



OOTISCHENIA IMPROVEMENT DISTRICT

EMERGENCY RESPONSE PLAN (ERP)



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During a major emergency a command centre will be set up at the Ootischnia Improvement District office building. A plan of action and notification will be determined and put in place to correctly deal with the emergency by the individual who is in charge. Communications must be submitted to all who are involved.

Last Update (minimum yearly review):

June 2018

Spokesperson for the Ootischnia Improvement District:

Ken Oglow

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INTRODUCTION

Protecting Public Health

Safe and reliable drinking water is vital to every community. Emergency response planning is an essential part of managing a drinking water system. Most public water systems have had routine operating emergencies such as pipe breaks, pump malfunctions, bacteriological contamination, and power outages. These are manageable if the water system has an emergency response plan that can be put into action. More serious non-routine emergencies may result from intentional acts of vandalism, chemical spills, floods, earthquakes, windstorms, or droughts. These can drastically affect the system and the community that depends on it. Each emergency has unique effects on different parts of a water system. Floods can cause widespread bacterial contamination, earthquakes can damage water sources, distribution systems and treatment systems, and storms can disrupt power supplies. The common element is that each emergency may threaten the system's ability to deliver potable and palatable drinking water. Emergency response planning is a process by which water system managers and staff explore vulnerabilities, make improvements, and establish procedures to follow in an emergency situation. It is also a process that encourages people to form partnerships and get to know one another. Preparing a response plan and practicing it can save lives, prevent illness, enhance system security, minimize property damage, and lessen the overall burden of a catastrophic event and the cost associated to the disaster.

EMERGENCY RESPONSE PLAN MISSION AND GOALS

MISSION STATEMENT

The mission of the water system is to be a safe provider of potable water to the community under normal conditions as well as during emergencies. In an emergency, the mission of The Ootischenia Improvement District is to protect the health of the water users by being prepared to respond immediately to a variety of events that may result in contamination of the water or disruption of supplying water via floods, storms, earthquakes, and vandalism.

GOALS

1. Be able to quickly identify an emergency and initiate a timely and effective response to the situation at hand.
2. Be able to quickly notify local and regional authorities to assist in the response if utilities cannot respond effectively.
3. Protect public health by being able to quickly determine if the water is not potable nor palatable to drink or use and being able to immediately notify the water users effectively of the situation and advise them of an appropriate protective action plan.
4. To be able to quickly respond and repair damages to minimize system down time and the potential of illness associated to water quality in the event of a rare emergency.

SYSTEM INFORMATION

IHA Permit-Facility Certificate Number: 0210625 Water Distribution System Environmental
EOCP Facility Classification Certificate Number: 646

System name and address Ootischnia Improvement District
123 Ootischnia Road
Ootischnia, BC V1N 4L7

Directions to the office Located east of the Castlegar Airport and
behind the Ootischnia Fire Hall

Basic description and locations Raw water is pumped from 3 wells through the piping
system and into 2 reservoirs. There are two pressure
reducing stations and 56 fire hydrants. Well #2 is located at
Hillview Road on Lot 28, well #5 is located on the west side
of the Fortis power lines near the Castlegar Golf Course.
Well #6 is located across the highway from the weigh scales.

Location/Town Ootischnia

Population served Approximately 1150 residences

System owner Ootischnia Improvement District

**Name, title and telephone number of
person responsible for activating the
emergency response plan** Wendy Settle, Water System Operator
Office Tel: 250-365-6996
Cell: 250-304-3019

WATER SOURCE

The OID's water supply comes from three (3) production wells which pump at a combined rate of approximately 1,300 gpm. Hydrogeological assessments indicate there are at least three extensive unconfined to semi-confined aquifers in the area. Two of these aquifers are tapped by the existing OID wells.

DISTRIBUTION SYSTEM

The water distribution system consists of the three production wells (wells 2,5,6), one buried concrete 73,000 US Gal reservoir, one 420,000 US Gal steel reservoir, two pressure reducing stations, 53 fire hydrants, a SCADA system and approximately 23,700 linear meters of water main line. The OID's total service area covers approximately 480 ha (1190 ac) and currently has a total of 528 parcels with 419 active connections.

PRESSURE ZONES

There are two pressure zones with two pressure reducing valves.

EVENTS THAT CAUSE EMERGENCIES

The purpose of this plan is to address situations where the raw water of the Ootischenia Improvement District has been compromised creating risk management concerns. Possible emergencies include:

- Natural disasters
- Accidents
- Deliberate acts of vandalism or terrorism
- System neglect or deferred maintenance

An emergency may affect the entire water system or only isolated sections. Each type of event can cause different types of damage to system components or contamination resulting in a disruption in service. Evaluations should be considered in how to respond to these actions.

NATURAL DISASTERS:

EARTHQUAKES

Damage resulting from the earth shifting along geologic faults resulting in shaking and settling of the ground can cause severe structural damage to virtually all water system facilities, including sources, transmission and distribution lines, storage reservoirs and pump-houses.

FLOODS

Floods can cause widespread contamination as turbid waters carry bacteria that can overflow sources, transmission lines, treatment facilities, and pumping facilities. Floods can also ruin electrical components and telemetry systems. Fortunately the Ootischenia Improvement District drinking water system has not been vulnerable to high flooding.

HIGH WINDS

Every so often high winds occur in the region and they can pose a threat mainly to the power supply.

DROUGHT

Severe droughts have the potential to compromise the water supply with lower levels in the aquifers. This has not been an issue recently.

WATERBORNE DISEASES

Organism such as Giardia, Cryptosporidium, E.coli and viruses can contaminate water supplies and cause waterborne diseases. It is very important to have regular water samples analyzed.

POWER OUTAGE

Due to storms and vehicle accidents. Power outages of any kind can shut down the operations of the wells as well as the SCADA system

FOREST FIRES

Due to storms or human-caused. Forest fires of any sort can cause power outages which in turn shut down the operations of the wells and SCADA system

HUMAN-CAUSED EVENTS:

Human-caused events that can result in a water system emergency include chemical spills, vandalism, terrorism, cyber-attack, fires, construction accidents and basic neglect of maintaining the system.

VANDALISM

Vandalism is generally a spur-of-the-moment act using materials at hand rather than preplanned or premeditated activities. Vandals often break into systems, damage facilities, and paint graffiti. These acts are relatively easy to prevent by enhancing security, increasing lighting, installing locks on doors and hatches, and installing and maintaining security fencing.

TERRORISM

Acts of terrorism are conducted by someone whose intent is to instill fear or induce harm to people and facilities. Acts of terrorism are a very real threat. Even though it may seem unlikely, it would only take one well-staged event to undermine confidence in drinking water safety. Being prepared and knowing what to look for are crucial elements of preventing an attack on the system. There are many potential terrorist threats to drinking water systems, including chemical, biological or radiological contamination as well as damage to infrastructure and computer systems. In most cases, contamination using biological or chemical agents would cause the most concern for a drinking water system. Although it would be difficult to effectively contaminate a large water supply with these agents or cause major damage, the possibility should not be taken lightly. The threat is real, and drinking water systems need to enhance security around facilities and be prepared to respond.

SYSTEM NEGLECT

System neglect, often referred to as deferred maintenance, is a significant cause of emergencies. System components that are aging and need replacement go without attention for so long that they fail, causing an emergency. Drinking water systems need to continuously evaluate facilities and replace them before a large scale failure occurs.

CROSS CONNECTIONS

A cross connection is an actual or potential physical connection between a public water system and any source of non-potable liquid, solid, or gas that could potentially contaminate water supply through a backflow event. Cross connections usually occur unknowingly when someone makes a connection to the system. Backflow is the reverse flow of water or other substances into the public water system. Under backflow conditions, unprotected cross-connections can provide a path for biological, chemical, or physical contaminants to enter the water supply. These contaminants can lead to waterborne disease outbreaks, chemical poisonings, and sometimes death. Backflow usually occurs when there is a loss of pressure somewhere in the system causing water flow to reverse.

CONSTRUCTION INCIDENTS

Construction incidents may fall into the category of an operating emergency e.g. a contractor damages a water line and the system needs to be shut down for repair. If the response is not timely and effective, this kind of incident can turn into a serious emergency. The system may lose pressure, resulting in the potential for backflow incidents to occur that contaminate the water distribution network. The utility must be aware of construction in and around the system and be prepared to respond quickly to an incident if it occurs.

CHEMICAL SPILLS

Many chemicals that are routinely transported can harm humans directly or by contaminating air or water. No drinking water system is safe from a hazardous chemical spill and the resulting contamination. Spills can come from motor vehicles, trains, airplanes, boats, or fixed containers. They can occur at any time without warning.

EMERGENCY SEVERITY

Emergencies usually have a wide range of severity. Defining categories of severity can significantly aid in determining appropriate response actions and notifying correct agencies to assist with the emergency. Knowing the severity of the emergency and being able to communicate it to others will help system personnel keep their response balanced and effective.

Making a decision on severity should be collaborative among system personnel with who could be potentially involved with the emergency. The individual in charge may also choose to coordinate with external parties, especially if partnerships have been formed and are part of the ERP contacts. The information for making the decision will progressively increase over time and may result in the level of severity being changed and other actions required.

After an assessment of the severity, the assessment must be communicated immediately to those dealing with the emergency. Make sure personnel have cell phones and/or radios when they are in the field assisting. Remember to have an alternative method of communicating if cell phones don't work or in a worst case scenario event. The buddy system should be utilized if personnel are available.

The system has specific response activities identified for these types of emergencies below, including proper system personnel are advised and are directed to work on the problem and are usually capable of resolving the problem within 24 hours from the first notification. If it is determined the event will last longer than 24 hours and storage is likely to be drawn down below a safe operating level, the situation may be elevated to the next level of emergency.

TYPE I – ROUTINE EMERGENCY

The system experiences a normal emergency, such as a line break or power outage. System personnel are able to handle the problem with minimal assistance. The situation is not likely to negatively impact public health. Although it is important to begin responding, personnel should have no difficulty remaining calm and work thoroughly through the situation. Normal events can usually be resolved within 24 hours.

Description: The Ootischenia Improvement District Type I Emergencies:

- Distribution line breaks, PRV station failure
- Short power outages
- Minor mechanical problems in pump-houses
- Fire hydrant strike
- Other minor situations where it is not likely that public health would be affected

TYPE II – MINOR EMERGENCY

The system experiences minor disruption in supply or had indication of possible contamination where it may need to coordinate with Interior Health Authority (IHA) and consider issuing an advisory to the water users. In these types of emergencies, health may be jeopardized, so it is important for system personnel to be on alert and initiate a quick response. These emergencies can usually be resolved within 48-72 hours.

Description: The Ootischenia Improvement District Type II Emergencies:

- Disruption in supply such as a transmission main line break, pump failure with a potential for backflow and loss of pressure
- Storage is not adequate to handle disruption in supply
- An initial positive bacteriological sample (E.coli)
- An initial primary chemical contaminant sample
- A minor act of vandalism
- Drought conditions.

TYPE III – SIGNIFICANT EMERGENCY

The system experiences significant mechanical or contamination problems where disruption in supply is inevitable and assistance from Interior Health Authority (IHA) is needed. Major emergencies should be reported to Interior Health Authority and Ministry of Environment as soon as possible to determine the best available means of protection. May also be reporting to law enforcement. System personnel are directed to the situation and outside agencies are notified to aid in the response. Major emergencies may extend beyond 72 hours before resolution.

Description: The Ootischenia Improvement District Type III Emergencies:

- A confirmed coliform MCL or E.coli/fecal positive sample, requiring immediate consideration of a boil water advisory notice to customers.
- A confirmed sample of another primary contaminant requiring immediate consideration of a boil water advisory notice to customers (ie. Cryptosporidium, Giardia Lamblia, Turbidity)
- A major line break or other system failure resulting in a water shortage or requiring system shutdown.
- An act of vandalism or terrorist threat such as damage to the Water System Facilities.

TYPE IV – CATASTROPHIC DISASTER/MAJOR EMERGENCY

The water system experiences major damage or contamination from a natural disaster, an accident, an act of terrorism, and/or vandalism. These incidents require immediate notification of local law enforcement (if appropriate for the event) and local emergency governing services (IHA, MOE, PEP). Immediate notification of Interior Health Authorities is critical to protect public health. These types of emergencies are usually not resolved quickly, depending on circumstances.

Description: The Ootischenia Improvement District Type IV Emergencies:

- Chemical spill that comes into area of the system's source(s)
- High flood that infiltrates into system
- Act of terrorism possibly contaminating the water system with biological or chemical agents.
- Storm that significantly damages power grid and system operations
- Intrusion alarms

EMERGENCY NOTIFICATION

During most emergencies it will be necessary to notify a variety of government agencies. Type III and Type IV emergencies will require this to be done immediately.

Procedure:

- Operator in charge will assess the situation and take immediate action.
- Notification to Local Authorities (Interior Health)
- Operator notifies Ootischenia Improvement District Management
- The water notification will be distributed by:
 1. Personnel placing “water notices” on doors and along travel routes
 2. Personnel will do whatever it takes to notify throughout community
 3. The District Administrator will notify local radio station, television and news paper
 4. Administrative support person will provide pre-scripted message to telephone callers or media and log message that was delivered in timely basis
- Water system personnel will continuously update the Ootischenia Improvement District and regulatory agencies on water advisory
- Once resolved, notify customers of rescinding notices.

Notification call-out list:

Use the following lists to notify appropriate personnel and agencies during an emergency.

MANAGEMENT PERSONNEL

<i>Name</i>	<i>Title</i>	<i>Home</i>	<i>Office</i>	<i>Cell</i>
Wendy Settle	Water System Operator	250-304-9446	250-365-6996	250-304-3019
Bill Alexander	Maintenance man/ Ass			250-304-5919
Ken Oglow	Chair	250-304-9954		250-304-9954
Ken Lloyd	Vice-Chair	250-365-2153		250-304-8489
Colin Rogers	Trustee	250-304-1794		250-304-3372
Johnny Strilaeff	Trustee	250-365-2100	250-304-1632	250-304-9032
Lisa Repko	Administrator	250-365-6337	250-365-6996	

Once contacted, Management personnel will assess the situation, notify proper authorities and take the necessary steps to correct the situation.

OOTISCHENIA VOLUNTEER FIRE DEPARTMENT

Ootischenia Fire Department-George Hamm (Fire Chief) Home-250-365-304-3306
Office 250-365-4928 Emergencies 250-304-8582

If no fire department member can be contacted call 911 if call already has not been made.

INTERIOR HEALTH AUTHORITY

Medical Health Officers

Dr. Trevor Corneil	Chief MHO	Kelowna	250-368-7700	trevor.corneil@interiorhealth.ca
Dr. Sue Pollock Dr. Kamran Golmohammadi Dr. Silvina Mema	Medical Health Officers	Kelowna	250-368-7700	sue.pollock@interiorhealth.ca kamran.golmohammadi@interiorhealth.ca silvina.mema@interiorhealth.ca

Drinking Water Program Management

Roger Parsonage	Corporate Director	Vernon	250-549-5714	roger.parsonage@interiorhealth.ca
J. Ivor Norlin	Manager	Salmon Arm	250-833-4100	ivor.norlin@interiorhealth.ca
Dan Byron	Large Water	Cranbrook	250-420-2240	dan.byron@interiorhealth.ca
Rob Birtles	Small Water	Penticton	250-770-5540	robert.birtles@interiorhealth.ca

Drinking Water Program Staff

Marianne Crowe Richard Liu Wayne Radomske	Health Engineers	Nelson Kamloops Penticton	250-505-7225 250-851-7340 250-770-5540	marianne.crowe@interiorhealth.ca gingchun.liu@interiorhealth.ca wayne.radomske@interiorhealth.ca
Judi Ekkert Gordon Moseley *Pouria Mojtahedi	Large Water Specialists	Kelowna Vernon Nelson	250-868-7700 250-549-5725 250-551-1911	judiekkert@interiorhealth.ca gordonmoseley@interiorhealth.ca pouria.mojtahedi@interiorhealth.ca
Renee Ansel Katie McNamara Brian Gregory Tristin Wilson Kim Wrixon	Small Water EHO's	Nelson Invermere Salmon Arm Penticton Williams Lk	250-505-7220 250-342-2368 250-833-4170 250-770-5540 250-302-5000	renee.ansel@interiorhealth.ca katherine.mcnamara@interiorhealth.ca brian.gregory@interiorhealth.ca tristin.wilson@interiorhealth.ca kimberly.wrixon@interiorhealth.ca

HOSPITALS		
Castlegar Hospital		250-365-7711
Trail Hospital		250-368-3311
PROVINCIAL GOVERNMENT		
Provincial Emergency Program (PEP)		1-800-663-3456
Ministry of Wildfire and Management Branch		1-800-663-5555
Ministry of Environment	250-354-6333	1-800-663-3456
Ministry of Environment – Rick Wagner, Hazmat Emergency Operations		250-371-6220 Cell 250-851-6410
Ministry of Community, Sport and Cultural Development		250-387-4074
Ministry of Agriculture and Lands		250-387-5121
Ministry of Transportation – Hugh Eberle, area manager		250-354-6628
Michele Ihas –prov approving officer		250-354-6526
Regional District of Central Kootenay		1-800-268-7325
Canadian Transport Emergency Centre (CANUTEC)		613-996-6666
Report all Poachers and Polluters (RAPP)		1-877-952-7277

Interior Health Emergency Contact Numbers

The following is meant to assist water suppliers to reach their Interior Health representative in the event of a water quality problem as part of their Emergency Response Plan protocol.

During Office Hours (8:30 am – 4:30 pm weekdays)

Please call 250-505-7211 and do the following:

- State your name
- Water system
- Contact numbers you can be reached at
- And the fact this is an emergency call

If your direct contact is not available our administrative staff will direct your call to the Water Quality Specialist covering your area.

After Hours (after 4:30 pm weekdays, weekends and statutory holidays)

- Call the Medical Health Officer of the day at 1-866-457-5648

EMERGENCY SERVICES

Ambulance Service	250-365-2266
RCMP	250-365-7721
Fortis BC – natural gas	1-800-224-2710 emerg1-800-663-9911
Fortis BC – electricity	1-866-436-7847
Telus	250-310-2255

LOCAL MEDIA

Radio-The GOAT	250-365-7600
Radio – KBS	250-365-5513
CBC Radio	1-866-306-4636
Television-Shaw Cable community bulletin	250-365-3122
Newspaper-Castlegar	250-365-6397
Newspaper-Trail	250-364-1242

TRADESMEN

Tyler Underwood – SCADA	250-320-3827 or UES 250-275-4939
Castlegar Machine & Chrome	250-365-5367
Venture Mechanical	250-365-4999
Martech Electrical Systems	250-365-2115
Hughes Contracting	250-365-1006
Coleman Excavating	250-365-5013

SUPPLIERS

Kootenay Valley Water (bottled) Home	250-365-3937	250-365-8008
		2253 Columbia Avenue, Castlegar
Back up Generator-Trowalex – have all sizes		250-365-3315
Back up Generator – United Rentals Genelle – all sizes		250-693-8844
Andrew Sheret		250-365-2597
Terminal City		604-534-8687
Gough Electric		250-365-7774
West K Concrete		250-693-2430

TESTING AGENCIES – ENVIRONMENTAL MONITORING

Caro Analytical Services-water analysis (Kelowna)	250-765-9646 fax 250-765-3893
	Email: Kelowna@caro.ca
Cantest Services	604-734-7276
Passmore Laboratory Ltd.(4235 Upper Passmore Road, Winlaw BC V0G 2J0)	250-226-7339
passmorelaboratory@columbiawireless.ca	

WATER QUALITY SAMPLING

Many types of emergencies can jeopardize the quality of water and adversely affect those using the water. The primary objective for any water system is to protect human health, the system must know how to act quickly and make decisions on whether to issue a health advisory. Sampling and obtaining results from a lab takes time.

If there is reason to believe that the water has been contaminated, the Water System Operator should consult Interior Health and consider issuing a health advisory as soon as possible – often before conducting water quality sampling.

Contamination of drinking water, whether intentional or unintentional, comes in many forms, which are classified in four general categories.

- Inorganics such as metals and cyanide
- Organics such as pesticides or volatile compounds
- Radionuclides
- Pathogenic microorganisms or microbial organisms

If the water system is experiencing an emergency caused by a natural event or intentional act and contamination is suspected, system personnel may be faced with making a decision about what contaminants to test for and how to get the tests performed quickly.

If contamination is suspected, Interior Health Authorities should be contacted to assist with the direction as to what testing should be completed. If it is suspected that someone intentionally sabotaged the system or contaminated the water, this may be a crime scene and Interior Health shall be notified immediately as well as the local RCMP detachment.

Coliform Bacteria: In the event of an emergency, testing for coliform is a standard first test, and if detected it is a signal that the system may be contaminated. Coliform bacteria are organisms that are present in the environment and in the feces of all warm-blooded animals, including humans. Coliform bacteria generally do not cause illness, but their presence indicates that other disease-causing organisms (pathogens) may be present in the water system. Most pathogens that contaminate water supplies come from the feces of humans or animals. Testing drinking water for all possible pathogens is complex, time-consuming, and expensive. Coliform testing is, however, relatively quick, easy, and inexpensive. Public water systems must test for coliform bacteria regularly as per the GCDWQ.

Heterotrophic Plate Count (HPC): This test provides information regarding the numbers of bacteria that may have been introduced into the water. HPC counts with significant growth require immediate action. Very high levels (1000-10,000 and greater) would suggest a problem that needs immediate evaluation.

Chlorine Residual: In chlorinated systems, this test indicates if materials introduced into the water have created a demand for the chlorine, leaving lower-than-normal or no residual and signaling the need for further evaluations. Samples need to be taken at the distal end of the distribution system (the point farthest from the start of the distribution system).

Note: The Ootischenia Improvement District is not a chlorinated system.

Chlorine Demand: This test reveals unusual demands on the oxidizing capability of the added chlorine, indicating the presence of a contaminant that warrants further investigation.

Note: The Ootischenia Improvement District is not a chlorinated system.

Total Organic Carbon (TOC): Relatively simple to perform, normal expected levels range from 0.2 to 4.0 mg/L for surface water and 0.01 to 2.0 mg/L for groundwater. Higher levels may indicate the presence of organic materials that could pose a health concern.

Trihalomethanes and Haloacetic Acid (THM & HAA): Disinfection by-products such as Trihalomethanes and Haloacetic acids. High levels suggest that contamination has occurred or that organic materials have been added to enable formation of disinfection by-products.

Note: The Ootischenia Improvement District is not a chlorinated system.

Cyanide: This test is not easily performed, but should be done immediately if cyanide contamination is suspected. Presence may indicate a source of water pollution that must be traced and eliminated. It may be noted that toxicity is related to pH with a deleterious effect at pH=6 and can become innocuous at pH>8 (may be decomposed to carbon dioxide and nitrogen gas). Deterioration of cyanide happens in open streams and further reduction because of bacterial action. Time is the key for the reduction of cyanide. Cyanide is very poisonous. The lungs, gastrointestinal tract and skin absorb cyanide.

Sampling Standard Operating Procedures (SOP) is attached in Appendix D. Testing agency is listed in contact list.

EFFECTIVE COMMUNICATION

Effective communication is a key element of emergency response.

Developing partnerships with others in your local emergency response network, establishing relationships with water users and the media, and creating communication tools such as fact sheets and media releases ahead of time will help us communicate efficiently and successfully during a crisis.

All questions and concerns should be directed to the designated spokesperson.

COMMUNICATION TIPS

Do:

- Be prepared.
- Designate a spokesperson.
- Provide complete, accurate and timely information.
- Tell the truth.
- Express empathy.
- Acknowledge uncertainty and offer to get back with more information later.
- Document your communications.

Do not:

- Speculate on the cause or outcome of an incident.
- Blame or debate.
- Minimize or brush off concerns of customers.

Media Spokesperson	Alternate 1	Alternate 2
Ken Oglow (Chair)	Ken Lloyd (Vice-Chair)	Johnny Strilaeff (Trustee)

KEY MESSAGES

Develop possible messages in advance, and update them as the emergency develops:

- We are taking this incident seriously and doing everything we can to resolve it.
- Our primary concern is protecting our customer's health.
- Another important concern is keeping the system operational and preventing damage.
- What we know right now is?
- The information we have is incomplete at this time, we will keep you informed as soon as we know more.
- We have contacted regional and local authorities to help us respond effectively and to correct the current situation as soon as possible.
- If you think you may be ill or need medical advice, contact your local physician or go to the emergency room of the hospital.
- We are sampling the water and doing tests to determine whether there is a potential cause of contamination.

RESPONSIVE ACTIONS

GENERAL

EXTENDED POWER FAILURE – TYPE IV

1. Call Power Company at 1-866-436-7847 to check status and duration of power outage.
2. Increase flow and balance distribution to utilize water.
3. Decrease system pressures and notify contacts list of the possibility of water shortages if power outage is prolonged.
5. Verify actuator valve is open at new reservoir.

Note: the reservoirs are on separate power grids. Also well 5 is separate from wells 2 & 6.

DISTRIBUTION/COMMUNICATION LOSS FOR EXTENDED PERIOD – TYPE IV

1. Determine if problem is radio or SCADA issue.
2. Call technician for assistance if problem cannot be rectified by operations.
3. If communication problem persists call out operations personnel to operate and monitor distribution system.

CHEMICAL SPILLS – TYPE IV

AT OID FACILITY

1. Obtain MSDS if possible and report spill (required by law).
2. Contain and prevent spill from entering storm or sanitary sewer by using rubber or clay mats and sandbags; contact personnel to bring out Vacuum Truck.
3. Use proper PPE including appropriate respiratory protection for specific chemical
4. If possible neutralize chemicals which are alkaline or acid using spill kit neutralizers.

TRANSPORT CHEMICAL TRUCK SPILL

1. Contain and prevent spill from entering storm or sanitary sewer by using rubber mats or sandbags. Contact Fire Department and City personnel to bring out Vacuum Truck.
2. By law all chemical spills are to be reported.
3. Use proper PPE and necessary breathing protection for specific chemical.
4. If possible neutralize chemical which are alkaline or acid using spill kit neutralizers.

FIRE AT DISTRIBUTION BUILDINGS – TYPE IV

1. If fire cannot be contained using a fire extinguisher, evacuate building leaving doors closed and call 911 or
2. Once outside take roll call of all contractors, chemical delivery personnel and employees.
3. Open all gate accesses to the plant or facility for fire department.
4. Fire Safety Plan for the water plant should be reviewed yearly by employees open link below <\\dserver\global\WaterServices\Safety\FIRE SAFETY PLAN master copy.docx>

FOREST FIRE ENCROACHING COMMUNITY – TYPE IV

1. Increase all reservoir fill set points and maintain maximum water storage capacity for fire fighting.
2. Increase manpower to monitor and assist with operation and to work with the fire department's need for volume and increased pressure.

INTRUSION ALARMS – TYPE IV

1. Dispatch will call standby personnel with location of site intrusion alarm.
2. Do a drive-by of location and have dispatch call the RCMP if location is not secure or suspicious activity is observed.
3. Record license plate numbers and description of vehicle and/or individuals if safe to do so. Do not confront individuals. Wait for the RCMP.
4. Thoroughly check area for any possible type of sabotage or vandalism.

DISTRIBUTION SYSTEM

LOSS OF RESERVOIR STORAGE – CONTAMINATION – TYPE III

1. If suspected contamination is imminent, isolate reservoir from the distribution system.
2. Ensure isolation from distribution system is complete and take all necessary steps to ensure the integrity of the distribution system is not further compromised.
3. Contact proper authorities (i.e. Manager of Utilities, IHA, Engineering) and assess the situation.
4. Under the guidance of the IHA, notify customers that water is unsafe to use via door to door distribution, media, etc. If home owners are not home at the time of notification, leave notice at the residences.
5. Notify local fire department that volume of water is decreased (indicate volume that is contained in affected reservoir).
6. After isolation and assessment of reservoir, drain reservoir notifying appropriate agencies depending on the contaminant that is suspected.
7. De-contaminate the reservoir, fill and sample.
8. Put reservoir back online once approved by the IHA (typically upon receipt of satisfactory water quality sample results).
9. Lift all notices distributed to water users.

LOSS OF RESERVOIR STORAGE – STRUCTURE – TYPE III

1. Isolate reservoir from distribution system and assess the area.
2. If required during the assessment, run a pump to maintain positive pressure. Ensure that the distribution system does not increase in pressure but does remain positive within the system.
3. Contact proper authorities (i.e. Manager of Utilities, IHA, Engineering) and assess the situation.
4. Notify local fire department that volume of water is decreased (indicate volume that is contained in affected reservoir).
5. If affected areas lack system capacity, implement Water Conservation Program and notify the affected users by going door to door or through other informational avenues.
6. Upon completion of repairs (as approved by the Engineer), fill and sample the reservoir.
7. Put reservoir back online once approved by the IHA (typically upon receipt of satisfactory water quality sample results or review by Public Health Engineer).
8. Lift all notices distributed to water users.

LOSS OF PRESSURE – PIPE BREAK – TYPE III

1. Identify the cause and location of the loss of pressure in the distribution system.
2. Contact proper authorities (i.e. Manager of Utilities, IHA, Engineering) and assess the situation.
3. Ensure pumps are operating and positive pressure is maintained throughout the system. Ensure the minimum water levels are maintained in the reservoirs to maintain system integrity.
4. Issue a Voluntary Conservation Notice or Mandatory Conservation Notice as deemed necessary following the notification protocol.
5. When problem area is located and repaired, follow AWWA guidelines for disinfecting of the water mains and/or reservoirs.
6. Notify water users when system integrity is back to normal, the proper authority has been informed and the test results are in hand.

BACKFLOW CONTAMINATION – TYPE II (POTENTIAL TYPE III)

1. Assess nature and cause of backflow contamination issue.
2. Contact proper authorities (i.e. Manager, IHA, Engineering) and assess the situation.
3. Isolate area if possible.
4. Arrange for alternate drinking water source if unable to isolate the affected area.
5. Notify users of potential water contamination. In case of bacteriological contamination, issue a Boil Water Order. In case of chemical or toxic substance; advise accordingly.
6. Make corrections to fix or eliminate the source of contaminant.
7. Once issue is rectified, initiate water flushing and disinfection procedures in distribution system to remove contaminant as required.
8. When safe to do so and permission has been received from the Interior Health Authority, turn water source back on issuing to the consumers “Notice–Drinking Water Problem Corrected”.

PUMP FAILURE – TYPE II

1. Determine if sufficient capacity is still available to supply the water distribution network.
2. Maximize Creek water if water quality allows.
3. Assess nature and cause of pump problem.
4. Contact the power company if power failure is cause of pump failure.
5. Notify users of potential water shortage and the need for conservation where total water supply may be insufficient and issue a Notify for Voluntary Conservation or Mandatory Conservation Notice. In addition, notify the Fire Department that fire flows/storage may be reduced.
6. Once pump failure is corrected put back into service.
7. Contact all affected users and inform them the pump is back on-line, issue Water System Recovering Notice.

BROKEN WATERMAIN – TYPE I

1. Isolate break at nearest valves.
2. Determine zone of influence.
 - a. If break is limited to a specific area, inform affected users of temporary loss of service or pressure reductions while repairs are being completed.
 - b. If break affects overall system, proceed to “Loss of Pressure Response”.
3. Repair water main as quickly as possible following the AWWA guidelines for disinfection of water mains.
4. Once repair is completed, initiate water flushing and disinfection procedures in affected water mains.
5. Re-instate main operation after test results received (if any) and contact affected users and issue “Notice-Water System Recovering” if deemed necessary.

PRESSURE REDUCING VALVE FAILURE – TYPE I

1. Assess nature and cause of problem. Manually control system pressure with valves.
2. Determine zone of influence. With a large PRV failure, the small PRV may become the primary source of water supply to users and pressure reductions may occur during peak demand conditions. Notify affected users and, if deemed necessary, issue Voluntary Conservation Notice and Mandatory Conservation Notice to reduce water consumption.
3. Notify the Fire Department of locations where fire fighting flows have been reduced.
4. Once corrected, notify affected users and the Fire Department that the PRV is back in service and issue “Notice-Water System Recovering” if deemed necessary.

APPENDIX A – RISK ASSESSMENT

<i>Type of event</i>	<i>Probability or risk (High – Med – Low)</i>	<i>Comments</i>
Earthquake	Low	Never experienced a major earthquake
Flood	Low	Distribution system not in flooding zone
High Winds/ Lightning	Med	Power can be disrupted
Drought	Low	Climate Change meaning drops in aquifers
Terrorism	Low	Need training on suspicious activity
Construction Accident	Med	Crews can hit pipes if locates are not done properly. May lead to system failure due to backflow and contamination
Chemical Spill	Low	Possibility is low. Risk of contaminating the entire water system is low. It would be easily mitigated by shutting down the affected well.

Wildfires	High	As our lands continue to receive less precipitation as well as climate change the chances of wildfires are getting more common this can cause power outages
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APPENDIX B – CONTAMINATION OF SOURCE

Assessment

The district's 3 wells are at low risk of contamination because of their location. Well #2 is located within a residential area. Well #5 is located far from major traffic. Well #6 is located at a higher elevation than the highway.

Immediate actions

1. In case of well contamination, the affected well would be shut down.
 2. Implement water response actions to inform customers to reduce water usage until situation is resolved. Arrange for alternate drinking water if necessary and initiate water flushing throughout. Response actions may require personnel to go door to door to deliver the appropriate notices.
-

Notifications

1. Notify Interior Health Authority (Public Health Officer)
 2. Local RCMP Detachment.
 3. Regional District of Central Kootenay
 4. Notify Caro Analytical Services of increased testing
-

Follow-up actions

1. Collect water samples.
 2. Follow Interior Health recommendations.
 3. Return all systems to normal after test confirmed and all is good.
 4. Report to Interior Health.
-

APPENDIX C – ADVISORY NOTICES

BOIL WATER NOTICE

[Fecal Coliform Presence]

Laboratory tests indicate the presence of fecal coliform bacteria in the drinking water. If fecal coliform bacteria are present in drinking water supplies, this is a serious concern because disease-causing micro organism called pathogens may be present. These pathogens include bacteria, viruses and parasites that can cause enteric symptoms [diarrhea, cramps, nausea, vomiting or other symptoms]. Boiling the water kills these organisms. People with weakened or undeveloped immune systems are most at risk [this includes: elderly people, pregnant women and their unborn, very young children [under 2], people with AIDS, cancer, diabetes or kidney disease and people being treated with immuno-suppressing medications [antibiotics, chemotherapy etc].

Water users are advised to bring all water to a rolling boil for a least one minute and let it cool before using it or, use bottled water. Boiled or bottled water should be used for drinking, making ice, washing dishes, brushing teeth and food preparation until further notice. We will inform you when you no longer need to boil your water.

THIS BOIL WATER NOTICE IS EFFECTIVE _____ UNTIL FURTHER NOTICE.

ENQUIRIES?

Please call Wendy Settle, Water System Operator for the Ootischenia Improvement District
@ 250-304-3019

Interior Health – Drinking Water Office – 250-551-1911/ Pouria

Toll Free Emergency Contact Number – 1-866-457-5648

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly [for example: people in apartments, rental units, nursing homes, schools, preschools, churches and businesses]. You can do this by posting this notice in a public place or distributing copies by hand or mail.

Signature: _____

Wendy Settle, Water System Operator

Ootischnia Improvement District

WATER QUALITY ADVISORY

[High Turbidity Levels]

High turbidity levels have been detected in the drinking water supply. High turbidity [cloudiness] levels may occur in surface water sources due to seasonal weather changes causing excessive surface runoff, flooding or lake turnover. A high turbidity level may impair the effectiveness of the disinfection treatment system. If disinfection is impaired, disease-causing microorganisms may escape into the water distribution system resulting in an increased risk of intestinal illness. People with undeveloped immune or severely weakened immune systems, infants and elderly may be at increased risk.

Due to the above concerns and as a precautionary measure, water users are advised to bring all water to a rolling boil for at least one minute and let it cool before using it or, use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth and food preparation until further notice. We will inform you when the Water Quality Advisory is removed.

**THIS WATER QUALITY NOTICE IS EFFECTIVE _____ UNTIL
FURTHER NOTICE.**

ENQUIRIES?

Please call Wendy Settle, Water System Operator for the Ootischnia Improvement District
@ **250-304-3019**

Interior Health – Drinking Water Office – 250-551-1911/ Pouria

Toll Free Emergency Contact Number – 1-866-457-5648

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly [for example: people in apartments, rental units, nursing homes, schools, preschools, churches and businesses]. You can do this by posting this notice in a public place or distributing copies by hand or mail.

Signature: _____
Wendy Settle, Water System Operator

Ootischema Improvement District

WATER QUALITY ADVISORY

[Total Coliform Presence]

Laboratory tests indicate the presence of total coliform bacteria in the drinking water. The “total coliforms” may be due to inadequate disinfection treatment or distribution pipes that are in need of maintenance. Total coliform bacteria are naturally present in the environment and they are generally not harmful themselves but they indicate an increased chance that organisms causing intestinal illness may be present in the drinking water. People with undeveloped immune or severely weakened immune systems, infants and elderly may be at increased risk.

Due to the above concerns and as a precautionary measure, water users are advised to bring all water to a rolling boil for a least one minute and let it cool before using it or, use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth and food preparation until further notice. We will inform you when the Water Quality Advisory is removed.

THIS WATER QUALITY NOTICE IS EFFECTIVE July 20 2018 UNTIL FURTHER NOTICE.

ENQUIRIES?

Please call Wendy Settle, Water System Operator for the Ootischema Improvement District
@ 250-304-3019

Interior Health – Drinking Water Office – 250-551-1911/ Pouria

Toll Free Emergency Contact Number – 1-866-457-5648

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly [for example: people in apartments, rental units, nursing homes, schools, preschools, churches and businesses]. You can do this by posting this notice in a public place or distributing copies by hand or mail.

Signature: _____
Wendy Settle, Water System Operator

Ootischenia Improvement District

BOIL WATER NOTICE

[Contaminated Water]

Contaminated water has entered the distribution system and we've received reports of people with symptoms typical of waterborne illness. Disease-causing organisms [bacteria, viruses or parasites] may have entered the distribution system. These organisms can cause symptoms such as diarrhea, abdominal cramps, headaches, nausea, vomiting or other symptoms. Boiling the water kill these organisms. People with weakened or undeveloped immune systems are most at risk [this includes: elderly people, pregnant women and their unborn, very young children [under 2], people with AIDS, cancer, diabetes or kidney disease and people being treated with immuno-suppressing medications].

Water users are advised to bring all water to a rolling boil for a least one minute and let it cool before using it or, use bottled water. Boiled or bottled water should be used for drinking, making ice, washing dishes, brushing teeth and food preparation until further notice. We will inform you when you no longer need to boil your water.

THIS BOIL WATER NOTICE IS EFFECTIVE _____ UNTIL FURTHER NOTICE.

ENQUIRIES?

Please call Wendy Settle, Water System Operator for the Ootischenia Improvement District
@ 250-304-3019

Interior Health – Drinking Water Office – 250-551-1911/ Pouria

Toll Free Emergency Contact Number – 1-866-457-5648

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly [for example: people in apartments, rental units, nursing homes, schools, preschools, churches and businesses]. You can do this by posting this notice in a public place or distributing copies by hand or mail.

Signature: _____
Wendy Settle, Water System Operator

DRINKING WATER NOTICE

We have recently discovered that an unknown quantity of a chemical contaminant may have entered the water supply system. Water samples are being collected to determine if the water quality meets the standards of the *Guidelines for Canadian Drinking Water Quality*. The chemical contaminant may be at a level that makes our water supply toxic and unfit for drinking or bathing.

As a precautionary measure to avoid health risks, we are advising water users to use bottled water or an alternate source of water for drinking, making ice, washing dishes, brushing teeth, bathing and food preparation until further notice. **BOILING THE WATER WILL NOT MAKE IT SAFE**. If alternate water sources are used, the water must be from Interior Health approved sources only. The water in your hot water tank may also be unsafe. Please consult a qualified plumber before draining your hot water tank.

DO NOT USE WATER NOTICE

IS EFFECTIVE _____ UNTIL FURTHER NOTICE

ENQUIRIES?

Please call Wendy Settle, Water System Operator for the Ootischia Improvement District
@ 250-304-3019

Interior Health – Drinking Water Office – 250-551-1911/ Pouria

Toll Free Emergency Contact Number – 1-866-457-5648

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly [for example: people in apartments, rental units, nursing homes, schools, preschools, churches and businesses]. You can do this by posting this notice in a public place or distributing copies by hand or mail.

Signature: _____
Wendy Settle, Water System Operator

Ootischia Improvement District

NOTICE
VOLUNTARY
CONSERVATION

As a result of the recent incident involving _____ there is a strong possibility that pumping systems will have to be shut down. All water users are requested 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 household use. As an extra precaution, you may want to disinfect this emergency water supply by adding household chlorine bleach [two drops of bleach to 1 litre of water or 0.5ml bleach to 1 Imperial Gallon/4.55litre of water]. Please ensure that only clean potable water containers are used for storing these emergency supplies.

EFFECTIVE _____ UNTIL FURTHER NOTICE

THANK YOU FOR YOUR PATIENCE AND CO-OPERATION

ENQUIRIES?

Please call Wendy Settle, Water System Operator for the Ootischia Improvement District
@ 250-304-3019

Interior Health – Drinking Water Office – 250-551-1911/ Pouria

Toll Free Emergency Contact Number – 1-866-457-5648

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly [for example: people in apartments, rental units, nursing homes, schools, preschools, churches and businesses]. You can do this by posting this notice in a public place or distributing copies by hand or mail.

Signature: _____
Wendy Settle, Water System Operator

Ootischema Improvement District

NOTICE
MANDATORY
CONSERVATION

As a result of the recent incident involving _____ the main pumping system is not in operation – there is no water entering the distribution system. Please refrain from using faucets and other plumbing fixtures and please use stored water, bottled water or an alternate source of water for domestic purposes. Draining your hot water tank is not recommended unless you have consulted a qualified plumber. If alternate water source are used, the water must be from Interior Health approved sources only.

EFFECTIVE _____ UNTIL FURTHER NOTICE

THANK YOU FOR YOUR PATIENCE AND CO-OPERATION

ENQUIRIES?

Please call Wendy Settle, Water System Operator for the Ootischema Improvement District
@ 250-304-3019

Interior Health – Drinking Water Office – 250-551-1911/ Pouria

Toll Free Emergency Contact Number – 1-866-457-5648

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly [for example: people in apartments, rental units, nursing homes, schools, preschools, churches and businesses]. You can do this by posting this notice in a public place or distributing copies by hand or mail.

Signature: _____
Wendy Settle, Water System Operator

Ootischema Improvement District

NOTICE
WATER SYSTEM
RECOVERING

The water supply system has been inspected and, where necessary, repairs have been made. All pumping systems are now fully operational. While the system is recovering to normal operating levels, your assistance with conservative water use over the next two or three days would be appreciated. If you have received a *Boil Water Notice* or a *Water Quality Advisory*, please continue to take the necessary precautions until you've seen the *Drinking Water Problem Corrected* notice.

EFFECTIVE _____

THANK YOU FOR YOUR PATIENCE AND CO-OPERATION

ENQUIRIES?

Please call Wendy Settle, Water System Operator for the Ootischema Improvement District
@ 250-304-3019

Interior Health – Drinking Water Office – 250-551-1911/ Pouria

Toll Free Emergency Contact Number – 1-866-457-5648

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly [for example: people in apartments, rental units, nursing homes, schools, preschools, churches and businesses]. You can do this by posting this notice in a public place or distributing copies by hand or mail.

Signature: _____
Wendy Settle, Water System Operator

Ootischenia Improvement District

NOTICE

DRINKING WATER ISSUE CORRECTED

Water samples collected from our water system indicate that **it is no longer necessary to boil water prior to consumption**. Chlorine levels will be increased for a short period of time and you may detect a stronger chlorine taste and odor. Chlorine levels will be reduced to normal operating range as soon as possible.

EFFECTIVE _____

THANK YOU FOR YOUR PATIENCE AND CO-OPERATION

ENQUIRIES?

Please call Wendy Settle, Water System Operator for the Ootischenia Improvement District
@ 250-304-3019

Interior Health – Drinking Water Office – 250-551-1911/ Pouria

Toll Free Emergency Contact Number – 1-866-457-5648

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly [for example: people in apartments, rental units, nursing homes, schools, preschools, churches and businesses]. You can do this by posting this notice in a public place or distributing copies by hand or mail.

Signature: _____
Wendy Settle, Water System Operator

Ootischema Improvement District

NOTICE

DRINKING WATER ISSUE CORRECTED

The Do Not Use Water Notice is Removed

Water samples collected from our water system indicate that **it is no longer necessary to use bottled water or other alternate sources of drinking water.** We may find it necessary to increase chlorine levels for a short period of time and you may detect a stronger chlorine taste and odour. Chlorine levels will be reduced to normal operating range as soon as possible.

EFFECTIVE _____

THANK YOU FOR YOUR PATIENCE AND CO-OPERATION

ENQUIRIES?

Please call Wendy Settle, Water System Operator for the Ootischema Improvement District
@ 250-304-3019

Interior Health – Drinking Water Office – 250-551-1911/ Pouria

Toll Free Emergency Contact Number – 1-866-457-5648

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly [for example: people in apartments, rental units, nursing homes, schools, preschools, churches and businesses]. You can do this by posting this notice in a public place or distributing copies by hand or mail.

Signature: _____

Wendy Settle, Water System Operator

SUPERVISORY CONTROL AND DATA ACQUISITION

AUTOMATIC CONTROLS: SCADA - Supervisory Control and Data Acquisition. - controls at office and at reservoir. Well shut down procedure:

Computer at: Lookout Direct [OID_SCADA] [Main Panel] screen-it is normally left at this screen; simply move mouse to bring up screen if monitor is blank. Shows reservoir levels and well status; check for alarms. Toggle on appropriate well as indicated on screen Well # Configuration panel should pop up showing possible settings.

Eg:

Well #3	-	X	
On *	Off		*
Auto *	Manual *		

normal setting well off.

Running will show green at “on” indicator and “green” pump symbol. Toggle Manual indicator box and keep mouse keyed for at least 30 seconds. Auto indicator should go “off” and Manual indicator should come “on”. If not switching, repeat toggle for longer period. Now toggle Off indicator box with same procedure as previously. Off indicator should come “on” in red and flow rate will drop. Failure of any of this may indicate link loss or repeater failure. Alarm section should indicate this. To check for alarms, toggle Alarms indicator at top right of grey screen.

Also clear area near top of screen should show alarms if there are problems. Repeater failure will not be indicated and may cause all wells to come on depending on settings at time. Wells will then have to be manually shut down. Should still indicate link loss alarm. Easiest manual shut down is at external cut off switch at well site. Well #2 requires shovel or step ladder to reach switch. Step ladder is in shop. Key for locks at switches in lock box in office.

EMERGENCY REPORT

1. Person or department calling in emergency: _____

Phone number _____ Date call received _____ Time call received _____

2. Location of emergency: _____

Street or house / building number _____

3. Condition at scene (check appropriate box {es})

Escaping water: _____ seepage _____ free-flowing _____ gushing

Flooding: _____ roads _____ intersections _____ property _____ buildings

Erosion: _____ banks _____ foundations

Electrical Power: _____ interruptions _____ total loss of power

Change in water quality: _____ taste _____ odor _____ color _____ clearness

4. Actual / potential damage: Briefly describe the situation

5. Access restrictions, if any _____

6. Assistance already available (who, what they are doing, etc.) _____

7. Personnel analyzing emergency _____

8. Reported results of investigation _____

9. Emergency action taken _____

10. Persons / Department notified of Emergency _____

Signature of person who filled out form _____

CUSTOMER PHONE TREE

If someone can't be reached by phone, leave notice in mailbox or slip it under the door.

Folio Number	Name of Person Phoning
07285.055 to 07288.056	Wendy Settle Cell: 250-304-9446 Work: 250-304-3019
07288.057 to 07288.168	Bill Alexander Cell: 250-304-5919
07288.170 to 07288.296	Johnny Strilaeff Home: 250-365-2100 Cell: 250-304-9032 Work: 250-304-1632 Cell: 250-304-8565
07288.297 to 07288.690	Johnny Strilaeff Home: 250-365-2100 Cell: 250-304-9032 Work: 250-304-1632 Cell: 250-304-8565
07288.725 to 07289.165	Colin Rogers Home: 250-304-1794 Cell: 250-304-3372
07289.170 to 07289.290	Colin Rogers Home: 250-304-1794 Cell: 250-304-3372
07289.295 to 07289.420	Kevin Waldal Cell: 250-718-3300
07289.425 to 07292.084	Kevin Waldal Cell: 250-718-3300
07292.088 to 07597.120	Ken Oglow Cell: 250-304-9954
07297.125 to 07597.300	Ken Oglow Cell: 250-304-9954

APPENDIX D - STANDARD OPERATING PROCEDURES

Testing of the Ootischenia Improvement District water system is done in accordance with the Ministry of Health regulations in agreement with the Interior Health Authority.

The frequency and quality of water sample testing is determined on the basis of the number of water users on the system. Under the Safe Drinking Water Regulation, it is up to the medical officer in each region to establish the testing protocol, frequency and location of samples.

The water sample test sites are at various locations within the district. Water samples are taken at two sample sites, are tested weekly for Total Coliform and E Coli and the testing is done by Passmore Laboratory Ltd. 4235 Upper Passmore Road, Winlaw, BC V0G 2J0, Tel: 250-226-7339 e-mail:passmorelaboratory@columbiawireless.ca. The company is a “certified laboratory” and approved by the BC Ministry of Health. The water samples are collected by the district’s water system operator who is trained in the handling, sampling, storage and transportation of water samples as per the guidelines.

The OID takes 2 samples per week. Once every three years the district does a Chemical Water Analysis of each well.

WATER SAMPLE SITES

562 Ootischenia Road
 Waterloo Road Sampling Station
 Prairie Road Sampling Station
 Bridgeview Crescent Sampling Station

WATER QUALITY STANDARDS FOR POTABLE WATER

Parameter:	Standard:
<i>Fecal coliform</i> bacteria	No detectable <i>Fecal coliform</i> bacteria per 100 ml.
<i>Escherichia coli</i>	No detectable <i>Escherichia coli</i> per 100 ml.
<i>Total Coliform</i> Bacteria	
a) 1 sample in a 30 day period	No detectable <i>total coliform</i> per 100 ml.
b) more than 1 sample in a 30 day period	at least 90% of samples have no detectable <i>total coliform</i> bacteria per 100 ml and no sample has more than 10 <i>total coliform</i> bacteria in 100 ml.

The Interior Health Officer is to be contacted anytime the water sampling results do not meet the Schedule A Water Quality Standards for Potable Water (see above) outlined in the Drinking Water Protection Regulations. The Interior Health Officer and the OID Water Operator will discuss what actions have to be taken.

FREQUENCY OF MONITORING SAMPLES FOR PRESCRIBED WATER SUPPLY SYSTEMS

Population served by prescribed water Supply system:	Number of samples per month:
Less than 5,000	4
5,000 to 90,000	1 per 1000 of population
More than 90,000	90 plus 1 per 10,000 of population in excess of 90,000

WATER SAMPLE PROCEDURES

Care must be taken not to contaminate lid or the top of the bottle when taking sample. Allow water to run approximately five (5) minutes to allow the standing water to be flushed out of the line and then a good representative sample can be collected. Fill all sampling containers to the appropriate levels. Store in a cooler with ice packs. Sample containers supplied by Passmore Laboratory may contain preservatives (if applicable). Use caution as the preservatives are Corrosive. The preservatives are necessary to ensure accurate results. Samples must be delivered to City of Castlegar Works Yard on Minto Road before 12:00 noon. Passmore Lab representative will pick up all samples at the Works Yard.

Equipment Needed:

- Cooler with ice packs
- Passmore Laboratory water sample bottles
- Passmore Laboratory Chain of Custody form & zip lock bag
- Turbidity meter

Sampling Procedure for Bacteriological Sampling

1. Water samples are collected once per week typically every Monday morning.
2. Prior to sampling prepare Chain of Custody (COC) Form. Also fill in information label on the sample bottles for each site.
3. Proceed to each site and flush water for at least five (5) minutes.
4. Record the current time on the bottle and fill to between the shoulder and the neck of the bottle. Replace the lid snugly and place the sample bottle in the cooler with the ice packs.
5. Test water for turbidity.
6. When all sites have been sampled, tested and the information recorded on the Chain of Custody Form, fold the COC form and place in the zip-lock bag. Place COC in the cooler with the sample bottles.
7. Samples are ready to be delivered.