



ତହସିଲଦାରଙ୍କ କାର୍ଯ୍ୟାଳୟ, କାଲିମେଲା  
**OFFICE OF THE TAHASILDAR, KALIMELA**

Letter No. ୧୭୧୧/2021.(Touzi)

Dated. 07.10.2021

To

The Chairman,  
State Environment Impact Assessment Authority,  
Qr.No-5 RF-2/1, Unit -9,  
Bhubaneswar-751022.

Sub-

Application for environmental Clearance as per EIA Notification 2006 and amended thereafter from MoEf & CC in respect of Bhejangi wada -1 Stone Quarry over an area of 4.500 hector in Villagae Bhejangi wada under Kalimela Tahasil of Malkangiri District, Odisha.

Sir,

With reference to the above cited subject, I am herewith submitting the application for grant of Environmental clearance in respect of Bhejangi wada Stone Quarry-1 under Kalimela Tahasil of Malkangiri District as per the procedure specified in EIA Notification 2006 & amendment thereafter.

In this connection please find enclosed herewith the Form-I, duly filed along with prefeasibility Report, Environmental Plan, Approved Mining plan, Check List and other relevant documents for your kind perusal and necessary approvals.

Yours Faithfully

TAHASILDAR, KALIMELA

Memo No- ୧୭୧୧/2021

Date- 07.10.2021

Copy submitted to Collector, Malkangiri for kind information and necessary action.

TAHASILDAR, KALIMELA

## MODIFIED CHECK LIST FOR MINOR MINERAL MINING PROJECT

1.	Online date of application & File No.	:	
2.	Scrutiny fees challan details	:	Yes, Challan No. dt.
3.	Name & address of the Applicant (with postal pin code, mobile / landline no., Email ID.)	:	Tahasildar, Kalimela, At/Po-Kalimela, Dist- Malkangiri, Odisha
4.	Category of Project(B1/B2)	:	B/2
5.	Type of proposal (New / Existing / Expansion/ Extension / Amendment)	:	New
6.	Name of the Minor Mineral projects	:	Bhejangiwada Stone Quarry
7.	Whether the present proposal is shown as an identified source of the particular minor mineral in the approved DSR report of the District (Yes / No.) If yes, the page no. / para no / map location in DSR report.	:	Yes  Page No 30 Serial No 07
8.	Lease period, letter of lease and lease execution documents granted by the concerned authority.	:	Five Years, Tahasildar Letter No 1164 Dtd.10.07.2020
9.	Area of the lease (ha)	:	11.11 Acre (4.500 Ha)
	a) Forest Land (ha.)	:	Non-Forest
	i) If Forest land; status of forest clearance	:	
	b) Non-forest / Govt.land (ha.)	:	Non Forest Govt Land Area 11,11 Acre (4.500 Ha)
	c) Non-forest Private land (ha.)	:	
10.	For Minor Mineral other than Sand (i.e. Stone / Murrum / Laterite / Decorative Stone / Brick Earth etc.), the concerned DFO to verify the DLC report of the District, and inform, if the proposed lease area plots are listed therein as forest land. Whether the said Certificate from DFO is attached (Yes / No)	:	Yes, DFO. Certificate Enclosed
11.	For Brick Earth Minor Mineral cases on Agricultural land Please specify following:	:	NO
	(i) Upland / medium land / low land	:	NA
	(ii) Rain fed / irrigated	:	NA
	(iii) Cropping pattern involved	:	NA
	(iv) Distance of site from nearest Thermal Power Plant	:	NA
12.	Whether any vegetation exists in the lease area? If so, specify the type and quantity (number/area)	:	No Vegetation exists.
13.	Location of mine (Detailed land schedule, etc.) with landmark.	:	Bhejangiwada Area, 11.11 Acre(4.500Ha), Khata No-629, Plot No-43/1, Kissam-Patharbani
	i) District	:	Malkangiri
	ii) Tahasil	:	Kalimela









18.	Certificate of the Tahasildar that there is no other minor mineral lease or proposed lease area located within 500 m from the periphery of the proposed mine lease area as per approved DSR report in the area.  Whether Certificate from Tahasildar attached (Yes/No)	:	There are no mines within the periphery of the mine.  : Yes
19.	<b>Other Proposals of the Same Lessee/proponent submitted for EC</b>		
Sl. No.	Name and address of the mine	Name of mineral	Lease area
(i)	NIL	NIL	NIL
(ii)	NIL	NIL	NIL
20.	Whether the mining plan is approved? (Yes/No) If so, period of plan and name of the competent approving authority	:	Yes Joint Director of Geology, O/o Joint Director of Geology, Koraput.
21.	Mining method (Manual/Semi mechanized/Mechanized)	:	Semi Mechanised
22.	Whether drilling and blasting is required(Yes / No.) If yes, explosive storage license status:	:	Yes, Drilling and Blasting will be carried by the explosive license holder.
23.	If any other minor mineral rich or proposed lease area is located within 500 mtrs from the periphery of the proposed mine lease area exist, the corresponding names with exact distances along with Geo-coordinates i.e. longitude and latitude is be indicated	:	There are no mines within the periphery of the mine..
24.	Plan for year wise plantation with species at the river embankment and along side of haulage road/village road for sand mining be indicated.	:	Plantation will be carry-out as per the mining plan.
25.	Top and Bottom R.L. of the stone quarry	:	Top-184 , Bottom-158
26.	Whether any no complaint or court case exists against the lease (Yes / No)	:	No
27.	Whether any EC granted earlier by SEIAA / DEIAA (Yes / No)	:	Yes

Counter signed and recommended for  
Environmental Clearance

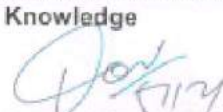
Signature with seal of Tahasildar

  
**TAHASILDAR**  
**KALIMELA**

Mining Officer (for specified minor mineral)

Certified that the information  
furnished above is true to the best of  
My Knowledge

Signature of Applicant

  
**TAHASILDAR**  
**KALIMELA**

**Encl: The following documents are mandatory to submit along with filled-in checklist to receipt the proposal for consideration of Environmental Clearance:**

		Put mark	✓ tick
1.	Form-I duly filled.		✓
2.	Pre-feasibility Report (PFR) properly binding.		✓
3.	Environment Management Plan (EMP) properly binding.		✓
4.	Approved District Survey Report for minor mineral as per the amended Notification S.O. No. 3977(E) dated 14.08.2018 issued by MoEF&CC, Govt. of India.		✓
5.	Certificate from the concerned DFO/ Tahasildar about involvement of DLC land in the lease area, whether it is forest or non-forest land (incase minor mineral other than sand).		✓
6.	Certificate from Tahasildar that there is no other mines located within 500m from the periphery of the proposed mine lease area as per DSR report in the area.		✓
7.	Certificate from Tahasildar indicating distance of boundary of mining lease from River Bridge, Railway Bridge, river embankment and Electric High Transmission Line (in case of sand mining).		
8.	Location map / Trace map from Tahasildar of all leases (existing & operating) around 1 km area of the project site.		✓
9.	Full scape toposheet (1:50,000 scale) showing all features and depicting lease site (colour marking).		✓
10.	Full scape village sheet showing location of the project and other mines within 500 meter (colour marking).		✓
11.	Full scape Toposheet showing areas within 10 Km radius from the lease area including Sanctuary/National Park, if Any (colour marking).		✓
12.	Lease permission /sanction order of Competent Authority (Tahasildar /any other).		✓
13.	Scrutiny fee payment details		
14.	Approved mining plan along with approval letter.		✓
15.	Category of land and conversion document, if required		
16.	Copy of Environmental Clearance, if granted by DEIAA/SEIAA earlier and compliance to the Environmental Clearance conditions if granted.		
17.	Distance from the nearest Eco-sensitive Zone in map		✓
18.	Google map showing the present lease hold area with all sairat source within 500 meter boundary of the lease hold area.		✓

*Dar*  
**TAHASILDAR**  
 Page 5 of 5  
**KALIMELA**

### CERTIFICATE

Certified that, there are no other Mines within the periphery of 500 meters from Bhejangiwada Stone Quarry having Khata No-629 and Plot No- 43/1, Kissam-Patharbani, Over an Area of 4.500 Hects. Is situated in the Village- Bhejangiwada.



Tahasildar, Kalimela

**TAHASILDAR  
KALIMELA**

### CERTIFICATE

Certified that, the exact Road bridge distance is 2.8 Kms & Railway bridge distance is 88.4 Kms from Bhejangiwada Stone Quarry having Khata No-629 and Plot No- 43/1, Kissam- Patharbani, Over an Area of 4.500 Hects. Is situated in the Village- Bhejangiwada.



Tahasildar, Kalimela

**TAHASILDAR  
KALIMELA**

### CERTIFICATE

Certified that, the Co-Ordinate of the Bhejangiwada Stone Quarry having Khata No-629 and Plot No- 43/1, Kissam- Patharbani, Over an Area of 4.500 Hects. Is situated in the Village- Bhejangiwada.

Latitude :  $18^{\circ} 07' 41.81''$  N to  $18^{\circ} 07' 35.48''$  N

Longitude:  $81^{\circ} 53' 40.10''$  E to  $81^{\circ} 53' 36.33''$  E

Nearby Mines is Kuasiguda Stone Quarry

Latitude :  $18^{\circ} 03' 40.2''$  N to  $18^{\circ} 03' 44.7''$  N

Longitude:  $81^{\circ} 43' 15.3''$  E to  $81^{\circ} 43' 32.0''$  E



Tahasildar, Kalimela

**TAHASILDAR  
KALIMELA**




## Bhejangiwada stone Quarry

4.500 Hectars

There is no other Quarry within 500m boundary from lease area

### Legend

 Bhejangiwada Stone Quarry

Google Earth

Image © 2021 Maxar Technologies

Bhejangiwada Stone Quarry



500 m

  
**TAHASILDAR**  
**KALIMELA**



**CERTIFICATE**

Certified that the Bhejangiwada Stone Quarry having Khata No- 629 and Plot No- 43/1, Kissam- Patharbani, Over an Area of 4.500 Hects. Is not coming under the DLC land. As per the report of DFO, Malkangiri.

  
**TAHASILDAR  
KALIMELA**

Tahasildar, Kalimela

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**FORM-1**

**OF**

**BHEJANGIWADA STONE QUARRY**

**OVER AN AREA OF 11.11 ACRE OR 4.500 HECTARE IN VILLAGE BHEJANGIWADA  
UNDER KALIMELA TAHASIL OF  
MALKANGIRI DISTRICT, ODISHA.  
(CATEGORY: B2)**

**OF**

**PLAN PERIOD - FIVE YEARS**

**PREPARED FOR & ON BEHALF OF  
SUCCESSFUL BIDDER**

**TAHASILDAR, KALIMELA  
DIST- MALKANGIRI (ODISHA)  
(LESSEE)**

**APPENDIX I**  
**(See Paragraph-6)**

**FORM 1**

**(I) Basic Information**

S. No.	Item	Details
1.	Name of the Project/s	Tahasildar, Kalimela At/Po- Kalimela Dist. - Malkangiri, Odisha.
2.	S. No in the schedule	
3.	Proposed capacity / area /length/tonnage to be handled /command area /lease area/number of wells to be drilled	Production of 7011.00 Cum/Annum. From the lease area 4.500 ha.
4.	New /Expansion /Modernization	New
5.	Existing Capacity / Area etc. *	7011.00 Cum /Annum, 4.500 ha.
6.	Category of project i.e. 'A' or 'B'	"B2"
7.	Does it attract the general condition? If yes, please specify.	Yes, Semi-Mechanised
8.	Does it attract the specific condition? If yes, please specify.	No
9.	Location	Refer to Topo sheet No: E44J16 Latitude : 18° 07' 41.81" N to 18° 07' 35.48" N Longitude: 81° 53' 40.10" E to 81° 53' 36.33" E
	Plot//Khata No.	Plot No-43/1 & Khata No-629
	Village	Bhejangiwada
	Tehsil	Kalimela
	District	Malkangiri
	State	Odisha
10	Nearest railway station/airport along with distance in kms.	The nearest railway station is Padua which is about 89.3 km from the mine lease area. The nearest airport is Visakhapatnam Airport at 148 km from the mining site.
11	Nearest Town, city, District, Headquarters along with distance in kms.	The nearest town is Kalimela which is at a distance of 15.6 kms from the lease area. The District Head Quarter is Malkangiri at a distance covering 25.5 km.



12	Village, Panchayats, Zilla Parisad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Village- Bhejangiwada Zila Parisad- Malkangiri Local Body – Kalimela.
13	Name of the applicant	Tahasildar, Kalimela
14	Registered address	Tahasildar, Kalimela, At/Po: Kalimela Dist.- Malkangiri, Odisha.
15	Address for correspondence :	
	Name	Tahasildar, Kalimela
	Designation (Owner/Partner/CEO)	Owner
	Address	Tahasildar, Kalimela, At/Po: Kalimela Dist.- Malkangiri, Odisha.
	Pin code	
	E-mail	
	Telephone No.	
	Details of Alternative sites examined, if any, Location of these sites should be shown on a topo sheet.	Village-District-State 1. 2. Not applicable 3.
16.	Interlinked Projects	NIL
17.	Whether separate application of interlinked project has been submitted?	Not applicable
18.	If yes, date of submission	Not applicable
19	If no, reason	Not applicable
20	Whether the proposal involves approval / clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z Notification, 1991 ?	Not applicable
21	Whether there is any Government order/Policy relevant/relating to the site?	Not applicable
22	Forest land involved (hectares)	NIL
23	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up?	Not applicable

	(a) Name of the Court (b) Case No. (c) Orders/directions of the Court, if any and its relevance with the proposed project.	
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**(II) Activity**

**1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)**

<b>S. No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities /rates, wherever possible) with source of information data</b>
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	---
1.2	Clearance of existing land, vegetation and buildings?	No	Not Applicable
1.3	Creation of new land uses?	Yes	As per the table given above on Sl. No.1.1
1.4	Pre-construction investigations e.g. bore holes, soil testing?	Yes	Geological survey and Mining Plan has been prepared after conducting different tests.
1.5	Construction works?	No	Not Applicable
1.6	Demolition works?	No	Not Applicable
1.7	Temporary sites used for construction works or housing of construction workers?	No	Not Applicable
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Mining will be carried out as per the approved mining scheme.
1.9	Underground works including mining or tunneling?	Yes	Mining of stone quarry is accomplished by Manual Method
1.10	Reclamation works?	No	Not Applicable
1.11	Dredging?	No	Not Applicable



1.12	Offshore structures?	No	Not Applicable
1.13	Production and manufacturing processes?	Yes	Manual method for mining of stone quarry with production capacity of 7011.00 Cum.
1.14	Facilities for storage of goods or materials?	Yes	Stone quarry will be mined and transported. Temporary stack yards are provided within mine lease area.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	No	Not Applicable
1.16	Facilities for long term housing of operational workers?	No	Not Applicable
1.17	New road, rail or sea traffic during construction or operation?	No	There is no existence of Public road and railway line within the Lease area.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	Not applicable
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	Not applicable
1.20	New or diverted transmission lines or pipelines?	No	Not applicable
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	Yes	Not applicable
1.22	Stream crossings?	No	Not applicable
1.23	Abstraction or transfers of water from ground or surface waters?	Yes	Accumulated water are proposed to be utilized for plantation & water sprinkling.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	During mining no alteration or changes in the passage/ route of river.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	Minerals Road Metal will be transported in tippers by road to consumers. Workers will come from nearby villages on their convenience

1.26	Long-term dismantling or decommissioning or restoration works?	No	No dismantling work will be carried in the project.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	No decommissioning activity proposed.
1.28	Influx of people to an area in either temporarily or permanently?	Yes	Skilled-3, Semi skilled-3, Unskilled-8, total 14 labours.
1.29	Introduction of alien species?	No	Not Applicable
1.30	Loss of native species or genetic diversity?	No	Not Any
1.31	Any other actions?	No	Not applicable

**2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):**

<b>S.No.</b>	<b>Information/checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities /rates, wherever possible) with source of information data</b>
2.1	Land especially undeveloped or agricultural land (ha)	Yes	Non Forest Govt. land will be converted to Mining purposes.
2.2	Water (expected source & competing users) unit: KLD	Yes	Water requirement will be 2 KLD. Water would be purchased from wells and tube wells from nearby areas.
2.3	Minerals (MT)	No	Road Metal 7011.00 Cum annual production.
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	No	Not Applicable
2.5	Forests and timber (source – MT)	No	Not Applicable
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	No	----
2.7	Any other natural resources (use appropriate standard units)	No	Not Applicable

**3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.**

<b>Sl. No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities/rates, wherever possible) with source of information data</b>
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	Not Applicable
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Not Applicable
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	Socio-economic condition will improve and will have positive impact due to increasing earning sources of nearby peoples.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	Not Applicable
3.5	Any other causes	No	Not Applicable

**4. Production of solid wastes during construction or operation or decommissioning (MT/month)**

<b>S. No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities/rates, wherever possible) with source of information data</b>
4.1	Spoil, overburden or mine wastes	No	Not Applicable
4.2	Municipal waste (domestic and or commercial wastes)	No	Not Applicable
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	Not Applicable
4.4	Other industrial process wastes	No	Not Applicable
4.5	Surplus product	No	No surplus product will generate
4.6	Sewage sludge or other sludge from effluent treatment	No	Not Applicable
4.7	Construction or demolition wastes	No	Not Applicable



4.8	Redundant machinery or equipment	No	There is no redundant machinery or equipment.
4.9	Contaminated soils or other materials	No	Not Applicable
4.10	Agricultural wastes	No	Not Applicable
4.11	Other solid wastes	No	Not Applicable

#### **5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)**

<b>S.No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities/rates, wherever possible) with source of information data</b>
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	Emission from transportation trucks and a few mining equipments is the only source of vehicular emissions.
5.2	Emissions from production processes	Yes	Not Applicable
5.3	Emissions from materials handling including storage or transport	Yes	Not Applicable
5.4	Emissions from construction activities including plant and equipment	No	Not Applicable
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	Yes	Not Applicable
5.6	Emissions from incineration of waste	No	Not Applicable
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	Not Applicable
5.8	Emissions from any other side	No	Nil

#### **6. Generation of Noise and Vibration, and Emissions of Light and Heat:**

<b>S.No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data</b>
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Noise will be generate from movement of mining machineries transport vehicles.
6.2	From industrial or similar processes	No	Not Applicable
6.3	From construction or demolition	No	Not Applicable
6.4	From blasting or piling	Yes	Blasting & Drilling will be done with safety measures.
6.5	From construction or operational traffic	No	Not Applicable

6.6	From lighting or cooling systems	No	Proposed mining is open cast thus emission of light and heat will be negligible. All the mining operation will be done in day only. No cooling system is required.
6.7	From any other sources	No	Not Applicable

**7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:**

<b>S.No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities/ rates, wherever possible) with source of information data</b>
7.1	From handling, storage, use or spillage of hazardous materials	No	No hazardous materials will be used.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	Yes	The domestic wastewater will be disposed to septic tank followed by soak pit.
7.3	By deposition of pollutants emitted to air into the land or into water	No	-----
7.4	From any other sources	No	Nil
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	No dump proposal at mine site.

**8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment**

<b>S.No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities/rates, wherever possible) with source of information data</b>
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	Yes	Not Applicable
8.2	From any other causes	No	Nil

8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	The area is not prone to flood and earthquake. No such incident is reported in this area so far. The area comes in seismic zone-II.
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**9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality**

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting. Localities, ancillary development or development stimulated by the project which could have impact on the environment e.g.:  <ul style="list-style-type: none"> <li>Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.)</li> <li>housing development</li> <li>extractive industries</li> <li>supply industries</li> <li>other</li> </ul>		Roads and transport facility will be improved due to frequently available of mine vehicles. Project proponent will organize regular medical checkup Camps and recreational activities. Employment to local people will be generated. Overall living standard of nearby people will have positive impact.
9.2	Lead to after-use of the site, which could have an impact on the environment	No	The mining area will be back-filled and reclaimed after mining is completely over. No impact will occur
9.3	Set a precedent for later developments	No	----
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	----

**(III) Environmental Sensitivity**

S. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	Nil



2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	No	Nil
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	Nil
4	Inland, coastal, marine or underground waters	No	Nil
5	State, National boundaries	No	Nil
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	No	There is no existence of Public road and railway line within the Lease area.
7	Defence installations	No	Nil
8	Densely populated or built-up area	No	-----
9	Areas occupied by sensitive man-made land uses ( <i>hospitals, schools, places of worship, community facilities</i> )	Yes	Hospitals and schools are available in nearby villages
10	Areas containing important, high quality or scarce resources ( <i>ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals</i> )	No	-----
11	Areas already subjected to pollution or environmental damage. ( <i>those where existing legal environmental standards are exceeded</i> )	No	-----
12	Areas susceptible to natural hazard which could cause the project to present environmental problems ( <i>earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions</i> )	No	Nil

#### (IV) Proposed Terms of Reference for EIA studies

- Purpose and Brief of the Project.
- Project description in terms of type, need, size and magnitude of operation, technology & process description and other details of utilities including site /location map, plan and relevant sections for the proposed mining and waste management.

The EIA study will be done for the mines site (core zone) and area within 10 km radius (buffer zone), both of which comprise the 'study area'. The following data, through field survey and Baseline Data Generation (One season) for Rapid EIA/EMP Studies.

#### PROPOSED TERMS OF REFERENCE FOR EIA STUDIES.

To study the area surrounding 10 km. radius of the mine lease area as the centre. The TOR for EIA broadly includes:

- Project details like technology, methodology, production, handling of waste, waste dumping etc.
- To conduct a literature review and to collect data relevant to the study area;
- To undertake environmental monitoring so as to establish the baseline environmental status of the study area;
- To identify various existing and expected pollution loads due to various activities in the ambient levels:
- To identify impact on Air, water regime, ecology and land environment.
- To prepare an Environmental Management Plan (EMP) outlining the measures for reducing the adverse impact and improving the environmental quality and scope for future expansions for environmentally sustainable development; and collection of the environment data as per the following table

Sl. No.	Attribute	Parameters	Frequency of Monitoring
1	<b>Ambient air quality</b>	SPM, RSPM SO <sub>2</sub> , NO <sub>x</sub> AND CO	24 hourly samples twice a week for three months covering one season for at least four locations. Monitoring as per NAAQ norms.
2	<b>Meteorology</b>	Wind speed and direction, temperature, relative humidity, rainfall & cloud cover	Data collected from secondary sources like IMD
3	<b>Water quality</b>	Physical, Chemical and Bacteriological parameters	One season sampling/analysis from surface and ground water sources.
4	<b>Ecology</b>	Existing terrestrial and aquatic flora and fauna	Through field visits
5	<b>Noise levels</b>	Noise levels in dB (A)	Recording at regular interval for per location for one season
6	<b>Soil</b>	Parameters related to agricultural and deforestation potential	Soil sampling / analysis for one season.
7	<b>Land use</b>	Trend of land use change for different categories	Based on data published in district census handbooks

8	<b>Socio economic aspects</b>	Socio-economic characteristics, labor force characteristics, boom town effects etc.	Secondary sources like census handbooks.
9	<b>Geology</b>	Geological history	Based on data collected from secondary sources and exploration undertaken during the course of mining
10	<b>Hydrology</b>	Drainage area and pattern, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected from secondary sources
11	<b>Hydrogeology</b>	Ground water assessment	As per GEC 1997.

Identification and evaluation of impacts through dispersion modeling and preparation of EIA report with Environmental Management plan (Basing on the above baseline data).

- Details of Jham and saal tree are the common flora, and the buffalo, cow, goats are available manage by the local people. Within a distance of 5 km from the project site (including forest details).
- Major habitat within 15 km radius.
- There are no Major industries within 15 km radius.
- There is no Sensitive places / historical monuments and sanctuaries
- Demography and Socio-economic based on last available Census data for entire study area.
- Relevant meteorological data, for previous decades from India Meteorological Department (IMD).
- Study of present environmental protection and mitigation measures in nearby operating similar projects, if any.
- Geo-hydrological aspects based on available data from various sources.
- Identification of water bodies, hills, roads etc. within 10 km radius and collecting data regarding discharge of streams and flood levels etc. from existing records, if any river lies in study area.

**The environmental impacts would be anticipated in core and buffer zone on:**

- Topography
- Climate
- Water Quality (Surface/Ground)
- Hydro-geological Regime
- Air quality
- Noise Levels
- Flora and Fauna (terrestrial, aquatic)
- Traffic density
- Land-Use
- Socio-Economic Conditions
- Habitat
- Health, culture, human environment including public health, occupational health and safety.



- Sensitive Places/Historical Monuments
- Aesthetics and Visual intrusion
- The impacts would be anticipated based on experience of similar projects and success of this mine operation during the past.

**Proposed Environmental Safeguards and Monitoring Mechanism**


- Reclamation of areas disturbed during construction but not required for any activity during operation.
- Measures to control the surface and ground water pollution due to various effluents to be discharged
- Measures to control air pollution due to proposed activities/ operation.
- Green belt development and identification of flora species which can be planted in and around the project
- Measures to control noise pollution and mitigate adverse impact on workers and habitat in core and buffer zone
- Pronounce the improvement in socio-economic conditions and benefits the people will get on implementation of the project
- Measures to control health hazard of workers and surrounding population
- Total and specific cost of implementation of control measures
- Environmental monitoring, implementation organization and feedback mechanism to effect mid course corrections.
- Impact due to displacement, if any

The experience of similar project(s) will be made use of for envisaging the pollution control measures by pronouncing the success in the past.

"I hereby given undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and believe and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project rejected and clearance given, if any to the project will be revoked at our risk and cost.

Place:

Date:

  
Signature of the Lessee (in full)

Address: Tahasildar Kalimela  
At/Po: Kalimela  
Dist.- Malkangiri, Odisha.

# **ENVIRONMENTAL MANAGEMENT PLAN**

OF

## **BHEJANGIWADA STONE QUARRY**

**OVER AN AREA OF 11.11 ACRE / 4.500HA  
IN VILLAGE BHEJANGIWADA OF KALIMELA TAHASIL OF  
MALKANGIRI DISTRICT OF ODISHA.**

For

**PREPARED FOR & ON BEHALF OF  
TAHASILDAR KALIMELA (ODISHA)**

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## 1 Introduction

Environmental Management Plan (EMP) is a site specific plan developed to ensure that the Bhejangi wada mine project is implemented in an environmentally suitable manner. Environmental Management Plan also ensures that the project implementation is carried out in accordance with design by taking appropriate mitigation methods to minimize impacts on the environment during the construction and/ or operational phase. Environmental Management Plan will outline Environmental Aspects of concern as well as their level of risk and environmental protection measures to diminish this risk. It emphasizes how the development may impact on relevant environmental factors and how these impacts may be mitigated and managed so that they are environmentally acceptable accordingly Environmental Management Plan is prepared.

### 1.1. Brief Description of the Project

The Mining lease for Stone over an extent of 4.500 ha of Village Bhejangi wada Under Kalimela Tahasil of Malkangiri District of Odisha. The mining lease area is bounded by latitude 18° 07' 41.81" N to 18° 07' 35.48" N and longitude 81° 53' 40.10" E to 81° 53' 36.33" E in the Topo sheet no. E44J16.

The project comes under i.e. Bhejangi wada Stone Quarry of *Tahasildar, Kalimela* comes within 500mts radius. So the Environmental Management Plan (EMP) is being prepared for one mines.

The objective of the Bhejangi wada Stone Quarry of *Tahasildar, Kalimela*, to produce 35055 cum, of Stone respectively to meet the raw material requirement of nearby crusher, the community needs by ensuring the economy feasibility pointing the following objectives.

- Ensure that ecological balance of the area is not adversely affected by air , noise missions and solid wastes
- To minimize operational risk and maximize safety of working persons.
- Improvement in the living standard of local inhabitants.
- Improvement of indirect means of livelihood.

**Table 1-1: Salient features**

<b>Description</b>	<b>Details</b>
<b>Site Location</b>	Plot No-43/1, Khata No.-629 Bhejangi wada (V), Kalimela (T), Malkangiri(D), Odisha
<b>Production</b>	7011 cum of Stone Per Annum
<b>Mine Lease Area</b>	4.500 Hectares
<b>Latitude</b>	Latitude 18° 07' 41.81" N to 18° 07' 35.48" N
<b>Longitude</b>	Longitude 81° 53' 40.10" E to 81° 53' 36.33" E
<b>Top sheet No.</b>	E44J16
<b>Nearest railway line</b>	Padua Railway line-89.3Km
<b>Airport</b>	Visakhapatnam Airport -148Km
<b>Road/ Highway</b>	NH 326- 10.5 km
<b>Hospital</b>	Hospital-16.8 Km
<b>Nearest Town</b>	Kalimela 15.6 km
<b>Nearest Habitant &amp; Village</b>	Bhejangi wada village- 0.7 K m
<b>Nearest Canal/Dam</b>	Canal-0.6km
<b>Nearest Reserve Forest</b>	1.6 Km Bapanapalli Reserve forest
<b>Nearest Archaeological site</b>	1.3 Kms Kali Temple, Malkangiri.
<b>Method of Mining</b>	Opencast semi mechanized method

## **2 Reserves Estimation and Life of Mine**

Geological traverses in the quarry and the study exposures in the vicinity of quarries facilitated to access the shape and size of the deposit in the area.

### **2.1 Method for estimation of reserves**

Stones rich in iron and aluminum are formed in hot and wet tropical areas. Nearly all Stones are rusty-red because of iron oxides. They develop by intensive and long-lasting weathering of the underlying parent rock. Tropical weathering (laterization) is a prolonged process of chemical weathering which produces a wide variety in the thickness, grade, chemistry and ore mineralogy. The majority of the land area containing Stones is between the tropics of Cancer and Capricorn.

The initial products of weathering are essentially kaolinized rocks called saprolites. A period of active laterization extended from about the mid-Tertiary to the mid-Quaternary periods (35 to 1.5 million years ago).

Stones are formed from the leaching of parent sedimentary rocks (sandstones, clays, limestones); metamorphic rocks (schists, gneisses, migmatites); igneous rocks (granites, basalts, gabbros, peridotites); and mineralized proto-ores; which leaves the more insoluble ions, predominantly iron and aluminum. The mechanism of leaching involves acid dissolving the host mineral lattice, followed by hydrolysis and precipitation of insoluble oxides and sulfates of iron, aluminum and silica under the high temperature conditions of a humid sub-tropical monsoon climate. An essential feature for the formation of Stone is the repetition of wet and dry seasons. Rocks are leached by percolating rain water during the wet season; the resulting solution containing the leached ions is brought to the surface by capillary during the dry season. These ions form soluble salt compounds which dry on the surface; these salts are washed away during the next wet season. Stone formation is favored in low topographical reliefs of gentle crests and plateaus which prevents erosion of the surface cover. The reaction zone where rocks are in contact with water—from the lowest to highest water table levels—is progressively depleted of the easily leached ions of sodium, potassium, calcium and magnesium.

The mineralogical and chemical compositions of Stones are dependent on their parent rocks. Stones consist mainly of quartz, zircon, and oxides of titanium, iron, tin, aluminum and manganese, which remain during the course of weathering. Quartz is the most abundant relic mineral from the parent rock. Stones vary significantly according to their location, climate and depth.

The reserve of Stone in the leasehold area been calculated by cross sectional area method. The total cross sectional area of the rock along each section have been calculated and multiplied with the strike influence based on grid spacing, to get the volume in cubic meter.



**2.2 Total Mineable Reserves: 627022.8 cum**

***2.3 Total Geological Reserves: 1027292.0 cum***

**2.4 Life of the Mine**

**Life of the Mine**                      = total mineable reserves/ Annual production rate  
  
   = 627022.8/7011 or 89.43  
   = 89.43 or Say as 89 years

### 3 Production details

#### 3.1 Land Usage details

Land Use Pattern of the quarry area during the next 5 years will be as follows

**Table 3-1 : Land usage details**

Head	Area used upto Previous plan (Ha)	Area required in present plan (Ha)	Total Area (Ha)
Mining Area	---	0.537	0.537
Over Burden / Market Rejects	---	0.007	0.007
Mineral Storage	---	---	---
Infrastructure	---	0.003	0.003
Roads	----	---	---
Green belt	---	0.625	0.625
Unused land	---	3.328	3.328
Total			4.500

**Table 3-2 : Man power requirement**

S.No.	Category	No. of Persons
1	Mines Manager	1
2	Mining Mate	1
3	Supervisor	1
5	Skilled Workers	3
6	Semi Skilled Workers	3
7	Un-skilled	8
Total		17

## 4 Environmental Management Plan

Mining of Stone involves using heavy machinery and impacts the surrounding environment. In order to reduce the impact, we assessed the possible impacts on surrounding environment and suggested possible preventive measures by categorizing as Air, Noise and Water. The details of the possible causes and measures taken to reduce them are as follows. In addition to these measures a green belt will also be developed to remedy the biomass loss occurring due to the mining process.

### 4.1 Air pollution management

In the process of mining heavy machinery such as excavators, Tippers, etc are used. These result in air pollution at various stages, which are stated as follows

1. Particulate matter generation from the mining process,
2. Particulate matter generation due to hauling, loading & unloading of mined Stone & Dolomite
3. NOx & Sox generation form the consumption of fossil fuels in heavy machinery and transportation vehicles.

#### *4.1.1 Measures taken to reduce pollution*

During mining: Particulate matter generation during mining is mainly from drilling holes which can be controlled by covering the drill holes with cloth.

Transportation:

- a. To minimize the particulate mixing in air during hauling the vehicles are never overloaded and covered with atarpal
- b. The particulate generation from the vehicular movement is suppressed by sprinkling water twice a day and conducting regular road repairs

Additionally the proposed green belt would act as sinks for particulate matter.

## **4.2 Noise Pollution management**

The major source of noise pollution is due to

- i. Drilling,
- ii. Blasting and
- iii. Vehicular movements.

Regular maintenance of noise generating units (repairing, greasing and minimization vibrations) will be taken to minimize noise levels. During blasting operations the noise level may increase (short time exposures). Blasting will be carried out during daytime to avoid noise intensity to the surrounding people at night time.

Personal protective equipment like earplugs and other protective devices will be provided to workers those who are working near by the noise generating sources (drill machine operators). But as with distance away from the mining operations, the noise levels will reduce and the anticipated noise levels falls below the day and night residential standard limits set by CPCB (day Leq 55 and night Leq 45 dB(A)).

Dense vegetation is planned at the periphery of the lease area to minimize the impact of blasting in the surrounding environment.

## **4.3 Water Pollution Management**

The ground water table in this belt is 30 m below from the surface and since the quarry depth will not reach upto this depth in the near future flooding by ground water is not anticipated. However, during rainy months, there is a possibility of wet conditions developing in the working pit. This will be minimized if not altogether eliminated by adopting simple techniques like digging trenches all round to drain off rainwater and preventing surface run off from entering and flooding working pit. The water from the will be pumped by deploying suitable pumps, if and when required, the mine drainage can be effectively managed and the pit kept dry to keep up the production schedule.



#### 4.4 Green belt development

The whole area is occupied by scattered sparse vegetation of thorny trees and small bushes. In the quarry lease area no wild animals are witnessed as per the statements collected from the local population, since 50 years. There will be loss of biomass due to clearing of existing vegetation, but will be compensated by the given a forestation plan. As the site is near to human settlement other than domestic animals no important wild life is found that need to take special attention. However due to planned development of green belt, the area attracts more avifauna and also gives shelter to other domestic animals.

**Table 4-1: Proposed Green belt & corresponding water requirement**

<b>Year</b>	<b>Trees at the end of year (No.)</b>	<b>Water needed @2 L/tree (KLD)</b>
1 <sup>st</sup> Year	200	0.12
2 <sup>nd</sup> Year	200	0.22
3 <sup>rd</sup> Year	200	0.31
4 <sup>th</sup> Year	200	0.21
5 <sup>th</sup> Year	200	0.23

**Table 4-2: Suggested trees for green belt**

<b>No.</b>	<b>Botanical Name</b>	<b>Common Name</b>	<b>Height (m)</b>	<b>Color of the flower</b>	<b>Flowering time</b>
1	<i>Acacia Arabica</i>	Nallathumma	8.0-10.0	Yellow	March-May
2	<i>Azadirachta indica</i>	Neem	15.0-20.0	White	January- May
3	<i>Terminalia catappa</i>	Badam	10.0-35.0	White	March - April

4	<i>Nerium odoratum</i>	Ganneru	2.0-4.0	Red, white	February- March
5	<i>Tectona grandis</i>	Teak	10-45	White	June - September
6	<i>Annona squamosa</i>	Sethaphalam	3.0 -8.0	Creamish yellow	May- August
7	<i>Eucalyptus citridora</i>	Eucalyptus	30.0 - 45.0	White	July- August

#### **4.5 Environmental Monitoring program**

The survey of air pollution comprises of the following monitoring aspects;

- i. Ambient air quality survey
- ii. Noise Level Monitoring

Ambient air quality and noise level Monitoring will be carried out at minimum three stations, one station within mine site and two stations nearby residential areas outside the mine. Parameters like suspended particulate matter, sulphur dioxide, oxides of nitrogen carbon monoxide and lead will be monitored. The frequency of monitoring is preferably once in three months on 24 hour basis. The samples will be collected in accordance with the procedures given by CPCB.

## **4.6 Mine closure Plan**

### **Reclamation**

The top soil or the waste generated from the mine will be used to refill the pit and since it won't be sufficient to fill the mine. The mining pit will be developed as water logged areas with suitable fencing all along the boundaries. Storage of rain water in the mine it will help to improve the ground water table in the area.

Asthisarea always experiences acute drought situation, this water body can act as a source of water. The aqua fauna like fishes, prawns, etc. will be developed in the hydro-reclaimed areas by migrating them from the area having similar type of environment. The pit will be fenced appropriately keeping in view the most important aspect of safety.

## **4.7 Occupational health and safety**

Health and safety aspects of the mine will be taken care off as per the World Bank (WB) guidelines on open pit mining. The guidelines provide the detailed information on the aspects that are required to be taken into account for maintaining proper health and safety issues. The workers continuously exposed to dust will be provided with some protective devices like dust mask to prevent respiratory disorders. The workers continuously exposed to a high noise will be provided with ear muffs/ earplugs. Green belt in and around the mining area will be developed to attenuate noise and dust impact. The blasting carried out in the mine area will be carefully planned and executed under the supervision of a responsible officer, to avoid any accidents. Drinking water supply for the employees will be provided by the project authority. The standard of the drinking water will be per WHO guidelines.

Periodical training programme to inform the employees about their task, associated risk, and safe working practices will be undertaken. Training will also include information on accident prevention, proper control and maintenance of equipment and safe material handling practices.

A regular monitoring of the Occupational Health and Safety will reduce the chances of accidents in the mine. Records of job related accidents and illness should be maintained. This information will be reviewed and evaluated to improve the effectiveness of Environmental Health and Safety programme.

#### **4.8 Other management aspects**

Records will be maintained for the analysis of ambient air quality and noise levels. These records are not only required for the perusal of the Pollution Control Board authorities. The management will maintain the records as per the hazardous waste regulations and EPA regulations and apply for the annual consents for air and water, and renewal of authorization for the storage of hazardous waste as per the Hazardous Waste (Handling & Management) Rules, 1989. The records of hazardous waste manifest will be maintained. The format of the same is enclosed in appendix.

The mine shall obtain the consent for operation (CFO) as required under section 25/26 of the Water act, 1974 and under section 21/22 of Air Act, 1981, before trial production and commissioning from the State Pollution Control Board. The CFO will be renewed each year by the management. The mine will submit environmental statement every year before September 30. The management ensures that it will comply with all the directions and regulations issued by the Ministry of Environment and Forests, New Delhi, State and Centre Pollution Control Boards.

The Consent for Establishment & Consent for Operation will be displayed in a conspicuous location for reference to the inspecting authorities of different departments.



#### **4.9 Cost of Environmental Management Plan**

The total project cost is Rs.1.8 Lakhs and the details of the same are given below.

##### **Budgetary measures for EMP**

<b>Heads</b>		<b>Bhejangiwada Stone Quarry</b>
<b>Sl. No.</b>	<b>Activity</b>	<b>Total Capital Cost in Rs.</b>
1.	Environmental Monitoring & Pollution Control Measures	95,000
2.	Maintenance of Vehicles	40,000
3.	Plantation & Maintenance	30,000
4.	Water Sprinkling	15,000
<b>Total Capital Cost in Rs.</b>		<b>Rs. 1,80000</b>
<b>Total Recurring Cost in Rs.</b>		<b>Rs.36,000/annum</b>