

|->

Title 22@ Social Security

|->

Division 4@ Environmental Health

|->

Chapter 3@ Water Recycling Criteria

|->

Article 5.2@ Indirect Potable Reuse: Groundwater Replenishment - Subsurface Application

|->

Section 60320.224@ Response Retention Time

60320.224 Response Retention Time

(a)

The recycled municipal wastewater applied by a GRRP shall be retained underground for a period of time necessary to allow a project sponsor sufficient response time to identify treatment failures and implement actions, including those required pursuant to section 60320.200(b), necessary for the protection of public health.

(b)

The response retention time required in subsection (a) must be approved by the Department, based on information provided in the engineering report required pursuant to section 60323. The response retention time shall be no less than two months.

(c)

To demonstrate the retention time underground is no less than the response retention time approved pursuant to subsection (b), a tracer study utilizing an added tracer shall be implemented under hydraulic conditions representative of normal GRRP operations. With Department approval, an intrinsic tracer may be used in lieu of an added tracer. For each month of retention time estimated utilizing the approved intrinsic tracer, a project sponsor shall receive no more than 0.67 months credit. The retention time shall be the time representing the difference from when the water with the tracer is applied at the GRRP to when

either; two percent (2%) of the initially introduced tracer concentration has reached the downgradient monitoring point, or ten percent (10%) of the peak tracer unit value observed at the downgradient monitoring point reaches the monitoring point. A project sponsor for a GRRP shall initiate the tracer study prior to the end of the third month of operation. A project sponsor for a GRRP permitted on or before June 18, 2014 that has not performed a tracer study shall complete a tracer study demonstrating the retention time underground.

(d)

For the purpose of siting a GRRP location during project planning and until a GRRP's project sponsor has met the requirements of subsection (c), for each month of retention time estimated using the method in column 1, the recycled municipal wastewater or recharge water may be credited with no more than the corresponding response time in column 2 of Table 60320.224. Table 60320.224

Column 1	Column 2	Method used to estimate the retention time	Response Time
Credit per Month	Tracer study utilizing an added tracer.	11.0 month	Tracer study utilizing an intrinsic tracer.
		10.67 month	Numerical modeling consisting of calibrated finite element or finite difference models using validated and verified computer codes used for simulating groundwater flow.
		0.50 month	Analytical modeling using existing academically-accepted equations such as Darcy's Law to estimate groundwater flow conditions based on simplifying aquifer assumptions.
		0.25 month	1 The retention time shall be the time representing the difference from when the water with the tracer is applied at the GRRP to when either; two percent (2%) of the initially introduced tracer concentration has reached the downgradient monitoring point, or ten percent (10%) of the peak tracer unit value observed at the downgradient monitoring point reaches the monitoring point.

(e)

A project sponsor shall obtain Department approval for the protocol(s) to be used to establish the retention times in subsections (c) and (d).

(f)

Upon request from the Department, a project sponsor shall demonstrate that the underground retention times required in this section are being met based on changes in hydrogeological or climatic conditions since the most recent demonstration.