

EXECUTIVE SUMMARY

BAHINIPATI KERADA SAND BED

Over an area 18.80Ac/7.608Ha.

Village- Bahinipati Kerada Tahasil- Rayagada
Dist- Rayagada, Odisha.

Production- 12100 CUM/ Annum

File No. 495357/43-MINB1/09-2024
Proposal No. SIA/OR/MIN/495357/2024

For & on Behalf of

Maa Velankanni Civil Supply & Construction

Sri Kola Ashok (Proprietor)

At – Saipriya Nagar, 11th Lane Rayagada
Dist- Rayagada, Odisha

PREPARED BY-

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Certificate No. NABET/ EIA/ 2326/ RA 0286, Valid up to Jan 06, 2026)

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION OF PROJECT

Name of the project:	Bahinipati Kerada Sand Quarry
Type of the project:	New
Proposed Production:	Proposed Sand Mine with proposed production capacity of 12100 m ³ /year sand
Area of Lease:	7.608 ha.
Location of the project:	Village Bahinipati Kerada, Tahasil – Rayagada in Rayagada district of Odisha 765001
Identification of Proponent:	Sri Kola Ashok, by Mining Officer, Rayagada for 5 years via letter no. 313/Mines dated 27.03.2024

1.2 TYPE OF PROJECT

Bahinipati Kerada Sand Quarry is a new proposed project located at Village: Bahinipati Kerada, Khata No. 35, Plot No. 192, Tehsil: Rayagada, District: Rayagada, Odisha and has an area 7.608 ha falls under Category “B1”, 1(a), due to Mining lease area is more than 7.608 Ha as per honorable NGT order and as per OM dated 03/07/2024. Project will be assessed by SEIAA, Odisha. Lessee will have to take Environmental Clearance from SEIAA, Odisha as per EIA notification September, 2006 amended in December 2009 and April 2011 and amendment thereof to start the mining operation

1.3 NEED FOR THE PROJECT

The basic objective of the project is to meet the utilization of mineral demand in the country and /or region. The urbanization and industrialization have enhanced the demand of building material. Mainly, in infrastructure projects-like highways, buildings, township etc. which has raised the demand of river sand. Sand is used to provide bulk, strength, and other properties to construction materials like concrete. It is also used as a decorative material in landscaping. River sand falls under the fine quality of construction sand which is found near river banks and streams and has smoother texture and better shape of grains. This can be also used for RCC, plastering, and much other brick work.

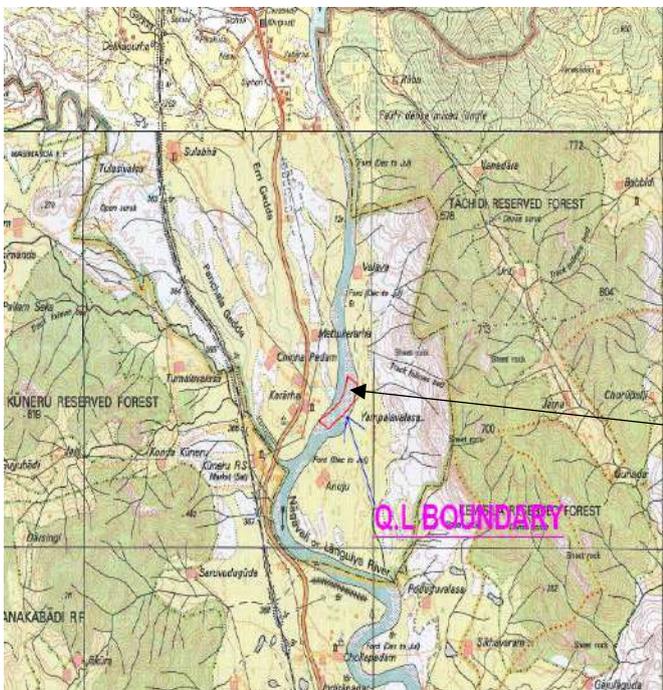
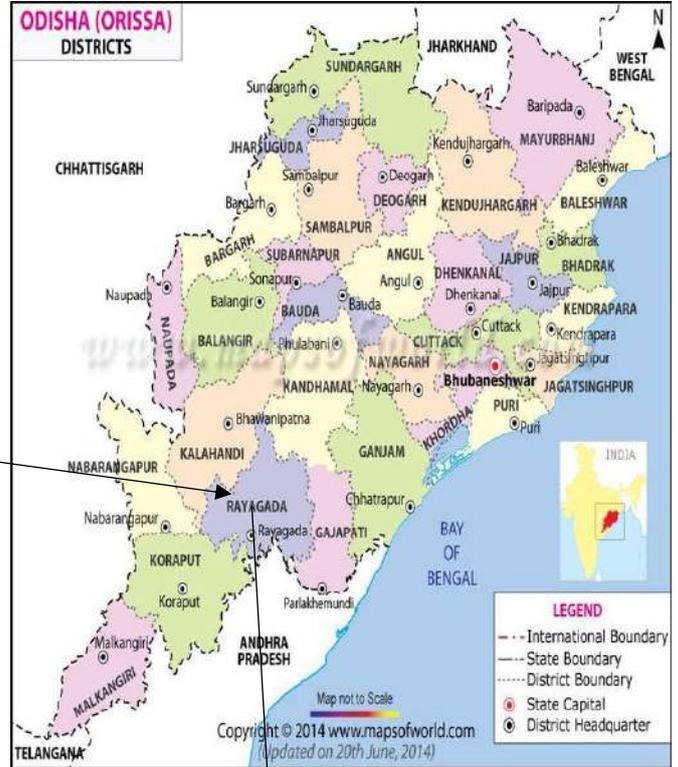
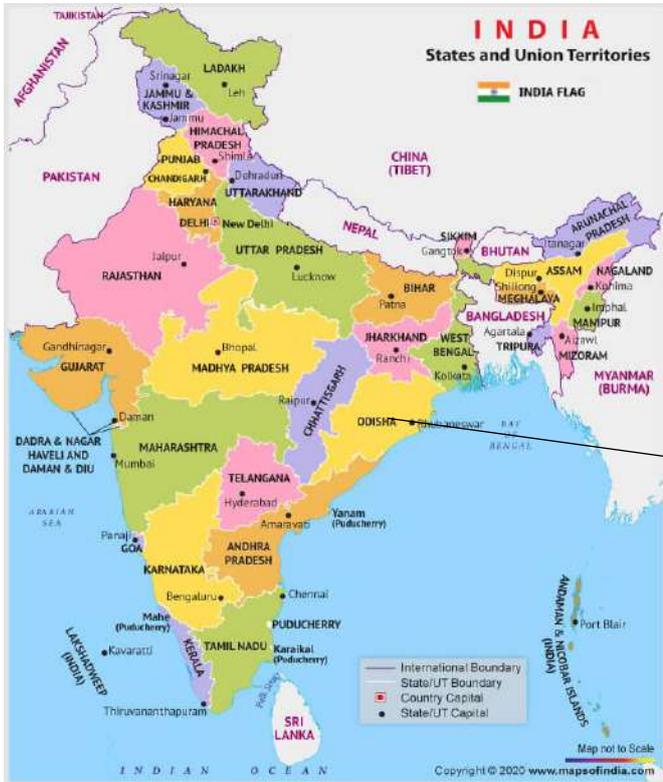
1.4 BRIEF DESCRIPTION OF THE PROJECT

Table – 1 Brief Description of the Project

Sr. No.	Particulars	Details
A	Nature of project	New Sand Quarry Project
B	Size of project	
1	ML Area	7.608 Ha.
2	Proposal	Proposed Sand Quarry Mine with proposed production capacity of 12100 m ³ /year.
3	Project Name	Bahinipati Kerada Sand Bed
4	Lease Period	5 years
C	Project Location	
1	Villages	Bahinipati Kerada
2	Tehsil	Rayagada
3	District	Rayagada
4	State	Odisha
5	Khata No.	35
D	Environmental Setting Details (with approx. aerial distance & direction from the mining lease boundary)	
1	Present land use at the proposed site	Non-Forest Government Land
2	Nearest village	Rayagada about 22 km,
3	Nearest Town/City	Rayagada about 22 km,
4	Nearest Railway Station	Keneru Railway Station 1.25 Km,
5	Nearest Airport	Bhubaneswar airport is 380 Kms from the lease area
6	Nearest Highway	National Highway NH 326-22.61 km State Highway SH4-0.40 km
7	Nearest Water Body	Reseroviour Vattiguda 21 km Kerada 0.25 km
8	Nearest Bridge	Anija Road Bridge- 0.5 km,
9	Nearest River	Nagavali About 0.5 km,

	Embankment	
10	Nearest Archeological Site	Majhighariani Temple about 22.5 km,
11	Nearest Sensitive Man-made Landuse	Areas occupied by sensitive man-made land uses (Hospitals, schools, places worship, community facilities)- Rayagada- 22Km
12	Ecology Sensitive Zone	No national parks and Karlapat sanctuary within 89 km radius
13	Reserve Forest	Hamas Reserve Forest- 2.5 Km,
14	Topography	Gently sloping almost flat terrain
15	Sesmic Zone	Zone – II as per IS: 1893 (Part-I): 2002 The area is not prone to flood and earthquake. No such incident is reported in this area comes in seismic Zone-II.
16	Survey of India Topo-Sheet no.	E44L5.
D	Cost Details	
1	Project Cost	2.5 Cr.
2	Cost of EMP	3.8 lakhs.

1.5 LOCATION MAP



Bahinipati Kerada Sand Quarry at Nagavali River

1.6 MINE DESCRIPTION

1.6.1 MINING LEASE STATUS

- Quarry lease has been awarded to Sri Kola Ashok, by Mining Officer Rayagada for 5 years via letter no. 313/Mines dated 27.03.2024.
- Mining Plan with Progressive Mine Closure Plan has been approved by Deputy Director Geology O/o Joint Director Geology, South Zone, Berhampur, Odisha vide letter no. Memo no.-5/5/KZ. dated 03/07/2024

1.6.2 MINING DETAILS

Table – 2 Mining Details

Sr. No.	Particulars	Details
1	Method of Mining	Manual opencast mining
2	Available Movable Reserve-	12100
3	Lease period	5years
4	Ultimate Mine Working Depth	1m
5	Water Requirement	2 KLD
6	Manpower Requirement	11 no.
7	Present land use at the proposed site	The area is a Non-Forest Govt. land
8	Number of Working Days	

Source: Approved Mining Plan & Progressive Mine Closure Plan

1.6.3 METHOD OF MINING

Mining method to be adopted in the sanctioned lease area will be of manual manner. In which;

- The mining operation as proposed will be done by manual opencast method.
- Quarrying activities will be done following all the security majors. Rules and regulations of DGMS and IBM will be observed during the Quarrying operations to avoid unwanted circumstances.
- Mined out material of commercial use will be transported by trucks / dumpers. Haul road of suitable width is proposed for proper and smooth quarry operations.

- Quarrying / excavation will be done according to the proposed manual means, for mechanized way following machineries will be required to deploy on hire basis for loading and transport purpose.

2.0 DESCRIPTION OF THE ENVIRONMENT

2.0 PRESENTATION OF RESULTS (AIR, NOISE, WATER & SOIL)

Baseline study of the study area was conducted during pre-monsoon from 1st March 2024 to 31st May 2024 for Bahinipati Sand Quarry.

The concentrations of PM₁₀ and PM_{2.5} for all the 9 AAQM stations were found between 52.7 to 88.9 µg/m³ and 23.7 to 45.30 µg/m³ respectively. The concentrations of SO₂ and NO_x were found to be in range of range of 7.90 to 15.10 µg/m³ and 11.20 to 27.2 µg/m³ respectively.

Ambient noise levels were measured at 9 locations around the Mine site. Noise levels varied from 44.4 dB (A) Leq to 54.8 Leq dB (A) during day time 36.1 (A) Leq to 44.6 Leq dB (A) during night time.

The ground water analysis for all the 8 sampling stations shows that pH varied from 7.29 to 7.49, total hardness varied from 260 mg/l to 520 mg/l & total dissolved solids varied from 153.4 mg/l to 242 mg/l. The water samples contain chloride 13.8 mg/l to 26.4 mg/L, Ca from 27.2 mg/l to 90.5 mg/l, Magnesium varies from 16.52 mg/l to 58.1 mg/l.

Samples collected from 8 identified soil locations indicate pH value ranging from 7.29-7.61. Organic Matter ranges from 0.25% -0.55% in the soil samples. Nitrogen is found to be in moderate amount as it ranges from 116 mg/kg- 161 mg/kg and Phosphorous in less amount i.e. from 32 mg/kg- 52 mg/kg, whereas the Potassium is found to be ranging from 115 mg/kg - 135 mg/kg.

2.1 BIOLOGICAL

Flora: Species which are most commonly found in the study area are: *Alstoniascholaris*, *Anogeissuslatifolia*, *Artocarpushetrophyllus*, *Averrhoa carambola*, *Azadirachtaindica*, *Bauhinia variegata*, *Beideliaretusa*, *Bombax ceiba*, *Buchananialanzan*, *Butea monosperma*, *Caricapapeya*, *Cassia fistula*, *Cassia siamia*, *Cleistanthuscollinus*, *Couropitaguianensis*, *Holarrhenapubescens*, *Abrusprecatorius*, *Argyreia nervosa*, *Aristolochiabracteaata perculinaturpentum*, *Paederiafoetida* etc.

Fauna: Species which are most commonly found in the study area are

Mammal: *Herpestresedwardsii*, *Rattus rattus*, *Lepus nigricollis*, *Mus booduga*, *Macacamulata*, *Funambulus pennant* etc.

Reptiles: *Bangaruscaerulidus*, *Homodactylusflevirudis*, *Ptyasmucosus* etc

Birds: *Milvus migrans*, *Corvussplendens*, *C. marorhynchos*, *Bubulcus ibis*, *Acridotherestrictis*, *Sturnus contra*, *Ardeolagrayerii*, *Dicrurusadsimilis*, *Streptopeliaspp*, *Alcedoatthis*, *Turboidescaudatus*, *Psittaculakrameri*, *Eudynamysscolopacea*, *Orthotomussutorius* etc.

2.2 SOCIO-ECONOMIC ENVIRONMENT

The total population as per 2011 Census records is 60082 (for 10 km radius buffer zone). Scheduled Caste population of the study area (10 km) is 22.22%, Scheduled Tribe is 22.33%. The percentage of total working population is 52 %, Remaining, 48 % of the total population is considered as non-workers.

2.3 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

- **Impact on Air Environment**

Due to Mining

The key air emissions from the mining activities (loading, and transportation) are Particulate Matter. Gaseous emissions will be generated from HEMM & transportation of vehicles. Use of proper mitigation measures will be taken like water sprinkling on haul roads & development of green area to control fugitive emissions. Better maintenance of equipment's also helps to reduce such emissions.

- **Impact on Water Environment –
Surface Water**

The mining process will not divert and utilize the surface & ground water. Quantity of water will remain the same. The existing background level of water quality as indicated by the baseline data revealed that impact on water environment will be insignificant in this project. Ground water table will not be intersected. The impact on surface water will be positive as the river gets channelized and the flow of the water flow will not be hindered.

Ground Water

At conceptual stage, ultimate working depth of the mining operation will be upto 1 m bgl only. Water table will not be intersected due to mining activities.

- **Impact of Noise–**

Due to Mining Activities

Major noise generating sources of the mining activity are HEMM movement. The plantation and the green belt along haul road and nearby areas will help in reducing noise level and proper mitigation measures will be carried out.

- **Impact on Land Environment –**

The sand is unconsolidated in nature will be collected carefully and loaded in dumpers manually. The land use pattern will not change permanently and will be reclaimed every year in the monsoon season. The land use pattern will only be changed by proposed green belt development plan in the study area. Mining activities will not affect land use pattern.

4.0 POST PROJECT ENVIRONMENTAL MONITORING PROGRAMME

Table 4 Post Project Monitoring

Sr. No.	DESCRIPTION	FREQUENCY OF MONITORING
1	Ambient Air Quality monitoring	Half Yearly or as per consent
2	Water Quality & Level monitoring	Half Yearly or as per consent
3	Noise Level Monitoring	Half Yearly or as per consent
4	Soil Analysis	Half Yearly or as per consent
5	Medical Check-up of employees	Half Yearly or as per consent

5.0 ADDITIONAL STUDIES

Additional Studies i.e. Risk Assessment & Disaster Management Plan, Land use and land cover study, Ecology and Biodiversity are covered with this Draft EIA/EMP Report as per the Terms of Reference was granted by SEIAA for file number File No-SIA/OR/MIN/495357/2024 on 05/09/2024.

6.0 PROJECT BENEFITS

The proposed project will help the local economy directly as well as indirectly as it will generate substantial employment in the region. With the proposed development in and around the area, there will be supporting facilities/infrastructure eventually leading to the development of the area. The project will boost the overall growth of the region and in the state, the local economy will flourish due to income expenditure in the local market. Therefore, project is having great importance to the district and state economy.

Along with the contribution in employment generation and economic growth of the country project will also be helpful in the development of basic needs of the local area like education, Health & family welfare, women empowerment, water conservation, infrastructure development etc.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 AIR QUALITY MANAGEMENT

Loading & Transportation

- Development of green belt/plantation along the haul road and other places will be carried out to control the air pollution.
- Haul Road will be sprayed with water.
- Proper maintenance of the HEMMs & transportation vehicles will be done.
- Vehicular emissions will be kept under norms.
- Personal Protective Equipment like dust masks will be provided to all employees.
- Periodic air quality monitoring will be carried out.

7.2 NOISE QUALITY MANAGEMENT

Transportation

- Adequate silencers in HEMM will be provided to reduce generation of noise.
- Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.
- The workers employed at HEMM will be provided with protective equipment, earmuffs and earplugs as a protective measure from the high noise level generated at the mine site and wherever required.
- Development of green belt & plantation along haul roads and other places will be carried out.
- Periodical monitoring of noise level will be carried out regularly.

7.3 WASTE WATER MANAGEMENT

Waste Water

- Portable toilets will be used for generated domestic waste water.
- No waste water will be generated from the mining operations.

7.4 LAND USE PATTERN

- At conceptual stage total excavated area will be 2.50 ha,
- Greenbelt will be developed along the haul road and nearby areas.

7.5 GREENBELT DEVELOPMENT AND PLANTATION PROGRAM

- Greenbelt will be developed along the haul road and nearby areas.
- Native species will be planted like Neem, Mango, Teak, Jhaun and Jammu about 50 number of trees will be planted each year.

7.6 BUDGET FOR ENVIRONMENT PROTECTION

Sl. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
1	Pollution Control Dust Suppression /Water Sprinkling	--	2,00,000
2	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	--	50,000 40,000 20,000 10,000
3	Green belt development	50,000	20,000
4	Maintenance of haul road	60,000	40,000
Total		1,10,000	3,80,000

CONCLUSION

Based on the EIA study it is observed that there will be an increase in the dust pollution, which will be controlled by sprinkling of water and plantation. There will be an insignificant impact on ambient environment and ecology due to the mining activities moreover the mining operation will lead to direct and indirect employment generation in the area. Green belt development around the area will also be act as an effective pollution mitigative technique, as well as to control the pollutants released from the premises of the Mine. Monitoring program will be followed till the mining operations continue. Hence, it can be summarized that the development of the mine will have a positive impact on the socio-economic environment of the area and lead to sustainable development of the region.
