

Northern Flows



Alaska's Drinking Water Program Newsletter

Issue 32 • Winter 2007/2008



Message from the Manager

Winter in Alaska, and our Southcentral Alaska weather has been “interesting”, to say the least. The temperatures have wandered almost on a weekly basis between very cold, to cool, to warm. We had little to no snow for most of November, some snow for December, and now for January we have broken the monthly historic record for snowfall for Anchorage. I am very glad that I am not a meteorologist, a.k.a “The Weatherman” because the weather in Alaska is quite unpredictable. The saying in Alaska is, “If you don’t like the weather, wait 15 minutes and it will change”.

Now, what does the weather have to do with drinking water? Really not much in this situation, except

that drinking water from Alaska Public Water Systems (PWS) is mostly predictable in regards to quality and quantity. I am very content with the fact that I focus on drinking water and that the Alaska Drinking Water Program is well staffed with dedicated professionals. I am pleased that PWS are also staffed with dedicated professionals and that most communities recognize the importance of these dedicated

water system professionals. At least with drinking water, when everyone is doing their job, has a written plan for what they need to do, when they need to do it, and then implement that plan; our water, with few exceptions, is clean and of predictable high quality. With a high degree of confidence, we expect that when we turn on the tap, our water will flow clean, cold, and taste great. What a State, and what a blessing, when it all works as it should.

Over the next couple of months, the dedicated Drinking Water Program professionals will be completing customized water system monitoring schedules. Our goal is to get these monitoring schedules to every federally-regulated PWS by March 31, 2008. If you don’t receive your monitoring schedule by then, please contact your local Drinking Water Program

Environmental Program Specialist.

Some other significant Drinking Water Program projects planned for this year include at least two sets of Drinking Water Regulations, 18 AAC 80, revisions; a resurgence of completing PWS source water assessments for all new federally-regulated systems since 2004, or any systems missed during the initial Source Water Assessment project that began in late 2000 and finished in June 2004; strategic

planning for engineering educational

workshops in Wasilla

and Anchorage; and development of curricula for the annual U.S. EPA / DEC joint regulatory and treatment technology workshop. This year, we plan to focus on all aspects of the Ground Water Rule which was finalized by U.S. EPA, November 7, 2006, and became effective January 8, 2007. This workshop will be held in Anchorage, at the Loussac Library, in early to mid November 2008. Please note that the PWS compliance date for Ground Water Rule requirements, unless specifically noted in the Rule, is December 1, 2009. Overall, we have a very busy schedule for this year, so please stay involved with Drinking Water Program activities, and when the proposed revisions to the Drinking Water Regulations are released for a 30-day public comment period, take the time to review the proposed changes and provide

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Wells In Trouble and Current Standards

By Charley Palmer

Wells that have been improperly constructed or abandoned wells that have not been properly decommissioned pose a **serious potential threat to our drinking water supply**. They can act as a potential pathway for surface water contamination to find its way to the aquifer supplying your drinking water well. For example, surface water contamination, such as household products (cleaners, soaps, etc.), fertilizers, and petroleum products from automobiles and equipment, can be incorporated in storm water runoff and snow melt. These potential contaminants can accumulate and pond near improperly graded well mounts (platforms) and percolate down the outside of a well casing that is poorly sealed, or not sealed at all, and in effect, bypass the natural buffer that the upper unsaturated soil might typically provide. Poorly-mated (joined) well casing segments or damaged well casings could also provide contaminants a shortcut to spoiling the water you drink. Many other examples exist for why these types of wells can pose such a serious threat.

Aquifers are commonly a shared resource and it is the responsibility of each of us to ensure that we are not contributing to the contamination of the aquifer supplying our drinking water. Currently, DEC has Regulation 18 AAC 80.015, to ensure well construction and decommissioning standards are followed for *public* water systems. However, the

regulation of *private* well construction and decommissioning is extremely limited; efforts are focused on wells within the 2-year time of travel (Zone B) protection area for public water sources that have been identified by DEC.

Remember the community is counting on professionals, as well as concerned citizens to help protect their drinking water. You can help the DEC Drinking Water Program, do their part by identifying existing wells within Protection Area Zones A or B of your public well that have been abandoned and not properly decommissioned (refer to your PWS Source Water Assessment for maps of Zones A and B for your well). Please contact the Drinking Water Protection Program staff with abandoned or improperly decommissioned well location information at (907) 269-7549. In the future, make certain wells in your area are being properly constructed and decommissioned by adhering to DEC regulations. Below is a summary of key points addressed by 18 AAC 80.015.

Summary of Regulation 18 AAC 80.015: The full version of the current regulations can be accessed at:

<http://www.dec.state.ak.us/regulations/pdfs/18%20AAC%2080%20Amended%20as%20of%20November%209%202006.pdf>, (this version contains current information, but is not official yet);

[http://www.legis.state.ak.us/cgi-bin/folioisa.dll/aac/query=\[jump!3A!27title18chap80!27\]/doc/{@73176](http://www.legis.state.ak.us/cgi-bin/folioisa.dll/aac/query=[jump!3A!27title18chap80!27]/doc/{@73176), (this version is official,

but not yet current).

A person may not:

- « Cause pollution or contamination to enter a public water system; or
- « Create or maintain a condition that has a significant potential to cause or allow the pollution or contamination of a public water system.

Some minimum requirements for the owner, operator, or individual who installs or is responsible for maintaining a public water system.

General construction standards:

- « Wells must have a sanitary seal;
- « Casing must terminate at least one foot above ground level or at least one foot above the level of the well house floor; whichever offers the most protection from contamination;
- « Well must be grouted with at least 10 feet of continuous grouting within the first 20 feet below the ground surface;
- « Well must be adequately protected against flooding;
- « For at least 10 feet in all directions around the well, the surface must be sloped or contoured to drain away from the well;

A person who owns or is responsible for a well, hole, or excavation into a water supply source or potential water supply source for a public water system shall seal, protect, or fill...



(Cont. on page 7)

DEC's Role in Village Water System Construction & Modification *By Doug Zellmer*

It was recently brought to the Drinking Water Program's attention that one of the villages that we work closely with had concerns about the State's role in planning and construction of a new water system in their community. Examples of some of the concerns that members of this community had were that the State would tell them what type of water system they had to have and where it would be located. There were even concerns that the water system and the property that it was on could become the property of the State. Understanding that other communities may share similar concerns, we thought that it would be appropriate to clarify the role of the DEC in water system development in a community.

We'll begin with a drinking water regulation that will give us a good starting point for the rest of this discussion. Under 18 AAC 80.200 (b), "...in order to construct, install, alter, renovate, operate, or improve a Class A or B public water system, or any part of one, the owner must have prior written approval of engineering plans..." These engineering plans must be approved by the DEC Drinking Water Program engineering staff. The plans are reviewed by the Drinking Water Program to ensure that the water system will be constructed or modified in such a manner that it complies with water treatment requirements, meets industry standards, will not introduce contaminants into the drinking water, and adequately protects public health. Simply stated, the basis for the State's

involvement in construction or modification of public water systems is to protect those that consume the water provided by those facilities.

Most rural Alaska villages lack the financial and technical ability to independently plan, design, and construct or significantly modify a water system. In these instances, these communities apply for grants or loans through DEC's Village Safe Water (VSW) Program or the Municipal Grants and Loan Program to cover the costs associated with water system construction or upgrades. Grants and loans for water systems are available because both the state and federal government understand the importance of accessibility to safe drinking water for everyone. Funding through the VSW Program is available for planning, design, and construction projects. The source of this funding is 75% federal and 25% state monies. The VSW Program manages those sanitation projects receiving grants and is responsible for meeting the requirements and expectations of the agencies which provide the funding. As the VSW Program is largely accountable for the success of these projects, they make the final decision on funding projects. Projects with a likelihood of failure will not be funded.

Communities must meet certain requirements which show that they have the ability to manage and maintain any proposed water system. Every year numerous communities will apply for grants. These communities are scored

based on the critical public health needs of the community, and the ability of the community to operate and maintain the facilities. Communities that score the highest are awarded the grants in that funding cycle. Successful communities work in collaboration with an engineering consultant to identify and evaluate the sanitation needs and preferences of their community. Once some realistic options are determined, then an engineer prepares construction plans and sends them to the State's Drinking Water (DW) Program for review.

The DW Program determines if the proposed system is reasonably capable of meeting water treatment requirements. The DW Program also assesses the source water to determine if it can consistently provide enough water to the community. If the program determines that the water system as proposed, cannot adequately treat the water, then the design engineer would be required to revise the plans to meet treatment requirements or find a more treatable water source. If the source water cannot supply enough water, then another source of water would need to be either added or selected.

The State works closely with the community and the project engineer to promote satisfactory water system construction and modification. Water system planning, design, and construction decisions are made based on the sustainability of the water system and the protection

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Message from the Manager (cont.) *By James Weise*

constructive written comments. Also, when a drinking water-related educational workshop is scheduled in your area, please take the time to participate.

The dynamics of staffing in the Drinking Water Program continue on a routine basis. Please welcome Jennifer Blommer, Administrative Clerk in the Anchorage office, Justine Holvoet, Analyst Programmer in the Anchorage office, and Robin Anacker, Administrative Clerk in the Fairbanks office.

Unfortunately, we have recently lost two Drinking Water Program staff from our Anchorage office;

Jessica Horras, Environmental Program Specialist in our statewide Compliance and Enforcement group and Shannon DeWandel, Environmental Program Specialist focused on Alaska PWS Security and Emergency Response Planning. We are currently recruiting for an Environmental Engineer II for any of our office locations (Anchorage, Fairbanks, Wasilla, Soldotna, or Juneau), and also an Environment Program Specialist I/II in our Anchorage office. If you are interested in working in a friendly and “family style” work environment, as well as a dynamic and challenging regulatory public health program,

check out Workplace Alaska recruitment as we post these DEC Drinking Water Program positions. All of these positions provide support and promote the program’s focused goal of “drinking water, good to the last drop.” Check for Workplace Alaska recruitment notices at:

<http://www.jobs.state.ak.us/>

and click on “Workplace Alaska”. Now, let’s get ready for Spring!

James R. Weise

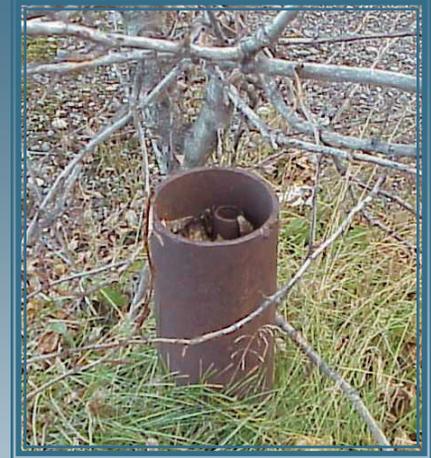
James Weise
Manager
Alaska Drinking Water Program

Wells - Can You Spot The Potential Hazards?

By Charley Palmer

Description

These pictures depict drinking water well casings that have been poorly constructed or abandoned, and improperly decommissioned. Each could pose a significant threat for contamination to the drinking water aquifer. In what ways do you think these wells might make it easier for contamination to find a pathway to the drinking water aquifer?



Potential Pathways for Contamination

Potential Pathway: Contamination can enter the well casing through the opening created from the missing sanitary seal (a.k.a., well cap). Once contamination enters the well, it can then easily spread into the aquifer and potentially contaminate other drinking water wells that use the same aquifer and also nearby surface water .

Potential Pathway: Contaminated surface water or spills can collect near the well casing and infiltrate the ground along the side of the casing because there is no surface mount or platform (e.g., concrete pad) and the surface area is not finished or graded to slope away from the well. The surface water that has collected near the well casing can become concentrated with contaminants and flow down the outside of the casing to the aquifer, especially if the below-surface well seal is missing or compromised.

Can you identify other potential pathways?

Annual PWS Compliance Report *By Jeanine Oakland*

Each year the Drinking Water Program prepares an **Annual Compliance Report (ACR)** as required by the 1996 Amendments to the Safe Drinking Water Act (SDWA). As a primacy state, Alaska submits data electronically every quarter to the Environmental Protection Agency's (EPA) federal public

water system database. The data transmitted includes information on Public Water System (PWS) inventory, source, violations, and associated enforcement actions. The ACR is a summary of that data, giving an overview of the number and type of violations that were issued to Alaska's PWS's over the past year. A summary of

the current ACR is available on the Drinking Water Program's website (<http://www.dec.state.ak.us/eh/dw/dwmain/violations.html>). To obtain a complete copy of the report, please contact Jeanine Oakland at: jeanine.oakland@alaska.gov or (907) 269-2007.

Regulations Corner *By Gloria Collins*

Last October, the EPA published the final rule entitled "Lead and Copper: Short-Term Regulatory Revisions and Clarifications." According to this rule, a public water system (PWS) is not required to comply with this rule's requirements until 1) the effective date of the state's adoption of the rule; or 2) December 10, 2009, whichever date is earlier. The Alaska Drinking Water Program plans to adopt this rule during 2009. There are 8 main changes in 5 areas of the new lead and copper regulations. These new requirements include:

Monitoring:

- « Minimum number of samples required-The state can allow a PWS with fewer than 5 taps to collect one sample per tap.
- « Definitions for Compliance and Monitoring Periods: "Monitoring Period" is defined as the specific period in which a public water system must conduct required monitoring; "Compliance Period" is clarified as the three-year calendar period within a compliance cycle. This clarification is to ensure that monitoring occurs within the appropriate timeframe.

« Reduced Monitoring Criteria- When a PWS exceeds the lead action level, a reduced lead and copper monitoring schedule is not allowed based only on results of water quality parameter monitoring.

Treatment processes:

- « A PWS must obtain prior approval by the State to add a new water source or to change a treatment process that would have long-term impacts on water quality (such as changes in corrosion control).

Public education:

- « Modifications have been made to the content and to the delivery requirements of the public education materials that a PWS must deliver to consumers *after a lead action level exceedance*:
 - Content: the mandatory language is shortened and simplified.
 - Delivery: a PWS must deliver educational materials to additional organizations, such as licensed childcare facilities, preschools, and obstetricians-gynecologists and midwives. A PWS must contact the local public health

agency. A PWS must do additional outreach activities. A PWS must post information on water bills (or in a separate mailing if water bills are not feasible) and issue press releases. To facilitate compliance, the rule presents options for fulfilling the delivery requirements.

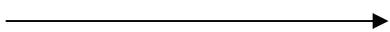
- « A community water system must include an educational statement about lead in its annual *Consumer Confidence Report*.

Customer awareness:

- « A PWS must notify consumers in homes or buildings tested for lead of the test results.

Lead service line replacement:

- « A replaced lead service line must be reevaluated through testing if a PWS resumes a lead service line replacement program.

The complete text of the "Lead and Copper: Short-Term Regulatory Revisions and Clarifications; Final Rule" as published in the *Federal Register*, October 10, 2007, can be accessed at: 

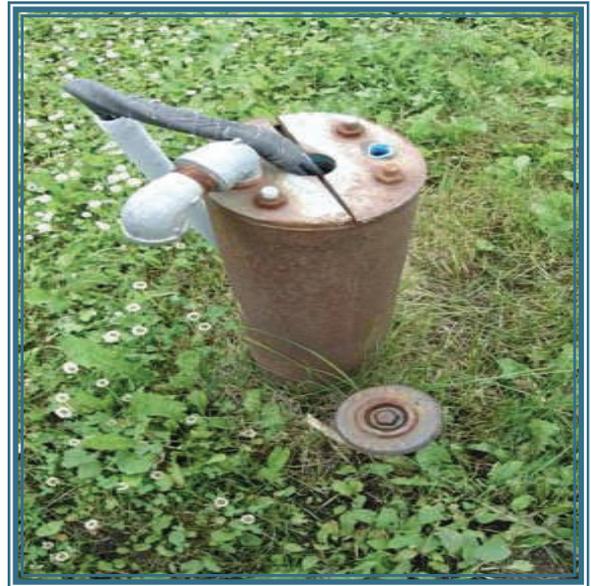
What's Wrong With This Picture? *By Scott Forgue*

This photograph was taken during a sanitary survey of a public water system.

“What’s wrong with this picture?”



(See answer below)



Northern Flows E-Newsletter Subscription

If you are interested in subscribing to our quarterly Northern Flows e-Newsletter, please go to the Department of Environmental Conservation, Division of Environmental Health, Drinking Water Program’s website and click on “subscribe”.

<http://www.dec.state.ak.us/eh/dw/publications/newsletters.html>



Click on “unsubscribe” to remove yourself from the mailing list.

What's Wrong With This Picture? (cont.) *By Scott Forgue*

ANSWER:

This picture shows a public water system source well with sanitary risks and safety hazards.

The source protection requirements of the Drinking Water Regulations (18 AAC 80.015) require the well casing to have a sanitary seal to minimize the potential for the entry of contaminants. The split cap on this casing does not provide adequate protection. The split in the cap, the hole through which the pump wires are running, the opening at the broken blue plug,

and the unscreened downturned vent are all potential pathways for the entry of contaminants.

The exposed electrical wires for the well pump present a safety hazard. Chafing of the pump wire insulation could result in an electrical shock.

To correct these deficiencies, the sanitary seal needs to be replaced and the wires enclosed in conduit from the sanitary seal to below the ground surface.



The owner of this public water system was apprised of these deficiencies and they were promptly corrected with the installation of a new sanitary seal with an integral screened vent and a proper wiring conduit!

If you would like to see your picture showing something wrong with a drinking water system in a future issue of Northern Flows, send it to Scott Forgue at scott_forgue@alaska.gov.

Wells In Trouble and Current Standards (cont.)

By Charley Palmer

General decommissioning standards:

- « A well that is abandoned or not in use;
- « A hole drilled, augured, or jetted for the purpose of sub-surface exploration or sampling;
- « A cathodic protection well; or
- « Another form of excavation that might contaminate a public water system.

A person who decommissions a **public water supply well**, an **observation well** associated with testing a **public water system supply well**, a **private water well**, or a **monitoring well** shall use:

- « A method that conforms to ANSI/AWWA Standard A100-97, Appendix H; or
- « An alternate method that has been presented to and approved by the department as protective of public health.

In order for the department to

assess the vulnerability of each drinking water source in a public water system to significant existing and potential sources of man-made contaminants, and for the department to establish protection areas for public water systems, the owner or operator of a Class A public water system shall:

- « Assist the department in delineating a protection area for each source of drinking water by providing a copy of the driller's log for each source;
- « Maps and other information such as the latitude and longitude location for each source;
- « Information that can be used to estimate the peak rate of production from each source;
- « Assist the department in preparing a preliminary inventory of significant existing and potential sources of man-made contaminants within each drinking water protection area by providing;



- « Photographs of each wellhead, spring, or intake;
- « Photographs of the area surrounding each wellhead, spring, or intake;
- « Within three months after receiving the preliminary contaminant source inventory from the department, assist the department in completing the inventory for each drinking water protection area by conducting a visual survey of the drinking water protection area, and a search of local public records, to verify contaminant assessments and add to the inventory; and
- « Assist the department in updating protection areas, contaminant inventories, and vulnerability assessments for each source used for public drinking water every five years after the initial assessment, or more frequently if requested by the department.

* * *

EPA Water Sense

WaterSense, a partnership program sponsored by EPA, seeks to protect the future of our nation's water supply by promoting water efficiency and enhancing the market for water-efficient products, programs, and practices.

WaterSense will help consumers identify water-efficient products and programs. The [WaterSense label](#) will indicate that these

products and programs meet water efficiency and performance criteria. WaterSense labeled products will perform well, help save money, and encourage innovation in manufacturing.

WaterSense is partnering with irrigation professionals and irrigation certification programs to promote water-efficient landscape irrigation practices. WaterSense is also partnering with manufacturers,

retailers, and distributors, and also utilities to bring WaterSense products to the marketplace and make it easy to purchase high-performing, [water-efficient products](#).

For information on becoming a water utility partner, visit: →



DEC's Role in Village Water System Construction & Modification (cont.)

By Doug Zellner

of public health. The community is encouraged to be involved in the decision making process, and can be as active in this process as they choose to be.

The main interest of the State in regard to water systems in Alaskan villages or in any community is that these communities are consistently provided with safe drinking water in sufficient amounts. There will sometimes be State imposed restrictions on water system type and location. These restrictions are

based upon the long term viability of the water system, the limits of certain treatment technologies, and ultimately the protection of public health. Village water systems and the property that they are on, generally belong to the entity in the village that received the grant or loan for these projects. These facilities would not become the property of the State.

If there are any concerns or additional questions that community members have in regard

to the State's role in their water services, these questions and concerns are certainly welcome and encouraged. We want the community members of the villages or any community of our state to fully understand the Drinking Water Program's roles and responsibilities, and to fully understand the necessity and benefits of safe drinking water. For any questions, please contact a representative from your local DEC Drinking Water Program.



Northern Flows

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