

## **INTRODUCTION**

Contained in this primer are various water quality contaminant fact sheets and related fact sheets containing supporting information. These primer and fact sheets are resources offered by the U.S. Bureau of Reclamation (Reclamation) as a means of sharing technical information. The purpose of the contaminant fact sheets is to provide timely and accurate summations of water treatment principles and techniques for various water quality contaminants of concern. The fact sheets are intended as a first source of information for small communities or communities of low economic status which typically do not have the resources to hire water treatment consultants. Cooperation with other federal, state, and local agencies and water treatment entities in solving the water treatment issue of concern is recommended and encouraged. As research reveals new water treatment techniques, the fact sheets will be revised and updated to reflect state of the art methods for water treatment. In 2001, a total plant cost (\$/1000 gal) fact sheet was prepared for 9 of the more common best available technology (BAT) treatment techniques.

Each of the contaminant fact sheets contains the following information:

### 1. Contaminant Data

- A. Chemical data including name, symbol, molecular weight, cation/anion, metal/nonmetal, reactivity, etc.
- B. Source in nature including sources of contamination in surface and groundwater.
- C. SDWA limits including MCL, MCLG, and SMCL limits.
- D. Health effects of contamination.

### 2. Removal Techniques

- A. USEPA BAT including brief description.
- B. Alternative methods of treatment including all other commonly used technologies.
- C. Related WTP/DWPR publications (this section may be expanded to include publications from other sources).
- D. Safety and health requirements for treatment processes.

### 3. Process Description and Cost Data

- A. Individual process description including pretreatment, maintenance, waste disposal, advantages, and disadvantages; and equipment and O&M cost curves for flows of 0.25, 0.50, 0.75, and 1.0 MGD.

## **2003 REVISIONS**

Year 2003 revisions include a summary table and the addition of a disinfection by-product fact sheet for bromate, chlorite, HAAs, and THMs.

## **RECLAMATION'S DESALTING RESEARCH PROGRAMS**

Funding for this primer has come from a number of Reclamation desalting research programs: Water Treatment Technology Program (WTP - [www.usbr.gov/water/wtp.html](http://www.usbr.gov/water/wtp.html)), Desalination & Water Purification Research & Development Program (DWPR - [www.usbr.gov/water/desal.html](http://www.usbr.gov/water/desal.html)), and Advanced Water Treatment Research Program (AWTR - [www.usbr.gov/water/awtr.html](http://www.usbr.gov/water/awtr.html)). These programs are funded through Reclamation's office of Research and Natural Resources, Shannon Cunniff, Director.

## **DIRECT INQUIRIES TO:**

- Mail to: Bureau of Reclamation, Technical Service Center, PO Box 25007, Denver, CO 80225, Attention: Water Treatment Engineering and Research Group, D-8230
- Contact: Kevin Price, Group Manager, telephone at (303) 445-2260 or FAX at (303) 445-6329
- Internet: [www.usbr.gov/water/water.html](http://www.usbr.gov/water/water.html)

Funding for most Reclamation projects and programs is provided through US Congressional appropriations. Occasionally, grants and general investigation funds are available for specific areas of research. Cost-shared funding for use of the Reclamation's Mobile Treatment Plant is provided through the AWTR program, Task E. Contracts under the DWPR program are awarded yearly, contingent upon Congressional appropriations, through Broad Agency Announcements. Work not funded through the AWTR or DWPR programs or covered by Congressional appropriations generally requires full cost reimbursement.