

## EPA 502/524.2 VOCs using the CDS 7400 Autosampler

The CDS Model 7400 autosampler, combined with a Model 7000 Purge & Trap, constitutes an autosampling system capable of handling up to 72 water or soil samples, using standard 40 ml vials. In the water analysis mode, samples are transferred from the 40 ml vial to the 5 or 25 ml sparging vessel of the 7000, then purged to the trap. The 7400 automatically adds the internal standard solution and may be programmed to perform replicate analyses, blanks and rinses between runs.

Figure 1 shows an analysis of water containing volatile organics at the 40 PPB level, plus internal standards. The sample amount was 5 ml, purged with helium for 11 minutes at 35 ml/min. The chromatography was programmed to permit detection of the compounds, from Dichlorodifluoromethane to Trichlorobenzene, in less than 22 minutes. The full list of compounds is shown in Table 1 on the reverse.

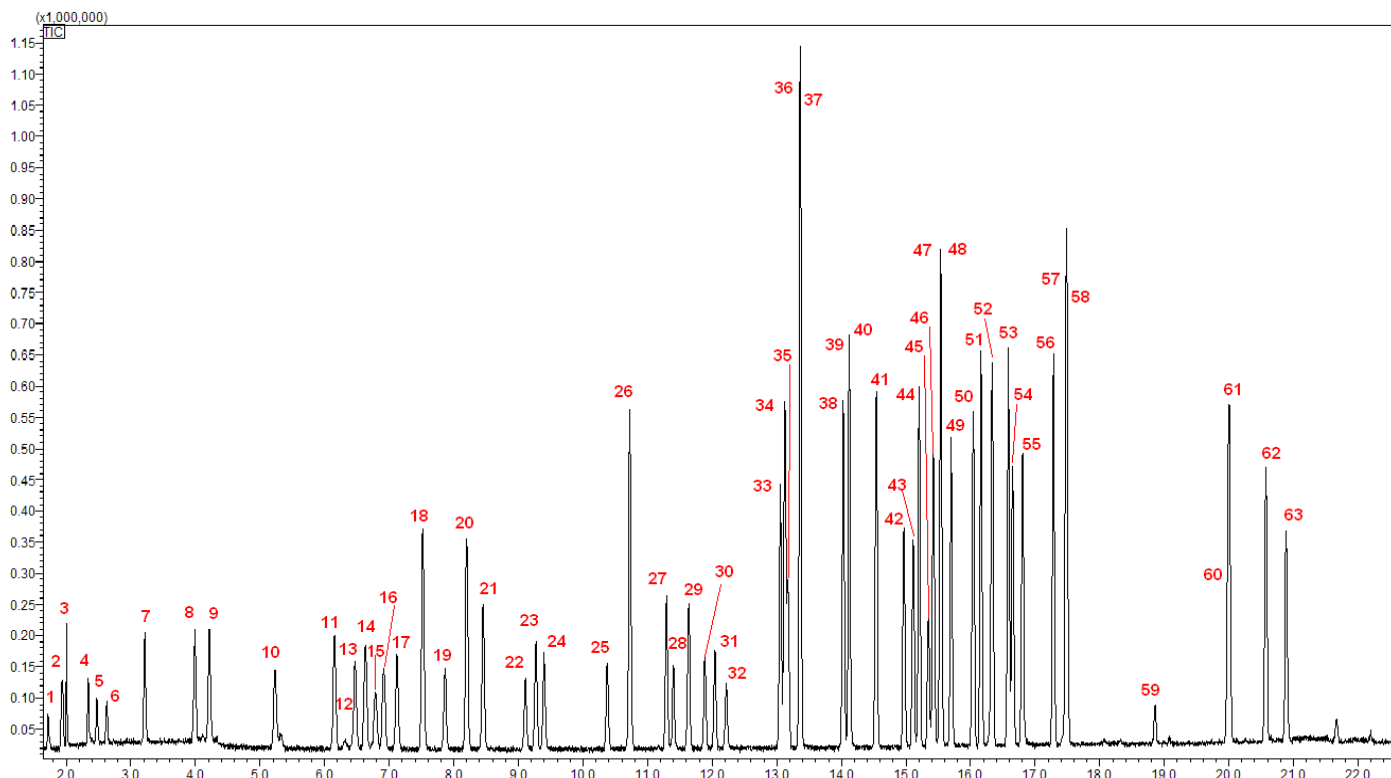


Figure 1. Purge & Trap of 5 ml water sample.

**Table 1**

**Operating Parameters**

**CDS 7000E Purge & Trap**

Valve Oven:	130°C	
Transfer Line:	130°C	
Purge Time:	11 minutes	
Dry Purge:	2 minutes	
Desorb Preheat:	240°C	
Trap Desorb:	250°C	2 minutes
Trap Bake:	260°C	10 minutes
Trap:	Vocarb 3000	

**7400 Autosampler**

Vial:	40 ml
Sample Loop:	5 ml
Rinses:	1
Internal Standard:	2 µl

**Chromatography**

Oven Program:	40°C	5 minutes
	8°C/minute	
	220°C	5 minutes
Carrier:	Helium	
Split:	35:1	
Column:	Rtx-VMS 30 m 0.25 mm 1.4 µm df	

1	Dichlorodifluoromethane
2	Chloromethane
3	Vinylchloride
4	Bromomethane
5	Chloroethane
6	Trichlorofluoromethane
7	1,1-Dichloroethylene
8	Dichloromethane
9	<i>trans</i> -1,2-Dichloroethylene
10	1,1-Dichloroethane
11	<i>cis</i> -1,2-Dichloroethylene
12	2,2-Dichloropropane
13	Bromochloromethane
14	Chloroform
15	Carbon tetrachloride
16	1,1,1-Trichloroethane
17	1,1-Dichloro-1-propene
18	Benzene
19	1,2-Dichloroethane
20	Fluorobenzene (I.S.)
21	Trichloroethylene
22	Dibromomethane
23	1,2-Dichloropropane
24	Bromodichloromethane
25	<i>cis</i> -1,3-Dichloropropene
26	Toluene
27	Tetrachloroethylene
28	<i>trans</i> -1,3-Dichloropropene
29	1,1,2-Trichloroethane
30	Dibromochloromethane
31	1,3-Dichloropropane
32	1,2-Dibromoethane
33	Chlorobenzene
34	Ethylbenzene
35	1,1,1,2-Tetrachloroethane
36	<i>m</i> -Xylene
37	<i>p</i> -Xylene
38	<i>o</i> -Xylene
39	Styrene
40	Bromoform
41	Isopropylbenzene
42	Bromofluorobenzene
43	Bromobenzene
44	Propylbenzene
45	1,1,2,2-Tetrachloroethane
46	2-Chlorotoluene
47	1,2,3-Trichloropropane
48	1,3,5-Trimethylbenzene
49	4-Chlorotoluene
50	<i>tert</i> -Butylbenzene
51	1,2,4-Trimethylbenzene
52	<i>sec</i> -Butylbenzene
53	<i>p</i> -Isopropyltoluene
54	1,3-Dichlorobenzene
55	1,4-Dichlorobenzene
56	Butylbenzene
57	1,2-Dichlorobenzene-d4 (I.S.)
58	1,2-Dichlorobenzene
59	1,2-Dibromo-3-chloropropane
60	Hexachloro-1,3-butadiene
61	1,2,4-Trichlorobenzene
62	Naphthalene
63	1,2,3-Trichlorobenzene

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