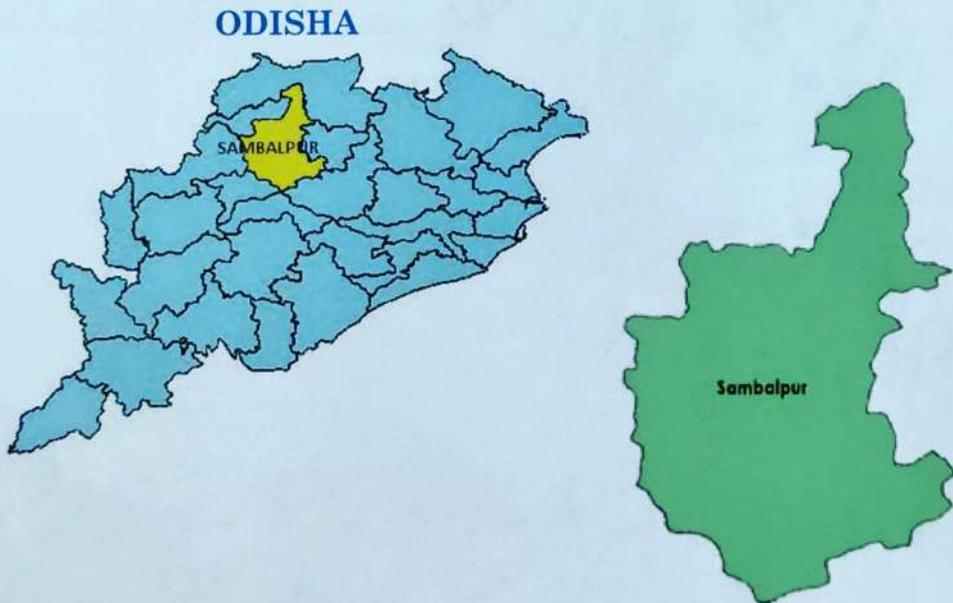




**DISTRICT SURVEY REPORT (DSR)
OF
SAMBALPUR DISTRICT, ODISHA
FOR
ROAD METAL / BUILDING STONE / BLACK STONE**

**(FOR PLANNING & EXPLOITING OF MINOR
MINERAL RESOURCES)**



As per Notification No. S.O. 3611(E) New Delhi,
25th July, 2018
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(MoEF & CC)

COLLECTORATE, SAMBALPUR

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 Sub-Collector Sambalpur	 Sub-Collector Rairakhol	 Sub-Collector Kuchinda	 DFO Sambalpur
 DFO Rairakhol	 DFO BAMRA (WL) Kuchinda	 Geologist/DDG/JDG GEOLOGIST Sambalpur	 Regional Officer SPCB, Sambalpur Regional Officer State Pollution Control Board Regional Office, Sambalpur
 Executive Engineer Water Resource Dept Sambalpur	 Mining Officer Sambalpur Mining Officer Sambalpur Circle	 Deputy Director of Mines (I/C) Sambalpur Circle, Sambalpur	

PREFACE

In compliance to the notification issued by the Ministry of Environment and Forest and Climate Change **Notification no. S.O.3611 (E) New Delhi dated 25-07-2018**, the district survey report for road metal/building stone mining has been prepared conforming to Clause II of Appendix X of the notification. All efforts have been made to cover road metal/building stone mining locations, future potential areas and overview of road metal mining activities in the district with all its relevant features pertaining to geology and mineral wealth. This report will act as a compendium of available mineral resources, geological set up, environmental and ecological set up of the district and is based on data of various departments like Revenue, Water Resources, Forest, Geology and Mining in the district as well as statistical data uploaded by various state Government departments. Over and above, the data relating to such departments as up loaded in the official web site of Directorate of Economics & Statistics, Government of Odisha have also been relied upon. The main purpose of preparation of the District Survey Report is to identify the mineral resources and developing the mining activities in a sustainable manner vis-a-vis all other relevant data of the District.

1. INTRODUCTION

Sambalpur district is situated in the western part of the state of Odisha, India. The historic city of Sambalpur is the district headquarters. The district is located in the Mahanadi River basin. Sambalpur is the connecting city between the states of Chhattisgarh and Odisha. It is also used to be known for its importance as a diamond trading centre. Now-a-days, it is mainly known for its textiles, especially the Sambalpur Saree. The district is surrounded by Deogarh district in the East, Bargarh district in the West, Jharsuguda district in the North and Sonepur and Angul districts in the South.

The district of Sambalpur has a history full of events including Indian freedom struggle representing the different sections of the society. Sambalpur is mentioned in the book of Ptomely as Sambalaka on the river Manada. Sambalpur district was subsequently divided into four separate districts. Bargarh district was separated in The year 1993 and Jharsuguda & Deogarh districts were separated in 1994. The district covering a geographical area of 6702 sq km lies between 20° 54' to 22° 11' North Latitudes and 83° 49' to 84° 45' East Longitudes.

Sambalpur is mentioned in the book of Ptolemy (2nd century) as Sambalaka on the river Manada (the Mahanadi River). This gateway to the exotic charms of the western region of Odisha was the cradle of an ancient civilization and is an important landmark in India's cultural history.

Sambalpur was a former princely state of British India. When its ruler died without a direct male heir in the year 1849, the British seized the state under the doctrine of lapse. It was attached to the British Bengal Presidency, but was later, transferred to the Central Provinces in 1862. The district was again, transferred back to Bengal in 1905, but the subdivisions of Phuljhar and Chandarpur-Padampur remained with the Central Provinces. Bengal's Odisha division became part of the new province of Bihar and Odisha in 1912 and in 1936 became a separate province of Odisha. After Indian Independence in 1947, Odisha became an Indian state.

- 2. OVERVIEW OF MINING ACTIVITIES IN THE DISTRICT:** The district constitutes a part of cratonic area which had been subjected to tectonic and thermal activities. Normally, cratons host a number of metallic as well as non metallic minerals. The following description gives an account of the mineral occurrences in the district.

Diamond: Winning of diamonds from the gravel beds exposed in the Hirakud Dam site is an age old process which is still going on by the local people. This is recovered along with gold panning. The history records that maximum weight of diamond is registered at 1 (one) carat (200 mg). The colour of the diamond normally is snow white, yellowish and brown colour. The source of these diamonds is yet to be explored.

Gold: Alluvial gold is being recovered from the recent gravel of all the creeks and rivers of this district. The activity can be seen in the River Mahanadi around Sambalpur, Tikra river in Redhakhol sub division and Kharla Nala in Kuchinda Sub- Division. An auriferous quartz vein is found to contain 0.08 gm per tonne which have been emplaced in Khondalite suite of rocks around Kuchinda.

Gem stone: The district is bestowed with rich potential of gem stones from Eastern Ghat Supergroup of rock : aquamarine, zircon, tourmaline and heliodor in Chabati-Beldihi belt, (ii) aquamarine, rhodonite, garnet, lolite, and amethyst in Bagdhapa-Tabloi belt (iii) corundum, lolite, green tourmaline and aquamarine are reported in the Meghpal-Ranchipada belt . Rare occurrence of alexandrite is reported from biotite schist at the contact of granite pegmatite and peridotite.

Chrysoberyl:- The known occurrence of chrysoberyl is located around Ranchipara- Meghpal area about 35 km from Sambalpur Town. Small incidence of chrysoberyl including Alexandrite is mineralized along the contact zone of pegmatite and ultrabasic rocks. The gem stones recovered are shattered and a very few pieces are found suitable for lapidary unit. Besides, few pieces of green beryl, tourmaline and garnets are also found. The occurrence has been extensively worked out by the local artisans.

Corundum:- Red and pink coloured massive and crystalline variety of corundum is recovered from the colluvial zones located around Meghpal village. Due to its opaque nature, few of them are found to be cabochon variety. In addition, stray occurrences of blue coloured corundums are also found around Redhakhola area.

Aquamarine:-

Gem grade aquamarines are recovered from the extensively developed colluvial zones on either side of the pegmatites intruding into the older metamorphic rocks. The localities of aquamarine occurrences are Charbati, Shradhapur, Barkhol, Kandhal, Tabloi, Jujumura,, Bhimkhoj, Telighana and Badmal. Minor incidence of aquamarine is reported from Bansajal, Bhaluchua, Hatia Joypur, Palsamal, Burhiakata and Chamakhunda.

Heliodor:-

It is a variety of beryl exhibiting yellow colour which is found along with the other aquamarine occurrences around Charbati.

Goshenite:-

Transparent, colourless beryl better known as Goshenite are found around Jaripani near Redhakhol and Charbati area in pegmatites intruding into khondalitic rocks. The incidence is erratic.

Zircon:-

Gem quality zircons are mineralized in the contact zone of pegmatite and khondalite around the east of Charbati. The colour of zircon is reddish brown.

Garnet:-

Different variety of gem garnet like rhodolite, almandine, pyrope are found to be associated with khondalite suite of rocks. Rhodolite garnets which are purplish red in colour but are found as scattered pockets around Baghdapa, Deojharan under Jujumura Block. Almandine garnets of red and deep red in colour are found to occur around Baghdapa, Deojharan, Badmal in the Redhakhol Sub Division. In addition to these garnets, small pockets of pyrope garnets exhibiting brilliant fiery red colour do also occur at places but are unsuitable for lapidary units (units for cutting, polishing and engraving of gemstones) except a few pieces for being highly fractured.

Manganese:

Low grade manganese ores occur near Khandhal in Sagmalia Reserve Forest under Redhakhol Sub Division in association with khondalite. But it contains high phosphorous. Manganese ore is also reported to occur in Jamankira area of Kuchinda Sub Division.

Iron Ore:-

Sporadic occurrences of iron ores are found around Lohakhanda in Kuchinda Sub Division. The iron ore is of low grade and not economically workable at present.

Ilmenite:-

Fine grained ilmenite is reported from the area around Mundher with traces of nickel in the Eastern Ghat Suite of rocks.

Coal:-

Coal seams are encountered in the Gondwana Supergroup of rocks around Rail and Koing area of Redhakhol Sub Division. Exploration data reveals three numbers of coal seams classified under E & F grade.

Fire clay:-

Fire clay occurrence has been reported about 0.5 km north east of Bindupur in Redhakhol Sub Division, extending intermittently over a distance of 1.5 km. The clay is grayish white to buff in colour. Besides, low grade fire clays are being mined out near Chandli Reserve Forest around Burla over an area of 25 acres.

China Clay:-

Sporadic pockets of china clay in the khondalitic suite of rocks are found and leased out near Jhankarpalli, Banjipalii, Choukitikra (Akharkhand Hill) in Kuchinda Sub Division.

Quartzite/ Quartz:-

Quartz and quartzite containing +97% SiO₂ occur around Bodmal ,Charbati and Bamra.

Dimension stones:-

Quarriable exposures of pink and grey colour granites and its variants are located around Badmal, Bhoipali of Kuchinda Sub Division and Sahaspur, Chhachanpalli, Salesingha area of Sambalpur Sub Division. A reserve of 1.17 million cubic meter of granite blocks has been estimated so far.

Other than the above mentioned minerals, minor minerals such as river sand, laterite slabs, building stone/black stone/road metals, morrum, brick earth etc. are also available in the district.

3. GENERAL PROFILE

a. Administrative set up:

SI No	Item	Unit	Magnitude
1	Location		Avg. Elevation 150.75 a MSL
	Longitude	Degree	83°49' to 84°45' East
	Latitude	Degree	20° 54' to 22°11' North
2	Geographical area	Sq.Km.	6624
3	Sub-division	Numbers	3
4	Tahsils	Numbers	9
5	C D Blocks	Numbers	9
6	Municipalities	Numbers	1
7	NACs	Numbers	2
8	Police Stations	Numbers	25
9	Gram Panchayats	Numbers	138
10	Villages	Numbers	1313
	Inhabited	Numbers	1229
	Uninhabited	Numbers	84
11	Assembly constituencies	Numbers	4

b. Area and Population:

The district has an area of 6,702 sq. km and 10,41,000 of population as per 2011 census. The district accounts for 4.28 percent of the states territory and shares 2.48 percent of the state's population. The density of population of the district is 157 per sq. km as against 2.70 person per sq.km of the state. It has 1313 villages (including 84 un-inhabited villages) covering 9 blocks, 9 Tahsils and 3 Subdivisions. As per 2011 census, the schedule caste population is 1,91,827 (18.4 %) and schedule tribe population 3,55,261 (34.1 %). The literacy percentage of the district covers 76.2 against 72.9 of the state.

c. Climate :

The climatic condition of the district is generally hot with high humidity during March to September and cold during October to February. The monsoon generally breaks during the month of 15th June. Average rainfall of the district in last four years was 1436.88 mm which is less than the normal rainfall (1499.5 mm).

d. Economy:

The economy of Sambalpur district is basically dependent on agriculture and secondly on forests. Forests play an important role in the economy in terms of contribution to revenue, Domestic Product as well as dependence of people for livelihood. In the past Sambalpur has been a great centre of diamond trade. Kendu leaf (*Diospyros Melanoxylon*) is also produced in Sambalpur. Tendu leaf is one of the most important non-wood forest products of Sambalpur and is also called as green gold of Odisha. Of late, industrialisation has come up in the district and the prime industries of thermal power, alumina and steel have been established. The place is famous for its globally renowned textile bounded patterns and fabrics locally known as Baandha. Sambalpur is famous for its Hand loom textile works, popularly known as Sambalpuri Textile. It has earned international fame for its unique pattern, design and texture. Apart from textiles, Sambalpur has a rich tribal heritage and fabulous forestlands.

e. Industry: Brief Industrial Profile of Sambalpur dist, Ministry of MSME,2019-20

No. of MSME units set up	Investment (In Rs. Lakhs)	Total Employment generated
13,958	4531.05	13,713
Large Industries- & MSE-16	17,07,107.92	7,121

f. Agriculture:

During the year 2021-22, the net area sown was 189 thousand hectares against 5414 thousand hectares of the state. The production of various crops was as below:

Name	Paddy	Wheat	Maize	Mung	Birli	Kulthi	Till	Groundnut	Mustard	Potatoes	Jute	Sugar cane	
Production in 000 MT	495.28	0.11	14.77	11.68	6.77	0.55	5.33	2.77	2.98	9.15	0.00	0.00	

During 2021-22, the total fertilizers used in the district was as produced below:

Type of fertilizer	Nitrogenous	Phosphatic	Pottasic	Total	Consumption Kg/per Ha
Quantity in MT	23,660	10,170	3,530	37,360	160.19

g. Transport & Communication:(2021-22)

Railway route length km	168
No of Rly stations and PH	18
Forest road	739.10
National Highway	268.86
State Highway	158.56
Major district road	138.17
Other dist road	1535.18
Rural road	2646.99
Rural Surface Road	2779.77
Rural Un-Surface Road	2298.98

h. Health:

The medical facilities are provided by different agencies like Govt., Private individuals and voluntary organizations in the district.

Medical college/DHq Hospitals	2 Nos
Sub divisional hospitals including mobile	3 Nos
Bed facilities	1419 Nos
Homoeopathic dispensaries	17 Nos
Ayurvedic dispensaries	15 Nos
CHC	11 Nos
PHC	32Nos
Health Subcenter	167 Nos
Mobile Health Unit	4 Nos.

i. Tourist places:

There are 6 nos. of tourist centres such as Hirakud dam, Huma temple, Samaleswari temple, Ghanteswari (Chipilima), Usakothi, and Deojharan identified by department

of Tourism and Culture, Orissa. During 2011, the numbers of Domestic tourists were 8,48,724 and foreign tourists were 348 who visited the tourist spots of the district.

j. Forest areas:

Category of forest	Area in sq km
Reserve Forest	2151.71
Unclassified Forest	1.18
Demarcated Protected Forest (DRF)	363.01
Other forest under Revenue Dept	1115.87
Total	3631.77

k. Education: in 2021-22.

Primary School	No. of Schools	706
	Enrolment (No)	29965
	Pupil Teacher Ratio	16.95
Upper Primary School	No. of Schools	529
	Enrolment (No)	64158
	Pupil Teacher Ratio	18.99
General College	Junior	56
	Degree	20
Secondary School	No. of Schools	251
	Enrolment (No)	69820
	Pupil Teacher Ratio	23.22
Literacy Rate, 2011	Male	84.4
	Female	67.9
	Total	76.2

L. Culture & Heritage:

The district experiences many beautiful festivals round the year. Sital Sasthi is observed in the month of June. This festival is the marriage ceremony of Lord Shiva and Parvati. Nuakhai is the most important social festival of the District. Bhaijuntia festival is celebrated on the Mahastami Day of Durga Puja. The Puajuntia festival is observed by mothers to invoke the grace of Lord Dutibahana for the long life and prosperity of their sons. Other religious festivals which are observed include Shiva Ratri, Dola Yatra, Durga Puja, Janmanstami, Diwali, Ganesh Puja and Saraswati Puja. Many eminent personalities have taken birth on the soil of the Sambalpur District. Bir Surendra Sai (freedom fighter), Gangadhar Meher (Poet of nature), Bhima Bhoi (celebrated religious and poet), Satya Narayan Bohidar (Pioneer of Sambalpuri language and grammar), Swapneswar Das (accomplished poet and eminent

journalist), Gokulanand Panda (Poet of extraordinary calibre), Sunil Mishra (renowned writer of humour and social satire), Braja Mohan Panda (Educationist of repute) and Laxmi Narayan Mishra (Eminent freedom fighter) are the famous personalities of this soil.

4.GEOLOGY

The Sambalpur district houses a wide variety of rock types of different ages. They can broadly be classified into Eastern Ghat Supergroup, Bonai Group, Gangpur Group, Chattisgarh Group, intrusive nepheline syenite, Gondwana Supergroup and Quaternary sediment. The rocks belonging to Eastern Ghat Supergroup are mostly quartz-garnet-graphite-sillimanite gneiss and quartzite of Khondalite Group and acid/intermediate charnockite, pyroxene granulite and leptynite of Charnockite Group. The khondalite suite of rocks are found mostly in the southern parts of the district, west of the central Gondwanic graben. The charnockite occurs in the form of massive plutonic massif confined to the central part of the district. The trend of gneissosity in the Eastern Ghat belt swerves from northeasterly in the western part to northwesterly in the eastern part of the district. Granite gneiss, migmatite and augen gneiss form the most conspicuous country rocks in the district, stretching from Panikhimal in the south to as far as Govindpur in the north. It is essentially biotite granite, with composition ranging from granodiorite to occasional alkali granite. Bonai Group is represented by meta-volcanics and sericite quartzite in stratigraphically lower horizons and shale, phyllite, mica schist, quartz sericite schist in the upper horizons. They are mostly found in the northeastern part of the district. Metabasic bodies are occasionally found as intrusives within the meta-sedimentaries of Bonai Group. A very thin strip of sedimentary rocks belonging to Gangpur Group are found near the northern tip of the district. The rock types are basal conglomerate, quartzite, phyllite and mica schist. An isolated outcrop of Chattisgarh Supergroup of rocks occurs west of Mahanadi River. It runs in a N-S direction. A cluster of nepheline syenite bodies are intruded into the Eastern Ghat Supergroup of rocks near Rairakhol which is responsible for the formation of gemstones in the region. The swarm of NW-SE trending dolerite dykes traverse the gneisses near Badarama Reserve Forest. Rocks of Gondwana Supergroup are hosted in the fault bounded basins occupying the central portion of the district with a NW-SE trend. They are represented by Talchir Formation, Barakar Formation and Mahadeva

Formation. Coal bearing horizons are yet to be reported from the Barakars, present in the district. Quaternary sediments are sporadically distributed district. They occur as soil/alluvium in the pediplains and flood plains. Cenozoic laterites occur as small cappings over the altered bedrocks.

STRATIGRAPHY: The geological succession in the district is as follows:

Age	Geological Unit		Litho unit
Pleistocene to recent	Quaternary		Soil/ Alluvium
Cenozoic			Laterite
Permian-Triassic	Gondwana Super Group	Mahadev Formation	Red sandstone/ clay
		Barakar Formation	Sandstone & shale
		Talchir Formation	Boulder bed, sandstone, needle shale
			Quartz Vein/ Dolerite dyke
Proterozoics (Undiff.)			Nepheline syenite
Middle- Upper proterozoic	Chhatishgarh Super Group	Chandarpur Formation	Sandstone , quartzite, clay, shale)
			Intrusive granite (equivalent to Gangpur granite)
			Phyllite, mica schist
Lower Proterozoics		Gangpur Group	Basal Conglomerate & quartzite
			Metabasic rocks (Intrusive)
		Upper Bonai Group	shale, mica-schist, phyllite sericite quartzite)
Archaean to Lower Proterozoic			Metabasics/metavolcanics
		Lower Bonai Group	Quartzite & Sericite quartzite
			Granite gneiss, Augen gneiss, migmaite
			Acid/intermediate Charnockite
		Charnockite group	Pyroxene granulite
Archaean	Eastern Ghat Super Group		Leptynite
		Khondalite Group	Quartz-garnet-sillimanite gneiss
			Quartzite

5.DRAINAGE AND IRRIGATION PATTERN.

The drainage of the district is mainly controlled by rivers like Mahanadi & Bheden and their tributaries like Bamphei Nadi, Sialjore Nadi, Malti Jore, Gadgadbahal jore etc. Major part of the district is irrigated through canal irrigation from Hirakud dam on river Mahanadi.

6. LAND USE PATTERN

SI No	Land-use	Area in '000Ha
1	Forest Area	363
2	Misc. trees & Grooves	4
3	Permanent Pasture	13
4	Culturable Waste	19
5	Land put to Non Agril Use	38
6	Barren & Unculturable Land	18
7	Current Fallow	5
8	Other Fallow	17
9	Net Area Sown	189
10	Mining	5
	Total Area	670

7.SURFACE WATER & GROUND WATER SCENARIO

The drainage systems i.e. rivers of the district gets filled with water during the monsoon and the gradually it decreases from the month of January to June of each year. In the summer season all rivers become almost dry excepting narrow flow of water within the basin.

The variation of ground water table in the district is as follows:

Depth of water level (mbgl)/ Period	April	August	November	January
Minimum	0.45	0.26	0.60	0.41
Maximum	11.8	7.42	9.25	10.0

8. RAINFALL & CLIMATIC CONDITION

The district is generally hot with high humidity during April and May and cold during December and January. The monsoon generally breaks during the month of July and continues till end of October. The temperature goes as high as up to 46°C in the summer and up to 7°-8° C during peak winter.

The rainfall statistics in mm of the district for last four years is given below:

Year/ Month	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	JAN	FEB	MARCH	TOTAL
20-21	92.3	42.71	321.11	261.22	668.39	110.32	124.84	3.62	0.0	6.43	6.02	10.28	1647.245
21-22	5.0	151.3	198.84	310.11	132.86	261.62	41.33	28.69	72.37	40.77	13.99	0.00	1257.486
22-23	0.39	76.71	126.08	327.26	543.52	173.89	87.86	0.00	0.00	0.00	0.00	37.28	1396.06
23-24	33.4	25.82	306.67	49.38	466.72	297.12	139.7	18.82	32.93	14.88	9.6	50.80	1446.74
24-25	14.7	71.3	157.2	320.4	331.6	261.5	16.87	-	-	-	-	-	1173.57
NORMAL	16.5	32.3	221	429.5	442.4	224.7	54.7	12.7	4.4	14.4	24.5	18.2	1499.5

9. DETAILS OF QUARRY LEASES FOR ROAD METALS:

Attached vide **Annexure I**

10. DETAILS OF ROYALTY COLLECTED FROM ROAD METAL QLS (in Rs)

2023-24	2024-25(up to October.24)
8,08,65,624	10,92,04,377

11. DETAILS OF PRODUCTION OF ROAD METALS:

Year wise Production of Road metal in cum

2023-24	2024-25(up to October'24)
6,54,948	3,82,053

12/MINERAL MAP OF THE DISTRICT

Attached as Plate No 4.

13. LIST OF LOI HOLDERS ALONG WITH VALIDITY

List enclosed as Annexure II

14.TOTAL MINERAL RESOURCE AVAILABLE IN THE DISTRICT

Total resources of road metal/building stone/black stone/white stone is **19186418** cum which may increase after detail investigation.

Details of the potential areas submitted as **Annexure III**.

15.QUALITY/GRADE OF MINERAL

Road metal/building metals of the district are very much suitable for various construction purposes after its crushing and screening. The in-situ rocks are fractured making these unsuitable for decorative purpose.

16.USE OF MINERAL

Road metal/building metals of the district are used mainly for various construction purposes like road making, concrete making, dams etc.

17.DEMAND & SUPPLY OF THE MINERAL

The tentative annual demand is to the tune of 3 to 4 million cum of road metal and is mainly met from different tahsils of the district and adjoining districts of Jharsuguda and Baragad.

18.QUARRY LEASES FOR ROAD METALS MARKED ON THE MAP OF THE DISTRICT.

Attached as Plate No 5.

19.DETAILS OF AREAS WHERE THERE IS A CLUSTER OF ROAD METAL QUARRY LEASES:

Cluster may be formed which can only be decided after auctioning of the potential areas.

20.DETAILS OF ECO-SENSITIVE AREA

An area of 11.475 Ha of the district within the jurisdiction of Sambalpur Forest Division comes under eco-sensitive zone.

21.IMPACT ON THE ENVIRONMENT (AIR, WATER, NOISE, SOIL FLORA & FAUNAL , LAND USE , AGRICULTURE, FOREST ETC.) DUE TO MINING

Activities attributed to Mining:-

Generally, the environment impact can be categorized as either primary or secondary. Primary Impacts are those, which are attributed directly by the project. Secondary impacts are those which are indirectly induced and typically include the associated investment and changed pattern of social and economic activities by the proposed action.

The impact has been ascertained for the project assuming that the pollution due to mining activity has been completely spelled out under the base line environmental status for the entire ROM which is proposed to be exploited from the mines.

Impact on Ambient Air Quality:

Mining operation are carried out by opencast manual, semi mechanized/ mechanized methods generating dust particles due to various activities likes, excavation, loading, handling of mineral and transportation. The air quality in the mining areas depends upon the nature and concentration of emissions and meteorological conditions.

The major air pollutants due to mining activities include:-

- Particulate matter (dust) of various sizes.
- Gases, such as sulphur dioxide, oxides of nitrogen, carbon monoxide etc from machine & vehicular exhaust.

Dust is the single air pollutant observed in the open cast mines. Diesel operating drilling machines, blasting and movement of machineries/ vehicles produce NOx , SO₂ and CO emissions, usually at low levels. Dust can be of significant nuance surrounding land user and potential health risk in some circumstances.

Impact on Water Quality:

Sometimes the mining operation leads to intersect the water table causing ground water depletion. Due to the interference with surface water sources like river, nallah etc drainage pattern of the area is altered.

Impact on Noise Level:

Noise pollution mainly due to operation of machineries and occasional plying of machineries. These actives will create noise pollution in the surrounding area.

Impact on Land:

The topography of the area will change certain changes due to mining activity which may cause some alteration to the entire eco system.

Impact on Flora & Fauna

The impact on biodiversity is difficult to quantify because of it's diverse and dynamic characteristics.

Mining activities generally result in the deforestation, land degradation, water, air and noise pollution which directly or indirectly affect the faunal and flora status of the project area.

However, occurrence and magnitude of these impacts are entirely dependent upon the project location, mode of operation and technology involved.

22.REMEDIAL MEASURES TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT:-

Air

Mitigation measures suggested for air pollution controls are to be based on the baseline ambient air quality of the project/cluster area and would include measures such as:

- Dust generation shall be reduced by using sharp teeth of shovels.
- Wet drilling shall be carried out to contain the dust particles.
- Controlled blasting techniques shall be adopted.
- Water spraying on haul roads, service roads and overburden dumps will help in reducing considerable dust pollution.
- Proper and regular maintenance of mining equipment have to be undertaken.
- Transport of materials in trucks are to be covered with tarpaulin.
- The mine pit water can be utilized for dust suppression in and around mine area.
- Information on wind direction and meteorology are to be considered during planning, so that pollutants, which cannot be fully suppressed by engineering techniques, will be prevented from reaching the nearby agricultural land, if any.
- Comprehensive greenbelt around overburden dumps and periphery of the mining projects/clusters has to be carried out to reduce to fugitive dust transmission from the project area in order to create clean & healthy environment.

Water

- Construction of garland drains and settling tanks to divert surface run –off of the mining area to the natural drainage.
- Construction of checks dams/ gully plugs at strategic places to arrest silt wash off from broken up area.
- Retaining walls with weep hole are to be constructed around the mine boundaries to arrest silt wash off.
- The mined out pits shall be converted in to the water reservoir at the end of mine life. This will help in recharging ground water table by acting as a water harvesting structure.

- Periodic analysis of mine pit water and ground water quality in nearby villages are to be undertaken.
- Domestic sewage from site office & urinals/latrines provided within ML/QL areas is to be discharged in septic tank followed by soak pits.

Noise

- Periodic maintenance of machineries, equipments shall be ensured to keep the noise generated within acceptable limit.
- Development of thick green belt around mining/cluster area, haul roads to reduce the noise.
- Provision of earplugs to workers exposed to high noise generating activities like blasting, excavation site etc. Workers and operators will be provided with ear muffs at work sites
- Conducting periodical medical checkup of all workers for any noise related health problems.
- Proper training to personnel to create awareness about adverse noise related effects.
- Periodic noise monitoring at locations within the mining area and nearby habitations to assess efficacy of adopted control measures.
- During blasting optimum spacing, burden and charging of holes will be made under the supervision of competent qualified mines foreman, mate etc.

Biological Environment

- Development of green belt/gap filling saplings in the safety barrier left around the quarry area/ cluster area.
- Carrying out thick greenbelt with local flora species predominantly with long canopy laves on the inactive mined out upper benches.
- Development of dense poly culture plantation using local floral species in the mining areas at conceptual stage if the mine is not continued much below the general ground level.
- Adoption of suitable air pollution control measures as suggested above.
- Transport of materials in trucks covered with tarpaulin.

23. RECLAMATION OF MINED OUT AREA (BEST PRACTICE ALREADY IMPLEMENTED IN THE DISTRICT, REQUIREMENT AS PER RULES AND REGULATION, PROPOSED RECLAMATION PLAN):-

As per statute all mines/quarries are to be properly reclaimed before final closure of the mine. Reclamation of exhausted mines are planned to be undertaken in below three possible means:

1. If, substantial amount of waste is there, the exhausted quarry can be fully or partly back-filled using the stored waste. The back-filled areas are to be brought under plantation of local species.
2. If the generation of waste is much less as in the case of minor mineral mining, the exhausted quarries can be reclaimed by
 - a. Plantation on the broken up surface if the depth of quarry is not much below the surrounding surface level.
 - b. Converted to water reservoir after stabilization of the slopes if the exhausted quarry continues much below the surrounding surface level. It is preferred to cordon the water reservoir either through wire fencing or retaining wall with plantation from the safety point of view.

Most of the quarry/mining lease areas are yet to be exhausted from ore point of view. Hence, reclamation would be taken up only after exhaustion of the ore/mineral content from these areas. The exhausted minor mineral quarries of the district have been converted to water reservoirs.

24. RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

The only risk involved related to mining of minor mineral excepting natural calamities is slope failure and probable accidents due to high and ill maintained bench walls. This can only be addressed through making of regular benches and undertaking mining in benching pattern.

The disaster management plan (DMP) is supposed to be a dynamic, changing, document focusing on continual improvement of emergency response planning and arrangements.

The disaster management plan is to be aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage

operations in this same order of priorities. For effective implementation of the disaster management plan, it should be widely circulated through rehearsal/induction conducted by the respective department from time to time .

General responsibilities of employees' during an emergency:

During an emergency, it becomes more enhanced and pronounced when an emergency warning is raised, the worker in charge, should adopt safe and emergency shut down and attend to any prescribed duty. If no such responsibility is assigned, the workers should adopt a safe course to assembly point and wait instructions. He should not resort to spread panic. On the other hand, he must assist emergency personnel towards objectives of DMP.

Co-ordination with local authorities:

The Mine Manger who is responsible for emergency will always keep a jeep ready at site. In case of any eventuality, the victim will be taken to the nearby hospitals after carrying out the first aid at the site. The Manger should collect and have adequate information of the nearby hospitals, fire station, police station, village panchayat heads, taxi stands, medical shops, district revenue authorities etc. and use them efficiently during the case of emergency.

25. DETAILS OF THE OCCUPATIONAL HEALTH ISSUES IN THE DISTRICT:

As per the guidelines of the Mine Rules 1995, occupational health safety has been stipulated by the ILO/WHO. The proponent's will take necessary precautions to fulfil the stipulations. Normal sanitary facilities have to be provided within the lease area. The management should carry out periodic health checkup of workers.

Occupational hazards involved in mines are related to dust pollution, noise pollution, blasting and injuries which may result from operating machineries & equipment and fall from high places. DGMS has given necessary guidelines for safety against these occupational hazards. The management has to strictly follow these guidelines.

All necessary first aid and medical facilities are to be provided to the workers. The mine shall be well equipped with personal protective equipment (PPE). Further, all the necessary ported equipment such as helmet, safety goggles, earplugs, ear muffs

etc are to be provided to mine workers as per Mines Act,1952, Mines Rules,1955, Metalliferous Mines Regulations,1961 and Coal Mines Regulations,1957 and as amended from time to time. All operators and mechanics are to be trained to handle fire fighting equipment.

Details of occupational health issues in the district since last 3 years.

TUBERCULOSIS DATA (NTEP)

Year	No of Tuberculosis patients
2019	1540
2020	1200
18-19	1335

There is no case of Silicosis found in Sambalpur within the time frame mentioned above.

26. PLANTATION OF GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT

As most of the minor mineral mines/quarries of the district are yet to be exhausted of their mineral content no sort of reclamation measures including plantation has been undertaken excluding gap plantation of local species in the peripheral safety zones of the quarries/ clusters and in some of the haul roads.

27. ANY OTHER INFORMATION

Nil

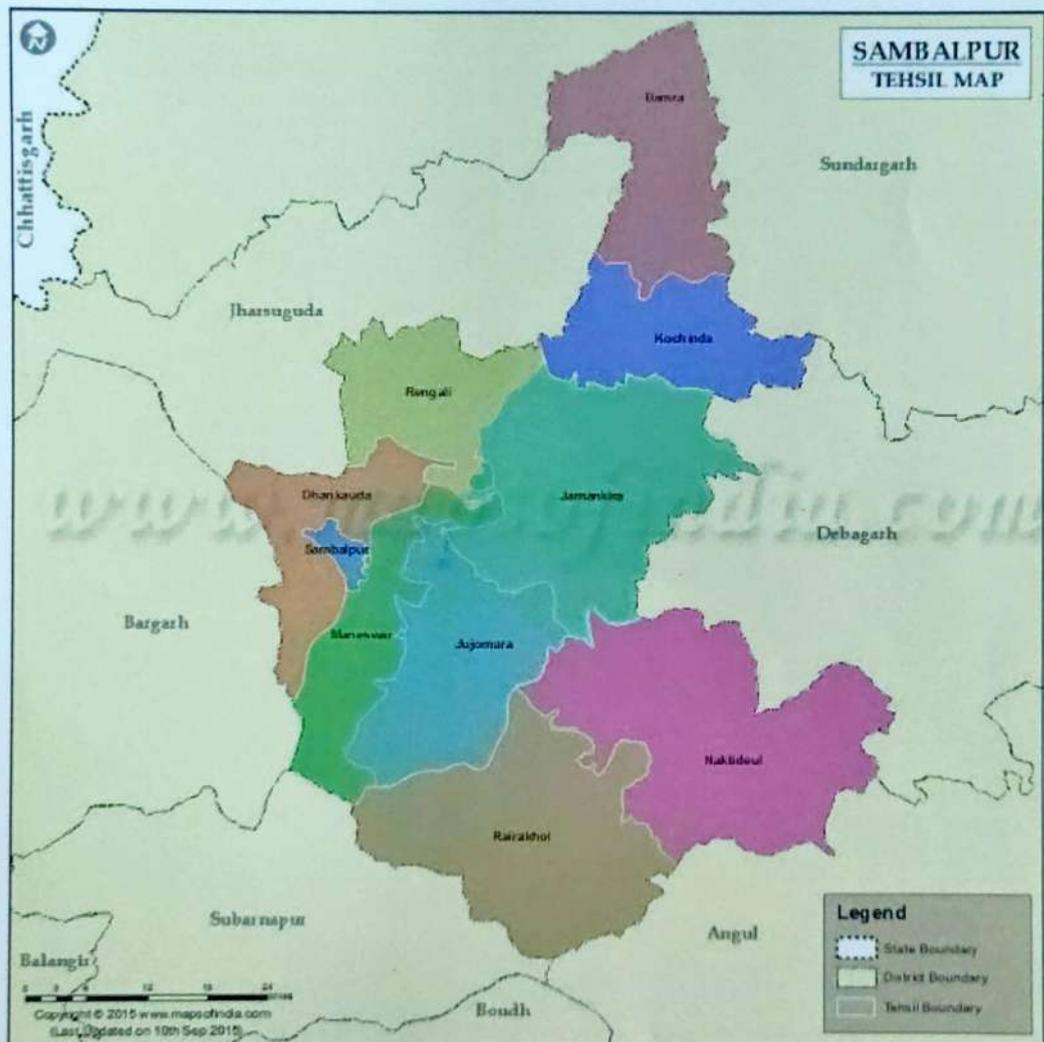
INDEX MAP



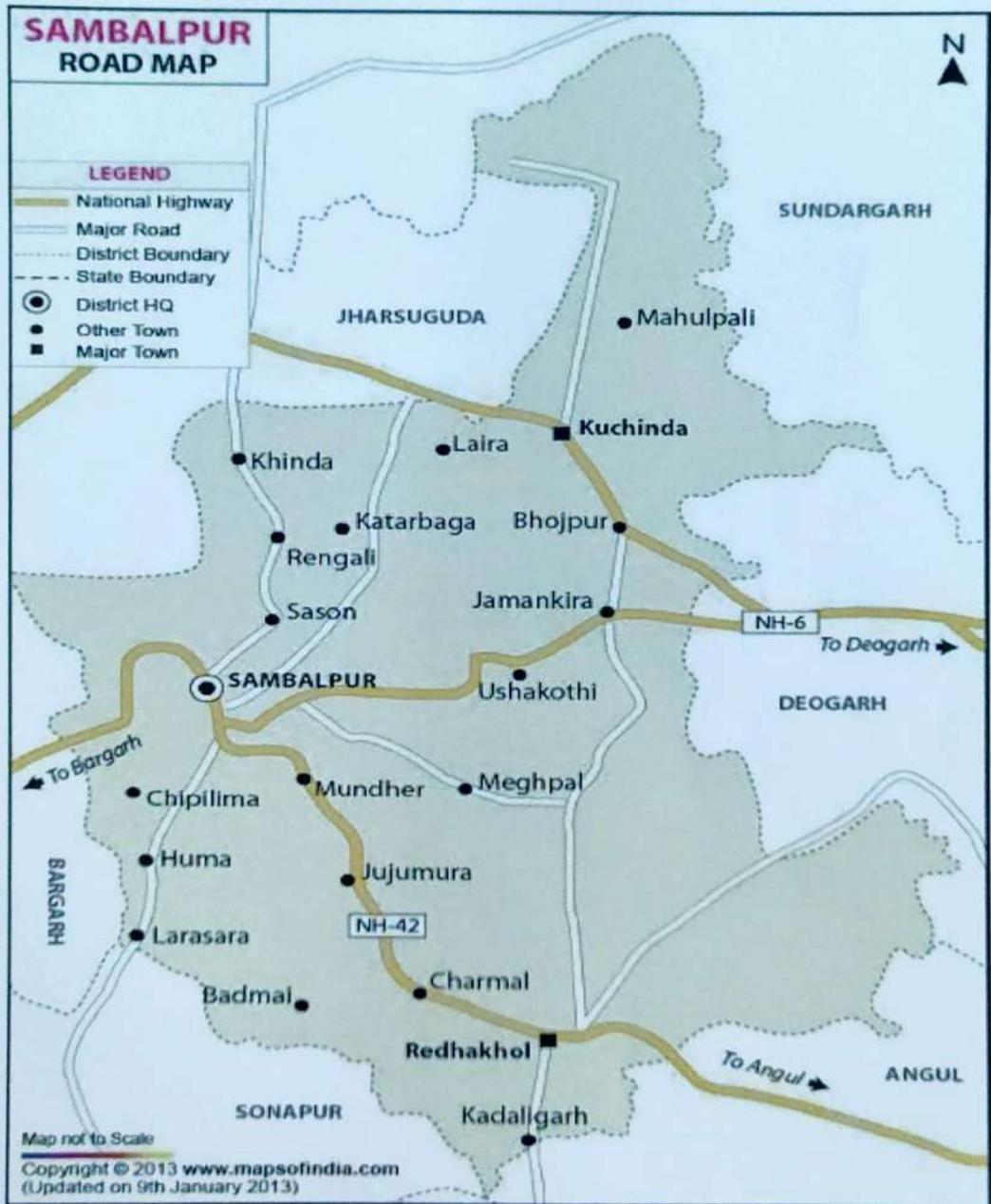
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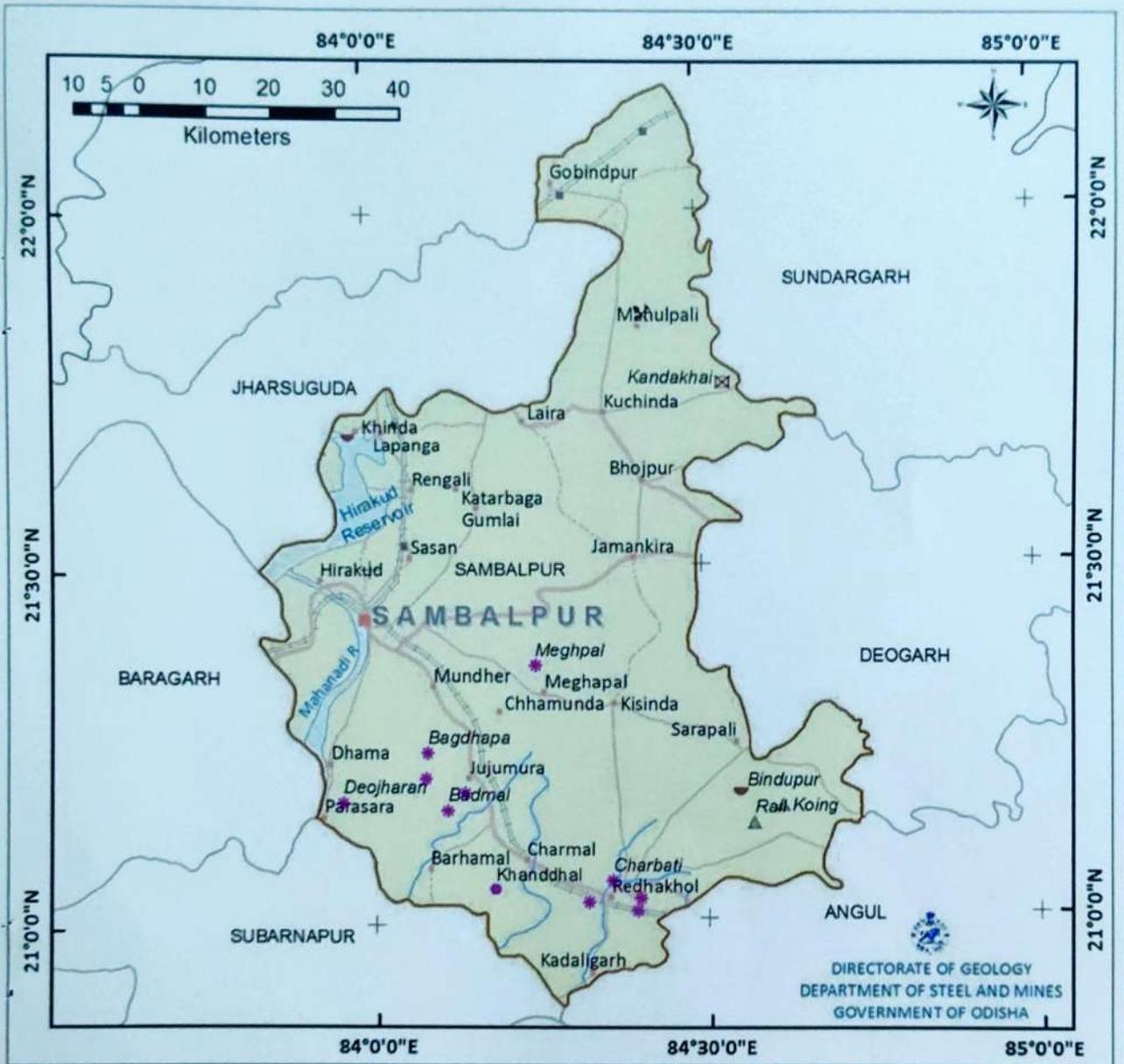
MAP SHOWING THE TAHASILS OF SAMBALPUR DISTRICT



MAP SHOWING THE MAJOR ROADS OF SAMBALPUR DISTRICT



MINERAL MAP OF SAMBALPUR DISTRICT



DIRECTORATE OF GEOLOGY
DEPARTMENT OF STEEL AND MINES
GOVERNMENT OF ODISHA

Legend

- | | | | |
|---|-------------------|---|-----------------|
|  | District Boundary |  | Railway Line |
|  | National Highway |  | Railway Station |
|  | Minor Road |  | River |
|  | Major Road |  | Waterbody |

Mineral Occurrence

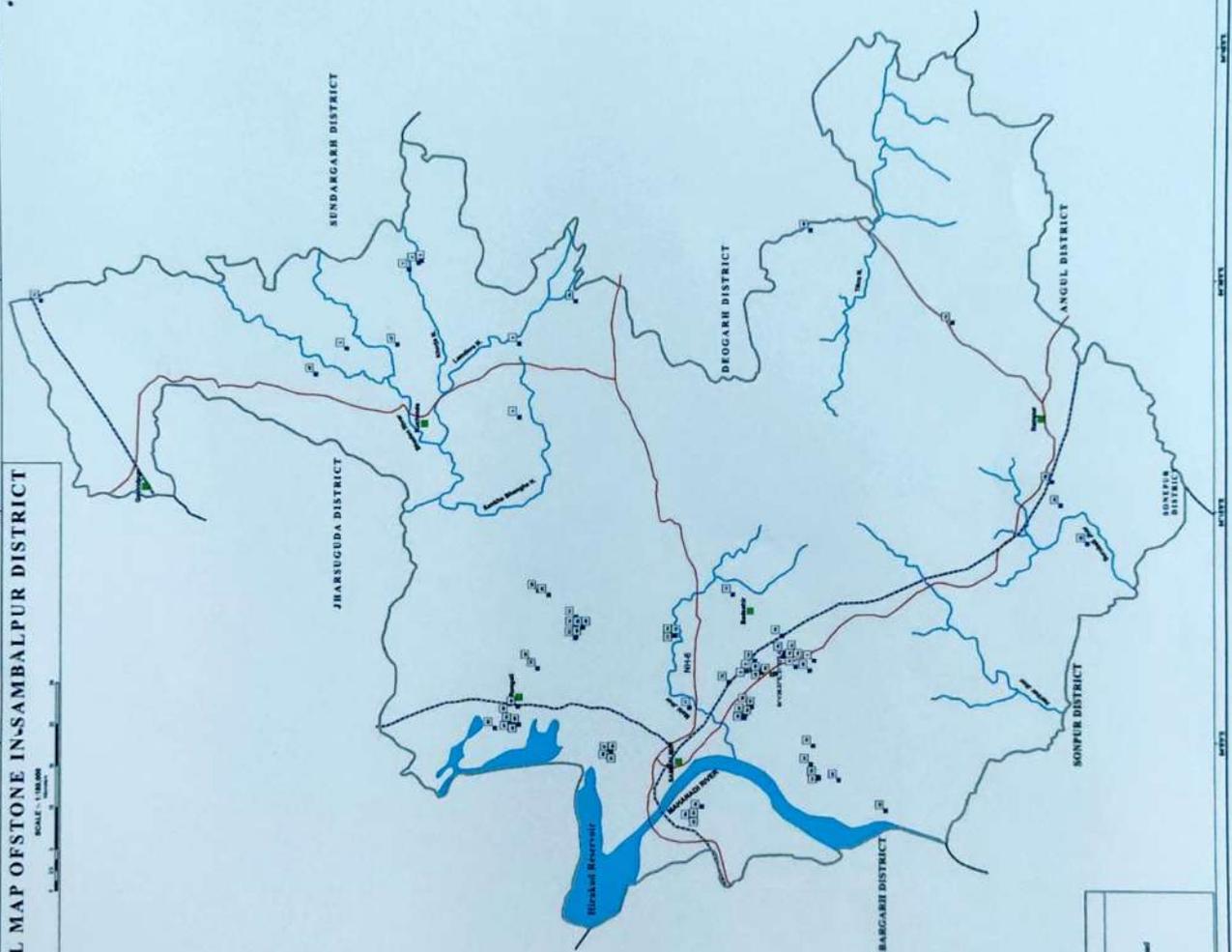
- | | |
|--|-----------------|
|  | Coal |
|  | Dimension Stone |
|  | Fireclay |
|  | Gemstone |

LEASE/POTENTIAL MAP OF STONE IN SAMBALPUR DISTRICT

PLATE NO. 4



SCALE - 1:100,000



DETAILS OF STONE SOURCE

Sl. No.	Name of the Quarry	Block	Estimated Annual Production (CUM)
1	AMBIKAPUR STONE QUARRY	Deogarh	100
2	AMBIKAPUR STONE QUARRY	Deogarh	100
3	AMBIKAPUR STONE QUARRY	Deogarh	100
4	AMBIKAPUR STONE QUARRY	Deogarh	100
5	AMBIKAPUR STONE QUARRY	Deogarh	100
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98	AMBIKAPUR STONE QUARRY	Deogarh	100
99	AMBIKAPUR STONE QUARRY	Deogarh	100
100	AMBIKAPUR STONE QUARRY	Deogarh	100

Legend

- Block Headquarters
- District Boundary
- NH Road / SH Road/Major District Road
- Railway Line
- River/Lake/Waterbody
- Stone

Sl No	Name of the source	Name of the Tahsil	Status	Type of Mineral	Mouds	Khata No.	Plot No.	Total Area in Hectare	Total Area in Acres	Kisam	Name of Lessee	Address & Contact No of Lessee	Date of Registration of Lease Deed	No. of Clearances	Name of Successful Bidder	Address & Contact No of Successful Bidder	Latitude	Longitude	Minable Reserve	Cluster
1	PANDIA DHIPA STONE QUARRY	Kuchinda	Operational	STONE	PANDIA DHIPA	61	146	4.456	11.01	DUNGUR I	JAMAHA RIAL AGRAWA	9438335978	15.09.20 21	2032/SEI AA 05/08/2021	JAMAHA RIAL AGRAWA	9438335978	21°45'37.778817"N	84°30'46.206447"E	188149	
2	JAMANKI RA STONE QUARRY	Kuchinda	Operational	STONE	JAMANKI RA	183	2119, 2130	3.035	7.50	DUNGUR I	PATNAK AR SAHOO	9836617700	20.05.20 22	13- MIRAB/09/2021	PATNAK AR SAHOO	98356317700	21°44'49.77323"N	84°31'13.56896"E	999950	
3	LAIGURA STONE QUARRY	Kuchinda	Operational	STONE	LAIGURA	121/70, 43, 121/69, 121/67	692, 692/3087, 692/3236, 692/3237	1.95	4.81	GODA II	Raj Kishor Deo	7008476393	18.10.20 23	EC23800 887, 02/05/2021	Raj Kishor Deo	7008476393	21°49'42.92855"N	84°23'37.91501"E	176960	
4	BADBALI MAL STONE QUARRY	Jamanki	Operational	STONE	BADBALI MAL	80	20/1234(P), 20/1235(P)	1.994	4.78	PATTA	RAJESH KUMAR NAYAK	9437065753	15.11.20 21	2046/SEI AA 05/06/2021	RAJESH KUMAR NAYAK	9437065753	21°38'28.61424"N	84°21'8.33122"E	89879	
5	ORE STONE QUARRY	Jamanki	Operational	STONE	KULIARI ORE	81	5, 220	3.338	8.25	DUNGUR I	LALIT KUMAR BEHERA	9439212060	12.11.20 21	2632/SEI AA 04/09/2021	LALIT KUMAR BEHERA	9439212060	21°45'1.39730"N	84°31'11.56269"E	357564	Cluster-1
6	ORE STONE QUARRY	Jamanki	Operational	STONE	KULIARI ORE	81	253	4.727	11.68	DUNGUR I	LALIT KUMAR BEHERA	9439212060	16.09.20 22	251933/238- MIRAB/03/2022	LALIT KUMAR BEHERA	9439212060	21°38'28.76670"N	84°25'56.53380"E	564371	Cluster-1
7	BARLOI STONE QUARRY	Jujomura	Operational	STONE	BARLOI	132	523, 501, 475	0.551	1.31	PATHAR CHATAN	M/S JAGURU STONE WORKS PARTNER RADHIKA AGRAWA	9437057063	07.07.20 22	EC22800 10R119 881, 13/04/2022	M/S JAGURU STONE WORKS PARTNER RADHIKA AGRAWA	9437057063	21°19'22.35517"N	84°5'2.72811"E	11506.4	
8	DUDKAK UD STONE QUARRY	Jujomura	Operational	STONE	DUDKAK UD	24	422	1.692	4.18	PATTA	TAHER HUSSAIN	9583443652	19.05.20 22	4443/SEI AA 01/02/2022	TAHER HUSSAIN	9583443652	21°23'45.94696"N	84°4'40.63219"E	110050	Cluster-9
9	DUDKAK UD STONE QUARRY	Jujomura	Operational	STONE	DUDKAK UD	25	458, 460, 471	2.290	5.66	PATHAR CHATAN	TAHER HUSSAIN	9583443652	11.10.20 22	EC22800 10R160 793, 07/09/2022	TAHER HUSSAIN	9583443652	21°23'24.18148"N	84°4'43.61681"E	106508	Cluster-9
10	HATIBAR STONE QUARRY	Jujomura	Operational	STONE	HATIBAR	169	414(P), 464(P)	3.808	9.41	PATHAR CHATAN	SURESH AGRAWA	7894445123	28.02.20 23	EC23800 10R182 402, 17/01/2023	SURESH AGRAWA	7894445123	21°20'47.22191"N	84°3'48.10811"E		Cluster-9
11	HATIBAR STONE QUARRY	Jujomura	Operational	STONE	HATIBAR	169	703, 109/2478, 109	2.116	5.23	PATHAR CHATAN	WORKING UNDER PERMIT						21°20'33.08"N	84°4'56.30"E	207118	Cluster-11
12	KUSAMP URI STONE QUARRY	Jujomura	Operational	STONE	KUSAMP URI	483	835, 845, 847, 837, 844	1.428	3.53	PATHAR CHATAN, PATTA	GOPAL NARNDU	7608981171	07.12.20 21	31977/5 EAA, 07/10/2021	GOPAL NARNDU	7608981171	21°28'21.23900"N	84°5'58.36191"E	13150	

13	BHANDA RIMAL STONE QUARRY	Jujomura	Operatio	STONE	BHANDA RIMALA	263/400	2622, 2623, 2648, 2649, 2658, 2659, 2666	1.254	3.10	MASA	SUDIP NATH	9437257047	06.09.2022	EC22800 LOR111 537, 07/06/2022	SUDIP NATH	9437257047	21°24'37.86890"N	84°59'38.09949"E	47124
14	DHUDHA LMUND A STONE QUARRY-2	Jujomura	Operatio	STONE	DHUDHA LMUND A	140	1211	1.777	4.39	PATHAR CHATAN	DHIRAJ AGRAWA	8847872229	18.05.2022	EC22800 LOR158 1392, 13/04/2022	DHIRAJ AGRAWA	8847872229	21°21'21.56607"N	84°53'38.92308"E	44764
15	KHAIIRMA L STONE QUARRY-2	Jujomura	Operatio	STONE	KHAIIRAMA	94	49, 53, 57	0.927	2.29	PATHAR CHATAN	SUDIP NATH	9437257047			SUDIP NATH	9437257047	21°21'27.73165"N	84°56'57.88196"E	10880
16	DHUDHAL STONE QUARRY-3	Jujomura	Operatio	STONE	DHUDHAL	140	12.50, 12.54	1.032	2.55	PATHAR CHATAN	DHIRAJ AGRAWA	8847872229			DHIRAJ AGRAWA	8847872229	21°21'17.74816"N	84°55'53.27721"E	63294.5
17	KUDOPA LI STONE QUARRY	Manesar	Operatio	STONE	KUDOPA LI	160	11.28, 75.109, 122.123, 21	2.515	5.72	PATHAR CHATAN	MANOJ KUMAR	9437059281	11.05.2022	4280/SE AA, 28/03/2022	MANOJ KUMAR	9437059281	21°27'28.01610"N	84°2'17.46105"E	33662
18	LABDERA STONE QUARRY	Manesar	Operatio	STONE	LABDERA	226	1195/1436	4.452	11.00	PATTA	BKD INFRA STRUCTURE PVT. LTD.	9937965482	07.09.2020	4220/SE AA, 15/03/2022	BKD INFRA STRUCTURE PVT. LTD.	9937965482	21°19'25.90237"N	83°59'48.98171"E	3542.76
19	BALALA NGA B STONE QUARRY	Manesar	Operatio	STONE	BALALA NGA	69	1154, 1192, 1199, 668, 1119	3.719	9.19	DUNGUR I/PATHAR CHATAN	PANKAJ KUMAR	9437052085	27.10.2020	742-min B2/06-2022, 29/07/2022	PANKAJ KUMAR	9437052085	21°23'24.35597"N	84°2'20.36604"E	70338
20	BARADU NGRI STONE QUARRY	Rengali	Operatio	STONE	BARADU NGRI	299	4, 902, 903	1.537	3.80	PATTA	NAVIN MISHRA S/O NAR SINGH PRASAD MISHRA	9437061837	05.01.2022	EC22800 LOR167 382, 04/01/2022	NAVIN MISHRA S/O NAR SINGH PRASAD MISHRA	9437061837	21°34'20.09780"N	84°7'29.32185"E	89348
21	BABUCH AKULI STONE QUARRY	Rengali	Operatio	STONE	BABUCH AKULI	172		4.071	10.06	BAHAL SADIHAR AN	PRADEEP KUMAR	9437056107	27.09.2023	EC23800 LOR140 173, 25/09/2023	PRADEEP KUMAR	9437056107	21°38'59.81901"N	84°1'23.20450"E	332978
22	JHANKAR PALI STONE QUARRY	Rengali	Operatio	STONE	JHANKAR PALI	393	4922	4.978	12.30	PATTA	M/S.KRI SHNA STONES WORKS THROUGH PARTNER SUNIL KU AGRAWA	9437055360	24.09.2021	2735/SE AA, 22/09/2021	M/S.KRI SHNA STONES WORKS THROUGH PARTNER SUNIL KU AGRAWA	9437055360	21°37'13.63662"N	84°9'52.76472"E	573300
23	TABADA BAHAL-4 STONE QUARRY	Rengali	Operatio	STONE	TABADA BAHAL	348/226, 348/221, 348/230, 348/225, 348/226, 348/221, 348/225	758, 760, 760/1364, 761, 762, 763, 763/1364, 763/1184, 765	7.687	18.99	CHAKA	M/S. BALAJI ENGINCO NS PVT LTD THROUGH DIRECTO R, SUSHIL KU AGRAWA	9937090719	27.07.2022	EC22800 LOR128 020, 02/06/2022	M/S. BALAJI ENGINCO NS PVT LTD THROUGH DIRECTO R, SUSHIL KU AGRAWA	9937090719	21°34'53.41158"N	84°7'10.38806"E	932796

24	TABADA BAHAL-5 STONE QUARRY	Rengali	Operatio nal	STONE	TABADA BAHAL	348/231, 348/231, 348/225, 348/226, 348/226, 348/223, 348/229	747, 748, 749, 753, 756, 754, 755	5.307	13.11	CHAKA H	9937090719	17.06.20	22	EC22800 LOR137 712, 19/05/2 022	M/S, BALAJI ENGICO NS PVT LTD THROUGH DIRECTO R, SUSHIL KU AGRAWA	9937090719	21°35'7.63502"N	84°12'261.48"E	475250	Cluster-2
25	SALAD STONE QUARRY	Rengali	Operatio nal	STONE	SALAD	126/260, 126/240, 126/240, 126/243, 126/243, 126/305, 126/305, 126/309, 126/309, 126/309	425/2351, 425/2028, 425/2302, 425/2368, 1951/2401, 425/2468, 1951/2469, 1954/2372, 1954, 425/2373	2.550	6.30	SARAKH ANAMA L SA, PAIT A	9861418394	12.03.20	21	667/SEA A, 26/02/2 021	PANKAJ KUMAR AGRAWA L S/O GAJ ANAN AGRAWA	9861418394	21°39'3.72186"N	84°11'7.47893"E	163780	Cluster-4
26	TABADA BAHAL-2 STONE QUARRY	Rengali	Operatio nal	STONE	TABADA BAHAL	348/300, 348/300, 348/242	854, 856, 857	1.801	4.45	CHAKA H	9937437465	10.06.20	22	EC22800 LOR178 966, EC22800 LOR113 073, 02/06/2 022	M/S,SU MI TRADING CO. THROUGH MANAGI NG PARTNER BRAJA KISHOR DASH	9937437465	21°34'46.75341"N	84°7'28.79488"E	36120	Cluster-2
27	TABADA BAHAL-1 STONE QUARRY	Rengali	Operatio nal	STONE	TABADA BAHAL	348/196, 348/195, 348/195, 348/300, 55, 348/241	774,780,781/1349,784, 782, 738	4.386	10.84	CHAKA H	9937437465	10.06.20	22	EC22800 LOR154 455, TRADING CO. THROUGH LOR19: 353, 02/06/2 022	M/S,SU MI TRADING CO. THROUGH MANAGI NG PARTNER BRAJA KISHOR DASH	9937437465	21°34'40.19497"N	84°7'18.87736"E	32082	Cluster-2
28	RENGALI STONE QUARRY	Rengali	Operatio nal	STONE	Rengali	502	66	2.003	4.95	PATITA H	9937102550	11.12.20	20	3884/SEI AA 04/12/2 020	M/S, BALAJI ENGICO NS PVT LTD THROUGH DIRECTO R, SUSHIL KU AGRAWA	9937102550	21°39'6.59674"N	84°7'3.60054"E	17723	Cluster-2
29	BRAHMA NIPALI STONE QUARRY	Rengali	Operatio nal	STONE	Brahmani	416	2530	0.777	1.92	PATITA H	9437052453			2804/SEI AA, 22/09/2 021	M/D, ZIVALUD IN, S/O M/D SAMSUD DIN	9437052453	21°37'41.43263"N	84°5'21.88582"E	42124	Cluster-4
30	BARUCHA KULI GLLSTER 1,2,3 STONE QUARRY	Rengali	Operatio nal	STONE	BARUCHA	173	1555(P)	0.89	2.20	PATHAR CHATAN SHARMA	7008504778			544/08/ NIN/422	NIRMAL SHARMA S/O SUB ASH SHARMA	7008504778	21°39'14.43284"N	84°1'19.16096"E	50436	Cluster-4
31	SALESING H STONE QUARRY	Maneswar	Operatio nal	STONE	SALESING	219	816/1, 826/2	4.998	12.35	DUNGUR I	9437254515	09.07.20	24	544/08/ NIN/422 754/202 3, 12/09/2 023	KANCHI NBALA DAS	9437254515	21°19'4.09728"N	83°57'42.94842"E	62762	Cluster-11

32	PATPALI STONE QUARRY	Operation	STONE	PATPALI	35		83	5.059	12.50	DUNGUR I	RAJ KISHORE AGRAWA L	9937610509	21°14'47.18570"N	87°53'13.11561"E	901530
33	SALESING H STONE QUARRY (B)	Operation	STONE	SALESING	229		826(P)	9.106	22.50	DUNGUR I	SUNIL TRADING CO.	9937965482	21°19'7.11011"N	87°57'48.48737"E	890250
34	SALESING H STONE QUARRY (A)	Operation	STONE	SALESING	229		519, 605, 634	5.245	12.96	PAHAD, P ATHAR CHATAN	NIHAR DIAS	9778071555	21°19'35.05641"N	87°58'36.43158"E	314888
35	BALALAN G.A.D STONE QUARRY	Operation	STONE	BALALAN	69		414(P)	4.816	11.90	PATHAR MOHAP CHATAN	SUBOM MOHAP ATRA	9437054757	21°23'56.06800"N	84°1'44.15057"E	548726
36	BALALAN G.A.C STONE QUARRY	Operation	STONE	BALALAN	69		808, 817, 845(P)	4.978	12.30	PATHAR MOHAP CHATAN	SUNIL KUMAR MOHAP ATRA	9437054757	21°23'55.46340"N	84°1'37.04567"E	110946
37	BALALAN G.A STONE QUARRY	Operation	STONE	BALALAN	69		449, 450(P), 803, 805	2.36	5.82	DUNGUR I, PATHAR CHATAN	ABANIKA NT PANIGRA HI	9437050642	21°23'49.82598"N	84°1'51.87691"E	105876
38	RAGHUNATH STONE QUARRY	Operation	STONE	RAGHUNATHPALI	50		25(P)	2.428	6.00	PATTA	PK GANESH	8895628308	21°26'40.90985"N	83°55'52.47487"E	893115
39	TALAB STONE QUARRY NO 2A	Operation	STONE	TALAB	751		1443(P)	4.961	12.25	PATTA	Neeraj Agrwal	9937204370	21°31'33.43670"N	83°59'31.90653"E	480739
40	HELEI STONE QUARRY-3	Operation	STONE	HELEI	80/78		1206(P), 1285(P), 1283, 1286, 1287, 1187, 1207(P)	1.581	3.91	MASA, ASA	Neeraj Agrwal	9937204370	21°3'17.15172"N	84°15'23.57939"E	744145
41	TANDARI STONE QUARRY	Operation	STONE	TANDARI	160		270, 274(P), 276(P)	3.165	7.82	PARBAT	RAJESH PRAADHA N	7655852363	21°10'19.55926"N	84°27'19.11999"E	289340
42	MAHULP ALI STONE QUARRY	Operation	STONE	MAHULP ALI	159		177, 671	4.989	12.33	DUNGUR I, PATHAR CHATAN	RAJ KUMAR AGASTY	9556383225	21°51'42.72906"N	84°23'58.02303"E	1504411
43	BABUPALI STONE QUARRY	Non-operation	STONE	Babupali	45		41	3.27	8.08	PATHAR CHATAN	MURARI LAL AGRAWA	8280058888	21°23'12.33"N	84°4'8.57"E	117720
44	BABUPALI STONE QUARRY	Non-operation	STONE	Babupali	214		216	3.12	8.45	PATTA	MURARI LAL AGRAWA	8280058888	21°22'36.24"N	84°4'45.29"E	112320
45	BABUPALI STONE QUARRY	Non-operation	STONE	Babupali	45		234	0.18	0.45	PATHAR CHATAN	MURARI LAL AGRAWA	8280058888	21°22'43.81"N	84°4'43.76"E	6480
46	BABUPALI STONE QUARRY	Non-operation	STONE	Babupali	44		199	1.48	3.65	PATTA	MURARI LAL AGRAWA	8280058888	21°22'44.99"N	84°4'34.35"E	132300
47	DANSANA ADHI STONE QUARRY	Non-operation	STONE	DANSANA	57		160, 161	3.893	9.62	PATTA	PATTA		21°46'23.08430"N	84°23'53.30778"E	786126
48	HKAPALI STONE QUARRY	Non-operation	STONE	HKAPALI	38		104(P)	5.059	12.50	DUNGUR I			21°19'32.38322"N	84°33'19.93737"E	387308

49	BARLOI STONE QUARRY-4	Jajmura	Non-operation	STONE	BARLOI	119,125/324,131,132	50,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,80	4.25	10.49	ATA SADHAR ANA, BAHAL, SADHAR AN, BERNIA SADHAR ANA, MALA SADHAR ANA, PATHAR CHATAN, PATIT	21°19'38.73055"N	84°4'41.88873"E	349966
50	MUNDHER STONE QUARRY-4	Jajmura	Non-operation	STONE	MUNDHER	117	872	1.481	3.66	PATHAR CHATAN	21°21'51.42116"N	84°4'31.07540"E	48715
51	TALAB STONE QUARRY NO-3	Sambalpur	Non-operation	STONE	TALAB	751	1437	0.789	1.95	PATHAR BANI	21°32'33.74024"N	85°59'24.57950"E	26533.5
52	TALAB STONE QUARRY NO-1	Sambalpur	Non-operation	STONE	TALAB	751	1443(P)	2.21	5.46	PARBAT	21°32'39.44898"N	85°59'34.18959"E	207212
53	SKIRIDI STONE QUARRY NO-4	Sambalpur	Non-operation	STONE	SKIRIDI	160	1784(P), 1779, 1781(P)	4.856	12.00	PATITA	21°27'19.36144"N	85°55'17.68780"E	698741
54	SKIRIDI STONE QUARRY NO-3	Sambalpur	Non-operation	STONE	SKIRIDI	160	1781(P)	1.31	3.25	PATITA	21°27'21.59728"N	85°55'4.29517"E	467273
55	SKIRIDI STONE QUARRY NO-3	Sambalpur	Non-operation	STONE	SKIRIDI	160	1737, 1764(P)	0.99	2.45	PATHAR CHATAN	21°27'18.98540"N	85°54'58.68753"E	544546
56	TALAB STONE QUARRY NO-6	Sambalpur	Non-operation	STONE	TALAB	751	1443/P	5.102	12.61	PATITA	21°32'33.78668"N	85°59'24.52280"E	182672
57	TALAB STONE QUARRY NO-1(A)	Sambalpur	Non-operation	STONE	TALAB	751	1443/P	1.8	4.46	PATITA	21°32'33.73462"N	85°59'22.52481"E	67680
58	Balalinga Stone Quarry-1	Maneswar	New	STONE	Balalinga	50/87	1062,1063,1065,1066,1069,1070,1158,1159,1160,1161,1166,1167,1168	2.22	5.48	PATHARA BANI	21°23'36.39753"N	84°23'33.46856"E	79920
59	Jharbhui n Stone Quarry-A	Rairakhol	New	STONE	Jharbhui n	4,13/4,17	20(P),21(P),22(P),28(P),29,30,81,82,85		7.38	PATHAR CHATAN	21°3'52.60510"N	84°16'57.09760"E	53040
60	Bharatp ur Stone Quarry	Rairakhol	New	STONE	Bharatp ur	94/108,98,97	1122(P),1215,1210(P),1211,1212,1214,1215,1216,1217(P),1218	2.26	5.93	PATITA	21°1'34.39612"N	84°12'55.00910"E	81360
61	Hatibari Stone Quarry-A	Jajmura	New	STONE	Hatibari	166	1299	2.51	6.19	PATHAR CHATAN	21°20'21.90280"N	84°5'38.15544"E	90360
62	Said Stone Quarry-C	Rengali	New	STONE	Said	126/285,126/238.1,26/358,126/305	2026/2359,425/2357,425/2358,2026/2492,2026/2504,2026/2501,2026/2388	4.4	10.88	PATHAR CHATAN	21°38'33.68083"N	84°1'21.98555"E	158400
63	Talabaha Granite Stone Quarry-C	Rengali	New	STONE	Talabaha	348/348	716/1251	0.81	7	CHAKA	21°34'47.09322"N	84°6'52.23823"E	29160
64	Talabaha Granite Stone Quarry-D	Rengali	New	STONE	Talabaha	348/347	716/1252	0.81	7	CHAKA	21°34'49.98133"N	84°6'48.70913"E	170108

65	Gumbi Stone Quarry	Rengali	New	STONE	Gumbi	125/180, 125/181, 125/171	1377/1553, 1377/1549, 1377/1545	2.43	6	PAITTA							21°36'34.245097"N	84°9'36.63358"E	87980	Cluster-1
66	Salad Stone Quarry-A	Rengali	New	STONE	Salad	126/495	444/254, 395/255, 436/256	1.85	4.57	PATHAR CHATAN							21°38'56.20283"N	84°1'8.50118"E	66600	Cluster-3
67	Baburhak uli Stone Quarry-B	Rengali	New	STONE	Baburhak uli	165/225, 165/233	1574/2079, 1573/2078, 1574/1573, 1572, 1571/2305, 1570/2304, 1576/2496, 1576/2330	1.42	3.52	BASA							21°39'31.7099"N	84°1'19.20432"E	51120	Cluster-4
68	Salad Stone Quarry-D	Rengali	New	STONE	Salad	126/302, 126/293	325, 323, 324/1960	0.74	1.82	PATHAR CHATAN							21°38'33.42337"N	84°1'1.53114"E	26640	Cluster-3
69	Baburhak uli Stone Quarry-A	Rengali	New	STONE	Baburhak uli	165/425, 165/424, 165/422, 165/429	1206, 1202/2227, 1818/2203, 1209	1.93	4.78	BASA							21°40'5.11882"N	84°0'37.15037"E	69480	Cluster-4
70	Tabadaba hal Stone Quarry-G	Rengali	New	STONE	Tabadaba hal	348/308	853		1.75	CHAKA							21°34'46.56293"N	84°7'28.85617"E	25560	
71	Mundalis ha Stone Quarry	Barma	New	STONE	Mundalis ha		1327(P)	2.408	5.95	PaITTA							22°9'32.16550"N	84°28'42.15472"E	218000	
72	Sutunga Stone Quarry-A	Maneswar	New	STONE	Sutunga	205/210	825		4.2	PAITTA							21°24'54.36"N	84°3'57.30"E	171000	
73	Kushanpu ri Stone Quarry-A	Jujumura	New	STONE	KUSANPU RI		808,809,811,812,813,816,831,833,83, 2,879,838,871,814,830,843,841,842, 477/626,176,14,482,4 92,485	2.42	5.98	PATHAR CHATAN							21°28'25.407"N	84°5'59.6"E	208000	Cluster-6
74	Kushanpu ri Stone Quarry-B	Jujumura	New	STONE	KUSANPU RI		81,84,08,39,846	0.78	1.97	PATHAR CHATAN							21°28'15.407"N	84°7'0.99"E	20480	Cluster-6
75	Nua Rampela Stone Quarry	Rengali	New	STONE	Nua Rampela	357/346,67,59,361,10 3,254, 485,14,482	2466,2467,2591,2590,2588,2589, 7/419	1.27	3.14	PAITTA							21°37'16.97"N	84°4'49.07"E	22000	
76	Salad Stone Quarry New	Rengali	New	STONE	SALAD	126/439 308,099,112,782,73, 348/351,348/361,348 7/34,348/360,348/35 5,348/350,348/353,3 48/315,348/313	425/416,425/2437,424,425/2196,425 7/419	1.76	4.34	PATHAR CHATAN							21°38'54.29"N	84°1'14.976"E	171000	Cluster-4
77	Tabadaba hal Stone Quarry-E	Rengali	New	STONE	TABADAB AHAL		781775788805868, 789,790, 800,801,803,804,806,802,833 48/315,348/313	11.24	27.77	CHAKA							21°34'46.863"N	84°7'2.58"E	68400	Cluster-2
78	Tabadaba hal Stone Quarry-F	Rengali	New	STONE	TABADAB AHAL	102	859	2.33	5.77	CHAKA							21°34'46.86293"N	84°28'42.15472"E	213000	Cluster-2
79	Munder Stone Quarry	Jujumura	New	STONE	Munder	117	864	5.83	14.42	PaIthachu							21°22'5.43"N	84°04'26.57"E	193672	
80	Putapara Stone Quarry	Maneswar	New	STONE	Putapara	125	177	0.81	2	Dunguri							21°17'46.83"N	83°57'35.44"E	51300	Cluster-2
TOTAL																			13600	Cluster-2

Mining Officer cum Competent Authority
Sambalpur
Mining Officer
Sambalpur Circle