

Annual Drinking
Water Report - 2025

Black Creek/ Oyster Bay Water System



Comox Valley
REGIONAL DISTRICT

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The CVRD respectfully acknowledges the Black Creek-Oyster Bay Water System operates on the unceded traditional territory of the K'ómoks First Nation and the Ligwíłdax^w Peoples.

Introduction

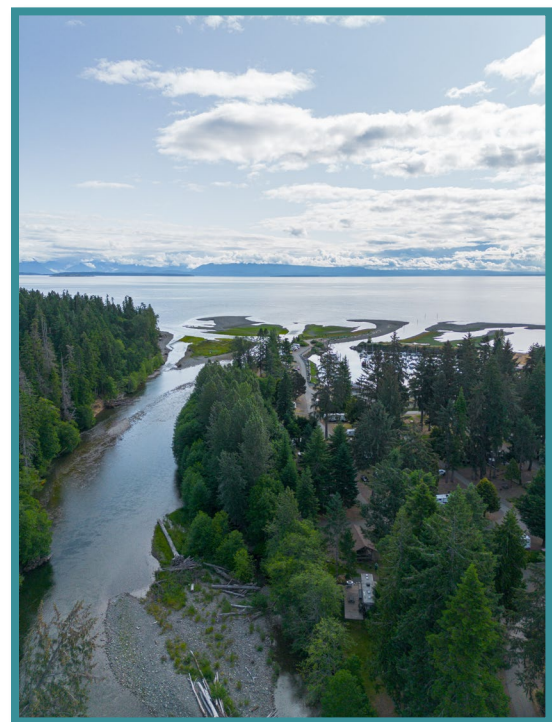
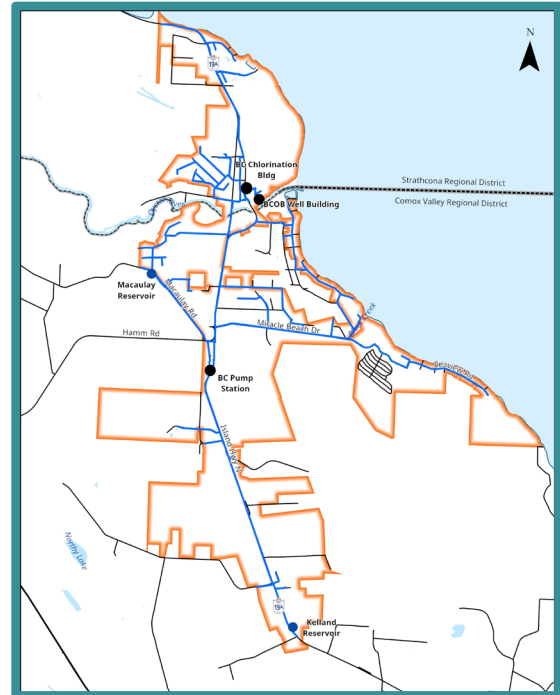
The Comox Valley Regional District strives to provide high-quality drinking water through responsible operation and management of the water system. The CVRD is regulated by Island Health for its activities as a potable water supplier and is required under the *Drinking Water Protection Act* to report annually on the Black Creek/Oyster Bay Water System. This report includes information on water quality, consumption, maintenance, and capital projects.

The CVRD provides water to roughly 2600 residents and 30 local businesses in the Black Creek/Oyster Bay Water System.

Source Water

Water for the Black Creek/Oyster Bay Service Area is sourced from four wells and an infiltration gallery in the Oyster River Nature Park.

The Oyster River watershed is 376km² and originates in the mountains of Forbidden Plateau before travelling northeast to the Strait of Georgia. Its main tributaries are Little Oyster River, Woodhus Creek, Piggott Creek, and Adrian Creek.



The Oyster River near the infiltration gallery.

Water Treatment

All water supply systems using surface water are governed by Island Health and are required to adhere to provincial “4-3-2-1-0” treatment objectives to ensure effective elimination of disease-causing viruses, bacteria, and parasites.

The “4-3-2-1-0” objectives are as follows:

- 4-log (99.99 per cent) removal/inactivation of viruses
- 3-log (99.9 per cent) removal/inactivation of Giardia and Cryptosporidium
- 2 types of treatment processes
- 1 maximum Nephelometric Turbidity Units in treated water
- 0 detectable E. Coli, fecal coliforms and total coliforms in treated water

The journey from source to tap begins at one of the wells 20’ below the Oyster River Nature Park, or in the infiltration gallery near the river. Water is pumped to the treatment facility on Regent Road where it passes through Ultra-Violet (UV) reactors before being injected with sodium hypochlorite for disinfection and caustic soda for pH adjustment. Water sourced from underground wells is typically very clear, has no microbiological growth, but has a low pH and is corrosive. If left unadjusted - in addition to impacting treatment processes - this can cause leaching of metal ions from fittings in the distribution system. Caustic soda is added to address this issue and raise the pH to 7-8.



Ultraviolet reactors.

The water then enters a large contact main which provides contact time for the sodium hypochlorite to disinfect any remaining bacteria.

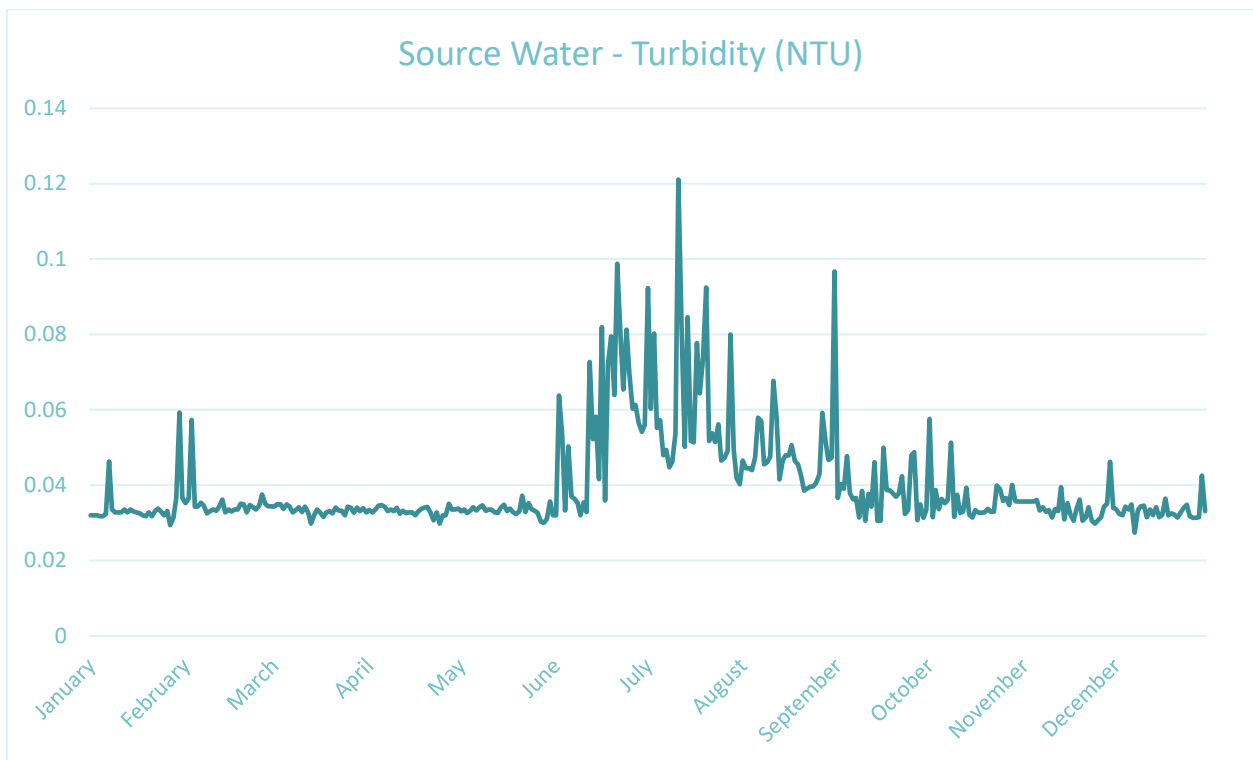
Source Water - Turbidity

Turbidity is a measure of the clarity of water in nephelometric turbidity units, or NTUs. The earth is an excellent natural filter of particulate, pathogens, and organic material and in most circumstances, this makes filtration unnecessary. Ground water is extremely insulated from turbidity events occurring at the surface, but continuous monitoring is important in order to ensure the integrity of the well seal, casing, screen and transmission piping.

The average daily source water turbidity in 2025 was 0.03 NTU.



Regent Road Bridge over the Oyster River.



Filtration Exemption

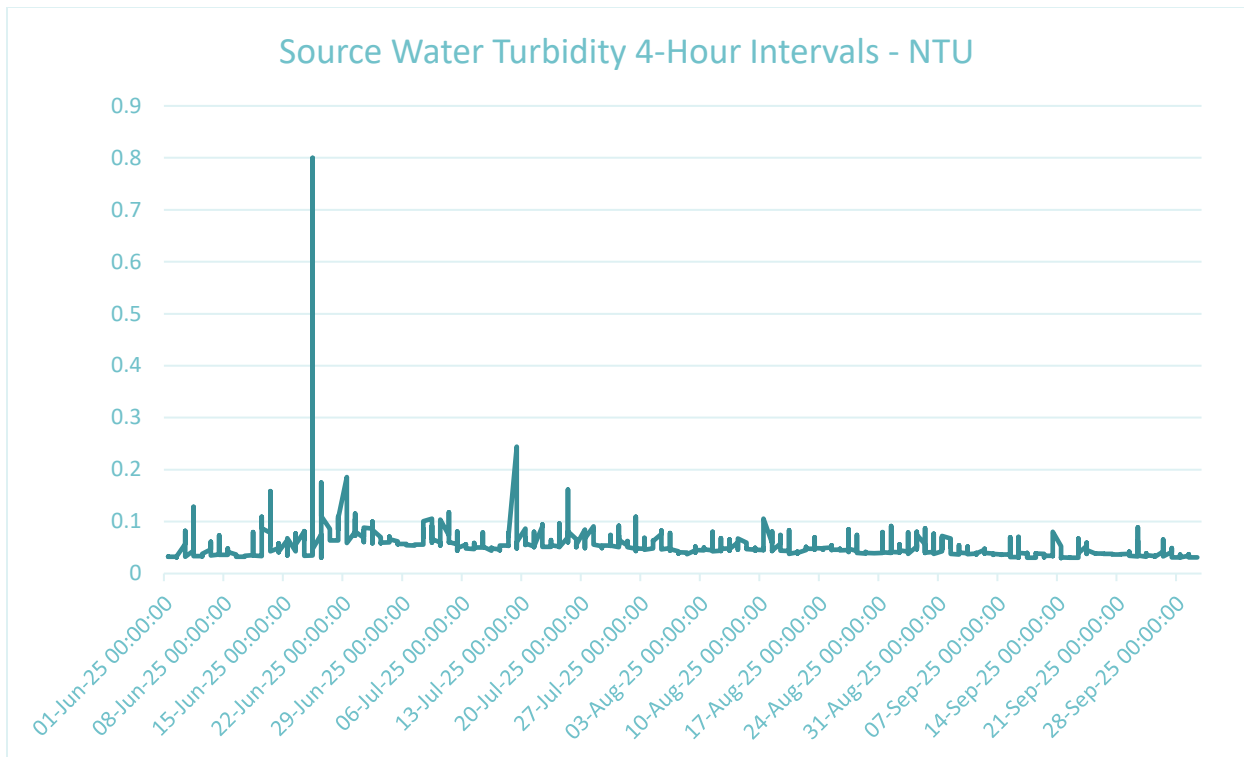
Surface water sources such as the Oyster River infiltration gallery are required to meet the BC Drinking Water Treatment Objectives, however, if specific criteria is achieved, then the source water may qualify for a filtration exemption.

The infiltration gallery only becomes operational as higher summer demand necessitates – typically running from July through September. In addition to the treatment objectives laid out in the previous section, the gallery is monitored continuously with on-line analyzers during operation so as to meet the following criteria. If the raw water quality goes outside of the set parameters, the wells will automatically shut down, and qualified Operations staff are immediately notified.

- E. Coli levels do not exceed 20/100mL in at least 90% of raw water samples.
- $\geq 90\%$ of treated water samples have zero detectable total coliform bacteria and no samples contain more than 10 per 100mL .
- Average raw turbidity levels are ~1NTU and do not exceed 5 NTU for more than 48 hours annually.
- Overall inactivation is met using a minimum of 2 forms of disinfectant; The Oyster River Station utilizes ultra-violet light and sodium hypochlorite.
- A watershed control program is in place that minimizes the potential for fecal contamination of the source water.

Date	E. Coli (MPN/100mL)	Criteria Met
June 23, 2025	0	Yes
July 7, 2025	0	Yes
July 14, 2025	0	Yes
July 28, 2025	0	Yes
August 5, 2025	0	Yes
August 11, 2025	0	Yes
August 20, 2025	0	Yes
August 25, 2025	0	Yes
September 2, 2025	0	Yes
September 22, 2025	0	Yes

No treated water sample had detectable levels of total coliform.



Watershed Control Program

A multi-faceted approach to watershed management is employed to ensure the protection of existing and future sources:

- A non-spray covenant in place surrounding Well #6 (and any future wells outside of the Oyster River Nature Park).
- Annual analysis of sewage-specific indicators such as total phosphorous and nitrate-nitrogen.
- Signage within the Oyster River trail area.
- A hydrogeological study of the area that includes potential impact of nearby septic fields, agricultural activity, and climate-related projections.
- Periodic analysis of chemical and physical water properties that will indicate any significant changes in the wellfield hydrology or intake structures.
- Periodic inspection of the infiltration gallery piping and annual flushing.
- Careful management of proximate land development
- Continued building of relationships with watershed stakeholders such as forestry companies, the Strathcona Regional District, private landowners, Mount Washington Alpine Resort, etc.

Water Distribution

After these processes, the water travels to either Macaulay Reservoir or is pumped through the Black Creek Booster Station towards Kelland Reservoir.

Water flows in and out of these reservoirs to provide water to residents from the Oyster Bay Shoreline Park in the north, to Kelland Road in the south.

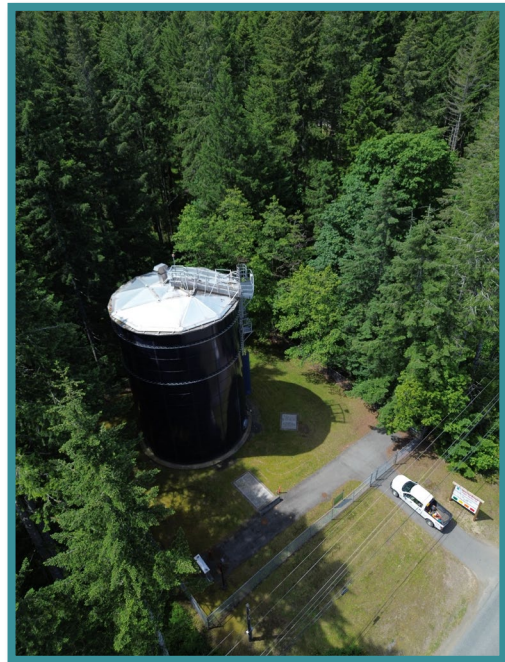
There are 130 fire hydrants and 1072 service connections in the distribution system.

Water Quality

The Ministry of Health, through its regional body Island Health, regulates municipal drinking water quality through the *Drinking Water Protection Act* and the *Drinking Water Protection Regulation*. Both documents set out certain requirements for drinking water purveyors to ensure the provision of safe drinking water to their customers.

The *Guidelines for Canadian Drinking Water Quality* are developed by the Federal-Provincial-Territorial Committee on Drinking Water, and they provide a limit on microbial, chemical, physical, radiological substances called a “maximum acceptable concentration”. The guidelines also assign aesthetic objectives to substances that do not cause risk to human health, but influence consumer acceptance of the water based on factors such as taste, odour and colour.

The CVRD collects and analyzes weekly water quality samples at the water treatment facility, source water, Macaulay, and Kelland Reservoirs, and from various other strategic points within the distribution system to ensure that water is meeting regulatory objectives. Additionally, water from select locations is tested periodically throughout the year for over 200 different analytes to confirm the effectiveness of treatment processes, the quality of our source water, and the integrity of the distribution system.



Macaulay Reservoir.

Water Quality Summary

Source Water	2024	2025	
Turbidity (Average, NTU)	0.03	0.03	
Temperature (Average, °C)	14.2	13.4	
pH (Average)	6.6	5.65	
Distribution Water	2024	2025	Target
Turbidity (Average, NTU)	0.12	0.26	<1
Temperature (Average, °C)	12.3	12.5	<15
pH (Average)	7.4	7.2	7-10.5
Chlorine Residual (Average, mg/L)	0.95	0.95	0.4 \geq 2.0
Total Coliforms (Positive Samples)	0	0	0
E. Coli (Positive Samples)	0	0	0
Trihalomethanes (Average, mg/L)	0.008	0.0066	<0.1

Distribution Water – Data by Sample Site

Date	2220 Salmon Point Road		1536 Seaview Road		8527 Island Highway		2315 King Road		Kelland Reservoir		Macaulay Reservoir	
	Cl ²	NTU	Cl ²	NTU	Cl ²	NTU	Cl ²	NTU	Cl ²	NTU	Cl ²	NTU
Jan-06	1	0.14	0.87	0.14								
Jan-13					0.85	0.09	0.87	0.09				
Jan-20	1.03	0.14	0.97	0.15					0.74	0.13		
Feb-03					0.99	0.11	1.01	0.14				
Feb-10	0.99	0.09	0.94	0.11								
Feb-19					0.96	0.18	1.09	0.14				
Mar-03	0.97	0.08	0.79	0.08					0.64	0.08		
Mar-10					0.87	0.07	1.07	0.06				
Mar-17	0.94	0.09	0.99	0.12								
Mar-24					1	0.07	1.06	0.05				
Apr-07	0.86	0.09	0.88	0.07					0.74	0.12	0.91	0.12
Apr-14					0.89	0.2	1.16	0.07				
Apr-22	0.99	0.06	0.93	0.08								
Apr-28					0.92	0.22	1.06	0.18	0.73	0.07		
May-05	1.05	0.06	0.97	0.06								
May-12					0.96	0.06	1.06	0.06				
May-26	1.1	0.15	0.94	0.13								
Jun-02					1.04	0.15	1.02	0.1				
Jun-09	1.06	0.09	1.03	0.08					0.68	0.13		
Jun-16					1.1	0.08	0.92	0.04				
Jun-23	1.08	0.06	0.94	0.05								
Jun-24					0.95	0.2	1.16	0.17			0.95	0.07
Jul-07	1	0.17	1.13	0.15					0.75	0.18		
Jul-14					1.04	0.15	1.04	0.08				
Jul-21	0.86	0.07	1.13	0.07								
Jul-28					0.98	0.6	1.05	0.13				
Aug-05	0.84	0.1	0.77	0.08	0.69	0.09						
Aug-11					0.79	0.22	0.77	0.24				
Aug-20					0.91	0.08	0.94	0.09				
Aug-25	0.66	0.16	0.73	0.13								
Sep-02					0.87	0.22	1.03	0.13				
Sep-08	1.05	0.07	0.91	0.14	0.4	0.13						
Sep-15					1	0.11	0.96	0.07				
Sep-22	0.9	0.07	0.74	0.06							1.07	1.07
Sep-23					0.93	0.22	1.05	0.12				
Sep-24	1.29	0.09	1.13	0.13	1.01	0.17						
Oct-06					0.94	0.28	0.95	0.14				
Oct-13	1.08	0.09	0.92	0.11								
Oct-21					1.03	0.11	1.08	0.11				
Oct-27	1.09	0.07	0.9	0.07	1.01	0.1						
Oct-31					1.11	0.05	1.09	0.04				
Nov-03	1.04	0.38	0.92	0.2								

Nov-12						0.16		0.2				
Nov-17	1.1	0.06	0.97	0.08	0.99	0.06						
Nov-24							1.11	0.08				
Dec-01	1.02	0.1	0.89	0.08								
Dec-08					1.05	0.08	1.03	0.09			1.02	0.12
Dec-15	0.94	0.08	0.95	0.08	0.72	0.7						
Dec-22					1.06	0.08	1.09	0.08				
Dec-28												

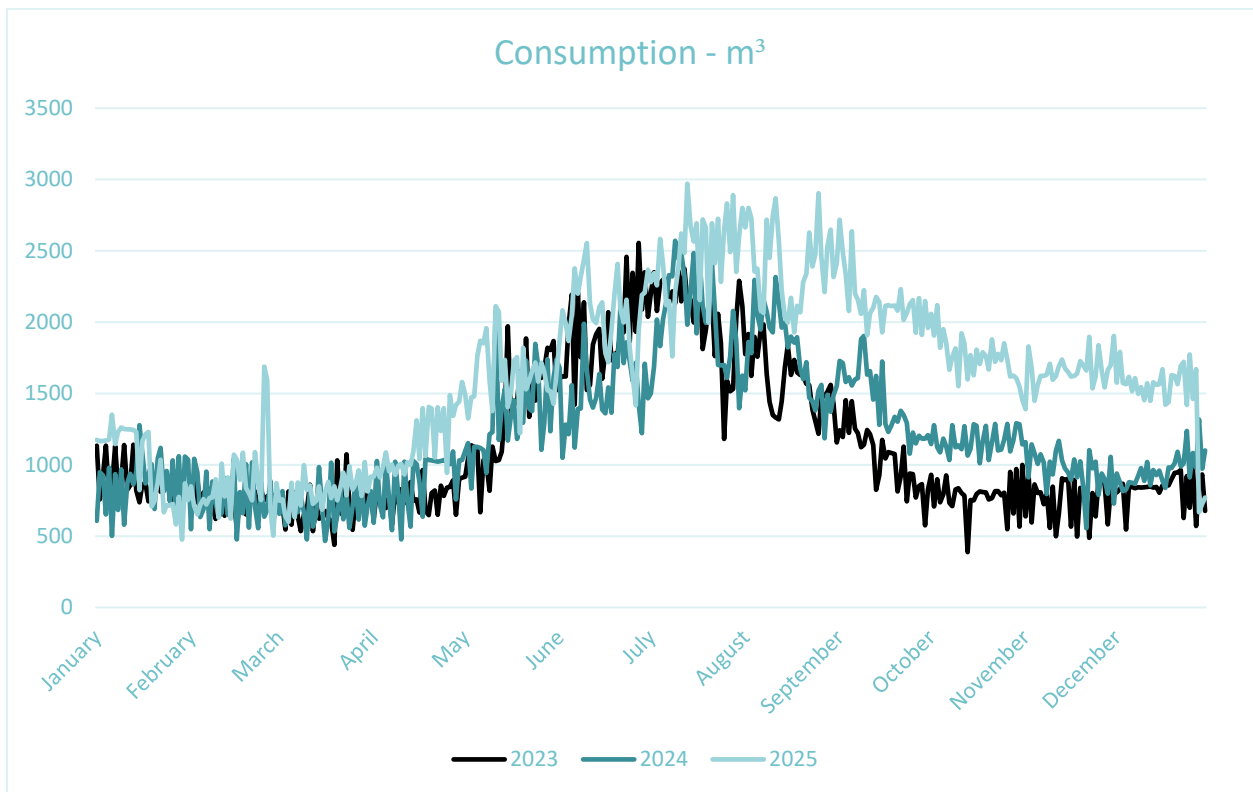
Distribution Water - Other Analytes

Parameter	Units	DL	Q1	Q2	Q3	Q4
Total Dissolved Solids	mg/L	N/A	130	140	52	110
Nitrite (N)	mg/L	N/A	<0.0050	<0.0050	<0.0050	<0.0050
Nitrate (N)	mg/L	N/A	1.83	1.46	0.391	1.46
Conductivity	uS/cm	N/A	230	220	110	200
pH	pH		7.84	7.83	7.45	7.88
Alkalinity (PP as CaCO3)	mg/L		<1.0	<1.0	<1.0	<1.0
Alkalinity (Total as CaCO3)	mg/L	10	98	92	43	86
Bicarbonate (HCO3)	mg/L	0.005	120	110	52	100
Carbonate (CO3)	mg/L	0.02	<1.0	<1.0	<1.0	<1.0
Hydroxide (OH)	mg/L	2	<1.0	<1.0	<1.0	<1.0
Chloride (Cl)	mg/L	N/A	8.5	7.4	3	6.5
Sulphate (SO4)	mg/L	1	2.8	2.7	1.8	2.7
True Colour	Col. Unit	1	<2.0	<2.0	<2.0	<2.0
Orthophosphate (P)	mg/L	1	0.006	0.0034	0.0031	<0.0030
Nitrate plus Nitrite (N)	mg/L	1	1.83	1.46	0.391	1.46
Dissolved Fluoride (F)	mg/L	1	<0.050	<0.050	<0.050	<0.050
Turbidity	NTU	1	0.51	0.12	0.2	0.17
Total Coliforms	CFU/100mL	1	0.032	0.395	0.064	0.035
E. coli	CFU/100mL	2	0	0	0	0
Bromide (Br)	mg/L	0.003	0	0	0	0
Total Hardness (CaCO3)	mg/L	0.02	48	42.9	29.5	37.7
Total Aluminum (Al)	ug/L	0.05	<3.0	<3.0	<3.0	<3.0
Total Antimony (Sb)	ug/L	0.1	<0.50	<0.50	<0.50	<0.50
Total Arsenic (As)	ug/L	N/A	<0.10	<0.10	<0.10	<0.10
Total Barium (Ba)	ug/L	N/A	1.3	1	<1.0	1.1
Total Beryllium (Be)	ug/L	0.01	<0.10	<0.10	<0.10	<0.10
Total Bismuth (Bi)	ug/L	0.5	<1.0	<1.0	<1.0	<1.0
Total Boron (B)	ug/L	3	<50	<50	<50	<50
Total Cadmium (Cd)	ug/L	0.5	<0.010	<0.010	<0.010	<0.010
Total Chromium (Cr)	ug/L	0.1	<1.0	<1.0	<1.0	<1.0
Total Cobalt (Co)	ug/L	1	<0.20	<0.20	<0.20	<0.20
Total Copper (Cu)	ug/L	0.1	1.23	1.52	12.7	13.4

Total Iron (Fe)	ug/L	1	<5.0	<5.0	13	<5.0
Total Lead (Pb)	ug/L	50	<0.20	<0.20	<0.20	<0.20
Total Manganese (Mn)	ug/L	0.01	<1.0	<1.0	<1.0	<1.0
Total Molybdenum (Mo)	ug/L	1	<1.0	<1.0	<1.0	<1.0
Total Nickel (Ni)	ug/L	0.2	<1.0	<1.0	<1.0	<1.0
Total Selenium (Se)	ug/L	0.2	0.11	<0.10	<0.10	<0.10
Total Silicon (Si)	ug/L	5	7590	7630	5060	6970
Total Silver (Ag)	ug/L	0.2	<0.020	<0.020	<0.020	<0.020
Total Strontium (Sr)	ug/L	1	36.4	32.9	22	29.8
Total Thallium (Tl)	ug/L	1	<0.010	<0.010	<0.010	<0.010
Total Tin (Sn)	ug/L	1	<5.0	<5.0	<5.0	<5.0
Total Titanium (Ti)	ug/L	0.1	<5.0	<5.0	<5.0	<5.0
Total Uranium (U)	ug/L	100	<0.10	<0.10	<0.10	<0.10
Total Vanadium (V)	ug/L	0.02	<5.0	<5.0	<5.0	<5.0
Total Zinc (Zn)	ug/L	1	<5.0	<5.0	<5.0	<5.0
Total Zirconium (Zr)	ug/L	0.01	<0.10	<0.10	<0.10	<0.10
Total Calcium (Ca)	mg/L	5	13.4	12.2	8.63	10.4
Total Magnesium (Mg)	mg/L	5	3.51	3.02	1.94	2.81
Total Potassium (K)	mg/L	0.1	0.257	0.242	0.167	0.257
Total Sodium (Na)	mg/L	5	32.9	28.8	9.45	23.8
Total Sulphur (S)	mg/L	5	<3.0	<3.0	<3.0	<3.0
Total Mercury (Hg)	ug/L	0.1	<0.0019	<0.0019	<0.0019	<0.0019
Total Trihalomethanes	ug/L	0.05	8.2	1.4	9	8
Bromodichloromethane	ug/L	0.05	2.6	<1.0	1.9	1.9
Bromoform	ug/L	0.05	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	ug/L	0.05	2	<1.0	<1.0	1.1
Chloroform	ug/L	3	3.6	1.4	7.1	5.1

Consumption Metrics and Water Rates

The average daily water production in 2025 was 1627m³ per day. Demand is highest during the summer months - approximately twice as much as during the winter. In 2025, system demand reached its highest point on July 28th with 2891m³ of water being produced.



		2025	2026
Residential	Minimum charge up to 15m ³	\$27.76	\$28.45
	15m ³ to 45m ³	\$1.66/m ³	\$1.70/m ³
	Over 45m ³	\$2.50/m ³	\$2.56/m ³
Commercial	Minimum charge up to 15m ³	\$43.24	\$44.32
	Over 15m ³	\$2.16/m ³	\$2.22/m ³

Conservation

Water conservation is an increasingly important initiative and while it seems as if there is an abundance of water available, our supply is truly a limited resource, particularly during the summer months.

The CVRD has a four-stage system in place for managing water consumption. Stage one is the least restrictive and comes into effect annually on May 1st until September 30th unless otherwise noted. Stage two is implemented on July 1st. Stages three and four are the most restrictive and are typically reserved for emergencies.

Black Creek-Oyster Bay Watering Schedule

Residential lawn and garden watering is permitted with a sprinkler during the specified days and hours as follows:

STAGE	STARTS	HOURS	Mon	Tues	Wed	Thu	Fri	Sat	Sun
1	Starting May 1	5-8 am & 7-10 pm	No Watering	Even Address	Odd Address	Even Address	Odd Address	Even Address	Odd Address
2	Starting July 1	6-8 am & 8-10 pm	No Watering	Even Address	Odd Address	No Watering	No Watering	Even Address	Odd Address
3	When Notified	6-8 am & 8-10 pm	HAND WATERING OR MICRO/DRIP IRRIGATION OF TREES, SHRUBS, FLOWERS AND VEGETABLES ONLY						
4	When Notified	N/A	NO WATERING						

Hand watering or micro/drip irrigation of trees, shrubs and vegetables is permitted anytime during Stage 1 and 2.

For more information visit:
comoxvalleyrd.ca/restrictions
 or call **250-334-6000**



comoxvalleyrd.ca   

Operations

Water treatment facilities and distribution systems are operated by 15 qualified operators. In 2024, several ongoing and annual maintenance activities were carried out, as well as improvements to work order tracking, data collection, and map improvements.

Additionally, many non-annual projects were completed such as reservoir cleaning, and hydrant painting.

