

Greater Vernon Water (GVW) Water Quality Report for October 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	10 ⁵	-----	2	63 ⁶	19.2
Total Coliform	RDNO Lab	MPN/100 mL	10 ⁵	-----	307.6	1789 ⁶	859.1
Turbidity	Operator Grab Samples	NTU	5	-----	1.37	2.83	1.98
Turbidity	SCADA ¹ Daily Average ³	NTU	31 Days	-----	0.92	2.12	1.32

¹SCADA: Supervisory Control and Data Acquisition.

²Drinking Water Treatment Objectives (Microbiological) 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.

³SCADA data for this online analyzer is a 24 hour average of readings taken every 10 minutes

⁴Non detect values are used at ½ the reporting limit for average calculations.

⁵Each sample includes at least one duplicate sample taken for quality assurance purposes.

⁶Duteau Creek Intake sees a yearly increase in Total Coliforms and E.coli beginning 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.coli²	RDNO Lab	MPN/100 mL	11 ⁵	-----	2	12.1	6.5
Total Coliform	RDNO Lab	MPN/100 mL	11 ⁵	-----	12.1	54.8	32.2
Turbidity	Operator Grab Samples	NTU	5	-----	0.83	1.15	1.02
Turbidity	SCADA ¹ Average ³	NTU	31 Days	-----	0.56	0.87	0.70

¹SCADA: Supervisory Control and Data Acquisition.

²Drinking Water Treatment Objectives (Microbiological) 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.

³SCADA data for this online analyzer is a 24 hour average with readings taken every 15 seconds.

⁴Non detect values are used at ½ the reporting limit for average calculations.

⁵Each 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	0.47	0.13	0.41
Average (ML/Day)	0.00	0.02	0.00	0.05
Monthly Total (ML)	0.00	0.72	0.13	1.53

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 Chlorine²	SCADA ¹ Daily Average	mg/L	31 Days	-----	1.89	2.40	1.97
E.coli	RDNO Lab	MPN/100 mL	5	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	5	-----	<1	<1	<1
Turbidity²	SCADA ¹ Daily Average	NTU	31 Days	-----	0.15	0.36	0.23
Pre UVT³	SCADA ¹ Daily Average	%	31 Days	-----	87.83	93.04	90.66

¹SCADA: Supervisory Control and Data Acquisition.

²Operation Guideline: As outlined in Deviation Response Plan, free chlorine >1.0 mg/L, turbidity <1.0 NTU.

³UVT is monitored pre-UV treatment which is used to determine UV dosage.

⁴Non detect values are used at ½ the reporting limit for average calculations.

This month, 0 m³ of off-spec water occurred at DCWTP

Table 5 DCWTP – Log Removal of Viruses

Log Removal of Viruses¹	
Days Monitored	31 Days
Days 4-Log Inactivation Achieved	31 Days

¹4-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	31 Days	-----	2.18	2.22	2.20
E.coli	RDNO Lab	MPN/100 mL	5	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	5	-----	<1	<1	<1
Turbidity²	SCADA ¹ Daily Average	NTU	31 Days	-----	0.54	0.88	0.68
Pre UVT	SCADA ¹ Daily Average	%	31 Days	-----	91.34	92.65	92.16

¹SCADA: Supervisory Control and Data Acquisition.

²Operation Guideline: As outlined in Deviation Response Plan, free chlorine >0.8 mg/L, turbidity <3.0 NTU.

³Non detect values are used at ½ the reporting limit for average calculations.

⁴Turbidity 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 October 8, 2025, the transmission main was shutdown near Highway 6 and Learmouth Rd. Duteau Creek Water Treatment plant was used to supply water to all properties within GVW east of this valve while the Mission Hill Water Treatment plant provided water to all properties to the west and north of this valve. This shutdown was scheduled and was expected to last into the middle of November.

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)	1.30	11.45
Max (ML/Day)	13.80	19.57
Average (ML/Day)	6.66	15.36
Monthly Total (ML)	206.60	476.12

Table 8 summarizes results for chlorine, 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	139	13 ⁴	0.02	2.02	0.99
Total Chlorine	Operator Grab Samples	mg/L	138 ⁵	-----	0.14	>2.2	1.25
E.coli	RDNO Lab	MPN/100 mL	138 ³	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	138 ³	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Turbidity ¹	Operator Grab Samples	NTU	136	-----	0.20	3.52	0.73

¹GVW WQ Deviation Response Plan: free chlorine >0.20 mg/L, turbidity <5 NTU.

²Non detect values are used at ½ the reporting limit for average calculations.

³Three samples per week are ran in duplicate for quality assurance purposes.

⁴There were 13 sample locations which had free chlorine <0.2 mg/L. Nine of the sites were part of the City of Vernon monitoring of low chlorine sites program. All 13 sites were sampled and bacterial testing showed <1 MPN/100mL for both E.coli and Total Coliforms.

⁵One total chlorine reading was not taken this month, however this was a low chlorine site and was on the schedule to be flushed. A post flush free and total chlorine reading were taken for this site and were within normal ranges.

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 three (3) customer calls this month.

Table 9 Water Quality Customer Calls for the month

Type of Call	Issue/Inquiry	Investigation	Comments
Issue	Turbid Water	No	The customer called stating they filled their hot tub and could not see bottom through all the turbidity. The customer mentioned they used an outside hose and did not see any similar issues within the house. RDNO staff looked at all recent data and activities in the area and didn't notice anything unusual. Looking further back, RDNO staff noticed there was a fire in the area a few weeks prior that may have stirred up some turbidity, and that turbidity may have become trapped in the outdoor piping section of the house if that faucet hadn't been used. The customer was advised to flush some water from the outside tap and call back if the problem persisted.
Issue	Turbid Water	No	The customer called stating that they were seeing brown, turbid water at their residence. RDNO staff explained that there was a source change occurring that day and the direction of flow of the water in the pipes at their property was reversed, likely stirring up turbidity that had previously settled in the pipes. Assured the customer that the water was still being treated and is meeting Interior Health guidelines.
Inquiry	Algae Concern	No	The customer was concerned about algae on King Edward lake as he has been having stomach issues. RDNO staff explained that we monitor Kind Edward lake, and it is only an irrigation/livestock water source for GVW and not a drinking water source. He was advised to attend a physician if he is having stomach issues.
Issue	Water Quality	No	The customer called saying that they are boiling their water for 12 minutes and notice a film sitting on the water after boiling. RDNO staff advised them that there was a recent water source change in their area, switching their water source to Kalamalka lake water. Kalamalka lake has more minerals than the previous Duteau source and these minerals precipitate out when heated.
Issue	Water Smell	No	The customer noticed the water smelled marshy and suspected the water was stale and needed to be flushed. The customer noted that the District of Coldstream was doing some work in their area and suspected that they were now on a dead-end water main. RDNO staff mentioned that the water source had recently been switched to accommodate a repair along the water main. RDNO staff requested that the District of Coldstream flush the area.

Issue	Water Quality	No	The customer called City of Vernon after hours to complain the water tasted like dirt. The operator on call told the customer to run the water for a few minutes to clear it up. RDNO staff followed up the following morning to inform the customer that a fire in the area had most likely stirred up turbidity due to water use by the fire department. Water quality should have returned to normal, but the customer was advised to flush their house by running a faucet for a few minutes. If the taste and odor did not return to normal, staff advised the customer to call back.
-------	---------------	----	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

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 45 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
2	New Hydrant Install
10	Water Service GIS Locate
0	Water Main Break Repair
1	Property Damage Repair
0	Water Valve Maintenance
0	Water Valve Repair
5	Water Service Install
27	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
WQA	Overland Water Supply	Lavington Area	October 9 – November 14	2
None	Water Main Break	3207 24 Ave	October 17	6
WQA	Water Main Tie In	Hawksbill Place	October 17 – October 20	15
WQA	Scheduled Power Outage	711-1101 Galiano Rd	October 27 – October 31	20
WQA	Water Main Break	Pearson Rd Area	October 28 – October 30	122
WQA	Power Outage	6780-6880 Goose Lake Rd	October 29 – October 31	6