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Hydraulics

Hydrology

Water Resources

October 7, 1999

Mr. Allen Merritt
Idaho Department of Water Resources
1341 Fillmore Street, Suite 200
Twin Falls, ID 83301

Re: Application for Permit 45-07745
Additional information

Dear Allen:

I am writing in response to your letter dated September 6, 1999 with regard to a new application for permit filed by the U.S. Forest Service. We have been involved with the Pomerelle Ski Area for approximately 3 years in order to determine the effect of the ski area's water usages on the hydrology of the Howell Creek basin. You requested that additional information be submitted relative to the consumptive use which would occur under the new permit. This letter will provide information to evaluate the permit application in terms of the effect of the proposed use on the hydrology of the Howell Creek basin and other water right holders in the basin.

I am including with this letter a summary of the data collection and analysis that has been performed to date. This narrative was prepared in conjunction with the previous transfer application that was filed by the USFS and subsequently protested.

The snowmaking proposed for the ski area will be largely non-consumptive, although a portion of the water is lost to sublimation and evaporation. It is estimated that the total annual consumptive use of the snowmaking will be 1.94 acre-feet. Stream gauges installed at two locations on Howell Creek indicate that the total annual average runoff of the basin is approximately 2050 acre-feet at the Bennett Springs road and 3930 acre-feet at the Howell Canyon road. The snowmaking consumptive use is less than 0.1% of the total runoff.

During the proposed snowmaking period, water will be withdrawn from Howell Creek and from the storage reservoirs. The 27 gpm to be withdrawn from the creek is 2.5% to 3.0% of the measured streamflow, which is nearly constant during this period. The snowmaking period is after the irrigation season, so no senior water right holder would be injured by this withdrawal.

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EXHIBIT 14

It is proposed to store early-season runoff in three reservoirs for use later during the snowmaking period. The application requests 16.3 acre-feet of storage. Diversion to storage of this water would occur during the runoff period, which generally begins in mid-April. The reservoirs would fill rapidly and only during the period when the flow in Howell Creek is very high and water cannot be utilized by downstream irrigators. It is estimated that the reservoirs will take less than two weeks to fill, after which no diversion of runoff will occur. No injury to other senior water right holders on Howell Creek would occur because of this capture of spring runoff.

It should be noted that water withdrawn from Howell Creek or from the reservoirs during the snowmaking period will be stored on the hill in the form of artificial snowpack. This snow then melts and contributes to runoff the next spring. The calculations show that the runoff will be augmented by 17.5 ac-ft in this manner, which more than offsets the 16.3 ac-ft required to fill the reservoirs. Therefore, there will be no net decrease in spring/summer runoff.

Once full, evaporation will occur from the reservoir surface. My site inspections and a review of the topography indicate that an average water depth of 6.0 feet should be achievable. The water surface area will therefore be 2.72 acres. Average annual free water surface evaporation has been estimated by the Idaho State Climatologist's office. For the Pomerelle area, this value is 39.8 inches/year which yields a total annual evaporative volume of 9.02 acre-feet.

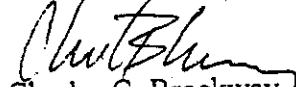
Although the reservoir evaporation is certainly a consumptive use, no injury to senior water right holders on Howell Creek will occur for the reasons outlined above. Once full, the ponds will be isolated and will simply store water on the hill until it is required for snowmaking in late October. This is very unlike the typical case of constructing a pond on a live stream, which increases the water surface area and hence raises the evaporative depletion on a continuous basis. It is also unlike a typical irrigation diversion, which causes a consumptive depletion on a continuous basis throughout the irrigation season.

Paragraph 9(b) of the Amended Moratorium Order for the Eastern Snake River Plain states that a new permit can be approved if "The Director determines that the development and use of the water pursuant to an application will have no effect on prior surface and groundwater rights because of its location, insignificant consumption of water or mitigation provided by the applicant to offset injury to other rights."

In terms of consumption of water, the total estimated consumptive use is 10.96 acre-feet (1.94 for the snowmaking, and 9.06 evaporative). This is a substantial volume, but could be considered insignificant relative to the total basin surface water yield. Also, the analyses provided herein show that, because of location and timing, this new permit would have no effect on prior surface or groundwater rights in the Howell Creek basin.

Please do not hesitate to call if you have questions or need clarification.

Sincerely,



Charles G. Brockway