

**Table 64-16 A – CLOSURE REQUIREMENTS**

CLOSURE EVENT	CORRECTIVE ACTION REQUIRED	CLOSURE EVENT	CORRECTIVE ACTION REQUIRED
A. Free Chlorine = less than 1.0 pm	Close the facility. Determine the cause. Make repairs or corrections.	<p>I. Fecal Accident or Release of Blood or Vomitus into Water*</p> <p>VACUUMING STOOL AND VOMITUS FROM THE WATER IS NOT RECOMMENDED.</p> <p>Follow Cleanup Procedure A if: A formed stool, visible blood, or vomit is discharged into the water.</p> <p>Follow Cleanup Procedure B if: A loose stool (e.g. diarrheal fecal accident) is discharged into the water.</p> <p>For both cleanup procedures: Establish a fecal accident log. Document each fecal accident by recording date and time of event, note whether formed stool or diarrhea, and note the chlorine levels at the time or observation of the event. Before allowing anyone back into the water, record the pH, the procedures followed in response to the fecal accident (including the process used to increase chlorine levels if necessary), and the contact time.</p> <p>* Current CDC guidelines</p>	<p>Evacuate patrons from all water contaminated with fecal material. Do not let anyone back into the water until all decontamination procedures are completed. Remove as much fecal material as possible using a net or scoop and dispose of in a sanitary manner. Clean and disinfect the net or scoop (e.g. after cleaning, leave the net or scoop immersed in the pool during disinfection).</p> <p><u>Cleanup Procedure A</u> 1. Raise free chlorine to 2 ppm, adjust pH to between 7.2-7.5, and maintain for at least 25 minutes before letting anyone back into the water. 2. Ensure that the filtration system is operating during this entire process.</p> <p><u>Cleanup Procedure B</u> 1. Raise chlorine to one of the following concentrations, maintain for the corresponding time, and adjust pH to between 7.2-7.5: a. 5ppm free chlorine for 32 hours; b. 10 ppm free chlorine for 16 hours; c. 15 ppm free chlorine for 12 hours; d. 20 ppm free chlorine for 8 hours. 2. Ensure that the filtration system is operating during the entire process. 3. Backwash the filter thoroughly or clean the filter media after maintaining the required free chlorine concentration and time. 4. Adjust free chlorine concentration to less than 5 ppm before letting anyone back into water.</p>
B. pH of water = greater than 7.8	Close the facility. Determine the cause. Make repairs or corrections.		
C. pH of water = less than 7.2	Close the facility. Determine the cause. Make repairs or corrections.		
D. Inadequate lifeguards or lifesaving equipment	Close the facility until the required number of lifeguards and lifesaving equipment are provided.		
E. Accident Resulting In: Lifeguard leaving station OR Body fluids discharged into water	Close facility until lifeguard returns to station. Follow fecal accident cleanup procedures outlined below in item I if blood or feces are discharged into the water.		
F. Water Clarity Unsatisfactory (Main drain or 6 inch black disk in the deepest water on the bottom of a pool or spa not visible from the adjacent deck)	Close the affected area until the main drain or a six (6) inch black disk in the deepest water on the bottom of a pool or spa is visible from the adjacent deck. Determine cause. Make repairs or corrections.		
G. Free bromine = less than 2.0 ppm	Close the facility. Determine the cause. Make repairs or corrections.		
H. Equipment Failure - Main pump, disinfectant feed equipment, or main drain covers.	Close the facility immediately upon main pump failure. Close the facility when disinfectant feed equipment fails and free chlorine falls below 1.0 ppm or free bromine falls below 2.0 ppm. Repair equipment. Test and balance chemical parameters prior to re-opening the recreational water facility. Close facility if main drain covers are missing, loose, or broken. Replace, secure, or repair as required.		

**TABLE 64-16 B - LIFEGUARD REQUIREMENTS**

NUMBER OF PATRONS IN WATER	WATER SURFACE AREA IN SQUARE FEET					
	UP TO 2000	2001-4000	4001-6000	6001-8000	8001-10,000	10,000 +
<u>1-30</u>	<u>1</u>	<u>2</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>
<u>31-60</u>	<u>2</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>
<u>61-90</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>
<u>91-120</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>4</u>
<u>121-150</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>
<u>151 +</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>5</u>

West Virginia Department of Health and Human Resources  
Legislative Rule 64 CSR 16 – Recreational Water Facilities

Table 64-16 C – WATER QUALITY STANDARDS

A. Disinfectant	Min.	Ideal	Max.	Comments
1. Free chlorine mg/l (ppm)	1.0	2.0 - 3.0	5.0	Chlorine should be maintained at this level continuously. Super-chlorinate regularly. See F-1.
2. Combined chlorine mg/l (ppm)	None	None	0.5	Eliminated by super-chlorination. If too high, you may have: Sharp chlorinous odors Eye burn Algae and bacteria growth
3. Bromine mg/l (ppm)	2.0	2.0-3.0	5.0	Consult health dept. before use.
B. Chemical	Min.	Ideal	Max.	Comments
1. pH	7.2	7.5	7.8	TOO HIGH Low chlorine efficiency Scale formation Increased chemical demand Cloudy water Eye discomfort TOO LOW Rapid dissipation of chlorine Eye discomfort Plaster/concrete etching Corrosion of metals
2. Total alkalinity as CaCO <sub>3</sub> mg/l (ppm)	60	80-100 or 120	180	TOO HIGH Increased scaling potential Cloudy water pH maintained too high TOO LOW Corrosion tendency pH bounce
3. Undissolved solids mg/l (ppm) (Turbidity)	None	None	None	TOO HIGH Chlorine level may be too low Filtration system may be inoperative May lead to drowning due to decreased visibility
4. Dissolved solids mg/l (ppm)	300	...	2000	TOO HIGH Chlorine may be less effective Salty taste Dull water Chemical balance difficult to maintain Scaling may occur Add fresh water to reduce solids TOO LOW Total alkalinity may be too low Aggressive water
5. Hardness, as CaCO <sub>3</sub> mg/l (ppm)	50	125	800	TOO HIGH Scaling may occur Water has bad "feel" Short filter runs TOO LOW Plaster or concrete etching Corrosion may occur
6. Copper mg/l (ppm)	None	None	0.3	TOO HIGH Staining may occur Water may discolor Chlorine dissipates rapidly Filter may plug May indicate pH too low Corrosion may occur
7. Iron mg/l (ppm)	None	None	0.2	TOO HIGH Staining may occur Water may discolor Chlorine dissipates rapidly Filter may plug
8. Manganese mg/l (ppm)	None	None	0.05	TOO HIGH Staining may occur
C. Biological	Min.	Ideal	Max.	Comments
1. Algae	None	None	None	Super-chlorinate or shock treat Supplement with brushing and vacuuming Maintain free chlorine residual Use approved algacide according to label direction

2. Bacteria	None	None	Refer to 64 CSR 3	If bacteria count exceeds health dept. requirements: Super-chlorinate RWF Follow proper maintenance procedures Maintain proper free chlorine residual
D. Stabilizer	Min.	Ideal	Max.	Comments
1. Cyanuric acid mg/l (ppm)	10	30-50	100	TOO HIGH May exceed health dept. regulations TOO LOW Chlorine residual rapidly destroyed by sunlight NOTE Stabilizer is not needed for indoor facilities and should not be used in hot water facilities. Cyanuric acid may titrate as Alkalinity.
E. Algacides	Min.	Ideal	Max.	Comments
1. Quaternary mg/l (ppm)	...	...	...	Not permitted in public recreational water facilities.
2. Copper based (non-chelated) mg/l (ppm)	0.1	0.2	0.3	Ineffective against some algae. Consult health dept. before using. May contribute to staining.
3. Copper based (chelated) mg/l (ppm)	0.1	1.0	3.0	Ineffective against some algae. Consult health dept. before using. May contribute to staining.
4. Silver based mg/l (ppm)	0.5	1.5	3.0	Precipitates with cyanuric acid. Ineffective against some algae. Consult health dept. before use.
F. Remedial Practices	Min.	Ideal	Max.	Comments
1. Super-Chlorination	When Combined Chlorine is 0.2 mg/l (ppm) or more			* As needed
2. Required super-chlorination /shock chlorine	10*			*10 times combined chlorine reading. Must be done when the facility is not in use. May reopen when free chlorine is below 5.0 ppm.
3. Floccing	Not Recommended			Consult health dept. officials before using.
4. Water Replacement Hot water facility	...	...	...	Change water and clean monthly as a minimum. Change more frequently when heavy use and chemical treatment difficulties are experienced.
G. Temperature	Min.	Ideal	Max.	Comments
1. Water Temperature Hot water facility	Patron preference	...	105° F	TOO HIGH Excessive fuel requirement Increased chlorine use Increased scaling potential Patron discomfort Health threat to patrons with high blood pressure TOO LOW Patron discomfort
2. Water Temperature Artificially heated	75° F	...	90° F	
3. Air Temperature Indoor facilities	Water temp. - 2° F	...	Water temp. + 8° F	Excluding hot water facilities.
H. Water Clarity	Min.	Ideal	Max.	Comments
1. Turbidity	Must be able to see main drain or six inch black disk on bottom of deepest part from the sidewall.			TOO HIGH Chlorine level may be too low Filtration level may be inoperative May lead to drowning due to decreased visibility