

SUPPLY SYSTEM BWA ASSESSMENT TOOL

GENERAL OVERVIEW:

Community Name: _____ Date visited: _____

Have there been any recent weather events (high precipitation, overland flooding, snow melt): _____

Is water quality (clarity, colour, odour) affected by weather? _____

Has there been an increase in turbidity or colour in the water recently? Y / N

Have there been complaints of water taste or odours from residents? Y / N

Service/Existing Population: _____

No. of homes on public WW collection system: _____ No. of homes on private septic: _____

Number of homes on private wells: _____ No. of industrial users: _____

Treatment and Disinfection Building

Year of Construction: _____ Treatment Processes: _____

Type of building construction (metal, wood, brick): _____

Condition of treatment building: _____

Design capacity: _____ Typical Flows: _____

Does system meet peak demand? Y / N Are any unsanitary conditions present? Y / N

Describe any obvious maintenance requirements: _____

Describe any upgrades completed in last 5 years: _____

Operations

Number of water system operators? _____ Are operators certified? Y / N

Circle records that are available: a) Flows b) Free and Total chlorine residual
c) Chemical consumption d) Treatment/disinfection system maintenance
e) Source water monitoring f) Distribution system maintenance
g) Other(s): _____

Circle any of the following that are available on site:

a) Standard Operating Procedures b) Contingency Plans c) Emergency Response Plans
d) Maintenance Assurance Manual e) Source Water/Well Head Protection Plan

List any risks identified through completing the above form:

General Risks:

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SOURCE WATER:

Surface Water Supply (if applicable)

Name of water supply: _____

Have there been reports of beavers or muskrats in the water supply? Y / N

Other wildlife or birds? Y / N

Any on-site septic systems near the water source or intake? Y / N

Any new excavations or developments in the water supply area? Y / N

Any farms or livestock in or near the water supply Y / N

Any recent spills (septic or other) in the water supply area? Y / N

Any algal blooms been observed? Y / N

Has the water level in the source dropped in recent years? Y / N

Have there been any water shortages? Y / N

Groundwater Supply (if applicable)

Has a hydrogeological assessment been done? Y / N Date of Assessment: _____

Has a GUDI assessment been performed for the well? Y / N Date of Assessment: _____

Is the sanitary seal intact? Y / N

Are vents protected from debris and rainwater? Y / N

Does casing extend 600 mm above ground? Y / N

Is the wellhead secured to prevent unauthorized access? Y / N

Are there any farms or livestock near by the well? Y / N

Have there been any water shortages? Y / N

What is the distance to nearest known septic field? _____

List any risks identified through completing the above form:

Source Water Risks Identified:

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DISINFECTION:

Type of disinfection system(s): _____ Is disinfection system operational? Y / N
Are all chemicals ANSI/NSF 60 Certified? Y / N Is dosing system flow paced? Y / N
Age of disinfectant chemical: _____ Concentration of feed solution: _____

For the following equipment, select if they are functional, and if regularly calibrated

<u>Equipment</u>	<u>Functional?</u>	<u>Calibrated Regularly?</u>
a) Pocket Colorimeter (chlorine analyzer)	Y / N / NA	Y / N / NA
b) Chlorine Dosing Pump(s)	Y / N / NA	Y / N / NA
c) Flow Meter	Y / N / NA	Y / N / NA
d) Online Chlorine Analyzer	Y / N / NA	Y / N / NA
e) Other: _____	Y / N / NA	Y / N / NA
f) Other: _____	Y / N / NA	Y / N / NA

Calculating CT - Refer to Water Resources Management Division's SOP for CT Calculation

Peak flowrate through the system (in m³/min) _____ m³/min

Minimum chlorine residual at end of contact chamber/1st customer: _____ mg/L

Does the system have a contact pipe or tank? Y / N

If system has contact pipe/tank, select the configuration and associated baffle factor:

<u>Configuration</u>	<u>baffle factor (Fsc)</u>
a) single or multiple unbaffled inlets and outlets	0.3
b) baffled inlet or outlet	0.5
c) perforated inlet baffle, with outlet weir	0.7
d) contact pipe (no baffles)	1

What CT is being achieved? _____ mg · min/L Are CT requirements (> 6 mg min/L) met? Y / N

Chlorine Residual

Range of Cl₂ residual at disinfection building (mg/L): Free: _____ Total: _____

Range of Cl₂ residual within distribution system (mg/L) Free: _____ Total: _____

Range of Cl₂ residual at dead ends (mg/L): Free: _____ Total: _____

List any risks identified through completing the above form:

Disinfection Risks Identified:

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OTHER TREATMENT EQUIPMENT (if applicable):

General Treatment

Has there been an increase in turbidity or colour in the water recently? Y / N

Have there been complaints of water taste or odours from residents? Y / N

Type of treatment system: _____

List chemicals used at the facility: _____

Are all chemicals ANSI/NSF 60 Certified? Y / N

Are chemicals stored properly? (e.g. secondary containment, compatibility) Y / N

Have any chemicals surpassed their date of expiry? _____

MECHANICAL AND ELECTRICAL EQUIPMENT

Number of pumps: _____

Type of pumps: _____

Size of pumps: _____

Condition of pumps: _____

Other mechanical equipment on site (valves, blowers, compressors): _____

Condition: _____

Other comments: _____

Instrumentation (pressure gauges, flow meters, etc.): _____

Condition: _____

Other comments: _____

List any risks identified through completing the above form:

Other Treatment Equipment Risks Identified:

Mechanical and Electrical Equipment Risks Identified:

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DISTRIBUTION SYSTEM:

Distribution System

Construction material(s) (circle all that apply): CI / DI / Steel / PVC / HDPE / AC / CPP

Pipe Diameter(s) (circle all that apply): 2" / 4" / 6" / 8" / 10" / 12" / 14" / 16" /

Are drawings available? Y / N

Are there **functioning** hydrants: Y / N

Is flushing performed? Y / N

Frequency of flushing: _____

Are there records of distribution system pressures? Y / N

Typical pressures: _____

Maximum pressure (pressures at low lying areas): _____

Minimum pressure (pressures at high elevations): _____

Have there been recent events causing pressure drop:

- a) breaks: Y / N
- b) flushing: Y / N
- c) new high demand users: Y / N
- d) fire fighting: Y / N
- e) other: _____

Is a detectable free chlorine residual consistently maintained in distribution system? Y / N

Have there been recent significant changes in water demand? Y / N

Cross Connection Control Program

Do any of the following conditions exist and are there backflow preventers (BFPs):

a) Public water supply users that also have a private well: Yes, with BFPs / Yes, without BFPs / No

b) Industrial facilities (such as a fish plant) on public water supply Yes, with BFPs / Yes, without BFPs / No

Do any customers have backflow preventers? Y / N

Are backflow preventers inspected annually by specialist? Y / N

Are there any abandoned wells or surface water sources? Y / N

Are abandoned sources decommissioned properly? Y / N

List any risks identified through completing the above form:

Distribution Risks Identified:

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TREATED WATER STORAGE:

Type of storage tank: a) Below-ground Reservoir: Y / N

b) Standpipe: Y / N

c) Elevated Tank: Y / N

Capacity: _____ igal, USgal, m³, L

Construction Material: _____

Year Constructed: _____

Condition: _____

Does storage include pest protection (screens on vents/overflows)? Y / N

Do openings, hatches, and ports have gaskets, as required? Y / N

Is the facility secure from unauthorized access? Y / N

Are security measures in place? Y / N

Is a maintenance plan in place? Y / N

Has prescribed maintenance and inspection been performed? Y / N

Are there signs of cracks or rust? Y / N

What maintenance has been performed in past 12 months? _____

Are chlorine residuals measured at the distribution system storage tank? Y / N

List any risks identified through completing the above form:

Storage Risks Identified:

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SAMPLE SITES:

Are sample taps clean, free of rust and have suitable flow?	Y / N
Are there nearby sources of contamination of the sampling tap?	Y / N
Is the tap regularly used?	Y / N
Are there private treatment systems upstream of any sample taps?	Y / N
Have distribution system repairs been made in area of any sample sites?	Y / N
Have there been low pressure events since last testing?	Y / N

BACTERIOLOGICAL SAMPLING PROCEDURE

Does sampling protocol follow Health and Community Services procedure?	Y / N
Were aerators, swivels, and/or remote hoses removed prior to sampling?	Y / N
Were sterile bottles used and adequate storage available at the prescribed temperatures?	Y / N
Were clean gloves used to handle sample bottles and collect samples?	Y / N
Was tap flushed for five minutes before collecting sample?	Y / N

OTHER:

Has Department of Health and Community Services indicated that there has been a waterborne illness outbreak?	Y / N
Has the facility been subject to other BWAs in past 12 months?	Y / N
Were the most recent sample results satisfactory?	Y / N
Have additional water sources been added recently?	Y / N
Is there evidence of forced access to:	Y / N
Disinfection building	Y / N
Pump Station	Y / N
Storage Tanks	Y / N
Other: _____	Y / N
Are there any known leaks in the municipal sewage system?	Y / N
Are any components of the water supply system near on-site septic systems?	Y / N

List any risks identified through completing the above form:

Other Risks: