CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LAHONTAN REGION

MEETING OF JULY 10, 2019 BISHOP

ITEM 6 LOCAL AGENCY MANAGEMENT PROGRAM FOR ALPINE COUNTY

CHRONOLOGY	
July 2, 1990	California Regional Water Quality Control Board, Lahontan Region (Water Board), entered into a memorandum of understanding (MOU) with Alpine County authorizing it to approve onsite wastewater treatment systems (OWTS) provided that the OWTS criteria in the <i>Water Quality Control Plan for the Lahontan Region</i> (Basin Plan) are met.
June 19, 2012	The State Water Resources Control Board (State Water Board) adopted the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy).
May 13, 2013	The State Water Board's OWTS Policy became effective.
April 9, 2014	Water Board amended the Basin Plan to incorporate the OWTS Policy.
November 7, 2016	Alpine County submitted a proposed draft Local Agency Management Program (LAMP) to the Water Board.
October 24, 2017	Water Board staff issued a comment letter to Alpine County on the proposed draft LAMP (Enclosure 3).
January 17, 2018	Alpine County submitted a revised draft LAMP to the Water Board.
February 26, 2018	California Regional Water Quality Control Board, Central Valley Regional (Central Valley Water Board) issued a comment letter to Alpine County on the revised draft LAMP (Enclosure 4).
February 1, 2019	Water Board issued a comment letter to Alpine County on the revised draft LAMP (Enclosure 5).
April 14, 2019	Alpine County submitted the final proposed Alpine County LAMP (Enclosure 2).
May 7, 2019	Alpine County Board of Supervisors approved the Alpine County LAMP.

BACKGROUND

The OWTS Policy establishes risk-based tiers for existing, new, and replacement OWTS as follows:

- Tier 0: Applies to existing, properly functioning OWTS that are not impacting water quality.
- Tier 1: Sets state-wide protective requirements for siting and design of new or replacement OWTS that a local agency must follow when authorizing construction of new/replacement OWTS.
- Tier 2: Local agencies may tailor and implement a LAMP to regulate new and replacement OWTS within their jurisdiction, in lieu of Tier 1 standards.
- Tier 3: Applies specific standards to OWTS that may be affecting impaired surface waters.
- Tier 4: Applies to existing OWTS requiring corrective action.

Alpine County has elected to implement a Tier 2 LAMP for OWTS management, replacing the state-wide requirements provided in the OWTS Policy, Tier 1.

Alpine County covers approximately 743 square miles of land, of which more than 96percent is federal land (the highest percentage of California counties). As of the 2010 census, the population was 1,760, making it the least populous county in California. The majority of the population resides in communities with sewage collection and treatment systems: Markleeville, Kirkwood, and Bear Valley. Outside of these communities with collection/treatment systems, there are approximately 1,000 septic systems within Alpine County. The remaining population resides primarily in small communities relying on groundwater for drinking water purposes. There are no known drinking water wells with nitrate exceedances documented. Additionally, there are no private water wells with bacteriological contamination documented (sampling is a permitting requirement to install an OWTS in Alpine County). Future growth of OWTS is expected to be small, approximately two OWTS applications are received each year by Alpine County. There are no Basin Plan septic system prohibitions for Alpine County. Additionally, there are currently no water bodies within Alpine County listed on the 303(d) listing as impaired for nutrients or pathogens related to OWTS.

ISSUES

Should the Water Board adopt the proposed resolution (Enclosure 1) approving the Alpine County LAMP?

DISCUSSION

Water Board staff identified the following questions as those most critical with respect to water quality. Additionally, these questions will recur during LAMP implementation and during the ongoing review of the required Five-Year Water Quality Assessment Program reports. These questions, and responses, are the following:

1. Where are areas of existing or new OWTS that are expected to contribute to or cause groundwater contamination or pollution? Where are the nearest existing supply wells or likely potential supply wells?

The population that utilizes OWTS for domestic wastewater disposal are typically small subdivisions that also rely on groundwater wells for drinking water purposes. Each time a supply well is planned, water quality tests are performed to determine the suitability of the water, and to determine whether there is an indication of contamination in groundwater/wells. Additionally, State Water Board Division of Drinking Water or Alpine County Environmental Health Services regulates drinking water systems and requires drinking water well monitoring. That data will be used to assess OWTS impacts and water quality changes as required by the Water Quality Assessment Program as required as part of the LAMP. This includes, any and all surface water and groundwater sampling efforts, new water well sampling, and any maintenance records, inspections, or sampling required for alternative/supplemental treatment systems.

2. For future growth areas, where will OWTS be allowed? Which of these areas will likely contribute/cause groundwater contamination or pollution? Where will likely supply wells be in these areas?

There are no prohibitions of domestic wastewater discharge listed in the Basin Plan, nor in Alpine County's County Code; therefore, OWTS will be allowed anywhere in Alpine County provided they meet the design standard and sitespecific requirements detailed in this LAMP. Alpine County historically receives approximately 2 applications for new OWTS every year, most of which are either in existing subdivisions or remote locations with no neighboring OWTS. Additionally, population growth for Alpine County is among the lowest comparatively in the Lahontan Region and future growth with respect to new subdivisions/OWTS is expected to be negligible. As mentioned above, to date, no groundwater contamination has been identified within Alpine County, which should continue with the implementation of this LAMP.

3. When will pollution occur (greater than 10 mg/L nitrate-nitrogen) and to what extent?

Historically, no pollution has been identified with respect to nitrogen or bacteriological contamination associated with OWTS. With proper implementation of the design standards and site-specific prohibitions set forth in this LAMP, groundwater contamination is not expected to occur. By utilizing the equivalent dwelling unit limit on discharge and implementing a minimum lot size, the discharge of domestic waste is expected to mitigate pollution while allowing continued development. Additionally, due to the small population, distributed nature of development, and seasonal occupancy of existing structures utilizing OWTS, domestic waste discharge is not expected to result in pollution to groundwater or surface waters.

To ensure that no pollution of the waters within Alpine County occurs, the LAMP proposes a minimum Water Quality Assessment Program. Annual reports will include: numbers and locations of complaints pertaining to OWTS, and the results of those findings; applications and registrations of septic tank pumping companies;

the number, location, and description of permits issued for new and replacement OWTS; and supplemental treatment system performance data.

The 5-year Assessment Reports will include an evaluation of the effectiveness of Alpine County's OWTS program with respect to protecting receiving water quality and focus on the communities of Alpine County with higher density OWTS.

The water quality assessment program will include monitoring and analysis of water quality data, review of complaints, failures and OWTS inspections. The water quality data can be obtained from the following sources:

- 1. Random well samples.
- 2. Well samples taken to establish a well as a potable source.
- 3. Routine water samples taken by community water systems.
- 4. Any other sampling data deemed relevant or necessary for the protection of ground/surface water supplies.
- 5. Data contained in the California Water Quality Assessment Database and Groundwater Ambient Monitoring and Assessment Program.
- 6. Results of sampling required for supplemental treatment systems.
- 7. Reports from any inspections, maintenance, and pumping performed.

There are currently no segments of surface waters in Alpine County listed on the 303(d) list as impaired for pathogens or nutrients associated with OWTS. If there is enough information to consider OWTS as a major contributing source, then Alpine County will revise the LAMP to implement the OWTS Policy Tier 3 program requirements for location considered impaired by OWTS.

SUSTAINABLE GROUNDWATER MANAGEMENT ACT BASINS

For purposes of the Sustainable Groundwater Management Act, the California Department of Water Resources identifies the following groundwater basin in Alpine County, along with priority.

PriorityGroundwater BasinVery LowCarson Valley (6-006)

Source: https://gis.water.ca.gov/app/bp2018-dashboard/

PUBLIC OUTREACH/INPUT

Alpine County posted their proposed LAMP from April 17 through May 7, 2019, requesting comments from the public; no comments were received. The Alpine County Board of Supervisors approved the LAMP on May 7, 2019. The Water Board circulated the draft Resolution and requested comments on the Alpine County LAMP on June 21, 2019. The draft and final LAMPS are published on the Water Board website at: https://www.waterboards.ca.gov/lahontan/water_issues/programs/owts/.

The draft LAMP approval resolution was circulated to Alpine County, interested parties, and the public. No comments were received during the public comment period.

PRESENTERS

Trevor Miller, Water Board, Water Resource Control Engineer (presentation is Enclosure 7)

RECOMMENDATION

Water Board staff recommends approval of the Alpine County LAMP because it is protective of water quality and meets the minimum requirements for OWTS Policy Tier 2.

ENCLOSURE	ITEM	BATES NUMBER
1	Proposed Resolution No. R6T-2019- PROPOSED	6 - 7
2	Alpine County LAMP approved by Alpine County Board of Supervisors (April 14, 2019).	6 - 11
3	Water Board staff issued LAMP comment letter to Alpine County (October 24, 2017).	6 - 51
4	California Regional Water Quality Control Board, Central Valley Region issued LAMP comment letter to Alpine County (February 26, 2018).	6 - 59
5	Water Board issued LAMP comment letter to Alpine County (dated January 18, 2019).	6 - 65
6	Comparison of OWTS Policy, Lahontan Basin Plan, and Selected Lahontan Region Tier 2 LAMPS for Supplemental Systems and Density	6 - 71
7	Water Board staff presentation (Trevor Miller)	6 - 77

ENCLOSURE 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LAHONTAN REGION

RESOLUTION NO. R6T-2019-PROPOSED

APPROVING THE LOCAL AGENCY MANAGEMENT PROGRAM FOR ALPINE COUNTY

WHEREAS, the California Regional Water Quality Control Board, Lahontan Region (Water Board) finds that:

- 1. On June 19, 2012, the State Water Resources Control Board (State Water Board) adopted Resolution No. 2012-0032, which approved the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy).
- 2. The OWTS Policy defines a local agency as any subdivision of state government that has responsibility for permitting the installation of and regulating OWTS within its jurisdictional boundaries; typically, a county, city, or special district.
- 3. The OWTS Policy allows local agencies to propose Local Agency Management Programs (LAMP) for Water Board approval. Upon approval, the local agency would manage the installation of new and replacement OWTS under that LAMP.
- 4. The OWTS Policy requires the Water Board to solicit comments from the State Water Board, Division of Drinking Water (DDW) regarding a LAMP's proposed setbacks and notifications to water purveyors.
- 5. Alpine County is split geographically between two Regional Water Boards, the Central Valley Water Quality Control Board (Central Valley Water Board) and the Water Board. The Water Board is the designated Regional Water Board for the approval of Alpine County's proposed LAMP. The Central Valley Water Board also has regulatory jurisdiction within Alpine County and was consulted for input on Alpine County's proposed LAMP.
- 6. On November 7, 2016, Alpine County submitted a proposed LAMP to the Water Board.
- 7. On October 24, 2017, the Water Board issued a comment letter to Alpine County regarding Alpine County's proposed LAMP.
- 8. On January 17, 2018, Alpine County submitted a revised draft LAMP to the Water Board.
- 9. On February 26, 2018, Central Valley Water Board issued a comment letter to the Water Board regarding Alpine County's revised draft LAMP.

- 10. On January 30, 2019, the Water Board met with Alpine County to review proposed changes to the LAMP.
- 11. On February 1, 2019, the Water Board issued a comment letter to Alpine County regarding their submitted revised draft LAMP.
- 12. On March 20, 2019, and on April 3, 2019 the Water Board met with Alpine County to review proposed changes to the LAMP.
- 13. On April 14, 2019, Alpine County submitted the final proposed Alpine County LAMP.
- 14. On April 16, 2019 the Water Board forwarded a copy of the proposed LAMP to DDW to solicit comments regarding the proposed LAMP's policies and procedures, including notification to local water purveyors to OWTS permitting.
- 15. On April 16, 2019, through May 7, 2019, Alpine County notified Alpine County residents and interested parties of the opportunity for public comment and public hearing concerning consideration adoption of the Alpine County LAMP.
- 16. On May 7, 2019, the Alpine County Board of Supervisors approved the Alpine County LAMP.
- 17. On June 13, 2019, the Water Board notified Alpine County and interested parties of the opportunity for public comment and public hearing concerning consideration of a resolution to approve the Alpine County LAMP.
- 18. On July 10, 2019, the Water Board, in a public meeting, heard and considered all comments pertaining to this action.

THEREFORE, BE IT RESOLVED THAT:

The Water Board hereby approves the Local Agency Management Program submitted by Alpine County.

I, Patty Z. Kouyoumdjian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Lahontan Region, on July 10, 2019.

PATTY Z. KOUYOUMDJIAN EXECUTIVE OFFICER

ENCLOSURE 2

County of Alpine

Local Area Management Program (LAMP)

Onsite Wastewater Treatment Systems

4/15/2019

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CHAPTER 1: Introduction

The Local Area Management Program (LAMP) is the required end result of California Assembly Bill 885, which directed the State Water Resources Control Board (State Water Board) to develop uniform, statewide standards for onsite wastewater treatment systems (OWTS). The State Water Board adopted the Water Quality Control Policy for Siting, Design, Operation and Maintenance on Onsite Wastewater Treatment Systems (OWTS Policy) on June 19, 2012 and it became effective on May 13, 2013. The OWTS Policy allows local agencies to approve OWTS, based on a local ordinance and upon approval of the LAMP by their respective Regional Water Quality Control Boards (Regional Water Board). For Alpine County, their respective Regional Water Board is the Lahontan Regional Water Quality Control Board (Lahontan Water Board).

The OWTS Policy establishes a tiered approach whereby, Tier 0 authorizes existing OWTS; Tier 1 establishes minimum standards for low risk new or replacement OWTS; Tier 2 allows for development of conditions specific to Alpine County, and these LAMPs must be approved by the appropriate Regional Water Board; Tier 3 applies special, enhanced standards to both new and existing OWTS located near a water body that has been listed as impaired due to nitrogen or pathogens pursuant to Section 303(d) of the Clean Water Act; Tier 4 applies to existing OWTS that have or are failing. Once approved, the standards contained in an approved LAMP supersede the Tier 1 standards. The LAMP is intended to be Alpine County's primary instrument for siting OWTS within Alpine County.

Discharges of waste are regulated through the use of Waste Discharge Requirements (WDRs) issued by the Water Boards that act as discharge permits. With regard to the regulation of wastewater in Alpine County, the Lahontan Water Board and the Central Valley Regional Water Quality Control Board (Central Valley Water Board) issue discharge permits to the municipalities, special districts, or individuals (Person) that operate domestic wastewater (sewage) treatment plants in the County of Alpine (County). In addition, they issue permits for the use of recycled wastewater.

The State's regulatory authority extends to individual OWTS; therefore, general guidelines for the siting, design and construction of new OWTS were part of the OWTS Policy and each Regional Board's Basin Plan (Basin Plan). The State Water Board and the Regional Water Boards recognized the advantages and efficiencies of regulation of such systems by local agencies. Consequently, while the Regional Boards retained primacy over large and some specialized systems, direct regulatory authority for individual OWTS has, prior to the OWTS Policy, been delegated to individual counties through Memorandums of Understanding. This LAMP supersedes any prior Memorandum of Understanding with regard to OWTS.

The implementation of this LAMP will allow the continued use of OWTS within Alpine County, as well as to expand the local program to permit and regulate alternative OWTS, while protecting

water quality and public health. The LAMP also applies to OWTS on federal and state lands, to the extent authorized by law or agreement.

The LAMP is designed to protect groundwater and surface waters from contamination through the proper design, placement, installation, maintenance, and assessment of individual OWTS. This LAMP develops minimum standards for the treatment and ultimate disposal of sewage through the use of OWTS in Alpine County. The LAMP does not regulate or otherwise include the following which require the owner to file a report of waste discharge with the Lahontan Water Board and obtain WDRs (or waiver of WDRs):

- Any OWTS designed for multiple dwelling units or commercial developments with a projected wastewater flow of over 500 gallons per day per acre;
- Any OWTS with a projected wastewater flow of over 10,000 gallons per day;
- Any OWTS that receives industrial or high strength wastewater;
- Any OWTS with a Biochemical Oxygen Demand (BOD) higher than 900 milligrams per liter (mg/l);
- Projects utilizing packaged wastewater treatment plants with onsite disposal;
- Any discharge to surface waters.

It is the intent of the County Board of Supervisors, in adopting this plan, to ensure that OWTS are constructed, modified, repaired, abandoned, operated, maintained, inspected and serviced in a manner that prevents environmental degradation and protects the health, safety and general welfare of the people of the County. This LAMP conforms to all of the applicable Tier 2 criteria listed in §9 of the OWTS Policy including requirements in §9.4 to adhere to the applicable Basin Plan "prohibitions."

The standards for existing and new OWTS are specified in the OWTS Policy, the California Plumbing Code, Appendix H & K; the USEPA Design Manual – Onsite Wastewater Treatment and Disposal Systems; the Manual of Septic Tank Practice published by the U.S. Department of Health, Education and Welfare (1975); and Alpine County Code, Chapter 13.08.

OWTS, including conventional septic systems, require routine maintenance in order to ensure that they function properly and to extend the life of the system. While this LAMP does not require mandatory maintenance or reporting for conventional systems, regular maintenance and reporting will be required for all alternative or supplemental treatment systems.

The provisions of this LAMP will apply to all areas that Alpine County maintains jurisdiction.

While every effort was made to make this LAMP comprehensive, it is likely that it will be necessary to modify it in the future for several reasons. Section 9.3.3 of the OWTS Policy requires that a jurisdiction complete an evaluation of its monitoring program every five (5) years to determine if water quality is being impacted by OWTS, and whether modifications must be made to its LAMP to address any noted water quality impacts. If changes are necessary, those changes will be made after consultation with the Lahontan and Central Valley Water

Boards. If changes are substantive, the County Environmental Health Department (EHD) will return to the Alpine County Board of Supervisors for approval.

Chapter 2: Definitions

Alternative OWTS: is a type of OWTS that utilizes a method of wastewater disposal other than a conventional drain field trench/bed, for the purpose of producing a higher quality effluent and improved performance of siting options for effluent dispersal. Alternative waste disposal systems include, but are not limited to, mound systems, evapotranspiration beds, and sand filters.

At-Grade System: means an OWTS dispersal system with a discharge point located at the preconstruction grade (ground surface elevation). The discharge from an at-grade system is always subsurface. At-grade systems are engineered systems requiring a Registered Civil Engineer stamped design that conforms to guidelines for at-grade systems established by EHD and the guidelines in this LAMP.

Average Annual Rainfall: the average of the annual amount of precipitation for a location as measured by the nearest National Weather Service station for the preceding three decades. For example: the data set used to make a determination in 2012 would be the data from 1981 to 2010.

Basin Plan: means the same as "water quality control plan" as defined in Division 7 (commencing with §13000) of the Water Code. Basin Plans are adopted by each Regional Water Board, approved by the State Water Board and the Office of Administrative Law, and identify surface water and groundwater bodies within each Region's boundaries and establish, for each, its respective Beneficial Uses (BU) and WQOs. Copies are available from the Regional Water Boards, electronically at each Regional Water Board's website, or at the State Water Board's Plans and Policies web page (http://www.waterboards.ca.gov/plans_policies/).

Bedrock: the rock, usually solid, that underlies soil or other unconsolidated, surficial material. **Cesspool:** an excavation in the ground receiving domestic wastewater, designed to retain the organic matter and solids, while allowing the liquids to seep into the soil. Cesspools differ from seepage pits because cesspool systems do not have septic tanks and are not authorized under this LAMP. The term cesspool does not include pit-privies and out-houses which are not regulated under this LAMP.

Cut/Slope: any slope greater than 60% or man-made contour that exposes the vertical soil profile. Cuts and slopes require a 5 foot horizontal setback for every 1 foot of vertical height to any dispersal system.

Dispersal System: means a leach field leach bed, mound system at-grade system, or other type of system for final wastewater treatment and subsurface discharge.

Domestic Wastewater: means wastewater with a measured strength less than high-strength wastewater and is the type of wastewater normally discharged from, or similar to, that discharged from plumbing fixtures, appliances and other household devices including, but not limited to toilets, bathtubs, showers, laundry facilities, dishwashing facilities, and garbage disposals. Domestic wastewater may include wastewater from commercial buildings such as office buildings, retail stores, restaurants, or from industrial facilities where the domestic wastewater is segregated from the industrial wastewater. Domestic wastewater does not include wastewater from industrial processes.

Domestic Well: a groundwater well that provides potable water for human consumption.
Drain Field: a system of trenches or beds that distribute treated effluent for subsurface disposal into the soil. A drain field is also known as a "leach field" or "soil absorption area".
Effluent: means sewage, water, or other liquid, partially or completely treated or in its natural state, flowing out of a septic tank, aerobic treatment unit, dispersal system, or other OWTS component.

Equivalent Dwelling Units (EDUs): are defined as a unit of measure used for sizing a development based on the amount of waste generated from that development; the value used in implementation of these criteria is 250 gpd per EDU. For purposes of these criteria, a single-family dwelling is equal to one EDU.

Existing OWTS: means an OWTS that was constructed and operating prior to the effective date of the OWTS Policy, and OWTS for which a construction permit has been issued prior to the effective date of the OWTS Policy (May 13, 2013).

Flowing Water Body: means a body of running water flowing over the earth in a natural water course, where the movement of the water is readily discernible or if water is not present it is apparent from review of the geology that when present it does flow, such as in an ephemeral drainage, creek, stream, or river.

Groundwater: means water below the land surface that is at or above atmospheric pressure. **High-Strength Wastewater:** means wastewater having a 30-day average concentration of biochemical oxygen demand (BOD) greater than 300 milligrams-per-liter (mg/L) or of total suspended solids (TSS) greater than 330 mg/L or a fats, oil, and grease (FOG) concentration greater than 100 mg/L prior to the septic tank or other OWTS treatment component.

Holding Tank: a watertight receptacle used to collect and store wastewater prior to it being removed from the property by vacuum pump or hauling. The use of holding tanks in Alpine County may only be allowed if specifically approved by the local enforcement agency, for the abatement of immediate health hazards or for temporary use at certain public facilities.

Impaired Water Bodies: means those surface water bodies or segments thereof that are identified on a list approved first by the State Water Board and then approved by US EPA pursuant to Section 303(d) of the federal Clean Water Act.

Infiltrative Area: means the area of infiltrative surface below the OWTS disposal system, expressed in terms of square-feet per linear-foot, and calculated as multiplying the cross-sectional perimeter of the disposal trench by the linear feet of the disposal line. The cross-sectional perimeter is calculated by adding the disposal line trench bottom width to the effective sidewall height for each side. Effective sidewall height excludes the first foot on each side below the disposal line. In lieu of the OWTS Policy's defined infiltrative area of 4 square-feet per linear foot, Alpine County will allow a maximum of 7 square-feet per linear foot.

Intermittent Sand Filter: an alternative OWTS using a bed filter of medium grained sand to treat septic tank effluent to a secondary level. The wastewater is dosed to the surface of the sand via a pressure distribution system, which may be enclosed with a bottom, or bottomless. Any proposed intermittent sand filters must be an engineered system (stamped by a registered civil engineer) in conformance with the guidelines established by Alpine County and this LAMP.

Local Agency: means any subdivision of state government that has responsibility for permitting the installation of and regulating OWTS within its jurisdictional boundaries, typically a county, city, or special district.

Mottling: a soil condition that results from oxidizing or reducing minerals due to soil moisture changes from saturated to unsaturated over time. Mottling is characterized by spots or blotches of different colors or shades of color (grays and reds) interspersed within the dominant color as described by the USDA soil classification system. This soil condition can be indicative of historic seasonal high groundwater level, but the lack of this condition may not demonstrate the absence of groundwater.

Mound System: means an aboveground dispersal system (covered sand bed with effluent leach field elevated above original ground surface inside) used to enhance soil treatment, dispersal, and absorption of effluent discharged from an OWTS treatment unit such as a septic tank. Mound systems have a subsurface discharge.

New OWTS: means an OWTS permitted after the effective date of the OWTS Policy. **National Sanitation Foundation (NSF):** an international, not for profit, nongovernmental organization that develops health and safety standards and performs product certification.

Oil/Grease Interceptor: means a passive interceptor that has a rate of flow exceeding 50 gallons-per-minute (gpm) and that is located outside a building. Oil/grease interceptors are used for separating and collecting oil and grease from wastewater.

Onsite Wastewater Treatment System (OWTS): means individual disposal systems, community collection and disposal systems, and alternative collection and disposal systems that use subsurface disposal. The short form of the term may be singular or plural. OWTS do not include "gray water" systems pursuant to Health and Safety Code §17922.12.

OWTS Policy: means the State Water Board's Policy for Siting, Design, Operation and Management of OWTS.

Percolation Test: a method of evaluating water absorption of the soil. The test is conducted with clean water and test results can be used to establish the dispersal system design. See Appendix I for guidelines on conducting Percolation Tests.

Permit: a document issued by a local or State agency that allows the installation, construction, repair, modification, or operation of an OWTS, or outlines waste discharge requirements, or a waiver of waste discharge requirements that authorizes discharges from an OWTS.

Person: means any individual, firm, association, organization, partnership, business trust, corporation, company, State agency or department, or unit of local government who is, or that is, subject to this LAMP.

Pit-Privy: (a.k.a. outhouse, pit-toilet) means self-contained waterless toilet used for disposal of non-water carried human waste; consists of a shelter built above a pit in the ground into which human waste falls.

Pressure Distribution: a method of wastewater dispersal using a pump or automatic dosing siphon and distribution piping used to achieve equal distribution of wastewater within a treatment unit, such as a sand filter, or a dispersal field.

Public Water System: is a water system regulated by the State Water Resources Control Board, Division of Drinking Water pursuant to Division 4, Part 12, Chapter 4, Article 1, §116275 (h) of the California Health and Safety Code.

Public Water Well: a ground water well serving a public water system.

Qualified Inspector: means a registered Environmental Health Specialist, registered California Civil Engineer, Qualified Installer/Contractor, or an individual that meets the requirements of the OWTS Policy. Additionally, a septic-pumping company registered with Alpine County (as defined in Chapter 9) shall be permitted to inspect OWTS, when servicing the system. **Qualified Installer:** means a Licensed General Engineering Contractor (Class A), General Building Contractor (Class B), Sanitation System Contractor (Specialty Class C42), or Plumbing Contractor (Specialty Class C-36), and shall install all new OWTS and replacement OWTS in accordance with California Business and Professions Code Sections 7056, 7057, and 7058 and Article 3, Division 8, Title 16 of the California Code of Regulations (Plumbing Code). Additionally, if permitted by EHD a property owner may install their own OWTS as an owner/builder.

Qualified Professional: means an individual licensed or certified by a State of California agency to design OWTS and practice as professionals for other associated reports, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist. For the purposes of performing site evaluations, Soil Scientists certified by the Soil Science Society of America are considered qualified professionals. EHD reserves the right to determine if any person is qualified for a specific task.

Regional Water Quality Control Board (Regional Water Board): means one of the nine regional water quality control boards designated by Water Code §13200, which have authority for adopting, implementing, and enforcing water quality control plans (basin plans) which set forth the State's water quality standards and the objectives or criteria necessary to protect the beneficial uses of the waters of the state. The Lahontan and Central Valley Water Boards have jurisdiction over Alpine County.

Repair: is any action that modifies/replaces the existing dispersal system, replaces an existing septic tank, or modifies/replaces a major component of the onsite wastewater treatment system. Repairs require the issuance of a permit by the Department of Environmental Health. **Sand:** means a soil particle; this term also refers to a type of soil texture. As a soil particle, sand consists of individual rock or mineral particles in soils having diameters ranging from 0.05 to 2.0 millimeters. As a soil texture, sand is soil that is comprised of 85 percent or more sand particles, with the percentage of silt plus 1.5 times the percentage of clay particles comprising less than 15 percent.

Sanitary Sewer: a system for collecting residential or municipal wastewater and directing the collected wastewater to a treatment works prior to dispersal.

Septage: means materials accumulated in septic tanks, cesspools, vault privies, portable toilets, holding tanks, or any other sewage holding apparatus that receives bodily waste or

wastewater from plumbing fixtures. Septage does not include sewage sludge from municipal or community sewage treatment plants.

Septic Tank: a watertight, covered receptacle designed for primary treatment of wastewater and constructed to receive wastewater discharged from a building sewer, separate solids from the liquid, digest organic matter and store undigested solids, and allow the clarified liquids to discharge for further treatment with final subsurface discharge.

Silt: means a soil particle; this term also refers to a type of soil texture. As a soil particle, silt consists of individual rock or mineral particles in soils having diameters ranging from between 0.05 and 0.002 mm. As a soil texture, silt is soil that is comprised as approximately 80 percent or more silt particles and not more than 12 percent clay particles using the USDA soil classification system.

Site: the land occupied by the OWTS including any designated reserve areas.

Site Evaluation: an assessment of the characteristics of the site sufficient to determine its suitability for an OWTS to meet the requirements of this LAMP.

Soil: the naturally occurring body of porous mineral and organic materials on the land surface, which is composed of unconsolidated materials, including sand-sized, silt-sized, and clay-sized particles mixed with varying amounts of larger fragments and organic material.

State Small Water Systems: is a water system regulated by the State Water Resources Control Board, Division of Drinking Water pursuant to §116275(n) of the California Health and Safety Code.

Supplemental Treatment: means any OWTS or component of an OWTS, except a septic tank or dosing tank, that performs additional wastewater treatment so that the effluent meets a predetermined performance requirement prior to discharge of the effluent into the dispersal field.

Total Maximum Daily Load (TMDL): Section 303(d) (1) of the Clean Water Act requires each State to establish a TMDL for each impaired water body to address the pollutant(s) causing the impairment. In California, TMDLs are usually adopted as Basin Plan amendments and contain implementation plans detailing how water quality standards will be attained. **Waste Discharge Requirements (WDR):** an operation and discharge permit issued for the

discharge of waste pursuant to §13260 of the California Water Code.

Chapter 3: Alpine County OWTS Background (OWTS Policy 9.1 and 9.2)

Groundwater

Groundwater supplies a majority of Alpine County's residential, commercial, industrial, and agricultural water. Most groundwater is located within fracture zones of the bedrock, with a few small basins associated with valley and meadow alluvium. Ground waters are subject to the water quality objectives as specified in the Basin Plan. The Indian Creek Watershed and West Fork Carson River Hydrologic Unit, subsets of the Carson Valley Groundwater Basin and Alpine County, have been assigned a specific groundwater objective that the taste and odor shall not be altered.

Regulatory Framework

Since about 1970, onsite sewage disposal systems in Alpine County have been regulated by EHD. Alpine County regulations for onsite sewage disposal systems are contained in Chapter 13 of the Alpine County Code and the Memorandum of Understanding between Alpine County and the Regional Water Boards. Those regulations set forth specific requirements related to (a) permitting and inspection of onsite systems; (b) septic tank design and construction; (c) disposal field requirements; and (d) enforcement.

Land developments and subdivisions consisting of less than one hundred lots may be processed entirely by the health officer. The County, at its discretion, may require the formation of a public entity to maintain septic systems in residential developments of one hundred (100) lots or more.

County Records

EHD will retain permanent records of all OWTS and will make those records available within 10 working days upon written request for review by a Regional Water Board. The records for each permit shall reference the Tier under which the permit was issued.

Chapter 4: Data Collection, Reporting, and Notifications (OWTS

Policy 3.3, 9.3.1, 9.3.3)

Reporting to Lahontan Water Board

On an annual basis, EHD will collect data and report, in tabular spreadsheet format, the following information. A copy of the report will be provided to both the Lahontan and Central Valley Regional Water Boards by February 1st each year.

- The number and location of complaints pertaining to OWTS operation and maintenance, and identification of those which were investigated and how they were resolved;
- The applications and registrations issued as part of the local septic tank cleaning registration program pursuant to §117400 et seq. of the California Health and Safety Code and Chapter 9 of this LAMP;
- The number, location, and description of permits issued for new and replacement OWTS,
 - Include parcel size, in square-feet, and
 - o Design sewage flow rate, in gallons-per-day,
- The number, location and description of permits issued for OWTS where a variance from the approved LAMP was granted, and
 - Include parcel size, in square-feet, and
 - o Design sewage flow rate, in gallons-per-day,
- The number of existing OWTS known and regulated by the County.

The annual report will include a summary with recommendations of any further actions warranted to protect water quality or public health.

Water Quality Assessment Program (Water Quality Monitoring) (OWTS Policy 9.3.2 & 9.3.3)

EHD must maintain a water quality assessment program to determine the general operation status of OWTS, evaluate the impact of OWTS discharges, and assess the extent to which groundwater and local surface water quality may be adversely impacted. The assessment program will include monitoring and analysis of water quality data, review of complaints, failures and OWTS inspections. This program will primarily focus on areas where shallow soils, fractured bedrock, shallow depth to the groundwater table, high-density of OWTS, and public/domestic water wells exist. The water quality data can be obtained from the following sources:

- Random well samples,
- Well samples taken following construction of a new well,
- Water samples taken by public water systems,
- Groundwater data collected as part of the Groundwater Ambient Monitoring and Assessment Program and available in the Geotracker Database,

• Any other sampling data deemed relevant or necessary for the protection of groundwater and surface water supplies.

In addition to any data provided above, for existing communities that have septic tank density that is greater than one OWTS per acre for a given development, the County will provide the number of parcels in the community, the number of undeveloped parcels, and the number of parcels developed in the last five years.

A summary of the data shall be submitted on an annual basis on or before February 1st. An evaluation of the monitoring program and an assessment of whether water quality is being impacted by OWTS shall be submitted every 5 years with the annual report, beginning 2023.

Notifications to Owners of Water Systems and State Water Board (OWTS Policy 7.6)

Existing or proposed OWTS in close proximity to public water wells and/or surface water drinking water supplies may have some potential to impact water quality. The owner of the drinking water system will be notified, prior to issuance of any discharge permit, under the following conditions:

- 1. Prior to issuance of a permit to install a new or replacement OWTS that is within a horizontal sanitary setback to the public well; or within 1,200 feet of an intake point for a surface water treatment plant for drinking water, in the drainage catchment in which the intake point is located, or located such that it may impact water quality at the intake point. Notification will be done electronically or in writing by EHD with a copy of the permit application that includes:
 - a. A topographical plot plan for the parcel showing the OWTS components, property boundaries, proposed structures, physical address, and name of property owner,
 - b. The estimated wastewater flows, effluent composition, intended use of proposed structure generating the wastewater, soil data, and estimated depth to seasonally saturated soils, and
 - c. Advise the public water system owner or Division of Drinking Water shall have 15 calendar days from receipt of the permit application to provide recommendations and comments to EHD.
- 2. Within 72 hours of discovering a failing OWTS that is within 150 feet of a public water well, 400 feet of the high water mark of a surface water drinking water supply where the dispersal system is within 1,200 feet of the water system's surface water intake, within the catchment of the drainage and located such that it may impact water quality at the intake point, or 200 feet of the high water mark of a surface water drinking water supply where the dispersal system is between 1,200 and 2,500 feet of the water system's surface water intake, within the catchment of the drainage and located such that it may impact is between 1,200 and 2,500 feet of the water system's surface water intake, within the catchment of the drainage and located such that it may impact water quality at the intake point. Notification will be done electronically or in writing and will include proposed corrective action that will be taken to mitigate the failure.

Chapter 5: Not Allowed or Authorized in LAMP (OWTS Policy 9.4)

The following conditions are not allowed or authorized in this LAMP:

- 1. Cesspools of any kind or size.
- 2. OWTS receiving a projected flow over 10,000 gpd.
- 3. OWTS receiving a projected flow over 3,500 gpd must either utilize a supplemental treatment system certified by the NSF or a third party tester as capable of achieving 50-percent total nitrogen reduction when comparing the 30-day average influent to the 30-day average effluent; or submit an evaluation to the EHD completed by a Qualified Professional that determines whether or not the discharge from the OWTS will adversely affect groundwater quality.
- 4. OWTS that discharge effluent on or above the ground surface such as sprinklers, exposed drip lines, free-surface wetlands, or a pond.
- 5. Slopes greater than 30-percent.
- 6. Decreased leaching area for IAPMO certified dispersal systems using a multiplier less than 0.70.
- 7. OWTS utilizing supplemental treatment without requirements for periodic monitoring or inspections.
- 8. OWTS dedicated to receiving significant amounts of wastes dumped from RV holding tanks, or RV holding tanks that accept waste combined with preservatives (i.e., formaldehyde).
- Separation from the bottom of dispersal system to seasonally high groundwater of less than 2 feet for alternative/supplemental treatment systems, nor less than 5-feet separation for conventional systems,
- 10. Installation of new or replacement OWTS where a public sewer is available. Public sewer availability is defined as follows:
 - a. The property on which the structure is located within 200-feet of a public sewer main,
 - b. The property is within the boundaries of the sewer district or annexation has been approved by the sewer district, and a waiver of the connection to sewer can be considered where the sewer is located more than 200-feet from the building or plumbing stub out, the connection fees and construction costs are greater than twice the total cost of the OWTS and the proposed OWTS can be installed in a manner that will meet the minimum requirements of this LAMP.
- 11. Except as provided for in Item 12 and 13, new or replacement OWTS with minimum horizontal setbacks less than any of the following:
 - a. 150 feet from a public water well where the depth of the effluent dispersal system does not exceed 10 feet in depth,
 - b. 200 feet from a public water well where the depth of the effluent dispersal system exceeds 10 feet in depth,

- c. Where the effluent dispersal system is within 600 feet of a public water well and exceeds 20 feet in depth, the horizontal setback required to achieve a two-year travel time for microbiological contaminants shall be evaluated by a qualified professional; in no case shall the setback be less than 200 feet,
- d. Where the effluent dispersal system is within 1,200 feet from a public water system's surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 400 feet from the high water mark of the reservoir, lake or flowing water body, or
- e. Where the effluent dispersal system is located more than 1,200 feet but less than 2,500 feet from a public water system's surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 200 feet from the high water mark of the reservoir, lake or flowing water body.
- 12. For replacement OWTS that do not meet the horizontal separation requirements in Item 11 above, the replacement OWTS shall meet the horizontal separation to the greatest extent practicable. In such case, the replacement OWTS shall utilize supplement treatment and other measures, unless EHD finds that there is no indication that the previous system is adversely affecting the public water source, and there is limited potential that the replacement system could impact the water source based on topography, soil depth, soil texture, and groundwater separation.
- 13. For new OWTS, installed on parcels of record existing before May 13, 2013 which is the effective date of the OWTS Policy, that cannot meet the horizontal separation requirements in Item 11 above, the OWTS shall meet the horizontal separation to the greatest extent practicable and shall utilize supplemental treatment for pathogens as specified in §§10.9 and 10.10 of the OWTS Policy and any other mitigation measures prescribed by EHD.

Chapter 6: Requirements for Existing OWTS (Tier 0)

Existing Functioning Onsite Wastewater Treatment Systems (OWTS Policy 6.0 – 6.3)

Consistent with the criteria outlined in Tier 0 of the OWTS Policy, existing systems that are functioning properly will not be affected by this LAMP. Regular inspection and maintenance are necessary to ensure that an OWTS continues to operate satisfactorily and to extend the life of the system. OWTS that fail will be repaired consistent with the criteria outlined in Tier 4 of the OWTS Policy and Chapter 11 of this LAMP.

Existing functioning OWTS are eligible for coverage under Tier 0 of this LAMP if they meet the following requirements:

- Projected flow of 10,000 gpd or less,
- Receive only domestic wastewater from residential or commercial buildings, or highstrength wastewater from commercial food service buildings that does not exceed 900 mg/L BOD and has a properly sized and functioning oil/grease interceptor,
- Continue to comply with any previously imposed permitting conditions (i.e., Alpine County Code),
- Do not have prohibited conditions as outlined in Chapter 5,
- Do not require supplemental treatment under Tier 3,
- Do not require corrective action under Tier 4, and
- Do not consist of a cesspool as a means of wastewater disposal.

The Regional Water Boards and/or Alpine County will deny OWTS coverage under Tier 0 if the OWTS is not in compliance with the aforesaid requirements. Additionally, the OWTS may be denied coverage if the OWTS is unable to adequately protect water quality of the waters of the State, as determined by the Regional Water Boards. Existing OWTS currently under waste discharge requirements or individual waiver of waste discharge requirements will remain under those orders until notified in writing by the Regional Water Boards that they are covered under this LAMP.

OWTS Maintenance, Repairs, and Modification

Whenever an OWTS is serviced (e.g. septic tank pumping, leach line endoscopy), a Qualified Inspector shall examine the tank to look for signs of deterioration, corrosion or evidence that the dispersal field has failed or is in the process of failing. A Qualified Inspector submits a written report that includes the property owner's name, address and parcel number, a description of the system and any deficiencies noted during the inspection within 30-days of the inspection. If the inspection was performed by an Alpine County registered septic-pumping company (Chapter 9) the report of the service/inspection may be submitted to EHD with the quarterly report, or within 30-days of the inspection... However, in any case where the inspection has found that the system has failed or has reasonable potential to fail, the report must be submitted within 24-hours. For systems that are deemed failing or display reasonable potential to fail, the requirements outlined in Tier 4 of this LAMP will be enforced.

The responsibility of the satisfactory operation of the OWTS rests solely with the property owner. In the event of a sewage system failure the property owner must notify Alpine County and is solely responsible for the cleanup and repair of the system.

Existing OWTS will be reviewed by EHD when homes are remodeled or expanded that increases the sewage flow or changes the characteristics of the sewage generated. When a building remodel will increase the flow, the OWTS should be upgraded so that the anticipated new flow can be received and treated adequately, in compliance with the requirements specified in this LAMP. Examples of changes that would increase the flow of sewage include the addition of an accessory dwelling unit, bedroom, fixtures, or increased population. Additionally, improvements on a property that could potentially intrude upon the physical location of the OWTS and the expansion or alternate areas for the dispersal system would trigger the need for review.

Accessory Dwelling Units (ADU) proposed to be added to existing developments utilizing OWTS will be reviewed for approval by EHD. To add an ADU to an existing, installed OWTS, the system must be verified by a Qualified Professional to be adequately designed and sized, and met all the applicable requirements provided here in this LAMP, including the minimum lot size requirements. If a new OWTS is proposed in addition with an ADU or to accommodate an ADU, the system will be treated as a new development and must meet all the requirements provided herein, including protection of groundwater.

Chapter 7: Onsite Wastewater Treatment System Permitting Process and Siting (OWTS Policy 7.0 and 9.1)

System Design Considerations:

The size and type of OWTS needed for a particular development will be a function of the following factors:

Soil Permeability:	Permeability determines the degree to which soil can accept sewage discharge over a period of time. Permeability is measured by percolation rate, measured in minutes per inch (MPI).
Unsaturated Soil Interval:	The distance between the bottom of the OWTS dispersal system and the highest anticipated groundwater level or the shallowest impervious subsurface layer at a site.
Peak Daily Flow:	The anticipated peak sewage flow, typically represented in gpd. In many cases the number of bedrooms and/or persons for a proposed home is used to determine peak daily flow.
Net Usable Land Area:	The area available that meets all setback requirements to structures, easements, watercourses, or other geologic limiting factors for the design of an OWTS.

The Permit Process

A completed permit application, including a scaled plot-plan, must be submitted to EHD for any construction that requires the installation of a new, or the replacement of an existing OWTS. Only after the EHD has approved a permit application can the County's Building Department issue any permits.

1. Percolation Tests

Percolation testing shall be performed by a registered California Civil Engineer, registered Engineering Geologist, registered Environmental Health Specialist, an American Registry of Certified Professionals in Agronomy Crops and Soils (ARCPACS) Certified Professional Soil Scientist with experience in onsite wastewater disposal, or a qualified individual as determined by EHD. In some cases, new percolation tests may be waived if prior testing was performed or existing data indicates adjacent lots have consistent and adequate soil to support the installation of an OWTS. EHD may request additional percolation tests to verify adequacy of soils. See Appendix I for percolation test procedures.

2. Soil Profiles

The purpose of the test trenches is to determine site-specific soil characteristics, including effective soil depth below the bottom of the leach lines and suitability of the soils to receive wastewater. Alpine County requires a minimum of two test trenches to a depth of 10 feet.

Additional test trenches may be required on a site-specific basis. At a minimum, soil profiles shall provide the following information:

- Observed groundwater depth,
- Field texture analyses with approximate percentage of gravel, sand, silt, and clay,
- Soil mottles,
- Depth to bedrock or impervious layer,
- Roots,
- Visual observations of the soil lithology and the stratified layers, especially those layers exemplifying low-permeability.

If groundwater is observed in the soil profiles or groundwater could rise to an elevation which would not meet the minimum separation requirements during the course of a normal rainfall season, additional wet weather testing may be required. Wet weather testing shall be conducted during the course of an average or above average annual rainfall year and during the months of the highest anticipated groundwater (April, May, June). The Qualified Professional conducting the groundwater study must support their express conclusion that the anticipated high groundwater elevation will not encroach upon the minimum separation required to the bottom of the proposed OWTS. The supporting data shall include, but not be limited to, data on the site's topography, soils, geology, basin studies, hydro-geologic studies, and groundwater-monitoring data from the on-site observation wells through an above normal rainfall year.

3. Permit Application and Approval

The permit application shall include:

- A completed permit application form,
- Three (3) copies of a site plan illustrating the proposed sewage disposal system,
- Soils report, including percolation test results and soil profiles,
- OWTS system design with proposed design flow calculations, and
- The appropriate permit fees.

Once the application has been deemed complete, EHD will conduct a site evaluation to verify adequate soil conditions exist, setbacks requirements are met, and to determine if any other conditions exist that may adversely impact ground or surface water quality. The property corners shall be located prior to the on-site lot evaluation.

A permit will be issued upon determination that the OWTS components are designed in accordance with this LAMP. Permits are valid for one year and may be extended up to one year upon receiving a request from the owner.

Once the permit is issued, the OWTS can be installed by a Qualified Installer, or a property owner may install their own OWTS as an owner/builder. Applicable site-specific conditions for each system will be attached to the permit.

4. Changes in Design or Location

For any proposed changes in design or location of any of the OWTS components, approval must be obtained from EHD prior to commencing any construction of the OWTS.

5. Setbacks

The OWTS installation shall comply with the following setback requirements outlined in Table 7-1, below.

Minimum Horizontal Distance (in feet) Required	Building	Septic Tank	Leach Trench/Bed
From:	OCIVE		
Building/Structure ²	2	5	8
Property Line ³			
With Wells	25	50	50
Without Wells	25	5	5
Private Wells ⁴	50	100 ¹	100 ¹
Public Wells ⁴	100	150 ¹	150 ¹
Lake, Reservoir or Wetlands (measured from the high-water line) ⁴	50	200	200
Perennial Stream	50	100	100
Water Line	1	5	25
Pressure Public Water Main	10	25	25
Unstable Land Mass or Earth Slides	100	100	100
Ephemeral Streams	25	50	50
Cut Bank	10	25	5 x height of bank
Distribution Box	-	5	5
Large Trees	-	5	5
Public Utility Trenches		10	10

Table 7-1: Setback Requirements for OWTS Systems

^{1.} For any system discharging 5,000 gpd or more, the distance shall be increased to 200 feet.

² Distance requirements shall include porches and steps whether covered or uncovered, breezeways, roofed porte-cocheres, roofed patios, car port, covered walks, covered driveways and similar structures or appurtenances.

- ^{3.} For parcels created prior to April 1, 1973, the preceding minimum horizontal distance required from the property line to the septic tank or leach trench may not apply. For these parcels, the setback distances from the property line to the septic tank or disposal field is 5 feet. For old parcels with insufficient area to meet all the above setbacks the EHD may provide additional guidelines for setback requirements. Additionally, where special hazards are involved, the distance required may be increased as directed by EHD.
- ⁴ In addition to these setbacks listed herein, there are additional setback requirements in Chapter 5, item 11 for disposal fields with respect to drinking water wells and surface water intakes that must be met.

6. OWTS in close proximity to surface water treatment plants.

Prior to issuing permit, EHD shall determine if the OWTS is within 1,200 feet of an intake point for a surface water treatment plant for drinking water, or is in the drainage catchment in which the intake point is located, and located such that it may impact water quality at the intake point such as being upstream of the intake point for a flowing water body. If the OWTS is within 1,200 feet of an intake point for a surface water treatment plant for drinking water, is in the drainage catchment in which the intake point is located, and is located such that it may impact water quality at the intake point, the following requirements will apply:

- EHD shall provide a copy of the permit application to the owner of the water system of the Applicant's proposal to install an OWTS within 1,200 feet of an intake point for a surface water treatment. If the owner of the water system cannot be identified, then the EHD will notify State Water Board's Division of Drinking Water.
- In addition to supplying a plot plan with the aforesaid requirements, the permit application shall provide the estimated wastewater flows, intended use of proposed structure generating the wastewater, soil data, and estimated depth to seasonally saturated soils.
- The public water system owner shall have 15 days from receipt of the permit application to provide recommendations and comments to the EHD. Approval or denial of the OWTS will be based on the risk of the OWTS to water quality.

7. Lot Size Requirements

For new subdivisions, or new developments within Alpine County, minimum lot size requirements shall be predicated on development density and proposed discharge flow. Equivalent Dwelling Units (EDU) are used as a metric to size waste disposal developments and is defined as 250 gpd per EDU. Developments for single-family dwelling units OWTS are not to exceed two EDUs per acre, or 500 gpd/acre. OWTS serving single-family dwelling units are based on proposed design discharge, but shall always met/exceed the minimum lot size requirements below:

- The minimum lot size for new lots with an OWTS and private, individual wells onsite is one acre.
- The minimum lot size for new lots with an OWTS and served by a public water supply is $\frac{1}{2}$ acre.

For existing subdivisions, the following minimum lot size requirements shall apply:

- The minimum lot size for the use of a new OWTS within an existing subdivision shall have a net area greater than 15,000 SF.
- Lots of less than 15,000 SF in size and are served by OWTS require special consideration because of their small size and may not be developable. Alternative/supplemental treatment, limits in discharge, and additional monitoring may be required for these systems.

OWTS serving multiple-dwelling units shall also utilize minimum lot size requirements based on development density and proposed discharge flow. Developments for multiple-dwelling units OWTS shall not exceed two EDUs per acre, or 500 gpd/acre. The minimum lot size for multiple-dwelling units shall be 1 acre.

8. Groundwater Separation Requirements for Onsite Wastewater Treatment Systems

Table 7-2: Minimum Depths to Groundwater/Minim	num Soil Depth from the
Bottom of Leach Line Dispersal S	ystem

Percolation Rate	Minimum Depth	
Less than 1 MPI	Conventional OWTS Not Authorized	
1 MPI but less than 5 MPI	Twenty (20) feet	
5 MPI but less than 60 MPI	Five (5) feet	
Greater than 60 MPI	Conventional OWTS Not Authorized.	

OWTS with alternative or supplemental treatment will be required to maintain a minimum of two-feet of separation between the bottom of the dispersal system and the highest anticipated level of groundwater. OWTS will not be permitted in soils with a percolation rate greater than 120 MPI, whether conventional or supplemental/alternative. The minimum vertical separation for seepage pits shall not be less than 10-feet.

9. Operating Permits

Operating permits will be required for Alternative or supplemental OWTS to ensure they are functioning properly and as designed. Permit conditions will require an annual inspection of the OWTS by a Qualified Inspector or a trained manufacturer's representative. A report detailing the findings of the inspection shall be submitted to EHD within 30-days of the date of the inspection. In cases where an OWTS has been determined to be failing, the qualified inspector must submit a report to the EHD within 24-hours.

10. Special Conditions

Certain conditions such as building in a flood plain, high ground water, less permeable soils (percolation rates greater than 60 MPI), limited parcel size, or excessive rock may necessitate that the septic system be designed by a Registered Civil Engineer. Use of an engineer does not guarantee EHD acceptance or approval of any engineered sewage disposal design submitted. Some existing properties may be unsuitable for the use of individual onsite sewage disposal systems for a variety of reasons.

Chapter 8: Minimum OWTS Design and Construction Standards (Tier 2)

Septic Tanks

The following will provide the minimum design specifications and requirements for septic tanks:

- 1. Septic tanks must be certified by the IAPMO or stamped by a California registered civil engineer as meeting the industry standards.
- 2. The minimum septic tank size shall be 1,000 gallons.
- 3. The tank shall be watertight and possess two chambers.
- 4. Septic tanks shall be installed per the manufacturer's instructions.
- 5. The bottom of the excavation for the tank shall be level and extend into native or compacted soils to eliminate potential settling issues.
- 6. Access openings shall have watertight risers, the tops of which shall be set at most 6 inches below finished grade.
- 7. Effluent filters must be IAPMO approved.
- 8. Septic tanks installed in areas of vehicular traffic must be traffic-rated.
- 9. Minimum slope of the building sewer effluent main to the septic tank shall be ¼ inch per foot (2%). A clean out shall be installed within 2 to 5 feet of the house. Additional clean outs of the sewer line feeding the septic tank shall be required at 100-foot intervals.
- 10. Septic tanks shall be sized as follows:

Single Family Dwelling; No. of Bedrooms ¹	Multiple Dwelling Units or Apartments, One Bedroom Each [units] ¹	Other Uses; Maximum Fixture Units Served ¹	Minimum Septic Tank Capacity [gallons]
1, 2 or 3	-	20	1,000
4	2	25	1,200
5 or 6	3	30	1,500
	4	45	2,000
	5	55	2,250
	6	60	2,500
	7	70	2,750
	8	80	3,000
	9	90	3,250
	10	100	3,500
Extra Bedrooms over 6			Additional 150 gallons per bedroom
Extra Dwelling Units			Additional 250 gallons
over 10			per bedroom/unit
Extra Fixture Units			Additional 25 gallons per
over 100			fixture unit

Table 8-1: Capacity of Septic Tanks

¹The design peak daily flow shall not exceed the volume of the septic tank.
Disposal Fields

Leach lines systems are the primary means of effluent dispersal for OWTS. Disposal fields shall be constructed based on the calculated area needed to treat sewage produced from the proposed or existing residence or structure. Septic systems shall not be installed on filled ground unless the fill is designed, evaluated, and approved by a Licensed California Civil Engineer.

- 1. All piping and materials used in leach line systems, including gravel-less/chamber systems, must have IAPMO approval.
- 2. Leach line trenches shall be constructed to a minimum width of 18-inches and a maximum of 36-inches.
- 3. Leach lines shall be installed level with a maximum allowable fall of 2-inches per 100-feet.
- 4. Leach lines shall be spaced at least 10-feet apart, measured center to center.
- 5. The perforated pipe shall be covered with a minimum of 2-inches of leach rock. Leach rock shall be graded at ³/₄ to 2¹/₂-inches in size and shall be covered with straw, untreated building paper or a geotextile fabric prior to backfill. The ends of leach pipes shall be capped. A minimum of 12-inches (18-inches is preferred) of earth shall then be applied. The maximum soil cover allowed over the top of the infiltrative surface is 48-inches.
- 6. The depth of the trench will vary depending on design. The depth of rock beneath the perforated pipe will vary between 1-foot minimum and 3-feet maximum. The infiltrative area [square-feet per linear-foot] quantified in Tables 8-2 below, shall be calculated by multiplying the cross-sectional linear footage by the linear length of the leach lines. The cross-sectional linear footage is calculated by adding the trench depth (one foot below the leach pipe to the bottom of the trench) multiplied by two (to account for both sides), plus the width of the trench bottom. Utilizing the maximum trench dimensions for leach lines specified herein, the maximum infiltrative area is 7-square-feet per linear-foot. This results in an effective depth of not more than 2-feet for each sidewall, and caps the trench depth at 3-feet below the disposal line.
- 7. Square-footage of required leach lines utilizing chambers are calculated using a multiplier of 70-percent of required square footage, as determined in step #6 above. For gravel-less chamber system infiltrative areas, no sidewall credit is given, only bottom width credit.
- 8. Non-residential leach line systems shall be calculated by a Qualified Professional using expected peak daily wastewater flows and safety/surge a factor of 2 of the calculated application area as determined in step #6 above, unless a reduction is allowed by EHD.
- 9. Maximum length of any leach line shall be 100-feet and multiple leach lines in a system shall be of equal length.
- 10. A 100-percent replacement area is required for all leach lines systems.

Distribution Boxes

Where two or more drain lines are installed, an approved distribution box shall be installed at the head of each disposal field. Distribution boxes shall be designed to ensure equal flow distribution and shall be installed level. There shall be a five-foot separation between he distribution box and each leach trench.

Leach Lines on Steep Slopes

The following design parameters are applicable to slopes exceeding 25-percent but less than 30-percent.

- 1. The maximum slope allowed is 30-percent.
- 2. Leach lines installed on slopes exceeding 25-percent shall be installed in 5-foot-deep trenches with 12-inches of leach rock below the leach pipe or with approved chambers or other gravel-less system.
- 3. Soil testing must provide data representative of the entire disposal area.
- 4. Design reports must include:
 - a. Leach line depth, slope, location, and composition,
 - b. Cross sections of hillside soil profiles, or detailed boring logs of all test holes and borings,
 - c. A topography map,
 - d. A scaled plot plan.
 - e. A slope stability report or statement from a Qualified Professional.

		Leach Line Disposal Area (Infiltrative Area) Required [ft ²]			
		(Use 0.70 multiplier of the values listed below for chamber systems)			
Percolation	Application				
Rate [minutes	Rate [gpd per	300 gpd	400 gpd	500 gpd	600 gpd
per inch]	ft ²]	(2 bedroom)	(3 bedroom)	(4 bedroom)	(5 bedroom)
<1	1.2	Alternative/Supplemental Treatment Systems Only			
1-5*	1.2	250	333	417	500
10	0.8	375	500	625	750
15	0.73	411	548	685	822
20	0.66	454	606	758	909
25	0.59	508	678	847	1017
30	0.53	566	755	943	1132
35	0.48	625	833	1042	1250
40	0.42	714	952	1190	1429
45	0.37	811	1081	1351	1622
50	0.31	968	1290	1613	1935
55	0.26	1154	1538	1923	2308
60	0.2	1500	2000	2500	3000
65	0.18	Alternative/Supplemental Treatment Systems Only			
70	0.17				
75	0.15				
80	0.13				
85	0.12				
90-120	0.1				

TABLE 8-2: Application Rates as a Function of Disposal Rate [ft²/gpd]

* 20 feet to groundwater or Alternative/Supplemental Systems required.

Leach Beds

- 1. Leach beds may be only used when lot size and/or setbacks prohibit installation of standard leach lines. Leach bed construction is similar to standard leach lines except for sizing and spacing of lateral piping.
- 2. Leach beds will be sized with 1.5 times the absorption area as for leach lines calculating bottom area only, no infiltrative area credit is given for the sidewalls of then leach bed.
- 3. Distribution piping will be spaced no more than 4-feet apart and will be looped (interconnected) at the far end.
- 4. Leach beds must maintain a minimum of 10-feet of vertical separation between the bottom of the dispersal system and the highest groundwater level.

Low Pressure Distribution Systems (Pressure Dosed System)

When site conditions preclude the use of wastewater dispersal by gravity flow, effluent may be distributed to a dispersal field under pressured systems.

- 1. The pump chamber or tank shall meet industry accepted standards; have a capacity equal to six hours of peak flow or 375 gallons, whichever is greater.
- 2. Be equipped with an audible and visible high-water alarm.
- 3. There must be at least 6-inches of soil cover over the distribution system.
- 4. Pressure dosed systems must be designed and stamped by a California registered civil engineer.

Alternative and Supplemental Treatment Systems

Alternative Wastewater Treatment Systems are OWTS utilizing dispersal fields consisting of components other than a conventional system, designed to address unfavorable site conditions such as high groundwater, impervious soil formations, slow percolation rates, and disposal field size limitations. Examples include mound systems, at-grade, sand filters, and evapotranspiration systems. Supplemental Treatment Wastewater Treatment Systems (STS) are OWTS that perform additional wastewater treatment so that the effluent meets a predetermined performance requirement prior to discharge of effluent into the dispersal field. They may be designed to address conditions in 303 (d) list "Impaired Water Bodies" designated areas (see Tier 3). All STS must be tested and certified by an independent testing organization, such as NSF. Part of the testing must include an evaluation of the system's effectiveness in reducing Total Suspended Solids (TSS), BOD and Total Nitrogen (TN).

- 1. Alternative and supplemental systems must be designed by a registered California civil engineer or qualified professional in conformance with manufacturer's and State guidelines.
- 2. Treated effluent from all STS shall be discharged to a subsurface dispersal system consisting of leach lines, leach beds or pressurized dispersal systems.
- 3. Sizing for dispersal systems that utilize leach lines or leach beds shall be the same as those used for conventional OWTS, defined in Table 8-2 above.

- 4. A minimum 2-foot separation of permeable soil must exist between the bottom of the dispersal system to the highest anticipated level of groundwater.
- 5. The STS shall be equipped with visual and audible alarms.
- 6. The system designer shall provide the property owner with a design, operation, monitoring, and maintenance manual fully describing all components of the system and the proper and necessary operations, monitoring, and maintenance of all components.
- 7. To ensure that the system continues to function properly, the system shall be inspected at least once annually by a Qualified Inspector. Inspection reports shall be submitted to EHD detailing the findings of the inspection within thirty days. The inspection report shall indicate if the system is functioning and meeting effluent requirements as designed. If the system is determined to be failing the report must be submitted within 24-hours. This agreement is to remain in effect for the life of the Alternative or Supplemental Treatment system.

Special Permitting for Alternative and Supplemental Treatment Systems

Additional permitting requirements for alternative and supplemental treatment systems shall include:

- 1. A report by a registered California civil engineer that describes the proposed on-site sewage disposal system and the relevant physical conditions of the site, including all calculations.
- 2. A written certification by the registered California civil engineer stating the on-site sewage disposal system has been installed, inspected and approved in accordance with the approved engineered plans.
- **3.** Prior to final approval, the property owner shall record at the Alpine County Clerk-Recorder's office, a notice stating that an alternative or supplemental treatment system has been installed on the property. This "Notice to Property Owner" shall run with the land and will serve as constructive notice to any and all future property owners that the property is served by an alternative or supplemental treatment wastewater treatment system and is therefore subject to a contract for regular maintenance, monitoring and reporting requirements. A copy of the recorded document shall be provided to EHD.

Supplemental Treatment Systems and Required Treatment Standards

The OWTS Policy prescribes the following treatment standards:

- OWTS receiving a projected flow over 3,500 gallons per day must either utilize a supplemental treatment system certified by the NSF or a third-party tester as capable of achieving 50-percent total nitrogen reduction when comparing the 30-day average effluent to the 30-day average influent; or submit an evaluation to the EHD completed by a qualified professional that determines whether or not the discharge from the OWTS will adversely affect groundwater quality.
- 2. OWTS in situations where horizontal setbacks (excluding water supply setbacks) cannot be met, or there are inadequate soils for the allowance of conventional systems, and no

other impairing conditions such as high ground water, supplemental treatment components of STS, must be certified by the NSF to meet the minimum requirements of NSF 40, or must meet standards approved by EHD.

- 3. OWTS in situations where minimum density cannot be met, increased protection of shallow groundwater is required, or nutrient reductions may be necessary, the OWTS system must meet the requirements of an NSF 245 certified system.
- 4. OWTS that cannot meet setbacks required in Chapter 5, item 11, for proximity to public water systems will need to utilize supplemental treatment for pathogens and nitrogen, as required by §10.8 of the OWTS Policy.

Variances

An individual may apply for a variance from requirements of this LAMP, provided the request does not violate a Basin Plan prohibition. EHD may establish alternative OWTS siting and operational requirements on a case-by-case basis with proper supporting documentation and concurrence from the Regional Water Board. As defined in the OWTS Policy, a variance exists for those parcels of record before the State's implementation of the OWTS Policy in 2013 and unable to meet the horizontal setbacks for surface water intakes:

a. For new and replacement OWTS, installed on parcels of record existing at the time prior to January 1, 2013, that cannot meet the horizontal separation requirements for surface water intakes and public well as defined in Chapter 7 of this LAMP, the OWTS shall meet the horizontal separation to the greatest extent practicable and shall utilize supplemental treatment for pathogens as specified in §10.8 of the OWTS Policy. Supplemental treatment for pathogens requires components designed to perform disinfection shall provide sufficient pretreatment of the wastewater so that effluent from the supplement treatment components does not exceed a 30-day average TSS of 30 mg/L and shall further achieve an effluent fecal coliform bacteria concentration less than or equal to 200 Most Probable Number (MPN) per 100 milliliters (OWTS Policy §10.10.1). In addition, the level of groundwater below the bottom of the dispersal system shall not be less than 3 feet, and all dispersal systems shall have at least 12 inches of soil cover (OWTS Policy §10.10.2).

Chapter 9: Septic Pumping (OWTS Policy 9.2.6)

All septic tank sludge is required to be transported out of Alpine County to an approved sewage treatment facility. The volume of septage from the County is very limited and all septic pumper companies are from adjacent counties.

In accordance with the California Health and Safety Code §117400 – 117450, registration is required for the operation of a sewage pumping business. A septic pumping registration form must be completed and submitted to EHD. The registration may be revoked for violations of the California Health and Safety Code.

Pursuant to California Health and Safety Code §117420, all sewage pumping equipment must be inspected and approved by EHD prior to granting registration of a sewage pumping business. Pumpers are requested to make the necessary arrangements for the inspection of their vehicle and equipment.

The registrant shall submit quarterly reports of septage pumping to the EHD. At a minimum, the report shall indicate the following:

- a. The name and address of the owner,
- b. Gallons removed from the septic system,
- c. Any septic tank components or disposal field that are failing or not operating as intended,
- d. The treatment plant where the septage was disposed of and by whom.

In those cases where the service has found that the system has failed, or has reasonable potential to fail, the report must be submitted to EHD within 24 hours.

Chapter 10: Impaired Water Bodies (Tier 3)

Currently, there are no water bodies in Alpine County listed on Attachment 2 of the OWTS Policy as impaired pursuant to the federal Clean Water Act.

Advanced Protection Management Program

If a water body in Alpine County is subject to being listed on Attachment 2 because it has been listed as impaired under Section 303(d) of the Clean Water Act, the EHD will follow the specific requirements found in Tier 3 of the OWTS Policy, or develop an Advanced Protection Management Program (APMP) in accordance with the established TMDL and in close consultation with the Regional Water Board. The APMP shall provide the same level of protection as the Tier 3 standards in the OWTS Policy and will require appropriate supplemental treatment systems (STS) within those areas. Variances from the prohibitions specified in §9.4.1 through §9.4.9 of the OWTS Policy and Chapter 5 of this LAMP, are not allowed in areas covered by an APMP.

Chapter 11: Guidelines for Repairs and Abandonment of Systems (Tier 4) (OWTS Policy 11)

Failing OWTS

All OWTS have the potential to fail due to age, misuse or improper design and the failure may result in wastewater being discharged to the surface of the ground, or wastewater backing up into plumbing fixtures. These systems will require corrective action to mitigate any risk to public health or contamination of the environment.

Corrective Action Requirements:

- EHD will respond to and conduct an investigation of all reports or complaints of failing OWTS and sewage surfacing on a particular property. EHD will notify the owner of a public water well or water intake and the State Water Board's Division of Drinking Water upon the discovery of a failing OWTS within the setbacks detailed in Chapter 4 of this LAMP (OWTS Policy §7.5.6 - 7.5.8).
- 2. Any OWTS that is found to be failing will be issued a Notice of Violation (NOV) to the property owner requiring action to eliminate any potential health hazard through pumping of the septic tank by a licensed sewage hauler and elimination of wastewater flows to the failing OWTS. The NOV will detail the repair time frames required by the OWTS owner.
- 3. The repair shall be evaluated by EHD to ensure it meets the minimum design criteria of the associated Tier as detailed in this LAMP and conforms to the requirements outlined in §11 of the OWTS Policy.
- 4. A permit will be required to repair the system and a follow-up inspection will be conducted to determine compliance.
- 5. Failure to complete the required corrective action within the time frames given in the NOV may result in additional enforcement action to eliminate any immediate health hazards.

Abandonment of OWTS

Unless properly abandoned, an OWTS that is no longer used may represent a safety or environmental hazard. Prior to abandoning an OWTS, the owner must submit an application and obtain a permit from EHD. OWTS shall be properly abandoned under the following conditions:

- Upon the discovery of a cesspool,
- When the structure is connected to the public sewer, or
- When the structure served by the OWTS is demolished, unless the owner demonstrates their intention to use the system again.

The abandonment standards for a septic tank and dispersal field include:

• The tank or pit must be pumped to remove all contents,

- A tank may be removed entirely, or
- If left in place, the top must be removed, the bottom punctured or cracked to allow for drainage and the shell filled with inert material such as clean soil, sand, or cement.
- Leach lines composed of gravel and pipe may be abandoned in place,
- Chamber systems shall be removed, and the trench backfilled, unless EHD approves of abandoning the system in place.

Appendix I: Percolation Test Procedure

This Appendix is to be used to establish clear direction and methodology for percolation testing in Alpine County. The objective is to determine the area necessary to properly treat and maintain sewage underground, to size the OWTS with adequate infiltration surface area based on an expected hydraulic conductivity of the soil and the rate of loading, and to provide for a system intended to allow for a long-term expectation of satisfactory performance.

All percolation testing for dispersal systems in Alpine County shall be conducted through the use of the following procedures. The test shall be performed by or under the direct supervision of a Qualified Professional or Certified Professional Soil Scientist, with experience in onsite sewage disposal. A copy of the percolation test results is to be submitted with the plot plan to the Environmental Health Department (EHD). Soil profiles are 10-foot deep backhoe excavations and are required to determine the depth and composition of the soil and the distance to ground water. Any deviation shall be authorized only after receiving written approval by EHD.

TEST HOLES

Number of Test Holes

- 1. A minimum of <u>two</u> test holes are required for each dispersal site proposed; testing must be completed for primary site and reserve site.
- 2. Additional test holes may be necessary on a site-specific basis for reasons that include, but are not limited to the following:
 - a. Unacceptable or failed tests,
 - b. Areas of the disposal field requiring defined limits for exclusion,
 - c. Soil conditions are variable or inconsistent,
 - d. Surface slope exceeds 25%,
 - e. Use of an Alternative or Supplemental system, and
 - f. EHD reserves the right to require additional test holes.

Depth of Testing

- 1. Test holes shall be representative of the dispersal system installation depth, typically 36 or 48 inches.
- 2. Conditions which may require testing deeper than leach line depth, including:
 - a. Shallow consolidated rock or impervious soil layers, or
 - b. Other factors as might be determined by sound geotechnical engineering practices.

Soil Classification

- All test holes and excavations shall have soil types described according to the American Society for Testing and Materials (ASTM) or the USDA Soil Classification System (Unified).
- 2. All excavations are to be reported, including any, which encountered groundwater or refusal. Comments about consolidation and friable characteristics are encouraged.

Location of Percolation Test Holes

Test holes shall be representative of the dispersal area demonstrating site conditions throughout the entire sewage disposal system with equal consideration of primary and reserve leach fields.

Drilling of Borings for Test Holes

Diameter of each test hole shall be 6 inches, hand dug or bored. If a backhoe excavation is used, a test hole at 12–14 inches in depth shall be excavated into the bottom of the trench.

Preparation of Test Holes

The sides and bottom of the holes shall be scarified so as to remove the areas that became smeared by the auger or other tool used to develop the hole. All loose material should be removed from the hole. Two inches of fine gravel should be placed in the hole to prevent bottom scoring.

PRESOAKING THE TEST HOLES

Procedure

- 1. Carefully fill the test hole with 12-14 inches of clear water.
- 2. Maintain 12-14 inches of clear water for a minimum of 4 hours. After four hours, allow the water column to drop overnight. Testing must be done within 24-hours after the initial four-hour presoak.
- 3. Overnight Option: If clay soils are present, it is recommended to maintain the 12-14inch water overnight. A siphon can be used to maintain the supply at a constant level.
- 4. In highly permeable sandy soils with no clay and/or silt, the presoak procedure may be modified. If, after filling the hole twice with 12-14 inches of clear water, the water seeps completely away in less than 30 minutes, proceed immediately to begin the test. If the test is done the following day, a presoak will be necessary for at least an hour in order to reestablish a wetted boundary.

Saturation and Swelling

1. Saturation means that the void spaces between soil particles are full of water. This can be accomplished in a short period of time.

2. Swelling is caused by the intrusion of water until the individual soil particles are full of water. This is a slow process, especially in clay-type soil and is the reason for requiring a prolonged soaking.

DETERMINATION OF PERCOLATION RATES

Depending on the soil type and permeability, and the results of the presoak, variations in the procedures used for determining percolation rates can be allowed. Testing shall proceed based on the conditions outlined in the following cases:

Case 1 Procedure

- Water remains overnight in the test hole following the four-hour presoak. (Unless an overnight siphon is used.)
 - 1. Adjust depth of water to 6 inches in the hole.
 - 2. Take two (2) readings at thirty (30) minute intervals and report percolation rate as the slower of the two readings. Until stabilized or for a period of 4 hours.

NOTE: When a minimum amount of water remains due to a damaged hole or silting, the hole may be cleaned out and tested under Case 3, starting with the presoak.

Case 2 Procedure

- Soil with a fast percolation rate is encountered where two columns of 12-14 inches of water percolates in less than 30 minutes for each column during the presoak.
- 1. Begin test 15-30 hours after presoak.
- 2. Fill the hole twice with 12-14 inches of water. Observe to see if each column of water seeps away in less than 30 minutes. If so, proceed with the percolation test. If not, go to Case 3.
- 3. Refill hole to 6 inches above the bottom.
- 4. Measure from a fixed reference point at ten (10) minute intervals over a period of one (1) hour to the nearest 1/16th inch. Add water at each 10-minute time interval.
- 5. Continue 10-minute readings as long as necessary to obtain a "stabilized" rate with the last 2 rate readings not varying more than 1/16th inch or for a duration of four (4) hours. The last water level drop will be considered in the percolation rate.

Case 3 Procedure

- No water remains in the test hole 15 -30 hours after the four-hour presoak.
- 1. Begin test 15-30 hours after presoak.
- 2. Clean out the silt and mud and add 2 inches of 3/8 inch pea gravel.
- 3. Adjust water depth to 6 inches above the pea gravel buffer and measure from a fixed reference point at 30-minute intervals to the nearest 1/16th inch. NOTE: It is not necessary to record data points for the first hour as this is an adjustment period and a reestablishment of a wetted boundary.

- 4. Refill the hole as necessary between readings to maintain a 6-inch column of water over the pea gravel. If a fall of 1 inch or less is recorded, the test can continue without refilling until the next 30-minute reading interval.
- 5. Continue recording readings at 30-minute intervals for a minimum of four hours.
- 6. The last water level drop is used to calculate the percolation rate.

CALCULATIONS

Calculation Example

The percolation rate is reported in minutes per inch. For example, a 30-minute time interval with a 3/4-inch fall would be as follows:

30 minutes \div 3/4 inch = 40 minutes per inch (mpi)

ENCLOSURE 3





Lahontan Regional Water Quality Control Board

October 24, 2017

Dennis Lampson Alpine County Environmental Health 75 Diamond Valley Road Markleeville, CA 96120 <u>dlampson@alpinecountyca.gov</u>

Comments on Alpine County's Proposed Local Agency Management Program for Onsite Waste Treatment Systems

The California Regional Water Quality Control Board, Lahontan Region (Lahontan Water Board) staff reviewed the County of Alpine (County) Draft Local Agency Management Program (LAMP). The County developed the LAMP as an option to regulate onsite wastewater treatment systems (OWTS) as required by the State Water Resources Control Board (State Water Board) OWTS Policy.

Thank you for providing your LAMP and affording us an opportunity to review and provide comments. We appreciate that Alpine County has taken the steps needed to continue the OWTS permitting program in Alpine County. We found the LAMP to contain all necessary elements and seek clarification and additional information in certain sections.

The Lahontan Water Board is acting as the Lead Water Board for approving the County LAMP, which will also affect water resources in the jurisdiction of the Central Valley Regional Water Quality Control Board (Central Valley Water Board). As Lead Water Board, the Lahontan Water Board is coordinating review of the County's LAMP by both Regional Boards and the State Water Board. The comments, below, are presented in two sections: General Comments, and Specific Comments.

General Comments on the Draft LAMP

1. The LAMP states on page 31, under the section titled Lot Size Requirements, that, prior to the LAMP, the County required subdivision parcels that were projected to use OWTS to have a minimum one-acre parcel size. In the LAMP, the County is proposing all new subdivision parcels must satisfy tier one criteria. Ongoing use of OWTS or new OWTS on existing parcels with lot sizes less than the new criteria increase Water Board concerns about impacts to groundwater quality. Water Board staff understands the County is sparsely populated and there is no substantial

PETER C. PUMPHREY, CHAIR | PATTY Z. KOUYOUMDJIAN, EXECUTIVE OFFICER

information to indicate that groundwater has been adversely affected by OWTS to an unacceptable degree. However, there has been limited groundwater data collected and staff is concerned that OWTS densities in some locations may degrade water quality. Where existing densities are greater than allowed by tier one criteria, staff requests the following additional information:

- a. What actions will be taken, and what data will be collected, to monitor changes in groundwater conditions in both the proposed and the existing housing developments? Data should be provided on an annual basis. Every fifth year both the monitoring program and all the data must be evaluated to determine if the monitoring program must change and if groundwater quality is being impacted by OWTS.
- b. Existing OWTS that are not failing or are not located near impaired surface waters (considered impaired due to OWTS), are covered by tier zero in the OWTS Policy. In areas where the existing OWTS are more densely spaced than allowed by current OWTS Policy criteria, identify the types of information that will be collected to substantiate discharges from existing OWTS are not adversely affecting the groundwater quality.
- c. For communities that have OWTS more densely spaced than either tier one criteria or the proposed one-acre parcel size, staff requests the County to identify and track the number of parcels already developed, and the number of undeveloped parcels approved for development during the last five years. This information can be provided and updated in the Water Quality Assessment Report, due every five years.
- 2. In several instances, the draft LAMP references variances to the LAMP criteria or policies being granted by the County. There should be a section in the LAMP describing the variance process and the administrative and technical requirements for a variance identified in the LAMP. The process description does not need to identify what will or will not be allowed (other than what cannot be authorized by the County per the LAMP Policy), but does need to identify the information and preparer requirements, and the decision-making body or person (i.e., Environmental Health Department staff, County Health Director, County Board of Supervisors, etc.). The process description should also include a step for notifying the appropriate Water Board of pending variances prior to approval by the County, and provisions for reporting variances referred to the Water Boards.
- 3. The Supplemental Treatment Section of the LAMP should be expanded to describe specifically what will be required under the LAMP. For example, treatment standards for the supplemental treatment systems must be provided. (See comment D, below.)
- 4. The Lahontan Water Board and the County have an existing Memorandum of Understanding (MOU) concerning OWTS that was very successful in strengthening the relationship between Water Board and County staffs. The intent of the State Water Board's OWTS Policy is the LAMP will be the only document for managing OWTS and the MOUs should no longer be referenced. Water Board staff recommend that the County carry any MOU provisions the County continues to support into the LAMP to ensure their continued use.

Specific Comments on Specific Sections

A. The Introduction, page 6, sixth line down, states,

"The LAMP does not include the following, which require individual waste discharge requirements or a waiver of individual waste discharge requirements issued by the RWQCB [Regional Water Quality Control Board] (see also Chapter 5, Not Allowed LAMP Items)

• Any OWTS with a projected wastewater flow of over 3500 gallon per day."

This statement indicates the County would only regulate OWTS that discharge up to 3,500 gallons per day. However, LAMP Chapter 5, page 19, contains a statement, that no system over 10,000 gallons per day will be allowed by the County. Please resolve these inconsistencies and clarify if the County will regulate OWTS with flow rates up to 3,500 gallons per day or up to 10,000 gallons per day. If the County wishes to regulate systems up to 10,000 gallons per day, the introduction should be modified accordingly.

- B. On page 17, there is a brief description of the "Water Quality Assessment Program" (program). The program lists some of the various kinds of different information that will be collected and provided in the report for the program. However, there is one existing database not included, and one source of information in the list of information that should be included and used. One such database program maintained by the State Water Board, is Groundwater Ambient Monitoring and Assessment- secure (GAMA-secure), which is a repository of groundwater information. The program did not describe that it would include information from GAMA-secure. Also, the County regulates some small domestic drinking water systems and any groundwater information from these two sources described above should be included and evaluated in the Water Quality Assessment Report due every fifth year.
- C. On page 18, under "Notification to Owners of Water Systems and SWRCB [State Water Board]," the LAMP indicates conditions where the County will notify the owner of the OWTS. After reading the conditions with regard to that statement, it appears that notification should be to the owner of the "water system" instead of the "OWTS." Please review this part and either modify it or provide the County's rationale for the current phrasing. Also under the "Notification to Owner of Water Systems" section on page 18, Lahontan Water Board staff recommends the County specify in this section that within 72 hours of determining a failing OWTS is within 150 feet of a public or private water supply well, the County will notify the owner of the well, the State Water Board's Division of Drinking Water, and the OWTS owner.
- D. On page19, under "Not Allowed or Authorized in LAMP," item number 3 provides that an OWTS with a projected flow of over 3,500 gallons per day must have a supplemental treatment system. It also provides the specification for the supplemental

treatment system, but that same specification is not provided in the section for supplemental treatment systems. Lahontan Water Board staff requests that the specification also be provided in the section for supplemental treatment systems.

- E. On page 29, under Setback two additional setbacks regarding proximity to drinking water mains should be added. California Code of Regulations, title 22, section 64572 (f) requires that new water mains will not be installed within 25 horizontal feet of a septic tank and leach field. To be consistent with that regulation, Lahontan Water Board staff requests that the County require a minimum 25-foot horizontal setback for the placement of a new septic tank or leachfield from an existing drinking water main pipeline.
- F. On page 30, note 1 states, "For parcels created after April 1, 1973, the preceding distance requirements do not apply." Please clarify whether the note means that all parcels created prior to 1973 are not subject to the siting criteria in the LAMP. Staff understands that the pre-1973 parcels were established, and many have been developed, without the siting requirements in the LAMP. Staff recommends the LAMP require new or replacement systems for older, existing parcels comply with as many modern siting requirements in the LAMP as possible. In some instances, alternative or supplemental treatment systems may need to be considered or required in lieu of meeting certain siting requirements, and the LAMP should discuss these situations and how they will be managed to assure water quality is maintained and public health will be protected.
- G. On page 30, there are notes concerning setback criteria. Notes number two and three are identical to the requirements in chapter 5, item 11 in the LAMP. Lahontan Water Board staff suggests instead of the two additional notes (two and three), to replace note number two with a statement that there are additional setback requirements in chapter 5, item 11 on page 20 for disposal fields with respect to drinking water wells and surface water intakes.
- H. On page 42, there are the design criteria for alternative and supplemental OWTS. In this section, the County should provide the criteria provided earlier (see page 19), the requirements for alternative and supplemental OWTS. The following were taken from page 19 and should be placed in a section on alternative and supplemental treatment systems or cross referenced to the section where they originate.
 - OWTS receiving a projected flow over 3,500 gallons per day must either utilize a supplemental treatment system certified by the NSF [National Sanitation Foundation] or a third-party tester as capable of achieving 50 percent total nitrogen reduction when comparing the 30-day average influent to the 30-day average effluent; or submit an evaluation to the County EHD [Environmental Health Department] completed by a qualified professional that determines whether or not the discharge from the OWTS will adversely affect groundwater quality.
 - OWTS that cannot meet setbacks required in Chapter 5, item 11, for proximity to public water systems will need to utilize a supplemental treatment for pathogens as specified in section 10.8 of the State Water Board's OWTS Policy.

I. The LAMP must have a proposed effective date or projected effective date no later than May 1, 2018.

- 5 -

We are providing our comments on the draft LAMP to the Central Valley Water Board and the Division of Drinking Water, and are hereby requesting any additional input from their offices. When our comments, above, and any other comments we receive, are addressed we will provide the County our advice concerning whether the LAMP is acceptable for staff to recommend approval to the Lahontan Water Board. After that occurs we ask that the County Board of Supervisors approve the LAMP prior to the Lahontan Water Board consideration of the LAMP.

If you have any questions or desire a meeting to discuss our comments regarding this matter, please contact Rob Tucker, Water Resource Control Engineer at (530) 542-5467 (<u>robert.tucker@waterboards.ca.gov</u>), or Alan Miller, Chief North Basin Regulatory Unit at (530) 542-5430 (<u>alan.miller@waterboards.ca.gov</u>).

Lauri Kemper, P.E. Assistant Executive Officer

cc: Ali Rezvani, State Water Board, Division of Drinking Water Eric Rapport, Senior Engineering Geologist, Central Valley Water Board Alan Miller, Lahontan Water Board Rob Tucker, Lahontan Water Board

RTT/gg/T: Comments on the LAMP for Alpine County File Under: ECM

ENCLOSURE 4





Central Valley Regional Water Quality Control Board

TO: Robert Tucker, P.E. Region 6

FROM: Eric Rapport, C.HG., C.E.G., Lani Andam, Region 5

DATE: 26 February 2018 SIGNATURE: _original signed by

SUBJECT: REVIEW REQUEST FROM REGION 6, ALPINE COUNTY LAMP

INTRODUCTION

The State Water Resources Control Board (State Board) *Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems* (OWTS Policy, or Policy) in part allows Local Agencies to propose Local Agency Management Programs (LAMPs) for Regional Water Quality Control Board (Regional Board) approvals. Under OWTS Policy Tier 2, LAMPs can propose alternative local standards to those in Tier 1; however the standards should meet the same overall purpose to protect water quality and human health.

Local Agencies, largely county environmental health agencies, in some cases span multiple Regional Board jurisdictions. In these cases, Policy §4.3 and Attachment 3 designate one Regional Board to review and approve LAMPs. Policy §4.3.1 nonetheless requires Regional Boards to work cooperatively and assure adequate water quality protection in each Region.

On 25 January 2018, Region 6, Designated Region, requested our staff's general opinion on a LAMP from Alpine County. The following summarizes our review of; proposed notifications, commitment to submit reports, scope of coverage, compliance with prohibitions and setbacks, technical adequacy to protect water quality, and other pertinent standards. Note that our review covers only key Policy Sections and does not replace your complete and detailed review.

LAMP REVIEW

Proposed Notifications

Within 30 days of receiving a proposed LAMP, Policy §4.3.2 requires Designated Regions to solicit comments from Division of Drinking Water (DDW, formerly Department of Public Health) on proposed notifications of water purveyors prior to OWTS permitting. State Board Guidance requests our focus on Policy §§3.5, 9.2.11, and 9.2.12. We presume that Region 6 has already solicited comments from DDW. Nonetheless, we find that the LAMP meets most minimum standards for notifications.

Policy §3.5 requires a Local Agency to notify public water well or water intake owners and DDW as soon as practicable, but no later than 72 hours upon discovery of a failing OWTS (Policy §§11.1 and 11.2) within setbacks in Policy §7.5.6 through 7.5.10 [sic, should be through 7.5.8]. LAMP Chapter 4, *Notifications to Owners of Water Systems and SWRCB*, part 2, pages 20 and 21, meets these requirements.

Policy §9.2.11 generally requires a Local Agency to notify public water system owners of pending installation and repair permits within horizontal setbacks of a public supply well, or within 1,200 feet of a surface water intake, within its drainage area catchment, and located such that it might impact water quality. LAMP Chapter 4, *Notifications to Owners of Water Systems and SWRCB*, part 2, also meets these requirements.

Policy §9.2.12 requires a Local Agency to propose procedures in instances when a dispersal area would be within a horizontal setback of a public well or surface water intake, requiring either supplemental treatments for nitrogen and pathogens (Policy §§10.9 and 10.10), or alternative siting and operational criteria. LAMP Chapter 5, *Not Allowed or Authorized in LAMP*, parts 12 and 13, pages 23 and 24, meets most Policy standards. However, these parts should cite both OWTS Policy §§10.9 and 10.10, not §10.8 (We presume that this citation is a typographical error).

Commitment to Submit Reports

Policy §§3.3 and 9.3.3 cover Annual, and Water Quality Assessment Reports. Policy §3.3 generally requires Local Agencies to submit annual, spreadsheet format reports on OWTS complaints, applications and registrations as part of the local septic tank cleaning program, and permits for new and replacement OWTS (see Policy §§3.3.1, 3.3.2, and 3.3.3). Annual Reports are due 1 February every year following LAMP implementation, beginning 13 May 2018. The fifth annual report should include an evaluation of the Water Quality Assessment Program (Policy §9.3.2). LAMP Chapter 4, *Reporting to RWQCB* and *Water Quality Assessment Program*, pages 19 and 20, generally meet Policy standards.

Scope of Coverage

Policy §9.2 et seq. describes scope of coverage. We consider Policy §§9.2.1 through 9.2.10 generally beyond the scope of this review; our key consideration is maximum authorized projected flows. LAMP Chapter 1, *Introduction*, page 6 (second full paragraph, first bullet), and Chapter 5, *Not Allowed or Authorized in LAMP*, part 2, page 22, show LAMP coverage of OWTS with projected wastewater flows less than 10,000 gallons per day, consistent with OWTS Policy standards.

Compliance with Prohibitions and Setbacks

Policy §9.4 et seq. prohibits some authorizations in LAMPs, and gives minimum horizontal setbacks for new and replacement OWTS from public supply wells and surface water intakes. The LAMP meets most Policy requirements. LAMP Chapter 5, *Not Allowed or Authorized in LAMP*, parts 1 through 13, addresses most prohibitions in Policy §§9.4 et seq.

However, this chapter and others in the LAMP exclude a specific minimum vertical separation between seepage pits and groundwater; see also Chapter 2, *Definitions* for Cap/Cap Depth and Cesspool, pages 8 and 9, and Chapter 9, *Septic Pumping*, page 52. Policy §9.4.8 requires a minimum vertical separation of 10 feet for seepage pits. Based on LAMP Chapter 9, Alpine County Environmental Health Department (ACEHD) requires quarterly reports for OWTS with seepage pits. We suggest a discussion with ACEHD on seasonally shallowest groundwater depths at these locations. Chapter 9 also refers to quarterly monitoring of cesspools, although the LAMP disallows these consistent with Policy §9.4.1. We suggest further clarification.

Technical Adequacy to Protect Water Quality

OWTS Policy Tier 1 provides largely prescriptive standards for siting and construction for OWTS systems; key summaries are in Policy §§7.8 (Table 1), 8.1.5 (Table 2), and 8.1.7 (Tables 3 and 4), respectively; allowable OWTS densities based on average annual rainfall; minimum

depths to shallowest groundwater and bottom of soil below dispersal trenches; and long term application rates based on percolation rates and soils descriptions. For Tier 2, Policy §9.1 et seq. require Local Agencies to consider appropriate conditions to ensure that the LAMP is overall as protective of water quality and public health as Tier 1. Policy §9.3.2 describes minimum standards of a Water Quality Assessment Program.

LAMP Chapter 7, *Onsite Wastewater Treatment System Permitting Process and Siting*, shows allowable density rates in some areas less stringent than OWTS Tier 1 standards. LAMP Chapter 7, *Lot Size Requirements*, page 34, allows 1 acre for parcels with private domestic wells and ½ acre for parcels with public water, less stringent than Tier 1 for drier portions of the County. For example, near Markleeville, assuming average annual precipitation of about 19 inches, OWTS Policy §7.8 allows 2 acres per single family dwelling unit, more stringent than the LAMP. Near Kirkwood, assuming about 48 inches, Policy §7.8 allows ½ acre, consistent with, to less stringent than the LAMP; see http://cdec.water.ca.gov/cgi-progs/reports/PRECIPOUT; find precipitation data for Caples (Twin Lake), Grover Hot Springs, and Markleeville, Station I.D. Numbers 8000, 5280, and 5530 respectively. We presume that allowable densities might be overall more of a potential issue in Region 6, due to the drier climate east of our common watershed divide.

We are nonetheless potentially concerned largely due to local soils. For example, based on a preliminary search, most soils near Markleeville and Woodford are very limited for dispersal systems variously due to steep slopes, slow water movement (percolation rate), and shallow depth to bedrock; see <u>https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/</u>. Numerous areas of the county have no ratings due to bedrock outcrops.

LAMP Chapter 4, *Data Collection, Reporting, and Notifications*, sufficiently addresses Policy §9.3.2 standards. Based on several discussions with the California Conference of Directors of Environmental Health, in Region 5 we consider a reasonable minimum data scope as; state small community water systems, Geotracker GAMA-Secure, monitoring wells from permitted facilities, and private domestic wells – but only if a Local Agency routinely requires sampling, for example as proof of potable water or to settle a dispute between a landlord and tenant. LAMP Chapter 4, *Water Quality Assessment Program (Water Quality Monitoring)*, pages 19 and 20, generally satisfies these minimum requirements. Due to likely numerous supply wells in fractured bedrock aquifers and overall limited local potential for soil treatment of nitrate below dispersion fields, we suggest focused assessment of nitrate trends in Water Quality Assessment Reports.

Other Pertinent Standards

The Alpine County Board of Supervisors should adopt appropriate new codes and ordinances to support the LAMP. In some cases, County Supervisors in Region 5 have approved LAMPs and adopted the total document as an ordinance by reference. In other cases, Supervisors have opted for specific changes. We have no objections to either approach. Also note, State Board Office of Chief Counsel staff allows a delayed code implementation date, if it precedes the Policy deadline, 13 May 2018. Some County Counsels in Region 5 have expressed concern about California Government Code §251123, which generally requires implementation within 30 days of code adoption. However, §251123 also in part provides "A county ordinance may be adopted to take operative effect more than 30 days after its passage by the board of supervisors." This has allayed their concerns and might expedite local approvals in Region 6.

Other

We found several typographical errors in the LAMP. For example, the title should be Local Agency Management Program, not Plan. In general, the LAMP needs further proofreading.

FINDINGS AND CONCLUSIONS

Based on the above, the subject LAMP meets most minimum standards in key portions of the OWTS Policy. However, the LAMP should cite appropriate supplemental treatments both for pathogens and nitrate. Also, the LAMP should include a minimum vertical separation between seepage pits and groundwater consistent with Policy standards. We suggest requiring ACEHD to technically justify OWTS densities greater than Tier 1 standards in future Water Quality Assessment Reports at minimum based on nitrate trends of appropriate fractured bedrock wells. We seek to resolve these potential issues, and are aware of their potential impact on your approval process. We can be available for a teleconference or meeting with the ACEHD within the next two to three weeks.

ENCLOSURE 5





Lahontan Regional Water Quality Control Board

January 18, 2019

Dennis Lampson, Director of Environmental Health Alpine County Environmental Health Department 75 Diamond Valley Road Markleeville, CA 96120 <u>dlampson@alpinecountyca.gov</u>

Water Board Comments and Questions to the Initial Draft of the Alpine County Local Agency Management Plan

The Lahontan Regional Water Quality Control Board (Water Board) staff reviewed the revised draft of the Alpine County Local Agency Management Plan (LAMP), dated January 17, 2018. The LAMP has redline/strikeout suggestions included in the document for your review (enclosed). Please review these comments and questions by February 15, 2018, so that Water Board staff may consider the Alpine County LAMP at its March 2018 meeting. If this deadline is unattainable, please inform the Water Board as early as possible so arrangements can be made to push it to a later Board Meeting. The LAMP will become the Tier 2 regulatory mechanism under the State Board's onsite Wastewater Treatment System (OWTS) Policy. Please consider the following comments.

Comments/Questions:

- 1. This document suffers from great inconsistencies for acronyms, symbols, and definitions (i.e., percent vs %, RWQCB vs Regional Water Board, etc.). Please correct.
- Regarding Chapter 4, *Reporting to RWQCB*; in addition to the items listed, Lahontan Water Board staff would also like the total number of existing OWTS known and regulated by Alpine County as of the date of the Annual Report.
- 3. Regarding Chapter 4, *Water Quality Assessment Program (Water Quality Monitoring)*, Page 21; for the provision that Alpine County will report the number of septic systems incorporated in existing subdivisions with septic density greater than one OWTS per acre, how does Alpine County propose to monitor groundwater and surface water quality for these subdivisions? How many of these subdivisions exist currently and what steps are being taken to monitor water quality, both ground and surface?
- 4. Chapter 6 speaks about Tier 0 OWTS (Existing Systems) and the need for regular inspection and maintenance. Details regarding who is qualified to perform the inspections, what they need to report on, and when/where the report is due

PETER C. PUMPHREY, CHAIR | PATTY Z. KOUYOUMDJIAN, EXECUTIVE OFFICER

2501 Lake Tahoe Blvd., So. Lake Tahoe, CA 96150 | 15095 Amargosa Road, Bldg 2, Ste 210, Victorville CA 92394 e-mail Lahontan@waterboards.ca.gov | website www.waterboards.ca.gov/lahontan should be included in this section. What happens when any deficiencies are identified (i.e., EHD notifies the owner, Tier 4 becomes applicable, etc.)?

- 5. The County's permitting process is unclear. Does the County require the owner/developer submit an application to the EHD for their evaluation and feedback of the system/components/layout before they perform percolation testing and soil profiles, or is all the information included prior to their testing?
- 6. What are the Application for discharge and Application for construction named? The Application(s) for construction and/or discharge should be defined and referenced throughout.
- 7. If EHD proposes a different infiltrative area requirement for leach line systems than provided in OWTS Policy Tier 1 requirements (4 SF/LF), it should be specified in Chapter 8 where applicable (near the infiltrative area specifications). Else, the LAMP needs to state that it will use the 4 SF/LF infiltrative area requirement and adjust leach line dimensions.
- 8. The *Leach Line Systems* section of Chapter 8, specifies the minimum leach line cover as 12-inches. This requirement is also specified in Appendix IV for *At-Grade Systems*. The preferred depth is also specified as 18-inches of depth. While 12-inches is legal, Alpine County may increase the minimum depth requirement to 18-inches or 2-feet minimum based on the fact that much or all of Alpine County is subject to extended depth of freezing.
- 9. This comment also relates to the *Leach Line Systems* section of Chapter 8; what type of leach line system does Alpine County propose to approve for leach line systems on slopes? It seems that slopes up to 25-percent should be designed and constructed with a serial relief line system.
- 10. Additionally, OWTS Policy §9.4.6 requires monitoring and inspections for supplemental treatment systems. Please provide procedures and implementing ordinances to meet this requirement.
- 11. The *Variance* section of Chapter 8 needs to be expanded to detail the variance process and the technical requirements for a variance. The process description does not need to identify what will or will not be allowed (other than what cannot be authorized by Alpine County per the LAMP, as given) but does need to identify the information and preparer requirements, and the decision-making person. The process description should also include a step for notifying the appropriate Water Board of pending variances prior to approval by the County, and provisions for reporting variances referred to the Water Boards.
- 12. What is the intent of Appendix III? §9.4.3 of the OWTS Policy states that any effluent dispersal above post installation grade is prohibited. The Definitions Chapter defines *At-Grade Systems* as a dispersal system at preconstruction grade. Is the Appendix III for an Alternative Treatment dispersal system a mound dispersal system?
- 13. Where did Appendix IV come from? There are many new acronyms within this Appendix, which need to be defined. There is no mention of this Appendix nor the approval of a sand filter system as a Supplemental Treatment. In general, all

Alternative and Supplemental Treatment Systems should be stated as an approved method and detailed with specific design considerations. We commend supplying the specifications in an appendix, but the treatment alternative should be introduced as an approved method in the applicable section.

14. Included in the attached Word document are a number of suggested corrections to grammar and language for your review. Additionally, there are many comments to specific sections throughout the LAMP that should be addressed. You may comment back to those comments in the Word document or address them in the response letter to these comments.

If you have any questions or concerns, please contact me at (530) 542-5430 (trevor.miller@waterboards.ca.gov). In my absence or unavailability, Robert Tucker may be able to assist you. Please contact him at (530) 542-5467 (robert.tucker@waterboards.ca.gov). Additionally, we are able to hold a meeting to discuss these comments with you, if preferred.

Trevor Miller, P.E. Water Resource Control Engineer

Enclosure: Alpine County LAMP, dated January 17, 2018

cc: Robert Tucker, Lahontan Water Board

TM/ma/T: Alpine County LAMP Comment Letter File Under: Waste Discharge Requirements/ OWTS Policy/Local Agency Management Plan/Draft LAMP Documents/Correspondence

ENCLOSURE 6
Enclosure 6

Comparison of OWTS Policy, Lahontan Basin Plan, and Selected Lahontan Region Tier 2 LAMPS for Supplemental Systems and Density

In addition to the siting and design criteria described in the State Board's *Onsite Wastewater Treatment System Policy* (OWTS Policy) and individual *Local Agency Management Programs* (LAMPs); providing supplemental treatment and limiting septic system density are the primary methods to *control* water quality from onsite systems. Criteria for OTWS (septics) contained in regional board basin plans are superseded by the OWTS Policy. This describes the relationship between the OWTS Policy and the *Water Quality Control Plan for the Lahontan Region* (Basin Plan) with respect to supplemental treatment and density, followed by a comparison of select Lahontan Basin LAMPs for this topic.

- <u>Onsite wastewater treatment systems</u> The OWTS Policy defines OWTS as individual disposal systems, community collection and disposal systems, and alternative collection and disposal systems that use subsurface disposal. Typically, OWTS refer to conventional septic tank systems with subsurface dispersal systems. However, OWTS may include supplemental treatment. The OWTS Policy does not authorize OWTS receiving a projected flow over 10,000 gallons per day, and requires owners of OWTS with flow greater than 10,000 gallons to submit a Report of Waste Discharge to the Water Board.
- Supplemental treatment The OWTS Policy defines supplemental treatment as any additional wastewater treatment so that effluent meets a predetermined performance standard prior to subsurface effluent disposal. Typically, this involves additional aeration and, if required, recirculation for nitrification and denitrification.
- 3. <u>Treatment requirements for nitrogen or pathogens</u> The OWTS Policy only requires specific nitrogen and pathogen treatment requirements for Tier 3 OWTS located near water bodies listed as impaired due to nutrients or pathogens. The OWTS Policy does not define any impaired water bodies in the Lahontan Region where OWTS would have to comply with Tier 3 requirements. Water Board staff recommended local agencies incorporate into Tier 2 LAMPs, treatment standards for supplemental treatment systems to protect receiving groundwater.

4. National Sanitation Foundation (NSF) Standards 40 and 245

To ensure supplemental treatment systems produce an effluent quality protective of receiving water, most Lahontan Region LAMPs require supplemental treatment systems to achieve either the NSF Standard 40 or 245 criteria, which are described in the table below. Both the NSF Standard 40 and 245 certified systems have up to 1,500 gal/day of rated flow, however modular systems can be expanded for higher flows.

Constituent	NSF 40 Standard	NSF 245 Standard
Biochemical Oxygen Demand	30 milligrams per liter (mg/L), or	30 milligrams per liter (mg/L), or
(BOD), or	25 mg/L	25 mg/L
Carbonaceous BOD		
Total Suspended Solids (TSS)	30 mg/L	30 mg/L

Constituent	NSF 40 Standard	NSF 245 Standard
Total Nitrogen	N/A	At least a 50% average
		reduction of influent to effluent
рН	6.0 - 9.0	6.0 - 9.0

- 5. <u>OWTS density criteria</u> The OWTS Policy Tier 1, statewide criteria for low risk new or replacement OWTS, specifies a rainfall based average density only for new subdivisions occurring after May 13, 2013. There is no requirement for OWTS density for previously subdivided lots or for Tier 2 LAMPs. Many local agencies elected to submit LAMPS primarily due to this criterion. Water Board staff recommended local agencies incorporate density criteria into LAMPs, consistent with now superseded Basin Plan criteria, to protect receiving groundwater.
- 6. <u>Basin Plan Requirements for Package Plants</u> The Basin Plan has no specific requirements for supplemental treatment systems, but includes a Package Treatment Plant Policy (Basin Plan, page 4.4-6). Package plants are commercially available prefabricated units that provide complete wastewater treatment. Package plants may be considered OWTS in some applications. The Basin Plan policy requires package plant effluent to achieve a total nitrogen effluent limitation of 10 mg/L where density cannot be met or underlying groundwater exceeds 10 mg/L nitrate as nitrogen. Additionally, the Basin Plan policy includes design guidelines, requirements for certified operators, and specifies parameters for effluent monitoring and receiving groundwater monitoring.
- 7. <u>Basin Plan Requirements for Density</u> In 1988, the Water Board adopted criteria into the Basin Plan (Basin Plan page 4.4-10) for individual waste disposal systems. After the OWTS Policy effective date of May 13, 2018, the Basin Plan criteria for density only applies for any domestic sewage discharge not regulated under the OWTS Policy. For example, new OWTS on federal or state land. Because the OWTS Policy did not establish density criteria for Tier 2 LAMPS, and because OWTS density is the primary factor for controlling nitrate groundwater pollution, Water Board staff encouraged local agencies to consider incorporating comparable OWTS density criteria into Tier 2 LAMPs, at least as stringent as the Basin Plan. The Basin Plan criteria established minimum lot size as follows based upon the flow of a single-family equivalent dwelling unit (EDU); one EDU considered 250 gal/day.
 - Final development tract maps approved before June 16, 1988, may utilize a septic system if the lot has a net area of greater than or equal to 15,000 sq. ft.
 - Final development tract maps approved after June 16, 1988, may utilize a septic system if the lot has at least one-half acre, or no more than two EDUs per acre (e.g. 500 gal/acre/day).
 - Commercial, industrial, or institution discharges of domestic sewage are based on the fixture unit values of the California Plumbing Code, total flow produced, and lot size with prorations based on the allowed 500 gal/acre/day.

Density greater than two EDU per acre must have secondary treatment, or a waiver of individual criteria approved by the Water Board's Executive Officer. After May 13, 2018,

the Executive Officer may no longer issue waivers of septic criteria and Water Board regulation of OWTS may occur only after issuance of Waste Discharge Requirements.

The US EPA secondary treatment standards are as follows.

Parameter	30-day average	7-day average
BOD (or CBOD)	30 mg/L (25 mg/L)	45 mg/L (40 mg/L)
TSS	30 mg/L	45 mg/L
BOD and TDS removal	Not less than 85%	
рН	Within 6.0 – 9.0	

8. <u>The following table is a comparison</u> between selected Tier 2 LAMPs effective in the Lahontan Region for supplemental treatment and density to *control* water quality.

Local Agency LAMP Maximum Allowed Flow	Supplemental Treatment Systems	Density and Minimum Lot Size For Conventional Systems
Alpine County (proposed item) • Up to 10K gpd	 Supplemental treatment required where: Horizontal setbacks can't be met, Percolation rates are not within range, Insufficient depth to groundwater, Insufficient or inadequate soil below leach line, and Development density or minimum lot size cannot be met. Annual report, inspection and sampling (influent/effluent where necessary) 	 New OWTS within an existing subdivision must be 15,000 sq. ft. minimum. Minimum one-acre lot required for OWTS with private, individual water supply must. Minimum half-acre lot required for OWTS with public water supply. 2 EDU/acre (500 gpd/acre).
Inyo County • Up to 10K gpd	 Supplemental treatment required where: Horizontal setbacks can't be met, Percolation rates are not within range, Insufficient depth to groundwater, Insufficient or inadequate soil below leach line, and Other conditions (including density) require Annual samples for BOD, TSS, total Kjeldahl nitrogen and nitrate required to ensure 50% nitrogen reduction. 	 Lots created before 06/16/88 must be 15,000 sq. ft. Lots created after 06/16/88, must be at least ½ acre. 500 gal/acre/day.
Mono County • Up to 10K gpd	 Supplemental treatment required where: site conditions or water quality conditions warrant. Annual, or more frequent, influent and effluent samples. 	 No minimum lot size for existing subdivided lots. New subdivided lots after the LAMP must be at least ½ acre or 500 gal/acre/day. New subdivisions using an OWTS and individual water supply well on each lot must have minimum 40,000 sq. ft.
San Bernardino County • Up to 10K gpd	 Supplemental treatment required where: Near an impaired water body, or Where the underlying groundwater exceeds 10 mg/L nitrate-nitrogen and is an aquifer that supplies drinking water, or 	 No minimum lot size for pre-existing subdivided lots. New subdivided lots after the LAMP must be at least 0.5 acre or 500 gal/acre/day.

Enclosure 6 Comparison of LAMPS for Supplemental Systems and Density

Local Agency LAMP Maximum Allowed Flow	Supplemental Treatment Systems	Density and Minimum Lot Size For Conventional Systems
	 o Where minimum lot size requirements cannot be met Annual effluent samples are required. 	 New subdivided lots after the LAMP having onsite drinking water wells must be at least 2.5 acres.

ENCLOSURE 7





	Tier Review		
	TIER	OWTS DESCRIPTION	
	0	Applies to properly functioning existing OWTS that are not impacting water quality.	
	1	Sets state-wide protective requirements for siting and design of new or replacement OWTS	
	2	Allows local agency to establish and implement a Local Agency Management Program (LAMP) to regulate new and replacement OWTS within their jurisdiction	
	3	Applies specific standards to OWTS that may be affecting impaired surface waters	
	4	Applies to existing OWTS requiring corrective action.	
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Local Agency	Supplemental Treatment Systems, ≤10,000 gal/day	Density for Conventional Systems
Alpine County	Supplemental treatment required where site-specific requirements cannot be met: Horizontal setbacks, percolation rates, depth to groundwater, development density or minimum lot size. Annual report: inspection and sampling (influent/effluent where necessary)	New OWTS within an existing subdivision must be 15,000 sq. ft. minimum. Minimum one-acre lot required for OWTS with private, individual water supply must. Minimum half-acre lot required for OWTS with public water supply. 2 EDU/acre (500 gpd/acre).
Mono County	 Supplemental treatment required where site conditions or water quality conditions warrant. Annual samples required. 	 No minimum lot size for existing subdivided lots. New lots after the LAMP must be at least ½ acre or 500 gal/acre/day. New subdivisions using an OWTS and individual well must have 40,000 sq. ft.
Inyo County	Supplemental treatment required where site-specific requirements cannot be met: O Horizontal setbacks, percolation rates, depth to groundwater, density, etc. Annual samples for BOD, TSS, total Kjeldahl nitrogen and nitrate required to ensure 50% nitrogen reduction.	 Lots created before 06/16/88 must be 15,000 sq. ft. Lots created after 06/16/88, must be at least ½ acre. 500 gal/acre/day.











	Abbreviations
	Description
OWTS	Onsite wastewater treatment systems
OWTS Policy	Water Quality Policy for Siting, Design, Operation, and Maintenance of OWTS
LAMP	Local Agency Management Program (Tier 2 of OWTS Policy)
WQAP	Water Quality Assessment Program
SNMP	Salt and Nutrient Management Plan









