

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET
(Pursuant to NAC 445A.236)

Permittee Name: City of Yerington
227 S. Main St.
Yerington, NV 89447

Permit Number: NEV40033

Facility Location: Yerington Wastewater Treatment Facility
215 Trowbridge Rd
Yerington, Lyon County, NV 89447
Latitude: 39° 00' 00"N, Longitude: 119° 09' 44"W
Township 13N, Range 25E, SW¼ SW¼ Section 11

Outfall Location: Mason Valley Wildlife Management Area
Operator: Nevada Department of Wildlife, #NEV92035
Discharge Point: Cinnamon Pond Mixing Pool
7 miles north-northeast of the City of Yerington, Lyon County
Latitude: 39° 03' 47"N, Longitude: 119° 06' 40"W
Township 14N, Range 26E, Section 19

Leak Detection Well: No effluent discharge from this facility occurs within the city limits. A down gradient leak detection well at the wastewater treatment facility, located 20 ft north of the secondary ponds, has not indicated leakage to-date from the HDPE-lined municipal lagoons. Monitoring data for this well indicates the following representative data: Depth to Groundwater, 10 ft; TDS, 313 mg/l; Chloride, 25 mg/l and Nitrate-Nitrogen, 0.1 mg/l.

Wellhead Protection Area: The effluent outfall is neither located within a Drinking Water Protection Area nor a wellhead capture zone for any public supply well.

General: The City of Yerington (pop. 3,319) operates a wastewater treatment facility consisting of two primary and two secondary, HDPE-lined ponds. The ponds are operated in parallel, partial-mix (mechanically aerated) mode, and individual pond dimensions are: primary (1.0 acre (Area) × 11¾ ft (Operating Depth)) and secondary (1.7 acre (Area) × 13 ft (Operating Depth)). A facility upgrade, completed in 2004, included sludge removal in all four ponds and installation of an auger screen at the head works for sanitary debris removal. Sodium hypochlorite (bleach) is added at the effluent control structure for disinfection of the secondary-treated effluent. The export pipeline distance between the ponds and the Cinnamon Pond mixing pool at the Mason Valley Wildlife Management Area is approximately seven miles. There are one 10 in-diameter and two 6 in-diameter, PVC export pipelines available for gravity flow transport. If all three of the export pipelines are unavailable, the facility would require Division approval to discharge effluent into a nearby irrigation canal for pasture irrigation.

The effluent is received at the Mason Valley Wildlife Management Area discharging over a concrete cascade aerator located at the south end of the Cinnamon Pond mixing pool. The mixing pool blends treated municipal effluent from the city with Walker River diversion water to form a 125-acre wetland. This wetland provides wildlife habitat (e.g., waterfowl) and managed hunting recreation but is not recognized as a stocked, productive fishery. Presently, only rough, non-game fish, e.g., carp, are present. The effluent is disinfected to a level to permit incidental human contact since hunting is managed there by the Nevada Department of Wildlife (NDOW) during the waterfowl hunting season. The south end (mixing pool) of Cinnamon Pond is fenced and posted to restrict immediate public access at the cascade aerator outfall.

Flow: Permitted flow capacity is 0.71 MGD. Presently, flow averages 0.29 MGD or 41% of available treatment capacity. Annual discharge of effluent is 324 Acre Feet (AF) or 49% of the 660 AF/yr reuse agreement limitation.

DMR Analysis:

- *CBOD:* Influent/effluent levels averaged 202/15 mg/l, respectively, with 93% overall removal to meet secondary-treatment pond limitations. The influent is considered domestic-strength in origin. Proposed sampling frequency is quarterly (influent) and monthly (effluent).
- *TSS:* Influent/effluent levels averaged 176/45 mg/l, respectively, with 74% overall removal to meet secondary-treatment pond limitations. Proposed sampling frequency is quarterly (influent) and monthly (effluent).
- *pH:* This effluent parameter averaged 7.5 S.U. showing a slight increase over influent level due to natural pond algal growth. Proposed sampling frequency is monthly.
- *Fecal Coliform:* This effluent parameter averaged 30 CFU / 100 ml and met required Category “D” reuse limitations. Proposed sampling frequency is monthly at the cascade aerator to allow sufficient chlorine contact time for effective pathogen kill in the export pipeline.
- *Total Nitrogen & Phosphorus (Effluent):* Presently, the level of these two effluent parameters is not reported to the Division. For the permit renewal, a seasonal (quarterly) monitoring schedule is proposed to allow the Division and NDOW to track nutrient (i.e., nitrogen and phosphorus) loading to the wetlands environment, similar to the monthly reporting requirements at the Fernley Wildlife Management Area (#NEV98008). Generally, municipal pond wastewater treatment systems operated in partial-mix treatment mode do not significantly reduce influent nutrient (i.e., nitrogen and phosphorus) levels considerably. Without proper vegetative uptake, excess nutrient loading can adversely impair surface (e.g., algal blooms) and ground (e.g., high nitrate level) water quality.
- *Total Nitrogen (Groundwater):* For the permit renewal, a proposed Total Nitrogen (TN) groundwater standard of 10 mg/l replaces the current Nitrate-Nitrogen groundwater standard, which will then be addressed on a Monitor and Report basis. The current Nitrate-Nitrogen level in the ponds’ leak detection well averaged 0.1 mg/l, which is non-indicative of any leakage occurrence. Groundwater sampling frequency is quarterly.

Receiving Water Characteristics: Depth to groundwater at the Mason Valley Wildlife Management Area is reported to be 33 ft below ground surface (ref. NDOW Well “B”). Cinnamon Pond is an unlined wetland habitat, and as such, permits seepage to State groundwater resources. The wetland habitat does provide beneficial effluent polishing and vegetative nutrient uptake with some seasonal nutrient management practiced via pond rotation and vegetation burning as NDOW resources and burning conditions allow. To date, the Division has not required groundwater monitoring at the Cinnamon Pond. Groundwater flow at the Cinnamon Pond outfall is reported to be west-northwest towards the Walker River.

Certified Operator Requirement: The permit requires a Grade 1 (or higher) Certified Wastewater (WW) Operator. The current Utilities Chief for the City of Yerington, hired last year, is licensed as a Grade 2 WW Operator.

Proposed Effluent Limitations and Special Conditions:

Table 1: Plant Discharge Limitations

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Flow, MGD (Influent)	0.71	Monitor & Report	Continuous	Influent Flow Meter
Flow, MGD (Effluent)	0.71	0.78	Continuous	Effluent Flow Meter
Annual Discharge to Cinnamon Pond, acre-feet/yr (Effluent)	660		Quarterly	Totalized Effluent Flow
CBOD, mg/L (Influent)	Monitor & Report		Quarterly	Composite
CBOD, mg/L (Effluent)	45		Monthly	Discrete
TSS, mg/L (Influent)	Monitor & Report		Quarterly	Composite
TSS, mg/L (Effluent)	90		Monthly	Discrete
Total Nitrogen as N, mg/l (Effluent)	Monitor & Report		Quarterly	Discrete
Total Phosphorus as P, mg/l (Effluent)	Monitor & Report		Quarterly	Discrete
pH, Std. Units (Effluent)	Between 6.0 – 9.0		Monthly	Discrete
Fecal Coliform, c.f.u. or mpn/100 ml (Sample effluent at cascade aerator outfall)	400		Monthly	Discrete

Table 2: Groundwater Monitoring (MW-1)

PARAMETER	GROUNDWATER LIMITATIONS	MONITORING REQUIREMENTS	
		Measurement Frequency	Sample Type
TDS, mg/L	Monitor & Report	Quarterly	Discrete
Chlorides, mg/L	Monitor & Report	Quarterly	Discrete
Nitrate as N, mg/L	Monitor & Report	Quarterly	Discrete
Total Nitrogen as N, mg/L	10.0	Quarterly	Discrete
Depth to Groundwater, ft	Monitor & Report	Quarterly	Field Measurement
Groundwater Elevation, ft	Monitor & Report	Quarterly	Field Measurement

Rationale for Permit Requirements: Discharge limitations in Table 1 require the effluent to meet secondary treatment (i.e., partial-mix, pond biological oxidation) standards and to be disinfected to meet the fecal coliform limits applicable at the Cinnamon Pond cascade outfall structure. Discharge limitations in Table 2 require the lined treatment cells to be maintained without leakage or defects to protect the shallow groundwater in the City of Yerington.

Schedule of Compliance: The Permittee shall submit the following item to the Division for review and approval (**all compliance deliverables shall be addressed to the attention of the Compliance Coordinator, Bureau of Water Pollution Control**):

- Within ninety (90) days of the permit renewal date, the Permittee shall update the Operations & Maintenance (O&M) Manual to include information for the 2004 facility upgrade (e.g., auger screen) and any other changes made in the past five years.
- Once during the term of this discharge permit and prior to its expiration date, the Permittee shall provide a copy of a pond sludge depth analysis report for all four treatment ponds. Where findings indicate $\geq 20\%$ sludge overall depth buildup (in any pond) in excess of Division recommendations for proper wastewater treatment pond operation, the Permittee shall also submit a plan and schedule for timely sludge removal.

Procedures for Public Comment: The Notice of the Division's intent to issue (renew) this discharge permit, subject to the conditions contained within the permit is being sent to the **Mason Valley News** and **Reno Gazette-Journal** newspapers for publication. The notice is also being electronically mailed to interested persons on our public notification mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the

date of publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the Division is **Monday, May 18, 2009, by 5:00 P.M. PST.**

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.

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 determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

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

Proposed Determination: The Division has made the tentative determination to issue (renew) the proposed discharge permit for a period of five (5) years.

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Date: April 9, 2009