

MEMORANDUM

January 29, 2010

To: Application for permit 27-7582

From: Ernie Carlsen, Program Manager

Re: Mitigation for permit 27-7582

The pond covered by this application for permit appears on the 1987 NAPP confirming the previous owner constructed the dam and filled the pond over 22 years ago. According to information obtained from Mr. Stolworth, who constructed the pond, the area where the pond is located was irrigated pasture.

The pond is located at an elevation very close to 5100 ft above mean sea level ("AMSL"). Referring to the ETIdaho website, there are two sites fairly close to the pond location but at different elevations. The Blackfoot site is at an elevation of 4500 feet and the Idaho Falls 16 SE site is at 5700 feet. Since 5100 feet is in the middle of the two elevations, averaging the numbers between the two tables approximates the precipitation deficit at the elevation of the pond. Because of the location of the pond, the calculations below are based on a 200-day irrigation season from April 15 to October 31.

	<i>Blackfoot</i>	<i>Idaho Falls 16 SE</i>	<i>Average</i>
<i>Grass Pasture (low Management)</i>	<i>2.22'</i>	<i>1.48</i>	<i>1.85'</i>
<i>Open Water (shallow system)</i>	<i>1.78'</i>	<i>1.43'</i>	<i>1.60'</i>

During the 2009 irrigation season, flow measurements made by James Cefelo using a AA meter determined inflow to the pond was 0.84 cfs and overflow back to the creek was 0.81 cfs a difference of only 0.03 cfs and less than 4% depletion of the total inflow. James conducted a measurement earlier in the irrigation season with very similar results. Though the percent of depletion is within the standard percent of error for the instrument, any depletion from the pond would consist of evaporative losses and losses due to seepage. In the case of seepage, the dam creating the pond is adjacent to Wolverine Creek at an elevation above the creek, so outflow from the pond goes directly into the creek. With the hydrologic gradient sloping from the dam to the creek, similarly, what seepage may occur considering the pond is at least 22 years old would naturally flow to the creek. With regard to evaporation, comparing the precipitation deficit for grass pasture and open water indicates the evaporative loss is actually less with the pond than historically occurred prior to its construction. Considering the elevation relationship between the pond and Wolverine Creek, the close proximity of the pond to the creek, the historically occurring evaporation and that one-acre was removed from irrigation with construction of the pond, the percentage of depletion is further reduced making it so insignificant that mitigation for evaporation and seepage should be pardoned.

Though the pond is full, mitigation is still required for the one time fill of 8.8 AF, the pond volume. Mitigation is calculated by dividing the pond volume by 1.86 feet, the averaged precipitation deficit for grass pasture. The result reveals 4.8 acres of irrigated land must be idled for one irrigation season to mitigate for the one time fill. The present owner has agreed to use water rights 27-51B and 27-11919 to provide this mitigation. These two rights are included in the large group that was objected to by the BIA and Shoshone Bannock Tribes. The shape files for the two rights must be modified to identify the acres to be set aside and the recommendation modified to reflect the mitigation both in the place of use and in the conditions.