64668.30 Swsap Augmented Reservoir Requirements

(a)

The SWSAP PWS shall ensure that prior to augmentation of a surface water reservoir by a SWSAP, the surface water reservoir to be used as an augmented reservoir was in operation as an approved surface water supply pursuant to this Chapter for a period of time sufficient to establish a baseline record of the surface water reservoir's raw water quality (including, but not limited to, the monitoring required pursuant to section 60320.326, Chapter 3), and treated drinking water quality. A surface water reservoir shall have been operating as an approved surface water source for at least five years prior to receiving recycled municipal wastewater from a SWSAP, unless approved otherwise in writing by the State Board, but in no case less than two years.

(b)

The SWSAP PWS shall ensure that a surface water reservoir used as an augmented reservoir has a minimum theoretical retention time of no less than that which has been approved by the State Board. Monthly, the SWSAP PWS shall calculate and record the theoretical retention time. The theoretical retention time shall be the value (in units of days) resulting from dividing the volume of water in the surface water reservoir at the end of each month, by the total outflow from the surface water reservoir during the corresponding month. The total outflow shall include, but not be limited to, all outflows and withdrawals from the surface

water reservoir. An initial approved minimum theoretical retention time may be no less than 180 days.(1) If a month's theoretical retention time is determined to be less than the SWSAP PWS's approved theoretical retention time, the SWSAP PWS shall, by the end of the subsequent month, submit a report to the State Board and Regional Board describing the corrective actions to be taken to ensure future theoretical retention times will be no less than the approved theoretical retention time. (2) A SWSAP PWS may apply to the State Board, for written approval, for a reduced on-going alternative minimum theoretical retention time of less than 180 days, but no less than 60 days. The SWSAP PWS's application shall include all information requested by the State Board for its consideration of a proposed alternative minimum theoretical retention time, including the following: (A) Evidence that the SWSAP PWS and SWSAP WRA have reliably and consistently met the requirements of this Article and Article 5.3, Chapter 3, under varying operating conditions; (B) At the proposed alternative minimum theoretical retention time, the maximum anticipated recycled municipal wastewater flow to the surface water reservoir, the total anticipated outflows from the reservoir, and the total available flows of approved reservoir sources of supply; (C) The maximum percent, by volume, of recycled municipal wastewater that will be delivered to the surface water reservoir during any 24-hour period, in accordance with subsection (c), at the proposed alternative minimum theoretical retention time; (D) A description of total proposed treatment and total log10 reduction for enteric virus, Giardia cysts, and Cryptosporidium oocysts. For proposed alternative minimum theoretical retention times less than 120 days, no less than one log10 reduction of such pathogens beyond that otherwise required pursuant to this Article and Article 5.3, Chapter 3, shall be provided; (E) The ability to adequately respond to potential SWSAP treatment failures in a timely manner,

such that there is no interruption of drinking water, meeting all applicable standards, supplied to customers; and (F) A demonstration that the alternative minimum theoretical retention time provides, based on information provided pursuant to subsection (b)(2), an equivalent or better level of protection of public health than otherwise required pursuant to this Article and Article 5.3, Chapter 3. If required by the State Board, the SWSAP PWS's demonstration shall include a review by an independent scientific advisory panel approved by the State Board.

(1)

If a month's theoretical retention time is determined to be less than the SWSAP PWS's approved theoretical retention time, the SWSAP PWS shall, by the end of the subsequent month, submit a report to the State Board and Regional Board describing the corrective actions to be taken to ensure future theoretical retention times will be no less than the approved theoretical retention time.

(2)

A SWSAP PWS may apply to the State Board, for written approval, for a reduced on-going alternative minimum theoretical retention time of less than 180 days, but no less than 60 days. The SWSAP PWS's application shall include all information requested by the State Board for its consideration of a proposed alternative minimum theoretical retention time, including the following: (A) Evidence that the SWSAP PWS and SWSAP WRA have reliably and consistently met the requirements of this Article and Article 5.3, Chapter 3, under varying operating conditions; (B) At the proposed alternative minimum theoretical retention time, the maximum anticipated recycled municipal wastewater flow to the surface water reservoir, the total anticipated outflows from the reservoir, and the total available flows of approved reservoir sources of supply; (C) The maximum percent, by volume, of recycled municipal wastewater that will be delivered to the surface water reservoir during any 24-hour period, in accordance with subsection

(c), at the proposed alternative minimum theoretical retention time; (D) A description of total proposed treatment and total log10 reduction for enteric virus, Giardia cysts, and Cryptosporidium oocysts. For proposed alternative minimum theoretical retention times less than 120 days, no less than one log10 reduction of such pathogens beyond that otherwise required pursuant to this Article and Article 5.3, Chapter 3, shall be provided; (E) The ability to adequately respond to potential SWSAP treatment failures in a timely manner, such that there is no interruption of drinking water, meeting all applicable standards, supplied to customers; and (F) A demonstration that the alternative minimum theoretical retention time provides, based on information provided pursuant to subsection (b)(2), an equivalent or better level of protection of public health than otherwise required pursuant to this Article and Article 5.3, Chapter 3. If required by the State Board, the SWSAP PWS's demonstration shall include a review by an independent scientific advisory panel approved by the State Board.

(A)

Evidence that the SWSAP PWS and SWSAP WRA have reliably and consistently met the requirements of this Article and Article 5.3, Chapter 3, under varying operating conditions;

(B)

At the proposed alternative minimum theoretical retention time, the maximum anticipated recycled municipal wastewater flow to the surface water reservoir, the total anticipated outflows from the reservoir, and the total available flows of approved reservoir sources of supply;

(C)

The maximum percent, by volume, of recycled municipal wastewater that will be delivered to the surface water reservoir during any 24-hour period, in accordance with subsection (c), at the proposed alternative minimum theoretical retention time;

(D)

A description of total proposed treatment and total log10 reduction for enteric virus, Giardia cysts, and Cryptosporidium oocysts. For proposed alternative minimum theoretical retention times less than 120 days, no less than one log10 reduction of such pathogens beyond that otherwise required pursuant to this Article and Article 5.3, Chapter 3, shall be provided;

(E)

The ability to adequately respond to potential SWSAP treatment failures in a timely manner, such that there is no interruption of drinking water, meeting all applicable standards, supplied to customers; and

(F)

A demonstration that the alternative minimum theoretical retention time provides, based on information provided pursuant to subsection (b)(2), an equivalent or better level of protection of public health than otherwise required pursuant to this Article and Article 5.3, Chapter 3. If required by the State Board, the SWSAP PWS's demonstration shall include a review by an independent scientific advisory panel approved by the State Board.

(c)

Prior to augmentation and whenever requested to do so by the State Board based on information that previous tracer studies or hydrodynamic modeling may not accurately reflect current conditions, the SWSAP PWS shall demonstrate to the State Board, utilizing tracer studies and hydrodynamic modeling, that at all times under all operating conditions, the volume of water withdrawn from the augmented reservoir to be ultimately supplied for human consumption contains no more than: (1) one percent, by volume, of recycled municipal wastewater that was delivered to the surface water reservoir during any 24-hour period, or (2) ten percent, by volume, of recycled municipal wastewater that was delivered to the surface water reservoir during any 24-hour period, with the recycled municipal wastewater delivered by the SWSAP WRA having been subjected to additional

treatment producing no less than a 1-log10 reduction of enteric virus, Giardia cysts, and Cryptosporidium oocysts, as noted pursuant to section 60320.308(a)(2). With regard to the additional treatment: (A) The additional treatment need not be a unique type of process from other treatment processes utilized by the SWSAP WRA to meet the requirements of section 60320.308. (B) The SWSAP PWS, in consultation with the SWSAP WRA, shall obtain the additional treatment process information necessary for demonstrating that the requirements of subsection (c)(2) of this section, and section 60320.308(a)(2), will be met.

(1)

one percent, by volume, of recycled municipal wastewater that was delivered to the surface water reservoir during any 24-hour period, or

(2)

ten percent, by volume, of recycled municipal wastewater that was delivered to the surface water reservoir during any 24-hour period, with the recycled municipal wastewater delivered by the SWSAP WRA having been subjected to additional treatment producing no less than a 1-log10 reduction of enteric virus, Giardia cysts, and Cryptosporidium oocysts, as noted pursuant to section 60320.308(a)(2). With regard to the additional treatment: (A) The additional treatment need not be a unique type of process from other treatment processes utilized by the SWSAP WRA to meet the requirements of section 60320.308. (B) The SWSAP PWS, in consultation with the SWSAP WRA, shall obtain the additional treatment process information necessary for demonstrating that the requirements of subsection (c)(2) of this section, and section 60320.308(a)(2), will be met.

(A)

The additional treatment need not be a unique type of process from other treatment processes utilized by the SWSAP WRA to meet the requirements of section 60320.308.

(B)

The SWSAP PWS, in consultation with the SWSAP WRA, shall obtain the additional treatment process information necessary for demonstrating that the requirements of subsection (c)(2) of this section, and section 60320.308(a)(2), will be met.

(d)

To verify that the requirements of subsection (c) are being met, within the first six months of operation, under hydraulic conditions representative of normal SWSAP operations, the SWSAP PWS shall initiate a tracer study utilizing an added tracer. The results of the tracer study shall be used to validate the hydrodynamic modeling required in subsection (c). Prior to performing the tracer study, the SWSAP PWS shall submit a tracer study protocol for State Board review and written approval. The SWSAP PWS shall perform the verification required by this subsection whenever requested by the State Board.

(e)

Notwithstanding a change in operation allowed pursuant to the SWSAP PWS's domestic water supply permit, prior to initiating a change in operation, including physical changes to the surface water reservoir, that may impact the hydraulic characterization utilized to determine compliance with the requirements of this section, the SWSAP PWS shall notify the State Board and: (1) demonstrate that the hydraulic characterization used to comply with this section remains valid under the changed operation, or (2) if requested by the State Board, demonstrate compliance pursuant to this section under the new hydraulic conditions.

(1)

demonstrate that the hydraulic characterization used to comply with this section remains valid under the changed operation, or

(2)

if requested by the State Board, demonstrate compliance pursuant to this section under the new hydraulic conditions.

(f)

Unless directed otherwise by the State Board, a SWSAP PWS shall utilize an independent scientific advisory panel to meet the requirements of this section pertaining to the hydraulic characterization of the reservoir, including tracer study verifications and hydraulic modeling used to demonstrate compliance with subsection (c). The independent scientific advisory panel shall be approved by the State Board and include, at a minimum, a limnologist with experience modelling the hydraulic characterization of surface water reservoirs, or a limnologist and an individual with experience modelling the hydraulic characterization of surface water reservoirs. The SWSAP PWS shall allow State Board representatives, as guests, to join all independent scientific advisory panel meetings and discussions.

(g)

Prior to augmentation of a surface water reservoir using a SWSAP, a SWSAP PWS shall submit a plan, for State Board review and approval, describing the actions the SWSAP PWS will take to assess and address potential impacts resulting from the introduction of advanced treated water into the SWSAP PWS's surface water treatment plant and, indirectly, into the drinking water distribution system. At a minimum, the plan shall address: (1) maintaining chemical and microbial stability in the drinking water distribution system as the drinking water quality changes with anticipated increasing fractions of advanced treated water; (2) maintaining treatment effectiveness throughout the surface water treatment plant as the source water quality changes with anticipated increasing fractions of advanced treated water in the reservoir; (3) assessments to be performed prior to and

during operation of the SWSAP with respect to paragraphs (1) and (2); and (4) assessment outcomes of which the SWSAP PWS will notify the State Board.

(1)

maintaining chemical and microbial stability in the drinking water distribution system as the drinking water quality changes with anticipated increasing fractions of advanced treated water;

(2)

maintaining treatment effectiveness throughout the surface water treatment plant as the source water quality changes with anticipated increasing fractions of advanced treated water in the reservoir;

(3)

assessments to be performed prior to and during operation of the SWSAP with respect to paragraphs (1) and (2); and

(4)

assessment outcomes of which the SWSAP PWS will notify the State Board.