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Christopher McNicholas

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Oil Shale Water in Colorado: The Energy and Water Connection

OIL SHALE WATER IN COLORADO: THE ENERGY AND WATER CONNECTION

Western Resource Advocates ("WRA") is a non-profit law and policy organization, which aims to protect the land, air, and water of the West. Bart Miller, WRA's Water Program Director, helped shed light on the oil shale industry's reliance on water to develop its resource, water's use in the generation of energy and the impacts of oil shale and water on the future. Last year, WRA released a report, *Water on the Rocks: Oil Shale Water Rights in Colorado* that focused on questions about the relationship between oil shale and water. This investigative report specifically focused on water requirements and water rights, in conjunction with the future implications on the extraction of oil shale.

First, Mr. Miller discussed water requirements and water demands associated with commercial oil shale development. He briefly discussed the method of extracting oil from shale rock. With current technology, developers create a "frozen water wall" around the rock and then essentially cook the rock at extremely high temperatures, which causes the oil to separate from the rock itself. Within Colorado lies the Piceance Basin, the most prevalent oil shale formation in the United States. Experts opine that through oil shale development, developers may obtain over one-half of a trillion barrels of oil from this region. Although prospectors discovered oil shale over 100 years ago in the Piceance Basin, companies still cannot economically drill and extract the oil in this area. Despite these difficulties, there is an increasing demand for large-scale development because of people's dependence on oil. In addition to the technical difficulties in extracting the oil, developers would require large quantities of water for extraction. In order to facilitate the large-scale developments, the Bureau of Land Management estimates that developers would need one to three barrels of water to produce a single barrel of oil from the oil shale. Furthermore, a large development producing 1.55 million barrels of oil per day would require approximately 378,310 acre feet of water annually. In comparison, the Denver metro area, consisting of roughly 1.4 million people requires 275,000 acre feet of water annually. Additionally, there are many uncertainties about oil shale development. Since it is in its relative infancy, it is difficult for experts to determine the actual amounts of water needed to develop the oil. Also, experts question how much shale could reasonably produce oil given current technologies, and how much people will begin to rely on other technologies that produce energy, such as coal, wind, and natural gas. Currently, the demand for water is high and production of oil shale is difficult. But the development of oil shale remains on the horizon as one of the future's premier energy resources.

Next, Mr. Miller spoke about water rights and future impacts on the environment and society. Water rights for oil shale are mostly in the White and Colorado River basins. Energy companies continue to

obtain water rights for production of oil shale. Currently, energy companies own absolute water rights to almost 70,000-acre feet of water annually within the White and Colorado River basins. In addition, energy companies have conditional water rights in these two basins with 1960 era priority dates. If energy companies exercise the conditional water rights that they own, this could create serious impacts throughout the state. For example, many of the large water rights owned by Denver Water have junior priority dates to many of the oil companies' conditional water rights. Moreover, under the Colorado River Compact of 1922, which the various states created during a historically wet period in history, Colorado may be approaching serious risk of exceeding its allocation and having its use of Colorado River water curtailed. Additional water projects using substantial amounts of water may further lead to excess water use causing a Compact call. Such a call would first curtail the larger Front Range cities. Endangered fish also mount a cause for concern. If oil shale developers with senior rights require more water, endangered fish would lose their habitat at an alarming rate because the White and Colorado River basins contain extensive numbers of endangered fish.

Mr. Miller concluded his presentation by stating the various findings of *Water on the Rocks*, which proffers that western communities must understand and conserve water, especially if we continue our current usage of water and hope to expand to include oil shale development. The report found that commercial oil shale development would transform western water communities by changing the ways that people view and access water. Thus, we must balance the development and sustainability of water, and further strive to evaluate and understand oil shale development in terms of climate change and water availability. In order to do this, experts must quantify water needs and identify supply sources before we commit to oil shale development as the energy of the future.

Christopher McNicholas

COLORADO WATER COURTS UPDATE

Justice Gregory Hobbs of the Colorado Supreme Court discussed the history of water law in Colorado and the future of the water courts. Justice Hobbs explained that, throughout Colorado's history, the courts helped develop Colorado water law. Colorado has seven water courts, which solely handle water issues. These courts have influenced the development of Colorado water law since 1879, when the Colorado legislature created them. The Colorado Supreme Court also has a long and significant history of deciding issues of importance in water law.

According to Justice Hobbs, the Colorado Supreme Court faces significant challenges in interpreting and enforcing water laws. Several water doctrines constrain the Colorado Supreme Court. In particular,