REGIONAL DISTRICT NORTH OKANAGAN

Greater Vernon Water (GVW) Water Quality Report for November 2025

The following is the water quality summary for the Greater Vernon Water (GVW) utility.

1. Potable Sources

GVW has two sources that are routinely used for potable water. The two sources are Duteau Creek and Kalamalka Lake. Raw (untreated) water samples are taken at the intakes of Duteau Creek and Kalamalka Lake once per week. Two additional groundwater sources, Antwerp Deep Well and Ranch Well 3, may also be used in emergency situations or when there is additional demand to the system. Tables 1 and 2 summarize the results for bacteria and turbidity for the potable water sources in use.

Table 1 Duteau Creek Intake

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average[4]
E.coli[2]	RDNO Lab	MPN/100 mL	8[5]	-----	<1	6.3	3.3
Total Coliform	RDNO Lab	MPN/100 mL	8[5]	-----	165.0	387.3	263.2
Turbidity	Operator Grab Samples	NTU	4	-----	1.27	1.47	1.34
Turbidity	SCADA[1] Daily Average[3]	NTU	30 Days	-----	0.87	1.07	0.98

[1]SCADA: Supervisory Control and Data Acquisition.
[2]Drinking Water Treatment Objectives (Microbilological) for Surface Water Supplies in British Columbia (Sec 4.3): The number of E. coli in raw water samples should not exceed 20/100 mL in at least 90% of the weekly samples from the previous six months.
[3]SCADA data for this online anazlyer is a 24 hour average of readings taken every 10 minutes
[4]Non detect values are used at ½ the reporting limit for average calculations.
[5]Each sample includes at least one duplicate sample taken for quality assurance purposes.
[6]Duteau Creek Intake sees a yearly increase in Total Coliforms and E.coli begining in middle to late spring and lasting throughout the summer. We are currently seeing Coliform counts starting to drop from their peak in August and Early September.

Table 2 Kalamalka Lake Intake

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average[4]
E.coli[2]	RDNO Lab	MPN/100 mL	8[5]	-----	1	8.6	4.3
Total Coliform	RDNO Lab	MPN/100 mL	8[5]	-----	12.2	21.8	17.5
Turbidity	Operator Grab Samples	NTU	4	-----	0.44	0.77	0.63
Turbidity	SCADA[1] Average[3]	NTU	30 Days	-----	0.28	0.66	0.45

[1]SCADA: Supervisory Control and Data Acquisition.
[2]Drinking Water Treatment Objectives (Microbilological) for Surface Water Supplies in British Columbia (Sec 4.3): The number of E. coli in raw water samples should not exceed 20/100 mL in at least 90% of the weekly samples from the previous six months.
[3]SCADA data for this online anazlyer is a 24 hour average with readings taken every 15 seconds.
[4]Non detect values are used at ½ the reporting limit for average calculations.
[5]Each sample includes at least one duplicate sample taken for quality assurance purposes.

2. Agriculture/ Irrigation Sources

The sources used for irrigation supply include Duteau Creek, King Edward/Deer Creek, Goose Lake, Coldstream Ranch Well #2 and Well #3. Table 3 summarizes the daily flows for each irrigation system.

Duteau Creek is separated into a potable water system and a non-chlorinated, non-potable water system, the latter of which is used exclusively for irrigation purposes. The other sources are separated from the potable system and are not chlorinated.

The irrigation season is from April 15 to September 15. Irrigation water used during the off season is used mainly for livestock watering. This water comes from Ranch Well #2, Ranch Well #3, King Edward and Duteau Creek.

Table 3 Irrigation Volumes for Irrigation Sources over the Month

Irrigation Sources	DCWTP	Well 3	Well 2	King Edward
Min (ML/Day)	0.00	0.00	0.00	0.00
Max (ML/Day)	0.00	0.10	0.00	0.05
Average (ML/Day)	0.00	0.01	0.00	0.00
Monthly Total (ML)	0.00	0.19	0.00	0.13

3. Treatment Plants

GVW has two treatment plants: Duteau Creek Water Treatment Plant (DCWTP) and Mission Hill Water Treatment Plant (MHWTP). At the DCWTP, water is treated with a coagulant and mixed to create a floc before Dissolved Air Flotation (DAF) achieves clarification. Chlorine is added after clarification to ensure contact time for the removal of viruses, followed by Ultra-violet (UV) disinfection. Finally, an additional dose of chlorine is added before entering the distribution system to maintain residual chlorine throughout the system. MHWTP contains dual disinfection which includes UV and chlorine.

Tables 4 and 6 summarize results for chlorine, bacteria, turbidity, and UV Transmittance (UVT). Table 5 summarizes the log removal of viruses at the DCWTP.

Table 4 Duteau Creek Water Treatment Plant Reservoir

Parameter	Laboratory	Units	# of Samples	# of Deviations	Min	Max	Average[4]
Free Chlorine[2]	SCADA[1] Daily Average	mg/L	30 Days	-----	1.84	2.43	2.02
E.coli	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Turbidity[2]	SCADA[1] Daily Average	NTU	30 Days	-----	0.15	0.32	0.22
Pre UVT[3]	SCADA[1] Daily Average	%	30 Days	-----	88.3	92.4	89.7

[1]SCADA: Supervisory Control and Data Acquisition.
[2]Operation Guideline: As outlined in Deviation Response Plan, free chlorine >1.0 mg/L, turbidity <1.0 NTU.
[3]UVT is monitored pre-UV treatment which is used to determine UV dosage.
[4]Non detect values are used at ½ the reporting limit for average calculations.

This month, 0 m^3 of off-spec water occurred at DCWTP

Table 5 DCWTP – Log Removal of Viruses

Log Removal of Viruses[1]	
Days Monitored	30 Days
Days 4-Log Inactivation Achieved	30Days

[1]4-log virus removal logged by the minute on SCADA.

Table 6 Mission Hill Water Treatment Plant

Parameter	Laboratory	Units	# of Samples	# of Deviations	Min	Max	Average[3]
Free Chlorine	SCADA[1] Daily Average	mg/L	30 Days	-----	1.98	2.22	2.10
E.coli	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Turbidity[2]	SCADA[1] Daily Average	NTU	30 Days	-----	0.28	0.63	0.44
Pre UVT	SCADA[1] Daily Average	%	30 Days	-----	91.70	92.81	92.21

[1]SCADA: Supervisory Control and Data Acquisition.
[2]Operation Guideline: As outlined in Deviation Response Plan, free chlorine >0.8 mg/L, turbidity <3.0 NTU.
[3]Non detect values are used at ½ the reporting limit for average calculations.
[4]Turbidity increase in MHWTP due to Marl in Kalamalka Lake during summer months. Marl is now ending and turbidity is starting to return to normal.

This month, no off-spec water occurred at MHWTP.

4. Distribution

While the domestic GVW system has areas that are normally served by either of the two main sources (DCWTP or MHWTP), the system is interconnected with the ability to move water from each source to various parts of the system. The distribution areas from either source may change depending on water demands, source water availability or water quality, and is therefore considered a combined system for the purposes of data reporting. GVW has approximately 23,000 service connections. When possible, water source change notices may be put out to advise customers of a change. On November 7, 2025, the Duteau Creek transmission line was put back into service after being shut down on October 6, 2025, for required repairs. Testing and sampling occurred before the transmission line was put back online to ensure the continued safety of the drinking water.

Table 7 summarizes the daily flow for each distribution system. The Duteau and Kalamalka systems have many locations where they can be interconnected. This means there are areas where there is a blend of water quality and can be identified by the conductivity of the water.

Table 7 Volumes for GVW Distribution Systems over the Month

Volumes	DCWTP	MHWTP
Min (ML/Day)	2.20	11.56
Max (ML/Day)	5.50	18.55
Average (ML/Day)	3.94	15.16
Monthly Total (ML)	118.30	454.78

Table 8 summarizes results for chorine, bacteria, and turbidity for the combined distribution system which includes both the Duteau distribution system and the Kalamalka distribution system. These results are from grab samples taken weekly at designated spots within the distribution system.

Table 8 Duteau and Kalamalka Distribution

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average[2]
Free Chlorine[1]	Operator Grab Samples	mg/L	118	8[4]	0.07	2.16	1.01
Total Chlorine	Operator Grab Samples	mg/L	118	-----	0.16	>2.2	1.27
E.coli	RDNO Lab	MPN/100 mL	128[3]	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	128[3]	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Turbidity[1]	Operator Grab Samples	NTU	118	-----	0.17	2.03	0.57

[1]GVW WQ Deviation Response Plan: free chlorine >0.20 mg/L, turbidity <5 NTU.
[2]Non detect values are used at ½ the reporting limit for average calculations.
[3]Three samples per week are ran in duplicate for quality assurance purposes.
[4]There were eight sample locations which had free chlorine <0.2 mg/L. Six of the sites were part of the City of Vernon monitoring of low chlorine sites program and two were due to the Duteau Creek transmission main project. All eight sites were flushed (If possible) and sampled with bacterial testing showed <1 MPN/100mL for both E.coli and Total Coliforms.

5. Water Quality and Customer Calls and Notifications

Water Quality Customer Calls within the GVW Service area are tracked and recorded. There were a total of eleven (11) customer calls this month.

Table 9 Water Quality Customer Calls for the month

Type of Call	Issue/Inquiry	Investigation	Comments
Issue	Water Taste	No	The customer called wondering if the source had been changed as their water had a different flavor. The customer was advised that the water source had temporarily been changed from Duteau to the Kalamalka water source
Issue	Smelly Water	No	The customer stated they were away for a couple of months and just returned and the water now smelled swampy. RDNO staff explained that they were near a dead-end main, and the water was most likely a little stagnant. Additionally, the customers had been switched from their normal Duteau Creek water source to the Kalmalka Lake water source which has a different taste and odor. The customers were advised to flush their lines to remove stagnant water. They were also informed that the water sources had been switched back to normal, but it would take a few days for the water to move through the system.
Inquiry	Water Additives	No	The customer called asking what is added to the water. RDNO staff informed them that chlorine is the only additive in Greater Vernon Water and that it is added as sodium hypochlorite.
Inquiry	Water Testing	No	The customer called asking if they could get their water tested. RDNO staff informed them that the RDNO does not test for private parties. Staff provided a list of nearby laboratories that provided water testing.
Inquiry	Boil Water Notice	No	Seven customers called during the Black Rock area Boil Water Notice asking for an update. Updates were provided for all customers as to when the BWN was expected to be lifted pending bacteria results.

6. Operational or Maintenance Activity

Operational activity within the GVW City of Vernon service area is tracked and recorded using an online database. There was a total of 61 operational activities outlined this month in Table 10.

Table 10 Monthly operational work and maintenance for the City of Vernon

NUMBER OF LOCATIONS	TYPE OF WORK
0	Hydrant Maintenance
0	Hydrant Maintenance – Corrective
1	New Hydrant Install
32	Water Service GIS Locate
1	Water Main Break Repair
0	Property Damage Repair
0	Water Valve Maintenance
5	Water Valve Repair
1	Water Service Install
21	Water Service Repair
0	Reservoirs Cleaned

7. Localized WQA's and Other Activity

Water quality events are tracked and recorded below. The type of notices for any given event varies based on the severity of the event and the availability of water to adequately flush the area. This month, there was a total of zero Type 1 breaks where no advisory was required, fourteen (14) Water Quality Advisories (WQA), and three (3) Boil Water Notices (BWN)

Table 11 Monthly public notifications

Type of Notice	Reason	Area	Length or Time in Place	Number of Connections Affected
None	Water Main Break	Tamarack Dr	November 10	20
WQA	Scheduled Tie-In	38 St and Hawksbill Pl	November 12 – November 14	15
BWN	Water Main Break	Black Rock Rd Area	November 12 – November 25	20
BWN	Power Outage	Dixon Dam Rd and East Vernon Rd area between Briggs Rd and Brookside Rd	November 13 – November 21	49
Source Water Change	Planned Construction	Foothills and North Vernon	November 14 -	15
WQA	Power Outage	6780 – 6880 Goose Lake Rd	November 14 – November 19	6
Water Outage and BWN	Scheduled Water Main Repair	Parts of Easthill and South BX	November 18 – November 25	425

Essential Use Only	Scheduled Water Main Repair	Parts of Old Kamloops Rd, Steppingstones, North BX, Foothills, South BX, and parts of Coldstream	November 18 – November 20	3000
WQA	Water Main Break	Willow Park Rd and 5899-5909 Okanagan Landing Rd	November 21 – November 24	27