UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

Docket No. 12-70338

IDAHO CONSERVATION LEAGUE,

Petitioner

v.

BONNEVILLE POWER ADMINISTRATION,

Respondent

Petition for Review
Under the Northwest Power Act

DECLARATION OF KATHRYN DIDRICKSEN

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I, KATHRYN DIDRICKSEN, hereby declare as follows:

1. My name is Kathryn Didricksen, and I reside in Boise, Idaho. The following matters are personally known to me and, if called as a witness, I could and would testify truthfully thereto.

Statement of Qualifications & Basis for Testimony Regarding Erosion

2. I am a graduate of Western Washington University (BS, Geology) and Eastern Washington University (MS, Geology with Hydrogeology emphasis). I retired in June 2011 from the Bureau of Reclamation, where I worked for more than 32 years as an Engineering Geologist and Hydrogeologist carrying out scientific investigations for engineering, agriculture, water supply, and stream restoration projects.

3. During my professional career I reviewed and interpreted geologic and technical information from maps and reports; designed and completed field investigations to determine landslide and erosion processes and groundwater occurrence and movement; monitored landslides along Reclamation reservoirs; designed, tested and measured wells to determine hydraulic properties of aquifers; and wrote technical reports with scientific interpretations.

4. I am familiar with the scientific literature regarding geology and groundwater hydrology, both in general and throughout the Pacific Northwest.

5. I have reviewed the 2011 Army Corps of Engineers (COE) and Bonneville Power Administration (BPA) Final Environmental Assessment (EA) for the Flexible Winter Power Operations of Albeni Falls Dam, and I have read appropriate sections of the Columbia River System Operation Review (SOR) Final Environmental Impact Statement (BPA, et al, 1995). I have also reviewed several technical reports concerning erosion of the Clark Fork delta in Lake Pend Oreille (Parametrix, 1998; Findlay Engineering, 2000; Ducks Unlimited, 2009; Idaho Department of Fish and Game, 2009, 2010; and COE, 2010) and general studies dealing with reservoir shoreline and streambed erosion (Gotto and Doe, 1987) and Rosgen (2001).

Shoreline Erosion at Albeni Falls Dam

6. The SOR Final EIS recognized and described many of the variables that can affect the rate of erosion and processes acting on a reservoir shoreline and stream bed, including (but not limited to) the shoreline orientation, stream currents, composition and layering of the shoreline sediments, climate and wind fetch, wave action, freeze-thaw processes and groundwater piping. Although all of these processes occur

naturally, reservoir level fluctuations add to the magnitude and complexity of these erosion processes.

7. The Parametrix assessment (1998) indicates that raised lake levels and pool level fluctuations from operations of Albeni Falls Dam and wind generated waves along the shoreline have been the most significant factors influencing erosion of the Clark Fork delta. Also, a loss of bank vegetation and soil structure caused by the increased lake levels contribute to shoreline erosion during periods of exposure when lake levels are lowered. Several technical studies (Gotto and Doe, 1987; Findlay Engineering, 2000; Ducks Unlimited, 2009; and COE, 2010; IDFG, 2009 and 2010) concur with these general conclusions and confirm that shoreline erosion from Albeni Falls Dam operations is significant and that the magnitude of erosion is increased by the fluctuations of the reservoir pool level.

8. The EA recognized the increased potential for erosion due to bank seepage and groundwater piping related to increased water level variations. But the EA simply stated: "These increases are expected to be incremental relative to the rate of erosion that occurs throughout the year particularly in the summer" (section 4.5.1, page 4.15). This statement is not sufficient to determine the quantity or significance of the increased erosion from the new winter fluctuations. The EA does not differentiate between

erosion caused by summer pool level fluctuations (current operations) and winter fluctuations (proposed action), nor does it cite any monitoring that has studied winter erosion impacts.

9. In my opinion, focusing the wave energy and drawdown induced erosion on elevations not historically subjected to these processes during winter may result in an increased loss of stratigraphic integrity.

10. An assessment of areas prone to these processes, based on shoreline stratigraphy, location and orientation with respect to wave energy, coupled with a monitoring program of bank pins and measurements, would be necessary to properly characterize and quantify the amount of erosion expected and to identify areas with higher erosion susceptibility. Without this type of information, it is difficult to evaluate the potential impacts of the proposed action.

11. When little is known about a resource or when a negative impact could occur, it is appropriate to set forth monitoring requirements so that baseline conditions and the range of variable conditions can be documented. Then, with background information to compare to, potential impacts can be evaluated based on the measured data. As the SOR final EIS states, “Monitoring shoreline erosion is the basic tool for preventing it”.

DATED this 19th day of September, 2013.

/s Kathryn Didricksen

Kathryn Didricksen