

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL  
COMMITTEE, ODISHA HELD ON 28<sup>th</sup> DECEMBER, 2021**

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The SEAC met on 28<sup>th</sup> December, 2021 at 04:00 PM through video conferencing in Google Meet under the Chairmanship of Sri. B. P Singh. The following members were present in the meeting.

1. Sri. B. P. Singh	-	Chairman
2. Dr. K. Murugesan	-	Secretary
3. Prof (Dr.) H. B. Sahu	-	Member
4. Dr. D. Swain	-	Member
5. Sri. J. K. Mahapatra	-	Member
6. Sri. K. R. Acharya	-	Member
7. Prof. (Dr.) B.K. Satpathy	-	Member
8. Dr. K.C.S Panigrahi	-	Member

The agenda-wise proceedings and recommendations of the committee are detailed below.

**ITEM NO. 01**

**PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF THE ODISHA MINING CORPORATION LTD. FOR SUKHAPADA DECORATIVE STONE MINE OVER AN AREA OF 46.159 HA OR 114.062 ACRES AT VILLAGE- BANDARESWAR & KESHARAIPUR, TAHASIL- DARPAN, DISTRICT- JAJPUR OF SRI SUMAN KRISHNA SIT - EC**

1. The proposal is for Environmental Clearance of the Odisha Mining Corporation Ltd., for Sukhapada Decorative Stone Mine over an area of 46.159 Ha or 114.062 Acres at Village- Bandareswar & Kesharaipur, Tahasil- Darpan, District- Jajpur of Sri Suman Krishna Sit.
2. As per the EIA Notification S.O. 1533, dated 14th September 2006 and subsequent amendments, this project falls under Category B (B1).
3. Terms of Reference was issued by SEIAA on dated 31.8.2021 vide letter no. 2344/SEIAA.
4. Public Hearing was conducted on dated 15.12.2021 at Palei Grampanchayat office in Jajpur district as per the guidelines of EIA Notification 14<sup>th</sup> September 2006 and subsequent amendments. As per demand of people during public hearing, the cost allocated for social development plan will be 60 Lakhs.
5. Mining lease was granted by Department of Steel & Mines, Govt. of Odisha vide letter no. 9804/ IV(DS)SM-39/2019 dated 11.12.2019 to Odisha Mining Corporation for a period of 30 years subject to submission of the approved mining plan along with other conditions.
6. Mining plan is being approved by Director of Geology, Odisha, Bhubaneswar vide letter no. MXXII-(C)-1/2021 5587/DM dated 27.07.2021.

7. **Location and Connectivity** - The area of mining lease area is located in the Survey of India Toposheet no. F45U6, latitude 20° 35' 33.5422" N to 20° 36' 1.8569" N and longitude 86° 15' 32.7960" E to 86° 16' 9.88396" E. The land use pattern of the mining lease area comes under the non forest agricultural land (Abada Ajogya Anabadi), bearing Khata no. /Plot No./Area/Kisam: 389/29/ 37.685 Acres/Pahada, 388/31/37.17 Acres/ Pahada & 261/248/39.206 Acres/ Abada Ajogya Anabadi. No forest land involved. The applied area of 46.159 Ha in village Bandareswar No-1219 & Kesharaipur No-1218, Tahasil–Darpanin Jajpur district of Odisha. Nearest railway stations is Dhanamandal Railway Station at a distance of 18Km from lease. The lease area can be approached from NH: 5A (Daitari - Paradeep Express Highway) at a distance of 0.2Km. Birupa River at a distance of 5.5Km. Nearest major habitation is Bandareswar No.-1219 & Kesharaipur No.-1218 at 1km. Nearest Archaeological site is Ratnagiri Budhist Site at 10 Km. Nearest Airport is Bhubaneswar Airport which is at a distance of 60Km. Nearest sanctuary is Kapilash Wildlife Sanctuary is at is at 33.7km from lease boundary.
8. **Method Of Mining** - Mining is essentially proposed by opencast and semi mechanized method with the deployment of machines like jack hammer drill, compressor, hydraulic excavators & tippers. The major activities in this quarry are removal of waste materials, block cutting/splitting & dressing, loading & transportation of decorative stone as well as waste disposal. The decorative stone blocks will be extracted, loaded and transferred from a quarry face to the stone cutting shop/processing plant/port through trailers/lorries/ trucks. Mineral rejects, rubble stone will be transported through trucks to the waste dump as waste/ rejects.
9. **Total Reserves & Production** - The geological and mineable reserve of Sukhuapada Decorative Stone Mine of area 46.159 Ha is 61,99,785 m<sup>3</sup> and 57,27,717 m<sup>3</sup> respectively. The project has been proposed for maximum production of 28,975 cu.m per annum and 1,38,025 cum of total production of Decorative Stone during the plan period from the lease area.

**Table No.1.1 Details of the Geological Reserve during the Plan Period**

GEOLOGICAL RESERVE					
Reserve Category	Decorative Stone (m3)	Vol. Of Waste Rock In m3	Vol. Of Sub Grade In m3	Total In (m3)	Geological Axis As Per UNFC
Proved	6199785	11159614	7439742	24799141	G1

Table No.1.2 Details of the Mineable Reserve during the Plan Period

MINERAL RESERVE					
RESERVE CATEGORY	DECORATIVE STONE (m3)	VOL. OF WASTE ROCK IN m3	VOL. OF SUB GRADE IN m3	TOTAL IN (m3)	GEOLOGICAL AXIS AS PER UNFC

<b>Proved</b>	<b>5727717</b>	<b>6873261</b>	<b>10309890</b>	<b>22910868</b>	<b>G1</b>
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Table No.1.3 Details of the proposed production during the Plan Period

Year	LOI (M)	Vol of Total Excavation (M3)	Vol of Decorative Stone (M3)	Vol. of Presently Non-Saleable Ore (M3)	Vol. of Waste (M3)	Vol. Of Weathered Rock (M3)
1ST YR	100	106600	26650	31980	47970	122800
2ND YR	100	115900	28975	34770	52155	35700
3RD YR	100	109800	27450	32940	49410	32800
4TH YR	100	109200	27300	32760	49410	30900
5TH YR	100	110600	27650	33180	49770	32500
<b>TOTAL</b>		<b>552100</b>	<b>138025</b>	<b>165630</b>	<b>248445</b>	<b>254700</b>

10. **Waste generation and utilization** - A total of 248,445m<sup>3</sup> waste is likely to be generated during the plan period. These wastes will be utilized concurrently for construction and maintenance of road in the lease area. For temporary storing of these wastes, an area of 2.01 Ha has been earmarked in the southern part of the mining lease area.
11. After the plan period a total of 11.3736 Ha will be utilised for mining, dumping, stack yard and ancillary activities along with the safety zone over 2.272Ha. During the life of the mine, a total of 5.180 Ha of lease area will be degraded under mining.
12. **Green Belt** - The plantation will be done over an area of 1.23 Ha in the lease boundary and open spaces available. By the end of conceptual period the dumping and stacking area will be covered under plantation.
13. **Water Requirement** - Total water requirement for the project will be 5 KLD out of which 1.5 KLD will be required for drinking and domestic purpose and 2.0 KLD for dust suppression and 1.5 KLD for plantation purpose.
14. **Power Requirement** - Power Requirement will be met through DG sets.
15. **Employment Potential** - The mining activity will generate employment for 40nos consisting of (Skilled, Semiskilled, Unskilled, and Administrative Staffs).
16. Baseline studies was conducted during the period from March 2021 to May 2021.
17. The project cost is ` 4 crores and funds under EMP is ` 40 lakhs (capital) and ` 5.2 lakhs (Recurring).
18. There is no DLC land involved in the lease area as certified by the concerned DFO.
19. The Environment consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a presentation on the proposal

before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the project proponent, the SEAC recommended for grant of Environmental Clearance with following specific conditions in addition to the conditions as per **Annexure – A**.

- i) While Land use of the proposed project site is stated to be “Non forest Agricultural land (Abada Ajogya Anabadi)” by the lessee, it is also said to be of “Parbat-2” Kisam by the lessee. Therefore, land conversion / diversion for mining purpose shall be done with the approval of the concerned authority confirming to land use policy of the State.
- ii) The lessee shall provide the settling tank of suitable design & capacity to accommodate run-off / wash off from non – saleable stone / waste dumps without outflowing in addition to retaining wall & garland drain.
- iii) The lessee shall prepare the “SOP” for silt management in place including desiltation (if any, by analysing the presence of silt and fine sand and other fine minerals if any) of water bodies / Birupa river / Agricultural & Crop lands and implement the same.
- iv) Permission for use of village road shall be obtained from appropriate Govt authority before use of the same.
- v) Perennial periodical maintenance of the above said village road shall be done by the lessee in consultation & as advised by the authority of the road or it will be maintained by the authority of the road as required based on the “deposit scheme” of appropriate fund by the lessee with the authority.
- vi) Suitable haulage road shall be constructed by the lessee from lease boundary till NH- 5A (Daitari- Paradeep State Highway) of 200 meters & also maintained by them with permanent auto sprinkling arrangement on the said road for fugitive dust suppression.
- vii) The lessee shall provide the permanent sprinkling system inside the mines.
- viii) Rain water harvesting Management shall be in place with the pond for use in green belt, water sprinkling etc., and reduce the burden of water drawal from elsewhere.
- ix) The lessee shall make all efforts for transplantation of trees / saplings / afforestation done earlier in the hillocks fall, within the safety zone and non-mineral zone of mining area. Besides this, compensatory plantation/ afforestation shall be done for the trees to be cut if unavoidable with due permission of the appropriate Govt. Forest authority under deposit scheme as per the Govt. rules, Three tier/ dense green belt shall be maintained in safety zone around mining area by planting more saplings.
- x) Lessee shall make avenue plantation on both sides of haulage road and village road.
- xi) Since the manpower is 40+ including floating population, the lessee shall install a STP of minimum 5 KLD capacity of suitable design for treatment of domestic waste water.
- xii) The lessee shall make all efforts for “Zero discharge” to outside the lease boundary.
- xiii) The Lessee should provide large Sumps in the mined out/ non-mining area for collection of rain water & simultaneously recharge the Ground water.
- xiv) Provision of matching capacity of Settling Pond for sedimentation shall be provided to release the supernatant water through Check dam/ grass way/stone gabions if the water

quality is within permissible limit and if Zero Discharge concept is not achieved in exigencies.

- xv) This EC is granted subject to strict compliance by the lessee / PP on the commitments made by them during Public Hearing.
- xvi) This EC is granted without prejudice to any order or direction from any court of competent jurisdiction or competent authority under applicable laws.
- xvii) The lessee shall comply with all the conditions of EC and if anything is found otherwise at any point of time, the EC so granted shall be deemed to have withdrawn / revoked with immediately effect besides levy of penalty as applicable under the applicable laws.
- xviii) Mines closure plan shall be strictly followed by the lessee.
- xix) Protection of Nalas/ Water body(s)/ ponds at the bottom of the Hillock shall be ensured by the Lessee with the construction of " Retention Wall " of appropriate length, height and construction materials that will also protect fish cultivation and arrest erosion.

## **ITEM NO. 02**

### **PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF THE ODISHA MINING CORPORATION LTD. FOR GOBINDPUR DECORATIVE STONE MINE OVER AN AREA OF 45.17 ACRES OR 18.280 HA AT VILLAGE- GOKULPUR, TAHASIL- TANGI- CHOUDWAR, DIST- CUTTACK OF SRI SUMAN KRISHNA SIT - EC**

1. The proposal is for Environmental Clearance of the Odisha Mining Corporation Ltd., for Gobindpur Decorative Stone Mine over an area of 45.17 Acres or 18.280 Ha at Village- Gokulpur, Tahasil- Tangi- Choudwar, Dist- Cuttack of Sri Suman Krishna Sit.
2. As per the EIA Notification S.O. 1533, dated 14th September 2006 and subsequent amendments, this project falls under Category B (B1).
3. Terms of Reference was issued by SEIAA on dated 31.8.2021 vide letter no. 2346/SEIAA.
4. Public Hearing was conducted on dated 14.12.2021 was conducted on 15th Decemeber 2021 at Sidhagiri Bidyapitha, Village Gobindapur, under Tangi- Choudwar Block of Cuttack District as per the guidelines of EIA Notification 14th September 2006 and subsequent ammendments. As per demand of people during public hearing the cost allocated for social development plan will be 37 Lakhs.
5. Mining lease was granted by Department of Steel & Mines, Govt. of Odisha vide letter no. 5682/SM-MC2-MC-0058-2021/S&M dated 28.07.2021 to Odisha Mining Corporation for 30years subject to submission of the approved mining plan along with other conditions.
6. Mining plan is being approved by Director of Geology, Odisha, Bhubaneswar vide letter no. MXXII-(c)-3/2021/5585 /DM dated 27.07.2021.
7. Location and Connectivity - The area of mining lease area is located in the Survey of India Toposheet no. F45U2, latitude 20° 03'21.39" N to 20° 34'44.81" N and longitude 86° 03'21.39" E to 86° 03'44.52" E. The land use pattern of the mining lease area comes under the non forest agricultural land (Abada Ajogya Anabadi), bearing Plot

No.- 1213, Khata No.- 368, Class of the land – Parbata-2. Tenant Name - Abada Ajogya Anabadi. No forest land involved. The applied area of 18.28Ha in village Gobindapur ,Tahasil–Tangi-Choudwar in Cuttack district of Odisha. Nearest railway stations is Kapilash Road Junction Railway Station at a distance of 6.5 Km from lease. The lease area can be approached from SH 9A at a distance of 11KM and NH-5 at a distance of 2.7KM. Birupa River at a distance of 1Km. Nearest major habitation is Tangi at 10km. Nearest Archaeological site is Chhatia Site at 4 Km. Nearest Airport is Bhubaneswar Airport which is at a distance of 49Km. Nearest sanctuary is Kapilash Wildlife Sanctuary is at is at 33.7km from lease boundary.

8. **Method Of Mining** - Mining is essentially proposed by opencast and semi mechanized method with the deployment of machines like L/D bore machine, jack hammer drill, compressor, hydraulic excavators & tippers. The major activities in this quarry are removal of waste materials, block cutting/splitting & dressing, loading & transportation of decorative stone as well as waste disposal. The decorative stone blocks will be extracted, loaded and transferred from a quarry face to the stone cutting shop/processing plant/port through trailers/lorries/ trucks. Mineral rejects, rubble stone will be transported through trucks to the waste dump as waste/ rejects.
9. **Total Reserves & Production** - The geological and mineable reserve of Gobindapur Decorative Stone Mine of area 46.159 Ha is 5195330 cu.m and 3969510cu.m respectively. The project has been proposed for maximum production of 114900 cu.m per annum and 1,37,095 cum of total production of Decorative Stone during the plan period from the lease area.

Table No.1.1 Details of the Geological Reserve during the Plan Period

Reserve category	Decorative stone (m3)	Vol. Of waste rock in m3	Vol. Of sub grade in m3	Total in (m3)
Proved	1018383	1833089	1222059	4073531
Probable	280450	504810	336540	1121800
<b>GRAND TOTAL</b>	<b>1298833</b>	<b>2337899</b>	<b>1558599</b>	<b>5195331</b>

Table No.1.2 Details of the Mineable Reserve during the Plan Period

Reserve category	Decorative stone (m3)	Vol. Of waste rock in m3	Vol. Of sub grade in m3	Total in (m3)
Proved	809090	1456362	970908	3236360
Probable	183288	329918	219945	733151
<b>GRAND TOTAL</b>	<b>992378</b>	<b>1786280</b>	<b>1190853</b>	<b>3969511</b>

Table No.1.3 Details of the proposed production during the Plan Period

YEAR	VOL OF TOTAL EXCAVATION IN CUM	VOL OF DECORATIVE STONE IN CUM	VOLUME OF PRESENTLY NON SALEBALE ROCK IN CUM	VOL.OF WASTE IN CUM	VOLUME OF WEATHERED ROCK IN CUM
1ST YEAR	104780	26195	31434	47151	101920
2ND YEAR	107700	26925	32310	48465	78400
3RD YEAR	57200	14300	17160	25740	3000
	57700	14425	17310	25965	54000
SUB-TOTAL 114900		28725	34470	51705	57000
4TH YEAR	113000	28250	33900	50850	31100
5TH YEAR	108000	27000	32400	48600	5400
TOTAL 548380		137095	164514	246771	273820

10. **Waste generation and utilization** - A total of 51705 m<sup>3</sup> waste is likely to be generated during the plan period. These wastes will be utilized con-currently for construction and maintenance of road in the lease area. For temporary storing of these wastes, an area of 2.03 Ha has been earmarked in the mining lease area.
11. After the plan period a total of 9.78 Ha will be utilised for mining, dumping, stack yard and ancillary activities along with the safety zone over 1.579 Ha. During the life of the mine, a total of 18.281 Ha of lease area will be degraded under mining. The land under the quarry area will be converted to water reservoir and plantation will be carried out along the boundary of the reservoir. The dumping area, mineral storage area will be reclaimed and utilized for plantation. The waste generated during the mining period will be completely utilized for construction purpose.
12. **Green Belt** - The plantation will be done over an area of 1.580 Ha in the lease boundary and open spaces available. By the end of conceptual period the dumping and stacking area will be covered under plantation.
13. **Water Requirement** - Total water requirement for the project will be 5 KLD out of which 2 KLD will be required for drinking and domestic purpose and 1.5 KLD for dust suppression and 1.5 KLD for plantation purpose. Source of domestic water will be nearby village well.
14. **Power Requirement** - Power Requirement will be met through DG sets.
15. **Employment Potential** - The mining activity will generate employment for 40nos consisting of (Skilled, Semiskilled, Unskilled, and Administrative Staffs).
16. Baseline studies was conducted during the period from March 2021 to May 2021.
17. The project cost is ` 4 crores and funds under EMP is ` 40 lakhs (capital) and ` 5.2 lakhs (Recurring).

18. There is no DLC land involved in the lease area as certified by the concerned DFO.
19. The Environment consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the project proponent, the SEAC recommended for grant of Environmental Clearance with following specific conditions in addition to the conditions as per **Annexure – A**.

- i) While Land use of the proposed project site is stated to be “Non-Forest Agricultural land (Abada Ajogya Anabadi)” by the lessee, it is also said to be of “Parbat-2” Kisam by the lessee. Therefore, land conversion / diversion for mining purpose shall be done with the approval of the concerned authority confirming to land use policy of the State.
- ii) The lessee shall provide the settling tank of suitable design & capacity to accommodate run-off / wash off from non – saleable stone / waste dumps without outflowing in addition to retaining wall & garland drain.
- iii) The lessee shall prepare the “SOP” for silt management in place including desiltation (if any, by analysing the presence of silt and fine sand and other fine minerals if any) of water bodies / Birupa river / Agricultural & Crop lands and implement the same.
- iv) Permission for use of village road shall be obtained from appropriate Govt authority before use of the same.
- v) Periodical maintenance of the above said village road shall be done by the lessee in consultation & as advised by the authority of the road or it will be maintained by the authority of the road as required based on the “deposit scheme” of appropriate fund by the lessee with the authority.
- vi) Suitable haulage road shall be constructed by the lessee from lease boundary till NH-5 of about 2.7 km & also maintained by them with permanent auto sprinkling arrangement on the said road for fugitive dust suppression.
- vii) The lessee shall provide the permanent sprinkling system inside the mines.
- viii) Rain water harvesting Management shall be in place with the pond for use in green belt, water sprinkling etc., and reduce the burden of water drawal from elsewhere.
- ix) The lessee shall make all efforts for transplantation of trees / saplings / afforestation done earlier in the hillocks fall, within the safety zone and non mineral zone of mining area. Besides this, compensatory plantation/ afforestation shall be done for the trees to be cut if unavoidable with due permission of the appropriate Govt. Forest authority under deposit scheme as per the Govt. rules.
- x) Lessee shall make avenue plantation on both sides of haulage road and village road.
- xi) Since the manpower is 40+ including floating population, the lessee shall install a STP of minimum 5 KLD capacity of suitable design for treatment of domestic waste water.
- xii) The lessee shall make all efforts for “Zero discharge” to outside the lease boundary.
- xiii) The Lessee should provide large Sumps in the mined out/ non-mining area for collection of rain water & simultaneously recharge the Ground water.



- xiv) Provision of matching capacity of Settling Pond for sedimentation shall be provided to release the supernatant water through Check dam/ grass way/stone gabions if the water quality is within permissible limit and if Zero Discharge concept is not achieved in exigencies.
- xv) This EC is granted subject to strict compliance by the lessee / PP on the commitments made by them during Public Hearing.
- xvi) This EC is granted without prejudice to any order or direction from any court of competent jurisdiction or competent authority under applicable laws.
- xvii) The lessee shall comply with all the conditions of EC and if anything is found otherwise at any point of time, the EC so granted shall be deemed to have withdrawn / revoked with immediately effect besides levy of penalty as applicable under the applicable laws.
- xviii) Mines closure plan shall be strictly followed by the lessee.
- xix) Protection of Nalas/ Water body(s)/ ponds at the bottom of the Hillock shall be ensured by the Lessee with the construction of " Retention Wall " of appropriate length, height and construction materials that will also protect fish cultivation and arrest erosion.

  
Secretary, SEAC

Approved  
  
Chairman, SEAC

**CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR DECORATIVE STONE QUARRY**

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**A. Specific Conditions**

1. This EC for the proposal shall be operational after submission of an undertaking through affidavit to SEIAA, Odisha within 15 days of receipt of the EC letter for compliance of all the conditions prescribed herein.
2. EC for the proposal shall be operational after getting necessary approval from the CGWA.
3. Consent / NoC shall be obtained from the concerned village Sarpanch for use of village road for mineral transport. The said road shall also be maintained by the lessee.

**B. Standard conditions**

**(I) Statutory compliance**

1. This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
2. The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
3. The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors. This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project,
4. This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the project.
5. Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board.
6. The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety

(DGMS) and Indian Bureau of Mines from time to time.

7. The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made thereunder in respect of lands which are not owned by it.
8. The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-I1013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".
9. The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
10. A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
11. State Pollution Control Board shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
12. The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board and web site of the Ministry of Environment, Forest and Climate Change ([www.environmentclearance.nic.in](http://www.environmentclearance.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEF&CC Regional Office for compliance and record.
13. The Project Proponent shall inform the MoEF&CC/SEIAA, Odisha for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

**(II) Air quality monitoring and preservation**

14. The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2; CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
15. Effective safeguard measures for prevention of dust generation and subsequent

suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from ah sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

**(III) Water quality monitoring and preservation**

16. In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
17. Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
18. Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
19. The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC / SEIAA, Odisha. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon

(August), post-monsoon (November) and winter (January) and the record of monitored data be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, SEIAA, Odisha, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

20. Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1 /2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
21. The project proponent shall construct retaining wall and settling pond within the lease area. Further, check dams shall be constructed at strategic locations in which rain water passes in rainy season. Finally, the excess supernatant after sedimentation shall be allowed to spill away through stone pitch structure to the nearby valley.
22. De-silting of agricultural lands in buffer zone and beyond including nearby Nalas/rivers perennially periodically and perpetually caused due to wash up of minerals/OB/dumps shall be done as per SOP submitted. A legal affidavit shall be submitted within 6 months from the date of issue of Environmental Clearance to this effect with periodicity of de-silting.
23. Detail design of the existing retaining wall and the proposed for the expansion from a chartered Civil Engineer shall be submitted within 6 months from the date of issue of Environmental Clearance to ensure that no silt after wash up is escaped from the core / buffer zone of the mines.
24. An area of 3.40Ha shall be kept for public use as pond and road. Hence, remaining 52.956Ha shall be planted during life of the mine in a phased manner i.e. within a period of 20 years.
25. Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office, MoEF&CC annually.
26. Industrial waste water (workshop and waste water from the mine) should be properly collected and treated in an ETP as proposed so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
27. The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board.

**(IV) Noise and vibration monitoring and prevention**

28. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
29. The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
30. The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The worker engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

**(V) Mining Plan**

31. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
32. The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
33. The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

**(VI) Land reclamation**

34. The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
35. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
36. The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
37. The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
38. The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC, Govt. of India, Bhubaneswar as well as SEIAA, Odisha.
39. Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and topsoil / OB / waste dumps to prevent runoff of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
40. Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the comers of the garland drains.
41. The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety

in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

42. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

**(VII) Transportation**

43. No Transportation of the minerals shall be allowed in case of roads passing through transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
44. The Main haulage road within the mine lease should be provided with a permanent water arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.
45. Traffic management shall be done as per recommendation of Traffic Management Study Report.

**(VIII) Green Belt**

46. The Project Proponent shall develop greenbelt in 7.5 m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
47. The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of



trees.

48. The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
49. The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
50. And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

**(IX) Public hearing and human health issues**

51. The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.
52. A commitment in form of an undertaking for periodical occupational health checkup of the employee and the local people shall be done through an occupational health expert as per the detailed action plan submitted with the proposal within 6 months from the date of issue of Environmental Clearance.
53. The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.
54. The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise

Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x 14 inches and of good quality).

55. The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities, (c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.
56. The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
57. Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
58. The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.
59. Issues raised and recorded in proceedings of public hearing w.r.t. environment / pollution / CER shall be complied by the Mining Authority as per OM F. No. 22-65/2017-IA.III, dated 30.09.2020 of MoEF&CC, Govt. of India.

**(X) Corporate Environment Responsibility (CER)**

60. The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by SEAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
61. Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

**(XI) Miscellaneous**

62. The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
63. The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
64. The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MoEF&CC & its concerned Regional Office, SEIAA, Odisha, Central Pollution Control Board and State Pollution Control Board.
65. A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
66. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
67. The project proponent shall augment infrastructure on drinking water, health care and education in nearby villages as per time bound action plan submitted.
68. The project proponent shall obtain permission from DGMS under 106(2b) to carry out blasting operation within the lease area.
69. The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
70. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.