Manali Consumer Awareness Welfare Association

122 Patashala Street, Manali, Chennai

Manali Air Not Fit to Breathe, Air Sample Reveals

CHENNAI, 28 September, 2005 -- Contrary to claims by Tamilnadu Pollution Control Board that pollution in Manali was within norms, an air sample taken by Chennai-based Community Environmental Monitoring and youth volunteers of the Manali Environment Protection Committee found that the air contains dangerously high levels of chemicals, including benzene that causes blood cancer among children, and ethanol – another cancer-causing chemical. Benzene was found 25 times higher than safe levels. Seen together with residents' complaints about the ever-present air pollution in Manali, the results indicate that Manali air may not be fit to breathe. The sample is the first of its kind in Manali, and reveals the presence of 12 chemicals many of which have never been tested before either by the industry or the TNPCB.

Five out of 12 chemicals exceed health standards set by the United States Environmental Protection Agency. These chemicals include acetone, hydrogen sulphide, benzene, carbon disulphide and toluene. All chemicals target multiple systems in our bodies, including kidneys and liver, and the respiratory, nervous and cardiovascular systems, for instance. All five chemicals that exceeded limits are known to attack the Central Nervous System – a serious concern given that little research has been done on the synergistic effects of multi-chemical exposure.

The sample was taken downwind of Futura Polymers, near the factory gate. However, the results indicate the presence of chemicals from other sources too. Acetone is the only chemical suspected to be stored in Futura. The Chennai Petroleum Corporation Ltd, Manali Fertilisers Ltd, Kothari Sugars and Cetex are the other big contributors to air pollution in the Manali area. All these companies operate flare stacks – a mechanism used to dispose toxic chemicals into the atmosphere – with some such as CPCL flaring chemicals throughout the day.

"The air sample results indicate that TNPCB's claims about Manali air being safe are not based on science. We're noticing numerous health problems and increases in fatal diseases such as cancer, and now we find benzene in our air. It is shocking. The people and children of Manali cannot be sacrificed for the sake of the profits of chemical companies," said A. P. Ramalingam of the Manali Consumer Awareness Welfare Association.

Manali residents have demanded the implementation of a time-bound plan to reduce air toxics in Manali under the supervision of community organisations and representatives. They have also demanded access to clean water and better health care facilities given their special status as pollution-impacted communities.

Indian regulatory agencies such as State Pollution Control Boards neither monitor for the presence of toxic chemicals in the air, nor have standards for these chemicals. This situation persists despite the fact that the Supreme Court Monitoring Committee (SCMC) in September 2004 instructed the Central Pollution Control Board to develop standards for toxic gases in the air. However, this recommendation – like many other of the SCMC's suggestions -- remains unimplemented.

The sample was taken using a device called the "Bucket" which consists of a bucket that offers protection to a special plastic bag which is used to trap ambient air. The bag is

then detached and sent to Columbia Analytical Services in California where its contents are analysed for 69 volatile organic compounds and 20 sulphur compounds. The Bucket is a community-friendly device that allows residents to take an air sample as and when companies release toxic gases.

Details of Sample and Sampling

- A Tedlar bag sample was taken on 25 July 2005 at 7:30 pm from opposite the Futura Polymers gate near the graveyard, Manali North Madras, downwind of the company. Wind direction was towards south west, though the wind was very shifty. Given the high levels of prevalent air pollution from multiple sources, including other large sources like refineries, it is likely that Futura is not the only source of the chemicals found in the current sample.
- Twelve chemicals were found: Hydrogen Sulphide, Carbon disulphide, ethanol, acetone, iso propyl alcohol, 2-butanone, n-hexane, benzene, toluene, ethyl benzene, m,p-xylenes and o-xylene.

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S No	Chemical found	Levels detected (ug/m3)	Health based Screening levels (ug/m3)	Number of times exceed the screening levels (approx)	Odour	Health Effects	Target Organs	Carcinogen
1.	Hydrogen Sulphide	19.1	1.00 (US EPA Region 6 Screening Level)	19.1	A strong odour of rotten eggs	Irritation eyes, respiratory system; convulsions; conjunctivitis, eye pain, dizziness, headache, weakness, exhaustion, irritability, gastrointestinal disturbance	Eyes, respiratory system, central nervous system	No
2.	Carbon Disulphide	46.1	3 (Texas Long-Term Screening Levels)	15.3	A sweet ether-like odour	Dizziness, headache, poor sleep, weakness, exhaustion, anxiety, weight loss; gastritis; kidney, liver injury; eye, skin burns; dermatitis; reproductive effects	central nervous system, peripheral nervous system, cardiovascular system, eyes, kidneys, liver, skin, reproductive system	No
3.	Ethanol	180	--	--	A pungent, fruity odour	Irritation eyes, nose, throat; eye, skin burns; dermatitis; conjunctivitis; cough; central nervous system depression;; in animals: kidney, reproductive, teratogenic effects; [potential occupational	Eyes, skin, respiratory system, kidneys, central nervous system, reproductive system **Cancer Site** [in animals: nasal cancer]	Yes

						carcinogen]		
4.	Acetone	3400	370 (EPA Region 6 Screening Level)	9.1	A fragrant, mint-like odour	Irritation eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis	Eyes, skin, respiratory system, central nervous system	No
5.	Isopropyl Alcohol	5.2	--	--	Odour of rubbing alcohol	Irritation eyes, nose, throat; drowsiness, dizziness, headache; dry cracking skin	Eyes, skin, respiratory system	No
6.	2-Butanone (Methyl Ethyl Ketone)	8.1	1000 (EPA Region 6 Screening Level)	--	A moderately sharp, fragrant, mint- or acetone-like odour	Irritation eyes, skin, nose; headache; dizziness; vomiting; dermatitis	Eyes, skin, respiratory system, central nervous system	No
7.	n-Hexane	6.7	210 (EPA Region 6 Screening Level)	--	A gasoline-like odour	Irritation eyes, nose; nausea, headache; muscle weakness; dermatitis; dizziness	Eyes, skin, respiratory system, central nervous system, peripheral nervous system	No
8.	Benzene	6.2	0.250 (EPA Region 6 Screening Level)	24.8	An aromatic odour	Irritation eyes, skin, nose, dizziness; headache, nausea, exhaustion; bone marrow depression; [potential occupational carcinogen]	Eyes, skin, respiratory system, blood, central nervous system, bone marrow **Cancer Site** [leukaemia]	Yes
9.	Toluene	520	400 (EPA Region 6 Screening Level)	1.3	A sweet, pungent, benzene-like odour	Irritation eyes, nose; weakness, exhaustion, confusion, euphoria, dizziness, headache; discharge of tears;	Eyes, skin, respiratory system, central nervous system, liver, kidneys	No

						anxiety, muscle fatigue, insomnia; liver, kidney damage		
10.	Ethylbenzene	25	1100 (EPA Region 6 Screening Level)	--	An aromatic odour.	Irritation eyes, skin, mucous membrane; headache; coma	Eyes, skin, respiratory system, central nervous system	No
11.	m,p- Xylenes	17	--	--	An aromatic odour.	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; nausea, vomiting, abdominal pain; dermatitis	Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys	No
12.	o-Xylene	6.4	730 (EPA Region 6 Screening Level)	--	An aromatic odour.	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait, nausea, vomiting, abdominal pain	Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys	No