ADITYA BIRLA

HINDALCO

29th November, 2019

To,

The Director (S)
Eastern Regional Office,
Ministry of Environment and Forests & CC,
Government of India,
A/3, Chandrasekharpur,
Bhubaneswar - 751023

Sub: **Compliance of Environment Clearance (EC) conditions for the period April'19 to September'19**

Ref.: EC No.: J-11011/400/2006-IA II (I), dated 6th February 2008 &
J-11011/144/2006-IA II (I), dated 19 October 2009

Dear Sir,

With referene to the above stated Environment Clearance (EC), accorded for expansion of our Smelter Plant from 100 KTPA to 360 KTPA and Captive Power Plant from 267.5 MW to 967.5 MW at Hirakud, please find enclosed herewith the six monthly compliance of the conditions laid down in the EC for the period of April'19 to September'19, along with data on environment quality of all the plants.

The same has been sent through mail id: mef@ori.nic.in.

Thanking you.

Yours truly

J. P. Nayak
Head - Hirakud Smelter

Encl: As above

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Copy to:

1. The Member Secretary,
   Central Pollution Control Board,
   Ministry of Environment, Forests & Climate Change
   Paribesh Bhawan, East Arjun Nagar,
   New Delhi - 110032

2. The Member Secretary,
   State Pollution Control Board, Odisha
   A/118, Nilakantha Nagar,
   Unit – VIII, Nayapalli,
   Bhubaneswar - 7561012

3. The Regional Officer,
   State Pollution Control Board, Odisha
   1070, Hospital Road,
   Modipara,
   Sambalpur - 768002

ADITYA BIRLA

HINDALCO

COMPLIANCE TO ENVIRONMENT CLEARANCE (EC) CONDITIONS

(APRIL 2019 - SEPTEMBER 2019)

MINISTRY OF ENVIRONMENT & FORESTS (MoEF&CC) ENVIRONMENTAL CLEARANCE(EC) FOR EXPANSION OF SMELTER PLANT FROM 100 KTPA TO 360 KTPA AND CAPTIVE POWER PLANT FROM 267.5 MW TO 967.5 MW AT HIRAKUD BY M/s HINDALCO INDUSTRIES LIMITED

EC No. - J - 11011/400/2006-IA II (I), dated: 6 February 2008, &
Amendment Letter - J - 11011/144/2006-IA II (I), dated 19 October 2009.

Sl. No	CONDITIONS		STATUS AS ON 30th September 2019
2	The Ministry of Environment and Forests has examined the proposal. It is noted that the proposal is for expansion of smelting capacity of Aluminium metal from the existing 1, 00,000 MTA (including 35,000 TPA capacity under trial) to 3, 60,000 TPA and Captive Power Plant capacity from 267.5 MW (including 100 MW under trial) to 967.5 MW at the Smelter Plant at Hirakud, Sambalpur, Orissa.The project cost is Rs.5195 Crores, out of which Rs.369 Crores has been earmarked for pollution control measures. This expansion will be undertaken in two phases.In Phase I, 46,000 MTA capacity will be added and in Phase II,the addition shall be of 2,14,000 MTA.Presently, HIL has 468 pots of Soderberge Technology and 164 of Pre-baked Anode Technology (632 pots of 1,00,000 MTA).During Phase-I,the capacity shall be increased to 1,46,000 MTA by changing all (468) Soderberg pots to Pre-Baked ones.Additional 14 pots will be shifted from Belgaum unit and shall also be converted into Pre- Baked.This will result in total of 646 pots of Pre-Baked technology having a capacity of 1,46,000 MTA.During phaseII,232 new Pre-Baked pots with 2,14,000 TPA capacity will be added.The unit has Captive Power Plant of 267.5 MW.100 MW will be added in phase-I and 600 MW in phase-II, thereby making the final capacity as 967.5 MW.The power plant will be based on CFBC/PFC Boiler.Coal for CPP shall be procured from coal fields 20 km away and transported in covered Volvo trucks which will be later shifted to railway.Most of the other materials will also be transported by railways.	:	The capacity of the Smelter Plant has been increased from 100000 TPA to 146000 TPA in Phase - I. 468 pots based on Soderberg technology was converted to prebaked ones. In Phase – II the Smelter was expanded to 216000 TPA by adding 80 pots of capacity 70000 TPA. All pots used in the Smelter are based on prebaked technology. The CPP has been expanded from 267.5 MW to 467.5 MW by adding 100 MW in Phase - I and additional 100 MW in Phase - II. Currently CPP is operating with installed capacity of 467.5 MW having configuration of 1 x 67.5 MW and 4 x 100 MW. The CPP is based on CFBC technology. After deallocation of captive coal mine at Talaira (20 Km away from the Power Plant) in 2014, the coal is procured from newly allocated captive coal mine at Gare Palma in the state of Chhatishgarh and other coal mines inside the state of Odisha. Coal is transported from captive mine and other sources through railways as well as through tarpaulin covered trucks. A railway siding has been established in the premise of Power Plant for transporting of coal through railway in 2018.

3	The Phase-I units will be accommodated within the existing 163.95 ha of land. For Phase-II units, additional 91 ha of land will be acquired. No R&R is involved in the project and no forest land is involved in the project. The site is about 8.5 km away from Sambalpur town. Hirakud reservoir on Mahanadi river is located 1.2 km away from the plant. Small size reserve forests (Laxmi dungri, Ram dungri and Jamraha) are located within 10 km radius of the plant.No ecologically sensitive zone exists within 10 km periphery of the project. The proposed Sambalpur Elephant Reserve falls outside 10 km radius of the plant site and the site does not fall in the elephant movement corridor.	:	In Phase - I expansion, Smelter has increased its capacity from 1,00,000 TPA to 1,46,000 TPA and CPP from 267.5 MW to 367.5 MW. In Phase - II of Smelter Plant has added 80 pots having capacity 70 KTPA, taking total capacity of the unit to 216 KTPA and CPP added 100 MW(Unit - V) increasing total capacity to 467.5MW. Both phases of expansions have been accommodated within the existing 163.95 ha of land. No R&R and forest land is involved in the project.
4	The raw water requirement shall increase from 31,955 to 1, 01,555 KLD, thereby increase for the expansion project will be 69,600 KLD which will be sourced from the Hirakud reservoir. 14,250 KLD of wastewater will be generated from the expansion project. Wastewater generation shall increase from 8278 KLD to 22,528 KLD thereby increase in waste water generation for the expansion project will be 14,250 KLD .This will be treated in Rotating Biological Contactor and reused with in the plant.Cooling water blow down from the power plant will be treated to meet the discharge standards and discharged into Kharjhor nalla. 7650 TPA of solid waste generated from smelter will be disposed off as per CPCB guidelines, in secured landfill site inside the premises. 2.55 million TPA of coal ash generated from power plant will be disposed as dry ash mounds. Coal ash disposal as backfill material in abandoned coal mines has been explored.	:	The raw water requirement is sourced from the Hirakud Reservoir. During the period, a total of 4429862 KL @24206.9 KLD of water has been drawn from the reservoir. For treatment of Smelter Plant effluent, three RO based ETPs (two of 250 KLD capacity and one of 50 KLD capacity) have been installed. For treatment of effluent from our Flat Rolled Product (FRP) unit, an ETP Integrated with RO Capacity of 120 KLD has been installed. Five STPs (500 KLD, 2 x 100 KLD, 400 KLD, 300 KLD capacities) have been provided for treatment of sewage water from canteen, toilets & colony of three plants including FRP. Solid wastes generated from the Smelter Plant are disposed off to the registered and authorized agencies, TSDF and in the Secured Landfill site as per the CPCB guideline. Cooling tower blowdown from the power plant is treated in RO plant of capacity 120 m^3/hr for reuse in process and cooling. Other effluents from the plant is treated to meet the standards for discharge, stored in the common monitoring basin and entirely reused in cooling towers and other in-house activities with no discharge to outside. Coal ash generated from the Power Plant is utilized in cement plants, brick manufacturing units, road making, low lying area filling etc. Balance ash, if any, is disposed dry at ash mound. 494040 MT of ash was generated with utilization of 408442 MT during the period April'19 to September'19.

A. SPECIFIC CONDITIONS :

(i)	As stated in the Public Hearing, the new expansion site shall be on the opposite side of the village.	: The expansion site is on the opposite side of the village.
(ii)	The expansion shall be based only on Pre-baked Anode Technology and all Soderberge Technology based pots shall be converted to Pre-baked Anode Technology, as per the schedule submitted to the Ministry. The Captive Power Plant shall be based on CFBC/PFC Boiler.	: Only prebake anode technology is being adopted. All the soderberg pots have already been converted to prebake one. All the boilers of 467.5 MW Power Plant are CFBC in nature.
(iii)	The gaseous emissions (SO_2, NOx, CO, HC and Fluoride) and Particulate matter along with RSPM levels from various process units shall conform to the standards prescribed by the concerned authorities from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view of the nature of the industry and its size and location. At no time the emission level shall go beyond the prescribed standards. On-line continuous monitoring system for particulate emissions, SO_2 and NO_x shall be provided and shall make necessary arrangements for submission of on-line real time emission data to CPCB website. Interlocking facility shall be provided between pollution control equipment and the process operation so that in the event of the pollution control equipment not working, the respective unit (s) is shut down automatically. In the event of failure of any pollution control system adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency. Low NOx burners shall be installed to control the NOx emissions.	: The emission/discharge confirm to the standards prescribed by MoEF&CC, CPCB and OSPCB from time to time. Particulate Matter and Fluoride from the Smelter through FTP out let and fugitive fluoride from pot rooms is being monitored regularly.In CPP, environment friendly CFBC boilers have been provided to each unit, which are low NO_x producing in nature for the technology used in the boiler. ESPs, of efficiency 99.9%, fitted with High Frequency Rectifier Transformers (HFTRs) have been attached to each boiler of the CPP to maintain the Particulate Matter below the standard stipulated by MoEF&CC vide its notification dated 07th Dec 2015. Use of crushed lime stone in the bed of the boilers is in progress for reduction in generation of SO_2, much below the stipulated standard. Online real-time fluoride and dust monitoring analyzers installed at all FTP stack of Smelter. Forbes Marshall-Codel make Opacity Monitors (Model No: DCEM-2100) have been installed and commissioned in all the stacks of of CPP. Further, online Continuous Flue gas Analyzers of SO_2, NOx (Model No: GCEM 4000 of Codel make) have also been installed in all the stacks. Similarly in our FRP, 3 online PM analyzers have been provided in stacks of HRM & CRM. Real time data from the online monitors of Smelter, Power & FRP plant are submitted to SPCB/CPCB server and data transmision is continuous.

(iv)	Only 10 new stacks shall be installed for the expansion project - 4 in smelter plant, 4 in anode plant and 2 in casting unit. The scrubbed alumina from Alumina based dry scrubbing system shall be reused in process. Minimum stack height shall be 50 m. The minimum height of other stacks of anode plant and casting plant shall be 35 m, which shall base on Sulphur content of fuel. 3 new stacks in power plant shall be provided with ESP.	:	Stacks, of height 50m have been provided to all FTPs and of height 35 m and above have been provided to casting unit. Fume Treatment Plants (FTPs) with dry scrubbing system have been installed and the alumina from the FTPs is being reused in the process. Stacks of height 130 m have been provided to each unit of CPP. ESPs of efficiency 99.9%, equipped with High Frequency Rectifier Transformers (HFTRs) have been provided to all boilers of the 467.5 MW CPP.
(v)	Total Fluoride emissions and pitch fumes from smelter and anode-baking unit shall be controlled using alumina based dry scrubbing system to limit Fluorides emissions within 0.8 kg/ton Aluminium produced and SPM within 50 mg/Nm^3. SPM emissions from Captive Power Plant shall be less than 100 mg/NM^3.Forage Fluoride levels of less than 80 ppm for one month, less than 60 ppm for two months and less than 40 ppm for 12 months shall be complied with. Further the pot emissions through fume treatment plant shall not exceed 0.30 kg/ton of Aluminium produced.	:	All the FTPs of the Smelter are based on alumina based dry scrubbers through which the total fluorid emission is controlled. At present we have no anode baking plant and we are using green anodes of our nearby sister concern Aditya Aluminium.The particulate matter, fluoride emissions and forage fluoride in grass are being regularly monitored for the existing lines and reported to Board and Ministry through half yearly compliance reports. The emission from CPP is meeting the stipulated norms of MoEF&CC/CPCB/SPCB.
(vi)	Regualr monitoring of fluoride content in ambient air, forage fluoride and in ground water shall be carried out and data shall be submitted to State pollution Control Board.	:	We are regularly monitoring forage fluoride as an indicator of ambient air fluoride and also fluoride in surface and ground water and the data is submitted to State Pollution Control Board through monthly progress reports (Aneexure-XIV).
(vii)	Raw material shall be stored in covered yards. Water sprinkling arrangement shall be made in the raw material stock yard to control fugitive emissions. Coal and other raw material shall be transported in covered trucks, containers etc., which shall later be shifted to covered rail wagons.	:	The coal for Power Plant is transported from various sources through railways, covered trucks and stored under sheds in the coal yard of Power plant where sprinkling is done through fixed sprinklers to prevent the fugitive emission. Fugitive dust in the area is also suppressed by water sprinkling through mobile water tankers. Transportation of coal through railway has been started from Feb-2018.
(viii)	In plant control measures for checking fugitive emissions from all the vulnerable sources like spillage/raw materials/coal handlings etc. shall be provided. Further, specific measures like provision of dust extraction and suppression system consisting of water sprinkling, suction hoods, fans,	:	Fume Treatment Plant (FTPs), dust collector and bag filters have been provided in Smelter. For control of fugitive emission in CPP, central dedusting system with suction hoods and bag filter has been provided in the crusher houses

	cyclones, bag filters, ventury scrubber etc. shall be installed at material transfer points and other enclosed raw material handling areas. Centralized de-dusting system i.e. collection of fugitive emissions through suction hood shall be provided and subsequent treatment through bag filter or any other device and finally emitted through a stack of appropriately designed height, as prescribed above.		of CHP. Dust suppression systems have also been provided in the railway siding, coal yard, ash silo area, ash transporting road and all other vulnerable areas of fugitive dust emission. Bag filter houses have been provided to crusher houses of CHP & ash silos. Ash is undloaded from the silos after moisturisation to prevent the fugitive dust emission. Frequent sprinkling in regular intervals is carried out on the ash and coal transportation road.
(ix)	Fugitive Fluoride emissions from the Pot room shall not exceed 0.4 Kg/Ton of Aluminium produced. Fugitive emissions, especially in the work zone area, product and raw materials storage area etc. shall be regularly monitored and records be maintained. The emissions shall conform to the limits imposed by the State Pollution Control Boards / Central Pollution Control Board.	:	For strict adherence to the SOPs, the fugitive fluoride emission from the pot rooms is remaining within 0.4 Kg/Ton of Aluminium produced. Regular monitoring of fugitive emission in the work zones is being carried out and record maintained. The fluoride emission is being monitored regularly and reporting to State Pollution Control Board.
(x)	Windbreakers shall be installed to restrict fugitive dust	:	Boundary wall of sufficient height provided to Smelter, Power & FRP to restrict the fugitive dust. Extensive sprinkling, at potential source of generation, is being carried out through fixed and mobile sprinklers to contain the fugitive dust.
(xi)	The water requirement for the expansion project shall not exceed 69,600 KLD and shall be sourced from the Hirakud reservoir	:	The raw water for the all the three plants, i.e Smelter, Power and Flat Rolled Plant is being sourced from Hirakud reservoir. Total raw water withdrawal from the reservoir for the period is 4429862 KL @24206.9 KLD.
(xii)	Waste water generation shall not exceed 14,250 KLD for the expansion project. Waste water generated from smelter shall be treated in Rotating Biological Contactor and shall be reused in the plant. Cooling water blowdown from the power plant shall be treated up to discharge standards and discharged into Kharjhor nalla.	:	The waste water generation from all the units is remaining below 14250 KLD. The waste water generated from Smelter is being treated in three effluent treatment plants (ETPs) of capacity 250KLD, 250KLD and 50KLD. The earlier existing Rotating Biological Contractor (RBC) has been replaced with RO based 250 KLD ETP. The cooling tower blow-down water of CPP is being treated through RO Plant and reused for cooling. Other effluents are being treated to meet the standards before reuse in various in-house activities and cooling towers. No waste water is discharged to outside, especially in dry seasons as per the CTO of SPCB.

			Waste water generated from FRP Plant is being treated at ETP Integrated with RO Capacity of 120 KLD. The domestic waste water of three plants is treated in STPs of capacities 500KLD, 400KLD, 300KLD & 2 x 100KLD.The treated water of these STPs is reused inside plants. Monitoring of water quality is being carried out regularly and the same for the period Apr'19 to Sept' 19 is enclosed as Annexure - I, IV & XII.
(xiii)	7650 TPA of solid waste generated, mainly the spent pot lining from smelter shall be disposed off in a secured landfill site inside the premises. The SLF shall be as per CPCB guidelines. 2.55 million TPA of coal ash generated from power plant shall be disposed as dry ash mounds. However, it shall be ultimately disposed off as backfill material in abandoned coal mines or shall be utilized as per the Fly Ash Notification 5.0.763 (E) dated 14.9.1999 of this Ministry. The proposed Amendment / revision to this Notification shall be applicable for compliance from the Project Authority	:	The aluminium dross generated in the process of Smelter is reprocessed inside the plant and also disposed to authorized vendors fro reprocessing. The carbon content of spent pot lining is disposed to authorized agency and the non-carbon (refractory) content is stored in close roof sheds with concrete platform. The used anode butts are being sent to nearby siste concern Aditya Aluminium for coversion to green anode which is again used in our plant. Other solid wastes from Smelter Plant, which are hazardous in nature, are disposed at the TSDF and other registered recyclers/reprocessors. The captive SLF, designed as per the CPCB guideline, is used especially for disposal of wastes in emergency. Coal ash, the solid waste generated from the process of CPP, after utilization in different applications (supply to manufacturers of cement, ash bricks and low lying area filling, road making etc), is disposed off dry in ash mound, if any. During the period April 2019 to September 2019, about 494040 MT of ash (from all the units of Power Plant) have been generated and about 408442 MT of ash utilized with an average utilization figure of 84.8 %. The ash generation and utilization is enclosed. After de-allocation of captive mine at Talabira of Sambalpur district in Odisha, disposal in the other coal mines is being explored.
(xiv)	Minimum Cycle of Concentration (COC) for the CPP shall be 5.0	:	To minimize the fresh water use, COC is being maintained more than 5.0 in all the operating units of CPP. For the period April 19 to September 19 the average COC, for all units, was 5.4.

(xv)	Minimum of 33 % of total land area shall be developed as green belt with local species in consultation and as per the CPCB's guidelines	:	33% of total land area including solid waste disposal sites has been green covered. The details of plantation are enclosed.
(xvi)	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium Sector shall be strictly implemented.	:	All the recommendations of Charter of Corporate Responsibilty for Environment for aluminium sector are being strictly implemented.
(xvii)	The project authorities shall earmark Rs.369 crores to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	:	Being complied.

B. GENERAL CONDITIONS :

(i)	The project authorities shall strictly adhere to the stipulations made by the State Pollution Control Board	:	We are adhering to the directions of State Pollution Control Board.
(ii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	:	No further expansion or modifications in the plant shall be carried out without prior approval of MoEF&CC.
(iii)	Regular monitoring of ambient air for SPM, RSPM, SO_2, NO_x, CO, HC and Fluoride shall be carried out as per CPCB guidelines. The locations of ambient air quality monitoring stations shall be reviewed in consultation with the State Pollution Control Board (SPCB) and additional stations shall be installed, if required, in the downwind direction as well as where maximum ground level concentrations are anticipated	:	The ambient air quality is being monitored at seven locations of Smelter, eight locations in core & buffer zones of CPP regularly. For the online realtime monitoring of ambient air quality 2 stations installed inside Smelter premise, 3 in CPP premise. The real time data is being transmitted to sever of SPCB & CPCB continuously.
(iv)	Data on ambient air quality, fugitive emissions and stack emissions should be regularly submitted to the concerned Regional Office of this Ministry and SPCB/CPCB every six months and posted on the Website of the Project Authority	:	Data on ambient air quality, fugitive emissions, stack emissions and water effluent quality is being regularly submitted to Eastern Regional Office through six monthly compliance reports. The data for

			the period April 2019 to September 2019 are enclosed. The six monthly compliance report is posted in company's website.
(v)	Industrial waste water shall be properly collected and treated so as to conform to the standards prescribed under GSR422 (E) dated 19th May 1993 and 3rd December, 1993 or as amended from time to time	:	Waste water is properly collected, treated to confirm to the standards and entirely reused in various processes. Data on water effluent quality is enclosed for kind reference.
(vi)	The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000 and Hazardous Waste (Management and Handling) Rules, 1989, as amended from time to time. Authorization from the SPCB shall be obtained for collection, treatment, storage, and disposal of hazardous wastes. All Transportation of Hazardous Chemicals shall be as per the MVA, 1989	:	Authorization for Management and Handling of Hazardous Waste has been obtained from State Pollution Control Board for Smelter, CPP and FRP. Conditions stipulated in the authorizations are being strictly followed as per Hazardous Waste (Management, Handling and Transboundary Movement) Rule 2016 and its amendments time to time.
(vii)	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time)	:	Overall noise level is kept within standards by providing adequate noise control measures, wherever practicable. High noise areas have been provided with visual displays for use of PPEs. Noise quality in and around the plants is being monitored regularly. These are confirming to the standards prescribed under Environment (Protection) Act, 1986. The noise level data for the period April 2019 to September 2019 is enclosed for reference.
(viii)	Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act.	:	Occupational health surveillance of all the employees is being carried out on a regular basis and records are maintained.
(ix)	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis	:	Regular training is being imparted to all the employees on various safety, health and environmental issues. Pre-employment and routine periodical medical examinations for all employees are being undertaken on regular basis.

			For the period April 2019 to September 2019 the health surveillance statistics are as follows: Pre–employment health surveillance against new recruitment- 07 Periodic medical health surveillance for permanent employees- 799 Periodic medical health surveillance for contractual employees- 3476
(x)	Usage of PPEs by all employees/ workers shall be ensured	:	Use of PPEs by all the employees and workers are being strictly ensured in unit.
(xi)	The Company shall harvest surface as well as rainwater from the rooftops of the buildings proposed in the expansion project and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water	:	Studies by the Dept. of Civil Engineering, A.U College of Engineering, Andhra University, Visakhapatnam in 2007 and M/S Visiontek Services Pvt. Ltd, Bhubaneswar in 2012, recommend not to adopt rain water harvesting in Hirakud area for: (i) Presence of shallow water table (ii) Hard rock at shallow depth (iii) Water logging in the area and (iv) Rising trend of the water table in the area
(xii)	The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the EIA/EMP report. All the recommendations made in respect of environmental management and risk mitigation measures relating to the project shall be implemented.	:	We are complying with the environmental protection measures and sageguards proposed in the EIA/EMP. All the recommendations made in respect of environmental management and risk mitigation measures relating to the project shall be implemented.
(xiii)	The company will undertake all relevant measures, as indicated during the Public Hearing for improving the Socio-economic conditions of the surrounding area. CSR activities will be undertaken by involving local villages and administration	:	The company is undertaking various socio-economic development projects in the surrounding areas involving local SHGs. The CSR activities for the period Apr-19 to Sept-19 is enclosed for reference.
(xiv)	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment. The eco-development plan should be submitted to the SPCB within three months of receipt of this letter for approval	:	The company is undertaking various community development programmes in and around Hirakud involving local SHGs. Various welfare measures are undertaken.

			During April-2019 to September-2019 about Rs. 95.10 Lakhs have been spent towards community development projects including rural periphery development at Hirakud Complex.
(xv)	A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	:	A separate Environmental Management Cell with adequate laboratory facility has been set up at Hirakud Complex, to carry out environmental management and monitoring functions.
(xvi)	The implementation of the project vis-a-vis environmental action plans shall be monitored by the concerned Regional Office of the Ministry/ SPCB / CPCB. A six monthly compliance status report shall be submitted to monitoring agencies and shall be posted on the Website of the Company.	:	Strictly followed.
(xvii)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/ Committeeand mayalso be seen at Website of the Ministry at http://envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapersthat are widely circulated in the region of which one shall be in the vernacular languageof the locality concerned and a copy of the same shall be forwarded to the concerned RegionalOffice of the Ministry.	:	Public was informed through advertisements in three widely circulated regional newspapers namely : (1) The Dharitri, Dated 12th February, 2008 (2) The Agnisikha, Dated 12th February, 2008 & (3) The Sambad, Dated 14th February, 2008, This was also communicated to the Regional Office of MOEF, Bhubaneswar vide our letter of 14th February, 2008 along with copies of the news letters.
(xviii)	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	:	Will be complied.
(xix)	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	:	Agreed

Amendment Letter: J - 11011/144/2006-IA II (I), dated 19 October, 2009

Sl. No	CONDITIONS		STATUS AS ON 30th September - 2019
3.0.1	All the specific and general conditions shall remain unchanged and have to be complied in toto and pari passu.	:	Being complied
2	There shall be no change or modification in the ultimate capacity of the Smelter Plant (1,00,000 to 3,60,000 TPA) and Captive Power Plant (267.5 MW to 967.5 MW).	:	There will be no change or modification of the ultimate capacity of Smelter Plant as well as Captive Power Plant.
3	All the emissions (ambient air, stack, fugitive and fluoride emissions) shall be within the permissible limit as prescribed in the Environmental Clearance dated 5th February, 2008.	:	All the emissions are within the prescribed limit.Monitoring reports are enclosed
4	No additional land shall be acquired.	:	No additional land will be acquired for expansion.
5	No additional water shall be used.	:	No additional water, other than the quanity mentioned in the EC, will be used.
6	A copy of clearance letter shall be sent by the proponent to concerned Panchayat Zilla Parished / Municipal Cooperation, Urban local body and the local NGO, if any, from whom suggestions / representations if any were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	:	Copy of the clearance letter was submitted to local Urban local body after receiving the same.
7	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their web site and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEF at Bhubaneswar, the respective Zonal office of CPCB and the OPCB. The criteria pollutant levels namely; SPM, RSPM, SO_2, NO_x (ambient levels as well as Stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	:	The six monthly report of compliance of conditions of the Environment Clearance is submitted to Regional Office of Ministry of Environment & Forests & Climate Change (MoEF&CC), Bhubaneswar regularly in form of both soft and hard copies.The same is also uploaded in the website of the company.Critical sectoral environmental parameters are displayed in the main gates of both Smelter and Power Plant.
8	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated environment clearance conditions, including results of monitored data (both in hard copies as well as by	:	Six monthly compliance of Environment Clearance (EC) conditions is submitted to the Regional Office of Ministry of Environment & Forests & Climate Change

	e-mail) to the regional office of MOEF at Bhubaneswar, the respective Zonal office of CPCBand the OPCB. The Regional Office of this Ministry at Bhubaneswar / CPCB/ OPCB shall monitor the stipulated conditions.		(MoEF&CC), Bhubaneswar regularly in form of both soft and hard copies.
9	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986 as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEF by e-mail.	:	Being complied.
4.0	This letter is issued with prior approval from the Competent Authority.	:	Agreed
5.0	This letter shall be kept with the environment clearance issued by the Ministry vide letter No.:J-11011/100/2006-IA.II(I), dated 6th February, 2008.	:	Complied.

ADITYA BIRLA
HINDALCO

HIRAKUD SMELTER

ENVIRONMENTAL QUALITY PARAMETERS OF SMELTER
(APRIL-2019 TO SEPTEMBER-2019)

STACK EMISSION : FUME TREATMENT PLANT (DRY SCRUBBERS)

Particulate Matter: Standard: 100 mg/Nm^3 Total Fluoride: Standard: 0.3 Kg/MT. Al.

Location of sampling	Unit	Apr'19	May'19	June'19	July'19	Aug'19	Sept'19
FTP I - Stack I							
Particulate Matter	mg/Nm3	13.34	8.82	8.30	9.5	7.1	13.6
Total Fluoride	Kg/t. Al.	0.18	0.12	0.08	0.12	0.14	0.14
FTP - I - Stack II							
Particulate Matter	mg/Nm3	10.67	9.14	9.74	10.2	9.3	14.16
Total Fluoride	Kg/t. Al.	0.16	0.10	0.09	0.10	0.13	0.13
FTP - II - Stack - III							
Particulate Matter	mg/Nm3	11.75	8.67	10.50	14.0	11.3	16.2
Total Fluoride	Kg/t. Al.	0.17	0.11	0.12	0.15	0.18	0.16
FTP - III- Stack - IV							
Particulate Matter	mg/Nm3	8.84	9.48	8.81	11.2	13.2	10.6
Total Fluoride	Kg/t. Al.	0.14	0.09	0.10	0.11	0.15	0.14
FTP - IV- Stack - V							
Particulate Matter	mg/Nm3	8.91	10.10	9.61	13.2	12.5	12.0
Total Fluoride	Kg/t. Al.	0.15	0.13	0.13	0.14	0.12	0.11

STACK EMISSION Particulate Matter: Unit: mg/Nm^3 Standard: 100 mg/Nm^3

Location of sampling	Apr'19	May'19	June'19	July'19	Aug'19	Sept'19
CAST HOUSE - I :						
Stack-6 (Furnace -A)	51.8	50.2	46.2	70.0	54.0	41.0
Stack-7 (Furnace -B)	53.5	51.6	48.6	53.0	39.0	28.0
Stack-8 (Furnace -C)	Shut down	Shut down	Shut down	Shut down	Shut down	Shut down
CAST HOUSE - II, III , IV & Caster						
Stack - 9 (Furnace-1&2)	50.6	48.2	45.8	66.0	48.0	54.0
Stack - 10(Furnace-A&B)	52.4	50.6	41.3	62.0	42.0	27.0
Stack -11 (Furnace-A&B)	51.9	49.2	40.2	56.0	60.0	71.0
Stack -12 (Furnace-A&B)	46.4	47.1	43.9	72.0	48.0	36.0

ADITYA BIRLA
HINDALCO

HIRAKUD SMELTER

FUGITIVE EMISSION Total Fluoride: Unit: Kg/MT. Al. Standard: 0.4 kg/MT.Al.

Location of sampling	Apr'19	May'19	June'19	July'19	Aug'19	Sept'19
PR-I, Section XII	0.29	0.29	0.32	0.31	0.28	0.27
PR-II, Section IV	0.30	0.32	0.29	0.31	0.30	0.31
PR-III, Section V	0.31	0.28	0.31	0.29	0.31	0.29
PR-IV, Section VIII	0.28	0.30	0.28	0.30	0.33	0.32
PR-V, Section IX&X	Shut down	Shut down	Shut down	Shut down	Shut down	Shut down
PR-VI,RS End	0.33	0.31	0.30	0.33	0.29	0.30
PR-VII,RS End	0.32	0.32	0.29	0.34	0.34	0.33
PR -VIII,RS End	0.33	0.34	0.33	0.32	0.32	0.31
PR- IX ,RS End	0.34	0.33	0.35	0.34	0.35	0.34
PR -X , RS End	0.35	0.35	0.33	0.35	0.33	0.35
PR -XI, RS End	0.32	0.32	0.32	0.33	0.31	0.33
80-POT Area (Middle)	0.31	0.33	0.30	0.32	0.30	0.29

AMBIENT AIR SAMPLING

PARTICULATE MATTER (PM_{10}): Unit: µg/Nm^3 Standard: 100 µg/Nm^3 (24 hours)

Location of sampling	Apr'19	May'19	June'19	July'19	Aug'19	Sept'19
Pump House Near Adm. Building	53.48	51.10	47.1	46.88	46.64	44.69
R/S Cooling Tower MCC Room	53.09	51.07	46.62	45.61	42.82	42.48
R&D Building	46.88	48.77	48.73	47.86	43.47	41.24
Near caster Security Kiosk	52.1	50.72	47.23	43.99	45.39	42.31
Near New Security watch tower	49.50	49.93	47.45	46.07	45.36	43.82
Project office near Old Rectifier	51.87	50.17	46.83	44.78	45.09	42.20
Hindalco club	43.57	44.69	40.97	38.39	37.87	34.33

PARTICULATE MATTER ($PM_{2.5}$): Unit: µg/Nm^3 Standard: 60 µg/Nm^3 (24 hours)

Location of sampling	Apr'19	May'19	June'19	July'19	Aug'19	Sept'19
Pump House Near Adm. Building	35.14	35.82	35.82	34.40	33.22	33.43
R/S Cooling Tower MCC Room	33.88	33.10	31.83	31.80	31.92	31.11
R&D Building	34.23	34.70	34.66	31.21	28.92	27.44
Near caster Security Kiosk	34.67	34.99	33.37	31.74	29.54	28.39
Near New Security watch tower	36.80	37.12	32.26	32.89	30.83	29.98
Project office near Old Rectifier	33.52	34.27	32.81	32.70	30.16	28.91
Hindalco club	31.41	33.88	28.96	28.29	26.23	27.11

ADITYA BIRLA
HINDALCO

HIRAKUD SMELTER

SULPHUR DI-OXIDE (SO_2): Unit: µg/Nm^3 Standard: 80 µg/Nm^3 (24 hours)

Location of sampling	Apr'19	May'19	June'19	July'19	Aug'19	Sept'19
Pump House Near Adm. Building	13.16	11.14	10.43	10.14	9.40	9.32
R/S Cooling Tower MCC Room	12.91	11.26	9.97	9.94	9.42	9.12
R&D Building	10.08	9.94	9.69	9.73	9.08	8.94
Near caster Security Kiosk	11.66	10.84	10.17	9.80	9.32	9.03
Near New Security watch tower	9.93	9.69	9.73	9.61	9.06	9.18
Project office near Old Rectifier	9.92	9.90	9.47	9.56	8.98	8.83
Hindalco club	9.84	9.90	9.48	9.35	8.59	8.60

NITROGEN OXIDE (NO_X): Unit: µg/Nm^3 Standard: 80 µg/Nm^3 (24 hours)

Location of sampling	Apr'19	May'19	June'19	July'19	Aug'19	Sept'19
Pump House Near Adm. Building	9.62	9.46	9.17	8.94	8.28	8.34
R/S Cooling Tower MCC Room	9.9	9.21	9.38	8.47	8.11	8.32
R&D Building	9.12	8.99	8.54	8.32	7.86	7.98
Near caster Security Kiosk	9.03	8.77	8.82	8.57	8.03	7.79
Near New Security watch tower	8.91	8.63	8.64	8.21	8.08	8.02
Project office near Old Rectifier	9.5	9.30	8.74	8.30	7.80	7.70
Hindalco club	8.80	8.27	7.91	7.88	7.94	7.26

CARBON MONOXIDE (CO): Unit: µg/Nm^3 Standard: 2000 µg/Nm^3 (8 hours)

Location of sampling	Apr'19	May'19	June'19	July'19	Aug'19	Sept'19
Pump House Near Adm. Building	133.41	131.73	130.71	130.02	127.58	124.21
R/S Cooling Tower MCC Room	138.59	135.03	133.3	131.82	130.93	125.39
R&D Building	110.7	109.40	108.44	108.04	108.18	106.58
Near caster Security Kiosk	113.87	112.03	110.38	106.82	107.31	105.48
Near New Security watch tower	132.65	131.44	131.19	132.31	130.58	127.73
Project office near Old Rectifier	112.3	109.90	108.90	106.40	107.2	104.80
Hindalco club	94.28	93.74	92.27	91.93	90.24	90.24

Note: Hydro-Carbon (HC) and Lead in all seven locations are Not Detectable (ND).

ADITYA BIRLA

HINDALCO

HIRAKUD POWER

ANNEXURE - I

STACK EMISSION

(April' 2019 to September' 2019)

Unit # I

Process attached to the unit : Boiler # 1 & 2

Sl. No.	Month / Year	Unit	PM	SO_2	NO_x	Hg
01.	April	mg / NM^3	56.05	494.95	163.45	0.0059
02.	May	mg / NM^3	UNIT SHUT DOWN			
03.	June	mg / NM^3				
04.	July	mg / NM^3				
05.	August	mg / NM^3				
06.	September	mg / NM^3				
	Average	mg / NM^3	56.05	494.95	163.45	0.0059
	Standard	mg / NM^3	100	600	600	--

ADITYA BIRLA
HINDALCO

HIRAKUD POWER

ANNEXURE - II

STACK EMISSION
(April' 2019 to September' 2019)

Unit # II

Process attached to the unit : Boiler # 3, 4 & 5

Sl. No.	Month / Year	Unit	PM	SO_2	NO_x	Hg
01.	April	mg / NM^3	49.9	363.2	158.1	0.0050
02.	May	mg / NM^3	49.5	363.2	158.1	0.0050
03.	June	mg / NM^3	48.5	394.5	155.20	0.0060
04.	July	mg / NM^3	43.0	410.0	162.3	0.0063
05.	August	mg / NM^3	44.1	408.8	169.6	0.0060
06.	September	mg / NM^3	43.4	403.3	163.1	0.0060
	Average	mg / NM^3	**46.4**	**390.5**	**161.1**	**0.0057**
	Standard	mg / NM^3	**50**	**600**	**300**	**0.03**

ADITYA BIRLA
HINDALCO

HIRAKUD POWER

ANNEXURE - II

STACK EMISSION
(April' 2019 to September' 2019)

Unit # III

Process attached to the unit : Boiler # 6, 7 & 8

Sl. No.	Month / Year	Unit	PM	SO_2	NO_x	Hg
01.	April	mg / NM^3	49.7	368.3	164.9	0.0052
02.	May	mg / NM^3	49.7	368.3	164.8	0.0052
03.	June	mg / NM^3	49.3	391.4	147.2	0.0050
04.	July	mg / NM^3	45.5	393.3	152.1	0.0053
05.	August	mg / NM^3	45.9	398.8	157.8	0.0055
06.	September	mg / NM^3	45.1	401.6	158.8	0.0050
	Average	mg / NM^3	**47.5**	**387.0**	**157.6**	**0.0052**
	Standard	mg / NM^3	**50**	**600**	**300**	**0.03**

ADITYA BIRLA
HINDALCO

HIRAKUD POWER

ANNEXURE - II

STACK EMISSION
(April' 2019 to September' 2019)

Unit # IV

Process attached to the unit : Boiler # 9, 10 & 11

Sl. No.	Month / Year	Unit	PM	SO_2	NO_x	Hg
01.	April	mg / NM^3	49.2	415.0	174.9	0.0049
02.	May	mg / NM^3	46.5	415.0	174.9	0.0049
03.	June	mg / NM^3	48.6	415.4	156.9	0.0052
04.	July	mg / NM^3	45.9	418.1	160.4	0.0053
05.	August	mg / NM^3	44.9	418.6	164.0	0.0051
06.	September	mg / NM^3	41.4	416.8	166.2	0.0052
	Average	mg / NM^3	46.1	416.479	166.202	0.005
	Standard	mg / NM^3	50	600	300	0.03

ADITYA BIRLA
HINDALCO

HIRAKUD POWER

ANNEXURE - II

STACK EMISSION
(April' 2019 to September' 2019)

Unit # V

Process attached to the unit : Boiler # 12 & 13

Sl. No.	Month / Year	Unit	PM	SO_2	NO_x	Hg
01.	April	mg / NM^3	39.9	382.2	166.9	0.0046
02.	May	mg / NM^3	44.6	388.7	167.5	0.0055
03.	June	mg / NM^3	42.5	371.7	143.4	0.0056
04.	July	mg / NM^3	43.3	375.9	145.9	0.0058
05.	August	mg / NM^3	47.6	381.2	154.1	0.0059
06.	September	mg / NM^3	45.5	368.6	151.1	0.0057
	Average	mg / NM^3	**43.9**	**378.1**	**154.8**	**0.0055**
	Standard	mg / NM^3	**50**	**600**	**300**	**0.03**

ADITYA BIRLA
HINDALCO

HIRAKUD POWER

ANNEXURE - III

FUGITIVE EMISSIONS AT COAL HANDLING PLANT (CHP) AREA
(April' 2019 to September' 2019)

Sl. No.	Month	Unit	Results
01.	April	$\mu g / m^3$	194.6
02.	May	$\mu g / m^3$	216.2
03.	June	$\mu g / m^3$	206.2
04.	July	$\mu g / m^3$	192.6
05.	August	$\mu g / m^3$	175.0
06.	September	$\mu g / m^3$	149.0
Average		$\mu g / m^3$	**188.9**
Standard		$\mu g / m^3$	**500.0**

ADITYA BIRLA
HINDALCO

HIRAKUD POWER

ANNEXURE - IV

EFFLUENT ANALYSIS
(April' 2019 to September' 2019)

INDUSTRIAL EFFLUENT (CPP):

Sl. No	PARAMETERS	APR - 2019	MAY - 2019	JUN - 2019	JUL- 2019	AUG - 2019	SEP - 2019
1	pH	7.6	7.26	7.2	8.2	7.96	7.63
2	Total Suspended Solids, mg/L	43.1	48.2	43.7	46.8	43	45
3	Total Dissolved Solids, mg/L	713.2	592.2	587.3	635.0	624	641
4	Oils & Grease, mg/L	<1.4	<1.4	<1.4	<1.4	1.6	1.8
5	Total Residual Chlorine as Cl, mg/L	<0.1	<0.1	<0.1	<0.1		<0.1
6	Ammonical Nitrogen as N, mg/L	<0.1	<0.1	<0.1	<0.1	1.34	1.26
7	Total Kjeldahl Nitrogen as NH_3, mg/L	2.3	1.42	1.2	1.8	1.92	1.84
8	Free Ammonia as NH_3, mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
9	Biological Oxygen Demand (BOD) (3 days at 30°C), mg/L	8.2	3.8	4.2	3.0	4.2	5.1
10	Chemical Oxygen Demand (COD), mg/L	18.6	16.2	14.8	32.8	28	32
11	Arsenic as As, mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
12	Mercury as Hg, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	0.002
13	Lead as Pb, mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
14	Cadmium as Cd, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
15	Hexavalent Chromium as Cr^{6+}, mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
16	Total Chromium as Cr, mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
17	Copper as Cu, mg/L	<0.1	<0.15	<0.15	<0.15	<0.02	<0.15
18	Zinc as Zn, mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
19	Selenium as Se, mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
20	Nickel as Ni, mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
21	Cyanide as CN, mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22	Fluoride as F, mg/L	0.4	0.96	0.92	0.11	1.1	0.14
23	Dissolved Phosphate as P, mg/L	<0.05	<0.05	<0.05	<0.05	0.24	<0.05
24	Sulphide as S, mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
25	Phenolic Compounds as C_6H_5OH, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
26	Manganese as Mn, mg/L	<0.02	<0.02	<0.02	<0.02	BDL	<0.05
27	Iron as Fe, mg/L	0.50	0.52	0.33	0.14	0.16	0.17
28	Vanadium as V, mg/L	<0.2	<0.2	<0.02	<0.2	BDL	<0.2

ADITYA BIRLA
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ANNEXURE - V

AVERAGE CYCLE OF CONCENTRATION (COC)
(April' 2019 to September' 2019)

Sl. No.	Month	Unit	Results
01.	April	-	5.5
02.	May	-	5.8
03.	June	-	5.5
04.	July	-	5.4
05.	August	-	5.3
06.	September	-	5.3
	Average	-	5.5

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ANNEXURE - VI

AMBIENT AIR MONITORING, (CPP)
(April' 2019 to September' 2019)

PARTICULATE MATTER 10 (PM_{10}) : **Limit : 100.00 µg / m^3**

Location	APR - 2019	MAY - 2019	JUN - 2018	JUL- 2019	AUG - 2019	SEP - 2019
FHP Control Room Top	73.40	86.20	78.20	72.00	67.00	61.00
120^0 NNE (Near Hindalco Admn. Building)	51.80	62.40	56.20	58.10	60.00	56.00
240^0 SSE (Rajapada village)	44.50	50.20	46.20	50.60	52.00	48.00
360^0 W (Hindalco Club)	43.20	50.80	48.10	49.20	48.00	54.00
Jyoti Vihar, Burla	41.90	44.20	41.80	42.80	44.00	43.00
Ash Mound Road	76.40	78.00	72.80	66.40	69.00	63.00
Ash Mound area	77.00	81.20	75.20	71.80	70.00	68.00

SULPHUR DI-OXIDE (SO_2) : **Limit : 80.00 µg / m^3**

Location	APR - 2019	MAY - 2019	JUN - 2018	JUL- 2019	AUG - 2019	SEP - 2019
FHP Control Room Top	10.00	12.20	11.60	12.80	12.20	11.70
120^0 NNE (Near Hindalco Admn. Building)	11.70	12.80	11.60	11.40	11.20	10.80
240^0 SSE (Rajapada village)	9.90	10.40	9.20	10.20	9.70	9.20
360^0 W (Hindalco Club)	8.70	8.10	7.60	8.40	8.10	8.50
Jyoti Vihar, Burla	6.20	6.80	6.20	7.80	7.20	7.50
Ash Mound Road	9.50	9.20	8.80	8.10	8.70	8.90
Ash Mound area	9.10	8.40	8.20	7.60	7.30	7.70

NITROGEN OXIDE (NO_X) : **Limit : 80.00 µg / m^3**

Location	APR - 2019	MAY - 2019	JUN - 2018	JUL- 2019	AUG - 2019	SEP - 2019
FHP Control Room Top	13.20	15.20	14.60	13.80	10.50	10.20
120^0 NNE (Near Hindalco Admn. Building)	14.90	15.60	14.20	14.00	13.40	13.10
240^0 SSE (Rajapada village)	11.10	11.20	10.80	11.60	11.80	11.50
360^0 W (Hindalco Club)	10.90	10.20	9.60	10.20	10.50	11.30
Jyoti Vihar, Burla	8.70	8.80	8.10	8.80	9.70	10.60
Ash Mound Road	11.30	13.20	12.60	11.80	12.30	11.90
Ash Mound area	10.80	10.80	10.10	10.40	10.20	10.50

PARTICULATE MATTER 2.5 ($PM_{2.5}$) : **Limit : 60.00 µg / m^3**

Location	APR - 2019	MAY - 2019	JUN - 2018	JUL- 2019	AUG - 2019	SEP - 2019
FHP Control Room Top	46.10	56.20	51.20	50.60	34.00	30.00
120^0 NNE (Near Hindalco Admn. Building)	41.30	46.80	40.80	41.20	32.00	29.00
240^0 SSE (Rajapada village)	30.70	28.20	26.80	32.60	27.00	24.00
360^0 W (Hindalco Club)	30.90	31.40	30.60	34.80	25.00	27.00
Jyoti Vihar, Burla	30.50	32.80	30.60	35.20	23.00	22.00
Ash Mound Road	41.80	48.20	46.20	40.80	36.00	32.00
Ash Mound area	48.40	44.20	42.80	42.60	39.00	35.00

ADITYA BIRLA
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HIRAKUD POWER

ANNEXURE - VII

STATUS OF UTILISATION OF FLY ASH AND BOTTOM ASH

(April' 2019 to September' 2019)

Sl. No	Description	Quantity
1	Quantity of fly ash generated (MT)	444635
2	Quantity of bottom ash generated (MT)	49405
	Total ash generated (MT)	494040
3	Supply to Brick Manufacturing Units (MT)	166209
4	Supply to Cement Plants (MT)	67728
5	Land Filling (MT)	151927
6	Utilization in Embankment / Dyke Raising (MT)	0
7	Utilization in other purposes (MT) (road making etc)	22578
	Total Ash Utilized (MT)	408442
8	% of total ash utilization	82.7

ADITYA BIRLA
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ANNEXURE – VIII

PLANTATION DETAILS

YEAR	NO. OF SAPLINGS PLANTED	AREA COVERED (ACRE)	SPECIES PLANTED
Up to 2006 – 07	419865	250.12	
2007 – 08	33,000	12.0	Chakunda, Gambhari, Sisam, Krushna Chuda, Radha Chuda, Jammun & Neam
2008 – 09	25,200	16.0	Chakunda, Gambhari, Sisam, Krushna Chuda, Radha Chuda, Jammun & Neam
2009 – 10	31,000	10.0	Chakunda, Gambhari, Sisam, Krushna Chuda, Radha Chuda, Jammun & Neam
2010 – 11	30,000	10.0	Chakunda, Gambhari, Sisam, Krushna Chuda, Radha Chuda, Jammun & Neam
2011 – 12	25,200	10.0	Chakunda, Gambhari, Sisam, Krushna Chuda, Radha Chuda, Jammun & Neam
2012 – 13	25000	10.0	Neam, Karanja, Sisam, Krushna Chuda, Radha Chuda, Cassia Fistula, Alstonia & Kadamba
2013 – 14	30000	13.0	Neem, Karanja, Sisam, Cassia Fistula, Alstonia, Kadamba, Mango, Jamun etc
2014 – 15	12000	6.0	Neem, Karanja, Sisam, Cassia Fistula, Alstonia, Kadamba, Mango, Jamun etc
2015 – 16	10000	5.0	Bamboo, Sisoo, Karanja, Alstonia, Chhatiana, Mango, Jamun etc
2016 – 17	21175	10.6	Bamboo, Ficus, Alstonia, Champa, Plumeria Alva etc
2017 – 18	13500	6.75	Krushnachuda, Radhachuda, Acassia, Ficus, Jamun, Arjun, Ashok etc
2018 - 19	10500	5.25	Bamboo, Sisam, Cassia Fistula, Alstonia, Kadamba, Mango, Jamun
2019 - 20	7800	3.9	Faikas, Arjun, Chhatiana, Boul, Devdaru, Neem
Total	**694240**	**368.62***	

* Including replenished area

ANNEXURE - IX

ENVIRONMENTAL EXPENDITURE

(April' 2019 to September' 2019)

01.	Ash Disposal	:	Rs.	1029.42	Lakh
02.	Operating & Maintenance cost of ESP, Ash Handling Plant including Ash Silo & CHP DES	:	Rs.	1037.01	Lakh
03.	Envt. Monitoring / Envt. Charges including Environment Management System and water cess	:	Rs.	7.49	Lakh
04.	Plantation Activities	:	Rs.	5.63	Lakh
05.	Aesthetics	:	Rs.	23.68	Lakh
	TOTAL	:	Rs.	**2103.23**	Lakh

HINDALCO

HIRAKUD POWER

ANNEXURE – XI

AMBIENT NOISE QUALITY DATA (CPP)
(April' 2019 to September' 2019)

Sl. No.	Location	Category	Standard* Day / Night	Distance / Direction w.r.t Plant	Noise Level (Day/Night) in dB(A)					
					APR -2019	MAY -2019	JUN -2018	JUL-2019	AUG -2019	SEP -2019
1.	Riverside Colony	Residential	55/45	0.8 km / SW	47.6/38.2	41.8/38	40.5/35.2	40.35/36.4	42.0/35.0	45.4/39.7
2.	Tarasinghpada	Residential	55/45	0.2 km / S	50.5/40.6	52.7/41.8	52.3/43.2	52.8/40.8	53.1/43.7	53.3/40.4
3.	Christianpada	Residential	55/45	0.1 km / S	51.2/41.9	50.7/46.2	52.3/41.2	52.6/43.8	53.1/48.8	52.5/43.3
4.	Power Plant Security Gate	Industrial	75/70	Plant Site	68.5/51.2	57.8/52.6	56.1/50.2	54/42.6	54.6/44.5	53.3/49.7
5.	Power Colony	Residential	55/45	0.4 km / NW	50.5/42.4	52.7/40.2	49.3/41.2	50.6/38.8	51.2/39.4	51.4/41.8

* Day Time : 0600 to 2200 Hrs * Night Time : 2200 to 0600 Hrs.

ANNEXURE - XII

ADITYA BIRLA
HINDALCO

Monitoring Data of Hindalco Hirakud FRP

ETP_Parameter	Unit	Standard (as per CTO)	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
pH	-	6.5-9.0	7.3	7.2	7.45	6.99	6.93	7.85
TSS	mg/l	100	<2.5	9.4	8.3	9.8	6.3	3.1
TDS	mg/l	2100	48	26	24	15	16	14
Fluoride	mg/l	1.5	<0.1	<0.1	0.2	0.2	0.2	0.2
Oil & Grease	mg/l	10	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4
BOD	mg/l	30	5	<2.0	<2.0	<2.0	<2.0	<2.0
COD	mg/l	250	24	<4.0	<4.0	<4.0	<4.0	<4.0
Chromium Hexavalent	mg/l	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cyanide	mg/l	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Free Ammonia	mg/l	5	<0.1	0.16	0.87	0.87	0.74	0.72

Monitoring Data of Hindalco Hirakud FRP

STP_Parameter	Unit	Standard (as per CTO)	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
pH	-	6.5-9.0	7.02	7.18	6.56	7.17	7.39	7.3
TSS	mg/l	100	6.7	32	6.9	5.1	<2.5	<2.5
BOD	mg/l	30	5.8	2.2	3.2	6.7	<2.0	<2
Fecal Coliform (FC)	MPN/ 100 ml	1000	220	790	220	230	730	400

ADITYA BIRLA
HINDALCO

PRE EMPLOYMENT				PERIODICAL MEDICAL CHECKUP OF PERMANANT EMPLOYEE				PERIODICAL MEDICAL CHECKUP OF CONTRACTOR EMPLOYEE		
MONTH	SMELTER	POWER		MONTH	SMELTER	POWER		MONTH	SMELTER	POWER
Apr-19	4	NIL		Apr-19	42	14		Apr-19	314	439
May-19	2	NIL		May-19	88	16		May-19	529	245
Jun-19	NIL	NIL		Jun-19	137	25		Jun-19	259	440
Jul-19	NIL	NIL		Jul-19	205	49		Jul-19	110	288
Aug-19	1	NIL		Aug-19	112	31		Aug-19	291	223
Sep-19	NIL	NIL		Sep-19	61	19		Sep-19	186	152
TOTAL	7	0		TOTAL	645	154		TOTAL	1689	1787

CSR EXPENSES FROM APRIL TO SEPT 2019-20

	Focus Area	Nos of Benificiaries Covered	Hindalco Expenses in Lacs
A	**Education**		
1	Pre School Education	0	0.00
2	School Education Project	870	3.00
3	Education Support Project	1501	0.54
4	Vocational / Technical Education Project	0	0.00
5	School Infrastructure	100	0.14
	SUB TOTAL (1)	**2471**	**3.68**
B	**Health Care**		
1	Preventive Health Care	1399	0.23
2	Curative Health Care	**1189**	3.44
3	Reproductive and Child Health	31	0.25
4	Health Support Program	219	0.05
5	Health Infrastructure	26121	2.95
	SUB TOTAL (2)	**28959**	**6.92**
C	**Sustainable Livelihood**		
1	Agriculture and Farm Based	87	5.08
2	Animal Husbandry Based	0	0.00
3	Skill development & alternate Livelihood	144	0.58
4	Natural Resource conservation programs & Non conventional Energy	300	0.06
5	Livelihood infrastructure	0	0.00
	SUB TOTAL (3)	**531**	**5.72**

D	**Rural Infrastructure Development other than Health /Education /Livelihood**		
1	Roads/Culverts/Bridges/Bus Stands	300	0.01
2	Community Halls	30500	71.89
	SUB TOTAL (4)	**30800**	**71.90**
E	**Social Empowerment**		
1	Institutional building & strengthening	80	0.22
2	Support to development organizations	0	0.00
3	Social Security	0	0.00
4	Awareness programmes	0	0.00
5	Social Events	0	0.15
6	Promotion of heritage/culture/Sports	5001	4.39
7	Disaster Relief Programmes	2200	2.12
	SUB TOTAL (5)	**7281**	**6.88**
	Grand Total	**70042**	**95.10**