

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

Permittee Name: City of Ely
P.O. Box 299
Ely, NV 89301

Permit Number: NEV70015

Location: Ely Wastewater Treatment Facility (WWTF), White Pine County
North Ogden Road, Ely, NV 89301

Latitude: 39° 16' 02"N
Longitude: 114° 52' 17"W
Township 16N, Range 63E, Section 10 SW¼ NE¼

Rapid Infiltration Basins (RIBs)

Located 1.5 miles north of WWTP
North Ogden Road, Ely, NV 89301
Latitude: 39° 17' 14"N, Longitude: 114° 51' 47"W
Township 16N, Range 63E, Section 3 NE¼ NE¼

Wellhead Protection

The City of Ely Wastewater Treatment Facility (WWTF) is not within an established wellhead protection program capture zone. The facility is within the 6000 foot Drinking Water Protection Area (DWPA) around three (3) Ely Municipal Water Department wells and two (2) water supply wells for the Valley View Trailer Park. It is not within the 3000 foot DWPA around the wells.

General:

The City of Ely provides sewer service to approximately 4,100 residents (2000 census) in the Ely area. Previously, wastewater was treated in a facultative pond system. Currently, wastewater is treated in an extended-aeration plant by screening, extended aeration, and secondary clarification. The ponds have not been decommissioned, and are used periodically in upset conditions. Waste activated sludge is stored in an aerated sludge holding tank and centrifuged for ultimate disposal at the Ely Landfill.

The WWTF allows for partial denitrification of the effluent, dependent on factors such as the ambient temperature and available detention period in the aeration basin. The extended aeration basin is aerated by eight submerged aerators, which are configured in four aeration zones. The first zone is presently maintained in an anoxic (i.e., \cong zero dissolved oxygen) condition. Plant inflow is combined in this zone along with nitrified mixed liquor recycled from zone #4. After partial denitrification in zone #1, the wastewater undergoes extended aeration and nitrification in zones #2-4.

Treated clarified effluent is discharged to two disposal locations. The first disposal location is an effluent reuse site located at the city-owned Georgetown Ranch, for flood irrigation reuse on approximately 90 acres of forage crops. The main crop grown is alfalfa and the growing season lasts from April through October. Reclaimed effluent supplements irrigation water obtained from the nearby Murry Springs. Groundwater at this location is monitored in MW-3.

The second discharge site is located at the two RIBs, which are approximately 1.5 miles north of the WWTF. Effluent disposal in the RIBs is conducted whenever field irrigation does not occur. The RIBs are approximately 5 acres each, and groundwater is monitored in MW-4. MW-4 is sited adjacent to the RIBs (i.e., within 30 feet). Monitor well MW-5 is located upgradient of the two disposal areas, and is located near the former treatment ponds.

Receiving Water Characteristics:

According to the facility, depth to groundwater at the site varies from 13 feet at the irrigated fields to up to 65 feet at the RIBs. The application does not indicate the groundwater flow direction. The groundwater flow in the Steptoe Valley is generally north. Monitor well samples indicate the following:

PARAMETER		AVERAGE	MAXIMUM	MINIMUM
Chloride (mg/l)	MW-5	62.4	80	34
	MW-3	41.7	62	19
	MW-4	66.3	76	55
Total Kjeldahl Nitrogen (mg/l)	MW-5	7.78	11	6.1
	MW-3	0.24	0.5	0.1
	MW-4	0.15	0.2	<0.1
Total Nitrogen (mg/l)	MW-5	7.78	11	6.1
	MW-3	2.02	3.4	1.2
	MW-4	7.03	11	4.4
Nitrate as N (mg/l)	MW-5	<0.05	<0.05	<0.05
	MW-3	1.86	3.1	1.1
	MW-4	7.08	11	4.4

Nitrate level in well MW-4 has exceeded the permit limit of 10 mg/L on one occasion during the period from November 2002 through November 2006. The nitrate level in this well has been decreasing since August 2005, with the most recent analytical result at 4.4 mg/L.

Effluent Flow and Characteristics:

The Permittee has requested a treatment capacity limit for the new treatment works of 1.5 MGD. This is the design capacity of the treatment facility. During the period from October 2002 through December 2006, the effluent from the WWTF has had the following quantity and quality.

PARAMETER		AVERAGE	MAXIMUM	MINIMUM
Flow	30-Day Average	0.937	1.09	0.819
	Daily Maximum	1.034	1.49	0.882
BOD5 (mg/l)	30-Day Average	12.9	30.6	1.7
	Daily Maximum	17.4	43	1.9
Total Suspended Solids (mg/l)	30-Day Average	10.1	24.1	1.9
	Daily Maximum	20.8	54	5
pH (Standard Units)		7.47	9.59	7.02
Total Kjeldahl Nitrogen (mg/l)		3.23	17	<0.1
Total Nitrogen (mg/l)		6.97	17	1.6
Nitrate as N (mg/l)		4.25	10.2	<0.05

Proposed Effluent Limitations and Special Conditions:

The following are the proposed effluent limitations and monitoring requirements for the City of Ely WWTF:

Table 1: Plant Discharge Limitations

PARAMETER		DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
		30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Influent	Flow, MGD	1.5	Monitor & Report	Continuous	Flow Meter
	BOD ₅ , mg/L	Monitor & Report		Weekly	Composite
	TSS, mg/L	Monitor & Report		Weekly	Composite
Effluent	TSS, mg/L	30	45	Weekly	Composite
	BOD ₅ , mg/L	30	45	Weekly	Discrete
	BOD ₅ and TSS Removal, Percent	85	---	Weekly	Calculate
	pH, Std. Units	Between 6.0 & 9.0		Weekly	Composite
	Total Nitrogen as N, mg/L	Monitor & Report		Quarterly	Discrete

TSS = Total Suspended Solids

Table 2: Effluent Reuse Limitations

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Irrigation Rate, MGD	Monitor & Report ¹		Seasonal	Flow Meter
Annual Application Volume, Acre-Feet (AF) ²	Acre-Feet (AF x 0.326 = Million Gallons) (Volume determined from Consumptive Use Balance)		Cumulative Annual Total Irrigation Flows	Flow Meter
Annual (Actual) Nitrogen Loading (lbs/year)	Determined from Nitrogen Budget		Calculated Annually & reported in 4 th Quarter DMR	Calculated from records
Allowable Nitrogen Loading (lbs/year)	Calculated in EMP		Reported in 4 th Quarter DMR	Calculated in EMP

1. Monthly application rates in the EMP should be used as a guide.
2. Annual Application Volume is based upon 110% of the application volume determined in the EMP. (Also see Part I.A.18 of the Permit.)

Table 3: Groundwater Monitoring (MW-3, MW-4 & MW-5)

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 AMSL)	Monitor & Report	Quarterly	Field Measurement

Schedule of Compliance:

The Permittee shall submit the following items to the Division for review and approval:

- **By November 1, 2007**, the Permittee shall submit a revised Operations and Maintenance (O&M) Manual prepared in accordance with the Division’s WTS-2 guidance: *Minimum Information Required for an Operations and Maintenance Manual*.
- **By January 1, 2008**, the Permittee shall submit a revised Effluent Management Plan prepared in accordance with the Division’s WTS-1B guidance: *General Criteria for Preparing an Effluent Management Plan*.

Rationale for Permit Requirements:

The Division’s rationale for the proposed monitoring conditions is as follows:

- *Flow*: Influent flow is continuously metered to ensure that the design capacity of the treatment facility is not exceeded.
- *BOD₅*: The Division requires the monitoring of influent and effluent Biochemical Oxygen Demand (5-day), as an indication of treatment performance in the plant, and to ensure that 85% removal goals are achieved. The Division’s secondary-treatment BOD₅ standards for this plant and ponds are 30 and 45 mg/L, respectively, for the 30-day average and daily maximum values. This parameter is currently monitored and reported on a weekly basis.
- *TSS*: The Division’s secondary-treatment standards for Total Suspended Solids (TSS) in the treatment plant effluent are 30 and 45 mg/L, respectively, for the 30-day average and daily maximum values. This parameter is currently monitored and reported on a weekly basis to ensure compliance with Division standards, and to ensure that 85% removal goals are achieved.
- *pH*: The Division requires the effluent to meet a pH standard of between 6.0 and 9.0 standard

units, consistent with other regulated groundwater dischargers in Nevada. This parameter is currently sampled in the effluent on a weekly basis.

- *Groundwater Monitoring:* The Division requires quarterly groundwater sampling for depth to groundwater, groundwater elevation, total dissolved solids (TDS), chlorides, nitrate as nitrogen, and total nitrogen parameters to ensure that State groundwater resources are not impacted from effluent percolation in the RIBs (MW-4) and field irrigation practices (MW-3).
- *Effluent Total Nitrogen:* On a quarterly basis, the Division requires the effluent to be sampled for total nitrogen. The average annual value of this parameter will be necessary to calculate the nitrogen balance for crop irrigation at the Georgetown Ranch.

Procedures for Public Comment:

The Notice of the Division's intent to issue a permit authorizing the facility to discharge treated effluent to the RIBs and Georgetown Ranch, subject to the conditions contained within the permit is being sent to the **Ely Times** and the **Las Vegas Review Journal** for publication. The notice is being mailed to interested persons on our 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 **August 17, 2007 by 5:00 P.M.**

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 the proposed groundwater discharge and effluent reuse permit for a period of five (5) years.

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