

**Compliance towards Environmental clearance for Ministry of environment & Forests, Govt. of India  
Delhi vide letter No. J-11015/7/2007-IA.II (M)**

	<b>Conditions</b>	<b>Compliance</b>
<b>Sl No.</b>	<b>Specific condition</b>	
A. i)	All the conditions stipulated by the State pollution control Board, Orissa in their consent to establish shall be effectively implemented.	Consent conditions stipulated by State Pollution Control Board. vide letter No. 6327/IND-I-CON-220 dated 06.04.2013 are being complied & effectively implemented. Consent to Operate valid up to 31.03.2014.
ii)	Necessary forestry clearance under the forest (Conservation) Act, 1980 for an area of 224.63 ha forestland shall be obtained before starting mining operation in that area. Environmental clearance is subject to grant of forestry clearance. No mining shall be carried out in the forest area without requisite prior forestry clearance.	Clearance has been obtained vide letter No. 8-100/95 FC dated 16.01.1997 from Ministry.
iii)	Necessary clearance from central Ground Water Authority shall be obtained for drawl of groundwater for the project and effectively implement all the condition stipulated therein.	Clearance from Central Ground water authority has been obtained to draw groundwater vide letter No. 21-4(73)/SER/CGWA/2008-1300 dated 24.10.2008.
iv)	The project proponent shall ensure that no natural water sources and or water resources are obstructed due to any mining operations. Adequate measures shall be taken while diverting Kamarda Nallh and other seasonal channels originating from the mine lease, if any, during the course of mining operation.	It has been informed that no natural water course or water resources getting obstructed due to mining operations in the leasehold area. One first order stream is flowing near to the leasehold area. There is a perennial nallah viz, Damsala which receives mine discharges of the project. Adjacent to OMC lease necessary retaining wall have been provided to filter run-off water and Garland drain is provided to channelize the water and settling pits have been made to arrest any siltation so that no silt is allowed to flow out-side. Further the channelized water is being diverted into a discontinued quarry No. 1&2. Hence there is no chance of contributing additional pollution load to river Damsala.

v)	<p>The top soil shall temporarily be stored at earmarked site(S) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.</p>	<p>At present generation of top soil is not envisaged as no virgin land is broken for mining purposes. In future, if any virgin area is used for mining, topsoil will be collected and preserved scientifically to retain its nutrient values for utilization in future and it will be recorded in M-book. Besides OB generation, its re-handling is also maintained in the M-book.</p>
vi)	<p>The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(S) only and it should not be kept active for long period of time and their phase wise stabilization shall be carried out. The total height of the dumps shall not exceed 50m. Proper terracing of the OB dumps shall be carried out so that the overall slope of the dumps shall be maintained to 27°. The proponent shall carry out slope stability study and submit report to the Ministry. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas , use of Geo textiles shall be under taken for stabilization of dumps. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self sustaining. Compliance status should be submitted to Ministry of Environment &amp; Forests and its regional office located at Bhubaneswar on six monthly basis.</p>	<p>The OB generated during the mining operation is stacked at earmarked dump site as per approved mining scheme. Phase wise stabilization of the dump is made by providing terrace and doing regular and planned plantation. The total height of dumps has not been exceeded 50m. Overall slope of dumps is maintained 25 to 26 degree. Till date 24.51 ha of dump area have been rehabilitated and greenery has come up well.</p>

<p>vii)</p>	<p>Catch drains and siltation ponds of appropriate size shall be constructed for the working pit, soil, OB &amp; mineral dumps to arrest flow of silt and sediment directly into the Damsal Nallah, kamarda Nallah &amp; other water bodies . The water so collected should be utilized for watering the mine area, roads, greenbelt development etc. the drains should be regularly desilted particularly after the monsoon &amp; maintained properly.</p> <p>Garland drains, settling tanks &amp; check dams of appropriate size, gradient and length shall be constructed both around the mine pit and overburden dumps to prevent run-off of water and flow of sediments directly into the Damsal-Nallah, kamarda Nallah and other water bodies and sump capacity should be designed keeping fifty percent safety margin over and above peak sudden rain fall ( based on 50 years data and maximum dis-charge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.</p> <p>Storm water return system should be provided.</p> <p>Storm water should not be allowed to go to the effluent treatment plant during high rain fall/ super cyclone period. A separate storm water sump for this purpose should be created.</p>	<p>Catch drains , siltation ponds &amp; check dams have been provided for the working pits, OB &amp; mineral with adequate size . The quarry water after treatment is being utilized for watering the mining area roads, plantation etc. The drains is being de-silted regularly &amp; maintain properly.</p> <p>At present a total length of 7.5Km Garland drain has been provided around the mine pit &amp; overburden dumps to prevent run-off water and flow of sediments directly into the Damasala-Nallah &amp; Kamarada-Nallah. Further 23 Nos. of settling pits &amp; some check dams have been provided inside the Garland drain, to arrest the silt. An effluent treatment plant has been provided to treat the quarry discharge water. There is no scope to enter the storm water to the effluent treatment plant during high rain fall &amp; super cyclone period. The storm water is collected in an old pit.</p>
<p>Viii)</p>	<p>Dimension of retaining wall at the toe of the overburden dumps and the OB benches within the mine to check the run-off and siltation should be based on the rain fall data.</p>	<p>Retaining wall at the toe of OB dump and OB benches have been provided &amp; are maintained properly an having size - Bottom width of 2 M, Top width of 1 M &amp; Height of 1 M.</p>

<p><b>ix)</b></p>	<p>Effluents containing Cr+6 shall be treated to meet the prescribed standards before reuse/ discharge. Effluent treatment plant should be provided for treatment of mine water discharge and waste water generated from the work-shop and mineral separation plant.</p> <p>Run-off from the OB dumps and other surface run-off should be analyzed for Cr+6 and incase its concentration is found higher than the permissible limit the water should be treated before reuse /discharge.</p>	<p>An effluent treatment plant has been set up near quarry by I.I.T Kharagpur in the year 1997 where quarry water is treated by adding ferrous-sulphate &amp; alum to convert hexavalent chromium into trivalent &amp; to settle the suspended particles respectively in a settling tank and allowed to pass through fiber clarifier. The treated water is canalized in pipes and allowed to discharge out side the lease area. As per instruction of Pollution control Board ETP under modification with help of IIT Khargpur. The consultants M/S Nature care &amp; Environmental Research Services Institute (Pvt.) Ltd. have been engaged for monitoring of the treatment plant and also monitored by in house Env. Cell &amp; laboratory.</p> <p>Run off from the OB dump and other surface run-off during rainy season is canalized into a discontinued pit i-e Qry No.1&amp;2.</p>
<p><b>x)</b></p>	<p>Run off from the OB dumps and other surface run off should be analyzed for Cr+6 and in case its concentration is found higher than the permissible limit the water should be treated before reuse/ discharge.</p>	<p>Run off from the OB dump and other surface run-off is collected and analyzed for Cr+6. At present no point of time, the concentration is found higher than the permissible limit as the run-off is let out after passing through the settling tanks and pits. Run-off generated inside the catchment of the quarry is not let out into any nallah.</p>
<p><b>xi)</b></p>	<p>Separate impervious concrete pits for disposal of sludge shall be provided for the safe disposal of sludge generated from the mining operations.</p>	<p>ETP Sludge handed over to Odisha Waste Management Project, Ramkay as per instruction of Odisha State Pollution Control Board.</p>
<p><b>xii)</b></p>	<p>The project proponent shall ensure that the quality of decanted effluents from the tailing pond, if any, conform to the prescribed standards before discharge.</p>	<p>No decanted effluents from the tailing pond are let out into any nallah. Ferrous sulphate and alum is added in the decanted water of tailing ponds by providing pipe line system, which convert hexavalent chromium to trivalent chromium.</p>

<b>xiii)</b>	The project proponent shall explore the possibility to reduce concentration of Cr+6 in the tailing pond, if any, in consultation with an expert scientific institution like NEERI.	No decanted effluents from the tailing pond are let out into nallah. Ferrous sulphate and alum is added in the decanted water of tailing ponds by providing pipe line system, which convert hexavalent chromium to trivalent chromium.
<b>xiv)</b>	Plantation shall be raised in an area of 191.3 ha including a 7.5m wide greenbelt in the safety zone the mining lease, overburden dumps, roads, etc. By planting the native species in consultation with the local DFO/ agriculture department. The density of trees should be around 2500 plants per ha.	Till date plantation has been made over an area of 42.36 ha inside the mining lease area and density of plants is more than 2500 Nos. per ha. Growths of plants are seen to be satisfactory and also good survival rate. All types of mixed species have been raised to keep the survival rate high and also increase the local habitat.
<b>xv)</b>	Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollutions and having high levels of SPM and RSPM such as around crushing & screening plant, loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the ambient air quality parameters conform to the norm prescribed by the central pollution control Board in this regard.	Water sprinkling is a regular practice by water sprinkler on haul roads, OB dumps, ore plots, loading and un-loading points etc. Three Nos. water tankers have been engaged for this purpose, out of which two are in use and one is stand-by. AAQ monitoring is being carried out regularly by consultant and the parameters are within the permissible limit. As advised by M.O.E.F to monitor all the parameters of AAQ as per NAAQS Notification, necessary assignment has been given to consultant to carry out the said monitoring.
<b>xvi)</b>	Regular monitoring of water quality up-stream and down stream of the Damasala- nallah and the kamarda Nallah shall be carried out and the record of monitored data should be maintained and submitted to the Ministry of Environment & Forest, its regional office, Bhubaneswar, the Central Ground water authority, the Regional Director, Central Ground water Board , the State pollution control Board & the Central Pollution Control Board.	Monitoring of water quality of up-stream & down- stream of Damasala Nallah is being carried out and submitted to Regional office, the Regional Director Central ground water Board, the State Pollution Control Board & the Central Pollution Control Board in half yearly monitoring report.

<b>xvii)</b>	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with Regional Director, Central Ground water Board.	A consultant from Delhi has carried out the groundwater resources in the area.
<b>xviii)</b>	Regular monitoring of Ground water level and quality shall be carried out in and around the mining lease by establishing a network of existing wells and constructing new Piezometers during the mining operation. The monitoring should be carried out four times in a year, Pre- monsoon (April to May), Monsoon (August), Post monsoon( November) & winter ( January) and the data thus collected shall be sent regularly to the Ministry of environment & Forest and its regional office, Bhubaneswar, the Central Ground Water authority and the regional Director, Central Ground water Board. If at any stage, it is observed that the Ground Water table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.	Monitoring of ground water quality is being carried out regularly. The monitoring data carried out in the month of November 2012 indicates that there are 15 water quality parameters have been analyzed and the monitoring data are being submitted to the Regional office regularly. The project is monitoring on its own the water level and its quality regularly.
<b>xix)</b>	Suitable rain water harvesting measures on long term basis shall be planned and implemented in consultation with the Regional director, Central ground water Board.	A water reservoir about 2.42ha area in the lease hold area has been created where rain water is arrested for recharging the ground water.
<b>xx)</b>	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportations of mineral. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.	Vehicles are being maintained properly to reduce vehicular emissions. Vehicular emission is regularly checked up and monitored by consultant in every six month & it is well within the norms. The mineral transportation is being carried out through the covered trucks only and no trucks are overloaded at any point of time.

<b>xxi)</b>	Blasting operations shall be carried out only during the day time. Controlled blasting shall be practiced. The mitigative measures for control of ground vibration and to arrest fly rocks and boulders should be implemented.	The amount of Blasting is very negligible. This is being followed as per DGMS norms. NONEL is also being practiced to reduce dispersal of fly rocks to far off distance and also generation of noise and vibration are taken care of to reduce impact to any structure and also buildings. Besides, SME (Site Mixed slurry Emulsion) is also being practiced as per DGMS norms and also to avoid huge inventory of magazine in the Magazine House. Wetting of the Blasting area is also being carried out before blasting to reduce dust generation.
<b>xxii)</b>	Drills shall either be operated with dust extractors or equipped with water injection system.	Wet drilling is practiced in the mines. The drill machine is equipped with inbuilt water injection system
<b>xxiii)</b>	Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. This should be properly maintained and operated.	Regular dust control measure is being taken by water spraying in loading & unloading points, haul roads, excavation area and other areas prone to generation of dust.
<b>xxiv)</b>	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and waste water generated during the mining operation.	Mine is having a small colony and septic tank followed by soak pit in each house have been installed to treat domestic effluents. In the work shop, oil and grease trap system has been provided near the work shop and treated water is recycled for various use in the mines and as seen, sufficient care has taken to avoid spillage of oil inside the workshop.
<b>xxv)</b>	Consent to operate shall be obtained from the State pollution control board, Orissa before starting enhanced production from the mine.	Consent to operate has been obtained from S.P.C.B Orissa for a production of 1.36 lac M.T chrome ore. Vide letter No. 6327/IND-I-CON-220 dated 06.04.2013 valid up to 31.03.2014.
<b>xxvi)</b>	Pre placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and record and maintained. For the purpose, schedule of health examination of the	M/s Utkal polyclinic, Bhubaneswar, is periodically conducting intial and periodical examination of the project regularly. Personal protective equipment (PPE) such as respiratory devices, nose masks, ear plugs, helmets, hand globes, etc. are being provided to all the

	workers should be drawn and followed accordingly.	employee. Mobile health checking is also being done regularly as a part of occupational health surveillance programme. Apart from this, specialized checking is being carried out at Utkal Poly clinic, Bhubaneswar. It has been informed that no any health problems have been detected which can be related to occupational exposure. Person working in the dusty area are regularly wearing protective devices.
xxvii)	Provision shall made for the housing of contraction labour within the site with all necessary infrastcture 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 structure to be removed after the completion of the project	Housing have been provided to the workman within the site with all necessary infrastructure facilities such as fuel for cooking, Toilet, Safe drinking water, medical health care , Education, crèche , recreation & Entertainment, Sports etc. The present houses are of permanent nature, since they were made prior to 1980.The structure will be removed after completion of the project.
xxviii)	Digital processing of the entire lease area using remote sensing technique shall be done regularly once in three years for the monitoring land use pattern and report submitted to the Ministry of environment & Forests and its regional office, located at Bhubaneswar.	Digital processing of the entire lease area has been carried out by ORSAC .
xxix)	A final mine Closure plan along with details of corpus fund shall be submitted to the Ministry of Environment & Forests in advance of final mine Closure for approval.	Ore has been proved up to a depth of 200m (Appox) so there is no scope of final closure in the near future.
<b>B.</b>	<b>General Condition</b>	
i)	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Project proponent has not changed the mining technology and process of working.



<b>ii)</b>	No change in the calendar plan including excavation , quantum of mineral chromite ore and the waste shall be made.	We strictly follow the approved mining plan/ scheme for excavation of waste and production of ore.
<b>iii)</b>	Conservation measures for protection of flora and fauna in the core & buffer zone should be drawn up in consultation with the local forest and wildlife department.	The condition will be implemented as per guidance of the local DFO.
<b>iv)</b>	At least four ambient air quality - monitoring stations should be established in the core zone as well as in the buffer zone for RSPM, SPM, SO <sub>2</sub> & NO <sub>x</sub> monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecological sensitive targets and frequency of monitoring should be undertaken in consolation with the State pollution Control Board.	Air quality monitoring is being carried regularly by M/S Nature Care ( Env. Consultant). We are having four ambient air quality monitoring station in the core zone and four in the buffer zone where air quality monitoring is carried out regularly. As advised to monitor all the parameters of AAQ as per the NAAQS Notification, Necessary assignment has been given to consultant to carry out the said monitoring.
<b>v)</b>	Data on ambient air quality (RSPM,SPM,So <sub>2</sub> & No <sub>x</sub> ) should be regularly submitted to the Ministry of Environment & Forests including its Regional Office located at Bhubaneswar and the State Pollution Control Board/ Central pollution Control Board once in a six months.	Data on ambient air quality (RSPM, SPM, SO <sub>2</sub> , NO <sub>x</sub> ) is being submitted to MOEF Regional office BBSR, State Pollution Control Board/ Central Pollution Control Board once in every six month regularly.
<b>vi)</b>	Fugitive dust emission from all the sources should be control regularly. Water spraying arrangement on haul roads, loading and unloading and transfer point should be provided and properly maintained.	At present monitoring of dust survey is carried out at three places in the active mining area and one in the colony area.
<b>vii)</b>	Measures should be taken for control of Noise levels below 85dBA in the work Environment. Worker engaged in operation of HEMM etc. should be provided with earplugs /muffs.	To control the noise levels in the work environment all the equipments are maintained properly and condition monitoring is also being done periodically. In case wherever noise level is more than 85dBA in the working places, workers are not allowed to work without earplugs/muffs.

viii)	Industrial waste water (workshop and waste water from the mine) should be properly collected treated so as conform to the standard prescribed under GSR422(E) dated 19 <sup>th</sup> May 1993 and 31 <sup>st</sup> December 1993 or as amended from time to time Oil & Grease trap should be installed before discharge of workshop effluents .	Mine discharge water is treated in an ETP and the treated effluents are discharged out side the leasehold area after meeting the prescribed standards. A zero discharge Oil & Grease trap has been installed near workshop, however proper care is being taken to avoid spillage of Oil & Grease in the work-shop.
ix)	Personnel working in dusty area should wear protective respiratory device and they should also be provided with adequate training & information on Safety and health aspects. Occupational health surveillance program of workers should be under taken periodically to observe any contraction due to exposure to dust to take corrective measures, if needed.	Apart from the due protection against generation of dust, all the workers have been provided with protective respiratory devices those who are prone to expose in the dusty area. Adequate training and information on safety and health aspects is being given to all the workers time to time to inculcate awareness among them. Approved occupational medical consultant M/s Utkal poly clinic, Bhubaneswar Is also carrying out occupational health surveillance program periodically. Corrective measures are also being taken in case of contraction due to exposure of dust, if any.
x)	A separate environmental management cell with suitable qualified personnel should be set-up under the control of senior Executive, who will report directly to the head of organization.	An Env. Management Cell has been established in the mines to look after all Env. Matters.
xi)	The fund earmarked for environmental protection measures should be kept in separate account and should be diverted for other purpose . Year wise expenditure should be reported to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar.	Expenditure towards environmental protection measures is 390.027 lakhs up to June -2013. Six monthly expenditure it is being submitted regularly to MOEF, Bhubaneswar.
xii)	The project authorities should inform to the Regional office located at Bhubaneswar regarding date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	It is being Complied.

<b>xiii)</b>	The Regional office of Ministry located Bhubaneswar shall monitor completion of stipulated conditions. The project authorities should extend full co-operation to the Officer of the Regional office by furnishing the requisite data / information/ monitoring reports.	During the monitoring of stipulated conditions by MOEF, Bhubaneswar the project authority extends full co-operation by furnishing the requisite data/information/monitoring reports.
<b>xiv)</b>	The project proponent shall submit six monthly report on the status of implementations of the stipulated environmental safe guard to the Ministry of Environment & Forests, its Regional office, Bhubaneswar, Central Pollution Control Board, State Pollution control Board. The proponent shall upload the status of completion of their website and shall update the same periodically.	The six monthly reports on the status of the implementation of the stipulated Env. Safe Guards is being submitted to the MOEF Regional office, Bhubaneswar, Central Pollution Control Board, State Pollution Control Board. Six Monthly Compliance Status is being up-loaded in our web-site.
<b>xv)</b>	A copy of clearance letter will be marked to concerned Panchyat / Local NGO, if any, from suggestion / representation has been received while processing the proposal.	A copy of clearance letter has been given to the Panchayat.
<b>xvi)</b>	The State pollution Control Board should display a copy of clearance letter at the Regional office, District industry Centre and the Collector's office / Tahsildar office for thirty days.	A copy of the clearance letter has been given to Orissa State Pollution Control Board.
<b>xvii)</b>	The project authorities should advertise at least two local News papers widely circulated, one of which shall be in the vernacular language of the locality concerned , within the 7 days of the issue of the clearance letter informing that the project has been according Environmental Clearance and copy of the Clearance letter is Available with State Pollution Control Board & also at the website of the Ministry ofEnvironment&Forestsat <a href="http://envfor.nic.in">http://envfor.nic.in</a> and copy of the same should be forwarded to the Regional Office of Ministry located at Bhubaneswar.	Environmental clearance has been displayed in the website of the ministry of Environment & Forest .Advertisement has been made within 7days in two local papers named “ The Anupam Bharat” & “ The Pioneer” .

