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Colorado's lifeblood

While Loveland has relatively clean water, regulators say it could be better

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The Daily Reporter-Herald*

Water is one of the essential components that makes life possible on the planet. And while it covers 71 percent of the earth's surface, only 3 percent of that is potable, making it a precious resource.

Here in Loveland, water experts say residents are fortunate to live just downstream from the Colorado headwaters.

"The quality of the water in the watershed is quite good, we don't routinely see exceedences in the constituents that we monitor," said Michael Lewis, associate director of U.S. Geological Survey's Colorado Water Science Center.

Technicians with the Geological Survey along city water staff and members of the Big Thompson Watershed Forum routinely sample the river.

The samples are then tested for contaminants that the Environmental Protection Agency and the Colorado Department of Public Health and Environment regulates. The two agencies set acceptable levels of pollution. If a contaminant goes above that level, it is classified as a health risk.

Steve Adams, Loveland water utility manager, said in regard to Loveland's drinking water supply, this has not been a problem. "The city has stayed below all the maximum contamination levels," he said.

The city's water supply comes from a combination of the West Slope and the Big Thompson River, which unfurls down the canyon from the Continental Divide.

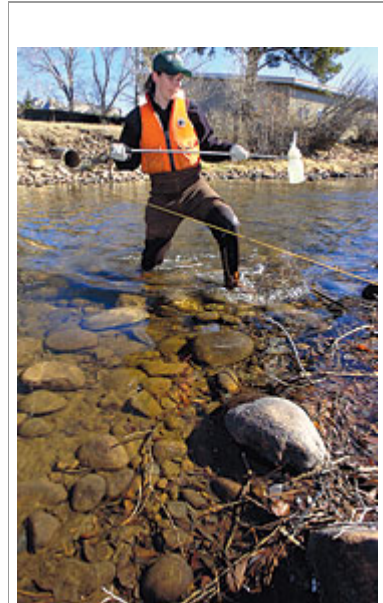
As the water travels down the canyon, city workers capture Loveland's share and store it in the Green Ridge Glade Reservoir.

When residents need water, city workers then funnel it from the reservoir into the Water Treatment Plant in west Loveland.

Ruth Hecker, Loveland interim water quality lab coordinator, said she and others carefully monitor the treatment process.

"We test it throughout the process, and especially at the (end) before it goes to the tanks and the distribution system," she said.

The treatment process mostly consists of clearing out the organic matter — soil, bacteria, algae, microorganisms — brought down by the river.



Andria Fleming, a student at the Colorado School of Mines, collects water samples from the Big Thompson River in Estes Park on April 10.

Reporter-Herald/Jenny Sparks

New Contaminants

One area that all water quality experts are watching unfold is emerging contaminants.

Traces of pharmaceuticals — antibiotics, steroids, antidepressants and some personal hygiene products — are cropping up in increasing numbers in the nation's waterways.

While currently unregulated, the substances travel from people's homes through wastewater treatment plants and into waterways without obstruction. Researchers are just beginning to grasp the issue.

Locally, the Big Thompson Watershed Forum is teaming up with the U.S. Geological Survey to study it.

phosphorus levels in the river. Phosphorus is a nutrient that largely comes from human and animal waste. However, it is found in fertilizer and cleaning agents as well.

At high levels it causes accelerated plant and algae growth.

"The real pollutants that are a threat to human or aquatic health, they're already closely regulated or well managed," Buirgy said. "Now, we're looking at more subtle compounds like nutrients."

While the forum is not a regulatory agency, the plan will establish local and voluntary standards that will come out ahead of federal and state standards, which are expected sometime after 2010.

Buirgy said there are a number of things residents can do to limit polluting waterways. While conserving water use remains at the top of the list, stopping chemicals from entering the drains or streams is a close second, he said. This includes using fertilizers sparingly, cleaning vehicles at commercial car washes and properly disposing of vehicle fluids and pharmaceuticals.

By the numbers

10: Million gallons of water city workers on average treat each day.

24: Million gallons of water treated in the peak summer months.

1,000: Number of square miles the Big Thompson River watershed stretches.

12: Number of locations U.S. Geological Survey technicians collect and tested water samples on the Big Thompson River 15 times a year since 2000.

At the end of the process, the water is disinfected with chlorine. Fluoride is added along with soda ash, which makes the water less corrosive to plumbing.

Even with the relatively high water quality, regulators have placed three areas on a state list for impaired waterways. The stretch of river from Interstate 25 to the confluence to the South Platte River as well as some of the Little Thompson River tributaries contain elevated levels of selenium. While selenium is a naturally occurring element, in high doses it endangers aquatic life. Also, the Little Thompson River from the Culver Ditch to the Big Thompson River is red flagged for both selenium and E-coli, a bacteria commonly found in human and animal intestines.

Although these present areas of concern, water quality in the river has improved over the last 50 years, said Rob Buirgy, executive director of the Big Thompson Watershed Forum. Better technology at the Wastewater Treatment Plant and livestock management practices are credited for the improvements.

Buirgy said his organization is currently working on a plan that will first focus on finding high

Chemicals in our water

Chemicals that are added:

Fluoride: a compound that prevents tooth decay, detected at 0.85 parts per million

Chlorine: a disinfectant added at 1.02 parts per million

Chlorine dioxide: a disinfectant detected at 238 parts per billion
Trihalomethanes: a disinfection byproduct detected at 35.6 parts per billion

Haloacetic acids: a disinfection byproduct detected at 22.56 parts per billion

Chlorite: a disinfection byproduct detected at 321 parts per billion

Naturally occurring elements:

Coliform: a bacteria that was not detected

Organic carbon: also not detected

Contaminants found:

Lead: a metallic element from corrosion of plumbing detected at 5.04 parts per billion

Copper: a metallic element from corrosion of plumbing detected at 0.16 parts per million

Contaminants not detected:

Antimony, arsenic, beryllium, cadmium, chromium, mercury, nickel, selenium and thallium.