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*Supplement of*

## **Stable carbon isotope ratios of ambient aromatic volatile organic compounds**

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**Table S1.** Sampling intervals, mixing ratios and carbon isotope ratios of aromatic hydrocarbons relative to VPDB. All samples were collected at the Downsview location of Environment Canada (43°46'N, 79°28'W), time is given as local time

Sampling interval				Carbon Isotope Ratio, ‰					Mixing ratios, nmol mol <sup>-1</sup>				
Date	Time	Date	Time	Benzene	Toluene	Ethylbenzene	o-Xylene	p,m-Xylene	Benzene	Toluene	Ethylbenzene	o-Xylene	p,m-Xylene
10/13/2009	9:53	10/14/2009	8:42	-26.0	-20.6	-17.9	-18.3	-18.6	0.05	0.40	0.05	0.03	0.09
10/19/2009	8:28	10/20/2009	8:57	-23.4	-20.4	-18.8	-17.7	-18.1	0.15	0.98	0.08	0.07	0.22
10/20/2009	9:08	10/21/2009	8:41	-26.0	-23.3	-20.5	-21.8	-20.7	0.18	1.57	0.15	0.10	0.35
10/21/2009	8:56	10/22/2009	8:06	-23.2	-20.4	-17.9	-16.6	-16.4	0.12	1.27	0.08	0.08	0.23
10/22/2009	8:20	10/23/2009	8:24		-21.7	-17.5	-16.5	-18.1			0.05	0.04	0.14
10/23/2009	8:34	10/23/2009	14:34	-29.4	-28.0				0.12	0.37	0.03		0.03
10/23/2009	14:38	10/26/2009	8:44							0.14	0.04	0.03	0.10
10/26/2009	8:54	10/27/2009	8:51	-23.5	-24.3	-22.4	-23.2	-23.3	0.07	0.37	0.06	0.06	0.19
10/27/2009	8:58	10/28/2009	8:42	-24.7	-21.1	-17.7	-18.2	-18.4	0.05	0.99	0.16	0.13	0.42
10/28/2009	8:51	10/29/2009	8:50	-29.2	-21.3	-17.4		-16.6	0.03	0.26	0.03		0.09
10/29/2009	8:57	10/30/2009	8:37		-23.4	-18.9	-18.7	-19.4	0.04	0.63	0.06	0.06	0.17
10/30/2009	8:42	10/30/2009	14:35	-28.4	-24.1	-22.4		-22.3	0.20	0.11	0.08		0.18
11/2/2009	8:29	11/3/2009	8:25	-28.0	-26.4	-30.2	-30.0	-30.5	0.12	0.73	0.09	0.08	0.24
11/3/2009	8:35	11/4/2009	7:31	-27.2	-26.1	-31.7	-29.2	-31.6	0.11	0.86	0.01	0.05	0.01
11/4/2009	7:37	11/5/2009	8:32	-28.3	-25.7	-28.7	-28.0	-28.1	0.09	0.54	0.05	0.05	0.14
11/5/2009	8:41	11/6/2009	8:19		-24.2	-25.1	-25.3	-25.2		0.77	0.05	0.04	0.14
11/6/2009	8:25	11/6/2009	2:34	-27.6	-24.1	-25.5		-28.7	0.33	0.74	0.04	0.04	0.10
11/6/2009	14:36	11/7/2009	8:32	-28.4	-25.6	-32.6		-33.0	0.13	0.60	0.05		0.14
11/7/2009	8:40	11/8/2009	8:43	-26.5	-22.7	-21.6	-22.3	-23.7	0.16	0.85	0.06	0.05	0.15
11/8/2009	8:49	11/9/2009	8:45	-22.8	-20.4	-22.4	-21.5	-22.5	0.10	0.68	0.07	0.08	0.20
11/9/2009	8:51	11/10/2009	8:52	-23.0	-26.1	-26.8		-26.2	0.14	0.56	0.03	0.02	0.06
11/10/2009	8:58	11/11/2009	8:51	-22.5	-26.9	-25.1		-25.4	0.15	0.60	0.02	0.02	0.05
11/11/2009	8:57	11/12/2009	8:17		-28.0	-28.4		-28.0	0.08	0.61	0.04	0.03	0.10

Table S1 continued.

Sampling interval				Carbon Isotope Ratio, ‰					Mixing ratios, nmol mol <sup>-1</sup>				
Date	Time	Date	Time	Benzene	Toluene	Ethylbenzene	o-Xylene	p,m-Xylene	Benzene	Toluene	Ethylbenzene	o-Xylene	p,m-Xylene
11/12/2009	8:22	11/13/2009	10:57	-26.5	-22.7	-21.6	-22.3	-23.7	0.15	0.77	0.06	0.05	0.13
11/13/2009	11:05	11/16/2009	8:33	-26.3	-26.7	-27.6		-28.2	0.07	0.38	0.03	0.02	0.07
11/16/2009	8:39	11/17/2009	8:33		-27.8	-28.2		-27.9	0.08	0.70	0.05	0.03	0.10
11/17/2009	8:39	11/18/2009	8:56	-20.3	-27.3	-27.8			0.16	0.53	0.05	0.04	0.12
11/19/2009	8:52	11/20/2009	8:50	-23.3	-27.9	-21.8	-21.7	-21.8	0.17	1.46	0.11	0.04	0.30
11/23/2009	7:51	11/24/2009	9:10		-20.2	-24.1	-24.1	-24.4			0.00	0.00	0.00
11/24/2009	9:14	11/26/2009	8:48		-24.4	-21.7	-21.1	-21.2	0.07	0.44	0.03	0.02	0.07
11/26/2009	8:52	11/27/2009	8:26		-20.0	-21.8	-21.2	-22.0	0.16	1.50	0.18	0.13	0.48
11/27/2009	8:30	11/30/2009	8:52	-23.7	-24.5	-19.5	-19.7	-19.7	0.08	0.61	0.05	0.04	0.12
11/30/2009	8:56	12/1/2009	9:03	-26.1	-27.3	-27.0	-26.6	-27.2	0.25	1.41	0.13	0.10	0.37
12/1/2009	9:07	12/2/2009	9:45		-25.7	-28.0	-22.3	-28.4		0.88	0.08	0.06	0.22
12/2/2009	9:50	12/3/2009	7:54		-25.5	-23.5	-24.1	-23.9	0.13	0.39	0.03	0.02	0.07
12/3/2009	7:58	12/4/2009	7:33		-25.8	-22.4	-26.9	-22.7	0.07	0.58	0.05	0.03	0.12
12/4/2009	7:39	12/7/2009	8:06	-26.2	-26.3	-22.9	-23.5	-22.3	0.06	0.48	0.04	0.03	0.10
12/7/2009	8:11	12/8/2009	8:01		-26.2	-28.4	-29.1	-28.4		1.06	0.08	0.06	0.20
12/8/2009	8:07	12/9/2009	9:28		-25.9		-29.2		0.25	0.32	0.05	0.04	0.12
12/9/2009	9:32	12/10/2009	9:39	-25.0	-18.7	-20.3	-20.6	-19.2	0.20	0.62	0.08	0.06	0.23
12/10/2009	9:45	12/11/2009	9:48	-24.3	-24.3	-24.9	-25.0	-25.5	0.74	0.56	0.05	0.04	0.17
12/11/2009	9:53	12/14/2009	9:32	-26.0	-24.5	-24.6	-24.1	-25.0	0.05	0.44	0.04	0.03	0.11
12/14/2009	9:37	12/15/2009	10:16		-26.5	-23.4	-23.5	-23.5	0.28	0.54	0.07	0.06	0.18
12/16/2009	9:17	12/17/2009	9:46	-28.1	-25.3	-26.8	-26.2	-26.8	0.28	0.55	0.07	0.06	0.18
12/17/2009	9:52	12/18/2009	8:52		-26.7	-20.6	-18.6	-19.7	0.12	0.59	0.05	0.04	0.13
1/18/2010	9:10	1/19/2010	9:44		-27.1	-27.0	-27.4	-26.9	0.12	0.86	0.08	0.05	0.20
1/19/2010	9:49	1/20/2010	10:05		-26.8	-23.3		-23.3	0.12	0.81	0.09	0.06	0.25
1/20/2010	10:09	1/21/2010	9:30	-25.8	-24.6	-26.5		-26.5	0.09	0.40	0.03	0.02	0.07
1/21/2010	9:35	1/25/2010	10:18		-27.4	-24.1	-25.1	-24.6	0.09	0.22	0.02	0.01	0.03

Table S1 continued.

Sampling interval				Carbon Isotope Ratio, ‰					Mixing ratios, nmol mol <sup>-1</sup>				
Date	Time	Date	Time	Benzene	Toluene	Ethyl- benzene	o- Xylene	p,m- Xylene	Benzene	Toluene	Ethylbenzene	o- Xylene	p,m- Xylene
1/22/2010	10:22	1/25/2010	11:30	-18.2	-27.4	-34.8		-34.6	0.02	0.12	0.01	0.01	0.03
1/25/2010	11:35	1/26/2010	10:59							0.40	0.10	0.10	0.29
1/26/2010	11:02	1/27/2010	10:33	-29.0	-27.5	-28.9	-28.1	-27.9	0.07	0.66	0.07	0.03	0.16
3/6/2010	9:02	3/7/2010	9:05		-27.2	-23.4	-26.1	-23.8	0.08	1.04	0.20	0.13	0.56
3/12/2010	8:25	3/13/2010	8:55	-22.3	-28.5				0.09	0.42	0.02	0.02	0.06
3/13/2010	8:58	3/14/2010	8:30	-13.6	-26.9	-19.5	-20.6	-19.6	0.28	1.54	0.02	0.09	0.19
3/14/2010	8:30	3/15/2010	9:05	-26.8	-24.7		-23.3		0.18	0.15		0.01	
3/15/2010	9:08	3/16/2010	9:03	-25.0	-23.0	-19.9	-21.6	-19.2	0.12	1.16	0.16	0.09	0.41
3/19/2010	8:58	3/20/2010	9:08	-26.8	-27.0				0.10	0.33	0.03	0.02	0.08
3/20/2010	9:09	3/21/2010	9:00		-27.1	-21.8	-21.4	-21.6	0.12	1.39	0.11	0.07	0.24
3/21/2010	9:00	3/22/2010	9:00	-16.6	-24.4				0.03	0.28	0.03	0.01	0.08
3/22/2010	9:03	3/23/2010	9:05		-26.9				0.04	0.32		0.02	0.04
8/30/2010	9:16	8/31/2010	9:10	-25.4	-25.5	-23.5		-23.9	0.30	1.48	0.09		0.21
8/31/2010	9:13	9/1/2010	8:47		-23.7	-21.2		-20.9		2.11	0.15		0.39
9/7/2010	9:20	9/8/2010	8:46	-26.8	-24.7		-23.3		0.27	0.22		0.01	
9/8/2010	8:40	9/9/2010	8:42		-27.2	-23.4	-26.1	-23.8	0.11	1.37	0.26	0.17	0.74
9/9/2010	8:45	9/10/2010	8:45		-24.9					0.20	0.03	0.01	0.04
9/9/2010	8:45	9/10/2010	8:45		-26.3					0.28	0.02	0.01	0.04
9/10/2010	8:49	9/13/2010	9:20	-26.0	-23.3	-24.6	-23.5		0.09	0.50	0.05	0.03	
9/10/2010	8:49	9/13/2010	9:20		-27.3					0.16			
9/13/2010	10:10	9/14/2010	8:47		-28.2	-27.1		-26.3	0.02	0.38	0.03	0.02	0.08
9/13/2010	10:10	9/14/2010	8:47		-27.3				0.04	0.15	0.01	0.01	0.04
9/14/2010	8:50	9/15/2010	8:44	-26.4	-25.9				0.03	0.37	0.07	0.06	0.18
9/14/2010	8:50	9/15/2010	8:44		-7.7				0.02	0.09			
9/16/2010	8:53	9/17/2010	14:25		-27.2				0.03	0.16	0.01	0.01	
9/16/2010	8:53	9/17/2010	14:25	-18.9	-16.8				0.03	0.05			
9/17/2010	14:25	9/20/2010	9:10	-28.1		-28.2		-27.7	0.47		0.03	0.02	0.09