



Information Brief: STATUS OF SOURCE WATER PROTECTION IN THE BC SOUTHERN INTERIOR

Minister of Environment

Minister of Health

Honourable Minister Barry Penner

Honourable Minister George Abbott

FOREWORD

This information brief comes to the Minister as a result of recent events that have taken place in the BC Interior related to water supply and source water protection. The information presented within this brief is intended to provide the Ministers with an assessment of the on-the-ground conditions that the water suppliers face within the BC Southern Interior.

The Black Mountain Irrigation District is an Improvement District and follows the legislation for Improvement Districts set out in the Local Government Act. BMID has water storage reservoirs within the upper Mission Creek watershed, which is the largest source of water to Okanagan Lake. BMID considers ourselves stewards of 561 square kilometers of the Mission Creek Watershed above our intake on Mission Creek. BMID operates upper elevation storage reservoirs and releases water to the creek for our users and to maintain fish habitat flows downstream. With a service population of 21,000 and 5,000 acres of agriculture, BMID is the largest stakeholder dependant on Mission Creek. BMID controls the flow rates in the creek, yet have no jurisdiction to protect the watershed from being damaged. For this, we rely on the Provincial legislation and staff.

Our primary concerns are that the safety of our water sources is maintained at the highest possible level, and that the safety of water supplied to the public is also at the highest possible level.

BMID CONCERNS

BMID has identified several issues that cause us concern:

- Population increases have resulted in increased activity in the watersheds. The pressures on these areas are from multiple user groups. The concentration of activity is increasing which is leading to higher levels of contamination and pollution to both the ground and surface water sources;
- The BC Southern Interior has the driest climate in the country and is the region most sensitive to drought. We are dependant on our watersheds to fill our upper reservoirs and Okanagan Lake on an annual basis. Releases from these reservoirs provide water to the valleys during the summer and fall months;
- Extensive work has recently been completed on the potential of Climate Change occurring in the Okanagan Basin. This will increase the demands for water with projections of a longer growing season and less precipitation during the summer months;
- With increased population and activity, there also must be increases in monitoring and staffing to protect our natural resources. Enforcement of legislation is presently inadequate and there appears to be no definitive plan that protects our watersheds.

Multiple Involvement of Provincial Ministries

Source water protection is a very complex issue within the Province of BC. The recent *Drinking Water Protection Act* is one of several pieces of legislation designed to protect drinking water in the Province. Other key regulations include the *Water Act*, The *BC Safe Drinking Water Regulation*, the *Groundwater Protection Regulation*, the *Forest Practices Code*, the *Health Acts*, the *Waste Management Act*, the *Mines Act* and the *Forest Land Reserve Act*.

The Ministries of Health, Environment, Agriculture and Lands, Forests, Mining, and Community Services all have a key role in the protection of water. The conflicting objectives of some of these agencies also leads to confusion in responsibilities and regulation enforcement.

We understand that a Memorandum of Understanding is being drafted by the Ministry of Health that will involve all of the key government agencies and will define responsibilities with respect to protecting drinking water.

EXAMPLES OF SOURCE WATER PROTECTION PROBLEMS

Several examples are presented to show the complexity of the issue and typical problems that the water suppliers are facing.

1. Lambly Creek Watershed Damage

(news story from Kelowna Castanet internet news)

Local dirt bikers clashed with some 'ravers' on Kelowna's Westside last weekend. The Okanagan Trail Riders were holding a sanctioned event in the Bear Creek area when they discovered they weren't alone in the bush. Upwards of 500 people had gathered for a rave billed as the "Toxic Tea Party" involving three stages and more than 20 bands.

President of the Okanagan Trail Riders Association, Ken Umbarger, says it was a quite the scene. "RCMP arrived at the scene shortly thereafter, but the numbers of partiers by this point had grown and enforcement was not an option given lack of the RCMP's resources."

*Umbarger says damage control seemed to be the only logistical course of action. "A meeting was held with the promoter and RCMP at which time it was stated that no government authority had sanctioned or condoned the event." **Umbarger says the promoter of the rave agreed to a number of conditions in order to keep things under control (agreed with whom??) including only one fire pit and garbage clean-up.** But Umbarger says, despite the promoter's good intentions, things fell apart.*

"By 10:00 am numbers had ballooned to some 500 ravers. Fire pits were seen through out the area and a couple of kids drinking booze were collecting admission of \$40 per person. Alcohol was being sold with no regard to age or permitting."



Burned down outhouses and remnants of toilet facilities in the watershed, September 30th, 2006

LAMBLY CREEK IS THE DRINKING WATER SOURCE FOR 10,000 PERSONS THAT LIVE IN THE LAKEVIEW IRRIGATION DISTRICT

Behind the issue was the "permission" given by persons that belonged to one of the "trail riders" organizations to the promoters of the party. It is not within the responsibilities of persons who are allowed to use watershed areas to give permission for events like this to occur. The issue of responsibility and stewardship were not followed in this instance. With increased activity comes increased risk.

2. Trucks Hanging over Kelowna Creek

The adjacent photo was taken by the Operations Supervisor of the Glenmore-Ellison Improvement District. Several Provincial agencies were contacted by GEID with regards to their removal but all stated it was not their responsibility. These agencies were likely correct as we believe that the responsibility lies with ICBC who also denied any responsibility. The issue of whether or not the vehicles were stolen was also at question as it was impossible to read the license plates or serial numbers in their present state. Risks included leaking fuel and contamination of Mill Creek.



Two trucks pushed into Kelowna Creek Canyon, July, 2006

3. Damage from Motorized Vehicles (ATVs)

Erosion potential increases with the number of trails and human activity in a watershed as illustrated in the adjacent photo. The soil movement increases the potential for nutrient loading into the natural streams and reservoirs. This nutrient loading increases the potential for blue-green algae blooms which was found in 2005 to be linked to the occurrence of Alzheimers Disease.

The most damaging vehicles are the two-stroke motorcycles that have extremely high torque and ripping effect and also have extremely high exhaust emissions.



Erosion caused by ATVs

4. Cattle and Livestock in Drinking Water Reservoirs

A recent presentation by Steve Hrudehy of the University of Alberta presented a review of why waterborne disease outbreaks continue to occur in the civilized world. Dr. Hrudehy and his wife recently published a book on 30 outbreaks that occurred in North America in the last 25 years. The reasons for continuing outbreaks includes at least one of the following items:

- Operator error or complacency;
- Waste contamination from humans or animals such as cattle;
- Failure of equipment and lack of response or notification.



Pincushion of Cattle access to meadowlands in watershed

5. Natural Events

On the morning of June 15th, 2006, the Upper Mission Creek and Kettle Valley watersheds received 50mm of rainfall in a 12 hour period. The rainfall, combined with snowmelt at the higher elevations resulted in 1:100 year flows in Mission Creek of 88 m³/s.

Homes were impacted and significant damage resulted to several houses. The entire creek flow was diverted to a new channel location due to large trees straddling the creek. No government agency was in a position to respond to the residents emergency. Clear protocol for the residents and communication to our utility would be very helpful in this instance as BMID received on-going phone calls related to the damage within the creek and to the adjacent residences.



Mission Creek flooding, June 15th, 2006

6. Unregulated Geothermal Installations

Geothermal technology has taken off in the BC Interior and the regulations have not kept abreast with the industry. The technology appears to be an excellent “green” application for heating and cooling of homes. BMID is not against the Geothermal industry, however we do have concerns related to the protection of the groundwater aquifers. The aquifers are sensitive to temperature and contamination. As temperatures increase, the potential for chemical reactions also increases. The impact of heating and cooling cycles on the natural aquifers is not well researched or known. The focus of geothermal research has been on heating and cooling sustainability and not issues of water quality.

Rutland Waterworks District supplies water to over 12,000 persons within Kelowna and is solely dependant on groundwater as their source. There is likely over 1,000 holes drilled now within the Kelowna City limits and there is no procedure for protection of the aquifers with regards to water quality.

POLICIES FOR CONSIDERATION

From our perspective as a local water utility that relies on a large watershed area, we would ask the Ministers to consider the following items when reviewing programs with their senior Ministry staff.

1. **Integrated Approach:** Review Water Treatment and Source Protection must take place with a comprehensive and interrelated approach. Isolated review of source water protection or an isolated review of water treatment without considering the other is short-sighted and may not be the best long term solution for the watershed or the utility. An end-of-the-pipe solution is something that should be pursued after all protective environmental measures are in place.

We look forward to reviewing the Memorandum of Understanding between the different Provincial Ministries related to the protection of drinking water. Discussions must take place with regards to the level of investment

2. **Delegate a Local Authority:** The existing DWPA and Water Act are strong legislation designed to protect our drinking water and our source water. The enforcement of this legislation is at times lacking as illustrated in the 2006 photos. The powers to utilize the Act can be delegated to a Provincial employee designate. Presently the role of enforcement is not clear to the Water Districts and when problems occur in the watershed, such as large 4x4 vehicles being buried up to their windshields in mud, there are no consequences or fines to pay. The police / law enforcement shows up and states the truck isn't stolen so they have no jurisdiction in this situation. (South East Kelowna Irrigation District actual occurrence)

A regional Conservation Officer, or a Drinking Water Officer, that can make decisions, or some similar designate who could represent multiple Provincial Ministries could be a solution to actually having enforcement within the watersheds. The water utilities are the watchdogs of many watersheds within the Province. They are not the protectors however and they need support from the Province. Watershed stakeholder teams consisting of the Local Authority person, the Water Utility, local residents, and/or local conservation groups may also be viable for watershed protection.

3. **Geothermal Concerns:** Geothermal technology is considered to be an excellent "green" technology. Groundwater is not visible and out of the thoughts and minds of the public. The impacts of the technology has not been well studied with respect to protection of water quality. The pincushion of holes into the aquifer in some development areas also poses a risk as the well-heads must be sealed and should follow the recommended practices for drinking water wells. Otherwise they could contaminate a nearby drinking water well. There are numerous drill rigs operating every day within Kelowna installing geothermal holes for new development.
4. **Regional Watershed Protection:** The BC Interior has within the deep valley lakes, some of the highest raw water quality in the entire country. The low turbidity levels, taste, odour, safety and risk are all at a level of extremely high water quality. The pressures applied by the local health agencies do not reflect the safety of these sources or the technologies available to reduce the risks such as UV disinfection. Protection of the regional watersheds

must be discussed and considered along with discussions of whether or not filtration is required for these water sources. Pharmaceuticals, metals from vehicles and parts per billion contamination from our wastewater treatment plants is not well understood. Their impact on our high quality water sources is also not well understood. Protection of the watersheds from non-point sources such as street runoff must be given higher consideration. Water in Okanagan Lake has a 70 year residence time. Our urban society is still polluting this source for the first time. Protection of this source is paramount to the health of our populations and our habitat.

5. **Source Protection vs Water Treatment:** As per Item No. 1, source water protection must be given as high a priority and consideration as filtration of water supplies. The installation of conventional or membrane filtration plants generates a concentrated waste stream that must be dealt with in an environmentally safe manner. If an effort of even 1/10th the economic value of filtration is put into source water protection, the long term health of our natural resources would have an excellent chance of being sustainable. Going to the “end-of-the-pipe” treatment solution without fully implementing source water protection is short-sighted and fiscally irresponsible. We must focus on source water protection first. The reduction of waste to our sources is a key issue.

CLOSURE

Please consider the policies provided for consideration within this memorandum. We have been in discussions with many of the water utilities within the region and have directed our comments to a much broader area than just the Black Mountain Improvement District.

Sincerely,

**Black Mountain Irrigation District
Board of Trustees**

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