



EARTHWORKS

May 23, 2012

Ms. Amber Vogt, Director
Lawrence County Planning and Zoning
90 Sherman St.
Deadwood, SD 57732

Re: Deadwood Standard Project Conditional Use permit

I am writing on behalf of Earthworks and our members in South Dakota and across the nation. I am writing in relation to the conditional use permit application submitted by the Valentine Mining Company, LLC for the Deadwood Standard Project proposed for development on the rim of Spearfish Canyon.

Spearfish Canyon is a national treasure and vital to the local tourist economy. As stated in a recent editorial by the *Rapid City Journal*, "Quite literally, there is no other place like it on earth. With tourism the region's largest industry, protecting Spearfish Canyon ought to be a priority."

It is premature for the county to be considering a conditional use permit for this project, because the land use designation currently precludes mining on lands included in the proposed operation. The proposed Project is located, in part, on lands designated as Special, Exceptional, Unique or Critical, and therefore mining cannot occur on these lands without a change in designation by the State Board of Minerals and the Environment or a determination that impacts can be satisfactorily mitigated. This has not occurred.

The permit application is also missing basic and important project information that is necessary for the proper analysis of the impacts of this mine project. Without this information, it is impossible to determine the impacts to Spearfish Canyon, Spearfish Creek and to members of the public, let alone whether those impacts can be mitigated.

We ask the County to deny the conditional use permit, given the Special, Exceptional, Unique or Critical land designation, and the inadequacy of information in the permit application.

Sincerely,

Bonnie Gestring
Earthworks

1) The mine is proposed, in part, on lands that are designated as special, exceptional, unique or critical; and mining is currently prohibited on these lands.

The mine is proposed, in part, on lands that are designated as Special, Exceptional, Unique or Critical. The existing state permit authorized 122 acres of disturbance, but the Deadwood Standard Project permit application is proposing to disturb approximately 173 acres, including the addition of a mill site, which was not authorized in the original permit. Furthermore, the entire permit boundary appears to extend to approximately 400+ acres. All of this additional acreage falls within the designation of Special, Exceptional, Unique or Critical.

South Dakota statute 45-6B-33(3) prohibits any mining permit to be issued on these lands, unless the applicant demonstrates that satisfactory mitigation of impacts is possible. The mining company has not obtained a change in land designation from the Board of Minerals.

Furthermore, there is insufficient information to understand the impacts of the Project, let alone whether satisfactory mitigation is possible. As a result, it is currently unlawful for the project to be developed in this area, and the county should forego any consideration of this proposal at this time.

2) There is inadequate information on mine operation & facilities to determine impacts.

According to the CUP application, the mine proposes to mine up to 1,000 tons per day of ore. The mine application does not specify the total amount of production over the life of the mine. More importantly the permit application doesn't provide information on how much mine waste (i.e., tailings) will be generated by the vat leach operation, or how the tailings will be stored, managed or reclaimed. It merely states that spent ore will be put back into lined repositories in the mine pits. Does that mean that there will be multiple tailings impoundments? In fact the application states that, "Detailed engineering designs for ore excavation within the proposed excavation and backfill areas is planned to be completed after county and state permitting is complete." P. 3-14.

Mine tailings from vat leach operations are generally in a slurry form, stored in a lined impoundment behind a dam. It is crucial to have information on the total and annual volume of tailings that will be generated, how the tailings and tailings impoundment will be managed during operations, how leachate from the tailings will be managed, and how those tailings will be reclaimed. For example, the Nixon Fork mine in Alaska, which is a recently permitted 200-ton per day operation, overtopped its tailings impoundment in March 2012 because the company failed to maintain sufficient water balance in the impoundment.¹ As a result, there was an unpermitted release of tailings water, and the overtopping of the impoundment put the integrity of the entire tailings impoundment at risk.

The Deadwood Standard Project CUP application fails to provide information on the location, size, design and dimensions of a tailings impoundment(s), as required by

¹ Alaska Department of Natural Resources, Notice of Violation of Alaska Dam Safety Statutes and Regulations Nixon Fork Tailings Dam, March 19, 2012.

Chapter 20 of Lawrence County Zoning Ordinance, which states that extractive industry projects must provide a topographic site location map, detailing proposed areas of disturbance, *all waste disposal sites*, structures, access and haul roads. It also requires information on all *existing and proposed structures, dimensions, design specifications and location of all facilities*.

The permit application also contains insufficient information on the process area. The designs for the process area facilities (drawings 11034-G-01 and 11032-G-02) are labeled as “Work in Progress” and “Not Released and Not for Reference.” The design specifications need to be finalized before any analysis of impacts can occur.

The applicant has provided a blasting study for another mining project (the Minerva Project) from 1988 – a full 24 years ago, to evaluate the impacts of blasting to the canyon rim and neighboring residents. The mining companies needs to provide specific information on its blasting plans (location, amount, timing), and an independent analysis is needed to determine whether blasting near the rim could result in damage to the canyon, and impacts to tourism and neighboring landowners from noise and dust.

3) There is inadequate information to evaluate the potential impacts to water.

According to the permit application, precipitation that falls on the project area likely infiltrates through the limestone and surfaces in springs in Spearfish Canyon.

“Precipitation that falls on the proposed project area likely infiltrates based on relatively high permeability of the limestone plateau and the lack of observed surface water flow. Most precipitation is released back into the atmosphere through plant transpiration and evaporation, but a portion of precipitation percolates downward through the Pahasapa Limestone. Because the Englewood Formation is a confining layer, much of this water likely migrates laterally along the Pahasapa Limestone/Englewood Formation contact to points within Spearfish Canyon where it discharges to the surface as springs.” (CUP application, p. 5-12)

Hydrological studies are needed to identify the potential impacts to Spearfish Canyon and Spearfish Creek as a result of spill(s), tailings impoundment leaks, or other water quality impacts resulting from mine activities.

Spills and leaks are common at cyanide leach operations. Despite existing mining regulations, the Wharf Mine has experienced repeated cyanide spills over the last ten years, with impacts to Annie Creek and the Annie Creek fish population, including:

Notice of Violation, 1995: From August 21 – 28, 1995, discharged inadequately treated cyanide solution into Ross Valley and subsequently into Annie Creek. Approximately 300 fish were killed as a result of the discharge.

Notice of Violation 1997: Surface water compliance points below Wharf's waste rock depository in the headwaters of Annie Creek and below Wharf's spent ore depository in Ross Valley, and the instream sampling point in Annie Creek has exceeded the daily maximum total cyanide limit of 0.02 mg/L numerous times since March 1, 1994. Monitoring well GWAC-6 is in the alluvium of Annie Creek approximately 450 feet upstream of its confluence with Spearfish Creek exceeded the 10 ppm ground water for nitrate during 1996 and 1997. Also on a few occasions Wharf exceeded selenium and copper at compliance point 001.

Notice of Violation, 2000: Surface water compliance point below waste rock depository in the headwaters of Annie Creek exceeded daily maximum selenium during a period from August 1998 – July 1999. Surface water compliance point 006 exceeded the daily maximum ammonia and 30-day average for ammonia during the months of November and December 1999.

Notice of Violation, 2001: For leakage rates above 2000 gallons per acre per day, Wharf failed to immediately lower the pond level below the leakage point.

Notice of Violation 2003: Wharf violated its groundwater discharge limits for nitrate, when the nitrate concentration at a compliance monitoring well downgradient of the spent ore pile exceeded 10 ppm. Wharf also violated its surface water discharge limits for ammonia.

Notice of Violation, 2008: Wharf violated its surface water discharge permit with the release of biomass from its water treatment plant during the summer of 2007. The discharge affected fish populations in Annie Creek. Wharf also violated its permit limits for ammonia two times, and its limits for cyanide six times.

The Wharf mine has also caused extensive groundwater pollution from nitrates as a result of the breakdown of residual cyanide in the process area and spent ore impoundments and from blasting residues in ammonium nitrate fuel oil explosives found in waste rock repositories. Groundwater pollution that originated in 1995 has continued to exceed human health standards into 2011.

Valentine Mining Company dismisses any concerns about cyanide releases or other water quality impacts, because it states that the mine is an enclosed vat leach operation. Yet, there are many examples of vat leach mines that have experienced significant cyanide releases.

For example, the Golden Sunlight Mine in Montana, an open pit vat leach mine, has had repeated cyanide spills – effecting groundwater and neighboring drinking water wells.² Similarly, the

² Jim Kuipers P.E. Kuipers and Associates, “Nothing New Here” A Technical Analysis of I-137, September 2004.

Grouse Creek mine, a vat leach operation in Idaho that operated from 1994 - 1997, had cyanide spills that affected a neighboring trout stream, and a leaking tailings impoundment that ultimately caused the Forest Service to take emergency action under CERCLA in 2003.³

In the case of the Deadman Standard Project, cyanide spills, leaks and other water quality impacts are of particular concern because it could present a water quality risk to waters in Spearfish Canyon. The existing application doesn't provide sufficient information to determine the risks to Spearfish Creek. This is crucial information, given the importance of these resources to tourism and local communities. A comprehensive hydrologic study is needed to evaluate the connection between the groundwater in the project area and Spearfish Canyon, and whether a spill in the area could result in impacts to the creek or area springs.

There is also insufficient information on the geochemistry of the ore to determine potential impacts to water quality from metals leaching. This is essential information to determine the potential impacts from development rock (waste rock) and spent ore (tailings).

4) There is inadequate information on proposed and existing grading, drainage patterns and landscaping, as required by LCZO Chapter 20 Section 1.5(10).

The permit application does not include a stormwater management plan to specify how the project will control mine run-off. There is no spill prevention, control and countermeasure plan (SPCC) (p. 3-14). And, there is insufficient information on the capacity and design of the emergency overflow pond.

³ United States Forest Service, Removal Action Memorandum, Grouse Creek Mine Tailings Impoundment Dewatering, May 21, 2003. Available at: <http://www.docstoc.com/docs/33951388/REMOVAL-ACTION-MEMORANDUM-GROUSE-CREEK-MINE-TAILINGS>