

## Periodical on Control of pollution and health hazards due to coal mining

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### Abstract

Metals are extracted from the minerals and rocks in which they naturally reside through the process of mining. The main causes of mining-related health risks and environmental issues are operations and waste products related to metal extraction and processing. Early mining occurred at a time when health risks were not widely understood and, more importantly, were not a serious worry. Before the 1970s, during these times, closure actions were not always a part of the mining cycle. The public's knowledge of the risks associated with mining operations has gradually grown in recent years. This review work focuses on the health hazards due to coal mining, pollution due to coal mining, policies and steps to control illegal mining activities. Although mining can benefit societies in many ways, it can also lead to conflict, not least when it comes to above-ground and below-ground land use. Similar to mining, remediation and mitigation can repair systems after they have been damaged.

**Keywords** – Extraction, Mining, Hazards, Metals

### Introduction

Digging coal from underground coal reserves is known as coal mining or excavation. There are two ways to mine coal opencast mining on the surface and deep mining underneath. One of people's first jobs was mine. The writings of Hippocrates demonstrate his understanding of mining-related occupational disease. Dust particles from the coal mining operation can spread quite a distance from the mine region through river channels and air transportation, negatively affecting not just its near environment. When people think of the mining business, they frequently think of accidents, catastrophes, and environmental damage connected to mining, particularly coal mining. There are undoubtedly valid explanations based on actual events for the viewpoints that people have stated. The dust pollution in the air and water, noise, and vibrations had an adverse effect on the health and wellbeing of the residents living near and around mining complexes. At the workplace, coal mining operations cause pollution from dust, gas, and noise. If sufficient preventative measures are not taken, these could pose long-term health risks to mineworkers. Additionally, there are vibrations brought on by blasting and vigorous vehicle movement. Acid mine drainage, thermal pollution from coal plants, acid rain, and contamination of groundwater, streams, rivers, and seas with heavy metals, mercury, and other toxins and pollutants found in coal ash, coal sludge, and coal waste are just a few of the negative health and environmental effects of mining, processing, burning, and storing coal. Contamination of water is unavoidable. Due to the numerous minerals in the rock, it is certain to happen. Our efforts ought to focus on assessing the pollution levels of various metrics and maintaining them within the established guidelines.

**Table no. 01 List of few Coal mines in India**

S.No	Name of coal mines	State
1	Korba Coalfield	Chhattisgarh
	Hasdeo Arand Coalfield	
	Mand-Raigarh Coalfield	
2	Talcher Coalfield	Odisha
	Ib Valley Coalfield	
3	Bokaro Coalfield	Jharkhand
	South Karanpura Coalfield	
	Ramgarh Coalfield	
4	Lakhimpur Coalfield	Assam
	Namdang Coalfield	
	Borholla Coalfield	

### **Health diseases by inhaling dust**

#### **Pneumoconiosis**

Pneumoconiosis is a lung disease caused by inhaling dust which results inflammation of lungs wall and cells in advance stage leads to chronic infection. The dust generated through mining industries it affects the local regions as well as the workers inside the factory. The silica dust causes silicosis ,Beryllium causes Berylliosis and so on. Pneumoconiosis known as asbestosis is brought on by inhaling hydrated magnesium silicate. In contrast to silicosis, asbestosis causes lung fibrosis to appear more quickly, and in severe cases, asbestosis can cause death within five years of the commencement of symptoms.

#### **Pollution due to coal mining**

##### **Noise pollution**

The use of loud machinery for overburden handling raises noise levels in the neighboring residential areas as well. However, at the planning stage, choosing the right dumpsite can reduce or even completely eliminate noise consequences on the locals. It is recommended to use "noise mapping" to visualize the spread of noise as noise contours so that preventive measures can be developed and put into action (ABH Publishing Corporation). Although the Tenth Conference on Safety in Mines' recommendations made noise mapping necessary in Indian mines (according to the Directorate General of Mines and Safety), the mining industry is still not placing enough emphasis on creating noise maps of mines.

##### **Water pollution**

For dust control, fire protection, and coal cleaning, coal mining needs a lot of water. For each metric tonne of coal mined, an average of between 63 and 120 litres of water are used, whereas only 17 litres are used for surface mining. In addition, waste removal in both surface and underground mining requires 33 litres of water per tonne. Any soluble minerals that may be present in the coal or accompanying rocks are carried by this water as it flows through a broad area of the mine, greatly impairing the quality of the water. Water pollution from the washing and beneficiation of coal is also very bad.

## Soil contamination

Because soil serves as the interface between human activity and other aspects of the environment, the contaminating of the atmosphere by coal mining and use is a particular problem. One of the most precious non-renewable resources is soil, and the condition of the soil has a big impact on the ecosystem and its surroundings. In addition to PAHs, heavy metals such As, Cd, Pb, Co, Cr, Cu, Ni, Zn, V, and others have a direct impact on public health due to their ease of entry into human bodies by inhalation, skin contact, and dust ingestion. Numerous health problems, including cancer, teratogenicity, mutagenicity, developmental abnormalities, neurotoxicity, immunotoxicity, etc., can occur as a result of exposure to these toxins.

## Policies

1. **NATIONAL MINERAL POLICY 2019:-** The 2019 Policy suggests giving mining activity industry status to increase financing of mining for the private sector. The Policy also calls for measures to be made to align taxes, levies, and royalties with international standards in order to support the private sector.
2. **THE ENVIRONMENT PROTECTION ACT, 1986 -** The United Nations Conference on the Human Environment, which took place in Stockholm in June 1972, established the statute. The Central Government publishes notices pursuant to the Environment Act for the protection of ecologically sensitive areas or publishes guidelines for matters pursuant to the Environment Act for the protection of ecologically sensitive areas or guidelines for matters pursuant to the Environment Act.

## Steps to stop illegal coal mining and illegal coal transportation in the state

- To prevent illicit coal mining and transportation, the State Government has been enforcing the provisions of the Mines and Minerals (Development & Regulation) Act, 1957. When illicit mining and transportation of coal are discovered, cases are filed under Section 21 of the Act against those implicated.
- Under Section 21(4) of the MMDR Act, 1957, the Government has given the authorised officials notice that they may seize any mineral that has been illegally mined or transported, as well as any associated machinery, tools, and equipment.
- At the DMR Checkgate, the Director of Mineral Resources has given the Divisional Mining Officers and every Mines Royalty Inspector instructions to check for illicit coal transportation and take appropriate legal action against offenders.
- Meghalaya Mineral Truck Scanning and Monitoring System (MMT-SMS), a project of the Mining and Geology Department, would install intelligent integrated checkgates to identify coal-carrying vehicles without proper documentation.

## Case study Reported

Survey conducted by ICMR in Tamnar Raigarh region of Chhattisgarh state reported 80% of population in that area near mining field is suffered from acute respiratory infection, tuberculosis, cardiovascular disorder many of them died due to this.

**Conclusion** - Mining-related activities, such as prospecting, exploration, construction, operation, maintenance, expansion, abandonment, decommissioning, and repurposing of a mine, can have a variety of direct and indirect effects on social and environmental systems, both good and negative. Land use changes due to mine exploration, construction, operation, and maintenance are possible. These changes may have an adverse effect on the environment and cause deforestation, erosion, contamination of nearby streams and wetlands, as well as an increase in noise, dust, and emissions.

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