

DENVER BOARD OF WATER COMMISSIONERS

Meeting Date: March 28, 2012

Board Item: 2-A-3

Lease/Purchase Of WEARS Treatment Equipment with MISCO Water for Cat and Miller Reservoirs Contract 14102A

Action by Consent

Action

Information

The initial filling of Cat and Miller Reservoirs began in April 2009 and was completed in July 2009. Water is delivered to the reservoirs via the Burlington Canal, stored and released back to the South Platte River to satisfy water rights needs. The Burlington Canal diverts water year round and much of the time the quality of the water is directly impacted by urban runoff and upstream wastewater plant discharges. Water quality degrades in these reservoirs even when the storage time is short. Testing has shown that blue-green algae blooms are occurring and dissolved oxygen is dropping in the reservoirs. These are typical problems observed as water quality declines. Other water quality problems have resulted in the formation of hydrogen sulfide (H2S) in the hypolimnion of each reservoir. When formed the dissolved H2S releases hydrogen sulfide gas within the Cat Pump Station and at the discharge to the South Platte River due to pumping and agitation. Hydrogen sulfide gas is both toxic and corrosive to metals and concrete at the levels experienced at the Cat Pump Station in 2010.

Currently no regulations exist restricting the quality of the water returned to the South Platte River, however, it is prudent to release water with acceptable quality to the river. Also, operation personnel should not be exposed to conditions where high levels of hydrogen sulfide gas are present.

WEARS Australia, Ltd. has evaluated Cat and Miller Reservoirs and submitted a proposal to provide floating electric powered mixers that can introduce naturally occurring oxygen from the surface water into the hypolimnion and help to break the thermocline that forms each spring and summer in the reservoirs. The downward circulation induced by these units are intended to prevent the formation of hydrogen sulfide due to bacteria within the anoxic (low oxygen) hypolimnion and to seasonally destratify the reservoirs. WEARS ResMix units have successfully been used by several water quality management agencies within Australia and are now being introduced to the United States to improve water quality within lakes and reservoirs. Two WEARS ResMix units, one per reservoir, are to be pilot tested for 6 months to demonstrate the required oxygen and mixing needed to oxygenate and destratify the lower levels of the reservoirs. At the end of the 6 month testing period, Denver Water will have the option to purchase the equipment with the lease payments going towards the full purchase price.

2012 Budget (MPC 4AN0030) does not include funds for this project. Unused funds from (MPC 2CE0548) in the amount of \$300,000.00 will be used to cover these costs.

Recommendation:

It is recommended that the Board authorize the award of Contract 14102A to MISCO Water to furnish two (2) WEARS ResMix 1000 units at Cat and Miller Reservoirs with a six month lease of \$108,000.00 and a total purchase price in the amount of \$160,000.00.

Budget Considerations

Master Plan Code(s): 4AN0030

Budgeted Item

Unbudgeted Item

Funds transferred from another project: 2CE0548

Budget Information

Table with 2 columns: Description, Amount. Rows include 2012 Budget, Transfer In, Revised 2012 Budget, Amount Requested This Item, YTD Expenditures, Additional Expenditures Anticipated, Revised 2012 Estimate, and Variance Required.

Approvals:

Signature of Robert J. Mahoney, Director of Engineering

Signature of Patty Wells, General Counsel

Respectfully submitted,

Signature of James S. Lochhead, CEO/Manager