



Annual Water Report

2020

Water System Description

The Alto Utilities Ltd. water system provides water for approximately 430 domestic unmetered connections, 1 school and 1 metered church (approximately 1000 people).

Untreated groundwater is drawn from two deep wells located on Lodge Road. These wells replenish three concrete reservoirs with a total capacity of over 1,700m³. The reservoirs are situated above the subdivision where gravity feeds the system through a series of mains, 29 fire hydrants, and two pressure reducing valve stations (PRVs).

Alto Utilities operates as required, and in accordance with the following programs:

- Capital Plan – Alto is in the process of developing both near and long-term plans for source, treatment, and distribution infrastructure upgrades.
- Water Quality Monitoring Plan – In addition to the regular daily and weekly monitoring, Alto has recently completed a source water assessment and is implementing a well protection plan that will continue to ensure safe drinking water for its customers on into the future.
- Emergency/Drought/Wildfire Response Plans – Each year Alto reviews its Emergency Response Plan to ensure that it is prepared for any kind of emergency. This includes keeping emergency contact information current, as well as developing strategies for drought and wildfire situations.
- Cross Connection Control Program – The cross-connection program was updated this year and we will provide suggestions in future correspondence about ways that you can help protect your drinking water from cross connection dangers.
- Environmental Operators Certification - Alto continues to provide a Level II Operator oversight as well as a Level 1 Operator In Training.



Lodge Road Pump House



Inside the Lodge Road Pump House

System Improvements & Maintenance

The distribution system was originally constructed in 1970 and has seen many upgrades over the years and 2021 was no exception. This year Alto wrapped up the Source Water Assessment we have been working on since 2020 and upgraded one of its two submersible wells and pumps.

Interior Health regulates, issues Water permits, and requires water quality reporting from all water purveyors in the Interior of British Columbia. In 2020, Interior Health asked Alto to update its Source Water Assessment (SWA) as part of a continuing provincial mandate to protect its citizen's health and the water sources they use. That same year we introduced new monitoring equipment and record keeping that Associated Environmental used to complete Alto's SWA. This report provides recommendations which Alto will use to continue improving its monitoring. Better monitoring and more importantly the information that comes from it will allow Alto to improve its understanding of the aquifer that supplies water to Alto's customers and will enable Alto to continue delivering safe drinking water and even improve on its 50 year track record. One of the main recommendations from the report that Alto will be considering is some form of water treatment. Alto Utilities is now working with Interior Health and Associated Environmental to determine how to best use the information from the SWA and what treatment options make sense for Alto's water system. We will post the SWA report on Alto's new website soon for it's customers to access.

Another infrastructure upgrade that occurred this last year is the replacement of the pump, motor, and pipe on Alto's South Well. After thoroughly examining the motor and reasons for failure as well as the assessing the pump Alto determined that the best course of action would be to replace all the components. The original pump was installed back in 2002 with iron pipe and brass components in the pump. The new pump has been upgraded to

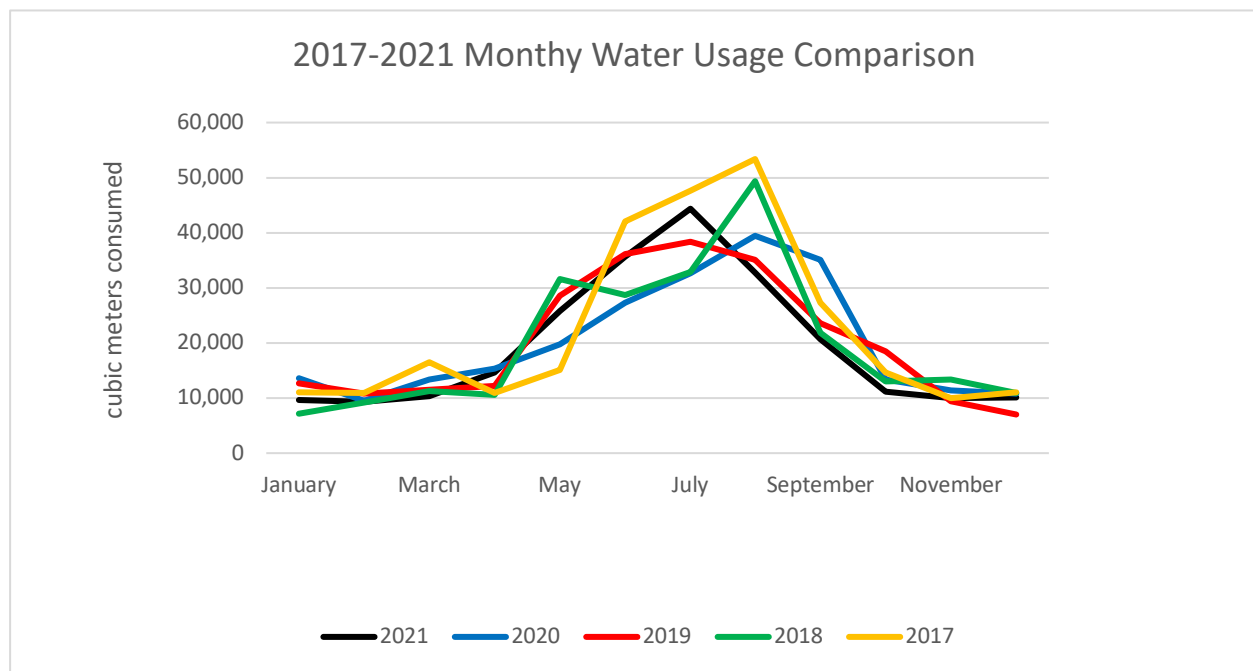


Water Consumption

Below is the annual consumption for the last five years in cubic meters. Usage generally reflects weather patterns with highest usage occurring during the summer months. Both the numbers and the graph (cf. black line) show that usage increased significantly in late June due to the extreme heat dome.

| 2021 | 2020 | 2019 | 2018 | 2017 |
|---------|---------|---------|---------|---------|
| 258,844 | 241,517 | 243,474 | 239,944 | 270,544 |

The graph below shows the monthly water usage over the last five years. In 2020 we had a cooler June and July and the water usage reflects the seasonal temperature trends.



Water Sampling & Quality Monitoring

Every utility that supplies water to Canadians is governed and regulated by the *Guidelines for Canadian Drinking Water Quality*. These guidelines set both water quality parameters and priorities. As these guidelines state, "the highest priority guidelines are those dealing with microbiological contaminants", and in this regard Alto Utilities continues to meet the Canada guidelines for drinking water as it has done for the last 45 years without any water treatment.

Water samples are collected on a weekly basis and analyzed for indicator pathogens (*Escherichia coli* and *total Coliforms*). In addition to this, every Spring and Fall a comprehensive water analysis is performed to track water quality factors that change with seasonal conditions and to establish a baseline for the chemical parameters. Alto then submits monthly reports to Interior Health. We have four distribution points from which we collect and one source point; these are tested by an accredited laboratory. Of the 72 samples collected for bacteriological analysis in 2021 all met the standards set out in the *B.C Drinking water Protection Regulation*.



It is true that in 45 years, Alto Utilities has never had to issue a Boil Water Advisory and has met all of the requirements found in the *Guidelines for Canadian Drinking Water Quality*. However, the regulations are evolving and reflect the most recent water quality and health research. In the past year, new guidelines have been set for several parameters in the *Guidelines*. While Alto continues to meet these *Guidelines*, one of Alto's wells slightly exceeds the limits for Manganese. Since Alto uses two wells to supply water to its customers the combined average is below the parameters found in the *Guidelines for Canadian Drinking Water Quality*. This is an issue that Alto takes seriously and is monitoring. One of the goals of the source water assessment is to determine the best course of action to continue provide safe drinking water to Alto's customers and to this end Alto is considering all options including some form of treatment to meet the Canadian Drinking water guidelines. This assessment will be completed in 2021 and from this information Alto will work with its hydrogeologists, engineers, and Interior Health to develop a strategy to continue to provide safe drinking water to its customers on into the future.

| Alto Water System | Total # of samples in 2021 | E. Coli | positive for Coliform |
|-------------------|----------------------------|---------|-----------------------|
| Source | 23 | 0 | 0 |
| Distribution | 49 | 0 | 2* |

*No Total Coliform detected on resample

Sample Locations

- Woodsdale Road Test Station
- Darlene Road Test Station
- Velda Road Test Station
- Peter Greer Elementary School
- Main Pump House, Lodge Road

In addition, a complete chemical analysis of each well source is completed by an accredited laboratory in the spring and fall; the most recent one was completed in the fall of 2021.

If you are interested in the Comprehensive Analysis these are available on Alto's website.