The background of the entire page is a photograph of a wide, paved road lined with mature trees. Sunlight filters through the dense green foliage, creating a dappled light effect on the road surface. In the distance, a few people can be seen walking along the path.

Annual Environment Survey Report

2009 - 2010

**Puducherry Pollution Control Committee
Department of Science, Technology & Environment
Government of Puducherry**



Annual Environment Survey Report

2009 – 2010



PUDUCHERRY POLLUTION CONTROL COMMITTEE

**3rd Floor, Housing Board Building,
Anna Nagar
Puducherry - 605 005.**

PUDUCHERRY POLLUTION CONTROL COMMITTEE



***We have not INHERITED this earth from our
ANCESTORS, We borrowed it from our Children.***

V. VAITHILINGAM

Chief Minister



MESSAGE

During the last few decades, it has become very clear that we can no longer think of socio-economic development without addressing the environmental issues. Failure in arriving conscious decisions at Copenhagen Conference for combating global warming implies that the environment issue is quite complex.

Being a small U.T., rich in diversity of ecosystems, Government is keen to put inbuilt environmental protection measures while framing development projects. Halting salt water intrusion in the coastal aquifer, improvement of quality of ground water and air quality, banning of use of thin plastics are some of the positive outcome of the Government green initiatives.

I am glad to note that Puducherry Pollution Control Committee and Department of Science, Technology and Environment is bringing out the second Annual Environment Survey Report, which would be of immense help as a reference material to all those concerned.



V. VAITHILINGAM



Puducherry
24-05-2010



E. VALSARAJ
Home Minister



MESSAGE

Environmental protection & development being interdependent & indivisible, Our Government have been taking all measures to arrest environmental degradation and promote economic development.

I am glad to note that Pondicherry Pollution Control Committee highlighting its activities is bringing out "Annual Environment Survey Report" in connection with World Environment Day, 2010.

I am confident that the report will be an effective tool and useful to planners, policy makers, scientists and NGO's in the field.

Puducherry
28-05-2010


E. VALSARAJ



R. CHANDRAMOHAN, I.A.S
Chief Secretary



MESSAGE

The Annual Environment Survey Report - 2009-2010 is being released by the Pondicherry Pollution Control Committee and Department of Science, Technology and Environment, Govt. of Puducherry on the occasion of the World Environment Day - 2010 i.e., on 5th June, 2010. The survey brings out that all the important environmental parameters like Ambient Air Quality, Ground Water Quality and Surface Water Quality, etc., are within the prescribed standards.

I compliment all the officers of the PPCC and DSTE for the efforts put in by them in monitoring the environmental conditions in the Union Territory and for publishing this Report in time.



R. CHANDRAMOHAN

Puducherry
31-05-2010



G. THEVA NEETHI DHAS

Special Secretary (Environment)
Chairman, PPCC



PREFACE

Sustained and equitable development is possible only with the conservation of environment. Global warming and the consequential climate changes are the major challenges being faced by all living beings. Loss of fauna and flora is also one of the visible effects of global warming. Emphasizing the importance of conservation of biodiversity, the theme of World Environment Day has been declared this year as "Many species, One planet and One future".

Puducherry like other coastal territories faces various environment related challenges like coastal erosion, industrial pollution, inadequate disposal of municipal and bio medical wastes, vehicular emission, loss of biodiversity etc. Puducherry Pollution Control Committee having realized the necessity of protecting the fragile ecosystems is taking concerted efforts to resolve various issues pertaining to environment degradation. The PPCC will coordinate with the Government Departments and other Stakeholders and prepare a state action plan on climate change during 2010-11. The decision of UT Government to ban the use of thin plastics less than 51 micron will be enforced vigorously.

Thanks to the continuous financial and technical support of Ministry of Environment and Forests and Central Pollution Control Board, PPCC has been strengthened considerably. This second annual report of PPCC will throw light on various activities performed and initiative taken during the financial year 2009-2010 and will make an overall presentation on the environmental scenario in the U.T of Puducherry


G. THEVA NEETHI DHAS



Puducherry
24-05-2010

Dr. RAMASWAMY MURUGAN

Member Secretary
Puducherry Pollution Control Committee



From the Desk of Member Secretary

Environment has close nexus with human beings. Good environment improve the productivity of mankind. Environment protection has moved from option to compulsion. Protection of the environment is needed from various human activities. Waste, loss of biodiversity, introduction of invasive species, release of genetically modified organism and toxins are some of the issues related to environment protection.

Creating awareness about the environment and an attitude of caring and sharing of natural resources in the minds of citizens of our nation is very important. Role of NGOs in bringing awareness about the Government ban on usage of carry bags of thickness of 50 micron or below to be appreciated. PPCC is inspired by the success outcome of its approach by collaboration in abating pollution in industrial sector.

Industries located in Puducherry vary in resource consumption and release of environment pollution. Technology needed to be adopted also varies on case to case. PPCC is in the position to guide them to choose appropriate technology. As a result, the compliance status of various discharge / emission standards of the industry have been improved.

In compliance with the provision of Section 24 of the Water (Prevention and Control of Pollution) Rules, 1974, Puducherry Pollution Control Committee (PPCC) bring its second Annual Report. This report documented the various activities performed by the Department of Science, Technology & Environment and PPCC for the financial year 2009-2010.

Puducherry
28-05-2010


Dr. RAMASWAMY MURUGAN



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1. INTRODUCTION

Puducherry Pollution Control Committee (PPCC) has been functioning since 1.4.1992 in U.T. of Puducherry. It is a statutory body in the Department of Science, Technology & Environment. PPCC realized the importance of protecting the fragile ecosystem of the U.T. and enforces the provisions of Rules and Acts pertaining to environment protection. Puducherry consists of various ecosystems like marine, freshwater, mountain, crop, mangroves and sand dunes.

Establishment of private medical colleges and rapid urbanization leads to generation of considerable quantity of bio medical wastes and municipal solid wastes. Managing these wastes are great challenges to this Administration. PPCC in collaboration with private entrepreneur and other stakeholders trying to find sustainable solution by establishing Common facility.

PPCC encourages industry to shift the conventional technology to Clean Development Mechanism (CDM) in order to minimize the green house gases and to mitigate the on going climate changes. PPCC is not only adopting command and control policy but also provide consultancy, advocacy and dissemination of best practicing technology. It identifies and recognizes the Industries adopting green technology by awarding Green Award.

Activities of Puducherry Pollution Control Committee (PPCC) are guided by the Ministry of Environment and Forests, and Central Pollution Control Board and being shaped by the Southern State Region Conferences of Pollution Control Boards / Committees. Uniform consent procedure, Co-processing of plastic wastes and sharing of Treatment, Storage and Disposal Facilities are few collaborative outcome of the Southern Region Conference which have been embedded in the activities of PPCC.

PPCC is also acting as host organization for Environmental Information System (ENVIS), a Ministry of Environment and Forests sponsored project. PPCC organize various environment awareness program in collaboration with NGOs like conduct of World Environment Day and observation of Earth Day, etc.

This Annual report documents important events / activity of PPCC and Dept. of Science Technology and Environment and enable to evaluate its performance during the financial year 2009-2010.

2. CONSTITUTION OF PUDUCHERRY POLLUTION CONTROL COMMITTEE

Puducherry Pollution Control Committee was constituted on 1.4.1992 after the Central Pollution Control Board (CPCB) had delegated all its power in exercise of the power conferred by Section 4, Clause (4) of Water (Prevention and Control of Pollution) Act, 1974 and Section 6 of the Air (Prevention and Control of Pollution) Act, 1981. The Committee consists of the following members:

1.	Secretary to Government (Environment), Union Territory (UT) of Puducherry	Chairman
2.	Senior Town Planner, Town and Country Planning Department, UT of Puducherry	Member
3.	Chief Engineer, Public Works Department, UT of Puducherry	Member
4.	Director of Health and Family Services UT of Puducherry	Member
5.	Director of Local Administration Dept, UT of Puducherry	Member
6.	Commissioner of respective Commune Panchayats	Member
7.	Director of Agriculture, UT of Puducherry	Member
8.	Director of Industries, UT of Puducherry	Member
9.	President of the Chamber of Commerce	Member
10.	Director, Department of Science, Technology and Environment	Member Secretary

PPCC also co-opt the following three members as special invitee:

1. Inspector of Factories, Government of Puducherry
2. Superintending Engineer, Electricity Department, Government of Puducherry
3. Chairman, State Environmental Impact Assessment Authority, Puducherry.

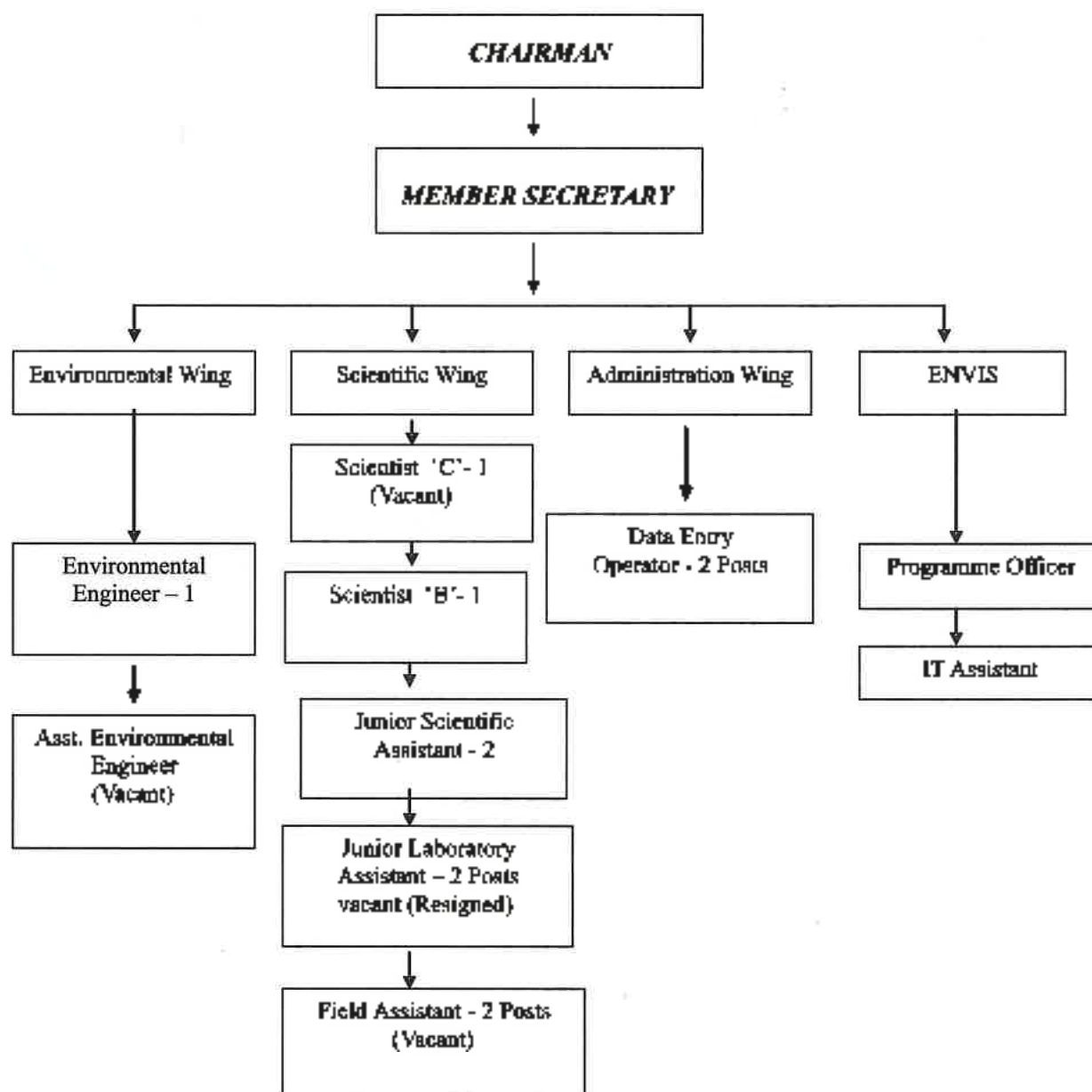
FUNCTIONS OF PUDUCHERRY POLLUTION CONTROL COMMITTEE

- a. Planning comprehensive programme for the prevention and control of pollution.
- b. Advise the State Government on framing environment and industrial policy
- c. Collect and disseminate Informations relating to natural resource, environment protection and pollution control
- d. Carrying research programmes in conservation and pollution control
- e. Collaborating with the Ministry of Environment and Forest and Central Pollution Control Board in organizing training related to prevention, control or abatement of pollution and to organize mass education programmes
- f. Scrutinize application and inspect the site and grant/reject Consent to Establish for industrial unit
- g. Ensure compliance of Consent to Establish conditions and issue Consent to Operate or take action against defaulter
- h. Keep strict vigil and monitoring on the industrial activity and performance of pollution control devices
- i. Evolving economical and reliable methods of treatment of sewage and trade effluent
- j. Encourage entrepreneur to pursue Corporate Responsibility measures and adopt Clean Development Mechanism
- k. Involving Self Help Groups, NGOs, farmers and students in environmental awareness creating programme.
- l. Preparation of action plan on solid waste, biomedical waste and hazardous waste management

PPCC IMPLEMENTS THE FOLLOWING ACTS AND RULES:

1. The Water (Prevention and Control of Pollution) Act, 1974
2. The Water (Prevention and Control of Pollution) Rules, 1975
3. The Water (Prevention and Control of Pollution) Cess Act, 1977
4. The Water (Prevention and Control of Pollution) Cess Rules, 1978
5. The Air (Prevention and Control of Pollution) Act, 1981
6. The Air (Prevention and Control of Pollution) Rules, 1981
7. The Environment (Protection) Act, 1986
8. The Environment (Protection) Rules, 1986
9. The Manufacture, Use, Import, Export and Storage of Hazardous Micro-organism Genetically Engineered Organism or Cells Rules, 1989
10. The Hazardous Wastes (Management & Handling) Rules, 1989
11. The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989
12. Notification on Coastal Regulation Zones, 1991
13. The Public Liability Insurance Act, 1991
14. The Public Liability Insurance Rules, 1991
15. Fly Ash Notification, 1991
16. Environmental Impact Assessment Notification, 2006
17. The Bio-Medical Waste (Management & Handling) Rules, 1998
18. The Plastics Manufacture, Sale and Usage Rules, 1999
19. The Municipal Solid Wastes (Management & Handling) Rules, 2000
20. The Noise Pollution (Regulation and Control) Rules, 2000
21. The Ozone Depleting Substances (Regulation) Rules, 2000
22. The Batteries (Management & Handling) Rules, 2001

**PUDUCHERRY POLLUTION CONTROL COMMITTEE
ORGANIZATIONAL CHART**



Constitution of Committee for Uniformity in Consent Management

A decision was taken in the 3rd Southern Regional Conference of Chairpersons and Member Secretaries of State Pollution Control Boards / Committee held during 29-30, May 2009 at Bengaluru to constitute a Committee for Uniformity in consent management for Southern States. Dr. N. Ramesh, Environmental Engineer, PPCC has been nominated as a member of the Consent Management Committee.



Fig. 1. 3rd Regional Conference of Chairperson & Member Secretaries of Southern State PCBs / PCCs held on 29th & 30th May 2009 at Bengaluru, Chairman, PPCC is on the dais

Meetings of the PPCC

As per the provision of Section 8 of the Water (Prevention and Control of Pollution) Act, 1974, a Board shall meet at least once in every three months. 104 PPCC meetings has been convened since its inception.

The following meetings have been convened during the financial year:

Table 1. Details of PPCC meeting

No. of the Committee Meeting	Date of convened
98 th Meeting	03.06.2009
99 th Meeting	04.07.2009
100 th Meeting	16.09.2009
101 st Meeting	16.12.2009
102 nd Meeting	20.01.2010
103 rd Meeting	19.02.2010
104 th Meeting	19.03.2010

3. A GLANCE ON INDUSTRIALIZATION

Pandit Jawaharlal Nehru had envisioned a special status for Puducherry to preserve "The Window to the French Culture in India". While Nehru was laying strong foundations for a modern industrialized nation, Puducherry has joined the union of India in 1954 with limited industrial inheritance. There were only 3 large textile mills and 5 odd small industrial units. Until the end of the 70s, Puducherry witnessed slow phase of industrialization. Only 9 large scale units had been established.

Industrialization gained momentum in Puducherry during 1980. By the end of the 1980s, Puducherry had 12 large scale, 41 medium scale and 1426 small scale units. By February 1997, there were impressive establishment of 25 large scale Industries, 88 medium and 5492 small scale units. The union territory of Puducherry has received since April 1993 the benefit of income tax holiday for five years for new industries. This has brought in a new spurt in the industrial growth. By 2010 there were 75 large scale, 183 medium scale and 8141 small scale units in the Puducherry, providing employment of 90,000 persons. Currently the industrial sector plays a vital role in the state economy and accounts for 37% of state income. (Report on index of industrial production, 2001). It has been estimated that the annual industrial growth rate is 4.9%. Investment on industries has increased 250 folds during the last twelve years.

Table 2. Profile of Industries

Size	Number
Small Scale Industries	8141
Medium Scale Industries	183
Large Scale Industries	75
TOTAL	8399

4. CONSENT MECHANISM

Based on the Prevention and Control of Pollution (Uniform Consent Procedure) Rule, 1999, industries in Puducherry have been classified into three categories viz.

- ❖ Green – Lesser Polluted.
- ❖ Orange- Moderately Polluted.
- ❖ Red- Highly Polluted

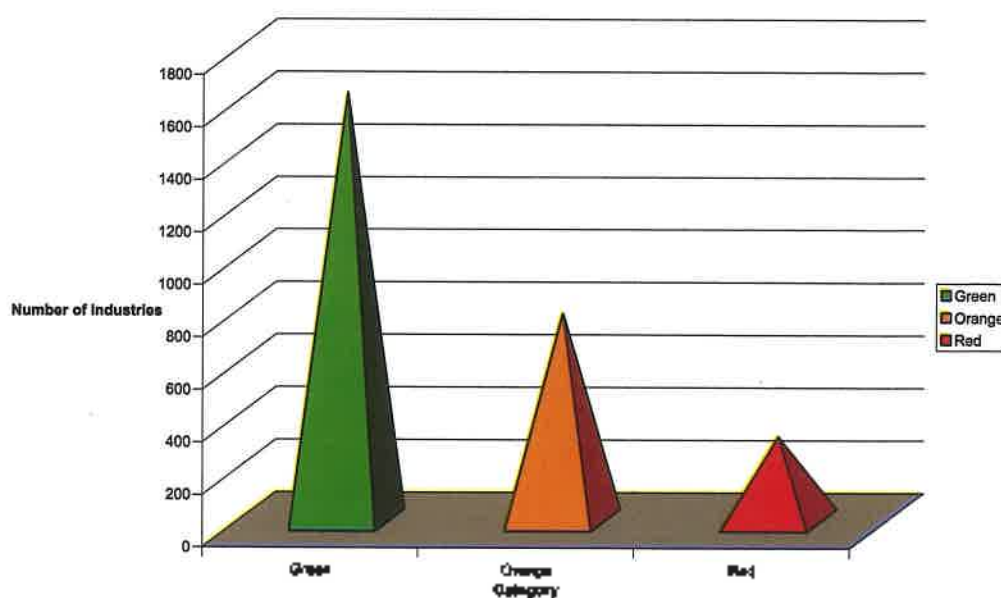


Fig.2 Categorization of Industries

In order to speed up the issue of consent renewal of the industry, Consent mechanism has been re-engineered. A decision was taken in the 98th PPCC meeting held on 3.6.2009 to increase the frequency of renewal as given below.

Table 3. Periodicity of Renewal

Category	Period
Red	Three
Orange	Four
Green (Medium and Large)	Five

Delegation of power for issue of Consent to Establish, Consent to operate and Renewal of consent

In order to simplify and expedite the consent procedure, power has been delegated at different levels as given below:

Table 4. Delegation of power

Sl No.	Category	Size	Power to issue NOC / Consent to Establish	Power to issue Consent to Operate	Consent Renewal
1	Red	Large, Medium & Small	By Committee	Chairman	Chairman
2	Orange	Large, Medium & Small	Chairman	Member Secretary	Member Secretary
3	Green	Large & Medium	Member Secretary		
		Small	Member Secretary	Exempted from obtaining Consent to operate and renewal of consent.	

During the financial year 2009-2010, 220 Consent to Establish, 57 Consent to Operate, 214 Consent Renewal under Air Act, 192 Consent Renewal under Water Act have been accorded. The details are as given below

Table 5. Details on No. of Consent issued during April'09 - March'10

Month	NOC	Consent to Operate (Air Act)	Consent to operate (Water Act)	Consent Renewal (Air Act)	Consent Renewal (Water Act)
April 2009	14	5	2	16	12
May 2009	9	5	2	27	21
June 2009	17	5	3	31	28
July 2009	14	3	2	19	18
August 2009	11	4		20	20
September 2009	37	7	5	30	30
October 2009	15	2	2	13	10
November 2009	16	-	-	10	9
December 2009	15	-	-	15	13
January 2010	18	1	1	10	11
February 2010	27	3	1	12	13
March 2010	27	3	1	11	7
Total	220	38	19	214	192

Meeting with Industrial Association

A meeting was organized with the representative of the Association of Industries under the Chairmanship of Thiru G. Theva Neethi Dhas, Chairman, PPCC to resolve various issues pertaining to the grant of consent under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981. The following decisions have been taken:

- The Chairman, PPCC emphasized the necessity of adopting Self regulation / monitoring system in tune with the Corporate Social Responsibility. It also helps the industries in getting ISO Certification.

- i. In order to efficiently monitor the environmental parameters the services of the laboratories authorized by the Ministry of Environment and Forests, GOI may be utilized.
- ii. Special Campaign may be organized in the Industrial Estates for group consent renewal. First campaign will be organized at Mettupalayam Industrial Estate in the week commencing 25th January 2010. CII will consult all their affiliated associations and furnish a suggestive schedule for all cases.
- iii. Cess payment may be simultaneously done while submitting returns of ground water consumption.
- iv. The due date for consent renewal may be synchronized and be fixed as 31st December for all the units.
- v. Industries will furnish the data sheet in the prescribed format for computerization of records in the PPCC.



Fig. 3. Interaction meeting with Industrial Association to resolve various issues pertaining to grant of consent renewal

Campus Clearance

PPCC has very skeleton manpower. It is very difficult to cope with managing the consent procedure. The following attributes delay in consent process:

- i. Delay in submission of the application
- ii. Incomplete application
- iii. Applied with inadequate fee
- iv. Incompetent staff for dealing the consent issue (mostly from HRD)
- v. Temporary shut down of the unit during monitoring / inspection.

In order to evolve effective mechanism to deal the consent process, a decision was taken in the Industrial Association meeting to organize Campus Clearance in all the industrial estates. Accordingly, first campus clearance was conducted on 25.01.2010 at Mettupalayam Industrial Estate in collaboration with Pondicherry Chamber of Industry. Officials of PPCC received the consent applications, scrutinized and consents were renewed.



Fig 4 Campus Clearance at the Mettupalayam Industrial Estate

5. LABORATORY ACTIVITIES

Grade 'B' analytical laboratory is functioning in the Department since 1993. The activities of the Laboratory include:

- ❖ Ambient Air Quality and Stack Monitoring
- ❖ Monitoring of industrial effluents
- ❖ Noise Monitoring
- ❖ Vehicular Monitoring
- ❖ Surface and Ground Water Quality Monitoring
- ❖ Monitoring on festive occasion viz., Vinayaka Chathurthi (Ganesh Pooja) and Deepavali

Table 6. Parameter Assessed in the Laboratory - Water Samples

S. No.	Parameter	Method Followed
1.	Temperature	Thermometric method
2.	pH	Electrometric method
3.	Turbidity	Nephelometric method
4.	Dissolved Oxygen	Iodometric method
5.	Biochemical oxygen Demand	Dilution method
6.	Nitrogen, nitrate + nitrite	Amalgamated Cadmium Reduction method for reduction of nitrate to nitrite by diazotization method
7.	Conductivity	Conductometric method
8.	Chloride	Argentometric method
9.	Total Residual Chlorine	Titrimetric method
10.	Hardness	EDTA Titrimetric method
11.	Calcium	EDTA Titrimetric method

12.	Magnesium	By difference of 10 and 11
13.	Alkalinity	Visual titration Method
14.	Sulphate	Turbidimetric method
15.	Sodium	Flame photometric method
16.	Potassium	Flame photometric method
17.	Chemical Oxygen Demand	Dichromate reflex method
18.	Total Dissolved Solids and Fixed Dissolved Solids	Gravimetric method
19.	Phosphate	Molybdate method (Colorimetric)
20.	Boron	Curcumin method (Colorimetric)
21.	Ammonia	Nesslerisation Method
22.	TKN	Distillation followed by Colorimetric method
23.	P/R ratio	Iodometric method
24.	Oil & grease	Solvent Extraction Method
25.	TSS	Gravimetric method
28.	Chromium Trivalent	Colorimetric method
29.	Chromium Hexavalent	Colorimetric method

Table 7. Parameter Assessed in the Laboratory - Air Samples

S. No.	Parameter	Method Followed
01	Particulate Matter (size less than 10 micron)	Gravimetric
02	Sulphur di oxide (SO ₂)	Improved West and Gaeke Method
03	Oxides of Nitrogen as (NO _x)	Jacob & Hochheiser Modified Method
04	Chlorine	Colorimetric method
05	Acid Mist (HCl & H ₂ SO ₄)	Titrimetric
06	Ammonia	Nesslerisation

Table 8. Details of monitoring conducted during 2009-10

S.No	Type of monitoring	No. of monitoring
1	Ambient	167
2	Stack	36
3	Noise	7
4	Effluent	42
5	AQC	4
6	Vehicular Emission	3
	Total	259



Fig 5. Ambient air quality monitoring



Fig 6. Stack Monitoring



Fig 7. Vehicular emission Monitoring

6. STATUS OF AIR QUALITY

The Central pollution Control Board (CPCB) in collaboration with the State Pollution Control Board (SPCBs) has established National Ambient Air Quality Monitoring (NAMP) network, comprising 342 station in 127 cities/towns. The data, generated, are transmitted to CPCB for scrutinization, analysis, compilation and publication as a consolidated report.

Dust, dirt, harmful gases and industrial emissions, are causes of air pollution. These pollutants cause a deterioration in air quality and are capable of harming life forms. Thus the primary aim of the NAMP is to provide a basis for protecting public health from adverse effects of air pollution

The average adult at rest inhales and exhales approximately 7 to 8 liters of air per minute. And about 11,000 liters of air require in a day to sustain the requirements of oxygen. If these air gets polluted, it will have various impact on man and the environment. So it is prime important to undergo monitoring for estimating the pollutant load so as

- To determine present air quality status and trends,
- To provide background air quality data as needed for industrial siting.
- To control and regulate pollution from industries and other sources to meet the air quality standards.

Air Quality Monitoring station in the U.T. of Puducherry

Under the scheme of "National Air Quality Monitoring" Programme, three stations have been identified and the monitoring is being carried out two days in a week in each station.

The monitoring of Ambient Air Quality of Puducherry region includes the assessment of Particulate Matter (less than 10 micron meter), Sulphur-di-oxide (SO_2) and Nitrogen di oxide (NO_2). Respirable Dust sampler used for sampling Particulate Matter (less than 10 micron meter) at the flow rate of 0.9 – 1.4 m^3/min . Thermoelectrically cooled gaseous samplers attached to the kit used for gaseous sampling at the flow rate of 1LPM.

The Annual Average Concentration of Air pollutants for the year 2009 is given in the table 9

Table 9. Ambient Air Quality Monitoring Results - 2009

Parameters	Chamber of Commerce	DSTE	PIPDIC	Annual Average standard
PM ₁₀ ($\mu\text{g}/\text{m}^3$)	37	40	47	60
SO ₂ ($\mu\text{g}/\text{m}^3$)	2.9	3.5	4	50
NO ₂ ($\mu\text{g}/\text{m}^3$)	8	11.4	12.4	40



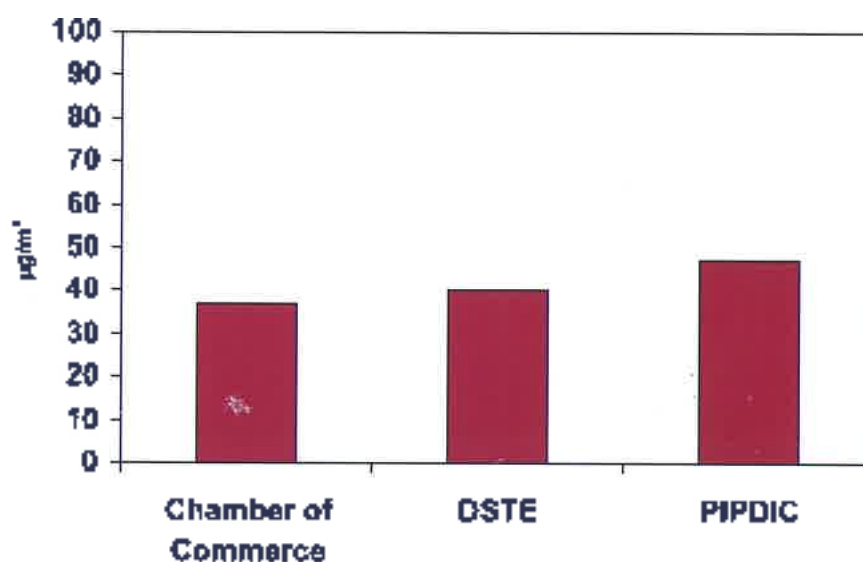


Fig 8. Annual average concentration of Particulate Matter (size less than 10 micron meter) - 2009 - 2010

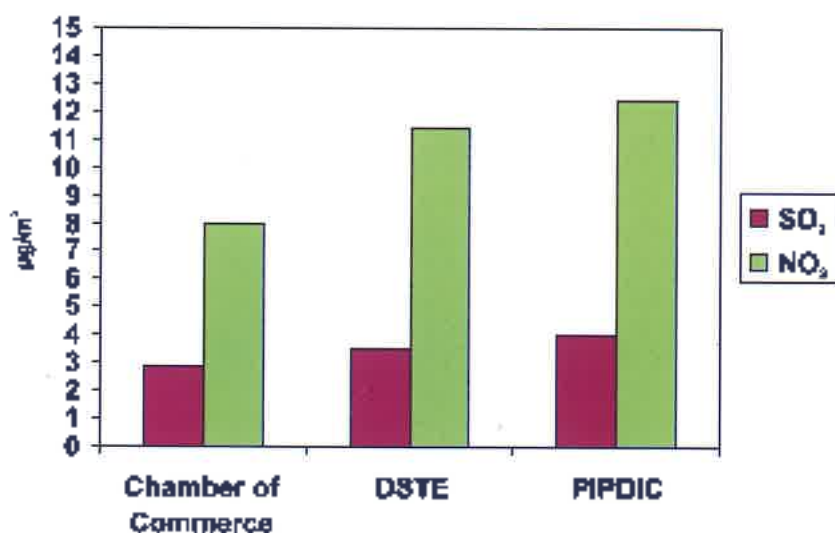


Fig 9. Annual average concentration of Sulphur Dioxide and Nitrogen Dioxide - 2009 - 2010

Inference from the ambient air quality results

Concentrations of all the gaseous pollutants are well within the prescribed standards limit. The concentration of Particulate Matter (size less than 10 micron meter) in the ambient air monitored in all the three locations are in the ranges from 26 – 55 ($\mu\text{g}/\text{m}^3$) as against the annual average standard of 60 ($\mu\text{g}/\text{m}^3$)

REVISED NATIONAL AMBIENT AIR QUALITY STANDARDS

Ambient air quality standards were first notified by Ministry of Environment and Forests on 2.4.1996 for 7 parameters. These standards have been revised and re-notified on 18.11.2009 for 12 parameters. It differs from the former notification on having same standard for residential and industrial zone. These standards are similar with Euro standards.

Table 10. REVISED NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Govt.)	Methods of Measurement
1	Sulphur Dioxide (SO_2), $\mu\text{g}/\text{m}^3$	Annual	50	20	-Improved West and Gaeke
		24 hours	80	80	-Ultraviolet fluorescence
2	Nitrogen Dioxide (NO_2), $\mu\text{g}/\text{m}^3$	Annual	40	30	- Modified Jacob & Hochheiser
		24 hours	80	80	(Na- Arsenite) - Chemiluminescence
3	Particulate Matter (size less than $10\mu\text{m}$) or PM_{10} $\mu\text{g}/\text{m}^3$	Annual	60	60	- Gravimetric
		24 hours	100	100	- TOEM - Beta attenuation
4	Particulate Matter (size less than $2.5\mu\text{m}$) or $\text{PM}_{2.5}$ $\mu\text{g}/\text{m}^3$	Annual	40	40	- Gravimetric
		24 hours	60	60	- TOEM - Beta attenuation

5	Ozone (O ₃) µg/m ³	8 hours 1 hour	100 180	100 180	- UV photometric - Chemiluminescence - Chemical method
6	Lead (Pb) µg/m ³	Annual 24 hours	0.50 1.0	0.50 1.0	- AAS / ICP method after sampling on EPM 2000 or equivalent filter paper - ED XRF using Teflon filter
7	Carbon Monoxide (CO) mg/m ³	8 hours 1 hour	02 04	02 04	- Non Dispersive Infra Red (NDIR) Spectroscopy
8	Ammonia (NH ₃) µg/m ³	Annual 24 hours	100 400	100 400	- Chemiluminescence - Indophenol blue method
9	Benzene (C ₆ H ₆) µg/m ³	Annual	05	05	- Gas chromatography based continuous analyser - Adsorption and desorption followed by GC analysis
10	Benzo (a) Pyrene (BaP) – particulate phase only, ng/m ³	Annual	01	01	- Solvent extraction followed by HPLC / GC analysis
11	Arsenic (As), ng/m ³	Annual	06	06	AAS / ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni) ng/m ³	Annual	20	20	AAS / ICP method after sampling on EPM 2000 or equivalent filter paper

Ambient air quality and noise level during Diwali 2009

The Puducherry Pollution Control Committee had conducted Ambient Air quality and Noise monitoring during the Deepawali festival in the year 2009 (17.10.2009) to assess the impact of bursting crackers on the Environment.

Ambient air quality assessment revealed that SO₂ concentration on Diwali day during 2009 was ranged between 2.4 and 4.7 µg/m³ as compared to 4.4 and 106 µg/m³ during Diwali day, 2008. Concentration of NO₂ ranged between 8.8 and 25.8 µg/m³ as compared to 7.5 and 26.5 µg/m³ respectively during Diwali day, 2008. The concentration of SO₂ & NO₂ have been found within the prescribed standards of 80 µg/m³ (24 hourly average).

Ambient Noise level monitored on Diwali' 2009 has no significant change as compared to Diwali 2008. The maximum Noise Level (Leq) was found to be 93.2 dB(A) in 2009 and it was 90.6 dBA in 2008 . But the levels are found to be within the prescribed standards of Hon'ble Supreme Court directions.

Table 11 Noise level comparison during Diwali day 2008 & 2009

Location : Muthialpet; Residential area

Sl.No.	Time duration	27.10.2008	17.10.2009
		L equivalent dB(A)	
1.	18:00 Hrs. to 19:00 Hrs.	87.4	93.2
2.	19:00 Hrs. to 20:00 Hrs.	90.6	91.3
3.	20:00 Hrs. to 21:00 Hrs.	90.3	87.9
4.	21:00 Hrs. to 22:00 Hrs.	81.4	76.4
5.	22:00 Hrs. to 23:00 Hrs.	71.1	69.8
6.	23:00 Hrs. to 24:00 Hrs.	49.2	65.7
	Average L equivalent dB(A)	78.3	80.7

Fig. 10. Comparison of Noise level during Diwali Day of 2008 and 2009

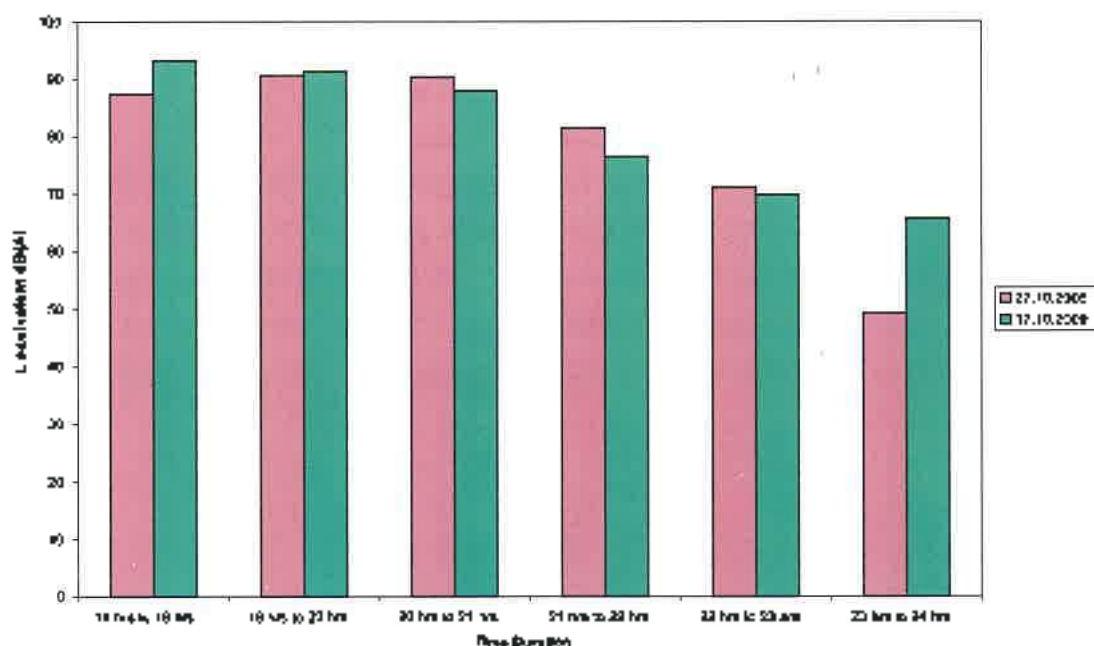




Fig 11. Dr. R. Sagaya Alfred and Dr. V.R. Sumathi. Scientists of DSTE attended training on preparation of Water Quality Management Plan at Bengaluru

7. STATUS OF WATER QUALITY

Department of Science, Technology & Environment / Puducherry Pollution Control Committee (PPCC) has been monitoring water quality periodically at various water sources with financial assistance from Central Pollution Control Board, Delhi. The list of parameters are being monitored as per the guidelines of Central Pollution Control Board. Monitoring is done on quarterly basis in surface water and on half yearly basis in case of bore well water.



Table 12 Water quality monitoring stations in Puducherry Region

Sl. No.	Station Code	Location	Type	Latitude	Longitude	Date of inception
1	1396	Ousteri	Lake	11° 56' N	79 ° 44' E	11-01-90
2	1397	Ramakrishna Nagar. Morthalpet	Borewell	11° 56' N	79 ° 50' E	11-01-90
3	1398	Tengaitthitu	Borewell	11° 54' N	79 ° 49' E	11-01-90
4	1453	Muthirappalayam	Borewell	11° 56' N	79 ° 46' E	01-01-92
5	1454	Puducherry University, Kalapet	Borewell	12° 10' N	79 ° 51' E	01-01-92
6	1688	Karterikuppam	Borewell	12° 00' N	79 ° 42' E	15-05-02
7	1686	Bahour	Lake	11° 48' N	79 ° 44' E	15-05-02
8	1687	Nehru Statue	Borewell	12° 01' N	79 ° 51' E	15-05-02
9	1689	Chunnambar	River	11° 52' N	79 ° 47' E	15-05-02
10	2009	Kurumbapet	Borewell	11° 55' N	79 ° 45' E	16-05-06
11	2010	Mettupalayam	Borewell	11° 56' N	79 ° 47' E	15-05-06
12	2011	Uruvaiyar	Borewell	11° 53' N	79 ° 45' E	15-05-06
13	2012	Karuvadikuppam	Borewell	11° 58' N	79 ° 48' E	15-05-06

Table 13. Water quality monitoring stations in Karaikal Region

Sl. No.	Station Code	Location	Type	Latitude	Longitude	Date of inception
1	1685	Arasalar	River	10° 54' 562" N	79 ° 49' 066" E	15-05-02
2	2013	T.R.Pattinam	Borewell	10° 50' 485" N	79 ° 49' 918" E	16-05-06
3	2014	Vadamattam	Borewell	11° 56' 773" N	79 ° 49' 771" E	16-05-06



Fig.12. Water Quality Monitoring Stations in Puducherry Region

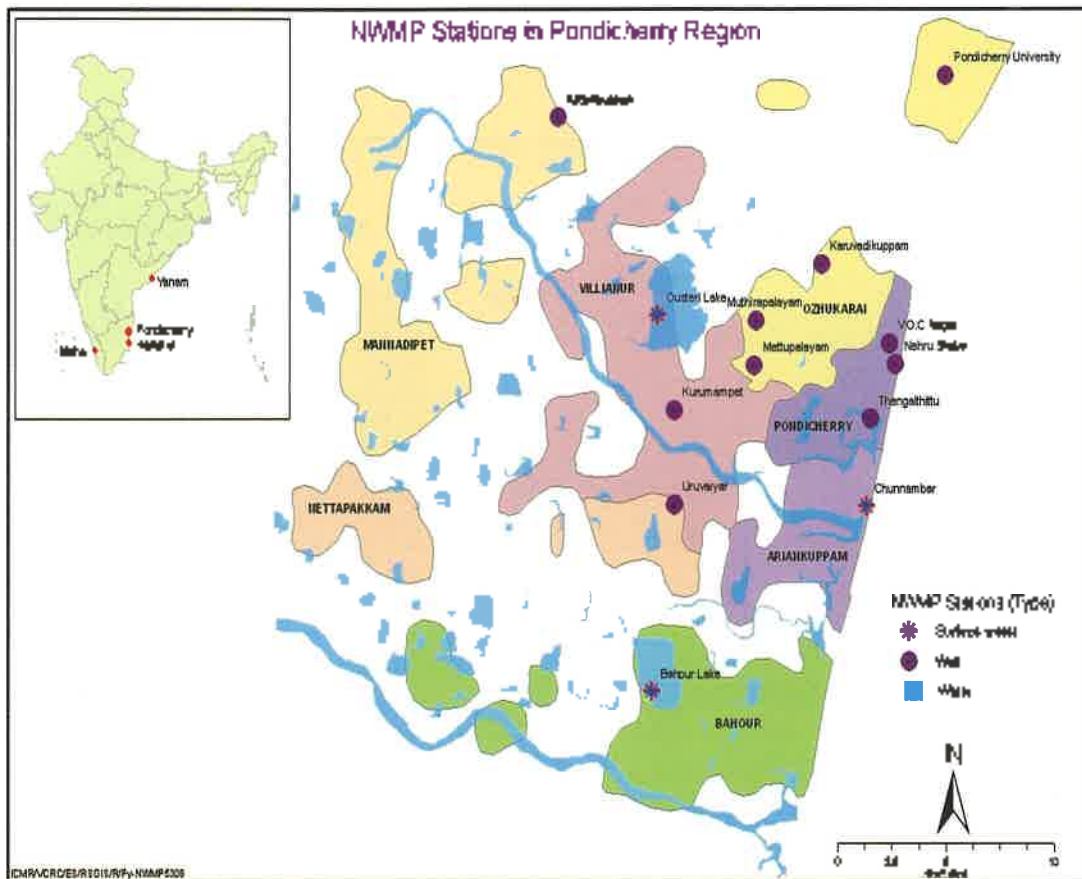


Fig.13. Water Quality Monitoring stations in Karaikal Region

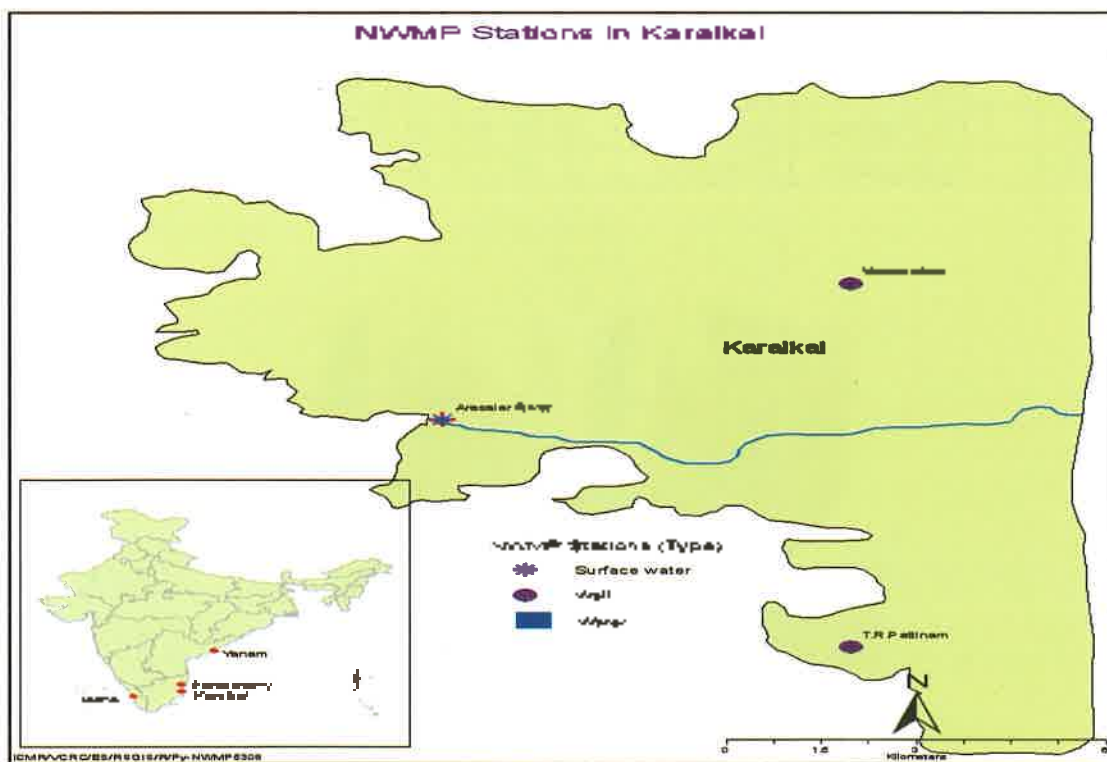


Table 14. Water quality monitoring stations in Yanam Region

Station Code	Location	Type	Latitude	Longitude	Date of inception
2442	Gautami-Godavari	River	16° 72' 597" N	82 ° 20' 216" E	12.09.09
2443	Gautami-Godavari	River	16° 71' 519" N	82 ° 26' 158" E	-do-
2444	Coringa	River	16° 73' 000" N	82 ° 21' 747" E	-do-

Table 15. Water quality monitoring stations in Mahe Region

Station Code	Location	Type	Latitude	Longitude	Date of inception
2445	Mahe river	River	11° 42' 275" N	75 ° 32' 594" E	25.04.09
2446	Paithur	Borewell	11° 43' 960" N	75 ° 32' 460" E	-do-
2447	Panthakkal	Borewell	11° 45' 123" N	75 ° 32' 284" E	-do-

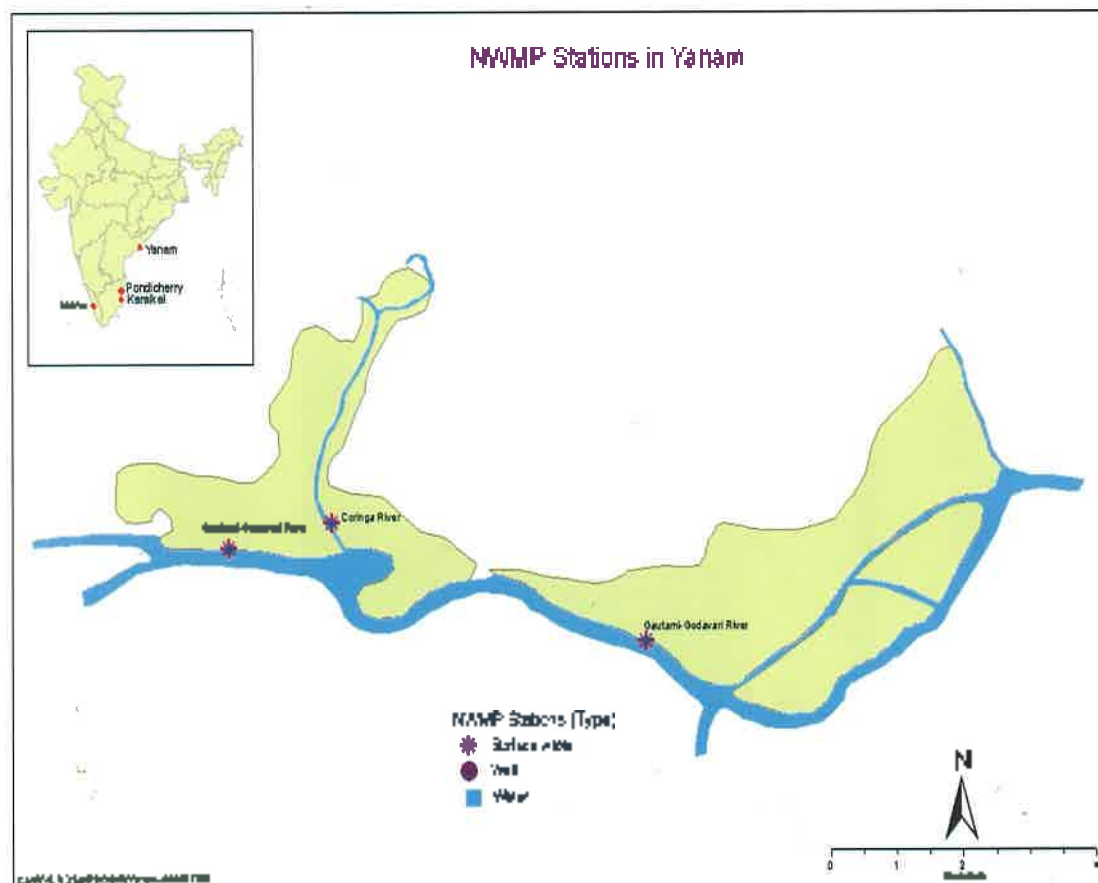
Fig.14. Water Quality Monitoring stations in Yanam Region

Fig.15 Water Quality Monitoring stations in Mahe Region

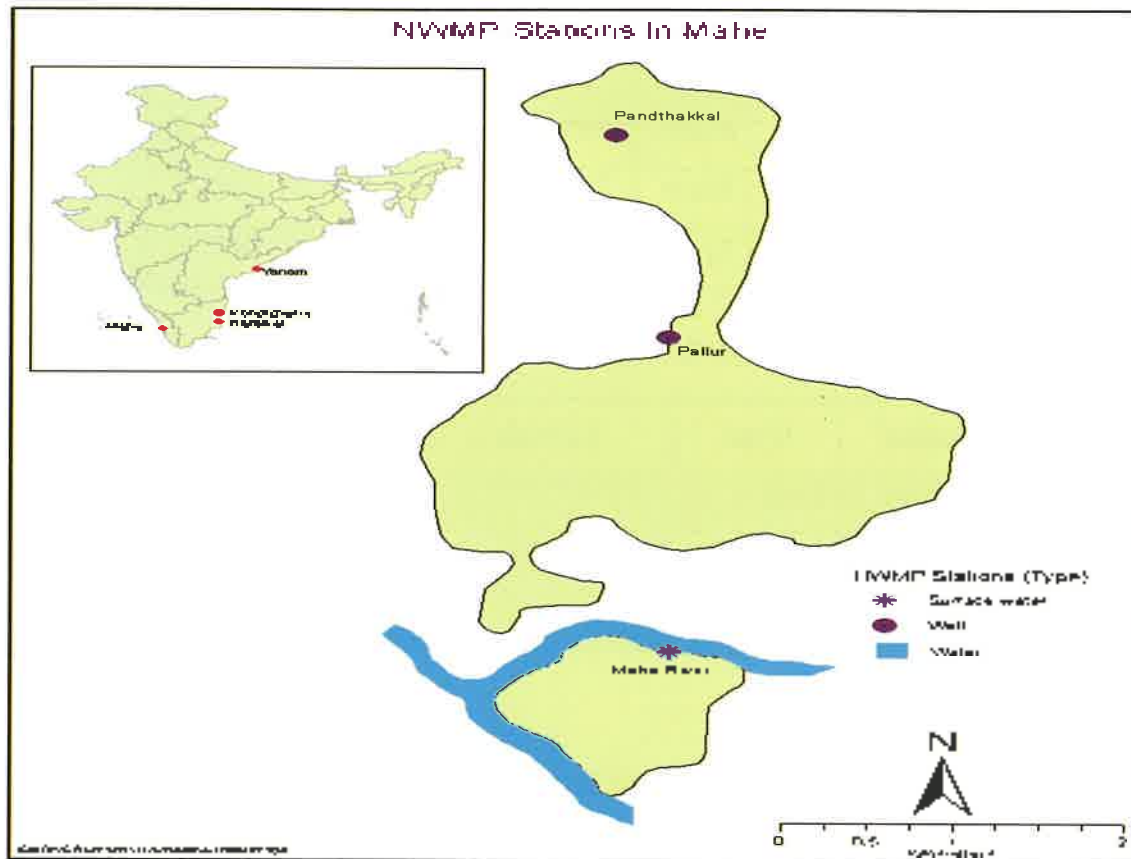


Fig 16. Water sampling at temple borewell in Mission Street



Status of Water Quality in surface water

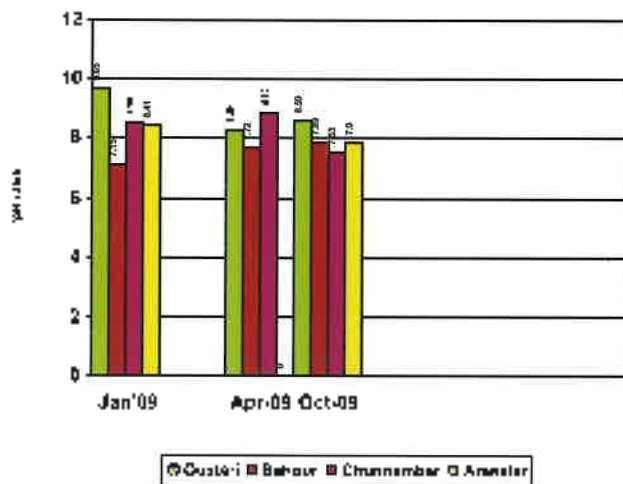


Fig.17. pH

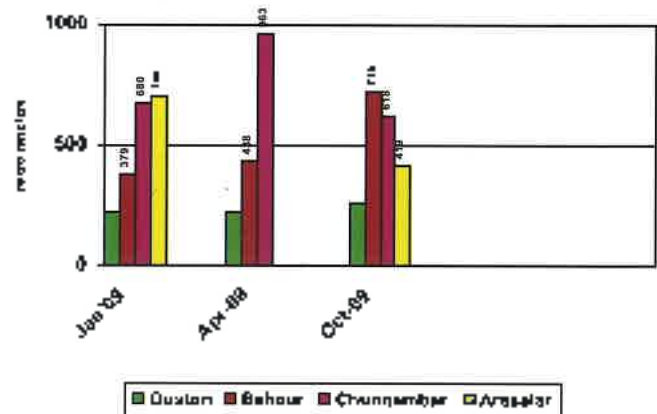


Fig.18. Conductivity in micro mho/cm

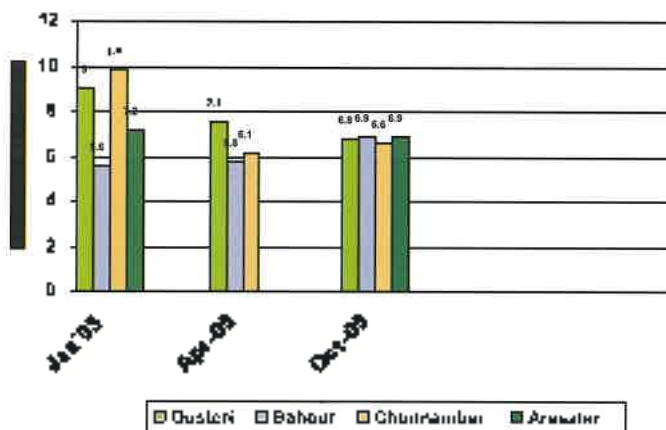


Fig.19. Dissolved Oxygen in mg/l

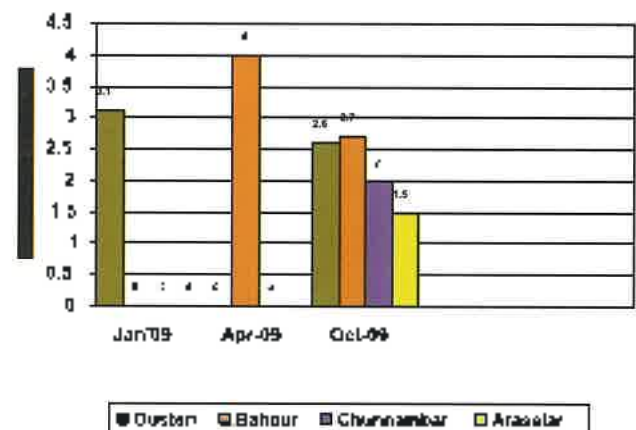


Fig.20. Biochemical Oxygen Demand in mg/l

Note: During July 2009 & January 2010 Sample was not collect at Ousteri, Bahour, Arasalar and Chunnambar stations and during April'09 at Arasalar River due to non-flow of water.

Status of Water Quality in Borewell

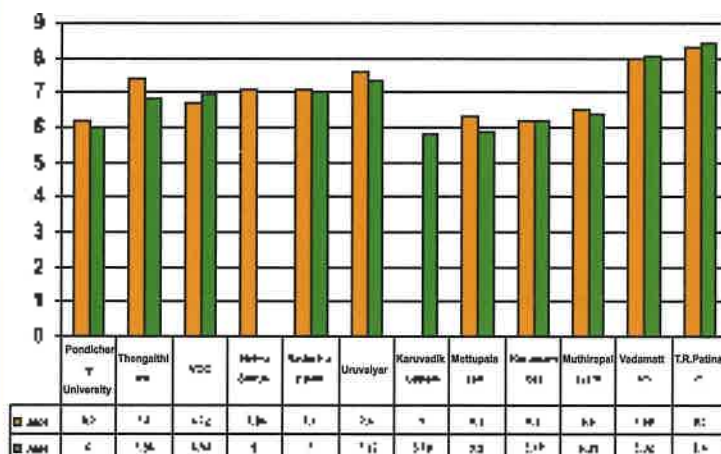


Fig.21. pH

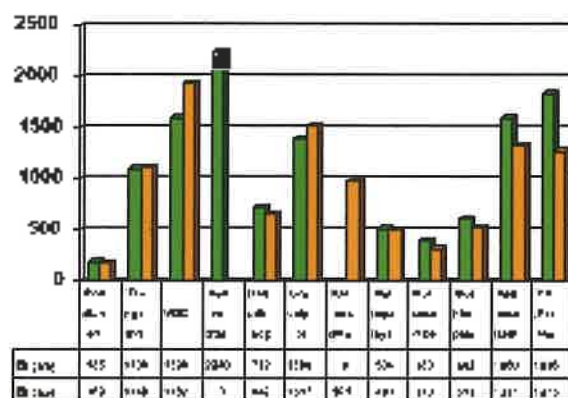


Fig.22. Conductivity in micro mho/cm

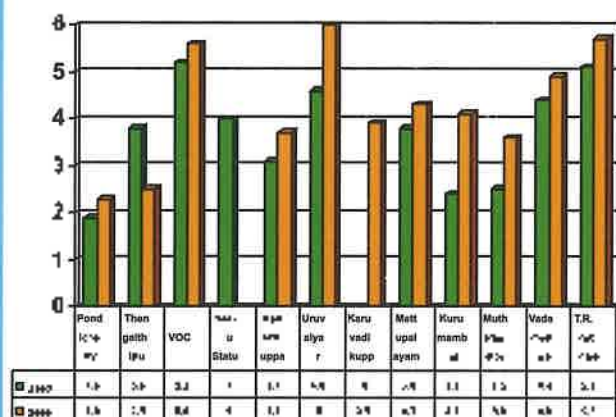


Fig. 23. Dissolved Oxygen in mg/l

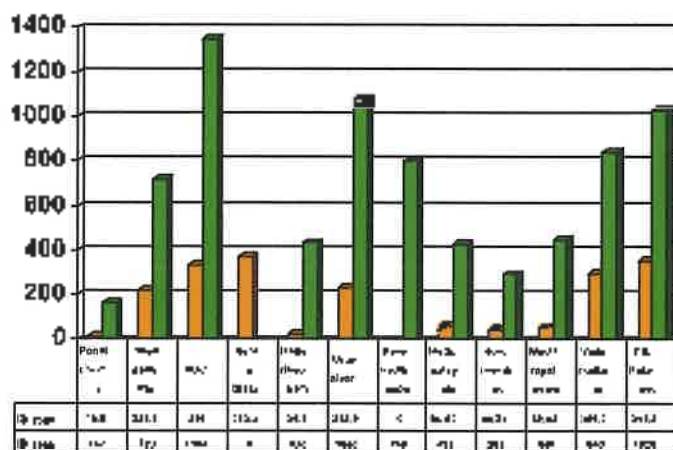


Fig. 24. Total Dissolved Solid in mg/l

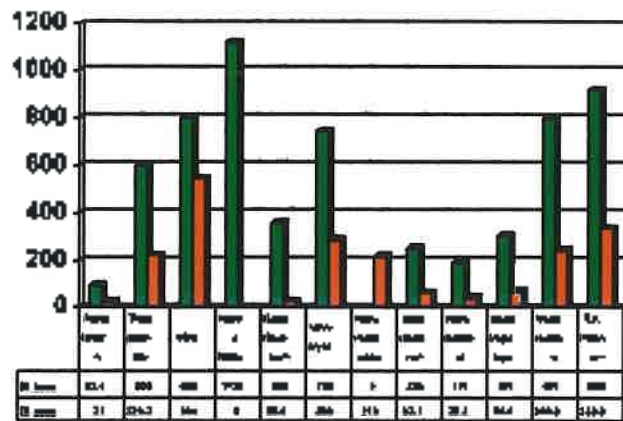


Fig.25. Chloride in mg/l

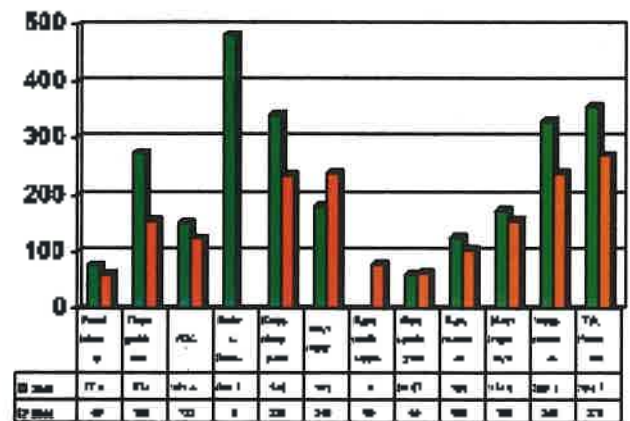


Fig.26. Alkalinity in mg/l

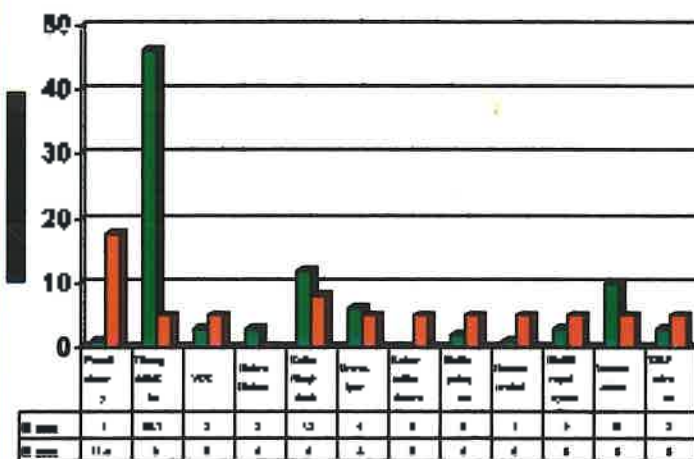


Fig.27. TSS in mg/l

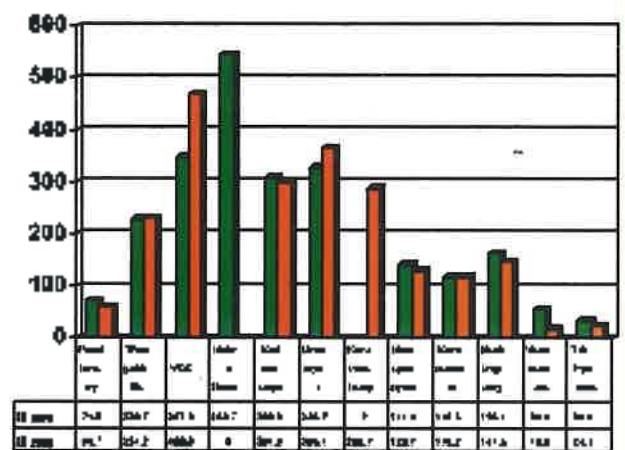


Fig.28. Total Hardness in mg/l

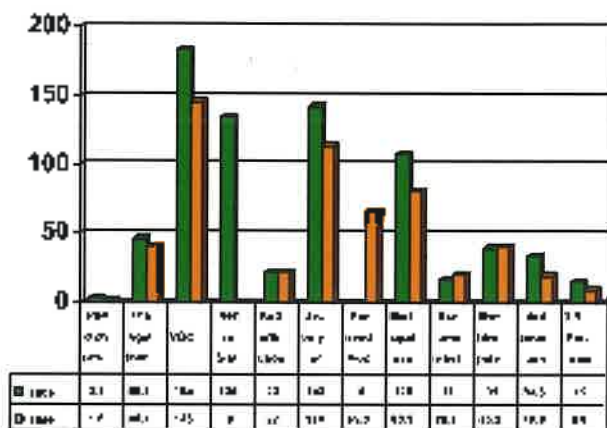


Fig.29. Sulphate in mg/l

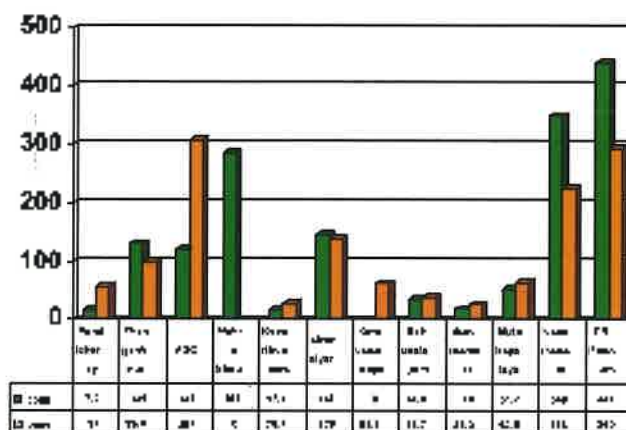


Fig.30. Sodium in mg/l

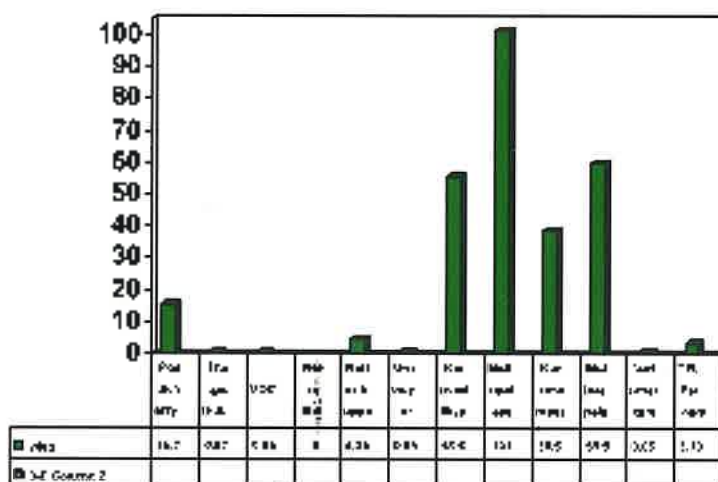


Fig.31. Nitrate in mg/l

Note : Nitrate was not analysed during 2008

Puducherry Region

In some of the bore well samples the value of alkalinity, hardness, calcium, magnesium, TDS and chloride exceeded the prescribed standard limit. This may be due to the salt water intrusion and geological condition.

In few bore well samples such as Mettupalayam, Muthirapalyam and Karuvadikuppam during 2009 nitrate level was found exceeding the limit. This may be due to disposal of Municipal Solid Waste in open ground, untreated sewage disposal and in densely populated areas like Muthirapalyam, absence of septic tank may also be the cause. Hence the Director (Local Administration Department), the Executive Engineer (Public Works Department – Irrigation Division) and the Commissioner, Outgarat Municipality have been requested to take appropriate remedial measures to contain the nitrate level in Ground water. In the surface water bodies' pH, DO and BOD are within the norms.

Karaikal Region

It is observed from the ground water analytical results that the concentration of alkalinity, TDS and chloride are high which may be due to salt water intrusion. In Arasalar River pH, DO and BOD are within the norms.

Yanam Region

The high level of BOD in Coringa River may be due to discharge of untreated sewage water from Yanam town.

Table 16. Water Quality at Yanam Region

Sl. No.	Parameter	Balayogi Bridge	Near Adavipolam	Coringa River
1	pH	7.85	7.60	7.41
2	Conductivity	220	406	309
3	Dissolved Oxygen (mg/l)	7.7	7.1	6.8
4	BOD (mg/l)	4.0	3.0	7.0
5	Nitrate	11.0	15.8	15.3
6	Alkalinity	13.5	18	23.9
7	Chloride	18.5	82.6	34
8	COD	36	36	56
9	NH ₃	Nil	Nil	Nil
10	Total Hardness	46	70	80
11	Calcium Hardness	36	44	52
12	Magnesium Hardness	10	26	28
13	Sulphate	15.2	21	16
14	Sodium	97.7	483	279
15	TDS	190	302	194
16	TSS	16	31	3
17	Potassium	17.3	47.3	43.5

Mahe Region

In the samples collected from the well all the parameters are within the prescribed limit. In the river, nitrate, chloride, hardness, calcium, magnesium, sodium, potassium, TDS and iron are found high.

Table 17. Water Quality at Mahe Region

Sl. No.	Parameter	Mahe River	Pandakkal	Pallor
1	pH	8.43	6.08	5.58
2	Conductivity	4120	115.5	227.0
3	Dissolved Oxygen (mg/l)	5.1	5.3	2.8
4	BOD (mg/l)	3.0	-	-
5	Nitrate	108.69	31.9	2.86
6	TDS	3366	84	196
7	Chloride	8000	19.2	35.7
8	Alkalinity	95	35	45
9	TSS	10	5	5
10	Total Hardness	1000	30.3	58.6
11	Sulphate	247.6	2.0	18.0
12	Sodium	5000	5.1	14.5

Monitoring during Festive occasion:

To know the water quality due to immersion of idols in the water bodies on the occasion of Vinayaka Chaturthi Festival, Coastal water quality is being assessed at three stages viz., pre immersion, immersion and post immersion and analysed as per the CPCB guidelines and the analysis report is given in table 8.

**Table 18. Coastal monitoring conducted
on the occasion of Vinayaka Chathurthi Festival**

Parameter	Pre Immersion 17.09.2009		During Immersion 30.09.09		Post Immersion 09.10.2009	
	Surface	Bottom	Surface	Bottom	Surface	Bottom
Temperature	29.0	29.0	28	28	30.0	30.0
pH	8.36	8.25	8.10	7.95	8.17	7.95
Conductivity	26.3	30.6	52.2	52.0	52.1	51.9
TDS	47,164	40,194	48,434	42,018	38,801	42,277
TS	47,332	40,403	48,532	42,503	38,930	42,376
DO	6.2	6.4	5.0	4.3	7.0	7.0
COD	5.4	4.6	3.4	9.4	5.1	4.2
BOD	BDL	BDL	BDL	BDL	BDL	BDL
Turbidity	11	06	08	17	11	09

Except pH, turbidity (in NTU) and Conductivity (in mS), all the other parameters are expressed in mg/l. Bottom samples were collected at a depth of 5m. BDL – Below Detectable Limit.

Due to idol immersion in the sea, the concentration of the parameters monitored did not show much variation during immersion and post immersion period compared to the pre immersion.

8. MUNICIPAL SOLID WASTE MANAGEMENT

Municipal Solid Waste Management is possessing great challenge to the administration. Rapid urbanization, establishment of commercial complexes and diversity in the composition of the wastes are the factors attributed to failure in findings sustainable solution to the disposal problem. Though a specific rule have been framed one decade ago, still the compliance is far below the average:

PPCC has been approaching the issue in two ways. One is strict enforcement of the Municipal Solid Waste (Management & Handling) Rules 2000 through local bodies and another is continuous awareness creating activity to the stakeholders and public through NGOs.

To create awareness among the Local bodies, one day workshop on Municipal solid waste management was organized by PPCC on 04.04.2009. In the meeting it was insisted to strictly follow the provisions of the Rules, like proper segregation, treatment and disposal of municipal solid wastes.

Another one day workshop was conducted on 25.05.2009, on the same subject, to follow up the progress made by the local bodies. In the workshop, it was insisted them to submit an Action Plan for proper management of Solid wastes.

To create awareness among the Local bodies in Karaikal region, one day capacity building Workshop on Municipal Solid waste Management was conducted on 4th of February 2010 in Karaikal, with the collaboration of the CPR Environmental Education Centre, Chennai.



Fig 32. Awareness programme on Solid Waste Management conducted to the President and Councilor in Karaikal region

For Common Municipal Solid waste disposal, 23 acres of land has been identified at Kurumbapet. The project would be implemented with a cost of Rs. 4.65 crores. It will form a scientific solution for municipal solid waste disposal problem.

Table 10. Directives issued to the Local bodies for the compliance of the provisions of Municipal Solid Waste Management and Handling Rules, 2000

Sl. No.	Name of the Local bodies	Date of issue of direction	Nature of Directions
1.	Ariankuppam Commune Panchayat	10.11.2009	To comply with the provisions of the Rules.
2.	Puducherry Municipality	30.12.2009	- do -
3.	Oulgaret Municipality	30.12.2009	- do -

Legal issues

Thiru H. Sathyaseelan, Edyanchavady filed a writ petition against Union of India, represented by Chief Secretary, U.T. of Puducherry, regarding indiscriminate dumping and burning of Municipal Solid waste at Karuvadikuppam. In this regard, Hon'ble Judge of High Court of Madras after hearing the arguments on 19.12.2009, directed the respondent to file a counter affidavit on behalf of the third party also. Accordingly a Counter affidavit has been filed in the Hon'ble High Court, Chennai.

9.BIO-MEDICAL WASTE MANAGEMENT

In the U.T of Puducherry, 7 Private Medical Colleges cum Hospitals and one Government Medical College cum Hospital besides many Government and Private Health Care facility are functioning.

Table 20. Issue of Authorization – Region wise during 2009-2010

Sl. No	Region	Issue of Authorization
1.	Puducherry	02
2.	Karaikal	01
3	Mahe	Nil
4	Yanam	Nil
	Total	03

During this year three new Consents to Establish / NOC has been issued to the following three Health Care Facilities:

- i) M/s Pondicherry Medical Mission, Puducherry
- ii) M/s L.K. Nursing Home, Puducherry
- iii) M/s Nandhu Clinic, Karaikal

Authorisation has been issued to M/s Medicare Enviro System, Sengipatti, Thanjavur District for transportation of Bio-Medical waste from Karaikal to their Common Facility for treatment.

Number of Direction issued

21 Hospitals / Health Care facilities have been directed to comply with the provision of the Bio-Medical waste (Management & Handling) Rules, 1998. After receipt of the direction of this Authority, all of them have complied (submitted the Annual Report)

Table 21. Directions issued to Health Care Facility for the violation of the provisions of Bio-Medical Waste (Management & Handling) Rules, 1998

Sl. No.	Name of the Health Care Facilities	Date of direction issued	Nature of Directions
1	Government General Hospital, Puducherry.	20.02.2010	Non- submission of Annual Report in time.
2	Mahatma Gandhi Govt. Leprosy Hospital, Puducherry	-do-	-do-
3	Mahatma Gandhi Dental college & Hospital,	-do-	-do-
4	Govt. Chest Hospital	-do-	-do-
5	General Hospital, Mahe	-do-	-do-
6	Community Health Centre, Pallor, Mahe	-do-	-do-
7	General Hospital, Yanam	-do-	-do-
8	New Medical Centre, Puducherry	-do-	-do-
9	Rani Hospital, Puducherry	-do-	-do-
10	Sri Devi Nursing Home, Puducherry	-do-	-do-
11	Care Clinic, Puducherry	-do-	-do-
12	Vector Control Research Centre, Puducherry	-do-	-do-
13	Govt. Hospital for Chest Diseases, Gorimedu	-do-	-do-
14	Sri Mahalakshmi Nursing Home, Puducherry	-do-	-do-
15	Pondicherry Institute of Medical Sciences, Periakalpet	-do-	-do-
16	Primary Health Centre, Pandakkal	-do-	-do-

17	Sedhu Nursing Home, Puducherry	-do-	-do-
18	Arunachalam Hospital, Puducherry	-do-	-do-
19	St. Rock's Dispensary, Karaikal	-do-	-do-
20	ESI Hospital, Pallor, Mahe	-do-	-do-
21	Govt. General Hospital, Karaikal	-do-	-do-
22	Community Health Centre, Pallor, Mahe	-do-	-do-
23	Tresor Nursing Home, Puducherry	-do-	-do-

Awareness programmes

Two day workshop on Bio-Medical waste Management have been organized on 16th and 17th July 2009, in the Conference Hall of Indira Gandhi General Hospital and Post Graduate Institute, Puducherry with financial support of Ministry of Environment and Forests, Govt. of India, New Delhi. The workshop was inaugurated by the Hon'ble Home Minister cum Minister for Environment. In the workshop the resource persons delivered their lectures on various topics related to the Bio-Medical waste Management. Doctors, Nursing Superintendents, nurses, ward boys of various category were attended the programme. In the second day, a field trip to the site of Common Bio-Medical waste Treatment Facility at Thuthipet was arranged.



Fig 33, Shri E. Valsaraj, Minister for Home and Environment delivering presidential address

To create awareness among the staff of ESI hospitals i.e. Doctors, staff nurses and group 'D' staff, different level of training programme has been conducted with the financial support of this Authority.

To create awareness among the students and staff of the Mother Theresa Institute of Health Sciences, Gorimedu (on 14th September 2009) one day Workshop on Bio-Medical waste Management was conducted

To create awareness among the Health Care Facilities in Karaikal region, one day capacity building Workshop on Bio-Medical waste Management has been conducted in Karaikal (on 3rd of February 2010), with the collaboration of the CPR Environmental Education Centre, Chennai.



Fig 3A. Mr. C. Suresh, Environmental Engineer delivering lecture on Bio Medical Waste Management Meeting at Karaikal

10. HAZARDOUS WASTE MANAGEMENT

Identification of hazardous waste generating units, quantification and its disposal is very difficult task. PPCC successfully completed the Invetorisation of hazardous waste generating unit and it is being updated periodically.

Boundaries of Puducherry and Tamil Nadu are mingled in many places. Illegal and interstate movement of Hazardous waste is great concern for both the states. This issue was deliberated in the Fourth Regional Conference of Chairperson & Member Secretaries of Southern State PCBs / PCC held on 4th and 5th January.



Fig 35. 4th Regional Conference of Chairperson & Member Secretaries of Southern State PCBs / PCCs

As per the Hazardous wastes (Management, Handling and Transboundary Movement) Third Amendment Rules, 2010, Rule (8) "Every trader desirous of import of Metal scrap, paper waste and other wastes as listed in Schedule III (Part D) may make an application in Form-16 to any of the State Pollution Control Boards or Pollution Control Committees. As per Rule(9) the State Pollution Control Boards or Pollution Control Committees will register the trader on a one time basis and registration would be considered as deemed if not objected to within a period of 30 days.

In the U.T of Puducherry 23 M.S Ingot Units are functioning and most of them are importing the scraps. All these units are now comes under the purview of the Rule.

Table 22. Issue / renewal of Authorization under Hazardous Waste Management Rule

Sl. No	Region	Total No. of units
1.	Puducherry	17
2.	Karaikal	04
3	Mahe	Nil
4	Yanam	Nil
	Total	21

Table 23. Directions issued to the Industries for the violation of the provisions of Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008

Sl. No.	Name of the Industries	Date of issue of direction	Nature of Directions
1.	M/s Puducherry power Corporation Ltd., Karaikal	02.03.2010	To submit relevant details
2	M/s SMS Traders, Thirubuvana	12.02.2010	Indiscriminate disposal of plastics & House keeping is poor.
3	M/s Basic Chemicals & Intermedicates	02.03.2010	Spillage of HW (Dichromate waste on the floor and ground
4	M/s Snam Alloys, Kariamannickam,	09.03.2010	No specific HW storage area
5	M/s L & T Ltd., (ECC division) Timber shop unit, Sedarapet	03.03.2010	Disposal of HW is not ensured

6	M/s SJS Traders, Kanniakovil	15.02.2010	Unauthorised activity of HW storage
7	M/s A.K. Enterprises, Kurumbapet	05.02.2010	Disposal of HW is not ensured
8	M/s Govt. Automobile Workshop, Puducherry	04.12.2009	Storage area of HW is not proper
9.	M/s Ucal polymer Industries Ltd.,	12.02.2010	Disposal of HW is not ensured
10.	M/s Hindustan Unilever Ltd.,	10.12.2009	To pay the authorization fee
11.	M/s Delta Power Solution Ltd.,	07.12.2009	To identify the final disposal of HW
12.	M/s Anabond Ltd.,	15.02.2010	Improper storage of HW
13.	M/s Indian Nippon Ltd.,	03.03.2010	No specific HW storage area

11. DIRECTIONS/CLOSURE ORDER ISSUED

PPCC continuously keeps strict vigil on the activity of all the industrial unit in the U.T. of Puducherry. Any unit found to be violating the Consent to Establish or Consent conditions, direction is being issued and ensured the compliance. List of direction issued during the reported period is as given below:

Table 24. Directions/Closure order Issued

Sl. No.	Name of unit	Direction date	Direction details	Compliance status
1	M/s. Ganesh Restaurant, Mudaliarpet	03.11.2009	To take measures to control noise pollution	Acoustic enclosure has been provided to the blower.
2	M/s. Athiappa Chemicals, Mettupalayam	24.11.2009	To stop the Furnace -I connected to a broken chimney until the chimney is repaired.	Complied
3	Unauthorized Brass Lamp and statues manufacturing industry at Plot No. 142, 143 of Suthakar Nagar, Reddiarpalayam, Puducherry	13.11.2009	Notice issued for unauthorized operation	The unit stopped their manufacturing operations

4	M/s. Aparna Paper Processing Industry (P) Ltd., Sedarapet	8.6.2009	Burning of waste wrapper on the open land.	Burning was stopped
5	M/s. The Pondicherry Co-operative Milk Producers Union Ltd., Kurumbapet	6.7.2009	Non compliance of discharge standards	Oil & Grease trapper has been installed
6	M/s. AML Steel Ltd. Erupakkam	26.8.2009	Operation of the unit without water consent	Applied for water consent
7	M/s. Taica Lab Kurumbapet	23.7.2009	Unauthorized liquid formulation. Closure direction issued	Liquid formulation has been stopped.
8	Suzlon energy Ltd	15.10.2009	Discharge of effluent-non compliance of standard. O/G value higher than the prescribed standard.	Oil and grease trapper has been installed
9	Advait steel rolling mills pvt ltd.,	3.8.2009	SPM concentration was higher than the prescribed standard, hence directed to modify APCS system.	Unit had complied with the direction.
10	Pandi devi oil industries	30.12.2009	Direction issued for discharging of domestic waste water in to the public channel.	Submitted report
11	M/s. Kamakshi Chemicals (P) Ltd.,	20.04.2009	Direction issued for non compliance of Ambient Air Quality Standards	Complied by changing the size of the raw material and provided glass windows and doors in the process area to control dust emission.

12	M/s. Sri Padmabalaji Steels (P) Ltd., Rolling Mill Division	11.05.2009	Direction issued to comply with the conditions of Air Consent Order for non-compliance of Ambient Air Quality Standards	Complied by providing 7.5 H.P. suction to wet scrubber, one more dust collector and fabrication work inside the furnace to control leakage
13	P.S.P. Steel (P) Ltd.,	11.05.2009	Direction issued to comply with the conditions of Air Consent Order for non-compliance of Ambient Air Quality Standards	Complied by providing proper hood arrangements and cleaned the pipeline and water circulation tank for effective scrubbing
14	M/s. Shri Ulaganayagi Amman Steels	27.05.2009	Direction issued to comply with the conditions of Air Consent Order for non-compliance of Ambient Air Quality Standards	Complied by cleaning the Air Pollution Control Systems
15	M/s. Godrej Sara Lee Ltd., Sethur Village Thirunallar Commune	25.06.2009	Direction issued to comply with the conditions of Air Consent Order for non-compliance of Ambient Air Quality Standards	Complied by providing Bag Dump Hoppers with inbuilt Dust Extractors
16	M/s. Godrej Sara Lee Ltd., Kurumbaga ram Village Nedungadu Commune	25.06.2009	Direction issued to comply with the conditions of Air Consent Order for non-compliance of Ambient Air Quality Standards - Suspended Particulate Matter	
17	M/s. Sri Vignesh Enterprises	09.07.2009	Show Cause Notice to comply with conditions of Air Consent Order for unauthorized activity	Complied and stopped the unauthorized activity and provided Dust Collector with impulse jet bag filter and fully automated from blending to bagging

18	M/s. Karaikal Chlorate	19.10.2009	Direction issued to submit documents related to Excise Returns, Sales Returns and Licence obtained under Arms and Ammunition Act for excess production	Complied by providing documents available with the respective unit
19	M/s. Vaigai Industries	19.10.2009		
20	M/s. Kumaran Chemicals	19.10.2009		
21	M/s. Sunchem Products (P) Ltd.,	19.10.2009		
22	M/s. Jothy Chlorate	19.10.2009		
23	M/s. Aakavi Spinning Mills (P) Ltd..	07.12.2009	Direction issued to comply with the conditions of Consent to Establish for unauthorized expansion	Complied and stopped all the activities and applied to PPCC for enhancement.
24	Menakshi Industries.	16.2.2010	Conc of SPM higher than the prescribed standard	complied
25	Meenakshi Steels	15.2.2010	Storing of domestic waste water inside the unit, directed the unit to provide STP	Unit will provide STP within three months
26	M/s. National Fibre Glass	11.03.2010	Notice issued for unauthorized operation	Unit submitted reply vide lt. dt. 29.03.2010. It is under process.
27	M/s. B.R. Fibre	11.03.2010	Notice issued for unauthorized operation	Not complied Further action is under process.
28	Pandi devi oil industries	8.3.2010	Direction issued to the project proponent for personal hearing	Attended personal hearing and Submitted compliance report and assured to provide STP in the unit.

29	M/s. Skol Breweries Iyankuttipalayam	16.2.2010	Bypass of untreated effluent	Bypass has been arrested
30	M/s. Vinayaga Plastics Kurumbapet	5.3.2010	Manufacture of carry bags lesser than 51 micron thickness	Stopped the production of carry bags lesser than 51 micron thickness
31	Suzlon energy Ltd	30.4.2010	Fire accident occurred at scrap yard	Compliance status are being verified
32	M/s. Karaikal Chlorate	05.03.2010	To stop excess production.	Complied
33	M/s. Vaigai Industries	05.03.2010		
34	M/s. Kiran Pondy Chems Ltd., (Unit - II)	25.03.2010	Direction issued for non compliance of Ambient Air Quality Standards	Complied and replaced manual feeding of raw materials with screw conveyor system.

12. COURT CASES DEALT BY PPCC

Table 25. Cases filed before the Appellate Authority (MOEF) against PPCC decision

SL. No.	Name of the Industry	Ground	Status
1	M/s. Pandian Chemicals, Karaikal	Rejection of proposal to establishing Potassium Chlorate manufacturing unit	Directed PPCC to reconsider its decision.

Table 26: Case filed against PPCC decision.

SL No.	Name of the Industry	Ground	Status
1	Thiru Sathyscelan (PIL) Edayanchavady. W.P. No.5452 of 2008 in the High Court of Madras	Improper disposal of Municipal Solid Waste	Counter affidavit has been filed. Judgement is awaited
2	C.M.A. No. 8/2009 in the Court of the Honble Principal Subordinate Judge at Pondicherry Puinniyamurthy & Lakshminarayana Vs. PPCC and others	Appeal against the order of the lower court disposing the I.A.1950/2007 in O.S.892/2007 filed by the petitioner to restrain the various respondent authorities from granting license and electricity to the fabrication industry - M/s. Kumar Fab and to restrain starting of the industry.	PPCC has submitted Counter and matter is subjudice
3	O.S. 144/2008 in the Court of Additional Sub Judge at Puducherry - M/s. Kumar Fab Vs PPCC and others	O.S. filed by M/s. Kumar Fab seeking direction to PPCC and PPA for grant of permission.	Suit dismissed
4	W.P. 6397/2010 in the High Court of Madras - M/s. Common Wealth Pharma Vs. PPCC and others	Requesting interim stay of the direction issued by PPCC to shift the unit - M/s. Common Wealth Pharma to an industrial area and to relax the time period of 6 months stipulated by PPCC.	Interim stay has been granted. Petitioner directed to shift the unit to some other location. Posted on 21.07.2010.

13. GOVERNMENT NOTIFICATION ON IMPOSING BAN ON THIN PLASTIC ARTICLES

Realizing environment havoc played by thin plastic articles, Government of Puducherry has banned the manufacturing, storage, distribution and usage of plastic carry bags of thickness 50 microns or below of size less than 8 x 12 inches plastic disposal cups and plates in the U.T. of Puducherry vide G.O. Ms. No.20/Envr./2009 dated 9.12.2009.

PPCC has been designated as nodal agency in implementing the notification. It organised series of programme with stakeholders for successful enforcement of the notification. Interaction meeting with plastic manufacturer, dealer and distributor associations was held on 23.12.2009 in the Chairmanship of Shri Theva Neethi Dhas, Chairman. They were informed the ill effect of usage of thin plastics and necessity of banning these items.



Fig 36. Shri Theva Neethi Dhas, Chairman explaining the Government Notification on ban on usage of thin plastic articles to the plastic manufacturer and dealer association

Brainstorming meeting was held with implementing authorities on 23.12.2009. Banned items were displayed and using gauge meter measurement of the thickness of the plastic articles was demonstrated.



Fig 37. Demonstration of measurement of thickness of plastic articles using gauge Meter to Implementing Authority Formation of Core Group

Around 20 Non Governmental Organizations (NGO) have been roped to form a core group for successful Implementation of the notification. This core group are involved in conducting a continuous, structural awareness campaign to ensure that awareness of the ban notification reaches the common man at grass root levels.



Fig 38. Meeting with NGOs for formulating action plan to carry out continuous awareness programme on Government notification on ban on usage of thin plastics



Fig 39. NGO, SHG and Officials of PPCC distributing pamphlets on ban on usage of thin plastic articles



Fig 40. Former Member Secretary inspecting carry bag manufacturer unit at Kurumbapet

A massive awareness programme was conducted on 5th February in the Chairmanship of Shri E. Valsaraj, Hon'ble Minister for Home and Environment. More than 1000 Self Help Group Members, NGOs, Councillors and Students were participated in the campaign, samples of banned plastic items and viable alternatives were displayed at the event. Cloth bags was distributed to all the participants. Hoarding about the notification has been displayed in important places.



Fig. 41. Hon'ble Minister for Home and Environment inaugurating awareness campaign on ban on usage of thin plastic article

14. CORPORATE RESPONSIBILITY

Corporate Responsibility is voluntary involvement of Industry towards environmental Excellency. Thus CREP is beyond the ambit of environment legislation.

1. Co-processing of FRP waste by M/s. Suzlon Energy (I) Ltd.

M/s. Suzlon Energy Ltd. generates approximately 5 TPD of FRP waste. Absence of suitable disposal mechanism, it accumulated to the extent of 500 Tons and dumped within the premises of the unit. A major fire accident was occurred on 11.12.2008 and as a result ambient air quality was deteriorated. A trial run of Co-processing of FRP waste was successfully conducted at M/s. ACC Cement Work, Coimbatore.

2. Non conventional Energy schemes implemented in M/s. MRF Ltd., Puducherry.

Natural air exchange by installing turbo ventilators on the roofs. A total of 4.8 lakh square feet area is covered by this ventilation, which makes use of natural air draft. Natural day light illumination in place of conventional light at various production work centres by using transparent polycarbonate sheets. This is implemented in 2.4 lakh square feet area. Solar powered traffic blink lamps have been installed. Solar powered LED type street light project is under execution.

15. CLEAN DEVELOPMENT MECHANISM (CDM)

The concept of clean technology with waste minimization and resource forms part of the Clean Development Mechanism, empowering the environmental sustainability movement in the developing countries. With the availability of financial incentive in the form of 'Carbon Trading' entrepreneur shows interest towards CDM. M/s. Venkatachalapathy Modern Rice Mill has installed husk based 300 KW Co-generation plant at T.N. Palayam, Ariyankuppam Commune. Earlier the unit had used the electricity from the central grid. Having shifted to captive power generation, this unit is entitled for 'Carbon Credit'.



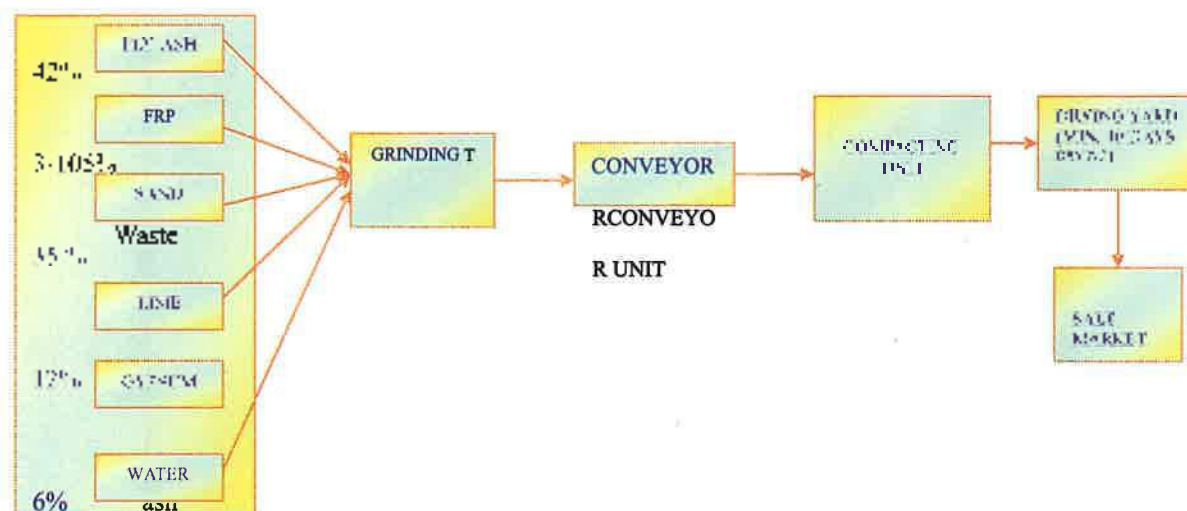
Fig.42. Co-generation Power Plant.

16. NEW INITIATIVE OF PPCC

1. Scientific disposal of FRP waste

Fiber Reinforced Plastic (FRP) was first used as a material for boats and bath tubs about 40 years ago. Now, it is being widely used in construction, automobile and moulding process due to its light weight, ease of installation, low maintenance, tailor made properties, corrosion resistance besides its typically high strength-to-weight ratio and low cost. Due to these attributes, FRP also plays a major role in Wind mill assembling unit.

Recently, FRP waste causes a serious environmental problem all over the world. FRP which were once invented as a dream material that was widely used owing to their advantageous points such as non bio-degradable, no rusting and robustness. After almost 30 years have passed since these products were made, their life time is almost running out. These advantageous now turn into formidable demerits when the FRP are treated as waste materials. Currently no scientific method is available to dispose the FRP waste. PPCC has explored the possibility of using the FRP waste in the brick making industry as depicted in the flow chart:



FRP waste bricks meets the prescribed ISI standards in terms of compressive strength and water absorption capacity.

2. Action plan for adopting Japan Model in Municipal Solid Waste Management

Scientific disposal of Municipal Solid waste has been greater challenges to this administration. Dr. N. Ramesh, Environmental Engineer was deputed to Japan to undergo three months training programme on Comprehensive waste management techniques organized by Japan International Cooperation Agency (JICA). Based on the training programme, Action plan for adopting Japan Model in Municipal Solid Waste Management has been submitted to the Government of Puducherry. The action plan consists of the following five aspects:

- ☐ Basic law for wastes segregation—Puducherry 3 (Kitchen waste, Incinerable & Inert)
- ☐ Scheduled waste Collection (Kitchen – daily, Incinerable – Weekly, Inert – Monthly)
- ☐ Establishing Transition waste collection points
- ☐ Usage of adequate and appropriate waste collection bin and vehicles like compactor
- ☐ Appropriate destination (Land fill, Incineration, Composting)



Fig. 43. Dr. N. Ramesh, EE undergoing Leachate Treatment Training at Central Environment Monitoring Laboratory, Japan

3. Insisting Industry to utilize renewable energy sources

In pursuance of compliance of National Solar Mission, PPCC is insisting to all the Large / Medium scale industries to replace conventional energy sources with non conventional energy sources.

4. Research Project to Academic Institutes

PPCC is keen in transfer of knowledge from lab to land. In order to utilize their expertise in selective discipline, PPCC has sanctioned three projects to the following academic institutions:

Table 27. Details of Project granted

S.No.	Name of the Institution	Project	Amount sanctioned Rs. in lakhs
1	Department of Environmental Sciences, Pondicherry University	Bio medical waste management	2
2	Centre for Pollution Control and Energy Technology, Pondicherry University	Pollution control efficiency in industry	3
3	Pondicherry Engineering College	Inventory on plastic manufacturing industry	2

17. ENVIRONMENTAL AWARENESS PROGRAMME

Environmental legislation alone can not ensure environment protection and conservation. People involvement is essential to reach the endeavor. It is very important to involve SHG at large in the environmental movement as they are working at grass root level. The role of NGOs in environmental awareness creation activity is appreciable. In order to encourage NGOs in the field of awareness activity, PPCC releases financial assistance periodically.

a. Celebration of World Environment Day - 2009

World Environment Day 2009 was celebrated in befitting way in the Chairmanship of Hon'ble Environment Minister Shri E. Valsaraj. First Environmental Survey Report was released in the occasion. Debate on environment conservation was conducted by the State Training Centre, Education Department.



Fig.44. Shri E. Valsaraj, Hon'ble Minister for Environment releasing Annual Environment Survey Report – 2009



Fig.45 Debate on Environment Protection by State Training Centre, Education Department on the occasion of World Environment Day – 2009

b. Awareness Programme to Self Help Groups

Creating awareness to the Self Help Group members proved to be make effective as they are working with grass root level.



Fig. 64: Mr. M. S. Narayan, District Milk Producers' Cooperative Societies, to Self Help Group

c. Celebration of National Environment Month

In the eve of National Environment Month PPCC conducted serious of awareness programmes to student, NGOs and Farmers.



Fig. 67: P. S. Narayan, District Milk Producers' Cooperative Societies, to the students of Class High School, K. S. Narayan, to the students of National Environment Month, 10/10/2009

d. Floating of Tableaux

In order to create awareness about the climate change, PPCC floated Tableaux on the occasion of Republic day, 26th January, 2009. The Tableaux has been designed with melting of glaciers and sea level raises and induction of coastal villages. It also depicted the concept of five ways to save the earth. It attracted large public gathering.



Fig. 48 Tableaux floated on the eve of Republic Day 2009

18. ACTIVITIES OF ENVIS CENTRE

Puducherry ENVIS centre was established on 8th August, 2005 by Ministry of Environment and Forest, Government of India. Puducherry Pollution Control Committee has been designated as host organization. 'Solid Waste Management' is the subject allotted.

OBJECTIVES OF THE CENTRE

- ❖ Creation of website and disseminating environment related informations with special reference to Solid Waste Management with regional language interface.
- ❖ Periodical compilation of information on Solid Waste Management
- ❖ Identification of information / data gaps in the specified subjects areas and bridge these gaps.
- ❖ Creation of Database on Solid Waste Management in bilingual language and uploading in the website.
- ❖ To establish and prepare a distributed clearing house to answer and channel queries related to the allocated subject.
- ❖ To establish linkages with information users, carriers and providers from among government, academia, business and Non Governmental Organizations.
- ❖ Publication of quarterly newsletters on various environmental related issues.
- ❖ ENVIS center act as a local resource centre for supply of necessary information to MoE&F as and when required.

ACTIVITIES & ACHIEVEMENTS

Data Collection – primary data from line depts. and secondary data from websites, newsletters, reports, newspapers and others

Development of Database -Language - Bilingual (English and Tamil)

Dissemination – through Website (Recent development, abstracts, success stories)

- in form of quarterly Newsletter
- in the ISBEID data bank created by NIC
- and in the form of State of Environment (SOE) report in collaboration with host organization

The following four News letters have been published in the financial years

1. Slaughter House Waste
2. Hazardous waste management
3. Biodiversity in Wetland
4. Wet land abstracts

A pamphlet on Biomedical waste management has also been published

ISBEID Data bank

Uploaded material by collecting data from line departments on following header:

- ❖ Administrative Profile
- ❖ Ground Water
- ❖ Hazardous Waste
- ❖ Health
- ❖ Bio-Diversity
- ❖ Infrastructure
- ❖ Demography
- ❖ Surface Water
- ❖ Tourism
- ❖ Energy – solar Energy
- ❖ Waste Disposal
- ❖ Water Pollution
- ❖ Agriculture



Fig.49 Dr.N.Ramesh, Coordinator, ENVIS is presenting the activities of Puducherry ENVIS centre in the National evaluation workshop at Sikkim

19. PUDUCHERRY COASTAL ZONE MANAGEMENT AUTHORITY (PCZMA)

Genesis of PCZMA

Ministry of Environment & Forests, GOI brought a Notification on 19th February 1991 under the Environment Protection Act, 1986 known as 'Coastal Regulation Zone Notification, 1991' where in it is declared that the coastal stretches of seas, bays, estuaries, creeks and backwaters which is influenced by tidal action up to 500 meters from HTL and the land between LTL and HTL as Coastal Regulation Zone and imposed certain restrictions in the said Coastal Regulation Zone

Based on the Guidelines in the CRZ Notification the Coastlines of the Pondicherry, Karaikal and Mahe regions in the U.T. of Puducherry were studied and a Coastal Zone Management Plan (CZMP) was prepared by the Town and Country Planning Department, Puducherry during 1992. The same was approved by MOEF and published in State Gazette vide G.O. Ms. No. 18/93/Hg dated 31st December 1993.

Till 1998, the provisions of CRZ Notifications were monitored and enforced by a High Power Committee of the Development Department, Govt. of Puducherry and the regulation of construction activities in CRZ was dealt by the Pondicherry / Karaikal / Mahe / Planning Authorities in their respective regions.

In 1998, Puducherry Coastal Zone Management Authority (PCZMA) was constituted and published in Gazette of India on 26th November 1998 based on the Supreme Court Direction to the Central Government to consider setting up of State & National Coastal Zone Management Authorities for ensuring effective implementation of CRZ Notification. PCZMA was subsequently reconstituted in 2002, 2005 and 2008.

Composition of PCZMA

The present composition of PCZMA is as follows:

- i. Chairman – Secretary, Environment
- ii. Member Secretary – Director, DST&E
- iii. Members –
 - i. Director (Fisheries)
 - ii. Chief Town Planner
 - iii. Dr. Ramesh, Professor, Institute of Ocean Management, Anna University
 - iv. Dr. T. Sundararajan, Dept. of Civil Engineering, Pondicherry Engineering College
 - v. Thiru. Jurgen Putz, Director, Palmyra, Auroville

The Authority meets periodically to review the CZMP of Puducherry, discuss Environmental issues related to CRZ region and examine project proposals in CRZ region (all constructions / developments within 500 meters from High Tide Line). Till date 22 meetings of PCZMA have been conducted.

Nodal Agency

Department of Science, Technology and Environment, Govt. of Puducherry is the Nodal Agency for the activities of PCZMA.

Activities

PCZMA carries out the following activities for protecting and improving the quality of the coastal environment and preventing and abating coastal environmental pollution in the coastal areas of Puducherry U.T.

1. Examination of proposals for modifications in classification of CRZ areas and in the Coastal Zone Management Plans (CZMP) received from the Puducherry State Government and making specific recommendations to the National Coastal Zone Management Authority (NCZMA) thereof.
2. Enquire into cases of alleged violations of the provisions of the CRZ Notification and to take action.
3. Deal with environmental issues relating to CRZ which may be referred by Puducherry Government or NCZMA
4. Identify ecologically sensitive areas in CRZ and formulate area-specific management plans for the identified area
5. Identify coastal areas highly vulnerable to erosion or degradation and formulate area-specific management plans
6. Identify economically important stretches in the CRZ and prepare Integrated Coastal Zone Management Plan for the same
7. Obtaining NCZMA approval for plans prepared as per clause iv, v & vi above.
8. Examine all project proposals in CRZ areas and give their recommendations
9. Ensure compliance of all specific conditions that are stipulated in CZMP of Puducherry.
10. Furnish report of its activities to NCZMA once in six months

CRZ Classification in Puducherry U.T.

As per CZMP of Puducherry the Coastal stretches of Puducherry U.T. is divided into three categories viz. CRZ I, II & III

CRZ-I: (Ecologically Sensitive Area)

Mangroves of Ariyankuppam Estuary in Ariyankuppam Revenue Village falls under this category

CRZ-II: (Area already developed upto or close to the shoreline)

Urban coastal areas of Muthialpet, Thengalhitu and Puducherry of Puducherry region and Mahe and Kallaye of Mahe region falls under this category.

CRZ-III: (Relatively undisturbed area and those which do not belong to either Category-I or II)

Kalapet, Pillaichavady, Ariyankuppam, Manaveli, Pooranankuppam, Kurumambakkam, Pillyankuppam and Manapattu of Puducherry region and Keezhakasagudy, Thalatheru, Kovilpalhu, Kizhaveli, Akkaravattam, Thiruvettakuddy, Keezhaiyur North / South and Vanjoor of Karaikal region falls under this category.

Table 28. Details of PCZMA meeting held from April 2009 to March 2010

Details of Meeting	Date	No. of Projects cleared	No. of Projects deferred	No. of Projects rejected
20 th PCZMA meeting	19.12.2009	1	2	Nil
21 st PCZMA meeting	19.01.2010	4	2	1
22 nd PCZMA meeting	18.03.2010	6	Nil	Nil

20. STATE ENVIRONMENTAL IMPACT ASSESSMENT AUTHORITY (SEIA)

In exercise of the powers conferred by sub-section (3) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) and in pursuance of the Government of India notification number S.O. 1533 (E), dated the 14th September, 2006, the Central Government constituted the State Level Environment Impact Assessment Authority (SEIAA), Puducherry (hereinafter referred to as the Authority, Puducherry) comprising of three members namely, Chairman,

Member and Member-Secretary nominated by the State Government of Puducherry as under:

- | | | | |
|----|---|----|--------------------------------------|
| 1. | Prof. M.A. Sivasankaran,
Head of the Department,
Department of Civil Engineering,
Puducherry Engineering College,
Puducherry - 605 014. | .. | Chairman,
Environment
Quality. |
| 2. | Prof. Anisa Basheer Khan,
Department of Environment and Ecology,
Puducherry Central University,
R.V. Nagar, Puducherry - 605 014. | .. | Life Sciences |
| 3. | Director,
Department of Science, Technology and
Environment, Puducherry
Pollution Control Committee. | .. | Member - Secretary |

To assist the said Authority, the Central Government, in consultation with the State Government of Puducherry, constituted the State Level Expert Appraisal Committee, Puducherry (SEAC), which comprise the following Members:

- | | | | |
|----|---|---|------------------------|
| 1. | Prof. M.P. Ramanujam ,
Reader K.M. Centre for PG Studies,
Puducherry. | - | Chairman, Life Science |
| 2. | Dr. G. Poyyamoli,
Reader Department of Environment and
Ecology Puducherry University. | - | Member, EIA Process |
| 3. | Dr. R. Saravanan,
Asst. Professor,
Civil Engineering Department,
Puducherry Engineering College.
Puducherry-m 605 014. | - | Member, Risk |
| 4. | Dr. T. Nambi Rajan,
Reader, Department of Management,
Studies, School Management,
Puducherry University
Puducherry - 605 014. | - | Member, Management |
| 5. | Dr. L. Nadarajan
Dean, Pandit Jawaharlal Nehru College
of Agriculture, Karaikal, Puducherry - 609 603. | - | Member, Life Sciences |
| 6. | Prof. Ganapathy Venkatasubramanian,
Asst. Professor
Centre for Environment Studies
Anna University, Chennai | - | Member, EIA Process |

- | | | | |
|----|--|---|------------------------------------|
| 7. | Dr.K.K.Sivadasan
Lecturer, Department of Botany,
Mahatma Gandhi Govt. Arts College,
Mahe, New Mahe – 673 311. | - | Member, Life Science |
| 8. | Dr. S. Bhyravamurthy,
Lecturer, Department of Economics,
Dr. S.R.K. Government Arts College, Yanam | - | Member, Environmental
Economics |
| 9. | Dr. K. Sundravadivelu
Senior Scientific Officer
Department of Science, Technology and Environment
Puducherry. | - | Secretary |

Table 29: Proposals deliberated in SEIAA in the year 2009-2010

Sl.No.	Name of the proposal	Status
1.	Construction of Fishing Harbour at Yanam by the Dte. of Fisheries and Fishermen Welfare, Govt. of Puducherry.	Issued Environmental Clearance on 19.12.2009
2.	Establishment of 400 MW combined cycle power plant at Yanam proposed by the M/s Puducherry Power Corporation Ltd	Clarification sought from the MoEF with regard to interstate boundary to process the case further
3.	Establishment of a Medical College and Hospital at Ariyur Village, Villianur Main Road, Puducherry with 300 beds and power load of 500 KVA by M/s. Ramachandra Educational Trust	Issued Environmental Clearance on 17.03.2010
4.	Establishment of 380 MW Combined Cycle Power Project at Yanam submitted by M/s Yanam Power Generation (P) Ltd	Clarification sought from the MoEF with regard to interstate boundary to process the case further.





Fig.50 Public Hearing for the Yanam Fishing Harbour project conducted on 10.12.2009



Fig. 51 Women actively participated in the Public Hearing

2011 - 2012



Puducherry Pollution Control Committee

IIIrd - Floor, Housing Board Building

Anna Nagar

Puducherry - 605 005