Attachment 2 - B

SURFACE AND GWUDI WATER SYSTEMS

(GWUDI - Groundwater that has been determined to be under the direct influence of surface water)

DISINFECTANTS/DISINFECTION BYPRODUCTS (D/DBP) MONITORING REQUIREMENTS

*Applies to any community or nontransient noncommunity water system that serves water that has had a disinfectant added.

TREATMENT TECHNIQUE - Precursor Removals:

Applies only to those Surface or GWUDI water systems using conventional water treatment processes.

NOTE: A minimum of one paired TOC set (to include the source alkalinity) per plant is required per month regardless of which method is chosen to comply with the Treatment Technique requirements.

CONTAMINANTS		Type of Viol	COMPLIANCE BASED ON	ANALYSIS REQUIREMENTS	ROUTINE MONITORING REQUIREMENTS			REDUCED MONITORING REQUIREMENTS				INCREASED MONITORING REQUIREMENTS			
					FREQUENCY	# of Smpls	LOCATION	CONDITIONS	FREQUENCY	# of Smpls	LOCATION	CONDITIONS	FREQUENCY	# of Smpls	LOCATION
Total Organic Carbon (TOC)		TT	**R**unning **A**nnual **A**verage (RAA)*	Certified Lab	Monthly	1 Paired Set **	1 sample each at Source*** & Treated[1] taps with both collected on the same day.	Treated TOC RAA < 2.0 mg/L for 2 consecutive years or < 1.0 mg/L for 1 year	Quarterly	1 Paired Set	1 sample each at Source & Treated taps with both collected on the same day.	If treated TOC RAA exceeds 2.049 mg/L	Monthly	1 Paired Set	1 sample each at Source & Treated taps with both collected on the same day.
Alkalinity		TT	RAA	Certified Lab	Monthly	1	1 sample at Source tap collected with the Source TOC. (See above)	Treated TOC RAA < 2.0 mg/L for 2 consecutive years or < 1.0 mg/L for 1 year	Quarterly	1	1 sample at Source tap collected with the Source TOC. (See above)	If treated TOC RAA exceeds 2.049 mg/L	Monthly	1	1 sample at Source tap collected with the Source TOC. (See above)
SUVA[2] (optional)	(ACC)[3] Analyze UV_{254} and Dissolved Organic Carbon (DOC). (SUVA = UV254 ÷ DOC)	TT	RAA	Certified Lab	Monthly	1 each for DOC and UV254	At Source OR Treated tap based on which SUVA Alternative is used.	N / A				N / A			
Alkalinity (optional)	(ACC for only those systems using Enhanced Softening or a State approved Step 2 TOC removal rate)	TT	RAA	Certified Lab	Monthly	1	Treated	N / A				N / A			
Magnesium (optional)	(ACC for only those systems using Enhanced Softening)	TT	RAA	Certified Lab	Monthly	1	1 each Source & Treated	N / A				N / A			

***** **RAA - (Running Annual Average) -** The average for the past four completed quarters on an ongoing basis. The RAA for the Step 1 removal ratio or an ACC is calculated by averaging either the Step 1 removal ratios that have been calculated for each compliance TOC set or the values for the compliance samples for the one ACC used for the 12-month period for a monthly average; then use the monthly averages to calculate the quarterly average. The quarterly averages of the past completed four quarters are then used to calculate the RAA.

****** **Paired Set** - The collection of an alkalinity and a TOC water sample at the Source water tap at the same time, with a TOC sample also collected at the Treated water tap, all on the same day.

******* **Source water sample -** Collected as a raw water sample prior to any treatment.

[1] **Treated water sample -** Collected no later than the point of combined filter effluent turbidity monitoring and respresentative of the treated water.

[2] **SUVA -** Specific ultraviolet absorbance = UV absorption at 254 nm (UV254) measured in m-1 divided by the dissolved organic carbon measured as mg/L resulting in a SUVA value expressed as L/mg-m.

[3] **ACC -** (Alternative Compliance Criteria) - An option that a system may choose to achieve compliance with the D/DBP Rule Treatment Technique when the Step 1 TOC % removal requirements cannot be met. If a system cannot meet Step 1 Removal Requirements for a minimum of at least 6 months out of every 12 months, then it must use the same ACC for the entire 12-month period.

ADDITIONAL MONITORING REQUIREMENTS:

Applies only to those systems using either Chlorine Dioxide or Ozone as either an oxidant or disinfectant.

DISINFECTION BYPRODUCTS		MCL* (mg/L)	COMPLIANCE BASED ON	ANALYSIS REQUIREMENTS	ROUTINE MONITORING REQUIREMENTS			REDUCED MONITORING REQUIREMENTS				INCREASED MONITORING REQUIREMENTS			
					FREQUENCY	# of Smpls	LOCATION	CONDITIONS	FREQUENCY	# of Smpls	LOCATION	CONDITIONS	FREQUENCY	# of Smpls	LOCATION
Chlorite	(Only for systems using chlorine dioxide)	1.0	Average of each 3-sample set.** (See Increased Monitoring)	EPA / State Approved Amperometric Method **II** by Certified Operators or Cert. Lab	Daily	1	Entry Point *** (EP)	No Reductions				If any Daily EP sample exceeds 1.0 mg/L	Next Day	3-Smpl Set	1 each at 1st customer[1], representative flow and MRT sites **(Analysis by Certified Lab)**
Chlorite	(Only for systems using chlorine dioxide)	1.0	Average of each 3-sample set	Certified Lab	Monthly	3-Smpl Set	1 each from 1st customer, representative flow and MRT[2] sites	After 1 year with No EP samples **and** No distribution samples exceeding 1.0 mg/L	Quarterly	3-Smpl Set	1 each from 1st customer, representative flow and MRT sites	If any EP sample exceeds 1.0 mg/L **or** any distribution sample exceeds 1.0 mg/L	Monthly	3-Smpl Set	1 each at 1st customer, representative flow and MRT sites
Bromate	(Only for systems using ozone)	0.010	**R**unning **A**nnual **A**verage (RAA)	Certified Lab	Monthly	1	Entry Point	If Source BROMIDE RAA is less than 0.05 mg/L for 1 year (Monthly Avgs calculated quarterly)	Quarterly	1 per plant	Entry Point	If Source Bromide RAA exceeds 0.0549 mg/L, increase Bromate monitoring back to monthly.	Monthly	1 per plant	Entry Point
Bromide	(Optional for systems using ozone)	N/A	N / A	Certified Lab	Monthly	1 per source	Source[3]	No Reductions - (Monthly Bromide monitoring at the raw tap must continue for as long as the Bromate EP monitoring is performed quarterly.				N / A			

***** **MCL** - The maximum level allowed for a given contaminant in drinking water by EPA.

****** **3-sample set -** A set of samples collected for chlorite on the same day in the distribution system at the following designated sites: one at the first customer served (cannot be the plant's entry point tap), one at a representative flow site and one at the water's maximum residence time site.

******* **Entry Point Site -** The location where potable water from a source and/or treatment plant enters the distribution system.

[1] **1st Customer -** If the water treatment plant is used as the first customer tap, the Entry Point tap and code cannot be used as the first customer tap. Another tap and code must be assigned.

[2] **Maximum Residence Time (MRT) -** The location within the distribution system where a given unit of water remains for the longest period of time.

[3] **Source water sample -** Raw water sample that is collected prior to any treatment.

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