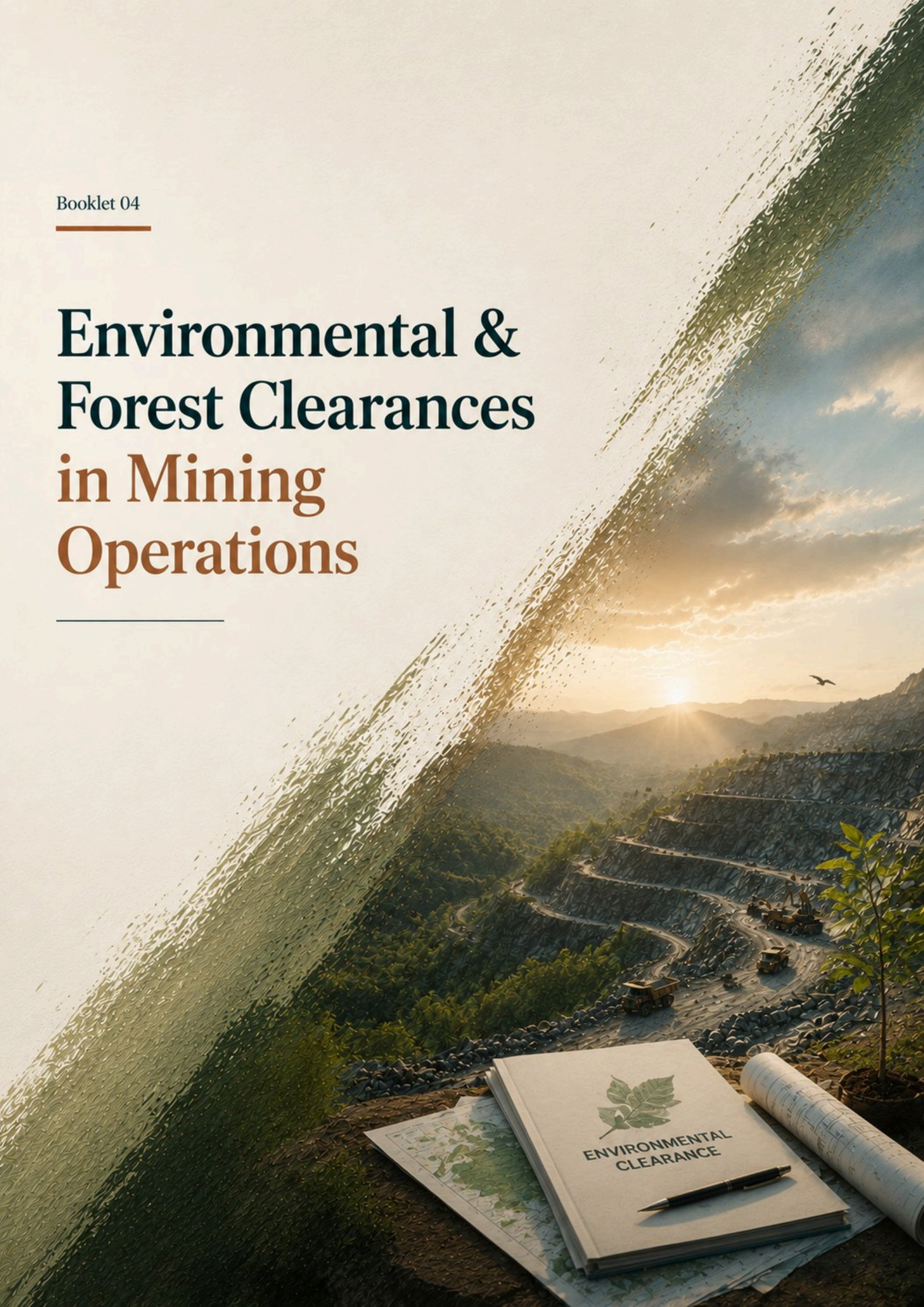
Booklet 04

Environmental & Forest Clearances in Mining Operations



BHATT & JOSHI ASSOCIATES — INDIAN MINING SECTOR LEGAL SERIES

Environmental & Forest Clearances in Mining Operations

EIA Notification 2006, Forest Conservation Act, NBWL Clearance, Mine Closure and Environmental Compliance Framework

Booklet IV of VI — Indian Mining Sector Legal Series

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CHAPTER ONE

Environmental Clearance for Mining: EIA Notification Framework

EIA Notification 2006, Category A and B Mining Projects, Scoping, Public Hearing, EC Grant and Post-EC Compliance

> *Environmental Clearance (EC) is the most critical regulatory approval in the mining project development timeline — without it, no mineral extraction can commence regardless of the validity of the mining lease. The EC process under the EIA Notification 2006 is the central pillar of India's environmental governance for mining, and mastery of its procedural and substantive requirements is essential for mining counsel.*

1.1 EIA Notification 2006: Application to Mining

The Environmental Impact Assessment Notification, 2006 (EIA Notification 2006), notified by the Ministry of Environment, Forest and Climate Change (MoEFCC) under Section 3 of the Environment (Protection) Act, 1986, requires prior Environmental Clearance from the designated authority before the commencement of any new mining project, or the expansion of an existing mining project beyond the parameters of its existing EC, in any category of mining

specified in Schedule I to the Notification. Mining projects are listed in Schedule I, Category A and B, with the classification determining whether EC must be obtained from MoEFCC's Expert Appraisal Committee (EAC) — for Category A (large-scale and high-impact projects) — or from the State Level Environment Impact Assessment Authority (SEIAA) — for Category B (smaller-scale or lower-impact projects). The classification thresholds for mining: Coal and non-coal mineral mining with lease area above 50 hectares and production above 3 MTPA is Category A; mining below these thresholds is Category B1 if above 25 hectares or 1 MTPA, and Category B2 below these thresholds. This tiered classification determines the level of EIA study required, the extent of public consultation, and the stringency of conditions that the EC authority is likely to impose.

The EC process for mining projects under EIA Notification 2006 follows a four-stage procedure. Stage 1 is Screening — applicable only to Category B projects, to determine whether a full EIA or a conceptual EIA is required based on the project's potential environmental impacts. Stage 2 is Scoping — the EC authority (EAC for Cat A, SEAC for Cat B) issues Terms of Reference (TOR) specifying the environmental parameters to be studied in the EIA, the area of influence to be covered, and the specific studies required (baseline environmental data collection, impact assessment, public health surveys, socio-economic surveys, wildlife surveys, hydrology studies). Stage 3 is Public Consultation — comprising public hearing in the project area (where affected persons and local bodies can present their concerns and objections on the EIA report) and a public notice period for written responses from anyone who wishes to comment on the EIA. Stage 4 is Appraisal — the EAC/SEAC examines the EIA report, the public hearing record, and any additional information required, and recommends grant or refusal of EC with specified conditions. The entire EC process typically takes 18–36 months from the initial application for a Category A mining project — a timeline that must be factored into the mine development schedule from the moment the ML is granted.

1.2 EIA Study Requirements for Mining

The EIA study for a mining project must characterise the existing (pre-mining) environment in the area of influence — including the physical environment (air quality, water quality, soil quality, topography, hydrology), the biological environment (flora, fauna, aquatic life, forest cover, wildlife), and the socio-economic environment (population, livelihoods, cultural heritage, tribal communities) — and then predict and assess the impacts of the proposed mining operations on each of these environmental parameters over the project's lifetime. The impacts of particular concern in mining EIAs include: dust and particulate matter emissions from blasting, excavation, and material handling; noise pollution from blasting and machinery; groundwater dewatering (the mine must typically pump out groundwater that seeps into the pit, reducing groundwater levels in the surrounding area and affecting wells and springs used by local communities); changes to surface drainage patterns from removal of overburden and

construction of tailing storage facilities; fugitive emissions from haul road traffic and ore stockpiles; land disturbance and loss of agricultural and forest land; and displacement of communities from the mine lease area. For each identified impact, the EIA must propose mitigation measures, environmental management plans, and monitoring programmes that reduce the impact to acceptable levels — and the EC authority incorporates the most important mitigation commitments as binding conditions of the EC.

1.3 EC Conditions and Compliance

Environmental Clearance for mining projects is typically granted subject to a comprehensive set of conditions covering: air quality management (dust suppression systems on haul roads, covered ore stockpiles, air monitoring stations around the mine periphery with public reporting of results); water management (zero discharge commitment — all process water and mine drainage to be recycled or treated, with no discharge to surface water bodies; groundwater monitoring programme; compensation for farmers whose wells are affected by mine dewatering); noise management (blasting time restrictions, residential setback requirements, noise barriers); land and biodiversity management (progressive reclamation and re-vegetation of disturbed areas; compensatory afforestation in accordance with the forest clearance conditions; wildlife corridor maintenance); community welfare obligations (employment preference for project-affected persons; contribution to local infrastructure under the Corporate Social Responsibility framework); and environmental monitoring and reporting (quarterly environmental monitoring reports to be submitted to the Regional Office of MoEFCC, with results made publicly available on the company's website). Non-compliance with EC conditions — detected through inspection by MoEFCC's Regional Officers, NGT-ordered monitoring committees, or civil society whistleblowing — can result in: show-cause notices from MoEFCC; environmental penalties under the NGT Act; suspension of EC (preventing further mining operations); and in serious cases, revocation of EC with the mine ordered to cease operations until compliance is restored. The cumulative financial and reputational consequences of EC non-compliance are severe enough to justify substantial investment in environmental management systems — experienced mining companies treat EC condition compliance as a core operational discipline, not merely a regulatory obligation to be minimally satisfied.

CHAPTER TWO

Forest Clearances: Forest Conservation Act 1980 and 2023

Forest (Conservation) Act, FC Process, Compensatory Afforestation, CAMPA, Forest Rights Act and the 2023 Legislative Changes

2.1 Forest Clearance Under the Forest Conservation Act

Approximately 40–60% of India's major mineral deposits are located under or adjacent to classified forest land — a geographical reality that makes forest clearance (FC) under the Forest Conservation Act one of the most critical and time-consuming regulatory approvals in the mining project development process. The Forest (Conservation) Act, 1980 (recently renamed the Forest Conservation Act, 1980, with amendments in 2023) prohibits the use of forest land for any non-forest purpose (including mining) without prior approval from the Central Government — specifically from the MoEFCC's Forest Conservation Division, which reviews FC applications with input from the state forest departments, the National Board for Wildlife (for areas within 10 km of protected areas), and the Forest Advisory Committee (FAC) at the national level. The FC process is separate from and in addition to the EC process under the EIA Notification — a mining project in forest land requires both EC (from MoEFCC's EAC or the SEIAA) and FC (from MoEFCC's Forest Conservation Division), and while the two processes can proceed in parallel to some extent, the FC is typically required before the final EC is granted for forest land mining. The combined EC+FC timeline for a new forest land mining project is typically 3–7 years from the initial application, making pre-clearance regulatory risk management one of the most commercially important aspects of mining project development in India.

The FC application process requires the mining company (as "user agency") to submit to the state forest department a comprehensive application specifying: the exact area of forest land sought for diversion (broken down by forest type, species composition, and distance from reserve forest boundaries); the purpose for which the forest land is required (mine pit, waste dump, haul road, plant site, township); the economic justification for the forest diversion (the mineral value, employment, revenue, and strategic significance of the project); the proposed mitigation measures (compensatory afforestation, net present value payment, wildlife management plan); and the alternatives considered to avoid or minimise forest land use. The state forest department forwards the application with its recommendations to the FAC at the central level, which examines the application and recommends grant or refusal with conditions to the MoEFCC Secretary for final decision. For projects in Scheduled Areas where tribal communities have traditional rights over forest land, the Forest Rights Act, 2006 (now Van Dhan Vikas Kendras Act) requires that the Gram Sabha (village assembly) of the affected communities give their informed consent to the forest diversion before the FC can be granted — the so-called

"Gram Sabha consent" requirement has become one of the most contested procedural requirements in the FC process, with debates about what constitutes valid consent, how many Gram Sabhas must consent, and whether consent can be withdrawn after it is given.

2.2 Compensatory Afforestation and CAMPA

As a condition of every forest clearance, the mining company must undertake compensatory afforestation (CA) — the planting and nurturing of an equivalent or double area of non-forest land with trees, to compensate for the forest cover lost to the mine. The CA obligation is calculated on the basis of the forest land diverted: for non-degraded forest, CA at 2:1 (twice the diverted area); for degraded forest, CA at 1:1 (equal to the diverted area); and for deemed forest (revenue land or private land having the characteristics of forest), the CA conditions are specified case by case. In addition to the CA obligation, the user agency must pay a net present value (NPV) of the forest ecosystem services lost — a payment calculated by the Supreme Court-mandated formula (Rs. 4.38 lakh to Rs. 10.03 lakh per hectare depending on forest type) that is deposited with the Compensatory Afforestation Management and Planning Authority (CAMPA) for use in forest restoration activities. The combined CA and NPV payment creates a significant financial obligation for mining companies with large forest land requirements: a 100-hectare mine in good quality forest requires 200 hectares of CA land and NPV payments of approximately Rs. 8.76 crore — a cost that must be identified, budgeted, and committed before the FC can be granted. The CA land must also be identified (outside the mine lease area and the existing forest reserve) — a frequently challenging task in mineral-rich states where non-forest land suitable for CA may be limited or contested.

2.3 Forest Conservation Amendment Act 2023

The Forest Conservation (Amendment) Act, 2023 — which attracted significant controversy and legal challenge from environmental organisations and tribal rights groups — made several important changes to the Forest Conservation Act's scope and application. The 2023 Amendment narrowed the definition of "forest" for FC purposes, excluding from FC requirements certain categories of land that had previously been treated as "deemed forest" under the Supreme Court's expansive 1996 definition in T.N. Godavarman Thirumulpad v. Union of India: specifically, land recorded as forest in the government revenue records (but not notified as Reserved Forest, Protected Forest, or Sanctuary/National Park) and located within 100 km of international borders, and land that had been or was being used for non-forest purposes on or before December 12, 1996. For the mining sector, the 2023 Amendment's most significant change is the exemption from FC requirements for "surveys and investigations" (including drilling and prospecting) on non-notified forest land — previously, even geological survey activities in deemed forest required FC prior approval, significantly impeding exploration work. The 2023 Amendment's constitutional validity has been challenged before the Supreme Court by multiple petitioners who argue that it impermissibly narrows the Forest Conservation Act's

protections and violates Article 21 (right to life including a clean environment) and the Forest Rights Act's protections for tribal communities.

CHAPTER THREE

Wildlife, Protected Areas and Special Clearances

Wildlife Protection Act, National Board for Wildlife, Eco-Sensitive Zones, NBWL Clearance and Mining in Tiger Reserves

3.1 Wildlife Protection Act and Mining Restrictions

The Wildlife Protection Act, 1972 (WPA) creates a comprehensive regime for the protection of wildlife and their habitats that intersects critically with mining operations. The WPA designates several categories of protected areas: National Parks (the most strictly protected — no mining or other commercial activity is permitted, and the boundary is inviolable); Wildlife Sanctuaries (mining and other activities are prohibited without the Chief Wildlife Warden's permission); Conservation Reserves and Community Reserves (lower-protection categories where regulated activities may be permitted). Mining within a National Park or Wildlife Sanctuary is absolutely prohibited — any mining lease whose area overlaps with a National Park or Wildlife Sanctuary boundary is legally void to the extent of the overlap, and the Supreme Court has consistently directed cancellation of ML portions overlapping protected areas, even where the leases predate the protected area's notification. Mining adjacent to National Parks and Wildlife Sanctuaries — while not categorically prohibited — requires NBWL clearance and must comply with the provisions of the Eco-Sensitive Zone (ESZ) notification if the mining area falls within the ESZ of a protected area.

3.2 NBWL Clearance: Procedure and Standards

The National Board for Wildlife (NBWL), constituted under Section 5A of the WPA and chaired by the Prime Minister, exercises the Central Government's powers over wildlife conservation at the national level. The NBWL's Standing Committee — delegated the NBWL's project clearance functions — reviews and decides upon applications for: diversion of forest land within 10 km of the boundaries of National Parks, Wildlife Sanctuaries, and Tiger Reserves for non-forest purposes (including mining); construction of mines, roads, and industrial facilities in Eco-Sensitive Zones; and any activity that the WPA or the wildlife authorities consider likely to affect protected wildlife or their habitats. NBWL clearance is an additional regulatory requirement (beyond EC and FC) for mining projects located within 10 km of protected areas — a condition that affects a very large proportion of India's mineral-bearing areas in forested zones, since many National Parks and Wildlife Sanctuaries were notified in areas that were already known to have mineral potential. The NBWL clearance process involves: review of the project's potential impacts on protected area ecology by the Wildlife Institute of India (WII); submission of a wildlife conservation plan by the user agency; examination by the NBWL Standing Committee; and grant of clearance with conditions (including wildlife corridors, anti-poaching measures, and

exclusion zones near the protected area boundary).

CHAPTER FOUR

Water Law, Air Pollution and Mine Environmental Management

Water Act 1974, Air Act 1981, Mine Water Management, Dust Control and National Green Tribunal Oversight

4.1 Water Act 1974 and Mine Discharge

The Water (Prevention and Control of Pollution) Act, 1974 (Water Act) requires all industries — including mining operations — to obtain "Consent to Establish" and "Consent to Operate" (collectively, "CTO") from the State Pollution Control Board (SPCB) before establishing or operating any outlet for discharge of trade effluent or mine drainage. Mine drainage — the water pumped out of open-cast and underground mines to maintain dry working conditions — typically contains elevated concentrations of suspended solids, iron, sulphate, and (in some mine types) heavy metals, and cannot be discharged to surface water bodies without treatment. The CTO conditions for mining operations specify: the treatment standards for mine drainage before discharge (typically, suspended solids below 100 mg/L and pH between 6 and 9); the requirement for a settling pond or treatment plant of specified design and capacity; the prohibition on direct discharge of untreated drainage; and the monitoring programme for receiving water bodies downstream of the mine. The "zero liquid discharge" commitment required in EC conditions for most large mining operations goes beyond the Water Act's minimum standards — it requires all water generated at the mine (including rainfall runoff from disturbed areas and process water from ore beneficiation) to be either recycled within the mine's water management system or evaporated in specially designed evaporation ponds, with no discharge to natural water courses. Zero liquid discharge compliance is operationally demanding and requires robust water balance management — maintaining the mine's internal water balance to ensure that all generated water is contained and managed within the mine's closed water circuit.

4.2 National Green Tribunal: Mining Sector Jurisdiction

The National Green Tribunal (NGT), established under the National Green Tribunal Act, 2010 as a specialised court for environmental matters with original and appellate jurisdiction, has become one of the most significant forums for mining sector environmental disputes in India. The NGT's original jurisdiction covers: applications for enforcement of environmental laws applicable to mining; civil suits for compensation for environmental damage caused by mining operations; and appeals against environmental clearances, consent orders, and forest clearances. The NGT has exercised its jurisdiction proactively in mining-related matters — suo motu cases based on media reports of mining damage, cases initiated by civil society organisations or affected residents, and government-referred matters where the NGT's technical

expertise and investigative authority are needed. Notable NGT mining-sector interventions include: the suo motu case on illegal sand mining across multiple states (resulting in comprehensive guidelines for regulated sand mining and orders against unrestricted alluvial sand extraction); the Goa Foundation cases challenging the validity of renewed mining leases and the adequacy of environmental controls; and multiple cases in Jharkhand, Chhattisgarh, and Odisha challenging the environmental management of large iron ore and coal mines. The NGT's orders — including directions for mine closure, financial penalty, and remediation — are enforceable as decrees of a civil court and are subject to appeal only before the Supreme Court, making NGT environmental orders a highly significant operational risk for mining companies.

CHAPTER FIVE

Mine Closure, Reclamation and Environmental Bonds

Progressive Mine Closure Plan, Mine Closure Fund, Land Reclamation Standards, Post-Closure Monitoring and Financial Assurance

5.1 Progressive Mine Closure Plan Requirements

The Progressive Mine Closure Plan (PMCP), required under the MCDR 2017 for all mining leases with annual production above specified thresholds, is the central instrument for ensuring that mining operations are planned from the outset with a view to eventual closure and land reclamation. The PMCP must be prepared by a recognised consultant as part of the Mining Plan submitted to the IBM for approval, and must specify: the staged sequence in which different parts of the mining area will be progressively backfilled, graded, and revegetated as mining operations in those areas are completed; the standards for land reclamation (slope stability requirements for backfilled waste dumps, topsoil replacement depth, species composition for revegetation); the water quality management programme for post-closure monitoring of potentially contaminated groundwater and surface water; the post-closure land use (whether the reclaimed area will be returned to agricultural or forest use, or developed for industrial, recreational, or other purposes); and the financial plan for the Mine Closure Fund, specifying the annual contribution rate and the total fund target calculated to cover all closure and reclamation costs. The Progressive Mine Closure Plan must be updated at least every five years (or whenever there is a material change in the Mining Plan) to reflect the actual state of mine development and the revised closure cost estimates. IBM inspectors verify PMCP implementation during their periodic mine inspection visits, checking that reclamation work in progressively closed areas is proceeding in accordance with the approved plan and that Mine Closure Fund contributions are current.

5.2 Mine Closure Fund and Financial Assurance

The Mine Closure Fund — maintained in an escrow account held jointly by the mining company and the IBM — receives the company's annual closure contributions at the rate of Rs. 100 per hectare of the estimated "disturbed area" within the mine lease (the total area affected by open-cast excavation, waste dumps, haul roads, and plant infrastructure). The escrow arrangement ensures that the closure fund cannot be accessed by the mining company for general corporate purposes — the funds are restricted exclusively to meeting the mine closure and reclamation costs specified in the PMCP. The adequacy of the Mine Closure Fund as a financial assurance mechanism has been questioned by environmental auditors and civil society organisations: the current contribution rate (Rs. 100 per hectare per year) is considered by many practitioners to

be grossly insufficient to fund the actual cost of comprehensive mine reclamation, which can range from Rs. 5–20 lakh per hectare depending on the nature and extent of the disturbance, the land reclamation standard required, and the post-closure land use planned. This under-funding risk creates a contingent liability for the state government (as the residual party responsible for remediation if the mining company is insolvent at closure) and for future generations (who inherit the environmental legacy if closure costs are not fully funded). The Ministry of Mines is currently reviewing the Mine Closure Fund contribution rates with a view to aligning them more closely with actual reclamation cost estimates — a revision that would significantly increase the financial obligations of operating mining lessees but would also substantially improve the mine closure funding adequacy.

Booklet IV Key Takeaways: Environmental and forest clearances are the most time-consuming and uncertain regulatory approvals in the mining project development lifecycle — combining EC (18–36 months), FC (24–60 months), and NBWL clearance (12–24 months) creates a regulatory timeline that can exceed 7 years for large forest land mining projects. EC conditions (air, water, land, wildlife management) create binding operational obligations whose breach can result in EC suspension or revocation. The Forest Conservation Act's compensatory afforestation and NPV payment obligations create significant financial and land procurement challenges for forest land mining. The NGT's proactive environmental jurisdiction creates continuous operational oversight risk. Mine Closure Planning from project inception — with adequate Mine Closure Fund contributions — is essential for both regulatory compliance and investor confidence in the long-term environmental and financial viability of mining projects.

EXTENDED ANALYSIS

Environmental and Forest Clearances: Advanced Practice

MOEF Regional Office Interface, State PCB Compliance, Environmental Bonds, NGT Monitoring and Abandoned Mine Legacy

D.1 MoEFCC Regional Offices and EC Post-Compliance

The post-EC compliance monitoring for mining projects is conducted primarily through MoEFCC's eight Regional Offices (located in Bhopal, Bhubaneswar, Bengaluru, Chandigarh, Chennai, Lucknow, Shillong, and Mumbai), each of which is responsible for monitoring EC compliance for projects in its geographic jurisdiction. Regional Officers (ROs) conduct: Six-Monthly Compliance Reports (SMCRs) — mandatory reports that EC holders must submit to the RO within 30 days of the end of each six-month period, documenting compliance with each specific EC condition; site inspections by the RO and its technical staff; and investigation of complaints about EC violations received from civil society organisations, local communities, or state pollution control boards. For mining companies, the SMCR is the primary instrument of ongoing EC compliance — it must accurately document the mine's environmental performance against each condition (air quality monitoring data, water quality monitoring data, tree plantation progress, dust suppression measures implemented) and promptly disclose any non-compliance or deviation from the EC conditions. A SMCR that falsifies or omits material non-compliance information is itself a serious regulatory violation — the MoEFCC treats deliberate misrepresentation in SMCRs as grounds for EC show-cause proceedings. For legal practitioners advising mining companies on EC compliance, the SMCR provides a quarterly compliance checkpoint that, properly used, can identify emerging compliance risks before they become enforcement actions — and companies that proactively disclose minor non-compliances in their SMCRs with corrective action plans are generally treated more favourably than those whose non-compliances are discovered through RO inspections or civil society complaints.

D.2 Cumulative Environmental Impact Assessment

The Cumulative Environmental Impact Assessment (CEIA) — which assesses the combined environmental impacts of multiple mining operations in a region rather than evaluating each mine in isolation — has been advocated by environmental regulators and civil society as a more realistic approach to mining environmental governance in intensively mined regions such as the Sundergarh district of Odisha (with dozens of iron ore and coal mines), the Bellary-Chitradurga-Tumkur iron ore belt of Karnataka, and the Hasdeo Arand coal block region of Chhattisgarh. The Supreme Court, in the post-Goa Foundation monitoring proceedings and in the Common Cause coal block case, has directed the development of CEIAs for specific intensively mined regions,

recognising that the individual-project EIA approach misses the cumulative depletion of forest cover, groundwater resources, and local biodiversity that results from the combined effect of many separately-approved mining operations. The MoEFCC's CEIA guidelines (in development) would require new mining projects in designated "critically polluted" or "ecologically sensitive" mining regions to address their incremental contribution to the cumulative regional environmental burden — potentially making EC grants in already-impacted regions more stringent, with higher mitigation requirements and more stringent post-approval monitoring conditions. For mining companies planning new operations in established mining regions, the CEIA framework creates additional regulatory uncertainty that must be factored into project development timelines and EC application strategies.

D.3 Green Mining Initiatives and Industry Standards

India's mining industry — through FIMI and individual large mining companies — has developed voluntary green mining initiatives and sustainability reporting frameworks that go beyond the mandatory EC and MCDR compliance requirements, both to demonstrate environmental responsibility to regulators and investors and to build the social licence to operate that is increasingly essential for mining projects in environmentally and socially sensitive areas. The FIMI Sustainability Standards for Mining — developed in consultation with IBM, MoEFCC, and international standards bodies — specify best practice requirements for: biodiversity impact assessment and management (including offset mechanisms for residual impacts); water stewardship (responsible water use and watershed management); climate change adaptation and mitigation (energy efficiency, renewable energy procurement, scope 1 and 2 emissions reduction); community livelihood support (employment, skill development, and business development for mining-affected communities beyond DMF-funded projects); and responsible supply chain management (verifying that contractors and suppliers meet the same environmental and social standards as the primary operator). For mining companies seeking to attract international institutional investors or to participate in global supply chains for green technologies (where supply chain ESG standards are increasingly rigorous), voluntary adoption of FIMI Sustainability Standards or alignment with international standards (ICMM Mining Principles, IRMA Standard for Responsible Mining) provides a credibility signal that differentiates them from operators who merely meet the minimum regulatory requirements.

> **Booklet IV — Complete Summary:** Environmental and forest clearances are the most time-critical and uncertainty-laden regulatory challenge in Indian mining project development. The EC process (18–36 months), FC process (24–60 months), and NBWL clearance (12–24 months) collectively create a 3–7 year regulatory development period that must be managed through proactive community engagement, rigorous EIA and EMP preparation, and strategic engagement with the regulatory authorities. EC condition compliance — monitored through six-monthly compliance reports and RO inspections — is a continuous operational obligation. The NGT's

environmental enforcement jurisdiction creates an additional regulatory oversight layer beyond the MoEFCC framework. Progressive mine closure planning and adequate Mine Closure Fund contributions are essential for both regulatory compliance and investor confidence. The evolving CEIA framework and green mining standards create forward-looking environmental governance obligations that well-managed mining companies are already addressing proactively.