

# Acid Mine Drainage (AMD) from Metal Mines

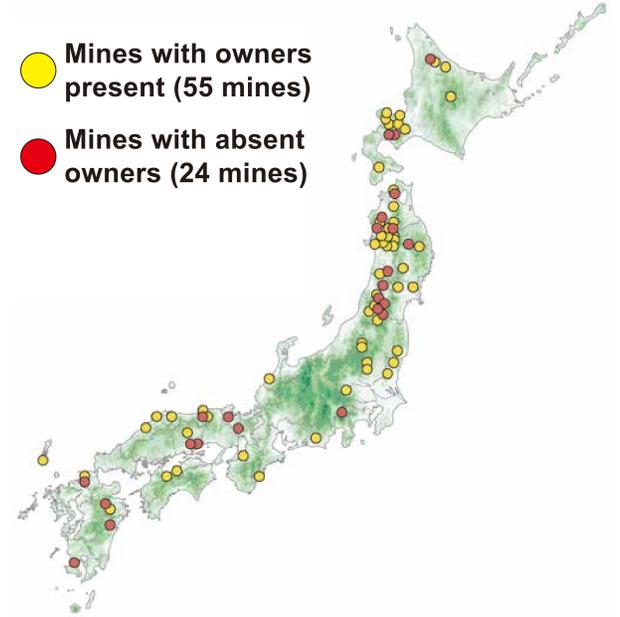
Metals Environment Management Department

In the current mining development, countermeasures to environmental problems caused by mining activities are necessary. It is important to maximize the accumulated know-hows on mine pollution control based on previous domestic mine pollutions, and to apply them to oversea mining sites with AMD problems.

JOGMEC is working on various projects with a keyword “harmony between mine and environment”, both in Japan and abroad.

Mine drainage treatment plants (2014FY)

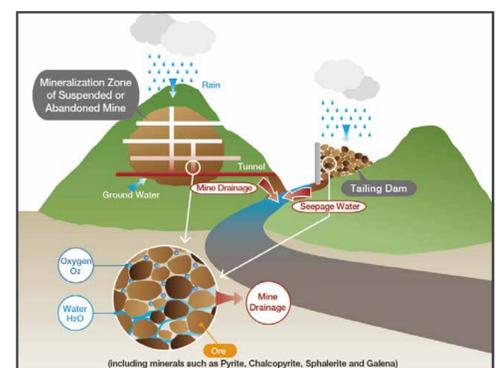
- Mines with owners present (55 mines)
- Mines with absent owners (24 mines)



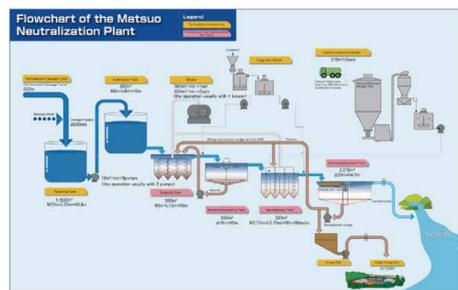
Treatment of mine wastewater in Japan costs more than 3.7 billion yen per year.

## Generation Mechanism of Mine Pollution

After the mining activity, sulfide minerals are often left in metal mines. When these residual sulfides are exposed to rainwater, groundwater and air, it results in AMD generation which also occurs in waste rocks dumps and tailing dams. Since AMD often contains heavy metals, it is necessary to be properly treated before discharging into environment.



## The Matsuo Neutralization Plant



The Matsuo sulfur mine had produced approximately 29 million tons of sulfur and iron sulfide ore in total during the operation period (58 years) since 1914. The Matsukawa river had been contaminated by AMD caused by the mining activity in the Matsuo mine until the construction of the Matsuo Neutralization Plant (in 1982). This plant is one of the biggest active water treatment plants in Japan, and can treat approximately 9 million m<sup>3</sup> of AMD/year.

## Forestry Reclamation Approach at the Matsuo mine

Reforestation at the Matsuo mine using planting techniques has been carried out until 2017 after the Matsuo mine was abandoned in 1972, which contributes to restoration of the environment around the Matsuo mine to the original natural environment.



The Matsuo mine in 1979 (left) and 2017 (right)