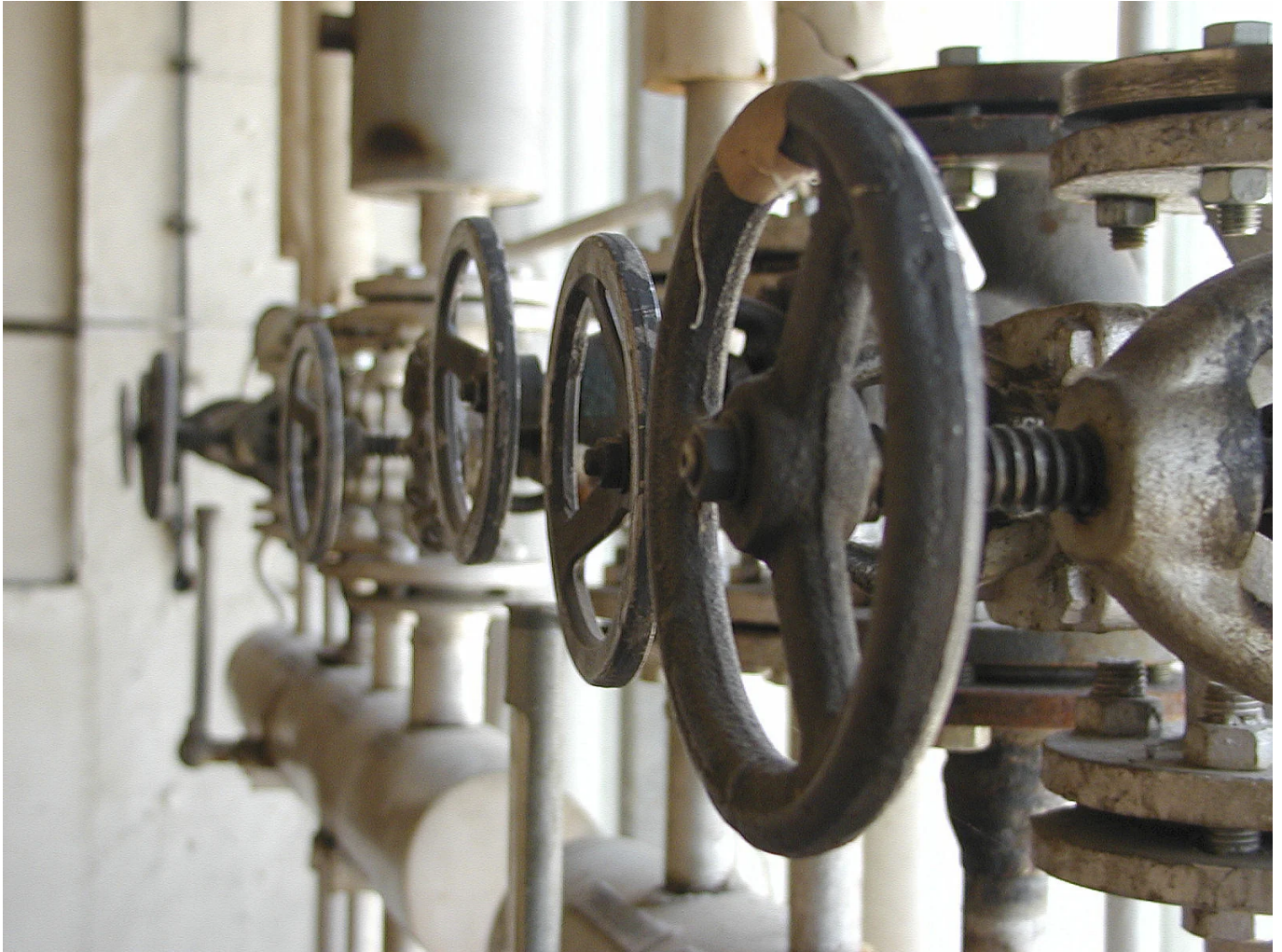


Industrial Process Mapping: a Tool for Environmental Monitoring



Client

Industry

Facts

Period2018 - 2019

Project CountryBrazil

The study made it possible to identify chemical compounds that should be included in the environmental monitoring to complement the impacts of industrial activity identification and, in the same way, it was possible to reduce compounds that were being mon

It was possible to identify the best sampling points for water and effluent to be sampled, seeking optimization of the monitoring campaigns backed by industrial activity.

In an industrial mining installation in Brazil, upon requests from the control agency, it was required to evaluate the expansion of the environmental monitoring network for safety and improvement reasons aiming a better environmental control of production processes. The objective of the study was to identify through water and mass balances of industrial processes all products and raw materials, wastes and effluents, enabling an analysis of compliance with the environmental plan in force and the identification of needed improvements.

Initially, a field survey was conducted in all areas of the company's industrial processes, in which all inputs and outputs were identified and quantified. Later, the information was tabulated in water and mass flows, and at this time direct effects from rainwater in the area that directly influence the transport and effluent flows during the rainy season were considered.

The water balance contemplated from the capture of water for industrial use and utilities, consumption in preparation of products for industrial processes, water losses and reuse already practiced by the mining company.

The mass balance included the identification of raw materials and chemical input in the process, as well as evaluating typical composition of each item in order to identify potential contaminants to be observed during the environmental monitoring.

The study made it possible to identify the areas of consumption and generation of various products, raw materials, wastes, and effluents, as well as the geographic location of each area in the plant.

Based on this identification, the adherence within the monitoring plans carried out by the company and the plans prepared, which were based on balances and flows identified and quantified in the study. Finally, monitoring plans and tailor-made sampling for groundwater and surface water, liquid and gaseous effluents and solid wastes were elaborated. The new plans allow the mining company to effectively control the environmental contribution of the site.

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