

Flambeau Copper Mine Reclamation

Ladysmith, Wisconsin

AES began surface reclamation planning and design in 1997 for Flambeau's 180-acre site where copper, primarily copper sulfides, had been mined throughout the mid-90's. Because of the potential for acid mine drainage, the closure plan called for backfilling of the mine pit in the original sequence with waste rock mixed with limestone to neutralize its acidity. The neutralized waste rock was capped with a naturally occurring clay layer, followed by overlayment of the native till to approximate original contours. Salvaged topsoil was uniformly redistributed over the entire site.

AES developed surface grading and reclamation planting plans to handle site drainage and restore ten different plant communities to the site. Communities ranging from wetlands to upland prairies and savanna were planted in phases beginning in 1998 and completed in early 1999. The site, located along the Flambeau River, primarily contained old fields and woodland patches prior to mining activities.

Of the 180 acres, approximately 150 were restored to natural areas, with approximately 30 acres dedicated to the development of a light industrial park utilizing part of the infrastructure developed for the mine. AES designed a wetland system and a wetland-like biofilter complex to filter runoff water on-site, replace wetland habitat, and increase the biodiversity of the post-mining site. Runoff and snowmelt from the reclaimed natural area is filtered prior to discharge into the Flambeau River through a biofilter strategically located where the natural surface drainage channels converge.

The stormwater runoff and snowmelt from the light industrial or commercial area is directed through a biofilter prior to discharge offsite into a natural drainage system. By isolating the industrial park drainage, the reclamation design makes the area more amenable to prospective firms who may be required to obtain stormwater discharge permits. The biofilter will filter stormwater prior to its release, thereby assisting successor businesses in their stormwater management plans. Using ecological landscape design, AES has transformed the problems of mine site restoration into an ecological and financial asset for the local community.



Goals of the design were to:

- Restore the mine site into a natural landscape,
- Provide a high-quality wildlife habitat,
- Accommodate stormwater drainage needs of future light industrial and commercial sites, and
- Obviate subsidence over the former pit area.

Because of the diversity of species and complexity of the planting plan, AES planned and implemented a variety of live plant installation and seeding strategies, including hydro-seeding, drilling, cyclone seeding, hand seeding, transplanting, hand plugging, etc.

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