



INFORMATION BULLETIN

DANDENONG SOUTH AIR MONITORING PROGRAM: REPORT TWO

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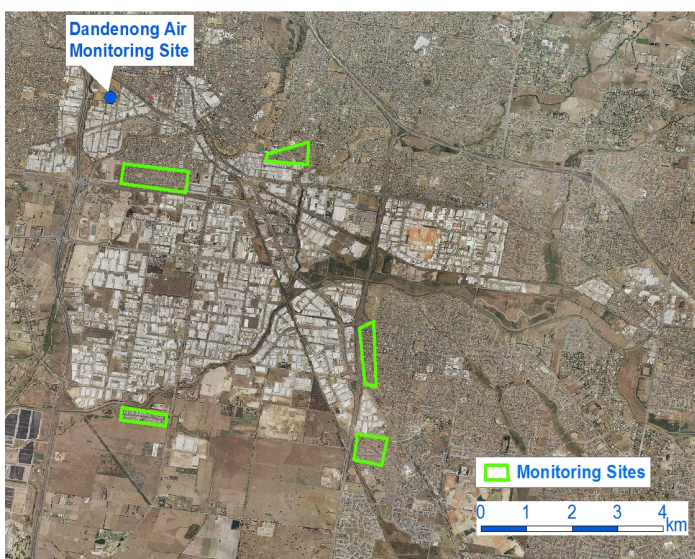
WHY AND WHERE IS EPA MEASURING?

In April 2011 EPA Victoria started an air monitoring program to assess the impact of the Dandenong South industrial zone on air quality in surrounding residential areas. This air quality assessment was initiated in response to community concerns about emissions from the Dandenong South industrial 2 zone and Lyndhurst prescribed waste landfill.

The monitoring program is measuring the levels of specific air pollutants at residential locations and this report presents the second set of monitoring results - from August 2011 to October 2011.

Air monitoring is being conducted over a 12 month period at five residential locations surrounding the industrial zone and Lyndhurst landfill. Monitoring sites are located in Bangholme, Lynbrook, Hampton Park, Doveton and Dandenong South. The general locations of the sampling sites are marked in green on the aerial photo below.

A statistically sound air quality risk assessment requires 12 months of data to ensure seasonal variations are considered and to enable assessment of risk for low-level chronic exposure. EPA will continue to report on findings from the analysis every three months.



HOW ARE THE RESULTS ASSESSED?

The air quality data is compared against national and international air quality values to assess the risk these gases may pose to human health. Air quality values are determined by scientific research to protect people's health when they may be in contact with the air pollutant for a short period (up to two weeks) or longer period of one year or more.

These values contain a margin of safety that ensures protection of people who may be more sensitive to breathing air pollutants such as children or older people.

The air quality values used for this assessment have been recommended by the Department of Health and taken from the following sources:

- The Air Toxics National Environment Protection Measure (Air Toxics NEPM); and
- For pollutants not covered by the Air Toxics NEPM, assessment values have been obtained from the Texas Centre for Environmental Quality (TCEQ), California's Office of Environmental Health Hazard Assessment (OEHHA), Ontario Ministry of the Environment (Ontario), United States Environment Protection Agency (US EPA)

WHAT DO THE RESULTS TELL US?

The results so far indicate the low levels being measured are not a risk to health. More than half of the 63 compounds analysed have not been detected. No new compounds were detected since the last report.

Of the 24 compounds that have been detected, 17 were well below the relevant air quality value and a further 7 will be assessed at the end of the 12 month monitoring program.

PRIORITY POLLUTANTS

When EPA was designing the air monitoring program in March 2011, a group of 15 compounds (listed over the page) were identified as priority pollutants.

EPA's air pollution emission inventory identified these compounds as being in the highest quantities in the Dandenong area.

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These were:

1. ethanol
2. dichloromethane
3. toluene
4. xylene
5. methyl ethyl ketone
6. ethyl acetate
7. acetone
8. trichloroethylene
9. methyl isobutyl ketone (MIBK)
10. n-hexane
11. benzene
12. tetrachloroethylene
13. styrene
14. ethylbenzene
15. cyclohexane

For the first two reports of air monitoring results, apart from trichloroethylene and tetrachloroethylene, the majority of the 15 priority pollutants were detected at low levels or not at all.

Four have no short term air quality value and will be assessed against the long term air quality value at the end of the program.

A summary of the levels of the compounds detected are listed in Table 1 and the compounds not detected are listed in Table 2.

Table 1: Dandenong South air monitoring results 27 April 2011 – 30 October 2011

Compound Name	Site 1		Site 2		Site 3		Site 4		Site 5		Guideline		
	Avg ppb	Max ppb	Avg ppb	Max ppb	Avg ppb	Max ppb	Avg ppb	Max ppb	Avg ppb	Max ppb	ppb	Averaging period	Air quality standard
Ethanol	5.5	14.0	6.3	47.6	5.1	11.5	4.8	14.0	6.2	32.3	3,715,000	Annual	ATSDR
Acetone	3.7	8.0	3.2	9.6	2.6	7.4	2.6	6.5	2.8	7.4	4,752	24 Hour	Ontario
Toluene	1.3	5.4	1.4	4.8	1.4	5.3	1.6	5.0	1.9	7.1	1,000	24 Hour	NEPM
Methyl butyl ketone	<i>bdl</i>	6.3	<i>bdl</i>	0.7	<i>bdl</i>	1.3	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	1.0	Annual	TCEQ
m- & p-Xylene	0.6	2.4	0.7	2.5	0.7	2.5	0.7	2.3	0.9	3.6	250	24 Hour	NEPM
Benzene	<i>bdl</i>	3.3	<i>bdl</i>	1.1	<i>bdl</i>	1.0	<i>bdl</i>	1.2	<i>bdl</i>	1.3	3.0	Annual	NEPM
Dichloromethane	0.5	2.8	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	1.2	<i>bdl</i>	1.5	<i>bdl</i>	0.6	60	24 Hour	Ontario
Carbon disulfide	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	2.4	<i>bdl</i>	1.8	300	Annual	ATSDR
Isopropyl Alcohol	0.7	2.3	<i>bdl</i>	1.2	<i>bdl</i>	1.6	<i>bdl</i>	1.7	1.0	2.0	2,822	24 Hour	Ontario
Methyl ethyl ketone	0.5	1.4	0.5	2.2	<i>bdl</i>	1.1	<i>bdl</i>	1.3	0.5	1.0	322	24 Hour	Ontario
Acrolein	<i>bdl</i>	1.2	<i>bdl</i>	0.9	<i>bdl</i>	0.7	<i>bdl</i>	1.0	<i>bdl</i>	1.9	3.0	24 Hour	ATSDR
Vinyl acetate	<i>bdl</i>	1.7	<i>bdl</i>	1.6	<i>bdl</i>	1.1	<i>bdl</i>	0.8	<i>bdl</i>	<i>bdl</i>	10	Annual	ATSDR
Heptane	<i>bdl</i>	0.6	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	1.6	<i>bdl</i>	0.6	2,551	24 Hour	Ontario
Chloromethane	0.6	1.5	0.6	0.9	0.6	1.3	0.7	0.9	0.6	1.2	147	24 Hour	Ontario
Ethyl acetate	<i>bdl</i>	0.8	<i>bdl</i>	0.7	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	0.7	<i>bdl</i>	1.4	400	Annual	TCEQ
o-Xylene	<i>bdl</i>	0.9	<i>bdl</i>	0.9	<i>bdl</i>	0.9	<i>bdl</i>	0.8	<i>bdl</i>	1.3	250	24 Hour	NEPM
1,2,4-Trimethylbenzene	<i>bdl</i>	0.6	<i>bdl</i>	0.8	<i>bdl</i>	0.8	<i>bdl</i>	0.8	<i>bdl</i>	1.1	43	24 Hour	Ontario
1,4-Dioxane	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	1.1	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	923	24 Hour	Ontario
Hexane	<i>bdl</i>	0.6	<i>bdl</i>	0.9	<i>bdl</i>	0.6	<i>bdl</i>	0.8	<i>bdl</i>	0.9	600	Annual	ATSDR
Ethylbenzene	<i>bdl</i>	0.5	<i>bdl</i>	0.6	<i>bdl</i>	0.6	<i>bdl</i>	0.6	<i>bdl</i>	0.9	5,000	24 Hour	ATSDR
Styrene	<i>bdl</i>	0.9	<i>bdl</i>	0.8	<i>bdl</i>	0.5	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	0.8	89	24 Hour	Ontario
Methyl isobutyl ketone	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	0.9	<i>bdl</i>	0.8	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	278	24 Hour	Ontario
Cyclohexane	<i>bdl</i>	0.6	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	<i>bdl</i>	0.5	<i>bdl</i>	0.7	1,684	24 Hour	Ontario
Dichloro-difluoromethane	<i>bdl</i>	0.6	<i>bdl</i>	0.6	<i>bdl</i>	0.6	<i>bdl</i>	0.6	<i>bdl</i>	0.6	96,063	24 Hour	Ontario

Key: *bdl* - below detectable limit (0.5 ppb), N/A - no appropriate standard

(This table includes monitoring results for Report 1 and Report 2)



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Table 2: Compounds not detected during air monitoring at Dandenong South

Compound Name		
1,3-Butadiene	1,2-Dibromoethane	1,1-Dichloroethylene
4-Ethyltoluene	Bromoform	trans-1,2-Dichloroethylene
1,3,5-Trimethylbenzene	Chloroethane	cis-1,2-Dichloroethylene
Methyl tert-butyl ether	1,1-Dichloroethane	Trichloroethylene
Tetrahydrofuran	1,2-Dichloroethane	cis-1,3-dichloropropene
Methyl methacrylate	1,1,1-Trichloroethane	trans-1,3-dichloropropene
Dichlorotetrafluoroethane	1,2-Dichloropropane	Tetrachloroethylene
Trichlorofluoromethane	1,1,2-Trichloroethane	Chlorobenzene
1,1,2-Trichloro-1,2,2-trifluoroethane	1,1,2,2-Tetrachloroethane	Benzyl chloride
Bromomethane	Chloroform	1,3-Dichlorobenzene
Bromodichloromethane	Carbon tetrachloride	1,4-Dichlorobenzene
Dibromochloromethane	Vinyl chloride	1,2-Dichlorobenzene
1,2,4-Trichlorobenzene	Hexachlorobutadiene	Naphthalene

Note: The results in the original Dandenong South Air Monitoring Program: Report One has been amended to Report One Update. Three compounds (1,2,4-Trichlorobenzene, Hexachlorobutadiene and Naphthalene) that had originally been detected on one sampling day at one single location are now not reported as detected. This is due to technical problems with the analysis of these compounds in that particular sample. Tables 1 and 2 have been updated in this report to reflect this information, with the three compounds now listed in Table 2 as compounds not detected during air monitoring.