Date Submitted
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Option Name
Desalination of Brackish Groundwater

Description
Brackish groundwater is abundant in many areas of the lower Colorado River basin. Brackish, or partially saline water, can be "de-salted" through a reverse-osmosis treatment process. This treated water can then be used to meet agricultural or municipal water supply needs depending on the level of treatment.

Location
Yuma, AZ and Riverside County, CA are specifically analyzed in a technical memo prepared during the 2007 augmentation study,[1] however it is estimated that over 15,000,000 AF of brackish water is physically available in Southern California alone.

Quantity & Timing
We do not include the Yuma desalter in this O&S. For Riverside, annual production close to 10,000 AFY. Again, over 15,000,000 AF of brackish water may be physically available in Southern California alone.

Brackish supplies could be brought online within 2-10 years and incrementally increased as demand dictates.

Technical Feasibility
Reverse osmosis treatment plants are operational throughout the world.

Costs
$640 to $1,950 per AF.

Permitting
Federal and state permitting likely required (NEPA, CAA, PPA, NPDES). Local permitting also probable.

Legal/Public Policy Considerations
Unknown.

Implementation Risk/Uncertainty
Little to no risk or uncertainty.

Reliability
Highly reliable, drought-proof supply.

[1] Colorado River Consultants. 2008. Technical Evaluation of Options for Long-Term Augmentation of the Colorado River System: Brackish Water Desalination Technical Memorandum. February.

Water Quality
Brine disposal will have impacts on receiving waters. Zero liquid discharge technology exists where surface water discharge is unacceptable.

Energy Needs
Ocean desalination is highly energy intensive – upwards of 4,000 kWh/AF. Brackish water is less saline than ocean water, so energy requirement will be smaller, but likely still considerable.

Hydroelectric Energy Generation
No impacts.

Recreation
No impacts.

Environment
Issues of brine disposal and general facility siting could be significant.

Socioeconomics
Unknown.

Other Information
See: Colorado River Consultants. 2008. Technical Evaluation of Options for Long-Term Augmentation of the Colorado River System: Brackish Water Desalination Technical Memorandum. February.