*Environmental Impact Assessment (EIA) on **"Open-Cast Coal Mining Project (600 Hectares)"***

Client: ABC Mining Corp.

Project Location: Chhattisgarh, India (Mineral-rich belt)

Lead Consultant: Mr. XYZ

Date of Submission: [xx/xx/xxxx]

Background: ABC Mining Corp. has obtained a mining lease to start an open-cast coal mining project covering 600 hectares in Chhattisgarh. EIA is needed due to mining project impact on significant land degradation, deforestation, and soil erosion, impacts on surface and groundwater quality, air pollution from dust and coal transport, and effects on local communities and occupational health risks. EIA full is conducted including baseline studies, risk assessment, and an environmental management plan to secure statutory clearances.

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1.0 Executive Summary

1.1 Project at a Glance

ABC Mining Corp. has proposed an open-cast coal mining project in Chhattisgarh covering a total lease area of 600 hectares. The project aims to produce 4 million tonnes per annum (MTPA) of coal with an estimated mine life of 25 years. The mining operation will follow conventional shovel-dumper combination technology with progressive overburden removal and coal extraction in phases.

Parameter	Details
Project Type	Open-Cast Coal Mine
Lease Area	600 ha
Production Capacity	4 MTPA of coal
Estimated Mine Life	25 years
Mining Technology	Shovel-Dumper combination
Water Requirement	2.5–3.0 MLD (for dust suppression and washing)
Power Requirement	6 MW
Manpower	350 (Skilled: 150, Unskilled: 200)
Location	Chhattisgarh, India (Mineral-rich belt)

Figure 1.1: Location of Mining Lease Area (Map)

1.2 Critical Environmental Issues

The proposed project has the potential to cause significant environmental impacts due to its scale and nature. Key concerns identified during the scoping study include:

1. Forest Diversion and Land Use Change: Approximately 120 ha of dense and degraded forest is proposed to be diverted, affecting biodiversity and carbon sequestration potential (MoEF&CC, 2022).
2. Tribal Land Acquisition: The project overlaps areas used by local tribal communities for subsistence agriculture and forest produce collection.
3. Air Quality Concerns: Dust generation from blasting, excavation, overburden dumps, and coal transport may degrade ambient air quality (PM_{10} and $PM_{2.5}$) near habitations (CPCB, 2021).
4. Water Pollution Risks: Surface runoff from OB dumps and coal stockpiles may lead to siltation and acid mine drainage (AMD) in local streams (Singh et al., 2020).
5. Occupational Health & Safety: Miners may face risks of Silicosis, Coal Workers' Pneumoconiosis (CWP), and noise-induced hearing loss if exposure is not controlled (ICMR, 2019).

1.3 Mitigation Commitments

ABC Mining Corp. has committed to implementing a comprehensive Environmental Management Plan (EMP) including:

Environmental Component	Mitigation Measures
Land & Soil	Progressive backfilling, topsoil preservation, OB dump stabilization, biological reclamation with native species
Air Quality	Water sprinklers on haul roads, mist cannons, black-topping of roads, covering of coal trucks
Water Quality	Settling ponds, ETPs, AMD neutralization, regular water quality monitoring
Noise & Vibration	Controlled blasting, noise berms, periodic HEMM maintenance
Biodiversity	Green belt development, wildlife corridors, afforestation with native species
Community	Resettlement & Rehabilitation (R&R) package for Project Affected Families (PAFs), livelihood support, healthcare initiatives

Figure 1.2: Overview of Mitigation Measures (Flow Diagram)

1.4 Conclusion

The EIA study concludes that the proposed mining project can be conducted in an environmentally sustainable manner with strict adherence to mitigation measures outlined in the EMP. The project aligns with the national energy security objectives, while minimizing adverse impacts on local ecosystems, water resources, and communities through proactive management strategies (MoEF&CC, 2021).

ABC Mining Corp. seeks Environmental Clearance (EC) under the EIA Notification, 2006, and Forest Clearance (FC) under the Forest Conservation Act, 1980 to commence operations.

2.0 Introduction

2.1 Project Background

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