

No. J-11015/140/2013-IA.II (M)

Government of India

Ministry of Environment, Forest and Climate Change

Impact Assessment Division

Indira Paryavaran Bhavan,
Aliganj, Jor Bagh Road
New Delhi-110 003

Dated: 7th September, 2016

To,

M/s Garhwal Mandal Vikas Nigam (GMVN) Limited,
74-/1, Rajpur Road,
Dehradun, Uttarakhand,
Pin-248 001

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Sub.: Mining of Mineral Sand *Bajri* and Boulder (Minor Mineral) from River Yamuna Lot No-21/3 with proposed production capacity of 6,00,000 TPA (ROM) by M/s Garhwal Mandal Vikas Nigam Ltd., located at villages: Dhakrani & Gangbhewa Tehsil: Vikasnagar & District: Dehradun, Uttarakhand (MLA:68.364 ha)-Environmental Clearance regarding.

Reference: Online Application IA/UK/MIN/18561/2013.

Sir,

This has reference to your online application for the above mentioned proposal for for mining of Sand, *Bajri* and Boulder (Minor Mineral) with proposed production capacity of 6,00,000 TPA (ROM) of Sand, *Bajri* and Boulder in the mine lease area of 68.364 ha. The mine is located at villages: Dhakrani & Gangbhewa, Tehsil: Vikasnagar, Dehradun, Uttarakhand. The Latitudes and Longitudes of the mine lease area lies in Yamuna River bed 30°27'14.17"N to 30°26'43.02"N and 77°42'1.06"E to 77°40'57.88"E on Survey of India toposheet numbers 53F11. The Project is located in Seismic zone-IV.

2. The Ministry had prescribed TOR on 27.08.2013. The Proponent after conducting Public Hearing on 08.07.2014 submitted the EIA/EMP report online for seeking environmental clearance. The proposal of EC was appraised before the Expert Appraisal Committee (EAC) in its Meeting held during April 25-26, 2016 wherein the Committee recommended the proposal for Environmental Clearance for Mining of Mineral Sand, *Bajri* and Boulder (Minor Mineral) with proposed production capacity of 6,00,000 TPA (ROM).

3. The mine lease area is 68.364 ha which is on Yamuna River. No forest land is involved. Letter of Intent (LoI) for grant of mining lease for minor mineral Sand, *Bajri* and Boulder over an area of 68.364 ha has been granted by the Department of Geology and Mining, Directorate of Industry Dehradun, vide letter no. 40/Bhu.Khani/2012-13, dated 18th April, 2013 for the period of 5 year. The Mining Plan has been approved by the Department of Geology and Mining, Directorate of Industry Dehradun, vide letter no. 2218, dated 03.03.2015.

4. Method of Mining will be opencast manual. Excavation will be carried out up to a maximum depth of 1.5 meters from surface of deposit and not less than one meter from the ground water level of the River Channel whichever is reached earlier. The site elevation is 408 m AMSL. The Ground water depth is 2.52 m bgl in pre monsoon season and 2.29 m bgl in post-monsoon season. The total water requirement is 6.5 KLD including water demand for domestic purpose, dust suppression and plantation development which shall be met by tanker supply, NOC from Gram Panchayat has been obtained in this regard. Project Proponent reported that mining will be done leaving a safety distance from the banks i.e. 15% of the width of the River from both the banks. Mining will be done only during day time and completely stop in monsoon season. No mining will be done in the zone of 100m on either side of the structure/bridge. Project Proponent reported that there will be construction of ramps, temporary rest shelters during operational phase and these will be removed at the time of mine closure.

5. Mineral will be transported by road. Project Proponent has made the Traffic Analysis Survey and reported that 267 numbers of trucks will be deployed per day (10 tones capacity each). The total PCUs estimated is 1602 PCUs per day. The level of service (LOS) will change from "A to B". Project Proponent reported that roads will be repaired regularly and maintained in good condition. A Supervisor will be appointed to regulate the traffic movement near site.

6. Proponent reported that the project lies in Doon Valley, Aasan Conservation Reserve lies at 2 km from the Mine lease area and the Simbalbara Wildlife Sanctuary lies at a distance of 9 km from the Mine lease area. Project Proponent has informed that the application for NBWL Clearance has been submitted which is under approval. Further, the Project Proponent reported that there are three Schedule I and three Schedule II species has been found, accordingly, the species specific conservation plan has been prepared which is under the process of approval by the Chief Wildlife Warden, Uttarakhand.

7. The baseline data was generated for the period during October, 2013 to December 2013. All the parameters for water and air quality were within permissible limits. Project Proponent reported that no R&R is applicable for this Project as the mine lease area lies entirely on the River bed and there is no establishment on the site.

8. The Public Hearing for the proposed project was conducted on 8th July, 2014 at 2.00 pm at Rajkiya High School, Dhakrani, Vikasnagar, Dehradun, Uttarakhand. The Public Hearing was presided over by Shri Pratap Singh Shah, ADM, Dehradun, Uttarakhand. The issues raised during the Public Hearing were also considered and discussed during the meeting, which inter-alia, included that priority to local people in employment, effective implementation of measures to control dust pollution, water conservation measures, social and other village development activities and not to harm nearby fields.

9. The total cost of the project is Rs. 26.0 Lakhs. Project Proponent has earmarked the EMP cost @ Rs. 6.0 lakhs towards capital cost and Rs. 12.15 lakhs per annum towards recurring cost. Project Proponent reported that there is no Court case/litigation pending against the project.

10. Project Proponent has made Replenishment Study analysis based on Dendy Bolton's Replenishment Model and also mentioned that a proposal of replenishment

study is under consideration which is to be carried out by FRI Dehradun. According to approved mine plan, the Total Reserve is 6057113.38 tonnes for 5 years and mineable reserve is 18,00,000 tonnes as mentioned in the EIA/EMP Report. The Committee deliberated the issues on Replenishment rate and is of the view that Project Proponent shall decrease/stop the mining of Mineral Sand *Bajri* and Boulder in case the replenishment of minerals is lower than the approved rate of production, till the replenishment is completed.

11. The Ministry of Environment, Forest and Climate Change has examined the proposal in accordance with the Environmental Impact Assessment Notification (EIA), 2006 and further amendments thereto and hereby accords the Environmental Clearance under the provisions thereof to the above mentioned proposal of **M/s Garhwal Mandal Vikas Nigam Ltd. for Mining of Mineral Sand *Bajri* and Boulder (Minor Mineral) from River Yamuna Lot No-21/3 with proposed production capacity of 6,00,000 TPA (ROM), villages: Dhakrani & Gangbhewa Tehsil: Vikasnagar & District: Dehradun, Uttarakhand** subject to compliance of the followings terms and conditions and environmental safeguards mentioned below:-

A. Specific conditions

- (i) Environmental clearance is granted subject to final outcome of **Hon'ble Supreme Court of India, Hon'ble High Court of Uttarakhand, Hon'ble NGT and any other Court of Law**, if any, as may be applicable to this project.
- (ii) The project lies in **Doon Valley, Aasan Conservation Reserve** lies at 2 km from the Mine lease area and **Simbalbara Wildlife Sanctuary** lies at a distance of 9 km from the Mine lease area. **This Environmental Clearance is subject to obtaining requisite NBWL Clearance from the Standing Committee of National Board for Wildlife as applicable for this Mining project.**
- (iii) The Project Proponent shall obtain Consent to Operate from the State Pollution Control Board, Uttarakhand and effectively implement all the conditions stipulated therein.
- (iv) **Project Proponent shall decrease / stop the mining of Sand, Bajri and Boulder, in case the replenishment is lower than the approved rate of production, till the replenishment is completed.**
- (v) Project Proponent shall appoint a Monitoring Committee to monitor the replenishment, traffic management, levels of production, River Bank erosion and maintenance of Road etc.
- (vi) Excavation will be carried out up to a maximum depth of **1.5 meter from surface of sand deposit and 1 meter above** from the water level of the River channel whichever is reached earlier.
- (vii) Project Proponent shall implement the Disaster Management Plan as the mine lease area is located in Seismic Zone-IV. Project Proponent shall appoint a Committee to have a check over any disaster to warn workers well before for the safety of the workers. Emergency helpline number will be displayed at all levels.

- (viii) Project Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and records maintained; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smokers, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. Recommendations of National Institute for Labour for ensuring good occupational environment for mine workers would also be adopted; All the old age people of the surrounding villages may be provided medical facilities.
- (ix) The number of trips of the trucks shall not exceed the estimated quantity of **267 trucks (10 tonnes capacity) trips per day**. Transport of minerals shall be done either by dedicated road or it should be ensured that the trucks/dumpers carrying the mineral should not be allowed to pass through the villages. The Project Proponent shall ensure that the road may not be damaged due to transportation of the mineral; and transport of minerals will be as per IRC Guidelines with respect to complying with traffic congestion and density.
- (x) Implementation of Action Plan on the issues raised during the Public Hearing. The Proponent shall complete all the tasks as per the Action Plan submitted with the budgetary provisions during the Public Hearing.
- (xi) The pollution due to transportation load on the environment will be effectively controlled & water sprinkling will also be done regularly. Vehicles with PUC only will be allowed to ply. The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Project should obtain 'PUC' certificate for all the vehicles from authorized pollution testing centre.
- (xii) Washing of all transport vehicle should be done inside the mining lease. Permanent pillars has to be constructed to demarcate width of extraction of ROM leaving 25% of River width from the bank with depth of 1.5m below the ground and 1.2 m above the ground to observe its stability.
- (xiii) The Project Proponent shall also take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any, spotted in the study area.
- (xiv) The illumination and sound at night at project site, 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. Project Proponent 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 light/night hours.
- (xv) Transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sound, dust and accidents could be mitigated. The Project Proponent shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the Project. No road

movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.

- (xvi) As per the Company Act, the CSR cost should be 2 % of average net profit of last three years. Hence CSR expenses should be as per the Company Act/Rule for the Socio Economic Development of the neighborhood Habitats which could be planned and executed by the Project Proponent more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers. The report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office located at Dehradun on six monthly basis.
- (xvii) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xviii) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest and Climate Change 5 years in advance of final mine closure for approval.

B: Special Conditions:

The Ministry of Environment, Forest and Climate has constituted a Committee to formulate the "Guidelines for Sustainable Sand Mining in the Country". The Guidelines, inter-alia, included the following recommendations. The Project Proponent shall implement the following special conditions so as to mitigate the environment impact of mining activities:-

Impact Category	S. No.	Environmental Conditions
Stakeholder Engagement	1	In the case of private land not owned by the lease holder an affidavit should be obtained regarding consent of the concerned land owner (s) for carrying out the mining operation.
	2	Stakeholder awareness and ability to raise concerns and getting it to be addressed.
	3	Implementation of Action Plan on the issues raised during the Public Hearing. The Proponent shall complete all the tasks as per the Action Plan submitted with the budgetary provisions during the Public Hearing.
	4	Having valid lease and all the permits is very much needed.
	5	To establish a Monitoring Committee including Local Panchayat, to check on traffic due to transportation and submit an annual report on the same.
	6	The directions given by the Hon'ble Supreme Court of India vide order dated 27.02.2012 in Deepak Kumar case [SLP(C) Nos. 19628-19629 of 2009] and order dated 05.08.2013 of the Hon'ble National Green Tribunal in application No. 171/2013 may be strictly followed.
	7	All the provisions made and restrictions imposed as covered in the Minor Mineral Rule, shall be complied with, particularly regarding Environment Management Practices and its fund management and Payment of compensation to the land owners.
Sustainable	8	District level Survey Report should be prepared and area

Mining Practices		suitable for mining and area prohibited for mining be identified.
	9	The depth of mining in Riverbed shall not exceed one meter or water level whichever is less, provided that where the Joint Inspection Committee certifies about excessive deposit or over accumulation of mineral in certain reaches requiring channelization, it can go up to 3 meters on defined reaches of the River.
	10	No River sand mining be allowed in rainy season.
	11	To submit annual replenishment report certified by an authorized agency. In case the replenishment is lower than the approved rate of production, then the mining activity / production levels shall be decreased / stopped accordingly till the replenishment is completed.
	12	Ultimate working depth shall be up to 1.5 m from Riverbed level and not less than one meter from the water level of the River channel whichever is reached earlier. In hilly terrain this depth be preferably restricted to one meter.
	13	In River flood plain mining a buffer of 3 meter to be left from the River bank for mining.
	14	In mining from agricultural field a buffer of 3 meter to be left from the adjacent field.
	15	Mining shall be done in layers of 1 meter depth to avoid ponding effect and after first layer is excavated, the process will be repeated for the next layers.
	16	To maintain safety and stability of Riverbanks i.e. 3 meter or 10% of the width of the River whichever is more will be left intact as no mining zone.
	17	No stream should be diverted for the purpose of sand mining. No natural water course and/ or water resources are obstructed due to mining operations.
	18	No blasting shall be resorted to in River mining and without permission at any other place.
	19	Depending upon the location, thickness of sand, deposition, agricultural land/Riverbed, the method of mining may be manual, semi-mechanized or mechanized; however, manual method of mining shall be preferred over any other method.
Identification and Preparation of Mining Site	20	Mining should be done only in area / stretch identified in the District Level Survey Report suitable for mining and so certified by the Sub-Divisional Level Committee after site visit.
	21	Mining should begin only after pucca pillar marking the boundary of lease area is erected at the cost of the lease holder after certification by the mining official and its geo coordinates are made available to the District Level Committee.
	22	The top soil in case of surface land mining shall be stored temporarily in an earmarked site and concurrently used for land reclamation.
Monitoring the Mining of Mineral and its Transportation	23	The EC holder shall keep a correct account of quantity of mineral mined out, dispatched from the mine, mode of transport, registration number of vehicle, person in-charge of vehicle and mine plan. This should be produced before officers of Central Government and State for inspection.
	24	For each mining lease site the access should be controlled in a way that vehicles carrying mineral from that area are tracked and accounted for.
	25	The State / District Level Environment Committee should use technology like Bar Coding, Information and Communications

		Technology (ICT), Web based and ICT enabled services, mobile SMS App etc. to account for weight of mineral being taken out of the lease area and the number of trucks moving out with the mineral.
	26	There should be regular monitoring of the mining activities in the State to ensure effective compliance of stipulated EC conditions and of the provisions under the Minor Mineral Concessions Rules framed by the State Government.
Noise Management	27	Noise arising out of mining and processing shall be abated and controlled at source to keep within permissible limit.
	28	Restricted working hours. Sand mining operation has to be carried out between 6 am to 7 pm.
Air Pollution and Dust Management	29	The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly.
	30	Air Pollution due to dust, exhaust emission or fumes during mining and processing phase should be controlled and kept in permissible limits specified under environmental laws.
	31	The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Wheel washing facility should be installed and used.
Management of Visual Impact	32	The mining operations are to be done in a systematic manner so that the operations shall create a major visual impact on the site.
Bio-Diversity Protection	33	Restoration of flora affected by mining should be done immediately. Twice the number of trees destroyed by mining to be planted preferably of indigenous species. Each EC holder should plant and maintain for lease period at least 5 trees per hectare in area near lease.
	34	No mining lease shall be granted in the forest area without forest clearance in accordance with the provisions of the Forest Conservation Act, 1980 and the rules made thereunder.
	35	Protection of turtle and bird habitats shall be ensured.
	36	No felling of tree near quarry is allowed. For mining lease within 10km of the National Park / Sanctuary or in Eco-Sensitive Zone of the Protected Area, recommendation of Standing Committee of National Board of Wild Life (NBWL) have to be obtained as per the Hon'ble Supreme Court order in I.A. No. 460 of 2004.
	37	Spring sources should not be affected due to mining activities. Necessary Protection measures are to be incorporated.
Management of Instability and Erosion	38	Removal, stacking and utilization of top soil in mining are should be ensured. Where top soil cannot be used concurrently, it shall be stored separately for future use keeping in view that the bacterial organism should not die and should be spread nearby area.
	39	The EC should stipulate conditions for adequate steps to check soil erosion and control debris flow etc. by constructing engineering structures
	40	Use of oversize material to control erosion and movement of sediments
	41	No overhangs shall be allowed to be formed due to mining and mining shall not be allowed in area where subsidence of rocks is likely to occur due to steep angle of slope.
	42	No extraction of stone / boulder / sand in landslide prone areas.
	43	Controlled clearance of riparian vegetation to be undertaken

Waste Management	44	Site clearance and tidiness is very much needed to have less visual impact of mining.
	45	Dumping of waste shall be done in earmarked places as approved in Mining Plan.
	46	Rubbish burial shall not be done in the Rivers.
Pollution Prevention	47	The EC holder shall take all possible precautions for the protection of environment and control of pollution.
	48	Effluent discharge should be kept to the minimum and it should meet the standards prescribed.
Protection of Infrastructure	49	Mining shall not be undertaken in a mining lease located in 200–500 meter of bridge, 200 meter upstream and downstream of water supply / irrigation scheme, 100 meters from the edge of National Highway and railway line, 50 meters from a reservoir, canal or building, 25 meter from the edge of State Highway and 10 meters from the edge of other roads except on special exemption by the Sub-Divisional level Joint Inspection Committee.
	50	For carrying out mining in proximity to any bridge or embankment, appropriate safety zone (not less than 200 meters) should be worked out on case to case basis, taking into account the structural parameters, location aspects and flow rate, and no mining should be carried out in the safety zone so worked out.
	51	Mining activities shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical, and archeological importance.
Enhancement of Road Safety	52	Vehicles used for transportation of sand are to be permitted only with fitness and PUC Certificates.
	53	Junction at takeoff point of approach road with main road be properly developed with proper width and geometry required for safe movement of traffic by concession holder at his own cost.
	54	Project Proponent shall ensure that the road may not be damaged due to transportation of the mineral; and transport of minerals will be as per IRC Guidelines with respect to complying with traffic congestion and density.
	55	No stacking allowed on road side along National Highways.
Closure and Reclamation of Mined Out Area	56	The Project Proponent shall undertake phased restoration, reclamation and rehabilitation of land affected by mining and completes this work before abandonment of mine.
	57	Restoration, reclamation and rehabilitation in cluster should be done systematically and jointly by each EC holder in that cluster. This should be appropriately reflected as EC condition in each EC in cluster.
	58	Site specific plan with eco-restoration should be in place and implemented.
Health and Safety	59	Health and safety of workers should be taken care of.
	60	Transport of mineral will not be done through villages / habitations.
	61	The Project Proponent shall make arrangement for drinking water, first aid facility (along with species specific anti-venom provisioning) in case of emergency for the workers.
	62	Project Proponent shall implement the Disaster Management Plan if the mine lease area is located in Seismic Zone-IV. Project Proponent shall appoint a Committee to have a check over any disaster to warn workers well before for the safety of the workers. Emergency helpline number will be displayed at all

		levels.
	63	Project Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and records maintained; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smokers, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. Recommendations of National Institute for Labour for ensuring good occupational environment for mine workers would also be adopted.
Monitoring the Impact of Mining	64	The Project Proponent shall report monitoring data on replenishment, traffic management, levels of production, River Bank erosion and maintenance of Road etc.
Mineral Conservation	65	Use of alternate material such as M-sand in place of natural River sand shall be encouraged in order to reduce stress on natural eco-system.

C: PROCEDURE FOR MONITORING OF SAND MINING

The Project Proponent shall implement the procedure for monitoring of sand mining or river bed mining as per the **Amendments in EIA Notification, 2006 vide SO No. 141 (E) dated 15.01.2016.**

- (i) Project Proponent must ensure that the security features of Transport Permission viz. (a) Printed on Indian Bank Association (IBA) approved Magnetic Ink Character Recognition Code (MICR) paper; (c) Unique Barcode; (d) Unique Quick Response Code (QR); (e) Fugitive Ink Background; (f) Invisible Ink Mark; (g) Void Pantograph; (h) Watermark.
- (ii) Project Proponent must ensure that the CCTV camera, Personal Computer (PC), Internet Connection, Power Back up, access control of mine lease site; and arrangement for weight or approximation of weight of mined out mineral on basis of volume of the trailer of vehicle used at mine lease site are available.
- (iii) Project Proponent must ensure the Scanning of Transport Permit or Receipt and Uploading on Server.
- (iv) The State Mines and Geology Department should print the Transport Permits / Receipt with security features enumerated at Paragraph (i) above and issue them to the mine lease holder through the District Collector. Once these Transport Permits or Receipts are issued, they would be uploaded on the server against that mine lease area. Each receipt should be preferably with pre-fixed quantity, so the total quantity gets determined for the receipts issued. When the Transport Permit or Receipt barcode gets scanned and invoice is generated, that particular barcode gets used and its validity time is recorded on the server. So all the details of transporting of mined out material can be captured on the server and the Transport Permit or Receipt cannot be reused.
- (v) The staff deployed for the purpose of checking of vehicles carrying mined mineral should be in a position to check the validity of Transport Permit or Receipt by scanning them using website, Android Application and SMS.
- (vi) In case the Vehicle breakdown, the validity of Transport Permit or Receipt shall be extended by sending SMS by driver in specific format to report breakdown of

vehicle. The server will register this information and register the breakdown. The State can also establish a call centre, which can register breakdowns of such vehicles and extend the validity period. The subsequent restart of the vehicle also should be similarly reported to the server / call centre.

- (vii) The route of vehicle from source to destination shall be tracked through the system using check points, Radio-frequency identification (RFID) Tags, and Global Positioning System (GPS) tracking.
- (viii) The system shall enable the Authorities to develop periodic report on different parameters like daily lifting report, vehicle log/ history, lifting against allocation, and total lifting. The system can be used to generate auto mails/SMS. This will enable the District Collector / Magistrate to get all the relevant details and will enable the authority to block the scanning facility of any site found to be indulged in irregularity. Whenever any authority intercepts any vehicle transporting illegal sand, it shall get registered on the server and shall be mandatory for the officer to fill in the report on action taken. Every intercepted vehicle should be tracked.

D. General conditions

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest and Climate Change.
- (ii) No change in the calendar plan including excavation, quantum of mineral and waste should be made.
- (iii) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and ground water for the project.
- (iv) Regular monitoring of ground water table to be carried out at the upstream and depth of water available in the dug well is to be measured. Monitoring to be done by establishing a network of existing wells and constructing new piezometers.
- (v) Monitoring of Ambient Air Quality to be carried out based on the 2009 Notification, as amended from time to time by the Central Pollution Control Board. Water sprinkling should be increased at places loading and unloading points & transfer point to reduce fugitive emissions.
- (vi) The upliftment of scheduled caste/scheduled tribe population, specific programmes have been taken in to consideration specially with respect to education, health care, livelihood generation, infrastructure development & promotion of sports & culture for SC/ST population and that these will be intensified in future.
- (vii) Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.

- (viii) Dimension of the retaining wall at the toe of over burden dumps and OB benches within the mine to check run-off and siltation shall be based on the rain fall data.
- (ix) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM₁₀ and PM_{2.5} such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (x) 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 maintained. Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the Ministry of Environment, Forest & Climate Change, its Regional Office, Dehradun, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.
- (xi) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year – pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest & Climate Change and its Regional Office, Dehradun, Central Ground Water Authority and Regional Director, Central Ground Water Board.
- (xii) The critical parameters such as PM₁₀ (size less than 10 micro meter), PM_{2.5} (size less than 2.5 micro meter), NO_x and SO_x in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS))]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest & Climate Change, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.
- (xiii) Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for PM₁₀, PM_{2.5}, SO₂ & NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. Data on ambient air quality should be regularly submitted to the Ministry including its Regional office located at Dehradun and the State Pollution Control Board/Central Pollution Control Board once in six months.
- (xiv) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.

- (xv) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
- (xvi) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (xvii) 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.
- (xviii) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (xix) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Dehradun.
- (xx) The Project authorities should inform to the Regional Office located at Dehradun regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xxi) The Project Proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Dehradun, Central Pollution Control Board and State Pollution Control Board.
- (xxii) The Regional Office of this Ministry located at Dehradun shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- (xxiii) A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
- (xxiv) State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
- (xxv) The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest & Climate Change at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located Dehradun.

12. The Ministry or any other Competent Authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

13. 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 attract action under the provisions of the Environment (Protection) Act, 1986.

14. 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 Uttarakhand and any other Court of Law relating to the subject matter.

15. 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.

Yours faithfully,


(Surendra Kumar)
Director (S)

Copy to:

1. **The Secretary**, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. **The Secretary**, Department of Mines & Geology, Government of Uttarakhand, Secretariat, Dehradun.
3. **The Secretary**, Department of Environment, Government of Uttarakhand, Secretariat, Dehradun.
4. **The Secretary**, Department of Forest, Government of Uttarakhand, Dehradun, Uttarakhand.
5. **The Chief Wildlife Warden**, Government of Uttarakhand, Secretariat, Dehradun.
6. **The Principal Chief Conservator of Forests (C)**, Ministry of Environment, Forest and Climate Change, Regional Office (NCZ), Pearson Road, P.O. New Forest, Forest Research Institute (FRI) campus, Dehradun – 248006.
7. **The Chairman**, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
8. **The Chairman**, Uttarakhand Environment Protection & Pollution Control Board, E-115, Nehru Colony, Hardwar Road, Dehradun, Uttarakhand.
9. **The Member Secretary**, Central Ground Water Authority, A-2, W3, Curzon Road Barracks, K.G. Marg, New Delhi-110001.
10. **The Executive Engineer**, Department of Irrigation, Government of Uttarakhand, Dehradun.
11. **The Chief Wildlife Warden** of State Government of Uttarakhand, Dehradun.
12. **The District Collector**, District Dehradun, Uttarakhand.
13. **Guard File.**
14. **MoEFCC website.**


(Surendra Kumar)
Director (S)