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**Re: Opposition to J. C. Boyle Dam Removal 401 Water Quality Certification Approval**

Current and future Oregonians are, and should continue to be, beneficiaries of the monumental achievements in water infrastructure that has created Oregon's exemplary agricultural economy. The proposed removal of the four PacifiCorp dams, including the J. C. Boyle dam in Oregon, will destroy that very infrastructure.

Therefore, I stand alongside the majority of tax-payers and citizens in firm opposition to ODEQ's approval of a water quality certification request for the J. C. Boyle Dam removal project.

The dam removal effort has too many uncertainties which bear negatively on long-term water quality, river habitat and fish spawning grounds due to the river dynamics and existing sedimentary buildup behind the dams.

These dams serve several environmentally beneficial functions by first, creating a series of reservoirs which diminish turbidity and improve water quality as water moves through the system. These reservoirs are essentially giant settling ponds for particulate matter, including erosional debris, dead algae, cobble-sized sediment, pebbles, and valley-fill alluvium.

Particulate organic matter, that originates from Upper Klamath Lake, basin agricultural return flows, municipal and industrial sources in the Klamath Falls area, is largely trapped by the J. C. Boyle reservoir. The overall nutrient loads, including naturally occurring phosphorous rich material, settles behind the dam and never reaches the slower moving and shallower gradient portions of the river system. In turn, Copco 1, Copco 2 and Iron Gate Dam reservoirs also serve to keep sedimentary debris from flowing further downstream.

Although, all four reservoirs are known to have elevated organic loads, they still serve as excellent sedimentary traps. Current estimates range from 15 million to 30 million cubic yards of sediment behind all four dams. The J. C. Boyle dam, had an estimate that was originally 1.5 million cubic yards. Today the estimate has been forced into a range that is deemed politically acceptable, at 600,000 cubic yards. This number is still a ridiculously large volume of sedimentary debris to consider flushing into the California river system. Flushing this debris would be unconscionable and would cause catastrophic harm to the overall river environment, downstream fish populations, spawning grounds and riparian habitats.

Additionally, the toxicity of these enormous volumes of muck and sedimentary composites have not been sufficiently studied. Mining operations have long surrounded the river system throughout So. Oregon and No. California. A U.S. Geological Survey review of mine data (2005), highlights that these past operations released elevated amounts of toxic substances into the watershed, including arsenic, chromium, copper, lead, mercury, nickel, tungsten, uranium, and zinc.

Oregon has been tightening rules, initiating moratoriums and legislating outright bans on various small-volume run-of-river dredge mining operations for years. Therefore, ODEQ should have serious reservations about the complexities involved in this potential toxic stockpile and be less insistent on approving this certification. Otherwise, the citizens will recognize this current 401-certification process is a politically motivated, agenda-driven water quality charade reeking with double-standards.

The existing dams provide beneficial cleansing structures which allow the massive fresh-flow tributaries, and downstream volumes of low phosphoric, clean water from the western-slope to actually improve water quality as it travels the 250 miles to the Pacific Ocean.

ODEQ should never considering allowing this potential toxic debris into the river system. First, it will never make it to the Pacific Ocean because deep boulder pockets, gravel and cobble bars and the subsequent multiple confluence embankments and ridges that occur along the lower elevations will trap the overwhelming tonnage of debris.

Additionally, the downstream gradient is too shallow, and the river flows will never be sufficient to mobilize the debris field. ODEQ's permit approval pretends to only be concerned about water quality in Oregon. This is indefensible because all of these toxins, muck and sedimentary debris will devastate the lower river.

The downstream impacts cannot be ignored. From River Mile 160 to the Pacific Ocean the gradient approaches a mere two percent (.1893) grade (Figure-1). The drop to sea level is only a 1600-foot change in elevation, which is only 10 feet per mile. ODEQ certainly knows the typical waste-water or home septic system would require a slope of 110 feet per mile to drain efficiently.

While dam critics often complain that dam construction has altered the natural sediment transport processes reducing gravel bar and pocket gravel deposits and thereby reducing salmonid and lamprey spawning and rearing habitats, dam removal is not the solution.

The purposeful disbursement of Oregon's debris field into California's portion of the Klamath River system would be an immoral act.

In fact, the debris flow today, with the dams in place, is too heavy for the current channelized flows to successfully push into the Pacific. Even with the benefit of increase flows used for dissolution and flushing programs, which are regulated by the dam structures, there is insufficient flow to clear the mouth of the river (Figure-2).

The J. C. Boyle dam:

- Provides cool water for the continued operations of Iron Gate Fish Hatchery which releases 7 million anadromous fingerlings annually
- Provides clean, renewable, low-cost hydroelectric power for 70,000 households
- Reduces peak flood flows by 25 percent
- Reduces algae blooms in the Lower Klamath River
- Reduces river temperatures in the Lower Klamath River
- Reduces river sedimentation and debris buildup in the Lower Klamath River
- Provides for lakeside camping, hiking, fishing, boating and recreational opportunities
- Provides river rafting and business opportunities
- Provides reservoirs for bio-remediation, while trapping toxins and sediment
- Allows for flow control and remediation techniques, such as flushing flows

These positive attributes provide enormous public benefit and sufficient reason for ODEQ's denial of this step in the dam removal certification process.

In closing, there is another item that ODEQ must consider – Cost. Original cost estimates ranged from \$1.4 billion and upwards. After 2010, when the US Congress first balked at funding the destruction of the Klamath Dams, there was an enormous effort to “find cost reductions.” The results offered nothing more than cost shifting and slight-of-hand congressional Gerry-rigging of payments from various agency-level accounts. Never-the-less, the public was told of a new cost estimate of \$800 million, a reduction of \$400 million. Today, the Klamath River Renewal Corp. estimates total cost at \$400 - \$450 million dollars, an estimated reduction of nearly \$1 billion. It appears that if we wait a couple of more years the cost would be halved again!

I suggest, that a neat and tidy, \$1 billion cost reduction from the original estimates with an overall price-tag of only \$400 million cannot be legitimate, at least not using the same project scope and equivalent efforts. This begs the question, what items will be added to complete the dam removal project and who will fund future restoration and remediation efforts?

No doubt, tax-payers will end up paying the full-price. They will be burdened with millions of dollars of cost-overruns, future water quality issues, higher rates for base-load electricity, devastated habitat and riparian areas, and the destruction of private property, all because of an over-whelming, unfathomable mindset intent on destroying western civilization's technological advances.

Oregonians should be the beneficiaries of the monumental investments, hard work and successful achievements made possible by our state's water infrastructure. Oregon's status as a modern agricultural and technological engine has been made possible by inexpensive base-load electricity and abundant, well-managed water resources.

Please ensure our heritage by denying approval for the 401 Water Quality Certificate for the removal of the J.C. Boyle dam.

Sincerely,



Dennis Linthicum  
OR State Senate – District 28

Attachments: Figure-1, Figure-2

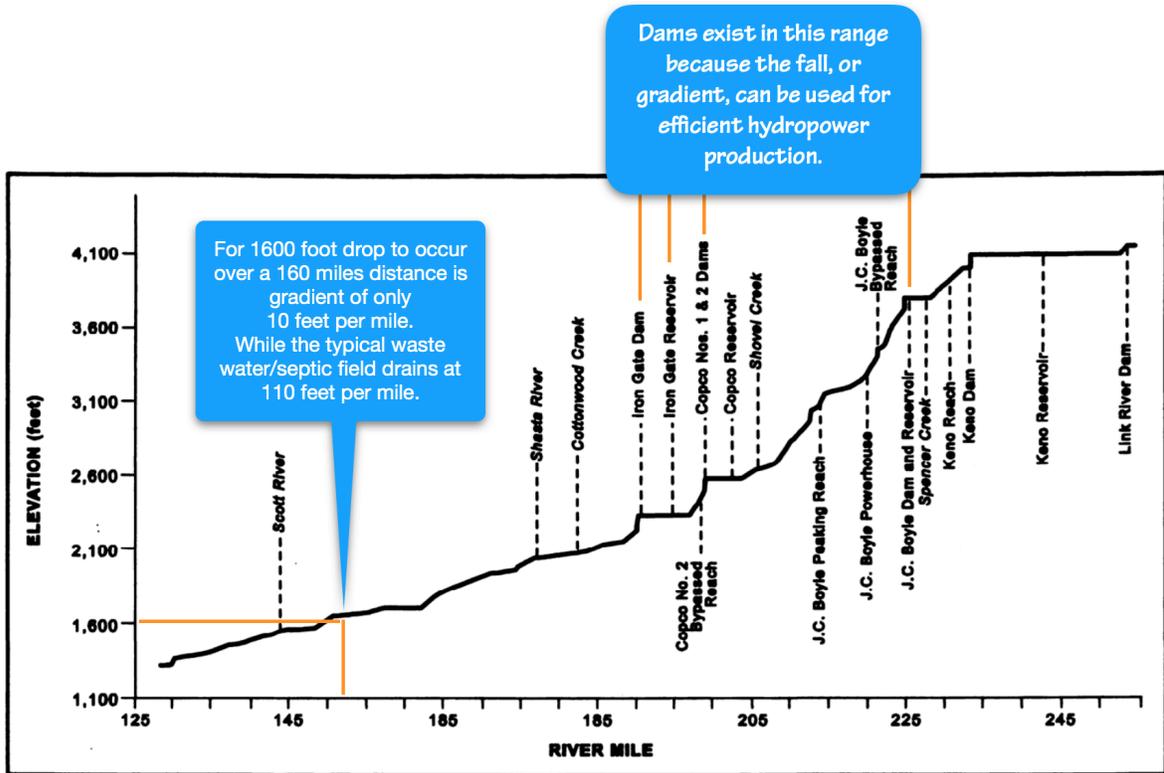


Figure 1 – Klamath River Profile. (Source: PacificCorp, 2004)



Figure 2 - Tonnage of Debris at Mouth of Klamath (Source: gardensforgoldens.com)