REGIONAL DISTRICT NORTH OKANAGAN

Greater Vernon Water (GVW) Water Quality Report for May 2026

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]	-----	4.1	17.3	9.6
Total Coliform	RDNO Lab	MPN/100 mL	8[5]	-----	195.6	517.2	312.2
Turbidity	Operator Grab Samples	NTU	4	-----	2.19	3.88	2.82
Turbidity	SCADA[1] Daily Average[3]	NTU	31 Days	-----	0.98	1.72	1.23

[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.

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	4.1	1.3
Total Coliform	RDNO Lab	MPN/100 mL	8[5]	-----	<1	8.6	2.3
Turbidity	Operator Grab Samples	NTU	3[6]	-----	0.83	1.21	1.07
Turbidity	SCADA[1] Average[3]	NTU	28[7] Days	-----	0.48	0.90	0.64

[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.
[6]One turbidity grab sample not taken due to instrument issues.
[7]No SCADA turbidity data from May 24 to May 26 as the Mission Hill Water Treatment plant was taken offline during that time to repair a leak in the primary water main.

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)	0.02	0.00	0.00	0.00
Max (ML/Day)	7.08	3.64	1.07	2.30
Average (ML/Day)	3.52	1.31	0.05	1.04
Monthly Total (ML)	109.01	40.72	1.42	32.17

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	31 Days	-----	1.80	2.02	1.93
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	31 Days	-----	0.12	0.31	0.20
Pre UVT[3]	SCADA[1] Daily Average	%	31 Days	-----	86.33	88.51	87.27

[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	31 Days
Days 4-Log Inactivation Achieved	31 Days

[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	28[4] Days	-----	1.98	2.21	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	28[4] Days	-----	0.48	0.87	0.62
Pre UVT	SCADA[1] Daily Average	%	28[4] Days	-----	91.71	92.41	92.06

[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]No SCADA turbidity data from May 24 to May 26 as the Mission Hill Water Treatment plant was taken offline during that time to repair a leak in the primary water main

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.

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)	21.00	0.00
Max (ML/Day)	66.50	35.60
Average (ML/Day)	45.84	28.57

Monthly Total (ML)	1375.30	856.97

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	103	-----	0.46	2.13	1.20
Total Chlorine	Operator Grab Samples	mg/L	103	-----	0.58	2.40	1.46
E.coli	RDNO Lab	MPN/100 mL	108[3]	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	108[3]	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Turbidity[1]	Operator Grab Samples	NTU	107	-----	0.27	3.99[4]	1.04

[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]Higher than normal turbidities were seen in the distribution system on May 25 and May 26 when the MHWTP was shut down. This was most likely caused by a change in the flow direction causing sedmient to resuspend in the water mains.

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	Fishy/Swampy Taste	Yes	The customer called the RDNO noting a Fishy/Swampy taste in the water. The customer requested that the RDNO send someone to assess the water as they suspected a lack of chlorine. The RDNO informed the City of Vernon operators to flush the area to try to improve water quality. RDNO staff attended the customers residence just as City of Vernon had completed flushing. All parameters were within normal. Customer was told to contact the RDNO again if they notice their water quality declining.
Issue	Sulfur Smell	Yes	The customer called the RDNO noting a sulfur smell in their water since the water main outside their residence had been changed. The RDNO investigated and did not make note of any sulfur smell in the water. All parameters were within normal operating conditions. The customer was told that sulfur smells are not typical in the distribution water and are more common in wastewater. The customer was advised to test the p-traps by filling a bucket of water from the sink in the morning and making note of any smells. If no smell was noted, the customer was then asked to dump the water down the drain and note if the smell came up from the p-trap.
Issue	pH change in customers process water	No	The customer called stating that the pH and alkalinity had dropped suddenly in their process water. RDNO staff told the customer that the Kalamalka Lake source had to be immediately shut down due to an emergency main leak repair and the water they were receiving was from Duteau Creek. The customer was notified that the sources will be switched back once the repair to the main was complete and the Kalamalka Lake source could be used again.

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 23 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
0	New Hydrant Install
4	Water Service GIS Locate
3	Water Main Break Repair
4	Property Damage Repair
0	Water Valve Maintenance
1	Water Valve Repair
4	Water Service Install
7	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 three (3) Type 1 breaks or planned outage where no advisory was required, three (3) Water Quality Advisories (WQA), and two (2) Boil Water Notices (BWN). There was one additional water restriction notice.

Table 11 Monthly public notifications

Type of Notice	Reason	Area	Length or Time in Place	Number of Connections Affected
BWN	Planned Water Outage for Repairs	Priest Valley Area	May 4 – May 11	200
BWN	Power Outage Causing Depressurization	Stepping Stones	May 4 – May 8	40
None	Planned Water Outage for Irrigation Customers to repair water main	Bella Vista Area	May 6	44
Stage 2 Water Restrictions	Reduced Water Availability	All GVW Customers	May 7	All
None	Planned Repairs	Rendell Dr	May 8	10
WQA	Water Main Break	Cherry Lane	May 20 – May 21	16
WQA	Water Main Break	Allenby Way	May 28 – May 30	22

WQA	New Water Main Install	1500-1608 18 Ave	May 29 – July 10 (estimated)	17
None	Water Main Break	28 Ave	May 29	12