

MEMORANDUM

July 8, 2003

To: Pam Skaggs, Water Rights Permits
From: Shane Bendixsen, Technical Hydrogeologist
Reviewed by: Garth Newton, Hydrology Manager Section
Subject: **Transfer 70506, Simplot**

It is my understanding JR Simplot Co. has applied to transfer a portion of a current surface water right to a ground water right in T06S R34E sec 06 near Pocatello, Idaho. The surface water right is from the Portneuf River. The distance between the current point of diversion and the proposed point of diversion is approximately ¼ mile. The reader is referred to application for transfer for a location map. The following is a brief hydrologic review.

Their consultant's argument is based on previous work that concluded there is a distinct shallow aquifer separated from the deep or regional aquifer by the American Falls Lake Beds (formation?). This shallow aquifer is in direct hydraulic connection with the Portneuf River based on ground water contours and ground water geochemistry.

While their argument may very well be correct, no estimate is made for stream depletion. It is my understanding there must be at least 50 percent depletion in one day for the transfer to be acceptable. Based on the proximity for the current and proposed points of diversion to the Portneuf River, there is a good chance there will be 50 percent depletion the first day. But some type of analysis is needed to confirm this.

I would suggest an analytical method such as image wells (the Jenkins Method) or possibly a numeric model. Based on the proximity to the Portneuf River an analytical method would be appropriate.

Based on the amount being transferred, a pump test will not be useful. The amount transferred is only 2.94 cfs (1300 gpm) and flow in the Portneuf is approximately 250 cfs. Stream gauging is usually only accurate within five percent. Therefore the amount transferred will not be detectable.

There should also be some discussion about well construction. Since the transfer is from the river to the 'shallow aquifer' the well will have to be designed to insure the deep or regional aquifer is not tapped.

In closing, I am not in disagreement with the applicants findings, but a much more thorough analysis is needed.