

COAL MINE SITE WATER USE RELATIVE TO CATCHMENT: EXAMPLES FROM EASTERN AUSTRALIA

Novaes C. D.^{1,2}; Timms W.^{3,4}

¹Federal University of Mato Grosso; ² Science Without Borders Program Scholar, CNPq (2013-2014);

³Australian Centre for Sustainable Mining Practices (ACSMP), University of New South Wales, New South Wales, Australia; ⁴School of Mining Engineering, University of New South Wales, New South Wales, Australia

ABSTRACT: The water management is the key to water sustainability and security. While the water demand has increased, water resource has become scarce. The availability of water is not the unique concern but, also its quality. In this context, region where mining activities are more intense, the water take and the risk of pollution of water resources drive to a serious problem. In the eastern of Australia, coal mining is responsible for the worth of economy and a contentious issue where conflicts between farms and mining have taken place. Due to its direct interference with surface and ground water, it has negative impacts on hydrological systems. To mitigate the negative effects, it is necessary active and passive instruments to control water management in mining and guarantee the water sustainability. The aim of this study is to investigate the practices of water management in coal mining industry in Australia. To achieve the research goals, a quantitative research was using for the ratio analysis method based in the Global Reporting Initiative (GRI) and the Water Accounting Framework for the Minerals Industry (WAFMI). The methodology was applied in seven Mines sites located at Hunter Valley and Macquarie catchment in the eastern of Australia (representing 33% in a total of 24 mines selected in an initial sampling). The ratio analysis comprised the last three years information - from 2011 to 2013 reports. Mines sites include both cut and underground operations and the commodity includes thermal and coking coal types. It was reported many mining industry has inefficiently framework in calculating indicators and reporting their flow volume. Therefore, it demonstrates that there are many drawbacks that require changes. Firstly, the infrastructure in water management. Despite of the many policies and regulations developed by government, inefficient model of management and bureaucracy have resulted in unsuccessful achievements and efforts. Second, disclosure and quality of mining report. For example, water management reports in coal mining are not available for society or when they are accessible, many of them are incomplete. It was also found that some companies use same reports for two or more their mine site affecting in the accuracy of water management reports. Although sustainable practices has been adopted by mining, its efforts are far from the acceptable as a sustainable standard.

KEY WORDS: COAL MINING IN AUSTRALIA; WATER ACCOUNTING FRAMEWORK; WATER MANAGEMENT.