

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0051

REQUIRING MILLENIUM HOLDINGS, INC.
BULLY HILL AND RISING STAR MINES,
SHASTA COUNTY
TO CEASE AND DESIST FROM
VIOLATING WASTE DISCHARGE REQUIREMENTS

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. On 24 October 1997, the Regional Board adopted Cease and Desist Order (C&D) No. 97-215 against Millennium Holdings, Inc. (hereafter Discharger) for failure to comply with Waste Discharge Requirements Order No. 97-214 (NPDES No. CA0084212).
2. The Discharger partially complied with the C&D Order by improving access to the mines, implementing remedial actions to reduce the discharge of acid mine drainage (AMD), and performing a pilot test for a biological metal removal system. However, despite compliance with these tasks, the Discharger failed to meet effluent limits and receiving water objectives. This Order replaces Order No. 97-215 and contains a revised time schedule to bring the discharge into compliance with revised waste discharge requirements.
3. On 14 March 2003, the Regional Board adopted Order No. R5-2003-0039 (NPDES No. CA0084212), which revised the existing NPDES permit by establishing new narrative effluent limits and requiring implementation of Best Management Practices to control discharges of AMD from the Bully Hill and Rising Star Mines in Shasta County. The mines are owned by the Discharger.
4. Waste Discharge Requirements Order No. R5-2003-0039 provides, in part, the following:

“A. Discharge Prohibitions

1. The direct, discreet, discharge of acid mine drainage (AMD) from portals, fissures, waste rock piles, seeps or waste piles to surface water drainage courses is prohibited, except as provided in Effluent Limitation B.1.

B. Effluent Limits

1. The average annual discharge rate (lbs/day) of arsenic, cadmium, copper, lead, mercury, nickel, and zinc from any discreet discharge, including Discharge Numbers 1-9, shall be reduced by 99 percent from the rate prior to control.

2. The Discharge shall implement site-specific Best Management Practices (BMPs) to reduce or prevent pollutant discharge associated with AMD. The BMPs may include installation of concrete bulkhead seals, passive treatment systems, injection of neutralizing agents into underground workings, run-on and run-off controls, consolidation and capping of reactive waste rock, or other technologies, including new technologies as they are developed.

C. Discharge Specifications

1. Neither the treatment nor the discharge shall cause a pollution or nuisance as defined by the California Water Code, Section 13050.
2. The discharge shall not cause degradation of any water supply.
3. Storm water discharges to any surface or ground water shall not adversely impact human health or the environment.
4. Storm water discharges shall not cause or contribute to a violation of any applicable water quality objectives contained in the Basin Plan.

“E. Receiving Water Limitations

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit.

The discharge shall not cause the following in Horse Creek, Town Creek, or Shasta Lake:

1. Concentrations of heavy metals to exceed the following:

<u>Parameter</u>	Concentration ¹ µg/l <u>(Dissolved)</u>
Cadmium	0.22 ^{2,3}
Copper	4.1 ^{2,4}
Zinc	16.0 ^{2,3}

¹ The above concentrations are water quality objectives based upon a receiving water hardness of 40 mg/l. Metal limitations vary with hardness of the receiving waters as follows:

Cadmium	=	$e^{(1.160)(\ln \text{hardness})-5.777} \times 10^{-3}$
Copper	=	$e^{[(0.8545)(\ln \text{hardness})-1.702] \times (0.960)} \times 10^{-3}$
Zinc	=	$e^{(0.830)(\ln \text{hardness})-0.289} \times 10^{-3}$

² The noted concentrations are those identified as Water Quality Objectives for the protection of the designated beneficial use for Freshwater Habitat based on toxicity studies on

³ These Water Quality Objectives are listed in Table III-1 of the Basin Plan.

⁴Water Quality Objective contained in the California Toxics Rule.”

5. The Discharger is in violation of and threatening to continue to violate the conditions in Finding No. 4 above in that untreated AMD containing constituents well in excess of the effluent limits specified continues to be discharged to Horse Creek and Town

Creek. From these tributaries, the drainage enters Shasta Lake and, eventually, the Sacramento River. This Order contains a reasonable time schedule for the Discharger to achieve compliance with all Prohibitions, Specifications, and Limitations specified in this Order.

6. The Discharger submitted the following reports to address violations at the mines and support revision of the C&D Order:
 - *Preliminary Assessment Report, Bully Hill and Rising Star Mines, Lake Shasta, California.* Dames and Moore, May 1997.
 - *Preliminary assessment Report, Addendum-Additional Site Investigation, Bully Hill and Rising Star Mines, Lake Shasta, California.* Dames and Moore, July 1999.
 - *Design Report-Remedial Measures, Bully Hill and Rising Star Mines, Shasta County, California.* Dames and Moore, March 2000.
 - *Summary of Compliance Report, Cease and Desist Order No. 97-215, Bully Hill and Rising Star Mines, Shasta County California.* URS Corporation, July 2001.
 - *2001 Work Plan Interim Remedial Measures, Bully Hill and Rising Star Mines, Shasta County, California.* URS Corporation, August 2001.
 - *2001 Construction Report-Interim Remedial Measures.* URS Corporation, January 2002.
 - *Pilot-Scale Evaluation of SRB Treatment of Acid Rock Drainage, Rising Star Mine, Shasta County, California.* URS Corporation, April 2002.
 - *5-Year Work Plan, Bully Hill and Rising Star Mines, Shasta County, California.* Vestra Resources, Inc., December 2002
 - *Monthly monitoring reports*
7. The Basin Plan identifies the following beneficial uses for Shasta Lake: municipal and domestic supply (MUN); agricultural irrigation (AGR); hydropower generation (POW); contact and non-contact recreation (REC1, REC2); freshwater habitat (WARM, COLD); fish spawning (WARM, COLD); and wildlife habitat (WILD).

Upon review of the flow conditions, habitat values, and beneficial uses of Horse Creek and Town Creek, and the hydraulic continuity, potential aquatic life migration, potential for contact recreation, and potential for preservation and enhancement of

fish, wildlife and other aquatic resources, the Regional Board finds that the beneficial uses identified in the Basin Plan for Shasta Lake are applicable to Town Creek and Horse Creek. However not all the designated beneficial uses exist now or have existed in the past for Horse Creek and Town Creek.

8. Mining activities were initiated in the 1860's. Gold and silver recovery was the primary reason for the initial mining efforts. In the late 1800's until 1927, copper, gold, silver, and zinc were recovered. Although exploratory work was performed on the mine in the 1950's, there has been no production from the mines since 1927. The extraction of large quantities of ore from the mines resulted in extensive development of the underground workings, the principal source of AMD.
9. There is no evidence that the designated beneficial uses of a warm water habitat, cold water habitat, cold water fishery, or spawning habitat were present below the sources of AMD in Town Creek or the unnamed tributary to Horse Creek prior to adoption of the Basin Plan or the Clean Water Act.
10. The action to adopt a Cease and Desist Order is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the California Water Code.
11. Any person adversely affected by the action of the Regional Board may petition the State Water Resources Control Board to review the action. The petition must be received by the State Board within **30 days** of the date the Regional Board took action. Copies of the law and regulation applicable to filing petitions will be provided on request.
12. On 14 March 2003, in Sacramento, California, after due notice to the Discharger or other affected persons, the Regional Board conducted a public hearing at which the Discharger appeared and evidence was received concerning the discharge.

IT IS HEREBY ORDERED THAT:

1. Millennium Holdings Company, Inc. shall cease and desist from discharging and threatening to discharge contrary to Waste Discharge Requirements Order No. R5-2003-0039, Discharge Prohibitions, Effluent Limits, Discharge Specifications, and Receiving Water Limitations.
2. Millennium Holdings Company, Inc. shall comply with the following time schedule to assure compliance with Waste Discharge Requirements Order No. R5-2003-0039 as described in the above Findings:

<u>Task</u>	<u>Compliance Date</u>
Progress reports, describing the activities of the past six months, shall be submitted at the end of July and January of each year. The Reports shall contain a detailed narrative description of the remedial activities undertaken and contain water quality data, in tabular and graphical form as appropriate, to demonstrate the success, or lack thereof, of the remedial activities.	<u>1 March and 1 September of each year</u>
Replace flumes at Portal BH-3 (D-1) and RS-5 (D-2), install additional flumes or weirs, complete installation of a monitoring network using continuous recording devices, install three new wells at the Rising Star Mine and regrade waste rock piles and abandon pilot treatment cell, as described in the workplan dated December 2002 . Submit report upon completion of these activities.	<u>1 February 2004</u>
Submit mine portal rehabilitation design plan and time schedule to Regional Board.	<u>15 April 2004</u>
Submit 5-year Work-Plan update	<u>1 February 2005</u>
Submit completion report on mine portal rehabilitation, including evaluation of rock competency for installing bulkhead seals.	<u>1 March 2005</u>
Submit bulkhead seal design plan, if appropriate	<u>15 April 2005</u>
Submit 5-year workplan update	<u>1 February 2006</u>
Submit 2005 completion report, if appropriate	<u>1 March 2006</u>
Submit additional bulkhead seal design plan, if appropriate	<u>15 April 2006</u>
Submit 5-year workplan update	<u>1 February 2007</u>
Submit 2006 completion report, if appropriate	<u>1 March 2007</u>

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| Submit waste rock design plan, if appropriate | <u>15 April 2007</u> |
| Submit 5-year workplan update | <u>1 February 2008</u> |
| Submit 2006 completion report, if appropriate | <u>1 March 2008</u> |
| Obtain full compliance with WDRs. | 1 March 2008 |
- All remedial projects, designs, and plans must be developed under the direct supervision of either a California Licensed Civil Engineer or Registered Geologist as appropriate and the documents shall bear the signature and stamp of the registered professional.
 - The Discharger shall continue to reimburse the Regional Board for reasonable costs associated with the oversight of investigation, cleanup, and abatement of the discharges of AMD to surface waters.
 - If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may apply to the Attorney General for judicial enforcement or issue a complaint for Administrative Civil Liability.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 14 March 2003.

Original signed by

THOMAS R. PINKOS, Executive Officer

(Date)

RSD/PVW:sae
26 March 2003