

Environmental Licensing Operational Plan for Mining Industries - A Case Study at Hydro Paragominas

Jonilton Paschoal¹, Ana Everdosa², Mayra Barral³, Ana Karla Pontes⁴, Deyvisson Santana⁵ and Gizelia Matos⁶

1. Environment Manager

2. Environment Engineer

3. Environment Analyst

4. Environment Analyst

5. Environment Analyst

6. Senior Manager of Contracts and Services

Hydro Paragominas (Mineração Paragominas), Paragominas/PA, Brazil

Corresponding author: jonilton.paschoal@hydro.com

Abstract

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Environmental licensing is a legal instrument applicable to potentially polluting activities in Brazil. Mining is a licensable activity and requires the implementation and operation of licensable auxiliary assets and processes, such as access roads, power transmission, emergency systems, production flow systems (e.g., pipeline, railways), tailings systems, and fuel stations. The complexity of mining activities requires appropriate planning for new licensing processes. This is to carry out reliable environmental studies, elaboration and revision of technical reports for licenses maintenance and to ensure adequate deadlines are set in place to obtain the licensing permits in time. In this way, the Operational Plan for Environmental Licensing (POL) was designed to guarantee the efficiency, compliance, and sustainability of the operations of Mineração Paragominas S.A (MPSA), a company of the Norsk Hydro Brasil group. The plan was written in accessible language, with compiled information from all environmental licensing processes, for consultation by various sectors of the company. It covers the entire licensing process, from the company startup to the current moment, and it contains the environmental licensing plan for the next 10 years. The plan was prepared considering the company's growth strategies, 4.0 Industry Guidelines, all of 10 International Council on Mining and Metals (ICMM) Mining Principles and Aluminium Stewardship Initiative (ASI) Performance Standards. Therefore, the POL provides a holistic view on how the management of legal licenses is carried out and whether this management takes place efficiently. In addition, it gathers important information for continuous improvement process and lessons learned over more than 15 years of the MPSA operation. Considering its structure and effectiveness, the POL might be applied in different industries as a complementary, but important tool for the maintenance of environmental licenses.

Keywords: Mining, Bauxite mining, Environmental Management, Environmental Licensing, Operational plan.

1. Introduction

The environmental licensing (EL) in Brazil is an instrument of the National Environment Politics (Federal Law n. 6.938/1981). It aims at providing sustainable development of industrial sector with a clear focus on preventive management for environmental protection. Through this instrument, environmental agencies can monitor the deployment, the installation, and the operation of activities that are considered potentially pollutant including companies that use natural resources, such as mining [1, 2].

Mining might be defined as the processes of mineral or ore extraction with economic feasibility [3, 4]. As a source of feedstock for several activities, from agriculture to technology industries, it is an essential primary industry for human development [5]. Not only it works as a multiplier of the use of minerals on the production chain, but also generates significant numbers of job directly and indirectly connected to the value chain, resulting in considerable gains on economics, social, politics and strategic aspects [3].

Once the mining process involves the extraction of non-renewable natural resources, it is considered as an activity that could have impact on environment. In Brazil, this type of activity is subject to the mining regulation of the Mining National Agency (ANM) and to previous approval from federal, state, or municipal agencies, such as the Environmental Licensing [3]. Therefore, the EL of mining activity represents an important legal instrument for the compatibility of mining with environmental protection, and consequently, is a critical process for any phase of a mining project [1,2].

Regardless of the activity, the environmental licensing process must be performed in a well-organized way to ensure that all stages of the process to obtain the permits are carried out in a timely manner. An environmental license is issued by the regulatory agencies with expiration date and scope defined as it states the rules, conditions, and environmental control measures to be complied with by the company. Additionally, in case of non-compliance with its pre-established conditions and scope, the license might be suspended or cancelled. Finally, once the license is issued to an operator, it is critical that company commitment must be given to the compliance with all its requisites to maintain it in place [2,3].

Considering the complexity that encompasses mining activities, new licensing processes demands appropriate planning, to overcome possible delay issues related to the project deadlines, to guarantee the elaboration of liable environmental studies, to properly address the requirements for each phase of the licensing process, and to the management of constraints and notifications fulfillment, which will all converge to the goal of keeping the current licenses valid.

In this context, amongst the high load of requirements related to the management of environmental licensing processes in the mining activity, the Environmental Licensing Operational Plan (POL) was prepared for Mineração Paragominas S.A (MPSA), a company of the Norsk Hydro Brazil group. The POL was arranged to guarantee the efficiency, conformity, and sustainability of operations. Hence, this work aims to present MPSA's POL as a study case, so it can be used as reference or source of guidance for the environmental licensing management of other companies.

2. Company Context

The MPSA mine is made of two bauxite deposits on contiguous plateaus referred as Miltonia 3 (M3) and Miltonia 5 (M5), situated on the municipality of Paragominas, northwest region of Pará State in the North of Brazil. The mine is located on the geographic coordinates 2° 59' 51" S; 47° 21' 13" O, as shown in Figure 1.

increased number of Environmental Permits required and increase number of conditions. The improvement also resulted in a reduction of notifications and response time within given deadlines while maintaining the number of team members unchanged.

The improvements described in this article were possible thanks to the details provided in the POL's Working Assumptions chapter. Also, the practice of keep lessons learned documented helped avoiding routine failures. This is an important indication of the quality of the environmental studies, the technical work of reviewing official documents and studies, and the inclusion of learned items into the checklist of key documents for new licensing requests.

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