

Northern Flows



Alaska's Drinking Water Program Newsletter
 Issue 27 • Fall 2006

Important Information



For Water System Operators and Owners

Upcoming Workshop
 See Inside!

Northern Flows

Drinking Water Program Directory

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Vacant	Regulations Specialist	269-xxxx
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Carrie McMullen	DW Compliance	465-5333

SOLDOTNA FIELD OFFICE

262-5210	Program Coordinator	x227
	DW Compliance	x224
	Env. Engineer	x243
	Env. Program Technician	x246
	Administrative Clerk	x230

FAIRBANKS FIELD OFFICE

451-2138	Field Operations Manager	451-2138
451-2168	Program Coordinator	451-2168
451-2179	Env. Engineer	451-2179
451-2137	DW Compliance	451-2137
451-xxxx	DW Compliance	451-xxxx
451-5193	Env. Engineer Assistant	451-5193
451-2170	Env. Program Technician	451-2170
451-2108	Administrative Clerk	451-2108

Message from the Manager

From my perspective, summer came and went so fast this year, it seemed to be over before it began. Our rainy August and September, along with the shorter and cooler days and change in color of the leaves, indicates it is "Fall" in Alaska. Unbelievable as it may seem, soon it will be winter. Our focus at the Alaska Department of Environmental Conservation (ADEC), Drinking Water (DW) Program, is to complete public water system (PWS) sanitary surveys, remind water systems owners and operators to complete their routine monitoring in a timely manner, and to prepare their systems for "end-of-the-year" compliance monitoring as well as the upcoming winter. This takes planning for both the "expected" and the "unexpected" events or activities that need to be done or may happen. Planning is the routine, everyday task that allows us to maximize our days and our most precious commodity - time. Let's take this time to proactively plan what we need to do as a PWS owner or operator to prepare ourselves and our water system for the rest of this year and the future.

The State of Alaska adopted by reference the Long Term 1 Enhanced Surface Water Treatment Rule (LT1 ESWTR), effective August 19, 2006. Also included with the adoption by reference of LT1 ESWTR was the master meter requirement for water systems and a requirement for ADEC-certified labs to use the Electronic Data Reporting System (EDRS) to submit PWS compliance monitoring information directly to the state in an approved (electronic or hard copy) format. Currently, we are working on finalizing a regulations revision package that responds to EPA's request for clarifications and revisions of specific sections of the Alaska Drinking Water Regulations, 18 AAC 80. When this proposed regulations package becomes effective, the State of Alaska will be able to obtain primacy for nine previously adopted federal rules. It is planned that this new set of drinking water regulations will become effective in early November 2006.

To better assist Alaska PWS owners and operators, consulting engineers, and technical and compliance assistance providers, the DW Program is collaborating with U.S. EPA Headquarters in Washington, D.C., to provide a 3-day workshop on the surface water treatment and disinfection by-products rules. (See the insert in this issue for details.) The workshop will be held in Anchorage at the Loussac Library Wilda Marston Theater from October 31 through November 2, 2006, and is at **no cost** to participants, but you **must pre-register** so that notebooks with workshop materials are available

for each participant. Please contact Christopher Clark at 907-269-7631 if you need additional information. To confirm your attendance and reserve your workshop materials, please register online at:

As usual, new drinking water regulations impact both the State of Alaska and PWS owners and operators. To prepare for implementing the many new regulations we have recently adopted, the DW Program added a new staff member during August 2006. Please welcome Jessica Goldberger, Environmental Program Specialist, in the statewide compliance group in the Anchorage office. Jessica will be working with Jeanine Oakland, Environmental Program Specialist in the Anchorage office, on Statewide PWS compliance and enforcement issues and activities. Additionally, as part of our FY 2007 budget increment, the DW Program is actively recruiting for four new engineering positions to be located in the Anchorage, Fairbanks, Soldotna, and Wasilla offices, as well as a new program specialist position for the Anchorage office.

Let's have a great fall and get all of our much needed activities done while the weather is still reasonably mild. Enjoy!!

James R. Weise

James Weise
 Manager
 Drinking Water Program

http://www.cadmusgroup.com/dev/akdec/

This Issue		
Neighborhood Watch Program	Electronic Data Reporting System	
3	7	
Wellhead Advisory Committee	Regulations Corner	What's Wrong with this Picture?
2	2	3
Drinking Water Program Staff	Comprehensive Performance Evaluations	
6	4	

Regulations Corner *by Gloria Collins*

Hello, Regs Fans! This year overall has been extremely busy for drinking water regulations. Two regulations projects have already become effective in 2006, one on January 11th and one on August 19th, and a third is expected to go into effect in November.

The latest changes that took effect on August 19, 2006, incorporate the EPA's Long Term 1 Enhanced Surface Water Treatment Rule (Lt1 ESWTR). Other changes include adding requirements for the master meter and the EDRS (Electronic Data Reporting System), repealing the Special Monitoring Requirements section, updating sanitary survey information, and clarifying laboratory requirements. A PDF version of these regulations can be found by clicking the "Adobe Reader file, 723K, effective August 19, 2006" line under "Chapter 80, Drinking Water" on the DEC website Regulations page at

<http://www.dec.state.ak.us/regulations/index.htm>

Our latest proposed regulations change package, DW 2006-1, finished its 30-day public notice period on July 28, 2006. It is currently undergoing review at the Department of Law prior to being filed by the Lt. Governor, and 30 days after being filed, these changes will go into effect. We anticipate the effective date to be sometime in November.



This regulations project addresses technical items to make our regulations consistent with federal regulations so that the Drinking Water Program can receive full primacy from the EPA for nine federal drinking water rules. These rules include Interim Enhanced

Surface Water Treatment, Stage 1 Disinfectants and Disinfection Byproducts, Lead and Copper Rule Minor Revisions, Public Notification, Radionuclides, Arsenic, Variances and Exemptions, Filter Backwash and Recycling, and Analytical Methods.

Other changes in this package include updating cross-references and sanitary survey information, and requiring a completed Water System Inventory form instead of a Sanitary Survey for a new water system to receive final approval to operate. A copy of the Water System Inventory form can be accessed by clicking on either the PDF or MS Word format next to "Water System Inventory form" on the ADEC/Environmental Health/Drinking Water/Engineering Plan Reviews web page at <http://www.dec.state.ak.us/eh/dw/dwmain/engineering.html>

Until next time! ~

Wellhead Protection Advisory Council (WPAC) *by Chris Miller*

On September 14, 2006, the initial meeting of the Wellhead Protection Advisory Council (WPAC) was held at the Alaska Rural Water Association Conference. The goal of WPAC is to recommend strategies to both the State and PWS owners that will ultimately result in increased development and implementation of PWS Source Water Protection Plans.

The initial meeting was a success, and it was agreed to have four additional meetings. The next meeting is scheduled for October 6, 2006. The group will be meeting the first Tuesday of each month in Anchorage. Teleconference capabilities will be available for those outside of Anchorage. If you would like to take

part in future meetings, please contact Chris Miller at 907-269-7549.

The ADEC DW Protection Program and Alaska Rural Water Association want to congratulate the following public water systems for the Certificate of Recognition they received for their efforts in developing and implementing Source Water Protection Plans:

- Talkeetna
- Whittier
- Juneau
- Kodiak
- Seldovia
- Nenana
- Valdez
- Ketchikan
- Sitka
- Unalaska

These are the only water systems currently implementing Source Water Protection Plans. Congratulations to all of you for recognizing the need to plan and protect your most important

resource-safe drinking water.

A recent telephone survey completed by DW Protection staff indicates many Source Water Protection Plans have not been recognized or made available to the ADEC DW Protection Program or the Alaska Rural Water Association. If your system or community has a Source Water Protection Plan and you would like to be recognized for your efforts, please contact the ADEC DW Protection Program at 907-269-7549. If you are interested in developing a plan, ADEC DW Protection staff can provide you with the Wellhead Protection Management CD-ROM that can assist you in developing protection plans for any type of water systems. ~

Electronic Data Reporting System *by Maria Ridgway*

The ADEC DW Program's regulation 18 AAC 80.1109(a) became effective August 19, 2006. It requires laboratories to provide sample information on a form provided by the department, and they must transmit sample information to the department by electronic means in an approved format.

The Electronic Data Reporting System (EDRS) was developed to allow laboratories to submit data to

the ADEC DW Program electronically and in an XML format, an Excel spreadsheet, or by using a web entry form for Total Coliform data.

Most of the laboratories are using the new system to submit data to the ADEC DW Program. We are still assisting some laboratories in getting their personnel signed up as authorized users. We encourage all laboratories to contact us if they have

any questions or comments about the system.

We will continue to work with laboratories and the DW Program staff in the development and the refinement of EDRS to better serve the needs of all parties using the system. We appreciate all the efforts of the DW Program staff and the labs that helped in testing and implementing this new system. Thank you! ~

Dear Doctor Drip: Where can I get information about arsenic in drinking water?

The "Arsenic in Drinking Water" page, <http://www.epa.gov/safewater/arsenic/index.html>, provides regulatory information about arsenic in drinking water.

According to this page:

Arsenic is a semi-metal element in the periodic table. It is odorless and tasteless. It enters drinking water supplies from natural deposits in the earth or from agricultural and industrial practices.

Non-cancer effects can include thickening and discoloration of the skin; stomach pain; nausea; vomiting; diarrhea; numbness in hands and feet; partial paralysis; and blindness. Arsenic has been linked to cancer of the bladder, lungs, skin, kidney, nasal passages, liver, and prostate.

EPA has set the arsenic standard for drinking water at 0.010 parts per million (10 parts per billion) to protect consumers served by public water systems from the effects of long-term, chronic exposure to arsenic. Nationally, water systems have needed to comply with this standard since January 23, 2006, providing additional protection to an estimated 13 million Americans.

This web site is designed to provide you with information about arsenic in drinking water and provide guidance materials to help the states and water system owners and operators comply with the standard.

You can read more about arsenic on the "Safewater Fact Sheet: Drinking Water Standard for Arsenic," at http://www.epa.gov/safewater/arsenic/regulations_factsheet.html

For more information, you can contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791 or 703-412-3330. The hotline's hours of operation are from 9:00 am to 5:00 pm, Eastern Time, Monday - Friday (except federal holidays). The Safe Drinking Water Hotline provides information about EPA's drinking water regulations and other related drinking water and groundwater topics.

This is a new area of our newsletter; we hope you will use and enjoy it. Doctor Drip encourages you to send in any questions you have and he will try and get the answers back to you in the next newsletter. You can submit your questions in writing to: The Drinking Water Program, 555 Cordova Street, Anchorage, Alaska 99501; or email them to the editor of Northern Flows: kathaleen_kastens@dec.state.ak.us; or call in at 907-269-7639. We look forward to hearing from you.

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

ANSWER: This picture shows a public water system wellhead 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 stop the entry of contaminants. In this picture, the sanitary seal is on the ground and not properly affixed to the top of the casing.

Source protection regulations also require that the area around the well casing be graded to drain away from the casing. This casing has a 55-gallon drum with the ends removed surrounding the well head. Rain water could pond between the drum and the well casing and could leak down along the casing, potentially contaminating the drinking water source. At least in this case, when the inspector arrived to conduct the sanitary survey, there was a doghouse over the drum to shed the rain from the wellhead!

The exposed well pump electrical wiring is hanging out of the top of the well casing. Chafing of the wires on the rough edge of the casing or a break in the wiring insulation could result in an electrical hazard. The sanitary seal needs to be replaced and the wires enclosed in a conduit from the sanitary seal to below the ground surface.

If you would like to see it in a future issue, send your picture showing something wrong with a drinking water system to Scott Forgue at Scott_Forgue@dec.state.ak.us. ~

Get to Know the Anchorage CTS Staff *by Vivian Terrell and Margaret Hansen*

The photo on the right shows the DW Program's Statewide Compliance and Technical Services (CTS) staff and also the Administrative staff in the Anchorage office. In the back row are, left to right: Chris Miller, Environmental Program Specialist III, who works on developing wellhead protection plans for PWSs and also evaluates SOC/OOC monitoring waivers; Adam Pigg, Hydrologist I, who works on wellhead protection plans and SOC/OOC monitoring waivers; Jessica Goldberger, Environmental Program Specialist, who works with statewide compliance and enforcement monitoring of PWSs; Vivian Terrell, Administrative Clerk III, who does administrative tasks for the DW Program and Solid Waste Program; Maria Ridgway, Statewide Database Analyst Programmer IV, who oversees the development of the DW Program database, SDWIS/State, and the web application for the Electronic Data Reporting System (EDRS) for certified laboratories; and Margaret Hansen, Administrative Clerk III, who does administrative functions for the DW Program. Pictured in the front row are, left to right: Julia Pieper, Administrative Clerk II, who performs upkeep and organization of the South-central DW Program area files; Gloria Collins, Regulations Specialist II, who oversees updates and changes to the DW regulations; and Jeanine Oakland, Environmental Program Specialist III, who oversees statewide compliance and enforcement monitoring of PWSs. Not pictured are Shannon DeWandel, Environmental Program Specialist I, who works with PWSs to develop security and emergency response plans; and Kathy Kastens, Environmental Program Specialist III, who works with grant applications, spending plans, special projects, and other administrative functions. ~



Answer: A) Displacement Pumps (include Reciprocating and Rotary pumps); and C) Dynamic Pumps (include end suction, centrifugal, split case, vertical turbines, and special effect pumps).

Neighborhood Watch Programs & Security *by Shannon DeWandel*

Water security is a shared responsibility involving water suppliers; wastewater utilities; state, local, and federal government; law enforcement; and citizens. We can all be involved in homeland security by playing an important role in protecting our critical water resources. One way to improve security for a public water system is to implement a Neighborhood Watch Program. Neighborhood Watch Programs can trace their roots back to the days of colonial settlements, when night watchmen patrolled the streets. The modern version of a neighborhood watch was developed to provide a more thorough method of long-term safety and security for neighborhoods, communities, and utilities.

Water utilities are often located in isolated areas, and drinking water sources may cover large areas that are difficult to secure and patrol. Because of this, public local drinking water

and wastewater systems may be targets for terrorists, other would-be criminals, and vandals wishing to disrupt and cause harm to your community water supplies or wastewater facilities.

One protection solution is for increased awareness and for residents to be educated to notice and report any suspicious activity in and around local water utilities. Interested and dedicated citizens are essential to increase the security eyes and ears in your community. Any residents interested in protecting their water resources and community as a whole can join together with law enforcement, water suppliers/operators, and other local entities to create neighborhood watch groups.

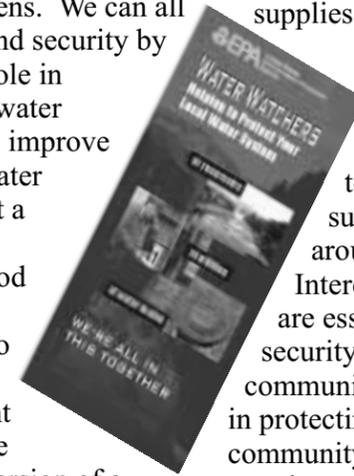
As a first step, consider introducing neighbors close to the local drinking water supplier and its operators to each other. You can supply those neighbors interested in the Neighborhood Watch Program with the appropriate phone numbers and addresses to contact in

the event of a suspicious activity or trespass.

Examples of suspicious activities include:

- People dumping, throwing, or discharging material into a water reservoir;
- People climbing or cutting a utility fence;
- An unidentified truck or car parked or loitering near waterways or facilities;
- A suspicious opening or tampering of manhole covers, gates, or doors;
- People on top of water tanks;
- People photographing or videotaping utility facilities, structures, or equipment; and
- Strangers hanging around fences, locks, or gates.

For more information on Neighborhood Watch Programs or other public water system security information, please contact Shannon DeWandel with the DW Program at 907-269-8924. ~



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?" (Answer on page 6.)



Comprehensive Performance Evaluations (CPE) by Christopher Clark

This fall the DW Program is sending a team of Environmental Specialists, Engineers, and the Program Manager to Unalakleet for a Comprehensive Performance Evaluation (CPE) training session. While a Comprehensive Performance Evaluation may be a daunting title, the benefits of the CPE are anything but daunting. The CPE approach originated from the survey results of a large number of wastewater treatment facilities that were not meeting wastewater regulations. The survey found that a facility's performance limiting factors (PLFs) were consistently related to operations and maintenance; however, the survey also exposed limiting factors associated with administration and design. In the late 1980s, the U. S. Environmental Protection Agency (EPA) developed a program (modeled after the successful wastewater CPE approach) to improve the performance of direct and conventional filtration water treatment plants.

A CPE consists of an in-depth evaluation of an existing treatment facility, including a determination of the major unit process capabilities and the impact of the operations, maintenance, and administrative practices on the facility's performance. The CPE sets specific performance goals (turbidity levels) to define the best possible performance of treatment process components such as sedimentation, filtration, and disinfection. The goal of the CPE is to maximize public health protection from microbial contamination through optimizing particle removal in direct and conventional filtration surface water treatment facilities. In addition to the evaluation, the CPE offers technical assistance to help water treatment plants comply with the Surface Water Treatment Rule

(SWTR). An important benefit of the CPE is that the assistance is focused on improving the water system's performance without making major capital improvements. Thus, "optimizing" means providing the highest water quality possible while keeping the facility cost to a minimum.

Unlike many of the tasks performed by the DW Program, the progressive CPE training and technical assistance approach is not a regulatory action, but rather an opportunity to train DW Program staff and to assist surface water treatment facilities having turbidity control issues. However, while "training/technical assistance" CPEs are not regulatory actions, there are "regulatory" CPEs triggered by systems that do not meet the continuous turbidity requirements outlined in the Code of Federal Regulations (CFR), Part 141, Subpart T, Section 141.563. Regulatory CPEs are required on systems that, for two



months in a row, exceed a turbidity of 2.0 NTU for 2 consecutive recordings 15 minutes apart at the same filter (or combined filter effluent [CFE] for systems with 2 filters that monitor CFE in lieu of individual filters)." While both training/technical assistance and regulatory CPEs utilize the same evaluation process,

regulatory CPEs are funded by the water system; conversely, the training CPEs are funded by the DW Program. Thus, for communities experiencing turbidity problems, hosting a CPE training and technical assistance session is an excellent way to avoid costly regulatory CPEs.

The ADEC recognizes that optimizing the performance of surface water treatment plants is an important safeguard that should be pursued to protect the public health to the greatest degree possible. As such, ADEC has committed to providing CPE training and technical assistance in the State of Alaska. For the past few years the DW Program, in conjunction with the Alaska Training/Technical Assistance Center (ATTAC) and EPA, has been traveling twice a year to Alaskan communities that have volunteered to host the CPE trainings. Ultimately, it is envisioned that components of the CPE will be an integral part in the effort to optimize the performance of all direct and conventional filtration water treatment plants in Alaska. Plans are in place to apply CPEs in a modified format to those PWSs using a groundwater source.

The ADEC DW Program would like to give a special thanks to the communities of Petersburg, Kotzebue, Haines, Craig, and Unalakleet, which have offered the use of their facilities for CPE trainings. The DW Program has benefited from these training sessions and greatly appreciates the fine Alaskan hospitality displayed by the operators, public works directors, city assembly representatives, and countless other community members. ~

Community Profile: Gambell by Marci Irwin

Gambell is a community of 660 people on the northwest cape of St. Lawrence Island, AK. Originally known by its Yup'ik name, Sivuqaq, the village was renamed after the Reverend Vene and Nellie Gambell, school teachers and missionaries to the island, lost their lives when the ship they were returning to the village on, sank. Located in the Bering Sea, 36 miles east of Siberia and 200 southwest of Nome, it has a maritime climate with average temperatures of 48° F for summer highs and -2° F for winter lows. Winds, fog, and precipitation are common most of the year. A majority of the Gambell inhabitants are Yup'ik Eskimos who have been able to preserve their native culture and language due to the remote location of this island. An important part of this Yup'ik culture is a subsistence lifestyle maintained by harvesting fish and marine mammals, such as seal, walrus, bowhead, and gray whales from the sea. The people of Gambell add to the village economy through ivory carving, trapping fox, and from a limited tourism industry for birdwatchers. As with many remote villages in Alaska, air transport is the means of transportation to and from the village.

An infiltration gallery at the base of Sivuokuk Mountain provides water

for the community of Gambell. The source is Ground Water Under the Direct Influence of Surface Water (GWUDISW) and is operated year round. Water is filtered using bag filters (alternate filtration), disinfected with chlorine, and stored in three storage tanks. The washeteria and school, along with 11 other commercial buildings and all but 43 of the 170 residential homes, are connected to the piped water and sewer systems. Despite operating the water treatment plant around the clock, the water system barely meets the water demands of the community. A three-phased project is being designed to upgrade the water treatment plant, and includes; completing a 2.2 million gallon water storage tank, developing a new well field and new summer use transmission line, and hooking up the remaining houses to the water and sewer systems.

The Alaska Technical Assistance Providers (TAP) group has invited the City of Gambell to participate in a new process designed to help public water systems provide safe drinking water to their communities. The TAP workgroup has been working to develop a process that will help communities understand the drinking water regulations and help build their capacity to provide safe drinking

water in a consistent manner. The group is trying to explore a more coordinated approach with better communication between agencies, non-profit organizations, and the communities involved to provide technical assistance. The TAP workgroup includes state, federal, private, and non-profit technical assistance providers. Some of the state agencies involved are the ADEC Drinking Water Program, the Rural Utilities Business Advisor (RUBA), the Remote Maintenance Worker (RMW) Program, and the Village Safe Water (VSW) Program. Some of the federal agencies involved are the Alaska Native Tribal Health Consortium (ANTHC), Norton Sound Health Consortium (NSHC), and the Environmental Protection Agency (EPA). Some of the private technical assistance providers involved are the Alaska Water Wastewater Management Association (AWWMA), the Rural Community Assistance Corporation (RCAC), and the Alaska Rural Water Association (ARWA).

For additional community information, please visit the following web sites:
http://www.commerce.state.ak.us/dca/commdb/CF_COMDB.htm
http://www.commerce.state.ak.us/dca/ruba/report/Ruba_Report.cfm

The *Introduction to Small Water Systems* student manual suggests some basic routines and maintenance considerations for pumps. "The Maintenance requirements associate with pumping installations are unique to the installation. However, there are general considerations that can be applied to most pumping installations. These include performing the following activities and gathering the following data.

- Suction and discharge pressure - Daily
- Hours from the hour meter - Daily
- Replace Packing - Annually
- Inspect stuffing box for leakage - Daily
- Flow - Monthly
- Amperage and voltage measurements - Quarterly"

Question: There are two general types of pumps; what are they?
 A) Displacement B) Hydraulic C) Dynamic D) Split Case