



LONG BEACH WATER DEPARTMENT
The Standard in Water Conservation &
Environmental Stewardship

MEDIA RELEASE

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New Desalination Technology Demonstrates Significant Energy Savings

National Research Project Concludes First Phase of National Research with Major Energy Reduction Deliverable

LONG BEACH, CA - Long Beach Water officials have announced that Dual-Stage Nanofiltration (NF2), the Long Beach Method of desalinating seawater, has been demonstrated to be nearly 30 percent more energy efficient than Reverse Osmosis technology in large-scale, long-term testing conducted at [Long Beach's National Seawater Desalination Research and Development Project](#). Long Beach and United States Department of Interior, Bureau of Reclamation engineers have completed the first of three phases of [national research](#) to address energy and environment issues related to seawater desalination.

The Long Beach Desalination Project has concluded major research related to efficacy of [Dual-Stage Nanofiltration](#), a process invented by Long Beach Water engineers. Research was conducted comparing this new technology with the more commonly used single-pass Reverse Osmosis process, under the same pretreatment and influent water quality conditions. "The objectives of this major study phase are to determine, through extensive water quality monitoring, if the potable water products produced are comparable, and to scientifically determine and compare the energy requirements under each technology," stated [Dr. Robert Cheng](#), Assistant General Manager for Operations. "We've demonstrated that the Long Beach process is more energy efficient than Reverse Osmosis, with comparable water quality."

Research at the project's [300,000 gallon-per-day facility](#) will continue focusing on optimization of membrane selection and vessel configuration, used to further reduce the overall energy requirement, while maintaining high water quality standards. Engineers will also test new concepts for disinfection and microbial fouling control of the membranes utilizing ultraviolet light and chlorine dioxide. The project will also focus on providing resolutions to municipal water distribution system integration challenges.

“We have a terrific team of engineers and scientists from many different organizations working to reduce the cost and environmental impact of building and operating a seawater desalination facility,” according to [Bill Townsend](#), President, Long Beach Board of Water Commissioners. “Credit for work being done here also goes in large measure to the United States Congress, without whom, none of this very important work would be possible.” The Federal government funds half of the project.

Long Beach and the Bureau of Reclamation are also constructing an [Under Ocean Floor Intake and Discharge Demonstration System](#). This system, the only one of its kind in the United States, will demonstrate a cost-effective, environmentally responsive alternative to more traditional ocean intake practices, by using the ocean floor itself as a natural filtration system. A similar intake system has been constructed and is operating in [Fukuoka, Japan](#).

The Long Beach Seawater Desalination Project is the largest research and development project of its kind in the United States, constructed to conduct large-scale analyses of seawater desalination operations under a variety of different operating conditions, including utilization of innovative new technology.

[Long Beach Water](#) is an urban, southern California retail water supply agency and the standard in water conservation and environmental stewardship.

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