

WEST BASIN MUNICIPAL WATER DISTRICT

JULY 9, 2003 - Water Resources
McDonald, Kwan
JULY 28, 2003 - Board Meeting
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Approved by: Darryl G. Miller

ACTION CALENDAR

REPLACEMENT OF MICROFILTER ELEMENTS ON BARRIER TRAIN NO. 3

SUMMARY:

Barrier Train No. 3 consists of microfiltration pre-treatment followed by thin-film composite reverse osmosis membranes. There are five microfilter units that have been in service for about six years, since the summer of 1997. The expected life of the microfilter elements was five years. Although the quality of the filtrate is still good, the capacity of the microfilters has declined and require more frequent backwashing. The combination of age and poor water quality from Hyperion has at times reduced the capacity of Train No. 3 microfilters from its initial design capacity of 2.9 million gallons per day (mgd) to around 1.8 mgd.

Exhibits "A" through "E" show the increase in Trans-membrane Pressure (TMP) for the five microfiltration units in Train No. 3. The TMP for each unit has doubled since it was first installed. TMP is a measure of pressure drop through the microfiltration membranes at a certain flowrate. The increasing TMP's indicate fouling and general degradation of the membranes over time. As the TMP increases, flows need to be reduced to maintain the same backwash intervals. Based on increasing TMP's and observed operating performance of the microfilters, staff recommends the elements be replaced.

The microfilters are manufactured by U. S. Filter and replacement sub-modules must be purchased from the manufacturer. Staff has negotiated a price for the replacement microfiltration sub-modules from U. S. Filter at \$62,550 per unit. The price works out to be \$695 per sub-module before sales tax. In addition, other miscellaneous parts that have worn will need to be replaced. This is estimated to cost an additional \$7,127 per unit. Total price for the replacement sub-modules for all five units and miscellaneous parts, including sales tax is \$377,127.

FISCAL IMPACTS:

Funds are available in the fiscal year 2003-04 Facility Replacement Fund.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

This item was reviewed by the Water Resources Committee on July 9, 2003 and recommended for approval at the July 28, 2003 Board meeting.

RECOMMENDED MOTION:

Authorize the General Manager to enter into an agreement to purchase replacement microfiltration modules from U.S. Filter for \$377,127 plus ten percent contingencies for a total amount not-to-exceed \$414,839.

LIST OF EXHIBITS:

Exhibit "A" - Trans-membrane Pressures for Microfiltration Units 1 Through 5

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