

Gas Trouble II

Air Quality Status and Assessment of TNPCB's Compliance to Supreme Court Monitoring Committee Order



SIPCOT Area Community Environmental Monitors

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A report of the Community Environmental Monitoring program -- DEPORT, Cuddalore District Consumer Organisation, FEDCOT, Global Community Monitor and The Other Media

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Executive Summary

In September 2004, the Supreme Court Monitoring Committee on hazardous wastes directed the Tamilnadu Pollution Control Board to bring Volatile Organic Compounds (VOCs) and other toxic gases in ambient air in SIPCOT, Cuddalore, to levels below those prescribed by the United States Environmental Protection Agency (US EPA). If the air pollution in Cuddalore is not reversed by the end of June 2005, the SCMC has directed that all industries within the industrial estate should be closed down until they have the infrastructure to run the factories without polluting the air.

Between October 2004 and March 2005, the SIPCOT Area Community Environmental Monitors used the "bucket" to take four samples of air breathed by SIPCOT residents. The findings revealed 12 chemicals, of which at least seven violated US EPA Region 6 Screening Levels or Texas Long-term Screening Levels or the Texas Short-term Screening Levels. The chemicals found included many of those reported in "Gas Trouble: Air Quality in SIPCOT, Cuddalore." Trichloroethylene, a highly toxic chemical and a known carcinogen, for instance, exceeded US EPA Region 6 levels by a factor of 909 and Acrolein exceeded the same standards by a factor of 304.

SACEM contends that with less than two months to the deadline, the Tamilnadu Pollution Control Board has taken no steps to curb air pollution. SACEM is not aware of any air monitoring studies conducted by the TNPCB. Neither is SACEM aware of any mitigation measures prescribed by the TNPCB to curb industries' pollution.

Indeed, even the Local Area Environment Committee set up by the Supreme Court Monitoring Committee has expressed concern over the lack of progress made by the Tamilnadu Pollution Control Board. Pursuant to a surprise midnight visit of the SIPCOT Industrial Estate, Adv. T. Mohan, Chairperson of the Cuddalore Local Area Environment Committee, wrote to the TNPCB Chairperson that: "On my night visit to the estate on 21st April 2005, I was assailed by a cocktail of malodours. It is clear that these industries are yet to address the odour problem effectively." (See Annexure 3)

SACEM demands that:

1. The Tamilnadu Pollution Control Board should submit reports on steps taken to monitor and reverse air pollution with particular reference to VOCs and sulphur compounds.
2. The Central Pollution Control Board should submit a progress report on developing ambient air quality standards for VOCs and sulphur compounds.
3. The Tamilnadu Pollution Control Board and the Local Area Environment Committee should initiate comprehensive air quality monitoring using, among other things, the expertise of Cuddalore monitors and the bucket sampler.
4. Take action against TNPCB and the polluters if air pollution levels are not brought under control by June 2005, as per SCMC's directions.

Introduction

In its report dated 29 September, 2004, the Supreme Court Monitoring Committee (SCMC) on Hazardous Wastes directed the Tamilnadu Pollution Control Board to bring down ambient air pollution due to toxic gases, including volatile organic compounds and sulphur compounds, from the chemical industries in SIPCOT, Cuddalore, to levels lower than USEPA standards by December 31, 2004. This deadline was extended on request to June 2005. The SCMC also directed the Central Pollution Control Board to develop standards for ambient air for these categories of chemicals.

The SCMC direction was given based on a report titled "Gas Trouble: Air Quality in SIPCOT, Cuddalore." The report, released by the SIPCOT Area Community Environmental Monitors, found 22 toxic chemicals, including raw materials used by SIPCOT industries in the air breathed by local residents. Some of the toxic chemicals were more than 20,000 times in excess of permissible levels prescribed by the US EPA.

With less than one month to go for TNPCB's deadline to bring levels of volatile organic compounds and toxic gases within USEPA limits, no progress has been made in curbing air pollution levels in Cuddalore. Chemical odours continue to assail the communities living near the industries. Indeed, several odour incidents, including some serious ones, have been recorded in the months following the Supreme Court direction.

Table 1: List of Complaints about the chemical odours and gas leaks in SIPCOT Cuddlaore from October 2004 to April 2005

Date of Incident	Date of complaint	Complaints details	Response from TNPCB
27 October 2004	1 November 2004	Gas Leak: Complaint by the Eachangadu villagers on the gas leak by SPIC Unit (filed on the village letter head)	The District Environment Engineer visited the site and reported no problem, blaming the villagers of mass hysteria.
30 October 2004	4 November 2004	Gas Leak: Complaint of Ammonia leak from Tantech Agro Chemicals on 29 October 2004.	No action taken by the DEE on the Tantech leak. Odour incidents continue.
13 February 2005	14 February 2005	Gas Leak: Complaint about air emissions during industrial accident in Tagros Chemicals.	TNPCB in its letter to LAEC describes the accident as boiler accident and mentions that there was no effect on the immediate surroundings of it.
16 February 2005	17 February 2005	Gas Leak: Complaint about a school child in Eachangadu fainting after being exposed to gas leak reportedly from Tantech Agro Chemicals.	TNPCB's response to LAEC said: "excess HCl fumes might have been discharged into the atmosphere from the stack on those days."
13 April 2005	14 April 2005	Gas Leak: Gas leak from TANFAC Ltd. Bus commuters on Cuddlaore-Chidambaram highway affected, four persons vomited as a result of the exposure	Show cause notice has been issued to TANFAC. Further details awaited

Concerned about the lack of progress and TNPCB's lack of political will to bring down air pollution in Cuddalore, SACEM has been conducting regular odour monitoring exercises in addition to frequent pollution patrols. Between the months of October 2004 and March 2005, SACEM took four air samples of ambient air using a bucket. The results of these samples form the basis for this report.

Air samples and what they indicate:

All four samples were taken during routine pollution patrols by SIPCOT Area Monitors on occasions where chemical odour intensities were between moderate and high.

Findings & Discussion:

Table 2: Chemicals detected

1. A total of 12 chemicals were detected.
2. At least 5 out of the 12 chemicals detected are used as raw materials in the SIPCOT industries.¹
3. Out of the 12 chemicals found, 12 target the eyes; 10 target the respiratory system; 10 target the Central Nervous System; 11 target the skin; 5 target the liver; 5 target the Cardiovascular system; 5 target the kidneys; 1 targets the blood system; 1 targets the reproductive system; 1 targets the peripheral nervous system; and 1 targets the gastrointestinal system.² (Refer to the Picture attached)
4. Three of the 12 chemicals are known to cause cancer in animals and are also known or potential occupational carcinogens (highlighted in Table 2).³
5. A number of chemicals are also attributed with causing birth defects, central nervous system effects and respiratory disorders.⁴
6. At least 7 out of 12 chemicals violate one or more US regulations, including the US EPA Region 6 Effects Screening Levels for residential air, Texas Long Term Screening levels and Texas Short Term Screening levels.
 - Trichloroethene, taken downwind of Tantech Agro Chemicals, exceeded the US EPA Region 6 screening levels by a factor of 909.
 - Hydrogen Sulphide was found in the sample taken downwind of Bayer- Arkema Complex at levels 17 times above the Texas Short Term Screening Levels.
 - Acrolein was above US EPA Region 6 Screening Levels by a factor of 304 in the sample taken downwind of Tantech Agro Chemicals.
 - Methylene Chloride was found in the sample taken downwind of Tantech Agro Chemicals at levels 23 times above the US EPA Effects Screening Levels.
 - Bromomethane was found in the sample taken downwind of Tantech Agro Chemicals at levels 2.11 times above the US EPA Effects Screening Levels.

Chemicals found in the SIPCOT Air
▪ Hydrogen Sulphide
▪ Carbon Disulphide
▪ Isopropyl Alcohol
▪ Toluene
▪ m,p – Xylene
▪ Acrolein
▪ Acetone
▪ Methylene Chloride
▪ Trichloroethene
▪ 4-Methyl-2-Pentanone
▪ Bromomethane
▪ 2-Butanone

Three out of the above five chemicals, with the exception of Hydrogen Sulphide and Acrolein, are known or suspected human or animal carcinogens.

Vulnerable populations:

Women, infants and the elderly are the most vulnerable populations because they spend most of their time in the polluted villages. Many of the toxic gases found in SIPCOT air are known to retard the mental and physical growth of children, and result in birth defects and reproductive disorders. See Annexure 2 for health impacts of the gases found in the current samples.

The SIPCOT Area Community Environmental Monitors demand the following:

1. Ensure the implementation of the SCMC order (dated: 29 October 2004) with regard to SIPCOT Cuddalore and initiate continuous and long-term monitoring of emissions in SIPCOT industrial area Cuddalore, including for toxic gases such as VOCs and sulphur compounds, in consultation with the communities and publish the results periodically.
2. Use the data to apprehend polluters and take corrective action to bring levels of toxic gases to below detection limits in residential areas.
3. Conduct and make public company-specific audits, mass balance exercises, and toxic release reduction plans to pinpoint and fix leaks, fugitive emissions and total losses to the environment of chemicals used or generated in the process.
4. Provide for long-term health monitoring by initiating health studies among the residents of villages and workers in and around SIPCOT, Cuddalore at the cost of the polluters.
5. Take strict action against the Pollution Control Board for not complying with the orders of the SCMC.

The First “Gas Trouble” Report

Residents of SIPCOT Industrial Estate, Cuddalore, have long complained that the air they breathe is polluted. Last year, these complaints were scientifically verified. For the first time in India, trained environmental monitors from among the pollution-impacted communities analysed the air for toxic gases by the residents of the fence-line communities.

A total of five ambient air samples were taken between March and June 2004 during intense chemical odour incidents from the industries. The SIPCOT Area Community Environmental Monitors (SACEM) released its report -- “Gas Trouble – Air Quality in SIPCOT, Cuddalore” in September 2004. The report found:

- A total of 22 toxic chemicals.
- Eight of the 22 chemicals are known to cause cancer in animals and/or humans. Two are known human carcinogens; 6 are known animal carcinogens, and all are known or potential occupational carcinogens.
- At least 14 out of 22 chemicals violate the US EPA Region 6 Effects Screening Levels for residential air.

The results conclusively established that odour incidents are not merely a nuisance but a chemical hazard. The presence of chemical odour indicates the presence of toxic chemicals in the air.

The report highlighted the failure of the TNPCB to curb pollution in SIPCOT. Despite the fact that SIPCOT industries use more than 100 chemicals, including volatile and toxic compounds, as raw material, the levels of these chemicals inside the factory or in ambient air had never been tested. Neither have the villagers complaints of health problems been investigated.

As noted above, in September 2005, the SCMC ordered the TNPCB to monitor and assess the air quality in SIPCOT and to bring levels down to safe limits as prescribed by the US EPA.

After the SCMC Order...

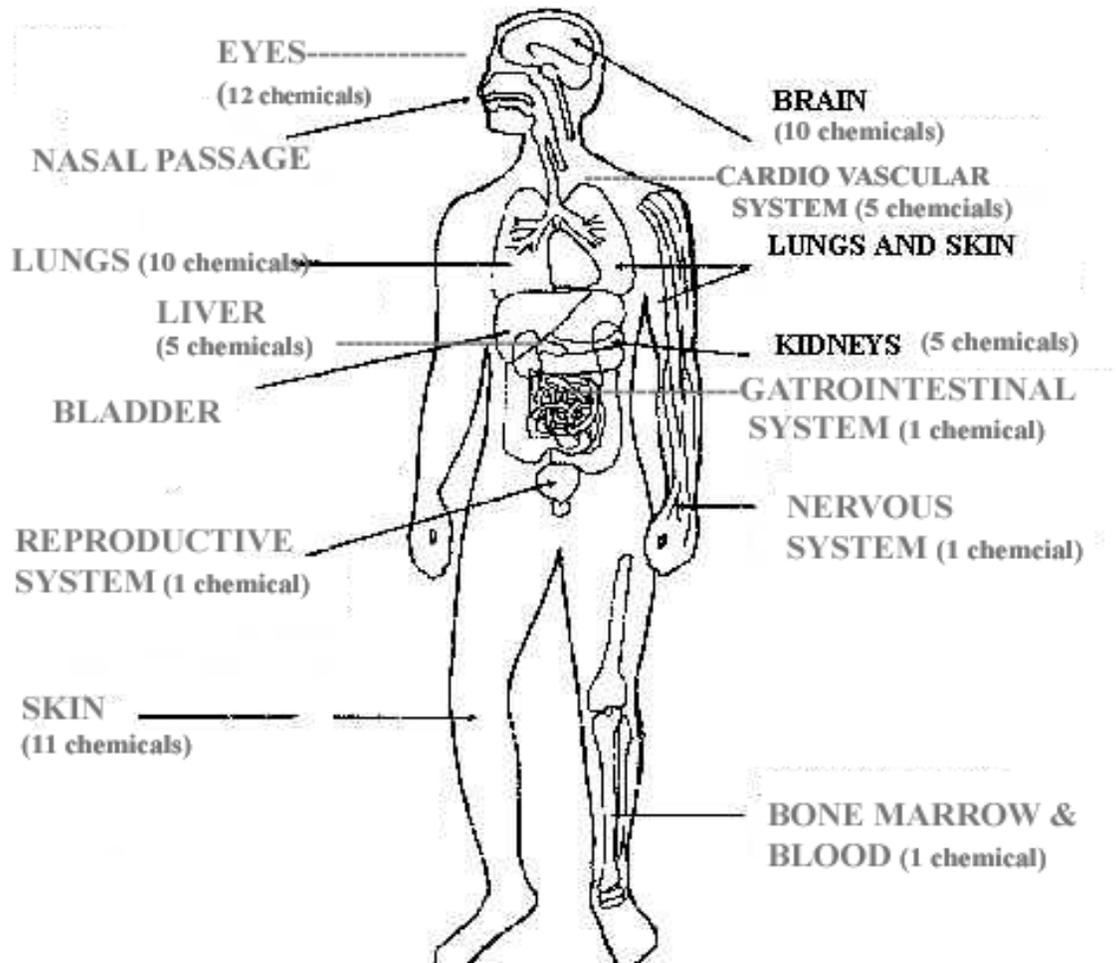
Following the orders of the SCMC, the Tamil Nadu Pollution Control Board (TNPCB) invited Central Pollution Control Board (CPCB) to monitor and assess the air quality in SIPCOT, Cuddalore.

At midnight of 11-12 October, 2004, the Central Pollution Control Board deployed a high-volume air sampler to get a 24-hour average of air quality in SIPCOT, Cuddalore. In this exercise, the

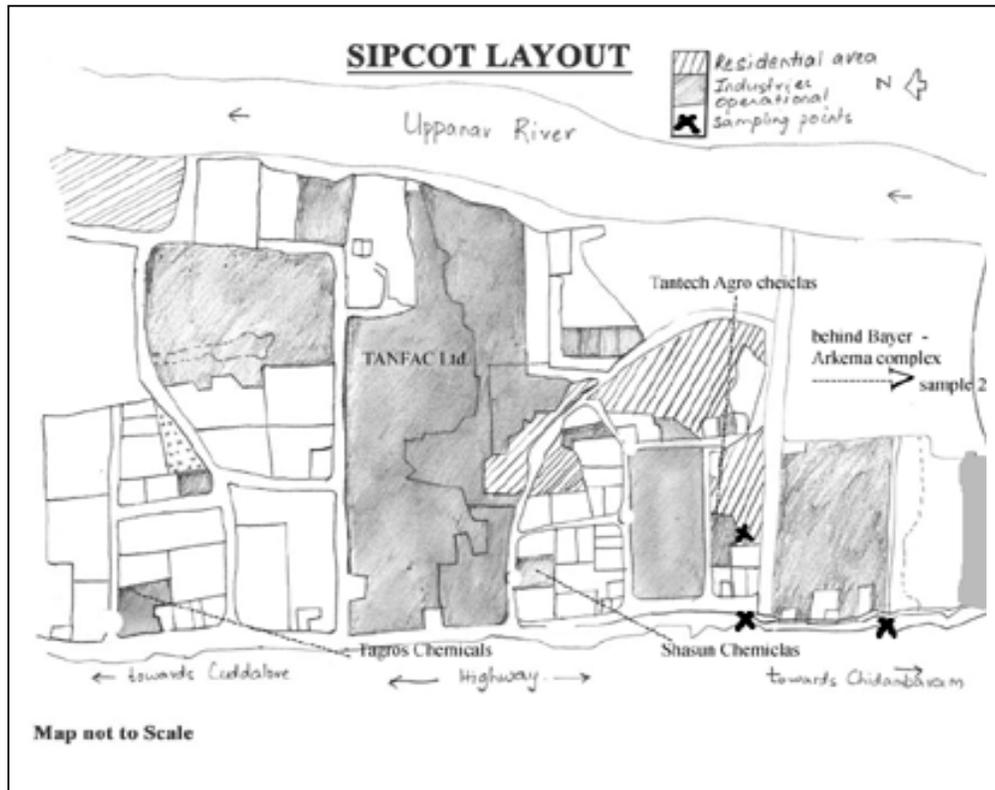
CPCB and the TNPCB personnel consulted and were guided around the industrial estate by the industry. Transportation was also allegedly provided by the industry.

Not only were the industries informed of the sampling exercise, but they were involved in identifying suitable sampling locations. Routine pollution patrols conducted by SACEM during CPCB's visit revealed that most of the industries had ceased to operate or were operating at less than 50 percent capacity during the sampling period. SACEM sent in daily representations recording the lack of odour during CPCB's visit. Further, neither the TNPCB nor the CPCB sought to involve community members in the exercise. Despite requests, no information about the data collected has been provided to the public.⁵

Body Organs targeted by Chemicals found in SIPCOT Air



Annexure 1



List of Chemicals found in the samples, their location and levels detected

Sample 1: Downwind of Tantech Agro Chemicals

Date: 30 October 2004

Comments: This sample was taken about a fortnight after the CPCB sampling in SIPCOT Cuddlaore.

Name of the Chemical	$\mu\text{g}/\text{m}^3$	ppbV	Levels in $\mu\text{g}/\text{m}^3$	Number of times exceeds the safe levels
Carbon Disulphide	64.7*	20.8	3.00 ^	21.5
Bromomethane	11*	2.8	5.20 **	2.11
Acetone	40	17	370 **	--
Isopropyl Alcohol	340	140	---	--
2 – Butanone (MEK)	8.3	2.8		--
Trichloroethylene	460*	85	1.10 **	418.1
4-Methyl-2-pentanone	230*	55	83 **	2.77
Toluene	35	9.2	400 **	--

*Exceed the Screening Levels

^ Texas Long – Term Screening Levels

** US EPA Region 6

Sample 2: Downwind of Bayer – Arkema Complex**Date:** 25 February 2005**Comments:** This sample was taken during a regular pollution patrol by the monitors, approximately one month after the visit of SCMC to Cuddalore

Name of the Chemical	µg/m ³	ppbV	Levels in µg/m ³	Number of times exceeds the safe levels
Hydrogen Sulphide	17.3*	12.4	1.00#	17.3
Carbon Disulphide	12*	3.9	3.00 ^	4
Isopropyl Alcohol	5.7		---	--
Toluene	70		400 **	--
m, p – Xylenes	7.1		---	--

*Exceed the Screening Levels

Texas Short – Term Screening Level

^ Texas Long – Term Screening Levels

** US EPA Region 6

Sample 3: Downwind of Tantech Agro Chemicals**Date:** 28 March 2005**Comments:** This sample was taken during a regular pollution patrol by the monitors.

Name of the Chemical	µg/m ³	ppbV	Levels in µg/m ³	Number of times exceeds the safe levels
Carbon Disulphide	12*	3.9	3.00 ^	4
Acrolein	6.4*	2.8	0.021 **	304.7
Acetone	65	28	370 **	--
Isopropyl Alcohol	450	180	---	--
Methylene Chloride	98*	28	4.09 **	23.9
Trichloroethene	1000*	190	1.10 **	909
4-Methyl-2- pentanone	200*	49	83 **	2.4
Toluene	93	25	400 **	--

*Exceed the Screening Levels

^ Texas Long – Term Screening Levels

** US EPA Region 6

Sample 4: Downwind of SPIC**Date:** 28 March 2005**Comments:** This sample was taken during a regular pollution patrol by the monitors.

Name of the Chemical	µg/m ³	ppbV	Levels in µg/m ³	Number of times exceeds the safe levels
Carbon Disulphide	15.1*	4.85	3.00 ^	5.03
Acrolein	5.3*	2.3	0.021 **	252.3
n-Butyl Acetate	320	68	---	--

*Exceed the Screening Levels

^ Texas Long – Term Screening Levels

** US EPA Region 6

Annexure 2

Health effects of the chemicals found in the air samples

Source: National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards, U. S. Department of Health and Human Services, February 2004.

S No.	Name of the chemical found	Odour	Found in sample taken downwind of	Health effects	Target Organs	Carcinogen
1.	Carbon Disulphide*	Sweet ether-like odour	<ul style="list-style-type: none"> ▪ Sample 1 Tantech Agro Chemicals ▪ Bayer – Arkema Complex ▪ Sample 2 Tantech Agro Chemicals ▪ SPIC 	Dizziness, headache, poor sleep, weakness, exhaustion, anxiety, weight loss; heart disease; stomach related problem; kidney, liver injury; eye, skin burns; skin diseases; reproductive defects	Central Nervous System, Peripheral Nervous System, Cardiovascular system, eyes, kidneys, liver, skin, reproductive system	No
2.	Bromomethane*	chloroform-like odour at high concentrations	<ul style="list-style-type: none"> ▪ Sample 1 Tantech Agro Chemicals 	Irritation eyes, skin, respiratory system; Central Nervous System depression; liver, kidney disease, cardiac arrest, [Potential occupational carcinogen]	Eyes, skin, respiratory system, liver, kidneys, Cardiovascular System, Central Nervous System	Yes Known animal carcinogen.
3.	Trichloroethene*	chloroform-like odour	<ul style="list-style-type: none"> ▪ Sample 1 Tantech Agro Chemicals ▪ Sample 2 Tantech Agro Chemicals 	Irritation of eyes and skin; headache, visual disturbances, weakness and exhaustion, dizziness, tremor, drowsiness, nausea, vomiting, dermatitis, liver injury, [Potential occupational carcinogen]	eyes, skin, respiratory system, heart, liver, kidneys	Yes Known animal carcinogen.

4.	4-Methyl-2-pentanone*	Mild odour	<ul style="list-style-type: none"> ▪ Sample 1 Tantech Agro Chemicals ▪ Sample 2 Tantech Agro Chemicals 	Irritation eyes, skin, mucous membrane; headache, coma; in animals: liver, kidney damage	Eyes, skin, respiratory system, central nervous system, liver, kidneys	NA
5.	Acetone	Fragrant mint-like odour	<ul style="list-style-type: none"> ▪ Sample 1 Tantech Agro Chemicals ▪ Sample 2 Tantech Agro Chemicals 	Irritation eyes, nose, throat; headache, dizziness, Central Nervous System depression; dermatitis	Eyes, skin, respiratory system, central nervous system	No
6.	Isopropyl Alcohol	Rubbing alcohol odour	<ul style="list-style-type: none"> ▪ Sample 1 Tantech Agro Chemicals ▪ Bayer – Arkema Complex ▪ Sample 2 Tantech Agro Chemicals 	Irritation eyes, nose, throat; drowsiness, dizziness, headache	Eyes, skin, respiratory system	No
7.	2-Butanone (MEK)	Sharp, fragrant min- like odour	<ul style="list-style-type: none"> ▪ Sample 1 Tantech Agro Chemicals 	Irritation eyes, skin, nose; headache; dizziness; vomiting; skin dermatitis	Eyes, skin, respiratory system, central nervous	No
8.	Toluene	Pungent Benzene-like odour	<ul style="list-style-type: none"> ▪ Sample 1 Tantech Agro Chemicals ▪ Bayer – Arkema Complex ▪ Sample 2 Tantech Agro Chemicals 	Irritation eyes, nose; weakness, exhaustion, confusion, dizziness, headache; discharge of tears; anxiety, muscle fatigue, sleeplessness; dermatitis; liver, kidney damage	Eyes, skin, respiratory system, central nervous system, liver, kidneys	No
9.	Acrolein*	Piercing disagreeable odour	<ul style="list-style-type: none"> ▪ Sample 2 Tantech Agro Chemicals ▪ SPIC 	Irritation eyes, skin, chronic respiratory disease	Eyes, skin, respiratory system, heart	No

10.	Methylene chloride*	Sweetish pungent, chloroform-like odour	<ul style="list-style-type: none"> Sample 2 Tantech Agro Chemicals 	Irritation eyes, skin; weakness, exhaustion, drowsiness, dizziness; numbness, tingle limbs; nausea; [potential occupational carcinogen]	Eyes, skin, cardiovascular system, central nervous system	Yes Known animal carcinogen.
11.	Hydrogen Sulphide*	Strong odour of rotten eggs	<ul style="list-style-type: none"> Bayer – Arkema Complex 	Irritation eyes, respiratory system; coma, eye pain, abnormal visual intolerance to light; dizziness, headache, weakness, exhaustion, problems related to the stomach	Eyes, respiratory system, central nervous system	No
12.	m,p – Xylene	Aromatic odour	<ul style="list-style-type: none"> Bayer – Arkema Complex 	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, uncoordination, staggering gait; nausea, vomiting, abdominal pain; skin diseases	Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys	No

Annexure 3

Letter from Adv. T. Mohan, Chairman of the Cuddalore Local Area Environment Committee to Chairperson, Tamilnadu Pollution Control Board

25th April 2005
L. No. 89-04/05

The Chairperson
Tamil Nadu Pollution Control Board
Chennai - 600 032.

Dear Ms.Vaidyanathan,

I visited the SIPCOT Industrial Estate, Cuddalore on 21st and 22nd April 2005. On 22nd April 2005, along with the District Environmental Engineer (DEE) and members of the LAEC, I visited Tagros, Victory Chemicals, CUSECS6, TANFAC and Shasun Drugs and Chemicals Ltd.

On my night visit to the estate on 21st April 2005, I was assailed by a cocktail of malodours. It is clear that these industries are yet to address the odour problem effectively.

1. My visit to Victory Chemicals left me entirely frustrated at the lack of progress. Their house keeping is of the poorest order and the hazardous waste from the factory lies not only strewn around but is also piled in a mound at the rear end of the facility, while the Company claims that the bottom of the dump/ mound is a lined one, I am not sure whether this is true and even if so whether the run off can be addressed by the bottom lining with no containment on the sides.

Alongside the compound wall, there is a storm water drain which from its coloration and location clearly collects run off from the hazardous waste site. Please have the DEE draw samples from the drain and issue a show cause notice to the unit for closure.

2. As far as Tagros is concerned the unit claims to be producing 360 metric tonnes of product a year and has sought clearance for expansion which application has been forwarded to the MoEF.

We have received complaints that the unit has expanded production without clearance from the MoEF/ consent from you. I understand that the unit had originally denied these reports. Even at the last LAEC meeting held on 01/04/05, we had asked the DEE to conduct further investigation in the matter. We now understand that the unit has now "confessed" to have expanded without clearance/consent. I have handed over to the DEE photocopies of the Company's annual report which prove that the unit has been producing more than the approved quantity even in the year 2000-2001 and had steadily expanded both the installed capacity and actual production.

3. It is clear that the unit has confirmed its transgression of the law after it was made clear at the last LAEC meeting that we had documentary proof of the expansion without permission.

This state of affairs is unfortunate, to say the least. Industries must respect pollution control and environmental law and not deal with institutions and laws as something merely to be tolerated.

Please address the MoEF to reject Tagros' clearance application as the same is false in material particulars. The Board should prosecute the Company and its Directors (past and present) for operating at a capacity in excess of what was permitted. The MoEF and the State Government may be requested to prosecute the unit and its Directors for violation of the Environmental Impact Assessment Notification S.O.60[E] dated 27/01/1994. Could you please direct the D.E.E to send us copies of the correspondence between Tagros and the Board in this regard, especially the letters from Tagros dated 22/03/05 and 07/04/05. We also need to place on record in the Supreme Court in W.P.(Civil) No.460/04, the fact that Tagros has violated the EIA Notification. A copy of the Tagros' letter dated 07/04/05 may be sent to the SCMC also.

4. As regards TANFAC we saw HF waste lying in the open as well as gypsum waste. During my night visit around the precincts, I noticed that the waste was being loaded onto trucks and there was lot of particulate matter flying around.

I am also concerned about the HF waste polluting ground water. The D.E.E informed me that ground water samples had been drawn in close proximity to the dumpsite.

I would recommended that samples be drawn again in the presence of the LAEC. As for the present condition of the HF waste, it has to be addressed urgently.

5. On my visit to Shasun, I did notice persist odour especially near the mercaptan incineration. I however did not have enough time to do justice to my visit and I hope to redress that in the near future.

Over all, my assessment is that a lot of work needs to be done to redress the grievances of the communities living around the plant and this itself is a huge task. At the last LAEC meeting, we had articulated concern over this and directed that all applications for establishment / operation/ renewal/ expansion be refused to the LAEC.

However, to our consternation we learn that a new unit has been accorded consent to establish as also MoEF clearance viz Shasank Chemicals and Drugs Pvt. Ltd. Please forward necessary papers to the LAEC and intimate the applicant that the matter is being looked into by the LAEC. I am also concerned that in spite of the SHRC report, the NEERI report and the IPT report recommending no new industries in Cuddalore, plans are afoot for a textile park in Cuddalore.

We also learn that phase II of SIPCOT is generating interest hitherto dormant. We are concerned about these developments. As resolved at the last LAEC, please refer all applications for expansion/ establishment/ operation/ renewal to the LAEC. Please let us know if the TNPCB has taken any policy decision on locating the new industries in Phase I / Phase II/ Phase III of SIPCOT and whether it has corresponded with the State / Central Government in this regard. I enclose representations from villagers and a SACEM member against new industries in SIPCOT.

Another issue which troubles the LAEC is the grim drinking water situation. Ground water contamination has rendered the water unpotable. Industries must be saddled with the responsibility of paying for supply of drinking water to the villages around SIPCOT. SIPCOT may be asked to provide an estimate of the costs of ensuring piped water supply to the villages both capital and operational and we may address industries on paying these costs.

The Board has furnished us a filled up questionnaire giving us details of 6 industries as well as some shutdown industries. I have referred the report to an independent researcher, whose comments I enclose. He points out that the ROA reveals effluent parameters exceeding threshold standards by any extremely high degree.

Please let us know what steps have been taken in respect of this situation.

Yours sincerely,
(T.MOHAN)

Annexure 4

SUPREME COURT MONITORING COMMITTEE

(Ref: CWP 657 Of 1995)

**REPORT OF THE VISIT OF THE SCMC TO TAMILNADU
SEPTEMBER 20-22, 2004**

(Relevant Excerpts from the report regarding the Order on Air Quality of SIPCOT Cuddalore)

(Page 1)

The Supreme Court Monitoring Committee on Hazardous Waste Management (SCMC) visited the State of Tamilnadu during September 20-22, 2004 to monitor compliance of the directions issued by the Supreme Court in its order dated 14.10.2003 in CWP No.657/1995 and to verify the report presented by the Tamilnadu Pollution Control Board (TNPCB) to the SCMC at its second meeting held in Mumbai in January 2004.

Present were:

1) Members of the SCMC

- Dr. Claude Alvares
- Dr. D.B. Boralkar
- Dr. Tapan Chakrabarti
- Prof. S.P. Mehrotra
- Dr. G. Thyagarajan, Chairman

2) MoEF

- Ms. Usha Subramaniam, Jt. Director (HSM Divn)

3) TN PCB

- Ms. Girija Vaidyanathan, Chairperson
- Thiru K. Sanjeevi, Member Secretary
- Thiru R. Ramachandran, Dy. Chief Environ. Engineer.

4) TN State Government

- Shri Ajoy Bhattacharya, Environment Secretary
- Shri R. Mishra, Industry Secretary
- Shri T.R.Srinivasan, Chairman & Managing Director, SIPCOT

(Page 8-10)

3. Report titled “GAS TROUBLE” relating to air pollution by Cuddalore industrial estate

During the public hearing held on September 22, 2004 in the premises of TNPCB, a group of NGOs presented the SCMC with a copy of a detailed report entitled “Gas Trouble” regarding monitoring study of air quality in SIPCOT, Cuddalore, particularly for the presence of volatile organic compounds (VOCs). The residents living in and around the industrial estate have complained of intense chemical odour. According to them, the odour is due to chemical pollution and such VOCs are the cause for many health disorders.

The SCMC feels that the regulatory authorities ought to have investigated such complaints in a serious manner as that would have given authentic information regarding the nature and levels of toxic gases in the ambient air in the residential areas in and around SIPCOT. SCMC did not come across any health studies done to investigate the nature of health problems and the probable causes.

The report of the NGO has indicated presence of 22 toxic chemicals that are harmful to eyes, respiratory system, central nervous system, skin, liver, heart, kidney etc. Some of these chemicals are even known to cause cancer. Following is a list of toxic organic compounds reported in the report:

- Hydrogen sulphide
- Methyl mercaptan

- Dimethyl disulphide
- Ethanol
- Methylene chloride
- Trichloroethene
- Toluene
- Acetone
- Isopropyl alcohol
- n-Hexane
- Chloroform
- Carbon tetrachloride
- Vinyl acetate
- n-Butyl acetate
- Carbon disulphide
- Dimethyl disulphide
- Vinyl chloride
- Bromomethane
- Acetonitrile
- 1,2-Dichloroethane
- Benzene
- Acrolein

Air quality measurements conducted by NGOs at different locations have reportedly shown concentration of toxic gaseous compounds far in excess of standards permissible under the USEPA. For many of these compounds there is no Indian standard as yet.

The SCMC considered the said report carefully. The conceptual definition of hazardous waste as given in Vol. I of the final report submitted by the High Powered M.G.K. Menon Committee is reproduced below:

Hazardous waste means, any substance, whether in solid, liquid or gaseous form, which has no foreseeable use and which by reasons of any physical, chemical, reactive, toxic, flammable, explosive, corrosive, radioactive or infectious characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other wastes or environment, and should be considered as such when generated, handled, stored, transported, treated and disposed of. This definition includes any product that releases hazardous substance at the end of its life, if indiscriminately disposed of.

In view of the above, it is very much clear that the toxic organic compounds present in the ambient air are arising due to the improper management of the hazardous wastes and hazardous chemicals in the SIPCOT, Cuddalore industrial estate.

It is further felt that in the absence of proper facilities for treatment and disposal, such hazardous wastes/spent organic compounds are indiscriminately thrown by the user industries within the industrial area and outside which have resulted in the presence of such high concentrations.

The SCMC, therefore, issues following directions to address the problem of volatile compounds in the ambient air:

- 1) A detailed investigation including monitoring and inventorisation of use of such organic compounds and their methods of management and handling shall be done by TNPCB. For this purpose, Tamilnadu Board shall take the technical assistance from the expert agencies/organizations. CPCB may also be involved in the monitoring and assessment. The work should be completed within three months from the date of this Report.
- 2) CPCB shall accord high priority and lay down the standards for organic VOCs cited in the document produced by the said NGO ("Gas Trouble"). USEPA standards for VOCs could form a basis to begin with.
- 3) If the air pollution around Cuddalore is not reversed within three months, from the date of this Report, that is, by December 31, 2004, the entire Cuddalore industrial estate shall go for closure and units will be allowed to reopen only if they meet the currently available standards (applicable in this case) laid down under the USEPA for VOCs or CPCB standards if made available during this period.

¹ Tamil Nadu Pollution Control Board, Letter No. T12/SCMC/2783/05 Dated 28 March 2005. “Information on SIPCOT Industries”.

² National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards, U. S. Department of Health and Human Services, February 2004.

³ NIOSH, February 2004. *Op Cit*

⁴ NIOSH, February 2004. *Op Cit*

⁵ Letter dated 13 October 2004, to Dr. Claude Alvares, member SCMC by Nityanand Jayaraman