

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET (Pursuant to NAC 445A.236) August 2004

PERMITTEE NAME: Gold Ranch Casino

PERMIT NUMBER: NEV94008

LOCATION: Exit 2, Interstate Highway 80
Verdi, Washoe County, Nevada 89439

Latitude: 39°29'37" North
Longitude: 119°59'54" West

FLOW: 30-Day Average: 0.25 Million Gallons per Day (MGD)
Daily Maximum: 0.25 MGD

PUBLIC WATER SUPPLY: Not within a well protection zone.

GENERAL:

Gold Ranch Casino operates a Hydro-Aerobics Package Plant using activated sludge, on/off aeration, and nutrient removal that discharges tertiary-treated effluent to two (2) leach fields just west of Interstate Highway 80 at Exit 2 in Verdi, Nevada. The operation and leach fields are configured approximately 0.25-mile west, topographically upgradient, of the Truckee River.

Domestic wastewater is received from three lift stations that service the casino, main restaurant, recreational vehicle (RV) park (150 spaces) and office, Lotto office, and Jack-In-The-Box. The system has a reported design treatment capacity of 50,000 gallons per day (gpd), but is only authorized to operate at 25,000 gpd, in accordance with the assessed treatment capability of the package plant and the capacity of the leach fields after expansion in 2002.

DISCHARGE CHARACTERISTICS

Wastewater for discharge to the leach field is required to be treated to meet secondary treatment standards. Secondary treatment standards include discharge limitations on 5-day carbonaceous (inhibited) biochemical oxygen demand (CBOD₅), total suspended solids (TSS), and pH. Nitrate (limited as total nitrogen [TN]) is limited to restrict and attenuate potential impacts to groundwater. Effluent data reported for the monitoring periods between July 2002 and December 2003 indicate the following typical discharge concentration ranges:

CBOD ₅ :	2-3 mg/L
Total Suspended Solids:	2-7 mg/L
Total Nitrogen:	1.3-5.8 mg/L
pH	Not available
mg/L:	milligram per liter

Effluent discharge concentrations in excess of permit limits have been reported as follows:

March 2000:	366 mg/L TSS
December 1999:	26 mg/L TN
May 2000:	13.7 mg/L TN
October 2000:	20 mg/L TN
January 2001:	15 mg/L TN
June 2001 through May 2002:	11-25 mg/L TN

The applicant has remained in compliance with permit limitations since July 2002 after successfully denitrifying treated effluent using the on/off aeration technique. Continued operation using this technique is expected to maintain the relatively low TN concentrations observed since July 2002.

RECEIVING WATER CHARACTERISTICS:

Treated effluent is discharged to groundwater of the State of Nevada. Discharge limitations to groundwater are based, in part, on primary drinking water standards adopted by the State of Nevada (NAC 445A.4525 and NAC 445A.453). The primary drinking water standard for nitrate as nitrogen (as N) is 10 mg/L.

Groundwater monitoring wells MW-1 and MW-2 are located at upgradient and downgradient locations with respect to the leach field(s). Upgradient groundwater conditions as of October 30, 2003 indicate relatively low concentrations of total dissolved solids (TDS, 140 mg/L), nitrate as N (less than 0.05 mg/L), kjeldahl nitrogen (0.4 mg/L), total nitrogen (less than 0.5 mg/L), and chloride (5.8 mg/L).

Monitoring well MW-2 is positioned as the monitoring point downgradient of the leach field(s). This well was replaced on May 8, 2003 because the original well location was frequently dry. The replacement well MW-2 is screened between 24 and 54 feet below grade surface (bgs) and is offset approximately 250 feet northeast from the expanded leach field section. The initial sample collected from the new MW-2 yielded a nitrate as N concentration of 8.5 mg/L (second quarter 2003). A sample collected on October 30, 2003 yielded a nitrate as N concentration of 9.0 mg/L, with a TDS concentration of 340 mg/L and a chloride concentration of 39 mg/L.

PROPOSED LIMITATIONS:

During the period beginning on the effective date of this permit and lasting until the permit expires, the Permittee is authorized to discharge from:

Outfall 001: Treated wastewater from the package treatment plant to groundwater of the State of Nevada.

Confirmation samples or discharge parameter measurements shall be collected at the:

Influent: At the intake of the package treatment plant; and,
 Effluent: At the discharge of the package treatment plant to the leach fields.

The discharge shall be limited and monitored by the Permittee as specified below:

Effluent Limitations

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	30-Day Average	Daily Maximum	Monitoring Location	Measurement Frequency	Sample Type
Flow (gpd)	25,000	25,000	Influent	Continuous	Meter
Inhibited BOD (mg/L)	25	40	Effluent	Bi-weekly	Discrete
TSS (mg/L)	30	45	Effluent	Bi-weekly	Discrete
Total Nitrogen as N (mg/L)	10	10	Effluent	Bi-weekly	Discrete
pH (SU)	----	6-9	Effluent	Bi-weekly	Discrete

gpd: Gallons per day
 mg/L: Milligrams per liter
 TSS: Total suspended solids
 SU: Standard Units

BOD: Biochemical oxygen demand
 (inhibited refers to carbonaceous)
 as N: As nitrogen

Rationale for Effluent Discharge Limitations:

- *Flow:* 25,000 gpd - The treatment system has been rated by an engineer licensed in the State of Nevada to effectively operate at this flow rate, and the leach field expansion has been approved by the Division to operate at up to 25,000 gpd.
- *Inhibited (carbonaceous) Biochemical Oxygen Demand (BOD):* 25 mg/L 30-day average (52 pounds per day [# /day]) and 40 mg/L daily maximum (83 #/day). These limitations are established based on secondary treatment standards.
- *Total Suspended Solids (TSS):* 30 mg/L 30-day average (63 #/day) and 45 mg/L daily maximum (94 #/day). These limitations are established based on secondary treatment standards.
- *Total Nitrogen:* 10 mg/L 30-day average and daily maximum (21 #/day) The system oxidizes nitrogen containing compounds in the wastewater, followed by denitrification for nutrient removal in order to protect groundwater quality. Because groundwater concentrations of nitrate as N have been detected as high as 9 mg/L in the downgradient monitoring well MW-2, denitrification to achieve a total nitrogen effluent concentration less than 10 mg/L is required. Total nitrogen is limited as opposed to only the nitrate fraction because other nitrogen-containing compounds that make up a total nitrogen concentration may oxidize in the environment to form nitrate if not effectively treated before discharge.
- *pH:* 6.0-9.0 standard units. This limitation is a secondary treatment standard.

Groundwater Monitoring:

Monitoring wells MW-1 and MW-2 shall be sampled for the presence of nitrogen compounds, total dissolved solids (TDS), and chloride. Measurements of depth to groundwater and groundwater elevation will also be required on a quarterly basis. Wells shall be monitored in accordance with permit conditions and sampling and analysis protocol defined in the facility Operations and Maintenance (O&M) Manual.

Should long-term monitoring results or facility operation necessitate or warrant the installation of additional monitoring wells, all wells shall be incorporated into the required monitoring schedule. Subsequent monitoring wells installed shall be constructed in accordance with "WTS-4: Monitoring Well Design Requirements"(NDEP, February 1997). The installation and use of additional wells must be reported to the Division and amended to the groundwater monitoring program (requirements) as a minor modification to the permit.

Groundwater wells shall be monitored according to the following parameters:

Groundwater Monitoring Requirements

PARAMETER	LIMITATIONS	SAMPLE LOCATION	SAMPLE FREQUENCY	SAMPLE TYPE
Depth to Groundwater (feet)	Monitor & Report	MW-1 & MW-2	Quarterly	Field Measurement
Groundwater Elevation (feet above msl)	Monitor & Report	MW-1 & MW-2	Quarterly	Calculate
Total Nitrogen as N (mg/L)	Monitor & Report	MW-1 & MW-2	Quarterly	Discrete
Nitrate as N (mg/L)	10	MW-1 & MW-2	Quarterly	Discrete
Chlorides (mg/L)	Monitor & Report	MW-1 & MW-2	Quarterly	Discrete
Total Dissolved Solids (mg/L)	Monitor &	MW-1 & MW-2	Quarterly	Discrete

445A.238. The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Prepared by: Tamara Pelham
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