Waterworks Level 2 Assessment

Waterworks Name:	PWSID No.:

Source Water Type:			City/County:					
Waterworks Type: Community			Population Served:					
	Nontransient Noncommunity			Seasonal				
Transient Noncommunity			Seasonal					
Operator:			Phone:					
Compliar	nce Monitoring Period:							
Number	of Samples	Required	Collected	Total coliform present	E. coli present			
Routine p	per monitoring period							
Repeat								
Triggered	source water							
Date OD	W Notified Waterworks Leve	l 2 Assessmen	t Required:					
Assessment Due Date:								
Assessment Conducted Date:								
Waterworks Personnel Consulted For Assessment:								
1.	Phone:							
2.	Phone:							
ODW- FO Staff Conducting Assessment:								
Reason Level 2 Assessment is required								
1.	An <i>E.coli</i> maximum cont	An <i>E.coli</i> maximum contaminant level (MCL) violation						
2.	A second Level 1 Assess	ment required	within a rollin	ng 12-month period				

Waterworks Assessment Instructions

Consider each assessment element listed in the following evaluation form to determine if the element listed may have contributed to the "present" bacteriological sample results.

A response in a highlighted box suggests the assessment element may have contributed to the "present" bacteriological sample results and is a potential Sanitary Defect. Provide an explanation of why the highlighted element could have contributed to the "present" bacteriological sample results in the column titled "Describe any element of concern." Use the "Additional Comments" space on page 8, if needed, and always refer to the assessment element number.

Also, provide the date and description of Corrective Action taken on Page 9.

Notes:

1. For wholesale and consecutive waterworks:

- a. Review records related to flows, pressures, and water quality parameters at the connection(s) with wholesale water supplier.
- b. Consecutive waterworks owners shall notify wholesale water supplier whenever the consecutive system has been triggered to perform a Level 2 Assessment.
- c. Wholesale waterworks owners shall notify consecutive waterworks owners as total coliform could have spread to the consecutive waterworks distribution system.
- 2. The Level 2 Assessment must be completed based on a site visit plus the data and documentation available and maintained on file by the waterworks and ODW-Field Office.

waterworks	Level 2	Assessme
		1

Waterworks Name	
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Accordment Floments		Response			Describe any element of concern		
	Assessment Liements		Ν	N/A	Describe any element of concern		
1. Sample Site							
1.1	Were all sites used listed on approved BSSP?						
1.2	If the sample site is listed on the approved BSSP, does it remain an appropriate sample site?						
1.3	Are the sample tap and the surrounding area clean?						
1.4	Describe sample tap fixture (e.g., outdoor hose bib, indoor cold water faucet, etc.)				Description:		
1.5	Is the sample tap fixture a swivel faucet?						
1.6	Is the sample tap location used regularly?						
1.7	Any plumbing breaks or changes in vicinity of sample site or premise plumbing?						
1.8	Are there any identified cross connections after the service connection or in premise plumbing? Describe if present.						
1.9	Were all of the backflow prevention devices at the sample location operational and maintained?						
1.10	Were there any low pressure events or changes in water pressure after the service connection or in the premise plumbing: immediately prior to sample? If yes, when?						
1.11	Are there any treatment devices after the service connection or in the premises of the sample site?						
2. Samp	le Collection Protocol	-					
2.1	Was the sample collector properly instructed in collection procedures?						
2.2	Were taps flushed adequately (approx. 5 minutes)?						
2.3	Were aerators removed?						
2.4	Were sample containers sealed/unopened prior to use?						
2.5	Were the sample containers/rim or cap contaminated during sampling?						
2.6	Were the taps disinfected?						
2.7	Were samples delivered per laboratory instructions?						

Waterworks Level 2 Assessment

Waterworks Name:

Account Flows who		F	Respon	se	Describe any element of someone			
		Assessment Elements	Y	Ν	N/A	Describe any element of concern		
3. Even	3. Events That May Have Caused a System Upset Prior to Collection of TC Samples							
3.1	activ	ities that could have introduced total coliforms / ?						
	a.	Well #						
	b.	Well Lot						
	с.	Reservoir						
	d.	Stream/River Intake						
	e.	Treatment Plant / System						
	f.	Distribution piping network						
	g.	Pump Station						
	h.	Storage tanks (atmospheric or pressure)						
3.2	Has t oper	here been a fire fighting event, flushing ation, sheared hydrant, etc.?						
3.3	Has t acces	here been any vandalism and/or unauthorized ss to facilities?						
	a.	Well #						
	b.	Well Lot						
	с.	Reservoir						
	d.	Stream/River Intake						
	e.	Treatment Plant / System						
	f.	Distribution piping network						
	g.	Pump Station						
	h.	Storage Tanks (atmospheric or pressure)						
3.4	Are t cond	here any visible indicators of unsanitary itions?						
3.5	Have comp samp	there been any TC+ samples that were not bliance samples, including well or raw water bles?						
3.6	Have resid distri	there been any low or inadequate disinfectant ual readings at the entry point or in the bution system?						
3.7	Are t main	here sites where it is historically difficult to tain a residual without flushing?						
3.8	Have been	any other measured water quality parameters out of normal ranges?						
3.9	Have distri Whe	there been any TC+ or E. coli results in the bution system (esp. in the last 12 months)? re?						
3.10	Did t viola	he water system receive any chlorine monitoring tions in the past 12 months? If yes, when?						
3.11	Have	there been any reports of community illness ected of being waterborne? (ODW/LHD)						

Waterworks Name:

		Response		se		
	Assessment Elements		Y	N	N/A	Describe any Element of Concern
4. Rece	nt Op	erational Changes To The System				
4.1	Have	e any new approved, previously inactive or				
4.1	serv	ice recently?				
4.2	Have sour	e any emergency or contingent/reserve well ces been placed into service recently?				
4.3	Is the from	ere evidence of any potential contamination main breaks, low pressure, high turbidity,				
44	If sea	asonal, were there any problems during the				
	mos	t recent start-up procedure?				
5. Distr	ibutic	on System				
5.1	Syste syste prior whe	em pressure: Is there evidence that the em experienced low or negative pressure r to sampling? If yes, describe event and n it occurred.				
5.2	Have utilit	e there been any water main breaks or y line construction in the vicinity of the				
5.2	sam	ple site? If yes, when?				
5.5	Fuili	Have there been any mechanical		_		
	a.	electrical, or operational problems?				
	b.	Are pump(s) currently operable?				
5.4	Pum six (6	p maintenance service or repair in the last 5) months?				
5.5	Air v conr	alves upstream of the sample tap nection:		•	•	
	a.	Is the air valve vault subject to flooding?				
	b.	Does the vent terminate below grade?				
5.6	Have sam	e any fire hydrants in the vicinity of the plet tap connection been used recently?				
5.7	Have tap b	e any blow-offs in the vicinity of the sample been used recently?				
5.8	Una syste	uthorized access or use of the distribution em suspected or reported?				
5.9	Back	flow Prevention Devices				
	a.	Are any backflow devices in service in the distribution system near tap?				
	b.	Are required inspections and certifications current?				
	C	Is the certification or serviceability of any				
	L.	backflow prevention device suspect?				
5.10	Was	there any scheduled flushing of the				
	distr	IDUTION SYSTEM? IT YES, When?				
5.11	cont	amination in the distribution system?				
5.12	Has resid	there been a large variation in chlorine lual values in the system?				

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		Response			
	Assessment Elements		N	N/A	Describe any Element of Concern
5. Distr	ibution System (contd.)				
5.13	Have any unusual circumstances/incidents involving the water distribution system been observed or reported?				
5.14	Authorized/unauthorized water haul trucks filled at any fire hydrant?				
5.15	Yard hydrants near sample location?				
5.16	Have there been any customer complaints about pressure and/or water quality prior to sampling?				
6. Trea	atment Process				
6.1	Have there been any interruptions in treatment processes from power outages or other causes? If yes, provide details for which part, when and for how long?				
6.2	Is treatment equipment operational and maintained?				
6.3	Has there been any new equipment installation or repair of treatment equipment recently?				
6.4	Has useful life of filter media/cartridges expired?				
6.5	Have there been any recent changes in the treatment process (e.g., addition of a process, change in chemical or dosage)? If yes, provide details for the change and when it occurred?				
6.6	Was the free chlorine residual measured immediately downstream from the point of application adequate for chlorine contact time?				
6.7	Has the desired free chlorine residual goal and range been consistently achieved?				
6.8	Did a review of the filter turbidity profiles reveal any anomalies?				
6.9	Were there any failures in meeting the required chlorine contact time?				
6.10	Was any process flow loading rate above the rated capacity?				
6.11	Was there anything unusual about the settled water turbidity?				
6.12	Other observations on the treatment system?				
7. Water Storage Tanks - Atmospheric					
7.1	Are the vents properly protected and screened?				
7.2	Are the storage facilities and sites secured to prevent unauthorized access?				
7.3	Are the roof access hatches properly designed as shoebox lids, properly gasketed, sealed and locked against unauthorized access?				

Waterworks Name:

Assessment Flamman		Response			
	Assessment clements		Ν	N/A	Describe any Element of Concern
7. Wa	ter Storage Tanks – Atmospheric (contd.)				
7.4	Does the tank have a screened drain line, separate from the overflow line, discharging to the atmosphere?				
7.5	Is the tank overflow outlet screened?				
7.6	Does the tank overflow line terminate above ground surface (air-gap) with a downward discharge screened end?				
7.7	Are there any unsealed openings in the storage facility, such as access doors, vents or joints, target float wire penetrations; cathodic protection/ ice free electrode holder penetrations in the tank roof or wall; have any leaks been observed?				
7.8	Was any physical deterioration of the tank appurtenances (ladders, communications equipment, etc.) observed?				
7.9	Could the physical condition of the tank be a possible source of contamination?				
7.10	Does the tank "float" on the distribution system?				
7.11	Are there separate inlet/outlet lines into the tank?				
7.12	Does the tank have an altitude valve assembly, air release assembly or other device associated with the tank inlet/outlet or fill/release line?				
8. Wate	er Storage – Hydropneumatic/Bladder Storage	Tanks	;		
8.1	Are the pressure storage tanks maintaining an appropriate minimum pressure?				
8.2	Has proper O&M been performed per appropriate schedule?				
8.3	Any recent tank maintenance (i.e. interior inspection; painting/coating)? If yes, when?				
8.4	Is the measured free chlorine residual in the water exiting the storage tank detectable?				
8.5	Is there any evidence of intentional contamination to the pressure storage tank?				
8.6	Are there any other observations of the water storage facilities worthy of note?				
9. Water Supply Well(s)					
9.1	Is well house free of pests/vermin?				
9.2	Is exposed well casing free of rust/pitting or damage?				
9.3	Is well casing floor penetration sealed?				

Waterworks Level 2 Assessment

According to Flow out to		Response				
	Assessment Elements			Ν	N/A	Describe any Element of Concern
9. Wat	er Sup	oply Well(s) (contd.)				
9.4	Well	head with Sanitary Seal				
	a.	Is the sanitary seal intact and tightened down?				
	b.	Is the seal properly vented and screened?				
	c.	Are all other penetrations through the seal protected?				
9.5	Wellhead with Caps (pitless adapter installations)					
	a.	Is the cap a PAS-97 watertight cap?				
	b.	Is the watertight cap and gasket properly installed and evenly tightened?				
	с.	Is the vent screen intact?				
	d.	If the cap has been modified for any purpose, is the cap properly sealed and is any vent securely installed and screened?				
9.6	ls the pern wate	Is the well casing cover fitted to permit measurement of depth to water level?				
		If yes, is the installation satisfactory?				
9.7	Does the well blowoff terminate with approved air gap and screened end?					
9.8	Are there any unprotected cross connections at the wellhead?					
9.9	Does the well casing extend 12-in. above grade?					
9.10	Is the near	Is there evidence of standing water near the wellhead?				
	a.	In the wellhead enclosure?				
	b.	Around the concrete pad?				
9.11	Does the Well have a suitable 6 ft. x 6 ft. concrete pad in good condition?					
9.12	Is th encl	e wellhead secured in a locked osure?				
9.13	Have othe arou	e there been any sewer spills or er contamination activities in or Ind wellhead (within 50 ft.)?				

Assessment Elements	Response	Describe any Element of Concern
		•

		Υ	Ν	N/A	
9. Wat	er Supply Well(s) (contd.)				
9.14	Are there any aspects of well or wellhead construction whether compliant or non-compliant with the VA. <i>Waterworks Regulations,</i> that might affect bacteriological				
10. Sou	ırce – Surface Water Supply (Lake/Reservoir)				
10.1	Have there been any sewer overflows, chemical spills or other disturbances into the source?				
10.2	Have there been any algal blooms?				
10.3	Has water turnover occurred?				
10.4	Has there been heavy rainfall, flooding, or rapid snowmelt in the past 60 days that have resulted in raw water turbidities exceeding 100 NTU?				
10.5	Any other surface water comments relevant to bacteriological quality?				
11. Sou	irce – Spring(s)				
11.1	Recent heavy rainfall, flooding event within 7 days prior to sampling?				
11.2	Recent incident of raw water turbidity (≥100 NTU) within 14 days prior to sampling?				
11.3	Has there been any damage, change or repairs to the spring(s) infrastructure?				
11.4	Has there been any damage, change or repairs to the treatment processes used at the spring(s)?				
11.5	Have there been any unusual changes or incidents within the spring drainage area?				
12. Env	vironmental Events				
12.1	Have there been changes in the availability of water supply, such as a significant drop in water table, ground well levels in the wells, reservoir capacity, etc.?				
12.2	Have there been any extremes in heat or cold?				
Additio	onal Comments				

Waterworks Name:

PWSID No.:

Assessment Elements/Sanitary Defects Corrective Action Taken and Date									
Conclusions:									
Conclusions:									
Conclusions:									
Conclusions:									
Conclusions:									
Attach additional sheets as necessary									
\square A cause for the contamination was not found									
Assistance with assessment provided by:									
Ves No Comments									
1. Was likely reason for IC+ occurrence or <i>E.coll</i> violation found?									
2. Have all identified problems or sanitary defects been corrected									
If 'No', has an approved schedule to complete remaining									
a. corrections been developed and accepted by the									
waterworks? See attachment									
b. If a correction schedule is necessary, has schedule been									
Print name of ODW staff completing the form:									

Signature:

Date:

Date:

Print name of Waterworks representative: ______ Date: ______

Name of Reviewer (Print)

Comments: