Snowshoe Mine Reclamation Project

Libby, Montana

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Abstract

Historic mining operations at the Snowshoe Mine near Libby, Montana left behind approximately 65,000 cubic yards of heavy metal laden tailings and waste rock within and adjacent to Snowshoe Creek on approximately 13 acres in the creek's drainage area. Antimony, arsenic, cadmium, copper, iron, lead, mercury, silver and zinc from the mine wastes contributed to the degradation of water quality in Snowshoe Creek. The Montana Department of Environmental Quality (DEQ), in conjunction with the United States Forest Service (USFS), successfully reclaimed the Snowshoe Mine site over a three and a half year work period.

Removal of mine waste materials within the Snowshoe Creek drainage was commenced in September of 2007. The site is located at an elevation of 4,500 feet on the edge of the Cabinet Mountains Wilderness Area. Approximately 2,000 feet of Snowshoe Creek was diverted utilizing a temporary channel to dewater the mine wastes. The waste materials were hauled to a nearby repository location and sealed in place. The repository consisted of a multi-layered impermeable cap. Additionally, two hazardous mine openings located in an avalanche chute were sealed with bat-friendly closures. Clean amended cover soil, which was fertilized, seeded and mulched, was placed within the footprints of the removed wastes. Following waste removal, Snowshoe Creek was reconstructed with coir fabric, grade control structures and check dams and pools throughout the entire disturbed footprint.

Project challenges included short work seasons attributable to harsh climatic conditions, constraints due to several threatened and endangered species, remote work site, avalanche chutes and associated steep topography.

Reclamation of the Snowshoe Mine site was designed to reduce human, wildlife and environmental exposure to the contaminants, as well as reduce the mobility of the contaminants and limit the impacts to the local surface water and groundwater resources. The reclamation was funded by the United States Department of Interior - Office of Surface Mining, the United States Forest Service and the Montana Department of Natural Resources. The project was completed in July 2010 at a cost of approximately $3.3 million.

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