

*California State University-Fresno*  
*Environmental Sciences Seminar Series*  
*Presents:*

***Management and Optimization of Water  
Bank Recharge and Recovery Using  
Groundwater Models***

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**Wednesday March 30, 2005 at 5:00 pm  
Smittcamp Alumni House, CSU, Fresno**

(reception at 5:00 pm, followed by seminar at 5:20 pm)

**Abstract**

Simply stated, "water banking" is the intentional recharge of groundwater for recovery and reuse at a later date. Initially, water banks were little more than groundwater replenishment programs using infiltration basins. Now, water banks consist of sophisticated series of recharge ponds, injection wells, recovery wells, and distribution canals. As the operations of water banks become more sophisticated, so do the questions and concerns of the stakeholders.

Numerical groundwater models can be utilized to evaluate the potential impact of water bank operations on the aquifer system. Questions concerning where the water will go, beneficial impacts, water quality changes, and recovery impacts can all be addressed. Numerical models may also be utilized to optimize recharge and recovery operations using the theory of constraints. By balancing conflicting interests of costs versus production rate, the optimization model can identify the best locations for recovery wells, minimizing the number of wells needed, and determine optimum pumping rates. An example of optimization of a hypothetical water bank is provided

All members of the professional, educational, and research communities are welcome. For additional information, please contact the Earth & Environmental Sciences department office at (559) 278-3086 or [vengieb@csufresno.edu](mailto:vengieb@csufresno.edu)

Parking restrictions will be relaxed in Lot V (Shaw and Woodrow Avenues) between 4:30 and 7:00 pm for seminar participants. An online campus parking map is available at: <http://www.csufresno.edu/univrelations/map>