

Status of compliance of the conditions stipulated in environmental clearance with respect to Bhatin Mines of Uranium Corporation of India Limited as on September 2020

SI No	Specific Conditions	Status of Compliance
1.	<i>Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Jharkhand, Hon'ble NGT and any other Court of Law, it any, as may be applicable to this project.</i>	Noted.
2.	<i>PP shall provide safe drinking water to the people in the surrounding areas as part of their Enterprise Social Commitment Programme. Awareness will also be created regarding the use of safe drinking water in the areas.</i>	Drinking watersupply through pipes water has been provided near mine gate. Drinking water through tanker is supplied to nearby villagers.
3.	<i>PP shall undertake health survey in the area to ascertain the impact of mining operations on local population / mine workers and submit the report to Atomic Energy Regulatory Board/ Atomic Minerals Department (AMD)/ concerned Regional Office of the Ministry.</i>	Health survey has been conducted. Report has been submitted.
4.	<i>PP shall the address the issued in Public Hearing through budgetary allocation Rs 30 lakhs per year under Enterprise Social Commitment. Apart</i>	Maintenance of existing tube wells, organizing football coaching, financial assistance for sports and cultural program in
	<i>from that, an amount of Rs 41.40 lakhs per year shall be earmarked towards the environmental protection measures. The Enterprise Social Commitment budget shall be exclusive of budget proposed under CSR.</i>	and around Bhatin mines has been done under CSR. The amount incurred for the above activities for the year 2019-20 is Rs 816964.00/-
5.	<i>The Environmental clearance is subject to grant of forestry clearance. The project proponent shall obtain requisite prior forestry clearance under the Forest (conservation) Act, 1980 for working in the forest area. No mining activities will be allowed in forest area for which the Forest Clearance in not available.</i>	Forest Clearance has been granted vide letter no 8-01/2016-FC dated 06.08.2018.
6.	<i>In areas where subsidence is anticipated in shallow uranium ore occurrence, such areas be identified and provided with garland drains to ensure draining of water and avoid ingress of the same in to the underground mine. Project Proponent shall also monitor concentration periodically in mine effluent and shall submit Report to the Ministry of Environment, Forest & Climate Change and its Regional Office, Ranchi.</i>	Ingress of Mine water quality is monitored periodically. Mine water is fully recycled. Treated Mine Water monitored & analyzed by M/s Envirotech East Pvt. Ltd., Jamshedpur through online monitoring system of Jharkhand State Pollution Control Board.
7.	<i>Regular subsidence study will be carried out by any Institution of repute under existing Rules and Reports shall submit to Ministry of Environment,</i>	Subsidence study was carried out by Indian School of Mines, Dhanbad and the report has been submitted to MoEFCC, Regional Office

	<i>Forest & Climate Change and its Regional Office, Ranchi.</i>	vide letter dated 25.05.2020.
8.	<i>Disaster management plan in respect of Rope way and the mine shall be prepared both On-site and a copy shall submit to Forest & Climate Change and its concerned Regional Office.</i>	Disaster management plan has been prepared and the same has been submitted to MoEFCC, Regional Office vide letter dated 25.05.2020.
9.	<i>Waste generated shall be gainfully utilized as practicable.</i>	As the mining method in Bhatin mines is horizontal cut and fill method, waste rock generated will be used for filling underground voids.
10.	<i>Mitigation measures such as well-designed ventilation network within underground mine, provision of personal of personal protective Equipment shall be ensured and necessary training and awareness programs for mine workers shall be undertaken.</i>	<p>Bhatin mines shall have well design ventilation network. Personnel working in dusty area are provided with PPE. Use of PPE will is monitored. Vocational Training Officer conducts various programs e.g. initial, refresher, special & development trainings on occupational health & safety and other various topics as per the certified schedule of DGMS.</p> <p>Occupational health surveillance:</p> <ul style="list-style-type: none"> • Pre employment and Periodical medical examination of all employees for blood test, lung function test, x-ray, audiometric test, ECG & physical tests etc. • Medical facility is provided for all employees and their dependent at Jaduguda Hospital and reputed referrals hospitals. • Medical teams visit surrounding villages periodically and medicines are supplied free of cost
11.	<i>The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite of requisite quantity of water (surface water and ground water) for the project.</i>	Application to CGWA has been made vide letter no UCIL/ENV/BHATIN/CGWB/09/19 dated 01.07.2019.
12.	<i>Rigorous and regular ambient air quality monitoring shall be carried out and necessary safeguard measures shall be taken to ensure that the ambient air quality is within the permissible limits.</i>	Ambient air quality at two locations in core and buffer zones during April 2020 to September 2020 in terms of PM ₁₀ , PM _{2.5} , SO ₂ , NOx, Pb, Ni & CO parameters are found within the permissible standards. Ambient Air Quality & Noise Level monitored & analyzed by M/s Envirotech East Pvt. Ltd., Jamshedpur through online monitoring system of Jharkhand State Pollution Control Board.
13.	<i>As agrees to by the Proponent, safe drinking water will be provided to the people in the</i>	Refer condition no. 2

	<i>surrounding areas as part of their CSR activities. Awareness will also be created regarding the use of safe drinking water in the area.</i>	
B	Standard Conditions	
I	Statutory Conditions	
1.	<i>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.</i>	Noted
2.	<i>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.</i>	Noted
3.	<i>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.</i>	Not applicable
4.	<i>This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoFE&CC subsequent to the recommendations of the Standing committee of National Board for Wildlife, if applicable to the Project.</i>	Not Applicable.
5.	<i>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.</i>	MoEFCC has granted FC vide it letter no 8-01/2016- FC dated 06.08.2018.
6.	<i>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 form the concerned State Pollution Control Board/ Committee.</i>	Consent to Established has been obtained from JSPCB vide letter no JSPCB/HO/RNC/CTE-6531065/2020/404 dated 10.11.2020.Application for CTO will be made.
7.	<i>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</i>	Noted

	<i>Safety (DGMS) and India Bureau of Mines from time to time.</i>	
8.	<i>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.</i>	Mine lease has been renewed by Govt. of Jharkhand on 09.12.2014.
9.	<i>The Project Proponent shall follow the mitigation measures provided in MoEF&CC 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".</i>	Noted.
10.	<i>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.</i>	Application for dewatering of ground water to CGWA has been made on 01.07.2019.
11.	<i>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.</i>	EC letter has been distributed to Gram Panchayat office vide letter number UCIL/ENV/BTN/01/2019 dated 30.01.2019.
12.	<i>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.</i>	EC letter has been the marked to the JSPCB Ranchi and its Regional office Jamshedpur, Dy. Commissioner Office - East Singhbhum and District Industries Centre vide letter number UCIL/ENV/BTN/01/2019 dated 30.01.2019
13.	<i>The Project Authorities should widely advertise about the grant of the 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 MoEF&CC Regional office for compliance and record.</i>	UCIL had advertised in two local newspapers widely circulated in the area on 31.01.2019.
14.	<i>The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease.</i>	Noted

	<i>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.</i>	
II	<i>Air quality monitoring and preservation</i>	
15.	<i>The Project 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 climatologically 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, PM_{2.5}, 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 place. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.</i>	Ambient Air Quality has been monitored. The same is displayed near mines gate. Ambient Air Quality & Noise Level monitored & analyzed by M/s Envirotech East Pvt. Ltd., Jamshedpur through online monitoring system of Jharkhand State Pollution Control Board.
16.	<i>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 level of PM₁₀ and PM_{2.5} 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 explore 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.</i>	Fugitive dust emission is monitored. Respirable dust is monitored (10locations) in work zone which varies from 0.17 to 0.25mg/m ³ during April to September 2020. (Permissible limit: 0.80 mg/m ³).
III	<i>Water quality monitoring and preservation</i>	
17. (14)	<i>In case, immediate mining scheme envisages intersection of ground water table, then Environment Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves</i>	Application to CGWA has been made on 01.07.2019.

	<i>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.</i>	
18. (15)	<i>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 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.</i>	Regularly monitoring of ground water level of the existing well around the project is done. Ground water levels from the 04 nos. of existing well during May & August 2020 vary as 3.60 m to 6.90 m&0.54 m to 4.20 m respectively.
19. (16)	<i>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.</i>	The water quality from four locations during April to September 2020 in terms of pH, Total Dissolved Solid, Turbidity, Chloride, Sulphate, Total Hardness as CaCO ₃ , Total Alkalinity, Nitrate Nitrogen, Sulphide, Cyanide, Iron & Aluminium meet the drinking water quality as per IS:10500. Uranium and Radium values in 09 ground water samples during April to September 2020 varies from 0.5-2.1 µg/l &14.0-37 mBq/l respectively which are well within drinking water standards (U- 60 µg/l and 226 Ra -300 mBq/l).
20. (17)	<i>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 place</i>	Water quality is monitored regularly in mining lease area. Ground Water has been sampled & analyzed by M/s Envirotech East Pvt. Ltd., Jamshedpur through online monitoring system of Jharkhand State Pollution Control Board.

	<p><i>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 monitoring shall include their water quality vis suitability for usage as per CPSB 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. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in 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.</i></p>	
21. (18)	<p><i>Quality of pollution 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, at a suitable location near the main gate of the Company. The circular No. J-20012/1/2016-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.</i></p>	<p>Mine water discharge is fully recycled in industrial process. No water is discharged in public domain from Bhatin mines. Mine water is pumped to Effluent Treatment Plant located at Jaduguda for reuse. Treated Mine Water has been sampled & analyzed by M/s Envirotech East Pvt. Ltd., Jamshedpur through online monitoring system of Jharkhand State Pollution Control Board.</p>
22. (19)	<p><i>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.</i></p>	<p>Rainwater harvesting scheme has been implemented in Bhatin mine for augmentation of ground water resource. Bhatin mine is located on the slope of the foot hill covering an area of about 4.72 ha. Rainwater from the catchments area is collected and channelled to the storm water garland drain. Two ground water recharge wells have been constructed in channel at a distance of 18.5 m apart. The ground water recharge well consist of two bore wells of 76 mm diameter and 50m depth each. Filter bed chambers of size 2.8m X 1.4m X 1.5m (height) and 10.25m X 2.8m (width) X 1.5m size have been constructed. The depth of</p>

		filter is 1.0 m with 0.3 m sand top layer and 0.7 m filled with pebbles. The rain water is charged in these recharge wells. In addition to the above, rainwater harvesting recharge trench of size 10 m x 1.7 m has been proposed near north-eastern side of plant boundary.
23. (20)	<i>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. 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.</i>	Mine discharge water is pumped to Effluent Treatment Plant located at Jaduguda.
24. (21)	<i>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.</i>	Noted
IV	Noise and vibration monitoring and preservation	
25. (22)	<i>The Peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.</i>	Not applicable.
26. (23)	<i>The illumination and sound at night at project sites disturb the village in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the village 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.</i>	Noted. Bhatin is underground mine, human and animals do not disturb by illumination and sound.
27. (24)	<i>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</i>	Personnel protective equipment (ear muffs/plug) is provided to workers. Noise levels at in work place (21samples) during April to September 2020 vary from 50 to 70 db (A) which is within the permissible limits.

	<i>held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.</i>	
V	<i>Mining plan</i>	
28. (25)	<i>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, overburden, interburden 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 modified after grant of EC or granted by State Gov. in the form of Short Term Permit (STP), Query License or any other name.</i>	Mine Plan has been approved vide letter noAMD/UCIL/MP-BTN/353.28 acres dated 23.01.2020.
29. (26)	<i>The Project Proponent shall get the Final Mine closure Plan along with Financial Assurance approved from India 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.</i>	Noted. A final mine closer plan will be submitted to MoEFCC before 5 years of mine closer.
30. (27)	<i>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 mines 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 vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.</i>	Noted.
VI	<i>Land reclamation</i>	
31. (28)	<i>The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked</i>	Not applicable as mine is underground.

	<i>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. safety in mining operations shall be strictly adhered to maintain the stability of top soil/ OB dump. The topsoil shall be used for land reclamation and plantation.</i>	
32. (29)	<i>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.</i>	Waste generated during mining activity is used in void filling in underground. No waste dump is available.
33. (30)	<i>The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum progressive mine Closure Plan.</i>	As above.
34. (31)	<i>The slope of sumps 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 slope 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.</i>	Please refer Sr. No. 33.
35. (32)	<i>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.</i>	Please refer Sr. No. 33.
36. (33)	<i>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,</i>	Please refer Sr. No. 33.

	<i>green belt development, plantation etc. The drains/ Sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.</i>	
37. (34)	<i>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 setting of sediments / silt material. The sedimentation pits/ sump shall be constructed at the corners of the garland drains.</i>	Please refer Sr. No. 33.
38. (35)	<i>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.</i>	Please refer Sr. No. 33.
VII	Transportation	
39. (36)	<i>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 and 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 done 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</i>	Fugitive dust emission is controlled by wet operation. Water tankers with water sprinkling arrangement are used for water spraying on road and dusty area. Fugitive dust emission is monitored. Respirable dust is monitored (10 samples) in work zone which varies from 0.17 to 0.25 mg/m ³ during April to September 2020. (Permissible limit: 0.80 mg/m ³).

	<p><i>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.</i></p>	
40. (37)	<p><i>The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other road 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.</i></p>	<p>Fugitive dust emission is controlled by wet operation. Water tankers with water sprinkling arrangement are used for water spraying on road and dusty area.</p>
VIII	Green Belt	
41. (38)	<p><i>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 in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 year 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.</i></p>	<p>Noted.</p> <p>Plantation work has been done at Bhatin mine. 50 numbers of plantations was done in between April to September 2020. Aerial view showing dense plantation at Bhatin mines is attached.</p>
42. (39)	<p><i>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</i></p>	<p>Noted.</p>

	<i>protection and care of trees.</i>	
43. (40)	<i>The Project Proponent shall make necessary alternative 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 in 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-may shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.</i>	Not applicable. Grazing land has not been acquired.
44. (41)	<i>The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora 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.</i>	Wildlife Conservation & Management Plan has been prepared by M/s MECON for conservation of flora and fauna and the same has been submitted for approval to Chief Wild Life Warden on 21.08.2019.
45. (42)	<i>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.</i>	Noted. Wildlife Conservation & Management Plan has been prepared by M/s MECON for conservation of flora and fauna and the same has been submitted for approval to Chief Wild Life Warden on 21.08.2019.
IX	<i>Public hearing and human health issues</i>	
46. (43)	<i>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. 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 send to MoEFCC regional Office and DGMS on half-yearly basis.</i>	PME of worker is carried out regularly. 03 numbers of employees has been given PME in last six month.
47. (44)	<i>The Project Proponent must demonstrate commitment to work towards 'zero' Harm' from their mining activities and copy out Health Risk</i>	Awareness & education to the nearby communities & workers for sanitation, women health & personal hygiene will be

	<p><i>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 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 to tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.</i></p>	<p>carried out. 65 packets of sanitary napkins were distributed local body to nearby Bhatin village.</p>
48. (45)	<p><i>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- Forthnightly skin inspection of hands and forearms by a responsible person. Except routing tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 Year, 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, Aluminum, 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 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*14inches and good quality). .</i></p>	<p>Occupational health surveillance:</p> <ul style="list-style-type: none"> • Pre employment and Periodical medical examination of all employees for blood test, lung function test, x-ray, audiometric test, ECG & physical tests etc. • Medical facility is provided for all employees and their dependent at Jaduguda Hospital and reputed referrals hospitals. • Medical teams visit surrounding villages periodically and medicines are supplied free of cost.
49.	<p><i>The Proponent shall maintained a record of</i></p>	<p>Maintenance of record of performance</p>

(46)	<i>performance indicators for workers which includes (a) there should not be a significant 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 (EFV1), 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 and 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.</i>	indicator for workers as suggested.
50. (47)	<i>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.</i>	PPE is distributed to all workers. 01pair of gumboot, 04 nos. of safety goggles & 03 nos. of respirator were distributed in between April to September 2020. Vocational Training is also provided on fortnightly basis.
51. (48)	<i>Project Proponent shall make provision for the housing for workers/ labors or shall construct labor camps within/ outside (company owned land) with necessary basis 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.</i>	Not applicable.
52. (49)	<i>The activities 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.</i>	Noted

X	Corporate Environment Responsibility (CER)	
53. (50)	<i>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 document, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.</i>	Noted
54. (51)	<i>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.</i>	Noted. Fund for environmental protection measure for recycling of mine water is Rs. 331.54 lakhs for the year 2019-20. Rs 8 lakhs has been incurred for environmental monitoring in year 2019-20.
XI	Miscellaneous	
55. (52)	<i>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 MOEFCC.</i>	Noted. Concerned agency has been approached for the study. Data collection is in progress. In completion of the land cover study, report will be submitted to concern Regional Office of the MOEFCC.
56. (53)	<i>The Project Authorities should inform to the Regional Office regarding date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.</i>	Noted
57. (54)	<i>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.</i>	Six monthly compliance report as on September 2020 is attached herewith.
58. (55)	<i>A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a senior Executive. The</i>	Environmental Engineering Cell is constituted for surveillance and monitoring of Bhatin mines. The cells comprises of a

	<i>senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit as report to RO, MEFCC.</i>	senior environmental engineer who directly reports to the General Manager.
59. (56)	<i>The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project should extend full cooperation to the MoEFCC officer (s) by furnishing the requisite data/ information / monitoring reports.</i>	Noted

Aerial view showing greenbelt and plantation done in and around Bhatin mines.



Photograph showing plantation in and around Bhatin mines