

**APPENDIX D -
LETTER FROM CALIFORNIA DEPARTMENT
OF PUBLIC HEALTH, JULY 16, 2007**



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July 16, 2007

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This letter is in response to your request for the California Department of Health Services' position on the City's proposed Discharge Compliance Project that may discharge water treated to meet the standards for Disinfected Tertiary Recycled Water from the Subregional System directly to the Laguna de Santa Rosa or the Russian River as part of the Incremental Recycled Water Program. This letter addresses the regulatory and public health consequences that discharge could have on groundwater that is used for drinking water downstream of, and/or adjacent to, the existing discharge locations in the Laguna de Santa Rosa and the candidate discharge locations under consideration along the Russian River.

I have met with representatives of the IRWP Discharge Compliance Project team on several occasions and am satisfied with the approach being used to identify how discharge could move through surface water and groundwater to drinking water sources. I have been provided with TM I-8, Regional Groundwater – Surface Water Interactions. The TM provides the information on how groundwater and surface water would mix, as requested by this Department. I also understand that:

- the design Discharge Compliance Project discharge from the Subregional System will not exceed 5% of the Russian River flow at Hacienda Bridge
- treatment will include tertiary filtration and disinfection
- existing discharges occur primarily from Delta Pond to the Laguna de Santa Rosa, and continued discharge at this location is being considered
- discharge may be relocated to one of three possible candidate sites along the Russian River; near Steelhead Beach (D1), near the Highway 101 bridge south of Healdsburg (D3) and near the Jimtown Bridge in the Alexander Valley (D4) in order to meet receiving water regulatory requirements for aquatic organisms

- the City is not continuing to evaluate the Indirect Discharge Alternative, partly because studies have shown this method will not meet receiving water requirements for trace levels of metals.

The Departments position on the proposed project is summarized as follows:

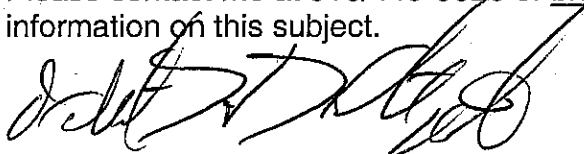
1. If a drinking water well is located adjacent to a gaining stream, gaining even during well pumping, there is no reason to consider stream quality or treated wastewater discharges when evaluating the safety of the produced groundwater. A gaining stream is one where water flows from groundwater to the stream.
2. If a drinking water well is located adjacent to a stream that is losing at any time, understanding how treated wastewater might contribute to the water supply is a primary consideration. A losing stream is one where water flows from the stream to groundwater.
 - a. It is acceptable for a well to draw a fractional amount of groundwater that is from a stream containing treated and disinfected wastewater discharges under certain conditions.
 - b. There are several rivers used as major drinking water sources by California communities with wastewater discharge contributions in the 3 – 5% range. These rivers are tapped either directly with surface intakes, or indirectly from wells near the rivers. The protection provided by the standard provisions of the Clean Water Act and Safe Drinking Water Act assures a safe drinking water under these conditions.
3. The City will need to evaluate their proposed project in combination with discharges from other municipalities to assess cumulative conditions. Cumulative conditions were not addressed under TM I-8 and are not addressed herein, however the assessment methodology would be the same. In calculating cumulative wastewater contributions, 100% of the flow of upstream surface water discharge should be utilized, while attenuation factors based on conservative literature or experimental values are appropriate for wastewater discharged to land which experiences subsurface transport prior to entering the surface water. In this approach, appropriate microbial indicator organisms can be used for representation of pathogenic microorganisms and TOC can be used as an indicator of chemical contaminants.

The Department has investigated the impact of wastewater contributions to surface and groundwater drinking water sources. The threshold cumulative wastewater contributions that would trigger the need for further investigation by this Department into the need for additional wastewater and/or drinking water treatment are:

- 5% or more, over short durations (monthly averages at the groundwater source) for pathogenic microorganism control
- 10% or more, as an average over long periods of time (yearly averages at the groundwater source), for chemical contaminant control.

Most of the rivers' reaches that are adjacent to well fields are gaining during the City's discharge season during most years. TM I-8 indicates that domestic supply wells will not produce water with more than a 3% treated wastewater contribution over short durations, and less than 1% for long term averages, for candidate discharge sites D1 and D3 that are below Healdsburg's Gauntlett and Fitch Mountain well fields. If sites D1 or D3 were selected, treated wastewater contributions from the City's project would not alter the status of the Town of Windsor's and the Sonoma County Water Agency's wells along the river as being safe sources of drinking water and there should be no regulatory consequences, given existing drinking water law. This would remain true if the wastewater concentration remains below 5% under the cumulative condition. TM I-8 indicates that if the discharge point is above the Gauntlett and Fitch Mountain well fields at site D4, the treated wastewater contribution could be greater than 5% (up to 6%) during one month of the driest year of record over the past 95 years. If operational changes could not be employed to avoid this condition, a closer review of the subsurface flow path from the river to the well would be required to determine the safety of this condition as it exceeds the short duration threshold of 5% for pathogenic microorganism control.

Please contact me at 916/449-5626 or bhultqui@dhs.ca.gov if you need further information on this subject.



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