

Groundwater Management and Treatment Alternative Evaluation for Arsenic, Fluoride, and Perchlorate

HIGHLIGHTS

Review City's blending and treatment plan to deal with the contaminants.

Represent the City at the meetings with the PRP.

Identify potential implementation issues for arsenic treatment systems.



The proposed central wellhead treatment facility site for arsenic at the City of Loma Linda.

The City has been experiencing water quality problems in four wells due to perchlorate contamination from the Potentially Responsible Party (PRP) in the late 1990s. In order to restore the lost production, the PRP equipped three replacement wells in an attempt to avoid treatment of wells for perchlorate.

The new wells, however, showed elevated levels of arsenic and fluoride. The PRP and the City are now developing a blending and treatment plan to deal with these new contaminants. Implementation of such treatment systems need careful evaluation since the treatment of arsenic is often challenged by generation of a hazardous waste stream that will increase the overall cost of dealing with this contaminant. The presence of fluoride also complicates the selection of treatment options.

The proposed blending and treatment plan by the PRP may address the short-term issues with the contaminants of concern, but the plan must be carefully evaluated to ensure that the City does not incur major future costs if the water quality or regulations were to change in the coming years. In addition, the implementation of this plan needs to be evaluated for the City's existing operations and equipment.

Carollo is representing the City in developing a solution that will provide the long-term benefit for the City as part of this settlement. Based on the previous and current arsenic projects, Carollo's team is in the process of identifying potential issues, such as residual handling and treatment, hydraulic analyses, and blending analyses to ascertain successful implementation of the proposed ion exchange or granular ferric oxide treatment systems.