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Legal Counseling on Problems in Hazardous and Toxic Waste Management and Strategies to Overcome Environmental Pollution

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Abstract

Introduction: *Hazardous and Toxic Materials (B3) waste management is a crucial issue in efforts to protect the environment and public health. The main problems include low compliance with regulations, waste management that does not meet standards, lack of public awareness, weak supervision, and lack of adequate processing technology.*
Purposes of The Devotion: *This legal counseling aims to increase the understanding and commitment of all parties in managing B3 waste responsibly, so as to prevent environmental pollution and protect public health.*
Method of The Devotion: *Legal counseling activities are carried out by the panel discussion method where the presenter delivers the material in turn then continues with a question and answer between the speaker and the community.*
Results Main Findings of the Devotion: *The results of the study indicate that the socialization carried out by the local government is still limited, both in terms of frequency and reach of participants. The community in Gadingan Village still has a low understanding of the importance of environmental protection based on the law. Therefore, it is necessary to increase the intensity of socialization and more active community involvement in environmental programs. This study is expected to contribute to efforts to increase community understanding of the importance of environmental management and protection in accordance with the provisions in force in Law Number 32 of 2009.*

Keywords: Environmental Pollution Legal Complianc; Supervision; Regulation.

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INTRODUCTION

The environment is an interrelated system that guarantees balance, control, and productivity of the environment, and states the quality of the environment which is the source of life and welfare for humans and other living beings. Industrial development is a field of activity that has a mission to improve the standard of living and welfare of the community. Industrialization itself is inseparable from efforts to improve the quality of human resources and the use of natural resources. As the number of industries in this region increases, environmental issues are also becoming important and require greater attention.[1] Indonesia is a developing country in the economic field, where entrepreneurs can start a business and develop their business successfully. Examples of environmental problems and damage caused by human factors include large-scale human businesses and activities, such

[1] Putri, H. H., & Syafira, F. T. S. "Pengelolaan Limbah Industri Kimia untuk Keberlanjutan Lingkungan di Indonesia". *Jurnal Ilmiah Wahana Pendidikan*, 10 no. 12 (2024): 290-295

as the construction of tofu factories and the construction of toll roads, as well as small-scale human businesses and activities, such as household laundry. In daily life, especially in student and household garbage fires, the large amount of factory waste, especially tofu factory waste, can cause problems and environmental damage, especially seawater pollution. The construction of the toll road kills the surrounding vegetation, erodes it, and increases global warming. The same applies to small businesses and household laundry activities.[2]

The increase in industrialization has an impact on environmental pollution along with the increase in the amount and quality of waste (liquid, solid, gas) that is processed. Among the waste produced from industrial activities is hazardous and toxic material waste called B3 waste. One of the sources of environmental pollution is B3 industrial waste. Industrial B3 waste that is disposed of directly into the environment endangers the environment and the safety of humans and other living beings. B3 Pollution processes caused by waste (especially industry) can occur. directly or indirectly. Direct processes, namely pollutants, have a direct impact on poisoning, which can affect the health of humans, animals and plants, as well as affect the ecological balance of water, air and soil. Many chemicals now react with water and soil, an indirect process that causes pollution.[3]

Currently, almost every industry produces B3 waste. B3 waste produced by industry includes heavy metals, cyanide, pesticides, paints and dyes, oils, solvents, and other harmful chemicals. Improper waste disposal causes serious environmental damage. Industrial B3 waste also poses a risk to human health. The poor history of B3 waste management in developed countries also provides an important lesson, showing that rapid economic growth requires proper waste management. Based on the results of monitoring B3 waste management in 2019 released by the Directorate General of Waste, B3 Waste, and Toxic Materials Management, the total number of B3 waste from industrial activities in Indonesia is 44,939. 612.36 tons. Of these, 44,883,734.20 tons (99.80%) are managed waste and 285. 410.30 tonnes (0.2%) is unmanaged waste. Uncontrolled B3 waste is B3 waste that is processed without a permit (open landfill), transferred to a third party without a permit, and disposed of without a permit (*open landfill*).[4]

In the future, the problem of waste management, especially industrial B3 waste, will become more serious so that proper handling is needed. Hazardous industrial waste has become one of the main problems in the industrial era. B3 exposure from industrial waste is known to have a serious impact on human health, including the outbreak of Minamata disease and Itai-itai disease in Japan. Industrial B3 waste not only has a major impact on human health, but also damages the ecological balance of water, air, and soil. Given these risks, all waste management plans must be fully implemented. This means that waste must be processed from upstream to downstream. Otherwise, environmental pollution can be fatal.

Gadingan Village, Mojolaban District, Sukoharjo Regency, Central Java Province is located along the banks of the Bengawan Solo river which is directly adjacent to the city of Surakarta, Central Java. The dissemination of population data in Gadingan Village,

[2] Kaunang, C. K. P. G. "Eksistensi Analisis Mengenai Dampak Lingkungan Terhadap Suatu Usaha Atau Kegiatan Menurut Peraturan Pemerintah Nomor 22 Tahun", *Lex Crimen*, 12, no. 1 (2023).

[3] Munajat Danusaputro, *Hukum Lingkungan*, (Jakarta: Binacipta, 1981), p. 67

[4] Nursabrina, A., Joko, T., & Septiani, O. (2021). Kondisi Pengelolaan Limbah B3 Industri Di Indonesia Dan Potensi Dampaknya: Studi Literatur. *Jurnal Riset Kesehatan* Poltekkes, 13 no. 1 (2021): 80-90.

Mojolaban District, Sukoharjo Regency, Central Java Province is approximately 3,000 people. The existence of the people of Gadingan Village which is one of the densely populated areas and surrounded by industrial factories.

Therefore, related to the Tri dharma of higher education as a duty of responsibility for community service, the faculty of law of Slamet Riyadi University Surakarta carries out legal counseling, this is considered important to be provided with legal counseling related to the handling of industrial waste, especially B3 waste. The urgency of processing and managing industrial B3 waste requires the government to establish regulations for the management of hazardous and toxic waste in a comprehensive, integrated, and sustainable manner. mandatory B3 waste disposal activities where the processing and management of industrial B3 waste requires the government to establish regulations for the management of hazardous and toxic waste in a comprehensive, integrated, and sustainable manner. must carry out B3 waste disposal activities which include reduction, storage, collection, transportation, recycling, processing, and/or stockpiling[5] B3 If the waste producer is unable to process the waste himself, he or she can hand over the waste to a third party. So that B3 waste processing companies that process the waste must comply with regulations and competencies including reduction, storage, collection, transportation, recycling, processing, and/or landfilling. B3 If the waste producer is unable to process the waste himself, he or she can hand over the waste to a third party. The company, the B3 waste processor that processes the waste must comply with regulations and competencies.

METHOD OF THE DEVOTION

Legal counseling carried out as the Tri Darma of higher education and the fulfillment of the work program of the Faculty of Law of Slamet Riyadi University Surakarta which is located in Gadingan Village, Mojolaban District, Sukoharjo Regency, Central Java Province. Counseling was carried out by a direct delivery method delivered by each speaker consisting of three speakers. Each speaker was given the opportunity to deliver their material related to the rule of law, B3 waste management, and the role of the community in managing waste. After the presentation was made, the public was given the opportunity to ask questions related to the material presented.

RESULTS AND DISCUSSION

Hazardous and Toxic Material Waste (B3) is waste produced by production activities of both type, concentration and quantity, containing hazardous and toxic materials that can pollute the environment and pose health risks. B3 waste can be interpreted as a waste or waste whose nature and concentration contain toxic and dangerous substances so that directly or indirectly they can damage the environment, interfere with health, and threaten the survival of humans and other organisms.

B3 waste can be generated from industrial activities and household activities. B3 waste has very different properties and characteristics from conventional waste, especially in its nature which does not change frequently. The instability of such characteristics is influenced by many external factors, such as temperature, pressure or friction, and the mixing of B3 waste with different materials. It can activate the activity of B3 materials such as explosion, flammability, or hepatotoxicity. With the continued growth of industrial diversity, B3

[5] Setiyono, S. "Dasar Hukum Pengelolaan Limbah B3". *Jurnal Teknologi Lingkungan BPPT*, 2 no. 1 (2001): 144-938.

industrial waste is increasing every year around the world. The increase in this industry certainly brings negative impacts, one of which is that the waste piles produced are also increasing. [6] Today, industrial waste treatment requires the attention of various stakeholders, including governments, companies, and local communities. Industrial waste treatment is a problem that needs to be solved quickly and quickly, especially if the waste contains certain compounds (for example, harmful or toxic compounds). Pollution and environmental destruction are closely related to human development activities such as industrial activities. These wastes include hazardous wastes such as radioactive materials and heavy metals. B3 industrial waste must be disposed of properly and appropriately, and if not done, it can have a negative impact on the environment and human health. As citizens, people have rights and responsibilities.[7]

Environment Article 28H of the 1945 Constitution: "Everyone has the right to physical and spiritual welfare, the right to a good and healthy livelihood, and the right to health services, especially the right to environmental protection and management." environment as stipulated in Law Number 32 of 2009. Article 65 regulates the right to a good and healthy environment: 1) Everyone has the right to a good and healthy environment as part of human rights; 2) Everyone has the right to environmental education, access to information, access to participation, and access to justice for the realization of their rights. A good and healthy living environment; 3) Everyone has the right to submit proposals and/or objections to business plans and/or activities that are expected to have an impact on the environment; 4) Everyone has the right to play a role in environmental protection and management in accordance with laws and regulations. Integrated B3 Industrial Waste Management can be an important milestone in reducing pollution and environmental damage. B3 pollution incidents in the industry include various types of common violations. Examples include: a) Manufacturers (companies) that dispose of B3 waste themselves; b) Transfer to a non-interested party, and c) Incineration of waste using equipment that does not meet technical standards. The Requirements are in accordance with the Requirements; d) B3 waste is not necessarily recycled at the time of recycling and waste. Based on what is described above, there are several activities that stand out, especially during panel sessions or questions and answers in legal counseling, namely related to environmental pollution carried out by large industries.

Figure 1. Photo of the Legal Counseling Question and Answer Session of Slamet Riyadi University Surakarta

[6] Putri, H. H., & Syafira, F. T. S. (2024). "Pengelolaan Limbah Industri Kimia untuk Keberlanjutan Lingkungan di Indonesia". *Op. Cit.*
[7] Setiyono, S. "Dasar Hukum Pengelolaan Limbah B3". *Op. Cit.*

It is important to monitor compliance with industrial waste disposal regulations and impose sanctions in case of non-compliance. Industrial waste should be treated from the beginning using waste treatment technology and according to quality standards to create clean water sources that are environmentally friendly. If pollution from industrial B3 waste continues to be allowed, new environmental problems will arise. Exposure to B3 to industrial waste has been shown to have a serious impact on public health, including Minamata and Itai-Itai diseases in Japan. Minamata disease caused by exposure to mercury (Hg) can cause damage to the central nervous system so that sufferers cannot coordinate the movements of their limbs. Meanwhile, Itai-Itai disease occurs when metal impurities (Cd) that accumulate in the liver and kidneys damage each organ. Therefore, it is very important that industrial waste is treated in a standard manner before being discharged into the environment.[8]

Hazardous wastes affect health and harm society in two ways: directly (through explosions, fires, reagents, and corrosive substances) and indirectly (through acute and chronic toxicity). B3 waste enters the environment through the medium of water, soil, air, biota and affects the environment continuously and intermittently, gradually and instantaneously, regularly or irregularly. Hazardous waste poisons living organisms through organic phenomena and releases potential parts of living organisms (plants, animals, humans). The impact of industrial B3 waste on health and the environment varies depending on the quantity, characteristics, and management strategy. From an environmental perspective, industrialization activities and integrated waste management are currently very important because they have a positive impact on the health of industrialization itself. As well as environmental sustainability is protected from the risk of pollution.[9]

CONCLUSION

Improper management of Hazardous and Toxic Materials (B3) waste is one of the main causes of environmental pollution that endangers human health and ecosystems. Legal Counseling on Problems in the Management of Hazardous and Toxic Waste (B3) and Strategies to Overcome Environmental Pollution which was carried out in Gadingan Village, Mojolaban District, Sukoharjo Regency, Central Java Province, which was initiated by the Faculty of Law, Slamet Riyadi University, it is hoped that there will be an increase in awareness and understanding of the importance of Hazardous and Toxic Waste Management (B3) and how to Overcome Environmental Pollution. This activity began with the stage of identifying problems that occurred in the community which was carried out by students of the Faculty of Law in Gadingan Village, Mojolaban District, who then designed a Legal Counseling activity.

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[8] Nursabrina, A., Joko, T., & Septiani, O. "Kondisi Pengelolaan Limbah B3 Industri Di Indonesia Dan Potensi Dampaknya: Studi Literatur". *Op. Cit.*

[9] Nindy Callista Elvania. *Manajemen dan Pengelolaan Limbah*, (Bandung: Widina Media Utama, 2022).

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