

Minimum Detection Level Determination for EPA Method 8260B (VOCs)
Gas Chromatography Mass Spectrometry of 5mL discreet Purge & Trap
Instrumentation: O.I. DPM-16 / O.I. 4560 Concentrator / Carlo Ebra GC-8035 / Fisons MD-800
Laboratory: State Laboratory Division, New Mexico Department of Health

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Date: 11 March 2008

(All instrumental data are located in index folders OR-200800395)

MDL concentration was prepared at 1.0 ug/L for all VOCs; nine replicates analyzed over a one week period.										Statistical Results		
MS File Name:	22818	22819	22905	22906	22907	30303	30304	30305	30306	RSD	Standard Deviation	Minimum Detection Level
Time Acquired:	4:16	18:45	19:40	20:36	21:32	13:35	14:31	15:26	16:22			
Date Acquired:	2/29/08	2/29/08	2/29/08	2/29/08	2/29/08	3/3/08	3/3/08	3/3/08	3/3/08			
Analytes	MDL 1	MDL 2	MDL 3	MDL 4	MDL 5	MDL 6	MDL 7	MDL 8	MDL 9			
dichlorodifluoromethane	0.57	1.29	1.07	1.15	1.20	0.84	1.10	1.12	1.14	20.7%	0.218	0.63 ug/L
chloromethane	1.32	1.33	1.31	1.34	1.61	1.18	1.32	1.41	1.32	8.5%	0.115	0.33 ug/L
vinylchloride	1.09	1.51	1.42	1.48	1.44	1.28	1.45	1.46	1.54	9.9%	0.140	0.40 ug/L
bromomethane	1.37	1.45	1.48	1.45	1.48	1.42	1.39	1.49	1.59	4.4%	0.065	0.19 ug/L
chloroethane	1.25	1.57	1.67	0.95	1.72	1.56	1.62	1.79	1.40	17.6%	0.264	0.77 ug/L
trichlorofluoromethane	1.11	1.27	1.19	1.17	1.25	1.14	1.19	1.31	1.20	5.3%	0.063	0.18 ug/L
1,1-dichloroethene	0.97	1.45	1.32	1.15	1.10	1.09	1.25	1.49	1.16	14.2%	0.173	0.50 ug/L
acetone	0.66	0.37	0.38	0.11	0.00	0.11	0.12	0.20	0.73	86.5%	0.257	0.75 ug/L
methylene chloride	1.18	1.15	1.18	1.28	1.26	1.05	1.28	1.38	1.80	16.8%	0.215	0.62 ug/L
trans-1,2-dichloroethene	1.35	1.10	1.22	1.03	1.07	1.14	1.13	1.17	1.42	10.9%	0.129	0.37 ug/L
methyl tert-butyl ether	1.24	1.10	1.18	1.17	1.33	1.17	1.28	1.25	1.35	6.7%	0.082	0.24 ug/L
1,1-dichloroethane	1.14	1.13	1.19	1.09	1.21	1.12	1.21	1.20	1.29	5.2%	0.061	0.18 ug/L
cis-1,2-dichloroethene	1.28	1.21	1.24	1.31	1.28	1.16	1.36	1.36	1.37	5.7%	0.073	0.21 ug/L
2,2-dichloropropane	1.12	1.27	1.21	1.17	1.21	1.25	1.29	1.43	1.34	7.4%	0.093	0.27 ug/L
bromochloromethane	1.17	1.14	1.29	1.16	1.32	1.05	1.21	1.21	1.18	6.7%	0.080	0.23 ug/L
2-butanone (MEK)	2.98	2.46	3.50	2.70	3.14	2.84	2.80	4.16	3.50	16.7%	0.522	3.03 ug/L*
tetrahydrofuran	5.40	5.08	6.28	5.04	6.44	5.24	5.12	6.64	6.36	11.8%	0.676	7.83 ug/L*
chloroform	1.24	1.07	1.13	1.15	1.19	1.06	1.09	1.12	1.26	6.3%	0.072	0.21 ug/L
1,1,1-trichloroethane	1.04	1.07	1.07	1.08	1.10	0.96	1.13	1.19	1.13	6.0%	0.065	0.19 ug/L
1,1-dichloropropene	1.19	1.18	1.16	1.11	1.28	1.03	1.16	1.03	1.31	8.3%	0.096	0.28 ug/L
carbon tetrachloride	1.20	1.28	1.39	1.25	1.30	1.14	1.29	1.29	1.11	7.0%	0.087	0.25 ug/L
benzene	0.99	0.96	0.93	0.94	1.04	0.89	1.01	1.03	1.02	5.3%	0.052	0.15 ug/L
1,2-dichloroethane	1.07	0.99	1.19	0.99	1.28	1.10	1.09	1.26	1.31	10.7%	0.122	0.35 ug/L
trichloroethene	1.08	1.11	1.01	1.00	1.03	0.94	1.02	1.05	1.02	4.7%	0.049	0.14 ug/L
1,2-dichloropropane	1.04	1.02	1.04	1.00	1.08	0.99	1.03	1.02	1.07	2.9%	0.029	0.09 ug/L
dibromomethane	1.09	0.98	1.08	1.07	1.16	1.08	1.12	1.11	1.17	5.1%	0.056	0.16 ug/L
bromodichloromethane	1.09	0.97	1.03	1.00	1.10	0.95	1.07	1.08	1.06	5.2%	0.054	0.16 ug/L
cis-1,3-dichloropropene	0.99	0.99	0.98	0.95	1.02	0.96	1.06	1.03	1.04	3.7%	0.037	0.11 ug/L
toluene	1.00	1.01	0.98	0.98	0.98	0.91	1.02	1.03	1.00	3.5%	0.035	0.10 ug/L
trans-1,3-dichloropropene	0.98	0.93	0.96	0.93	0.96	0.94	0.99	1.00	1.03	3.5%	0.034	0.10 ug/L
1,1,2-trichloroethane	1.11	1.00	1.05	1.01	1.08	1.02	1.08	1.07	1.11	3.9%	0.041	0.12 ug/L
1,3-dichloropropane	1.05	1.00	1.06	1.03	1.07	1.02	1.06	1.04	1.12	3.3%	0.034	0.10 ug/L
tetrachloroethene	1.09	1.15	1.12	1.02	1.09	1.04	1.09	1.16	1.11	4.2%	0.046	0.13 ug/L
dibromochloromethane	1.11	1.04	1.03	1.00	1.06	1.00	1.10	1.10	1.12	4.4%	0.047	0.14 ug/L
1,2-dibromoethane	1.13	1.04	1.09	1.07	1.15	1.05	1.14	1.14	1.20	4.8%	0.053	0.15 ug/L
chlorobenzene	1.00	0.94	0.98	0.96	0.98	0.93	1.03	1.00	1.05	4.0%	0.039	0.11 ug/L
ethylbenzene	0.90	0.90	0.86	0.89	0.89	0.83	0.94	0.94	0.92	4.0%	0.036	0.10 ug/L
1,1,1,2-tetrachloroethane	1.03	0.98	0.99	1.00	1.01	1.03	1.06	1.04	1.11	3.9%	0.040	0.12 ug/L
m/p-xylenes	1.82	1.78	1.74	1.74	1.76	1.64	1.88	1.86	1.82	4.1%	0.073	0.42 ug/L*
o-xylene	0.93	0.91	0.89	0.88	0.91	0.84	0.97	0.93	0.94	4.2%	0.038	0.11 ug/L
styrene	0.91	0.86	0.86	0.85	0.90	0.86	0.95	0.92	0.90	3.9%	0.034	0.10 ug/L
bromoform	1.14	1.01	1.12	1.03	1.18	1.09	1.14	1.21	1.18	6.1%	0.068	0.20 ug/L
isopropylbenzene	0.91	0.93	0.91	0.90	0.91	0.85	0.97	0.96	0.97	4.2%	0.039	0.11 ug/L
1,1,2,2-tetrachloroethane	1.09	1.00	1.15	1.03	1.16	1.10	1.12	1.16	1.19	5.7%	0.063	0.18 ug/L
1,2,3-trichloropropane	1.09	1.01	1.16	1.03	1.15	1.09	1.12	1.19	1.21	6.1%	0.068	0.20 ug/L
bromobenzene	1.04	0.99	1.01	0.97	1.00	0.96	1.03	1.01	1.05	3.0%	0.030	0.09 ug/L
propylbenzene	1.00	0.95	0.96	0.96	0.92	0.94	1.06	1.03	1.04	5.0%	0.050	0.14 ug/L
2-chlorotoluene	0.95	1.03	0.95	0.92	0.98	0.93	1.10	1.01	1.10	6.9%	0.069	0.20 ug/L
1,3,5-trimethylbenzene	0.93	0.94	0.91	0.90	0.91	0.86	0.93	0.95	0.97	3.5%	0.032	0.09 ug/L
4-chlorotoluene	1.07	1.02	1.01	1.00	0.98	0.97	1.02	1.00	1.08	3.6%	0.037	0.11 ug/L
tert-butylbenzene	0.91	0.95	0.94	0.93	0.93	0.84	0.96	0.96	0.94	4.0%	0.037	0.11 ug/L
1,2,4-trimethylbenzene	0.89	0.92	0.88	0.88	0.88	0.83	0.91	0.93	0.90	3.3%	0.029	0.08 ug/L
sec-butylbenzene	0.85	0.91	0.87	0.88	0.87	0.81	0.92	0.92	0.91	4.2%	0.037	0.11 ug/L
1,3-dichlorobenzene	0.99	0.95	0.95	0.92	0.93	0.89	0.99	0.97	0.99	3.7%	0.035	0.10 ug/L
4-isopropyltoluene	0.89	0.90	0.89	0.88	0.87	0.84	0.92	0.92	0.91	2.9%	0.026	0.07 ug/L
1,4-dichlorobenzene	1.01	0.97	0.92	0.90	0.90	0.89	0.96	0.96	0.98	4.5%	0.042	0.12 ug/L
1,2-dichlorobenzene	1.01	0.95	0.98	0.96	1.01	0.95	1.03	0.97	1.05	3.7%	0.036	0.11 ug/L
n-butylbenzene	0.91	0.95	0.90	0.88	0.88	0.83	0.94	0.94	0.91	4.2%	0.038	0.11 ug/L
1,2-dibromo-3-chloropropane	1.24	1.16	1.35	1.19	1.34	1.28	1.19	1.37	1.53	9.0%	0.117	0.34 ug/L
nitrobenzene	0.63	0.57	0.79	0.62	0.75	0.70	0.67	0.81	0.78	12.1%	0.085	4.94 ug/L*
1,2,4-trichlorobenzene	0.98	0.98	0.95	0.93	0.93	0.90	0.97	0.95	0.99	3.1%	0.030	0.09 ug/L
hexachlorobutadiene	1.10	1.18	1.01	1.05	1.07	1.05	1.16	1.15	1.05	5.4%	0.059	0.17 ug/L
naphthalene	0.94	0.94	1.03	0.93	1.02	0.96	0.96	1.04	1.04	4.8%	0.047	0.14 ug/L
1,2,3-trichlorobenzene	1.00	0.99	0.96	0.95	0.97	0.95	1.04	1.01	0.97	3.1%	0.030	0.09 ug/L

Note: Student t value for nine replicates equals 2.89646; MDL = 2.89646 x Std.Dev.

*Note: Data are on-column quantitations; MDL values for 2-Butanone, Tetrahydrofuran, m/p-Xylenes, and Nitrobenzene were multiplied by 2, 4, 2, and 20 respectively to yield true concentration.