



F.No.J-11015/187/2018-IA.II(M)
Government of India
Ministry of Environment, Forest and Climate Change
Impact Assessment Division

2

2nd Floor, Prithvi Block
Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj
New Delhi-110003

Date: 25th may,2021

To

M/s. JSW Cement Ltd
JSW Centre, Bandra Kurla Complex
Near MMRDA Grounds, Bandra East
Mumbai- 400 051

Sub: Proposal for EC Limestone mine (Mudhvay Sub Block D), with production capacity of 1.60 MTPA, Top Soil - 0.32 MTPA and Overburden - 0.515 MTPA) with Mining lease area 107 ha located at village Mudhvay, Taluka Lakhpat, District Kachchh, Gujarat by M/s JSW Cement Ltd - Environmental Clearance-reg.

Sir,

This has reference to the proposal no.IA/GJ/MIN/85230/2018 for mining of limestone (Mudhvay Sub Block D) with production capacity of 1.6 Million TPA, Top Soil – 0.32 Million TPA & Overburden – 0.515 Million TPA in the ML area of 107.00 ha. The mine lease area is located at Village Mudhvay, Taluka Lakhpat, District Kachchh, Gujarat by M/s. JSW Cement Limited The mine lease area falls between Latitudes 23° 42' 12.1144" N to 23° 42' 57.7472" N & Longitudes 68° 40' 07.4650" E to 68° 40' 59.0367" E with Survey of India Topo-Sheet No. 41A/10 and study area – 41A/9, 41A/13 and 41A/14.

2. As per EIA Notification dated 14th September, 2006 as amended from time to time, the project falls under Category A or Activity 1(a) as the mining lease area is greater than 100 ha.

3. The Project Proponent applied online vide proposal no IA/GJ/MIN/85230/2018 for prescribing Term of Reference (ToR) and submitted Form-1and Pre-feasibility report. The proposal was considered in EAC meeting held on 29th – 30th May, 2019 wherein the EAC recommended the proposal for prescribing standard Term of Reference (ToR) along with specific TOR. The ToR letter was issued on 28.06.2019.

M/s. JSW Cement Ltd, Gujarat

Page 1 of 19

4. The Project Proponent vide proposal No. IA/GJ/MIN/85230/2018 applied online for grant of EC on 29th February 2020.

5. The Project Proponent submitted that the total mine lease area is 107 ha, out of which 94.31 ha is Government land and 12.69 ha is other (santhni/Private) land. The project proponent submitted that there is no forest land involved in the mining lease. However, Narayan Sarovar Wildlife Sanctuary is present within the 10 km study area.

The Project Proponent submitted that the lessee had applied for its 1st renewal on 28.05.2007, which was under consideration of State Government. Meanwhile, as per section 8A(5) of Mines & Minerals (Development & Regulation) Amendment Act 2015, the mining lease tenure has been extended for the period of 50 years from the date of original lease deed i.e. up to 7th June, 2038 vide Industries & Mines Department, Govt. of Gujarat, Gandhinagar order no. MCR/1589/(S-34)2164/CHH dated 02.07.2020. The mine block was auctioned by Government of Gujarat and Letter of Intent has been granted by Industries & Mines Department, Government of Gujarat.

6. The Project Proponent submitted the Mining Plan and Progressive Mine Closure Plan has been approved by Indian Bureau of Mines (IBM), Gandhinagar (Gujarat) vide letter no. 684 (4) (1)/MP-165/2018-GNR dated 07.09.2018.

7. The Project Proponent submitted that mining will be done by fully mechanized opencast method using Continuous Surface Miner (CSM) with combination of excavator/loader and dumpers. Drilling and blasting techniques will be used occasionally for hard formations. The loading is proposed to be carried out by hydraulic excavator for OB handling and pay loader for lifting sized limestone whereas transportation from mine to the proposed cement plant by dumpers/tippers.

8. The Project Proponent submitted that the total water requirement for proposed project will be 100 KLD which will be sourced from proposed desalination plant and mine water. Water requirement shall be fulfilled from desalination plant proposed in cement plant and harvested water in mine. No ground water will be used for Mining purpose.

9. The Project Proponent submitted that the Green belt development / Plantation will be done on 43.41 ha including 3.50 ha along the boundary greenbelt, 33.91 ha on backfilling and 6.00 ha within the Nallah barrier.

10. The Project proponent submitted that there is no National Park, Biosphere Reserve, Wildlife Corridors, Tiger/Elephant Reserves etc. within 10 km radius of the Mine site. There is Narayan Sarovar Sanctuary at a distance of 3.05 km and ESZ is at a distance of 0.55 km from the lease boundary.

11. The Project Proponent submitted that there are three Schedule-I faunal Species namely Peafowl, Chinkara and Monitor Lizard are found in the study area for which Conservation Plan has been prepared. Conservation plan of Rs. 133.875 Lakh has been approved from CWLW Vide letter dated 20.01.2020.

12. The Project Proponent reported that the Primary baseline data including Site Specific Meteorological data has been collected during Post Monsoon Season (October to December, 2018). Ambient Air Quality: The concentrations of PM10 and PM2.5 for all the 08 AAQM stations were found between 40.90 to 83.12 $\mu\text{g}/\text{m}^3$ and 22.16 to 52.24 $\mu\text{g}/\text{m}^3$ respectively. The concentrations of SO2 and NO2 were found to be in range of 6.18 to 16.43 $\mu\text{g}/\text{m}^3$ and 8.40 to 24.12 $\mu\text{g}/\text{m}^3$ respectively. Ambient Noise Levels: Ambient noise levels were measured at 8 locations around the mine site. Noise levels vary from 47.1 to 54.1 Leq dB (A) during day time and from 40.2 to 43.6 Leq dB (A) during night time. Surface Water Quality: There is no perennial water body exists within the study area, only some seasonal water bodies like Water reservoir, Kapurasi Nadi, Kori Creek, Jogira Talav, Kanana Talav, Sangdiawala Talav, Aliasar Talav, Kali Nadi found in the study area. No water was found in the above water bodies except Kori Creek for sampling during survey which shows that pH varies from 7.92, Total hardness 11632.18 mg/l, Total Suspended Solid 12.40 mg/l, Alkalinity 615.18 mg/l, Chloride 20952.12 mg/l, Flouride 1.38 mg/l, Total dissolved solids 39652.0 mg/l, BOD varies from 0.85 mg/l, COD 56.18 mg/l and DO 6.60 mg/l. Ground Water Quality: The ground and drinking water analysis for all the 6 sampling stations shows that pH varies from 7.38 to 7.61, total hardness varies from 268.26 mg/l to 946 mg/l & total dissolved solids varies from 556.0 mg/l to 4223.60 mg/l, chloride from 124.19 to 2076 mg/l, SO4 varies from 40.19 to 314 mg/l. Soil Quality: The analysis result for soil shows that pH value varies from 7.56 to 7.94 and soil textures of the soil samples were sandy loam. organic matter ranges from 0.63 % to 0.84 % in the soil samples. Nitrogen ranges from 115.36 to 156.37 kg/ha and Phosphorous varies from 18.56 to 23.47 kg/ha, whereas the Potassium is found to be ranging from 201.41 to 287.45 Kg/ha.

13. The Project Proponent submitted that the advertisement for public hearing was published on 30.09.2019 in Kutch Mitr & The Indian Express. Public hearing was conducted on 05.11.2019 by Gujarat Pollution Control Board. Issues raised during public hearing were about work on education, health facility, infrastructure development, water arrangement, employment, Dargah development, Road construction etc. An amount of Rs. 157 Lakh has been earmarked for issues raised during public hearing.

14. The Project Proponent submitted that the total Area is 107.00 ha, out of which 94.31 ha is Govt. land and 12.69 ha is Private land. Land will be acquired under the "Right to fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act-2013 (LARR Act, 2013)" and mutual agreement. There are 9 Project Affected Families; all are having land within in the lease area. Total budget for R&R is Rs. 4.57 Crores.

15. The Project Proponent submitted that the Under Air Quality and Noise level Management Surface miner will be used and drilling blasting will be used occasionally. Drilling machines will be equipped with wet drilling/ dry suction arrangements. Controlled blasting will be adopted and optimum use of explosive energy will help in reducing the air pollution. Blasting will be carried out during day time only, as per the permission of Director of Mines Safety, Govt of India. Regular water sprinkling on haul roads & loading area to suppress dust. Proper maintenance (preventive as well as scheduled maintenance), oiling

and greasing of HEMMs to minimize generation of noise & gaseous pollutants. Personal protective equipment like dust mask, ear muffs, safety shoes, helmet etc. will be provided to all employees. Periodic air quality & Noise Level Monitoring will be carried out as per CECB guide lines. Under Water Management, No wastewater generation due to mining activities. Domestic wastewater will be disposed in Soak Pit via Septic tank. To control the surface run-offs, Retaining walls, Garland drains along the periphery of pits and dumps & settling tanks will be constructed. The rainwater falling directly into the mine pits will be stored and used for plantation & dust suppression. Periodical Ground water level monitoring & quality analysis will be carried out.

16. The Project Proponent submitted that the Initial & Periodical Medical checkup of all the employees will be carried out. Necessary medical facilities will be provided to all the employees. All the necessary precautions for Health & Safety measures will be taken care. Following tests will be done for employees: Hematological Test, Biochemical Test (Sugar, Liver function test, Renal function test, Lipid Profile etc.), Urine R/M, E C G, Spirometry, Audiometry, Chest X –Ray, Vision Examination, Health Review System. Medical Record of Each Employee will be maintained and updated with finding as per 29 P of Mines Rules 1955.

17. The Project Proponent submitted an Affidavit in accordance with the statutory requirement & judgment of Hon'ble Supreme Court dated 2nd August 2017 in writ Petition (civil) No. 114 of 2014 in the matter of common cause versus Union of India & Ors before grant of ToR/EC has been submitted to MoEF&CC.

18. The Project Proponent submitted that the total project cost is Rs. 47.58 Crore. The total manpower required for the proposed mining project will be around 96 persons.

19. The present proposal was considered in the 15th EAC meeting on 20-21 April 2020, in which EAC deferred the proposal for Shortcomings. The Project Proponent replied vide letter dated 31st January 2021 with the following relevant information:

- i. PP shall decide on the location of the Cement plant and shall plan for transportation of raw material through a closed conveyor keeping in view of the cluster of activities proposed in the area. Further, the PP may explore the possibility of transportation through common infrastructure with the other projects for efficient control of dust generation.

The PP replied that the JSWCL has identified location for Cement Plant near Village- Mudhvay, Taluka- Lakhpat, District: Kachchh, Gujarat in North West Direction adjacent to Mining Lease Area , covering an area of 40.47 ha.

- ii. Detailed hydrogeological survey to be conducted in view of salinity ingress, if any in the mining process up to the conceptual pit limit. The aquifer characteristics shall be delineated with geophysical survey to assess impact on the ground water regime and mitigation measures.
- iii. The PP replied that the detailed hydrogeological survey in view of salinity ingress has been conducted by M/s HydroGeosurvey Consultants Private Limited (HCPL),

M/s. JSW Cement Ltd, Gujarat

Jodhpur, accredited by NABL as well as CGWA. The study indicates that there is no possibility of sea water ingress as the coast is about 6 Km away from mine and there is regular flow of fresh ground water to sea with saturated fresh water of 29 m above the sea level.

- iv. Stage wise reclamation plan of the mine up to the period of conceptual pit limit shall be provided in the environment management plan.

The PP replied that the at the conceptual stage, mined out area will be 37.35 ha in which 3.44 ha area will be backfilled and 33.91 ha area will be covered under water reservoir. During Plan Period, 0.569 Million Tonne of soil and 1.546 Million Tonne of Overburden will be generated and at conceptual stage 1.36 Million Tonne of soil and 3.015 Million Tonne of Overburden will be generated.

- v. As the area is in close proximity to Narayan Sarover Wild life sanctuary, a study to assess the impact of mining activity on bird's Migratory path shall be conducted and mitigation plan for the same shall be incorporated in consultation with State Government and the revised conservation plan to be submitted.

The PP replied that the Mining Lease Area is at a distance of 3.05 Km from Narayan Sarovar Wildlife Sanctuary, Letter regarding the distance has been obtained from CWLW vide letter dated 02.03.2020. Detailed Impact assessment of mining activity on birds' migratory path has been conducted by NABET Accredited, FAE Cat-I Ecology & Biodiversity of Bhagwati Enviro Care Pvt. Ltd., Ahmedabad.

- vi. Fodder development plan for the livestock to mitigate the impact on grazing land due to mining activity for the village of the vicinity shall be brought out in the socio economic development plan.

The PP replied that looking to the climatic conditions and scarcity of fodder in the area, JSW Cement aims to implement a fodder development programme in the village Mudhvay and its vicinity for socio economic development of the area which company has allocated a budget of Rs. 18 Lakh

- vii. Issues raised during the Public hearing shall be properly addressed along with time bound action plan.

The PP replied that the Public Hearing was conducted on 05.11.2019 At Moti Mudhvay, Common plot, beside primary school, Moti Mudhvay, PO. Koriyani, Taluka: Lakhpat, District: Kutch. Public Hearing was chaired by Shri Kuldip Singh Jhala (G.A.S), Resident Additional Collector & Additional District Magistrate, Kutch & Dr. S. N Agravat, Regional officer, GPCB, Kutchh. Total of 275 persons attended the PH and a total of 33 representatives expressed their concerns (verbal and written). Total of Rs. 157 Lakh has been allocated on the basis of issues raised during public hearing, which will be spent during first 3 years under EMP.



viii. The revised manpower and organization chart shall be provided relevant to the environmental cell for implementation of EMP and environmental monitoring. The mechanism of reporting the noncompliance's / infringements at periodical interval to the board of directors has not been provided.

The PP replied that the Total Manpower required for Mining project is 96 Persons including 26 persons for implementation of EMP.

ix. The plantation shall be planned with native species including leguminous grass in lieu of the proposed exotic species like Prosopis Julifora.

The PP replied the list of native species for plantation.

x. Annual total excavation quantity shall be provided.

The PP replied that the total excavation w.r.t. mineral, OB, Inter burden, Waste are given below:

S.No.	Particulars	Production Capacity (In Million TPA)
1.	Limestone	1.6
2.	Waste (OB)	0.515
3.	Top Soil	0.32
	Total Excavation	2.435

xi. The schedule of the occupational health survey shall be furnished in the Environmental management plant as per the ILO and DGMS rules

The PP submitted the details of Schedule of the occupational health survey as per ILO and DGMS rules.

20. Based on the discussion held and document submitted in the EAC meeting held on 24 to 26 February, 2021 the Committee recommended the Proposal for EC Limestone mine (Mudhvay Sub Block D), with production capacity of 1.60 MTPA, Top Soil - 0.32 MTPA and Overburden - 0.515 MTPA) with Mining lease area 107 ha located at village Mudhvay, Taluka Lakhpat, District Kachchh, Gujarat with the following specific conditions.

21. The Ministry has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto; and after accepting

M/s. JSW Cement Ltd, Gujarat

the recommendation of EAC meeting on 24 to 26 February, 2021 & corrigendum minutes dated 15-17 March, 2021 and accord environmental clearance for Limestone mine (Mudhvay Sub Block D) with production capacity of 1.60 MTPA, Top Soil - 0.32 MTPA and Overburden - 0.515 MTPA) with Mining lease area 107 ha located at village Mudhvay, Taluka Lakhpat, District Kachchh, Gujarat with the following specific conditions with the following Specific conditions and Standard conditions subject to compliance of the followings terms and conditions and environmental safeguards mentioned below:


A. Specific conditions

- i. The Project Proponent needs to follow the National action plan for conservation of migratory Birds as well as the convention of Migratory species as the terrestrial migration of birds also involved.
- ii. The Project Proponent needs to submit the EMP during the compliance for bifurcated activity.
- iii. The Project Proponent needs to depute a Chemist for the regular environmental monitoring in the Project area.
- iv. The Project Proponent should continue to study in the mine lease nearby area which will be a part of conservation plan.
- v. The piezometer should be placed on the western side of the lease and also within the Mine lease area *to monitor the increase* in Salinity in the area.
- vi. The Project Proponent should have the facility to convert the mined out water with salinity 5000 to 10000 gm/kg to convert mined out water to potable water. After reducing the salinity use the potable water for irrigation and agriculture.
- vii. PP shall have proper Noise control measures to ensure that the Noise Levels are maintained within limits outside the lease area as well as at heights at which the migratory and the local birds generally fly.

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.
- (4) 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.
- (5) 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.
- (6) 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/Committee.
- (7) 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.
- (8) 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 there under in respect of lands which are not owned by it.
- (9) The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-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".
- (10) 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.



- (11) 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.
- (12) State Pollution Control Board/Committee 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.
- (13) 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/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.
- (14) The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred, PP needs to apply for 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

- (1) 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/PCII, 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.
- (2) 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 all 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 MoEFCC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

- (1) 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 MoEFCC 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.
- (2) 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.
- (3) 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.
- (4) 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-à-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 MoEFCC. 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 may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, 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.

- (5) 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.
- (6) 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 MoEFCC annually.
- (7) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated 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.
- (8) 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/Committee.

IV. Noise and vibration monitoring and prevention

- (1) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- (2) 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.

- (3) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers 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

- (1) 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.
- (2) 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.
- (3) 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-à-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 MoEFCC and its concerned Regional Office.

VI. Land reclamation

- (1) 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.
- (2) 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.
- (3) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- (4) 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.
- (5) 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.
- (6) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off 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.
- (7) 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 corners of the garland drains.

- (8) 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.

VII. Transportation

- (1) No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of 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.
- (2) The Main haulage road within the mine lease should be provided with a permanent water sprinkling 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.

VIII. Green Belt

- (1) The Project Proponent shall develop greenbelt in 7.5m 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.

- (2) 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.
- (3) 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.
- (4) 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.
- (5) 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

- (1) 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 MoEFCC Regional Office and DGMS on half-yearly basis.



- (2) 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.
- (3) 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 x14 inches and of good quality).
- (4) 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, MoEFCC annually along with details of the relief and compensation paid to workers having above indications.

- (5) 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.
- (6) 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, crèche 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.
- (7) 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.

X. Corporate Environment Responsibility (CER)

- (1) 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 EAC 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.
- (2) 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 MoEFCC and its concerned Regional Office.

XI. Miscellaneous

- (1) 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.



- (2) 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.
- (3) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.
- (4) 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, MoEFCC.
- (5) The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data / information / monitoring reports.

22. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

23. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attracts action under the provisions of Environment (Protection) Act, 1986.

24. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Chhattisgarh and any other Court of Law relating to the subject matter.

25. 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.

This issues with the approval of Competent Authority.

Yours faithfully,
Pankaj Verma
(Pankaj Verma)
Scientist E

Copy to

1. The Secretary, Ministry of Mines, Government of India Shastri Bhawan, New Delhi.
2. The Secretary, Department of Environment, Government of Gujarat, Gujarat.
3. The Secretary, Department of Forests, Government of Gujarat, Gujarat.
4. The Secretary, Department of Mines and Geology, Government of Gujarat, Gujarat.
5. The Additional Principal Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (WZ), E-5, Kendriya Paryavaran Bhawan, E-5 Arera Colony , Link Road-3, Ravishankar Nagar, Bhopal-462016.
6. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum— Office Complex, East Arjun Nagar, Delhi—110032.
7. The Chairman, Gujarat State Pollution Control Board, Paryavaran Bhavan, Sector 10-A, Gandhinagar Gujarat-382010.
8. The Member Secretary, Central Ground Water Authority, A2, W— 3 Curzon Road Barracks, K.G. Marg, New Delhi—110001.
9. The Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur—440 001.
10. The District Collector, Kachchh
11. Guard File.
12. PARIVESH


(Pankaj Verma)
Scientist E