

December 2008 Update

Eagle Mine Superfund Site
Minturn, Colorado
(Five-Year Review Date 9/30/08)

Highlights Since the 2008 Five-Year Review

- **The State of Colorado and the Environmental Protection Agency (EPA) are working to develop an agreement to address future site activities.**

Brief Site History: A hundred years of mining near Vail left metals that killed fish in the Eagle River and threatened drinking water wells in Minturn, Colorado. The site includes the now-flooded Eagle Mine, the abandoned town of Gilman and 8 million tons of mine wastes. Miners began working the Eagle Mine in the 1880s, searching for gold and silver. The Eagle later became a mainly zinc-mining operation, leaving high levels of arsenic, cadmium, copper, lead and zinc in the soil, and in surface and groundwater. EPA placed the mine on its National Priorities List in 1986.

Cleanup Activities Completed: The Colorado Department of Public Health and Environment (CDPHE) and the responsible party, Viacom, (now CBS Operations, Inc. (CBS)), implemented a cleanup plan in 1988 to:

- Plug mine portals to flood the mine workings
 - Collect and treat mine and groundwater in a newly constructed treatment plant
 - Remove, consolidate and cap tailings materials, replant removal areas, cap soils
- Since then, EPA and CDPHE have cooperated on long-term actions. In 1996 the two agencies and Viacom signed an agreement requiring:
- Evaluation of health risks in the middle school and Minturn area
 - Cleanup and reconstruction of the wetlands area
 - Removal of hazardous materials from the mine site
 - Tighter cleanup standards on the Eagle River

Three ground water extraction wells were installed in June 2006. A Belden Roaster waste rock pile was removed and disposed by September 2006, and a ground water extraction trench was built in October 2007.

Fish populations in the Eagle River have improved; testing has shown that risks to human health have diminished or do not exist.

Current Status: Assessment and mitigation of risks to the environment have largely focused on the aquatic ecosystem. Many response actions were intended to

reduce metal loading to site surface water and to a lesser extent to site ground water. Both of these environmental media have shown improvement since the implementation of response actions. Portions of the site may be developed for residential and recreational uses by Ginn Entities. Such changes in land use would require modifications to site decision documents as well as additional response actions to ensure development is consistent with final land use.

Current operation and maintenance activities include maintenance of the multi-component cap over the consolidated tailings pile, mine dewatering, groundwater extraction and the water treatment plant operation.

Summary of Protectiveness:

OU 1: The remedy at OU1 currently protects human health and the environment through implementation of various actions to isolate contaminants from humans as well as collection and treatment of contaminated surface and ground water. However, in order for the remedy to be protective in the long-term, institutional controls to regulate development under existing or revised land zoning are necessary to ensure future land use is consistent with the remedy. In addition, ICs to prohibit new water wells must be formalized.

OU 2: The remedy at OU2 currently protects human health and the environment through implementation of access restrictions and an IC in the form of a commitment by the Eagle County Sheriff's department to patrol the Gilman area and arrest trespassers. However, in order for the remedy to be protective in the long-term, ICs to regulate development under existing or revised land zoning are necessary to ensure future land use is consistent with the remedy.

Site-wide: The remedy is not protective of human health and the environment because additional response actions are necessary to achieve protection of the aquatic ecosystem. New water quality standards have been adopted by the Colorado Water Quality Control Commission (WQCC). The site does not comply with the standards and will not comply in the future without further reductions in zinc loading through additional response actions.

Issues Impacting Protectiveness: The 2008 Five-Year Review was conducted only three years following the second five-year review to evaluate compliance with new water quality standards established by the WQCC in June 2008. The site does not comply with the standards and will not in the future without further reductions in zinc loading through additional response actions. Nine issues were noted during the 2008 Five-Year Review, and recommendations identified. The following table summarizes the status of the follow-up actions addressing these issues.

**Eagle Mine Superfund Site
Five-Year Review Update Table
(Review Date: 9/30/08)**

Issues	Recommendations/ Follow-up Actions	Follow-up Actions (Status/Due Date)	Status of Follow-up Actions 12/08	Responsible Party
<p>1. The two Consent Decrees (CDs) currently in place effectively addressed the completed remedial actions, but do not adequately address current/future operation, inspection, maintenance and monitoring activities nor do they establish Points of Compliance (POCs) and time frame for compliance with Applicable or Relevant and Appropriate Requirements (ARAR) established.</p>	<p>The State and EPA will develop a CD that updates terms, established performance standards, POC(s), ARAR compliance schedule, current/future activities, reporting requirements, schedules and any other items. These requirements will be incorporated into a Compliance Monitoring Plan (CMP).</p>	<p>12/31/09</p>		<p>EPA/CDPH E/ CBS</p>
<p>2. Surface water quality in the Eagle River is not protective of brown trout.</p>	<p>Revision of water quality standards through WQCC occurred in June 2008. New standards adopted by the WQCC become performance standards for the site surface water and will be incorporated into the CD discussed in Issue No. 1. The new water quality standards will be identified as site ARARs in an Explanation of Significant Differences (ESD) or Record of Decision (ROD) Amendment. Additional response actions would be</p>	<p>New water quality standards - June 2008. ESD or ROD Amendment – 9/30/09 Implementation of additional response actions – To be</p>		<p>CDPHE and EPA</p>

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	required to comply with the new performance standards and would be implemented as discussed in the Metals Loading and Water Quality Standards Attainability Analysis (CDPHE, 2008), at a minimum.	determined and defined in the CD discussed in Issue No. 1.		
3. ICs to regulate development under existing or revised land zoning in OU1 were not required under the ROD. Such ICs are necessary to ensure the future land use is consistent with the remedy. These ICs were required under the OU2 ROD but were not formally implemented. Development of portions of OU1 and OU2 as a ski resort with residential development is proposed for implementation within the next several years. Such development will comply with the ICs.	Prepare an ESD or ROD Amendment identifying the need for ICs and the form the ICs will take. This may include environmental covenants (Colorado Environmental Covenant Law, C.R.S. §§ 25-15-317 to 25-15-327) for areas of the site where the land owner is willing to enter into such agreements, County ordinances or other mechanism to maximize the likelihood that appropriate government entities control and/or oversee changes in land use.	ESD or ROD Amendment – 9/30/09 Environmental Covenants – – To be determined based on land redevelopment plans. Other ICs – 12/31/09	Awaiting further reuse or redevelopment plans.	EPA/CDPHE/ Minturn or Eagle County
4. Institutional controls prohibiting new wells required under the OU1 ROD have not been implemented.	Formalize and enforce the ICs through an Environmental Covenant.	12/31/09		Minturn and Eagle County

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5. Physical limits of OU1 and OU2 have not been defined. Therefore, the area over which OU-specific ICs apply is unclear.	Define OU boundaries through resolution of Issue Nos. 3 and 4.	9/30/09		EPA/CDPHE
6. Apparent excessive settlement on CTP resulting in ponded water observed during the site inspection.	Repair cover to reestablish surface drainage.	12/31/09		CBS
7. Geomembrane liner in temporary cell on CTP in poor condition.	Repair geomembrane	12/31/09		CBS
8. The Mine at Adit #8 has partially collapsed presenting a safety hazard for personnel entering the mine.	The State and EPA will work with CBS to address the rehabilitation of the mine tunnel to ensure continued access to the mine workings and to allow periodic confirmatory measurements of the mine pool elevation.	12/31/09		CDPHE, CBS and EPA
9. Proposed redevelopment could potentially impact human health and the environment during and after implementation.	The current property owner (Ginn Entities) has requested Bona Fide Prospective Purchaser Status and therefore will be required to perform additional actions at the site to place the site in a condition that is consistent with the intended land use. These actions will be documented under future decision documents.	12/31/11		CDPHE/EPA/ Ginn Entities