

2. I have a B.S. in Civil Engineering from the University of Idaho; an M.S. in Civil Engineering from the California Institute of Technology and a Ph.D in Civil Engineering from Utah State University. Since the 1960's to the present date, I have been instrumental in the characterization and analysis of water resources throughout southern Idaho and the Northwest. I have headed a team of university researchers who developed the first numerical groundwater model of the Eastern Snake River Plain Aquifer. I have authored over 100 publications. I have extensively investigated the Big Wood River surface water and groundwater systems over approximately the last 30 years, and have overseen the development in 2009 of a numerical groundwater model of a portion of the system. As a person who was raised in Blaine County, which includes the Big Wood River, I have first-hand knowledge of the Big Wood River system.

3. I have been asked to provide an opinion on Transfer No. 73969 (water right 37-21956). I understand that the priority date for water right 37-21956 is March 24, 1883, a split from the so-called W.T. Riley water right adjudicated in the Frost Decree. I have been asked to render an opinion of the propriety of subordinating the priority date for water right 37-21956 to the two minimum stream flow (collectively "MSF") rights. Those MSF water rights are: (1) 37-8308, 119 cfs, priority date of October 16, 1987; and (2) 37-7919, 70 cfs, priority date of June 18, 1981. I understand that the Idaho Department of Water Resources ("IDWR") required water right 37-21956 to be subordinated to the two MSF rights, if the actual streamflow at the U.S. Geological Survey gauging station at Hailey (the "Hailey Gauge") was less than 189 cfs, as a condition of approval of the transfer. I understand that the reason for the subordination is to prevent injury to the MSF rights.

4. The water right was transferred out of the Hiawatha Canal to a property located in the Gimlet Subdivision, approximately 3 miles upstream of the original point of diversion. At the new point of diversion, the water right allows irrigation of 0.9 acres and a diversion rate for irrigation of 0.02 cfs (1.0 miners inch). In a companion permit approval for a small storage pond, the evaporative component is identified as 0.01 cfs. Therefore, the maximum consumptive depletion from the water resource is 0.03 cfs.

5. Both the original diversion and the new diversion are located at least five miles north of the so-called "Hailey Gauge." The Hailey Gauge is the only place within the reach of the MSF rights to measure the actual streamflow on a systematic basis. The Hailey Gauge consists of a discharge rated section and a device which continuously measures the water level in the river. A rating curve developed from field measurements relates the water level to the streamflow.

6. In my opinion, due to the *de minimus* nature of the amounts in question, there is no way to measure the diminishment or actual injury, if any, of a transfer of 0.03 cfs of water, using the Hailey Gauge as a surrogate. The typical accuracy of streamflow gauges on rated sections is at best +/- 5%, and is likely closer to +/- 10%. I performed a statistical analysis of 235 field measurements of streamflow made by the U.S. Geological Survey at the Hailey Gauge. The 95% confidence interval of the difference between the field measurement and the streamflow predicted by the rating curve, was +/-5.8%. The 95% confidence interval is an accepted means of expressing statistical accuracy. This analysis does not account for potential error in the field measurements, but does provide some indication of gauging error.

7. In this case, the combined rate of the two MSF rights is 189 cfs. At this streamflow, the accuracy of the Hailey Gauge is no better than +/- 5%, or +/- 9.45 cfs (472.5 inches). The consumptive diversion rate of the right being transferred is 0.03 cfs (1.5 inches). In other words, the right being transferred is 0.3% of the amount of water contained in the margin of error of the Hailey Gauge for a stream flow of 189 cfs. Therefore, there is no scientific method to determine using the Hailey Gauge whether, when the gauge reads 189 cfs, diversion of water at the new location is in fact causing a violation of the MSF rights.

8. In the approval of Transfer No. 73969, IDWR made the implicit assumptions that a) the Hailey Gauge, correcting for major upstream diversions from the river, could accurately be used as a proxy for the streamflow in the MSF reach; and b) when the gauge reads exactly 189 cfs or below, any and all upstream transfers, no matter how small, would result in injury to the MSF rights (memo from Allen Merritt, July 2, 2009).

9. Any determination of injury should first be based on a quantifiable impact. The impact in the case of the MSF rights should be quantified based on a scientific determination of the magnitude and location of net impact to the streamflow. Net impact to the streamflow should consider changes due to the proposed transfer in the magnitude and location of diversion, consumptive use, and return flow to the river either via a surface path or aquifer-river exchange. The scientific determination of net impact should be based on actual measurements, analytical calculation, or numerical modeling. Based on information in the IDWR files, no such scientific determination was made in this case.

10. After quantification of actual impact on streamflow, any determination of injury should be based on the effect of the impact on the beneficial uses authorized by the water right. Based on information in the IDWR files, no such analysis was performed in this case.

11. In my opinion, a conclusion that such a transfer would cause injury to the MSF rights is not well-supported by the scientific evidence.

12. Water rights on the river with priority dates of March 24, 1883, have historically been active in nearly all years even when the Hailey Gauge flow is less than 189 cfs. Subordination of water right 37-21956 to the MSF rights whenever the streamflow at the Hailey Gauge is less than 189 cfs would therefore result in an effective advancement of the priority date of the right. In order to determine the magnitude of the advancement, I analyzed priority cut data reported by the watermaster of Water District 37 for the years 1948 through 2008, and determined for each year which priorities were still active when the streamflow at the Hailey Gauge declined to 189 cfs. I determined the following:

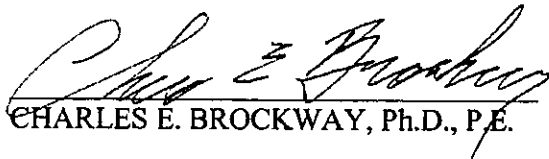
- a. Save for a single year, the March 24, 1883 rights have never been cut when the Hailey Gauge flow was 189 cfs or greater.
- b. Based on the median cutoff date, subordination to the MSF rights would effectively advance the priority to June 3, 1884. In some years, the effective advancement would have been to approximately September 1884. In some years, the effective advancement would have been essentially nil.

13. Based on the priority cut data cited above, a water right with a March 24, 1883 priority date has been active, on average, through October 5. A water right with a priority date of June 3, 1884 has been active, on average, through September 14. Advancement of the priority date to June 3, 1884 would significantly reduce the value of the water rights by reducing the reliability of the water right and eliminating, on average, three weeks of irrigation water supply.

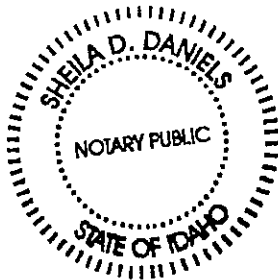
14. Finally, my firm has been involved in many transfers. In my years of practice, I have never witnessed IDWR subordinate any transferred right to a MSF right.

FURTHER YOUR AFFIANT SAYETH NOT.

DATED this 9th day of October, 2009.


CHARLES E. BROCKWAY, Ph.D., P.E.

SUBSCRIBED AND SWORN to before me this 9th day of October, 2009.




NOTARY PUBLIC FOR IDAHO
Residing at: Kimberly, Idaho
Commission expires: Aug 16, 2013

CERTIFICATE OF SERVICE

I hereby certify that on the 9th day of October, 2009, I served a true and correct copy of the within and foregoing document upon the attorney(s) named below in the manner noted:

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XX By depositing copies of the same in the United States Mail, postage prepaid, at the post office at Hailey, Idaho.

 By hand delivering copies of the same to the office of the attorney(s) at his offices in Hailey, Idaho.

✓ By telecopying copies of same to said attorney(s) at the telecopier number _____, and by then mailing copies of the same in the United States Mail, postage prepaid, at the post office at Hailey, Idaho.

& by e-mail.


FRITZ X. HAEMMERLE