

Irvine Ranch Water District. Irvine Desalter Project.

IRWD. WELL GROUNDED IN WATER RELIABILITY.



Project Purpose:

In the late 1980's it was discovered that portions of the groundwater beneath Irvine contained high salt levels because of the natural geology of the area and its history of agricultural use. The Irvine Desalter Project is designed to clean the elevated levels of salt in this previously untapped local groundwater, thus adding to IRWD's drinking water supply.

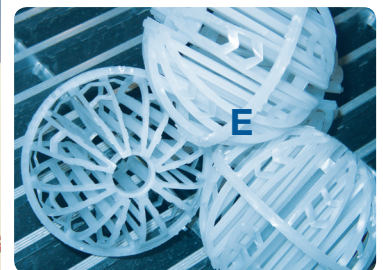
Project Background:

The Irvine Desalter Project consists of five wells located near the I-5 Freeway in Irvine. Salty water is pumped from these wells and sent to the IDP treatment facility. The treatment process uses reverse osmosis, decarbonation and disinfection to make the water suitable for drinking purposes. The purified water provides 5,100 acre-feet or 1.6 billion gallons of drinking water per year, enough for 50,000 people.

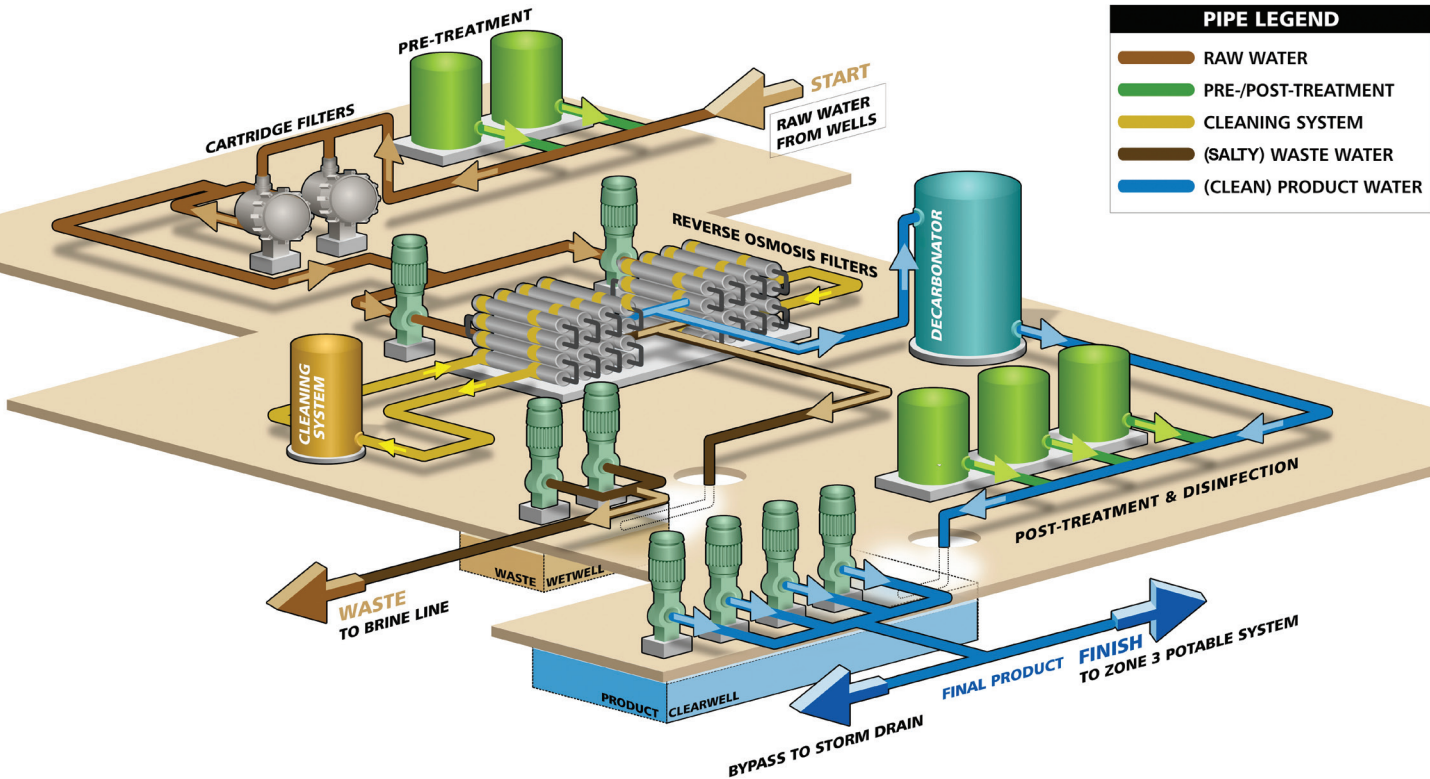
A diversified water supply is a reliable water supply. The IDP provides a local supply of water, ensuring a reliable source of water during drought conditions and for future generations.

Project Process:

- Reverse Osmosis: The heart of the Irvine Desalter potable water treatment facility consists of two reverse osmosis trains. **A** These are used to separate the salt from the water. A total of 343 reverse osmosis membrane elements **B** are inside the 62 pressure vessels. The two trains combined produce 2.7 million gallons per day of desalted water.
- Two 300 horsepower pumps **C** pressurize the water for the membrane separation process.
- Decarbonation: High quality water from the reverse osmosis process is further treated using a forced air decarbonator. **D** The decarbonator removes carbon dioxide from the treated water before it's blended with local well water.
- Three-inch diameter plastic media **E** are loaded inside the decarbonator to aid in the removal of carbon dioxide gas.
- A 7.5 horsepower fan **F** blows air through the water, removing carbon dioxide in the process.



Irvine Desalter Project: A Potable (drinking water) Treatment Process



Project Benefits:

The project provides several important benefits for the residents of Orange County:

- The Irvine Desalter cleans, restores and makes use of an important part of the groundwater basin.
- Provides a local supply of water, ensuring a reliable water source during drought conditions and for future generations.
- Provides 5,100 acre-feet (1.6 billion gallons) of very high quality drinking water, enough for 50,000 people per year.

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For more Information:
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