



ENVIRONMENTAL ASSESSMENT

for the

Big Hole River Diversion Dam

in

Silver Bow and Beaverhead Counties, Montana

APPENDIX B

DESCRIPTION OF HISTORIC DIVERSION DAM FOOTPRINT FOR DNRC TRUST LANDS PERMITTING

Historic Footprint for Purposes of DNRC Trust Lands Permitting

The historic footprint of the Big Hole River Diversion Dam and Intake structure is defined as not only the structure and its placement on, under, or above the streambed, but also that area which has historically been used for both maintenance and original construction of the existing structure. This historical footprint has been defined through surveys of the existing structure, mapping of adjacent features and topography, and through discussions with Butte Silver Bow (BSB) maintenance employees, Utilities Division managers and operators.

In recent years, BSB has conducted repairs to both the upstream and downstream portions of the diversion dam and intake. In 1998, BSB accessed the streambed immediately downstream of the dam to buttress the dam footings with imported rock fill. This buttressing was required due to undercutting of the dam on the downstream side and to preclude imminent failure of the dam's ability to check up the water surface. The imported rock was hauled to the south shore of the river and then machine placed across the downstream face of the dam with excavation equipment and cranes. This effort was again repeated in 2006 with similar access and activities. During the 2006 repairs, BSB also placed riprap along the south shore dam abutment approximately 100 feet up and down stream of the abutment to correct streambank erosion that was threatening the south abutment walls.

In 2003, BSB completed emergency repairs to the upstream face of the pier located in the middle of the river. The upstream face of the existing concrete pier was deteriorating and in jeopardy of failing. The activities including constructing coffer dams upstream of the pier, dewatering the site, installing a new steel nose plate structure on the pier and then placing concrete between the triangular nose plate and the existing pier. This activity required BSB to access the streambed upstream of the structure and the use of cofferdams and equipment to facilitate the repair.

On a more frequent basis, BSB maintenance crews continually access the streambed for 100 to 150 feet downstream of the dam for purposes of ice and trash removal as part of their routine maintenance activities. In addition, BSB personnel routinely access the streambed upstream of the dam for the same purposes of ice removal, establishing flow channels in the ice and to remove debris and trash that are detained on the structure. These upstream activities are nominally contained to 100 to 150 feet upstream of the existing structures.

In recent years, BSB has also installed safety cable and emergency retrieval trolley chairs to improve operational safety and to promote safer and more immediate rescue of stranded boaters. These installations have required access to the streambed both up and downstream of the structures for purposes of installation and maintenance of these safety cable and retrieval chair systems.

In the 1960's, BSB personnel installed an infiltration gallery and a series of perforated pipes within the river streambed that were manifolded together into a collection box on the north river bank that fed the pump suction headers. These perforated pipes and collection box required access to the streambed and also periodic maintenance activities. This system is still in place today and remains operable albeit with marginal effectiveness and is not used regularly.

Through these discussions and documentation of events, the historical footprint has been defined as an area approximately 400 feet in length by the width of the river comprising about 1.6 acres more or less. More specifically, the area is defined as shown on Sheet No. 1 of the Preliminary Alternatives Drawings as Station 30+50 downstream and Station 34+50 upstream and by the north and south banks of the river.