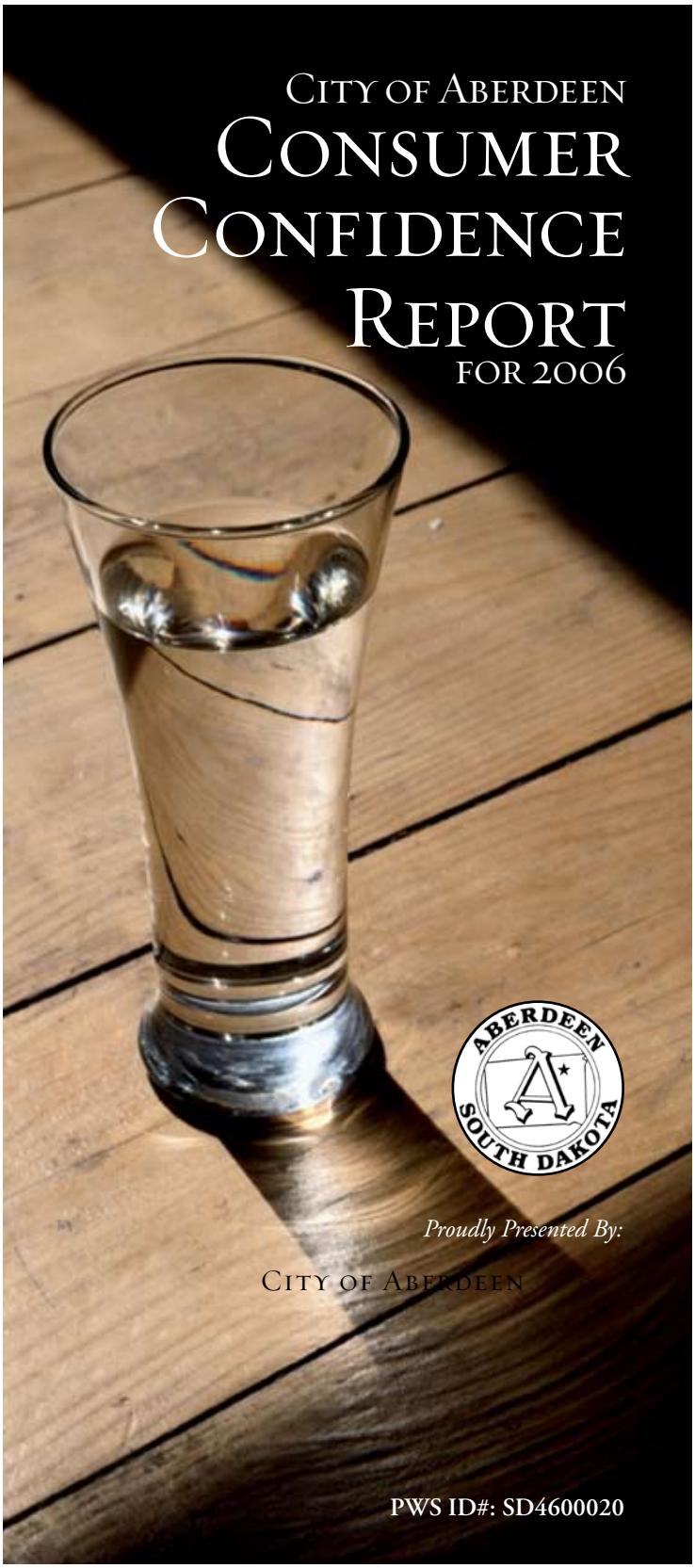

City of Aberdeen

# Consumer Confidence Report

for 2006

*Proudly Presented By:*

City of Aberdeen

**PWS ID#: SD4600020**

## Water Conservation

Remember that in 2006 the City of Aberdeen put into place a Water-Use Restriction. This ordinance is not intended to be a means by which to control the amount of water used for watering grass, trees, plants, or other vegetation but to ensure that water used for those purposes is used when it is most beneficial to the vegetation. The permanent regulation states that no person shall perform outdoor irrigation between the hours of 11:00 a.m. and 5:00 p.m.

Irrigation as stated in the ordinance is "the act or process of watering or wetting landscaping, grass, trees, plants and/or other vegetation by causing water from the city's water utility to flow upon, over, through or into property with sprinklers, sprinkler hoses, soaker hoses(s) (water weeping types), drip irrigation systems, in-ground irrigation systems, or by other similar means. Irrigation includes the application of water by hand-held hose, bucket, or other manual means of water application."

If there is severe drought or an emergency that requires a reduction in water use, there are provisions in this ordinance to enact those measures which will result in the reduction of water used.

## Continuing Our Commitment

Once again we proudly present our annual water quality report. This edition covers all testing completed from January 1, 2006 through December 31, 2006. Since 1934 the citizens of Aberdeen have received safe tap water produced at the Aberdeen Water Works along the banks of the Elm River. We continue to be committed to delivering the best-quality drinking water. To that end, in 2006 new-process technologies and enhanced old-process technologies were put into service. These improvements will serve us well in our vigilance for meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

For additional information regarding the results of the many tests conducted on our drinking water or for clarification of the information contained within this report, please call Janel Ellingson at the Aberdeen Water Works at 626-7011.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

## The Water Source

The water supply for the City of Aberdeen is a blend of surface water and groundwater. The major portion of our water is taken from the Elm River, which receives water from the Maple River, from both Elm Lake and Willow Creek Lake and beginning in 2006 a small portion of our daily total is taken from the Elm Aquifer. An average of three million gallons a day is treated and sent to town to serve 24,658 customers.

## Source Water Assessment

In 2002, the South Dakota Department of Environment and Natural Resources (SD DENR) prepared a Source Water Assessment of the Aberdeen Public Water Supply system. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area, and a determination of the water supply's susceptibility to contamination by the identified potential sources.

According to this Source Water Assessment Plan it was determined that the City of Aberdeen Public Water Supply System has a moderate, relative susceptibility rating. This means that the surface water prior to treatment is minimally influenced by agricultural practices within the watershed area. You can obtain copies of this report by calling the City of Aberdeen Public Works Department at 626-7011.

## Water Treatment Process

Our treatment process is a blend of old and new technologies. As the water is pumped to the processing building, potassium permanganate is added to aid in removal of odor-causing organisms and materials. The water then enters the pretreatment area where the treatment process, using sand and polymer, quickly removes suspended particles thereby further reducing the taste and odor-causing substances. After this process, powered, activated carbon is added for final taste and odor removal. The water now moves into the softening and clarifying basins where lime and soda ash are used for softening and, when needed, a polymer to aid in the clarification process. Because the lime and soda ash increase the pH of the water, carbon dioxide is added at this point to bring the pH back to an acceptable level for drinking. A corrosion inhibitor is added as the water flows to the filters where it is filtered through layers of fine coal, sand, and gravel. As the remaining small, suspended particles are removed, turbidity disappears and clean water flows into the transfer well were chlorine and ammonia are added for disinfection and fluoride for prevention of tooth decay. The water then enters the clear well from which it is pumped to reservoirs in town, from them the water is pumped to the towers from which it flows finally to your home and business.

## Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

The state allows us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### REGULATED SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | MCL [MRDL] | MCLG [MRDLG] | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE |
|---|---|---|---|---|---|---|---|
| **Barium** (ppm) | 2006 | 2 | 2 | 0.018 | NA | No | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| **Chromium** (ppb) | 2006 | 100 | 100 | 1.2 | NA | No | Discharge from steel and pulp mills; Erosion of natural deposits |
| **Combined Radium** (pCi/L) | 2002 | 5 | 0 | 0.4 | NA | No | Erosion of natural deposits |
| **Fecal coliform and E. coli** (# positive samples) | 2006 | 1 | 0 | 1 | NA | No | Human and animal fecal waste |
| **Fluoride** (ppm) | 2006 | 4 | 4 | 1.29 | 0.63–1.29 | No | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| **Haloacetic Acids [HAA]** (ppb) | 2006 | 60 | 0 | 25.7 | NA | No | By-product of drinking water disinfection |
| **Selenium** (ppb) | 2006 | 50 | 50 | 1.8 | NA | No | Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines |
| **TTHMs [Total Trihalomethanes]** (ppb) | 2006 | 80 | 0 | 20.8 | 7.5–20.8 | No | By-product of drinking water chlorination |
| **Total Coliform Bacteria** (# positive samples) | 2006 | 1 positive monthly sample | 0 | 1 | NA | No | Naturally present in the environment |
| **Turbidity**[1] (NTU) | 2006 | TT | NA | 0.90 | 0.10–0.90 | Yes | Soil runoff |
| **Turbidity** (Lowest monthly percent of samples meeting limit) | 2006 | TT > 0.3 NTU | NA | 94 | NA | Yes | Soil runoff |

**Tap water samples were collected from 30 sample sites throughout the community**

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | ACTION LEVEL | MCLG | AMOUNT DETECTED (90TH%TILE) | SITES ABOVE ACTION LEVEL | VIOLATION | TYPICAL SOURCE |
|---|---|---|---|---|---|---|---|
| **Copper** (ppm) | 2005 | 1.3 | 0 | 0.1 | 0 | No | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives |
| **Lead** (ppb) | 2005 | 15 | 0 | 4 | 1 | No | Corrosion of household plumbing systems; Erosion of natural deposits |

[1] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

## Table Definitions

**AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG (Maximum Residual Disinfectant Level Goal):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**NA:** Not applicable.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

## Drinking Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

**Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

**Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## About Our Violation

In 2006 during the month of May, the City of Aberdeen exceeded the turbidity requirements of the Surface Water Treatment Rule (SWTR) resulting in a Treatment Technique violation for that month. A majority of the high turbidity readings occurred as a result of a disruption of lime feed to the treatment process due to the loss of water supply to the feed equipment. A policy was enacted which requires the plant to be shutdown if the water loss is not corrected within 10 minutes and remain down until the problem is corrected. The cause of the water loss was also addressed and measures were taken to minimize the frequency and duration of these occurrences. After much investigation and testing, the problem was finally corrected. Several unanticipated problems arose during the process changes. These changes were evaluated and a better procedure was implemented to minimize the effect of the process changes.

Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

## Water Conservation Tips

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water but can also save you money by reducing your water bill. Here are a few suggestions:

*Conservation measures you can use inside your home include:*

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures; install water-saving devices in faucets, toilets, and appliances.
- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.

*You can conserve outdoors as well:*

- Water the lawn and garden in the early morning or evening.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.

Information on other ways that you can help conserve water can be found at www.epa.gov/safewater/publicoutreach/index.html.