



# STATE OF NEVADA

Department of Conservation & Natural Resources

*Jim Gibbons, Governor*

*Allen Biaggi, Director*

DIVISION OF ENVIRONMENTAL PROTECTION

*Leo M. Drozdoff, P.E., Administrator*

## FACT SHEET

(Pursuant to NAC 445A.236)

**Permittee Name:** Topaz Lodge Incorporated  
1979 Highway 395 South  
Gardnerville, NV 89410

**Permit Number:** NEV50003

**Location:** Topaz Lodge Enterprises  
1979 U.S. Highway 395 South  
Topaz Lake, Douglas County, Nevada

Latitude: 38° 41' 42"N

Longitude: 119° 32' 47"W

Township 10N, Range 22E, Section 29

### **General:**

The Topaz Lodge Enterprises operates a wastewater treatment facility (WWTF) at Topaz Lake in Douglas County, Nevada, that provides tertiary sewage treatment for the Topaz Lodge and Casino. The lodge consists of 103 hotel rooms, three restaurants, a casino, and a year-round 58-space RV park.

The WWTF utilizes a 25,000-gallon DAVCO™ package wastewater treatment system equipped with two 10,000-gallon flow equalization tanks, resulting in a maximum plant capacity of 0.035 MGD. The additional capacity was required to handle peak flows during high-occupancy periods (i.e., holiday weekends). The influent is stored in the tank and gravity fed into the treatment plant during low-flow periods.

Currently, the WWTF consists of two 10,000-gallon equalization tanks, an extended aeration tank with an activated sludge holding compartment, a secondary clarifier, a chlorine disinfection unit, and a denitrification media filter. Methanol is added to the denitrification process stream to serve as a carbon source for nitrogen consuming bacteria. The denitrified effluent is discharged to an open tank equipped with a bubble diffuser to volatilize some of the residual methanol. Effluent is then discharged to groundwater via percolation in a leach field through five parallel distribution trenches. The effluent flow to the leach field is measured and recorded.

Because of the addition of methanol to the denitrifying process, the final effluent BOD<sub>5</sub> is elevated over the BOD<sub>5</sub> of the fluid entering the denitrifying tower. In previous permits for this operation, the final effluent BOD<sub>5</sub> limit was set at 140 mg/l, instead of the typical limit of 30

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mg/l and 45 mg/l, for 30-day average and daily maximum limits, respectively. NDEP has determined that the final BOD<sub>5</sub> limits for this operation shall be set at the typical limits described above, in part to maintain efficient operation of the leach field.

The WWTP will be receiving backwash from the nearby water treatment facility that removes arsenic from the drinking water. There is the possibility that some free arsenic may not be entirely adsorbed in the backwash sludge and may enter the WWTP's treatment stream. Since the projected arsenic levels in the sludge will exceed the arsenic drinking water maximum contaminant level of 10 µg/L (10 parts per billion), NDEP is requiring Topaz Lodge to test the effluent for arsenic limits. If the level exceeds the drinking water standard of 10 µg/L, Topaz Lodge will not be able to continue to receive backwash water from the water treatment plant until the arsenic level meets the drinking water standard.

The groundwater in the area of the leach field is monitored through the use of three monitoring wells. The groundwater monitoring wells, MW-1A, MW-2, and MW-3, are sampled quarterly. Early operation of the WWTF without denitrification resulted in high levels of nitrates as N in groundwater near the leach field. Denitrification of effluent was initiated in 1994, and has decreased the Nitrate as N levels in groundwater in the vicinity of MW-1A to within the permit limits.

**Corrective Actions Sites:** There is no Bureau of Corrective Actions remediation site located within a one-mile radius of the permitted site.

**Wellhead Protection Area:** The WWTP is located approximately 300 feet down-gradient from a municipal potable water well. There is another drinking water well located approximately 1,200 feet down-gradient of the WWTP. The WWTP lies within water supply well Drinking Water Protection Areas. Both wells are moderately to highly vulnerable to surface contamination.

**Flow:**                      0.030 MGD 30-day Average  
                                     0.035 MGD Daily Maximum

**Receiving Water Characteristics:**

Groundwater depth in the vicinity of the leach field is approximately 160 - 210 feet.  
Groundwater quality meets drinking water standards, except for arsenic.

**Proposed Effluent and Groundwater Limitations**

Discharges from the Topaz Lodge WWTF to groundwater of the State will be limited as follows:

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<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS</u>		<u>MONITORING REQUIREMENTS</u>	
	30 Day Ave.	Daily Max.	Measurement Frequency	Sample Type
Flow (MGD)	0.030	0.035	Continuous	Flow meter
BOD <sub>5</sub> (Influent), mg/L	M & R	M & R	Quarterly	Composite
TSS (Influent), mg/L	M & R	M & R	Quarterly	Composite
BOD <sub>5</sub> (Effluent), mg/L	30	45	Quarterly	Composite
TSS (Effluent), mg/L	30	45	Quarterly	Composite
Total Kjeldahl Nitrogen as N (Effluent), mg/L	M & R		Quarterly	Discrete
Nitrate as N (Effluent), mg/L	M & R		Quarterly	Discrete
Total Nitrogen as N (Effluent), mg/L	10		Quarterly	Discrete
Arsenic (Effluent), µg/L	10		Quarterly	Discrete
pH (Effluent), SU	Between 6.0 and 9.0		Quarterly	Discrete

M & R - Monitor and Report

Total Nitrogen = Total Kjeldahl Nitrogen + Nitrate + Nitrite

The three groundwater monitoring wells, MW-1A, MW-2, and MW-3, will be monitored and limited per the permit as follows:

<u>PARAMETERS</u>	<u>GROUNDWATER LIMITATIONS</u>	<u>MONITORING REQUIREMENTS</u>	
		Measurement Frequency	Sample Type
Depth to Water, ft	Monitor and Report	Quarterly	Discrete
Groundwater Elevation, ft AMSL	Monitor and Report	Quarterly	Discrete
Total Nitrogen as N, mg/L	10	Quarterly	Discrete
Nitrate as N, mg/L	Monitor and Report	Quarterly	Discrete
Total Dissolved Solids, mg/L	Monitor and Report	Quarterly	Discrete
Chloride, mg/L	Monitor and Report	Quarterly	Discrete
Arsenic, µg/L	Monitor and Report	Quarterly	Discrete

### **Schedule of Compliance**

The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications that the Administrator may make in approving the schedule of compliance.

- a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit, unless otherwise approved by the Division.
- b. A revised O & M Manual shall be submitted by MonthDay, 2009, that outlines any changes to the treatment process or operation of the facility during the past five (5) years.

### **Special Conditions**

As stated, the permit limitations for effluent BOD<sub>5</sub> will be changed with renewal of the permit. A timeframe for meeting the more stringent conditions will be determined jointly by the Division and the Permittee.

### **Proposed Determination**

The Division has made the tentative determination to reissue the proposed permit for a period of five (5) years.

### **Rationale for Permit Requirements**

The flow is measured to verify the flow to the treatment plant is consistent with permit limitations, and to determine when design capacity is being approached. Influent and effluent BOD<sub>5</sub> and TSS, and effluent nitrogen are monitored to assess the level of treatment being provided and to verify compliance with permit limitations.

Groundwater monitoring is required to verify that groundwater of the State is not degraded.

### **Procedures for Public Comment:**

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to the groundwater of the State of Nevada subject to the conditions contained within the permit, is being sent to the **Nevada Appeal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit may do so in writing for a period of 30 days following the date of the public notice. All comments regarding this permit must be received or postmarked by **5:00 PM on July 3, 2009**. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

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Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted to accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Prepared by: Steve McGoff, P.E.  
Staff Engineer III  
May 29, 2009