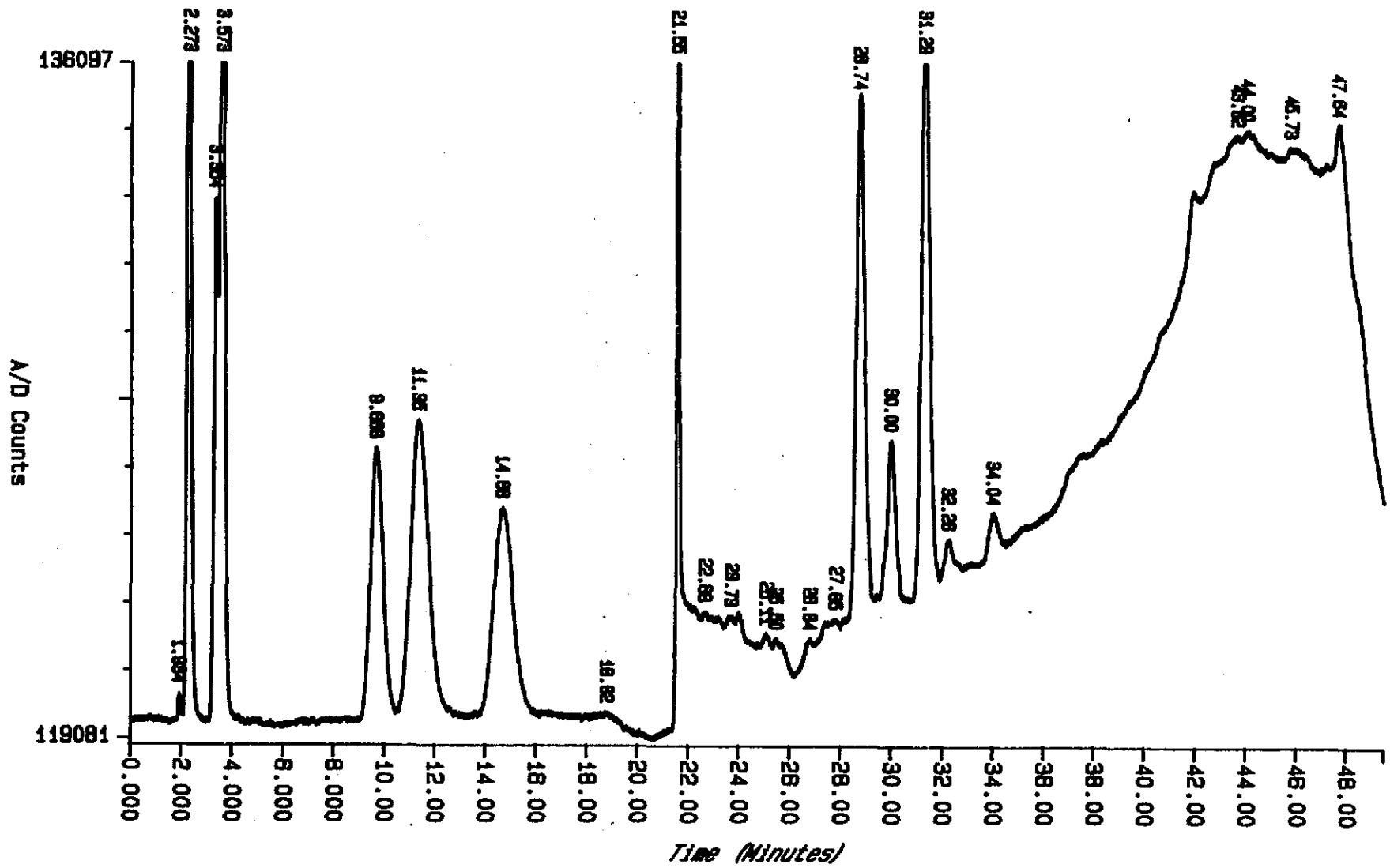
Sample: STD10974-5.0 Injected at 17:09:22 ON JUL 11, 1985
Raw File: RH1526 Proc File: PH1526 Method: DAI210


Sample: STD10969-25. Injected at 20:51:26 ON JUL 11, 1985
Raw File: RH1530 Proc File: PH1530 Method: DAI210
Time (Minutes)
A/D Counts
262015
118971
0.000
2.000
4.000
6.000
8.000
10.00
12.00
14.00
16.00
18.00
20.00
22.00
24.00
26.00
28.00
30.00
32.00
34.00
36.00
38.00
40.00
42.00
44.00
46.00
48.00
2.281
3.613
9.678
11.58
15.21
18.75
24.03
28.16
29.02
29.73
31.59
32.38
34.16
35.39
45.28
47.59

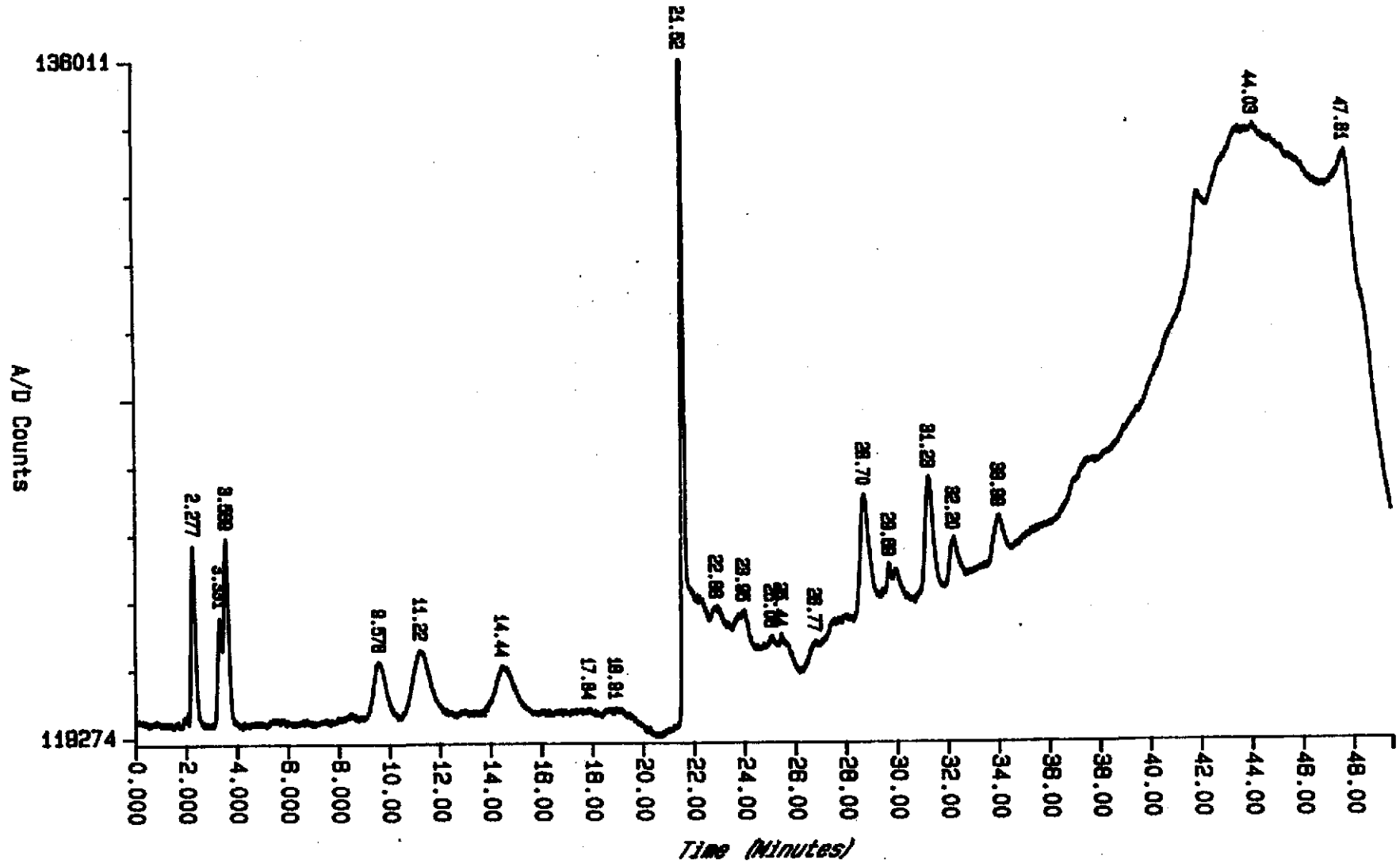


Sample: STD10973-25. Injected at 21:46:58 ON JUL 11, 1985
Raw File: RH1531 Proc File: PH1531 Method: DAI210

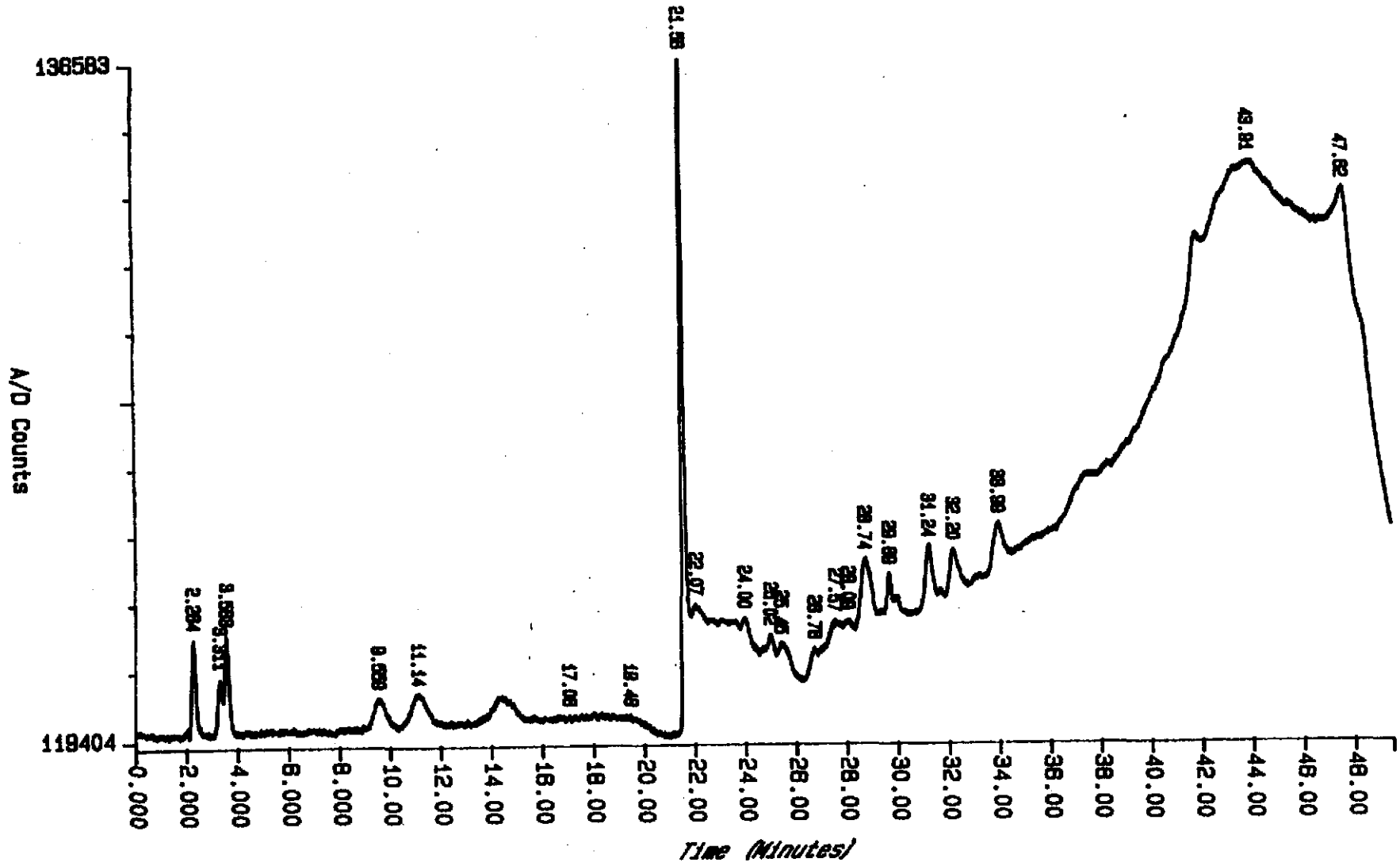

Sample: STD11020-025 Injected at 12:26:51 ON JUL 13, 1985
Raw File: RH1555 Proc File: PH1555 Method: DAI210
Time (Minutes)
A/D Counts
215038
119413
47.59
46.40
44.35
34.78
34.08
32.28
31.33
30.01
28.79
27.48
26.78
24.10
23.10
21.65
15.19
12.02
10.06
8.741
3.801
2.308
2.878
1.945
.294
48.00
46.00
44.00
42.00
40.00
38.00
36.00
34.00
32.00
30.00
28.00
26.00
24.00
22.00
20.00
18.00
16.00
14.00
12.00
10.00
8.000
6.000
4.000
2.000
0.000



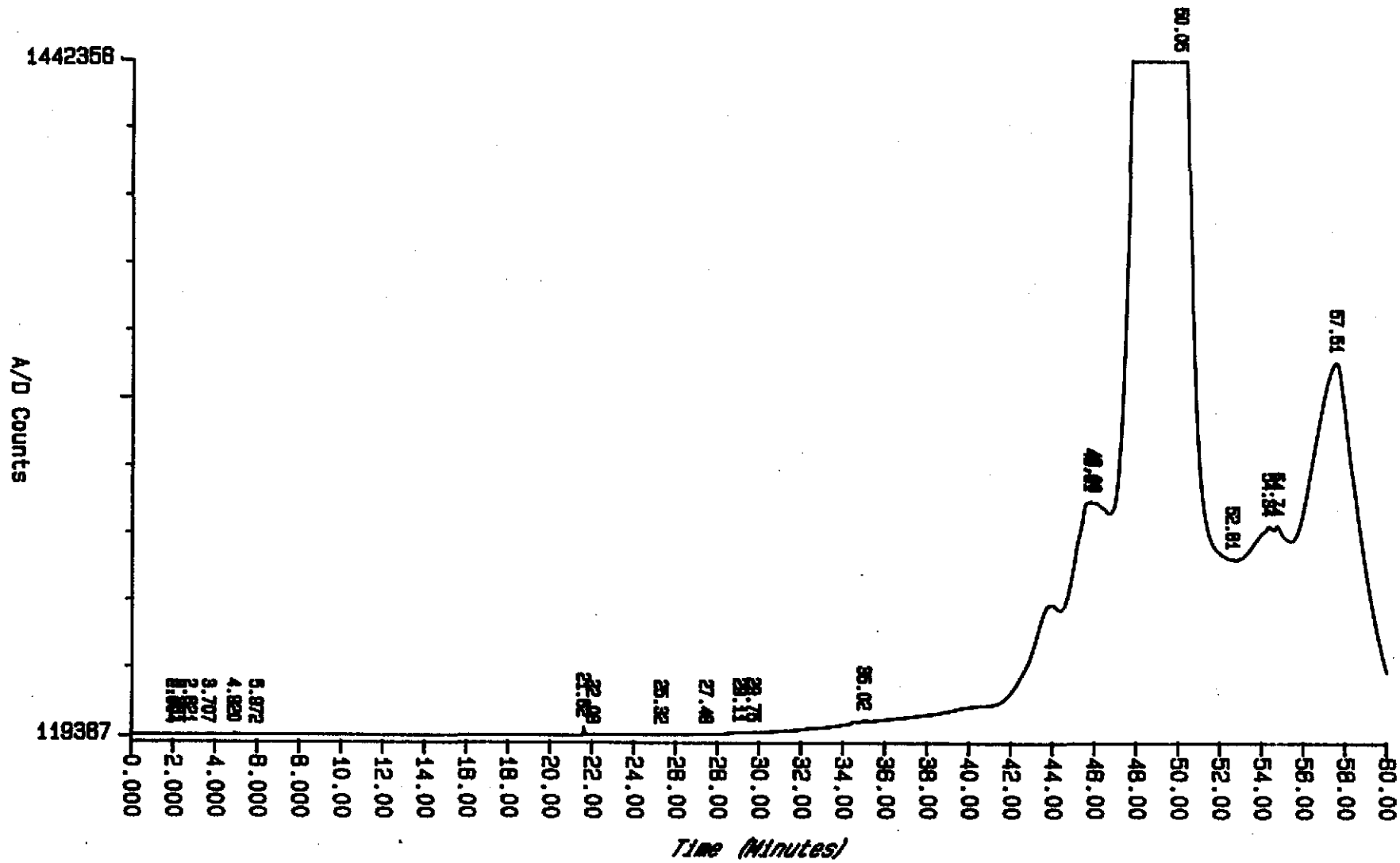
Sample: STD11021-5.0 Injected at 13:22:24 ON JUL 13, 1985
Raw File: RH1556 Proc File: PH1556 Method: DAI210



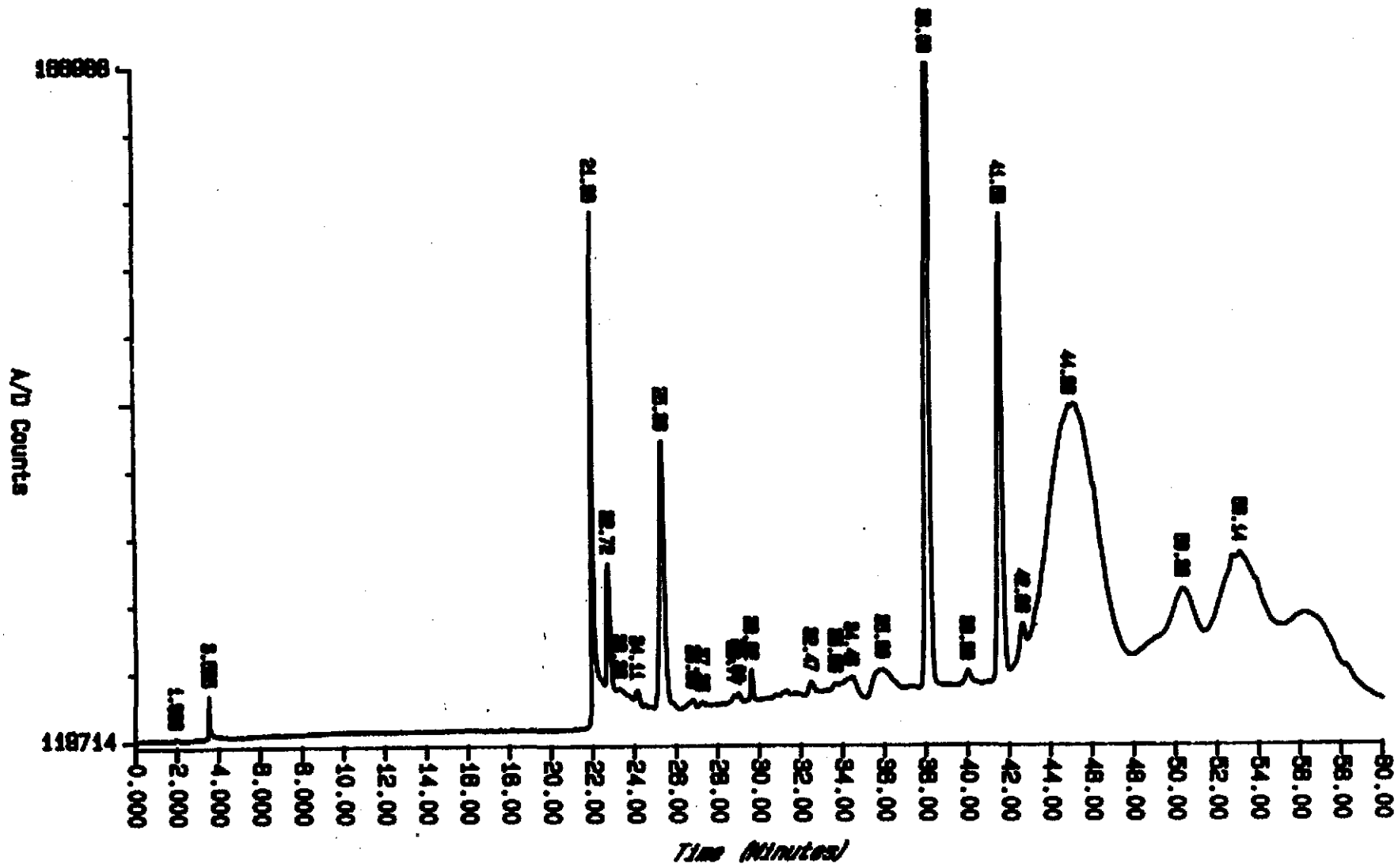
Sample: STD11022-1.0 Injected at 14:17:56 ON JUL 13, 1985
Raw File: RH1557 Proc File: PH1557 Method: DAI210



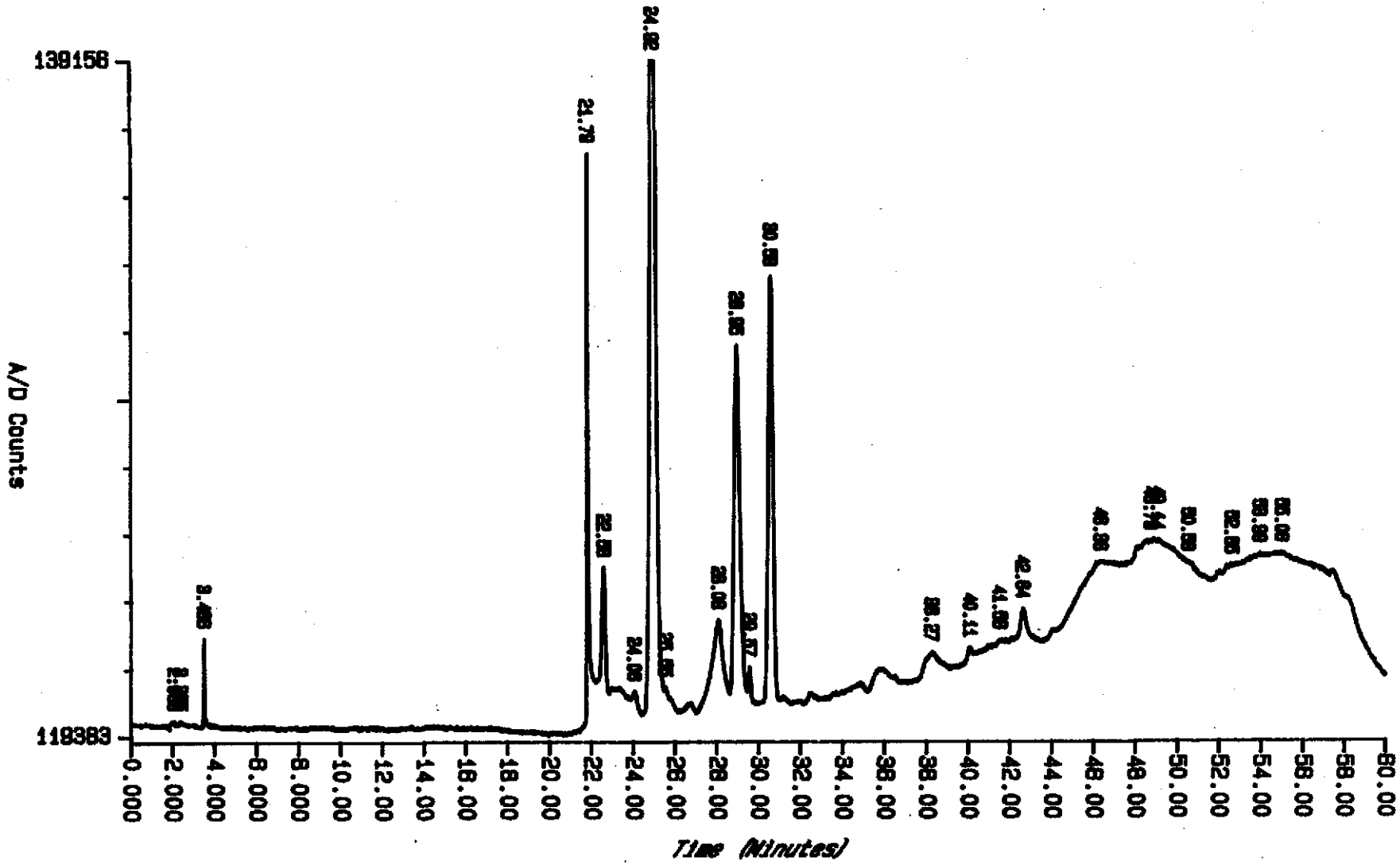
Sample: STD11023-0.5 Injected at 15:13:28 ON JUL 13, 1985
Raw File: RH1558 Proc File: PH1558 Method: DAI210



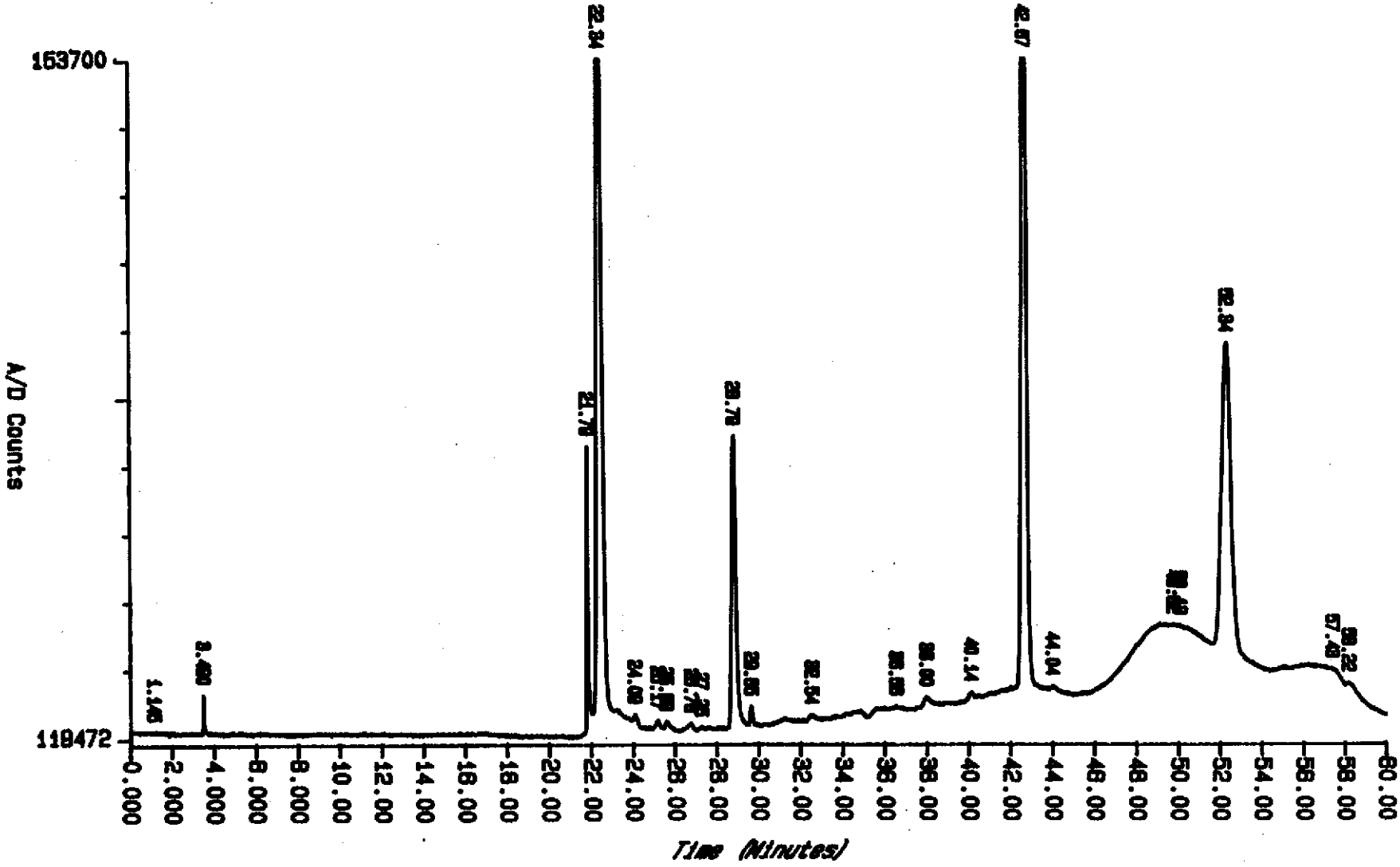
Sample: H6068 Injected at 10:13:54 ON JUL 8, 1985
Raw File: RH1327 Proc File: PH1327 Method: EXT250



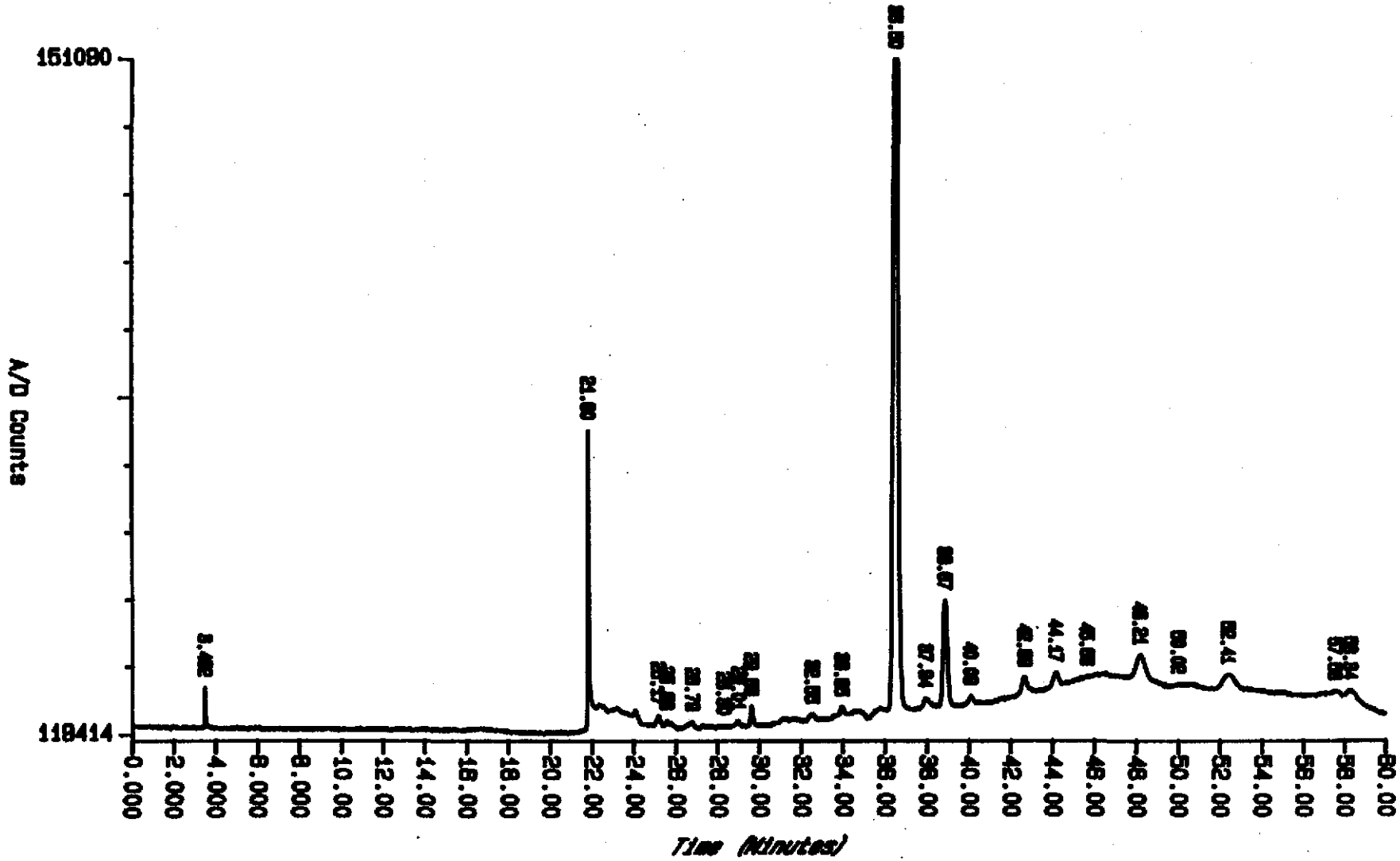
Sample: STD10901-025 Injected at 12:34:22 ON JUL 8, 1985
Raw File: RH1300 Proc File: PH1300 Method: EXT250



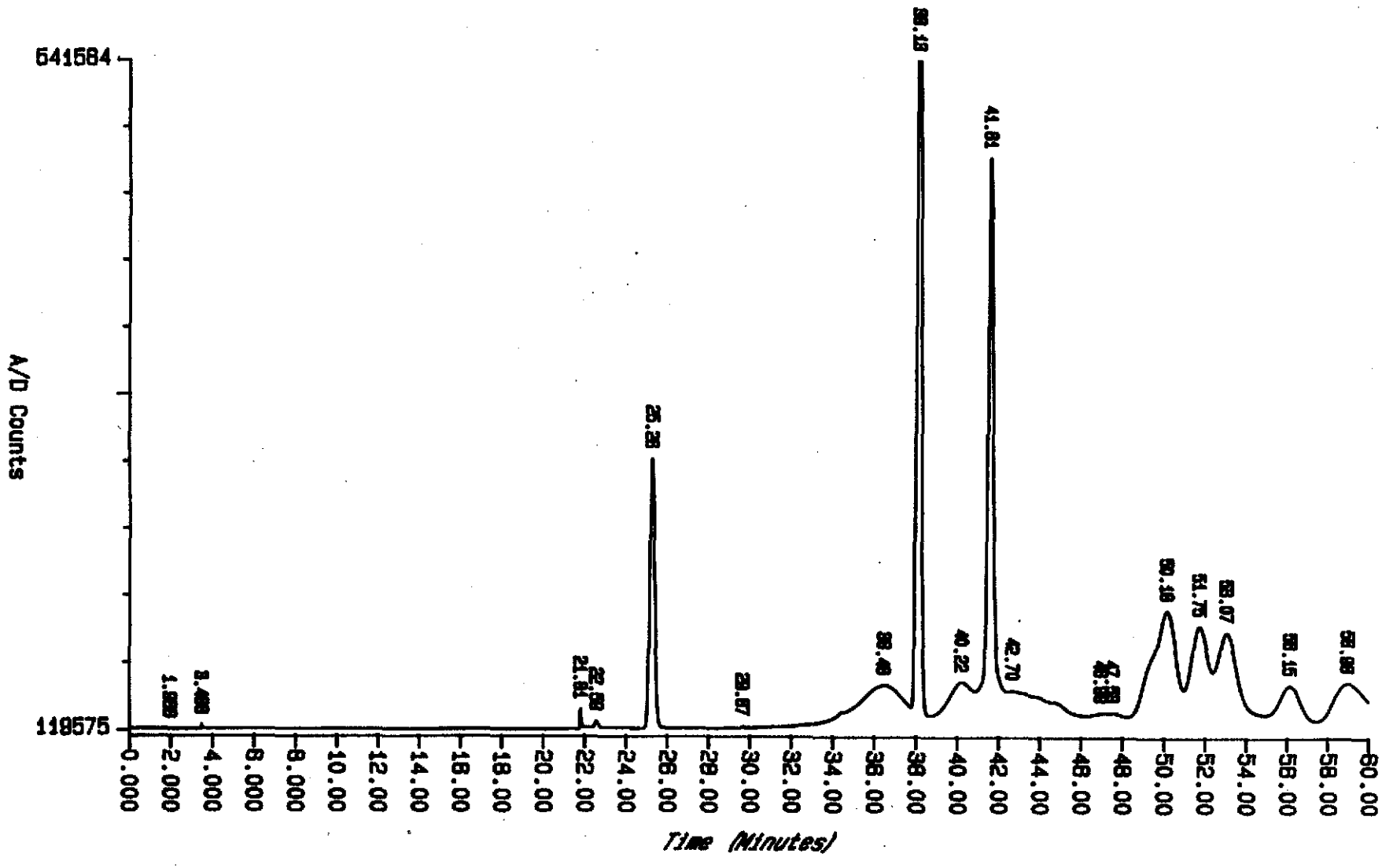
Sample: STD10902-025 Injected at 13:40:53 ON JUL 6, 1985
Raw File: RH1301 Proc File: PH1301 Method: EXT250



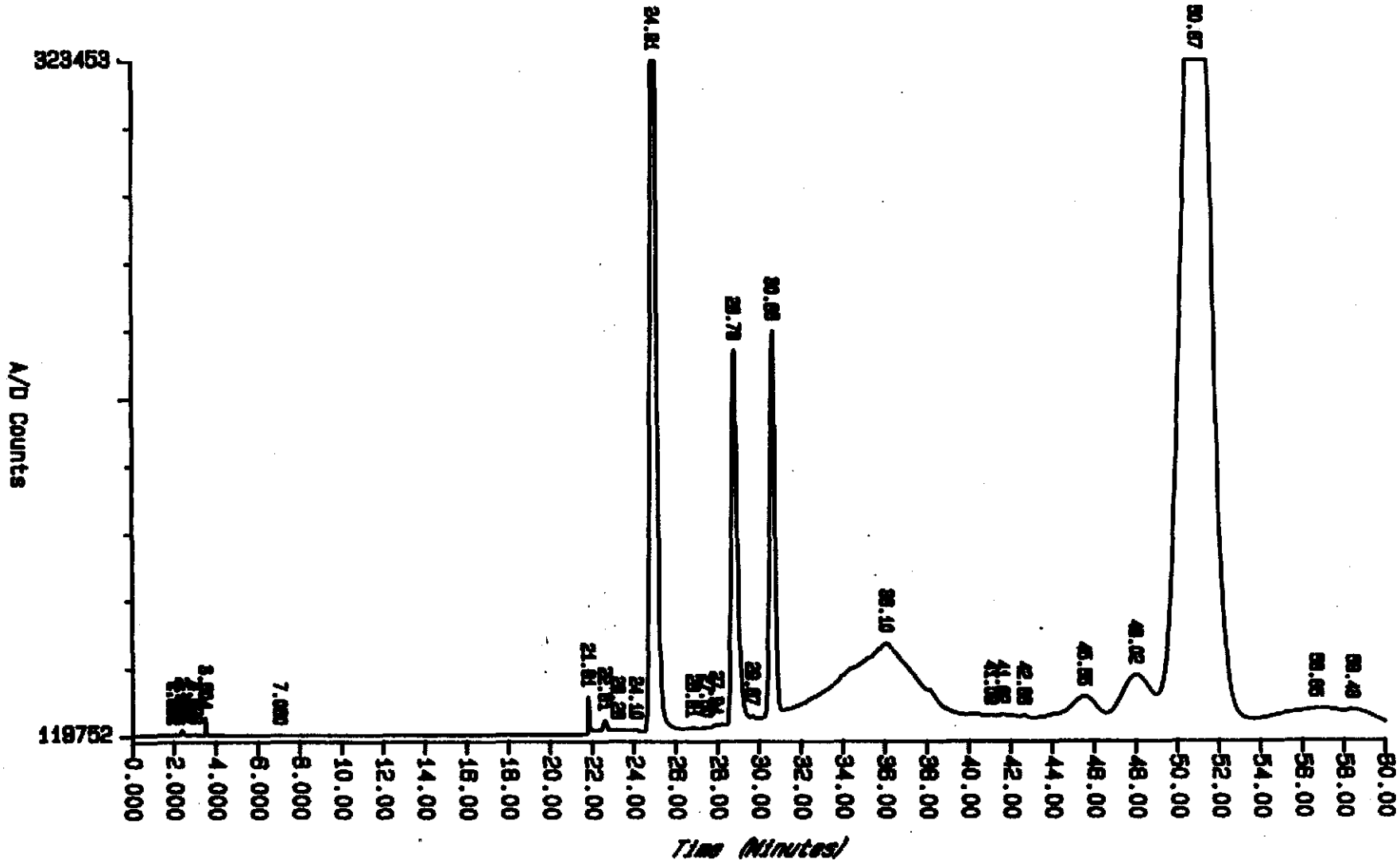
Sample: STD10903-025 Injected at 14:47:23 ON JUL 6, 1985
Raw File: RH1302 Proc File: PH1302 Method: EXT250



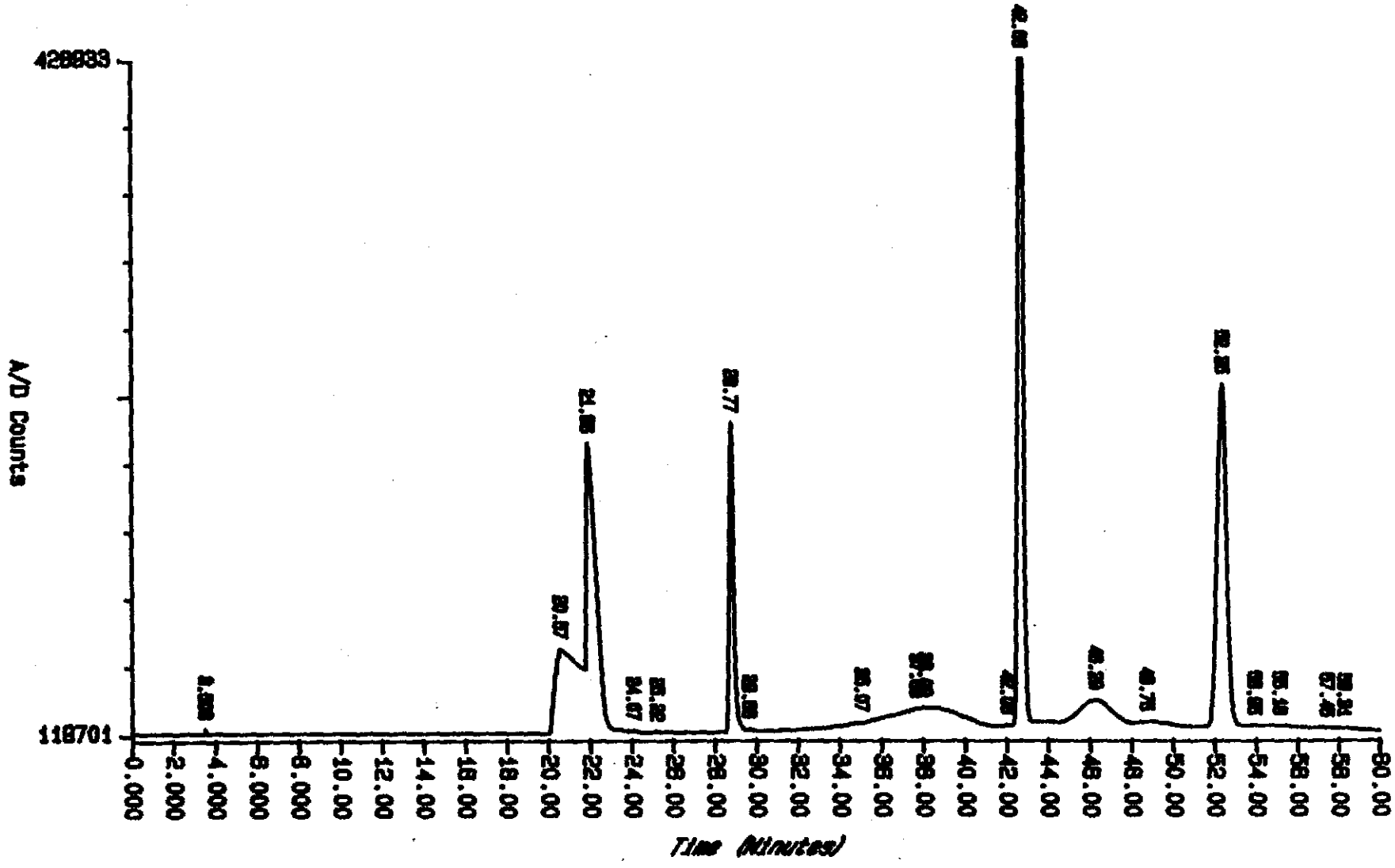
Sample: STD10904-025 Injected at 15:53:54 ON JUL 6, 1985
Raw File: RH1303 Proc File: PH1303 Method: EXT250



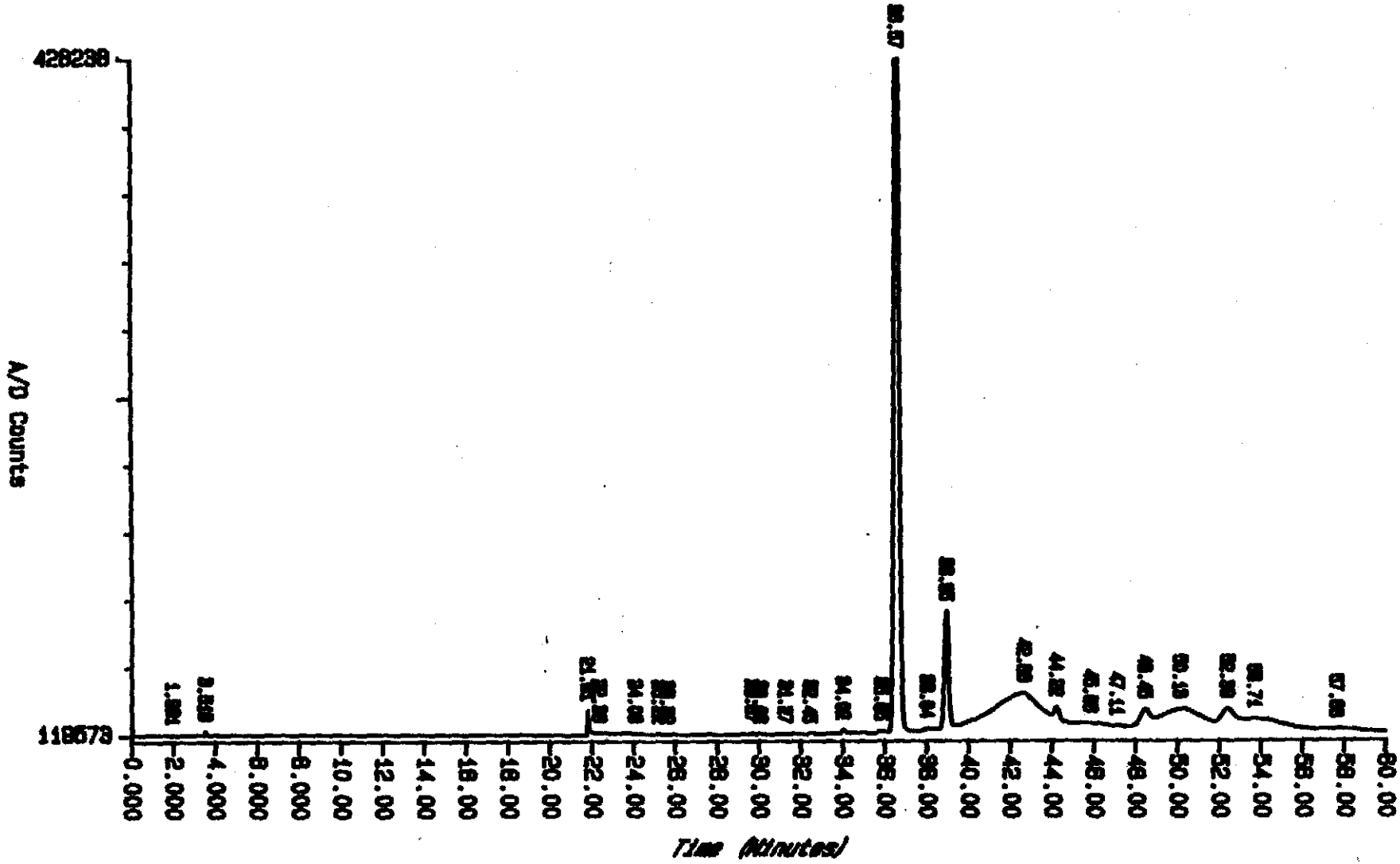
Sample: STD10905-250 Injected at 0:46:04 ON JUL 7, 1985
Raw File: RH1311 Proc File: PH1311 Method: EXT250



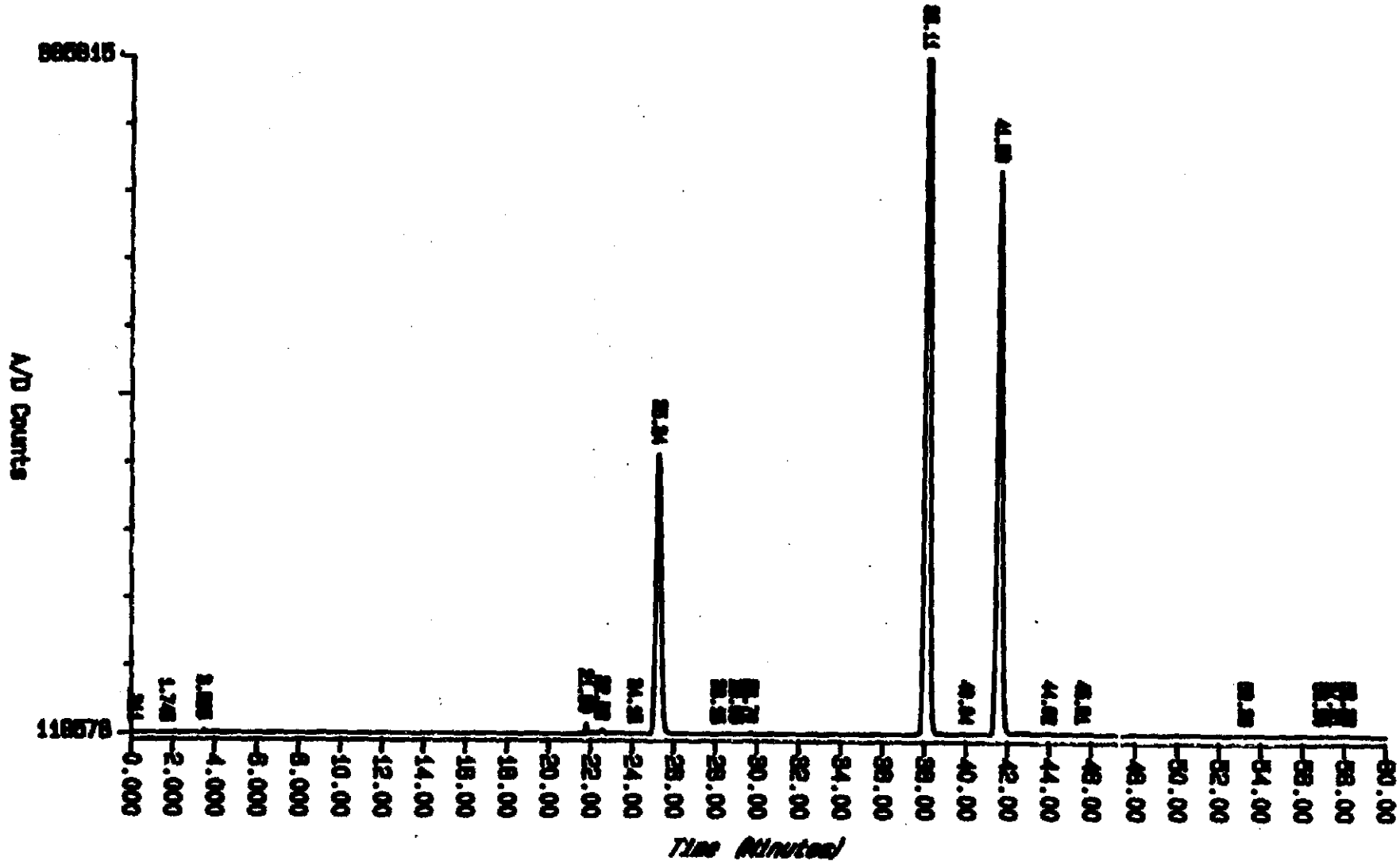
Sample: STD10908-250 Injected at 1:52:34 ON JUL 7, 1985
Raw File: RH1312 Proc File: PH1312 Method: EXT250



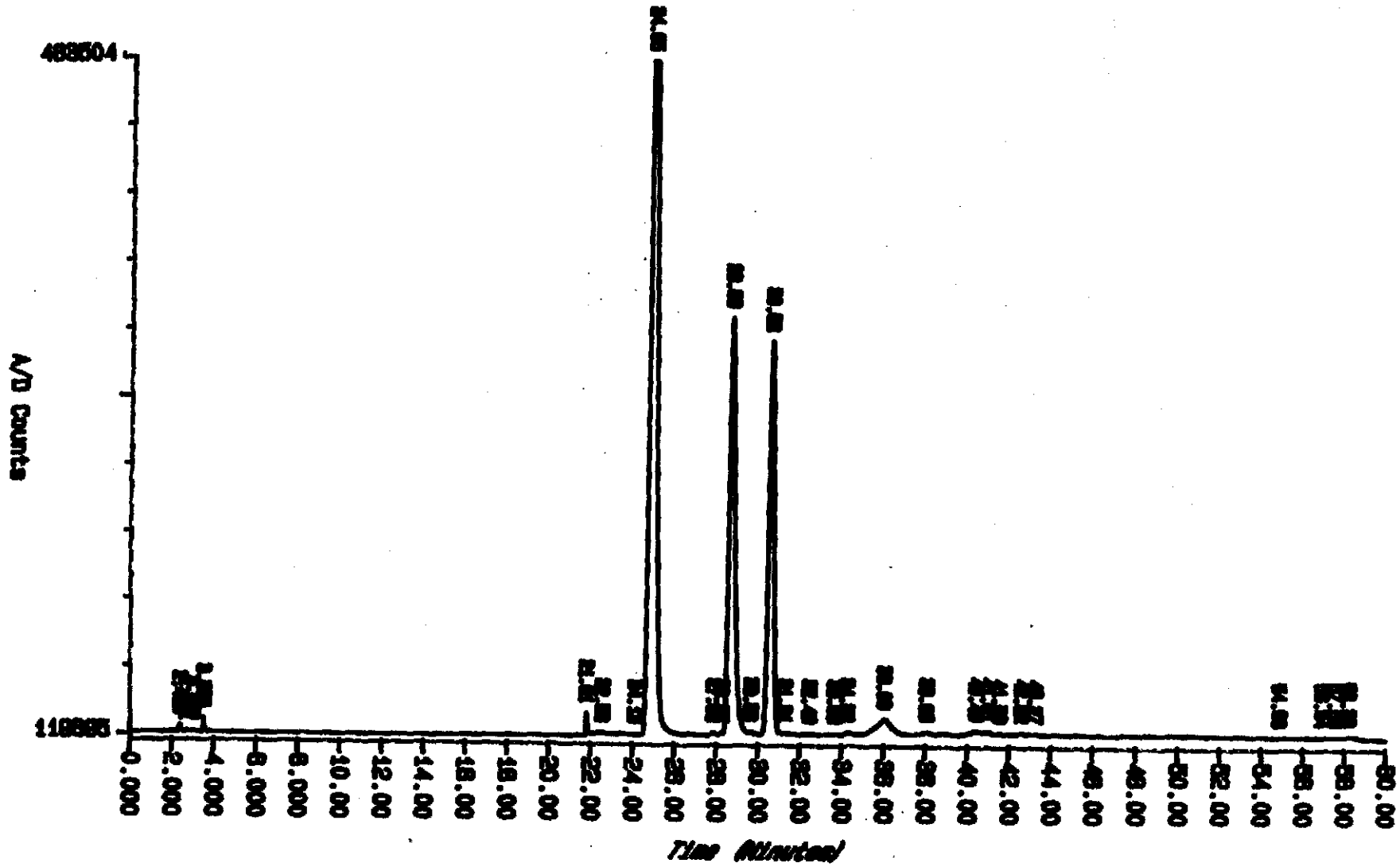
Sample: STD10907-250 Injected at 2:59:05 ON JUL 7, 1985
Raw File: RH1313 Proc File: PH1313 Method: EXT250



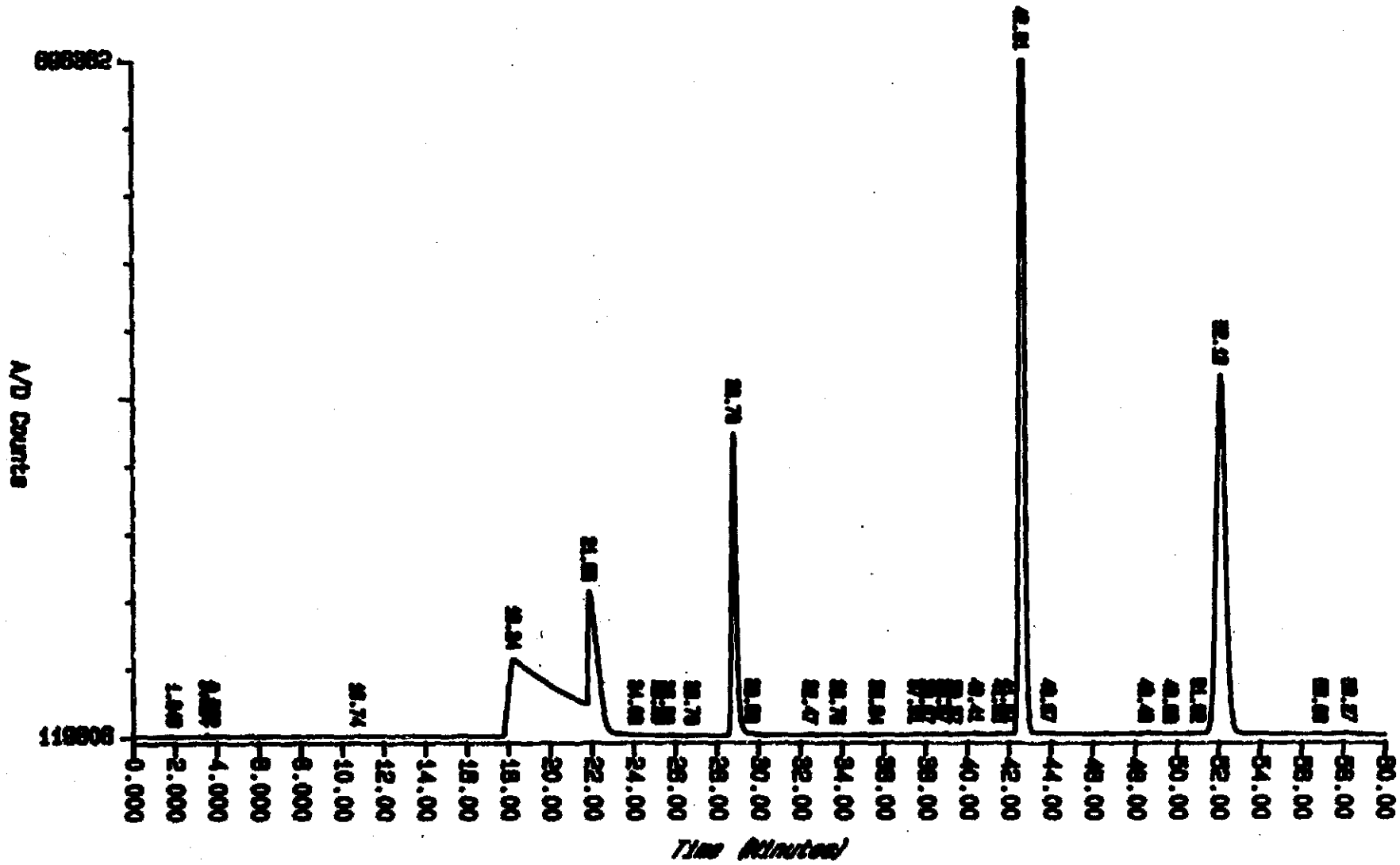
Sample: STD10908-250 Injected at 4:05:35 ON JUL 7, 1985
Raw File: RH1314 Proc File: PH1314 Method: EXT250



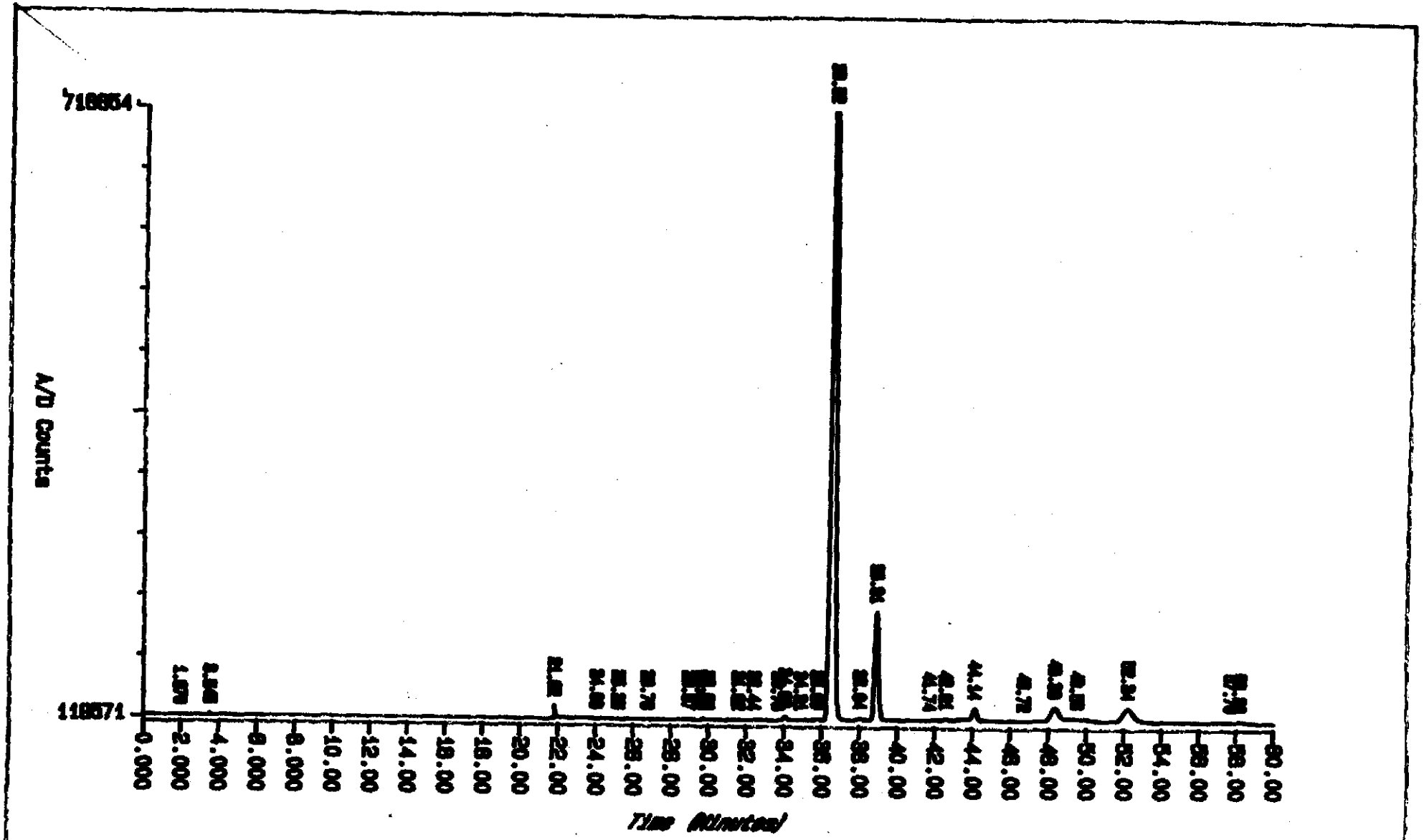
Sample: STD10808-500 Injected at 13:38:45 ON JUL 7, 1985
Raw File: RH1320 Proc File: PH1320 Method: EXT250



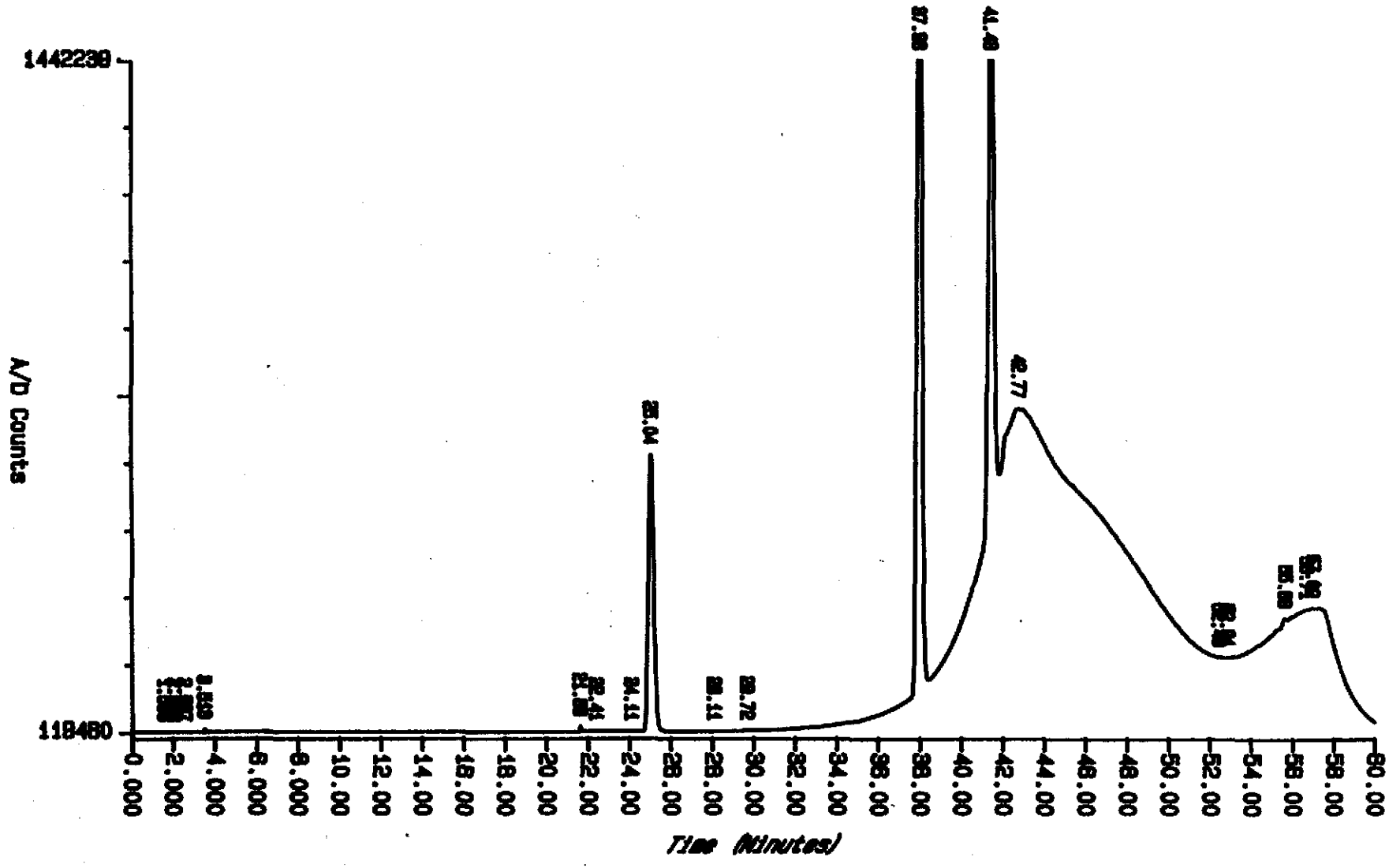
Sample: STD10910-500 Injected at 14:43:18 ON JUL 7, 1985
Raw File: RH1321 Proc File: PH1321 Method: EXT250



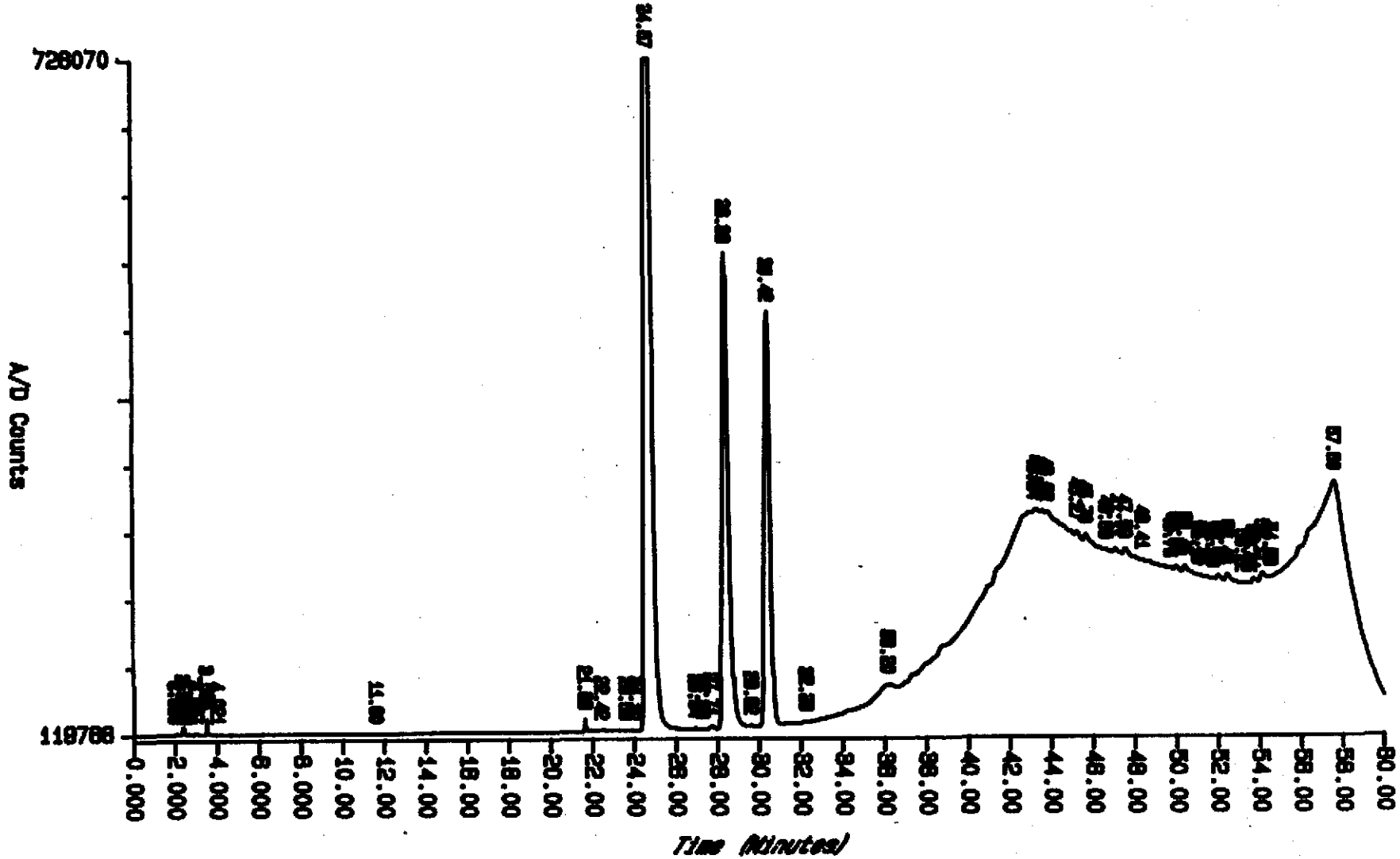
Sample: STD10911-500 Injected at 15:48:46 ON JUL 7, 1985
Raw File: RH1322 Proc File: PH1322 Method: EXT250



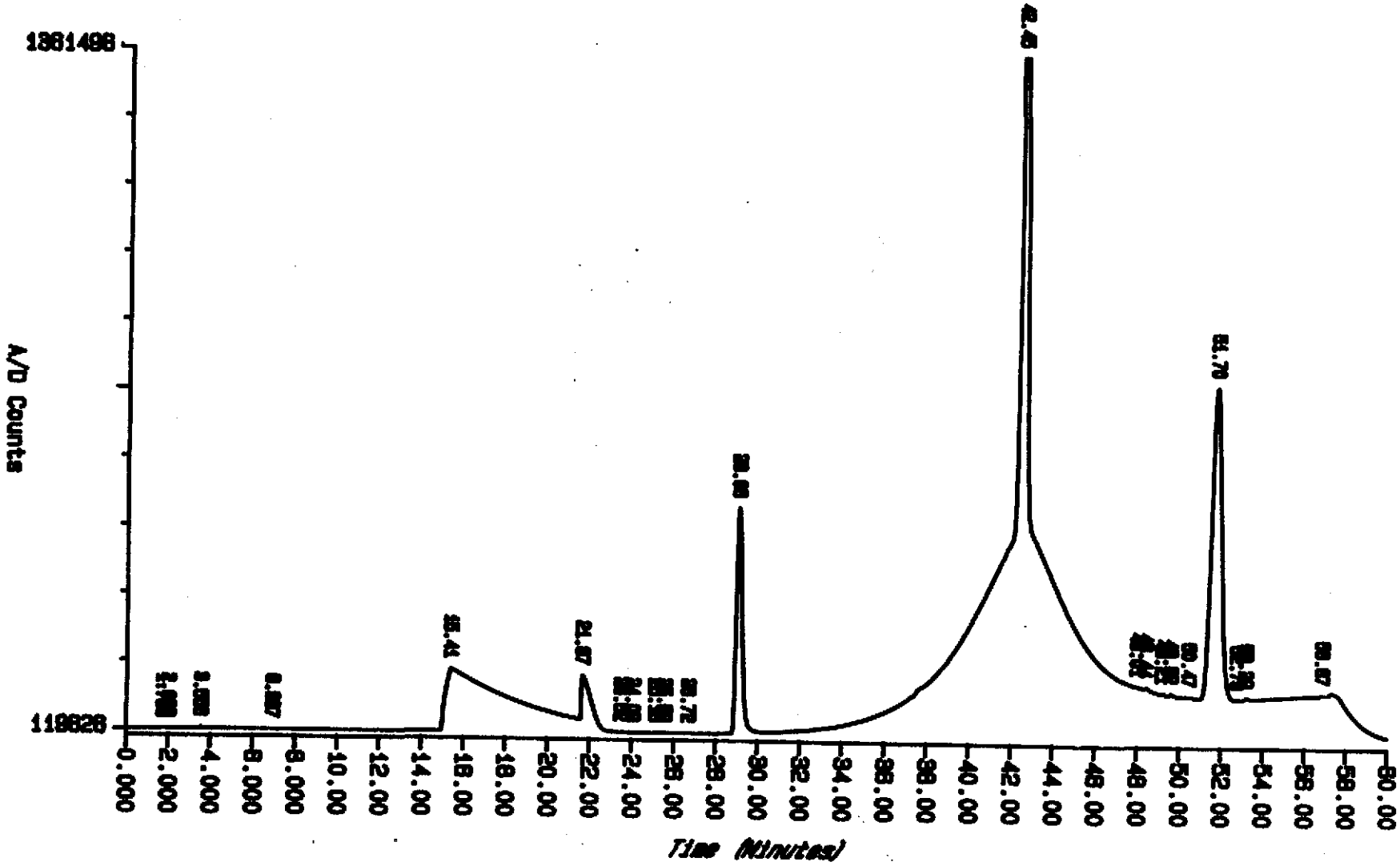
Sample: STD10912-500 Injected at 16:58:16 ON JUL 7, 1985
Raw File: RH1323 Proc File: PH1323 Method: EXT250



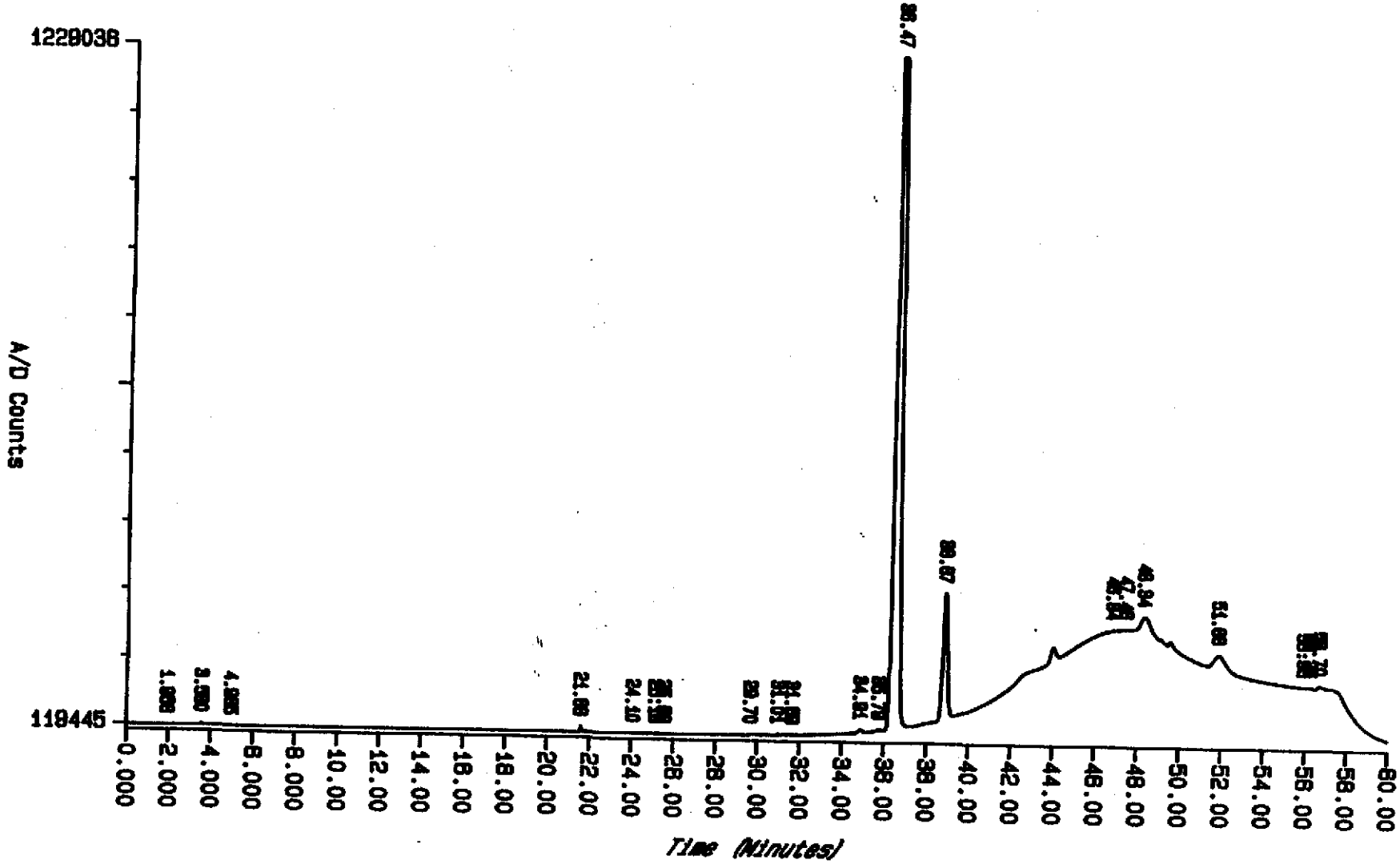
Sample: ST10897-1000 Injected at 14:39:58 ON JUL 8, 1985
Raw File: RH1331 Proc File: PH1331 Method: EXT250



Sample: ST10898-1000 Injected at 15:48:29 ON JUL 8, 1985
Raw File: RH1332 Proc File: PH1332 Method: EXT250



Sample: STD1099-1000 Injected at 16:53:02 ON JUL 8, 1985
Raw File: RH1333 Proc File: PH1333 Method: EXT250



Sample: ST10900-1000 Injected at 17:59:32 ON JUL 8, 1985
Raw File: RH1334 Proc File: PH1334 Method: EXT250

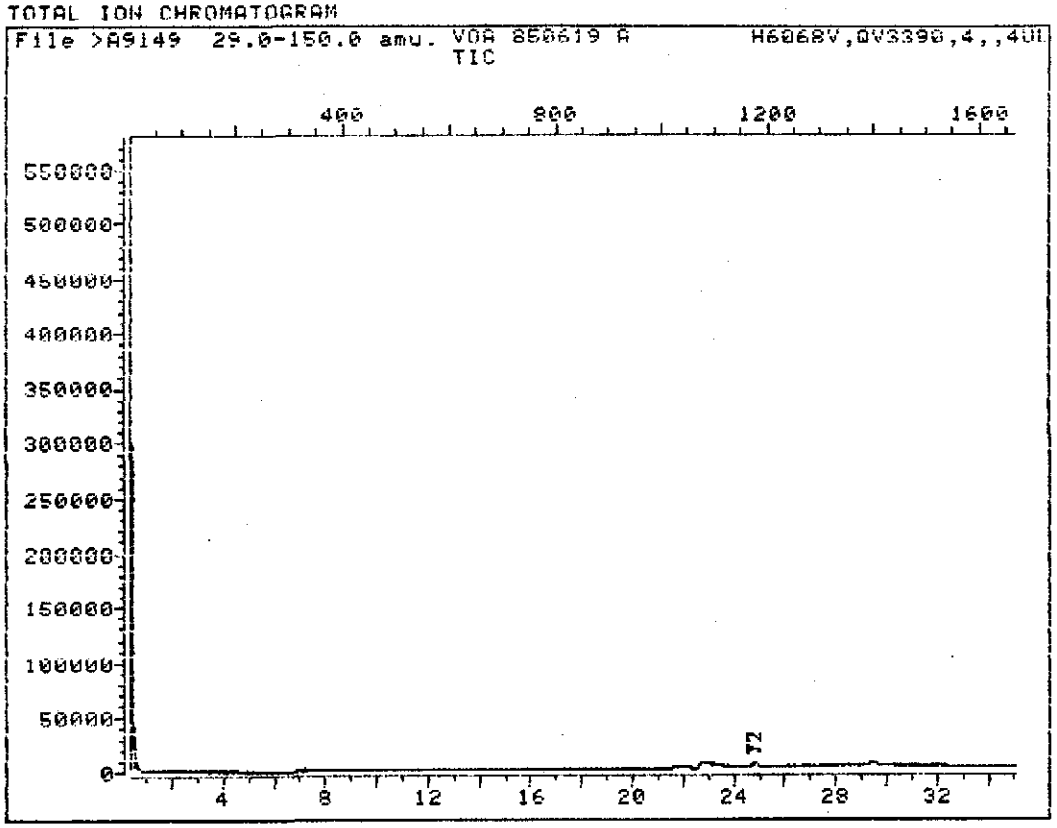
Appendix A

Mass Spectral Data for Quantitated Compounds

1) A total ion chromatogram for each sample analyzed by a GC/MS instrument.

2) A mass spectrum and a reference spectrum for each priority pollutant compound detected in the sample.

TOTAL ION CHROMATOGRAM



Data File: >A9149::U2
Name: VOA 850619 A
Misc: H6068V,QV3390,4,,4UL INJECTED APB/DAI

Id File: AAPBDI
Title: DAI APENDIX B ID FILE
Last Calibration: 850619 00:24

Operator ID: LA2639
Quant Time: 850619 02:28
Injected at: 850619 01:52

QUANT REPORT

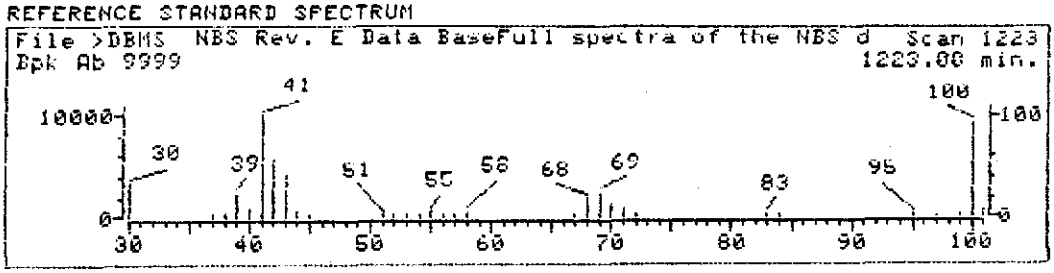
Operator ID: LA2639 Quant Rev: 4 Quant Time: 850619 02:28
Output File: ^A9149::AQ Injected at: 850619 01:52
Data File: >A9149::U2 Dilution Factor: 1.00
Name: VOA 850619 A
Misc: H6068U,QU3390,4,,4UL INJECTED APB/DAI

ID File: AAPBDI
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850619 00:24

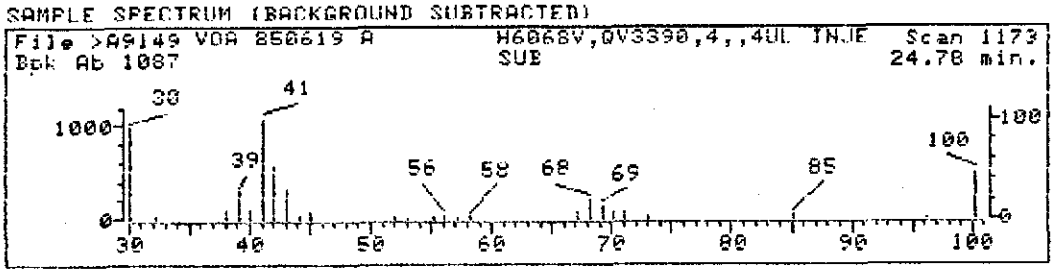
Compound	R.T.	Scan#	Area	Conc	Units	q
7) #N-Nitrosopyrrolidine	24.78	1173	14627	84.83	NG	100
12) #N-Proplamine	24.78	1173	15355	~~119.93~~	~~NG~~	100

Compound uses ESTD

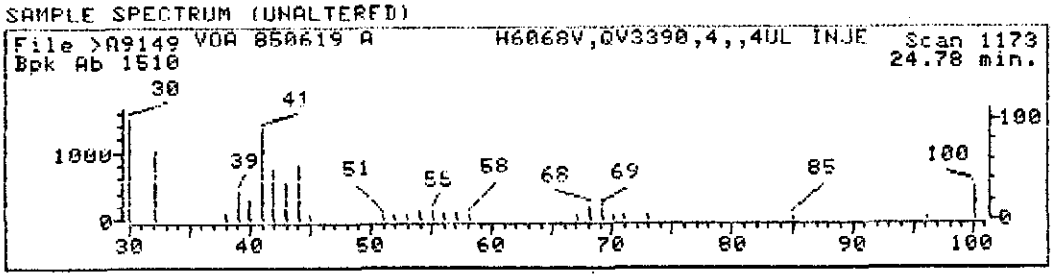
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



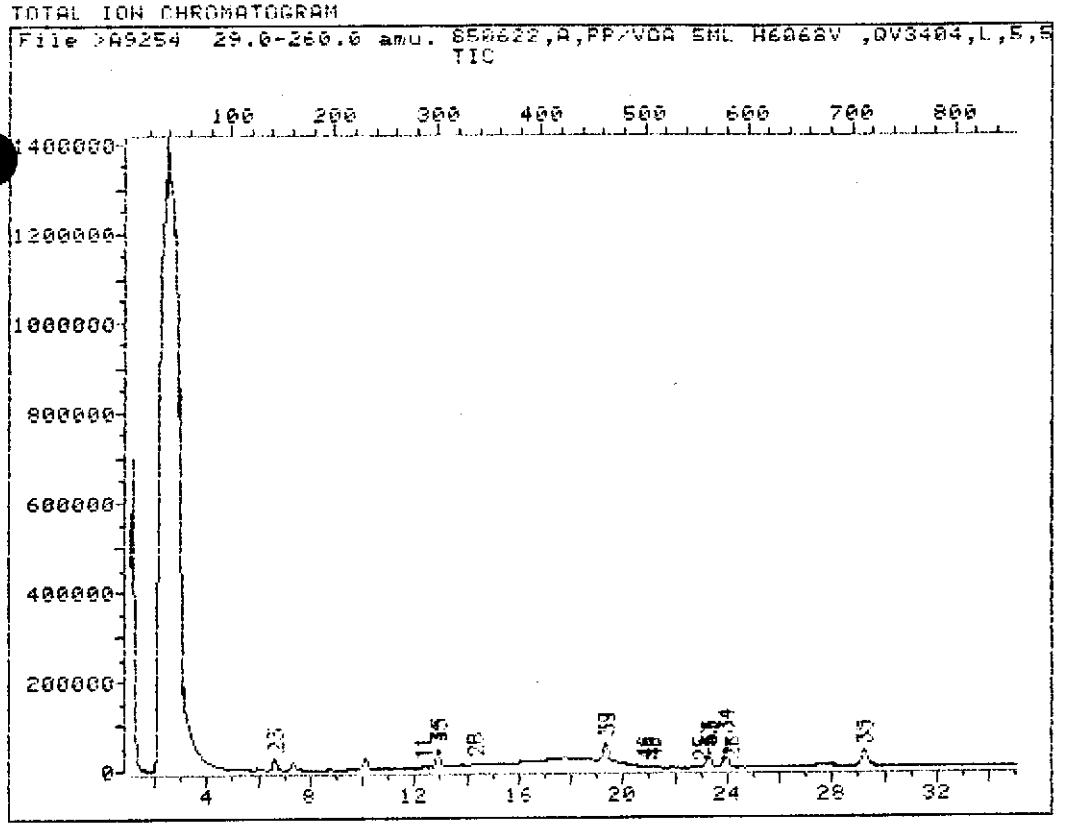
SAMPLE SPECTRUM (UNALTERED)



Data File: >A9149::U2
Name: VOA 850619 A
Misc: H6068V,QV3390,4,,4UL INJECTED AP8/DA1
Quant Time: 850619 02:28
Injected at: 850619 01:52

Compound No: 7
Compound Name: N-Nitrosopyrrolidine
Scan Number: 1173
Retention Time: 24.78 min.
Area: 14627
Concentration: 84.83 NG
q-value: 100

TOTAL ION CHROMATOGRAM



Data File: >A9254::U2
Name: 850622,A,PP/VOA 5ML
Misc: H6068V ,QV3404,L,5,5,

Id File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, 1
Last Calibration: 850623 06:42

Operator ID: MM5066
Quant Time: 850623 10:16
Injected at: 850623 08:56

```
:P
  RU,QREP,^A9253
:P//////////////4
  RU,QREP,^A9254
:
```

QUANT REPORT

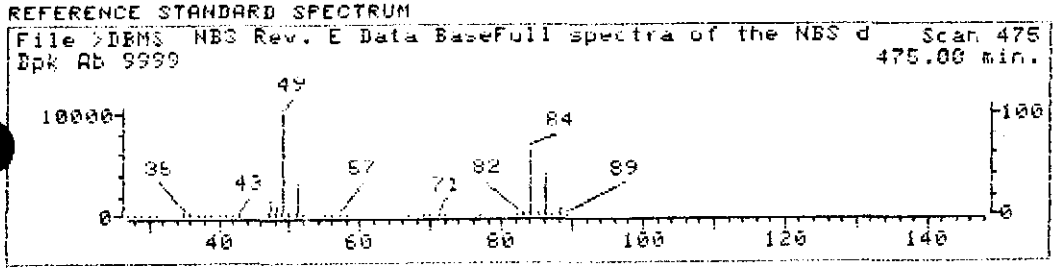
Operator ID: MM5066 Quant Rev: 4 Quant Time: 850623 18:22
Output File: ^A9254::AQ Injected at: 850623 08:56
Data File: >A9254::U2 Dilution Factor: 1.000
Name: 850622,A,PP/VOA 5ML
Misc: H6068V ,QV3404,L,5,5,

ID File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850623 17:15

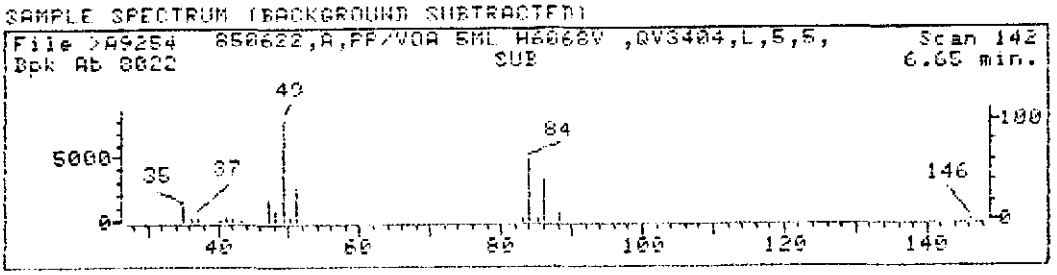
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*2-Bromo-1-chloropropane	19.34	462	89679	200.00	NG	96
11)	Chloroform	12.32	285	2274	~~3.58~~	NG	32
23)	Methylene chloride	6.65	142	63159	83.12	NG-10=73	99
25)	Tetrachloroethylene	22.99	554	2347	3.93	NG	90
26)	Toluene	24.18	584	2134	~~2.04~~	NG	99
28)	1,1,1-Trichloroethane	14.30	335	10384	~~22.91~~	NG	90
33)	1,2-Dichloroethane-D4	12.91	300	50021	269.26	NG	92
34)	Toluene-D8	23.94	578	263511	272.47	NG	88
35)	p-Bromofluorobenzene	29.21	711	99561	254.70	NG	98
39)	1,2-Dibromoethane	19.34	462	5389	~~14.27~~	NG	90
41)	1,4-Dichloro-2-butene	23.30	562	9196	~~17.23~~	NG	100
45)	Methyl-ethyl-ketone	12.91	300	6622	~~113.70~~	NG	[illegible]
46)	Methyl-methacrylate	20.85	500	894	~~3.32~~	NG	1[illegible]
46)	Methyl-methacrylate	21.08	506	963	~~3.58~~	NG	100
46)	Methyl-methacrylate	21.16	508	585	~~2.18~~	NG	100
53)	*1,4-Dichlorobutane	23.30	562	137993	200.00	NG	96

* Compound is ISTD

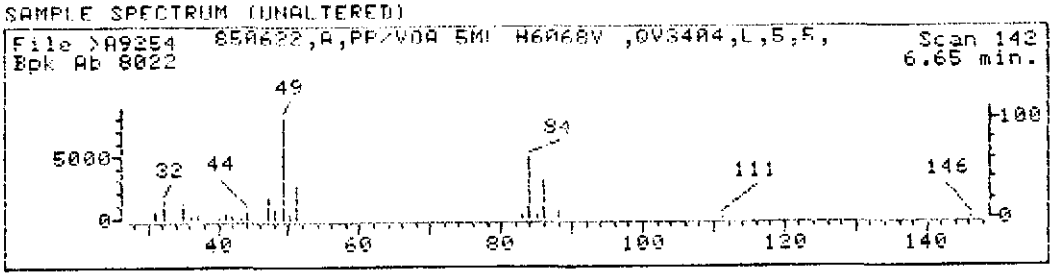
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



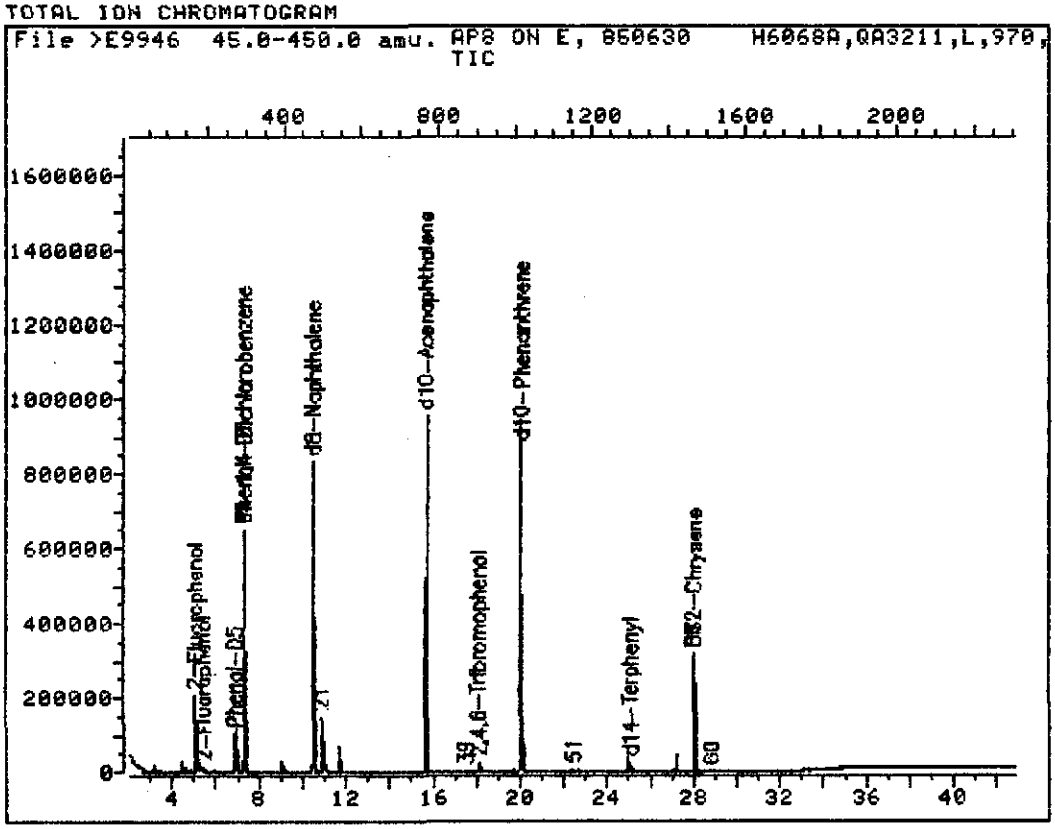
SAMPLE SPECTRUM (UNALTERED)



Data File: >A9254::U2
Name: 850622,A,PP/VOA 5ML
Misc: H6068V ,QV3404,L,5,5,
Quant Time: 850623 10:16
Injected at: 850623 08:56

Compound No: 23
Compound Name: Methylene chloride
Scan Number: 142
Retention Time: 6.65 min.
Area: 63159
Concentration: 211.10 NG
q-value: 99

TOTAL ION CHROMATOGRAM



Data File: >E9946::U4
Name: AP8 ON E, 850630
Misc: H6068A,QA3211,L,970,1

BTL#37

Id File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

Operator ID: TM0576
Quant Time: 850701 21:18
Injected at: 850701 20:33

QUANT REPORT

Operator ID: TM0576 Quant Rev: 4 Quant Time: 850701 21:18
Output File: ^E9946::AQ Injected at: 850701 20:33
Data File: >E9946::U4 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: H6068A,QA3211,L,970,1 BTL#37

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.27	292	358760	40.00	UG/ML	93
10)	2-Fluorophenol	5.04	166	137909	20.72	UG/ML	100
10)	2-Fluorophenol	5.44	189	748	.11	UG/ML	100
12)	Phenol-D5	6.88	270	165828	19.22	UG/ML	88
12)	Phenol-D5	7.27	292	3203	.37	UG/ML	83
13)	*d8-Naphthalene	10.45	472	940572	40.00	UG/ML	95
21)	Naphthalene	10.89	497	5532	.26	UG/ML	99
28)	*d10-Acenaphthalene	15.64	766	570554	40.00	UG/ML	95
39)	Diethyl phthalate	17.46	869	1633	.08	UG/ML	93
42)	2,4,6-Tribromophenol	18.06	903	12169	2.83	UG/ML	94
45)	*d10-Phenanthrene	20.02	1014	1156316	40.00	UG/ML	98
51)	Di-n-butyl phthalate	22.40	1149	12091	.41	UG/ML	99
54)	*D12-Chrysene	27.98	1465	335211	40.00	UG/ML	97
57)	Benzo(a)anthracene	27.98	1465	820	.11	UG/ML	100
58)	Chrysene	27.98	1465	820	.09	UG/ML	100
60)	bis(2-Ethylhexyl)phthalate	28.80	1511	914	.11	UG/ML	96
68)	d14-Terphenyl	25.05	1299	27353	1.74	UG/ML	100

* Compound is ISTD

QUANT REPORT

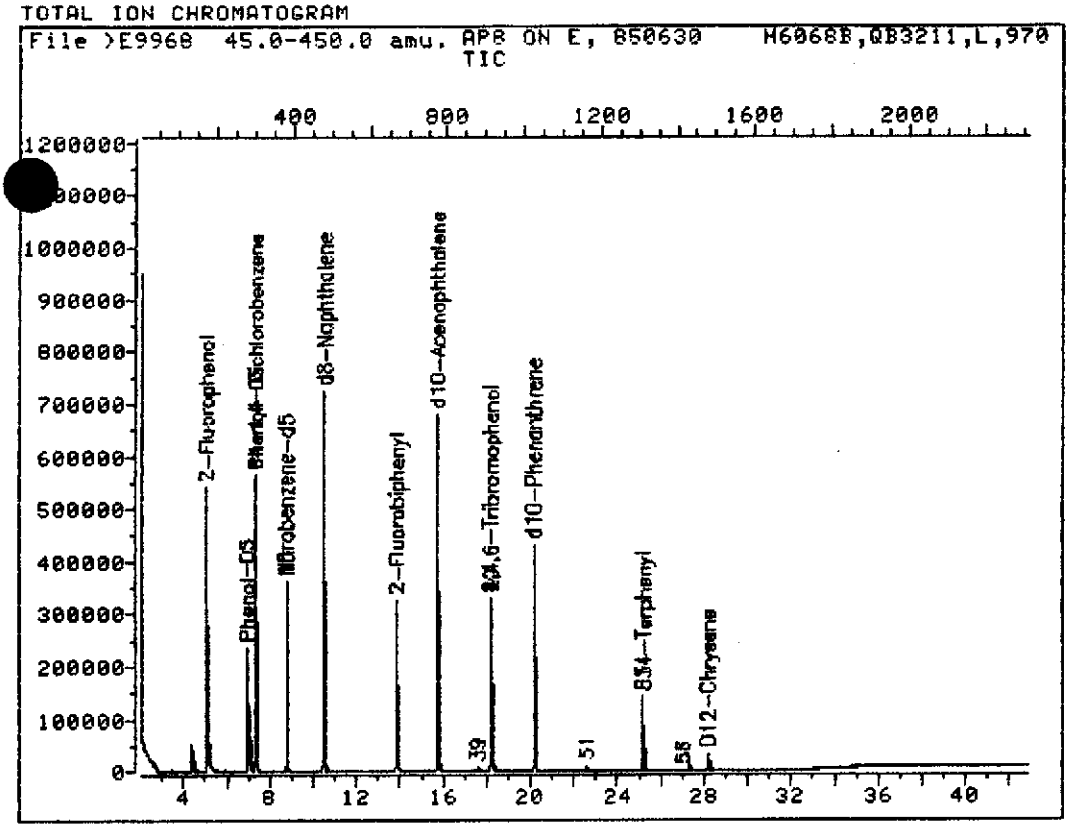
Operator ID: TM0576 Quant Rev: 4 Quant Time: 850702 11:27
Output File: EE9946::AQ Injected at: 850701 20:33
Data File: >E9946::U4 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: H6068A,QA3211,L,970,1 BTL#37

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.27	292	358760	40.00	UG/ML	9
16)	*d8-Naphthalene	10.45	472	940572	40.00	UG/ML	9
25)	p-Chloroaniline	10.89	497	11247	~~1.94~~	UG/ML	4
29)	*d10-Acenaphthalene	15.64	766	570554	40.00	UG/ML	9
46)	*d10-Phenanthrene	20.02	1014	1156316	40.00	UG/ML	10

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >E9968::U5
Name: AP8 ON E, 850630
Misc: H6068B,QB3211,L,970 ,1

BTL#59

Id File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

Operator ID: TM0576
Quant Time: 850702 20:19
Injected at: 850702 19:34

QUANT REPORT

Operator ID: TM0576 Quant Rev: 4 Quant Time: 850702 20:19
Output File: ^E9968::AQ Injected at: 850702 19:34
Data File: >E9968::U5 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: H6068B,QB3211,L,970 ,1 BTL#59

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.30	297	313033	40.00	UG/ML	92
7)	Nitrobenzene-d5	8.71	377	259808	36.29	UG/ML	94
10)	2-Fluorophenol	5.04	169	312516	53.80	UG/ML (2)	100
12)	Phenol-D5	6.91	275	248932	33.07	UG/ML x20	96
12)	Phenol-D5	7.30	297	2881	.38	UG/ML	66
13)	*d8-Naphthalene	10.50	478	714861	40.00	UG/ML	95
14)	2-Fluorobiphenyl	13.85	668	278180	33.67	UG/ML	98
15)	N-Nitrosodi-n-propylamine	8.71	377	38972	2.33	UG/ML	60
28)	*d10-Acenaphthalene	15.72	774	355938	40.00	UG/ML	97
39)	Diethyl phthalate	17.56	878	4262	.33	UG/ML	92
40)	Fluorene	18.16	912	5868	.52	UG/ML	94
42)	2,4,6-Tribromophenol	18.16	912	119171	44.46	UG/ML +3	99
45)	*d10-Phenanthrene	20.12	1023	469378	40.00	UG/ML	97
51)	Di-n-butyl phthalate	22.54	1160	15791	1.32	UG/ML	95
53)	Benzidine	25.19	1310	1527	3.58	UG/ML	100
54)	*D12-Chrysene	28.16	1478	54738	40.00	UG/ML	98
56)	Butyl benzyl phthalate	27.01	1413	579	.46	UG/ML	92
68)	d14-Terphenyl	25.19	1310	137283	53.62	UG/ML	100

* Compound is ISTD

QUANT REPORT

Operator ID: TM0576
Output File: EE9968::AQ
Data File: >E9968::U5
Name: AP8 ON E, 850630
Misc: H6068B,QB3211,L,970 ,1

Quant Rev: 4
Quant Time: 850702 22:26
Injected at: 850702 19:34
Dilution Factor: 1.00

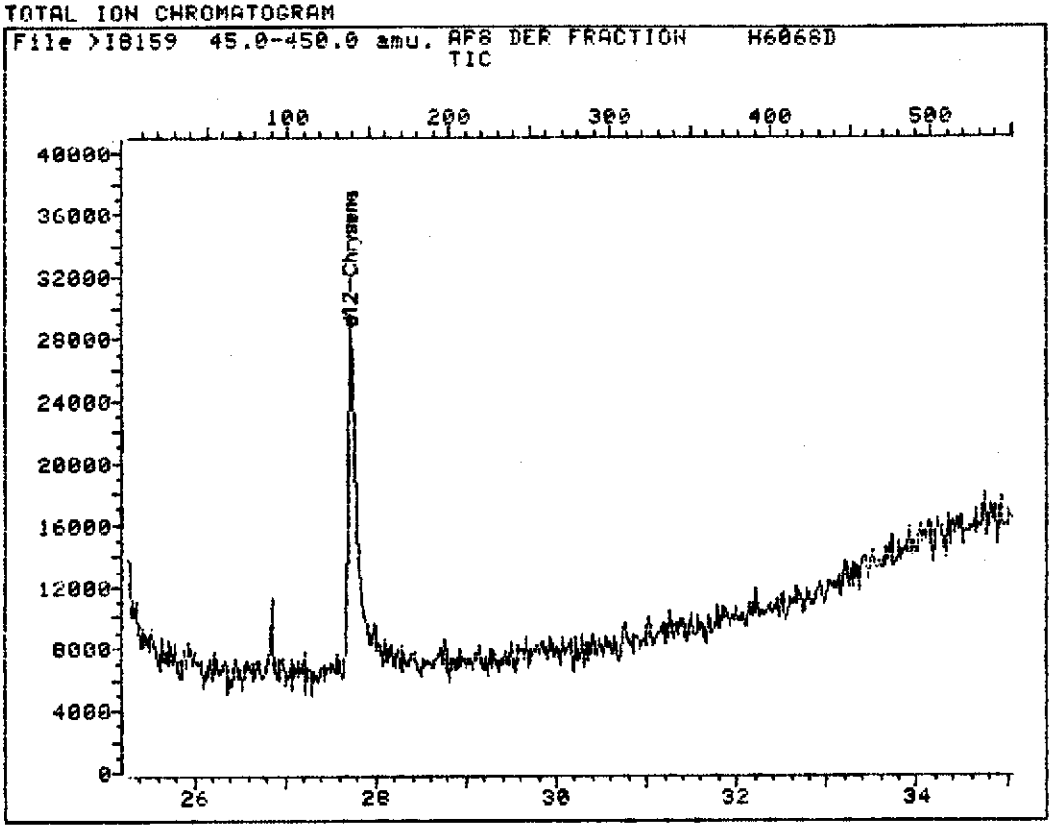
BTL#59

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	c
1)	*d4-1,4-Dichlorobenzene	7.30	297	313033	40.00	UG/ML	9
16)	*d8-Naphthalene	10.50	478	714861	40.00	UG/ML	9
29)	*d10-Acenaphthalene	15.72	774	355938	40.00	UG/ML	9
46)	*d10-Phenanthrene	20.12	1023	469378	40.00	UG/ML	10

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >I8159::U5
Name: AP8 DER FRACTION
Misc: H6068D

BTL #23

Id File: IAP8DE
Title: AP8 DEV IN 1
Last Calibration: 850701 15:00

Operator ID: TM0526
Quant Time: 850702 04:13
Injected at: 850702 03:35

QUANT REPORT

Operator ID: TMU576
Output File: ^18159::AQ
Data File: >18159::U5
Name: APB DER FRACTION
Misc: H6U68D

Quant Rev: 4 Quant Time: 850702 04:13
Injected at: 850702 03:35
Dilution Factor: 1.00

BTL#23

ID File: IAP8DE
Title: AP8 DFV UN 1
Last Calibration: 850701 15:00

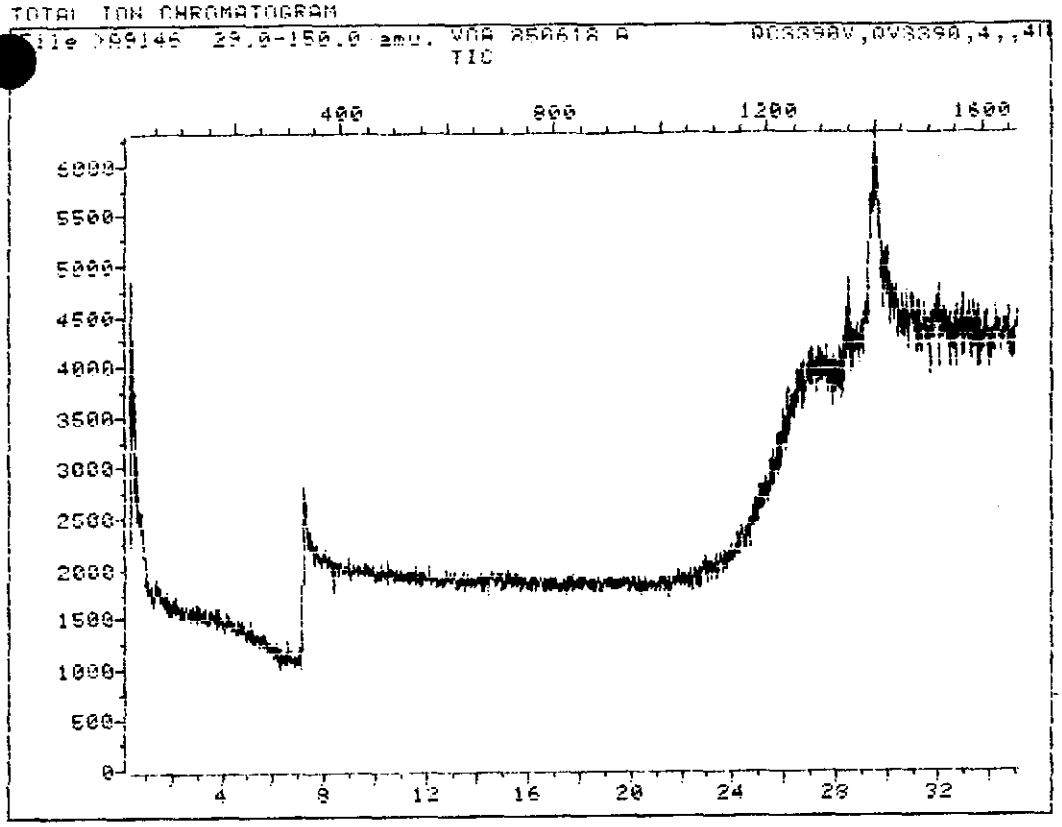
Compound	R.T.	Scan#	Area	Conc	Units	q
1) *d12-Chrysene	27.71	138	62931	40.00	UG/ML	89

* Compound is ISTD

Appendix C1

GC/MS Subsidiary Data

TOTAL ION CHROMATOGRAM



Data File: >A9146::U2
Name: UDA 850618 A
Misc: DC3390V,QV3390,4,,4UL INJECTED DAI

Id File: AAPBDI
Title: DAI APENDIX B ID FILE
Last Calibration: 850619 00:24

Operator ID: LA2639
Quant Time: 850619 00:25
Injected at: 850618 22:39

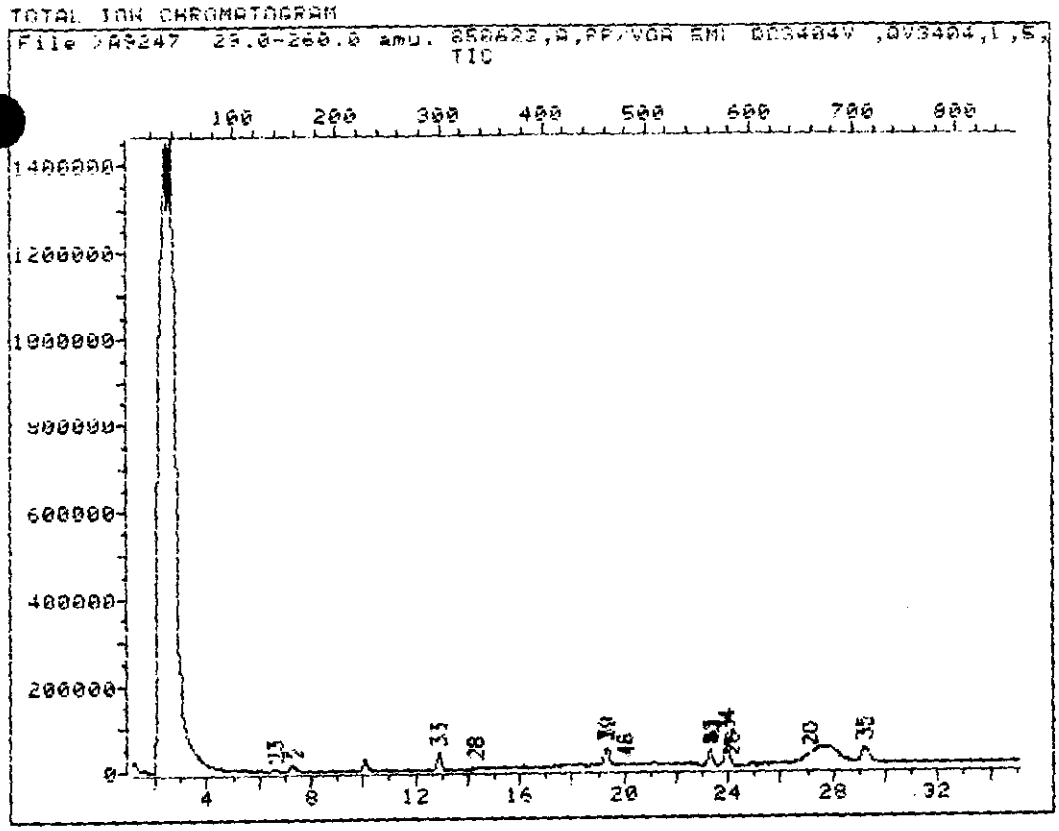
QUANT REPORT

Operator ID: LA2639 Quant Rev: 4 Quant Time: 850619 00:25
Output File: ^A9146::AQ Injected at: 850618 22:39
Data File: >A9146::U2 Dilution Factor: 1.00
Name: VOA 850618 A
Misc: QC3390V,QV3390,4,,4UL INJECTED DAI

ID File: AAP8DI
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850619 00:24

Compound	R.T.	Scan#	Area	Conc	Units	q

TOTAL ION CHROMATOGRAM



Data File: >A9247::U2
Name: 850622,A,PP/VOA 5ML
Misc: QC3404V ,QV3404,L,5,5,BLANK

Id File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850623 06:42

Operator ID: MM5066
Quant Time: 850623 10:08
Injected at: 850623 02:49

SREF,^A9247

QUANT REPORT

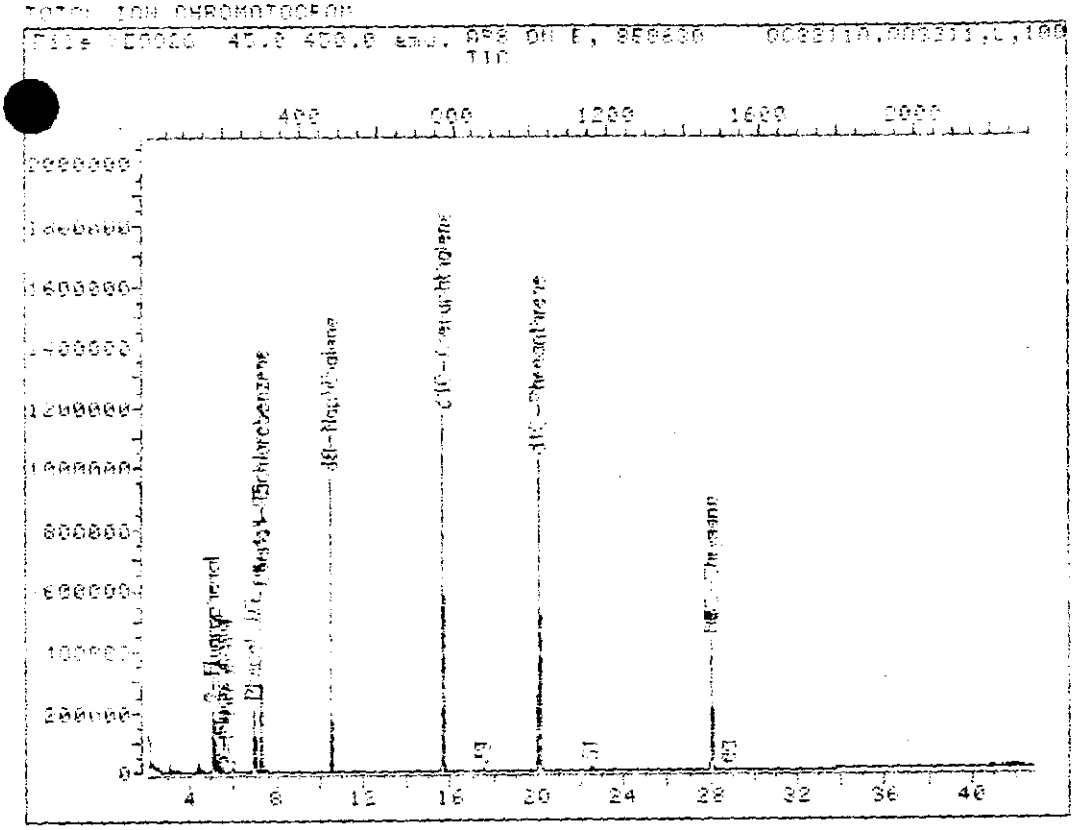
Operator ID: MM5066 Quant Rev: 4 Quant Time: 850623 18:14
Output File: ^A9247::AC Injected at: 850623 02:49
Data File: >A9247::C2 Dilution Factor: 1.000
Name: 850622,A,PP/VOA 5ML
Misc: CC3404V ,CV3404,L,5,5,BLANK

ID File: AAP8FT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850623 17:15

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*2-Bromo-1-chloropropane	19.33	460	95599	200.00	NG	95
2)	Acrolein	7.36	158	844	~~13.53~~	NG	88
20)	Ethylbenzene	27.10	656	6568	4.74	NG	85
23)	Methylene chloride	6.61	139	8332	10.29	NG	91
26)	Toluene	24.13	581	2641	2.37	NG	93
28)	1,1,1-Trichloroethane	14.30	333	7988	~~16.53~~	NG	72
33)	1,2-Dichloroethane-D4	12.91	298	49509	250.00	NG	88
34)	Toluene-D8	23.93	576	257742	250.00	NG	89
35)	p-Bromofluorobenzene	29.21	709	104173	250.00	NG	97
39)	1,2-Dibromoethane	19.33	460	5462	~~13.56~~	NG	84
41)	1,4-Dichloro-2-butene	23.30	560	7795	~~13.70~~	NG	100
46)	Methyl-methacrylate	20.05	478	1084	~~3.78~~	NG	100
53)	*1,4-Dichlorobutane	23.30	560	137983	200.00	NG	95

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Date File: 0E9926::U4
Name: APR ON E, 860630
Misc: 0033110.000311,C,100:1

BTL#17

ID File: 8800
Title: BN & HCBD 100ng/L FOR APR,NO:X 8
Last Calibration: 860630 20:30

Operator ID: TM0576
Quant Time: 860701 00:35
Injected at: 860630 23:47

QUANT REPORT

Operator ID: TM0576 Quant Rev: 4 Quant Time: 850701 00:35
Output File: :E9926::A0 Injected at: 850630 23:47
Data File: :E9926::U4 Dilution Factor: 1.00
Name: APX ON E. 850630
Misc: QC3211A,QA3211,L.1000,1 BTL#17

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*d4-1,4-Dichlorobenzene	7.27	294	350850	40.00	UG/ML	90
10)	2-Fluorophenol	5.01	166	144206	22.15	UG/ML	100
11)	2-Fluorophenol	5.49	191	1686	.26	UG/ML	100
10)	2-Fluorophenol	5.70	205	771	.12	UG/ML	100
12)	Phenol-D5	6.88	272	202412	23.99	UG/ML	97
12)	Phenol-D5	7.27	294	1879	.22	UG/ML	78
13)	*d8-Naphthalene	10.47	475	1021108	40.00	UG/ML	96
28)	*d10-Acenaphthalene	15.66	769	661873	40.00	UG/ML	97
39)	Diethyl phthalate	17.46	871	2569	.11	UG/ML	96
46)	*d10-Phenanthrene	20.04	1017	1395173	40.00	UG/ML	98
51)	Di-n-butyl phthalate	21.42	1152	16224	.46	UG/ML	97
54)	*D12-Chrysene	28.00	1468	434049	40.00	UG/ML	97
57)	Benzo(a)anthracene	28.00	1468	1136	.11	UG/ML	100
58)	Chrysene	28.00	1468	1136	.09	UG/ML	100
60)	bis(2-Ethylhexyl)phthalate	28.20	1513	922	.09	UG/ML	99

* Compound is ISTD

QUANT REPORT

Operator ID: TM0576
Output File: EE9926::AQ
Data File: >E9926::U4
Name: AP8 ON E, 850630
Misc: QC3211A,QA3211,L,1000,1

Quant Rev: 4

Quant Time: 850701 13:59
Injected at: 850630 23:47
Dilution Factor: 1.00

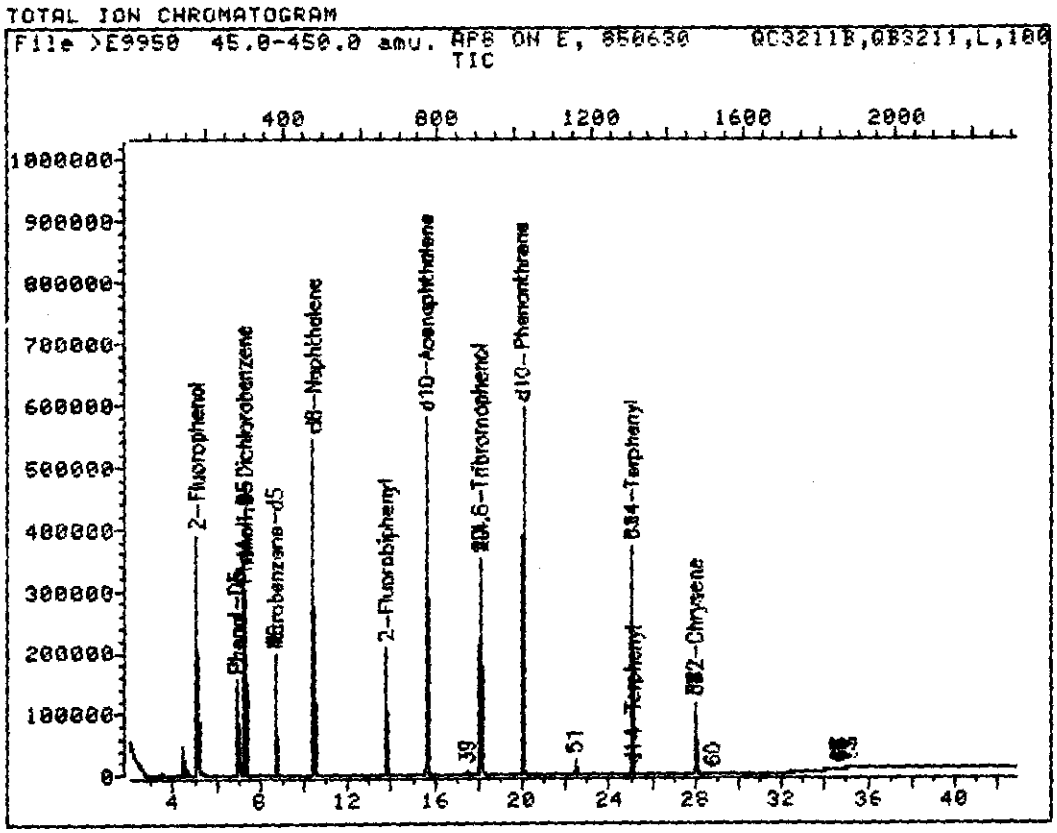
BTL#17

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	C
1)	*d4-1,4-Dichlorobenzene	7.27	294	350850	40.00	UG/ML	7
16)	*d8-Naphthalene	10.47	475	1021108	40.00	UG/ML	9
29)	*d10-Acenaphthalene	15.66	769	661873	40.00	UG/ML	9
46)	*d10-Phenanthrene	20.04	1017	1395173	40.00	UG/ML	10

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >E9950::U4
Name: AP8 ON E, 850630
Misc: QC3211B,QB3211,L,1000,1

BTL#41

Id File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

Operator ID: TM0576
Quant Time: 850702 00:16
Injected at: 850701 23:31

QUANT REPORT

Quant Rev: 4

Quant Time: 850702 14:37
Injected at: 850701 23:31
Dilution Factor: 1.00

Operator ID: TM0576
Output File: EE9950::AQ
Data File: >E9950::U4
Name: AP8 ON E, 850630
Misc: QC3211B,QB3211,L,1000,1

BTL#41

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*d4-1,4-Dichlorobenzene	7.25	295	193308	40.00	UG/ML	9
16)	*d8-Naphthalene	10.43	475	522888	40.00	UG/ML	9
29)	*d10-Acenaphthalene	15.61	768	319716	40.00	UG/ML	9
46)	*d10-Phenanthrene	19.98	1016	623730	40.00	UG/ML	10

* Compound is ISTD

QUANT REPORT

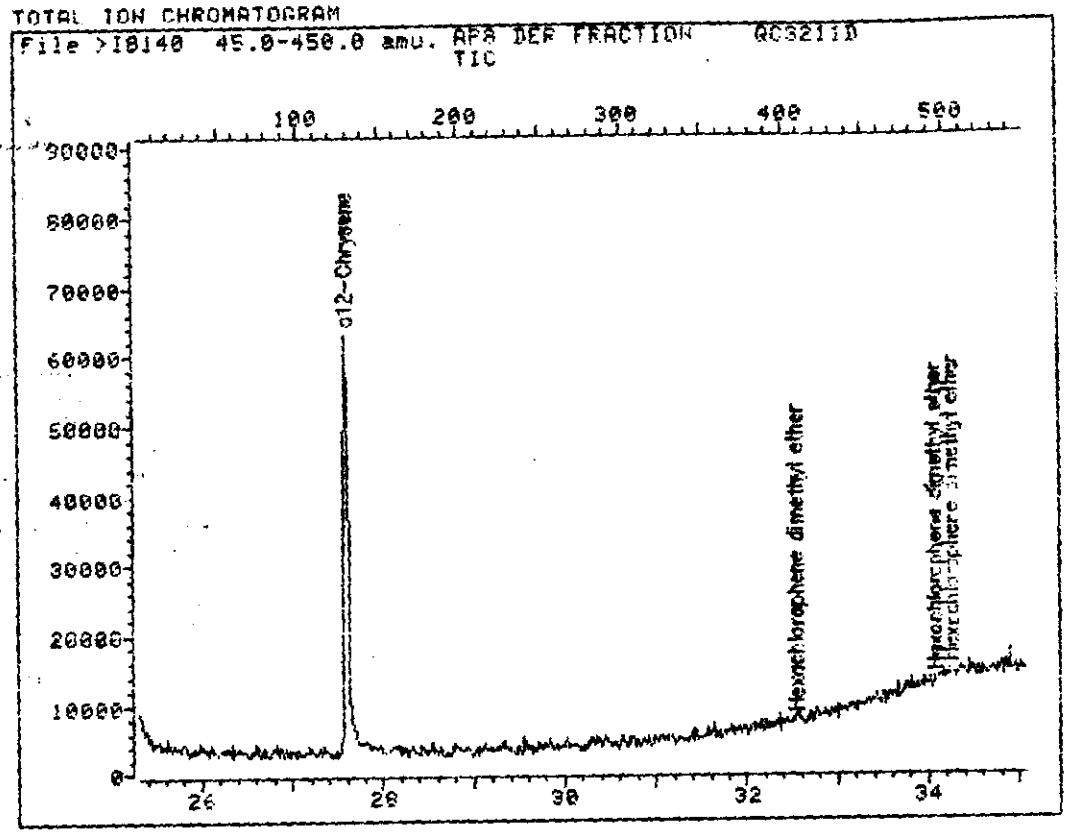
Operator ID: TM0576 Quant Rev: 4 Quant Time: 850702 00:16
Output File: ^E9950::AQ Injected at: 850701 23:31
Data File: >E9950::U4 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: QC3211B,QB3211,L,1000,1 BTL#41

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.25	295	193308	40.00	UG/ML	90
7)	Nitrobenzene-d5	8.67	375	140822	32.29	UG/ML	93
10)	2-Fluorophenol	5.04	170	225158	62.77	UG/ML	100
12)	Phenol-D5	6.88	274	174518	37.54	UG/ML	95
12)	Phenol-D5	7.27	296	2749	.59	UG/ML	82
13)	*d8-Naphthalene	10.43	475	522888	40.00	UG/ML	94
14)	2-Fluorobiphenyl	13.75	663	160828	26.62	UG/ML	98
15)	N-Nitrosodi-n-propylamine	8.67	375	20964	5.39	UG/ML	61
28)	*d10-Acenaphthalene	15.61	768	319716	40.00	UG/ML	96
39)	Diethyl phthalate	17.44	872	4182	.36	UG/ML	95
40)	Fluorene	18.04	906	5735	.57	UG/ML	84
42)	2,4,6-Tribromophenol	18.04	906	119601	49.68	UG/ML	96
45)	*d10-Phenanthrene	19.98	1016	623730	40.00	UG/ML	98
51)	Di-n-butyl phthalate	22.37	1151	39041	2.45	UG/ML	98
53)	Benzidine	25.02	1301	3511	6.19	UG/ML	100
54)	*D12-Chrysene	27.95	1467	130055	40.00	UG/ML	98
57)	Benzo(a)anthracene	27.95	1467	573	.19	UG/ML	100
58)	Chrysene	27.95	1467	573	.15	UG/ML	100
60)	bis(2-Ethylhexyl)phthalate	28.76	1513	1195	.36	UG/ML	95
65)	Indeno(1,2,3-c,d)pyrene	34.61	1844	2273	1.44	UG/ML	100
65)	Indeno(1,2,3-c,d)pyrene	35.14	1874	2624	1.62	UG/ML	100
66)	Dibenzo(a,h)anthracene	34.68	1848	1527	.94	UG/ML	100
67)	Benzo(ghi)perylene	34.61	1844	2273	1.48	UG/ML	100
67)	Benzo(ghi)perylene	35.14	1874	2624	1.62	UG/ML	100
68)	d14-Terphenyl	25.02	1301	310046	50.97	UG/ML	100
68)	d14-Terphenyl	25.07	1304	5893	.97	UG/ML	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >I8140::U4
Name: APS DEF FRACTION
Misc: QC3211D

Id File: IAPSDE
Title: APS DEV ON I
Last Calibration: 850701 15:00

Operator ID: TM0576
Quant Time: 850701 18:54
Injected at: 850701 13:37

BTL# 4

QUANT REPORT

Operator ID: IMB5/6
Output File: ^18140::AW
Data File: >18140::114
Name: AP8 DER FRACTION
Misc: QC3211D

Quant Rev: 4
Quant Time: 850701 18:54
Injected at: 850701 13:37
Dilution Factor: 1.000

HTI # 4

ID File: IAP8DE
Title: AP8 DEV IN 1
Last Calibration: 850701 15:00

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*d12-Chrysene	27.59	129	82446	40.00	UG/ML	90
2)	Hexachlorophene dimethyl ether	32.54	407	100	.20	UG/ML	80
2)	Hexachlorophene dimethyl ether	34.07	493	103	.21	UG/ML	89
2)	Hexachlorophene dimethyl ether	34.75	503	119	.24	UG/ML	73

* Compound is ISTD

Appendix E

Chain-of Custody Forms

1) A field Chain-of-Custody form (CC1) is included for all samples shipped by ETC shuttle.

2) An in-house sample Chain-of Custody form is included for the period the sample was in ETC's possession.

3) A subcontractor's Chain-of-Custody form is included for any analytical work not performed within ETC's laboratory.

4) Any additional Chain-of-Custody material provided by a client or by a client's sampling agent is also included.

Shuttle H

ETC ENVIRONMENTAL TESTING and CERTIFICATION

CHAIN OF CUSTODY FORM (CC1)

Seal No. 34575 ETC Job # H60168

Date Sealed 5/7/85 By: Kanna

Company: Vertac Corporation

Attn.: John Hill

Facility/Site:

Phone: ( )

Address: Rifle Range Road
Vicksburg, MS 39180

SAMPLE IDENTIFICATION

Facility: VERTACIUICK

Sample Point: 74 | 4-0051 | 8506/10 | 0900 | 0214

Source Code (from below) | Facility/Site Code Your Sample Point ID (left justify) | (Optional Sample Point Descriptions) Start Date (YY/MM/DD) | Start Time (2400 hr clock) | Elapsed Hours (composite)

Source Codes:
Well ...(W) Outfall.....(O) Bottom Sediment....(B) Surface Impoundment....(I) Leachate Collection Sys.....(C) Other .....(X)
Soil ...(S) River/Stream..(R) Generation Point ....(G) Treatment Facility .....(T) Lake/Ocean .....(L) Specify

SHUTTLE CONTENTS

BOTTLE No	Type	Size	Preserv.	ANALYSIS	SAMPLER Fill (Y/N)	SAMPLER Observations	LAB Observations
3	A	1L	Baked	Acid & Bn			
1	P/H	1L	Baked	P/H			
1	CN	125ml	NaOH	CYANIDE			
4	V	40ml	Sod thio	VOA			
4	F	40ml	Baked	DAT			F. Bibbola
1	TB	40ml	DI/MSH2O	Trip Blank			

CHAIN OF CUSTODY CHRONICLE

1. Shuttle Opened By: (print) Date: Time:
Signature: Seal #: Intact:

2. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

3. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

4. Shuttle Sealed By: (print) BRAD MCCOLLUM Date: 6/11/85 Time: 0820
Signature: Seal #: 0034576 Intact:

ETC USE ONLY Opened By: Tracey Quick Date: 6/12/85 Time: 1100
Seal #: Condition:

ETC ENVIRONMENTAL TESTING and CERTIFICATION

FIELD PARAMETER FORM (CC2)

ETC JOB # H6068

Sample Point [ ] Source Code [ ] Sample Point ID

FIELD PROCEDURES

PURGE DATE (YY MM DD) | START PURGE (2400 hr Clock) | ELAPSED HRS | WATER VOL IN CASING (Gallons) | VOLUME PURGED (Gallons)

SAMPLING METHOD: _____

Sampler Type [ ] A-Submersible Pump B-ISCO C-Bladder Pump D-Dipper/Bottle E-Bailer F-Scoop/Shovel X-Other _____ (SPECIFY OTHER)

Sampler Material [ ] A-Teflon B-Metal C-PVC D-Plastic X-Other _____ (SPECIFY OTHER)

Tubing Material [ ] A-Teflon B-Tygon C-Polyethylene D-Silicon X-Other _____ (SPECIFY OTHER)

Sample Composited [Y/N] _____ Procedure/Proportions

FIELD MEASUREMENTS

Well Elevation (ft/msl) [ ]

Depth to Ground water (ft) [ ]

Groundwater Elevation (ft msl) [ ]

Well Depth (ft) [ ]

Sample Depth (non-well) (ft) [ ]

1st [ ] ph (STD) 1st [ ] spec. cond. um/cm at 25° C [ ] (other parameter) [ ] value [ ] units

2nd [ ] ph (STD) 2nd [ ] spec. cond. um/cm at 25°C [ ] (other parameter) [ ] value [ ] units

3rd [ ] ph (STD) 3rd [ ] spec. cond. um/cm at 25°C [ ] (other parameter) [ ] value [ ] units

4th [ ] ph (STD) 4th [ ] spec. cond. um/cm at 25°C [ ] (other parameter) [ ] value [ ] units

[ ] Sample Temp (°C) [ ] Turbidity NTU

FIELD COMMENTS

Sample Appearance: _____

Weather Conditions: _____

Other: _____

FILTERING: Use Chain of Custody (CC1) to indicate which bottles were filtered

Sampler: _____ (Print) Employer: _____

I certify that sampling procedures were in accordance with applicable EPA state and corporate protocols.

_____ (Date) (Signature)

Shuttle D

ETC ENVIRONMENTAL TESTING and CERTIFICATION

CHAIN OF CUSTODY FORM (CC1)

Seal No. 34577 ETC Job # H6068

Date Sealed 5/7/85 By: Kanna

Company: Vertac Corporation

Attn.: John Hill

Facility/Site:

Phone: ( )

Address: Rifle Range Road
Vicksburg, MS 39180

SAMPLE IDENTIFICATION

Facility: VERTAC VICK

Sample Point: W - 005 (Facility/Site Code; Source Code (from below); Your Sample Point ID (left justify))

(Optional Sample Point Descriptions): 815 6 1 1 (Start Date YYMMDD); 0900 (Start Time 2400 hr clock); 048 (Elapsed Hours composite)

Source Codes
Well ..(W) Outfall.....(O) Bottom Sediment ....(B) Surface Impoundment....(I) Leachate Collection Sys.....(C) Other .....(X)
Soil ...(S) River/Stream ..(R) Generation Point ....(G) Treatment Facility .....(T) Lake/Ocean .....(L) Specify

SHUTTLE CONTENTS

BOTTLE No	Type	Size	Preserv.	ANALYSIS	SAMPLER Fill (Y/N)	SAMPLER Observations	LAB Observations
1	P/H	1L	Baked	Pest/Herb		✓	
2	A	1L	Baked	HPLC		✓	
1	M	1L	Nitric	Metals		✓	

CHAIN OF CUSTODY CHRONICLE

1. Shuttle Opened By: (print) Date: Time:
Signature: Seal #: Intact:

2. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

3. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

4. Shuttle Sealed By: (print) BRAD MCCOLLUM Date: 6/13/85 Time: 0925
Signature: [signature] Seal #: 0034578 Intact:

ETC USE ONLY Opened By: Chacey Quast Date: 6/14/85 Time: 1100
Seal #: 34578 Condition: OK

ETC ENVIRONMENTAL TESTING and CERTIFICATION

FIELD PARAMETER FORM (CC2)

ETC JOB # H6068

Sample Point [ ] Source Code [ ] Sample Point ID

FIELD PROCEDURES

PURGE DATE (YY MM DD) | START PURGE (2400 hr Clock) | ELAPSED HRS | WATER VOL IN CASING (Gallons) | VOLUME PURGED (Gallons)

SAMPLING METHOD: _____

Sampler Type [ ] A-Submersible Pump B-ISCO C-Bladder Pump D-Dipper/Bottle E-Bailer F-Scoop/Shovel X-Other _____ (SPECIFY OTHER)

Sampler Material [ ] A-Teflon B-Metal C-PVC D-Plastic X-Other _____ (SPECIFY OTHER)

Tubing Material [ ] A-Teflon B-Tygon C-Polyethylene D-Silicon X-Other _____ (SPECIFY OTHER)

Sample Composited [Y/N] _____ Procedure/Proportions

FIELD MEASUREMENTS

Well Elevation (ft/msl) [ ]

Depth to Ground water (ft) [ ]

Groundwater Elevation (ft msl) [ ]

Well Depth (ft) [ ]

Sample Depth (non-well) (ft) [ ]

1st	ph (STD)	1st	spec. cond. um/cm at 25°C	(other parameter)	value	units
2nd	ph (STD)	2nd	spec. cond. um/cm at 25°C	(other parameter)	value	units
3rd	ph (STD)	3rd	spec. cond. um/cm at 25°C	(other parameter)	value	units
4th	ph (STD)	4th	spec. cond. um/cm at 25°C	(other parameter)	value	units

Sample Temp (°C) | Turbidity NTU

FIELD COMMENTS

Sample Appearance: _____

Weather Conditions: _____

Other: _____

FILTERING: Use Chain of Custody (CC1) to indicate which bottles were filtered

Sampler: _____ (Print) Employer: _____

I certify that sampling procedures were in accordance with applicable EPA state and corporate protocols.

_____

(Date) (Signature)

GC-MS ANALYSIS CUSTODY LOG

DATE 6/18 SHIFT ___
FRACTION VOA /DAI
INSTRUMENT A
TUNE FILE APF101
SEQUENCE FILE ___
METHOD FILE DAIA
IDFILE AAP8D1
ANALYST(S) [illegible]

SUPERVISOR [illegible]
BATCH #'s QC3390

(PLEASE INITIAL)

CURRENT CSGS STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
BFB	50	10225	1ul
AP8/DAI	500	0215	4ul

NAME	DATA FILE	UL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
BFB	>A9145	1ul			A00124	OK 19.44	
QC3390V	>A9146	4ul					
QC3390VS	>A9147	4ul				AP8/DAI std.	
QC3390VS	>A9148					AP8/DAI std.	
H6068V	>A9149						
H9998V	>A9150						
H9999V	>A9151						
H9999VR	>A9152	↓					

TSR 8-84

SAMPLE NUMBER	LINK	PRES.	INE (ml)	BN	ACID	DER BN	
H5601-	9454		900 ml	~~0.5~~ 1.0	1.0	~~0.5~~ 1.0	*
H5602	↓		1000 ml	~~0.5~~	1.0	~~0.5~~	*
H7219-	9518		990 ml	~~0.5~~	1.0	~~0.5~~	*
H7220	↓		990 ml	~~0.5~~	1.0	~~0.5~~	*
H7221-	↓		1000 ml	~~0.5~~	1.0	~~0.5~~	*
H7222	↓		990 ml	~~0.5~~	1.0	~~0.5~~	*
G8452	9516		925 ml	~~0.5~~	1.0	~~0.5~~	*
H7523	9682		925 ml	~~0.5~~	1.0	~~0.5~~	*
H7524	↓		995 ml	~~0.5~~	1.0	~~0.5~~	*
H7525	9740		995 ml	~~0.5~~	1.0	~~0.5~~	*
H7526	↓		1000 ml	~~0.5~~	1.0	~~0.5~~	*
H6066-	9887		965 ml	~~0.5~~	1.0	~~0.5~~	*
H6067-	↓		950 ml	~~0.5~~	1.0	~~0.5~~	*
H6069-	9878		970 ml	~~0.5~~	1.0	~~0.5~~	*
H6068-	9913		970 ml	~~0.5~~	1.0	~~0.5~~	*
	H7220 R		1000 ml	0.5	1.0	0.5	
	H7222 S		1000 ml	0.5	1.0	0.5	
	QC 3211		1000 ml	0.5	1.0	0.5	
	QC 3211 S		1000 ml	0.5	1.0	0.5	

QC BATCH 3211

ANALYSIS A-TYPES APB/B APB/A

SEP. FUNNEL ✓ CONTINUOUS

6/24

DISTILLATE

NEUTRAL

BASE

ACID

DERIVITIZED BN

MATRIX H_2O

COMMENTS:

Derivatized STDs: (Hexachlorophene) LOT #

1.0 ml 50 µg/ml 10,335

1.0 ml 150 µg/ml 10,335

1.0 ml 300 µg/ml 10,33

aliquoted.

* Final volumes of Hexachlorophenes - all 0.5 ml

JA 6/23

SET UP. - Minagarelli / Pi

EXTRACTION: Joe Angelo

BN DER.: Joe Rubert 6/

BN CONC.: Joe Rubert 6/

ACID CONC.: John Rabate

SUPERVISOR:

*: Please note FV for AN and BN SHOULD BE 1.0 ml (2 5 aliquot Ave

FRACTIONS	SPIKES Lot No.	Conc.	Amount (ml)	SURROGATES Lot No.	Conc.	Amount
APB Acid Spike	9892	100 ug/ml	1.0 ml			
APB B/N Spike I	9888	100 ug/ml	1.0 ml			
APB B/N Spike II	9890	300 ug/ml	1.0 ml			
BN Spike	10,499	100 ug/ml	1.0 ml			
Acid Spike	10,583	100 ug/ml	1.0 ml			
Semi-VOA			~~1.0 ml~~ (ave)	10,686	50/100 ug/ml	1.0 ml

GC-MS ANALYSIS CUSTODY LOG

DATE 850630/861 SHIFT ____
FRACTION APS BNA
INSTRUMENT E
TUNE FILE MTFCC1
SEQUENCE FILE TMF
METHOD FILE ~~EBNF~~ BNPE
IDFILE EBNA, EAPSE
ANALYST(S) [illegible]

SUPERVISOR ____
BATCH #'s GAB3211

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ	[illegible]	DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
APS BN I	300	9889	1ml
APS BN I	100	9894	
APS BN I	30	9895	
APS BN II	500	9891	
"	300	9896	
"	100	9897	
APS ACID	300/500	9893	
"	100/300	9898	
"	30/100	9899	
BN Calib II	200	10904	
" I	100	10903	
" I	60	10802	
ACID Calib II	300	10956	
" II	100	10527	
" I	60	10859	
DFTPP		10610	2ml
ISTD		10701	10ml/5ml acid

CBAPSE CBEBNA

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
DFTPP	>E9909	✓					
ACID Calib III	>E9910	✓	1			EBNA	
II	>E9911	✓	2				
I	>E9912	✓	3				
APS ACID Calib III	>E9913	✓	4			EAPSA	
II	>E9914	✓	5				
I	>E9915	✓	6				
BN Calib III	>E9916	✓	7			EBNA	
II	>E9917	✓	8				
I	>E9918	✓	9				
APS BN I High	>E9919	✓	10			EAPSE	
" " Med	>E9920	✓	11				
" " Low	>E9921	✓	12				
APS BN II High	>E9922	✓	13			EAPSE2	
Med	>E9923	✓	14				
Low	>E9924	✓	15				
DFTPP	>E9925	✓	16				
~~ACID Calib II~~ Q3211A	>E9926	✓	17		✓		
~~APS ACID Calib I~~ 32ml	>E9927	✓	18		✓		
H 7222AS	>E9928	✓	19		✓		
H5601A	>E9929	✓	20		✓		
H5603A	>E9930	✓	21		✓		
H7219A	>E9931	✓	22		✓		
H7220A	>E9932	✓	23		✓		
H7220AR	>E9933	✓	24		✓		

TSR 8-84

GC-MS ANALYSIS CUSTODY LOG

DATE 850701 SHIFT ____
FRACTION APS
INSTRUMENT ____
TUNE FILE ____
SEQUENCE FILE ____
METHOD FILE ____
IDFILE ____
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s QAC3211

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACO		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL

NAME	DATA FILE	UL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
H7221A	7E9934	✓	25		✓		
H7222A	7E9935	✓	26		✓		
G8452A	7E9936	✓	27		✓		
H7523A	7E9937	✓	28		✓		
H7524A	7E9938	✓	29		✓		
DFTPP	7E9939	✓	30				
ACID Calib II	7E9940		31				
~~MSB~~ ACID Calib II	7E9941		32				
H7525A	7E9942	✓	33		✓		
H7526A	7E9943	✓	34		✓		
H6066A	7E9944	✓	35		✓		
H6067A	7E9945	✓	36		✓		
H6068A	7E9946	✓	37		✓		
H6069A	7E9947	✓	38		✓		
DFTPP	7E9948		39				
BN Calib II	7E9949		40				
QC3211B	7E9950		41				
QC3211BS	7E9951		42				
H7222BS	7E9952		43				
H5601B	7E9953		44				
H5602B	7E9954		45				
H7219B	7E9955		46				
H7220B	7E9956		47				
H7220BR	7E9957		48				
H7221B	7E9958		49				

3c. 3

GC-MS ANALYSIS CUSTODY LOG

DATE 55C 7C1 SHIFT ___
FRACTION APB
INSTRUMENT ___
TUNE FILE ___
SEQUENCE FILE ___
METHOD FILE ___
IDFILE ___
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s GAB3211

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
H7222B	7E9959		50				
H8452B	7E9960		51				
H7523B	7E9961		52				
DFTPP	7E9962		53				
BN Calib II	7E9963		54				
H7524B	7E9964		55				
H7526B	7E9965		56				
H6066B	7E9966		57				
H6067B	7E9967		58				
H6068B	7E9968		59				
H6069B	7E9969		60				
H7525B	7E9970		61				
H5601A	7E9971		62	1:10			
~~H7524A~~ H7524A	7E9972		63	1:5			
H7523B	7E9973		64	1:5			
H7524B	7E9974		65	1:20			
H5601B	7E9975		66	1:50			

TSR 8-84

GC-MS ANALYSIS CUSTODY LG

DATE 850801 SHIFT ___
FRACTION APSDER
INSTRUMENT I
TUNE FILE MTI001
SEQUENCE FILE TMI
METHOD FILE BNPI2
IDFILE EAPSDE
ANALYST(S) M Mannes

SUPERVISOR ___
BATCH #'s QD3211

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	850801
WIP		BY	M

STANDARD	CONC PPM	LOT NO.	LOT VOL
ISTD	400	10701	50ul
DFTPP	25	10610	2ul

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
DFTPP	>I8136						
Per Std III	>I8137		1				
" " II	>I8138		2				
" " I	>I8139		3				
QC3211D	>I8140		4				
QC3211DS	>I8141		5				
H7222DS	>I8142		6				
H5601D	>I8143		7				
H5602D	>I8144		8				
H7219D	>I8145		9				
H7220D	>I8146		10				
H7220DR	>I8147		11				
H7221D	>I8148		12				
H7222D	>I8149		13				
G8453D	>I8150		14				
H7523D	>I8151		15				
H7524D	>I8152		16				
H7525D	>I8153		17				
DFTPP	>I8154		18				
Per Std II	>I8155		19				
H7526D	>I8156		20				
H6066D	>I8157		21				
H6067D	>I8158		22				
H6068D	>I8159		23				
H6069D	>I8160		24				

TSR 8-84

EXTRACTION LOG

QC Batch # 3212

Sample Lot#	Log Lot#	Sample Vol (ml)	Extract Vol (ml) EC	Extract Vol (ml) EPD	Comments FINAL Vol (ml)
H5661	9454	500	aliquoted	aliquoted	5.0 ml
H5662	↓				5.0 ml
H7219	9518				5.0 ml
H7220					5.0 ml
H7221					5.0 ml
H7222	↓				5.0 ml
G8452	9516				5.0 ml
H7523	9682				5.0 ml
H7524	↓				5.0 ml
H7525	9740				5.0 ml
H7526	↓				5.0 ml
H6066	9887				5.0 ml
H6067	↓				5.0 ml
H6069	9878				5.0 ml
H6068	9913	✓			5.0 ml
MS1 ~~H9220~~		~~465 ml~~	—	—	—
H7221 MS2		500			5.0 ml
QC 3212 S2					5.0 ml
QC 3212 S3					5.0 ml
H7223 MS3					5.0 ml
QC 3212					5.0 ml
QC 3212 S1					5.0 ml
H7220 MS1		465			5.0 ml
H6066 R		✓	↓	↓	5.0 ml

Analysis: APB / PEST (EC)
APB / PEST (EPD)

Matrix: H_2O

Turnaround: NORM

Date: 6/24/85

Extraction Method:
- Sep funnel ✓
- continuous
- soxhlet
- other

COMMENTS FOR EXTRACT.:

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
~~APB~~ PEST S1	0.1 ml	100 µg/ml	10,636
~~APB~~		25 µg/ml	
APB/PEST S2	0.1 ml	2.5 µg/ml	10,806
		250 ng/ml	
APB/PEST S3	0.2 ml	12.5 µg/ml	10,640
		62.5 µg/ml	
		125 µg/ml	

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: [illegible] 6/24/85 UPD/Supervisor: M Berkley 6/25/85

Conc.: [illegible] SUPERVISOR PA 6/27/85

QC Batch # 3218

Analysis: APB / HERB (EC)

Matrix: H_2O

Turnaround: NORM

Date: 6/24/85

Extraction Method:

- sep funnel ✓
- cont. nuous
- soxhlet
- other

Sample Number	Log Date	Sample Vol (ml)	Extract Vol (ml) HERB		Comments
15602	9454	500	2.5		
H6066	9887	500	2.5		
H6067	↓	500	2.5		
H6069	9878	440	2.5		
H6068	9913	475	2.5		
H9998	9958	500	2.5		
H9999	↓	500	2.5		
QC 3218		500	2.5		
QC 3218 S		500	2.5		
H9998 S		500	2.5		
H9999 R		500	2.5		

COMMENTS FOR EXTRACT.:

COMMENTS FOR GC/MS:
① ALIQUOT TAKEN

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
BLEND 2,4-D	0.5	100 ug/ml	10,595
BLEND 2,4,5-TP		10 ug/ml	
2,4,5-T	0.5	10 ug/ml	10,819

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: Don B. 6/24/85 UPD/Supervisor: M Barkley 6/26/85

Conc.: Bill DiKeefe 6/25/85 Spike verified: Judy Menton 6/25/85

STD. PREP:

ETC ENVIRONMENTAL TESTING and CERTIFICATION

LOG LINK 9913

Metals Analysis Custody Log

Samples H-60068

	Chemist	Date
Hg Prep	Douglas G. Rohrfeld	6/25/85
AA/ICAP Prep	Joan Komarek	6/21/85

Lab Supervisor Vidya Wkiawor date 6/27/85

JUN 26, 1985 14:32
SEQUENCE: Q3212 ON CRN 15
CHANNEL 8

SUBSEQUENCE 1

METHOD
AP8FPD

DIALG-PRG PARAM-FILE
/N

#WSHS	#PMPS	STOP
5,	5,	1

ISO	POST-BTL#	POST-#WSHS
NO ,	0,	1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	FPD STDB ,	1,	PW0790:CE,	RW0790:CE,	100.00,	1.0000,	1.0000
2	QC3212 ,	2,	PW0791:CE,	RW0791:CE,	100.00,	1.0000,	1.0000
3	QC3212S ,	3,	PW0792:CE,	RW0792:CE,	100.00,	1.0000,	1.0000
4	H7220S1 ,	4,	PW0793:CE,	RW0793:CE,	100.00,	1.0000,	1.0000
5	H6066R ,	5,	PW0794:CE,	RW0794:CE,	100.00,	1.0000,	1.0000
6	H5601 ,	6,	H5601A:CE,	H5601B:CE,	100.00,	1.0000,	1.0000
7	H5602 ,	7,	H5602A:CE,	H5602B:CE,	100.00,	1.0000,	1.0000
8	H7219 ,	8,	H7219A:CE,	H7219B:CE,	100.00,	1.0000,	1.0000
9	H7220 ,	9,	H7220A:CE,	H7220B:CE,	100.00,	1.0000,	1.0000
10	H7221 ,	10,	H7221A:CE,	H7221B:CE,	100.00,	1.0000,	1.0000
11	H7222 ,	11,	H7222A:CE,	H7222B:CE,	100.00,	1.0000,	1.0000
12	FPD STD A ,	12,	PW0795:CE,	RW0795:CE,	100.00,	1.0000,	1.0000
13	G8452 ,	13,	G8452A:CE,	G8452B:CE,	100.00,	1.0000,	1.0000
14	H7523 ,	14,	H7523A:CE,	H7523B:CE,	100.00,	1.0000,	1.0000
15	H7524 ,	15,	H7524A:CE,	H7524B:CE,	100.00,	1.0000,	1.0000
16	H7525 ,	16,	H7525A:CE,	H7525B:CE,	100.00,	1.0000,	1.0000
17	H7526 ,	17,	H7526A:CE,	H7526B:CE,	100.00,	1.0000,	1.0000
18	H6066 ,	18,	H6066A:CE,	H6066B:CE,	100.00,	1.0000,	1.0000
19	H6067 ,	19,	H6067A:CE,	H6067B:CE,	100.00,	1.0000,	1.0000
20	H6068 ,	20,	H6068A:CE,	H6068B:CE,	100.00,	1.0000,	1.0000
21	H6069 ,	21,	H6069A:CE,	H6069B:CE,	100.00,	1.0000,	1.0000
22	FPD STD C ,	22,	PW0796:CE,	RW0796:CE,	100.00,	1.0000,	1.0000
23	/E						

SUBSEQUENCE 2

METHOD
METH

DIALG-PRG PARAM-FILE
/N

#WSHS	#PMPS	STOP
5,	5,	1

ISO	POST-BTL#	POST-#WSHS
NO ,	0,	1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	PEST STDB ,	23,	PW0797:CF,	RW0797:CF,	100.00,	1.0000,	1.0000
2	QC3212 ,	24,	PW0798:CF,	RW0798:CF,	100.00,	1.0000,	1.0000
3	QC3212S2 ,	25,	PW0799:CF,	RW0799:CF,	100.00,	1.0000,	1.0000
4	H7721S2 ,	26,	PW0800:CF,	RW0800:CF,	100.00,	1.0000,	1.0000
5	H6066R ,	27,	PW0801:CF,	RW0801:CF,	100.00,	1.0000,	1.0000
6	H5601 ,	28,	H5601C:CF,	H5601D:CF,	100.00,	1.0000,	1.0000
7	H5602 ,	29,	H5602C:CF,	H5602D:CF,	100.00,	1.0000,	1.0000
8	H7219 ,	30,	H7219C:CF,	H7219D:CF,	100.00,	1.0000,	1.0000
9	H7220 ,	31,	H7220C:CF,	H7220D:CF,	100.00,	1.0000,	1.0000
10	H7221 ,	32,	H7221C:CF,	H7221D:CF,	100.00,	1.0000,	1.0000
11	H7222 ,	33,	H7222C:CF,	H7222D:CF,	100.00,	1.0000,	1.0000
12	PEST STDA ,	34,	PW0802:CF,	RW0802:CF,	100.00,	1.0000,	1.0000
13	G8452 ,	35,	G8452C:CF,	G8452D:CF,	100.00,	1.0000,	1.0000
14	H7523 ,	36,	H7523C:CF,	H7523D:CF,	100.00,	1.0000,	1.0000
15	H7524 ,	37,	H7524C:CF,	H7524D:CF,	100.00,	1.0000,	1.0000
16	H7525 ,	38,	H7525C:CF,	H7525D:CF,	100.00,	1.0000,	1.0000
17	H7526 ,	39,	H7526C:CF,	H7526D:CF,	100.00,	1.0000,	1.0000
18	H6066 ,	40,	H6066C:CF,	H6066D:CF,	100.00,	1.0000,	1.0000
19	H6067 ,	41,	H6067C:CF,	H6067D:CF,	100.00,	1.0000,	1.0000
20	H6068 ,	42,	H6068C:CF,	H6068D:CF,	100.00,	1.0000,	1.0000
21	H6069 ,	43,	H6069C:CF,	H6069D:CF,	100.00,	1.0000,	1.0000
22	PEST STD C ,	44,	PW0803:CF,	RW0803:CF,	100.00,	1.0000,	1.0000
23	TCK STD A ,	45,	PW0804:CF,	RW0804:CF,	100.00,	1.0000,	1.0000
24	HEXANE ,	46,	PW0805:CF,	RW0805:CF,	100.00,	1.0000,	1.0000
25	QC3212S3 ,	47,	PW0806:CF,	RW0806:CF,	100.00,	1.0000,	1.0000
26	HEXANE ,	48,	PW0807:CF,	RW0807:CF,	100.00,	1.0000,	1.0000
27	H7223S3 ,	49,	PW0808:CF,	RW0808:CF,	100.00,	1.0000,	1.0000
28	HEXANE ,	50,	PW0809:CF,	RW0809:CF,	100.00,	1.0000,	1.0000
29	TCK STD B ,	51,	PW0810:CF,	RW0810:CF,	100.00,	1.0000,	1.0000
30	HEXANE ,	52,	PW0811:CF,	RW0811:CF,	100.00,	1.0000,	1.0000
31	TCK STD C ,	53,	PW0812:CF,	RW0812:CF,	100.00,	1.0000,	1.0000
32	/E						

Krzuhl 7/1/85
Krzuhl 7/2/85

JUL 1, 1985 11:20
SEQUENCE: S3205 ON CRN 15
CHANNEL 8

SUBSEQUENCE 1

METHOD
HERB8

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

KB

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	QC3223	1,	PK1513:CM,	RK1513:CM,	500.00,	1.0000,	1.0000
2	HERBB	2,	PK1514:CM,	RK1514:CM,	100000,	1.0000,	1.0000
3	QC3223S	3,	PK1515:CM,	RK1515:CM,	500.00,	1.0000,	1.0000
4	H6820S	4,	PK1516:CM,	RK1516:CM,	500.00,	1.0000,	1.0000
5	H6820	5,	H6820M:CM,	H6820N:CM,	500.00,	1.0000,	1.0000
6	H6811	6,	H6811M:CM,	H6811N:CM,	500.00,	1.0000,	1.0000
7	H6811R	7,	PK1517:CM,	RK1517:CM,	500.00,	1.0000,	1.0000
8	H6810	8,	H6810M:CM,	H6810N:CM,	500.00,	1.0000,	1.0000
9	H6826	9,	H6826M:CM,	H6826N:CM,	500.00,	1.0000,	1.0000
10	H6827	10,	H6827M:CM,	H6827N:CM,	500.00,	1.0000,	1.0000
11	HERB1A	11,	PK1518:CM,	RK1518:CM,	100000,	1.0000,	1.0000
12	H9620	12,	H9620M:CM,	H9620N:CM,	500.00,	1.0000,	1.0000
13	H9621	13,	H9621M:CM,	H9621N:CM,	500.00,	1.0000,	1.0000
14	H9622	14,	H9622M:CM,	H9622N:CM,	500.00,	1.0000,	1.0000
15	H9623	15,	H9623M:CM,	H9623N:CM,	500.00,	1.0000,	1.0000
16	HERBA'	16,	PK1519:CM,	RK1519:CM,	100000,	1.0000,	1.0000
17	H8867	17,	H8867M:CM,	H8867N:CM,	500.00,	1.0000,	1.0000
18	H5140	18,	H5140M:CM,	H5140N:CM,	595.00,	1.0000,	1.0000
19	H5142	19,	H5142M:CM,	H5142N:CM,	526.00,	1.0000,	1.0000
20	H5144	20,	H5144M:CM,	H5144N:CM,	595.00,	1.0000,	1.0000
21	H5145	21,	H5145M:CM,	H5145N:CM,	556.00,	1.0000,	1.0000
22	H5146	22,	H5146M:CM,	H5146N:CM,	543.00,	1.0000,	1.0000
23	H5141	23,	H5141M:CM,	H5141N:CM,	500.00,	1.0000,	1.0000
24	HERBC	24,	PK1520:CM,	RK1520:CM,	100000,	1.0000,	1.0000
25	HEXANE	25,	PK1521:CM,	RK1521:CM,	100000,	1.0000,	1.0000
26	QC3231	26,	PK1522:CM,	RK1522:CM,	500.00,	1.0000,	1.0000
27	HERBB	27,	PK1523:CM,	RK1523:CM,	100000,	1.0000,	1.0000
28	QC3231S	28,	PK1524:CM,	RK1524:CM,	500.00,	1.0000,	1.0000
29	J1093S	29,	PK1525:CM,	RK1525:CM,	500.00,	1.0000,	1.0000
30	J1093	30,	J1093M:CM,	J1093N:CM,	714.00,	1.0000,	1.0000
31	J1098	31,	J1098M:CM,	J1098N:CM,	625.00,	1.0000,	1.0000
32	J1098R	32,	PK1526:CM,	RK1526:CM,	625.00,	1.0000,	1.0000
33	H4205	33,	H4205M:CM,	H4205N:CM,	500.00,	1.0000,	1.0000
34	J1094	34,	J1094M:CM,	J1094N:CM,	532.00,	1.0000,	1.0000
35	J1095	35,	J1095M:CM,	J1095N:CM,	833.00,	1.0000,	1.0000
36	J1096	36,	J1096M:CM,	J1096N:CM,	556.00,	1.0000,	1.0000
37	J1097	37,	J1097M:CM,	J1097N:CM,	694.00,	1.0000,	1.0000
38	HERBA	38,	PK1527:CM,	RK1527:CM,	100000,	1.0000,	1.0000

39	HEXANE	,	39,	PK1528:CM,	RK1528:CM,	100000,	1.0000, 1.0000
40	QC3218	,	40,	PK1529:CM,	RK1529:CM,	500.00,	1.0000, 1.0000
41	HERBB	,	41,	PK1530:CM,	RK1530:CM,	100000,	1.0000, 1.0000
42	245TB	,	42,	PK1531:CM,	RK1531:CM,	100000,	1.0000, 1.0000
43	QC3218S	,	43,	PK1532:CM,	RK1532:CM,	500.00,	1.0000, 1.0000
44	H9998S	,	44,	PK1533:CM,	RK1533:CM,	500.00,	1.0000, 1.0000
45	H9998	,	45,	H9998M:CM,	H9998N:CM,	500.00,	1.0000, 1.0000
46	H9999	,	46,	H9999M:CM,	H9999N:CM,	500.00,	1.0000, 1.0000
47	H9999R	,	47,	PK1534:CM,	RK1534:CM,	500.00,	1.0000, 1.0000
48	H5602	,	48,	H5602M:CM,	H5602N:CM,	500.00,	1.0000, 1.0000
49	245TA	,	49,	PK1535:CM,	RK1535:CM,	100000,	1.0000, 1.0000
50	H6066	,	50,	H6066M:CM,	H6066N:CM,	500.00,	1.0000, 1.0000
51	H6067	,	51,	H6067M:CM,	H6067N:CM,	500.00,	1.0000, 1.0000
52	H6069	,	52,	H6069M:CM,	H6069N:CM,	568.00,	1.0000, 1.0000
53	H6068	,	53,	H6068M:CM,	H6068N:CM,	526.00,	1.0000, 1.0000
54	HERBC	,	54,	PK1536:CM,	RK1536:CM,	100000,	1.0000, 1.0000
55	245TC	,	55,	PK1537:CM,	RK1537:CM,	100000,	1.0000, 1.0000
56	HEXANE	,	56,	PK1538:CM,	RK1538:CM,	100000,	1.0000, 1.0000
57	/E						

SUBSEQUENCE 2

METHOD
DWPST8

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME		BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	QC3224	,	57,	PK1539:CM,	RK1539:CM,	1000.0,	1.0000,	1.0000
2	DWPST8	,	58,	PK1540:CM,	RK1540:CM,	100000,	1.0000,	1.0000
3	QC3224S	,	59,	PK1541:CM,	RK1541:CM,	1000.0,	1.0000,	1.0000
4	H6820S	,	60,	PK1542:CM,	RK1542:CM,	1000.0,	1.0000,	1.0000
5	H6820	,	61,	H6820O:CM,	H6820P:CM,	1400.0,	1.0000,	1.0000
6	H6811	,	62,	H6811O:CM,	H6811P:CM,	1149.0,	1.0000,	1.0000
7	H6811R	,	63,	PK1543:CM,	RK1543:CM,	1000.0,	1.0000,	1.0000
8	H6810	,	64,	H6810O:CM,	H6810P:CM,	1100.0,	1.0000,	1.0000
9	H6826	,	65,	H6826O:CM,	H6826P:CM,	1190.0,	1.0000,	1.0000
10	H6827	,	66,	H6827O:CM,	H6827P:CM,	1250.0,	1.0000,	1.0000
11	DWPST1A	,	67,	PK1544:CM,	RK1544:CM,	100000,	1.0000,	1.0000
12	H9620	,	68,	H9620O:CM,	H9620P:CM,	1000.0,	1.0000,	1.0000
13	H9621	,	69,	H9621O:CM,	H9621P:CM,	1000.0,	1.0000,	1.0000
14	H9622	,	70,	H9622O:CM,	H9622P:CM,	1000.0,	1.0000,	1.0000
15	H9623	,	71,	H9623O:CM,	H9623P:CM,	1000.0,	1.0000,	1.0000
16	DWPSTA	,	72,	PK1545:CM,	RK1545:CM,	100000,	1.0000,	1.0000
17	H8867	,	73,	H8867O:CM,	H8867P:CM,	1000.0,	1.0000,	1.0000
18	H5140	,	74,	H5140O:CM,	H5140P:CM,	1000.0,	1.0000,	1.0000
19	H5142	,	75,	H5142O:CM,	H5142P:CM,	1000.0,	1.0000,	1.0000
20	H5144	,	76,	H5144O:CM,	H5144P:CM,	1000.0,	1.0000,	1.0000
21	H5145	,	77,	H5145O:CM,	H5145P:CM,	1000.0,	1.0000,	1.0000
22	H5146	,	78,	H5146O:CM,	H5146P:CM,	1000.0,	1.0000,	1.0000
23	H5141	,	79,	H5141O:CM,	H5141P:CM,	1000.0,	1.0000,	1.0000
24	DWPSTC	,	80,	PK1546:CM,	RK1546:CM,	100000,	1.0000,	1.0000

7/1/85
7/3/85

```
25  HEXANE      ,  81, PK1547:CM, RK1547:CM, 100000,  1.0000,  1.0000
26  QC3232      ,  82, PK1548:CM, RK1548:CM, 1000.0,  1.0000,  1.0000
27  RCPSTB      ,  83, PK1549:CM, RK1549:CM, 100000,  1.0000,  1.0000
28  QC32323     ,  84, PK1550:CM, RK1550:CM, 1000.0,  1.0000,  1.0000
29  J10955      ,  85, PK1551:CM, RK1551:CM, 1000.0,  1.0000,  1.0000
30  H1095       ,  86, J10950:CM, H1095P:CM, 1000.0,  1.0000,  1.0000
31  J1097       ,  87, J10970:CM, J1097P:CM, 1000.0,  1.0000,  1.0000
32  J1097R      ,  88, PK1552:CM, RK1552:CM, 1000.0,  1.0000,  1.0000
33  H4205       ,  89, H42050:CM, H4205P:CM, 1000.0,  1.0000,  1.0000
34  RCPSTA      ,  90, PK1553:CM, RK1553:CM, 100000,  1.0000,  1.0000
35  J1093       ,  91, J10930:CM, J1093P:CM, 1000.0,  1.0000,  1.0000
36  J1094       ,  92, J10940:CM, J1094P:CM, 1000.0,  1.0000,  1.0000
37  J1096       ,  93, J10960:CM, J1096P:CM, 1000.0,  1.0000,  1.0000
38  J1098       ,  94, J10980:CM, J1098P:CM, 1000.0,  1.0000,  1.0000
39  RCPSTC      ,  95, PK1554:CM, RK1554:CM, 100000,  1.0000,  1.0000
40  /E
```

KB

EXTRACTION LOG

QC Batch # 3259

Analysis: APB / EXT LC

Matrix: H_2O

Turnaround: NORM

Date: 7/2/85

Extraction Method:

- sep funnel ✓
- continuous
- soxhlet
- other

Sample Ref	Log Book	Sample Vol (ml)	Extract Vol (ml)		Comments
H7526	9740	1000	1.0		
H8331	9856	1000	1.0		
* H8332	↓	1000	1.0		
H8333		1000	1.0		
H8334		1000	1.0		
H8335		1000	1.0		
H8337	↓	1000	1.0		
H8336	9864	750	1.0		
H6066	9887	1000	1.0		
H6067	↓	950	1.0		
H6069	9878	960	1.0		
H6068	9913	960	1.0		
H9998	9958	970	1.0		
H9999	↓	970	1.0		
J0545	10096	1000	1.0		
QC 3259		1000	1.0		
QC 3259 S		1000	1.0		
# 6066 S		1000	1.0		
# 6069 R		1000	1.0		

COMMENTS FOR EXTRACT.:

* - some of sample was lost during shake. (H8332).

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
APB EXT LC I	0.5 ml	1000 ug/ml	10,897
APB EXT LC II	0.5 ml	1000 ug/ml	10,898
APB EXT LC III	0.5 ml	1000 ug/ml	10,899
1-naphthyl Thiourea	0.5 ml	1000 ug/ml	10,900

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: Anna Grandli 7/2/85

Conc.: Joseph Angelone 7-2-85

UPD/Supervisor: M Barkley 7/3/85

Spike verified [illegible] 7/2/85

J0700

Sample Number	Log Date	Sample Vol (ml)	PCB Extract Vol (ml) BN	PCB Extract Vol (ml) ACID	Comments
J0700	9953	500	1 ml		
H9897	9984				
J0965	10,026				
H8Y68	10,026				
J0964	10,024				
J0942	10,060	9MB			
~~J0935~~					
J0968	10,060	500	1 ml		
H8YY6	10,038				
H8YY7	10,038				
H8YY8	10,038				
J1526	10,162				
* H8334	9850				
* H8336	9864				
* H8331	9856				
* H8332	↓				
* H6068	9913				
QC 3255		500	1 ml		
QC 3255-S		↓	↓		
J0964-S		450	1 ml		
J0965-R		425	1 ml		

QC Batch # 3255

Analysis: PP/PCB(GC)

Matrix: H_2O

Turnaround: NORM

Date:

Extraction Method:

- sep funnel ✓
- continuous
- soxhlet
- other

716

COMMENTS FOR EXTRACT.:

* AP8/PCB(EC): H8334, H8336, H8331, H8332, H6068

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
Aroclor 1260	0.1 ml	10 ng/ml	10,529

SURROGATE	Amt. (ml)	Conc.	Lot #
BN			
ACID			

Set-up: Amy Menson 7/2/85 UPD/Supervisor: [illegible] 7/2/85

Conc.: [illegible] 7.2.85 Spike verified: Amy Menson 7/2/85

JUL 9, 1985 13:50
SEQUENCE: S34555 ON CRN 15
CHANNEL 0

SUBSEQUENCE 1

METHOD
PCBB0

BJ 7-8-85

DIALG-PRG PARAM-FILE
/N

Original # K. Baker 7/11/85
7-13-85

#WSHS #PMPS STOP
5, 5, 1

ISO	POSI-BTL#	POSI-#WSHS					
26	AR1232-0.5	, 26,	PJ1353:DI,	RJ1353:DI,	100000,	1.0000,	1.0000
27	AR1221-0.5	, 27,	PJ1354:DI,	RJ1354:DI,	100000,	1.0000,	1.0000
28	AR1016-0.5	, 28,	PJ1355:DI,	RJ1355:DI,	100000,	1.0000,	1.0000
29	AR1260-5.0	, 29,	PJ1356:DI,	RJ1356:DI,	100000,	1.0000,	1.0000
30	QC3255	, 30,	PJ1357:DI,	RJ1357:DI,	200.00,	1.0000,	1.0000
31	AR1260-1.0	, 31,	PJ1358:DI,	RJ1358:DI,	100000,	1.0000,	1.0000
32	QC3255S	, 32,	PJ1359:DI,	RJ1359:DI,	200.00,	1.0000,	1.0000
33	J0964	, 33,	PJ1360:DI,	RJ1360:DI,	200.00,	1.0000,	1.0000
34	J0964R	, 34,	PJ1361:DI,	RJ1361:DI,	222.00,	1.0000,	1.0000
35	J0965	, 35,	PJ1362:DI,	RJ1362:DI,	200.00,	1.0000,	1.0000
36	J0965R	, 36,	PJ1363:DI,	RJ1363:DI,	235.00,	1.0000,	1.0000
37	J0700	, 37,	PJ1364:DI,	RJ1364:DI,	200.00,	1.0000,	1.0000
38	H9897	, 38,	PJ1365:DI,	RJ1365:DI,	200.00,	1.0000,	1.0000
39	H 8468	, 39,	PJ1366:DI,	RJ1366:DI,	200.00,	1.0000,	1.0000
40	J0968	, 40,	PJ1367:DI,	RJ1367:DI,	200.00,	1.0000,	1.0000
41	H8446	, 41,	PJ1368:DI,	RJ1368:DI,	200.00,	1.0000,	1.0000
42	AR1260-0.5	, 42,	PJ1369:DI,	RJ1369:DI,	100000,	1.0000,	1.0000
43	AR1254-0.5	, 43,	PJ1370:DI,	RJ1370:DI,	100000,	1.0000,	1.0000
44	AR1248-0.5	, 44,	PJ1371:DI,	RJ1371:DI,	100000,	1.0000,	1.0000
45	AR1242-0.5	, 45,	PJ1372:DI,	RJ1372:DI,	100000,	1.0000,	1.0000
46	H8447	, 46,	PJ1373:DI,	RJ1373:DI,	200.00,	1.0000,	1.0000
47	H8448	, 47,	PJ1374:DI,	RJ1374:DI,	200.00,	1.0000,	1.0000
48	J1526	, 48,	PJ1375:DI,	RJ1375:DI,	200.00,	1.0000,	1.0000
49	H8334	, 49,	PJ1376:DI,	RJ1376:DI,	200.00,	1.0000,	1.0000
50	H8336	, 50,	PJ1377:DI,	RJ1377:DI,	200.00,	1.0000,	1.0000
51	H8331	, 51,	PJ1378:DI,	RJ1378:DI,	200.00,	1.0000,	1.0000
52	H8332	, 52,	PJ1379:DI,	RJ1379:DI,	200.00,	1.0000,	1.0000
53	H6068	, 53,	PJ1380:DI,	RJ1380:DI,	200.00,	1.0000,	1.0000
54	AR1232-0.5	, 54,	PJ1381:DI,	RJ1381:DI,	100000,	1.0000,	1.0000
55	AR1221-0.5	, 55,	PJ1382:DI,	RJ1382:DI,	100000,	1.0000,	1.0000
56	AR1016-0.5	, 56,	PJ1383:DI,	RJ1383:DI,	100000,	1.0000,	1.0000
57	AR1260-5.0	, 57,	PJ1384:DI,	RJ1384:DI,	100000,	1.0000,	1.0000
58	/E						

EXTRACTION LOG

QC Batch # 3278

Sample Number	Sample Date	Sample Volume (ml)	Extract Vol (ml) Aliquot		Comments
H8331	9856		2ml		
H8332			2ml		
H8333			2ml		
H8334			2ml		
H8335			2ml		
H8337	↓		2ml		
H8336	9864		2ml		
H6066	9887		2ml		
H6067	↓		2ml		
H6069	9878		2ml		
H9998	9958		2ml		
H9999	↓		2ml		
J0545	10096		2ml		
H6068	9913		2ml		
* J1534	10,150		2ml		
* J1535	↓		2ml		
* J1538	↓		2ml		
* J1542	↓		2ml		
MS J1538R	10,150		2 ml		
QC 3278			2ml		
QC 3278 S			2ml		
J1534 S			2ml		
H8335 R			2ml		

Analysis: APB/DAILC 210
APB/DAILC 254
* SPECLC

Matrix: H_2O

Turnaround: NORM

Date: 7/9/85

Extraction Method:
- sep funnel
- continuous
- soxhlet
- other Aliquoting

COMMENTS FOR EXTRACT.:

~~* DO NOT USE FOR QC~~

* DO USE FOR QC!!

Aliquot ~2 ml. into vial. Identify vial with "Sharpie" no tape labels

QC - Hycopure H_2O only

MS or QCS — add 1.0 ml. of both APB/DAI LC std. (1 comp & 8 comp) to 5.0 ml. volumetric. Bring to 5.0 ml. w/ H_2O or sample. Mix, Aliquot into vial. NJB

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
APB-HPLC DAI Spike	1 ml	8 comp 25 mg/ml	10969
APB-HPLC DAI Spike II	1 ml	8 comp 25 mg/ml	10973

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: [signature] 7.9.85 UPD/Supervisor: [signature] 7/9/85

Conc.: [signature] 7.9.85

GC-MS ANALYSIS CUSTODY LOG

DATE 850622-23 SHIFT ___
FRACTION VOA
INSTRUMENT A
TUNE FILE APFI01
SEQUENCE FILE 10A
METHOD FILE APBPT
IDFILE APBPT
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s QV3404

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
p-BFB	50	10275	1
ISTD	40	10332	5
SURR	35	10562	10
SWCA/ABC	18	10815	5, 10, 30
APBPT STD	50	10218	5, 10, 30

CBAPBT

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
p-BFB	>A9241				A-125		
QC3404V	>A9242		1		TYPED IN AS >A9742	NG	
QC3404VS	>A9243		2		TYPED IN AS >A9743	5uL SWCA/ABC + APBPT	
QC3404VS	>A9244		3			10uL SWCA/ABC + APBPT	
QC3404VS	>A9245		4			30uL SWCA/ABC + APBPT	
QC3404V	>A9246		5			NG	
QC3404V	>A9247		2		✓ OK	~~6 BMDL~~ 5 BMDL	
QC3404V	>A9248		2			NG	
p-BFB	>A9249						
H999815	>A9250		2				
H9998V	>A9251		3			dilute 1:5	
H9999V	>A9252		4			1:10	
H9999VR	>A9253		5			1:10	
H6068V	>A9254		6			OK	
(R) H9998V	> A9255		1	1:10			
(R) H9999V	> A9256		2	1:10			
(R) H9999VR	> A9257		3	1:10			

TSR 8-84

JUL 5, 1985 16:27
SEQUENCE: LCS105 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
EXT250

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

7/5/85

K. Baker 7-13-85

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10901-025,	0,	PH1300:CX,	RH1300:CX,	100.00,	1.0000,	1.0000
2	STD10902-025,	1,	PH1301:CX,	RH1301:CX,	100.00,	1.0000,	1.0000
3	STD10903-025,	2,	PH1302:CX,	RH1302:CX,	100.00,	1.0000,	1.0000
4	STD10904-025,	3,	PH1303:CX,	RH1303:CX,	100.00,	1.0000,	1.0000
5	QC3259 ,	4,	PH1304:CX,	RH1304:CX,	100.00,	1.0000,	1.0000
6	QC3259S ,	5,	PH1305:CX,	RH1305:CX,	100.00,	1.0000,	1.0000
7	H6066 ,	6,	PH1306:CX,	RH1306:CX,	100.00,	1.0000,	1.0000
8	H6066S ,	7,	PH1307:CX,	RH1307:CX,	100.00,	1.0000,	1.0000
9	H6069 ,	8,	PH1308:CX,	RH1308:CX,	100.00,	1.0000,	1.0000
10	H6069R ,	9,	PH1309:CX,	RH1309:CX,	100.00,	1.0000,	1.0000
11	H7526 ,	10,	PH1310:CX,	RH1310:CX,	100.00,	1.0000,	1.0000
12	STD10905-250,	11,	PH1311:CX,	RH1311:CX,	100.00,	1.0000,	1.0000
13	STD10906-250,	12,	PH1312:CX,	RH1312:CX,	100.00,	1.0000,	1.0000
14	STD10907-250,	13,	PH1313:CX,	RH1313:CX,	100.00,	1.0000,	1.0000
15	STD10908-250,	14,	PH1314:CX,	RH1314:CX,	100.00,	1.0000,	1.0000
16	H8331 ,	15,	PH1315:CX,	RH1315:CX,	100.00,	1.0000,	1.0000
17	H8332 ,	16,	PH1316:CX,	RH1316:CX,	100.00,	1.0000,	1.0000
18	H8333 ,	17,	PH1317:CX,	RH1317:CX,	100.00,	1.0000,	1.0000
19	H8334 ,	18,	PH1318:CX,	RH1318:CX,	100.00,	1.0000,	1.0000
20	H8335 ,	19,	PH1319:CX,	RH1319:CX,	100.00,	1.0000,	1.0000
21	STD10909-500,	20,	PH1320:CX,	RH1320:CX,	100.00,	1.0000,	1.0000
22	STD10910-500,	21,	PH1321:CX,	RH1321:CX,	100.00,	1.0000,	1.0000
23	STD10911-500,	22,	PH1322:CX,	RH1322:CX,	100.00,	1.0000,	1.0000
24	STD10912-500,	23,	PH1323:CX,	RH1323:CX,	100.00,	1.0000,	1.0000
25	H8337 ,	24,	PH1324:CX,	RH1324:CX,	100.00,	1.0000,	1.0000
26	H8336 ,	25,	PH1325:CX,	RH1325:CX,	100.00,	1.0000,	1.0000
27	H6067 ,	26,	PH1326:CX,	RH1326:CX,	100.00,	1.0000,	1.0000
28	H6068 ,	27,	PH1327:CX,	RH1327:CX,	100.00,	1.0000,	1.0000
29	H9998 ,	28,	PH1328:CX,	RH1328:CX,	100.00,	1.0000,	1.0000
30	H9999 ,	29,	PH1329:CX,	RH1329:CX,	100.00,	1.0000,	1.0000
31	J0545 ,	30,	PH1330:CX,	RH1330:CX,	100.00,	1.0000,	1.0000
32	ST10897-1000,	31,	PH1331:CX,	RH1331:CX,	100.00,	1.0000,	1.0000
33	ST10898-1000,	32,	PH1332:CX,	RH1332:CX,	100.00,	1.0000,	1.0000
34	STD1099-1000,	33,	PH1333:CX,	RH1333:CX,	100.00,	1.0000,	1.0000
35	ST10900-1000,	34,	PH1334:CX,	RH1334:CX,	100.00,	1.0000,	1.0000
36	/E						

TITLE: Cyanides BOOK NO. CV6 PAGE NO. 92

	SAMPLE #	CONC.
1	H7525	BMDL
2	H7526	BMDL
3	H8334	BMDL
4	H8335	BMDL
5	H8728	0.0598
6	H9502	0.0275*
7	J3051	Not analyzed Recount
8	J3052	Not analyzed Recount
9	H4664	ND
10	G5045	ND
11	J1545	1.67 1:10 **
12	H7271	BMDL
13	H7272	BMDL
14	J1534	BMDL
15	J1536	ND
16	J1538	ND
17	J1542	ND
18	J2722	Rerun*
19	J2721	Rerun*
20	H9651	ND
21	H9667	ND
22	H9668	ND
23	H9669	ND
24	H9685	BMDL
25	H9687	ND
26	J1360	ND
27	J1361	ND
28	J1362	1:26 Rerun*
29	J1363	ND

	SAMPLE #	CONC
30	J1365	BMDL
31	H6066	ND
32	H6067	0.120
33	H6068	BMDL
34	H6069	BMDL
35	H9998	BMDL
36	H9999	ND
37	J1530	ND
38	J1531	ND
39	J1537	BMDL
40	J1540	BMDL
41	G5044	BMDL
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		

UNITS: MG/L Detection limit = 0.025 mg/l

COMMENTS: BMDL

< = less than 0.025 mg/l

ND ≤ 0

* matrix interference

** sample bright yellow

2nd (prepared fresh) Blank Recovery = 0.197/0.2 x 100 = 99%

EPA Std. Rec. = 0.199/0.224 x 100 = 89%

1st Blank Recovery (Low) = 0.145/0.2 x 100 = 73%

SPIKE RECOVERY

SAMPLE #:	H4664	H9685	J1537
REPLICATE 1:	ND	BMDL	BMDL
REPLICATE 2:	ND	BMDL	BMDL
MEAN :	ND	BMDL	BMDL
STD. DEV. :			
SPIKE VALUE:	0.2	0.2	0.2
REPLICATE 1:	0.171	0.197	0.195
REPLICATE 2:			
MEAN :			
STD. DEV. :			
% RECOVERY :	86%	99%	98%

REPLICATE DATA:

SAMPLE # :			
REPLICATE 1:			
REPLICATE 2:			
MEAN :			
STD DEV. :			

ANALYST: H. Wagner
DATE : 7-12-85

VERIFIED BY: [illegible]

EXTRACTION LOG

Sample Number	Log Date	Sample Vol (ml)	Aliquot Extract Vol (ml) BN	Aliquot Extract Vol (ml) ACID	Comments
H8332	9856		2.0ml		
H8333			2.0ml		
H8334			2.0ml		
H8335			2.0ml		
H8337	↓		2.0ml		
H9336	9864		2.0ml		
H6066	9887		2.0ml		
H6067	↓		2.0ml		
H6069	9878		2.0ml		
H9998	9958		2.0ml		
H9999	↓		2.0ml		
J0545	10096		2.0ml		
H6068	9913		2.0ml		
* [redacted]	10150		2.0ml	[redacted]	
QC 3278			2.0ml		
QC 3278 S			2.0ml		
J 1534 S			2.0ml		
H 8335 R			2.0ml		

QC Batch # 3273

Analysis: APB/DAILC 210
APB/DAILC 254
* REVISED *

Matrix: H_2O

Turnaround: NORM

Date: 7/9/85

Extraction Method:
- sep funnel
- continuous
- soxhlet
- other Aliquoting.

COMMENTS FOR EXTRACT.:

* [redacted]

COMMENTS FOR GC/MS:

	FRACTION	SPIKE Amt (ml)	SPIKE Conc.	SPIKE Lot #
I	APPB-HPLC DAIL	1.0ml	25mg/ml	10,969
II	APPB-HPLC DAI II	1.0ml	25mg/ml	10,973

SURROGATE	Amt. (ml)	Conc.	Lot #
BN			
ACID			

Set-up: [signature] 7.9.85 UPD/Supervisor: [signature] 7/9/85

Conc.: [signature] 7.9.85 Spike verified: [signature] 7/9/85

JUL 12, 1985 8:00
SEQUENCE: LCS108 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
EXT280

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10903-025,	0,	PH1500:DK,	RH1500:DK,	100.00,	1.0000,	1.0000
2	STD10907-250,	1,	PH1501:DK,	RH1501:DK,	100.00,	1.0000,	1.0000
3	H6067 ,	2,	PH1502:DK,	RH1502:DK,	100.00,	1.0000,	1.0000
4	STD10911-500,	3,	PH1503:DK,	RH1503:DK,	100.00,	1.0000,	1.0000
5	STD10899-100,	4,	PH1504:DK,	RH1504:DK,	100.00,	1.0000,	1.0000
6	/E						

7/16/85

Helen Wagner 7-17-85
Jane H. Schaper 7/22/85

SUBSEQUENCE 2

METHOD
DAI210

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10972-0.5,	5,	PH1505:DK,	RH1505:DK,	100.00,	1.0000,	1.0000
2	STD10976-0.5,	6,	PH1506:DK,	RH1506:DK,	100.00,	1.0000,	1.0000
3	QC3278 ,	7,	PH1507:DK,	RH1507:DK,	100.00,	1.0000,	1.0000
4	QC3278S ,	8,	PH1508:DK,	RH1508:DK,	100.00,	1.0000,	1.0000
5	J1534 ,	9,	PH1509:DK,	RH1509:DK,	100.00,	1.0000,	1.0000
6	J1534S ,	10,	PH1510:DK,	RH1510:DK,	100.00,	1.0000,	1.0000
7	H8331 ,	11,	PH1511:DK,	RH1511:DK,	100.00,	1.0000,	1.0000
8	H8332 ,	12,	PH1512:DK,	RH1512:DK,	100.00,	1.0000,	1.0000
9	H8333 ,	13,	PH1513:DK,	RH1513:DK,	100.00,	1.0000,	1.0000
10	H8334 ,	14,	PH1514:DK,	RH1514:DK,	100.00,	1.0000,	1.0000
11	STD10971-1.0,	15,	PH1515:DK,	RH1515:DK,	100.00,	1.0000,	1.0000
12	STD10975-1.0,	16,	PH1516:DK,	RH1516:DK,	100.00,	1.0000,	1.0000
13	H8335 ,	17,	PH1517:DK,	RH1517:DK,	100.00,	1.0000,	1.0000
14	H8335R ,	18,	PH1518:DK,	RH1518:DK,	100.00,	1.0000,	1.0000
15	H8337 ,	19,	PH1519:DK,	RH1519:DK,	100.00,	1.0000,	1.0000

```
17  H6066        ,  21, PH1521:DK, RH1521:DK, 100.00,  1.0000,  1.0000
18  H6067        ,  22, PH1522:DK, RH1522:DK, 100.00,  1.0000,  1.0000
19  H6069        ,  23, PH1523:DK, RH1523:DK, 100.00,  1.0000,  1.0000
20  H9998        ,  24, PH1524:DK, RH1524:DK, 100.00,  1.0000,  1.0000
21  STD10970-5.0,  25, PH1525:DK, RH1525:DK, 100.00,  1.0000,  1.0000
22  STD10974-5.0,  26, PH1526:DK, RH1526:DK, 100.00,  1.0000,  1.0000
23  H9999        ,  27, PH1527:DK, RH1527:DK, 100.00,  1.0000,  1.0000
24  J0545        ,  28, PH1528:DK, RH1528:DK, 100.00,  1.0000,  1.0000
25  H6068        ,  29, PH1529:DK, RH1529:DK, 100.00,  1.0000,  1.0000
26  STD10969-25.,  30, PH1530:DK, RH1530:DK, 100.00,  1.0000,  1.0000
27  STD10973-25.,  31, PH1531:DK, RH1531:DK, 100.00,  1.0000,  1.0000
28  /E
```

JUL 13, 1985 11:56
SEQUENCE: LCS109 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
DAI210

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
  5,   5,   1

ISO POST-BTL# POST-#WSHS
NO ,   0,   1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD11020-025,	17,	PH1555:CX,	RH1555:CX,	100.00,	1.0000,	1.0000
2	STD11021-5.0,	18,	PH1556:CX,	RH1556:CX,	100.00,	1.0000,	1.0000
3	STD11022-1.0,	19,	PH1557:CX,	RH1557:CX,	100.00,	1.0000,	1.0000
4	STD11023-0.5,	20,	PH1558:CX,	RH1558:CX,	100.00,	1.0000,	1.0000
5	/E						

7/17/85

Technical Report

for

VERTAC CHEMICAL CORPORATION

P.O. BOX 3

VICKSBURG, MS 39180

Chain of Custody Data Required for ETC Data Management Summary Reports						
H6067	VERTAC CHEMICAL CORPORATION	VERTACVICK	~~1007~~ W006	850610	0900	
ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours

Denis C. K. Lin, Ph.D.

Vice President
Research and Operations

This Technical Report is a product of the INSITE System and was generated using LODESTAR Data Management Software.

TABLE OF CONTENTS

Introduction

Table 1: Results and Quality Assurance Data

Table 2: Method Performance Data

Methodology

QA Protocol

Report Appendices

- Appendix A 1 - Gas Chromatographic Spectral Data for Quantitated Compounds
- Appendix A 2 - Chromatographic Spectral Data for Quantitated Compounds
- Appendix A - Mass Spectral Data for Quantitated Compounds
- Appendix C 1 - GC/MS Subsidiary Data - Blank Chromatograms
- Appendix E - Chain of Custody Forms

Introduction

This report contains the analytical results on your water sample, 007 85/07/25. Per your request, we analyzed for as many Appendix VIII parameters as presently available methodology permits. USEPA instructs that SW846, July, 1982 "Test Methods for Evaluating Solid Waste" is to be followed in the analysis. However, SW846 does not provide sufficient information to analyze for all the parameters in Appendix VIII. We have performed the analysis based on the methodology described in SW846 and divided the parameters into the following categories:

1. Direct Aqueous Injection for water soluble compounds by GC/MS.
2. Purge and Trap GC/MS method for volatile compounds.
3. Extractable Acid/Base/Neutral/Pesticides compounds by GC/MS.
4. Pesticides by GC/EC.
5. Pesticides by GC/FPD.
6. Herbicides by GC/EC.
7. Polar and thermally unstable compounds by HPLC/UV.
8. Metallic and Organometallic compounds by ICAP, AA, and Cold Vapor AA (Table 4)
9. Conventionals.

Furthermore, there are three categories of compounds that cannot be analyzed directly:

1. Compounds which are unstable in water. (Table A)
2. Not Otherwise Specified (N.O.S.) classes of compounds. (Tables B and D)
3. "Exotic" compounds that require special methods. (Table C)

We analyzed for selected representatives from the N.O.S. classes of compounds.

The Appendix VIII Parameters

As proposed on October 1, 1984, (Federal Register, Vol. 49, Page 38786) there are 13 parameters that are unstable in water; and 10 parameters that are exotic in nature and no satisfactory analytical methods are available. Furthermore, for those parameters that have metals in their compositions it is sufficient to analyze for the metal components only. There are 51 parameters that belong to this category. Using the same rationale 14 parameters can be tested as cyanides. Since one exotic, two unstable, and seven cyanide compounds are also classified as metals, the remaining Appendix VIII parameters that need to be addressed in an analytical scheme total 297.

The analytical scheme designed at ETC for the Appendix VIII parameters follows the rationale suggested by SW-846. Various parameters are categorized according to their chemical and physical characteristics and they are grouped together under analytical methods by which they can be quantified at optional method detection limits. We agree with EPA's approach to the unstable, exotic and metallic compounds. We focus our attention on the remaining 297 parameters.

There are 11 parameters among the 297 that ETC believes should also be classified as "unstable in water" (Table 1). EPA, while acknowledging that there are other unstable compounds, suggests that there is some likelihood they can be found in water. Since EPA insists these compounds should be analyzed, we have decided to incorporate them into our analytical scheme but not setting data acceptance critiera for them.

There are another 33 parameters (Table 2) that ETC believes should be classified as exotic compounds and require special or unusual methods for their analysis. Ten of these compounds are antineoplastic agents or other drugs. Five are uncommon compounds where pertinent information is unavailable. Three are alkaloid poisons or mycotoxins. Two are water soluble dyes. One is a very volatile compounds that can explode easily. The remaining 12 compounds, along with the rest of the compounds in this exotic group, possess unusual chemical and physical characteristics which in turn dictate that their analysis at a meaningful detection limit will require individual tailor-made analytical methodology. In most of these cases, EPA recommends to include them in a generalized analytical method without any data to support such recommendations. ETC is obliged to include these parameters into its most

recent Appendix VIII analytical scheme, but strongly urges US EPA to reexamine its position. Perhaps only under unusual circumstances analysis is required for the selected exotic parameters in Table 2.

Among the 297 parameters there are 28 that are listed "N.O.S." (not otherwise specified). These 28 parameters, along with aflatoxins, coal tars, cresote, cresols, phthalic acid esters, tetrachloroethane, and toluenediamine, constitute 35 complex mixtures or classes of compounds (Table B). Since some of these parameters represent thousands of individual compounds it is necessary to select representatives for the analysis of these parameters. In as much as possible, we have chosen "priority pollutants" and commonly available reference standard compounds to represent the 35 parameters (see Table B).

Throughout the development of the analytical scheme one of the major obstacles was the availability of reference standard compounds for the 375 parameters.

Results

There are 375 listings in Appendix VIII. To assist you in reviewing the results we have assigned a number to each parameter in the "Grand" Table. Also in the Grand Table we classified the parameters according to their analytical categories and indicated which result table the data and QA data are tabulated on. Depending on the analyses ordered, the quality assurance data may include results from the blank, spiked blank, spiked sample (i.e. matrix spike) and replicate sample as well as results from surrogate compound analyses.

In the results table, when a compound or element is present below published MDL it is reported as BMDL (Below Method Detection Limit). When a compound is not present at any detectable concentrations it is reported as ND (Not Detected). Matrix spike and replicate analyses, where included, were performed on samples randomly chosen within each quality assurance batch and are therefore not necessarily spikes and replicates of this report's sample. Surrogate compound recovery data and instrument calibration data are included in the Method Performance Data Tables.

The procedures used in the analysis of the sample are described in this report's methodology section. All analytical procedures within our laboratory are performed within a strictly enforced Quality Assurance Protocol. A description of this Protocol is included in the report. The report appendices include the chain of custody record for your sample and, where appropriate, the gas chromatograms and mass spectra.

TABLE 1

PARAMETERS WHICH SHOULD BE UNSTABLE IN WATER

40 Benzotrichloride
53 2-Butanone peroxide
75 1-Chloro-2,3-epoxypropane
79 Chloromethyl methyl ether
138 1,2,3,4-Diepoxybutane
148 Diisopropylfluorophosphate
161 Dimethyl sulfate
220 Maleic anhydride
295 Phorate
298 Phthalic Anhydride
331 Tetraethyldithiopyrophosphate

TABLE 2

"EXOTIC" COMPOUNDS THAT REQUIRE SPECIAL METHODS

10 Aflatoxins
15 Mitomycin C
25 Auramine
26 Azaserine
52 Brucine
62 Chlorambucil
86 Citrus red No. 2
98 Cyclophosphamide
99 Daunomycin
103 Diallate
147 3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol
173 2,4-Dithiobiuret
188 Formaldehyde
189 Formic acid
202 Hexaethyl tetraphosphate
241 N-Methyl-N'-nitrosoguanidine
262 4-Nitroquinoline-1-oxide
277 N-Nitrososarcosine
279 Diphosphoramide, octamethyl
281 Endothal
282 Paraldehyde
304 1,3-Propane sultone
306 Propylthiouracil
311 Saccharin and salts
320 Streptozotocin
322 Strychnine and salts
324 2,3,7,8-TCDD
334 Tetranitromethane
343 Thioacetamide
344 Thiosemicarbazide
367 Tri(1-azoidinyl)phosphine sulfide
369 Trypan blue
370 Uracil mustard

GRAND TABLE

	COMPOUND NAME	FRACTION	TABLE
1	Acetonitrile	P&T	QR27
2	Acetophenone	A/B/N	QR28
3	Warfarin	HPLC	QR31
4	2-Acetylaminofluorene	A/B/N	QR28
5	Acetyl chloride	UNSTABLE	TBL A
6	1-Acetyl-2-thiourea	HPLC	QR25
7	Acrolein	P&T	QR27
8	Acrylamide	HPLC	QR25
9	Acrylonitrile	P&T	QR27
10	Aflatoxins	CLASS	TBL B
10A	Aflatoxins, Total	A/B/N	QR28
11	Aldrin	PEST/HERB	QR24
12	Allyl alcohol	DIR/INJ	QR26
13	Aluminum phosphide	INORG,UNSTABLE	TBL D,A
13A	Aluminum	METALS	QR29
14	4-Aminobiphenyl	A/B/N	QR28
15	Mitomycin C	HPLC	QR31
16	5-(Aminomethyl)-3-isoxazolol	A/B/N	QR28
17	Amitrole	HPLC	QR25
18	Aniline	A/B/N	QR28
19	Antimony and Compounds, N.O.S.	CLASS, INORG	TBL B,D
19A	Antimony	METALS	QR29
20	Aramite	A/B/N	QR28
21	Arsenic and Compounds, N.O.S.	CLASS, INORG	TBL B,D
21A	Arsenic	METALS	QR29
22	Arsenic acid (Orthoarsenic acid)	INORG	TBL D
23	Arsenic pentoxide (Arsenic (V) oxide)	INORG	TBL D
24	Arsenic trioxide (Arsenic (III) oxide)	INORG	TBL D
25	Auramine	A/B/N	QR28
26	Azaserine	HPLC	QR31
27	Barium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
27A	Barium	METALS	QR29
28	Barium cyanide	INORG	TBL D
29	Benz[c]acridine	A/B/N	QR28
30	Benz[a]anthracene	A/B/N	QR28
31	Benzene	P&T	QR27
32	Benzenearsonic acid	INORG	TBL D
33	Dichloromethylbenzene	A/B/N	QR28
34	Benzenethiol	A/B/N	QR28
35	Benzidine	HPLC	QR31
36	Benzo[b]fluoranthene	A/B/N	QR28
37	Benzo[j]fluoranthene	A/B/N	QR28
38	Benzo[a]pyrene	A/B/N	QR28
39	p-Benzoquinone	A/B/N	QR28
40	Benzotrichloride	A/B/N	QR28
41	Benzyl chloride	A/B/N	QR28
42	Beryllium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
42A	Beryllium	METALS	QR29
43	bis(2-Chloroethoxy)methane	A/B/N	QR28
44	bis(2-Chloroethyl) ether	A/B/N	QR28
45	Chlornaphazine	A/B/N	QR28
46	bis(2-Chloroisopropyl)ether	A/B/N	QR28
47	bis(Chloromethyl)ether	UNSTABLE	TBL A
48	bis(2-ethylhexyl)phthalate	A/B/N	QR28
49	Bromoacetone	P&T	QR27
50	Methyl bromide	P&T	QR27
51	4-Bromophenyl phenyl ether	A/B/N	QR28
52	Brucine	A/B/N	QR28
53	2-Butanone peroxide	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
54	Butyl benzyl phthalate	A/B/N	QR28
55	2-sec-Butyl-4,6-dinitrophenol	A/B/N	QR28
56	Cadmium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
56A	Cadmium	METALS	QR29
57	Calcium chromate(Chromic acid,calcium salt)	INORG	TBL D
57A	Calcium	METALS	QR29
58	Calcium cyanide	INORG	TBL D
59	Carbon disulfide	P&T	QR27
60	Carbon oxyfluoride	UNSTABLE	TBL A
61	Chloral	DIR/INJ	QR26
62	Chlorambucil	HPLC	QR31
63	Chlordane	PEST/HERB	QR24
64	Chlorinated Benzenes, N.O.S.	CLASS	TBL B
64A	1,2,3-trichlorobenzene	A/B/N	QR28
64B	2,4,6-trichlorobenzene	A/B/N	QR28
64C	1,2,3,4-tetrachlorobenzene	A/B/N	QR28
64D	1,2,3,5-tetrachlorobenzene	A/B/N	QR28
65	Chlorinated Ethane, N.O.S.	CLASS	TBL B
65A	Chloroethane	P&T	QR27
66	Chlorinated Fluorocarbons, N.O.S.	CLASS	TBL B
66A	Freon TF	P&T	QR27
67	Chlorinated Naphthalene, N.O.S.	CLASS	TBL B
67A	1-chloronaphthalene	A/B/N	QR28
68	Chlorinated Phenol, N.O.S.	CLASS	TBL B
68A	2,3,5,6-tetrachlorophenol	A/B/N	QR28
68B	2,3,4,5-tetrachlorophenol	A/B/N	QR28
69	Chloroacetaldehyde	DIR/INJ	QR26
70	Chloroalkyl Ethers, N.O.S.	CLASS	TBL B
71	p-Chloroaniline	A/B/N	QR28
72	Chlorobenzene	P&T	QR27
73	Chlorobenzilate	PEST/HERB	QR24
74	p-Chloro-m-cresol	A/B/N	QR28
75	1-Chloro-2,3-epoxypropane	P&T	QR27
76	2-Chloroethyl vinyl ether	P&T	QR27
77	Chloroform	P&T	QR27
78	Methyl chloride	P&T	QR27
79	Chloromethyl methyl ether	P&T	QR27
80	2-Chloronaphthalene	A/B/N	QR28
81	2-Chlorophenol	A/B/N	QR28
82	1-(o-Chlorophenyl)thiourea	HPLC	QR25
83	3-Chloropropionitrile	DIR/INJ	QR26
84	Chromium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
84A	Chromium	METALS	QR29
85	Chrysene	A/B/N	QR28
86	Citrus red No. 2	HPLC	QR31
87	Coal Tars	CLASS	TBL B
87A	Acenapthene	A/B/N	QR28
87B	Acenaphthalene	A/B/N	QR28
87C	Anthracene	A/B/N	QR28
87D	Benzo(ghi)perylene	A/B/N	QR28
87E	Benzo(k)fluoranthene	A/B/N	QR28
87F	Fluorene	A/B/N	QR28
87G	Phenathrene	A/B/N	QR28
87H	Pyrene	A/B/N	QR28
88	Copper cyanide	INORG	TBL D
88A	Copper	METALS	QR29
89	Creosote	CLASS	TBL B
89A	2,Nitrophenol	A/B/N	QR28
90	Cresols	CLASS	TBL B
90A	o-Cresol	A/B/N	QR28
90B	m+p-Cresol	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
91	Crotonaldehyde	P&T	QR27
92	Cyanides (soluble salts and complexes)N.O.S	CLASS,INORG	TBL B,D
92A	Cyanide, Total	METALS	QR29
93	Cyanogen	DIR/INJ	QR26
94	Cyanogen bromide	INORG	TBL D
95	Cyanogen chloride	INORG	TBL D
96	Cycasin	EXOTIC, UNSTABLE	TBL C, A
97	2-Cyclohexyl-4,6-dinitrophenol	A/B/N	QR28
98	Cyclophosphamide	EXOTIC	TBL C
99	Daunomycin	HPLC	QR31
100	4,4'-DDD	PEST/HERB	QR24
101	4,4'-DDE	PEST/HERB	QR24
102	4,4'-DDT	PEST/HERB	QR24
103	Diallate	A/B/N	QR28
104	Dibenz[a,h]acridine	A/B/N	QR28
105	Dibenz[a,j]acridine	A/B/N	QR28
106	Dibenz[a,h]anthracene	A/B/N	QR28
107	7H-Dibenzo[c,g]carbazole	A/B/N	QR28
108	Dibenzo[a,e]pyrene	A/B/N	QR28
109	Dibenzo[a,h]pyrene	A/B/N	QR28
110	Dibenzo[a,i]pyrene	A/B/N	QR28
111	1,2-dibromo-3-chloropropane	P&T	QR27
112	1,2-Dibromoethane	P&T	QR27
113	Dibromomethane	P&T	QR27
114	Di-n-butyl phthalate	A/B/N	QR28
115	1,2-Dichlorobenzene	A/B/N	QR28
116	1,3-Dichlorobenzene	A/B/N	QR28
117	1,4-Dichlorobenzene	A/B/N	QR28
118	Dichlorobenzene, N.O.S.	CLASS	TBL B
119	3,3'-Dichlorobenzidine	HPLC	QR31
120	1,4-Dichloro-2-butene	P&T	QR27
121	Dichlorodifluoromethane	P&T	QR27
122	1,1-Dichloroethane	P&T	QR27
123	1,2-Dichloroethane	P&T	QR27
124	1,2-Trans-dichloroethylene	P&T	QR27
125	Dichloroethylene, N.O.S.	CLASS	TBL B
126	1,1-Dichloroethylene	P&T	QR27
127	Methylene chloride	P&T	QR27
128	2,4-Dichlorophenol	A/B/N	QR28
129	2,6-Dichlorophenol	A/B/N	QR28
130	2,4-D	PEST/HERB	QR24
131	Dichlorophenylarsine	A/B/N	QR28
132	Dichloropropane, N.O.S.	CLASS	TBL B
132A	1,3-Dichloropropane	P&T	QR27
133	1,2-Dichloropropane	P&T	QR27
134	Dichloropropanol, N.O.S.	CLASS	TBL B
134A	Dichloropropanol	DIR/INJ	QR26
135	2,3-Dichloropropene	P&T	QR27
136A	cis-1,3-Dichloropropene	P&T	QR27
136B	trans-1,3-Dichloropropene	P&T	QR27
137	Dieldrin	PEST/HERB	QR24
138	1,2,3,4-Diepoxybutane	P&T	QR27
139	Diethylarsine	P&T	QR27
140	N,N,-Diethylhydrazine	P&T	QR27
141	Carbophenothion	PEST/HERB	QR24
142	0,0-Diethylphosphoric acid, 0-p-nitrophenyl ester	A/B/N	QR28
143	Diethyl phthalate	A/B/N	QR28
144	Thionazin	PEST/HERB	QR24
145	Diethylstilbesterol	HPLC	QR25
146	Dihydrosafrole	A/B/N	QR28
147	3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol	HPLC	QR31

	COMPOUND NAME	FRACTION	TABLE
148	Diisopropylfluorophosphate	A/B/N	QR28
149	Dimethoate	PEST/HERB	QR24
150	3,3'-Dimethoxybenzidine	HPLC	QR31
151	p-Dimethylaminoazobenzene	A/B/N	QR28
152	7,12-Dimethylbenz[a]anthracene	A/B/N	QR28
153	3,3'-Dimethylbenzidine	HPLC	QR31
154	Dimethyl carbamoylchloride	UNSTABLE	TBL A
155	1,1-Dimethylhydrazine	DIR/INJ	QR26
156	1,2-Dimethylhydrazine	DIR/INJ	QR26
157	Thiofanox	A/B/N	QR28
158	alpha-alpha-Dimethylphenethylamine	A/B/N	QR28
159	2,4-Dimethylphenol	A/B/N	QR28
160	Dimethyl phthalate	A/B/N	QR28
161	Dimethyl sulfate	A/B/N	QR28
162	Dinitrobenzene, N.O.S.	CLASS	TBL B
162A	m-Dinitrobenzene	A/B/N	QR28
163	4,6-Dinitro-o-cresol	A/B/N	QR28
164	2,4-Dinitrophenol	A/B/N	QR28
165	2,4-Dinitrotoluene	A/B/N	QR28
166	2,6-Dinitrotoluene	A/B/N	QR28
167	Di-n-octyl phthalate	A/B/N	QR28
168	1,4-Dioxane	DIR/INJ	QR26
169	Diphenylamine	A/B/N	QR28
170	1,2-Diphenylhydrazine	A/B/N	QR28
171	N-Nitrosodi-n-propylamine	A/B/N	QR28
172	Disulfoton	PEST/HERB	QR24
173	2,4-Dithiobiuret	A/B/N	QR28
174A	Endosulfan I	PEST/HERB	QR24
174B	Endosulfan II	PEST/HERB	QR24
175	Endrin	PEST/HERB	QR24
176	Ethyl carbamate	HPLC	QR25
177	Ethyl cyanide	DIR/INJ	QR26
178	Ethylenebisdithiocarbamic acid	EXOTIC	TBL C
179	Ethyleneimine	HPLC	QR25
180	Ethylene oxide	DIR/INJ	QR26
181	Ethylenethiourea	HPLC	QR25
182	Ethyl methacrylate	P&T	QR27
183	Ethyl methanesulfonate	A/B/N	QR28
184	Fluoranthene	A/B/N	QR28
185	Fluorine	UNSTABLE	TBL A
186	2-Fluoroacetamide	UNSTABLE, EXOTIC	TBL A, C
187	Fluoroacetic acid	DIR/INJ	QR26
188	Formaldehyde	P&T	QR27
189	Formic acid	A/B/N	QR28
190	Glycidylaldehyde	DIR/INJ	QR26
191	Halomethane, N.O.S.	CLASS	TBL B
191A	Chlorodibromomethane	P&T	QR27
191B	Dichlorobromomethane	P&T	QR27
192	Heptachlor	PEST/HERB	QR24
193	Heptachlor epoxide	PEST/HERB	QR24
194	Hexachlorobenzene	A/B/N	QR28
195	Hexachlorobutadiene	A/B/N	QR28
196A	Alpha-BHC	PEST/HERB	QR24
196B	Beta-BHC	PEST/HERB	QR24
196C	Gamma-BHC	PEST/HERB	QR24
196D	Delta-BHC	PEST/HERB	QR24
197	Hexachlorocyclopentadiene	A/B/N	QR28
198	Hexachloroethane	A/B/N	QR28
199	Hexachlorohexahydro-endo, endo-dimethanonaphthalene	A/B/N	QR28
200	Hexachlorophene	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
201	Hexachloropropene	A/B/N	QR28
202	Hexaethyltetraphosphate	A/B/N	QR28
203	Hydrazine	DIR/INJ	QR26
204	Hydrogen cyanide	SEE 92	TBL B
205	Hydrofluoric acid	UNSTABLE	TBL A
206	Hydrogen sulfide	P&T	QR27
207	Hydroxydimethylarsine oxide	INORG	TBL D
208	Indeno(1,2,3-cd)pyrene	A/B/N	QR28
209	Iodomethane	P&T	QR27
210	Iron dextran	UNSTABLE, EXOTIC	TBL A,C
210A	Iron	METAL	QR29
211	Methyl isocyanate	UNSTABLE	TBL A
212	Isobutyl alcohol	DIR/INJ	QR26
213	Isosafrole	A/B/N	QR28
214	Kepone	PEST/HERB	QR24
215	Lasiocarpine	UNSTABLE, EXOTIC	TBL A,C
216	Lead and Compounds, N.O.S.	CLASS, INORG	TBL B,D
216A	Lead	METALS	QR29
217	Lead acetate (Acetic acid, lead salt)	INORG	TBL D
218	Lead phosphate (Phosphoric acid, lead salt)	INORG	TBL D
219	Lead subacetate	INORG	TBL D
220	Maleic anhydride	A/B/N	QR28
221	Maleic hydrazide	HPLC	QR25
222	Malononitrile	HPLC	QR25
223	Melphalan	A/B/N	QR28
224	Mercury fulminate	INORG	TBL D
225	Mercury and Compounds, N.O.S.	CLASS, INORG	TBL B,D
225A	Mercury	METALS	QR29
226	Methacrylonitrile	DIR/INJ	QR26
227	Methanethiol	DIR/INJ	QR26
228	Methapyrilene	A/B/N	QR28
229	Methomyl	HPLC	QR25
230	Methoxychlor	PEST/HERB	QR24
231	2-Methylaziridine	HPLC	QR25
232	3-Methylcholanthrene	A/B/N	QR28
233	Methyl Chlorocarbonate	UNSTABLE	TBL A
234	4,4'-Methylenebis(2-chloroaniline)	A/B/N	QR28
235	Methyl ethyl ketone	P&T	QR27
236	Methyl hydrazine	DIR/INJ	QR26
237	2-Methyllactonitrile	DIR/INJ	QR26
238	Methyl methacrylate	P&T	QR27
239	Methyl methanesulfonate	A/B/N	QR28
240	Aldicarb	A/B/N	QR28
241	N-Methyl-N'-nitrosoguanidine	A/B/N	QR28
242	Methyl parathion	PEST/HERB	QR24
243	Methylthiouracil	A/B/N	QR28
244	Mustard gas	UNSTABLE, EXOTIC	TBL A,C
245	Naphthalene	A/B/N	QR28
246	1,4-Naphthoquinone	A/B/N	QR28
247	1-Naphthylamine	A/B/N	QR28
248	2-Naphthylamine	A/B/N	QR28
249	1-Naphthyl-2-thiourea	HPLC	QR31
250	Nickel and Compounds, N.O.S.	CLASS, INORG	TBL B,D
250A	Nickel	METALS	QR29
251	Nickel carbonyl (Nickel tetracarbonyl)	INORG	TBL D

	COMPOUND NAME	FRACTION	TABLE
252	Nickel cyanide (Nickel (II)cyanide)	INORG	TBL D
253	Nicotinic acid	HPLC	QR25
254	Nitric oxide	UNSTABLE, EXOTIC	TBL A,C
255	p-Nitroaniline	A/B/N	QR28
256	Nitrobenzene	A/B/N	QR28
257	Nitrogen dioxide	UNSTABLE	TBL A
258	Nitrogen mustard and hydrochloride salt	EXOTIC, UNSTABLE	TBL C,A
259	Nitrogen mustard N-Oxide and hydrochloride salt	EXOTIC, UNSTABLE	TBL C,A
260	Nitroglycerin	HPLC	QR25
261	4-Nitrophenol	A/B/N	QR28
262	4-Nitroquinoline-1-oxide	A/B/N	QR28
263	Nitrosamines, N.O.S.	CLASS	TBL B
263A	N-Nitrosodiphenylamine	A/B/N	QR28
264	N-Nitrosodi-n-butylamine	A/B/N	QR28
265	N-Nitrosodiethanolamine	A/B/N	QR28
266	N-Nitrosodiethylamine	A/B/N	QR28
267	N-Nitrosodimethylamine	A/B/N	QR28
268	N-Nitroso-N-ethylurea	HPLC	QR25
269	N-Nitrosomethylethylamine	A/B/N	QR28
270	N-Nitroso-N-methylurea	HPLC	QR25
271	N-Nitroso-N-methylurethane	A/B/N	QR28
272	N-Nitrosomethylvinylamine	A/B/N	QR28
273	N-Nitrosomorpholine	A/B/N	QR28
274	N-Nitrosonornicotine	A/B/N	QR28
275	N-Nitrosopiperidine	A/B/N	QR28
276	N-Nitrosopyrrolidine	DIR/INJ	QR26
277	N-Nitrososarcosine	A/B/N	QR28
278	5-Nitro-o-toluidine	A/B/N	QR28
279	Octamethylpyrophosphoramide	A/B/N	QR28
280	Osmium tetroxide (Osmium (VIII) oxide)	INORG	TBL D
280A	Osmium	METALS	QR29
281	Endothal	A/B/N	QR28
282	Paraldehyde	P&T	QR27
283	Parathion	PEST/HERB	QR24
284	Pentachlorobenzene	A/B/N	QR28
285	Pentachloroethane	P&T	QR27
286	Pentachloronitrobenzene	A/B/N	QR28
287	Pentachlorophenol	A/B/N	QR28
288	Phenacetin	A/B/N	QR28
289	Phenol	A/B/N	QR28
290A	m-phenylenediamine	HPLC	QR31
290B	o-phenylenediamine	HPLC	QR31
290C	p-phenylenediamine	HPLC	QR31
291	Phenylmercury acetate	INORG	TBL D
292	N-Phenylthiourea	HPLC	QR25
293	Phosgene	UNSTABLE	TBL A
294	Phosphine	EXOTIC, UNSTABLE	TBL C, A
295	Phorate	PEST/HERB	QR24
296	Famphur	PEST/HERB	QR24
297	Phthalic acid esters	CLASS	TBL B
298	Phthalic anhydride	A/B/N	QR28
299	2-Picoline	A/B/N	QR28
300	Polychlorinated Biphenyl, N.O.S.	CLASS	TBL B
300A	Aroclor 1242	PCB/GC/EC	QR30
300B	Aroclor 1254	PCB/GC/EC	QR30
300C	Aroclor 1260	PCB/GC/EC	QR30
300D	Aroclor 1248	PCB/GC/EC	QR30
300E	Aroclor 1232	PCB/GC/EC	QR30
300F	Aroclor 1221	PCB/GC/EC	QR30
300G	Aroclor 1016	PCB/GC/EC	QR30
301	Potassium cyanide	INORG	TBL D
301A	Potassium	METAL	QR29

	COMPOUND NAME	FRACTION	TABLE
302	Potassium silver cyanide	INORG	TBL D
303	Pronamide	A/B/N	QR28
304	1,3-Propane sultone	A/B/N	QR28
305	n-Propylamine	DIR/INJ	QR26
306	Propylthiouracil	A/B/N	QR28
307	2-Propyn-1-ol	DIR/INJ	QR26
308	Pyridine	DIR/INJ	QR26
309	Reserpine	HPLC	QR25
310	Resorcinol	A/B/N	QR28
311	Saccharin and salts	A/B/N	QR28
312	Safrole	A/B/N	QR28
313	Selenious acid (Selenium dioxide)	INORG	TBL D
314	Selenium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
314A	Selenium	METALS	QR29
315	Selenium sulfide (Sulfur selenide)	INORG	TBL D
316	Selenourea	INORG	TBL D
317	Silver and Compounds, N.O.S.	CLASS, INORG	TBL B,D
317A	Silver	METALS	QR29
318	Silver cyanide	INORG	TBL D
319	Sodium cyanide	INORG	TBL D
319A	Sodium	METALS	QR29
320	Streptozotocin	HPLC	QR31
321	Strontium sulfide	INORG	TBL D
321A	Strontium	METALS	QR29
322	Strychnine and salts	EXOTIC	TBL C
323	1,2,4,5-Tetrachlorobenzene	A/B/N	QR28
324	2,3,7,8-TCDD	EXOTIC	TBL C
325	Tetrachloroethane	CLASS	TBL B
326	1,1,1,2-Tetrachloroethane	P&T	QR27
327	1,1,2,2-Tetrachloroethane	P&T	QR27
328	Tetrachloroethylene	P&T	QR27
329	Carbon tetrachloride	P&T	QR27
330	2,3,4,6-Tetrachlorophenol	A/B/N	QR28
331	Tetraethyldithiopyrophosphate	A/B/N	QR28
332	Tetraethyl lead	INORG	TBL D
333	Tetraethylpyrophosphate	PEST/HERB	QR24
334	Tetranitromethane	P&T	QR27
335	Thallium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
335A	Thallium	METALS	QR29
336	Thallic oxide (Thallium (III) oxide)	INORG	TBL D
337	Thallium (I) acetate (Acetic acid, thallium (I) salt)	INORG	TBL D
338	Thallium (I) carbonate	INORG	TBL D
339	Thallium (I) chloride	INORG	TBL D
340	Thallium (I) nitrate	INORG	TBL D
341	Thallium selenite	INORG	TBL D
342	Thallium (I) sulfate	INORG	TBL D
343	Thioacetamide	HPLC	QR31
344	Thiosemicarbazide	HPLC	QR31
345	Thiourea	HPLC	QR25
346	Thiuram	A/B/N	QR28
347	Toluene	P&T	QR27
348	Toluenediamine	CLASS	TBL B
348A	Toluene-2,4-Diamine	HPLC	QR31
349	O-Toluidine hydrochloride	A/B/N	QR28
350	Toluene diisocyanate	UNSTABLE	TBL A
351	Toxaphene	PEST/HERB	QR24

	COMPOUND NAME	FRACTION	TABLE
352	Bromoform	P&T	QR27
353	1,2,4-Trichlorobenzene	A/B/N	QR28
354	1,1,1-Trichloroethane	P&T	QR27
355	1,1,2-Trichloroethane	P&T	QR27
356	Trichloroethylene	P&T	QR27
357	Trichloromethanethiol	P&T	QR27
358	Trichlorofluoromethane	P&T	QR27
359	2,4,5-Trichlorophenol	A/B/N	QR28
360	2,4,6-Trichlorophenol	A/B/N	QR28
361	2,4,5-T	PEST/HERB	QR24
362	2,4,5-TP (Silvex)	PEST/HERB	QR24
363	Trichloropropane, N.O.S.	CLASS	TBL B
363A	1,1,2-trichloropropane	P&T	QR27
363B	1,2,2-trichloropropane	P&T	QR27
364	1,2,3-Trichloropropane	P&T	QR27
365	0,0,0-Triethyl phosphorothioate	A/B/N	QR28
366	sym-Trinitrobenzene	A/B/N	QR28
367	Tris (1-Azridinyl) phosphine sulfide	A/B/N	QR28
368	Tris(2,3-dibromopropyl) phosphate	A/B/N	QR28
369	Trypan blue	HPLC	QR31
370	Uracil mustard	A/B/N	QR28
371	Vanadic acid, ammonium salt	INORG	TBL D
372	Vanadium pentoxide (Vandium (V) oxide)	INORG	TBL D
372A	Vanadium	METALS	QR29
373	Vinyl chloride	P&T	QR27
374	Zinc cyanide	INORG	TBL D
374A	Zinc	METALS	QR29
375	Zinc phosphide	UNSTABLE	TBL A

TABLE A
PARAMETERS WHICH ARE UNSTABLE IN WATER

5 Acetyl chloride
13 Aluminum phosphide
47 bis (Chloromethyl) ether
60 Carbon oxyfluoride
96 Cycasin
154 Dimethyl carbamoylchloride
185 Fluorine
186 2-Fluoroacetamide
205 Hydrofluoric acid
210 Iron dextran
211 Methyl isocyanate
215 Lasiocarpine
233 Methyl chlorocarbonate
244 Mustard gas
254 Nitric oxide
257 Nitrogen dioxide
258 Nitrogen mustard and hydrochloride salt
259 Nitrogen mustard N-Oxide and hydrochloride salt
293 Phosgene
294 Phosphine
350 Toluene diisocyanate
375 Zinc phosphide

TABLE B
COMPOUND CLASSES

CLASS	REPRESENTATIVE	TABLE
19 Antimony and Compounds, N.O.S.	19A Antimony	QR29
21 Arsenic and Compounds, N.O.S.	21A Arsenic	QR29
27 Barium and Compounds, N.O.S.	27A Barium	QR29
42 Beryllium and Compounds, N.O.S.	42A Beryllium	QR29
56 Cadmium and Compounds, N.O.S.	56A Cadmium	QR29
84 Chromium and Compounds, N.O.S.	84A Chromium	QR29
216 Lead and Compounds, N.O.S.	216A Lead	QR29
225 Mercury and Compounds, N.O.S.	225A Mercury	QR29
250 Nickel and Compounds, N.O.S.	250A Nickel	QR29
314 Selenium and Compounds, N.O.S.	314A Selenium	QR29
317 Silver and Compounds, N.O.S.	317A Silver	QR29
335 Thallium and Compounds, N.O.S.	335A Thallium	QR29
10 Aflatoxins	10A Aflatoxins, Total	QR28
64 Chlorinated Benzenes, N.O.S.	64A 1,2,3-trichlorobenzene	QR28
	64B 2,4,6-trichlorobenzene	QR28
	64C 1,2,3,4-tetrachlorobenzene	QR28
	64D 1,2,3,5-tetrachlorobenzene	QR28
	115 1,2-Dichlorobenzene	QR28
	116 1,3-Dichlorobenzene	QR28
	117 1,4-Dichlorobenzene	QR28
	353 1,2,4-Trichlorobenzene	QR28
65 Chlorinated Ethane, N.O.S.	65A Chloroethane	QR27
	354 1,1,1-Trichloroethane	QR27
	355 1,1,2-Trichloroethane	QR27
66 Chlorinated Fluorocarbons, N.O.S.	66A Freon TF	QR27
67 Chlorinated Naphthalene, N.O.S.	67A 1-chloronaphthalene	QR28
68 Chlorinated Phenol, N.O.S.	68A 2,3,5,6-tetrachlorophenol	QR28
	68B 2,3,4,5-tetrachlorophenol	QR28
	128 2,4-Dichlorophenol	QR28
	129 2,6-Dichlorophenol	QR28
	359 2,4,5-Trichlorophenol	QR28
	360 2,4,6-Trichlorophenol	QR28
70 Chloroalkyl Ethers, N.O.S.	44 bis(2-chloroethyl) ether	QR28
	46 bis(2-chloroisopropyl)ether	QR28
	76 2-Chloroethyl vinyl ether	QR27
87 Coal Tars	31 Benzene	QR27
	87A Acenapthene	QR28
	87B Acenaphthalene	QR28
	87C Anthracene	QR28
	87D 3,4-Benzofluoranthene	QR28
	87E Benzo(ghi)perylene	QR28
	87F Benzo(k)fluoranthene	QR28
	87G Fluorene	QR28
	87H Phenathrene	QR28
	87I Pyrene	QR28
	90 Cresols	SEE BELOW
	245 Napthalene	QR28
	289 Phenol	QR28
	347 Toluene	QR27

TABLE B (cont'd)
COMPOUND CLASSES

CLASS	REPRESENTATIVE		TABLE
89 Creosote	74	p-Chloro-m-cresol	QR28
	89A	2,Nitrophenol	QR28
	90A	o-Cresol	QR28
	90B	m+p Cresol	QR28
	163	4,6-Dinitro-o-cresol	QR28
	261	4-Nitrophenol	QR28
90 Cresols	90A	o-Cresol	QR28
	90B	m+p Cresol	QR28
92 Cyanides, N.O.S.	92A	Cyanide, Total	QR29
118 Dichlorobenzene, N.O.S.	115	1,2-Dichlorobenzene	QR28
	116	1,3-Dichlorobenzene	QR28
	117	1,4-Dichlorobenzene	QR28
125 Dichloroethylene, N.O.S.	126	1,1-Dichloroethylene	QR27
132 Dichloropropane, N.O.S.	132A	1,3-Dichloropropane	QR27
	133	1,2-Dichloropropane	QR27
134 Dichloropropanol, N.O.S.	134A	Dichloropropanol	QR26
162 Dinitrobenzene, N.O.S.	162A	m-Dinitrobenzene	QR28
191 Halomethane, N.O.S.	191A	Chlorodibromomethane	QR27
	191B	Dichlorobromoethane	QR27
263 Nitrosamines, N.O.S.	263A	N-Nitrosodiphenylamine	QR28
	264	N-Nitrosodi-n-butylamine	QR28
	265	N-Nitrosodiethanolamine	QR28
	266	N-Nitrosodiethylamine	QR28
	267	N-Nitrosodimethylamine	QR28
	268	N-Nitroso-N-ethylurea	QR25
	269	N-Nitrosomethylethylamine	QR28
	270	N-Nitroso-N-methylurea	QR25
	271	N-Nitroso-N-methylurethane	QR28
	272	N-Nitrosomethylvinylamine	QR28
	273	N-Nitrosomorpholine	QR28
	274	N-Nitrosonornicotine	QR28
	275	N-Nitrosopiperidine	QR28
	276	N-Nitrosopyrrolidine	QR28
	277	N-Nitrososarcosine	QR28
297 Phthalic acid esters	48	bis(2-ethylhexyl)phthalate	QR28
	54	Butyl benzyl phthalate	QR28
	114	Di-N-Butyl phthalate	QR28
	143	Diethyl phthalate	QR28
	160	Dimethyl phthalate	QR28
	167	Di-n-octyl phthalate	QR28
300 Polychlorinated Biphenyl, N.O.S.	300A	Aroclor 1242	QR30
	300B	Aroclor 1254	QR30
	300C	Aroclor 1260	QR30
	300D	Aroclor 1248	QR30
	300E	Aroclor 1232	QR30
	300F	Aroclor 1221	QR30
	300G	Aroclor 1016	QR30
325 Tetrachloroethane	326	1,1,1,2-Tetrachloroethane	QR27
	327	1,1,2,2-Tetrachloroethane	QR27
348 Toluenediamine	348A	Toluene-2,4-Diamine	QR25
363 Trichloropropane, N.O.S.	363A	1,1,2-trichloropropane	QR27
	363B	1,2,2-Trichloropropane	QR27
	364	1,2,3-Trichloropropane	QR27

TABLE C
"EXOTIC" COMPOUNDS THAT REQUIRE SPECIAL METHODS

96 Cycasin
98 Cyclophosphamide *
178 Ethylenebisdithiocarbamic acid
186 2-Fluoroacetamide
210 Iron dextran
215 Lasiocarpine
244 Mustard gas
254 Nitric oxide
258 Nitrogen mustard and hydrochloride salt
259 Nitrogen mustard N-Oxide and hydrochloride salt
294 Phosphine
322 Strychnine and salts *
324 2,3,7,8-TCDD **

* No method specified by EPA.
** Method 8280, extra charge required.

TABLE D
INORGANICS

	REPRESENTATIVE	TABLE
13 Aluminum phosphide	13A Aluminum	QR29
19 Antimony and Compounds, N.O.S.	19A Antimony	QR29
21 Arsenic and compounds, N.O.S.	21A Arsenic	QR29
22 Arsenic acid (Orthoarsenic acid)	21A Arsenic	QR29
23 Arsenic pentoxide (Arsenci (V) oxide)	21A Arsenic	QR29
24 Arsenic trioxide (Arsenic (III) oxide)	21A Arsenic	QR29
27 Barium and compounds, N.O.S	27A Barium	QR29
28 Barium cyanide	27A Barium,	QR29
	92A Cyanide, Total	
32 Benzenearsonic acid	21A Arsenic	QR29
42 Beryllium and compounds, N.O.S.	42A Beryllium	QR29
56 Cadmium and compounds, N.O.S.	56A Cadmium	QR29
57 Calcium chromate (Chromic acid, calcium salt)	57A Calcium	QR29
	84A Chromium	QR29
58 Calcium cyanide	57A Calcium,	QR29
	92A Cyanide, Total	
84 Chromium and compounds, N.O.S	84A Chromium	QR29
88 Copper cyanide	88A Copper,	QR29
	92A Cyanide, Total	
92 Cyanides (soluble salts and complexes)	92A Cyanide, Total	QR29
94 Cyanogen bromide	92A Cyanide, Total	QR29
95 Cyanogen chloride	92A Cyanide, Total	QR29
207 Hyroxydimethylarsine oxide	21A Arsenic	QR29
216 Lead and compounds, N.O.S.	216A Lead	QR29
217 Lead acetate (Acetic acid, lead salt)	216A Lead	QR29
218 Lead phosphate (Phosphoric acid, lead salt)	216A Lead	QR29
219 Lead subacetate	216A Lead	QR29
224 Mercury fulminate (Fulminic acid, mercury salt)	225A Mercury	QR29
225 Mercury and compounds, N.O.S.	225A Mercury	QR29
250 Nickel and compounds, N.O.S.	250A Nickel	QR29
251 Nickel carbonyl (Nickel tetracarbonyl)	250A Nickel	QR29
252 Nickel cyanide (Nickel (II)cyanide)	250A Nickel	QR29
280 Osmium tetroxide (Osmium (VIII) oxide)	280A Osmium	QR29
291 Phenylmercury acetate	225A Mercury	QR29
301 Potassium cyanide	301A Potassium	QR29
	92A Cyanide, Total	QR29
302 Potassium silver cyanide	301A Potassium	QR29
	317A Silver	QR29
	92A Cyanide, Total	QR29
313 Selenious acid (Selenium dioxide)	314A Selenium	QR29
314 Selenium and compounds, N.O.S.	314A Selenium	QR29
315 Selenium sulfide (Sulfur selenide)	314A Selenium	QR29
316 Selenourea	314A Selenium	QR29
317 Silver and compounds, N.O.S.	317A Silver	QR29
318 Silver cyanide	317A Silver,	QR29
	92A Cyanide, Total	
319 Sodium cyanide	319A Sodium,	QR29
	92A Cyanide, Toatl	
321 Strontium sulfide	321A Strontium	QR29
332 Tetraethyl lead	216A Lead	QR29
335 Thallium and compounds, N.O.S.	335A Thallium	QR29
336 Thallic oxide (Thallium (III) oxide)	335A Thallium	QR29
337 Thallium (I) acetate (Acetic acid, thallium (I) salt)	335A Thallium	QR29
338 Thallium (I) carbonate	335A Thallium	QR29
339 Thallium (I) chloride	335A Thallium	QR29
340 Thallium (I) nitrate	335A Thallium	QR29
341 Thallium selenite	335A Thallium	QR29
342 Thallium (I) sulfate	335A Thallium	QR29
371 Vanadic acid, ammonium salt	371A Vanadium	QR29
372 Vanadium pentoxide (Vandium (V) oxide)	371A Vanadium	QR29
374 Zinc cyanide	374A Zinc	QR29

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 6, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 – Dir/Inj Vol Compounds – GC/MS Analysis Data (QR26)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTACVICK ~~W007~~ W006		850610	0900	

	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. mg/l	MDL mg/l	First mg/l	Second mg/l	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen. Added mg/l	% Recov
12	Allyl alcohol	ND	100	ND	ND	ND	0	-	-	0	-
61	Chloral	ND		ND	ND	ND	0	-	-	0	-
69	Chloroacetaldehyde	IND		IND	IND	IND	0	-	-	0	-
83	3-Chloropropionitrile	IND		IND	IND	IND	0	-	-	0	-
93	Cyanogen	ND		ND	ND	ND	0	-	-	0	-
134A	Dichloropropanol	ND	100	ND	ND	ND	0	-	-	0	-
155	1,1-Dimethylhydrazine	IND		IND	IND	IND	0	-	-	0	-
156	1,2-Dimethylhydrazine	ND		ND	ND	ND	0	-	-	0	-
168	1,4-Dioxane	ND	200	ND	ND	ND	0	-	-	0	-
177	Ethyl cyanide	ND	100	ND	ND	ND	0	-	-	0	-
180	Ethylene oxide	ND		ND	ND	ND	0	-	-	0	-
187	Fluoroacetic acid	ND		ND	ND	ND	0	-	-	0	-
203	Hydrazine	IND		IND	IND	IND	0	-	-	0	-
212	Isobutyl Alcohol	ND	100	ND	ND	ND	0	-	-	0	-
226	Methacrylonitrile	ND	100	ND	ND	ND	0	-	-	0	-
227	Methanethiol	IND		IND	IND	IND	0	-	-	0	-
236	Methyl hydrazine	IND		IND	IND	IND	0	-	-	0	-
237	2-Methyllactonitrile	IND		IND	IND	IND	0	-	-	0	-
276	N-Nitrosopyrrolidine	ND	100	ND	ND	ND	0	-	-	0	-
305	n-Propylamine	IND		IND	IND	IND	0	-	-	0	-
307	2-Propyn-1-ol	ND	100	ND	ND	ND	0	-	-	0	-
308	Pyridine	ND		ND	ND	ND	0	-	-	0	-

*Standards and reference spectra are not available for: Glycidylaldehyde.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 – Purge & Trap Compounds – GC/MS Analysis Data (QR27)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W007	850610	0900	

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen Added ug/l	% Recov
1	Acetonitrile	IND		IND	IND	IND	50	0	IND	50	0
7	Acrolein	ND	100	ND	ND	ND	800	105	ND	800	99
9	Acrylonitrile	ND	100	ND	ND	ND	80	101	ND	80	85
31	Benzene	ND	4.4	ND	ND	ND	18	100	ND	18	99
49	Bromoacetone	-	-	-	-	-	-	-	-	-	-
50	Methyl bromide	ND	10	ND	ND	ND	18	94	ND	18	261
59	Carbon disulfide	ND	10	ND	ND	ND	50	101	ND	50	92
65A	Chloroethane	ND	10	ND	ND	ND	18	90	ND	18	95
66A	Freon TF	ND	10	ND	ND	ND	50	103	ND	50	85
72	Chlorobenzene	ND	6.0	1	4	ND	18	99	ND	18	96
75	1-Chloro-2,3-epoxypropane	-	-	-	-	-	-	-	-	-	-
76	2-Chloroethylvinyl ether	ND	10	ND	ND	ND	18	100	ND	18	109
77	Chloroform	ND	1.6	ND	ND	ND	18	96	ND	18	97
78	Methyl chloride	ND	10	ND	ND	ND	18	91	ND	18	93
79	Chloromethyl methyl ether	-	-	-	-	-	-	-	-	-	-
91	Crotonaldehyde	IND		IND	IND	IND	50	0	IND	50	0
111	1,2-dibromo-3-chloropropane	ND	10	ND	ND	ND	50	154	ND	50	112
112	1,2-Dibromoethane	ND	10	ND	ND	ND	50	105	ND	50	99
113	Dibromomethane	ND	10	ND	ND	ND	50	105	ND	50	96
120	1,4-Dichloro-2-butene	ND	10	ND	ND	ND	50	119	ND	50	95
121	Dichlorodifluoromethane	ND	10	ND	ND	ND	18	90	ND	18	89
122	1,1-Dichloroethane	ND	4.7	ND	ND	ND	18	89	ND	18	94
123	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	92	ND	18	99
124	1,2-Trans-dichloroethylene	ND	1.6	ND	ND	ND	18	93	ND	18	90
126	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	90	ND	18	88
127	Methylene chloride	11.4	2.8	19	15	BMDL	18	91	8	18	78
132A	1,3-Dichloropropane	ND	10	ND	ND	ND	50	106	ND	50	98
133	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	96	ND	18	102
135	2,3-Dichloropropene	ND	10	ND	ND	ND	50	102	ND	50	96
136A	cis-1,3-Dichloropropene	ND	5.0	ND	ND	ND	18	89	ND	18	96
136B	trans-1,3-Dichloropropene	ND	10	ND	ND	ND	18	102	ND	18	97
138	1,2,3,4-Diepoxybutene	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Purge & Trap Compounds - GC/MS Analysis Data (QR27)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W006	850610	0900	

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
139 Diethylarsine	-	-	-	-	-	-	-	-	-	-
140 N,N-Diethylhydrazine	-	-	-	-	-	-	-	-	-	-
182 Ethyl methacrylate	ND	10	ND	ND	ND	50	110	ND	50	100
188 Formaldehyde	-	-	-	-	-	-	-	-	-	-
191A Chlorodibromomethane	ND	3.1	ND	ND	ND	18	91	ND	18	95
191B Dichlorobromomethane	ND	2.2	ND	ND	ND	18	90	ND	18	96
206 Hydrogen sulfide	ND	10	ND	ND	ND	0	-	ND	0	-
209 Iodomethane	ND	10	ND	ND	ND	50	97	ND	50	84
235 Methyl ethyl ketone	ND	10	ND	ND	ND	50	102	ND	50	95
238 Methyl methacrylate	ND	10	ND	ND	ND	50	109	ND	50	85
282 Paraldehyde	-	-	-	-	-	-	-	-	-	-
285 Pentachloroethane	ND	10	ND	ND	ND	50	99	ND	50	382
326 1,1,1,2-Tetrachloroethane	ND	10	ND	ND	ND	50	104	ND	50	96
327 1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	111	ND	18	113
328 Tetrachloroethylene	BMDL	4.1	1	14	ND	18	114	ND	18	36
329 Carbon tetrachloride	ND	2.8	ND	ND	ND	18	89	ND	18	83
334 Tetranitromethane	-	-	-	-	-	-	-	-	-	-
347 Toluene	ND	6.0	ND	ND	ND	18	101	ND	18	104
352 Bromoform	ND	4.7	ND	ND	ND	18	92	ND	18	89
354 1,1,1-Trichloroethane	ND	3.8	ND	ND	BMDL	18	87	ND	18	109
355 1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18	97	ND	18	100
356 Trichloroethylene	2.8	1.9	ND	ND	ND	18	99	ND	18	93
357 Trichloromethanethiol	-	-	-	-	-	-	-	-	-	-
358 Trichlorofluoromethane	ND	10	ND	ND	ND	18	90	6	18	85
363A 1,1,2-trichloropropane	ND	10	ND	ND	ND	50	106	ND	50	98
363B 1,2,2-trichloropropane	ND		ND	ND	ND	0	-	ND	0	-
364 1,2,3-Trichloropropane	ND	10	ND	ND	ND	50	119	ND	50	95
373 Vinyl chloride	ND	10	2	3	ND	18	90	ND	18	91

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-" specifies no standard available.
"ND" indeterminate. Standard and/or spikes could not be detected at current method levels.
Results with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 15, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W006	850610	0900	

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
2	Acetophenone	ND	10	ND	ND	ND	100	60	ND	100	90
4	2-Acetylaminofluorene	ND	10	ND	ND	ND	300	74	ND	300	112
10A	Aflatoxins, Total	-	-	-	-	-	-	-	-	-	-
14	4-Aminobiphenyl	ND	10	ND	ND	ND	100	106	ND	100	117
16	5-(Aminomethyl)-3-isoxazolo	IND		IND	IND	IND	300	0	IND	300	0
18	Aniline	ND	10	ND	ND	ND	100	82	ND	100	89
20	Aramite	-	-	-	-	-	-	-	-	-	-
25	Auramine	-	-	-	-	-	-	-	-	-	-
29	Benz[c]acridine	-	-	-	-	-	-	-	-	-	-
30	Benz[a]anthracene	ND	10	ND	ND	ND	100	56	ND	100	90
33	Dichloromethylbenzene	ND	10	ND	ND	ND	100	32	ND	100	79
34	Benzenethiol	ND	10	ND	ND	ND	300	44	ND	300	54
36	Benzo[b]fluoranthene	ND	4.8	ND	ND	ND	100	45	ND	100	72
37	Benzo[j]fluoranthene	-	-	-	-	-	-	-	-	-	-
38	Benzo(a)pyrene	ND	2.5	ND	ND	ND	100	45	ND	100	68
39	p-Benzoquinone	IND		IND	IND	IND	100	0	IND	100	0
40	Benzotrichloride	-	-	-	-	-	-	-	-	-	-
41	Benzyl chloride	ND	10	ND	ND	ND	100	47	ND	100	73
43	bis(2-Chloroethoxy)methane	ND	5.3	ND	ND	ND	100	58	ND	100	84
44	bis(2-Chloroethyl) ether	ND	5.7	ND	ND	ND	100	60	ND	100	72
45	Chlornaphazine	-	-	-	-	-	-	-	-	-	-
46	bis(2-Chloroisopropyl)ether	ND	5.7	ND	ND	ND	100	59	ND	100	86
48	bis(2-Ethylhexyl)phthalate	ND	10	ND	ND	ND	100	75	ND	100	109
51	4-Bromophenyl phenyl ether	ND	1.9	ND	ND	ND	100	99	ND	100	116
52	Brucine	-	-	-	-	-	-	-	-	-	-
53	2-Butanone peroxide	-	-	-	-	-	-	-	-	-	-
54	Butyl benzyl phthalate	ND	10	ND	ND	ND	100	59	ND	100	90
55	2-sec-Butyl-4,6-dinitrophen	ND	10	ND	ND	ND	300	81	ND	300	117
64A	1,2,3-Trichlorobenzene	ND	10	ND	ND	ND	100	51	ND	100	80
64B	1,3,5-Trichlorobenzene	ND	10	ND	ND	ND	100	55	ND	100	86
64C	1,2,3,4-tetrachlorobenzene	ND	10	ND	ND	ND	100	48	ND	100	76
64D	1,2,3,5-tetrachlorobenzene	ND	10	ND	ND	ND	100	40	ND	100	52

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 15, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTACVICK	W006	850610	0900	

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
67A 1-chloronaphthalene	ND	10	ND	ND	ND	100	107	ND	100	116
68A 2,3,5,6-tetrachlorophenol	ND	10	ND	ND	ND	300	70	ND	300	101
68B 2,3,4,5-tetrachlorophenol	ND	10	ND	ND	ND	300	55	ND	300	99
71 p-Chloroaniline	ND	10	ND	ND	ND	300	54	ND	300	57
74 p-Chloro-m-cresol	ND	3.0	ND	ND	ND	100	60	ND	100	87
80 2-Chloronaphthalene	ND	1.9	ND	ND	ND	100	77	ND	100	120
81 2-Chlorophenol	ND	3.3	ND	ND	ND	100	56	ND	100	77
85 Chrysene	ND	2.5	ND	ND	ND	100	58	ND	100	86
87A Acenaphthene	ND	1.9	ND	ND	ND	100	60	ND	100	93
87B Acenaphthalene	ND	3.5	ND	ND	ND	100	61	ND	100	90
87C Anthracene	ND	1.9	ND	ND	ND	100	98	ND	100	117
87D Benzo(ghi)perylene	ND	4.1	ND	ND	ND	0	-	ND	0	-
87E Benzo(k)fluoranthene	ND	2.5	ND	ND	ND	100	49	ND	100	69
87F Fluorene	ND	1.9	ND	ND	ND	100	62	ND	100	93
87G Phenanthrene	ND	5.4	ND	ND	ND	100	105	ND	100	124
87H Pyrene	ND	1.9	ND	ND	ND	100	49	ND	100	76
89A 2-Nitrophenol	ND	3.6	ND	ND	ND	100	59	ND	100	91
90A o-Cresol	ND	10	ND	ND	ND	100	73	ND	100	101
90B m+p-Cresol	ND	10	ND	ND	ND	200	76	ND	200	95
97 2-Cyclohexyl-4,6-dinitrophe	-	-	-	-	-	-	-	-	-	-
103 Diallate	-	-	-	-	-	-	-	-	-	-
104 Dibenz[a,h]acridine	-	-	-	-	-	-	-	-	-	-
105 Dibenz[a,j]acridine	ND	10	ND	ND	ND	100	119	ND	100	122
106 Dibenz[a,h]anthracene	ND	2.5	ND	ND	ND	0	-	ND	0	-
107 7H-Dibenzo[c,g]carbazole	-	-	-	-	-	-	-	-	-	-
108 Dibenzo[a,e]pyrene	-	-	-	-	-	-	-	-	-	-
109 Dibenzo[a,h]pyrene	-	-	-	-	-	-	-	-	-	-
110 Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-	-	-
114 Di-n-butyl phthalate	ND	10	ND	ND	BMDL	100	106	ND	100	133
115 1,2-Dichlorobenzene	ND	1.9	ND	ND	ND	100	49	1.2	100	74
116 1,3-Dichlorobenzene	ND	1.9	ND	ND	ND	100	46	ND	100	71
117 1,4-Dichlorobenzene	ND	4.4	ND	ND	ND	100	49	ND	100	77

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 15, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W006	850610	0900	

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen Added ug/l	% Recov
128 2,4-Dichlorophenol	ND	2.7	ND	ND	ND	100	63	ND	100	91
129 2,6-Dichlorophenol	ND	10	ND	ND	ND	100	53	ND	100	70
131 Dichlorophenylarsine	-	-	-	-	-	-	-	-	-	-
142 0,0-Diethylphosphoric acid	-	-	-	-	-	-	-	-	-	-
143 Diethyl phthalate	ND	1.9	ND	ND	ND	100	60	ND	100	89
146 Dihydrosafrole	-	-	-	-	-	-	-	-	-	-
148 Diisopropylfluorophosphate	-	-	-	-	-	-	-	-	-	-
151 p-Dimethylaminoazobenzene	ND	10	ND	ND	ND	100	84	ND	100	102
152 7,12-Dimethylbenz[a]anthrac	ND	10	ND	ND	ND	100	85	ND	100	101
157 Thiofanox	IND		IND	IND	IND	300	0	IND	300	0
158 a-a-Dimethylphenethylamine	IND		IND	IND	IND	100	0	IND	100	0
159 2,4-Dimethylphenol	ND	2.7	ND	ND	ND	100	67	ND	100	90
160 Dimethyl phthalate	ND	10	ND	ND	ND	100	58	ND	100	83
161 Dimethyl sulfate	-	-	-	-	-	-	-	-	-	-
162A m-Dinitrobenzene	ND	10	ND	ND	ND	100	51	ND	100	77
163 4,6-Dinitro-o-cresol	ND	24	ND	ND	ND	100	44	ND	100	76
164 2,4-Dinitrophenol	ND	42	ND	ND	ND	100	126	ND	100	127
165 2,4-Dinitrotoluene	ND	5.7	ND	ND	ND	100	49	ND	100	77
166 2,6-Dinitrotoluene	ND	1.9	ND	ND	ND	100	59	ND	100	89
167 Di-n-octyl phthalate	ND	10	ND	ND	ND	100	74	ND	100	108
169 Diphenylamine	ND	10	ND	ND	ND	100	35	ND	100	46
170 1,2-Diphenylhydrazine	ND	10	ND	ND	ND	100	59	ND	100	89
171 N-Nitrosodi-n-propylamine	ND	10	ND	ND	ND	100	47	ND	100	74
173 2,4-Dithiobiuret	-	-	-	-	-	-	-	-	-	-
183 Ethyl methanesulfonate	ND	10	ND	ND	ND	100	60	ND	100	69
184 Fluoranthene	ND	2.2	ND	ND	ND	100	90	ND	100	109
189 Formic acid	-	-	-	-	-	-	-	-	-	-
194 Hexachlorobenzene	ND	1.9	ND	ND	ND	100	72	ND	100	100
195 Hexachlorobutadiene	ND	.9	ND	ND	ND	100	38	ND	100	65
197 Hexachlorocyclopentadiene	ND	10	ND	ND	ND	0	-	ND	0	-
198 Hexachloroethane	ND	1.6	ND	ND	ND	100	35	ND	100	59
199 Hexachlorohexahydro-endo, e	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" =Indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available; compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 15, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W006	850610	0900	

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
200	Hexachlorophene	ND	10	ND	ND	ND	300	60	ND	300	74
201	Hexachloropropene	ND	10	ND	ND	ND	300	46	ND	300	81
202	Hexaethyltetraphosphate	-	-	-	-	-	-	-	-	-	-
208	Indeno(1,2,3-cd)pyrene	ND	3.7	ND	ND	ND	0	-	ND	0	-
213	Isosafrole	ND	10	ND	ND	ND	300	66	ND	300	72
220	Maleic anhydride	-	-	-	-	-	-	-	-	-	-
223	Melphalan	IND		IND	IND	IND	300	0	ND	300	0
228	Methapyrilene	-	-	-	-	-	-	-	-	-	-
232	3-Methylcholanthrene	ND	10	ND	ND	ND	100	109	ND	100	113
234	4,4'-Methylenebis(2-chloroa	ND	10	ND	ND	ND	100	70	ND	300	107
239	Methyl methanesulfonate	ND	10	ND	ND	ND	100	54	ND	100	65
240	Aldicarb	ND	10	ND	ND	ND	100	67	ND	100	95
241	N-Methyl-N'-nitrosoguanidin	-	-	-	-	-	-	-	-	-	-
243	Methylthiouracil	-	-	-	-	-	-	-	-	-	-
245	Naphthalene	-	-	-	-	-	-	-	-	-	-
246	1,4-Naphthoquinone	ND	1.6	ND	ND	ND	100	55	ND	100	85
247	1-Naphthylamine	ND	10	ND	ND	ND	100	28	ND	100	46
248	2-Naphthylamine	ND	10	ND	ND	ND	100	52	ND	100	59
255	p-Nitroaniline	ND	10	ND	ND	ND	100	35	ND	100	35
256	Nitrobenzene	ND	10	ND	ND	ND	300	89	ND	300	112
261	4-Nitrophenol	ND	1.9	ND	ND	ND	100	55	ND	100	76
262	4-Nitroquinoline-1-oxide	ND	2.4	ND	ND	ND	100	20	ND	100	26
263A	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-	-	-
264	N-Nitrosodi-n-butylamine	ND	1.9	ND	ND	ND	100	52	ND	100	79
265	N-Nitrosodiethanolamine	ND	10	ND	ND	ND	100	53	ND	100	79
266	N-Nitrosodiethylamine	IND		IND	IND	IND	300	0	IND	300	0
267	N-Nitrosodimethylamine	ND	10	ND	ND	ND	300	47	ND	300	61
269	N-Nitrosomethylethylamine	ND	10	ND	ND	ND	0	-	ND	0	-
271	N-Nitroso-N-methylurethane	IND		IND	IND	IND	100	0	IND	100	0
272	N-Nitrosomethylvinylamine	ND	10	ND	ND	ND	300	35	ND	300	31
273	N-Nitrosomorpholine	-	-	-	-	-	-	-	-	-	-
274	N-Nitrosonornicotine	ND	10	ND	ND	ND	300	57	ND	300	66
		-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-" specifies no standard or reference spectra available.
"IND" = indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 15, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTACVICK	W006	850610	0900	

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen Added ug/l	% Recov
275	N-Nitrosopiperidine	ND	10	ND	ND	ND	100	67	ND	100	89
277	N-Nitrososarcosine	-	-	-	-	-	-	-	-	-	-
278	5-Nitro-o-toluidine	ND	10	ND	ND	ND	300	85	ND	300	106
279	Octamethylpyrophosphoramide	-	-	-	-	-	-	-	-	-	-
281	Endothal	-	-	-	-	-	-	-	-	-	-
284	Pentachlorobenzene	ND	10	ND	ND	ND	100	55	ND	100	83
286	Pentachloronitrobenzene	ND	10	ND	ND	ND	300	73	ND	300	104
287	Pentachlorophenol	ND	3.6	ND	ND	ND	100	115	ND	100	121
288	Phenacetin	ND	10	ND	ND	ND	100	94	ND	100	123
289	Phenol	ND	1.5	ND	ND	ND	100	24	ND	100	19
298	Phthalic anhydride	-	-	-	-	-	-	-	-	-	-
299	2-Picoline	ND	10	ND	ND	ND	100	71	ND	100	93
303	Pronamide	ND	10	ND	ND	ND	100	84	ND	100	118
304	1,3-Propane sultone	-	-	-	-	-	-	-	-	-	-
306	Propylthiouracil	-	-	-	-	-	-	-	-	-	-
310	Resorcinol	IND		IND	IND	IND	300	0	IND	300	0
311	Saccharin and salts	-	-	-	-	-	-	-	-	-	-
312	Safrole	ND	10	ND	ND	ND	300	76	ND	300	107
323	1,2,4,5-Tetrachlorobenzene	ND	10	ND	ND	ND	100	53	ND	100	81
330	2,3,4,6-Tetrachlorophenol	ND	10	ND	ND	ND	300	55	ND	300	99
331	Tetraethyldithiopyrophospha	-	-	-	-	-	-	-	-	-	-
346	Thiuram	IND		IND	IND	IND	300	0	IND	300	0
349	O-Toluidine	ND	10	ND	ND	ND	300	48	ND	300	52
353	1,2,4-Trichlorobenzene	ND	1.9	ND	ND	ND	100	46	ND	100	72
359	2,4,5-Trichlorophenol	ND	10	ND	ND	ND	100	64	ND	100	97
360	2,4,6-Trichlorophenol	ND	2.7	ND	ND	ND	100	53	ND	100	84
365	0,0,0-Triethyl phosphorothi	-	-	-	-	-	-	-	-	-	-
366	sym-Trinitrobenzene	-	-	-	-	-	-	-	-	-	-
367	Tris(1-Azridinyl)phosphine	-	-	-	-	-	-	-	-	-	-
368	Tris(2,3-dibromopropyl)phos	IND									
370	Uracil mustard	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-" specifies no standard or reference spectra available.
"IND" = indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 12, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 – Pest & Herb Compounds – GC Analysis Data (QR24)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W006	850610	0900	

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
11 Aldrin	ND	.1	ND	ND	ND	0.5	76	ND	0.5	84
63 Chlordane	ND	1.0	ND	ND	ND	5	71	ND	5	140
73 Chlorobenzilate	-	-	-	-	-	-	-	-	-	-
100 4,4'-DDD	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
101 4,4'-DDE	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
102 4,4'-DDT	ND	.1	ND	ND	ND	0.5	120	ND	0.5	120
130 2,4-D	ND	.1	ND	ND	ND	100	40	ND	100	37
137 Dieldrin	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
141 Carbophenothion	-	-	-	-	-	-	-	-	-	-
144 Thionazin	ND	1.0	ND	ND	ND	25	100	ND	25	80
149 Dimethoate	ND	1.0	ND	ND	ND	5	58	ND	5	30
172 Disulfoton	ND	5.0	ND	ND	ND	25	88	ND	25	68
174A Endosulfan I	ND	.1	ND	ND	ND	0.5	100	ND	0.5	120
174B Endosulfan II	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
175 Endrin	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
192 Heptachlor	ND	.1	ND	ND	ND	0.5	80	ND	0.5	90
193 Heptachlor epoxide	ND	.1	ND	ND	ND	0.5	100	ND	0.5	120
196A Alpha-BHC	ND	.1	ND	ND	ND	0.5	100	ND	0.5	114
196B Beta-BHC	ND	.1	ND	ND	ND	0.5	98	ND	0.5	100
196C Gamma-BHC	ND	.1	0.05	ND	ND	0.5	100	ND	0.5	360
196D Delta-BHC	ND	.1	ND	ND	ND	0.5	110	ND	0.5	110
214 Kepone	ND	2.5	ND	ND	ND	5	200	ND	5	184
230 Methoxychlor	ND	1.0	ND	ND	ND	50	100	ND	50	110
242 Methyl parathion	BMDL	1.0	0.70	0.08	ND	5	100	ND	5	80
283 Parathion	ND	1.0	ND	ND	ND	5	110	ND	5	80
295 Phorate	-	-	-	-	-	-	-	-	-	-
296 Famphur	ND	10	ND	ND	ND	50	110	ND	50	76
333 Tetraethylpyrophosphate	ND	5.0	ND	ND	ND	25	72	ND	25	44
351 Toxaphene	ND	1.0	ND	ND	ND	20	38	ND	20	54
361 2,4,5-T	ND	5.0	ND	ND	ND	10	119	3.6	10	160
362 2,4,5-TP (Silvex)	ND	5.0	ND	ND	ND	10	99	ND	10	145

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-" specifies no standard available.
"IND" = indeterminate. Standard and/or spikes could not be detected at current method levels.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 24, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - DAI HPLC Compounds - Analysis Data (QR25)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTACVICK	W005	850610	0900	

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. mg/l	MDL** mg/l	First mg/l	Second mg/l	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen. Added mg/l	% Recov
6	1-Acetyl-2-thiourea	ND	.5	ND	ND	ND	5.0	110	ND	5.0	116
8	Acrylamide	ND	.5	ND	ND	ND	5.0	102	ND	5.0	105
17	Amitrole	-	-	-	-	-	-	-	-	-	-
82	1-(o-Chlorophenyl)thiourea	ND	.5	ND	ND	ND	5.0	100	ND	5.0	100
145	Diethylstilbesterol	-	-	-	-	-	-	-	-	-	-
176	Ethyl carbamate	-	-	-	-	-	-	-	-	-	-
179	Ethyleneimine	-	-	-	-	-	-	-	-	-	-
181	Ethylenethiourea	ND	.5	BMDL	ND	ND	5.0	96	ND	5.0	99
221	Maleic hydrazide	ND	.5	ND	ND	ND	5.0	99	ND	5.0	96
222	Malononitrile	-	-	-	-	-	-	-	-	-	-
229	Methomyl	ND	.5	ND	ND	ND	0	-	ND	0	-
231	2-Methylaziridine	-	-	-	-	-	-	-	-	-	-
253	Nicotinic acid	ND	.5	ND	ND	ND	5.0	83	ND	5.0	80
260	Nitroglycerin	-	-	-	-	-	-	-	-	-	-
268	N-Nitroso-N-ethylurea	BMDL	.5	BMDL	BMDL	ND	5.0	210	BMDL	5.0	99
270	N-Nitroso-N-methylurea	ND	.5	ND	ND	ND	5.0	350	11	5.0	150
292	N-Phenylthiourea	BMDL	.5	ND	ND	ND	5.0	92	BMDL	5.0	94
309	Reserpine	-	-	-	-	-	-	-	-	-	-
345	Thiourea	ND	.5	ND	ND	ND	5.0	105	ND	5.0	107

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-" specifies no standard available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 27, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 – Extractable HPLC Compounds – Analysis Data (QR31)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTACVICK	W006	850610	0900	

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
3 Warfarin	ND	26	BMDL	BMDL	BMDL	500	116	BMDL	500	118
35 Benzidine	ND	26	BMDL	BMDL	BMDL	500	85	BMDL	500	100
119 3,3'-Dichlorobenzidine	BMDL	26	BMDL	BMDL	BMDL	500	84	BMDL	500	101
150 3,3'-Dimethoxybenzidine	ND	26	BMDL	BMDL	ND	500	83	ND	500	99
153 3,3'-Dimethylbenzidine	BMDL	26	BMDL	ND	ND	500	90	ND	500	107
249 1-Naphthyl-2-thiourea	ND	26	ND	ND	ND	500	85	ND	500	97
290A m-phenylenediamine	BMDL	26	BMDL	BMDL	BMDL	500	46	BMDL	500	55
290B o-phenylenediamine	ND	26	ND	BMDL	ND	500	63	ND	500	69
290C p-phenylenediamine	ND	26	ND	ND	ND	500	19	ND	500	23
348A Toluene-2,4-Diamine	BMDL	26	BMDL	BMDL	BMDL	500	105	BMDL	500	106

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Aroclors -GC Analysis Data (QR30)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTACVICK W006		850610	0900	

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
300A Aroclor 1242	ND	1	ND	ND	ND	0	-	ND	0	-
300B Aroclor 1254	ND	1	ND	ND	ND	0	-	ND	0	-
300C Aroclor 1260	ND	1	ND	ND	ND	2	100	ND	2	100
300D Aroclor 1248	ND	1	ND	ND	ND	0	-	ND	0	-
300E Aroclor 1232	ND	1	ND	ND	ND	0	-	ND	0	-
300F Aroclor 1221	ND	1	ND	ND	ND	0	-	ND	0	-
300G Aroclor 1016	ND	1	ND	ND	ND	0	-	ND	0	-

*See Grand Table for complete compound name and specifications.
**MDL calculated for each sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 15, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Metals and Cyanides - Analysis Data (QR29)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6067	VERTAC CHEMICAL CORPORATION	VERTACVICK	W006	850610	0900	

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen, ug/l	MDL ug/l	First	Second	Blank Data	Concen. Added	% Recov	Unspiked Sample	Concen Added	% Recov
13A Aluminum	4300	100								
19A Antimony	ND	100								
21A Arsenic	15	10								
27A Barium	915	4								
42A Beryllium	ND	2								
56A Cadmium	BMDL	4								
57A Calcium	646000	100								
84A Chromium	ND	20								
88A Copper	20	10								
92A Cyanide, Total	120	25								
210 Iron	4700	200								
216A Lead	BMDL	90								
225A Mercury	.2	.2								
250A Nickel	BMDL	20								
280A Osmium	950	800								
301A Potassium	1300	40								
314A Selenium	ND	5								
317A Silver	ND	10								
319A Sodium	43100	90								
321A Strontium	740	50								
335A Thallium	BMDL	5								
372A Vanadium	ND	10								
374A Zinc	40	10								

*See Grand Table for complete compound name and specifications.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

July 18, 1985

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery Water- GC/MS Data (QR20)

Chain of Custody Data Required for ETC Data Management Summary Reports

H6067

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours

Compound	Amount Added ug	% Recovery	Control Limits *	
			Lower	Upper
VOLATILE FRACTION				
Toluene-D8	.250	104	86	119
Bromofluorobenzene	.250	116	85	121
1,2-Dichloroethane-D4	.250	112	77	120
ACID FRACTION				
Phenol-D5	100	33	15	103
2-Fluorophenol	100	59	23	121
2,4,6-Tribromophenol	100	47	10	130
BASE/NEUTRAL FRACTION				
Nitrobenzene-D5	50	73	41	120
2-Fluorobiphenyl	50	62	44	119
Terphenyl-D14	50	96	33	128

* IFB EPA Control Limits.

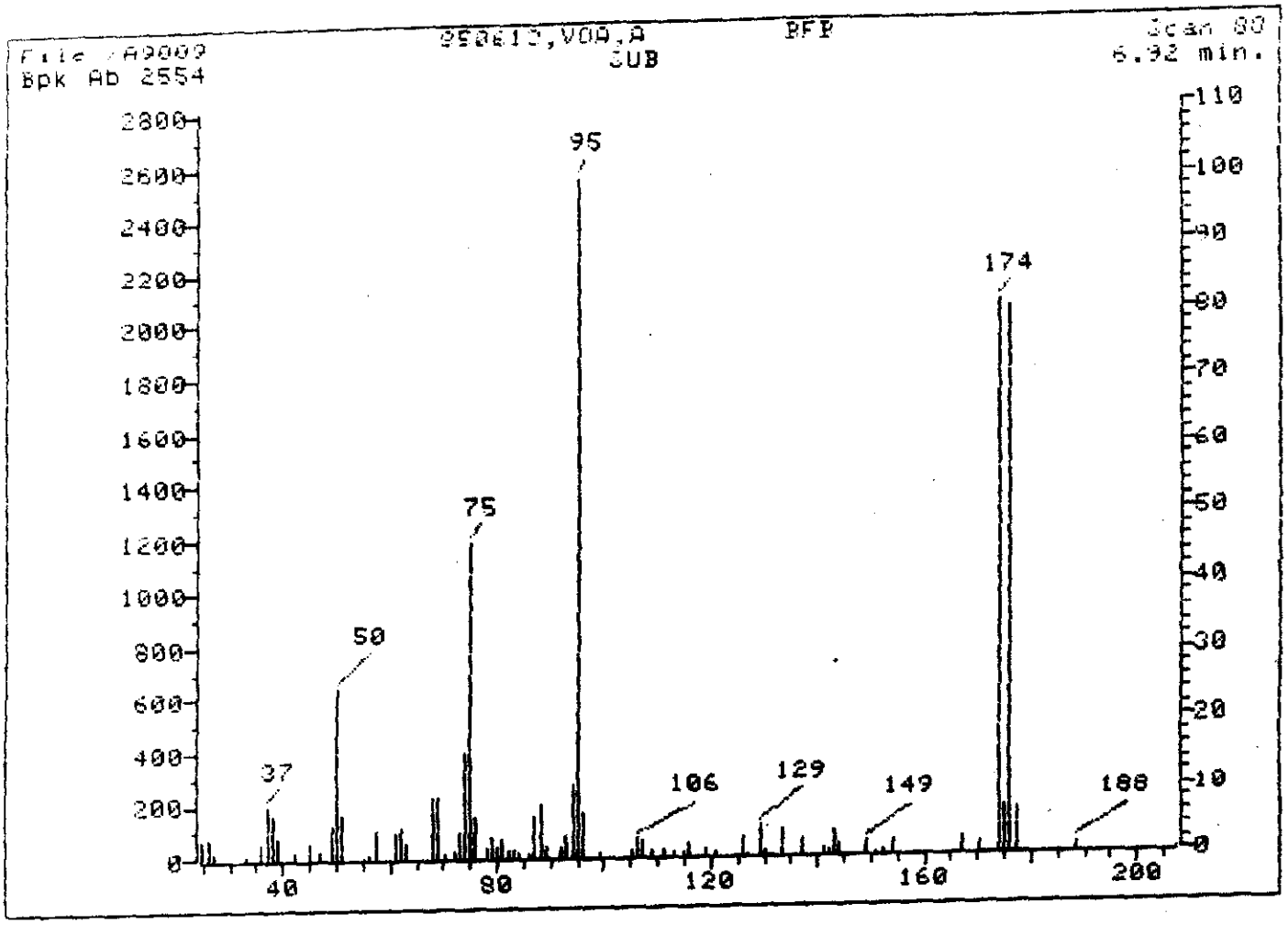


TABLE 2: METHOD PERFORMANCE DATA (QR21)

GC/MS Tuning Data - Bromofluorobenzene (BFB) for Volatiles Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	25.06	25.06	Ok
75	30-60% of mass 95	46.28	46.28	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.38	6.38	Ok
173	Less then 1% of mass 95	0.00	0.00	Ok
174	Greater then 50% of mass 95	81.21	81.21	Ok
175	5-9% of mass 174	6.70	8.24	Ok
176	95-101% of mass 174	80.31	98.89	Ok
177	5-9% of mass 176	6.07	7.56	Ok

Injection Date: 06/13/85
Injection Time: 00:18
Run No:)A9009
Spectrun No: 88

Analyst: [signature]
Processor: [signature]
QC Batch: QV327
Samples: H6066, H6067, H6069

[signature]

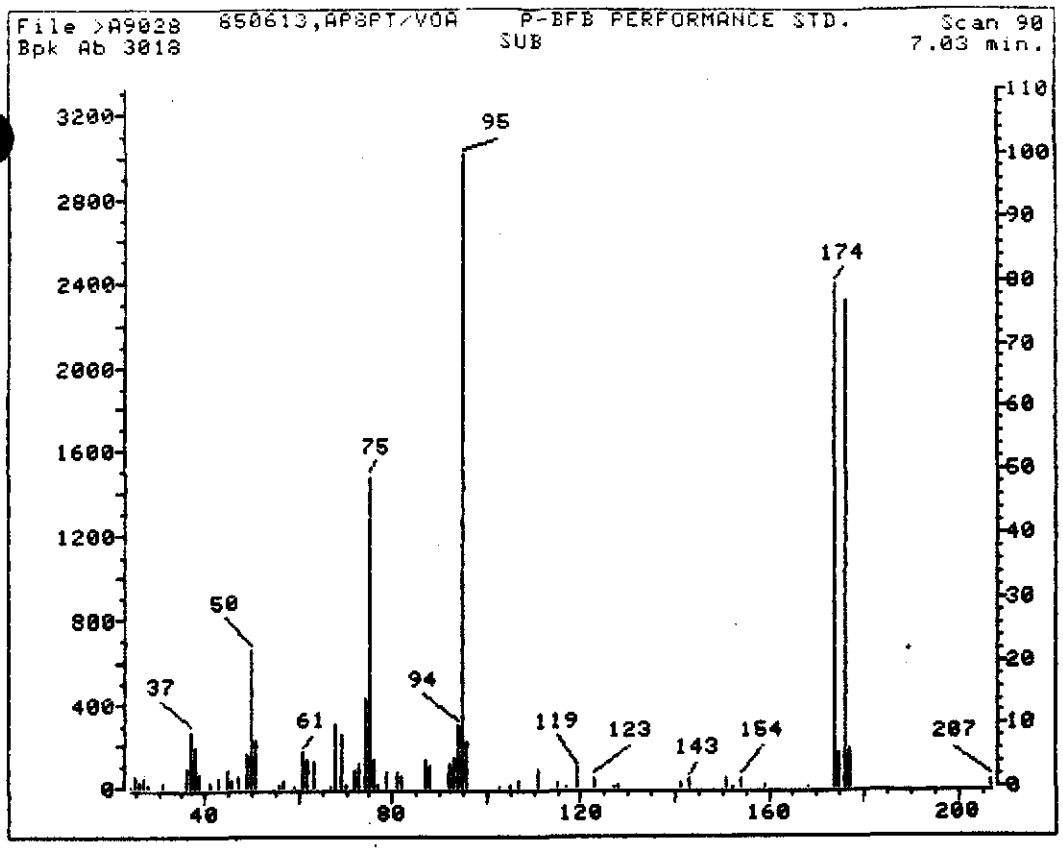


TABLE 2: METHOD PERFORMANCE DATA (QR21)

GC/MS Tuning Data - Bromofluorobenzene (BFB) for Volatiles Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	21.87	21.87	Ok
75	30-60% of mass 95	48.77	48.77	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.09	7.09	Ok
173	Less then 1% of mass 95	0.00	0.00	Ok
174	Greater then 50% of mass 95	79.26	79.26	Ok
175	5-9% of mass 174	5.57	7.02	Ok
176	95-101% of mass 174	76.94	97.07	Ok
177	5-9% of mass 176	5.96	7.75	Ok

Injection Date: 06/13/85 Analyst: W. Sebra
Injection Time: 23:11 Processor: [illegible]
Run No: >A9028 QC Batch: QV3374
Spectrun No: 90 Samples: H6069, H6066, H6067

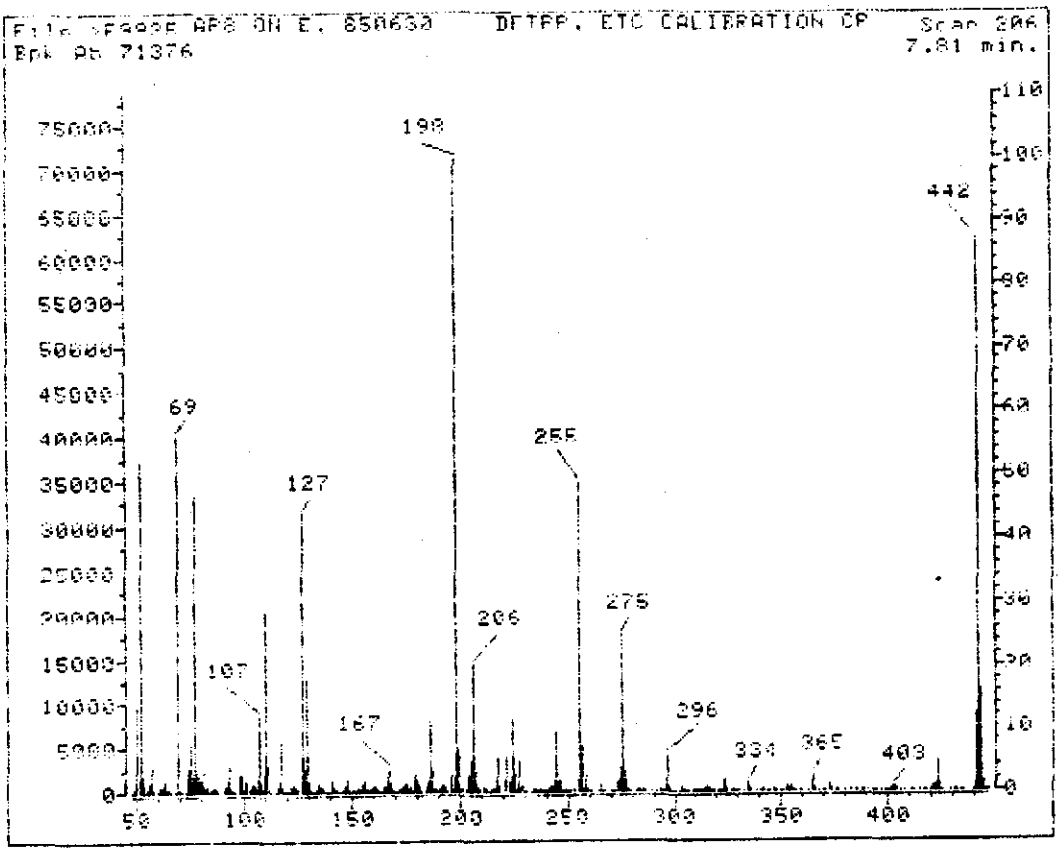


TABLE 2: METHOD PERFORMANCE DATA (QR23)

GC/MS Tuning Data - Decafluorotriphenylphosphine (DFTPP) for ~~Base N~~ AC10 Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	52.13	52.13	Ok
68	Less then 2% of mass 69	0.00	0.00	Ok
69	(reference only)	56.15	56.15	Ok
70	Less then 2% of mass 69	.30	.53	Ok
127	40-60% of mass 198	43.89	43.89	Ok
197	Less then 1% of mass 198	.53	.53	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.93	6.93	Ok
275	10-30% of mass 198	24.79	24.79	Ok
365	Greater then 1% of mass 198	2.60	2.60	Ok
441	Less then mass 443	12.22	77.19	Ok
442	Greater then 40% of mass 198	86.84	86.84	Ok
443	17-23% of mass 442	15.83	18.23	Ok

Injection Date: 06/30/85 Analyst: [signature]
Injection Time: 23:28 Processor: [signature]
Run No: >E9925 QC Batch: QA3211
Spectrum No: 206 Samples: H5601, H5602, H7219, H7220
H7221, H7222, G8452
H7523, H7524, H7525, H7526
H6066 & H6069

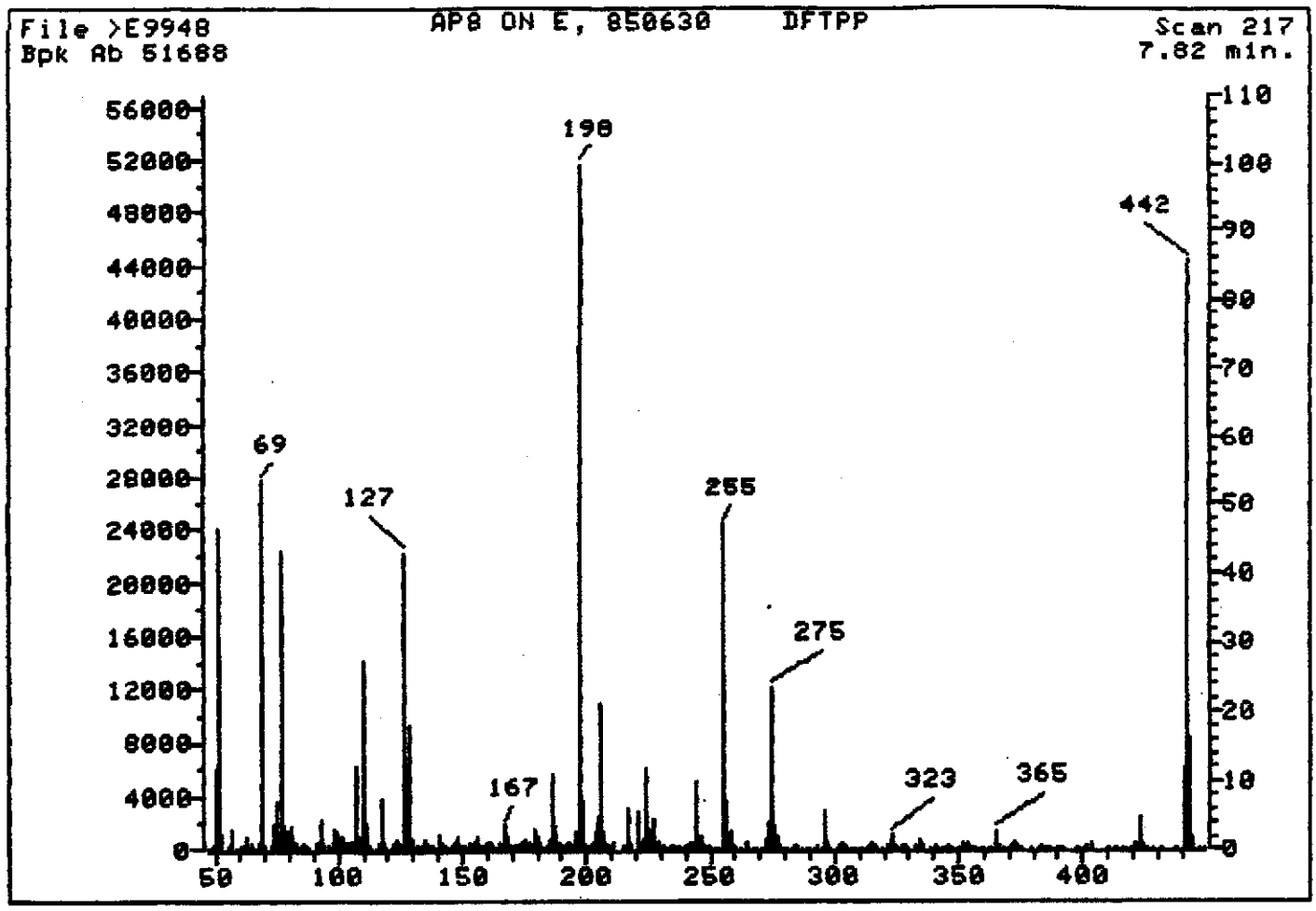


TABLE 2: METHOD PERFORMANCE DATA (QR23)

GC/MS Tuning Data - Decafluorotriphenylphospine (DFTPP) for Base/Neutral Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	46.63	46.63	Ok
68	Less then 2% of mass 69	.71	1.32	Ok
69	(reference only)	53.72	53.72	Ok
70	Less then 2% of mass 69	.28	.53	Ok
127	40-60% of mass 198	43.07	43.07	Ok
197	Less then 1% of mass 198	.50	.50	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.80	6.80	Ok
275	10-30% of mass 198	23.44	23.44	Ok
365	Greater then 1% of mass 198	2.71	2.71	Ok
441	Less then mass 443	11.71	73.80	Ok
442	Greater then 40% of mass 198	85.62	85.62	Ok
443	17-23% of mass 442	15.87	18.53	Ok

Injection Date: 07/01/85 Analyst: [illegible]
Injection Time: 22:20 Processor: [illegible]
Run No: >E9948 QC Batch: Q83211
Spectrun No: 217 Samples: H5601, H5602, H7219, H7220
H7221, H7222, G8452, H7523,
H7524 to 26, H6066, 67, 68, 69

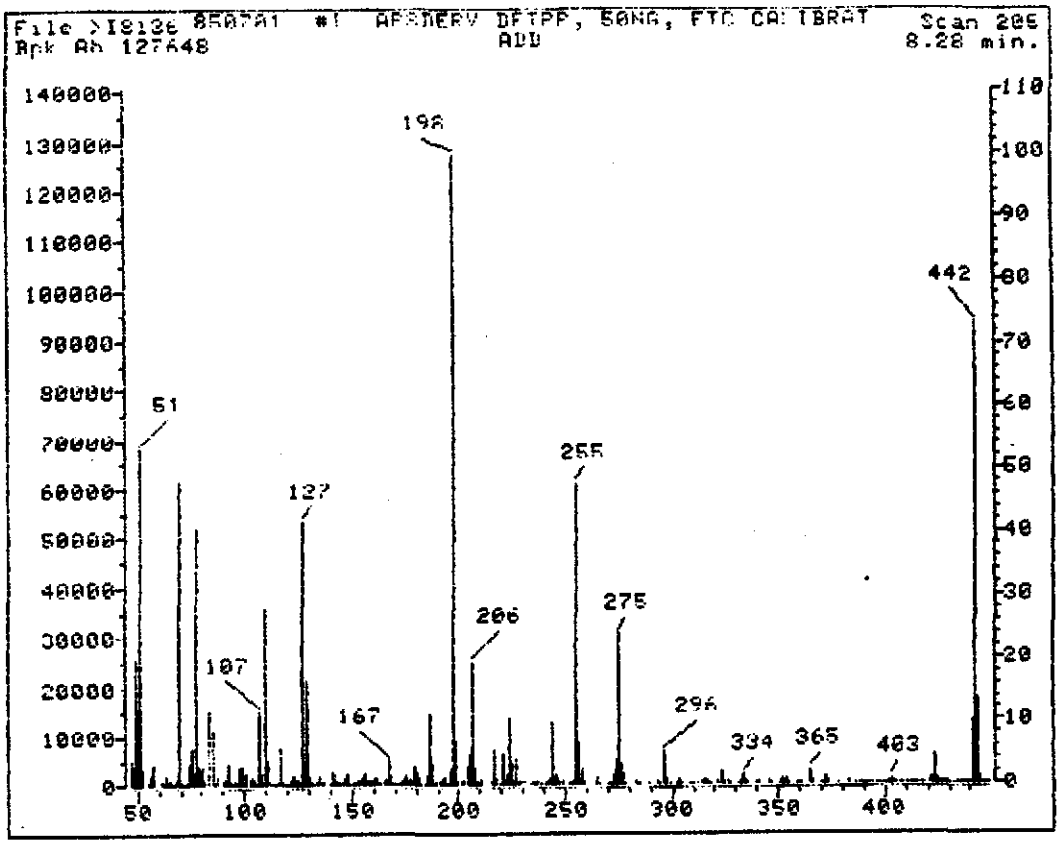


TABLE 2: METHOD PERFORMANCE DATA (QR23)

GC/MS Tuning Data - Decafluorotriphenylphosphine (DFTPP) for Base/Neutral Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	53.37	53.37	Ok
68	Less than 2% of mass 69	.86	1.78	Ok
69	(reference only)	48.17	48.17	Ok
70	Less than 2% of mass 69	.35	.74	Ok
127	40-60% of mass 198	41.78	41.78	Ok
197	Less than 1% of mass 198	.34	.34	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.74	6.74	Ok
275	10-30% of mass 198	23.78	23.78	Ok
365	Greater than 1% of mass 198	2.11	2.11	Ok
441	Less than mass 443	9.98	73.21	Ok
442	Greater than 40% of mass 198	73.13	73.13	Ok
443	17-23% of mass 442	13.63	18.64	Ok

Injection Date: 07/01/85
Injection Time: 10:16
Run No: >I8136
Spectrum No: 205

Analyst: Thomas J Mancuso
Processor:
QC Batch: QAB3211
Samples: H6066 to H6069, H5601, H5602, H7219 to H7222, H7523 to H7526, G8453

Methodology
For
Analysis of Appendix VIII Parameters

The methods employed in the analysis of specific compounds in Appendix VIII are based on the second edition (July 1982) of EPA Manual SW-846 "Test Methods for Evaluating Solid Waste". Since the manual is deficient in details on how the complete analysis of Appendix VIII compounds can be performed, we devised an analytical scheme that divides the compounds into the twelve categories as stated in the introduction. Within the nine categories of compounds that can be specifically analysed, not all the reference standards are readily available. We footnoted those unavailable compounds in our result tables. In the GC/MS analyses we were able to search for the specific compounds that did not have corresponding reference standards by using standard spectra from the literature. In other cases, GC and HPLC, where retention time characteristics are the only means to identify the compounds, we were unable to draw any conclusions on those compounds that corresponding reference standards are not available at the time of analysis.

In each category rigid compliance with the instrument parameters and performance criteria of established EPA methods, such as those in methods 624 and 625, was achieved before any sample analysis was initiated. (Similar criteria do not exist in SW846.) For GC/MS analysis where standards were available, identification was performed using relative retention times, the relative abundance of three characteristic ions and the abundance ratios. The entire mass spectrum was reviewed to confirm each identification. Quantitative analysis was performed using an internal standard with a single characteristic ion. When compounds without corresponding reference standard were identified, they were quantified assuming the same response factor as the internal standard.

Volatile Compounds by Purge and Trap GC/MS

For the analysis of purge and trap Volatile compounds, Methods 8240 and 5030 were used. The analysis can be summarized as follows: Helium is bubbled through a 5 ml water sample contained in a specially designed purging chamber at ambient temperature. The purgeable volatile organic compounds are transferred from the aqueous phase to the vapor phase. The vapor is swept through a sorbent column where the organic components are trapped. After the purge cycle is complete, the sorbent column is heated and backflushed with helium to desorb the organic purgeables onto a gas chromatographic column. The gas chromatograph is temperature programmed to separate the purgeable mixture. The separated purgeable components are then identified and quantitated using a computerized mass spectrometer.

Water Soluble Compounds by Direct Aqueous Injection GC/MS

For the analysis of water soluble compounds, 5 ul of aqueous sample was injected directly into the GC/MS system. The chromatographic column employed in the procedure is the same column used for purge and trap analysis. MS scanning was begun prior to sample injection to capture mass intensity data for early eluting compounds. The GC oven temperature program used was that specified in procedure 8240.

Extractable Acid, Base/Neutral and Pesticide Compounds by GC/MS

For the analysis of the Acid, Base/Neutral and Pesticide compounds in water, Methods 3510 and 8270 were used. The analysis can be summarized as follows: a measured volume of sample, approximately 1 liter, is extracted with an aliquot of methylene chloride without pH adjustment and then the sample is adjusted to a pH greater than 11 and extracted with another aliquot of methylene chloride. These two aliquots were combined. The pH of the sample is then adjusted to a value less than 2 and extracted with another aliquot of methlyene chloride. A separatory funnel or continuous extractor is used to perform the extractions. The two extracts are dried and concentrated to a 1 ml final volume. The extracts are then combined just prior to injection into a GC/MS instrument.

GC Analysis of Herbicides and Pesticides

The methods employed in the analysis of your sample for herbicides and pesticides are established EPA methods taken from the "Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples," June, 1980 and methods 8080, 8140 and 8150.

The herbicide method can be summarized as follows: A measured volume of sample, approximately 500-1000 ml, to which sodium sulfate has been added, is acidified and extracted with methylene chloride. The methylene chloride extract is evaporated to dryness, and the residue is derivatized with diazomethane and injected into a gas chromatograph equipped with a ^{63}Ni electron capture detector.

The pesticide method can be summarized as follows: A measured volume of sample, approximately 500ml, is extracted with methylene chloride. The extract is dried and concentrated to a final volume of 1ml and injected into a gas chromatograph equipped with a ^{63}Ni electron capture detector and Flame Photometric detector in phosphorus mode.

Analysis of Metals

The determination of metals in aqueous samples is performed according to the methods published by EPA in "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March, 1979, and the inorganic methods in SW846. Arsenic, selenium and thallium are determined by furnace AA; silver, aluminum, barium, beryllium, boron, cadmium, calcium, chromium, copper, cobalt, iron, magnesium, manganese, molybdenum, nickel, lead, sodium, antimony, tin, titanium, vanadium, and zinc are determined by ICP emission. The determination of mercury is performed by cold vapor AA.

Analysis by HPLC

The analysis of thermally unstable and polar compounds are based on the HPLC methods 8320 and 8330. The compounds analyzed fall into two catagories: direct aqueous injection and Base/Neutral extractables. Twenty ul of the sample or extract is injected into an HPLC equipped with a reverse phase column. Gradient elution and UV detector at 210 and 250 nm are used.

Conventional

Total cyanide analysis is performed using Method 9010.

Summary of
Quality Assurance/Quality Control Procedures (QA/QC)

ETC bases its quality assurance protocols on the following government guidelines:

. "Handbook for Analytical Quality Control in Water and Wastewater Laboratories", EPA-600/4-79-019, March 1979;

. National Enforcement Investigation Center Policies, and Procedures manual; EPA-330/9/79/001-R, October 1979;

. the recommended guidelines for EPA Methods 624 and 625. (Federal Register, December 3, 1979; updated on Otober 26,1984);

. "Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples," EPA 600/8-80-038, June 1980; and

. "Determination of 2,3,7,8-TCDD in Soil and Sediment" EPA, Region VII, Kansas City, September 1983.

. Organic Analysis: Multi-media, Multi Concentration-IFB WA84-A267

. Dioxin Analysis:Soil/Sediment Matrix; Multi-Concentration; Selected Ion Monitoring with Jar Extration Procedure-IFB WA84-A002

However, we have modified our protocols to provide a higher level of QA/QC than the guidelines require. For example, we analyze a higher than required number of quality control samples and we pay especially careful attention to the certification of the "reference standard" compounds we use in analysis. Below are listed the key QA/QC elements for the methods we used.

Analysis of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry

- Each batch of 13 samples consists of 9 customer samples (at a maximun). one blank sample, one spiked blank, one spiked sample and one replicate sample. This amounts to a 30% quality control factor.

- Three surrogate compounds are added to each sample in the batch of 13.

- A blind quality control sample is introduced to the laboratory for analysis on a weekly basis.

- Each GC/MS is checked and retuned, if necessary, at the beginning of each day to ensure that its performance on bromofluorobenzene (BFB) meets the EPA criteria.

- A calibration curve for quantitation is prepared using a mixture of Volatile Organic Priority Pollutant "standards" at a minimum of 3 different concentrations and using a mixture of 3 internal standards at a constant concentration.

- The calibration curve is verified with a mixture of priority pollutant standards every day. If the response factors factors vary greater than 25%, the instrument must be recalibrated.

Analysis of Organic Compounds Extracted in Acid or Base/Neutral Solutions by Gas Chromatography/Mass Spectrometry

- Each batch of 20 samples consists of 16 customer samples (at a maximum), one blank sample, one spiked blank (for water matrices), one sample spiked with the priority

pollutant standard mixture and a duplicate customer sample. This amounts to a 20% quality control factor.

- Three surrogate compounds are added to each sample in the batch for Base/Neutral analysis.
- Three surrogate compounds are added to each sample in the batch for Acid analysis.
- A blind quality control sample is introduced to the laboratory for analysis on a weekly basis.
- Each GC/MS is checked and retuned, if necessary, at the beginning of each day to ensure that its performance on decafluorotriphenylphosphine (DFTPP) meets the EPA criteria.
- A calibration curve for quantitation is prepared using a mixture of standards composed of either the Organic Acid or Base/Neutral Extractable Compounds at a minimum of 3 concentrations and using five internal standards for quantitation.

Analysis of Metals

All Samples

- New standards are prepared for each batch of samples.
- Normal calibration is performed using a blank sample and four standards that have been through the sample preparation procedure. A regression analysis is used to construct the calibration curve.
- All EP Toxicity samples and all samples determined by furnace atomic absorption are calculated by the "method of additions".
- For each sample analysis that requires the use of the "method of additions" technique, a three point calibration is performed using U.S. EPA "Methods for Chemical Analysis of Water and Wastes, 1979". Results are obtained using linear regression analysis. Any regression with a coefficient of correlation below 0.990 is considered suspect, necessitating review of calibration data or sample re-analysis.
- In constructing the normal calibration curves the lowest concentration levels we use are values greater than or equal to 5 times the Instrumental Detection Limit (IDL).
- All calibration standards are analyzed in duplicate, at a minimum.
- Independent reference standards are used to check the accuracy of calibration standards.
- A check standard is analyzed every ten samples to validate the normal calibration curve.
- One customer sample out of every ten is analyzed in triplicate.

Homogeneous Samples (except for Mercury analysis)

Samples are analyzed in batches of 30 or less. For batches in which the sample matrices are homogeneous, the QC program is a minimum of 25% and consists of analyzing:

- 3 sets of triplicate analyses;
- 2 Replicate spikes;
- 1 Independent reference standard;
- 4 Calibration standards (processed using the sample preparation method);
- 4 Calibration standards (without sample preparation); and

- 1 Reagent Blank.

Heterogeneous Samples (except for Mercury analysis)

Samples are analyzed in batches of 30 or less. For batches in which the sample matrices are heterogeneous, the QC program is a minimum of 35% and consists of analyzing:

- 3 sets of triplicate analyses;
- 2 Replicate spikes;
- 1 Replicate independent reference standards;
- 4 Calibration standards (processed using the sample preparation method);
- 1 Procedural Blank;
- 4 Calibration standards (without sample preparation); and
- 1 Reagent Blank.

Analysis of Mercury

To analyze samples for mercury we group them by matrix in batches of 30 or less. Our QC program is a minimum of 30% and consists of analyzing:

- each of the 30 customer samples in duplicate;
- 3 sets of triplicate anaylses;
- 2 Replicate spikes;
- 2 Replicate independent reference standards;
- 10 Calibration standards (processed using the sample preparation method); and
- 2 Procedural Blanks.

Analysis of Pesticides, Herbicides and PCB's by Gas Chromatography

Pesticide, herbicide and PCB samples are grouped in batches of 16 customer samples or less according to the type of analysis to be performed. The QC program for each of these three types of analyses is a minimum of 20% and consists of analyzing:

- 1 procedural blank sample(a reagent blank is analyzed in the case of non-water matrices);
- 1 spiked blank sample (the spiked blank is eliminated in the case of non-water matrices);
- 1 replicate sample;
- 1 replicate spiked sample; and
- 1 known refernece QC sample for at least each 100 samples analyzed.

The instrument is calibrated each run with three standards, and checked every 10 samples.

Analysis of Cyanides, Phenols, Fluoride, Chloride, Nitrate and Nitrite

- All parameters are analyzed using a Technicon Autoanalyzer II GT.

- 3 calibration standards are analyzed at the beginning and end of each batch.
- Each batch (up to 80 samples) consists of analyzing one blank, one spiked blank, one duplicate and spiked sample every 20 samples, and an EPA known reference sample.

Analysis of Total Organic Carbon (TOC)

TOC samples are analyzed on a daily basis with the number of samples analyzed per day dependent on the request for duplicate or quadruplicate analyses. The quality control program is designed to maintain the appropriate amount of QC and consists of the following elements:

- Daily instrument calibration
- One blank
- Standard recalibration every 10 samples
- Spiked samples at a low and high level
- Every sample is run in duplicate at a minimum

Analysis of Total Organic Halide (TOX)

- Blank reagent water for absolute carbon backround must contain less than 5 ug/l of halide (as chloride).
- Using a trichlorophenol standard, the mean adsorption efficiency must be within +/- 15% of the standard value.
- Calibration standards are run every 10 samples.
- Every sample is run in duplicate at a minimum.

Analysis of 2,3,7,8-TCDD (Dioxin) by GC/MS (SIM)

- Each sample is dosed with a known quantity of $^{13}C_{12}$-2,3,7,8-TCDD as internal standard and $^{37}Cl_4$-TCDD as surogate standard. The action limits for surrogate standard results is +/- 40% of the true value. Samples showing surrogate standard results outside of these limits are reextracted and reanalyzed.
- Two laboratory "method blanks" are run along with each set of 24 or fewer samples. The method blank is also dosed with the internal standard and surrrogate standard.
- At least one per set of 24 samples is run in duplicate to determine intralaboratory precision.
- Qualitative Requirements. The following are met in order to confirm the presence of native 2,3,7,8-TCDD:

  a. Isomer specificity must be demonstrated initially and verified once per 8-hour work shift. The verification consists of injecting a mixture containing TCDD isomers which elute close to 2,3,7,8-TCDD. The 2,3,7,8-TCDD must be separated from interferring isomers, with no more than 25% valley relative to the 2,3,7,8-TCDD peak.

  b. The 320/322 ratio is within the range of 0.67 to 0.87.

  c. Ions 320, 322, and 257 are all present and maximize together the signal to mean noise ratio must be 2.5 to 1 or better for all 3 ions.

  d. The retention time is equal (within 3 seconds) the retention time for the isotopically labeled 2,3,7,8-TCDD.

e. At least one of the positives can be confirmed by obtaining partial scan spectra from mass 150 to mass 350. The partial scan guidelines are as follows:

. the 320/324 ratio should be 1.58 +/- 0.16

. the 257/259 ratio should be 1.03 +/- 0.10

. the 194/196 ratio should be 1.54 +/- 0.15

- One sample is spiked with native 2,3,7,8-TCDD at a level of 1.0 PPB (for soil) for each set of 24 or fewer samples.
- In cases where no native 2,3,7,8-TCDD is detected, the actual detection limit is estimated and reported based on a signal to noise ratio of 2.5 to 1 at ions 320 and 322.
- For each sample, the internal standard is present with at least a 10 to 1 signal to noise ratio for both mass 332 and mass 334. Also, the internal standard 332/334 ratio must be within the range of 0.67 to 0.87.

Subcontractor QA/QC

Each subcontractoer is required to maintain an appropriate level of quality control. To insure this, each subcontractor is required to submit to ETC the quality control data for all analyses it performs. This data is kept on file at ETC. In general, the amount of quality control required is one duplicate sample with one spiked sample for every ten analyses.

Chain-of-Custody

The chain-of-custody procedure is part of our quality assurance protocol. We believe our chain-of-custody record fully complies with the legal requirements of federal, state and local government agencies and of the courts of law. The record covers:

- labeling of sample bottles, packing the Sample Shuttle and transferring the Shuttle under seal to the custody of a shipper;
- outgoing shipping manifests;
- the chain-of-custody form completed by the person(s) breaking the Shuttle seal, taking the sample, resealing the Shuttle and transferring custody to a shipper;
- incoming shipping manifests;
- breaking the Shuttle's reseal;
- storing each labeled sample bottle in a secured area;
- disposition of each sample to an analyst or technician; and
- the use of the sample in each bottle in a testing procedure appropriate to the intended purpose of the sample.

The records show for each link in this process:

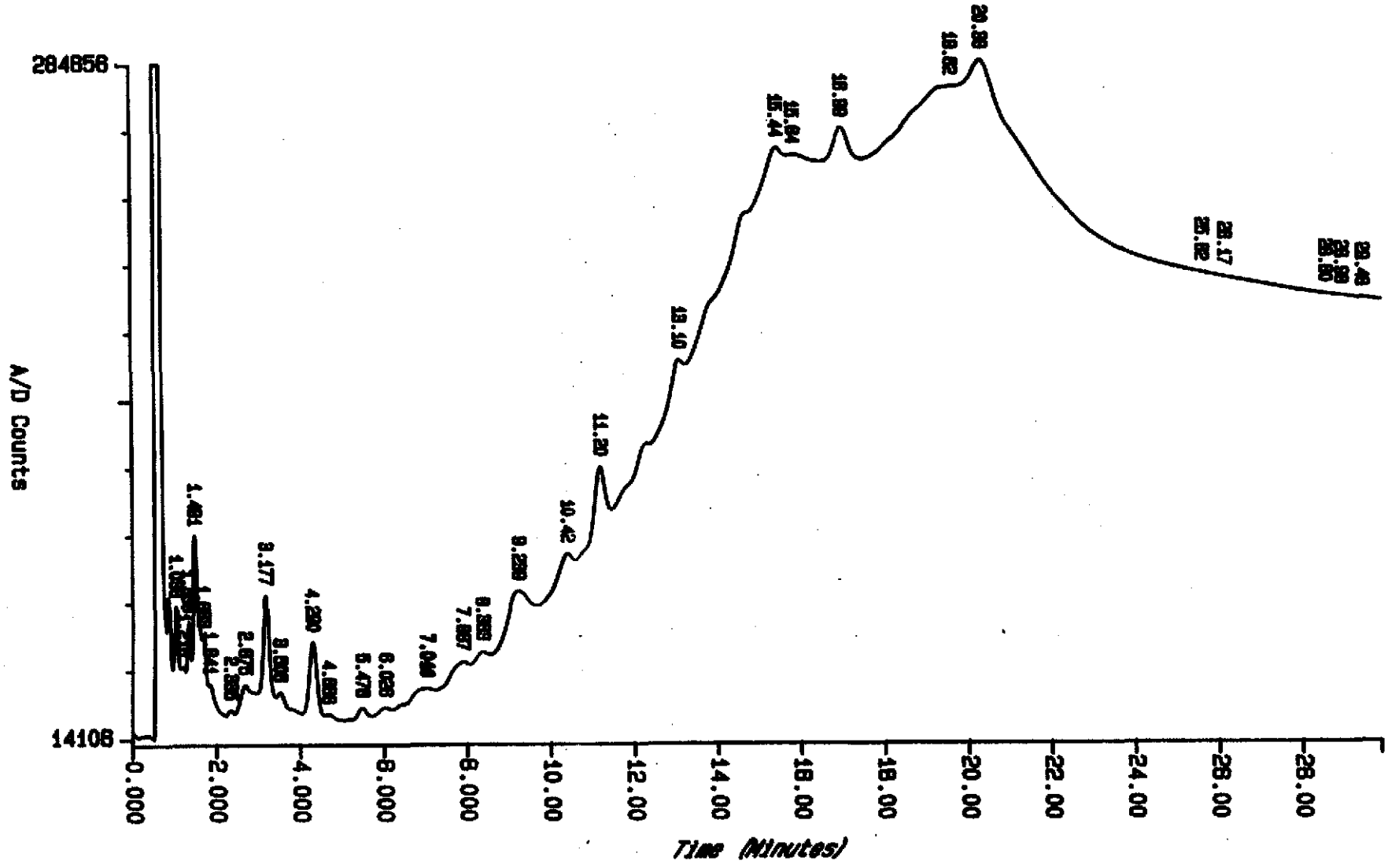
- the person with custody; and
- the time and date each person accepted or relinquished custody.

Appendix A1

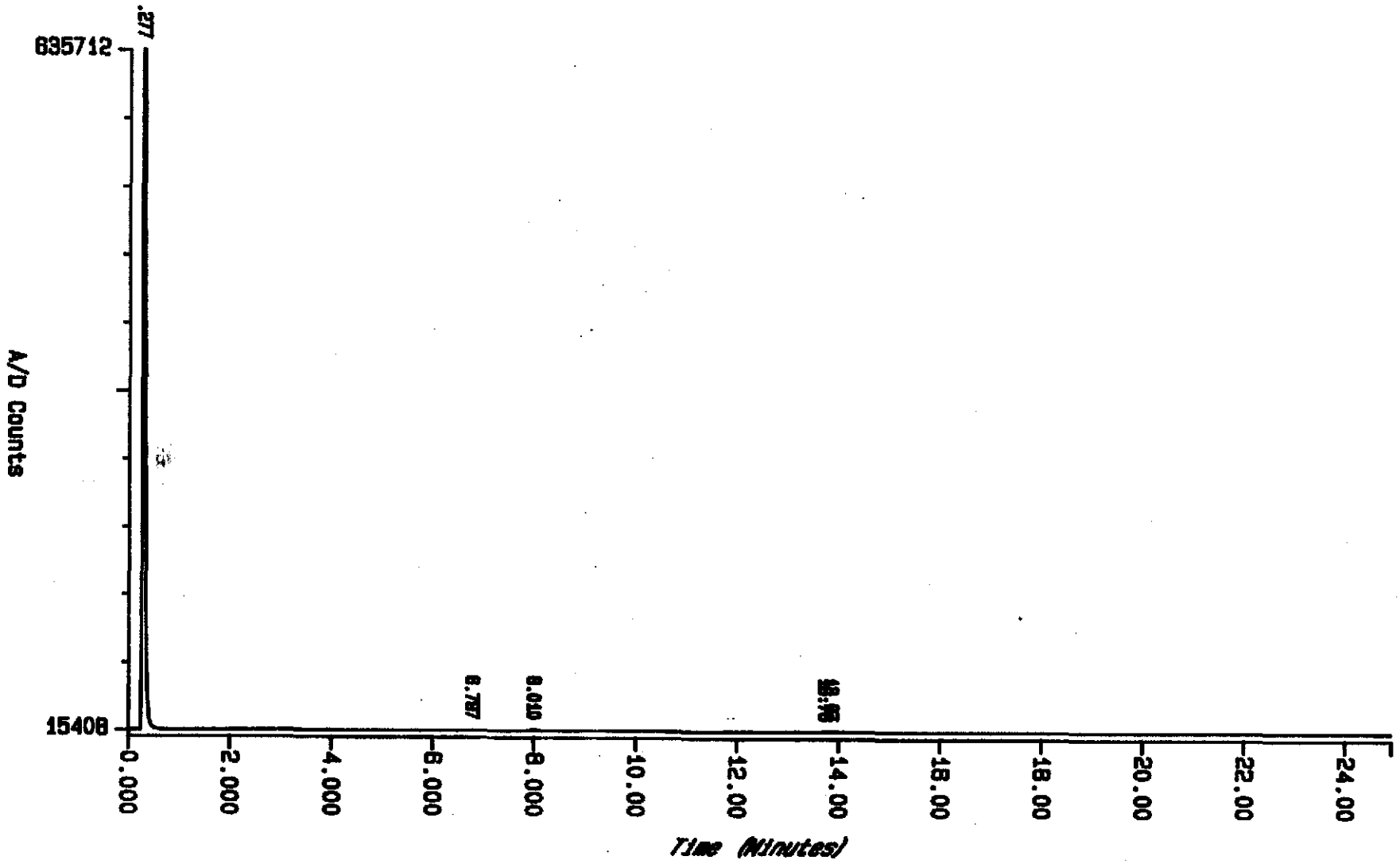
Gas Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed gas chromatogram for each sample analyzed by a GC instrument.

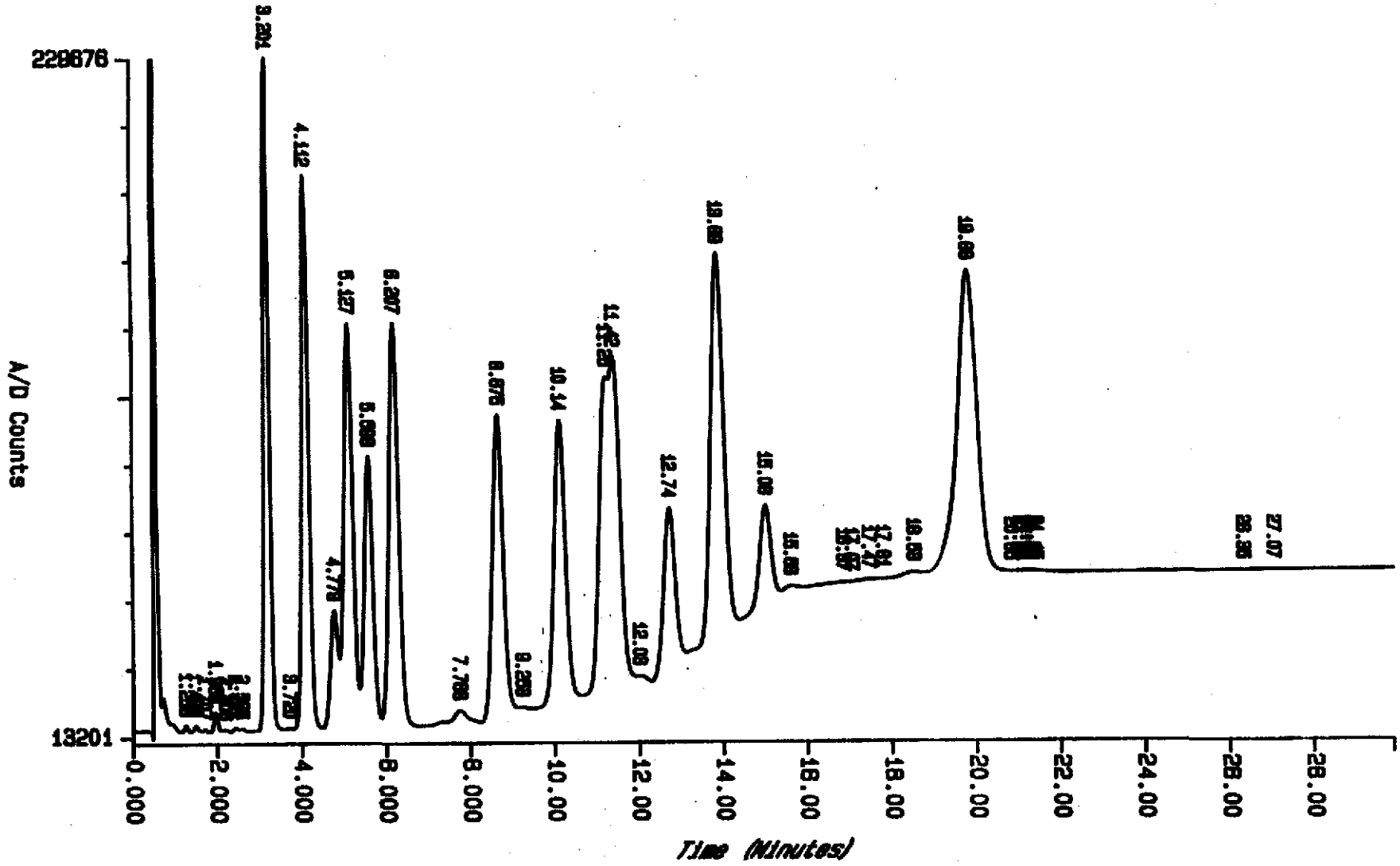
2) A reconstructed gas chromatogram for the appropriate standard compounds analyzed with the same GC under the same operating conditions.



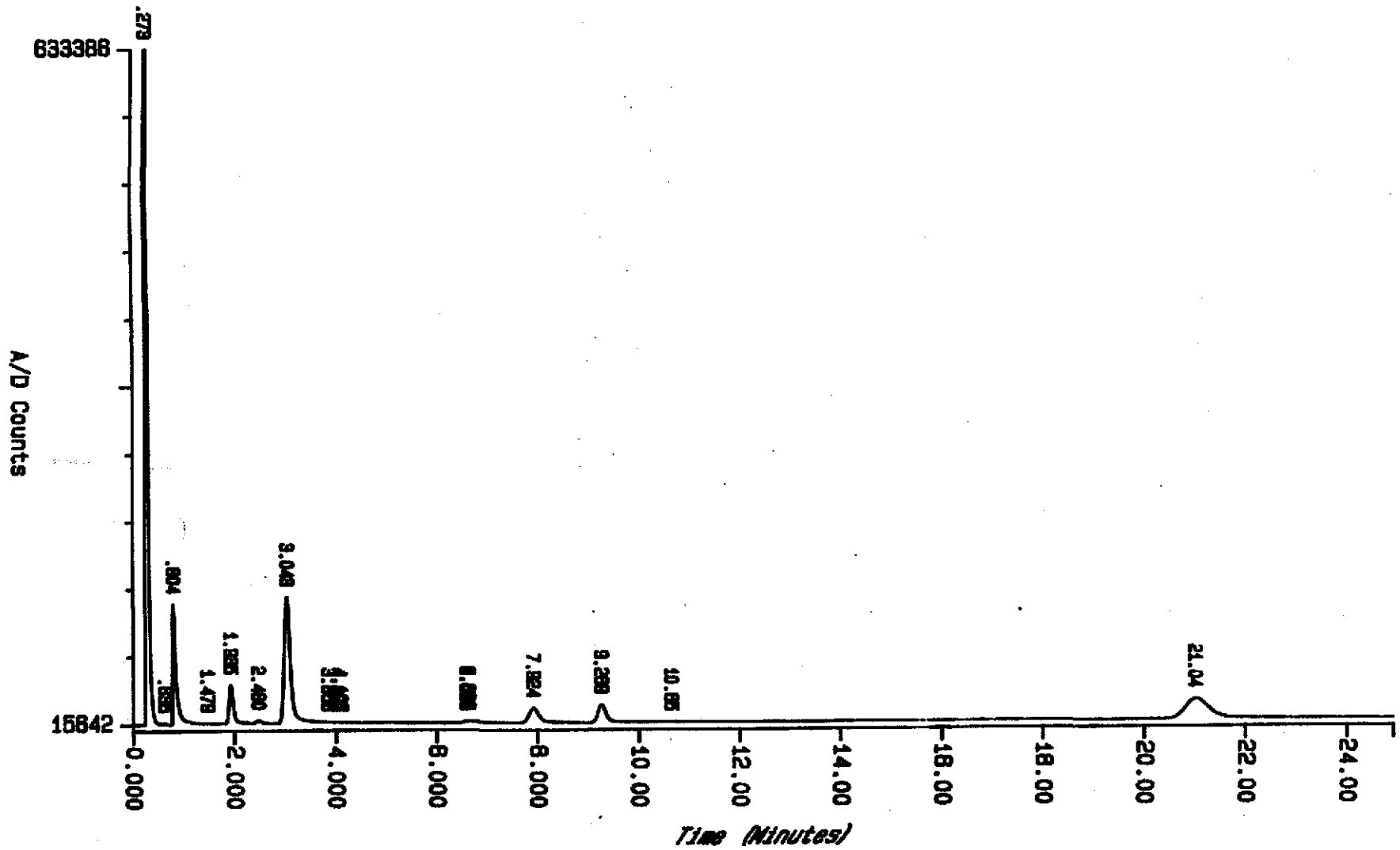
Sample: H6067 Injected at 13:37:43 ON JUN 27, 1985
Raw File: H6067D Proc File: H6067C Method: AP8PST



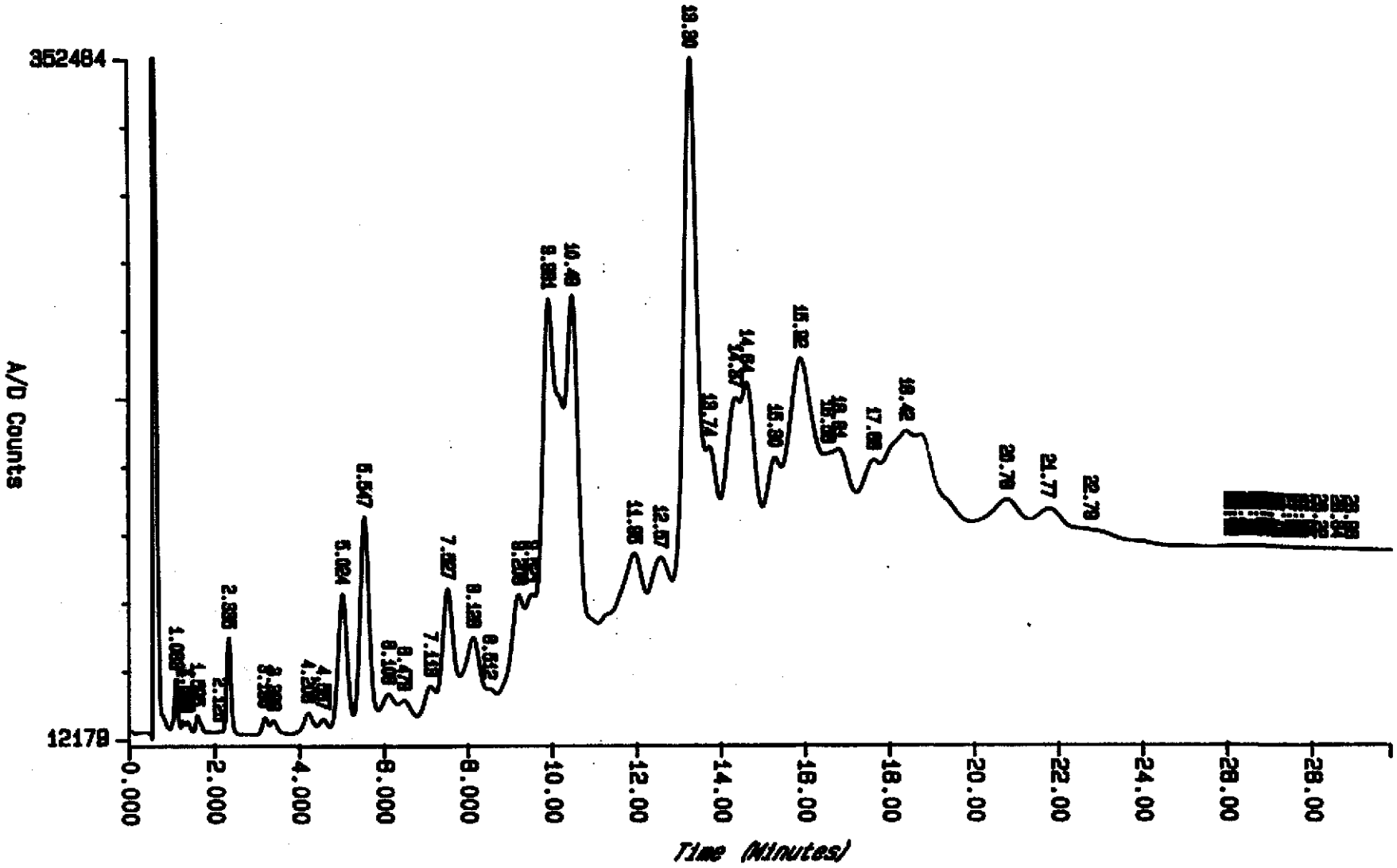
Sample: H6067 Injected at 1:04:21 ON JUN 27, 1985
Raw File: H6067B Proc File: H6067A Method: AP8FPD



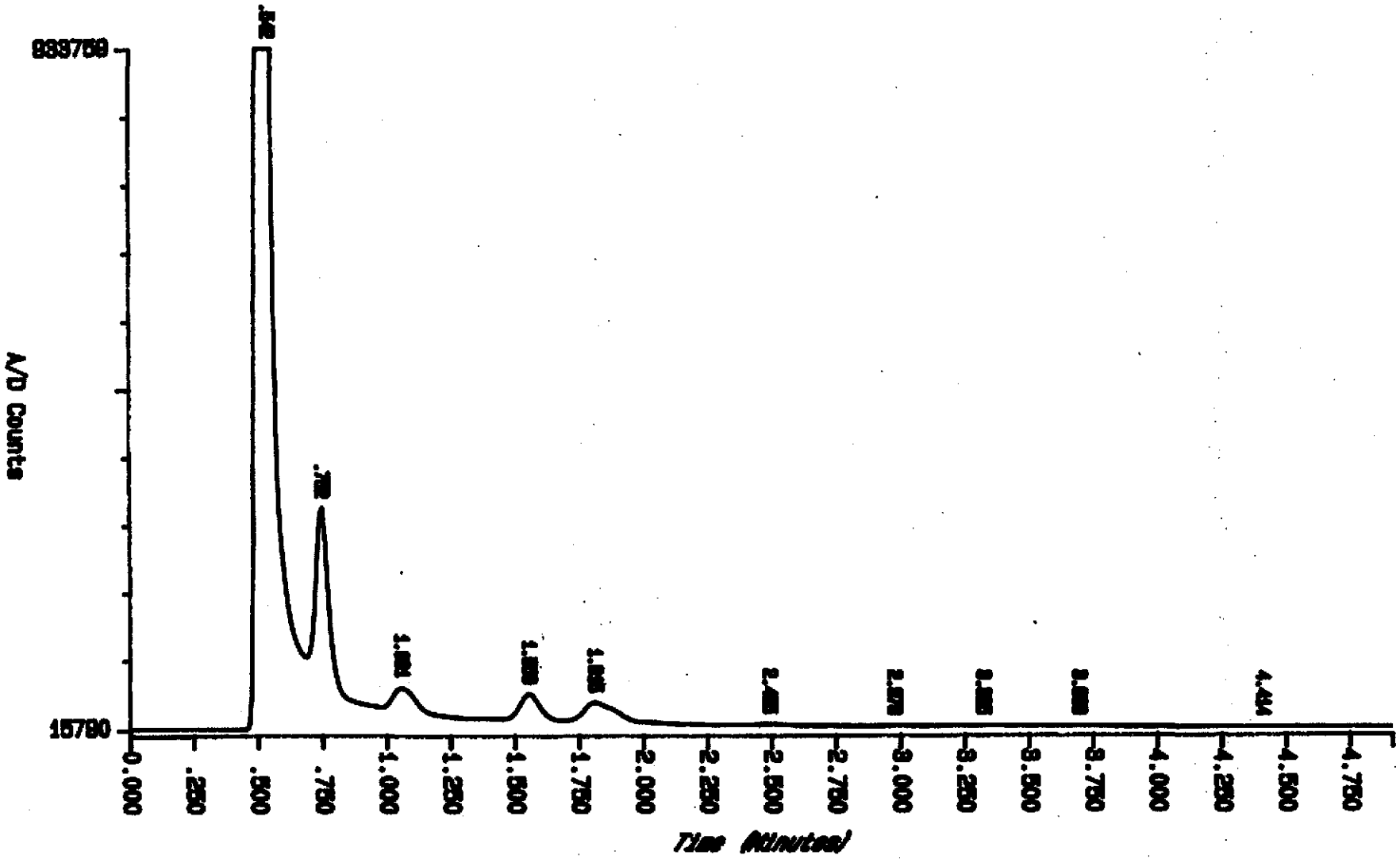
Sample: PEST STDB Injected at 3:03:46 ON JUN 27, 1985
Raw File: RW0797 Proc File: PW0797 Method: AP8PST



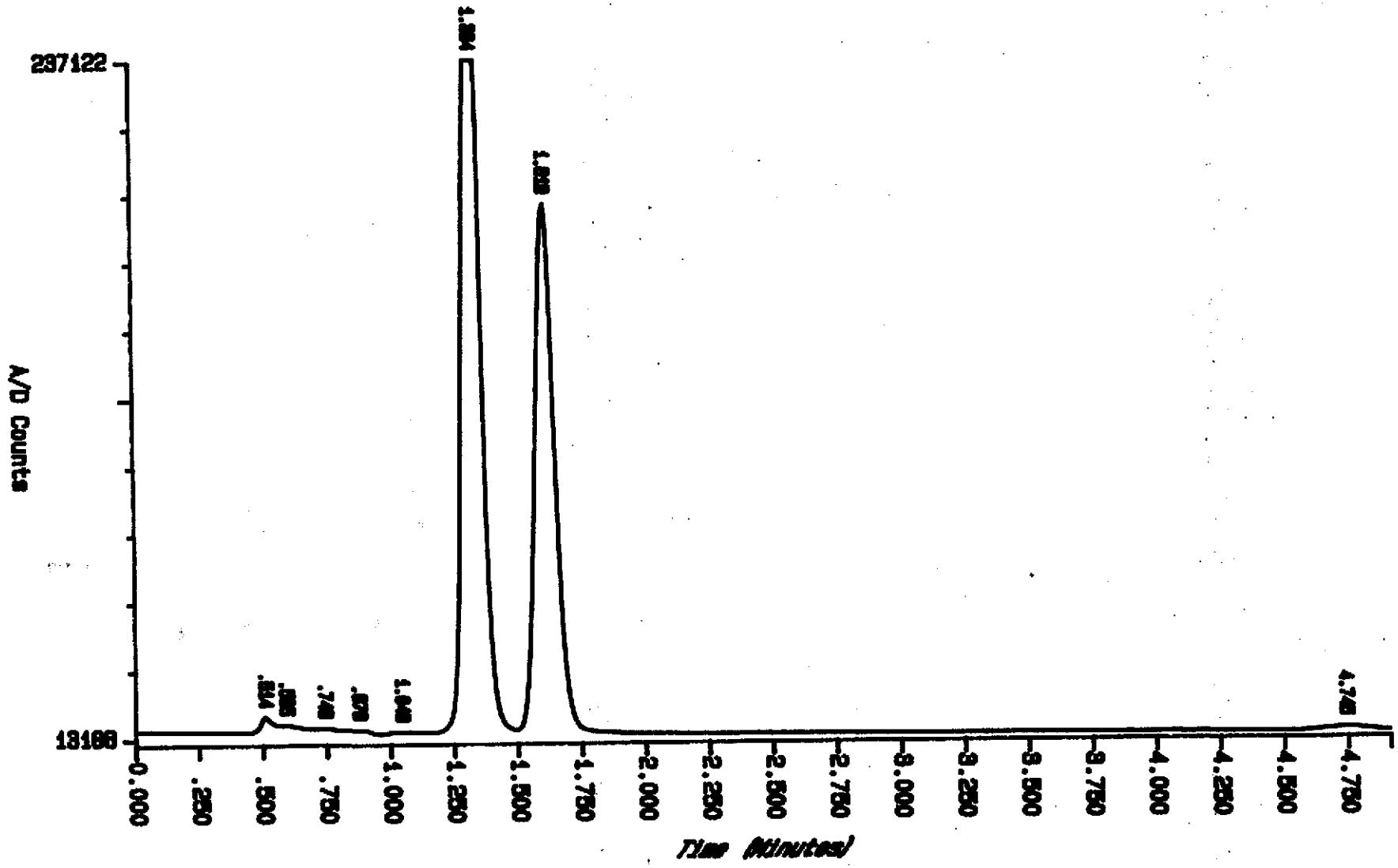
Sample: FPD STDB Injected at 15:50:47 ON JUN 26, 1985
Raw File: RW0790 Proc File: PW0790 Method: AP8FPD



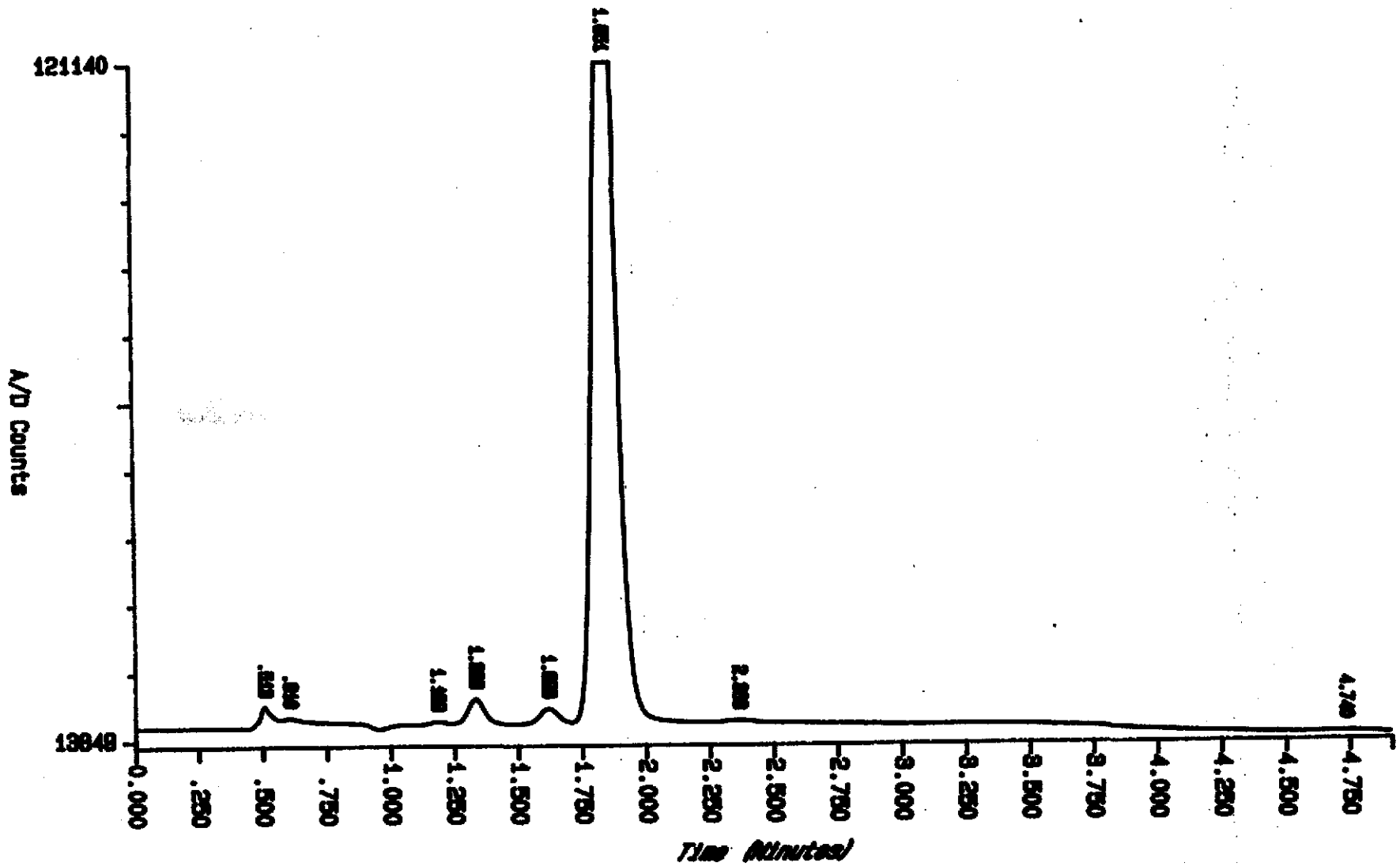
Sample: TCK STD B Injected at 19:33:39 ON JUN 27, 1985
Raw File: RW0810 Proc File: PW0810 Method: AP8PST



Sample: H8087 Injected at 12:01:50 ON JUL 2, 1985
Raw File: H8087N Proc File: H8087M Method: HERB8



Sample: HERBB Injected at 10:21:57 ON JUL 2, 1985
Raw File: RK1530 Proc File: PK1530 Method: HERBB



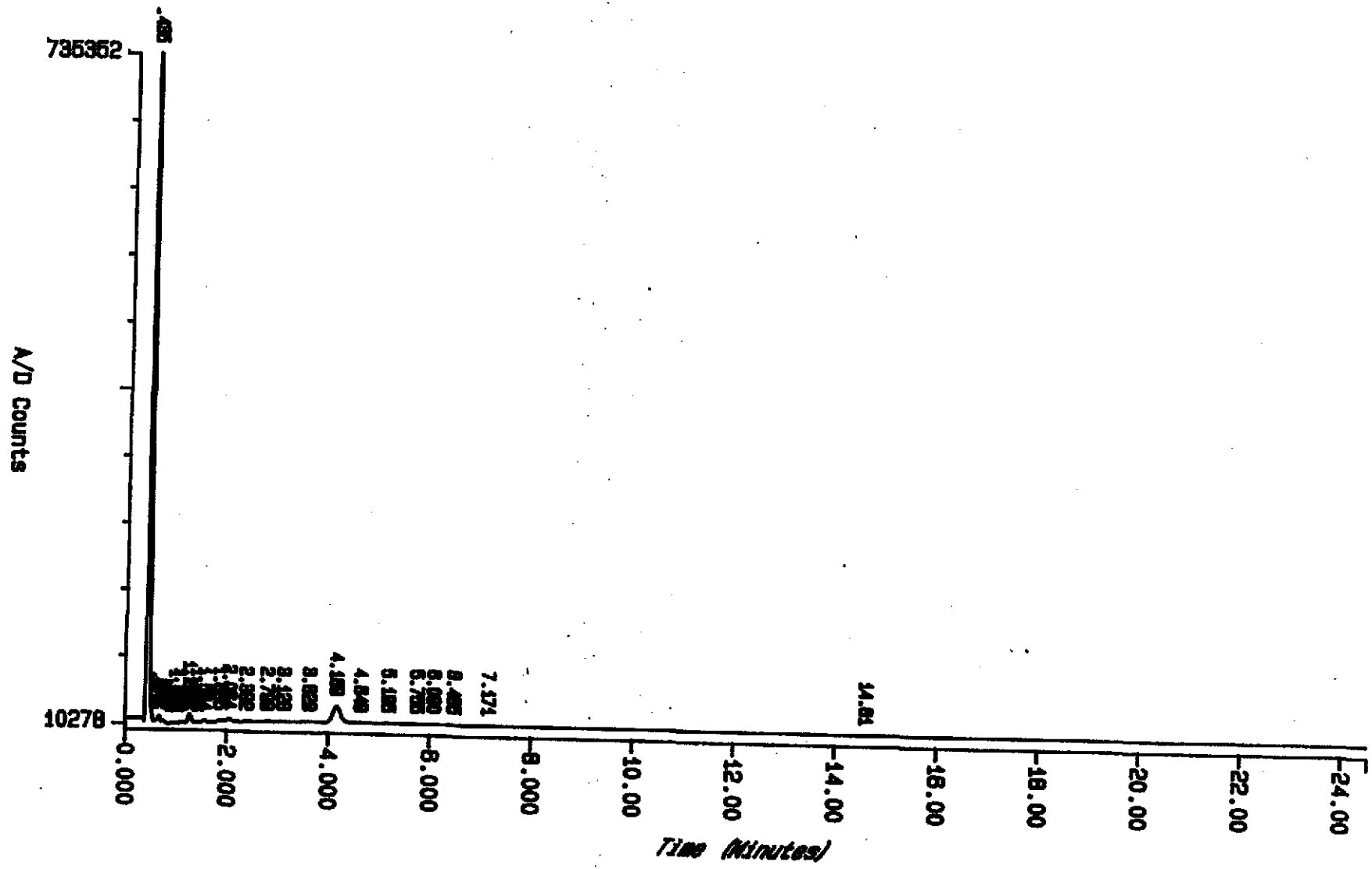
Sample: 245TB Injected at 10:28:29 ON JUL 2, 1985
Raw File: RK1531 Proc File: PK1531 Method: HERBB

Appendix A1

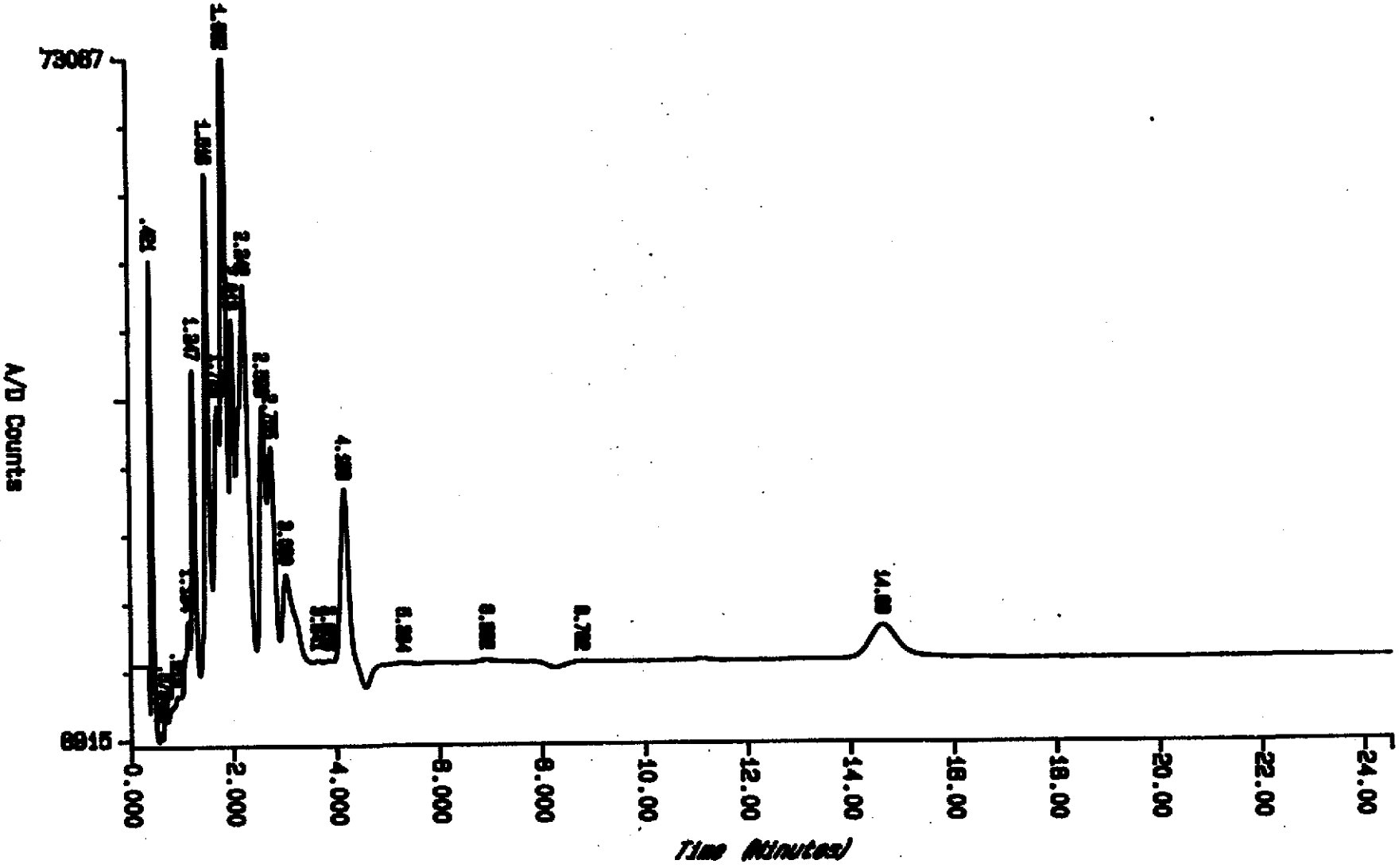
Gas Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed gas chromatogram for each sample analyzed by a GC instrument.

2) A reconstructed gas chromatogram for the appropriate standard compounds analyzed with the same GC under the same operating conditions.

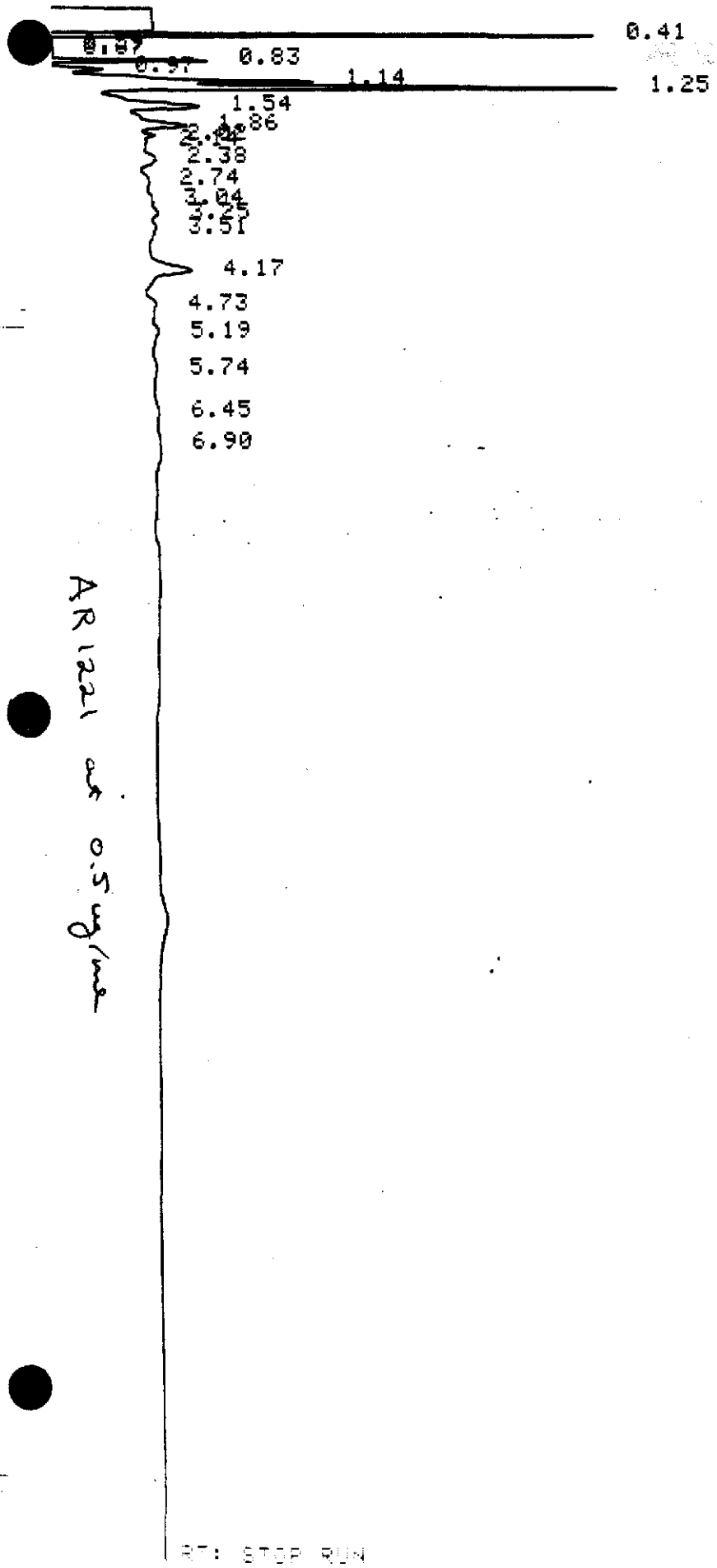


Sample: J6067 Injected at 10:42:54 ON JUL 16, 1985
Raw File: J6067B Proc File: J6067A Method: PCBB5

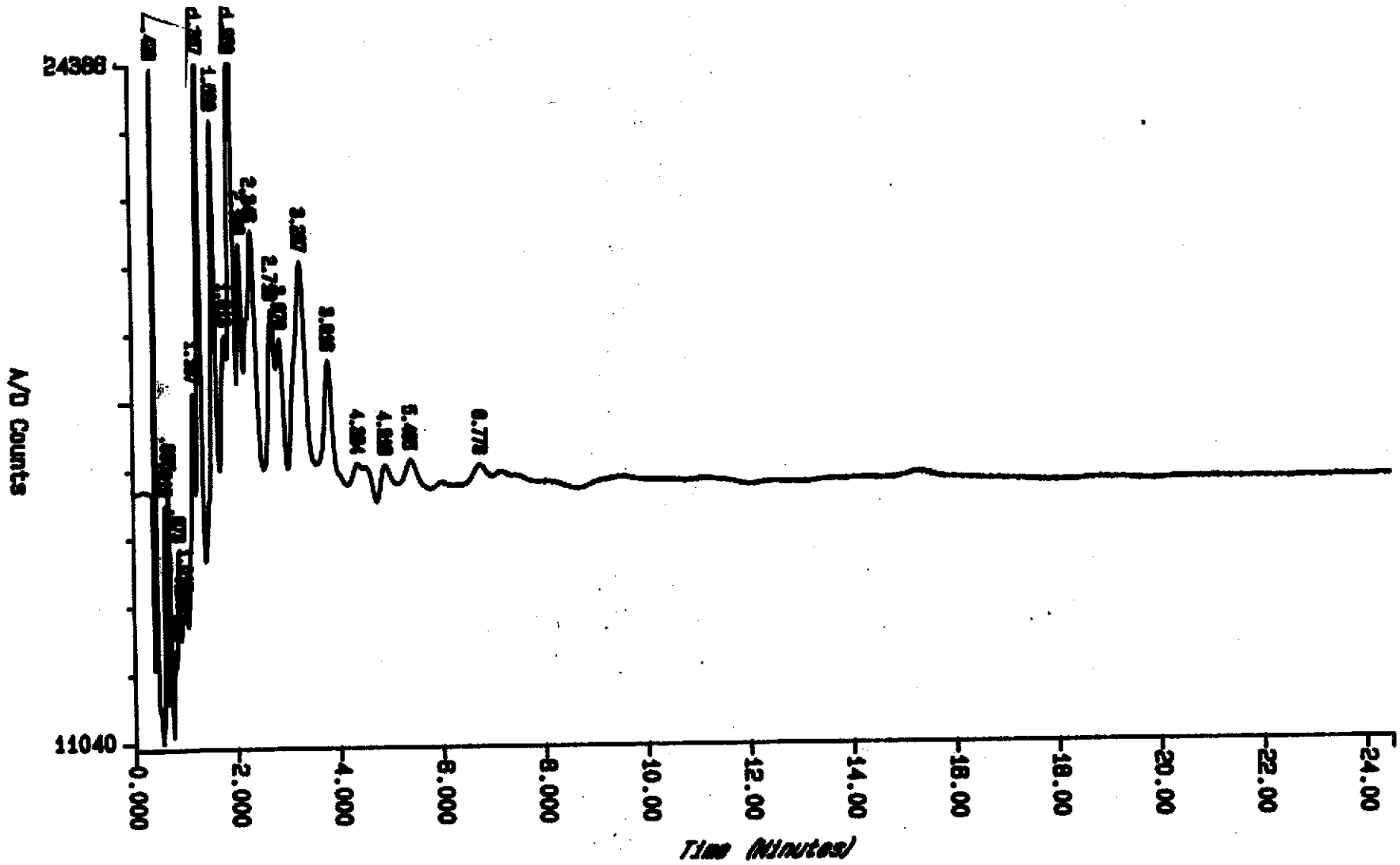


Sample: AR1018 0.5 Injected at 12:33:17 ON JUL 18, 1985
Raw File: RW1262 Proc File: PW1262 Method: PCBB5

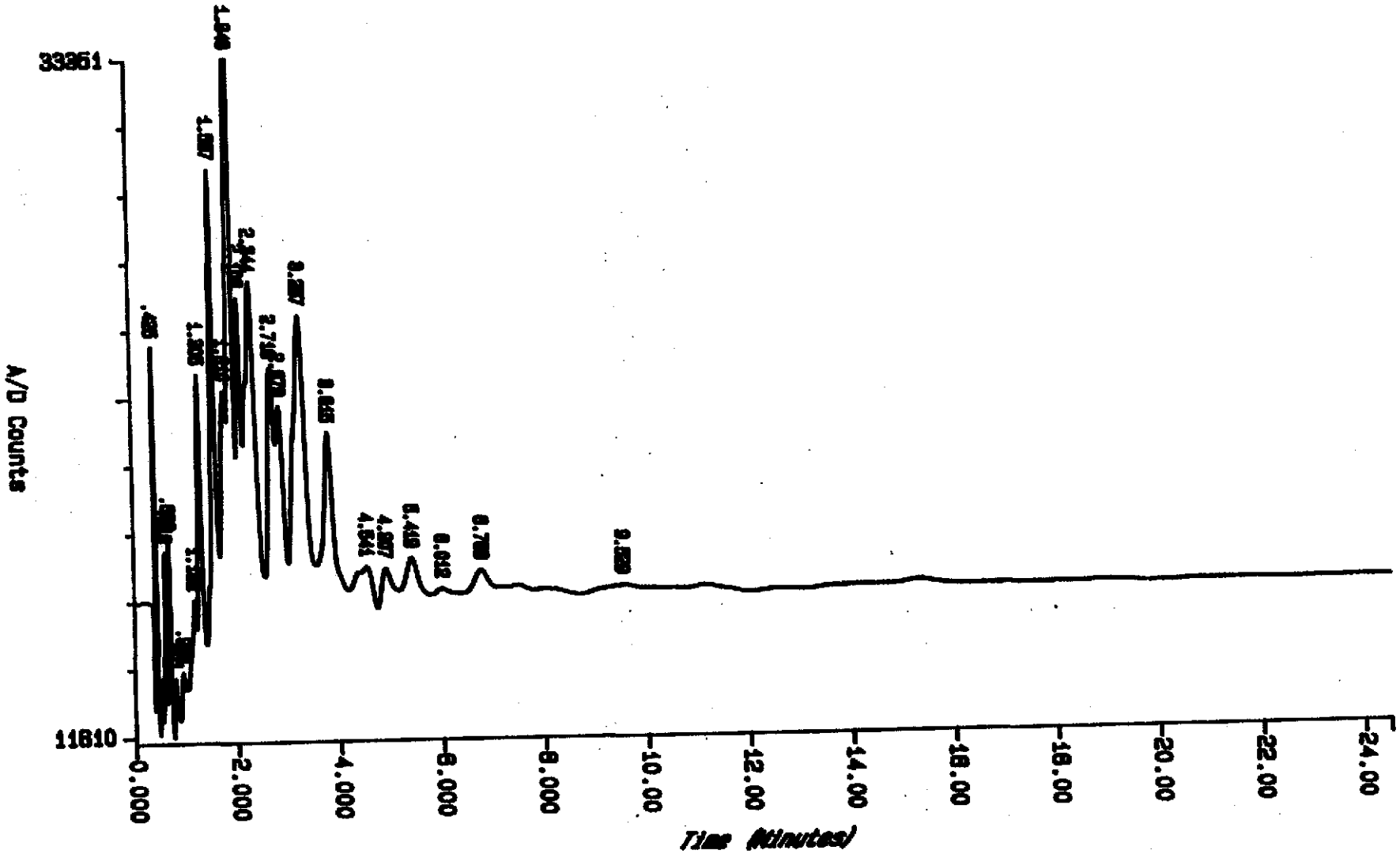
[hp] 5880A SAMPLER INJECTION @ 09:23 JUL 16, 1985
SAMPLE # : ID CODE :
21 0652



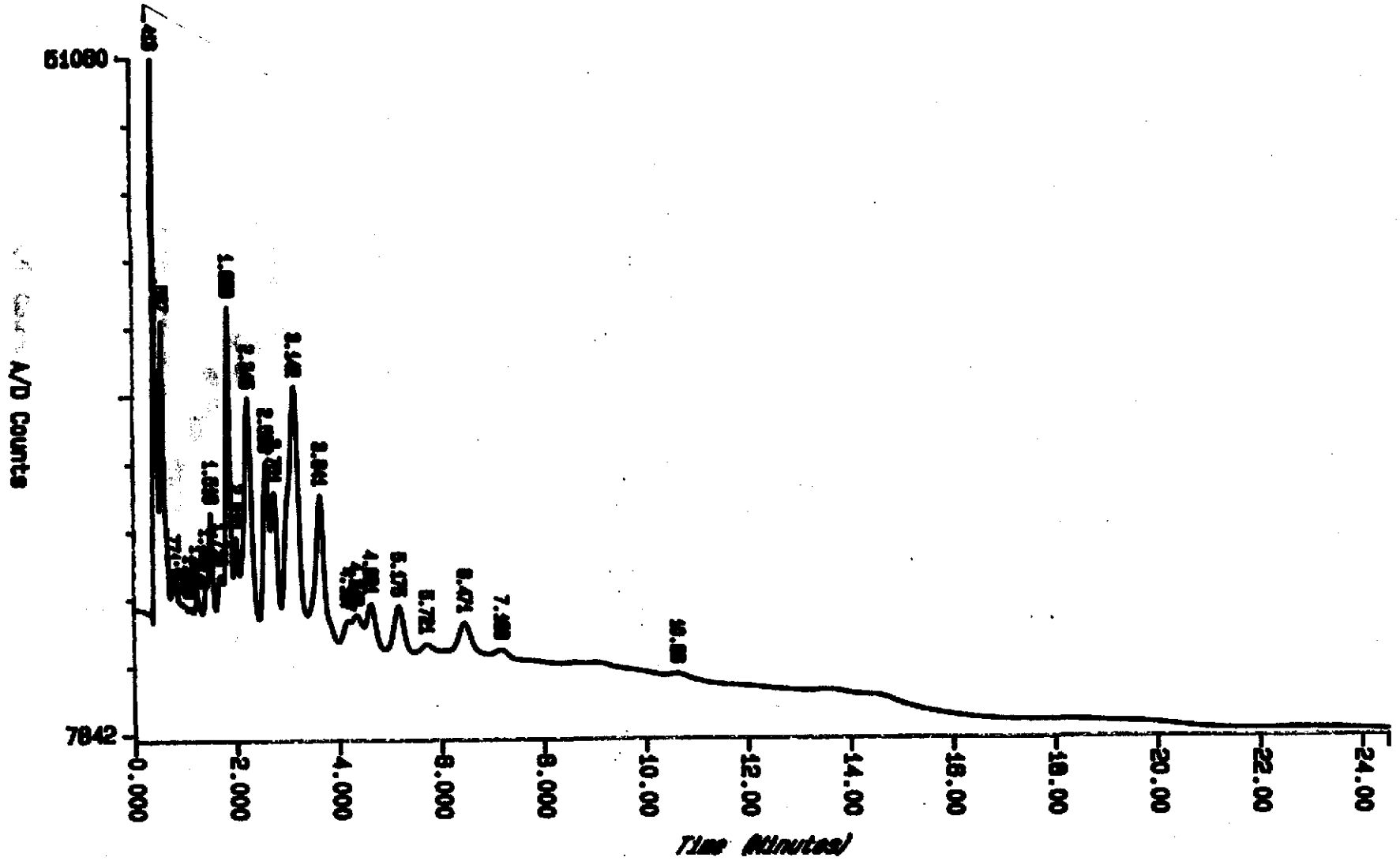
AR 1221 @ 0.5 g/mL



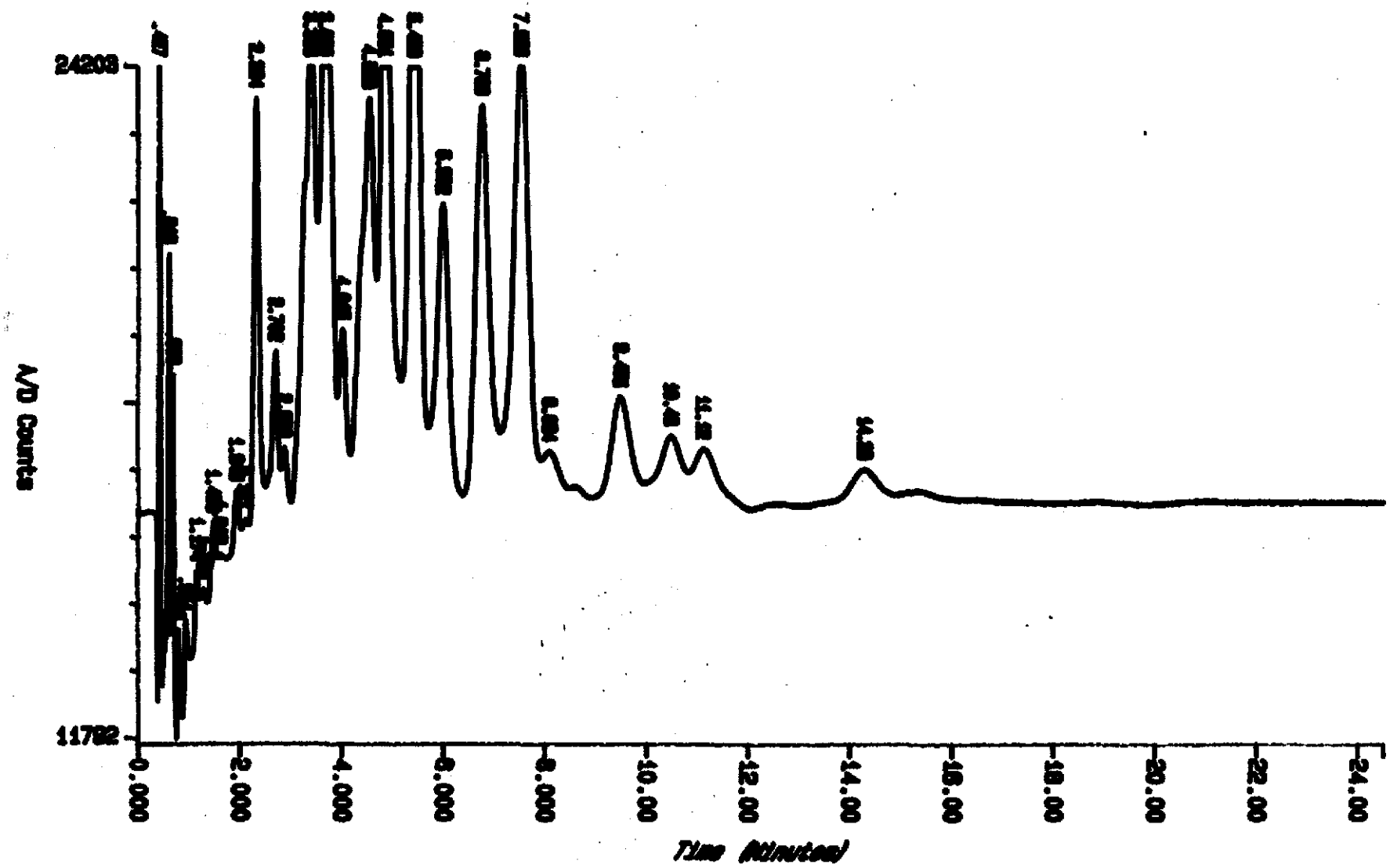
Sample: AR1232 0.5 Injected at 1:09:09 ON JUL 18, 1985
Raw File: RW1259 Proc File: PW1259 Method: PCB85



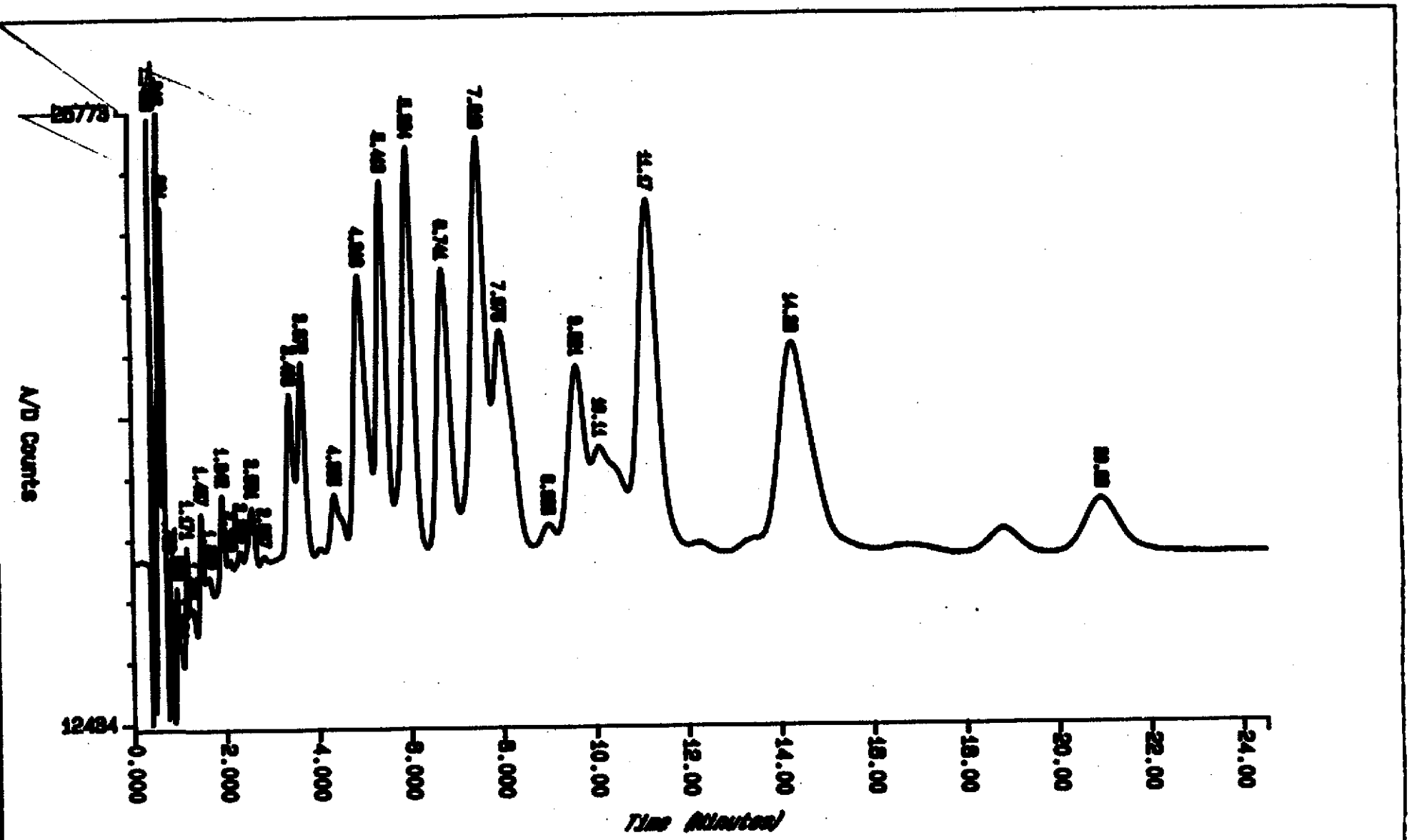
Sample: AR1242 0.5 Injected at 0:41:58 ON JUL 18, 1985
Raw File: RW1258 Proc File: PW1258 Method: PCBB5



Sample: AR1248 0.5 Injected at 20:28:51 ON JUL 18, 1985
Raw File: RW1271 Proc File: PW1271 Method: PCB85



Sample: AR1254 0.5 Injected at 21:58:18 ON JUL 15, 1985
Raw File: RW1258 Proc File: PW1258 Method: PCB85



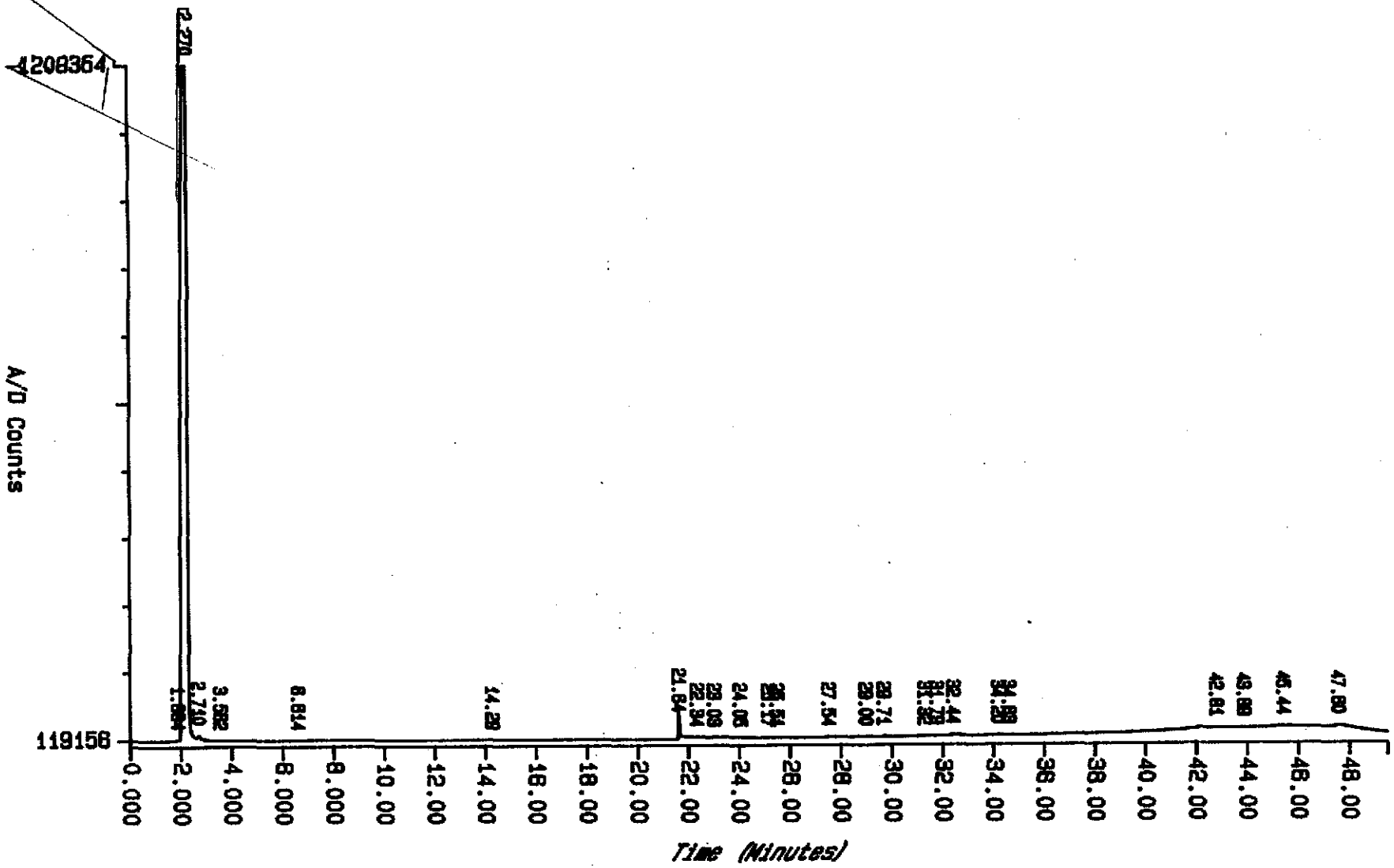
Sample: AR1260 0.5 Injected at 18:51:13 ON JUL 15, 1985
Raw File: RW1251 Proc File: PW1251 Method: PCB85

Appendix A2

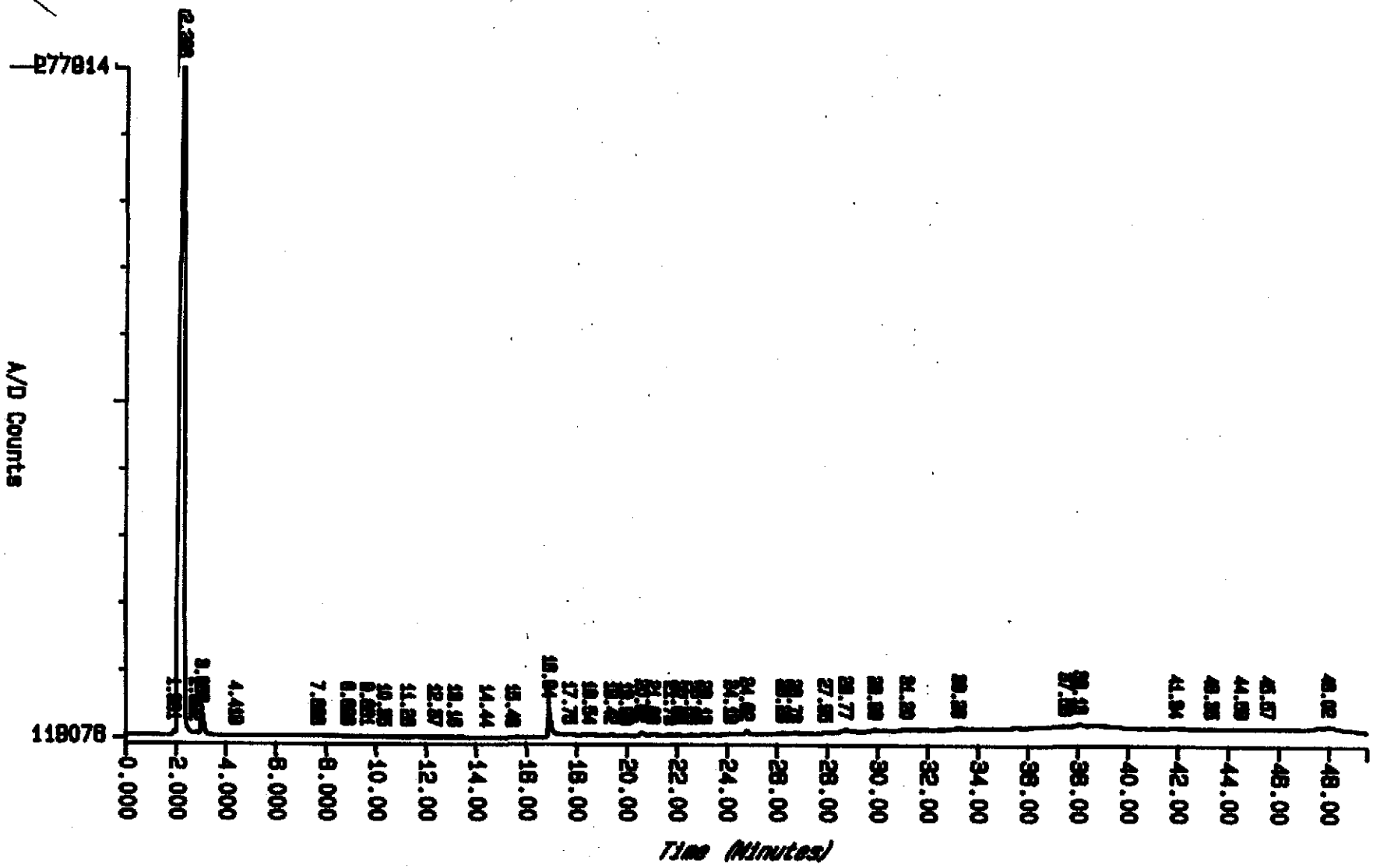
Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed chromatogram for each sample analyzed by an HPLC instrument.

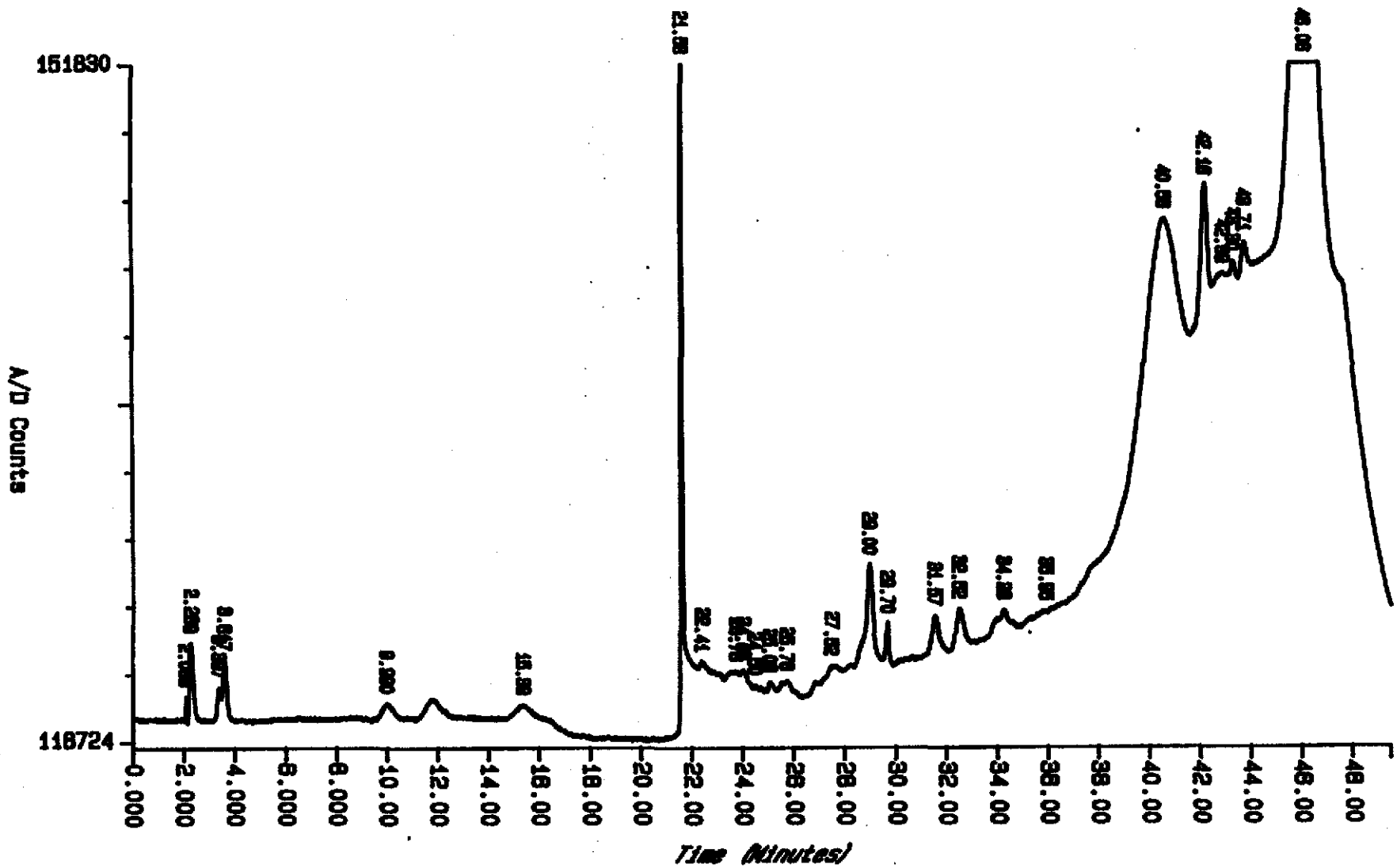
2) A reconstructed chromatogram for the appropriate standard compounds analyzed with the same HPLC under the same operating conditions.



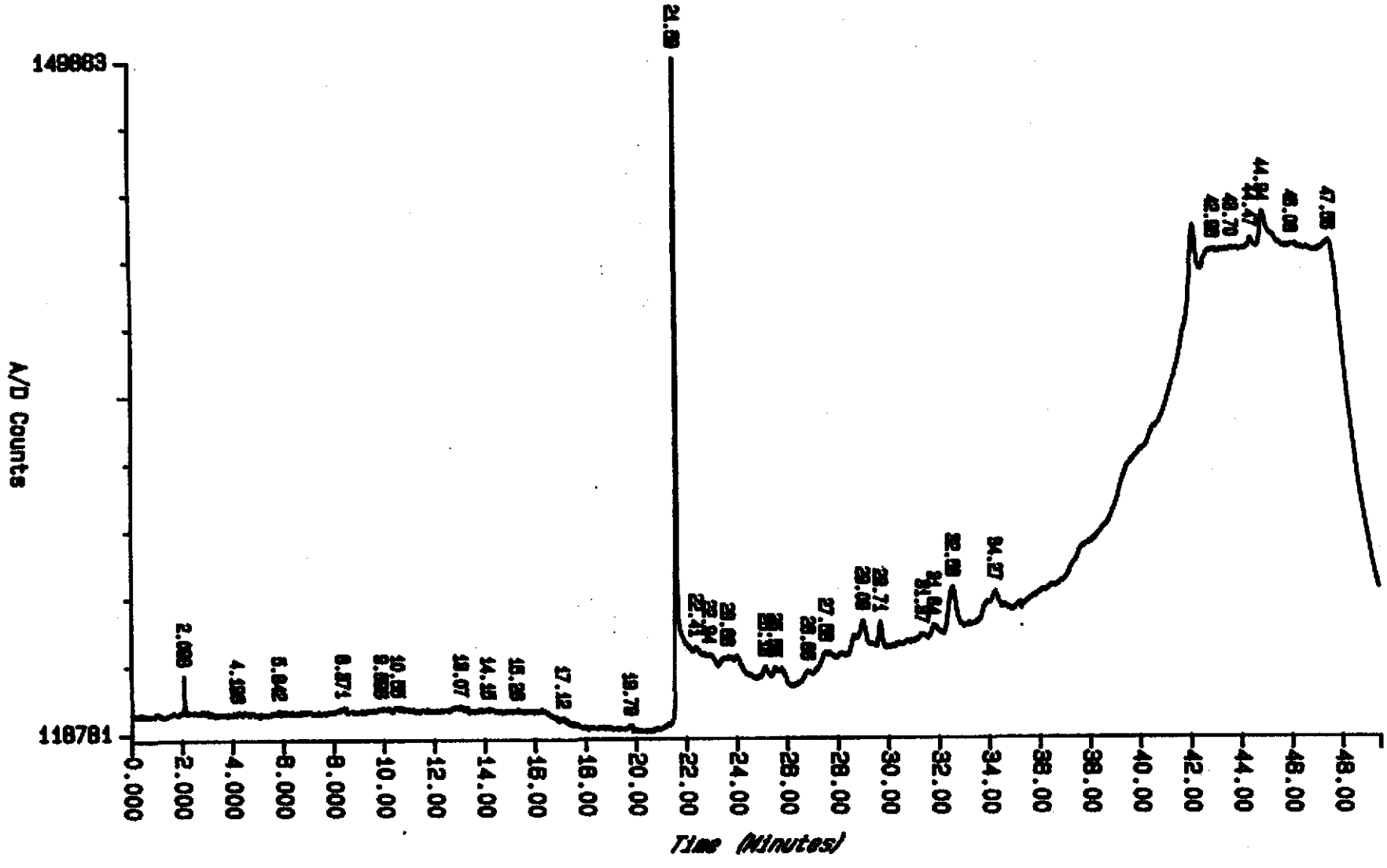
Sample: H6067 Injected at 13:27:17 ON JUL 11, 1985
Raw File: RH1522 Proc File: PH1522 Method: DAI210



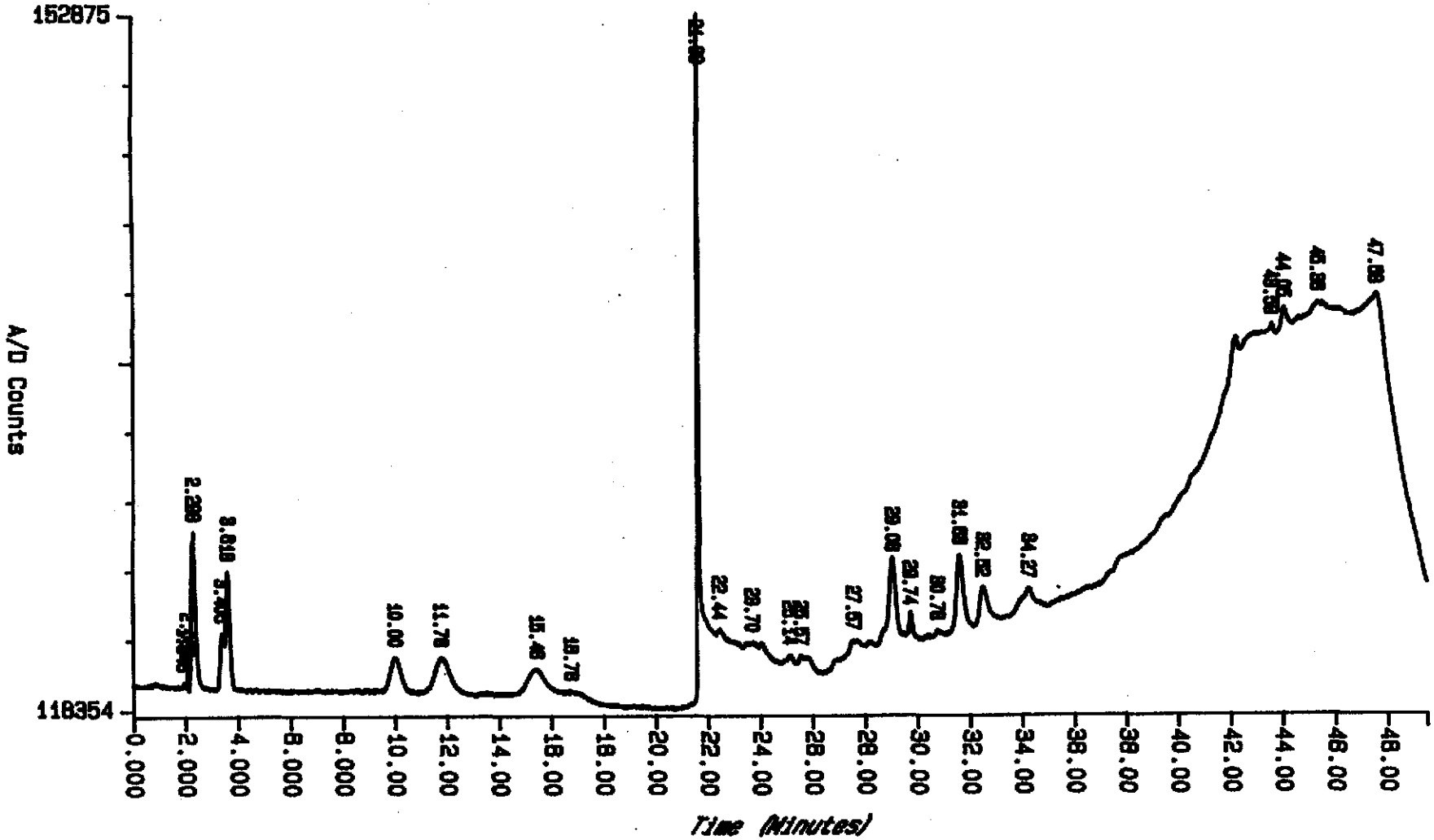
Sample: H6067 Injected at 21:48:16 ON JUL 16, 1985
Raw File: RH1704 Proc File: PH1704 Method: DAI230



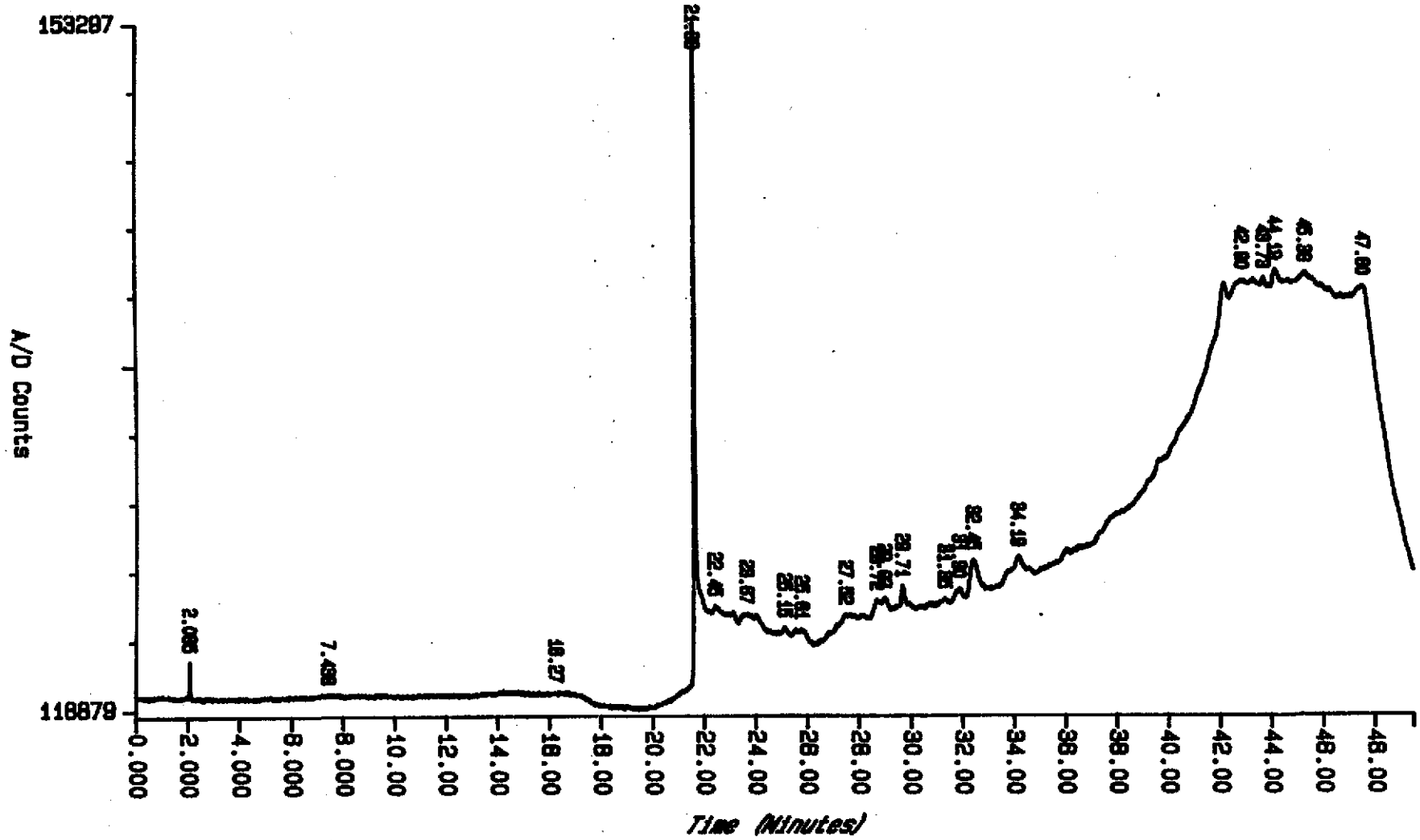
Sample: STD10972-0.5 Injected at 21:28:52 ON JUL 10, 1985
Raw File: RH1505 Proc File: PH1505 Method: DAI210



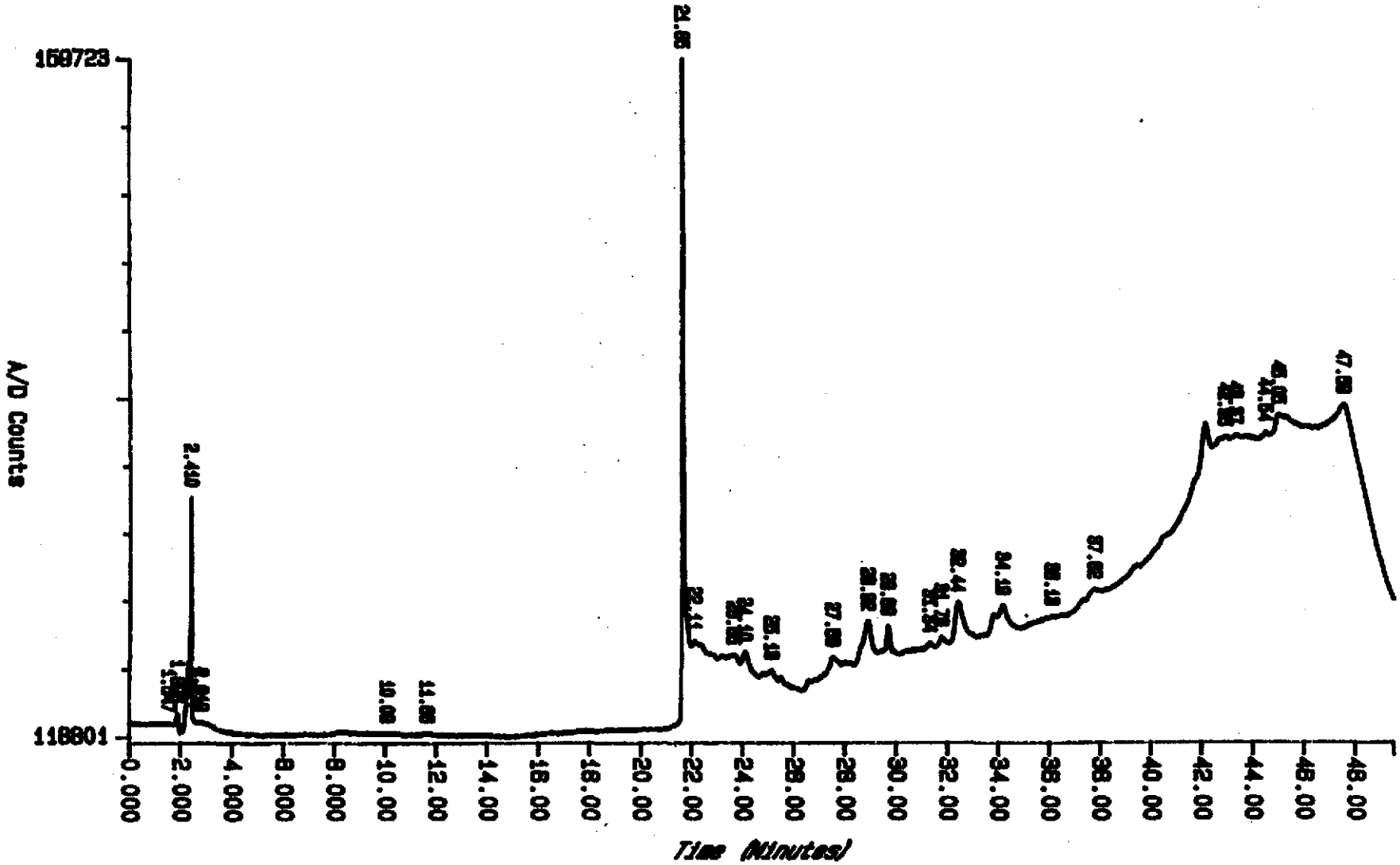
Sample: STD10976-0.5 Injected at 22:24:22 ON JUL 10, 1985
Raw File: RH1506 Proc File: PH1506 Method: DAI210



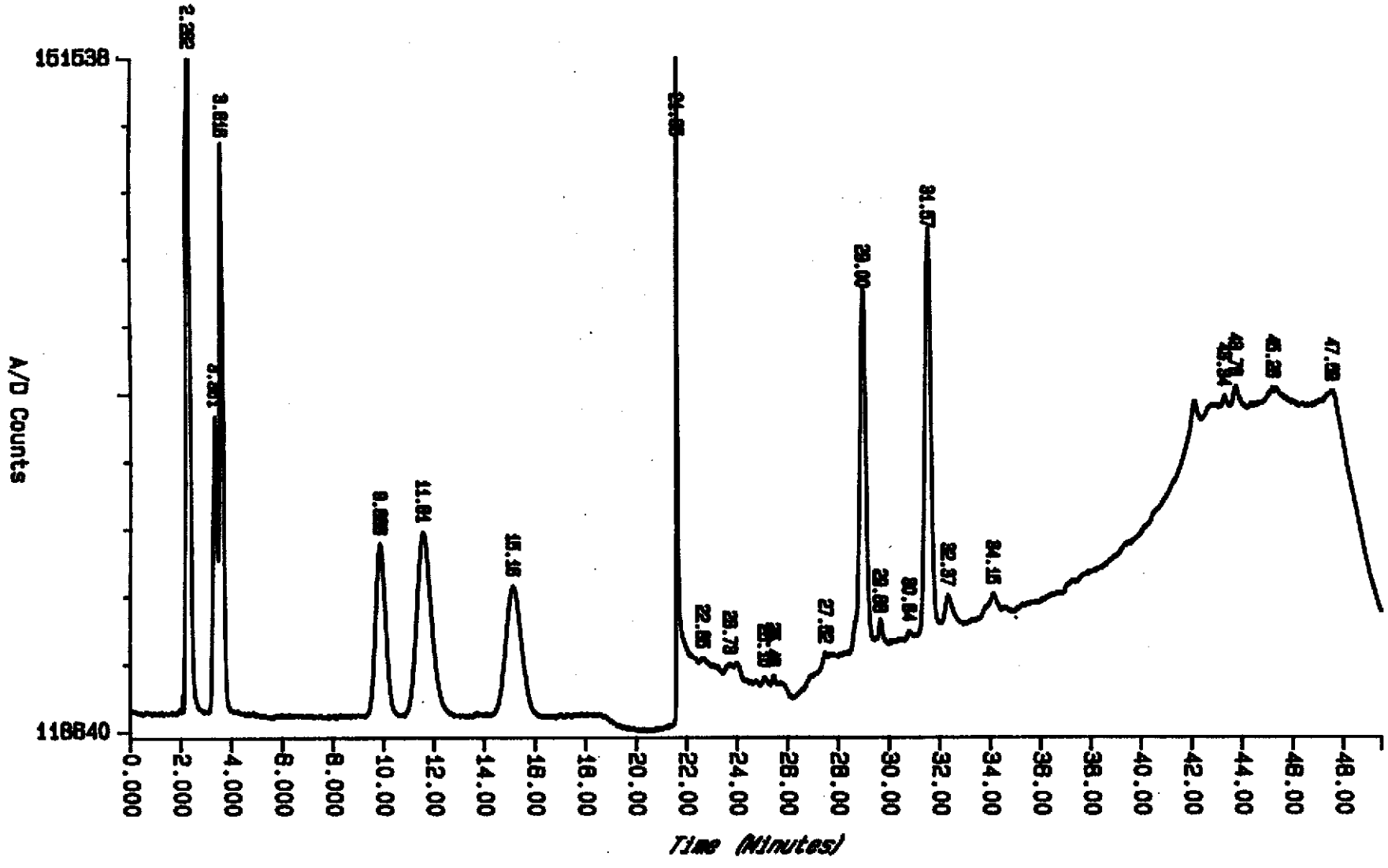
Sample: STD10971-1.0 Injected at 6:44:01 ON JUL 11, 1985
Raw File: RH1515 Proc File: PH1515 Method: DAI210



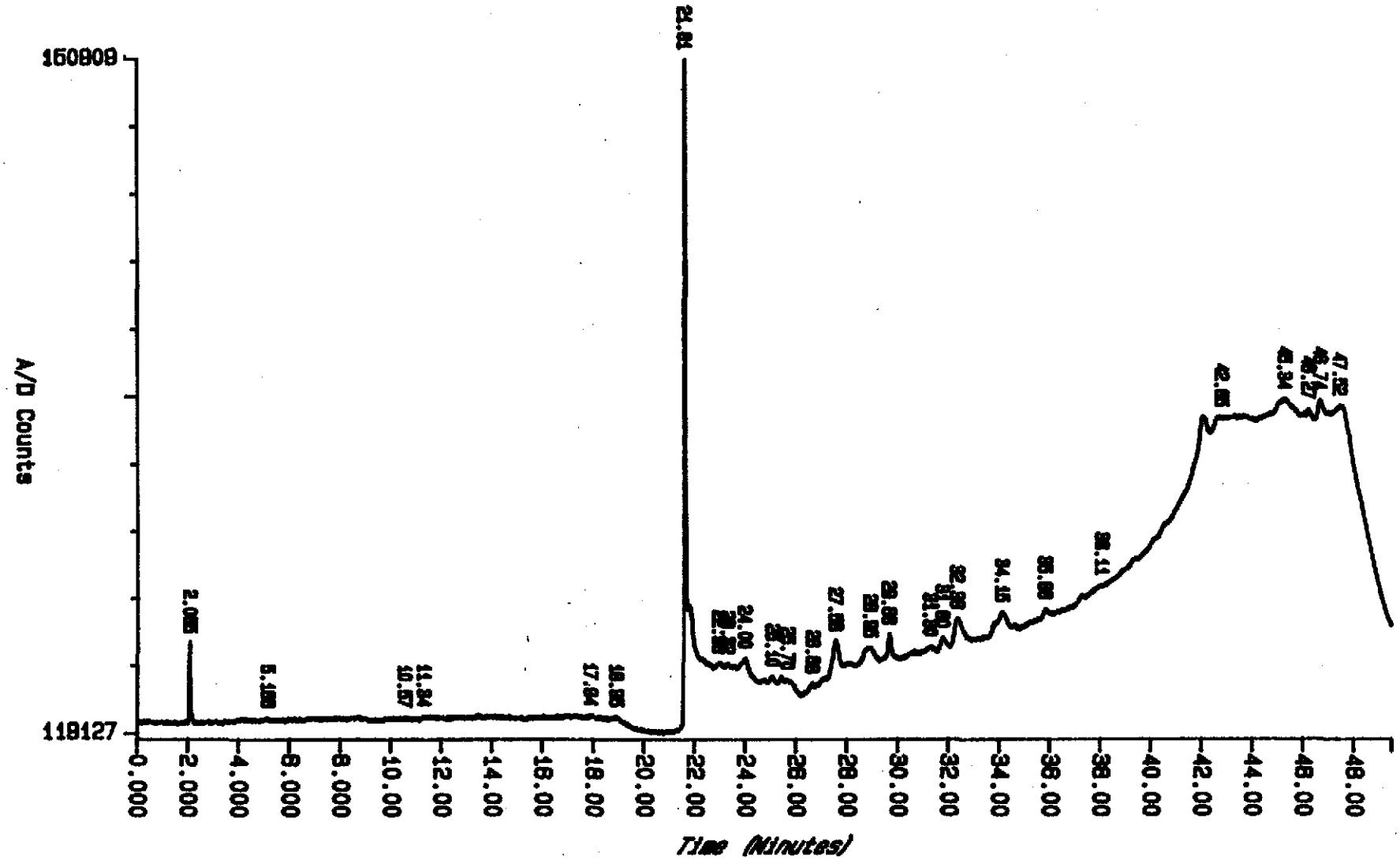
Sample: STD10975-1.0 Injected at 7:39:31 ON JUL 11, 1985
Raw File: RH1516 Proc File: PH1516 Method: DAI210



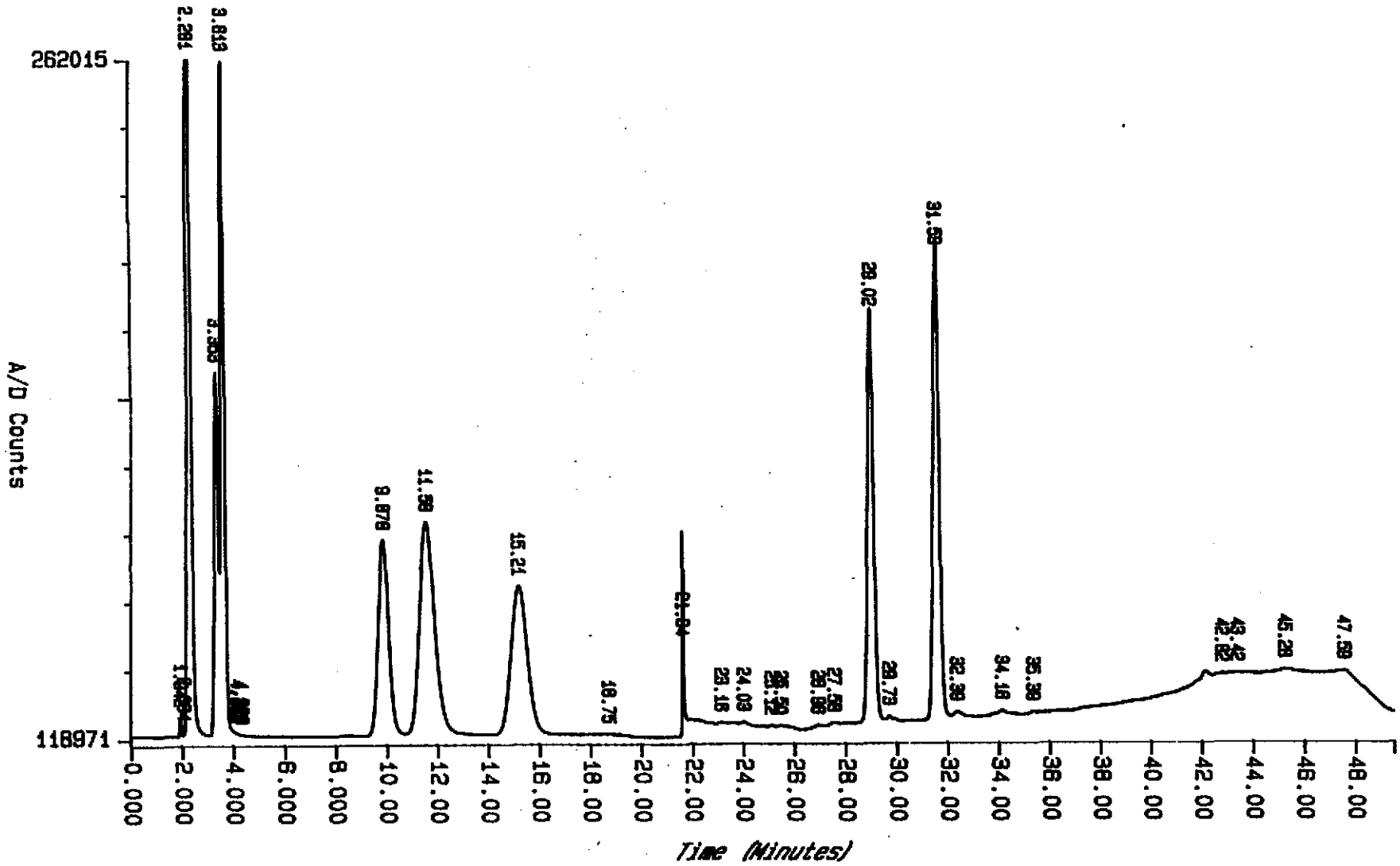
Sample: H8335R Injected at 8:45:14 ON JUL 11, 1985
Raw File: AH1518 Proc File: PH1518 Method: DAI210



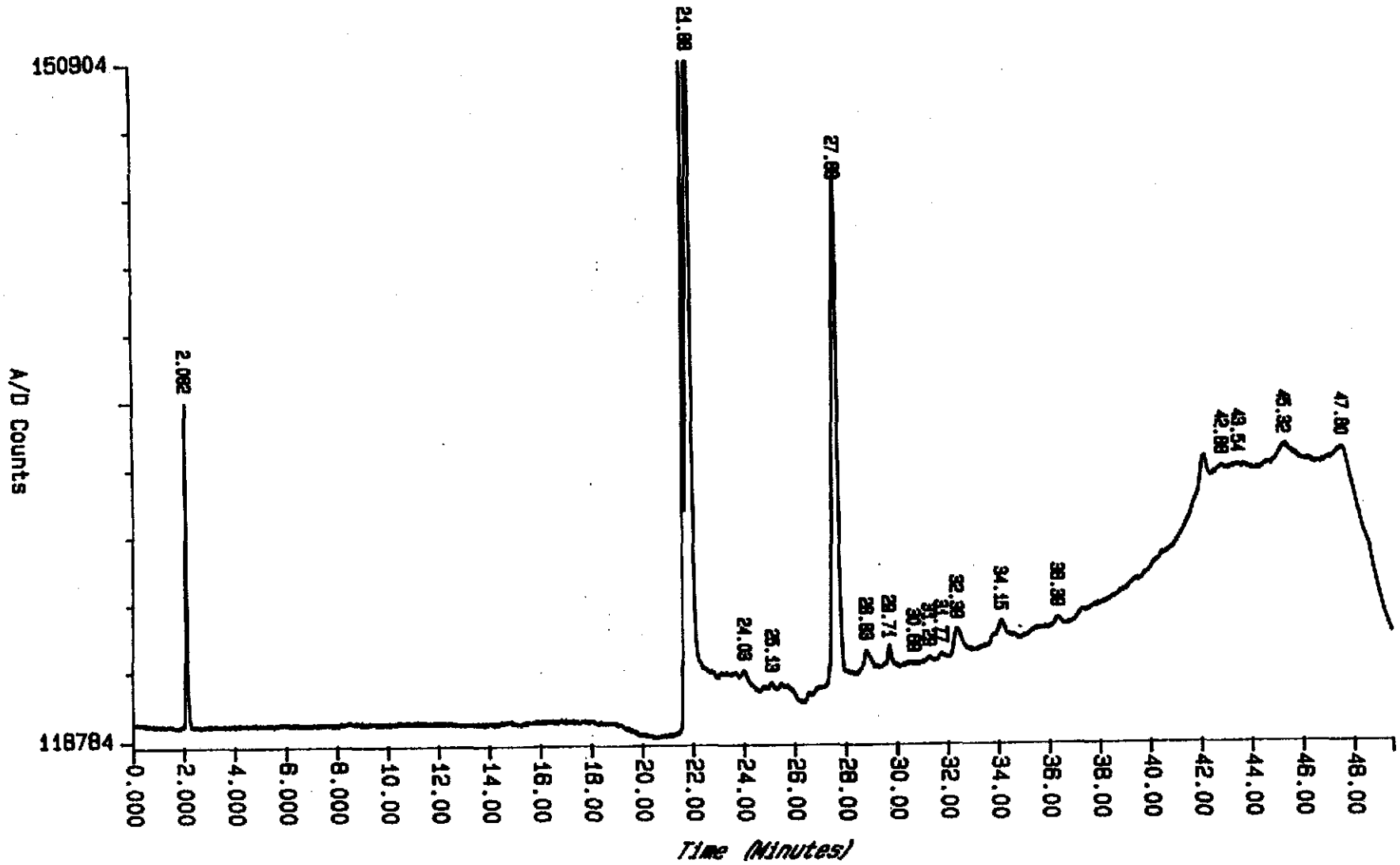
Sample: STD10970-5.0 Injected at 16:13:52 ON JUL 11, 1985
Raw File: AH1525 Proc File: PH1525 Method: DAI210



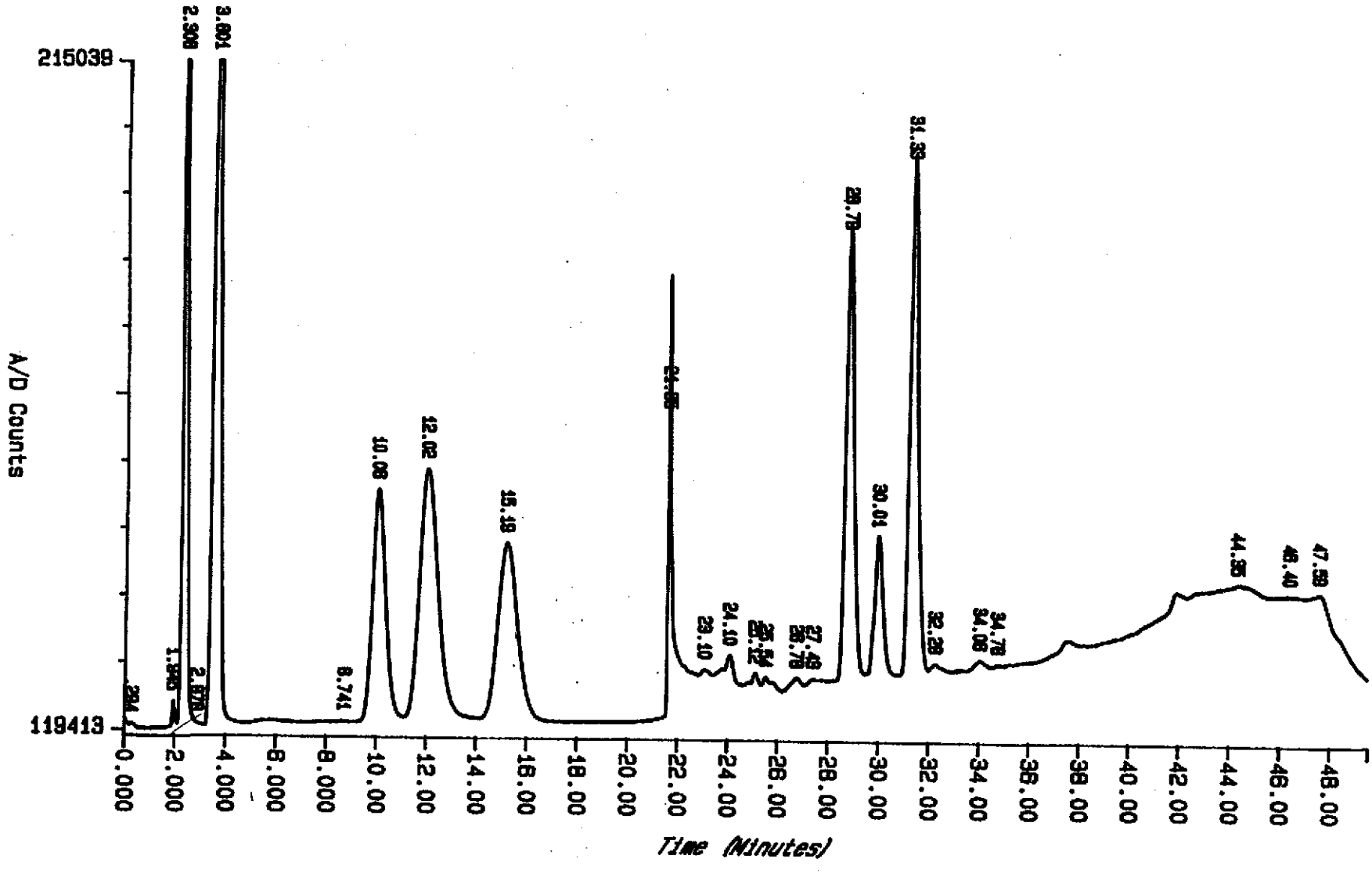
Sample: STD10974-5.0 Injected at 17:09:22 ON JUL 11, 1985
Raw File: RH1526 Proc File: PH1526 Method: DAI210



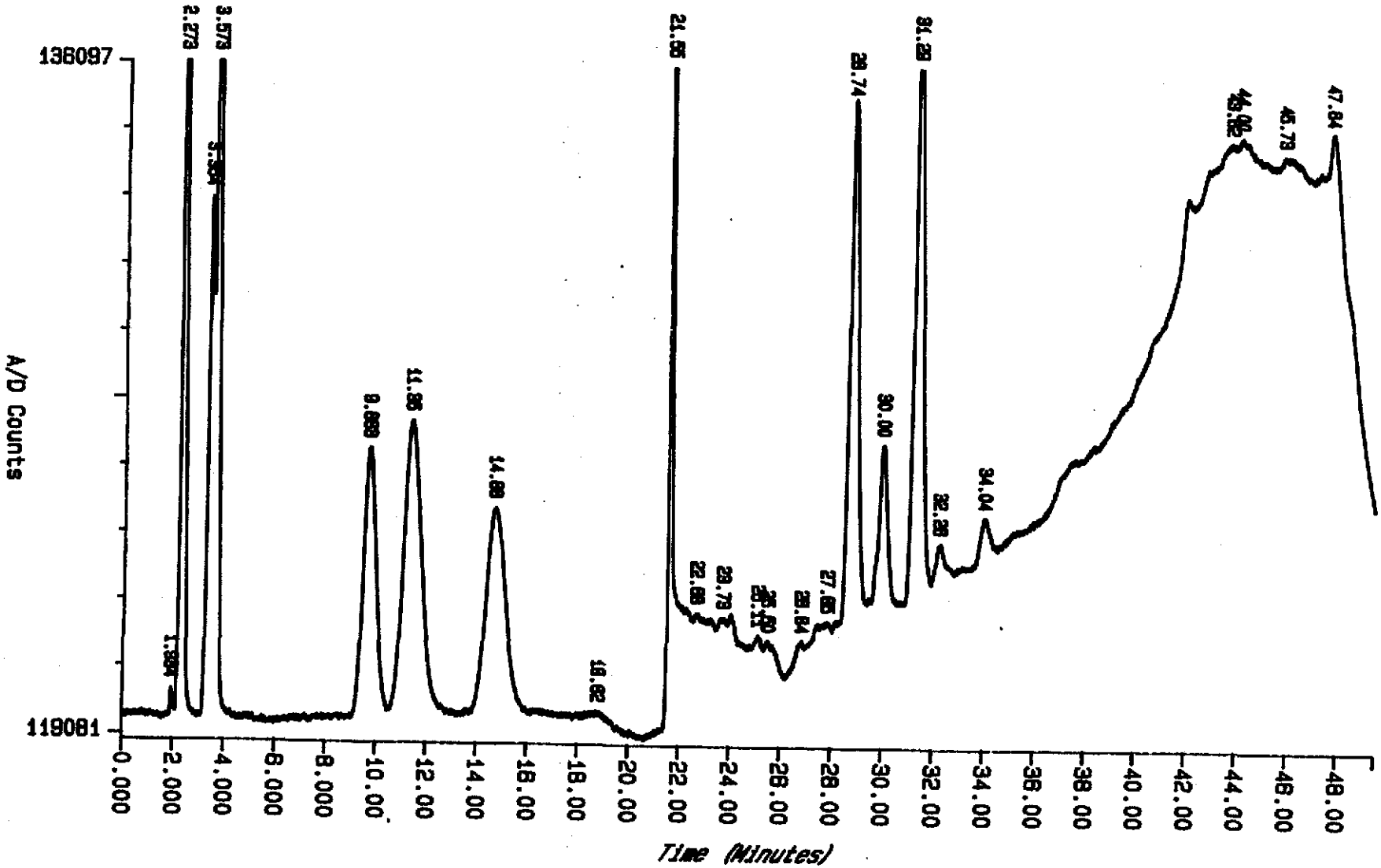
Sample: STD10969-25. Injected at 20:51:26 ON JUL 11, 1985
Raw File: RH1530 Proc File: PH1530 Method: DAI210



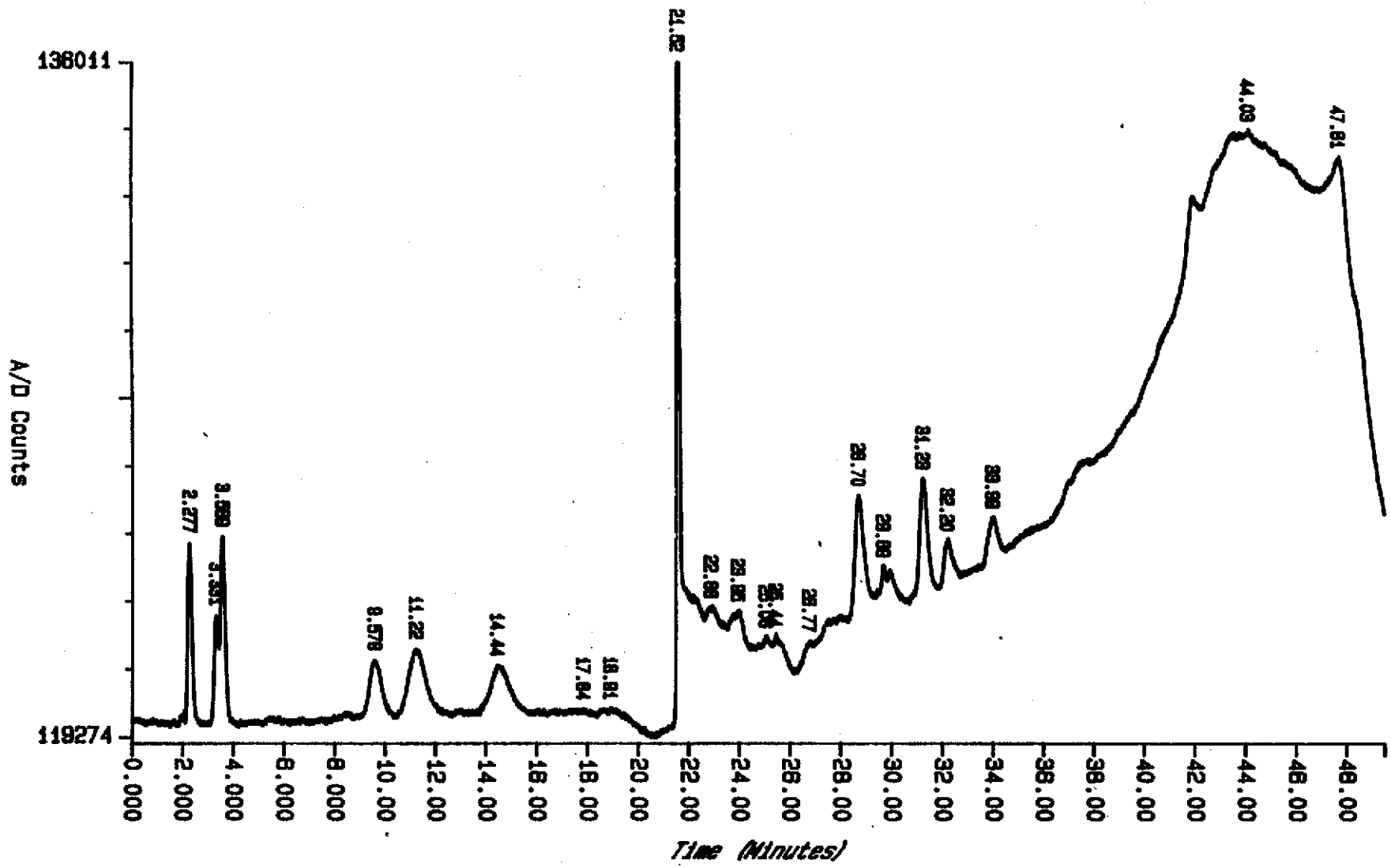
Sample: STD10973-25. Injected at 21:46:58 ON JUL 11, 1985
Raw File: RH1531 Proc File: PH1531 Method: DAI210



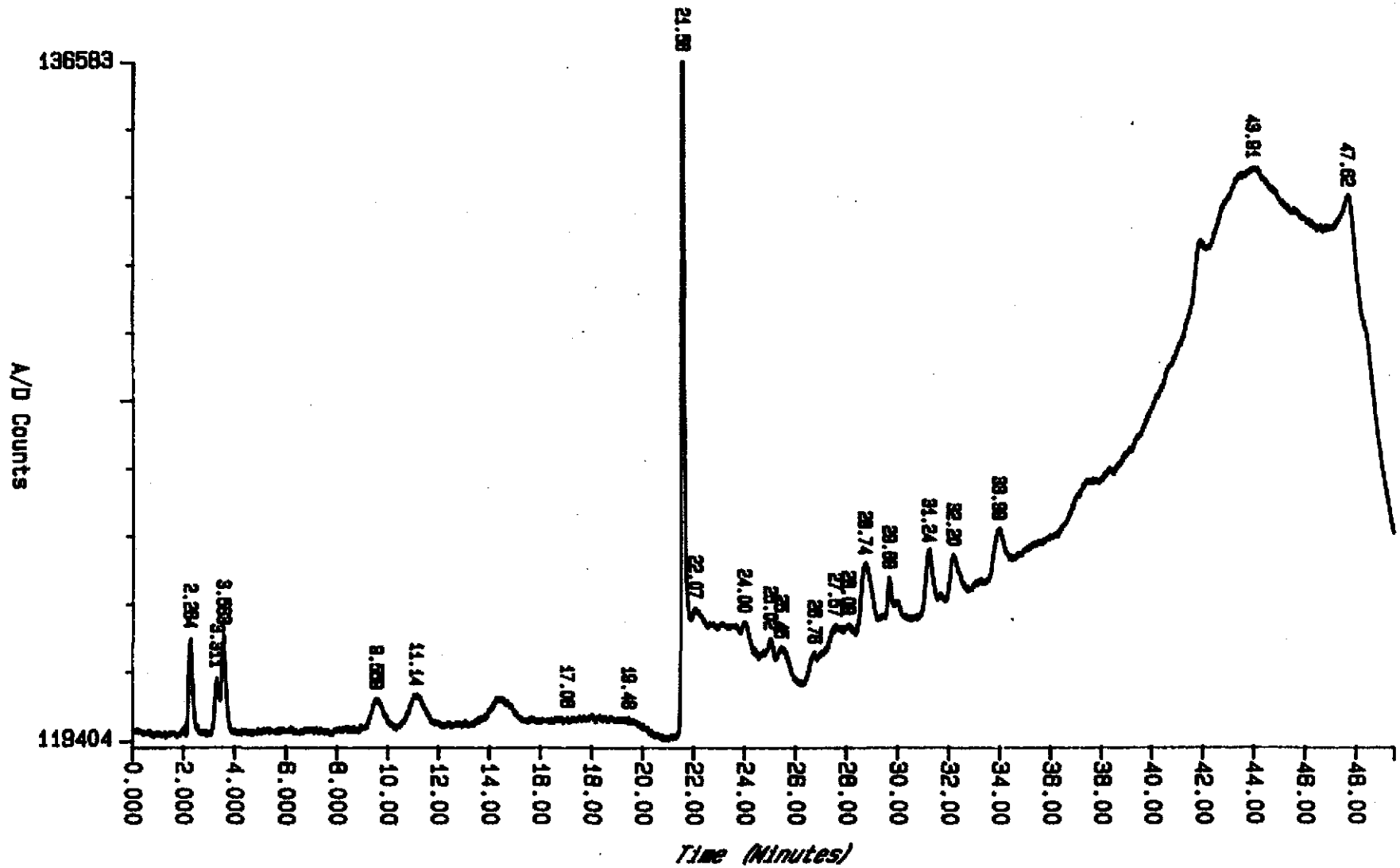
Sample: STD11020-025 Injected at 12:26:51 ON JUL 13, 1985
Raw File: RH1555 Proc File: PH1555 Method: DAI210



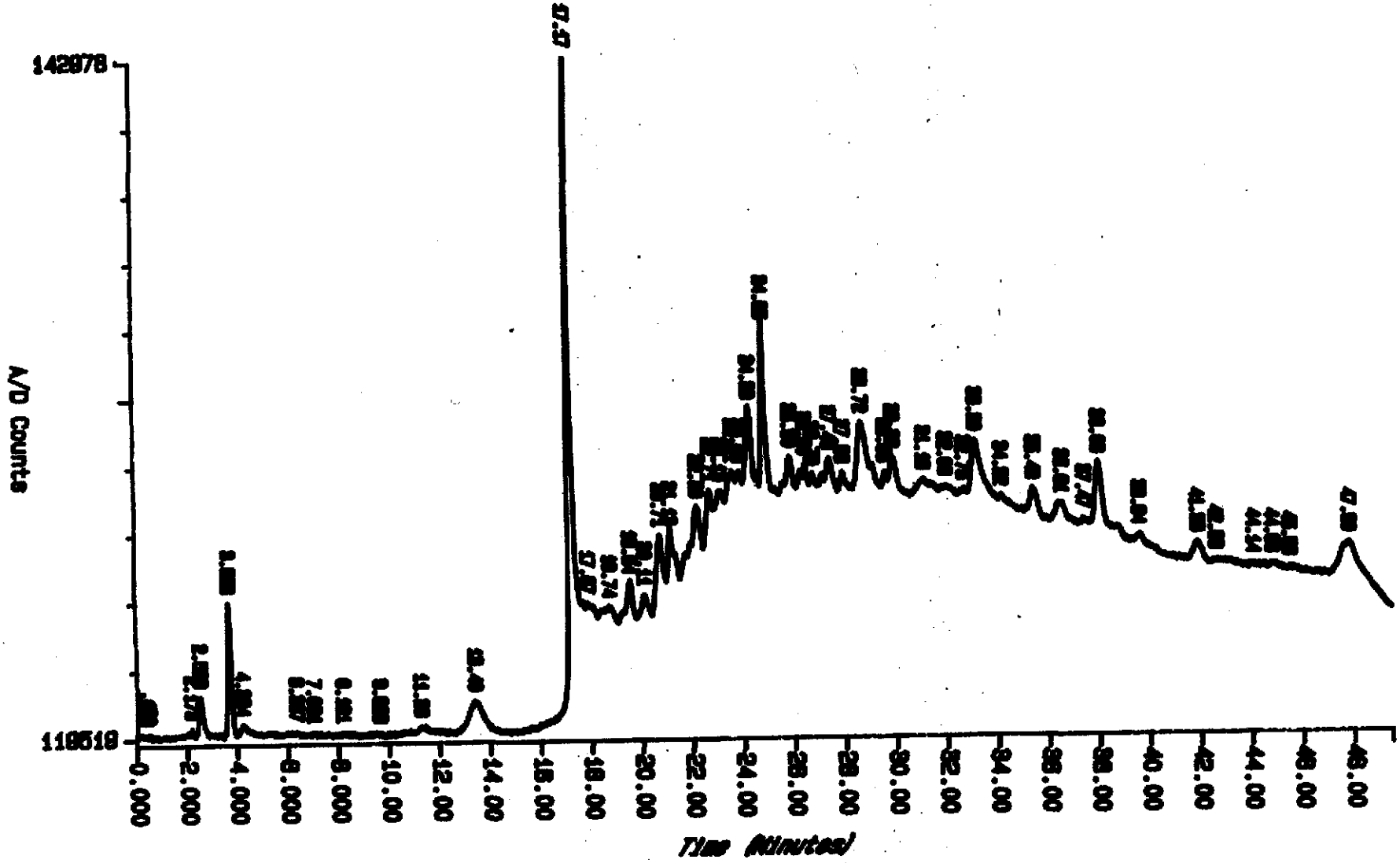
Sample: STD11021-5.0 Injected at 13:22:24 ON JUL 13, 1985
Raw File: RH1556 Proc File: PH1556 Method: DAI210



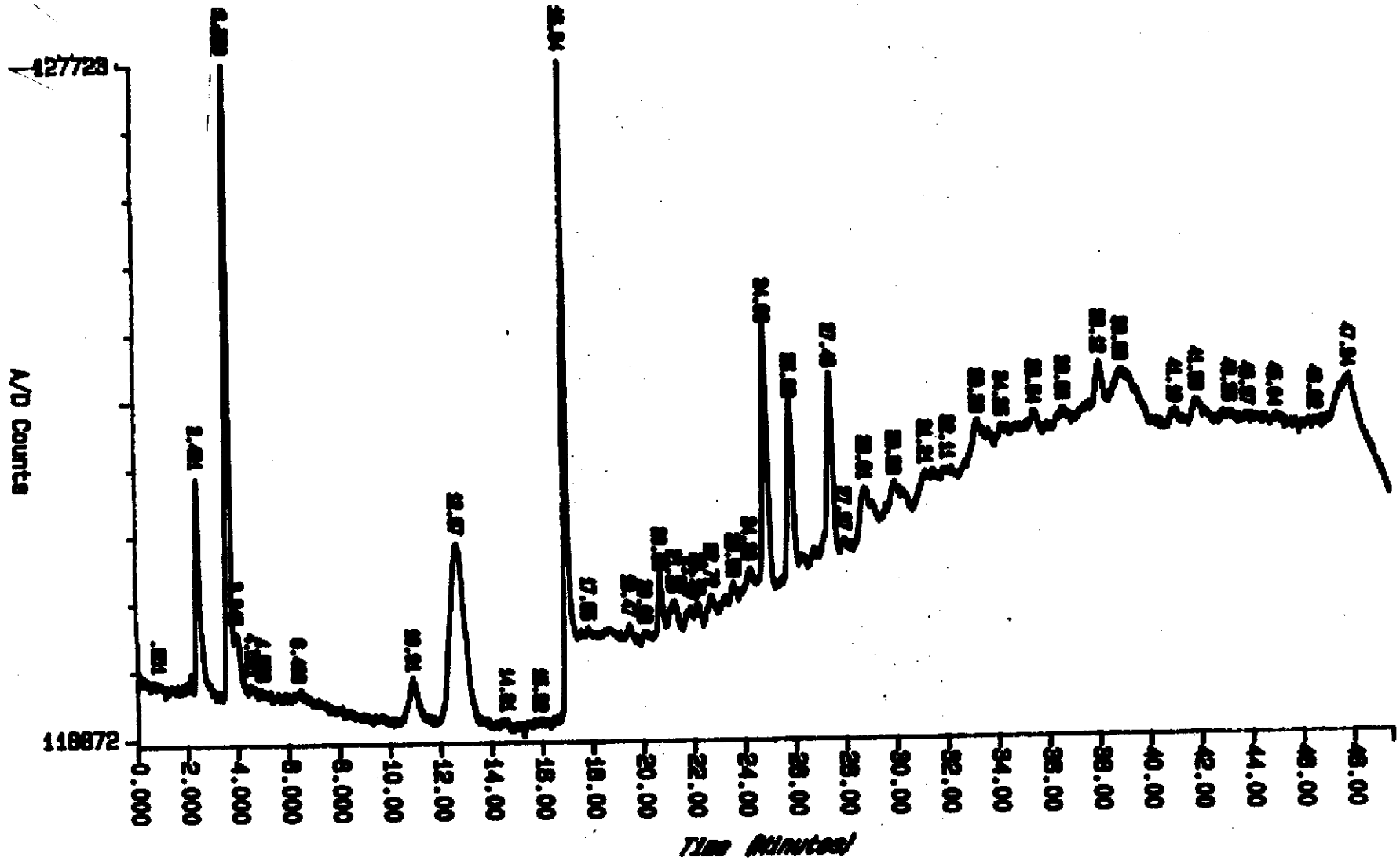
Sample: STD11022-1.0 Injected at 14:17:56 ON JUL 13, 1985
Raw File: RH1557 Proc File: PH1557 Method: DAI210



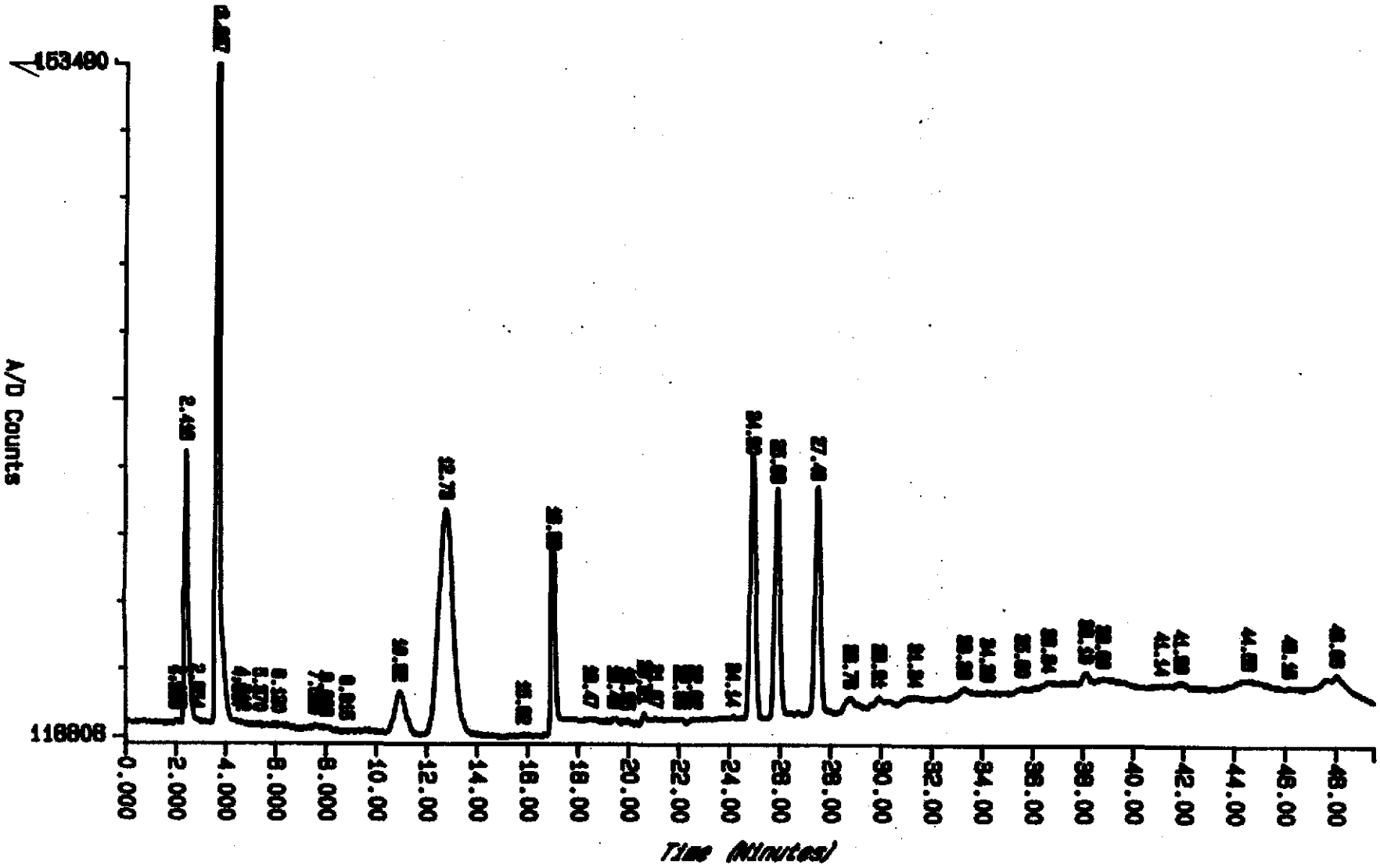
Sample: STD11023-0.5 Injected at 15:13:28 ON JUL 13, 1985
Raw File: RH1558 Proc File: PH1558 Method: DAI210



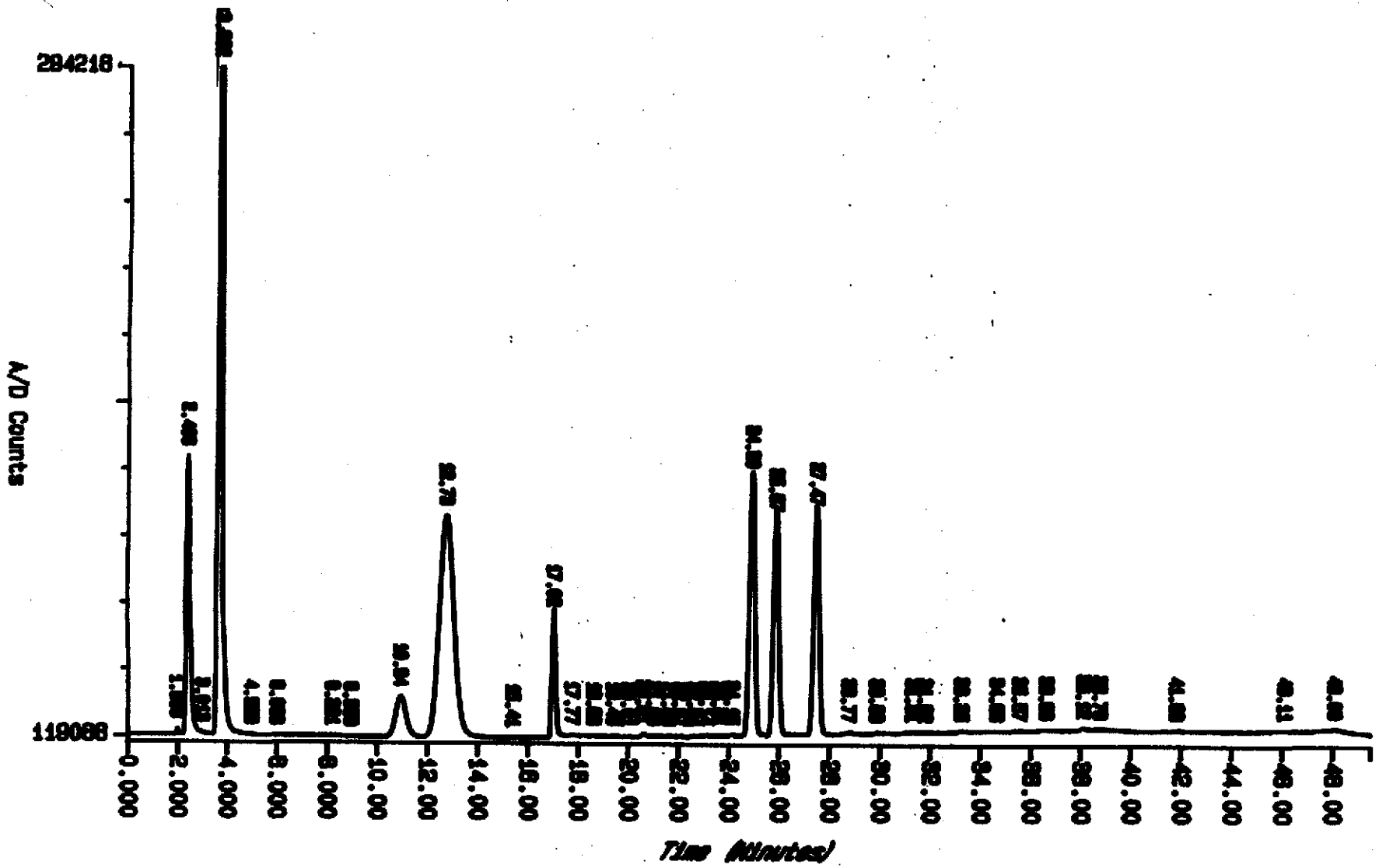
Sample: STD11023-0.5 Injected at 18:05:18 ON JUL 18, 1985
Raw File: RH1700 Proc File: PH1700 Method: DAI230



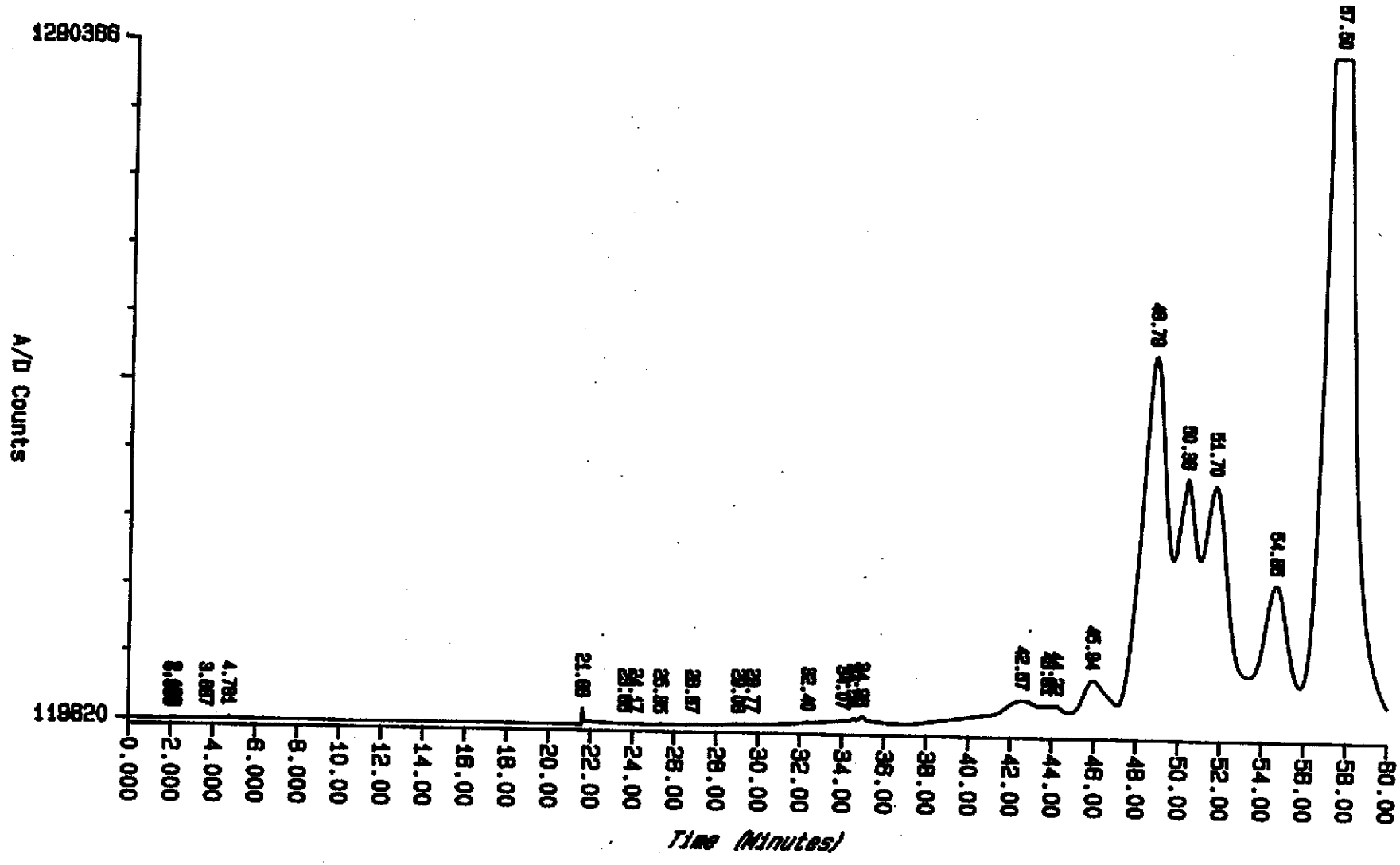
Sample: STD11022-1.0 Injected at 19:01:02 ON JUL 16, 1985
Raw File: RH1701 Proc File: PH1701 Method: DAI230



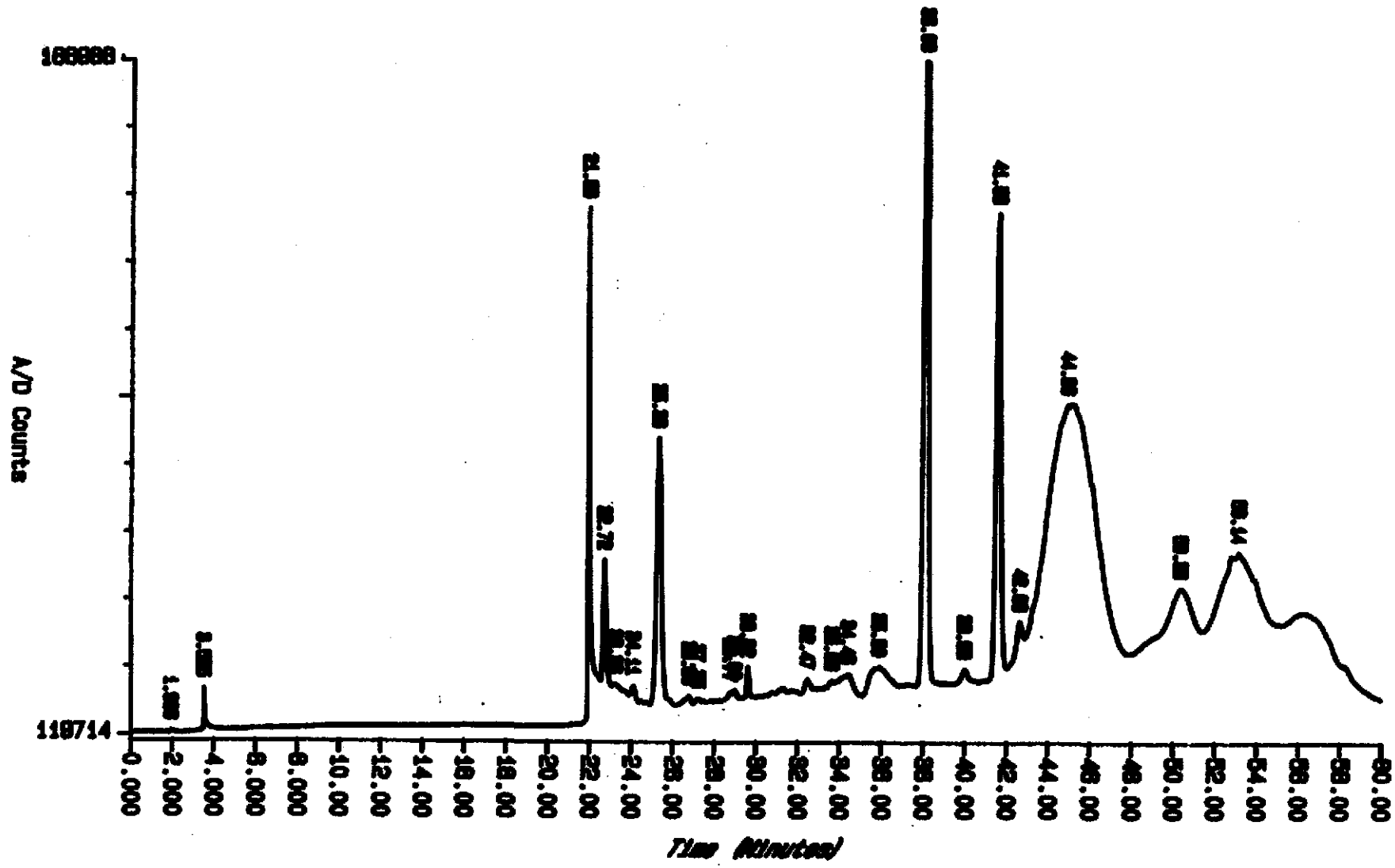
Sample: STD11021-5.0 Injected at 22:44:02 ON JUL 16, 1985
Raw File: RH1705 Proc File: PH1705 Method: DAI230



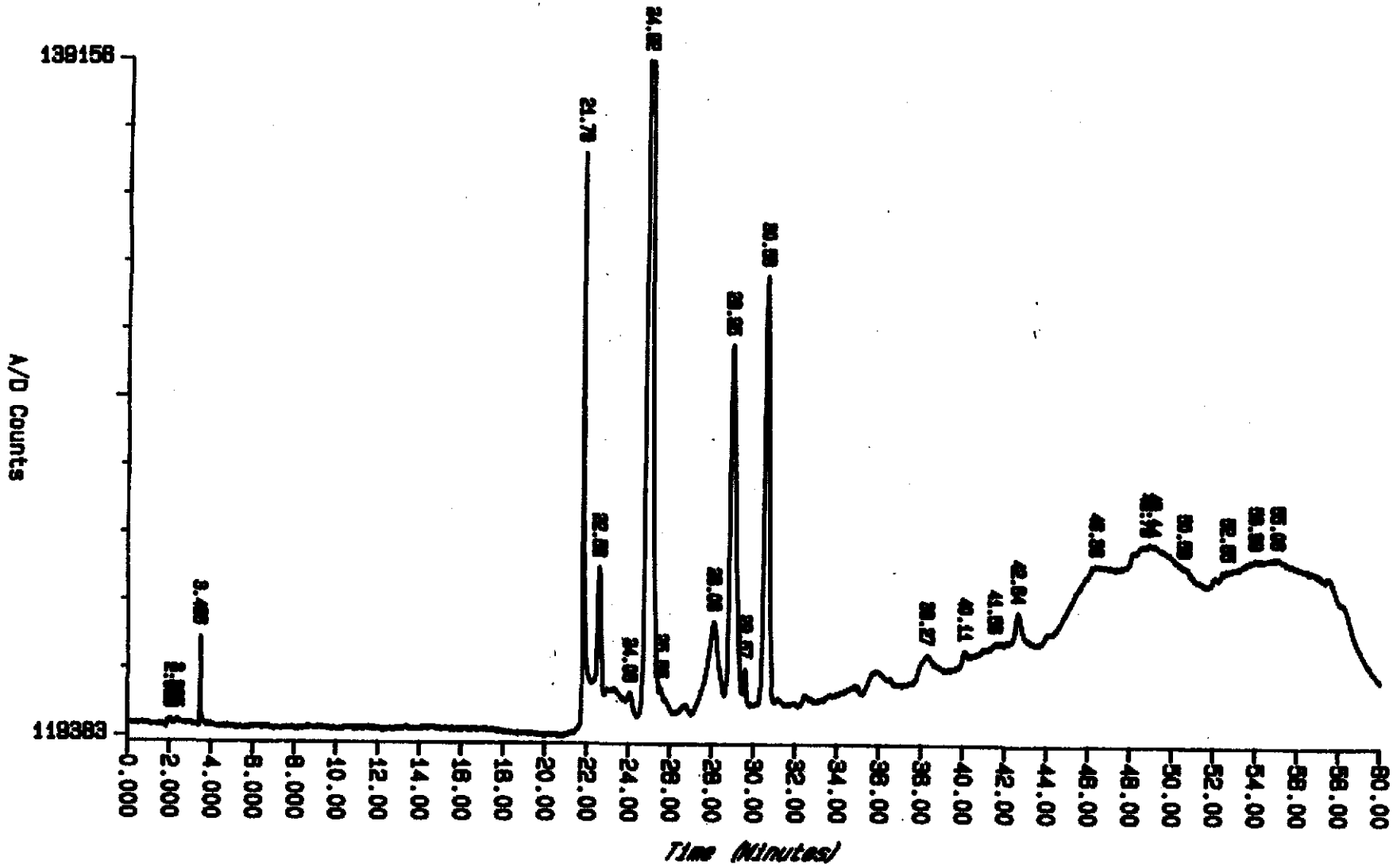
Sample: STD11021-25. Injected at 23:39:48 ON JUL 16, 1985
Raw File: RH1708 Proc File: PH1708 Method: DAI230



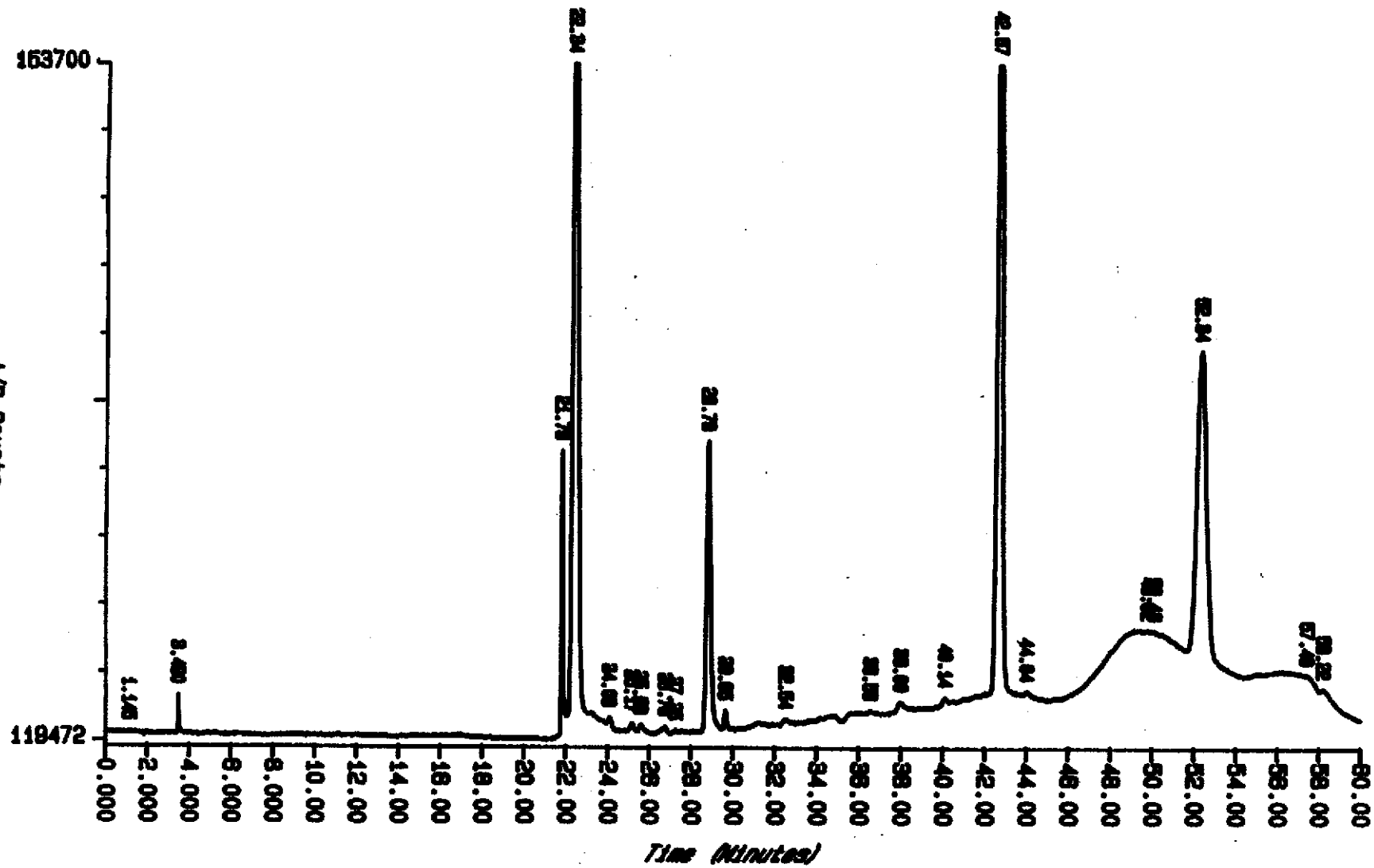
Sample: H6067 Injected at 9:07:21 ON JUL 8, 1985
Raw File: RH1326 Proc File: PH1326 Method: EXT250



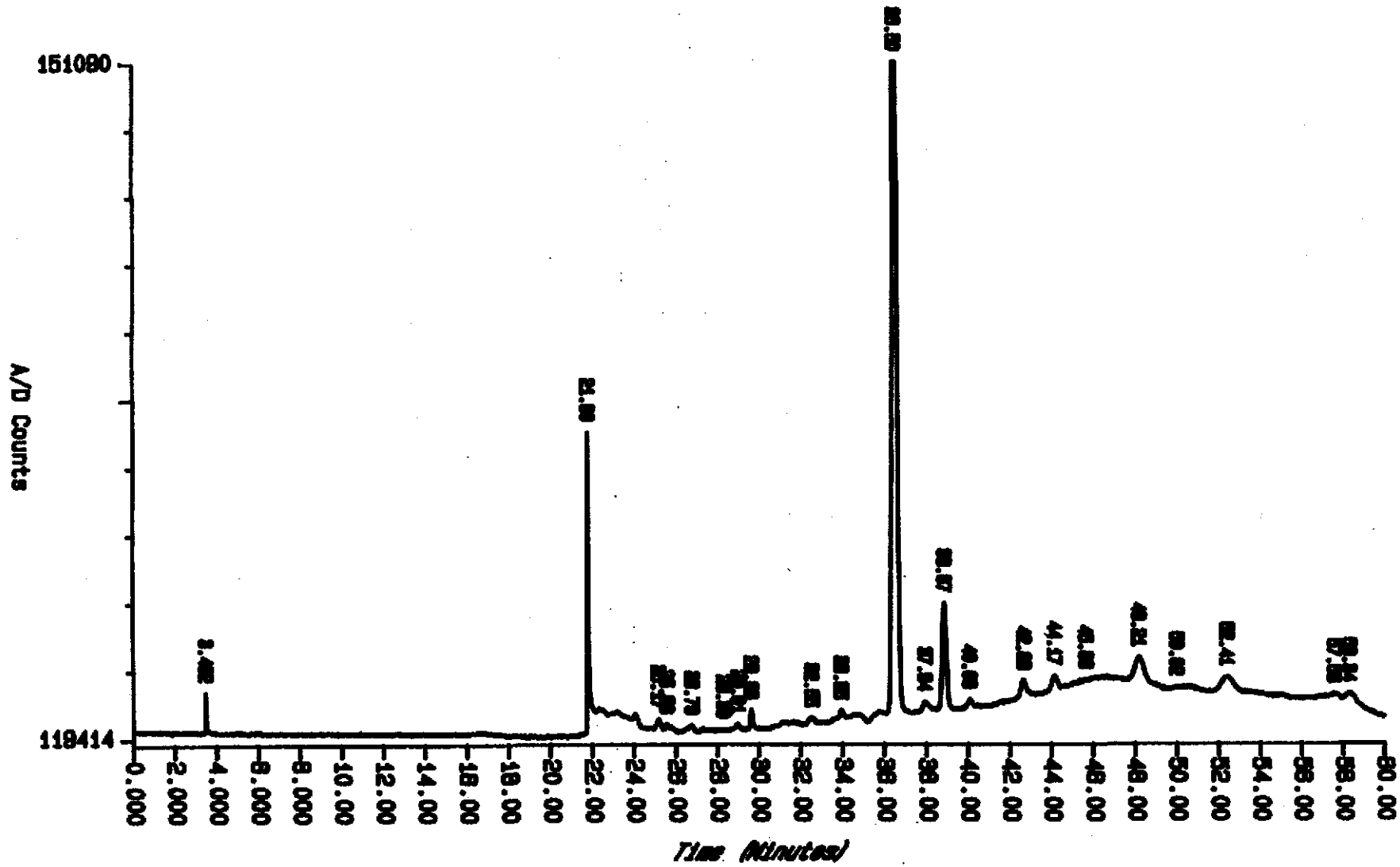
Sample: STD10801-025 Injected at 12:34:22 ON JUL 8, 1985
Raw File: RH1300 Proc File: PH1300 Method: EXT250



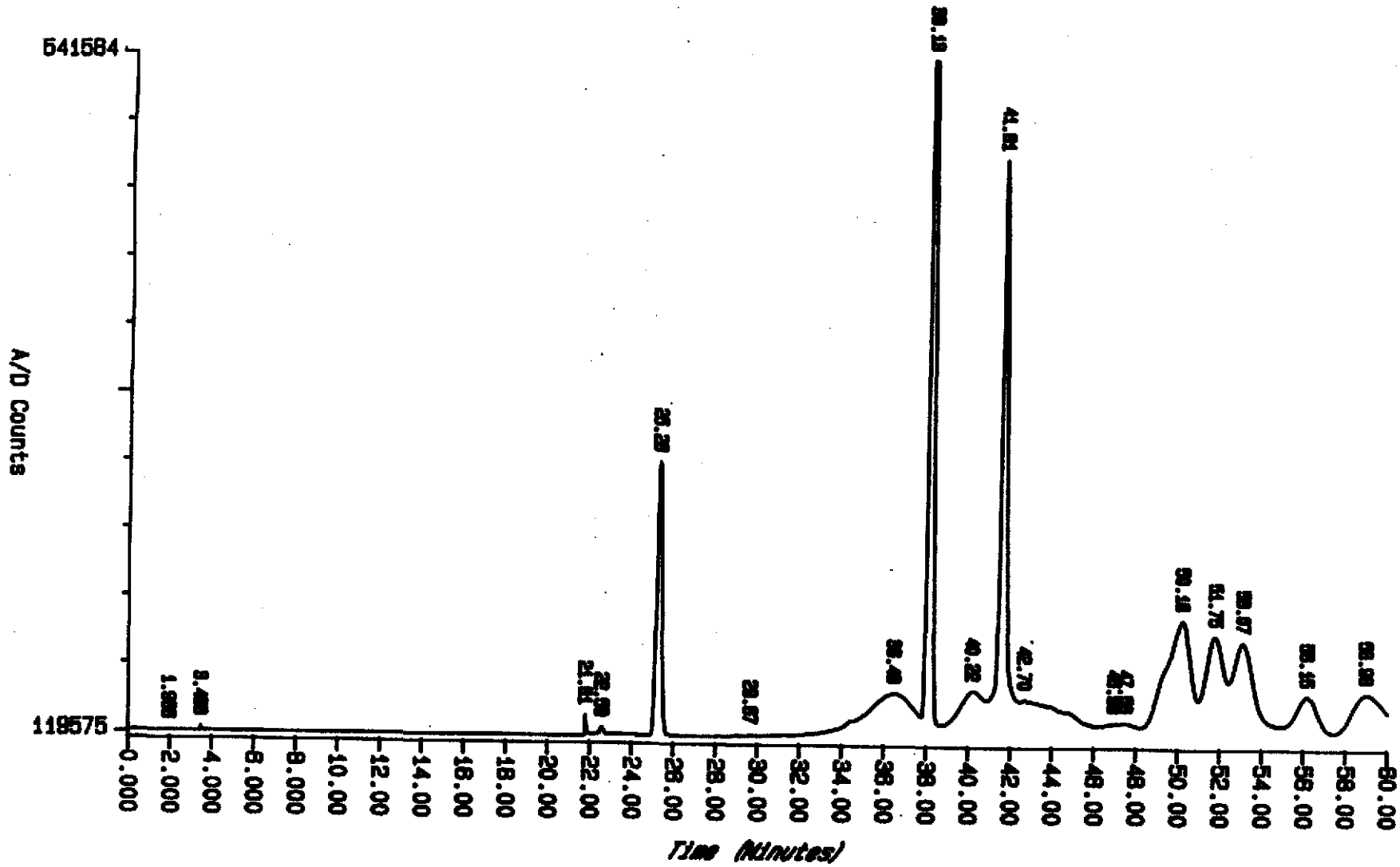
Sample: STD10902-025 Injected at 13:40:53 ON JUL 6, 1985
Raw File: RH1301 Proc File: PH1301 Method: EXT250



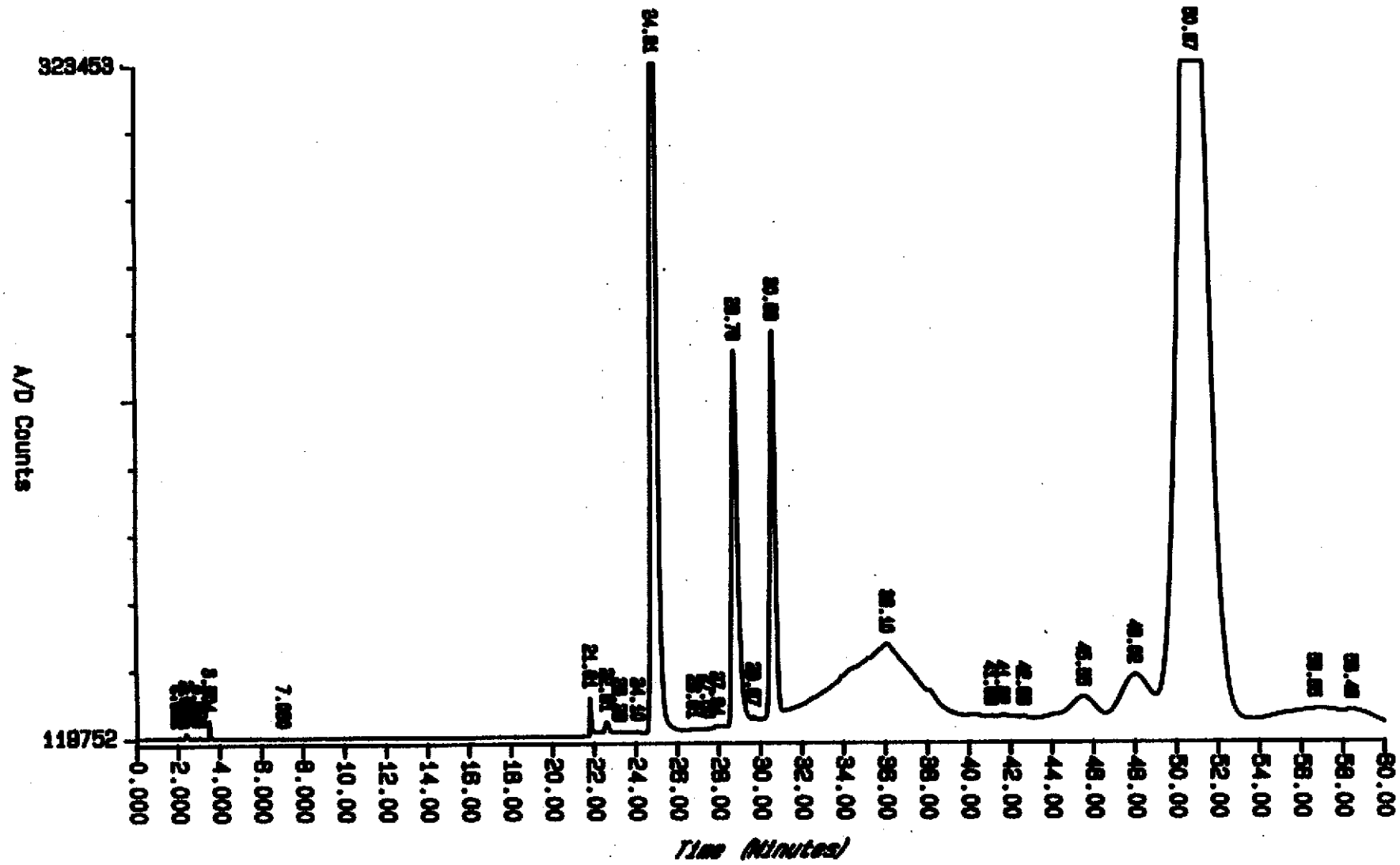
Sample: STD10903-025 Injected at 14:47:23 ON JUL 8, 1985
Raw File: AH1302 Proc File: PH1302 Method: EXT250



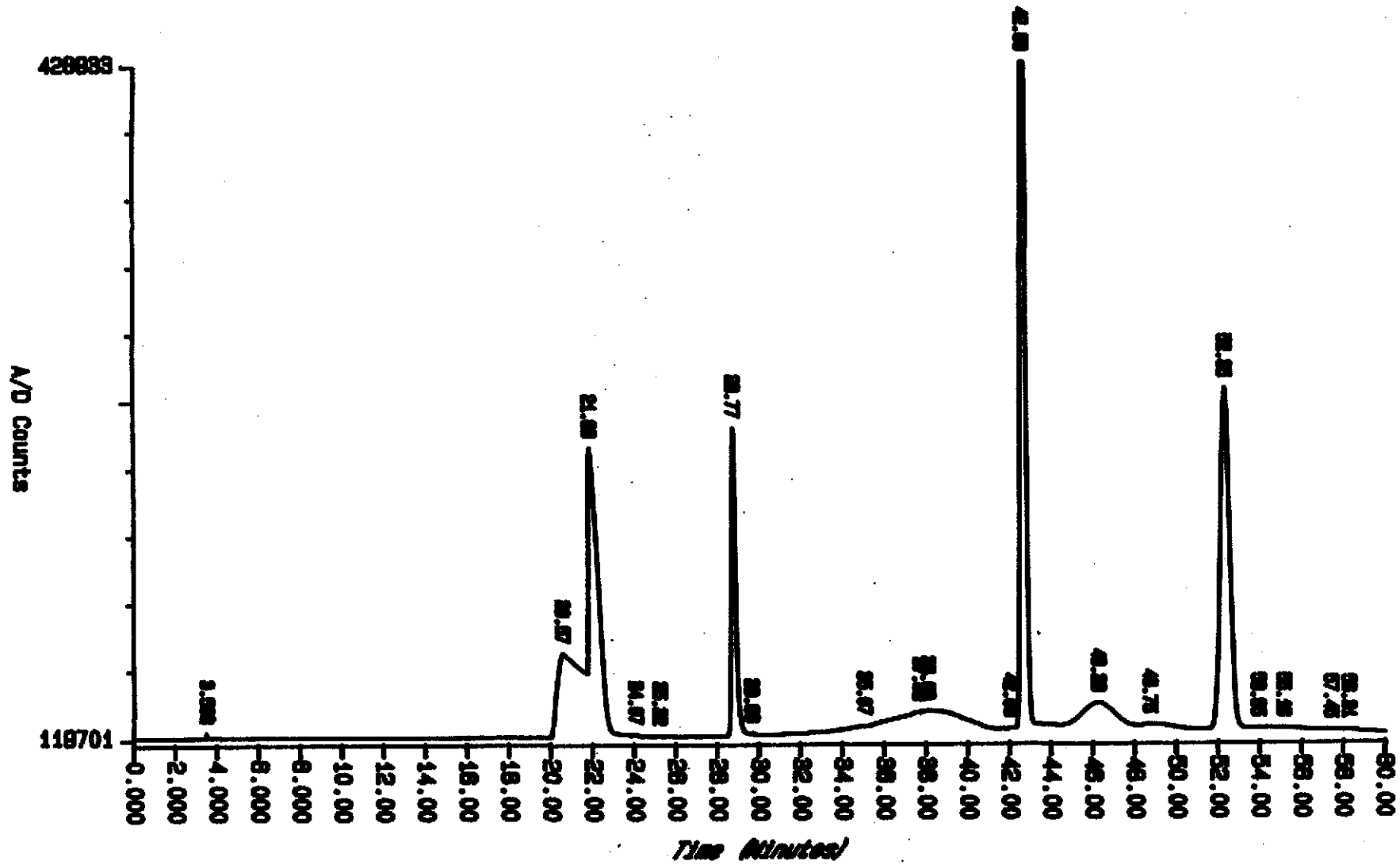
Sample: STD10804-025 Injected at 15:53:54 ON JUL 6, 1985
Raw File: RH1303 Proc File: PH1303 Method: EXT250



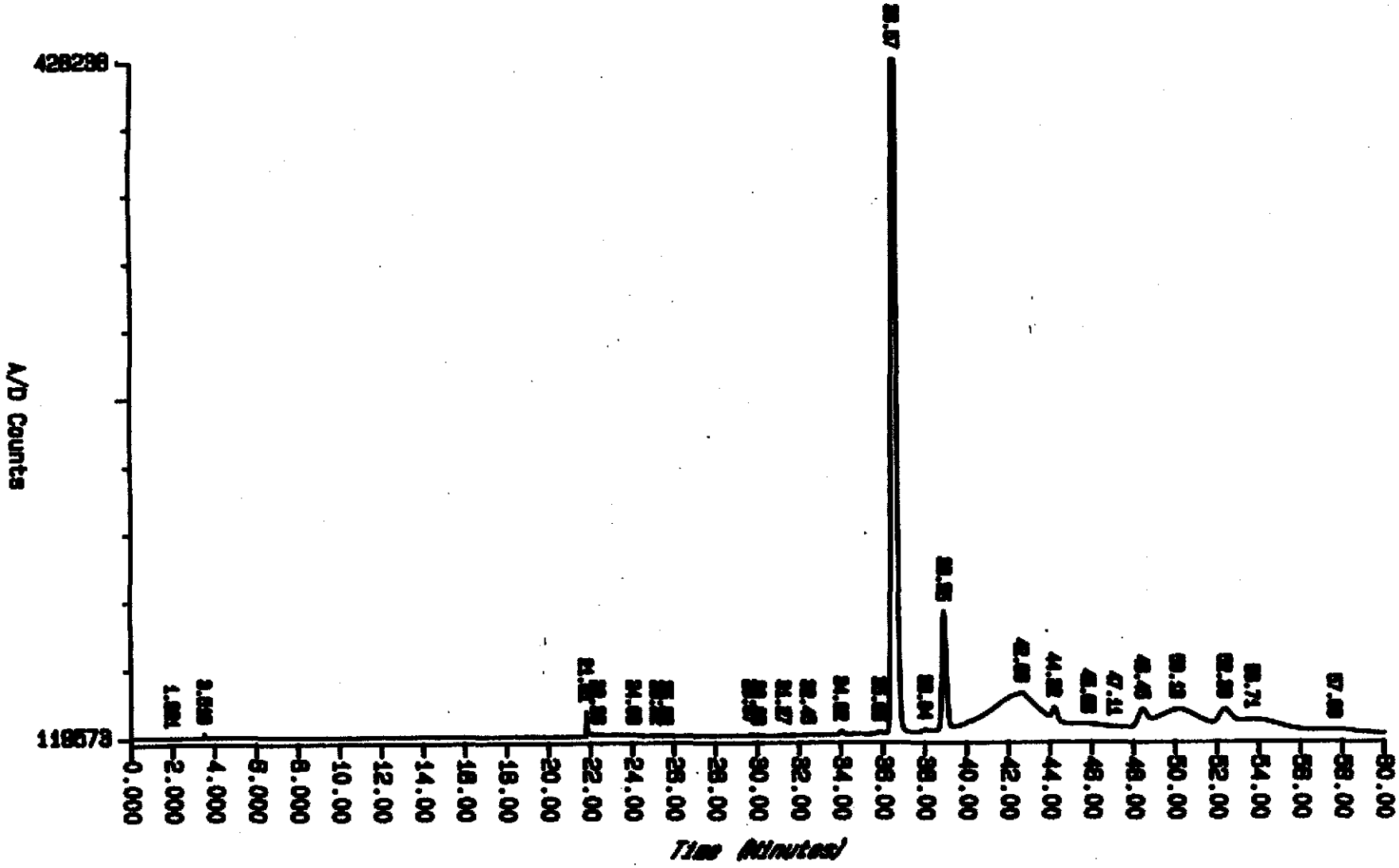
Sample: STD10905-250 Injected at 0:46:04 ON JUL 7, 1985
Raw File: RH1311 Proc File: PH1311 Method: EXT250



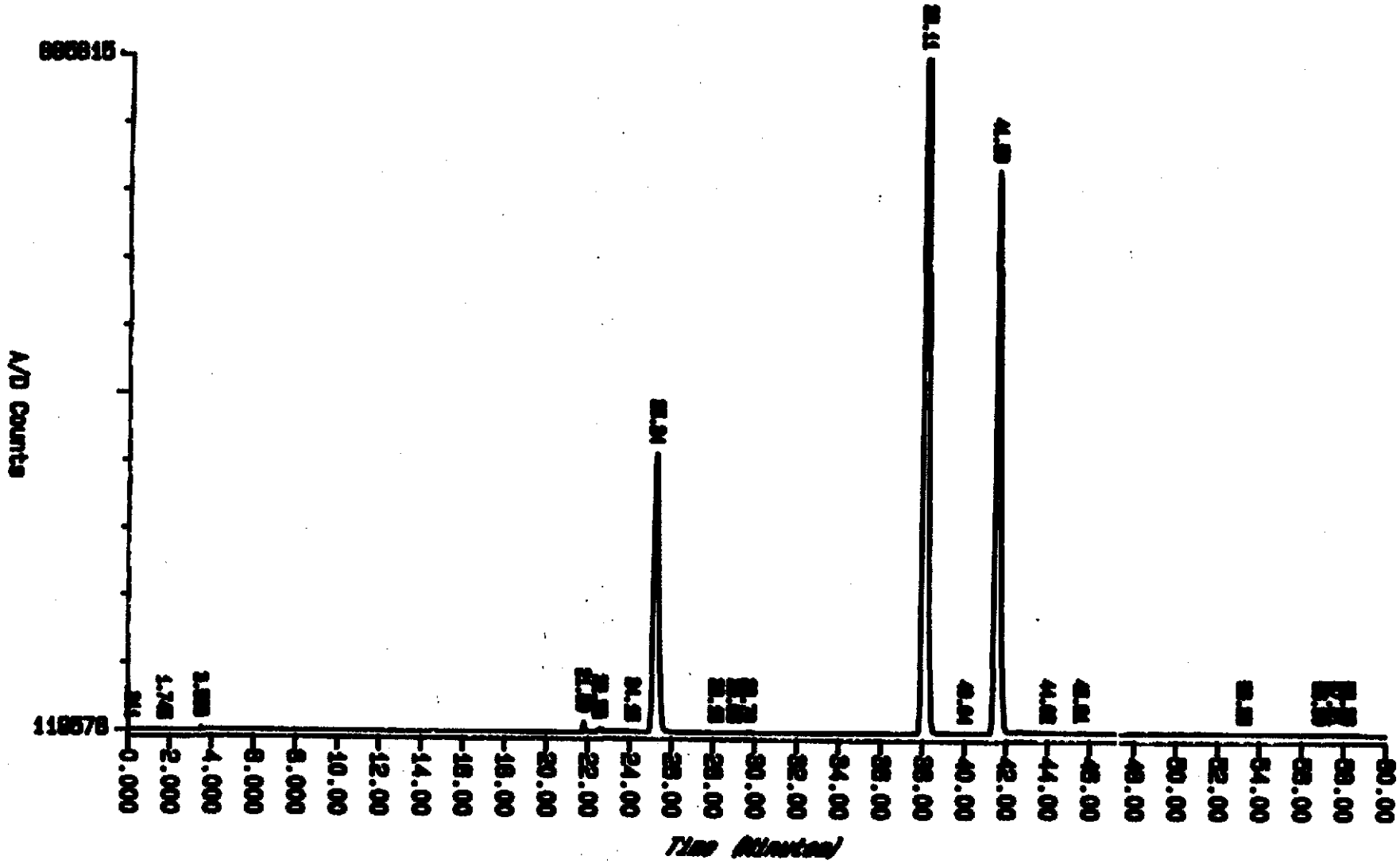
Sample: STD10906-250 Injected at 1:52:34 ON JUL 7, 1985
Raw File: RH1312 Proc File: PH1312 Method: EXT250



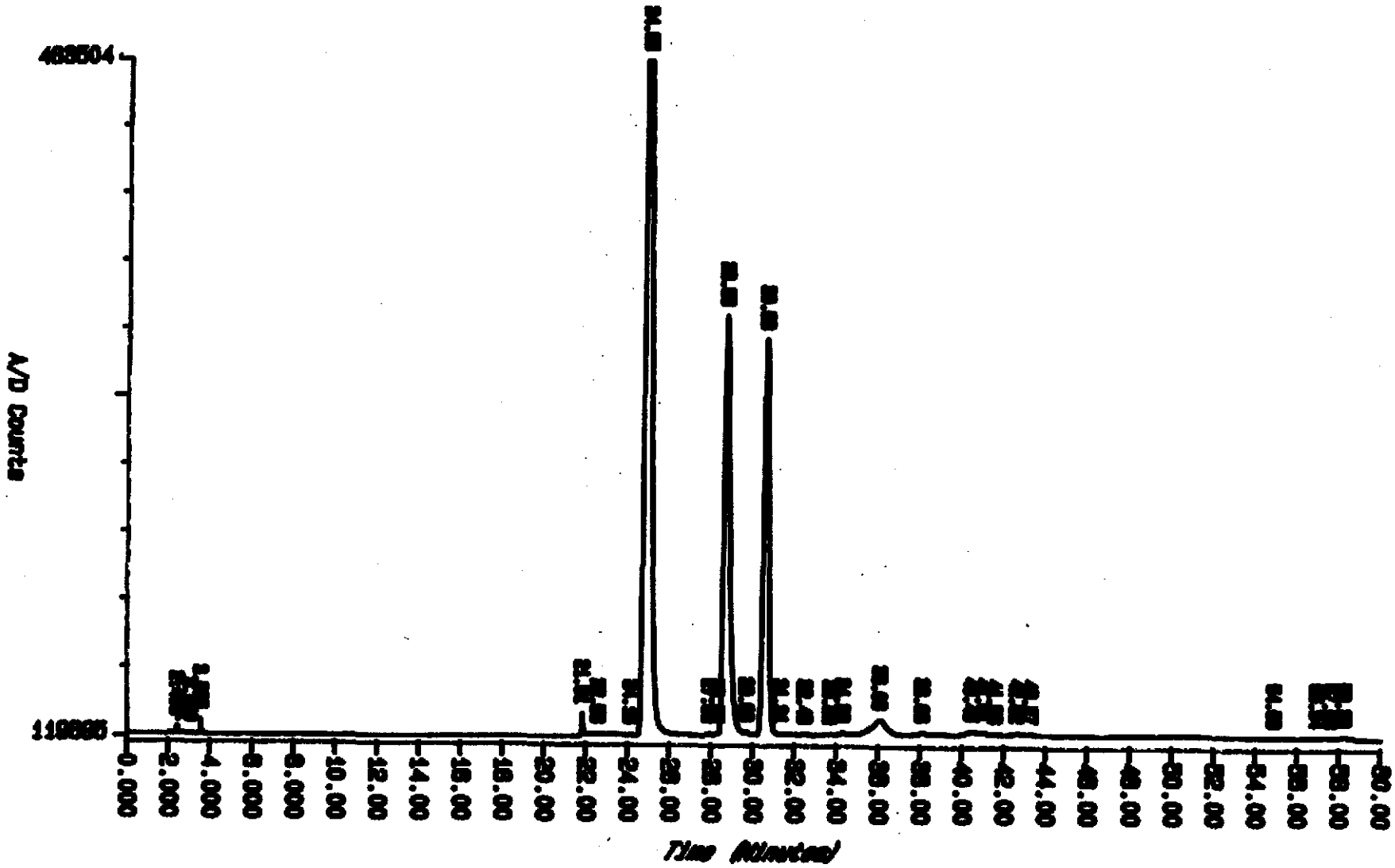
Sample: STD10907-250 Injected at 2:59:05 ON JUL 7, 1985
Raw File: RH1313 Proc File: PH1313 Method: EXT250



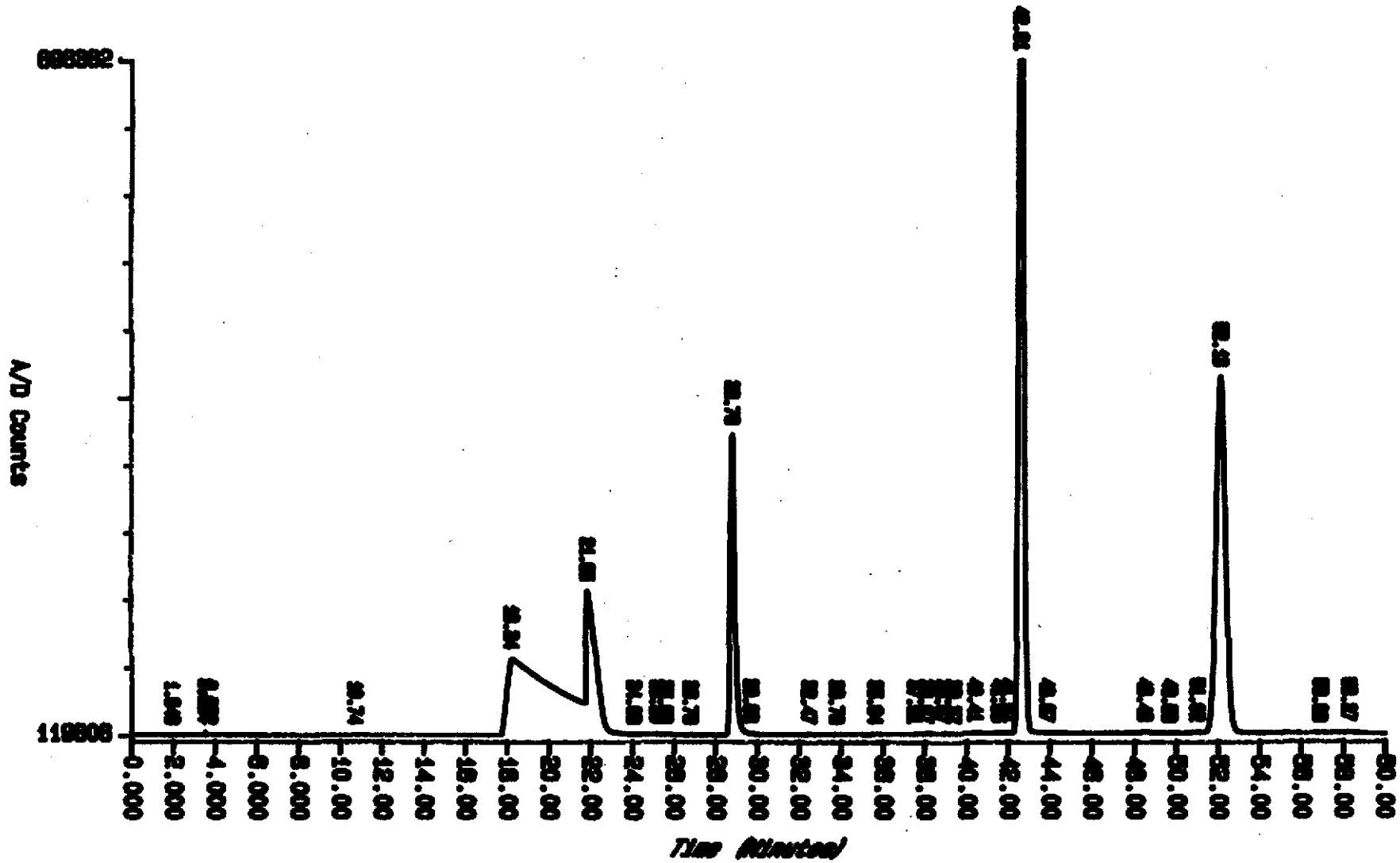
Sample: STD10908-250 Injected at 4:05:35 ON JUL 7, 1985
Raw File: RH1314 Proc File: PH1314 Method: EXT250



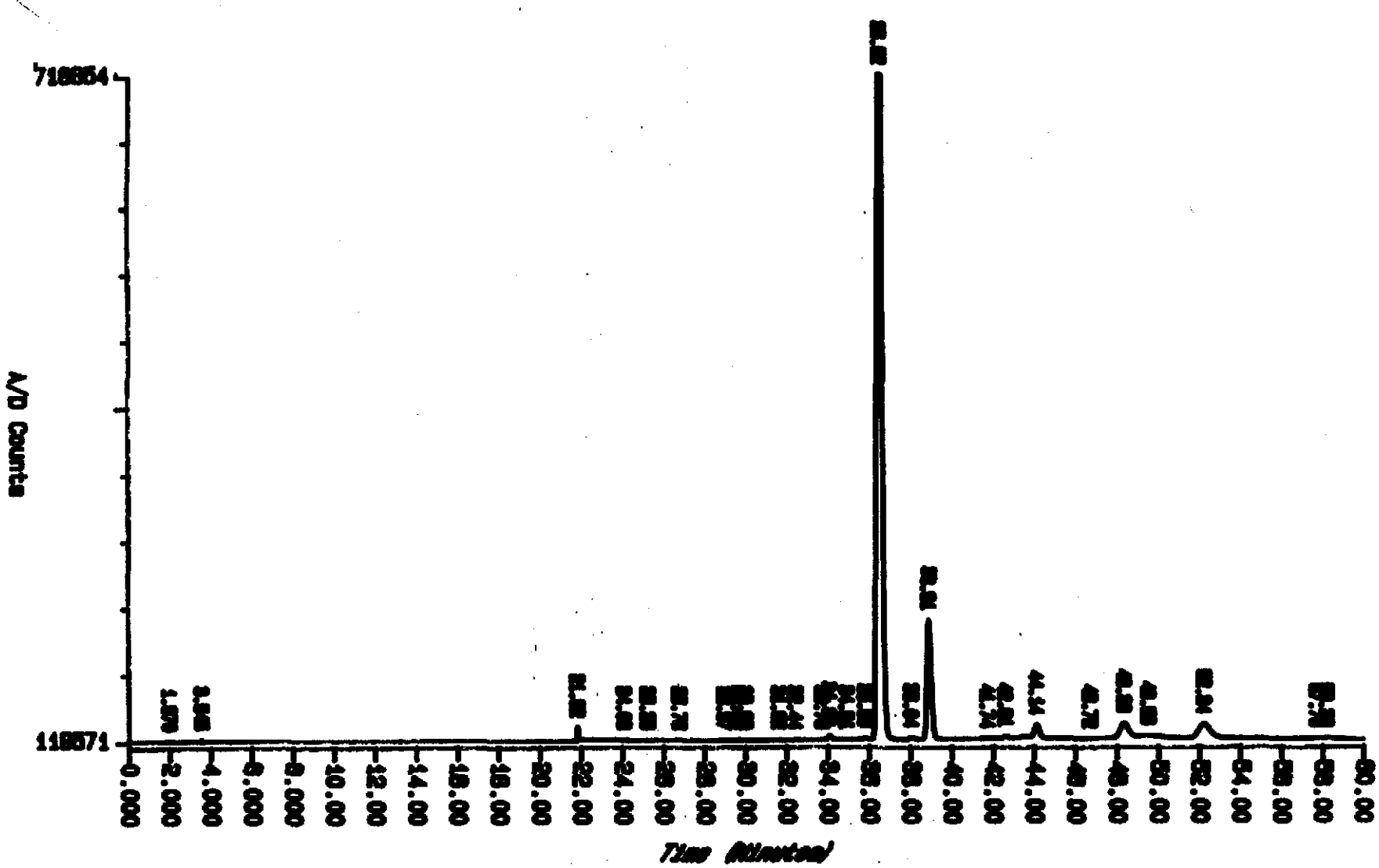
Sample: STD10908-500 Injected at 13:38:45 ON JUL 7, 1985
Raw File: RH1320 Proc File: PH1320 Method: EXT250



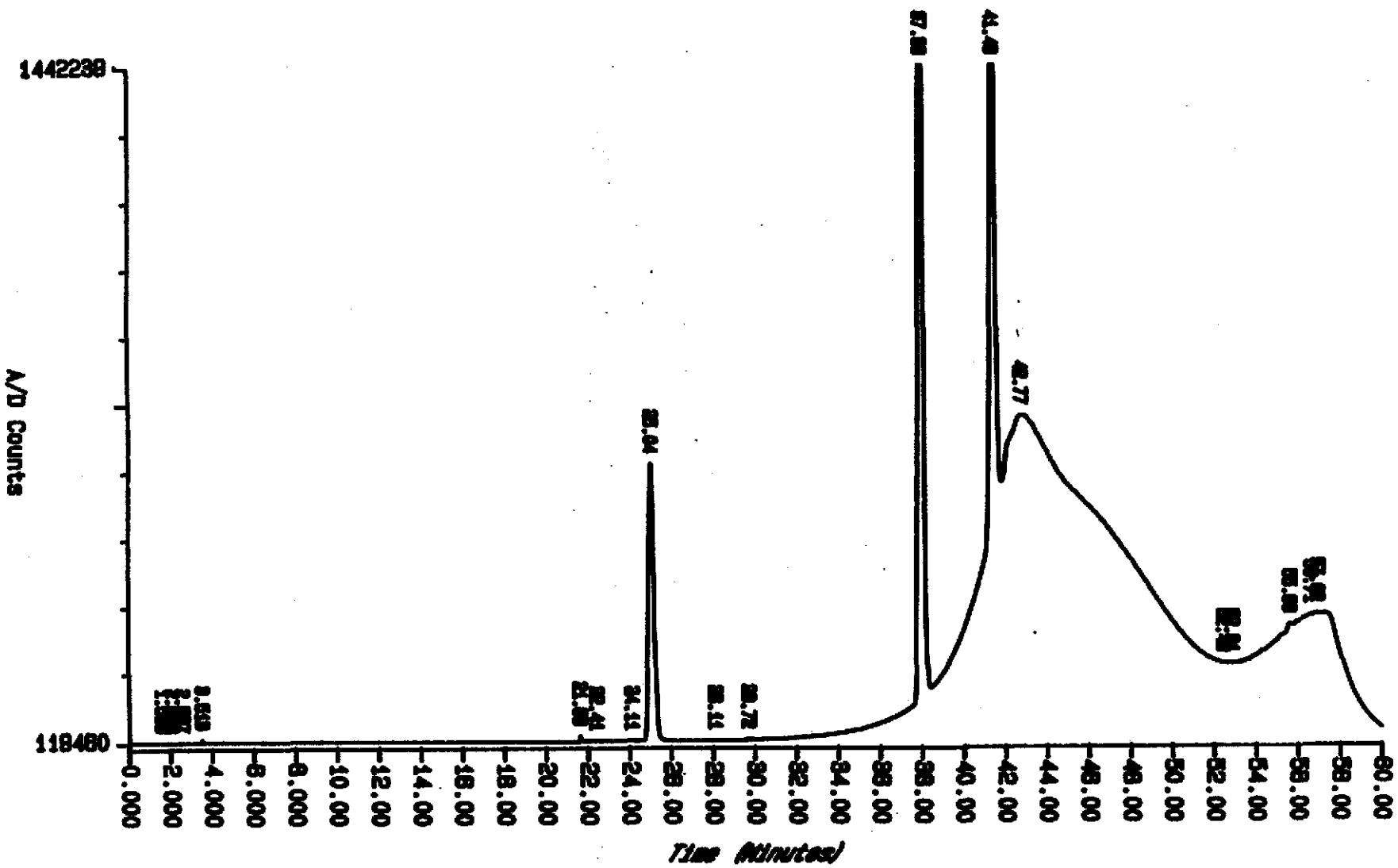
Sample: STD10910-500 Injected at 14:43:18 ON JUL 7, 1985
Raw File: RH1321 Proc File: PH1321 Method: EXT250



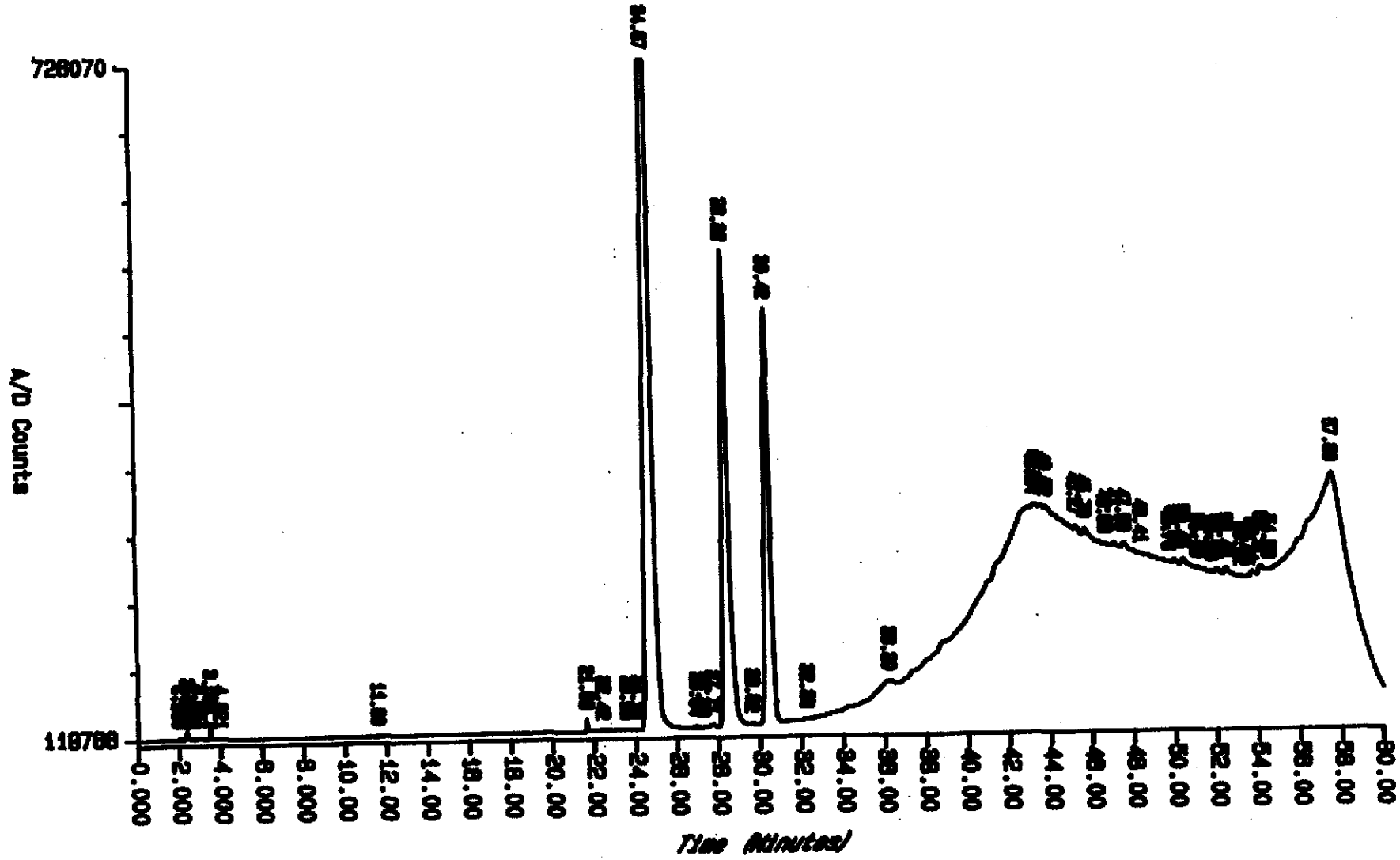
Sample: STD10B11-500 Injected at 15:49:48 ON JUL 7, 1985
Raw File: RH1322 Proc File: PH1322 Method: EXT250



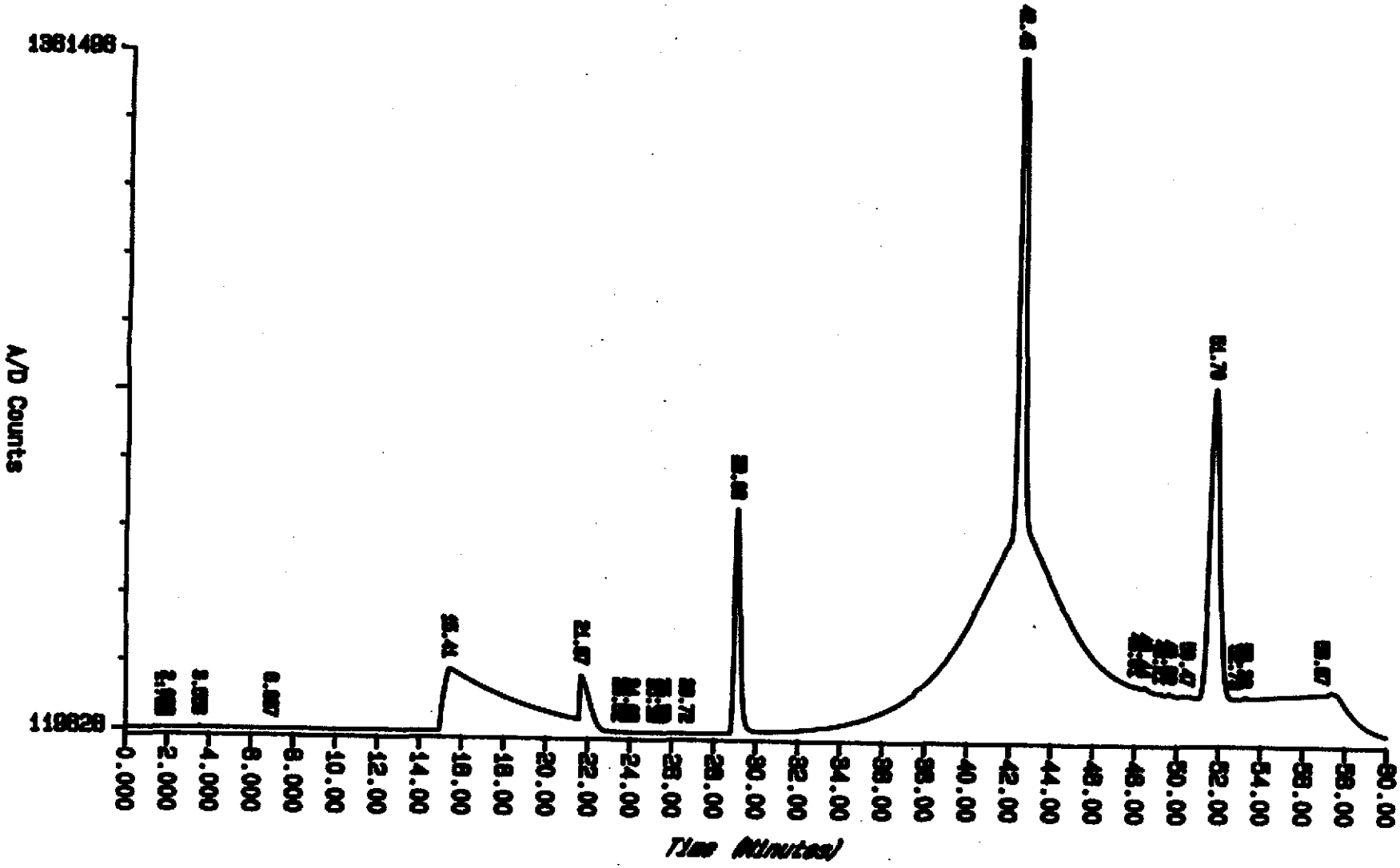
Sample: STD10812-500 Injected at 18:58:18 ON JUL 7, 1985
Raw File: RH1323 Proc File: PH1323 Method: EXT250



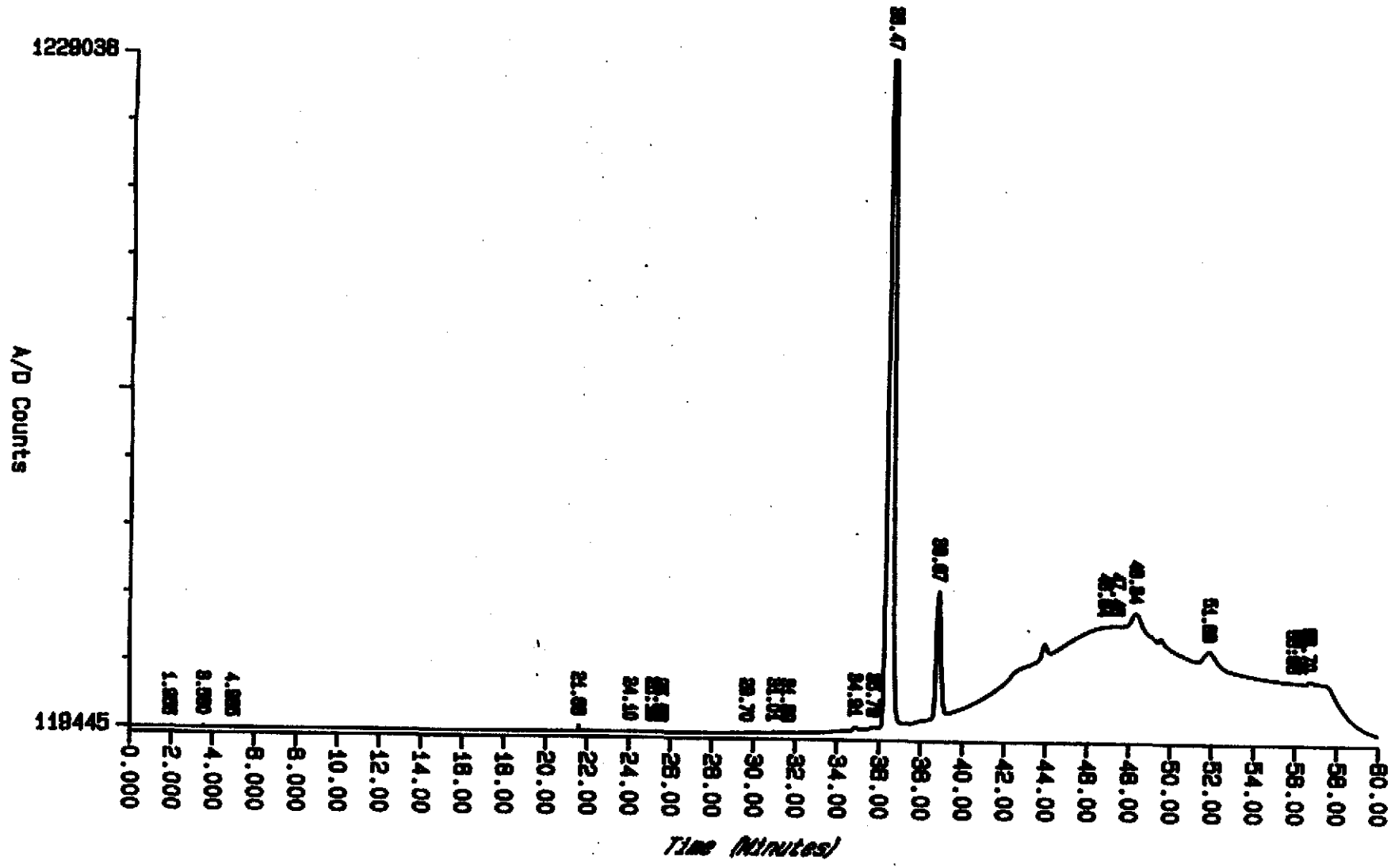
Sample: ST10897-1000 Injected at 14:39:58 ON JUL 8, 1985
Raw File: RH1331 Proc File: PH1331 Method: EXT250



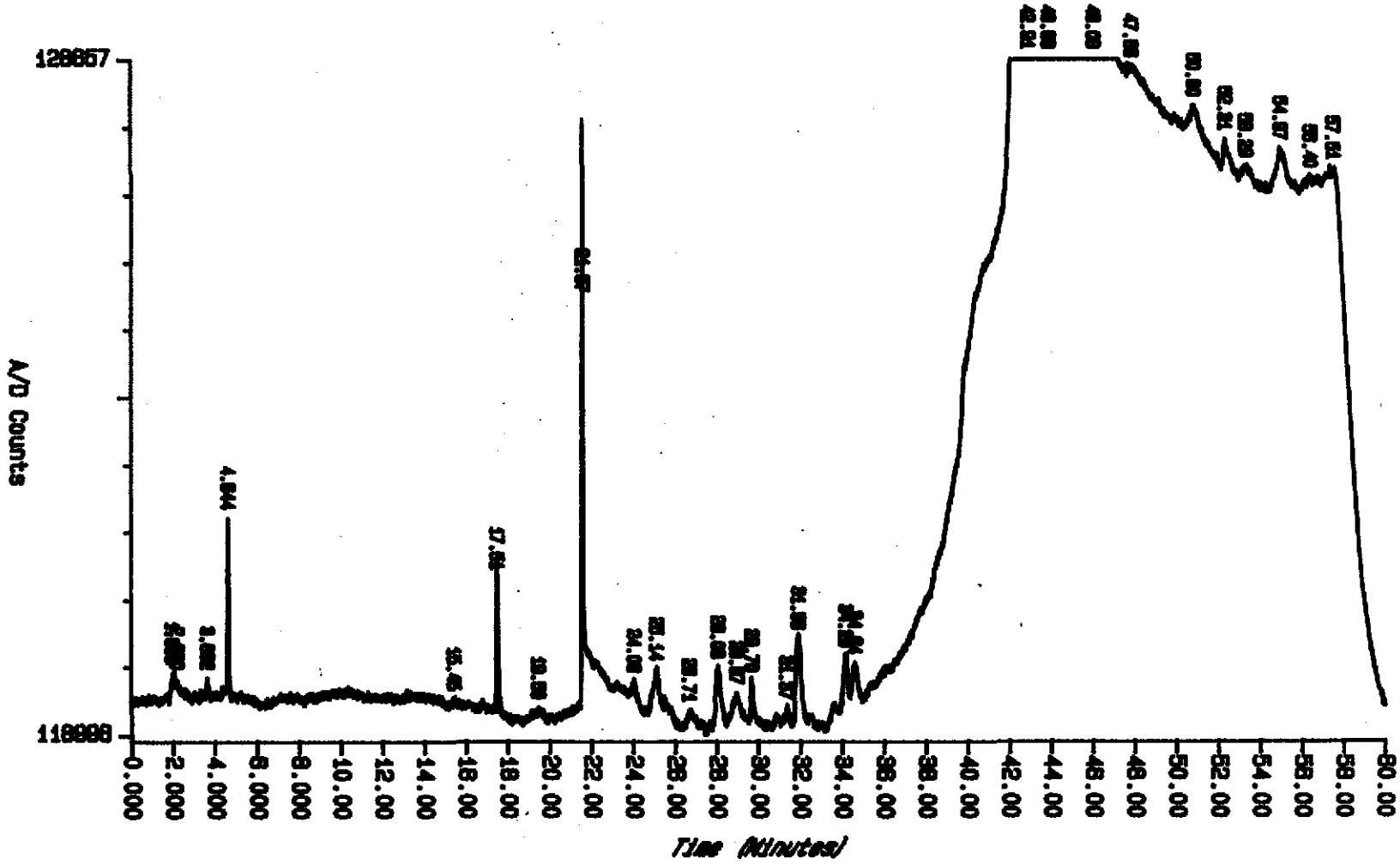
Sample: ST10898-1000 Injected at 15:46:29 ON JUL 8, 1985
Raw File: RH1332 Proc File: PH1332 Method: EXT250



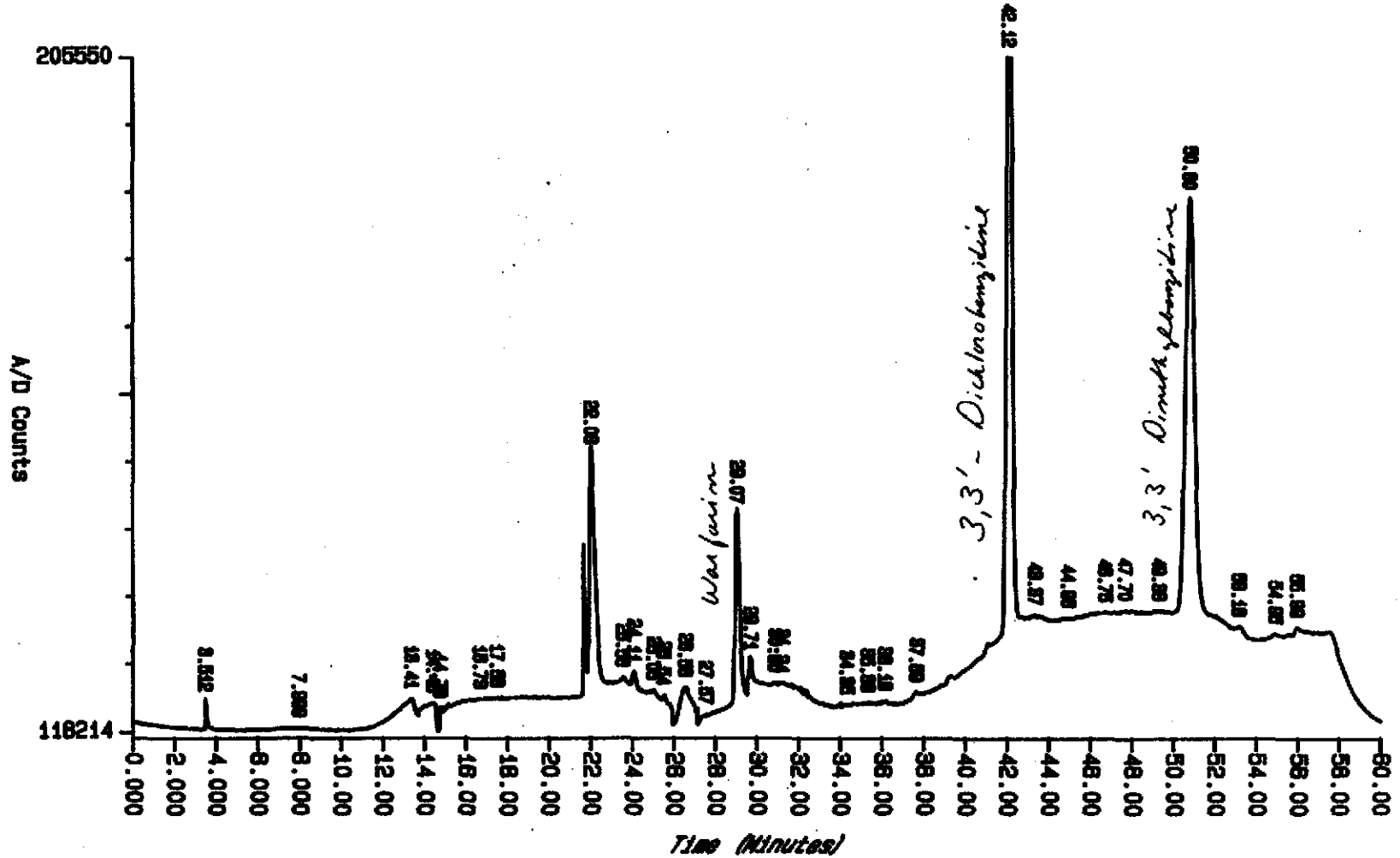
Sample: STD1088-1000 Injected at 16:53:02 ON JUL 8, 1985
Raw File: RH1333 Proc File: PH1333 Method: EXT250



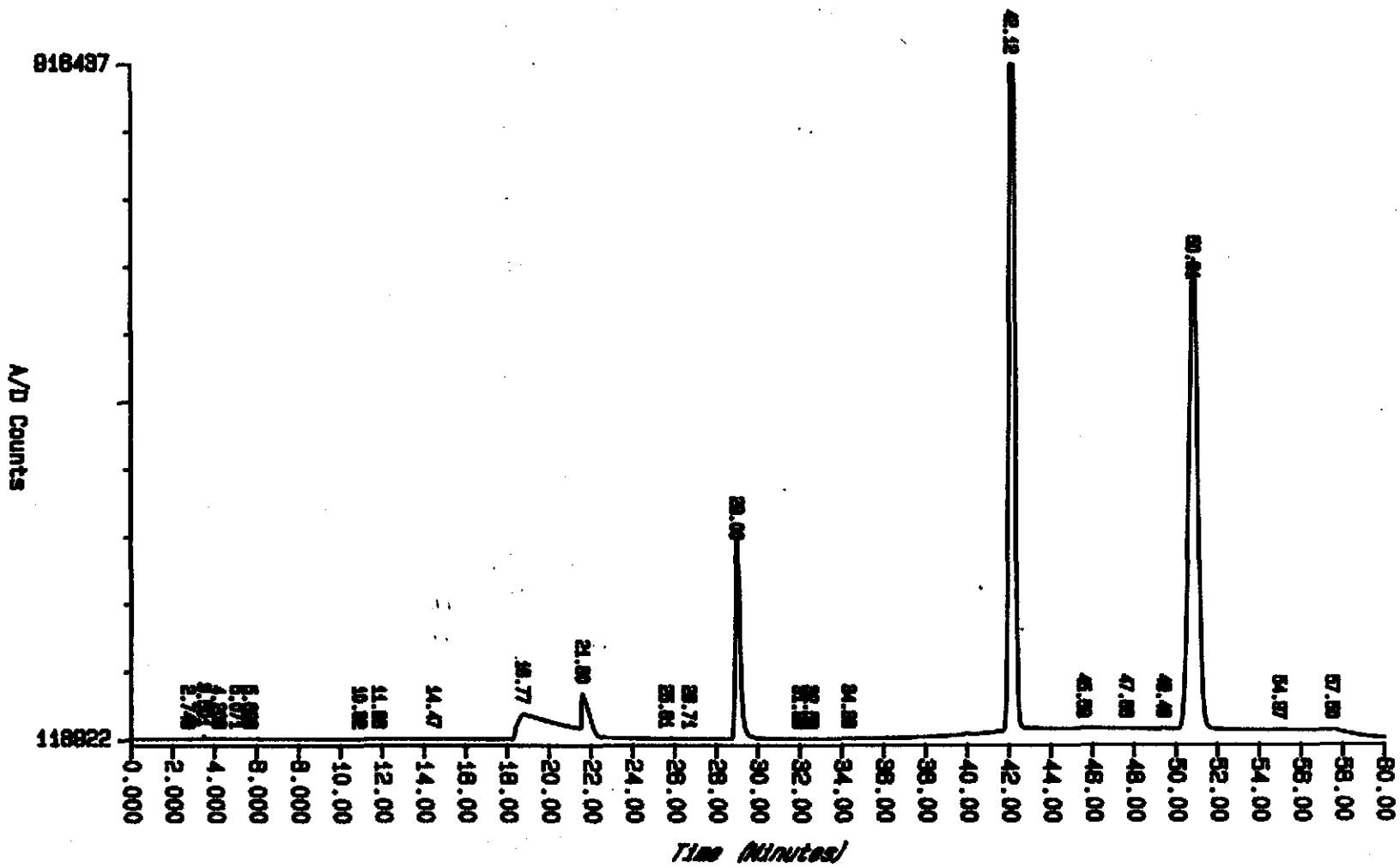
Sample: ST10900-1000 Injected at 17:59:32 ON JUL 8, 1985
Raw File: RH1334 Proc File: PH1334 Method: EXT250



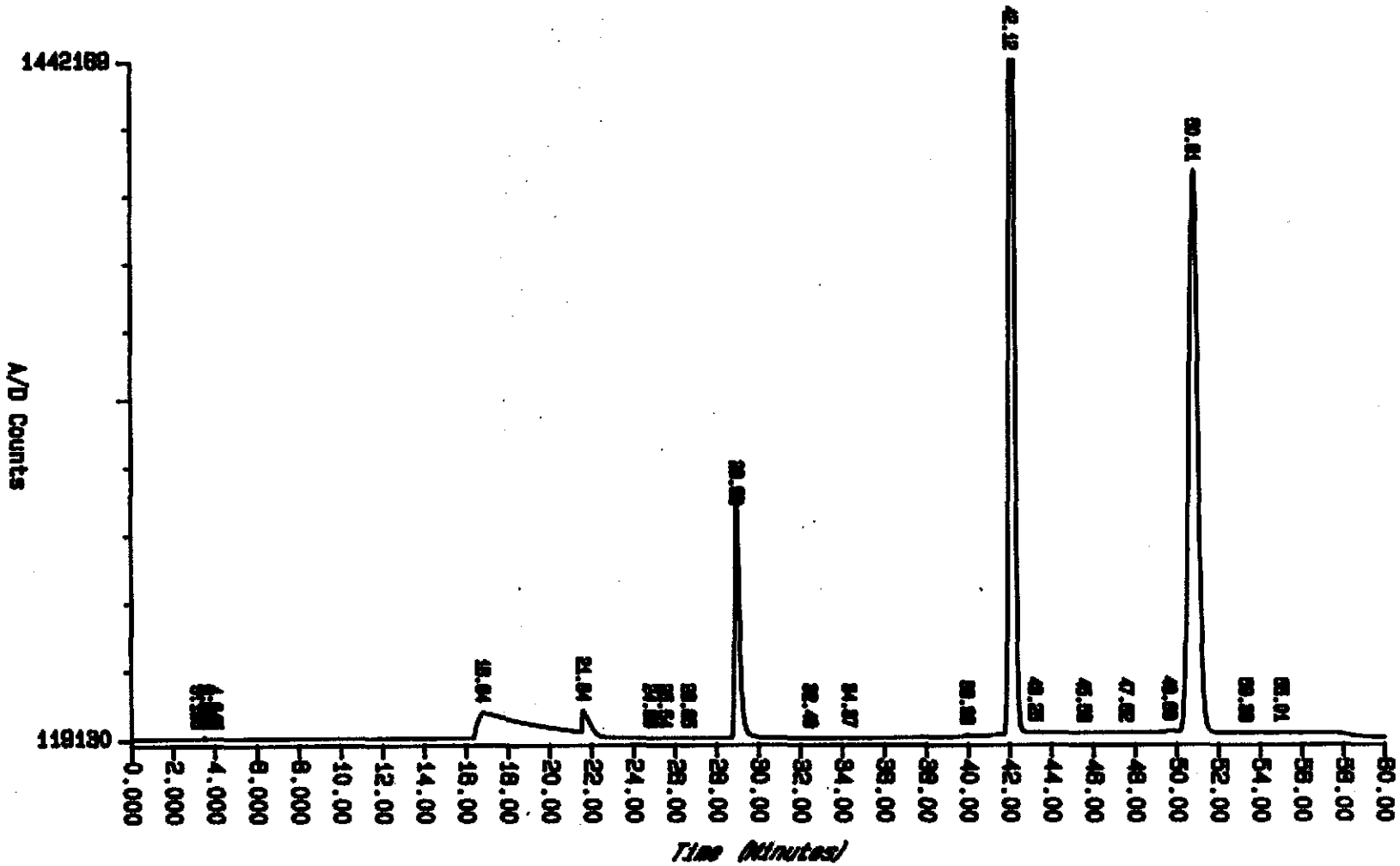
Sample: H6067 Injected at 18:09:00 ON JUL 10, 1985
Raw File: RH1502 Proc File: PH1502 Method: EXT280



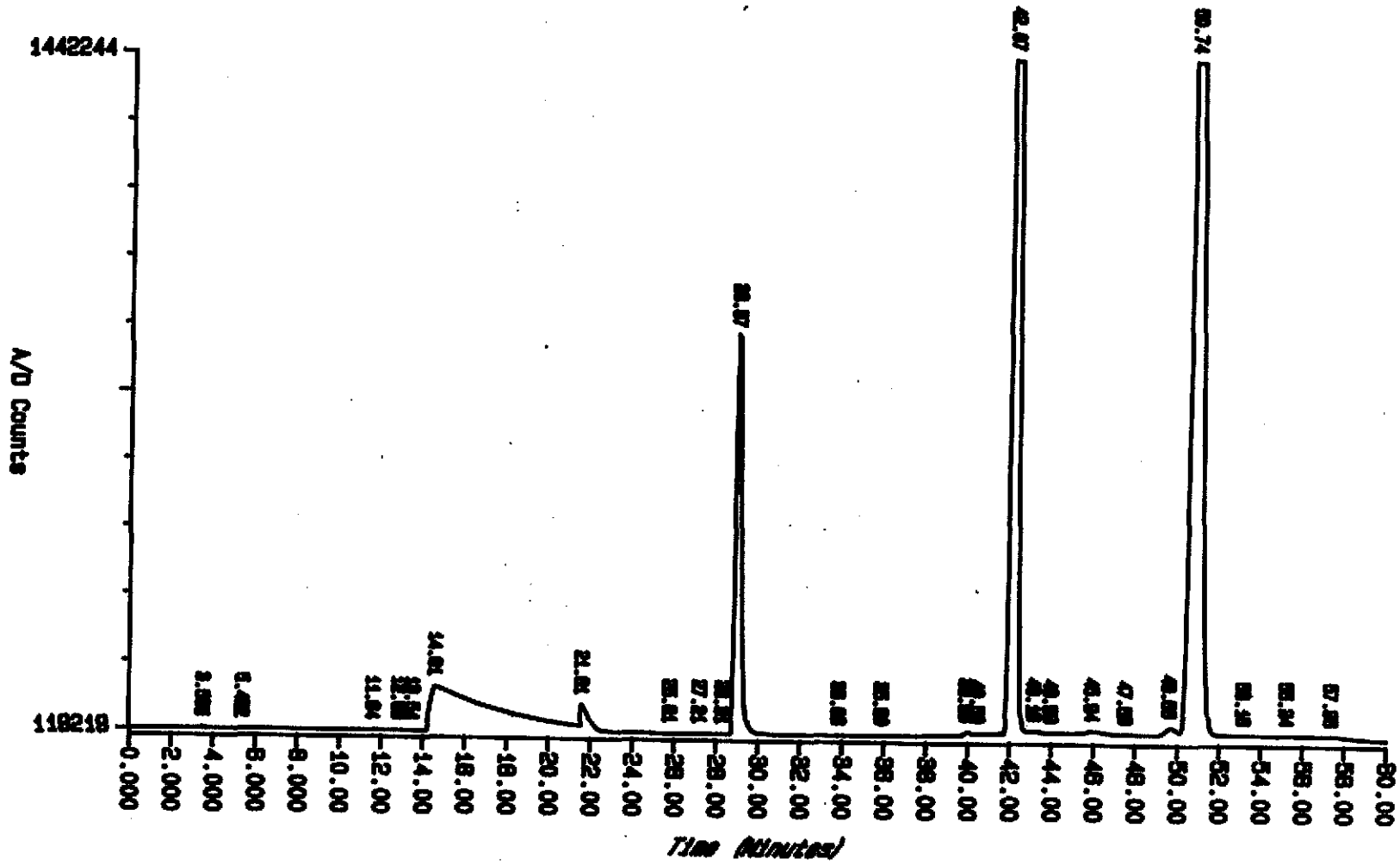
Sample: STD10903-025 Injected at 15:55:59 ON JUL 10, 1985
Raw File: RH1500 Proc File: PH1500 Method: EXT280



Sample: STD10907-250 Injected at 17:02:30 ON JUL 10, 1985
Raw File: RH1501 Proc File: PH1501 Method: EXT280



Sample: STD10911-500 Injected at 19:15:30 ON JUL 10, 1985
Raw File: RH1503 Proc File: PH1503 Method: EXT280



Sample: STD10899-100 Injected at 20:22:00 ON JUL 10, 1985
Raw File: RH1504 Proc File: PH1504 Method: EXT280

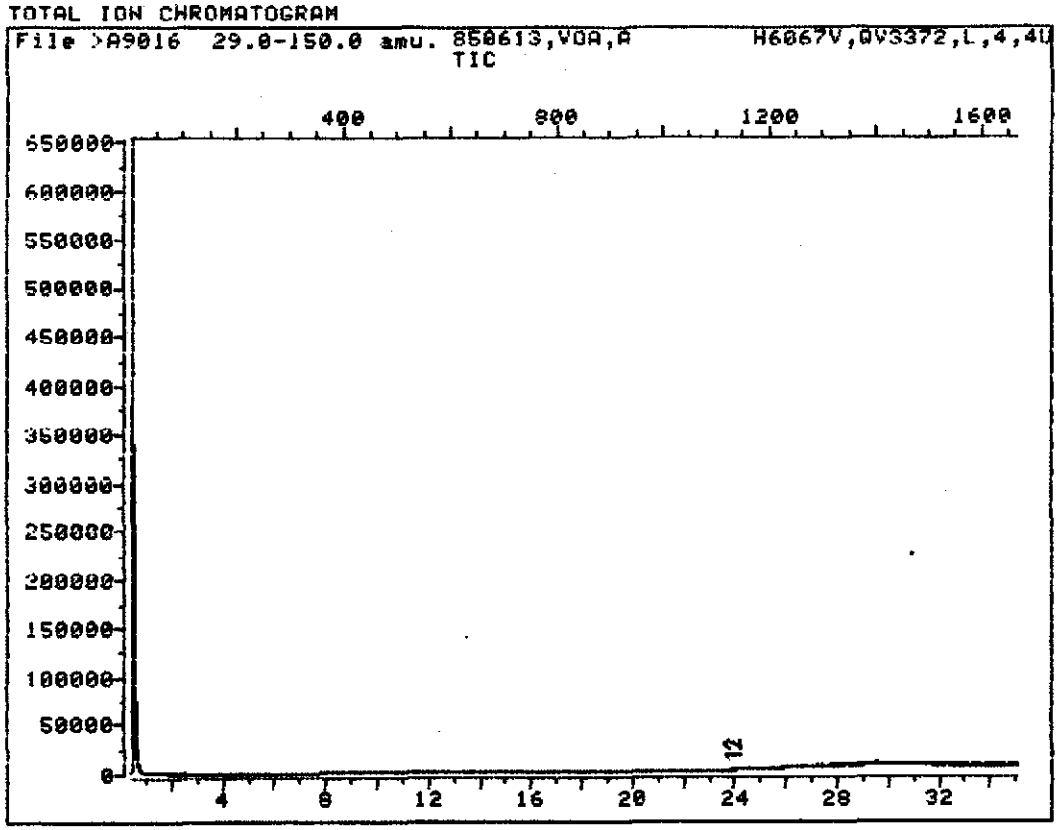
Appendix A

Mass Spectral Data for Quantitated Compounds

1) A total ion chromatogram for each sample analyzed by a GC/MS instrument.

2) A mass spectrum and a reference spectrum for each priority pollutant compound detected in the sample.

TOTAL ION CHROMATOGRAM



Data File: >A9016::U3
Name: 850613,VOA,A
Misc: H6067V,QV3372,L,4,4UL INJECTED AP8DAI

Id File: AAP8DI
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850613 04:11

Operator ID: LA2639
Quant Time: 850613 06:39
Injected at: 850613 05:59

QUANT REPORT

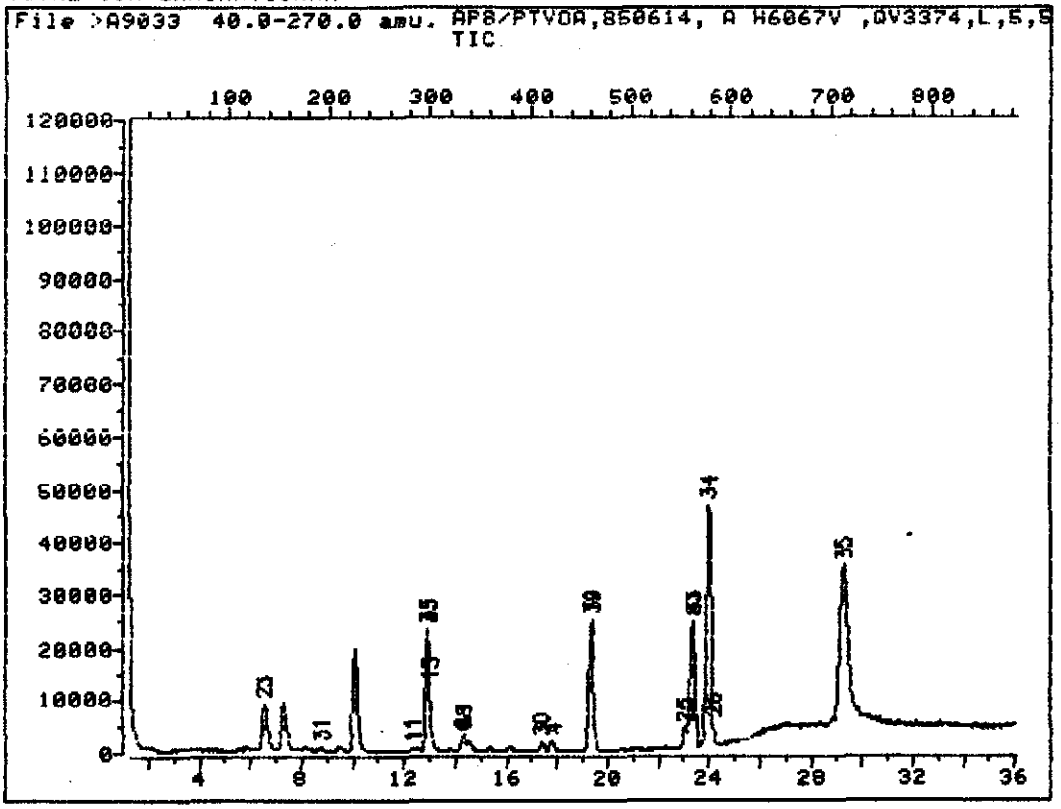
Operator ID: LA2639 Quant Rev: 4 Quant Time: 850613 06:39
Output File: ^A9016::AQ Injected at: 850613 05:59
Data File: >A9016::U3 Dilution Factor: 1.00
Name: 850613,VOA,A
Misc: H6067V,QV3372,L,4,4UL INJECTED AP8DAI

ID File: AAP8DI
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850613 04:11

Compound	R.T.	Scan#	Area	Conc	Units	q
12) #N-Proplamine	23.92	1131	1213	~~8.48~~ NG 2		100

Compound uses ESTD

TOTAL ION CHROMATOGRAM



Data File: >A9033::U3
Name: AP8/PTVOA,850614, A
Misc: H6067V ,QV3374,L,5,5,AP8 VOA FRACTION

Id File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850613 23:45

Operator ID: JA4996
Quant Time: 850614 03:51
Injected at: 850614 03:15

QUANT REPORT

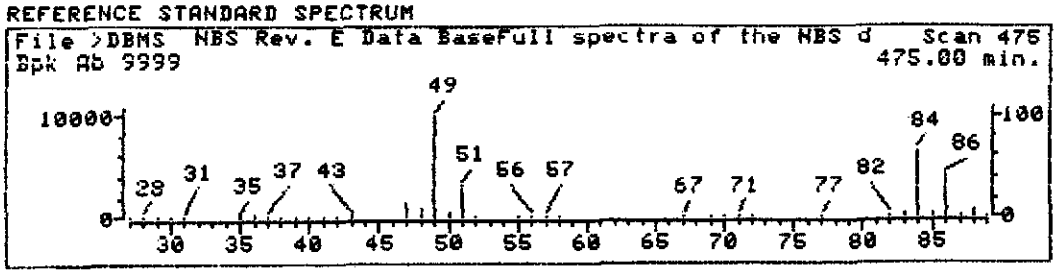
Operator ID: JA4996 Quant Rev: 4 Quant Time: 850614 03:51
Output File: ^A9033::AQ Injected at: 850614 03:15
Data File: >A9033::U3 Dilution Factor: 1.00
Name: AP8/PTVOA,850614, A
Misc: H6067V ,QV3374,L,5,5,AP8 VOA FRACTION

ID File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, 1
Last Calibration: 850613 23:45

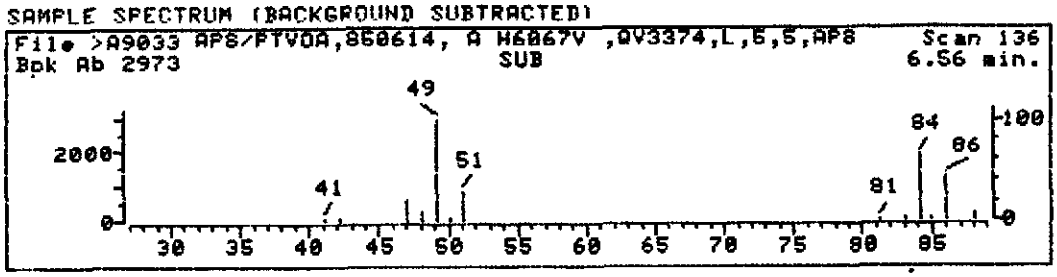
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*2-Bromo-1-chloropropane	19.38	461	76654	200.00	NG	97
4)	Benzene	17.84	422	3777	~~3.32~~	~~NG~~	86
6)	Carbon tetrachloride	14.29	332	1105	~~3.78~~	~~NG~~	94
11)	Chloroform	12.36	283	2120	~~5.91~~	~~NG~~	72
15)	1,2-Dichloroethane	13.03	300	3092	~~8.98~~	~~NG~~	78
23)	Methylene chloride	6.56	136	24521	70.94	NG 57	98
25)	Tetrachloroethylene	23.05	554	6232	7.49	NG	86
26)	Toluene	24.19	583	3249	~~3.64~~	NG	89
28)	1,1,1-Trichloroethane	14.33	333	10076	~~24.42~~	~~NG~~	94
30)	Trichloroethylene	17.41	411	3446	13.79	NG	97
31)	Trichlorofluoromethane	8.77	192	3548	~~6.75~~	~~NG~~	94
[illegible])	1,2-Dichloroethane-D4	12.95	298	44049	280.74	NG	89
[illegible])	Toluene-D8	24.00	578	214290	259.64	NG	89
35)	p-Bromofluorobenzene	29.25	711	87262	289.63	NG	99
39)	1,2-Dibromoethane	19.38	461	4281	~~13.18~~	~~NG~~	71
41)	1,4-Dichloro-2-butene	23.36	562	6287	~~22.20~~	~~NG~~	100
45)	Methyl-ethyl-ketone	12.95	298	3501	~~60.38~~	~~NG~~	69
53)	*1,4-Dichlorobutane	23.36	562	115063	200.00	NG	96

* Compound is ISTD

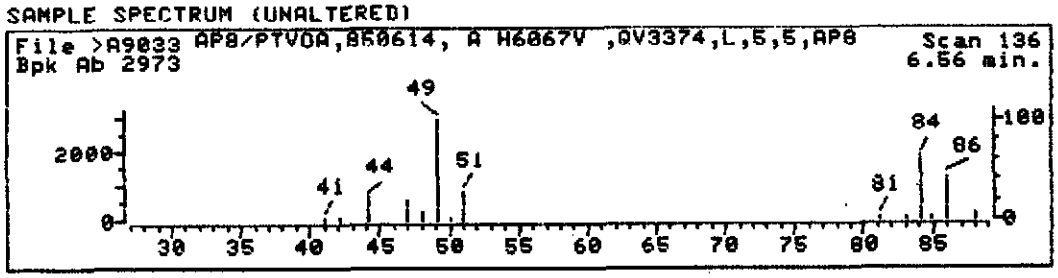
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



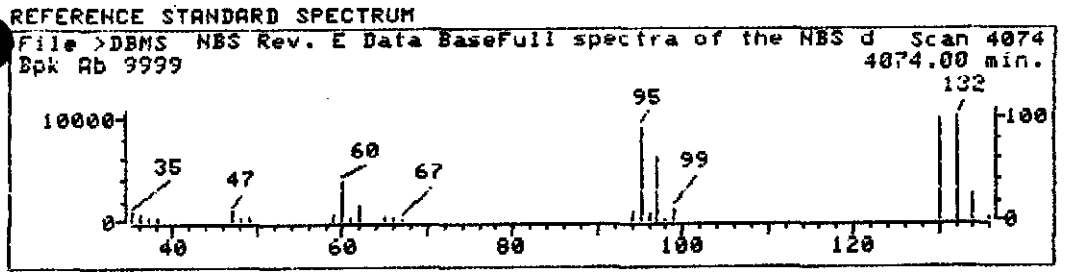
SAMPLE SPECTRUM (UNALTERED)



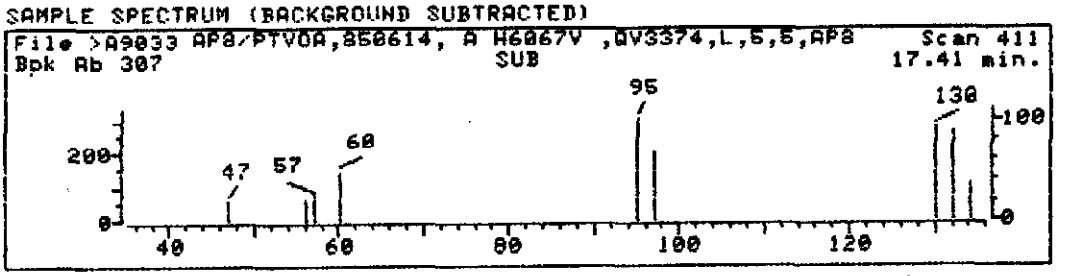
Data File: >A9033::U3
Name: AP8/PTVOA,850614, A
Misc: H6067V ,QV3374,L,5,5,AP8 VOA FRACTION
Quant Time: 850614 03:51
Injected at: 850614 03:15

Compound No: 23
Compound Name: Methylene chloride
Scan Number: 136
Retention Time: 6.56 min.
Area: 24521
Concentration: 70.94 NG
q-value: 98

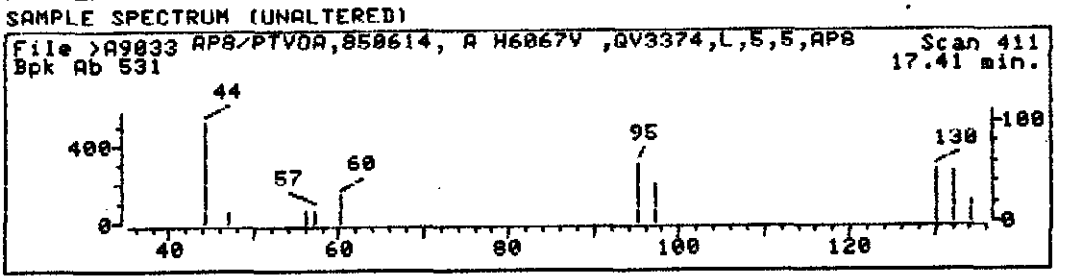
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



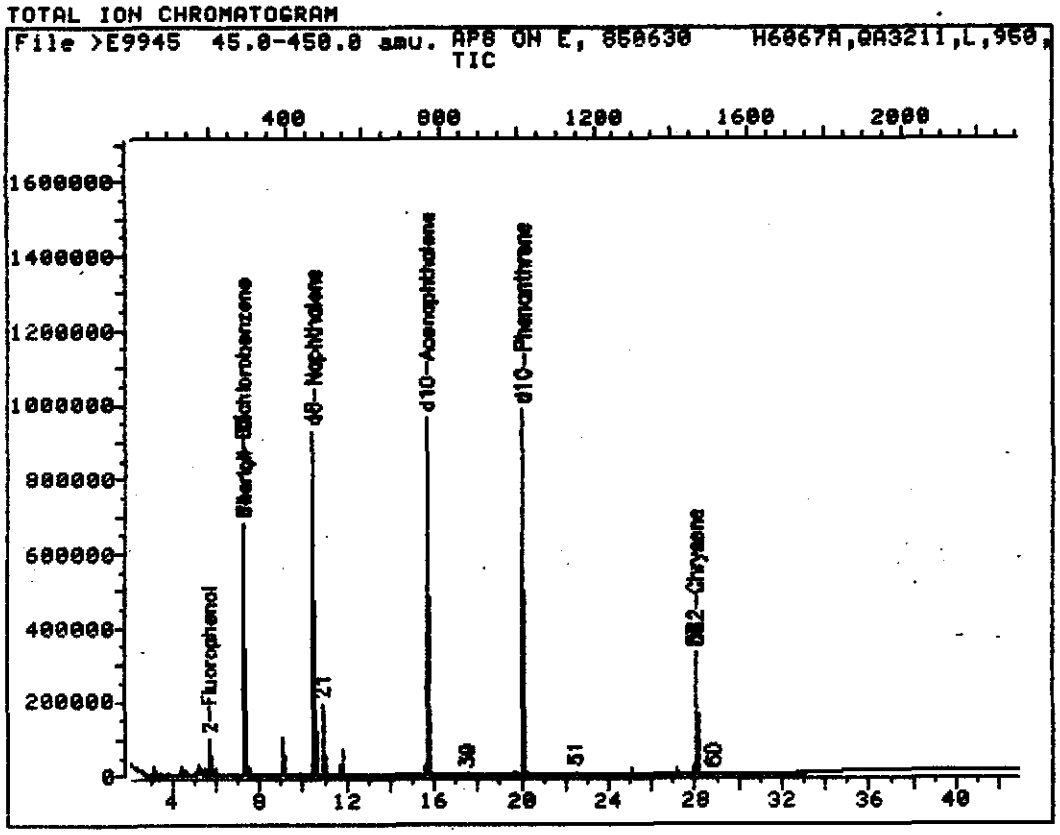
SAMPLE SPECTRUM (UNALTERED)



Data File: >A9033::U3
Name: AP8/PTVOA,850614, A
Misc: H6067V ,QV3374,L,5,5,AP8 VOA FRACTION
Quant Time: 850614 03:51
Injected at: 850614 03:15

Compound No: 30
Compound Name: Trichloroethylene
Scan Number: 411
Retention Time: 17.41 min.
Area: 3446
Concentration: 13.79 NG
q-value: 97

TOTAL ION CHROMATOGRAM



Data File: >E9945::U4
Name: AP8 ON E, 850630
Misc: H6067A,QA3211,L,950,1

BTL#36

Id File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

Operator ID: TM0576
Quant Time: 850701 20:24
Injected at: 850701 19:39

QUANT REPORT

Operator ID: TM0576
Output File: ^E9945::AQ
Data File: >E9945::U4
Name: AP8 ON E, 850630
Misc: H6067A,QA3211,L,950,1

Quant Rev: 4
Quant Time: 850701 20:24
Injected at: 850701 19:39
Dilution Factor: 1.00

BTL#36

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.27	289	359488	40.00	UG/ML	91
10)	2-Fluorophenol	5.68	199	31010	4.65	UG/ML	100
12)	Phenol-D5	7.27	289	2040	.24	UG/ML	84
13)	*d8-Naphthalene	10.46	470	956750	40.00	UG/ML	94
21)	Naphthalene	10.91	495	6004	.27	UG/ML	97
28)	*d10-Acenaphthalene	15.66	764	560739	40.00	UG/ML	96
39)	Diethyl phthalate	17.46	866	2019	.10	UG/ML	95
45)	*d10-Phenanthrene	20.04	1012	1187389	40.00	UG/ML	99
51)	Di-n-butyl phthalate	22.41	1146	13574	.45	UG/ML	98
54)	*D12-Chrysene	27.99	1462	339235	40.00	UG/ML	97
57)	Benzo(a)anthracene	27.99	1462	751	.10	UG/ML	100
58)	Chrysene	27.99	1462	751	.08	UG/ML	100
60)	bis(2-Ethylhexyl)phthalate	28.80	1508	1162	.13	UG/ML	87

* Compound is ISTD

QUANT REPORT

Operator ID: TM0576
Output File: EE9945::AQ
Data File: >E9945::U4
Name: AP8 ON E, 850630
Misc: H6067A,QA3211,L,950,1

Quant Rev: 4
Quant Time: 850702 11:23
Injected at: 850701 19:39
Dilution Factor: 1.00

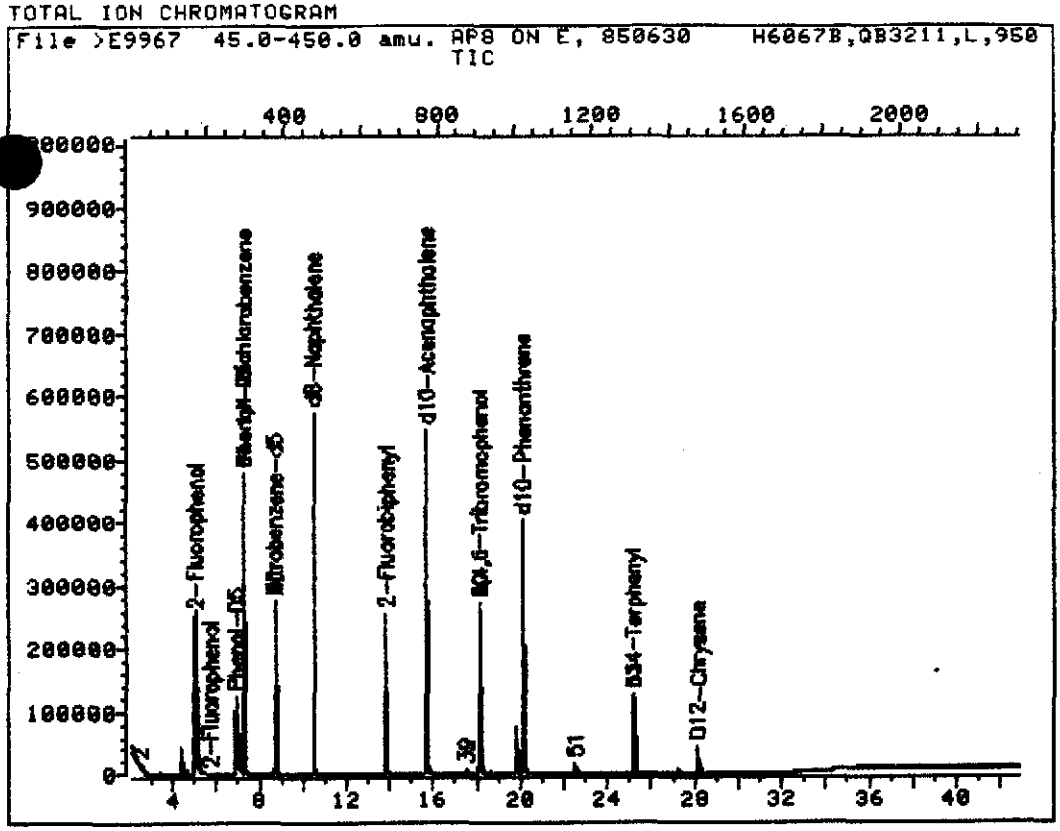
BTL#36

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.27	289	359488	40.00	UG/ML	91
16)	*d8-Naphthalene	10.46	470	956750	40.00	UG/ML	94
25)	p-Chloroaniline	10.91	495	11566	~~1.97~~	UG/ML	49
29)	*d10-Acenaphthalene	15.66	764	560739	40.00	UG/ML	97
46)	*d10-Phenanthrene	20.04	1012	1187389	40.00	UG/ML	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >E9967::U5
Name: AP8 ON E, 850630
Misc: H6067B,QB3211,L,950 ,1

BTL#58

Id File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

Operator ID: TM0576
Quant Time: 850702 19:23
Injected at: 850702 18:38

QUANT REPORT

Operator ID: TM0576 Quant Rev: 4 Quant Time: 850702 19:23
Output File: ^E9967::AQ Injected at: 850702 18:38
Data File: >E9967::U5 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: H6067B,QB3211,L,950 ,1 BTL#58

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.24	292	246582	40.00	UG/ML	92
2)	N-Nitrosodimethylamine	2.47	22	745	~~.31~~	UG/ML	100
7)	Nitrobenzene-d5	8.66	372	204293	36.77	UG/ML	94
10)	2-Fluorophenol	5.00	165	250130	54.66	UG/ML +5	100
10)	2-Fluorophenol	5.69	204	1033	~~.23~~	UG/ML	100
12)	Phenol-D5	6.87	271	192277	32.42	UG/ML	99
12)	Phenol-D5	7.24	292	2837	~~.48~~	UG/ML	77
13)	*d8-Naphthalene	10.44	473	566999	40.00	UG/ML	95
14)	2-Fluorobiphenyl	13.80	663	202512	30.91	UG/ML	98
15)	N-Nitrosodi-n-propylamine	8.66	372	30718	~~7.29~~	UG/ML	60
28)	*d10-Acenaphthalene	15.67	769	296136	40.00	UG/ML	95
39)	Diethyl phthalate	17.51	873	5013	~~.47~~	UG/ML	95
40)	Fluorene	18.11	907	5080	~~.54~~	UG/ML	91
42)	2,4,6-Tribromophenol	18.11	907	104393	46.81	UG/ML	91
45)	*d10-Phenanthrene	20.07	1018	446330	40.00	UG/ML	97
51)	Di-n-butyl phthalate	22.49	1155	23980	~~2.10~~	UG/ML	97
53)	Benzidine	25.14	1305	1566	~~3.86~~	UG/ML	100
54)	*D12-Chrysene	28.12	1474	60581	~~40.00~~	UG/ML	99
68)	d14-Terphenyl	25.14	1305	135685	47.89	UG/ML	100

* Compound is ISTD

QUANT REPORT

Operator ID: TM0576
Output File: EE9967::AQ
Data File: >E9967::U5
Name: AP8 ON E, 850630
Misc: H6067B,QB3211,L,950 ,1

Quant Rev: 4
Quant Time: 850702 22:22
Injected at: 850702 18:38
Dilution Factor: 1.00

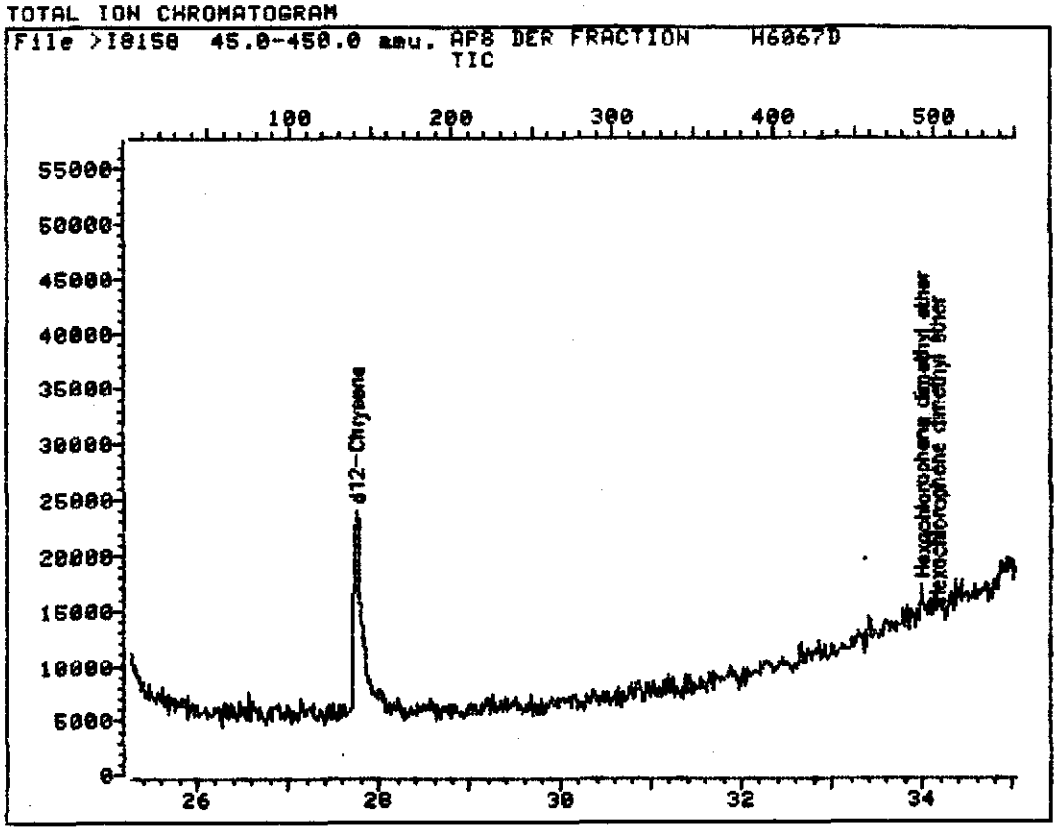
BTL#58

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.24	292	246582	40.00	UG/ML	92
16)	*d8-Naphthalene	10.44	473	566999	40.00	UG/ML	95
29)	*d10-Acenaphthalene	15.67	769	296136	40.00	UG/ML	96
46)	*d10-Phenanthrene	20.07	1018	446330	40.00	UG/ML	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >I8158::U5
Name: AP8 DER FRACTION
Misc: H6067D

BTL#22

Id File: IAP8DE
Title: AP8 DEV ON I
Last Calibration: 850701 15:00

Operator ID: TM0576
Quant Time: 850702 03:29
Injected at: 850702 02:52

QUANT REPORT

Operator ID: TM0576
Output File: ^I8158::AQ
Data File: >I8158::U5
Name: APB DER FRACTION
Misc: H6067D

Quant Rev: 4
Quant Time: 850702 03:29
Injected at: 850702 02:52
Dilution Factor: 1.00

BTL #22

ID File: IAP8DE
Title: APB DEV ON I
Last Calibration: 850701 15:00

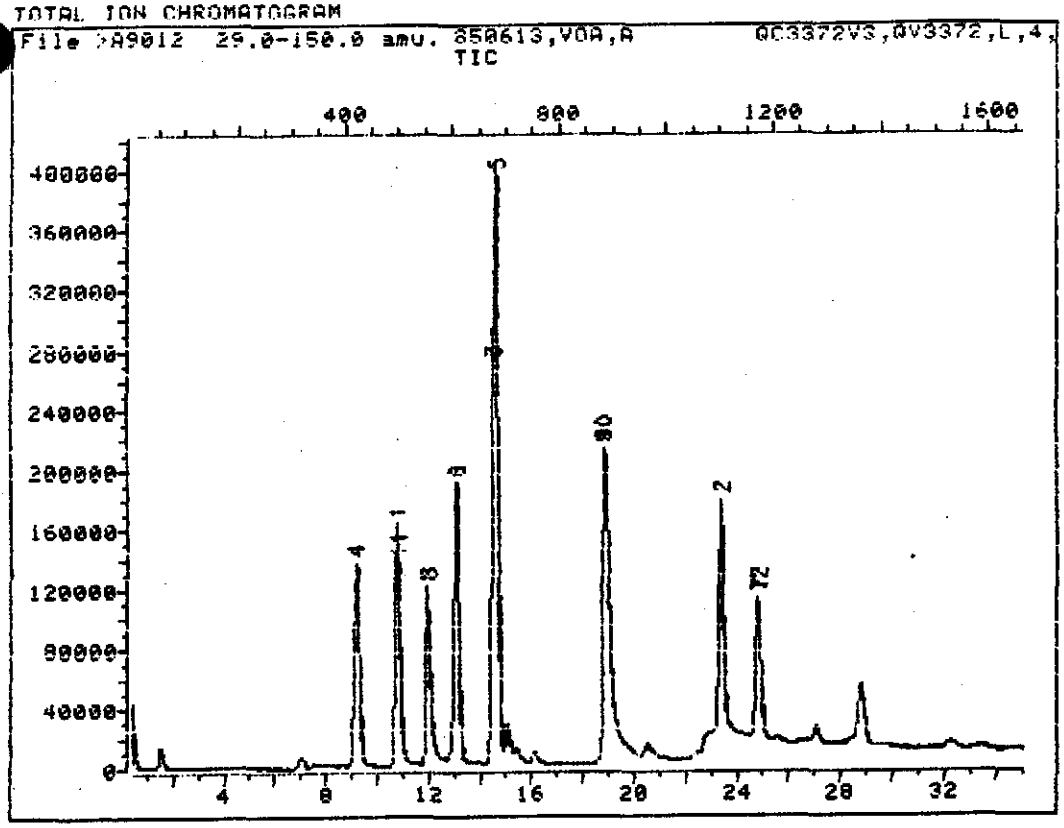
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d12-Chrysene	27.75	141	46072	40.00	UG/ML	92
2)	Hexachlorophene dimethyl ether	33.99	491	116	.42	UG/ML	86
2)	Hexachlorophene dimethyl ether	34.16	501	103	.37	UG/ML	82

* Compound is ISTD

Appendix C1

GC/MS Subsidiary Data

TOTAL ION CHROMATOGRAM



Data File: >A9012::U3
Name: 850613,VOA,A
Misc: QC3372VS,QV3372,L,4,,4UL AP8DAI STD INJECTED

Id File: AAP8D1
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850613 04:11

Operator ID: LA2639
Quant Time: 850613 04:12
Injected at: 850613 02:36

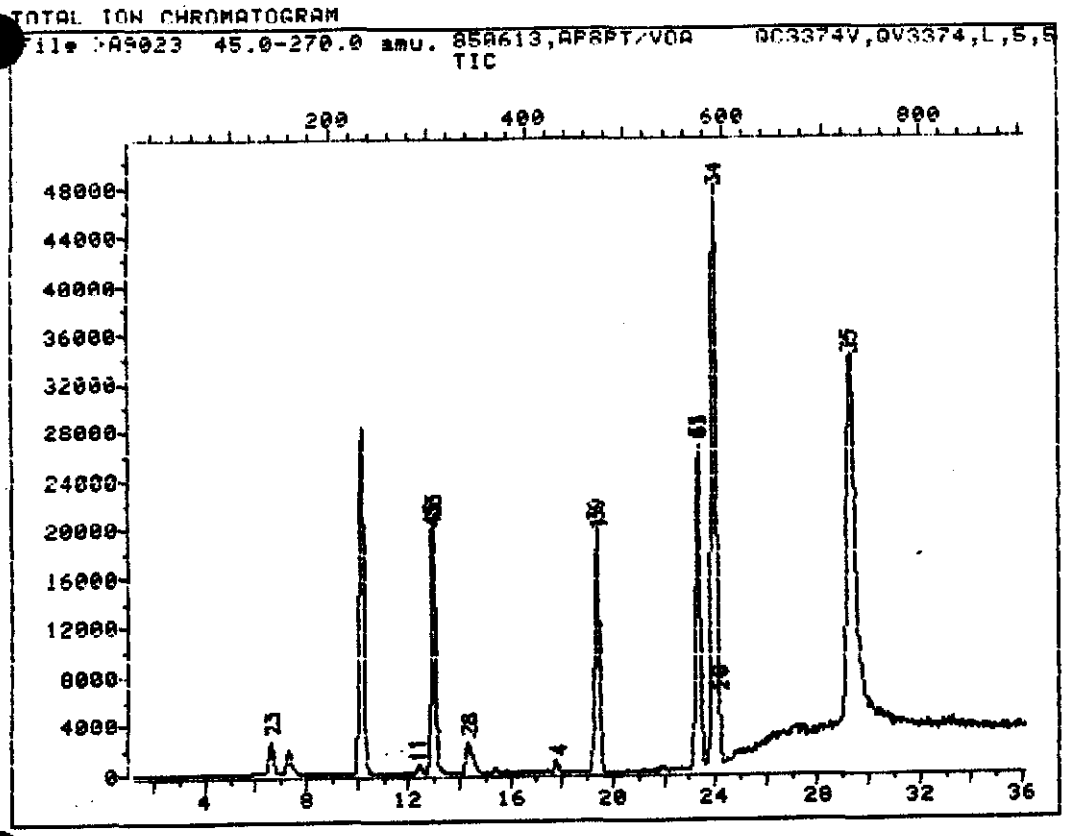
QUANT REPORT

Operator ID: LA2639 Quant Rev: 4 Quant Time: 850613 04:12
Output File: ^A9012::AQ Injected at: 850613 02:36
Data File: >A9012::U3 Dilution Factor: 1.00
Name: 850613,VOA,A
Misc: QC3372VS,QV3372,L,4,,4UL AP8DAI STD INJECTED

ID File: AAP8DI
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850613 04:11

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	#Allyl alcohol	10.75	498	587420	2000.00	NG	90
2)	#2,3-Dichloro-1-propanol	23.36	1103	602477	2000.00	NG	90
3)	#1,4-Dioxane	14.46	676	448032	2000.00	NG	100
4)	#Ethyl cyanide	9.13	420	901061	2000.00	NG	92
5)	#Isobutyl alcohol	14.56	681	1112660	2000.00	NG	94
6)	#Methacrylonitrile	13.06	609	659345	2000.00	NG	94
7)	#N-Nitrosopyrrolidine	24.80	1172	291702	2000.00	NG	100
8)	#2-propyn-1-ol	11.94	555	709834	2000.00	NG	98
9)	#Pyridine	18.77	883	1047587	2000.00	NG	87
10)	#Chloroacetaldehyde	18.79	884	403222	2000.00	NG	86
11)	#1,1-Dimethylhydrazine	10.82	501	46336	2000.00	NG	98
12)	#N-Proplamine	24.80	1172	286231	2000.00	NG	100

Compound uses ESTD



Data File: >A9023::U3
Name: 850613,AP8PT/VOA
Misc: QC3374V,QV3374,L,5,5

Id File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850613 23:45

Operator ID: JA4996
Quant Time: 850613 23:57
Injected at: 850613 17:23

QUANT REPORT

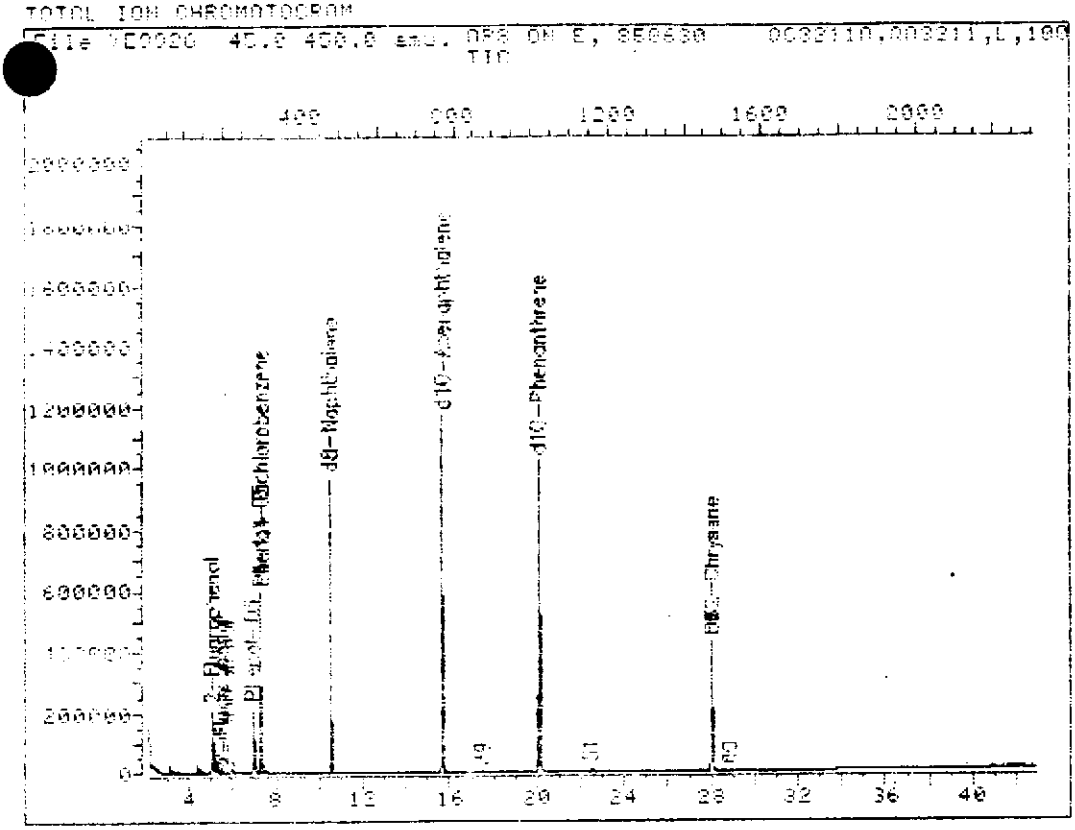
Operator ID: JA4996 Quant Rev: 4 Quant Time: 850613 23:57
Output File: ^A9023::AQ Injected at: 850613 17:23
Data File: >A9023::U3 Dilution Factor: 1.00
Name: 850613,AP8PT/VOA
Misc: QC3374V,QV3374,L,5,5

ID File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850613 23:45

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*2-Bromo-1-chloropropane	19.42	473	109727	200.00	NG	97
4)	Benzene	17.84	432	537	~~.33~~	~~NG~~	98
11)	Chloroform	12.36	290	1887	~~2.43~~	~~NG~~	76
23)	Methylene chloride	6.61	141	7112	14.37	NG	97
26)	Toluene	24.17	596	2516	~~1.97~~	~~NG~~	86
28)	1,1,1-Trichloroethane	14.32	341	9439	15.98	NG	96
33)	1,2-Dichloroethane-D4	12.97	306	43109	191.93	NG	88
34)	Toluene-D8	23.97	591	240846	203.86	NG	88
35)	p-Bromofluorobenzene	29.26	728	89054	206.49	NG	98
39)	1,2-Dibromoethane	19.38	472	5972	~~12.77~~	~~NG~~	72
41)	1,4-Dichloro-2-butene	23.35	575	8222	~~20.28~~	~~NG~~	100
45)	Methyl-ethyl-ketone	12.94	305	3828	~~46.12~~	~~NG~~	65
53)	*1,4-Dichlorobutane	23.35	575	147764	200.00	NG	9[illegible]

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >E9926::U4
Name: APX ON E, 850630
Misc: 003211E.043211,L,1000,1

BTL#12

Id File: BWNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

Operator ID: TM0526
Quant Time: 850701 08:35
Injected at: 850630 23:47

QUANT REPORT

Operator ID: TM0576 Quant Rev: 4 Quant Time: 850701 00:39
Output File: ^E9926::AQ Injected at: 850630 23:47
Data File: >E9926::U4 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: QC3211A,QA3211,L,1000,1 BTL#17

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.27	294	350850	40.00	UG/ML	90
10)	2-Fluorophenol	5.01	166	144206	22.15	UG/ML	100
10)	2-Fluorophenol	5.45	191	1686	.26	UG/ML	100
10)	2-Fluorophenol	5.70	205	771	.12	UG/ML	100
12)	Phenol-D5	6.88	272	202412	23.99	UG/ML	97
12)	Phenol-D5	7.27	294	1879	.22	UG/ML	76
13)	*d8-Naphthalene	10.47	475	1021108	40.00	UG/ML	95
28)	*d10-Acenaphthalene	15.66	769	661873	40.00	UG/ML	97
39)	Diethyl phthalate	17.46	871	2589	.11	UG/ML	94
45)	*d10-Phenanthrene	20.04	1017	1395173	40.00	UG/ML	98
51)	Di-n-butyl phthalate	22.42	1152	16224	.46	UG/ML	97
54)	*D12-Chrysene	28.00	1468	434049	40.00	UG/ML	97
57)	Benzo(a)anthracene	28.00	1468	1136	.11	UG/ML	100
58)	Chrysene	28.00	1468	1136	.09	UG/ML	100
60)	bis(2-Ethylhexyl)phthalate	28.80	1513	922	.09	UG/ML	99

* Compound is ISTD

QUANT REPORT

Operator ID: TM0576
Output File: EE9926::AQ
Data File: >E9926::U4
Name: AP8 ON E, 850630
Misc: QC3211A,QA3211,L,1000,1

Quant Rev: 4 Quant Time: 850701 13:59
Injected at: 850630 23:47
Dilution Factor: 1.00

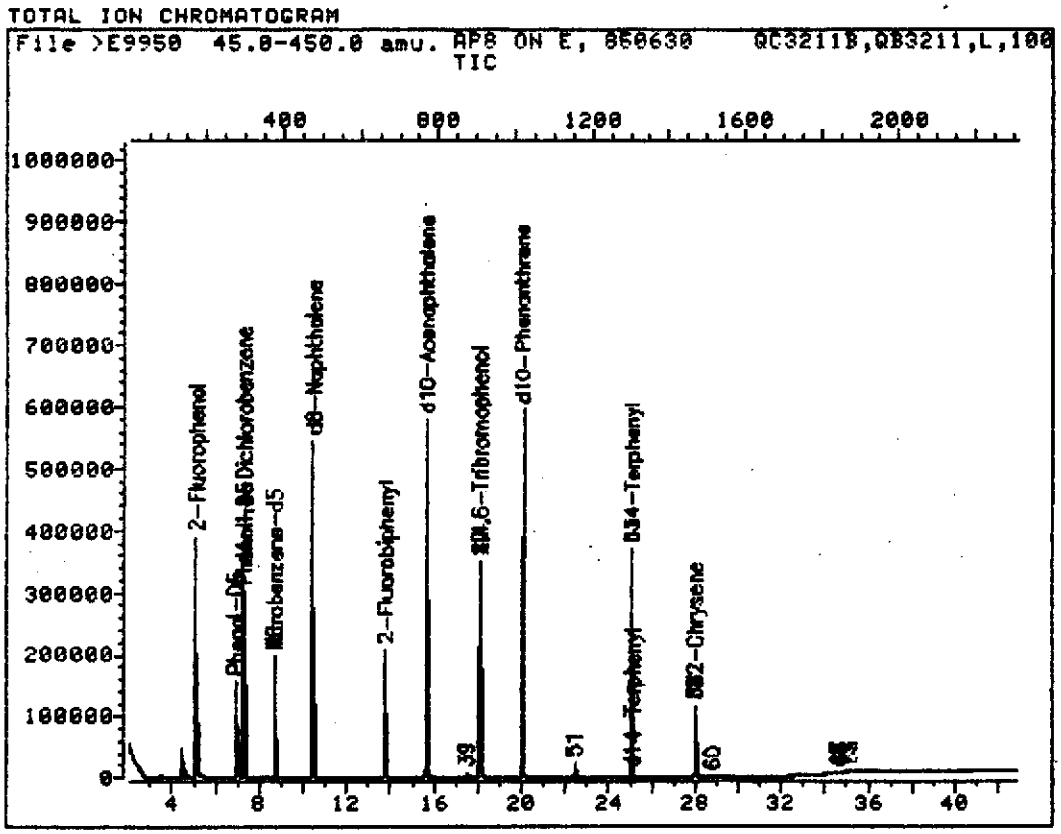
BTL#17

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*d4-1,4-Dichlorobenzene	7.27	294	350850	40.00	UG/ML	9
16)	*d8-Naphthalene	10.47	475	1021108	40.00	UG/ML	9
29)	*d10-Acenaphthalene	15.66	769	661873	40.00	UG/ML	9
46)	*d10-Phenanthrene	20.04	1017	1395173	40.00	UG/ML	10

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >E9950::U4
Name: AP8 ON E, 850630
Misc: QC32118,QB3211,L,1000,1 BTL#41

Id File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

Operator ID: TM0576
Quant Time: 850702 00:16
Injected at: 850701 23:31

QUANT REPORT

Quant Rev: 4

Quant Time: 850702 14:37
Injected at: 850701 23:31
Dilution Factor: 1.00

Operator ID: TM0576
Output File: EE9950::AQ
Data File: >E9950::U4
Name: AP8 ON E, 850630
Misc: QC3211B,QB3211,L,1000,1

BTL#41

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

Compound	R.T.	Scan#	Area	Conc	Units	q
1) *d4-1,4-Dichlorobenzene	7.25	295	193308	40.00	UG/ML	9
16) *d8-Naphthalene	10.43	475	522888	40.00	UG/ML	9
29) *d10-Acenaphthalene	15.61	768	319716	40.00	UG/ML	9
46) *d10-Phenanthrene	19.98	1016	623730	40.00	UG/ML	10

* Compound is ISTD

QUANT REPORT

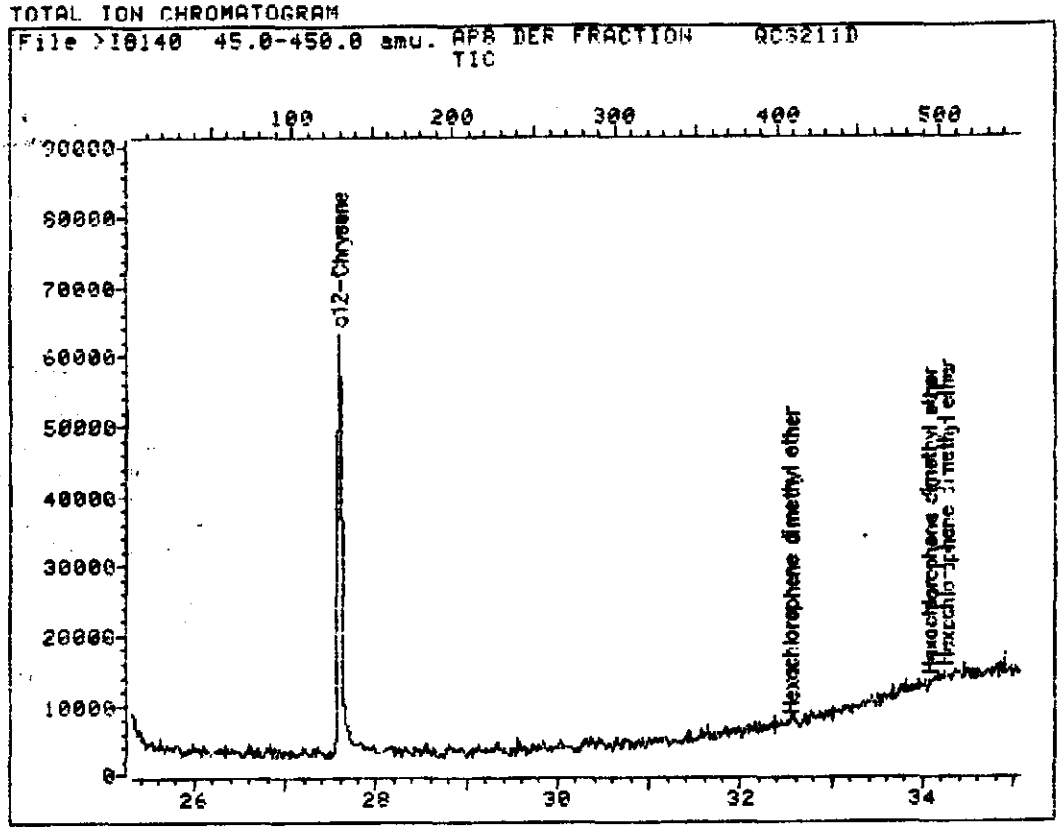
Operator ID: TM0576 Quant Rev: 4 Quant Time: 850702 00:16
Output File: ^E9950::AQ Injected at: 850701 23:31
Data File: >E9950::U4 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: QC3211B,QB3211,L,1000,1 BTL#41

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.25	295	193308	40.00	UG/ML	90
7)	Nitrobenzene-d5	8.67	375	140822	32.29	UG/ML	93
10)	2-Fluorophenol	5.04	170	225158	62.77	UG/ML	100
12)	Phenol-D5	6.88	274	174518	37.54	UG/ML	95
12)	Phenol-D5	7.27	296	2749	.59	UG/ML	82
13)	*d8-Naphthalene	10.43	475	522888	40.00	UG/ML	94
14)	2-Fluorobiphenyl	13.75	663	160828	26.62	UG/ML	98
15)	N-Nitrosodi-n-propylamine	8.67	375	20964	5.39	UG/ML	61
28)	*d10-Acenaphthalene	15.61	768	319716	40.00	UG/ML	96
39)	Diethyl phthalate	17.44	872	4182	.36	UG/ML	95
40)	Fluorene	18.04	906	5735	.57	UG/ML	84
42)	2,4,6-Tribromophenol	18.04	906	119601	49.68	UG/ML	96
45)	*d10-Phenanthrene	19.98	1016	623730	40.00	UG/ML	98
51)	Di-n-butyl phthalate	22.37	1151	39041	2.45	UG/ML	98
53)	Benzidine	25.02	1301	3511	6.19	UG/ML	100
54)	*D12-Chrysene	27.95	1467	130055	40.00	UG/ML	98
57)	Benzo(a)anthracene	27.95	1467	573	.19	UG/ML	100
58)	Chrysene	27.95	1467	573	.15	UG/ML	100
60)	bis(2-Ethylhexyl)phthalate	28.76	1513	1195	.36	UG/ML	95
65)	Indeno(1,2,3-c,d)pyrene	34.61	1844	2273	1.44	UG/ML	100
65)	Indeno(1,2,3-c,d)pyrene	35.14	1874	2624	1.62	UG/ML	100
66)	Dibenzo(a,h)anthracene	34.68	1848	1527	.94	UG/ML	100
67)	Benzo(ghi)perylene	34.61	1844	2273	1.48	UG/ML	100
67)	Benzo(ghi)perylene	35.14	1874	2624	1.62	UG/ML	100
68)	d14-Terphenyl	25.02	1301	310046	50.97	UG/ML	100
68)	d14-Terphenyl	25.07	1304	5893	.97	UG/ML	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >I8140::U4
Name: AP8 DER FRACTION
Misc: QC3211D

BTL# 4

Id File: IAPRDE
Title: AP8 DEV ON I
Last Calibration: 850701 15:00

Operator ID: TM0576
Quant Time: 850701 18:54
Injected at: 850701 13:37

QUANT REPORT

Operator ID: IMB5/6 Quant Rev: 4 Quant Time: 850701 18:54
Output File: ^I8140::AW Injected at: 850701 13:37
Data File: >I8140::114 Dilution Factor: 1.000
Name: AP8 DER FRACTION
Misc: QC3211D HTI # 4

ID File: IAP8DE
Title: AP8 DEV IN 1
Last Calibration: 850701 15:00

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d12-Chrysene	27.59	129	82446	40.00	UG/ML	90
2)	Hexachlorophene dimethyl ether	32.54	417	110	.20	UG/ML	81
2)	Hexachlorophene dimethyl ether	34.07	493	103	.21	UG/ML	85
2)	Hexachlorophene dimethyl ether	34.25	513	119	.24	UG/ML	73

* Compound is ISTD

Appendix E

Chain-of Custody Forms

1) A field Chain-of-Custody form (CC1) is included for all samples shipped by ETC shuttle.

2) An in-house sample Chain-of Custody form is included for the period the sample was in ETC's possession.

3) A subcontractor's Chain-of-Custody form is included for any analytical work not performed within ETC's laboratory.

4) Any additional Chain-of-Custody material provided by a client or by a client's sampling agent is also included.

Shuttle 11

ETC ENVIRONMENTAL TESTING and CERTIFICATION

CHAIN OF CUSTODY FORM (CC1)

Seal No. 39571 ETC Job # H6067

Date Sealed 5/7/85 By: Khanna

Company: Vertac Corporation

Attn.: John Hill

Facility/Site:

Phone: ( )

Address: Rifle Range Road
Vicksburg, MS 39180

SAMPLE IDENTIFICATION

Facility: VERITAC/VICK Well # 36

Sample Point: W-0036 (Facility/Site Code; Source Code (from below); Your Sample Point ID (left justify)) 85/06/10 (Start Date (YY/MM/DD)) 0900 (Start Time (2400 hr clock)) (Optional Sample Point Descriptions) (Elapsed Hours (composite))

627

Source Codes:
Well ...(W) Outfall.....(O) Bottom Sediment ...(B) Surface Impoundment....(I) Leachate Collection Sys.....(C) Other .....(X)
Soil ...(S) River/Stream...(R) Generation Point ....(G) Treatment Facility ..... (T) Lake/Ocean .....(L) Specify

SHUTTLE CONTENTS

BOTTLE				ANALYSIS	SAMPLER		LAB
No	Type	Size	Preserv.		Fill (Y/N)	Observations	Observations
3	A	1L	Baked	Acid & Bn		✓	
1	P/H	1L	Baked	P/H		✓	
1	CN	125ml	NaOH	CYANIDE		✓	
4	V	40ml	Sod thio	VOA		✓	
4	F	40ml	Baked	DAI		✓	
1	TB	40ml	sc/ms H2O	Trip Blank		✓	

CHAIN OF CUSTODY CHRONICLE

1. Shuttle Opened By: (print) Date: Time:
Signature: Seal #: Intact:

2. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

3. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

4. Shuttle Sealed By: (print) John Hill Date: 6/10/85 Time: 9 am
Signature: Seal #: 0034570 Intact:

ETC USE ONLY Opened By: Stacy Brant Date: 6/11/85 Time: 1100
Seal #: 34570 Condition: OK

ETC ENVIRONMENTAL TESTING and CERTIFICATION

FIELD PARAMETER FORM (CC2)

ETC JOB # H6067

Sample Point [ ] Source Code [ ] Sample Point ID

FIELD PROCEDURES

PURGE DATE (YY MM DD) | START PURGE (2400 Hr Clock) | ELAPSED HRS | WATER VOL. IN CASING (Gallons) | VOLUME PURGED (Gallons)

SAMPLING METHOD: _____

Sampler Type [ ] A-Submersible Pump, B-ISCO, C-Bladder Pump, D-Dipper/Bottle, E-Bailer, F-Scoop/Shovel, X-Other _____ (SPECIFY OTHER)

Sampler Material [ ] A-Teflon, B-Metal, C-PVC, D-Plastic, X-Other _____ (SPECIFY OTHER)

Tubing Material [ ] A-Teflon, B-Tygon, C-Polyethylene, D-Silicon, X-Other _____ (SPECIFY OTHER)

Sample Composited [Y/N] _____ Procedure/Proportions

FIELD MEASUREMENTS

Well Elevation (ft/msl) [ ]

Depth to Ground water (ft) [ ]

Groundwater Elevation (ft msl) [ ]

Well Depth (ft) [ ]

Sample Depth (non-well) (ft) [ ]

1st	ph (STD)	1st	spec. cond. um/cm at 25°C	(other parameter)	value	units
2nd	ph (STD)	2nd	spec. cond. um/cm at 25°C	(other parameter)	value	units
3rd	ph (STD)	3rd	spec. cond. um/cm at 25°C	(other parameter)	value	units
4th	ph (STD)	4th	spec. cond. um/cm at 25°C	(other parameter)	value	units

Sample Temp (°C) | Turbidity NTU

FIELD COMMENTS

Sample Appearance: _____

Weather Conditions: _____

Other: _____

FILTERING: Use Chain of Custody (CC1) to indicate which bottles were filtered

Sampler: _____ (Print) Employer: _____

I certify that sampling procedures were in accordance with applicable EPA state and corporate protocols.

_____ (Date) (Signature)

Shuttle B

ETC ENVIRONMENTAL TESTING and CERTIFICATION

CHAIN OF CUSTODY FORM (CC1)

Seal No. 34573 ETC Job # H6067

Date Sealed 5/7/85 By: Kanna

Company: Vertac Corporation

Attn.: John Hill

Facility/Site:

Phone: ( )

Address: Rifle Range Road
Vicksburg, MS 39180

SAMPLE IDENTIFICATION

Facility: VERTAC VICK | WELL NO. 6

Sample Point: W-06 (Facility Site Code) | 850610 (Start Date YY/MM/DD) | 0900 (Start Time 2400 hr clock) | (Elapsed Hours composite)

Source Codes (from below) | Your Sample Point ID (left justify)

Source Codes:
Well ..(W) Outfall.....(O) Bottom Sediment ....(B) Surface Impoundment....(I) Leachate Collection Sys.....(C) Other .....(X)
Soil ...(S) River/Stream ..(R) Generation Point ....(G) Treatment Facility .....(T) Lake/Ocean .....(L) Specify

SHUTTLE CONTENTS

BOTTLE No	Type	Size	Preserv.	ANALYSIS	SAMPLER Fill (Y/N)	SAMPLER Observations	LAB Observations
1	P/H	1L	Baked	Pest/Herb		✓	
2	A	1L	Baked	HPLC		✓	
1	M	1L	Nitric	Metals		✓	

CHAIN OF CUSTODY CHRONICLE

1. Shuttle Opened By: (print) _____ Date: _____ Time: _____
Signature: _____ Seal #: _____ Intact: _____

2. I have received these materials in good condition from the above person.
Name: _____ Signature: _____
Date: _____ Time: _____ Remarks: _____

3. I have received these materials in good condition from the above person.
Name: _____ Signature: _____
Date: _____ Time: _____ Remarks: _____

4. Shuttle Sealed By: (print) BRAD McCOLLUM Date: 6/10/85 Time: 0920
Signature: [signature] Seal #: _____ Intact: _____

ETC USE ONLY Opened By: Stacy Quast Date: 6/11/85 Time: 1100
Seal #: 34572 Condition: OK

ETC ENVIRONMENTAL TESTING and CERTIFICATION

FIELD PARAMETER FORM (CC2)

ETC JOB # H6067

Sample Point [ ] Source Code [ ] Sample Point ID

FIELD PROCEDURES

PURGE DATE (YY MM DD) | START PURGE (2400 hr Clock) | ELAPSED HRS | WATER VOL IN CASING (Gallons) | VOLUME PURGED (Gallons)

SAMPLING METHOD: _____

Sampler Type [ ] A-Submersible Pump, B-ISCO, C-Bladder Pump, D-Dipper/Bottle, E-Bailer, F-Scoop/Shovel, X-Other _____ (SPECIFY OTHER)

Sampler Material [ ] A-Teflon, B-Metal, C-PVC, D-Plastic, X-Other _____ (SPECIFY OTHER)

Tubing Material [ ] A-Teflon, B-Tygon, C-Polyethylene, D-Silicon, X-Other _____ (SPECIFY OTHER)

Sample Composited [Y/N] _____ (Procedure/Proportions)

FIELD MEASUREMENTS

Well Elevation (ft/msl) [ ]

Depth to Ground water (ft) [ ]

Groundwater Elevation (ft msl) [ ]

Well Depth (ft) [ ]

Sample Depth (non-well) (ft) [ ]

1st	ph (STD)	1st	spec. cond. um/cm at 25°C	(other parameter)	value	units
2nd	ph (STD)	2nd	spec. cond. um/cm at 25°C	(other parameter)	value	units
3rd	ph (STD)	3rd	spec. cond. um/cm at 25°C	(other parameter)	value	units
4th	ph (STD)	4th	spec. cond. um/cm at 25°C	(other parameter)	value	units

Sample Temp (°C) [ ] | Turbidity NTU [ ]

FIELD COMMENTS

Sample Appearance: _____

Weather Conditions: _____

Other: _____

FILTERING: Use Chain of Custody (CC1) to indicate which bottles were filtered

Sampler: _____ (Print) Employer: _____

I certify that sampling procedures were in accordance with applicable EPA state and corporate protocols.

_____

(Date) (Signature)

GC-MS ANALYSIS CUSTODY LOG

DATE 6/13 SHIFT ___
FRACTION VOA / DAI
INSTRUMENT A
TUNE FILE APE101
SEQUENCE FILE ___
METHOD FILE DAIA
IDFILE AAPSDI
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s Q13372

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
BFB	50	10275	1ul
APS/DAI	1500	10215	4ul

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
BFB	>A9009	1ul			A00122		
QC3372V	>A9010	4ul					
QC3372V	>A9011						
QC3372VS	>A9012					4ul APS DAI	
QC3372VS	>A9013					4ul APS DAI	
H60066V	>A9014						
H60066VR	>A9015					rerun	
H60067V	>A9016						
H60069V	>A9017	↓					
(B) H60066VR	>A9018	↓					

TSR 8-84

GC-MS ANALYSIS CUSTODY LOG

DATE 6-13-85 SHIFT ___
FUNCTION VOA
INSTRUMENT A
TUNE FILE APETO1
SEQUENCE FILE JAA
METHOD FILE VOAA
IDFILE AAPRPT
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s QV3374

STANDARD	CONC PPM	LOT NO.	LOT VOL
BFB	50	10275	1
Int. std	40	10,332	5
Surrogate	25	10,567	10
ABC	18	10,730	5, 10, 30
APE	50	10,718	5, 10, 30

(PLEASE INITIAL)

CURRENT CSUS STATUS		STANDARDS UPDATED	
ACQ		DATE	6/13/85
WIP		BY	DS

(U3, U2, U1) (PEPRI)

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
BFB (DAQ)	>A9019				A00122	OK (0909AM/6-13-85)	
QC3374V	>A9020					Hexyl dz Hg (Lake)	
QC3374V	>A9021					Methz Hg	
QC3374V	>A9022					NO peak, QC-MEAL OK	
QC3374V	>A9023		1			OK	
QC3374VS	>A9024		2		Don't use	5uL ABC + 5uL APE (TRP)	
QC3374VS	>A9025		3			10uL ABC (+10uL — " —)	CBURD
QC3374VS	>A9026		4			30uL ABC + 30uL — " —	QCCAL
QC3374VS	>A9027		5		Typed in as 3374	5uL ABC + 5uL — " —	
p-BFB	>A9028				OK	(2311 HRS)	
H6069VS	>A9029	5uL	6		OK	5uL ABC ; 5uL APE	
H6069V	>A9030		7		OK		
H6066V	>A9031		8		OK		
H6066VR	>A9032		9		OK		
H6067V	>A9033		10		OK		

TSR 8-84

EXTRACTION LOG

QC BATCH 3211

ANALYSIS A-TYPES APS/B APS/A

SEP. FUNNEL ✓ CONTINUOUS

6/24

DISTILLATE

NEUTRAL

BASE

ACID

DERIVITIZED BN

MATRIX H_2O

SAMPLE NUMBER	LOG LINK	DATE PRES.	SAMPLE VOLUME (ml)	EXTRACT VOL (ml) BN	ACID	DER BN	
H5601-	9454		900 ml	~~0.5~~ 1.0	1.0	~~0.5~~ 1.0	*
H5602	↓		1000 ml	~~0.5~~	1.0	~~0.5~~	*
H7219-	9518		990 ml	~~0.5~~	1.0	~~0.5~~	*
H7220-	↓		990 ml	~~0.5~~	1.0	~~0.5~~	*
H7221-	↓		1000 ml	~~0.5~~	1.0	~~0.5~~	*
H7222	↓		990 ml	~~0.5~~	1.0	~~0.5~~	*
G8452	9516		925 ml	~~0.5~~	1.0	~~0.5~~	*
H7523	9682		925 ml	~~0.5~~	1.0	~~0.5~~	*
H7524	↓		995 ml	~~0.5~~	1.0	~~0.5~~	*
H7525	9740		995 ml	~~0.5~~	1.0	~~0.5~~	*
H7526	↓		1000 ml	~~0.5~~	1.0	~~0.5~~	*
H6066-	9887		965 ml	~~0.5~~	1.0	~~0.5~~	*
H6067-	↓		950 ml	~~0.5~~	1.0	~~0.5~~	*
H6069-	9878		970 ml	~~0.5~~	1.0	~~0.5~~	*
H6068-	9913		970 ml	~~0.5~~	1.0	~~0.5~~	*
	H7220 R		1000 ml	0.5	1.0	0.5	
	H7222 S		1000 ml	0.5	1.0	0.5	
	QC 3211		1000 ml	0.5	1.0	0.5	
	QC 3211 S		1000 ml	0.5	1.0	0.5	

COMMENTS:

Derivatized Stds: (Hexachlorophene) LOT #

1.0 ml 50 µg/ml 10,335

1.0 ml 150 µg/ml 10,335

1.0 ml 300 µg/ml 10,[illegible]

aliquoted.

* Final volumes of Hexachlorophenes - all 0.5 ml

JA 6/29

SET UP: - Minagudin/P.[illegible]

EXTRACTION: Joe Angelon

BN DER.: Joe Rubert

BN CONC.: [illegible]

ACID CONC.: John [illegible]

SUPERVISOR:

*: Please note RV [illegible] SHOW LA [illegible] aliquot [illegible]

FRACTIONS	SPIKES Lot No.	Conc.	Amount (ml)	SURROGATES Lot No.	Conc.	Amount
AP8 Acid Spike	9892	100 ug/ml	1.0 ml			
AP8 BN Spike I	9888	100 ug/ml	1.0 ml			
AP8 BN Spike II	9890	300 ug/ml	1.0 ml			
BN Spike	10,499	100 ug/ml	1.0 ml			
Acid Spike	10,523	100 ug/ml	1.0 ml			
Semi-VOA			~~1.0 ml~~ (wa	10,686	50/100 ug/ml	1.0 ml

GC-MS ANALYSIS CUSTODY LOG

DATE 850630/861 SHIFT ___
FRACTION APS BNA
INSTRUMENT E
TUNE FILE MTF001
SEQUENCE FILE TMF
METHOD FILE ~~EBNA~~ BNPE
IDFILE EBNA, EAPSE
ANALYST(S) [illegible]

SUPERVISOR ___
BATCH #'s GAB3211

(PLEASE INITIAL)

CURRENT CS&S STATUS		STANDARDS UPDATED	
ACO	[illegible]	DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
APS BN I	300	9889	1ml
APS BN I	100	9894	
APS BN I	30	9895	
APS BN II	500	9891	
"	300	9896	
"	100	9897	
APS ACID	300/500	9893	
"	100/300	9898	
"	30/100	9899	
BN Calib III	200	10904	
" II	100	10803	
" I	60	10800	
ACID Calib III	300	10556	
" II	100	10527	
" I	60	10554	
DFTPP		10610	2ml
I.S.TB		10701	100ml/50ml acid / [illegible]

CBAPSE, CBEBNA

NAME	DATA FILE	UL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
DFTPP	>E9909	✓					
ACID Calib III	>E9910	✓	1			EBNA	
II	>E9911	✓	2				
I	>E9912	✓	3				
APS ACID Calib III	>E9913	✓	4			EAPSE	
II	>E9914	✓	5				
I	>E9915	✓	6				
BN Calib III	>E9916	✓	7			EBNA	
II	>E9917	✓	8				
I	>E9918	✓	9				
APS BN I High	>E9919	✓	10			EAPSE	
" " Med	>E9920	✓	11				
" " Low	>E9921	✓	12				
APS BN II High	>E9922	✓	13			EAPSE	
Med	>E9923	✓	14				
Low	>E9924	✓	15				
DFTPP	>E9925	✓	16				
~~ACID Calib II~~ QC3211A	>E9926	✓	17		✓		
~~APS ACID Calib I~~ QC3211A	>E9927	✓	18		✓		
H7222AS	>E9928	✓	19		✓		
H5601A	>E9929	✓	20		✓		
H5602A	>E9930	✓	21		✓		
H7219A	>E9931	✓	22		✓		
H7220A	>E9932	✓	23		✓		
H7220AR	>E9933	✓	24		✓		

GC-MS ANALYSIS CUSTODY LOG

DATE 850701 SHIFT ___
FRACTION APS
INSTRUMENT ___
TUNE FILE ___
SEQUENCE FILE ___
METHOD FILE ___
IDFILE ___
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s QAB3211

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
H7221A	7E9934	✓	25		✓		
H7222A	7E9935	✓	26		✓		
G8452A	7E9936	✓	27		✓		
H7523A	7E9937	✓	28		✓		
H7524A	7E9938	✓	29		✓		
DFTPP	7E9939	✓	30				
ACID Calib II	7E9940		31				
~~BN~~ ACID Calib II	7E9941		32				
H7525A	7E9942	✓	33		✓		
H7526A	7E9943	✓	34		✓		
H6066A	7E9944	✓	35		✓		
H6067A	7E9945	✓	36		✓		
H6068A	7E9946	✓	37		✓		
H6069A	7E9947	✓	38		✓		
DFTPP	7E9948		39				
BN Calib II	7E9949		40				
QC3211B	7E9950		41				
QC3211BS	7E9951		42				
H7222BS	7E9952		43				
H5601B	7E9953		44				
H5602B	7E9954		45				
H7219B	7E9955		46				
H7220B	7E9956		47				
H7220BR	7E9957		48				
H7221B	7E9958		49				

GC-MS ANALYSIS CUSTODY LOG

DATE 5 SEP 90 SHIFT ____
FRACTION APS
INSTRUMENT ____
TUNE FILE ____
SEQUENCE FILE ____
METHOD FILE ____
IDFILE ____
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s QAB3211

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL

NAME	DATA FILE	UL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
H7222B	>E9959		50				
H8452B	>E9960		51				
H7523B	>E9961		52				
DFTPP	>E9962		53				
Calib II	>E9963		54				
H7524B	>E9964		55				
H7526B	>E9965		56				
H6066B	>E9966		57				
H6067B	>E9967		58				
H6069B	>E9969		59				
H6069B	>E9969		60				
H7525B	>E9970		61				
H5601A	>E9971		62	1:10			
~~H7524A~~ H7524A	>E9972		63	1:5			
H7523B	>E9973		64	1:5			
H7524B	>E9974		65	1:20			
H5601B	>E9975		66	1:50			

GC-MS ANALYSIS CUSTODY LG

DATE 850801 SHIFT ___
FRACTION APBDER
INSTRUMENT I
TUNE FILE MTI001
SEQUENCE FILE TMI
METHOD FILE BNPI2
IDFILE IAPBDE
ANALYST(S) M Maxwell

SUPERVISOR ___
BATCH #'s QD3211

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	850801
WIP		BY	M

STANDARD	CONC PPM	LOT NO.	LOT VOL
ISTD	400	10701	50ul
DFTPP	25	10610	2ul

NAME	DATA FILE	UL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
DFTPP	>I8136						
Der Std III	>I8137		1				
" " II	>I8138		2				
" " I	>I8139		3				
QC3211D	>I8140		4				
QC3211DS	>I8141		5				
H7222DS	>I8142		6				
H5601D	>I8143		7				
H5602D	>I8144		8				
H7219D	>I8145		9				
H7220D	>I8146		10				
H7220DR	>I8147		11				
H7221D	>I8148		12				
H7222D	>I8149		13				
G8453D	>I8150		14				
H7523D	>I8151		15				
H7524D	>I8152		16				
H7525D	>I8153		17				
DFTPP	>I8154		18				
Der Std II	>I8155		19				
H7526D	>I8156		20				
H6066D	>I8157		21				
H6067D	>I8158		22				
H6068D	>I8159		23				
H6069D	>I8160		24				

TSR 8-84

EXTRACTION LOG

QC Batch # 3212

Sample Number	Log Book	Sample Vol (ml)	Extract Vol (ml) EC	Extract Vol (ml) FPD	Comments FINAL Vol (ml)
H5601	9454	500	aliquoted	aliquoted	5.0 ml
H5602	↓				5.0 ml
H7219	9518				5.0 ml
H7220					5.0 ml
H7221					5.0 ml
H7222	↓				5.0 ml
G8452	9516				5.0 ml
H7523	9682				5.0 ml
H7524	↓				5.0 ml
H7525	9740				5.0 ml
H7526	↓				5.0 ml
H6066	9887				5.0 ml
H6067	↓				5.0 ml
H6069	9878				5.0 ml
H6068	9913	✓			5.0 ml
MST ~~H7220~~		~~465 ml~~	—	—	—
H7221 MS2		500			5.0 ml
QC 3212 S2					5.0 ml
QC 3212 S3					5.0 ml
H7222 MS2					5.0 ml
QC 3212					5.0 ml
QC 3212 S1					5.0 ml
H7220 MS1		465			5.0 ml
H6066 R		✓	↓	↓	5.0 ml

Analysis: APB/PEST (EC)
APB/PEST (FPD)

Matrix: H_2O

Turnaround: NORM

Date: 6/24/85

Extraction Method:
- sep funnel ✓
- continuous
- soxhlet
- other

COMMENTS FOR EXTRACT.:

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
APB/PEST S1	0.1 ml	100 ng/ml	10,636
~~APB~~		25 ng/ml	
APB/PEST S2	0.1 ml	25 ng/ml	10,806
		250 ng/ml	
APB/PEST S3	0.2 ml	12.5 ng/ml	10,640
		62.5 ng/ml	
		125 ng/ml	

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: [illegible] June Scale 6/24/85 UPD/Supervisor: M Berkley 6/25/85

Conc.: [illegible] June Scale — Supervisor PA 6/27/85

JUN 26, 1985 14:32
SEQUENCE: Q3212 ON CRN 15
CHANNEL 8

SUBSEQUENCE 1

METHOD
AP8FPD

DIALG-PRG PARAM-FILE
/N

#WSHS	#PMPS	STOP
5,	5,	1

ISO	POST-BTL#	POST-#WSHS
NO ,	0,	1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	FPD STDB ,	1,	PW0790:CE,	RW0790:CE,	100.00,	1.0000,	1.0000
2	QC3212 ,	2,	PW0791:CE,	RW0791:CE,	100.00,	1.0000,	1.0000
3	QC3212S ,	3,	PW0792:CE,	RW0792:CE,	100.00,	1.0000,	1.0000
4	H7220S1 ,	4,	PW0793:CE,	RW0793:CE,	100.00,	1.0000,	1.0000
5	H6066R ,	5,	PW0794:CE,	RW0794:CE,	100.00,	1.0000,	1.0000
6	H5601 ,	6,	H5601A:CE,	H5601B:CE,	100.00,	1.0000,	1.0000
7	H5602 ,	7,	H5602A:CE,	H5602B:CE,	100.00,	1.0000,	1.0000
8	H7219 ,	8,	H7219A:CE,	H7219B:CE,	100.00,	1.0000,	1.0000
9	H7220 ,	9,	H7220A:CE,	H7220B:CE,	100.00,	1.0000,	1.0000
10	H7221 ,	10,	H7221A:CE,	H7221B:CE,	100.00,	1.0000,	1.0000
11	H7222 ,	11,	H7222A:CE,	H7222B:CE,	100.00,	1.0000,	1.0000
12	FPD STD A ,	12,	PW0795:CE,	RW0795:CE,	100.00,	1.0000,	1.0000
13	G8452 ,	13,	G8452A:CE,	G8452B:CE,	100.00,	1.0000,	1.0000
14	H7523 ,	14,	H7523A:CE,	H7523B:CE,	100.00,	1.0000,	1.0000
15	H7524 ,	15,	H7524A:CE,	H7524B:CE,	100.00,	1.0000,	1.0000
16	H7525 ,	16,	H7525A:CE,	H7525B:CE,	100.00,	1.0000,	1.0000
17	H7526 ,	17,	H7526A:CE,	H7526B:CE,	100.00,	1.0000,	1.0000
18	H6066 ,	18,	H6066A:CE,	H6066B:CE,	100.00,	1.0000,	1.0000
19	H6067 ,	19,	H6067A:CE,	H6067B:CE,	100.00,	1.0000,	1.0000
20	H6068 ,	20,	H6068A:CE,	H6068B:CE,	100.00,	1.0000,	1.0000
21	H6069 ,	21,	H6069A:CE,	H6069B:CE,	100.00,	1.0000,	1.0000
22	FPD STD C ,	22,	PW0796:CE,	RW0796:CE,	100.00,	1.0000,	1.0000
23	/E						

SUBSEQUENCE 2

METHOD
METH

DIALG-PRG PARAM-FILE
/N

#WSHS	#PMPS	STOP
5,	5,	1

ISO	POST-BTL#	POST-#WSHS
NO ,	0,	1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	PEST STDB ,	23,	PW0797:CF,	RW0797:CF,	100.00,	1.0000,	1.0000
2	QC3212 ,	24,	PW0798:CF,	RW0798:CF,	100.00,	1.0000,	1.0000
3	QC3212S2 ,	25,	PW0799:CF,	RW0799:CF,	100.00,	1.0000,	1.0000
4	H7721S2 ,	26,	PW0800:CF,	RW0800:CF,	100.00,	1.0000,	1.0000
5	H6066R ,	27,	PW0801:CF,	RW0801:CF,	100.00,	1.0000,	1.0000
6	H5601 ,	28,	H5601C:CF,	H5601D:CF,	100.00,	1.0000,	1.0000
7	H5602 ,	29,	H5602C:CF,	H5602D:CF,	100.00,	1.0000,	1.0000
8	H7219 ,	30,	H7219C:CF,	H7219D:CF,	100.00,	1.0000,	1.0000
9	H7220 ,	31,	H7220C:CF,	H7220D:CF,	100.00,	1.0000,	1.0000
10	H7221 ,	32,	H7221C:CF,	H7221D:CF,	100.00,	1.0000,	1.0000
11	H7222 ,	33,	H7222C:CF,	H7222D:CF,	100.00,	1.0000,	1.0000
12	PEST STDA ,	34,	PW0802:CF,	RW0802:CF,	100.00,	1.0000,	1.0000
13	G8452 ,	35,	G8452C:CF,	G8452D:CF,	100.00,	1.0000,	1.0000
14	H7523 ,	36,	H7523C:CF,	H7523D:CF,	100.00,	1.0000,	1.0000
15	H7524 ,	37,	H7524C:CF,	H7524D:CF,	100.00,	1.0000,	1.0000
16	H7525 ,	38,	H7525C:CF,	H7525D:CF,	100.00,	1.0000,	1.0000
17	H7526 ,	39,	H7526C:CF,	H7526D:CF,	100.00,	1.0000,	1.0000
18	H6066 ,	40,	H6066C:CF,	H6066D:CF,	100.00,	1.0000,	1.0000
19	H6067 ,	41,	H6067C:CF,	H6067D:CF,	100.00,	1.0000,	1.0000
20	H6068 ,	42,	H6068C:CF,	H6068D:CF,	100.00,	1.0000,	1.0000
21	H6069 ,	43,	H6069C:CF,	H6069D:CF,	100.00,	1.0000,	1.0000
22	PEST STD C ,	44,	PW0803:CF,	RW0803:CF,	100.00,	1.0000,	1.0000
23	TCK STD A ,	45,	PW0804:CF,	RW0804:CF,	100.00,	1.0000,	1.0000
24	HEXANE ,	46,	PW0805:CF,	RW0805:CF,	100.00,	1.0000,	1.0000
25	QC3212S3 ,	47,	PW0806:CF,	RW0806:CF,	100.00,	1.0000,	1.0000
26	HEXANE ,	48,	PW0807:CF,	RW0807:CF,	100.00,	1.0000,	1.0000
27	H7223S3 ,	49,	PW0808:CF,	RW0808:CF,	100.00,	1.0000,	1.0000
28	HEXANE ,	50,	PW0809:CF,	RW0809:CF,	100.00,	1.0000,	1.0000
29	TCK STD B ,	51,	PW0810:CF,	RW0810:CF,	100.00,	1.0000,	1.0000
30	HEXANE ,	52,	PW0811:CF,	RW0811:CF,	100.00,	1.0000,	1.0000
31	TCK STD C ,	53,	PW0812:CF,	RW0812:CF,	100.00,	1.0000,	1.0000
32	/E						

QC Batch # 3218

Analysis: APB / HERB (EC)

Matrix: H_2O

Turnaround: NORM

Date: 6/24/85

Extraction Method:

- sep funnel ✓
- continuous
- soxhlet
- other

Sample Number	Log Date	Sample Vol (ml)	Extract Vol (ml) HERB		Comments
H5602	9454	500	2.5		
H6066	9887	500	2.5		
H6067	↓	500	2.5		
H6069	9878	440	2.5		
H6068	9913	475	2.5		
H9998	9958	500	2.5		
H9999	↓	500	2.5		
QC 3218		500	2.5		
QC 3218 S		500	2.5		
H9998 S		500	2.5		
H9999 R		500	2.5		

COMMENTS FOR EXTRACT.:

COMMENTS FOR GC/MS:
① ALIQUOT TAKEN

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
BLEND 2,4-D	0.5	100 µg/ml	10,595
BLEND 2,4,5-TP		10 µg/ml	
2,4,5-T	0.5	10 µg/ml	10,819

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: Don B. 6/24/85 UPD/Supervisor: M Brakley 6/26/85

Conc.: Bill O'Keefe 6/25/85 Spike verified: Judy Newton 6/25/85

STD. PREP.:

Knuhl 7/1/85
Knuhl 7/2/85

JUL 1, 1985 11:20
SEQUENCE: S3205 ON CRN 15
CHANNEL 8

SUBSEQUENCE 1

METHOD
HERB8

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

KB

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	QC3223	1,	PK1513:CM,	RK1513:CM,	500.00,	1.0000,	1.0000
2	HERBB	2,	PK1514:CM,	RK1514:CM,	100000,	1.0000,	1.0000
3	QC3223S	3,	PK1515:CM,	RK1515:CM,	500.00,	1.0000,	1.0000
4	H6820S	4,	PK1516:CM,	RK1516:CM,	500.00,	1.0000,	1.0000
5	H6820	5,	H6820M:CM,	H6820N:CM,	500.00,	1.0000,	1.0000
6	H6811	6,	H6811M:CM,	H6811N:CM,	500.00,	1.0000,	1.0000
7	H6811R	7,	PK1517:CM,	RK1517:CM,	500.00,	1.0000,	1.0000
8	H6810	8,	H6810M:CM,	H6810N:CM,	500.00,	1.0000,	1.0000
9	H6826	9,	H6826M:CM,	H6826N:CM,	500.00,	1.0000,	1.0000
10	H6827	10,	H6827M:CM,	H6827N:CM,	500.00,	1.0000,	1.0000
11	HERB1A	11,	PK1518:CM,	RK1518:CM,	100000,	1.0000,	1.0000
12	H9620	12,	H9620M:CM,	H9620N:CM,	500.00,	1.0000,	1.0000
13	H9621	13,	H9621M:CM,	H9621N:CM,	500.00,	1.0000,	1.0000
14	H9622	14,	H9622M:CM,	H9622N:CM,	500.00,	1.0000,	1.0000
15	H9623	15,	H9623M:CM,	H9623N:CM,	500.00,	1.0000,	1.0000
16	HERBA'	16,	PK1519:CM,	RK1519:CM,	100000,	1.0000,	1.0000
17	H8867	17,	H8867M:CM,	H8867N:CM,	500.00,	1.0000,	1.0000
18	H5140	18,	H5140M:CM,	H5140N:CM,	595.00,	1.0000,	1.0000
19	H5142	19,	H5142M:CM,	H5142N:CM,	526.00,	1.0000,	1.0000
20	H5144	20,	H5144M:CM,	H5144N:CM,	595.00,	1.0000,	1.0000
21	H5145	21,	H5145M:CM,	H5145N:CM,	556.00,	1.0000,	1.0000
22	H5146	22,	H5146M:CM,	H5146N:CM,	543.00,	1.0000,	1.0000
23	H5141	23,	H5141M:CM,	H5141N:CM,	500.00,	1.0000,	1.0000
24	HERBC	24,	PK1520:CM,	RK1520:CM,	100000,	1.0000,	1.0000
25	HEXANE	25,	PK1521:CM,	RK1521:CM,	100000,	1.0000,	1.0000
26	QC3231	26,	PK1522:CM,	RK1522:CM,	500.00,	1.0000,	1.0000
27	HERBB	27,	PK1523:CM,	RK1523:CM,	100000,	1.0000,	1.0000
28	QC3231S	28,	PK1524:CM,	RK1524:CM,	500.00,	1.0000,	1.0000
29	J1093S	29,	PK1525:CM,	RK1525:CM,	500.00,	1.0000,	1.0000
30	J1093	30,	J1093M:CM,	J1093N:CM,	714.00,	1.0000,	1.0000
31	J1098	31,	J1098M:CM,	J1098N:CM,	625.00,	1.0000,	1.0000
32	J1098R	32,	PK1526:CM,	RK1526:CM,	625.00,	1.0000,	1.0000
33	H4205	33,	H4205M:CM,	H4205N:CM,	500.00,	1.0000,	1.0000
34	J1094	34,	J1094M:CM,	J1094N:CM,	532.00,	1.0000,	1.0000
35	J1095	35,	J1095M:CM,	J1095N:CM,	833.00,	1.0000,	1.0000
36	J1096	36,	J1096M:CM,	J1096N:CM,	556.00,	1.0000,	1.0000
37	J1097	37,	J1097M:CM,	J1097N:CM,	694.00,	1.0000,	1.0000
38	HERBA	38,	PK1527:CM,	RK1527:CM,	100000,	1.0000,	1.0000

95

39	HEXANE	, 39,	PK1528:CM,	RK1528:CM,	100000,	1.0000,	1.0000
40	QC3218	, 40,	PK1529:CM,	RK1529:CM,	500.00,	1.0000,	1.0000
41	HERBB	, 41,	PK1530:CM,	RK1530:CM,	100000,	1.0000,	1.0000
42	245TB	, 42,	PK1531:CM,	RK1531:CM,	100000,	1.0000,	1.0000
43	QC3218S	, 43,	PK1532:CM,	RK1532:CM,	500.00,	1.0000,	1.0000
44	H9998S	, 44,	PK1533:CM,	RK1533:CM,	500.00,	1.0000,	1.0000
45	H9998	, 45,	H9998M:CM,	H9998N:CM,	500.00,	1.0000,	1.0000
46	H9999	, 46,	H9999M:CM,	H9999N:CM,	500.00,	1.0000,	1.0000
47	H9999R	, 47,	PK1534:CM,	RK1534:CM,	500.00,	1.0000,	1.0000
48	H5602	, 48,	H5602M:CM,	H5602N:CM,	500.00,	1.0000,	1.0000
49	245TA	, 49,	PK1535:CM,	RK1535:CM,	100000,	1.0000,	1.0000
50	H6066	, 50,	H6066M:CM,	H6066N:CM,	500.00,	1.0000,	1.0000
51	H6067	, 51,	H6067M:CM,	H6067N:CM,	500.00,	1.0000,	1.0000
52	H6069	, 52,	H6069M:CM,	H6069N:CM,	568.00,	1.0000,	1.0000
53	H6068	, 53,	H6068M:CM,	H6068N:CM,	526.00,	1.0000,	1.0000
54	HERBC	, 54,	PK1536:CM,	RK1536:CM,	100000,	1.0000,	1.0000
55	245TC	, 55,	PK1537:CM,	RK1537:CM,	100000,	1.0000,	1.0000
56	HEXANE	, 56,	PK1538:CM,	RK1538:CM,	100000,	1.0000,	1.0000
57	/E						

SUBSEQUENCE 2

METHOD
DWPST8

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	QC3224	, 57,	PK1539:CM,	RK1539:CM,	1000.0,	1.0000,	1.0000
2	DWPSTB	, 58,	PK1540:CM,	RK1540:CM,	100000,	1.0000,	1.0000
3	QC3224S	, 59,	PK1541:CM,	RK1541:CM,	1000.0,	1.0000,	1.0000
4	H6820S	, 60,	PK1542:CM,	RK1542:CM,	1000.0,	1.0000,	1.0000
5	H6820	, 61,	H68200:CM,	H6820P:CM,	1400.0,	1.0000,	1.0000
6	H6811	, 62,	H68110:CM,	H6811P:CM,	1149.0,	1.0000,	1.0000
7	H6811R	, 63,	PK1543:CM,	RK1543:CM,	1000.0,	1.0000,	1.0000
8	H6810	, 64,	H68100:CM,	H6810P:CM,	1100.0,	1.0000,	1.0000
9	H6826	, 65,	H68260:CM,	H6826P:CM,	1190.0,	1.0000,	1.0000
10	H6827	, 66,	H68270:CM,	H6827P:CM,	1250.0,	1.0000,	1.0000
11	DWPSTIA	, 67,	PK1544:CM,	RK1544:CM,	100000,	1.0000,	1.0000
12	H9620	, 68,	H96200:CM,	H9620P:CM,	1000.0,	1.0000,	1.0000
13	H9621	, 69,	H96210:CM,	H9621P:CM,	1000.0,	1.0000,	1.0000
14	H9622	, 70,	H96220:CM,	H9622P:CM,	1000.0,	1.0000,	1.0000
15	H9623	, 71,	H96230:CM,	H9623P:CM,	1000.0,	1.0000,	1.0000
16	DWPSTA	, 72,	PK1545:CM,	RK1545:CM,	100000,	1.0000,	1.0000
17	H8867	, 73,	H88670:CM,	H8867P:CM,	1000.0,	1.0000,	1.0000
18	H5140	, 74,	H51400:CM,	H5140P:CM,	1000.0,	1.0000,	1.0000
19	H5142	, 75,	H51420:CM,	H5142P:CM,	1000.0,	1.0000,	1.0000
20	H5144	, 76,	H51440:CM,	H5144P:CM,	1000.0,	1.0000,	1.0000
21	H5145	, 77,	H51450:CM,	H5145P:CM,	1000.0,	1.0000,	1.0000
22	H5146	, 78,	H51460:CM,	H5146P:CM,	1000.0,	1.0000,	1.0000
23	H5141	, 79,	H51410:CM,	H5141P:CM,	1000.0,	1.0000,	1.0000
24	DWPSTC	, 80,	PK1546:CM,	RK1546:CM,	100000,	1.0000,	1.0000

KWuhl 7/1/85
KWuhl 7/3/85

```
25  HEXANE      ,  81, PK1547:CM, RK1547:CM, 100000,  1.0000,  1.0000
26  QC3232      ,  82, PK1548:CM, RK1548:CM, 1000.0,  1.0000,  1.0000
27  RCPSTB      ,  83, PK1549:CM, RK1549:CM, 100000,  1.0000,  1.0000
28  QC3232S     ,  84, PK1550:CM, RK1550:CM, 1000.0,  1.0000,  1.0000
29  J1095S      ,  85, PK1551:CM, RK1551:CM, 1000.0,  1.0000,  1.0000
30  H1095       ,  86, J10950:CM, H1095P:CM, 1000.0,  1.0000,  1.0000
31  J1097       ,  87, J10970:CM, J1097P:CM, 1000.0,  1.0000,  1.0000
32  J1097R      ,  88, PK1552:CM, RK1552:CM, 1000.0,  1.0000,  1.0000
33  H4205       ,  89, H42050:CM, H4205P:CM, 1000.0,  1.0000,  1.0000
34  RCPSTA      ,  90, PK1553:CM, RK1553:CM, 100000,  1.0000,  1.0000
35  J1093       ,  91, J10930:CM, J1093P:CM, 1000.0,  1.0000,  1.0000
36  J1094       ,  92, J10940:CM, J1094P:CM, 1000.0,  1.0000,  1.0000
37  J1096       ,  93, J10960:CM, J1096P:CM, 1000.0,  1.0000,  1.0000
38  J1098       ,  94, J10980:CM, J1098P:CM, 1000.0,  1.0000,  1.0000
39  RCPSTC      ,  95, PK1554:CM, RK1554:CM, 100000,  1.0000,  1.0000
40  /E
```

EXTRACTION LOG

QC Batch # 3296

Analysis: PP/PCB (GC)
SPECGC

Matrix:
Turnaround:
Date:

Extraction Method:
Sep funnel ✓
continuous
soxhlet
other

Sample Id	Log Date	Sample Vol (ml)	Extract Vol (ml) PCB		Comments
H962Y	9935	500	1.0		
J1360	10,168	500	1.0		
J1361	↓	500	1.0		
J1362		500	1.0		
J1363		500	1.0		
J1365	↓	490	1.0		
* J0647	10,194	500	1.0		
* J0648	↓	500	1.0		
* J0649	↓	500	1.0		
* J0651	10,195	500	1.0		
* J0652	↓	500	1.0		
* H6066	9887	500	1.0		
* H6067	↓	500	1.0		
* 6069	9870	475	1.0		
J1359	10,234	500	1.0		
J1364	↓	500	1.0		
QC 3296		500	1.0		
QC 3296 S		500	1.0		
J1363 S		450	1.0		
J1365 R		480	1.0		

COMMENTS FOR EXTRACT.:

~~* Note:~~ Do NOT put through clean-up
~~*~~ SPECGC

* APS/PCB(GC)

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
Decachlorobiphenyl	100	10 ng/ml	10529

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: Joe Bakant 7/9/85
Conc.: Rita San Miguel 7/9/85
UPD/Supervisor: Nina Gandhi 7/10/85
Spike Rita San Miguel

JUL 15, 1985 17:33
SEQUENCE: WPCB ON CRT 15
CHANNEL 5

SUBSEQUENCE 1

METHOD
PCBB5

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	DW STDA ,	1,	PW1250:DY,	RW1250:DY,	100.00,	1.0000,	1.0000
2	AR1260 0.5 ,	2,	PW1251:DY,	RW1251:DY,	100.00,	1.0000,	1.0000
3	QC3296 ,	3,	PW1252:DY,	RW1252:DY,	100.00,	1.0000,	1.0000
4	QC3296S ,	4,	PW1253:DY,	RW1253:DY,	100.00,	1.0000,	1.0000
5	J1363 ,	5,	J1363A:DY,	J1363B:DY,	100.00,	1.0000,	1.0000
6	J1363S ,	6,	PW1254:DY,	RW1254:DY,	100.00,	1.0000,	1.0000
7	J1365 ,	7,	J1365A:DY,	J1365B:DY,	100.00,	1.0000,	1.0000
8	J1365R ,	8,	PW1255:DY,	RW1255:DY,	100.00,	1.0000,	1.0000
9	AR1254 0.5 ,	9,	PW1256:DY,	RW1256:DY,	100.00,	1.0000,	1.0000
10	AR1248 0.5 ,	10,	PW1257:DY,	RW1257:DY,	100.00,	1.0000,	1.0000
11	H9624 ,	11,	H9624A:DY,	H9624B:DY,	100.00,	1.0000,	1.0000
12	J1360 ,	12,	J1360A:DY,	J1360B:DY,	100.00,	1.0000,	1.0000
13	J1361 ,	13,	J1361A:DY,	J1361B:DY,	100.00,	1.0000,	1.0000
14	J1362 ,	14,	J1362A:DY,	J1362B:DY,	100.00,	1.0000,	1.0000
15	AR1242 0.5 ,	15,	PW1258:DY,	RW1257:DY,	100.00,	1.0000,	1.0000
16	AR1232 0.5 ,	16,	PW1259:DY,	RW1259:DY,	100.00,	1.0000,	1.0000
17	J0647 ,	17,	J0647A:DY,	J0647B:DY,	100.00,	1.0000,	1.0000
18	J0648 ,	18,	J0648A:DY,	J0648B:DY,	100.00,	1.0000,	1.0000
19	J0649 ,	19,	J0649A:DY,	J0649B:DY,	100.00,	1.0000,	1.0000
20	J0651 ,	20,	J0651A:DY,	J0651B:DY,	100.00,	1.0000,	1.0000
21	~~AR1260 1.0~~ J0652 ,	21,	PW1260:DY,	RW1260:DY,	100.00,	1.0000,	1.0000
22	AR1221 0.5 ,	22,	PW1261:DY,	RW1261:DY,	100.00,	1.0000,	1.0000
23	J6066 ,	23,	J6066A:DY,	J6066B:DY,	100.00,	1.0000,	1.0000
24	J6067 ,	24,	J6067A:DY,	J6067B:DY,	100.00,	1.0000,	1.0000
25	J6069 ,	25,	J6069A:DY,	J6069B:DY,	100.00,	1.0000,	1.0000
26	J1359 ,	26,	J1359A:DY,	J1359B:DY,	100.00,	1.0000,	1.0000
27	J1364 ,	27,	J1364A:DY,	J1364B:DY,	100.00,	1.0000,	1.0000
28	AR1016 0.5 ,	28,	PW1262:DY,	RW1262:DY,	100.00,	1.0000,	1.0000
29	AR1260 5 ,	29,	PW1263:DY,	RW1263:DY,	100.00,	1.0000,	1.0000
30	DW STDA ,	30,	PW1264:DY,	RW1264:DY,	100.00,	1.0000,	1.0000
31	QC3301 ,	31,	PW1265:DY,	RW1265:DY,	100.00,	1.0000,	1.0000
32	QC3301S ,	32,	PW1266:DY,	RW1266:DY,	100.00,	1.0000,	1.0000
33	J0661 ,	33,	J0661A:DY,	J0661B:DY,	100.00,	1.0000,	1.0000
34	J0661S ,	34,	PW1267:DY,	RW1267:DY,	100.00,	1.0000,	1.0000
35	J0660 ,	35,	J0660A:DY,	J0660B:DY,	100.00,	1.0000,	1.0000
36	J0660R ,	36,	PW1268:DY,	RW1268:DY,	100.00,	1.0000,	1.0000
37	J0970 ,	37,	J0970A:DY,	J0970B:DY,	100.00,	1.0000,	1.0000
38	AR1260 0.5 ,	38,	PW1269:DY,	RW1269:DY,	100.00,	1.0000,	1.0000

7/15/85

7/18/85

7/19/85

EXTRACTION LOG

QC Batch # 3278

Analysis: AP8/DAILC 210
AP8/DAILC 254
* SPECLC

Matrix: H_2O

Turnaround: NORM

Date: 7/9/85

Extraction Method:
sep funnel
continuous
soxhlet
other Aliquoting

Sample Ident	Lab Data	Sample Wt (g)	Extract Vol (ml) Aliquot		Comments
H8331	9856		2ml		
H8332	↓		2ml		
H8333	↓		2ml		
H8334	↓		2ml		
H8335	↓		2ml		
H8337	↓		2ml		
H8336	9864		2ml		
H6066	9887		2ml		
H6067	↓		2ml		
H6069	9878		2ml		
H9998	9958		2ml		
H9999	↓		2ml		
J0545	10096		2ml		
H6068	9913		2ml		
* J1534	10,150		2ml		
* J1536	↓		2ml		
* J1538	↓		2ml		
* J1542	↓		2ml		
MG J1538 R	10,150		2 ml		
QC 3278			2ml		
QC 3278 S			2ml		
J1534 S			2ml		
H8335 R			2ml		

COMMENTS FOR EXTRACT.:

~~* DO NOT USE FOR QC~~

* DO USE FOR QC!!

Aliquot ~2 ml. into vial. Identify vial with "Sharpie" no tape labels

QC - Hycopure H_2O only

MS or QCS — add 1.0 ml. of both AP8/DAI LC std. (2 comp & 8 comp) to 5.0 ml. volumetric. Bring to 5.0 ml. w/ H_2O or sample. Mix, Aliquot into vial. NBB

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
AP8-HPLC DAI Spike I	1 ml	2 comp 25 mg/ml	10969
AP8-HPLC DAI Spike II	1 ml	8 comp 25 mg/ml	10973

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: [illegible] 7.9.85 UPD/Supervisor: MBarkley 7/9/85

Conc.: [illegible] 7.9.85

EXTRACTION LOG

Sample Number	Log Entry	Sample Vol (ml)	Aliquot Extract Vol (ml) BN	Aliquot Extract Vol (ml) ACID	Comments
H8332	9856		2.0ml		
H8333			2.0ml		
H8334			2.0ml		
H8335			2.0ml		
H8337			2.0ml		
H9336	9864		2.0ml		
H60669	9887		2.0ml		
H60667			2.0ml		
H60699	9878		2.0ml		
H9998	9958		2.0ml		
H9999			2.0ml		
J0545	10096		2.0ml		
H6068	9913		2.0ml	[redacted]	
* [redacted]	10150		2.0ml	[redacted]	
QC 3278			2.0ml		
QC 3278 S			2.0ml		
J 1534 S			2.0ml		
H 8335R			2.0ml		

QC Batch # 3278

Analysis: APB/DAILC 210
APB/DAILC 254
* REVISED *

Matrix: H_2O

Turnaround: NORM

Date: 7/9/85

Extraction Method:
sep funnel
continuous
soxhlet
other Aliquoting.

COMMENTS FOR EXTRACT.:

* [redacted]

COMMENTS FOR GC/MS:

	FRACTION	SPIKE Amt (ml)	SPIKE Conc.	SPIKE Lot #
I	APPB-HPLC DAI I	1.0ml	25mg/ml	10,969
II	APPB-HPLC DAI II	1.0ml	25mg/ml	10,973

SURROGATE	Amt. (ml)	Conc.	Lot #
		BN	
		ACID	

Set-up: [signature] 7.9.85 UPD/Supervisor: [signature] 7/9/85

Conc.: [signature] 7.9.85 Spike verified: [signature] 7/9/85

JUL 12, 1985 8:00
SEQUENCE: LCS108 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
EXT280

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

7/16/85

Helen Wagner 7-17-85
Janet L. Schaper 7/20/85

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10903-025,	0,	PH1500:DK,	RH1500:DK,	100.00,	1.0000,	1.0000
2	STD10907-250,	1,	PH1501:DK,	RH1501:DK,	100.00,	1.0000,	1.0000
3	H6067 ,	2,	PH1502:DK,	RH1502:DK,	100.00,	1.0000,	1.0000
4	STD10911-500,	3,	PH1503:DK,	RH1503:DK,	100.00,	1.0000,	1.0000
5	STD10899-100,	4,	PH1504:DK,	RH1504:DK,	100.00,	1.0000,	1.0000
6	/E						

SUBSEQUENCE 2

METHOD
DAI210

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10972-0.5,	5,	PH1505:DK,	RH1505:DK,	100.00,	1.0000,	1.0000
2	STD10976-0.5,	6,	PH1506:DK,	RH1506:DK,	100.00,	1.0000,	1.0000
3	QC3278 ,	7,	PH1507:DK,	RH1507:DK,	100.00,	1.0000,	1.0000
4	QC3278S ,	8,	PH1508:DK,	RH1508:DK,	100.00,	1.0000,	1.0000
5	J1534 ,	9,	PH1509:DK,	RH1509:DK,	100.00,	1.0000,	1.0000
6	J1534S ,	10,	PH1510:DK,	RH1510:DK,	100.00,	1.0000,	1.0000
7	H8331 ,	11,	PH1511:DK,	RH1511:DK,	100.00,	1.0000,	1.0000
8	H8332 ,	12,	PH1512:DK,	RH1512:DK,	100.00,	1.0000,	1.0000
9	H8333 ,	13,	PH1513:DK,	RH1513:DK,	100.00,	1.0000,	1.0000
10	H8334 ,	14,	PH1514:DK,	RH1514:DK,	100.00,	1.0000,	1.0000
11	STD10971-1.0,	15,	PH1515:DK,	RH1515:DK,	100.00,	1.0000,	1.0000
12	STD10975-1.0,	16,	PH1516:DK,	RH1516:DK,	100.00,	1.0000,	1.0000
13	H8335 ,	17,	PH1517:DK,	RH1517:DK,	100.00,	1.0000,	1.0000
14	H8335R ,	18,	PH1518:DK,	RH1518:DK,	100.00,	1.0000,	1.0000
15	H8337 ,	19,	PH1519:DK,	RH1519:DK,	100.00,	1.0000,	1.0000

```
16  H8336        ,  20, PH1520:DK, RH1520:DK, 100.00,  1.0000,  1.0000
17  H6066        ,  21, PH1521:DK, RH1521:DK, 100.00,  1.0000,  1.0000
18  H6067        ,  22, PH1522:DK, RH1522:DK, 100.00,  1.0000,  1.0000
19  H6069        ,  23, PH1523:DK, RH1523:DK, 100.00,  1.0000,  1.0000
20  H9998        ,  24, PH1524:DK, RH1524:DK, 100.00,  1.0000,  1.0000
21  STD10970-5.0,  25, PH1525:DK, RH1525:DK, 100.00,  1.0000,  1.0000
22  STD10974-5.0,  26, PH1526:DK, RH1526:DK, 100.00,  1.0000,  1.0000
23  H9999        ,  27, PH1527:DK, RH1527:DK, 100.00,  1.0000,  1.0000
24  J0545        ,  28, PH1528:DK, RH1528:DK, 100.00,  1.0000,  1.0000
25  H6068        ,  29, PH1529:DK, RH1529:DK, 100.00,  1.0000,  1.0000
26  STD10969-25.,  30, PH1530:DK, RH1530:DK, 100.00,  1.0000,  1.0000
27  STD10973-25.,  31, PH1531:DK, RH1531:DK, 100.00,  1.0000,  1.0000
28  /E
```

JUL 13, 1985 11:56
SEQUENCE: LCS109 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
DAI210

DIALG-PRG PARAM-FILE
/N

7/17/85

#WSHS	#PMPS	STOP
5,	5,	1

ISO	POST-BTL#	POST-#WSHS
NO ,	0,	1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD11020-025,	17,	PH1555:CX,	RH1555:CX,	100.00,	1.0000,	1.0000
2	STD11021-5.0,	18,	PH1556:CX,	RH1556:CX,	100.00,	1.0000,	1.0000
3	STD11022-1.0,	19,	PH1557:CX,	RH1557:CX,	100.00,	1.0000,	1.0000
4	STD11023-0.5,	20,	PH1558:CX,	RH1558:CX,	100.00,	1.0000,	1.0000
5	/E						

16, 1985 15:50
SEQUENCE: LCS111 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
DAI230

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD11023-0.5,	0,	PH1700:DZ,	RH1700:DZ,	100.00,	1.0000,	1.0000
2	STD11022-1.0,	1,	PH1701:DZ,	RH1701:DZ,	100.00,	1.0000,	1.0000
3	H8337 ,	2,	PH1702:DZ,	RH1702:DZ,	100.00,	1.0000,	1.0000
4	H8336 ,	3,	PH1703 ,	RH1703:DZ,	100.00,	1.0000,	1.0000
5	H6067 ,	4,	PH1704:DZ,	RH1704:DZ,	100.00,	1.0000,	1.0000
6	STD11021-5.0,	5,	PH1705:DZ,	RH1705:DZ,	100.00,	1.0000,	1.0000
7	STD11021-25.,	6,	PH1706:DZ,	RH1706:DZ,	100.00,	1.0000,	1.0000
8	/E 20						

SUBSEQUENCE 2

METHOD
DAI210

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD11023-0.5,	7,	PH1707:DZ,	RH1707:DZ,	100.00,	1.0000,	1.0000
2	STD11018-0.5,	8,	PH1708:DZ,	RH1708:DZ,	100.00,	1.0000,	1.0000
3	QC-3280 ,	9,	PH1709:DZ,	RH1709:DZ,	100.00,	1.0000,	1.0000
4	QC-3280S ,	10,	PH1710:DZ,	RH1710:DZ,	100.00,	1.0000,	1.0000
5	J1341 ,	11,	PH1711:DZ,	RH1711:DZ,	100.00,	1.0000,	1.0000
6	J1341S ,	12,	PH1712:DZ,	RH1712:DZ,	100.00,	1.0000,	1.0000
7	J1342 ,	13,	PH1713:DZ,	RH1713:DZ,	100.00,	1.0000,	1.0000
8	J1342R ,	14,	PH1714:DZ,	RH1714:DZ,	100.00,	1.0000,	1.0000
9	STD11022-1.0,	15,	PH1715:DZ,	RH1715:DZ,	100.00,	1.0000,	1.0000
10	STD11017-1.0,	16,	PH1716:DZ,	RH1716:DZ,	100.00,	1.0000,	1.0000
11	J1343 ,	17,	PH1717:DZ,	RH1717:DZ,	100.00,	1.0000,	1.0000
12	J1344 ,	18,	PH1718:DZ,	RH1718:DZ,	100.00,	1.0000,	1.0000
13	J1346 ,	19,	PH1719:DZ,	RH1719:DZ,	100.00,	1.0000,	1.0000

R. Wagner
7-19-85

```
14  J1340          ,  20, PH1720:DZ, RH1720:DZ, 100.00,  1.0000,  1.0000
15  J1013          ,  21, PH1721:DZ, RH1721:DZ, 100.00,  1.0000,  1.0000
16  J1014          ,  22, PH1722:DZ, RH1722:DZ, 100.00,  1.0000,  1.0000
17  STD11021-5.0,  23, PH1723:DZ, RH1723:DZ, 100.00,  1.0000,  1.0000
18  STD11016-5.0,  24, PH1724:DZ, RH1724:DZ, 100.00,  1.0000,  1.0000
19  H2389          ,  25, PH1725:DZ, RH1725:DZ, 100.00,  1.0000,  1.0000
20  H2390          ,  26, PH1726:DZ, RH1726:DZ, 100.00,  1.0000,  1.0000
21  H2391          ,  27, PH1727:DZ, RH1727:DZ, 100.00,  1.0000,  1.0000
22  H2392          ,  28, PH1728:DZ, RH1728:DZ, 100.00,  1.0000,  1.0000
23  J2257          ,  29, PH1729:DZ, RH1729:DZ, 100.00,  1.0000,  1.0000
24  J2258          ,  30, PH1730:DZ, RH1730:DZ, 100.00,  1.0000,  1.0000
25  STD11020-25.,  31, PH1731:DZ, RH1731:DZ, 100.00,  1.0000,  1.0000
26  STD11015-25.,  32, PH1732:DZ, RH1732:DZ, 100.00,  1.0000,  1.0000
27  /E
```

EXTRACTION LOG

QC Batch # 3259

Analysis: APB / EXT LC

Matrix: H_2O

Turnaround: NORM

Date: 7/2/85

Extraction Method:

- sep funnel ✓
- continuous
- soxhlet
- other

Sample Id	Log Date	Sample Vol (ml)	Extract Vol (ml)		Comments
H7526	9740	1000	1.0		
H8331	9856	1000	1.0		
H8332	↓	1000	1.0		
H8333	↓	1000	1.0		
H8334	↓	1000	1.0		
H8335	↓	1000	1.0		
H8337	↓	1000	1.0		
H8336	9864	750	1.0		
H6066	9887	1000	1.0		
H6067	↓	950	1.0		
H6069	9878	960	1.0		
H6068	9913	960	1.0		
H9998	9958	970	1.0		
H9999	↓	970	1.0		
J0545	10096	1000	1.0		
QC 3259		1000	1.0		
QC 3259 S		1000	1.0		
# 6066 S		1000	1.0		
# 6069 R		1000	1.0		

COMMENTS FOR EXTRACT.:

★ - some of sample was lost during shake. (H8332).

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
APB EXT LC I	0.5 ml	1000 ug/ml	10,897
APB EXT LC II	0.5 ml	1000 ug/ml	10,898
APB EXT LC III	0.5 ml	1000 ug/ml	10,899
1-naphthyl Thiourea	0.5 ml	1000 ug/ml	10,900

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: Irma Grandli 7/2/85

Conc.: Joseph Angelone 7-2-85

UPD/Supervisor: M Barkley 7/3/85

Spike verified [illegible] 7-2-85

JUL 5, 1985 16:27
SEQUENCE: LCS105 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
EXT250

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

7/5/85

K. Baker 7-13-85

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10901-025,	0,	PH1300:CX,	RH1300:CX,	100.00,	1.0000,	1.0000
2	STD10902-025,	1,	PH1301:CX,	RH1301:CX,	100.00,	1.0000,	1.0000
3	STD10903-025,	2,	PH1302:CX,	RH1302:CX,	100.00,	1.0000,	1.0000
4	STD10904-025,	3,	PH1303:CX,	RH1303:CX,	100.00,	1.0000,	1.0000
5	QC3259 ,	4,	PH1304:CX,	RH1304:CX,	100.00,	1.0000,	1.0000
6	QC3259S ,	5,	PH1305:CX,	RH1305:CX,	100.00,	1.0000,	1.0000
7	H6066 ,	6,	PH1306:CX,	RH1306:CX,	100.00,	1.0000,	1.0000
8	H6066S ,	7,	PH1307:CX,	RH1307:CX,	100.00,	1.0000,	1.0000
9	H6069 ,	8,	PH1308:CX,	RH1308:CX,	100.00,	1.0000,	1.0000
10	H6069R ,	9,	PH1309:CX,	RH1309:CX,	100.00,	1.0000,	1.0000
11	H7526 ,	10,	PH1310:CX,	RH1310:CX,	100.00,	1.0000,	1.0000
12	STD10905-250,	11,	PH1311:CX,	RH1311:CX,	100.00,	1.0000,	1.0000
13	STD10906-250,	12,	PH1312:CX,	RH1312:CX,	100.00,	1.0000,	1.0000
14	STD10907-250,	13,	PH1313:CX,	RH1313:CX,	100.00,	1.0000,	1.0000
15	STD10908-250,	14,	PH1314:CX,	RH1314:CX,	100.00,	1.0000,	1.0000
16	H8331 ,	15,	PH1315:CX,	RH1315:CX,	100.00,	1.0000,	1.0000
17	H8332 ,	16,	PH1316:CX,	RH1316:CX,	100.00,	1.0000,	1.0000
18	H8333 ,	17,	PH1317:CX,	RH1317:CX,	100.00,	1.0000,	1.0000
19	H8334 ,	18,	PH1318:CX,	RH1318:CX,	100.00,	1.0000,	1.0000
20	H8335 ,	19,	PH1319:CX,	RH1319:CX,	100.00,	1.0000,	1.0000
21	STD10909-500,	20,	PH1320:CX,	RH1320:CX,	100.00,	1.0000,	1.0000
22	STD10910-500,	21,	PH1321:CX,	RH1321:CX,	100.00,	1.0000,	1.0000
23	STD10911-500,	22,	PH1322:CX,	RH1322:CX,	100.00,	1.0000,	1.0000
24	STD10912-500,	23,	PH1323:CX,	RH1323:CX,	100.00,	1.0000,	1.0000
25	H8337 ,	24,	PH1324:CX,	RH1324:CX,	100.00,	1.0000,	1.0000
26	H8336 ,	25,	PH1325:CX,	RH1325:CX,	100.00,	1.0000,	1.0000
27	H6067 ,	26,	PH1326:CX,	RH1326:CX,	100.00,	1.0000,	1.0000
28	H6068 ,	27,	PH1327:CX,	RH1327:CX,	100.00,	1.0000,	1.0000
29	H9998 ,	28,	PH1328:CX,	RH1328:CX,	100.00,	1.0000,	1.0000
30	H9999 ,	29,	PH1329:CX,	RH1329:CX,	100.00,	1.0000,	1.0000
31	J0545 ,	30,	PH1330:CX,	RH1330:CX,	100.00,	1.0000,	1.0000
32	ST10897-1000,	31,	PH1331:CX,	RH1331:CX,	100.00,	1.0000,	1.0000
33	ST10898-1000,	32,	PH1332:CX,	RH1332:CX,	100.00,	1.0000,	1.0000
34	STD1099-1000,	33,	PH1333:CX,	RH1333:CX,	100.00,	1.0000,	1.0000
35	ST10900-1000,	34,	PH1334:CX,	RH1334:CX,	100.00,	1.0000,	1.0000
36	/E						

ETC ENVIRONMENTAL TESTING and CERTIFICATION

LOG LINK 9887

Metals Analysis Custody Log

Samples H60066 ; H60067
~~H60069~~ W 7/1/85

	Chemist	Date
Hg Prep	Douglas G. Lehfeldt	6/25/85
AA/ICAP Prep	Joan Komarek	6/21/85

Lab Supervisor Lidya Nikiforov date 6/27/85

ANALYSIS/CUSTODY

TITLE: Cyanides BOOK NO. CV6 PAGE NO. 32

	SAMPLE #	CONC.
1	H7525	BmDL
2	H7526	BmDL
3	H8334	BmDL
4	H8335	BmDL
5	H8728	0.0598
6	H9502	0.0275*
7	J3051	Not analyzed Rerun
8	J3052	Not analyzed Rerun
9	H4664	ND
10	G5045	ND
11	J1545	1.67 1:10 dil
12	H7271	BmDL
13	H7272	BmDL
14	J1534	BmDL
15	J1536	ND
16	J1538	ND
17	J1542	ND
18	J2722	Rerun*
19	J2721	Rerun*
20	H9651	ND
21	H9667	ND
22	H9668	ND
23	H9669	ND
24	H9685	BmDL
25	H9687	ND
26	J1360	ND
27	J1361	ND
28	J1362	1:20 Rerun*
29	J1363	ND

	SAMPLE #	CONC
30	J1365	BmDL
31	H6066	ND
32	H6067	0.120
33	H6068	BmDL
34	H6069	BmDL
35	H9998	BmDL
36	H9999	ND
37	J1530	ND
38	J1531	ND
39	J1537	BmDL
40	J1540	BmDL
41	G5044	BmDL
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		

UNITS: MG/L Detection limit = 0.025 mg/l

COMMENTS: BmDL

< = less than 0.025 mg/l

ND ≤ 0

* matrix interference

** sample bright yellow

2nd (prepared fresh) Blank Recovery = 0.197/0.2 x 100 = 99%

EPA Std. Rec. = 0.199/0.224 x 100 = 89%

1st Blank Recovery (Low) = 0.145/0.2 x 100 = 73%

SPIKE RECOVERY

SAMPLE #:	H4664	H9685	J1537
REPLICATE 1:	ND	BmDL	BmDL
REPLICATE 2:	ND	BmDL	BmDL
MEAN :	ND	BmDL	BmDL
STD. DEV. :			
SPIKE VALUE:	0.2	0.2	0.2
REPLICATE 1:	0.171	0.197	0.195
REPLICATE 2:			
MEAN :			
STD. DEV. :			
% RECOVERY :	86%	99%	98%

REPLICATE DATA:

SAMPLE # :			
REPLICATE 1:			
REPLICATE 2:			
MEAN :			
STD DEV. :			

ANALYST: Y. Wagner

DATE : 7-12-85

VERIFIED BY:

Technical Report

for

VERTAC CHEMICAL CORPORATION

P.O. BOX 3

VICKSBURG, MS 39180

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK	W007	850610		

Denis C. K. Lin, Ph.D.

Vice President
Research and Operations

This Technical Report is a product of the INSITE System and was generated using LODESTAR Data Management Software.

TABLE OF CONTENTS

Introduction

Table 1: Results and Quality Assurance Data

Table 2: Method Performance Data

Methodology

QA Protocol

Report Appendices

Appendix A 1 - Gas Chromatographic Spectral Data for Quantitated Compounds

Appendix A 2 - Chromatographic Spectral Data for Quantitated Compounds

Appendix A - Mass Spectral Data for Quantitated Compounds

Appendix C 1 - GC/MS Subsidiary Data - Blank Chromatograms

Appendix E - Chain of Custody Forms

Introduction

This report contains the analytical results on your water sample, 006 85/07/25. Per your request, we analyzed for as many Appendix VIII parameters as presently available methodology permits. USEPA instructs that SW846, July, 1982 "Test Methods for Evaluating Solid Waste" is to be followed in the analysis. However, SW846 does not provide sufficient information to analyze for all the parameters in Appendix VIII. We have performed the analysis based on the methodology described in SW846 and divided the parameters into the following categories:

1. Direct Aqueous Injection for water soluble compounds by GC/MS.
2. Purge and Trap GC/MS method for volatile compounds.
3. Extractable Acid/Base/Neutral/Pesticides compounds by GC/MS.
4. Pesticides by GC/EC.
5. Pesticides by GC/FPD.
6. Herbicides by GC/EC.
7. Polar and thermally unstable compounds by HPLC/UV.
8. Metallic and Organometallic compounds by ICAP, AA, and Cold Vapor AA. (Table 4)
9. Conventionals.

Furthermore, there are three categories of compounds that cannot be analyzed directly:

1. Compounds which are unstable in water. (Table A)
2. Not Otherwise Specified (N.O.S.) classes of compounds. (Tables B and D)
3. "Exotic" compounds that require special methods. (Table C)

We analyzed for selected representatives from the N.O.S. classes of compounds.

The Appendix VIII Parameters

As proposed on October 1, 1984, (Federal Register, Vol. 49, Page 38786) there are 13 parameters that are unstable in water; and 10 parameters that are exotic in nature and no satisfactory analytical methods are available. Furthermore, for those parameters that have metals in their compositions it is sufficient to analyze for the metal components only. There are 51 parameters that belong to this category. Using the same rationale 14 parameters can be tested as cyanides. Since one exotic, two unstable, and seven cyanide compounds are also classified as metals, the remaining Appendix VIII parameters that need to be addressed in an analytical scheme total 297.

The analytical scheme designed at ETC for the Appendix VIII parameters follows the rationale suggested by SW-846. Various parameters are categorized according to their chemical and physical characteristics and they are grouped together under analytical methods by which they can be quantified at optional method detection limits. We agree with EPA's approach to the unstable, exotic and metallic compounds. We focus our attention on the remaining 297 parameters.

There are 11 parameters among the 297 that ETC believes should also be classified as "unstable in water" (Table 1). EPA, while acknowledging that there are other unstable compounds, suggests that there is some likelihood they can be found in water. Since EPA insists these compounds should be analyzed, we have decided to incorporate them into our analytical scheme but not setting data acceptance critiera for them.

There are another 33 parameters (Table 2) that ETC believes should be classified as exotic compounds and require special or unusual methods for their analysis. Ten of these compounds are antineoplastic agents or other drugs. Five are uncommon compounds where pertinent information is unavailable. Three are alkaloid poisons or mycotoxins. Two are water soluble dyes. One is a very volatile compounds that can explode easily. The remaining 12 compounds, along with the rest of the compounds in this exotic group, possess unusual chemical and physical characteristics which in turn dictate that their analysis at a meaningful detection limit will require individual tailor-made analytical methodology. In most of these cases, EPA recommends to include them in a generalized analytical method without any data to support such recommendations. ETC is obliged to include these parameters into its most

recent Appendix VIII analytical scheme, but strongly urges US EPA to reexamine its position. Perhaps only under unusual circumstances analysis is required for the selected exotic parameters in Table 2.

Among the 297 parameters there are 28 that are listed "N.O.S." (not otherwise specified). These 28 parameters, along with aflatoxins, coal tars, cresote, cresols, phthalic acid esters, tetrachloroethane, and toluenediamine, constitute 35 complex mixtures or classes of compounds (Table B). Since some of these parameters represent thousands of individual compounds it is necessary to select representatives for the analysis of these parameters. In as much as possible, we have chosen "priority pollutants" and commonly available reference standard compounds to represent the 35 parameters (see Table B).

Throughout the development of the analytical scheme one of the major obstacles was the availability of reference standard compounds for the 375 parameters.

Results

There are 375 listings in Appendix VIII. To assist you in reviewing the results we have assigned a number to each parameter in the "Grand" Table. Also in the Grand Table we classified the parameters according to their analytical categories and indicated which result table the data and QA data are tabulated on. Depending on the analyses ordered, the quality assurance data may include results from the blank, spiked blank, spiked sample (i.e. matrix spike) and replicate sample as well as results from surrogate compound analyses.

In the results table, when a compound or element is present below published MDL it is reported as BMDL (Below Method Detection Limit). When a compound is not present at any detectable concentrations it is reported as ND (Not Detected). Matrix spike and replicate analyses, where included, were performed on samples randomly chosen within each quality assurance batch and are therefore not necessarily spikes and replicates of this report's sample. Surrogate compound recovery data and instrument calibration data are included in the Method Performance Data Tables.

The procedures used in the analysis of the sample are described in this report's methodology section. All analytical procedures within our laboratory are performed within a strictly enforced Quality Assurance Protocol. A description of this Protocol is included in the report. The report appendices include the chain of custody record for your sample and, where appropriate, the gas chromatograms and mass spectra.

TABLE 1

PARAMETERS WHICH SHOULD BE UNSTABLE IN WATER

40 Benzotrichloride
53 2-Butanone peroxide
75 1-Chloro-2,3-epoxypropane
79 Chloromethyl methyl ether
138 1,2,3,4-Diepoxybutane
148 Diisopropylfluorophosphate
161 Dimethyl sulfate
220 Maleic anhydride
295 Phorate
298 Phthalic Anhydride
331 Tetraethyldithiopyrophosphate

TABLE 2

"EXOTIC" COMPOUNDS THAT REQUIRE SPECIAL METHODS

10 Aflatoxins
15 Mitomycin C
25 Auramine
26 Azaserine
52 Brucine
62 Chlorambucil
86 Citrus red No. 2
98 Cyclophosphamide
99 Daunomycin
103 Diallate
147 3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol
173 2,4-Dithiobiuret
188 Formaldehyde
189 Formic acid
202 Hexaethyl tetraphosphate
241 N-Methyl-N'-nitrosoguanidine
262 4-Nitroquinoline-1-oxide
277 N-Nitrososarcosine
279 Diphosphoramide, octamethyl
281 Endothal
282 Paraldehyde
304 1,3-Propane sultone
306 Propylthiouracil
311 Saccharin and salts
320 Streptozotocin
322 Strychnine and salts
324 2,3,7,8-TCDD
334 Tetranitromethane
343 Thioacetamide
344 Thiosemicarbazide
367 Tri(1-azoidinyl)phosphine sulfide
369 Trypan blue
370 Uracil mustard

GRAND TABLE

	COMPOUND NAME	FRACTION	TABLE
1	Acetonitrile	P&T	QR27
2	Acetophenone	A/B/N	QR28
3	Warfarin	HPLC	QR31
4	2-Acetylaminofluorene	A/B/N	QR28
5	Acetyl chloride	UNSTABLE	TBL A
6	1-Acetyl-2-thiourea	HPLC	QR25
7	Acrolein	P&T	QR27
8	Acrylamide	HPLC	QR25
9	Acrylonitrile	P&T	QR27
10	Aflatoxins	CLASS	TBL B
10A	Aflatoxins, Total	A/B/N	QR28
11	Aldrin	PEST/HERB	QR24
12	Allyl alcohol	DIR/INJ	QR26
13	Aluminum phosphide	INORG,UNSTABLE	TBL D,A
13A	Aluminum	METALS	QR29
14	4-Aminobiphenyl	A/B/N	QR28
15	Mitomycin C	HPLC	QR31
16	5-(Aminomethyl)-3-isoxazolol	A/B/N	QR28
17	Amitrole	HPLC	QR25
18	Aniline	A/B/N	QR28
19	Antimony and Compounds, N.O.S.	CLASS, INORG	TBL B,D
19A	Antimony	METALS	QR29
20	Aramite	A/B/N	QR28
21	Arsenic and Compounds, N.O.S.	CLASS, INORG	TBL B,D
21A	Arsenic	METALS	QR29
22	Arsenic acid (Orthoarsenic acid)	INORG	TBL D
23	Arsenic pentoxide (Arsenic (V) oxide)	INORG	TBL D
24	Arsenic trioxide (Arsenic (III) oxide)	INORG	TBL D
25	Auramine	A/B/N	QR28
26	Azaserine	HPLC	QR31
27	Barium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
27A	Barium	METALS	QR29
28	Barium cyanide	INORG	TBL D
29	Benz[c]acridine	A/B/N	QR28
30	Benz[a]anthracene	A/B/N	QR28
31	Benzene	P&T	QR27
32	Benzenearsonic acid	INORG	TBL D
33	Dichloromethylbenzene	A/B/N	QR28
34	Benzenethiol	A/B/N	QR28
35	Benzidine	HPLC	QR31
36	Benzo[b]fluoranthene	A/B/N	QR28
37	Benzo[j]fluoranthene	A/B/N	QR28
38	Benzo[a]pyrene	A/B/N	QR28
39	p-Benzoquinone	A/B/N	QR28
40	Benzotrichloride	A/B/N	QR28
41	Benzyl chloride	A/B/N	QR28
42	Beryllium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
42A	Beryllium	METALS	QR29
43	bis(2-Chloroethoxy)methane	A/B/N	QR28
44	bis(2-Chloroethyl) ether	A/B/N	QR28
45	Chlornaphazine	A/B/N	QR28
46	bis(2-Chloroisopropyl)ether	A/B/N	QR28
47	bis(Chloromethyl)ether	UNSTABLE	TBL A
48	bis(2-ethylhexyl)phthalate	A/B/N	QR28
49	Bromoacetone	P&T	QR27
50	Methyl bromide	P&T	QR27
51	4-Bromophenyl phenyl ether	A/B/N	QR28
52	Brucine	A/B/N	QR28
53	2-Butanone peroxide	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
54	Butyl benzyl phthalate	A/B/N	QR28
55	2-sec-Butyl-4,6-dinitrophenol	A/B/N	QR28
56	Cadmium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
56A	Cadmium	METALS	QR29
57	Calcium chromate(Chromic acid,calcium salt)	INORG	TBL D
57A	Calcium	METALS	QR29
58	Calcium cyanide	INORG	TBL D
59	Carbon disulfide	P&T	QR27
60	Carbon oxyfluoride	UNSTABLE	TBL A
61	Chloral	DIR/INJ	QR26
62	Chlorambucil	HPLC	QR31
63	Chlordane	PEST/HERB	QR24
64	Chlorinated Benzenes, N.O.S.	CLASS	TBL B
64A	1,2,3-trichlorobenzene	A/B/N	QR28
64B	2,4,6-trichlorobenzene	A/B/N	QR28
64C	1,2,3,4-tetrachlorobenzene	A/B/N	QR28
64D	1,2,3,5-tetrachlorobenzene	A/B/N	QR28
65	Chlorinated Ethane, N.O.S.	CLASS	TBL B
65A	Chloroethane	P&T	QR27
66	Chlorinated Fluorocarbons, N.O.S.	CLASS	TBL B
66A	Freon TF	P&T	QR27
67	Chlorinated Naphthalene, N.O.S.	CLASS	TBL B
67A	1-chloronaphthalene	A/B/N	QR28
68	Chlorinated Phenol, N.O.S.	CLASS	TBL B
68A	2,3,5,6-tetrachlorophenol	A/B/N	QR28
68B	2,3,4,5-tetrachlorophenol	A/B/N	QR28
69	Chloroacetaldehyde	DIR/INJ	QR26
70	Chloroalkyl Ethers, N.O.S.	CLASS	TBL B
71	p-Chloroaniline	A/B/N	QR28
72	Chlorobenzene	P&T	QR27
73	Chlorobenzilate	PEST/HERB	QR24
74	p-Chloro-m-cresol	A/B/N	QR28
75	1-Chloro-2,3-epoxypropane	P&T	QR27
76	2-Chloroethyl vinyl ether	P&T	QR27
77	Chloroform	P&T	QR27
78	Methyl chloride	P&T	QR27
79	Chloromethyl methyl ether	P&T	QR27
80	2-Chloronaphthalene	A/B/N	QR28
81	2-Chlorophenol	A/B/N	QR28
82	1-(o-Chlorophenyl)thiourea	HPLC	QR25
83	3-Chloropropionitrile	DIR/INJ	QR26
84	Chromium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
84A	Chromium	METALS	QR29
85	Chrysene	A/B/N	QR28
86	Citrus red No. 2	HPLC	QR31
87	Coal Tars	CLASS	TBL B
87A	Acenapthene	A/B/N	QR28
87B	Acenaphthalene	A/B/N	QR28
87C	Anthracene	A/B/N	QR28
87D	Benzo(ghi)perylene	A/B/N	QR28
87E	Benzo(k)fluoranthene	A/B/N	QR28
87F	Fluorene	A/B/N	QR28
87G	Phenathrene	A/B/N	QR28
87H	Pyrene	A/B/N	QR28
88	Copper cyanide	INORG	TBL D
88A	Copper	METALS	QR29
89	Creosote	CLASS	TBL B
89A	2,Nitrophenol	A/B/N	QR28
90	Cresols	CLASS	TBL B
90A	o-Cresol	A/B/N	QR28
90B	m+p-Cresol	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
91	Crotonaldehyde	P&T	QR27
92	Cyanides (soluble salts and complexes)N.O.S	CLASS,INORG	TBL B,D
92A	Cyanide, Total	METALS	QR29
93	Cyanogen	DIR/INJ	QR26
94	Cyanogen bromide	INORG	TBL D
95	Cyanogen chloride	INORG	TBL D
96	Cycasin	EXOTIC, UNSTABLE	TBL C, A
97	2-Cyclohexyl-4,6-dinitrophenol	A/B/N	QR28
98	Cyclophosphamide	EXOTIC	TBL C
99	Daunomycin	HPLC	QR31
100	4,4'-DDD	PEST/HERB	QR24
101	4,4'-DDE	PEST/HERB	QR24
102	4,4'-DDT	PEST/HERB	QR24
103	Diallate	A/B/N	QR28
104	Dibenz[a,h]acridine	A/B/N	QR28
105	Dibenz[a,j]acridine	A/B/N	QR28
106	Dibenz[a,h]anthracene	A/B/N	QR28
107	7H-Dibenzo[c,g]carbazole	A/B/N	QR28
108	Dibenzo[a,e]pyrene	A/B/N	QR28
109	Dibenzo[a,h]pyrene	A/B/N	QR28
110	Dibenzo[a,i]pyrene	A/B/N	QR28
111	1,2-dibromo-3-chloropropane	P&T	QR27
112	1,2-Dibromoethane	P&T	QR27
113	Dibromomethane	P&T	QR27
114	Di-n-butyl phthalate	A/B/N	QR28
115	1,2-Dichlorobenzene	A/B/N	QR28
116	1,3-Dichlorobenzene	A/B/N	QR28
117	1,4-Dichlorobenzene	A/B/N	QR28
118	Dichlorobenzene, N.O.S.	CLASS	TBL B
119	3,3'-Dichlorobenzidine	HPLC	QR31
120	1,4-Dichloro-2-butene	P&T	QR27
121	Dichlorodifluoromethane	P&T	QR27
122	1,1-Dichloroethane	P&T	QR27
123	1,2-Dichloroethane	P&T	QR27
124	1,2-Trans-dichloroethylene	P&T	QR27
125	Dichloroethylene, N.O.S.	CLASS	TBL B
126	1,1-Dichloroethylene	P&T	QR27
127	Methylene chloride	P&T	QR27
128	2,4-Dichlorophenol	A/B/N	QR28
129	2,6-Dichlorophenol	A/B/N	QR28
130	2,4-D	PEST/HERB	QR24
131	Dichlorophenylarsine	A/B/N	QR28
132	Dichloropropane, N.O.S.	CLASS	TBL B
132A	1,3-Dichloropropane	P&T	QR27
133	1,2-Dichloropropane	P&T	QR27
134	Dichloropropanol, N.O.S.	CLASS	TBL B
134A	Dichloropropanol	DIR/INJ	QR26
135	2,3-Dichloropropene	P&T	QR27
136A	cis-1,3-Dichloropropene	P&T	QR27
136B	trans-1,3-Dichloropropene	P&T	QR27
137	Dieldrin	PEST/HERB	QR24
138	1,2,3,4-Diepoxybutane	P&T	QR27
139	Diethylarsine	P&T	QR27
140	N,N,-Diethylhydrazine	P&T	QR27
141	Carbophenothion	PEST/HERB	QR24
142	0,0-Diethylphosphoric acid, 0-p-nitrophenyl ester	A/B/N	QR28
143	Diethyl phthalate	A/B/N	QR28
144	Thionazin	PEST/HERB	QR24
145	Diethylstilbesterol	HPLC	QR25
146	Dihydrosafrole	A/B/N	QR28
147	3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol	HPLC	QR31

	COMPOUND NAME	FRACTION	TABLE
148	Diisopropylfluorophosphate	A/B/N	QR28
149	Dimethoate	PEST/HERB	QR24
150	3,3'-Dimethoxybenzidine	HPLC	QR31
151	p-Dimethylaminoazobenzene	A/B/N	QR28
152	7,12-Dimethylbenz[a]anthracene	A/B/N	QR28
153	3,3'-Dimethylbenzidine	HPLC	QR31
154	Dimethyl carbamoylchloride	UNSTABLE	TBL A
155	1,1-Dimethylhydrazine	DIR/INJ	QR26
156	1,2-Dimethylhydrazine	DIR/INJ	QR26
157	Thiofanox	A/B/N	QR28
158	alpha-alpha-Dimethylphenethylamine	A/B/N	QR28
159	2,4-Dimethylphenol	A/B/N	QR28
160	Dimethyl phthalate	A/B/N	QR28
161	Dimethyl sulfate	A/B/N	QR28
162	Dinitrobenzene, N.O.S.	CLASS	TBL B
162A	m-Dinitrobenzene	A/B/N	QR28
163	4,6-Dinitro-o-cresol	A/B/N	QR28
164	2,4-Dinitrophenol	A/B/N	QR28
165	2,4-Dinitrotoluene	A/B/N	QR28
166	2,6-Dinitrotoluene	A/B/N	QR28
167	Di-n-octyl phthalate	A/B/N	QR28
168	1,4-Dioxane	DIR/INJ	QR26
169	Diphenylamine	A/B/N	QR28
170	1,2-Diphenylhydrazine	A/B/N	QR28
171	N-Nitrosodi-n-propylamine	A/B/N	QR28
172	Disulfoton	PEST/HERB	QR24
173	2,4-Dithiobiuret	A/B/N	QR28
174A	Endosulfan I	PEST/HERB	QR24
174B	Endosulfan II	PEST/HERB	QR24
175	Endrin	PEST/HERB	QR24
176	Ethyl carbamate	HPLC	QR25
177	Ethyl cyanide	DIR/INJ	QR26
178	Ethylenebisdithiocarbamic acid	EXOTIC	TBL C
179	Ethyleneimine	HPLC	QR25
180	Ethylene oxide	DIR/INJ	QR26
181	Ethylenethiourea	HPLC	QR25
182	Ethyl methacrylate	P&T	QR27
183	Ethyl methanesulfonate	A/B/N	QR28
184	Fluoranthene	A/B/N	QR28
185	Fluorine	UNSTABLE	TBL A
186	2-Fluoroacetamide	UNSTABLE, EXOTIC	TBL A, C
187	Fluoroacetic acid	DIR/INJ	QR26
188	Formaldehyde	P&T	QR27
189	Formic acid	A/B/N	QR28
190	Glycidylaldehyde	DIR/INJ	QR26
191	Halomethane, N.O.S.	CLASS	TBL B
191A	Chlorodibromomethane	P&T	QR27
191B	Dichlorobromomethane	P&T	QR27
192	Heptachlor	PEST/HERB	QR24
193	Heptachlor epoxide	PEST/HERB	QR24
194	Hexachlorobenzene	A/B/N	QR28
195	Hexachlorobutadiene	A/B/N	QR28
196A	Alpha-BHC	PEST/HERB	QR24
196B	Beta-BHC	PEST/HERB	QR24
196C	Gamma-BHC	PEST/HERB	QR24
196D	Delta-BHC	PEST/HERB	QR24
197	Hexachlorocyclopentadiene	A/B/N	QR28
198	Hexachloroethane	A/B/N	QR28
199	Hexachlorohexahydro-endo, endo-dimethanonaphthalene	A/B/N	QR28
200	Hexachlorophene	A/B/N	QR28

	COMPOUND NAME	FRACTION	TABLE
201	Hexachloropropene	A/B/N	QR28
202	Hexaethyltetraphosphate	A/B/N	QR28
203	Hydrazine	DIR/INJ	QR26
204	Hydrogen cyanide	SEE 92	TBL B
205	Hydrofluoric acid	UNSTABLE	TBL A
206	Hydrogen sulfide	P&T	QR27
207	Hydroxydimethylarsine oxide	INORG	TBL D
208	Indeno(1,2,3-cd)pyrene	A/B/N	QR28
209	Iodomethane	P&T	QR27
210	Iron dextran	UNSTABLE, EXOTIC	TBL A,C
210A	Iron	METAL	QR29
211	Methyl isocyanate	UNSTABLE	TBL A
212	Isobutyl alcohol	DIR/INJ	QR26
213	Isosafrole	A/B/N	QR28
214	Kepone	PEST/HERB	QR24
215	Lasiocarpine	UNSTABLE, EXOTIC	TBL A,C
216	Lead and Compounds, N.O.S.	CLASS, INORG	TBL B,D
216A	Lead	METALS	QR29
217	Lead acetate (Acetic acid, lead salt)	INORG	TBL D
218	Lead phosphate (Phosphoric acid, lead salt)	INORG	TBL D
219	Lead subacetate	INORG	TBL D
220	Maleic anhydride	A/B/N	QR28
221	Maleic hydrazide	HPLC	QR25
222	Malononitrile	HPLC	QR25
223	Melphalan	A/B/N	QR28
224	Mercury fulminate	INORG	TBL D
225	Mercury and Compounds, N.O.S.	CLASS, INORG	TBL B,D
225A	Mercury	METALS	QR29
226	Methacrylonitrile	DIR/INJ	QR26
227	Methanethiol	DIR/INJ	QR26
228	Methapyrilene	A/B/N	QR28
229	Methomyl	HPLC	QR25
230	Methoxychlor	PEST/HERB	QR24
231	2-Methylaziridine	HPLC	QR25
232	3-Methylcholanthrene	A/B/N	QR28
233	Methyl Chlorocarbonate	UNSTABLE	TBL A
234	4,4'-Methylenebis(2-chloroaniline)	A/B/N	QR28
235	Methyl ethyl ketone	P&T	QR27
236	Methyl hydrazine	DIR/INJ	QR26
237	2-Methyllactonitrile	DIR/INJ	QR26
238	Methyl methacrylate	P&T	QR27
239	Methyl methanesulfonate	A/B/N	QR28
240	Aldicarb	A/B/N	QR28
241	N-Methyl-N'-nitrosoguanidine	A/B/N	QR28
242	Methyl parathion	PEST/HERB	QR24
243	Methylthiouracil	A/B/N	QR28
244	Mustard gas	UNSTABLE, EXOTIC	TBL A,C
245	Naphthalene	A/B/N	QR28
246	1,4-Naphthoquinone	A/B/N	QR28
247	1-Naphthylamine	A/B/N	QR28
248	2-Naphthylamine	A/B/N	QR28
249	1-Naphthyl-2-thiourea	HPLC	QR31
250	Nickel and Compounds, N.O.S.	CLASS, INORG	TBL B,D
250A	Nickel	METALS	QR29
251	Nickel carbonyl (Nickel tetracarbonyl)	INORG	TBL D

	COMPOUND NAME	FRACTION	TABLE
252	Nickel cyanide (Nickel (II)cyanide)	INORG	TBL D
253	Nicotinic acid	HPLC	QR25
254	Nitric oxide	UNSTABLE, EXOTIC	TBL A,C
255	p-Nitroaniline	A/B/N	QR28
256	Nitrobenzene	A/B/N	QR28
257	Nitrogen dioxide	UNSTABLE	TBL A
258	Nitrogen mustard and hydrochloride salt	EXOTIC, UNSTABLE	TBL C,A
259	Nitrogen mustard N-Oxide and hydrochloride salt	EXOTIC, UNSTABLE	TBL C,A
260	Nitroglycerin	HPLC	QR25
261	4-Nitrophenol	A/B/N	QR28
262	4-Nitroquinoline-1-oxide	A/B/N	QR28
263	Nitrosamines, N.O.S.	CLASS	TBL B
263A	N-Nitrosodiphenylamine	A/B/N	QR28
264	N-Nitrosodi-n-butylamine	A/B/N	QR28
265	N-Nitrosodiethanolamine	A/B/N	QR28
266	N-Nitrosodiethylamine	A/B/N	QR28
267	N-Nitrosodimethylamine	A/B/N	QR28
268	N-Nitroso-N-ethylurea	HPLC	QR25
269	N-Nitrosomethylethylamine	A/B/N	QR28
270	N-Nitroso-N-methylurea	HPLC	QR25
271	N-Nitroso-N-methylurethane	A/B/N	QR28
272	N-Nitrosomethylvinylamine	A/B/N	QR28
273	N-Nitrosomorpholine	A/B/N	QR28
274	N-Nitrosonornicotine	A/B/N	QR28
275	N-Nitrosopiperidine	A/B/N	QR28
276	N-Nitrosopyrrolidine	DIR/INJ	QR26
277	N-Nitrososarcosine	A/B/N	QR28
278	5-Nitro-o-toluidine	A/B/N	QR28
279	Octamethylpyrophosphoramide	A/B/N	QR28
280	Osmium tetroxide (Osmium (VIII) oxide)	INORG	TBL D
280A	Osmium	METALS	QR29
281	Endothal	A/B/N	QR28
282	Paraldehyde	P&T	QR27
283	Parathion	PEST/HERB	QR24
284	Pentachlorobenzene	A/B/N	QR28
285	Pentachloroethane	P&T	QR27
286	Pentachloronitrobenzene	A/B/N	QR28
287	Pentachlorophenol	A/B/N	QR28
288	Phenacetin	A/B/N	QR28
289	Phenol	A/B/N	QR28
290A	m-phenylenediamine	HPLC	QR31
290B	o-phenylenediamine	HPLC	QR31
290C	p-phenylenediamine	HPLC	QR31
291	Phenylmercury acetate	INORG	TBL D
292	N-Phenylthiourea	HPLC	QR25
293	Phosgene	UNSTABLE	TBL A
294	Phosphine	EXOTIC, UNSTABLE	TBL C, A
295	Phorate	PEST/HERB	QR24
296	Famphur	PEST/HERB	QR24
297	Phthalic acid esters	CLASS	TBL B
298	Phthalic anhydride	A/B/N	QR28
299	2-Picoline	A/B/N	QR28
300	Polychlorinated Biphenyl, N.O.S.	CLASS	TBL B
300A	Aroclor 1242	PCB/GC/EC	QR30
300B	Aroclor 1254	PCB/GC/EC	QR30
300C	Aroclor 1260	PCB/GC/EC	QR30
300D	Aroclor 1248	PCB/GC/EC	QR30
300E	Aroclor 1232	PCB/GC/EC	QR30
300F	Aroclor 1221	PCB/GC/EC	QR30
300G	Aroclor 1016	PCB/GC/EC	QR30
301	Potassium cyanide	INORG	TBL D
301A	Potassium	METAL	QR29

	COMPOUND NAME	FRACTION	TABLE
302	Potassium silver cyanide	INORG	TBL D
303	Pronamide	A/B/N	QR28
304	1,3-Propane sultone	A/B/N	QR28
305	n-Propylamine	DIR/INJ	QR26
306	Propylthiouracil	A/B/N	QR28
307	2-Propyn-1-ol	DIR/INJ	QR26
308	Pyridine	DIR/INJ	QR26
309	Reserpine	HPLC	QR25
310	Resorcinol	A/B/N	QR28
311	Saccharin and salts	A/B/N	QR28
312	Safrole	A/B/N	QR28
313	Selenious acid (Selenium dioxide)	INORG	TBL D
314	Selenium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
314A	Selenium	METALS	QR29
315	Selenium sulfide (Sulfur selenide)	INORG	TBL D
316	Selenourea	INORG	TBL D
317	Silver and Compounds, N.O.S.	CLASS, INORG	TBL B,D
317A	Silver	METALS	QR29
318	Silver cyanide	INORG	TBL D
319	Sodium cyanide	INORG	TBL D
319A	Sodium	METALS	QR29
320	Streptozotocin	HPLC	QR31
321	Strontium sulfide	INORG	TBL D
321A	Strontium	METALS	QR29
322	Strychnine and salts	EXOTIC	TBL C
323	1,2,4,5-Tetrachlorobenzene	A/B/N	QR28
324	2,3,7,8-TCDD	EXOTIC	TBL C
325	Tetrachloroethane	CLASS	TBL B
326	1,1,1,2-Tetrachloroethane	P&T	QR27
327	1,1,2,2-Tetrachloroethane	P&T	QR27
328	Tetrachloroethylene	P&T	QR27
329	Carbon tetrachloride	P&T	QR27
330	2,3,4,6-Tetrachlorophenol	A/B/N	QR28
331	Tetraethyldithiopyrophosphate	A/B/N	QR28
332	Tetraethyl lead	INORG	TBL D
333	Tetraethylpyrophosphate	PEST/HERB	QR24
334	Tetranitromethane	P&T	QR27
335	Thallium and Compounds, N.O.S.	CLASS, INORG	TBL B,D
335A	Thallium	METALS	QR29
336	Thallic oxide (Thallium (III) oxide)	INORG	TBL D
337	Thallium (I) acetate (Acetic acid, thallium (I) salt)	INORG	TBL D
338	Thallium (I) carbonate	INORG	TBL D
339	Thallium (I) chloride	INORG	TBL D
340	Thallium (I) nitrate	INORG	TBL D
341	Thallium selenite	INORG	TBL D
342	Thallium (I) sulfate	INORG	TBL D
343	Thioacetamide	HPLC	QR31
344	Thiosemicarbazide	HPLC	QR31
345	Thiourea	HPLC	QR25
346	Thiuram	A/B/N	QR28
347	Toluene	P&T	QR27
348	Toluenediamine	CLASS	TBL B
348A	Toluene-2,4-Diamine	HPLC	QR31
349	O-Toluidine hydrochloride	A/B/N	QR28
350	Toluene diisocyanate	UNSTABLE	TBL A
351	Toxaphene	PEST/HERB	QR24

	COMPOUND NAME	FRACTION	TABLE
352	Bromoform	P&T	QR27
353	1,2,4-Trichlorobenzene	A/B/N	QR28
354	1,1,1-Trichloroethane	P&T	QR27
355	1,1,2-Trichloroethane	P&T	QR27
356	Trichloroethylene	P&T	QR27
357	Trichloromethanethiol	P&T	QR27
358	Trichlorofluoromethane	P&T	QR27
359	2,4,5-Trichlorophenol	A/B/N	QR28
360	2,4,6-Trichlorophenol	A/B/N	QR28
361	2,4,5-T	PEST/HERB	QR24
362	2,4,5-TP (Silvex)	PEST/HERB	QR24
363	Trichloropropane, N.O.S.	CLASS	TBL B
363A	1,1,2-trichloropropane	P&T	QR27
363B	1,2,2-trichloropropane	P&T	QR27
364	1,2,3-Trichloropropane	P&T	QR27
365	0,0,0-Triethyl phosphorothioate	A/B/N	QR28
366	sym-Trinitrobenzene	A/B/N	QR28
367	Tris (1-Azridinyl) phosphine sulfide	A/B/N	QR28
368	Tris(2,3-dibromopropyl) phosphate	A/B/N	QR28
369	Trypan blue	HPLC	QR31
370	Uracil mustard	A/B/N	QR28
371	Vanadic acid, ammonium salt	INORG	TBL D
372	Vanadium pentoxide (Vandium (V) oxide)	INORG	TBL D
372A	Vanadium	METALS	QR29
373	Vinyl chloride	P&T	QR27
374	Zinc cyanide	INORG	TBL D
374A	Zinc	METALS	QR29
375	Zinc phosphide	UNSTABLE	TBL A

TABLE A
PARAMETERS WHICH ARE UNSTABLE IN WATER

5 Acetyl chloride
13 Aluminum phosphide
47 bis (Chloromethyl) ether
60 Carbon oxyfluoride
96 Cycasin
154 Dimethyl carbamoylchloride
185 Fluorine
186 2-Fluoroacetamide
205 Hydrofluoric acid
210 Iron dextran
211 Methyl isocyanate
215 Lasiocarpine
233 Methyl chlorocarbonate
244 Mustard gas
254 Nitric oxide
257 Nitrogen dioxide
258 Nitrogen mustard and hydrochloride salt
259 Nitrogen mustard N-Oxide and hydrochloride salt
293 Phosgene
294 Phosphine
350 Toluene diisocyanate
375 Zinc phosphide

TABLE B
COMPOUND CLASSES

CLASS	REPRESENTATIVE		TABLE
19 Antimony and Compounds, N.O.S.	19A	Antimony	QR29
21 Arsenic and Compounds, N.O.S.	21A	Arsenic	QR29
27 Barium and Compounds, N.O.S.	27A	Barium	QR29
42 Beryllium and Compounds, N.O.S.	42A	Beryllium	QR29
56 Cadmium and Compounds, N.O.S.	56A	Cadmium	QR29
84 Chromium and Compounds, N.O.S.	84A	Chromium	QR29
216 Lead and Compounds, N.O.S.	216A	Lead	QR29
225 Mercury and Compounds, N.O.S.	225A	Mercury	QR29
250 Nickel and Compounds, N.O.S.	250A	Nickel	QR29
314 Selenium and Compounds, N.O.S.	314A	Selenium	QR29
317 Silver and Compounds, N.O.S.	317A	Silver	QR29
335 Thallium and Compounds, N.O.S.	335A	Thallium	QR29
10 Aflatoxins	10A	Aflatoxins, Total	QR28
64 Chlorinated Benzenes, N.O.S.	64A	1,2,3-trichlorobenzene	QR28
	64B	2,4,6-trichlorobenzene	QR28
	64C	1,2,3,4-tetrachlorobenzene	QR28
	64D	1,2,3,5-tetrachlorobenzene	QR28
	115	1,2-Dichlorobenzene	QR28
	116	1,3-Dichlorobenzene	QR28
	117	1,4-Dichlorobenzene	QR28
	353	1,2,4-Trichlorobenzene	QR28
65 Chlorinated Ethane, N.O.S.	65A	Chloroethane	QR27
	354	1,1,1-Trichloroethane	QR27
	355	1,1,2-Trichloroethane	QR27
66 Chlorinated Fluorocarbons, N.O.S.	66A	Freon TF	QR27
67 Chlorinated Naphthalene, N.O.S.	67A	1-chloronaphthalene	QR28
68 Chlorinated Phenol, N.O.S.	68A	2,3,5,6-tetrachlorophenol	QR28
	68B	2,3,4,5-tetrachlorophenol	QR28
	128	2,4-Dichlorophenol	QR28
	129	2,6-Dichlorophenol	QR28
	359	2,4,5-Trichlorophenol	QR28
	360	2,4,6-Trichlorophenol	QR28
70 Chloroalkyl Ethers, N.O.S.	44	bis(2-chloroethyl) ether	QR28
	46	bis(2-chloroisopropyl)ether	QR28
	76	2-Chloroethyl vinyl ether	QR27
87 Coal Tars	31	Benzene	QR27
	87A	Acenapthene	QR28
	87B	Acenaphthalene	QR28
	87C	Anthracene	QR28
	87D	3,4-Benzofluoranthene	QR28
	87E	Benzo(ghi)perylene	QR28
	87F	Benzo(k)fluoranthene	QR28
	87G	Fluorene	QR28
	87H	Phenathrene	QR28
	87I	Pyrene	QR28
	90	Cresols	SEE BELOW
	245	Napthalene	QR28
	289	Phenol	QR28
	347	Toluene	QR27

TABLE B (cont'd)
COMPOUND CLASSES

CLASS	REPRESENTATIVE		TABLE
89 Creosote	74	p-Chloro-m-cresol	QR28
	89A	2,Nitrophenol	QR28
	90A	o-Cresol	QR28
	90B	m+p Cresol	QR28
	163	4,6-Dinitro-o-cresol	QR28
	261	4-Nitrophenol	QR28
90 Cresols	90A	o-Cresol	QR28
	90B	m+p Cresol	QR28
92 Cyanides, N.O.S.	92A	Cyanide, Total	QR29
118 Dichlorobenzene, N.O.S.	115	1,2-Dichlorobenzene	QR28
	116	1,3-Dichlorobenzene	QR28
	117	1,4-Dichlorobenzene	QR28
125 Dichloroethylene, N.O.S.	126	1,1-Dichloroethylene	QR27
132 Dichloropropane, N.O.S.	132A	1,3-Dichloropropane	QR27
	133	1,2-Dichloropropane	QR27
134 Dichloropropanol, N.O.S.	134A	Dichloropropanol	QR26
162 Dinitrobenzene, N.O.S.	162A	m-Dinitrobenzene	QR28
191 Halomethane, N.O.S.	191A	Chlorodibromomethane	QR27
	191B	Dichlorobromoethane	QR27
263 Nitrosamines, N.O.S.	263A	N-Nitrosodiphenylamine	QR28
	264	N-Nitrosodi-n-butylamine	QR28
	265	N-Nitrosodiethanolamine	QR28
	266	N-Nitrosodiethylamine	QR28
	267	N-Nitrosodimethylamine	QR28
	268	N-Nitroso-N-ethylurea	QR25
	269	N-Nitrosomethylethylamine	QR28
	270	N-Nitroso-N-methylurea	QR25
	271	N-Nitroso-N-methylurethane	QR28
	272	N-Nitrosomethylvinylamine	QR28
	273	N-Nitrosomorpholine	QR28
	274	N-Nitrosonornicotine	QR28
	275	N-Nitrosopiperidine	QR28
	276	N-Nitrosopyrrolidine	QR28
	277	N-Nitrososarcosine	QR28
297 Phthalic acid esters	48	bis(2-ethylhexyl)phthalate	QR28
	54	Butyl benzyl phthalate	QR28
	114	Di-N-Butyl phthalate	QR28
	143	Diethyl phthalate	QR28
	160	Dimethyl phthalate	QR28
	167	Di-n-octyl phthalate	QR28
300 Polychlorinated Biphenyl, N.O.S.	300A	Aroclor 1242	QR30
	300B	Aroclor 1254	QR30
	300C	Aroclor 1260	QR30
	300D	Aroclor 1248	QR30
	300E	Aroclor 1232	QR30
	300F	Aroclor 1221	QR30
	300G	Aroclor 1016	QR30
325 Tetrachloroethane	326	1,1,1,2-Tetrachloroethane	QR27
	327	1,1,2,2-Tetrachloroethane	QR27
348 Toluenediamine	348A	Toluene-2,4-Diamine	QR25
363 Trichloropropane, N.O.S.	363A	1,1,2-trichloropropane	QR27
	363B	1,2,2-Trichloropropane	QR27
	364	1,2,3-Trichloropropane	QR27

TABLE C
"EXOTIC" COMPOUNDS THAT REQUIRE SPECIAL METHODS

96 Cycasin
98 Cyclophosphamide *
178 Ethylenebisdithiocarbamic acid
186 2-Fluoroacetamide
210 Iron dextran
215 Lasiocarpine
244 Mustard gas
254 Nitric oxide
258 Nitrogen mustard and hydrochloride salt
259 Nitrogen mustard N-Oxide and hydrochloride salt
294 Phosphine
322 Strychnine and salts *
324 2,3,7,8-TCDD **

* No method specified by EPA.
** Method 8280, extra charge required.

TABLE D
INORGANICS

	REPRESENTATIVE	TABLE
13 Aluminum phosphide	13A Aluminum	QR29
19 Antimony and Compounds, N.O.S.	19A Antimony	QR29
21 Arsenic and compounds, N.O.S.	21A Arsenic	QR29
22 Arsenic acid (Orthoarsenic acid)	21A Arsenic	QR29
23 Arsenic pentoxide (Arsenci (V) oxide)	21A Arsenic	QR29
24 Arsenic trioxide (Arsenic (III) oxide)	21A Arsenic	QR29
27 Barium and compounds, N.O.S	27A Barium	QR29
28 Barium cyanide	27A Barium,	QR29
	92A Cyanide, Total	
32 Benzenearsonic acid	21A Arsenic	QR29
42 Beryllium and compounds, N.O.S.	42A Beryllium	QR29
56 Cadmium and compounds, N.O.S.	56A Cadmium	QR29
57 Calcium chromate (Chromic acid, calcium salt)	57A Calcium	QR29
	84A Chromium	QR29
58 Calcium cyanide	57A Calcium,	QR29
	92A Cyanide, Total	
84 Chromium and compounds, N.O.S	84A Chromium	QR29
88 Copper cyanide	88A Copper,	QR29
	92A Cyanide, Total	
92 Cyanides (soluble salts and complexes)	92A Cyanide, Total	QR29
94 Cyanogen bromide	92A Cyanide, Total	QR29
95 Cyanogen chloride	92A Cyanide, Total	QR29
207 Hyroxydimethylarsine oxide	21A Arsenic	QR29
216 Lead and compounds, N.O.S.	216A Lead	QR29
217 Lead acetate (Acetic acid, lead salt)	216A Lead	QR29
218 Lead phosphate (Phosphoric acid, lead salt)	216A Lead	QR29
219 Lead subacetate	216A Lead	QR29
224 Mercury fulminate (Fulminic acid, mercury salt)	225A Mercury	QR29
225 Mercury and compounds, N.O.S.	225A Mercury	QR29
250 Nickel and compounds, N.O.S.	250A Nickel	QR29
251 Nickel carbonyl (Nickel tetracarbonyl)	250A Nickel	QR29
252 Nickel cyanide (Nickel (II)cyanide)	250A Nickel	QR29
280 Osmium tetroxide (Osmium (VIII) oxide)	280A Osmium	QR29
291 Phenylmercury acetate	225A Mercury	QR29
301 Potassium cyanide	301A Potassium	QR29
	92A Cyanide, Total	QR29
302 Potassium silver cyanide	301A Potassium	QR29
	317A Silver	QR29
	92A Cyanide, Total	QR29
313 Selenious acid (Selenium dioxide)	314A Selenium	QR29
314 Selenium and compounds, N.O.S.	314A Selenium	QR29
315 Selenium sulfide (Sulfur selenide)	314A Selenium	QR29
316 Selenourea	314A Selenium	QR29
317 Silver and compounds, N.O.S.	317A Silver	QR29
318 Silver cyanide	317A Silver,	QR29
	92A Cyanide, Total	
319 Sodium cyanide	319A Sodium,	QR29
	92A Cyanide, Toatl	
321 Strontium sulfide	321A Strontium	QR29
332 Tetraethyl lead	216A Lead	QR29
335 Thallium and compounds, N.O.S.	335A Thallium	QR29
336 Thallic oxide (Thallium (III) oxide)	335A Thallium	QR29
337 Thallium (I) acetate (Acetic acid, thallium (I) salt)	335A Thallium	QR29
338 Thallium (I) carbonate	335A Thallium	QR29
339 Thallium (I) chloride	335A Thallium	QR29
340 Thallium (I) nitrate	335A Thallium	QR29
341 Thallium selenite	335A Thallium	QR29
342 Thallium (I) sulfate	335A Thallium	QR29
371 Vanadic acid, ammonium salt	371A Vanadium	QR29
372 Vanadium pentoxide (Vandium (V) oxide)	371A Vanadium	QR29
374 Zinc cyanide	374A Zinc	QR29

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 6, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Dir/Inj Vol Compounds - GC/MS Analysis Data (QR26)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W00[illegible]	850610		

	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. mg/l	MDL mg/l	First mg/l	Second mg/l	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen. Added mg/l	% Recov
12	Allyl alcohol	ND	100	ND	ND	ND	0	-	-	0	-
61	Chloral	ND		ND	ND	ND	0	-	-	0	-
69	Chloroacetaldehyde	IND		IND	IND	IND	0	-	-	0	-
83	3-Chloropropionitrile	IND		IND	IND	IND	0	-	-	0	-
93	Cyanogen	ND		ND	ND	ND	0	-	-	0	-
134A	Dichloropropanol	ND	100	ND	ND	ND	0	-	-	0	-
155	1,1-Dimethylhydrazine	IND		IND	IND	IND	0	-	-	0	-
156	1,2-Dimethylhydrazine	ND		ND	ND	ND	0	-	-	0	-
168	1,4-Dioxane	ND	200	ND	ND	ND	0	-	-	0	-
177	Ethyl cyanide	ND	100	ND	ND	ND	0	-	-	0	-
180	Ethylene oxide	ND		ND	ND	ND	0	-	-	0	-
187	Fluoroacetic acid	ND		ND	ND	ND	0	-	-	0	-
203	Hydrazine	IND		IND	IND	IND	0	-	-	0	-
212	Isobutyl Alcohol	ND	100	ND	ND	ND	0	-	-	0	-
226	Methacrylonitrile	ND	100	ND	ND	ND	0	-	-	0	-
227	Methanethiol	IND		IND	IND	IND	0	-	-	0	-
236	Methyl hydrazine	IND		IND	IND	IND	0	-	-	0	-
237	2-Methyllactonitrile	IND		IND	IND	IND	0	-	-	0	-
276	N-Nitrosopyrrolidine	ND	100	ND	ND	ND	0	-	-	0	-
305	n-Propylamine	IND		IND	IND	IND	0	-	-	0	-
307	2-Propyn-1-ol	ND	100	ND	ND	ND	0	-	-	0	-
308	Pyridine	ND		ND	ND	ND	0	-	-	0	-

*Standards and reference spectra are not available for: Glycidylaldehyde.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Purge & Trap Compounds - GC/MS Analysis Data (QR27)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK	W006	850610		

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1	Acetonitrile	IND		IND	IND	IND	50	0	IND	50	0
7	Acrolein	ND	100	ND	ND	ND	800	105	ND	800	99
9	Acrylonitrile	ND	100	ND	ND	ND	80	101	ND	80	85
31	Benzene	ND	4.4	ND	ND	ND	18	100	ND	18	99
49	Bromoacetone	ND	10	-	-	-	-	-	-	-	-
50	Methyl bromide	ND	10	ND	ND	ND	18	94	ND	18	261
59	Carbon disulfide	ND	10	ND	ND	ND	50	101	ND	50	92
65A	Chloroethane	ND	10	ND	ND	ND	18	90	ND	18	95
66A	Freon TF	ND	10	ND	ND	ND	50	103	ND	50	85
72	Chlorobenzene	BMDL	6.0	1	4	ND	18	99	ND	18	96
75	-Chloro-2,3-epoxypropane	-	-	-	-	-	-	-	-	-	-
76	-Chloroethylvinyl ether	ND	10	ND	ND	ND	18	100	ND	18	109
77	Chloroform	ND	1.6	ND	ND	ND	18	96	ND	18	97
78	Methyl chloride	ND	10	ND	ND	ND	18	91	ND	18	93
79	Chloromethyl methyl ether	-	-	-	-	-	-	-	-	-	-
91	Crotonaldehyde	IND		IND	IND	IND	50	0	IND	50	0
111	1,2-dibromo-3-chloropropane	ND	10	ND	ND	ND	50	154	ND	50	112
112	1,2-Dibromoethane	ND	10	ND	ND	ND	50	105	ND	50	99
113	Dibromomethane	ND	10	ND	ND	ND	50	105	ND	50	96
120	1,4-Dichloro-2-butene	ND	10	ND	ND	ND	50	119	ND	50	95
121	Dichlorodifluoromethane	ND	10	ND	ND	ND	18	90	ND	18	89
122	1,1-Dichloroethane	ND	4.7	ND	ND	ND	18	89	ND	18	94
123	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	92	ND	18	99
124	1,2-Trans-dichloroethylene	ND	1.6	ND	ND	ND	18	93	ND	18	90
126	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	90	ND	18	88
127	Methylene chloride	14.6	2.8	19	15	BMDL	18	91	8	18	78
132A	1,3-Dichloropropane	ND	10	ND	ND	ND	50	106	ND	50	98
133	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	96	ND	18	102
135	2,3-Dichloropropene	ND	10	ND	ND	ND	50	102	ND	50	96
136A	cis-1,3-Dichloropropene	ND	5.0	ND	ND	ND	18	89	ND	18	96
136B	trans-1,3-Dichloropropene	ND	10	ND	ND	ND	18	102	ND	18	97
138	1,2,3,4-Diepoxybutene	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" =Indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Purge & Trap Compounds - GC/MS Analysis Data (QR27)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK	W007	850610		

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
139 Diethylarsine	-	-	-	-	-	-	-	-	-	-
140 N,N-Diethylhydrazine	-	-	-	-	-	-	-	-	-	-
182 Ethyl methacrylate	ND	10	ND	ND	ND	50	110	ND	50	100
188 Formaldehyde	-	-	-	-	-	-	-	-	-	-
191A Chlorodibromomethane	ND	3.1	ND	ND	ND	18	91	ND	18	95
191B Dichlorobromomethane	ND	2.2	ND	ND	ND	18	90	ND	18	96
206 Hydrogen sulfide	ND		ND	ND	ND	0	-	ND	0	-
209 Iodomethane	ND	10	ND	ND	ND	50	97	ND	50	84
235 Methyl ethyl ketone	ND	10	ND	ND	ND	50	102	ND	50	95
238 Methyl methacrylate	ND	10	ND	ND	ND	50	109	ND	50	85
282 Paraldehyde	-	-	-	-	-	-	-	-	-	-
285 Pentachloroethane	ND	10	ND	ND	ND	50	99	ND	50	382
326 1,1,1,2-Tetrachloroethane	ND	10	ND	ND	ND	50	104	ND	50	96
327 1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	111	ND	18	113
328 Tetrachloroethylene	BMDL	4.1	1	14	ND	18	114	ND	18	36
329 Carbon tetrachloride	ND	2.8	ND	ND	ND	18	89	ND	18	83
334 Tetranitromethane	-	-	-	-	-	-	-	-	-	-
347 Toluene	ND	6.0	ND	ND	ND	18	101	ND	18	104
352 Bromoform	ND	4.7	ND	ND	ND	18	92	ND	18	89
354 1,1,1-Trichloroethane	ND	3.8	ND	ND	BMDL	18	87	ND	18	109
355 1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18	97	ND	18	100
356 Trichloroethylene	ND	1.9	ND	ND	ND	18	99	ND	18	93
357 Trichloromethanethiol	-	-	-	-	-	-	-	-	-	-
358 Trichlorofluoromethane	ND	10	ND	ND	ND	18	90	6	18	85
363A 1,1,2-trichloropropane	ND	10	ND	ND	ND	50	106	ND	50	98
363B 1,2,2-trichloropropane	ND		ND	ND	ND	0	-	ND	0	-
364 1,2,3-Trichloropropane	ND	10	ND	ND	ND	50	119	ND	50	95
373 Vinyl chloride	BMDL	10	2	3	ND	18	90	ND	18	91

*See Ground Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 17, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W007	850610		

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
2	Acetophenone	ND	10	ND	ND	ND	100	60	ND	100	90
4	2-Acetylaminofluorene	ND	10	ND	ND	ND	300	74	ND	300	112
10A	Aflatoxins, Total	-	-	-	-	-	-	-	-	-	-
14	4-Aminobiphenyl	ND	10	ND	ND	ND	100	106	ND	100	117
16	5-(Aminomethyl)-3-isoxazolo	IND		IND	IND	IND	300	0	IND	300	0
18	Aniline	ND	10	ND	ND	ND	100	82	ND	100	89
20	Aramite	-	-	-	-	-	-	-	-	-	-
25	Auramine	-	-	-	-	-	-	-	-	-	-
29	Benz[c]acridine	-	-	-	-	-	-	-	-	-	-
30	Benz[a]anthracene	ND	10	ND	ND	ND	100	56	ND	100	90
33	Dichloromethylbenzene	ND	10	ND	ND	ND	100	32	ND	100	79
34	Benzenethiol	ND	10	ND	ND	ND	300	44	ND	300	54
36	Benzo[b]fluoranthene	ND	4.8	ND	ND	ND	100	45	ND	100	72
37	Benzo[j]fluoranthene	-	-	-	-	-	-	-	-	-	-
38	Benzo(a)pyrene	ND	2.5	ND	ND	ND	100	45	ND	100	68
39	p-Benzoquinone	IND		IND	IND	IND	100	0	IND	100	0
40	Benzotrichloride	-	-	-	-	-	-	-	-	-	-
41	Benzyl chloride	ND	10	ND	ND	ND	100	47	ND	100	73
43	bis(2-Chloroethoxy)methane	ND	5.3	ND	ND	ND	100	58	ND	100	84
44	bis(2-Chloroethyl) ether	ND	5.7	ND	ND	ND	100	60	ND	100	72
45	Chlornaphazine	-	-	-	-	-	-	-	-	-	-
46	bis(2-Chloroisopropyl)ether	ND	5.7	ND	ND	ND	100	59	ND	100	86
48	bis(2-Ethylhexyl)phthalate	ND	10	ND	ND	ND	100	75	ND	100	109
51	4-Bromophenyl phenyl ether	ND	1.9	ND	ND	ND	100	99	ND	100	116
52	Brucine	-	-	-	-	-	-	-	-	-	-
53	2-Butanone peroxide	-	-	-	-	-	-	-	-	-	-
54	Butyl benzyl phthalate	ND	10	ND	ND	ND	100	59	ND	100	90
55	2-sec-Butyl-4,6-dinitrophen	ND	10	ND	ND	ND	300	81	ND	300	117
64A	1,2,3-Trichlorobenzene	ND	10	ND	ND	ND	100	51	ND	100	80
64B	1,3,5-Trichlorobenzene	ND	10	ND	ND	ND	100	55	ND	100	86
64C	1,2,3,4-tetrachlorobenzene	ND	10	ND	ND	ND	100	48	ND	100	76
64D	1,2,3,5-tetrachlorobenzene	ND	10	ND	ND	ND	100	40	ND	100	52

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-" specifies no standard or reference spectra available.
"IND" = indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 17, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK	W008	850610		

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
67A 1-chloronaphthalene	ND	10	ND	ND	ND	100	107	ND	100	116
68A 2,3,5,6-tetrachlorophenol	ND	10	ND	ND	ND	300	70	ND	300	101
68B 2,3,4,5-tetrachlorophenol	ND	10	ND	ND	ND	300	55	ND	300	99
71 p-Chloroaniline	ND	10	ND	ND	ND	300	54	ND	300	57
74 p-Chloro-m-cresol	ND	3.0	ND	ND	ND	100	60	ND	100	87
80 2-Chloronaphthalene	ND	1.9	ND	ND	ND	100	77	ND	100	120
81 2-Chlorophenol	ND	3.3	ND	ND	ND	100	56	ND	100	77
85 Chrysene	ND	2.5	ND	ND	ND	100	58	ND	100	86
87A Acenaphthene	ND	1.9	ND	ND	ND	100	60	ND	100	93
87B Acenaphthalene	ND	3.5	ND	ND	ND	100	61	ND	100	90
87C Anthracene	ND	1.9	ND	ND	ND	100	98	ND	100	117
87D Benzo(ghi)perylene	ND	4.1	ND	ND	ND	0	-	ND	0	-
87E Benzo(k)fluoranthene	ND	2.5	ND	ND	ND	100	49	ND	100	69
87F Fluorene	ND	1.9	ND	ND	ND	100	62	ND	100	93
87G Phenanthrene	ND	5.4	ND	ND	ND	100	105	ND	100	124
87H Pyrene	ND	1.9	ND	ND	ND	100	49	ND	100	76
89A 2-Nitrophenol	ND	3.6	ND	ND	ND	100	59	ND	100	91
90A o-Cresol	ND	10	ND	ND	ND	100	73	ND	100	101
90B m+p-Cresol	ND	10	ND	ND	ND	200	76	ND	200	95
97 2-Cyclohexyl-4,6-dinitrophe	-	-	-	-	-	-	-	-	-	-
103 Diallate	-	-	-	-	-	-	-	-	-	-
104 Dibenz[a,h]acridine	-	-	-	-	-	-	-	-	-	-
105 Dibenz[a,j]acridine	ND	10	ND	ND	ND	100	119	ND	100	122
106 Dibenz[a,h]anthracene	ND	2.5	ND	ND	ND	0	-	ND	0	-
107 7H-Dibenzo[c,g]carbazole	-	-	-	-	-	-	-	-	-	-
108 Dibenzo[a,e]pyrene	-	-	-	-	-	-	-	-	-	-
109 Dibenzo[a,h]pyrene	-	-	-	-	-	-	-	-	-	-
110 Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-	-	-
114 Di-n-butyl phthalate	ND	10	ND	ND	BMDL	100	106	ND	100	133
115 1,2-Dichlorobenzene	ND	1.9	ND	ND	ND	100	49	1.2	100	74
116 1,3-Dichlorobenzene	ND	1.9	ND	ND	ND	100	46	ND	100	71
117 1,4-Dichlorobenzene	ND	4.4	ND	ND	ND	100	49	ND	100	77

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 17, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK	W007	850610		

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen Added ug/l	% Recov
128	2,4-Dichlorophenol	ND	2.7	ND	ND	ND	100	63	ND	100	91
129	2,6-Dichlorophenol	ND	10	ND	ND	ND	100	53	ND	100	70
131	Dichlorophenylarsine	-	-	-	-	-	-	-	-	-	-
142	O,O-Diethylphosphoric acid	-	-	-	-	-	-	-	-	-	-
143	Diethyl phthalate	ND	1.9	ND	ND	ND	100	60	ND	100	89
146	Dihydrosafrole	-	-	-	-	-	-	-	-	-	-
148	Diisopropylfluorophosphate	-	-	-	-	-	-	-	-	-	-
151	p-Dimethylaminoazobenzene	ND	10	ND	ND	ND	100	84	ND	100	102
152	7,12-Dimethylbenz[a]anthrac	ND	10	ND	ND	ND	100	85	ND	100	101
157	Thiofanox	IND		IND	IND	IND	300	0	IND	300	0
158	a-a-Dimethylphenethylamine	IND		IND	IND	IND	100	0	IND	100	0
159	2,4-Dimethylphenol	ND	2.7	ND	ND	ND	100	67	ND	100	90
160	Dimethyl phthalate	ND	10	ND	ND	ND	100	58	ND	100	83
161	Dimethyl sulfate	-	-	-	-	-	-	-	-	-	-
162A	m-Dinitrobenzene	ND	10	ND	ND	ND	100	51	ND	100	77
163	4,6-Dinitro-o-cresol	ND	24	ND	ND	ND	100	44	ND	100	76
164	2,4-Dinitrophenol	ND	42	ND	ND	ND	100	126	ND	100	127
165	2,4-Dinitrotoluene	ND	5.7	ND	ND	ND	100	49	ND	100	77
166	2,6-Dinitrotoluene	ND	1.9	ND	ND	ND	100	59	ND	100	89
167	Di-n-octyl phthalate	ND	10	ND	ND	ND	100	74	ND	100	108
169	Diphenylamine	ND	10	ND	ND	ND	100	35	ND	100	46
170	1,2-Diphenylhydrazine	ND	10	ND	ND	ND	100	59	ND	100	89
171	N-Nitrosodi-n-propylamine	ND	10	ND	ND	ND	100	47	ND	100	74
173	2,4-Dithiobiuret	-	-	-	-	-	-	-	-	-	-
183	Ethyl methanesulfonate	ND	10	ND	ND	ND	100	60	ND	100	69
184	Fluoranthene	ND	2.2	ND	ND	ND	100	90	ND	100	109
189	Formic acid	-	-	-	-	-	-	-	-	-	-
194	Hexachlorobenzene	ND	1.9	ND	ND	ND	100	72	ND	100	100
195	Hexachlorobutadiene	ND	.9	ND	ND	ND	100	38	ND	100	65
197	Hexachlorocyclopentadiene	ND	10	ND	ND	ND	0	-	ND	0	-
198	Hexachloroethane	ND	1.6	ND	ND	ND	100	35	ND	100	59
199	Hexachlorohexahydro-endo, e	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 17, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK	W007	850610		

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
200 Hexachlorophene	ND	10	ND	ND	ND	300	60	ND	300	74
201 Hexachloropropene	ND	10	ND	ND	ND	300	46	ND	300	81
202 Hexaethyltetraphosphate	-	-	-	-	-	-	-	-	-	-
208 Indeno(1,2,3-cd)pyrene	ND	3.7	ND	ND	ND	0	-	ND	0	-
213 Isosafrole	ND	10	ND	ND	ND	300	66	ND	300	72
220 Maleic anhydride	-	-	-	-	-	-	-	-	-	-
223 Melphalan	IND		IND	IND	IND	300	0	ND	300	0
228 Methapyrilene	-	-	-	-	-	-	-	-	-	-
232 3-Methylcholanthrene	ND	10	ND	ND	ND	100	109	ND	100	113
234 4,4'-Methylenebis(2-chloroa	ND	10	ND	ND	ND	100	70	ND	300	107
239 Methyl methanesulfonate	ND	10	ND	ND	ND	100	54	ND	100	65
240 Aldicarb	ND	10	ND	ND	ND	100	67	ND	100	95
241 N-Methyl-N'-nitrosoguanidin	-	-	-	-	-	-	-	-	-	-
243 Methylthiouracil	-	-	-	-	-	-	-	-	-	-
245 Naphthalene	ND	1.6	ND	ND	ND	100	55	ND	100	85
246 1,4-Naphthoquinone	ND	10	ND	ND	ND	100	28	ND	100	46
247 1-Naphthylamine	ND	10	ND	ND	ND	100	52	ND	100	59
248 2-Naphthylamine	ND	10	ND	ND	ND	100	35	ND	100	35
255 p-Nitroaniline	ND	10	ND	ND	ND	300	89	ND	300	112
256 Nitrobenzene	ND	1.9	ND	ND	ND	100	55	ND	100	76
261 4-Nitrophenol	ND	2.4	ND	ND	ND	100	20	ND	100	26
262 4-Nitroquinoline-1-oxide	-	-	-	-	-	-	-	-	-	-
263A N-Nitrosodiphenylamine	ND	1.9	ND	ND	ND	100	52	ND	100	79
264 N-Nitrosodi-n-butylamine	ND	10	ND	ND	ND	100	53	ND	100	79
265 N-Nitrosodiethanolamine	IND		IND	IND	IND	300	0	IND	300	0
266 N-Nitrosodiethylamine	ND	10	ND	ND	ND	300	47	ND	300	61
267 N-Nitrosodimethylamine	ND	10	ND	ND	ND	0	-	ND	0	-
269 N-Nitrosomethylethylamine	IND		IND	IND	IND	100	0	IND	100	0
271 N-Nitroso-N-methylurethane	ND	10	ND	ND	ND	300	35	ND	300	31
272 N-Nitrosomethylvinylamine	-	-	-	-	-	-	-	-	-	-
273 N-Nitrosomorpholine	ND	10	ND	ND	ND	300	57	ND	300	66
274 N-Nitrosonornicotine	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available; compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 17, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Acid/B/N/Pest Compounds - GC/MS Analysis Data (QR28)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK	W007	850610		

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
275	N-Nitrosopiperidine	ND	10	ND	ND	ND	100	67	ND	100	89
277	N-Nitrososarcosine	-	-	-	-	-	-	-	-	-	-
278	5-Nitro-o-toluidine	ND	10	ND	ND	ND	300	85	ND	300	106
279	Octamethylpyrophosphoramide	-	-	-	-	-	-	-	-	-	-
281	Endothal	-	-	-	-	-	-	-	-	-	-
284	Pentachlorobenzene	ND	10	ND	ND	ND	100	55	ND	100	83
286	Pentachloronitrobenzene	ND	10	ND	ND	ND	300	73	ND	300	104
287	Pentachlorophenol	ND	3.6	ND	ND	ND	100	115	ND	100	121
288	Phenacetin	ND	10	ND	ND	ND	100	94	ND	100	123
289	Phenol	ND	1.5	ND	ND	ND	100	24	ND	100	19
298	Phthalic anhydride	-	-	-	-	-	-	-	-	-	-
299	2-Picoline	ND	10	ND	ND	ND	[illegible]	71	[illegible]	0	9
30[illegible]	[illegible]ronamide	ND	10	ND	ND	N[illegible]	[illegible]	84	NI[illegible]		1[illegible]
3[illegible]	1,3-Propane sultone	-	-	-	-			-	-		
3[illegible]	Propylthiouracil	-	-	-	-			-	-		-
3[illegible]	Resorcinol	IND		IND	IND	IN[illegible]	300	0	IND	3	0
3[illegible]	Saccharin and salts	-	-	-	-		-	-	-		-
3[illegible]	Safrole	ND	10	ND	ND	ND	300	6	ND	300	107
32[illegible]	1,2,4,5-Tetrachlorobenzene	ND	10	ND	ND	N[illegible]	100	53	[illegible]	100	81
330	2,3,4,6-Tetrachlorophenol	ND	10	ND	ND	NL	300	55	ND	300	99
331	Tetraethyldithiopyrophospha	-	-	-	-		-	-	-		-
346	Thiuram	IND		IND	IND	IND	300	[illegible]	IND	300	0
349	O-Toluidine	ND	10	ND	ND	N[illegible]	300	48	ND	300	52
353	1,2,4-Trichlorobenzene	ND	1.9	ND	ND	N[illegible]	100	46	ND	100	72
359	2,4,5-Trichlorophenol	ND	10	ND	ND	N[illegible]	100	64	ND	100	97
360	2,4,6-Trichlorophenol	ND	2.7	ND	ND	ND	100	53	ND	100	84
365	O,O,O-Triethyl phosphorothi	-	-	-	-	-	-	-	-	-	-
366	sym-Trinitrobenzene	-	-	-	-	-	-	-	-	-	-
367	Tris(1-Azridinyl)phosphine	-	-	-	-	-	-	-	-	-	-
368	Tris(2,3-dibromopropyl)phos	IND		IND	IND	IND	100	0	IND	100	0
370	Uracil mustard	-	-	-	-	-	-	-	-	-	-

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard or reference spectra available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.
Result with neither "MDL" nor "Conc.added" specifies no standard available, compound was qualitatively searched for.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 12, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Pest & Herb Compounds - GC Analysis Data (QR24)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK	W007	850610		

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
11 Aldrin	ND	.1	ND	ND	ND	0.5	76	ND	0.5	84
63 Chlordane	ND	1.0	ND	ND	ND	5	71	ND	5	140
73 Chlorobenzilate	-	-	-	-	-	-	-	-	-	-
100 4,4'-DDD	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
101 4,4'-DDE	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
102 4,4'-DDT	ND	.1	ND	ND	ND	0.5	120	ND	0.5	120
130 2,4-D	ND	50	ND	ND	ND	100	40	ND	100	37
137 Dieldrin	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
141 Carbophenothion	-	-	-	-	-	-	-	-	-	-
144 Thionazin	ND	1.0	ND	ND	ND	25	100	ND	25	80
149 Dimethoate	ND	1.0	ND	ND	ND	5	58	ND	5	30
172 Disulfoton	ND	5.0	ND	ND	ND	25	88	ND	25	68
174A Endosulfan I	ND	.1	ND	ND	ND	0.5	100	ND	0.5	120
174B Endosulfan II	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
175 Endrin	ND	.1	ND	ND	ND	0.5	100	ND	0.5	110
192 Heptachlor	ND	.1	ND	ND	ND	0.5	80	ND	0.5	90
193 Heptachlor epoxide	ND	.1	ND	ND	ND	0.5	100	ND	0.5	120
196A Alpha-BHC	ND	.1	ND	ND	ND	0.5	100	ND	0.5	114
196B Beta-BHC	ND	.1	ND	ND	ND	0.5	98	ND	0.5	100
196C Gamma-BHC	BMDL	.1	0.05	ND	ND	0.5	100	ND	0.5	360
196D Delta-BHC	ND	.1	ND	ND	ND	0.5	110	ND	0.5	110
214 Kepone	ND	2.5	ND	ND	ND	5	200	ND	5	184
230 Methoxychlor	ND	1.0	ND	ND	ND	50	100	ND	50	110
242 Methyl parathion	BMDL	1.0	0.70	0.08	ND	5	100	ND	5	80
283 Parathion	ND	1.0	ND	ND	ND	5	110	ND	5	80
295 Phorate	-	-	-	-	-	-	-	-	-	-
296 Famphur	ND	10	ND	ND	ND	50	110	ND	50	76
333 Tetraethylpyrophosphate	ND	5.0	ND	ND	ND	25	72	ND	25	44
351 Toxaphene	ND	1.0	ND	ND	ND	20	38	ND	20	54
361 2,4,5-T	ND	5.0	ND	ND	ND	10	119	3.6	10	160
362 2,4,5-TP (Silvex)	ND	5	ND	ND	ND	10	99	ND	10	145

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 22, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 – DAI HPLC Compounds – Analysis Data (QR25)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK	W007	850610		

	Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. mg/l	MDL** mg/l	First mg/l	Second mg/l	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen Added mg/l	% Recov
6	1-Acetyl-2-thiourea	BMDL	.5	ND	ND	ND	5.0	110	ND	5.0	116
8	Acrylamide	ND	.5	ND	ND	ND	5.0	102	ND	5.0	105
17	Amitrole	-	-	-	-	-	-	-	-	-	-
82	1-(o-Chlorophenyl)thiourea	ND	.5	ND	ND	ND	5.0	100	ND	5.0	100
145	Diethylstilbesterol	-	-	-	-	-	-	-	-	-	-
176	Ethyl carbamate	-	-	-	-	-	-	-	-	-	-
179	Ethyleneimine	-	-	-	-	-	-	-	-	-	-
181	Ethylenethiourea	ND	.5	BMDL	ND	ND	5.0	96	ND	5.0	99
221	Maleic hydrazide	ND	.5	ND	ND	ND	5.0	99	ND	5.0	96
222	Malononitrile	-	-	-	-	-	-	-	-	-	-
229	Methomyl	ND	.5	ND	ND	ND	0	-B	ND	0	-B
231	2-Methylaziridine	-	-	-	-	-	-	-	-	-	-
253	Nicotinic acid	ND	.5	ND	ND	ND	5.0	83	ND	5.0	80
260	Nitroglycerin	-	-	-	-	-	-	-	-	-	-
268	N-Nitroso-N-ethylurea	BMDL	.5	BMDL	BMDL	ND	5.0	210	BMDL	5.0	99
270	N-Nitroso-N-methylurea	ND	.5	ND	ND	ND	5.0	350	11	5.0	150
292	N-Phenylthiourea	ND	.5	ND	ND	ND	5.0	92	BMDL	5.0	94
309	Reserpine	-	-	-	-	-	-	-	-	-	-
345	Thiourea	ND	.5	ND	ND	ND	5.0	105	ND	5.0	107

A ETC established Method Detection Limit for this particular sample.

B Compound erronously omitted from original spiked and standard solution. New solutions were subsequently prepared to quantitate results for Methomyl.

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" =indeterminate. Standard and/or spikes could not be detected at current method levels.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 27, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Extractable HPLC Compounds - Analysis Data (QR31)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK W007		850610		

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
3 Warfarin	BMDL	25	BMDL	BMDL	BMDL	500	116	BMDL	500	118
35 Benzidine	BMDL	25	BMDL	BMDL	BMDL	500	85	BMDL	500	100
119 3,3'-Dichlorobenzidine	BMDL	25	BMDL	BMDL	BMDL	500	84	BMDL	500	101
150 3,3'-Dimethoxybenzidine	ND	25	BMDL	BMDL	ND	500	83	ND	500	99
153 3,3'-Dimethylbenzidine	ND	25	BMDL	ND	ND	500	90	ND	500	107
249 1-Naphthyl-2-thiourea	ND	25	ND	ND	ND	500	85	ND	500	97
290A m-phenylenediamine	BMDL	25	BMDL	BMDL	BMDL	500	46	BMDL	500	55
290B o-phenylenediamine	ND	25	ND	BMDL	ND	500	63	ND	500	69
290C p-phenylenediamine	ND	25	ND	ND	ND	500	19	ND	500	23
348A Toluene-2,4-Diamine	BMDL	25	BMDL	BMDL	BMDL	500	105	BMDL	500	106

*See Grand Table for complete compound name and specifications.
**EPA/ETC established method detection limit.
"-"specifies no standard available.
"IND" =Indeterminate. Standard and/or spikes could not be detected at current method levels.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Aroclors -GC Analysis Data (QR30)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTACVICK	W007	850610		

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL** ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
300A Aroclor 1242	ND	1	ND	ND	ND	0	-	ND	0	-
300B Aroclor 1254	ND	1	ND	ND	ND	0	-	ND	0	-
300C Aroclor 1260	ND	1	ND	ND	ND	2	100	ND	2	100
300D Aroclor 1248	ND	1	ND	ND	ND	0	-	ND	0	-
300E Aroclor 1232	ND	1	ND	ND	ND	0	-	ND	0	-
300F Aroclor 1221	ND	1	ND	ND	ND	0	-	ND	0	-
300G Aroclor 1016	ND	1	ND	ND	ND	0	-	ND	0	-

*See Grand Table for complete compound name and specifications.
**MDL calculated for each sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUL 13, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

RCRA Appendix 8 - Metals and Cyanides - Analysis Data (QR29)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H6066	VERTAC CHEMICAL CORPORATION	VERTAC	VICK W007	850610		

Compound *	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. ug/l	MDL ug/l	First	Second	Blank Data	Concen. Added	% Recov	Unspiked Sample	Concen. Added	% Recov
13A Aluminum	1700	100								
19A Antimony	ND	100								
21A Arsenic	30	10								
27A Barium	400	4								
42A Beryllium	ND	2								
56A Cadmium	BMDL	4								
57A Calcium	146000	100								
84A Chromium	ND	20								
88A Copper	BMDL	10								
92A Cyanide, Total	<25	25								
210 Iron	6700	200								
216A Lead	BMDL	90								
225A Mercury	BMDL	.2								
250A Nickel	BMDL	20								
280A Osmium	BMDL	800								
301A Potassium	1900	40								
314A Selenium	ND	5								
317A Silver	ND	10								
319A Sodium	18800	90								
321A Strontium	380	50								
335A Thallium	ND	5								
372A Vanadium	ND	10								
374A Zinc	40	10								

*See Grand Table for complete compound name and specifications.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

July 18, 1985

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery Water- GC/MS Data (QR20)

Chain of Custody Data Required for ETC Data Management Summary Reports

H6066

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours

Compound	Amount Added ug	% Recovery	Control Limits *	
			Lower	Upper
VOLATILE FRACTION				
Toluene-D8	.250	118	86	119
Bromofluorobenzene	.250	112	85	121
1,2-Dichloroethane-D4	.250	109	77	120
ACID FRACTION				
Phenol-D5	100	34	15	103
2-Fluorophenol	100	53	23	121
2,4,6-Tribromophenol	100	56	10	130
BASE/NEUTRAL FRACTION				
Nitrobenzene-D5	50	72	41	120
2-Fluorobiphenyl	50	61	44	119
Terphenyl-D14	50	75	33	128

* IFB EPA Control Limits

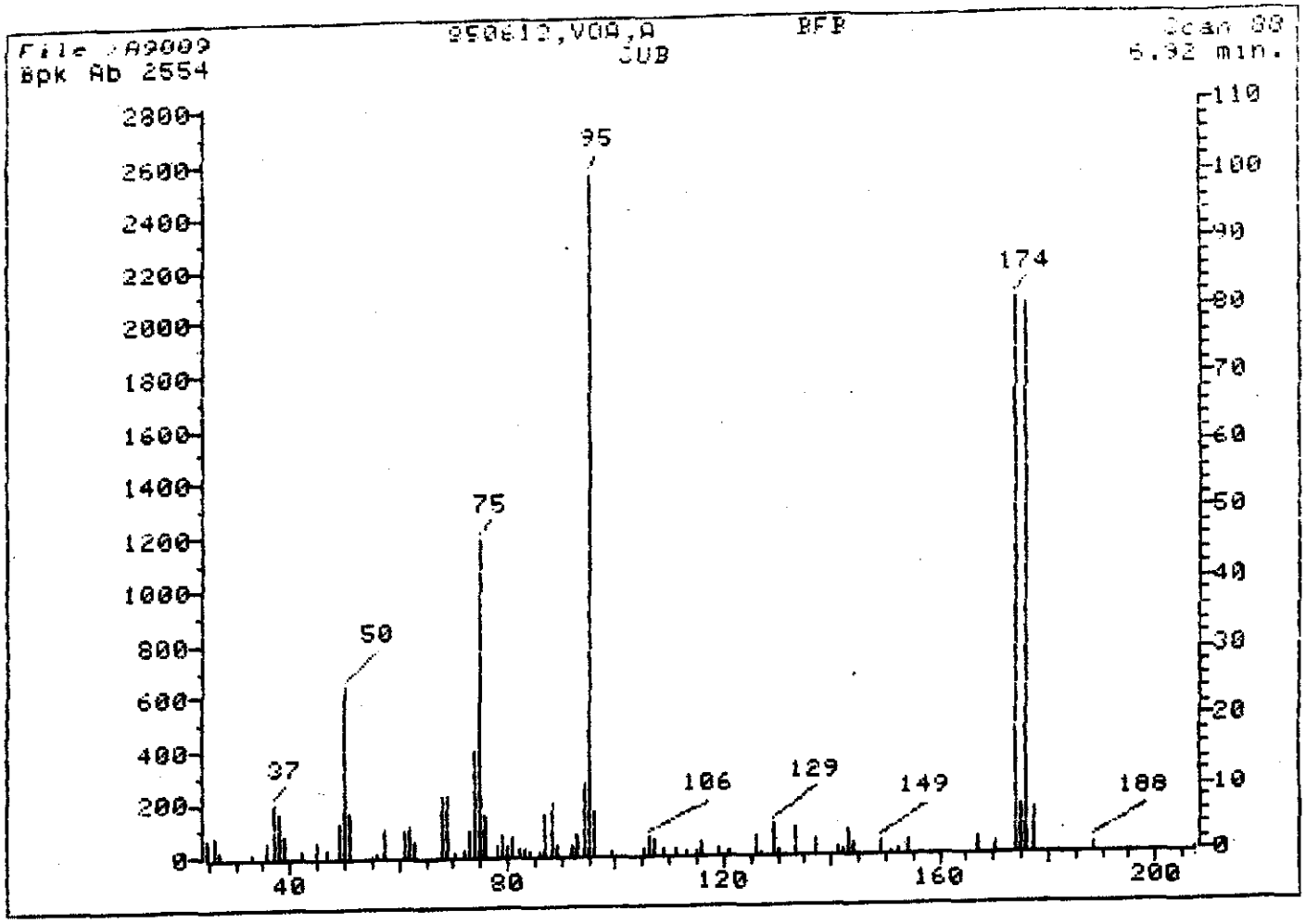


TABLE 2: METHOD PERFORMANCE DATA (QR21)

GC/MS Tuning Data - Bromofluorobenzene (BFB) for Volatiles Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	25.06	25.06	Ok
75	30-60% of mass 95	46.28	46.28	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.38	6.38	Ok
173	Less then 1% of mass 95	0.00	0.00	Ok
174	Greater then 50% of mass 95	81.21	81.21	Ok
175	5-9% of mass 174	6.70	8.24	Ok
176	95-101% of mass 174	80.31	98.89	Ok
177	5-9% of mass 176	6.07	7.56	Ok

Injection Date: 06/13/85 Analyst: [illegible]
Injection Time: 00:18 Processor: [illegible]
Run No: >A9009 QC Batch: QV337
Spectrun No: 88 Samples: H6066, H6067, H6069

KB

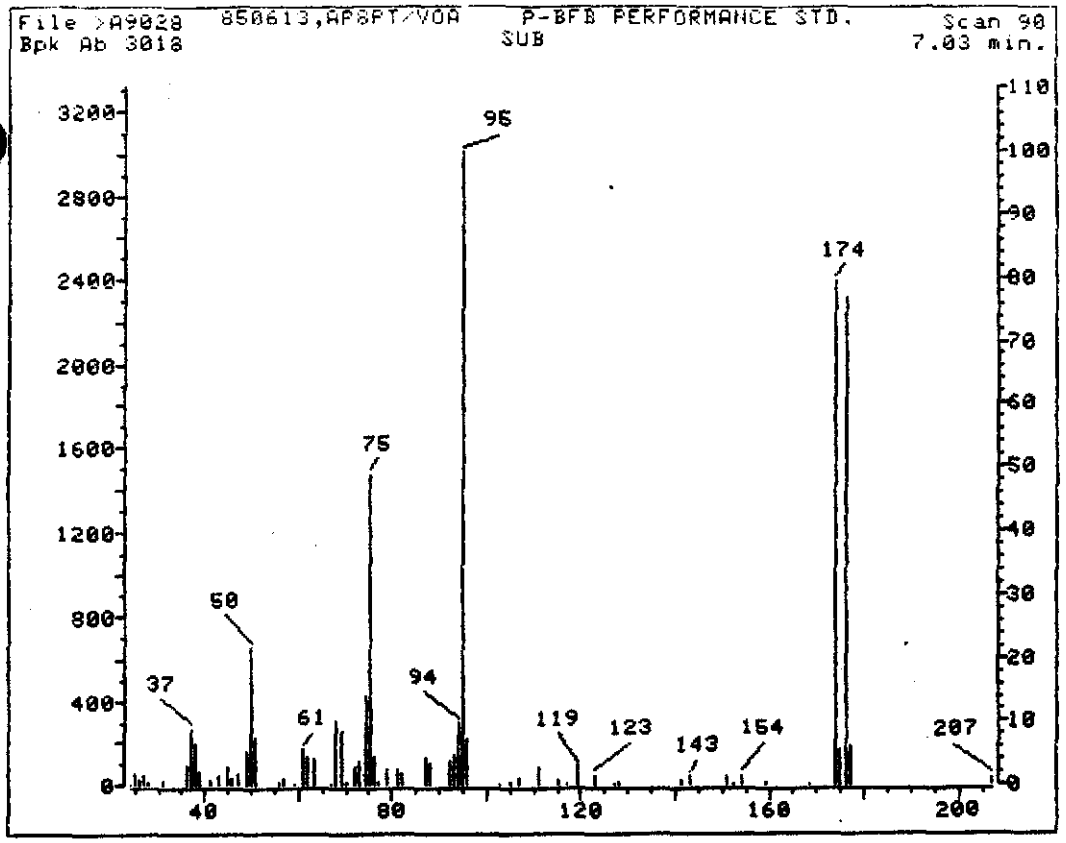


TABLE 2: METHOD PERFORMANCE DATA (QR21)

GC/MS Tuning Data - Bromofluorobenzene (BFB) for Volatiles Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	21.87	21.87	Ok
75	30-60% of mass 95	48.77	48.77	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.09	7.09	Ok
173	Less then 1% of mass 95	0.00	0.00	Ok
174	Greater then 50% of mass 95	79.26	79.26	Ok
175	5-9% of mass 174	5.57	7.02	Ok
176	95-101% of mass 174	76.94	97.07	Ok
177	5-9% of mass 176	5.96	7.75	Ok

Injection Date: 06/13/85 Analyst: W. Sebra
Injection Time: 23:11 Processor: [illegible]
Run No: >A9028 QC Batch: QV3374
Spectrun No: 90 Samples: H6069, H6066, H6067

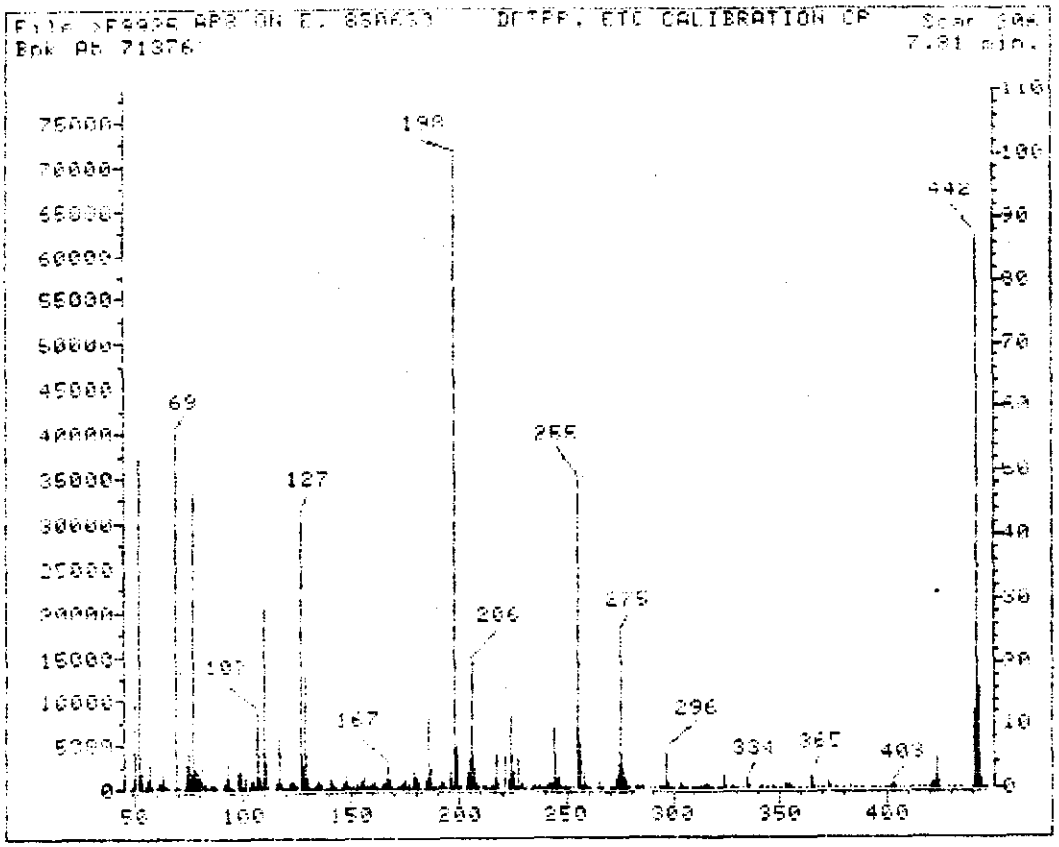


TABLE 2: METHOD PERFORMANCE DATA (QR23)

GC/MS Tuning Data - Decafluorotriphenylphospine (DFTPP) for ~~Base Neutral~~ ACID
Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	52.13	52.13	Ok
68	Less then 2% of mass 69	0.00	0.00	Ok
69	(reference only)	56.15	56.15	Ok
70	Less then 2% of mass 69	.30	.53	Ok
197	40-60% of mass 198	43.89	43.89	Ok
192	Less then 1% of mass 198	.53	.53	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.93	6.93	Ok
275	10-30% of mass 198	24.79	24.79	Ok
365	Greater then 1% of mass 198	2.60	2.60	Ok
441	Less then mass 443	12.22	77.19	Ok
442	Greater then 40% of mass 198	86.84	86.84	Ok
443	17-23% of mass 442	15.83	18.23	Ok

Injection Date: 06/30/85 Analyst: [signature]
Injection Time: 23:28 Processor: [signature]
Run No: >E9925 QC Batch: QA3211
Spectrum No: 206 Samples: H5601, H5602, H7219, H7220
H7221, H7222, G8652
H7523, H7524, H7525, H7526
H6066 to H6069

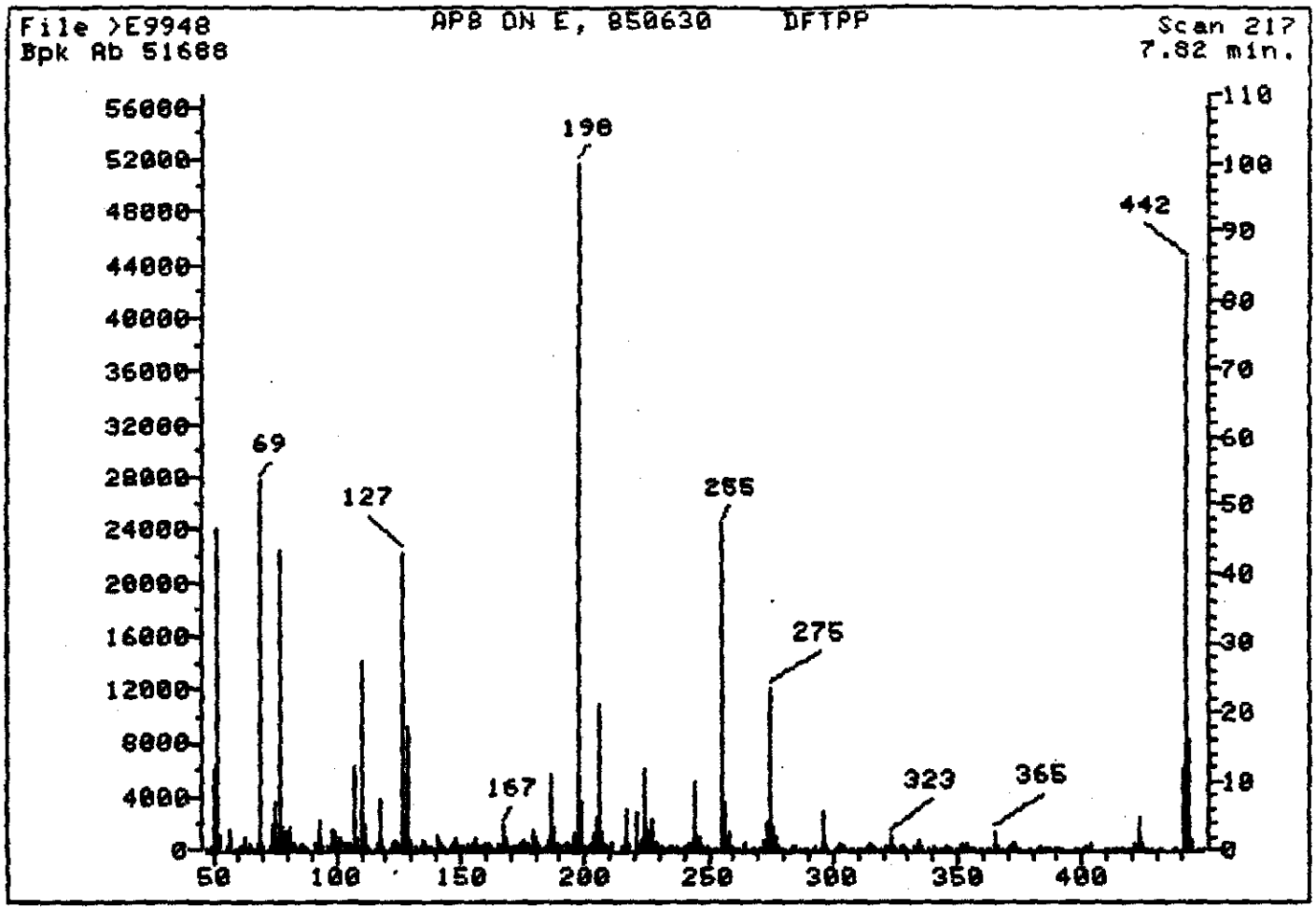


TABLE 2: METHOD PERFORMANCE DATA (QR23)

GC/MS Tuning Data - Decafluorotriphenylphospine (DFTPP) for Base/Neutral Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	46.63	46.63	Ok
68	Less then 2% of mass 69	.71	1.32	Ok
69	(reference only)	53.72	53.72	Ok
70	Less then 2% of mass 69	.28	.53	Ok
127	40-60% of mass 198	43.07	43.07	Ok
197	Less then 1% of mass 198	.50	.50	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.80	6.80	Ok
275	10-30% of mass 198	23.44	23.44	Ok
365	Greater then 1% of mass 198	2.71	2.71	Ok
441	Less then mass 443	11.71	73.80	Ok
442	Greater then 40% of mass 198	85.62	85.62	Ok
443	17-23% of mass 442	15.87	18.53	Ok

Injection Date: 07/01/85 Analyst: [illegible]
Injection Time: 22:20 Processor: [illegible]
Run No: >E9948 QC Batch: QB3211
Spectrun No: 217 Samples: H5601, H5602, H7219, H7220, H7221, H7222, G8452, H7523, H7524 to 26, H6066, 67, 68, 69

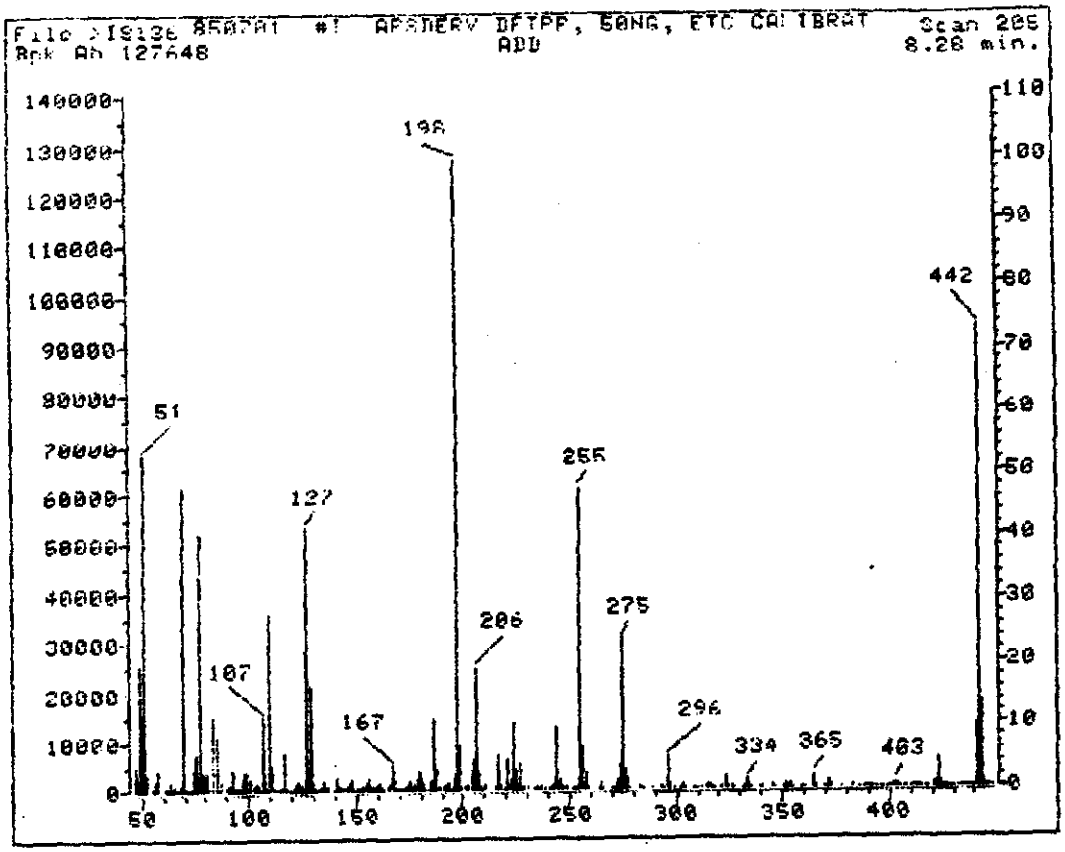


TABLE 2: METHOD PERFORMANCE DATA (QR23)

GC/MS Tuning Data - Decafluorotriphenylphospine (DFTPP) for Base/Neutral Analysis

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	53.37	53.37	Ok
68	Less than 2% of mass 69	.86	1.78	Ok
69	(reference only)	48.17	48.17	Ok
70	Less than 2% of mass 69	.35	.74	Ok
127	40-60% of mass 198	41.78	41.78	Ok
197	Less than 1% of mass 198	.34	.34	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.74	6.74	Ok
275	10-30% of mass 198	23.78	23.78	Ok
365	Greater than 1% of mass 198	2.11	2.11	Ok
441	Less than mass 443	9.98	73.21	Ok
442	Greater than 40% of mass 198	73.13	73.13	Ok
443	17-23% of mass 442	13.63	18.64	Ok

Injection Date: 07/01/85
Injection Time: 10:16
Run No: >18136
Spectrum No: 205

Analyst: Thomas J Mancuso
Processor:
QC Batch: QAB3211
Samples: H6066 to H6069, H5601, H5602, H7219 to H7222, H7523 to H7526, G8453

Methodology
For
Analysis of Appendix VIII Parameters

The methods employed in the analysis of specific compounds in Appendix VIII are based on the second edition (July 1982) of EPA Manual SW-846 "Test Methods for Evaluating Solid Waste". Since the manual is deficient in details on how the complete analysis of Appendix VIII compounds can be performed, we devised an analytical scheme that divides the compounds into the twelve categories as stated in the introduction. Within the nine categories of compounds that can be specifically analysed, not all the reference standards are readily available. We footnoted those unavailable compounds in our result tables. In the GC/MS analyses we were able to search for the specific compounds that did not have corresponding reference standards by using standard spectra from the literature. In other cases, GC and HPLC, where retention time characteristics are the only means to identify the compounds, we were unable to draw any conclusions on those compounds that corresponding reference standards are not available at the time of analysis.

In each category rigid compliance with the instrument parameters and performance criteria of established EPA methods, such as those in methods 624 and 625, was achieved before any sample analysis was initiated. (Similar criteria do not exist in SW846.) For GC/MS analysis where standards were available, identification was performed using relative retention times, the relative abundance of three characteristic ions and the abundance ratios. The entire mass spectrum was reviewed to confirm each identification. Quantitative analysis was performed using an internal standard with a single characteristic ion. When compounds without corresponding reference standard were identified, they were quantified assuming the same response factor as the internal standard.

Volatile Compounds by Purge and Trap GC/MS

For the analysis of purge and trap Volatile compounds, Methods 8240 and 5030 were used. The analysis can be summarized as follows: Helium is bubbled through a 5 ml water sample contained in a specially designed purging chamber at ambient temperature. The purgeable volatile organic compounds are transferred from the aqueous phase to the vapor phase. The vapor is swept through a sorbent column where the organic components are trapped. After the purge cycle is complete, the sorbent column is heated and backflushed with helium to desorb the organic purgeables onto a gas chromatographic column. The gas chromatograph is temperature programmed to separate the purgeable mixture. The separated purgeable components are then identified and quantitated using a computerized mass spectrometer.

Water Soluble Compounds by Direct Aqueous Injection GC/MS

For the analysis of water soluble compounds, 5 ul of aqueous sample was injected directly into the GC/MS system. The chromatographic column employed in the procedure is the same column used for purge and trap analysis. MS scanning was begun prior to sample injection to capture mass intensity data for early eluting compounds. The GC oven temperature program used was that specified in procedure 8240.

Extractable Acid, Base/Neutral and Pesticide Compounds by GC/MS

For the analysis of the Acid, Base/Neutral and Pesticide compounds in water, Methods 3510 and 8270 were used. The analysis can be summarized as follows: a measured volume of sample, approximately 1 liter, is extracted with an aliquot of methylene chloride without pH adjustment and then the sample is adjusted to a pH greater than 11 and extracted with another aliquot of methylene chloride. These two aliquots were combined. The pH of the sample is then adjusted to a value less than 2 and extracted with another aliquot of methlyene chloride. A separatory funnel or continuous extractor is used to perform the extractions. The two extracts are dried and concentrated to a 1 ml final volume. The extracts are then combined just prior to injection into a GC/MS instrument.

GC Analysis of Herbicides and Pesticides

The methods employed in the analysis of your sample for herbicides and pesticides are established EPA methods taken from the "Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples," June, 1980 and methods 8080, 8140 and 8150.

The herbicide method can be summarized as follows: A measured volume of sample, approximately 500-1000 ml, to which sodium sulfate has been added, is acidified and extracted with methylene chloride. The methylene chloride extract is evaporated to dryness, and the residue is derivatized with diazomethane and injected into a gas chromatograph equipped with a ^{63}Ni electron capture detector.

The pesticide method can be summarized as follows: A measured volume of sample, approximately 500ml, is extracted with methylene chloride. The extract is dried and concentrated to a final volume of 1ml and injected into a gas chromatograph equipped with a ^{63}Ni electron capture detector and Flame Photometric detector in phosphorus mode.

Analysis of Metals

The determination of metals in aqueous samples is performed according to the methods published by EPA in "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March, 1979, and the inorganic methods in SW846. Arsenic, selenium and thallium are determined by furnace AA; silver, aluminum, barium, beryllium, boron, cadmium, calcium, chromium, copper, cobalt, iron, magnesium, manganese, molybdenum, nickel, lead, sodium, antimony, tin, titanium, vanadium, and zinc are determined by ICP emission. The determination of mercury is performed by cold vapor AA.

Analysis by HPLC

The analysis of thermally unstable and polar compounds are based on the HPLC methods 8320 and 8330. The compounds analyzed fall into two catagories: direct aqueous injection and Base/Neutral extractables. Twenty ul of the sample or extract is injected into an HPLC equipped with a reverse phase column. Gradient elution and UV detector at 210 and 250 nm are used.

Conventional

Total cyanide analysis is performed using Method 9010.

Summary of
Quality Assurance/Quality Control Procedures (QA/QC)

ETC bases its quality assurance protocols on the following government guidelines:

. "Handbook for Analytical Quality Control in Water and Wastewater Laboratories", EPA-600/4-79-019, March 1979;

. National Enforcement Investigation Center Policies, and Procedures manual; EPA-330/9/79/001-R, October 1979;

. the recommended guidelines for EPA Methods 624 and 625. (Federal Register, December 3, 1979; updated on Otober 26,1984);

. "Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples," EPA 600/8-80-038, June 1980; and

. "Determination of 2,3,7,8-TCDD in Soil and Sediment" EPA, Region VII, Kansas City, September 1983.

. Organic Analysis: Multi-media, Multi Concentration-IFB WA84-A267

. Dioxin Analysis:Soil/Sediment Matrix; Multi-Concentration; Selected Ion Monitoring with Jar Extration Procedure-IFB WA84-A002

However, we have modified our protocols to provide a higher level of QA/QC than the guidelines require. For example, we analyze a higher than required number of quality control samples and we pay especially careful attention to the certification of the "reference standard" compounds we use in analysis. Below are listed the key QA/QC elements for the methods we used.

Analysis of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry

- Each batch of 13 samples consists of 9 customer samples (at a maximun), one blank sample, one spiked blank, one spiked sample and one replicate sample. This amounts to a 30% quality control factor.

- Three surrogate compounds are added to each sample in the batch of 13.

- A blind quality control sample is introduced to the laboratory for analysis on a weekly basis.

- Each GC/MS is checked and retuned, if necessary, at the beginning of each day to ensure that its performance on bromofluorobenzene (BFB) meets the EPA criteria.

- A calibration curve for quantitation is prepared using a mixture of Volatile Organic Priority Pollutant "standards" at a minimum of 3 different concentrations and using a mixture of 3 internal standards at a constant concentration.

- The calibration curve is verified with a mixture of priority pollutant standards every day. If the response factors factors vary greater than 25%, the instrument must be recalibrated.

Analysis of Organic Compounds Extracted in Acid or Base/Neutral Solutions by Gas Chromatography/Mass Spectrometry

- Each batch of 20 samples consists of 16 customer samples (at a maximum), one blank sample, one spiked blank (for water matrices), one sample spiked with the priority

pollutant standard mixture and a duplicate customer sample. This amounts to a 20% quality control factor.

- Three surrogate compounds are added to each sample in the batch for Base/Neutral analysis.
- Three surrogate compounds are added to each sample in the batch for Acid analysis.
- A blind quality control sample is introduced to the laboratory for analysis on a weekly basis.
- Each GC/MS is checked and retuned, if necessary, at the beginning of each day to ensure that its performance on decafluorotriphenylphosphine (DFTPP) meets the EPA criteria.
- A calibration curve for quantitation is prepared using a mixture of standards composed of either the Organic Acid or Base/Neutral Extractable Compounds at a minimum of 3 concentrations and using five internal standards for quantitation.

Analysis of Metals

All Samples

- New standards are prepared for each batch of samples.
- Normal calibration is performed using a blank sample and four standards that have been through the sample preparation procedure. A regression analysis is used to construct the calibration curve.
- All EP Toxicity samples and all samples determined by furnace atomic absorption are calculated by the "method of additions".
- For each sample analysis that requires the use of the "method of additions" technique, a three point calibration is performed using U.S. EPA "Methods for Chemical Analysis of Water and Wastes, 1979". Results are obtained using linear regression analysis. Any regression with a coefficient of correlation below 0.990 is considered suspect, necessitating review of calibration data or sample re-analysis.
- In constructing the normal calibration curves the lowest concentration levels we use are values greater than or equal to 5 times the Instrumental Detection Limit (IDL).
- All calibration standards are analyzed in duplicate, at a minimum.
- Independent reference standards are used to check the accuracy of calibration standards.
- A check standard is analyzed every ten samples to validate the normal calibration curve.
- One customer sample out of every ten is analyzed in triplicate.

Homogeneous Samples (except for Mercury analysis)

Samples are analyzed in batches of 30 or less. For batches in which the sample matrices are homogeneous, the QC program is a minimum of 25% and consists of analyzing:

- 3 sets of triplicate analyses;
- 2 Replicate spikes;
- 1 independent reference standard;
- 4 Calibration standards (processed using the sample preparation method);
- 4 Calibration standards (without sample preparation); and

- 1 Reagent Blank.

Heterogeneous Samples (except for Mercury analysis)

Samples are analyzed in batches of 30 or less. For batches in which the sample matrices are heterogeneous, the QC program is a minimum of 35% and consists of analyzing:

- 3 sets of triplicate analyses;
- 2 Replicate spikes;
- 1 Replicate independent reference standards;
- 4 Calibration standards (processed using the sample preparation method);
- 1 Procedural Blank;
- 4 Calibration standards (without sample preparation); and
- 1 Reagent Blank.

Analysis of Mercury

To analyze samples for mercury we group them by matrix in batches of 30 or less. Our QC program is a minimum of 30% and consists of analyzing:

- each of the 30 customer samples in duplicate;
- 3 sets of triplicate anaylses;
- 2 Replicate spikes;
- 2 Replicate independent reference standards;
- 10 Calibration standards (processed using the sample preparation method); and
- 2 Procedural Blanks.

Analysis of Pesticides, Herbicides and PCB's by Gas Chromatography

Pesticide, herbicide and PCB samples are grouped in batches of 16 customer samples or less according to the type of analysis to be performed. The QC program for each of these three types of analyses is a minimum of 20% and consists of analyzing:

- 1 procedural blank sample(a reagent blank is analyzed in the case of non-water matrices);
- 1 spiked blank sample (the spiked blank is eliminated in the case of non-water matrices);
- 1 replicate sample;
- 1 replicate spiked sample; and
- 1 known refernece QC sample for at least each 100 samples analyzed.

The instrument is calibrated each run with three standards, and checked every 10 samples.

Analysis of Cyanides, Phenols, Fluoride, Chloride, Nitrate and Nitrite

- All parameters are analyzed using a Technicon Autoanalyzer II GT.

- 3 calibration standards are analyzed at the beginning and end of each batch.
- Each batch (up to 80 samples) consists of analyzing one blank, one spiked blank, one duplicate and spiked sample every 20 samples, and an EPA known reference sample.

Analysis of Total Organic Carbon (TOC)

TOC samples are analyzed on a daily basis with the number of samples analyzed per day dependent on the request for duplicate or quadruplicate analyses. The quality control program is designed to maintain the appropriate amount of QC and consists of the following elements:

- Daily instrument calibration
- One blank
- Standard recalibration every 10 samples
- Spiked samples at a low and high level
- Every sample is run in duplicate at a minimum

Analysis of Total Organic Halide (TOX)

- Blank reagent water for absolute carbon backround must contain less than 5 ug/l of halide (as chloride).
- Using a trichlorophenol standard, the mean adsorption efficiency must be within +/- 15% of the standard value.
- Calibration standards are run every 10 samples.
- Every sample is run in duplicate at a minimum.

Analysis of 2,3,7,8-TCDD (Dioxin) by GC/MS (SIM)

- Each sample is dosed with a known quantity of $^{13}C_{12}$-2,3,7,8-TCDD as internal standard and $^{37}Cl_4$-TCDD as surogate standard. The action limits for surrogate standard results is +/- 40% of the true value. Samples showing surrogate standard results outside of these limits are reextracted and reanalyzed.
- Two laboratory "method blanks" are run along with each set of 24 or fewer samples. The method blank is also dosed with the internal standard and surrrogate standard.
- At least one per set of 24 samples is run in duplicate to determine intralaboratory precision.
- Qualitative Requirements. The following are met in order to confirm the presence of native 2,3,7,8-TCDD:

  a. Isomer specificity must be demonstrated initially and verified once per 8-hour work shift. The verification consists of injecting a mixture containing TCDD isomers which elute close to 2,3,7,8-TCDD. The 2,3,7,8-TCDD must be separated from interferring isomers, with no more than 25% valley relative to the 2,3,7,8-TCDD peak.

  b. The 320/322 ratio is within the range of 0.67 to 0.87.

  c. Ions 320, 322, and 257 are all present and maximize together the signal to mean noise ratio must be 2.5 to 1 or better for all 3 ions.

  d. The retention time is equal (within 3 seconds) the retention time for the isotopically labeled 2,3,7,8-TCDD.

e. At least one of the positives can be confirmed by obtaining partial scan spectra from mass 150 to mass 350. The partial scan guidelines are as follows:

. the 320/324 ratio should be 1.58 +/- 0.16

. the 257/259 ratio should be 1.03 +/- 0.10

. the 194/196 ratio should be 1.54 +/- 0.15

- One sample is spiked with native 2,3,7,8-TCDD at a level of 1.0 PPB (for soil) for each set of 24 or fewer samples.
- In cases where no native 2,3,7,8-TCDD is detected, the actual detection limit is estimated and reported based on a signal to noise ratio of 2.5 to 1 at ions 320 and 322.
- For each sample, the internal standard is present with at least a 10 to 1 signal to noise ratio for both mass 332 and mass 334. Also, the internal standard 332/334 ratio must be within the range of 0.67 to 0.87.

Subcontractor QA/QC

Each subcontractoer is required to maintain an appropriate level of quality control. To insure this, each subcontractor is required to submit to ETC the quality control data for all analyses it performs. This data is kept on file at ETC. In general, the amount of quality control required is one duplicate sample with one spiked sample for every ten analyses.

Chain-of-Custody

The chain-of-custody procedure is part of our quality assurance protocol. We believe our chain-of-custody record fully complies with the legal requirements of federal, state and local government agencies and of the courts of law. The record covers:

- labeling of sample bottles, packing the Sample Shuttle and transferring the Shuttle under seal to the custody of a shipper;
- outgoing shipping manifests;
- the chain-of-custody form completed by the person(s) breaking the Shuttle seal, taking the sample, resealing the Shuttle and transferring custody to a shipper;
- incoming shipping manifests;
- breaking the Shuttle's reseal;
- storing each labeled sample bottle in a secured area;
- disposition of each sample to an analyst or technician; and
- the use of the sample in each bottle in a testing procedure appropriate to the intended purpose of the sample.

The records show for each link in this process:

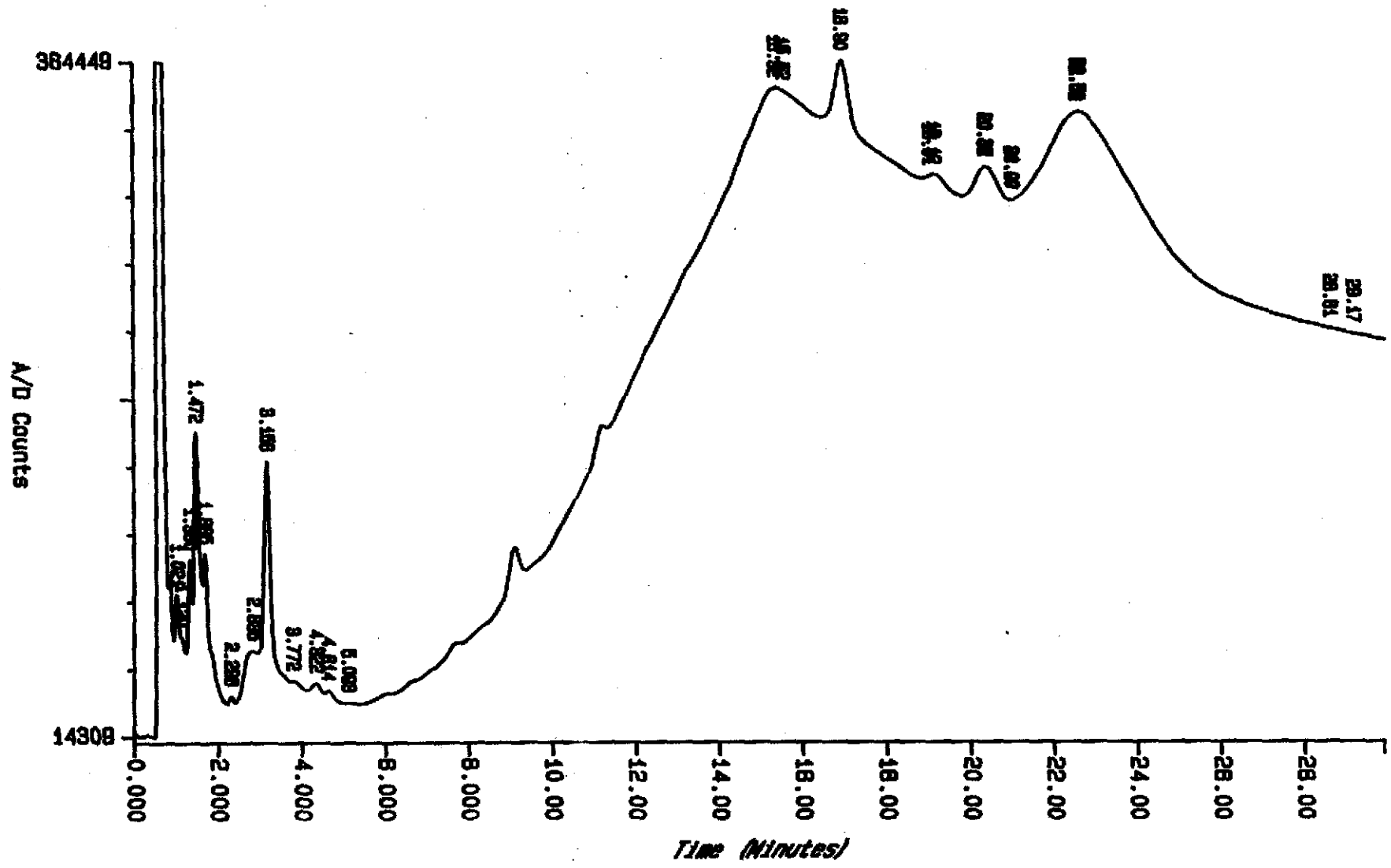
- the person with custody; and
- the time and date each person accepted or relinquished custody.

Appendix A1

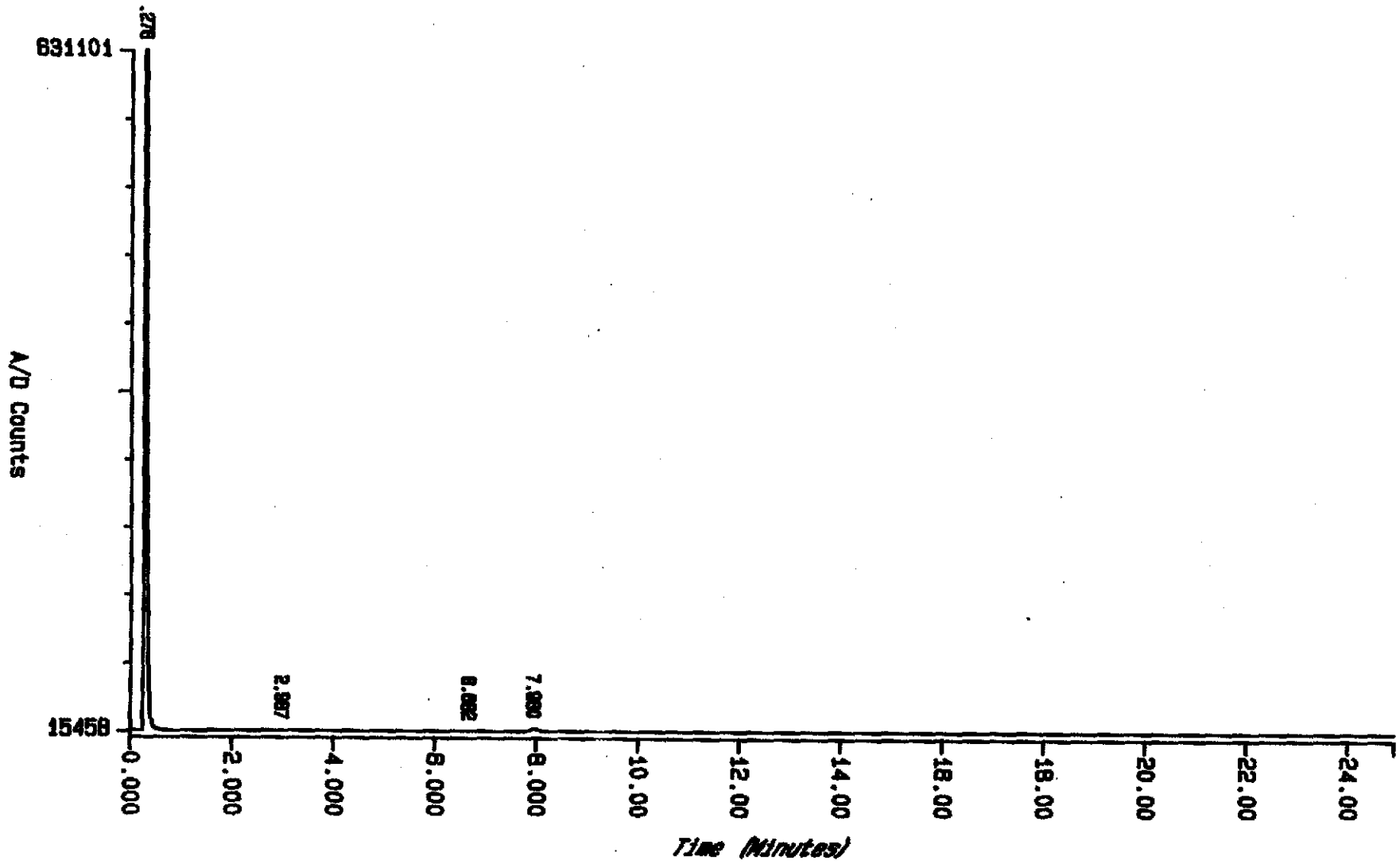
Gas Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed gas chromatogram for each sample analyzed by a GC instrument.

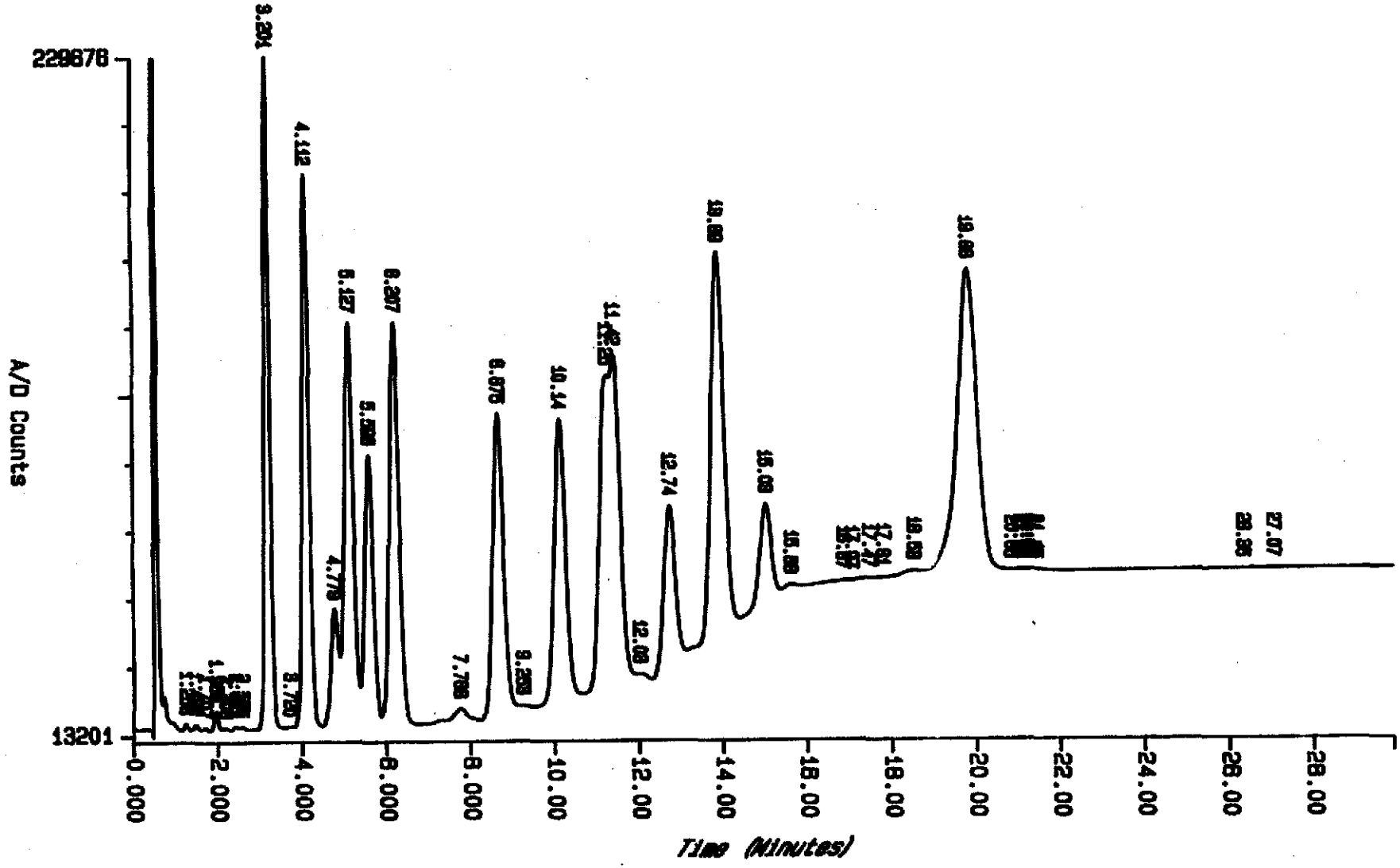
2) A reconstructed gas chromatogram for the appropriate standard compounds analyzed with the same GC under the same operating conditions.



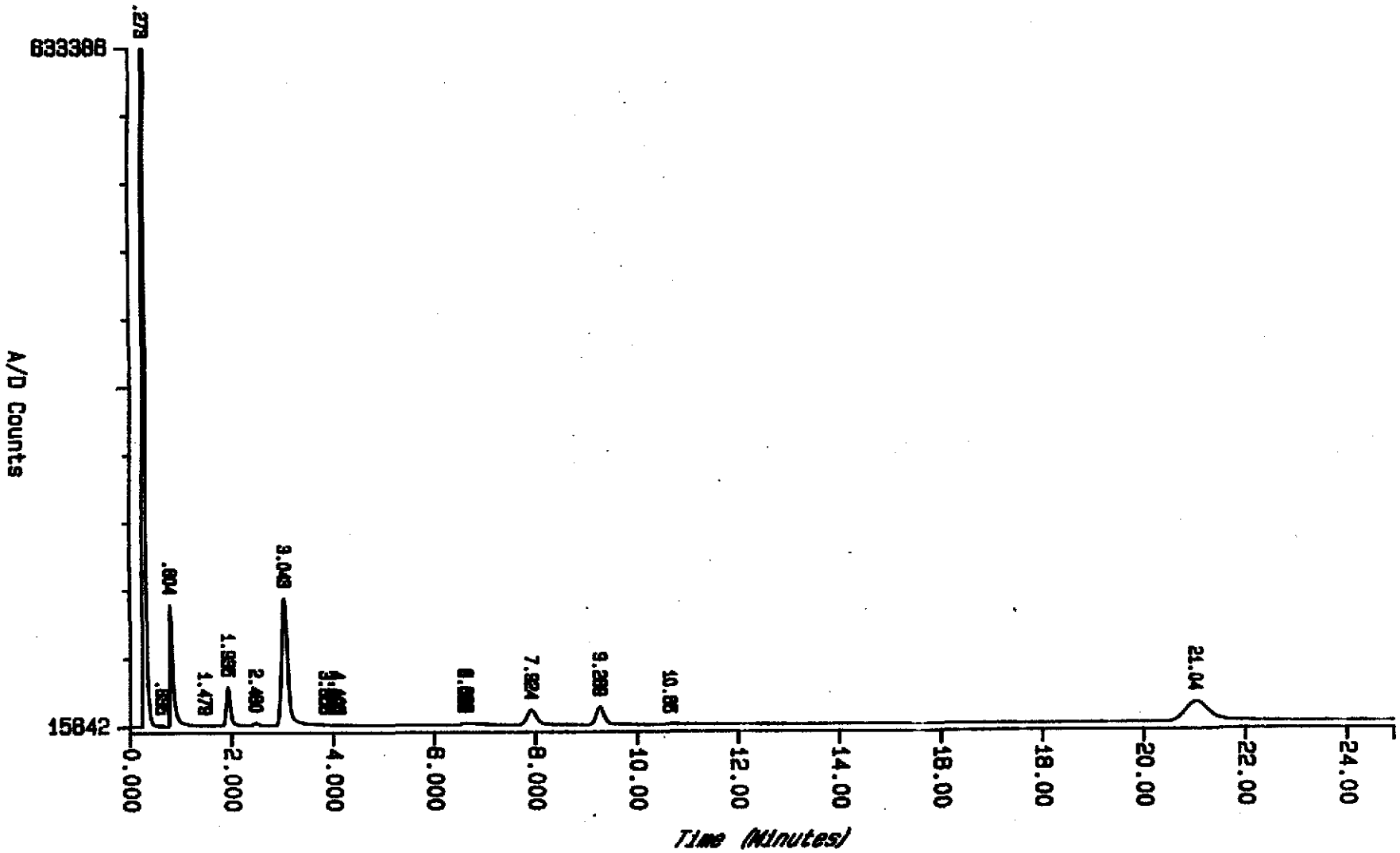
Sample: H6066 Injected at 13:02:33 ON JUN 27, 1985
Raw File: H6066D Proc File: H6066C Method: AP8PST



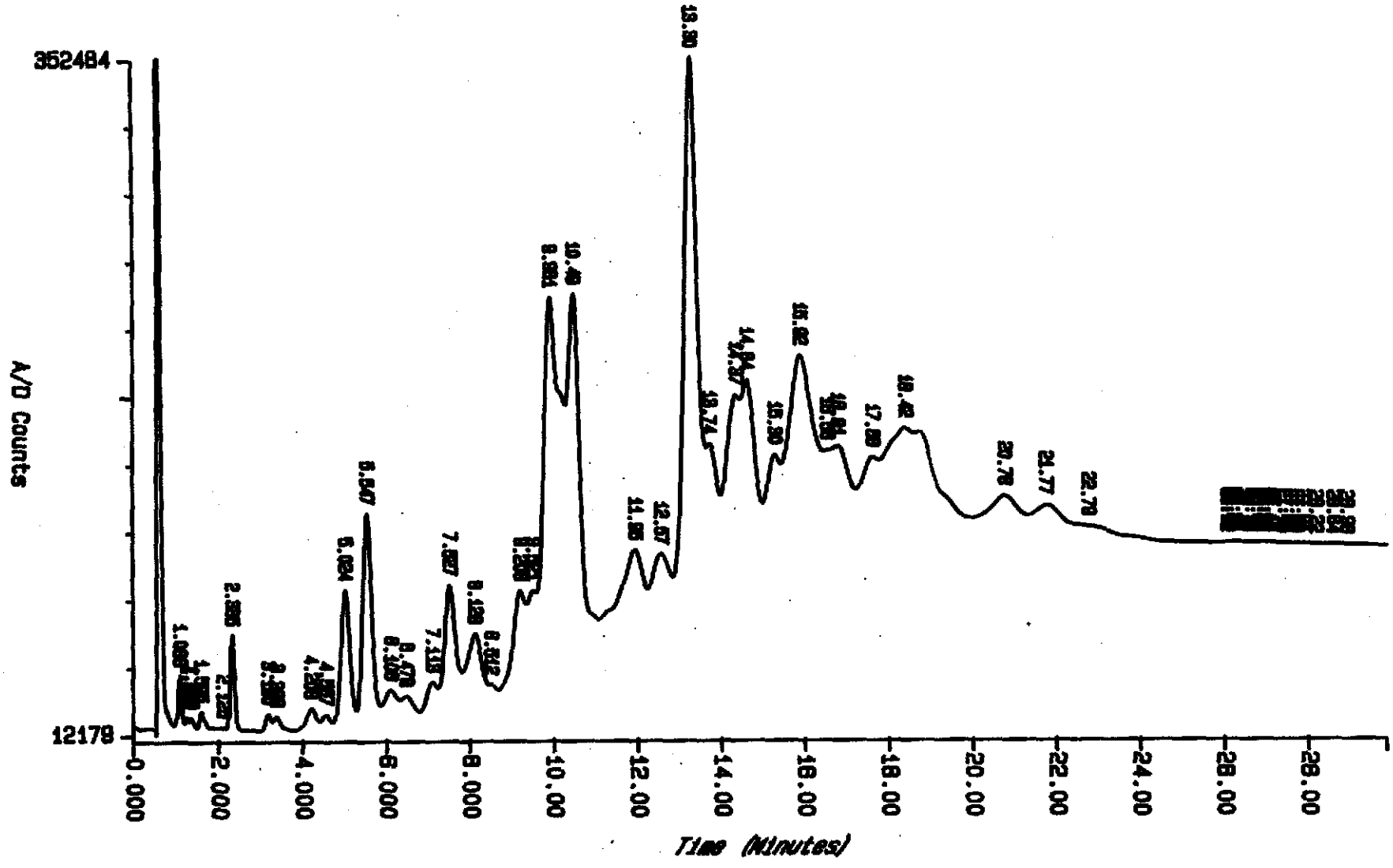
Sample: H6066 Injected at 0:34:29 ON JUN 27, 1985
Raw File: H6066B Proc File: H6066A Method: AP8FPD



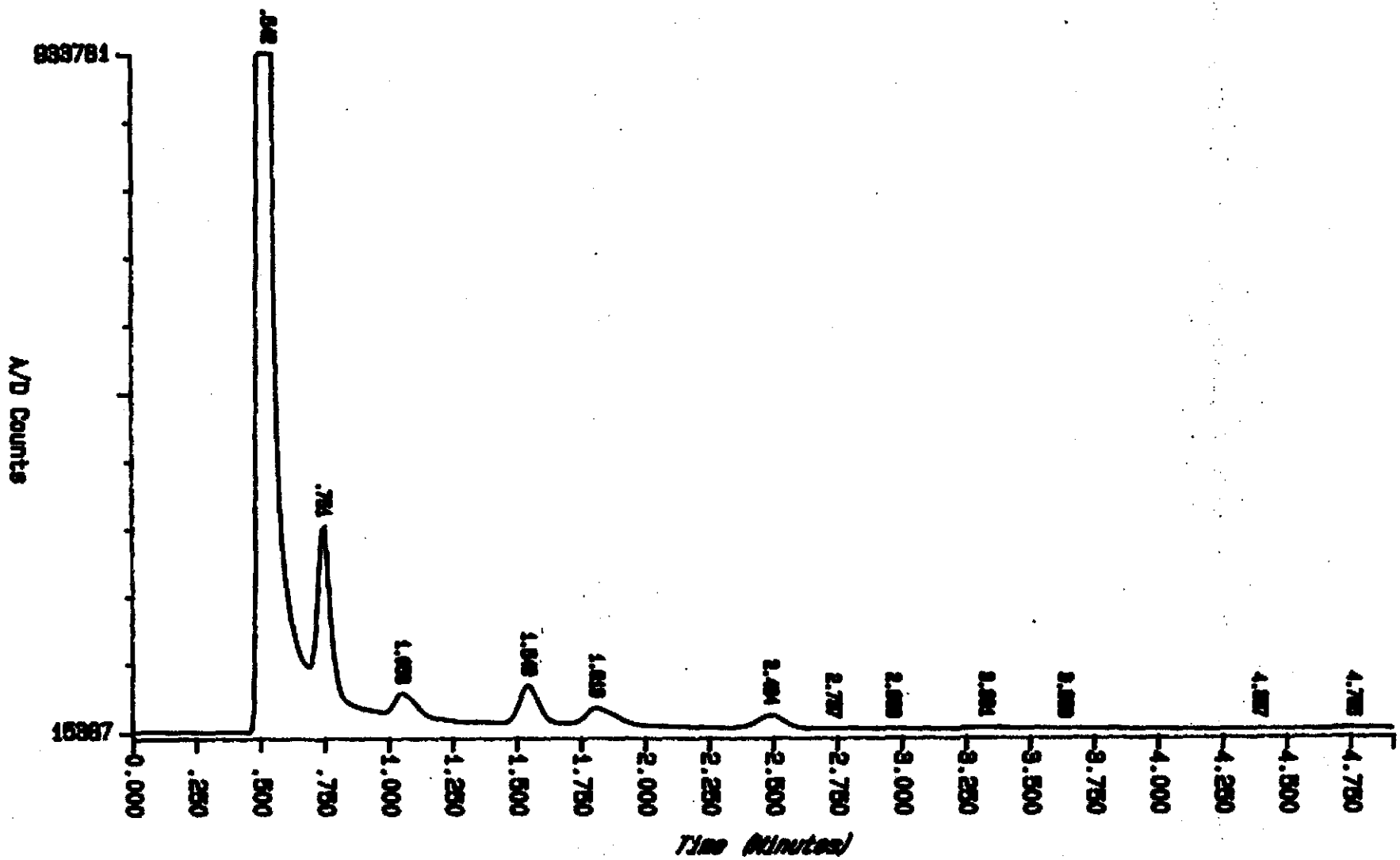
Sample: PEST STDB Injected at 3:03:46 ON JUN 27, 1985
Raw File: RW0797 Proc File: PW0797 Method: APBPST



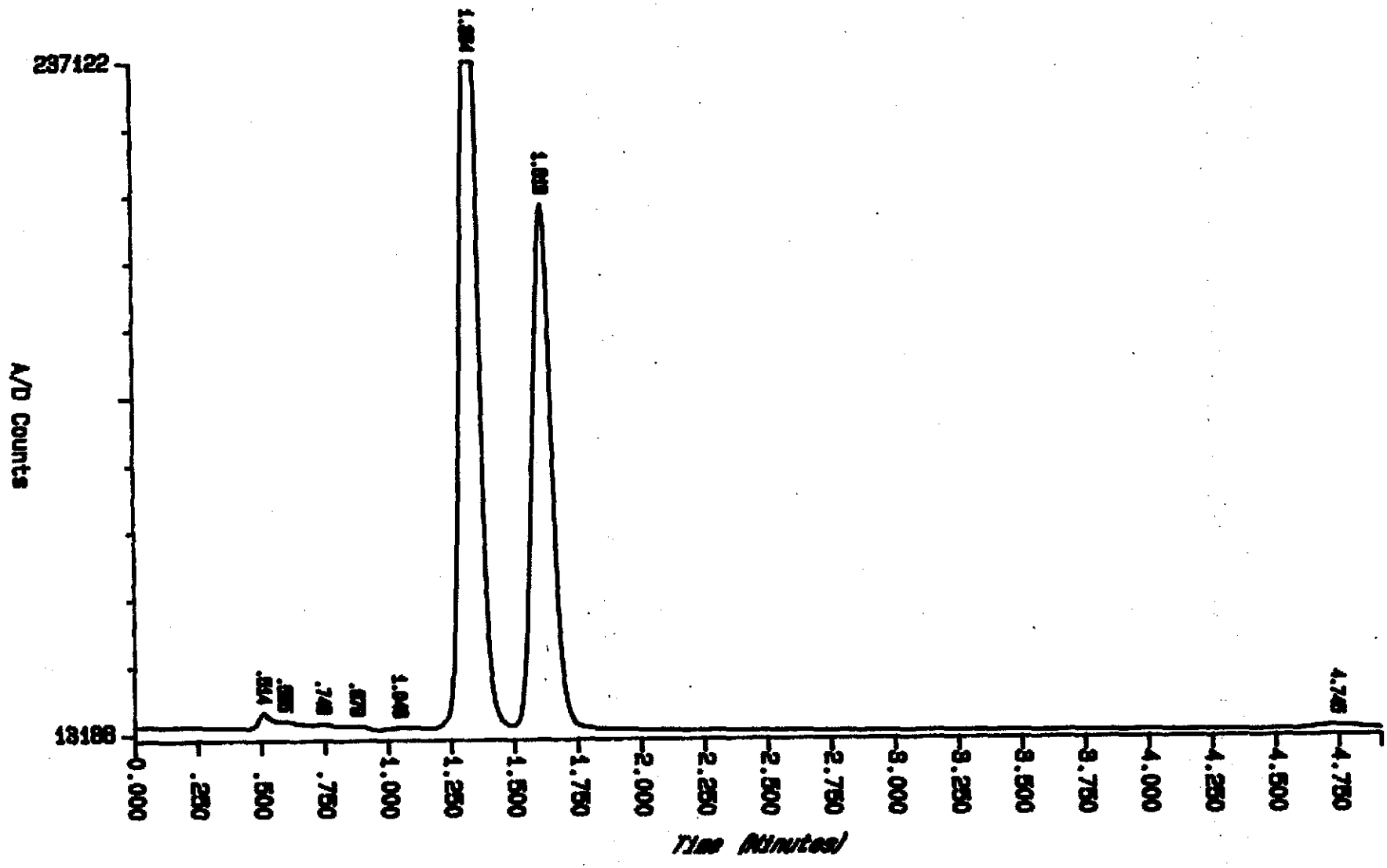
Sample: FPD STDB Injected at 15:50:47 ON JUN 26, 1985
Raw File: RW0790 Proc File: PW0790 Method: AP8FPD



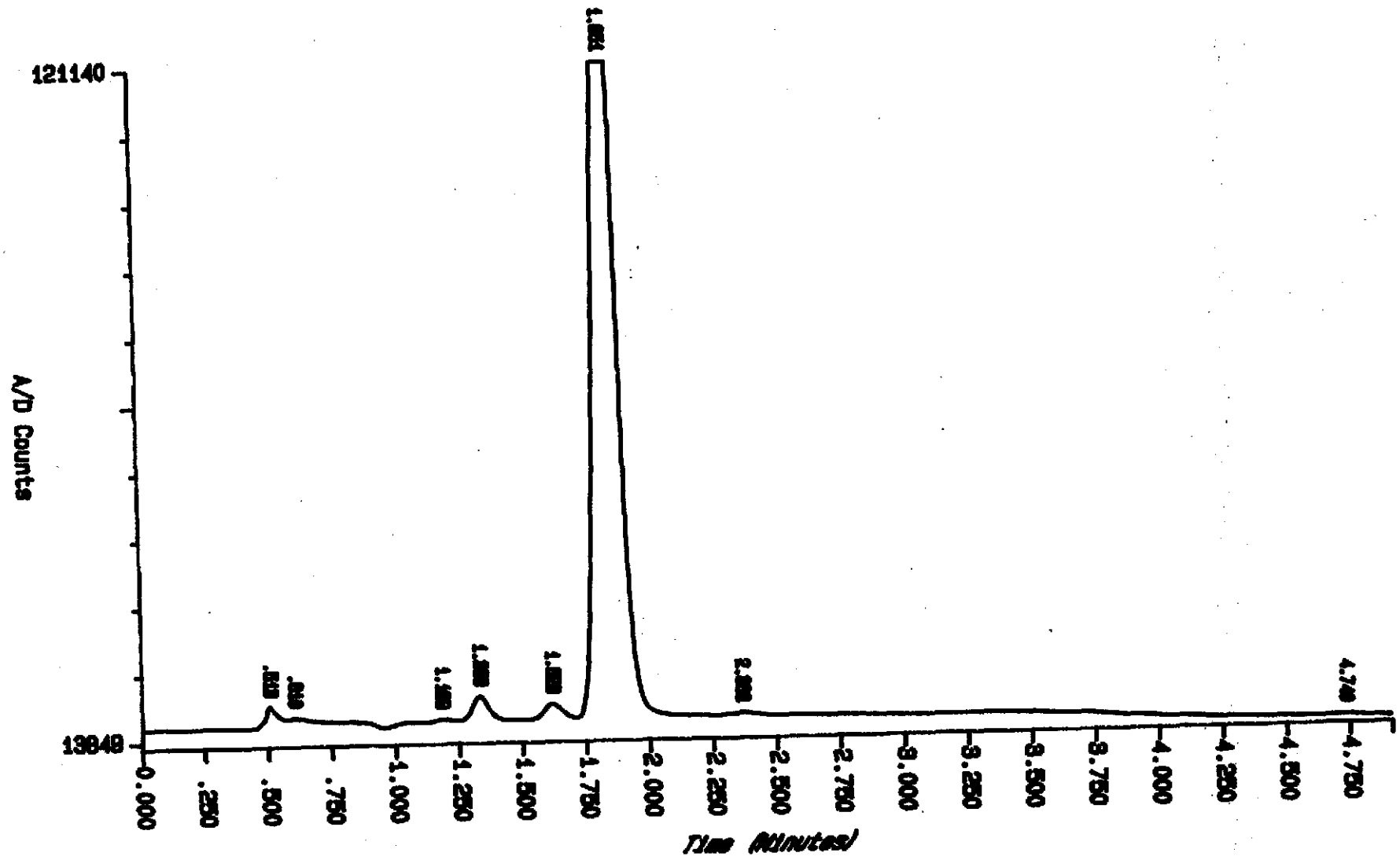
Sample: TCK STD B Injected at 19:33:39 ON JUN 27, 1985
Raw File: AW0810 Proc File: PW0810 Method: APBPST



Sample: H8088 Injected at 11:55:18 ON JUL 2, 1985
Raw File: H8088N Proc File: H8088M Method: HER88



Sample: HERBB Injected at 10:21:57 ON JUL 2, 1985
Raw File: RK1530 Proc File: PK1530 Method: HERBB



Sample: 245TB Injected at 10:28:29 ON JUL 2, 1985
Raw File: RK1531 Proc File: PK1531 Method: HERB8

Appendix A1

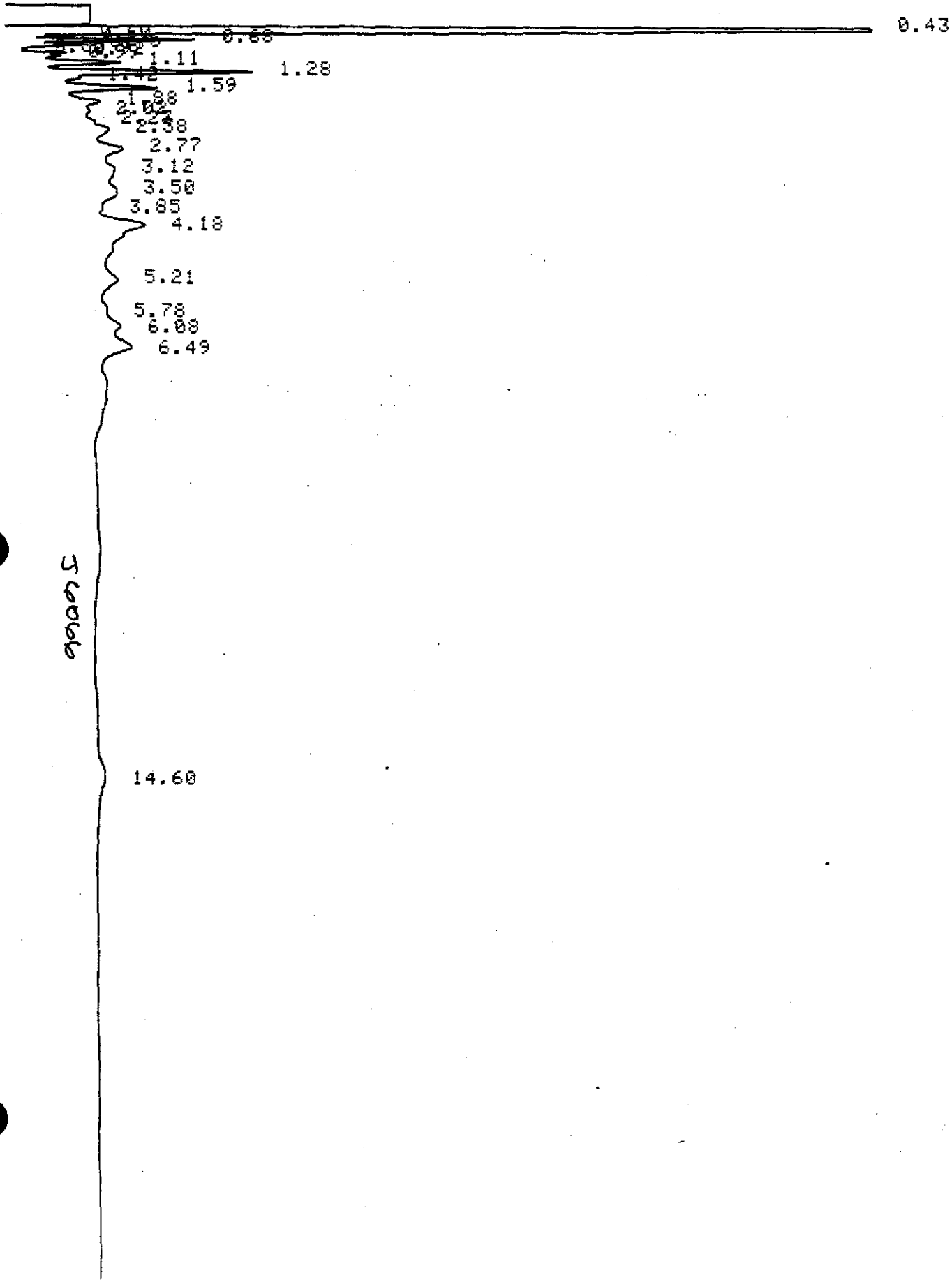
Gas Chromatographic Spectral Data for Quantitated Compounds

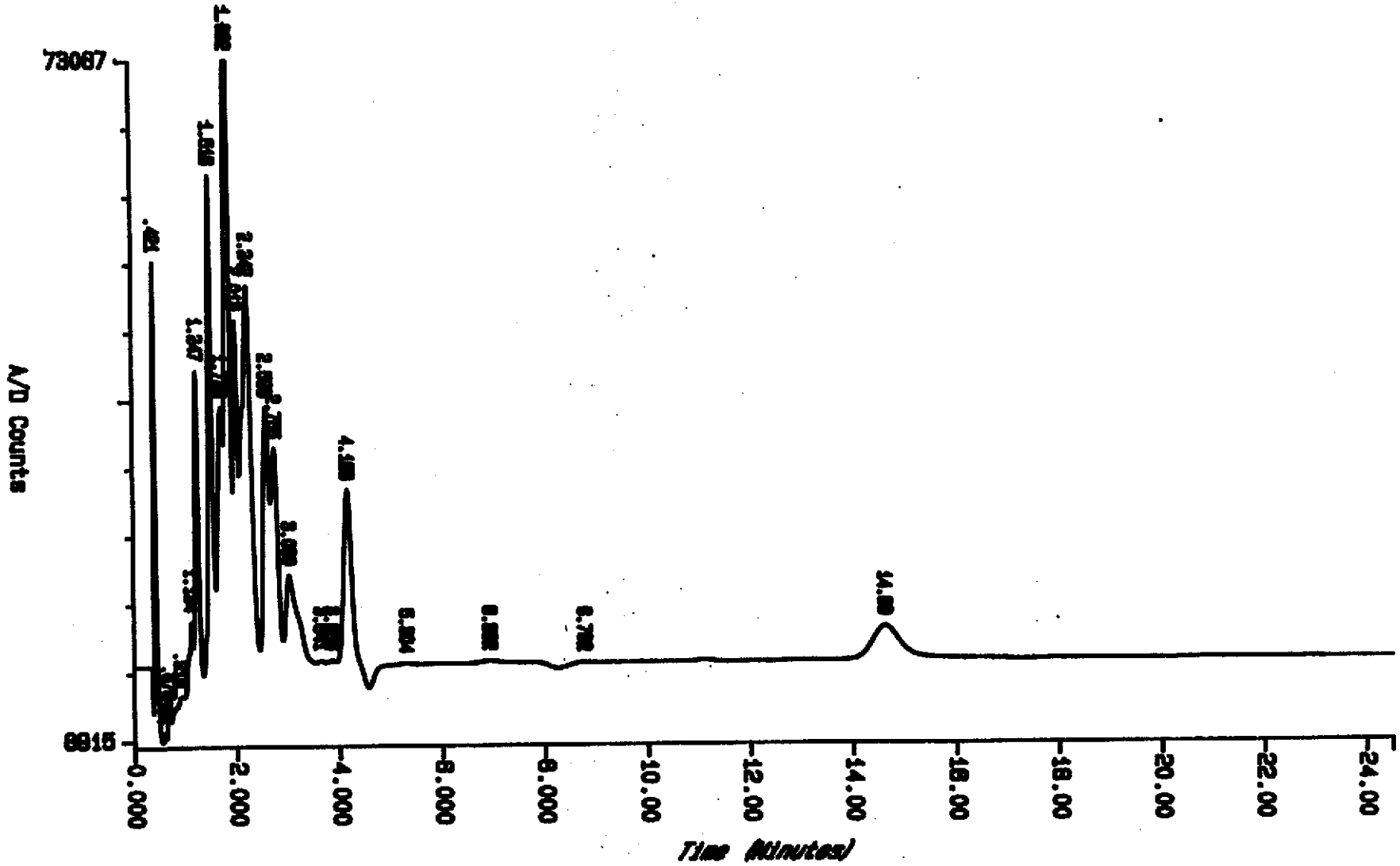
1) A reconstructed gas chromatogram for each sample analyzed by a GC instrument.

2) A reconstructed gas chromatogram for the appropriate standard compounds analyzed with the same GC under the same operating conditions.

PT: STOP RUN

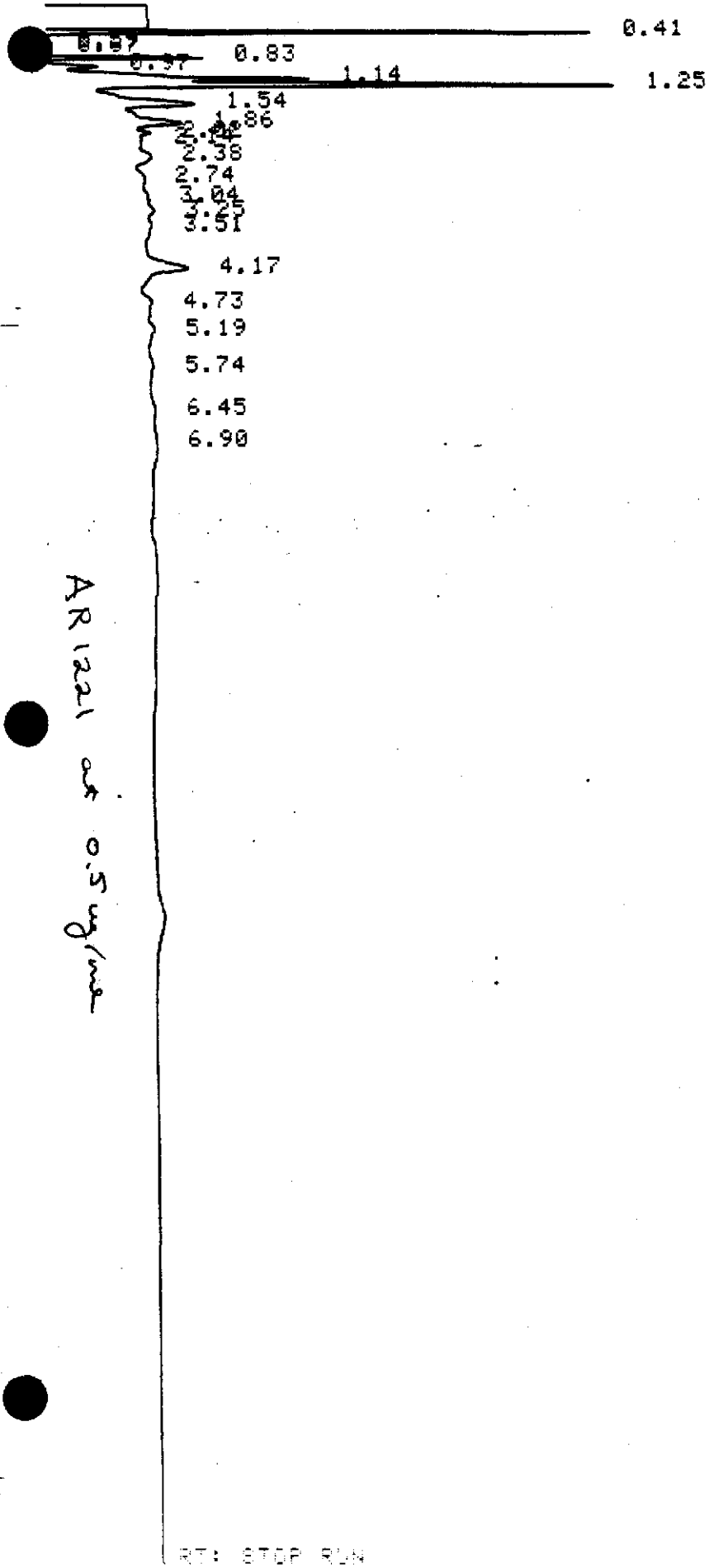
[hp] 5880A SAMPLER INJECTION @ 09:50 JUL 16, 1985
SAMPLE # : ID CODE :
22 1221-0.5





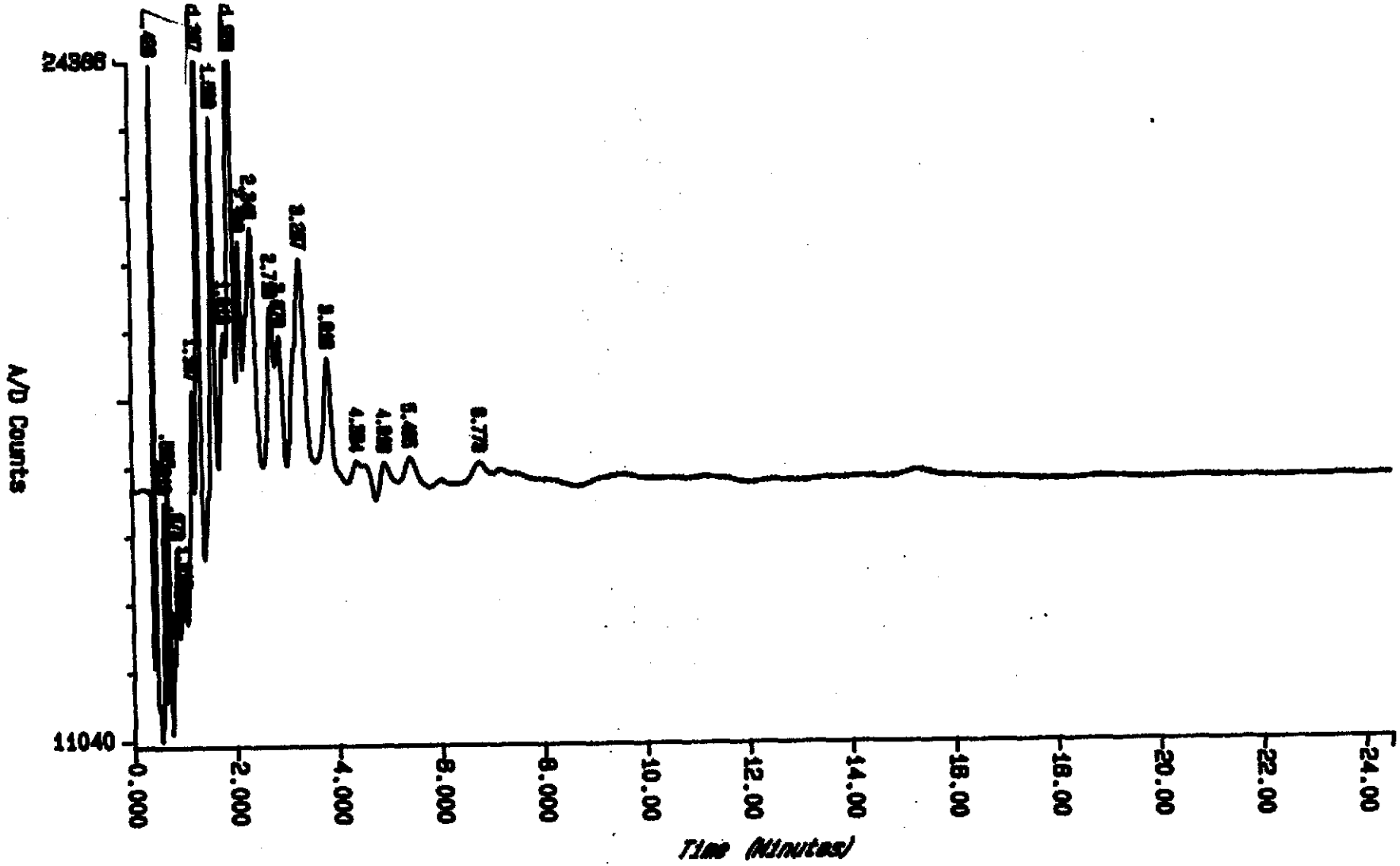
Sample: AR1018 0.5 Injected at 12:33:17 ON JUL 18, 1985
Raw File: RW1282 Proc File: PW1282 Method: PCBB5

[hp] 5880A SAMPLER INJECTION @ 09:23 JUL 16, 1985
SAMPLE # : ID CODE :
21 0652

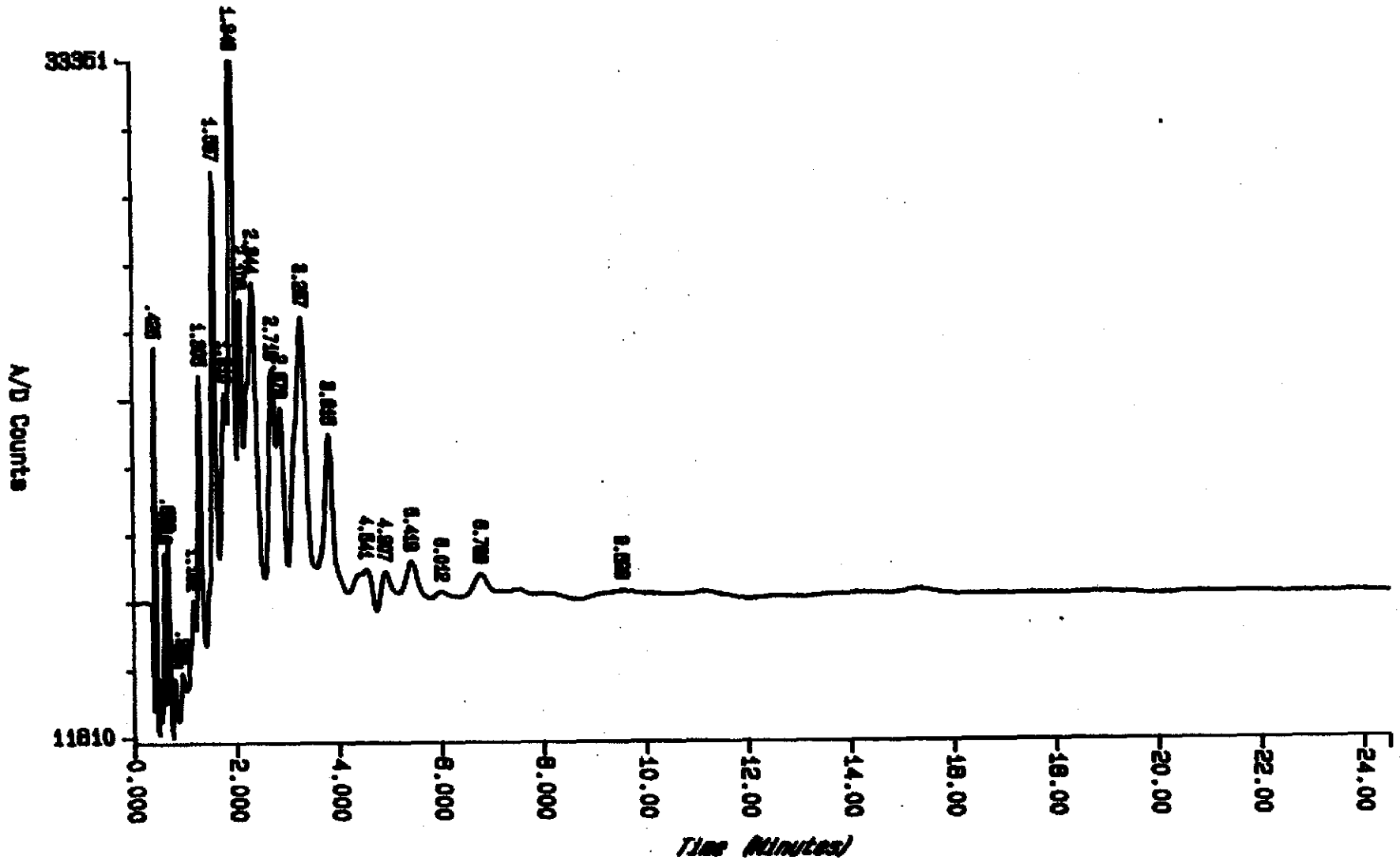


AR 1221 @ 0.5 µg/mL

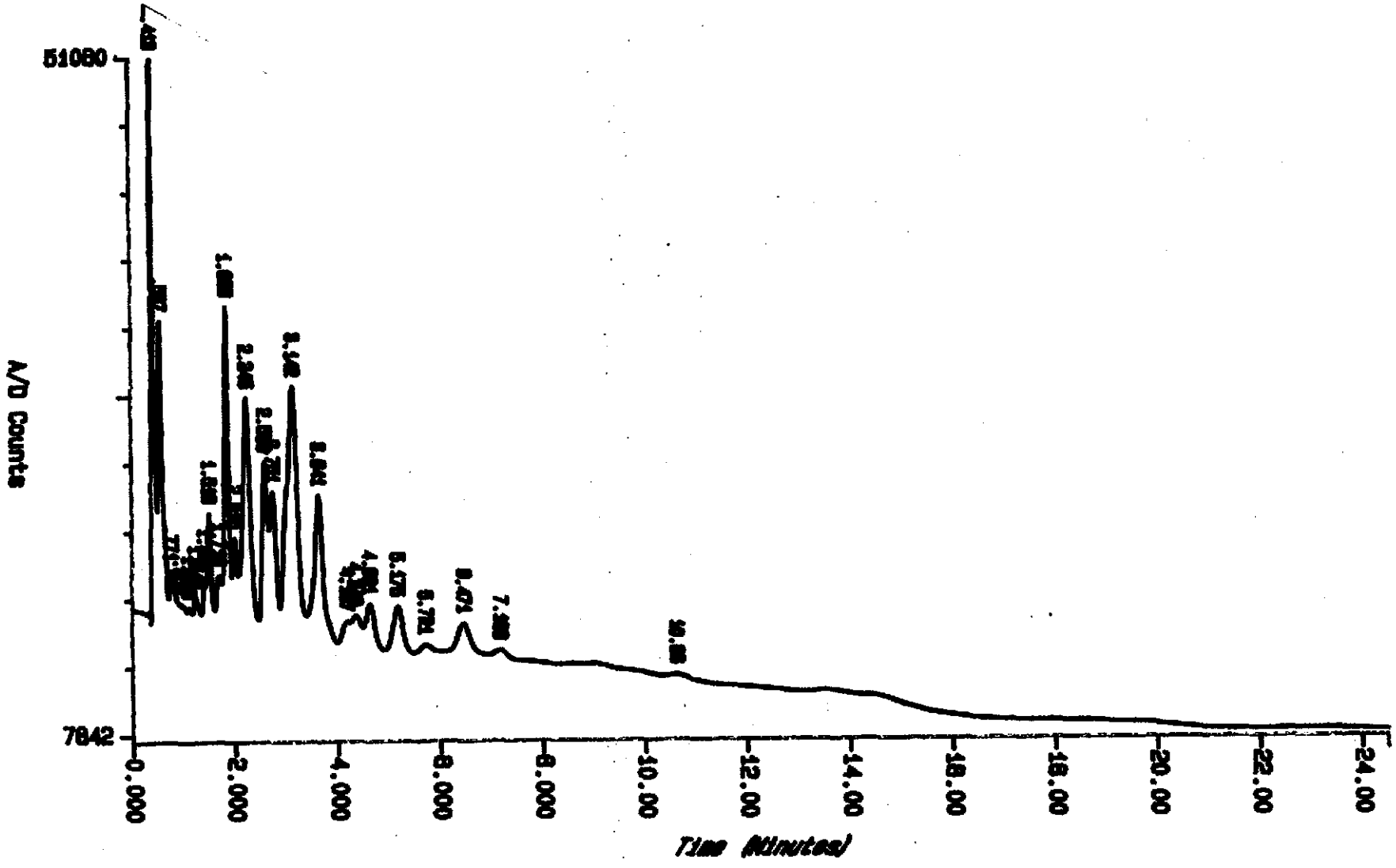
RT: STOP RUN



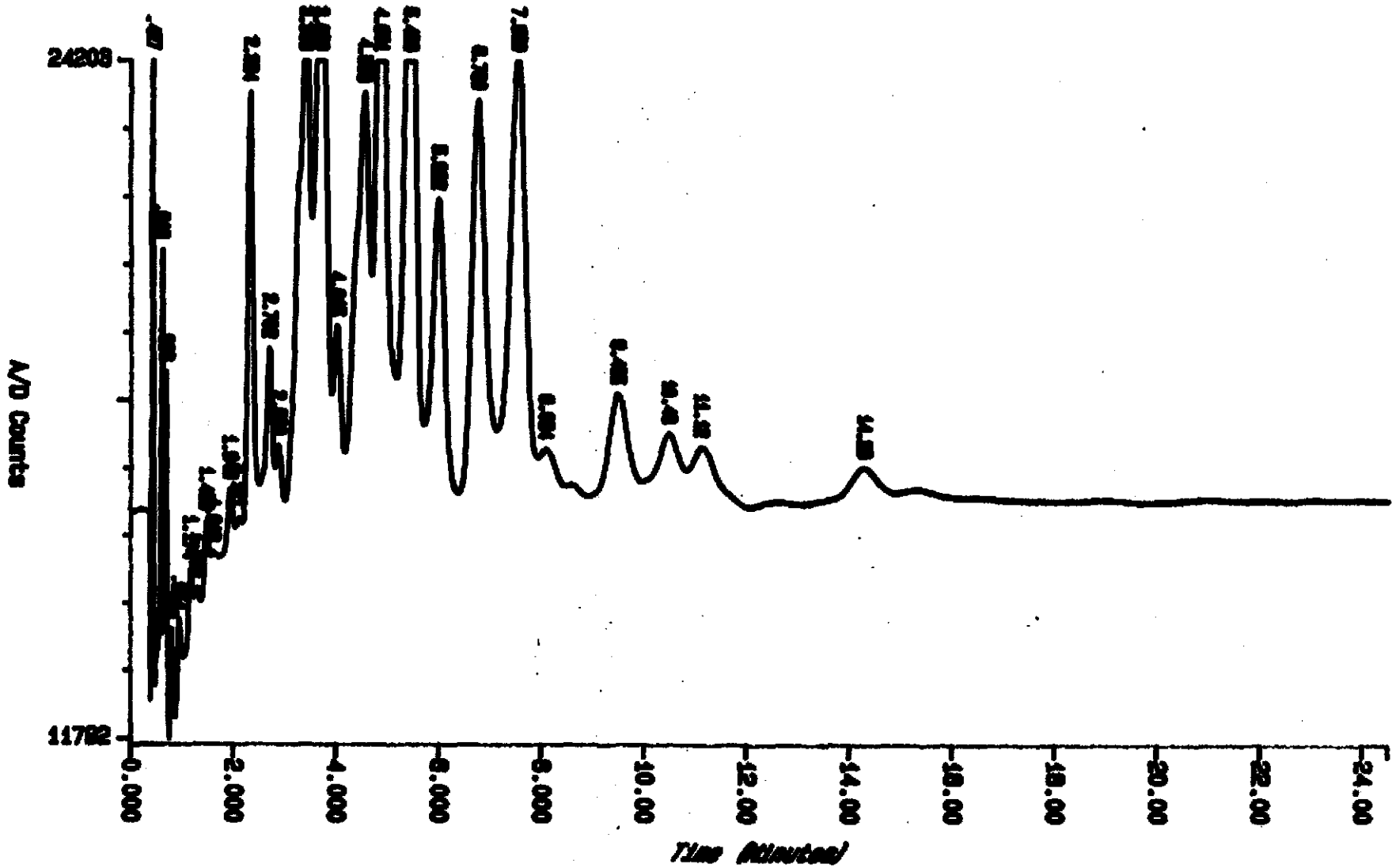
Sample: AR1232 0.5 Injected at 1:09:09 ON JUL 16, 1985
Raw File: RW1259 Proc File: PW1259 Method: PCBB5



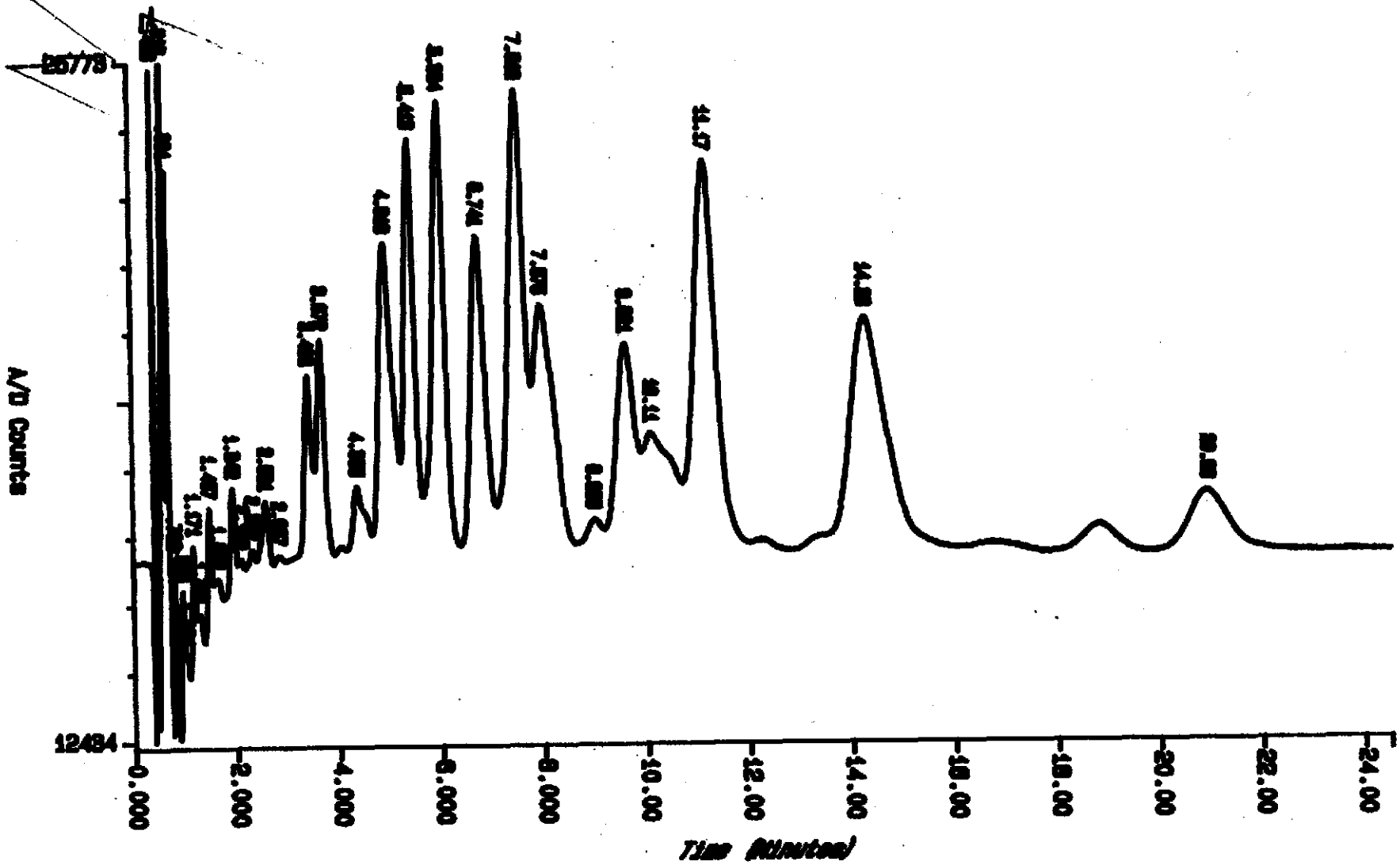
Sample: AR1242 0.5 Injected at 0:41:56 ON JUL 16, 1985
Raw File: RW1258 Proc File: PW1258 Method: PCBB5



Sample: AR1248 0.5 Injected at 20:28:51 ON JUL 16, 1985
Raw File: RW1271 Proc File: PW1271 Method: PCB85



Sample: AR1254 0.5 Injected at 21:58:18 ON JUL 15, 1985
Raw File: RW1258 Proc File: PW1258 Method: PCB85



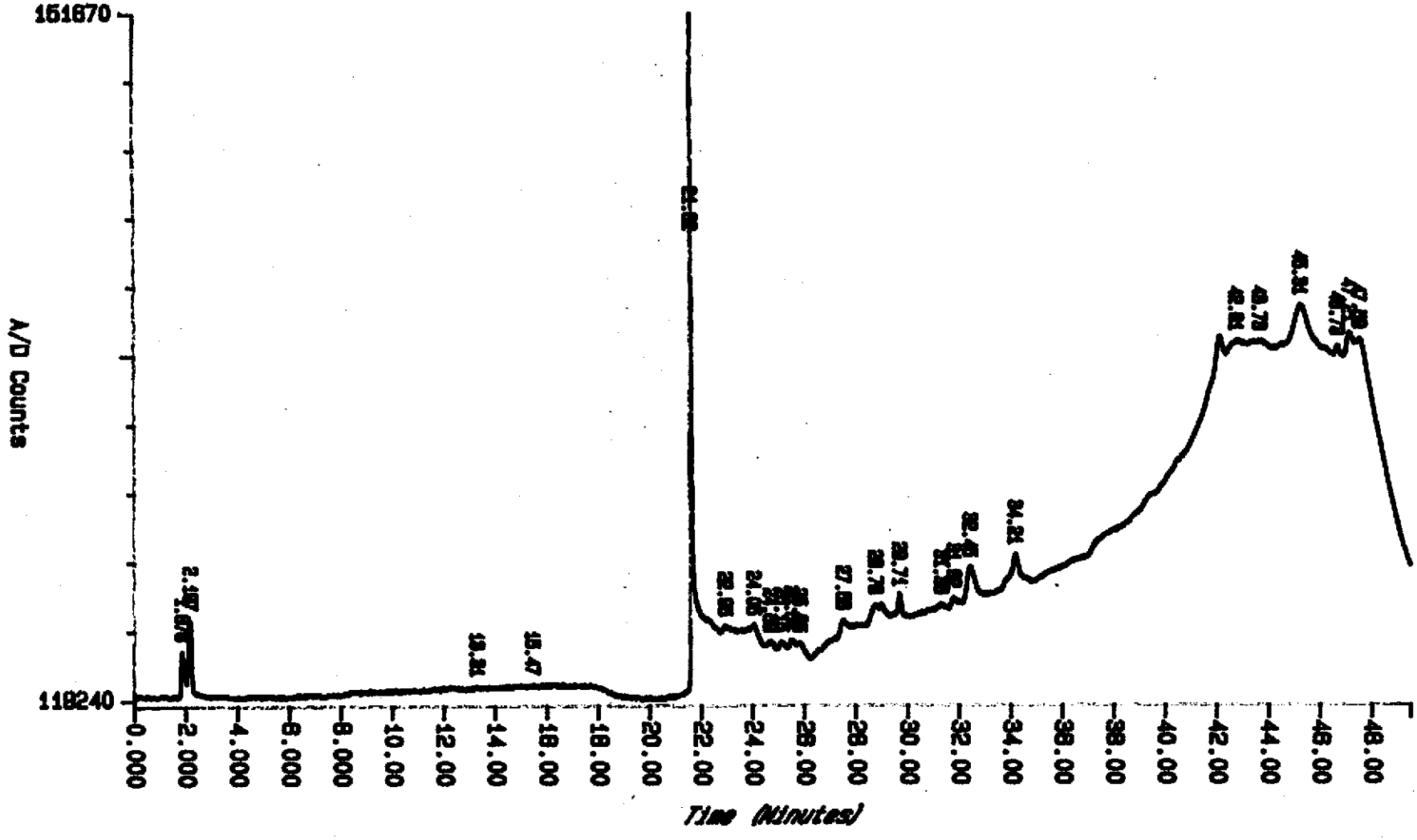
Sample: AR1260 0.5 Injected at 18:51:13 ON JUL 15, 1985
Raw File: RW1251 Proc File: PW1251 Method: PCBB5

Appendix A2

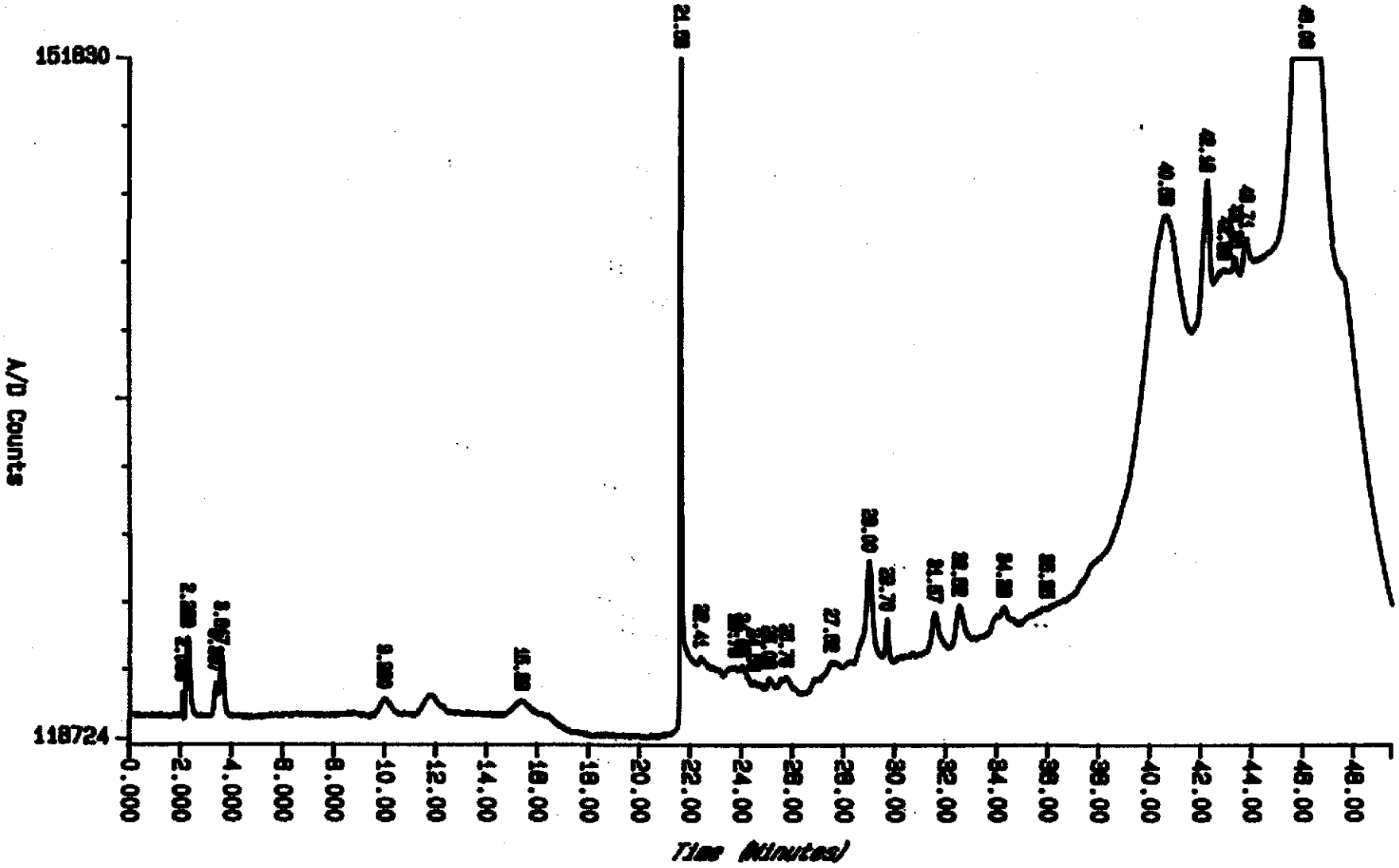
Chromatographic Spectral Data for Quantitated Compounds

1) A reconstructed chromatogram for each sample analyzed by an HPLC instrument.

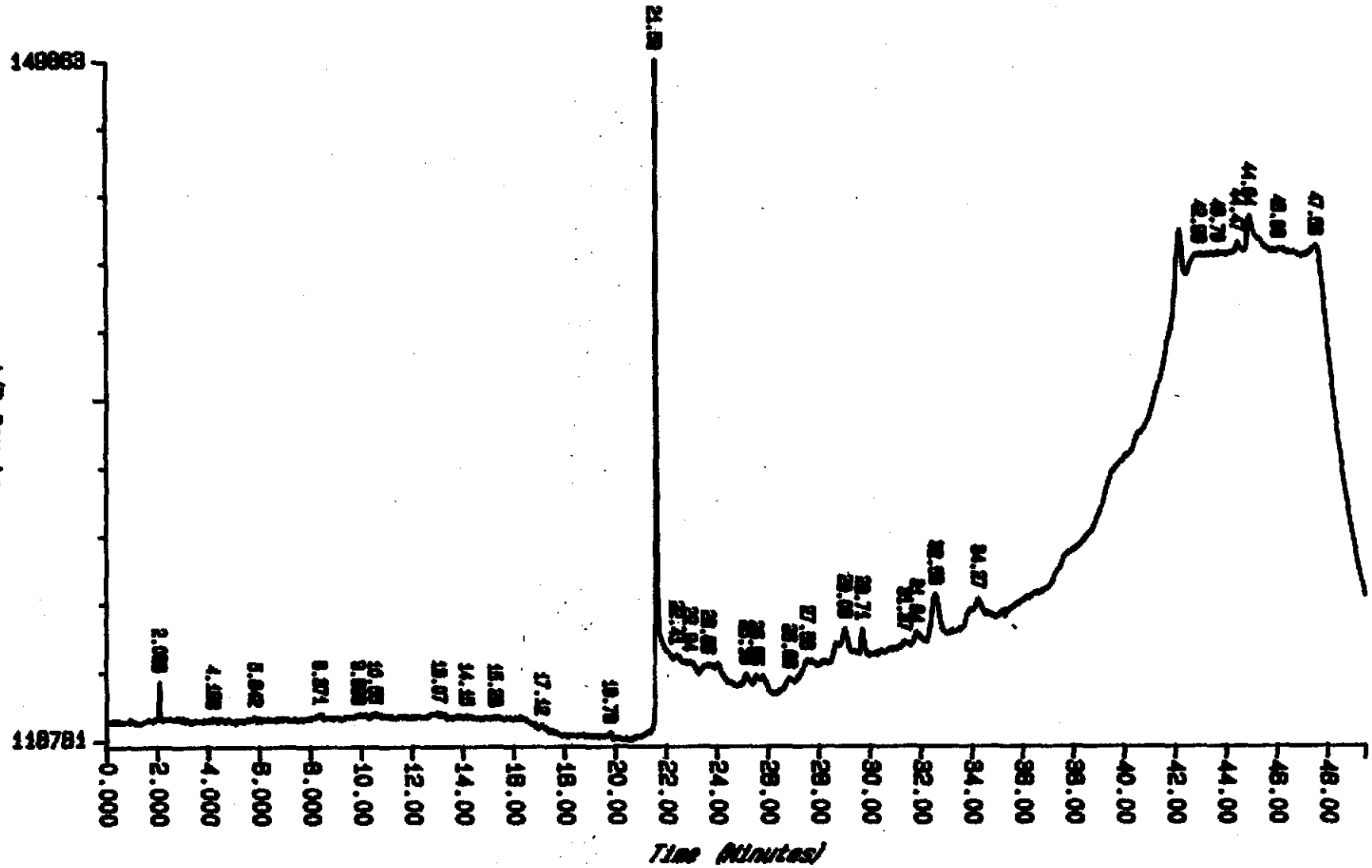
2) A reconstructed chromatogram for the appropriate standard compounds analyzed with the same HPLC under the same operating conditions.



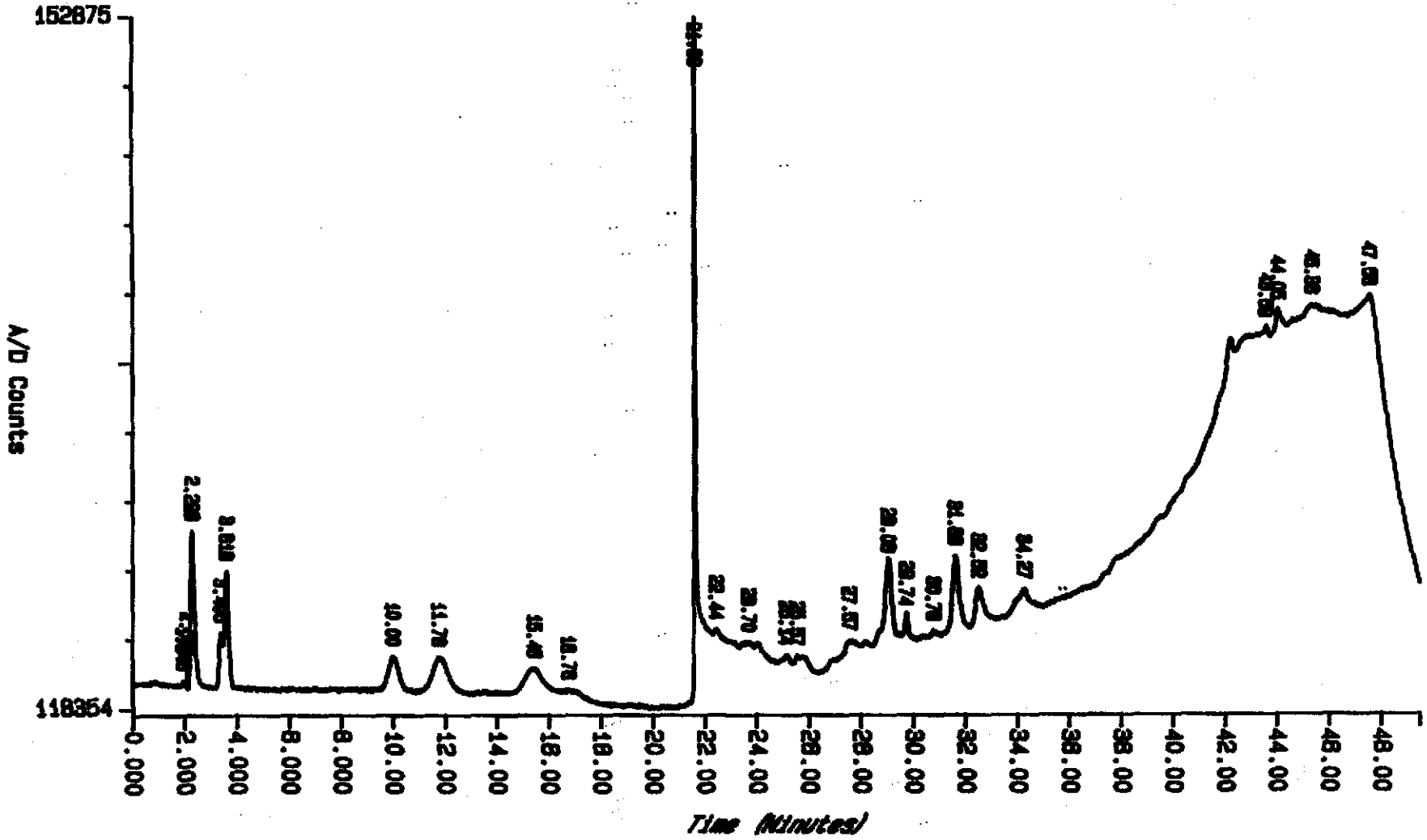
Sample: H6068 Injected at 12:31:45 ON JUL 11, 1985
Raw File: RH1521 Proc File: PH1521 Method: DAI210



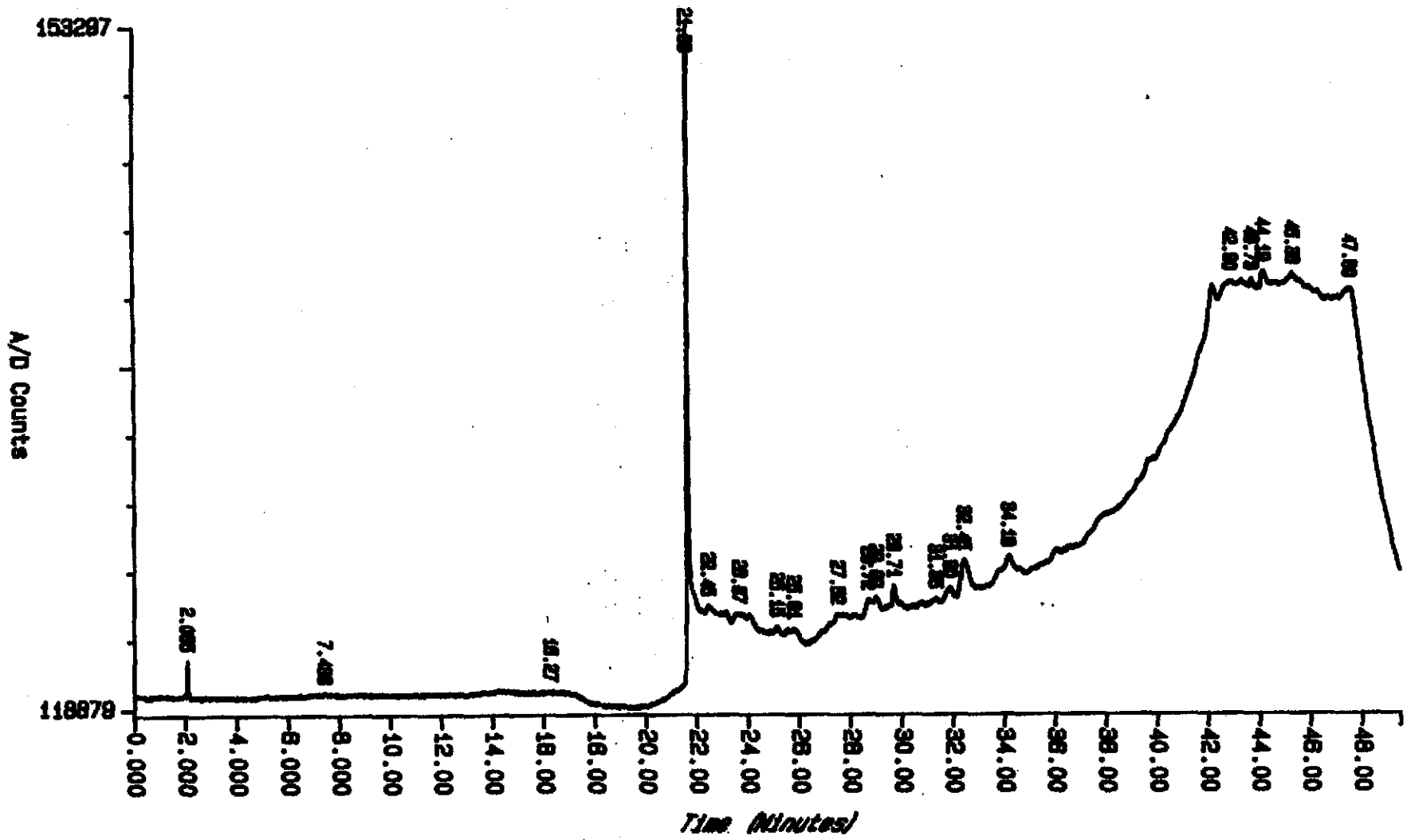
Sample: STD10972-0.5 Injected at 21:28:52 ON JUL 10, 1985
Raw File: RH1505 Proc File: PH1505 Method: DAI210



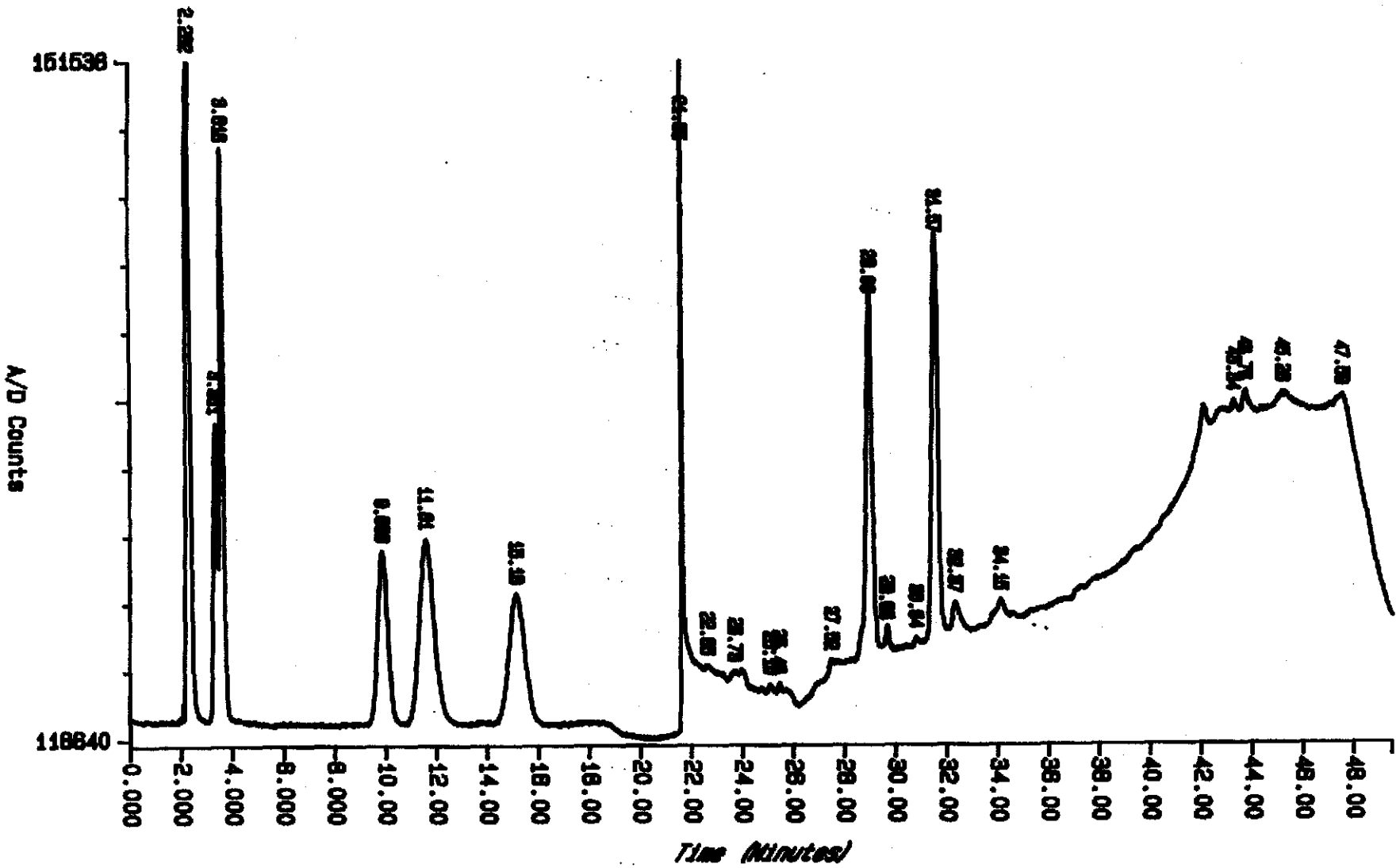
Sample: STD10978-0.5 Injected at 22:24:22 ON JUL 10, 1985
Raw File: RH1506 Proc File: PH1506 Method: DAI210



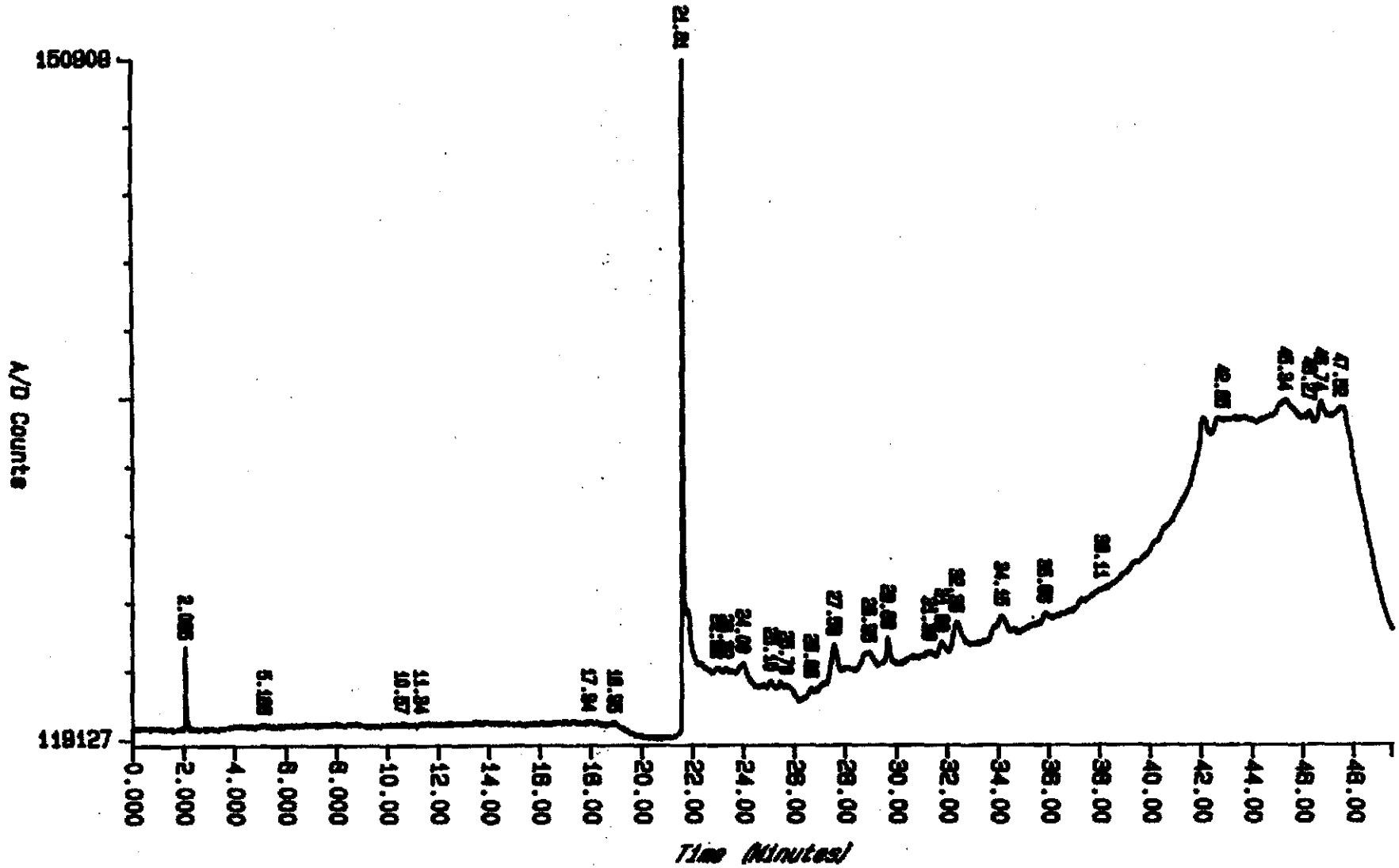
Sample: STD10971-1.0 Injected at 8:44:01 ON JUL 11, 1985
Raw File: RH1515 Proc File: PH1515 Method: DAI210



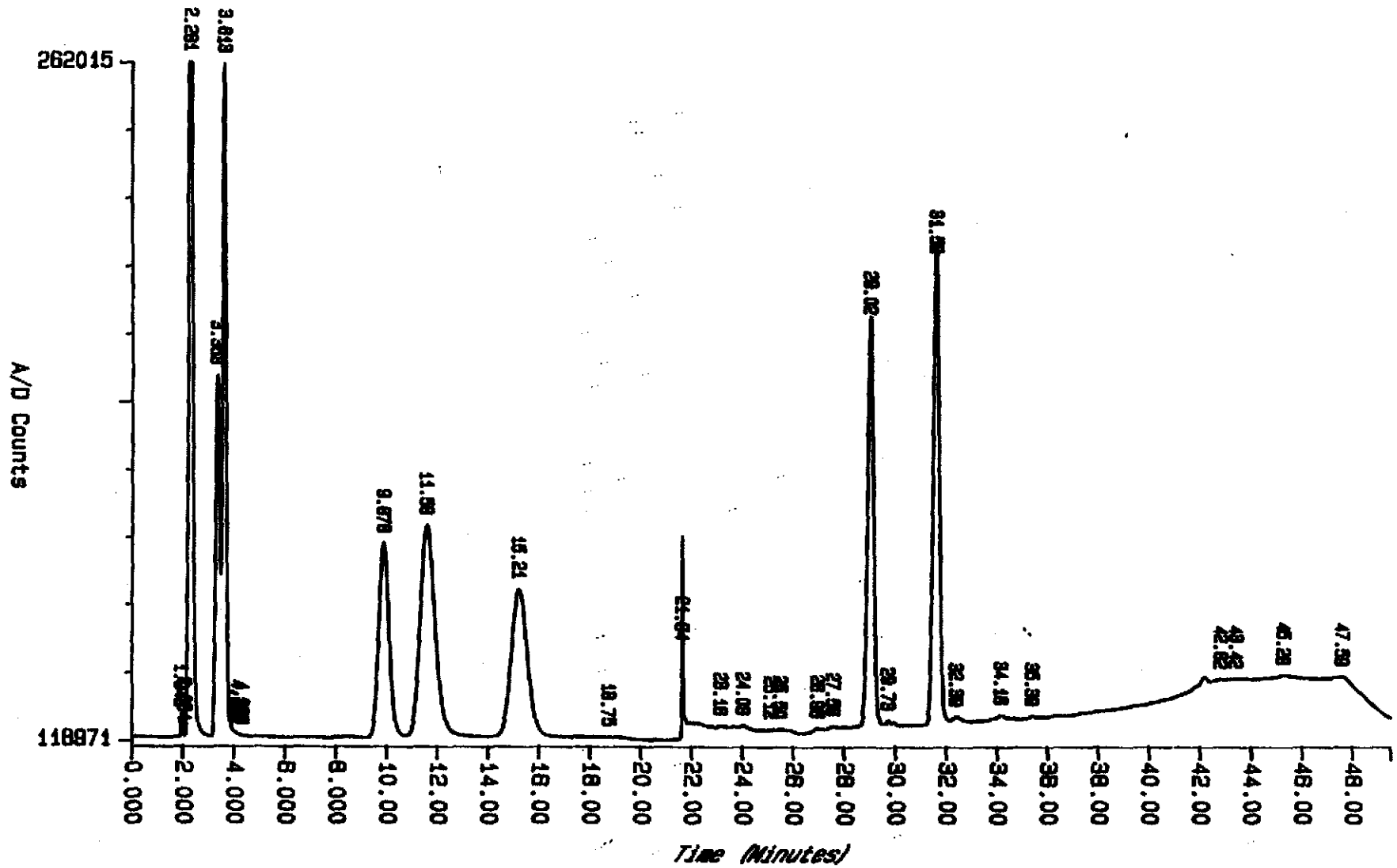
Sample: STD10975-1.0 Injected at 7:39:31 ON JUL 11, 1985
Raw File: RH1516 Proc File: PH1516 Method: DAI210



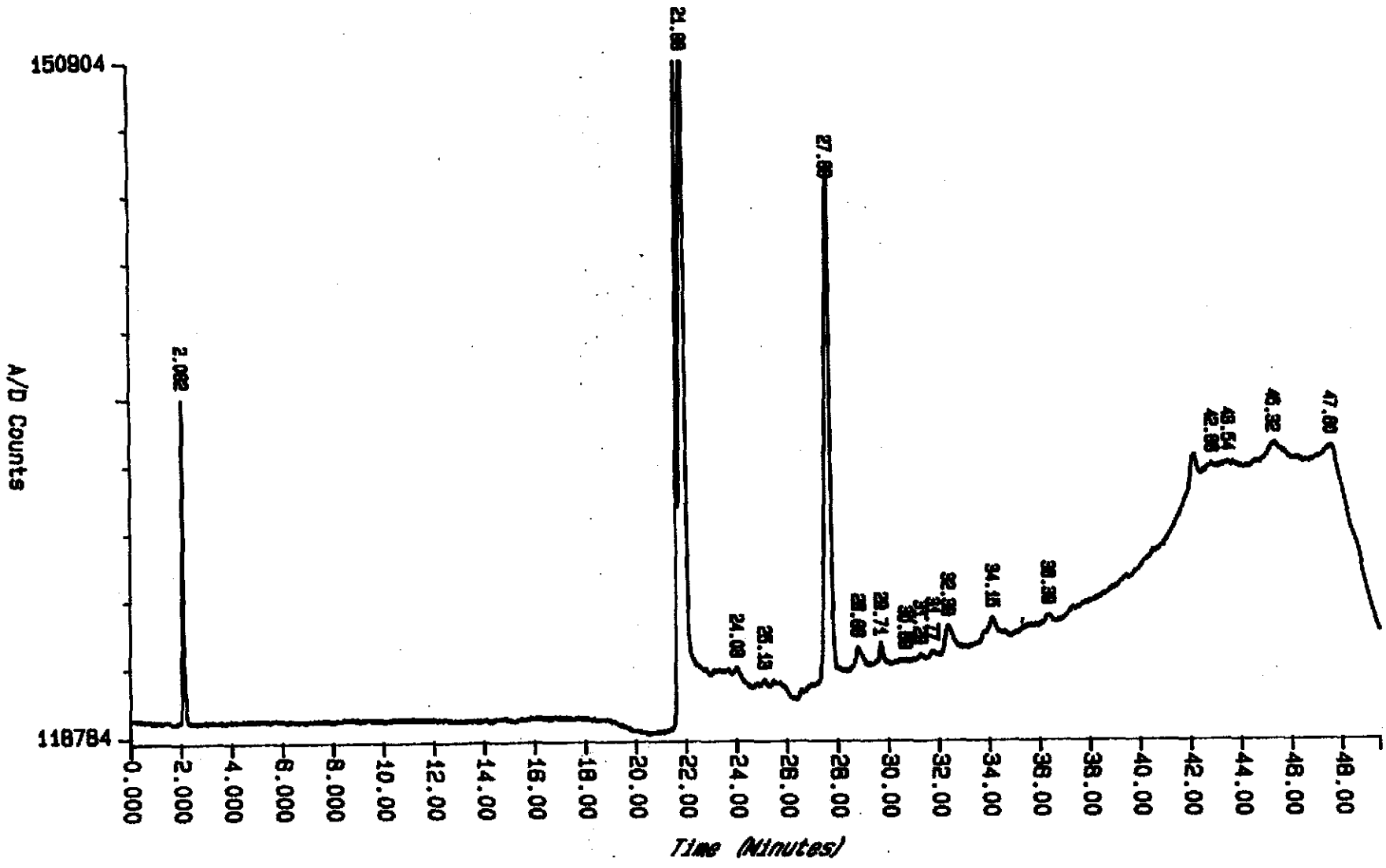
Sample: STD10970-5.0 Injected at 16:13:52 ON JUL 11, 1985
Raw File: RH1525 Proc File: PH1525 Method: DAI210



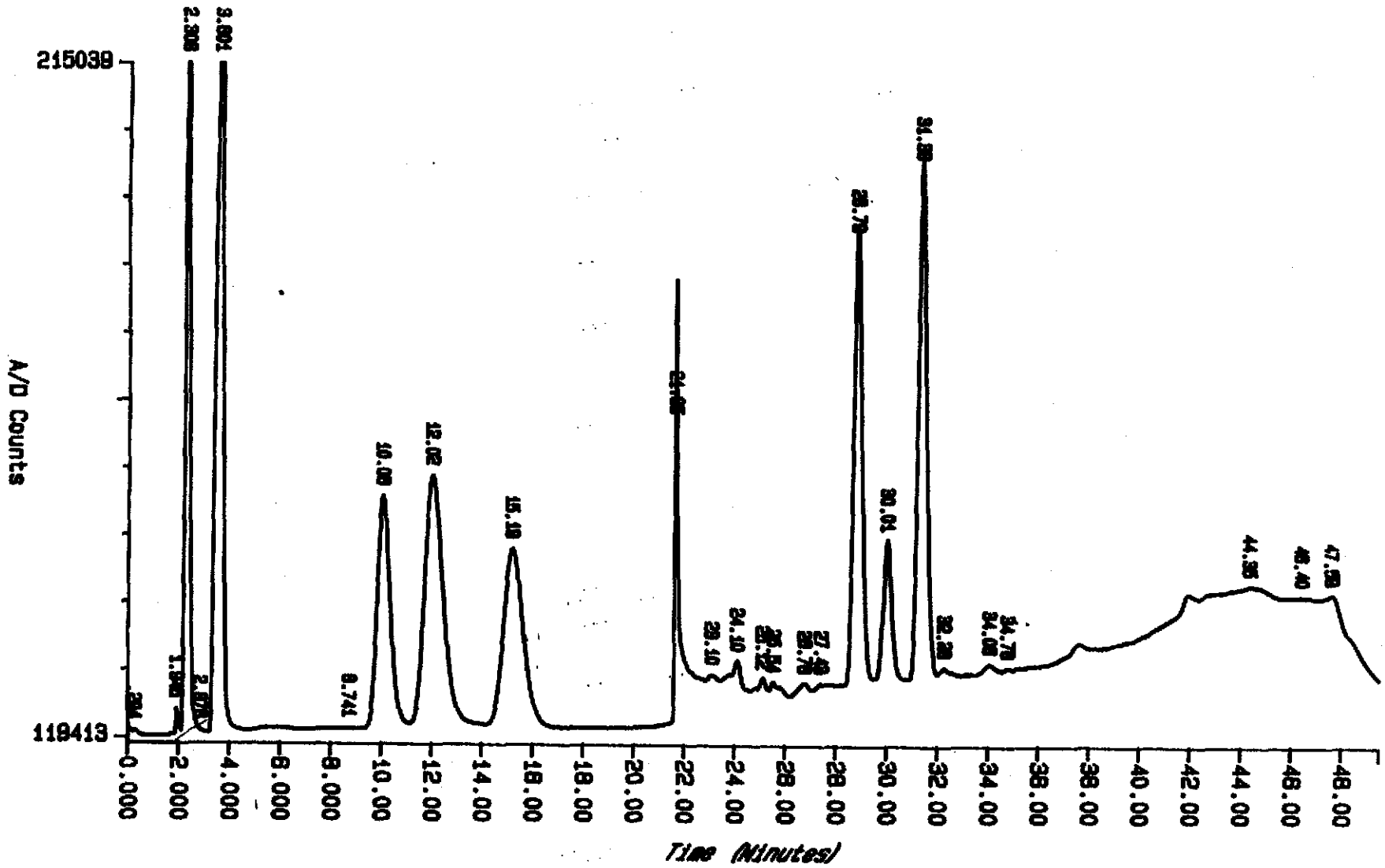
Sample: STD10974-5.0 Injected at 17:08:22 ON JUL 11, 1985
Raw File: RH1528 Proc File: PH1528 Method: DAI210



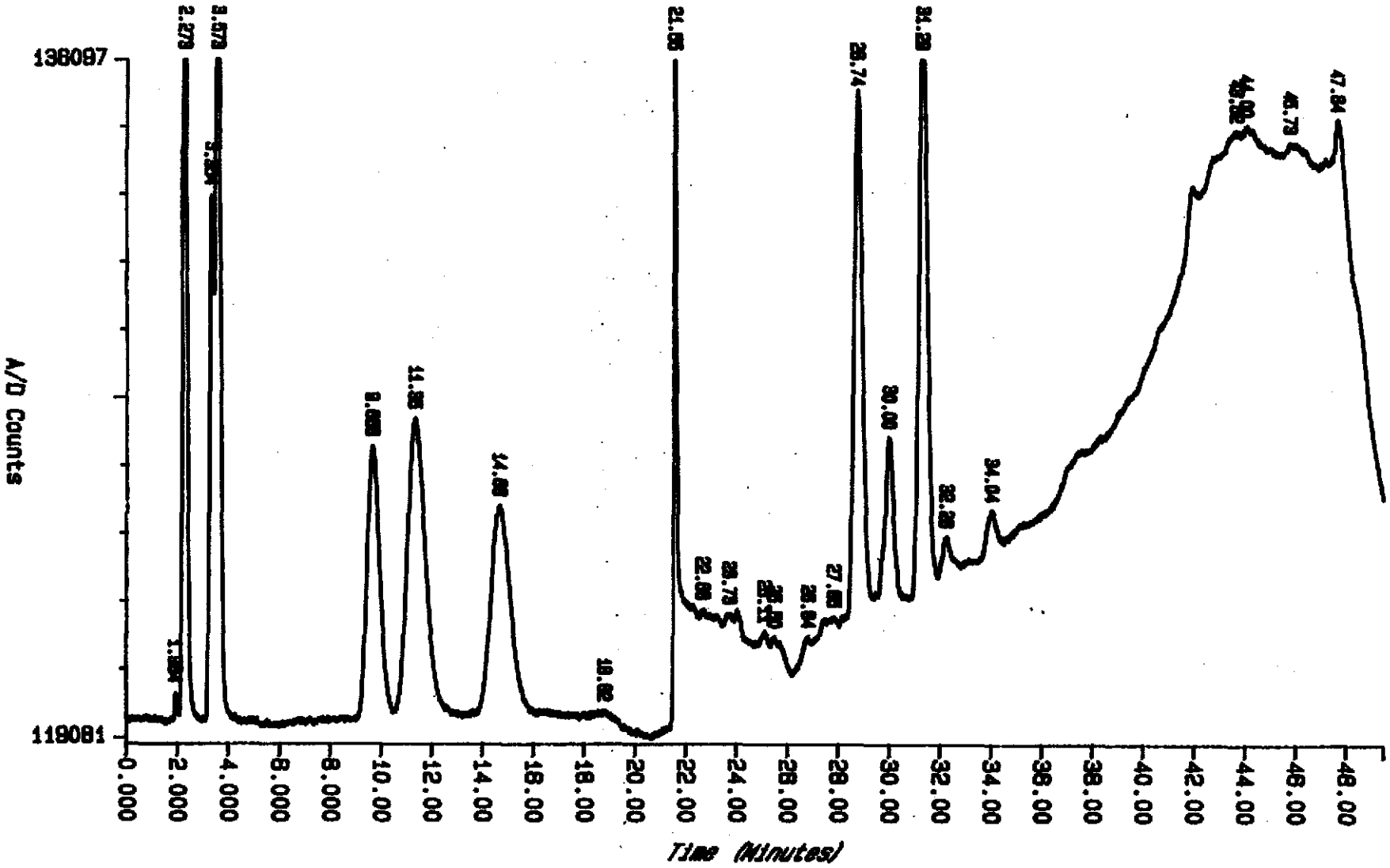
Sample: STD10969-25. Injected at 20:51:26 ON JUL 11, 1985
Raw File: RH1530 Proc File: PH1530 Method: DAI210



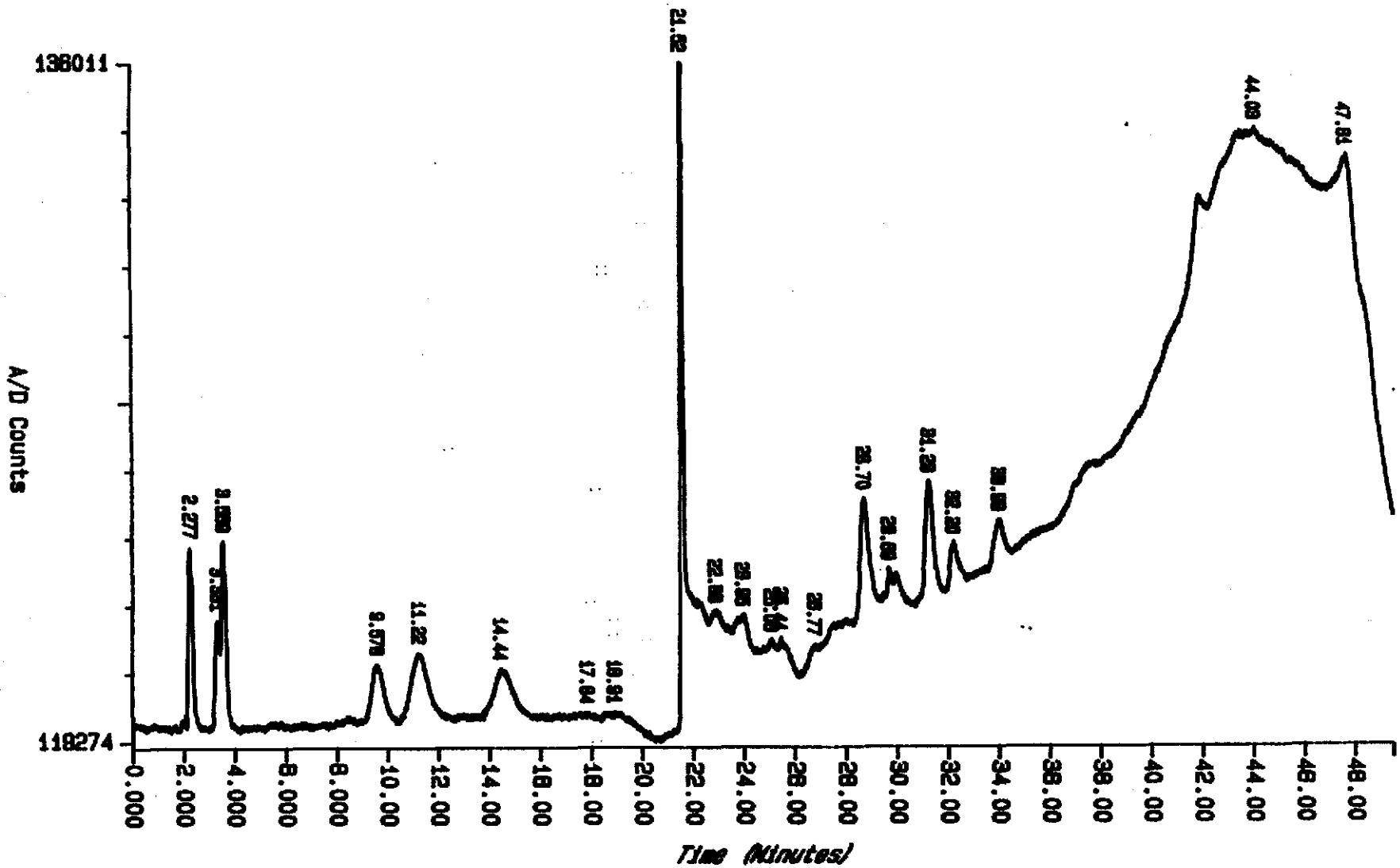
Sample: STD10973-25. Injected at 21:46:58 ON JUL 11, 1985
Raw File: RH1531 Proc File: PH1531 Method: DAI210



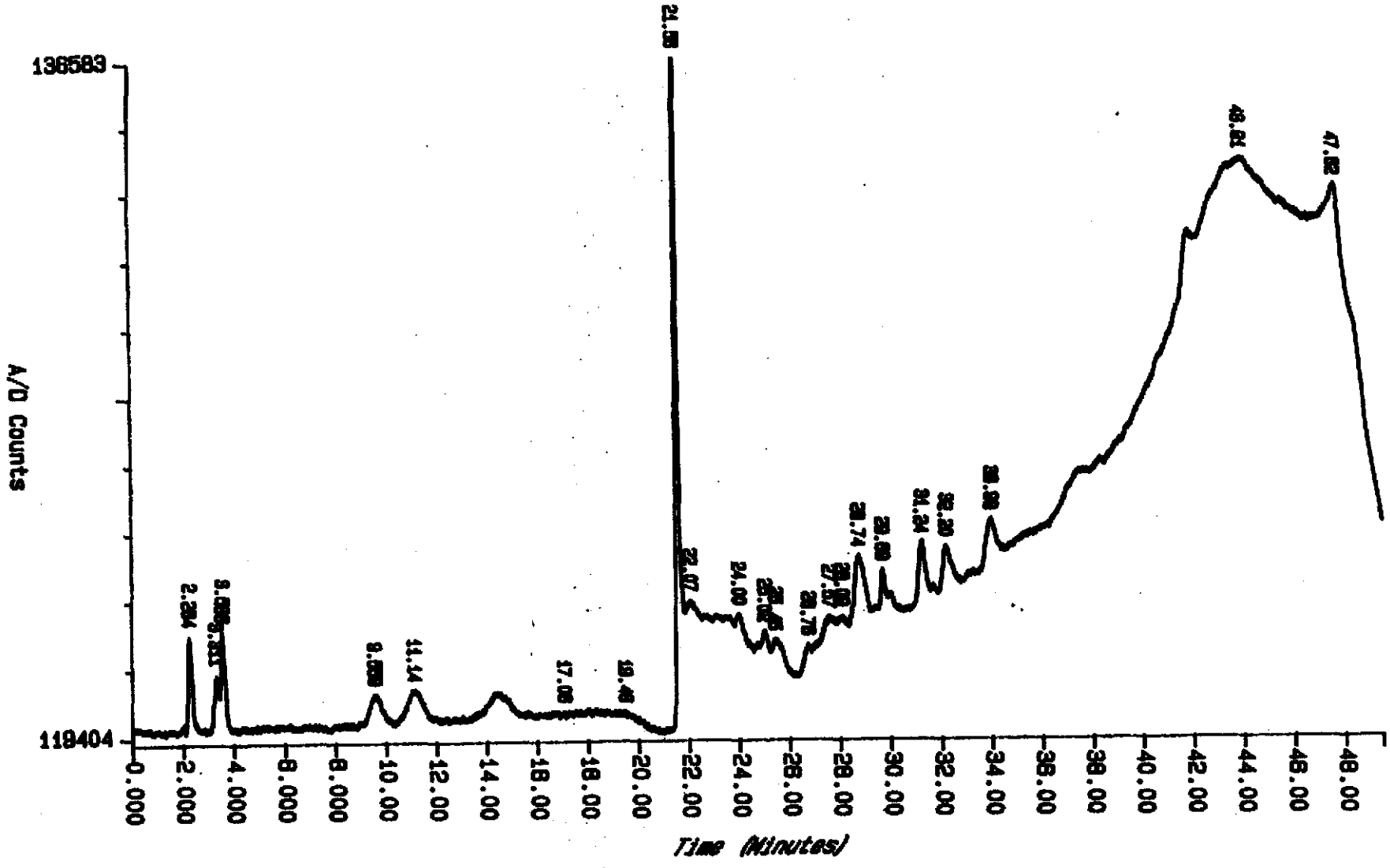
Sample: STD11020-025 Injected at 12:26:51 ON JUL 13, 1985
Raw File: RH1555 Proc File: PH1555 Method: DAI210



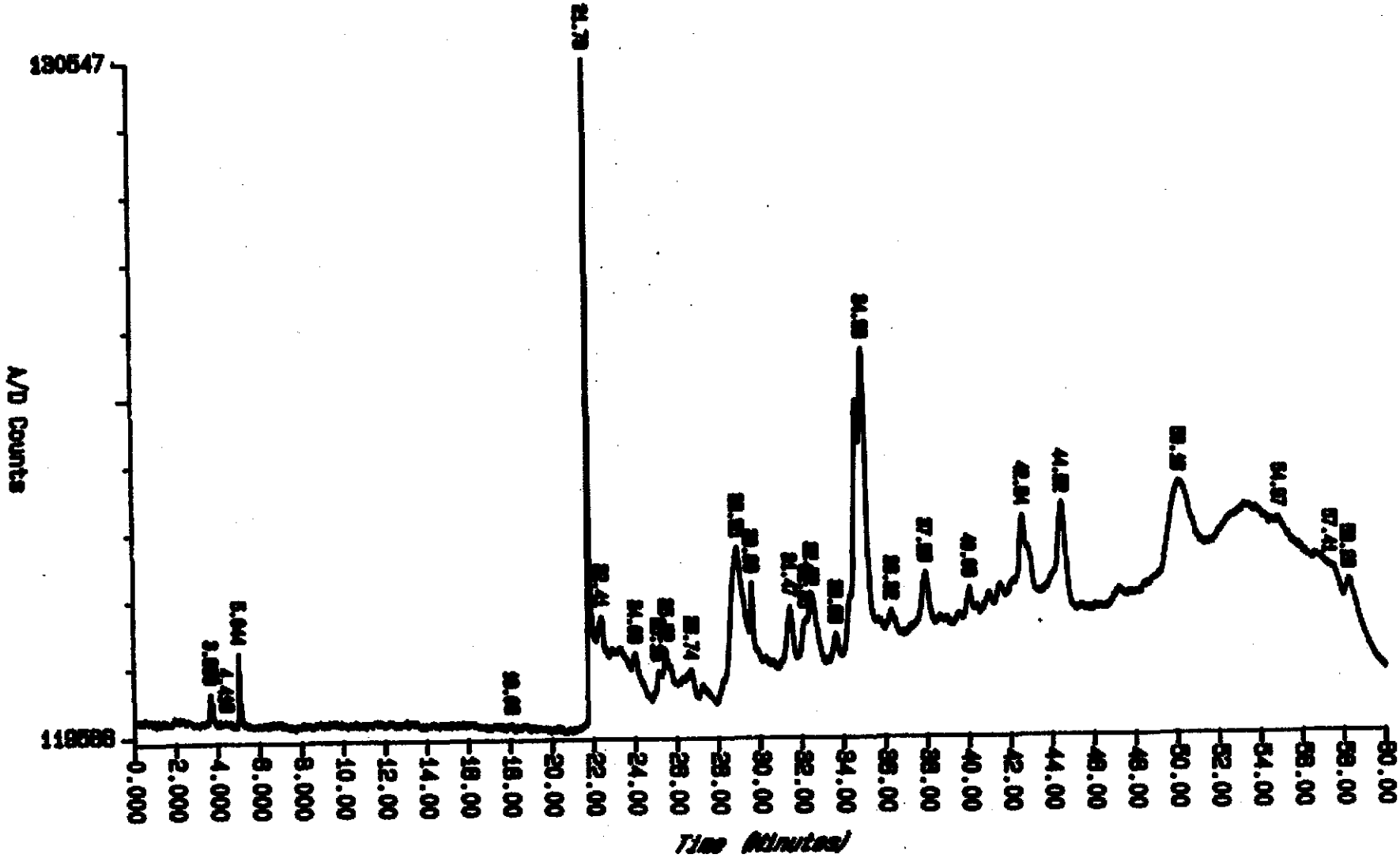
Sample: STD11021-5.0 Injected at 13:22:24 ON JUL 13, 1985
Raw File: RH1556 Proc File: PH1556 Method: DAI210



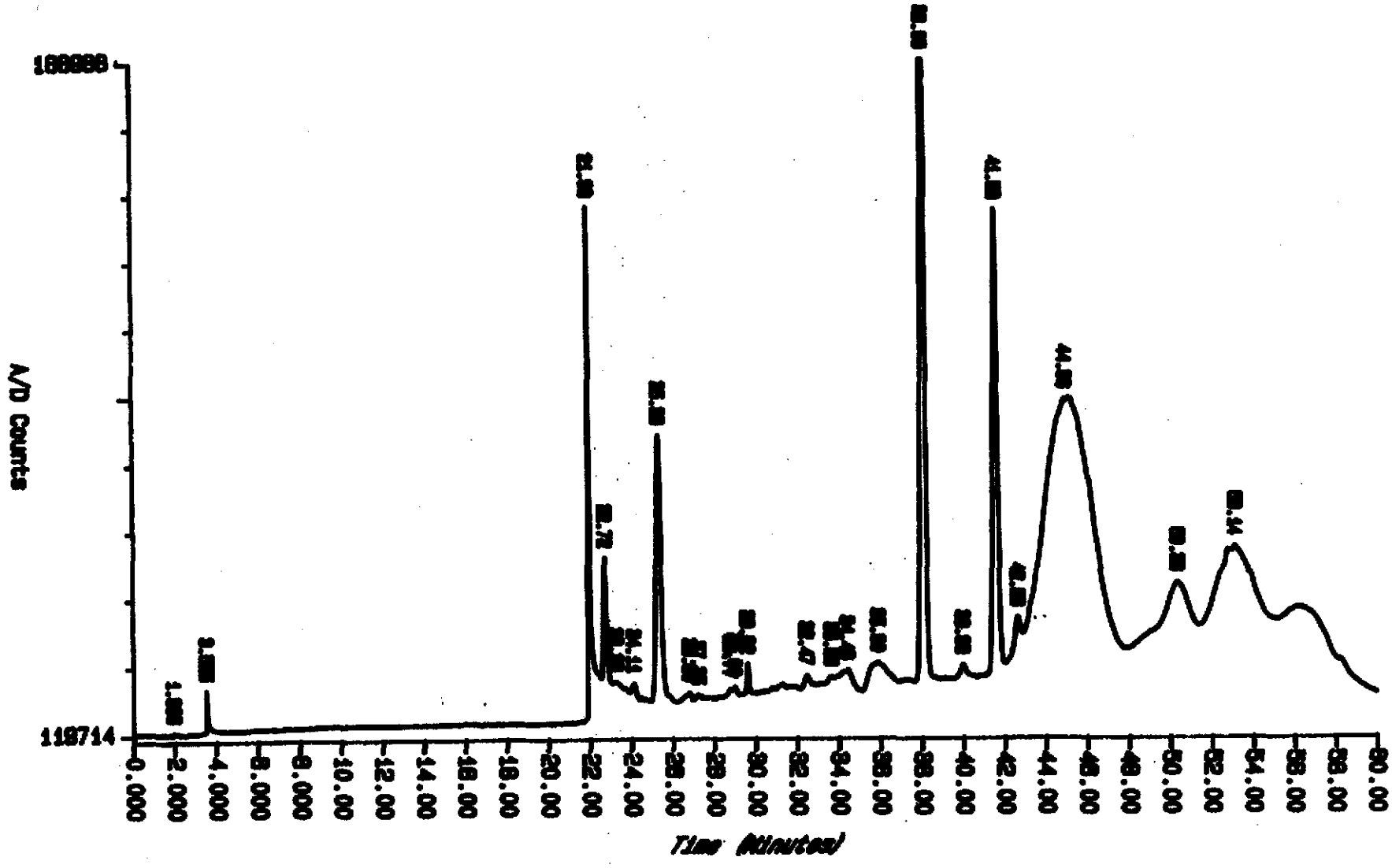
Sample: STD11022-1.0 Injected at 14:17:56 ON JUL 13, 1985
Raw File: RH1557 Proc File: PH1557 Method: DAI210



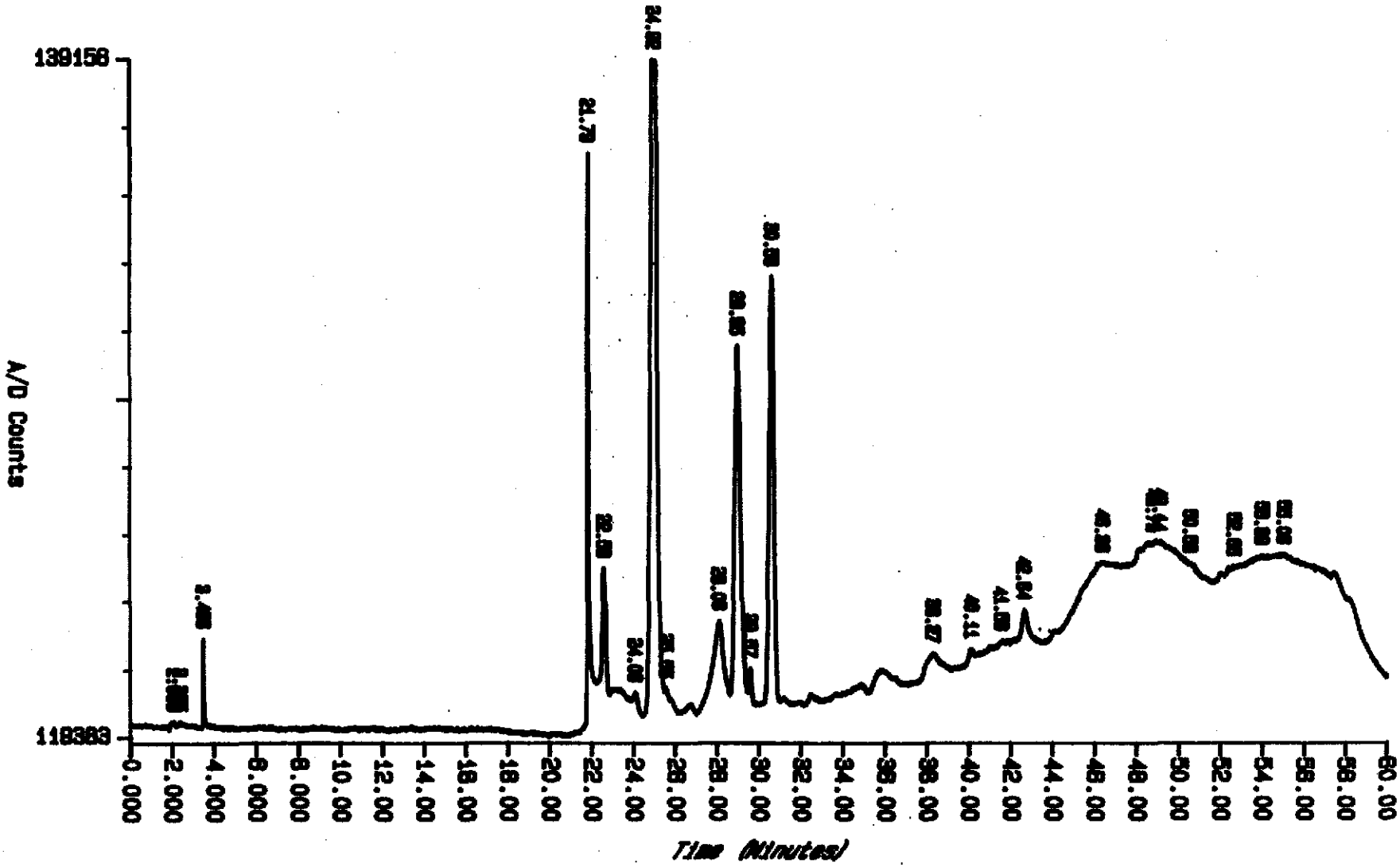
Sample: STD11023-0.5 Injected at 15:13:28 ON JUL 13, 1985
Raw File: RH1558 Proc File: PH1558 Method: DAI210



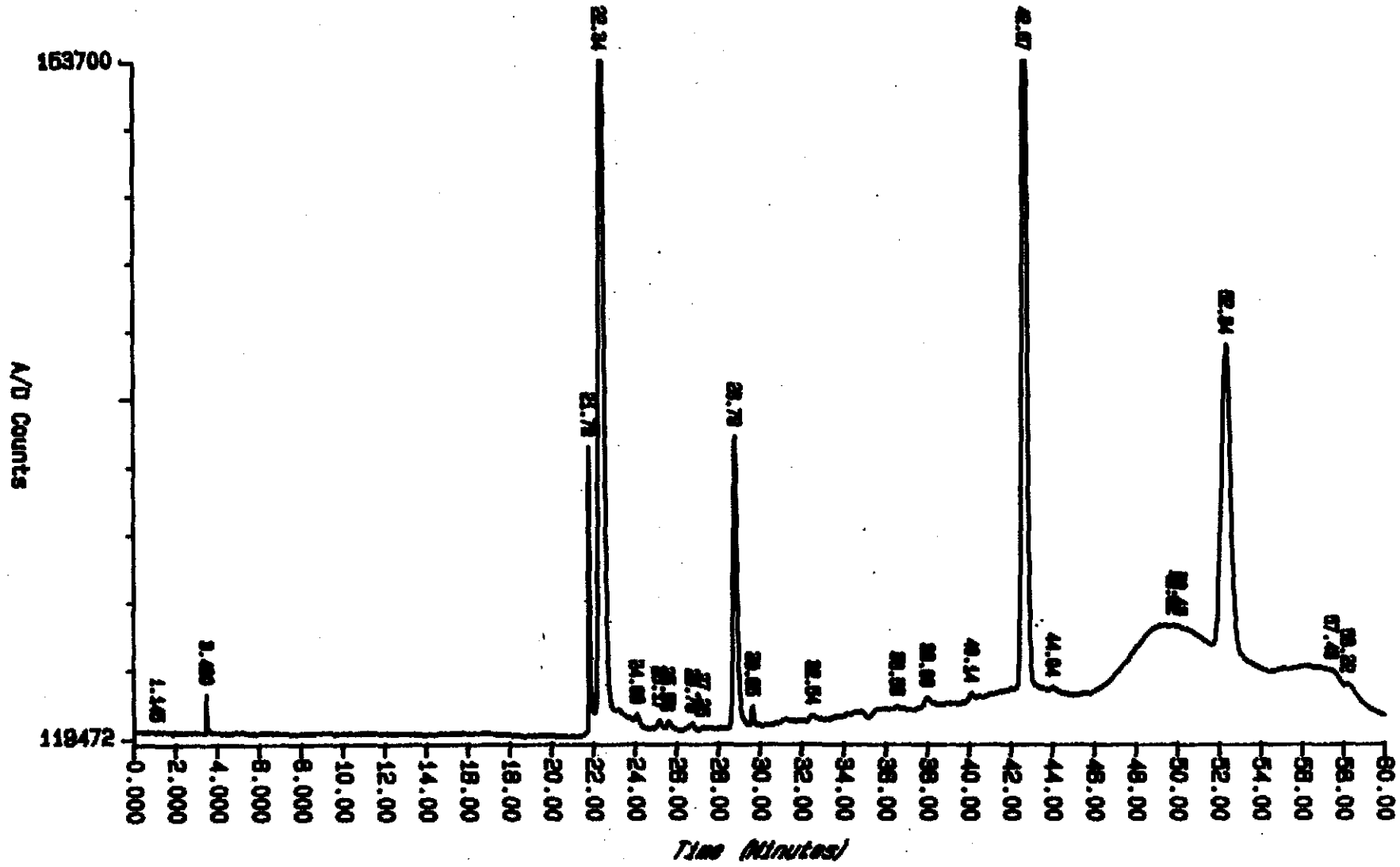
Sample: H8066 Injected at 18:13:27 ON JUL 6, 1985
Raw File: RH1306 Proc File: PH1306 Method: EXT250



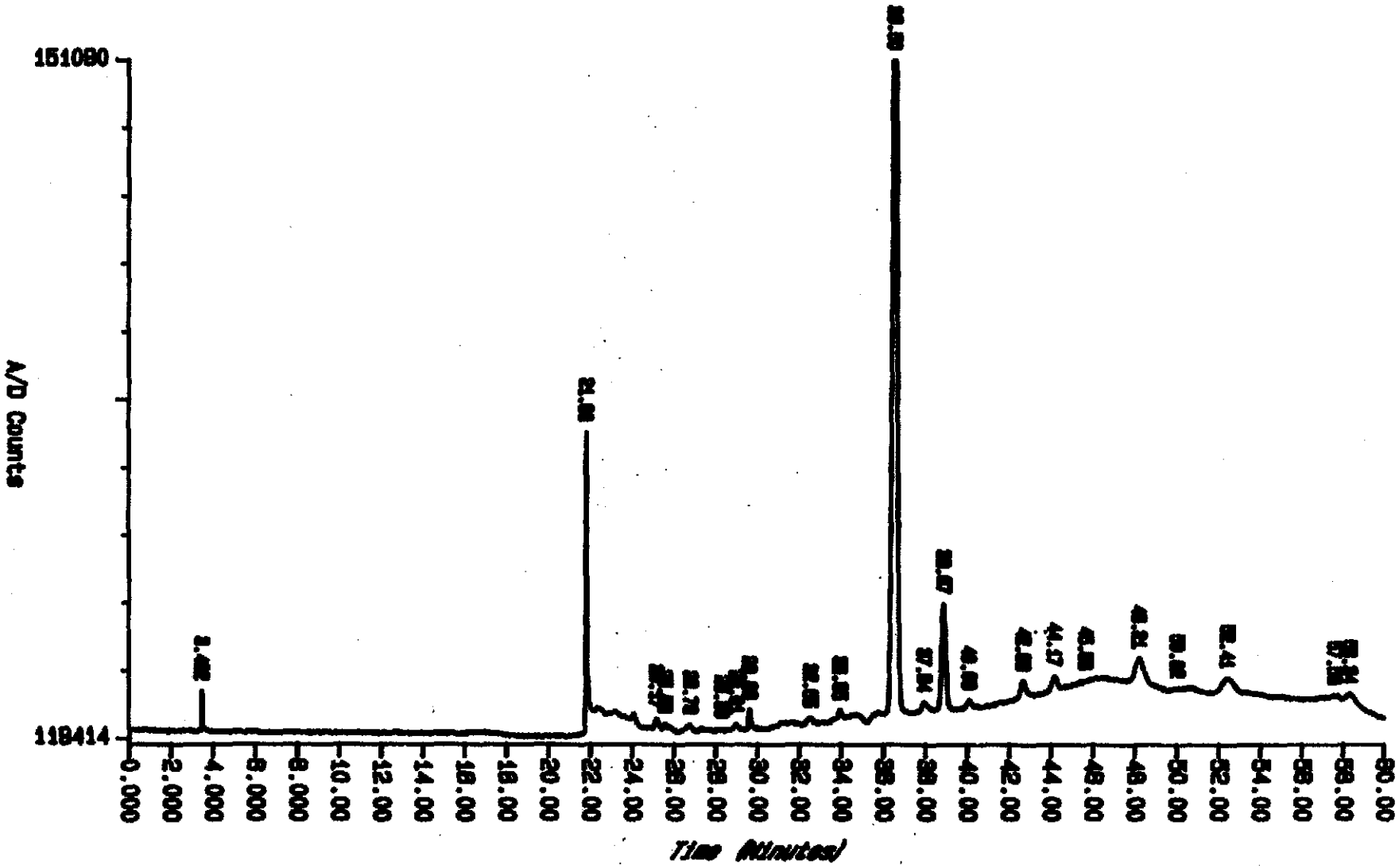
Sample: STD10901-025 Injected at 12:34:22 ON JUL 8, 1985
Raw File: RH1300 Proc File: PH1300 Method: EXT250



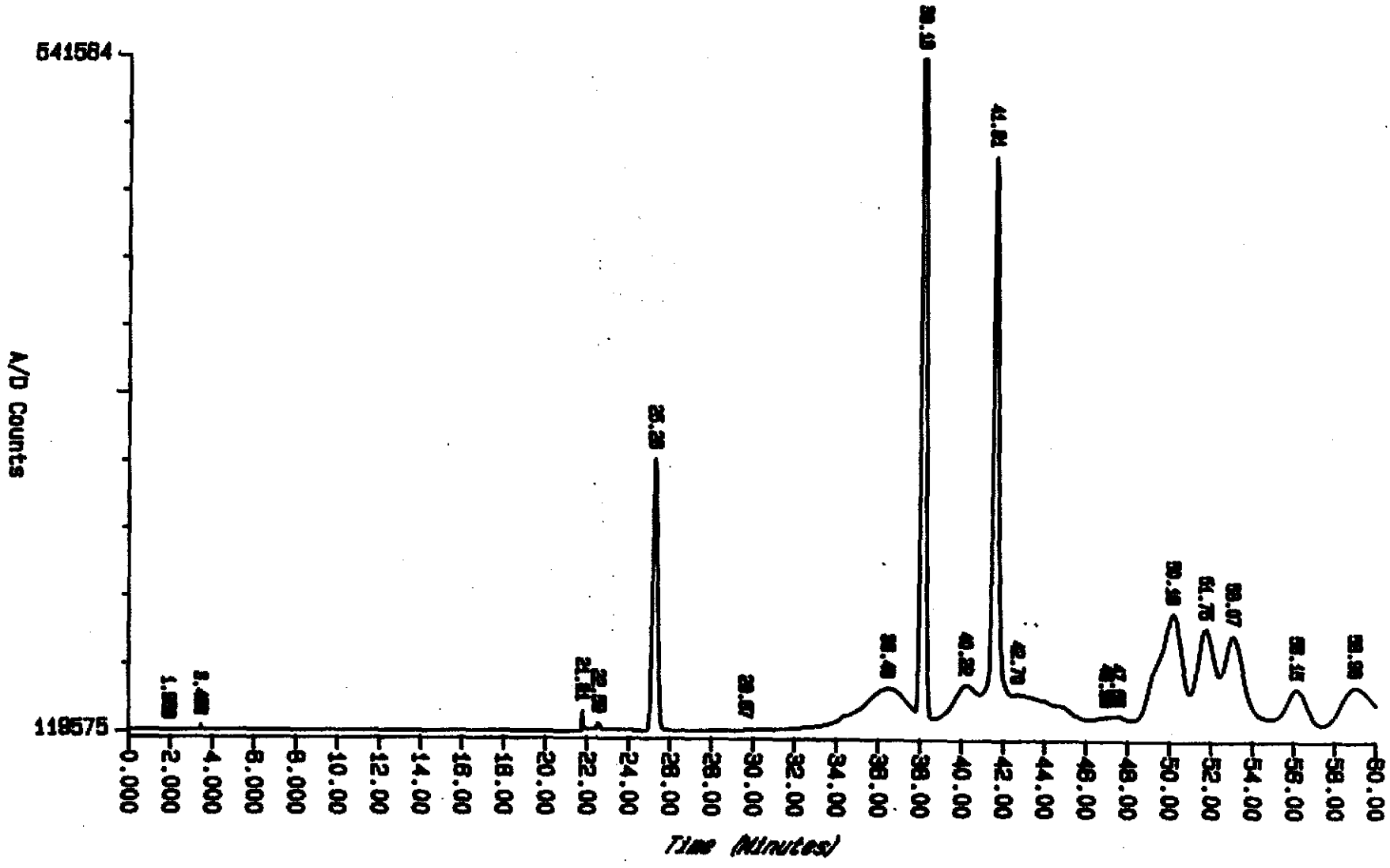
Sample: STD10902-025 Injected at 13:40:53 ON JUL 6, 1985
Raw File: RH1301 Proc File: PH1301 Method: EXT250



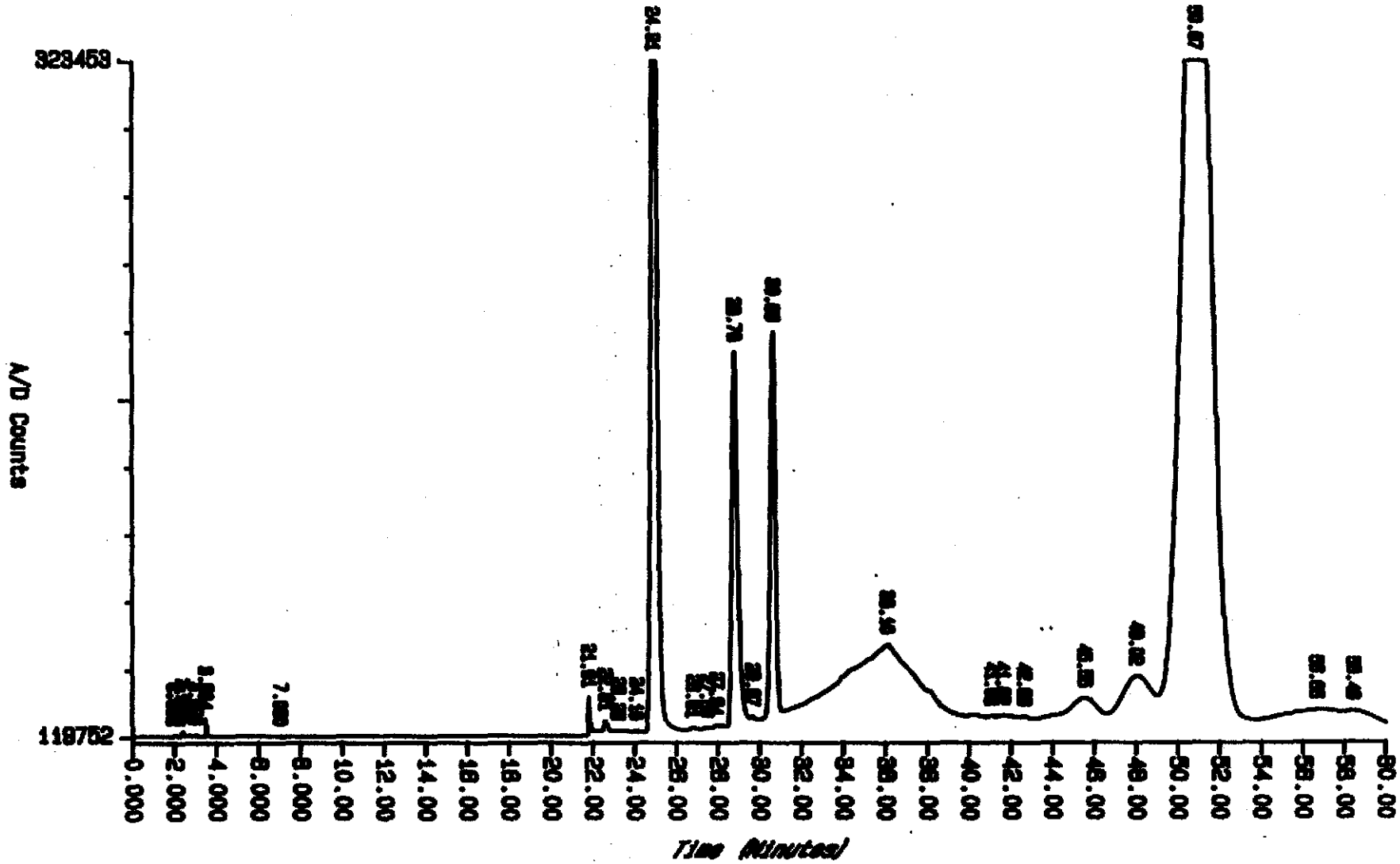
Sample: STD10903-025 Injected at 14:47:23 ON JUL 6, 1985
Raw File: RH1302 Proc File: PH1302 Method: EXT250



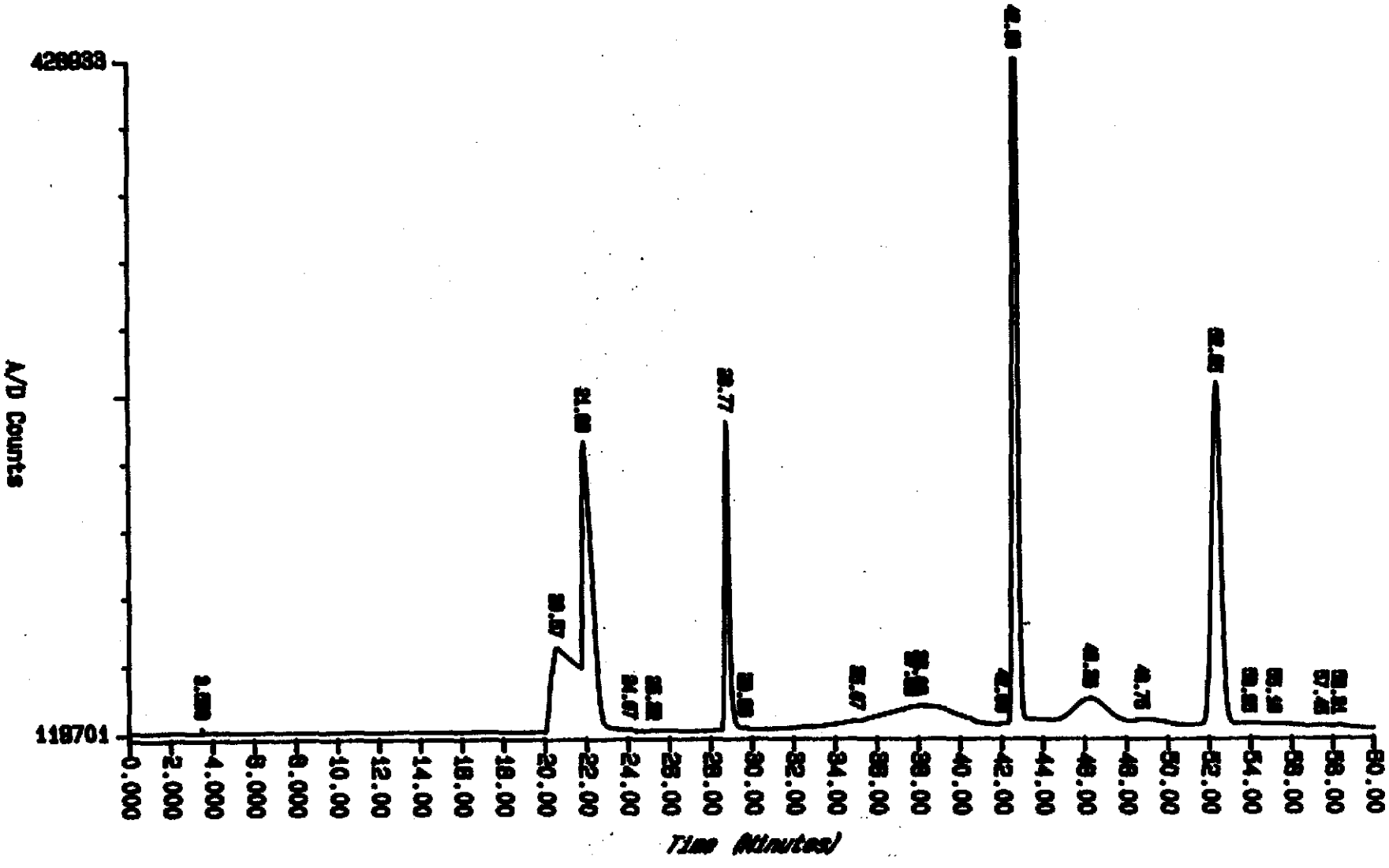
Sample: STD10804-025 Injected at 15:53:54 ON JUL 8, 1985
Raw File: RH1303 Proc File: PH1303 Method: EXT250



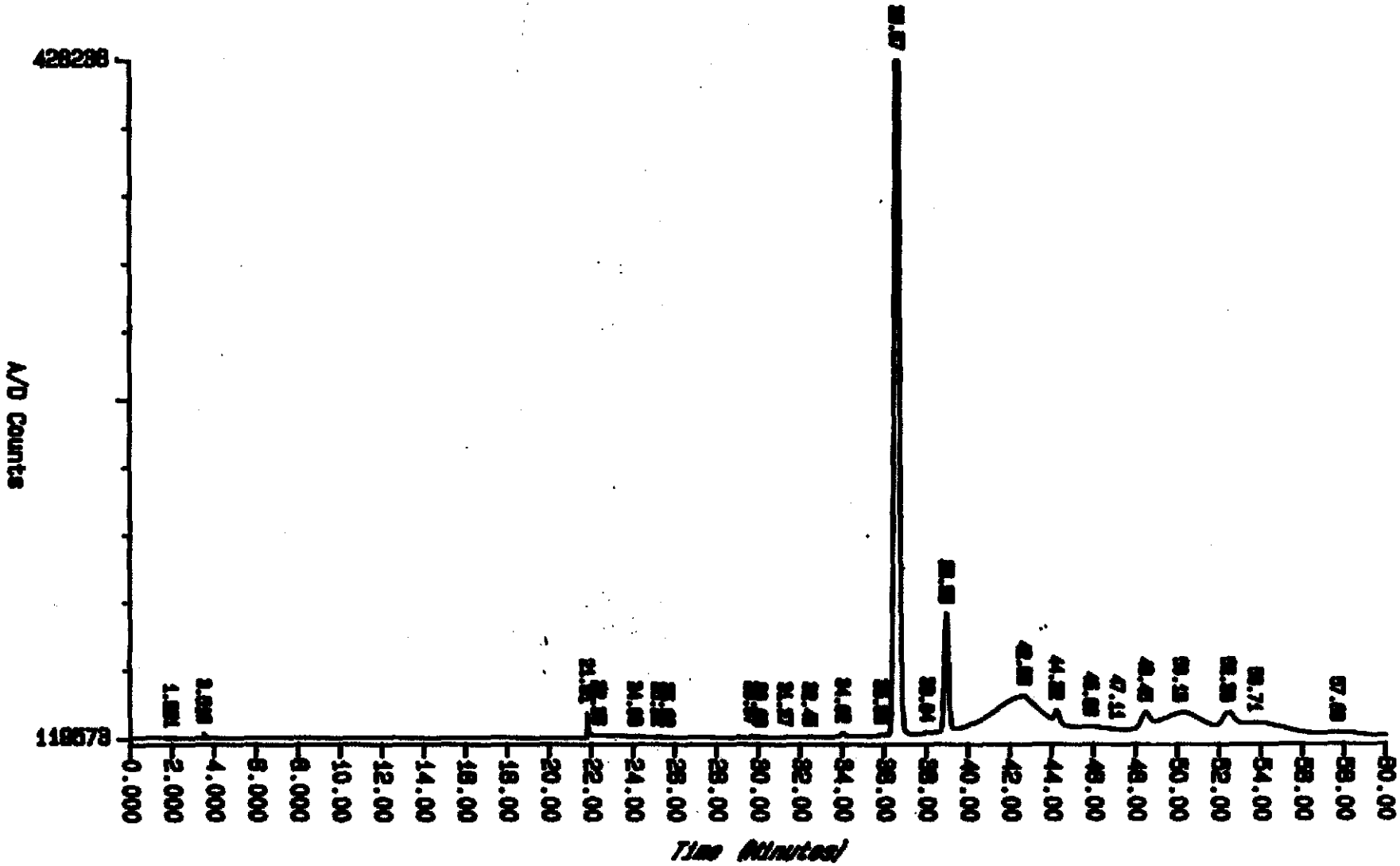
Sample: STD10905-250 Injected at 0:48:04 ON JUL 7, 1985
Raw File: RH1311 Proc File: PH1311 Method: EXT250



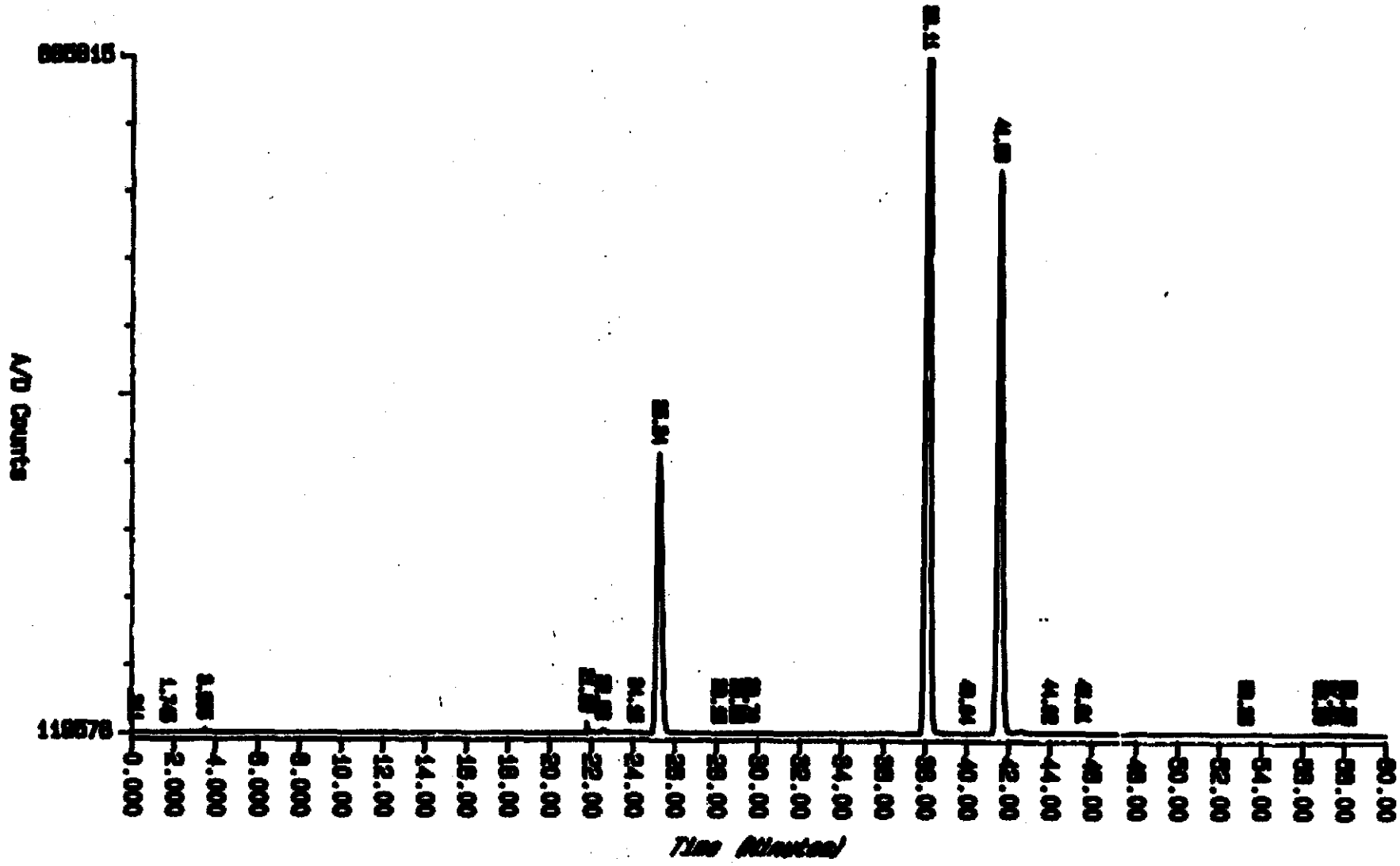
Sample: STD1090B-250 Injected at 1:52:34 ON JUL 7, 1985
Raw File: RH1312 Proc File: PH1312 Method: EXT250



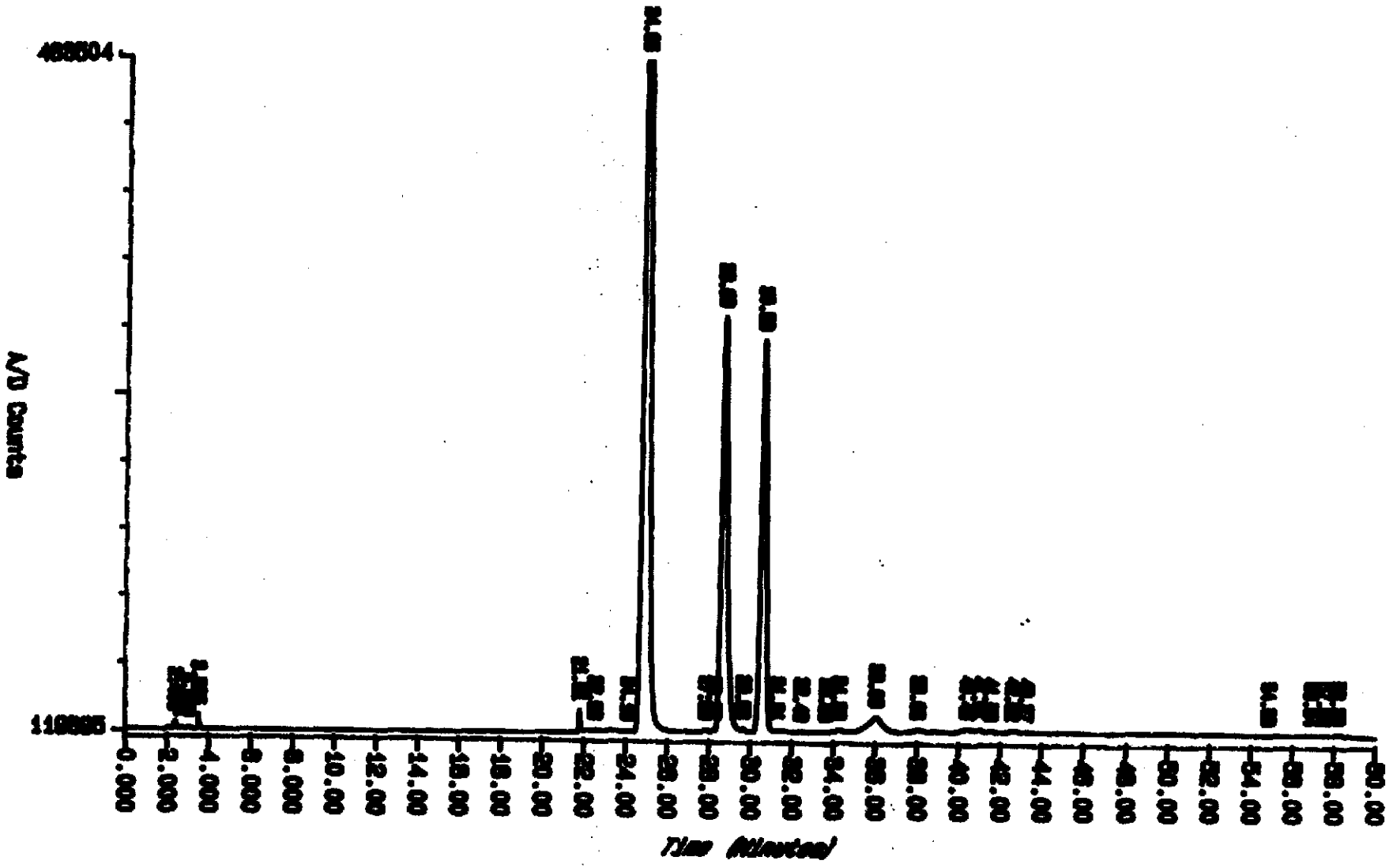
Sample: STD10907-250 Injected at 2:58:05 ON JUL 7, 1985
Raw File: RH1313 Proc File: PH1313 Method: EXT250



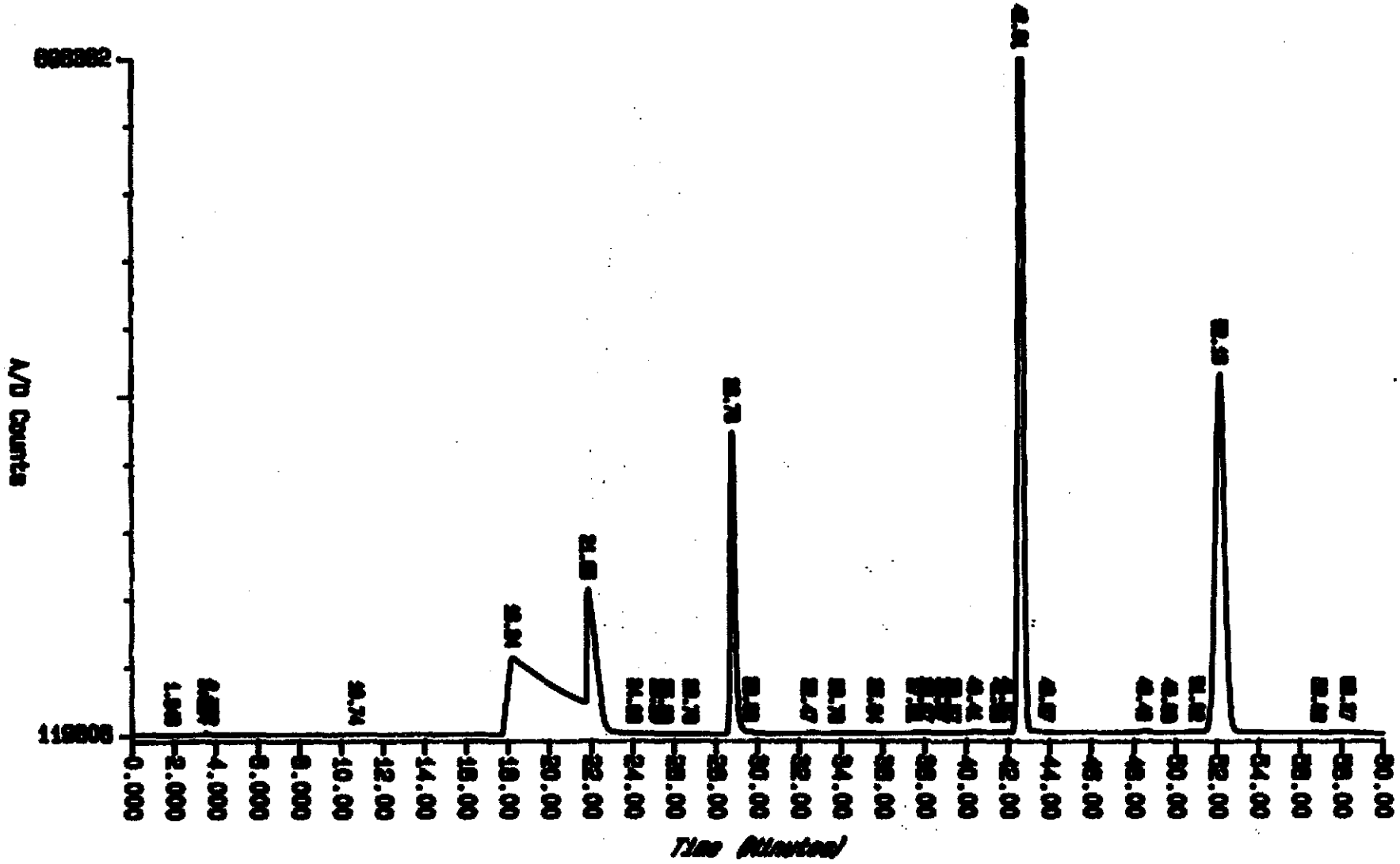
Sample: STD10908-250 Injected at 4:05:35 ON JUL 7, 1985
Raw File: RH1314 Proc File: PH1314 Method: EXT250



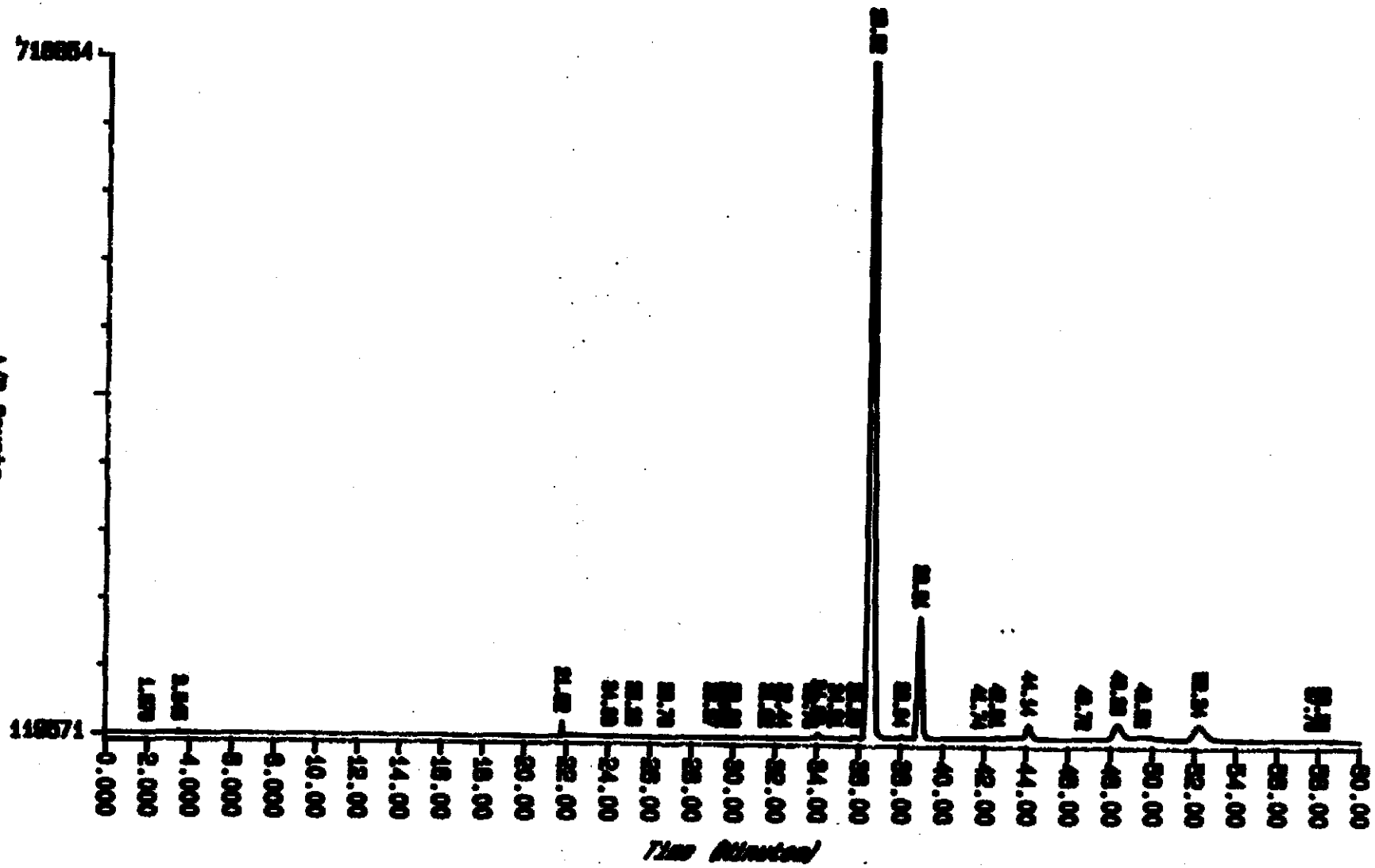
Sample: STD10909-500 Injected at 13:38:45 ON JUL 7, 1986
Raw File: RH1320 Proc File: PH1320 Method: EXT250



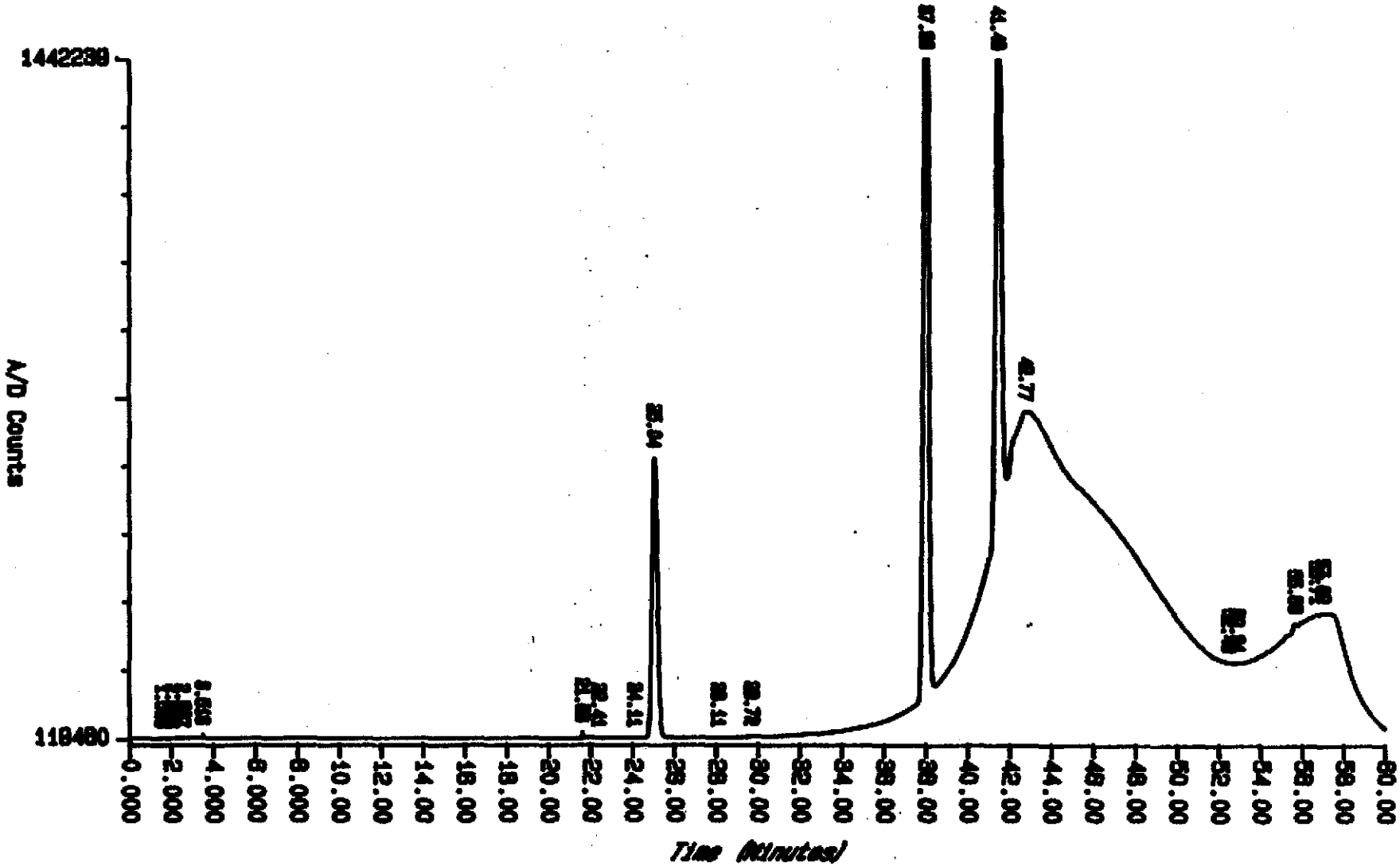
Sample: STD10810-500 Injected at 14:43:18 ON JUL 7, 1986
Raw File: RH1321 Proc File: PH1321 Method: EXT250



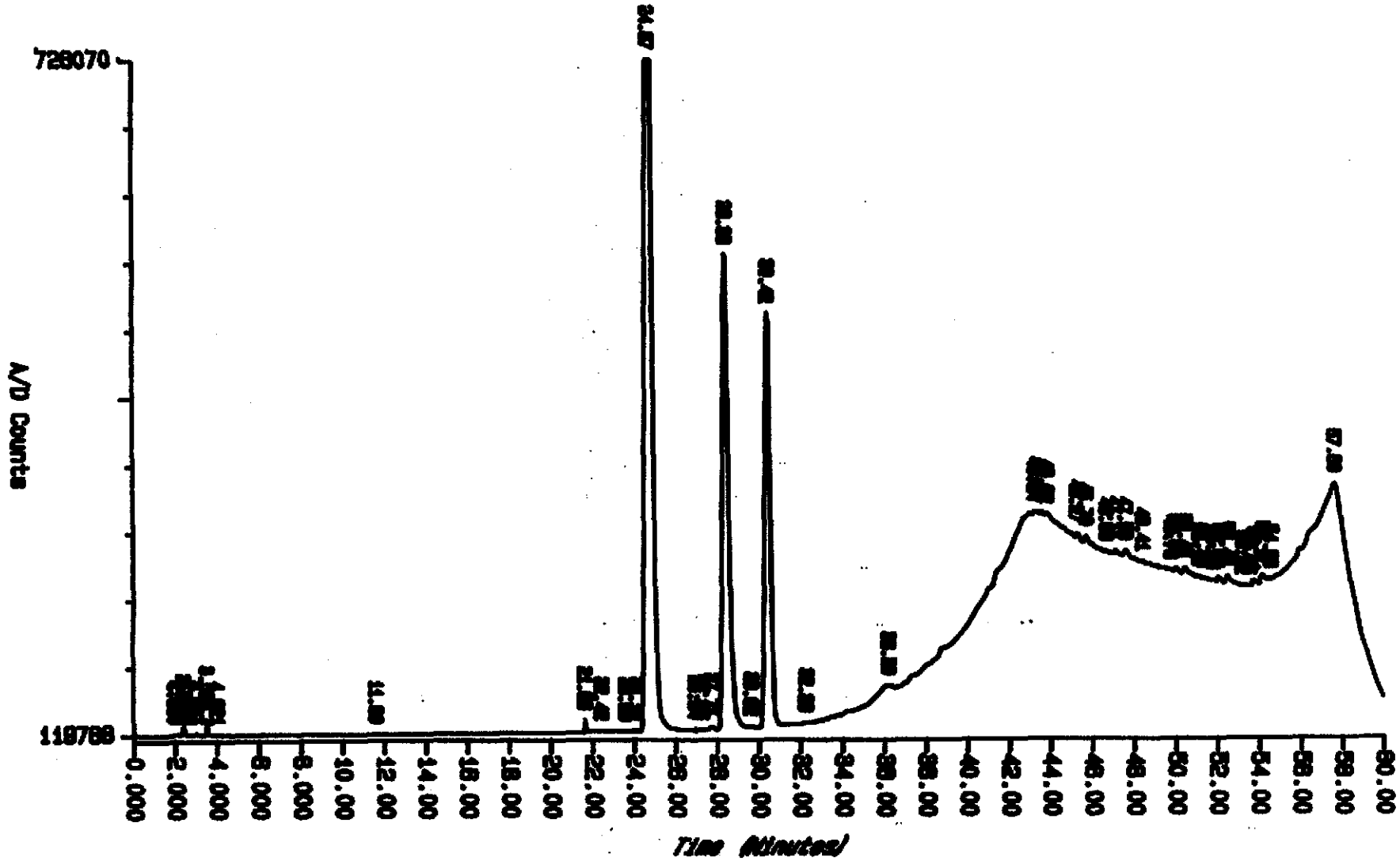
Sample: STD10911-500 Injected at 15:48:46 ON JUL 7, 1985
Raw File: RH1322 Proc File: PH1322 Method: EXT250



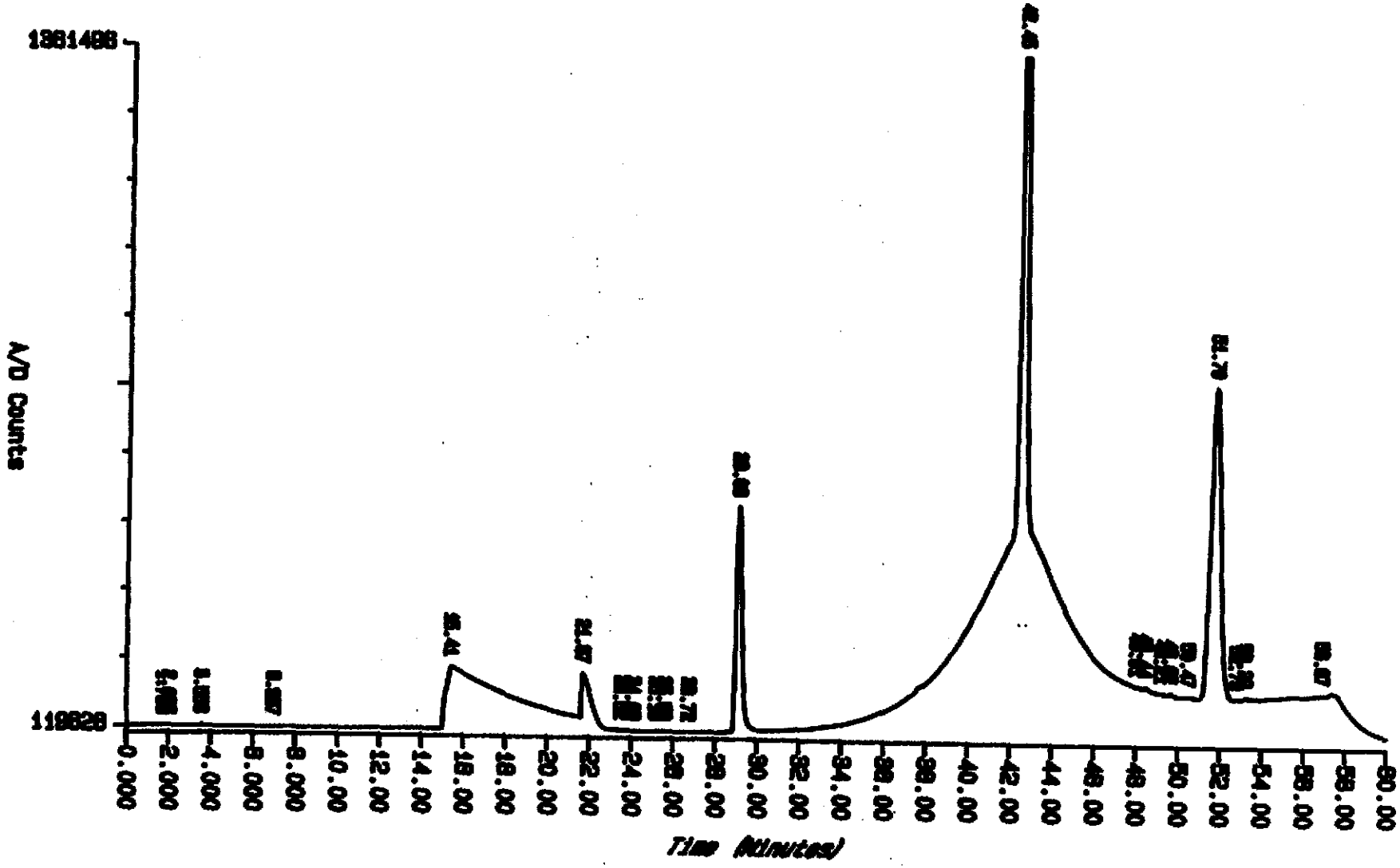
Sample: STD10912-500 Injected at 18:58:18 ON JUL 7, 1985
Raw File: RH1323 Proc File: PH1323 Method: EXT250



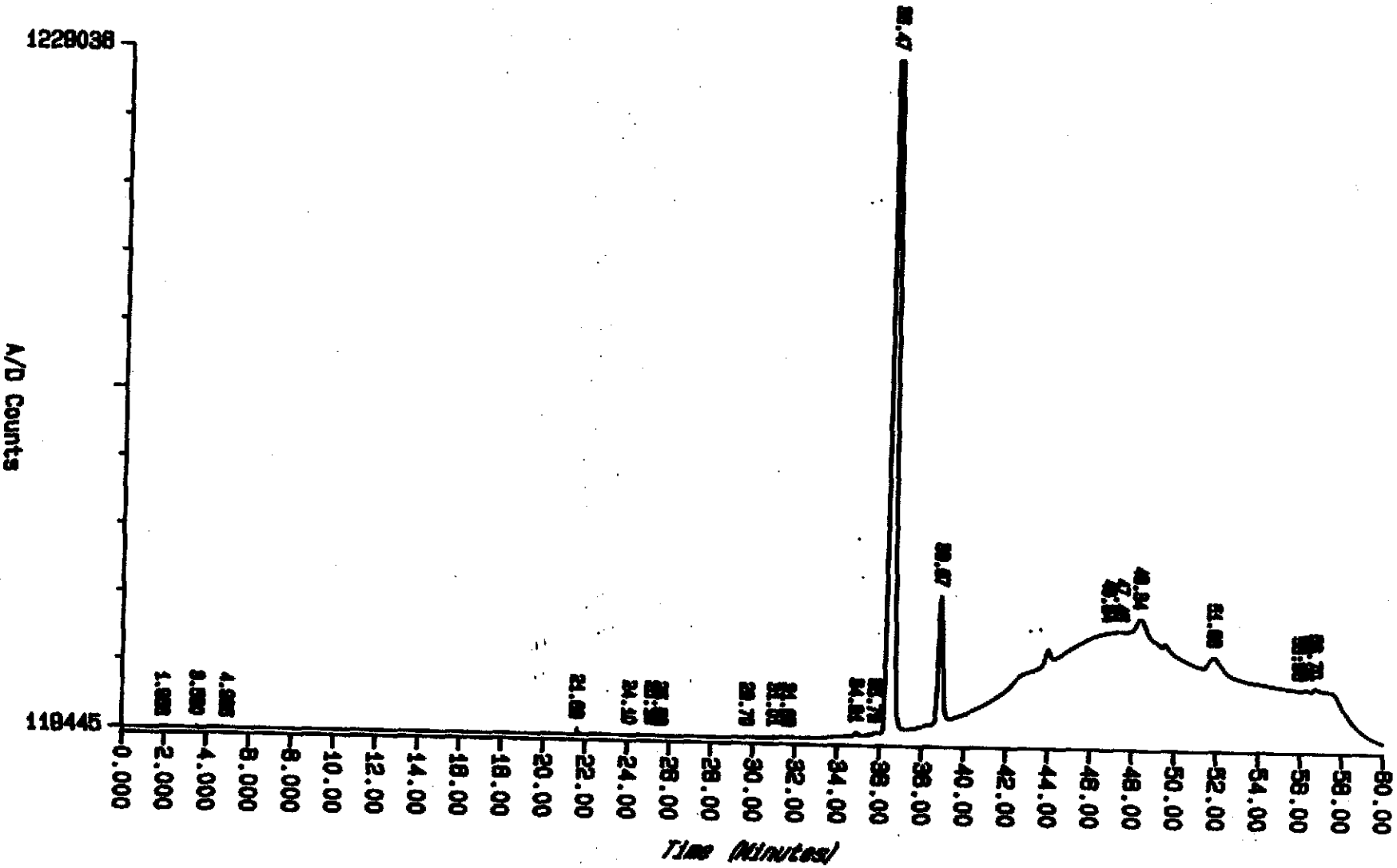
Sample: ST10897-1000 Injected at 14:38:58 ON JUL 8, 1985
Raw File: RH1331 Proc File: PH1331 Method: EXT250



Sample: ST10898-1000 Injected at 15:46:29 ON JUL 8, 1985
Raw File: RH1332 Proc File: PH1332 Method: EXT250



Sample: STD1099-1000 Injected at 18:53:02 ON JUL 8, 1985
Raw File: RH1333 Proc File: PH1333 Method: EXT250



Sample: ST10900-1000 Injected at 17:59:32 ON JUL 8, 1985
Raw File: AH1334 Proc File: PH1334 Method: EXT250

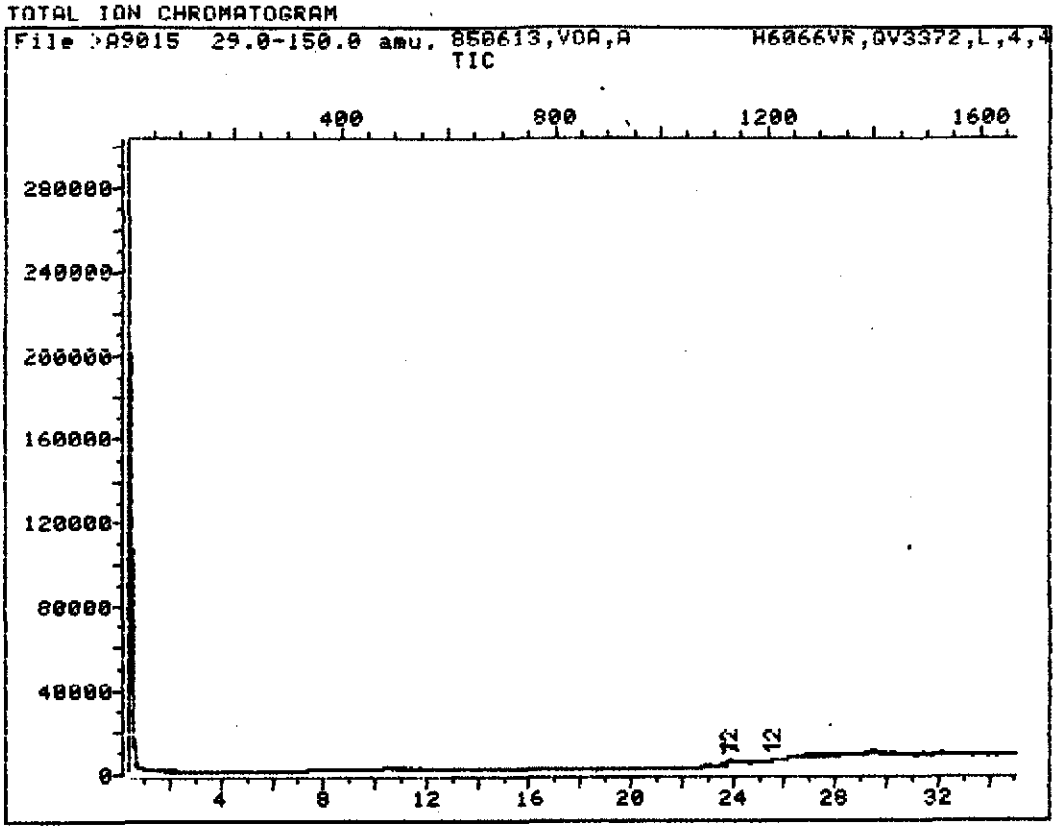
Appendix A

Mass Spectral Data for Quantitated Compounds

1) A total ion chromatogram for each sample analyzed by a GC/MS instrument.

2) A mass spectrum and a reference spectrum for each priority pollutant compound detected in the sample.

TOTAL ION CHROMATOGRAM



Data File: >A9015::U3
Name: 850613,VOA,A
Misc: H6066VR,QV3372,L,4,4UL INJECTED AP8DAI

Id File: AAP8DI
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850613 04:11

Operator ID: LA2639
Quant Time: 850613 05:56
Injected at: 850613 05:10

QUANT REPORT

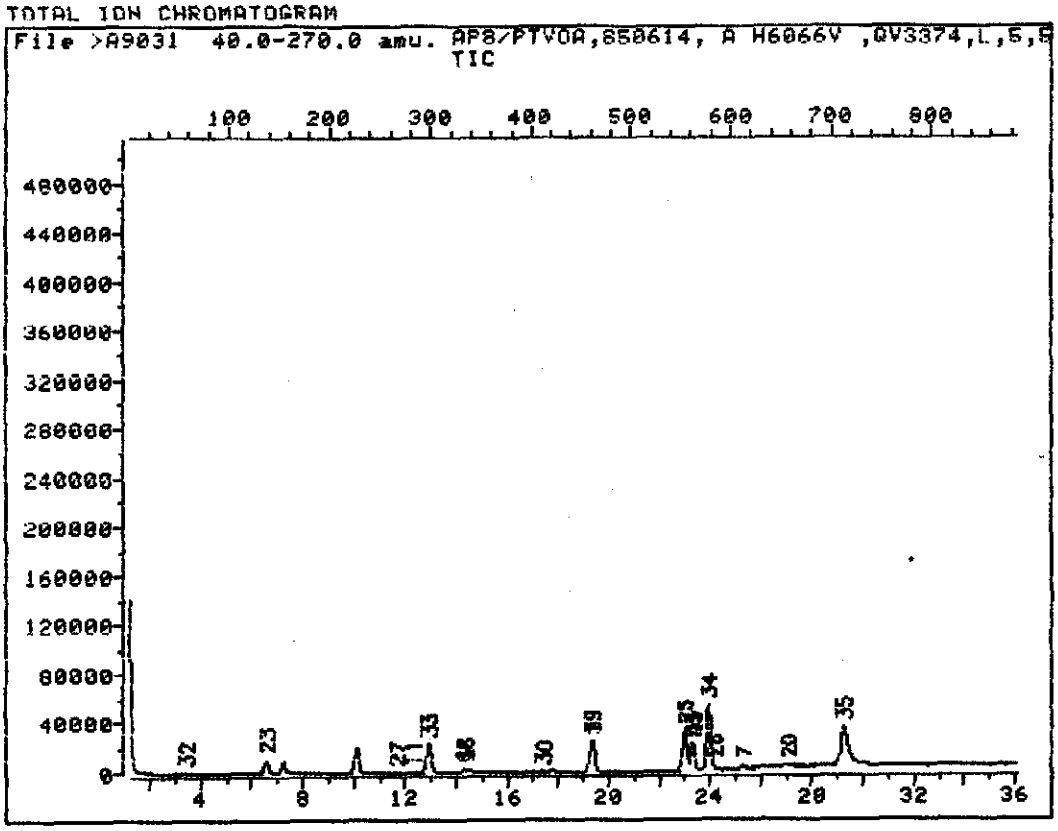
Operator ID: LA2639 Quant Rev: 4 Quant Time: 850613 05:56
Output File: ^A9015::AQ Injected at: 850613 05:10
Data File: >A9015::U3 Dilution Factor: 1.00
Name: 850613,VOA,A
Misc: H6066VR,QU3372,L,4,4UL INJECTED APBDAI

ID File: AAPBDI
Title: DAI APENDIX B ID FILE
Last Calibration: 850613 04:11

Compound	R.T.	Scan#	Area	Conc	Units	q
7) #N-Nitrosopyrrolidine	23.86	1129	1305	~~8.95~~	~~NG~~	100
12) #N-Proplamine	23.82	1127	7724	~~53.97~~	~~NG~~	100
12) #N-Proplamine	~~25.51~~	~~1208~~	~~1168~~	~~8.11~~	~~NG~~	100

Compound uses ESTD

TOTAL ION CHROMATOGRAM



Data File: >A9031::U3
Name: AP8/PTVOA,850614, A
Misc: H6066V ,QV3374,L,5,5,AP8 VOA FRACTION

Id File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850613 23:45

Operator ID: JA4996
Quant Time: 850614 02:26
Injected at: 850614 01:49

QUANT REPORT

Operator ID: JA4996 Quant Rev: 4 Quant Time: 850614 02:26
Output File: ^A9031::AQ Injected at: 850614 01:49
Data File: >A9031::U3 Dilution Factor: 1.00
Name: AP8/PTVOA,850614, A
Misc: H6066V ,QV3374,L,5,5,AP8 VOA FRACTION

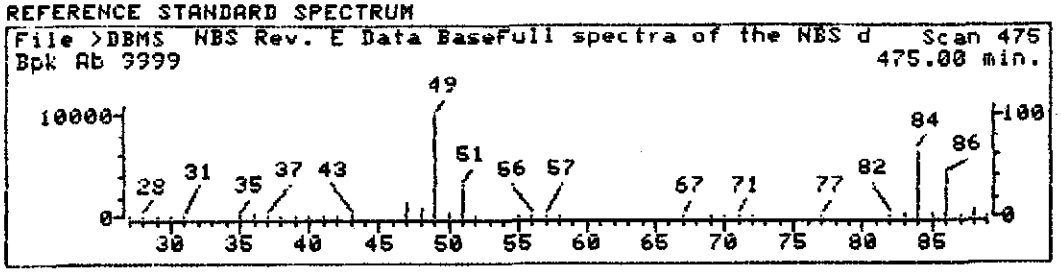
ID File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850613 23:45

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*2-Bromo-1-chloropropane	19.39	462	78619	200.00	NG	97
6)	Carbon tetrachloride	14.30	333	1451	~~4.84~~	~~NG~~	95
7)	Chlorobenzene	25.31	612	12115	~~28.57~~	~~NG~~ 1.1	95
11)	Chloroform	12.33	283	2203	~~3.96~~	~~NG~~	80
20)	Ethylbenzene	27.09	657	2605	~~2.31~~	~~NG~~	93
23)	Methylene chloride	6.61	138	30861	87.04	NG 73	98
25)	Tetrachloroethylene	23.02	554	61791	~~22.41~~	~~NG~~ 3	89
26)	Toluene	24.17	583	3336	~~3.65~~	NG	94
27)	1,2-Trans-dichloroethylene	11.70	267	1233	~~3.83~~	~~NG~~	97
28)	1,1,1-Trichloroethane	14.34	334	11085	~~26.19~~	~~NG~~	93
30)	Trichloroethylene	17.42	412	1692	~~6.68~~	~~NG~~	90
32)	Vinyl chloride	3.46	58	1801	13.61	NG	93
[illegible])	1,2-Dichloroethane-D4	12.92	298	43955	273.14	NG	90
34)	Toluene-D8	23.97	578	250034	295.37	NG	87
35)	p-Bromofluorobenzene	29.26	712	86640	280.38	NG	97
39)	1,2-Dibromoethane	19.35	461	4369	~~13.04~~	~~NG~~	82
41)	1,4-Dichloro-2-butene	23.34	562	6086	~~20.95~~	~~NG~~	100
53)	*1,4-Dichlorobutane	23.34	562	110085	200.00	NG	96

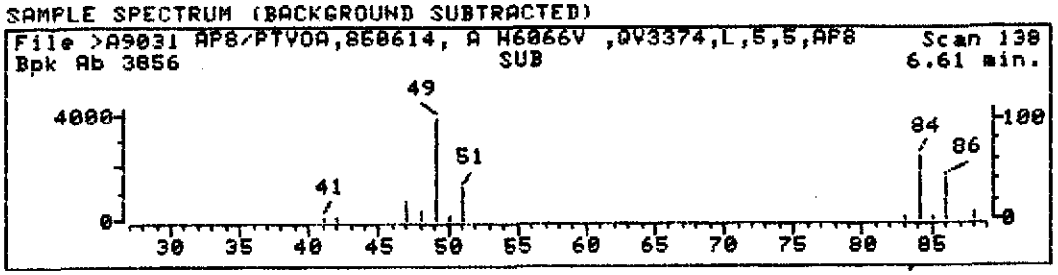
* Compound is ISTD

~~31) # 4799 5.29 NA~~

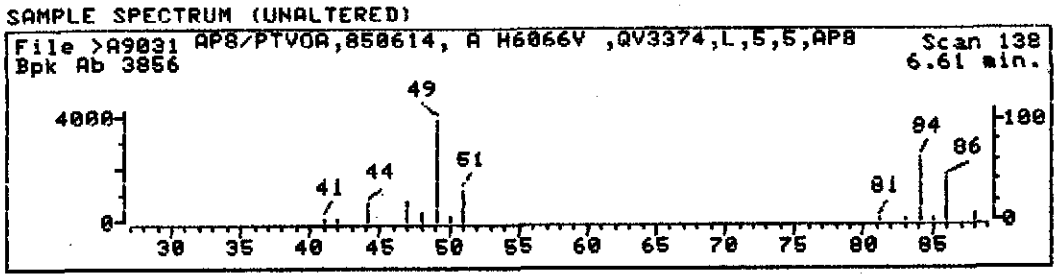
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



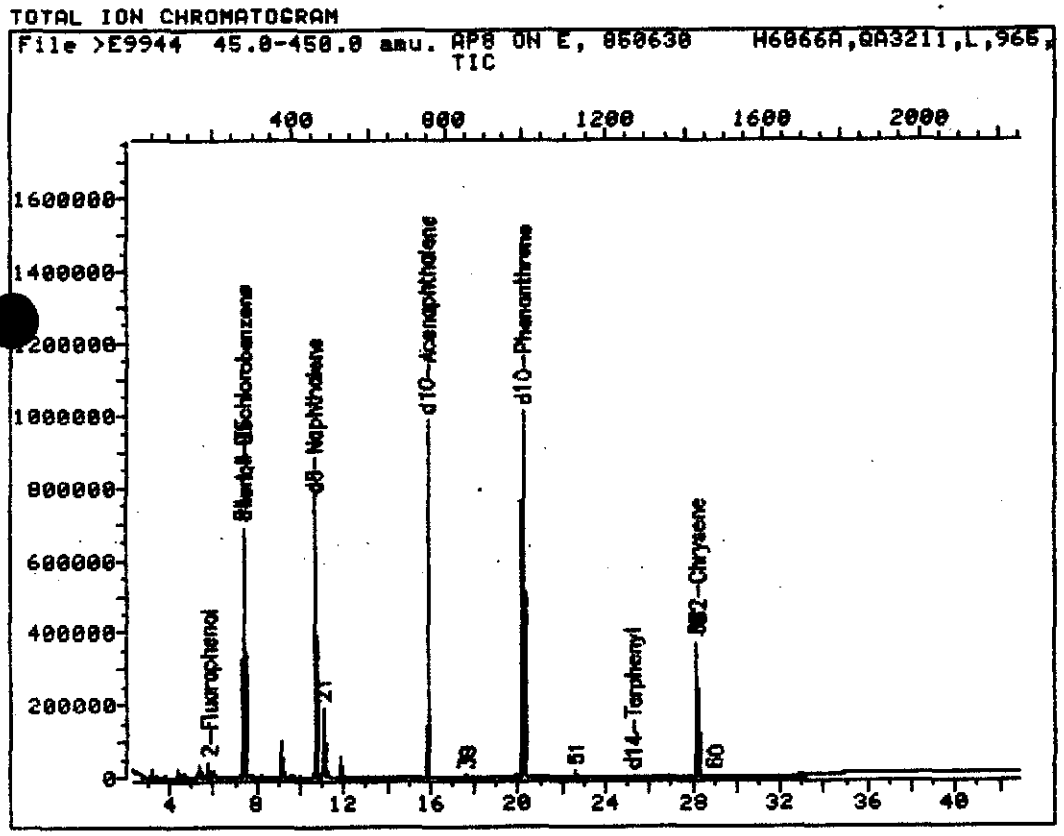
SAMPLE SPECTRUM (UNALTERED)



Data File: >A9031::U3
Name: AP8/PTVOA,850614, A
Misc: H6066V ,QV3374,L,5,5,AP8 VOA FRACTION
Quant Time: 850614 02:26
Injected at: 850614 01:49

Compound No: 23
Compound Name: Methylene chloride
Scan Number: 138
Retention Time: 6.61 min.
Area: 30861
Concentration: 87.04 NG
q-value: 98

TOTAL ION CHROMATOGRAM



Data File: >E9944::U4
Name: AP8 ON E, 850630
Misc: H6066A,QA3211,L,965,1

BTL#35

Id File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX B
Last Calibration: 850630 20:30

Operator ID: TM0576
Quant Time: 850701 19:32
Injected at: 850701 18:45

QUANT REPORT

Operator ID: TM0576 Quant Rev: 4 Quant Time: 850701 19:32
Output File: ^E9944::AQ Injected at: 850701 18:45
Data File: >E9944::U4 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: H6066A,QA3211,L,965,1 BTL#35

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.40	281	419024	40.00	UG/ML	92
10)	2-Fluorophenol	5.76	189	18416	2.37	UG/ML	100
12)	Phenol-D5	7.40	281	1933	.19	UG/ML	85
13)	*d8-Naphthalene	10.61	457	975144	40.00	UG/ML	94
21)	Naphthalene	11.05	482	6040	.27	UG/ML	96
28)	*d10-Acenaphthalene	15.82	752	574232	40.00	UG/ML	96
39)	Diethyl phthalate	17.64	855	2636	.13	UG/ML	96
45)	*d10-Phenanthrene	20.22	1001	1221248	40.00	UG/ML	98
51)	Di-n-butyl phthalate	22.60	1128	24072	.77	UG/ML	95
54)	*D12-Chrysene	28.17	1430	382867	40.00	UG/ML	98
57)	Benzo(a)anthracene	28.17	1430	889	.10	UG/ML	100
58)	Chrysene	28.17	1430	889	.08	UG/ML	100
60)	bis(2-Ethylhexyl)phthalate	28.99	1476	2279	.23	UG/ML	95
68)	d14-Terphenyl	25.23	1267	5630	.31	UG/ML	100

* Compound is ISTD

QUANT REPORT

Operator ID: TM0576
Output File: EE9944::AQ
Data File: >E9944::U4
Name: AP8 ON E, 850630
Misc: H6066A,QA3211,L,965,1

Quant Rev: 4
Quant Time: 850702 11:20
Injected at: 850701 18:45
Dilution Factor: 1.00

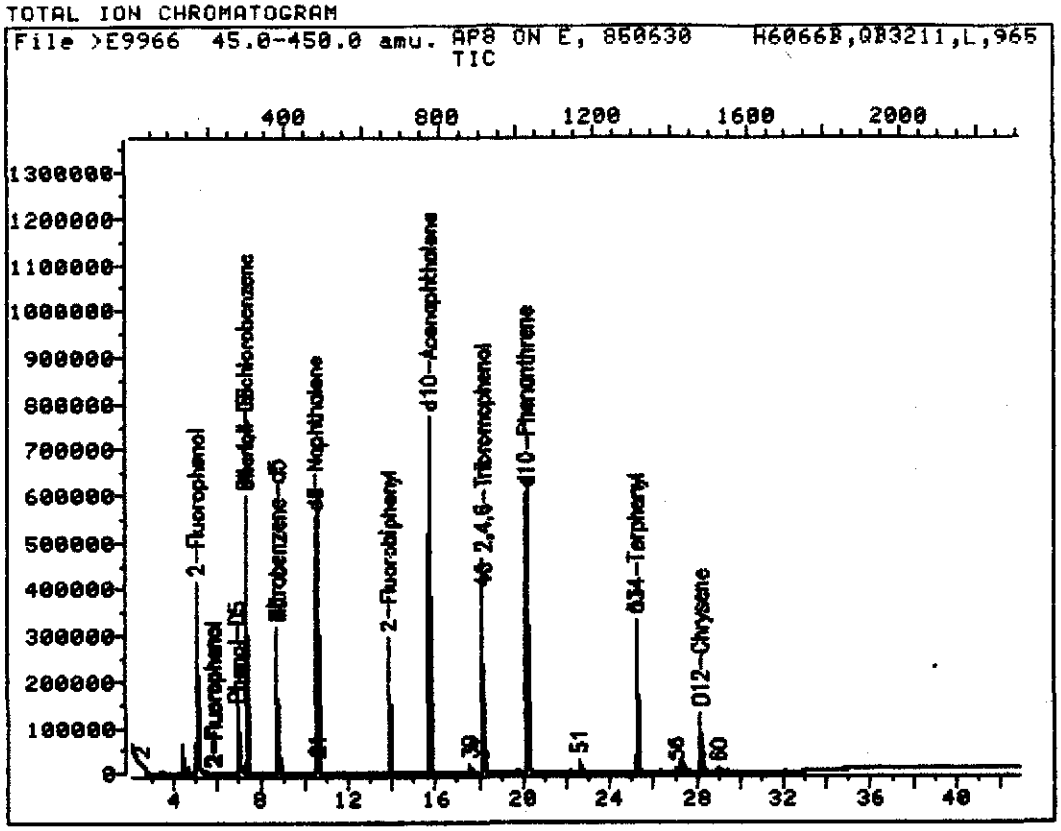
BTL#35

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.40	281	419024	40.00	UG/ML	92
16)	*d8-Naphthalene	10.61	457	975144	40.00	UG/ML	94
25)	p-Chloroaniline	11.05	482	11997	~~2.00~~	UG/ML	49
29)	*d10-Acenaphthalene	15.82	752	574232	40.00	UG/ML	96
46)	*d10-Phenanthrene	20.22	1001	1221248	40.00	UG/ML	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >E9966::U5
Name: AP8 ON E, 850630
Misc: H6066B,QB3211,L,965 ,1

BTL#57

Id File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

Operator ID: TM0576
Quant Time: 850702 18:26
Injected at: 850702 17:41

QUANT REPORT

Operator ID: TM0576 Quant Rev: 4 Quant Time: 850702 18:26
Output File: ^E9966::AQ Injected at: 850702 17:41
Data File: >E9966::U5 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: H6066B,QB3211,L,965 ,1 BTL#57

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.30	294	287381	40.00	UG/ML	92
2)	N-Nitrosodimethylamine	2.45	22	666	~~.23~~	UG/ML	100
7)	Nitrobenzene-d5	8.73	375	232321	35.83	UG/ML	96
10)	2-Fluorophenol	5.03	166	269922	50.62	UG/ML +2.4	100
10)	2-Fluorophenol	5.74	206	725	~~.14~~	UG/ML	100
10)	2-Fluorophenol	5.83	211	708	~~.13~~	UG/ML	100
12)	Phenol-D5	6.91	272	234958	34.00	UG/ML	85
12)	Phenol-D5	7.30	294	3092	~~.45~~	UG/ML	74
13)	*d8-Naphthalene	10.50	475	713399	40.00	UG/ML	94
14)	2-Fluorobiphenyl	13.85	665	251323	30.49	UG/ML	98
15)	N-Nitrosodi-n-propylamine	8.73	375	35206	~~6.64~~	UG/ML	60
21)	Naphthalene	10.55	478	1648	.10	UG/ML	93
28)	*d10-Acenaphthalene	15.72	771	410827	40.00	UG/ML	97
39)	Diethyl phthalate	17.56	875	10438	~~.78~~	UG/ML	91
40)	Fluorene	18.18	910	8228	~~.64~~	UG/ML	86
4[illegible]	2,4,6-Tribromophenol	18.16	909	174505	56.41	UG/ML	95
4[illegible]	*d10-Phenanthrene	20.12	1020	767328	40.00	UG/ML	97
51)	Di-n-butyl phthalate	22.54	1157	35565	~~1.81~~	UG/ML	95
53)	Benzidine	25.19	1307	3635	~~5.21~~	UG/ML	100
54)	*D12-Chrysene	28.16	1475	152045	40.00	UG/ML	97
56)	Butyl benzyl phthalate	27.01	1410	8087	~~2.33~~	UG/ML	98
60)	bis(2-Ethylhexyl)phthalate	28.98	1521	5665	~~1.44~~	UG/ML	99
68)	d14-Terphenyl	25.19	1307	338831	47.65	UG/ML	100

* Compound is ISTD

QUANT REPORT

Operator ID: TM0576
Output File: EE9966::AQ
Data File: >E9966::U5
Name: AP8 ON E, 850630
Misc: H6066B,QB3211,L,965 ,1.

Quant Rev: 4
Quant Time: 850702 22:18
Injected at: 850702 17:41
Dilution Factor: 1.00

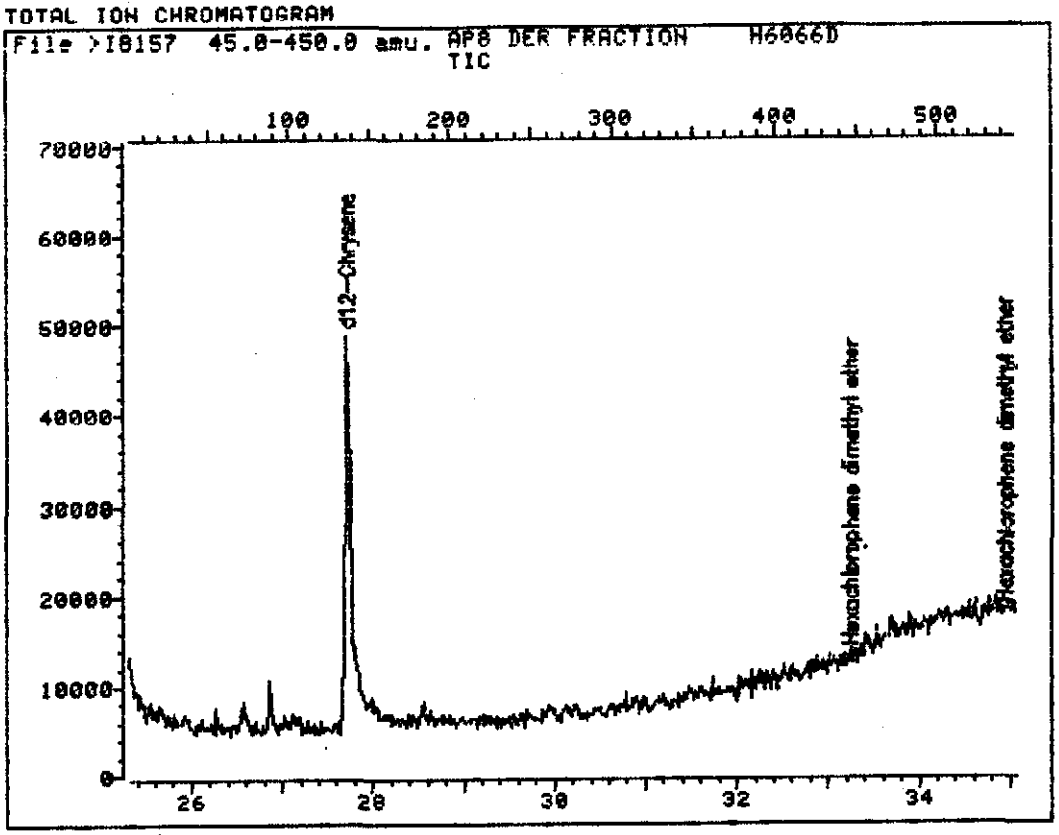
BTL#57

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.30	294	287381	40.00	UG/ML	92
16)	*d8-Naphthalene	10.50	475	713399	40.00	UG/ML	94
29)	*d10-Acenaphthalene	15.72	771	410827	40.00	UG/ML	97
46)	*d10-Phenanthrene	20.12	1020	767328	40.00	UG/ML	100
47)	5-Nitro-o-toluidine	18.18	910	2321	.62	UG/ML	77

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >I8157::U5
Name: AP8 DER FRACTION
Misc: H6066D

BTL#21

Id File: IAP8DE
Title: AP8 DEV ON I
Last Calibration: 850201 15:00

Operator ID: TM0576
Quant Time: 850702 02:46
Injected at: 850702 02:09

QUANT REPORT

Operator ID: TM0576
Output File: ^I8157::AQ
Data File: >I8157::U5
Name: AP8 DER FRACTION
Misc: H6066D

Quant Rev: 4
Quant Time: 850702 02:46
Injected at: 850702 02:09
Dilution Factor: 1.00

BTL#21

ID File: IAP8DE
Title: AP8 DEV ON I
Last Calibration: 850701 15:00

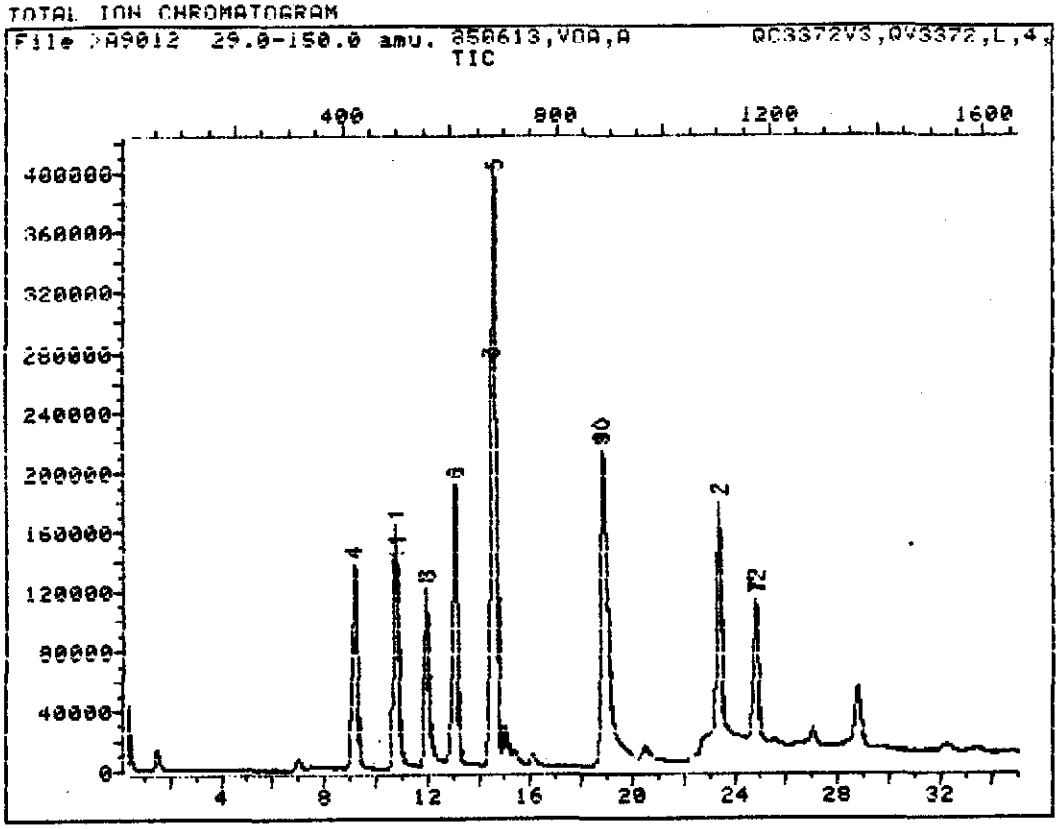
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d12-Chrysene	27.72	136	82617	40.00	UG/ML	89
2)	Hexachlorophene dimethyl ether	33.24	446	118	.24	UG/ML	79
2)	Hexachlorophene dimethyl ether	34.94	541	79	.16	UG/ML	90

* Compound is ISTD

Appendix C1

GC/MS Subsidiary Data

TOTAL ION CHROMATOGRAM



Data File: >A9012::U3
Name: 850613,VOA,A
Misc: QC3372VS,QV3372,L,4,,4UL AP8DAI STD INJECTED

Id File: AAP8DI
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850613 04:11

Operator ID: LA2659
Quant Time: 850613 04:12
Injected at: 850613 02:56

QUANT REPORT

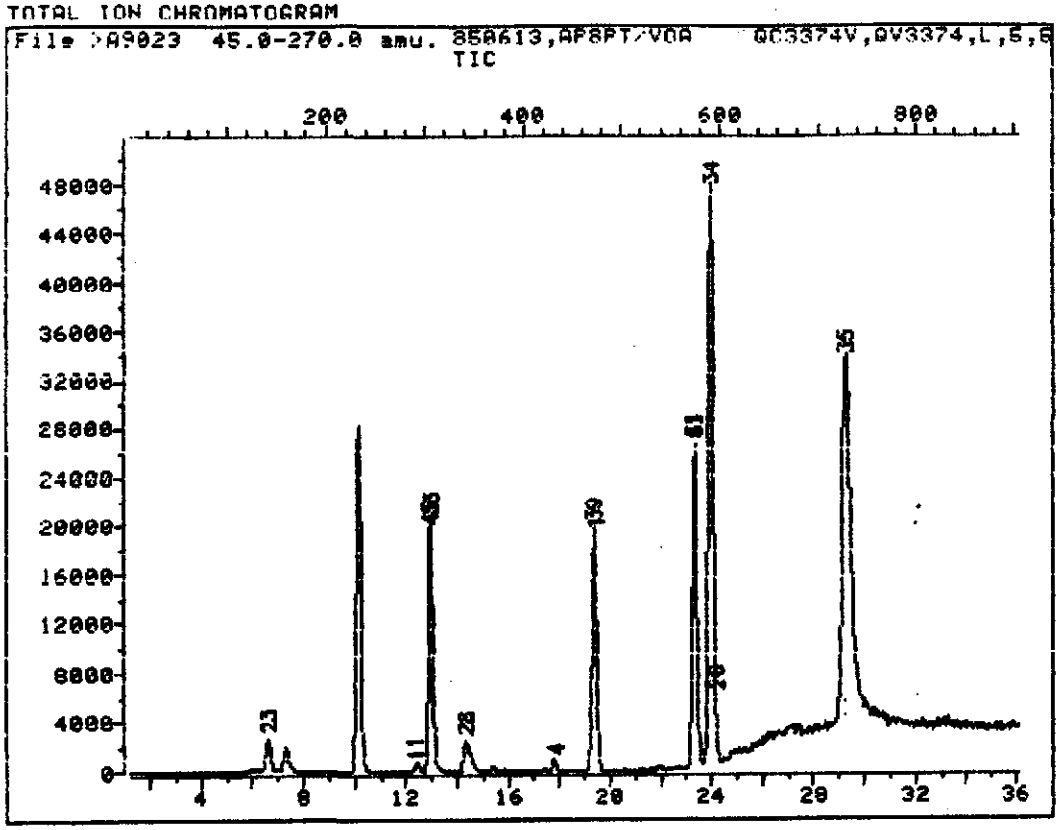
Operator ID: LA2639 Quant Rev: 4 Quant Time: 850613 04:12
Output File: ^A9012::AQ Injected at: 850613 02:36
Data File: >A9012::U3 Dilution Factor: 1.00
Name: 850613,VOA,A
Misc: QC3372VS,QV3372,L,4,,4UL AP8DAI STD INJECTED

ID File: AAP8DI
Title: DAI APENDIX 8 ID FILE
Last Calibration: 850613 04:11

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	#Allyl alcohol	10.79	498	587420	2000.00	NG	90
2)	#2,3-Dichloro-1-propanol	23.36	1103	602477	2000.00	NG	90
3)	#1,4-Dioxane	14.46	676	448032	2000.00	NG	100
4)	#Ethyl cyanide	9.13	420	901061	2000.00	NG	92
5)	#Isobutyl alcohol	14.56	681	1112660	2000.00	NG	94
6)	#Methacrylonitrile	13.06	609	659345	2000.00	NG	94
7)	#N-Nitrosopyrrolidine	24.80	1172	291702	2000.00	NG	100
8)	#2-propyn-1-ol	11.94	555	709834	2000.00	NG	98
9)	#Pyridine	18.77	883	1047587	2000.00	NG	87
10)	#Chloroacetaldehyde	18.79	884	403222	2000.00	NG	86
11)	#1,1-Dimethylhydrazine	10.82	501	46336	2000.00	NG	98
12)	#N-Proplamine	24.80	1172	286231	2000.00	NG	100

Compound uses ESTD

TOTAL ION CHROMATOGRAM



Data File: >A9023::U3
Name: 850613,AP8PT/VOA
Misc: QC3374V,QV3374,L,5,5

Id File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, 1
Last Calibration: 850613 23:45

Operator ID: JA4996
Quant Time: 850613 23:57
Injected at: 850613 17:23

QUANT REPORT

Operator ID: JA4996
Output File: ^A9023::AQ
Data File: >A9023::U3
Name: 850613,AP8PT/VOA
Misc: QC3374V,QV3374,L,5,5

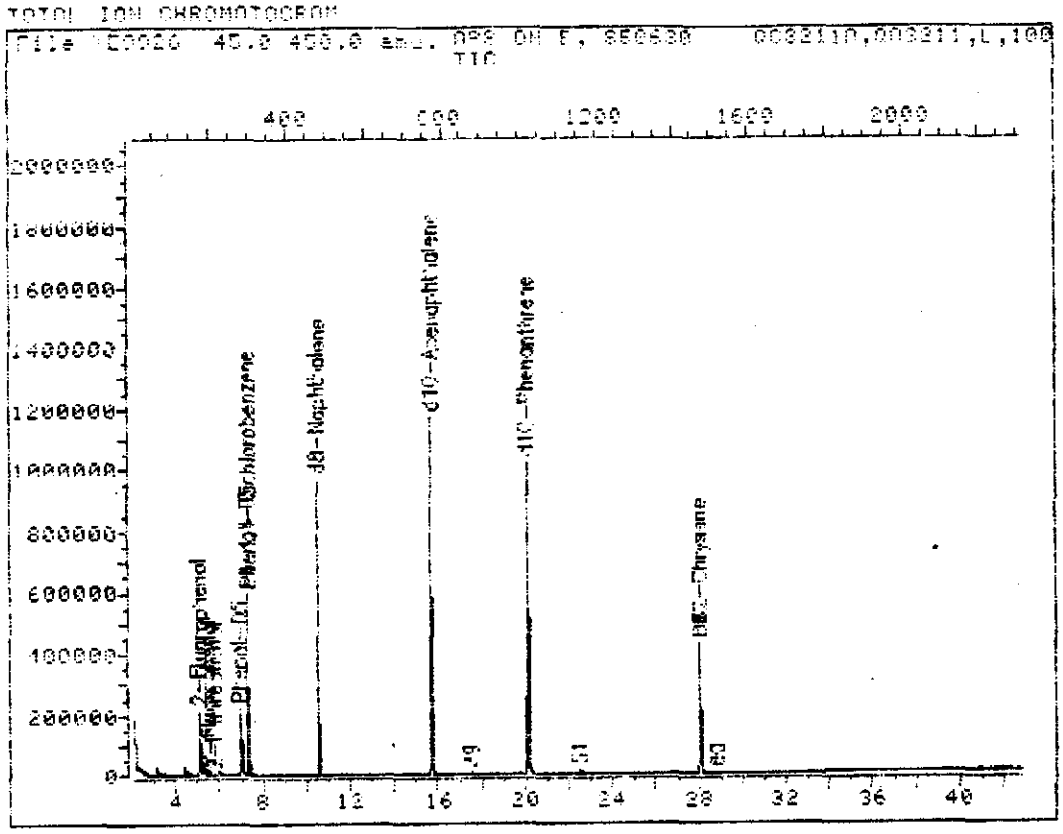
Quant Rev: 4
Quant Time: 850613 23:57
Injected at: 850613 17:23
Dilution Factor: 1.00

ID File: AAP8PT
Title: IDFILE, PURGEABLE PRIORITY POLLUTANTS, I
Last Calibration: 850613 23:45

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*2-Bromo-1-chloropropane	19.42	473	109727	200.00	NG	97
4)	Benzene	17.84	432	537	~~.33~~	~~NG~~	58
11)	Chloroform	12.36	290	1887	~~2.43~~	~~NG~~	76
23)	Methylene chloride	6.61	141	7112	14.37	NG	97
26)	Toluene	24.17	596	2516	~~1.97~~	~~NG~~	86
28)	1,1,1-Trichloroethane	14.32	341	9439	15.98	NG	96
33)	1,2-Dichloroethane-D4	12.97	306	43109	191.93	NG	88
34)	Toluene-D8	23.97	591	240846	203.86	NG	88
35)	p-Bromofluorobenzene	29.26	728	89054	206.49	NG	98
39)	1,2-Dibromoethane	19.38	472	5972	~~12.77~~	~~NG~~	72
41)	1,4-Dichloro-2-butene	23.35	575	8222	~~20.28~~	~~NG~~	100
[illegible])	Methyl-ethyl-ketone	12.94	305	3828	~~46.12~~	~~NG~~	65
[illegible])	*1,4-Dichlorobutane	23.35	575	147764	200.00	NG	96

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >E9926::U4
Name: APS ON E, 850630
Misc: QC3211A,DA3211,L,1000,1

BTL#12

Id File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX B
Last Calibration: 850630 20:30

Operator ID: TM0976
Quant Time: 850701 00:39
Injected at: 850630 23:47

QUANT REPORT

Operator ID: TM0576 Quant Rev: 4 Quant Time: 850701 00:35
Output File: >E9926::AQ Injected at: 850630 23:47
Data File: >E9926::U4 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: QC3211A.QA3211,L,1000,1 BTL#12

ID File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*d4-1,4-Dichlorobenzene	7.27	294	350850	40.00	UG/ML	90
10)	2-Fluorophenol	5.01	166	144206	22.15	UG/ML	100
10)	2-Fluorophenol	5.45	191	1686	.26	UG/ML	100
10)	2-Fluorophenol	5.70	205	771	.12	UG/ML	100
12)	Phenol-D5	6.88	272	202412	23.99	UG/ML	97
12)	Phenol-D5	7.27	294	1879	.22	UG/ML	70
13)	*d8-Naphthalene	10.47	475	1021108	40.00	UG/ML	96
28)	*d10-Acenaphthalene	15.66	769	661873	40.00	UG/ML	97
39)	Diethyl phthalate	17.46	871	2589	.11	UG/ML	94
45)	*d10-Phenanthrene	20.04	1017	1395173	40.00	UG/ML	98
51)	Di-n-butyl phthalate	22.42	1152	16224	.46	UG/ML	97
54)	*D12-Chrysene	28.00	1468	434049	40.00	UG/ML	97
5[illegible])	Benzo(a)anthracene	28.00	1468	1136	.11	UG/ML	100
[illegible])	Chrysene	28.00	1468	1136	.09	UG/ML	100
60)	bis(2-Ethylhexyl)phthalate	28.80	1513	922	.03	UG/ML	99

* Compound is ISTD

QUANT REPORT

Operator ID: TM0576
Output File: EE9926::AQ
Data File: >E9926::U4
Name: AP8 ON E, 850630
Misc: QC3211A,QA3211,L,1000,1

Quant Rev: 4
Quant Time: 850701 13:59
Injected at: 850630 23:47
Dilution Factor: 1.00

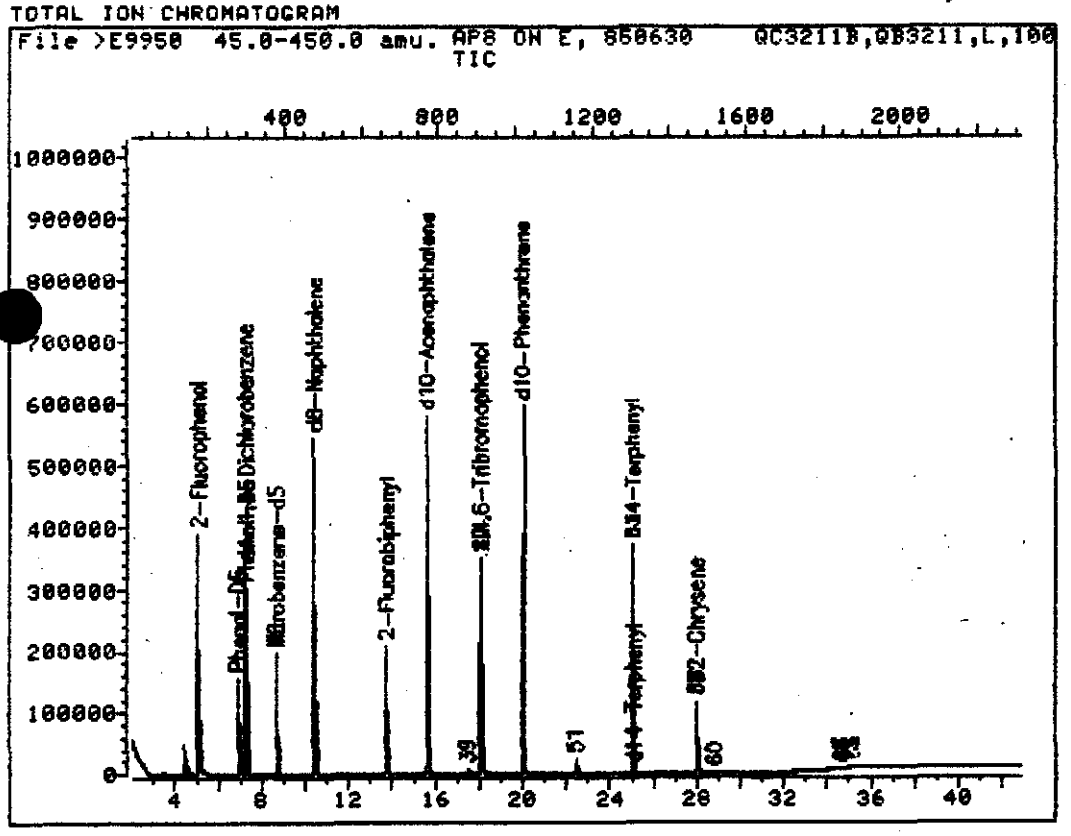
BTL#17

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.27	294	350850	40.00	UG/ML	9
16)	*d8-Naphthalene	10.47	475	1021108	40.00	UG/ML	9
29)	*d10-Acenaphthalene	15.66	769	661873	40.00	UG/ML	9
46)	*d10-Phenanthrene	20.04	1017	1395173	40.00	UG/ML	10

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >E9950::U4
Name: AP8 ON E, 850630
Misc: QC3211B,QB3211,L,1000,1

BTL#41

Id File: EBNA
Title: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

Operator ID: TM0576
Quant Time: 850702 00:16
Injected at: 850701 23:31

QUANT REPORT

Quant Rev: 4

Quant Time: 850702 14:37
Injected at: 850701 23:31
Dilution Factor: 1.00

Operator ID: TM0576
Output File: EE9950::AQ
Data File: >E9950::U4
Name: AP8 ON E, 850630
Misc: QC3211B,QB3211,L,1000,1

BTL#41

ID File: EAP8E
Title: APPENDIX 8 IDFILE
Last Calibration: 850701 09:08

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.25	295	193308	40.00	UG/ML	9
16)	*d8-Naphthalene	10.43	475	522888	40.00	UG/ML	9
29)	*d10-Acenaphthalene	15.61	768	319716	40.00	UG/ML	9
46)	*d10-Phenanthrene	19.98	1016	623730	40.00	UG/ML	10

* Compound is ISTD

QUANT REPORT

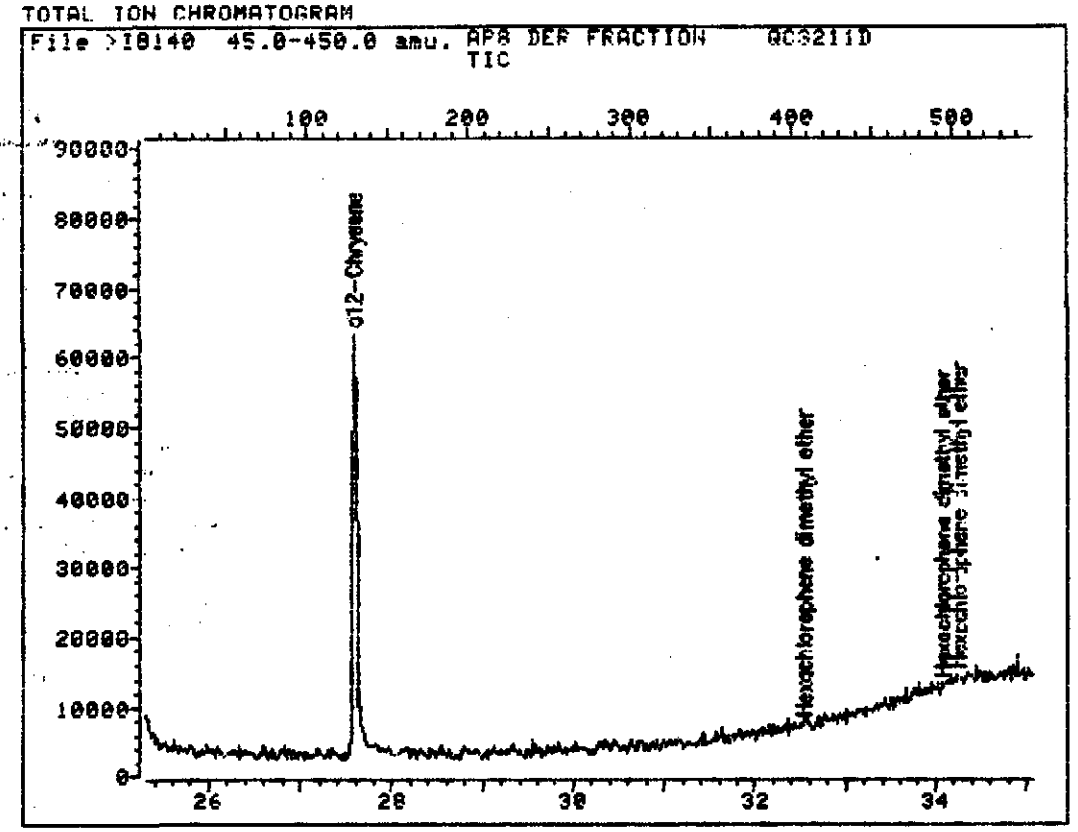
Operator ID: TM0576 Quant Rev: 4 Quant Time: 850702 00:16
Output File: ^E9950::AQ Injected at: 850701 23:31
Data File: >E9950::U4 Dilution Factor: 1.00
Name: AP8 ON E, 850630
Misc: QC3211B,QB3211,L,1000,1 BTL#41

I[illegible]File: EBNA
T[illegible]le: BN & ACID IDFILE FOR APPENDIX 8
Last Calibration: 850630 20:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.25	295	193308	40.00	UG/ML	90
7)	Nitrobenzene-d5	8.67	375	140822	32.29	UG/ML	93
10)	2-Fluorophenol	5.04	170	225158	62.27	UG/ML	100
12)	Phenol-D5	6.88	274	174518	37.54	UG/ML	95
12)	Phenol-D5	7.27	296	2749	~~.59~~	UG/ML	82
13)	*d8-Naphthalene	10.43	475	522888	40.00	UG/ML	94
14)	2-Fluorobiphenyl	13.75	663	160828	26.62	UG/ML	98
15)	N-Nitrosodi-n-propylamine	8.67	375	20964	5.39	UG/ML	61
28)	*d10-Acenaphthalene	15.61	768	319716	40.00	UG/ML	96
39)	Diethyl phthalate	17.44	872	4182	~~.36~~	UG/ML	95
40)	Fluorene	18.04	906	5735	~~.57~~	UG/ML	84
42)	2,4,6-Tribromophenol	18.04	906	119601	49.68	UG/ML	96
45)	*d10-Phenanthrene	19.98	1016	623730	40.00	UG/ML	98
51)	Di-n-butyl phthalate	22.37	1151	39041	2.45	UG/ML ✓	98
53)	Benzidine	25.02	1301	3511	~~6.19~~	UG/ML	100
54)	*D12-Chrysene	27.95	1467	130055	40.00	UG/ML	98
57)	Benzo(a)anthracene	27.95	1467	573	~~.19~~	UG/ML	100
58)	Chrysene	27.95	1467	573	~~.15~~	UG/ML	100
60)	bis(2-Ethylhexyl)phthalate	28.76	1513	1195	~~.36~~	UG/ML	95
65)	Indeno(1,2,3-c,d)pyrene	34.61	1844	2273	~~1.44~~	UG/ML	100
6[illegible]	Indeno(1,2,3-c,d)pyrene	35.14	1874	2624	~~1.62~~	UG/ML	100
66)	Dibenzo(a,h)anthracene	34.68	1848	1527	~~.94~~	UG/ML	100
67)	Benzo(ghi)perylene	34.61	1844	2273	~~1.40~~	UG/ML	100
67)	Benzo(ghi)perylene	35.14	1874	2624	~~1.62~~	UG/ML	100
68)	d14-Terphenyl	25.02	1301	310046	50.97	UG/ML	100
68)	d14-Terphenyl	25.07	1304	5893	~~.97~~	UG/ML	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >I8140::U4
Name: APS DEF FRACTION
Misc: QC3211D

BTL# 4

Id File: IAPRDE
Title: APS DEV ON I
Last Calibration: 850701 15:00

Operator ID: TM0576
Quant Time: 850701 18:54
Injected at: 850701 13:37

QUANT REPORT

Operator ID: TM1152A
Output File: ^18140::AU
Data File: >18140::114
Name: AP8 DER FRACTION
Misc: QC3211D

Quant Rev: 4
Quant Time: 850701 18:54
Injected at: 850701 13:37
Dilution Factor: 1.000

HTI # 4

ID File: IAP8DE
Title: AP8 DEV LIN 1
Last Calibration: 850701 15:00

Compound	R.T.	Scan#	Area	Conc	Units	q
1) *d12-Chrysene	27.59	129	82446	40.00	UG/ML	90
2) Hexachlorophene dimethyl ether	32.54	417	110	.20	UG/ML	81
2) Hexachlorophene dimethyl ether	34.07	493	103	.21	UG/ML	85
2) Hexachlorophene dimethyl ether	34.25	513	119	.24	UG/ML	73

* Compound is ISTD

Appendix E

Chain-of Custody Forms

1) A field Chain-of-Custody form (CC1) is included for all samples shipped by ETC shuttle.

2) An in-house sample Chain-of Custody form is included for the period the sample was in ETC's possession.

3) A subcontractor's Chain-of-Custody form is included for any analytical work not performed within ETC's laboratory.

4) Any additional Chain-of-Custody material provided by a client or by a client's sampling agent is also included.

Shuttle H

ETC ENVIRONMENTAL TESTING and CERTIFICATION

CHAIN OF CUSTODY FORM (CC1)

Seal No. 34563 ETC Job # H6066

Date Sealed 5/7/85 By: Khanna

Company: Vertac Corporation

Attn.: John Hill

Facility/Site:

Phone: ( )

Address: Rifle Range Road
Vicksburg, MS 39180

SAMPLE IDENTIFICATION

Facility: VERTACVICK (Facility Site Code) Well #7 (Optional Sample Point Descriptions)

Sample Point: W (Source Code (from below)) - 01017 (Your Sample Point ID (left justify)) 880610 (Start Date (YY MM DD)) (Start Time (2400 hr clock)) (Elapsed Hours (composite))

605
4

Source Codes:
Well ..(W) Outfall .....(O) Bottom Sediment ....(B) Surface Impoundment ....(I) Leachate Collection Sys. ....(C) Other .....(X)
Soil ...(S) River/Stream ..(R) Generation Point ...(G) Treatment Facility .....(T) Lake/Ocean .....(L) Specify

SHUTTLE CONTENTS

BOTTLE				ANALYSIS	SAMPLER		LAB
No	Type	Size	Preserv.		Filt. (Y/N)	Observations	Observations
3	A	1L	Baked	Acid & Bn			
1	P/H	1L	Baked	P/H			
1	CN	125ml	NaOH	CYANIDE			
4	V	40ml	Sodthio	VOA			Bubble
4	F	40ml	Baked	DAI			
1	TB	40ml	GC/MS H2O	Trip Blank			

CHAIN OF CUSTODY CHRONICLE

1. Shuttle Opened By: (print) Date: Time:
Signature: Seal #: Intact:

2. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

3. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

4. Shuttle Sealed By: (print) John G Hill Date: 6-10-85 Time: 9 04 am
Signature: Seal #: 0034564 Intact: 9:9 AM

ETC USE ONLY Opened By: Stacy Quast Date: 6/11/85 Time: 1100
Seal #: 34564 Condition: OK

ETC ENVIRONMENTAL TESTING and CERTIFICATION

FIELD PARAMETER FORM (CC2)

ETC JOB # H6066

Sample Point [ ] Source Code [ ] Sample Point ID

FIELD PROCEDURES

PURGE DATE (YY MM DD) | START PURGE (2400 hr Clock) | ELAPSED HRS | WATER VOL IN CASING (Gallons) | VOLUME PURGED (Gallons)

SAMPLING METHOD: _____

Sampler Type [ ] A-Submersible Pump, B-ISCO, C-Bladder Pump, D-Dipper/Bottle, E-Bailer, F-Scoop/Shovel, X-Other _____ (SPECIFY OTHER)

Sampler Material [ ] A-Teflon, B-Metal, C-PVC, D-Plastic, X-Other _____ (SPECIFY OTHER)

Tubing Material [ ] A-Teflon, B-Tygon, C-Polyethylene, D-Silicon, X-Other _____ (SPECIFY OTHER)

Sample Composited [Y/N] _____ (Procedure/Proportions)

FIELD MEASUREMENTS

Well Elevation (ft/msl) [ ]

Depth to Ground water (ft) [ ]

Groundwater Elevation (ft msl) [ ]

Well Depth (ft) [ ]

Sample Depth (non-well) (ft) [ ]

	pH	(STD)	spec. cond.	um/cm at 25°C	(other parameter)	value	units
1st							
2nd							
3rd							
4th							

Sample Temp [ ] (°C)

Turbidity [ ] NTU

FIELD COMMENTS

Sample Appearance: _____

Weather Conditions: _____

Other: _____

FILTERING: Use Chain of Custody (CC1) to indicate which bottles were filtered

Sampler: _____ (Print) Employer: _____

I certify that sampling procedures were in accordance with applicable EPA state and corporate protocols.

_____ (Date) (Signature)

Shuttle B

ETC ENVIRONMENTAL TESTING and CERTIFICATION

CHAIN OF CUSTODY FORM (CC1)

Seal No. 34569 ETC Job # H6066

Date Sealed 5/7/85 By: Dianna

Company: Vertac Corporation

Attn.: John Hill

Facility/Site:

Phone: ( )

Address: Rifle Range Road
Vicksburg, MS 39180

SAMPLE IDENTIFICATION

Facility: VERTAC VICKSBURG Well #7

Sample Point: W-0107 (Source Code from below; Your Sample Point ID left justify) 850607 (Start Date YY/MM/DD) (Start Time 2400 hr clock) (Elapsed Hours composite)

(Optional Sample Point Descriptions)

Source Codes:
Well ..(W) Outfall .....(O) Bottom Sediment ....(B) Surface Impoundment....(I) Leachate Collection Sys.....(C) Other .....(X)
Soil ...(S) River/Stream ..(R) Generation Point ....(G) Treatment Facility .....(T) Lake/Ocean .....(L) Specify

SHUTTLE CONTENTS

BOTTLE				ANALYSIS	SAMPLER		LAB
No	Type	Size	Preserv.		Fill (Y/N)	Observations	Observations
1	P/H	1L	Baked	Pest/Herb		—	
2	A	1L	Baked	HPLC		—	
1	M	1L	Nitric	Metals		—	

CHAIN OF CUSTODY CHRONICLE

1. Shuttle Opened By: (print) Date: Time:
Signature: Seal #: Intact:

2. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

3. I have received these materials in good condition from the above person.
Name: Signature:
Date: Time: Remarks:

4. Shuttle Sealed By: (print) John G. Hill Date: 6/10/85 Time: 9:30 am
Signature: John G. Hill Seal #: 0034572 Intact:

ETC USE ONLY Opened By: Tracey Quast Date: 6/11/85 Time: 1100
Seal #: 34570 Condition: OK

ETC ENVIRONMENTAL TESTING and CERTIFICATION

FIELD PARAMETER FORM (CC2)

ETC JOB # H60066

Sample Point [ ] Source Code [ ] Sample Point ID

FIELD PROCEDURES

PURGE DATE (YY MM DD) | START PURGE (2400 hr Clock) | ELAPSED HRS | WATER VOL IN CASING (Gallons) | VOLUME PURGED (Gallons)

SAMPLING METHOD: _____

Sampler Type [ ] A-Submersible Pump, B-ISCO, C-Bladder Pump, D-Dipper/Bottle, E-Bailer, F-Scoop/Shovel, X-Other _____ (SPECIFY OTHER)

Sampler Material [ ] A-Teflon, B-Metal, C-PVC, D-Plastic, X-Other _____ (SPECIFY OTHER)

Tubing Material [ ] A-Teflon, B-Tygon, C-Polyethylene, D-Silicon, X-Other _____ (SPECIFY OTHER)

Sample Composited [Y/N] _____ Procedure/Proportions

FIELD MEASUREMENTS

Well Elevation (ft/msl) [ ]

Depth to Ground water (ft) [ ]

Groundwater Elevation (ft msl) [ ]

Well Depth (ft) [ ]

Sample Depth (non-well) (ft) [ ]

	ph	(STD)		spec. cond.	um/cm at 25°C	(other parameter)	value	units
1st			1st					
2nd			2nd					
3rd			3rd					
4th			4th					

Sample Temp [ ] (°C)

Turbidity [ ] NTU

FIELD COMMENTS

Sample Appearance: _____

Weather Conditions: _____

Other: _____

FILTERING: Use Chain of Custody (CC1) to indicate which bottles were filtered

Sampler: _____ (Print) Employer: _____

I certify that sampling procedures were in accordance with applicable EPA state and corporate protocols.

_____ (Date) (Signature)

GC-MS ANALYSIS CUSTODY LOG

DATE 6/13 SHIFT ___
FRACTION VOA / DAI
INSTRUMENT A
TUNE FILE APE101
SEQUENCE FILE ___
METHOD FILE DAIA
IDFILE APSDI
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s Q13372

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
BFB	50	10275	1ul
APS/DAI	1500	10215	4ul

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
BFB	>A9009	1ul			A00122		
QC3372V	>A9010	4ul					
QC3372V	>A9011						
QC3372VS	>A9012					4ul APS DAI	
QC3372VS	>A9013					4ul APS DAI	
H60066V	>A9014						
H60066VR	>A9015						
H60067V	>A9016						
H60069V	>A9017	↓					
(R) H60066VR	>A9018	↓					

TSR 8-84

GC-MS ANALYSIS CUSTODY LOG

DATE 6-13-85 SHIFT ___
FRACTION VOA
INSTRUMENT A
TUNE FILE APE701
SEQUENCE FILE JAN/
METHOD FILE VOA
IDFILE AADRPT
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s QV3374

(PLEASE INITIAL)

CURRENT CSUS STATUS		STANDARDS UPDATED	
ACQ		DATE	6/13/85
WIP		BY	DS

STANDARD	CONC PPM	LOT NO.	LOT VOL
RBFB	50	10275	1
Int. std	40	10332	5
Surrogate	75	10,567	10
ABC	18	10,730	5,10,30
AP8	50	10,718	5,10,30

(U3, U2, U1) (RBDPI)

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
BFB (DNQ)	>A9019				A00122	OK (0909AM/6-13-85)	
QC3374V	>A9020					Methylene Cl2 (blank)	
QC3374V	>A9021					Methylene Cl2	
QC3374V	>A9022					NO peak, ok - blank ok	
QC3374V	>A9023		1			OK	
QC3374VS	>A9024		2		Don't use	5uL ABC + 5uL AP8 (TBP)	
QC3374VS	>A9025		3			10uL ABC (+10uL -"-)	CBURD
QC3374VS	>A9026		4			30uL ABC + 30uL -"-	CBCAL
QC3374VS	>A9027		5		Typed in as 5uL spike	5uL ABC + 5uL -"-	
p-BFB	>A9028				OK	(2311 HRS)	
H6069VS	>A9029	5uL	6		OK	5uL ABC ; 5uL AP8	
H6069V	>A9030		7		OK		
H6066V	>A9031		8		OK		
H6066VR	>A9032		9		OK		
H6067V	>A9033		10		OK		

TSR 8-84

EXTRACTION LOG

QC BATCH 3211

ANALYSIS A-TYPES APB/B APB/A

SEP. FUNNEL ✓ CONTINUOUS

DISC. START
NEUTRAL
BASE
ACID
DERIVITIZED BN

MATRIX H_2O

SAMPLE NUMBER	LOG LINK	DATE PRES.	SAMPLE VOLUME (ml)	EXTRACT VOL (ml) BN	ACID	DER BN	
H5601	9454		900 ml	0.5	1.0	0.5	*
H5602	↓		1000 ml	0.5	1.0	0.5	*
H7219	9518		990 ml	0.5	1.0	0.5	*
H7220			990 ml	0.5	1.0	0.5	*
H7221			1000 ml	0.5	1.0	0.5	*
H7222	↓		990 ml	0.5	1.0	0.5	*
G8452	9516		925 ml	0.5	1.0	0.5	*
H7523	9682		925 ml	0.5	1.0	0.5	*
H7524	↓		995 ml	0.5	1.0	0.5	*
H7525	9740		995 ml	0.5	1.0	0.5	*
H7526	↓		1000 ml	0.5	1.0	0.5	*
H6066	9887		965 ml	0.5	1.0	0.5	*
H6067	↓		950 ml	0.5	1.0	0.5	*
H6069	9878		970 ml	0.5	1.0	0.5	*
H6068	9913		970 ml	0.5	1.0	0.5	*
	H7220 R		1000 ml	0.5	1.0	0.5	
	H7222 S		1000 ml	0.5	1.0	0.5	
	QC 3211		1000 ml	0.5	1.0	0.5	
	QC3211 S		1000 ml	0.5	1.0	0.5	

COMMENTS:
Derivatized Stds: (Hexachlorophene) LOT #
1.0 ml 50 µg/ml 10,33
1.0 ml 150 µg/ml 10,33
1.0 ml 300 µg/ml 10,33
aliquoted.
* Final volumes of Hexachlorophenes - all 0.5 ml
JA 6/23

SET UP: - Minagendin/P.
EXTRACTION: Joe Angelm
BN DER.: Joe Rubert
BN CONC.: Joe Rubert
ACID CONC.: John Rabate
SUPERVISOR:

* Please code FV for BN and DER BN spikes [illegible]

FRACTIONS	SPIKES Lot No.	Conc.	Amount (ml)	SURROGATES Lot No.	Conc.	Amount
APB Acid Spike	9892	100 ug/ml	1.0 ml			
APB B/N Spike I	9888	100 ug/ml	1.0 ml			
APB B/N Spike II	9890	300 ug/ml	1.0 ml			
B/N Spike	10,499	100 ug/ml	1.0 ml			
Acid Spike	10,523	100 ug/ml	1.0 ml			
Semi-VOA			1.0 ml (MB)	10,686	50/100 ug/ml	1.0 ml

GC-MS ANALYSIS CUSTODY LOG

DATE 850630/861 SHIFT ___
FRACTION APS BNA
INSTRUMENT E
TUNE FILE MTFC01
SEQUENCE FILE TMF
METHOD FILE ~~EBNF~~ BNPE
IDFILE EBNA, EAPSE
ANALYST(S) J/M[illegible]

SUPERVISOR ___
BATCH #'s GAB3211

(PLEASE INITIAL)

CURRENT CSUS STATUS		STANDARDS UPDATED	
ACQ	[illegible]	DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL
APS BN I	300	9889	1ml
APS BN I	100	9894	
APS BN I	30	9895	
APS BN II	500	9891	
"	300	9896	
"	100	9897	
APS ACID	300/500	9893	
"	100/300	9898	
"	30/100	9899	
BN Calib III	200	10904	
" II	100	10903	
" I	60	10802	
ACID Calib III	300	10956	
" II	100	10927	
" I	60	10959	
DFTPP		10610	2ml
I STD		10701	100ml/50ml acid / 60 gesa 50ml

CBAPSE CBEBNA

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
DFTPP	>E9909	✓					
ACID Calib III	>E9910	✓	1				
II	>E9911	✓	2			EBNA	
I	>E9912	✓	3				
APS ACID Calib III	>E9913	✓	4				
II	>E9914	✓	5			EAPSA	
I	>E9915	✓	6				
BN Calib III	>E9916	✓	7				
II	>E9917	✓	8			EBNA	
I	>E9918	✓	9				
APS BN I High	>E9919	✓	10				
" " Med	>E9920	✓	11			EAPSE	
" " Low	>E9921	✓	12				
APS BN II High	>E9922	✓	13				
Med	>E9923	✓	14			EAPSE	
Low	>E9924	✓	15				
DFTPP	>E9925	✓	16				
~~ACID Calib II~~ QC3211A	>E9926	✓	17		✓		
~~APS ACID Calib I~~ QC3211A	>E9927	✓	18		✓		
H 7222AS	>E9928	✓	19		✓		
H5601A	>E9929	✓	20		✓		
H5602A	>E9930	✓	21		✓		
H7219A	>E9931	✓	22		✓		
H7220A	>E9932	✓	23		✓		
H7220AR	>E9933	✓	24		✓		

GC-MS ANALYSIS CUSTODY LOG

DATE 850701 SHIFT ____
FRACTION APS
INSTRUMENT ____
TUNE FILE ____
SEQUENCE FILE ____
METHOD FILE ____
IDFILE ____
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s QAB3211

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACO		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL

NAME	DATA FILE	UL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
H7221A	7E9934	✓	25		✓		
H7222A	7E9935	✓	26		✓		
G8452A	7E9936	✓	27		✓		
H7523A	7E9937	✓	28		✓		
H7524A	7E9938	✓	29		✓		
DFTPP	7E9939	✓	30				
ACID Calib II	7E9940		31				
~~BS~~ ACID Calib II	7E9941		32				
H7525A	7E9942	✓	33		✓		
H7526A	7E9943	✓	34		✓		
H6066A	7E9944	✓	35		✓		
H6067A	7E9945	✓	36		✓		
H6068A	7E9946	✓	37		✓		
H6069A	7E9947	✓	38		✓		
DFTPP	7E9948		39				
BN Calib II	7E9949		40				
QC3211B	7E9950		41				
QC3211BS	7E9951		42				
H7222BS	7E9952		43				
H5601B	7E9953		44				
H5602B	7E9954		45				
H7219B	7E9955		46				
H7220B	7E9956		47				
H7220BR	7E9957		48				
H7221B	7E9958		49				

GC-MS ANALYSIS CUSTODY LOG

DATE 85C7C1 SHIFT ____
FRACTION AP8
INSTRUMENT ____
TUNE FILE ____
SEQUENCE FILE ____
METHOD FILE ____
IDFILE ____
ANALYST(S) [illegible]
SUPERVISOR [illegible]
BATCH #'s QAB3211

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	
WIP		BY	

STANDARD	CONC PPM	LOT NO.	LOT VOL

NAME	DATA FILE	UL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
H7222B	7E9959		50				
K8452B	7E9960		51				
H7523B	7E9961		52				
DFTPP	7E9962		53				
BN Calib II	7E9963		54				
H7524B	7E9964		55				
H7526B	7E9965		56				
H6066B	7E9966		57				
H6067B	7E9967		58				
H6068B	7E9968		59				
H6069B	7E9969		60				
H7525B	7E9970		61				
H5601A	7E9971		62	1:10			
~~H7524A~~ H7524A	7E9972		63	1:5			
H7523B	7E9973		64	1:5			
H7524B	7E9974		65	1:20			
H5601B	7E9975		66	1:50			

GC-MS ANALYSIS CUSTODY LG

DATE 850801 SHIFT ___
FRACTION AP8DER
INSTRUMENT I
TUNE FILE MTI001
SEQUENCE FILE TMI
METHOD FILE BNPI2
IDFILE IAP8DE
ANALYST(S) Y Manuel

SUPERVISOR ___
BATCH #'s Q03211

(PLEASE INITIAL)

CURRENT CSWS STATUS		STANDARDS UPDATED	
ACQ		DATE	850801
WIP		BY	Y Manuel

STANDARD	CONC PPM	LOT NO.	LOT VOL
ISTD	400	10701	5cc
DFTPP	25	10610	2cc

NAME	DATA FILE	uL INJ	ALS #	DIL	TAPE #	SPECIALS (WRITE A-TYPE)	PLUS Y/N
DFTPP	>I8136						
Der Std III	>I8137		1				
" " II	>I8138		2				
" " I	>I8139		3				
QC3211D	>I8140		4				
QC3211DS	>I8141		5				
H7222DS	>I8142		6				
H5601D	>I8143		7				
H5602D	>I8144		8				
H7219D	>I8145		9				
H7220D	>I8146		10				
H7220DR	>I8147		11				
H7221D	>I8148		12				
H7222D	>I8149		13				
G8453D	>I8150		14				
H7523D	>I8151		15				
H7524D	>I8152		16				
H7525D	>I8153		17				
DFTPP	>I8154		18				
Der Std II	>I8155		19				
H7526D	>I8156		20				
H6066D	>I8157		21				
H6067D	>I8158		22				
H6068D	>I8159		23				
H6069D	>I8160		24				

TSR 8-84

EXTRACTION LOG

QC Batch # 3212

Sample Date	Log Date	Sample Vol (ml)	Extract Vol (ml) EC	Extract Vol (ml) FPD	Comments FINAL Vol (ml)
H5601	9454	500	aliquoted	aliquoted	5.0 ml
H5602	↓				5.0 ml
H7219	9518				5.0 ml
H7220					5.0 ml
H7221					5.0 ml
H7222	↓				5.0 ml
G8452	9516				5.0 ml
H7523	9682				5.0 ml
H7524	↓				5.0 ml
H7525	9740				5.0 ml
H7526	↓				5.0 ml
H6066	9887				5.0 ml
H6067	↓				5.0 ml
H6069	9878				5.0 ml
H6068	9913	✓			5.0 ml
~~MS1 H9220~~		~~465 ml~~	—	—	—
H7221 MS2		500			5.0 ml
QC 3212 S2					5.0 ml
QC 3212 S3					5.0 ml
H7220 MS3					5.0 ml
QC 3212					5.0 ml
QC 3212 S1					5.0 ml
H7220 MS1		465			5.0 ml
H6066 R		✓	↓	↓	5.0 ml

Analysis: APE / PEST (EC)
APE / PEST (FPD)

Matrix: H_2O

Turnaround: NORM

Date: 6/24/85

Extraction Method:
- sep funnel ✓
- continuous
- soxhlet
- other

COMMENTS FOR EXTRACT.:

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
APE/PEST S1	0.1 ml	100 ng/ml	10,636
~~APE~~		25 ng/ml	
APE/PEST S2	0.1 ml	2.5 ng/ml	10,806
		250 ng/ml	
APE/PEST S3	0.2 ml	12.5 ng/ml	10,640
		62.5 ng/ml	
		125 ng/ml	

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: [illegible] 6/24/85 UPD/Supervisor: M Berkeley 6/25/85

Conc.: [illegible] 6/24/85

QC Batch # 3218

Analysis: APB / HERB (EC)

Matrix: H_2O

Turnaround: NORM

Date: 6/24/85

Extraction Method:

- sep funnel ✓
- continuous
- soxhlet
- other

Sample Number	Log Date	Sample Vol (ml)	Extract Vol (ml) HERB		Comments
H5602	9454	500	2.5		
H6066	9887	500	2.5		
H6067	↓	500	2.5		
H6069	9878	440	2.5		
H6068	9913	475	2.5		
H9998	9958	500	2.5		
H9999	↓	500	2.5		
QC 3218		500	2.5		
QC 3218 S		500	2.5		
H9998 S		500	2.5		
H9999 R		500	2.5		

COMMENTS FOR EXTRACT.:

COMMENTS FOR GC/MS:
① ALIQUOT TAKEN

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
BLEND 2,4-D	0.5	100 ug/ml	10,595
BLEND 2,4,5-TP		10 ug/ml	
2,4,5-T	0.5	10 ug/ml	10,819

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: Don B. 6/24/85 UPD/Supervisor: M Bagley 6/26/85

Conc.: Bill DiKeefe 6/25/85 Spike verified: Judy Newman 6/25/85

STD. PREP:

JUN 26, 1985 14:32
SEQUENCE: Q3212 ON CRN 15
CHANNEL 8

SUBSEQUENCE 1

METHOD
APSFPD

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	XDIL-F	STD-AMT	SMP-AMT
1	FPD STDB	1,	PW0790:CE,	RW0790:CE,	100.00,	1.0000,	1.0000
2	QC3212	2,	PW0791:CE,	RW0791:CE,	100.00,	1.0000,	1.0000
3	QC3212S	3,	PW0792:CE,	RW0792:CE,	100.00,	1.0000,	1.0000
4	H7220S1	4,	PW0793:CE,	RW0793:CE,	100.00,	1.0000,	1.0000
5	H6066R	5,	PW0794:CE,	RW0794:CE,	100.00,	1.0000,	1.0000
6	H5601	6,	H5601A:CE,	H5601B:CE,	100.00,	1.0000,	1.0000
7	H5602	7,	H5602A:CE,	H5602B:CE,	100.00,	1.0000,	1.0000
8	H7219	8,	H7219A:CE,	H7219B:CE,	100.00,	1.0000,	1.0000
9	H7220	9,	H7220A:CE,	H7220B:CE,	100.00,	1.0000,	1.0000
10	H7221	10,	H7221A:CE,	H7221B:CE,	100.00,	1.0000,	1.0000
11	H7222	11,	H7222A:CE,	H7222B:CE,	100.00,	1.0000,	1.0000
12	FPD STD A	12,	PW0795:CE,	RW0795:CE,	100.00,	1.0000,	1.0000
13	G8452	13,	G8452A:CE,	G8452B:CE,	100.00,	1.0000,	1.0000
14	H7523	14,	H7523A:CE,	H7523B:CE,	100.00,	1.0000,	1.0000
15	H7524	15,	H7524A:CE,	H7524B:CE,	100.00,	1.0000,	1.0000
16	H7525	16,	H7525A:CE,	H7525B:CE,	100.00,	1.0000,	1.0000
17	H7526	17,	H7526A:CE,	H7526B:CE,	100.00,	1.0000,	1.0000
18	H6066	18,	H6066A:CE,	H6066B:CE,	100.00,	1.0000,	1.0000
19	H6067	19,	H6067A:CE,	H6067B:CE,	100.00,	1.0000,	1.0000
20	H6068	20,	H6068A:CE,	H6068B:CE,	100.00,	1.0000,	1.0000
21	H6069	21,	H6069A:CE,	H6069B:CE,	100.00,	1.0000,	1.0000
22	FPD STD C	22,	PW0796:CE,	RW0796:CE,	100.00,	1.0000,	1.0000
23	/E						

SUBSEQUENCE 2

METHOD
METH

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	PEST STDB ,	23,	PW0797:CF,	RW0797:CF,	100.00,	1.0000,	1.0000
2	QC3212 ,	24,	PW0798:CF,	RW0798:CF,	100.00,	1.0000,	1.0000
3	QC3212S2 ,	25,	PW0799:CF,	RW0799:CF,	100.00,	1.0000,	1.0000
4	H7721S2 ,	26,	PW0800:CF,	RW0800:CF,	100.00,	1.0000,	1.0000
5	H6066R ,	27,	PW0801:CF,	RW0801:CF,	100.00,	1.0000,	1.0000
6	H5601 ,	28,	H5601C:CF,	H5601D:CF,	100.00,	1.0000,	1.0000
7	H5602 ,	29,	H5602C:CF,	H5602D:CF,	100.00,	1.0000,	1.0000
8	H7219 ,	30,	H7219C:CF,	H7219D:CF,	100.00,	1.0000,	1.0000
9	H7220 ,	31,	H7220C:CF,	H7220D:CF,	100.00,	1.0000,	1.0000
10	H7221 ,	32,	H7221C:CF,	H7221D:CF,	100.00,	1.0000,	1.0000
11	H7222 ,	33,	H7222C:CF,	H7222D:CF,	100.00,	1.0000,	1.0000
12	PEST STDA ,	34,	PW0802:CF,	RW0802:CF,	100.00,	1.0000,	1.0000
13	G8452 ,	35,	G8452C:CF,	G8452D:CF,	100.00,	1.0000,	1.0000
14	H7523 ,	36,	H7523C:CF,	H7523D:CF,	100.00,	1.0000,	1.0000
15	H7524 ,	37,	H7524C:CF,	H7524D:CF,	100.00,	1.0000,	1.0000
16	H7525 ,	38,	H7525C:CF,	H7525D:CF,	100.00,	1.0000,	1.0000
17	H7526 ,	39,	H7526C:CF,	H7526D:CF,	100.00,	1.0000,	1.0000
18	H6066 ,	40,	H6066C:CF,	H6066D:CF,	100.00,	1.0000,	1.0000
19	H6067 ,	41,	H6067C:CF,	H6067D:CF,	100.00,	1.0000,	1.0000
20	H6068 ,	42,	H6068C:CF,	H6068D:CF,	100.00,	1.0000,	1.0000
21	H6069 ,	43,	H6069C:CF,	H6069D:CF,	100.00,	1.0000,	1.0000
22	PEST STD C ,	44,	PW0803:CF,	RW0803:CF,	100.00,	1.0000,	1.0000
23	TCK STD A ,	45,	PW0804:CF,	RW0804:CF,	100.00,	1.0000,	1.0000
24	HEXANE ,	46,	PW0805:CF,	RW0805:CF,	100.00,	1.0000,	1.0000
25	QC3212S3 ,	47,	PW0806:CF,	RW0806:CF,	100.00,	1.0000,	1.0000
26	HEXANE ,	48,	PW0807:CF,	RW0807:CF,	100.00,	1.0000,	1.0000
27	H7223S3 ,	49,	PW0808:CF,	RW0808:CF,	100.00,	1.0000,	1.0000
28	HEXANE ,	50,	PW0809:CF,	RW0809:CF,	100.00,	1.0000,	1.0000
29	TCK STD B ,	51,	PW0810:CF,	RW0810:CF,	100.00,	1.0000,	1.0000
30	HEXANE ,	52,	PW0811:CF,	RW0811:CF,	100.00,	1.0000,	1.0000
31	TCK STD C ,	53,	PW0812:CF,	RW0812:CF,	100.00,	1.0000,	1.0000
32	/E						

Knuhl 7/1/85
Knuhl 7/2/85

JUL 1, 1985 11:20
SEQUENCE: S3205 ON CRN 15
CHANNEL 8

SUBSEQUENCE 1

METHOD
HERB8

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

KB

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME		BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	QC3223	,	1,	PK1513:CM,	RK1513:CM,	500.00,	1.0000,	1.0000
2	HERBB	,	2,	PK1514:CM,	RK1514:CM,	100000,	1.0000,	1.0000
3	QC3223S	,	3,	PK1515:CM,	RK1515:CM,	500.00,	1.0000,	1.0000
4	H6820S	,	4,	PK1516:CM,	RK1516:CM,	500.00,	1.0000,	1.0000
5	H6820	,	5,	H6820M:CM,	H6820N:CM,	500.00,	1.0000,	1.0000
6	H6811	,	6,	H6811M:CM,	H6811N:CM,	500.00,	1.0000,	1.0000
7	H6811R	,	7,	PK1517:CM,	RK1517:CM,	500.00,	1.0000,	1.0000
8	H6810	,	8,	H6810M:CM,	H6810N:CM,	500.00,	1.0000,	1.0000
9	H6826	,	9,	H6826M:CM,	H6826N:CM,	500.00,	1.0000,	1.0000
10	H6827	,	10,	H6827M:CM,	H6827N:CM,	500.00,	1.0000,	1.0000
11	HERB1A'	,	11,	PK1518:CM,	RK1518:CM,	100000,	1.0000,	1.0000
12	H9620	,	12,	H9620M:CM,	H9620N:CM,	500.00,	1.0000,	1.0000
13	H9621	,	13,	H9621M:CM,	H9621N:CM,	500.00,	1.0000,	1.0000
14	H9622	,	14,	H9622M:CM,	H9622N:CM,	500.00,	1.0000,	1.0000
15	H9623	,	15,	H9623M:CM,	H9623N:CM,	500.00,	1.0000,	1.0000
16	HERBA'	,	16,	PK1519:CM,	RK1519:CM,	100000,	1.0000,	1.0000
17	H8867	,	17,	H8867M:CM,	H8867N:CM,	500.00,	1.0000,	1.0000
18	H5140	,	18,	H5140M:CM,	H5140N:CM,	595.00,	1.0000,	1.0000
19	H5142	,	19,	H5142M:CM,	H5142N:CM,	526.00,	1.0000,	1.0000
20	H5144	,	20,	H5144M:CM,	H5144N:CM,	595.00,	1.0000,	1.0000
21	H5145	,	21,	H5145M:CM,	H5145N:CM,	556.00,	1.0000,	1.0000
22	H5146	,	22,	H5146M:CM,	H5146N:CM,	543.00,	1.0000,	1.0000
23	H5141	,	23,	H5141M:CM,	H5141N:CM,	500.00,	1.0000,	1.0000
24	HERBC	,	24,	PK1520:CM,	RK1520:CM,	100000,	1.0000,	1.0000
25	HEXANE	,	25,	PK1521:CM,	RK1521:CM,	100000,	1.0000,	1.0000
26	QC3231	,	26,	PK1522:CM,	RK1522:CM,	500.00,	1.0000,	1.0000
27	HERBB	,	27,	PK1523:CM,	RK1523:CM,	100000,	1.0000,	1.0000
28	QC3231S	,	28,	PK1524:CM,	RK1524:CM,	500.00,	1.0000,	1.0000
29	J1093S	,	29,	PK1525:CM,	RK1525:CM,	500.00,	1.0000,	1.0000
30	J1093	,	30,	J1093M:CM,	J1093N:CM,	714.00,	1.0000,	1.0000
31	J1098	,	31,	J1098M:CM,	J1098N:CM,	625.00,	1.0000,	1.0000
32	J1098R	,	32,	PK1526:CM,	RK1526:CM,	625.00,	1.0000,	1.0000
33	H4205	,	33,	H4205M:CM,	H4205N:CM,	500.00,	1.0000,	1.0000
34	J1094	,	34,	J1094M:CM,	J1094N:CM,	532.00,	1.0000,	1.0000
35	J1095	,	35,	J1095M:CM,	J1095N:CM,	833.00,	1.0000,	1.0000
36	J1096	,	36,	J1096M:CM,	J1096N:CM,	556.00,	1.0000,	1.0000
37	J1097	,	37,	J1097M:CM,	J1097N:CM,	694.00,	1.0000,	1.0000
38	HERBA	,	38,	PK1527:CM,	RK1527:CM,	100000,	1.0000,	1.0000

95

39	HEXANE	,	39,	PK1528:CM,	RK1528:CM,	100000,	1.0000,	1.0000
40	QC3218	,	40,	PK1529:CM,	RK1529:CM,	500.00,	1.0000,	1.0000
41	HERBB	,	41,	PK1530:CM,	RK1530:CM,	100000,	1.0000,	1.0000
42	245TB	,	42,	PK1531:CM,	RK1531:CM,	100000,	1.0000,	1.0000
43	QC3218S	,	43,	PK1532:CM,	RK1532:CM,	500.00,	1.0000,	1.0000
44	H9998S	,	44,	PK1533:CM,	RK1533:CM,	500.00,	1.0000,	1.0000
45	H9998	,	45,	H9998M:CM,	H9998N:CM,	500.00,	1.0000,	1.0000
46	H9999	,	46,	H9999M:CM,	H9999N:CM,	500.00,	1.0000,	1.0000
47	H9999R	,	47,	PK1534:CM,	RK1534:CM,	500.00,	1.0000,	1.0000
48	H5602	,	48,	H5602M:CM,	H5602N:CM,	500.00,	1.0000,	1.0000
49	245TA	,	49,	PK1535:CM,	RK1535:CM,	100000,	1.0000,	1.0000
50	H6066	,	50,	H6066M:CM,	H6066N:CM,	500.00,	1.0000,	1.0000
51	H6067	,	51,	H6067M:CM,	H6067N:CM,	500.00,	1.0000,	1.0000
52	H6069	,	52,	H6069M:CM,	H6069N:CM,	568.00,	1.0000,	1.0000
53	H6068	,	53,	H6068M:CM,	H6068N:CM,	526.00,	1.0000,	1.0000
54	HERBC	,	54,	PK1536:CM,	RK1536:CM,	100000,	1.0000,	1.0000
55	245TC	,	55,	PK1537:CM,	RK1537:CM,	100000,	1.0000,	1.0000
56	HEXANE	,	56,	PK1538:CM,	RK1538:CM,	100000,	1.0000,	1.0000
57	/E							

SUBSEQUENCE 2

METHOD
DWPST8

KWall 7/1/85
KWall 7/3/85

DIALG-PRG PARAM-FILE
/N

#WSHS	#PMPS	STOP
5,	5,	1

ISO	POST-BTL#	POST-#WSHS
NO ,	0,	1

SAMPLES

	SAMPLE-NAME		BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	QC3224	,	57,	PK1539:CM,	RK1539:CM,	1000.0,	1.0000,	1.0000
2	DWPSTB	,	58,	PK1540:CM,	RK1540:CM,	100000,	1.0000,	1.0000
3	QC3224S	,	59,	PK1541:CM,	RK1541:CM,	1000.0,	1.0000,	1.0000
4	H6820S	,	60,	PK1542:CM,	RK1542:CM,	1000.0,	1.0000,	1.0000
5	H6820	,	61,	H68200:CM,	H6820P:CM,	1400.0,	1.0000,	1.0000
6	H6811	,	62,	H68110:CM,	H6811P:CM,	1149.0,	1.0000,	1.0000
7	H6811R	,	63,	PK1543:CM,	RK1543:CM,	1000.0,	1.0000,	1.0000
8	H6810	,	64,	H68100:CM,	H6810P:CM,	1100.0,	1.0000,	1.0000
9	H6826	,	65,	H68260:CM,	H6826P:CM,	1190.0,	1.0000,	1.0000
10	H6827	,	66,	H68270:CM,	H6827P:CM,	1250.0,	1.0000,	1.0000
11	DWPSTIA	,	67,	PK1544:CM,	RK1544:CM,	100000,	1.0000,	1.0000
12	H9620	,	68,	H96200:CM,	H9620P:CM,	1000.0,	1.0000,	1.0000
13	H9621	,	69,	H96210:CM,	H9621P:CM,	1000.0,	1.0000,	1.0000
14	H9622	,	70,	H96220:CM,	H9622P:CM,	1000.0,	1.0000,	1.0000
15	H9623	,	71,	H96230:CM,	H9623P:CM,	1000.0,	1.0000,	1.0000
16	DWPSTA	,	72,	PK1545:CM,	RK1545:CM,	100000,	1.0000,	1.0000
17	H8867	,	73,	H88670:CM,	H8867P:CM,	1000.0,	1.0000,	1.0000
18	H5140	,	74,	H51400:CM,	H5140P:CM,	1000.0,	1.0000,	1.0000
19	H5142	,	75,	H51420:CM,	H5142P:CM,	1000.0,	1.0000,	1.0000
20	H5144	,	76,	H51440:CM,	H5144P:CM,	1000.0,	1.0000,	1.0000
21	H5145	,	77,	H51450:CM,	H5145P:CM,	1000.0,	1.0000,	1.0000
22	H5146	,	78,	H51460:CM,	H5146P:CM,	1000.0,	1.0000,	1.0000
23	H5141	,	79,	H51410:CM,	H5141P:CM,	1000.0,	1.0000,	1.0000
24	DWPSTC	,	80,	PK1546:CM,	RK1546:CM,	100000,	1.0000,	1.0000

```
25  HEXANE      ,  81, PK1547:CM, RK1547:CM, 100000,  1.0000,  1.0000
26  QC3232      ,  82, PK1548:CM, RK1548:CM, 1000.0,  1.0000,  1.0000
27  RCPSTB      ,  83, PK1549:CM, RK1549:CM, 100000,  1.0000,  1.0000
28  QC3232S     ,  84, PK1550:CM, RK1550:CM, 1000.0,  1.0000,  1.0000
29  J1095S      ,  85, PK1551:CM, RK1551:CM, 1000.0,  1.0000,  1.0000
30  H1095       ,  86, J10950:CM, H1095P:CM, 1000.0,  1.0000,  1.0000
31  J1097       ,  87, J10970:CM, J1097P:CM, 1000.0,  1.0000,  1.0000
32  J1097R      ,  88, PK1552:CM, RK1552:CM, 1000.0,  1.0000,  1.0000
33  H4205       ,  89, H42050:CM, H4205P:CM, 1000.0,  1.0000,  1.0000
34  RCPSTA      ,  90, PK1553:CM, RK1553:CM, 100000,  1.0000,  1.0000
35  J1093       ,  91, J10930:CM, J1093P:CM, 1000.0,  1.0000,  1.0000
36  J1094       ,  92, J10940:CM, J1094P:CM, 1000.0,  1.0000,  1.0000
37  J1096       ,  93, J10960:CM, J1096P:CM, 1000.0,  1.0000,  1.0000
38  J1098       ,  94, J10980:CM, J1098P:CM, 1000.0,  1.0000,  1.0000
39  RCPSTC      ,  95, PK1554:CM, RK1554:CM, 100000,  1.0000,  1.0000
40  /E
```

KB

EXTRACTION LOG

QC Batch # 3259

Analysis: APB / EXT LC

Matrix: H_2O

Turnaround: NORM

Date: 7/2/85

Extraction Method:
- Sep funnel ✓
- continuous
- soxhlet
- other

Sample Id	Log Date	Sample Vol (ml)	Extract Vol (ml)		Comments
H7526	9740	1000	1.0		
H8331	9856	1000	1.0		
H8332	↓	1000	1.0		
H8333	↓	1000	1.0		
H8334	↓	1000	1.0		
H8335	↓	1000	1.0		
H8337	↓	1000	1.0		
H8336	9864	750	1.0		
H6066	9887	1000	1.0		
H6067	↓	950	1.0		
H6069	9878	960	1.0		
H6068	9913	960	1.0		
H9998	9958	970	1.0		
H9999	↓	970	1.0		
J0545	10096	1000	1.0		
QC 3259		1000	1.0		
QC 3259 S		1000	1.0		
# 6066 S		1000	1.0		
# 6069 R		1000	1.0		

COMMENTS FOR EXTRACT.:
★ - some of sample was lost during shake ★ (H8332).

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
APB EXT LC I	0.5 ml	1000 ug/ml	10,897
APB EXT LC II	0.5 ml	1000 ug/ml	10,898
APB EXT LC III	0.5 ml	1000 ug/ml	10,899
1-naphthyl Thiourea	0.5 ml	1000 ug/ml	10,900

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: Anna Grandlin 7/2/85

Conc.: Joseph Cagliani 7-2-85

UPD/Supervisor: M Barkley 7/3/85

SPIKE VERIFIED [illegible] 7/2/85

EXTRACTION LOG

QC Batch # 3278

Analysis: AP8/DAILC 210
AP8/DAILC 254
* SPECLC

Matrix: H_2O

Turnaround: NORM

Date: 7/9/85

Extraction Method:
sep funnel
continuous
soxhlet
other Aliquoting

Sample Number	Date	Sample Wt.	Extract Vol (ml) Aliquot		Comments
H8331	9856		2ml		
H8332			2ml		
H8333			2ml		
H8334			2ml		
H8335			2ml		
H8337	↓		2ml		
H8336	9864		2ml		
H6066	9887		2ml		
H6067	↓		2ml		
H6069	9878		2ml		
H9998	9958		2ml		
H9999	↓		2ml		
J0545	10096		2ml		
H6068	9913		2ml		
* J1534	10,150		2ml		
* J1536	↓		2ml		
* J1538	↓		2ml		
* J1542	↓		2ml		
MG J1538 R	10,150		2 ml		
QC 3278			2ml		
QC 3278 S			2ml		
J1534 S			2ml		
H8335 R			2ml		

COMMENTS FOR EXTRACT.:

~~* DO NOT USE FOR QC~~

* DO USE FOR QC!!

Aliquot ~2 ml. into vial. Identify vial with "Sharpie" no tape labels

QC - Hycopure H_2O only

MS - QCS - add 1.0 ml. of both AP8/DAI LC std. (1 comp & 8 comp) to 5.0 ml. volumetric. Bring to 5.0 ml. w/ H_2O or sample. Mix, Aliquot into vial. NCB

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
BaP8-HPLC DAI Spike I	1ml	8comp 25ng/ml	10969
BPP8-HPLC DAI Spike II	1ml	8comp 25ng/ml	10973

SURROGATE	Amt. (ml)	Conc.	Lot #

Set-up: [signature] 7.9.85 UPD/Supervisor: [signature] 7/9/85

Conc.: [signature] 7.9.85

EXTRACTION LOG

QC Batch # 3296

Analysis: PP/PCB(GC)
SPECGC

Matrix:
Turnaround:
Date:

Extraction Method:
sep funnel ✓
continuous
soxhlet
other

Sample ID	Log Date	Sample Vol (ml)	Extract Vol (ml) PCB		Comments
H9624	9935	500	1.0		
J1360	10,168	500	1.0		
J1361	↓	500	1.0		
J1362		500	1.0		
J1363		500	1.0		
J1365	↓	490	1.0		
* J0647	10,194	500	1.0		
* J0648	↓	500	1.0		
* J0649	↓	500	1.0		
* J0651	10,195	500	1.0		
* J0652	↓	500	1.0		
* H6066	9887	500	1.0		
* H6067	↓	500	1.0		
* H6069	9870	475	1.0		
J1359	10,234	500	1.0		
J1364	↓	500	1.0		
QC 3296		500	1.0		
QC 3296 S		500	1.0		
J1363 S		450	1.0		
J1365 R		480	1.0		

COMMENTS FOR EXTRACT.:

~~* Note:~~ DO NOT put through clean-up

*SPECGC

* APS/PCB(GC)

COMMENTS FOR GC/MS:

FRACTION	SPIKE Amt (ml)	Conc.	Lot #
Decachlorobiphenyl	.100	10 µg/ml	10579

SURROGATE Amt. (ml)	Conc.	Lot #

Set-up: Joe Burkart 7/9/85
Conc.: Rita San Miguel 7/9/85

UPD/Supervisor: Donna Gandhi 7/10/85
Spike Rita San Miguel

JUL 5, 1985 16:27
SEQUENCE: LCS105 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
EXT250

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

7/5/85

K. Baker 7-13-85

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10901-025,	0,	PH1300:CX,	RH1300:CX,	100.00,	1.0000,	1.0000
2	STD10902-025,	1,	PH1301:CX,	RH1301:CX,	100.00,	1.0000,	1.0000
3	STD10903-025,	2,	PH1302:CX,	RH1302:CX,	100.00,	1.0000,	1.0000
4	STD10904-025,	3,	PH1303:CX,	RH1303:CX,	100.00,	1.0000,	1.0000
5	QC3259 ,	4,	PH1304:CX,	RH1304:CX,	100.00,	1.0000,	1.0000
6	QC3259S ,	5,	PH1305:CX,	RH1305:CX,	100.00,	1.0000,	1.0000
7	H6066 ,	6,	PH1306:CX,	RH1306:CX,	100.00,	1.0000,	1.0000
8	H6066S ,	7,	PH1307:CX,	RH1307:CX,	100.00,	1.0000,	1.0000
9	H6069 ,	8,	PH1308:CX,	RH1308:CX,	100.00,	1.0000,	1.0000
10	H6069R ,	9,	PH1309:CX,	RH1309:CX,	100.00,	1.0000,	1.0000
11	H7526 ,	10,	PH1310:CX,	RH1310:CX,	100.00,	1.0000,	1.0000
12	STD10905-250,	11,	PH1311:CX,	RH1311:CX,	100.00,	1.0000,	1.0000
13	STD10906-250,	12,	PH1312:CX,	RH1312:CX,	100.00,	1.0000,	1.0000
14	STD10907-250,	13,	PH1313:CX,	RH1313:CX,	100.00,	1.0000,	1.0000
15	STD10908-250,	14,	PH1314:CX,	RH1314:CX,	100.00,	1.0000,	1.0000
16	H8331 ,	15,	PH1315:CX,	RH1315:CX,	100.00,	1.0000,	1.0000
17	H8332 ,	16,	PH1316:CX,	RH1316:CX,	100.00,	1.0000,	1.0000
18	H8333 ,	17,	PH1317:CX,	RH1317:CX,	100.00,	1.0000,	1.0000
19	H8334 ,	18,	PH1318:CX,	RH1318:CX,	100.00,	1.0000,	1.0000
20	H8335 ,	19,	PH1319:CX,	RH1319:CX,	100.00,	1.0000,	1.0000
21	STD10909-500,	20,	PH1320:CX,	RH1320:CX,	100.00,	1.0000,	1.0000
22	STD10910-500,	21,	PH1321:CX,	RH1321:CX,	100.00,	1.0000,	1.0000
23	STD10911-500,	22,	PH1322:CX,	RH1322:CX,	100.00,	1.0000,	1.0000
24	STD10912-500,	23,	PH1323:CX,	RH1323:CX,	100.00,	1.0000,	1.0000
25	H8337 ,	24,	PH1324:CX,	RH1324:CX,	100.00,	1.0000,	1.0000
26	H8336 ,	25,	PH1325:CX,	RH1325:CX,	100.00,	1.0000,	1.0000
27	H6067 ,	26,	PH1326:CX,	RH1326:CX,	100.00,	1.0000,	1.0000
28	H6068 ,	27,	PH1327:CX,	RH1327:CX,	100.00,	1.0000,	1.0000
29	H9998 ,	28,	PH1328:CX,	RH1328:CX,	100.00,	1.0000,	1.0000
30	H9999 ,	29,	PH1329:CX,	RH1329:CX,	100.00,	1.0000,	1.0000
31	J0545 ,	30,	PH1330:CX,	RH1330:CX,	100.00,	1.0000,	1.0000
32	ST10897-1000,	31,	PH1331:CX,	RH1331:CX,	100.00,	1.0000,	1.0000
33	ST10898-1000,	32,	PH1332:CX,	RH1332:CX,	100.00,	1.0000,	1.0000
34	STD1099-1000,	33,	PH1333:CX,	RH1333:CX,	100.00,	1.0000,	1.0000
35	ST10900-1000,	34,	PH1334:CX,	RH1334:CX,	100.00,	1.0000,	1.0000
36	/E						

TITLE: Cyanides BOOK NO. CV6 PAGE NO. 32

	SAMPLE #	CONC.
1	H7525	BmDL
2	H7526	BmDL
3	H8334	BmDL
4	H8335	BmDL
5	H8728	0.0598
6	H9502	0.0275*
7	J3051	Not analyzed Rerun
8	J3052	Not analyzed Rerun
9	H4664	ND
10	G5045	ND
11	J1545	1.67 1:10 dil
12	H7271	BmDL
13	H7272	BmDL
14	J1534	BmDL
15	J1536	ND
16	J1538	ND
17	J1542	ND
18	J2722	Rerun*
19	J2721	Rerun*
20	H9651	ND
21	H9667	ND
22	H9668	ND
23	H9669	ND
24	H9685	BmDL
25	H9687	ND
26	J1360	ND
27	J1361	ND
28	J1362	0.026 Rerun*
29	J1363	ND

	SAMPLE #	CONC
30	J1365	BmDL
31	H6066	ND
32	H6067	0.120
33	H6068	BmDL
34	H6069	BmDL
35	H9998	BmDL
36	H9999	ND
37	J1530	ND
38	J1531	ND
39	J1537	BmDL
40	J1540	BmDL
41	G5044	BmDL
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		

UNITS: MG/L Detection limit = 0.025 mg/l

COMMENTS: BmDL

< = less than 0.025 mg/l

ND ≤ 0

* matrix interference

** sample bright yellow

2nd (prepared fresh) Blank Recovery = 0.197/0.2 x 100 = 99%

EPA Std. Rec. = 0.199/0.224 x 100 = 89%

1st Blank Recovery (Low) = 0.145/0.2 x 100 = 73%

SPIKE RECOVERY

SAMPLE #:	H4664	H9685	J1537
REPLICATE 1:	ND	BmDL	BmDL
REPLICATE 2:	ND	BmDL	BmDL
MEAN :	ND	BmDL	BmDL
STD. DEV. :			
SPIKE VALUE:	0.2	0.2	0.2
REPLICATE 1:	0.174	0.197	0.195
REPLICATE 2:			
MEAN :			
STD. DEV. :			
% RECOVERY :	86%	99%	98%

REPLICATE DATA:

SAMPLE # :			
REPLICATE 1:			
REPLICATE 2:			
MEAN :			
STD DEV. :			

ANALYST: Y. Wagner

DATE : 7-12-85

VERIFIED BY: 7-16-85

ETC ENVIRONMENTAL TESTING and CERTIFICATION

LOG LINK 9887

Metals Analysis Custody Log

Samples H60066 ; H60067
~~H60069~~ u 7/1/85

	Chemist	Date
Hg Prep	Douglas G. Lehfeldt	6/25/85
AA/ICAP Prep	Joan Komarek	6/21/85

Lab Supervisor Lidya Wkianov date 6/27/85

JUL 15, 1985 17:33
SEQUENCE: WPCB ON CR- 15
CHANNEL 5

SEQUENCE 1

METHOD
PCBB5

DIALG-PRG PARAM-FILE
/N

#WSHS #SMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	DW STDA ,	1,	PW1250:DY,	RW1250:DY,	100.00,	1.0000,	1.0000
2	AR1260 0.5 ,	2,	PW1251:DY,	RW1251:DY,	100.00,	1.0000,	1.0000
3	QC3296 ,	3,	PW1252:DY,	RW1252:DY,	100.00,	1.0000,	1.0000
4	QC3296S ,	4,	PW1253:DY,	RW1253:DY,	100.00,	1.0000,	1.0000
5	J1363 ,	5,	J1363A:DY,	J1363B:DY,	100.00,	1.0000,	1.0000
6	J1363S ,	6,	PW1254:DY,	RW1254:DY,	100.00,	1.0000,	1.0000
7	J1365 ,	7,	J1365A:DY,	J1365B:DY,	100.00,	1.0000,	1.0000
8	J1365R ,	8,	PW1255:DY,	RW1255:DY,	100.00,	1.0000,	1.0000
9	AR1254 0.5 ,	9,	PW1256:DY,	RW1256:DY,	100.00,	1.0000,	1.0000
10	AR1248 0.5 ,	10,	PW1257:DY,	RW1257:DY,	100.00,	1.0000,	1.0000
11	H9624 ,	11,	H9624A:DY,	H9624B:DY,	100.00,	1.0000,	1.0000
12	J1360 ,	12,	J1360A:DY,	J1360B:DY,	100.00,	1.0000,	1.0000
13	J1361 ,	13,	J1361A:DY,	J1361B:DY,	100.00,	1.0000,	1.0000
14	J1362 ,	14,	J1362A:DY,	J1362B:DY,	100.00,	1.0000,	1.0000
15	AR1242 0.5 ,	15,	PW1258:DY,	RW1257:DY,	100.00,	1.0000,	1.0000
16	AR1232 0.5 ,	16,	PW1259:DY,	RW1259:DY,	100.00,	1.0000,	1.0000
17	J0647 ,	17,	J0647A:DY,	J0647B:DY,	100.00,	1.0000,	1.0000
18	J0648 ,	18,	J0648A:DY,	J0648B:DY,	100.00,	1.0000,	1.0000
19	J0649 ,	19,	J0649A:DY,	J0649B:DY,	100.00,	1.0000,	1.0000
20	J0651 ,	20,	J0651A:DY,	J0651B:DY,	100.00,	1.0000,	1.0000
21	~~AR1260 1.0~~ J065a ,	21,	PW1260:DY,	RW1260:DY,	100.00,	1.0000,	1.0000
22	AR1221 0.5 ,	22,	PW1261:DY,	RW1261:DY,	100.00,	1.0000,	1.0000
23	J6066 ,	23,	J6066A:DY,	J6066B:DY,	100.00,	1.0000,	1.0000
24	J6067 ,	24,	J6067A:DY,	J6067B:DY,	100.00,	1.0000,	1.0000
25	J6069 ,	25,	J6069A:DY,	J6069B:DY,	100.00,	1.0000,	1.0000
26	J1359 ,	26,	J1359A:DY,	J1359B:DY,	100.00,	1.0000,	1.0000
27	J1364 ,	27,	J1364A:DY,	J1364B:DY,	100.00,	1.0000,	1.0000
28	AR1016 0.5 ,	28,	PW1262:DY,	RW1262:DY,	100.00,	1.0000,	1.0000
29	AR1260 5 ,	29,	PW1263:DY,	RW1263:DY,	100.00,	1.0000,	1.0000
30	DW STDA ,	30,	PW1264:DY,	RW1264:DY,	100.00,	1.0000,	1.0000
31	QC3301 ,	31,	PW1265:DY,	RW1265:DY,	100.00,	1.0000,	1.0000
32	QC3301S ,	32,	PW1266:DY,	RW1266:DY,	100.00,	1.0000,	1.0000
33	J0661 ,	33,	J0661A:DY,	J0661B:DY,	100.00,	1.0000,	1.0000
34	J0661S ,	34,	PW1267:DY,	RW1267:DY,	100.00,	1.0000,	1.0000
35	J0660 ,	35,	J0660A:DY,	J0660B:DY,	100.00,	1.0000,	1.0000
36	J0660R ,	36,	PW1268:DY,	RW1268:DY,	100.00,	1.0000,	1.0000
37	J0970 ,	37,	J0970A:DY,	J0970B:DY,	100.00,	1.0000,	1.0000
38	AR1260 0.5 ,	38,	PW1269:DY,	RW1269:DY,	100.00,	1.0000,	1.0000

7/15/85

7/18/85

7/19/85

EXTRACTION LOG

Sample Number	Log Date	Sample Vol (ml)	Aliquot Extract Vol (ml) BN	Aliquot Extract Vol (ml) ACID	Comments
H8332	9856		2.0ml		
H8333			2.0ml		
H8334			2.0ml		
H8335			2.0ml		
H8337			2.0ml		
H9336	9864		2.0ml		
H60669	9887		2.0ml		
H60667			2.0ml		
H60699	9878		2.0ml		
H9998	9958		2.0ml		
H9999			2.0ml		
J05451	10096		2.0ml		
H60668	9913		2.0ml		
* [redacted]	10150		2.0ml	[redacted]	
QC 3278			2.0ml		
QC 3278 S			2.0ml		
J 1534 S			2.0ml		
H 8335 R			2.0ml		

QC Batch # 3278

Analysis: AP8/DAILC 210
AP8/DAILC 254
* REVISED *

Matrix: H_2O

Turnaround: NORM

Date: 7/9/85

Extraction Method:
sep funnel
continuous
soxhlet
other Aliquoting.

COMMENTS FOR EXTRACT.:

* [redacted]

COMMENTS FOR GC/MS:

	FRACTION	SPIKE Amt (ml)	SPIKE Conc.	SPIKE Lot #
I	APP8-HPLC DAIL	1.0ml	25mg/ml	10,969
II	APP8-HPLC DAIL II	1.0ml	25mg/ml	10,973

SURROGATE	Amt. (ml)	Conc.	Lot #
		BN	
		ACID	

Set-up: [signature] 7.9.85 UPD/Supervisor: [signature] 7/9/85
Conc.: [signature] 7.9.85 Spike verified: [signature] 7/9/85

JUL 12, 1985 8:00
SEQUENCE: LCS108 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
EXT280

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

7/16/85

Helen Wagner 7-17-85
Janet D. Schaper 7/22/85

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10903-025,	0,	PH1500:DK,	RH1500:DK,	100.00,	1.0000,	1.0000
2	STD10907-250,	1,	PH1501:DK,	RH1501:DK,	100.00,	1.0000,	1.0000
3	H6067 ,	2,	PH1502:DK,	RH1502:DK,	100.00,	1.0000,	1.0000
4	STD10911-500,	3,	PH1503:DK,	RH1503:DK,	100.00,	1.0000,	1.0000
5	STD10899-100,	4,	PH1504:DK,	RH1504:DK,	100.00,	1.0000,	1.0000
6	/E						

SUBSEQUENCE 2

METHOD
DAI210

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	%DIL-F	STD-AMT	SMP-AMT
1	STD10972-0.5,	5,	PH1505:DK,	RH1505:DK,	100.00,	1.0000,	1.0000
2	STD10976-0.5,	6,	PH1506:DK,	RH1506:DK,	100.00,	1.0000,	1.0000
3	QC3278 ,	7,	PH1507:DK,	RH1507:DK,	100.00,	1.0000,	1.0000
4	QC3278S ,	8,	PH1508:DK,	RH1508:DK,	100.00,	1.0000,	1.0000
5	J1534 ,	9,	PH1509:DK,	RH1509:DK,	100.00,	1.0000,	1.0000
6	J1534S ,	10,	PH1510:DK,	RH1510:DK,	100.00,	1.0000,	1.0000
7	H8331 ,	11,	PH1511:DK,	RH1511:DK,	100.00,	1.0000,	1.0000
8	H8332 ,	12,	PH1512:DK,	RH1512:DK,	100.00,	1.0000,	1.0000
9	H8333 ,	13,	PH1513:DK,	RH1513:DK,	100.00,	1.0000,	1.0000
10	H8334 ,	14,	PH1514:DK,	RH1514:DK,	100.00,	1.0000,	1.0000
11	STD10971-1.0,	15,	PH1515:DK,	RH1515:DK,	100.00,	1.0000,	1.0000
12	STD10975-1.0,	16,	PH1516:DK,	RH1516:DK,	100.00,	1.0000,	1.0000
13	H8335 ,	17,	PH1517:DK,	RH1517:DK,	100.00,	1.0000,	1.0000
14	H8335R ,	18,	PH1518:DK,	RH1518:DK,	100.00,	1.0000,	1.0000
15	H8337 ,	19,	PH1519:DK,	RH1519:DK,	100.00,	1.0000,	1.0000

```
16  H8336          ,  20, PH1520:DK, RH1520:DK, 100.00,  1.0000,  1.0000
17  H6066          ,  21, PH1521:DK, RH1521:DK, 100.00,  1.0000,  1.0000
18  H6067          ,  22, PH1522:DK, RH1522:DK, 100.00,  1.0000,  1.0000
19  H6069          ,  23, PH1523:DK, RH1523:DK, 100.00,  1.0000,  1.0000
20  H9998          ,  24, PH1524:DK, RH1524:DK, 100.00,  1.0000,  1.0000
21  STD10970-5.0,  25, PH1525:DK, RH1525:DK, 100.00,  1.0000,  1.0000
22  STD10974-5.0,  26, PH1526:DK, RH1526:DK, 100.00,  1.0000,  1.0000
23  H9999          ,  27, PH1527:DK, RH1527:DK, 100.00,  1.0000,  1.0000
24  J0545          ,  28, PH1528:DK, RH1528:DK, 100.00,  1.0000,  1.0000
25  H6068          ,  29, PH1529:DK, RH1529:DK, 100.00,  1.0000,  1.0000
26  STD10969-25.,  30, PH1530:DK, RH1530:DK, 100.00,  1.0000,  1.0000
27  STD10973-25.,  31, PH1531:DK, RH1531:DK, 100.00,  1.0000,  1.0000
28  /E
```

JUL 13, 1985 11:56
SEQUENCE: LCS109 ON CRN 15
CHANNEL 9

SUBSEQUENCE 1

METHOD
DAI210

DIALG-PRG PARAM-FILE
/N

#WSHS #PMPS STOP
5, 5, 1

ISO POST-BTL# POST-#WSHS
NO , 0, 1

SAMPLES

	SAMPLE-NAME	BTL#	PROC-FILE	RAW-FILE	XDIL-F	STD-AMT	SMP-AMT
1	STD11020-025,	17,	PH1555:CX,	RH1555:CX,	100.00,	1.0000,	1.0000
2	STD11021-5.0,	18,	PH1556:CX,	RH1556:CX,	100.00,	1.0000,	1.0000
3	STD11022-1.0,	19,	PH1557:CX,	RH1557:CX,	100.00,	1.0000,	1.0000
4	STD11023-0.5,	20,	PH1558:CX,	RH1558:CX,	100.00,	1.0000,	1.0000
5	/E						

7/17/85