



## **MINE TODAY - RESTORE TOMORROW**

Be it by air or land, as one traverses within an area that was once raided for precious minerals, you are bombarded by scenes such as landscape degradation, deforestation, and abandoned mined out pits with polluted/murky waters. These scenes remind us that even though the mining sector plays an important role in the social and economic development of Guyana, the negative environmental impacts within the sector cannot be ignored.

Environmental challenges within the mining sector are caused by a number of bad practices and habits. Poor tailings management (waste water generated during the recovery of the mineral from ore) is deemed as one of the major environmental challenges within Guyana's mining sector among small and medium scale gold miners (IDB, July 2017). Bad tailings practices such as, poor design / construction, lack of water balance control and the general lack of understanding of key features of safe operations are some of the causes of pollution of ground and surface water by toxic substances such as cyanide, mercury, and tailings sediments, etc., within mining areas.

It is clear from the profits derived from mining; the economic demand for the precious minerals will continue to rise. As such, miners should implement good practices for a sustainable future. Some best practices relating to tailings management are as follows:

- ❖ Miners should ensure that there is a tailings storage facility at their mine site to contain for all tailings/effluent discharged. Tailings storage facilities can be in the form of earthen raised dams to provide safe and stable storage of tailings to minimize environmental impacts during operation and post-closure. The storage facility should be located at least 100 meters away from any river or other waterways;
- ❖ Tailings facilities should be designed according to site-specific environmental conditions, ore type, topography, etc., to minimize interactions between tailings and the environment to prevent metal leaching and contamination of surface and ground water and loss to biodiversity;
- ❖ Tailings storage facility design and management plan should be applicable throughout operation up to post-closure, since the environmental impacts are as relevant during the post-closure phase as they are during operation. At the end of the mine cycle, the design of the tailings storage facility should allow the area to gradually attain its physical and chemical stability, allowing ecosystems to thrive;

- ❖ Strict tailings management can mitigate adverse effects on human health, vegetation, wildlife and aquatic life. As such, the storage facility should be frequently inspected for leaks/seepage and overtopping. To further determine the effectiveness of the storage facility, simple turbidity tests can be conducted. One or two persons within the mine site can be given this responsibility.

Gold miners should be reminded that the way tailings are handled can have a long term impact on their mine's economic efficiency, as well as on the ecology sustainability of the area.

## References

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