

REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2024



Westurne Heights Water Service Area June 2025



REGIONAL DISTRICT OF NANAIMO

Water & Utility Services Department

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Appendix A - Map of Westurne Heights Water Service Area

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1.0 Introduction

The following annual report describes the Westurne Heights Water Service Area and summarizes the water quality and production data from 2024. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, Operator Certification, the Emergency Response & Contingency Plan, and the Cross Connection Control Program. This report is to be submitted to Island Health by the spring of 2025.

2.0 Westurne Heights Water Service Area

The Westurne Heights Water Utility is located 2.2 kilometers south of the intersection of Highway 4 and Chatsworth Road in Whiskey Creek. The utility was established in 1995 to service properties along Westurne Heights Road. Ownership of the water utility was transferred to the RDN in September 2016. The water system is comprised of one groundwater well, two underground cisterns, a pumphouse, and a short network of watermains. There are 17 residential connections in this water system. The water source is chlorinated and pumped into the system on demand via two pressure tanks. A backup generator is present on-site in the event of a power outage. A map of the Westurne Heights Water Service Area is provided in Appendix A for reference.

2.1 Groundwater Wells

One groundwater production well is present at 1262 Westurne Heights Road, west of Coombs, B.C.

Well / Name	Well Depth	Wellhead Protection In Place	Treated/Untreated with Chlorine
#1	26.2 m	Yes	Treated

2.2 Reservoirs

Two below-ground cisterns are present at 1262 Westurne Heights Road, and have a combined water storage capacity of 13 m³ (2,800 imperial gallons). Water supply is pumped into the system via a dual pressure tank arrangement.

2.3 Distribution System

The water distribution system is comprised of 0.21 km of 75mm diameter PVC watermains. Three below-ground flushouts are present at the end of each watermain. There are no fire hydrants located in this water system.

Note: 'PVC' is poly-vinylchloride (plastic)

Westurne Heights
Well #1



3.0 Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. Notably, the chlorine residual levels are tested weekly to ensure the absence of bacterial regrowth in the watermain. The following table includes a summary of all testing:

Timing	Location	Tests
Weekly	RDN (in-house) Laboratory	Total coliforms, E.Coli, Temperature, pH, Conductivity, Free Chlorine residual, Salinity, TDS
Weekly	BC Centre for Disease Control	Total coliforms, E.Coli
Annual Source Water Testing (every Fall)	Bureau Veritas	Complete potability testing of raw well water, including T-Ammonia
Annual System Water Testing (every Spring)	Bureau Veritas	Complete potability testing of distribution system, including T-Ammonia

4.0 Water Quality - Source Water and Distribution System

Up-to-date water quality test reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca/westurne-heights. Tables of water quality testing results for both the source water and the distribution system are provided in Appendix B of this report.

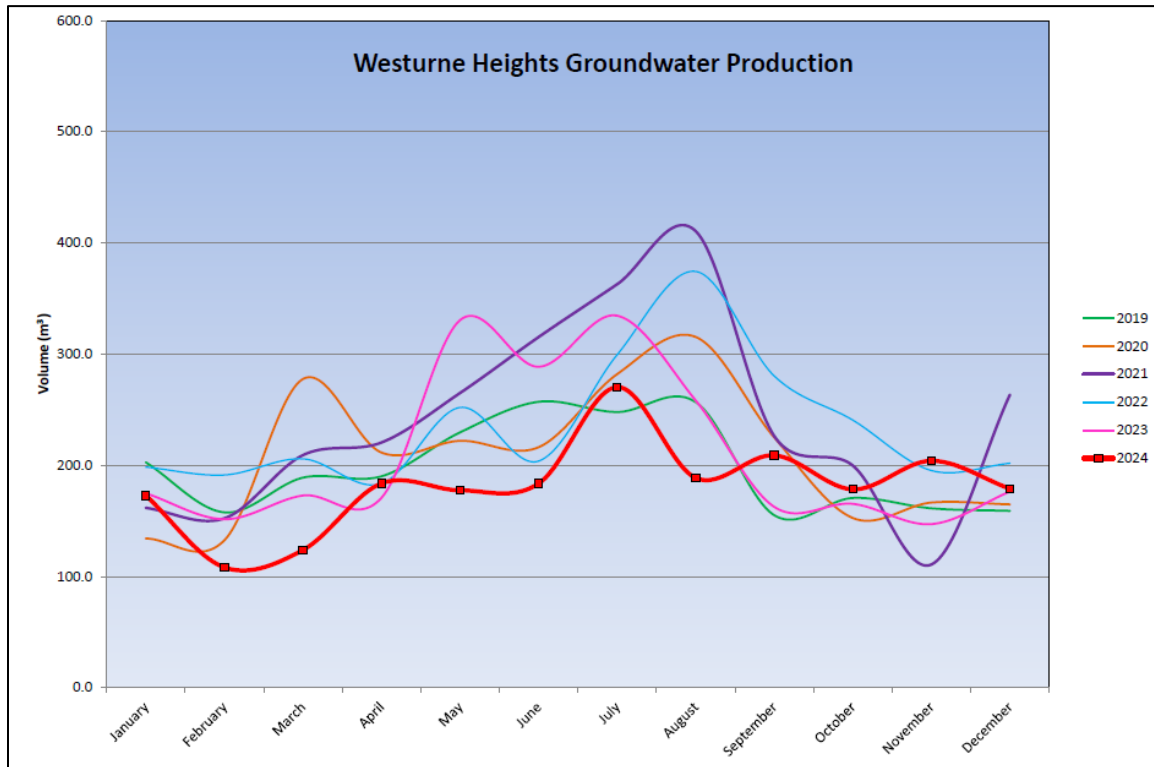
5.0 Water Quality Inquiries and Complaints

A few inquiries and complaints were received from the Westurne Heights water service area in 2024 and were typically related to temporary power outages in the area. The on-call water services staff respond to water system emergencies and alarms within minutes of receiving each call. A summary of the water system incidents in 2024 is given in the table below.

Activity in 2024	Date(s)	History/Notes
Boil Water Advisories	None	None
High Turbidity Events	None	None
Equipment Malfunction	None	None
Water Main Breaks	None	None
Pump Failures	None	None

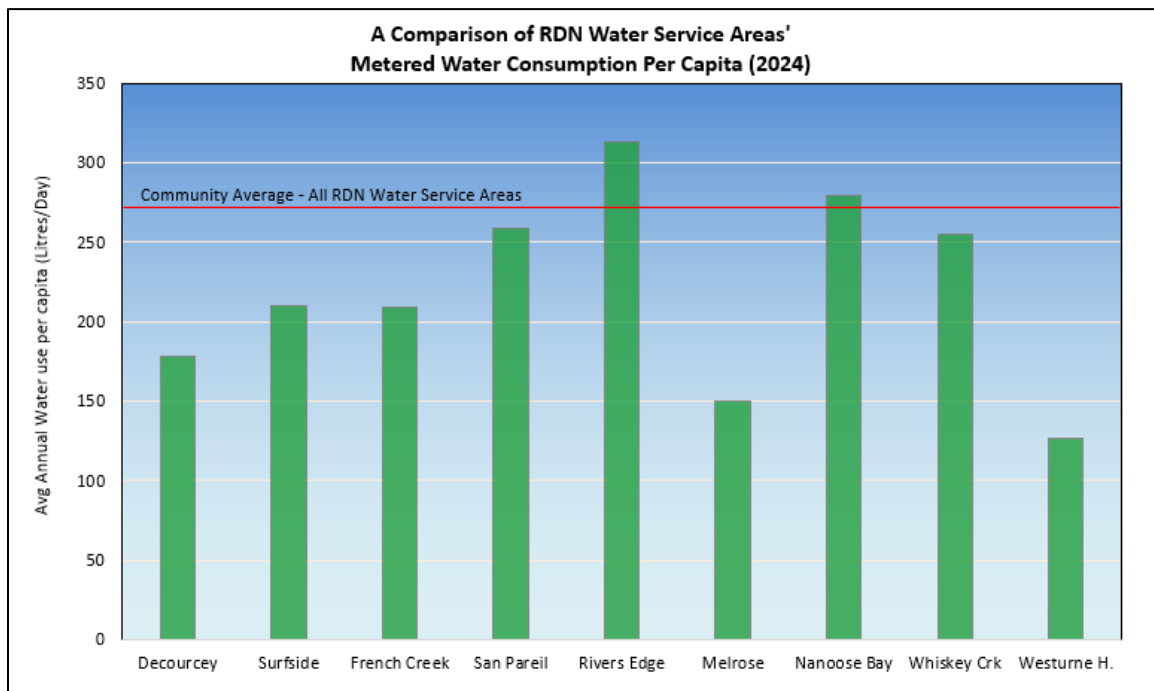
6.0 Groundwater Production and Consumption

Monthly groundwater production in the Westurne Heights Water Service Area for the past 6 years is shown in the chart below.



Consumption

In the fall/winter of 2023/2024, the average usage per home in the Westurne Heights Water Service Area was 0.27 cubic metres per day (59 imperial gallons). In the summer of 2024, the average water usage was 0.37 cubic metres per day (81 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 126 L/day (based on 2.4 people/household). This consumption is **53% less** than the average of all the other RDN water systems of 270 L/day/capita in 2024.



7.0 Maintenance Program

A weekly pump station inspection is carried out to reduce or eliminate the risk of contamination and system failure, and to ensure the consistent application of chlorine for treatment purposes. Watermains are flushed once annually in the spring. The water storage cisterns are drained and cleaned as required. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

8.0 Operator Certification

The Regional District Water & Utility Services staff is comprised of one Manager, one Project Engineer, one Engineering Technologist, one Engineering Technician, one Chief Operator, and seven certified operators. The operators receive ongoing training and certification in:

- | | | |
|----------------------------|---|----------------------------|
| ✓ Water Treatment | ✓ Chlorine Handling | ✓ Confined Space Awareness |
| ✓ Water Distribution | ✓ WHMIS (Workplace Hazardous Material Information System) | ✓ Fall Protection |
| ✓ Wastewater Collection | ✓ TDG (Transportation of Dangerous Goods) | ✓ First Aid |
| ✓ Cross Connection Control | | ✓ Silica Awareness |
| ✓ Asbestos Awareness | | ✓ Cyber Security |



**Westurne Heights
Pumphouse**

9.0 Water Service Area Projects

9.1 2024 Completed Studies & Projects

- Corresponded with residents regarding water conservation;
- Completed irrigation checks for high water users;
- Counselling residents regarding water leak repairs and bill adjustments;
- Enforced outdoor watering restrictions during summer months;
- Continued the 2020-2030 Water Conservation Plan;
- Followed Cross Connection Control program to reduce backflow prevention risks;
- Completed regular watermain flushing and hydrant maintenance;
- Continued valve maintenance program; and
- Maintained a high level of water quality.

9.2 2025 Proposed Projects & Upgrades

- Distribution pump replacement;
- Chlorine analyzer replacement;
- Complete irrigation checks for high water users;
- Continue watermain flushing program;
- Continue valve maintenance program;
- Continue the 2020-2030 DWWP Water Conservation Plan; and
- Continue to offer numerous water-saving incentives via rebates.

10.0 Emergency Response & Contingency Plan

The Regional District Emergency Response & Contingency Plan (ERCP) contains procedures and contact information to efficiently respond to water system emergencies such as contamination of water supply, loss of supply, pump failure, and drought management. The ERCP was reviewed and updated in 2024, and copies are available on our website, at each RDN office, in each pumphouse, and in each Water Services vehicle. A copy of the ERCP is also attached to this report in Appendix C.

11.0 Supply Security

The RDN continues to effectively manage water supply in its service areas in response to ongoing demand and the effects of climate change. Most RDN water service areas are unlikely to expand, so growth in demand is not expected. Initiatives that provide resiliency for the groundwater sources that serve residents remain a high priority. Reservoir capacity and redundancy are reviewed with regards to water storage during periods of drought, and water from backup sources is available to be delivered in the case of an emergency. Groundwater quality is regularly tested in all RDN water service areas. The aquifers within the regional district are monitored through the RDN's Drinking Water and Watershed Protection (DWWP) program. The most sustainable way to protect water supply is through demand management (conservation), which is promoted through outreach and stewardship initiatives provided by the RDN's Team WaterSmart, as well as the RDN Water Service Area's Water Conservation Plan 2020-2030. Rebates for well water testing, water

smart landscaping, and rainwater harvesting further assist RDN residents to reduce water usage in high demand seasons. A tiered system for water rates (introduced in 2023) helps promote conservation by rewarding low water users with reduced rates and encouraging high water users to seek ways to use less. Additional planning and preparation initiatives will be introduced in the future to support water supply security.



Pressure tanks inside
the Westerne Heights
pump house

12.0 Cross Connection Control (CCC)

The RDN's Cross Connection Control Program was put in place to protect the public health by reducing the risk of contaminants flowing back into the public water supply. The RDN Manager of Water Services is the designated Cross Connection Control Manager.

The RDN's Cross Connection Control Program addresses cross connection threats through operating policies and procedures, as well as assisting customers with backflow preventer selection, installation, testing, maintenance and reporting. The program receives its authority from *RDN Cross Connection Control Regulation Bylaw No. 1788*, and the *British Columbia Building Code*, Part 7, which requires that potable water be protected from contamination. Additionally, a webpage has been established at <https://rdn.bc.ca/cross-connection-control-program> to educate RDN water service customers about cross connection hazards, and lists the relevant links to current standards and resources.

Two of the RDN's water system operators are certified backflow assembly testers through the British Columbia Water & Waste Association (BCWWA), and one operator is additionally certified as a Cross Connection Control Inspector.

13.0 Cyber Security

The RDN uses a multi-level approach to cyber-security. Corporate network security is employed via a universal threat management gateway that implements various methods of data security, which includes daily definition updates to block known cyber threats. In addition, all RDN PC's are

protected with anti-virus software. RDN water systems are connected to the corporate network via IP-Sec VPN's for remote management by information technology and equipment operators.

Future infrastructure upgrades will see RDN water systems located on segregated networks to limit the vulnerability from cybersecurity threats. All RDN employees are required to regularly complete extensive training on cyber security awareness.

14.0 Closing

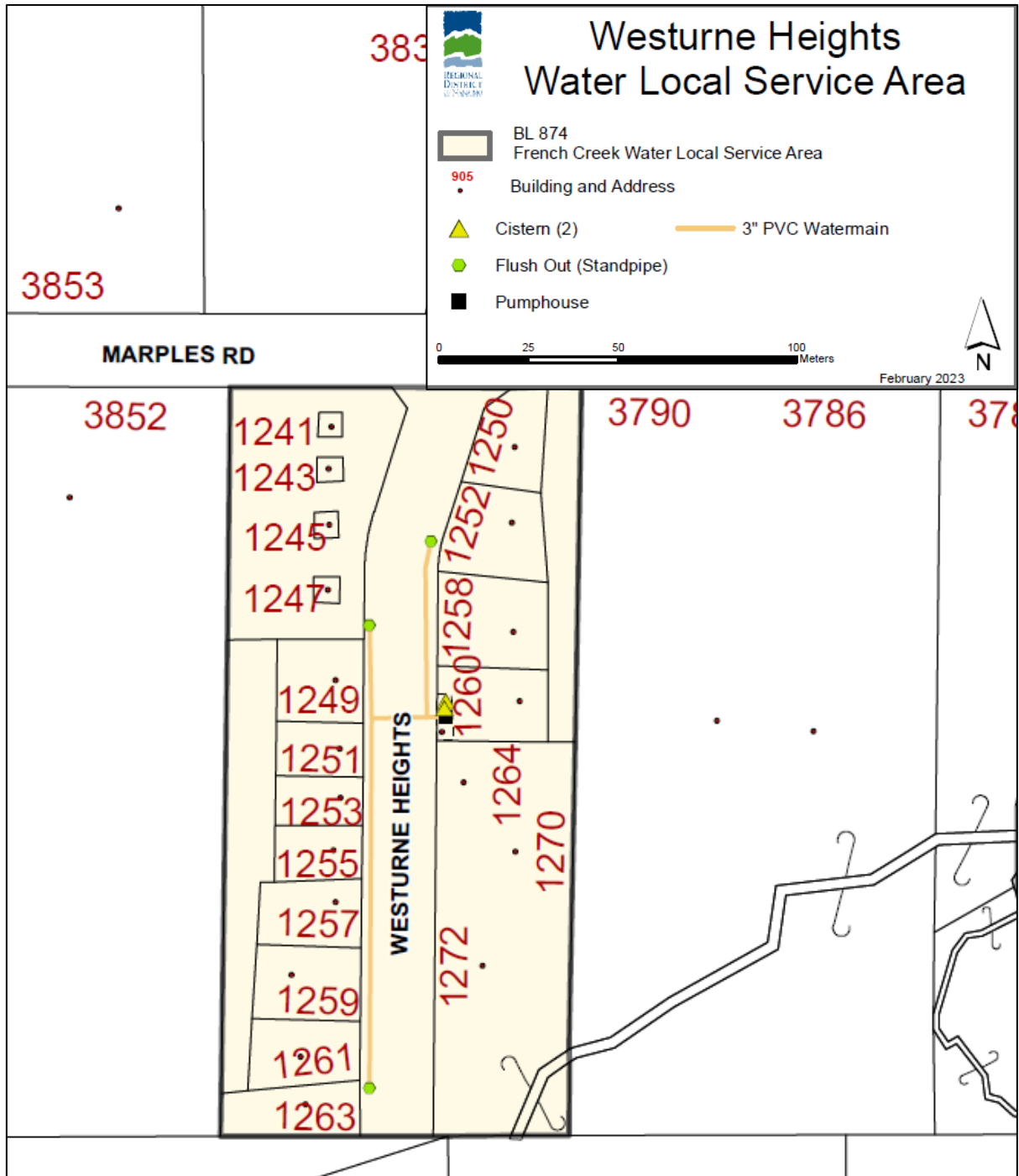
An annual report for 2025 will be prepared and submitted to Island Health in the Spring of 2026. Annual reports are also available on the RDN website: www.rdn.bc.ca/westurne-heights.



**Westurne Heights Well Site and
underground storage cisterns**

APPENDIX A

MAP OF WESTURNE HEIGHTS WATER SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS

WESTURNE HEIGHTS WATER SERVICE AREA



Facility Location: Qualicum Beach

Facility Information: Facility Type: 15-300 connections

Facility Sampling History:

Site Name	Date Collected	Total Coliform	Total E. Coli
WESTURNE Sample Port - 1263 Westurne Heights Rd.	1/3/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	1/24/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	1/24/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	1/31/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	2/6/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	2/14/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	2/21/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	2/28/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	3/4/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	3/19/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	3/26/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	3/26/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	4/9/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	4/16/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	4/24/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	4/29/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	5/8/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	5/14/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	5/21/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	5/28/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	6/5/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	6/17/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	6/17/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	6/26/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	7/2/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	7/9/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	7/17/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	7/24/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	8/6/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	8/13/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	8/21/2024	LT1	LT1

Site Name	Date Collected	Total Coliform	Total E. Coli
Westurne Sample Port - 1252 Westurne Heights Rd.	8/28/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	9/4/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	9/11/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	9/16/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	9/24/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	10/2/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	10/9/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	10/16/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	10/23/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	11/6/2024	LT1	LT1
Well Head Sample Port - 1260 Westurne Heights Rd.	11/25/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	11/25/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	11/26/2024	LT1	LT1
WESTURNE Sample Port - 1263 Westurne Heights Rd.	12/4/2024	LT1	LT1
Westurne Sample Port - 1252 Westurne Heights Rd.	12/9/2024	QRWRT	QRWRT
WESTURNE Sample Port - 1263 Westurne Heights Rd.	12/9/2024	QRWRT	QRWRT
Well Head Sample Port - 1260 Westurne Heights Rd.	12/17/2024	LT1	LT1

Interpreting Sample Reports

At Island Health, the results of drinking water sampling are reported using the following coding system:

- LT1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present
- QRWRT – Sample exceeded 30 hours from time of collection, results may not be valid. No written report will be issued by Island Health, and only a qualitative result will be reported by telephone when test is completed.