



UAIL-MINES/ENV/089/2019

29<sup>st</sup> November 2019

To

The Addl. Principal Chief Conservator of Forest ©  
Ministry of Environment Forests & Climate Changes  
Govt. of India  
Eastern Regional office, A/3, Chandrasekharpur,  
Bhubaneswar – 751023

Sub: Six-monthly Compliance status of conditions stipulated in Environment Clearance with respect to our Baphlimali Bauxite Mine of M/s Utkal Alumina International Limited, Rayagada, Odisha with production capacity of 8.5 MTPA.

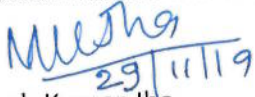
Ref: Environment Clearance No. J-11015/650/2007-IA.II (M) dated 19.02.2009.

Dear Sir,

As a part of the compliance to the EC granted with respect to our 8.5 MTPA Bauxite Mine vide Ministry's letter no. J-11015/650/2007-IA.II (M) dated 19.02.2009, we are enclosing herewith six monthly compliance status for the period from 1<sup>st</sup> April 2019 to 30th September 2019 for your kind perusal.

Thanking you,

Yours faithfully,  
For Utkal Alumina International Limited

  
29/11/19  
Mukesh Kumar Jha  
General manager- Mines

Encl: As above

Copy to:

1. The Member Secretary, State Pollution Control Board, Paribesh Bhawan A/118 Nilakantha Nagar Unit-VIII, Bhubaneswar -751012.
2. Regional Office, CPCB, Kolkata
3. Regional Office, OSPCB, Rayagada.
4. roez.bsr-mef@nic.in, mef.or@nic.in, [paribesh1@ospcboard.org](mailto:paribesh1@ospcboard.org), [rospcb.rayagada@ospcboard.org](mailto:rospcb.rayagada@ospcboard.org)

**UTKAL ALUMINA INTERNATIONAL LIMITED**

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**COMPLIANCE STATUS OF CONDITIONS IMPOSED IN ENVIRONMENTAL CLEARANCE FOR  
8.5 MTPA BAUXITE MINING VIDE LETTER NO J-11015/650/2007-IA.II (M), DTD.19.02.2009.  
PROJECT NAME: BAPHLIMALI BAUXITE MINE, M/S. UTKAL ALUMINA INTERNATIONAL LIMITED.**

**Period: From 1<sup>st</sup> April, 2019 to 30<sup>th</sup> September 2019.**

Sl. No.	Imposed Condition	Compliance Status
<b>A. Specific Condition</b>		
i.	All the conditions stipulated by the State Pollution Control Board, Orissa in their consent to establish shall be effectively implemented.	All the conditions stipulated in the Consent to Establish (CTE) issued by SPCB, Odisha have been implemented effectively. Routine inspections have been carried out by OSPCB and Consent to Operate (CTO) has been issued vide letter No. 2608/IND-I-CON - 5450 dated 14.03.2019.
ii.	The project proponent shall effectively address the concerns raised by the locals in the public hearing as well as during consideration of the project while implementing the project.	All the concerns raised in the public hearing are being implemented such as:- a) Health care by appointing doctors, paramedical staff with Medical Health Unit. b) Supply of drinking water by repairing and Constructing tube wells, Promoting education by constructing new school building and Renovation of old school building. c) Improving the livelihood by employing local people directly/ indirectly. d) Skill development programs such as training on tailoring, handicraft, mobile repairing and agriculture etc. are being effectively implemented. e) Improvement in infrastructures like Development & repair of village roads, irrigation channels, bridges/culverts, avenue plantations etc.
iii.	The project proponent shall develop fodder plots in the non-mineralized area in lieu of use of grazing land.	The entire plateau of the ML area consisting of Mineralized & Non-Mineralized are capped with hard laterite which normally prevents the tree growth.  However, plantation of fodder species in 3 Ha land out of 5 Ha available land at the extreme south of ML area is being taken up. The said area has been demarcated and plantation of different species of grasses are being done after loosening of hard laterite and spreading of top soil.
iv.	The mining operations shall be restricted to above ground water table and it should not intersect groundwater table. In case of working below ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.	Our Mining operation is restricted above the ground water table. Now the lowest working depth of our existing mine pit is around 1004 m RL, whereas the presence of ground water table has been estimated to be about 150 to 200 mtrs below/from the surface (800-850 m RL). Therefore, there is no possibility of any GW Intersection or exploitation thereby.
v.	The project proponent shall ensure that no natural watercourse and/or water resources are obstructed due to any mining operations. Adequate measures shall be taken while diverting seasonal channels emanating from the mine lease, during the course of mining operation.	No natural watercourse or water resources are obstructed due to mining operations. Necessary care has been taken during monsoon to divert/channelize run off water to the excavated pits, so that it does not carry any sediment to obstruct/ affect the water bodies at the foot hill.

*M/S. UTKAL*

vi.	The project proponent shall take adequate environmental safeguard measures for control of rolling down of silt and sediments and protection of the catchment area of upper Indrāvati Reservoir during the course of mining operation.	In addition to as stated in Sl. No. v, to check flow of any silt and sediments, numbers of check dams/siltation ponds have been constructed and ensured by regular cleaning and maintenance. The same is being also continued concurrently with the running of the mines. Details of Check Dams and garland drains attached as <b>Annexure- 1 &amp; Photo 1 &amp; 2</b> After measures listed in annexure-1, the run-off confluence with the nearby seasonal nallah & ultimately to River Indrāvati after moving a distance of 7 to 8 Kms & will have hardly any bearing on the water quality of Indrāvati.
vii.	A 3 km stretch on the upstream and 3 Km in the downstream of the river passing through the project area should be taken up by the project authorities for plantation to arrest river bank erosion and sediment flow into the river.	There is no such perennial river/nallah exists at the ML especially in the surface plateau. However there are small natural depressions, may called as gullies, develops preferably in the rainy days during inflow/outflow of rain water at the slope of the ML, which is a part of project area, are being provided with check dam & plantations of indigenous species to arrest the erosion & sediment flow into the perennial nallah available at the bottom of the ML.
viii.	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.	There is an old stock of top-soil still available at the earmarked site within the ML area which has been generated from 2013-14 to 2016-17. The old top soil stack are being used progressively after 2018-19 and in due course the same shall be consumed in planation activities.  However, the top-soil scrapped during on-going mining is being utilized in the course of concurrent back-filling & plantation activities since 2017-18. The photo of the top soil area is attached as <b>Photo-3</b>
ix.	The over burden (OB) generated during the initial years of the mining operation shall be temporarily stacked at the earmarked dump site(s) only for backfilling. Backfilling shall start from the 4th year onwards of the mining operation and the entire quantity of the waste to be generated shall be backfilled. There shall be no external over burden dumps after the 8th year of the mining operation. The entire backfilled area shall be afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.	<ul style="list-style-type: none"> <li>▪ The overburden of initial years of mining is stacked as per the approved mining scheme and within the earmarked area.</li> <li>▪ From 4th year onwards i.e since 1.04.2016 backfilling has been started by utilizing entire quantity of overburden in the voids of the mined out area as per the proposal given in the Scheme of Mining.</li> <li>▪ Re-handling of existing dump has already been started and there shall be no existence of any external dumps after 8th year of mining operation.</li> <li>▪ Till September 2019, 28.97 ha area has been rehabilitated out of 47.00 ha backfilled area. Both the activities are under progress &amp; shall meet by 100% as per the proposal within scheme period.</li> <li>▪ Monitoring and management is under progress. Compliance status shall be submitted to the Ministry of Environment &amp; Forests and its Regional Office located at Bhubaneswar on six monthly basis.</li> </ul>

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		<ul style="list-style-type: none"> <li>Photo of backfilled area with plantation is attached as <b>photo- 4.</b></li> </ul>
x.	<p>Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and temporary OB dumps to prevent run off of water and flow of sediments directly into the Kandabindha Nallah, the San River, the Indravati River and other water bodies. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted, particularly after the monsoon, and maintained properly.</p> <p>Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mine pit, topsoil dump, temporary over burden dumps and mineral dumps to prevent run off of water and flow of sediments directly into the Kandabindha Nallah, the San River, the Indravati River and other water bodies and sump capacity shall be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.</p>	<p>Garland drains, settling tanks and check dams of appropriate size, gradient and length has been constructed both around the mine pit and the over burden dump to prevent run off of water and flow of sediments directly into the Natural Nallah and other water bodies. Details of the above measures enlisted in <b>Annexure-1</b> &amp; photos attached as <b>Photo 1 to 2.</b></p> <p>The sump capacity has been designed keeping 50% safety margin over and above peak sudden rainfall. Sump capacity is having adequate retention period to allow proper settling of silt material. The drains are being desilted and maintained at regular intervals.</p> <p>Further, the rain water collected in the mine pits during monsoon is not pumped out. Rather, it is allowed to be collected at the lowest level to augment the ground water resources.</p> <p>In addition to above, a scientific study was carried out on surface runoff management by deputing NIT, Rourkela and the recommendations of the study report have been implemented and ensured arresting of silts and sediments.</p>
xi.	Dimension of the retaining wall at the toe of temporary OB dump(s) and the over burden benches within the mine to check run-off and siltation shall be based on the rain fall data	<p>Dimension of the retaining wall at the toe of temporary OB dump(s) within the mine to check run-off &amp; siltation are as follows:-</p> <ul style="list-style-type: none"> <li>height 1.00 mtr</li> <li>width 0.80 mtr</li> <li>length 1300.00 mtrs</li> </ul> <p>These dimensions are designed basing on the highest rainfall data.</p>
xii.	Plantation shall be raised in an area of 680ha including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around void, 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.	<p>The mining was commenced during 2013-14 and as per the approved Scheme of Mining, backfilling of mined out voids has been started from 1.04.2016. Rehabilitation over reclaimed area has been started from 2017-18 &amp; till the end of September'2019, an area of 28.97 ha has been afforested out of 47.00 ha of backfilled area.</p> <p>However plantation is being taken up in the Mine slope including a 7.5 meter safety zone since 2012-13. Till September'2019, we have planted around 2,33,240 saplings in an area of approx. 102.8 Ha. The remaining area will be covered progressively in phase wise manner as per the Scheme of Mining.</p> <p>Nursery has been developed with shed net arrangement to develop, preserve and cater the saplings during the course of plantation period. Photos of plantation &amp; nursery are attached as <b>Photo- 5 &amp; 6.</b></p>
xiii.	The void left unfilled in an area of 250ha shall be converted into the water body. The higher benches	The void to be left unfilled after exhaust of ore in an area of 250 Ha, which will be converted into water body. The

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	of the excavated void/mine pit shall be terraced and plantation done to stabilize the slopes. The slopes of higher benches shall be made gentler for easy accessibility by the local people to use the water body. Peripheral fencing shall be carried out all along the excavated area.	higher benches of the excavated void pit will be terraced / planted with Trees in consultation with the local DFO/Agriculture Department to stabilize the slopes. Provision will be made for easy accessibility by the local people to use the water body. Peripheral fencing shall be carried out all along the excavated area in due course incase required.
xiv.	Regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as around crushing and screening plant, loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	Regular water sprinkling is done on haul roads, loading & unloading areas and material transfer points by deploying two dedicated water tankers of capacity 28 KL. Fixed water sprinkling arrangement has been provided on both sides of the arterial road and around the stock pile of 1.3 Km length. Photos of water sprinkling arrangements are attached as <b>Photo 7 &amp; 8</b> .  Regular ambient air quality monitoring is being done in the Core Zone comprising of four locations. The result of the monitored air quality data (April'2019 to September'2019) shows that all parameters are well within the prescribed limit.  The result of monitored data for the period of April'2019 to September'2019 of core and buffer zone are attached as <b>Annexure- 2 &amp; 3</b> .
xv.	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.	The flow rate of the small perennial nallahs, which is flowing near the Baphlimali hillock close to the lease boundary, is being monitored regularly and the records are maintained. The flow rate monitoring data during October'2018 to March'2019 are attached as <b>Annexure 4</b> .
xvi.	Regular monitoring of water quality upstream and downstream of the Khandabindha Nallah shall be carried out and record of monitored data should be maintained and submitted to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, the Central Groundwater Authority, the Regional Director, Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board.	The same is being carried out and recorded. The results of surface water quality are enclosed in <b>Annexure-5</b> . The same is also being submitted to the Central Groundwater Authority, the Regional Director, Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board with six monthly compliance report.
xvii.	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	The following Conservation measures have been taken to augment ground water resources:- i. Rainwater harvesting is being carried out by collecting the precipitated water through a network of drainage system into the exhaust mining pit for storage and ground recharge.  ii. Movement of mine faces is being carried out systematically as per mine plan following the contour lines such that the faces have self-draining slopes. Precipitated water of the adjacent area is being collected within the mined out area.  iii. Concreted Weir has been constructed to arrest rain water resulting ground water recharge. Also

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		<p>the Surface water flow near the pit has been diverted towards the pit and this accumulation influences to recharge ground water table.</p> <p>iv. Arrangement has been made that the mining method and the peripheral barrier all around mining area does not allow the storm water to go outside valley areas. The water thus trapped, percolates down and recharges the ground water.</p>
xviii.	<p>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 the Ministry of Environment and Forests 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 is depleted due to mining activity, necessary corrective measures shall be carried out.</p>	<p>Regular monitoring of ground water level and quality is being carried out in each season of the open wells/ dug wells located around the nearby villages and the data is being submitted to Regional Office, MoEF and SPCB, Bhubaneswar once in every six month with this six monthly compliance report.</p> <p>Two peizometric wells have been constructed inside lease area to monitor the level of ground water.</p> <p>The monitoring results of Ground water quality &amp; level are enclosed as <b>Annexure - 6</b>.</p>
xix.	<p>Appropriate mitigative measures shall be taken to prevent pollution of the San River and the Indravati River in consultation with the State Pollution Control Board.</p>	<p>The following measures are being implemented and will be implemented in course of time also.</p> <ol style="list-style-type: none"> <li>1. Deep garland drains are constructed to check erratic flow of precipitated water.</li> <li>2. Check dams are constructed around the slopes of valley to arrest silts and sediments if any.</li> <li>3. Retaining wall of height 1.5 meter has been constructed at the edge of the valley. The naked areas of the valley slopes have been covered by mass afforestation and the same will be continued till full cover.</li> </ol> <p>San River &amp; Indravati are flowing at a distant location 12 Kms &amp; 9 Kms respectively. The above protection measures written Sl No. 1 to 3 shall may never create any unfavourable situation to affect the water quality of the above two rivers due to our contribution.</p>
xx.	<p>The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water, if any) required for the project.</p>	<p>There is no proposal to withdraw ground water for the project and surface water is being used for mining purpose. To this effect, an agreement was made between M/s Utkal Alumina Int. Ltd &amp; Water Resource Dept. Govt. of Odisha for drawl of 9.0 cusec or 7776000 cft/day of water from Govt. water source/ from San River upstream of Indravati River. The copy of agreement is attached as <b>Annexure-7</b>.</p>

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xxi.	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.	<p>As a step towards rain water harvesting, the following measures have been implemented -</p> <ul style="list-style-type: none"> <li>❖ Rainwater harvesting is being carried out by collecting the precipitated water through a network of drainage system into the exhaust mining pit for storage, it is not used for the mining purpose. Rather, it is allowed to be collected in the lowest level to augment the ground water resources gradually.</li> <li>❖ Movement of mine faces is being carried out systematically as per mine plan following the contour lines such that the faces have self-draining slopes. Precipitated water of the adjacent area is being collected within the mined out area.</li> <li>❖ In addition to this adequate numbers of Concreted Weir have been constructed to arrest rain water resulting ground water recharge. Also the Surface water flow near the pit has been diverted towards the pit and this accumulation influences to recharge ground water table.</li> </ul>
xxii.	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral within the mine lease. The mineral transportation within the mine lease shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.	Pollution testing certificate of all machinery is being verified regularly to check vehicular emission. Further emission level is kept under control by rigorous maintenance of all engines and changing of lubricants as per the recommendation of the manufacturer. A full fledge workshop is in place for maintenance of vehicles used in mining operation. All the transporting vehicles are being covered with tarpaulin and over loading are strictly avoided.
xxiii.	No blasting shall be carried out after the sunset. Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	Blasting is being carried out only during daytime. Controlled blasting is being practiced to reduce ground vibrations and to arrest fly rocks and boulders.
xxiv.	Drills shall either be operated with dust extractors or equipped with water injection system.	Drilling machine with in-built vacuum cyclone dust collector & equipped with water spraying system is being used. Photo of drilling is attached as <b>Photo-9</b>
xxv.	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. These should be properly maintained and operated.	Stock pile area is surrounded by fixed water sprinkling arrangement. Further water sprinkling by mobile water tankers is being carried out for effective dust suppression. Metal hoods are provided at transfer points in Crushing and Conveying System apart from provision of Covers all along the Conveyor System (18.5 km long) to restrict the dispersion of dust. In the Fixed crusher house, an efficient dry fog system is installed for suppression of dust at ROM hopper and Transfer points. Photos of the same are attached as <b>Photo 10 &amp; 11</b> .
xxvi.	Consent to operate shall be obtained from the State Pollution Control Board, Orissa prior to start of production from the mine.	Consent to Operate has been obtained from the State Pollution Control Board, Odisha vide letter no. 2608/IND-I-CON - 5450 dated 14.03.2019 attached as <b>Annexure 8</b> .

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xxvii.	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.	No residential colony is proposed within ML Area. Provision of ETP is not envisaged as no scope of generation of mine drainage water and deployment of mine machinery on contract basis. However, Modular STP of 75 KLD has been installed as an advance environmental measure. The photo of STP is attached as <b>Photo- 12</b> .
xxviii.	The project authorities shall undertake sample survey to generate data on pre-project community health status within a radius of 1 km from proposed mine.	Complied.
xxix.	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	Pre-placement medical examination and periodical medical examination of the workers engaged in the project are carried out regularly. Annual Schedule of PME is being made for all eligible employees as per DGMS requirement and necessary PME is carried out.
xxx.	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.	Work shed have been provided to the workers at the mine site having all facilities such as fuel for cooking, permanent toilets followed with septic tanks & soak pits drinking water, medical health care. Since the mining operation has already been commenced, the regular employees & executives are coming from the integrated town ship adjacent to the alumina refinery. Domestic effluents generated are being treated in the sewage treatment plant (STP) of 75 KLD located at mines & discharged to soak pit via septic tank constructed.
xxxi.	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely; python, panther, sloth bear, wild dog etc. spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. All the safeguard measures brought out in the Wildlife Conservation Plan so prepared specific to the project site shall be effectively implemented. A copy of action plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.	The Action Plan for conservation of wildlife i.e. Site Specific Wildlife Conservation Plan exclusively for Mining lease has been approved by PCCF (WL) & Chief wildlife Warden, Odisha vide letter No. 5608/1WL-SSP-80/2016 dated 27.06.2017 with financial forecast of Rs.670.451 Lakhs and an amount of Rs.535,715 Lakhs has been deposited in CAMPA FUND for implementation of the same. Further, as per the demand notice from the Divisional Forest Officer, Rayagada vide letter No. 4168 dated. 04.08.2017, an amount of Rs. 8,05,46,920/- has been deposited in CAMPA FUND for implementation of Regional Wildlife Management Plan. The copy of action taken to implement the Regional Wildlife management Plan is attached as <b>Annexure 9</b> & copy of approval letter as <b>Annexure 10</b> .
xxxii.	Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment and Forests and its Regional Office, Bhubaneswar.	Digital processing of the entire lease area using the remote sensing technique by the authorized agency from Orissa Remote Space Application Center (ORSAC), Bhubaneswar has been carried out for monitoring the land use pattern. The report has been submitted vide letter no UAIL-Mines/ENV/77/2017 dated 21.07.2017 to Ministry of Environment and Forests and its Regional Office, Bhubaneswar. The copy of the submission letter is attached as <b>Annexure- 11</b> .
xxxiii.	A final mine closure plan along with details of Corpus Fund shall be submitted to the Ministry of	The same will be submitted to the Ministry of Environment & Forests 5 years in advance of final closure for approval.

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	Environment & Forests 5 years in advance of final closure for approval.	
<b>B. General conditions</b>		
i.	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	No change in mining technology and scope of working will be made without prior approval of the Ministry of Environment & Forests.
ii.	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	There shall be no change in the calendar plan including excavation, quantum of mineral bauxite and waste/OB generation of work without prior approval from competent authority.
iii.	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 ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Four ambient air quality monitoring stations each have been established in both Core & Buffer Zone in consultation with the State Pollution Control Board, Odisha. Monitoring reports are attached as <b>Annexure -2</b> .
iv.	Data on ambient air quality (RSPM, SPM, SO <sub>2</sub> & NO <sub>x</sub> ) should be regularly submitted to the Ministry of Environment and Forests including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.	The monitored AAQ data is being submitted to the concerned authorities along with the half yearly compliance report once in six month.
v.	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.	Water spraying on haul roads is being practiced through water tankers. for which, provision is made to deploy 2 nos. of 28 KL capacity tankers to spray water at dust generating points such as haul roads, loading & unloading areas and material transfer points. Fixed water sprinkling arrangements has been provided on the side of the arterial road. The haulage roads are being maintained to avoid rut and pot holes.
vi.	Measures should be taken for control of noise levels below 85 dB (A) in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.	The following measures are taken to control noise levels below 85 dB (A) in the work environment. <ul style="list-style-type: none"> <li>• Maintenance of all machines including checking of silencers regularly,</li> <li>• Controlled blasting using delay detonators, installing immovable machinery on foundations and in closed rooms</li> <li>• Provision of earplugs/muffs to workers engaged in noise prone areas.</li> <li>• The HEMM operators are provided with AC close cabinets which itself is acoustic in nature.</li> </ul> The monitored report of noise level is attached as <b>Annexure- 12</b> .

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vii.	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.	<p>A full-fledged workshop is in place with the facility of Oil &amp; grease trap arrangement. All the repair &amp; maintenance activities are taken up in the existing facility, however major maintenances like engine overhauling etc are being taken up outside.</p> <p>All the used water during repair &amp; maintenance are properly collected &amp; treated thru oil &amp; grease trap &amp; reused in cyclic process.</p> <p>There is no outside discharge of workshop effluents.</p>
viii	<p>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.</p> <p>Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.</p>	<p>Personal protective equipments are being provided to all workers respective to the nature of the job. Initial and periodical awareness training is being imparted to all workers in the Company's Vocational Training Center located within the lease area on Safety and Health Aspects.</p> <p>Pre-placement medical examination and periodical medical examination as per DGMS guideline of the workers engaged in the project is being carried out and records maintained for corrective measures.</p>
ix.	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.	A separate environmental management cell with suitable qualified personnel has been set up under the control of the Agent of Mines, who reports the Head of the Organization directly.
x.	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 of Environment and Forests and its Regional Office located at Bhubaneswar.	Separate fund provision has been earmarked for environmental protection measures and it is not diverted for any other purpose. The expenditure to be incurred during the year 2018-19 shall be reported to the Ministry of Environment and Forests and its Regional Office located at Bhubaneswar in the compliance status of conditions imposed in Environment Clearance for the period 1st October'2019 to 31st March'2020.
xi.	The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Complied.
xii.	The Regional Office of this Ministry located at Bhubaneswar 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.	We are abide by the condition and shall extend full cooperation to the officer(s) of regional office by furnishing the requisite data / information/monitoring reports during their monitoring of compliance of the stipulated conditions.

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xiii.	The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, Central Pollution Control Board and State Pollution Control Board. The proponent shall upload the status of compliance on their website and shall update the same periodically.	Six monthly compliance report is being submitted on the status of compliance of the stipulated environmental clearance conditions including results of monitored data to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The status of compliance of the environmental clearance conditions, including results of monitored data is uploaded on company website periodically.
xiv.	A copy of clearance letter shall be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied.
xv.	The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.	Complied.
xvi.	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 7days 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 and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	Complied.

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**DETAILS OF GARLAND DRAIN, RETAINING WALL, SETTLING POND AND CHECK DAM**

Sl. No	Type of works	Particulars		
		Length	Width (avg)	Height (avg)
01	Wall around back side of OB dump	1300 mtrs	0.8 mtrs	1 mtr
02	Drain work at the back side of OB dump	1060 mtrs	2.8 mtrs	1 mtr
03	Drain work at ore stack yard	253 mtrs	2.7 mtrs	1 mtr
04	Drain work at top soil dump	362 mtrs	3 mtrs	1 mtr
05	Drain work at haul road towards OB dump	800 mtrs	2 mtrs	0.6 mtr
06	Wall around the top soil storage yard	400 mtrs	0.8 mtr	1 mtr
07	Wall beside the cave	330 mtrs	0.8 mtr	1 mtr
08	Three settling pond on back side of OB dump	10 mtrs	8 mtrs	2.2 mtrs
09	Parapet wall between service center facility to mine entrance	1501 mtrs	0.8 mtr	1 mtr
10	Check dam between crusher, ramp and haul road	76 mtrs	0.8 mtrs	1 mtr
11	Check dam across the slope from topsoil towards mining pit (2 nos)	47 mtrs	0.8 mtr	1 mtr
12	Check dam across the slope near mine entrance	35 mtrs	0.8 mtr	1 mtr
13	Drain work around the crusher	306 mtr	2 mtr	1 mtr
14	Hume pipe culvert in the natural stream flowing nearby Kalahandi Pit	5 mtrs	15 mtrs	
15	Concrete drain near fixed crusher	50 mtrs	1.5 mtrs	
16	Settling pond connected to concrete drain near fixed crusher	45 mtrs	23 mtrs	4 mtrs
17	Parapet wall around the safety zone area of Kalahandi Pit	500 mtrs	1.5 mtrs	2 mtrs
18	Three nos. concreted weir across the natural seasonal nallah	135 mtrs	1.2 mtrs	2.5 mtrs
19	Implementation of gabion along OB dump	60 mtrs	1 mtr	1 mtr
21	Settling pond near mine entrance	41 mtrs	25 mtrs	4 mtrs
22	Settling pond near MRSS building	45 mtrs	23 mtrs	4 mtrs
23	Check Dam over slope area North East Side (48 Nos.)	30 mtrs	2 mtrs	2 mtrs

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**AMBIENT AIR QUALITY MONITORING REPORT (CORE ZONE)**  
**BAPHLIMALI BAUXITE MINE**  
**M/s UTKAL ALUMINA INTERNATIONAL LIMITED**

**PERIOD: APRIL 2019 TO SEPTEMBER 2019**

**LOCATION: MINING PIT**

MONTH	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )
Apr-19	73.9	34.3	7.7	17.1	0.34
May-19	57.4	34.3	7.4	20.0	0.33
Jun-19	59.1	33.1	6.6	18.3	0.42
Jul-19	41.1	26.0	6.2	16.9	0.4
Aug-19	35.0	17.6	5.6	15.7	0.6
Sep-19	34.5	19.4	12.3	25.6	0.6
<b>AVERAGE</b>	<b>50.2</b>	<b>27.4</b>	<b>7.6</b>	<b>19.0</b>	<b>0.44</b>

**LOCATION: NEAR CRUSHER**

MONTH	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )
Apr-19	75.9	37.6	7.8	18.1	0.33
May-19	58.9	34.1	8.0	22.0	0.35
Jun-19	60.4	34.8	7.7	19.8	0.42
Jul-19	44.4	28.0	6.6	18.4	0.4
Aug-19	36.2	16.4	6.3	16.9	0.5
Sep-19	38.1	21.6	11.2	23.1	0.4
<b>AVERAGE</b>	<b>52.3</b>	<b>28.8</b>	<b>7.9</b>	<b>19.7</b>	<b>0.41</b>

**LOCATION: NEAR WEIGH BRIDGE**

MONTH	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )
Apr-19	71.4	36.6	8.2	20.5	0.30
May-19	58.5	33.5	7.1	20.4	0.33
Jun-19	56.6	34.0	6.9	19.6	0.4
Jul-19	40.9	27.6	6.4	18.3	0.4
Aug-19	36.9	20.6	5.6	16.2	0.4
Sep-19	31.4	18.0	11.4	23.8	0.5
<b>AVERAGE</b>	<b>49.3</b>	<b>28.4</b>	<b>7.6</b>	<b>19.8</b>	<b>0.40</b>

**LOCATION: MINE OFFICE**

MONTH	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )
Apr-19	70.3	38.4	8.4	18.0	0.28
May-19	58.6	34.0	7.2	20.2	0.31
Jun-19	58.3	34.4	6.6	19.4	0.4
Jul-19	42.9	26.7	6.4	18.2	0.4
Aug-19	31.4	16.9	6.0	15.7	0.5
Sep-19	32.4	18.5	11.9	24.8	0.5
<b>AVERAGE</b>	<b>49.0</b>	<b>28.1</b>	<b>7.7</b>	<b>19.4</b>	<b>0.39</b>

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**AMBIENT AIR QUALITY MONITORING REPORT (BUFFER ZONE)**  
**BAPHLIMALI BAUXITE MINE**  
**M/s UTKAL ALUMINA INTERNATIONAL LIMITED**

**PERIOD: APRIL 2019 TO SEPTEMBER 2019**

**LOCATION: ADRI**

MONTH	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )
Apr-19	65.5	32.5	9.3	19.6	0.26
May-19	58.1	35.8	8.1	19.6	0.33
Jun-19	55.0	34.9	7.1	19.4	0.42
Jul-19	39.0	25.8	7.1	17.7	0.43
Aug-19	46.4	30.2	5.8	15.0	0.44
Sep-19	42.3	27.4	6.9	17.0	0.43
<b>AVERAGE</b>	<b>51.1</b>	<b>31.1</b>	<b>7.4</b>	<b>18.1</b>	<b>0.38</b>

**LOCATION: CHANDRAGIRI**

MONTH	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )
Apr-19	68.0	37.0	9.7	19.1	0.31
May-19	58.4	34.5	7.3	16.0	0.33
Jun-19	54.5	34.1	6.7	20.3	0.41
Jul-19	37.9	24.3	5.9	15.5	0.40
Aug-19	40.0	23.9	5.5	16.7	0.40
Sep-19	41.4	26.1	5.9	16.6	0.41
<b>AVERAGE</b>	<b>50.0</b>	<b>30.0</b>	<b>6.8</b>	<b>17.3</b>	<b>0.38</b>

**LOCATION: PAIKUPAKHALA**

MONTH	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )
Apr-19	74.5	37.3	8.7	21.0	0.27
May-19	56.9	35.1	6.8	16.7	0.31
Jun-19	55.9	34.3	7.3	20.0	0.45
Jul-19	36.2	22.6	7.4	19.5	0.45
Aug-19	55.4	33.2	5.7	16.4	0.41
Sep-19	47.0	31.5	7.0	17.8	0.48
<b>AVERAGE</b>	<b>54.3</b>	<b>32.3</b>	<b>7.1</b>	<b>18.6</b>	<b>0.39</b>

**LOCATION: ANDIRAKANCH**

MONTH	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )
Apr-19	67.8	36.0	9.1	21.4	0.30
May-19	58.0	36.1	8.1	18.5	0.32
Jun-19	56.0	35.8	7.3	19.3	0.40
Jul-19	39.8	26.4	7.3	18.1	0.36
Aug-19	47.6	27.9	6.8	18.9	0.45
Sep-19	49.9	30.4	7.5	18.5	0.46
<b>AVERAGE</b>	<b>53.2</b>	<b>32.1</b>	<b>7.7</b>	<b>19.1</b>	<b>0.38</b>

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**STREAM FLOW MONITORING REPORT  
BAPHLIMALI BAUXITE MINE  
UTKAL ALUMINA INTERNATIONAL LIMITED**

**PERIOD: OCTOBER 2018 TO MARCH 2019**

Month of Monitoring	Stream Location			
	PIKUPAKHALA NALA	NEAR DANDABAD NALA	CHANDRAGIRI NALA (Near Khandukhani)	MISHRIPADA (Near Chandragiri towards Mines)
	Flow Rate in M3/hr			
Apr-19	10624	14976	23748	19549
May-19	6720	27936	97500	14280
Jun-19	12,400	38,160	1,53,360	18,000
Jul-19	9,828	54,000	97,020	25,200
Aug-19	27,000	1,72,800	2,40,000	54,000
Sep-19	17,280	72,000	1,27,500	42,900

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**SURFACE WATER QUALITY MONITORING REPORT**  
**BAPHLIMALI BAUXITE MINE**  
**UTKAL ALUMINA INTERNATIONAL LIMITED**

Sl. No.	Parameters	Unit	Standards as per IS 2296-Class C	Apr-19		May-19		Jun-19	
				Kandabinda Nallah U/S	Kandabinda Nallah D/S	Kandabinda Nallah U/S	Kandabinda Nallah D/S	Kandabinda Nallah U/S	Kandabinda Nallah D/S
1	Color	Hazen, max	300	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2	Odour	--	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
3	pH value	--	6.5-8.5	7.12	7.24	7.29	7.62	7.84	7.45
4	Suspended Solids( as SS)	mg/l, max	--	82	90	52	82	90	64
5	Total dissolved solids(as TDS)	mg/l, max	1500	136	114	110	154	154	106
6	Temperature	°C	--	29	29	26	24	27	26
7	Conductivity	µs/cm	--	252	238	234	256	238	170
8	Ammonical Nitrogen (as NH <sub>4</sub> -N)	mg/l, max	--	0.41	0.57	0.65	0.44	0.89	0.22
9	Total Kjeldahl Nitrogen (as N)	mg/l, max	--	1.33	1.69	1.26	1.36	1.62	1.41
10	Oil & Grease	mg/l, max	0.1	ND	ND	ND	ND	ND	ND
11	Free Ammonia (as NH <sub>3</sub> )	mg/l, max	--	ND	ND	ND	ND	ND	ND
12	Total Residual Chlorine (as RFC)	mg/l, min	--	0.0023	0.002	0.0016	0.0013	0.0017	ND
13	Iron (as Fe)	mg/l, max	50	0.27	0.32	0.36	0.27	0.35	0.26
14	Copper (as Cu)	mg/l, max	1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Fluoride (as F)	mg/l, max	1.5	0.31	0.37	0.62	0.18	0.62	0.29

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16	Hexavalent Chromium (as Cr <sup>+6</sup> )	mg/l, max	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
17	Cyanide (as CN)	mg/l, max	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
18	Dissolved Oxygen (as DO)	mg/l, min	4	6.7	6.2	6	6.6	5.8	6.6
19	Sulphide (as S)	mg/l, max	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
20	Nitrate (as NO <sub>3</sub> )	mg/l, max	50	0.53	0.36	0.88	0.32	1.08	0.57
21	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l, max	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Selenium (as S)	mg/l, max	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Manganese (as Mn)	mg/l, max	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
24	Bio-assay Test		90% survival of fish after 96 hrs in 100% effluent	98	94	90	86	72	82
25	Zinc (as Zn)	mg/l, max	15	0.25	0.21	0.32	0.33	0.25	0.16
26	Cadmium	mg/l, max	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
27	Chemical Oxygen Demand (as COD)	mg/l, max	--	3.6	5.4	8.4	10.6	5.2	4.2
28	Lead (as Pb)	mg/l, max	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
29	Mercury (as Hg)	mg/l, max	--	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
30	Nickel (as Ni)	mg/l, max	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
31	Arsenic (as As)	mg/l, max	0.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
32	Total Chromium (as TCr)	mg/l, max	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
33	Biochemical Oxygen Demand (as BOD at 27°C For 3 days)	mg/l, max	3	1.6	2.2	2	2.8	2.6	2.8
34	Dissolved Phosphate (as PO <sub>4</sub> )	mg/l, max	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

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Sl. No.	Parameters	Unit	Standards as per IS 2296-Class C	Jul-19		Aug-19		Sep-19	
				Kandabindha Nallah U/S	Kandabindha Nallah D/S	Kandabindha Nallah U/S	Kandabindha Nallah D/S	Kandabindha Nallah U/S	Kandabindha Nallah D/S
1	Color	Hazen, max	300	<1.0	<1.0	5	5	5	5
2	Odour	--	Unobjectionable	Unobjectionable	Unobjectionable	Agreeable	Agreeable	Agreeable	Agreeable
3	pH value	--	6.5-8.5	7.78	7.53	7.77	7.56	7.6	7.42
4	Suspended Solids( as SS)	mg/l, max	--	70	48	66	58	66	58
5	Total dissolved solids(as TDS)	mg/l, max	1500	134	114	164	122	207	173
6	Temperature	°c	--	26	26	25	26	27	26
7	Conductivity	µs/cm	--	210	187	270	198	334	262
8	Ammoniacal Nitrogen (as NH <sub>4</sub> -N)	mg/l, max	--	0.89	0.36	1.26	0.38	1.19	0.67
9	Total Kjeldahl Nitrogen (as N)	mg/l, max	--	1.55	0.77	1.41	0.73	1.68	0.9
10	Oil & Grease	mg/l, max	0.1	ND	ND	ND	ND	ND	ND
11	Free Ammonia (as NH <sub>3</sub> )	mg/l, max	--	ND	ND	ND	ND	ND	ND
12	Total Residual Chlorine (as RFC)	mg/l, min	--	0.0023	0.0009	ND	ND	ND	ND
13	Iron (as Fe)	mg/l, max	50	0.29	0.14	0.51	0.19	0.33	0.25
14	Copper (as Cu)	mg/l, max	1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Fluoride (as F)	mg/l, max	1.5	0.45	0.25	0.43	0.17	0.52	0.39
16	Hexavalent Chromium (as Cr <sup>+6</sup> )	mg/l, max	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
17	Cyanide (as CN)	mg/l, max	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

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18	Dissolved Oxygen (as DO)	mg/l, min	4	5.6	6.2	6.1	6.4	6.6	5.5
19	Sulphide (as S)	mg/l, max	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
20	Nitrate (as NO <sub>3</sub> )	mg/l, max	50	1.47	0.41	1.25	0.69	1.08	0.81
21	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l, max	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Selenium (as S)	mg/l, max	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Manganese (as Mn)	mg/l, max	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
24	Bio-assay Test		90% survival of fish after 96 hrs in 100% effluent	93	96	92	95	93	91
25	Zinc (as Zn)	mg/l, max	15	0.21	0.27	0.33	0.26	0.26	0.18
26	Cadmium	mg/l, max	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
27	Chemical Oxygen Demand (as COD)	mg/l, max	--	13	10	10	7	18	11
28	Lead (as Pb)	mg/l, max	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
29	Mercury (as Hg)	mg/l, max	--	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
30	Nickel (as Ni)	mg/l, max	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
31	Arsenic (as As)	mg/l, max	0.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
32	Total Chromium (as TCr)	mg/l, max	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
33	Biochemical Oxygen Demand (as BOD at 27°C For 3 days)	mg/l, max	3	2.4	2.6	2.9	2.4	2.2	2.8
34	Dissolved Phosphate (as PO <sub>4</sub> )	mg/l, max	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

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**GROUND WATER QUALITY MONITORING REPORT**  
**BAPHLIMALI BAUXITE MINE**  
**UTKAL ALUMINA INTERNATIONAL LIMITED**

**GROUND WATER QUALITY MONITORING REPORT**  
**BAPHLIMALI BAUXITE MINE**  
**UTKAL ALUMINA INTERNATIONAL LIMITED**

**MAY 2019 (Pre-Monsoon)**

Sl. No.	Parameters	Unit	Requirement	Result			
			Desirable limit (IS:10500:2012)	Paikupakhala	Andirakanch	Maligaon	Kandukhani
<b>Organoleptic &amp; Physical Parameters</b>							
1	Color	Hazen, max	5	<1.0	<1.0	<1.0	<1.0
2	Odor	--	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
3	pH value	--	6.5-8.5	7.58	7.84	7.82	7.83
4	Turbidity	NTU, max	1	0.7	0.5	0.6	0.8
5	Total Dissolved Solids (as TDS)	mg/l	500	214	202	182	246
6	Temperature	°C	-	27	27	27	27
7	Conductivity	µS/cm	-	382	356	296	412
<b>General Parameters Concerning Substances Undesirable in Excessive Amounts</b>							
8	Calcium (as Ca)	mg/l, max	75	43	40	44	52
9	Chloride (as Cl)	mg/l, max	250	43	42	30.4	48
10	Copper (as Cu)	mg/l, max	0.05	<0.05	<0.05	<0.05	<0.05
11	Fluoride (as F)	mg/l, max	1	0.51	0.66	0.61	0.57
12	Free residual Chlorine	mg/l, min	0.2	0.2	0.2	0.2	0.2
13	Iron (as Fe)	mg/l, max	0.3	0.14	0.16	0.28	0.21
14	Magnesium (as Mg)	mg/l, max	30	19	17.8	13	22
15	Manganese (as Mn)	mg/l, max	0.1	<0.05	<0.05	<0.05	<0.05
16	Mineral oil	mg/l, max	0.5	<0.02	<0.02	<0.02	<0.02
17	Acidity	mg/l, max	-	0.87	1.09	1.33	1.07
18	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l, max	0.001	<0.001	<0.001	<0.001	<0.001
19	Selenium (as Se)	mg/l, max	0.01	<0.005	<0.005	<0.005	<0.005
20	Sulphate (as SO <sub>4</sub> )	mg/l, max	200	18.6	20.9	17.8	18
21	Total Alkalinity	mg/l, max	200	110	102	92	116

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22	Total Hardness	mg/l, max	200	178	173	164	220
23	Zinc (as Zn)	mg/l, max	5	0.14	0.29	0.37	0.11
<b>Parameters Concerning Toxic Substances</b>							
24	Cadmium (as Cd)	mg/l, max	0.003	<0.003	<0.003	<0.003	<0.003
25	Cyanide (as Cn)	mg/l, max	0.05	<0.01	<0.01	<0.01	<0.01
26	Lead (as Pb)	mg/l, max	0.01	<0.005	<0.005	<0.005	<0.005
27	Mercury (as Hg)	mg/l, max	0.001	<0.0005	<0.0005	<0.0005	<0.0005
28	Total arsenic	mg/l, max	0.01	<0.001	<0.001	<0.001	<0.001
29	Pesticide	mg/l, max	0.0005	<0.0001	<0.0001	<0.0001	<0.0001
30	Total Coli forms	MPN/100ml	Shall not be detected in any 100 ml sample	Absent	Absent	Absent	Absent

### AUGUST 2019 (Monsoon)

Sl. No.	Parameters	Unit	Requirement	Result			
			Desirable limit (IS:10500:2012)	Paikupakhala	Andirakanch	Maligaon	Kandukhani
<b>Organoleptic &amp; Physical Parameters</b>							
1	Color	Hazen, max	5	5	<1.0	<1.0	<1.0
2	Odor	--	Unobjectionable	Agreeable	Agreeable	Agreeable	Agreeable
3	pH value	--	6.5-8.5	7.37	7.63	7.54	7.41
4	Turbidity	NTU, max	1	0.83	0.69	0.89	0.63
5	Total Dissolved Solids (as TDS)	mg/l	500	296	265	310	282
6	Temperature	°C	-	26	26	26	26
7	Conductivity	µS/cm	-	488	436	514	466
<b>General Parameters Concerning Substances Undesirable in Excessive Amounts</b>							
8	Calcium (as Ca)	mg/l, max	75	51.2	44.8	54.4	46.4
9	Chloride (as Cl)	mg/l, max	250	59.8	50.1	57.9	52.1
10	Copper (as Cu)	mg/l, max	0.05	<0.05	<0.05	<0.05	<0.05
11	Fluoride (as F)	mg/l, max	1	0.67	0.49	0.45	0.31
12	Free residual Chlorine	mg/l, min	0.2	0.3	0.2	0.2	0.2
13	Iron (as Fe)	mg/l, max	0.3	0.23	0.15	0.43	0.25
14	Magnesium (as Mg)	mg/l, max	30	15.6	11.7	11.7	8.8
15	Manganese (as Mn)	mg/l, max	0.1	<0.05	<0.05	<0.05	<0.05
16	Mineral oil	mg/l, max	0.5	<0.02	<0.02	<0.02	<0.02
17	Acidity	mg/l, max	-	1.22	<1.0	1.47	1.15
18	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l, max	0.001	<0.001	<0.001	<0.001	<0.001
19	Selenium (as Se)	mg/l, max	0.01	<0.005	<0.005	<0.005	<0.005
20	Sulphate (as SO <sub>4</sub> )	mg/l, max	200	15.4	12.7	13.2	11.9
21	Total Alkalinity	mg/l, max	200	164	144	164	128
22	Total Hardness	mg/l, max	200	192	160	184	152
23	Zinc (as Zn)	mg/l, max	5	0.19	0.12	0.29	0.21

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Parameters Concerning Toxic Substances							
24	Cadmium (as Cd)	mg/l, max	0.003	<0.003	<0.003	<0.003	<0.003
25	Cyanide (as Cn)	mg/l, max	0.05	<0.01	<0.01	<0.01	<0.01
26	Lead (as Pb)	mg/l, max	0.01	<0.005	<0.005	<0.005	<0.005
27	Mercury (as Hg)	mg/l, max	0.001	<0.0005	<0.0005	<0.0005	<0.0005
28	Total arsenic	mg/l, max	0.01	<0.001	<0.001	<0.001	<0.001
29	Pesticide	mg/l, max	0.0005	<0.0001	<0.0001	<0.0001	<0.0001
30	Total Coli forms	MPN/100ml	Shall not be detected in any 100 ml sample	Absent	Absent	Absent	Absent

## GROUND WATER LEVEL MONITORING REPORT

BAPHLIMALI BAUXITE MINE  
UTKAL ALUMINA INTERNATIONAL LIMITED

Location of well	May'2019 (Pre-Monsoon)	August'19 (Monsoon)
	Ground water level (in Mtr)	
Paikupakhal (Buffer Zone)	7.3	5.9
Andirakanch (Buffer Zone)	7.5	5.4
Malligaon (Buffer Zone)	7.4	6.7
Kendumundi (Buffer Zone)	6.4	4.8
Near Dump Yard (Core Zone)	>104	>113
Near Check Post (Core Zone)	>104	>108

\*Note: Monitoring of ground water level and quality not done in the mining lease area due to non-availability of ground water.

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B 355792

**'FORM 'K'**

[See rule 23-A (2) (a) & rule 23]

**AGREEMENT FOR SUPPLY OF WATER FOR THE PURPOSE OF INDUSTRIAL/COMMERCIAL USE**

THIS AGREEMENT is made on the 12<sup>th</sup> day of December two thousand Eighteen (2018) BETWEEN Shri. Narisetty Nagesh son of Prakasiah Narisetty by profession Chief Executive Officer (CEO), permanent resident of C2,Do-68-2, Leela Manor, Balsajinagar, Siripuram Junction, Siripuram, Vishakhapatnam, Andhra Pradesh, PIN- 530003, presently residing at "A" type building, Oshapada Residential Campus, M/s. Utkal Alumina International Ltd, Ps. Doraguda, Dist- Rayagada, Pin-765015, the authorized representative of M/s Utkal Alumina International Limited, having its plant at Doraguda (Hereinafter called the 'Applicant') of the First part.

AND

Shri B. Sankarnarayan, son of Late B. Kashinath, resident of village Gada Govindpur P.S. K. Nuagaon, District Ganjam, Odisha by profession Executive Engineer, Harabhangi Irrigation Division, Adava, Dist- Gajapati, Odisha (hereinafter referred to as the 'Sureties') of the second part. AND the Governor of Orissa which expression unless repugnant to the context, shall include its successors and assigns (hereinafter called 'the Government') of the third part;



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N = NAGESH



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CONSENT ORDER  
BAPLIMALI BAUXITE MINES OF UTKAL ALUMINA INT. LTD

Page 1 of 13

BY REGD. POST WITH AD

## STATE POLLUTION CONTROL BOARD, ODISHA

A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012  
Phone-2561339, Fax: 2562022, 2560956

### CONSENT ORDER

No. SG08 / IND-I-CON-5450 DL 14.03.2019 /

CONSENT ORDER NO. 2765

Sub: Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the plant under section 21 of Air (PCP) Act, 1981.

Ref: Your online application No. 2351845 Dated 20.12.2018 and Online reply dated 15.2.2019

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry: BAPLIMALI BAUXITE MINES OF M/S. UTKAL ALUMINA INTERNATIONAL LTD.

Name of the Occupier & Designation: SRI SURYAKANTA MISHRA, DIRECTOR.

Address: VILL: PAIKKUPAKHAL, PO: MAIKANCH, DIST: RAYAGADA

This consent order is valid for the period up to 31.03.2020 from the date of issue of this order.

This consent order supersedes the earlier consent orders issued vide letter NO. 3853 dated 29.03.2018.

#### Details of Products Manufactured

Sl. No	Product	Quantity
01.	Bauxite	5.3 MTPA

This consent order is valid for the specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. The consent is granted subject to the general and special conditions stipulated therein.

*Mishra*





**OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS  
(WILDLIFE) & CHIEF WILDLIFE WARDEN, GOISHA**  
 BPO BANGALORE, 3<sup>RD</sup> FLOOR, SHARDA BANGALORE INTERNATIONAL HOTEL, 22ND ST  
 No. 12580/FBH/11.07.2015  
 Bangalore-560025, Karnataka, India

No. 15543 /WL-SEP-01/2016  
 Dated: Bangalore, on 27. Jun. 2017

To

The Asst. Vice President, Mines,  
 M/s. Uthal Aluminium International Ltd.,  
 35, Jayadev Vihar,  
 Bangalore - 751013

Subj

**Proposal for diversion of 233.343 ha. of DLC forest land including safety zone of 10.283 ha in village Nam-mahabadi, Channarayana and Agrary-Subpart under Kasipur Tahsil of Rayachota District within total mining lease area of 1385.74 ha for bauxite mining in their South-Eastern Bauxite Mines in Kalahandi and Rayachota Districts of Odisha by M/s. Uthal Aluminium International Ltd. - Approval of Site Specific Wildlife Conservation Plan**

By

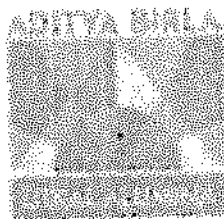
It is to inform you that you have to implement a Site Specific Wildlife Conservation Plan for your South-Eastern Bauxite Mines in Kalahandi and Rayachota Districts to address the impact on wildlife within the surrounding area and the recommendation of State Govt. for implementation of such a plan with forwarding the above document prepared to Govt. of India, MEF/FCI vide their letter No. 12580/FBH dt. 11.07.2015.

The Site Specific Wildlife Conservation Plan in respect of the above project has been approved by the undersigned with financial forecast of ₹670.451 lakh (Rupees Six crore seventy lakh forty five thousand one hundred and fifty one) for the following activities.

a. For activities to be implemented by the User agency in project area	₹134.725 lakh
b. For activities to be implemented by DFO, Rayachota Division in project impact area	₹320.627 lakh
c. For activities to be implemented by DFO, Kalahandi South Division in project impact area	₹215.100 lakh
<b>Grand Total:</b>	<b>₹670.451 lakh</b>

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UAIL-Mines/ENV/ 77/2017

Date: 21.07.2017

To,

The Addl. Principal Chief Conservator of Forest (C)  
MoEF & Climate Change, Govt. of India  
Eastern Regional Office, A/3, Chandrasekhar  
Bhubaneswar-751023

Subject: Submission of Compliance Report for the special condition no. xxiii laid down in the Environmental clearance vide Letter No. J-11015/650/2007-IA.II (M) dated 19<sup>th</sup> February 2009 for 8.5 MTPA bauxite mining.

Dear Sir,

Please find enclosed herewith the Report for Digital Processing of the Baphimali Bauxite Mining lease area using remote sensing technique for monitoring the land use pattern carried out by M/s Inatologix Technologies, Bhubaneswar with reference to the special condition no. xxiii laid down in the Environmental clearance Letter No. J-11015/650/2007-IA.II (M) dated 19<sup>th</sup> February 2009 for 8.5 MTPA bauxite mining.

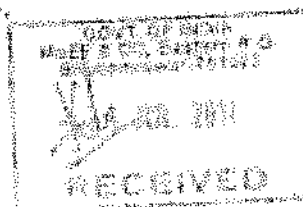
This is for your kind information and necessary compliance of the special condition.

Thanking you

Yours faithfully,

FOR UTKAL ALUMINA INTERNATIONAL LIMITED.

*[Signature]*  
Biswanath Kumar Padhi  
Asst. Vice President - Mines



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**NOISE LEVEL MONITORING REPORT**

BAPHLIMALI BAUXITE MINE  
 UTKAL ALUMINA INTERNATIONAL LIMITED

Period: April 2019 to September 2019

Location	Day Time (6:00 AM to 10: PM)					
	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
<b>A. For Operator working in the cabin</b>						
Drilling Operation	79.3	77.4	72.5	77.2	73.3	72.1
Loader Operation	81.1	80.6	76.8	74.5	76.1	74.7
Shovel Operation	78.4	79.5	81.4	78.7	79.5	76.3
Dumper Operation	83.7	81.8	75.5	71.9	74.4	76.9
<b>A. For Operator working without cabin</b>						
Crusher Operation	76.2	78.4	82.6	80.4	78.7	75.3
Workshop Area	71.4	80.7	78.3	74.9	75.1	79.7
Middle of Quarry	75.9	79.6	76.2	75.7	73.2	74.4

Noise Level Standard: 85 dB(A)

*Mishra*

PHOTOS



Photo -1 : Showing check dam in mine top



Photo -2 : Showing Retaining wall & garland drain around dump slope



Photo -3 : Showing Top soil storage area



Photo -4 : Showing plantation on back-filled area





Photo -5 : Showing Plantation inside mines



Photo -6 : Showing Nursery inside mines





Photo -7 : Showing Mobile water sprinklers in operation



Photo -8 : Showing Fixed water sprinklers in operation



Photo -9 : Showing drilling operation with dust extractor system



Photo -10 : Showing Fixed water sprinklers around stock pile area





Photo -11 : Showing conveyor with covered metal hood for transportation



Photo -12 : Showing 75 KLD STP