SUPREME AUDIT INSTITUTION OF INDIA
लोकहितार्थ सत्यनिष्ठा
Dedicated to Truth in Public Interest

Report of the Comptroller and Auditor General of India on Management of Minor Minerals in Jharkhand for the year ended 31 March 2022

Government of Jharkhand

Report No. 4 of 2025

(Performance Audit)

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Comptroller and Auditor General of India
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PREFACE

PREFACE

This Report of the Comptroller and Auditor General of India has been prepared under Article 151 of the Constitution of India for submission to the Governor of Jharkhand for being laid before the State Legislative Assembly.

A Performance Audit of Management of Minor Minerals in Jharkhand, covering the period from 2017-18 to 2021-22, was carried out during November 2022 to October 2023 considering the significant impact of mining activities on the revenue, development and mines affected areas and people.

The Report has been prepared in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

Executive Summary

Executive Summary

About the Report

Jharkhand is endowed with abundant mineral resources but there has been a declining trend in revenue contributions from the mineral sector to the State. Issues relating to irregularities in grant of mineral concessions, unscientific and unsustainable mining practices by lease holders *etc.*, have prominently featured in both print and electronic media.

Therefore, there was a need to assess the State Government's efficacy in enforcing provisions of applicable Acts and Rules framed thereunder by the Central and the State Government to tackle such lapses. Further, considering the significant impact of mining activities on the revenues and development of the State, a Performance Audit on the Management of Minor Minerals in Jharkhand (2017-22), was conducted during November 2022 to October 2023.

The objectives of the Performance Audit were to assess whether appropriate systems were being adopted to facilitate sustainable and scientific mining, mining leases/licenses were granted, renewed or cancelled in accordance with the applicable provisions; management of mines and minor minerals in the State was adequate and effective *etc*.

As part of the Performance Audit, six district mining offices were selected for detailed examination, besides audit of the Jharkhand State Mineral Development Corporation Limited (JSMDC). This Performance Audit aimed to identify areas that require corrections and improvement in the management of minor minerals in the State.

Main Audit Conclusions

Significant audit observations that emerged with regard to management of minor minerals are as follows:

Grant and management of leases

- The Department could not institute a check and balance mechanism to ensure that the Deputy Commissioners (DCs) do not grant leases for the mining area beyond their authority. Mining lease over an area of three Ha. and above was required to be put to e-auction. However, in one case, DC, Sahibganj granted the mining lease (4.74 Ha. on *raiyati* land) over the area beyond his authority. In another case, DMO, Sahibganj not only entertained the application for mining lease over an area of 3.136 Ha. but also issued LoI by arbitrarily reducing the area to 2.833 Ha. without any request from the applicant for reduction of the lease area.
- In DMOs, Chatra and Palamu, eight leases of stone were granted based on the reports of Circle Officer wherein nature of land was described as

Gair-Mazarua Parti Kadim, patthar pahar, tand-II, purani parati and *dhanhar-II*. Audit observed that these leases were granted on the land which were *Jungle Jhar,* as per revenue records and fell under the category of forest land under the provisions of the Forest Conservation Act, 1980.

- The Department had no system in place to identify defaulters during grant of new leases and to detect nature of land use, resulting in grant of mining leases on forest land. These cases eventually resulted in irregular grant or renewal or extension of mining leases in the State.
- Further, though the lessees had discontinued mining operations over a mineralised area of 276.99 acre in two test-checked districts for a continuous period of more than one year during 2017-23, these leases were neither declared lapsed nor cancelled. As a result, these inoperative leases remained idle, leading to blockage of State revenue and affecting mineral development.

(Paragraphs 2.1.1, 2.1.2, 2.2.1, 2.2.3 and 2.3)

Delay in auction process

- Progress of auction of mineral blocks was very slow with only 3.77 *per cent* (11 out of 292 blocks) auction completed during 2018-23. It was due to lack of monitoring by the Department and deficiencies in planning, which restricted effective conduct of auctions in a phased and time bound manner. As a result, minor mineral blocks with potential resources remained idle, leading to blockage of revenue.

(Paragraph 2.4.1)

Trend of Revenue

- Revenue receipts from minor minerals declined significantly, from ₹1,082.44 crore in 2017–18 to ₹697.73 crore in 2021–22. Furthermore, the share of minor mineral receipts in the State's total revenue also saw a decline, dropping from 5.36 *per cent* in 2017–18 to 2.23 *per cent* in 2021–22.

(Paragraph 3.1)

Deficiencies in Automation

- An IT based mineral administration system, the Jharkhand Integrated Mines and Minerals Management System (JIMMS), was introduced (May 2015) with the objective of simplifying complex mining processes. Despite lapse of more than seven years, automation of records was found to be incomplete during audit, due to unavailability of crucial records and consequently, the goal of encapsulating all crucial data/information in one platform, remained unachieved. For instance,

JIMMS has the provision to generate lease maps on Google Application using coordinates, which could assist the Department in monitoring the mining operation through generated maps. However, in 47 cases, coordinates required were not filled while in 15 cases, coordinates filled were insufficient, preventing the generation of satellite images and hindering monitoring of mining activities.

- Royalty leviable on stone boulders was determined by their intended uses. However, modules in the system lacked capability to identify the specific uses. Rules mandate annual assessment of royalty payable by lessees, but JIMMS lacked necessary tools for this purpose. Due to these constraints, JIMMS could not be comprehensively used for assessment and collection of revenue by the Department.

(Paragraph 3.2.1)

Leakage of Revenue

- There was leakage of revenue due to short levy of royalty including District Mineral Foundation Trust funds of ₹ 7.53 crore in 30 cases during the period October 2019 to January 2022 and non realisation of dead rent of ₹ 2.23 crore in 15 cases during the period March 2016 to March 2022. Further, between April 2014 and July 2023, 26 lessees in four districts extracted 33.21 lakh m^3 of minor minerals beyond the permissible limits. Although these lessees were liable to pay penalty amounting to ₹ 205.21 crore for unauthorised extraction of minerals, District Mining Offices of respective districts did not impose and collect the penalty.

(Paragraphs 3.2.2, 3.2.3 and 3.3)

Management of Sand *ghats*

- The State Government notified (August 2017) the Jharkhand State Sand Mining Policy, 2017 for effective guidance and management of sand mining in the State, in an environmentally sustainable and socially responsible manner. According to the Policy, the management of sand *ghats* of Category-2 in the State was handed over to the Jharkhand State Mining Development Corporation (JSMDC) for a period of five years *w.e.f* 16 August 2017, which was later extended for three years from August 2022.

- The Directorate of Mines provided (November 2017) JSMDC with a list of Category-2 sand *ghats* numbering a total of 177 *ghats* in 19 districts, which was later updated (March 2022) to 608 *ghats* in 23 districts. JSMDC initiated the process to operationalise 389 sand *ghats* but it could operate only 21 *ghats*. The reasons for this included not ensuring timely preparation of Mining Plans (MP), and delay in submission of

proposals to the State Environment Impact Assessment Authority (SEIAA) for grant of Environmental Clearance (EC). Due to 368 non-operative *ghats*, the State Government suffered potential losses of ₹ 70.92 crore from these *ghats* having an area of 9,782.55 acres.

- Since all Category-2 sand *ghats* in the State have been exclusively operated by the JSMDC from October 2018, the royalty received from the sand as reported by the Department should have matched the figures reported by the JSMDC. However, significant discrepancies were observed in the royalty amounts for the period 2019–2022, with differences ranging from ₹ 82.55 lakh to ₹ 7.61 crore, for which no justification was provided to audit.

(Paragraphs 3.4.1, 3.4.3 and 3.4.4.1)

Approval and implementation of Mining Plan/ Progressive Mine Closure Plan

- The Mining Plan (MP) serves as the basis for scientific and sustainable mining practices. In 64 of 74 test-checked cases of fresh lease, granted during February 2009 to March 2022, only the approved MPs and conditional approval letters were provided to Audit without supporting evidence of site inspections or dates of submission of MPs by applicants. This lack of documentation raises concerns about the thoroughness and transparency of the review and approval process.
- Out of 138 Mining Plans for 74 test checked stone leases, 120 plans were produced before Audit. Audit observed that 54 *per cent* (65 out of 120) of test checked Mining Plans were approved by non-designated authorities. According to the JMMC Rules, approval of the MP should be given after thorough investigation but in nine cases these were either approved on the same day or on the very next day of submission, indicating lack of thorough investigation. Further, the approved MPs contained unreliable information *viz.*, incorrect surface plans, incorrect coordinates of boundary pillars, overlapping lease areas, incorrect estimation of mineable and non-mineable reserves, incorrect estimation of ground water tables.
- The lease area is categorised into two parts: Mining Pit Area, containing mineable reserves for excavation and non-mineable resources in form of benches; and Safety Barrier of 7.5 meter zone around the pit area that holds only non-mineable resources, which is not available for mining. The audit calculated that a total of 83.87 lakh tonnes of non-mineable resources in 14 out of 25 cases should have been blocked within safety barriers, against which only 53.21 lakh tonnes were earmarked in the Mining Plans, leading to an overstatement of mineable resources to an

extent of 30.66 lakh tonnes. This resulted in irregular accounting of mineable reserves worth ₹ 34.96 crore within the mining pit area.

(Paragraphs 4.1.1, 4.1.2 and 4.1.3)

- Mining in non-mineable area of the lease is an irregular practice. Audit observed that 55 (87 *per cent)* out of 63 leases had side walls with steep slopes, instead of the recommended gentle slope. This resulted in irregular excavation of non-mineable resources without creating benches and safety barriers. Lessees also excavated beyond the allowable depth, vertically infringing on non-mineable resources, with pit depths exceeding permissible limits by 2.5 to 50 meters (*i.e.*, 11 to 494 *per cent*).

- Besides, in 14 out of 22 cases, lessees extracted minerals from 15.44 hectares (Ha.) that was outside the lease area. Excavation beyond lease area could have been monitored through satellite images of lease area generated through kml files, updating coordinates of each boundary pillar in JIMMS portal. These were not ensured in 63 test checked stone leases.

- Audit estimated extraction volumes by measuring excavated areas in Google Earth and multiplying them with depths observed during joint physical verification, adjusting for trapped volumes in slopes and haul roads. It is observed that lessees had underreported stone excavation by 93.53 lakh m^3 in 13 leases out of 63 test checked leases. This was validated by Birsa Institute of Technology (BIT) Sindri, which was engaged by audit for volume calculation of excavated minerals in stone quarries for these 13 mines. BIT, Sindri used AutoCAD Civil 3D software for calculating the total extraction and reported excess extraction (after deduction the production quantities during the period) at 95.51 m^3 *i.e.*, 2.12 *per cent* more than the quantity estimated by Audit. The potential financial implication of underreporting of mineral extraction (93.53 lakh m^3) was estimated at ₹ 292.75 crore.

- In deviation of applicable provisions**,** against yearly requirement of 20 *per cent,* Department of Mines and Geology, Government of Jharkhand conducted yearly sectional measurements of only 0.68 to 3.17 *per cent* of the existing minor mineral leases in six test checked districts during the period 2017-22.

- In 46 out of 63 cases, either the boundary pillars were entirely absent (30) or was only partially present (16). Furthermore, in 62 out of 63 leases across the sampled districts, the mandated 7.5-meter safety barrier was reduced, with actual widths ranging from 0 to 7 meters.

(Paragraph 4.1.4.1)

- To mitigate the adverse impact of mining on the environment, plantations were to be placed on the safety barriers of mining leases. Accordingly, lessees were required to plant the recommended quantity of trees in grid pattern on safety barriers. Audit found that in 61 out of 63 test-checked leases across sampled districts, only 2,225 trees were planted against the proposed 74,676, resulting in a shortage of tree plantation ranging from 20 to 100 *per cent.* Further, air, water, and noise monitoring stations were not found established within the lease area to monitor the levels of pollution.

(Paragraph 4.1.4.2)

- Every mine is required to have a Mine Closure Plan which is of two types: Progressive mine closure plan for the purpose of providing protective, reclamation and rehabilitation measures in a mine or part thereof; and Final mine closure plan for the purpose of decommissioning, reclamation and rehabilitation of a mine or part thereof after cessation of mining and mineral processing operations. Audit observed that in 61 out of 63 test checked stone leases (in two cases MPs not produced), though the progressive mine closure plans were submitted along with the MP, the same were not complied with. Further, the final mine closure plans were not submitted in 12 of 63 test-checked cases, where lease period had expired during the period from May 2019 to July 2023.

(Paragraph 4.1.5)

Environmental Clearance

- Absence of any system to cross-verify the documents submitted by the applicant on Parivesh Portal enabled applicants to obtain ECs from SEIAA under B2 (0-5 Ha.) category based on fake contiguous certificates instead of ECs under B2 (5 to 25 Ha.) category. After obtaining leases on these fake certificates, lessees had excavated 6.35 lakh m^3 of stone (as of March 2024) valuing ₹ 19.88 crore unauthorisedly during 2022-23 and 2023-24.

(Paragraph 4.2.1)

- While 29 *per cent* (171) of the participants of the beneficiaries' survey, conducted by Audit during November 2022 to October 2023 reported that mining activities provided them with employment, 68 *per cent* (407) expressed concerns that their quality of life had deteriorated due to environmental damage, destruction of agricultural field, depletion of the water table, damaged roads and the absence of any restoration works.

(Paragraph 4.2.3)

Transportation of minerals

- The Department of Mines and Geology (DMG) registered 72,449 vehicles as of 28 March 2023, but none of these vehicles was equipped with Radio Frequency Identification/ Global Positioning System (RFID/GPS) or any other vehicle tracking system even after a lapse of five years. The Department relied on permits and challans system in the absence of comprehensive systems to detect unauthorized movements of vehicles, overloading, transportation on unregistered vehicles *etc*.

(Paragraph 4.3.1)

- The overall system for transportation of minerals did not provide an assurance that it could prevent illegal transportation of minerals. Audit test checked weighbridge report of seven dealers of stone chips and found that in 85 *per cent* of cases, transporting challans issued through JIMMS were unavailable.

- In case of 28 vehicles, 35 initial challans were followed by 50 additional challans that were issued before the expiry of the previous challans, due to lacunae in JIMMS, leading to risk of misutilisation of challans.

(Paragraph 4.3.1.1)

- Audit noticed instances of (i) misutilisation of transporting challans for transportation of stone extracted illegally from an area other than the area under lease, and (ii) transportation of closing stock of stone lying at quarry site of the expired leases.

(Paragraph 4.3.1.2)

Audit Recommendations

In order to ensure sustainable and scientific mining of minor minerals and to boost the revenue of the State, ***the Government/Department may:***

1. ***implement a system of online application of mining lease and put in place a procedure for issuing/obtaining centralised royalty clearance certificates through JIMMS. The Department may also ensure integration of JIMMS with online land records;***
2. ***take necessary steps to cancel leases granted on Jungle Jhar/ forest land and restore legal status of such land;***
3. ***cancel inoperative leases and expedite auctioning process of mineral blocks for revenue augmentation and mineral development in the State;***
4. ***fix responsibility on erring officers who violated provisions of the relevant Acts and Rules by misreporting the nature of land to be leased for mining;***

5. ***assess reasons for decrease of sand reserves in inoperative sand ghats and take comprehensive measures to augment Government revenue from minor minerals by operationalizing sand ghats;***

6. ***fix responsibility on erring officials who did not verify rates of royalty applicable to boulders dispatched to crushers for making chips and adhere to provisions of the Act/Rules for collection of correct royalty and penalty;***

7. ***make concerted efforts to rectify shortcomings of JIMMS including formulating a mechanism for submission of Mining Plans through JIMMS for transparency and documentary evidence;***

8. ***formulate a manual for appraisal of Mining Plans on minor minerals in line with the Indian Bureau of Mines (IBM) Manual on appraisal of Mining Plan (2014), to establish a standardized procedure for processing, examination and scrutiny of Mining Plans;***

9. ***ensure submission of kml files of lease area created through Differential Global Positioning System (DGPS) survey alongwith the Mining Plans, ensure submission of these files to SEIAA, update repository of kml files thereon for monitoring through satellite imagery and enforce the progressive mine closure plan as proposed in the MPs. Also ensure that a final mine closure plan is submitted by lessees, and approved by the District Mining Officers (DMOs) for its implementation;***

10. ***conduct detailed investigation to work out the exact volume of under-reported minerals extracted and make provisions in JMMC Rules, 2004 in line with Rule 34A of Mineral Conservation and Development Rules (MCDR), 2017 for carrying out drone survey of minor mineral leases throughout the State for checking instance of excess excavation by lessees and imposing penalties accordingly;***

11. ***establish inter-departmental coordination among DMG, Ministry of Environment, Forest and Climate Change, State Environment Impact Assessment Authority, Central Ground Water Board and Jharkhand State Pollution Control Board for compliance of conditions of MPs and ECs;***

12. ***implement system for periodic survey for identification and reconstruction/restoration of damaged assets due to mining activities;***

13. ***implement a comprehensive system by integrating all aspects of transportation of minerals (weighing, tracking, monitoring etc.) to effectively monitor and plug illegal transportation of minerals; and***

14. ***ensure installation of weighbridges in dealer/lease areas with facilities for authentically fetching weighment data for transporting challans on a real-time basis.***

Chapter 1
Introduction

Chapter 1 Introduction

1.1 Background

Mineral as defined under Section 3(ad) of the Mines and Mineral (Development and Regulation) Act, 1957 (MMDR Act) includes all minerals except mineral oils. Management of mineral resources is the responsibility of both the Central and State Government[1]. Minerals can be divided into two categories *i.e.*, Major and Minor Minerals. Minerals defined in the First Schedule (including notified minerals in the Fourth Schedule) of the MMDR Act are interpreted as major minerals in Rules framed under the MMDR Act. As per Section 3(e) of the Act, *ibid*, minor minerals include building stone, gravel, ordinary clay, ordinary sand *etc.* and any other minerals notified by the Central Government.

Section 15 of the Act *ibid* empowers a State Government to make rules for regulating the grant of quarry leases, mining leases or other mineral concessions in respect of minor minerals and for the purposes connected therewith.

The Government of Jharkhand (GoJ) has framed Jharkhand Minor Mineral Concession (JMMC) Rules, 2004 for regulating grant of quarry leases, mining leases or other mineral concessions in respect of minor minerals. A list of minor minerals is annexed with JMMC Rules as Schedule-2 and 2 (क).

The Department of Mines and Geology, Government of Jharkhand implemented (May 2015) an IT based mineral administration system through a software application named the Jharkhand Integrated Mines and Minerals Management System (JIMMS) with an objective to simplify the assessment procedure. As per JIMMS portal, there were total 599 working leases of minor minerals in Jharkhand as of November 2023.

1.2 Why we selected this topic?

Issues relating to irregularities in grant of mineral concessions by the State Government, unscientific and unsustainable mining practices by stone mining lease holders, non-settlement of sand *ghats etc*. have prominently featured in both print and electronic media.

Therefore, the topic 'Management of Minor Minerals in Jharkhand' was selected to assess the State Government's efficacy in enforcing provisions

[1] Entry 54 of the Union List (List I) and entry 23 of the State List (List-II) of the Seventh Schedule of the Constitution of India.

of the applicable Act and Rules framed thereunder by the Central and the State Governments to tackle the highlighted issues.

1.3 Organizational set up

At the Government level, the Secretary, Department of Mines and Geology (Department), GoJ is responsible for the administration of the Act and Rules. The Secretary is assisted by two Joint Secretaries, two Deputy Secretaries and three Under Secretaries. The Department is divided into two functional entities under the charge of Director, Geology and Director, Mines.

The Director, Mines, is responsible for the administration of the Act and Rules. He is assisted by an Additional Director, Mines, (ADM), two Deputy Directors, Mines (DDM) and two Assistant Mining Officers (AMOs) at the Headquarters' level. The State is divided into six Circles[2], each under the charge of a DDM. The Circles are further divided into 24 District Mining Offices[3], each under the charge of a DMO/AMO. The DMOs/AMOs are responsible for levy and collection of royalty and other mining dues. They are assisted by Mining Inspectors (MIs). DMOs and MIs are authorized to (i) inspect the mining lease areas, (ii) review the production and (iii) check the dispatch of minerals.

The Director, Geology is responsible for detailed geological exploration of minerals, geo technical studies & analysis of minerals and preparation of mineral blocks for auction with reference to Minerals (Evidence of Mineral Contents) Rules, 2015. The Director, Geology is assisted by an Additional Director, four Deputy Directors, three Assistant Directors and five Geologists at the headquarters level. Jharkhand also has a State Geological Laboratory and a Geological Training Institute under the charge of an Additional Director, Geology. The State is divided into five Circles[4], each under the charge of a Deputy Director, Geology. The Circles are further divided into 14 District Geological Offices[5], each under the charge of an Assistant Director, Geology. These Assistant Directors are further assisted by Geologists.

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[2] South Chotanagpur Circle (Ranchi), North Chotanagpur Circle (Hazaribagh), Kolhan Circle (Chaibasa), Santhal Pargana Circle (Dumka), Dhanbad Circle and Palamu Circle (Medininagar).

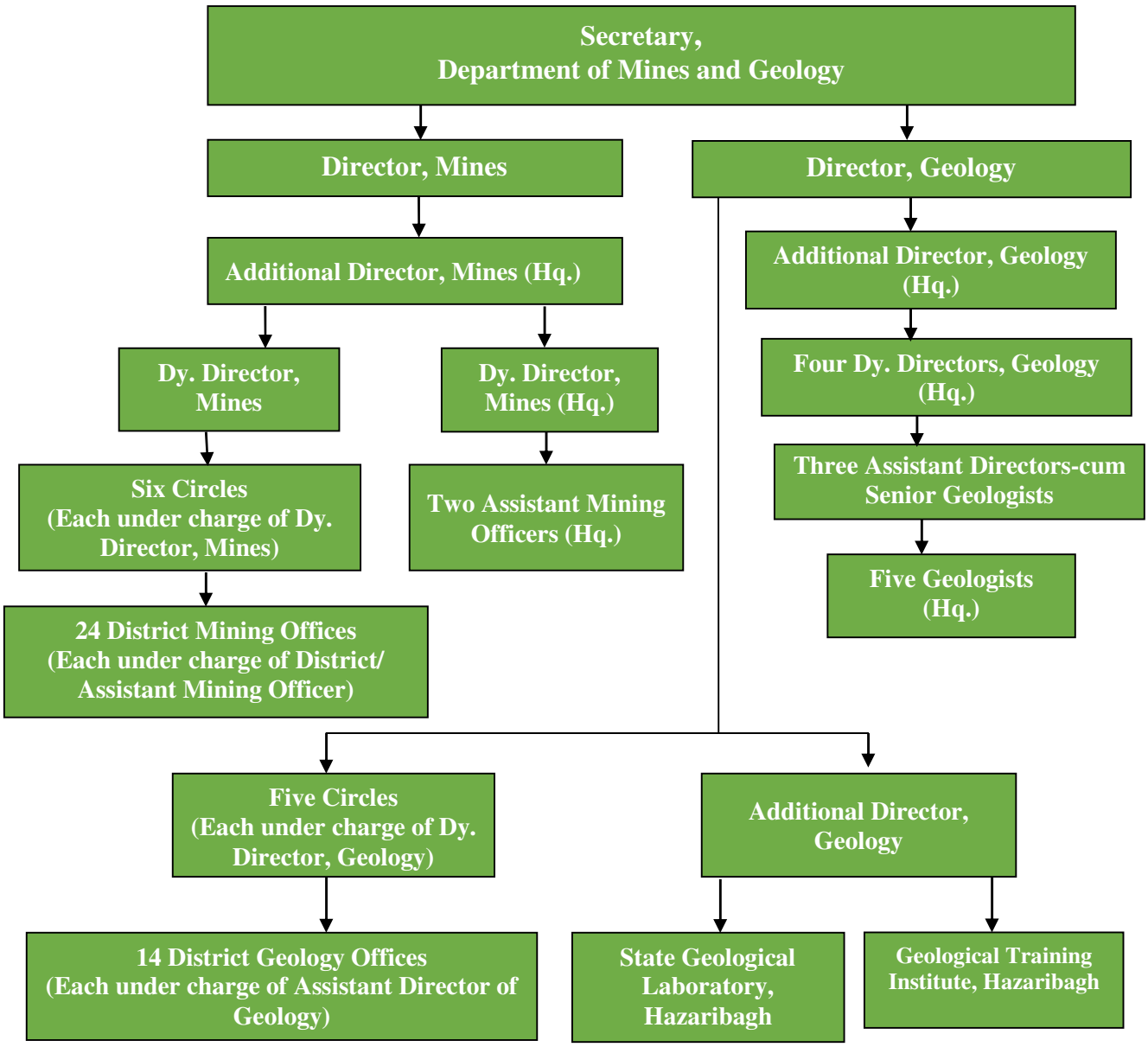
[3] Bokaro, Chaibasa, Chatra, Deoghar, Dhanbad, Dumka, Garhwa, Giridih, Godda, Gumla, Hazaribagh, Jamshedpur, Jamtara, Khunti, Koderma, Latehar, Lohardaga, Pakur, Palamu, Ramgarh, Ranchi, Sahibganj, Saraikela–Kharsawan and Simdega.

[4] Kolhan, North Chotanagpur, Palamu, Santhal Pargana and South Chotanagpur.

[5] Bokaro (for Bokaro and Dhanbad districts), Chaibasa, Deoghar (for Deoghar and Jamtara districts), Dumka (for Dumka and Godda districts), Hazaribagh (for Chatra, Hazaribagh and Ramgarh districts), Jamshedpur, Gumla (for Gumla and Simdega districts), Koderma (for Giridih and Koderma districts), Latehar, Lohardaga, Medininagar (for Garhwa and Palamu districts) Ranchi (for Ranchi and Khunti districts), Sahibganj (for Pakur and Sahibganj districts) and Saraikela–Kharsawan.

The organizational set-up is depicted in the **Chart 1.1**.

Chart- 1.1: Organizational Set-up of the Department



1.4 Audit Objectives

The Performance Audit (PA) was undertaken to ascertain whether:

i) mining leases or licenses were granted, renewed, closed and cancelled in accordance with the provisions of the relevant Act and Rules;

ii) management of mines of minor minerals in the State was adequate and effective to ensure systematic, sustainable & scientific mining and to augment and safeguard revenue; and

iii) adequate internal controls and co-ordination existed between various Departments involved in mining activities to address environmental and ecological concerns; prevent illegal mining and leakage of revenue.

1.5 Audit Criteria

The Audit Criteria have been derived from the following sources:

- The MMDR Act, 1957 with amendments;
- Minor Mineral Conservation and Development Rules (MMCDR), 2010;
- Jharkhand Minor Mineral Concession (JMMC) Rules, 2004 with amendments;
- Jharkhand Minor Mineral (Auction) Rules, 2017;
- Jharkhand State Sand Mining Policy, 2017;
- Jharkhand Minor Minerals (Evidence of Mineral Contents) Rules, 2018;
- Jharkhand Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2017;
- The Bihar and Orissa Public Demands Recovery (BOPDR) Act, 1914;
- Notifications, orders and circulars issued by the Government and the Department.

1.6 Audit Scope and Methodology

The Performance Audit covered the period of five years from 2017-18 to 2021-22. Audit involved scrutiny of records at the State level units (Departments and Directorates), selected district mining offices and joint physical verification (JPV).

Audit scrutinized the following broad areas:

- allocation and auction of minor minerals, trend of revenue and exploration of minerals;
- the role of associated agencies like State Environmental Impact Assessment Authority (SEIAA), Jharkhand State Pollution Control Board (JSPCB) *etc*., and their coordination with the Department;
- the role of Jharkhand State Mineral Development Corporation Ltd. (JSMDC) in view of Jharkhand State Sand Mining Policy, 2017;
- Mining plans and information available on JIMMS, in respect of 74 mining leases of minor minerals;
- Mining plans of 63 stone leases in six sampled districts (out of 24 districts in Jharkhand) through Joint Physical Verification (JPV), examination of mining lease area through Keyhole Markup Language

(kml) files[6] on *Google Earth pro* and information available on Geographical Information System (GIS) *etc*.; and

- beneficiary survey of 597 mines affected people in six sampled districts.

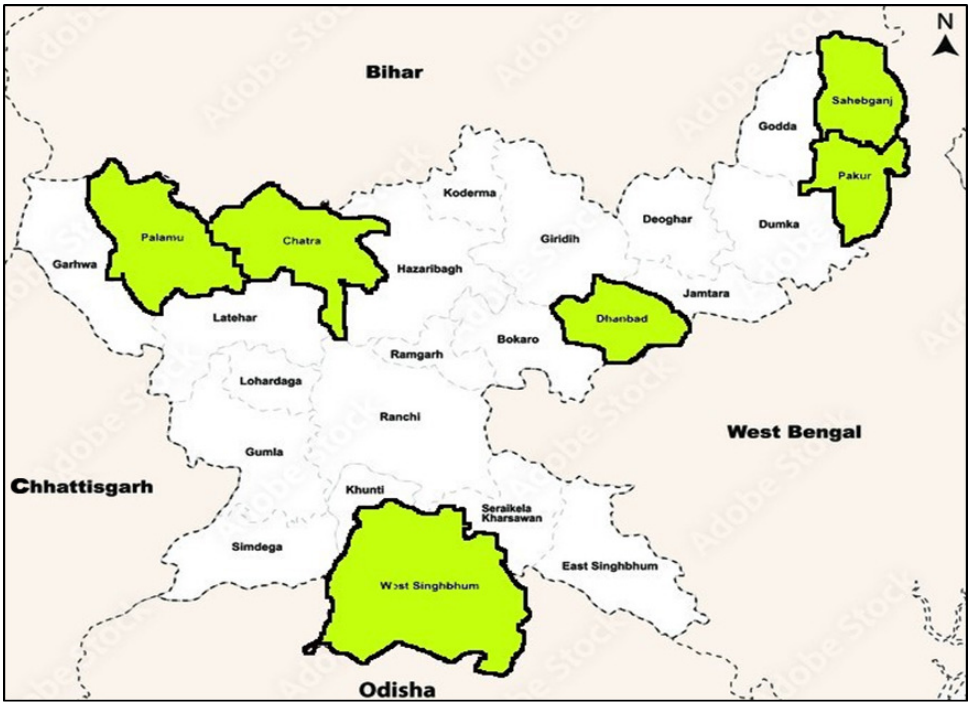
1.7 Sample and Sampling Methodology

The Performance Audit covered the Department and JSMDC.

Details of sampling of minerals, units and methodology used therein are as under:

Minerals: During 2017-22, out of total royalty from minor minerals[7], 95 *per cent* was realized from stone alone so six[8] out of 24 District Mining Offices were selected based on royalty collected from stone quarrying for detailed audit analysis. Representation of sampled districts on the map of Jharkhand is as under:

Picture- 1.1: Showing six sampled districts on the map of Jharkhand



JSMDC: Under a new sand mining policy of August 2017, JSMDC was made deemed lessee for regular and adequate supply of sand at a reasonable price to common people of the State. However, only 21 out of 608 Category-2 sand *ghats* were in operation during the audit coverage period.

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6 kml file is a format used to display geographical data in Earth browser such as Google Earth.

7 Stone metal, Brick earth, Sand, China Clay, Dolomite, *Morrum etc*.

8 Chaibasa, Chatra, Dhanbad, Pakur, Palamu and Sahibganj.

A detailed review of JSMDC was carried out by Audit to assess the reasons for the operation of only 3.45 *per cent* of commercial sand *ghats.*

1.8 Entry and Exit Conference

Entry Conference was held on 25 August 2022 with the Secretary, Department of Mines and Geology, GoJ, wherein objectives, scope and methodology were explained. The Exit Conference was held with the Secretary of the Department on 22 July 2024. The Secretary stated that the data pertaining to observations/suggestions were under verification and the detailed reply/comments would be furnished after examination. However, detailed replies in respect of the audit observations made have not been received despite several reminders issued between March 2024 and May 2025 (July 2025).

1.9 Structure of the Report

This report is structured on the basis of findings that emerged during audit. The audit findings have been reported under the following chapters:

Chapter-2: Allotment of mining leases;

Chapter-3: Revenue realisation and Management of Sand *Ghats*;

Chapter-4: Sustainable and Scientific mining; and

Chapter-5: Conclusion.

1.10 Acknowledgement

The Performance Audit was conducted between November 2022 and October 2023. Audit acknowledges the cooperation and assistance extended by the Department, JSMDC, State Environment Impact Assessment Authority (SEIAA) and the test checked District Mining Offices in conducting the PA.

Chapter 2
Allotment of mining leases

Chapter 2 Allotment of mining leases

Section 15 of the MMDR Act, 1957 empowers a State Government to make rules for regulating the grant of quarry leases, mining leases or other mineral concessions in respect of minor minerals and for the purposes connected therewith. Accordingly, the GoJ framed the Jharkhand Minor Mineral Concession (JMMC) Rules, 2004 which have been amended from time to time. According to JMMC Rules, 2004 lease in respect of stone, *morrum* and soil over *raiyati* land up to three hectares (Ha.) is granted by the Deputy Commissioner (DC) and leases in other cases of minor minerals irrespective of area and title of land, are granted through e-auction by the Director, Mines under the provisions of Jharkhand Minor Minerals (Auction) Rules, 2017 (JMMAR, 2017) framed (notified on 16 August 2017) by GoJ.

2.1 Grant of leases of minor minerals (Non-auction cases)[9]

A flow chart depicting the Standard Operating Procedure (SOP) required to be adopted for grant of mining lease of minor minerals in non-auction cases by DCs is shown in **Chart-2.1**.

Chart-2.1: SOP for non-auction cases of grant of mining leases for minor minerals

An application in Form "A" along with the prescribed documents is submitted for obtaining mining lease of minor minerals to the District Mining Officer (DMO). After checking the completeness of the application, DMO may either accept, or out rightly reject the application within 30 days of its receipt.

↓

After obtaining required verification from the Forest Department, Land Revenue Department and consent of the concerned *gram sabha*, DMO issues a Letter of Intent (LoI) within 120 days from the receipt of the application, otherwise the application becomes deemed rejected, after being time barred.

↓

Applicant of a mining lease is required to submit a Mining Plan (MP) and a Progressive Mine Closure Plan for approval. The applicant is also required to obtain Environmental Clearance (EC) from competent authority for prevention of air, water pollution and environmental conservation.

↓

Mining lease grant order is issued within 30 days after submission of MP and EC. On deposit of the sum relating to preliminary expenses, security deposit and financial assurance, lease deed is executed within 90 days from the date of issue of grant order, otherwise the grant order stands cancelled. After this, applicant has to obtain Consent to Establish (CTE) and Consent to Operate (CTO) from JSPCB before starting mining operations.

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[9] Grant of mining leases by Deputy Commissioner over *raiyati* land.

Audit noticed from the data/information available on JIMMS portal (November 2023) that a total of 599 leases of minor minerals were operating in the State.

Scrutiny of data/information furnished by six DMOs[10] revealed that 89 mining leases of minor minerals were granted during 2017-22. Out of these 89 cases, Audit test checked 40 cases (45 *per cent* of the total leases granted during the audit coverage period). Besides these, Audit also test checked 79 other cases, where mining lease was granted pre-2017 but these leases were either operational or had been renewed during the audit period (2017-22). Details of mining leases in test checked districts are shown in **Table-2.1**.

Table-2.1: Showing details of minor minerals leases in test checked districts as on 31 March 2022

District	No. of operating leases of minor minerals as on 31.03.2022	No. of mining leases granted during 2017-22	No. of leases test checked out of no. of mining leases granted during 2017-22	No. of leases test checked allotted prior to 2017 (part of sampled leases)
Chaibasa	11	00	00	10
Chatra	13	03	02	08
Dhanbad	62	12	12	12
Pakur	51	24	07	20
Palamu	54	30	04	21
Sahibganj	78	20	15	08
Total	**269**	**89**	**40**	**79**
Total leases test checked			**119**	

Source: information provided by DMOs

During the examination of these 119 cases, Audit noticed several irregularities in 44 cases of grant of mining leases, which are shown in **Table-2.2** and discussed in detail in subsequent paragraphs.

Table-2.2: Showing brief of irregularities in grant of minor minerals

Sl. No.	Brief of irregularities	District	No. of Cases
1	The Deputy Commissioner (DC) was not competent to grant mining lease over an area above three Ha. of *Raiyati* land[11] but the same was granted by the DC. **(Paragraph 2.1.1.1)**	Sahibganj	1
2	Mining lease was granted where DMO *suo moto* reduced the applied area. **(Paragraph 2.1.1.2)**		1
3	Mining lease was granted over forest land against the provisions of Rule 5(3) of JMMC Rules, 2004 and Forest Conservation Act 1980. **(Paragraph 2.1.2)**	Palamu	7
		Chatra	1
4	Mining lease was granted on incomplete set of mandatory documents. **(Paragraph 2.1.3)**	Chaibasa	4
		Chatra	4
		Dhanbad	6
		Pakur	4
		Palamu	1
		Sahibganj	11

[10] Chaibasa, Chatra, Dhanbad, Pakur, Palamu and Sahibganj.

[11] Nature of land (belongs to individual) as shown in Register 2, a government revenue record.

Table-2.2: Showing brief of irregularities in grant of minor minerals

Sl. No.	Brief of irregularities	District	No. of Cases
5	Mining lease was granted to the defaulters. **(Paragraph 2.1.3 bullets)**	Dhanbad	2
		Pakur	2
Total			**44**

2.1.1 Irregular grant of leases

Audit observed frequent changes in the JMMC Rules, 2004 in respect of grant of lease of stone quarries. Period-wise changes in Rules and their impact on lease applications and authority of DC to grant mining lease over *raiyati* land is explained below:

- **JMMC Amendment Rules, 2017: During 02 March 2017 to 11 December 2017**

  (i) Application for mining lease below five Ha. of *raiyati* land could be made to the DC who was empowered to grant the same.

  (ii) Any applications, for grant of lease over an area exceeding five Ha. of *raiyati* land that were pending on the date the amendment came into effect, became deemed ineligible, except those cases where LoI had been issued subject to a condition that applicant would have to submit MP and EC within 180 days from the date of notification *i.e.*, 01 September 2017 otherwise it would be deemed rejected.

- **JMMC (2nd Amendment) Rules, 2017: During 12 December 2017 to 13 March 2019**

  (i) Application for mining lease below five Ha. of *raiyati* land could be made to the DC and he was empowered to grant the same.

  (ii) All pending applications for mining leases irrespective of area over *raiyati* land became deemed ineligible except those cases where LoI had been issued subject to a condition that applicant would have to submit MP and EC within 180 days from the date of notification *i.e.*, 12 December 2017 otherwise it would be deemed rejected.

- **JMMC (Amendment) Rules, 2019: From 14 March 2019 to till date**

  (i) DC can grant mining lease for stone, *morrum* and soil only over *raiyati* land having area up to three Ha.

Under the provisions of Rule 62 of the JMMC Rules, 2004, an applicant could file an appeal before the Mines Commissioner for review of rejection of application, within 60 days of the rejection order or within 75 days of deemed rejection.

From the scrutiny of lease files in DMO, Sahibganj, Audit noticed two cases where leases for minor minerals were irregularly granted as discussed below:

2.1.1.1 Irregular grant of mining lease over an area of three Ha.

An applicant had applied (September 2017) for stone mining lease over an area of 4.74 Ha. of *raiyati* land for which DMO, Sahibganj issued LoI (October 2017). Meanwhile the second amendment to JMCC Rules was issued (12 December 2017) vide which the applicant had to submit the MP & EC within 180 days from the date of issue of LoI. Since the applicant failed to submit the MP and EC by the due date of 11 June 2018, his application became deemed rejected (June 2018). However, it was noted that despite being deemed rejected, the applicant applied for EC to SEIAA in October 2019, which was subsequently granted in November 2019.

In the meantime, Rule 9(1) (ङ) of JMMC Rules, 2004 was again amended (w.e.f. 28 September 2020), stating that if an application for mining lease could not be disposed of due to non-submission of MP and EC within 180 days from the date of issue of LoI, and if there was no fault on the part of the applicant for delay, the Mines Commissioner may consider the application on the merit of the case.

The applicant filed (October 2020) a revision petition before the Mines Commissioner, Jharkhand who, after review, remanded back (22 December 2020) the case to the DC, Sahibganj with a direction to examine the matter afresh, subject to the submission of statutory clearances as per the provisions laid down in the JMMC Rules. In response to the instructions of the Mines Commissioner, DC, Sahibganj granted (February 2021) mining lease on the basis of proposal note presented (December 2020) by DMO, Sahibganj. Subsequently, lease deed was executed (April 2021) for the period from 08 April 2021 to 07 April 2031.

Audit observed that the applicant filed review petition after deemed rejection of the application, which was remanded back to DC, Sahibganj with a direction to examine the matter afresh. The DMO, Sahibganj, however, misinterpreted the order and recorded that the Commissioner had not held the applicant responsible for delay in getting the EC and forwarded the proposal note to the DC. Audit, however, noticed that the delay was on the part of the applicant as he had applied (October 2019) for EC after lapse of 10 months when the application had already become deemed rejected. As such, DMO, Sahibganj presented incorrect and misleading fact in his proposal note forwarded to DC, Sahibganj, who granted (February 2021) the lease without verifying the intent/content of orders of the Commissioner.

Audit further observed that in terms of Rule 9(1) of JMMC (Amendment) Rules, 2019, the DC was not competent to grant mining lease over an area

of three Ha. and above. Mining lease over an area of three Ha. and above was required to be put to e-auction. However, DC, Sahibganj granted the mining lease (4.74 Ha. on *raiyati* land) over the area beyond his authority in gross violation of Rules *ibid*. Compliance to the procedure for grant of lease over areas of three Ha. and above, through e-auction, could have generated higher revenue.

2.1.1.2 Grant of mining lease by irregular reduction in applied area

An applicant had applied (02 March 2019) for mining lease over an area of 3.136 Ha. on *raiyati* land for which DMO, Sahibganj issued (June 2019) LoI for an area of 2.833 Ha. and EC was issued in October 2019. The mining lease was granted by DC, Sahibganj and grant order was issued by DMO, Sahibganj (July 2021). Subsequently, lease deed was executed (August 2021) for the period of 10 years from the date of execution of lease deed.

Audit observed that in terms of Rule 9(1) of JMMC (Second Amendment) Rules, 2017 and Rule 9(1) of JMMC (Amendment) Rules, 2019 effective from 14 March 2019, all applications for mining lease over an area of three Ha. and above should have become deemed ineligible and those areas should have been settled through e-auction. However, DMO, Sahibganj not only entertained the application but also issued LoI by arbitrarily reducing the area to 2.833 Ha. without any request from the applicant for reduction of the lease area. Thus, reduction in the applied area was indicative of connivance between the district administration and applicant to circumvent the provisions for grant of lease through e-auction. Responsibility for misleading competent higher authorities and granting undue favour to the applicant, needs to be fixed.

2.1.2 Irregular grant of lease over forest land

Rule 5(3) of JMMC Rules, 2004 stipulates that no mining lease will be granted on protected and conserved forests without prior approval of the Central Government. Further, MoEFCC issued letter (F.No.11-28/2005-FC, GoI) stating that the legal status of any land recorded as forest or *Jungle Jhar* in revenue records could not be changed without the prior approval of the Central Government as per provisions of the Forest Conservation (FC) Act, 1980. The GoJ conducts surveys for updating the nature of lands. Based on these surveys, the nature of land is periodically updated, replacing the old ones from the date of notification. New survey document would become effective only after it is notified, without which, such document would not be valid.

In DMOs, Chatra and Palamu, eight leases of stone were granted on the basis of reports of Circle Officer (CO) wherein nature of land was described as *Gair-Mazarua Parti Kadim, patthar pahar, tand-II, purani parati* and

dhanhar-II. Audit examined these cases and observed that these leases were granted on the land which were *Jungle Jhar* and fell under the category of forest land under the provisions of the FC Act, 1980. Details of examination of these leases are shown in **Table-2.3**.

Table-2.3: Cases of Irregular grant of mining leases over forest land

Sl. No.	Details of lease and Date of Grant	District	Nature of land as per CO's Report	Audit observation
A.	***Audit scrutinised the cases due to complaints of villagers found in the records***			
1	Ravi Shankar Singh, Mauza-Kharwadih, Circle-Chhatarpur, Old Khata No- 18 and Plot No.- 515	Palamu	*Patthar Tand-II and Dhanhar-II*	Scrutiny of cadastral map (year 1915-16), which was based on the old survey report revealed that the nature of land was depicted/ symbolized as *Jungle Jhar*.
2	Ashutosh Stone Mines, Mauza-Dalkoma, Circle-Hunterganj, Khata No.- 31 & 34, Plot No. 223 & 221/238, Date of grant-09.06.2014	Chatra	*Gair Mazarua-Parti Kadim*[12]	From the inquiry report (November 2022) of Sub-Divisional Officer conducted at the instance of villagers' complaint, Audit noted that nature of land was described as *Jungle Jhar* in the revenue records, but DMO did not take any action against the lessee.
B.	***Audit scrutinised the cases misreporting of nature of land by the CO on the basis of un-notified new survey report***			
3	Raj Kumar Khurana, Mauza- Munkeri, Circle-Chhatarpur, old Khata No.-218, Plot No.-1480, Date of grant-07.08.2013	Palamu	*Patthar*	In response to the Audit queries Assistant Settlement Officer, Palamu informed that the nature of land in four cases could not be ascertained as the *Khatiyan* was torn. Audit noticed that the nature of land as reported by the CO was based on a new survey report that had not been notified. However, scrutiny of cadastral map (year 1915-16), which was based on the old survey report revealed that the nature of land was depicted/ symbolised as *Jungle Jhar*.
4	Chandra Bhusan, Mauza-Munkeri Circle-Chhatarpur, old Khata No.-218, Plot No.- 1505 & 1507. Date of grant-15.02.2016		*Patthar pahar*	
5	Mahadeo Construction Mauza- Munkeri, Circle-Chhatarpur, old Khata No.-218, Plot No.- 2751, Date of grant- 21.12.2015		*Purani Parti, Gai. Aam*	
6	Anup Singh, Mauza-Munkeri, Circle-Chhatarpur, old Khata No.-218, Plot No. 110, Date of grant- 21.12.2015		*Pahari*	

[12] A nomenclature of nature of land.

Sl. No.	Details of lease and Date of Grant	District	Nature of land as per CO's Report	Audit observation
7	Shyam Stone Mines, Mauza- Karmakala, old Khata No.- 152, Plot No.- 994, Date of grant- 09.06.2015	Palamu	*Patthar*	In this case, Assistant Settlement Officer, Palamu informed that the nature of land was changed from *Jungle Jhar* (as shown in old survey report) to *Patthar Pahar* in the new survey report. However, the CO reported the nature on the basis of new survey report that had not been notified.
8	Ramashish Singh, Mauza- Madhya, Circle- Chhatarpur, old Khata No.- 40, Plot No.- 653(P), Date of grant- 27.02.2016		*Patthar Pahar*	The CO reported the nature of land as *Patthar Pahar* on the basis of new survey report, however, Audit checked and observed that in *Jharbhoomi*[13] portal the nature of land was still shown as *Jungle Jhar*.
In all these six cases (Sl. No. 3 to 8) the nature of land was misreported on the basis of a new survey report which was not notified (as of October 2023) hence should not have been taken into consideration.				

In view of the above, effecting the change in the legal status of the land recorded as *Jungle Jhar* in revenue records, without prior approval of the Central Government was in violation of the FC Act, 1980.

Audit also noticed that though the Department had introduced an automated system (JIMMS) for simplification of the complex mining process and records, but the facility for online application for mining lease/renewal had not been provided. Besides this there was also no integration of the JIMMS with the data of the Department responsible for maintaining land records. Resultantly, DMOs were dependent on CO's report for ascertaining the nature and use of land, for granting/not granting mining leases.

In reply, DMO, Palamu informed (June 2024) that a committee was constituted by DC, Palamu for examining the cases pointed out by Audit. The Committee had found that all the seven leases were irregularly granted over forest land. Out of these seven leases, one lease has expired, six leases were cancelled, and action was being taken to fix the responsibility on the erring officials. No reply regarding the remaining one case has been received either from the Department or from the DMO.

2.1.3 Incomplete set of mandatory documents

Under the provisions of Rule 9(1) of JMMC Rules, 2004 a person had to apply for mining lease of minor minerals along with a set of documents prescribed under Rule 9(2) to 9(8) like two separate affidavits, valid Royalty

[13] Web-portal of Revenue and Land Reforms Department, GoJ.

Clearance Certificate[14] (RCC), letter of consent of landlords *etc*. Rule 9(9) also stipulates that the competent authority should outrightly reject the application within 30 days from its receipt if the complete set of documents is not enclosed with the application.

Audit noticed from scrutiny of 119 test checked lease files in all six selected districts that, in 30 cases, complete sets of mandatory documents (Detailed in **Appendix-2.1**) were not enclosed with the application form as shown in **Table-2.4**.

Table-2.4: Grant of lease based on incomplete sets of mandatory documents

Sl. No.	District	Number of cases in which complete set of mandatory documents not enclosed
1	Chaibasa	4
2	Chatra	4
3	Dhanbad	6
4	Pakur	4
5	Palamu	1
6	Sahibganj	11
Total		**30**

Source: Information provided by DMOs.

Thus, in the absence of the complete sets of documents, these applications should have been rejected by the competent authority (DMO concerned) within 30 days from their receipt. However, it was noticed that despite insufficient documentation leases were irregularly granted by the concerned DCs.

As per Rule 9 (5) of JMMC Rules, 2004 applicants were required to submit a valid RCC for last year, but DMOs did not adhere to the provisions of JMMC Rules, 2004, and four leases were granted to applicants who had mining dues in same or in other districts at the time of application, as discussed in the following paragraphs:

- At DMO, Dhanbad, Asit Kumar Mandal and Azad Ansari had jointly applied for three stone mining leases between February and March 2016. For these leases, three affidavits were submitted with the applications wherein in two affidavits it was noted that Mr. Azad Ansari (co-applicant) had declared that he did not have any mining lease in the State, in case of the third affidavit, Mr. Ansari stated that he was holding one lease in Jamtara. As such, on the basis of the third application, it may be seen that Mr. Ansari had made false declarations in his first two affidavits submitted with first two applications. In all the three cases the RCC was not submitted

[14] RCC is a certificate issued by DMO which certifies that the applicant does not have any mining dues.

by the applicants. Hence, the affidavits in respect of two applications were incorrect and one affidavit was not supported by the required RCC. Thus, all the three applications were liable to be rejected due to non-submission of these documents under the provisions of Rule 9(9) of JMMC Rules, 2004. However, DMO, Dhanbad granted (August 2017) the three leases to the applicants. Audit obtained information from DMO, Jamtara which revealed that dues amounting to ₹ 2.97 lakh were outstanding against Azad Ansari at the time of application.

- In another case at DMO, Dhanbad, Rameshwar Mahto had applied (December 2020) for mining lease for Stone. The applicant was holding a mining lease in Bokaro district and submitted an RCC but, this was issued in June 2016 by DMO, Bokaro instead of being an RCC for the year 2019-20. The DMO Dhanbad granted (January 2022) the lease on the basis of old RCC, instead of seeking the latest RCC. Audit obtained updated information from DMO, Bokaro which revealed that Rameshwar Mahto had outstanding dues amounting to ₹ 0.76 lakh at the time of application.

- At DMO, Pakur, M/s Black Diamond Stone Works had applied (June 2016) for mining lease for stone without enclosing RCC from Mahbul Sheikh, one of the partners in the firm. Audit noticed from the scrutiny of Register IX[15] that Mr. Mahbul Sheikh was a defaulter in payment of dues of ₹ 10.74 lakh in two certificate cases registered in the same district. Despite the fact that one of the partners of the applicant firm, M/s Black Diamond Stone Works was a defaulter in the same district, mining lease was granted (September 2017) without submission of RCC as required under Rule 9 (5) of JMMC Rules, 2004. As the document was deficient in terms of submission of RCC by co-applicant, the application should have been outrightly rejected, but the DMO did not adhere to the provisions resulting in grant of lease to a defaulter.

- In another case at DMO, Pakur, M/s Bajrang Stone Works had applied (February 2016) for mining lease for stone. In the application Form submitted, Mr. Somraj Bhagat was declared as a partner of M/s Bajrang Stone Works and affidavit in respect of only Mr. Somraj Bhagat was submitted. DMO, while processing the application, did not enquire about other partners of the firm and granted (September 2019) the mining lease. Audit noticed that surface rights of the land (over which application was submitted for seeking mining lease) were in the names of Mr. Somraj Bhagat and Mr. Dilip Kumar Bhagat (father of Somraj Bhagat). Further scrutiny of Register IX revealed that Dilip Kumar Bhagat had defaulted (as proprietor of the firm M/s Bajrang Stone Works) in payment of mining dues of

[15] Register maintained at DMO to watch progress of Certificate cases initiated for recovery of mining dues which contains details of defaulters, amount to be recovered and nature of default *etc*.

₹ 3.99 lakh in two certificate cases (registered in the same district). Thus, there were deficiencies in the scrutiny of applications and visible facts by the DMO due to which mining lease was irregularly awarded despite deficient documents attached with the application.

Audit noticed that though Rule 9 (5) of JMMC Rules, 2004 mandates submission of valid royalty clearance of all mining leases held by applicants in Jharkhand with every application, there was no system in place for verification of leases held by applicants, unless the applicant himself offers a declaration regarding holding any lease either presently or previously. There was also no system in place to check for any omission of information by the applicant or, if he/she already held leases and had defaulted in payment of royalty.

A centralised/defined system for issuance of royalty clearance certificate either manually or electronically was absent in the State. Further, there were no cross checks or control measures in place while granting mining lease, due to which defaulters were able to obtain new leases despite having mining dues.

2.2 Management of mining leases

According to the provisions of the JMMC Rules, 2004, as amended from time to time, extension of leases of minor minerals (mentioned in Schedule-2) over government land and *raiyati* land above five Ha. could be extended up to 31 March 2022 and renewal over *raiyati* land having area of up to three hectares is granted by the Deputy Commissioner (DC).

2.2.1 Irregular renewal of mining lease

Rule 9(1)(क) of the JMMC (Amendment) Rules, 2017 (date of notification, *i.e.*, effective from 2 March 2017), stipulates that mining lease for minor minerals (stone, *morrum* and soil) over an area of more than five Ha.[16] of *raiyati* land would be granted by Director, Mines through e-auction.

Scrutiny of records revealed that a stone mining lease over an area of 6.026 Ha. of *raiyati* land under DMO, Sahibganj valid up to 9 October 2017, was renewed on the approval of DC, Sahibganj in October 2017 for a period of 10 years, despite the fact that the DC was not competent to grant lease over *raiyati* land exceeding five Ha.

Irregular renewal deprived the exchequer of chances of collection of higher revenue by grant of lease through auction process. Responsibility needs to be fixed for violation of extant provisions of Rule 9(1) of JMMC Rules by erring officials.

[16] This limit was amended to three Ha. vide gazette notification no. 218 dated 14 March 2019.

2.2.2 Irregular cancellation of mining lease

As per Rule 9(1)(घ) of JMMC (Amendment) Rules, 2017 effective from 02 March 2017 all applications for grant of mining lease over Government land or *raiyati* land having area of five Ha. and above (later appliable to all cases irrespective of area applied through 2nd Amendment effective from 12 December 2017) will be deemed ineligible as the amended Rules provide for settlement of such mines through e-auction only. Further, leases, having area of five Ha. and above, pending renewal, due to want of EC/MP shall be granted extension up to 31 March 2020 under the provisions of Rule 9(1)(च).

In case of one stone mining lease at DMO, Sahibganj, the lessee had applied (September 2017) for renewal of his mining lease over an area of 2.023 Ha. of *raiyati* land. This lease was going to expire in December 2017. The DC, Sahibganj granted renewal (on 01 December 2017) for a further period of 10 years but the renewal was later cancelled (August 2018) in light of JMMC (2nd Amendment) Rules and extension was granted only up to 31 March 2020.

Audit observed that provisions of Rule (extension of lease period) were not applicable in case of renewal of leases for an area of less than five Ha. of *raiyati* land. Furthermore, the renewal order (01 December 2017) in this case was passed before the issue of notification (12 December 2017) of JMMC (2nd Amendment) Rules. Hence, the cancellation of renewal of lease was irregular and deprived the lessee of renewal of lease for 10 years. The irregular action also caused potential revenue loss to exchequer for the remaining period of seven years as the mine remained idle after expiry of extended period.

2.2.3 Irregular extension of lease period

Audit observed frequent changes in the JMMC Rules, 2004 in respect of renewal of lease and period of lease (or extension of lease period) of stone mines. Period-wise changes in Rules and their impact on lease period in renewal cases is shown in **Table-2.5**.

Table-2.5: Amendments in Rule 9(1)(च) and (छ) of JMMC Rules, 2004 and impact thereof

Period	Rule 9(1)(च) and (छ) of JMMC Rules, 2004		
	Applicable for determining period of those leases whose renewal application became time barred due to non-obtaining of EC/MP prior to the notification.		
	0 to < 3 Ha. (*raiyati* land)	≥ 3 and < 5 Ha. (*raiyati* land)	Govt. land and *raiyati* land above 5 Ha.
I*st *Amendment 2017 02 March 2017 to 11 December 2017	Up to original period of lease	Up to original period of lease	Up to original period of granted/ renewed lease or 31st March 2020 which is later.
2*nd *Amendment 2017 12 December 2017 to 29 September 2020	Up to original period of granted/renewed lease or 31st March 2020 which is later.		
30 September 2020 to 31st March 2022	Up to original period of granted/renewed lease or 31st March 2022 which is later (in those cases only where extension of lease period granted up to 31st March 2020)		

In six sampled districts, Audit test checked 44 cases out of 78 cases where extension of lease period was granted under the amended Rule 9(1)(च) and (छ) of JMMC Rules, 2004 during 2017-22 as shown in **Table-2.6**.

Table-2.6: Number of mining leases extended during 2017-22 and test checked during audit

District	No. of mining leases where extension of lease period was granted during 2017-22	No. of cases test checked	No. of ineligible applicants
Chaibasa	02	02	01
Chatra	00	00	00
Dhanbad	12	10	10
Pakur	39	12	10
Palamu	05	05	05
Sahibganj	20	15	07
Total	**78**	**44**	**33**

Source: information available on records of DMOs.

As detailed in **Table-2.6**, Audit noticed in 33 out of 44 stone mining leases in five test checked districts[17] (lease end period ranged between August 2014 and December 2021) that lessees had submitted applications for renewal/extension between March 2018 and June 2021 *i.e.*, after the date of notification of the JMMC (First and Second Amendment) Rules, 2017. The extension of lease period (up to 31 March 2020 and further up to 31 March 2022) was granted to all these 33 lessees.

As per the provisions of Rule 9(1) of JMMC (2nd Amendment) Rules, 2017 extension of lease period was allowable only to those lessees, whose renewal applications were made prior to the date of notification of the

[17] Chaibasa, Dhanbad, Pakur, Palamu and Sahibganj.

amendments but had become time barred due to non-submission of EC/MP. In these 33 cases, lessees had applied for renewal/extension after the date of notification of amendments, hence, grant of extension in all these cases was not allowable. The DMOs concerned, however, granted extension of lease period in these cases in violation of the provisions of JMMC (Amendment) Rules, 2017; JMMC (Second Amendment) Rules, 2017 and JMMC (Amendment) Rules, 2020 (**Appendix-2.2**).

This resulted in irregular extension of lease period with the approval of DC, an action fraught with risk of connivance between the district administration and applicant to circumvent the provisions for grant of lease through auction process.

2.3 Non-lapsing/cancellation of inoperative leases

As per terms and conditions (No. 24) of Part-VII of the Model Lease Deed annexed with JMMC Rules, if a lessee, without obtaining prior approval of competent officer or DC, does not carry out mining operation in his mine for a continuous period of one year, his lease may be cancelled.

During the scrutiny of lease files with allied records of two mining leases of minor minerals (earlier major minerals) at DMO, Chaibasa and two mining leases of stone at DMO, Sahibganj, Audit noticed that the lessees had discontinued mining operations for a continuous period of one to more than five years during the period 2017-23 as shown in **Table-2.7**.

Table-2.7: Showing details of leases that required to be declared lapsed

Sl. No.	District	Name of lease	Mineral	Area (in acre)	Lease period	Period of discontinuance as of 31.3.2023
1	Chaibasa	M/s Mangi Lal Rungta	China clay	226.81	Up to 15.07.2025	Since 2017-18 (six years)
2		Sri Keyur Sinha	Quartz	39.93	24.07.2009 to 23.07.2039	Since 2017-18 (six years)
3	Sahibganj	Sri Somnath Ghosh	Stone	4.00	06.02.2017 to 05.02.2027	Since 2020-21 to date (three years)
4		M/s Mahakal Stone	Stone	6.25	10.01.2022 to 09.01.2032	Since inception (one year)
Total				**276.99**		

Source: Information available on records of DMOs.

It was noticed during audit scrutiny that, DMOs/DCs, of both these districts did not declare the mining leases lapsed or take steps to cancel these leases. Thus, these leases over a mineralised area of 276.99 acre were lying idle resulting in blockage of State revenue and affecting mineral development and employment generation.

2.4 Grant of mining leases through auction

Government of Jharkhand has framed Jharkhand Minor Mineral (Auction) Rules, 2017 effective from 06 September 2017 for grant of mining leases through an e-auction process. These rules were to apply to all minor minerals except soil, brick earth, *morrum*, reh soil, clay for making Raniganj tiles and stone (boulder, *bajri*, shingle, stone brick, stone dust) over an area of less than three Ha. of *raiyati* land (amended through Rule 9(1) of JMMC (Amendment) Rules, 2019).

The Director, Mines/DC would initiate an e-auction process for grant of a mining lease with respect to an area within the district, if the mineral contents in such area have been established by Director, Geology under the provisions of Jharkhand Minor Minerals (Evidence of Mineral Contents) Rules (JMMEMC Rules), 2018.

Existence of mineral content is required to be established in an area for the purpose of auction of Mineral Blocks by carrying out exploration as per suggested geological parameters and exploration norms. JMMEMC Rules, 2018, provide for two stages of exploration *i.e.*, C2: General Exploration followed by C1: Detailed Exploration.

Further, Rule 6 of JMMEMC Rules, 2018 provides that an area shall be considered for granting a mining lease if, Detailed Exploration (C1) has been completed to establish Indicated/Measured Mineral Resource and a geological study report has been prepared in respect of such an area.

During the course of Audit, it was observed that the Department did not have any reliable data about the minor mineral reserves in the State. In response to an audit enquiry, the Department stated that previously minor minerals (which were major minerals prior to February 2015) reserve data was maintained by the Indian Bureau of Mines (IBM) but at present, neither IBM nor the State Government maintains minor minerals inventory.

The Directorate of Geology prepared[18] 292 blocks of minor minerals after conducting General (C2) and Detailed (C1) explorations, during the period from 2018-19 to 2021-22, which were forwarded to the Director, Mines for auction process.

2.4.1 Delay in auction process

Out of 292 minor mineral blocks prepared, 278 were available for settlement during 2018-23, but auction process was initiated for only 47 stone blocks (16 *per cent*) and just 11 cases (3.77 *per cent*) were completed during this period. The details are shown in **Table-2.8**.

[18] Identified the location and area; kind and grade of minerals; estimated the volume of mineral reserve *etc*.

Table-2.8: Showing details of minor minerals blocks prepared during 2018-23

Year	Mineral	Mineral blocks available for auction in beginning of year	No. of mineral blocks prepared	Total mineral block available for auction during the year	No. of mineral blocks put on auction	No. of blocks where auction process had been completed
2018-19	Stone	**00**	37	**42**	03	01
	Decorative stone		01		00	00
	Mica		02		00	00
	Quartz		01		00	00
	Mica & Quartz		01		00	00
	Total		**42**		**03**	**01**
2019-20	Stone	**39**	22	**64**	00	00
	Decorative stone		02		00	00
	Mica		01		00	00
	Total		**25**		**00**	**00**
2020-21	Stone	**64**	22	**90**	00	00
	Decorative stone		04		00	00
	Total		**26**		**00**	**00**
2021-22	Stone	**90**	199	**289**	11	00
	Total		**199**		**11**	**00**
2022-23	Stone	**278**	00	**278**	33	10
	Total		**00**		**33**	**10**
Grand Total			**292**		**47**	**11**

Source: Information provided by the Directorate of Geology.

From **Table-2.8**, it is evident that though 42 mineral blocks were prepared during 2018-19 but auction process could be initiated in three cases only. Further, 90 mineral blocks were available for auction during 2019-21 but, the auction process could not be initiated even in a single case during these two years. Furthermore, auction process was initiated in only 44 cases out of the 289 mineral blocks available during 2021-23. Thus, the department had initiated auction process only in 47 mineral blocks out of 292 blocks prepared for auction and only 11 blocks were settled during 2018-23 due to lackadaisical approach of the Department towards auction of mineral blocks. Delayed auction of available minor mineral blocks put stress on available functional leases and ultimately led to unscientific mining (as discussed in **Chapter 4**).

Audit observed that delay in auction process and low percentage of initiation and finalisation of auction cases was due to lack of monitoring by the Department and deficiencies in planning, which restricted effective conduct of auctions in a phased and time bound manner. This has not only adversely affected flow of revenue to the State but also impacted potential employment generation and development.

2.4.2 Incorrect estimation of mineral reserves and defective auction of mineral blocks

Out of 47 cases, Audit examined 13 cases (10 cases where auction process had been completed and three cases where auction process was in progress). During the scrutiny of estimation of Geological Reserve (GR) of these 13

cases, Audit noticed that in three cases there were irregularities in determination of allowable depth (mining activities below ground water are not permissible as per JMMC Rules) and arithmetical errors in reserve estimation, as detailed below:

(i) In two cases[19] Audit observed that allowable depths (21 meter and 27 meters) of mining activities in the Mining Plans exceeded the ground water table (11.63 meters and 5.40 meters), reported by the Central Ground Water Board (CGWB), by 9.37 meters and 21.60 meters respectively. Based on these faulty Plans, the Department estimated GRs (February 2022), prepared mineral blocks and conducted auction for further settlement. As such, GR estimation, below the average depth of ground water table was irregular. Allowing the auction of these blocks raised the risk of unsustainable mining.

(ii) Arithmetical errors were noticed in estimation of GR in two old mineralised blocks[20], where auction process had been completed as detailed below:

- In one case, GR was wrongly computed (February 2022) by the Directorate of Geology as 7,280.77 m^3 instead of 72,808.14 m^3 which resulted in under estimation of mineral reserve by 65,527.37 m^3.
- In another case, total estimated reserve was 1,24,212.22 m^3 as per previous MP. However, there was depletion of reserve of 1,21,742.13 m^3 due to previously excavated quantity and balance reserve was only 2,470.10 m^3 but in the GR, this was computed as 2,04,491.48 m^3 resulting in over-estimation by 2,02,021.38 m^3.

Thus, these two GRs were defective in terms of reserve estimation. Further scrutiny revealed that auction had been conducted on the basis of incorrect estimation of resources made in GR as shown in **Table-2.9**.

Table-2.9: Showing financial impact of incorrect GR on key parameters

(₹ in lakh)

Particulars	Mineral Block	
	Sarmanda-A	**Pandiasai**
Correct quantity of reserve (m^3)	72,808.14	2,470.10
Incorrect quantity of reserve (m^3)	7,280.77	2,04,491.48
Difference (m^3)	65,527.37	(-) 2,02,021.38
Value of estimated reserve (VER) (₹ 448.09 per m^3)	(-) 293.62	(+) 905.24
Bid security (0.25% of VER)	(-) 0.73	(+) 2.26
Upfront payment (0.5% of VER)	(-) 1.47	(+) 4.53
Performance Security (0.5% of VER)	(-) 1.47	(+) 4.53
Total financial impact; short (-) and excess (+)	**(-) 3.67**	**(+) 11.32**

Source: GR and Comparative Statement of bid.

[19] Bara Bhumari Stone Block and Pandiasai Stone Block.
[20] Pandiasai Stone Block and Sarmanda-A Stone Block.

It is evident from the above that incorrect estimation of reserve in GR had affected threshold value of key parameters of bidding, rendering the entire bidding process questionable. This incorrect estimation could lead to extraction of non-mineable resources in the second case where the actual mineable reserve was only 2,470.10 m^3. Furthermore, such incorrect estimation of reserves would also lead to grant of irregular EC which may impact the environment adversely.

2.5 Recommendations

The Government/Department may:

- ***implement a system of online application of mining lease and put in place a procedure for issuing/obtaining centralised royalty clearance certificates through JIMMS. The Department may also ensure integration of JIMMS with online land records;***
- ***take necessary steps to cancel leases granted on Jungle Jhar/forest land and restore legal status of such land;***
- ***cancel inoperative leases and expedite auctioning process of mineral blocks for revenue augmentation and mineral development in the State; and***
- ***fix responsibility on erring officers who violated provisions of the relevant Acts and Rules by misreporting the nature of land to be leased for mining.***

Chapter 3

Revenue Realisation and Management of Sand *Ghats*

Chapter 3 Revenue Realisation and Management of Sand *Ghats*

The Department of Mines and Geology is responsible for the levy and collection of mineral receipts based on the production and dispatch of minerals.

Receipts from minor minerals mainly consist of royalty while other receipts include surface rent[21], dead rent[22], application fee, licence fee, permit fee, interest on belated payment of dues, price of minerals extracted unauthorisedly *etc*., and in case of auction of mineral blocks, upfront payment, price offer/reserve price are levied in addition to royalty. In this chapter, deficiencies in assessment, levy and collection of royalty from the lessee along with the role of JSMDC in the management of sand ghats for commercial purposes in the light of new Sand Mining Policy introduced in August 2017, have been discussed.

3.1 Trend of Revenue

The details of revenue receipts from minor minerals, total non-tax revenue receipts, total revenue receipts[23] and the percentage of contribution of minor mineral receipts towards non-tax revenue receipts and total revenue are given in **Table-3.1**.

Table-3.1: Trend of Revenue

(₹ in crore)

Year	Total revenue receipts[24] from minor minerals	Total non-tax revenue	Total revenue of State	Percentage contribution of minor minerals to total non-tax revenue receipts (Col. 2 to Col. 3)	Percentage contribution of minor minerals to total revenue receipts (Col. 2 to Col. 4)
1	2	3	4	5	6
2017-18	1,082.44	7,846.67	20,200.11	13.79	05.36
2018-19	683.03	8,257.98	23,010.02	08.27	02.97
2019-20	652.82	8,749.98	25,521.43	07.46	02.56
2020-21	775.09	7,564.01	24,444.09	10.25	03.17
2021-22	697.73	10,030.75	31,321.00	06.96	02.23
Total	**3,891.11**	**42,449.39**	**1,24,496.65**	**09.17**	**03.12**

Source: Finance Accounts, GoJ and mineral wise collection report furnished by Department.

The above figures indicate a decline in revenue receipts from minor minerals, which dropped from ₹ 1,082.44 crore in 2017-18 to ₹ 697.73 crore

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21 Surface rent is payable by a lessee for the surface area used by him for mining operations and it shall not exceed the land revenue.

22 Every lessee of a mining lease has to pay dead rent every year at prescribed rates or royalty in respect of the quantity of minerals removed, whichever is greater.

23 Own tax revenue receipts plus non-tax revenue receipts.

24 Includes ₹ 765 crore on account of surface rent, dead rent, application fee, licence fee, permit fee, certified/non-certified arrears of major as well as minor minerals.

in 2021-22. Further, the contribution of minor mineral receipts to total revenue receipts of the State also witnessed a sharp decrease falling from 5.36 *per cent* in 2017-18 to 2.23 *per cent* in 2021-22. Although no reasons for this fall in revenue from minor minerals were provided by the Department, Audit observed several instances of loss of revenue to the Government exchequer due to reasons such as short/non-levy of royalty, dead rent, penalty *etc*. as discussed in subsequent paragraphs.

3.2 Assessment, levy and collection of royalty

Under the provisions of JMMC Rules, the holder of a mining lease or permit for minor minerals shall furnish to the State Government such returns and statements within such period as may be specified by it. These returns[25] are to be scrutinised by Assistant Mining Officer (AMO)/District Mining Officer (DMO) who shall assess the amount of dead rent, surface rent and royalty payable by the lessees at the end of the prescribed period. The AMOs/DMOs are enjoined to inspect, verify, and check the accounts of minerals. Lack of scrutiny of the prescribed returns resulted in non/short levy and evasion of revenues.

3.2.1 Automation of process and records

The Department implemented (May 2015) an IT based mineral administration system through a software application called the Jharkhand Integrated Mines and Minerals Management System (JIMMS), introduced with the objective of simplifying the complex mining process. Through the introduction of JIMMS, the Department would identify and remove duplicity of the requirement of monthly/ annual progress reports and returns filled by the lessees. It, further, facilitate online realisation of mining revenue, quarterly assessment on real time basis for increasing efficiency, monitor demand to prevent illegal mining, help to formulate policies to curb pilferages, issuance of Transit Permit and Pass under tight guidance to avoid human errors on data posting and interconnecting all the reports and returns complying the laws laid. Sixty three leases pertaining to the lease period between December 1999 and March 2030 were examined by Audit to assess the extent of automation of records in JIMMS. The following deficiencies were noticed:

(i) Lease Profile

- ***Incomplete profiles***: JIMMS had provisions for lessees for uploading their profile. The DMOs of concerned districts would ensure the completion of the process. In 63 cases, it was noticed

[25] As per departmental instructions of June 1970, DMO/AMO is required to check monthly returns periodically and compare it with the entries in Raising and Despatch (RD) register of minerals.

that the lease profiles were incomplete, and missed crucial information such as: MP in nine cases, Forest clearance in 14 cases, EC in six cases, Pollution clearance in seven, survey details in 45 cases, Grant order of lease in 38 cases, Lease deed in 27 cases and Surface right clearance in 28 cases. Thus, the objective of making a robust system that would encapsulate all crucial data/information was not fully achieved.

- ***Deficient documents***: Instead of mining plans, in 50 cases, mining plan approval letters, in two cases, lease deed and in two cases, only cover pages, were uploaded. Up to date Pollution clearance was not found uploaded in the system in seven cases.
- ***Lease maps***: JIMMS has the provision to generate lease maps on Google Application using coordinates, which could assist the Department in monitoring the mining operation through generated maps. However, in 47 cases, coordinates required were not filled while in 15 cases, coordinates filled were insufficient, preventing the generation of satellite images and hindering monitoring of mining activities.

(ii) Monthly Returns and assessed figures

- ***Inconsistent balances***: JIMMS has a facility for lessees to upload the monthly return detailing the quantity of opening balance, production and dispatch during the month and closing balance of mineral. In 31 monthly returns of five leases for the period between April 2017 and September 2020, closing balances of previous months did not match with opening balances of subsequent months.
- ***Report on Periodic assessment***: Rule 41 of JMMC Rules, 2004 provides for annual assessment of royalty payable by lessees. However, there was non-availability of required tools in JIMMS to carry out this yearly royalty assessment.
- ***Module to map applicable rate***: Rates of royalty on stone boulder/ gravel/shingle were prescribed on the basis of their uses. Modules on JIMMS were not equipped to identify the uses and levy the applicable rate (refer to **Paragraph 3.2.2**).

(iii) Permanent Account Number (PAN)

- ***Incorrect PAN***: Lease profile did not have the facility to fill PAN, however, the number was to be filled in the "Mines-wise revenue collected" statement by lessee due to absence of facility to fetch the PAN from lease profile.
- ***Changes in PAN***: PAN is a unique number and could not be changed without changing the identity. In three cases, PAN of

lessees was changed two to three times during 2018-19 to 2020-21, which is unusual.

(iv) Generation of unauthentic transportation challans

JIMMS was not foolproof with regard to generation of authentic transportation challans as it allowed the lessee to generate subsequent challans for a vehicle before the expiry of the validity period of previous one (refer to **Paragraph 4.3.1**).

These findings highlight the need for improved data accuracy and completeness in JIMMS to ensure effective monitoring and management of mining activities through this automated system. Due to these constraints, JIMMS could not be comprehensively used for assessment and collection of revenue by the Department.

3.2.2 Short levy of royalty due to application of incorrect rate

Schedule 2 of JMMC Rules, 2004 prescribed royalty on stone boulder/ gravel/shingle to be levied at ₹ 132 per m^3 (say ₹ 3.74 per cft) whereas royalty on those stone boulder/gravel/shingle which are used for making chips, was to be levied at ₹ 250 per m^3 (say ₹ 7.08 per cft).

Audit noticed that the varied rates of royalty were fixed on the basis of end use of the output of quarries but there were no related checks in JIMMS to ensure application of correct rates as per end use. Due to this, the assessment of royalty was solely dependent upon the end use declared by the lessee. Further, for the purpose of royalty assessment, JIMMS recognized stones that were as small as 5 mm as 'stone boulders,' which is not logical.

Due to absence of checks in the JIMMS system on end use, Audit noticed short realisation of royalty and other revenue[26] as discussed in following cases:

- In three DMOs, Chatra, Chaibasa and Sahibganj, 25 lessees had dispatched 122.96 lakh cft of stone boulder to 15 crusher units during the period from October 2019 to January 2022, by paying royalty at the rate of ₹ 3.74 per cft. Supply to stone crusher clearly indicates that the boulders were to be used for making chips hence, as per applicable rates specified, royalty should have been ₹ 7.08 per cft. Payment of royalty at lower rate resulted in short levy of royalty and District Mineral Foundation Trust (DMFT)[27] contribution of ₹ 5.35 crore.

[26] Rule 6 of JDMFT Rules, 2016 provides for collection of contribution to DMF fund in the following manner: 30 *per cent* of the royalty for the existing leases which are not granted through auction; and 10 *per cent* of the royalty for leases which are granted through auction.

[27] MMDR Act, 1957 (Section 9B, 15(4) and 15A) provides that the State Governments shall establish a non-profit trust to be called the District Mineral Foundation Trust (DMFT) in districts affected by mining related operations. All mining lessees will contribute to the DMFT funds at certain rates.

- In DMO, Pakur, an irregularity was detected by the Audit where five lessees exploited an ambiguity in the system due to overlapping size ranges (0-150 mm) in the JIMMS dropdown menu for both stone chips and stone boulders. They dispatched 50.24 lakh cft of stone boulder with sizes between 40 mm and 60 mm and paid royalty at ₹ 132 per m^3 (*i.e.*, ₹ 3.74 per cft). However, as per Bureau of Indian Standards IS 383:2016, stone of this size was categorised as single size aggregate (chips). As such, the lessee was required to pay royalty at ₹ 250 per m^3 (₹ 7.08 per cft) instead of ₹ 3.74 per cft. This highlighted a potential revenue loss of ₹ 2.18 crore (under the head royalty and DMFT) due to incorrect classification.

Thus, due to the systemic error in JIMMS, identified during Audit, the lessees gained from undue benefit of ₹ 7.53 crore (₹ 5.35 crore + ₹ 2.18 crore).

3.2.3 Non-realisation of dead rent

Under the provisions of Rule 29 of JMMC Rules, 2004, every lessee of a mining lease must pay dead rent every year at prescribed rates or royalty in respect of the quantity of minerals removed, whichever is greater. Further, Rule 29(अ)(2) provides that dead rent for the current financial year was payable within a period of 15 days from execution of lease deed and thereafter, annual dead rent was payable by 28th February in advance.

Scrutiny of records of four DMOs[28] revealed that 15 minor mineral lessees had not paid dead rent of ₹ 2.23 crore for the period between March 2016 and March 2022. Audit observed that the DMOs could not monitor the dues of dead rent from these lessees. Further, the DMOs neither initiated any action to get the outstanding dead rent deposited nor did they forfeit the security deposit. The JIMMS also did not have a provision to automatically generate demand for dead rent on due date. This resulted in non-realisation of dead rent of ₹ 2.23 crore.

3.3 Production beyond limit of Mining Plan/Environmental Clearance/Consent to Operate

Rule 54(6) of JMMC (2nd Amendment) Rules, 2017 states that any person, agent, manager or contractor alleged as illegally mining would be liable to pay as penalty, double (previously single rate applicable up to 11 December 2017) the price of mineral so mined. Rule 34A(1) read with Rule 34E(1) of JMMC Rules, 2004, stipulates that mining operations will be carried out in accordance with the approved Mining Plan. Further Hon'ble Supreme Court in its decision (August 2017) in "Common Cause Case" held that any person, agent, manager or contractor who extracts any mineral beyond the

[28] Chaibasa, Dhanbad, Pakur and Sahibganj.

limit prescribed by the competent authority will also be held responsible for unlawful/unauthorized mining and such act would attract a penalty for illegal mining as per prevailing Act/Rules.

Scrutiny of Mining Plan/EC/CTO and Form-K submitted by lessees, for production and dispatches revealed that in four districts[29], 26 lessees of minor minerals had extracted minerals beyond permissible limits between April 2014 and July 2023 as summarized in **Table-3.2**.

Table-3.2: Details of extraction of sand and stone beyond permissible limits

Districts	Mineral	No. of leases	Quantity Extracted (in lakh m^3)	Permissible Limit* (in lakh m^3)	Excess Extraction (in lakh m^3)	Penalty Amount (₹ in crore)
Sahibganj	Stone	08	23.23	13.96	9.26	58.00
Pakur	Stone	12	43.38	20.23	23.15	144.91
Dhanbad	Sand	01	3.43	3.22	0.21	0.45
Chatra	Stone	05	0.59	0.00[30]	0.59	1.85
Total		**26**	**70.63**	**37.41**	**33.21**	**205.21**

**Limits permitted in MPs/ECs/CTO.*
Source: information available in records of DMOs.

It is evident from the above table that against the permissible quantity of minerals of 37.41 lakh m^3, 26 lessees extracted 70.63 lakh m^3 of sand and stone which resulted in excess extraction of 33.21 lakh m^3 of minor minerals beyond permissible limits and that should have been reckoned as illegally mined minerals as per Hon'ble Supreme Court Orders of August 2017. Hence, these lessees were liable to pay penalty amounting to ₹ 205.21 crore for unlawful/unauthorized extraction of minerals. However, DMOs of respective districts did not impose and collect the penalty.

3.4 Management of Sand *Ghats* by JSMDC

Sand mining policy in Jharkhand

In compliance of Supreme Court's ruling of Deepak Kumar v/s State of Haryana (SLP No. 19629 of 2009) and subsequent MoEFCC's guidelines, the State Government notified (August 2017)[31] the Jharkhand State Sand Mining Policy, 2017 for effective guidance and management of sand mining in the State, in an environmentally sustainable and socially responsible manner. The objective of the New Sand Mining Policy was to fulfil the developmental needs of the State as well as to ensure regular and adequate supply of sand at a reasonable price for common people.

As per New Sand Mining Policy, the management of sand *ghats* of Category-2 in the State was handed over by the Government to the

[29] Chatra, Dhanbad, Pakur and Sahibganj.
[30] The lessees conducted mining activities without obtaining 'Consent to Operate', hence, the total production of minerals was illegitimate.
[31] Notification number 1905 dated 16 August 2017.

Jharkhand State Mining Development Corporation (JSMDC) for a period of five years from 16 August 2017, which was later extended for another three years from August 2022 by a Cabinet decision (September 2022).

The salient features of the New Sand Mining Policy were as follows:

- District Survey Report (DSR)[32] for each district shall be prepared by a committee headed by the Deputy Commissioner-cum-Chairperson, of the District Environment Impact Assessment Authority (DEIAA). The State Government shall issue necessary guidelines or directives as and when required for an effective preparation of DSR.
- Identification of the sand available in different water streams of rivers, such as 1st, 2nd, 3rd and onwards would be done by the District Survey Committee, based on its size and capacity. Based on DSR, the Survey Committee shall categorize the sand in 1st order and 2nd order stream/ river as Category-1 and 3rd order and above as Category-2.

The Policy also defined the management structure of streams (henceforth sand *ghats*) of different orders. Management details of the two Categories are given in **Table-3.3**.

Table-3.3: Details of management of Category-1 and Category-2 sand *ghats*

Category	Category-1	Category-2
Management by	*Gram Panchayat*/Local Self Government	Allocated to JSMDC for a minimum period of five years or more as decided by the Government.
Utilisation Purpose	Non-commercial purpose (Sand would be free from taxes and royalty, only a nominal maintenance charge shall be levied by GP/LSG)	For Commercial purpose (Sand sold by JSMDC on price decided by JSMDC in consultation of State Government)
Statutory Clearance	Exempted from EC, no mechanised lifting, no storage of sand.	JSMDC to obtain EC, Mining Plan, or any other statutory requirement for sand mining, storage and sale.
Monitoring	DC to ensure no commercial/ illegal extraction of sand.	Adoption of appropriate technology such as RFID/GPS tracking of vehicles, CCTV surveillance, central monitoring, cashless online sale *etc*. to prevent illegal mining and transportation of sand.

[32] DSR for sand mining is prepared at an interval of every five years with an objective to identify the mineable area, non-mineable area and to calculate the annual rate and time of replenishment.

3.4.1 Identification of sand *ghats* and stock yard

The Directorate of Mines provided JSMDC with a list of Category-2 sand *ghats* (November 2017) numbering a total of 177 *ghats* in 19 districts. This was later updated (March 2022) to 608 *ghats* in 23 districts. Upon reviewing JSMDC's database for these 608 ghats, it was found that it contained only basic information like name, district and area to be covered. There was no information about inclusion of the listed *ghats* in the DSRs of concerned districts. JSMDC could not provide the DSRs of 21 districts (except Dhanbad, Pakur and Simdega) to Audit. These DSRs would have included crucial details such as mineable quantity, replenishment rate and time, compatibility with EC norms required for sand *ghats etc*.

Further, Audit compared the updated list of 608 sand *ghats* (having area of 4,859.96 Ha.) with the initial list of 177 sand *ghats* and observed that there was mention of 37 *ghats* in initial list which were omitted in the updated list. Reasons for such omissions were neither found on record nor were these provided by the Department of Mines & Geology. Further, 389 sand *ghats* for which tenders were invited for empanelment of MDO by JSMDC (during the period December 2017 to October 2019) consisted of 95 sand *ghats*, which were not in the updated list of 608 *ghats* as assigned by DMG to JSMDC. The inconsistencies in the information about the available number of sand *ghats* to be managed highlight the casual approach of the Department as well as JSMDC in management of sand *ghats.* This also contributed to the low rate of operationalization of sand ghats as indicated in **Table-3.4**.

- **Timeline *vis-à-vis* achievement for operationalisation of sand *ghats***: JSMDC, that was now responsible for the management of sand *ghats*, was to select (i) agencies for preparation of MP/EC; (ii) Mines Developer and Operators (MDO) for mining; and (iii) an IT solution developer for RFID/GPS tracking of vehicles used for transportation of sand, CCTV surveillance, central monitoring and facilitating cashless online sale. JSMDC decided to commence sand production from Category-2 sand *ghats* from 1 March 2018.

During the course of Audit, it was noticed that JSMDC could not achieve the targets as per the timelines set for operationalisation of sand *ghats*. Timelines set by JSMDC and corresponding achievement are outlined in **Table-3.4**.

Table-3.4: Timeline for operationalizing sand *ghats vis-à-vis* actual achievement (as of 31 October 2023)

Task	Action by	Timeline	Achievement by JSMDC against 608 identified sand *ghats*[33]	Final date of achievement for sand *ghats* in Col. D	Delay in achievement	Percentage achievement
A	**B**	**C**	**D**	**E**	**F**	**G**
Identification of stockyard for sand *ghats*	JSMDC	15 December 2017	21	February 2020	2Y 1.5M	3.45
Preparation of MP and EC	Selected agency	15 December 2017	22	July 2019	1Y 6.5M	3.62
Approval of MP and EC	Selected agency	15 March 2018	22	September 2019	1Y 5.5M	3.62
Award of work order to MDO for sand mining	JSMDC	15 January 2018	21	March 2020	2Y 1.5M	3.45
Network installation of sand *ghat* and user acceptance test/Go live	Selected agency	31 May 2018	21	Network installation, Cashless online sale achieved for 21 but CCTV surveillance and central monitoring not established		

Source: Compiled by Audit based on the records of JSMDC.

The table indicates that JSMDC achieved the set targets in only a limited number of sand *ghats*, ranging from 3.45 to 3.62 *per cent* of the total target. Even for these few sand *ghats*, there were delays ranging between 18 and 26 months for various tasks such as selection of agency for preparation of MP/EC, selection of MDOs for operation of *ghats etc*. Further no progress in any of these tasks was observed after March 2020. In essence, JSMDC managed to operationalise only 21 out of the 608 *ghats* of Category-2 assigned to it by the Department of Mines and Geology (DMG).

This lack of progress and non-achievement of targets could be further attributed to the following factors:

- **Preparation of MP and EC:** In January 2018, JSMDC empanelled five agencies[34] to prepare MPs and EC proposals[35] for sand *ghats.* During the period January 2018 to November 2019, JSMDC assigned 167 *ghats* to these agencies for preparation of MPs/EC proposals. Out of these 167 proposals, the agencies prepared and submitted the proposals for only 36 cases and could obtain approval to MPs and ECs in respect of only 22 *ghats*. Thus, MP and EC were obtained only for 22 *out* of 167 *ghats* (*i.e.*, 13.17 *per cent* of proposals) assigned to these agencies. Reasons for assigning only 167 *ghats* to the agencies for preparation of MPs and EC

[33] Yearwise list of identified sand *ghats* was not made available by JSMDC/Department.

[34] (i) Crystal Consultants, (ii) ENV Developmental Assistance Systems Pvt. Ltd., (iii) Enviro care Technocrats Pvt. Ltd, (iv) Kalyani Laboratories Private Ltd. and (v) Overseas Min Tech Consultant & Sathi Planners Pvt. Ltd.

[35] The procedure for grant of ECs from the concerned authorities is detailed in **Paragraph 4.2** of the report.

proposals against the 608 *ghats* assigned to JSMDC by DMG and preparation and submission of MPs and EC proposals in respect of only 36 *ghats* could not be ascertained in audit. JSMDC could also not provide any justification for inaction in respect of the remaining 441 *ghats*.

- **Award of work order to MDOs for sand mining:** The JSMDC floated tenders for 389 sand *ghats* between December 2017 and October 2019 to select the MDOs responsible for managing the entire sand *ghat* operation, including mining, transportation, stocking, and loading of sand.

Although preferred bidders were selected for 89 sand *ghats*, agreements were executed for only 26 sand *ghats*, indicating a low conversion rate of preferred bidders to MDOs. Notably, the reason for the low conversion rate was the availability of ECs for only 22 sand *ghats*. However, only 21 sand *ghats* could be made operational.

In a bid to streamline operations, JSMDC consolidated responsibilities in September 2021, assigning both mining plan preparation and execution to a single agency, the MDO. Consequently, JSMDC empaneled 130 MDOs by July 2022. However, despite this effort, none of the sand *ghats* became operational beyond the existing 21.

Thus, JSMDC could not ensure timely preparation of MPs to obtain ECs from SEIAA and proceeded with the process for selection of MDOs without valid MPs and ECs, rendering the entire process unproductive.

On this being pointed out (December 2023), management of JSMDC replied (July 2024) that due to various legal issues, the number of operational sand *ghats* decreased. At present all the sand *ghats* (21 sand *ghats*) are operational.

3.4.2 Irrational deployment of IT solution developer

Consortium of M/s M-Junction Service Ltd. and M/s Telematics 4 U Services Pvt. Ltd. was selected (September 2018) for providing required IT solution in 200 sand *ghats* for five years (at a cost of ₹ 59,535 per *ghat*[36] per month for first three years and ₹ 54,610 per *ghat* per month for next two years). The agreement also required the agency to deploy two persons (at ₹ 0.51 lakh per month- variable cost) at each sand *ghat* for bill generation and eight persons (₹ 4.20 lakh per month- fixed cost) at the Ranchi headquarters for call center and technical support.

The agency provided IT solutions for up to 16 *ghats* during 2018-22. Furthermore, the JSMDC operated a maximum of 16 sand *ghats* in a year and garnered sale proceeds amounting to ₹ 12.09 crore (excluding royalty

[36] Cost of Central monitoring system at State and district level was distributed among 200 *ghats*.

and other associated fees and cess paid to the Government) during 2018-22, while the IT service provider claimed bills amounting to ₹ 4.57 crore for the same period. As such, the expenditure incurred on IT solutions ranged from 31.95 *per cent* to a maximum of 59.87 *per cent* of the proceeds from sand sales in a year, as detailed in **Table-3.5**.

Table-3.5: Year wise sale proceeds of sand and payment made to the agency

(₹ in lakh)

Period	No. of sand *ghats* operational	Receipt from Sand sale	Bill claimed	Amount paid	Percentage of claim (Col. 4 to Col. 3)
1	2	3	4	5	6
2018-19	3	47.81	20.85	20.42	43.61
2019-20	16	173.92	104.13	103.52	59.87
2020-21	15	555.59	177.53	177.53	31.95
2021-22	12	431.70	154.41	104.82	35.77
Total		**1,209.02**	**456.92**	**406.29**	

Source: Statement provided by JSMDC.

Audit observed that JSMDC had prepared MP and obtained EC for only 22 sand *ghats* and maximum 16 *ghats* were operational in a year during 2018-22, but JSMDC made arrangements for IT solutions for operation of 200 *ghats* and incurred enormously high expenditure on it. JSMDC could have revised the timeline for network installation of sand *ghat* and user acceptance test/Go live or implemented IT solutions on a smaller scale and deployed lesser number of IT personnel at Headquarter level. In the absence of this, expenditure incurred solely on IT solutions exceeded one-third of the proceeds from sale of sand.

3.4.3 Potential loss of revenue due to non-operationalisation of sand *ghats*

As a deemed lessee for operational *ghats*, JSMDC was required to follow the procedures outlined in the JMMC Rules and pay dead rent ₹30,000 per acre per year or royalty in respect of the quantity of sand removed, whichever was greater.

Out of 608 sand *ghats*, JSMDC attempted to operate 389 *ghats* but successfully operationalized only 21 *ghats*. Thus, 368 sand *ghats* remained non-operational during 2017-22. Due to 368 non-operative *ghats*, the State Government suffered potential losses of ₹ 70.92 crore[37] for these ghats (with an area of 9,782.55 acres) during November 2019 to March 2022.

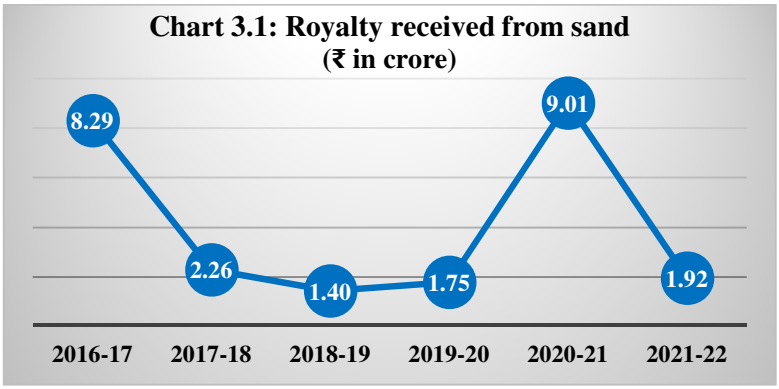
[37] ₹ 70.92 crore = 9,782.55 acres x ₹ 2,500 (₹ 30,000/12) acre per month x 29 months (November 2019 to March 2022) *i.e.*, after last of month of tender notice for selecting MDO (October 2019).

3.4.4 Analysis of the income and expenditure in operation of sand *ghats*

As per Department of Industries, Mines and Geology, GoJ notification dated 5 October 2017, JSMDC was entitled to a 15 *per cent* agency commission charge on the sale proceeds from the management of Category-2 sand *ghats*. After deducting all the expenditures related to operation and management of sand *ghats*, JSMDC was to pay back the remaining amount collected from sales to the Government exchequer.

3.4.4.1 Trend of revenue from Sand Mining

The chart below represents the royalty received by the Department on account of sand mining in the State, for the years 2016-22. It is evident from the chart below that the amount of royalty decreased significantly, post the handover of sand mining leases to JSMDC. There was a sudden increase in royalty in the year 2020-21, the reasons for which were neither evident in the records nor intimated by the Department.



Source: Royalty data provided by the Department.

Data on mineral-wise royalty receipts of the State was gathered from the Mines and Geology Department for the period 2017-22. A comparison was made between the royalty received from sand by the Department and the royalty remitted by JSMDC against sale of sand during the same period. Discrepancies observed are presented in **Table-3.6**.

Table-3.6: Royalty received from sand as per Department and royalty paid by the JSMDC

(₹ in lakh)

Period	As per Department (Royalty receipt from sand)	As per JSMDC (Royalty remitted against sale of sand)	Differences
2017-18	226.87	0.00	No sand *ghat* being operated by JSMDC during the period
2018-19	140.47	9.64	130.83
2019-20	175.67	38.81	136.86
2020-21	901.46	140.89	760.57
2021-22	192.02	109.47	82.55

Source: Royalty data provided by the Department and JSMDC.

From October 2018, the sand *ghats* (Category-2) of the State were being solely operated by JSMDC. Hence, royalty received from the sand as shown by the Department should have been the same as shown by the JSMDC. However, there were substantial discrepancies in the figures of royalty during the period 2019-22, ranging between ₹ 82.55 lakh and ₹ 760.57 lakh. No justification/reasons for the same were provided to Audit. In the absence of required information, Audit could not analyse the reasons for these variations.

3.4.4.2 JSMDC sustained loss in operation of sand *ghats*

Year wise proceeds obtained from the sale of sand by JSMDC and provision for payments made in the annual accounts of JSMDC during the period 2018-22 are depicted in **Table-3.7**.

Table-3.7: Sale proceeds of sand and provision of payment/payment made

(₹ in lakh)

Period	No. of operative sand ghats (Dispatch)	Sale proceeds without GST	Sales commission @15 *per cent* sale proceeds excluding royalty, DMFT, E. Cess & MGMT to JSMDC	Provision of payment to agency selected for preparation of MP/EC, MDO and IT service provider	Royalty, DMFT, E. Cess & MGMT	Profit to be deposited in State exchequer
2018-19	3	60.78	7.17	90.04	12.96	(-) 49.39
2019-20	14	225.97	26.09	265.98	52.05	(-) 118.15
2020-21	15	744.12	83.34	381.30	188.53	90.95
2021-22	11	578.19	64.75	322.66	146.49	44.29
Total		**1,609.06**	**181.35**	**1,059.98**	**400.03**	**(-) 32.30**

Source: JSMDC Annual Accounts.

It is evident from the table that, between 2018 and 2022, JSMDC dispatched sand from a maximum of 15 *ghats* in a year, generating ₹ 16.09 crore in sale proceeds. After deducting 15 *per cent* commission (₹ 1.81 crore) and statutory deductions (₹ 4.00 crore), JSMDC incurred direct expenses of ₹ 10.60 crore. Despite generating revenue, JSMDC therefore sustained a loss of ₹ 32.30 lakh, indicating operational inefficiency.

Audit estimated JSMDC's revenue potential with 60 *per cent* of available reserve as production output (as envisaged in the Sustainable Sand Mining Management Guidelines 2016 *i.e.*, annual mineable reserve in ECs) between April 2020 and March 2022. Based on this, had JSMDC efficiently operated all 21 sand *ghats*, it could have remitted profits of ₹ 11.51 crore to ₹ 12.25 crore[38] annually to the State Government. However, JSMDC's production output was only 28.53 to 31.50 *per cent* of desired production

[38] Profit = (Desired production per year x rate of sand per cft) – (liability on account of statuary deductions, payment to MDOs/IT solution provider, commission to JSMDC); Desired profit for 2020-21 = (407.82 lakh cft x ₹ 7.5 per cft) - ₹ 1,907.50 lakh = ₹ 1,151.15 lakh; For 2021-22: (407.82 lakh cft x ₹ 7.5 per cft) - ₹ 1,833.94 = ₹ 1,224.71 lakh.

during this period. Thus, this suboptimal performance resulted in lost revenue opportunities. The inefficient management and operation of sand *ghats* by JSMDC led to financial losses of ₹ 32.30 lakh during 2018-22.

3.4.5 Depleting reserve in non-operational *ghats*

An analysis was carried out of the trend of sand accumulation due to sedimentation process in non-operational Category-2 sand *ghats* for five years period. Audit compared the total reserve (as provided in DSRs 2017-22 and DSRs 2022-27) of 14 sand *ghats* of three districts as detailed in **Table-3.8**.

Table-3.8: Trend of sedimentation process in non-operational sand *ghats*

Sl. No.	District	Sand *ghat*	DSR 2017-22		DSR 2022-27	
			Area (in Ha.)	Annual Mineable reserve (MT)	Area (in Ha.)	Annual Mineable reserve (MT)
1	Dhanbad	Lohapatti	16.00	2,16,000	45.00	4,47,363
2	Dhanbad	Bhowra	12.00	1,62,000	12.79	54,079
3	Dhanbad	Chas-Nalla	7.20	97,200	30.63	62,357
4	Dhanbad	Jajalpur	3.00	40,500	9.81	77,107
5	Pakur	Babudha	10.49	7,18,794	9.21	1,91,824
6	Pakur	Rolagram	14.94	7,61,076	8.09	62,316
7	Pakur	Barasinghpur	20.01	10,57,050	11.60	1,28,134
8	Pakur	Ganpura	7.08	2,46,645	6.00	58,478
9	Pakur	Benakur	9.76	6,87,083	7.75	68,225
10	Pakur	Ghurani	10.96	3,85,823	3.60	56,240
11	Simdega	Gorra	4.43	1,79,314	5.80	48,139
12	Simdega	Konoriya	4.04	1,63,701	4.00	34,584
13	Simdega	Ramjal	4.84	1,96,182	5.92	21,323
14	Simdega	Latakel	4.71	1,90,958	12.00	1,01,477
Total			**129.46**	**51,02,326**	**172.20**	**14,11,646**

Source: Compiled by audit based on records of JSMDC.

It is evident from the table that there were 14 sand *ghats* having total area of 129.46 Ha. with total reserve 51.02 lakh MT *per annum* as per DSR 2017-22. In DSR 2022-27 though, the total area increased from 129.46 Ha. to 172.20 Ha., but the total reserve decreased from 51.02 lakh MT to 14.12 lakh MT *per annum*.

A huge decrease (72.33 *per cent*) in annual reserve in non-operational sand *ghats* could not be attributed to only a geographical phenomenon (washing away/ redistribution of reserve), and possibility of illegal mining in these non-operational *ghats* during the period cannot be ruled out. Further scrutiny of updated DSR (2023) revealed that there were 442 potential sand *ghats* of Category-2 in existence, which were not being operated. A similar study of sand reserves in these inoperative sand *ghats* may reveal possibilities of illegal mining on a larger scale.

3.5 Recommendations

The Government/Department may

- ***assess reasons for decrease of sand reserves in inoperative sand ghats and take comprehensive measures to augment Government revenue from minor minerals by operationalizing sand ghats;***
- ***fix responsibility on erring officials who did not verify rates of royalty applicable to boulders dispatched to crushers for making chips and adhere to provisions of the Act/Rules for collection of correct royalty and penalty; and***
- ***make concerted efforts to rectify shortcomings of JIMMS including formulating a mechanism for submission of Mining Plans through JIMMS for transparency and documentary evidence.***

Chapter 4

Sustainable and Scientific Mining

Chapter 4 Sustainable and Scientific Mining

Minor minerals were brought under the Environment Impact Assessment Notification in 2006, requiring environmental clearance for leases over five Ha. The Ministry of Environment, Forest and Climate Change (MoEFCC) constituted a group to develop guidelines for sustainable mining of minor minerals. The report recommended that the Union Ministry of Mines, Indian Bureau of Mines (IBM), and state governments adopt model guidelines and make necessary provisions under the Minor Mineral Concession Rules. The Indian Bureau of Mines finalized (June 2011) the Minor Minerals Conservation and Development Rules (Minor MCDR), 2010. Consequently, Chapter 4A in February 2014, 4B in May 2014 and 4C in March 2019 on Mining Plan and Environment Conservation were inserted in JMMC Rules 2004, adopting IBM's model guidelines format.

As per JMMC Rules 2004, scientific mining means carrying out mining activities as per mining plan and schemes. As per provisions contained in Rules 5 and 6 of the JMMC Rules, 2004, clearances and approvals from various agencies are required to ensure that mining activities are sustainable and scientific in nature. Details of these approvals required, and role of various agencies therein, are as shown in **Chart-4.1**.

Chart-4.1: Roles of various agencies in ensuring sustainable and scientific mining

Environmental Clearance from Central Government/SEIAA

- Category A mines from Central Government and Category B mines from SEIAA.

Clearance from State Pollution Control Board

- Consent to Establish and Consent to Operate.

Clearance from Ground Water Directorate, GoJ/ Central Ground Water Board

- The mining operations should be restricted to above ground water table so that it does not intersect it. In case of working below the ground water table, prior approval of Ground Water Directorate, GoJ/Central Ground Water Board shall be obtained.

Clearance from Divisional Forest Officer

- Distance of the lease from the nearest forest boundary should be at least 250 meters. No mining shall be undertaken in forest area without obtaining prior forest clearance from GoI**.**

Clearance from Circle Officer of Land Revenue Department

- There should be no human habitation within a distance of 500 meter from the applied mining lease area and clearance about type of land involved in mining lease is required.

Safety measures to be adpoted in line with instructions of DGMS

- As per instructions of DGMS, height of benches and slope should be maintained as per approved mining plan.

4.1 Mining Plan

After receiving letter of intent from DMO, Applicant of a mining lease is required to submit a Mining Plan (MP). The MP serves as the basis for scientific and sustainable mining practices. The annual projected volume of minerals approved in the MP also forms the basis for determining production quantities given in Environmental Clearance (EC), Consent to Establish (CTE), and Consent to Operate (CTO)[39]. Procedure for preparation and approval of MP for minor minerals in Jharkhand is given in **Chart-4.2**.

Chart-4.2: Procedure for preparation and approval of Mining Plan for Minor Minerals

Submission and Approval of Mining Plan

1. Submission of MP by applicant to AMO/DMO of concerned district for approval, which has to be done within seven days of submission of MP.

2. In case of delay in approval by AMO/DMO, the Deputy Dirctor, Mines should ensure approval of MP .

Review and Updation of Mining Plan

Holder of mining lease shall apply for review or updation of MP at least 120 days before the expiry of the first five years period of the MP to AMO/DMO.

Submission of mine closure plan by holder of mining lease and its approval by AMO/DMOs

1. Progressive mine closure plan had to be submitted along with the initial MP.

2. Final mine closure plan had to be submitted one year prior to the proposed closure and had to be approved within 90 days from date of receipt, by AMO/DMO.

4.1.1 Shortcomings in process of preparation and approval of Mining Plan

JMMC Rules adopted the Mining Plan format as provided in the model Minor MCDR, 2010 circulated by the IBM. Mining leases for minor minerals are generally granted for a period of 10 years (with provision for subsequent renewals). The MP of the entire lease period of 10 years was approved in two parts of five years each. The first part (Mining Plan, henceforth 1st Plan) had chapters on geology and exploration, expected yearly production, mining, processing and environmental management plan.

[39] CTE and CTO are given by Pollution Control Board under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 for establishing and operating the project.

The second part (Scheme of Mining, henceforth called 2nd Plan) had a chapter on review of 1st five-year plan, in addition to further chapters on yearly production, exploration, environmental management *etc*., on the lines of the 1st Plan. Both parts of the MP were required to be approved separately.

Audit test checked 74 stone mining leases, granted during February 2009 to March 2022 and their mining plans of six test checked districts and noticed the following shortcomings:

i) As per Para 3.3 of IBM Manual on Appraisal of Mining Plan (2014), the MP for fresh lease cases shall be approved only after site inspection is carried out along with the Recognised Qualified Person[40] (RQP) and representative of the applicant. However, in case of 64 fresh lease cases with lease period between February 2009 and January 2032, no records in support of site inspection of the lease area with the applicant/RQP by the approving authorities were made available to Audit. Further, in none of the cases, dates of submission of MPs by applicants to approving authorities were mentioned. Only approved MPs along with conditional approval letters were produced to Audit. The absence of a documented trail of these events raises concerns about the thoroughness and transparency of the review and approval process.

ii) The borehole and sampling reports that were to be mandatorily included in support of detailed exploration of the proved reserve and measurement of bulk density, were not available in the MPs of all the 74 test checked leases. In the absence of corroboratory evidence, correctness of the estimation of proved reserve and bulk density included in the MPs was questionable.

iii) AutoCAD software is used to generate Development Plans and sections, incorporating three-dimensional images of the lease area and applicable tools for measuring sectional area/volume. It was, however, noticed that given the crucial role of this software, the Department had not equipped mining offices with AutoCAD or compatible software to facilitate comprehensive vetting of these MPs and sections therein. Lessees were submitting (as of March 2022) only two-dimensional printouts of maps in the MP, which could not ensure comprehensive vetting of the Plan and effective monitoring of mining operations.

iv) Rule 34E(1) of JMMC Rules, 2004 provides that IBM instructions in respect of preparation and approval of MPs should be complied with. IBM (April 2010) instructed that boundary pillars of each mining lease were to be fixed precisely. Each boundary pillar was to be surveyed

[40] As per Rule 34C(1) of JMMC Rules, 2004, every MP shall be prepared by persons having required qualification and experiences.

using the Differential Global Positioning System or, DGPS (for its ground position), by an agency recognised by the State Government. Further, JMMC Rules, 2004 provided that coordinates on boundary pillars should also be recorded. In this context, Audit noted that available coordinates of boundary pillars in MPs were not recorded precisely in 47 cases, as detailed in **Paragraph-4.1.3.2**.

4.1.2 Irregular approval of Mining Plan

In compliance of Rule 34D of JMMC Rules, 2004, the State Government instructed through notification (27 September 2014) to submit MPs to AMOs/DMOs of concerned district who would approve it within seven days. In case of any delays foreseen or accumulation of unapproved MPs, these MPs were to be submitted to the DDM who shall ensure their approval by himself, or by a designated officer of the Directorate of Geology posted in the district. In this context, Audit noticed the following irregularities.

Out of 138 Mining Plans[41] for 74 test checked stone leases, 120 plans[42] were produced before Audit. In violation of Departmental instructions (August 2014), out of 120 plans, 65 plans (54 *per cent*) were approved by non-designated authorities posted in Department/other districts, as these were other than designated authorities as specified in State Government's instructions of 2014. Further, as per Rule 34 E of the JMMC Rules, 2004, approval of the MP should be given after thorough investigation but, in nine cases these were either approved on the same day[43] or on the very next day of submission, which indicates lack of thorough investigation.

To bypass the fulfilment of conditions required for approval of Plans, the approving authorities granted conditional approvals to MPs based on certain criteria (like submission of DGPS within six months, submission of detailed study of ground water study at the time of compliance of EC *etc*.). This practice was in contravention of Rule 34E of JMMC Rules, 2004 that states that approval should be granted only after thorough investigation.

Thus, the Department did not fully implement its own instructions on approval of MP by authorized officers of the respective districts and also did not adhere to the statutory provisions.

4.1.3 Irregularities in Mining Plan

Audit also noticed cases of irregularities in the MPs approved by DMG wherein information furnished in the MPs did not match the physical status

[41] 74 plans for 1st five-year and 64 plans for 2nd five-year (as in these cases 1st five-year period ended).
[42] 65 plans for 1st five-year and 55 plans for 2nd five-year.
[43] Counted from date of deposit of fee for approval of MP.

of mines. Cases noticed during test-checks have been discussed in succeeding paragraphs.

4.1.3.1 Unreliable information in Mining Plan

The Surface Plan of a lease area outlines the initial surface conditions, safety barriers and boundary pillars at the start of a MP period. For the second five-year plan period, a survey is conducted and the actual lease area position during the survey becomes the surface plan. Although surface plans of 2nd MP for stone mining in six districts exhibited boundary pillars, a 7.5-meter safety barrier and benches (created during 1st MP), joint physical verification (JPV) with DMG officials revealed that 55 out of 63 test checked leases lacked these features, as discussed in **Paragraph 4.1.4.1**, indicating non-compliance with plan requirements as illustrated in **Case Study-4.1**.

Case Study-4.1

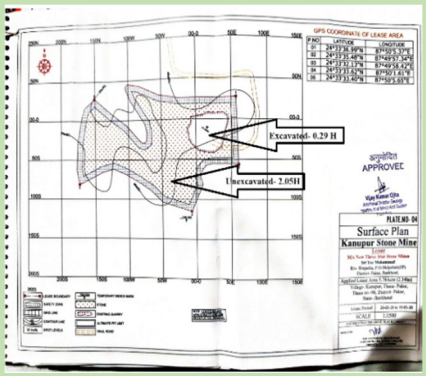
New Three Star Mines (Lessee code - 0623160603), Pakur

The District Mining Officer (DMO), Pakur granted a 10 year stone mining lease to a lessee over an area[44] covering 2.34 Ha. in October 2019. The lease was based on the 1st five-year mining plan approved in December 2015 and a 2nd five-year plan approved in November 2020. As per lease agreement, the lease period was from 20 March 2020 to 19 March 2030.

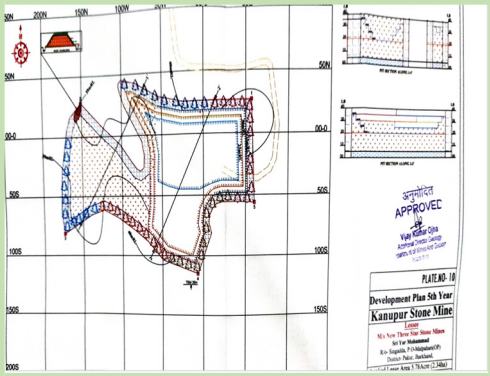
Audit findings were as follows:

- **Inaccurate Surface Plan**: The surface plan of the 2nd five-year plan showed 0.29 Ha. as excavated land and 2.05 Ha. unbroken land **(Picture-4.1)**. Scrutiny of records revealed that this was not a fresh lease as 1.975 out of 2.34 Ha. of lease area was previously allotted to an ex-lessee for lease tenure of 20 years (2 April 1990 to 1 April 2010). Information about mining activities performed by ex-lessee during his lease tenure of 20 years and satellite images prior to grant of this lease (9 March 2019) revealed that 42.73 *per cent* of lease area was already excavated **(Picture-4.3)** indicating lack of thorough examination by the RQP/approving authority.
- **Non-Compliance with MP**: The annual development plan (fifth year) of the 2nd five-year plan specified that the total area to be broken up in the next five years would be 1.17 Ha. (by March 2025) **(Picture-4.2)** and by March 2025, the maximum depth of the mining pit would be 15 meters with three benches (five meters each).

[44] Plot no. 329 (P), 338 (P), 340, 341, 342, 343(P), 344(P) and 347(P) of *Mauza* Kanupur, Pakur P.S, District Pakur.

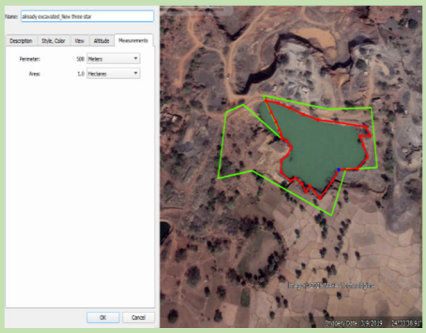


Picture-4.1: Showing unexcavated land (87.61 *per cent* of lease area) in Suface Plan of 2nd five year Mining Plan



Picture-4.2: Showing proposed broken up area (1.17 Ha.) in development plan (fifth year) of 2nd five year Mining Plan

During joint physical verification (JPV) in October 2023, the team found that excavation was carried out in the entire lease area (2.34 Ha.) and depth of pit was ranging from 25.45 meters to 30.45 meters with steep slope (ranging from 85° to 90°) without formation of benches (**Picture-4.4**) indicating non-adherence to the conditions of MP and lack of monitoring by the concerned DMO.



Picture- 4.3: Google Image dated 9 March 2019, showing 42.73 *per cent* of lease area was excavated prior to grant of lease (kml file)

Picture- 4.4: Showing steep slope of boundary wall without any bench, safety barrier (0-0.5m width instead of proposed 7.5 m), no plantation on safety barrier.

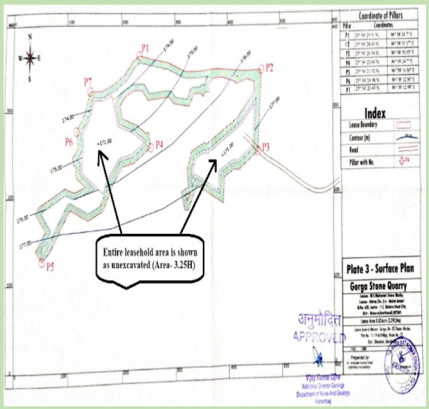
Ishraq Zia (Lessee code- 0204599601), Dhanbad

DMO Dhanbad granted[45] (March 2016) a stone mining lease (10 years) for an area covering 3.25 Ha.[46] based on 1st five-year MP which was approved by DDM Ranchi (undated). Subsequent to grant of lease, a revised MP was again approved by DDM Ranchi in July 2016. Scrutiny of surface plan of the revised approved MP revealed that there was a deliberate misrepresentation of facts. While the surface of lease area was depicted as unbroken **(Picture-4.5)** in the Plan, which meant that mining activities had not been carried out before, the satellite images of 21 March 2014 **(Picture-4.6)** of lease area (prior to grant of lease)

[45] Plot no. 11, 19, 20, 21, 1048(P) under the lease area was previously allotted to M/s JKC Project Ltd. Application for reallotment of lease were invited through gazette notification.

[46] Plot no. 11, 19, 1048(P) of *Mauza*- Gorga, Circle-Nirsa, District- Dhanbad.

showed excavated pit within the lease area. The reason behind the existence of this excavated pit was allotment of this lease previously to an ex-lessee.



Picture-4.5: Showing unexcavated lease area in Surface plan

Picture-4.6: Google Image dated 21 March 2014 of lease area

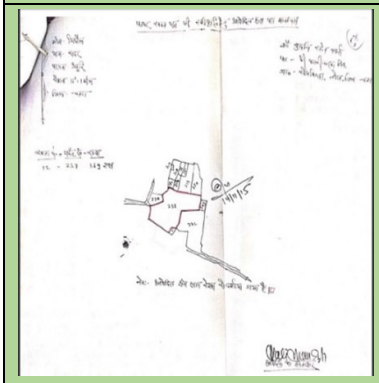
In both the cases covered under the case study, the surface plans' depiction of unbroken land was inaccurate, indicating that the MPs were prepared and approved without conducting a proper survey of the lease area. This had significant implications on subsequent approval of EC, mining operations and monitoring of excess excavation. Incorrect plans led to deviations from scientific mining practices, including the absence of benches, safety barriers, gentle slopes, and plantations. Under Rule 34(A)(2) it is the duty of the Deputy Commissioner of the concerned district and DMOs to ensure implementation of the mining plan, but they could not ensure its correctness and implementation.

4.1.3.2 Deficient recording of coordinates of lease area

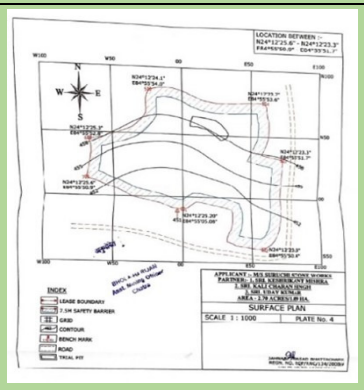
Recording of coordinates of every turning/corner point would ensure a proper shape and size of the leased area. Audit conducted a comparison of the shape, area, and location of mining leases available in the *khasra* and surface plan maps with maps generated on Google Earth using co-ordinates of 61 out of 63 jointly physically verified[47] mining leases. A comparison of these maps revealed variations in shape, area, and locations of mining leases in 47 out of 61 leases. The discrepancies in lease area, shapes, and locations across different maps indicated lack of diligence while preparing the MP and subsequent lacunae in the process of vetting and approval of mining leases/plans. A copy of the *Khasra* map, Surface plan and satellite image of a leased area (M/s Suruchi Stones works, Chatra) illustrating variations in the shape, size, and location of mining is shown in **Picture-4.7**.

[47] Two MPs not produced.

Picture-4.7: Showing variation in shape, size and place of mining



Khasra map (0.684 Ha.)



Surface plan of 1st five-year MP (lease area 1.09 Ha.) approved on 25 June 2015 by AMO, Chatra

Map generated using coordinates available in mining plan, Lease area-0.48 Ha. (kml file)

M/s Suruchi Stones works, Misrol, Lessee code: 308337301, lease area-0.684 Ha., granted on 14 November 2015, by DC, Chatra.

The variations in mining lease maps were attributed to several factors like (i) non-recording of coordinates of every turning point, (ii) non-recording of coordinates of every boundary pillar, and (iii) incorrect recording of coordinates. Audit noticed in cases of three leases in Chatra and Palamu districts that the maps generated on Google Earth based on recorded coordinates, have errors of aerial distances ranging up to 2.90 km from actual locations of mines, indicating possible violation of the lease area (as discussed in subsequent paragraphs).

4.1.3.3 Overlapping lease area with unregulated mining related activities around these leases

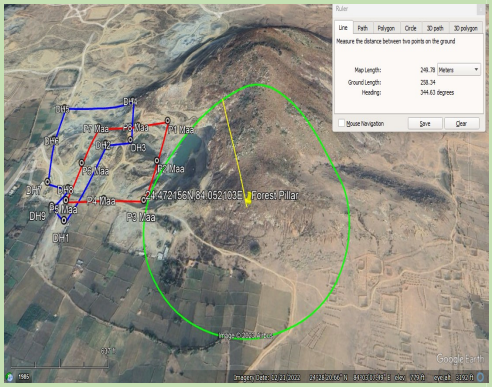
In three[48] out of the six test-checked districts, four instances were identified where the lease areas of two different leases overlapped. The extent of the overlapping portion varied, ranging from 0.30 to 1.14 Ha. Notably, the MPs for these two leases were either prepared/approved by the same RQP/authority (one set of leases in Palamu and one set in Chaibasa) or approved by the same authority but prepared by different RQP (one set of leases in Chaibasa and one set in Sahibganj) illustrated in **Case Studies-4.2** and **4.3**.

[48] **Chaibasa** (1) Trustline Dealer Pvt. Ltd., lessee code- 0101335502 and CTS Industries Ltd., lessee code- 0101334704 overlapped portion- 0.43 Ha., (2) CTS Industries Ltd., lessee code-0101334703 and Trustline Dealer Pvt. Ltd., lessee code-0101335501 overlapped area-0.30 Ha.), **Palamu** (1) Maa Stone Works, lessee code- 411172501 and Damdami Morrum and Stone Deposit, lessee code- 411722401 overlapped portion-1.14 Ha.) and **Sahibganj** (1) M/s Kwality Stone Products, lessee code- 620396401 and M/s Shree Guru, lessee code- 620420902 Plot 541 overlapped).

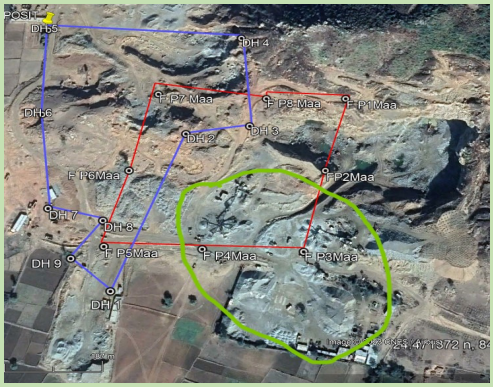
Case Study-4.2

The DMO Palamu granted two stone mining leases: (i) M/s Maa Stone Works, Damdami (June 2015) over 4.047 Ha. for 10 years, based on a 1st five-year Mining Plan approved by the Deputy Director, Geology; (ii) M/s Damdami Morrum and Stone Deposit (December 2016) over 4.65 Ha., on the part of the same plot. Both leases had MPs prepared and approved by the same RQP and authority. Audit conducted JPV with DMO of these two leases in December 2022 and noticed that:

- **Overlapping Lease Areas**: Boundary pillars in the two abutting leases were absent, except for only one pillar in M/s Damdami Morrum and Stone Deposit. In absence of boundary pillars, Audit prepared kml file from the coordinates in MPs of these leases on Google Earth software to demarcate their lease areas and found that 1.14 Ha. overlapped between M/s Maa Stone Works and M/s Damdami Morrum and Stone Deposit's lease areas. Due to this overlap, the possibility of disputes and unnecessary litigations cannot be ruled out.
- **Irregular operation of crushing units**: As per MPs and CTOs, M/s Maa Stone Works was permitted to sell stone boulder and not permitted to sell the stone chips but, scrutiny of historical images available on Google Earth pro revealed irregular operation of crushers in the lease area in January 2018 and January 2019.
- **Excavation in Non-Mining Zone**: Excavation of 2.19 Ha. outside the lease boundary of M/s Maa Stone works was found within 250 meters of forest land, which showed that not only was this mined illegally, but also that provisions prohibiting mining activities near forest areas were not being adhered to.



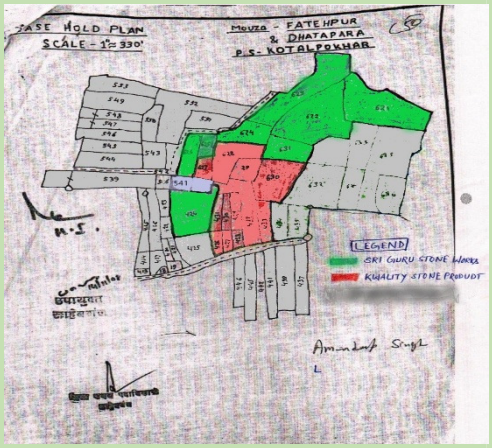
Picture-4.8: Showing lease area – M/s Maa Stone Works (lease boundary red line) overlapped (1.14 Ha.) with M/s Damdami Morrum and Stone Deposit (lease boundary in blue line); distance from forest pillar to excavated land (2.19 Ha., outside eastern boundary of M/s Maa Stone Works) was less than 250 meter image date 21 December 2022



Picture-4.9: Google Image date 10 January 2018 (crushers within lease area marked in green line)

Case Study-4.3

A lease was transferred to M/s Kwality Stone Products in September 2008 for the entire plot number 541 (along with 12 plots), later renewed for another 10 years (up to 14 October 2022). Despite the period of the existing lease not having expired, the DMO, Sahibganj irregularly granted a lease to M/s Shree Guru Stone Works in December 2018 on a part of the same plot (along with 07 plots) for 10 years (lease period 25 January 2019 to 24 January 2029). Thus, during the period 25 January 2019 to 14 October 2022, the lease portion over part of plot number 541 overlapped between M/s Kwality Stone Products and M/s Shree Guru Stone Works. This may lead to future disputes and legal issues. During JPV in September 2023, it was seen that excavation had been carried out in the entire plot, and boundaries between the two leases were not demarcated.



Picture- 4.10: Showing two abutting leases on plot-wise map (Plot number 541 allotted to two lease holders), (*Khasra* map) Sahibganj

Picture- 4.11: Showing excavation in lease of M/s Kwality Stone Products

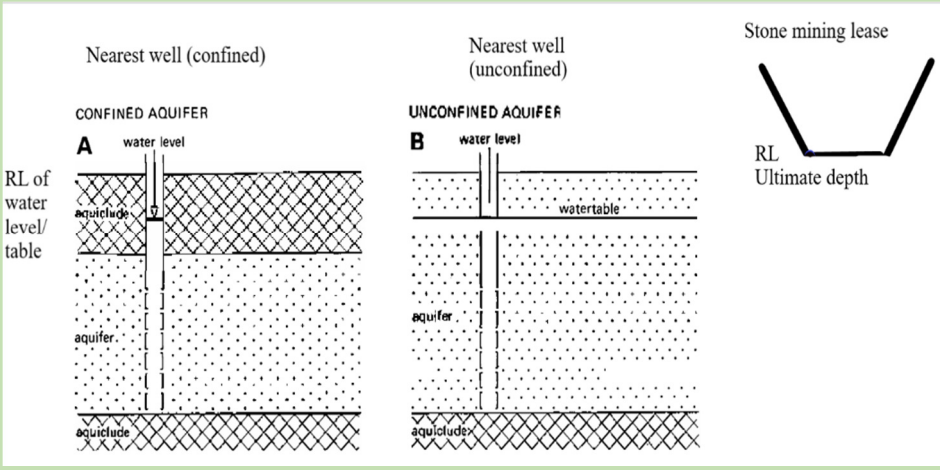
Audit observed that lack of diligence on the part of authorities responsible for vetting and approving mining plans resulted in irregular approval of mining plans with overlapping areas which may lead to disputes, illegal and unsustainable mining outside the lease areas *etc*.

4.1.3.4 Presumptive water table level in mining plan

As per Rule 6(घ) of the JMMC Rules, 2004 (amended on February 22, 2017), the maximum depth of mining should not exceed the permanent water level of that area. However, the Rules do not define what the permanent water level is. According to standard EC conditions, prior approval from the Ground Water Directorate, GoJ or the Central Ground Water Board (CGWB), Ministry of Jal Shakti, GoI is required to work below the groundwater table.

Scrutiny of MPs of 61 test-checked leases revealed that the water level was proposed on a presumptive basis (like assessing the level from the nearest wells, tube well, water bodies *etc*.) in MPs of these 61 leases without any consultation with CGWB to determine the Permanent water level. Moreover**,** in 13 cases lessees who had conducted mining activities below the ground water level failed to obtain necessary permission from CGWB before continuing mining activities.

In absence of exact definition of Permanent water level, audit obtained the data available with CGWB and Drinking Water & Sanitation Division (DWSD), GoJ. CGWB maintains data of two types of aquifers: (i) confined aquifer[49] and (ii) unconfined aquifer[50]. A comparison was made between the recommended depth of mining pits in conceptual plans[51]/the depth noticed during JPVs and the deepest water level/table[52] reported by CGWB/DWSD from 2017 to 2024.



Picture-4.12: Showing RL of stone mining leases and water level/table of nearest wells (confined and unconfined)

[49] A confined aquifer is bounded above and below by aquiclude (impermeable geological unit).

[50] An unconfined aquifer, also known as water table aquifer, is bounded below by aquiclude (impermeable geological unit) but not restricted by any confining layer above it. Its upper boundary is water table.

[51] Shows Plan and sections at the end of life of mine. This is part of the MP.

[52] Well nearest to the test checked mining leases.

The observations are discussed in **Table-4.1**.

Table- 4.1: Showing comparison of existing water table and depth of mining recommended in Mining Plan/found in JPV

Name of District	Number of mining lease/ Number of blocks	Maximum depth of pit (in meter)		Maximum Water level reported by CGWB during 2017-24 (in meter below ground level)		Maximum Water table reported by DWSD during 2017-24 (mbgl)	Excess depth in comparison to water level/ table (in meter)	
		MPs (Conceptual Plans)	JPV	Unconfined aquifer	Confined aquifer		Mining plan	JPV
Chatra	3/2	30 to 52	39.90 to 70.10	3.3 to 11.2	6.9 to 7.45	18.15 to 18.48	11.52 to 33.85	21.42 to 51.95
Dhanbad	3/2	27 to 34	30 to 48	3.5 to 9	9.26	16.20 to 16.80	10.20 to 17.80	13.20 to 31.80
Palamu	5/1	24 to 60	41 to 94	6.6 to 12.4	14.85	21.25	2.75 to 38.75	19.75 to 72.75
Pakur	2/1	25 to 42	33 to 40.23	8.27 to 10.95	4.07 to 6.12	21.50	3.50 to 20.50	11.5 to 18.73

Source: information from CGWB, DWSD, Mining plan, JPV report.

It is evident from the above table that in 13 cases out of 61 test-checked leases, depth recommended in the concerned MP and noticed during JPV exceeded the water level/table[53] of the concerned block which is discussed in **Case Study-4.4**.

Case Study-4.4

DMO, Palamu granted two adjoining stone mining leases[54] in Chattarpur block of Palamu district to a person in December 2011. The person obtained ECs for both leases on 30 December 2015, based on MPs prepared by the same RQP and approved by the same authority.

According to the 1st and 2nd MPs, the ultimate mining pit depth in conceptual plans and pre-monsoon water table for both leases were specified as follows:

Mining leases	Plans	Ultimate mining pit depth (Conceptual Plan) in meter	Pre-monsoon water table (in meter)
Kharwadih	1st	66 (RL 242-176)	75 (RL 167)
	2nd	42 (RL242- 200)	55-59 (RL 183-187)
Bagaiya	1st	72 (RL 246-174)	75 (RL 171)
	2nd	60 (RL 246-186)	76 (RL170)

[53] Maximum pit depth recommended in Conceptual Plan/noticed in JPV had been compared with the deepest water table/level reported by CGWB/DWSD.

[54] M/s Kharwadih (lease area- 4.650 Ha., lease period- 07.01.2012 to 06.01.2022, mauza: Kharwadih, 1st five-year MP approved on 14.05.2015 and 2nd plan approved on 05.08.2020), M/s Bagaiya (lease area- 4.046 Ha., lease period 08.01.2012 to 07.01.2022, mauza: Bagaiya, 1st five year MP approved on 14.05.2015, 2nd MP approved on 03 October 2020).

The table reveals that mining activities were reduced by 24 meters (from 66 to 42 meters) for Kharwadih and 12 meters (from 72 to 60 meters) for Bagaiya. The reduction in Kharwadih was done to avoid intersecting with groundwater. However, in the adjoining Bagaiya lease, mining was allowed up to 60 meters, despite the fact that this was an adjoining lease. Notably, DWSD reported a maximum water table depth of 21.25 meters below ground level (mbgl) in the Chattarpur block during 2017-2023.

Thus, mining activities were allowed at different depths in adjoining leases based on presumptive assumptions in MPs without obtaining the necessary permission from CGWB.

Picture-4.13: Bagaiya stone mine, partly filled with water, depth of water-30 meter, (JPV- November 2022)

Picture-4.14: Kharwadih mines, filled with water (JPV- November 2022)

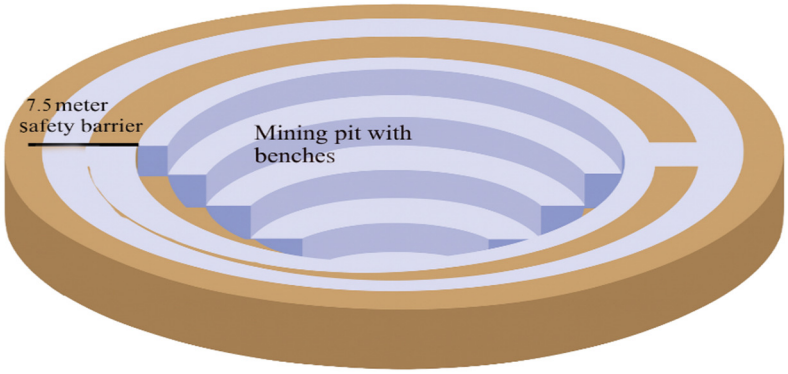
During beneficiary survey, 55 *per cent* (327 out of 597) residents stated that deterioration of the water table was one of the major negative impacts of mining activities. Thus, inability of the DMG in cross verifying the relevant data before approval of MP based on presumptive levels of water table resulted not only in deterioration of water table of the mines affected area but was also against the objective of environment management plan for sustainable and scientific mining.

4.1.3.5 Irregular accounting of mineable reserve in Mining Plan

The MPs for stone leases outlined mineable reserve and non-mineable resources. The lease area was categorised into (i) ***Mining Pit Area***: which includes mineable reserve for excavation and non-mineable resources in the form of benches[55] (ii) ***Safety Barrier***: 7.5 meter area surrounding the pit area, exclusively containing non-mineable resources which is not available for mining, as shown in **Picture-4.15**.

[55] Equal height and width, dimension (6 m height and 6 m width, 5 m x 5 m *etc*.).

Picture 4.15: Pictorial representation of a mine showing safety barrier and mining pit with benches



An audit scrutiny of the MPs of 61 out of 63 physically verified leases revealed that within the mining pit area, mining activities were proposed to be performed at a 45° angle, considering the existence of benches. It was also noticed that despite similar conditions for non-mineable resources, in 25 cases, ratio of mineable to non-mineable resources exhibited wide variation ranging from 88:12 to 51:49. Further, based on the area of the safety barrier (as mentioned in the land use pattern), Audit calculated[56] that non-mineable resources of 83.87 lakh tonnes should have been blocked in safety barriers in 14 out of 25 cases. However, it was observed that the MPs included the total approved non-mineable resources of 53.21 lakh tonnes in these mines, indicating understatement of non-mineable resources by 30.66 lakh tonnes in the MPs.

The overstatement of mineable reserve, valued at ₹ 34.96 crore[57], due to understatement of non-mineable resources, could result in: (i) Unwarranted allowance of mineable quantities in ECs (ii) Promotion of unsustainable mining practices (iii) Negative impact on safety measures due to absence of safety barriers and benches and (iv) Adverse environmental effects due to lack of space for plantation.

The irregular accounting of mineable reserve against non-mineable resources within the mining pit area in one case out of the 14 cases commented upon above, has been scrutinised in detail in **Case Study-4.5**.

Case Study-4.5

Lutful Haque (Lessee code-623955701), Pakur

According to MP, the total mineable reserve of the mine was 30,07,368 tonnes, with 24,74,928 tonnes (equivalent to 9,16,640 m^3) available for extraction during the 10 year lease period. The remaining quantity was reserved for subsequent period of two years. Further, area of 4.02 Ha. out of the total 5.46 Ha. was designated for excavation, with a specified depth ranging between two to 20 meters, to maintain a gentle side wall slope of 45°.

[56] Calculated by multiplying area of safety barrier (mentioned in land use pattern) multiplied by depth of the resources (mentioned in geological plan).

[57] 11.17 lakh m^3 (30.66 lakh tonnes/bulk density) x rate of stone ₹ 313 per m^3.

The mining plan indicated 9,16,640 m^3 (as per the volume mentioned in MP) of mineable reserve for 10 year lease period. Even if excavation is done at a 90° slope with uniform depth of 20 meters, there was overstatement of mineable reserve as shown below:

- Excavation area: 4.02 Ha. = 40,200 m^2
- Uniform depth: 20 meters
- Maximum possible mineable reserve without following the condition of maintaining the 45° slope: 40,200 m^2 x 20 m = 8,04,000 m^3

Comparing this to the approved mineable reserve of 9,16,640 m^3, it is evident that there was an overstatement of mineable reserve by at least 1,12,640 m^3 (9,16,640-8,04,000). This suggests that the estimation process followed was unreliable.

4.1.3.6 Recommendation for utilisation without sampling and testing

The Granite Conservation and Development Rules, 1999 were introduced for conserving and developing granite resources. Key provisions include: (i) Rule 3(h): Defines granite as rocks recoverable as dimensional stone, capable of taking polish, and commercially exploitable (ii) Rule 22: Promotes utilisation of smaller blocks for manufacturing bricks, flooring, tiles *etc*., and use of small pieces as stone aggregates and quarry backfill (iii) Rule 43: Requires quarry owners to maintain borehole records and prohibits their destruction without approval.

Among the 63 stone leases examined, MPs of 61 leases reported that the lease areas consisted of rock mass of granite. However, in all cases, the MPs uniformly recommended the use of granite as chips/boulders without conducting proper sampling and tests to ascertain whether they were suitable for dimensional stone, capable of taking polish, and commercially exploitable. Thus, the State Government ignored exploring the possibility of commercial exploitation of high value products that could have fetched higher royalty.

4.1.3.7 Non-incorporation of baseline data in Environmental Management Plan

As per Mining plan format provided in the model Minor MCDR, 2010 circulated by IBM, the chapter on Environmental Management Plan (EMP) in MP should have baseline data (air, water and noise pollution level) of lease area which would serve as reference point for evaluating environmental deterioration due to mining operations in future.

Scrutiny of Chapter on EMP in MPs of 61 test checked leases revealed that no data for air, water and noise pollution level through on-site measurements around lease area were recorded, except for documenting pre-recorded

water quality data measured by the CGWB at various locations in the respective district. This indicated that on-site measurements for air, water and noise pollution were not taken. Had these data points been collected and recorded, these could have been used as baseline data for evaluating environmental deterioration due to mining operation.

Thus, inclusion of EMP in mining plans without relevant data, resulted in lack of the baseline to effectively assess the impact of mining operation on environment.

4.1.4 Implementation of Progressive Mine Closure Plan

As per Rule 17 of minor MCDR, 2010, every mine shall have a Mine Closure Plan which shall be of two types:

- Progressive mine closure plan for the purpose of providing protective, reclamation and rehabilitation measures in a mine or part thereof and
- Final mine closure plan for the purpose of decommissioning, reclamation and rehabilitation of a mine or part thereof after cessation of mining and mineral processing operations.

The progressive mine closure plan essentially entails the systematic implementation of the MP. The lease area should be properly demarcated through boundary pillars and fenced, excavation should be limited within mining pit area, leaving benches with gentle slope and safety barriers around the mining pit area for plantation purposes. Audit observed that in 61 out of 63 test checked stone leases (in two cases MP not produced), progressive mine closure plans were submitted along with the MP but were not complied with.

Mine Closure Plan

Audit conducted JPV with DMG officials in 63 selected stone leases[58] and observed several deviations from the provisions outlined in the MP, both in working and closed stone mining leases, as discussed below.

4.1.4.1 Mining in excess of permissible limit

Indian Bureau of Mines issued a circular (No. 02/2010) in April 2010 requiring submission of geo referenced cadastral maps and DGPS surveys for boundary pillars of mining lease by the lessee. The JIMMS has facilities in place to use this data and generate maps in Google Earth using geographical coordinates of the boundary pillars of mining leases. Audit noted that in case of 61 out of 63 test-checked stone leases (in two leases MP not produced), the Mining Plans included mineable reserve,

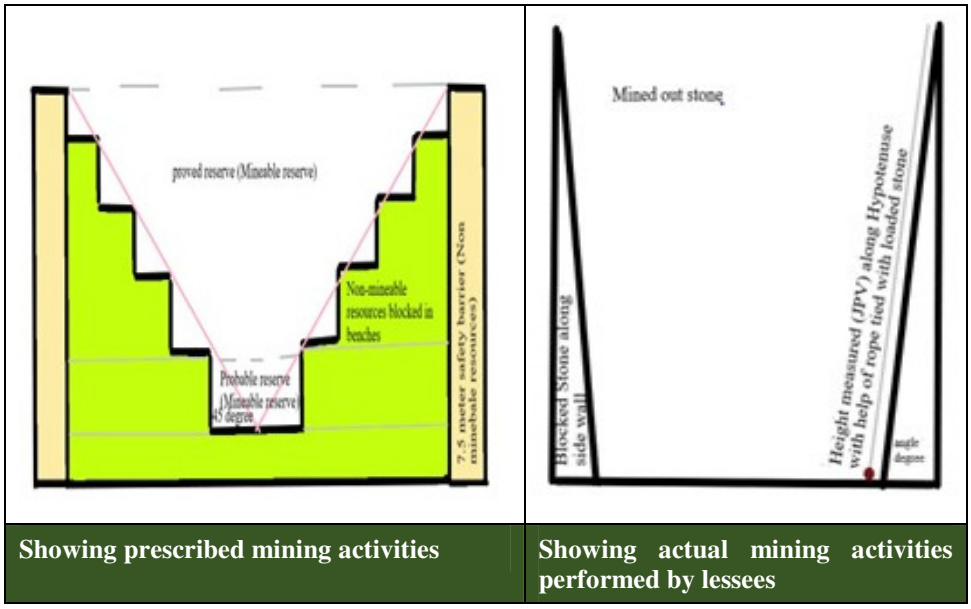
[58] 54 fresh leases (where no mining activity performed earlier) and nine renewed leases, out of 63 leases 51 working and 12 expired leases.

non-mineable resources, and proposed mining activities at a 45° angle, providing for equal size of benches.

Additionally, the Department had instructed field offices (in July 1986) to conduct annual sectional measurements (of at least 20 *per cent*) of leases to verify the actual quantity excavated against dispatch of minerals. The DMOs were further required to verify 10 *per cent* of these measurements for data accuracy.

During the JPV, Audit observed that 55 out of 63 leases[59] had side walls with steep slopes of approximately 65° to 90°, deviating from the recommended gentle slope of 45°. To verify the depth recommended in the mining plan, the team measured the depth by dropping a rope with a stone load from ground level to the ultimate pit level. The comparison of mining activities (prescribed in Mining plan) and JPV observations for 55 stone leases is shown in **Chart 4.3**.

Chart-4.3



Showing prescribed mining activities	Showing actual mining activities performed by lessees

The pictorial chart reveals two key issues:

a. Lessees excavated stone without creating required benches and safety barriers, increasing the side wall angle from 45° to 65-90° and horizontally infringing on non-mineable resources, violating mining plan terms.

b. Lessees also excavated beyond the allowable depth, vertically infringing on non-mineable resources, with pit depths exceeding permissible limits by 2.5 to 50 meters (*i.e.*, 11 to 494 *per cent*).

[59] 55 cases: no benches, one case: no mining performed, five cases: one bench and two cases: 2 to 3 benches.

For comparing the excavation within and outside lease area (horizontal infringement), geographical coordinates of every boundary pillar of the lease were necessary. Audit noticed that despite IBM instructions and inbuilt feature of recording of coordinates in JIMMS, sufficient and correct geographical coordinates of boundary pillars were not recorded.

Further, in order to obtain Environmental clearance from SEIAA, the applicants were to submit kml files[60] to generate lease maps on Google Earth. However, these kml files submitted for EC were not available on Parivesh Portal.[61] Had these files been made available to Audit, they could have proved helpful for generating maps on Google Earth.

The lessees in the test checked cases neither submitted geo-referenced maps of mining leases, nor did they ensure their superimposition on Geo-referenced cadastral map. As a result, the required superimposed outputs (soft copy of shape file and its hard copy) was not available with DMOs in the 61 test checked stone leases.

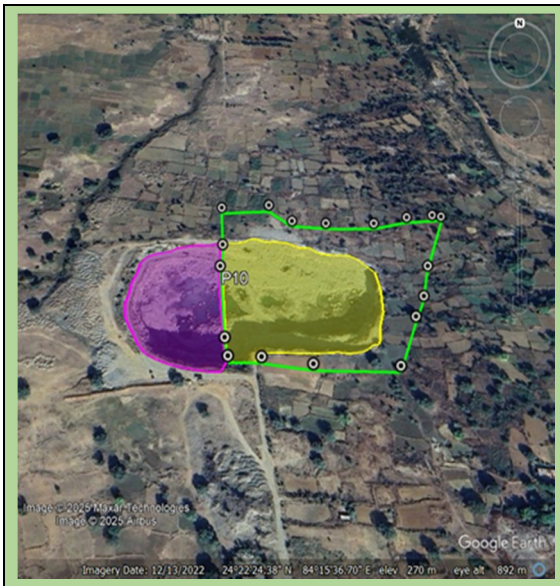

kml file

In the absence of shape files with DMOs, kml files in the Parivesh Portal, and coordinates for each boundary pillar pertaining to 63 stone leases in the JIMMS, Audit obtained coordinates from mining plans of these leases. Audit then generated maps on Google Earth by preparing Comma Separated Value (CSV) files from the available coordinates of boundary pillars in the mining plan. These CSV files were imported into Google Earth to produce maps in kml format. However, in 47 leases incorrect coordinates were recorded in the MPs and MPs in respect of two leases were not made available. On Audit's request for corrections in coordinates, DMOs provided accurate coordinates in respect of eight leases only. Audit successfully generated matching maps for 22 leases of five districts (except Dhanbad) and noticed horizontal infringement (15.44 Ha. outside lease area) in 14 leases[62]. Two of such Google Images are shown in **Picture-4.16** and **4.17**.

[60] kml files is a format used to display geographical data in Earth browser such as Google Earth.

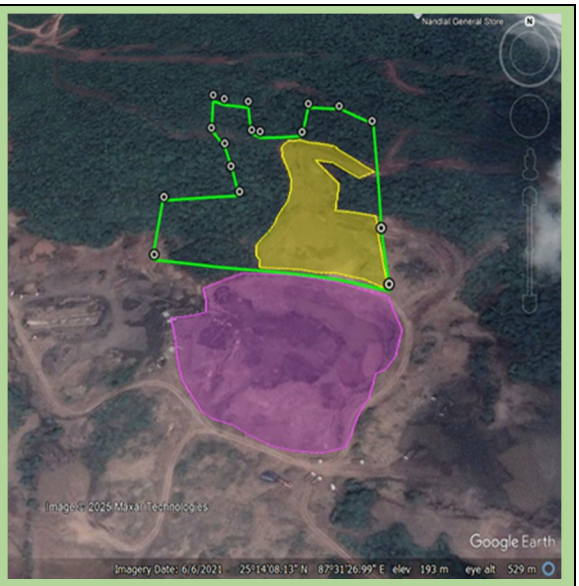
[61] MoEFCC, GoI launched (August 2018) Parivesh Portal, a single window portal for the EC.

[62] **In Chatra-** (i) Shri Ajay Kumar (lessee code-101333001, outside lease area 0.14 Ha.), **In Palamu-** (ii) Shri Anoop Kumar Singh (lessee code- 411510801, outside lease area 0.55 Ha.), (iii) M/s Mahadev Construction Pvt. Ltd. (lessee code-411510701, outside lease area 1.50 Ha.),
In Sahibganj- (iv) M**/s** Sri Ram Stone Product (lessee code- 620053304, outside lease area 1.64 Ha.), (v) M/s Kwality Stone Product (lessee code-620396401, outside lease area-0.21 Ha.) and nine leases mentioned in **Table-4.2**.



M/s Mahadev Construction Pvt. Ltd., lessee code-411510701, Palamu

Picture-4.16: Google Image (13 December 2022) showing lease area (kml area 4.65 Ha.) outlined in green, excavated area inside lease area shaded in Yellow (2.52 Ha.) and outside lease area in purple colour (1.50 Ha.)



Sri Ram Stone product, lessee code- 620053304, Sahibganj

Picture-4.17: Google Image (06 June 2021) showing lease area (kml area 2.43 Ha.) outlined in green, excavated area inside lease area shaded in Yellow (0.80 Ha.) and outside lease area in purple colour (1.64 Ha.)

Audit faced constraints[63] in estimating extraction volumes and accordingly selected[64] 13 out of 63 stone mining leases using specific criteria[65]. Audit estimated extraction volumes by measuring excavated areas in Google Earth and multiplying them with depths observed during JPV, adjusting for trapped volumes in slopes (70-90° angles[66]) and haul roads (**Appendices-4.1, 4.2** and **4.3**).

Volumetric assessment of excess extraction with the help of an expert

Audit appointed Birsa Institute of Technology[67] (BIT), Sindri as consultant and issued work order (05 April 2024 and 14 August 2024) for obtaining technical opinion of BIT, Sindri for volume calculation of excavated

[63] Non-availability of three-dimensional image of hills and inaccessible terrain, non-availability of production data of previous leases in renewal cases, overlapping leases *etc*.

[64] Nine stone leases where shape and size of kml files of mining leases matched with *Khasra* Maps and four stone leases where shape and size of kml files of mining leases did not match.

[65] Jointly physically verified leases (depth measured), fresh (unbroken leases *i.e.*, where excavation started for the first time). In case of renewed leases, if renewal data is available since beginning, availability of historical Google Image, no adjoining leases (in case of adjoining leases data of adjoining leases available).

[66] DMG officials estimated the volume of extraction in selected leases of Pakur through sectional measurement method by assuming the angle of extraction as 90º.

[67] A Government Engineering College in Dhanbad (Established in 1949) under Department of Higher and Technical Education, Government of Jharkhand.

minerals in stone quarries for these 13 mines, providing the requisite information (kml files, depth, angle, area of pit, mining plan *etc*.) available with Audit. BIT, Sindri used following techniques for providing the technical opinion:

- High resolution satellite images of each quarry site were obtained to provide a visual spatial reference for digitising the pit boundaries
- Preparation/validation of kml files and digitization of quarry pit boundaries
- Import of Satellite image and kml files into AutoCAD Civil 3D software
- Creation of 3D surface model[68] of each quarry pit
- Volume calculation using cut and fill method[69]

This technique allows for differentiation between the material removed (cut) and the void created (fill), providing a precise of the total excavated volume for each quarry site.

The consultant submitted (2 May 2024 and 7 October 2024) the study report on extracted minerals.

Observations based on excess extraction estimated by Audit and BIT, Sindri in these 13 leases are as under:

A. Observations on nine leases where shape and size matched with Khasra Map

The estimated excess excavation in nine mining leases, where kml file matched with *Khasra* map, as calculated by Audit is shown in **Table-4.2**.

[68] Represents the current topography of the quarry, including elevation data, pit depth and surface contours.

[69] Cut Volume: Represents the volume of material that has been excavated from the quarry pit. Fill Volume: Represents any voids or depression created during the excavation process.

Table 4.2: Estimated excess excavation in nine mining leases (where kml file matched with *Khasra* map) calculated by Audit

Sl. No.	Name of lease/district/ lessee code/ lease period	Lease area (in Ha.)	Estimated excavated area[70] (Ha.)		Estimated excavated volume (in lakh m^3)		Reported production[71] (in lakh m^3)		Estimated excess production (in lakh m^3)		Total excess production (in lakh m^3)
			In	Out	Lease area		Lease area		Lease area		Total area
					In	Out	In	Out	In	Out	(In+ Out)
1	**M/s Jaishankar Stone Works, Chatra, 308336601, 14.7.14 to 13.7.24**	0.713	0.71	2.98	2.71	10.61	0.80	0.00	1.91	10.61	12.52
2	**M/s Chatania Mines, Chatra, 308156501, 24.10.19 to 23.10.29**	2.83	0.65	0.78	1.92	2.15	1.92	0.19	0.00	1.96	1.96
3	**M/s Jai Shiv Construction, Chatra, 308336901, 12.2.15 to 11.2.25**	1.03	0.86	1.10	4.41	5.82	1.44	0.00	2.97	5.82	8.79
4	**M/s Trustline Mining and Minerals, Chaibasa, 101597101, 18.1.16 to 17.1.26**	18.93	4.22	1.09	18.15	4.10	14.30	0.00	3.85	4.10	7.95
5	**M/s Raj Kumar Khurana, Palamu, 411354101, 17.8.13 to 16.8.23**	4.05	2.23	0.95	13.42	5.80	13.42	0.02	0.00	5.78	5.78
6	**M/s Shyam Stone Mines, Palamu 411355001, 23.7.15 to 22.7.25**	4.856	3.51	3.30	14.27	10.74	6.72	0.00	7.55	10.74	20.52
7	**M/s Sona Stone Chips, Palamu, 411354301 12.12.13 to 11.12.23**	0.96	0.84		2.84		0.61		2.23		
8	**M/s Bagaiya Stone Mine, Palamu, 411353903, 08.1.12 to 07.1.22**	4.046	3.61	0.33	25.88	0.30	11.94	0.00	13.94	0.30	14.24
9	**M/s New Three Star Mines, Pakur, 623160603, 20.3.20 to 19.3.30**	2.34	1.95	0.87	3.36	1.48	1.52	0.00	1.84	1.48	3.32
	Total	**39.755**	**18.58**	**11.40**	**86.96**	**41.00**	**52.67**	**0.21**	**34.29**	**40.79**	**75.08**

It is evident from **Table-4.2** that in nine leases, total excess excavation of 75.08 lakh m^3 was estimated by Audit. While validating the audit observations, BIT Sindri estimated excess excavation of 76.54 lakh m^3. Thus, the overall difference (between Audit and BIT, Sindri) in estimated excess extraction was only 1.46 lakh m^3 (1.94 *per cent*) in these leases of four districts.

- **Within the lease area of nine leases:** Audit estimated stone excavation of 86.96 lakh m^3 while the lessees reported 52.67 lakh m^3 of Stone excavation for the period from January 2012 to September 2023.

[70] Satellite images (February 2021 to November 2022) considered for measuring area.
[71] Detailed in **Appendix-4.1** and **4.2**.

Therefore, there was underreporting of 34.29 lakh m^3 of stone extraction by the lessees, valued at ₹ 107.33 crore[72].

- **Outside lease area of nine leases:** Audit estimated 41.00 lakh m^3 of stone excavation while the lessees reported[73] 0.21 lakh m^3, leading to under reporting of 40.79 lakh m^3 of stone by the lessees for the period from January 2012 to September 2023, valued at ₹ 127.67 crore[74].

Five cases are illustrated in **Case Study-4.6**.

Case Study-4.6

1. M/s Jai Shankar Stone Works, Chatra

M/s Jai Shankar Stone Works, Chatra was granted (June 2014) a lease over 0.713 Ha. of land in Mauza Dalkoma, Block Hunterganj of Chatra district for a period of 10 years (14.07.2014 to 13.07.2024). During the JPV (on 23 May 2023), the team noticed that the lessee had exceeded permissible limits by vertically excavating up to 39.60 meters deep, exceeding the 15 meters permissible limit, approved in the MP. Audit generated kml file of lease area on Google Earth from available coordinates of boundary pillars in the MP and noticed an excavation of 0.71 Ha. within and 2.98 Ha. outside the lease area. Audit estimated the volume of extraction (February 2022) after deducting volume trapped inside slope and haul road.

Based on this, audit findings were as follows:

- **Total extraction: 13.32 lakh m^3 (2.71 lakh m^3 inside and 10.61 lakh m^3 outside lease area).**
- **Reported extraction: 0.80 lakh m^3 during the period.**
- **Under reporting: 12.52 lakh m^3 (1.91 lakh m^3 inside and 10.61 lakh m^3 outside).**

Picture- 4.18: Google Image (17 February 2022) showing lease area (kml area 0.713 Ha.) outlined in green, excavated area inside lease area shaded in Yellow (0.71 Ha.) and outside lease area in purple colour (2.98 Ha.)

[72] 34.29 lakh m^3 x ₹ 313 per m^3= ₹ 107.33 crore.

[73] Audit figured out volume produced outside lease area after adjusting the produced volume reported by lessee with excavated volume within lease area (calculated by Audit).

[74] 40.79 lakh m^3 x ₹ 313 per m^3= ₹ 127.67 crore.

Audit also noticed that for avoiding detection of excess excavation, the lessee started filling of excavated mines, as depicted in the following satellite images.

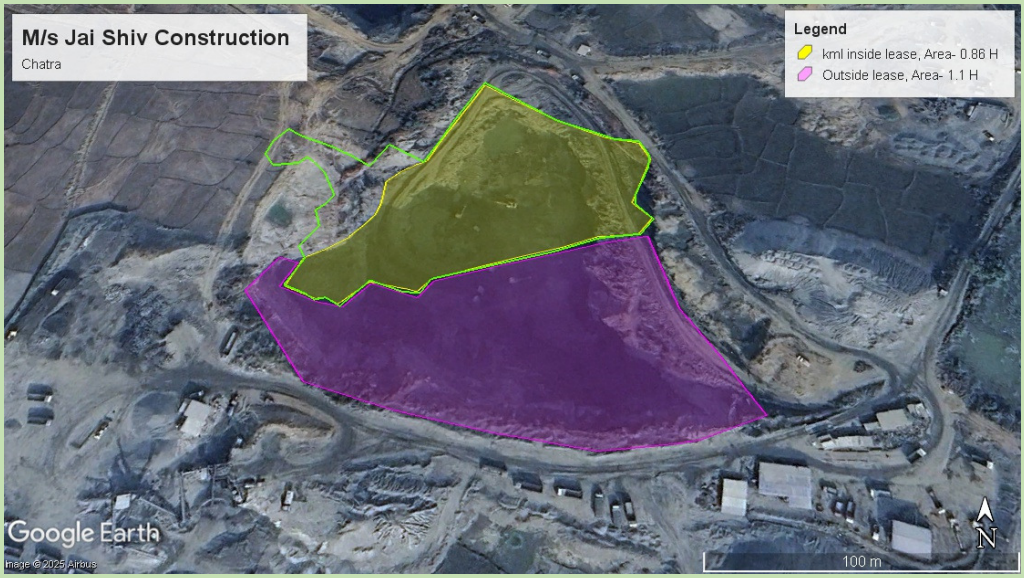
Picture-4.19: Google Image 28.12.2018 unfilled portion (shown in red outline)

Picture-4.20: Google Image of 17.02.2022 (excavated portion filled shown with in red outline)

2. M/s Chatania Mines, Chatra

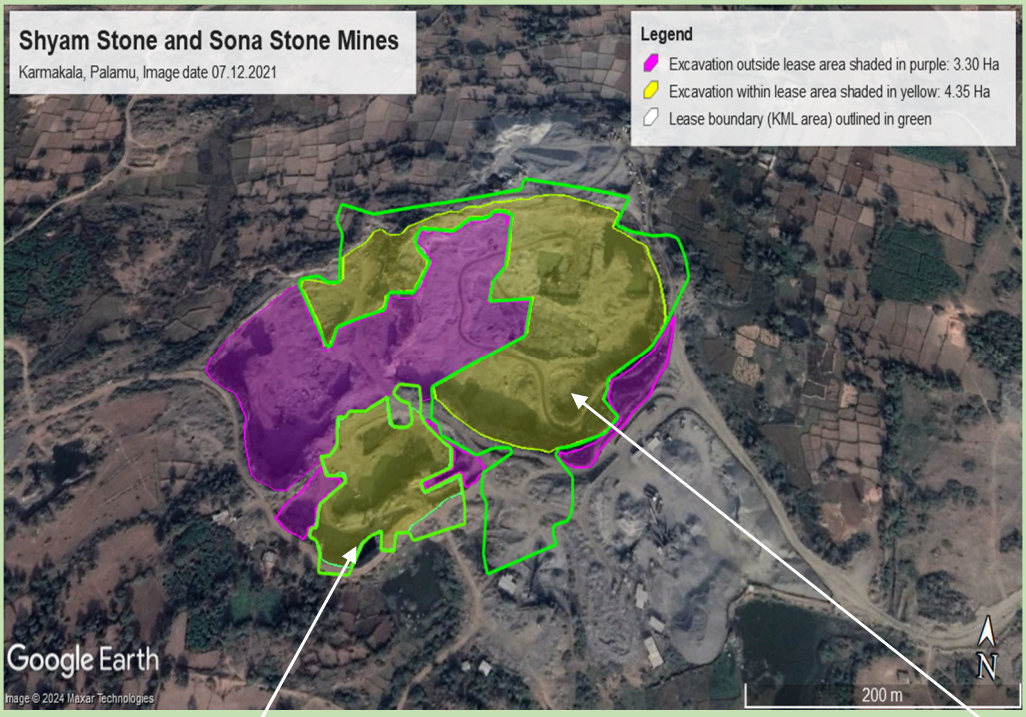
Picture-4.21: Google Image (17 February 2022) showing lease area (kml area 2.83 Ha.) outlined in green, excavated area inside lease area shaded in Yellow (0.65 Ha.) and outside lease area in purple colour (0.78 Ha.), Depth measured in JPV (23 May 2023): (39.90 meter against permissible depth of 20 meter)

3. M/s Jai Shiv Construction, Chatra



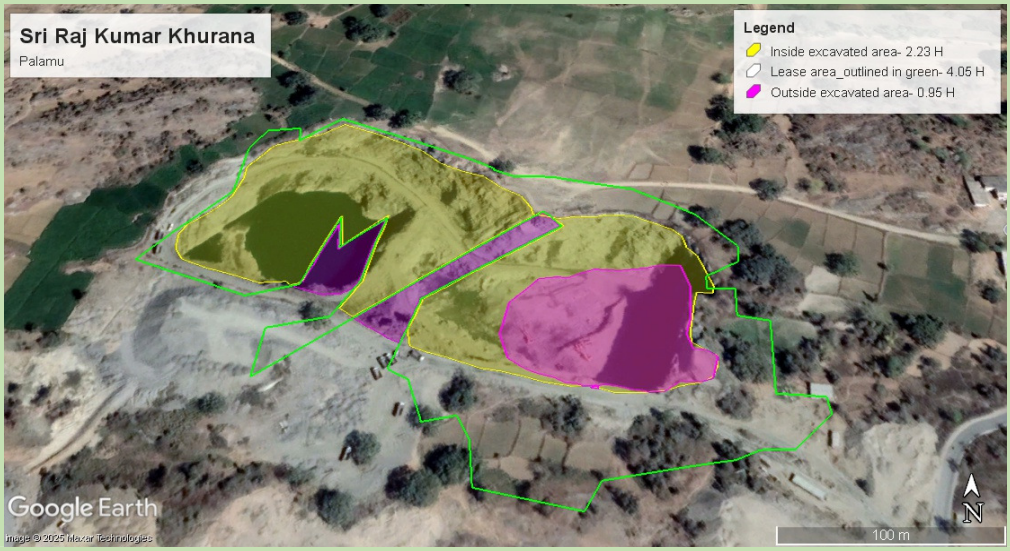
Picture-4.22: Google Image (30 November 2022) showing lease area (kml area 1.03 Ha.) outlined in green, excavated area inside lease area shaded in Yellow (0.86 Ha.) and outside lease area in purple colour (1.1 Ha.), Depth measured in JPV (11 May 2023): (64 meter against permissible depth of 18 meter)

4. M/s Shyam Stone Works, Palamu and M/s Sona, Palamu



Picture-4.23: Google Image (07 December 2021) showing lease area (kml area 4.856 Ha. of M/s Shyam and 0.96 Ha. of M/s Sona) outlined in green, excavated area inside lease area shaded in Yellow (3.51 Ha. of M/s Shyam and 0.84 Ha. of M/s Sona) and outside lease area in purple colour (3.30 Ha.), depth measured in JPV (02 December 2022): (35-45 meter against permissible depth of 12.5-24 meter)

5. M/s Raj Kumar Khurana, Palamu



Picture- 4.24: Google Image (25 February 2021) showing lease area (kml area 4.05 Ha.) outlined in green, excavated area inside lease area shaded in Yellow (2.23 Ha.) and outside lease area in purple colour (0.95 Ha.), Depth measured in JPV (26 November 2022): (61 meter against permissible depth of 18 meter)

B. Observations on four leases where shape and size did not match with Khasra map

The estimated excess excavation in four mining leases, where kml file did not match with Khasra map, as calculated by Audit is shown in **Table-4.3**.

Table-4.3: Showing estimated excess excavation in four mining leases (*where kml file not matched with Khasra map*) calculated by Audit

Name of lease/district/ lessee code/ lease period	Lease area (hectare)	Estimated excavated area[75] (hectare)	Estimated excavated volume (in lakh m^3)	Reported production[76] (in lakh m^3)	Excess production (in lakh m^3)
M/s Ashutosh Stone Works, Chatra, 308013401, 26.06.14 to 25.06.24	4.04	3.30	12.44	3.06	9.38
M/s CTS Industries Ltd., Chaibasa, 101334703, 23.02.16 to 22.02.26	3.64	1.74	4.15	1.40	2.75
M/s Ramashish Singh, Palamu, 411596801 23.03.16 to 22.03.26	4.85	6.00	13.33	9.98	3.35
M/s Sky Stone Works, Sahibganj, 620829301, 06.11.17 to 05.11.27	2.86	1.50	3.18	0.21	2.97
Total	**15.39**	**12.54**	**33.10**	**14.65**	**18.45**

[75] Satellite image (February 2022 to December 2022) considered for measuring area.
[76] Detailed in **Appendix-4.3**.

It is evident from the **Table 4.3** that the overall excess extraction (as per Audit) was 18.45 lakh m^3 (valued at ₹ 57.75 crore @ ₹ 313 per m^3) in four leases of four districts, while it was 18.97 lakh m^3 as per calculations of BIT, Sindri. Thus, there was an overall difference (between Audit and BIT, Sindri) in estimated excess extraction of only 0.52 lakh m^3 (2.82 *per cent*) which validated the audit observations.

Due to mismatch of kml file with *khasra* map, Audit faced limitations in analysing extraction outside/inside lease area. Audit only compared excavated volume (estimated by audit) with reported production by lessee.

Two cases are illustrated in **Case Study-4.7**.

Case Study-4.7

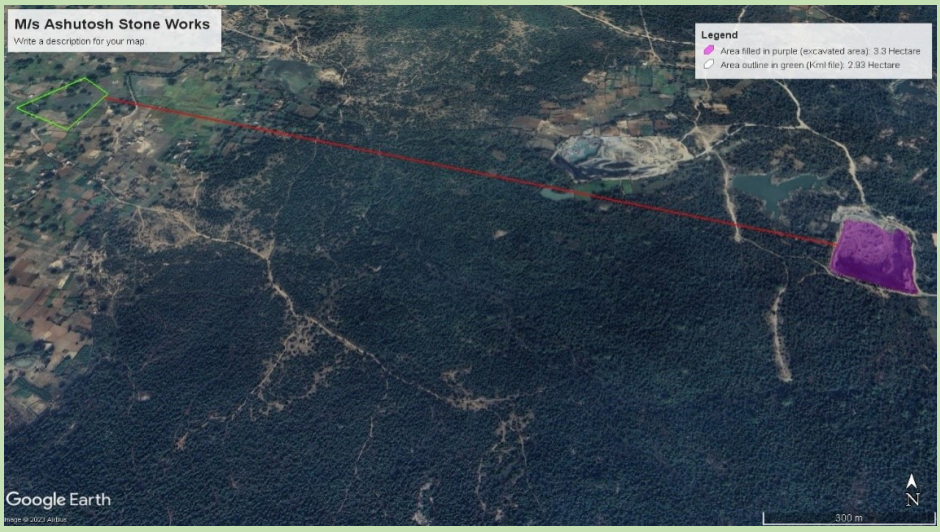
1. M/s Ashutosh Stone Works, Chatra

M/s Ashutosh Stone Works, Chatra was granted a 10 year lease (26 June 2014-25 June 2024) for 4.04 Ha. of land in Mauza Dalkoma, Hunterganj block of Chatra. Audit conducted JPV with DMO on 23 May 2023.

Audit findings:

- There was a mismatch between kml file size (2.93 Ha.) and khasra map (4.04 Ha.).
- Lease area was 1.95 km away from the kml file location.
- Excavated area: 3.3 Ha. (measured using Google Earth Pro).
- Excavated depth: 42 meters (exceeding the permissible 36 meters in approved mining plan).

Audit multiplied the depth with excavated area to calculate the volume of extraction after deducting volume trapped inside slope and haul road. The estimated extraction volume: (a) Total: 12.44 lakh m^3 (b) Reported: 3.06 lakh m^3 (c) Under reporting: 9.38 lakh m^3.



Picture- 4.25: Google Image (17 February 2022) showing incorrect lease area (kml area 2.93 Ha. instead of 4.04 Ha.) outlined in green, excavated area shaded in purple (3.3 Ha.)

2. M/s Ramashish Singh, Palamu

Picture- 4.26: Google Image (13 December 2022) showing incorrect lease area (kml area 5.83 Ha. instead of 4.85 Ha.) outlined in green, excavated area shaded in purple (6 Ha.), Depth measured in JPV (02 June 2023): Excavated depth (24.38 meter against permissible depth of 12 meter)

Thus, lessees had underreported stone excavation by 93.53 lakh m^3 (75.08 lakh m^3 as detailed in **Table-4.2** for nine cases where kml matched + 18.45 lakh m^3 as detailed in **Table-4.3** for four cases where kml did not match) in 13 leases compared to Audit's estimates based on JPV and available tools on Google Earth. This underreporting, combined with excavation beyond lease areas, poses environmental hazards and depletes mineral reserves rapidly, undermining scientific and sustainable mining objectives. Besides this, there is also significant revenue loss to the Government. Audit estimated the potential financial implication of such excess extraction of mineral extraction to be ₹ 292.75 crore {93.53 lakh m^3 (volume of excess extraction) x ₹ 313.00 per m^3 (price of mineral)} for 13 stone leases.

These observations are based on estimation to apprise the Department about the ground level situation. It calls for a further detailed investigation by the Department to work out the exact amount of underreporting of mineral extraction.

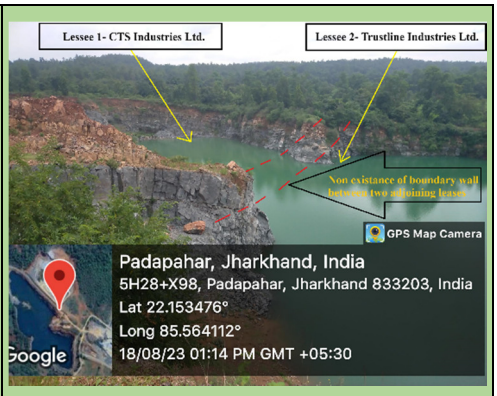
Apart from the above observations Audit noticed

(i) **Absence of required boundary pillars and safety barrier**: In 46 out of 63 cases either the boundary pillar was entirely absent (30) or was only partially found (16). Furthermore, in 62 out of 63 leases across sampled districts, the safety barrier was reduced, ranging from 0 to 7 meters, instead of the required 7.5 meters shown in **Picture-4.27**. This resulted in reducing the space for planation on safety barriers.

Picture-4.27: Showing no safety barrier and no plantation work

M/s Sanjay Kumar Singh & Ashish Kumar Singh, lessee code-0308337101, Chatra	M/s Arun Kumar Singh lessee code-0308081601, Chatra

In nine adjoining leases across three districts[77] there were no boundary walls between two leases, indicating extraction of non-mineral resources blocked in safety barriers, as shown in **Picture-4.28**.



Picture-4.28: Showing no boundary wall between adjoining leases.

M/s Trustline Dealers Pvt. Ltd., lessee code-0101335502, Chaibasa (Green polygon)	M/s CTS Industries Ltd., lessee code-0101334704, Chaibasa (Yellow polygon)

(ii) **Method adopted by lessees to conceal excess excavation:** Scrutiny of MP of three leases of three districts[78] revealed that after the end of lease period of current lessees, there were balance mineable stone reserves[79] of 6.55 lakh m^3. That means that the current lessee had extracted material of his share as mandated in MP/EC/CTO. The remaining balance after accounting the depletion of reserve (limited/fixed permissible extraction)

[77] Chaibasa, Chatra and Pakur.

[78] Pakur, Palamu and Sahibganj.

[79] M/s Lutful Haque, Pakur, lessee code- 623955701, lease period 15 September 2017 to 14 September 2027, Balance mineable reserve- 2,03,045.20 m^3, M/s Bagaiya Stone Mines, Palamu, lessee code-411353903, lease period 08 January 2012 to 07 January 2022, Balance mineable reserve- 60,235 m^3, M/s Krishna Sah, Sahibganj, lessee code-620779003, lease period 02 April 2015 to 01 April 2025, Balance mineable reserve-3,92,367.40 m^3.

would be reallotted to the next lessees. Audit noticed that in two leases of Pakur and Sahibganj, the lessees started filling/filled the pit using stone dust/earth brought from other places while in one lease of Palamu, lessee converted the mine into a water reservoir. Action of the lessees indicated that the lessees had extracted the material of more than permissible limits from these mines.

The filling up of excavated land was fraught with the risk of fraudulent intention to conceal excess excavation to avoid measurement of excavated area for fixation of demand by DMOs, shown in **Pictures-4.29** and **4.30**.

Kml file (outlined in Green) Krishna Sah, lessee code-0620779003, Sahibganj	
	
Picture-4.29: Area outlined in yellow excavated area (Google Image March 2020)	**Picture-4.30: Area outlined in yellow filled area (Google Image July 2022)**

(iii) **Non-conducting of required measurement:** Audit observed that during the period 2017-22, the official of the DMG did not conduct any periodic inspections as instructed by the Department. The DMG was supposed to conduct annual sectional measurement of at least 20 *per cent* of leases to verify the actual quantity excavated. The officials of the DMG conducted yearly sectional measurements of only 0.68 to 3.17 *per cent* of the existing minor mineral leases in six test checked districts. Thus, these measures were not adequate to determine excavation beyond lease area/excess excavation and impose penal provisions provided for in the Act/Rules. There is a need to include the use of modern technology (such as drone surveys) in the JMMC Rules, 2004, in line with Rule 34A of the Mineral Conservation and Development Rules (MCDR), 2017, for detecting instances of excess excavation by lessees and imposing penalties accordingly.

(iv) **Discrepancies in Rules to curb unauthorised/ illegal excavation:** In light of the ground situation, Audit further scrutinized, the collection report of royalty furnished by the Director, Mines to analyse the revenue collection from minor minerals consumable[80] in the State during the period

[80] As per Schedule of Rate published by Works Department, GoJ; Stone, Sand, *Morrum*, Brick earth and Ordinary earth are the minor minerals consumable in execution of construction/developmental works.

2017-22. It was observed that revenue of ₹ 1,554.81 crore was collected from lessees of four minor minerals (*i.e.*, stone, brick earth, sand and *morrum*) during 2017-22. During the same period, ₹ 1,550.34 crore was collected as royalty and penalty equal to royalty, from works contractors engaged by various Works Departments as depicted in **Table-4.4**.

Table-4.4: Showing comparison between contribution of royalty from mining leases and royalty and penalty equal to royalty from Works Department during 2017-22

Name of Minor mineral	Total collection in the State (₹ in lakh)					
	2017-18	2018-19	2019-20	2020-21	2021-22	Total
A.	B.	C.	D.	E.	F.	G.
Stone (Lease/permit)	22,781.66	26,127.46	26,983.26	36,021.61	38,179.96	1,50,093.95
Brick earth (Lease/permit)	452.50	530.78	631.84	781.50	830.62	3227.24
Sand (Lease/permit)	226.87	140.47	175.67	901.46	192.02	1636.49
Morrum	385.84	3.35	6.67	120.42	7.48	523.76
Ordinary earth	00.00	00.00	00.00	00.00	00.00	00.00
Total from Leases/Permits	**23,846.87**	**26,802.06**	**27,797.44**	**37,824.99**	**39,210.08**	**1,55,481.44**
Works Department (royalty and penalty equal to royalty received from works contractors)	31,559.90	34,214.73	31,282.85	33,422.74	24,553.68	**1,55,033.90**
Total collection from minor minerals consumable in construction works	**55,406.77**	**61,016.79**	**59,080.29**	**71,247.73**	**63,763.76**	**3,10,515.34**
Percentage of receipt from works contractors over total receipts from minor minerals consumable in works contract.	**56.96**	**56.07**	**52.95**	**46.91**	**38.51**	**49.93**

Source: Information received from Director, Mines.

From the above, it is evident that more than 95 *per cent* of minor minerals' revenue (Leases and Permits) was collected from stone, whereas the other minor minerals together contributed less than five *per cent*. Further, the Department had collected ₹ 1,550.34 crore from Works Departments during 2017-22, which was almost 50 *per cent* of total revenue collected from minor minerals. As such, collection of double the rate of royalty from works contractors for the minerals procured from undisclosed sources was almost equal to the revenue collection from disclosed sources of these minor minerals.

Audit noticed that there were discrepancies between Rules 54 and 55 of the JMMC Rules, 2004. Rule 54 provides that, if a person extracts/transports minor minerals without valid lease/permit he shall be considered as a party of illegal extraction. Further, the Rule prescribes legal actions or/and recovery of penalty at double the price of minerals so extracted/transported

illegally in addition to rent, royalty *etc*. However, Rule 55 of the Act *ibid* absolves contractors of the Works Departments from being a party to illegal/unauthorised extraction by enabling them to use minerals from undisclosed sources by payment of penalty equal to royalty only, which contradicts the essence of provision in Rule 54, *i.e.*, as a deterrent to illegal mining. Therefore, there is a need for the State Government to realign Rule 55 with Rule 54 of the JMMC Rules, 2004 to fulfill its objective.

4.1.4.2 Implementation of Environmental Management Plan

To mitigate the adverse impact of mining on the environment, plantations were to be placed on the safety barriers of mining leases. Accordingly, lessees were required to plant the recommended quantity of trees in grid pattern on safety barriers in the first year of the 1st Plan period and nurture them during the subsequent lease period.

Audit found that in 61 out of 63 test-checked leases across sampled districts, only 2,225 plants were planted against the proposed 74,676 plants, resulting in a shortage of tree plantation ranging from 20 to 100 *per cent* (illustrated in **Case Study-4.8)**.

At the time of renewal of the CTOs, JSPCB verifies the compliance of conditions like plantation of trees, maintenance of air quality standard *etc*. Audit enquired about copies of reports based on inspections conducted by the Regional Office, O/o JSPCB, Dhanbad, for renewal of CTO in case of 10 test checked stone leases in Dhanbad district. Test check of 10 Inspection Reports (of inspections conducted between 02 May 2020 and 03 September 2022) revealed that the renewal of CTOs was done on the basis of assurance provided by lessee for compliance with conditions of applicable Act/Rules for air, water and environment protection and condition of ECs. The inspecting team reported some plantation in all 10 cases which was not quantified in the report.

Noting the conditional renewal of CTO, Audit conducted JPV with the DMG officials. A case study on inspection conducted by Regional Officer, Hazaribagh in Hunterganj, Chatra is illustrated in **Case Study-4.8**.

Case Study-4.8

Regional Officer (O/o JSPCB, Regional Office, Hazaribagh) conducted (27 July 2022) physical verification of two leases[81] at Circle-Hunterganj, Chatra for compliance with CTO conditions. JSPCB had issued CTOs for these two leases based on the Inspection Reports in which the officer

[81] (i) M/s Ashutosh Stone Works (Lessee code- 0308013401), Chatra (lease period 26 June 2014 to 25 June 2024, Lease area- 4.04 Ha., Green belt- 1.05 Ha.), (ii) M/s Jaishankar Stone Industries (Lessee code- 0308027801), Chatra, Lease period (24 November 2015 to 23 November 2025, lease area 3.645 Ha., Green belt- 0.896 Ha.).

reported that these two leases were fenced by six feet high net and concrete pillars and plantation was done in the lease area.

Audit conducted JPV[82] of these leases with official of DMG and noticed that the lease area was not fenced by a net with the support of concrete pillars. Also, no air, water and noise monitoring stations were available in the lease area. The width of the green belt zone (for plantation) was 0.5-2 meter and 01-7.5 meter instead of 7.5 meter uniformly around the mining pit area. No plantation was available in the green zone.

Audit had conducted JPV only 5-10 months after the physical inspection conducted by the Regional Officer, JSPCB and noticed these contradictory observations. Thus, Reports based on physical verification conducted by Regional Officer was unreliable & incorrect, as is evident from the photograph shown below:

Picture-4.31: Showing no fencing with support pillars and no plantation on green belt (image taken during JPV of M/s Ashutosh Stone Works)

As discussed in **Paragraph-4.1.3.7**, for assessing the impact on environment, the lessees were required to establish air, water and noise monitoring stations with facilities of recording of real time data.

Audit further noticed in 63 test checked leases (except one lease in Sahibganj) that air, water, and noise monitoring stations were not established within the lease area.

In the MPs related to 40 out of 51 test checked working leases, construction of garland drains (connected to settling tanks) around the pit was proposed to prevent rainwater runoff from entering the mining pit. However, in 38 out of 40 leases, these drains were not constructed as proposed in the concerned MPs.

Parapet walls around dump were to be constructed in 15 out of 51 test checked working leases to establish overburden in the demarcated area. However, Audit noticed that these were not constructed in 14 leases and

[82] M/s Ashutosh Stone Works (Date of JPV- 23 May 2023), M/s Jaishankar Stone Industries (Date of JPV- 08 December 2022).

dump was found lying at places other than the demarcated areas, as shown in **Picture-4.32**.

Picture-4.32: Dump lying outside lease area (other than demarcated place) in Palamu, Lessee code- 411596801 Date of JPV (2 June 2023)

Thus, mining in excess of permissible area and improper implementation of EMP was in contravention of the progressive mine closure plan, which detailed various proposals with the objective of protecting the environment. Non-implementation of these, defeated the objectives of protective, reclamation and rehabilitation measures in mines.

4.1.5 Implementation of final mine closure plan

As per Rule 17E(3) of MMCD Rules, 2010 (prepared by IBM for minor mineral), the lessee shall submit a financial assurance (FA) to the officer authorised by the State Government before executing the mining lease deeds. As per Rule 34G of JMMC Rules, 2004, if mining lease/permit holder fails to execute reclamation and restoration work, the cost of the same shall be recovered from the FA.

Audit noticed the following shortcomings in the implementation of the Final Mine Closure Plan:

- As per MMCD Rules, 2010, the rate of FA was ₹ 15,000 per Ha. of the mining lease area that had been put to use for mining and allied activities, subject to a minimum of ₹ 50,000 for Category B mines. Thereafter, this was not revised by the State Government whereas, in case of major minerals, rate of FA was revised twice by the Central Government during the period February 2017 to November 2021 and was increased from ₹ 15,000 (effective from April 2003) to ₹ 3.00 lakh per hectare (effective from November 2021) subject to minimum ₹ 5.00 lakh in case of Category B mines. Scrutiny of mining plans revealed that in 63 cases[83] of test checked districts, different rates (13 cases: ₹ 15,000, 40 cases: ₹ 25,000, two cases: ₹ 2.00 lakh, six cases: not calculated in MP, two cases: MP not produced)

[83] Chaibasa (seven working + three expired), Chatra (nine working + one expired), Dhanbad (nine working + one expired), Pakur (five working + three expired), Palamu (ten working + two expired), Sahibganj (11 working + two expired).

per hectare for calculation of FA was proposed by RQP and approved by the authority. The reason for variation was adoption of rates of major mineral MCD Rules, prescribed for Category A in 40 cases (₹ 25,000) and for B mines in two cases (two case: ₹ 2.00 lakh) by different RQPs in MPs. This resulted in variation in rates of FA at inter/intra district level within a particular time interval among different mining leases.

- In 49 out of 63 leases of test checked districts, FA of ₹ 49.29 lakh was submitted to DMO by the lessees in the form of National Saving Certificates (25 cases), Bank Guarantees (23 cases), LIC policies (one case). Out of three means of submission of FA, LIC policy was not an acceptable form as spouse of the lessee was a nominee in this policy. In 21 out of 23 working leases (till October 2023 i.e. date of audit), BG of ₹ 23.56 lakh had lapsed. In 14 cases of all six test checked districts[84], FA of ₹ 7.55 lakh was not available with DMOs.

- In 12 out of 63 stone leases where the lease period had expired during May 2019 to July 2023, DMOs permitted lessees to exit the lease area without submission of the final mine closure plan or confiscation of their FA portion[85] of ₹ 15.00 lakh. This oversight hindered the enforcement of reclamation and rehabilitation redeeming activities as illustrated in **Case Study 4.9**.

Case study 4.9

In case of M/s Mahadev Stone Product, lease over an area of 4.35 Ha. had expired on 18 September 2023, and the mining pit was required to be converted into a water reservoir as per the conceptual plan. Audit prepared kml file on Google Image and noticed that instead of 3.72 Ha., total lease area (4.35 Ha.) was excavated. Due to the non-availability of boundary wall with adjoining leases**, different leases were found merged with one another, creating a bigger excavated pit**.

During JPV (October 2023), the Audit Team noticed that there were no benches and plantations available. Also the required safety barrier was only 0.5 meter, on one side of the boundary wall. The overburden was found dumped inside the lease area and three out of four boundary walls were not found.

Audit further noticed that lessee failed to submit final mine closure plan and FA, though he was required to submit ₹ 2.00 lakh for the purpose.

Thus, the provisions of the progressive mine closure plan were not followed.

[84] Chaibasa (three expired), Chatra (one expired), Dhanbad (one working), Pakur (one working + two expired), Palamu (two working + one expired), Sahibganj (one working + two expired).

[85] In 10 cases FA was submitted and two cases MP was not produced.

Picture-4.33: Showing lease of Mahadev Stone Product (Date of JPV 07 October 2023)

Picture-4.34: Showing kml file (Google Image date 16 January 2022), 4.40 Ha., lease area surrounded by other expired leases

Audit observed that unscientific closure of mines made them unsafe (due to absence of boundary pillars, fencing, safety barrier and benches), environmentally unfriendly (due to absence of plantation) and overexploited (due to excavation of non-mineable resources).

4.1.6 Mining operation without Mining Plan

Rule 34 (A) (2) of JMMC Rules, 2004 states that mining activities shall be done as per the approved MP and the DC/competent authority shall suspend mining activity if the lessee does not perform mining activity according to approved MP.

In five out of 63 test checked mining leases of three districts, the lessee excavated and produced stone without an approved MP. The details are in **Table-4.5**.

Table-4.5: Showing lease period, expiry date of 1st five year plan and status of 2nd five year plan

Name of lessee	Lessee code	Lease period	Expiry date of 1st MP	Date of submission of 2nd MP and present status (July 2023)	Production (m^3) during the period (no approved MP)
M/s Rana Uday Pratap Singh, Dhanbad	0204300705	30.04.2016 to 29.04.2026	29.04.2021	Not submitted	68,118 (May 2021 to January 2023)
M/s Umesh Kumar and Suresh Mahto, Dhanbad	0204596101	11.04.2016 to 10.04.2026	10.04.2021	Not submitted	22,653 (May 2021 to February 2023)
M/s Azhar Islam, Pakur	0623230302	25.02.2016 to 24.02.2026	24.02.2021	Submitted and approved on 27.09.2022	1,48,839 (March 2021 to August 2022)
M/s Mahadev Stone Product, Pakur	0623325710	19.09.2013 to 18.09.2023	28.11.2019	Submitted on 12.09.2022 and approved on 14.09.2022	1,88,334 (December 2019 to August 2022)
M/s Mumtaj Ahmad Khan, Palamu	0411140101	14.11.2017 to 13.11.2027	13.11.2022	16.12.2022 but not approved	Excavation noticed during JPV (no production reported)

Source: 1st Mining Plan, application fee deposited through JIMMS for 2nd Mining Plan and lease deed.

It is evident from **Table-4.5** that, in five leases, the 2nd five-year plan[86] was either not submitted or submitted after the expiry of one to 33 months of the 1st five-year plan but was not approved.

Even after the expiry of the 1st five-year plan and non-submission or approval of the 2nd five-year plan, lessees were engaged in unauthorized excavation and stone production of 4.28 lakh m^3. This was confirmed during JPV, where ongoing mining operations were observed, as shown in **Picture-4.35**.

Picture-4.35: Showing excavation in lease area on the date of physical verification (26 November 2022) by Lessees Code: 0411140101 (Name of Lessees- M/s Mumtaj Ahmad Khan) despite lapse of 1st five-year plan on 13/11/2022 and non-submission 2nd five-year plan.

Excavation without approved MP was unauthorized, lacked scientific oversight, and was non-compliant with environmental norms. Audit observed that DC/competent authority did not suspend the mining activities in these cases.

4.2 Environmental Clearance

The MoEFCC oversees India's environmental and forestry policies. The Environment Impact Assessment notification, 2006 issued by MoEFCC, mandates Central Government to issue Environmental Clearance (EC) for projects of Category 'A' (area ≥ 50 Ha.) and SEIAA[87] to approve projects of Category 'B' (area < 50 Ha.). The established procedures (effective from 14 August 2018) for grant of EC for sand and other minor minerals including cluster situation[88] for mines were as explained in **Table-4.6**.

[86] In case of M/s Mahadev Stone Product, Pakur period of 1st MP was 29.11.2014 to 28.11.2019. 2nd MP was approved on 14.09.2022. So excavation during 29.11.2019 to 13.09.2022 was without approved MP.

[87] A three membered committee (Chairman, Expert member and Member Secretary), duly constituted by the Central Government under Sub-section 3 of Section 3 of the Environment (Protection) Act, 1986, in accordance with the procedures specified in this notification.

[88] A cluster shall be formed when distance between the peripheries of one lease is less than 500 meters from the periphery of other lease in homogeneous mineral area.

Table-4.6: Showing category of mines, area and condition of approval of EC

Area of Lease (hectare)	Category of Project	Requirements	Requirement of Public hearing	Authority to Grant EC
0 to 5 Ha. individual mine lease	B2	Form 1M, DSR, Prefeasibility Report (PFR) and approved mine plan	No	DEIAA[89]
Clustered area of mine leases up to 5 Ha.				
> 5 Ha. and < 25 Ha. (Individual mine lease)	B2	Form 1, DSR, PFR and approved mine plan	No	SEIAA[90]
Clustered area of mine leases > 5 Ha. and < 25 Ha. with no individual lease > 5 Ha.		Form 1, DSR, PFR and approved mine plan and one EMP for all lease in the cluster		DEIAA
≥ 25 Ha. and < 100 Ha.	B1	Form 1, DSR, PFR and approved mine plan, EIA/EMP	Yes	SEIAA
Cluster of mine leases of area ≥ 25 Ha. with individual lease size < 100 Ha.		Form 1, DSR, PFR and approved mine plan and one EMP for all lease in the cluster		
≥ 50 Ha.	A	Form 1, DSR, PFR and approved mine plan, EIA/EMP	Yes	MoEFCC
Cluster of any size with any individual lease ≥ 50 Ha.				

The Project Proponent[91] (PP) would need to apply for EC in prescribed form through Parivesh Portal[92], along with requisite documents as specified in **Table-4.6**. After grant of EC, the PP shall submit six monthly reports on compliance with the stipulated EC conditions including results of monitoring data to the SEIAA/JSPCB and to its Regional Offices.

Audit noticed irregularities in granting of ECs which are elaborated in following paragraphs.

4.2.1 Issuance of EC based on fake contiguous certificate

In compliance with the judgment (dated 13 September 2018) of the National Green Tribunal (NGT), the MoEFCC issued an order (12 December 2018)

[89] For minor minerals of Category B2, District Environment Impact Assessment Authority (DEIAA) was established on 15 January 2016. The affairs of the DEIAA was assigned to SEIAA by the MoEFCC on 12 December 2018 (as per direction of NGT dated 13 September 2018).

[90] State Environment Impact Assessment Authority (SEIAA) was established by MoEFCC under EIA Notification 2006 to act as the regulatory authority for EC at the State level.

[91] "Project Proponent" means an individual or public or private entity that has ultimate control over the affairs of the project. An application seeking prior EC in all cases shall be made by the project proponent.

[92] MoEFCC, GoI launched (August 2018) Parivesh Portal, a single window portal for the EC.

that mine lease areas between five and 25 Ha. (including cluster situation) falling under Category B2 were to be treated at par with Category B1 by SEIAA. Thus, from 12 December 2018, submission of EIA, EMP by the PP and thereafter Public Consultation by the competent authority became compulsory conditions for prior issuance of EC for mine leases between five and 25 Ha.

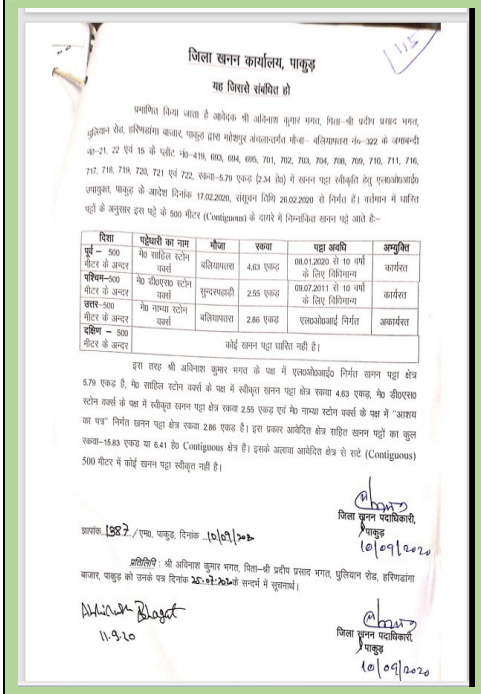
Contiguous certificates for cluster situations were issued to the applicants by the DMO. Such certificates provide information about the total area of the stone mine leases within 500 meters of the applied lease. The applicants had to attach these certificates with applications (Form 1) to get prior ECs from SEIAA. The applications along with cluster certificates were available in 'Parivesh Portal'.

➢ Test check of records of DMO Pakur revealed that in eight cases, DMO issued contiguous certificates (between August 2020 and August 2021) in which areas of mine leases within cluster ranged between 5.00 and 7.06 Ha. However, Audit noted that in the Parivesh Portal, the applicants had submitted manipulated certificates of the same number wherein the areas were reduced *i.e.*, between 2.73 and 4.94 Ha. for qualifying them under B2 Category, as detailed in **Table-4.7**.

Table-4.7: Showing contiguous certificate issued by DMO and manipulated by the applicants

Sl. No.	Name of Applicant	Number of mine lease and area of Cluster (including applied lease) (Area in hectare)				EC number and date (under B2 Category)
		Original (by DMO)		Fake (by Applicant)		
1	Shri Avinash Kumar Bhagat	4	6.41	4	4.65	2322/2021/33 (14.07.2021)
2	M/s CB Stone Works	2	5.27	1	2.73	2446/2021/188 (30.10.2021)
3	Md. Najimuddin	3	5.54	3	4.32	2407/2021/149 (23.09.2021)
4	M/s Four Star Stone Works	2	5.00	2	4.67	2414/2021/136 (23.09.2021)
5	M/s Manoj Stone Works	2	5.36	2	4.94	2323/2021/45 (13.07.2021)
6	M/s Rajiv Ranjan Pandey	3	6.75	2	4.02	2447/2021/187 (30.10.2021)
7	M/s Shriguru Stone Works	4	7.06	2	3.29	2452/2021/197 (30.10.2021)
8	M/s Jishan Stone Works	3	5.40	2	2.75	2433/2021/132 (23.09.2021)

Picture-4.36: Showing original and fake contiguous certificate issued to Shri Avinash Kumar Bhagat



जिला खनन कार्यालय, पाकुड़

यह जिससे संबंधित हो

प्रमाणित किया जाता है आवेदक श्री अविनाश कुमार भगत, पिता–श्री प्रदीप प्रसाद भगत, पुलिसियान रोड, हरिणडांगा बाजार, पाकुड़ द्वारा मौजापुर अंचलान्तर्गत मौजा– बरियापहरा मं०–322 के जमाबन्दी मं०–21, 22 एवं 15 के प्लॉट मं०–419, 693, 694, 695, 701, 702, 703, 704, 708, 709, 710, 711, 716, 717, 718, 719, 720, 721 एवं 722, रकबा–5.79 एकड़ (2.34 हे०) में खनन पट्टा स्वीकृति हेतु एलo ओo आई० उपायुक्त, पाकुड़ के आदेश दिनांक 17.02.2020, संस्वीकृत तिथि 26.02.2020 से निर्गत है। वर्तमान में धारित पट्टों के अनुसार इस पट्टे के 500 मीटर (Contiguous) के दायरे में निम्नांकित खनन पट्टे आते है:–

दिशा	पट्टेधारी का नाम	मौजा	रकबा	पट्टा अवधि	अभ्युक्ति
पूर्व – 500 मीटर के अन्दर	मे० साहिल स्टोन वर्क्स	बरियापहरा	4.63 एकड़	08.01.2020 से 10 वर्ष के लिए विधिमान्य	कार्यरत
पश्चिम–500 मीटर के अन्दर	मे० डीoएसo स्टोन वर्क्स	सुन्दरपहाड़ी	2.55 एकड़	09.07.2011 से 10 वर्ष के लिए विधिमान्य	कार्यरत
उत्तर–500 मीटर के अन्दर	मे० नान्या स्टोन वर्क्स	बरियापहरा	2.86 एकड़	एलoओoआई० निर्गत	अकार्यरत
दक्षिण – 500 मीटर के अन्दर	कोई खनन पट्टा धारित नही है।				

इस तरह श्री अविनाश कुमार भगत के पक्ष में एलoओoआई० निर्गत खनन पट्टा क्षेत्र 5.79 एकड़ है, मे० साहिल स्टोन वर्क्स के पक्ष में स्वीकृत खनन पट्टा क्षेत्र रकबा 4.63 एकड़, मे० डीoएसo स्टोन वर्क्स के पक्ष में स्वीकृत खनन पट्टा क्षेत्र रकबा 2.55 एकड़ एवं मे० नान्या स्टोन वर्क्स के पक्ष में "आशय का पत्र" निर्गत खनन पट्टा क्षेत्र रकबा 2.86 एकड़ है। इस प्रकार आवेदित क्षेत्र सहित खनन पट्टों का कुल रकबा–15.83 एकड़ या 6.41 हे० Contiguous क्षेत्र है। इसके अलावा आवेदित क्षेत्र से सटे (Contiguous) 500 मीटर में कोई खनन पट्टा स्वीकृत नहीं है।

जिला खनन पदाधिकारी, पाकुड़

ज्ञापांक 1387 /एम०, पाकुड़, दिनांक 10/09/2020

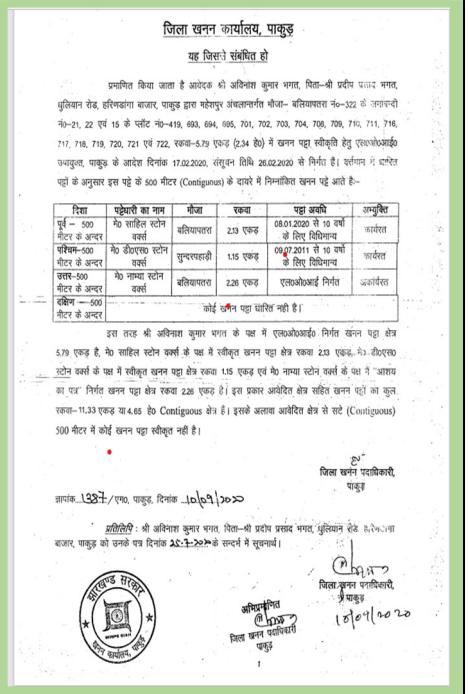
प्रतिलिपि: श्री अविनाश कुमार भगत, पिता–श्री प्रदीप प्रसाद भगत, पुलिसियान रोड, हरिणडांगा बाजार, पाकुड़ को उनके पत्र दिनांक 25.07.2020 के सन्दर्भ में सूचनार्थ।

Avinash Bhagat 11.9.20

जिला खनन पदाधिकारी, पाकुड़ 10/09/2020

Original Certificate of area 6.41 Ha.

Source: lease file maintained by DMO, Pakur.



जिला खनन कार्यालय, पाकुड़

यह जिससे संबंधित हो

प्रमाणित किया जाता है आवेदक श्री अविनाश कुमार भगत, पिता–श्री प्रदीप प्रसाद भगत, पुलिसियान रोड, हरिणडांगा बाजार, पाकुड़ द्वारा मौजापुर अंचलान्तर्गत मौजा– बरियापहरा मं०–322 के जमाबन्दी मं०–21, 22 एवं 15 के प्लॉट मं०–419, 693, 694, 695, 701, 702, 703, 704, 708, 709, 710, 711, 716, 717, 718, 719, 720, 721 एवं 722, रकबा–5.79 एकड़ (2.34 हे०) में खनन पट्टा स्वीकृति हेतु एलoओoआई० उपायुक्त, पाकुड़ के आदेश दिनांक 17.02.2020, संस्वीकृत तिथि 26.02.2020 से निर्गत है। वर्तमान में धारित पट्टों के अनुसार इस पट्टे के 500 मीटर (Contiguous) के दायरे में निम्नांकित खनन पट्टे आते है:–

दिशा	पट्टेधारी का नाम	मौजा	रकबा	पट्टा अवधि	अभ्युक्ति
पूर्व – 500 मीटर के अन्दर	मे० साहिल स्टोन वर्क्स	बरियापहरा	2.13 एकड़	08.01.2020 से 10 वर्ष के लिए विधिमान्य	कार्यरत
पश्चिम–500 मीटर के अन्दर	मे० डीoएसo स्टोन वर्क्स	सुन्दरपहाड़ी	1.15 एकड़	09.07.2011 से 10 वर्ष के लिए विधिमान्य	कार्यरत
उत्तर–500 मीटर के अन्दर	मे० नान्या स्टोन वर्क्स	बरियापहरा	2.26 एकड़	एलoओoआई० निर्गत	अकार्यरत
दक्षिण – 500 मीटर के अन्दर	कोई खनन पट्टा धारित नही है।				

इस तरह श्री अविनाश कुमार भगत के पक्ष में एलoओoआई० निर्गत खनन पट्टा क्षेत्र 5.79 एकड़ है, मे० साहिल स्टोन वर्क्स के पक्ष में स्वीकृत खनन पट्टा क्षेत्र रकबा 2.13 एकड़, मे० डीoएसo स्टोन वर्क्स के पक्ष में स्वीकृत खनन पट्टा क्षेत्र रकबा 1.15 एकड़ एवं मे० नान्या स्टोन वर्क्स के पक्ष में "आशय का पत्र" निर्गत खनन पट्टा क्षेत्र रकबा 2.26 एकड़ है। इस प्रकार आवेदित क्षेत्र सहित खनन पट्टों का कुल रकबा–11.33 एकड़ या 4.65 हे० Contiguous क्षेत्र है। इसके अलावा आवेदित क्षेत्र से सटे (Contiguous) 500 मीटर में कोई खनन पट्टा स्वीकृत नहीं है।

जिला खनन पदाधिकारी, पाकुड़

ज्ञापांक 1387 /एम०, पाकुड़, दिनांक 10/09/2020

प्रतिलिपि: श्री अविनाश कुमार भगत, पिता–श्री प्रदीप प्रसाद भगत, पुलिसियान रोड, हरिणडांगा बाजार, पाकुड़ को उनके पत्र दिनांक 25.07.2020 के सन्दर्भ में सूचनार्थ।

सत्यमेव जयते

अभिप्रमाणित

जिला खनन पदाधिकारी, पाकुड़

जिला खनन पदाधिकारी, पाकुड़ 10/09/2020

Fake Certificate of area 4.65 Ha.

Source: Parivesh Portal.

Based on such fake certificates, SEIAA issued prior ECs to eight applicants under B2 category (0 to 5 Ha.) (as detailed in **Table-4.7**) and DMO, Pakur granted the mining lease. After obtaining leases on these fake certificates, lessees had excavated 6.35 lakh m^3 of stone (as of March 2024) valuing ₹ 19.88 crore (6.35 lakh m^3 x ₹ 313 per/m^3) unauthorisedly between 2022-23 and 2023-24.

Audit observed that the Department has not developed any system to cross-verify the documents submitted by the applicant on Parivesh Portal which resulted in issuance of EC by SEIAA on the basis of manipulated documents. The Department may consider filing FIRs against erring applicants for detailed investigation of the matter and put in place a system of cross verification between the DMO and SEIAA.

➢ DMO Sahibganj, issued a Contiguous Certificate to M/s Pahariya Stone Works[93] on 23 November 2017 for issuance of EC by SEIAA under B2 Category (0 to 5 Ha.). The contiguous certificate stated that area of applied lease was 2.22 Ha. and there was a mining lease (1.11 Ha.) of M/s Parwati Stone Works within a periphery of 500 m. Based on this certificate, SEIAA issued EC to applicant on 4 November 2019 under B2 Category (0 to 5 Ha). Audit scrutiny of contiguous certificate and working leases in Sahibganj revealed that in addition to M/s Parwati Stone Works another

[93] Plot no. 83,175,193 and 194.

mine lease of M/s S.S. Black Stone[94] of 3.64 Ha. had been working within the periphery of 500 meters since 30 March 2016. These two leases (Applied lease: M/s Pahariya Stone Work and working lease: M/s S.S. Black Stone) were situated on a common plot (plot number 194) and were adjacent to each other. Thus, area of cluster in contiguous certificate should have been 6.97 Ha. instead of 3.33 (1.11+ 2.22) Ha. and SEIAA should have issued EC under B2 (5 to 25 Ha.) instead of B2 (0 to 5 Ha.) category. Audit observed that contiguous certificates were issued without proper verification of working leases within the periphery of 500 meters resulting in issuance of inaccurate certificates.

4.2.2 Mining vehicles damaging approach road

To avoid any adverse impact of mining operations on village and habitations surrounding the leases, MoEFCC directed (October 2014) that no road movement shall be allowed on existing village road network without appropriately increasing the carrying capacity of such roads by the Project Proponents. The EIA conditions require conduct of transportation study as per Indian Road Congress (IRC) Guidelines for assessing the impact (like projected increase in truck traffic, capability of road network in handling incremental load) of mining projects on local transport infrastructure.

During JPV with Engineers of Rural Works Divisions, Audit noticed that approach roads to the mines were originally village roads, constructed under the Pradhan Mantri Gram Sadak Yojana (PMGSY) or other schemes. As per IRC, the PMGSY roads were designed considering a low volume of traffic, hence, commercial vehicles (mining vehicles) with laden weights of up to 40 tonnes were not fit for these roads.

During JPV of village roads in four blocks[95] (where mines and crushers were concentrated) of Chatra and Palamu districts, 12 PMGSY roads which were constructed during December 2017 to July 2022 with an expenditure of ₹ 39.74 crore[96] were found completely/partly damaged after one to five years from date of construction due to operation of heavy mining vehicles. During JPVs in other four test checked districts[97] also, Audit noticed damaged approach roads in the periphery of five to 10 km of mines and crushers.

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94 Lessee code- 0620549801, Khata no. 3, Plot no. 79(P), Khata no. 18, Plot no. 194(P), Khata no. 11, Plot no. 198(P), Mauza- Belbhadri, Circle- Mandro, lease period 30.03.2016 to 29.03.2026.

95 Tandwa and Hunterganj blocks of Chatra (six PMGSY roads of ₹ 9.64 crore, Satbarwa and Chattarpur blocks of Palamu (six PMGSY roads of ₹ 30.10 crore).

96 As per the records of Rural Works Department.

97 Chaibasa, Dhanbad, Pakur and Sahibganj.

Picture-4.37: Showing completely damaged PMGSY road in mining area (due to plying of heavy mining vehicles) in Chatra and Palamu districts

(Link road to NH 75 to Sehra), Length-2.9 km, Satbarwa Palamu (JPV date 19 May 2023)

(Link road from Tulsipur to Bishunpur connecting NH 99) Length-6.10 km, Hunterganj, Chatra (JPV date 17 June 2023

4.2.3 Beneficiaries response on impact of mining activities

During the beneficiary survey conducted between November 2022 and October 2023, Audit enquired about the impact of mining activities, and responses obtained from beneficiaries (597) are summarized as under;

- Eighteen *per cent* (106) stated that mining activities were being performed within a distance ranging from 100 to 200 meter from their community/private assets (like school, temple, houses *etc*.).
- Thirty-three *per cent* (194) stated that their community assets (like road, ponds, playground *etc*.) were damaged due to mining activities and complained that no project had been taken up for reconstruction of destroyed assets.
- While 29 *per cent* (171) stated that mining activities provided them employment, 68 *per cent* (407) complained that quality of life had deteriorated due to damage to environment, destruction of agricultural field, lowering of water table, damaged roads and the absence of any restoration works.

4.3 Transportation of minerals

As per Rule 5 (ii) of Jharkhand (Prevention of Illegal Mining, Transportation and Storage) Rules, 2017 (notified on 27 January 2018), dealers/ lessee (as deemed dealer[98]) were required to register their mineral carrying vehicles (MCV) in JIMMS portal with their RFID/GPS or any other vehicle tracking details within 60 days of getting dealer registration.

[98] If a person is holding a valid mining lease granted under the Mineral Concession Rules, 1960, 2016 or JMMC Rules, 2004 & amended from time to time framed under the MMDR Act shall be exempted to register as a dealer for the same lease and minerals. However, he will be treated as deemed dealer for the purpose of these rules.

Further, as per the Rules, the transportation of mineral/ore was to be done in the following manner.

Rule 9(i and ii) and 10(ii)(a)- Lessee/Dealer shall apply for transit permit for transportation of mineral/ore from a particular stack to various consignees in Form C/C1 through JIMMS along with payment of royalty in advance.

Rule 9(iii) and 10(ii)(b)- DMO shall approve/reject Transit Permit (C2) to Lessee/Dealer duly generated through JIMMS after getting verification of stack/grade of mineral applied for within 15 days from the receipt of the application.

Rule 10(v)(a)-Transport of mineral/ore was to normally pass through check gate/weighbridge to verify the quantity moved. Wherever there was no facility of weighment, verification was to be done through volumetric measurement.

After approval of transit permit (a unique number) in (C2) for a particular stack, the Lessee/Dealer was to fill requisite information to generate Transport challan in Form D (a unique number) through JIMMS for transportation of minerals/ore (number of challans against a transit permit depends upon the total quantity approved in transit permit for a particular stack to be dispatched).

Carrier is required to comply with the information with regard to the locaction and time limits specified in the transport challan.

Source: Rules 9 and 10 of Jharkhand (Prevention of Illegal Mining, Transportation and Storage) Rules, 2017.

4.3.1 Non-provision of RFIDs/GPS in MCVs

As per the vehicle status report in DMG website, 72,449 vehicles were registered as of 28 March 2023, but none of these vehicles was equipped with RFID/GPS or any other vehicle tracking system even after lapse of five years.

During test-check, Audit observed cases where MCVs registered with DMGs were not equipped with RFID/GPS or any other vehicle tracking system, transporting challans were not captured in JIMMS, multiple challans were generated with unrealistic details *etc*. These cases which indicate absence of a robust system for transportation of minerals, have been discussed in the succeeding paragraphs.

4.3.1.1 Unregulated transportation of minerals

Rule 10(v)(a) of Jharkhand Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2017 provides that all transport of Minerals/ores will normally pass through check-gate/weighbridge of the Department and /or approved by the Department. The quantity moved will be verified through designated check gate/weighbridge.

- Audit conducted JPV of premises of 29 dealers[99] along with DMG officials in all six test checked districts. It was noted that in 20 out of 29 dealer premises,[100] weighbridges were installed however, only seven dealers provided the weighbridge report[101] for the period August 2022 to July 2023. In the absence of these Reports, Audit could not compare transporting challans with the weighbridge reports in the remaining 13 cases to ascertain illegal transportation of minerals.

- Audit compared information available in weighbridge reports (like vehicle number, date of weighment, weighment of mineral) with date wise challans available in JIMMS for respective vehicles in case of seven dealers of two districts (Palamu and Sahibganj). Comparison of these two information is detailed in **Table-4.8**.

Table-4.8: Comparison between weighment of vehicle as per weighbridge reports and transporting challans available at JIMMS

Weighbridge report v/s JIMMS Challans	Type of vehicles	Total number of vehicles	Total number of trips	Total weight of mineral transported (in MT)
Vehicle number matched with JIMMS (transporting challans available) (1)	Truck, Hyva, Dumper	280	720	18,318.85
Vehicle number not matched with JIMMS (transporting challans not available) (2)		234	1,614	22,442.04
Vehicle number not mentioned in weighbridge reports (transporting challans not available) (3)	Tractor	N/A	2,615	11,524.42
Total (2+3)			**4,229**	**33,966.46**
Grand Total (1+2+3)		**514**	**4,949**	**52,285.31**

Source: Data of seven dealers of two districts (Palamu: period August 2022 and December 2022 and Sahibganj: July 2023).

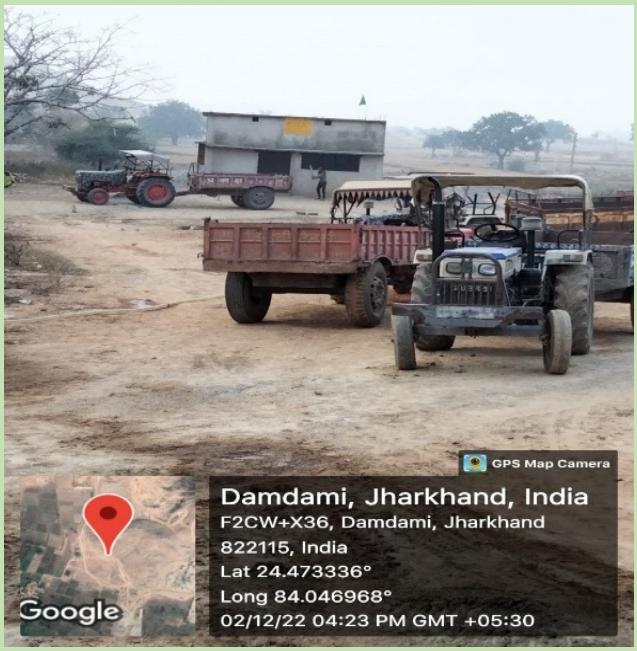
[99] According to the Jharkhand Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2017, a dealer is defined as any person engaged in purchasing, storing, selling, transporting or processing minerals for commercial gain within the State.

[100] District (Dealer/weighbridge installed) Chaibasa: 4/2, Chatra: 5/1, Dhanbad: 5/5, Palamu: 8/6, Pakur: 2/1 and Sahibganj: 5/5.

[101] Report containing the weighment results of vehicles, carrying minerals for a specified period.

The above table indicates that out of a total of 4,949 trips made by vehicles carrying 52,285.31 MT of stone-chips/boulders, only 720 trips (14.55 *per cent*) with a load of 18,318.85 MT (35 *per cent*) had corresponding transporting challans issued through JIMMS for 280 registered vehicles.

Audit scrutiny revealed that for 4,229 trips out of 4,949 trips where JIMMS challans were unavailable, the vehicles carried 33,966.46 MT of stone chips/boulders/dust out of which 11,524.42 MT was transported on other vehicles, for which registration number was not mentioned in weighbridge reports (like tractors as shown in **Picture-4.38**), indicating utilisation of unauthorised vehicles in transportation of minerals.



Picture-4.38: Tractor with no registration number parked outside Lessee/Dealer (lessee code- 0411722401) at Damdami, Palamu

Transportation of minerals without valid challans and use of unregistered vehicles for transporting minerals occurred because all trips made by vehicles were not weighed at the weighbridge and not recorded in JIMMS. Consequently, this raised the risk that dealers were unlawfully dispatching stone chips and stone dust without proper challans, and evading payment of royalty on these minerals.

➢ During JPV with DMG officials, the team observed 28 trucks loaded with stone within the lease/dealership areas across four districts. Audit verified the transporting challan records for these vehicles on JIMMS and noticed that challans for 17 out of 28 vehicles (61 *per cent*) were not available in JIMMS. The unauthorised movement of minerals by vehicles without valid challans indicated illegal transportation and highlighted loss of revenue to the government exchequer.

Picture-4.39: Loaded trucks (with boulder) inside lease area without challans

Loaded truck (JH09S3915) within lease area of M/s Shree Guru Stone Works, Sahibganj

Loaded truck (JH03T1494) within lease area of MCC Mahadeo Construction Pvt. Ltd, Palamu

➢ Transportation challans generated through JIMMS contain important information like address of seller and purchaser of minerals, type and quantity of mineral transported, place of delivery, vehicle number and its route, distance of delivery, period of validity of challans *etc*. However, there was no system in JIMMS to ascertain the completion of delivery of minerals at designated place within the validity period of the challans.

An examination of randomly selected 102 transportation challans available on JIMMS, issued between September 2021 and March 2023, involving four test-checked districts[102], revealed that:

- In case of 28 vehicles, 35 initial challans were followed by 50 additional challans that were issued before the expiry of the previous challans. These subsequent challans were issued with a time gap ranging from 11 minutes 34 seconds for making delivery at a distance of 20 km to 1 hour 41 minutes 41 seconds for distances of 250 kms for the same vehicles which appears unrealistic.
- In five cases, it was observed that these vehicles were in operation on two or three different routes on the same date, with time differences ranging from 19 minutes 27 seconds to 2 hours 6 minutes 50 seconds. Despite the distances between the places of dispatch for the first and succeeding routes ranging between 105 km to 299 km, these vehicles were recorded as being in operation.

In both cases, there were chances of misutilisation of challans. These irregularities indicate that JIMMS lacked the necessary security measures to generate valid challans. Moreover, inadequate monitoring mechanism to distinguish vehicular movements with or without valid challans rendered the transportation system through challans generated from JIMMS ineffective.

[102] Chatra, Dhanbad, Pakur and Palamu.

Audit observed that merely registering vehicles with DMG and issuing transporting challans through JIMMS were insufficient to detect illegal transportation. A more robust system integrating vehicle tracking system, check gates equipped with CCTV cameras, installation of weighbridges (with CCTV cameras) within lease/dealer areas, and generation of real-time challans through JIMMS during weighment was required.

4.3.1.2 Illegal transportation of minerals

Audit noticed instances of (i) misutilization of transporting challans for transportation of stone extracted illegally from an area other than the area under lease, and (ii) transportation of closing stock of stone lying at quarry site of the expired leases, without transit permit/ challan. Such transportation attracted penal action like recovery of value at double the price of minerals, under Rule 54(6) of JMMC Rules, 2004.

- As per JIMMS data, a lessee in Dhanbad, obtained transporting challans for dispatch of 1,98,950 cft. of stone boulder during 2016-18 and after that continuously maintained a closing balance of 1,63,625 cft. without any further production/dispatch of stone. Audit conducted JPV (June 2023) and noticed that land was unbroken and no mining activities had ever been carried out over the leased area. Thus, the lessee mis-utilised transporting challans for transportation of 1,98,950 cft. (5,633 m^3) of stone boulder illegally extracted from somewhere else. Thus, lessee was liable to pay penalty amounting to ₹ 35.26 lakh[103] for illegal transportation of 5,633 m^3 of stone boulder under the provisions of Rule 54 of JMMC Rules, 2004.

- Further, in Pakur district two leases had expired on 31 December 2019 and 31 March 2020 having closing balance of stock of 32,57,500 cft. (one case: stone metal: 11,46,580 cft. and stone boulder: 13,76,770 cft. and another case: stone boulder: 7,34,150 cft.). The possession of leasehold had not been taken over by the DMO in the first case while in the second case, it was surrendered by the lessee to DMO. Audit observed (during JPV conducted on 13 October 2023) that only 2,11,890 cft., of stone metal and 2,00,000 cft. of stone boulder were lying within the lease area in the first case, whereas, in the second case, no stone metal/boulder (during JPV conducted on 07 October 2023) was lying at the quarry site. As the lessee in the first case, illegally transported 21,11,460 cft/ 59,789 m^3 (9,34,690 cft. of stone metal and 11,76,770 cft. of stone boulder) from leasehold area, he was liable to pay penalty of ₹ 3.74 crore under the provisions of Rule 54 of Rules *ibid* but the same was not imposed by the DMO. Besides, DMO also could not prevent removal of 7,34,150 cft. or 20,789 m^3 of stone boulder worth of ₹ 65.07 lakh from the surrendered quarry site in the second case.

[103] At the rate of ₹ 626 per m^3.

4.4 Recommendations

The Government may:

- ***formulate a manual for appraisal of Mining Plans on minor minerals in line with the Indian Bureau of Mines (IBM) Manual on appraisal of Mining Plan (2014), to establish a standardized procedure for processing, examination and scrutiny of Mining Plans;***
- ***ensure submission of kml files of lease area created through Differential Global Positioning System (DGPS) survey alogwith the Mining Plans, ensure submission of these files to SEIAA, update repository of kml files thereon for monitoring through satellite imagery and enforce the progressive mine closure plan as proposed in the MPs. Also ensure that a final mine closure plan is submitted by lessees, and approved by the District Mining Officers (DMOs) for its implementation;***
- ***conduct detailed investigation to work out the exact volume of under-reported minerals extracted and make provisions in JMMC Rules, 2004 in line with Rule 34A of Mineral Conservation and Development Rules (MCDR), 2017 for carrying out drone survey of minor mineral leases throughout the State for checking instance of excess excavation by lessees and imposing penalties accordingly;***
- ***establish inter-departmental coordination among DMG, Ministry of Environment, Forest and Climate Change, State Environment Impact Assessment Authority, Central Ground Water Board and Jharkhand State Pollution Control Board for compliance of conditions of MPs and ECs;***
- ***implement system for periodic survey for identification and reconstruction/restoration of damaged assets due to mining activities;***
- ***implement a comprehensive system by integrating all aspects of transportation of minerals (weighing, tracking, monitoring etc.) to effectively monitor and plug illegal transportation of minerals; and***
- ***ensure installation of weighbridges in dealer/lease areas with facilities for authentically fetching weighment data for transporting challans on a real-time basis.***

Chapter 5
Conclusion

Chapter 5 Conclusion

The objectives of the Performance Audit were to assess whether appropriate systems were being adopted to facilitate scientific mineral exploration and estimation of mineral resources; mining leases/licenses were granted, renewed, surrendered or cancelled in accordance with the applicable provisions; management of mines and minerals in the State was adequate and effective *etc.* As part of the Performance Audit, six district mining offices were selected for detailed examination, besides audit of the Jharkhand State Mineral Development Corporation Limited (JSMDC).

After the conclusion of the Audit, an Exit Conference was held on 22 July 2024 with the Secretary, Department of Mines and Geology, Government of Jharkhand, where audit observations were discussed to obtain the Government's point of view. The Department intimated that the data pertaining to observations/suggestions were under verification and detailed replies would be furnished after examination. However, no replies have been received, despite several reminders (July 2025).

The Department amended the provisions for grant/renewal/extension of mining leases frequently, with short interval periods (in March 2017, February 2018, March 2019 and September 2020) creating ambiguity in the interpretation of amended provisions. The Department could not institute a check and balance mechanism to ensure that the Deputy Commissioners (DCs) do not grant leases beyond their competency. The Department had no system in place to identify defaulters during grant of new leases and to detect nature of land use, resulting in grant of mining leases on forest land. These cases eventually resulted in irregular grant/renewal/extension of mining leases in the State.

Progress of auction of mineral blocks was very slow with only 3.77 *per cent* (11 out of 292 blocks) auction completed during 2018-23. Minor mineral blocks with potential resources were lying idle, resulting in blockage of revenue.

An IT based mineral administration system, the Jharkhand Integrated Mines and Minerals Management System (JIMMS), was introduced with the objective of simplifying the complex mining process. However, automation of records was found to be incomplete due to unavailability of crucial records/information/data.

There was leakage of revenue due to short levy of royalty, including DMFT contribution of ₹ 7.53 crore, non/short realisation of dead rent of ₹ 2.23 crore *etc.* Further, penalty of ₹ 205.21 crore was not recovered from the lessees due to non-adherence to the provisions of the Act, Rules and Departmental instructions.

Management of Sand *ghats*

Jharkhand State Mineral Development Corporation had a mandate to operate 608 commercial sand *ghats* within the State during 2017-22.

JSMDC initiated the process to operationalise 389 sand *ghats* but it could operate only 21 *ghats* (*i.e.*, 3.45 *per cent* of *ghats*). The reasons for this included not ensuring timely preparation of Mining Plans (MP), and delay in submission of proposals to the State Environment Impact Assessment Authority (SEIAA) for grant of Environmental Clearance (EC). Due to 368 non-operative *ghats*, the State Government suffered potential losses of ₹ 70.92 crore from these *ghats* (that had an area of 9,782.55 acres). JSMDC had financial losses of ₹ 32.30 lakh during 2018-22 due to reduced operational efficiency of only 28.53 to 31.50 *per cent* of desired production.

Approval and implementation of Mining Plans

The approved Mining Plans contained unreliable information *viz*, incorrect surface plans, incorrect coordinates of boundary pillars, overlapping lease areas, incorrect estimation of mineable and non-mineable reserves, incorrect estimation of ground water table. Fifty-four *per cent* of MPs were approved by authorities posted in other districts who were not designated authorities while nine MPs were approved on the same day or the very next day of submission, indicating lack of due diligence.

Audit noticed that mining in non-mineable area of the lease was a common and widespread practice. There was estimated excess excavation *vis-à-vis* permissible limit on which estimated 93.53 lakh m^3 of stone in 13 stone leases was excavated which was not reported. The potential financial implication of excess extraction of mineral was estimated to be ₹ 292.75 crore (93.53 lakh m^3) in these 13 leases.

There were cases of deviations from activities proposed in the MPs, non-existence of benches and mines with steep side walls, reduced safety barriers with less plantation and extraction of non-mineable reserves.

The DMG could conduct sectional measurements of only 0.68 to 3.17 *per cent* of existing minor mineral leases in test checked districts during 2017-22 and they lacked modern tools like UAVs to monitor excavation to ensure implementation of progressive mines closure plans. The final mine closure plans were not submitted in test checked cases.

Air, water, noise monitoring stations were not found established within lease areas to monitor the level of pollution. Financial Assurance (FA) for reclamation and restoration submitted by lessees, was not sufficient due to non-revision of rate of FA, non-submission of FA, lapse of Bank Guarantees and non-confiscation of FA.

Environmental Clearance

State Environment Impact Assessment Authority, Jharkhand predominantly relied on mining plans for issuance of EC. SEIAA was unable to enforce the conditions of EC and did not conduct monitoring through methods like satellite imagery and JPV.

Lack of coordination between the Departments enabled the applicants to obtain ECs on fake contiguous certificates in eight cases.

Community assets (like roads, ponds, playgrounds *etc.*) were damaged due to mining activities and reconstruction/restoration of destroyed assets had

not been undertaken. In the absence of analysis of impact of mining activities on road networks, 12 PMGSY roads of ₹ 39.74 crore were completely/partly damaged due to operation of heavy mining vehicles.

Transportation of minerals

The DMG registered 72,449 vehicles as of 28 March 2023, but none of these vehicles were equipped with Radio Frequency Identification/Global Positioning System (RFID/GPS) or any other vehicle tracking system even after a lapse of five years. The Department relied on permits and challan system in the absence of comprehensive systems to detect unauthorised movements of vehicles, overloading, transportation on unregistered vehicles *etc.*

The overall system for transportation of minerals could not provide assurance for preventing illegal transportation of minerals. Audit test checked weighbridge report of seven dealers of stone chips and found that in 85 *per cent* of cases, JIMMS challans were unavailable. In case of 28 vehicles, 35 initial challans were followed by 50 additional challans that were issued before the expiry of the previous challans. There was no mechanism in place to monitor/detect illegal transportation of closing stock lying within the expired lease area.

Ranchi
The 27 September 2025

(INDU AGRAWAL)
Pr. Accountant General (Audit), Jharkhand

Countersigned

New Delhi
The 08 October 2025

(K. SANJAY MURTHY)
Comptroller and Auditor General of India

Appendices

Appendix-2.1
(Referred to in Paragraph 2.1.3)
Lease was granted on insufficient documents

Sl. No.	District	Name of applicant	Date of last application	Mauza/Area	Document attached	Deficiency in enclosed documents
1	Chaibasa	M/s CTS Industries	26.09.2015	Purtidighia/11.75 acre	Two affidavits and up to date RCC	Affidavit had partial contents of Rule 9 (1)(ज)(6 & 7).
2			26.09.2015	Padapahar/5.00 acre		
3			26.09.2015	Padapahar/10.00 acre		
4		M/s Ezhar Karim	11.06.2015	Padapahar/2.50 acre	One affidavit only	Affidavit had partial contents of Rule 9 (1)(ज)(7) only. RCC not attached.
5	Chatra	M/s Chatania Mines	17.05.2019	Chatania/ 7.00 acre	One affidavit only	Affidavit had partial contents of Rule 9 (1)(ज)(7) only. RCC not attached. PAN or Income Tax declaration regarding partnership firm was not enclosed.
6		M/s Jai Shankar Stone Works	22.04.2014	Dalkoma/1.76 acre	One affidavit and RCC	Affidavit had partial contents of Rule 9 (1)(ज)(7) only.
7			01.06.2015	Akta/9.00 acre		
8		M/s Ashutosh Stone Works	05.04.2014	Dalkoma/10.00 acre	One affidavit only	Affidavit had partial contents of Rule 9 (1)(ज)(7) only. RCC not attached. Applicant was director of Pvt. Ltd. Co. but neither PAN nor declaration regarding Income Tax payment of the company was furnished.
9	Dhanbad	Rameshwar Mahto	19.12.2020	Dudhia /7.00 acre	Single affidavit attached	Declared he holds lease in Bokaro but could not attached RCC for current year 2019-20, instead RCC of 2016 issued by DMO, Bokaro was attached.
10		Manmohan Grover & Ankush Grover	17.03.2021	Salpatra/7.32 acre	Single affidavit of each partner was attached	Ankush Grover already holds mining lease over an area of 9.00 acre but in this application, he concealed this fact and also left the column in his affidavit blank. As such his affidavit was incorrect.
11			02.03.2016	Garga/3.90 acre	Single affidavit of	Azad Ansari declared in his affidavit dated 02.03.2016 that he holds mining lease in Jamtara but did not attach RCC.

Sl. No.	District	Name of applicant	Date of last application	Mauza/Area	Document attached	Deficiency in enclosed documents
12	Dhanbad	Asit Kr Mandal & Azad Ansari	20.02.2016	Garga//7.00 acre	each partner was attached	Azad Ansari declared that he does not have mining lease and no due pending but, in the application, dated 02.03.2016 (lease at Sl. No. 11) he had declared that he holds mining lease in Jamtara. In JIMMS database a mining lease was in his name in Jamtara. Affidavit was incorrect.
13			26.02.2016	Garga/7.85 acre		
14		M/s. Maa Ambe Stone	29.03.2016	Dolabar/1.05 acre	Single affidavit attached	Affidavit had partial content of Rule 9 (1)(ज)(7) only. Declared no mining lease but not submitted RCC.
15	Pakur	M/s Bajrang Stone Works	05.02.2016	Suraidih/6.43 acre	One affidavit of one partner only	Affidavit had partial contents of Rule 9 (1)(ज)(7) only. Surface right over the applied land was jointly in the name of Dilip Kumar Bhagat and Somraj Bhagat but affidavit of other partner not attached. No RCC attached. Credentials of firm not attached.
16		M/s Black Diamond Stone	29.12.2016	Belpahari/10.36 acre	Affidavit of firm/company not attached	Affidavits had partial contents of Rule 9 (1)(ज)(7) only. Credentials of firm not attached.
17		M/s Cygnet stone works	21.09.2016	Jiyajori/05.83 acre	One affidavit of one partner only	Affidavit had partial contents of Rule 9 (1)(ज)(7) only. Affidavit of other partner not attached. No RCC attached. Credentials of firm not attached.
18		M/s Sahil Stone works	07.01.2020	Baliapatra/4.63 acre	Individual PAN attached	PAN of firm not attached
19	Palamu	M/s Maa Stone Works	31.01.2020	Damdami/12.00 acre	Single affidavit	Affidavit had partial contents of Rule 9 (1)(ज)(7) only. RCC not attached.
20	Sahibganj	M/s O.P.Stone Works	09.09.2017	Sudare/7.00 acre	Single affidavit	Affidavit had partial contents of Rule 9 (1)(ज)(7) only. RCC not attached.
21		M/s Maa Rakshi Stone Works	03.01.2020	Bhutaha/3.15 acre	Single affidavit and RCC	Affidavit had partial contents of Rule 9 (1)(ज)(6) only.
22		M/s S.B. Stone Works	16.07.2018	Piparjori/12.10 acre		

Sl. No.	District	Name of applicant	Date of last application	Mauza/Area	Document attached	Deficiency in enclosed documents
23	Sahibganj	M/s Minakshi Stone Works	26.07.2017	Demba/10.00 acre	Single affidavit	Affidavit had partial contents of Rule 9 (1)(ज)(6) only. RCC not attached.
24		M/s Maharani Stone Works	28.08.2017	Demba/08.10 acre		
25		M/s Mira Pahar Stone Mines	31.12.2016	Mirapahar/9.00 acre	Single affidavit and RCC	Affidavit had partial contents of Rule 9 (1)(ज)(6) only.
26		M/s Abhi Stone Works	31.08.2017	Rohre/12.00 acre	Single affidavit	Affidavit had partial contents of Rule 9 (1)(ज)(6) only. RCC not attached.
27		M/s Mahakal Stone Works	04.01.2021	Gilmari/6.25 acre		
28		M/s R. B. Stone Works	28.08.2017	Mayurkola/11.25 acre		
29		M/s Kashi Builders & Service Pvt. Ltd.	02.03.2019	Jokmari/7.00 acre		
30		M/s Sri Guru Stone Works	16.06.2017	Dhatapara/10.57 acre	Single affidavit and RCC	Affidavit had partial contents of Rule 9 (1)(ज)(6) only.

Appendix-2.2

(Referred to in Paragraph 2.2.3)

Irregular grant of extension of lease period

Sl. No.	District	Details of lease	Type of land	Original lease period	Date of application for extension	Date of grant of extension	Extended up to	Brief of observation
1	Chaibasa	Shri Ajay Kumar Mauza- Gundijora, Area- 4.00 acre	Govt. land	20.12.2009 to 19.12.2019	12.10.2019 and 04.11.2020	26.12.2019 and 18.12.2020	31.03.2020 and 31.03.2022	Renewal application was not pending prior to 02 March 2017 or 19 February 2018 hence, extension was not allowable.
2	Dhanbad	Tej Narayan Singh, Mauza- Keshka, Khata No. 42, Plot No. 21(P), Area- 3.00 acre	Govt. land	22.03.2009 to 21.03.2019	12.12.2018 (1st extension) and 21.10.2020 (2nd extension)	23.01.2019 and 08.12.2020	31.03.2020 and 31.03.2022	
3		Tej Narayan Singh, Mauza- Keshka, Khata No. 42, Plot No. 21(P), Area- 2.80 acre.	Govt. land	17.09.2010 to 16.09.2020	31.08.2020 (Renewal)	08.04.2021	31.03.2022	
4		Gayasuddin Ansari Mauza- Marro, Khata No. 20, Plot No. 386(P), Area- 3.5 acre.	Govt. land	06.11.2008 to 05.11.2018	25.06.2018 (Renewal) and 23.12.2020	17.11.2018 and 28.12.2020	31.03.2020 and 31.03.2022	
5		M/s Mahalakshmi Industries Mauza- Marro, Khata No. 20, Plot No. 386(P), Area- 5.00 acre.	Govt. land	13.06.2010 to 12.06.2020	11.02.2021 (Extension)	08.04.2021	31.03.2022	
6		M/s Mahalakshmi Industries Mauza- Marro, Khata No, 20, Plot No. 386(P), Area- 3.00 acre.	Govt. land	12.12.2008 to 11.12.2018	11.08.2018 (Renewal) and 22.10.2020 (Extension)	20.11.2018 and 26.11.2020	31.03.2020 and 31.03.2022	

Sl. No.	District	Details of lease	Type of land	Original lease period	Date of application for extension	Date of grant of extension	Extended up to	Brief of observation
7	Dhanbad	Amit Kumar Mandal. Mauza- Marro, Khata No, 20, Plot No. 386(P), Area- 6.00 acre.	Govt. land	03.01.2009 to 02.01.2019	08.10.2018 (Renewal) and 20.10.2020 (Extension)	06.12.2018 and 04.11.2020	31.03.2020 and 31.03.2022	Renewal application was not pending prior to 02 March 2017 or 19 February 2018 hence, extension was not allowable.
8		M/s Shivay Enterprises Mauza- Salpatra, Khata No. 78, Plot No. 423, 425(P), Area- 2.44 acre,	Govt. land	05.12.2011 to 04.12.2021	29.06.2021	12.01.2022	31.03.2022	
9		Kamlakar Mandal and Tara Pad Mandal, Mauza- Nipniya, Khata No, 54, Plot No. 01(P), Area- 2.00 acre,	Govt. land	27.10.2008 to 26.10.2018	04.06.2018 Renewal) and 05.01.2021 (Extension)	16.10.2018 and 27.01.2021	31.03.2020 and 31.03.2022	
10		Pradeep Kumar Singh, Mauza- Keshka, Khata No. 42, Plot No. 21(P), Area- 3.50 acre,	Govt. land	28.12.2008 to 27.12.2018	11.07.2018 (Renewal) and 21.10.2020 (Extension)	04.01.2019 and 08.12.2020	31.03.2020 and 31.03.2022	
11		Asit Kumar Mandal and Jagdish Singh. Mauza- Marro, Khata No, 20, Plot No. 386(P), Area- 3.50 acre,	Govt. land	05.11.2008 to 04.11.2018	29.06.2018 (Renewal) and 20.10.2020 (Extension)	17.11.2018 and 04.11.2020	31.03.2020 and 31.03.2022	
12	Pakur	Arti Madhyan, Mauza- Khaprajola, Area- 3.14 Ha.	Private/*Raiyati* land	24.05.2010 to 23.05.2020	30.12.2020	29.01.2021	31.03.2022	
13		Arti Madhyan, Mauza- Pipaljori, Area- 3.215 Ha.	Private/*Raiyati* land	19.02.2011 to 18.02.2021	30.12.2020	08.03.2021	31.03.2022	

Sl. No.	District	Details of lease	Type of land	Original lease period	Date of application for extension	Date of grant of extension	Extended up to	Brief of observation
14	Pakur	M/s Jial Das & Co. Mauza- Malpahari, Area- 1.06 Ha.	Private/*Raiyati* land	25.08.2004 to 24.08.2014	11.01.2021	07.11.2017 and 16.09.2021	31.03.2020 and 31.03.2022	Renewal application has already been deemed rejected on 24.11.2014 under the provision of rule 23(2)(च). Hence, renewal application in this case was not pending on 02.03.2017. Hence, extension was not allowable.
15		M/s Lakhmani Stone Products Mauza- Pipaljori, Area- 4.767 Ha.	Private/*Raiyati* land	20.08.2010 to 19.08.2020	07.10.2020	02.12.2020	31.03.2022	Renewal application was not pending prior to 02 March 2017 or 19 February 2018 hence, extension was not allowable.
16		M/s Rohit Rajdeo & others. Mauza- Bahirgram, Area- 0.437 Ha,	Private/*Raiyati* land	12.06.2011 to 11.06.2021	11.05.2021	14.06.2021	31.03.2022	
17		M/s. Maa Tara Stone Works, Mauza- Suraidih, Area- 1.133 Ha.	Private/*Raiyati* land	07.06.2010 to 06.06.2020	09.11.2020	09.12.2020	31.03.2022	
18		M/s. S.K. Dutta & Co, Mauza- Malpahari, Area- 0.809 Ha.	Private/*Raiyati* land	01.03.2001 to 28.02.2011	11.11.2020	26.09.2018 and 27.11.2020	31.03.2020 and 31.03.2022	Renewal application has already been deemed rejected on 28.05.2011 under the provision of rule 23(2)(च). Hence, renewal application in this case was not pending on 02.03.2017. Hence, extension was not allowable.

Sl. No.	District	Details of lease	Type of land	Original lease period	Date of application for extension	Date of grant of extension	Extended up to	Brief of observation
19	Pakur	M/s. Saura Constructions, Mauza- Bishanpur, Area- 1.299 Ha.	Private/*Raiyati* land	01.04.2010 to 31.03.2020	11.11.2020	02.12.2020	31.03.2022	Renewal application was not pending prior to 02 March 2017 or 19 February 2018 hence, extension was not allowable.
20		Hira Lal Bhakat, Mauza- Kanhupur, Area- 2.764 Ha.	Private/*Raiyati* land	31.08.2010 to 30.08.2020	10.11.2020	12.01.2021	31.03.2022	
21		M/s. Chhabariya Engineering Co., Mauza- Pipaljori, Area- 2.29 Ha.	Private/*Raiyati* land	01.07.2010 to 30.06.2020	06.02.2021	10.03.2021	31.03.2022	
22	Palamu	Amit Kr. Sinha, Mauza- Bohita, Khata No. 237, Plot No. 317(P), Area- 9.00 acre	Govt. land	25.02.2009 to 24.02.2019	29.10.2018 (Renewal) and 03.11.2020, 23.11.2020 and 10.12.2020 (Extension)	07.03.2019 and 04.01.2021	31.03.2020 and 31.03.2022	
23		Fazle Kareem Mauza- Bakoria, Khata No. 555, Plot No. 4348 and 4381(P), Area- 2.10 acre	Govt. land	17.07.2009 to 16.07.2019	25.03.2021	14.05.2021	31.03.2022	
24		M/s Jai Maa Kali Enterprises Mauza- Bohita, Khata No. 237, Plot No. 317(P), Area- 3.78 acre	Govt. land	24.07.2011 to 23.07.2021	24.05.2021	26.06.2021	31.03.2022	

Sl. No.	District	Details of lease	Type of land	Original lease period	Date of application for extension	Date of grant of extension	Extended up to	Brief of observation
25	Palamu	Uday Kr. Singh Mauza- Chhaparwar, Khata No. 91, Plot No. 128(P), Area- 6.00 acre	Govt. land	14.07.2011 to 13.07.2021	12.04.2021	07.06.2021	31.03.2022	Renewal application was not pending prior to 02 March 2017 or 19 February 2018 hence, extension was not allowable.
26		M/s Broadway Links Pvt. Ltd. Mauza- Chhaparwar, Khata No. 91, Plot No. 128(P), Area- 5.00 acre	Govt. land	10.08.2011 to 09.08.2021	17.05.2021	07.06.2021	31.03.2022	
27	Sahibganj	M/s Ghosh Stone Works, Mauza- Gangopara Bedo, Khasra No. 25(P) & 44(P), Area- 9.30 acre	Private/*Raiyati* land	11.10.2015 to 10.10.2020	13.07.2020	25.11.2020	31.03.2022	
28		Tarkeshwar Jaiswal, Mauza- Damra Daminbhitha, Khasra No. 9(P), 10(P), 15(P) and 37(P), Area- 9.60 acre	Private/*Raiyati* land	04.01.2012 to 03.01.2019	25.09.2018 (1st Renewal) and 02.12.2020 (2nd Renewal)	03.01.2019 and 13.03.2021	31.03.2020 and 31.03.2022	
29		Mrs. Najnin Bibi Mauza- Margaro, Khasra No. 106(P), Area- 5.00 acre	Private/*Raiyati* land	21.08.2008 to 20.08.2018	24.05.2018 (1st Renewal) and 18.11.2020.(2nd Renewal)	25.02.2019 and 27.01.2021	31.03.2020 and 31.03.2022	
30		Md. Farsad Mauza- Desh Paharia, Khasra No. 73(P), 77(P), 79(P), 83(P) & 100, Area- 3.34 acre	Private/*Raiyati* land	08.07.2011 to 07.07.2018	05.03.2018 (1st Renewal) and 06.01.2020 (2nd Renewal)	21.09.2018 and 29.07.2021	31.03.2020 and 31.03.2022	

Sl. No.	District	Details of lease	Type of land	Original lease period	Date of application for extension	Date of grant of extension	Extended up to	Brief of observation
31	Sahibganj	M/s Hiralal Ajay & Co. Mauza- Gudaitungi, Khasra No. 89. 90, 91 & 92, Area- 5.48 acre	Private/*Raiyati* land	23.06.2015 to 22.06.2020	09.11.2020	28.11.2020	31.03.2022	Renewal application was not pending prior to 02 March 2017 or 19 February 2018 hence, extension was not allowable.
32		M/s Jai Mata Di Stone Works Mauza- Banchapa, Khasra No. 299(P), 300(P), 301(P), 302 & 303(P), Area- 5.64 acre, Renewal Applied on Khasra No. 299(P) & 300(P), Area- 0.55 acre	Private/*Raiyati* land	21.12.2011 to 20.12.2018	16.07.2018 (1st Renewal) and 12.11.2020 (2nd Renewal)	29.12.2018 and 08.12.2020	31.03.2020 and 31.03.2022	
33		M/s Maa Kalika Stone Works. Mauza- Ambade, Khasra No. 17(P), 18(P), 22, 31(P), 32(P) and 35(P), Area- 11 acre	Private/*Raiyati* land	04.01.2012 to 03.01.2019	10.09.2018 (1st Renewal) and 03.01.2020 (2nd Renewal)	25.02.2019 and 24.12.2020	31.03.2020 and 31.03.2022	

Appendix-4.1

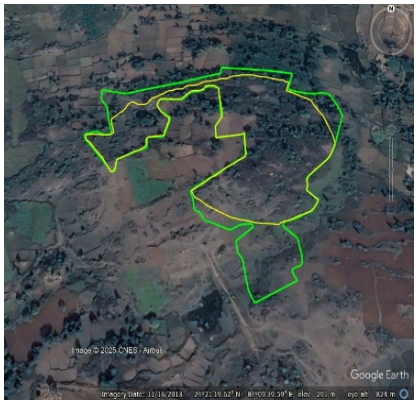
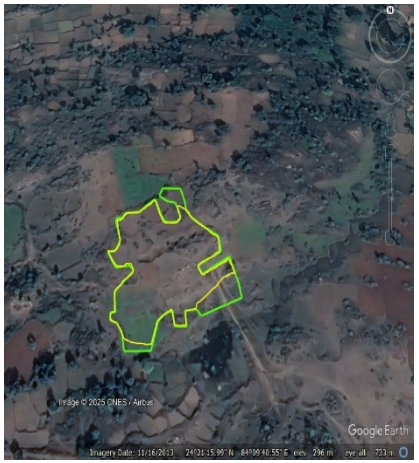
(Referred to in Paragraph 4.1.4.1)

Excess extraction of stone excavated by lessee (within lease area: kml matched with lease area)

Details of lessee	Area as per mining plan (Note 1)	Details of dimension per Google Image (Note 2)	Details JPV (Note 3)	Dates (Note 4)	Details of volume (Note 5)	Google Image of mining pit area (Date on extraction calculated) (Note 6)	Google Image of mining pit area (Before grant of lease) (Note 7)
Jaishankar Stone Works, Chatra, Lessee code-308336601, Period of lease-14.07.2014 to 13.07.2024	Lease area-0.713 Ha.	Lease area (KML file)-0.71 Ha.	Depth along hypotenuse-39.60 m	Google image-17.02.2022	Total Mineral resources-276886 m^3		
	Mining pit area- 0.44 Ha.	Mining pit area- 0.71 Ha.	Slope- 80^o	JPV-23.05.2023	Reserve trapped in slope and haul road - 6240 m^3		
	Safety barrier-0.22 Ha.	Perimeter of mining pit-393 m	Height-39 m Base-6.87 m	Period of production-July 2014-May 2023	Volume extracted-270646 m^3		
					Production reported-79650 m^3		
					Excess extraction 190997 m^3	Mining Pit (17.02.2022)	Unexcavated surface (21.01.2011)
Chatania Mines, Chatra, Lessee code-308156501, Period of lease-24.10.2019 to 23.10.2029	Lease area-2.83 Ha.	Lease area (KML file)-2.83 Ha.	Depth along hypotenuse-39.90 m	Google image-17.02.2022	Total Mineral resource -243709 m^3		
	Mining pit area-1.8 Ha.	Mining pit area- 0.65 Ha.	Slope- 70^o	JPV-23-05-2023	Reserve trapped in slope and haul road-52052 m^3		
	Safety barrier-0.93 Ha.	Perimeter of mining pit-168.30 m	Height-37.49 m Base-13.65 m	Period of production-October 2019-May 2023	Volume extracted-191657 m^3		
					Production reported 191657 m^3		
					Excess extraction-0 m^3	Mining Pit (17.02.2022)	Unexcavated surface (28.12.2018)

Details of lessee	Area as per mining plan (Note 1)	Details of dimension per Google Image (Note 2)	Details JPV (Note 3)	Dates (Note 4)	Details of volume (Note 5)	Google Image of mining pit area (Date on extraction calculated) (Note 6)	Google Image of mining pit area (Before grant of lease) (Note 7)
M/s Jai Shiv Construction, Chatra, Lessee code-308336901, Period of lease-12.02.2015 to 11.02.2025	Lease area-1.03 Ha.	Lease area (KML file)-1.03 Ha.	Depth along hypotenuse-64 m	Google image-30.11.2022	Total Mineral resource -542034 m^3		
	Mining pit area- 0.64 Ha.	Mining pit area- 0.86 Ha.	Slope- 80^o	JPV-11.05.2023	Reserve trapped in slope and haul road-101328 m^3		
	Safety barrier-0.35 Ha.	Perimeter of mining pit-275 m	Height-63.03 m Base-11.11 m	Period of production-February 2015- May 2023	Volume extracted-440706 m^3		
					Production reported-144132 m^3		
					Excess extraction-296574 m^3	Mining pit (30.11.2022)	unexcavated surface (16.04.2013)
M/s Trustline Mining and Minerals, Chaibasa, Lessee code-101597101, Period of lease-18.01.2016 to 17.01.2026	Lease area-18.93 Ha.	Lease area (KML file)-19.00 Ha.	Depth along hypotenuse-50 m	Google image-29.05.2022	Total Mineral resources -2038049 m^3		
	Mining pit area- 16.52 Ha.	Mining pit area- 4.22 Ha.	Slope- 75^o	JPV-18.08.2023	Reserve trapped in slope and haul road-222993 m^3		
	Safety barrier-2.33 Ha.	Perimeter of mining pit-590 m	Height-48.30 m Base-12.94 m	Period of production-January 2016-August 2023	Volume extracted-1815057 m^3		
					Production reported-1429890 m^3		
					Excess extraction-385166 m^3	Mining Pit (29.05.2022)	Unexcavated surface (26.04.2014)

Details of lessee	Area as per mining plan (Note 1)	Details of dimension per Google Image (Note 2)	Details JPV (Note 3)	Dates (Note 4)	Details of volume (Note 5)	Google Image of mining pit area (Date on extraction calculated) (Note 6)	Google Image of mining pit area (Before grant of lease) (Note 7)
M/s Raj Kumar Khurana, Palamu, Lessee code-411354101, Period of lease-17.08.2013 to 16.08.2023	Lease area-4.05 Ha.	Lease area (KML file)-4.05 Ha.	Depth along hypotenuse-61 m	Google image-25.02.2021	Total Mineral resource -1360300 m^3		
	Mining pit area- 3.10 Ha.	Mining pit area- 2.23 Ha.	Slope- 90^o	JPV-26.11.2022	Reserve trapped in slope and haul road -18300 m^3		
	Safety barrier-0.91 Ha.	Perimeter of mining pit-586.74 m	Height- 61 m Base- 0 m	Period of production-August 2013-November 2022	Volume extracted-1342000 m^3		
					Production reported-1342000 m^3		
					Excess extraction-0 m^3	Mining Pit (25.02.2021)	Unexcavated surface (16.04.2013)
M/s Bagaiya Stone Mine, Palamu, Lessee code-411353903, Period of lease-08.01.2012 to 07.01.2022	Lease area-4.046 Ha.	Lease area (KML file)-4.046 Ha.	Depth along hypotenuse-94.00 m	Google image-07.12.2021	Total Mineral resource -3277685 m^3		
	Mining pit area- 3.22 Ha.	Mining pit area- 3.61 Ha.	Slope- 75^o	JPV-10.11.2022	Reserve trapped in slope and haul road-689906 m^3		
	Safety barrier-0.60 Ha.	Perimeter of mining pit-526.04 m	Height-90.79 m Base-24.33 m	Period of production-January 2012- January 2022	Volume extracted-2587778 m^3		
					Production reported-1194282 m^3		
					Excess extraction-1393496 m^3	Mining Pit (07.12.2021)	Available image (second year of lease dated 16.11.2013)

Details of lessee	Area as per mining plan (Note 1)	Details of dimension per Google Image (Note 2)	Details JPV (Note 3)	Dates (Note 4)	Details of volume (Note 5)	Google Image of mining pit area (Date on extraction calculated) (Note 6)	Google Image of mining pit area (Before grant of lease) (Note 7)
M/s Shyam Stone Works, Palamu Lessee code-411355001, Period of lease 23.07.2015 to 22.07.2025	Lease area-4.856 Ha.	Lease area (KML file)-4.856 Ha.	Depth along hypotenuse-45.00 m	Google image-07.12.2021	Total Mineral resource -1555492 m^3		
	Mining pit area- 2.86 Ha.	Mining pit area- 3.51 Ha.	Slope- 80^o	JPV-02.12.2022	Reserve trapped in slope and haul road-128222 m^3		
	Safety barrier-2.27 Ha.	Perimeter of mining pit-637.16 m	Height-44.32 m Base-7.81 m	Period of production-July 2015-November 2022	Volume extracted-1427270 m^3		
					Production reported-671478 m^3		
					Excess extraction-755792 m^3	Mining Pit (07.12.2021)	Unexcavated surface (16.11.2013)
M/s Sona Stone Chips, Palamu Lessee code-411354301, Period of lease-12.12.2013 to 11.12.2023	Lease area-0.96 Ha.	Lease area (KML file)-0.96 Ha.	Depth along hypotenuse-35 m	Google image-07.12.2021	Total Mineral resource -294000 m^3		
	Mining pit area- 0.64 Ha.	Mining pit area- 0.84 Ha.	Slope- 90^o	JPV-02.12.2022	Reserve trapped in slope and haul road-9415 m^3		
	Safety barrier-0.28 Ha.	Perimeter of mining pit-95.80 m	Height- 35 m Base- 0 m	Period of production-December 2013-November 2022	Volume extracted-284585 m^3		
					Production reported 61212 m^3		
					Excess extraction-223373 m^3	Mining Pit (07.12.2021)	Unexcavated surface (16.11.2013)

<table>
<tr><th>Details of lessee</th><th>Area as per mining plan (Note 1)</th><th>Details of dimension per Google Image (Note 2)</th><th>Details JPV (Note 3)</th><th>Dates (Note 4)</th><th>Details of volume (Note 5)</th><th>Google Image of mining pit area (Date on extraction calculated) (Note 6)</th><th>Google Image of mining pit area (Before grant of lease) (Note 7)</th></tr>
<tr><td rowspan="5">M/s New Three Star Mines, Pakur, Lessee code-623160603, Period of lease-20.03.2020 to 19.03.2030</td><td>Lease area-2.34 Ha.</td><td>Lease area (KML file)-2.34 Ha.</td><td>Depth along hypotenuse-17.65 m</td><td>Google image-16.01.2022</td><td>Total Mineral resource -342864 m^3</td><td rowspan="2">  </td><td rowspan="2">  </td></tr>
<tr><td>Mining pit area- 0.90 Ha.</td><td>Mining pit area- 1.95 Ha.</td><td>Slope- 85^o</td><td>JPV-07.10.2023</td><td>Reserve trapped in slope and haul road-6553 m^3</td></tr>
<tr><td rowspan="3">Safety barrier-0.82 Ha.</td><td rowspan="3">Perimeter of mining pit-354.6 m</td><td rowspan="3">Height-17.58 m Base-1.54 m</td><td rowspan="3">Period of production-May 1990-September 2023 (including extraction during previous lease period)</td><td>Volume extracted-336310 m^3</td></tr>
<tr><td>Production reported 152116 m^3</td><td rowspan="2">Mining Pit (16.01.2022)</td><td rowspan="2">Available image (09.03.2019) before start of lease</td></tr>
<tr><td>Excess extraction-184194 m^3</td></tr>
<tr><td colspan="8">Note 1 – (Area as per mining plan)- available in Mining plan
Note 2- (Details of dimension as per Google image) -lease area, mining pit area, perimeter were calculated by available measurement tool in Google earth application
Note 3- (Details of JPV) -1. Depth along hypotenuse - measured by rope tied with stone for load purpose 2. Slope- eye estimation by JPV team 3. Height and base- sin and cos value of angle * depth along hypotenuse
Note 4- (Dates), 1. Google image- date of Google image mentioned in image 2. Date of JPV 3. Period of production- production figure available in file and JIMMS (from start of lease period to date of JPV)
Note 5- (Details of volume) 1. Total mineral reserve- mining pit area in Ha. (Google image) *10000*Height 2. Reserve trapped in slope- ½* Height * base* Perimeter (along boundary wall) 3. Volume extracted- Total mineral reserve- reserve trapped in slope 4. Production reported- Production reported during period of production 5. Excess extraction - Volume extracted – Production reported.
Note 6- Google image based on which calculation of volume done by the Audit, Area in Green line-lease boundary (KML file), Area in Yellow line- excavated area
Note 7- Google image showing flat surface (means no extraction) before start of lease</td></tr>
</table>

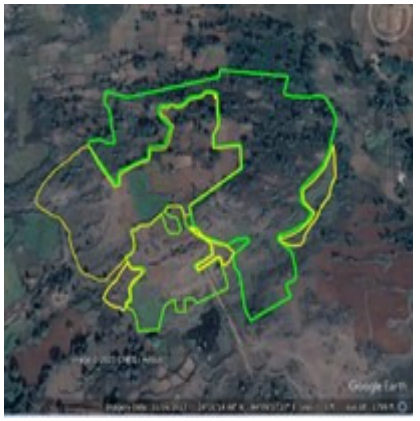
Appendix-4.2

(Referred to in Paragraph 4.1.4.1)

Excess extraction of stone (Outside lease area: kml matched with lease area)

Details of lessee	Area as per mining plan (Note 1)	Details of dimension per Google Image (Note 2)	Details JPV (Note 3)	Dates (Note 4)	Details of volume (Note 5)	Google Image of mining pit area (Image date on which extraction calculated) (Note 6)	Google Image of mining pit area (image date before grant of lease) (Note 7)
Jaishankar Stone Works, Chatra, Lessee code-308336601, Period of lease-14.07.2014 to 13.07.2024	Lease area-0.713 Ha.	Lease area (KML file)-0.71 Ha.	Depth along hypotenuse-39.60 m	Google image-17-02-2022	Total Mineral resource -1162143 m^3		
	Mining pit area-0.44 Ha.	Mining pit area- 2.98 Ha.	Slope- 80º	JPV-23-05-2023	Reserve trapped in slope-101608 m^3		
	Safety barrier-0.22 Ha.	Perimeter of mining pit-758 m	Height-39 m Base-6.87 m	Period of production-July 2014-May 2023	Volume extracted-1060535 m^3		
					Production reported 0 m^3		
					Excess extraction-1060535 m^3	Mining Pit (17.02.2022)	Unexcavated surface (21.01.2011)
Chatania Mines, Chatra, Lessee code-308156501, Period of lease-24.10.2019 to 23.10.2029	Lease area-2.83 Ha.	Lease area (KML file)-2.83 Ha.	Depth along hypotenuse-39.90 m	Google image-17-02-2022	Total Mineral resource -292450 m^3		
	Mining pit area-1.8 Ha.	Mining pit area- 0.78 Ha.	Slope- 70º	JPV-23-05-2023	Reserve trapped in slope- 77179 m^3		
	Safety barrier-0.93 Ha.	Perimeter of mining pit-301.70 m	Height-37.49 m Base-13.65 m	Period of production-October 2019-May 2023	Volume extracted-215271 m^3		
					Production reported -19728.58 m^3		
					Excess extraction-195542.27 m^3	Mining Pit (17.02.2022)	Unexcavated surface (28.12.2018)

Details of lessee	Area as per mining plan (Note 1)	Details of dimension per Google Image (Note 2)	Details JPV (Note 3)	Dates (Note 4)	Details of volume (Note 5)	Google Image of mining pit area (Image date on which extraction calculated) (Note 6)	Google Image of mining pit area (image date before grant of lease) (Note 7)
M/s Jai Shiv Construction, Chatra, Lessee code- 308336901, Period of lease- 12.02.2015 to 11.02.2025	Lease area- 1.03 Ha.	Lease area (KML file)- 1.03 Ha.	Depth along hypotenuse- 64 m	Google image- 30-11-2022	Total Mineral resource - 693299 m^3		
	Mining pit area- 0.64 Ha.	Mining pit area- 1.10 Ha.	Slope- 80°	JPV-11-05-2023	Reserve trapped in slope and haul road-111692 m^3		
	Safety barrier- 0.35 Ha.	Perimeter of mining pit- 319 m	Height- 63.03 m Base- 11.11 m	Period of production- February 2015- May 2023	Volume extracted-581608 m^3		
					Production reported-0 m^3		
					Excess extraction- 581608 m^3	Mining pit (30.11.2022)	unexcavated surface (16.04.2013)
M/s Trustline Mining and Minerals, Chaibasa, Lessee code- 101597101, Period of lease- 18.01.2016 to 17.01.2026	Lease area- 18.93 Ha.	Lease area (KML file)- 19.00 Ha.	Depth along hypotenuse- 50 m	Google image- 29-05-2022	Total Mineral resource - 526415.50 m^3		
	Mining pit area- 16.52 Ha.	Mining pit area- 1.09 Ha.	Slope- 75°	JPV- 18.08.2023	Reserve trapped in slope- 116238.34 m^3		
	Safety barrier- 2.33 Ha.	Perimeter of mining pit- 372 m	Height- 48.30 m Base- 12.94 m	Period of production- January 2016- August 2023	Volume extracted- 410177.16 m^3		
					Production reported-0 m^3		
					Excess extraction- 410177.16 m^3	Mining Pit (29.05.2022)	Unexcavated surface (26.04.2014)

Details of lessee	Area as per mining plan (Note 1)	Details of dimension per Google Image (Note 2)	Details JPV (Note 3)	Dates (Note 4)	Details of volume (Note 5)	Google Image of mining pit area (Image date on which extraction calculated) (Note 6)	Google Image of mining pit area (image date before grant of lease) (Note 7)
M/s Raj Kumar Khurana, Palamu, Lessee code- 411354101, Period of lease- 17.08.2013 to 16.08.2023	Lease area- 4.05 Ha.	Lease area (KML file)- 4.05 Ha.	Depth along hypotenuse- 61 m	Google image- 25-02-2021	Total Mineral resource - 579500 m^3		
	Mining pit area- 3.10 Ha.	Mining pit area- 0.95 Ha.	Slope- 90°	JPV-26-11-2022	Reserve trapped in slope-0 m^3		
	Safety barrier- 0.91 Ha.	Perimeter of mining pit- 222.26 m	Height- 61 m Base- 0 m	Period of production- August 2013- November 2022	Volume extracted- 579500 m^3		
					Production reported-2238 m^3		
					Excess extraction- 577263 m^3	Mining Pit (25.02.2021)	Unexcavated surface (16.04.2013)
M/s Shyam Stone Works, Palamu Lessee code- 411355001, Period of lease 23.07.2015 to 22.07.2025, M/s Sona Stone Chips, Lessee code- Palamu Lessee code- 411354301, Period of lease- 12.12.2013 to 11.12.2023	Lease area- 4.856 Ha., 0.96 Ha.	Lease area (KML file)- 4.856 Ha., 0.96 Ha.	Depth along hypotenuse- 35 m	Google image- 07-12-2021	Total Mineral resource - 1137444 m^3		
	Mining pit area- 2.86 Ha., 0.64 Ha.,	Mining pit area- 3.30 Ha.	Slope- 80°	JPV-02-12-2022	Reserve trapped in slope- 63897.40 m^3		
	Safety barrier- 2.27 Ha.,0.28 Ha.	Perimeter of mining pit- 610.21 m	Height- 34.47 m Base-6.08 m	Period of production- December 2013- November 2022	Volume extracted- 1073546.60 m^3		
					Production reported 0 m^3		
					Excess extraction- 1073546.60 m^3	Mining Pit (07.12.2021)	Unexcavated surface (16.11.2013)

Details of lessee	Area as per mining plan (Note 1)	Details of dimension per Google Image (Note 2)	Details JPV (Note 3)	Dates (Note 4)	Details of volume (Note 5)	Google Image of mining pit area (Image date on which extraction calculated) (Note 6)	Google Image of mining pit area (image date before grant of lease) (Note 7)
M/s Bagaiya Stone Mine, Palamu, Lessee code- 411353903, Period of lease- 08.01.2012 to 07.01.2022	Lease area- 4.046 Ha.	Lease area (KML file)- 4.046 Ha.	Depth along hypotenuse- 94.00 m	Google image- 07-12-2021	Total Mineral resource - 299622.18 m^3		
	Mining pit area- 3.22 Ha.	Mining pit area- 0.33 Ha.	Slope- 75°	JPV-10-11-2022	Reserve trapped in slope- 269426.79 m^3		
	Safety barrier- 0.60 Ha.	Perimeter of mining pit- 243.96 m	Height- 90.79 m Base-24.33 m	Period of production- January 2012- January 2022	Volume extracted- 30195.39 m^3		
					Production reported-0 m^3		
					Excess extraction- 30195.39 m^3	Mining Pit (07.12.2021)	Unexcavated surface (16.11.2013)
M/s New Three Star Mines, Pakur, Lessee code- 623160603, Period of lease- 20.03.2020 to 19.03.2030	Lease area- 2.34 Ha.	Lease area (KML file)- 2.34 Ha.	Depth along hypotenuse- 17.65 m	Google image- 16-01-2022	Total Mineral resource -152970 m^3		
	Mining pit area- 0.90 Ha.	Mining pit area- 0.87 Ha.	Slope- 85°	JPV-07-10-2023	Reserve trapped in slope-4969 m^3		
	Safety barrier- 0.82 Ha.	Perimeter of mining pit- 367.40 m	Height- 17.58 m Base-1.54 m	Period of production- March 2020- September 2023	Volume extracted-148001 m^3		
					Production reported 0 m^3		
					Excess extraction- 148001 m^3	Mining Pit (16.01.2022)	Available image (09.03.2019) before start of lease

Notes pertaining to Appendix-4.2
Note 1– (Area as per mining plan)- available in Mining plan
Note 2- (Details of dimension as per Google image) -lease area, mining pit area, perimeter were calculated by available measurement tool in Google earth application
Note 3- (Details of JPV) -1. Depth along hypotenuse- measured by rope tied with stone for load purpose 2. Slope- eye estimation by JPV team 3. Height and base- sin and cos value of angle * depth along hypotenuse
Note 4- (Dates), 1. Google image- date of Google image mentioned in image 2. Date of JPV 3. Period of production- production figure available in file and JIMMS (from start of lease period to date of JPV)
Note 5- (Details of volume) 1. Total mineral reserve- mining pit area in Ha. (Google image) *10000*Height 2. Reserve trapped in slope- ½* Height * base* Perimeter (along boundary wall) 3. Volume extracted- Total mineral reserve- reserve trapped in slope 4. Production reported- Production reported during period of production 5. Excess extraction- Volume extracted – Production reported.
Note 6- Google image based on which calculation of volume done by the Audit, Area in Green line-lease boundary (KML file), Area in Yellow line- excavated area
Note 7- Google image showing flat surface (means no extraction) before start of lease

Appendix-4.3

(Referred to in Paragraph 4.1.4.1)

Excess extraction of stone excavated by lessee (kml not matched with lease area)

Details of lessee	Area as per mining plan (Note 1)	Details of dimension per Google Image (Note 2)	Details JPV (Note 3)	Dates (Note 4)	Details of volume (Note 5)	Google Image of mining pit area (Image date on which extraction calculated) (Note 6)	Google Image of mining pit area (image date before grant of lease) (Note 7)
M/s Ashutosh Stone Works, Chatra, Lessee code-308013401, Period of lease-26.06.2014 to 25.06.2024	Lease area- 4.04 hectare	Lease area (KML file)-2.93 hectare	Depth along hypotenuse-42 m	Google image-17-02-2022	Total Mineral resource - 1364933 m^3		
	Mining pit area- 2.99 hectare	Mining pit area- 3.3 hectare	Slope- 80º	JPV-23-05-2023	Reserve trapped in slope and haul road-120760 m^3		
	Safety barrier-1.05 hectare	Perimeter of mining pit-746 m	Height-41.36 m Base-7.29 m	Period of production-June 2014-May 2023	Volume extracted-1244173 m^3		
					Production reported-305748 m^3		
					Excess extraction-938425 m^3	Mining Pit (17.02.2022)	Unexcavated surface (16.04.2013)
M/s CTS Industries Ltd., Chaibasa Lessee code-101334703, Period of lease-23.02.2016 to 22.02.2026	Lease area- 3.64 hectare	Lease area (KML file)-6.7 hectare	Depth along hypotenuse-26.52 m	Google image-29-05-2022	Total Mineral resource - 454434 m^3		
	Mining pit area- 3.10 hectare	Mining pit area- 1.74 hectare	Slope- 80º	JPV-18-08-2023	Reserve trapped in slope and haul road-39551 m^3		
	Safety barrier-0.54 hectare	Perimeter of mining pit-571 m	Height-26.12 m Base-4.60 m	Period of production-February 2016-August 2023	Volume extracted-414882 m^3		
					Production reported-140537 m^3		
					Excess extraction-274346 m^3	Mining Pit (29.05.2022)	Flat surface (26.04.2014)

Details of lessee	Area as per mining plan (Note 1)	Details of dimension per Google Image (Note 2)	Details JPV (Note 3)	Dates (Note 4)	Details of volume (Note 5)	Google Image of mining pit area (Image date on which extraction calculated) (Note 6)	Google Image of mining pit area (image date before grant of lease) (Note 7)
M/s Ramashish Singh, Palamu, Lessee code-411596801, Period of lease-23.03.2016 to 22.03.2026	Lease area- 4.85 hectare	Lease area (KML file)-5.83 hectare	Depth along hypotenuse-24.38 m	Google image-13-12-2022	Total Mineral resource - 1440565 m^3		
	Mining pit area- 4.19 hectare	Mining pit area- 6.0 hectare	Slope- 80°	JPV-02-06-2023	Reserve trapped in slope and haul road - 107872 m^3		
	Safety barrier-0.66 hectare	Perimeter of mining pit-989 m	Height-24.01 m Base-4.23 m	Period of production-March 2016- June 2023	Volume extracted-1332693 m^3		
					Production reported-998297 m^3		
					Excess extraction-334396 m^3	Mining Pit (image date 13.12.2022)	Flat surface (image date 02.06.2013)
M/s Sky Stone Works, Sahibganj, Lessee code-620829301, Period of lease-06.11.2017 to 05.11.2027	Lease area- 2.86 hectare	Lease area (KML file)-3.54 hectare	Depth along hypotenuse-24.38 m	Google image-07-03-2022	Total Mineral resource - 360141 m^3		
	Mining pit area- 1.66 hectare	Mining pit area- 1.5 hectare	Slope- 80°	JPV-21-09-2023	Reserve trapped in slope and haul road - 41296 m^3		
	Safety barrier - 0.53 hectare	Perimeter of mining pit-482 m	Height-24.01 m Base-4.23 m	Period of production-November 2017-September 2023	Volume extracted-318845 m^3		
					Production reported-20813 m^3		
					Excess extraction-298032 m^3	Mining Pit (07.03.2022)	Flat surface (23.02.2016)

Notes pertaining to Appendix-4.3
Note 1– (Area as per mining plan)- available in Mining plan
Note 2- (Details of dimension as per Google image) -lease area, mining pit area, perimeter were calculated by available measurement tool in Google earth application
Note 3- (Details of JPV) -1. Depth along hypotenuse- measured by rope tied with stone for load purpose 2. Slope- eye estimation by JPV team 3. Height and base- sin and cos value of angle * depth along hypotenuse
Note 4- (Dates), 1. Google image- date of Google image mentioned in image 2. Date of JPV 3. Period of production- production figure available in file and JIMMS (from start of lease period to date of JPV)
Note 5- (Details of volume) 1. Total mineral reserve- mining pit area in hectare (Google image) *10000*Height 2. Reserve trapped in slope- ½* Height * base* Perimeter (along boundary wall) 3. Volume extracted- Total mineral reserve- reserve trapped in slope 4. Production reported- Production reported during period of production 5. Excess extraction - Volume extracted – Production reported.
Note 6- Google image based on which calculation of volume done by the Audit, Area in Green line-mining pit area
Note 7- Google image showing flat surface (means no extraction) before start of lease

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