

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION
MEETING OF JUNE 8-9, 2016
BISHOP**

ITEM 14

Waste Discharge Requirements for the California Department of Transportation Honey Lake Safety Roadside Rest Area Wastewater Treatment and Disposal Facility, Lassen County, WDID 6A188070002

CHRONOLOGY

December 31, 2014	These are new Waste Discharge Requirements (WDRs). California Department of Transportation (Caltrans) submitted a Report of Waste Discharge requesting waste discharge requirements for the treatment and disposal of wastewater produced by the Honey Lake Safety Roadside Rest Area.
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BACKGROUND

Caltrans owns and operates the Honey Lake Safety Roadside Rest Area (Rest Area) which is approximately 16 miles south of Susanville on Highway 395. The location is in a rural area and Caltrans must treat and dispose of its own wastewater at the location. Caltrans evaluated their existing septic system and determined the discharge from their septic tank has higher concentrations of nitrogen than the discharge from a typical single-family home's septic system. Therefore, Caltrans has proposed to replace the septic system with an advanced onsite wastewater disposal system (OTWS).

Prior to Caltrans identifying that their discharge from the Rest Area's septic system contained high nitrogen concentrations, staff learned the shallow groundwater at the Rest Area was exceeding the 10 mg/L nitrate as nitrogen drinking water standard in an onsite shallow drinking water well. This well water had to be treated to remove nitrates under requirements from the State Water Resources Control Board Division of Drinking Water.

Caltrans approached Water Board staff about a year prior to providing a Report of Waste Discharge for the Rest Area to discuss what kind of effluent limits might be placed on an upgraded wastewater system for the Rest Area. Understanding the shallow groundwater exceeded the nitrate drinking water standard and that Caltrans was one of several suspected nitrogen sources, Water Board staff recommended 10 mg/L of *total* nitrogen on average, which provided a basis for the design.

The 10 mg/L of total nitrogen was chosen in reference to the drinking water standard which is 10 mg/L of nitrate as nitrogen. In the unlikely event that the total nitrogen discharged is all converted into nitrate then the concentration reaching the groundwater will be below 10 mg/L and provide some dilution to the groundwater nitrate concentrations above 10 mg/L. Calculations substantiate and support the use of 10

mg/L of total nitrogen as an appropriate effluent limit as the discharge of total nitrogen of 10 mg/L or less, on average, is less nitrogen loading than the discharge from a single-family home on 2.5 acres.

The proposed OWTS will reduce the total nitrogen concentrations from the Rest Area by over 90 percent. Additionally, the use of the shallow groundwater on the Rest Area's landscaping will aid in removing nitrate from the shallow groundwater, as will cessation operations of the Rest Area's water treatment system in 2015, which discharged nitrate-rich wastewater to the Rest Area's existing OWTS. The overall effect should be decreasing groundwater nitrate concentrations beneath and downgradient of the Rest Area.

The proposed WDRs include a time schedule that will require an irrigation schedule for the use of the shallow groundwater, proposed monitoring well designs, a date by which the monitoring wells will be installed, and a groundwater investigation report describing the nitrate conditions in the existing monitoring well and any effect the advanced OWTS discharges and the use of shallow groundwater for irrigation is having on the nitrate concentrations in the groundwater.

ISSUES

Should the Lahontan Water Board adopt Waste Discharge Requirements with nitrogen effluent limits for the Caltrans Honey Lake Safety Roadside Rest Area and the proposed time schedule?

DISCUSSION

Water Board staff released a Tentative Order for public comment. Water Board staff received comments on the Tentative Order from the California Department of Transportation (Caltrans). Staff made the revisions, below, in response to Caltrans recommendations.

1. Proposed OWTS Operations: Updated information to reflect that urine will be stored in the urine tank during colder months, and then released for treatment during the warmer months. A requirement to monitor the urine tank's capacity to avoid overflow was added to the Monitoring and Reporting Program.
2. Water Supply Well Operations: Updated information to reflect that the shallow water supply well was replaced by a new, deeper water supply well in 2015. The shallow supply well is now used for landscape irrigation, which provides an opportunity for nitrate uptake by the Rest Area's vegetation.
3. Water Treatment System Operations: Updated information to reflect the Rest Area's water treatment system was taken out of service when the new water supply well was put into service.

4. OWTS's (Existing) Impacts: Modified wording that more directly linked the Caltrans' wastewater discharges to the elevated groundwater nitrate concentrations beneath the Rest Area. The revised wording indicates that the Caltrans' wastewater discharges "may be contributing" to the elevated nitrate concentrations. The revisions are justified in light of the limited data and that there are other potential sources (e.g., residential septic systems, agriculture) that could be affecting the groundwater nitrate concentration.
5. Effluent Limitations: Modified the flow limitation to reflect the proposed OWTS's peak design flow. Modified the nitrogen effluent limitation from a monthly average based upon a minimum of one monthly sample to a quarterly average based upon a minimum of three monthly samples. This revision allows for some variability in system performance that is normal with biologically-based treatment systems, while still being protective of water quality and beneficial uses. Staff also established an effective date for the water quality-based effluent limitations that provides the Caltrans with a one-year startup period.
6. Nitrogen Effluent Limitation Analysis: Modified Water Board staff's analysis (WDR-Attachment D) that compares the nitrogen loading of the proposed OWTS to that of a single-family home, under the State Water Board's OWTS Policy. The revision involved increasing the proposed OWTS's discharge rate up to 4,000 gallons per day from 3,000 gallons per day, which was used in the original analysis. Doing so reflects the proposed OWTS's peak discharge rate and provides a more conservative analysis. The modified analysis shows the proposed nitrogen effluent limitation of 10 mg/L is comparable to that which would be allowed for a single family home on 2.5 acres under the State Water Board's OWTS Policy. Staff believes that the proposed nitrogen effluent limitation, in combination with using the shallow groundwater for landscape irrigation, will reduce groundwater nitrate concentrations beneath and downgradient of the Rest Area.
7. Minor: A number of minor changes intended to improve accuracy, clarity, and readability were made in response to Caltrans comments.

PUBLIC OUTREACH/INPUT

Staff released a Tentative Order for public comments and received comments from the Caltrans, as discussed above. The Caltrans' comments and staff's responses are provided in Enclosure 2.

The opportunity to review the tentative and proposed Orders, and to participate at the Water Board's June 8-9, 2016 meeting were noticed through electronic mailing and posting on the Water Board website. Water Board staff contacted Caltrans staff on their comment letter and provided information in advance of the written response provided in Enclosure 2 regarding what would be changed and changes that differed from Caltrans' requests. Caltrans has not expressed any opposition to staff's responses.

RECOMMENDATION
Adopt the Order as proposed.

ENCLOSURE	ITEM	BATES NUMBER
1	Proposed Order	14-7
2	Comments from the California Department of Transportation with Water Board Staff Responses	14-65
3	PowerPoint Presentation by Water Board Staff.	14-73

ENCLOSURE 1

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

**BOARD ORDER NO. R6T-2016-PROPOSED
WDID NO. 6A181412005**

WASTE DISCHARGE REQUIREMENTS
FOR
**CALIFORNIA DEPARTMENT OF TRANSPORTATION
HONEY LAKE SAFETY ROADSIDE REST AREA
WASTEWATER TREATMENT AND DISPOSAL FACILITY**

Lassen County

The California Regional Water Quality Control Board, Lahontan Region (Water Board), finds:

1. Discharger

California Department of Transportation is the owner and operator of the Honey Lake Safety Roadside Rest Area. For the purpose of this Order, the California Department of Transportation is referred to as the “Discharger.”

2. Facility

The Honey Lake Safety Roadside Rest Area discharges treated domestic wastewater from its existing onsite wastewater treatment and disposal system (OWTS) that is scheduled to be replaced. For the purpose of this Order, the Honey Lake Safety Roadside Rest Area is referred to as the “Facility.”

3. History of Previous Regulation by the Water Board

The Water Board has not regulated this Facility prior to this Board Order. The Discharger identified that the Facility produces a waste stream that, compared to a typical single-family home septic tank discharge, contains a significantly higher concentration of nitrogen. Therefore, it is appropriate to regulate the Facility’s OWTS under Waste Discharge Requirements (WDRs) issued by the Water Board.

4. Reason For Action

The Discharger filed a Report of Waste Discharge on December 31, 2014, requesting new WDRs for the Facility’s non-domestic wastewater discharge. The Discharger is also proposing a series of actions to address nitrate pollution in the shallow groundwater beneath the Facility. The Discharger’s proposed, completed, and ongoing actions include:

- a. Constructing and operating a proposed new advanced OWTS producing an effluent with total nitrogen concentrations less than 10 mg/L, quarterly average. Subsequently, ceasing discharging wastewater from the existing septic tank OWTS.

- b. Begin using a new, deeper onsite water supply well producing water that complies with nitrate drinking water standards without treatment. This was accomplished by the Discharger in 2015.
- c. The Discharger ceased operating and discharging nitrate-rich wastewater from its water treatment system to the Facility's existing OWTS, when the Discharger began providing water from its new, deeper water supply well in 2015. The water treatment system that was operated until 2015 removed nitrates from water produced by the Facility's existing shallow water supply well (now landscape irrigation supply) and discharged the effluent to the OWTS.
- d. Continue using the existing shallow water supply well (hereinafter referred to as the "irrigation well") for landscape irrigation, allowing for the uptake of nitrates currently in the shallow groundwater beneath the Facility by the vegetation.
- e. Establishing an ongoing groundwater monitoring program that identifies groundwater flow direction, characterizes the Facility's current impacts on groundwater quality, identifies other potential nitrate sources, and monitors the groundwater's response to the Facility's improved wastewater discharge quality.

5. Facility Location

The Facility is located adjacent to U.S. Highway 395, approximately 0.5 miles west of Honey Lake, 7.7 miles north of Milford, and approximately 16 miles southeast of Susanville, in Lassen County. The Facility's location is shown in Attachment A, which is made a part of this Order.

6. Facility Description

The Facility consists of a parking lot for cars and trucks, and restrooms for travelers. There are landscaped areas for outdoor picnics and pet walking. The restroom facilities and drinking fountains generate domestic wastewater that is treated and disposed of onsite.

The Discharger is proposing to install an advanced OWTS to replace the existing conventional septic system and leachfield OWTS. The new OWTS will consist of a 6,000-gallon urine tank, 1,700-gallon lift station, a 10,000-gallon septic tank, two 1,900-gallon media tanks, an 8,000-gallon recirculation tank, a 3,600-square-foot above-ground recirculating sand filter, and two anoxic wetlands. The Facility's new OWTS layout is shown in Attachment B, which is made a part of this Order.

The urine tank, lift station, and septic tank are pretreatment components of the new OWTS. Waste from the men's restroom urinals will be collected in the urine tank. During the colder months, the urine tank will be used to store anticipated urinal waste amounts. The tank will have a fluid-level indicator and will overflow if filled to capacity into the new lift station for the OWTS. During the warmer months, when biological processes are enhanced by warmer temperatures, stored urinal

wastewater will be metered into the other wastewater sources and treated.

Solids will be removed in the septic tank, and effluent will subsequently be treated by the two media tanks, the recirculating sand filter, and the wetlands system prior to being discharged to the Facility's subsurface leachfield. The wastewater effluent quality from the new OWTS will be significantly better than that of the Facility's existing OWTS, as presented below.

The following table provides a comparison of concentrations for specific constituents in treated wastewater from a typical residential septic tank, the Facility's existing septic tank, and anticipated constituent concentrations from the Facility's proposed OWTS.

Constituent	Typical Septic Tank Effluent* (mg/L)	Facility Existing Septic Tank Effluent (mg/L)	Proposed Facility OWTS Effluent (mg/L)
Biochemical Oxygen Demand, five day	140-200	230	<90
Chemical Oxygen Demand	160-300	500	<200
Total Kjeldahl Nitrogen	50-90	200	<10
Total Nitrogen	40-100	200	<10
Total Suspended Solids	20-55	60	<10

*USEPA, 2002. Onsite Wastewater Treatment Systems Design Manual, EPA/625/R-00/008. Office of Water, Office of Research and Development, Washington, D.C. February 2002

7. Sludge Disposal

The Facility's sludge disposal plan includes periodic sludge removal from the septic tank for transport to an offsite facility authorized to receive such waste.

8. Authorized Disposal Site

The authorized disposal site for the Facility's proposed OWTS will consist of 1,200 linear feet of subsurface leach field.

9. Total Nitrogen; Constituents of Concern

This Order establishes an effluent limitation for total nitrogen as nitrogen based upon the following information and conditions:

The Facility is located on land with groundwater close to the land surface (shallow groundwater). The irrigation well (former shallow water supply well), constructed from grade to 60 feet below grade, has had standing water as shallow as 21 feet below grade. In October 2015, the irrigation well had a nitrate as nitrogen

concentration of 10.2 mg/L, exceeding the drinking water standard for nitrate of 10 mg/L nitrate as N. The Discharger operated a water treatment system prior to 2016 to reduce nitrate concentrations in the Facility's drinking water supply, as required by the State Water Resources Control Board's Division of Drinking Water (DDW), and discharged the residual nitrates from the water treatment system into the Facility's existing OWTS.

- a. The Discharger has documented nitrogen concentrations in the Facility's wastewater discharge that are two to four times greater than nitrogen concentrations from a typical single-family home's OWTS. Such nitrogen discharges may be contributing to groundwater nitrate concentrations beneath the Facility that are exceeding the MCL for nitrate. Constructing and operating the advanced OWTS is proposed by the Discharger to reduce nitrogen concentrations in its wastewater effluent discharge and subsequently reduce groundwater nitrate concentrations.
- b. Establishing and meeting effluent limitations for total nitrogen as N of 10 mg/L, quarterly average, is necessary to prevent further groundwater quality degradation and to begin reducing the current groundwater nitrate concentrations to below the MCL. Meeting the quarterly average effluent limitation for total nitrogen as N will reduce the Facility's current nitrogen discharge by an estimated 95 percent. The effluent limitations for total nitrogen as N established by this Order are based on the proposal by the Discharger and a number of considerations discussed in detail in Attachment D, which is made a part of this Order.
- c. In conjunction with meeting the effluent limits, using the shallow groundwater for landscape irrigation and taking the water treatment system offline should further assist in reducing nitrate concentrations in the groundwater to levels below the MCL.

10. Site Geology

The Facility lies within the Honey Lake Valley. It is bounded on the west by the Sierra Nevada mountain range and to the north and west by volcanic areas of the Modoc Plateau and Cascade Range. Top soil and surface clay extends to a depth of 15 feet below grade, with sand from 15 feet to 60 feet below grade. Below the sand is decomposed granite and fractured granite from 60 feet to 90 feet below grade.

11. Site Hydrology

Annual precipitation at the Facility is estimated at less than 15 inches. The Facility lies within the Honey Lake Valley and is adjacent to Honey Lake, the terminal receiving water for the Susan River. The receiving water is the groundwater of the Honey Lake Valley groundwater basin.

12. Site Hydrogeology

The Facility is within the Honey Lake Valley groundwater basin, a 490-square mile basin with internal drainage, which stores an estimated 16 million acre-feet of water (California Department of Water Resources, *California's Ground Water, 1975*). The Discharger has two onsite water supply wells. One is an older shallow groundwater well (irrigation well), where the standing groundwater is found at approximately 21 feet below grade. This well is no longer being used for drinking water supply and is now used as an onsite irrigation supply well. This well has had nitrate as nitrogen concentrations above the drinking water MCL and at levels such that DDW required the Discharger to treat the water prior to distribution. The sources and extent of the elevated nitrate concentrations in the shallow groundwater are not fully known.

The Discharger has constructed a second drinking water supply well that is over 800 feet deep. The water there was found in fractured granite after drilling through the upper 60-foot sand layer. The standing water after drilling was at 36 feet below grade, indicating that the shallow water may not be in direct hydrologic connection with the deeper aquifer. The nitrate as nitrogen concentration in the deeper groundwater has been measured at 5.7 mg/L, below the 10 mg/L MCL.

13. Water Quality Control Plan for the Lahontan Region

The Water Board adopted the Basin Plan, which took effect on March 31, 1995. This Order implements the Basin Plan, as amended.

14. Groundwater Beneficial Uses

The beneficial uses of the groundwater of the Honey Lake Valley groundwater basin (Department of Water Resources No. 6-4), as set forth and defined by the Basin Plan, are:

- a. Municipal and Domestic Supply (MUN)
- b. Agricultural Supply (AGR)
- c. Freshwater Replenishment (FRSH)
- d. Industrial Service Supply (IND)
- e. Wildlife Habitat (WILD)

15. California Water Code Section 13172

Water Code section 13172 directed the State Water Resources Control Board (State Water Board) to write regulations for waste disposal sites, "except for sewage treatment plants..." to protect water quality. Those regulations are now incorporated in the California Code of Regulations (CCR), title 27. The statute exempts the wastewater treatment facilities from the regulation, but does not exempt the disposal of treated wastewater, except under specified conditions.

16. California Code of Regulations Title 27

CCR title 27, section 20090, defines the activities that may be exempt from CCR title 27 requirements. The section provides a list of preconditions that must be met for

the exemptions to apply. Section 20090(a) provides an applicable exemption for the discharge of treated effluent to land. The full text of the exemption follows:

“(a) Sewage - Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable SWRCB[State Water Board]-promulgated provisions of this division.”

The Facility’s discharge of treated effluent has historically been unregulated. The current discharge is a source of total nitrogen and may be contributing to the nitrate concentrations that exceed applicable water quality objectives in the shallow groundwater. The groundwater has elevated concentrations of nitrate and sources are not fully known; therefore, the Facility WDRs issued pursuant to CCR, title 23 will include effluent limits for total nitrogen to assure consistency with applicable water quality objectives, new groundwater monitoring systems, and other requirements intended to eliminate the existing condition of groundwater pollution.

The Discharger is required by this Order to satisfy the title 27 exemption criteria requiring that sludge generated in the septic tank be properly removed and disposed of at a facility authorized to accept the waste.

17. Time Schedule Requirements

Pursuant to Water Code section 13263(c), WDRs may contain a time schedule subject to revision at the discretion of the Water Board. This Order establishes a time schedule for the Discharger to accomplish certain actions as described in Finding No. 4, above. The Water Board has determined in its discretion that prescribing this time schedule is reasonable and needed in lieu of enforcement action to assure the completion of activities proposed to abate the groundwater nitrate condition above the MCL.

18. Policy for Maintaining High Quality Waters

State Water Resources Control Board Resolution No. 68-16 requires that *existing high quality waters will be maintained until it is demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the [State or Regional Water Board] policies; and requires that any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters must meet waste discharge requirements which will result in the best practical treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the*

highest water quality consistent with maximum benefit to the people of the State will be maintained.

A condition of pollution developed prior to adoption of this Order. The purpose of this Order is to regulate the Facility's waste discharge in a manner that improves groundwater quality and eliminates the existing condition of pollution. Groundwater quality is expected to improve in response to implementing the actions identified in Finding No. 4, above. Those actions will significantly reduced total nitrogen concentrations in the Facility's waste discharge, and facilitate nitrate removal from the groundwater through uptake by vegetation when irrigating with water from the shallow irrigation well.

This Order requires improved treatment of nitrate, which will be carried out by a new advanced OWTS, which is to be constructed, and for the Discharger to monitor the groundwater in the disposal location of the treated wastewater to evaluate whether the discharge is improving the quality of the previously-affected receiving water. The shallow groundwater already has elevated concentrations of nitrate and thus the Discharger will have total nitrogen effluent limits and be required to implement best practicable treatment and controls. The total nitrogen effluent limit is equivalent to the drinking water MCL for nitrate, assuming all the nitrogen could be converted to nitrate. The discharge of wastewater with a quarterly average total nitrogen as N concentration of 10 mg/L should help ameliorate the current groundwater nitrate concentrations to below the water quality objectives in the shallow groundwater. The Discharger will also be required to irrigate the Facility's landscaping with the shallow groundwater, further reducing groundwater nitrate concentrations. Ceasing water treatment system operations and its nitrate-rich discharge should further reduce total nitrogen and nitrates in the groundwater.

19. Water Code Section 13241 Considerations

Pursuant to California Water Code section 13241, the requirements of this Order take into consideration the following:

a. Past, present, and probable future beneficial uses of water.

The findings of this Order identify past, present and probable future beneficial uses of water, as described in the Basin Plan, that are potentially and currently affected by the discharge. The Facility's existing OWTS may be contributing to current impairment of the water for MUN uses. Present or probable future beneficial uses of the water are listed in Finding No. 14. Those beneficial uses other than MUN, should not be affected by the discharge. The proposed advanced OWTS discharge combined with irrigating with shallow groundwater, should improve the water quality and aid in restoring the MUN beneficial use for groundwater.

b. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

The findings of this Order concerning geology, hydrogeology, and hydrology

provide general information on the hydrographic unit environmental characteristics. Finding Nos. 10, 11, 12, and 14, above, discuss information concerning the quality of available water and the potential uses of the groundwater.

- c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
The requirements for the Facility are reasonable to achieve. The water quality may be adversely affected by factors beyond the control of the Discharger, including other nearby septic systems and agriculture practices. However, establishing effluent limits for total nitrogen for the Facility's discharge is needed to both reduce a known nitrogen source, which is expected to improve groundwater quality. The effluent requirements of this Order will reduce nitrate concentrations in the effluent discharged to groundwater and should, over time, aid in improving groundwater quality and restoring compliance with water quality objectives in the shallow groundwater beneath the Facility.
- d. Economic considerations
The Discharger proposed the advanced OWTS. The installation of the new OWTS and monitoring wells will increase the operational cost of the site, but are necessary in order to aid in abating existing pollution and monitor potential changes in groundwater quality with the new OWTS. The requirement for groundwater monitoring is reasonable and necessary to monitor progress towards compliance with water quality objectives for the shallow groundwater beneath the Facility.
- e. The need for developing housing within the region.
The Discharger provides rest services to drivers and occupants of vehicular traffic on U.S. Highway 395. This Order considers the need for housing, and does not increase the need for, or impact the ability to, develop housing within the Region. Thus, there are no impacts on the need for developing housing.

20. The Right to Access to Clean Water

Water Code section 106.3 states in part "... every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." This Order does not authorize the degradation of the groundwater beyond the level that supports beneficial uses, will assist in restoring the impaired MUN use, and requires monitoring to monitor for potential degradation of water quality.

21. California Environmental Quality Act

Adoption of this Order regulating the discharge from the Facility is categorically exempt under the provisions of the California Environmental Quality Act (CEQA, Public Resources Code section 21000, et seq.) in accordance with CCR, title 14, section 15301, "Existing Facilities." The Facility is an existing facility and has been

in operation for many years. No expansion of capacity is being authorized with the implementation of the new OWTS.

22. Notification and Consideration of Comments

The Water Board staff solicited public comments by placing a copy of the Tentative WDRs on the Water Board's internet site on March 29, 2016 and distributing the Tentative WDRs to the Discharger and known interested parties. The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that, pursuant to Water Code section 13263, the Discharger must comply with the following:

I. Discharge Specifications

A. Effluent Limitations

1. The total flow of wastewater to the authorized disposal site must not exceed 4,000 gallons per day (gpd).
2. The discharge to waters of the state must not contain trace elements, pollutants or contaminants, or combinations thereof, in concentrations that are toxic or harmful to humans or to aquatic or terrestrial plant or animal life.
3. Treated effluent discharged after **August 30, 2018**, must meet the following effluent limits.

Effluent Limitations

Constituents	Quarterly Average (mg/L)	Daily Maximum (mg/L)
Biochemical Oxygen Demand	90	---
Total N	10	---
Total Suspended Solids	30	45

B. Receiving Water Limitations

The discharge of waste must not cause the presence of the following substances or conditions in the groundwater of the Honey Lake Valley groundwater basin.

1. Bacteria, Coliform - In groundwater designated as MUN, the median concentration of coliform organisms over any seven-day period shall be less than 1.1/100 milliliters.
2. Chemical Constituents - Groundwater designated as MUN shall not contain concentrations of chemical constituents, as a result of the discharge, in excess of the maximum contaminant level (MCL) or secondary maximum

contaminant level (SMCL) based upon drinking water standards specified in the following provisions of title 22 of the CCR, which are incorporated by reference into this Order:

- a. Table 64431-A of section 64431 (Inorganic Chemicals),
 - b. Table 64431-B of section 64431 (Fluoride),
 - c. Table 64444-A of section 64444 (Organic Chemicals),
 - d. Table 64449-A of section 64449 (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits), and
 - e. Table 64449-B of section 64449 (Secondary Maximum Contaminant Levels-Ranges).
 - f. This incorporation-by reference is prospective includes future changes to the incorporated provisions as the changes take effect.
 - g. Waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).
3. Radioactivity - Groundwater designated as MUN shall not contain concentrations of radionuclides in excess of the limits specified in Table 4 of section 64443 (Radioactivity) of title 22 of the CCR, which is incorporated by reference into this Order. This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.
4. Taste and Odor - Groundwater shall not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect the beneficial uses. For groundwater designated as MUN, at a minimum, concentrations shall not exceed adopted secondary maximum contaminant levels specified in
- a. Table 64449-A of section 64449 (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits), and
 - b. Table 64449-B of section 64449 (Secondary Maximum Contaminant Levels- Ranges) of title 22 of the CCR,
 - c. The above sections are incorporated by reference into this Order. This incorporation-by-reference includes future changes to these provisions as the changes take effect.

C. General Requirements and Prohibitions

1. There must be no discharge, bypass or diversion of raw or partially treated sewage, sewage sludge, grease or oils from the collection, treatment, or disposal facilities to adjacent land areas or surface waters.

2. The discharge of waste that causes violation of any narrative or numeric water quality objective contained in the Basin Plan is prohibited.
3. Where any numeric or narrative water quality objective contained in the Basin Plan is already being violated, the discharge of waste that causes further degradation or pollution is prohibited.
4. The discharge must not cause a pollution as defined in section 13050 of the California Water Code.
5. Neither the treatment nor the discharge can cause a nuisance as defined in section 13050 of the California Water Code.
6. The discharge of treated wastewater except to the authorized disposal site is prohibited.
7. The integrity of any treatment and disposal systems must be maintained throughout the life of these systems and must not be diminished as the result of any maintenance or cleaning operation.

II. Provisions

A. Standard Provisions

The Discharger must comply with the "Standard Provisions for Waste Discharge Requirements," dated September 1, 1994, in Attachment C, which is made part of this Order.

B. Monitoring and Reporting

Pursuant to section 13267(b) of the California Water Code, the Discharger must comply with Monitoring and Reporting Program No. 2016-PROP as specified by the Executive Officer.

C. Final Construction Documents

By **August 30, 2017**, the Discharger must submit a construction quality assurance report for the construction of the Facility OWTS signed by a California-registered Professional Engineer (PE). The final construction report for the Facility OWTS must include the following information:

1. A statement that the Facility OWTS was constructed as designed, or that changes were acceptable per PE.
2. After the construction of the treatment system components that use geosynthetic containment structures (recirculating sand filter and anoxic wetland), provide documentation that the structures were inspected and repaired as specified by the manufacturer, with any holes or defects repaired prior to being filled with media (sand or wood chips).

D. Time Schedule Requirements

The Discharger must provide the following technical reports prepared by a California-licensed Professional Engineer or Professional Geologist, as appropriate, and these reports must provide the following information:

1. By **September 30, 2016**:

- a. A landscape irrigation plan identifying where water from the shallow irrigation well will be used for landscape irrigation, an seasonal irrigation schedule, and the irrigation system's estimated seasonally-adjusted water use (e.g., average gallons per week or average gallons per month), keeping in mind that water should be applied at agronomic rates, preventing irrigation water from percolating into the shallow groundwater.
- b. A monitoring well design and construction plan describing and illustrating proposed monitoring well design and construction features, including but not limited to, drilling method, materials used to drill and construct the well, well depth, well diameter, screening length, and well seal installation methodology. The plan shall also include a schedule for installing and preparing the monitoring wells for sampling.

2. By **July 30, 2017**, confirmation that the groundwater monitoring wells noted in 1.b., above, have been installed and are fully operational. Additionally, submit a scaled map identifying the naming nomenclature for each of the three monitoring wells.

3. By **December 1, 2018**, a groundwater investigation report describing the groundwater nitrate conditions since installing and sampling the monitoring wells noted in 1.b., above. Specifically, provide findings regarding the effects of operating and discharging from the advanced OWTS, and using the shallow irrigation well for landscape irrigation, only, on groundwater nitrate concentrations.

I, Patty Z. Kouyoumdjian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on June 9, 2016.

PATTY Z. KOUYOUMDJIAN
EXECUTIVE OFFICER

Attachments: A. Location Map
 B. Facility Layout
 C. Standard Provisions for Waste Discharge Requirements

- D. Nitrogen Effluent Limitation Analysis
- E. Map of Facility and Proposed Monitoring Well

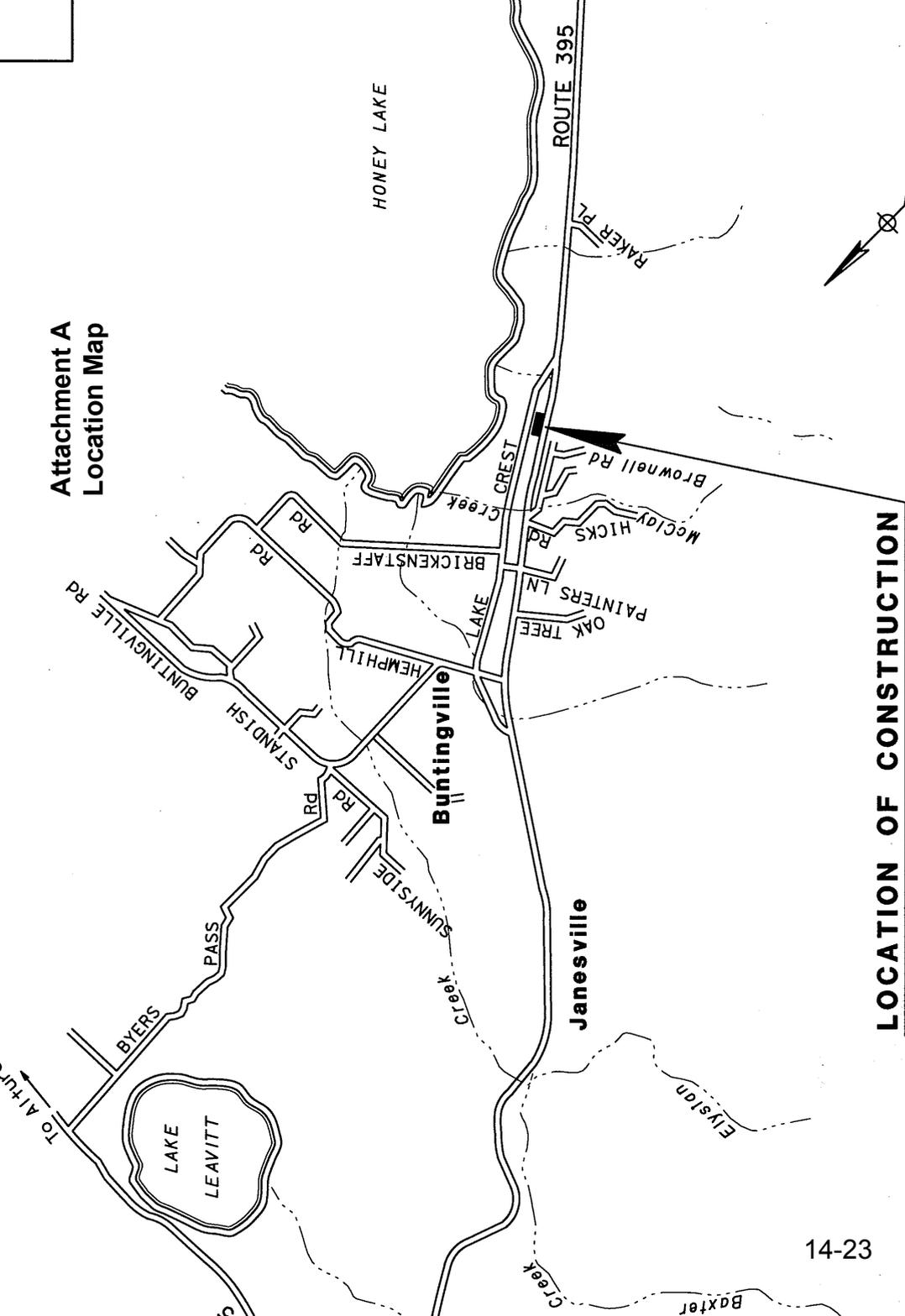
Proposed

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ATTACHMENT A

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**Attachment A
Location Map**



**LOCATION OF CONSTRUCTION
HONEY LAKE SAFETY
ROADSIDE REST AREA
PM 49.5**

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ATTACHMENT B

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ATTACHMENT C

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LAHONTAN REGION

STANDARD PROVISIONS FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The Discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements (WDRs);
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

2. Reporting Requirements

- a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260 (c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with applicable WDRs in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the WDRs shall be reported to the Regional Board. Notification of applicable WDRs shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing, and correct that information.
- e. Reports required by the WDRs, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or

refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation.

- f. If the Discharger becomes aware that their WDRs (or permit) are no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their WDRs (or permit) be rescinded.

3. Right to Revise WDRs

The Regional Board reserves the privilege of changing all or any portion of the WDRs upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the WDRs may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the WDRs which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the WDRs. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the WDRs.

7. Waste Discharge Requirement Actions

The WDRs may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDRs conditions.

8. Property Rights

The WDRs do not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the WDRs including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the WDRs shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the WDRs are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from treatment and disposal facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operation. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

- a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.
- b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

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ATTACHMENT D

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Attachment D

The Development of Effluent Limits for the Honey Lake Safety Roadside Rest Area's (Facility) Advanced Onsite Wastewater Treatment System

Purpose

The California Department of Transportation (Caltrans) Honey Lake Safety Roadside Rest Area has an onsite wastewater treatment system (OWTS) to treat and dispose of all wastewater from the Facility. The Facility's existing OWTS consists of a septic tank that discharges to a leachfield. The Facility generates wastewater higher in nitrogen and biochemical oxygen demand (BOD) than typical household domestic waste. Additionally, groundwater nitrate as nitrogen concentrations in an onsite shallow groundwater well that is across gradient, or possibly up gradient, from the OWTS leachfield exceed drinking water standards (e.g., October 2015, 10.2 mg/L). There currently is no information available regarding groundwater gradient or direction for the shallow groundwater beneath the Facility. Additionally, there are multiple sources of nitrogen in the area, including nearby residential septic tank/leachfield systems and agricultural land uses that may be affecting the groundwater quality.

Caltrans self-identified that the Facility's wastewater discharge may be a source of the elevated groundwater nitrate concentrations. Caltrans understands that its wastewater discharge is subject to Water Board regulation due to the discharge's unusually high nitrogen concentrations.

Following a review of available data and Caltrans' proposed advanced OWTS, Water Board staff suggests a quarterly average limit of 10 mg/L for total nitrogen. The limit was selected based on the possibility of all discharged nitrogen converting into nitrate; thus, with any natural precipitation, an average of 10 mg/L for total nitrogen should prevent the sum of all the discharged wastewater from further degrading groundwater quality. Additionally, Water Board staff anticipates some subsurface consumption of nitrogen by bacteria, further reducing the waste discharge impacts on nitrate concentrations in the groundwater beneath the Facility. Caltrans also committed to using water from the onsite shallow well for landscape irrigation, providing an additional opportunity to remove nitrates from the underlying groundwater. The combination of these actions, in addition to ceasing the nitrate-rich discharge from the Facility's water treatment system, is expected to return groundwater nitrate concentrations to below the MCL for nitrates.

Water Board staff's analysis also compared the nitrogen loading from a typical single family home to that of Caltrans' proposed advanced OWTS. Water Board staff relied upon the calculations, below, to determine if the Facility's proposed advanced OWTS discharge would produce a nitrogen load greater than that from a single family home for a similar-sized parcel using the State Water Board's Tier One Siting Criteria from the State Water Board's Onsite Wastewater Treatment System (OWTS) Policy.

Assumptions for a Single Family Home

Septic tank effluent of total nitrogen (on the low range) is 40 mg/L:

$$40.0 \frac{(mg\ N)}{L} \cong 40.0\ parts\ per\ million\ nitrogen \cong 40 \times 10^{-6} N$$

Standard flow from single household: 250 gallons/day (assumed Equivalent Dwelling Unit or EDU).

From the State Water Board's OWTS Policy, Tier 1 Siting Requirements, a 2.5-acre parcel is required for disposal of septic tank effluent from a single family home in an area that receives less than 15 inches of rain annually.

Calculation for Pounds of Nitrogen per Acre*Day from a Single Family Home

$$40 \times 10^{-6} N \times \frac{250\ gallon}{2.5\ acre * day} \times \frac{8.34\ lbs}{gallon} = \frac{0.033\ lbs\ N}{(acre * day)}$$

Calculation of Daily Loading for Caltrans Property

Applying the acceptable loading rate for a single family home, above, on the Caltrans property, which is a little over 10 acres (approximate area is 448,000 ft²).

$$\frac{0.033(lbs\ N)}{acre * day} \times \frac{1\ acre}{43,560\ ft^2} \times 448,000\ ft^2 = 0.34 \frac{lbs\ N}{day}$$

Using the pounds of nitrogen per day based on the total area of the Caltrans property, given the proposed advanced OWTS's peak design flow rate of 4,000 gallons per day, Water Board staff determined the maximum concentration for discharge that would mimic that of a standard septic system.

Calculation to Determine Total Nitrogen Concentration for Caltrans Design Flows at the Honey Lake Safety Rest Area

$$0.34 \frac{lbs\ N}{day} \times \frac{gallon}{8.34\ lbs} \times \frac{day}{4,000\ gallon} = 10.2 \frac{mg\ N}{L}$$

Summary

The calculations, above, show that the disposal of 4,000 gallons per day with a total nitrogen concentration of 10.2 mg/L on the Caltrans property would be similar to the total nitrogen load from a single family home on 2.5 acres. Water Board staff is proposing a quarterly average total nitrogen effluent limit of 10 mg/L, which is basically

equivalent to that required for a single family home (a conservative analysis based on low concentrations of nitrogen from a single family home). The proposed effluent limit should be adequate to avoid additional groundwater quality degradation and to begin decreasing nitrate concentrations in the groundwater below the Facility.

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ATTACHMENT E

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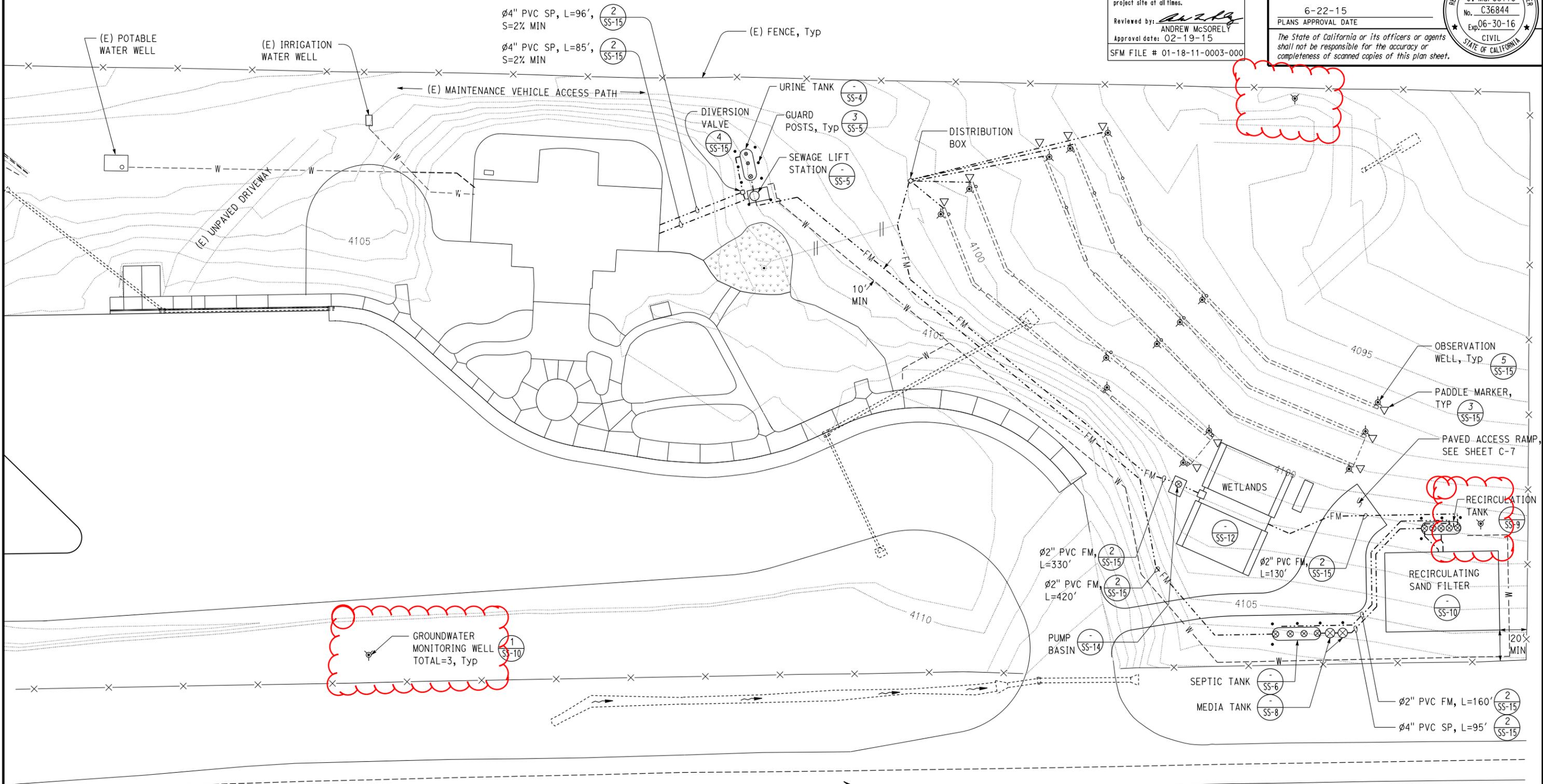
Attachment E

CALIFORNIA STATE FIRE MARSHAL
APPROVED
 Approval of this plan does not authorize or approve any omission or deviation from applicable regulations. Final approval is subject to field inspection. One set of approved plans shall be available on the project site at all times.
 Reviewed by: *[Signature]*
 ANDREW MCSORELY
 Approval date: 02-19-15
 SFM FILE # 01-18-11-0003-000

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02, 03	Las, Sac	395, 5	49.6, 23.3	41	106

[Signature]
 REGISTERED CIVIL ENGINEER DATE 05-15-15
 6-22-15
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
 J. Marcotte
 No. C36844
 Exp. 06-30-16
 CIVIL
 STATE OF CALIFORNIA



PROPOSED SITE PLAN

1" = 30'-0"

THIS PLAN ACCURATE FOR SANITARY SEWER WORK ONLY

DESIGN	BY Andy Quan	CHECKED G Panuschka
DETAILS	BY Jim Stangl/A Quan	CHECKED G Panuschka
QUANTITIES	BY	CHECKED

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

BRIDGE No.
 POST MILE
 49.6

HONEY LAKE SRRRA WASTEWATER IMPROVEMENTS
 PROPOSED SITE PLAN

SHEET **SS-2** OF

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

MONITORING AND REPORTING PROGRAM NO. 2016- (PROPOSED)
WDID NO. 6A181412005

FOR

**CALIFORNIA DEPARTMENT OF TRANSPORTATION
HONEY LAKE SAFETY ROADSIDE REST AREA
WASTEWATER TREATMENT AND DISPOSAL FACILITY**

_____Lassen County_____

I. GENERAL REQUIREMENTS

A. Effective Date

This monitoring and reporting program (MRP) is required pursuant to California Water Code section 13267 and is effective on the date it is signed by the Water Board's Executive Officer. Implementation will be according to the following schedule.

1. Groundwater monitoring must begin in the second quarter monitoring period of 2017 (see section II for specific time frame), or upon completion of proposed new monitoring wells, if sooner. The existing shallow irrigation well (IW-1), must be sampled and reported on quarterly, and monitored in accordance with section II.D.3., below, upon the effective date of this MRP. Quarterly reports prior to **August 1, 2017**, must report the groundwater elevation and quality for IW-1, and any issues that may delay the construction of the monitoring wells or advanced onsite wastewater treatment system (OWTS).
2. The first annual report, due **Feb 15, 2017**, will only include the following information:
 - a. Sludge removed from the Facility's septic tank during the previous calendar year;
 - b. All total nitrogen data for the IW-1 well;
 - c. Advanced OWTS construction status; and
 - d. Description of any proposed monitoring wells that are completed and functional.
3. Quarterly monitoring reports must include all parameters required by this MRP. The first quarterly report will be for the **April 1 – June 30, 2017**

monitoring period, and is due by **August 1, 2017**. All quarterly and annual reports are required after that date in accordance with section II, below.

B. Overview of Reports Required

Each year the Discharger must provide four quarterly reports and one annual monitoring report. The monitoring period covered for each report and the dates the reports are due are provided in section II and section III, below. Each report must provide information on the Facility monitoring, groundwater monitoring, sludge disposal, and other required information as specified herein.

C. Certified Cover Letter

The Discharger must use Attachment 1 as a cover letter and certification, or a cover letter containing the same information, for all reports provided to the Water Board in connection with this MRP.

D. Paperless Submission of Report and written communications

The Discharger must submit all written communication and monitoring reports via e-mail to the following address lahontan@waterboards.ca.gov. If the report or material is in excess of 50 MB, please submit that information on a disk (CD or DVD). The reports or materials should be in a Portable Document Format (PDF) package format

E. General Provisions

The Discharger must comply with the "General Provisions for Monitoring and Reporting" dated September 1, 1994, which is made part of this MRP as Attachment 2.

F. Groundwater Data to be Uploaded to Geotracker Database

The groundwater sample data for the quarterly monitoring reports must be uploaded directly to the Geotracker database maintained by the Water Board. Contact the Water Board staff for uploading procedures and compliance assistance.

G. Sampling and Analysis Plan

By **December 30, 2016**, the Discharger must provide to the Water Board a Sampling and Analysis Plan (SAP) pursuant to provision No. 1d. of the General Provisions for Monitoring and Reporting, Attachment 2 of this MRP. Additionally, a copy of the SAP must be maintained at the Facility and available for inspection. The SAP must include a detailed description of procedures and techniques for:

1. Sample collection, sample locations, sampling equipment, and decontamination of sampling equipment;
2. Groundwater well purging methods and sample collection methods consistent with either the methods specified in section II.D., below, or consistent with the *Guidance Manual for Groundwater Investigations, revised 2008*, by CalEPA Department of Toxic Substances Control, or consistent with USEPA's Groundwater Sampling Guidelines for Superfund and RCRA Project Managers of 2002, or subsequent revision, or the Discharger may propose a different purging method for acceptance by the Water Board's Executive Officer;
3. Sample preservation and shipment;
4. Analytical methods and procedures to be used;
5. Chain of custody and control of samples;
6. Quality assurance/quality control (QA/QC) for sample collection;
7. Frequency of calibration of any onsite equipment (e.g., pH meter, electrical conductivity meter, flow meter); and
8. Description of how onsite measurements are done.
9. The procedures for sampling and purging the shallow groundwater well that has elevated nitrogen may differ from those for the monitoring wells, since this well was originally a drinking water well. The SAP must describe any differences in purging and sampling procedures between the different wells, if such differences exist.

II. QUARTERLY MONITORING AND REPORTING REQUIREMENTS

The Discharger must provide four quarterly reports per year on the following re-occurring dates, covering the monitoring periods stated. The information that must be submitted to complete the report is specified in items A - E, below.

<u>Reporting Period</u>	<u>Monitoring Period</u>	<u>Due Date</u>
1 st Quarter	Jan 1 - Mar 31	May 1
2 nd Quarter	Apr 1 - Jun 30	Aug 1
3 rd Quarter	Jul 1 - Sep 30	Nov 1
4 th Quarter	Oct 1 - Dec 31	Feb 1

A. General Facility Monitoring Information

The following must be inspected monthly, with monthly information presented in each quarterly report.

1. Visually inspect the disposal area. Determine if there is seepage or surfacing effluent from the disposal area.
2. Visually inspect the entire wastewater treatment works for unauthorized discharges (e.g., system bypasses, leaks, spills).
3. Provide the urine tank storage available in gallons and percentage of total storage capacity, on a monthly basis.

B. Flow Monitoring

The Discharger must provide total monthly flow and determine the daily average flow of wastewater disposed to the leach field for each month (in gallons).

C. Effluent Monitoring

The Discharger must monitor the quality of effluent that discharges into the disposal area/leachfields. The Discharger must monitor the following parameters in the discharge.

<u>Parameters</u>	<u>Units</u>	<u>Frequency</u>	<u>Analyses</u>
Total Nitrogen ¹	mg/L	Monthly	Laboratory
Biochemical Oxygen Demand	mg/L	Monthly	Laboratory
Total Suspended Solids	mg/L	Monthly	Laboratory

¹ Total Nitrogen must be in terms of nitrate-nitrite, total Kjeldahl nitrogen, and ammonia

D. Groundwater Monitoring

Currently, there are no dedicated monitoring wells. However, the Discharger has proposed to install three monitoring wells at the Facility, and to use one existing irrigation well (IW-1) for monitoring (which will also be used for landscaping irrigation). Because IW-1 was constructed as a drinking water well, it is possible the monitoring procedures may be different than those for the three proposed monitoring well. Any differences in well purging or sampling methodologies must be described in the SAP, as required above. After new monitoring wells are installed, the Discharger must perform the following on a quarterly basis and submit the information quarterly.

1. Groundwater Elevation and Gradient

Determine the groundwater elevation with respect to mean sea level for each monitoring well prior to purging for sampling.

2. Purging

- a. Groundwater samples must be collected after either of the following: 1) an amount of water equal to three times the amount of water within the well casing has been removed, or 2) the temperature, electrical conductivity, and pH measurements of the water in the well have stabilized to approximately ± 10 percent for successive measurements after a minimum of one well volume has been removed. For each purging method, the groundwater elevation must recover before the sample is collected. Other purging methods may be used if it is described in the site SAP and accepted by the Water Board's Executive Officer.
- b. If a monitoring well is purged, and does not appear to be recovering to pre-purging elevations, the Discharger must document the amount of time allowed for the well to recover, the volume of water removed, and the groundwater elevation at the time of the sample collection. If the monitoring well does not recover within one hour after purging, the Discharger must document the volume of water removed and may return the next day and attempt to collect the sample from the well without further purging. Measurements of temperature, electrical conductivity, and pH during purging must be reported with the results of groundwater analyses.
- c. Well casing diameter, well depth, depth to groundwater, and total volume purged prior to sampling must also be reported with the groundwater monitoring results.

3. Groundwater Sampling

Groundwater monitoring wells, including monitoring well IW-1, must be sampled quarterly for the parameters listed below.

Parameter	Units	Analysis
Temperature	C or F	Field procedures ²
Specific Conductance/ Electrical conductivity	$\mu\text{S}/\text{cm}$ or $\mu\text{mho}/\text{cm}^2$	Field procedures ²
Dissolved oxygen	mg/L	Field procedures ²
pH	pH units	Field procedures ²
Nitrate as nitrogen	mg/L	Laboratory ¹
Total Nitrogen ³	mg/L	Laboratory ¹

Chloride	mg/L	Laboratory ¹
Total Coliform	MPN/100mL	Laboratory ¹

¹Laboratory –the analysis will be conducted by a California certified laboratory (ELAP)

²Field procedures –the analysis will be conducted by field staff in the field with handheld meters that are used in accordance with and calibrated to manufacturer's specifications.

³Total Nitrogen must be in terms of nitrate-nitrite, total Kjeldahl nitrogen, and ammonia.

4. Groundwater Direction and Gradient

Using groundwater elevation data, determine the groundwater flow direction and gradient beneath the Facility and present it on a scaled map in each quarterly monitoring report.

E. General Reporting

The Discharger must report on any maintenance, repairs, or operational problems that occur throughout the reporting period.

1. Any additions, repairs or replacements to the subsurface disposal systems the Discharger is responsible for maintaining.
2. A description of any operational problem(s) and corrective action(s) taken to address the problem(s).
4. The date and quantity of sludge removed from the septic tank. The name of the company removing the material must also be reported, in addition to the name and location of the facility receiving the material. If no sludge is removed, a statement that no sludge was removed must be included in the report.
5. The Discharger is required to review the effluent data collected and self-report any violation.
6. The Discharger must also review the groundwater data collected and identify any violation of a receiving water limitation.
7. A single sample may serve as an arithmetic average for a monitoring period. If more than one sample is collected for averaging purposes during a monitoring period, the result must be used. All data used for averaging sample results must be provided to the Water Board.

III. ANNUAL MONITORING REPORT

The Discharger must submit an annual report by **February 15** of each year (after the first report in **February 15, 2017**) covering the period from January 1 through

December 31 of the previous calendar year. The information that must be submitted to complete the report is specified below in items A. - C.

A. Annual Report General Reporting

The Annual Report must include information specified below.

1. Graphical and tabular presentation of all effluent monitoring data obtained for the previous year.
2. Graphical and tabular presentation of all groundwater monitoring data obtained for history of the Facility (for the constituents and groundwater information described in MRP section II.D.3. and section II.D.4, respectively).
3. The compliance record and corrective actions taken or planned which may be needed to bring the discharge into full compliance with the waste discharge requirements.
4. Any modification or additions to, or any major maintenance conducted on, the wastewater flow measuring equipment, treatment or disposal facilities during the past year.
5. The amount of sludge removed and the sludge disposal location(s).

B. Data Analysis Review

1. By **Oct 15, 2016**, the Discharger must produce for acceptance by the Water Board's Executive Officer a procedure to analyze and review the groundwater data annually. The review and analysis may be accomplished by comparing up gradient and down gradient monitoring well data, intrawell statistical analysis, interwell statistical analysis, or other method. The analysis procedure must provide a method to determine if the groundwater data indicates either an improving or degrading trend in the groundwater quality.

If the Executive Officer does not provide a written confirmation within 45 days after receiving the procedure, the procedure may be used for the next annual report and may be considered accepted. Any comments issued by the Executive Officer after 45 days may alter the analysis for the next annual report and will require a response by the Discharger.

2. The Discharger must annually review all the groundwater data collected above in sections II.D.3. and II.D.4, above, and conduct an analysis on the data as proposed and accepted pursuant to III.B.1, above, and identify any trends regarding constituent concentrations that may be associated with the Facility's discharge.

3. The Discharger must determine and certify that the groundwater monitoring data has not shown an increase for the monitored constituents. If the certification cannot be provided because an increase is detected, the Discharger is required to notify the Water Board within 5 days of identifying the conditions

Ordered By _____
PATTY Z. KOUYOUMDJIAN
EXECUTIVE OFFICER

Date _____

- Attachment 1 Monitoring Report Cover Sheet
- Attachment 2 General Provisions for Monitoring and Reporting Program

Proposed

ATTACHMENT 1

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b) Section(s) of WDRs/NPDES

Permit Violated:

c) Reported Value(s) or Volume:

d) WDRs/NPDES

Limit/Condition:

e) Date(s) and Duration of Violation(s):

f) Explanation of Cause(s):

g) Corrective Action(s)

(Specify actions taken and a schedule for actions to be taken)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision following a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my knowledge of the person(s) who manage the system, or those directly responsible for data gathering, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

If you have any questions or require additional information, please contact _____ at the number provided above.

Signature: _____

Name: _____

Title: _____

ATTACHMENT 2

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ATTACHMENT 2

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LAHONTAN REGION

GENERAL PROVISIONS FOR MONITORING AND REPORTING

1. **SAMPLING AND ANALYSIS**

- a. All analyses shall be performed in accordance with the current edition(s) of the following documents:
 - i. Standard Methods for the Examination of Water and Wastewater
 - ii. Methods for Chemical Analysis of Water and Wastes, EPA
- b. All analyses shall be performed in a laboratory certified to perform such analyses by the California State Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified on each laboratory report.
- c. Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The methods used shall also be reported. If methods other than EPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board prior to use.
- d. The Discharger shall establish chain-of-custody procedures to insure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory. Sample collection, storage, and analysis shall be conducted in accordance with an approved Sampling and Analysis Plan (SAP). The most recent version of the approved SAP shall be kept at the facility.
- e. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted. The calibration of any wastewater flow measuring device shall be recorded and maintained in the permanent log book described in 2.b, below.
- f. A grab sample is defined as an individual sample collected in fewer than 15 minutes.
- g. A composite sample is defined as a combination of no fewer than eight individual samples obtained over the specified sampling period at equal intervals. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal

the discharge period, or 24 hours, whichever period is shorter.

2. OPERATIONAL REQUIREMENTS

a. Sample Results

Pursuant to California Water Code Section 13267(b), the Discharger shall maintain all sampling and analytical results including: strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

b. Operational Log

Pursuant to California Water Code Section 13267(b), an operation and maintenance log shall be maintained at the facility. All monitoring and reporting data shall be recorded in a permanent log book.

3. REPORTING

- a. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and shall submit a timetable for correction.
- b. Pursuant to California Water Code Section 13267(b), all sampling and analytical results shall be made available to the Regional Board upon request. Results shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- c. The Discharger shall provide a brief summary of any operational problems and maintenance activities to the Board with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities shall be included in this summary.
- d. Monitoring reports shall be signed by:
 - i. In the case of a corporation, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates;
 - ii. In the case of a partnership, by a general partner;

- iii. In the case of a sole proprietorship, by the proprietor; or
 - iv. In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
- e. Monitoring reports are to include the following:
- i. Name and telephone number of individual who can answer questions about the report.
 - ii. The Monitoring and Reporting Program Number.
 - iii. WDID Number.
- f. Modifications

This Monitoring and Reporting Program may be modified at the discretion of the Regional Board Executive Officer.

4. NONCOMPLIANCE

Under Section 13268 of the Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation under Section 13268 of the Water Code.

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ENCLOSURE 2

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DEPARTMENT OF TRANSPORTATION

Office of Electrical, Mechanical, Water &
Wastewater Engineering
Structure Design
Division of Engineering Services
1801 30th Street , MS 9-3/11H
Sacramento, CA 95816-8041
PHONE (916) 227-8526
FAX (916) 227-8157
www.dot.ca.gov



*Serious drought.
Help save water!*

April 29, 2016

Mr. Robert Tucker
Water Resource Control Engineer
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

Dear Mr. Tucker:

SUBJECT: Tentative Waste Discharge Requirements for Honey Lake Safety Roadside Rest Area Wastewater Treatment and Disposal Facility, Lassen County WDID No. 6A188070002

Thank you for the opportunity to comment on the subject Regional Water Quality Control Board's tentative waste discharge requirements. Enclosed below are Caltrans comments on subject document:

Page 1, item 4: The first sentence states that the facility's has a high-strength domestic wastewater discharge. High strength has a specific definition in the State Board OWTS Policy of BOD5 > 300 mg/l and TSS > 330 mg/l. The table on page 3 item 6 states that the facility's BOD5 is 230 mg/l and TSS is 60 mg/l. Therefore, the facility does not meet the concentration levels to be classified as high strength wastewater. Please modify the language.

Page 2, item 6, the above ground recirculation sand is 3600 square-feet. The urine tank will not be pumped out and transported to an offsite facility authorized to receive such waste. However, as stated in the subsequent sentence - the urine tank will be pumped out during the warmer times of the year into the lift station, media filters, RSF and wetlands when the biological processes are operating at higher performance levels.

Page 4, item 9 and 9c: Caltrans disconnected the drinking water treatment system in 2015 and is no longer in operation.

Page 4, item 9a and 9c: "...such nitrogen discharges are, in part, responsible..." and "should further reduce nitrate concentrations in the groundwater to levels below the MCL", these statements assume the existing system is causing or contributing to nitrate concentrations but

Mr. Robert Tucker
April 29, 2016
Page 2

there is no sampling or groundwater characterization to suggest the contamination is from the facility. Until the groundwater investigation demonstrates the connection between the facility and groundwater the assumption should not be made. Bulletin 118 states that there are high nitrate levels in the groundwater basin.

Page 4, item 10: The geology below 90' is granitic rock.

Page 6, item 16; "The current discharge is a source of total nitrogen is probably contributing to the nitrate concentrations..." same comment as above.

Page 9, item I.A., 1: The wastewater system average design design flow rate is 2,000 gallons per day and the peak design flow is 4,000 gallons per day. Caltrans requests that peak discharge limit be established at 4,000 gallons per day.

Page 9, item I.A.3, table: Caltrans requests modification of Effluent Limitations into a Monthly Average based on an average of the previous triennial (4 months) sample results. The average of the four-month triennial period is necessary because the Monitoring and Reporting Program only requires monthly effluent sampling. The Monthly Average Effluent Limitation does not allow an averaging of sample results because only one sample is required monthly. Therefore, Caltrans request that the monthly sample results be averaged over four months in a triennial period. Since the advanced treatment system is a biological system, the performance of the treatment system is going to vary over time due to biological activity and variations in flow and temperature. Therefore, averaging of effluent concentrations over the triennial period is requested.

Caltrans also requests a one-year start-up period to allow the wastewater treatment biological treatment system to become fully established prior to meeting the proposed effluent limitations. The formation of facultative bacteria as acetogens and acidogens require a significant amount of time to develop. In addition, denitrification under anoxic conditions require substantial time for heterotrophic bacteria to develop and optimize system performance. Caltrans will seed the wastewater treatment system with anaerobic sludge from a municipal wastewater treatment system to initiate and quicken the bacteria formation process. However, a one-year start-up period is required for this type of advanced biological wastewater treatment system. Caltrans experience with the startup of similar advanced biological wastewater treatment systems required this length of time to achieve optimum treatment performance and effluent levels.

Page 11, Section II, D, 1, b: sentence should read "...irrigation a seasonal..."

Attachment D, page 2: Since the average daily design flow is 2,000 gpd, Caltrans recommends replacing 3,000 gpd with 2,000 gpd.

Monitoring and Reporting Program

Mr. Robert Tucker
April 29, 2016
Page 3

1. Replace "shallow drinking" with "irrigation" well. The shallow drinking water well was replaced with a new deeper well. In the future, the shallow well will only be used for irrigation.

Sincerely,



JERRY MARCOTTE, P.E.
Branch Chief
Water and Wastewater Branch

c: Doug Ames, Lassen County
John Dobson, Caltrans
Deena Matagualy, Caltrans
Bob Weber, Caltrans
Jeff Rothgery, Caltrans

Lahontan Regional Water Quality Control Board

TO: Jerry Marcotte P.E., Branch Chief
California Department of Transportation
Water and Wastewater Branch
Division of Engineering Services
1801 30th Street, MS 9-3/11H
Sacramento, CA 95816-8014
Jerry.Marcotte@dot.ca.gov



FROM: Robert Tucker, Water Resource Control Engineer
California Regional Water Quality Control Board, Lahontan Region
Robert.Tucker@waterboards.ca.gov

DATE: May 16, 2016

SUBJECT: Response to Comments on the Tentative Waste Discharge Requirements for Honey Lake Safety Roadside Rest Area's Wastewater Treatment and Disposal Facility, Lassen County (WDID 6A181412005)

Please find California Regional Water Quality Control Board, Lahontan Region (Water Board) staff's response to the California Department of Transportation's (Department) January 15, 2016 comments regarding tentative waste discharge requirements for the above-referenced facility. Staff responses are referenced by the page and item notation in the Department's comment letter.

1. Page 1, item 4: References to "high strength" wastewater have been removed to avoid confusion and inconsistencies with the definition for "high strength wastewater" provided in the State Water Resources Control Board's Onsite Wastewater Treatment System (OWTS) Policy.
2. Page 2, item 6: The size of the recirculation sand filter has been revised to 3,600 square feet. The description of urine tank operations has also been revised in response to the information provided in the comment letter. Additionally, a requirement to monitor the urine tank's capacity on a monthly basis has been added, given that urine waste will be held in the urine tank during colder months, and then pumped to the remaining treatment system components during warmer months.

3. Page 4, item 9 and 9c: Revisions reflecting that the drinking water treatment system was disconnected in 2015 and is no longer in operation have been made.
4. Page 4, item 9a and 9c: The Department requests removing language indicating that the Department's existing onsite wastewater treatment and disposal system is responsible for or contributing to the nitrate groundwater pollution measured in the shallow drinking water supply well. Water Board staff agrees there is limited groundwater quality data and that there are other potential nitrate sources near the facility. However, staff believes that it is reasonable to expect, based upon its experiences with other septic tank/leachfield systems that the facility's existing septic tank/leachfield system has been and continues to contribute to groundwater nitrate concentrations. Staff also believes it is reasonable to expect that significantly reducing the facility's wastewater discharge nitrogen concentration and using the shallow groundwater for landscape irrigation will have a positive effect on groundwater nitrate concentrations. So in light of the limited groundwater data and staff's experience with similar septic tank/leachfield systems, staff has replaced "cause..." with "may be contributing..." and has made other similar revisions, where appropriate.
5. Page 4, item 10: Information regarding the area's geology has been revised to reflect that granite rock extends downward from 90 feet below grade.
6. Page 6, item 16: Same response as provided in No. 4, above.
7. Page 9, item I.A.1: A peak flow limitation of 4,000 gallons per day has been incorporated, as requested.
8. Page 9, item I.A.3 (nitrogen effluent limitation): Water Board staff has evaluated the Department's request to revise the effluent nitrogen limitation from a monthly average to a four-month average. The nitrogen effluent limitation has been revised from a monthly average based upon a minimum of one monthly sample to a quarterly average based upon a minimum of three monthly sampling events. Staff's decision to limit the nitrogen effluent limitation to a quarterly average, compared to a four-month average, is based upon the following:
 - a. A quarterly average accounts for system performance variability for a new biologically-based treatment system, while still being protective of water quality and beneficial uses.
 - b. There is an improved balance between the potential number of sampling events and monitoring system performance variability.
 - c. A quarterly average coincides with the quarterly reporting frequency, avoiding the need to review multiple reports to determine compliance, which would be necessary for a four-month average.
9. Page 9, item I.A.3 (startup period): The effluent limitations will become effective **August 30, 2018**, providing the one-year startup period the Department has

requested. Water Board staff agrees with the Department that biological treatment systems do take time to establish the appropriate biological conditions to optimize system performance. This is especially true when relying upon biological treatment systems for nitrogen removal.

10. Comment regarding page 11, section II.D.1.b: The typographical error has been corrected.
11. Attachment D, page 2: Water Board staff revised its analysis by using the proposed OWTS's peak discharge flow of 4,000 gallons per day, instead of 3,000 gallons per day. The revision produces a very conservative analysis that continues to support the flow limitation (4,000 gallons per day) and nitrogen effluent limitation (10 mg/L, quarterly average). Additionally, the daily maximum effluent for nitrogen has been removed, as staff believes it is more appropriate at this time to rely upon a quarterly average for the biological treatment system.
12. Monitoring and Report Program: References to the "shallow drinking water well" have been revised to "irrigation well" where appropriate, to reflect the well's change in use.

Water Board staff appreciates Department staff taking the time to review and comment on the tentative waste discharge requirements. A copy of the proposed waste discharge requirements reflecting the revisions discussed, above, will be emailed to you around May 25, 2016. The proposed waste discharge requirements will be presented to the Water Board for its consideration at the June 8-9, 2016 Board meeting in Bishop, California. If you have any questions, please contact me at (530) 542-5467 or email me at Robert.Tucker@waterboards.ca.gov.

Cc: Scott Armstrong/Regional Water Quality Control Board, Central Valley Region
Lixin Fu/Regional Water Quality Control Board, Central Valley Region

RTT/dk/T: HLRA RTC

ENCLOSURE 3

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Caltrans Honey Lake Safety Roadside Rest Area

Wastewater Treatment and Disposal Facility

Agenda Item No. 14
June 9, 2016



Honey Lake Safety Rest Area



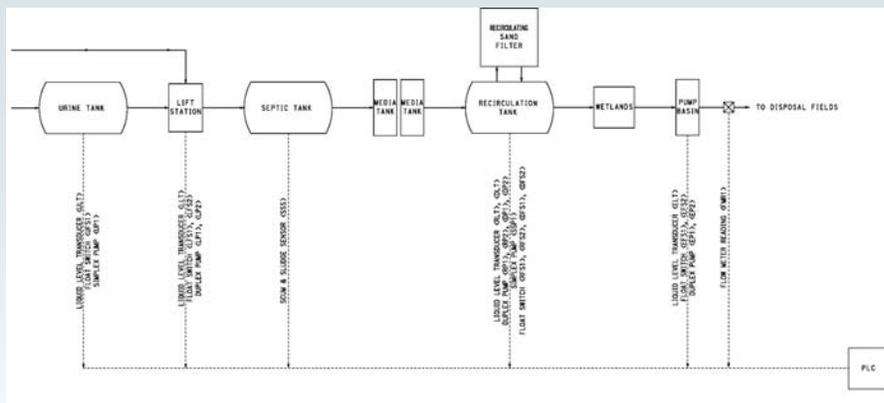
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Wastewater Effluent Comparison

Constituent	Typical Septic Tank Effluent* (mg/L)	Facility Existing Septic Tank Effluent (mg/L)	Proposed Facility OWTS Effluent (mg/L)
Biochemical Oxygen Demand, five day	140-200	230	<90
Chemical Oxygen Demand	160-300	500	<200
Total Kjeldahl Nitrogen	50-90	200	<10
Total Nitrogen	40-100	200	<10
Total Suspended Solids	20-55	60	<10

*USEPA, 2002. Onsite Wastewater Treatment Systems Design Manual, EPA/625/R-00/008. Office of Water, Office of Research and Development, Washington, D.C. February 2002

Caltrans OWTS Schematic



Nitrogen Load Comparison

- Comparing single family homes to proposed HLRA onsite wastewater treatment system (OWTS)
- Using State Water Board's OWTS Policy, Tier One Siting Criteria and following information for analysis:
 - Single Family Residence:
 - Parcel size - 2.5 acres
 - Discharge total nitrogen - 40 mg/L (~ 40 ppm)
 - Discharge flow - 250 gallons/day
 - Average annual rainfall - 15 inches



Results

- HLRA's maximum nitrogen loading will be slightly less than that allowed by the State Water Board's OWTS Policy for single family homes on the same property at maximum density.



Recommendation

- Adopt the Order as proposed.

