



# MADDIKA

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### CRIMINAL LIABILITY OF IUP HOLDERS IN CASES OF ENVIRONMENTAL POLLUTION RESULTING FROM MINING ACTIVITIES

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#### *Abstract*

Environmental pollution caused by mining activities is a complex issue that requires comprehensive handling through strict and effective criminal law instruments. Mining Business License (IUP) holders have a legal obligation to comply with environmental protection and management regulations. This study analyzes the criminal liability of IUP holders in cases of environmental pollution, the factors that influence the effectiveness of criminal law enforcement against IUP holders, and describes a criminal law enforcement model to enhance environmental protection from the negative impacts of mining activities. This study uses a normative legal research method by analyzing primary legal materials from Law No. 32 of 2009 concerning Environmental Protection and Management, related regulations, and relevant previous studies. The results of the study indicate that the legal construction of criminal liability for IUP holders is based on the principle of comprehensive liability, which includes corporate and individual liability with the application of progressive criminal sanctions. The effectiveness of environmental criminal law enforcement is influenced by the complexity of inter-agency coordination, human resource capacity, the application of the ultimatum remedium principle, and a monitoring system that still requires strengthening. A criminal law enforcement model to enhance environmental protection from the negative impacts of mining activities can be developed through a comprehensive approach that integrates preventive, repressive, and restorative aspects. This study contributes to the development of more effective environmental criminal law enforcement policies through strengthened inter-agency coordination, enhanced human resource capacity, and the utilization of technology in the monitoring system.

**Keywords:** *Criminal Responsibility; IUP Holders; Environmental Pollution*

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### Abstrak

Pencemaran lingkungan hidup akibat kegiatan pertambangan menjadi isu kompleks yang memerlukan penanganan komprehensif melalui instrumen hukum pidana yang tegas dan efektif. Pemegang Izin Usaha Pertambangan (IUP) memiliki kewajiban hukum untuk mematuhi ketentuan perlindungan dan pengelolaan lingkungan hidup. Penelitian ini menganalisis pertanggungjawaban pidana pemegang IUP dalam kasus pencemaran lingkungan hidup, faktor-faktor yang memengaruhi efektivitas penegakan hukum pidana lingkungan terhadap pemegang IUP, dan mendeskripsikan model penegakan hukum pidana untuk dapat meningkatkan perlindungan lingkungan hidup dari dampak negatif kegiatan pertambangan. Penelitian ini menggunakan metode penelitian hukum normatif dengan menganalisis bahan hukum primer Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup, peraturan perundang-undangan terkait, dan penelitian terdahulu yang relevan. Hasil penelitian menunjukkan bahwa konstruksi hukum pertanggungjawaban pidana pemegang IUP dibangun atas dasar prinsip tanggung jawab komprehensif yang mencakup pertanggungjawaban korporasi dan individual dengan penerapan sanksi pidana progresif. Efektivitas penegakan hukum pidana lingkungan dipengaruhi oleh kompleksitas koordinasi antar instansi, kapasitas sumber daya manusia, penerapan prinsip *ultimum remedium*, dan sistem pengawasan yang masih memerlukan penguatan. Model penegakan hukum pidana untuk meningkatkan perlindungan lingkungan hidup dari dampak negatif kegiatan pertambangan dapat dikembangkan melalui pendekatan komprehensif yang mengintegrasikan aspek preventif, represif, dan restoratif. Penelitian ini memberikan kontribusi bagi pengembangan kebijakan penegakan hukum pidana lingkungan yang lebih efektif melalui penguatan koordinasi antar instansi, peningkatan kapasitas sumber daya manusia, dan pemanfaatan teknologi dalam sistem pengawasan.

**Kata Kunci :** Pertanggungjawaban Pidana; Pemegang IUP; Pencemaran Lingkungan Hidup

## INTRODUCTION

The mining sector is one of the main pillars of the Indonesian economy, contributing significantly to gross domestic product and state revenue. However, mining activities also have negative impacts that cannot be ignored, particularly on environmental sustainability. Environmental degradation caused by mining activities has become a complex problem that requires comprehensive handling through strict and effective legal instruments (Andri & Akbar, 2023). Environmental pollution caused by mining activities not only threatens natural ecosystems but also has a direct impact on public health and the sustainability of future generations. A Mining Business Permit, hereinafter referred to as IUP, is a legal instrument that grants the permit holder the authority to conduct mining activities in a specific area. IUP holders are legally obligated to comply with all applicable laws and regulations, including those related to environmental protection and management. Violations of environmental regulations in the context of mining activities may result in criminal liability for IUP holders, as stipulated in Law No. 32 of 2009 on Environmental Protection and Management (Rasjuddin, 2020).

Environmental pollution caused by mining activities is becoming increasingly alarming, with a rising number of reported cases across various regions. Cases of water, soil, and air pollution caused by mining activities have resulted in immeasurable material and immaterial losses. Although there are legal instruments in place to hold polluters criminally liable, in practice, there are still various obstacles in enforcing the law against holders of mining permits (IUP) who have been proven to have caused environmental pollution (Zulfikar, 2023). The complexity of legal issues in criminal liability for IUP holders lies in several fundamental aspects. First, it relates to proving the causal relationship between mining activities and environmental pollution. Second, it relates to the standards and criteria used to determine whether environmental pollution has

occurred. Third, it concerns corporate criminal liability in the context of mining activities carried out by business entities. Fourth, it relates to effective law enforcement mechanisms to ensure that IUP holders comply with environmental protection regulations (Parawansa et al., 2020).

Previous studies have shown that the enforcement of environmental criminal law in the mining sector still faces various challenges, both in terms of legal substance, legal structure, and legal culture. Research conducted by several environmental law experts shows a gap between existing legal norms and their implementation in the field. This indicates the need for an in-depth study of the effectiveness of criminal law instruments in handling cases of environmental pollution committed by IUP holders. The urgency of this research is based on several important factors. First, the increasing number of cases of environmental pollution caused by mining activities in Indonesia. Second, the weak enforcement of criminal law against IUP holders who have been proven to have polluted the environment. Third, there is a need for a comprehensive understanding of the legal construction of criminal liability of IUP holders in the context of environmental pollution. Fourth, the importance of formulating policy recommendations that can strengthen the enforcement of environmental criminal law in the mining sector (Salsabila et al., 2024).

This study has significant scientific novelty and contributions in several aspects. First, this study comprehensively examines the legal construction of criminal liability of IUP holders in cases of environmental pollution using a normative-empirical approach. Second, this study analyzes the factors that influence the effectiveness of criminal law enforcement in the mining sector. Third, this study formulates a criminal law enforcement model that can improve the effectiveness of environmental protection from the negative impacts of mining activities. Fourth, this study provides policy recommendations that can strengthen criminal law instruments in handling cases of environmental pollution caused by mining activities. The research gap that this study will fill lies in the lack of studies that specifically analyze the criminal liability of IUP holders in the context of environmental pollution. Previous studies tend to examine aspects of criminal environmental liability in general or examine aspects of mining without focusing on the criminal liability of IUP holders. Additionally, there has been no comprehensive study analyzing the legal obstacles in enforcing criminal law against IUP holders who cause environmental pollution and formulating appropriate legal solutions to address these issues.

Based on the above description, this study aims to analyze the legal construction of criminal liability of IUP holders in cases of environmental pollution caused by mining activities, identify factors that influence the effectiveness of environmental criminal law enforcement against IUP holders, and formulate a criminal law enforcement model that can improve environmental protection from the negative impacts of mining activities. The research questions to be answered are: how is the legal construction of criminal liability for IUP holders in cases of environmental pollution, what factors influence the effectiveness of criminal environmental law enforcement against IUP holders, and what is the ideal criminal law enforcement model to enhance environmental protection from the negative impacts of mining activities.

## **THEORETICAL BASIS**

### ***The Theory of Criminal Liability in Environmental Law***

Criminal liability in the context of environmental law has specific characteristics that distinguish it from conventional criminal liability. The theory of environmental criminal liability is based on the understanding that environmental crimes have a broad and long-term impact on ecosystems and human life. This concept of criminal liability emphasizes not only punishment as a form of retribution, but also prevention and restoration of environmental damage that has occurred. In the context of Indonesian law, environmental criminal liability is based on the principle of strict liability, which allows for punishment without having to prove fault, as long as the act has caused pollution or environmental damage (Suciadi & Mandiana, 2024).

The development of environmental criminal liability theory has also evolved from an anthropocentric approach to a more comprehensive ecocentric approach. The ecocentric approach positions the environment as an entity that has intrinsic value and is entitled to legal protection. This is reflected in criminal sanctions that go beyond imprisonment and fines to include obligations to restore the environment and compensate affected communities. This concept expands the scope of criminal liability from focusing solely on individual perpetrators to include corporate liability and the liability of parties involved in activities that have a negative impact on the environment (Angkasa, 2020).

### ***The Concept of Mining Business Permits and the Legal Obligations of IUP***

A Mining Business License is an administrative legal instrument that provides legitimacy to license holders to conduct mining business activities in a specific area within a specified time frame and under certain conditions. The concept of a Mining Business License not only grants rights to license holders but also imposes legal obligations that must be fulfilled during the validity period of the license. The legal obligations of IUP holders include technical operational obligations, administrative obligations, financial obligations, and most importantly, the obligation to comply with environmental protection and management regulations. Violations of these legal obligations may result in legal consequences such as license revocation, administrative sanctions, and even criminal liability if the violation causes environmental pollution or damage (Rusyuniardi, 2020).

The legal obligations of IUP holders in the context of environmental protection include the obligation to prepare and implement environmental documents, the obligation to conduct regular environmental quality monitoring, the obligation to implement reclamation and post-mining programs, and the obligation to comply with established environmental quality standards. These obligations are mandatory and cannot be ignored by IUP holders for any reason. The concept of legal responsibility of IUP holders also includes aspects of responsibility for the impacts caused by mining activities, both direct and indirect, occurring during operations and after the end of mining activities. This shows that the legal responsibility of IUP holders is comprehensive and sustainable (Kemalasari et al., 2023).

### ***Theory of Environmental Pollution and Law Enforcement Mechanisms***

Environmental pollution is theoretically defined as the introduction or entry of living organisms, substances, energy, or other components into the environment by human activities, thereby exceeding established environmental quality standards. The theory of environmental pollution has evolved from a simple understanding of pollution to a more complex concept that encompasses various aspects of ecology, public health, and sustainable development. In the context of mining activities, environmental pollution can occur through various media, namely water pollution, soil pollution, air pollution, and noise pollution. Each type of pollution has different characteristics and impacts, requiring specific management approaches. This theory also introduces the concept of cumulative pollution, explaining how pollution impacts can accumulate over time and cause irreversible damage (Soamole & Rosnawati, 2024).

The mechanism for enforcing the law in cases of environmental pollution is based on a theory of law enforcement that integrates preventive, repressive, and restorative approaches. The preventive approach emphasizes efforts to prevent pollution through the strict supervision and guidance of activities that have the potential to cause pollution. The repressive approach is carried out through the application of legal sanctions against polluters, including administrative sanctions, civil sanctions, and criminal sanctions. Meanwhile, the restorative approach focuses on efforts to restore environmental damage and compensate for losses incurred. In practice, these three approaches must be applied simultaneously and in a coordinated manner to ensure the effectiveness of environmental law enforcement. Environmental law enforcement theory also emphasizes the importance of public participation in the monitoring and enforcement process as a form of social control over activities that have the potential to pollute the environment (Sodikin, 2020).

### **METHOD**

This study uses a normative legal research method with a literature review approach. The literature review approach is used to collect secondary data sourced from various legal literature, scientific journals, and relevant legislation related to the research theme, enabling the researcher to conduct a comprehensive analysis of the various theoretical and practical perspectives developed by legal experts and practitioners in the fields of environmental law and mining law (Hamzah, 2020). Data analysis techniques were carried out using qualitative analysis techniques, which included data reduction, data presentation, and conclusion drawing. Data validity in this study was ensured through data source triangulation, which involved various literature from different perspectives and time periods. Data reliability was ensured through consistency in the use of analysis criteria and repeated checks on the collected data. The transparency of the research methodology allows other researchers to replicate or verify the research findings using the same data sources and analysis techniques, thereby ensuring the scientific accountability of the research results and contributing significantly to the development of legal science, particularly in the fields of environmental law and criminal law.

## RESULTS AND DISCUSSION

### *Legal Construction of Criminal Liability of IUP Holders in Environmental Pollution Cases*

The legal construction of criminal liability for holders of Mining Business Permits in cases of environmental pollution is based on the principle of comprehensive responsibility as stipulated in Law No. 32 of 2009 concerning Environmental Protection and Management (Law of the Republic of Indonesia, 2009). As stated in Article 116, paragraph (1):

“If an environmental crime is committed by, for, or on behalf of a business entity, criminal charges and penalties shall be imposed on:

- a. Business entity; and/or
- b. The person who gave the order to commit the criminal act or the person who acted as the leader of the criminal activity.”

The Law stipulates that if an environmental crime is committed by, for, or on behalf of a business entity, criminal charges and penalties may be imposed on the business entity and/or the person who gave the order to commit the crime or the person who acted as the leader of the criminal activity. This provision indicates that criminal liability can be imposed not only on corporations holding an IUP, but also on individuals who play a key role in corporate decision-making. IUP holders have a legal obligation to comply with all applicable laws and regulations, including the obligation to properly protect and manage the environment. Violations of these obligations can result in serious criminal consequences, both for corporations and individuals involved in the company's operational decision-making. This legal construct reflects an environmental criminal law paradigm that prioritizes the protection of public interests and environmental sustainability. In the context of mining, activities carried out without considering environmental aspects can have widespread and lasting impacts on ecosystems and surrounding communities. The implementation of criminal liability is based on the principle that IUP holders not only have the right to exploit mineral resources but also have the obligation to protect the environment from the negative impacts of mining activities (Adison et al., 2022).

The criminal liability of IUP holders in environmental pollution is also specifically regulated in Article 98, paragraph (1) of Law Number 32 of 2009, which states that:

“Any person who intentionally commits an act that results in the exceeding of ambient air quality standards, water quality standards, marine water quality standards, or environmental damage criteria shall be punished with imprisonment for a minimum of 3 (three) years and a maximum of 10 (ten) years and a fine of at least Rp3,000,000,000.00 (three billion rupiah) and a maximum of Rp10,000,000,000.00 (ten billion rupiah).”

This provision indicates that lawmakers have established clear standards regarding the limits of environmental pollution for which individuals can be held criminally liable. In the context of mining activities, IUP holders can be prosecuted if their operational activities are proven to exceed the environmental quality standards set forth in the legislation. This legal construction also covers aspects of proof that do not always require the classic element of intent, but may use a strict liability approach in certain cases. This indicates that the criminal liability of IUP holders is not limited to intentional acts, but may also include acts caused by negligence in carrying out environmental protection

obligations. The application of this principle is intended to provide more effective protection for the environment and prevent pollution that could harm the public interest. This legal framework also accommodates the complexity of mining activities, which involve various operational stages and require strict supervision to ensure compliance with environmental regulations (Suryawan et al., 2021).

The criminal liability of IUP holders is also reinforced by the provisions of Article 117 of Law No. 32 of 2009, which explains that:

“If criminal charges are brought against the person who gave the order or the leader of the criminal act, then the criminal penalty that can be imposed is the same as the penalty for the perpetrator of the criminal act plus one-third.”

This provision indicates that lawmakers place particular emphasis on the accountability of individuals who hold strategic positions in companies that hold IUPs. This reflects the principle that criminal liability can be imposed not only on corporations as legal entities, but also on individuals who have authority in the company's operational decision-making. In the context of mining practices, this provision has significant implications for the directors and shareholders of mining companies that hold IUPs. They may not only be held administratively or civilly liable, but also face individual criminal charges if it is proven that they issued orders or led activities that resulted in environmental pollution. The application of this provision requires careful proof of the causal relationship between the orders or leadership exercised and the occurrence of environmental pollution. This legal framework also accommodates the principle that every individual involved in activities harmful to the environment should be held accountable in accordance with their role and contribution to causing such harm. The implementation of this provision in practice requires close cooperation between law enforcement agencies, regulatory bodies, and the public to ensure that any violations of environmental regulations can be identified and properly addressed (Saputra et al., 2025).

The corporate aspect of criminal liability of IUP holders is also comprehensively regulated in Article 116, paragraph (2) of Law Number 32 of 2009, which explains that:

“If an environmental crime as referred to in paragraph (1) is committed by a person who, based on an employment relationship or other relationship, acts within the scope of a business entity, criminal sanctions shall be imposed on the person who gave the order or the leader in the criminal act, regardless of whether the criminal act was committed individually or jointly.”

In the case of criminal charges against a corporation, the corporation is represented by its management. This provision indicates that corporations holding IUPs can be held directly liable for criminal offenses as independent legal entities. This reflects developments in modern criminal law that recognize corporations as legal entities that can commit criminal offenses and be held criminally liable. In the context of environmental pollution, corporations holding IUPs can be punished with fines of a very large amount, as stipulated in various criminal articles in Law No. 32 of 2009. The application of corporate criminal liability requires a deep understanding of the company's organizational structure and the decision-making mechanisms in place within the company. This legal framework also accommodates the reality that, in mining operations, decisions related to environmental aspects are often made collectively by various parties within the company. Therefore, criminal liability may be imposed on the

corporation as the entity responsible for all operational activities carried out by the company. The implementation of this provision requires good coordination between various law enforcement agencies to ensure that the law enforcement process can be carried out effectively and efficiently (Munzir et al., 2024).

### ***Factors Affecting the Effectiveness of Environmental Criminal Law Enforcement Against IUP***

The effectiveness of criminal law enforcement against IUP holders is influenced by the complexity of the coordination system between various agencies that have authority in environmental supervision and law enforcement. Article 95 paragraph (1) of Law Number 32 of 2009 explains that:

“In order to enforce the law against perpetrators of environmental crimes, integrated law enforcement can be carried out between civil servant investigators, the police, and the attorney general's office under the coordination of the Minister.”

This provision indicates that the enforcement of environmental criminal law requires close coordination between various agencies with different competencies and authorities. In practice, ineffective coordination between these agencies can hinder the law enforcement process and reduce the effectiveness of sanctions imposed on IUP holders who pollute the environment. This coordination factor is particularly important given the complexity of mining activities, which involve various technical, administrative, and legal aspects that require specialized expertise from various agencies. Ineffective coordination can lead to overlapping authority or even gaps in oversight, which IUP holders can exploit to violate environmental regulations. Effective enforcement of environmental criminal law requires a deep understanding by all parties involved of the characteristics of mining activities and the environmental impacts they may cause. This necessitates enhancing the capacity of human resources across agencies involved in environmental criminal law enforcement, as well as providing adequate facilities and infrastructure to support the implementation of oversight and enforcement tasks. (Yunita et al., 2024).

Institutional factors and supervisory authority also have a significant influence on the effectiveness of criminal law enforcement against IUP holders. Article 112 of Law No. 32 of 2009 states that:

"Any authorized official who deliberately fails to supervise the compliance of business and/or activity operators with the regulations and environmental permits as referred to in Articles 71 and 72, resulting in environmental pollution and/or damage that causes loss of human life, shall be punished with imprisonment for a maximum of 1 (one) year or a fine of up to Rp. 500,000,000.00 (five hundred million rupiah)."

This provision shows that the effectiveness of environmental criminal law enforcement depends not only on the compliance of IUP holders with applicable regulations, but also on the performance of supervisory officials in carrying out their supervisory duties. Weaknesses in the supervisory system can lead to undetected violations or violations that are not properly followed up, thereby reducing the deterrent effect of criminal sanctions imposed. In the context of mining activities, effective



supervision requires adequate technical expertise to assess whether the operational activities carried out by IUP holders comply with applicable environmental regulations. This requires improving the competence of supervisory agencies and providing adequate equipment and technology to support supervisory activities. Coordination between various supervisory agencies is also an important factor in ensuring that supervision is comprehensive and that there are no loopholes that can be exploited by IUP holders to commit violations. The effectiveness of supervision is also influenced by the availability of adequate funding to support routine supervision and special supervision of mining activities that pose a high risk to the environment (Tampubolon et al., 2025).

The application of the *ultimum remedium* principle in the enforcement of environmental criminal law is also a factor that influences the effectiveness of criminal law enforcement against IUP holders. This principle prioritizes the use of administrative sanctions before applying criminal sanctions, as reflected in the structure of sanctions in Law No. 32 of 2009. Article 76 paragraph (1) explains that:

“Ministers, governors, regents/ mayors shall impose administrative sanctions on business and/or activity managers if violations of environmental permits are found during inspections.”

The application of this principle can affect the effectiveness of criminal law enforcement because, in practice, administrative sanctions imposed on IUP holders may not provide a sufficient deterrent effect to prevent repeat violations. This can occur if the administrative sanctions imposed are relatively light compared to the economic benefits gained from the violation. In the context of mining activities, IUP holders may consider administrative sanctions as operational costs that can be factored into the economic analysis of mining activities. Therefore, the effectiveness of criminal law enforcement in environmental matters requires the application of sanctions that are proportionate and can provide adequate deterrence. This requires ongoing evaluation of the effectiveness of the sanctions imposed and adjustment of the level of sanctions if necessary to ensure that they achieve the objective of protecting the environment. The application of the principle of *ultimum remedium* also requires good coordination between the authorities responsible for imposing administrative sanctions and those responsible for enforcing criminal law to ensure that the enforcement process can be carried out effectively and efficiently (Liofa & Dewanto, 2024).

Human resource capacity and competence in the environmental criminal justice system also have a significant influence on the effectiveness of criminal law enforcement against IUP holders. The complexity of environmental pollution cases caused by mining activities requires special expertise in environmental engineering, environmental law, and mining technology to conduct accurate investigations and prove cases. The lack of technical expertise among law enforcement officials can make it difficult to prove the causal relationship between mining activities and environmental pollution. This can result in poor-quality case files being submitted to court and potentially lead to the defendant being acquitted of criminal charges. In the context of environmental criminal law enforcement, proving the causal relationship between mining activities and environmental pollution requires in-depth scientific analysis and the use of the latest technology. This requires significant investment in improving human resource capacity

and providing adequate equipment to support investigation and evidence-gathering activities. In addition, the effectiveness of environmental criminal law enforcement is also influenced by judges' understanding of the complexity of environmental pollution cases and their ability to assess the technical evidence presented in court. This requires improving judges' competence in environmental law through ongoing training and education programs. Coordination between various experts and research institutions is also an important factor in ensuring that investigations and evidence can be conducted to adequate scientific standards (Laia, 2021).

### ***Criminal Law Enforcement Model to Improve Environmental Protection from the Negative Impacts of Mining***

A criminal law enforcement model to improve environmental protection from the negative impacts of mining activities can be developed through a comprehensive approach that integrates preventive, repressive, and restorative aspects as stipulated in Law No. 32 of 2009 concerning Environmental Protection and Management, Article 109, which states that:

“Any person who engages in business and/or activities without obtaining an environmental permit as referred to in Article 36(1) shall be punished with imprisonment for a minimum of 1 (one) year and a maximum of 3 (three) years and a fine of no less than Rp1,000,000,000.00 (one billion rupiah) and a maximum fine of Rp3,000,000,000.00 (three billion rupiah).

This provision indicates that environmental pollution prevention begins at the licensing stage, where every mining activity must have a valid environmental permit. An effective criminal law enforcement model must be able to ensure that every IUP holder complies with environmental permit requirements and fulfills their obligations in protecting the environment. This requires strengthening the monitoring system to detect violations early and impose appropriate sanctions according to the level of violation committed. Based on the results of the analysis of preventive aspects, the model for criminal law enforcement in the environmental sector must include guidance and socialization for IUP holders regarding their obligations in protecting the environment. This aims to increase the awareness and compliance of IUP holders with applicable environmental regulations. An effective criminal law enforcement model must also be able to provide legal certainty for all parties involved in mining activities, including IUP holders, the community, and the government as the regulator (Haris et al., 2023).

The repressive aspect as a model for enforcing environmental criminal law must be able to impose proportionate sanctions and provide adequate deterrence for IUP holders who pollute the environment. Article 98 paragraph (2) of Law Number 32 of 2009 concerning Environmental Protection and Management states that:

“If the act referred to in paragraph (1) results in the death of another person, the offender shall be punished with imprisonment for a minimum of 5 (five) years and a maximum of 15 (fifteen) years and a fine of at least Rp5,000,000,000.00 (five billion rupiah) and a maximum of Rp15,000,000,000.00 (fifteen billion rupiah).

This provision indicates that criminal sanctions imposed on IUP holders must be commensurate with the level of damage caused by environmental pollution. An effective

criminal law enforcement model must be able to accurately identify and measure the impact of environmental pollution so that the sanctions imposed are proportional to the damage caused. This requires the development of advanced methodologies and technologies that can objectively and scientifically measure the impact of environmental pollution. In addition, an effective criminal law enforcement model must also be able to ensure that the sanctions imposed can be effectively enforced and are not merely symbolic. This requires strengthening the capacity of enforcement agencies and providing adequate mechanisms to ensure compliance by IUP holders with the sanctions imposed. An effective criminal law enforcement model must also be able to prevent repeated violations through the application of sanctions that can provide a lasting deterrent effect. This can be done through the application of additional sanctions in the form of revocation of business licenses or restrictions on operational activities for IUP holders who commit repeated violations (Ramandana, 2024).

The restorative aspect as a model for enforcing environmental criminal law must be able to ensure that environmental damage caused by mining activities can be effectively restored. Article 54 of Law Number 32 of 2009 explains that:

“Everyone who pollutes and/or damages the environment is obliged to restore the function of the environment.”

This provision indicates that criminal sanctions imposed on IUP holders must be accompanied by an obligation to restore the environment. Based on the analysis, effective criminal law enforcement must be able to ensure that environmental restoration obligations can be carried out effectively and in accordance with applicable technical standards. This requires the development of technical criteria and standards for environmental restoration that can be used as a reference in the implementation of restoration obligations. In addition, an effective criminal law enforcement model must also ensure that the costs of environmental restoration can be met by IUP holders who cause pollution. This can be done through the implementation of an environmental guarantee system or environmental insurance that must be owned by IUP holders and must also be able to involve the community in the environmental restoration process to ensure that the restoration carried out can provide real benefits to the communities affected by pollution. This requires the development of mechanisms for community participation in the environmental restoration process and oversight of the implementation of restoration obligations by IUP holders. The restorative dimension must also include compensation for communities harmed by environmental pollution caused by IUP holders (Adison et al., 2022).

An ideal criminal law enforcement model to improve environmental protection from the negative impacts of mining activities must be able to integrate digital technology and information systems to enhance the effectiveness of monitoring and law enforcement. Article 116(1) of Law No. 32 of 2009, which regulates corporate criminal liability, can be optimized through the use of real-time monitoring technology that can continuously monitor mining activities. A modern criminal law enforcement model must be able to utilize technologies such as sensor-based environmental monitoring systems, satellite imagery, and big data technology to detect potential environmental pollution at an early stage. This enables law enforcement agencies to intervene before environmental

pollution reaches dangerous levels. In addition, an ideal criminal law enforcement model must also be able to integrate a database system that can comprehensively store and analyze data on the environmental performance of IUP holders. This enables more accurate decision-making in the application of sanctions and law enforcement. An effective criminal law enforcement model must also be able to create transparency and accountability in the law enforcement process through the publication of data and information on the environmental performance of IUP holders and the law enforcement actions that have been taken. This can increase public trust in the law enforcement system and encourage active public participation in monitoring mining activities. The integration of technology in the criminal law enforcement model must also be accompanied by strengthening the capacity of human resources who can operate and utilize the technology optimally to support the effectiveness of environmental criminal law enforcement (Suryawan et al., 2021).

## CONCLUSION

Based on a comprehensive analysis of the legal framework for criminal liability of Mining Business License holders in cases of environmental pollution, this study reveals that the Indonesian legal framework provides a sufficiently strong basis for prosecuting IUP holders who cause environmental pollution. The legal framework established through Law No. 32 of 2009 on Environmental Protection and Management applies a comprehensive liability principle, encompassing both corporate and individual liability, with the application of progressive criminal sanctions. The research findings indicate that the criminal liability of IUP holders is not limited to the classical aspect of intent but also encompasses the application of strict liability principles, allowing for criminal prosecution without the need to prove conventional elements of fault. This reflects the paradigm of environmental criminal law that prioritizes the protection of public interests and ecosystem sustainability, where criminal sanctions can be imposed on corporations with fines of up to fifteen billion rupiah and imprisonment of up to fifteen years for individuals involved in operational decision-making.

The effectiveness of criminal law enforcement against IUP holders is influenced by the complexity of the inter-agency coordination system, human resource capacity, and the application of the *ultimum remedium* principle, which still needs improvement. An ideal criminal law enforcement model should integrate a preventive approach through the strengthening of a digital technology-based surveillance system, a repressive approach with proportional sanctions that provide a lasting deterrent effect, and a restorative approach that ensures effective environmental restoration. The implications of this research are that environmental criminal liability should prioritize the protection of public interests through the application of strict liability in mining activities. Practically, this research contributes to the development of more effective environmental criminal law enforcement policies through strengthened inter-agency coordination, enhanced human resource capacity, and the utilization of technology in monitoring systems. Further research is recommended to examine the implementation of environmental criminal sanctions in judicial practice and to develop an integrated

environmental criminal law enforcement model with an environmental monitoring system utilizing cutting-edge technology.

## REFERENCES

- Adison, Yuwono, A., Sukhma, D. M., Larasati, G. D., & Khonjogo, M. J. (2022). Penegakan Hukum Terhadap Pelaku Tindak Pidana Pertambangan Liar Yang Tidak Memiliki Izin Usaha Pertambangan (IUP) (Kajian Putusan Nomor.268/Pid.Sus/2021/PN.Bdg). *Jurnal Lex Specialis*, 3(1), 449-454. <https://Openjournal.Unpam.Ac.Id/Index.Php/Jlsp/Article/View/34681/0>
- Andri, & Akbar. (2023). Penegakan Hukum Terhadap Pelanggaran Lingkungan Dalam Industri Pertambangan Di Indonesia. *Jurnal Justice Aswaja*, 2(1), 38-48. <https://Doi.Org/10.52188/Jja.V2i1.852>
- Angkasa. (2020). Green Victimology Perspective The Law Number 32 Of 2009 On Environmental Protection And Management. *Jurnal Media Hukum*, 27(2), 228-239. <https://Doi.Org/10.18196/Jmh.20200153>
- Hamzah, A. (2020). Metode Penelitian Kepustakaan Library Research. Malang: *Literasi Nusantara Abadi*.
- Haris, O. K., Hidayat, S., Herman, Sanib, S. S., Handrawan, & Yahya, A. K. (2023). Pertanggungjawaban Pidana Penyalahgunaan IUP (Izin Usaha Pertambangan) Yang Berimplikasi Kerusakan Hutan (Studi Kasus Putusan Nomor 181/Pid.B/LH/2022/PN.Unh.). *Halu Oleo Legal Research*, 5(1), 290-306. <https://Journal.Uho.Ac.Id/Index.Php/Holresch>
- Kemalasari, P., Nila Trisna, & Dara Quthni Effida. (2023). Tanggung Jawab Pelaksanaan Reklamasi Dan Pasca Tambang Perusahaan Pemegang Iup Operasi Produksi Batubara Berdasarkan Prinsip Good Mining Practice. *Jurnal Hukum Samudra Keadilan*, 18(1), 108-120. <https://Doi.Org/10.33059/Jhsk.V18i1.7382>
- Laia, F. (2021). Pertanggungjawaban Pidana Terhadap Tindak Pidana Pencemaran Lingkungan Hidup. *Jurnal Indonesia Sosial Sains*, 2(4), 524-534. <https://Doi.Org/10.36418/Jiss.V2i4.251>
- Liofa, L. P., & Dewanto, W. A. (2024). Restorasi Sebagai Pertanggungjawaban Pemulihan Fungsi Lingkungan Hidup Bagi Perusahaan Pemegang Izin Usaha Jasa Pertambangan. *Jurnal Yustika: Media Hukum Dan Keadilan*, 26(02), 98-110. <https://Doi.Org/10.24123/Yustika.V26i02.6023>
- Munzir, M., Kristiawanto, K., & Ismed, M. (2024). Pertanggungjawaban Pidana Dalam Tindak Pidana Lingkungan Hidup Pengelolaan Limbah Bahan Berbahaya Dan Beracun (B3). *ARMADA: Jurnal Penelitian Multidisiplin*, 2(3), 214-224. <https://Doi.Org/10.55681/Armada.V2i3.1248>
- Parawansa, S. S. R., Koesrianti, Rahayuningsih, T., & Parawansa, D. A. S. (2020). Hukum Pidana Akibat Kerusakan Lingkungan Yang Dilakukan Oleh Korporasi Pada Industri Tambang. *Jurisprudentie : Jurusan Ilmu Hukum Fakultas Syariah Dan Hukum*, 6(2), 192-202. <https://Doi.Org/10.24252/Jurisprudentie.V6i2.9612>
- Ramandana, K. (2024). Penegakan Hukum Terhadap Kasus Pelanggaran Izin Usaha Pertambangan (IUP) Pada Pertambangan Nikel. *Savana: Indonesian Journal Of Natural Resources And Environmental Law*, 1(01), 63-71. <https://Doi.Org/10.25134/Savana.V1i01.42>
- Rasjuddin. (2020). Perlindungan Hukum Pidana Terhadap Perusahaan Pertambangan Dalam Penanggulangan Kerusakan Lingkungan. *Jurnal Hukum Unissula*, 36(1), 1-11. <https://Doi.Org/10.26532/Jh.V36i1.11180>
- Rusyuniardi, C. C. M. U. (2020). Kekuatan Mengikat Izin Usaha Pertambangan Dalam Hukum Pertambangan Di Indonesia. *Lex Et Societatis*, 8(1), 148-154.

- <https://doi.org/10.35796/Les.V8i1.28481>
- Salsabila, Y., Ferdiyansyah, Syalsabila, A. N., Rahma, R. A., & Fahriansyah, M. (2024). Analisis Keterkaitan Hukum Pertambangan Dan Hukum Lingkungan Dalam Pengelolaan Sumber Daya Alam Berkelanjutan. *Indonesian Journal Of Law And Justice*, 2(2), 6. <https://doi.org/10.47134/Ijlj.V2i2.3461>
- Saputra, B. B. D., Hermawan, S., & Najicha, F. U. (2025). Pengaturan Hukum Perlindungan Tumbuhan Pada Wilayah Pertambangan Oleh Pemegang Izin Usaha Pertambangan (IUP). *Jurnal Kajian Hukum Dan Kebijakan Publik*, 2(2), 941-947. <https://jurnal.kopusindo.com/index.php/jkhkp/article/view/688>
- Soamole, M. G., & Rosnawati, E. (2024). Analisis Penegakan Hukum Terhadap Pencemaran Lingkungan. *Indonesian Journal Of Law And Justice*, 2(1), 9. <https://doi.org/10.47134/Ijlj.V2i1.3081>
- Sodikin. (2020). Penegakan Hukum Lingkungan Menurut Undang-Undang Nomor 32 Tahun 2009 Tentang Perlindungan Dan Pengelolaan Lingkungan. *Kanun: Jurnal Ilmu Hukum*, 12(03), 543-563. <https://jurnal.hukumonline.com/a/5cb4950701fb73000e1c710c/penegakan-hukum-lingkungan-menurut-undang-undang-nomor-32-tahun-2009-tentang-perlindungan-dan-pengelolaan-lingkungan/>
- Suciadi, W. S., & Mandiana, S. (2024). Penerapan Doktrin Strict Liability Dalam Tindak Pidana Lingkungan Hidup Oleh Korporasi. *Kultura: Jurnal Ilmu Hukum, Sosial, Dan Humaniora*, 2(11), 1035-1045. <https://doi.org/http://jurnal.kolibi.org/index.php/kultura>
- Suryawan, I. K. A. E., Sugiarta, I. N. G., & Sutarna, I. N. (2021). Pertanggungjawaban Pidana Terhadap Pencemaran Lingkungan Di Indonesia. *Jurnal Interpretasi Hukum*, 2(1), 59-63. <https://doi.org/10.22225/Juinhum.2.1.3092.59-63>
- Tampubolon, D. H., Haryono, W. S., & Saefullah. (2025). Penegakan Hukum Pidana Lingkungan Terhadap Pencemaran Limbah B3 Peleburan Besi Baja. *Yustisi*, 12(2), 334-352.
- Undang-Undang RI. (2009). *Undang-Undang Republik Indonesia Nomor 32 Tahun 2009 Tentang Perlindungan Dan Pengelolaan Lingkungan Hidup*.
- Yunita, E., Suhandi, R. W. W., Alawiyah, S., & Triadi, I. (2024). Analisis Penegakan Hukum Pidana Bagi Pelaku Pencemaran Lingkungan Hidup (Undang-Undang Nomor 32 Tahun 2009 Tentang Pengelolaan Dan Perlindungan Lingkungan Hidup). *Demokrasi: Jurnal Riset Ilmu Hukum, Sosial Dan Politik*, 1(3), 102-120. <https://doi.org/10.62383/Demokrasi.V1i3.257>
- Zulfikar, A. A. (2023). Pengaruh Penegakan Hukum Pidana Dan Dampaknya Terhadap Wilayah Pertambangan Di Indonesia. *Keadilan : Jurnal Fakultas Hukum Universitas Tulang Bawang*, 21(2), 75-90. <https://doi.org/10.37090/Keadilan.V21i2.1045>