



Staff Report

Agenda Item: **WORKSESSION ON THE ARSENIC REMOVAL FACILITIES FOR MESCAL WELL** – A worksession to discuss the proposal from Basin Water for the lease purchase of arsenic removal facilities for the Mescal Well.

Meeting Date: April 22, 2008

Prepared By: Ron Doba, Utilities Director

Background: The Mescal well is located adjacent to the Highlands Subdivision and was dedicated to the Town by Verde Highlands LLC. In addition to the well, Verde Highlands deposited \$265,000 with the Town in 2006 in return for providing water service to the Highlands Subdivision and commercial development located in Parcels B and C of the Highlands Subdivision Final Plat.

Willdan Engineering has been designing the infrastructure required to operate the well and is ready to include the Arsenic removal system. The Arsenic in the well is 19 ppb and the maximum allowable level is 10 ppb as mandated by the Safe Drinking Water Act. Basin Water is providing the Arsenic removal facilities for Cottonwood. Cottonwood is in the process of installing approximately twenty Basin Water Arsenic removal systems of various sizes for their wells. Basin Water has been asked for a proposal to provide Arsenic removal facilities for Clarkdale. The proposal has been distributed to Councilmembers and Basin Water will be at the worksession to provide a presentation on their system.

The Basin Water treatment system is a proprietary ion exchange system that requires no pH control or sewer connection. The other Arsenic removal system the Town owns is the Kinetico system that was installed by Empire for the Mountain Gate Well. The Kinetico system is still not operational because Empire has not completed the installation and there has been a delay dealing with the bonding company for the Town to proceed on its own with the completion. The Kinetico system is an oxidation, co-precipitation, and filtration system that requires injecting ferric chloride into chlorinated water to adsorb the Arsenic. The pH is controlled via acid feed to a range of 7.2 to 7.6. The water is then filtered and the backwash

discharged to the Town sewer. The proposal from Kinetico (July 14, 2006) indicates the proposed cost for that system was \$543,000 which included a backwash treatment system (\$199,000) that was eliminated in favor of a sewer to dispose of the backwash to the Town's wastewater treatment plant.

O&M costs: There are some assumptions that need to be made regarding the O&M costs for the Kinetico unit because we have no actual experience with it. We know it requires operator attention on a regular basis to insure the ferric chloride and pH control systems are working properly. Chemicals need to be inventoried, ordered, and the system refilled. Pumps and instrumentation need to be maintained. Staff has contacted Kinetico to find out what O&M costs can be expected for our unit and hopes to have these numbers available by the worksession. The O&M costs for the Basin Water system is based on the amount of water treated. If the well operates at 50% utilization (20.55 af/mo), the O&M for the Basin Water system would be $20.55 \times \$320 = \$6,576$ per month.

Recommendation:

The purpose of this work session is for the Council to receive a presentation on how the Basin Water Arsenic removal system works and understand the benefits of the ion exchange system. The work session is also to provide the council with an opportunity to ask questions regarding the system.