STATUS OF IMPLEMENTATION OF CONDITIONS STIPULATED IN CONSENT TO OPERATE FOR ALUMINIUM SMELTER & CAPTIVE POWER PLANT FOR ADITYA ALUMINIUM BY M/S HINDALCO INDUSTRIES AT LAPANGA, SAMBALPUR, ORISSA.

REF: Consent to Operate order vide letter no. 10952/IND-I-CON-6120, dated 19/08/2017

<table>
<tr><th>Sl. No.</th><th>General Conditions for all units</th><th>Status of Compliance</th><th>Remarks</th></tr>
<tr><td>A</td><td>Product/Facilities</td><td>1. 0.36 MTPA Aluminium Smelter: Products (Ingot/Sow/Slab)
2. Electricity - 6X150 MW CPP
3. Electricity- DG SETS (7X3000 KVA, 2X2000 KVA, 1X630 KVA)- Total 25630 KVA</td><td>We have applied to OSPCB for granting permission to Sale Molten metal upto 75 KTPA, Baked Anodes of 5000 nos./annum and Bath materials 1500 MT/ annum.</td></tr>
<tr><td>B</td><td>Discharged Standard and Permitted Outlet
i) Outlet of common ETP of Smelter & CPP units.
ii) Domestic Effluent</td><td>i) Outlet water of the common ETP is being reused in CPP.
ii) The DM plant blow down is being treated in common ETP and reused in CPP.
iii) The cooling tower blow down is being treated in common ETP and reused in CPP.
iv) The domestic effluent in Smelter is being treated in the STP and reused for gardening. Separate STP installed for the plant and township.</td><td></td></tr>
<tr><td>C</td><td>Emission Standard and Stacks
i) Stack attached to GTC (pot room) 1&2
(Qty of Emission-1587600 m3/hr, PM- 50 mg/Nm3, Fluoride – 0.3 kg/Ton of Al)
ii) Stack attached FTC (ABF) 1 & 2
(Qty of Emission-180000 m3/hr, PM- 50 mg/Nm3, Fluoride – 0.1 kg/Ton of Al through FTC stacks and 0.4 kg/Ton of Al through fugitive emission)
iii) ESP of CPP stack 1 to 6
(Qty of Emission-449288 m3/hr, PM- 50 mg/Nm3)</td><td>
<table>
<tr><th rowspan="2">Stack No.</th><th rowspan="2">Description of Stack</th><th rowspan="2">Stack Height (m)</th><th rowspan="2">Quantity of Emission (m3/hr)</th><th colspan="2">Prescribed standard</th></tr>
<tr><th>PM (ng/Nm3)</th><th>Fluoride (kg/ton of Al)</th></tr>
<tr><td>1</td><td>Pot room GTC 1 & 2</td><td>100</td><td>2322000 each</td><td>50</td><td>0.3 of Al produced for GTC stacks</td></tr>
<tr><td>2</td><td>Anode Baking Furnace FTC - 1</td><td>70</td><td>133800</td><td>50</td><td>0.1 of Al produced for all bake oven stacks
0.4 of Al produced for fugitive emission</td></tr>
<tr><td>3</td><td>Anode Baking Furnace FTC - 2</td><td>70</td><td>75700</td><td>50</td><td></td></tr>
<tr><td>4</td><td>ESP of CPP Stack 1, 2 & 3</td><td>275</td><td>1238400 each</td><td>50</td><td></td></tr>
<tr><td>5</td><td>ESP of CPP Stack 4, 5 & 6</td><td>275</td><td>1238400 each</td><td>50</td><td></td></tr>
</table>
The emission from stacks attached to GTC, FTC and ESP are within the prescribed norms.</td><td>The quantity of emission (m3/hr) is the maximum as per design.</td></tr>
<tr><td>D</td><td>Solid Waste
i) Ash – 5000 ton/month</td><td>Approx. 4000 ton of ash is being generated and 100% ash utilization is being achieved through supplying to Cement</td><td></td></tr>
</table>

		Plants, road making, low lying area filling and ash bricks manufacturing units till Dec '16. At present, Ash is utilized in cement plants, low-lying area filling and being disposed in the Ash pond.	
E	**General Conditions**		
1	The applicant shall analyze the effluent/emission and ambient air quality every month through approved laboratory for the parameters indicated in TABLE- 'B', 'C' & part –'B' as mentioned in this order and shall furnish the report thereof to the Board on monthly basis	The emission and effluent parameters are being monitored/analyzed the per the Table A & B. The report is being submitted to SPCB on monthly basis.	
2	The following information Shall be forwarded to the Member Secretary on before 10th of every month. a) Performance / progress of the treatment plant. b) Monthly statement of daily discharge of domestic and/or trade effluent	The said information is being forwarded to the Member Secretary every month.	
3	Non-compliance with effluent limitations a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification. i) Causes of non-compliance ii) A description of the non-compliance discharge including its impact on the receiving waters iii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and v) steps to be taken by the applicant too prevent the condition of non-compliance b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation	We are intimating the regional office of SPCB, Sambalpur and CPCB regarding episoidal emissions during light-up and shut down of the Units.	

	specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge. C) Nothing in this consent shall be constructed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.		
4	Proper housekeeping shall be maintained inside the factory premises including process areas by a dedicated team.	Mechanical road sweeping machine has been deployed for cleaning of roads and process areas. Dedicated teams are deployed for house-keeping of offices, shop-floors and other areas.	
5	The industry must constitute a team of responsible and technically qualified personal who will ensure position to explain the status of operation of the pollution control measures to the inspecting officers of the board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concern regional officer and head office of the Board and in case of any change in the team it shall be intimate to the Board immediately.	The Heads of each Department in the Plant are responsible for complying to the said condition.	
6	The industry shall engage dedicated qualified manpower to ensure continuous and effective operation of online stack / Ambient Air quality/Effluent monitoring stations for maintenance of database, real time data transfer to SPCB server, data analysis and co-ordination with concerned personal of process units for taking corrective measures in case of non-compliance and to respond to the instructions of SPCB in this matter.	Dedicated manpower are employed for the same and the condition is complied.	
F SPECIAL CONDITIONS (F1 Air Pollution Control)			
1	All the online continuous stack emission monitoring system (CEMS) for measurement of PM and Gaseous pollutants shall be operated effectively and uninterruptedly and the online monitoring data so generated shall be transmitted to SPCB and CPCB server on a continuous basis.	All major stacks in Smelter and CPP has been installed with online emission monitoring analyzers (CEMS). Installation of four (04) nos. of CAAQMS completed and commissioned.	

2	All the online continuous ambient air quality monitoring system (CAAQMS) shall be operated effectively and for measurement of PM and Gaseous pollutants and uninterruptedly and the online monitoring data so generated shall be transmitted to SPCB and CPCB server on a continuous basis.	All the CEMS, CAAQMS & EQMS data synchronized with the webserver of the SPCB & CPCB with URL http://117.239.117.27/ospcbrtdas/ & http:// 113.19.81.38/ cpcbrtdas/ respectively.	
3	The unit shall obtain authorization from the Board under Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008.	Aditya Aluminium has obtained the authorization under Hazardous Waste (Management, Handling and Transboundary Movements) Rules, 2008 from SPCB, Odisha vide authorization number IND-IV-HW-980/5191, dated 24.03.2015. The renewal of Authorization is being submitted simultaneously.	
4	All compliance shall be made with respect to manufacture, storage and import of Hazardous Chemical Rules, 1989 and amendment thereof and other provisions of E (P) Act, 1986.	We are complying with the said Rules and amendments from time to time.	
5	All the used oil and batteries shall be sold to registered recycler.	The used oils and battery are being sold to authorize recyclers.	
6	A detail off-site and on-site emergency plan shall be prepared in consultation with the local authority and other concerned authorities and shall be duly approved by competent authority. A copy each of the plans shall be furnished to the Board.	The onsite emergency plan accepted by the Directorate of Factories & Boilers and a copy plan has been submitted to the SPCB, Bhubaneswar vide our letter no. AAP/E&F/CTO/2015/68, dated 10/10/2015.	
7	Proper housekeeping shall be maintained by a dedicated team.	Dedicated team has been deployed for housekeeping. Besides this, a mechanical sweeper deployed for cleaning of roads.	
8	Ensure that the industry develops an Environmental Engineering Department in terms of manpower and infrastructure to cope with the increased workload and improved results for compliance to statutory norms on top priority. The head of the environment management cell should report to the unit head.	The Unit has established a full-fledged environment monitoring laboratory and environment management cell with qualified personnel for monitoring of pollutants and effective remedial measures. The Head of the Environment & Sustainability Dept. report to the Unit Head.	
9	The Board may impose further conditions or modify the conditions stipulated in this order and may revoke consent to operate in case the stipulated conditions are not implemented and/or any information suppressed in the application form.	We have noted and accepted it.	
F. Aluminium Smelter			

1	The unit shall provide and maintain adequate air pollution control equipment's at smelter plant, anode shop, pitch smelter furnace, anode making unit and casting plant to conform the prescribed emission standard as stipulated in consent to establish order by Board vide letter no. 9946, dtd 29/05/2013.	Adequate number of de-dusting systems installed at ABF, Rodding shop, GAP, Alumina handling, coke handling, cathode sealing, bath recycling, carbon recycling shops and also confirm to the emission within the prescribed standard.	
2	Steps shall be taken so that emission of fluoride from the various sources shall conform the following: ▪ Anode Baking Furnace- 0.1 kg/MT of Al Produced (max.) ▪ Pot emission through GTC- 0.3 kg/MT of Al Produced (max.) ▪ Fugitive emission- 0.4 kg/MT of Al Produced (max.) So that total fluoride emissions (Fugitive + Stack emission) shall conform to standard as proposed under Environmental Management Plan and in no case it shall exceed 0.8 kg/ton of Aluminium produced.	The total fluoride emission from the plant (stack emission and Fugitive) is within the prescribed limit (around 0.2 kg/MT of Al). The Board is requested to define the limit of fluoride emissions in mg/Nm3 in line with the Minutes of Meeting held on 29th October 2015.	
3	Four numbers of Gas Treatment Centre (GTC) with advanced dry scrubbing system shall be interlocked in potlines to treat the fumes and dust generated. The scrubbing system shall be interlocked with the main plant so that in case of failure of dry scrubbing system operation of the plant shall be stopped.	This condition has been amended in the consent to establish order however; all possible measures have been taken for smooth operation of the Gas Treatment Centre.	
4	3 nos. of fume treatment system (FTC) shall be installed in the anode baking furnace (ABF) to treat the fluoride, dust and tar contain in the fumes comes out of the ABF. The emission through FTC will be less than 0.3 kg/T of aluminium produced.	For phase-I, two nos. of Fume Treatment Center in Anode Baking Furnaces installed to treat the fluoride, dust and tar in the fumes comes out of the ABF. The emission through the FTC is being kept below 0.1 kg per ton of Aluminium Produced.	
5	Hooded cells shall be installed for reduction of fugitive losses.	Aodes with hooded cells are installed for reduction of fugitive losses	
6	Fugitive emission of secondary alumina generated at the transfer points near FTPs and during transportation inside the premises shall be controlled applying proper engineering methods and use specially designed transport vehicles.	08 nos. of bag filters has been installed in the alumina handling system to reduce the secondary alumina emission. Besides this, alumina is being conveyed through pipe conveyors from alumina silo to FTC and from FTC to pots through hyper dense phase system (HDPS) for control of fugitive loss and control pollution.	

7	De-dusting system in shop floor particularly carbon area and pot lines shall be maintained adequately.	De-dusting system provided at carbon recycling, ABF, GAP, Rodding, bath recycling, butts recycling etc. however, gas treatment system (GTC) has been installed in pot line area to treat the fumes comes out from the pots. Adequate measures is being taken in the shop floors to reduce the fugitive emission.	
8	The fluoride bearing dust accumulated at the zero pot lines level shall be removed more frequently adopting proper methods without any spillage/discharge to the nearby drains/areas and the same shall be reused or disposed in a specific manner.	With advanced technology (i.e. AP 36S) the fugitive emission is very less. However, regular cleaning is being made at the zero pot lines level.	
9	The industry need to explore use of hand driven industrial vacuum cleaners to collect spilled fluoride bearing material where the heavy duty industrial vacuum cleaners are not approachable.	Industrial vacuum cleaners have been installed in the Carbon area at appropriate locations.	
10	An inventory of at least 30% excess spare parts shall be available in the store to meet emergency need of effluent treatment plants/ pollution control systems/ FTPs/BFs etc.	Sufficient inventory of spares is being maintained for the Pollution control equipments.	
11	Dross generated from various sources shall be completely recycled in cast house.	Dross is being recycled in the dross processing unit established near the cast house and residue generated supplied to CHW-TSDF of Ramky for disposal. Furthermore, partly the dross is being reused along with the bath material in pots.	
12	The unit shall install laser technology or any alternative technology to measure fugitive fluoride emission from pot room and the installation shall be completed during the construction phase.	The monitoring of fugitive emission is being done through the laser based HF analyzer installed in the roof top of the pot rooms, and manual monitoring is being done through cassette method for particulate fluoride in roof top.	
13	The proponent shall install continuous online ambient air quality monitoring and stack monitoring system with real time display facility at the main gate.	Installation of four (04) CAAQMS completed and commissioned. All the stack emission from operating units and ambient air monitoring stations synchronized with the webserver of the SPCB & CPCB with URL http://117.239.117.27/ospcbrtdas/ & http://113.19.81.38/cpcbrtdas/ respectively. The real time electronic display board installed near the gate.	
14	The unit shall make necessary arrangements at all the pots to reduce door opening time of the pots and ensure proper sealing of pot heads to minimize fugitive emission	The AP technology has following good aspects to minimize fugitive emissions.	

	from doors and roofs. Door cleaning facility along with adequate pollution control equipment's shall also be installed.	1. Two anodes are clubbed together in one anode stem, resulting in change of two anodes at a time, resulting in further reduction in hood opening for anode change. 2. Use of tap hole tending vehicle is more effective in making tapping holes in pots resulting in reduction in time of door opening, resulted in less fugitive emissions. 3. Pot superstructure has been provided with sealing jaws, which further seals gaps between anode stem and superstructure resulting in less fugitive emissions.	
15	Proper arrangements and pressure shall be maintained in the fume collection hood to prevent any fugitive emission from pot and ensure maximum fume collection efficiency.	The technology provider, Rio-Tinto Alcan has provided necessary arrangements to ensure maximum collection of pot gases. Further Pot superstructures are provided with sealing jaws to seal the passage between anode stem and hoods in order to prevent fugitive emissions.	
16	The poly aromatic hydrocarbons (PAH) from the carbon plant (ABF) shall not exceed 2 mg/Nm3. The data on PAH from the carbon plant shall be monitored quarterly.	The PAH from the carbon plant is being monitored on quarterly basis and results are within the limit.	
17	Fluoride consumption shall be less than 10 kg/ton of Aluminium produced.	The average fluoride (as F) consumption from April 17 to Oct 17 is 8.04 Kg/ton, therefore average fluoride (as F) is below 10 kg/ton of Aluminium produced as specified under CREP guideline.	
18	The spent pot lining generated from the smelter shall be properly treated by setting of spent pot lining treatment plant to remove fluoride, cyanide and disposed of in secured land fill along with all fluoride contaminated solid waste i.e. rejected filter bags, rejected refractories, housekeeping wastes, transport vehicle wastes etc as proposed. The location and design of land fill shall be approved by the Board. Leachate collection facilities shall be provided. The proponent shall submit a long term proposal for disposal of spent pot lining including burning in CPP and other possible utilization.	The spent pot lining generated from the smelter is being supplied to the Authorized recyclers/reprocessors and remaining refractory part is being stored under covered shed for disposal at CHW-TSDF. The location and design of the land fill site has been prepared as per the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and approved from SPCB, Odisha vide letter no. 25030/IND-IV-HW-980, dated 27-12-2012.	
19	The effective operational procedure and technology to minimize non-point fluoride emission from the smelter pot lines shall be developed and submitted to the Board.	Following major steps has been adopted in AP 36S technology to minimize non-point fluoride emissions.	

		a) High heighted anodes (80 shift anodes) instead of 76 shifts are being taken to minimize frequency of their changing, resulting in less hood opening. b) Two anodes are clubbed in one anode stem; this has further reduced number of anode changing operations and has resulted in less hood opening. c) Use of tap hole tending vehicle is more effective in making tapping holes in pots resulting in reduction in time of door opening, which in turn resulted in less fugitive emissions Pot superstructure has been provided with sealing jaws, which further seals gaps between anode stem and superstructure resulting in less fugitive emissions.	
20	There shall be covered storage area for storing of all fluoride bearing material and rejects like butt, aluminium fluoride and spent pot lining etc.	All the fluoride bearing materials and rejects like butt, aluminium fluoride and spent pot lining are being stored under covered shed.	
21	Adequate de-dusting equipment's shall be installed at crushers, screens, conveyors of raw material handling area and other potential dust generating points to minimize fugitive emission. The particulate emission from all vents/stacks connected to the de-dusting systems shall not exceed 100 mg/m3. Height of stack/vents shall be at least 30 meter from the ground level. The unit shall provide porthole and platform at suitable location with safe approach to conduct emission monitoring at the stack.	Adequate nos. of de-dusting systems provided in Green Anode Plant, Anode Baking Furnace area, Rodding shop, butts recycling areas, cathode sealing shops, carbon recycling shops, alumina handling, coke conveying system, coal handling plant, ash handling system etc to minimize fugitive emission. The particulate emission from all vents/ stacks connected to the de-dusting systems will not exceed 100 mg/Nm3 as desired. Height of the stacks/vents is kept minimum 30 mtr above the ground level. Necessary arrangements are being made for portholes and platform at suitable locations with safe approach to conduct emission monitoring at stacks.	
22	All possible measures shall be explored for co-generation of SPL.	Under process.	
F. Captive Power Plant			
1	All air pollution control devices shall be operated and maintained properly so that, the particulate matter emission from stacks attached to ESPs of the Boiler shall not exceed 50 mg/Nm3.	The emission from the stack attached to the ESP is within the limit.	

2	Steps shall be taken for regular Monitoring of Mercury (Hg) in the stacks of boilers and submit data to Board.	Regular monitoring of Mercury (Hg) in the stacks of boilers is being done and report submitted on monthly basis along with the monthly performance report to Board.	
3	The unit shall provide low NOx burner to reduce NOx emission to keep level within the prescribed standard by MoEF & CC vide notification dtd. 07.11.2015.	The NOx emission is within the prescribed standard.	
4	Steps shall be taken for installation of Flue gas desulphurization (FDG) system in future if required to keep the SO2 level within 600 mg/Nm3 to confirm to MoEF & CC notification dtd. 07.12.2015. This shall also include management and disposal of effluent/ solid waste to be generated from FDG system.	We are in the process of taking a final decision in this regard and will limit the SO_2 emission within the prescribed standard.	
5	Air pollution control measures installed at different potential dust generating points shall be operated continuously and effectively to control fugitive dust emission.	De-dusting system, dust suppression system, dry fog system installed and is being operated continuously and effectively to control fugitive dust emission.	
6	Fugitive emission from all possible sources shall be adequately controlled and minimized.	Dry fog system and de-dusting system (bag filters) are installed in coal handling plant. Bag filters are installed at ash handling system.	
7	Proper dust extraction system shall be installed in the coal handling plant to control fugitive emission.	08 nos. of dust extraction system is being installed in coal handling plant to control the fugitive emissions.	
8	The DG sets of capacity (7x3000 KVA, 2x2000 KVA and 1x630 KVA) shall be operated only during black out of the power plant.	The black start DG set of 7x2000 KVA, 2x2000 KVA and 1x630 KVA is being used in case of black out only.	
9	The unit shall comply with the conditions stipulated in the consent to Establish (CTE) for DG sets (standby).	Complied.	
10	Adequate water sprinkling arrangement shall also be made at coal handling area to control generation of fugitive emission as stand by measures.	Adequate nos. of water sprinkling system (dry fog system, gun sprinklers etc) installed at coal handling area to control fugitive emission.	
11	The unit shall augment/install additional of water sprinkling system at track hopper of coal handling plant and coal yard.	Water sprinkling arrangement made in the wagon tippler area of coal handling plant and gun sprinkler installed in the coal yard.	
12	The unit shall explore to use of washed coal in the thermal power plant.	Initially washed coal was being procured for use in power plant. However, non-washed coal is being procured through e-auctions from MCL/Coal India and from the recently allotted Gare-palma mines.	

13	All raw material, product and waste material shall be transferred through covered vehicles without any spillage or leakages on the way, in case any accidental spillage on the road, waste shall be lifted by the industry and suitably disposed off and to be lifted by the industry and suitably disposed off in designated solid waste dumping area.	All raw materials, products and waste materials are transported through covered vehicles with a care to prohibit any spillage or leakages on the way.	
14	Appropriate devices like pneumatic dust handling system be provided at the hoppers of ESPs and pulse jet bag filters for continuous evacuation of dust from the hoppers without creating fugitive emission near the ESP and bag filter area. The collected dust from air pollution control equipment's shall be utilized or disposed off at designated land fill area. Until capping of land fill, the dust shall be kept in wet condition with water sprinklers to avoid re-entrainment into the surrounding area due to wind.	Pneumatic dust handling system provided at the hoppers of ESPs for continuous evacuation of dust from the hoppers without creating fugitive emission near the ESP area. The dust collected is stored in the fly ash and bottom ash silos respectively and supplied to M/s Ultratech & M/s OCL for cement making, road making in Sambalpur-Rourkela SH Expansion, brick making units, low lying areas inside the plant at approved locations and remaining ash disposed in the ash pond through HCSD system.	
15	The unit shall submit fly ash utilization status to the Board annually and shall comply to the provisions of revised fly ash notification No. SO. 254 (E), Dt 25.01.2016 of MoEF.	The fly ash utilization status is being submitted to the Board on monthly and annual basis.	
16	Supply of fly ash to brick manufacturing units shall be done on free of cost. Further, transportation cost of fly ash within 100 km radius of your plant shall be borne by you or a subsidy of Rs 150/- per ton of fly ash shall be provided to all the fly ash brick, tile, road construction or other fly ash based construction materials manufacturing units or for use in road making if utilizing your fly ash.	We have Noted and accepted.	
17	Filling of low lying over 53.92 ac shall be done in such a manner that the ultimate height after filling shall match with the contour of the immediate vicinity and it shall not led to creation of ash mound.	The ash is being disposed in accordance with the C-FARM guideline and required height is being maintained to avoid formation of ash mound.	
18	Appropriate measures like provision of water sprinkling or soil covering shall be made over the exposed dry surface of the ash ponds to prevent dust nuisance due to	It is being complied with.	

	wind action. Dust suppression measures shall also be provided where construction activities are undertaken at ash pond area to prevent dust nuisance		
19	The unit shall develop its own R&D wing and extend support to outside R&D organization working on utilization of fly ash, GHG emission.	M/s Hindalco Industries Limited in India is spear-headed by its two R&D centers at Belgaum and Taloja, both recognized by the Council of Scientific & Industrial Research, CSIR, Govt. of India. Both centers' are ISO 9001:2000 certified, and Taloja has also been accredited in accordance with the standard ISO/IEC 17025:2005 by the National Accreditation Board for Testing and Calibration Laboratories (NABL). Aditya Aluminium will have one central environment laboratory for both CPP & Smelter for testing of environmental pollution. However, efforts will be made to do some R&D activities in the lab.	
20	Fugitive emission from all possible sources like coal handling plant and transfer points shall be minimized by restoring to appropriate measures like water sprinkling and covering etc.	Water sprinkling system installed and belt conveyor is covered from all side to minimize fugitive emission. Dry fog system and dust extraction systems are also installed.	
21	All measures including sufficient water sprinkling and developing green belt around coal handling plant etc., which are potential sources of fugitive emission shall be taken to mitigate the dust pollution.	In coal handling plant, dust extraction system and dry fog system installed. Planation is there, near the boundary wall besides the coal handling plant to mitigate dust pollution.	
22	Care shall be taken so, that the ambient noise level shall conform to the standard prescribed under E(P) Act for this purpose the township and area outside the factory premises shall be treated as residential area and the areas inside the factory premises shall be treated as industrial areas.	Acoustic enclosures have been provided to high noise generating equipment's. The ambient noise level is confirming to the standard prescribed under E (P) Act.	
23	Proper housekeeping shall be maintained by a dedicated team.	Dedicated team has been deployed for housekeeping at each shop floors. Besides a mechanical sweeper is deployed for cleaning of all roads.	
24	All the internal roads of the unit shall be black topped / concreted.	All the major roads are black topped.	
25	The ambient air quality inside the factory premises shall be measured through online & continuous monitors and conform to the standard prescribed under E (P) Rules,	Installation of continuous stack emission monitoring equipment's completed and commissioned. All the stack emission and ambient air monitoring stations synchronized with the web servers of the SPCB & CPCB.	

	1986 for industrial area and amendments made thereafter.		
26	Care shall be taken so that the ambient noise level shall conform to the standard prescribed under Environmental Protection Act, 1986.	The ambient noise level is monitored and is confirming to the standard prescribed under EP Act.	
27	The unit shall comply with the conditions stipulated in consent to establish (NOC) vide no. 9946 dt. 29.05.2013 and Environmental clearance vide no. nil dt. 29.11.2012.	The point wise compliance to the consent to establish order is submitted to OSPCB along with the application for consent to operate.	
28	The area of 457.3 ha earmarked for ash pond and other utility shall not be diverted for other purpose.	This condition has been amended by SPCB in the consent to establish, 170 ha land has been earmarked for ash disposal and will not be diverted for other use.	
29	Silo for high capacity shall be installed which can be stored at least 2-3 days of ash generation for its dry storage and subsequent utilization as proposed.	In Phase-I (i.e. 6x150 MW) four (04) nos. of silos have been made to store fly ash & bottom ash (3x2500 ton fly ash silo + 1x3000ton bottom ash silo) with a cumulative capacity of 10,500 ton.	
30	If coal will be transported through truck, tipper etc. they shall be done under covered condition to avoid any spillages etc. on the road to be used for coal transportation shall be black topped and properly cleaned.	Coal is being transported through rakes, trucks with tarpaulin cover. All the major roads are blacktopped and cleaned regularly. Besides, one Road-sweeping machines is being deployed to clean the roads on daily basis.	
31	The cooling water shall be re-circulated to maintain optimum COC and any chrome based chemicals should not be used as descaling agent.	The optimum CoC is being maintained in cooling water of power plant.	
32	Comprehensive plan for utilization and management of fly ash shall be prepared and submitted to the Board within six months.	The comprehensive management plan for disposal of fly ash has been submitted to OSPCB vide letter no. IR/AAP/Env/7552, dated 30-04-2012.	
33	Proper dyke of adequate height shall be maintained so as to avoid spillage of ash.	The NIT Rourkela has provided us the design for the Ash pond. Adequate height is being maintained in line with their proposal to avoid spillage of ash from ash pond.	
34	The unit shall explore the possibility of disposal of fly ash in its abandoned mine pit for complete utilization.	Possibility of disposal of ash in any abandoned mine voids is being explored. We have requested the District Administration in this regard.	
35	In case the consent fees revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the	We have noted and accepted it.	

	period stipulated by the Board the consent order will be revoked without prior notice.		
36	The Board reserves the right to revoke / refuse consent to operate / to modify or stipulate conditions as deemed appropriate at any time during period for which consent is granted.	We have noted and accepted it.	
F-II (Water Pollution Control)			
1	Specific water consumption shall be limited within 3.5 m3/MWh by 6th Dec, 2017 as per MoEF & CC vide notification dtd. 07.12.2015.	The specific water consumption is below the standard of 3.5 m3/MWH.	
2	The runoff water from the factory premises and solid waste dumping area generated during rainy season shall be adequately treated so as to meet the prescribed standard of the Board before discharged to outside / reused.	The run-off water from the Smelter area are being drained to a storm water pond of 65,000 cum capacity and the total water is being treated in the double stage RO based ETP. Surface run-off in rainy season will meet to the prescribed standard of the Board.	
3	A pucca boundary wall shall be provided around the factory premises and the solid waste dump yard.	A Pucca boundary has been provided around the factory premises.	
4	Garland drains shall be cleaned periodically and excavated materials shall be dumped in the dump yard.	Garland drains provided around the coal storage yard are being cleaned periodically.	
5	Online flow measuring device with digital display and data recorder shall be installed in all the drains connected to ETP & at the final outlet before the treated effluent is recycled / reused.	Online flow monitoring device with digital display and data recorder is installed.	
6	The Effluent Treatment Plant (ETP) and the Sewage Treatment Plant (STP) shall be operated effectively and continuously through a dedicated in house team or through valid AMC so as to conform to the prescribed norms.	Installed and connected to SPCB and CPCB server.	
7	The Online continuous effluent monitoring system (EQMS) shall be operated effectively and uninterruptedly and the online monitoring data as generated shall be transmitted to SPCB and CPCB server on a continuous basis.	One environmental laboratory is established to monitor different pollutants for taking immediate control measures	
8	Installation of forced evaporation system adopting multi-effective evaporation system designed properly to	The unit has explored management and utilization of RO reject water through alumina adsorption and utilization in flue gas conditioning in FTC. Both the experiments findings presented	

	segregate solid and liquid and to recycle the liquid for treatment in ETP and disposed the solid to TSDF	before the Board and Board has recommended to further investigate on long term effects on the system. The experiments is continuing and the process is being verified by IIT (K), after receipt of final report from IIT (K), the scheme will be implemented.	
9	Necessary facilities shall be provided at the factory site for analysis of different pollutants for taking immediate control measures.	One Environment Laboratory established for monitoring and analysis of different pollutants.	
10	Rain water harvesting ponds shall be developed and the water can be used by the industry in dry season to minimize water drawl from river and dams	The Ministry of Environment & Forests has modified the stipulated condition in the Environmental Clearance letter and has asked us to implement the same in the Township area only.	
11	STP sludge shall be utilized as manure for greed belt development area and gardens inside the plant.	STP sludge is being utilized as manure for development of greenbelt and used in gardening purposes.	
12	The industry shall take all steps to substantially reduce water consumption and the waste water generation under domestic, cooling and industrial use according to the norms. A water balance of the plant shall be submitted to the Board.	An integrated waste water management scheme has been implemented with an ETP of 300 m3/hr capacity so as to treat the waste water generated from smelter and captive power plant. Water balance diagram has been submitted to the Board.	
13	The unit shall provide a guard pond with sufficient volume to store at least 3 days of effluents.	Guard pond of 65,000 m3 capacity established to store the effluent waste water for more than 3 days.	
14	The proponent shall provide garland drains around coal storage area followed by series of settling tanks to retain the solids, if any in order to prevent damage to the surrounding land and water bodies.	Garland drain around the coal storage area followed by twin settling tanks is provided to retain the solids and prevent damage to the surrounding land and water bodies.	
	Aluminium Smelter		
1	The unit shall provide adequate design ETP of 300 m3/hr in phase-I and 300 m3/hr in phase-II with cumulative capacity of 600 m3/hr for treatment of effluent generated from smelter plant and process waste water of CPP. The ETP shall be designed for fluoride removal to a level of 1.5 mg/l. Treated effluent shall be reused. The industry has to adopt zero discharge of effluent. There shall be no discharge to outside.	ETP of 300 cum/ hr is installed with Double Stage Reverse Osmosis facility to treat the blowdowns from cooling towers & boilers in phase-I facilities of CPP & Smelter. The ETP is designed for fluoride removal for outlet concentration below 1.5 mg/l, the treated effluent is being reused in the power plant.	
2	Proper housekeeping of the whole plant shall be maintained by a dedicated team. The unit shall take	House-keeping is being maintained by a core team under the Administration department and regular monitoring is being conducted by departments across the Smelter and CPP. Cast	

	proper care to improve the house keeping of cast house and green anode plant.	house and GAP areas are also given proper care for maintenance of good house-keeping.	
3	The wastewater generated from the smelter plant shall be adequately treated in the ETP to meet the prescribed standard of the Board and reused inside the plant premises.	Double stage RO based ETP of 300 cum/hr is already installed to treat the waste water generated from CPP and Smelter. The ETP is designed for removal of fluoride at the outlet below 1.5 mg/l and the permeate water is being used in the processes of CPP.	
4	The sewage generated from canteen, colony and plant area shall be adequately treated in the sewage treatment plant. The domestic effluent shall conform to prescribed standard for inland surface water and shall be reused in gardening.	The domestic effluent from canteen, offices within the core plant area will be treated in the installed sewage treatment plant(STP) of 25 Cum/hr capacity and the domestic sewage from township is being be treated in STP inside the township area of 300 KLD capacities. The STP at township area is in operation and the STP in the core plant area is commissioned recently and trial run is under progress.	
5	The spent pot lining generated from the smelter shall be properly treated in spent pot lining treatment plant to remove fluoride, cyanide and disposed of in secured land fill. The location and design of landfill shall be approved by the Board. Leachate collection facility shall be provided to in the secured land fill facility.	The Spent pot lining generated from the smelter stored under shed and carbon part is supplied to authorized recyclers/reprocessors and refractory part stored inside covered shed. The location and design of a secured land fill (SLF) site has been prepared as per the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and approved by SPCB, Odisha vide letter no. 25030/IND-IV-HW-980, dated 27-12-2012.	
6	All fluoride contaminated solid waste i.e. rejected filter bags, rejected refractories, housekeeping waste, transport vehicle waste etc. shall be disposed-off in secured land fill.	All fluoride contaminated wastes, which will not be extractable/recyclable/reusable, is being supplied to the CHW-TSDF at Jajpur by M/s Ramky Enviro Pvt. Ltd for secured disposal.	
7	There shall be covered storage area for storing of all fluoride bearing materials and rejects like butt, aluminium fluoride and spent pot lining etc.	Anode butts are being reused in the green anode plant and Spent Pot lining (refractory part) is being stored inside a covered shed.	
8	Regular ground water monitoring shall be carried out by installing Piezometers all around the secured land fill and submit the data to the Board.	Regular ground water monitoring will be carried out after establishment of secured landfill site.	
	Captive Power Plant		
1	The blow down shall meet the following standards before its reuse;	The blow down of cooling tower and boiler is being monitored and is found to be well within the standard as prescribed by the	

	Boiler Blow Down Suspended solids : 100.0mg/l (max.) Oil & Grease : 20.0 mg/l (max.) Copper (Total) : 1.0 mg/l (max.) Iron (Total) : 1.0 mg/l (max.) **Cooling Tower Blow down** Free available chlorine : 5.0 mg/l (max.) Zinc : 1.0 mg/l (max.) Chromium (Total) : 2.0 mg/l (max.) Phosphate : 5.0 mg/l (max.)	SPCB, and it will be treated in the double staged RO based ETP and reused in the process and other areas.	
2	The treated water shall be reused for ash conditioning, gardening and smelter plant use	The treated water is being reused in the CPP.	
3	Under no circumstances there shall be discharge of any untreated effluent to outside the factory premises.	We have Noted and accepted.	
4	All the cooling water shall be completely recirculated.	The cooling water blow down is being treated and recycled in the process of power plant and used for ash conditioning.	
5	Concrete parapet wall of adequate height should be provided all along the concreted drains on its both sides with rain cuts at regular intervals to prevent entry of dust/ash from the road and work zone into the drainage system. All the industrial drains shall be cleaned regularly.	Regular dust cleaning with mechanical road sweeper is being carried out on the roads inside the Smelter and CPP areas; therefore parapet wall will not be essential along the drainage system. Industrial drains are regularly cleaned and especially before the onset of monsoon.	
6	Test well near ash disposal area shall be dug around the dumping ground so as to monitor the ground water quality of the area to ascertain about water contamination.	Ash is being supplied to Cement Plants in maximum quantity and balance quantity is being utilized for low-lying area filling inside the Plant. Ash utilisation was 100% till December ’16. At present, part of Ash is being disposed into the Ash Pond. Dug well and bore well near the low lying area is being analysed.	
7	The industry shall steps for fulfillment of all the stipulations and necessary measures to check pollution.	One environmental laboratory is established to monitor different pollutants for taking immediate control measures.	
8	Consent to operate is subject to availability of all other statutory clearances required under relevant Acts/Rules and fulfillment of required procedural formalities.	All required statutory clearances are obtained from concerned authorities from time to time for operation of the plant.	
G. Additional conditions			

1	The industry shall properly operate the STP so as to meet the prescribed standards stipulated by CPCB (As per table 'B').	The STP is being operated properly and the treated water quality meets the CPCB standard.	
2	The unit shall strictly follow the action plan submitted during the personal hearing held on 27.08.2016 and vide letter No. AA/F&E/HW/2016/122, dtd. 04.04.2016 for completion of ash pond system including decantation pond and ash water recirculation system.	The compliance to the personal hearing held on 27.08.2016 is compiled in the schedule time and is being strictly followed and ash pond system including decantation pond and ash water recirculation system completed.	
3	The industry Shall comply with the new standards of emission of PM, SO2, NOx and Hg as given in table 'C' before 6th Dec 2017	A separate letter of compliance in this regard is submitted to OSPCB.	

Kailash Nath Pandey
(Authorized Signatory)