



IAEA

International Atomic Energy Agency

Atoms for Peace

September 2008

Monitoring the environment in Peruvian mining areas

The challenge...

Mining activities in Peru have resulted in a high level of environmental contamination. Wastes and tailings from concentrators, mine extraction, pile leaching, gold washing plants, and from chemical products used in the mining and extraction process are a significant source of pollution. Gases and suspended particles emitted by chimneys and other sources associated with mining activities, foundries, and refineries are also responsible for pollution.

The level of environmental contamination has led to a deterioration in farming activities. In addition, the main rivers in Peru are affected by high levels of cyanide and metals, including copper, lead, zinc, cadmium, arsenic, nickel and mercury – all from mining activities.

The project...

The project was carried out by the Peruvian Institute of Nuclear Agency (IPEN), with IAEA support.

The project used isotopic tracer techniques to determine contamination levels in order to establish clean operating practices in the mining and mineral processing industries. More specifically, these techniques were used to establish the technical tools needed to characterize environmental pollution caused by mining activities, in order to adhere to the national policy for the management of naturally occurring radioactive materials.

The IAEA provided fellowships, a scientific visit and equipment to analyse non-radioactive and radioactive materials in environmental samples.



The impact...

- The installation of equipment led to an improvement in analytical capability.
- The amount of arsenic and other pollutants in sediments of the Rimac and Aruri rivers located in the mining zone of the central uplands around Lima was evaluated.
- Two studies on the hydrodynamics of underground waters of two mines in Puno and Lima and the characterization of effluent filtration from two mines in Arequipa and Cajamarca were completed.
- On the basis of the findings, IPEN has drawn up an environmental conservation plan.

PER/2/015: Radiotracer Technology Applied to Conservation of the Environment in the Mining and Mineral Sector