

Mine water treatment options for meeting stringent selenium regulatory limits

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Abstract

Selenium can be a constituent of concern in mine waters and is often present in neutral waters. Selenium is typically leached from waste rock piles as the selenate ion and mines can be faced with multiple, high-flow contaminated discharges. In recent years, biological treatment has emerged as an effective and relatively inexpensive method compared to physical and chemical methods. With some waters, biological treatment alone is sufficient to achieve stringent regulatory limits; however, in other cases, additional unit processes are required. Three treatment cases studies are included for treating moderate levels of influent selenium (50 – 500 µg/L).

Key words: selenium, biological, water treatment