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## DEPARTMENT OF RESOURCE MANAGEMENT



# SOLANO COUNTY

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### Environmental Health Division

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REQUEST FOR LAMP RENEWAL AND WATER QUALITY ASSESSMENT PREPORT,  
SOLANO COUNTY, REPORTING PERIOD AUGUST 19, 2017, TO SEPTEMBER 30, 2022

THIS DOCUMENT REQUESTS RENEWAL OF THE Local Agency Management Program (herein LAMP) for Solano County in part based on an enclosed Water Quality Assessment Report, which meets minimum standards in Section 9.3.3 and 12.0 et seq. of the State Resources

Control Board Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (herein OWTS Policy or LAMP).

#### 1.0 LAMP Renewal Request

Solano County Department of Resource Management Division of Environmental Health request renewal of the Local Agency Management Program (LAMP), with Conditional Waiver of Waste Discharge Requirements as listed in Section 12 et al of the State Water Board OWTS Policy dated June 19, 2012. Solano County is not proposing any changes to the LAMP at this time.

#### Conditional Waiver of Waste Discharge Requirements

12.0 In accordance with Water Code section 13269, the State Water Board hereby waives the requirements to submit a report of waste discharge, obtain waste discharge requirements, and pay fees for discharges from OWTS covered by this Policy. Owners of OWTS covered by this Policy shall comply with the following conditions:

12.0.1 The OWTS shall function as designed with no surfacing effluent.

12.0.2 The OWTS shall not utilize a dispersal system that is in soil saturated with groundwater.

12.0.3 The OWTS shall not be operated while inundated by a storm or flood event.

12.0.4 The OWTS shall not cause or contribute to a condition of nuisance or pollution.

12.0.5 The OWTS shall comply with all applicable local agency codes, ordinances, and requirements.

12.0.6 The OWTS shall comply with and meet any applicable TMDL implementation requirements, special provisions for impaired water bodies, or supplemental treatment requirements imposed by Tier 3.

12.0.7 The OWTS shall comply with any corrective action requirements of Tier 4.

12.1 This waiver may be revoked by the State Water Board or the applicable Regional Water Board for any discharge from an OWTS, or from a category of OWTS.

#### 2.0 Water Quality Assessment Report

### 2.0.1 Program Summary and Policy Conformance

Solano County OWTS Program is protective of public health and the environment by ensuring the by ensuring the proper treatment and disposal of liquid waste through the appropriate siting, design, installation, maintenance and monitoring of OWTS given the specific geologic, hydrologic, and soil characteristics of Solano County. Solano County implements Section 9.0 Local Agency Management Program for Minimum OWTS Standards, including maintaining low density development standards in collaboration with Planning Division and requirements for new Subdivisions. All OWTS systems not meeting Tier 1 requirements for standard type gravity systems are required to enroll in an annual operations and maintenance program, administered by this office. All Tier II permits require additional engineering review and certification where less than five feet of usable soil is available beneath the leachfield. Where two to three feet of usable soil is available, this office requires the installation of an additional treatment device for OWTS developed with two to three feet of usable soil. Site and soil testing ensure the OWTS are not developed in areas of poorly drained soils, fractured rock, and setbacks are maintained to waterways and drinking water wells. System designs are required to state a maximum daily design capacity based on actual use and the number of bedrooms in a residential property.

High density development in Solano County occurs within the City Limits of the seven incorporated Cities within Solano County. Municipal Sewer services are available for the residents of the seven incorporated Cities: Benicia, Vallejo, Fairfield, Suisun City, Rio Vista, Vacaville and Dixon. Existing historic agreements are in place to provide municipal sewer service to high density developments in unincorporated Vallejo and unincorporated Cordelia.

### 2.0.2 Community Water System Well Monitoring

Solano County regulates State Small Water Systems and includes the required water sampling associated with the State Small Water Systems as a measure of compliance with the LAMP and OWTS policies. The ten regulated State Small Water Systems are typically in compliance with bacteriological standards for drinking water. Solano County interfaces with the State Water Board, Division of Drinking Water regarding contamination issues with State regulated Public Drinking Water Systems. At this time this office is not aware of impacts associated with Public Drinking Water Systems and high density OWTS developments. Planning and siting requirements ensure Public Drinking Water Wells are physically separated from OWTS by a minimum distance of 150 feet.

### 2.0.3 Private Domestic Well Monitoring Program

Solano County tracks results of domestic drinking water well testing for coliform and e-coli bacterial standards for drinking water. The Public Health lab is a partnership between Napa County, Solano County, Yolo County, Marin County and Mendocino County with the laboratory located within Solano County, in Fairfield California. Laboratory data is correlated to the specific property by parcel number and all water sampling results are digitally maintained by parcel number. To date, bacteriological contamination of drinking water wells is not associated with failure of OWTS.

### 2.3 Water Quality Recommendations

Solano County will continue to reference water quality and testing data and reporting as a gauge of the current Local Agency Management Plan with protections in place to prevent the degradation of ground water. Solano County recommends to keep the water testing programs in place with reference to the performance of the LAMP.

## 2.4 Certification and Closure

Solano County has one listed water body as impaired – Impaired Water Bodies 303d List with the Napa River traversing through Solano County. The Napa River impairment is not associated with OWTS development. The City of Vallejo provides sanitary sewer service for high density development found near the Napa River. OWTS are not developed within 600 feet of the Napa River.

## 2.5 References

CEDEN Reporting  
GAMA Reporting  
GEO Tracker  
Solano County Water Monitoring Program

### List of Tables –

2.1 – Water Quality Summary, Key Community Water System Wells, Solano County Reporting August 19, 2017, to September 30, 2022.

2.2 Private Domestic Well Density and Water Quality Summary – Tier 2 – Quarter Sections – Reporting August 19, 2017, to September 30, 2022.

2.3 Water Quality Summary, Wastewater Nitrate Loading and System Repairs, Key PLSS Quarter Sections, Solano County sampling period August 19, 2017 to September 30, 2022.

## 1.0 Lamp Renewal Request

In support of a continued conditional waiver of Waste Discharge Requirements for domestic onsite wastewater treatment systems (OWTS), and in accordance with California Water Code (CWC) Section 13269, Solano County hereby affirms that during the reporting period August 19, 2017, to September 30, 2022, its LAMP implementation complied with Section 12.0 et seq of the OWTS Policy. OWTS within LAMP scope generally performed as follows: functioned as designed with no surfacing effluent, did not operate while dispersal systems had groundwater-saturated soils; did not operate while inundated during storms or floods; did not cause a condition of pollution or nuisance; complied with all applicable local codes and requirements, and complied with all OWTS Policy Tier 4 corrective action requirements.

During the reporting period, County staff observed no public health or water quality related performance issues that warrant substantive changes to the current LAMP; Solano County Department of Resource Management, Environmental Health Division, therefore requests the Central Valley Regional Water Quality Control Board to renew the LAMP as originally approved on August 19, 2016. Solano County requires a minimum of 5 acres to develop a property with onsite domestic drinking water and onsite wastewater treatment system (OWTS). A 2.5 acre parcel is required for development when a public potable drinking water is supplied to the property and is utilizing OWTS. Solano County does not have high density housing associated with OWTS.

## 2.0 Water Quality Assessment Report

### 2.0.1 Program Summary and Policy Conformance

Pursuant to OWTS Policy Section 9.3.3 this report summarizes the Water Quality Assessment Program for Solano County.

In consideration of Policy Section 9.1 et seq, this report emphasizes the Solano County Land Use Policies in Chapter 26 of Solano County Code, requiring 5-acre minimum lot sizes to develop a property with onsite domestic water supply and onsite wastewater treatment system.

(OWTS). Solano County Code Chapter 26 allows for development of parcels 2.5 acres in size with OWTS and a potable public water supply. High density development is limited to the incorporated cities within Solano County, where municipal water and sewer services are available.

Pursuant to Policy Section 9.3.2.3 and 9.3.2.9, this Program includes compilation of water quality data from public water system wells with data available from agency websites. Pursuant to Policy Section 9.3.2.1, 9.3.2.2 and 9.3.2.4 this Program collects water testing data from well testing submitted to the Public Health Laboratory for properties within Solano County submitting for well water testing. Domestic well densities are low, similar in comparison with OWTS densities, as Solano County Code requires a 5 acre minimum lot size to develop with onsite domestic drinking water and onsite wastewater treatment systems.

## 2.02. Community Water System Well Monitoring Program

To evaluate potential pathways from OWTS to community water system wells, this Program considers potential near-well wastewater indicators. Most nitrate in the Central Valley Region is agricultural in origin. (e.g., after Ransom, et. Al 2017). Therefore, this Program preliminarily assumes that typical OWTS-related potential wastewater nitrate pathways to wells would be nearby, from dispersal systems, downward through vadose soils to shallowest hydraulically unconfined groundwater, laterally through shallow aquifer units to the well, then downward toward the pump intake through vertical conduits, leaking sanitary seals, annular gravel packs and open perforated intervals.

As a preliminary screening tool for a wastewater nitrate component in active community waster system wells due to vertical conduits, this Program considers. Current OWTS loading are not high density. Nitrate and Nitrite levels are available at SWRCB GAMA website. This Program considers nitrate trends relative to the Primary Maximum Contaminate Level of 10 milligrams/liter as Nitrogen. The absence of Nitrogen does not preclude a near well nitrogen source, the presence of nitrogen even at low levels is a potential indicator for contamination from OWTS (e.g.after Javandel and Tsang, 1986).

Inactive wells can serve as a conduit for wastewater sourced nitrate. This Program considers inactive wells as potential pollution sources. (e.g. Gailey 2017). This Program tracks both active and inactive water wells.

## 2.0.3 Private Domestic Well Monitoring Program

To evaluate threats to private domestic wells, this Program largely considers OWTS and domestic well densities. The OWTS Policy generally considers pollutant impacts to groundwater wells within its scope as non-point sources. Solano County has low density development standards and does not have current language to allow for high density development utilizing OWTS. Home construction and potable water service data is available on Geographic Information System (GIS), Geotracker and GAMA data portals.

## 2.1 Water Quality Data

Table 2.1 summarizes community water system and school wells with at least one nitrate detection over  $\frac{1}{2}$  the PMCL of 10 mg/liter with the potential of impact from OWTS based on nitrogen trends. Solano County does not have high density OWTS associated with developed Public Drinking Water Wells.

Table 2.1 Water Quality Summary, Key Community Water System Wells, Solano County Reporting Period August 19, 2017 to September 30, 2022.

Well Name	ID Number	Community or School	Pumping Status (Active – Inactive)	Nitrate as N, mean mg/l	Nitrate as N, maximum mg/l	Nitrate Trend positive/negative /none	Nitrate as N mean	Nitrate as N maximum	Analyses Count

Table 2.2 Private Domestic Well Density and Water Quality Summary, Tier 2 PLSS

Tier 2 PLSS Quarter Section	Wells	Average Terminal Well Depth (ft Bgs)	Nitrate Analyses Count	Nitrate Results >5 mg/l as N. Count	Nitrate Results > 10 mg/l as N Count	Total Coliform Analyses Count	Total Coliform Detections >2.2 MPN/100 ml Count

Table 2.3 Water Quality Summary, Wastewater Nitrate Loading and System Repairs, Key PLSS Quarter Sections, Solano County, Reporting Period August 19, 2017 to September 30, 2022

Community	PLSS Quarter Section	Average Wastewater Nitrate at Water Table Mg/l as N	Percolation Rate Range MPI	Depth to Water Table Range (ft bgs)	Depth to Bedrock Range (ft Bgs)	Siting Related OWTS Repairs Count	Unknown Cause OWTS Repairs Count

## 2.2 Discussion

### 2.2.1 Water Quality Threats to Community Water System Wells

Water quality monitoring results do not indicate OWTS related impacts to community water system or school wells. Highest detected nitrate for this reporting period was \_\_\_\_\_ mg/l as N, below the PMCL.

### 2.2.2 Water Quality Threats to Private Domestic Wells

Water quality monitoring results do not indicate OWTS related impacts to private domestic wells. Solano County does not have areas of high density domestic well development.

### 2.3 Water Quality Recommendations

Based on the above water quality findings, Solano County recommends no changes to the current LAMP.

### 2.4 Certification and Closure

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

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Department of Resource Management  
Environmental Health Division

### 2.5 References

Gailey, R. M. (2017) Inactive supply wells as conduits for flow and contaminant migration: conditions for occurrence and suggestions for management. Hydrogeology Journal DOI 10.1007/s10040-017-1588-y published online May 15, 2017.

Water Quality Control Policy for Siting Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems, State Water Resources Control Board, June 19, 2012.

Environmental Engineering and Sanitation, Joseph Salvato, 4<sup>th</sup> Edition.

Onsite Wastewater Treatment Systems Manual, United States Environmental Protection Agency, February 2002.

Solano County Code Chapter 26 Subdivisions [Chapter 26 SUBDIVISIONS \(codepublishing.com\)](#)

Solano County Code Chapter 6.3 Building Code – Water Supply and Testing Residential Construction Section 50 – 51. [Chapter 6.3 BUILDING STANDARDS AND CODES \(codepublishing.com\)](#)

Solano County Code Chapter 6.4 Sewage Standards [Chapter 6.4 SEWAGE STANDARDS \(codepublishing.com\)](#)

Solano County Code Chapter 25 Chemical Toilets, Sewage Pumping Trucks, Domestic Septage Land Application and Biosolids Land Application [Chapter 25 CHEMICAL TOILETS, SEWAGE PUMPING TRUCKS, DOMESTIC SEPTAGE LAND APPLICATION, AND BIOSOLIDS LAND APPLICATION \(codepublishing.com\)](#)

Department of Water Resources Sustainable Groundwater Management Act (DWR SGMA) portal <https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels>

State Water Resources Control Board Groundwater Ambient Monitoring and Assessment (SWRCB GAMA) secure website:  
(<https://gamagroundwater.waterboards.ca.gov/gama/gamamap/regulator/>)

R:/Envhlth/Tech/01\_Liquidwaste/03\_Regulations-OWTS Policy-LAMP-P&Ps/2022 5 Year Request for LAMP Renewal and Water Quality Assessment/1-30-23 Request for LAMP Renewal Solano County