

# City pumps toxic water from ground



■ Areas where there is no piped water supply, people tend to use hand pumps to draw groundwater from shallow aquifers, DJB says.

RAJ K RAJ/HT PHOTO

## HEALTH HAZARDS Reports say groundwater contains high amounts of lead and fluoride

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**NEW DELHI:** Unfit for human consumption — that is what government agencies say groundwater in many parts of the city has become.

Large parts of Delhi, especially unauthorised colonies, still go without piped water supply. According to the Economic Survey of Delhi 2014-15, 18.7% households don't have access to piped water.

What majority of these people rely on is groundwater pumped by borewells — legal and illegal — across the city.

According to NASA's Gravity Recovery and Climate Experiment (GRACE) satel-

lites, groundwater is fast becoming dear and India has one of the worst stressed aquifer systems in the world.

As per data collected from the satellites and analysed by the University of California, the Indus Basin aquifer in India and Pakistan is the second-most overstressed in the world. There is no natural replenishment to make up for usage, the study said. The most overstressed aquifer system in the world is the Arabian Aquifer System.

According to the study, the most overburdened aquifers are in the world's driest areas, where populations draw heavily from underground water. The findings of the study were published in the journal Water Resources Research.

In Delhi, however, the problem is not just of drying up aquifers but also of

### THE DEEPER YOU GO INTO THE EARTH FOR WATER, THE BRACKISHNESS AND SALINITY OF WATER INCREASES

polluted water resources.

Numerous reports published by government agencies over the years have found that groundwater in Delhi contains high amounts of nitrates, lead and fluoride. It has also been found that as you go deeper into the earth for water, the brackishness and salinity of water increases. In Delhi, brackish water is found at around 25 metres deep. Many areas, especially in south and southwest

Delhi have already dug deeper than that.

But residents of Hauz Rani do not need a government report to tell them that the water they have been pumping from illegal borewells is contaminated.

"We can taste and smell that the water is not fit for consumption. Those who have more money buy expensive filtration systems but we can only boil the water. We don't have a DJB connection and can only rely on groundwater," said Nasreena, who goes by her first name.

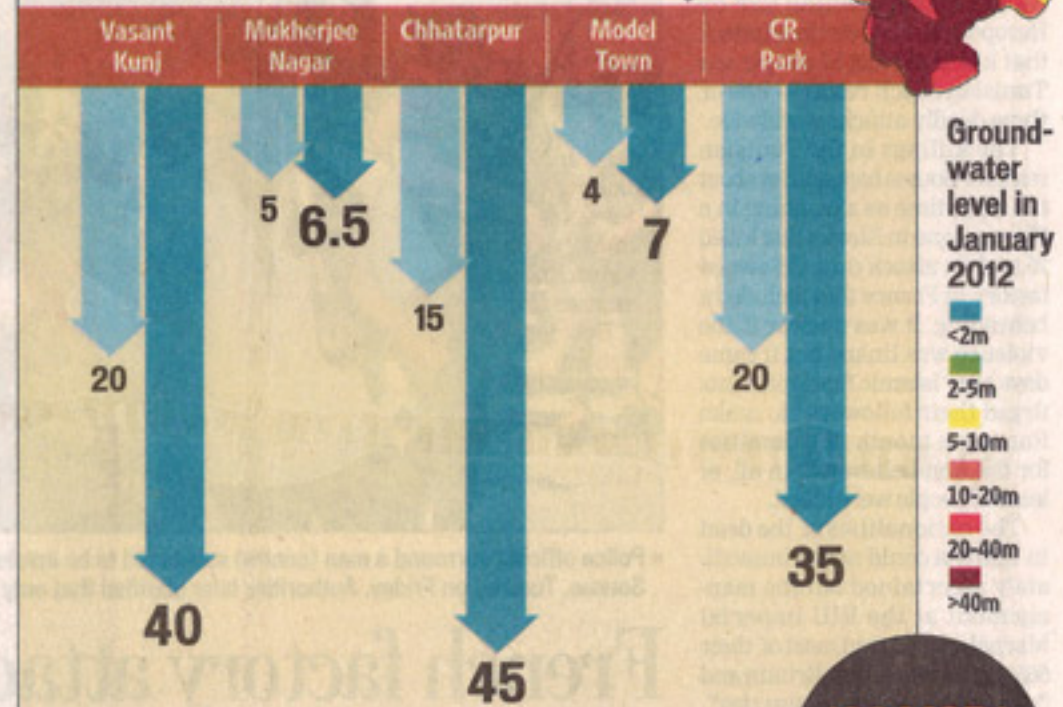
While efforts are being made to expand Delhi's piped water map, getting people to join in is also a challenge.

The problem does not stop there, industry effluents, leachate from landfill sites and seepage of sewer into storm water drains are all contributing to increasing pollution of groundwater sources.

## DWINDLING SUPPLY

There is no natural replenishment to make up for usage of groundwater in Delhi

Water Table ■ 2003 ■ 2013 (in metres)



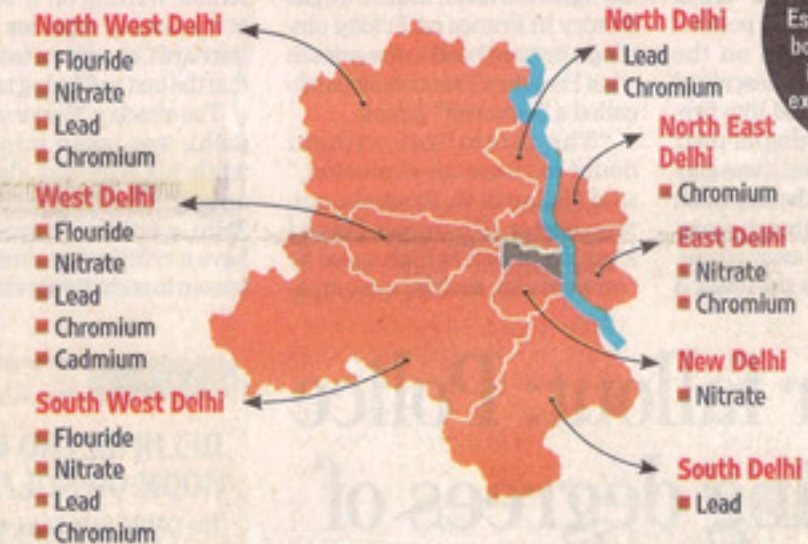
## HOW DIRTY IS YOUR WATER

Delhi's groundwater is contaminated by dangerous pollutants:

### PERMISSIBLE LIMITS

Fluoride (>1.5 mg/l), Nitrate (>45 mg/l), Lead (above 0.01 mg/l), Cadmium (above 0.003 mg/l), Chromium (above 0.05 mg/l).

### Pollutants more than permissible limits



100 MGD\*

Amount of groundwater extracted by Delhi Jal Board daily

4.5 lakh

Estimated number of borewells/tubewells in Delhi that also extract groundwater

\*MILLION GALLONS PER DAY