

ALBERNI CLAYOQUOT REGIONAL DISTRICT



MILLSTREAM WATER SYSTEM

WATER EMERGENCY PREPAREDNESS PLAN

Updated by:

ACRD

Community Services Department

January 2023

x *Eddie Kunderman*

Eddie Kunderman, Operations Manager



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1.0 INTRODUCTION



Mission Statement

The core objectives of the Millstream Water System during emergency situations are to:

1. Protect human health.
2. Control and prevent the loss of water.
3. Provide an adequate supply of potable water
4. Prevent damage to property
5. Restore the system to full operation



The Plan

What is the Water System Emergency Response Plan (ERP)?

The Alberni-Clayoquot Regional District is responsible for providing adequate supplies of clean potable water to its citizens, even in the event of an emergency or disaster. Disruptions in water quality and delivery may result from emergencies such as natural disasters, accidents, or intentional acts. The goal of the Alberni-Clayoquot Regional District is to minimize all adverse impacts resulting from disruptions in the water system. This is achieved through sound emergency planning and thorough communication coordination.

This plan has been prepared to guide the Alberni-Clayoquot Regional District to respond to an emergency in the Millstream Water System (MWS). The purpose of the ERP is to:

- Provide the earliest response to an emergency condition.
- Ensure that water quality and public health are not compromised.
- Ensure that water for firefighting is available.
- Restore normal water system operation.
- Protect the natural environment from impacts associated with the system operation in the event of an emergency

How to Use This Plan

The Water System Emergency Response Plan is to act as a guide in the event of a water system emergency. Within the section labeled “Actions” many potential water system emergencies are anticipated and listed. Each potential emergency contains a guide for the persons involved to reference in an attempt to avert further damage.

Another component of the ERP is the post emergency response. We ask that an internal document referred to as the post incident report (Appendix B) be filled out after each water system emergency.

In addition, tabletop exercises and regular updates should be conducted to enhance our emergency response capacity. We ask all plan holders to attend meetings and to participate and make recommendations so that the Water System Emergency Response Plan will become more effective. It is important to note that an emergency response plan is of little or no value if individuals do not review it, know how to use it, or participate in its creation and evolution.



Determination of Emergency

Possible water system events:	Emergency	Action Plan:
Extended Loss of BC Hydro at:		
Pump Station	No	Ucluelet Water Main Procedure
Water main failure in system (>10 homes)	Yes	Transmission Main Failure
Extended Loss of Reservoir	No	Ucluelet Water Main Procedure
Chlorine Disinfection Failure:		
Pump House	No	Ucluelet Water Main Procedure
Contamination of Water System	Yes	Contamination of Water
Control System Failure to fill Reservoir	No	Go to Operational Procedures
Loss of Pump Station	No	Go to Operational Procedures
Extended Loss of water (all sources)	Yes	No Water Available

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2.0 COMMUNICATIONS



Communication and Identification of Emergency

The Operations Manager (OM) or General Manager (GM) will provide communication and coordination support for the emergency. This involves ensuring safety for those involved, providing information to external and internal stakeholders and maintaining liaison with other agencies with the incident.

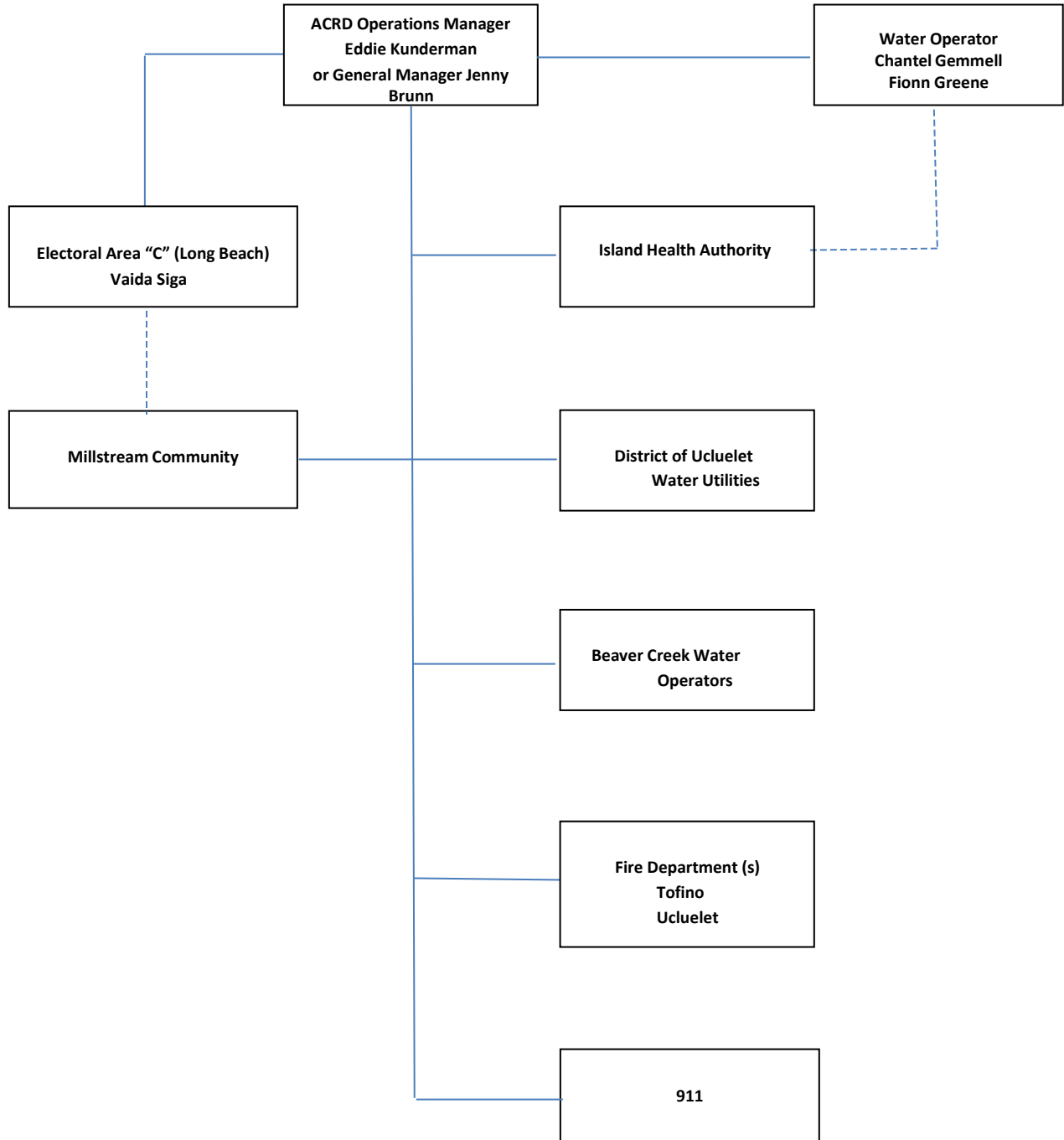
Once an emergency has been identified in Millstream an emergency meeting via telephone with the OM should occur. If no answer call the GM and if still no answer call Stericycle (formerly Tigertel) to inform them there is a Millstream Water System Emergency and to call an ACRD Manager from the list.

An emergency meeting will determine the severity of an emergency, extent of affected areas, need for external resources, response strategy and action plan, communications/media relations strategy, communication updates and further emergency meetings.

Information to be provided to the assigned communication person include:

- What the emergency is.
- When it began.
- Where it is.
- Who is affected by the emergency.
- What is being done to correct the situation.
- How long is it expected to last, if known.
- Where to direct calls that require more information.
- When the next update will be received.

Communication Flow Chart





3.0 WATER ADVISORIES



Issuing a Water Notice

It is the responsibility of the Alberni-Clayoquot Regional District to contact the Drinking Water Officer (DWO), whenever there is a possibility that public health may be at risk due to compromised water system conditions.

Situations where public health may be at risk include but are not limited to:

- Contamination of water source compromising potability (biological, physical or chemical);
- Failure of treatment or disinfection systems;
- Vandalism/terrorism;
- Prolonged loss of water source/supply;
- Possibility of bacteria or organisms are present in the water system;
- Disinfecting equipment (chlorine) failure resulting in the lack of disinfection in the water;
- Possibility of a backflow event or contaminants entering the system (soil or other contaminants);
- Any other situation that may pose a risk to the users from contamination of the system or on the requirement of the DWO.

Protocol

Once a possible risk to public health has been perceived to be present, identify the extent of the affected area with the Operations Manager and collect all pertinent information.

The Operations Manager or Water Operator(s) will contact the DWO and inform them of the situation.

The DWO will assess the situation and determine whether a Water Notice is required. The Alberni-Clayoquot Regional District will issue the notice and communicate a public advisory. The Operations Manager will further communicate with organizations or persons depending on the emergency.

Signs on public notice boards may need to be posted informing users of the risk.

Once the water system has returned to normal operations, water quality testing must be performed to the satisfaction of the DWO before any Water Notice is to be removed.

If the Water Notice is related to a loss of disinfection prior to rescinding a boil water advisory, two consecutive representative samples or sample sets taken a minimum of 24 hours apart show no E.coli or total coliform bacteria.

The water supplier and DWO will be working together during a boil water advisory and the DWO will advise the water supplier of the requirement that need to be met to lift an advisory.

Complete post incident report.



4.0 EMERGENCY RESPONSE PLAN ACTIONS



Extended Loss of BC Hydro Power Supply

Description of Emergency:

The loss of power will stop the pumping systems to supply water to the distribution system and from filling the reservoir.

There is no back up power generator to supply electricity to the pump house. The reservoir does not need electricity.

Action Items:

- Call ACRD Operations Manager and describe emergency.
- Take action to reduce water use “Mandatory Conservation Notice”
- Implement Emergency Backup from “Ucluelet Water Main Procedure”
- If Ucluelet is unable to supply go to “No Water Available”

Once power is re-established, ensure all equipment and any valves are placed into service



No Water Available

Description of Emergency:

The failure of the system means that there is NO water available to the community. The Millstream Water System's primary source of water comes from the two wells within the community. The MWS has an emergency treated backup source from the District of Ucluelet directly connected to the water main.

The failure of these two sources to supply the MWS could be caused by many different factors including earthquake, tsunami, and a loss of hydro to the west coast or anything causing the complete breakdown of the two water systems to provide any water. This type of an event will require the coordination with many different agencies to effectively deal with the situation.

The last resort would be to supplying the community with bottled water.

Action Items:

- Call ACRD Operations Manager and describe the emergency.
- Attempt to identify, assess and correct the problem with the MWS
- Attempt to access the Ucluelet water system with the OM's permission
- Call Fire Department to inform them of no water

Arrange Alternate Water Supply

- The Operations Manager or Water Operator(s) will contact the Drinking Water Officer and inform them of the situation
- Initiate a Do Not Use Water Notice
- Arrange to transport water bottles from Port Alberni, if possible
- Conduct a thorough inspection of all MW System facilities for damage and record findings
- Once water supply is re-established issue a water advisory as directed by Island Health (IH). Please refer to page9: "Issuing a Water Notice" and Appendix C: "Mandatory Conservation Notice"
- Prepare a plan to transition back to MW water source and identify a schedule to resumption of normal service



Contamination of the Water Supply

Description of Emergency:

The Millstream watershed is susceptible to contamination by many sources and factors. These include the introduction of hydrocarbons (fuel spill) or other chemicals related to the Tofino-Ucluelet Highway or works yards above the community. Slope or bank failure above the wells would create increased turbidity levels or bacteria contamination. Other possible contamination could come from households above the aquifer including runoff of chemicals or septic.

Action Items:

- Call ACRD Operations Manager and describe the emergency
- The Operations Manager or Water Operator(s) will contact the DWO and inform them of the situation
- Stop the entry of contaminated raw water into the system until an assessment of risk can be made
- Advise the ACRD Operations Manager of the contamination of the water and recommend the advisory if necessary
- If hydrocarbons or other chemicals were spilled in the watershed this would create a need to inform with a “Do Not Use Water Notification” and arrange alternate potable water supply. Please refer to page 9: “Issuing a Water Notice” and Appendix C: “Do not use Water Notification”
- With advice from Island Health, water testing for chemical contaminants will take place
- Once the water quality in the watershed is back to normal, ask IH for advice as to when the Advisory can be removed



Loss of Reservoir

Description of Emergency:

The MWS has only one reservoir that is located on Mavis Avenue. The potential to lose the reservoir may be caused by many different factors including structural failures due to an earthquake or a significant water main break. A significant water break has the possibility of draining the reservoir and requiring isolation from the distribution system.

Reservoir:

The reservoir is a bolted steel construction- with the loss of the reservoir it does not necessitate an emergency as the water system could operate as long as the valves or water mains are not damaged.

The loss of the reservoir is not considered to be an emergency as there are operational procedures to mitigate this event. These include switching the water source to the Ucluelet Water System or running the Millstream pumping system in manual with a pressure relief valve attached to a fire hydrant.

Action Items:

- Call ACRD Operations Manager and describe the emergency
- Attempt to identify, assess, and correct the problem
- Call Fire Department to inform them when water quantities and pressures are compromised
- Close valves feeding the reservoir or the closest valves to isolate the reservoir
- Switch water source to the Ucluelet System **OR** run pump in Manual to supply water to the distribution system. With the reservoir isolated there must be a pressure relief valve installed. Refer to operation procedures. Aquifer levels must be checked to avoid pumping the wells dry.
- Conduct a thorough inspection of the reservoir for damage and record findings
- Prepare a plan to begin repairs and determine a schedule to resumption of normal service
- Call Fire Department to inform them when water quantities and pressures are restored



Transmission Main Failure

Description of Emergency:

In the event of a main failure, there will be the potential for loss of water to the community, backflow (biological and or chemical) into the distribution system and flooding of properties. The type of failure will have to be assessed and the appropriate action taken on an individual basis. The transmission main runs from the pump house up Karn Ave, then up either fork of Albion Crescent then either side of Lee St. to the reservoir on Mavis Ave. Isolation of sections of the transmission main can reduce the number of properties effected.

Action Items:

- Call ACRD Operations Manager and describe the emergency
- Stop the flow of water by closing valves on each side of the failure
- Make the site safe by implementing traffic control
- Provide a bypass or use an alternative supply loop if possible
- Repair the damage and disinfect the affected areas
- Put sediment control measures in place and de-chlorinated water released
- If there is a potential that the system has been contaminated the ACRD Operations Manager will contact Island Health for issuing a Water Advisory or Boil Water
- If a backflow or siphonage of a chemical contamination occurs and represents a threat a “Do not use Notice” may be required
- Make a damage assessment and prepare plans to begin repairs and identify a schedule to resume normal operations
- Contact the Ministry of Environment R.A.P.P. line if there is significant sediment or unchlorinated water in streams and the Department of Fisheries and Oceans
- Assess downstream damage, prepare a plan and schedule to remediate any flooding damage
- Call Fire Department to inform them when hydrants are in or out of service



5.0 EMERGENCY CONTACT LIST

MILLSTREAM WATER SYSTEM

Emergency Contacts List

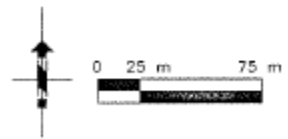
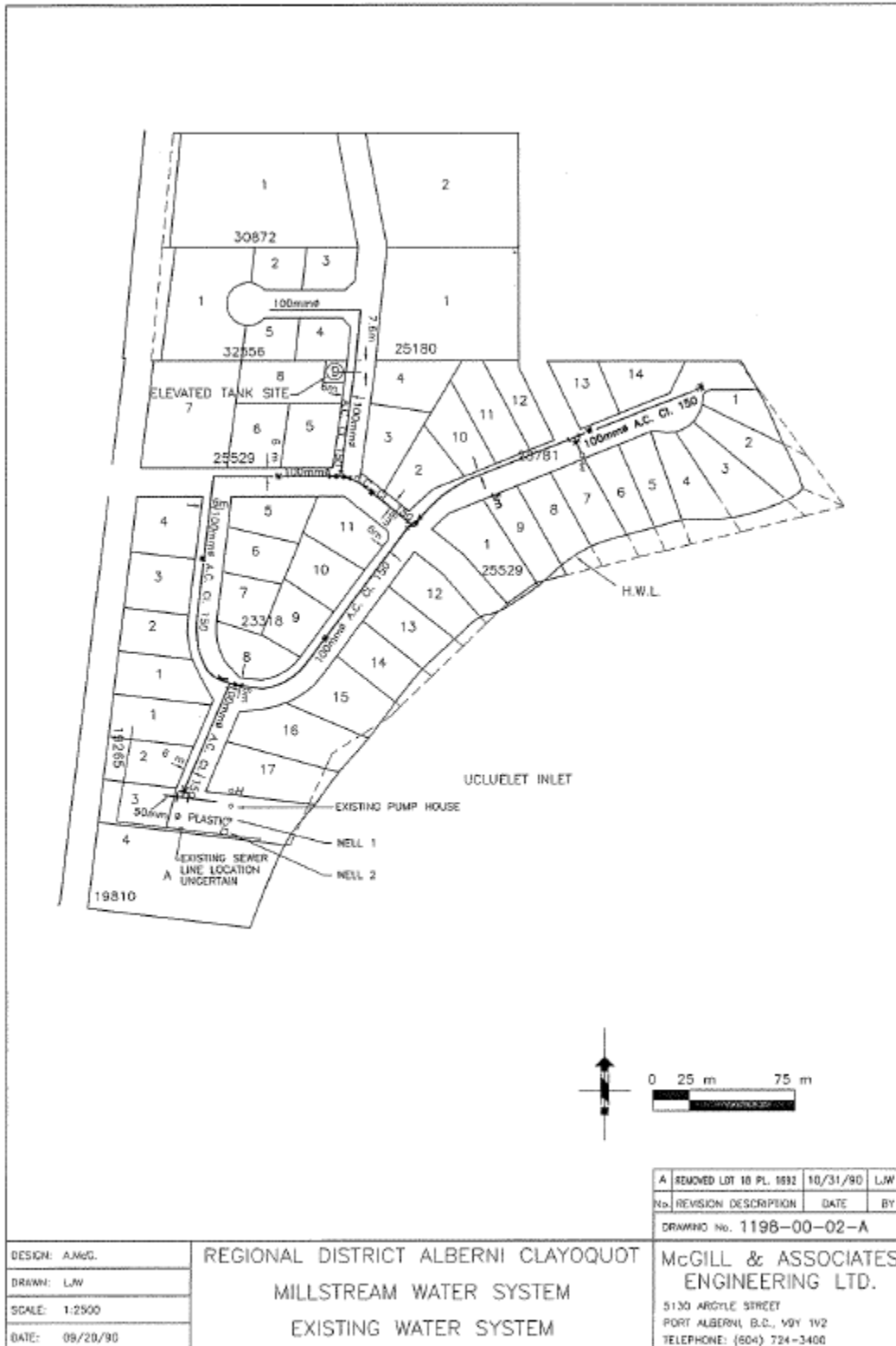
ORGANIZATION	NAME	TELEPHONE
Stericycle (former Tigertel)	24 hr ACRD Management Contact	1-800-853-8483
ACRD Millstream Emergency Contact	Chantel Gemmell	250-726-6106 (cell)
ACRD Millstream Contact	Mark Fortune	250-726-5336 (cell)
ACRD BCWS Maintenance Technician	Matt McLeod	250-720-5540 (cell)
ACRD BCWS Maintenance Technician	Keith Looker	250-206-0023 (cell)
Regional District of Alberni-Clayoquot	Office	250-720-2700
ACRD GM of Community Services	Jenny Brunn	250-202-0513 (cell)
ACRD Operations Manager	Eddie Kunderman	250-735-8885 (cell)
ACRD CAO	Daniel Sailland	250-720-7051 (cell)
ACRD Protective Services Manager	Heather Zenner	250-720-9010 (cell)
BC-one-Call		1-800-474-6886 ID #1292
District of Ucluelet, Public Works	Warren Cannon	1-250-726-5507 (cell)
Island Health (VIHA)	Emergency Contact	1-877-370-8699 (24 hrs.)
Environmental Health Officer (VIHA)	Stephanie Bruvall (or Leni Rose)	250-731-1355 Ex. 41768
Public Health Engineering (VIHA)	Murray Sexton	250-755-6215
Medical Health Officer	Dr. Paul Hasselback	250-755-6215
ACRD Millstream Consulting Engineer	McGill Eng. & Ass. Mike Lange	250-724-3400
		250-951-8551 (cell)
City of Port Alberni Waterworks	Amar Giri	250-720-2845
		250-206-0048 (cell)
R.C.M.P.	Emergency - 911	250-723-2424
Hospital Tofino	Tofino General Hospital	250-725-4010
Hospital Port Alberni	West Coast General	250-731-1370
Ministry of Environment	Nanaimo Branch	250-751-3100
	Water Protection	250-751-3149
	R.A.P.P	1-877-952-7277
	Environmental Emergency Reporting	1-800-663-3456
Ministry of Transportation	24 hour line	1-800-661-2324
Department of Fisheries and Oceans	Port Alberni	250-720-4440
Fire Departments	Tofino Volunteer Fire Dept.	
	Brent Baker, Fire Chief	250-725-3229
	Ucluelet Volunteer Fire Dept.	
	Rick Geddes, Fire Chief	250-726-7744

B.C. Hydro Emergencies	24 hour line	1-888-POWERON
		911- electrical emergency
BC Hydro Security Command Center	24 hour line	1-877-311-8611
Fortis BC Emergency	24 hour line	1-800-663-9911
Electrical Services	Gord Blakey	250-723-9717
		250-720-9529
Fyfe Well and Water Services	Jim Fyfe	250-248-0830
Confined Space	Walco Industries	250-723-6919
Flaggers	Coastal Flagging	250-726-8127
Rentals	Ucluelet Rent-It Center	250-726-7368
	LB Woodchoppers (Port Alberni)	250-723-5841
Water Works Suppliers	Andrew Sheret	250-713-4153
	Corix Water Products	250-334-3200
	Four Star	250-616-7299
Excavation Services	Gibson Bros Contracting	250-725-3945
	Crow Excavating & Trucking	250-266-0427
	David Edwards Excavation	250-726-5012
Bulk Water Hauler	Island Water Hauling Inc. (Nanaimo)	250-323-6363



APPENDIX A

WATER SYSTEM MAP



A	REMOVED LOT 10 PL. 1892	10/31/90	LJW
No.	REVISION DESCRIPTION	DATE	BY
DRAWING No. 1198-00-02-A			

DESIGN: AJ&S.
DRAWN: LJW
SCALE: 1:2500
DATE: 09/20/90

REGIONAL DISTRICT ALBERNI CLAYOQUOT
MILLSTREAM WATER SYSTEM
EXISTING WATER SYSTEM

McGILL & ASSOCIATES
ENGINEERING LTD.
5130 ARGYLE STREET
PORT ALBERNI, B.C. V0Y 1V2
TELEPHONE: (604) 724-3400



APPENDIX B

FORMS



Incident Report

This form was created so that technicians and the persons responsible for executing Action lists during water system emergencies can create a detailed account of their actions along with the respective date and time each action was taken. In addition, there is a section labeled Post Incident Comments in which statements concerning the protocol followed in the respective Action List can be reviewed. The following information provided by this form will aid in improving the Alberni-Clayoquot Regional District water system emergency response in the upcoming years. After the form is completed, please make a copy for yourself and send the original to the Operations Manager. Thank you for your cooperation.

Action List Referenced: _____

Date: _____ Time: _____

Action Taken: _____

Date: _____ Time: _____

Action Taken: _____

Date: _____ Time: _____

Action Taken: _____

Date: _____ Time: _____

Action Taken: _____



Date: _____ Time: _____

Action Taken: _____

Date: _____ Time: _____

Action Taken: _____

Date: _____ Time: _____

Action Taken: _____

Date: _____ Time: _____

Action Taken: _____

Date: _____ Time: _____

Action Taken: _____



Post Incident Report

To: ACRD Operations Manager

From: _____

Date: _____

Details

Type of emergency: _____

Location of emergency: _____

Duration of emergency: _____

Emergency Information

Description of Emergency:

Procedures/Actions Taken during Emergency:



Emergency Evaluation

(Include areas of strength and recommendations for improvement)

Emergency Action Team Response Evaluation:

Communications Response Evaluation:

Recommendations:

Suggested Amendments to the Emergency Response Plan:



APPENDIX C

Notices

Millstream Water System

IMPORTANT NOTICE

TO ALL WATER CUSTOMERS

Because of the system's inability to adequately disinfect water at this time and for your safety, it is recommended that you boil your drinking water prior to consumption. Water should be subject to a rolling boil for at least 1 minutes prior to cooling and consumption.

BOIL WATER ADVISORY

EFFECTIVE _____ UNTIL FURTHER NOTICE

Enquires?

Eddie Kunderman, Operations Manager

Alberni Clayoquot Regional District 250-720-2700

Long Beach Airport Water System Operator

Chantel Gemmell 250-726-6106

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Millstream Water System

IMPORTANT NOTICE

TO ALL WATER CUSTOMERS

Bacteria sampling of the water system indicates that it is no longer necessary to boil water prior to consumption. You may notice elevated levels of chlorine (smell and taste) for a short period. Levels of disinfection will be reduced as soon as possible.

**Thank you for your patience
and co-operation**

EFFECTIVE _____

Enquires?

Eddie Kunderman, Operations Manager

Alberni Clayoquot Regional District 250-720-2700

Long Beach Airport Water System Operator

Chantel Gemmell 250-726-6106

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Millstream Water System

IMPORTANT NOTICE

TO ALL WATER CUSTOMERS

Pumping systems have been repaired and are operating normally. While the system is recovering to operating levels, your assistance with conservation over the next two or three days would be appreciated.

Thank you for your patience and co-operation

EFFECTIVE _____

Enquires?

Eddie Kunderman, Operations Manager

Alberni Clayoquot Regional District 250-720-2700

Long Beach Airport Water System Operator

Chantel Gemmell 250-726-6106

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Millstream Water System

IMPORTANT NOTICE

TO ALL WATER CUSTOMERS

As a result of _____ the main pumping system is inoperative – there is no water entering the system. Please refrain from using faucets and fixtures and please use stored or bottled water for household use. If this situation persists for more than 24 hours, you may wish to contact your plumber for advice or assistance with your hot water tank

MANDATORY CONSERVATION NOTICE

EFFECTIVE _____ UNTIL FURTHER NOTICE

Enquires?

Eddie Kunderman, Operations Manager

Alberni Clayoquot Regional District 250-720-2700

Long Beach Airport Water System Operator

Chantel Gemmell 250-726-6106

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Millstream Water System

IMPORTANT NOTICE

TO ALL WATER CUSTOMERS

As a result of _____ there is a strong probability that pumping systems will have to be shut down. Residents are asked to reduce water consumption immediately and to be prepared for a temporary water shortage. It is recommended that you store a small quantity of water for consumption and general use.

VOLUNTARY CONSERVATION NOTICE

EFFECTIVE _____ UNTIL FURTHER NOTICE

Enquires?

Eddie Kunderman, Operations Manager

Alberni Clayoquot Regional District 250-720-2700

Long Beach Airport Water System Operator

Chantel Gemmell 250-726-6106

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Millstream Water System

IMPORTANT NOTICE

TO ALL WATER CUSTOMERS

Pumping systems have been repaired and are operating normally. While the system is recovering to operating levels, your assistance with conservation over the next two or three days would be appreciated.

Thank you for your patience and co-operation

EFFECTIVE _____

Enquires?

Eddie Kunderman, Operations Manager

Alberni Clayoquot Regional District 250-720-2700

Long Beach Airport Water System Operator

Chantel Gemmell 250-726-6106

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Millstream Water System

IMPORTANT NOTICE

TO ALL WATER CUSTOMERS

As a result of _____ the water is non potable
and we are asking that everyone not to use the water

DO NOT USE WATER

EFFECTIVE _____ UNTIL FURTHER NOTICE

Enquires?

Eddie Kunderman, Operations Manager

Alberni Clayoquot Regional District 250-720-2700

Long Beach Airport Water System Operator

Chantel Gemmell 250-726-6106

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Millstream Water System

IMPORTANT NOTICE

TO ALL WATER CUSTOMERS

Date: _____

WATER SAFE TO USE NOW

The “Do Not Use” Advisory issued on _____

has been removed your water is safe to use

Enquires?

Eddie Kunderman, Operations Manager

Alberni Clayoquot Regional District 250-720-2700

Long Beach Airport Water System Operator

Chantel Gemmell 250-726-6106

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

WATER SHUTOFF NOTIFICATION

The Millstream Water System will be turning the water off in your area in order to make necessary repairs to the system.

Area to be shut off _____

Date (s) of shutoff _____

Time (s) of shutoff _____

Reason for shutoff _____

Date of notice _____

If you have any questions about the above information, please call:

Eddie Kunderman, Operations Manager

Alberni Clayoquot Regional District 250-720-2700

Long Beach Airport Water System Operator

Chantel Gemmell 250-726-6106