

ENVIRONMENTAL ASPECTS IN BRAZILIAN MINERAL LEGISLATION SINCE 2017

ASPECTOS AMBIENTAIS NA LEGISLAÇÃO MINERAL BRASILEIRA DESDE 2017

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Resumo

O modelo metodológico utilizado neste trabalho foi a realização de uma pesquisa bibliográfica na legislação mineral brasileira na esfera Federal, elencando Leis, Decretos, regulamentos, portarias e resoluções desde 2017, até 2022. Com este levantamento objetiva-se demonstrar como, e de que forma a legislação mineral no Brasil protege o meio ambiente, desconsiderando portanto, aparatos legais com origem em órgãos ambientais.

No ano de 2018 foi publicado o Decreto nº 9.406, conhecido como Novo Regulamento do Código de Mineração, e que atualizou o antigo texto em vigor desde 1968. Um dos principais avanços voltados à proteção ambiental deste Regulamento é o estabelecimento de que recuperar o meio ambiente é uma obrigação gerada em consequência ao exercício da atividade de mineração, além de exigir a introdução de um projeto de recuperação ambiental no Plano de Fechamento de Mina.

O Código de Mineração Brasileiro, publicado em 1967 sofreu mudanças significativas na área ambiental, apenas em 2020 quando entrou em vigor a Lei 14.066, que trouxe importantes revisões do texto original, como o estabelecimento de multas que podem atingir valores na casa de um bilhão de reais (BRL 1.000.000.000,00), equivalente a aproximadamente cento e oitenta milhões de euros (EUR 180.000.000,00) em janeiro de 2023, de acordo com a gravidade. Ocorreram, também, grandes avanços em questões relacionadas às barragens de rejeitos, e a impactos à população e ao meio ambiente, como vazamentos ou rompimentos de barragens. Em 2020, foi criado o conceito de desastre ambiental, sendo estabelecidas punições tanto para pessoa física quanto para pessoa jurídica, sem distinção de dolo ou culpa (se houve ou não intenção por parte do responsável em realizar a ação ilegal).

A Resolução nº 68 editada pela ANM em 2021 aprofundou de maneira expressiva os critérios que devem ser levados em consideração no momento da recuperação ambiental. Critérios morfológicos, geomecânicos, químicos e termodinâmicos de toda a área sob impacto das atividades de mineração devem ser avaliados e recuperados. Com relação às barragens, estas devem ser descaracterizadas sempre que possível, e quando houver impossibilidade técnica, o monitoramento contínuo deve ser mantido mesmo após a conclusão total dos trabalhos de fechamento da mina.

O Decreto nº 10.965/2022 traz uma revisão do cálculo dos valores das multas, que passam a levar em consideração fatores como antecedentes, nível de gravidade, e a capacidade financeira do infrator, mantendo o titular da concessão de lavra como responsável pela área até que o relatório final do plano de fechamento de mina seja aprovado tanto pela ANM quanto pelos órgãos ambientais.

A partir deste trabalho, fica evidente a preocupação dos órgãos gestores de mineração brasileiros com o cuidado e a proteção ambiental, revelando os avanços alcançados ao longo dos anos na criação de um arcabouço legal que permita que atividades essenciais de mineração sejam realizadas em equilíbrio e harmonia com o meio ambiente.

Palavras Chave: Mineração no Brasil; Meio Ambiente; Legislação Mineral Brasileira, Recuperação Ambiental.

Abstract

The methodological model used in this work was to carry out bibliographical research on the Brazilian mineral legislation in the Federal sphere, listing Laws, Decrees, regulations, ordinances and in force from 2017, until 2022. This survey aims to demonstrate how, and in what way, mineral legislation in Brazil protects the environment, therefore disregarding legal apparatus originating from environmental agencies. In 2018, Decree No. 9,406 was published, known as the New Regulation of the Mining Code, which updated the old text in force since 1968. One of the main advances aimed at environmental protection of this Regulation is the establishment that recovering the environment is an obligation generated as a result of the exercise of the mining activity, in addition to requiring the introduction of an environmental recovery project in the Mine Closure Plan.

The Brazilian Mining Code, published in 1967, underwent significant changes in the environmental area, only in 2020 when Law 14,066 came into force, which brought important revisions to the original text, such as the establishment of fines that can reach amounts of one billion reais (BRL 1,000,000,000.00), equivalent to approximately one hundred and eighty million euros (EUR 180,000,000.00) in January 2023, depending on the severity. There were also major advances in issues related to tailings dams, and impacts on the population and the environment, such as leaks or ruptures of dams. In 2020, the concept of environmental disaster was created, establishing punishments for both individuals and legal entities, without distinction of intent or guilt (whether or not there was intention on the part of the person responsible to carry out the illegal action).

Resolution No. 68 edited by ANM in 2021 significantly deepened the criteria that must be taken into account at the time of environmental recovery. Morphological, geomechanical, chemical, and thermodynamic criteria of the entire area impacted by mining activities must be evaluated and retrieved. Concerning dams, these must be de-characterized whenever possible, and when technically impossible, continuous monitoring must be maintained even after the complete conclusion of the mine closure works.

Decree No. 10,965/2022 brings a review of the calculation of fines, which now take into account factors such as antecedents, level of seriousness, and the financial capacity of the violator, keeping the holder of the mining concession as responsible for the area until that the final report of the mine closure plan is approved by both the ANM and the environmental agencies.

From this work, the concern of Brazilian mining management bodies with environmental care and protection is evident, revealing the advances achieved over the years in creating a legal framework that allows essential mining activities to be carried out in balance and harmony with the environment.

Keywords: Mining in Brazil; Environment; Brazilian Mineral Legislation, Environmental Recovery.

1 - Introduction

The methodological model used in this work was to carry out a bibliographical research on Brazilian mineral legislation at the Federal level, listing Laws, Decrees, regulations, ordinances and resolutions since 2017, until 2022. From this survey, a compilation of legislation covering, in some way, about the protection of the environment and natural resources; as well as the promotion of mining activity in a sustainable manner. Therefore, this work's main objective is to highlight the environmental concerns contained in Brazilian mineral legislation, demonstrating how these concepts were introduced into mineral legislation over time, until the consolidation of the guidelines currently in force. It should be noted that, in line with the objectives of this work, no environmental legislation originating from Brazilian environmental agencies was included in this research.

In 2018, following the creation of ANM in 2017, the new regulation of the Mining Code came into effect. This was the first of several other reforms in mineral legislation, which continued until 2022, all emphasizing environmental preservation. These advancements mainly focused on creating legal grounds for more effective punishment of entrepreneurs and companies responsible for environmental impacts and disasters. During this period, notable progress was also made in the management of tailings and waste materials, the regulation of Mine Closure Plans (MCPs), and the revision of the maximum fine amounts, reaching the highest figures ever provided in the history of mineral legislation.

2 - New Regulation of the Mining Code, 2018

Decree No. 9,406 of June 12, 2018, known as the New Regulation of the Mining Code, introduced a set of new rules concerning mining activities in Brazil. This was the first update since the last regulation of 1967. The decree was developed through cooperation between the Government and mining companies, addressing several pending issues in the sector.

Developed with a post-1988 constitution mindset, the advancements in the environmental area are numerous and undeniable, particularly when compared to previous codes. While the merits and quality of the requirements in the New Code may be debated, it is unquestionable that the number of rules addressing environmental issues has exponentially increased.

An example of the need for updating the old 1967 Code is the fines linked to the minimum wage, which were previously calculated in Cruzeiros Novos³⁰. With the new 2018 text, fines were converted into specific amounts in reais, subject to correction based on the IPCA – Broad Consumer Price Index. This measure prevents the monetary weight of fines from being diminished by inflation over time.

Article 5 establishes a clear definition of the scope of the Decree. Previously, there was no clear definition of what constituted a mining activity, which allowed for interpretations that only applied to the extraction itself. However, with the new wording, peripheral works are included within this definition. Consequently, according to the legislation, mining activity encompasses everything from exploration and mine development to beneficiation and waste utilization, and even to the sale of mineral products and mine closure.

The second paragraph expressly establishes that the concession holder is fully responsible for rehabilitating the area, considering these procedures as an inevitable consequence of mining activity.

An important highlight of the New Mining Code is the third paragraph, which, for the first time, includes mine closure as a stage of mining activity, correcting a long-standing and serious deficiency in the country's legal aspects regarding this matter. Miners are now required to plan for future uses, dismantle installations, and monitor aquifers and waste during the mine closure process.

The third paragraph also addresses various issues previously covered by NRM 21, incorporating part of it into the Decree and including it in the Mining Code.

In practice, all mine installations fall under the scope of the Code, including transportation, storage, and ore beneficiation sectors, as well as waste disposal areas, such as tailings dams. This means that all areas impacted by mining are subject to the responsibilities and obligations stipulated in the Code, including the development of ecological impact reduction plans, obtaining all licenses from environmental and mining authorities, as well as being liable to fines and civil liability.

Article 10 defines the activities that encompass mining, including secondary activities necessary for the operation of the enterprise, such as mineral beneficiation plants. The article also links the concept of mining to the destination of waste and residues. As a result, these activities are subject to regulations related to mining activity.

³⁰ Currency that circulated in Brazil between the years 1967 and 1970. The Real came into force in 1994.

The second paragraph of Article 10 deals with the management of mining residues and waste and stipulates that the Ministry of Mines and Energy should encourage their utilization by facilitating the granting of titles to interested companies. Finally, the third paragraph establishes that ANM must create a specific resolution to address the use of mining residues.

Article 31 addresses situations where the concessionaire has not yet obtained environmental licenses but has an operating enterprise. The company is obliged to submit documentation semi-annually to the regulatory agency, proving compliance, and non-compliance with this requirement may result in the revocation of the mining permit.

The fourth paragraph requires the Applicant of the Mining Concession to demonstrate the request for an environmental license within 60 days and show that the request is underway and that measures are being taken to obtain the licenses, every six months.

Articles 53 to 70 deal with fine amounts according to the gravity and type of infraction, revoking the previous values established in the 1968 Regulation. The new values are no longer linked to the minimum wage and are based on fixed amounts ranging from BRL 329.39 (three hundred twenty-nine reais and thirty-nine centavos) to BRL 3,293.90 (three thousand, two hundred ninety-three reais and ninety centavos), depending on the severity of the infractions. Previously, the values could vary between 3 and 50 minimum wages; therefore, these new Regulations have reduced the cost of fines.

3 - Law No. 14,066, dated September 30, 2020

Law No. 14,066, dated September 30, 2020, amends various laws that impact the mining sector. Some of the amended legislation is related to environmental agencies, such as Law No. 12,334, dated 2010, which establishes the National Policy on Dam Safety, and Law No. 9,433, dated 1997, which deals with the National Water Resources Policy, both under the National Water Agency - ANA. However, in this work, we will only mention the changes introduced by articles 7 and 8, which solely address amendments to the 1967 Mining Code and bring important steps towards making Brazilian mining legislation more advanced in terms of environmental care.

Article 7 of Law 14,066 makes several changes to the texts of articles 39, 52, 63, and 65 of Decree-Law No. 227, dated February 28, 1967 (Mining Code), while Article 8 of Law 14,066 adds articles 6-A, 43-A, and 47-A after articles 6, 43, and 47, respectively.

A new subparagraph was added to Article 39, under Item II. Subparagraph "h" concerns dams and prohibits the use of the upstream raising technique, while the sole paragraph establishes the Emergency Action Plan, which must be submitted together with the Economic Exploitation Plan in cases where the construction of tailings dams is foreseen.

Article 52 is supplemented with a sole paragraph, introducing the penalty of revoking the mining title for the concessionaire causing serious harm to the population and the environment. These damages may have been caused not only due to mining and beneficiation activities but also due to mismanagement of tailings and waste. The revocation of the title in this case occurs through an

administrative process, and the entrepreneur is not exempt from other penalties provided for in Article 65, such as fines and civil and criminal liability.

Article 64 is updated with updated fine amounts, reaching a maximum value of 1,000,000,000.00 Brazilian reais³¹, depending on the seriousness of the offense. The minimum value is established at R\$ 2,000.00 two thousand reais³². Previously, this article defined fine amounts ranging from 3 to 50 minimum wages.

Article 65, which deals with the possibilities of forfeiture of the concession, previously provided five situations, already mentioned in this work, in which the loss of the concession title would be possible, of which only two were more directly related to the generation of environmental liabilities: mine abandonment and ambitious mining. With the updated wording, this article includes a fourth paragraph, which adds cases of mining dam ruptures that cause damage to water resources, the environment, and people, without distinguishing whether the entrepreneur acted with intent or just negligence; situations with a strong environmental connection.

Article 6 of the Mining Code had no changes to its wording, and Article 6-A was introduced, stating that the holder of the concession is only relieved of responsibility for the mine after the issuing agency declares its decommissioning terminated. Another introduced measure is the inclusion of various objects within the concept of "Mining Activity," such as the development of plans for the prevention and contingency of environmental disasters, responsibility for surrounding communities, and the recovery of impacted areas. In practice, this determination results in environmental recovery being considered a mining activity according to the legislation.

The sole paragraph is a section of the norm that has a very important and broad environmental spectrum. The implementation of sustainable development in the mine's surrounding areas is now interpreted as something intrinsic to the exercise of mining activity. In addition, the recovery and compensation for impacts resulting from this exercise are also included in this concept.

Sections III and IV introduce the concept of environmental disaster into mining legislation, making its prevention inherent to the exercise of mining activity. The idea of an environmental disaster, when mentioned for the first time, came with the obligation that such accidents be prevented through the elaboration of studies that assess risks and allow for prevention. The obligation to develop a contingency plan that must be adequately implemented is also established. It is important to note that these regulations were not implemented in the legislation in a disconnected manner but are now considered an activity that is included within the definition of the exercise of mining activity. Furthermore, environmental recovery works in impacted areas are also included in this definition.

As for Article 43, its original wording established that the mining concession should be signed by the President of the Republic, a responsibility that was transferred to the Minister of Mines and Energy in 1996. Article 43-A was inserted by Law 14,066 and deals with a completely different subject than before, addressing the miner responsible for the mining concession and reiterating their civil obligation to bear the environmental and social consequences of their activities.

³¹ Approximately 183.000.000,00 EUR (04/2023)

³² Approximately 365,00 EUR (04/2023)

Since the enactment of Article 225 of the 1988 Constitution, the holder of the mining concession was already obliged to restore the degraded environment as a consequence of their activities. This obligation is reiterated by the new wording of Article 43-A, adding responsibility for damages caused to third parties, while the sole paragraph also includes the closure of the mine, the decommissioning of tailings dams, and the closure of the venture's facilities.

The text introduced in the Mining Code under number 47-A complements the determinations present in 43-A and describes in detail the miner's responsibilities towards society and the environment. The cases where the mining concession is forfeited or terminated are addressed, establishing that the obligations of environmental recovery are maintained, even in these exceptional cases. The sole paragraph requires the submission of two reports: the Mine Closure Plan (PFM), which must be submitted to the mining issuer, a mining agency; and the Plan for the Recovery of Degraded Areas (PRAD), which must be presented to the licensing agency, i.e., an environmental agency.

4 - Mine Closure Plan (PFM), 2021

On April 30, 2021, Resolution ANM No. 68 was published, establishing the guidelines for the elaboration of the Mine Closure Plan - PFM (Plano de Fechamento de Mina).

The operational period of a mining plant is directly linked to the availability and viability of obtaining the targeted resource by the entrepreneur. Consequently, at some point, the plant will need to be decommissioned, either due to the exhaustion of the mined resource or the economic infeasibility to continue operations.

Recognizing the immense importance of regulating mine deactivation, given its potential to promote environmental preservation in the affected area, in 2021, ANM decided to publish a resolution solely dedicated to this subject. The agency acknowledges the significance of sustainable mining activities by adopting clear and transparent measures that describe and regulate the Mine Closure Plan - PFM.

Since 2001, a Mine Closure Plan had already been required by the Department of National Mineral Production (DNPM), which should have been presented within the Economic Utilization Plan - PAE (Plano de Aproveitamento Econômico). In 2018, this requirement was transformed into a Decree as part of the Mining Code reform, and the Mine Closure Plan - PFM became a second report that must be presented along with the PAE. Finally, in 2021, ANM published a resolution specifically detailing the elaboration of the PFM and adapting it to security and sustainability needs. The obligation to include the closure costs in the company's financial planning, ensuring that the profits obtained from the operation cover the decommissioning expenses, is also maintained.

The updated Mine Closure Plan contains 24 articles, providing a more detailed description compared to the 2018 regulation, and it establishes how the PFM should be elaborated.

Article 1, Clause III, defines the PFM and summarizes its contents, which include concepts previously defined in earlier regulations, such as the forecast of future area use, continuous monitoring as appropriate, dismantling of structures, and area rehabilitation.

Articles VII and VIII introduce the concepts of physical and chemical stability, individually defined. The first is related to geomechanical and morphological stability, while the second pertains to the chemical and mechanical equilibrium of the site.

Article 2 reaffirms the requirement that every mine must have a PFM, and Article 5 provides details about the minimum information that must be presented by projects still in the stage of requesting the mining title. These measures increase the scrutiny by government agencies, ensuring compliance with the legislation and promoting mine sustainability. The responsible authority must monitor the financial capacity of the project to fund the closure interventions. This guarantee was previously ensured through the Economic Utilization Plan - PAE and the introduction of Clause VII of Article 5 deepens this requirement. It now demands a financial breakdown of the interventions into three parts: pre-closure, closure, and post-closure.

Article 6 encompasses mines that are closing due to exhaustion, adding specific information that must be included in the PFM for this type of project. The article encompasses various reports on area mapping, including periodic updates of topographic information, as well as the locations of facilities and roads. From a strictly environmental perspective, four clauses deserve attention: II, IV, VI, and VII.

Clause II demands an assessment of the risks that may arise from mine closure and requires the presentation of measures to reduce potential damages. Clause IV addresses the previously mentioned physical and chemical stabilizations. Finally, Clauses VI and VII stipulate the actions of maintenance and monitoring of structures after the activities' termination and the measures taken to ensure the area is suitable for the anticipated future use specified in the PFM.

Article 10 adds the requirement for periodic updates of the PFM every five years or in conjunction with PAE updates, presenting the changes made during the period.

Resolution ANM 68 of 2021 was published after the accidents in the cities of Mariana (2015) and Brumadinho (2019) in the state of Minas Gerais. It is crucial to note that this resolution includes a specific section (Section III, Article 15) that applies exclusively to projects with mining dams associated with them.

Article 15 demands that mines with mining dams present an additional report, the Dam Decommissioning Plan. This plan must be individually elaborated for each dam, including a technical solution to reduce the Potential Damage Associated with the dam. The first paragraph of the article establishes that in cases where decommissioning is not possible, monitoring of the dam must be included in the PFM.

The Potential Damage Associated - DPA is defined by the National Information System on Dam Safety - SNISB, a body subordinate to the National Water Agency - ANA, as "the damage that may occur due to dam rupture, leakage, infiltration into the ground, or malfunction, regardless of the probability of occurrence, and may be graduated according to the loss of human lives and social, economic, and environmental impacts."

Another article worth highlighting is Article 17, which establishes the obligation to present a report proving that the work that should have been executed was indeed carried out following what was

outlined in the PFM. This measure prevents non-compliance with the Plan and avoids environmental consequences resulting from the breach of regulations by the entrepreneur.

5 - Decree No. 10.965, February 11, 2022

Decree No. 10.965, dated February 11, 2022, amends Decree No. 9.406, dated June 12, 2018 (New Mining Code Regulation), and brings several changes to the environmental approach of the existing legislation up to that point.

One of the notable changes is the new wording given to Article 5, which defines the scope of the concept of mining activity. Mine closure has been excluded from this definition and is now included in paragraph 2-A as one of the stages of the environmental recovery process, along with the decommissioning of facilities and dams.

The second paragraph, which addresses the responsibilities of the miner as a result of mining activity, has been expanded with four new clauses: Clause I, which includes concepts that were already provided in Law No. 14.066 of 2020, such as social concern for communities surrounding the mine and prevention and mitigation of environmental impacts; Clause II, which deals with the health and safety of employees; Clause III, which establishes the responsibility to prevent environmental disasters and include the mine contingency plan in the Civil Defense Plan of municipalities that have one; and Clause IV, which imposes the obligation to carry out environmental recovery of impacted areas. This last requirement was already present in the 2018 text.

The fourth paragraph establishes that the concession holder remains responsible for the mine until its closure plan is approved by both ANM (National Mining Agency) and the licensing environmental agency.

Article 34 addresses the obligations of the mining concession holder and summarizes several responsibilities that have been in effect since the 1967 Code. This article is now expanded with five new clauses, numbered from XX to XXIV, four of which pertain to environmental issues.

Clause XX deals with the contingency plan or other similar documents, which must not only be developed but effectively implemented.

Clause XXI also concerns the area surrounding the mine, where the miner is responsible for the well-being of the population and must promote sustainable development in the area. Additionally, the miner must prevent, mitigate, and compensate for the environmental impacts resulting from mining activity.

Clause XXII is the only one that does not include environmental issues and focuses on preserving the health and safety of workers.

Clause XXIII introduces the obligation to prevent environmental disasters, a new concept that did not exist before.

Finally, Clause XXIV addresses the responsibility for executing environmental recovery in the impacted.

Article 53 corrects a setback present in the 2018 New Regulation regarding fine amounts. Until then, fines could range from BRL 329.39³³ e to BRL 3,293.90³⁴. The new wording given in 2022 establishes that fines can range from BRL 2,000.00 to BRL 1,000,000,000.00³⁵.

Another change introduced by Article 53 concerns the specific fine amounts for each type of violation. While the nature and severity of the violations are still taken into account, there is no longer a list of possible violations and their respective fine amounts, as was the case with Articles 54 to 70, all of which have been revoked. Therefore, there is no longer a limit to the fine for a specific offense, which previously could not exceed the maximum set for that type of violation, no matter how severe the breach. Additionally, it is important to consider the criteria that must be taken into account for calculating the fine, such as the damages caused by the violation, the offender's history, the recurrence of violations, and especially the economic capabilities of the offender. All these measures enable a more efficient punishment for those with a history of misconduct and allow for a more significant impact, even on those with substantial cash flow.

6 - ANM Resolution No. 122, 2022

On November 28, 2022, ANM Resolution No. 122 was published, which "establishes procedures for investigating infractions, sanctions, and the applicable fine amounts resulting from non-compliance with obligations outlined in the mineral sector legislation."

Regarding environmental matters, the main change is found in Article 30, which introduces the provision of daily fines for situations where there is environmental damage.

This resolution includes the mathematical factors that will be used to calculate the fine amounts according to the presented situation, aggravating and mitigating circumstances applicable.

It lists more than 1,200 (one thousand and two hundred) potential infractions subject to fines under the current mineral sector legislation, organized into 8 (eight) distinct groups according to the level of severity.

7 - Conclusion

After the publication of the New Mining Code Regulation in 2018, which did not fully revoke previous texts but introduced valuable rules for environmental protection and the promotion of sustainable use of mineral resources. One prominent feature of the legislation during this period (2017 to 2022) is the improved regulation for the disposal of tailings and waste rock. The establishment of criteria to facilitate and encourage the implementation of companies that economically utilize tailings and waste rock allows for better management of these environmental liabilities. This is accompanied by

³³ Approximately 60,00 EUR

³⁴ Approximately 600,00 EUR

³⁵ Approximately 183.000.000,00 EUR

Values converted based on exchange rate in April 2023.

another significant advancement, which is the requirement for projects with tailings dams to develop decommissioning plans and maintain monitoring of various parameters.

The important advances introduced by the Mining Regulatory Norms were incorporated into a Decree. The ANM mandates the elaboration of a new mine closure plan, regulating even the landscaping and topography, with its effective implementation to be proven through a report.

Some legislations were certainly influenced by the disasters of Brumadinho and Mariana in Minas Gerais, aiming to prevent similar incidents from happening in the future. These include the creation of the concept of environmental disaster, the inclusion of environmental impact factors in the prediction of concession expiration, the prohibition of the use of the upstream method for tailings dams, and the Mine Closure Plan (PFM), which establishes specific measures for projects with tailings dams that must be monitored even if mining activities are suspended or ceased.

The constitutional obligation of the mining concession holder to remediate environmental damages to the environment and third parties is reaffirmed and introduced in the new Mining Code Regulation of 2018, directing their responsibility for environmental losses resulting from their activities. The responsibilities of the miner and the company for the project only end after approval from the ANM and environmental agencies, which will only be given after the completion of all closure stages, meaning the full execution of the Mine Closure Plan.

Another important advancement was the revision of the fine amounts so that, taking into account mitigating and aggravating factors, fines can range from two thousand to one billion reais. These measures allow for more appropriate punishment, especially after establishing that the economic conditions of the offender should be considered when calculating the fine amount, meaning companies with higher revenue pay higher fines compared to those with lower revenue.

The mineral legislation in Brazil has evolved exponentially over time regarding environmental issues. It is clear that there is now a comprehensive legal framework that requires mining activities to be conducted in balance with the environment, ensuring that: 1) environmental impacts are monitored and adequately addressed; 2) areas are fully rehabilitated after the cessation of activities, and 3) appropriate penalties are applied to those causing environmental damage or disasters. All of this is independent of the legislation applied by environmental management agencies.

Finally, this research highlights the concern of Brazilian mining management agencies for environmental care and protection, revealing the progress made over the years in creating a legal framework that allows for essential mining activities to be carried out in balance and harmony with the environment. Therefore, it is clear that mining management bodies are protecting the environment, highlighting how this occurs.

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³⁶ Federal Official Gazette

³⁷ National Dam Safety Policy

³⁸ National Environment Fund

³⁹ National Water Resources Policy

⁴⁰ Mining Code

⁴¹ Mine Closure Plan