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HOW TO DEAL WITH POOR WATER QUALITY

Apartment complexes should set up centralised water filtration units, provision separate tanks for Cauvery water; many use softening devices

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Bengaluru is sitting on a ticking time bomb. Bad roads are everywhere, but there is something which is perhaps more serious and yet overlooked. A lot of sewer lines in the city are leaking because they are old and almost broken.

Shashank Palur, a senior hydrologist looking at urban water programmes in WELL Labs, a non-profit water systems research and innovation centre based in Bengaluru, says that over time, sewage would percolate into the ground and get mixed with groundwater. "If the sewer lines and water lines are damaged, there is also a risk of sewage entering the water supply lines when the water lines are empty," he says.

WATER FILTRATION METHODS

A water treatment process utilising charcoal and sand filters followed by chlorination effectively removes pathogens and suspended particles, but is inefficient in reducing total dissolved solids (TDS). Adding an RO filtration system to this significantly decreases TDS, though it also results in the loss of beneficial minerals.

A sewer upgradation tender has been invited, but the city is growing so rapidly that infrastructure is constantly trying to catch up. Shashank says a system-wide sewer line overhaul is the need of the hour:

The deteriorating quality of water has become a major concern in Bengaluru. Many apartments rely on borewell and tanker water, despite the rains. Residents of an apartment complex recently reported foul smell and visible impurities in their tanker water. Renu Rajeev Kumar, a resident of the complex, says the community plans to conduct lab tests and demand water source details from vendors. "Until results arrive, residents have been advised to boil water and use purifiers," she says.

Tanker water - source uncertain
The desirable limit for TDS in drinking water is under 500 ppm (parts per million). In one major apartment complex in Koramangala, a TDS meter is used to check the quality of the

"We recently had poor quality tanker water, with foul smell and visible impurities. We are entirely dependent on tankers. We plan to conduct lab tests and demand source details. Until results arrive, residents have been advised to boil water and use purifiers."

Renu Rajeev Kumar | RESIDENT, ELECTRONICS CITY

tanker water. "The TDS varies from 400-800 ppm," says a resident.

A hydrologist says most citizens have no idea where the tanker water comes from. "The smell and colour of the water sometimes make you feel the water is unsafe for consumption. But nobody dares to speak against the tanker mafia," he says.

Many large apartment complexes now install centralised water filtration or softening units, which help to significantly reduce TDS in the water coming through household taps. But irrespective of that, all households use in-house filtration units at least for drinking water - these typically deal with both pathogens, suspended particles and dissolved solids.

Borewells - quality concerns rise with increasing depths

Residents of apartments located in the fringes of the city, specifically in the Yelahanka and Mahadevapura zones, tend to experience particularly high levels of TDS in their water supply. These apartment complexes have borewells drilled to depths exceeding 600 - 900 feet, significantly deeper than the city average of about 600 ft. Drilling deeper into the ground causes minerals from the rock formations to dissolve into the water, thereby increasing TDS levels. Some fringe locations have TDS levels above 1,000 ppm, way beyond the safe consumption limit.

Create separate tank for Cauvery water

Residents of Hillcrest in House of Hiranandani in Begur have been using tanker (60%) and Cauvery water (40%) for their daily needs since November 2023. Before that it was a mix of borewell, Cauvery and tanker water. "Tanker water's TDS levels are over 500 ppm," says Neha Advani, ex-president of the management committee. Both sources of water go into the same tank. "If builders at the time of construction had created separate tanks for Cauvery water and connected those to the kitchens of every flat, we would have had to use just a regular water filter to make the water drinkable," she says. That's a lesson for newer apartment complexes.

How RWAs are tackling water pollution

At Assetz 63 Degree East, a 1,000-unit apartment complex in Kodathi, Sarjapur Road, water testing is done frequently. "The RWA ensures that the WTP is serviced on a regular basis to ensure low TDS. We are also doing random audits at vendor sites and levy penalties in cases of non-compliance," says Nikhar Jain, secretary of the management committee.

Siddharth Singh of Ahad Euphoria on Sarjapur Road, like many others, uses softening devices in the bathroom too, to try and prevent hairfall and dryness.



"There is no regulatory mechanism for private tankers. Without legal power, it's difficult for us to monitor or control them. There is a gap in policy, which needs to be addressed by the groundwater department. If anybody wants a Cauvery water connection, let them apply online and I will ensure that it is given on time. Private tankers have existing long-term supply agreements with apartment communities, so the response for BWSSB's Sanchari Cauvery online tanker water supply, we launched it four months ago, is yet to realise its full potential.

The existing sewer lines in the city are about 30 years old and in dire need of replacement. It is a major issue in old Bengaluru especially in places like Shivaji Nagar, Chickpet and Chamrajpet. Sewage contamination issues persist in few areas/slums due to ageing infrastructure and space constraints. Limited space within slums makes laying new pipelines challenging. Efforts to replace the pipelines are ongoing in phases with available funds. Changing the system requires substantial funding.

Ram Prasath Manohar | CHAIRMAN, BANGALORE WATER SUPPLY AND SEWERAGE BOARD

NEED ROBUST SURVEILLANCE SYSTEMS, EFFECTIVE SOURCE DETECTION

"A lot of apartments in the city that we have surveyed or spoken to have mentioned high TDS in their water. For those in the fringes of the city, water quality has become a pressing issue. Apartments normally have a water treatment plant (WTP). Whether it's functional or not is a different question. And then people put it through their own RO or water purifiers. You need a certain amount of salts to maintain your equilibrium in the body. Ideally, drinking water should have a TDS level of 200. RO results in wastage, UV and UF water purifier systems can protect you from bacterial or biological contaminants."

Shashank Palur | SENIOR HYDROLOGIST, URBAN WATER PROGRAM, WELL LABS

"If sewer lines run parallel to drinking water lines and are old or break at multiple points, contamination can occur. When sewage mixes with drinking water, it causes bacterial and viral infections. We see these infections commonly. While infections such as E. coli bacteria, hepatitis A, and hepatitis E are prevalent, determining the exact water contamination source is challenging. High total dissolved solids (TDS) levels in water present another significant health concern. For instance, elevated fluoride levels can cause bone toxicity. Unlike microbial contaminants, high TDS does not make water infective, but poses long-term health risks. Excess salts and heavy metals can cause kidney damage, kidney stones, high blood pressure and heart diseases. We need effective source detection, robust surveillance systems and better water supply infrastructure."

Dr Parvesh Kumar Jain | PROFESSOR AND HEAD, DEPT OF MEDICAL GASTROENTEROLOGY AND ORGAN TRANSPLANT, BENGALURU

"Water is a shared responsibility. We've built that awareness into the way our communities function. Every project is designed to harvest rainwater, treat and reuse greywater, and reduce dependence on freshwater sources. We create natural recharge pits, install smart metering systems, and plan green landscapes that help the ground retain moisture. Developers must take a hands-on approach: engineer efficient systems, plan for reuse, and think beyond today's needs."

Mahesh Khaitan | DIRECTOR, SATVA GROUP



"Tankers often draw water from borewells located near lakes or agricultural catchments, where contamination arises from polluted lake recharge or fertiliser runoff. Apartments on the periphery of the city relying on borewell water face potential heavy metal contamination, especially in industrial catchments. In some cases, industries discharge wastewater into abandoned borewells under the guise of 'zero discharge', leading to elevated TDS and heavy metal concentrations. Regular groundwater monitoring, use of RO filtration units, and strict enforcement of environmental regulations by relevant agencies are critical to mitigating these risks."

Priyanka Janwal | PROGRAMME LEAD AND SENIOR FELLOW (WATER AND SOCIETY PROGRAMME), CENTRE FOR ENVIRONMENT AND DEVELOPMENT, ASHOKA TRUST FOR RESEARCH IN ECOLOGY AND THE ENVIRONMENT (ATREE), JAKKUR

"While Cauvery water is of much better quality, the sump system in our complex mixes water from various sources before pumping the water to overhead tanks, resulting in significantly high hardness. Our water treatment plant (WTP) treats the water prior to distribution which helps reduce the hardness to a certain extent, but not to the desired levels. As a result, residents are forced to install heavy duty water purifiers for their drinking water needs as well as water softeners for bathroom showers, resulting in a significant water wastage."

Neha Advani | EX-PRESIDENT, HILLCREST, HOUSE OF HIRANANDANI, BEGUR



"With over 900 apartments, we receive around 35 water tankers daily, which meets about 80% of our water requirement. Borewell water contributes about 10%, while the remaining Cauvery water supply from the govt is significantly below the promised level. All incoming water is processed through the water treatment plant, ensuring reasonably good water quality. However, since the majority of the supply comes from tankers, the water tends to be slightly hard. The storage tanks are cleaned regularly, which helps minimise the risk of contamination."

Mamta Pai | RESIDENT, SOBHA SILICON OASIS, MAGNATHAPURA

"Our apartment complex gets our water samples tested at Bangalore Analytical Research Centre once in four months. We collect samples from underground tanks (UGTs), inlet points, overhead tanks (OHTs), flat taps and sewage treatment plants (STPs). As many as 39 parameters are tested. We also clean our water tanks frequently."

Manish Agrawal | ELITA PROMENADE, JP NAGAR

