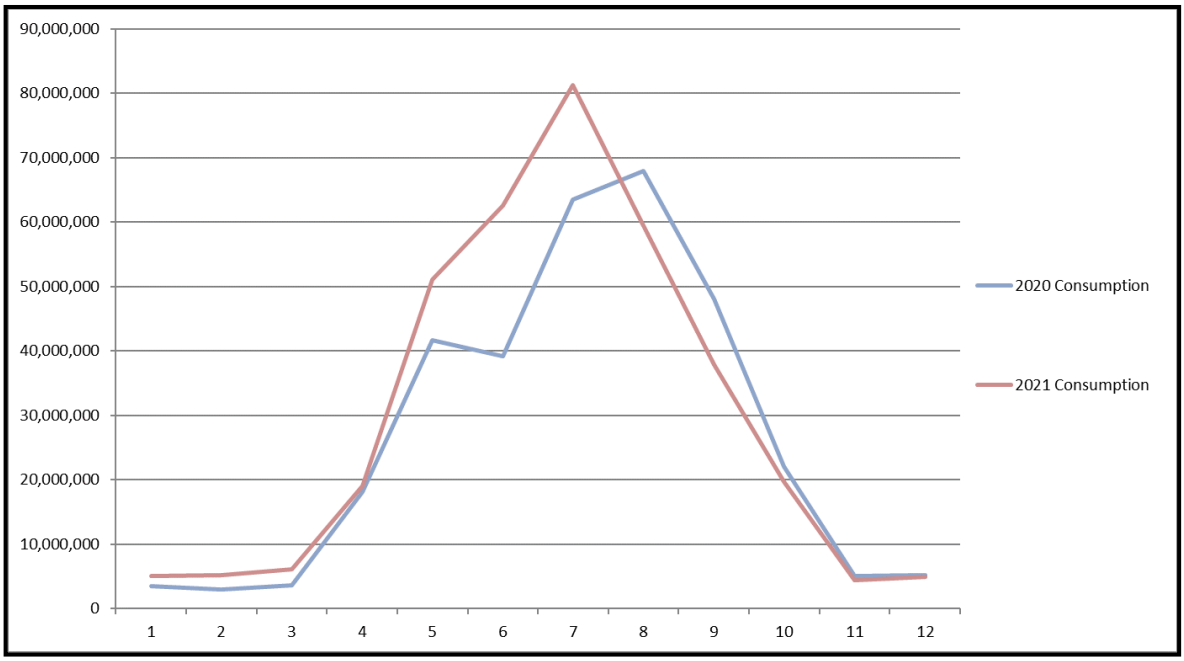
KALEDEN IRRIGATION DISTRICT

REPORT ON OPERATIONS for 2021

QUANTITY OF WATER PUMPED 2021	356,728,200 U.S. GAL
MAXIMUM DAILY DEMAND (July 28, 2021)	3,323,020 U.S. GAL
MINIMUM DAILY DEMAND (December 5, 2021)	459.66 U.S. GAL

2021 water consumption was higher likely due to the extreme heat and more Kaledenites being at home due to COVID-19. 67,791,339 U.S. Gal more were consumed than in 2020.

2021 vs 2020 Consumption



Total Coliform and E-Coli Bacterial Testing Sample Locations:

KALEDEN POST OFFICE	9
PINEVIEW NORTH END	8
LINDEN SOUTH END	9
KALEDEN DISTRICT OFFICE	10
PUMPHOUSE	8
UPPER CYPRESS	8
TOTAL SAMPLES TAKEN	**52**

There were no positive E-Coli samples.

Trihalomethane Results:

	100 Ash Ave.	**621 Linden Ave.**
February 24, 2021	0.0722 mg/L	0.0704 mg/L
May 12,2021, May 26, 2021	0.0550 mg/L	0.0733 mg/L
August 25, 2021	0.0904 mg/L	0.0764 mg/L
December 2, 2021	0.1570 mg/L	0.1110 mg/L

Guidelines for Canadian Drinking Water Quality maximum acceptable concentration is 0.1 mg/L

KID has been busy with upgrades in the main pumphouse this past year, with upgrades to both our pumping system and our chlorine systems.

A big cost to supplying water to the community is of course power! In 2021, Kaleden took advantage of the Fortis Rebate Program; this program gives rebates towards converting the pump starters to VFD's (variable frequency drives); this allows for a very slow ramping up of the motors that run our pumps, in turn not pulling such a large drain on Fortis power supply. This change-over has now been completed on Pump #4 (250 HP) capable of producing over 1,600 USG per minute and Pump #1 (125 HP), our winter pump that produces approximately 630 USG per minute. Pump #2 (200 HP) is scheduled for 2022 as well. As a side note, from Nov. 1st to April 1st, KID is not eligible for a demand charge reduction rate from Fortis; this means that in the event of a large pump needing to be brought online during the winter season, KID is slammed with a demand charge of up to $1,500 on activation. These VFDs now allow us to avoid these large costs by running our pumps within the allowable ranges set by Fortis.

Another big upgrade completed in 2021, was the installation of a complex Valve Cluster, that will be part of the UV Treatment Plant, scheduled to be built in the near future. Installation costs for this project were covered through our IHA Compliance levies at around $180K. The project involved a complete shut down of all pumping and a partial draining of the upper zone main lines. After a very long day and night, the new Valve Cluster installation was completed and the system was placed on a Water Quality Advisory until further water quality testing was completed and all parameters were satisfied by Interior Health.

Perhaps the biggest change to the water system is currently underway. In 2021, KID was given notice from WorkSafe BC that many costly upgrades were required, if we were to continue to disinfect with chlorine gas. A cost estimate to meet these safety upgrades came in around $60K. Future plans for the new UV Treatment Plant already made provisions for the switch to Sodium Hypo-chlorite (liquid chlorine). So KID decided to expedite the conversion to the much safer liquid disinfectant and avoid the costly upgrades to the current gas injection system. This conversion process has now been completed, and all water pumped by the District is disinfected utilizing 12% Sodium Hypo-chlorite! Initial cost of conversion is approximately $15K, far less that the $60K upgrades, however the liquid product is much more costly than the gas. In fact, it is almost 3-fold. So, for every $1K in gas spent in previous years, KID now pays $3K for the liquid equivalent! So the best way to combat these higher costs is to simply reduce the water consumption! Please follow our Water Conservation Program and remember, green lawns cost $$$.

That all being said, the biggest advantage of the conversion to liquid chlorine is the hazard level; chlorine gas is extremely toxic and can cause death in the event of a failure in the injection system.

Although our operators are trained and certified to work with chlorine gas, it is with great relief to now only work with the less hazardous liquid Sodium Hypo-chlorite!

A few last items to mention:

- Our Water Conservation Program is in full effect for the 2022 season, and KID staff will continue to monitor the District and hand out violation notices to anyone found watering outside of the allotted days and times.

- There are still vacuum breakers (free of charge) at the District Office for pick up; these are attachments for your outside taps that prevent any chance of backflow into the drinking water system.

- Please make sure to provide the District with contact information; this information is very useful in the event where notification is required for emergencies or scheduled system repairs.

If there are any questions or concerns, please feel free to contact the office on Monday, Wednesday, or Thursday mornings at 250-497-5407, send us an email at k.i.d@shaw.ca or visit our website, www.kaledenirrigation.org

We hope you have a safe, enjoyable summer!

Mike Snair,
Operations Manager