

- **Board of Directors**  
**Engineering and Operations Committee**

November 14, 2000 Board Meeting

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9-1

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**Subject**

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Authorize (1) \$43.5 million for the Jensen and Mills Oxidation Retrofit Program; and (2) award of a \$28.947 million contract to Kiewit Pacific Co. for construction of oxygen/ozone facilities for the Henry J. Mills Filtration Plant (Appn. 15173)

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**Description**

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The Oxidation Retrofit Program (ORP) at the Joseph Jensen and Henry J. Mills Filtration Plants consists of retrofitting these plants with an ozonation process that will replace chlorine as the primary disinfectant. Staff has determined that the ORP is the most cost-effective response to new federal and state regulations that have added treatment requirements and lowered the maximum contaminant levels (MCLs) for trihalomethanes and other disinfection by-products.

In January 2000, the Board adopted a reduced capacity ORP for the Jensen and Mills plants to comply with Stage 1 of the U.S. Environmental Protection Agency's Microbial/Disinfection By-Products (M/DBP) Rule. Such compliance will provide long-term flexibility to meet future water demands in a staged approach, as well as the ability to comply with future water quality regulations, while lowering current program costs. Accordingly, the Mills plant ORP was reduced to an ozonation capacity of 160 million gallons per day (mgd) from a maximum plant capacity of 326 mgd.

Approval of the following recommendation will appropriate funds and authorize award of the construction contract, provide construction support and owner services for the Mills ORP, and increase funding for the design cost of reducing the hydraulic ozonation capacity for both plants. The ORP program was evaluated and recommended by the Capital Investment Plan (CIP) Evaluation Team and is included in the Capital Budget for Fiscal Year 2000/01.

See [Attachment 1](#) for the detailed report, [Attachment 2](#) for the location map, [Attachment 3](#) for the Abstract of Bids, [Attachment 4](#) for the Minority-Owned Business Enterprise/Women-Owned Business Enterprise Participation, and [Attachment 5](#) for the Financial Statement.

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**Policy**

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Metropolitan Water District Administrative Code Section 5108: Capital Project Appropriation  
Metropolitan Water District Administrative Code Section 8113: Construction Contract Award

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**Board Options/Fiscal Impacts**

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**Option #1**

Appropriate \$43.5 million, authorize the General Manager to have all work performed as described in this letter, and award a construction contract in the amount of \$28.947 million for the construction of Oxygen/Ozone Facilities for the Mills plant ORP.

**Fiscal Impact:** Expenditure of \$43.5 million of budgeted funds.

**Option #2**

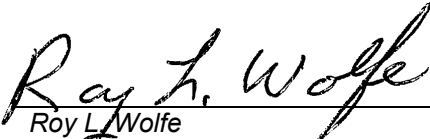
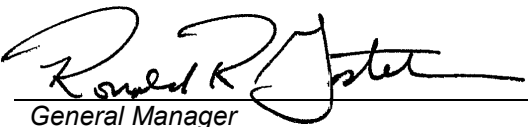
Reject all bids for construction of the Oxidation Retrofit at the Mills plant and rebid the project in an attempt to obtain a more favorable bid. This would delay project completion, potentially jeopardizing meeting the regulatory compliance timeframe, and would most likely result in increased costs.

**Fiscal Impact:** Increased cost.

**Staff Recommendation**

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Option #1.

 Roy L. Wolfe Manager, Corporate Resources	10/19/2000 Date
 Ronald R. Jester General Manager	10/19/2000 Date

**Attachment 1 – Detailed Report**

**Attachment 2 – Location Map**

**Attachment 3 – Abstract of Bids**

**Attachment 4 – MBE/WBE Participation**

**Attachment 5 – Financial Statement**

BLA #294

## Detailed Report

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*Purpose/Background.* In December 1988, the U.S. Environmental Protection Agency promulgated Stage 1 of the Microbial/Disinfection By-Products (M/DBP) Rule. The rule includes two components: (1) new and reduced maximum contaminant levels (MCLs) for disinfection by-products including trihalomethanes and (2) implementation of required treatment techniques, such as ozone, for many surface waters. The two plants that will be affected by Stage 1 of the Rule are the Jensen and Mills plants because they treat 100 percent State project water (SPW), which forms greater levels of disinfection by-products with chlorine disinfection than does Colorado River water (CRW). Staff has evaluated several alternatives for complying with the Rule, and has determined that installation of ozone at the Jensen and Mills plants is the most cost-effective method for Metropolitan to achieve the requirements of the M/DBP rule while maintaining control over taste-and-odor compounds. Other alternatives that were extensively evaluated, in conjunction with a member agency workgroup, included granular activated carbon and enhanced coagulation.

The ORP consists of retrofitting Metropolitan's filtration plants with an ozonation process so that ozone will replace chlorine as the primary disinfectant in the treatment process at the Joseph Jensen and Henry J. Mills Filtration Plants. In March 1997, the Board directed the General Manager to proceed with the final design of ozone facilities at the Mills and Jensen plants, with scheduled on-line dates of early 2003 and late 2004, respectively, consistent with the Board's continuing commitment to public health and water quality. The treatment technique component of Stage 1 needs to be implemented by May 2005, while compliance with the new MCLs must be achieved by January 2002. In May 1999, the Board approved Action No. 6 to Appropriation No. 15173 to increase funding to \$86.92 million to finance procurement of oxygen/ozone system equipment for the ORP at the Jensen and Mills plants, and awarded a contract for construction of the Vehicle Maintenance and Service Center Buildings at the Jensen plant, which must be relocated for the Jensen ORP construction.

In January 2000, the Board directed staff to reduce the ozone hydraulic capacity of the ozone facilities at the Jensen and Mills plants to more closely match the revised flow projections of 500 mgd and 160 mgd, respectively, at each plant.

*Impact of Future Regulations.* Recently, negotiators agreed upon treatment rules for a second set of M/DBP regulations (Stage 2). These rules will be promulgated in May 2002 with compliance required 3 to 8 years after promulgation depending on the California Department of Health Services input and the need to construct capital facilities. Implementing ozone now at Jensen and Mills plants is also compatible with the proposed Stage 2 agreement. Staff is evaluating the impact of these proposed Stage 2 regulations on Metropolitan's other plants (the Diemer, Skinner and Weymouth plants) that treat a blend of SPW and CRW.

*Project Description.* The scope of the construction contract consists of performing all necessary work to retrofit the existing Mills plant to treat water with an ozone disinfection system. The contract work includes constructing buildings and water-bearing structures, constructing new chemical storage and feed facilities, modifying plant conduits and pipelines, installing Metropolitan-furnished oxygen/ozone equipment, and adding and modifying plant utilities and appurtenances.

*Bids Received.* Three bids were received and opened under Specifications No. 1367B, as amended, for construction of Oxygen/Ozone Facilities at the Mills plant. These bids are shown on the attached Abstract of Bids (Attachment 3). The low bid from Kiewit Pacific Co., in the amount of \$28.947 million, complies with requirements of the specifications, is \$1,546,359 below the next lowest bid, and is \$2,292,800 below the Engineer's Estimate. Metropolitan forces will perform construction management, contract administration and field inspection.

*Current cost estimate.* Attachment 5 shows a breakdown of the total appropriated amount of \$130 million for the Jensen and Mills ORP.

*Business Outreach.* The specifications, as amended, established the mandatory subcontracting minimum (MSM) and required the bidder to conduct a good-faith effort to encourage participation of minority- and women-owned business enterprises (MBE/WBE). The MSM for this project was 24 percent, and 32.83 percent of the work will

be subcontracted. The Anticipated Levels of Participation for MBE/WBE firms were established at 6 percent and 2 percent, respectively. The contractor's proposed MBE participation was 2.1 percent with 5.42 percent submitted for WBE. The Business Outreach Office has reviewed the good-faith effort submitted by Kiewit Pacific Co. and has determined that it meets the criteria set forth in the specifications. The MBE/WBE subcontractors are listed on Attachment 4.

### **CEQA Compliance / Environmental Documentation**

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On February 12, 1991, the Final Environmental Impact Report (FEIR) for the Henry J. Mills Filtration Plant Expansion No. 2 was certified by the Board, along with the Mitigation Monitoring Plan, both of which are still in effect. Addendum 1 to the FEIR for the expansion of the Mills plant administration building and maintenance building was considered by the Board on August 22, 1992. Addendum 2 to the FEIR for the construction of the Mills plant service center (warehouse and storage building) was considered by the Board on August 19, 1997. Addendum No. 3 to the FEIR for the relocation and construction of chemical storage, electrical facilities and associated site improvements necessary for the Mills ORP was considered by the Board on June 9, 1998. The facility plan and disclosure statements in the FEIR included the provisions for construction and operation of ORP facilities at the Mills plant.

These actions satisfy the provisions of CEQA in regard to these matters; no further environmental review or documentation is necessary for the Board to act on this request.

**Program Summary Schedule**

Activity/Milestone	1998	1999	2000	2001	2002	2003	2004	2005
<b>M/DBP Stage 1 Compliance Schedule:</b>								
Rule Promulgation	■							
MCL Compliance					■			
Treatment Technique Compliance								■
<b>Mills ORP:</b>								
Design for Capacity Reduction			■					
Advertise/NTP			■					
Construction (24 mo.)				■	■	■		
<b>Oxygen/Ozone Equipment Contract for Jensen and Mills ORP:</b>								
Design/Fabrication		■	■	■	■			
Installation/Start-up					■	■	■	
<b>Jensen ORP:</b>								
Design			■	■	■			
Advertise/NTP					■			
Construction (30 mo.)					■	■	■	

**Actions and Milestones**

- February 2001- Complete construction of Jensen plant Vehicle Maintenance and Service Center
- Early 2002- Award Jensen reduced hydraulic capacity ORP construction contract
- Early 2003- Complete construction Mills reduced hydraulic capacity ORP
- Late 2004- Complete construction Jensen reduced hydraulic capacity ORP



**The Metropolitan Water District of Southern California**

**Abstract of Bids Received September 28, 2000, at 2:00 p.m.**

**Specifications No. 1367B**

**Oxygen/Ozone Facilities**

**for the Henry J. Mills Filtration Plant Oxidation Retrofit Project**

The contract consists of performing all necessary work to retrofit the existing Henry J. Mills Filtration Plant to treat water with an oxygen/ozone system.

**Engineers Estimate:            \$ 31,239,800**

<b>Bidder &amp; Location</b>	<b>Total</b>	<b>Sub \$</b>	<b>Sub %</b>	<b>Met MSM*</b>
Kiewit Pacific Co. – Santa Fe Springs, CA	\$28,947,000	\$9,502,000	32.83	Yes
J. F. Shea Construction, Inc. – Corona, CA	\$30,493,359	\$10,612,000	34.80	Yes
J. W Contracting Corp. – Corona, CA	\$30,669,000	\$8,937,262	29.14	Yes

\* Mandatory Subcontractable Minimum, set at 24% with an Anticipated Level of Participation of 6% MBE and 2% WBE.

**MBE/WBE PARTICIPATION**  
**Specifications No. 1367B, as Amended**

**Name of Bidder: Kiewit Pacific Co.**

**MBE/WBE Anticipated Participation Levels: 6% MBE and 2% WBE**

Name of Certified MBE/WBE Subcontractor/Supplier	Work to Be Performed or Materials To Be Supplied	Participation	
		MBE%	WBE%
Pacific Reinforcing Steel	Rebar		3.70
A.C.S.	HVAC	2.03	
Bledsoe Masonry	Masonry		1.72
D. & N. Concrete	Concrete Pumping	.07	
<b>Total Committed Participation</b>		<b>2.10%</b>	<b>5.42%</b>



**FINANCIAL STATEMENT**

A breakdown of the cumulative estimated costs through Board Action No. 7 for Appropriation No. 15173 to finance the Joseph Jensen and Henry J. Mills Filtration Plants Oxidation Retrofit Program is as follows:

	<b>CUMULATIVE THROUGH BOARD ACTION NO. 6 (May 1999)</b>	<b>CUMULATIVE THROUGH BOARD ACTION NO. 7 (Nov 2000)</b>
Contract – Specifications No. 1321 (Jensen ORP Site Preparation)	\$ 6,584,700	\$ 6,584,700
Extra Work – Specifications No. 1321	219,634	219,634
Equipment- Specifications No. 1346A	18,638,500	18,638,500
Contract – Specifications No. 1352A (Jensen Vehicle Maintenance and Service Center)	6,381,000	6,381,000
Extra Work – Specifications No. 1352A	13,480	13,480
Contract – Specifications No. 1367B (Mills ORP)		28,947,000
<b>Subtotal Contracts</b>	<b>\$ 31,837,314</b>	<b>\$ 60,784,314</b>
Labor:		
Research/Preliminary Design	\$ 11,886,000	\$ 11,886,000
Final Design/Specification Preparation	16,897,000	20,105,000
Construction Inspection and Support	5,607,800	10,115,000
Control System Programming		370,000
Owner Services (Contract Admin., Operations/Start-up, Environmental, Permitting, Project Mgmt./Coordination,)	1,344,100	3,620,000
<b>Subtotal Labor</b>	<b>\$ 35,734,900</b>	<b>\$ 46,096,000</b>
Material and Supplies	250,000	834,500
Incidental Expenses	567,000	900,000
Professional/Technical Services:	11,476,000	12,180,000
Office Space	2,300,000	2,300,000
Operating Equipment	150,000	300,000
Remaining Budget	4,604,786	7,025,186
<b>Total</b>	<b>\$ 86,920,000</b>	<b>\$ 130,420,000</b>

(Total Expenditures through August 31, 2000: \$54,576,304)

**FUNDING REQUEST**

<b>Program Name:</b>	Jensen and Mills Oxidation Retrofit Program		
<b>Source of Funds:</b>	Construction Funds (possibly General Obligation, Revenue Bonds, Pay-As-You-Go Fund)		
<b>Appropriation No.:</b>	15173	<b>Board Action No.:</b>	7
<b>Requested Amount:</b>	\$ 43,500,000	<b>Capital Program No.:</b>	15173-W
<b>Total Appropriated Amount:</b>	\$130,420,000	<b>Capital Program Page No.:</b>	E-24
<b>Total Program Estimate:</b>	\$182,100,000	<b>Program Goal:</b>	W-Water Quality