

## Introduction

Since 1996 a group of five municipal partners -- the Town of Blackfalds, Town of Lacombe, Lacombe County, Town of Ponoka and Ponoka County -- have been working to develop a new, sustainable source of water capable of supplying the future needs of their rapidly growing populations.

In 2004 these partners formed the North Red Deer River Water Services Commission and began construction of a 62-kilometre regional pipeline to deliver treated Red Deer River water purchased from the City of Red Deer to the communities of Blackfalds, Lacombe and Ponoka. This pipeline is scheduled to become operational in the spring of 2006.

Switching from an underground aquifer to the new surface water source will mean some significant differences in the water flowing from your household faucets.

### What's changing?

The new regional pipeline will provide water with considerably reduced alkaline and sodium levels. Water hardness will increase, although not to such an extent that household plumbing systems would be negatively affected or that water softeners are necessary.

Because water will arrive through the regional pipeline already treated, municipal water treatment will no longer be required. The City of Red Deer utilizes a different disinfection method, called chloramination (adding chlorine plus ammonia), than the chlorination process (chlorine only) currently used by the municipalities of Blackfalds, Lacombe and Ponoka.

Chloramination is a safe, proven water disinfection process that has been widely used in communities across Canada, the United States and Europe for several decades. In Alberta, the cities of Edmonton and Lethbridge treat their water via chloramination, and Calgary is also considering switching to this method. The City of Red Deer implemented its chloramination process more than 10 years ago.

### What does "water hardness" mean?

Water is considered to be "hard" or "soft" according to the amount of dissolved minerals, most commonly calcium and magnesium, it contains. Water hardness is



typically measured in milligrams per litre (mg/l) or in grains per gallon (g/g). As a comparison, a typical aspirin tablet contains about five grains of material.

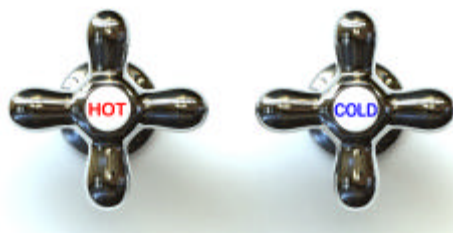
SOFT	0 - 80 mg/l
MODERATELY HARD	80 - 200 mg/l
HARD	200+ mg/l
VERY HARD	500+ mg/l

Consumer preferences for harder or softer water are subjective and vary widely. Water delivered through the new regional pipeline system will be somewhat harder than the underground aquifer variety that residents of Blackfalds, Lacombe and Ponoka are accustomed to, but it is not considered to be hard enough to cause the formation of lime scale deposits in household plumbing and appliances, or to require the use of water-softening equipment.

### What is chloramination?

Chloramination is recognized by the Province of Alberta and Health Canada as an approved, safe water treatment process. It involves the use of both chlorine and ammonia to disinfect drinking water. When mixed in a reservoir, they combine chemically to form chloramines, which destroy harmful bacteria and organisms but leave water safe for drinking, cooking and all household uses.

Chloramination is a better choice than using chlorine alone because it produces lower levels of disinfectant by-products like trihalomethanes, which are suspected carcinogens that form when chlorine combines with natural organic substances found in water.



Chloramine is more chemically stable than chlorine and lasts much longer in the local water distribution system than chlorine, allowing it to penetrate more effectively into the water distribution system and provide greater protection against contamination from bacteria and viruses. This process does not affect mineral content and pH levels.

### Is chloraminated water safe?

Chloraminated water is safe for drinking by people and animals, cooking, bathing, laundry, gardening and all other general household uses. It can be used safely by women who are pregnant, for mixing baby formula and for cleansing of cuts, scrapes and wounds. Chloramine does not accumulate in the human body.

**However, just like chlorine, precautions must be taken to neutralize or remove chloramines by these special groups:**



- **Kidney dialysis patients**
- **Owners of aquariums, reptiles, amphibians or backyard fish ponds**
- **Restaurants and supermarkets with live seafood tanks**
- **Processors of photographic materials**
- **Businesses or laboratories requiring high-purity water**

Chloramine-treated water is safe for spraying on lawns, flowers and vegetable gardens. Chloramine dissipates with

minimal impact on beneficial soil bacteria because of the soil's high demand for chlorine.

### Why is chloramine harmful to dialysis patients?

Like chlorine, chloramines can harm kidney dialysis patients during the dialysis process if it is not removed from water before it comes into contact with their bloodstream, where it inhibits the ability of their red blood cells to carry oxygen. All dialysis patients can freely drink or bathe in chloraminated water because the body's digestive process neutralizes chloramines.

Patients who perform dialysis at home must check with their health care provider to ensure their equipment has been properly adapted for use with chloraminated water.

All local hospital services serving residents of Blackfalds, Lacombe, Lacombe County, Ponoka and Ponoka County have been notified of the change to a chloraminated water supply. If you are a dialysis patient and have any questions, please call your doctor or the dialysis centre where you are treated.

### **Why is chloramine harmful to fish?**

Because fish and amphibians pass water through their gills directly into their bloodstream, chloramine (like chlorine) will inhibit the ability of their red blood cells to carry oxygen. Owners of aquariums and ponds will need to adjust their current chlorine removal process to remove chloramines. Chloraminated water is safe for all animals that do not live in water.



Chloramine can be removed from aquarium water or backyard ponds only by using inexpensive water-conditioning agents or an activated carbon filtration system. Chlorine removal agents that are not specifically designed to also remove chloramines could leave excess ammonia in the water and harm fish. These products are all readily available from pet supply stores.

Unlike chlorine, chloramine will not dissipate through boiling or allowing water to sit in an aquarium or pond exposed to the air. Water pH levels are not affected by chloramines.

### **How can chloramine affect the processing of photographic materials?**

Photo labs may need to remove chloramines because it may interfere with the chemicals used to develop film, cause staining or adversely impact the colors in paper prints.

### **Can I remove chloramine from my water?**

Not easily. Domestic filtration equipment will reduce the level of chloramines in household water, but not completely remove it. Most home water-softening equipment is not designed to remove chloramines. Chloramine cannot be removed by boiling, letting water stand in containers exposed to the air or by adding salt.

### **How will chloramines affect household plumbing, pipes and water heaters?**

In some cases, chloramine may cause rubber seals or parts such as gaskets or toilet flappers to degrade at a slightly faster rate. Although rare, signs of such degradation can include small black flakes in water or plumbing fixtures. It is advisable to inspect your toilet flapper once or twice a year for signs of deterioration. Replacement parts are available at any hardware store.

If you have installed a water purification system, you may need to change filters more frequently.



# **CHANGES *in* your WATER**

*For more information about chloramination or changes in your community's water supply, contact your local municipal office:*

- Town of Blackfalds 885-4657 [www.blackfalds.com](http://www.blackfalds.com)
- Town of Lacombe 782-6666 [www.town.lacombe.ab.ca](http://www.town.lacombe.ab.ca)
- Town of Ponoka 783-4431 [www.ponoka.org](http://www.ponoka.org)

*or visit the North Red Deer River Water Services Commission website: [www.ourwater.ca](http://www.ourwater.ca)*

## **Important information about chloramination**

*from the  
North Red Deer River  
Water Services Commission*