

2022

Waterworks Emergency Plan



Community: Town of Battleford
Water Source: Ground Water – 4 Wells Adjacent to the North Sask. River
Address: P.O. Box 40, 392 25th Street West, Battleford, SK
Contacts: Manager - Phone: (306) 937-6228 | Cell: (306) 441-7090
Water Plant - Phone: (306) 937-6224
Admin - Phone: (306) 937-6220 | Fax: (306) 937-5963

Revised: 2022-01-05

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Introduction and Policy Statement

This Emergency Response Plan is intended to guide the actions of the Town of Battleford personnel during an emergency response that may affect water quality. Its sole purpose is to ensure the safety of Town personnel, consumers, protection of life, property and the environment in the most efficient way possible in the event of an unexpected incident.

Performance goals and acceptable levels of service:

Life Safety

The primary goal of the water system is to ensure the safety of its users. At all times, safe, clean water should be provided to the public. Examples of conditions that should never occur are the failure of the distribution system; the distribution of contaminated water; the release of hazardous materials and the collapse of structures.

High Quality Water

Supply Consumers with sufficient quantities of safe and acceptable water

Fire Suppression

Supply enough water for fire suppression and make such water available as soon as possible after an emergency

Public Health Needs

Supply the following needs with potable water in the allowable time span after an emergency.

Commercial & Business

Supply businesses relying on water as soon as possible



Emergency Contacts

Utility Personnel

Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Whittleton, Aubrey	Manager	(306) 937-6228	(306) 441-7090	(306) 937-5963	aubrey@battleford.ca
Michelman, Mark	W/S Operator 2	(306) 937-6224	(306) 441-7752	(306) 937-5963	markmichelman@sasktel.net
Kolosnjaji, Mihajlo	W/S Operator 2	(306) 937-6224	(306) 480-6113	(306) 937-5963	myke81@live.ca
Day, Glenn	W/S Operator	(306) 937-6224	(306) 441-3342	(306) 937-5963	gkday@sasktel.net
Ramac, Miron	W/S Operator	(306) 937-6224	(306) 480-9703	(306) 937-5963	ramacmiron@yahoo.ca
Wright, Bailey	Maintenance Personnel	(306) 937-6224	(306) 481-5783	(306) 937-5963	Wright.bailey9@gmail.com
Noble, Kayla	Admin Assistant	(306) 937-6220	(306) 480-6606	(306) 937-5963	works@battleford.ca

Emergency Contacts

Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Health & Safety						
Public Health	Clarke, Steven	Public Health Inspector	(306) 446-5418	(306) 441-0099		PublicHealthInspection@pnrha.ca
Medical Health Officer	Nsungu, Dr. Mandiangu	Medical Health Officer	(306) 446-6426	(306) 441-5572	(306) 446-6432	
Water Security Agency	Dahl, Bruce	WSA - Project Officer	(306) 230-3184	(306) 933-8387	(306) 933-6820	bruce.dahl@wsask.ca
	Sherman, Laurie	Safety & Enviro.Coordinator	(780) 853-8512			lauries718@gmail.com
Emergency Planning		Regina, Saskatchewan	(306) 787-9563			
Emergency Planning		Saskatoon, Saskatchewan	(306) 933-6116			
SE Spill Emergency		24 Hour Line	(800) 667-7525			
		Outside Province	(306) 953-2980			
Police		Local	(306) 446-1720		(306) 446-1738	
Ambulance		Local	(306) 310-911		(306) 445-1738	
Hospital		Local	(306) 446-6600		(306) 446-4114	
Fire Department	Thompson, Geoff	Deputy Fire Chief	(306) 441-1534	(306) 937-6208	(306) 937-3719	geoff@battleford.ca
Fire Department	Gabruch, Larry	Fire Chief	(306) 441-0577	(306) 937-6208	(306) 937-3719	firechief@battleford.ca
Bylaw	McAngus, Ross	Enforcement	(306) 441-5607	(306) 937-6231		publicsafetyofficer@battleford.ca
Municipal Engineering						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
BCL			(306) 477-2822		(306) 955-3755	
Associated Engineering			(306) 721-2466			
Suppliers						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Anderson Pump House - Pump Manufacturer	Smith, Gerry		(306) 441-3482	(306) 937-7741		
Regal Manufacturing - ClearTech	Day, Rick	Sales Manager	(306) 280-7112	(800) 387-7503	(888) 281-8109	rday@cleartech.ca
Chemicals - ClearTech	Day, Rick	Sales Manager	(306) 280-7112	(800) 387-7503	(888) 281-8109	rday@cleartech.ca
Chemicals - ClearTech	Orders		(800) 387-7503		(888) 281-8109	orders@cleartech.ca
Chemicals - ClearTech	Administration		(306) 664-2522		(306) 665-6216	
Chemicals - ClearTech	24 Hour Line		(306) 664-2522			
Excavation Services						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Sanburn Construction	Mahon, Fred	Owner	(306) 937-3777	(306) 441-7490		sanburn.construction@sasktel.net
Sask First Call			(866) 828-4888	(306) 525-2356		

Access Cable			(866) 363-2225			
Electricians						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
CMP Electric			(833) 222-1094			
Collins Electric			(306) 441-5703			
Fauchon Electric Ltd.	Fauchon, Sean	Owner	(306) 441-3566			fauchonelectric@gmail.com
Fedler Electric	Fedler, Rick	Owner	(306) 445-3885	(306) 441-8656	(306) 446-6106	
	Fedler, Rodney	Owner	(306) 445-3885	(306) 441-6494	(306) 446-6106	
Gardiner Electric			(306) 937-2633			
General Plumbing			(306) 445-2341		(306) 445-2289	
L7 Electric			(306) 446-2425			
Manula Electric			(306) 441-3587	(844) 206-5533		
Ultimate Powerline			(306) 445-1661			
Plumbing						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Big Sky Mechanical Ltd.			(306) 480-5030			
Billy's Plumbing			(306) 441-7083			
Cheynes Plumbing			(306) 445-6691		(306) 446-3588	
Garry Weran Contracting			(306) 441-9703	(306) 446-2309		
Hawtin Plumbing Services			(306) 441-4158			
Hydros Plumbing			(306) 445-0442	(306) 441-1317		
Luk Plumbing & Hearing			(306) 445-6707	(306) 445-6708	(306) 463-2635	
P&W Mechanical			(306) 446-2770		(306) 445-1038	
River City			(306) 445-4344		(306) 445-4497	
	Winterhault, Todd	Owner	(306) 445-4344	(306) 441-6920	(306) 445-4497	
	Dimmick, Brent		(306) 445-4344	(306) 441-1634	(306) 445-4497	
Rooted Plumbing & Heating	Edlin, Carson	Owner	(306) 386-7870			
Bottled Water Suppliers						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Battlefords Pure Water			(306) 441-1489			
Culligan Water			(306) 445-6266			
Easthill Enterprises			(306) 441-7228			
Superior Water Ltd.			(780) 870-5970			

Priority Contacts

Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Pharmacies, Offices & Clinics						
Co-op Pharmacy			(306) 446-5520			
Remedy's Rx Pharmacy			(306) 937-2600		(306) 937-3298	rxaccounts@hotmail.com
Pharmacies, Offices & Clinics						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Heritage Christian						
Playtime Co-Operative			(306) 937-3184			
Senior Housing						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Battlefords District Care			(306) 446-6900		(306) 937-2258	
Golden Years Lodge	Battlefords Housing Authority		(306) 937-3055		(306) 446-1277	
Meadow Sweet Manor	Battlefords Housing Authority		(306) 937-3055		(306) 446-1277	
Bakeries						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
29th Street Market	Kim, Danny & Lindsay		(306) 937-3377			
Co-op Food Market			(306) 446-5520			
Tim Hortons			(306) 446-2088			
Restaurants, Fast Food, Catering						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Busters Pizza			(639) 390-3700			battleford.busterspizza@gmail.com
Li King			(306) 937-7363			
Pennydale Junction			(306) 937-3544		(306) 937-5952	pennydale@sasktel.net
R & J Garden	Cheung, Ricky & Wu, Jenny		(306) 937-5555			rickycheung6118@gmail.com
Subway			(306) 937-2048			jervon@sasktel.net
Tim Hortons			(306) 446-2088			
Redneck's Concession	Warren, Wayne & Shelley		(306) 445-2436	(306) 441-6543		
Schooling						
Company Name	Contact Name	Contact Title	Phone No.	Phone No. 2	FAX Number	Email Address
Battleford Central	Sommerfeld, Monique	Principal	(306) 937-2112		(306) 937-7175	bcs@lskysd.ca
	Charbin, Lindsay	Vice Principal	(306) 937-2112		(306) 937-7175	
Board Member	Leask, Glen		(306) 441-3534	(306) 937-7702		glen.leask@lskysd.ca

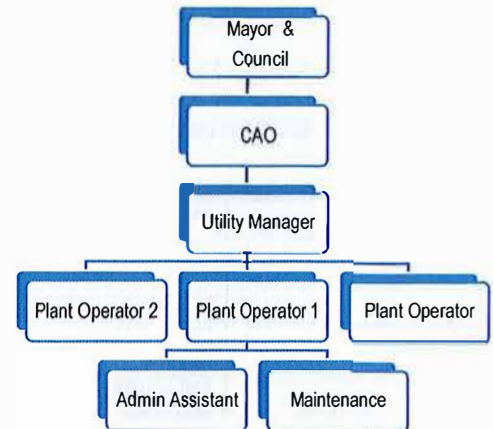
Heritage Christian	Weibe, Gerald	Principal Admin	(306) 446-3188	(306) 446-3187	heritage@lskysd.ca
St. Vital Catholic	Nichol, Natasha	Principal	(306) 937-2233	(306) 937-7666	Natasha.nichol@lskysd.ca
		Secretary	(306) 937-2233	(306) 937-7666	stvital@lskysd.ca

Utilities

Company Name	Contact Name	Contact Title	Phone No	Phone No. 2	FAX Number	Email Address
Access Cable			(866) 363-2225			
Bell			(866) 875-9591	(800) 773-2121		
Sask First Call			(866) 828-4888	(306) 525-2356		
Sask.Energy			(800) 567-8899	(888) 700-0427		
Sask.Power	Stuckless, Everett		888-757-6937	(306) 227-4033		estuckless@saskpower.com
Sask.Tel			(855) 444-9464	-611		
	Dereniwsky, Suzane		(306) 446-5348	(306) 481-3660	(306) 445-7337	
	Chupa, Diane		(306) 777-1223			
Telus			(866) 558-2273	310-3100		
Virgin Mobile			(888) 999-2321			

Organization and Responsibilities Emergency Planning Task Force

Contact Name	Contact Title	Phone No	Phone No. 2	Email Address
Leslie. Ames	Town Mayor		(306) 441-2412	mayorieslie@battleford.ca
Laing, Doug	Town Designate Member		(306) 441-7706	councillorlaing@battleford.ca
Whittleton, Aubrey	Utility Manager	(306) 937-6228	(306) 441-7090	aubrey@battleford.ca
Alam, Ashrafal	Town CAO	(306) 937-6203	(306) 400-9788	ashalam@battleford.ca
Dahl, Bruce	WSA Project Manager	(306) 446-6426	(306) 441-5572	bruce.dahl@wsask.ca
Dr. Nsungu	Medical Health Officer	(306) 441-5572		
MacAngus, Ross	Town Bylaw Enforcement	(306) 937-6231	(306) 441-1534	publicsafety@battleford.ca



Water Quality Crisis Management

Water Quality Crisis Coordinator:

Coordinates all emergency actions, personnel and equipment.

Public Relations Coordinator:

Represents the Municipality in all the infrastructural facilities including support staff. All media enquiries and public enquiries should be directed to CMC

Lead Hand:

Coordinate, supervise and schedule personnel, equipment and materials to facilitate the repair or replacement of critical drinking water facilities, which have been prioritized by the CMC and Water Quality Crisis Coordinator

Company Name	Contact Name	Contact Title	Address	Phone No	Phone No. 2	Email Address
Crisis Coordinator (Utility Manager)	Whittleton, Aubrey	Manager	281 26 th Street West Battleford, SK S0M 0E0	(306) 937-6228	(306) 441-7090	aubrey@battleford.ca
Public Relations Coordinator & Administrator	Alam, Ashrafal	Town CAO	151 1 st Avenue West Battleford, SK S0M0E0	(306) 937-6203	(306) 400-9788	ashalam@battleford.ca
Coordinator – Mayor	Leslie, Ames	Mayor	191 1 st Avenue West Battleford, SK S0M0E0		(306) 441-2412	mayorieslie@battleford.ca
Personnel Lead Hand(s)	Kolosnjaji, Mihajlo	WS Operator 2	2491 100 th Street, North Battleford, SK S9A3K6	(306) 937-6224	(306) 480-6113	myke81@live.ca
Advisors	Dahl, Bruce	Project Manager	101-108 Research Drive Saskatoon, SK	(306) 446-6426	(306) 441-5572	bruce.dahl@wsask.ca
Advisors	Dr. Nsungu	Health Officer		(306) 441-5572	(306) 446-6426	
Advisor	MacAngus, Ross	By law Enforcement	North Battleford, SK	(306) 937-6231	(306) 441-1534	publicsafety@battleford.ca

Notification and Communication

The purpose of this section is to identify a process for system personnel to notify system users about an emergency and for system users to notify system personnel about an emergency.

In general, a waterworks incident needs to follow these steps:

1. The waterworks owner/operator(s) monitor the distribution system and treatment plant for trigger events (as defined in section 6). The local Health District monitors the public for a public health trigger;
2. All incidents are reported to the Water Quality Crisis Coordinator;
3. the Water Quality Crisis Coordinator evaluates the event, determines if a trigger has been met and classifies all events even those without a technical action plan (TAP) (see section 6).
4. The Water Quality Crisis Coordinator activates the Water Quality Crisis Management Cell (CMC), if called for;
5. The CMC directs the implementation of the TAP and recommends further actions, if required. This may require the notification of the Emergency Measures Organization for the municipality

6. The CMC utilizes the Communication Plan to advise the public.
7. When the emergency is over, CMC is deactivated; and
8. The Water Quality Crisis Coordinator prepares a report on the incident and presents it to the Waterworks Emergency Planning Task Force for evaluation.

System personnel will typically inform system users using one or more of the following methods:

- phone phone tree flyer personal contact
 media release door to door or other

System users need to also be given the names and phone numbers of the system personnel to contact in case of an emergency. Typically, billing or newsletters are used to provide this information.

Media Communications

In any crisis, the media will receive information only from the designated spokesperson(s). The spokesperson(s) will call a media conference, give information over the phone or release a written statement.

The Town of Battleford website (www.battleford.ca) and social media pages will be updated as information becomes available. In the case of a major emergency or disaster, the emergency hotline will be manned 24 hours a day until the CMC determines that the crisis has ended. The phone at the office (306-937-6224) will be utilized for this purpose.

Company Name	Contact Name	Contact Title	Phone No	Phone No. 2	Email Address
SaskAlert	Jean Longpre		(306) 787-6678		
Battlefords News Optimist			(306) 445-7261		
Battlefords Now			(306) 445-2477		
		News Room	(306) 446-6397		
	Colin McGarrigle	News Director			colin.mcgarrigle@jpbj.ca
Q98 97.9 FM	Main Switchboard		(306) 445-2477		
	Newsline		(306) 446-6397		
	Karl Johnston	General Manager			
	Mike Aimoe	After Hours Emergency	(306) 480-4570		Aimoe@jpbj.ca
93.3 FM The Rock	Same as Q98 above				
1050 AMM CJNB	Same as Q98 and 93.3 FM above	Newsline			cjnnews@jpbj.ca
Jim Pattison Group			(604) 688-6764		
North Battleford Radio Stations After Hours Emergency Only	Kathy Gallant		(306) 480-4570		kathy.gallant@jpbj.ca
	Mike Aimoe	Station Manager	(306) 480-4570		Mike.aimoe@jpbj.ca
	Matt Ryan		(306) 290-7643		Matt.ryan@jpbj.ca

Official Statements

Precautionary Drinking Water Advisory, Emergency Boil Water Order & Emergency Boil Water Notices.

Precautionary Drinking Water Advisory

This Advisory applies to all residents and users in the _____ and is effective: __:00 am/pm ____ day, Month Date, Year.

Pursuant to clause 36(1)(a) of *The Environmental Management and Protection Act, 2010* this Precautionary Drinking Water Advisory is issued due to _____ and therefore the safety of _____ drinking water supply cannot be ensured at all times. Therefore, pursuant to Clause 36(1)(b) of *The Environmental Management and Protection Act, 2010*, consumers must be notified to:

- (a) boil all water, used for drinking purposes, for at least one (1) minute, at a rolling boil, prior to use;
- (b) boil water to be used for other activities where it may be ingested, including: (i) brushing teeth or soaking false teeth; (ii) washing fruits and vegetables; (iii) food or drink which will not be subsequently heated; and (iv) ice cubes;
- (c) not use the water for washing dishes, unless the water has been boiled or the dishes are sanitized in another fashion. Washed dishes and utensils can be soaked in a bleach water solution (approximately 2 tablespoons of bleach per gallon or 10 ml of bleach per liter of water) for at least two minutes after being washed to kill any bacteria which may be present.
 Note: **Do not mix bleach with soaps or detergents.**
- (d) not drink from any public drinking fountains supplied with water from the public water supply;
- (e) ensure that younger children and infants are sponge bathed;
- (f) use an alternative water source known to be safe, if they do not wish to boil the water; and

(g) consult with your physician if you have cuts or rashes that are severe before using the water.

Under most circumstances, there is no need to boil water used for other household purposes. Adults, adolescents and older children may shower, bathe or wash using tap water but should avoid swallowing the water. Laundry may be washed in tap water, either by hand or by machine.

This Advisory is effective immediately and will not be lifted until the water supply is determined to be completely safe.

If you require any additional information, please contact the following:

Municipal Office -	306-??-???	
Water Security Agency – Environmental & Municipal Management Services Division	306-??-???	
Water Security Agency - Communications Manager	306-694-8914	Media Inquiries
???????????????? Health Region	306-??-???	

Environmental Project Officer
Water Security Agency

Order To Remedy A Health and Hazard Associated With Water

This order given this _____(date) pursuant to Section 25 of *The Public Health Act, 1994*.

To: (Municipality or owner/operator of the water supply)

Whereas you are responsible for the following health hazard:

The (presence of contaminates or lack of minimum treatment), namely (list) _____(in, for) the public water supply provided by you to the municipality(ies) of _____.

Pursuant to Section 25 of *The Public Health Act, 1994*, you are hereby ordered to remedy the health hazard by:

1. Take all reasonable steps to immediately notify all users of the public water supply of the (presence of unacceptable bacteria levels or lack of adequate disinfection) and the steps necessary to make the water supply safe, including:
 - (a) boiling all water used for drinking purposes for at least one minute, at a rolling boil, prior to usage;
 - (b) advising that such boiled water should be used as the water for other activities where it may be ingested, including:
 - (i) tooth brushing or soaking false teeth;
 - (ii) dishwashing, unless sanitized in another fashion;
 - (iii) food or drink which will not be subsequently heated;
 - (iv) ice cubes
 - (c) advising persons providing food or drink to the public to ensure all water that will be consumed by the public is boiled and to make un-operational all public drinking fountains supplies with water from the public water supply.
 - (d) making the attached "Emergency Boil Water Notice" available to users of the public water supply by:
 - (a) (v) posting in conspicuous places in public buildings and areas in the municipality(ies). (vi) list any other appropriate methods for the circumstance – newspaper, distribute copies. etc.);
 - (e) advising persons not wishing to boil water that they should use an alternative water source known to be safe.

2. This order remains in effect until safe water is restored as evidenced by the completion of any necessary work and receipt of at least two consecutive series of satisfactory water sample test results taken from the public water supply, as directed by Saskatchewan Environment.

NOTE TO MEDICAL HEALTH OFFICER OR DESIGNATE: This Order should be accompanied by a cover letter, which includes a statement similar to the following: You may appeal this Order in accordance with Section 11 of the Public Appeals Regulations (excerpt for the regulations, pages 5-10, attached).

Medical Health Officer or Designate

Sample PDWA Media Release – Faxed to Local Radio and Television Stations

Water Security Agency, in consultation with the _____ Health Region, has issued a Precautionary Drinking Water Advisory for the _____ region/municipality/owner due to (state reasons)_____.

All residents and users of water from the _____ system are notified to:

- boil water used for drinking purposes for at least one minute at a rolling boil prior to use;
- do not drink from any public drinking fountains supplied with water from the public water supply;
- use an alternative water source known to be safe, if they do not wish to boil the water.

- boil water for at least one minute at a rolling boil when it is to be used for other activities where it may be ingested, including: (i)
 - brushing teeth or soaking false teeth;
 - 1. dishwashing, unless sanitized in another fashion;
 - 2. using water in food or drink which will not be subsequently heated;
 - 3. making ice cubes; and
 - 4. washing fruit and vegetables.

Under most circumstances, residents do not need to boil water used for other household purposes. Adults, adolescents and older children may shower, bathe or wash using tap water but should avoid swallowing the water. Younger children and infants should be sponge-bathed. Residents should also consult with a physician before using the water if they have severe cuts or rashes. Laundry may be washed in tap water, either by hand or by machine.

This Advisory is effective immediately??? or enter date, time and or location it takes effect ???, and will not be lifted until the water supply is determined to be completely safe.

Water Security Agency, _____ (municipality/owner) and the _____ Health Region are working together to resolve the problem as quickly as possible, and will continue to keep residents advised.

For more information, please contact:

Municipal Office	306 - _____ - _____	
WSA Policy & Communications Division	306 - 694-8914	Media Inquiries
WSA - _____ Head/field Office	306 - _____ - _____	(Inquiries regarding PDWA)
_____ Health Region	306 - _____ - _____	

Immediate Release – Sample EBWO Media Release – Faxed To Local Radio and Television Stations

Emergency Boil Water Order Issued for _____ (municipality/owner)

The _____ Health Region, Water Security Agency and the _____ (municipality/owner) have announced that, effective immediately, an Emergency Boil Water Order has been issued for the _____ region/municipality/owner.

All residents and users of water from the _____ system are ordered to:

- boil water used for drinking purposes for at least one minute at a rolling boil prior to use;
- not drink from any public drinking fountains supplied with water from the public water supply;
- use an alternative water source known to be safe, if they do not wish to boil the water.
- boil water for at least one minute at a rolling boil when it is to be used for other activities where it may be ingested, including: (vi)
 - brushing teeth or soaking false teeth;
 - 1. using water in food or drink which will not be subsequently heated;
 - 2. dishwashing unless sanitized in another fashion;
 - 3. making ice cubes; and
 - 4. washing fruit and vegetables.

Under most circumstances, residents do not need to boil water used for other household purposes. Adults, adolescents and older children may shower, bathe or wash using tap water but should avoid swallowing the water. Younger children and infants should be sponge-bathed. Residents should also consult with a physician before using the water if they have severe cuts or rashes. Laundry may be washed in tap water, either by hand or by machine.

This Boil Water Order is issued due to (state reasons) _____, and will not be lifted until the water supply is determined to be completely safe. The _____ Health Region, Water Security Agency and the _____ (municipality/owner) are working together to resolve the problem as quickly as possible, and will continue to keep residents advised.

For more information, please contact:

Municipal Office	306 - _____ - _____	
WSA Policy & Communications Division	306 - 694-8914	Media Inquiries
WSA - _____ Head/field Office	306 - _____ - _____	(Inquiries regarding PDWA)
_____ Health Region	306 - _____ - _____	

For any media inquiries please contact applicable Health Region

Follow-up/Update – Sample PDWA/EBWO Media Release – Faxed To Local Radio, Television Stations and Newspaper
Emergency Boil Water Order/Precautionary Drinking Water Advisory

The _____ Health Region, Water Security Agency and the _____ (municipality/owner) are advising _____ residents that there continues to be a high level of risk with the _____ drinking water system. Water used for drinking, cooking, food preparation, making ice cubes, washing dishes or brushing teeth must be brought to a rolling boil for at least one minute.

The EBWO/PDWA remains in place due to (state reasons) _____.

"Our top priority is protecting the health of the public, and we are taking every precaution necessary," said (local MHO / local EPO or EP Manager in the case of a PDWA).

This Boil Water Order/PDWA will not be lifted until the water supply is determined to be completely safe. Water Security Agency and the _____ (municipality/owner) are conducting a full review of the water systems and will be consulting with the HR on risks to public health. The public will continue to be advised.

For more information, please contact:

Municipal Office	306 - _____ - _____	
_____ Health Region	306 - _____ - _____	
WSA- _____ Head – field Office	306 - _____ - _____	(Inquiries regarding PDWA)
WSA Policy & Communications Division	306- 787-6595	(Media Inquiries)

Final Follow-up– Sample PDWA/EBWO Media Release – Faxed To Local Radio, Television Stations and Newspaper Emergency Boil Water Order/Precautionary Drinking Water Advisory Lifted

The _____ Health Region/Field Office of Water Security Agency has lifted the Emergency Boil Water Order/ Precautionary Drinking Water Advisory for _____ (municipality/owner).

"The factors that caused the issuance of the Order/Advisory have been rectified," said (local MHO/local EPO or EP Manager in the case of a PDWA).
"Residents no longer need to boil their water before drinking or using the water in other ways."

For more information, please contact:

Municipal Office	306 - _____ - _____	
_____ Health Region	306 - _____ - _____	
WSA- _____ Head – field Office	306 - _____ - _____	(Inquiries regarding PDWA)
WSA Policy & Communications Division	306- 787-6595	(Media Inquiries)

Handout for Public Facilities

Precautions To Be Taken During A Precautionary Drinking Water Advisory Or Emergency Boil Water Order at Public Facilities

The following precautionary measures for public facilities are in addition to the measures that are listed in the PDWA/EBWO that have been posted in the community. These measures do not apply to all public premises. Those that are not pertinent to the premise's operation may be ignored.

- a. Do NOT serve water directly from the taps to your clients.
- b. Water being served must be brought to a rolling boil for at least one minute, cooled and then refrigerated before being used cold.
 - c. Bottled water from an alternate approved source may also be used.
- d. Coffee makers connected to the water supply must be disconnected if the water being heated for making coffee does not reach boiling point.
 - e. Boiled or bottled water must be used when rinsing fruits and vegetables that will not be cooked.
 - f. Discard any ice made in the last 7 days or otherwise directed by the local health region.
 - g. Turn the water off to any automatic ice making equipment, slush machines, drink dispensers or similar equipment.
- h. The water may be used for washing dishes in a dishwasher if there is a sani-cycle that reaches at least 45C for 20 minutes or 50C for 5 minutes or 72C for 1 minute.
 - i. Disconnect drinking fountains.
- j. Post notices in all washrooms advising of the PDWA or EBWO and reminding customers NOT to drink from the taps.
- k. In dental offices, provide boiled or bottled water for patients when rinsing mouths. Also ensure that equipment that uses water is provided with a safe supply.

Actions to be taken when the Precautionary Drinking Water Advisory / Emergency Boil Water Order has been lifted.

- a. Water lines within the premise should be completely flushed.
- b. Any equipment that is directly connected to the water lines should be flushed, including water heaters.
- c. All in-line water filters should be properly cleaned, or media should be replaced.

Signs

All example signs (Precautionary Drinking Water Advisory & Emergency Boil Water Order) are available from the Water Security Agencies document entitled "Bacteriological Follow-up Standard for Waterworks, November 1, 2012, EPB 505".

Technical Action Plans

Classification of the Emergency or Disaster

Level 1: Normal (routine) incident – Personnel and equipment currently on duty can handle the problem. There will be no effect on subsequent shifts or future operations. The CMC is not activated.

Level 2: Minor emergency – Personnel and equipment currently on duty can handle the emergency, but requires that additional staff be notified, given related work tasks, or work additional shifts. The CMC is activated, and the Waterworks Emergency Command Center is staffed.

Level 3: Major emergency – The problems are beyond the capabilities of the drinking water system staff and equipment. Requires personnel work extra shifts and they may need the assistance of outside help. The CMC is activated, and the Waterworks Emergency Command Center is staffed.

Level 4: Disaster – Problems are clearly and immediately beyond the capability of the drinking water system. The costs will be great, and the repair time will exceed one week. The assistance of outside personnel and equipment will be required. The CMC is activated, and the Waterworks Emergency Command Center is staffed.

The purpose of this section is to serve as a repository for detailed reference material that may be used for training or needed during an emergency.

Flood conditions Trigger events: (Disaster) widespread flooding occurs.	
Action	notify WSA – Environmental Project Officer (EPO); notify users of the potential for water contamination, loss of pump, power, etc. Users should be advised to store some drinking water in advance and to boil any suspect water for at least one minute; notify priority customers; contact local media for public service announcement (where all customers cannot be notified by phone); and contact government agencies (see below) for advice and assistance.
Contact	Owners of water system, WSA (Local EPO), Saskatchewan Emergency Planning and others as necessary.
Outbreak of a waterborne disease Trigger events: (Major emergency to disaster) local Health District notifies the water system of a confirmed outbreak.	
Action	notify WSA – EPO; notify users of the potential for water contamination. Users should be advised to boil any suspect water for at least one minute; notify priority customers; contact local media for public service announcement (where all customers cannot be notified by phone); and contact government agencies (see below) for advice and assistance
Contact	Owners of water system, WSA (Local EPO), Saskatchewan Emergency Planning and others as necessary
Contamination of source Trigger event: (Major emergency) gross deterioration of source water due to a spill, vehicle accident or natural causes.	
Action	shut down pump; notify WSA – Environmental Project Officer; notify users; notify priority customers; contact government agencies (see below) for advice and assistance; and contact local media for public service announcement (where all customers can not be notified by phone).
Contact	Owners of water system, WSA (Local EPO), Saskatchewan Emergency Planning and others as necessary.
Loss of source Trigger event: (Major emergency) Access to source water is lost due to intake problems or natural causes	
Action	shut down pump; notify WSA – EPO; notify users; notify priority customers; and contact government agencies (see below) for advice and assistance.
Contact	Owners of water system, WSA (Local Environmental Project Officer) and others as necessary.
Treatment process failure	
A Loss of chlorine residual leaving plant Trigger events: chlorine level leaving the plant is less than 0.1 mg/l free chlorine. (Minor emergency)	
Action	notify WSA – EPO; notify users of the potential for water contamination. Users should be advised to boil any suspect water for at least one minute; notify priority customers; and contact government agencies (see below) for advice and assistance.
Contact	Owners of water system, WSA (Local EPO), Chlorinator and chlorine suppliers
B Loss of chlorine residual in distribution system Trigger events: (Major emergency) chlorine levels at any place in the distribution system is less than 0.1mg/l free chlorine or 0.5 mg/l total chlorine.	
Action	notify WSA– EPO; notify users of the potential for water contamination. Users should be advised to boil any suspect water for at least one minute; notify priority customers; and contact government agencies (see below) for advice and assistance.
Contact	Owners of water system, WSA (Local Environmental Project Officer), Chlorinator and chlorine suppliers
C Increased turbidity in filter effluent Trigger event: (Minor emergency)	

	<p>the effluent turbidity of a filter is greater than 0.3 N.T.U. Sudden increases generally indicate a system disturbance or treatment failure</p> <p>notify WSA – EPO; notify users of the potential for water contamination. Users should be advised to boil any suspect water for at least one minute; ¶ notify priority customers; and contact government agencies (see below) for advice and assistance.</p> <p>Contact Owners of water system, WSA (Local EPO)</p>
D	<p>Microbial contamination detected Trigger event: (Routine incident to major emergency) a positive microbial test result is received for the treated water.</p> <p>Action Follow Saskatchewan's Bacteriological Protocol for Waterworks Regulated by Water Security Agency and Saskatchewan Environment EPB 505 procedures document</p> <p>Contact As per Saskatchewan's Bacteriological Follow-up procedures document.</p>
E	<p>Pump system failure Trigger events: (Minor Emergency) all pumps fail and unable to supply water or distribution system pressure drops</p> <p>Action notify WSA – EPO; notify users of interruption of service; and notify priority customers.</p> <p>Contact Owners of water system, WSA (Local EPO), Pump supplier</p>
F	<p>Other treatment process failure Trigger events: (Routine incident to major emergency) loss of coagulation, or other significant process failures.</p> <p>Action notify WSA – EPO; notify users of the potential for water contamination. Users should be advised to boil any suspect water for at least one minute; notify priority customers; and contact government agencies (see below) for advice and assistance</p> <p>Contact Owners of water system, WSA (Local EPO)</p>
	<p>Power failure Trigger events: (Minor emergency) power outage.</p> <p>Action notify WSA – EPO; start backup generator, if possible; notify users of interruption of service if backup pump not capable of maintaining supply; notify priority customers; and call SaskPower.</p> <p>Contact Owners of water system, WSA (Local EPO)</p>
	<p>Distribution system problems</p>
A	<p>Backflow or back siphonage/ significant loss of pressure in the system Trigger events: (Major emergency) backflow or contamination is widespread throughout the distribution system</p> <p>Action notify WSA – EPO; notify users of to boil their water for at least one minute or take other disinfection procedures or as instructed by SE ; notify priority customers; and purge and disinfect lines as directed</p> <p>Contact Owners of water system, WSA (Local EPO)</p>
B	<p>Water breaks - sanitary repair procedures Trigger event: (Major emergency) main line breaks</p> <p>Repairing a main break is the most common type of emergency maintenance in a distribution system. Depending on site-specific conditions, a main break may be a source of contamination. For example, if the damaged pipe is below the water table or in contact with a sewage or storm water main, contamination may occur. As noted, maintenance procedures differ for main breaks between those breaks likely and unlikely to cause contamination. Contact your local EPO if you are unsure about whether contamination is expected for a break.</p> <p>Action If contamination is not expected: call excavation contractor; treat the replacement pipe and fittings with a chlorine solution; and notify downstream users of interruption of water service, if required</p> <p>If the existing main is partially or wholly dewatered, some of the following steps may be necessary to repair the main: Actions (AWWA C651-99): control water loss by completely or partially shutting down the main. flushing may be used to minimize flow toward the damaged main, thus reducing the extent of possible contamination; water should be reduced to a level below the break as quickly as possible. Groundwater may be treated with hypochlorite while repairs are underway. If the water appears to be clear, a 25 to 50 ppm dose may be sufficient. If sewage is present, a dose greater than 100 ppm is suggested; customers at higher elevations than the break should be notified to shut off the inlet valve at their meter to prevent siphoning of hot-water tanks or water softeners; extensive flushing may be used to purge possible contaminants and to bring clear water to the point of damage; chlorine residuals should be checked hourly to evaluate the effectiveness of pumping and flushing procedures; mains which have been repaired after a break or leak need to be cleaned, disinfected and monitored before being returned to service; and monitoring that follows a main disinfection or the addition of a new facility usually entails a check for microbial activity, pH, turbidity, color, disinfectant residual, odor and an analysis for volatile organic compounds that may be associated with the application of coatings</p> <p>Contact Owners of water system, WSA (Local EPO), excavation contractor and others as necessary.</p>
	<p>Trigger event: (Major emergency) storage facility break</p> <p>Emergency repair of finished water storage facilities is warranted by conditions such as: penetration due to localized corrosion; penetration or splits due to extensive metal loss; high turbidity and/or bacteria from excessive sediment; or animal contamination due to screen failure.</p> <p>Generally, emergency maintenance on steel or concrete storage facilities involves temporarily plugging a hole or other penetration in the facility wall. Ultimately, however, the temporary repair should be replaced with a welded patch.</p>

Action	temporarily plug hole or other penetration in storage facility wall, if required notify WSA – EPO; flush the water from the storage facility; notify users if an interruption in service is expected; contact government agencies (see below) for advice and assistance; and contact contractor to permanently repair puncture. (i.e. welded patch on a steel reservoir).
Contact	Owners of water system, WSA (Local EPO), Saskatchewan Emergency Planning and others as necessary
Customer complaints Trigger event: (Routine incident)	
consumer complaint	
Water quality complaints should be logged in a retrievable format for tracking and reporting purposes. Tracking the complaints can help identify problem areas of the system. Temporary fixes (such as flushing) should not be used to address chronic water quality problems (such as excessive chlorine demand, turbidity, sediment, corrosive water, etc.).	
Action	log the water quality complaint; investigate the water quality complaint;
Contact	None

Training & Plan Review

Training is provided:

- for new employees during their introductory period;
- for transferred or promoted employees;
- when new equipment or materials are introduced which affect the response in an emergency;
- when emergency procedures are revised; and
- at least annually.

Testing of the plan is performed periodically so all individuals involved are aware of their duties.

Major System Components

Administration & Operations • personnel • facilities and equipment (buildings and computers) • records • emergency plan	Source Water • watersheds and surface water sources • reservoirs and dams • groundwater sources • wells and galleries	Transmission System • intake structures • aqueducts • pump stations • pipelines, valves and other appurtenances	Treatment Facility • facility Structures (buildings, basins, and tanks) • controls (manual and computer) • equipment (feeder, pumps, and piping) • chemicals	Storage • tanks • valves • piping
Distribution System • pipelines, valves and other appurtenances • pump or pressure reducing stations • materials (extra pipe, valves, hydrants, etc.)	Electric Power • substations • transmission lines • transformers • standby generators	Transportation • vehicles (including construction equipment) • maintenance facilities • supplies, spare parts, and fuel • roadway infrastructure	Communications • telephone • radio • telemetry • mass media outlets (such as newspaper, radio and television)	Consumers • increased risk of acute sickness • increased risk of chronic sickness • aesthetically less pleasing

Emergency Disinfection of the Distribution System

Water Mains

The purpose of this standard is to define the minimum requirements for the disinfection of water mains, including the preparation of water mains, application of chlorine, and sampling and testing for the presence of coliform bacteria.

Disinfection is performed in accordance with AWWA Standard C651. Three forms of chlorine may be used for disinfection including liquid chlorine, liquid sodium hypochlorite and calcium hypochlorite, which is available in granular form or tablets. Three disinfection methods are included in the standard, as summarized in the below table. The utility may select the most appropriate method for each specific application.

Disinfection does not occur until the chlorine demands are met. Chlorine demand is caused by the pipe's interior surface, pipe joint lubricant, rust from connected mains, construction dirt and the water used to fill the main.

The use of too much chlorine can be a problem. Not only may the taste and odor be unacceptable, but the production of trihalomethanes such as chloroform and chlorate from calcium hypochlorite makes the disinfected water unusable in the distribution system.

	Tablet	Continuous Feed	Slug
Dose	25 mg/L	10 mg/L Free Chlorine Residual after contact time	50 – 100 mg/L
Time	24 – 48 Hrs.	24 Hrs.	3 Hrs.
Application	Mains up to 24 inches. Not to be used on solvent-welded plastic or screwed joint steel pipe	General	Large Diameter mains, long mains
Advantages	Requires no special equipment	Uniform chlorine concentration	Reduced volume of heavily chlorinated water to be disposed
Disadvantages	No preliminary flushing. Main kept clean and dry during construction. Chlorine conc. Not uniform. Tablets may dissolve slowly under stagnant conditions.		

Source: AWWA (1992)

Wells

Shock Chlorination Procedure for Drilled Wells

A modified procedure is provided for large diameter wells.

Caution: If your well is low yielding or tends to pump any silt or sand, you must be very careful using the following procedure because over pumping may damage the well. When pumping out the chlorinated solution, monitor the water discharge for sediment.

Follow these steps to shock chlorinate your well:

Step 1 Store sufficient water to meet needs for 8 to 48 hours.

Step 2 Pump the recommended amount of water (see Table 1, Amount of Chlorine Required to Obtain a Chlorine Concentration of 1000 PPM) into clean storage. A clean galvanized stock tank or pickup truck box lined with a 4 mil thick plastic sheet is suitable. The recommended amount of water to use is twice the volume of water present in the well casing. To measure how much water is in the casing, subtract the non-pumping water level from the total depth of the well. See the example below.

Metric Example

The drilling record indicates the casing is 61 meters in length and the non-pumping ("static") water level is 30.5 meters ft. The length of casing that is holding water in it is 30.5 m. (61-30.5). If your casing is 150 mm. in diameter you need to pump 35.3 litres of water for every meter of water in the casing, into your storage container. Since you have 30.5 m. of water in the casing, you will pump 35.3 L./m. x 30.5 m. = 1077 litres. of water into storage.

Using Table 1, calculate how much water you need to pump into clean storage.

Casing diameter _____ needs _____ L/m. x _____ m. = _____ L.

Table 1 – Amount of Chlorine Required To Obtain A Chlorine Concentration of 1,000 PPM-Metric

	Mm	100	150	200	600	900
Volume of Water Needed Per 1 Meter of Water	L	15.7	35.3	62.8	565.4	1272.3
5 ¼% Domestic Chlorine Bleach – Litres Needed Per 1 Meter of Water	L	0.30	0.67	1.2	10.8	24.2
12% of Industrial Sodium Hypochlorite – Litres Needed Per 1 Meter of Water	L	0.13	0.29	0.52	4.7	10.6
70% High Test Hypochlorite – Dry Weight ¹ Per 1 Meter of Water	G	102.0	229.5	408.0	3672.4	8262.9

Imperial Example

The drilling record indicates the casing is 200 ft. in length and the non-pumping ("static") water level is 100 ft. The length of casing that is holding water in it is 100 ft. (200-100). If your casing is 6 in. in diameter you need to pump 2.4 gal. of water for every foot of water in the casing, into your storage container. Since you have 100 ft. of water in the casing, you will pump 2.4 gal./ft. x 100 ft. = 240 gal. of water into storage.

Using Table 2, calculate how much water you need to pump into clean storage.

Casing diameter _____ needs _____ gal./ft. x _____ ft. = _____ gal.

Table 2 – Amount of Chlorine Required To Obtain A Chlorine Concentration of 1,000 PPM-Imperial

Casing Diameter	In.	4	6	8	24	36
Volume of Water Needed Per 1 Foot of Water	Gal – Canadian	1.1	2.4	4.3	39.1	87.9
5 ¼% Domestic Chlorine Bleach – Litres Needed Per 1 Foot of Water	Gal	0.02	0.05	0.08	0.74	1.7
12% of Industrial Sodium Hypochlorite – Litres Needed Per 1 Foot of Water	Gal	0.01	0.02	0.04	0.33	0.73
70% High Test Hypochlorite – Dry Weight ¹ Per 1 Foot of Water	Oz.	0.25	0.56	1.7	9.0	20.1

Since a dry chemical is being used, it should be mixed with water to form a chlorine solution before placing it in the well.

12% industrial sodium hypochlorite and 70% high test hypochlorite are available from:

- Water treatment suppliers **Figure 1 Siphoning Chlorine Solution**
- Drilling contractor (s)
- Swimming pool maintenance suppliers
- Dairy equipment suppliers
- Some hardware stores.

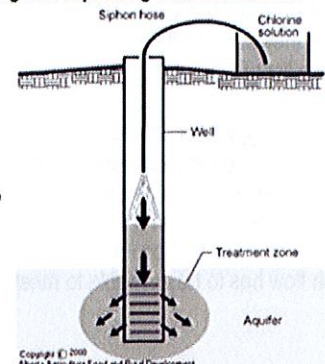
Caution: Chlorine is corrosive and can even be deadly. If your well is located in a pit, you must make sure there is proper ventilation during the chlorination procedure. Well pits are no longer legal to construct. Use a drilling contractor who has the proper equipment and experience to do the job safely.

Step 3 Calculate the amount of chlorine that is required, as shown in Table 1 and Table 2. Mix the chlorine with the previously measured water to obtain a 1000 ppm chlorine solution.

Example – Calculation Amount of Chlorine Metric

If your casing is 150 mm. and you are using 12% industrial sodium hypochlorite, you will require .29 litres per m of water in the casing. If you have 30.5 m. of water in the casing, you will use 0.29 litres x 30.5 m. = 8.85 litres of 12% chlorine.

Figure 1 Siphoning Chlorine Solution



Using Table 1, calculate the amount of chlorine you will need for your well.

Casing diameter _____ Chlorine strength _____ Gallons needed per 1 m. of water _____ x _____ m. of water in casing = _____ litres of chlorine.

Example – Calculation Amount of Chlorine Imperial

If your casing is 6 in. and you are using 12% industrial sodium hypochlorite, you will require .02 gal per ft. of water in the casing. If you have 100 ft. of water in the casing, you will use 0.02 gal x 100 ft. = 2.0 gal of 12% chlorine.

Using Table 2, calculate the amount of chlorine you will need for your well.

Casing diameter _____ Chlorine strength _____ Gallons needed per 1 ft. of water _____ x _____ ft. of water in casing = _____ gal of chlorine.

Step 4 Siphon this solution into the well (see Figure 1, Siphoning Chlorine Solution).

Step 5 Leave the chlorine solution in the well and distribution system for 8 to 48 hours. The longer the contact time, the better the results.

Step 6 Open an outside tap and allow the water to run until the chlorine odor is greatly reduced. Make sure to direct the water away from sensitive plants or landscaping.

Step 7 Flush the chlorine solution from the well and piping.

If you have an old well that has not been routinely chlorinated, consider hiring a drilling contractor to thoroughly clean the well prior to chlorinating. Any floating debris needs to be removed from the well and the casing scrubbed or hosed to disturb the sludge buildup.

Modified Procedure For Large Diameter Wells

Due to the large volume of water in many bored wells the above procedure can be impractical. A more practical way to shock chlorinate a bored well is to mix the recommended amount of chlorine right in the well. The chlorinated water is used to force some of the chlorine solution into the formation around the well. Follow these steps to shock chlorinate a large diameter bored well.

Step 1 Pump 200 gal. (1000 L) of water into a clean storage tank at the well head.

Step 2 Mix 20 L of 5 1/4% domestic chlorine bleach (or 8 L of 12% bleach or 1.4 kg of 70% calcium hypochlorite) into the 200 gal. of stored water. This mixture will be used later in Step 4.

Step 3 Using Table 2 (or Table 1 for metric calculations) calculate the amount of chlorine you require per foot of water in the casing and add directly into the well. (Note that the 70% hypochlorite powder needs to be dissolved in water to form a solution before placing in the well.)

Step 4 Siphon the 200 gal. bleach and water solution prepared in Steps 1 and 2 into the well.

Step 5 Complete the procedure as described in Steps 5 to 7 for drilled wells.

Parts of this section are reprinted from *Shock Chlorination and Control of Iron Bacteria* and are available on-line at <http://www.agric.gov.ab.ca/agdex/700/16d12.html#shock> with the permission of Alberta Agriculture, Food & Rural Development.

Alternate Source of Water

Water Supply

Besides boiling the water during an emergency situation, people need to be informed about alternatives such as water bottlers and household filters, which they can use if necessary. This will lessen the problems of the people, if they don't want to boil the water. The municipal authorities need to keep a list of agencies

Emergency Water Source

During an emergency situation, if the outbreak persists for a long period, boiling the water or looking for bottled water may frustrate people. It may become necessary to create a central water supply area from where people can get clean safe water. People may find it more convenient to haul treated water home from a central supply area rather than boiling large quantities for drinking and food preparation. There are also small package treatment plants that could be used during such situations. Another option for a central supply is to haul treated water from a nearby community. Cash flow has to be available to meet the situation, so funds need to be reserved. A list of bottled water distributors shall be included.

Customer Complaint Tracking Form

INFO	Date: _____ Time: _____																																		
	Location: _____																																		
	Name: _____		Contact # _____																																
QUESTIONS	<input type="checkbox"/> Pressure <input type="checkbox"/> Taste <input type="checkbox"/> Odor <input type="checkbox"/> Sediments <input type="checkbox"/> Color <input type="checkbox"/> Other _____																																		
	Problem Began: _____ Issue Occurring Right Now <input type="checkbox"/> Yes <input type="checkbox"/> No Involves: <input type="checkbox"/> Cold <input type="checkbox"/> Hot <input type="checkbox"/> Both <input type="checkbox"/> Entire House <input type="checkbox"/> Kitchen <input type="checkbox"/> Bathroom <input type="checkbox"/> Laundry Rm. Plumber Contacted <input type="checkbox"/> Yes <input type="checkbox"/> No Who: _____ Construction or Plumbing In House or Area <input type="checkbox"/> Yes <input type="checkbox"/> No Where: _____ Water Softener Installed <input type="checkbox"/> Yes <input type="checkbox"/> No Bypassed: <input type="checkbox"/> Yes <input type="checkbox"/> No Valve Closed: <input type="checkbox"/> Yes <input type="checkbox"/> No Faucet Screens Cleaned <input type="checkbox"/> Yes <input type="checkbox"/> No Smell/Taste Like Chlorine <input type="checkbox"/> Yes <input type="checkbox"/> No Cloudy - Clear From Bottom up <input type="checkbox"/> Yes <input type="checkbox"/> No Lateral Exposed to Drafts <input type="checkbox"/> Yes <input type="checkbox"/> No Heat Tape Working <input type="checkbox"/> Yes <input type="checkbox"/> No Resident on Winter Water Run <input type="checkbox"/> Yes <input type="checkbox"/> No Lower Usage - Away On Vacation <input type="checkbox"/> Yes <input type="checkbox"/> No																																		
ANALYSIS (IF APPLICABLE)	Date Collected: _____ Time: _____ Initials: _____ <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 20%; text-align: center;">In-House Analysis</th> <th style="width: 20%; text-align: center;">Tested By</th> <th style="width: 30%; text-align: center;">Lab Analysis</th> </tr> </thead> <tbody> <tr> <td>Chlorine - Free</td> <td>_____ mg/l</td> <td>_____</td> <td>_____ mg/l</td> </tr> <tr> <td>Chlorine - Total</td> <td>_____ mg/l</td> <td>_____</td> <td>_____ mg/l</td> </tr> <tr> <td>Turbidity</td> <td>_____ ntu</td> <td>_____</td> <td>_____ ntu</td> </tr> <tr> <td>Iron</td> <td>_____ mg/l</td> <td>_____</td> <td>_____ mg/l</td> </tr> <tr> <td>Manganese</td> <td>_____ mg/l</td> <td>_____</td> <td>_____ mg/l</td> </tr> <tr> <td>pH</td> <td>_____ mg/l</td> <td>_____</td> <td>_____ mg/l</td> </tr> <tr> <td>PO₄³⁻</td> <td>_____ mg/l</td> <td>_____</td> <td>_____ mg/l</td> </tr> </tbody> </table>				In-House Analysis	Tested By	Lab Analysis	Chlorine - Free	_____ mg/l	_____	_____ mg/l	Chlorine - Total	_____ mg/l	_____	_____ mg/l	Turbidity	_____ ntu	_____	_____ ntu	Iron	_____ mg/l	_____	_____ mg/l	Manganese	_____ mg/l	_____	_____ mg/l	pH	_____ mg/l	_____	_____ mg/l	PO ₄ ³⁻	_____ mg/l	_____	_____ mg/l
	In-House Analysis	Tested By	Lab Analysis																																
Chlorine - Free	_____ mg/l	_____	_____ mg/l																																
Chlorine - Total	_____ mg/l	_____	_____ mg/l																																
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pH	_____ mg/l	_____	_____ mg/l																																
PO ₄ ³⁻	_____ mg/l	_____	_____ mg/l																																

Signing of Approval

DISCUSSED: JAN 24, 2022

DOUG LANG
COUNCIL DESIGNATE (PRINT)
Doug Lang
COUNCIL DESIGNATE (SIGNATURE)

WHITTLETON, AUBREY
UTILITY MANAGER (PRINT)
AH
UTILITY MANAGER (SIGNATURE)

PRESENTED AND DISCUSSED AT COUNCIL: JAN 24, 2022

DOUG LANG
PRESENTED BY (PRINT)
COUNCILLOR

