

Audit of Environment Clearance and Environment Management in Extractive Industries

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The Plan for the Session

- Audit Objectives- General -
- Audit Objectives- Subject Specific
- Audit Criteria
- Audit Methodology
- Audit Tools
- Audit Evidence
- Indian Experience of Audit of EIs
- Audit Findings and Recommendations
- Good Audit Practices

Time Schedule	
Objectives-	15 minutes
Criteria-	5 minutes
Methodology-	3 minutes
Tools -	15 minutes
Evidence-	5 minutes
SAI India Exp-	5 minutes
SAI India Findings-	7 minutes
Good Practices-	5 minutes
Discussion, Q&A -	10-15 minutes

Audit Objectives - General

- To assess whether
 - the Government/ Public Sector Company performed exploration activities as per the policies and developmental goals of the country
 - the extracted oil/ gas/ ores/ other minerals as planned by the Government/ Public Sector Company in a sustainable manner.
 - the particular Public Sector Company operated and processed the raw materials extracted from the Earth to produce optimum finished or salable products
 - the mines or extraction sites have been managed sustainably to reduce its impact on environment and pollution.
 - the pricing mechanism ensures to fix appropriate sale price to maximise revenue/ optimise consumer price and extent of its achievement.

Audit Objectives -Issue Specific

- **Environment Clearance- Exploration and Extraction**

- To assess whether

- all necessary clearances (site, project, forest and pollution clearances) required for mining have been obtained before the project start.
- the environment impact assessment and environment management plan have been examined carefully before issuing environment clearance.
- forest clearance have been issued considering the nature of the forest and the extent of biodiversity and green cover impacted
- the rehabilitation plan of the extraction site has been prepared considering extraction plan and assessed environment impact.
- the method of extraction and duration of extraction has been decided considering the extent of impact caused to the environment
- temporary and preliminary clearance have been issued considering the results of rapid assessment and quick facts available (exploration activities)
- conditions required for deep drilling for extraction have been fully met before issuing environment clearance.

Audit Objectives -Issue Specific

- Environment Management -Sustainability
- To assess whether
 - the Government /Public Sector Company made strategic decisions to determine the extent of extraction and whether the same is in consonance with sustainable development.
 - the Government/ Public Sector Company acted/ acting on the Sustainable Development Goals as per the countries strategic requirements
 - all or most of the sustainable development goals have been considered in the extraction operation
- Environment Management - Effect on Environment
- To assess whether
 - all the environmental concerns have been addressed before/ while extraction operations and all mitigation/ remedial measures have been taken.
 - extraction and exploration operations are performed without harming the environment/ with minimum impact on the environment.
 - the by-products / wastes have been disposed or managed safely and without harming the environment

Audit Objectives -Issue Specific

- **Environment Management - Pollution**

- To assess whether

- measures to contain pollution in the extraction site are appropriate and adequate to contain the pollution from the extraction activity
- appropriate monitoring system has been placed to assess the extent of pollution in extraction area and the area surrounding the site.
- suitable treatment plant (like sewerage treatment plant), solid waste management units and hazardous waste management have been installed and operated efficiently.

- **Environment Management - Rehabilitation of extraction area**

- To assess whether

- the exploration and extraction sites have been rehabilitated as planned and as per the conditions given for operation
- harmful and hazardous extracted products have been safely disposed in situ or ex situ

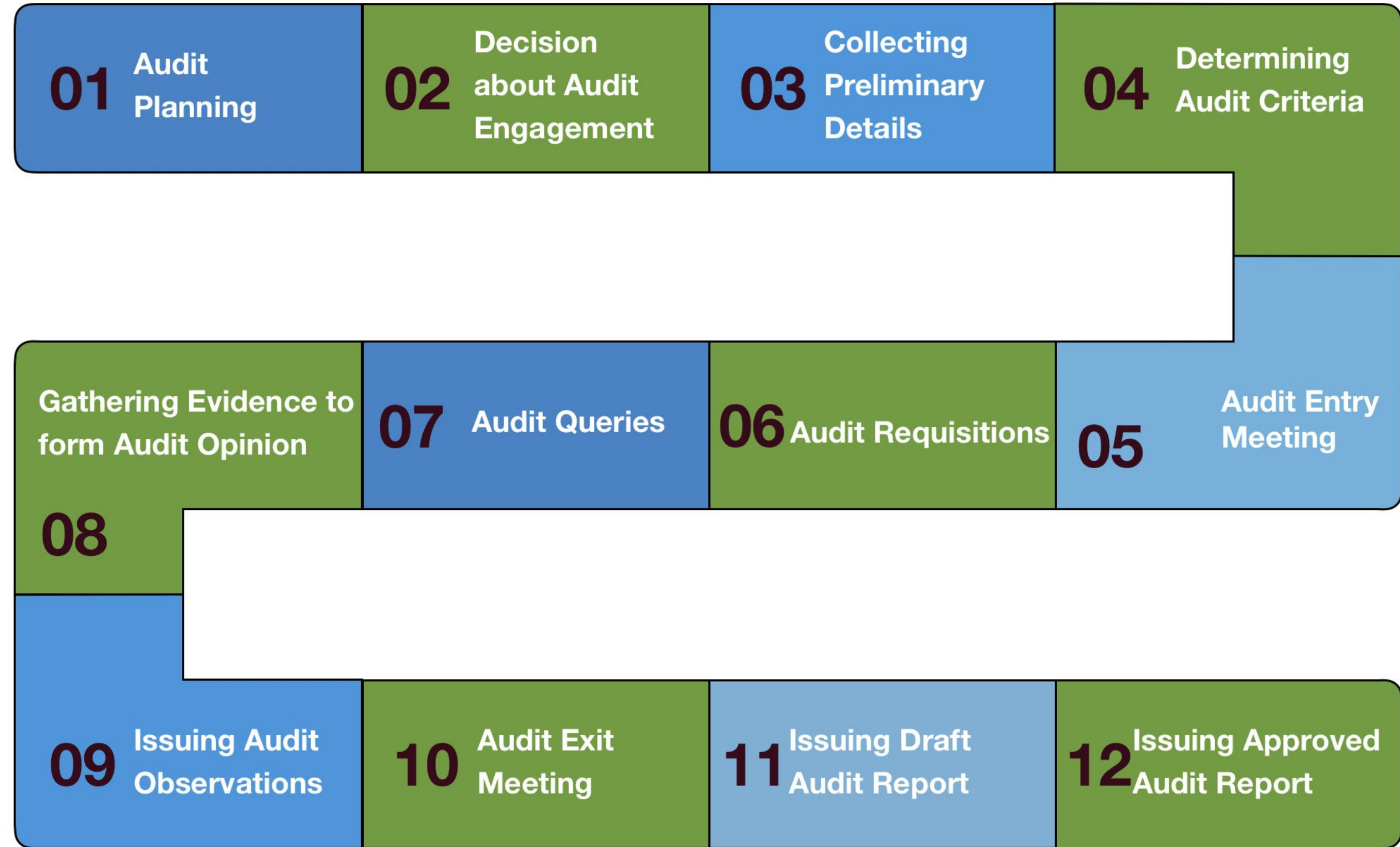
Audit Criteria

- Policies, acts and rules
- Guidelines issued by approving and monitoring authorities
- Applicable judicial pronouncements
- Conditions of approval and conditions of agreements
- Specific directions and orders of authority with enforcement responsibilities
- Assurance given by the concern agency to the government, approving and monitoring authorities.
- Acts and rules governing environment and pollution
- Safety related acts and rules
- Rules relating Finance management and accounting
- Rules and guidelines relating to miscellaneous aspects

Audit Methodology

- Standard audit process has to be followed
- Specific methodology for audit of extraction industries

- Audit Scope
- Audit schedule
- Audit Resource Planning



Audit Tools

- Analytical Reviews- Document Reviews/ Desk Reviews
 - Interviews, Questionnaire, Group Discussions
 - Data Analysis- on primary and secondary data.
 - Joint site inspection; Photos and Videos
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- Technology driven audit tools
 - Remote Sensing- Obtain data from National Remote Sensing Agents
 - Drone Technology - Engage reliable third party
 - Web based applications- From Google Earth to simulation models.

Audit Evidence

- Documents, data, financial statements received from the audited entity
- Details obtained from monitoring and enforce authorities
- Third party reports and data sources, accepted by the auditor and audited entity
- Assessment reports about control systems established
- Extraction, Exploration reports; Laboratory Reports; Tax authorities Report
- Environment Impact Assessment Reports; Mining Rehabilitation Report
- Independent institutional professional statement- expert comment
- Results of data analysis- data gap, data duplication, unreliable data etc.
- Remote sensing reports; Extractions from Google Earth application
- Unmanned Ariel Vehicle (Drone) study reports

Indian experience of audit of EIs

- **Union Government Reports**

- Performance Audit of Production and Sale of Steel Ore by NMDC Ltd (2013)
- Performance Audit of Allocation of Coal Blocks and Argumentation of Coal Production (2013)
- Compliance Audit on Hydrocarbon Production Sharing Contracts (2014)
- Performance Audit on Hydrocarbon Exploration Efforts of Oil India Ltd (2015)
- Compliance Audit on e-Auction of Coal Mines (2016)
- Performance Audit - Planning and Implementation of Phase 3 Expansion Project of MRPL (2017)
- Performance Audit on Marine Logistics Operations in ONGC (2019)
- Assessment of Environment Impact due to Mining Activities and its Mitigation (2019)

- **State Government Reports**

- Sand mining operations of Government of Tamilnadu (2018)
- Mineral Wealth Administration System of Government of Tamilnadu (2019)

Audit Observations and Recommendations

- **Assessment of Environment Impact due to Mining Activities and its Mitigation-Coal India Ltd**

- **Audit Objectives**

- to examine whether CIL / subsidiaries adhered to the relevant laws, rules and regulations as prescribed for environmental protection under the EP Act for prevention of pollution;
- to assess the implementation and effectiveness of sustainable development measures taken up by CIL / subsidiaries for environment protection in the mining area; and
- to assess whether adequate monitoring mechanism existed in CIL / subsidiaries for taking up remedial measures to control environmental degradation.

- **Audit Criteria**

1. EP Act 1986 and related Rules, Notifications and Circulars
2. Water (Prevention and Control of Pollution) Cess Act, 1977.
3. Standards prescribed by Bureau of Indian Standards in 2012.
4. Environmental Policy 2012 of CIL.
5. CIL guidelines issued in March 2014 for personnel of Environment Dept deployed in mines and guidelines
6. Mine closure guidelines 2009 and 2013
7. Environment Impact Assessment and Environment Management Plan.
8. EC of Mines and washery projects and conditions attached to EC accorded by MoEF&CC.

Audit Observations and Recommendations

- **Audit Observation**

- Mines were operated without valid Environment Clearance
- The company did not update policy; no operational manuals available
- Inadequate facilities for air quality monitoring; High level of air pollutants
- 30 % mines were polluting water bodies heavily; Ground water contamination
- Poor land management; mitigation of land degradation and reclamation
- Equipments to monitor pollution not installed; Lab analysis of samples not done

- **Audit Recommendations**

- Environment policies in the companies
- Two pronged pollution control strategy in all subsidiaries
- Remedial action should be expedited
- Speed up implementation of solar power project
- Remedial actions for mitigating and arresting the adverse impact of subsidence

Audit Observations and Recommendations

- **Audit of sand Sand Mining Operations**
 - Government failed to prevent unscientific way of mining
 - Large scale illegal mining was happening; Controls either not there or did not function
 - Mine area and volume of sand mined exceeded the approved limits
- **Mineral Wealth Management System**
 - Delay in formulation of State Mineral Policy;
 - Illegal removal of certain minor minerals; control system of mineral administration either not there or did not function
 - Scope limitation in strong words

Audit Good Practices

- **Preparatory Stage**

- Ensure availability of adequate and appropriate Human Resources
- Familiarisation meeting or training for the selected resources

- **Audit Stage**

- Develop specific audit questions and sub-audit questions linked to audit objectives
- Assess availability and operation of internal control system
- Visit to the site of exploration, extraction; mine completed and rehabilitated area
- Make best use of technology to assess about the mining situation realistically
- Use third party sources and institutional experts appropriately

Thank You