

BOIL WATER ADVISORY SYSTEM ASSESSMENT FORM

Town Name	Trepassey - Miller Pond		
Assessor Name	BM		
Assessor Title			
Contact Phone #		Date of Assessment	04-Oct-16

Boil Water Advisory Issue Date	23-Jun-00
BWA Reason Code	E1

Cause(s) of BWA	1.	Not providing a high enough free chlorine dose
	2.	Not measuring free chlorine residual
	3.	High concentration of organics in water
	4.	

This assessment tool is designed to identify possible issues and root causes of situations leading to a boil water advisory (BWA). It is designed as a field-level exercise and should be completed by or with the participation of the system operator. This assessment tool is designed to be used in conjunction with the Standard Operating Procedures (SOP) to identify the issue and then correct it.

Instructions

1. Tables 1.1 and 1.2 have been provided to log disinfection parameters and to identify disinfectant residual trends. For best results take readings at approximately the same time of day on a daily basis.

2. The main assessment worksheet asks a series of questions on the condition and operation of each component of the system. Responses are either Yes, No or NA and the Result is identified as being OK, Serious or Critical. 'Critical' indicates that it is a root cause for the current BWA, 'Serious' indicates issue makes system prone to re-occurring BWAs and 'OK' indicates no concerns.

NOTE: Complete entire Assessment worksheet even if appears the cause has been identified.

3. The last page of this assessment tool (BWA System Assessment Summary) is used to document the 'Serious' and 'Critical' issues identified on the worksheet. This sheet is then used in conjunction with the appropriate SOP to mitigate the issue such that the BWA can be lifted.

Code	System Aspects	CR - Critical Issue SR - Serious Issue	
		Response Yes/No/NA	Result CR / SR /OK
Drinking Water System Facility Events			
F-1	Has there been recent operations or maintenance that could introduce bacteria into the system? Recent curb stop replacement	Yes	OK??
F-2	Has system pressures dropped below 20psi recently? <u>Notes:</u>	No	OK
F-3	Has there been a recent fire fighting, hydrant flushing or other high-flow event? Operator routinely flushes system	Yes	OK
F-4	Is the disinfection system and surrounding area free of visible unsanitary conditions? <u>Notes:</u>	Yes	OK
F-5	Has there been a indication from Department of Health and Community Services of a waterborne illness outbreak? <u>Notes:</u>	No	OK
F-6	Has the facility been subject to additional BWAs within the past 12 months? List reason codes. <u>Notes:</u>	No	OK
F-7	Were the last water samples results satisfactory? Explain below. No longer sampled	No	CR
F-8	Has the facility been subject to unauthorized access? <u>Notes:</u>	No	OK
F-9	Have maintenance logs been reviewed to identify possible causes? No.	???	
F-10	Has an increased color been noted in the source water? Colour varies and is impacted by run-off/precipitation.	Yes	SR
F-11	Has there been an increase in turbidity in source water or tap water? Operator is unsure, but most likely yes	Yes	SR
F-12	Has there been complaints of water taste from residents? Complaints are associated with colour	Yes	SR

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F-13	Has there been complaints of odor in tap water from residents?	Yes	SR
	Complaints are associated with colour		
Operational Change			
O-1	Has there been any additional or backup equipment added to system recently?	No	OK?
	<u>Notes:</u>		
O-2	Has there been any significant changes in water demand (eg. additional large consumers such as fish plants)?	Yes	SR
	A number of high water consumers were listed, but seems they have been around for a while		
O-3	Have additional water sources been added recently?	No	OK
	<u>Notes:</u>		
Distribution System			
D-1	Do SCADA logs indicate a low pressure event (less than 20 PSI)?	N/A	
	<u>Notes:</u>		
D-2	Are there any known cross-connections on the system?	No	OK
	<u>Notes:</u>		
D-3	Were any unsanitary conditions identified at pump station?	No	OK
	<u>Notes:</u>		
D-4	Has there been recent pump maintenance conducted?	Yes	OK
	Changed impeller in June 2016		
D-5	Are distribution assets secured against unauthorized access?	Yes	OK
	<u>Notes:</u>		
D-6	Have recent water main repairs followed AWWA 651 disinfection protocol?	No	SR
	Operator is unfamiliar with this protocol		
D-7	Has there been a recent water main branch installation (street, subdivision, large consumer etc.)?	No	OK
	<u>Notes:</u>		
D-8	Has there been a recent water main break?	Not in last year	OK

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	<u>Notes:</u>		

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D-9	Is the system being regularly flushed (unidirectional, spot)?	Yes	OK
	Twice per year		
D-10	Is there evidence of intentional contamination such as forced access?	No	OK
	<u>Notes:</u>		
D-11	Are there any components of the water distribution system near on-site septic systems?	No	OK
	<u>Notes:</u>		
D-12	Are there any known leaks in municipal sewage system (if applicable)?	No	OK
	<u>Notes:</u>		
D-13	Are there any high-volume users on system (ex. fish plant)?	No	OK
	<u>Notes:</u>		
D-14	List any known or suspected leaks within the distribution system	N/A	
	1		
	2		
	3		
Storage Tanks			
S-1	Are overflows and vents secured and screened?	Yes	OK
	<u>Notes:</u>		
S-2	Is the facility secured against unauthorized access?	No	SR
	<u>Notes:</u>		
S-3	Do openings, hatches and ports have gaskets as required?	??	SR
	Operator was not sure		
S-4	Is tank in suitable condition without cracks or excessive rust?	Yes	OK
	<u>Notes:</u>		
S-5	Has prescribed maintenance and inspection been performed on storage tanks and pressure tanks?	No	SR
	<u>Notes:</u>		

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S-6	What maintenance has been conducted recently? Including painting or coating application.	None	SR
	<u>Notes:</u>		
S-7	Is there a maintenance plan in place, and if so was it followed?	No	SR
	<u>Notes:</u>		
S-8	Have leaks been observed from the tank or connections?	No	OK
	<u>Notes:</u>		
S-9	Is there evidence of intentional contamination such as forced access?	No	OK
	<u>Notes:</u>		
S-10	Are vents protected from debris and rainwater with a minimum 300 mm clearance between adjacent surfaces?		
	<u>Notes:</u>		
S-11	Have chlorine residuals been measured at tank intake and output?		
	<u>Notes:</u>		
Treatment Processes (including disinfection)			
T-1	Does water treatment include an operational disinfection system? Describe system below.	Yes	OK
	Notes:		
T-2	Is there any water treatment processes beyond disinfection? Describe treatment processes below.	Yes	OK
	pH adjustment system		
T-3	Are all treatment devices operational? List those out of service.	Yes	OK
	Operator is not sure of what dose is being applied of soda ash		
T-4	Is there adequate disinfectant chemicals in storage or have supplies been ordered?	Yes	OK
	<u>Notes:</u>		

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T-5	Is there a maintenance plan in place, and if so was it followed?	No	SR
	<u>Notes:</u>		
T-6	Have there been any recent equipment installations?	No	OK
	<u>Notes:</u>		
T-7	Have there been any treatment interruptions? List their date and duration.	No	OK
	<u>Notes:</u>		
T-8	Is free chlorine residual measured immediately downstream from the point of application?	No	CR
	<u>Notes:</u>		
T-9	Are flow rates at or below the rated capacity of system?	Below	OK
	<u>Notes:</u>		
T-10	Is the chlorine system flow-proportioning?	Yes	OK
	<u>Notes:</u>		
T-11	Have any changes in raw water quality been recently noted?	Yes	SR
	Affected by colour		
T-12	Have C x T requirements been met (free chlorine residual of at least 0.3 mg/l after 20 minutes or equivalent CT)?	No	CR
	<u>Notes:</u>		
Source - Well			
S-1.1	Is ground graded away from casing?	N/A	
	<u>Notes:</u>		
S-1.2	What is the typical flow?	N/A	
	<u>Notes:</u>		
S-1.3	Is the sanitary seal intact?	N/A	
	<u>Notes:</u>		

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S-1.4	Are vents protected from debris and rainwater with a minimum 300 mm clearance between adjacent surfaces? <u>Notes:</u>	N/A	
S-1.5	Does casing extend 600mm above ground? <u>Notes:</u>	N/A	
S-1.6	Is there evidence of standing water at the wellhead? <u>Notes:</u>	N/A	
S-1.7	Is the casing sealed with a bentonite, grout or other approved seal? <u>Notes:</u>	N/A	
S-1.8	Is the wellhead secured to prevent unauthorized access? <u>Notes:</u>	N/A	
S-1.9	What is the distance to nearest known septic field? <u>Notes:</u>	N/A	
S-1.10	What is the distance to new excavations in area? <u>Notes:</u>	N/A	
S-1.11	Has there been a recent spill in the area (septic or other)? <u>Notes:</u>	N/A	
S-1.12	What is the distance to farms or livestock? <u>Notes:</u>	N/A	
S-1.13	What is the general condition of the well? <u>Notes:</u>	N/A	
Source - Surface Water			
S-2.1	Have there been any reports of beavers or muskrat in the water supply? Or concentration of wildlife or birds using the water supply? Indicated as being likely, but not actually observed	No	SR
S-2.2	Are there any on-site septic systems near the water source and intake? <u>Notes:</u>	No	OK

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S-2.3	Are there any new excavations or development activity in the water supply area?	No	OK
	<u>Notes:</u>		
S-2.4	Are there any farms or livestock in or near the water supply?	No	OK
	<u>Notes:</u>		
S-2.5	Has there been a recent spill in the area (septic or other)?	No	OK
	<u>Notes:</u>		
S-2.6	Is the reservoir/watershed area clean and free from potential sources of contamination?	Yes	OK
	<u>Notes:</u>		
S-2.7	Is there any new human activity in the reservoir/source area?	No	OK
	<u>Notes:</u>		
S-2.8	Have algal blooms been observed?	Yes	SR
	In Summer		
Environmental Event			
E-1	Has there been a heavy rainfall recently?	Yes	SR?
	Last week		
E-2	Has there been a rapid snow melt recently?	No	OK
	<u>Notes:</u>		
E-3	Has there been overland flooding recently?	No	OK
	<u>Notes:</u>		
E-4	Has there been a significant drop in available source water?	No	OK
	<u>Notes:</u>		
E-5	Has there been recent interruptions to treatment/distribution power supply?	No	OK
	<u>Notes:</u>		
E-6	Has there been extreme heat or cold recently?	No	OK
	<u>Notes:</u>		

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Sampling Location			
L-1	Is the tap from which sample collected clean, free of rust, have good flow? <u>Samples are not being taken</u>	No	SR
L-2	Are there any potential nearby sources which could result in contamination of the sampling tap? <u>Notes:</u>	N/A	
L-3	Is the tap used regularly? <u>Notes:</u>	N/A	
L-4	Has there been repairs to components in area/system since last sampling? <u>Notes:</u>	N/A	
L-5	Are any private treatment devices present? Sample taken: <input type="checkbox"/> <u>Upstream</u> <input type="checkbox"/> <u>Downstream</u> of treatment <u>Notes:</u>	N/A	
L-6	Are backflow preventers installed and if so has the required maintenance been conducted? <u>Notes:</u>	N/A	
L-7	Has there been a recent installation/repair of components within sampling building? <u>Notes:</u>	No	OK
L-8	Has there been any documented/known low pressure events since last testing (main break etc.)? <u>Notes:</u>	No	OK
Sampling Protocol			
P-1	Has the sampling protocol outlined in the Drinking Water Manual - Health and Community Services been followed? <u>Notes:</u>	No	CR
P-2	Were aerators, swivels and/or remote hoses removed prior to sampling? <u>Notes:</u>	No	

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P-3	Were sterile sampling bottles used and adequate storage available at the prescribed temperatures? <u>Notes:</u>	No	
P-4	Were clean gloves used to handle sample bottles and conduct sampling? <u>Notes:</u>	No	
P-5	Was tap flushed 5 minutes before beginning to collect samples? <u>Notes:</u>	No	
P-6	Was sampling completed by a person other than the normal collector? <u>Notes:</u>	No	
<u>GENERAL NOTES</u>			

BWA System Assessment Summary

Review results of the assessment worksheets to identify likely root cause(s) of the boil water advisory (Critical Issues) and areas of concern which may result in re-occurring BWA (Serious Issues).
Attach additional sheets as required.

Sampling is not performed. Chlorine is not being dosed at a high enough rate. Water has high organics.

Assessed Risk			
<input type="checkbox"/>	System Facility Issue	<input type="checkbox"/>	Source Issue
<input checked="" type="checkbox"/>	Operational Issue	<input type="checkbox"/>	Environmental Issue
<input type="checkbox"/>	Distribution Issue	<input type="checkbox"/>	Sampling Location Issue
<input type="checkbox"/>	Storage Issue	<input checked="" type="checkbox"/>	Sampling Protocol Issue
<input checked="" type="checkbox"/>	Treatment Issue	<input type="checkbox"/>	Not Identified

Critical Issue	<input checked="" type="checkbox"/>
Serious Issue	<input type="checkbox"/>

Description of Deficiency

Assessed Risk			
<input type="checkbox"/>	System Facility Issue	<input type="checkbox"/>	Source Issue
<input type="checkbox"/>	Operational Issue	<input type="checkbox"/>	Environmental Issue
<input type="checkbox"/>	Distribution Issue	<input type="checkbox"/>	Sampling Location Issue
<input type="checkbox"/>	Storage Issue	<input type="checkbox"/>	Sampling Protocol Issue
<input type="checkbox"/>	Treatment Issue	<input type="checkbox"/>	Not Identified

Critical Issue	<input type="checkbox"/>
Serious Issue	<input type="checkbox"/>

Description of Deficiency

Assessed Risk			
<input type="checkbox"/>	System Facility Issue	<input type="checkbox"/>	Source Issue
<input type="checkbox"/>	Operational - Issue	<input type="checkbox"/>	Environmental Issue
<input type="checkbox"/>	Distribution Issue	<input type="checkbox"/>	Sampling Location Issue
<input type="checkbox"/>	Storage Issue	<input type="checkbox"/>	Sampling Protocol Issue
<input type="checkbox"/>	Treatment Issue	<input type="checkbox"/>	Not Identified

Critical Issue	<input type="checkbox"/>
Serious Issue	<input type="checkbox"/>

SEE STANDARD OPERATING PROCEDURES TO ADDRESS THE AREAS OF CONCERN NOTED ABOVE