



STATE OF NEVADA

Department of Conservation & Natural Resources

DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor

Leo M. Drozdoff, P.E., Director

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FACT SHEET

(pursuant to NAC 445A.236)

Applicant: Barrick Goldstrike Mines, Inc.
P.O. Box 29
Elko, NV 89803

Permit Number: NV0022675

Facility Locations: Boulder Valley Mine Water Treatment Facility (BVWTF)
27 miles northwest of Carlin, off SR 766
Eureka County, Nevada
Section 33, T36N R49E
Latitude: 40° 56' 49" N, Longitude: 116° 26' 41" W

Discharge Outfalls: **Outfall 001: Boulder Valley Water Treatment Facility**
Latitude: 40° 56' 49" N Longitude 116° 26' 41" W
Section 33, T36N R49E MDB&M

Outfall 002: Humboldt River Discharge 3 miles west of Dunphy
Latitude: 40° 42' 14" N; Longitude: 116° 34' 44" W
Section 29, T33N R48E MDB&M

General: The Permittee has applied for renewal of a National Pollutant Discharge Elimination System (NPDES) permit to extend the authorization to discharge a maximum of 100.8 million gallons per day (MGD), 30-day average, of treated groundwater to the Humboldt River from the Boulder Valley Water Treatment Facility (BVWTF). The Permittee has not discharged to the Humboldt River (under NPDES Permit NV0022675) since February 1999. A re-issued permit will maintain operational flexibility and allow for rapid response to market fluctuations.

The Permittee owns and operates a gold mining operation located in Eureka and Elko Counties, Nevada. The Permittee has developed and implemented a groundwater management program to ensure stability of open pit mine walls, to enable the development of underground mines, and to facilitate optimum recovery of the precious metals resources. Groundwater pumping commenced in 1990. Within the cone of depression created by the groundwater pumping, there are several gold deposits owned by the Permittee, as well as other mining companies. The Permittee may enter into agreements with other companies to accept, treat, and discharge water produced by other mining companies under this permit as well. According to the Permittee, this NPDES discharge permit is expected to be adequate to manage surface discharge rates associated with existing and presently anticipated mining development in the Little Boulder Basin area.

In addition to the surface water discharge, the de-watering water is used as make-up water for mining operations and processing, for irrigation purposes in Boulder Valley. Excess water not able to be used for those purposes is permitted for infiltration to groundwater, and/or injection into the groundwater system in Boulder Valley. These discharges are authorized by other permits and approvals. The NPDES permit covers water pumped from the TS Ranch Dam coffer pond for treatment and discharge to surface waters only.

The BWTP treatment processes include chemical precipitation, settling, and neutralization. An individual containment structure was constructed to contain 110% of the volume of the acid storage tank and the milk of lime slurry/magnesium sulfate tank. The other chemicals used in the treatment processes do not require secondary containment. The entire treatment site is graded and bermed to divert any spill to an unlined pond that is designed to contain 110% of the clarifier volume (the largest vessel) plus the contribution from the 25-year, 24-hour storm event. The clarifier sludge is trucked to the processing area and used in the autoclave processing of sulfide ores.

Description of the Location of the Discharge: The approximately 20-mile long conveyance system connects the treatment facilities with the Humboldt River outfall through a system of pipelines and lined open channels and ponds. The upper section of the conveyance system is a buried pipeline to eliminate any potential conflicts associated with wildlife migration routes or the center pivot irrigation fields. The upper section consists of approximately 4,300 feet of 66-inch diameter and 23,500 feet of 48-inch diameter epoxy-lined steel pipe. In the 73,000-foot central section, a 60-mil HDPE lined and fenced open canal was constructed to convey the water to the 90-foot square, 60-mil HDPE-lined compensating pond. A concrete head structure in the pond marks the start of the lower pipeline section with the first 2,000 feet of this reinforced concrete pipe being 84 inches in diameter and the remaining 4,600 feet being 72-inch diameter pipe. The lower pipeline crosses Whitehouse Creek and the Union Pacific railroad tracks before discharging to the Humboldt River. A slotted, steel diffuser was installed at the end of the concrete pipe to reduce the potential for erosion and scouring of the riverbed and bank. This area of the River is also armored with riprap. The Whitehouse Ditch outfall has not been designed, although the Permit has language and requirements that would allow for that discharge in the event the discharge system and Outfall are needed, designed, constructed, and implemented.

Discharge Characteristics: The groundwater associated with the discharge is carbonate saturated with associated calcium and magnesium hardness. The quality of the raw groundwater is generally good. However, it does not meet Humboldt River water quality standards for total dissolved solids (TDS), boron, fluoride, dissolved oxygen, and temperature. Therefore, in order to discharge, the water must be treated to meet the appropriate standards. The treatment process includes precipitation, clarification/settling, and neutralization followed by cooling through cooling towers. The treatment process results in compliance with all Humboldt River -Battle Mountain Gage drinking water, aquatic life, and irrigation standards at the discharge points.

There has been no discharge from the BWTF since February 1999. The data on file for the 5-year period between 1995 and 1999 supports the premise that the treated discharge, when it

occurs, does not compromise the water quality standards established the Humboldt River at the Battle Mountain Gage, designated in Nevada Administrative Code (NAC) 445A.1442.

Section 303 (d) (1) (C) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) shall be established at a level necessary to implement the applicable water quality standards. Any discharge which improves the existing water quality, and has permitted discharge limits as strict as, or stricter than the water quality standards will be considered in compliance with the TMDLs. The 2006 303 (d) List for the Humboldt River Basin, Palisade to Battle Mountain, lists existing TMDLs as TP and TSS. The 2006 303 (d) List also includes total iron, and turbidity as pollutants or stressors of concern. The 2006 303 (d) List delisted dissolved zinc.

The NAC 445A.1442 TP standard is an April through November seasonal average of less than 0.1 mg/L. From 2007 through 2012 the TP seasonal average concentration ranged from 0.04 mg/L to 0.07 mg/L. The TSS standard is an annual median concentration of less than 80 mg/L with a maximum allowable point source single value discharge of 80 mg/l. The TSS annual median has ranged from 25 mg/l in 2003 to 188 mg/L in 1996, with an annual median of 89 mg/l. A daily maximum TSS permit limitation of 30 mg/l and a 30-day average TSS permit limitation of 20 mg/l will result in an annual median TSS concentration less than 80 mg/L and in an improvement of the existing water quality. Therefore, the discharge will be in compliance with the TP and TSS TMDLs.

Flow: The permit includes discharge limitations of 100.8 MGD for the 30-day average and 110.0 MGD for the daily maximum discharge rates. The Permittee has not discharged to the Humboldt River since February 1999. During the only period of discharge, from 1995-1999, the 30-day average discharge was 50.9 MGD and the maximum daily discharge rate was 99.8 MGD.

Receiving Water Characteristics: The Humboldt River -Battle Mountain Gage water quality standards cited in NAC 445A.1442 apply to this stream segment. The listed beneficial uses of this segment include aquatic life (warm-water fishery), water contact recreation, wildlife propagation, irrigation, stock watering, municipal or domestic supply, and non-contact recreation.

Humboldt River water in the area of the discharges, from the Palisade Gage to the Battle Mountain Gage, is a calcium-bicarbonate type with a pH range of 7.9 to 8.7 S.U. TDS concentrations range from 340 to 434 milligrams per liter (mg/L). Temperature of the river water varies considerably with season, being primarily dependent on ambient air temperature with a minimum temperature of 0°C, and a maximum temperature of 28.3°C. This segment generally meets the appropriate water quality standards except for frequent exceedances of the NAC 445A.1442 standards for turbidity, total phosphorus (TP) and total suspended solids (TSS).

From January 2007 through September 2012, the U.S. Geological Survey (USGS) website lists a maximum mean monthly flow of 3,370 cubic feet per second (cfs), May 2012, and a minimum mean monthly flow of 0.000 cfs, September 2012, for the Battle Mountain Gage.

Site Groundwater: In the area of the treatment facility/discharge location, the elevation of the groundwater table ranges from approximately 40-100 feet below ground surface, and it varies substantially with location. The local groundwater flow is generally south-southeast towards the Humboldt River. There are no public drinking water supply wells within 6000 feet of the BVWTF or the discharge outfall. The BVWTF is not within 6000 feet of a Drinking Water Protection Area.

Corrective Actions Sites: There are no Bureau of Corrective Actions (BCA) remediation sites within a one-mile radius of the BVWTF or discharge outfall location.

Proposed Discharge Limitations, Sampling and Monitoring Requirements:

Samples taken in compliance with the monitoring requirements specified in Tables I.A.1 through I.A.8 of the Permit are collected at the following locations:

- i. **Outfall 001 - BVWTF:** outfall from BVWTF to pipeline;
- ii. **Outfall 002 - Humboldt River:** the end-of-pipe discharge to the Humboldt River;
- iii. In the Humboldt River, three meters upstream of the confluence with the unnamed pipeline, as near as possible to the centroid of the river flow;
- iv. In the Humboldt River, three meters upstream of the confluence with the unnamed pipeline, as near as possible to the centroid of the river flow;
- v. In the Humboldt River, three meters upstream of the confluence with Rock Creek, as near as possible to the centroid of the river flow;
- vi. In the Humboldt River, ten meters downstream of the confluence with Rock Creek, as near as possible to the centroid of the discharge flow;
- vii. In the Whitehouse Ditch, ten meters downstream of the confluence with the lined canal, as near as possible to the centroid of flow;
- viii. In Rock Creek, three meters upstream of the confluence with Whitehouse Ditch, as near as possible to the centroid of flow; and
- ix. In Rock Creek, ten meters downstream of the confluence with Whitehouse Ditch, as near as possible to the centroid of the discharge flow.

There shall be no discharge except as authorized by this permit, and there shall be no discharge of substances that would cause a violation of water quality standards of the State. The treated and discharged groundwater will be managed in such a way so as to not degrade downstream water quality.

Water quality shall be limited and monitored by the Permittee as specified in Tables 1-8. The Table Definitions and Footnote Explanations are provided in Table 9.

Table 1. Outfall 001 Discharge Limitations, Daily, Weekly & Monthly Monitoring Requirements

| Parameters | Units | Discharge Limitations | | Monitoring Requirements | | |
|----------------------|-------|-----------------------|-----------|-------------------------|----------------------|-----------------|
| | | 30-Day Average | Daily Max | Sampling Locations | Monitoring Frequency | Monitoring Type |
| Flow ¹ | MGD | 100.8 | 110 | i | Continuous | Totalizer |
| Arsenic ² | mg/l | --- | .05 | i | Weekly ³ | Discrete |
| Boron ² | mg/l | --- | 0.75 | i | Weekly ³ | Discrete |

| | | | | | | |
|------------------------------|------|-------------------|-------------------|---|---------------------|----------|
| Copper ² | µg/l | 5,18 | 5,18 | i | Weekly ³ | Discrete |
| Fluoride ² | mg/l | --- | 1.0 | i | Weekly ³ | Discrete |
| Iron ² | mg/l | --- | 1.0 | i | Weekly ³ | Discrete |
| Lead ² | µg/l | 7,18 | 7,18 | i | Weekly ³ | Discrete |
| TP -P | mg/l | 0.1 ¹⁰ | --- ¹⁰ | i | Weekly ³ | Discrete |
| Temperature ^{14,15} | °C | M&R | | i | Monthly | Discrete |
| pH -minimum | S.U. | 7.0 ⁴ | 7.0 | i | Monthly | Discrete |
| pH -maximum | S.U. | 8.4 ⁴ | 8.6 | i | Monthly | Discrete |
| TDS | mg/l | 425 ⁴ | 520 | i | Monthly | Discrete |
| TSS | mg/l | 20 | 30 | i | Monthly | Discrete |
| Turbidity | NTU | --- | 50 | i | Monthly | Discrete |
| TN -N | mg/l | 1.9 ⁴ | --- ⁸ | i | Monthly | Discrete |
| | | | 4.0 ⁸ | | | |
| NH ₃ -N | mg/l | 9,18 | 9,18 | i | Monthly | Discrete |
| Zinc ² | µg/l | 11,18 | 11,18 | i | Monthly | Discrete |
| Chloride | mg/l | 50 ⁴ | 70 | i | Monthly | Discrete |

Table 2. Outfall 001 Discharge Limitations, and Quarterly Monitoring Requirements

| Parameters | Units | Discharge Limitations | | Monitoring Requirements | | |
|----------------------|-------|-----------------------|-----------|-------------------------|-------------------------|-----------------|
| | | 30-Day Average | Daily Max | Sampling Locations | Monitoring Frequency | Monitoring Type |
| SAR | mg/l | 8.0 ⁴ | --- | i | Quarterly | Discrete |
| Cadmium ² | µg/l | 16,18 | 16,18 | i | Quarterly ¹⁷ | Discrete |

Table 3. Outfall 001 Discharge Limitations, and Annual Monitoring Requirements

| Parameters | Units | Discharge Limitations | | Monitoring Requirements | | |
|---|-------|-----------------------|-----------|-------------------------|----------------------|-----------------|
| | | 30-Day Average | Daily Max | Sampling Locations | Monitoring Frequency | Monitoring Type |
| Alkalinity as CaCO ₃ ¹³ | mg/l | M&R | --- | i | Annually | Discrete |
| Bicarbonate as HCO ₃ ¹³ | mg/l | M&R | --- | i | Annually | Discrete |
| Calcium ¹³ | mg/l | M&R | --- | i | Annually | Discrete |
| Magnesium ¹³ | mg/l | M&R | --- | i | Annually | Discrete |
| Potassium ¹³ | mg/l | M&R | --- | i | Annually | Discrete |
| Sodium ¹³ | mg/l | M&R | --- | i | Annually | Discrete |
| Aluminum ¹³ | mg/l | M&R | --- | i | Annually | Discrete |
| Antimony ^{12,13} | mg/l | M&R | --- | i | Annually | Discrete |
| Beryllium ^{12,13} | mg/l | M&R | --- | i | Annually | Discrete |
| Nickel ^{12,13} | mg/l | M&R | --- | i | Annually | Discrete |
| Barium ^{12,13} | mg/l | M&R | --- | i | Annually | Discrete |
| Chromium ^{12,13} | mg/l | M&R | --- | i | Annually | Discrete |
| Manganese ^{12,13} | mg/l | M&R | --- | i | Annually | Discrete |
| Mercury ^{12,13} | mg/l | M&R | --- | i | Annually | Discrete |
| Selenium ^{12,13} | mg/l | M&R | --- | i | Annually | Discrete |
| Silver ^{12,13} | mg/l | M&R | --- | i | Annually | Discrete |
| Thallium ^{12,13} | mg/l | M&R | --- | i | Annually | Discrete |

Table 4. Outfall 002 Discharge Limitations & Weekly Sampling Requirements

| Parameters | Units | Discharge Limitations | | Monitoring Requirements | | |
|-----------------|-------|-----------------------|-----------|-------------------------|----------------------|-----------------|
| | | 30-Day Average | Daily Max | Sampling Locations | Monitoring Frequency | Monitoring Type |
| DO ⁶ | mg/l | --- | ≥ 5.0 | ii | Weekly ³ | Discrete |

Table 5. Sampling Points iii & iv Limitations & Monthly Monitoring Requirements

| Parameters | Units | Discharge Limitations | | Monitoring Requirements | | |
|-------------------------------|-------|--|-----------|-------------------------|----------------------|-----------------|
| | | 30-Day Average | Daily Max | Sampling Locations | Monitoring Frequency | Monitoring Type |
| Hardness as CaCO ₃ | mg/l | M&R | --- | iii | Monthly | Discrete |
| Temperature ^{14,15} | °C | M&R | | iii, iv | Monthly | Discrete |
| ΔT ^{14,15} | | T _{iv} ≤ T _{iii} + 2 | | iii, iv | | |

Table 6. Sampling Points v & vi Limitations & Monthly Monitoring Requirements

| Parameters | Units | Discharge Limitations | | Monitoring Requirements | | |
|------------------------------|-------|--------------------------------------|-----------|-------------------------|----------------------|-----------------|
| | | 30-Day Average | Daily Max | Sampling Locations | Monitoring Frequency | Monitoring Type |
| Temperature ^{14,15} | °C | M&R | | v, vi | Monthly | Discrete |
| ΔT ^{14,15} | | T _{vi} ≤ T _v + 2 | | v, vi | | |

Table 7. Sampling Point vii Limitations & Weekly Monitoring Requirements

| Parameters | Units | Discharge Limitations | | Monitoring Requirements | | |
|-----------------|-------|-----------------------|-----------|-------------------------|----------------------|-----------------|
| | | 30-Day Average | Daily Max | Sampling Locations | Monitoring Frequency | Monitoring Type |
| DO ⁶ | mg/l | --- | ≥ 5.0 | vii | Weekly ³ | Discrete |

Table 8. Sampling Points viii & ix Limitations & Monthly Monitoring Requirements

| Parameters | Units | Discharge Limitations | | Monitoring Requirements | | |
|------------------------------|-------|---|-----------|-------------------------|----------------------|-----------------|
| | | 30-Day Average | Daily Max | Sampling Locations | Monitoring Frequency | Monitoring Type |
| Temperature ^{14,15} | °C | M&R | | viii, ix | Monthly | Discrete |
| ΔT ^{14,15} | | T _{ix} ≤ 34 or T _{ix} ≤ T _{viii} + 3 | | viii, ix | | |

Table 9. Table Definitions and Footnote Explanations

| Term/ Footnote | Definitions and Footnote Explanations |
|---|--|
| MGD | Million gallons per day |
| DO | Dissolved oxygen |
| mg/l | Milligrams per liter |
| TP -P | Total phosphorus as phosphorus |
| M&R | Monitor and report |
| ΔT | Change in temperature |
| T _{iii} , T _{iv} , T _v , T _{vi} , T _{viii} , T _{ix} | Absolute temperature at specific sampling points: iii, iv, v, vi, viii and ix. |
| S.U. | Standard pH units |
| TDS | Total dissolved solids |

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|--------------------|---|
| TSS | Total suspended solids |
| NTU | Nephelometric turbidity units |
| µg/l | Micrograms per liter |
| TN -N | Total nitrogen as nitrogen |
| NH ₃ -N | Ammonia as nitrogen |
| CaCO ₃ | Calcium carbonate |
| SAR | Sodium adsorption ratio |
| Profile I | All parameters on Nevada Profile I list |
| WET | Whole effluent toxicity testing |
| µg/l | Micrograms per liter |
| Footnote 1 | Flow shall be monitored and recorded at Outfall 001 with a totalizer. Flow is limited to 50.4 MGD when discharge is to Whitehouse Ditch. |
| Footnote 2 | Analyze as total recoverable. |
| Footnote 3 | Monitoring frequency may be reduced to monthly by the Division after one year of weekly monitoring with no exceedances of the discharge limitations. Monitoring frequency shall revert to weekly with a change in the source of the dewatering water as determined by the reporting required by Part I.A.3. |
| Footnote 4 | Annual average may be interpreted to be a more frequent monitoring period average, such as monthly or quarterly. |
| Footnote 5 | Total Copper calculations: Daily Maximum: concentration (µg/l) = $e^{\{0.9422 \ln(H) - 1.700\}}$ (Acute) 30-day Average: concentration (µg/l) = $e^{\{0.8545 \ln(H) - 1.702\}}$ (Chronic) Where: H = Hardness of the receiving water, in mg/l. |
| Footnote 6 | The Permittee is required to monitor DO at location ii only during periods of discharge from the pipeline to the Humboldt River (Outfall 002) and to monitor at location vii only during periods of discharge to Whitehouse Ditch. |
| Footnote 7 | Total Lead calculations: Daily Maximum: concentration (µg/l) = $e^{\{1.273 \ln(H) - 1.460\}}$ (Acute) 30-day Average: concentration (µg/l) = $e^{\{1.273 \ln(H) - 4.705\}}$ (Chronic) Where: H = Hardness of the receiving water, in mg/l. |
| Footnote 8 | TN daily maximum of 4.0 mg/l is applicable April-Nov. No TN daily maximum Dec-March. |
| Footnote 9 | NH ₃ -N calculations: Daily Maximum: $\text{Concentration(mg/l)} = \left[\frac{0.0577}{1+10^{7.688-pH}} \right] + \left[\frac{2.487}{1+10^{pH-7.688}} \right] \times \text{MIN} [2.85, 1.45 \times 10^{0.028x(25-T)}]$ Where: T = discharge temperature in degrees Celsius (°C) x = multiplication MIN = the lesser of the two values separated by the comma 30-day Average: concentration (mg/l) = $\left[\frac{0.411}{1+10^{7.204-pH}} \right] + \left[\frac{58.4}{1+10^{pH-7.204}} \right]$ |
| Footnote 10 | TP seasonal average of 0.1 mg/l is applicable April-Nov. No TP discharge limit Dec-March. |
| Footnote 11 | Total Zinc calculations: Daily Maximum: concentration (µg/L) = $e^{\{0.8473 \ln(H) + 0.884\}}$ (Acute) 30-day Average: concentration (µg/L) = $e^{\{0.8473 \ln(H) + 0.884\}}$ (Chronic) Where: H = Hardness of the receiving water, in mg/l. |
| Footnote 12 | If a constituent is ≥ 90% of the most restrictive beneficial use standard, pursuant to NAC 445A.1236, then the Permittee shall add it to the list of quarterly monitored constituents. Antimony: 146 µg/L; Beryllium: 0* µg/L; Nickel: $e^{\{0.8460 \ln(H) + 0.0584\}}$ µg/L; Barium: 2,000 µg/L; Chromium: 100 µg/L; Manganese: 200 µg/L; Mercury, dissolved: 0.77 µg/L; Selenium: 5.0 µg/L; Silver: $e^{\{1.72 \ln(H) - 6.59\}}$ µg/L; and Thallium: 13 µg/L. |
| Footnote 13 | Annual Profile I characterization (for Profile I parameters not sampled more frequently than annually) of the discharge is required. If possible, the characterization shall occur in the 4 th quarter of the calendar year. *Laboratory results that show that beryllium was not detected |

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| | using a Division accepted method will be deemed to show compliance with the standard unless other information indicates that beryllium may be present. |
| Footnote 14 | When there is no flow in Rock Creek, discharge temperature from Whitehouse Ditch shall be 34° C or less. When there is flow in Rock Creek, the Whitehouse Ditch discharge temperature shall be no more than 3° C greater than the Rock Creek water temperature. The Permittee shall report which condition applies each quarter of discharge to Whitehouse Ditch. |
| Footnote 15 | The Permittee is required to monitor the temperature at locations iii., iv., viii., and ix. only during periods of discharge to Whitehouse Ditch and monitor the temperature at locations v. and vi. only during periods of discharge from the pipeline to the Humboldt River. |
| Footnote 16 | Total Cadmium calculations: Daily Maximum: concentration (µg/l) = $e^{\{1.0166 \ln(H) - 3.924\}}$ 30-day Average: concentration (µg/l) = $e^{\{0.7409 \ln(H) - 4.719\}}$ Where: H = Hardness of the receiving water, in mg/l. |
| Footnote 17 | Monitoring frequency may be reduced to annually by the Division after one year of quarterly monitoring with no exceedances of the aquatic life standards. Monitoring frequency shall revert to quarterly with a change in the source of the dewatering water. |
| Footnote 18 | Calculated limits shall be numerically specified in the DMR table under Permit Requirement. |

Rationale for Permit Requirements: The Applicant is proposing to utilize a treatment process which will result in compliance with all Humboldt River water quality standards at the treatment plant outfall (001) except for temperature and dissolved oxygen. The applicable temperature and dissolved oxygen standards will be achieved at Rock Creek and the Humboldt River by use of natural cooling through the proposed conveyance system and by use of cooling towers as needed.

Permit requirements are designed to be consistent with the Humboldt River at Battle Mountain Gage, Standards of Water Quality cited in NAC 445A.1442 (HRBM Standards). In instances where the Humboldt River from Palisade to Battle Mountain exhibits natural water quality standards outside the specified criteria, narrative standards and best professional judgment have been used to establish particular parameter limitations in place of absolute water quality standards. Some permit requirements are designed to be consistent with the Standards for Toxic Materials Applicable to Designated Waters cited in NAC 445A.1236 (Toxic Standards).

Flow: Flow rates, 110.0 MGD, daily maximum, and 100.8 MGD, 30-day average are based on the BVWTP design capacity and conveyance capacity. Permit limits are retained from the previous permit. **There has been no discharge from BVWTF since February 1999.**

Dissolved Oxygen: The 5.0 mg/l limit is based on the HRBM Standards, with warm-water fishery as the most restrictive beneficial use. Permit limit is retained from the previous permit.

Arsenic, total: The 50 µg/l limit is based on the Toxic Standards, Municipal or Domestic Supply. Permit limit is retained from the previous permit.

Boron: The 750 µg/l daily maximum limit is based on the Toxic Standards, Irrigation. Permit limit is retained from the previous permit.

Copper, total: The Toxic Aquatic Life Standards include equations with hardness as the only variable to determine the 1-hour, acute, and 96-hour, chronic, average dissolved

copper standards. Permit limitations are consistent with the previous permit.

Fluoride: The 1.0 mg/L daily maximum limit is based on the Toxic Standards, Irrigation. Permit limit is retained from the previous permit.

Iron, total: The 1.0 mg/l daily maximum limit is based on the Toxic Standards, Aquatic Life. Permit limit is retained from the previous permit.

Lead, total: The Toxic Aquatic Life Standards include equations with hardness as the only variable to determine the 1-hour, acute, and 96-hour, chronic, average dissolved copper standards. Permit limitations are consistent with the previous permit.

Total Phosphorus as P: The 0.1 mg/l seasonal limitation, April through November, is based on the HRBM Standards, with warm-water fishery as the most restrictive beneficial use. Permit limit is retained from the previous permit. No limit from December through March.

Temperature, ΔT : The $\Delta T \leq 2.0$ °C limit on the discharge to the Humboldt River is based on the HRBM Standards, with warm-water fishery as the most restrictive beneficial use. The $T \leq 34$ °C and $\Delta T \leq 3.0$ °C limitations on the potential discharge to Rock Creek are based on NAC 445A.1522. Permit limits are retained from the previous permit.

pH: Daily maximum 8.6 S.U.; annual average max 8.4 S.U.; average annual and daily minimums 7.0 S.U. Limitations are based on the HRBM Standards, water contact recreation and wildlife propagation as the most restrictive beneficial uses. Permit limits are retained from the previous permit.

Total Dissolved Solids: Limitations are based on the HRBM Standards, and the requirements to maintain existing higher quality (RMHQ). The daily maximum, 520 mg/l, is the single value limitation and the 30-day average, 425 mg/l, is the annual average limitation with municipal or domestic supply as the most restrictive use. Permit limits are retained from the previous permit.

Total Suspended Solids: The 30 mg/l daily maximum and 20 mg/l 30-day average discharge limitations are based on the design performance standards of the facility. These values are more restrictive than the HRBM Standards, warm-water fishery beneficial use standard, 80 mg/l. Permit limits are retained from the previous permit.

Turbidity: The 50 NTU limitation is based on the HRBM Standards, with warm-water fishery as the most restrictive beneficial use. Permit limit is retained.

Total Nitrogen -N: The limitations are based on the HRBM Standards, and RMHQ. The daily maximum, 4.0 mg/l, is the single value, April through November, limit and the 1.9 mg/l is the annual average limit with municipal or domestic supply as the most restrictive use. Permit limits are retained from the previous permit.

Total Ammonia -N: The limitations are based on the Water Quality Criteria for Total

Ammonia, NAC 445A.118. The proposed daily maximum is based on the acute water quality criteria for total ammonia for freshwater aquatic life. The proposed 30-day average limit is based on the chronic water quality criteria for total ammonia for water where freshwater fish in early life stages may be present. Permit limits are retained.

Zinc, total: The Toxic Aquatic Life Standards include equations with hardness as the only variable to determine the 1-hour (acute) and 96-hour (chronic) average total zinc standards. Permit limitations are consistent with the previous permit.

Hardness: Monthly monitoring and reporting of hardness as calcium carbonate has been retained in the permit because the Toxic Aquatic Life Standards for cadmium, chromium, copper, lead, silver, and zinc are functions of the hardness. Monitoring of total cadmium, total copper, total lead, and total zinc is required. This monitoring is consistent with the previous permit.

Chloride: Limitations are based on the HRBM Standards, and RMHQ. The daily maximum, 70 mg/l, is the single value limit and the 30-day average, 50 mg/l, is the annual average limit with municipal or domestic supply as the most restrictive use. Permit limits are retained from the previous permit.

Sodium Adsorption Ratio SAR: The 8.0 annual average limit is based on HRBM Standards, with irrigation as the most restrictive beneficial use. This limitation is consistent with the previous permit.

Cadmium: The Toxic Aquatic Life Standards include equations with hardness as the only variable to determine the 1-hour, acute, and 96-hour, chronic, average total cadmium standards. Permit limitations are consistent with the previous permit.

Profile I: Requirement established to annually validate adequate definition and maintenance of appropriate and applicable discharge limitations for inorganic species not specifically mentioned that require more frequent than annual monitoring.

Whole Effluent Toxicity (WET) Testing: WET Testing is only required once every 5 years, and until there is discharge from the BVWTP, WET testing is not required.

Changes from Previous Permit: None.

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 which the Administrator may make in approving the schedule of compliance:

- The Permittee shall achieve compliance with the discharge limitations upon issuance of the permit.
- Within 60 days of operating the water treatment system, the Permittee shall submit two copies of an Operations and Maintenance Manual, covering the dewatering system, water

treatment system, discharge system and sampling and monitoring protocols, to the Division for review and approval.

- The Permittee shall provide written notification to the Division sixty days prior to acceptance of water for treatment at the Boulder Valley Water Treatment Plant and/or discharge under this permit from any source other than the Permittee's mine dewatering activities.
- Within fourteen days of acceptance of water for treatment at the BVWTP and/or discharge under this permit from any source other than the Permittee's mine dewatering activities, the Permittee shall notify the Division of such acceptance.
- Thirty days prior to discharge to Whitehouse Ditch, the Permittee shall submit Nevada licensed Professional Engineer stamped as-built drawings of the diversion to Whitehouse Ditch and all related control structures. A revised O&M Manual shall be submitted at the same time.
- Within fourteen days of discharge to Whitehouse Ditch, the Permittee shall notify the Division of the discharge.
- If total chromium is detected in the discharge at a concentration greater than 5 µg/L, the normal analytical detection limit, the Permittee shall complete a study to determine the chromium speciation. This study shall be submitted to the Division within forty-five days of chromium detection.
- Within fourteen days of detecting total chromium at a concentration greater than 5 µg/L, the Permittee shall notify the Division of the detection.

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

Procedures for Public Comment: The Notice of the Division's intent to renew a NPDES permit authorizing the Permittee to discharge groundwater to the Humboldt River, for a five-year period subject to the conditions contained within the permit, is being sent to the **Reno Gazette Journal** and to the **Elko Daily Free Press** 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 **January 8, 2013 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.

Prepared by: Jeryl R. Gardner, P.E.
Date: December 2012