Annual Report

Park Headquarters Water System

located in Golden Ears Provincial Park

for the period:

January 1, 2023 to December 31, 2023

This water system is owned by:

The BC Ministry of Environment and Climate Change Strategy

and operated by:

Alouette Park Management Ltd.

Questions or requests for further information about this report should be directed to:

Alouette Park Management Ltd.

PO Box 206

Maple Ridge, BC V2X 7G1

(604) 466-8325

office@alouetteparks.ca

This report was prepared on:

March 20, 2024

This annual report contains a summary of Bacteriological Water Quality Results for the Park Headquarters Water System during the period described above, and any other information required by the Environmental Health Officer.

DRINKING WATER SYSTEM ANNUAL REPORT

Reporting Period:	January 1st to December 31st , 2023 (year)
Water System	Golden Ears Provincial Park - Park Headquarters Drinking Water System
Water System Owner	Ministry of Environment and Climate Change Strategy
Primary Contact Name (Operator or Manager)	Jamie Hall, Alouette Park Management Ltd.
Phone Number (Operator or Manager)	(604) 466-8325
E-mail (Operator or Manager)	office@alouetteparks.ca

DESCRIBE YOUR WATER SUPPLY SYSTEM

What is the Source(s) of Raw Water?

☒ Deep Well ☐ Shallow Well ☐ Surface Water ☐ Other

If other, specify details:

Does the Drinking Water System have Primary Disinfection? ☒ Yes ☐ No

☐ Chlorination ☒ Ultraviolet Light ☐ Ozone ☐ Other

If other, specify details:

Does the Drinking Water System have Secondary Disinfection? ☐ Yes ☒ No

☐ Chlorination ☐ Other

If other, specify details:

Does the Drinking Water System have Filtration? ☒ Yes ☐ No

Check all boxes that apply

☒ Cartridge Filter(s) ☐ Carbon Filter ☐ Sand Filtration ☐ Reverse Osmosis ☐ Other

If other, specify details:

PUBLIC REPORTING

Emergency Response & Contingency Plan (ERCP)

Is your ERCP up to Date? ☒ Yes ☐ No

How do you Inform the System Users of the ERCP?

☐ Hand Delivered ☐ Bulletin Board ☐ Newspaper ☐ Utility Bill Insert ☒ Website

☒ Other (specify details) Referral to website when telephone/email enquiries received at business office

Drinking Water System Annual Report

How do you Inform the System Users of the Annual Report?

☐ Hand Delivered ☐ Bulletin Board ☐ Newspaper ☐ Utility Bill Insert ☒ Website

☒ Other (specify details) Referral to website when telephone/email enquiries received at business office

COMPLIANCE WITH OPERATING PERMIT

List the conditions of your Operating Permit (Contact the DWO for a copy if needed):

Year round

Are you in compliance with your Operating Permit? ☒ Yes ☐ No

BACTERIOLOGICAL TESTING AND DRINKING WATER PROTECTION REGULATION WATER QUALITY STANDARDS

How many bacteriological samples were collected during this reporting period? 26

What is the minimum required sampling frequency for this system? (#samples/month) 1 sample/2 weeks

Additional sampling details:

Was the minimum required sampling frequency achieved? ☒ Yes ☐ No

Comments:

Bacteriological summary attached to this report? ☒ Yes ☐ No

If no, how do the users of the system view the results?

WATER QUALITY STANDARDS FOR POTABLE WATER

Parameter:	***Standard:***	**Did this system meet standard?**	
Escherichia coli (for all samples)	No detectable *Escherichia coli* per 100ml	☒ Yes	☐ No
Total Coliform Bacteria *(if only 1 sample collected in a 30 day period)*	No detectable total coliform bacteria per 100ml	☐ Yes	☐ No
Total Coliform Bacteria *(if more than 1 sample collected in a 30 day period)*	No more than 10% of samples contain total coliform bacteria, **and** No sample has more than 10 total coliform bacteria per 100ml	☒ Yes	☐ No

If the system did not meet any of above Drinking Water Protection Regulation standards, record the results in the table below; attach additional sheets if necessary.

Date	TC/100ml	E.coli/100ml	Reason	Corrective Action

CHEMICAL SAMPLING COMPLETED DURING THIS REPORTING PERIOD

Was any chemical sampling conducted during reporting period? ☐ Yes ☒ No

If no, when were the last chemical samples conducted for this system?	***If yes, did all water samples meet the Guidelines for Canadian Drinking Water Quality?***
(date) 30-Jun-2022 ☐ Don't Know ☐ Never	☒ Yes ☐ No

If any water samples did not meet the Guidelines for Canadian Drinking Water Quality, record the results in the table below; attach additional sheets if necessary.

Parameter	Result	Corrective Action / Treatment / Comments

ADDITIONAL TESTING

Does the system have analyzers for continuous monitoring? ☐ Yes ☒ No

If yes, check all boxes that apply:

☐ Chlorine ☐ Turbidity ☐ Other (details)

Are the results available on request?

If any additional testing or sampling was conducted, record results in the table below; attach additional sheets if necessary.

Additional Testing & Reason for Sampling	Corrective Action Taken

WATER QUALITY COMPLAINTS

Were there any water quality complaints in this reporting period? (e.g. taste, odour, colour etc.) ☐ Yes ☒ No

If yes, complete the table below; attach additional sheets if necessary.

Date	Water Quality Complaint	Corrective Action / Treatment

OPERATIONAL PROBLEMS

Were there any operational problems during this reporting period? (e.g. insufficient water supply, malfunction of disinfection equipment, line breaks, elevated turbidity etc.). ☐ Yes ☒ No

If yes, complete the table below; attach additional sheets if necessary.

Incident Date	Type of Operational Problem	Corrective Action Taken

MAJOR UPGRADES/REPAIRS & EXPENSES

Were there any major upgrades/repairs or any major costs incurred during this reporting period? ☐ Yes ☒ No

If yes, complete the table below; attach additional sheets if necessary.

Major Upgrades/Expenses	Details
Improvements required by DWO	
Additions/changes to system	
Purchase or install new equipment	
Equipment repair or replacement	
Annual maintenance of system	
Specialist report	
Other	

FUTURE IMPROVEMENTS

Are there any plans for future improvements? ☐ Yes ☒ No

If yes, complete the table below; attach additional sheets if necessary.

Future Upgrades or Improvements	Estimated Date of Completion

DATE COMPLETED: 20-Mar-2024	**COMPLETED BY:** Jamie Hall

Sample Range Report

Fraser Health Authority

Facility Name: Golden Ears Provincial Park - Headquarters WS
Date Range: Jan 1 2023 to Dec 31 2023

Operator Jamie Hall
Alouette Park Management
PO Box 206
Maple Ridge, BC V2X 7G1

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
Kitchen Coffee Room, Park Headquarters	1-3-2023 8:00:00 AM	1	LT1	
	1-16-2023 8:30:00 AM	LT1	LT1	
	1-30-2023 8:00:00 AM	LT1	LT1	
	2-13-2023 8:07:00 AM	LT1	LT1	
	3-14-2023 8:35:00 AM	LT1	LT1	
	3-27-2023 8:00:00 AM	LT1	LT1	
	4-3-2023 8:15:00 AM	LT1	LT1	
	4-17-2023 8:15:00 AM	LT1	LT1	
	5-1-2023 8:30:00 AM	LT1	LT1	
	5-15-2023 8:15:00 AM	LT1	LT1	
	5-29-2023 8:15:00 AM	LT1	LT1	
	6-12-2023 8:40:00 AM	LT1	LT1	
	6-26-2023 8:35:00 AM	LT1	LT1	
	7-10-2023 8:25:00 AM	LT1	LT1	
	7-24-2023 8:40:00 AM	LT1	LT1	
	8-8-2023 9:00:00 AM	LT1	LT1	
	8-21-2023 8:35:00 AM	LT1	LT1	
	9-5-2023 8:55:00 AM	LT1	LT1	
	9-18-2023 8:30:00 AM	LT1	LT1	
	10-2-2023 9:10:00 AM	QRWRT	QRWRT	
	10-16-2023 8:30:00 AM	LT1	LT1	

10-30-2023 8:30:00 AM	LT1	LT1	
11-14-2023 8:10:00 AM	LT1	LT1	
11-27-2023 8:10:00 AM	LT1	LT1	
12-13-2023 8:20:00 AM	LT1	LT1	
12-27-2023 8:15:00 AM	REJCT AS PREVIOUSLY COMMUNICATED SAMPLES WILL NOT BE ACCEPTED FROM DEC 22, 2023 TO JAN 1, 2024. PLEASE RESUBMIT JAN 2, 2024.	REJCT AS PREVIOUSLY COMMUNICATED SAMPLES WILL NOT BE ACCEPTED FROM DEC 22, 2023 TO JAN 1, 2024. PLEASE RESUBMIT JAN 2, 2024.	
Total Positive:	**1**	**0**	**0**

Result Values: **E - estimated** **L - less than** **G - greater than**

Samples that contain total coliform:	1	3.85% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of consecutive samples that contain total coliform:	0	
Number of samples that contain total coliform in last 30 days:	0/1	
Total number of samples:	26	

Comments:

Environmental Health Officer
Feb 2 2024

FOR FURTHER INFORMATION PLEASE CALL: Heather Slater (604) 870-7900

fraserhealth

DRINKING WATER INSPECTION REPORT

Health Protection

6529

FACILITY NAME:	INSPECTION DATE (yyyy/mmm/dd):	TIME SPENT:
Golden Ears Prov. Park Head Quarters WS	2023/Apr/28	4.0
FACILITY ADDRESS: 24480 Fern Cres. Maple Ridge	NEXT INSPECTION DATE (yyyy/mmm/dd): 2024/Apr./15	

☑ NEW PERSON IN CHARGE: Jamie Hall — ☐ New Tel: ☐ New Fax:

☐ NEW EMERGENCY CONTACT: Alex Westby — ☐ New Tel: ☐ New Fax:

FACILITY TYPE:

- ☐ WS1 (300+ connections)
- ☐ WS2 (15 – 300 connections)
- ☑ WS3 (2 – 14 connections)
- ☐ WS4 (1 public connection)
- ☐ WS9 (other)

INSPECTION TYPE:

- ☐ Initial
- ☑ Routine
- ☐ Follow Up
- ☐ Consultation
- ☐ Sampling
- ☐ Investigation
- ☐ Follow Up to Lab Report
- ☐ Water Quality Complaint
- ☐ Water Borne Illness Complaint

ACTION TAKEN:

ADMINISTRATIVE

- ☑ Information Provided
- ☐ No Action Required
- ☐ Permit Issued
- ☐ Rescind Public Notification _____

ENFORCEMENT

- ☐ Require Corrections
- ☐ Ticket Issued
- ☐ Written Order
- ☐ Order Public Notification _____

OTHER INFORMATION:

(complete for Routine Inspection)

	COMPLY Yes	No	N/A
EOCP (operator certification)	☑	☐	☐
Acceptable SWS Training	☑	☐	
ERCP (emergency plan)	☑	☐	
Annual Report Provided to Users	☑	☐	

HAZARD RATING FOR YOUR FACILITY: ☐ High ☐ Moderate ☑ Low

Follow Up to "Critical" Violations Noted on Previous Inspections (if applicable)

Code	Corrected?	Code	Corrected?
	☐ Yes ☐ No		☐ Yes ☐ No
	☐ Yes ☐ No		☐ Yes ☐ No
	☐ Yes ☐ No		☐ Yes ☐ No

Code	Explanation of Violations, Recommendations or Comments	(✓) Corrected During Insp.	Date To Be Corrected By
	2022 chemical + physical parameters report in compliance		
	Bacteriological water quality + sampling frequency in compliance		
	UV + Filter treatment train well maintained.		

RECEIVED BY (Signature): _____ EHO (Signature): _____

PRINTED NAME: Mark James Hall EHO PRINTED NAME: Heather Slater

Print Shop #254978 Revised: 20 September 2011

WHITE: Owner / Operator YELLOW: Data Entry

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
F: +1 (604) 514-3323
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: Alouette Park Management Ltd
PO Box 206
Maple Ridge, BC, Canada
V3S 8P8
Attn: Stu Burgess
Sampled By: Stu Burgess
Company: Alouette Park Management

Project ID: APM2022
Project Name: Chem
Project Location: GE & RL Prov Parks
LSD:
P.O.: 1581979
Proj. Acct. code:

Lot ID: **1581979**
Control Number:
Date Received: Jun 30, 2022
Date Reported: Jul 6, 2022
Report Number: 2763227

Reference Number	1581979-1
Sample Date	June 30, 2022
Sample Time	07:30
Sample Location	
Sample Description	GE-HQ / GE Headquaters / 19.5 °C
Sample Matrix	Drinking Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Metals Extractable						
Aluminum	Extractable	mg/L	0.027	0.001	0.1 OG; 2.9 MAC	Below OG
Antimony	Extractable	mg/L	<0.00002	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0027	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0004	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.033	0.002	5	Below MAC
Cadmium	Extractable	mg/L	<0.00001	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	<0.00005	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	<0.0005	0.0005	1 AO; 2 MAC	Below AO
Lead	Extractable	mg/L	0.00013	0.00001	0.005	Below MAC
Selenium	Extractable	mg/L	<0.0002	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.0050	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	<0.00001	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	<0.00005	0.00005		
Zinc	Extractable	mg/L	0.22	0.0005	5.0	Below AO
Physical and Aggregate Properties						
Colour	True	Colour units	9	5		
Turbidity		NTU	1.49	0.1	0.1/0.3/1.0 OG	
Routine Water						
pH - Holding Time			Exceeded			
pH	at 25 °C		7.66	0.01	7.0-10.5	Within Range
Electrical Conductivity		µS/cm at 25 °C	140	1		
Calcium	Extractable	mg/L	1.3	0.01		
Iron	Extractable	mg/L	0.51	0.004	0.3	Above AO
Magnesium	Extractable	mg/L	0.29	0.02		
Manganese	Extractable	mg/L	0.014	0.001	0.02 AO; 0.12 MAC	Below AO
Potassium	Extractable	mg/L	0.24	0.04		
Silicon	Extractable	mg/L	10	0.005		
Sodium	Extractable	mg/L	27	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	64	5		
Chloride	Dissolved	mg/L	1.28	0.05	250	Below AO
Fluoride	Dissolved	mg/L	0.08	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	<0.01	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC
Sulfate (SO4)	Dissolved	mg/L	6.1	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	4.5	1		
Total Dissolved Solids	Extractable	mg/L	103	1	500	Below AO

BRITISH COLUMBIA

Report 1 - Detailed Well Record

Well Tag Number: 86717

Owner: BC PARKS LOWER MAINLAND REGION

Address: GOLDEN EARS PROVINCIAL PARK - HEADQUARTERS/SERVICE YARD

Area: NORTH FRASER

WELL LOCATION:

NEW WESTMINSTER Land District

District Lot: Plan: Lot:

Township: Section: Range:

Indian Reserve: Meridian: Block:

Quarter:

Island:

BCGS Number (NAD 27): 092G028342 Well: 3

Class of Well: Water supply

Subclass of Well: Domestic

Orientation of Well: Vertical

Status of Well: New

Well Use: Water Supply System

Observation Well Number:

Observation Well Status:

Construction Method:

Diameter: 6 inches

Casing drive shoe:

Well Depth: 405 feet

Elevation: feet (ASL)

Final Casing Stick Up: inches

Well Cap Type:

Bedrock Depth: feet

Lithology Info Flag: N

File Info Flag: N

Sieve Info Flag: N

Screen Info Flag: N

Site Info Details:

Other Info Flag:

Other Info Details:

Construction Date: 1985-04-25 00:00:00.0

Driller: A. & M. Drilling Ltd.

Well Identification Plate Number: 18762

Plate Attached By: STEVE HEGGIE & BRAIN ROBERTS

Where Plate Attached: WELL CAP

PRODUCTION DATA AT TIME OF DRILLING:

Well Yield: (Driller's Estimate)

Development Method:

Pump Test Info Flag: N

Artesian Flow:

Artesian Pressure (ft):

Static Level: 210 feet

WATER QUALITY:

Character:

Colour:

Odour:

Well Disinfected: N

EMS ID:

Water Chemistry Info Flag: N

Field Chemistry Info Flag:

Site Info (SEAM): N

Water Utility: N

Water Supply System Name: GOLDEN EARS HEADQUARTERS SERVICE YARD

Water Supply System Well Name: GOLDEN EARS HEADQUARTERS SERVICE YARD

SURFACE SEAL:

Flag: N

Material:

Method:

Depth (ft):

Thickness (in):

WELL CLOSURE INFORMATION:

Reason for Closure:

Method of Closure:

Closure Sealant Material:

Closure Backfill Material:

Details of Closure:

Screen from	to feet	Type	Slot Size	
Casing from	to feet	Diameter	Material	Drive Shoe

GENERAL REMARKS:

LITHOLOGY INFORMATION:

Alouette Park Management Ltd.
Emergency Response & Contingency Plan
Golden Ears Provincial Park Water Systems

Water System Name: Golden Ears Provincial Park - Park Headquarters
Date Completed/Revised: January 15, 2024

EMERGENCY PROCEDURES

Bacterial Contamination of Water Supply – E. Coli

In the event of bacterial contamination of the water system by E. Coli bacteria, the following steps shall be taken:

1. Contact Fraser Health (FH) Environmental Health Officer for consultation.
2. Issue FH Approved Boil Water Notice by posting signs at all water taps, both at standpipes and in washrooms and kitchen.
3. Investigate any recent changes to the water system, including assessing the condition of wellhead, pressure tanks, UV system, water quality (colour, turbidity), and water pressure.
4. Contact appropriate services for maintenance/repair of the water system. Take any corrective action required. Record actions taken in water system log book.
5. Resample water supply upon consultation with Environmental Health Officer.
6. Further action may be required pending resampling results.
7. Boil Water Advisory is to continue until 2 sample results taken not less than 24 hours apart are negative for both E. Coli and total coliform. Environmental Health Officer must provide verbal or written approval prior to rescinding Boil Water Advisory, and written approval must be obtained later if verbal approval is given first.

Note: If Park Operator (PO) is not able to contact staff from Fraser Health, PO must issue "Boil Water Notice" immediately.

Bacterial Contamination of Water Supply – Total Coliform

In the event of bacterial contamination of the water supply by coliform:

1. Contact Fraser Health Environmental Health Officer for consultation
    a. If positive sample is one of consecutive positive samples, or if high number of totals detected in sample, then a Boil Water Notice may be required to be issued.
    b. If sample is single isolated positive result then disinfection of water system may be required followed by resampling after chlorine from disinfection has been flushed out of system.
2. If required, issue FH Approved Boil Water Notice by posting signs at all water taps, both at standpie and in washrooms and kitchen.
3. Investigate any recent changes to the water system, including assessing the condition of wellhead, pressure tanks, UV system, water quality (colour, turbidity), and water pressure.
4. Contact appropriate services for maintenance/repair of the water system. Take any corrective action required. Record actions taken in water system log book.
5. Resample water supply upon consultation with Environmental Health Officer.
6. Further action may be required pending resampling results.
7. Boil Water Advisory is to continue until 2 sample results taken not less than 24 hours apart are negative for both E. Coli and total coliform. Environmental Health Officer must provide verbal or written approval prior to rescinding Boil Water Advisory, and written approval must be obtained later if verbal approval is given first.

Chemical or Unknown Contaminant Entering the Water Supply

In the event of an occurrence that could potentially contaminate a water system accidentally, or a chemical or unknow contaminant has entered the water supply, the PO in direct responsibility charge shall immediately take the following steps:

1. Contact Fraser Health Environmental Health Officer for consultation. Extensive testing of the water quality may be required.
2. Issue a "Flush Only" notice to all users of the water system.
3. Water may only be used for flushing toilets and may not be used for human consumption, food preparation or sanitation purposes until the contaminant is removed from the water system.
4. Investigate any possible sources of contaminant.
5. Take any corrective action required from the investigation. Record actions taken in water system log book.
6. Resample water supply upon consultation with Fraser Health Environmental Health Officer.
7. If contamination is still detected, then continue to investigate the source of the contamination and take corrective action as required.
8. If contaminant is no longer detected, consult with Fraser Health Environmental Health Officer to determine when the "Flush Only" notice can be rescinded.
9. **Note: If PO not able to contact staff from Fraser Health PO must issue a notice to users of the water system immediately.**
10. Report the occurrence to BC Parks. Refer to Park Emergency Call-Out List.
11. Document all relevant facts and circumstances on the BC Parks Complaint Occurrence Form.

Loss of Water Source (Pump failure or power failure)

1. Turn off pump and UV system in the pump house.
2. Shut down all outside water sources (standpipes).
3. Shut down all inside water sources (sinks, showers).
4. Turn off tap at standpipes, and put up appropriate signage ("Do Not Use") on standpipes. Indicate alternative water source (Gold Creek/Alouette Campgrounds or South Beach day-use area) on signs.
5. Notify all Park staff.
6. Notify all users of the problem.
7. Notify the Fraser Health Environmental Health Officer, Alouette Park Management Ltd. senior management, and B.C. Parks Area Supervisor.
8. Contact outside agencies for advice and assistance if necessary.
9. Arrange alternate source. (Bottled water or bulk water)
10. Once problem is solved, restart water system following instructions from Fraser Health, take water samples and send in for testing.
11. Take down signs once given approval by Environmental Health Officer.
12. Document all events on BC Parks Complaint/Occurrence Report. Provide copies to BC Parks and Fraser Health Authority.

Broken Water Main

1. Reduce pressure (but maintain enough pressure to prevent backflow of water).
2. Call appropriate contact for repairs. Record actions taken in water system log book.
3. Notify users of interruption of service (i.ie. duration of interruption, corrective actions being taken) by posting notices at standpipes, kitchen and washrooms.
4. Notify Fraser Health Environmental Health Officer.

Criminal Tampering

In the event of suspected criminal tampering with a water system, the PO in direct responsibility charge shall immediately take the following steps:

1. Turn off the water system, and do not turn it back on without consultation with the Fraser Health Environmental Health Officer. Follow all procedures required by FH.
2. Report the occurrence to the Royal Canadian Mounted Police. Phone 911
3. Report the occurrence to BC Parks. Refer to Park Emergency Call-Out List.
4. Document all relevant facts, evidence and circumstances on the BC Parks Complaint Occurrence Form. Record actions taken in water system log book.

Other Threats to the Drinking Water Supply

1. If PO staff become aware of any situation or emergency which may cause a threat to the water supply, immediately notify Fraser Health Environmental Health Officer.
2. Notify all users of the threat to the water supply.
3. Record actions taken in water system log book.

Water System Turn Off Procedures

1. Turn off pump and UV system in the pump house.
2. Shut down all outside water sources (standpipes).
3. Shut down all inside water sources (sinks, showers). Put up appropriate signage (“Do Not Use”) on standpipes, sinks and showers.
4. Notify all Park staff.
5. Notify all other users of the problem.
6. Put up proper signage indicating alternative water source (Gold Creek/Alouette Campgrounds or South Beach day-use area).
7. Notify the Fraser Health Authority (Kevin Freer), Alouette Park Management Ltd. senior management (Jamie Hall, Alex Westby, or Lance Leger), and B.C. Parks (Area Supervisor).
8. Contact outside agencies for advice and assistance if necessary.
9. Arrange alternate source. (Bottled water or bulk water)
10. Once problem is solved, refill water system if drained; take water samples and send in for testing.
11. Take down signs once given approval from Fraser Health Authority.
12. Document all events on BC Parks Complaint/Occurrence Report. Provide copies to BC Parks and Fraser Health Authority.

EMERGENCY CONTACTS

Emergency Contacts	Name/Company	Phone	Email or Fax
Facility Contacts			
Park Operator	Alouette Park Management Ltd.	604-466-8325	info@alouetteparks.ca
Primary Contact System Operator	Jamie Hall General Manager		james@alouetteparks.ca
Secondary Contact	Brandon Schofield Operations Manager		brandon@alouetteparks.ca
Company Owner	Lance Leger		lance@alouetteparks.ca

Water System Operator			
Alouette Park Management	James Hall (General Manager)		james@alouetteparks.ca

Fraser Health Authority			
Environmental Health Officer	Heather Slater	1-604-870-7900 loc 647902	Fax 1-604-852-1558
Fraser Health After Hours (after 4:30 pm or on weekends/stat. holidays)	Fraser Health On-Call Staff	604-527-4806	

Emergency Contacts			
Alternative Water Supplies	Allied Water Services	604-467-8628	
Plumbing Services	A&H Pumps	1-877-794-5544	Fax (604) 302-1301
Equipment Supplier (Pumps)	A&H Pumps	1-877-794-5544	Fax (604) 302-1301
	Bob's A to Z Rentals	604-463-8894	
UV Treatment System	EDS Pumps	604-534-1115	Fax 604-534-5522
B.C. Hydro		1-888-769-3766 1-888-POWERON	
Hospital	Ridge-Meadows	604-463-4111	
Police	Ridge-Meadows Detachment	9 1 1 Non emerg 604-463-6251	
BC Parks	Rebecca Fardy (Recreation Service Officer)	(604) 824-2314 (office) (604) 997-4453 (cell)	rebecca.fardy@gov.bc.ca
	24 Hour Emergency	1-888-549-8820	
Provincial Emergency Program		1-800-663-3456	

BOIL WATER NOTICE

Warning: Boil or Otherwise Treat Your Water Before Using

Date Issued: _____

The Park Headquarters water system supplying this area has been contaminated with potentially harmful bacteria. E. Coli bacteria were found in the water supply on _____.

WHAT SHOULD I DO?

- **DO NOT DRINK** the water without **BOILING FIRST** or otherwise treating the water.
- Boil water for 1 minute (rolling boil). Prefereably use a kettle so as to reduce the risk of burns. Let it COOL before using.
- You can choose to use Bottled Water
- You can obtain drinking water from any of the water taps in Gold Creek Campground, 4km north along the main park road.
- Boiled or bottled water should be used for *DRINKING*, *COOKING*, *BRUSHING TEETH*, *WASHING READY-TO-EAT FOODS AND WASHING DISHES*.
- Store treated water in sanitary containers and keep refrigerated.

OTHER METHODS OF TREATING YOUR WATER

- CHLORINE: Household bleach (5%): Add 2 drops per liter and let stand for 30 minutes
    - If water is cloudy or cold add 4 drops per liter.
- IODINE/CHLORINE TABLETS: see manufacturers' directions
- Note: Brita Water Filters will NOT provide treatment for microbes.

WHAT HAPPENED? WHAT IS BEING DONE?

Bacteria have entered the water system from an unknown source. We are working with the Fraser Health Authority to investigate/resolve this issue. We have disinfected and flushed the water system with chlorinated water, and will be monitoring continuing test results over the next few weeks.

We will inform you when the problem has been corrected and tests show no bacteria and you no longer need to boil your water. We apologize for the inconvenience.

This notice is posted by the Park Operator:

Alouette Park Management Ltd.
(604) 466-8325
info@alouetteparks.ca

DO NOT DRINK THE WATER (FLUSH ONLY)

Date Issued:_____:

An Unknown Contaminant may have been into the Park Headquarters water supply.

What should I do?

- **Do not use the water for** *DRINKING, COOKING, BRUSHING TEETH, WASHING READY TO EAT FOODS & WASHING DISHES OR BATHING.*
- Water can only be used for **FLUSHING TOILETS** at this time.

What happened? What is being done?

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How long will this Flush Only last?

We are working with the Fraser Health Authority to investigate/resolve this issue. We are currently:

_____

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We will inform you when the problem has been corrected and that the flush only notice is no longer in effect.

This notice is posted by Alouette Park Management Ltd., the Park Operator for Golden Ears Provincial Park.

HealthLinkBC

Number 49c
September 2016

Arsenic in Drinking Water

Arsenic is found naturally in the rocks in the earth's crust. It can be found in some drinking water supplies, and wells. Drinking water containing arsenic can have serious short-term and long-term health effects.

How does arsenic get into drinking water?

Arsenic can get into drinking water from natural deposits or runoff from agriculture, mining and industrial processes.

In B.C., natural minerals are the most common sources of arsenic in drinking water.

The amount of arsenic in ground water supplies like wells is usually higher than in surface water supplies such as lakes, streams and rivers.

What are the health effects of arsenic exposure?

Short to medium term (days to weeks) exposure to very high levels of arsenic in drinking water can lead to arsenic poisoning.

Symptoms of exposure to high levels of arsenic include stomach pain, vomiting, diarrhea, and impaired nerve function, which may result in 'pins and needles' sensation or numbness and burning in hands and feet.

Arsenic can also cause skin changes, which include darkening, and wart-like or corn-like growths. These are mostly found on the palms of the hands or bottoms of the feet. Other symptoms can include skin flushing and rashes.

As children tend to drink more water per unit of body weight than adults, they may have more exposure to arsenic in drinking water. As a result children may be at greater risk of illness when higher levels of arsenic are present.

Long-term (years to decades) exposure to even relatively low amounts of arsenic in drinking water can increase your risk of developing certain cancers, including:

- skin,
- lung,
- kidney,
- bladder, and
- liver.

The risk of cancer is the reason for developing the Canadian guideline for arsenic in drinking water. For more information on The Guidelines for Canadian Drinking Water Quality see, www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-drinking-water-quality-guideline-technical-document-arsenic.html.

What amount of arsenic causes health effects?

Health Canada set a Maximum Acceptable Concentration (MAC) of 10 micrograms per litre for arsenic in drinking water. This can also be reported as 10 µg/L, or as 0.010 milligrams per litre (mg/L).

This level was set based on the ability to treat water practicably to this level. This amount is still linked with a health risk higher than the level considered to be a very minor risk. For this reason people should consider taking precautions with their drinking water even if the arsenic levels are slightly below the guideline. Data collected in Canada indicates that the levels of arsenic in drinking water is usually less than 0.005 mg\L, but concentrations may be higher in some areas.

How do I know if there is arsenic in my drinking water?

Public drinking water systems are monitored regularly. In drinking water, arsenic has no odor or taste and can only be detected by a chemical test.

Most private wells are not tested routinely for water quality or contaminants. It is the well owner's responsibility to test the water for arsenic. Any well may contain arsenic or other contaminants. Private wells should be tested regularly for water quality.

Contact your local public health unit or environmental health officer for information on the testing process in British Columbia.

For more information about private well water testing, see HealthLinkBC File #05b Should I Get My Well Water Tested?

What can I do if there is arsenic in my drinking water?

Water with arsenic is only a concern if it is being used for drinking or preparing food.

Exposure through breathing and skin contact is not harmful. For example, there are no known health effects from hand washing, bathing or washing clothing in water with arsenic.

If an initial test detects arsenic, even at levels below the guideline, it is important to have a second test done to confirm the results. If your water tests positive for arsenic above the recommended level, you should use another source for drinking water or treat the current source.

There are several treatment devices and options including reverse osmosis filters and distillation. Chlorination and mechanical filters do not remove arsenic from water. Boiling water may increase the concentration of arsenic.

There is no regulatory control over treatment devices for private homes, therefore the well owner must be careful and select an appropriate treatment device that has been certified for the removal of arsenic.

When purchasing a treatment device, you should consider one that has been certified by an organization accredited by the Standards Council of Canada (SCC). The treatment device should meet the following standards:

- NSF/ANSI Standard 62 on drinking water distillation and adsorption systems; or
- Standard 58 on reverse osmosis drinking water treatment systems; or
- Standards 53 on drinking water treatment units – with specific designation for the water quality parameters you are trying to remove (arsenic).

Certification assures that a device works as the manufacturer or distributor claims. Find an up-to-date list of accredited organizations by visiting Standards Council of Canada at www.scc.ca/en/accreditation/product-process-and-service-certification/directory-of-accredited-clients.

For more information on drinking water and treatment options, contact your local environmental health officer.

For More Information

For more information about arsenic and drinking water, visit:

- B.C. Ministry of Environment - Arsenic in Groundwater www2.gov.bc.ca/assets/gov/environment/air-land-water/water/water-wells/as020715_fin3.pdf
- Health Canada – Arsenic in Drinking Water www.canada.ca/en/health-canada/services/healthy-living/your-health/environment/arsenic-drinking-water.html

Number 56
January 2017

Preventing Water-Borne Infections For People with Weakened Immune Systems

Who is at higher risk from water-borne infections?

People with very weak immune systems who are at higher risk of certain water-borne diseases include those with:

- HIV infection who have a CD4+ count of less than 100 cells/mm^3;
- lymphoma or leukemia (hematological malignancies) who are being actively treated or have been in remission and off treatment for less than 1 year;
- hematopoietic stem cell transplant recipients; and
- people born with diseases that severely affect their immune systems.

Some people with weakened immune systems, such as those with certain types of cancers or taking certain medications, may not be at higher risk of severe water-borne diseases. These people do not need to take extra precautions with their drinking water.

Ask your doctor or nurse practioner how weak your immune system is, and whether you need to take extra precautions.

How can drinking water become contaminated?

Drinking water can contain different organisms, including bacteria, viruses and parasites, which can cause disease. These organisms can exist in the source water, such as lake water, and survive through treatment, or they can enter the water supply in the distribution system.

Well water can be contaminated if the well is located or constructed in a way that the groundwater it draws from is at risk of containing pathogens (germs) such as a shallow well or a well drilled in fractured rock.

Surface water, such as rivers, lakes and streams, can also contain disease-causing organisms from animal feces.

If you have a weak immune system, you should not drink water from surface sources or groundwater at risk of containing pathogens, unless the water has been treated to remove or inactivate at least 99.9 per cent of parasites (protozoa), 99.99 per cent of viruses and all harmful bacteria.

Most community water systems in B.C. have effective treatment, such as disinfection or chlorination, against bacteria and viruses. However, in many cases, treatment may not provide a 99.9 per cent reduction in infectious parasites. Some water systems and many private supplies have no treatment at all. If the water you drink has not been disinfected, please refer to HealthLinkBC File #49b Disinfecting Drinking Water.

How can I further treat disinfected water?

People with very weak immune systems should consult with their doctor or nurse practitioner and may need to take extra precautions with their drinking water.

Boiling: If your water supply has already been disinfected, bring the water to a full boil to inactivate any *Cryptosporidium* parasites - a major concern for people with weakened

immune systems. For more information, see HealthLinkBC File #48 *Cryptosporidium* Infection.

If the water has not already been disinfected, bring the water to a full boil for at least 1 minute. This will kill or inactivate bacteria, viruses and parasites. At elevations over 2,000 meters (6,500 feet), boil water for at least 2 minutes to disinfect it.

Do not drink or use tap water to brush your teeth, rinse your mouth, mix drinks or make ice cubes without boiling it first.

Please note that boiling water will get rid of viruses, bacteria and parasites but not chemicals which may be found in the water.

Reverse Osmosis (RO): RO is effective against all disease-causing organisms and many chemical contaminants. Unless it has a high capacity, it will only produce small amounts of water and waste a large volume. Speak to a water treatment specialist to see if this is the best option for you.

Ultraviolet (UV) Treatment: UV light will kill many disease-causing organisms, and is effective against almost all parasites. UV will not kill some bacterial spores and some viruses, so it should not be used unless the water supply is at least disinfected. UV treatment units should meet NSF Standard #55A.

Filters: Filters do not remove bacteria and viruses and should not be used unless the water supply is disinfected first.

If you plan to install a drinking water filter in your home, you will need a system labeled as Absolute 1 micron or smaller, and labeled as meeting ANSI/NSF International Standard #53 for removal of parasites.

Jug-type filters, such as a Brita®, which sit in a jug and allow water to trickle through, and some tap-mounted and built-in devices are not an appropriate solution. The jug filter models are not effective in removing many disease-causing organisms.

Can I drink bottled water?

Bottled water in B.C. may or may not have been treated. If you have a very weak immune system, check with the bottling company to find out what treatment, if any, it has had. Bottled water that has been properly treated using one of the methods listed above can be used for drinking, brushing teeth, making ice cubes and for recipes where water is used but not boiled, such as cold soups.

For More Information

For more information, including the level of treatment in your local water system, contact your drinking water purveyor or supplier, or the local environmental health officer or drinking water officer. To find your health authority's drinking water contact visit www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/drinking-water-quality/health-authority-contacts.

For more information about water-borne infections and how to safely disinfect your drinking water, see the following HealthLinkBC Files:

- HealthLinkBC File #49a Water-borne Infections in British Columbia
- HealthLinkBC File #49b Disinfecting Drinking Water
- HealthLinkBC File #69b Feeding Your Baby Formula: Safely Making and Storing Formula

Metals in Drinking Water – a message from Fraser Health

Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until you notice a change in temperature. (This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer.) The more time water has been sitting in your home's pipes, the more lead it may contain.

Use only water from the cold-tap for drinking, cooking, and especially making baby formula. Hot water is likely to contain higher levels of lead.

The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

Conserving water is still important. Rather than just running the water down the drain you could use the water for things such as watering your plants.