ENVIRONMENTAL

BIODIVERSITY

GRI 3-3, 304-1,304-1,304-3,304-4/ SASB EM-MM-160a.1, SASB EM-MM-160a.3

The TZ Project also presents potential environmental challenges. To address these, GMIN and Brazauro are deeply committed to preserving biodiversity through robust initiatives. This includes vigilant monitoring of emission of atmospheric gases, forest fires, vegetation supply, waste leaks/spills and animal injuries.

GMIN and Brazauro are firmly committed to biodiversity preservation, utilizing fauna and flora monitoring programs and initiatives for degraded areas recovery as fundamental tools to minimize the operational impact of the Tocantinzinho Project on local species. In 2022, we set a reforestation target of 16 hectares southeast of the pit, surpassing it in 2023 with 18 hectares reforested. Our objective for 2024 is to reach a total of 36 hectares of reforested areas by year-end.

The TZ Project (mine, tailings facilities and processing plant) total surface area is about 485 hectares, and by the end of 2023 we got 285 hectares developed. The project is located within the EPA – Tapajós Environmental Preservation Area, adjacent to the Jamanxim National Park, Crepori and Jamanxim FLONA's (National Forests).

Of the 1,157 species identified, most (1,122) species are categorized as having little concern regarding the risk of extinction. However, three species are critically endangered, six are threatened with extinction, one species is nearly threatened, and 25 species are classified as vulnerable.

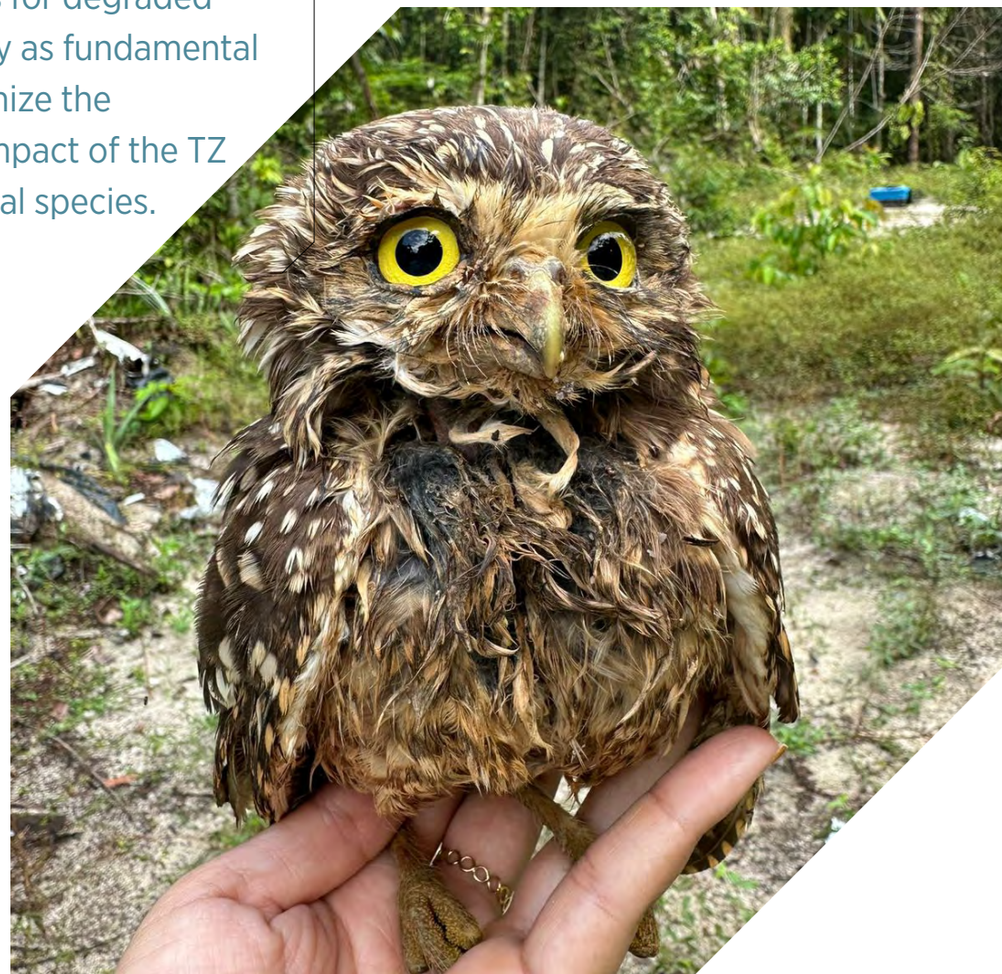
In 2023, we did not establish partnerships with external parties for the protection or restoration of habitat areas, as the organization independently supervised and implemented all restoration and protection measures.

The fauna and flora habitat of TZ Project property covers **6,584 hectares**, boasting a biodiversity value of **1,157 identified species**, including 35 endangered ones.

GMIN and Brazauro are firmly committed to biodiversity preservation, utilizing fauna and flora monitoring programs and initiatives for degraded areas recovery as fundamental tools to minimize the operational impact of the TZ Project on local species.

Note: This watch owl was recently found on the Transmission Line, successfully recovered, and donated to the Mangal das Garças Zoobotanical Park. This park is part of the curatorship of the Emilio Goeldi Museum in Belém.

You can even read an article about this donation: https://agenciapara.com.br/noticia/48276/fauna-do-mangal-ganha-nova-integrante-a-coruja-relogio-clocktilde



WATER AND EFFLUENT MANAGEMENT

GRI 3-3 303-1,303-2,303-3,303-4,303-5

Our interaction with water includes monitoring surface water, underground water and effluent discharge. Through the Water Resources Management Program and associated subprograms including qualitative-quantitative monitoring of surface waters and groundwater, monitoring of drinking water quality, and initiatives for the protection, preservation and restoration of springs, Brazauro aims to mitigate potential impacts on water dynamics and quality, as well soil quality during the operation of TZ.

All monitoring points are hydrographically located in the sub-basins of the Veados Stream, the Teodorão Stream and the Tocantinzinho River. The surface collection point of the project is located upstream of Veados Stream, with the effluent discharge point downstream. Monitoring of surface waters is dynamic and responsive to operational structures, ensuring environmental quality and compliance with relevant legislation.

Established based on the Environmental Control Plan (ECP), the monitoring points facilitate the sampling of parameters indicating the quality of water resources and effluents, considering the impacts of project installation and operation. Monitoring campaigns occur quarterly to ensure ongoing quality assessment and compliance.

Surface water samples were collected from 15 points for hydrochemical analysis, along with groundwater sampling and measurement of groundwater level in 11 environmental monitoring wells and seven supply wells for human consumption. These sampling points are strategically located around main operational structures, effluent release sites, and surface water collection points.

To evaluate the results of quarterly monitoring campaigns, a methodology was employed to verify parameters, inorganic, organic, physical and microbiological that exceeded the maximum values allowed by relevant environmental regulations. This included CONAMA Resolution no. 357/2005, for surface waters, CONAMA Resolution no. 396/2008 for groundwater and, for effluents, CONAMA no. 430/2011 for effluents. Water resources characterization involves qualitative and quantitative monitoring, with compliance assessed based on the number of compliant and non-compliant results in the samples taken.

The main objective is to meet the standards legally established by CONAMA Resolution no. 396/2008 and CONAMA Resolution no. 396/2008 for groundwater. Furthermore, adherence to ORDINANCE GM/MS no. 888 of May 4, 2021, for drinking water quality is essential. The objective includes decision-making and implementing

preventive or corrective actions to maintain and improve the quality of water resource that supplies the Water Treatment Stations (WTS). The goals defined for each water resource program aim to achieve these objectives.

- Create records that can indicate the quality of the raw water that supplies the WTS; and
- Create subsidies to improve adopted treatment systems. In the project we do not have an area with water stress.

Results from 2023 monitoring campaigns revealed non-conformities in certain parameters due to local geological characteristics. These included elevated levels of Dissolved Aluminum, True Color, Dissolved Iron, Total Phosphorus, Oils and Greases, Dissolved Oxygen, pH (in situ), Turbidity, Turbidity (in situ), and Total Zinc. Similarly, groundwater tests showed irregularities in Total Aluminum, Total Lead, Total Iron, Total Manganese, and Total Uranium levels. Additionally, E. Coli levels were found to be higher than the limits set by legislation. This issue was not overlooked; it was addressed with utmost seriousness. The levels were closely monitored and brought within the acceptable range as defined by the relevant regulations.

It is worth mentioning that these non-conformities are the same as the background before the project was installed. In other words, they occur due to characteristics of the region with no impact from the installation.

In addressing the management of effluent disposal impact, efficiency is observed in the treatment process at the sewage treatment plant. Analytical results reveal a significant reduction of 68 % in BOD parameter[1] after the effluent undergoes treatment. This outcome demonstrates the effectiveness of the treatment applied at the station, indicating compliance with the requirements of CONAMA 430/2011.

In 2023, surface water abstraction totaled 57,345m³, with an additional 8,815m³ from underground water abstraction. Accounting a total capture of 66,160m³. The following table presents a detailed breakdown of all categories and funding sources used.

Table 5 | Water capture in all areas m³

Type	2023
Surface water:	57,345
Underground water:	8,815
Detailed data on total water abstraction from each source	
Type	**2023**
Freshwater (total dissolved solids ≤1,000 mg/L)	66,160

[1] Biochemical oxygen demand.

Surface water is captured exclusively at one point, the Veados Stream, while underground collection occurs in two artesian wells, both containing freshwater. Data compilation occurs daily through database and graph feeding, with flow records indicated on the water meters and digital panel on the wells and underground collection.

Quantitative monitoring ensures compliance with authorized daily water consumption values, allowing specific flows for the TCZ 11 Well (55 m³/day), the TCZ 05 Well (24 m³/day), industrial use, and human supply (4,560 m³/day and 240 m³/day, respectively). In terms of water disposal, the recorded amount in 2023 totaled 28,265 m³ of surface water, all of which constitutes fresh water.

Table 6 | Total water discharge in all areas m³

Type	2023
Surface water:	28,265
A breakdown of the total water discharge in all areas (m³)	
Type	**2023**
Freshwater (total dissolved solids ≤1,000 mg/L)	28,265

The quantitative monitoring process involves database feeding and digital panel records at the Sewage Treatment Station, complemented by graphs indicating compliance with the flow values established in the release grant. These include Grant no. 6,545/2023 for effluent dilution up to 240 m³/day after proper treatment at our permanent station, and Grant no. 6293/2022 for effluent dilution up to 61m³/day after treatment at our Exploration Camp station.

In 2023, the organization's total water consumption was 17,955 m³. Quantitative monitoring, facilitated by database feeding and digital panel records at water collections points, ensures 80% of this water is allocated to the industrial use, with the remaining 20% designated for human consumption. Graphs indicate compliance with established flow values in abstraction grants for human consumption.

Quantitative monitoring aligns with daily consumption values granted under authorization grants. For instance, Grant no. 6,776/2023 permits water capture at a flow of 4,560 m³/day for industrial use and 240 m³/day for human supply.

WASTE

GRI 3-3 306-2,306-3,306-4,306-5, SASB EM-MM-150a.7, SASB EM-MM-150a.8

Brazauro is dedicated to continuously raising awareness among employees and service providers through environmental campaigns and dialogues. Furthermore, we prioritize community awareness by engaging in socio-environmental initiatives within the school environment.

An integral tool in waste management is the Solid Waste Management Program (SWMP) of the Tocantinzinho Project. This program focuses on minimizing solid waste generation during the implementation and operation phases, ensuring appropriate management final disposal for each waste type. SWMP is designed to mitigate impacts throughout the project's lifecycle, with updates made as necessary in response to measurable changes.

Currently, a significant portion of waste generated during the project implementation is directed towards recycling, including certain hazardous waste, such as used oil waste (sent for re-refining) and automotive batteries (recycled).

Organic waste undergoes composting, with the resulting compound utilized in area recovery and socio-environmental activities in schools. Sanitary effluents are all treated Sewage Treatment Stations. In 2023, 74% of project-generated waste was recycled, with, 21% providing revenue to Brazauro.

A significant portion of the waste produced (75%) is managed by third-party entities. Disposal activities are closely monitored through an Internal Waste Inventory and registered on the SINIR/IBAMA website. All traceability documentation, including the Final Disposal Certificate issued by the website, is provided.

All companies involved in the waste management process, including generator, transporter, temporary storage and final destination entities, must be duly registered on the website, and are accountable for generating receipts and reports submitted to IBAMA and other Licensing Bodies. The remaining 25% of waste generated by the enterprise consist of Sanitary Effluents, treated in the company's Internal ETP's , with efficiencies validated through monitoring in compliance with CONAMA 430/2011.

In waste management, it is noteworthy that Brazauro began in 2023 with an operating cost of R$ 6,558 per tonne of disposed waste. At the year-end, this cost was reduced to R$ 3,104 per tonne, maintaining an annual average of R$ 3,236 per tonne. The initial cost reflects the limited number of waste recipients at that time, with the inclusion of new companies throughout the year, resulting in a significant portion being converted into revenue.

Waste classification adheres to ABNT NBR 10004/2004 standards. Each waste generated, collected or disposed of is accompanied by a final destination manifest issued directly via the SINIR/IBAMA WEBSITE, with weights confirmed through weighing tickets on a road-style scale. All companies responsible for transportation, temporary storage and final storage possesses the necessary licenses.

Waste generated at the Project is categorized as Hazardous (outpatient, contaminated and used oil) and Non-Hazardous (non-recyclable, organic, paper, metal scrap, glass, plastics and sanitary effluents).

In 2023, 1,215,089 tonnes of Non-hazardous waste and 118,191 tonnes of Hazardous waste, were generated, totaling 1,333,280 tonnes of waste. Of this, 985,590 tonnes were directed to recycling, composting and treatment processes, while 345,350 were incinerated.

Table 7 | Total weight of 'Non-Hazardous' waste in metric tons

Category:	Total weight of waste in metric tonnes:
	2023
Non-Hazardous	1,215,089
Hazardous	118,191

GRI 306-3

Table 8 | Hazardous waste not intended for disposal

Total weight of hazardous waste not intended for disposal in metric tons	
Type of Recovery	Total weight of hazardous waste in metric tons:
	2023
Preparation for reuse:	0
Recycling:	0
Other recovery operations:	55,630
Total weight of non-hazardous waste not intended for disposal in metric tons	
Type of Recovery	Total weight of non-hazardous waste in metric tons:
	2023
Preparation for reuse:	0
Recycling:	256,850
Other recovery operations:	669,110

GRI 306-4

The Solid and Liquid Waste Management Program uses specific results indicators, including generation rates of solid and liquid waste by the volume, type and the variation in waste generation on both monthly and annual scale. This data is derived from the monthly consolidation of the waste inventory.

55,630 metric tonnes of hazardous waste, not slated for disposal, underwent other recovery operations. Additionally, 925,960 metric tons of non-hazardous waste, not earmarked for disposal, were processed, with 256,850 metric tons recycled and 669,110 metric tons subjected to other recovery methods.

Table 9 | Hazardous waste intended for disposal

Total weight of hazardous waste intended for disposal in tonnes	
Disposition Type	Total weight of hazardous waste in tonnes:
	2023
Incineration (with energy recovery)	0
Incineration (without energy recovery)	56,561
Grounding	0
Other recovery operations:	59,630
Total	116,191
Total weight of non-hazardous waste intended for disposal in tonnes	
Disposition Type	Total weight of non-hazardous waste in tonnes:
	2023
Incineration (with energy recovery)	0
Incineration (without energy recovery)	289,129
Grounding	0
Other recovery operations:	925,960
Total	1,215,089

*The values in the table are represented in tonnes (t)

GRI 306-5

CLIMATE CHANGE AND AIR QUALITY

GRI 3-3, 305-1, 305-2, 305-3, 305-4, 305-5, 305-6, 305-7/ SASB EM-MM-120a.1

Aligned with Brazilian Standard NBR 8.969:1985, air quality control encompasses various methods such as repetitive, discrete or continuous measurement, or systematic observation of the air condition. Regular analysis and quality assessment are therefore pivotal to ensure the efficacy of environmental preservation measures. Thus, to secure a favorable assessment of emission control mechanisms, adherence to air quality parameters outlined in CONAMA Resolution no. 491/2018 is imperative, which establishes standards for air quality at ground level.

The Air Quality Management Program at TZ aims to maintain control over atmospheric emissions, ensuring compliance with established standards and prevailing legislation. Furthermore, the program endeavors to satisfy the mandates of regulatory bodies, thereby ensuring operational functionality without causing significant damage to air quality.

Currently, the project monitors air quality at two points, strategically positioned based on prevailing wind direction in the region. One monitoring station is located in the southwest pit, while the other is located at the industrial plant. It should be noted that there are no large urban centers or communities close to the project. With regards to the Total Suspended Particles (TSP) parameters, a single reference limit value is applied. For PM10 (particulate matter with equivalent aerodynamic cutting diameter of 10 µm), air quality standards are considered intermediate (PI-1) adopted after the publication of CONAMA Resolution no. 491/18.

Table 10 | Air Quality Monitoring Points

Point	Reference (Location)	Annual accumulation of measurements (µg/m³)	Total (µg/m³)
QAR-01 (TSP)	Southwest of the pit	1,303	8,767
QAR-02 (TSP)	Industrial plant	7,464	
QAR-01 (PM10)	Southwest of the pit	22,681	38,982
QAR-02 (PM10)	Industrial plant	16,301	

GRI 306-7

In compliance with the requirements established by IBAMA Ordinance no. 85/1996, the TZ Project diligently monitors the emission of black smoke from diesel-powered vehicles and equipment during the installation and operational phases. The objective is to ensure continuous monitoring both during construction and operation periods.

The assessments conducted in 2023 concerning the black smoke control revealed that all diesel-powered vehicles and machinery involved at TZ adhere to emission levels within the confines of legal parameters, thus aligning with the mandates set forth by the regulatory authority.

Committed to reducing Global Greenhouse Gas (GHG) emissions, GMIN conducted a Corporate Greenhouse Gas Inventory. In 2023, Brazauro reported total emissions of 328,490 tCO_{2e}.

Scope 1 emissions, totaling 326,417 tCO_{2e}, were exclusively generated from the operational activities at the TZ site. On the other hand, Scope 2 emissions, amounting to 16 tCO_{2e}, emanated from both the Belo Horizonte and Itaituba Offices. Emissions from the TZ site were not included in Scope 2 calculations, because the site primarily uses energy from its own generators, rather than external electrical systems. It should be clarified that Scope 2 emissions during the construction period were pending the electrification of the transmission line.

Lastly, Scope 3 emissions, totaling 2,072 tCO_{2e}, were accounted for across all locations.

Lastly, Scope 3 emissions, totaling 2,072.44 tCO_{2e}, were accounted for across all locations.

Figure 10 | Total Emissions (tCO_{2e}) per unit

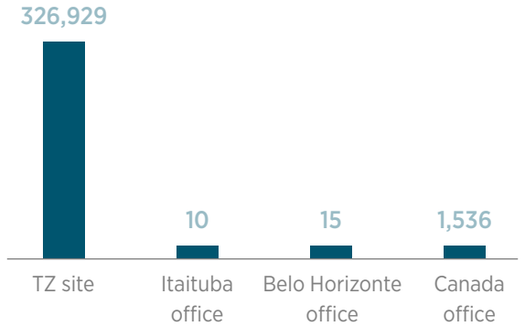


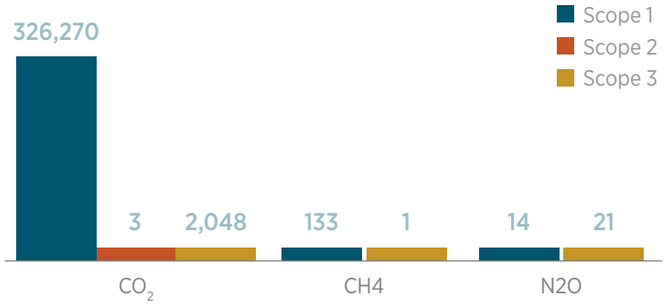
Table 11 | TCO_{2e} Emissions per Scope and Category

SCOPE	CATEGORY	tCO_{2e}	Quota
1	Stationary combustion	175	0.05%
	Mobile combustion	890	0.27%
	Detonations	67	0.02%
	Effluent Treatment and Disposal	130	0.04%
	Change in land use	325,154	98.98%
2	Purchased electricity	3	0.00%
3	Business travel	1,757	0.53%
	Home-to-work emissions	312	0.10%
TOTAL		**328,490**	**100%**

The primary pollutant emitted was carbon dioxide (CO_2), with total emissions amounting to 326,271 tonnes of CO_2 equivalent (tCO_{2e}). Additionally, 187 tonnes of biogenic CO_2 were released due to the use of biofuel in vehicles and machinery. In contrast, reforestation efforts in degraded areas successfully removed 4,097 tonnes of biogenic CO_2.

After carbon dioxide (CO_2), the pollutants emitted in the highest quantities were methane (CH4) and nitrous oxide (N2O). It should be noted that these calculations included only the greenhouse gases regulated by the Kyoto Protocol: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). Figure 11 depicts these emissions, categorized by greenhouse gas and scope. There were no emissions of HFCs, PFCs, or SF6 detected.

Figure 11 | Estimated GHG emissions in tCO_{2e}/annual



Additionally, 187 tonnes of biogenic CO_2 were emitted due to the biofuel component in diesel and gasoline used by vehicles and machinery. In 2023, 4,097 biogenic tCO_2 were sequestered through reforestation efforts in degraded areas. This CO_2 fixation occurs via photosynthesis, which captures carbon in plant biomass, aiding in atmospheric CO_2 sequestration.