**Submission No 11**

# INQUIRY INTO CURRENT AND POTENTIAL IMPACTS OF GOLD, SILVER, LEAD AND ZINC MINING ON HUMAN HEALTH, LAND, AIR AND WATER QUALITY IN NEW SOUTH WALES

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Mining activities, including the extraction of metals like gold, silver, lead, and zinc, can have significant impacts on human health, land, air, and water quality. These impacts vary based on factors such as mining techniques, proximity of waterways, creeks, tributaries, aquifers, topography, land uses, and geological conditions.

The  impacts can be long-term, irreversible and dire.

**1. Human Health:**

**Exposure to Toxic Metals:** Mining and processing of metals can release toxic substances into the environment, leading to human exposure. For instance, lead and mercury are known to be harmful to human health, even in small amounts.

**Airborne Dust and Respiratory Issues:** Mining operations generate airborne dust containing various harmful particles, including heavy metals. Inhaling such dust can lead to respiratory problems and other health issues.

**Chemical Exposure:** Workers in mines and nearby communities may be exposed to hazardous chemicals used in mining processes, such as cyanide used in gold extraction.

**2. Land:**

**Habitat Destruction:** Mining often involves clearing vegetation and altering landscapes, leading to habitat destruction and biodiversity loss.

**Soil Degradation:** The disturbance of soil during mining can result in erosion, compaction, and contamination, affecting soil fertility and productivity.

**3. Air Quality:**

**Dust and Particulate Matter:** Mining operations can generate dust and particulate matter that contribute to air pollution. These particles can have negative effects on air quality and human health.

**Emissions from Processing Plants:** Smelting and processing of metals can release sulfur dioxide (SO2) and other air pollutants, contributing to acid rain and air quality deterioration.

**4. Water Quality:**

**Surface Water Pollution:** Runoff from mining sites can carry pollutants like heavy metals, sediment, and chemicals into nearby water bodies, leading to contamination and ecological damage.

**Groundwater Contamination:** Mining activities can result in the leaching of toxic substances into groundwater, potentially affecting drinking water sources and agricultural lands.

**Acid Mine Drainage:** The exposure of sulfide minerals during mining can lead to the formation of acid mine drainage, which contains high levels of acidity and toxic metals, negatively impacting water quality.

**5. Ecosystem Disruption:**

**Disruption of Aquatic Ecosystems:** Contaminated water can harm aquatic ecosystems, affecting fish and other aquatic life, as well as disrupting food chains.

**Deforestation and Habitat Fragmentation:** Clearing land for mining can lead to deforestation and habitat fragmentation, impacting wildlife populations.

Gold, silver, lead, and zinc mining can have serious consequences for human health, land, air, and water quality due to the extraction process, waste management, and the release of harmful substances into the environment. Here are some of the potential impacts associated with each element:

**Gold Mining:**

1. **Toxic Chemical Use:** Gold mining often involves the use of toxic chemicals such as cyanide and mercury to extract gold from ore. These chemicals can contaminate nearby water sources and soil, posing risks to aquatic life, wildlife, and human populations.
2. **Deforestation and Habitat Destruction:** Large-scale gold mining can lead to deforestation and destruction of habitats, affecting biodiversity and ecosystem stability.
3. **Water Contamination:** The use of cyanide in gold extraction can result in the release of toxic substances into water bodies, causing pollution and affecting aquatic organisms.
4. **Air Pollution:** Dust and emissions from machinery used in mining can contribute to air pollution, affecting air quality in surrounding areas.

**Silver Mining:**

1. **Chemical Use:** Similar to gold mining, silver mining can involve the use of hazardous chemicals such as cyanide and mercury, leading to environmental contamination.
2. **Water Pollution:** The chemicals used in silver extraction can leach into water sources, polluting them and affecting aquatic life and ecosystems.
3. **Energy Intensity:** Silver mining can be energy-intensive, contributing to greenhouse gas emissions and climate change.

**Lead Mining:**

1. **Soil Contamination:** Lead mining can lead to soil contamination with lead, which is a highly toxic heavy metal. This contamination can persist for years and pose risks to human health, especially to children who may ingest lead-contaminated soil.
2. **Water Contamination:** Runoff from lead mining areas can carry lead particles into water bodies, contaminating drinking water sources and harming aquatic organisms.
3. **Health Risks:** Lead exposure can cause serious health issues, including developmental problems in children, cognitive impairments, and damage to the nervous system.

**Zinc Mining:**

1. **Water Pollution:** Zinc mining can release heavy metals and other contaminants into water sources, affecting water quality and aquatic life.
2. **Soil Degradation:** Mining activities can lead to soil erosion, loss of topsoil, and disruption of ecosystems, impacting land quality and biodiversity.
3. **Air Emissions:** Dust and particulate matter generated during zinc mining and processing can contribute to air pollution and respiratory issues in nearby communities.

In general, the environmental and health consequences of mining these metals can have dire short and long term consequences in many cases perpetual.

Mitigation measures based on modeling can be ineffective even if they are very stringently enforced via constant monitoring, testing, with checks and balances

The government must weigh up the consequences against any benefit from extraction of those metals.

Mining in NSW MUST be restricted to areas that are not within any rural townships or farmland.

It is abhorrent that mining companies can currently engage in {any form} of mining on or beneath privately owned land. Once the mining companies close those operations the land owners are left to deal with the impacts and consequences of the mining activities, in particular the impacts on surface and ground water, catchments, aquifers, creeks, dams, springs and the like.

The Government needs to urgently revisit and change the legislation so mining companies are required to purchase the properties they propose to mine on. In addition they should be required to rehabilitate the land upon completion and pay the government a substantial Bond that can be used to address any impacts that will inevitably happen for at least 50 years post mining.

Rest assured that no amount of conditions on any mining consent will totally address or prevent the consequences or pollution or mitigate the harmful effects of mining on the environment and human health.