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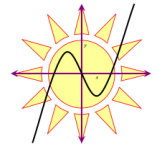
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## Acronyms & Abbreviations

ARRA	American Recovery and Reinvestment Act
DB	Design-Build
DBF	Design-Build-Finance
DBFOM	Design-Build-Finance-Operate-Maintain
DBOM	Design-Build-Operate-Maintain
EIR/EIS	Environmental Impact Report
EIS	Environmental Impact Statement
mgd	Million gallons per day
P3	Public-Private Partnership
PAB	Private Activity Bond
PDA	Pre-Development Agreement
ROD	Record of Decision
RFI	Request for Information
RFP	Request for Proposals
RFQ	Request for Qualifications
VfM	Value For Money

# Contents

Introduction	1
Desalination in the US	2
California	3
Florida	8
Texas	11
Companies	13

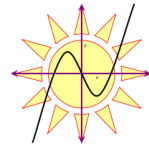


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## Introduction

Global desalination capacity has increased exponentially since 1960. Currently there are more than 15,000 water desalination plants in more than 100 countries worldwide. The past five years have seen a 57 percent increase in the capacity of desalination plants. The installed base of desalination plants around the world now has a capacity of 19.8 billion gallons per day compared to 12.6 billion gallons per day at the end of 2008. Desalination equipment orders are forecast to triple over the next five years to become a \$17 billion a year business driven by breakthroughs in energy savings and demand by the public and private sectors. Investment in the sector rose from \$5 billion in 2011 to \$8.9 billion in 2012.

Almost half of all current capacity is located in the Middle East, with Saudi Arabia leading the way with 26 percent of all desalination consumers and approximately 30 percent of all of its household water coming from desalination. Australia is another leading market, where desalination accounts for up to half of drinking water supplies in major cities. China and the Mediterranean are rapidly growing markets. North America, Europe and Asia each represent approximately 15 percent of global capacity.

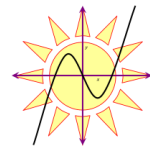


## Desalination in the US

In the US, prolonged drought, dwindling traditional water supplies and more stringent regulatory requirements are driving up the costs of treated water supplies, thereby making desalination more competitive. Currently, more than 300 desalination facilities deliver fresh drinking water to urban centers in Florida, Texas, California, Arizona and 10 other states. Desalination plants have been built in every state in the US, although nearly half of the plants are small facilities built for specific industrial needs. Most existing facilities treat brackish water but the current trend is for increased seawater desalination. Another trend is for large facilities instead of small industrial facilities. Facilities in the pipeline aim to deliver 10-20 percent of the fresh water supply of coastal urban centers in California, Texas and Florida. The two largest desalination projects under development in California at present are the 50 million gallons per day (mgd) Carlsbad and Huntington Beach desalination facilities. The planning and permitting efforts for these projects are near completion and construction is expected to begin in 2013. A third trend in the US market is for the delivery of desalination projects under public-private partnership (P3) arrangements, where a private company or consortium of companies takes the lead in designing, building and operating the facilities with the role of the public utility limited to an off-take agreement that spells out the terms and conditions for purchasing the water produced by the facility.

Desalination projects face several challenges in the US marketplace. In the first case, they share the same challenges as other long-term infrastructure projects. They involve complex construction and long-term considerations of demand, operations and maintenance. Demand for the water produced by the projects must be identified and the demand risk must be accepted, transferred or shared by the parties involved. Regulatory risks abound. Increased regulation of existing water sources may benefit desalination projects but environmental regulations pose challenges. Large seawater desalination plants are a relatively new phenomenon and many public sector entities are unfamiliar with the issues surrounding them. Energy costs for these projects are very high, typically representing 33-55 percent of operating costs. Water supplied by desalination typically is more expensive than traditional water sources.

Despite these challenges, the US market is taking off. Large facilities intended for water supply on a massive scale are under development and in planning. There is no end in sight for the restrictions on traditional water supplies, the general scarcity of water and the increased demand for what is increasingly recognized as a commodity. This report summarizes the largest desalination markets and projects within the US. It is not intended as a comprehensive report detailing every small industrial desalination facility. Instead, it highlights the most important facilities and trends in the sector. More detailed information and research is available from Claret Consulting's P3 Practice.



## California

California has faced a water crisis for decades and it has only become more acute in recent years. Half of the water in Southern California is imported from two sources: the Sacramento River Delta and the Colorado River. Local authorities need to make up for the rest from groundwater, recycled or surface water and imports from elsewhere. Currently, there are 20 proposals for large-scale desalination plants from San Francisco to San Diego that would turn Pacific Ocean water into potable tap water. The recent financial close of the Carlsbad Desalination Plant is a major development in the market and a sign of things to come.

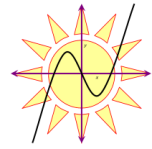
### Carlsbad Desalination Project

The Carlsbad Desalination project will be the largest desalination plant in the Western Hemisphere. The project is being implemented as a partnership between Poseidon Resources and the San Diego County Water Authority. The project includes a desalination plant, a pumping station, product water storage and finished water conveyance pipelines. It also includes a 10-mile pipeline that connects the new plant to the Water Authority's aqueduct in San Marcos. Financial close was reached in 2012 and financing includes \$755 million in investment-grade private activity and \$167 million in equity. Poseidon has leased a four-acre site adjacent to the existing Encina Power Station site owned by Cabrillo Power for 60 years for the desalination plant.

The plant will produce 50 million gallons of desalinated seawater a day and provide 10 percent of the total drinking water needed by San Diego. It will supply 56,000 acre feet of water annually; sufficient for approximately 300,000 people. The water from this plant will be purchased by the Carlsbad water agencies and be supplemented with imported water from San Diego County Water Authority. The agreement sets the purchase price at \$1,849 - \$2,064 per acre foot in 2012 dollars, depending on how much is purchased annually. A typical household of four people can expect to pay approximately \$5-7 per month more than current prices for water by 2016. In addition, the agreement allows for annual price increases of 2.5 percent. For reference, Metropolitan Water District rates have experienced an average increase of 7.9 percent in recent years.

Kiewit Shea Desalination, a joint venture between subsidiaries of Kiewit Corp and J. F. Shea Construction Inc., will provide engineering, procurement and construction (EPC) services for the desalination plant and the pipeline under a fixed price contract. IDE Americas Inc. a subsidiary of IDE Technologies Ltd will design the seawater process plant under the direction of Kiewit Shea Desalination. IDE will also be responsible for the operation and maintenance (O&M) under a 30-year contract.

Dickstein Shapiro LLP of Washington D.C. led the debt and equity financing for the Poseidon project, which is structured as a P3 including 60 parties and a water purchase agreement. The California Pollution Control Financing Authority issued \$734 million in tax-exempt Private



Activity Bonds (PAB) on behalf of Poseidon and the Water Authority with underwriting led by JP Morgan. Private equity investor Stonepeak Infrastructure Partners provided the remainder of the project capital. The bonds were sold at an interest rate of 4.78 percent. Under the terms of the of the Water Purchase Agreement between Poseidon and the San Diego County Water Authority, the agency pays only for delivered product that meets quality standards.

The project is being developed as a P3 between local authorities and municipalities in San Diego county and Poseidon Resources. The parties have entered into 30-year contracts with options to extend. The nine public water companies that are parties to the agreement include:

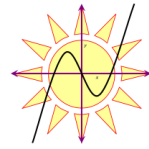
- Carlsbad Municipal Water District
- Rincon del Diablo Municipal Water District
- Olivenhain Municipal Water District
- Vallecitos Water District
- Sweetwater Authority
- Valley Centre Municipal Water District
- Santa Fe Irrigation District
- Rainbow Municipal Water District
- City of Oceanside Municipal Water District

The plant was proposed in 1998 and faced a number of hurdles including 14 cases filed against it between 2006 and 2009. These included a petition against the project's brine discharge by environmental groups in 2007, a lawsuit challenging the San Diego Regional Water Quality Control Board's approval to withdraw sea water for the desalination plant by Surfrider Foundation in 2012 and other opposition regarding energy, climate and marine impacts.

#### Timeline

- 1998 plant proposed
- February 2006 bidding for EPC
- 2007 contract awarded
- 2008 the plant received approvals from the State Lands Commission and the California Coastal Commission
- May 2009 the Regional Water Quality Control Board approved the construction of the desalination project
- November 2009 Construction of the first phase of the Carlsbad plant started
- January 2010 project was allocated \$530 million Private activity bonds by the California Debt Limitation Allocation Committee (CDLAC)
- November 2012 the Water Authority's Board approved a Water Purchase Agreement with Poseidon Resources
- December 24<sup>th</sup> 2012 financial close

#### Bay Area Regional Desalination Project



The San Francisco Bay Area's largest water agencies, the Contra Costa Water District, East Bay Municipal Utility District, San Francisco Public Utilities Commission, Santa Clara Valley Water District and Zone 7 Water Agency are jointly exploring a regional desalination project that would provide an additional water source for the region, diversifying the area's water supply and fostering long-term regional sustainability. The Bay Area Regional Desalination project may consist of one or more desalination facilities with an estimated total capacity of 10-50mgd. In May 2003, the partner agencies initiated a pre-feasibility study after which the State Department of Water Resources awarded the agencies a \$1 million grant to fund a small-scale pilot project. The pilot project was executed in Contra Costa County and finalized in June 2010. It concluded that desalination is technically feasible.

### **Monterey Peninsula Water Supply Project**

The Monterey Peninsula faces a critical need for new water sources since the state and court ordered the region to reduce its dependency on the Carmel River and Seaside Aquifer. On January 31, 2013 the Monterey Peninsula Regional Water Authority decided to back California American's project. The project was the most developed but a number of changes were recommended including lowering costs through the use of cheaper public financing. The mayors will submit testimony to the Public Utilities Commission which is considering Cal-Am's permit application.

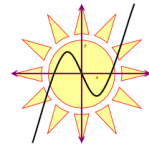
In April 2012 Cal-Am filed an application seeking approval for a new project with California Public Utilities Commission. One of the components of the proposal was the building of a desalination facility in North Marina that is either 9.0mgd or 5.4mgd costing \$83.8 million or \$64.5 million respectively. The plant would employ Energy Recovery Devices to lower power consumption and require a 10-mile pipeline to deliver water to the Monterey Peninsula. Through a combination of State Revolving Fund loans and a proposal to remove a portion of the capital investment from the company's rate base, the company expects to finance the desalination plant at a rate of between 3.0 and 4.0 percent. The plant will be owned and operated by Cal-Am.

Earlier in 2010 Cal-Am had received authority from the California Public Utilities Commission to develop the Regional Desalination Project. This faced a number of hurdles including legal and financial challenges and in January 2012, Cal Am withdrew its support for the Regional Desalination Project with the Monterey water agencies as the solution to address Monterey water supply needs. Monterey Peninsula is California America's new proposed solution to address water shortage.

### **El Segundo**

The West Basin wants to build a permanent desalination facility in the South Bay in order to reduce the region's dependence on drinking water from Northern California and the Colorado River. West Basin has been implementing a desalination program in phases over the last decade. From 2002 to 2009, it operated a pilot program at the NRG Energy site in El Segundo





then moved to the demonstration phase at The Sea Lab. The two programs cost approximately \$18 million. The demonstration plant produces 35 gallons of freshwater per minute which demonstrates full capacity. The goal of West Basin is to bring water imports down by 10 percent by 2020 this would amount to a 20mgd plant. A facility of this size would cost approximately \$400 million and require 40mgd seawater. The goal of the pilot program was to identify optimal performance conditions and evaluate water quality characteristics. West Basin anticipates permitting, financing and constructing a full scale facility by 2017.

### **Huntington Beach Project**

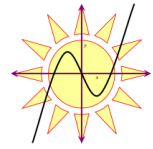
The Huntington Beach Desalination Facility in Orange County, CA is a 50mgd project scheduled to be operational by 2015. The plant will be located adjacent to the AES Power Station. The project was proposed by Poseidon Resources Corporation in 2005. The facility will consist of seawater intake pretreatment facilities, a sea water desalination plant utilizing reverse osmosis technology, product water storage, two pump station, materials storage tanks and 42-48 inch diameter product water transmission pipelines up to 10 miles in length in Huntington Beach and Costa Mesa. The project is estimated to cost \$350 million. As of January 2013 the project was awaiting the Coastal Commission's approval. Once this is obtained, construction is set to begin later in 2013. Poseidon is now negotiating with Orange County water agencies interested in purchasing the plant's output, with 18 agencies already signatories to non-binding letters of intent to purchase the water.

### **Santa Cruz Water Department & Soquel Creek Water District (SCWD2) Regional Seawater Desalination Project**

Currently the City of Santa Cruz and Soquel Creek Water District are proposing to build a seven-acre desalination factory along with extensive pipeline, pumping and storage infrastructure. The proposed project is expected to produce 2.5mgd. The components of the projects include: a sea water intake structure; a desalination plant; a brine disposal system; and a conveyance system. The plant is expected to run at half capacity in non-drought years and at full capacity during drought. The estimated cost of the projects is \$115 million. The project partners operated a pilot plant at the University of California Santa Cruz Long Marine Laboratory from March 2008 to April 2009. The proposed project is currently undergoing a thorough environmental review. In March 2012, the City of Santa Cruz adopted an ordinance that requires voter approval prior to construction of the plant. The earliest date such a vote would be held is June 2014.

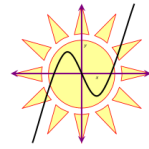
### **Sand City**

Sand City is a state-owned desalination plant operated by California American Water (CalAm). In February 2007, CalAm signed a 15-year lease to operate the Sand City desalination facility and repay Sand City for the cost of building the facility. The state awarded Sand City \$2.9 million in grant funding for the desalination plant in 2007. The funding was made possible by California Proposition 50, passed in November 2002, allowing the state to borrow \$3.4 billion for a variety of water projects. Total project costs were \$11.9 million with the city covering \$ 9



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million through redevelopment and city capital improvement funds. The facility is capable of producing 98 million gallons a year. The plant became operational in April 2010. The project was planned since the 1990's with the EIR completed in January 2005. The plant is owned by Sand City but operated by CalAm. The DB for the contract of the plant was awarded to CDM Constructors.



## Florida

Florida cannot meet its future demand for water by relying solely on the development of traditional ground and surface water sources. The state's water demand is expected to grow more than 25 percent to 8.7 billion gallons per day by 2025. Florida leads the nation in the use of desalination technology. As of 2012, Florida had 150 desalination facilities with a capacity of 515mgd, nearly 25 percent of the state's water supply. This represents a 46 percent growth over the past five years while the amount of desalination water produced by these plants has increased 94 percent during the same period.

### **Tampa Bay Seawater Desalination Plant**

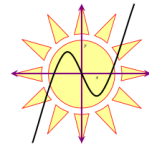
An RFP was issued by the then West Coast Regional Water Supply Authority in October 1996 for a commercial developer to design, build, operate and own a desalination plant. Four vendors submitted initial proposals in December 1997. In early 1999 Tampa Bay Water (formerly west Coast Regional Water Supply Authority) selected Stone & Webster Water LLC (S&W LLC), a consortium of Poseidon Water Resources and Stone and Webster. There was some opposition to the project by environmental groups but it did not delay the construction scheduled to begin in January 2001. Southwest Florida Water management District agreed to provide 90% of the projected capital cost of \$ 110 million.

In 2000, Stone & Webster declared bankruptcy and Poseidon became full owner of S&W LLC and hired Covanta Energy to build the plant. The new partnership became Tampa Bay Desal. Covanta energy however had a poor bond rating and was unable to secure financing for construction bonds. Tampa Bay Water (the regional water authority) then purchased Tampa Bay Desal. Tampa Bay Water contracted Covanta Construction (a subsidiary of Covanta Energy) to build the facility. The contract was valued at \$300-360 million. The first tests of water production were in March 2003, a year behind schedule. Inefficiencies in the filtering process emerged soon after this and Tampa Bay Water re-acquired the facility and contracted with American Water-Pridesa, a joint venture subsidiary of American Water and Acciona Agua in 2005 for a complete overhaul and management of the treatment facility under a design-build-operate contract. Remediation added an additional \$48 million to the \$110 million price tag. Tampa Bay Water charges its member governments \$2.2451 per 1,000 gallons. The cost is revenue neutral and only covers expenses including debt service payments.

The facility began producing water in January 2008. It was expected to produce 25mgd but averages 15mgd. The plant operates below full capacity because demand is lower than expected and less expensive water supply options are available.

### **Floridan Aquifer Desalination Facility**

It is located at the Florida Keys Aqueduct Authority's main water-treatment plant in Florida City. The \$38 million plant taps into the brackish waters of the Floridan Aquifer, located more than 1,700 feet below the surface.



### **The Coquina Coast Seawater Desalination Project**

The Coquina Coast Seawater Desalination Project is a partnership among local cities and counties to determine the feasibility of locating a desalination plant in St. Johns, Flagler or Volusia County. The local governments are being advised by several firms, including Malcolm Pirnie, Veolia Water, Sinclair Knight Merz, RosTek Associates, Florida Atlantic University, Janicki Environmental, Inc., Dialogue Public Relation and Halcrow. Options analysis has included on-land and off-shore facilities and a combination of both. Estimated capital costs for a facility range from \$190-260 million for a 10-15mgd plant. Produced water would cost an estimated \$6.27-7.74 per 1000 gallons. Future improvements to the plant could lower the cost to \$4.72 per 1000 gallons. The project is being implemented in phases over several years. If a plant is built, it is expected to begin producing drinking water by 2020.

### **The City of Hialeah**

The City of Hialeah is currently proceeding with final construction activity on a new seawater desalination plant that has been in the works since 2008. Aecom and Inima were selected for the 15-year DBO project and a joint venture contract was signed in August 2010. The plant will have a capacity of 17.5mgd and has a total project cost of \$100 million. The project will be implemented under a joint participation agreement with Miami-Dade County.

### **Davie Town**

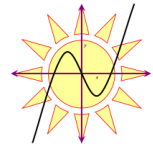
The \$101 million DB contract for this project was awarded to Aecom in August 2010. It includes a new brackish water, reverse osmosis plant and a new membrane wastewater treatment plant in the town of Davie. The plant will provide 6mgd but may be expanded in the future to 12mgd. The project is due to be completed in the fall of 2013.

### **Tarpon Springs**

This project includes plans for desalination of feed water from the brackish Floridian Aquifer and discharge of the reverse osmosis concentrate into the Progress Energy cooling water canal. The plant is expected to meet the city's water requirements for the next 20 years. After a three-year delay, the bidding process was re-opened in 2011. The following teams were prequalified:

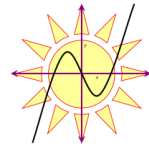
- Archer Western Contractors, AECOM, Hydropro
- Black & Veatch, Overland Contracting, Biwater AEWT
- Garney Construction, Carollo Engineers, Doosan Hydro
- Veolia Water, Encore Construction, Aerex Industries
- Wharton-Smith, Tetra Tech, Harn R/O
- MWH Constructors, MWH Americas, H2O Innovation.

RFPs were issued to these teams with responses due October 2012. A decision was expected as early as November 2012 and construction is expected to take 24 months. The plant is expected



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to cost \$45 million with \$20 million funded by a grant from the Southwest Florida Water Management District.



## Texas

Texas has 44 desalination plants with an estimated total desalination capacity of about 134,500 acre feet per year. This is expected to increase to 310,000 acre feet per year in 2060 based on the 2012 State Water Plan. Interest in desalination surged 10 years ago when the technology became more efficient and cost competitive. The state's population has been growing at rates as high as 20 percent and is expected to double by 2060, and this is another key drive in the demand for water and the search for alternative supplies. Texas is an ideal state for desalination given the 360 miles of coastline and 30 aquifers. The Texas Water Development Board (TWDB) has been at the forefront of the state's efforts to identify and address challenges to implementing seawater and brackish groundwater desalination projects. The Board funds feasibility studies, pilot plants, technology demonstrations, procuring additional data and outreach efforts.

The state's largest plant is El Paso where the \$91 million Kay Bailey Hutchinson Desalination Plant was completed in 2007. It can supply 27.5mgd but rarely operates at full capacity. In 2011 it supplied 4 percent of El Paso's water. Texas does not have a seawater desalination plant however on May 14, 2011, voters in Laguna Madre Water District approved a bond proposition to build a 1mgd seawater plant on South Padre Island.

### San Antonio Project

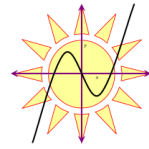
A plant above the Wilcox Aquifer in south Bexar County is under construction and will open in 2016. It is expected to cost \$145 million for 10mgd of capacity or \$225 million for 25mgd of capacity. The project is financed partly by local water rates and by \$59 million of low-interest loans from the Texas Water Development Board. Production is expected to begin in 2016 with full full production scheduled for 2020.

### Kay Bailey Hutchinson/El Paso Desalination Plant

This 15-year, \$87 million project was implemented jointly by El Paso Water Utilities and the US Army base at Fort Bliss. It was built in 2007. It is the world's largest inland desalination plant. The facility produces approximately 27.5mgd, increasing El Paso Water Utilities' drinking water supplies by 25 percent. The cost of providing ground water was \$160 per acre foot, treated surface water was about \$300 per acre foot and treating brackish water was about \$534 per acre foot, importing water from about 100 miles away would have cost \$1,200 to \$1,400 per acre foot.

### Freeport Seawater Desalination Project

Brazos River Authority is working with Poseidon Resources Corporation on development of a seawater desalination treatment facility to be located at the Dow Chemical complex in Freeport, Texas. The plant is not expected to be operational until 2050. The capital cost of the project is estimated at \$93.1 million. The annual O&M cost is estimated at \$7.3 million. Energy costs represent approximately 43 percent of the O&M costs. The Brazos River Authority



estimates that a subsidy of approximately \$8 million per year will be required to make the project feasible.

#### **Odessa Desalination Plant**

The city of Odessa is limited by a contract to take water from Colorado River Municipal District (CRMWD) and no other source so the city is encouraging the Odessa Development Corporation, a separate entity to consider building a plant similar to the one in El Paso. The city is negotiating with CRMWD so that if a desalination plant is built it could supplement any water Odessa could not get from CRMWD. Eight proposals were received by the June 15<sup>th</sup> 2012 deadline in response to the RFP to build a 10mgd water desalination plant and a 44-mile pipeline. The proposed project is estimated to cost \$150 million. The bidders include Abengoa Water, Texas Aqua Partners, West Texas Partners, Aquifer Group, Oscar Renda Contracting Roanoke, Odessa Area Water Supply of Odessa, Salt of the Earth Energy, San Antonio and US Waterworks.

#### **Brownsville Seawater Desalination Project**

This project will deliver a 2.5mgd demonstration-scale seawater desalination plant. The proposed plant would be located on the south shore of the Brownsville Ship Channel.

#### **Laguna Madre and Laguna Vista Seawater Desalination Project**

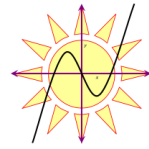
The Laguna Madre Water District, based in Port Isabel, completed a pilot seawater desalination project two years ago and is now looking for property on the north end of South Padre Island to locate a larger facility after voters in the District authorized a full scale plant in Spring of 2010. Desalination would reduce the utility's dependence on unreliable supply from the Rio Grande. A feasibility analysis in 2010 recommended full scale operations be located on the north side of the South Padre Island using Gulf water as its raw water source. The \$13.2 million plant will be built on the bay with water piped less than half a mile across the island.

#### **Corpus Christi Seawater Desalination**

Regional plans include proposals to construct a desalination plant located next to the Barney M. Davis Power Station between Laguna Madre and Oso Bay. Production is not expected to begin before 2040.

#### **North Alamo Water Supply Corporation (NAWSC)**

In 2010, the North Alamo Water Supply Corporation (NAWSC) selected Befesa WaterBuild and NRS Consulting Engineers for a \$6 million design-build contract for a brackish groundwater desalination plant in Donna, TX. This is the brackish desalination plant to be implemented by a private water company in Texas. The initial plant will produce 2mgd with plans for expansion. The plant was completed five months ahead of schedule in 2012 and within budget.



## Companies

### **AECOM**

AECOM is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. AECOM has built up its desalination business through a series of acquisitions, acquiring Metcalf & Eddy and Guy Maunsell in 2000, Earth Tech and Boyle Engineering in 2008 and Inocsa Ingenieria in 2010.

### **Black & Veatch**

This is a global engineering, consulting and construction firm specializes in infrastructure development for the energy, water, environmental, federal and telecommunications markets. The company was founded in 1915 and is based in Oakland Park, Kansas.

### **California America Water**

California America (CalAm) is a wholly owned subsidiary of American Water (NYSE: AWK) which was founded in 1886 and is the largest investor-owned US water and wastewater utility company. The firm is headquartered in Voorhees, NJ.

### **CDM Constructors**

CDM Constructors, Inc., a consulting environmental engineering company, provides construction, general contracting, design/build, remediation, equipment fabrication and construction-related services to public and private clients. It serves water, wastewater and solid and hazardous waste markets. It was incorporated in 1992 and is based in Cambridge, MA. It operates as a subsidiary of Camp Dresser & McKee, Inc. The company has approximately 3,500 employees and annual sales revenue of \$750 million.

### **CH2M Hill**

CH2M Hill is a global leader in full-service engineering, procurement, construction and operations. It provides water, wastewater and water resource services to clients worldwide. The firm has \$6.4 billion in revenue and 30,000 employees worldwide.

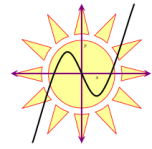
### **GHD**

GHD is an international network of engineers, architects and environmental scientists serving clients in the global markets of water, energy and resources, environment, property and buildings and transportation.

### **IDE Technologies**

IDE provides seawater desalination and water reuse solutions in China, India, Australia and the US among other countries. The company specializes in research and development of sea, brackish and process water desalination processes. It was founded in 1965 and is based in Kadima, Israel. It operates as a subsidiary of Israel Chemicals Ltd.





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### **Inima**

Inima OHL, a subsidiary of Spain-based Obrascon Huarte Lain (OHL) performs mainly desalination projects in Latin America, Algeria, Morocco and the Middle East. The company introduced desalination to the US via the Taunton River project in Brockton, MA, and is working on another endeavor in Florida.

### **Malcolm Pirnie**

This is a private consulting firm focused exclusively on water and environmental issues and incorporated in 1970. As of July 10, 2009, it operates as a subsidiary of Arcadis US, Inc. an international engineering company based in Netherlands.

### **Poseidon Resources**

Poseidon specializes in developing and financing water infrastructure projects, primarily seawater desalination and water treatment plants. Their projects are implemented through P3 arrangements. Poseidon was founded in 1994 and is headquartered in Connecticut. It is owned by Warbug Pincus, a large investment firm.

### **Seven Seas Water**

The firm was established in 1996 and in 2006 it joined with Aqua Venture Management and provides water and wastewater treatment services for municipal, industrial and private clients under the build-own-operate service model. It is a privately owned company and is solidly funded by clean tech financial investors such as Advent Marrow, Element Partners, Texas Pacific Group and Virgin Green Fund. It has had a number of P3 projects in the Carribean. It is headquartered in Tampa, FL.