



## NITRIFICATION CONTROL PLAN FOR CHLORAMINATED DISTRIBUTION SYSTEMS

### PART 1: GENERAL SYSTEM INFORMATION

Water System Name:		PWSID:	
Mailing Address:			
Contact Person:		Phone:	Email:
System Type:	<input type="checkbox"/> CWS <input type="checkbox"/> NTNCWS <input type="checkbox"/> TNCWS		Population Served:
Source Types: (check all that apply)	<input type="checkbox"/> Surface Water (SW) <input type="checkbox"/> Purchased SW <input type="checkbox"/> Groundwater (GW) <input type="checkbox"/> Purchased GW <input type="checkbox"/> GUDI (GW under direct influence of SW) <input type="checkbox"/> Purchased GUDI		Selling finished water to any other public water system?  <input type="checkbox"/> Yes <input type="checkbox"/> No
Treatment: (check all that apply)	<input type="checkbox"/> <b>No treatment.</b> <i>Purchase and distribute chloraminated water only.</i>  <i>Chloramines</i> <input type="checkbox"/> <b>Chloramine Production</b> <input type="checkbox"/> <b>Booster Chloramination</b>  <i>Free Chlorine</i> <input type="checkbox"/> <b>Seasonal Chlorination<sup>1</sup></b> <input type="checkbox"/> <b>Seasonal Free Chlorine Conversion<sup>2</sup></b> <input type="checkbox"/> <b>Booster Chlorination</b> (for system-wide nitrification control)		
Blending:	Does chloraminated water and chlorinated water, from different sources, blend within your distribution system?  <input type="checkbox"/> Yes <input type="checkbox"/> No		

<sup>1</sup> Routine seasonal conversion to free chlorine (e.g. utilized chloramines from June – September and free chlorine from October – May) based on normal operational practices or permit conditions.  
<sup>2</sup> Shorter term conversion to free chlorine done specifically for system-wide nitrification control.

**PART 2A: MONITORING PLAN FOR CHLORAMINE PRODUCTION (*TREATMENT*)**

(This part is only for water systems that produce chloramines, booster chloramine or booster chlorinate.)

**Treatment Monitoring Locations, Parameters and Frequencies**

Parameter	Pre-Treatment Frequency (prior to ammonia addition) Sample Location Description: _____	Post-Treatment Frequency (after ammonia addition and prior to entry into the distribution system) Sample Location Description: _____
Free Chlorine <sup>1</sup>		
Total Chlorine		
Monochloramine		
Free Ammonia <sup>2</sup>		
pH		
Nitrite		
Nitrate		
Other Parameters: (Please list below)		

1 Free chlorine is needed for monitoring free chlorine concentrations *prior* to ammonia addition. Caution must be used when using N,N-diethyl-p-phenylenediamine (DPD) methods after monochloramine formation, due to the positive interference from monochloramine, other oxidants and oxidized manganese.

2 Pre-treatment free ammonia samples should be taken from the raw water (prior to the addition of free chlorine within the treatment process). Elevated raw water free ammonia levels can create a demand on the free chlorine and lead to the formation of chloramines prior to ammonia addition.

**PART 2B: MONITORING PLAN FOR CHLORAMINATED DISTRIBUTION SYSTEMS**

	Monitoring Locations <sup>1</sup>							
Parameter	Frequency							
Total Chlorine								
Monochloramine								
Free Ammonia								
Nitrite								
pH								
Temperature								
HPCs								
Nitrate								
Free Chlorine <sup>2</sup>								
Other Parameters: (Please list below)								

1 Make additional copies of this table, as necessary, if the number of monitoring locations exceeds the spaces provided.  
 2 Free chlorine is **only** useful for distribution monitoring during a chlorine conversion, periods of seasonal chlorination, when trying to boost chloraminated water with free chlorine past breakpoint and when free chlorine and chloraminated waters are blended. Caution must be used when using N,N-diethyl-p-phenylenediamine (DPD) methods, due to the positive interference from monochloramine, other oxidants and oxidized manganese.

**PART 3A: RESPONSE PLAN FOR CHLORAMINE PRODUCTION (*TREATMENT*)**

(This part is only for water systems that produce chloramines, booster chloramine or booster chlorinate.)

**Pre-Treatment Goals, Action Levels and Responses**  
(prior to ammonia addition)

Parameter	Goal	Action Level	Response
Free Chlorine			
Total Chlorine			
Monochloramine			
Free Ammonia			
pH			
Nitrite			
Nitrate			
Other Parameters: (Please list below)			

**Post-Treatment Goals, Action Levels and Responses**  
 (after ammonia addition and prior to entry into the distribution system)

Parameter	Goal	Action Level	Response
Free Chlorine			
Total Chlorine			
Monochloramine			
Free Ammonia			
pH			
Nitrite			
Nitrate			
Other Parameters: (Please list below)			

**PART 3B: RESPONSE PLAN FOR CHLORAMINATED DISTRIBUTION SYSTEMS**

**Distribution System Goals and Trigger Levels**

Parameter	Goal	Alert Level	Action Level
Total Chlorine			
Monochloramine			
Free Ammonia			
Nitrite			
pH			
Temperature			
HPCs			
Nitrate			
Free Chlorine <sup>1</sup>			
Other Parameters: (Please list below)			

<sup>1</sup> Free chlorine is **only** useful for distribution monitoring during a chlorine burn, periods of seasonal chlorination, when trying to boost chloraminated water with free chlorine past breakpoint and when free chlorine and chloraminated waters are blended. Caution must be used when using N,N-diethyl-p-phenylenediamine (DPD) methods, due to the positive interference from monochloramine, other oxidants and oxidized manganese.

