DeepWater DESAL

February 15, 2013

Monterey Peninsula Water Management District
c/o David Stoldt
General Manager
Monterey Peninsula Water Management District
5 Harris Court, Bldg. G
Monterey, CA 93940

Dear Mr. Stoldt,

Please find enclosed our Soliciting Statements for the Monterey Peninsula Water Management District's Qualifications Joint Participation in Desalination Facility Project.

In Summary our DeepWater Desal's Central Coast Regional Water Project ("CCRWP") is intended to alleviate ongoing damage to the environment surrounding Monterey Bay caused by overuse of existing ground and surface water resources. The CCRWP seawater reverse osmosis facility in Moss Landing will produce 25,000 acre feet of potable water per year for use in Santa Cruz, Monterey and San Benito Counties.

DeepWater Desal, LLC is in the process of seeking permission from the California State Lands Commission, the California Department of Parks and Recreation and the Moss Landing Harbor District to change the use of an existing easement located on land owned by each of these agencies from a pipeline formerly used to transport fuel oil from an off-shore anchorage to the Moss Landing Power Plant ("MLPP"), to a pipeline used to take seawater from Monterey Bay to be desalinated. The above ground portion of the existing fuel oil pipeline that runs over the 'north jetty' at Moss Landing Harbor is located on lands now owned by California State Parks.

An existing fuel oil pipeline located in an offshore easement will be replaced with a new seawater intake pipeline terminating at existing wet wells on the MLPP site. A digital data storage facility, commonly referred to as a 'data center' will be co-located with the desalination plant at MLPP. Heat will be extracted from the data center and the power plant using cool seawater. The warmed seawater will then be used in the desalination process. Brine resulting from the desalination process will be diluted and discharged through existing cooling water discharge lines at the MLPP.

7532 Sandholdt Rd., Suite 6, Moss Landing, CA 95039 Phone: 831-632-0616

The project's impact on the environment will be minimized by taking seawater from a depth in Monterey Bay below the photic zone. Oceanographic studies show deepwater intake will minimize entrainment and impingement of larvae. Seawater at the offshore terminus of the existing pipeline also has very low turbidity, thereby reducing the need for prefiltration in the desalination process. The project's impact on the environment will be further minimized by co-location with a digital storage data center. Power purchase from a municipal power utility to Moss Landing businesses established by the City of Salinas for the data center in induce economic growth will give the CCRWP access to the lowest price power.

Reducing the need for prefiltration, cooling the data center with seawater and using warmed seawater in the desalination process will reduce the amount of carbon dioxide emitted from the project, thereby reducing greenhouse gas emissions.

Finally, the project will include adaptive reuse of existing infrastructure at MLPP which is zoned for heavy industrial use and centrally located on Monterey Bay.

DeepWater Desal welcomes an independent and thorough analysis of the proposed project under both the California Environmental Quality Act and the National Environmental Policy Act. We look forward to your questions and are available at your convienence.

Our point of contact for our DeepWater Desal Project is:

Brent R. Constantz, Ph.D.
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DeepWater Desal, LLC
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Moss Landing, CA 95039
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Sincerely,

Brent R. Constantz
CEO & Managing Member
DeepWater Desal, LLC.

DeepWater DESAL

Section 1: Cover Letter & Table of Contents

Table of Contents

Section 2: Organizational Information and Financial Strength

Description Of Type Of Organization

DeepWater Desal LLC ("**DWD"**) is a California Limited Liability Company located at 7532 Sandholdt Rd, #6, Moss Landing, CA 95039.

DWD is a project management firm that will partner with a public agency to design, build and operate ("**DBO**") a regional desalination project for the Monterey and Santa Cruz counties. Our team is composed of experts and highly experienced professionals that will guide the process through permitting and the eventual build-out and operation. Our public partner may ultimately be a selected group of agencies operating as a Joint Powers Authority ("**JPA**") for the purpose of owning the Monterey portion of the desalination plant (PHASE I) and overseeing the production of potable water for public use.

The Central Coast Regional Water Project at Moss Landing is currently intended to be a public/private partnership with the JPA (or single public agency partner) issuing tax free municipal bonds based upon the Water Purchase Agreements committed by the members of the JPA. DWD will be under contract to the JPA for the design, construction and operation of the plant. DWD will be at risk for the funds expended to get all the applicable permits. Upon completion of a Public financing, DWD would seek reimbursement of approved expenditures towards receiving permits and work related to project financing, including a reasonable development fees. In addition, management fees would be paid to DWD during construction and upon successful completion of the project. The construction of the project will be financed through tax-free municipal bonds or other competitive means at rates dependent upon the credit rating of the member agencies of the JPA and market conditions at time of issuance. It is presently intended that the initial JPA would own the assets of the Monterey portion of desalination plant and would have the power to set water rates for the member agencies (which could also include Castroville Community Services District, Marina Coast, and Monterey County, in addition to the Monterey Peninsula Water Management Agency, as well as the Moss Landing Harbor District). Later, as JPA members to the east (Salinas, other parts of Monterey County), and to the north (Water Agencies in Santa Cruz County) join the JPA, those new pro-rata portion of the desalination plant would be owned by the expanded JPA whose level control would be proportional to their water supply agreements.

The JPA would also have the authority to contract for the operation of the desalination plant at Moss Landing. DWD expects that it will operate the plant for a minimum period to ensure that all operational conditions have stabilized and operating at the projected costs. Because the project will be funded by tax-free municipal bonds, the contract for operation must meet such guidelines identified in IRS Revenue Procedure 97-13. The contract structure meeting the requirements of the IRS guideline may not be satisfactory to other operators; however, DWD has agreed to operate under such guidelines.

Capital Structure

DWD is a private legal entity formed in April 2011 with capital raised from private investors. All of the management team are also members of the LLC. DWD's capital structure is composed of a Series A Preferred unit and common units. DWD has not financed its operation with bank debt nor does it anticipate needing to do so. Attached and appendix A is the LLC-1 and appendix B is the LLC-12 from California Secretary of State.

Financial Resources Over Next 18 Months

DWD has forecasted a need of $5.3M in capital to complete the permitting process, preliminary design and legal work prior to a public financing. The key line items are:

- $1.6M for Legal/EIR/Permits
- $1.5M for DWD's technical studies and preliminary design
- $2.2M for rent, insurance, compensation and consultants

Cost Sharing

DWD would pay for Legal, Permits, technical studies, Preliminary Designs, rent, insurance, compensation, and consultants. DWD proposes that MPWMD pay for the CEQA review of the project to be conducted by the State Lands Commission, and the NEPA review to be conducted by the Monterey Bay National Marine Sanctuary or other appropriate federal agency.

Provide Copy of Audit:

DWD has no present source of income and is an investor supported legal entity. DWD has not engaged an auditor to date. DWD can provide a set of financial statements, unaudited, for your review if needed. See Exceptions.

Section 3: Technical Aspects

Team

Brent Constantz
Dr. Constantz has supervised the design and construction of several cement manufacturing operations over the last twenty-five years. For medical cement products, these operations where built to FDA Good Manufacturing Practice Standards, as well as ISO EN46000 Standards. The most recent was Calera's green cement demonstration facility on the old Kaiser National Refractory's site at Moss Landing. This involved constructing a pipeline from the Dynegy Moss Landing Power Plant across Dolan Rd. to a $50 M cement demonstration production facility he built that drew sea water from Moss Landing harbor and combined it with raw flue gas from the power plant to form green cement. The project also received discharge permits for the extracted seawater post carbon sequestrations. Constantz worked successfully with federal, state, and local regulatory bodies to attain the necessary permits, so that construction was completed far ahead of schedule, and at reasonable cost. The cement produced at this plant is currently being employed in a Santa Cruz County road construction project (http://sccrtc.org/news/auxiliary-lanes-project-update/).

Dennis Ing
Mr. Ing has a BS Engineering degree from University of Illinois-Chicago and has managed many large engineering projects over the past 30 plus years. Most recently, Dennis was Chief Financial and Administrative Officer of Moss Landing Cement Company. Dennis was instrumental in the start-up of the green cement plant in Moss Landing and was responsible for many of the construction management aspects of the build-out over a two-year period. The plant went from an initial feasibility stage, to pilot and then demonstration phase. Dennis managed over $30 million in capital costs during this development and construction phase. The key project management efforts consisted of processing all permits, managing the contractors' deliverables, purchasing, inspection and sign-off on milestone completions, contractor payments per contract terms, recruitment and hiring of over 50 technical and administrative staff. The projects were aggressively scheduled and were completed on schedule and on budget.

James Heisinger
Mr. Heisinger holds an AB degree from the University of California-Santa Cruz and a J.D. degree from Lewis and Clark College. He has over 30 years experience practicing land use and municipal law. f Jim has served as City Counsel for Sand City for over 20 years. During that time, he guided Mayor Pendergrass and the City Council through the successful permitting, construction and completion of the only operating municipally owned desalination plant in the State of California. The project achieved unanimous approval from the California Coastal Commission. Jim also advised the City in negotiating a Design/Build contract with CDM Engineering in 2007, setting performance criteria, and supervising extensive testing through 2008. Construction took place between 2008 and 2010. Jim

successfully negotiated the many regulatory and organizational hurdles necessary to complete this pioneering and complicated project.

Ambassador John A. Bohn
Ambassador Bohn most recently completed a 6 year term as Commissioner of the California Public Utilities Commission (CPUC), focusing on water and renewable energy issues Ambassador Bohn currently serves as a Director of the National Endowment for Democracy in Washington DC, and is on the Advisory Board of the Yale Institute for Corporate Governance and Performance. He is a member of the Center for Capital Markets Competitiveness, chartered by the U.S. Chamber of Commerce to advise on the reform capital markets for the 21st Century. Ambassador Bohn is a principal in GlobalNet Partners, N.A., LLC, a global advisory and consulting firm.

Prior to his present position, Ambassador Bohn was a co-founder and Executive Chairman of ChemMatch.com, an Internet based trading exchange for petrochemicals. He spent 1-1/2 years at Burson-Marsteller, where he served as Managing Director, focusing on international markets, and economic resources issues, and was special advisor to the Government of Korea during the Asian financial crisis. From 1989-1996, Ambassador Bohn served as President and Chief Executive Officer of Moody's Investors Service.

In 1981, he joined the President Reagan Administration as Special Assistant to Treasury Secretary Don Regan, and was subsequently appointed by President Reagan as U.S. Ambassador and Executive Director of the Asian Development Bank, and later as Chairman and CEO of the Export Import Bank of the United States.

Ambassador Bohn began his career practicing law in California and the Pacific, and subsequently spent 13 years as an international banker principally in Asia, and later as Division Manager for Trade Finance, private banking, and multinational banking.

A graduate with honors from Stanford University, Ambassador Bohn attended the London School of Economics as a Fulbright scholar, and received his JD from the Harvard Law School. He is a member of the California State Bar and the Bar of the Supreme Court of the United States.

David Armanasco
Mr. Armanasco was born in Monterey and attended Carmel schools, Monterey Peninsula College, San Diego State University and Golden Gate College. David began his professional career in the wine industry and spent fifteen years in sales, marketing and management. David founded Armanasco Public Relations, Inc. in February 1985. With his years of experience in marketing, public relations, community relations, public affairs and crisis management he leads a team of professionals in addressing clients' needs and goals. He has held numerous leadership roles for community organizations including serving as Chair of the Monterey Peninsula Chamber of Commerce and VCB, Director of the Economic Development Corporation of Monterey County, Co-Chair of the United Way Campaign, President of the Rotary Club of Monterey most recently Chairman of the Community Foundation for Monterey County. Governor Pete Wilson appointed David to the California

Coastal Commission where he served as a Commissioner from 1996 – 1999. David received the 2009 Citizen of the Year Award from the Monterey Peninsula Chamber of Commerce; he was inducted into the Junior Achievement of Silicon Valley, Monterey Bay Inc., Business Hall of Fame in 2008.

Project Management Team

Our project management and engineering team is comprised of two SWRO water treatment industry veterans with combined experience of more than 55 years in the design, construction, start-up and operation of large capacity desalination plants for the production of potable water from brackish and seawater sources.

K. Scott Jackson
Mr. Jackson has held senior management positions in the desalination and advanced technology water and wastewater treatment industries for more than twenty-five years, most recently as Vice President for Business Operations at Hydranautics, a market leading global manufacturer of reverse osmosis, ultrafiltration and advanced separation membrane products, where he also served as the lead negotiator. He has also served as Managing Director of Inge America's, a subsidiary of Inge, AG, (now wholly owned by BASF) a market-leading manufacturer of ultrafiltration membrane products. He has served as either project or program manager for more than 60 large capacity desalination (SWRO & BWRO), nanofiltration and ultrafiltration systems worldwide, including many of the benchmark systems built around the world. He negotiated the contractual framework and program managed the first large capacity seawater RO systems built in California (Diablo Canyon Nuclear Power Plant & Chevron's Oil Processing Facility at Gaviota) under a commercial structure that served as the model for today's design, build, own and operate contracting model for large capacity seawater desalination systems.

He has successfully managed RO membrane supply contracts with major EPC contractors and RO system OEMs including Degremont, IDE, Veolia, Sembcorp and Hyflux for major projects including Gold Coast, Australia; Paris, France; Barcelona, Spain and other major projects throughout the U.S., Middle East and North Africa. A representative listing of Mr. Jackson's project management experience is provided in Appendix C.

Jonathan A. Dietrich, P.E.
Mr. Dietrich is a registered professional engineer (Florida No. 49929 - primary) plus numerous other states and a member of the National Council of Examiners for Engineering and Surveying (Professional Engineer Certificate No. 26852.) He has more than 25-years experience in the design, permitting, piloting, construction, startup and commissioning of desalination facilities and water treatment systems for industrial, commercial and municipal clients around the world. He has provided professional engineering services to major EPC contractors and Owners including: Brown and Root, Veolia, Acciona, IDE, KBR, Kiewit Industrial, Bechtel, Fluor, Dow, American Water, Doosan Heavy and Hyundai Heavy. Additionally, Mr. Dietrich had deep expertise in the design, construction and installation of

process equipment for chemical water conditioning and in conventional media filtration technologies and systems. Mr. Dietrich's CV is provided in Appendix D.

Source Water Intake Strategy:

Feedwater Source and Physical Infrastructure

Engineered wedgewire screened, passive, low velocity, open ocean intakes are a proven, reliable method of source water extraction to supply desalination plants with source water and represent the intake technology used in more than 98% of SWRO desalination plants presently in operation globally.

DeepWater Desal will utilize this proven technology and importantly will site the intake location at a depth below the photic zone 1.1 miles off Moss Landing to significantly reduce to larval entrainment and improve source water quality and consistency. The intake velocity will be restricted to less than 0.5ft/sec. to prevent impingement of marine organisms on the screens. The proposed deep water, ocean-sited intake, consists of a passive seawater withdrawal system containing a wedge-wire screened intake, supply pipeline and a feedwater pump station. Feedwater will be withdrawn from a new 48-in. diameter pipe that will replace an existing pipeline previously used by PG&E for offloading fuel oil for the MLPP during the time the MLPP was owned and operated by PG&E. In 2011, DWD was offered the easement an associated intake structures and wet well by Dynegy's Moss Landing Power Plant which lead to the two entities entering an exclusive MOU and subsequent contract negotiations, an engagement of the State lands Commission, the Moss Landing Harbor District, and California State Parks. See the diagram of easement and pipeline with wet well below as well as photographs in Appendices E,F,G,H,I and J . The replacement pipe will be constructed of high density polyethylene (HDPE), assembled on the surface, flooded and sunk to position the pipeline significantly above the seafloor with minimal seafloor disturbance. The pipe will be anchored in place with concrete saddles, again to minimize disruption to the seafloor. At the intake location, a riser will be constructed to position the intake at a depth sufficiently off the seafloor to isolate the intake from bottom disturbances caused by marine life or geological disturbances such as shifting sand.

At the intake location, pipe branches will be constructed to increase the cross sectional area of the intake structure to limit the intake velocity to less then 0.5ft/sec.. Engineered wedge wire screens will be installed at the pipe openings to eliminate entrainment of all fish larvae greater than approximately 0.2mm in size. Entrainment and impingement studies using the empirical transport modeling (ETM) method preferred by the both the Coastal Commission and the State Water Board for Track 2 intakes being conducted by Tenera Environmental (http://www.tenera.com) co-funded by both DeepWater Desal and Moss Landing Power Plant, indicate that larvae entrainment will be minimized using this intake method. Both biological sampling and water quality studies at the intake location are ongoing with TENERA..

The new source water intake pipe will be routed from the off shore intake structure to come onshore adjacent to the Moss Landing Power Plant and the routed to an abandoned in place

wet-well located adjacent to the wet wells currently in use for power plant cooling water recirculation. The wet well will be re-built to accommodate new high efficiency pumps and motors to forward the raw seawater through a series of heat exchangers designed to extract heat from the other coastal-dependent operations at Moss Landing, including the Moss Landing Power Plant and potentially planned sea water-cooled data center operations that will be co-located with the SWRO desalination plant.

Appendices E,F,G,H,I, and J show the approximate location of the seawater intake and the routing of the seawater delivery pipeline.

Water Rights Risk Assessment

The ocean and its resources (tidal, coastal and outer continental shelf) are well established in federal and state law as a being a publically owned resource held in trust. The right to access source water from an off-shore, deep water, open ocean intake, as proposed by DWD, and the legal authority to withdraw such water for desalination will be authorized by the appropriate federal and state agencies - primarily the California State Lands Commission, the California Coastal Commission and the National Oceanographic and Atmospheric Administration. Once valid permits are issued by the designated regulatory agencies, with the legal jurisdiction to issue such permits on behalf of the public, there is no legal theory that we are aware of that could conceivable challenge the right to use offshore seawater for the purposes designated in the permits.

Consequently, it is our view that there is minimal to no legal risk associated with a right to withdraw seawater from offshore for the purpose of producing municipal drinking water and for other approved and permitted purposes, subject to the issuance of, and in compliance with, the applicable conditions of the required permits.

Environmental Litigation Risk Assessment

DWD is not aware of any threats of litigation concerning the Central Coast Regional Water Project. The core of the project is to provide an environmentally sound method for extracting seawater from the ocean with a deepwater intake, and using the existing Power Plant infrastructure including the cooling water discharge capacity for brine disposal. In fact, in 2009 Dr. Constantz was awarded the Global Ocean Hero Award from the marine science community of Santa Cruz for his dedication and contribution to preserving and enhancing the marine realm. Because the project will be owned by public agencies through a JPA, we believe that the potential growth inducing aspect of the project will be well regulated by those public agencies who will be subscribing to the new water supply issues through the water purchase agreements and membership in the JPA.

Long-Term Source Water Security and Legal Rights to Source Water

It is well known that inland or intertidal aquifers where source water is withdrawn using wells or other methods involving subsurface extraction, are susceptible to changes in

chemical composition, physical quality and well productivity over time. However, an off-shore deep-water intake will not be subject to a degradation in chemical composition, physical quality, or declining well field productivity over time because the ocean source water is not influenced by changes in physical or chemical composition due to extended pumping of confined or interconnected aquifers. Deepwater intakes produce similar low turbidity water as well produced feedwater, without the transition and heavy metals issues, or the off gassing of greenhouse gases indicative off well water off the California Coast, and particularly Monterey Bay. A deepwater open ocean intake is not subject to loss of well field productivity due to sedimentation, compaction or geological processes. Offshore open-ocean intakes can guarantee long-term, uninterruptable access to source water at the flows and with the physical and chemical composition on which the SWRO process is designed. Unlike shallow-water open intake, a deepwater intake minimizes influences from oil spills and red tides, as well as storm event seen at the surface. Therefore, DWD views the long-term risk of the source water supply becoming either unavailable or unusable as being extremely low.

Outfall Strategy:

RO concentrate generated by SWRO would be transferred from the desalination plant to an above ground mixing basin at the Moss Landing Power Plant for blending with power plant cooling water to achieve a dilution ration of between 20 and 60 to 1. Following mixing, the diluted concentrate would be discharged to the open ocean using the existing cooling water discharge piping and outfall operated by the Moss Landing Power Plant. Filter backwash waste would be collected in a 175,000-gallon settling tank, with decant and sent to a separate 150,000-gallon tank for disposal along with the RO concentrate.

A Preliminary RO System Concentrate Specification has been developed and is provided below:

Phase 1: 10,000 AFY (8,8,921,516 GPD) Permeate Capacity

Parameter	Value	Comment
Flow	2,663 GPM	At 10° C and 42% permeate recovery – Final design recovery & temperature has not yet been fixed. See attached Spreadsheet for values from 5 - 20°C and 40% to 45% recovery.
TDS	58,339.8 TDS	
Temperature	To Be Finalized	
TSS	<1 mgl	

Build-Out Capacity: 25,000 AFY (15,488 GPM) Permeate Capacity

Parameter	Value	Comment
Flow	6,663 GPM	At 10° C and 42% permeate recovery – Final design recovery & temperature has not yet been fixed.
TDS	58,339.8 TDS	
Temperature	To Be Finalized	
TSS	<1 mgl	

So long as the Moss Landing Power Plant utilizes seawater for cooling, there will be sufficient volume of seawater to achieve the required dilution of RO concentrate prior to ocean discharge. In the event the Moss Landing Power Plant suspends the use of seawater cooling, the intake loop would be operated to the extent needed to provide sufficient flow for dilution of the RO concentrate. This method for RO concentrate disposal has been approved by the California Coastal Commission for the Carlsbad and Huntington Beach SWRO projects. Given these precedents, DWD s anticipates that the Central Coast Regional Water Project will be allowed to use this alternative method for concentrate disposal.

The only new construction required to implement the concentrate disposal method would be the construction of a new 36-inch brine disposal pipeline to transfer the brine from the SWRO plant to the Power Plant's existing mixing basin. All other required infrastructure exists and is currently in operation, including the discharge piping and outfall.

DWD and Dynegy entered into an exclusive Memorandum of Understanding in May of 2012 under which the parties have agreed to identify land and improvements at the Power Plant to be purchased or leased by DWD and used for the SWRO desalination plant. The MOU grants DWD an exclusive right to negotiate definitive agreement(s) with Dynegy for a period of five years. DWD and Dynegy have identified land and improvements at the Moss Landing Power Plant necessary for the DWD project and are presently in negotiating definitive agreements concerning acquisition and use of that land and improvements.

Water Treatment Facility:

Preliminary Process Design

Preliminary process design work was completed in September, 2012 for the DWD SWRO system as follows:

1. Major process equipment, e.g. pumps, filters, tanks, RO Trains, etc. have been sized and quantities determined together with number of installed spares for process redundancy.
2. Flows, pressures, motor HP ratings and efficiencies have been determined for the major rotating equipment.
3. RO membrane design and performance projections have been developed for various flows, temperatures and recovery.
4. RO train capacity has been sized.
5. Energy Recovery Devices have been sized and efficiencies determined.
6. Pre and Post Treatment chemicals have been identified and consumption has been calculated.
7. Raw Water Intake Pump Station; and the Final Product Water Storage and High Service Pump Station have been sized with pressures, flows and retention times calculated.

This work was performed by Dietrich Consulting Group, LLC and Jackson Consulting. Both John Dietrich and Scott Jackson are partners in DeepWater Desal LLC. A Process Flow Diagram is enclosed for additional information. A summary of the preliminary design is provided in Appendix K. The Process Flow Diagram is provided in Appendix L.

A general description of the overall process is provided below:

SWRO Desalination Plant

The proposed DeepWater Desal project will be constructed in phases to accommodate both immediate and future demand. Phase 1 will be sized to produce 10,000 AF/Y (8.9 MGD). However, the seawater intake, intake pipeline and transmission pipelines will be sized and constructed to accommodate the full build-out capacity of 25,000 AF/Y (22.3 MGD).

The desalination plant will consist of the following major components:

1. Screened, passive, deep-water intake
2. Intake pipeline
3. Intake pump station to convey seawater to the desalination facility
4. Pretreatment media filtration system
5. 10,000 AFY capacity (Phase 1), reverse osmosis seawater desalination system (SWRO); with infrastructure in-place to ultimately produce 25,000 AFY
6. Energy recovery system
7. Chemical conditioning facilities
8. Post-treatment facilities
9. Product water pump station
10. Residuals management system – solids settling and filter presses
11. Electrical power supply
12. Brine discharge and conveyance

Overview

The project will utilize existing buildings and infrastructure to the greatest extent possible to house the RO system equipment, control room, laboratory and offices. The RO system equipment will be fabricated off-site, installed and assembled on-site, within existing buildings and structures. On site construction activities will be largely limited to tankage, pump stations, foundations, connecting pipelines, and a substation.

The desalination plant will be designed to accommodate both immediate and future demand for high purity drinking water. Phase 1, will be built to provide a capacity of 10,000 AFY. Additional production capacity will then be added in incremental blocks to meet future demand with a "build-out" capacity presently fixed at 25,000 AFY.

Deep Water Ocean-Sited Intake System

The proposed deepwater ocean-sited intake, to be constructed and owned by DWD, consists of a passive seawater withdrawal system containing a wedge-wire screened intake, supply pipeline and a feedwater pump station. Feedwater will be withdrawn from a new 48-in. diameter pipe that will replace an existing pipeline previously used by PG&E for offloading fuel oil for the MLPP during the time the MLPP was owned and operated by PG&E. The intake of the new 10,000 linear foot (LF) feedwater intake pipe will be located at a depth of approximately 85 ft. The pipe will be screened with a passive, cylindrical wedge-wire screen constructed with slot openings of 2 mm. and designed such that the maximum velocity through the screen would never exceed 0.5 foot per second (fps) in order to eliminate impingement and reduce entrainment of aquatic organisms. A feedwater pump station will be constructed in the existing wet well of Dynegy's MLPP, which is located onshore below sea level at the terminus of the abandoned PG&E fuel oil line. The feedwater pump station will be equipped with high-service pump(s) with a rated capacity of up to 24 MGD (Phase 1).

Feedwater Conveyance System

The feedwater conveyance system includes piping and pumps to transport the feedwater to the SWRO facility. The high-service pump(s) has a rated capacity of 13,000 gallons per minute (gpm), Phase 1, at a discharge pressure of 75 pounds per square inch (psig).

Pretreatment System

Because of the high quality of the raw seawater taken from the deep-water intake, expensive ultrafiltration membrane treatment will not be required. The pretreatment will instead utilize a granular media filtration system, a robust and proven technology, to protect the integrity and reliability of the seawater reverse osmosis (SWRO) membrane system. The pretreatment system will consist of a single-stage, deep-bed, dual media granular media system with sufficient redundancy to ensure a reliable, sustainable supply to the downstream desalination process. Coagulant and filter aid polymer systems will be integrated to improve the efficiency of the pretreatment system during system operation.

The media filters are designed to utilize filtered seawater as a source of backwash water or alternatively, RO concentrate. The filters will be fully automated and monitored to assure trouble-free operation.

Cartridge Guard Filters

Following pretreatment, filtered water will be collected in a clear well to insure a continuous reliable supply of pretreated water to the downstream SWRO system. From the clear well, the pretreated water will be pumped through 5-micron cartridge filters that will serve as guard filters and then forwarded to the high-pressure pumps feeding the SWRO. Chemical dosing for pH adjustment and scale control will be implemented prior to the feed water entering the SWRO membrane elements.

Reverse Osmosis System

Reverse osmosis desalination is a cross-flow separation process using polymeric membranes to separate and concentrate dissolved minerals (salts) from seawater. In RO desalination, the feed stream is split into high quality permeate and concentrated brine. Permeate is produced by passing water through a semi-permeable membrane that has the ability to effective reject all of the dissolved minerals (99.98% or greater) leaving the salts on the feed side of the membrane. As permeate is produced, the volume of the feed is reduced and the concentration of salts increases until the concentrated brine is discharged from the RO membrane trains. For seawater, the ratio of the volume of desalted water to the volume of the feedwater is approximately 45%. In other words, for every 100 gallons of feed introduced into the RO system, approximately 45 gallons of high quality permeate are produced and 55 gallons of concentrated brine are produced.

Seawater reverse osmosis desalination is a mature technology with thousands of plants in successful operation around the world and the technology has made a major contribution to alleviating water scarcity around the world.

During Phase 1, the feed flow rate to the SWRO system will be 18.2 MGD (at 50-percent feedwater recovery); producing 8.9 MGD of high quality desalted drinking water. The system will be designed with redundant capacity to ensure a reliable, sustainable source of desalted water for post-treatment conditioning. High pressure feed pumps will produce approximately 900 – 1,000 psi (pounds per square inch) of pressure to drive the seawater through the reverse osmosis membrane elements. An integrated energy recovery system will recapture approximately 30-percent of the energy consumed for the high-pressure feed pumps and apply the energy into the feed stream, effectively reducing the energy needed for the treatment process. The entire membrane system will be automated and continuously monitored using state-of-the-art sensors and computer control systems.

Permeate produced by the SWRO will require post-treatment conditioning with lime and/or carbon dioxide; followed by disinfection and treatment for corrosion control to protect the distribution pipeline.

The plant will supply product water of a quality that fully complies with all regulatory requirements of the California Department of Public Health, the Safe Drinking Water Act, and the California Title 22 code for drinking water standards. The finished product water from the desalination plant will be compatible with the water quality of the other sources of potable water delivered to the same distribution system.

Chemical Storage and Feed Facilities

Chemicals safe and certified for use in drinking water treatment will be used in the desalination process to optimize pretreatment filtration, maintain the correct water quality, and to maintain the RO membrane elements in a clean condition; and also for stabilization and disinfection of the desalted water for distribution in a regulated potable water supply. The chemicals used will be delivered to the site in bulk quantities and stored in fully contained bulk storage tanks prior to being used in the process. All chemical storage, handling and feed facilities will be designed, constructed and maintained in compliance with all codes, OSHA requirements and best practices to insure safe storage and handling.

Waste Management

The desalination plant will generate waste streams consisting of concentrate from the SWRO process, sludge from the media filter backwash, sanitary wastewater from bathrooms, spent membrane cleaning solution, solid waste, and surface runoff. The plant will be designed and constructed to handle all waste streams generated in an environmentally sound manner and in compliance with all codes and regulatory requirements as may be applicable.

Brine Concentrate Conveyance System

Concentrated seawater (brine) produced by the RO process will be collected and piped by a separate dedicated brine pipeline from the desalination plant site to the mixing basin at the Moss Landing Power Plant for discharge into the power plant's cooling water discharge where it would be diluted close to ambient salinity levels by the 100 to 1,224 MGD cooling water outfall flow from the MLPP.

Residuals Management

Filter backwash will be collected and discharged into the RO concentrate line, or alternatively treated on site via the solids handling system. Discharge will be regulated so that the suspended solids load will mix with and be diluted with the particle free RO concentrate. Further dilution of the TSS load will occur during mixing with the power plant cooling water discharge so that turbidity at the ocean outfall will not exceed that of normal seawater.

"Spent" or used cleaning chemicals will be collected and treated prior to discharge into the brine discharge line. Treatment will include pH neutralization. Residual surfactants, if any, will be of low concentration and small volume and it is not anticipated that any further treatment will be required prior to discharge.

Treated Water Storage and Distribution Pump Station

Desalted treated water will be temporarily stored on site prior to being forwarded to the distribution pipeline. The storage facilities will be comprised of above ground circular tank(s) that will provide sufficient residence time to meet all requirements for final disinfection prior to forwarding to the distribution pipeline. The product water pump station will provide high quality drinking water to the distribution pipeline at the flow and pressure required for distribution.

Non-Process Facilities

Power will be provided to the project by the local electrical supply existing within the footprint of the existing facility. Circuits feeding the desalination plant would be 4.1kV and 460 V.

Facility Operation and Maintenance

The seawater desalination facility will be designed and constructed for continuous operation (24 hours per day and seven days per week) and will be adequately staffed to support continuous operations in accordance with California and Federal Law. The plant will be fully automated and will have operations and maintenance staff of approximately 12 full-time employees. Additionally, outside services will be required from electrical, equipment and instrumentation contractors, and the service industry.

Site Control:

Within the context of the existing exclusive MOU between DWD and the Dynegy Moss Landing Power Plant, the intake basin, water treatment facility, and the discharge basin and discharge lines, are all controlled by Dynegy, and DWD has the exclusive right to negotiate definitive agreements regarding DWD's acquisition and utilization of these lands and facilities.

Permitting:

DeepWater Desal has filed an application with the State Lands Commission for necessary permissions to replace an existing submerged fuel oil intake line with seawater intake lines. We anticipate that the CSLC will initiate CEQA review of the project as the lead agency shortly after it's meeting presently scheduled for February 23, 2012. We have held preliminary meetings with the Monterey Bay National Marine Sanctuary regarding its role conducting review of the project under NEPA. DWD has met twice with the California Coastal Commission staff to discuss permit requirements for the project under the California Coastal Act. DeepWater Desal's ETM modeling on impingement and entrainment has been reviewed with Coastal staff in the presence of their experts, and Coastal staff have the sampling protocol that are being carried out at the intake site off Moss Landing.

Regulatory permission from several governmental agencies will be required prior to construction and operation of the project at Moss Landing. As of today, DWD has identified

the following federal, State and local agencies with regulatory authority over various parts of the project, or an ownership interest in property to be utilized by the project. Agencies may be added to or deleted from this list in the future.

DWD has engaged TENERA Environmental to conduct oceanographic studies to determine the project's impact on the marine environment, with particular emphasis regarding entrainment and impingement issues. TENERA's work is being supervised by John Steinbeck, a recognized expert in the area. Mr. Steinbeck sits on the State Water Board's Expert Panel on desalination and seawater intakes and outfalls. The Water Quality studies are being conducted under the supervision of Dr. Joseph Phelan, an experienced marine scientist with TENERA. DWD's environmental assessment of the project will be compiled by TENERA under the direction of Dr. Carol Raifschneider. This assessment will provide the starting point for review under CEQA and NEPA.

DWD has also met on several occasions with the Regional Water Quality Board staff to review DWD's planned intake and outfall facilities. RWCB staff have offered a number of suggestions and guidelines.

Federal Agencies

- National Marine Fisheries: Approval for construction and operation of submerged structures
- National Oceanic & Atmospheric Administration: Authorization by the Monterey Bay National Marine Sanctuary Superintendent of federal, state and local agencies' permits within the sanctuary in accordance with NOAA's National Marine Sanctuary Program requirements for the MBNMS
- U.S. Army Corps of Engineers: Permit in accordance with Clean Water Act Section 404
- Permit in accordance with Rivers and Harbors Act Section 10
- U.S. Coast Guard: Approval for construction and use of structures located in and above navigable waterways
- U.S. Fish and Wildlife Service: Permission for incidental take if project will result in the take of certain species listed under federal law
- Requirements for All Federal Agencies: Consultation with United States Fish and Wildlife Service as required under Endangered Species Act of 1973, Migratory Bird Treaty Act, Fish and Wildlife Coordination Act, the Magnuson-Stevens Fishery Conservation and Management Act and other federal laws Consultation with the State Historic Preservation Officer and/or Tribal Historic Preservation Officer in accordance with the National Historic Preservation Act of 1966 Consultation with the California Coastal Commission Consultation with State Regional Water Quality Control Board Compliance with National Environmental Policy Act
- U.S. Environmental Protection Agency: Consultation with State Regional Quality Board

Regional and Local Agencies

- Monterey County: Coastal Development Permit for development to be located above

the mean high water line within the Coastal Zone

- Use Permit Permission from County Health Department to Construct Desalination Facility Permission from County Health Department to Operate Desalination Facility Encroachment Permit for structures to be located within County road right of way Grading Permit Erosion Control Permit Building Permit
- Monterey Bay Unified Air Pollution Control District:
- Permission to construct and operate in accordance with Air Quality Regulations
- Moss Landing Harbor District: Permission to construct and use facilities located on or above submerged lands and uplands owned by MLHD
- Transportation Agency for Monterey County: Permission to construct and use facilities located on land owned by TAMC
- Monterey Peninsula Water Management District: Water System Expansion Permit (if a water purveyor within the MPWMD's territory takes water from the DWD project)
- For All Regional and Local Agencies: Consultation and coordination with State and federal agencies and permits Consultation with the California Department of Fish and Game Compliance with California Environmental Quality Act

State Agencies

- California Coastal Commission: Coastal Development Permit for all development below mean high tide line
- Regional Water Quality Control Board for the Central Coast Region: Compliance with National Pollutant Discharge Elimination System General Permit For Storm Water Discharges Associated With Construction Activity National Pollutant Discharge Elimination System Permit in accordance with Clean Water Act Section 402 Waste Discharge Requirements in accordance with the Porter- Cologne Water Quality Control Act Water Quality Certification in accordance with Clean Water Act Section 401
- State Water Resources Control Board: Order of approval for Regional Board Action
- California Department of Fish and Game: Permission for incidental take if project will result in the take of certain species listed under State law which does not require an incidental take permit under federal law
- California Department of Public Health: Permit to Operate a Public Water System
- California Department of Transportation: Encroachment permit for structures to be located within State Highway right of way Consultation with State Historic Preservation Office regarding historic resources
- California Public Utilities Commission: Certificate of Public Convenience and Necessity (if a utility company regulated by the CPUC takes water from the DWD project)
- California State Lands Commission: Permission to construct and use facilities to be located on land owned by State of California
- For All State Agencies: Consultation and coordination with federal agencies Compliance with California Environmental Quality Act

Energy and GHG Emissions:

Because DWD has the ability to warm its intake water, both from the Moss Landing Power Plant's cooling water, and have the additional alternative of source water warming from a planned data center at the Moss Landing Power Plant, and since the efficiency of the SWRO process increases with temperature, the power requirements, and associated green house gas (GHG), for the project are relatively lower than for a project which cannot warm its source water with waste heat.

For our energy calculation we have used the regular PG&E E-20 rate, as used by Dr. Constantz's cement plant at Moss Landing for it's electrochemical plant, which will always be available for the project. Additionally, DeepWater Desal have entered into an Memorandum of Understanding to investigate the establishment of a municipal power utility by the City of Salinas. The initial goal of the utility would be to purchase electrical power at wholesale prices and resell it to a limited group of users at Moss Landing, including the Central Coast Regional Water Project. DWD intends to work with the City of Salinas in partnership with other coastal-dependent businesses in Moss Landing to achieve the lowest cost of power for the project.

Salinas would have the ability to purchase renewable energy for the project, giving the project a lower GHG emission profile than other desalination options. DWD has entered another Memorandum of Understanding with a 400 MW solar farm, PV2 Solar, in San Benito County to explore the purchase of solar power via Salinas for the project.

Desalination plants will not be exempt from California's new cap-and-trade law (AB 32). Plants that emit more than 10,000 metric tons of CO2eqv per year now have mandatory GHG inventory reporting requirements. Emitters producing more than 25,000 metric tons of CO2eqv per year must participate in California's newly established cap-and-trade system. DWD presently estimates that its completed project at Moss Landing will fall well under the 10,000 metric ton per year threshold.

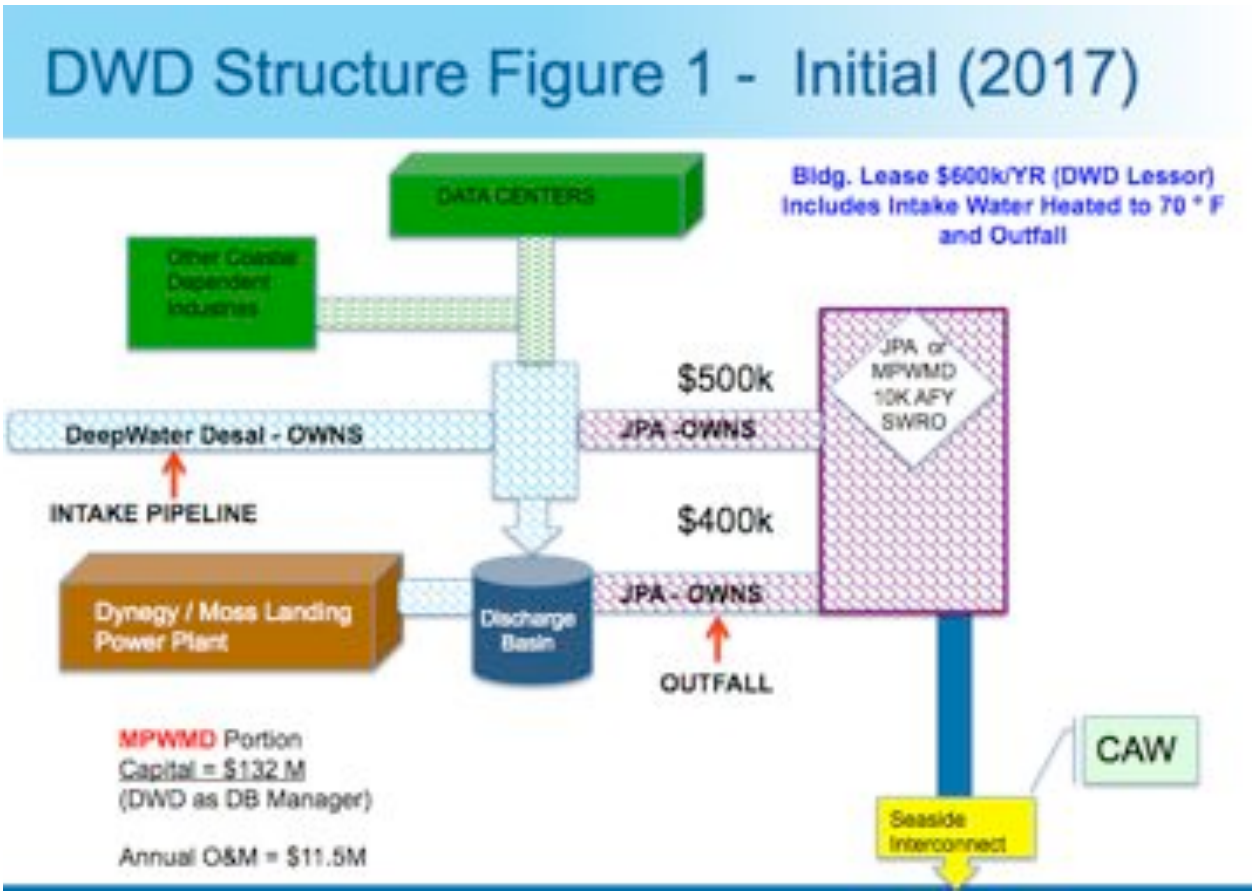
Third Parties:

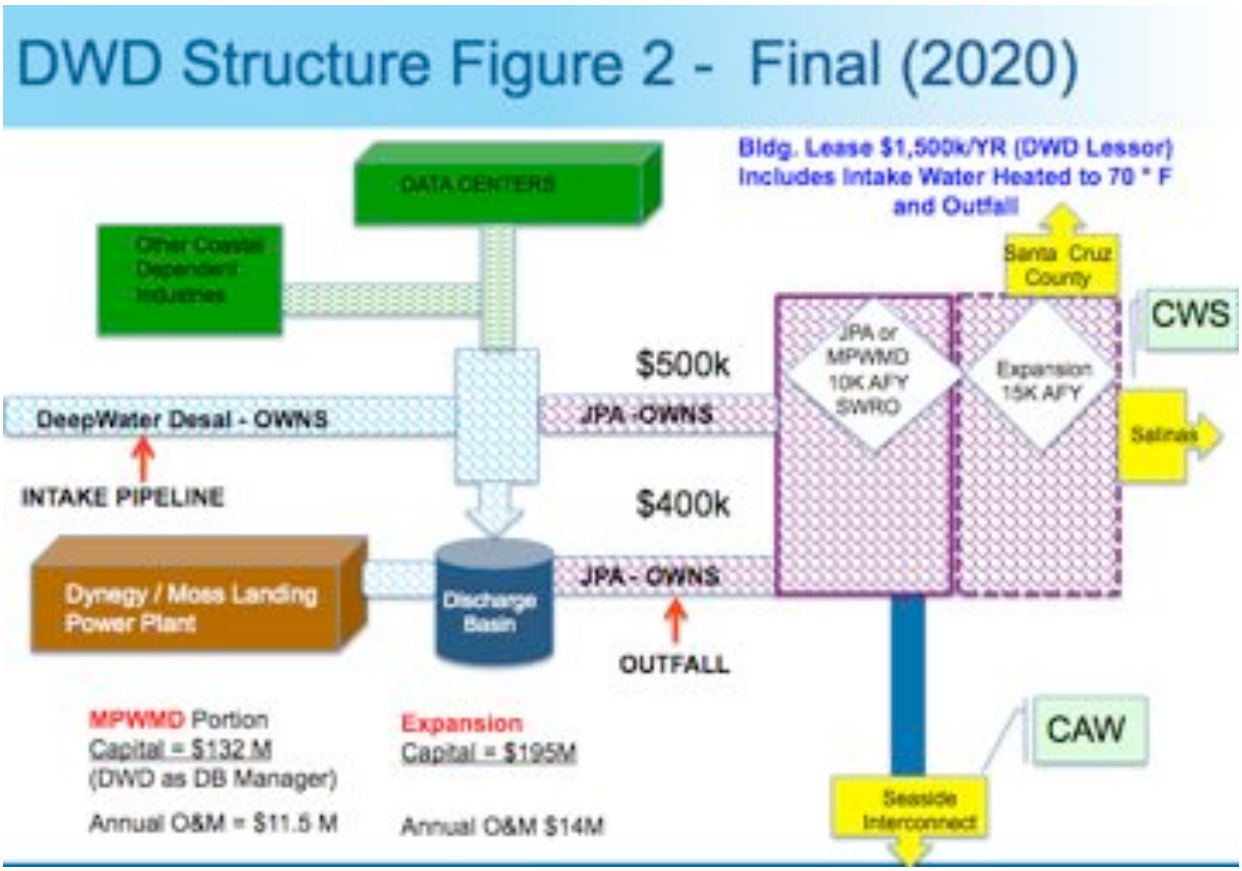
DWD will execute the design and build phases of the project acting as the project developer or as the owner's project manager, depending on whether the project is eventually built by DWD as a private developer or under a JPA with public ownership. In either case, DWD will contract certain engineering services and construction and equipment procurement under a competitive bid process. Because DWD personnel have extensive global experience in the design, procurement and contracting of large capacity desalination plants, the company is well qualified to successfully execute the project on this basis. Generally, the contracting/subcontracting process will involve issuance of request for pre-qualification followed by issuance of a request for proposal (RFP) for major portions of the work. RFPs for process equipment supply will be issued on a turn-key basis with full responsibility for performance backed by financial guarantees. The SWRO System equipment will likely be issued as a single package to insure single source responsibility by the successful bidder.

DWD will be pleased to provide additional information on project execution methodologies and practice on request.

Section 4: Business Terms

Below is a graphic chart that depicts the initial structure of the plant serving only the Monterey Peninsula (Figure 1). During the near-term environmental and permitting phase the project would be funded at risk by DWD. The second graphic chart (Figure 2) depicts the final structure and relationship of the different entities involved in the Central Coast Regional Water Project. During the construction phase, the project would be financed by tax-free bonds sponsored by the initial members of the JPA (MPWMD and Moss Landing Harbor District, for example) and backed by their credit and in most eventual, cases water purchase agreements, including MPWMD. DWD would be reimbursed for it's pre-effective costs with a reasonable fee from the proceeds of the bond issuance. DWD would be the Design-Build-Operator of the project and receive payment for the operation of the plant, at least initially. In the final phase, additional water purchasing members would join the JPA (Salinas, Santa Cruz Co. Water Agencies, Monterey County Water Agencies), and the pro-rata portion of the initial project (intake, outfall, etc) and expansion (more RO trains, new conveyance, etc.) would be funded by a new tax-exempt bond offering, backed by the new JPA member's credit and water purchase agreements.


DWD Structure Figure 1 - Initial (2017)
DATA CENTERS
Other Coastal Dependent Industries
Bldg. Lease $600k/YR (DWD Lessor)
Includes Intake Water Heated to 70 ° F
and Outfall
JPA or MPWMD 10K AFY SWRO
$500k
DeepWater Desal - OWNS
JPA -OWNS
INTAKE PIPELINE
$400k
Dynegy / Moss Landing Power Plant
Discharge Basin
JPA - OWNS
OUTFALL
MPWMD Portion
Capital = $132 M
(DWD as DB Manager)
Annual O&M = $11.5M
CAW
Seaside Interconnect


DWD Structure Figure 2 - Final (2020)
Bldg. Lease $1,500k/YR (DWD Lessor)
Includes Intake Water Heated to 70 ° F
and Outfall
DATA CENTERS
Other Coastal Dependent Industries
Santa Cruz County
CWS
JPA or MPWMD 10K AFY SWRO
Expansion 15K AFY
Salinas
$500k
DeepWater Desal - OWNS
JPA -OWNS
INTAKE PIPELINE
$400k
Dynegy / Moss Landing Power Plant
Discharge Basin
JPA - OWNS
OUTFALL
CAW
Seaside Interconnect
MPWMD Portion
Capital = $132 M
(DWD as DB Manager)
Annual O&M = $11.5 M
Expansion
Capital = $195M
Annual O&M $14M

Section 5: Litigation History

DWD has not been involved in any litigation.

Section 6: Exception

As referenced on page 4 under Section 2, DWD has no present source of income and is an investor supported legal entity. DWD has not engaged an auditor to date. DWD can provide a set of financial statements, unaudited, for your review if required.

Appendices: A - L

Appendix A
LLC-1

State of California
Secretary of State

Limited Liability Company
Articles of Organization

ENDORSED - FILED

DEEPWATER DESAL, LLC

BRENT R. CONSTANTZ

7532 Sandholdt Road, Suite 6, Moss Landing

CA

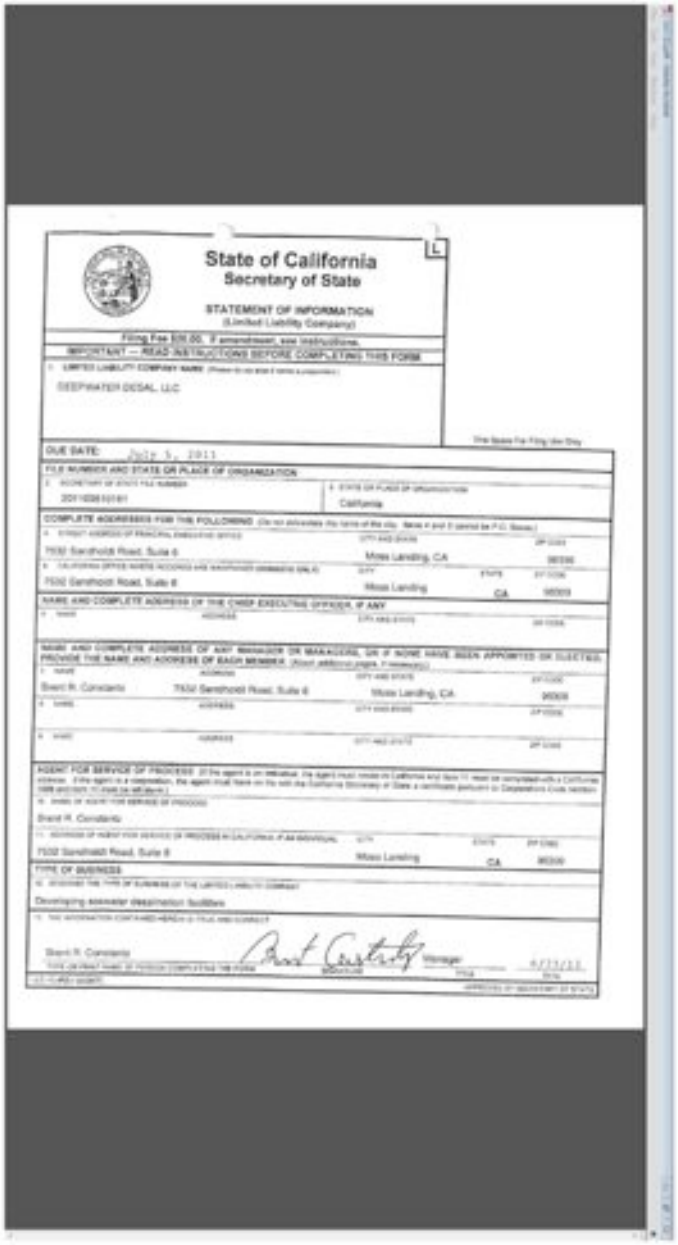
Brent R. Constantz

BRENT R. CONSTANTZ

7532 Sandholdt Rd., Suite 6, Moss Landing, CA 95039 Phone: 831-632-0616

Appendix B

LLC-12



State of California
Secretary of State

STATEMENT OF INFORMATION
(Limited Liability Company)

Filing Fee $20.00. If amendment, see instructions.

IMPORTANT — READ INSTRUCTIONS BEFORE COMPLETING THIS FORM

1. LIMITED LIABILITY COMPANY NAME: DEEPWATER DESAL, LLC

DUE DATE: July 5, 2011

FILE NUMBER AND STATE OR PLACE OF ORGANIZATION

2. SECRETARY OF STATE FILE NUMBER: 201103810161

3. STATE OR PLACE OF ORGANIZATION: California

COMPLETE ADDRESSES FOR THE FOLLOWING (Do not abbreviate the name of the city. Items 4 and 5 cannot be P.O. Boxes.)

4. STREET ADDRESS OF PRINCIPAL EXECUTIVE OFFICE: 7532 Sandholdt Road, Suite 6 — Moss Landing, CA — ZIP 95039

5. STREET ADDRESS WHERE ACCOUNTS AND WRITTEN RECORDS ARE MAINTAINED: 7532 Sandholdt Road, Suite 6 — Moss Landing — CA — ZIP 95039

NAME AND COMPLETE ADDRESS OF THE CHIEF EXECUTIVE OFFICER, IF ANY

6. NAME — ADDRESS — CITY AND STATE — ZIP CODE

NAME AND COMPLETE ADDRESS OF ANY MANAGER OR MANAGERS, OR IF NONE HAVE BEEN APPOINTED OR ELECTED, PROVIDE THE NAME AND ADDRESS OF EACH MEMBER (Attach additional pages, if necessary.)

7. NAME: Brent R. Constantz — ADDRESS: 7532 Sandholdt Road, Suite 6 — CITY AND STATE: Moss Landing, CA — ZIP CODE: 95039

8. NAME — ADDRESS — CITY AND STATE — ZIP CODE

9. NAME — ADDRESS — CITY AND STATE — ZIP CODE

AGENT FOR SERVICE OF PROCESS (If the agent is an individual, the agent must reside in California and Item 11 must be completed with a California address. If the agent is a corporation, the agent must have on file with the California Secretary of State a certificate pursuant to Corporations Code section 1505 and Item 11 must be left blank.)

10. NAME OF AGENT FOR SERVICE OF PROCESS: Brent R. Constantz

11. ADDRESS OF AGENT FOR SERVICE OF PROCESS IN CALIFORNIA, IF AN INDIVIDUAL — CITY: Moss Landing — STATE: CA — ZIP CODE: 95039

TYPE OF BUSINESS

12. DESCRIBE THE TYPE OF BUSINESS OF THE LIMITED LIABILITY COMPANY: Developing seawater desalination facilities

13. THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT.

Brent R. Constantz — TYPE OR PRINT NAME OF PERSON COMPLETING THE FORM — Brent Constantz — SIGNATURE — Manager — TITLE — 6/13/11 — DATE

APPROVED BY SECRETARY OF STATE

Appendix C

K. Scott Jackson
Program/Project Management - Representative Project List

Owner/Client	Project Scope	Project
Chevron Corporation, Gaviota, CA	Turn-key	274,000 GPD seawater RO and 72,000 brackish water systems, process make-up water
City of Cape Coral, FL	Turn-key	9 MGD low pressure RO system
City of Englewood, FL	Turn-key	3 MGD brackish water RO system
City of Fort Myers, FL	Turn-key	12 MGD membrane softening system (20 MGD ultimately)
City of Majma'ah/Arabian Bechtel Company Ltd., Saudi Arabia	Turn-key	3.2 MGD brackish water RO system
Douglas Aircraft Company, Long Beach, CA	Turn-key	127,000 GPD RO and 426,000 GPD Two-stage waste treatment and reuse systems
EcoFund, Warsaw, Poland	Turn-key	$500,000 zero-discharge pilot scale study RO and evaporator mine drainage water
Exxon Company, USA, CA	Turn-key	864,000 GPD MF system for recovery and reuse of oil produced water and water flood operations
Hutchinson Technology, Hutchinson, MN	Turn-key	2 each 130,000 GPD MF systems for wastewater treatment and reuse
LSI Logic, Gresham, OR	Turn-key	100 gpm CMP and 10 gpm Fluoride MF wastewater treatment system
Marin Municipal Water District, CA	Turn-key	50 GPM MF pilot phase pretreatment study
Minnesota Corn Processors, Marshall, MN	Turn-key	Pilot test, feasibility study and comparative economic evaluation for 2 each 4.3 MGD RO systems
Orange County Water District, Fountain Valley, CA	Component Supply	Membrane and pressure vessel replacement, 5 MGD municipal reclaim RO system
Pacific Gas & Electric Company, Diablo Canyon Nuclear Power Station, CA	Turn-key	576,000 GPD seawater RO system (First large capacity seawater desal project built in California)
Plains Electric Power Generation, NM	Turn-key	500,000 GPD RO system

Owner/Client	Project Scope	Project
Public Service Company of New Mexico, San Juan, NM	Turn-key	Membrane replacement and system refurbishment, 2.88 MGD Zero Discharge system
Royal Commission for Jubail and Yanbu, Arabian Bechtel Company Ltd.	Turn-key	3 MGD brackish water RO system
St. Lucie West, FL	Turn-key	1.2 MGD membrane softening plant
U.S. Army	Turn-key	22 each 150,000 GPD mobile seawater RO systems, logistical support for Rapid Deployment Forces
U.S. Bureau of Reclamation, Yuma Desalting Plant, Yuma, AZ	RO Membrane Trains	20 MGD RO system (total plant capacity was 76 MGD) for reclamation of agricultural drainage water
City of Menifee, CA	Turn-key	2.5 MGD municipal brackish RO system
City of Jupiter, FL	Turn-key	2 MGD municipal brackish RO system
Boca Raton, FL	RO Membrane Trains	40 MGD municipal brackish RO system
Palm Beach County, FL, Plant No. 9	RO Membrane Trains	22,880 MGD municipal brackish water RO system
Wichita Falls, TX	Turn-key	12 MGD municipal brackish water RO system
City of O'Fallon, MO	Turn-key	3 MGD municipal brackish water RO system
Oman Sur, Oman	RO membrane Supply	21.3 MGD SWRO
Eau de Paris, Paris, France	UF Module Supply and Control System support and services	38.7 MGD Ultrafiltration surface water treatment plant
City of Nancy, France	UF Module Supply and related technical services	23.2 MGD Ultrafiltration surface water treatment plant
Thames Water (London), UK	RO membrane supply	40 MGD Seawater RO Plant
Sharjah Electricity & Water Authority, Al Hamriyah, Oman	RO & UF Membrane Supply	40 MGD UF Pretreatment System and 20 MGD SWRO Plant

Owner/Client	Project Scope	Project
Skikda & Beni Saf, Algeria	RO membrane supply	79 MGD combined Seawater RO Plant
Ulu Pandan	RO membrane supply	39 MGD Water Reuse RO plant
Chennai, India	RO Membrane supply	26.5 MGD SWRO Plant
Tiemcen, Algeria	RO membrane supply	52.8 MGD SWRO Plant
Gold Coast, Australia	RO membrane supply	35 MGD Seawater RO Plant
City of Barcelona, Spain	RO membrane supply	52.8 MGD

Appendix D

Jon Dietrich contributions with desalination.

Describe previous experience with desalination.

Seawater Desalination Facility, Al Dur, Bahrain. Senior Process Commissioning Specialist for an IWPP BOT desalination facility located along the Arabian Gulf. Responsible for process associated commissioning activities and implementation of acceptance testing protocols. The 58 mgd (218,000 m^3/d) SWRO desalination plant utilizes an open-ocean intake, dissolved air flotation, conventional media pretreatment, a full two-pass RO system, followed by post-treatment to meet strict potable water specifications.

Seawater Desalination Facilities - Asset Valuation.
Technical Advisor; providing independent expertise on all technical matters associated with plant process design, intake, outfall, desalination facility and interconnections, condition and availability of equipment, commissioning and acceptance testing, residuals management, operation and maintenance, and relevant environmental aspects of plant operation.

Seawater Desalination Facility, Shuaibah III, Saudi Arabia. Development of pretreatment pilot testing protocols and on-site pilot testing, operational and desalination troubleshooting services for an IWPP BOO desalination facility located along the Red Sea. The combination 40 mgd (150,000 m^3/d) membrane desalination + 232 mgd (880,000 m^3/d) thermal MSF desalination facility utilizes an open-ocean intake, conventional media pretreatment, and two-passes of reverse osmosis membranes.

Seawater Desalination Facility – Hamma, Algeria. Process operational guidance and desalination commissioning services at a 52 mgd (200,000 m^3/d) SWRO facility in Algiers. Facility utilizes an open-ocean intake, conventional clarification, deep bed media pretreatment, single-pass membrane treatment. Additional tasks encompassed the review and assessment of the desalination system functionality and chemical storage and delivery systems' operational protocols.

Namibian Water Corporation (NamWater) – Namibia, South Africa. Seawater desalination consultant and Owner's Engineer-Advisor for a 13 mgd (50,000 m^3/d) expandable to 21 mgd (80,000 m^3/d) facility to be constructed along the coast near Swakopmund. The feed water is particularly challenging compared to most coastal locations due to the occurrences of red tides and sulphur upwellings. Work includes pilot operational guidance, treatment process guidance, development of EPC scope book and bidding documents.

City of Santa Cruz Water Department - Seawater Desalination Demonstration Program. Design and Technical Engineering Review associated with the pilot demonstration program, including operational data and water quality assessment; operational results compared to other similar desalination facilities; pretreatment and membrane treatment process performance, data interpretation, and normalized membrane operating data commensurate with a thorough technical review. Also responsible for technical support and recommendations regarding intake methods.

West Basin Municipal Water District - Seawater Desalination Facility. Design and Value Engineering Review. Work involved assisting the District in providing a comprehensive design review and value engineering assessment of the District's Temporary Ocean Water Desalination Demonstration Facility plans and specifications. Also, membrane Technology Support Services ranging from pilot testing support to general process and engineering support. Work activities include pretreatment design and testing guidance, development of layouts, cost estimates, and sharing institutional knowledge.

The project was awarded the National Water Research Institute's (NWRI) "Award of Excellence" for its contribution to water desalination research and dedicated efforts to create a new, locally controlled sustainable water supply.

Saudi Arabia, Bahrain, United Arab Emirates. Operational audit of seawater desalination facilities located throughout the Middle East. Included assessment of the design and operational sustainability of numerous open-intake configurations on seawater of vastly different qualities. Provided assessment of treatment efficacy for numerous membrane desalination facilities treating Arabian Gulf seawater.

Carlsbad Seawater Pilot Demonstration Facility, Carlsbad, CA. Technical director and advisor in the development of a 50 mgd (190,000 m^3/d) SWRO in Carlsbad, CA. Responsibilities include conceptual plant design, pilot plant operation, oversight and performance testing assessments, data collection and interpretation, technical aspects of facility permitting, economic analyses.

Seawater Desalination Facility - Palmachim, Israel. Process operational guidance and desalination troubleshooting services at a 22 mgd (83,000 m^3/d) SWRO facility in Israel utilizing an open-ocean intake, conventional media pretreatment, and multiple membrane treatment components. Additional tasks encompassed the review and assessment of the desalination system and chemical storage and delivery systems' operational protocols.

Ras Tanura Petrochemical Facility; Saudi Arabia. Subject Matter Expert (SME), basic engineering assistance, and preliminary process design development for a 62 mgd (235,000 m^3/d) seawater reverse osmosis facility. The grass-roots facility will incorporate membrane filtration as pretreatment on an open intake, followed by seawater reverse osmosis membranes in a number of process configurations. Responsibilities include assistance with the development of process flow diagrams, and

piping and instrumentation diagrams, process control strategy, pilot protocol development, and implementation of the pilot program including operational guidance and data interpretation; review of vendor/EPC contractor submittals, cost guidance, negotiations assistance, equipment and facility construction inspections, operator training, and facility commissioning oversight.

Brownsville Public Utility Board Seawater Desalination Pilot Program. Program implementation, process, and operational guidance for a seawater desalination pilot consisting of four pretreatment configurations (one conventional, three membrane-based) and two SWRO trains at the Brownsville, TX ship channel. Also included pilot testing guidance, interpretation of operating data, and implementation of protocols.

Tampa Desalination Facility. At the Tampa, FL 25 mgd (95,000 m^3/d) seawater desalination facility; provide training to operations staff, development of Standard Operations Protocols for desalination process equipment including warm and cold-water intakes, revised pretreatment system utilizing coagulation, flocculation, media filtration and precoat microfiltration; a two-pass seawater process, and enhanced post treatment utilizing lime and carbon dioxide. Develop facility commissioning framework for Operator and Owner consent. Provide guidance to plant staff towards fulfilling NPDES discharge and operations permit requirements.

Iraq Water Theater. Subject Matter Expert, Operations Audit and development of a membrane operations training program for desalination facilities and ice operations supporting United States and coalition troops. Tasks encompassed pretreatment, process, membrane operations, chemical conditioning, hands-on training, testing protocols, and operational guidance.

Texas Water Development Board Seawater Desalination Program. Seawater Desalination Engineering Project Manager (EPM) for the State of Texas' implementation of the pilot plant study components of the Brownsville seawater desalination initiative. Tasks include development of funding application package for Developers/participants, assisting TWDB with developer negotiations, development of pilot protocol and meaningful Demonstration Program guidance, pilot progress and operations inspections, data evaluation, technical feasibility.

West Basin Municipal Water District, Temporary Ocean Water Desalination Demonstration Project. Membrane process and support services in various capacities related to intake assessment, pretreatment efficacy, and siting for the West Basin seawater desalination demonstration program. The project was awarded "Project of the Year" by the WateReuse Association in 2011.

OPIC Petrochemical Facility; Sohar, Oman. Subject Matter Expert (SME) for the water utility and infrastructure components of a petrochemical facility in Oman. The water facility is designed to utilize membrane pretreatment on an open ocean intake, followed by seawater reverse osmosis membranes. Responsibilities include process flow diagram and piping and instrumentation diagram development oversight, process control

strategy guidance, development of the water facility process design, technical review of vendor/EPC contractor submittals, cost guidance, negotiations assistance, equipment and facility construction inspections, operator training, development of operational protocols.

Algerian Energy Company/Seawater Desalination Program. Technical Advisor for pretreatment process and facility design development, for 13 MGD to 50 MGD seawater desalination facilities in Algeria. The facilities are designed to utilize conventional pretreatment on an open ocean intake, followed by seawater reverse osmosis membranes. Responsibilities include process flow diagram and piping and instrumentation diagram development and oversight.

Tampa Bay Water / Anclote Seawater Pilot Demonstration Facility, Holiday, FL. Project Principal for the operation and performance assessment of parallel pretreatment followed by seawater reverse osmosis pilot trains for a future, planned 25-MGD seawater desalination facility in the Northwest Tampa Bay area, on the Gulf of Mexico, at Progress Energy's Anclote Power Generating Station. Treatment trains included membrane pretreatment next to conventional media pretreatment, followed by seawater desalination and a second pass reverse osmosis polishing array. Managed the pilot program, evaluated the sustainability of the processes, directed the treatment operations and courses of action on-site and performed scale-up and economic analyses.

United States Bureau of Reclamation + Tampa Bay Water - Anclote Seawater Pilot Demonstration Facility, Holiday, FL. This is the second piloting component for the Seawater Pilot Demonstration Program at the Anclote Power Generating Station; although with different pretreatment trains compared to the Tampa Bay Water Component of the Program. Pretreatment trains included membrane pretreatment followed by UV inactivation, next to a coagulation/flocculation/sedimentation system with a 2-stage media filter polishing system. Both systems fed parallel single-pass seawater reverse osmosis systems. Managed the pilot program, evaluated the sustainability of the processes, directed the treatment operations and courses of action on-site, and performed scale-up and economic analyses.

Tampa Bay Desal, LLC / Tampa Bay Water – Tampa, FL. Development through completion of a 25 MGD (95,000 m^3/d) DBOOT/DBO seawater desalter in Tampa, FL. Responsibilities as Director of Technical Services include pilot plant operation and oversight, owner-management of facility construction and overall startup/commissioning oversight, adhering to schedules, and technical aspects of facility permitting (including concentrate), public information, utility service coordination, EPC contractor replacement, O&M contractor replacement, risk analyses, and intense economic analyses. Responsible for managing client relationships and numerous consultant / engineer subcontractors.

Trinidad / Tobago, West Indies (for Private Client). Assistant to the Design Manager for a 65 mgd (250,000 m^3/d feed water capacity) membrane desalination pretreatment plant. Work included the preliminary conceptual engineering, design, economic analysis

of the pretreatment system design, chemical storage and feed systems, plant layout and yard piping, site civil work and support facilities, and membrane system design quality control.

Oil Conglomerate - Exploration and Development Program (for Private Client). Subject Matter Expert for development of platform mounted, hybrid seawater desalination systems utilized to enhance recovery of oil from well fields.

Desalination System, City of Santa Barbara, CA (for Private Client). Process design of multimedia filter systems for a seawater desalination facility.

NAWA/City of Vandalia and Tipp City, Ohio. Provided consulting engineering peer review services for membrane pilot study and membrane conceptual design component of a proposed (7 mgd) ground water treatment facility using reverse osmosis. Reviewed the applicability of membrane process to meet NAWA's water quality and residual management goals, and performed a desktop assessment of iron and manganese removal, and membrane cleaning frequency and fouling potential. Evaluated the capability of the proposed piloted split-stream treatment system to adequately address manganese and iron removal in the pretreatment stream and possible impacts of untreated feedwater on the performance of the RO system.

Town of Newton - Newton, NJ. Membrane plant design team leader including process design of a 2 mgd advanced microfiltration membrane filtration facility to treat Morris Lake reservoir water. Tasks include evaluating treatment alternatives and associated costs, plant layout and piping, process design and development of the chemical storage and delivery systems for pre-treatment, membrane system design, and post-treatment chemical conditioning.

Lee County Utilities – Lee County, FL. Development of and conceptual design of an approximately 10 (initial) to 20 mgd (buildout) capacity, brackish water reverse osmosis potable water treatment system to supplement the Lee County drinking water service area. Tasks involved with the project include review and recommendations for surface and groundwater sources in light of competing treatment technologies and within a regulatory framework for future compliance, design and siting alternatives, residuals impact and analysis, and intense economic evaluation.

Collier County North Gwinnett County North Advanced Water Reclamation Facility – Gwinnett County, GA. Membrane Technology Team Leader for the process design and economic analysis of a membrane-based secondary effluent treatment system including microfiltration, ultrafiltration, nanofiltration, and chemical delivery systems on secondary treated wastewater. Designed and operated bench-scale and pilot microfiltration, ultrafiltration, and softening reverse osmosis systems for qualitative and quantitative performance analysis. Membrane configurations included cross flow hollow fiber, dead-end flow, vacuum draw, and spiral wound type. Performance data was utilized for the design of a full-scale secondary effluent reclamation plant.

Collier County North Regional Water Treatment Upgrade – Collier County, FL. Process design of reverse osmosis, degasification, odor control, and chlorine scrubber systems for plant expansion.

City of Plantation, East Plant Upgrade – Plantation, FL. Process design of membrane softening system, degasification system, emergency power system, and plant layout.

City of Hollywood, Water Treatment Plant Upgrade – Hollywood, FL. Process design, enhancement, and facility start-up of membrane softening and reverse osmosis systems, degasification system, odor control system, and chemical handling and delivery systems.

Advanced Micro Devices Manufacturing Facility - Austin, TX. Reverse osmosis process water treatment system retrofit and process upgrade, including mixed bed ion exchangers and reverse osmosis system.

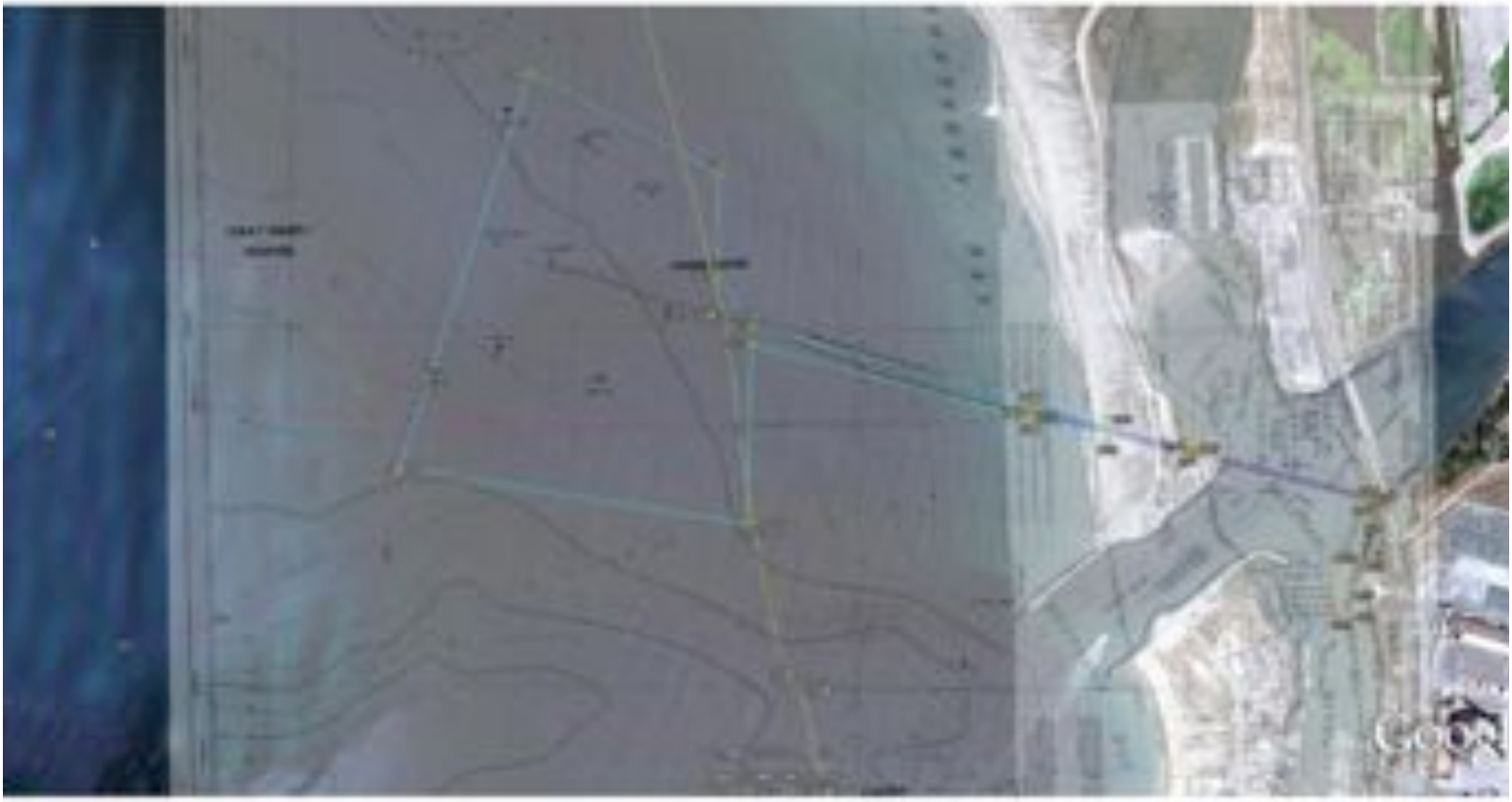
Kalaeloa Cogeneration Plant - Ewa Beach, HI. Process design of a process water treatment system upgrade including pretreatment, reverse osmosis desalination, ion exchange, and value engineering.

IBM, T.J. Watson Research Center - Yorktown Heights, NY. Process design of reverse osmosis and vacuum degasifier system retrofit and upgrade.

IBM Manufacturing Facility - East Fishkill, NY. Process design of reverse osmosis, vacuum degasifier, chemical handling, and many other related treatment systems. Managed maintenance and analytical activities for over 30 various configurations of water and chemical delivery systems throughout the 950-acre site.

B.F. Goodrich Manufacturing Facility - Louisville, KY. Design/build of reverse osmosis system for process water.

Appendix E



Appendix F

Figure 1. Overview of the area showing Monterey Bay, Elkhorn Slough, Moss Landing Harbor, Highway 1 Bridge, and the Moss Landing Power Plant. The abandoned pipeline is first seen inside the box marked Figure 2 (see following Figure 2 for a close-up view). The pipeline can be seen again inside the box marked Figure 3 (see following Figures 3–6 for close-up views).

Figure 2. Close up of the abandoned fuel oil pipeline near Jetty Road.

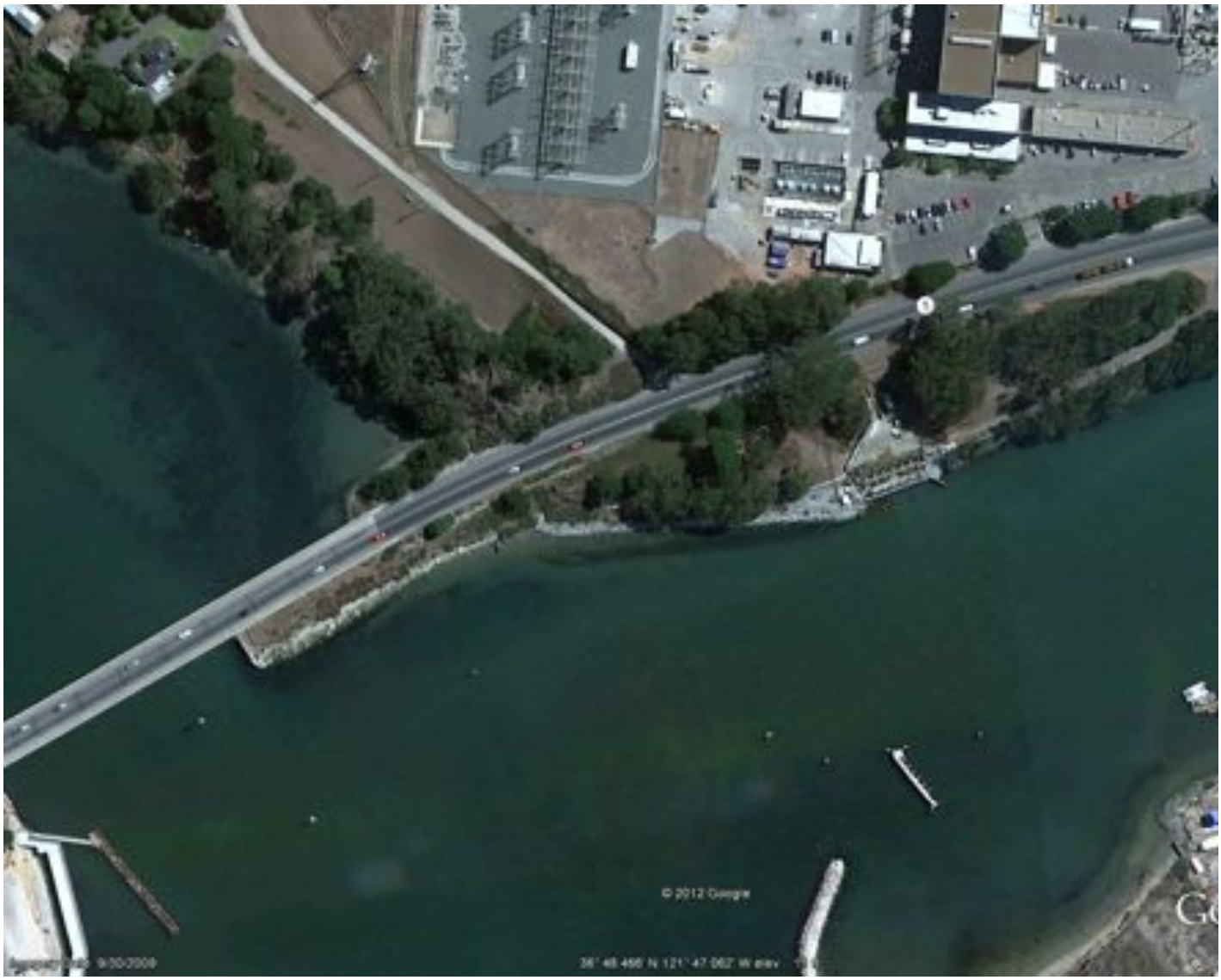


Figure 3. Overview of the area of the abandoned fuel oil pipeline near the Moss Landing Power Plant.

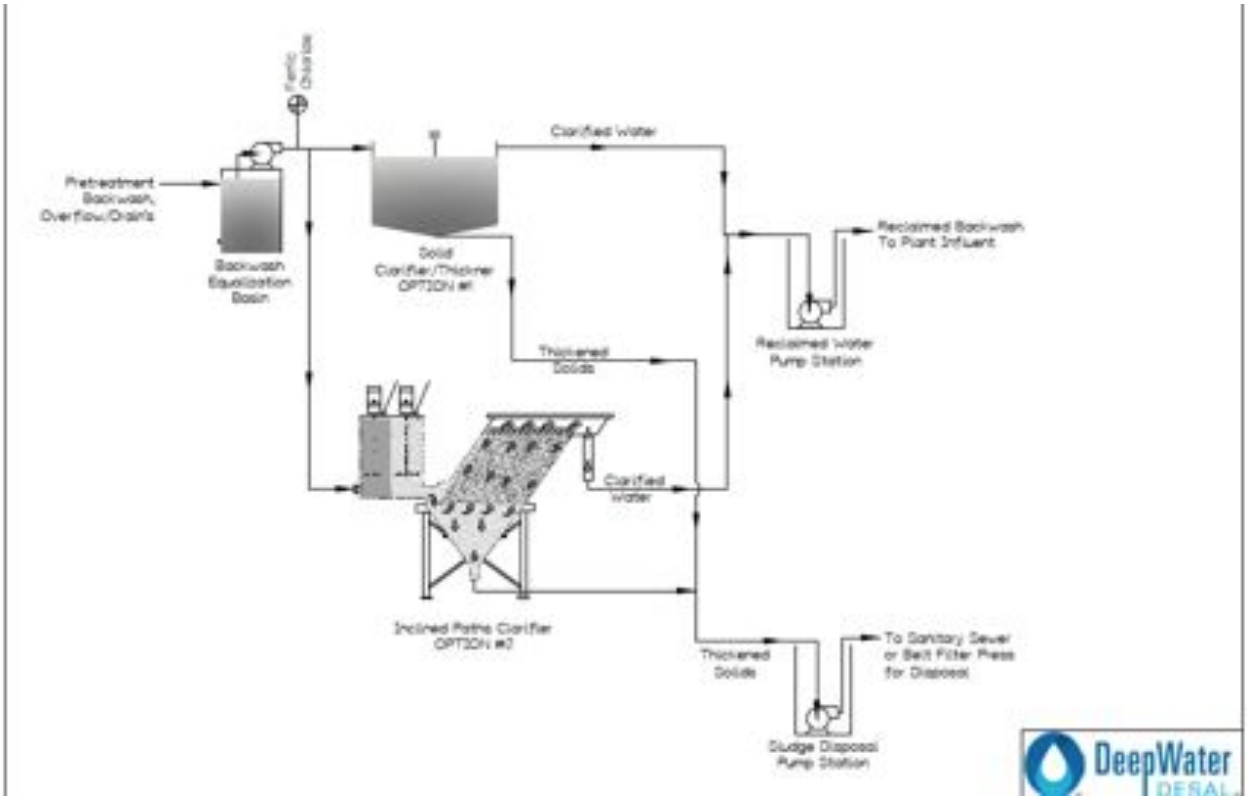
Appendix I

Figure 4. Photograph of the abandoned fuel oil pipeline where it can first be seen on shore, south of the Highway 1 bridge and just north of the Moss Landing Power Plant.

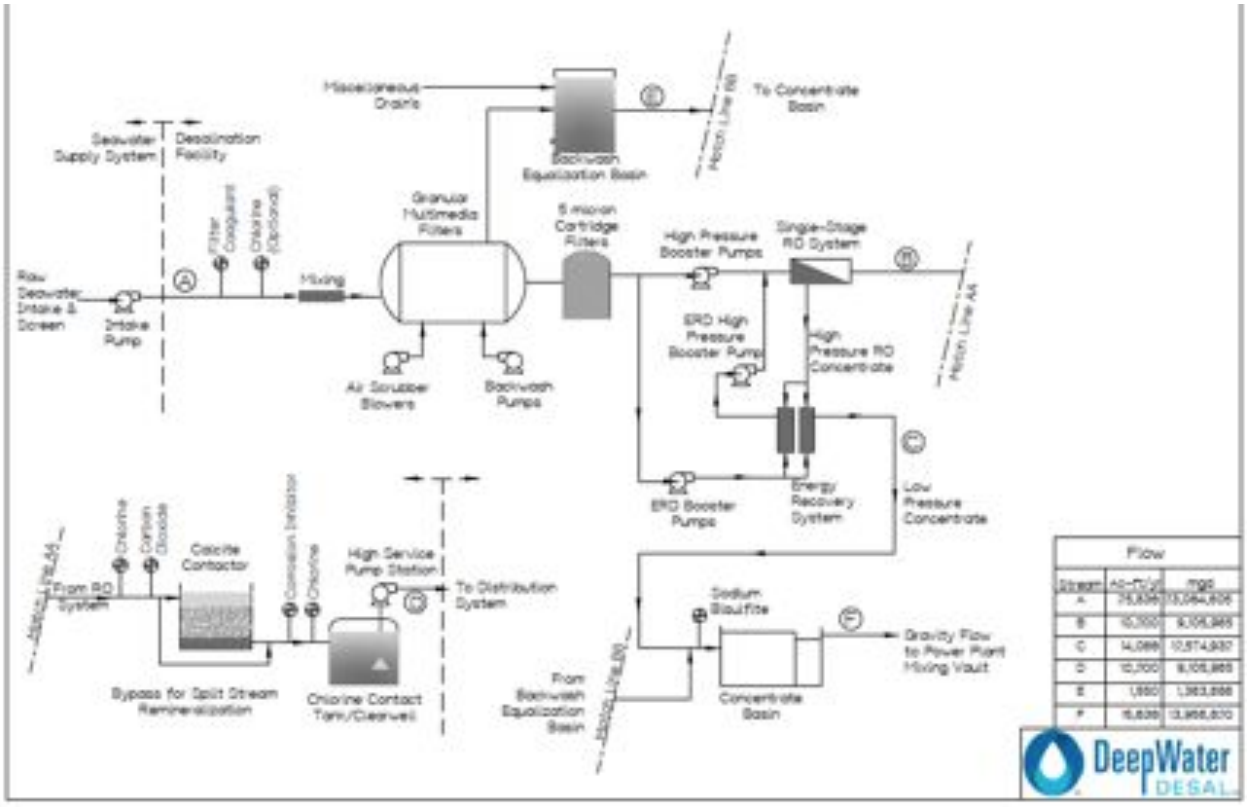
Appendix J

Figure 5 Continuation of the abandoned fuel oil pipeline near Moss Landing Units 1 & 2 Intake Structure. See overview in Figure 3.

Appendix K


Ferric Chloride
Pretreatment Backwash, Overflow/Drains
Backwash Equalization Basin
Solid Clarifier/Thickner OPTION #1
Clarified Water
Reclaimed Backwash To Plant Influent
Reclaimed Water Pump Station
Thickened Solids
Clarified Water
Inclined Plate Clarifier OPTION #2
Thickened Solids
To Sanitary Sewer or Belt Filter Press for Disposal
Sludge Disposal Pump Station
DeepWater DESAL

Appendix L


Miscellaneous Drains
To Concentrate Basin
Seawater Supply System
Desalination Facility
Backwash Equalization Basin
Filter Coagulant
Chlorine (Optional)
Granular Multimedia Filters
5 micron Cartridge Filters
High Pressure Booster Pumps
Single-Stage RO System
Raw Seawater Intake & Screen
Intake Pump
Mixing
ERD High Pressure Booster Pump
High Pressure RO Concentrate
Air Scrubber Blowers
Backwash Pumps
ERD Booster Pumps
Energy Recovery System
Low Pressure Concentrate
Chlorine
Carbon Dioxide
From RO System
Calcite Contactor
Corrosion Inhibitor
Chlorine
High Service Pump Station
To Distribution System
Sodium Bisulfite
Gravity Flow to Power Plant Mixing Vault
Bypass for Split Stream Remineralization
Chlorine Contact Tank/Clearwell
From Backwash Equalization Basin
Concentrate Basin
Flow
Stream
DeepWater DESAL