REGIONAL DISTRICT OF NANAIMO

# Water Service Area Annual Report 2023


# French Creek Water Service Area

June 2024

**REGIONAL DISTRICT OF NANAIMO**

*Water & Utility Services Department*

6300 Hammond Bay Rd, Nanaimo, BC Canada V9T 6N2 | Ph 250-390-6560

## Table of Contents

## 1.0 Introduction

The following annual report describes the French Creek Water Service Area and summarizes the water quality and production data from 2023. 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 2024.

## 2.0 French Creek Water Service Area

The French Creek Water Service Area was established in 1980 and comprises an area west of Drew Road and south of the Island Highway between the City of Parksville and the Town of Qualicum Beach (the Sandpiper Subdivision). The water source formerly came from a series of groundwater wells located within the neighbourhood. As of 2022, bulk water has been supplied by the Town of Qualicum Beach. The water is chlorinated and stored in one reservoir. There are 238 water service connections in the French Creek Water System. In the event of a water system emergency that disrupted flow from the Qualicum Beach connections, back-up water would be immediately provided by trucked-in treated drinking water provided by a nearby water service area. A map of the French Creek Water Service Area is provided in Appendix A for reference.

### 2.1 Groundwater Wells and Bulk Water Connection

Six groundwater production wells are present in the French Creek Water Service Area, although none of them are currently in use as drinking water sources.

| Well / Name | Well Depth | In Use | Wellhead Protection | Treated/Untreated with Chlorine |
|---|---|---|---|---|
| #1 | 39.6 m | No | Yes | n/a |
| #2 | 40.5 m | No | Yes | n/a |
| #4 | 40.2 m | No | Yes | n/a |
| #5 | 50.3 m | No | Yes | n/a |
| #6 | 52.4 m | No | Yes | n/a |
| #7 | 39.6 m | No | Yes | n/a |

French Creek Well #1 was converted to a monitoring well in 2013 due to low production and high iron levels. Wells #5 and #6 are temporarily not in use due to elevated levels of iron and manganese. Wells #2, 4, and 7 were turned off in 2023 when bulk water was supplied by the Town of Qualicum Beach.

The bulk water connection with the Qualicum Beach supply is located on Sunrise Drive. Water passes though a pressure reducing valve before filling the reservoir. Additional chlorine is added to maintain an appropriate residual amount at the farthest reaches of the system.

## 2.2 Reservoirs

One service reservoir (steel construction) is present at 1225 Sunrise Drive, Parksville, B.C. and has a capacity of 364 $m^3$ (80,000 imperial gallons).

## 2.3 Distribution System

The water distribution system in the French Creek Water Service Area is summarized in the table below. Fire hydrants (26) are located throughout the water service area.

| Watermain Material | Length of mains in service area | Prevalence in service area |
|---|---|---|
| Asbestos-concrete: | | |
| 150mm or smaller | 3.5 km | 52% |
| 200mm or larger | 0.8 km | 12% |
| PVC: | | |
| 150mm or smaller | 0.9 km | 14% |
| 200mm or larger | 1.5 km | 22% |

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

## 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 watermains. The following table includes a summary of all testing.

| Timing | Location | Tests |
|---|---|---|
| Weekly | RDN (in-house) Laboratory | Total coliforms, E.Coli, Temperature, pH, Conductivity, Chlorine residual, Salinity, TDS |
| Semi-Monthly | 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 reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca/french-creek. Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

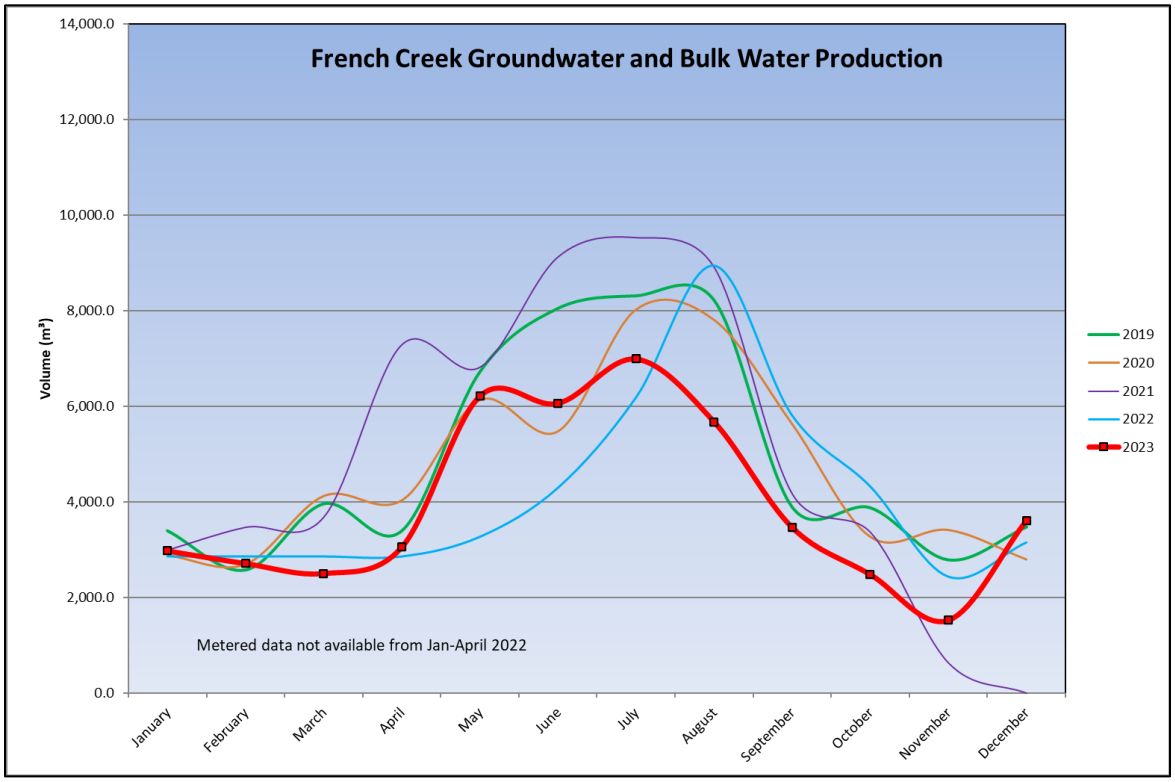
## 5.0 Water Quality Inquiries and Complaints

Inquiries received from the French Creek Water Service Area in 2023 were typically related to irrigation leaks, water sourcing and billing, and conservation advice. A summary of the water system incidents in 2023 is given in the table below.

| Activity in 2023 | Date(s) | History/Notes |
|---|---|---|
| Boil Water Advisories | None | None, ever. |
| High Turbidity Events | None | None, ever. |
| Equipment Malfunction | None | None. |
| Water Main Breaks | None | None. |
| Pump Failures | None | None. |

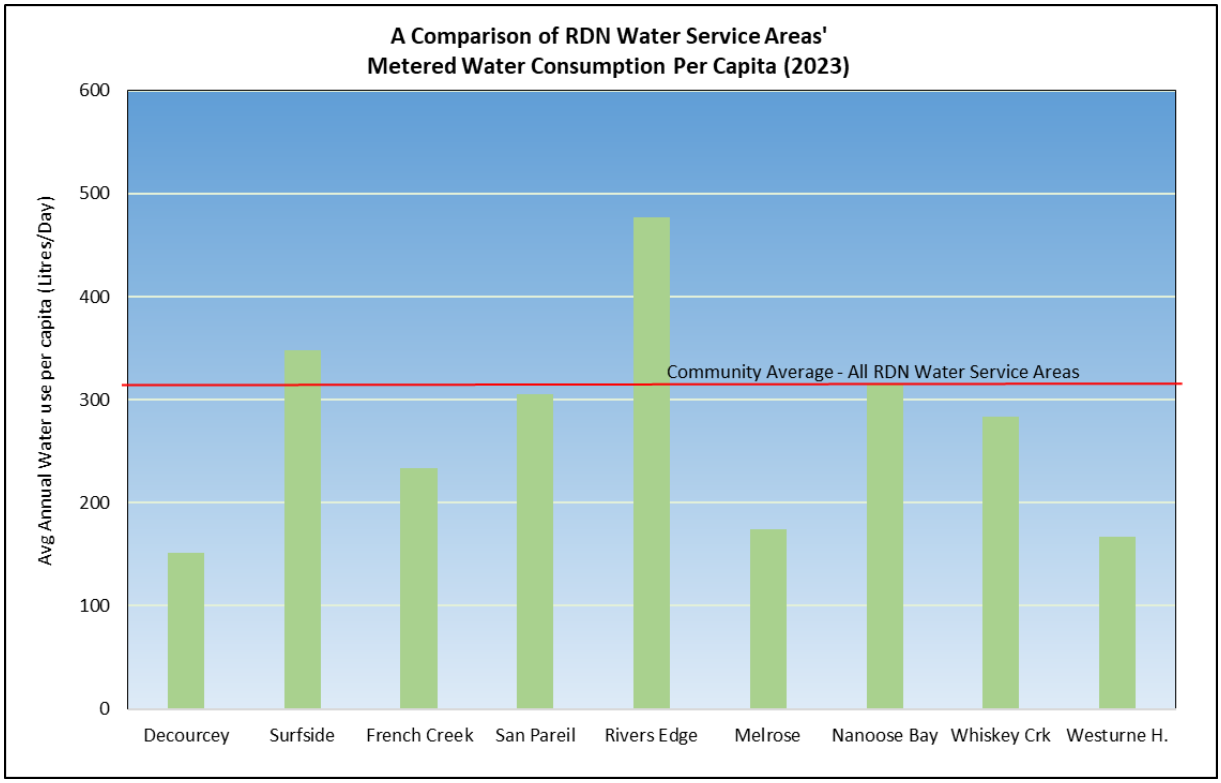
## 6.0 Groundwater Production and Consumption

The monthly water production in the French Creek Water Service Area for the past 5 years is shown in the chart below.



*Consumption*

In the Fall/Winter of 2023, the average usage per home in French Creek was 0.44 cubic metres per day (96.8 imperial gallons). In the summer, the average water usage was 0.79 cubic metres per day (173.8 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 234 L/day (based on 2.4 people per household). This consumption is ***25% less*** than the average of all the other RDN water systems of 313 L/day/capita for 2023.




## 7.0 Maintenance Program

Weekly pump station inspections are 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.

Fire hydrants are serviced once per year (either 'A-level' or 'B-level' maintenance). The water storage reservoir is drained and cleaned once every two years. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

**French Creek Storage Reservoir**

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

## 9.0 Water Service Area Projects

### 9.1 2023 Completed Studies & Projects

- Completed meter replacement program;
- Drained and cleaned reservoir and continued maintenance;
- Corresponded with residents regarding water conservation;
- Utilized leak detection equipment and tracking;
- Began billing for metered consumption based on revised water rates;
- Followed Cross Connection Control program to reduce backflow prevention risks;
- Enforced outdoor watering restrictions during summer months;
- Advised residents regarding water leak repairs and bill adjustments;
- Continued the 2021-2030 Water Conservation Plan;
- Completed regular watermain flushing and hydrant maintenance;
- Maintained a high level of water quality;
- Continued quality control through regular testing and monitoring of water system;
- Implemented Phase 2 Water Systems SCADA Master Plan; and
- Continued valve maintenance program.

### 9.2 2024 Proposed Projects & Upgrades

- Begin upgrading to smart meters throughout service area to aid in conservation and leak detection;
- Begin reservoir replacement planning;
- Complete irrigation checks for high-water users;
- Continue watermain flushing program and hydrant maintenance;
- Continue leak detection equipment utilization program;
- Introduce new watermain flushing and metering procedures to promote conservation;
- 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 2023, 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 not expected to expand, so growth in demand is unlikely. 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 new tiered system for water rates taking effect in 2023 will help 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.

## 12.0 Cross Connection Control

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 carry certification as backflow assembly testers through the British Columbia Water & Waste Association (BCWWA), and one operator is additionally certified as a backflow 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 our 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 the year 2024 will be prepared and submitted to Island Health in the spring of 2025. Annual reports are also available on our website at: https://www.rdn.bc.ca/french-creek.


**French Creek Well #2 pumphouse**

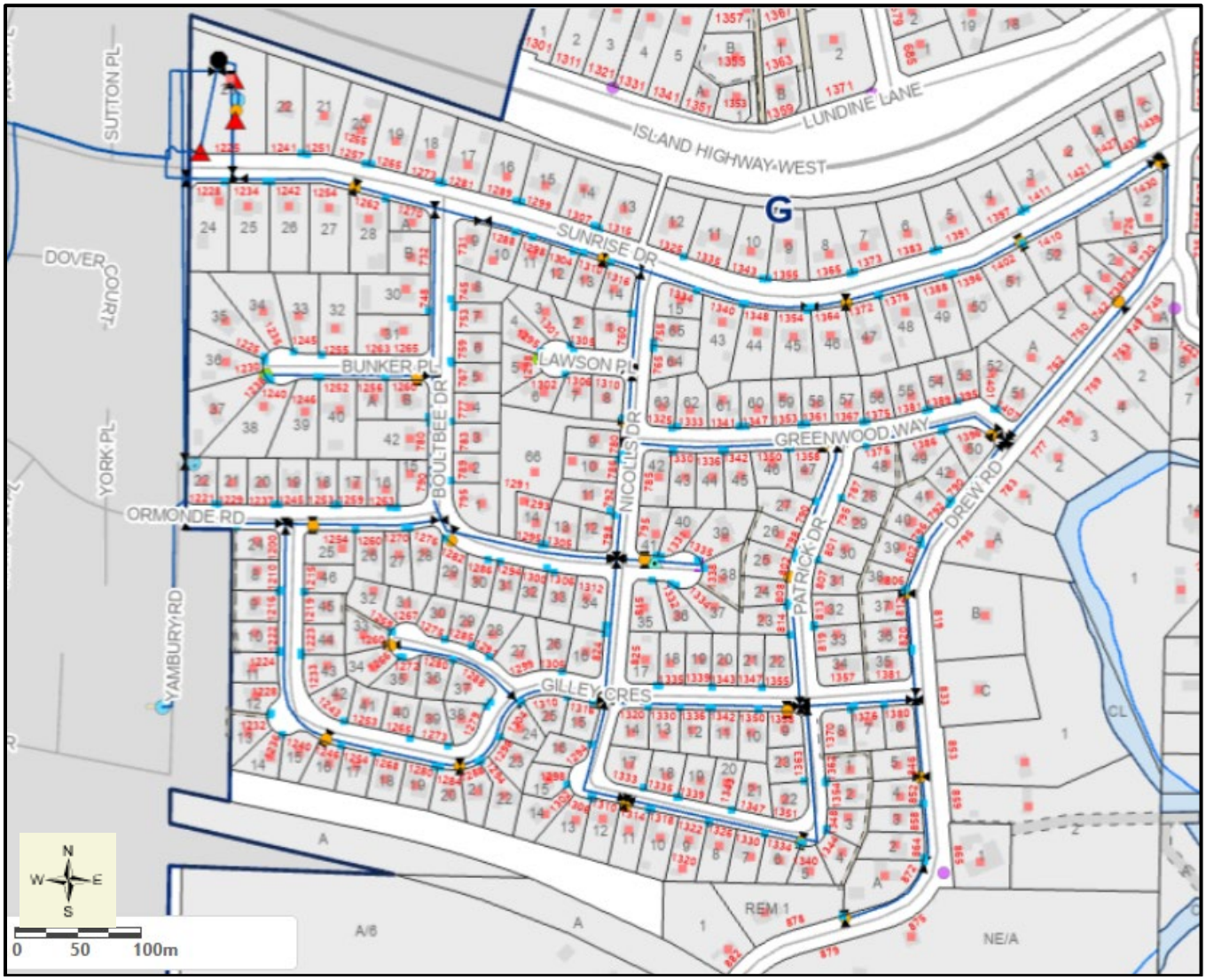
# APPENDIX A

## MAP OF FRENCH CREEK

## WATER SERVICE AREA

**FRENCH CREEK**

**WATER SERVICE AREA**



# APPENDIX B

# WATER QUALITY TESTING RESULTS

# FRENCH CREEK WATER SERVICE AREA

island health

**Facility Location:**
1480 Industrial Way

**Facility Information:** Facility Type: 301-10,000 Connections DWT

**Facility Sampling History:**

| Site Name | Date Collected | Total Coliform | Total E. Coli |
|---|---|---|---|
| 1228 Sunrise in ground sampling port at water meter | 04-Jan-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 10-Jan-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 08-Feb-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 13-Feb-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 07-Mar-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 13-Mar-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 03-Apr-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 12-Apr-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 03-May-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 10-May-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 06-Jun-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 13-Jun-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 04-Jul-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 12-Jul-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 01-Aug-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 08-Aug-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 06-Sep-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 13-Sep-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 03-Oct-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 11-Oct-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 06-Nov-2023 | LT1 | LT1 |

| | | | |
|---|---|---|---|
| 1381 Gilley Crescent Sample Port | 20-Nov-2023 | LT1 | LT1 |
| 1228 Sunrise in ground sampling port at water meter | 05-Dec-2023 | LT1 | LT1 |
| 1381 Gilley Crescent Sample Port | 13-Dec-2023 | LT1 | LT1 |

**Interpreting Sample Reports**

In VIHA, the results of drinking water sampling are reported using the following coding system:

LT1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present
L1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present
OG Overgrown - Meaning: Too many background bacteria to give an accurate count
EST Estimated Count
A Sample not tested; Too long in transit
C Sample leaked/broken in transit D Sample not tested; No collection date given
T Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.
NS No sample received with requisition