

# EXECUTIVE SUMMARY

FOR

(ORDINARY SAND) FROM BYALACHINTE & B.D HALLI SAND  
BLOCK (BLY OSB-2) HAGARI RIVER BED AT BYALACHINTE & B.D  
HALLI VILLAGE, BALLARI DISTRICT, KARNATAKA AREA OF 19.83  
HA, PRODUCTION-133590 TPA  
(CATEGORY- B1(as ML Area is<100 Ha)  
PROPOSAL NO.- SIA/KA/MIN/64153/2021

## PROJECT PROPONENT



**KARNATAKA STATE MINERALS CORPORATION LIMITED  
BALLARI, KARNATAKA**



DOC. No: MCPL/EMD/MIN/2020-21/03/02(DEIA) \_\_\_\_\_ April 2022

Study Period: October-December,2021



**PREPARED BY**



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## CHAPTER-1 : SUMMARY & CONCLUSION

### 1.1 GENERAL

The chapter discusses about the summary of whole EIA/EMP report along with recommendation and conclusion. The proposed mining lease area falls in Survey of India Toposheet (OSM) No. 57E/4. The lease area is located in Village- B.D. Hall, District- Ballari, and Karnataka.

**Table 11.1 Details of the Project**

S. No.	Particulars	Details																					
A.	Nature and Size of the Project	Mining of Minor Minerals (Sand, and s) from the riverbed of River Hagari by M/s Karnataka satete Mineral Corporation limited. Located in village- B.D. Hall, District- Ballari, Karnataka over an area of 19.83Ha with Production Capacity of 133590 TPA.																					
B.	Location																						
Geographical Coordinates	Latitude and Longitude of	<table border="1"> <thead> <tr> <th>Pillar No.</th> <th>Latitudes</th> <th>Longitudes</th> </tr> </thead> <tbody> <tr> <td>S. No</td> <td>Latitudes</td> <td>Longitudes</td> </tr> <tr> <td>A.</td> <td>15°12'05.7"N</td> <td>77°04'10.7 "E</td> </tr> <tr> <td>B.</td> <td>15°12'04.2" N</td> <td>77°04'13.5"E</td> </tr> <tr> <td>C.</td> <td>15°12'11.8"N</td> <td>77°04'18.2"E</td> </tr> <tr> <td>D.</td> <td>15°12'14.1"N</td> <td>77°04'21.5"E</td> </tr> <tr> <td>E.</td> <td>15°12'15.1"N</td> <td>77°04'12.4"E</td> </tr> </tbody> </table>	Pillar No.	Latitudes	Longitudes	S. No	Latitudes	Longitudes	A.	15°12'05.7"N	77°04'10.7 "E	B.	15°12'04.2" N	77°04'13.5"E	C.	15°12'11.8"N	77°04'18.2"E	D.	15°12'14.1"N	77°04'21.5"E	E.	15°12'15.1"N	77°04'12.4"E
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Toposheet (OSM) No.	57 E/4																						
C.	Lease Area Details																						
	Lease Area	19.83 Ha																					
	Topography	Undulated (Riverbed)																					
	Site Elevation Range	403M amsl <i>(Source: Mining Plan)</i>																					
D.	Cost Details																						
	Cost of the project	Rs. 29849190																					
	Cost for EMP	Rs. 8.53 Lakh ( Capital Cost) Rs. 7.20 Lakh/yr (Recurring Cost)																					
	OH&S	Rs. 1.00 Lakh/Yr (Capital Cost) Rs 3.00 Lakhs/Yr (Recurring Cost)																					
E.	Environmental Settings of the area																						
	Ecological Sensitive Areas (National Park, Wild Life Sanctuary, Biosphere Reserve, Reserve/ Protected Forest etc.) within 10 Km radius	NIL																					

	Inter-state boundary within 5 Km radius	None
	Nearest Town/ Major City	Ballari ~17.55 Km, WN
	Nearest Railway Station	Ballari Railway Station~17.2 km, W
	Nearest State Highway/ National Highway	SH-72, Road~3.0 km,
	Nearest Airport	Ballari Airport~20 km, SE (aerial distance)
	Nearest Post Office	Ballari head Post office ~16.55 km, W (aerial distance)
	Nearest Police Station	District police station Ballari~ 16.55 km.
	Medical Facilities	Government Hospital Moka ~ 5.5 Km Navodaya hospital ~18.00 Km
	Education Facilities	Government middle school- 4.5 Km
	Seismic Zone	Zone-III (As per 1893:2002)
	Water Body	Hagari River ~ 7.92 kms in S

## 1.2 INTRODUCTION

As per MoEF, New Delhi Gazette dated 14th September 2006 and amended thereof, the proposed mining project is categorized as category 'B', The project involves extraction of Sand from River bed of Hagari river of Village- B.D. Halli, Tehsil & District-Ballari, State- Karnataka.

## 1.3 PROJECT DESCRIPTION

The proposed project is for mining of Sand, and (Minor Mineral) by open manual method in riverbed over an area of 5.26 Ha. With proposed production capacity of 133590 TPA & The production as per replenishment study report 2018-2019 is 1,48,372.6 TPA The total geological reserve is 883031 tons and total mineable reserve is 267181 T. Ultimate depth of a bench will be 1.0 m. Riverbed block will be further replenished during rainy season. Minerals will be transported by trucks. It is widely used in construction, buildings, bridges, roads and other infrastructure. It is free from clay and non-sticky in nature. Total water requirement for the project is 20.7 KLD. Total man power requirement for the project is 22 numbers. The site facilities like canteen, rest-shelter, first aid facility, water and electricity supply etc. will be provided as per requirement. There is no litigation pending against this project.

## 1.4 DESCRIPTION OF THE ENVIRONMENT

Environmental data has been collected in relation to proposed mining for Air, Noise, Water, Soil, Ecology and Biodiversity. The generation of primary data as well as collection of secondary data

and information from the site and surroundings was carried out during post monsoon season i.e. October 2021 to December 2021.

The EIA study is being done for the Mine Lease (core zone) and area within 10 Km distance from mine lease boundary (buffer zone), both of which together comprise the study area.

**Table 11-2: Baseline Status**

Attribute	Baseline Status
<p><b>1. Ambient Air Quality</b></p>	<p>Ambient Air quality Monitoring was carried out in total 7 locations and the maximum value for <b>PM<sub>10</sub></b> is observed as 79 <b>µg/m<sup>3</sup></b> and minimum value of 47 <b>µg/m<sup>3</sup></b>.</p> <p>Ambient Air Quality Monitoring was carried out in total 7 locations and the maximum value for <b>PM<sub>2.5</sub></b> is observed as 48 <b>µg/m<sup>3</sup></b> and minimum value of 25 <b>µg/m<sup>3</sup></b> observed.</p> <p>Ambient Air Quality Monitoring was carried out in total 7 locations and the maximum value for <b>SO<sub>2</sub></b> is observed as 15 <b>µg/m<sup>3</sup></b> and minimum value 5 <b>µg/m<sup>3</sup></b> is observed.</p> <p>Ambient Air Quality Monitoring was carried out in total 7 locations and the maximum value for <b>NO<sub>2</sub></b> is observed as 26 <b>µg/m<sup>3</sup></b> and the minimum value of 14 <b>µg/m<sup>3</sup></b> is observed.</p>
<p><b>2. Noise Levels</b></p>	<p>Noise Monitoring was carried out in total 7 locations and the noise levels recorded during the day time were from 42 Leq dB to 50.8 Leq dB respectively and level of noise during night time were from 36.4 Leq dB to 40.6 Leq dB respectively.</p>
<p><b>3. Water Quality</b></p>	<p>Analyses of Ground water and Surface water were taken in the Post Monsoon Season October 2021 to December 2021.</p> <p><b>Ground Water</b>-Ground water monitoring was carried out in total 6 locations.</p> <p><b>Analysis results of Ground water;</b></p> <ul style="list-style-type: none"> <li>• pH varies from 7.15 to 7.64</li> <li>• Total Hardness varies from 284.00 to 564.00 mg/L.</li> <li>• Total Dissolved Solids varies from 487.00 to 1011.00 mg/L.</li> <li>• Fluoride varies from 0.65 to 0.94 mg/L</li> <li>• Chloride varies from 94.00 to 188.00 mg/L</li> </ul> <p><b>Surface Water</b>-Surface water monitoring was carried out in total 4 locations</p>

	<p><b>Analysis result of Surface water:</b></p> <ul style="list-style-type: none"> <li>• pH varies from to 7.35 to 7.62</li> <li>• Total Hardness varies from 204.00 to 252.00 mg/L.</li> <li>• Total Dissolved Solids varies from 312.00 to 420.00 mg/L.</li> <li>• Fluoride varies from 0.73 to 0.93 mg/L</li> <li>• Chloride varies from 64 to 82 mg/L</li> <li>• COD varies from 26 to 48 mg/L</li> <li>• BOD varies from 8 to 14mg/L</li> </ul>
<p><b>4. Soil Quality</b></p>	<p><b>Soil Monitoring was carried out in total 7 locations.</b></p> <p>Monitoring data shows that the texture of soil at allocations is Sandy Loam. The monitoring sites have sand ranging from 62% to 66% in soil samples. Silt content varies from 18% to 24%, while Clay content varies from 12% to 16% in the soil samples.</p> <ul style="list-style-type: none"> <li>• The data shows that value of pH ranges from 7.13-7.85.</li> <li>• Jalihal shows maximum conductivity of 480 µmhos/cm, Byradevanahali village shows minimum conductivity of 373 µmhos/cm.</li> <li>• Values of CEC ranges from 8.84 meq/100g as lowest at Byradevanahali and 13.74 meq/100gas maximum at Jalihal.</li> <li>• Magnesium values ranges from 3.03 meq/100g as lowest and 3.83 meq/100g as highest.</li> <li>• The average concentration of Nitrogen, Phosphorus and Potassium in the soil samples Varies from 13.38 to 18.28 mg/100gm, 0.62 to 0.98 mg/100gm and 8.47 to10.25 mg/100gm.</li> </ul>

#### 1.4.1 Socio Economic Environment

Socio-Economic Impact Assessment (SEIA) refers to systematic analysis of various social and economic characteristics of human being living in a given geographical area (study area/impact area). The prime objective of SEIA is to identify and evaluate potential socio-economic and cultural impacts of a proposed development project on the lives & conditions of people, their families and communities.

The demographic profile of the study area is given below:-

S. No.	Description	Number	Percentage to Respective Total
1	<b>Total Population</b>	<b>105923</b>	<b>100</b>
	Male	53516	50.5
	Female	52407	49.5
	Sex Ratio	979	

2	<b>Population (0-6 age group)</b>	<b>14805</b>	<b>100</b>
	Male	7576	51.2
	Female	7229	48.8
	Sex Ratio	954	
3	<b>Population- Scheduled Caste</b>	<b>18511</b>	<b>100</b>
	Male	9397	50.8
	Female	9114	49.2
	Sex Ratio	970	
4	<b>Population- Scheduled Tribe</b>	<b>32473</b>	<b>100</b>
	Male	16206	49.9
	Female	16267	50.1
	Sex Ratio	1004	
5	<b>Total Literates</b>	<b>51803</b>	<b>100</b>
	Male	31710	61.2
	Female	20093	38.8
	Gender Gap in Literates	22.4	
6	<b>Overall Literacy Rate</b>	<b>56.9</b>	
	Male	69.0	
	Female	44.5	
	Gender Gap in Literacy Rate	24.5	
7	<b>Total Workers</b>	<b>55429</b>	<b>100</b>
	Male	30949	55.8
	Female	24480	44.2
	Gender Gap in Work Participation	11.6	
8	<b>Main Workers</b>	<b>47793</b>	<b>100</b>
	Male	28057	58.7
	Female	19736	41.3
	Gender Gap in Work Participation	17.4	
9	<b>Marginal Workers</b>	<b>7636</b>	<b>100</b>
	Male	2892	37.9
	Female	4744	62.1
	Gender Gap in Work Participation	24.2	
10	<b>Household Industrial Workers</b>	<b>651</b>	<b>100</b>
	Male	409	62.8
	Female	242	37.2
11	<b>Total Agricultural Workers</b>	<b>39623</b>	<b>100</b>
	Male	21813	55.1
	Female	17810	44.9
12	<b>Cultivators</b>	<b>17286</b>	<b>100</b>
	Male	11782	68.2
	Female	5504	31.8

<b>13</b>	<b>Agricultural Labour</b>	<b>22337</b>	<b>100</b>
	Male	10031	44.9
	Female	12306	55.1
<b>14</b>	<b>'Other Workers'</b>	<b>7519</b>	<b>100</b>
	Male	5835	77.6
	Female	1684	22.4

### 1.4.2 Biological Environment

It is observed that the **BLY-OSB -2**, River sand mine study area is dominated by agriculture fields. However, the mine lease area is Govt. waste land which is dominated by shrubby species (*Agave sp.*, *Acacia sp.*, *Albizia sp.*, *Calotropis procera*, *Mimosa hamata*, *Lantana camara* and *Prosopis sp.* etc. The species observed in the study area are generally found in abundance.

Since the core area comprises mainly waste land and is having predominantly shrubby vegetation, it does not support higher faunal species. No Schedule-I faunal species as per the Indian Wildlife (Protection) Act 1972 has been reported from the study area.

Mining which leads to the removal of channel substrate, re-suspension of streambed sediment and stockpiling on the streambed will have ecological impacts. These impacts may have an effect on the direct loss of stream reserve habitat, disturbances of species attached to streambed deposits, reduced light penetration, reduced primary production, and reduced feeding opportunities. Sand mining generates additional traffic which also impacts the environment.

The proposed project of river bed sand mining shall be carried out on the riverbed of Hagari River. The project site area is waste land, devoid of vegetation except a few thorny bushes on the banks of the river. The project shall also not lead to any change in land use and will be replenished every year after successive rains. The proposed mining activity, which although is an economically gainful activity, also constitutes river training work. It allows for necessary dredging activity which may otherwise lead to flooding of the surrounding area.

There shall be negligible dust emissions during loading of the truck or effluents from the project site. Mining activities will not disturb the existing aquatic ecology as there is no effluent discharge proposed from the River Sand quarry and mining will be done during dry non- monsoon season.

## 1.5 ANTICIPATED ENVIRONMENT IMPACT AND MITIGATION MEASURES

### 1.5.1 AIR ENVIRONMENT

The air quality in the mining area depends upon the nature and concentration of emissions and meteorological conditions.

### 1.5.2 Anticipated Impact

- Mining Operation carried out by opencast manual & semi mechanized method generate dust particles due to various activities like Loading & Unloading of sand, and Transportation.

- The impact on ambient air quality in the area surrounding the mining area depends upon the pollutant emission rate and prevailing meteorological conditions. As it is an open cast semi mechanized mine, particulate Matter (Dust) of various sizes is the only pollutant of any significance.

### **1.5.3 Mitigation measures**

- The speed of trucks on haul road will be controlled as increased speed increases dust emissions. Overloading of transport vehicles will be avoided.
- Transportation of minerals will be done by covered vehicles.
- Proper mitigation measures like water sprinkling will be adopted to control dust emissions.
- Masks will be provided to workers.
- To control the emissions regular preventive maintenance of equipment will be carried out on contractual basis.
- Green belt of adequate width will be developed.

## **1.6 NOISE ENVIRONMENT**

The area in general represents calm surroundings. There is no heavy traffic, industry or noisy habitation in the area except the existing mine. As the project is proposed for open cast manual mining method there will be no blasting or drilling activities.

### **1.6.1 Anticipated Impact**

- The source of Noise pollution will be the vehicular movements.
- Noise generated by manual extraction of river bed material, using shovels, crowbars etc., will be negligible.

### **1.6.2 Mitigation Measures**

- Proper maintenance of all transportation vehicles will be carried out which help in reducing noise during operations. No other equipment except the transportation vehicles will be allowed.
- Noise generated by hand equipment will be negligible and will not cause detectable adverse impact.
- Awareness will be imparted to the workers about the permissible noise levels and maximum exposure to those levels.

## **1.7 WATER ENVIRONMENT**

The impact of mining project on groundwater hydrology and surface water regime are site specific and depends upon the characteristics of the mineral, hydrogeology and requirement of groundwater for other uses.

### **1.7.1 Anticipated Impacts**

- The Mining in the riverbed area may cause the groundwater contamination due to the intersection of the water table.
- Waste water disposed from the mining activity may contaminate the surface water.



- River recharges the ground water; excessive mining may be reducing the thickness of natural filter materials (Sediments), through which the ground water is recharged.

### **1.7.2 Mitigation Measures**

- Mining will be done above the water table as well as river bed water level therefore much impact on water regime is not accepted.
- Proper analysis/Monitoring will be done to check the ground water

## **1.8 LAND ENVIRONMENT**

Impact assessment study on land environment can be done by considering land use pattern/land cover, topography, drainage pattern and geological features of the mine site as well as the study area.

### **1.8.1 Anticipated Impact**

- Mining activity will impact river bed topography by formation of excavation voids.
- River bed mining may bring in some change in topography at the nearby area of the mine lease
- Stacks of solid waste generated from mining activity may hinder the flow of water in monsoon season.

### **1.8.2 Mitigation Measures**

Adopting suitable, site specific mitigation measures can reduce the degree of impact of mining on land. Some of the land-related mitigation measures are as follows:-

- Excavated pits will get replenished annually in monsoon itself & will be restored to original
- Mining work will be executed only by manual open cast method and the depth of pits will be restricted up to 3.00 meter or the river water level whichever is less.
- Mineral will be mined after leaving the 25% width as a safety zone on both sides of the riverbed.

## **1.9 SOCIO ECONOMIC**

### **1.9.1 Anticipated Impact**

- Impact on the Demographic Composition
- Impact on Employment Opportunities

### **1.10 Solid Waste**

#### **1.10.1 Anticipated Impact**

- As there is practically no soil cover observed in the river bed, this RBM project does not involve any waste generation. Thus, no waste dump sites are needed for the project. However, there will be 22 workers on site.
- No municipal waste other than domestic sewage shall be generated.

#### **1.10.2 Mitigation Measures**

- Only clayey soil generated during mining process which will be used for the plantation.

- Domestic sewage will be disposed off into septic tanks followed by soak pits

## **1.11 TRAFFIC ENVIRONMENT**

### **1.11.1 Anticipated Impact**

- The increase in traffic density will lead to the air pollution and it cause the effect on human health like damage to lung tissue, cancer, asthma etc.
- The movement of vehicles cause the noise pollution

### **1.11.2 Mitigation Measures**

- Vehicles with PUC certificate will be hired.
- Regular maintenance of vehicles will be compelled to ensure smooth running of vehicles.
- Regular health checkups camps will be organised for the safety purpose of the workers.
- Unnecessary blowing of horn will be avoided.

## **1.12 Analysis of alternatives**

No alternative site had been considered since proposed Capacity Enhancement is in existing sand, and mine and hence it is site specific.

## **1.13 ENVIRONMENT MONITORING PROGRAMME**

KSMCL has formulated well laid-out Environmental Policy, wherein preservation of environment has been accorded a most strategic and prime position. The various protocol procedures in connection with communication channels upwards and downwards, for dealing with violations or departures in environmental standards involvement of Board of Directors as well as shareholders about such incidences, etc, have been described in detail in chapter VI.

Regular monitoring of environmental parameters of immense importance to assess the status of environment during project operation. With the knowledge of baseline conditions, the monitoring programme will serve as an indicator for any deterioration in environmental conditions due to operations of the project, which will enable to take suitable mitigation steps in time to safeguard the environment.

## **1.14 ADDITIONAL STUDIES**

The possible risks in the case of river bed mining project are bank erosions, floods, accidents due to the transport etc. At present the mining is proposed in a mild sloping forest land in river beds. Pits will be created of limited depth 1.0 m from first to fifth year or river water levels whichever less, thus the chance of failure of pit slope not seems to be appeared,

## **1.15 PROJECT BENEFIT**

The proposed project brings overall improvement in the locality, neighbourhood and the state by bringing employment generation at local level and revenue to state government. Hence it will be helpful for the economic growth and support to enhance quality of life through employment

### **1.16 ENVIRONMENTAL COST BENEFIT ANALYSIS**

It is considered desirable that the mining project may be implemented. Project cost for the proposed Mining project having area of 19.83. Ha. Falling in located in village- B.D. Halli and G. Nagenahalli District-Ballari, and Karnataka is Rs. 152292600.00.

### **1.17 ENVIRONMENTAL MANAGEMENT PLAN**

As per Above discussion there is no major impact on the environment due to mining except fugitive emission in the form of dust generated during handling of mineral. The adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Plantation development will be carried out along the approach roads, around Govt. buildings etc. It will prove an effective pollution mitigate technique, and help avoid soil erosion during monsoon season. Employment opportunities will be provided to the locals only as providing extraction of minerals from the mine site is the only prevailing occupation for them for their livelihood. A budget of Rs. 8.53 Lakhs (Capital Cost) & Rs. 7.20 Lakh (Recurring Cost) under EMP head are incurred by Project Proponent.

### **1.18 CONCLUSION**

The proposed project will provide the employment to local people in different activities such as mining, transportation and plantation activities. The project activity will not have any major impact on the environment. At post mining stage of proposed project, the existing land use will remain same i.e. riverbed, and it will get replenished yearly during monsoon season. Also the extracted sand will be used in construction activities like building, infrastructure facilities. The Corporate Social Responsibility initiatives will have a positive impact on socio economic environment of the region