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Air Emissions Management Standard

Purpose & Objectives

This Global Standard sets the minimum requirements to monitor, assess and manage emissions of common air pollutants to be protective of human health and the environment.

Scope

The scope of this Standard is global. It applies to all directors, officers and employees of Gold Global Mining Corporation ("NC") or any entity that is controlled or managed by NC (together with NC, "Gold Global Mining" or the "Company"). In addition, where explicitly stated in an applicable contract, it may apply to Gold Global Mining's contingent workers, vendors, contractors, and other types of business partners. It is applicable to all sites and in all phases of the mine life cycle including exploration, design, construction, operation and closure.

Content

1. Planning & Design

1.1 Sites shall identify, assess, and comply with applicable laws, regulations, permits, licenses, external standards and other applicable or relevant and appropriate requirements for source air emissions, fugitive dust emissions and ambient air quality. If the host country's laws are non-existent or incomplete, US EPA National Ambient Air Quality Standards and Gold Mine Ore Processing and Production: National Emission Standards for Hazardous Air Pollutants shall be used as applied at the facility boundary.

1.2 Sites shall conduct dispersion modeling of site point source and fugitive emissions of PM2.5, PM10, TSP, SO2, NOx, and CO as required to obtain applicable permits and licenses. The model shall be updated to reflect significant new sources of air emissions or existing point sources undergoing major modifications as required to meet regulatory requirements.

1.3 Sites shall develop, implement, communicate and adhere to an Air Emissions Management Plan that includes air quality criteria, operational controls, management practices, modeling and monitoring requirements, and responsibilities defined for site staff to implement the plan including planned maintenance (PM) and calibration schedules for emissions control equipment.

1.4 Baseline concentrations of ambient air pollutants, to include PM2.5, PM10, TSP, SO2, NOx, and CO at a minimum, shall be characterized prior to construction of new mining operations and facilities to establish background levels.

1.5 Sites shall estimate annual greenhouse gas (GHG) emissions for all projects that emit ≥ 10,000 tonnes of CO2-equivalent per calendar year.

1.6 Sites shall apply mercury-related best available techniques and best environmental practices to the design of new point sources or existing sources undergoing major modifications in order to achieve Minamata Convention requirements.

2. Implementation & Management

2.1 Sites shall install, operate, maintain, and calibrate air monitoring equipment in accordance with the Air Emissions Management Plan.

2.2 Corporate S&ER shall quantify annual GHG emissions for each site in metric tonnes (mt) of CO2-equivalent for direct (e.g. mobile and stationary combustion, processes, fugitive releases of refrigerants and SF6) and indirect (e.g. purchased grid electricity) emission sources.

2.3 Sites shall quantify annual emissions of relevant pollutants for regulatory and other reporting purposes.

2.4 Sites shall suitably treat and/or dispose of air pollution control wastes and by-products in accordance with the Waste Management Standard.

2.5 Sites shall control fugitive dust emissions to protect human health and the environment.

3. Performance Monitoring

3.1 Sites shall perform and document planned & corrective maintenance, calibration, and inspections of emissions control and monitoring equipment.

3.2 Sites shall use qualified persons to verify air quality compliance through source testing, monitoring, validated/accepted calculation methods, or other valid approach.

3.3 Corporate S&ER shall verify annual GHG emissions to ISO 14064 or other acceptable standard.

Terms

- Air dispersion model – mathematical simulation of how air pollutants originated from a source disperse in the ambient atmosphere.
- CO2-equivalent – standard unit for expressing carbon footprint of different greenhouse gases.
- Fugitive emissions – non-point source emissions (e.g., of dust) from facilities or activities (e.g., construction) that do not originate from a stack, chimney, vent, or other functionally equivalent opening.
- ISO 14064 – International standard that specifies principles and requirements at the organization level for the quantification and reporting of greenhouse gas (GHG) emissions and removals. It includes requirements for the design, development, management, reporting and verification of an organization's GHG inventory.
- Minamata Convention - an international treaty designed to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds.
- Minamata Convention
- PM2.5 - inhalable coarse particles, which are coarse particles with a diameter of ≤ 2.5 micrometers (μm).PM2.5
- PM10 - inhalable coarse particles, which are coarse particles with a diameter between 2.5 and 10 micrometers (μm).PM10
- Point source - a single identifiable localized source of air emissions; emission sources are called point sources because in mathematical modeling, these sources can usually be approximated as a mathematical point to simplify analysis.
- TSP (total suspendedSuspended particulates) - Particles ranging in size from 0.1 micrometer to about 30 micrometer in diameter.

References

- IMS Assessment Management Program System Procedure – NEM-IMS-MSP-008
- IMS Interactions, Inspections and Audits Standard – NEM-IMS-STA-008
- ISO 14064-1:2018 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.
- Minamata Convention on Mercury, United Nations Environment Program, October 10, 2013. http://www.mercuryconvention.org/Convention/Text
- Sustainability and Stakeholder Engagement Policy – NEM-SER-POL-001.
- US EPA National Air Quality Standards (NAAQS) for criteria air pollutants – carbon monoxide, lead, nitrogen dioxide, ozone, particulates (OM2.5, PM10), sulfur dioxide. https://www.epa.gov/criteria-air-pollutants/naaqs-table
- US EPA National Emission Standards for Hazardous Air Pollutants for Area Sources: Gold Mine Ore Processing and Production. February 17, 2011.

Document Control

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