

# Water matters

A newsletter from  
the Black Mountain  
Irrigation District

Issue Number 10  
December, 1999

## BMID treatment facility to be ready for run-off

**C**onstruction of BMID's \$3-million water treatment facility is turning a few heads in the water supply industry.

"Engineers at Reid Crowther researched our particular problem and then applied conventional technology in an unconventional way," explains administrator Phil Ruskowsky. "Other purveyors with similar systems and water quality challenges are asking questions and watching closely to see if the process meets our expectations."

While next spring's run-off will be the first big test, the system is expected to be up and running long before then. Construction is virtually complete; last-minute instrumentation and programming checks will be undertaken early in the new year.

"Our goal is to have the system running smoothly by freshet (run-off)," says project engineer Bob Hrasko. "We've had a few problems — one being wet weather and a very wet job site — but the contractor, Maple Reinders, has done a great job

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Water will be drawn from Mission Creek at a new intake and then directed into a settling pond, where heavier particles such as fine gravel and sand will settle out. Water will overflow into the sedimentation headworks, where it will be injected with a chemical coagulant (alum) before being directed into one of the two flocculators **1** where mixing occurs to encourage floating particles to stick together. The bigger these 'floc' particles become, the better they'll settle out in the polyethylene-lined clarifier basins **2**, each of which is designed to accommodate 51 megalitres/day. The clarified water will then move to Stevens and Hadden Reservoirs for further settling before flowing through the screening and chlorination station on its way to BMID's 6,300 connections. Settled 'floc' sludge from the clarification basins will be diverted into a clay-lined holding pond **3** where it will dry before being disposed of.

### Wally and Wanda say...

## Season's Greetings!

If you spend time in the watershed this winter, please protect drinking water quality by following these simple rules.

- Take out whatever you take in,
- Avoid driving in or near streams and lakes,
- Go to the bathroom well away from water sources, and
- Refuel your gas motor away from the water, as one litre of gas can contaminate two million litres of drinking water.



# Water Whys? Water Wise!

## Understanding ecosystem-based (watershed) management

### What is a watershed?

A watershed includes all land that drains into a common outlet. Often called a drainage basin or catchment area, a watershed collects water received as precipitation and slowly releases it into streams, which flow into rivers, which eventually empty into the ocean. A watershed — which also contains bodies of standing water such as lakes and wetlands — provides habitat for plants and animals and pathways for environmental pollutants to be filtered and processed.

### Who uses a watershed?

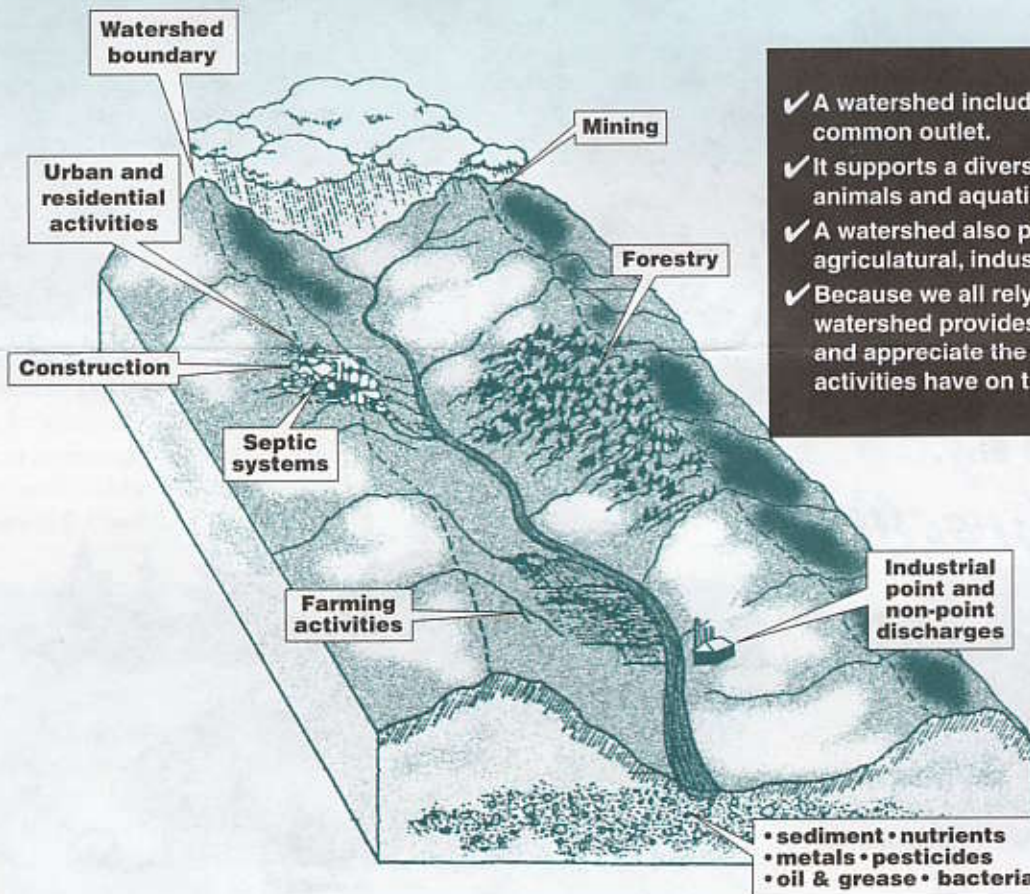
Watershed uses are either licensed (by the provincial government) or unlicensed. Licensed uses include forestry, cattle grazing, mining and mineral exploration, trapping and guiding, and water supply for irrigation and domestic purposes. Unlicensed uses are primarily recreational, and include fishing, hunting, boating, hiking, wood cutting, snowmobiling, and ATV and 4 x 4 use.

### What affect do these uses have?

Watersheds naturally undergo continuous natural change. Stream channels shift, unstable soils erode, and trees topple. Typically, human-induced change is different and broader in scope than change that occurs naturally. When we cut forests, clear and cultivate land, build towns and roads, remove riparian (stream-side) vegetation, alter drainage patterns, and withdraw water for irrigation, we cause rapid and often irreversible change. These changes also affect watershed health in downstream areas.

### What is watershed management?

"The last time you went to a concert, you didn't listen to music from just one instrument or voice," states the Water Environment Federation in its brochure *Everyone Shares a Watershed*. "You heard the entire orchestra or chorus. It was a holistic or complete experience. Watershed management is like



- ✓ A watershed includes all land that drains into a common outlet.
- ✓ It supports a diverse population of plants, animals and aquatic life.
- ✓ A watershed also provides water for domestic, agricultural, industrial, and recreational use.
- ✓ Because we all rely on the water and habitat a watershed provides, it's vital we understand and appreciate the impact these human activities have on this vulnerable ecosystem.

## Bylaw Bulletin!

Operational costs associated with the new water treatment facility will be significant. To meet this additional expense, BMID will increase its water rates. Effective January 1st, 2000, monthly rates will increase by \$1.50 for residential use, with a similar percentage adjustment for irrigation, commercial, industrial, and other uses. Similar increases are expected in the year 2001.

Capital costs associated with the project will be financed through long-term borrowing and the purchase of government debentures, provided they are available next spring.

### Pre-authorized payment has arrived!

BMID now offers pre-authorized payment - and it's as easy as 1,2,3! First, request an application form; second, complete and return the form; and third, enjoy the convenience! Domestic customers have the option of paying a set amount monthly or quarterly.

In addition, BMID accepts cash, cheques, Interac, and tele-banking from most financial institutions.

### We're now online!

In August, BMID introduced its website on the World Wide Web. Located at [bmid.org](http://bmid.org) this site offers a convenient look at the district's history, bylaws, billing, current and future projects, newsletters, and links to other related sites.

"Having a website for your business is increasingly critical in today's market," says administrative assistant James Moller. "Being on the net ensures your customers have all the information they need to make informed decisions. The net represents one of the hottest, fastest-growing worldwide marketing channels ever devised, and it's one of the ways BMID keeps abreast of current technology."

that. Instead of focusing on one particular problem, we take a holistic approach. Society makes decisions based on all water resources, all water uses, and all threats to water throughout a common geographical area."

Watershed (ecosystem-based) management is the preferred approach because it:

- complements nature's regime,
- saves time and money,
- prevents duplication of effort,
- involves all stakeholders who, in turn, will assume more responsibility, and
- results in a more in-depth understanding of the ecosystem, making it easier to target priority concerns.

### What are the barriers to watershed management?

While government policies set the necessary legal framework for watershed protection, they are often inadequate because:

- many jurisdictions function within a given watershed,
- administrative boundaries don't coincide with watershed boundaries,
- communication amongst and within governing bodies is often poor,
- most laws apply only to certain issues or watershed locations,
- private landowners are exempt from certain regulations, and
- enforcement is difficult and expensive.

### How can you help?

Watershed management requires cooperation and contribution from everyone. You can help by:

- educating yourself about water resources and uses in your watershed,
- promoting watershed management to elected officials,
- participating in watershed planning groups, attending open houses, etc.,
- ensuring local schools are teaching the concept of watershed management,
- reaching out to other communities and crossing political boundaries to address watershed-wide issues, and
- considering future water needs.

### Meet the Staff



As Administrative Assistant, **James Moller** is responsible for billing, payroll, accounts payable and receivable, and all other accounting and banking functions. He also provides input to setting policies and procedures, is responsible for computer maintenance and support, helps with

customers, and supervises BMID office staff.

Although new to the water industry — he's been with BMID for only a year — James looks forward to a long and rewarding administrative career. "It's a great office environment at BMID," says James. "The staff are great and I love the variety and the day-to-day challenges."

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keeping things organized and on track.”

Hrasko also credits a good working relationship with BMID for keeping the project moving forward as planned.

“District staff have a great attitude,” he says. “They believe wholeheartedly in the project, and have very clear expectations of us and the process. They communicate those expectations clearly and positively, so we all want to do a good job for them.”

### The Recommended Coagulant

Of the five coagulants tried during pilot testing last spring, alum (aluminum sulphate) proved the most effective and cost-efficient.

Aluminum is the third most abundant element in the earth's crust, and is present in soil, air, and water. Humans are constantly exposed to aluminum in food, drugs (e.g. antacids), cosmetics (e.g. deodorant), consumer products (e.g. cooking utensils), the air we breathe (e.g. dry soil, smoke, and sprays), and water (e.g. coagulants used in treatment). Most adults ingest between 9 and 14 milligrams of aluminum daily from all sources; about 90 percent coming from their diets. In general, exposure to aluminum from drinking water is very low (below three percent) compared with that from food and drugs. Of the percentage that comes from drinking water, recent studies have shown that only 0.3 to 0.4 percent of that small amount is bio-available (can be absorbed by the body).

*Canadian Drinking Water Quality Guidelines* are being revised to include a guideline for aluminum in drinking water. During testing, BMID levels of dissolved aluminum following treatment with alum averaged 0.105 milligrams per litre, well within preliminary guidelines of 0.1 to 0.2.

## Prevent frozen pipes

To look for possible freeze points in your home, check water pipes that sit against outside walls. Fill any cracks or joints that could let freezing air to the pipe. Check around pipes that go to outside taps; fill any holes with insulation. Make sure you disconnect sprinkler hoses from outside taps. Should you get a frozen pipe, try the hair dryer trick. Open a tap, and with the dryer on low heat, fan the pipe with warm air.

## TECH TALK

One of the most neglected plumbing fixtures in a house or building is the pressure regulating valve (PRV), which is usually found behind the shut-off valve where the waterline enters the building. A PRV is critical because it regulates water pressure, thereby preventing damage to the pipes, the fixtures, and the contents of the building.

All water systems experience fluctuations in main-line pressure that can stress pipe connections, hot-water tanks, appliances, and fixtures. Last summer, for example, one of BMID's large-diameter water mains broke, causing a significant fluctuation in water pressure. Of the customers who experienced failed water tanks and flooded basements, many had defective PRVs or none at all. So, if you don't have a PRV, we strongly recommend you have one installed.

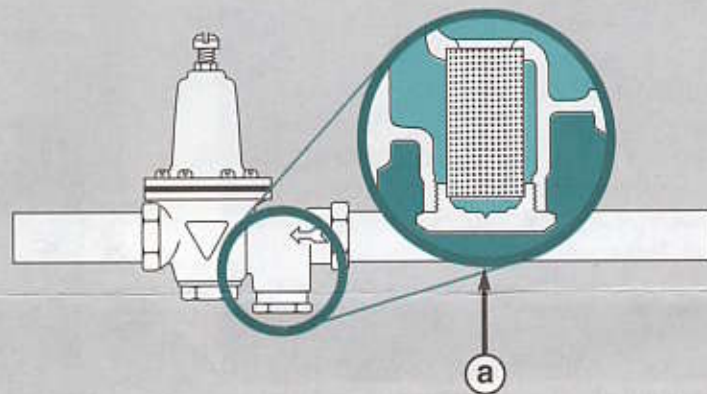
PRVs have a life span of about ten years, and should be replaced after that time. The valve should

also be cleaned regularly to ensure proper functioning. When the valve needs cleaning, you may experience reduced pressure resulting from restricted flow caused by accumulated debris in the filter.

Cleaning your PRV is easy if you follow these steps.

- 1 To prevent backflow, tell your family what you're doing and ask them not to flush the toilets or use the taps or appliances until you're done.
- 2 Shut off the in-line valve that brings water into the house.
- 3 Use a bucket to catch any drips.
- 4 Undo the hexagon nut (a) nearest the shut-off valve on the bottom of the unit, and remove and rinse the stainless steel screen.
- 5 Replace the screen and nut and turn the water back on, checking for leaks.

For more information, please call BMID or your favourite plumber.



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