

# NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

## FACT SHEET

(pursuant to NAC 445A.236)

**Permittee Name:** Barrick Turquoise Ridge, Inc.  
(formerly Getchell Gold Corporation)  
HC66, Box 220  
Golconda, NV 89414

**Permit Number:** NEV96009

**Location:** Turquoise Ridge Joint Venture Mine  
28 miles Northeast of Golconda, Humboldt County, Nevada  
Township 38N & 39N, Range 42E, Sections 22, 23, 26, 27, 33, 34  
Latitude: 41° 13.86' N  
Longitude: 117° 15.00' W

**Permitted Flow:** 30-Day Average: 0.0220 MGD  
Daily Maximum: 0.0375 MGD

### **Wellhead Protection:**

The facility is not within a Wellhead Protection capture zone. There are no public water supply wells within 7000 feet of the facility.

### **General:**

Barrick Turquoise Ridge, Inc. operates the Turquoise Ridge Mine, which is a gold mine. The facility is located 28 miles northeast of Golconda, Humboldt County, Nevada, and employs approximately 300 workers. The Turquoise Ridge mine was formerly operated by Getchell Gold Corporation, to which the original groundwater discharge permit NEV96009 was issued. The permitted discharge is treated sanitary wastewater effluent generated by the workforce at the facility, and includes restroom waste, showers and change room floor drains. There is a substantial amount of highly mineralized dirt rinsed from boots and work clothing associated with the influent to the treatment system.

The wastewater treatment system consists of two rotating biological contactor trains. The first train is composed of 2 parallel package units, and the second train is a single unit. The package contactor units are Rotordisk™ supplied by CMS Group Inc. of Concord, Ontario, Canada. Each unit is comprised of a primary settling chamber, a “rotor zone” with 7000 square feet of bio-support media, a final settling chamber, and a chlorine contactor. Disinfected effluent will be discharged to the on-site lined tailings impoundment for evaporation. Water from this impoundment is not recovered for use in the processing plant.

In October, 2009, the permit was modified to include occasional waste streams from the Potable Water Treatment Plant (PWTP), a treatment system for arsenic removal, utilizing granular adsorption media (ferric oxide) bedded with graded gravel. Inflow of the PWTP waste stream will be to STP-3, and will occur under two scenarios. The first scenario would occur at the time of plant start up or

start up or introduction of fresh media, approximately every two and ½ years. Under this scenario, up to approximately an additional 4,570 gallons per event would be introduced into the sanitary waste stream. The second scenario would occur during backwashing to remove accumulated fines and reclassify the media beds. This would occur approximately monthly, and would introduce approximately 1,400 gallons per event. Neither scenario would cause an exceedance of the STP-3 flow limit of 18,500 gallons per day. Further, neither scenario would introduce additional arsenic into the effluent stream, since backwashing activities would be accomplished using treated potable water.

**Receiving Water Characteristics:**

Discharge of treated effluent will be to a lined tailings impoundment facility. This is a zero discharge facility. Effluent will not contact waters of the State of Nevada.

**Effluent Flow and Characteristics:**

During the period from January 2002 to June 2006, the following was reported for effluent discharged to the tailings impoundment:

PARAMETER		AVERAGE	MAXIMUM	MINIMUM
Outfall 001 (STP-1 & STP-2)	Flow (MGD) (Permit Limit = 0.025 MGD)	0.0039	0.0076	0.0011
	BOD <sub>5</sub> (mg/l) (Permit Limit = 30 mg/l)	8.02	65	2
Outfall 002 (STP-3)	Flow (MGD) (Permit Limit = 0.0125 MGD)	0.0081	0.0169	0.0042
	BOD <sub>5</sub> (mg/l) (Permit Limit = 30 mg/l)	3.63	34	< 2
Tailings Basin Underdrain System	Fecal Coliform (cfu or mpn /100 ml) (Permit Limit=Monitor & Report)	6.78	54	< 1

**Proposed Effluent Limitations and Special Conditions:**

The following are the proposed effluent limitations and monitoring requirements proposed for the renewal of the permit:

PARAMETER		DISCHARGE LIMITATION		MONITORING REQUIREMENTS	
		30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Outfall 001 STP-1 & STP-2 Combined Flow	Effluent Flow (MGD)	0.0250	0.0375	Continuous	Flow Meter
	BOD <sub>5</sub> (mg/l)	30	45	Monthly	Discrete
	Total Suspended Solids (mg/l)	30	45	Monthly	Discrete
	Fecal Coliform (CFU or MPN/ 100 ml)	23	240	Quarterly	Discrete
Outfall 002 STP-3	Effluent Flow (MGD)	0.0125	0.0185	Continuous	Flow Meter
	BOD <sub>5</sub> (mg/l)	30	45	Monthly	Discrete
	Total Suspended Solids (mg/l)	30	45	Monthly	Discrete
	Fecal Coliform (CFU or MPN/ 100 ml)	23	240	Quarterly	Discrete
Basin Under-Drain System	Cumulative Volume Evacuated (Gallons)	Monitor & Report		Quarterly	Discrete
	Fecal Coliform (CFU or MPN/ 100 ml)	Monitor & Report		Quarterly	Discrete

**Schedule of Compliance:**

The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.

- a. **By MMM DD, 2010**, the Permittee shall submit updates to the facility Operations and Maintenance (O&M) Manual, detailing the inclusion of the waste streams from the Potable Water Treatment System.

**Rationale for Permit Requirements:**

The monitoring proposed by this permit is consistent with practices at similar facilities, to protect groundwater quality.

**Procedures for Public Comment:**

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to a lined tailings impoundment subject to the conditions contained within the permit, is being sent to the **Reno Gazette Journal and the Humboldt Sun** 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 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator. The deadline for receipt at the Division Office of all comments pertaining to this public notice period is **December 3, 2009**.

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 determined 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 permit for a five (5) year period.

**DRAFT**

Prepared by: Janine O. Hartley  
October, 2006  
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