

SWAP NEWS

Source Water Assessment Program

Fall 2004

Using your Source Water Assessment for Drinking Water Protection Planning

By July 2006, each public water system (PWS) in Montana will receive a Source Water Delineation and Assessment Report (SWDAR) completed or reviewed by the Department of Environmental Quality (DEQ). Almost 70% of the community public water systems have already received the report or it's currently in progress. The Assessment gives you information on the source area for the aquifer or surface water that serves your water supply (source water protection areas), potential contaminant hazards within the protection area, and an evaluation of those contaminants to which the PWS has the most susceptibility (susceptibility analysis). The source water assessment is the foundation that the public water system and local community can use to develop and implement a *drinking water protection plan*.

Why develop a Drinking Water Protection Plan?

The requirements for water quality monitoring of public water systems in Montana

provide some degree of assurance of safe drinking water; however, all systems are vulnerable to potential contamination. One of the best ways to ensure safe drinking water and minimize future treatment costs is to develop a local plan designed to protect against potential contamination. Not only will

this measure add a margin of safety; it will raise awareness in the local community of the risks of drinking water contamination, and provide information to them about how they can help protect their source of water. Having a certified plan has many benefits including ensuring better local management of the resource, facilitating better long-term planning, facilitating state and federal resource prioritization, potentially reducing monitoring costs, and potentially obtaining future priority funding for protection activities.

How do we start?

The first step towards developing a drinking water protection plan is to **form a local team** that will represent the interests of the community. The drinking water protection team should strive to include a balanced representation of various interests which may include the commercial, industrial, agricultural/forestry, regulatory, environmental, municipal, residential (urban and rural) sectors as well as city officials, the water system provider, or city staff.

The Next Steps...Contaminant Source Management and Contingency Planning

Identifying management strategies to protect the drinking water supply is the heart of developing the protection plan. The primary goal of a management plan is to **reduce or minimize the risks of drinking water contamination** from the potential sources as well as future potential sources. It is highly improbable that you can eliminate all hazards in any



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area, but by applying one or more management tools, you will be able to reduce the likelihood of potential contamination impacting your water supply in the future. Management options are described in your PWS’s SWDAR and Montana DEQ is available to assist the community in identifying and evaluating the various options that are available. The team can modify any of the suggested management options or adopt other strategies to fit the needs of the local community.

based alternative action plan for responding to potential contamination or disruption of the water supply. Generally, these plans should focus on the recognition of potential threats to the supply and the development of procedures to be followed should these threats materialize. Contingency planning also includes planning for new or additional sources of drinking water to accommodate population growth and increased in demand.

Contingency planning focuses on establishing a plan of action in case of emergency. It is a community-

Need Help?

Technical assistance is available through DEQ and MRWS for communities that choose to move beyond the assessments and voluntarily develop a Drinking Water Protection Plan.

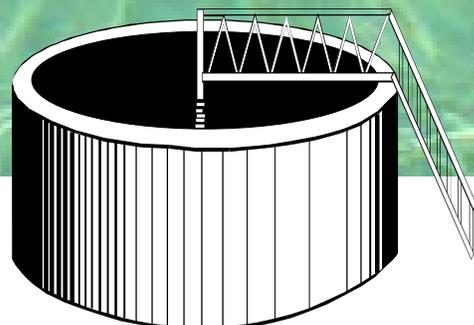
For technical assistance with developing plans to protect your public water system:

Joe Meek
 Source Water Protection Program Supervisor
 Montana Department of Environmental Quality
 P.O. Box 200901
 Helena, MT 59620-0901
 Phone: 406-444-4806
 Email: jmeek@state.mt.us

Kristi Kline
 MRWS, Inc.
 925 7th Avenue South
 Great Falls, MT 59405
 Phone: (406) 454-1151

For technical assistance with the monitoring and operation of your public water system:

Public Water Supply and Subdivisions Bureau
 Montana Department of Environmental Quality
 P.O. Box 200901
 Helena, MT 59620-0901
 Phone: 406-444-4400
 FAX: 406-444-1374



Who Writes my Source Water Delineation and Assessment Report, and Who do I Talk to When a Correction is Needed?

When your public water supply receives a copy of a Source Water Delineation and Assessment Report to review, correct, and comment on; there may be more than one name listed as the author. Why is that, who is responsible for the report, and who should you contact if you have a question or want to make suggestions and corrections if they are needed? This article will help answer these questions.

Montana has more than 2,000 public water supplies and the Source Water Protection Program has a staff of 4 hydrogeologists to write reports and a supervisor. That's a lot of reports for each person to write. To help make the workload more manageable and organized, the Source Water Protection Program has taken several steps.

First, each public water supply is assigned a priority rating of high, moderate, or low, based on what type of public water supply they are (Community vs. Transient), how vulnerable their source water is to potential contaminant sources in general, the size of the population served by the public water supply, and whether part or all of the population served is at high risk to water borne contamination such as children, the elderly, or individuals with compromised immune systems.

Second, the state is divided into 4 watersheds with a staff person assigned to each one. The staff person is responsible to make sure all of the public water supplies in their watershed have Source Water Reports completed by June 30, 2006. With this approach, high and moderate priority public water supplies are addressed first in each of the watersheds and then the low priority systems. At the time of writing this newsletter, Source Water Reports for almost all of the high priority systems are complete in each of the 4 watersheds and a significant number of moderate priority systems are also completed. This means that reports for almost

all of the 940 community or non-community non-transient public water supplies are done or are in the final stage of completion.



In addition to the community and non-community non-transient public water supplies, Montana has about 1,250 transient public water supplies. While the Source Water Reports for a transient system are less complicated than those for a community system, they still represent a large part of the Source Water Program's workload. To help complete reports for the transient systems by the 2006 deadline, the Source Water Program has taken several steps.

First, the Program hires several college interns each school year to work under the supervision of the professional staff. With training and supervision, the interns have proven very effective in helping the professional staff tackle the large number of transient public water supply reports.

Second, the Program also contracts with other entities to write Source Water Reports. Entities that have been under contract with the Source Water Protection Program include: the Montana Bureau of Mines and Geology (MBMG); the Missoula County Water Quality District; the Gallatin County Water Quality District; the University System; and others. Any Source Water Report written by one of the Program's interns or by a contractor is thoroughly reviewed by the Program's professional staff. In addition, these reports will state in the introduction who wrote the report and which professional staff reviewed the report. The Source Water Protection Program's staff is responsible for the report and they are the ones to contact for questions, corrections, or comments. ■

DEQ and MRWS Working Together for Public Water Systems

By Bill O'Connell, MRWS Groundwater Specialist

Since its beginning 10 years ago last May, the Montana Rural Water System's (MRWS) Wellhead Protection Program has partnered with the State. Carole Mackin started the state's Wellhead Protection Program as part of the old Water Quality Bureau in 1990. Today the program works mainly with the Source Water Protection Section and Drinking Water Section of the DEQ.

The 1996 amendments to the Safe Drinking Water Act required a Source Water Delineation and Assessment be completed on every drinking water source in the United States. The Source Water Protection Section of the DEQ is responsible for the Source Water Delineation and Assessment Reports (SWDAR) for the state of Montana.



The SWDARs currently being completed for every Public Water System (PWS) by the DEQ are an excellent example of the cooperation between MRWS Wellhead Protection Program and the DEQ. Cooperation is critical due to the large number of assessments that are required to be completed within a specified time-frame. Much of the information used in the SWDARs comes from

Wellhead Protection Plans, sanitary surveys, and the PWS's water quality test results in the DEQ's files.

Time constraints are such that the Water Quality Specialist writing the SWDAR can not visit every PWS. However, the MRWS Groundwater Specialist can verify the accuracy of the DEQ's data and SWDAR during on-site visits to the PWS.

The sanitary survey is a report from an on-site visit that evaluates the PWS facilities and, if needed, recommends improvements. The sanitary survey does not evaluate potential contaminant sources that may be in the Inventory Region (critical area to protect) of a SWDAR. The potential contaminant inventory is part of a Wellhead/Source Water Protection Plan. The potential contaminant inventory is the heart of the SWDAR and WHPP. As the groundwater specialist for Montana Rural Water Systems, I can do the on-site work needed to ensure the accuracy of the SWDAR. This cooperation is not new as many of the SWDAR are based on existing Wellhead Protection Plans. As more SWDARs are being completed, some are being turned into Wellhead/Source Water Protection Plans.

A benefit of the Source Water Delineation and Assessment Report are recommendations for waivers for the PWS where appropriate. The testing waiver program is 8-years old and many PWSs have received some testing relief and modified Wellhead Protection Plans have been used by the DEQ to justify waivers to PWSs. Greg Butts of the DEQ's Kalispell office has taken over the waiver program and we should see more action in response to waiver requests.

This is another area where MRWS can assist public water systems. We will work with the DEQ to help PWSs apply for waivers or we can help PWSs deal with deficiencies if waivers have been denied. ■

Public Water System Monitoring Waivers

As most water system operators know, monitoring requirements for PWSs are complex and can be a significant cost to system operation. Some water systems can have certain monitoring requirements waived when it can be shown that chemicals of concern are not used in the source water protection area.

Waivers can be requested in conjunction with the completion of the source water delineation and assessment report for a PWS. Typically, the PWS operator will need to provide additional site-specific chemical use information for parcels within the inventory region in order to process a waiver request. Waiver requests must be in writing.

The additional information that the operator would need to provide (above what is usually included in a source water assessment report) includes a topographic map showing individual land parcels, brief land-use description, and a list of chemicals used or in use for each parcel within the inventory region. This site-specific information comes from parcel owners who should be contacted by the PWS operator and asked to provide a list of herbicides, pesticides, solvents, or fuels and approximate quantity currently in use or stored on their property. While a parcel level inventory may seem a bit onerous, the cost savings to small systems can be significant. It should be noted that

if land ownership and land use in the inventory region is very complex, the PWS is probably not a candidate for waiver consideration anyway. The Source Water Protection Section at DEQ can assist operators in finding information needed to support a waiver request.

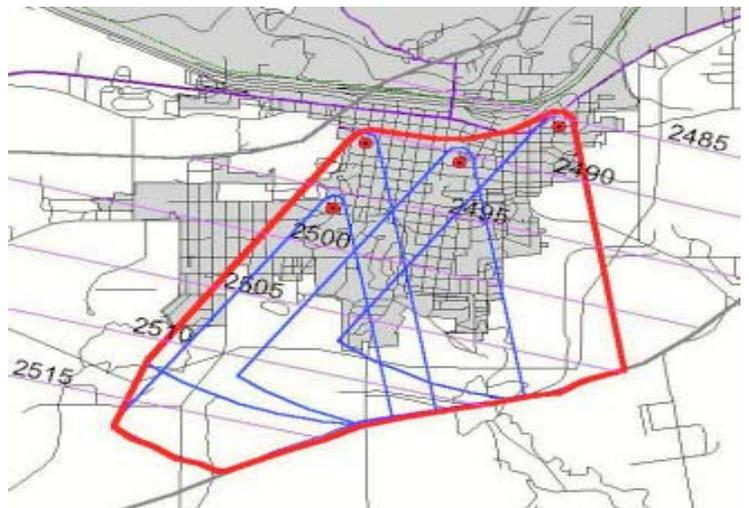
The chemical monitoring waiver program at DEQ is managed by Greg Butts in the Kalispell office. A waiver will be given in writing by DEQ and will specify which chemical(s) are included in the waiver, the time during which the waiver is in effect, and the sampling required for renewing the waiver.

A written chemical monitoring waiver request and supporting documentation should be sent to:

Greg Butts
Montana DEQ
109 Cooperative Way, Ste. 105
Kalispell, MT 59901

Technical assistance can be requested from:

Joe Meek
Source Water Protection Program
MT Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901 ■



PWS Monitoring Schedules

The PWS Monitoring Schedules have been incorporated into the Source Water Protection Query System found at <http://nris.state.mt.us/wis/swap/swapquery.asp>. To select all PWS Monitoring Schedules, do the following after loading the database:

- Scroll to the far right of the page
- Select **Yes** from the Monitoring Schedule drop-down list
- Click on **Select Schedule**
- To return to this page click the **back** button in your browser

You may also select from any other available criteria such as, PWS ID, City, County, Delineation and Assessment Reports or just by PWS Monitoring Schedule.

Alternative Continuing Education Credit Opportunities for Operators

*By Jenny Chambers, Water and Wastewater Operator
Certification Program Manager*

In addition to traditional correspondence courses and other training courses, there are new types of training made available with the onset of new technologies. These training courses are approved for Continuing Education Credits (CECs). These training opportunities include, but are not limited to, the following:

- a. On-line Internet Training;
- b. Compact Disk – Read Only Memory (CD-ROM);
- c. Video Based Training;
- d. On-site Facility Based Training; and
- e. Satellite Teleconferences.

Please contact Jenny Chambers at 444-2691 (jchambers@state.mt.us), or Ashley Eichhorn at 444-4584 (aeichhorn@state.mt.us) for more information.

FEATURED ALTERNATIVE TRAINING COURSE SELECTED FOR REVIEW

Source Water Protection Technical Guidance – CD-Rom: This CD-Rom was developed by the Montana University System Water Center; Montana Department of Environmental Quality; and the Montana Bureau of Mines and Geology. This program will simplify the process of developing your source water protection plan. Trainers may use this tool to provide a standardized approach to program development. Operators can earn 0.5 CECs for successful completion of this training. Contact Joe Meek at 444-4806 or jmeek@state.mt.us for more information.

Estimating Travel Time for Potential Contaminant Spills Upstream from Public Water Supplies along the Yellowstone River in Montana

When accidents occur on highways or railroads on bridges or near streams that provide source water to public water supplies, it is often difficult to know how much time the public water supplies have to respond in order to prevent taking in contaminated water. Time-of-Travel calculations for streams and rivers require a lot of information, are complicated, and they are time consuming to complete. Recently, the U.S. Geological Survey developed a more simple method that can be used

to estimate surface water time-of- travel and the concentration of contaminants when they arrive at a specific point on the river, like a surface water intake location. The Montana Department of Environmental



Quality's Source Water Protection Program is working jointly with the USGS on a pilot project to use this new procedure to benefit public water supplies on the Yellowstone River. If the results of the pilot project are useful and can be verified, the effort will be expanded to other areas where surface water is used to supply public water supplies.

The Yellowstone River Basin was selected to start with because the Yellowstone River provides drinking water for more than 100,000 citizens through multiple public water supplies. In addition, numerous water supplies obtain drinking

water from shallow alluvial aquifers adjacent to the Yellowstone or its tributaries. The surface-water and alluvial aquifers are considered highly sensitive and vulnerable to contamination. Of particular concern are spills from large trucks, rail cars, and petroleum pipelines. There are multiple locations where transportation and pipeline structures come close to the river or cross the river. Responding to potential threats in a timely fashion is key to maintenance of adequate and safe drinking water supplies. This project will use an automated procedure based on equations developed by the USGS (Jobson, 1999), to estimate contaminant travel time from multiple spill points to the water supply intake, estimate contaminant concentrations upon arrival, and the time required for contaminant plumes to pass by the intakes. The procedure supports Source Water Protection efforts in the Yellowstone River Basin. The procedure can be modified for use on other large streams in Montana. ■



Yellowstone River