

**MORE WATER AND ENERGY WITH LESS WASTE –
CASE STUDIES IN UTAH, COLORADO AND WYOMING**

David R. Stewart*

Lynn Takaichi

Produced Water Development, LLC

3801 Automation Way, Suite 200

Fort Collins, CO 80525

Voice: 970 226 5500 ext 204

Fax: 970 226 4946

dave.stewart@stewartenv.com

Produced Water Development has under design 10 water treatment facilities that are able to use the produced water for numerous beneficial uses while developing processes for by product synergy to eliminate waste from the facility. This paper will discuss our combined experience in the beneficial use of produced water and the actual selling of this produced water as an asset. Produced water is becoming an issue in the E&P industry and is a significant constraint on energy production. We have designed and are currently operated the first of several treatment plants for an oil field to sell produced water as a by-product of the oil field E&P operation. We have also developed processes to harvest rare earth minerals and recover brine waste streams to allow for the manufacturing of acid and base solutions as a by-product. This paper will discuss the process on how produced water can become a valuable by-product of an E&P operation. This involves understanding the various water laws of each state, the treatment process of the produced water for both oil and CBM waters and the associated environmental constraints on this process. We will update previous presentations on the progress made in other projects and how this is becoming a significant contribution to the energy industry.

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