

To: IDWR Transfer Application 84902
From: Remington Buyer
Date: December 17, 2021
Re: Technical Supplement for Transfer of 84902

PURPOSE/NARRATIVE:

Transfer application 84902 was protested by the Idaho Water Resource Board (IWRB). James Cefalo was appointed the hearing officer for the protested transfer application. Mr. Cefalo requested that a technical analysis of the transfer be conducted by both the transfer applicant, and by the IWRB. This memo summarizes the findings of a technical review of the transfer application performed on behalf of the IWRB.

Transfer 84902 includes ground water rights 37-22499 and 37-8409. During the pre-hearing conference, it was noted that the transfer seeks an authorization to allow for ground water to be pumped for irrigation purposes at a new location. Representatives of the transfer applicant affirmed that the ground water rights have not been used at their current location during the past five years. Water right 37-8409 has not been used in more than six years and has now become subject to forfeiture through non-use. Water right 37-22499 is supplemental to surface water rights 37-20843, 21240 and 21242. If surface water has not been diverted and used for irrigation purposes during 2011 and during the period of 2017-2021, then six years of non-use has elapsed under the surface water rights, and they, along with supplemental ground water right 37-22499 have become subject to forfeiture through non-use.

A review was conducted to quantify the impact of pumping ground water under primary ground water right 37-8409 at the location to which water right is proposed to be transferred. The review consisted of modeling the impact to the Big Wood River of continuously diverting a steady stream of ground water at the new location, during 2022. Water right 37-8409 authorizes an annual diversion volume of six acre feet (af) for irrigation purposes. The irrigation season is approximately 214 days in the Wood River Valley, from April 1 through October 31. Dividing six af by 214 days provides for a potential average pumping volume of 0.028 af/day, which is in turn equivalent to a diversion rate of 0.014 cfs, continuously, throughout the irrigation season.

The Alluvial Water Accounting System (AWAS), developed by Colorado State University (CSU), was used to model the impact of the above described ground water pumping scenario. A daily diversion volume of 0.028 af/day was modeled using AWAS. This pumping volume was divided in half and associated with the points of diversions (PODs) associated with water rights 37-8461 and 37-8647, which are ground water rights at the location to which the water rights are proposed to be transferred. The distance from wells to the river was modeled as 800 feet and 940 feet for the two PODs, while the distance from the two PODs to the boundaries of the ground water model were set at 5900 feet and 5600 feet. A transmissivity of 24288 gallons per day per foot (GPD/ft) and 25462 GPD/ft was set for the respective PODs.

Based on a pumping of 0.014 af/day, from April 1, 2022 through to October 31, 2022, a cumulative 6 af of water might be pumped annually from either POD, resulting in a net depletion of 4.19 af which would be depleted from the Big Wood River. This depletion averages out to 0.01 af/day. The model results are summarized on page three of this memo.

Per technical modeling, if Transfer 84902 authorizes a relocation of ground water right 37-8409 to the new location, it appears 4.2 af of surface water will be removed from the Big Wood River during the irrigation season, each year, resulting in a direct, negative impact to the IWRB's minimum streamflow on the Big Wood River.

Ground water right 37-8409 is located close to supplemental ground water right 37-22499. Based on a finding that approximately two thirds of the ground water pumped under 37-8409 might be depleted from the Big Wood River, it can be assumed that as much as 11 af might be depleted from the Big Wood River annually if 17 af of ground water is pumped under 37-22499 during the irrigation season.

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