

A Case Study of Rainwater Harvesting in Thane City

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Inspiration

Environmental Status Report 1999 - 2000.

TABLE NO 4.19
GROUND WATER STATUS IN T.M.C. AREA
WELL WATER RESULT RANGE

Sr.No.	Parameters	Open well	Tube well	limit class B ISI 10500-1983	WHO
1	PH	7.0 - 8.6	6.8 - 7.1	6.5 - 8.5	6.5 - 8.5
2	Turbidity	2.2 - 10.3	1.5 - 3.9	10.0	5.0
3	Chloride	59.0 - 134.0	44.0 - 78.0	250.0	—
4	Hardness	284.0 - 584.0	224.0 - 540.0	300.0	—
5	DO	4.2 - 6.7	1.9 - 5.9	5.0	—
6	BOD	2.0 - 12.0	2.0 - 15.0	3.0	—
7	TDS	466.0 - 722.0	372.0 - 699.0	—	1000.0
8	Alkalinity	300.0 - 450.0	269.0 - 350.0	—	—
9	Lead	—	—	0.1	0.01
10	Chromium	0.02 - 0.77	0.03 - 1.1	0.05	—
11	Cadmium	—	—	0.01	0.003
12	Zinc	Nil - 0.44	Nil - 0.07	5.0	3.0
13	Copper	—	—	0.05	1.2
14	MPN	14 - 1600	14 - 1600	500	—
15	E.Coli	6 - 350	0 - 45	-	0
16	E. Coli	0 - 20	0 - 30	-	0

All Results are in Ma/Lt except pH turbidity and microbiological counts.

- 1999-2000
- Environmental status report
- Thane Municipal Corporation
- Says that all the ground water is non potable

Interpretation:

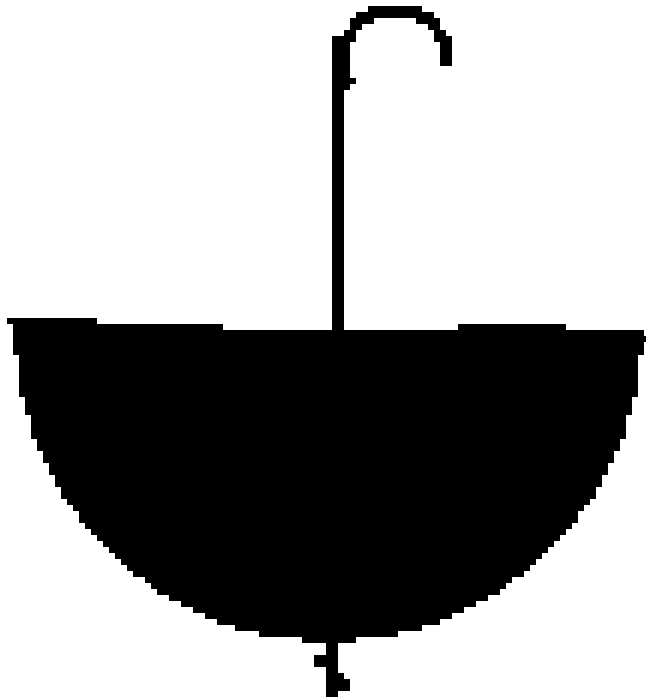
Comparing with WHO and ISI guideline for drinking water most of the tube well and open well water is contaminated with E.Coli. Only in case of tube well at Dhokali falls within the limit whereas water of all wells found to be not fit for human consumption. This water can be used for domestic purpose other than human consumption. The regular monitoring of all open well and tube well is recommended.

Research and development



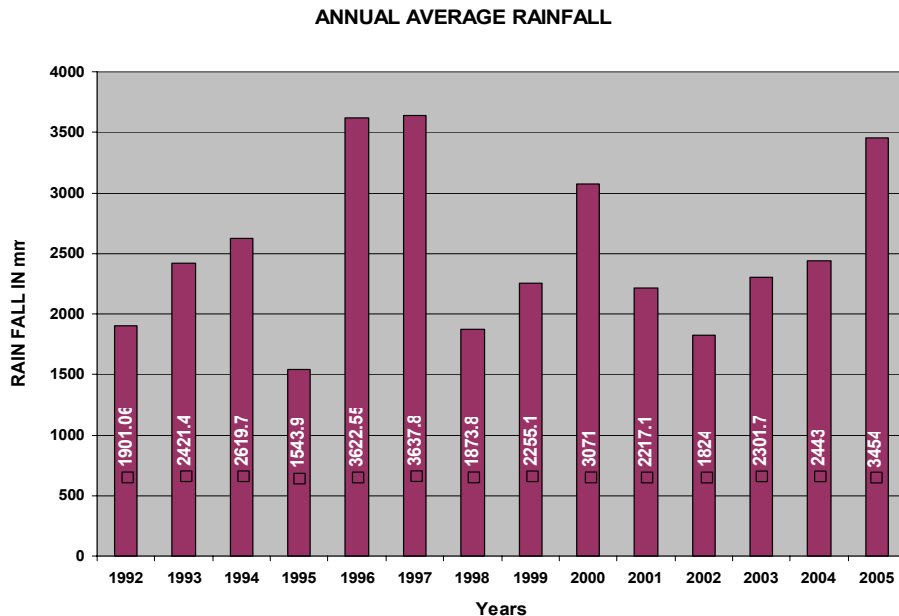
- Factors responsible for nonpotability of ground water
- Paving of open lands
- Low flushing rate
- Decrease in green cover
- Storm water drainage
- Industrial sewage water
- Domestic Sewage water
- High and low tidal movement of water

Possible Answers



- * **Flushing the rainwater to replace or dilute the ground water.**
- **Modern sewage treatment systems.**
- **Charging the tube-wells and bore-wells with rooftop rain water harvesting**

Creating Awareness



- Study of rain-pattern to understand the potential
- Awareness through programmes
- Study of distribution system of city water supply and possible problems.
- Economics of drinking water
- Threats to quality of drinking water – Chlorination
- Technology for rainwater harvesting

Socialising and Economising technology



- **Benefit to everybody**
- **Low cost factor**
- **Use of existing structure pipelines**
- **Revolution started with breaking of paved areas**
- **Soak pit concept with sand filter accepted as economic solution**
- **Online filters developed to charge the water to tube wells and bore wells.**

Success stories



- Total 30 localities (Societies) in our city have started roof top rainwater harvesting.
- Includes 30,000 residents.
- 150,000 square feet rooftop.
- 16,14,00,000 litres of rain water harvested each year.
- Also it has improved the quality and quantity of ground water.
- Decrease the number of tankers which are continuing the supply in summer.

Participation of Thane Municipal Corporation

- Old structures will be given concession in property tax if they have rain water harvesting system.
- Occupation certificate will not be issued unless the new constructions have rain water harvesting system.
- A committee formed by TMC authorities includes five organisations for awareness creation and technology development



**THE THANE
MUNICIPAL CORPORATION**



Additional benefits



- Increase in ground water level indicates-
- Healthy soil and nature. Makes everything green and soil starts “breathing”
- Helps control the rising temperature
- Water for other uses is available free of cost.
- Serves as a buffer in absorbing the shocks due to earthquakes.



A key to SUCCESS

- Think globally – act locally
- Team Work: The force that drives common people to achieve uncommon results

**ENVIRONMENTAL
AWARENESS BRINGS
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FORGETTING THEIR
DIFFERENCES**