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# The Future of Mine Waste: From the Myth of Zero Tailings to Real Solutions

Analysis of "Tailings Reduction Strategies:  
Fostering a Paradigm Shift in the Mining Sector"

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Recently, some mining companies have made the claim that their operations are “zero tailings” or “tailings free” or have “green tailings,” when in fact, there is no waste-free modern mining.

Research performed in 2026 by AECOM, a leading global company specialized in environmental and infrastructure engineering, looked into the concept of “Zero Tailings,” the technical and economic feasibility of completely eliminating the need for tailings storage facilities, and what conditions would be necessary to achieve this goal.

Their report “Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector” exposes the gap between public relations messaging from mining companies and reality. The research analyzes a range of initiatives that intend to reduce tailings, including strategies for tailings reuse and minimization, and repurposing of tailings for other industrial sectors, but finds, “there is no evidence of operating mines that have eliminated tailings generation across all stages of production.”<sup>1</sup>

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<sup>1</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 5. Available at: <http://earthworks.org/zero-tailings>

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## 1. Negative spotlight on tailings

Beginning in 2014, a series of catastrophic failures at mine waste facilities around the world brought the mining industry's waste management practices under scrutiny. Particularly, the 2019 failure of the B1 tailings dam at the Córrego do Feijão mine in Brumadinho, Brazil, which killed 272 people and impacted the livelihoods of over 3 million people in the downstream watershed, showed governments, investors, international agencies, and other stakeholders that tailings management could not continue as usual.

The mass destruction, the tragic loss of life, and the preventable nature of the failure laid bare the risks and dangers of tailings as well as the negligence and gaps in oversight from the mining industry. The Brumadinho failure was a catalyst for investors in mining companies and the United Nations to take action and bring the mining industry to the table to negotiate the first standalone global tailings standard. The Global Industry Standard on Tailings Management (GISTM) was a first step towards improving tailings safety, but it did not go far enough to rein in the most dangerous practices of the mining industry<sup>2</sup>.

After Brumadinho, the international press also began to call attention to tailings risks and impacts. Reuters and other international outlets ran major stories<sup>3</sup>. Following negative media attention and increased scrutiny from investors and other stakeholders, some mining companies began to shift their vocabulary to attempt to avoid the negative connotations associated with tailings dams. The term "Zero Tailings" began to appear in corporate communications.

## 2. Modern mining is waste management

Mining creates huge amounts of toxic and non-toxic waste that remains permanently in the environment.

There are three components that are excavated and removed from the earth during mining: waste rock, tailings, and the final product. Waste rock is the material on top of the ore body that is removed and discarded. After extraction, the ore undergoes processing, during which the metal or mineral that will be sold is separated from the remaining material that has no economic interest. Tailings are the waste left over after processing the ore, usually containing things like water, finely ground rock, chemicals, metals, and minerals, many of which can be toxic and dangerous to human health and the environment. And, the final product is what is sold by the mining company.

Globally, mining creates about 13 billion tons of tailings each year, with total volumes of tailings and waste rock projected to reach 2 trillion tons by 2050<sup>4</sup>. As large mineral deposits are depleted, ore grades decline, which means more waste is created during the mining process<sup>5</sup>. For example, for every metric ton of gold produced, the modern mine creates 3 million tons of waste, on average<sup>6</sup>.

According to AECOM, "As ore grades decline and mining expands into new frontiers, the volume, toxicity, and management complexity of tailings are expected to increase."<sup>7</sup> This creates risks for communities, ecosystems, and the climate.

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<sup>2</sup>Earthworks (2020) Scorecard: The Global Industry Standard on Tailings Management vs Safety First Guidelines. Earthworks. Available at: <https://earthworks.org/wp-content/uploads/2021/09/Global-Tailings-Scorecard-Final.pdf>

<sup>3</sup>Warburton, M. et al (2020) The Looming Risk of Tailings Dams. Reuters. Available at: <https://www.reuters.com/graphics/MINING-TAILINGS1/0100B4572K1/>

<sup>4</sup>Vivoda, V., Loginova, J., Kemp, D. (2025) Geopolitics and mine waste: An overview and future research directions, *Journal of Environmental Management*, Volume 385, <https://www.sciencedirect.com/science/article/pii/S030147972501521X?via%3Dihub>

<sup>5</sup>Calvo, G.; Mudd, G.; Valero, A.; Valero, A. (2016) Decreasing Ore Grades in Global Metallic Mining: A Theoretical Issue or a Global Reality? *Resources*, 5, 36. <https://doi.org/10.3390/resources5040036>

<sup>6</sup>Nassar, N.T., Lederer G.W., Brainard, J.L., Padilla, A. J., Lessard, J.D. (2022) Rock-to-Metal Ratio: A Foundational Metric for Understanding Mine Wastes *Environmental Science & Technology* 56 (10), <https://pubs.acs.org/doi/10.1021/acs.est.1c07875>

<sup>7</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 37. Available at: <http://earthworks.org/zero-tailings>

### 3. Tailings are currently unavoidable

The report identifies cases where mining companies have made progress to significantly reduce and repurpose tailings. However, AECOM concludes that “for most operations, “Zero Tailings” remains a theoretical horizon rather than an attainable short-term objective,”<sup>8</sup> and there is no evidence of operating mines that have eliminated tailings generation across all stages of production. Even the ICMM, the mining trade industry organization, has mentioned that the generation of tailings is an unavoidable aspect of mining and metals processing, and is expected to continue for the foreseeable future.<sup>9</sup>

Despite this reality, some mining companies still evoke the idea of “Zero tailings” in their corporate communications. They may use alternate, but similar terms, to convey the same ideas like “tailings free,” “zero waste,” “low waste operations,” or “green mining.”<sup>10</sup> In many cases, these terms should be understood as a form of greenwashing that overstate the feasibility and downplay the technical complexity of their tailings management systems. According to AECOM, “they function more as communication instruments than as descriptions of measurable and verifiable operational outcomes.”<sup>11</sup>

Eliminating tailings from mining would require an integrated approach. This could mean:

- Improved technology for targeted ore extraction and sorting that produces less waste;
- The full utilization of the extracted material including metals or minerals considered secondary or of lower commercial value;<sup>12</sup>
- Reusing or repurposing the tailings for alternative applications, like transforming them into products used in cement manufacturing, paving, ceramics, abrasives, fertilizers, and industrial acids;<sup>13</sup> and/or
- Remining legacy tailings deposits that may contain significant concentrations of metals or minerals that were not previously extracted at the time of original processing.<sup>14</sup>

While remining has the potential to meet some of the demand for transition minerals, more work is still needed to ensure remining is safe and sustainable for people, communities, and the planet. Before remining can be regarded as a viable option, assessments of the risks in extracting minerals from mine waste must be conducted.<sup>15</sup> Remining without the Free, Prior and Informed Consent of Indigenous Peoples or community engagement risks continuing or recreating the environmental injustices for communities already impacted by mining. According to AECOM, “even the most viable re-mining projects for critical mineral tailings continue to generate residual waste, confirming that no current technology has achieved 100% mineral recovery.”<sup>16</sup>

Additionally, the rehandling of wet, slurried tailings in dammed impoundments can lead to tailings dam failures. This was the case of the 2022 Jagersfontein failure in South Africa at a remining operation for a diamond mine which killed five people, and the Baia Mare failure in Romania in 2000, where silver and gold were being recovered.<sup>17</sup>

Another critical piece of reducing tailings risks involves improving tailings disposal methods and locations. The amount of water in a tailings facility can directly impact its physical stability. Filtered tailings, which require reducing the water content of the tailings before depositing them in the tailings facility, are considered industry best practice for a number of reasons, including the reduced likelihood of failure and the reduced consequences of a potential failure. Filtered tailings facilities make closing a site easier when mining and processing ends. Also, backfilling tailings or waste rock into mine pits or underground cavities eliminates or reduces the need for aboveground storage facilities.<sup>18</sup>

<sup>8</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 71. Available at: <http://earthworks.org/zero-tailings>

<sup>9</sup>International Council on Mining and Metals (ICMM). (2024). Tailings Reduction Roadmap. <https://www.icmm.com/tailings-reduction-roadmap>.

<sup>10</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 26. Available at: <http://earthworks.org/zero-tailings>

<sup>11</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 27. Available at: <http://earthworks.org/zero-tailings>

<sup>12</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 50. Available at: <http://earthworks.org/zero-tailings>

<sup>13</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 50. Available at: <http://earthworks.org/zero-tailings>

<sup>14</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 50. Available at: <http://earthworks.org/zero-tailings>

<sup>15</sup>Maest, A.S. (2023) Remining for Renewable Energy Metals: A Review of Characterization Needs, Resource Estimates, and Potential Environmental Effects. Minerals 13, 1454. <https://earthworks.org/resources/remining-for-the-energy-transition/>

<sup>16</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 43. Available at: <http://earthworks.org/zero-tailings>

<sup>17</sup>Bega, Sheree. (2022, Sept 22) Cleaning up an 'ecological tragedy': Jagersfontein Developments did not have a dam safety licence Mail and Guardian. <https://mg.co.za/environment/2022-09-22-cleaning-up-an-ecological-tragedy-jagersfontein-developments-did-not-have-a-dam-safety-licence/>; Fondazione Stava The Baia Mare tailings dam failure, 2000 Fondazione Stava <https://www.stava1985.it/tailings-spill-accident-in-baia-mare-romania-2000/?lang=en>

<sup>18</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 50. Available at: <http://earthworks.org/zero-tailings>



Figure 1: Minerals Potential in relation to "Zero Tailings".



## 4. Barriers to reducing and eliminating tailings

Certain minerals have a high potential for tailings reduction or elimination. These deposits benefit from simpler mineralogy, tailings that are able to be repurposed, processing techniques where material losses are minimal, and viable markets for by-products<sup>19</sup>. A key consideration in advancing toward tailings reduction or elimination is distinguishing between tailings that can be repurposed and those requiring secure, long-term containment.

Conversely, some ore deposits are particularly challenging for waste elimination.<sup>20</sup> For example, tailings from deposits with sulphide minerals are more difficult to transform, repurpose, reuse, or dispose of safely, as compared to non-sulfidic ores. However, if tailings are reduced or could be eliminated this can diminish legacy impacts at the mine site and improve safety at mine closure. Similarly, tailings that contain radioactive materials create a barrier for reuse or repurposing. These ore deposits include copper deposits, high-grade underground gold deposits, sulphide ore deposits, and rare earth elements from alkaline rocks.<sup>21</sup>

Additionally, low grade ore deposits with complex mineralogy make eliminating waste technologically and economically unfeasible with the technology available today. Lower grade ores mean more waste, and if the other byproducts are also not economically viable, eliminating the waste altogether becomes much more difficult. The report identifies lateritic nickel-cobalt deposits that rely on High Pressure Acid Leaching (HPAL) processing technology, nickel cobalt deposits, and complex zinc ores as some of the most challenging low grade deposits for waste elimination. In Indonesia, tailings from HPAL nickel-cobalt facilities present health, safety, and environmental risks that are tied to EV battery grade nickel products.<sup>22</sup> Regulatory safeguards have failed to keep pace with the rapid scale-up and new waste management technologies.

Direct Lithium Extraction is often touted as a more environmentally sustainable alternative without tailings to traditional lithium evaporation or mining. According to AECOM, DLE and DLE with ReInjection, “both generate waste products including residual brines, saturated resins or adsorbents, and sludge.”<sup>23</sup> In California, DLE proposals include the production of hazardous byproducts harmful to human health. The concentrations of heavy metals such as arsenic, lead, and cadmium are of particular concern, as well as any naturally occurring radioactive materials. The impacts of improper waste disposal are one of the worries of frontline communities, who have raised concerns about potential impacts to soil, air, and water quality at the Salton Sea.<sup>24</sup>

Tailings reuse, recycling, or reprocessing projects may introduce new environmental risks and impacts that must be carefully assessed, mitigated, managed, and monitored throughout the project’s lifecycle. Projects to reduce and eliminate tailings must take into account environmental considerations like reducing water consumption, minimizing land disturbance, and mitigating long-term ecological risks, to ensure that the benefits outweigh the risks and that the adopted solutions are both environmentally safe and socially acceptable.

For deposits where tailings reduction or elimination could be technologically or environmentally feasible, economic considerations can be a barrier. According to AECOM, the “initial capital expenditure (CAPEX) for implementing advanced processing technologies and infrastructure is often substantial, while operating costs (OPEX) associated with energy consumption, water management, and specialized treatment can significantly impact profitability.”<sup>25</sup> The availability of markets for repurposed tailings products may not be near the mine site, making transportation and marketing costs an issue. For example, if a mine on an island in the Indian Ocean can reprocess its tailings into construction materials, but the market for those materials is hundreds or thousands of kilometers away, the transportation costs may outweigh the economic opportunities to sell those new materials.

<sup>19</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 76. Available at: <http://earthworks.org/zero-tailings>

<sup>20</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 45. Available at: <http://earthworks.org/zero-tailings>

<sup>21</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 46. Available at: <http://earthworks.org/zero-tailings>

<sup>22</sup>Moore, E., J. Morrill, v. Ncube, P. Personius, A. Sangadji (2026) “Summary, Analysis, and Recommendations: Filtered Tailings in Indonesia The Catastrophic Failure of a Disruptive Technology” Earthworks. <http://earthworks.org/tailings-indonesia>

<sup>23</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 38. Available at: <http://earthworks.org/zero-tailings>

<sup>24</sup>Earthworks, Comité Civico del Valle (2023, Nov) “Environmental Justice In California’s Lithium Valley” Earthworks. <https://earthworks.org/resources/lithium-valley/>

<sup>25</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 60. Available at: <http://earthworks.org/zero-tailings>

However, the externalized costs of tailings mismanagement can outweigh costs associated with investing in tailings reduction or elimination. Environmental remediation, fines, penalties and legal settlements, and reputation risks from tailings pollution or failures can cost mining companies millions and up to billions of dollars. Governments and regulators have a role to play in implementing policies that incentivize tailings reduction and reuse so as to make projects more environmentally viable and reduce externalized costs.

## 5. Improving tailings management must be more than greenwashing

Increased risks from tailings are one of the clearest examples of the impacts of scaling up mining for the energy transition, military technology, or data centers: massive toxic dams that put communities, the environment, and workers at risk. Beyond inflated promises, identifying solutions to reduce, repurpose, recycle and eventually eliminate tailings is a critically important issue. Tailings mismanagement can lead to dire and long-lasting impacts on communities, the environment, worker safety, local economies, and Indigenous Peoples' Rights. And because of the immense quantities of water used in ore processing, tailings and overuse and pollution of water resources are, in most mining operations, interconnected.

Globally, it is imperative we find ways to reduce the amount of tailings produced to avoid the long-term liability of mine waste sites and their social and environmental impacts. Reducing primary demand for raw materials is the most direct way to accomplish this. At its core, a concept like "Zero Tailings" is rooted in the principles of a circular economy, seeking to minimize and transform waste in order to reduce resource extraction.

However, AECOM found that for most operations, "Zero Tailings" remains a theoretical horizon rather than an attainable short-term objective.<sup>26</sup> If tailings reduction were solely a matter of economic feasibility, the mining sector would have already adopted these practices on a large scale. To begin moving towards reducing and eliminating tailings at scale, it is essential to establish new incentives for waste management, foster sector-wide commitment, and promote long-term strategic planning.<sup>27</sup>

There also must be shifts in the vision and priorities of not only mining companies, but regulators, investors and downstream purchasers of mined materials. Solutions will not come from mining companies alone, and as this report shows, mining companies need to be held accountable by those with the power to influence their decisions. Greenwashing undermines trust in the mining industry and masks the real risks associated with tailings.

A coordinated effort that includes governments, research institutions, civil society and impacted communities, mining companies and supply chain actors will be essential to move towards significant changes.<sup>28</sup> There must be investments made to encourage innovation and new technologies. Through policy, regulations, investment decisions, or purchasing power, governments and other stakeholders should incentivize safer and more sustainable mine waste management solutions. The initial and limited success and the progress already made by companies to reduce and repurpose waste should be incentivized and built upon.

## 6. Solutions

Given that complete tailings elimination is still not feasible nor practiced anywhere in the world, the mining industry and consumers of metals and minerals must implement a waste mitigation hierarchy to reduce the risks and impacts of tailings. This begins at a societal level with reducing the demand for metals and minerals by shifting away from disposable consumption and overconsumption, especially in the Global North.

Next we must reduce the demand for new mines or the expansion of existing mines by prioritizing and improving circular economy solutions for end products that reduce the overall demand for primary metals such as reuse, reduction, recycling, and design for disassembly.<sup>29</sup> In cases where mining must continue, the creation of tailings should be minimized as much as possible and tailings should be safely reused, reprocessed and repurposed, as discussed in AECOM's research.

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<sup>26</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 71. Available at: <http://earthworks.org/zero-tailings>

<sup>27</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 26. Available at: <http://earthworks.org/zero-tailings>

<sup>28</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p. 77. Available at: <http://earthworks.org/zero-tailings>

<sup>29</sup>Earthworks (2022, Sept) Circular Minerals Economy Earthworks <https://earthworks.org/wp-content/uploads/2022/09/Circular-Minerals-Economy-9-2022-final.pdf>



When tailings must be disposed of at the mine site, mining companies must prioritize the safety and stability of facilities by maximizing the backfilling of tailings into exhausted open pits or underground mine workings, and filtering tailings to reduce their water content. Tailings should never be discharged into rivers, streams, lakes, oceans, or other waterbodies.

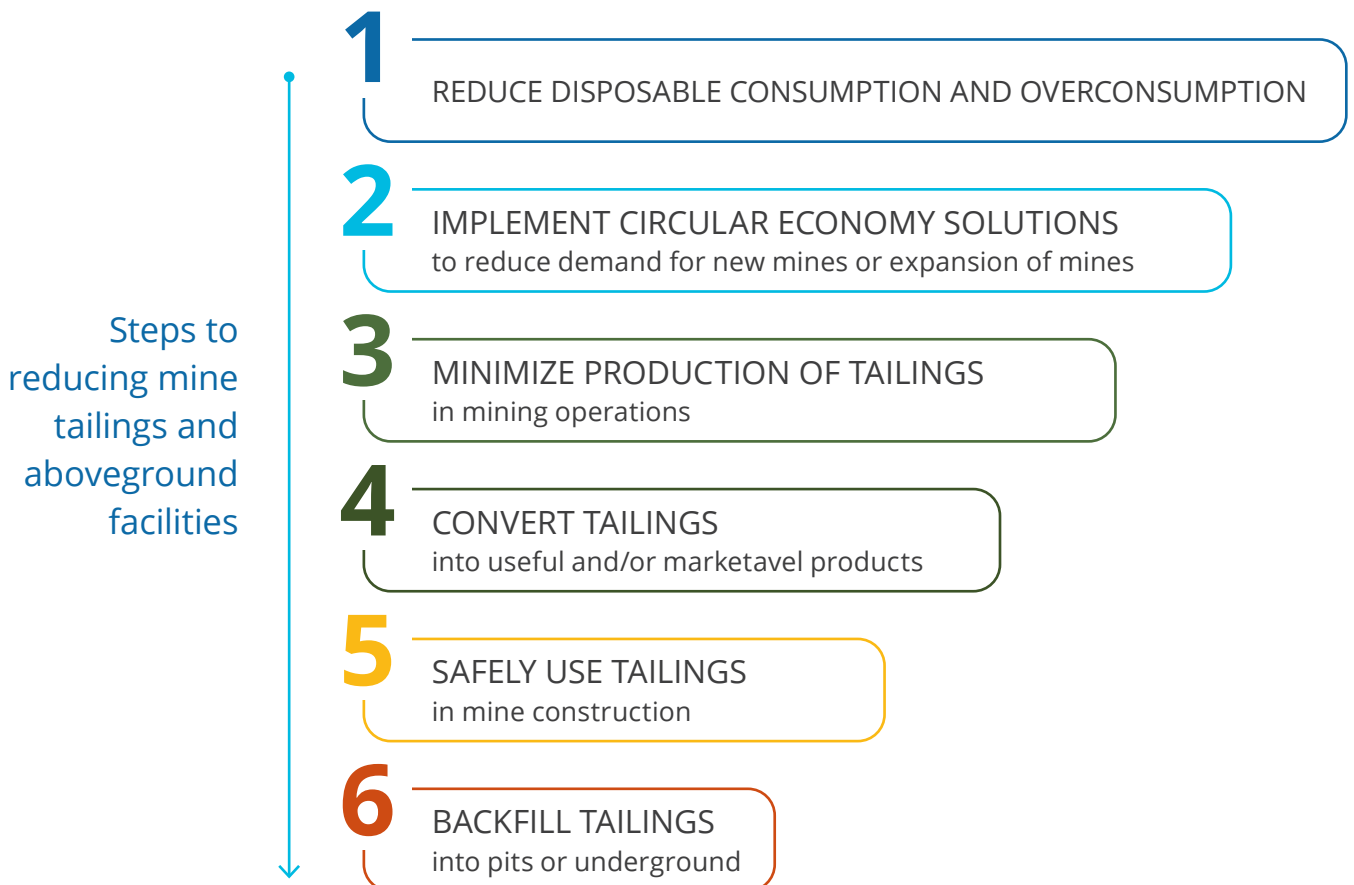


Figure 2: Waste mitigation hierarchy

Safety First: Guidelines for Responsible Mine Tailings Management are a set of 17 guidelines endorsed by 164 scientists, frontline community groups, Tribal governments and civil society organizations from 32 countries that outline the urgent steps needed to improve the safer storage of mine waste, when tailings cannot be eliminated.<sup>30</sup> Safety must be the primary consideration in tailings facilities and dam design, construction, operation, closure and post-closure, and the primacy of safety must be independently verified. Cost cannot be allowed to take precedence. Tailings storage facilities must be built and managed only with meaningful community engagement, respecting human rights and the self-determination of Indigenous Peoples, including their right to Free, Prior and Informed Consent.

When mining companies utilize methods to reduce or repurpose waste, they should disclose how much and to what degree they are actually eliminating tailings. Operations that generate any volume of tailings, even if minor or temporary, should never use marketing terms like “Zero Tailings,” which compromise transparency and may lead to future mistrust or accountability issues.

In their report, AECOM proposes reference bands that help assess and communicate progress more transparently and allow for comparison between mining operations.<sup>31</sup> The proposed scale enables companies to position themselves within a spectrum of technological maturity, capable of describing different levels of performance in tailings management, while acknowledging the specificities of each operational context.<sup>32</sup> It includes four distinct reference categories that provide a clear benchmark of project performance in tailings reduction. It also has as a distinction for heap leach facilities, where crushed ore is stacked on lined pads and flushed with chemicals to dissolve and recover target metals. However, heap leach facilities are not a tailing reduction strategy but an alternative extraction method.

- The first category, “Near-Zero Tailings”, refers to operations in which the remaining tailings mass, after processing and environmentally appropriate disposal or reuse, represents a ratio of less than 5%. This concept doesn’t currently exist in practice and will require very specific conditions associated with exceptional ore grades and near complete reintegration of materials.

- The second category, “Highly Reduced Tailings,” encompasses projects producing between 5% and 30% residual mass, emphasizing reuse potential and landform design for site rehabilitation.
- The third category, “Controlled Tailings Management,” covers the range between 30% and 90%, where extraction and processing methods reduce waste generation, but disposal structures such as dams and piles remain necessary.
- The last category, “Conventional Tailings,” classifies traditional operations in which the remaining tailings mass represents over 90% of the total mass, requiring continuous geotechnical monitoring, stringent long-term management, and complete reintegration of materials.<sup>33</sup>

Adopting accurate descriptive terms provides stakeholders such as government, investors, impacted communities, civil society, and downstream purchasers with information that allows them to make informed assessments and decisions, that promotes innovation and continual improvements, and increases transparency in the mining industry.

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<sup>30</sup>Morrill, J., Chambers, D., Emerman, S., Harkinson, R., Kneen, J., Lapointe, U., Maest, A., Milanez, B., Personius, P., Sampat, P., and Turgeon, R. (2022), Safety First: Guidelines for Responsible Mine Tailings Management, Earthworks, MiningWatch Canada and London Mining Network. <https://earthworks.org/resources/safety-first/>

<sup>31</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p.71 . Available at: <http://earthworks.org/zero-tailings>

<sup>32</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p.71 . Available at: <http://earthworks.org/zero-tailings>

<sup>33</sup>Castro, A. et al. (2026) Tailings Reduction Strategies: Fostering a Paradigm Shift in the Mining Sector. AECOM. p.72 . Available at: <http://earthworks.org/zero-tailings>

## 7. Recommendations

### To all stakeholders:

- Challenge the perception of tailings as an inevitable outcome of mining and strengthen collective dialogue around production models that prioritize safety, responsibility, and alignment with the long-term, post-mining use of affected areas.

### For investors and downstream purchasers of metals and minerals:

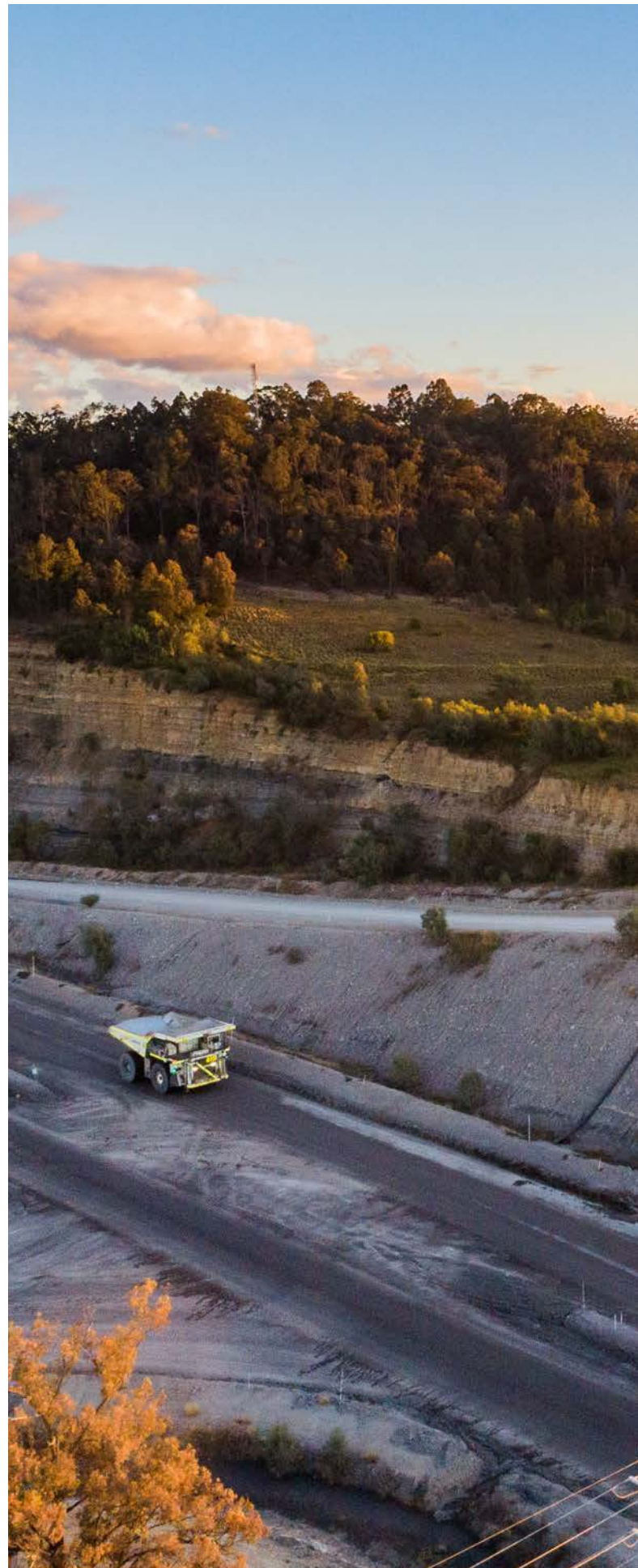
- Prioritize mining initiatives that implement integrated tailings reduction, reuse, and repurposing strategies alongside robust community engagement and environmental stewardship.
- Where mining companies use terms like “Zero Tailings” leverage financial relationships to correct inaccuracies or cut financial ties.

### For companies:

- Reframe “Zero Tailings” as a strategic horizon, not an immediate operational claim.
- Align corporate reporting with quantifiable, auditable performance indicators.
- Position tailings reduction as a core element of corporate sustainability and safety culture.
- Explicitly link tailings reduction to risk management and liability reduction.

### Governments and regulatory authorities:

- Design and implement incentive frameworks that explicitly reward demonstrable reductions in mining-related liabilities, linking verified tailings reduction and long-term risk mitigation to tangible improvements for local communities, Indigenous Peoples and other rightsholders throughout the mining life cycle.
- Create spaces for collaboration and coordinated efforts between governments, research institutions, civil society and impacted communities, mining companies and supply chain actors to identify and promote circular approaches to waste management.



## About Earthworks

Earthworks protects communities and the environment from the adverse impacts of mineral and energy development while promoting sustainable solutions.



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