

Alaskan City Uses Water Pressure Monitoring to Ensure Community has Adequate Water Supply

Global Water PL200-G Pressure Logger Herring Cove, AK Customer Application A001

Herring Cove is located eight miles south of the center of the Ketchikan Gateway Borough (KGB). Ketchikan is a separately governed City and Borough, called the “First City” as it is the first seaport in Alaska voyaging from the south.

In 2011, Ketchikan’s combined population was about 12,400, with approximately 5,000 residing outside the City. The KGB operates a small potable water system for the South Tongass Service Area (STSA) serving approximately 350 residences, an elementary school and a few businesses. The water system averages a daily consumption of 120,000 gallons. Due to most southeast Alaska communities hugging mountainous terrain, communities are built linearly making this small utility have close to 15 miles of service main.

Historically, it was assumed, that either the Civilian Conservation Corp (CCC) or the Works Progress Administration (WPA) constructed the area’s original water system which eventually served a total of 35 homes and two businesses. Water mains were built using 4 inch wood stave, cast iron, ductile iron, and PVC. The supply was the pristine Whitman Creek with more than ample supply volume. No treatment was provided, thus the customers were under a continuous boil water notice from the Alaska Department of Conservation, Division of Environmental Health. This system has since been replaced with 6 and 8 inch High Density Polyethylene (HDPE).

Approximately ten years ago, the KGB realized that the source of water for the STSA was inadequate and laid out a plan to use Whitman Creek and Herring Cove as new supply sources. The plan, soon after, became reality.

The first phase of the plan required the construction of a dual main leading from the Whitman Creek intake dam to the existing STSA water treatment plant (WTP) located four miles from



Ketchikan, Alaska is approximately 235 miles south of Juneau and covers a total area of 4.1 miles.

Whitman Creek. This enabled potable water to be returned to Herring Cove and other customers along the route.

Prior experience had proven that constructing a new municipal potable water system to serve properties which were relying on individual supplies, such as roof catchment or adjacent streams, were likely to have piping with deficient pressure capacities. The deficiency along with the fact that there were no building or plumbing codes enforced in the KGB compounded the situation. These factors, made the possibility of plumbing deficiencies, a potential reality.

The original Herring Cove operating pressure was set by the intake elevation at Whitman Creek, which provided between 40 and 60 psi across the customer base. The KGB



Herring Cove was added to the South Tongass Service Area shortly after Whitman Creek, to be an additional source of water for the community. Herring Cove is located right outside Ketchikan Alaska, and home to some of the state’s most incredible wildlife .

decided to maintain the new supply as close as possible to this pressure base. Maintaining this pressure base would help prevent possible property damage by boosting the pressure to allowable Code limits. To provide necessary
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documented proof of the pressure consistency (or lack thereof) a constant reading data logger was installed. Global Water's PL200-G (Garden Hose Thread) was chosen to gather this data. The pressure logger was attached to a fitting at the water service configuration.

The PL-200-G was compact and extremely easy to use, simply connected to a computer with a USB cable to gather data.

"The PL200-G was compact and extremely easy to use..."

The KGB PL-200-G was set to collect data points every ten-seconds. That data was downloaded once per week. Data was examined daily and differential readings were reported to the KGB Department of Public Works.

The original intent was to prove that the STSA pressure was well below the Code maximum. The data gathered by the PL200-G proved the opposite had occurred. Pressures rose to above 90 psi. A new theory has since been developed based on this data: debris in the new mains is clogging the pressure-reducing valve (PRV) at the Herring Cove connection on numerous occasions. Thus, pressure has actually risen above Code maximums.

Global Water's PL200-G pressure logger is expected to be operating for at least another year, essentially until the cause of the differential pressures has been positively identified.



The PL200-G Pressure Logger's garden hose connection and compact, water-resistant enclosure makes it easy to use and mount anywhere.

"The data logger has proven to be quite effective."

For more information about Global Water, including product specifications please visit:

www.globalw.com or http://www.globalw.com/products/pl200_g.html



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