ADITYA BIRLA

HINDALCO

Letter No: AAP/E&S/EC/2017/237 Date: 30/05/2017

To

The Director
Eastern Regional Office
Ministry of Environment & Forests
A/3, Chandrashekharpur
Bhubaneswar – 750 023 (Odisha)

Sub: Submission of Six Monthly Compliance from Oct' 16 to Mar' 17.
Ref: Environmental Clearance Letter No: J-11011/136/2009-IA.I (1), dated 29/11/2012.

Dear Sir,

As a part of the compliance to the Environmental Clearance accorded by MoEFCC to Aditya Aluminium for 0.72 MTPA Smelter and 1650 MW CPP at Lapanga in Sambalpur district, please find enclosed herewith the six monthly compliance reports of aluminium smelter and captive power plant for the period October '16 to March' 17.

Kindly acknowledge receipt of the reports.

Thanking You

Yours faithfully
For Aditya Aluminium

Bibhu Mishra
President & COO

Copy for kind information to:

1. The Member Secretary, SPCB, Bhubaneswar
2. The Scientist 'D' & In-charge, Zonal office of CPCB, Kolkata
3. The Regional Officer, SPCB, Sambalpur

Hindalco Industries Limited
Aditya Aluminium: At/P.O.: Lapanga - 768 212, District: Sambalpur, Odisha, India
T: +91 663 2536 247 | Fax: +91 663 2536 499 | E: hindalco@adityabirla.com | W: www.hindalco.com
Registered Office: Century Bhavan, 3rd Floor, Dr. Annie Besant Road, Worli, Mumbai 400 030, India | T: +91 22 6662 6666
Corporate ID No.: L27020MH1958PLC011238

STATUS OF IMPLEMENTATION OF CONDITIONS STIPULATED IN ENVIRONMENTAL CLEARANCE FOR 7,20,000 TPA ALUMINIUM SMELTER& 1650 MW CAPTIVE POWER PLANT FOR ADITYA ALUMINIUM BY M/S HINDALCO INDUSTRIES AT LAPANGA, SAMBALPUR, ORISSA.

REF: Environmental Clearance Letter No: J-11011/136/2009-IA.I (1), Dated 29th November 2012 From MOEF, GOI.

Sr. No	Specific Conditions	Compliance
i)	The streams passing through the project site shall not be disturbed w.r.t their quantity and quality of flow	The streams passing through the project site will not be disturbed.
ii)	Alumina shall be obtained from those refineries, which have been accorded environmental clearance by the Ministry of Environment and Forests.	The Alumina is obtained from Utkal Alumina International Limited (UAIL), Rayagada Distt. and it has been accorded environmental clearance from MoEFCC.
iii)	The gaseous emissions (PM, SO2, NOx, PAH, HC, VOCs and Fluoride) from various process units shall confirm to the standards prescribed by the concerned authorities from time to time. The SPCB may specify more stringent standards for the relevant parameters keeping in view the nature of the Industry and its size and location. At no time the emissions level should go beyond the prescribed standards. 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. The particulate emissions from the bake oven plant shall not exceed 50 mg/Nm^3.	Online Monitoring equipments have been installed at the outlet of following stacks for monitoring of particulate matter and gaseous emissions. The online data has been connected to the Servers of OSPCB and CPCB. a) GTC- 2 Nos. b) FTC - 2 Nos. c) CPP - 6 Nos. Particulate matter emission from the bake oven does not exceed the prescribed limit of 50 mg/Nm3 (**Stack monitoring report attached as *Annexure-1***).
iv)	Particulate fluoride emissions should not be more than 0.65 mg/Nm3 and fugitive particulate fluoride emissions from pot room should not be more than 1.85 mg/Nm3.	Online monitoring equipment at Gas Treatment Centre (GTC) and Fume Treatment Centre (FTC) installed for monitoring of Hydrogen Fluoride (HF), Particulate Matter (PM). The particulate fluoride emission from the gas treatment system is within the prescribed standard. The monitoring report is attached as ***Annexure-2.***
v)	The poly aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) should not exceed 2 mg/Nm^3. The data on PAH should be monitored quarterly and report submitted regularly to the Ministry/Regional Office at Bhubaneswar and SPCB.	The poly aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) are being monitored on quarterly basis and found within the standard. The monitoring report is enclosed as ***Annexure-3.***
vi)	In plant, control measures like fume extraction and dust extraction system for controlling fugitive emissions from all the materials handling/transfer points shall be provided to control dust emissions.	Fume Extraction Centre (FTC) in Anode Baking furnace, Gas Treatment Plant (GTC) in potlines and bag filters in raw material handling, GAP, Anode Baking, Roding areas, bath recycling, carbon recycling area, butts recycling area, cathode sealing shop etc in smelter area and

		coal handing, ash handling plant in captive power plant is installed to control fugitive dust emissions.
	Fugitive Fluoride emissions from the pot room and in the forage around the smelter complex and the data submitted regularly to the Ministry Regional Office at Bhubaneswar and SPCB. Further dry scrubbing system to control the emissions from the pot lines should be provided.	HF analyzer installed for Fugitive fluoride monitoring in potrooms for monitoring of Hydrogen Fluoride, the monitoring results attached as ***Annexure-4***. Forage around the smelter is being monitored on quarterly basis and the report is enclosed as ***Annexure-5***. Dry scrubbing system provided in gas treatment centre (GTC) to control fugitive emission.
vii)	Electrostatic Precipitators (ESP) will be provided to Captive Power Plant (CPP) to control particulate emissions below 50 mg/Nm3. The company shall provide bag filters, dry scrubbing system and dust suppression system to control all the emissions including fluoride emissions from all melting and casting units. Tar, Dust and fluoride in the fumes shall be controlled in baking furnace by providing dry scrubber. The emissions shall conform to the standards prescribed by the Ministry CPCB/SPCB whichever is more stringent.	Electrostatic Precipitators(ESP) of adequate efficiency is installed in Captive Power Plant (CPP) to restrict particulate emissions below 50 mg/Nm^3. Gas Treatment Centres (GTC) installed in potline and bag filters installed in all material handling & transfer points. Fume treatment centre (FTC) installed in Anode Baking Furnace 1 & 2 to treat the tar, dust, gaseous and particulate fluorides. The standards prescribed by the Ministry/ CPCB/ SPCB is being adhered.
viii)	Provision for installation of FGD shall be provided for future use.	Provisional Space has been kept for installation of FGD in future, if required.
ix)	Three tri-flue and one bi-flue stack of 275 m height with flue gas velocity not less than 22 m/s shall be installed and provided with continuous online monitoring equipment's for SO_2, NO_x, and PM_{10}.	Two (02) numbers of tri-flue stacks of 275 m height is installed in phase-I, another two nos. of stacks will be installed during Phase-II construction activities. Continuous emission monitoring system (CEMS) installed for monitoring of SO_2, NOx, and PM in all the units of CPP.
x)	Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	Dust extraction systems (DE) and Dry fog system installed in coal handling plant and ash handling system of Captive Power Plant.
xi)	Utilization of 100% fly ash generated shall be made from 4th year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.	Ash generated is being utilized by means of supplying to M/s Ultratech Cements, Jharsuguda, M/s OCL, Bargarh for cement manufacturing. Also we are supplying Ash to the brick manufactures and utilising it for filling the low lying areas inside the Plant with prior approval of SPCB. The low-lying areas are filled with Ash and subsequently planted with trees for development of greenbelt. Ash is also being disposed in the ash pond through HCSD system.

		The ash utilization achieved for the year 2016-17 is 97%. Status of utilization of Ash from April 16 to March 17 is enclosed as ***Annexure-6.***
xii)	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized ash shall be disposed-off in the ash pond in the form of slurry. Mercury and other heavy metals (Ag, Hg, Cr, Pbetc) will be monitored in the bottom ash and also in the effluent emanating from the existing ash pond. No ash shall be disposed-off in low laying area.	Fly ash & bottom ash are collected in dry form and Silos of adequate capacity have been installed. Maximum utilization of Ash is being ensured. Ash is being conveyed to the Ash pond through HCSD system. Monitoring of Mercury and other heavy metals (Ag, Hg, Cr, Pbetc) is being done for bottom ash. Bottom ash analysis report is enclosed as ***Annexure-7.***
xiii)	Fluoride (as F) consumption shall be less than 10 kg/ton of Aluminium produced as specified by the CREP.	Fluoride (as F) consumption for the period April 16 to March 17 is 6.6 kg/ton of Al produced.
xiv)	Anode butts generated from the pots shall be cleaned and recycled to the Anode Plant. The spent pot lining generated from the smelter shall be properly treated in spent pot lining treatment plant to remove fluoride and cyanide and disposed-off in secured landfill. The location and design of the land fill site shall be approved by the SPCB as per the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008. Leachate collection facilities shall be provided to the secured land fill facilities (SLF). The dross shall be recycled in the cast house. STP sludge shall be utilized as manure for greenbelt development. All the used oil and batteries shall be sold to the authorized recyclers/ re-processors.	Anode butts generated from the pots is being cleaned and recycled completely. Refractory part of the SPL is being stored under covered shed for disposal after publication of the disposal pathway/protocol by CPCB&SPCB. The carbon part is being sold to authorized recyclers. 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. The establishment of the inhouse dross recycling unit inside the plant is under progress. STP is commissioned at township & Plant area, the sludge is being used for greenbelt development. The used oil and batteries are being sold to authorized recyclers/reprocessors.
xv)	As proposed, spent pot lining waste shall also be provided to cement and steel industries for further utilization.	SPL generated is being stored under covered shed, the carbon part of the SPL is being supplied to authorized recyclers having permission from CPCB under rule 11 of the Hazardous Waste (M,H & TM) Rules 2008. The disposal pathway for disposal of the refractory part of the SPL in the CHW-TSDF is under progress by CPCB & SPCB.

xvi)	Ash pond shall be lined with HDP/LDPE lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached. Ash pond water shall be recirculated and reused.	The ash pond is provided with HDPE liner and adequate safety measures taken to avoid any kind of dyke breach. The ash disposal through HCSD system to the ash pond started from January 2017.
xvii)	Cycle of concentration (CoC) of 5.0 shall be adopted.	Water Balance of CPP is being optimized and presently we are maintaing the CoC at 8.
xviii)	Regular monitoring of ground water shall be carried out by establishing a network of existing wells and constructing new piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg, Cr, As, Pb) and records maintained and submitted to the regional office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground waterquality is not adversely affected due to the project.	Regular monitoring of ground water is being carriedout through establishing a network of existing wells and constructing a new piezometer well around the ash pond area. The ground water analysis report is enclosed **as *Annexure-8***. Monitoring of heavy metals (Hg, Cr, As, Pb) around the Ash pond area is being carried and record maintained. The analysis report of the ground water around the ash disposal area is attached as **annexure-9**.
xix)	Regular ground water monitoring shall be carried out by installing peizometers all around the secured land fill site in consultation with the SPCB, Central Ground Water Authority and State Ground Water Board and data submitted to the Ministry's Regional Office and SPCB.	Secured landfill site has not been established. Regular ground water monitoring will be carried out by installing peizometers all around the secured landfill site after establishment of the SLF in consultation with the SPCB, Central Ground Water Authority and State Ground Water Board. Data will be submitted to the Ministry's Regional Office and SPCB after establishment of secured land fill site.
xx)	Total water requirement for the expansion from Hirakud Reservoir shall not exceed 5,200 m3/hr and prior permission for the existing and proposed expansion shall be obtained from the concerned department before commissioning of the plant. All the effluent including from the cooling tower and de-mineralization plant shall be treated in the effluent treatment plant and treated effluent shall be recycled/reutilized in the process in smelter and CPP and also for fire protection, dust suppression, greenbelt development etc. Domestic effluent shall be treated in sewage treatment plant (STP) and treated domestic waste water will be used for greenbelt development.	No additional fresh water will be sourced from Hirakud Reservoir for the proposed expansion. The water requirement estimated for the expansion is within 52.73 cusec, as approved. The Effluent from the cooling towers and de-mineralization plant is being treated in Double Stage RO based effluent treatment plant and is being recycled/reutilized in the process of CPP. Separate Sewage Treatment Plant (STP) is installed @ capacity 25 m^3/hr for Smelter & Captive Power Plant, STP of 300 KLD capacity is installed at Township area and the treated water being used for greenbelt development.

xxi)	No effluent shall be discharged outside the premises of smelter during non-monsoon period and shall be discharged during the monsoon period only after treatment and meeting the norms of the OSPCB/CPCB.	We are operating a Double Stage RO based effluent treatment plant (ETP) of 300 m^3/hr capacity (150m^3/hr at present) and therefore no effluent water is being discharged to outside without treatment from Smelter.
xxii)	Greenbelt of adequate width and density around the project site shall be developed in 33% area in consultation with the DFO as per the CPCB guidelines having density of 2,000 trees/Ha.	Aditya Aluminium has developed Greenbelt over 320 acres inside the Core plant & Township areas. Around 1,80,500 saplings planted till March 2017.
xxiii)	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	Occupational Health Surveillance of the workers is being done as per the Odisha Factories Act.
xxiv)	The company shall develop rain water structures in the township area for recharge of ground water in consultation with the Central Ground Water Authority/Board.	Rain water harvesting structure arrangement is being made in the buildings of township area and water storage is done in township area for rain water recharge. A rain water scheme submitted to CGWA for approval vide letter no. AA/E&F/EC/2016/131, dated 09/04/2016.
xxv)	Rehabilitation and Resettlement Action Plan as prepared and submitted to the State Govt. shall be implemented as per the R & R Policy of the State Government. All the recommendations mentioned in the R&R Plan shall be strictly followed including suitable employment and other facilities to all the oustees.	Rehabilitation and Resettlement Action Plan is being implemented as per the R & R policy, 2006 of the State Govt. All the recommendations are being followed/complied.
xxvi)	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium Sector shall be strictly implemented.	All the conditions of CREP guideline for Aluminium sector is being followed. The point wise compliance to the CREP guideline is attached as ***Annexure-10***.
xxvii)	The company shall adopt well laid down corporate policy and identified and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with environmental clearance, environmental laws and regulations.	The company has adopted a well laid down corporate Environment policy. The Corporate Environment Policy is approved by the Board of Directors and submitted to MoEFCC.
xxviii)	All the commitments made to the public during public hearing /public consultation meeting held on 2nd march 2012 should be satisfactorily implemented and a separate budget for implementing the same should be allocated and information submitted to the Ministry's Regional Office at Bhubaneswar.	All the commitments made to the public during public hearing/public consultation meeting held on 2nd march 2012 is under gradual implementation.
xxix)	At least 5% of the total cost of the project shall be earmarked for towards the Enterprise Social Commitment and item-wise details along with time bound action plan should be prepared and submitted to the Ministry's office at Bhubaneswar. Implementation of such program should be ensured accordingly in a time bound manner.	The expenses under Enterpise Social Commitment(ESC) is Rs 36.91 Crores and the details of headwise expense and future planning for implementation in a time bound manner is attached as **Annexure- 11**.

xxx)	The company shall provide housing for construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. the housing may be in the form of temporary structures to be ensured accordingly in a time bound manner.	All necessary infrastructure and facilities are being provided to the workers from time to time.
xxxi)	The company shall submit within three months their policy towards Corporate Environment Responsibility which should inter-alia address (i) standard operating process/procedure to being into focus any infringement/deviation/violation of environmental or forests norms/ conditions (ii) Hierarchical system or administrative order of the company to deal with environmental issues and ensuring compliance to the environmental clearance and (iii) system of reporting of non-compliance/violation environmental norms to the Board of Directors of the company and/or stakeholders or shareholders.	The Corporate Environment Policy prepared and approved by the company Board of Directors, Organizational Structure for Hindalco Corporate Environment, Deployment of Corporate Policy inmanufacturing Plants & communication of Policy as regards Corporate Environment already submitted to MoEF.
	GENERAL CONDITIONS	
i)	The project authorities must strictly adhere to the stipulations made by the OSPCB and the State Government.	We will follow the stipulations made by OSPCB and the State Government.
ii)	No further expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	We will not carry out any expansion or modification in the plant without prior approval of MoEFCC.
iii)	The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The SPCB may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location.	We have noted and accepted the stipulated condition.
iv)	At least four number of ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO_2 and NO_x are anticipated in consultation with the OSPCB. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and Orissa State Pollution Control Board once in Six months.	Installation of four (04) CAAQM Stations completed and commissioned. Data connectivity established with the servers of OSPCB and CPCB. Installation of the continuous stack emission monitoring syatem in all the major stacks completed. All the CAAQMS & CEMS synchronized with the webserver of the SPCB with URL http:// 117.239.117.27/ ospcbrtdas/ & CPCB with URL http:// 113.19.81.38/ cpcbrtdas/ respectively. The six-monthly compliance along with the monitoring data is being submitted to the concerned authorities regularly.

v)	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (daytime) and 70 dBA (nighttime).	The overall noise levels in and around the plant area is within the prescribed standards and it is made possible by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The overall noise level is within the standard, regular monitoring is being done. All necessary PPEs are provided to the workers and engineers working in the factory.
vi)	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	Occupational Health Surveillance of the workers is being done as per the Factories Act.
vii)	The company shall develop surface water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	The company has developed surface water harvesting structures to the tune of 22 lakhs CUM to store water in the lean season and it will harvest the rain water during rainy season in the same reservoirs.
viii)	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA report. Further the company must undertake socio-economic development activities in the surrounding villages like community development progammes, drinking water supply and health care etc.	We have noted and accepted all the conditions and will comply in a time bound manner. The economic development activities are going on regularly as a part of our corporate social responsibility. A team of personnel are working dedicatedly for peripheral development work like conducting health camps, community developed programmes, formation SHG groups, supply of drinking water and other common infrastructural development works. Details of the CSR, R&R activities undertaken is attached as ***Annexure-12.***
ix)	Requisite fund shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment & Forests as well the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to Regional Office of the Ministry at Bhubaneswar. The funds so provided shall not be diverted for any other purpose.	Requisite fund has been spent & allotted towards capital cost and recurring cost/annum for environment pollution control measures and the fund will not be diverted for any other expenditure.
x)	A copy of the clearance letter shall be send by the proponent to concerned Panchayat, Zillaparishad/Municipality corporation, urban local boby and the local NGO, if any from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter also be put on the web site of the company by the proponent.	Copy of the clearance letter has already been communicated to all concerned as mentioned in the condition. Scanned copy of the letter is also displayed in our official website.

xi)	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitoring data on their website 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 SPCB. The criteria pollutant levels namely' PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	The status of compliance to the EC conditions is being submitted to the Regional office of the MOEF regularly on 1st June and 1st Dec respectively with a copy to CPCB & OSPCB and the same is being uploaded into the Company website. All the stack emission and ambient air monitoring stations are synchronized with the webserver of the SPCB & CPCB. The online monitoring data w.r.t. stack emission, ambient air quality and effluent water quality is being electrocically displayed at main entrance gate for information to the public.
xii)	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitoring data (both in hard & soft copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Offices of CPCB and the SPCB. The Regional office of this Ministry at Bhubaneswar. CPCB/SPCB shall monitor the stipulated conditions.	We are submitting the six monthly compliance reports of the stipulated environmental conditions (both in hard & soft copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Offices of CPCB and the SPCB. The monitoring data in respect of AAQ, water, soil, noise etc is enclosed as ***Annexure-13.***
xiii)	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 at Bhubaneswar.	The environmental statement for each financial year ending 31st March in Form-V is being submitted to the concerned authorities of SPCB and MoEF.
xiv)	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 and may also be seen at website of the Ministry of Environment & Forest at http/www.envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office at Bhubaneswar.	Information to Public has been madethrough advertisement of the environmental clearance in two widely circulated daily newspapers i.e. "The New Indian Express" on 04-12-2012 & "The Samaja" on 05-12-2012, within seven days of receiving the clearance letter. The copy of the advertisement was submitted to the Ministry's Regional Office at Bhubaneswar vide our office letter no. AAP/E&F/786, dated 07-12-2012.
xv)	The authorities shall inform the regional office as well as the Ministry, the date of financial closure and final approval of the project by the	Financial closure for Phase-1(Smelter capacity of 0.36 MTPA and CPP of 1650 MW) of the Project is completed on 17th September 2012 and Construction activities for Phase-I completed for

	concerned authorities and the date of commencing the land development work.	0.36 MTPA Smelter and 6x150 MW CPP and operating 360 pots out of 360 pots in Smleter and 5 units (5x150 MW) out of 6 units (6x150 MW) in CPP.

Encl: As above

(Authorized Signatory)

BIBHU MISHRA
President & COO
ADITYA ALUMINIUM
(A Division of Hindalco Industries Ltd.)
Lapanga, Sambalpur, Odisha

MINISTRY OF ENVIRONMENT &FORESTS
EASTERN REGIONAL OFFICE
A/3, CHANDRASEKHARPUR, BHUBANESWAR- 751023

FORMAT FOR PROVIDING PARTICULARS ON GREENBELT /PLANTATION UNDER F(C) ACT 1980 AND E(P) ACT 1986.

1	a) Name of the Project	Aditya Aluminium (A Unit of Hindalco Industries Limited)
	b) Envt./Forest Clearance Nos.	i. Env Clearance vide letter No: J-11011/136/2009-IA-I(I), dated 29/11/2012. ii. Forest Clearance vide letter No: 8-27/2009-FC, 10.02.2011
2	Location/ Block/ Sub-Divn./ Dist/ State	Aditya Aluminium (A Div. of Hindalco Industries Limited) At/Po- Lapanga, Dist- Sambalpur Pin - 768 212, Odisha
3	Address for communication	Aditya Aluminium (A Div. of Hindalco Industries Limited) At/Po- Lapanga, Dist- Sambalpur Pin - 768 212, Odisha
4	Existing vegetation in the area/ region	At present sevaral types of vegetation available in the area, however some of the names mentioned asfollows- Terminalia arjuna;Pongamiapinnata; Gmelinaarboria;Anthocephalluscadamba;Dalbergialatifolia; Azadiractaindica;AlbizziaLebbeck; Delonixregia; Ailanthus exelsa,Casseasiamea; Cassia fistula, etc
5	a) Species: (trees/shrubs/grasses/climbers)	Terminalia arjuna;Pongamiapinnata; Gmelinaarboria;Anthocephalluscadamba;Dalbergialatifolia; Azadiractaindica;AlbizziaLebbeck; Delonixregia; Ailanthus exelsa,Casseasiamea; Cassia fistula, etc trees species available.
	b) Major prevalent species of each type:	Anthocephalluscadamba,Terminalia arjuna,Peltoferrumferrugenium, Gmelinaarboria, AlberziaLebbeck,Delonixregiaetc are the prevalent species found.
6	Land coverage by the project:	1347.35 Ha
	a. Name and number of tree/species felled	2002 nos of trees felled through OFDC, Sambalpur (CKL) Division.
	b. Name and number of plant species still available in the area	Plant species and number will be counted after completion of all the project activities and will be submitted to your good office
	c. By protecting the area will indigenous stock come up	Nil
	d. Extent of greenbelt developed	320 acres covered under greenbelt till date
7	Plantations required to be carried out as per	
	a) Conditions of Environmental Clearance in Ha/Nos.	33% of total project area
	b) Conditions of Forest Act (c) Clearance in Ha/Nos.	25 % of total project area
	c. Voluntarily in Ha/Nos.	NA

8. Details of plantation

a) Total area available for plantation :

In each category

Grenbelt	Dumps	Back filled area	Road sides	Block plantation
The 33% of the project area will be covered under greenbelt/green cover and the plant. The phase- I facilities completed and Phase-II construction work not started. Till date 320 acres of land has been covered under greenbelt and balance will be covered in phased manner.				

b) Plantation details (category wise &methodology used)

Year of plantation	Species Planted	Spacing	Height attained	Total area covered	Area still available
2010 & 2011	Terminalia arjuna;Pongamiapinnata; Gmelinaarboria;Anthocephalluscadamba;Dalbergialatifolia; Azadiractaindica;AlbizziaLebbeck; Delonixregia;Peltophorrum Tectona grandis, Bauhinia sp, Ailanthus exelsa, Casseasiamea; Cassia fistula, etc	2*2	20'-25'	14.7 Ha	Plantation will be done in phased manner.
2012		3*3	15'-20'	38.2 Ha	
2013		3*3	10'-12'	11.2 Ha	
2014		3*3	8'-10'	16.8 Ha	
2015		4*4	5'-8'	24.36 Ha	
2016		2*2	2'-3'	24.00	

c) Survival of Plantation:

Total Plantation (No.)	1,80,500
Survival (No.)	1,62,500
Survival rate	Approx. 90 %

9. Agency carrying out plantation and maintenance: In-house Horticulture Department carrying out greenbelt development works.

10. Financial details (year wise) plantation wise and item wise:

Sl. No.	Year	Fund allocated(Rs)	Expenditure made(Rs)	Average cost of each surviving plant in Rs.
1	2010	81,62,000	81,62,000.00	245.00
2	2011			
3	2012	46,21,600	46,21,600.00	121.00
4	2013	13,62,500	13,62,500.00	121.00
5	2014	18,53,000	18,53,000.00	115.00
6	2015	18,65,000	18,65,000	109.00
7	2016	49,00,000	49,00,000	100.00

11. Inspection of plantation by field experts and their comments and follow up actions:

District Forest Officer, Range officer visit our location at periodic intervals and give their technical guidance from time to time.

12. Remarks/ any other information :

Indigenous species have been planted as per the direction of Regional office of MoEF&CC, Bhubaneswar.

(Signature)

Report-II

PROFORMA FOR PROVIDING INFORMATION ON REHABILITATION

1. No. of villages affected : 11
2. Families Affected : 1450

Families affected	SC	ST	OTH	TOTAL
	-	-	-	1450

3. Compensation package offered per family:

State/ Centre norms	Project package
As per the R&R Policy 2006, Govt. of Odisha	As per the R&R Policy 2006, Govt. of Odisha. Aditya Aluminium follows the RR Policy and subsequent Compensation Revision also.

4. Budget estimate for rehabilitation :

   a) Total outlay : 84.59 crores
   b) Amount paid/used : 80.81 crores

5. Employment details

   a) Total employment to be provided : 68
   b) Employment given so far : 48

6. Rehabilitation & Resettlement details : Total Displaced Persons Numbers -418

a	No. of families rehabilitated				
i	Name of the Site	Aditya Aluminium			
ii	Families rehabilitated	SC	ST	OTH	Total
		08	391	19	408
b	Families yet to be rehabilitated				
i	Name of the Site(s)	Aditya Aluminium			
ii	No. of families (Total-433)	SC	ST	OTH	Total
		00	19	1	20

7. Any other information : Nil

(Signature)

Annexure-1

Visiontek Consultancy Services Pvt.Ltd.
(An Enviro Engineering Consulting Cell)
ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref: VCSPL/16/R-1226

Date: 08.11.2016

STACK EMISSION MONITORING REPORT FOR OCTOBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 26.10.2016
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.10.2016 to 28.10.2016

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	101.0
Velocity of Flue Gas	m/sec	Stack Sampler	11.58
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	12.4
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	56.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	34.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.58
Total Fluoride as F	mg/Nm^3	Calculation	0.72
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

B. K. Mishra, B.Sc. Engg. (Chem)
GOVT. ANALYST
(GAZETTE No. 834 Dt. 12-04-2013)
For Visiontek Consultancy Services Pvt. Ltd.

Annexure - 1

Visiontek Consultancy Services Pvt.Ltd.
(An Enviro Engineering Consulting Cell)
ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/16/R-1227 Date: 28.11.2016

STACK EMISSION MONITORING REPORT FOR OCTOBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 26.10.2016
3. Sampling Location : **ST-2: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.10.2016 to 28.10.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	98.0
Velocity of Flue Gas	m/sec	Stack Sampler	9.49
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	16.8
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	70.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	50.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.39
Total Fluoride as F	mg/Nm^3	Calculation	0.5
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

B. K. Mishra, B.Sc. Engg. (Chem)
GOVT. ANALYST
(GAZETTE No. 834 Dt. 12-04-2013)
For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt.Ltd.
(An Enviro Engineering Consulting Cell)
ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/16/R-1374

Date: 06.12.2016

STACK EMISSION MONITORING REPORT FOR NOVEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.11.2016
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.11.2016 to 26.11.2016

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	99.0
Velocity of Flue Gas	m/sec	Stack Sampler	10.85
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	8.4
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	58.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	36.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.62
Total Fluoride as F	mg/Nm^3	Calculation	0.74
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

Ref.: VCSPL/16/R-1375 Date: 06.12.2016

STACK EMISSION MONITORING REPORT FOR NOVEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.11.2016
3. Sampling Location : **ST-2: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.11.2016 to 26.11.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	101.0
Velocity of Flue Gas	m/sec	Stack Sampler	9.39
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	9.2
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	66.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	54.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.09
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.42
Total Fluoride as F	mg/Nm^3	Calculation	0.51
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

Ref.:VCSPL/17/R-038

Date:05.01.2017

STACK EMISSION MONITORING REPORT FOR DECEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 22.12.2016
3. Sampling Location : **ST-2: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.12.2016 to 24.12.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	99.0
Velocity of Flue Gas	m/sec	Stack Sampler	9.86
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	24.0
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	68.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	52.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.38
Total Fluoride as F	mg/Nm^3	Calculation	0.5
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

*For **Visiontek Consultancy Services Pvt. Ltd.***

Plot-108, District Centre, Chandrasekharpur, Bhubaneswar -16, Tel.: 91-674-6600800, 3250790
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at: www.vespl.org

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

Ref.:VCSPL/17/R-037

Date:05.01.2017

STACK EMISSION MONITORING REPORT FOR DECEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 22.12.2016
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.12.2016 to 24.12.2016

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	97.0
Velocity of Flue Gas	m/sec	Stack Sampler	11.36
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	11.8
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	55.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	32.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.15
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.56
Total Fluoride as F	mg/Nm^3	Calculation	0.71
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

Ref.: VCSPL/ 17/R-380

Date: 09.02.2017

STACK EMISSION MONITORING REPORT FOR JANUARY-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.01.2017
3. Sampling Location : **ST-2: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.01.2017 to 30.01.2017

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	97.0
Velocity of Flue Gas	m/sec	Stack Sampler	10.44
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	10.6
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	63.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	49.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.15
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.44
Total Fluoride as F	mg/Nm^3	Calculation	0.59
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

*For **Visiontek Consultancy Services Pvt. Ltd.***

Plot-108, District Centre, Chandrasekharpur, Bhubaneswar -16, Tel.: 91-674-6600800, 3250790
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at: www.vcspl.org

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(An Enviro Engineering Consulting Cell)

Ref.: VCSPL/ 17/R-379

Date: 09.02.2017

STACK EMISSION MONITORING REPORT FOR JANUARY-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.01.2017
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.01.2017 to 30.01.2017

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	°C	Stack Sampler	94.0
Velocity of Flue Gas	m/sec	Stack Sampler	12.36
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	14.5
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	53.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	34.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.18
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.62
Total Fluoride as F	mg/Nm^3	Calculation	0.8
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

Plot-108, District Centre, Chandrasekharpur, Bhubaneswar -16, Tel.: 91-674-6600800, 3250790
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at: www.vcspl.org

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/ 17/R-502

Date: 04.03.2017

STACK EMISSION MONITORING REPORT FOR FEBRUARY-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.02.2017
3. Sampling Location : **ST-2: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 21.02.2017 to 24.02.2017

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	94.0
Velocity of Flue Gas	m/sec	Stack Sampler	10.2
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	8.4
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	70.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	46.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.16
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.42
Total Fluoride as F	mg/Nm^3	Calculation	0.52
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

*For **Visiontek Consultancy Services Pvt. Ltd.***

Plot-108, District Centre, Chandrasekharpur, Bhubaneswar -16, Tel.: 91-674-6600800, 3250790
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at: www.vcspl.org

Annexure - 1

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

Ref.: VCSPL/ 17/R-501 *Date: 04.03.2017*

STACK EMISSION MONITORING REPORT FOR FEBRUARY-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.02.2017
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 21.02.2017 to 24.02.2017

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	96.0
Velocity of Flue Gas	m/sec	Stack Sampler	11.86
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	6.1
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	50.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	26.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.15
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.41
Total Fluoride as F	mg/Nm^3	Calculation	0.73
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt.Ltd.
(An Enviro Engineering Consulting Cell)
ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref:VCSPL/17/R – 692

Date: 07.04.2017

STACK EMISSION MONITORING REPORT FOR MARCH-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 15.03.2017
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 16.03.2017 to 20.03.2017

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	°C	Stack Sampler	103.0
Velocity of Flue Gas	m/sec	Stack Sampler	9.57
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	8.8
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	57.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	31.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.18
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.42
Total Fluoride as F	mg/Nm^3	Calculation	0.6
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

Visiontek Consultancy Services Pvt.Ltd.

(An Enviro Engineering Consulting Cell)

ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.:VCSPL/17/R-693

Date:07:04:2017

STACK EMISSION MONITORING REPORT FOR MARCH-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 15.03.2017
3. Sampling Location : **ST-2: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 16.03.2017 to 20.03.2017

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^{0}C	Stack Sampler	99.0
Velocity of Flue Gas	m/sec	Stack Sampler	8.92
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	7.8
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	64.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	54.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.45
Total Fluoride as F	mg/Nm^3	Calculation	0.59
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Annexure-2

Visiontek Consultancy Services Pvt.Ltd.
(An Enviro Engineering Consulting Cell)
ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref: VCSPL/16/R-1229

Date: 08.11.2016

STACK EMISSION MONITORING REPORT FOR OCTOBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium): Lapanga**
2. Date of Sampling : 27.10.2016
3. Sampling Location : **ST-2: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 28.10.2016 to 29.10.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	102.0
Velocity of Flue Gas	m/sec	Stack Sampler	10.26
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	7.8
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	78.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	50.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.42
Total Fluoride	mg/Nm^3	Calculation	0.54

B. K. Mishra, B.Sc. Engg. (Chem)
GOVT. ANALYST
(GAZETTE No. 834 Dt. 12-04-2013)
For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt.Ltd.
(An Enviro Engineering Consulting Cell)
ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/16/R-1228

Date: 08.11.2016

STACK EMISSION MONITORING REPORT FOR OCTOBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 27.10.2016
3. Sampling Location : **ST-1: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument: Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 28.10.2016 to 29.10.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	108.0
Velocity of Flue Gas	m/sec	Stack Sampler	11.74
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	11.2
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	60.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	36.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.18
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.5
Total Fluoride	mg/Nm^3	Calculation	0.68

B. K. Mishra, B.Sc. Engg. (Chem)
GOVT. ANALYST
(GAZETTE No. 834 Dt. 12-04-2013)
For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt.Ltd.
(An Enviro Engineering Consulting Cell)
ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.:VCSPL/16/R-1377

Date.: 26.12.2016

STACK EMISSION MONITORING REPORT FOR NOVEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.11.2016
3. Sampling Location : **ST-2: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.11.2016 to 28.11.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	0C	Stack Sampler	106.0
Velocity of Flue Gas	m/sec	Stack Sampler	8.5
Concentration of Particulate Matter as PM	mg/Nm3	Gravimetric	5.2
Sulphur dioxide as SO2	mg/Nm3	IPA-Thorin method	73.0
Oxides of Nitrogen as NOx	mg/Nm3	Modified Jacob & Hochheiser (Na-Arsenite)	35.0
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	0.14
Gaseous Fluoride	mg/Nm3	Ion Electrode method	0.56
Total Fluoride	mg/Nm3	Calculation	0.70

For Visiontek Consultancy Services Pvt. Ltd.

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Ref.: VCSPL/16/R - 137C

Date: 26.12.2016

STACK EMISSION MONITORING REPORT FOR NOVEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.11.2016
3. Sampling Location : **ST-1: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 26.11.2016 to 28.11.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	102.0
Velocity of Flue Gas	m/sec	Stack Sampler	8.35
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	7.6
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	64.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	32.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.1
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.56
Total Fluoride	mg/Nm^3	Calculation	0.66

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Ref.:VCSPL/17/R-039

Date:05.01.2017

STACK EMISSION MONITORING REPORT FOR DECEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.12.2016
3. Sampling Location : **ST-1: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 21.12.2016 to 22.12.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	94.0
Velocity of Flue Gas	m/sec	Stack Sampler	8.43
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	9.4
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	64.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	34.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.17
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.48
Total Fluoride	mg/Nm^3	Calculation	0.65

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Ref.:VCSPL/17/R-040 *Date:05.01.2017*

STACK EMISSION MONITORING REPORT FOR DECEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.12.2016
3. Sampling Location : **ST-2: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 21.12.2016 to 22.12.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	98.0
Velocity of Flue Gas	m/sec	Stack Sampler	9.91
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	5.7
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	76.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	52.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.44
Total Fluoride	mg/Nm^3	Calculation	0.57

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Ref.: VCSPL/ 17/R-381

Date: 09.02.2017

STACK EMISSION MONITORING REPORT FOR JANUARY-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.01.2017
3. Sampling Location : **ST-1: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.01.2017 to 27.01.2017

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	98.0
Velocity of Flue Gas	m/sec	Stack Sampler	12.2
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	10.1
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	67.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	35.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.2
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.56
Total Fluoride	mg/Nm^3	Calculation	0.76

For Visiontek Consultancy Services Pvt. Ltd.

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Ref.: VCSPL/ 17/R-382 *Date: 09.02.2017*

STACK EMISSION MONITORING REPORT FOR JANUARY-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.01.2017
3. Sampling Location : **ST-2: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.01.2017 to 27.01.2017

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	101.0
Velocity of Flue Gas	m/sec	Stack Sampler	10.4
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	3.6
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	79.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	56.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.18
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.51
Total Fluoride	mg/Nm^3	Calculation	0.69

For Visiontek Consultancy Services Pvt. Ltd.

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Ref.: VCSPL/ 17/R-506

Date: 04.03.2017

STACK EMISSION MONITORING REPORT FOR FEBRUARY-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 22.02.2017
3. Sampling Location : **ST-1: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.02.2017 to 27.02.2017

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^{0}C	Stack Sampler	102.0
Velocity of Flue Gas	m/sec	Stack Sampler	10.8
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	4.8
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	72.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	43.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.19
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.46
Total Fluoride	mg/Nm^3	Calculation	0.65

For Visiontek Consultancy Services Pvt. Ltd.

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Ref.: VCSPL/ 17/R-507 *Date: 04.03.2017*

STACK EMISSION MONITORING REPORT FOR FEBRUARY-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 22.02.2017
3. Sampling Location : **ST-2: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.02.2017 to 27.02.2017

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	109.0
Velocity of Flue Gas	m/sec	Stack Sampler	11.2
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	5.8
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	84.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	58.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.20
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.54
Total Fluoride	mg/Nm^3	Calculation	0.74

For Visiontek Consultancy Services Pvt. Ltd.

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Ref.: VCSPL/17-18/R-690

Date.: 07.04.2017

STACK EMISSION MONITORING REPORT FOR MARCH-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 16.03.2017
3. Sampling Location : **ST-1: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 17.03.2017 to 21.03.2017

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	97.0
Velocity of Flue Gas	m/sec	Stack Sampler	10.68
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	8.4
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	62.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	30.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.19
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.52
Total Fluoride	mg/Nm^3	Calculation	0.71

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Ref.:VCSPL/571R-692

Date.:07.04.2017

STACK EMISSION MONITORING REPORT FOR MARCH-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 16.03.2017
3. Sampling Location : **ST-2: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 17.03.2017 to 21.03.2017

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	102.0
Velocity of Flue Gas	m/sec	Stack Sampler	10.25
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	7.4
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	74.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	50.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.16
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.48
Total Fluoride	mg/Nm^3	Calculation	0.64

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Annexure-3

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Ref: VCSPL/16/R-1326

Date: 08.11.2016

STACK EMISSION MONITORING REPORT FOR OCTOBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium): Lapanga**
2. Date of Sampling : 26.10.2016
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.10.2016 to 28.10.2016

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	101.0
Velocity of Flue Gas	m/sec	Stack Sampler	11.58
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	12.4
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	56.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	34.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.58
Total Fluoride as F	mg/Nm^3	Calculation	0.72
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected

B. K. Mishra, B.Sc. Engg. (Chem)
GOVT. ANALYST
(GAZETTE No. 834 Dt. 12-04-2013)

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Ref.: VCSPL/16/R-1374

Date: 06.12.2016

STACK EMISSION MONITORING REPORT FOR NOVEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.11.2016
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.11.2016 to 26.11.2016

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	99.0
Velocity of Flue Gas	m/sec	Stack Sampler	10.85
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	8.4
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	58.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	36.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.62
Total Fluoride as F	mg/Nm^3	Calculation	0.74
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

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Ref.:VCSPL/17/R-037

Date:05.01.2017

STACK EMISSION MONITORING REPORT FOR DECEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium): Lapanga**
2. Date of Sampling : 22.12.2016
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.12.2016 to 24.12.2016

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	97.0
Velocity of Flue Gas	m/sec	Stack Sampler	11.36
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	11.8
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	55.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	32.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.15
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.56
Total Fluoride as F	mg/Nm^3	Calculation	0.71
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

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Ref.:VCSPL/16/R-1374

Date.: 06.12.2016

STACK EMISSION MONITORING REPORT FOR NOVEMBER-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.11.2016
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.11.2016 to 26.11.2016

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	°C	Stack Sampler	99.0
Velocity of Flue Gas	m/sec	Stack Sampler	10.85
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	8.4
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	58.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	36.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.62
Total Fluoride as F	mg/Nm^3	Calculation	0.74
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected

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Ref.: VCSPL/ 17/R-501

Date: 04.03.2017

STACK EMISSION MONITORING REPORT FOR FEBRUARY-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.02.2017
3. Sampling Location : **ST-1: Stack attached to ABF-I - FTC-I**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 21.02.2017 to 24.02.2017

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	°C	Stack Sampler	96.0
Velocity of Flue Gas	m/sec	Stack Sampler	11.86
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	6.1
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	50.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	26.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.15
Gascous Fluoride	mg/Nm^3	Ion Electrode method	0.41
Total Fluoride as F	mg/Nm^3	Calculation	0.73
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

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Ref.:VCSPL/17/R – 692

Date: 07.04.2017

STACK EMISSION MONITORING REPORT FOR MARCH-2017

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 15.03.2017
3. Sampling Location : **ST-1: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 16.03.2017 to 20.03.2017

	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	103.0
Velocity of Flue Gas	m/sec	Stack Sampler	9.57
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	8.8
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	57.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	31.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.18
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.42
Total Fluoride as F	mg/Nm^3	Calculation	0.6
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	ND

Note: ND: Not Detected.

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Annexure-4

Sep-16

		Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday		AVG. IN ppm	AVG. IN mg/Nm3
		01-09-16	02-09-16	03-09-16	04-09-16	05-09-16	06-09-16	07-09-16	08-09-16	09-09-16	10-09-16	11-09-16	12-09-16	13-09-16	14-09-16	15-09-16	16-09-16	17-09-16	18-09-16	19-09-16	20-09-16	21-09-16	22-09-16	23-09-16	24-09-16	25-09-16	26-09-16	27-09-16	28-09-16	29-09-16	30-09-16				
		0.041	0.023	0.068	0.000	0.116	0.000	0.064	0.023	0.076	0.145	0.176	0.235	0.128	0.171	0.14	0.235	0.235	0.149	0.165	0.126	0.167	0.194	0.006	0.172	0.064	0.088	0.062	0.088	0.282	0.101		0.230	0.10
		0.261	0.254	0.321	0.456	0.216	0.141	0.314	0.313	0.14	0.336	0.42	0.336	0.432	0.296	0.282	0.000	0.000	0.000	0.360	0.352	0.452	0.168	0.386	0.433	0.426	0.303	0.312	0.361	0.300	0.307		0.303	0.13
		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.254	0.11
		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.00
		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.00

Oct-16

		Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday		AVG. IN ppm	AVG. IN mg/Nm3
		01-10-16	02-10-16	03-10-16	04-10-16	05-10-16	06-10-16	07-10-16	08-10-16	09-10-16	10-10-16	11-10-16	12-10-16	13-10-16	14-10-16	15-10-16	16-10-16	17-10-16	18-10-16	19-10-16	20-10-16	21-10-16	22-10-16	23-10-16	24-10-16	25-10-16	26-10-16	27-10-16	28-10-16	29-10-16	30-10-16	31-10-16				
		0.111	0.00	0.109	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
		0.441	0.408	0.175	0.290	0.289	0.402	0.47	0.402	0.439	314	0.363	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000
		0.472	0.598	0.441	0.007	0.457	0.466	0.466	0.583	0.449	0.466	0.466	0.475	0.469	0.434	0.598	0.434	0.598	0.456	0.598	0.441	0.441	0.108	0.83	0.117	0.467	0.130	0.466	0.108	0.466	0.130		0.41	0.417	0.885
		0.106	0.000	0.231	0.198	0.295	0.231	0.792	0.198	0.881	0.132	0.1	0.132	0.000	0.198	0.165	0.166	0.332	0.0	0.0	0.166	0.232	0.127	0.128	0.166	0.166	0.166	0.166	0.166	0.166	0.166		0.166	0.166	0.352
																																									0.42	0.172	0.134	0.355
																																											0.177	0.09

Nov-16

		Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		AVG. IN ppm	AVG. IN mg/Nm3
		08-11-16	09-11-16	10-11-16	11-11-16	12-11-16	13-11-16	14-11-16	15-11-16	16-11-16	17-11-16	18-11-16	19-11-16	20-11-16	21-11-16	22-11-16	23-11-16	24-11-16	25-11-16	26-11-16	27-11-16	28-11-16	29-11-16	30-11-16	01-12-16	02-12-16	03-12-16	04-12-16	05-12-16	06-12-16	07-12-16	08-12-16	09-12-16	10-12-16	11-12-16	12-12-16	13-12-16	14-12-16	15-12-16	16-12-16	17-12-16	18-12-16			
		0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
		0.46	0.379	0.449	0.188	0.000	0.000	0.387	0.000	0.387	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
		0.23	0.411	0.116	0.490	0.490	0.116	0.000	0.000	0.387	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
		0.29	0.245	0.207	0.75	0.241	0.000	0.000	0.116	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			

Dec-16

		Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		AVG. IN ppm	AVG. IN mg/Nm3
		05-12-16	06-12-16	07-12-16	08-12-16	09-12-16	10-12-16	11-12-16	12-12-16	13-12-16	14-12-16	15-12-16	16-12-16	17-12-16	18-12-16	19-12-16	20-12-16	21-12-16	22-12-16	23-12-16	24-12-16	25-12-16	26-12-16	27-12-16	28-12-16	29-12-16	30-12-16	31-12-16	01-01-17	02-01-17	03-01-17	04-01-17	05-01-17	06-01-17	07-01-17	08-01-17	09-01-17	10-01-17	11-01-17	12-01-17	13-01-17	14-01-17	15-01-17			
		0.456	0.508	0.514	0.416	0.412	0.409	0.49	0.434	0.504	0.445	0.34	0.412	0.445	0.370	0.450	0.314	0.41	0.357	0.357	0.368	0.371	0.314	0.447	0.283	0.483	0.45	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483			
		0.317	0.56	0.098	0.452	0.216	0.398	0.298	0.271	0.241	0.261	0.198	0.261	0.133	0.398	0.149	0.383	0.45	0.398	0.16	0.217	0.767	0.151	0.425	0.175	0.11	0.133	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398			
		0.345	0.398	0.319	0.127	0.466	0.132	0.133	0.116	0.398	0.398	0.467	0.265	0.133	0.49	0.233	0.204	0.154	0.066	0.398	0.066	0.132	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066			
		0.127	0.154	0.026	0.200	0.027	0.056	0.000	0.083	0.06	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			

Jan-17

		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday		AVG. IN ppm	AVG. IN mg/Nm3
		01-01-17	02-01-17	03-01-17	04-01-17	05-01-17	06-01-17	07-01-17	08-01-17	09-01-17	10-01-17	11-01-17	12-01-17	13-01-17	14-01-17	15-01-17	16-01-17	17-01-17	18-01-17	19-01-17	20-01-17	21-01-17	22-01-17	23-01-17	24-01-17	25-01-17	26-01-17	27-01-17	28-01-17	29-01-17	30-01-17	31-01-17				
		0.311	0.283	0.111	0.456	0.283	0.398	0.398	0.001	0.398	0.470	0.17	0.428	0.470	NA	NA	0.178	0.144	0.001	0.001	0.001	0.441	0.41	0.001	0.307	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001			
		0.157	0.156	0.264	0.266	0.262	0.211	0.21	0.383	0.266	0.398	0.00	0.133	NA	NA	0.451	0.236	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398			
		0.247	0.216	0.198	0.198	0.114	0.083	0.140	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
		0.84	0.83	0.75	0.72	0.00	0.00	0.6	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84			

Feb-17

		Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		AVG. IN ppm	AVG. IN mg/Nm3
		01-02-17	02-02-17	03-02-17	04-02-17	05-02-17	06-02-17	07-02-17	08-02-17	09-02-17	10-02-17	11-02-17	12-02-17	13-02-17	14-02-17	15-02-17	16-02-17	17-02-17	18-02-17	19-02-17	20-02-17	21-02-17	22-02-17	23-02-17	24-02-17	25-02-17	26-02-17	27-02-17	28-02-17																
		0.416	0.402	0.266	0.275	0.312	0.398	0.311	0.398	0.383	0.349	0.372	0.398	0.00	0.000	0.000	0.000	0.137	0.311	0.331	0.331	0.747	0.331	0.465	0.349	0.331	0.331	0.331																
		0.000	0.381	0.331	0.421	0.349	0.398	0.000	0.398	0.383	0.349	0.372	0.398	0.00	0.000	0.000	0.000	0.349	0.398	0.398	0.267	0.267	0.34	0.331	0.334	0.267	0.267	0.331																
		0.282	0.267	0.66	0.0249	0.0249	0.249	0.249	0.398	0.112	0.249	0.111	0.249	0.00	0.0249	0.0249	0.249	0.249	0.249	0.249	0.249	0.249	0.249	0.249	0.249	0.249	0.249	0.249																
		0.0	0.07	0.00	0.06	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00																

Mar-17

		Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		AVG. IN ppm	AVG. IN mg/Nm3
		01-03-17	02-03-17	03-03-17	04-03-17	05-03-17	06-03-17	07-03-17	08-03-17	09-03-17	10-03-17	11-03-17	12-03-17	13-03-17	14-03-17	15-03-17	16-03-17	17-03-17	18-03-17	19-03-17	20-03-17	21-03-17	22-03-17	23-03-17	24-03-17	25-03-17	26-03-17	27-03-17	28-03-17	29-03-17	30-03-17	31-03-17				
		0.300	0.270	0.272	0.200	0.395	0.265	0.486	0.140	0.204	0.208	0.278	0.26	0.21	0.27	0.240	0.277	0.357	0.306	0.357	0.357	0.357	0.306	0.306	0.306	0.306	0.306	0.306																
		0.247	0.306	0.192	0.153	0.153	0.0	0.000	0.153	0.153	0.204	0.200	0.25	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204																
		0.121	0.06	0.062	0.306	0.000	0.306	0.092	0.306	0.306	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																
		0.081	0.148	0.139	0.000	0.306	0.306	0.613	0.14	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																

Annexure-4

Annexure-5

Visiontek Consultancy Services Pvt.Ltd.

(An Enviro Engineering Consulting Cell)

ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/17/R-724

Date.: 08:04:2017

FORAGE FLUORIDE ANALYSIS REPORT

1. Name of Industry : **M/s Hindalco Industries Limited (Unit- Aditya Aluminium), Lapanga**
2. Nature of Sample : Leaf for Fluoride
3. Date of Analysis : 06.03.2017 to 08.03.2017

Sl. No.	Date of Sampling	Name of the Location	Type of Species	Fluoride
				ppm
1	03.03.2017	FF-1:Gumkarna	Grass	3.2
2	03.03.2017	FF-2:Ghichamura	Grass	4.1
3	03.03.2017	FF-3:Bamaloi	Dalbergiasisoo	3.0
4	04.03.2017	FF-4:Tilaimal	Azadirachtaindica	6.0
5	04.03.2017	FF-5:Lapanga	Albiziaprocera	5.4
6	04.03.2017	FF-6:Gurupali	Grass	3.1

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT.LTD.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

"Committed For The Better Environment"

Visiontek Consultancy Services Pvt.Ltd.
(An Enviro Engineering Consulting Cell)
ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref: VCSPL/16/R - 277

Date: 30 : 12 : 2016

FORAGE FLUORIDE ANALYSIS REPORT

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit- Aditya Aluminium), Lapanga**
2. Nature of Sample : Leaf for Fluoride
3. Date of Analysis : 14.12.2016 to 16.12.2016

Sl. No.	Date of Sampling	Name of the Location	Type of Species	Fluoride
				ppm
1	**12.12.2016**	**FF-1:**Gumkarma	Grass	4.2
2	**12.12.2016**	**FF-2**:Ghichamura	Grass	4.5
3	**12.12.2016**	**FF-3:**Bamaloi	Dalbergiasisoo	2.9
4	**13.12.2016**	**FF-4:**Tilaimal	Azadirachtaindica	6.8
5	**13.12.2016**	**FF-5:**Lapanga	Albiziaprocera	6.1
6	**13.12.2016**	**FF-6:**Gurupali	Grass	3.5

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiootekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org
"Committed For The Better Environment"

ANNEXURE-6

NAME OF THE INDUSTRY:- ADITYA ALUMINIUM

STATUS OF UTILIZATION OF COAL ASH (FLY ASH AND BOTTOM ASH), For the Month of:-April 2016- March 2017

Sl. No.	Month	Year	Coal Consumption (MT)	Power Installed Capacity (MWH)	Power Generated (MWH)	Quantity of Fly Ash generated (MT)	Quantity of Bottom Ash generated (MT)	Total Ash Generated (MT)	Disposal Method	Brick manufacturing (MT)	Supplied to cement industries (M/s Ultratech & M/s OCL) in (MT)	Mine Void Filling(MT)	Utilization in Embankment/Dyke Raising(MT)	Road Making (MT)	Low Lying area filling/land development (MT)	Through HCSD to Ash Pond	Aggregates (MT)	Agriculture/Horticulture Sector (MT)	Total Ash Utilized (MT)	% of utilization
1	April	2016	339240	750	615	140473.18	5852.03	146325.21	Dry disposal	0	81797.88	0	0	5955.25	48989	0	0	0	146226.23	100
2	May	2016	339466	750	640	135587.14	5643.47	141216.86	Dry disposal	0	78099	0	0	187.24	62255.61	0	0	0	141216.86	100
3	June	2016	309801.16	750	646.115	122337.21	5086.47	127424.18	Dry disposal	0	77135.29	0	0	0	50298.92	0	0	0	127424.18	100
4	July	2016	307384	750	647	108224.74	4551	112775.74	Dry disposal	0	66488.4	0	0	0	47291.34	0	0	0	113775.74	100
5	Aug	2016	310936	750	645.22	102344.86	4247.7	106592.57	Dry disposal	104.79	59026.77	0	0	0	55649.01	0	0	0	106192.67	100
6	Sept	2016	323431	750	656.187	117940.39	4923.77	122864.16	Dry disposal	104.24	63173.58	0	0	0	59486.88	0	0	0	122844.16	100
7	Oct	2016	310168	750	690.914	108572.89	4523.87	113096.76	Dry disposal	98.95	67116.60	0	0	0	45583.16	0	0	0	113096.76	100
8	Nov	2016	307378	900	650.208	125107	4567.79	129684.79	Dry disposal	114.98	81071.72	0	0	0	53558.16	0	0	0	114890.8	100
9	Dec	2016	318465	900	848.4	125499.62	5319.15	130728.77	Dry disposal	95.37	62956.41	0	0	0	68005.19	0	0	0	130728.77	100
10	Jan	2017	336281	900	856	135718.07	5055.2	141379.27	Dry disposal to Cement Plants, fly Ash Bricks unit and in low lying area development and through HCSD system to ash pond.	106.1	83063.59	0	0	0	29865.22	19571	0	0	112308.90	79.2
11	Feb	2017	300055	900	856	107299.66	4469.57	111739.23	Do	89.01	86027.71	0	0	0	22489.51	11944	0	0	99705.23	89.1
12	Mar	2017	348932	900	848.5	121447.03	5475.90	136823.99	Do	45.87	84079.87	0	0	0	44895.23	7708	0	0	129194.98	94.2
		Total	3983529.16			1440108.04	60254.3	1506362.55		739.51	891105.98	0	0	6241.59	398182.1	40204	0	0	1457159.18	97

Annexure-6

Annexure-7

Visiontek Consultancy Services Pvt.Ltd.

(An Enviro Engineering Consulting Cell)

ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/16/R-279

Date: 30/12/2016

FLY ASH ANALYSIS REPORT

1. Name of Industry : **M/s Hindalco Industries Limited (Unit- Aditya Aluminium), Lapanga.**
2. Sampling Location : **BA-01:** CPP Bottom Ash Silo
3. Date of Sampling : 06.12.2016
4. Date of Analysis : 07.12.2016 to 13.12.2016
5. Sample Collected By : VCSPL Representative in presence of Aditya Aluminium Representative.

Sl. No.	Parameters	Unit	Analysis Results
			BA-01
	A. Chemical Analysis		
1	Na_2O	%	0.16
2	MgO	%	1.1
3	Al_2O_3	%	22.6
4	SiO_2	%	55.4
5	P_2O_5	%	0.014
6	SO_3	%	1.2
7	K_2O	%	0.82
8	CaO	%	3.9
9	TiO_2	%	--
10	MnO	%	0.13
11	Fe_2O_3	%	7.6
	B. Heavy Metals Analysis		
1	Hg	%	<0.001
2	As	%	<0.001
3	Pb	%	0.022
4	Cr	%	< 0.002
5	V	%	<0.001
6	Fe	%	5.3
7	Co	%	<0.001
8	Cu	%	0.042
9	Ni	%	0.092
10	Zn	%	0.05
11	Sr	%	--
12	Ba	%	<0.001

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT.LTD.

Annexure-8

Visiontek Consultancy Services Pvt.Ltd.

(An Enviro Engineering Consulting Cell)

ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCS.PL/16/R-274

Date.: 30.12.2016

GROUND WATER QUALITY ANALYSIS REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga.**
2. Sampling location : **GW-1:** Lapanga Village; **GW-2:** Pandiel Village; **GW-3:**Bamloi Village; **GW-4:** Tilaimal Village; **GW-5:** Thelkoloi Village; **GW-6:** Ghichamura Village; **GW-7:** Gumkarama Village; **GW-8:** Chatikira Village.
3. Date of sampling : 06.12.2016
4. Date of analysis : 07.12.2016 to13.12.2016
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS - 10500:2012	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8
1	pH Value	APHA 4500H+ B	--	6.5-8.5	7.2	6.8	7.1	7.0	6.8	7.2	7.4	7.0
2	Colour	APHA 2120 B, C	Hazen	5	CL	CL	CL	CL	CL	CL	CL	CL
3	Taste	APHA 2160 C	--	Agreeable	AL	AL	AL	AL	AL	AL	AL	AL
4	Odour	APHA 2150 B	--	UO	UO	UO	UO	UO	UO	UO	UO	UO
5	Conductivity	APHA2510-B	µs/cm	--	158.2	122.1	132.5	136.9	164.4	136.2	130.6	164.4
6	Turbidity	APHA 2130 B	NTU	1	<2	<2	<2	<2	<2	<2	<2	<2
7	Total Dissolved Solids	APHA 2540 C	mg/l	500	203.0	126.4	180.6	208.2	206.2	172.6	209.1	184.2
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	70.0	64.0	58.0	46.0	76.0	48.0	70.0	54.0
9	Total Alkalinity	APHA 2320 B	mg/l	200	62.0	53.0	52.0	46.0	58.0	61.0	58.0	54.0
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	20.04	16.8	16.0	12.8	19.2	12.8	19.2	14.4
11	Magnesium (as Mg)	APHA 3500-Mg B	mg/l	30	4.8	5.3	4.4	3.4	6.8	3.9	5.3	4.3
12	Residual, free Chlorine	APHA 4500Cl, B	mg/l	0.2	ND	ND	ND	ND	ND	ND	ND	ND
13	Boron (as B)	APHA 4500B, B	mg/l	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
14	Chloride (as Cl)	APHA 4500Cl B	mg/l	250	19.0	16.0	22.0	18.0	20.0	16.0	20.0	16.0
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	8.2	4.9	6.6	7.2	7.4	6.4	7.8	7.0
16	Fluoride (as F)	APHA 4500F- C	mg/l	1.0	0.3	0.4	0.4	0.25	0.39	0.25	0.4	0.4
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	45	2.2	1.6	2.0	1.8	2.1	1.0	2.0	1.8
18	Sodium as Na	APHA3500Na	mg/l	--	15.2	10.8	10.2	12.8	11.5	12.8	12.9	13.1
19	Potassium as K	APHA 3500-K	mg/l	--	1.1	1.0	1.0	0.98	1.2	0.9	1.1	1.0
20	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	ND	ND	ND	ND	ND	ND	ND	ND
22	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
23	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
24	Arsenic (as As)	APHA 3114 B	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
25	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
26	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
27	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
28	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.3	0.22	0.20	0.26	0.25	0.28	0.32	0.26	0.22
29	Chromium (as Cr)	APHA 3500Cr B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
30	Selenium (as Se)	APHA 3114 B	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
31	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
32	Aluminium as(Al)	APHA 3500Al B	mg/l	0.03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
33	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
34	Mineral Oil	APHA 5220 B	mg/l	0.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
35	Pesticides	APHA 6630 B,C	mg/l	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
36	E.Coli	APHA 9221-F	MPN/100 ml	Shall not be detectable in any 100 ml sample	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
37	Total Coliforms	APHA9221-B	MPN/100 ml	Shall not be detectable in any 100 ml sample	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

Note: CL: Colourless, AL: Agreeable, U.O.:Unobjectionable, ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Annexure-9

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

Ref.: VCSPL/ 17/R-385

Date: 09.02.2017

GROUND WATER QUALITY ANALYSIS REPORT

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium),Lapanga.**
2. Sampling location : **GW-1:** Ash Disposal site near Bomaloi Bore well;
   GW-2: Ash Disposal Site inside the plant Dug well;
   GW-3: Ash Pond area Bore well.
3. Date of sampling : 23.01.2017
4. Date of analysis : 24.01.2017 to 03.02.2017
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Testing Method	Standard as per IS -10500:2012	Analysis Results		
					GW-1	GW-2	GW-3
1.	pH Value	--	APHA 4500 H^+ B	6.5-8.5	7.3	7.2	7.2
2.	Turbidity	NTU	APHA 2130B	5	0.1	0.2	0.2
3.	Conductivity	µs/cm	APHA 2510 B	--	246.2	241.36	252.6
4.	Total Hardness (as $CaCO_3$)	mg/l	APHA 2340 C	200	12.0	12.0	10.0
5.	Iron (as Fe)	mg/l	APHA 3500 Fe B	0.3	0.088	0.081	0.09
6.	Chloride (as Cl)	mg/l	APHA 4500 Cl^- B	250	35.4	36.2	34.98
7.	Dissolved Solids	mg/l	APHA 2540 C	500	108.0	106.2	115.7
8.	Calcium (as Ca)	mg/l	APHA 3500 Ca B	75	9.4	9.46	8.01
9.	Magnesium (as Mg)	mg/l	APHA 3500 Mg B	30	0.7	0.81	0.5
10.	Copper (as Cu)	mg/l	APHA 3111Cu B	0.05	<0.05	<0.05	<0.05
11.	Sodium (as Na)	mg/l	APHA 3500Na B	--	<0.1	<0.1	<0.1
12.	Potassium (as K)	mg/l	APHA 3500 K B	--	<0.1	<0.1	<0.1
13.	Manganese (as Mn)	mg/l	APHA 3111 B	0.1	<0.005	<0.005	<0.005
14	Sulphate (as SO_4)	mg/l	APHA 4500 SO_4^{2-} E	200	2.56	2.42	3.0
15.	Nitrate (as NO_3)	mg/l	APHA 4500 NO_3^- B	45	0.22	0.28	0.31
16.	Fluoride (as F)	mg/l	APHA 4500 F^- D	1.0	0.41	0.46	0.38
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	APHA 5530 C	0.001	<0.001	<0.001	<0.001
18.	Mercury (as Hg)	mg/l	APHA 3112B	0.001	<0.001	<0.001	<0.001
19.	Cadmium (as Cd)	mg/l	APHA 3111 B	0.003	<0.001	<0.001	<0.001
20	Selenium (as Se)	mg/l	APHA 3114 B	0.01	<0.001	<0.001	<0.001
21.	Arsenic (as As)	mg/l	APHA 3114 B	0.01	<0.001	<0.001	<0.001
22.	Cyanide (as CN)	mg/l	APHA 4500 CN^- C,D	0.05	ND	ND	ND
23.	Lead (as Pb)	mg/l	APHA 3111 B	0.01	<0.01	<0.01	<0.01
24.	Zinc (as Zn)	mg/l	APHA 3111 B	5.0	<0.05	<0.05	<0.05
25.	Chromium (as Cr)	mg/l	APHA 3500 Cr B	0.05	BDL	0.006	0.008
26.	Alkalinity	mg/l	APHA 2320 B	200	41.0	44.0	32.0
27.	Aluminium as(Al)	mg/l	APHA 3500 Al B	0.03	<0.001	<0.001	<0.001
28.	Boron (as B)	mg/l	APHA 4500 B	0.5	<0.01	<0.01	<0.01

Note : ND: Not Detected .

For Visiontek Consultancy Services Pvt. Ltd.

COMPLIANCE TO CREP GUIDELINES FOR CPP

ADITYA ALUMINIUM; LAPANGA

Compliance Status as on 31st March'17

Sr. No.	Conditions	Compliance
1	Implementation of Environmental Standards (emission & effluent) in non- compliant* Power Plants (31 & 27) - Submission of action plan: June 30, 2003 - Placement of order for Pollution of control equipment: September, 2003 - Installation & commission: December 31, 2005	Not Applicable
2	For existing thermal power plants, a feasibility study shall be carried out by Central Electricity Authority (CEA) to examine possibility to reduce the particulate matter emissions to 100 mg/Nm3. The studies shall also suggest the road map to meet 100 mg/Nm3. The studies shall also suggest the road map to meet 100 mg/Nm3 wherever found feasible. CEA shall submit the report by March 2004.	Not Applicable
3	New / expansion power projects to be accorded environmental clearance on or after1.4.1.2003 shall meet the limit of 100 mg/Nm3 for particulate matter.	Complied. SPM emission well below stipulated limit of 100 mg/Nm3
4	Development of SO2 & NOx emission standards for coal based plants by December 2003. - New/ expansion power projects shall meet the limit of SO2 & NOx w.e.f. 1.1.2005. - Existing power plants shall meet the limit of SO2 & NOX w.e.f.1.1.2006.	Not Applicable
5	Install/activate opacity meters/ continuous monitoring system in all the units by December 31, 2004 with proper calibration system.	Continuous monitoring system installed in the stacks attached to Power Plant for monitoring of PM, SO_2 & NOx.
6	Development of guidelines/ standards for mercury and other toxic heavy metals emissions by December 2003.	Not Applicable
7	Review of stack height requirement and guidelines for power plants based on micro meteorological data by June 2003	Not Applicable
8	Implementation of use of beneficiated coal as per GOI Notification: Power plants will sign fuel supply agreement (FSA) to meet the requirement as per the matrix prepared by CEA for compliance of the notification as short term measure.	Not Applicable

COMPLIANCE TO CREP GUIDELINES FOR CPP

ADITYA ALUMINIUM; LAPANGA

Compliance Status as on 31st March'17

Sr. No.	Conditions	Compliance
1	Implementation of Environmental Standards (emission & effluent) in non- compliant* Power Plants (31 & 27) - Submission of action plan: June 30, 2003 - Placement of order for Pollution of control equipment: September, 2003 - Installation & commission: December 31, 2005	Not Applicable
2	For existing thermal power plants, a feasibility study shall be carried out by Central Electricity Authority (CEA) to examine possibility to reduce the particulate matter emissions to 100 mg/Nm3. The studies shall also suggest the road map to meet 100 mg/Nm3. The studies shall also suggest the road map to meet 100 mg/Nm3 wherever found feasible. CEA shall submit the report by March 2004.	Not Applicable
3	New / expansion power projects to be accorded environmental clearance on or after1.4.1.2003 shall meet the limit of 100 mg/Nm3 for particulate matter.	Complied. SPM emission well below stipulated limit of 100 mg/Nm3
4	Development of SO2 & NOx emission standards for coal based plants by December 2003. - New/ expansion power projects shall meet the limit of SO2 & NOx w.e.f. 1.1.2005. - Existing power plants shall meet the limit of SO2 & NOX w.e.f.1.1.2006.	Not Applicable
5	Install/activate opacity meters/ continuous monitoring system in all the units by December 31, 2004 with proper calibration system.	Continuous monitoring system installed in the stacks attached to Power Plant for monitoring of PM, SO_2 & NOx.
6	Development of guidelines/ standards for mercury and other toxic heavy metals emissions by December 2003.	Not Applicable
7	Review of stack height requirement and guidelines for power plants based on micro meteorological data by June 2003	Not Applicable
8	Implementation of use of beneficiated coal as per GOI Notification: Power plants will sign fuel supply agreement (FSA) to meet the requirement as per the matrix prepared by CEA for compliance of the notification as short term measure.	Not Applicable

	Options/mechanism for setting up of coal washeries as a long term measure * Coal India will up its own washery * Sate Electricity Board to set up its own washery * Coal India to ask private entrepreneurs to set up washeries for CIL and taking washing charges * SEBs to select a private entrepreneur to set up a washery near pit- head installation of coal beneficiation plant	
9	Power plants will indicate their requirement of abandoned coal mines for ash disposal & Coal India/ MOC shall provide the list of abandoned mines by June 2003 to CEA.	Not Applicable
10	Power plants will provide dry ash to the users outside the premises or uninterrupted access to the users within six months.	Complied
11	Power Plants should provide dry fly ash free of cost to the users	Complied
12	State P.W.Ds/ construction & development agencies shall also adhere to the specifications/Schedules of CPWD for ash based products utilization MoEF will take up the matter with State Governments.	Not Applicable
13 (i)	New plants to be accorded environmental clearance on or after 1.04.2003 shall adopt dry fly ash extraction or dry disposal system or Medium (35-40%) ash concentration slurry disposal system or Lean phase with hundred percent ash waste re-circulation system depending upon site specific environmental situation.	It has been installed as part of the Ash Handling Package.
13 (ii)	Existing plants shall adopt any of the systems mentioned in 13(i)by December 2004	Implemented
14	Fly ash Mission shall prepare guidelines/manuals for fly ash utilization by March 2004.	Noted
15	New plants shall promote adoption of clean coal and clean power generation technologies * Units will submit bank guarantee to respective SPCB	Noted

Expense incurred under Enterprise Social Commitment:

Sl. Nos.	Description	Amount Spent(Rs)	Remarks
1	G D Birla Medical Research and Education Foundation for School at Kurki	20.25	
2	Land taken on Lease from IDCO for School at Kurki	9.10	
3	Sponsorship of Kalinga Lancers in Indian Hockey league Fy15, Fy16 & Fy17	4.50	
4	CSR expenses in & around Aditya Aluminium including Hirakud areas in FY17	3.06	
	Total Expense	36.91	

Aditya Aluminium intends to continue with the following activities under Enterprise Social Commitment like:-

a) Infrastructure development in villages around the Project area.
b) Drinking Water supply facilities.
c) Green cover development in collaboration with State Govt. departments.
d) Football play ground or mini stadium in Bomaloi village, as stated in the minutes of Public consultation held before environmental clearance.
e) Free distribution of school books & bags to children.
f) Constructing Toilets for girls in schools/villages.
g) Scholarship to poor, talented students in the schools.
h) Subsidy for Ash supply (Rs 150/- per Tonne at present) to local Ash brick manufacturers, as per OSPCB/MOEF&CC Notifications.
i) Providing Ash brick manufacturing machines to unemployed youth in the villages and one time assistance to establish the Unit.
j) Contributing to the development of Railway infrastructures in consultation with the railway authorities (e.g., ROB).
k) Implementation of skill development programmes and providing necessary infrastructure to existing ITI, Polytechnic colleges.
l) Development of Schools in the State of Odisha.

The remaining 5% amount for Phase-1 capacity (i.e., Smelter of 0.36 MTPA and CPP of 900 MW) is proposed to be spent over a period of 39 years from the year 2017.

SOCIAL CAUSES

- ❑ **Promotion of Héritage/culture/sports** : Supporting rural sports, culture and festivals in 23 villages covering more than 22000 population.
- ❑ **Plantation** : Mega Plantation Drive at Tileimal, Gopkani and Sambalpur
- ❑ **Social Security** : Financial Help to National Kick Boxing Athlètes Jagannath Suna

Football tournament Pondaloi village

Football tournament Ludhapali village

Football tournament Golamal village

Awareness Camp through Palla

SUSTAINABLE LIVELIHOOD

Observation of women's day


Exposure women farmers visit to Gopal Biotech

Exposure visit of farmers

Banaraj chicks distribution

SUSTAINABLE LIVELIHOOD

- ❑ **Sewing Machine Distribution for better Livelihood** : Facilitated 32 nos of Rural women for tailoring training for better livelihood earning.
- ❑ **Animal Husbandry** : Cattle & Poultry Vaccination Camps
- ❑ **Agriculture farm based** : Weekly training of 51 SHGs have been revived and 06 VDCs in the periphery villages, promoting backyard poultery & Vege. Farming
  : Namkeen Making, Mushroom & Fish Cultivation & badi Making Distribution, Recently started Vegetable vending at Township

Mixture making

Financial help to needy women

Improved seed distribution

Poultry Camp

HEALTH - Infrastructure

WATER SUPPLY THROUGH TANKERS TO VILLAGES

- **Health Infrastructure** - Supply of drinking water through 86 nos of tankers daily covering 90 hamlets facilitating more than 11,000 population with an expenses of Rs.25.00Lakhs

Bhoipali

Sithapada

Lapanga

HEALTH - Infrastructure

Construction of Community Toilets – Constructed 04 toilets in Tileimal and Bomaloi area. 20 more are schedule to construct. Installed Two Tube-well, repaired 08 Tube-wells, Installed 07 Solar Street Light

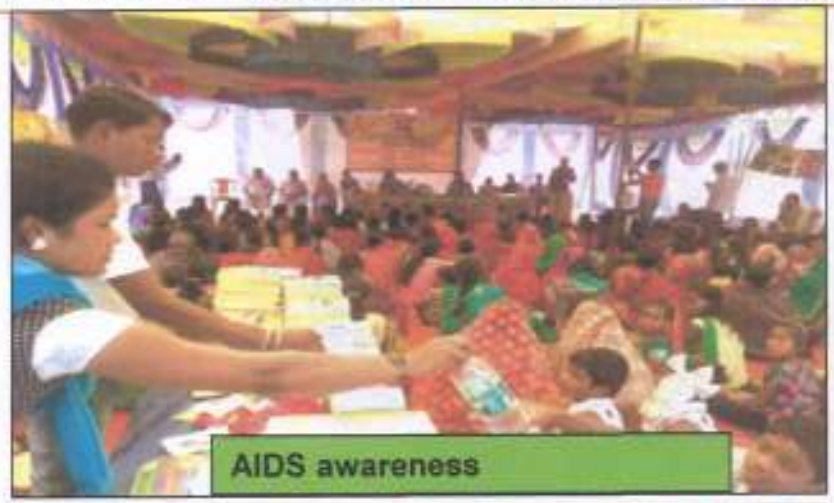
Tube-well

Bore-well

Solar Street Light at Tileimal

HEALTH

- **Curative Healthcare -** School Health Camps, Pulse Polio Program, Running Community Dispensary covering 03 Gram Panchayats, Awareness on Health & Hygiene, Mother Child care, Adolescent Care, Malnutrition and many more Financial Support to poor & needy Patients, Blood Donation Camps, Awareness on AIDS
- **Preventive Healthcare** – School Health Camp in 4



AIDS awareness

Mother child Healthcare

School Health Camp

Dengue Preparedness

EDUCATION – School Infra under construction

New Classroom at Pandoloi Primary School inauguration by Collector Sambalpur

Community Hall inauguration by Collector Sambalpur

New Kitchen at Bhalududia Primary School

Vehicle support to the school children

EDUCATION

- ❑ **School Education program** - School Transport to Gopkani (Jagatpada) students
- ❑ **Education Support program** - Promotion of Adult Education with 02 Centre with 84 Students,
  - Free coaching Centre KALIKA, providing learning material etc. 104 students in 04 centers.
  - Parents Teacher Meet to improve education awareness among parents
  - 25 nos. Bench and Desk to Primary School, Crockery and sports items for Anganwadis
  - School bags and stationaries distribution to primary school students
  - Students scholarship, Annual Functions, Annual Sports and National Day Celebration at 21 schools

Financial Help to poor Children

Specialized coaching School Students district level

School Sports Prog.

Adult education

CSR Expenses Till Date 2016 - 2017

Budget cum Expenditure for the Financial year till March 2016-17				
Project Activities	Population to be Reached	Budget (Rs. in lakhs)	Population Reached	Expenses till date (Rs. in lakhs)
Education	32250	60.74	7017	44.9659
Health	57485	53.48	6412	42.843
Sustainable Livelihood	4675	41.33	4170	17.549
Infrastructure	4400	100.98	279	12.795
Social Development Projects	32170	20.32	10017	15.195
NGO Staff Fees & Office Expenses	21	23.15	21	0
TOTAL	**131001**	**300**	**17926**	**133.348**

Aditya Aluminium, Lapanga Sambalpur

Reaching ...

- Villages - 19
- Population - 21500
- Blocks - 2
- District - Sambalpur

Key Focus Areas of CSR

Annexure - 12

Visiontek Consultancy Services Pvt.Ltd.

(An Enviro Engineering Consulting Cell)

ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/17/R - 370

Date: 03.02.2017

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling Location : **Monitoring Station No.- AAQMS-1 (Gumkarama)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
03.11.2016	50.4	24.4	6.2	15.2	<4	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.11.2016	58.2	29.6	6.7	16.1	<4	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.11.2016	64.9	32.8	7.1	16.8	<4	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.11.2016	61.7	31.5	6.8	16.5	<4	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.11.2016	66.4	33.8	7.4	17.1	<4	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.11.2016	68.3	34.7	7.6	17.5	<4	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.11.2016	65.7	33.6	7.2	17.2	<4	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.11.2016	62.9	31.8	7.3	17.6	<4	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.12.2016	66.8	32.7	7.8	18.5	<4	0.37	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.12.2016	69.2	35.8	7.5	18.2	<4	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.12.2016	64.5	33.1	6.8	17.5	<4	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.12.2016	67.1	34.6	7.2	17.8	<4	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.12.2016	71.5	37.4	7.6	18.2	<4	0.37	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.12.2016	68.7	34.9	7.2	17.9	<4	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.12.2016	73.4	37.1	7.7	19.5	<4	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.12.2016	70.2	36.4	7.8	19.2	<4	0.37	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.12.2016	74.6	38.2	7.6	18.6	<4	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.01.2017	68.2	34.9	7.8	18.8	<4	0.39	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.01.2017	70.5	35.3	7.4	18.5	<4	0.37	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.01.2017	76.5	39.4	7.8	19.6	<4	0.41	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.01.2017	71.1	36.3	7.6	19.1	<4	0.39	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.01.2017	64.5	32.5	7.2	18.4	<4	0.37	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.01.2017	69.8	35.4	7.5	18.7	<4	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.01.2017	73.4	37.5	7.8	19.5	<4	0.4	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.01.2017	75.6	38.9	8.1	19.8	<4	0.41	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.01.2017	68.8	35.1	7.4	19.2	<4	0.4	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Quarterly Average	67.8	34.5	7.4	18.1	< 4	0.36	< 20.0	<0.001	<0.002	<0.01	<0.001	<0.001	< 0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values: SO_2< 4 $\mu g/m^3$, NO_x< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01 $\mu g/m^3$ CO<0.1 mg/m^3

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

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ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/17/R-371

Date: 03.02.2017

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sampling Location : Monitoring Station No.- AAQMS-2 (Ghichamura)
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
03.11.2016	34.5	16.8	<4.0	<9.0	<4.0	0.11	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.11.2016	38.4	17.6	<4.0	9.2	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.11.2016	44.1	21.6	4.3	9.6	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.11.2016	46.7	22.4	4.6	10.3	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.11.2016	42.8	20.7	4.2	9.8	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.11.2016	40.7	20.1	4.3	10.2	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.11.2016	45.2	21.8	4.5	10.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.11.2016	43.9	21.1	4.4	10.8	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.12.2016	45.6	23.2	4.5	10.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.12.2016	42.8	20.6	4.2	9.9	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.12.2016	48.2	23.5	4.8	11.1	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.12.2016	47.5	23.2	4.5	10.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.12.2016	42.5	20.8	4.3	10.2	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.12.2016	45.2	22.4	4.2	9.8	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.12.2016	46.8	22.7	4.6	10.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.12.2016	48.8	24.1	4.8	11.4	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.12.2016	47.2	23.8	4.6	10.7	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.01.2017	49.2	24.2	4.7	10.9	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.01.2017	50.7	25.1	4.6	10.8	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.01.2017	45.8	22.4	4.3	10.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.01.2017	51.2	25.8	4.8	11.1	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.01.2017	50.6	24.8	4.6	11.3	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.01.2017	46.4	22.8	4.4	10.7	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.01.2017	44.3	22.2	4.2	10.2	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.01.2017	48.5	23.5	4.6	10.8	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.01.2017	52.4	25.4	4.8	11.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Quarterly Average	45.8	22.4	4.5	10.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & flosorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values: SO_2< 4 $\mu g/m^3$, NO_2< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01$\mu g/m^3$ CO<0.1 mg/m^3

For Visiontek Consultancy Services Pvt. Ltd.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

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ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref: VCSPL/17/R-373

Date: 03.02.2017

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling Location : **Monitoring Station No.- AAQMS-4 (Bumalai)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP^1 (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
03.11.2016	35.8	17.2	<4.0	9.2	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.11.2016	39.6	19.5	4.1	9.6	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.11.2016	43.7	21.7	4.5	10.1	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.11.2016	46.2	22.8	4.6	10.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.11.2016	44.8	21.7	4.4	10.2	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.11.2016	48.2	23.1	4.6	10.8	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.11.2016	43.7	20.8	4.2	10.4	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.11.2016	45.8	22.2	4.5	10.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.12.2016	44.4	21.6	4.4	10.3	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.12.2016	42.8	20.8	4.2	9.8	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.12.2016	47.5	23.6	4.3	10.2	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.12.2016	49.6	24.2	4.6	10.7	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.12.2016	43.5	21.2	4.1	9.8	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.12.2016	45.7	21.8	4.3	10.4	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.12.2016	46.4	22.5	4.5	10.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.12.2016	48.5	23.6	4.7	10.9	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.12.2016	45.7	22.1	4.6	10.7	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.01.2017	48.2	23.4	4.7	10.8	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.01.2017	50.6	24.8	4.6	10.6	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.01.2017	52.4	25.2	4.8	11.4	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.01.2017	47.6	23.6	4.6	11.1	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.01.2017	46.5	22.7	4.4	10.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.01.2017	48.2	24.1	4.5	10.8	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.01.2017	45.1	22.5	4.2	10.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.01.2017	50.6	24.6	4.6	11.3	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.01.2017	53.4	25.9	4.8	11.4	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	–
Quarterly Average	46.3	22.6	4.5	10.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values: SO_2<4 $\mu g/m^3$, NO_x< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01 $\mu g/m^3$, CO<0.1 mg/m^3

For Visiontek Consultancy Services Pvt. Ltd.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

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ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref: VCSPL/17/R-372

Date: 03.02.2017

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling Location : **Monitoring Station No.- AAQMS-3 (Tileimal)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
03.11.2016	35.6	17.2	<4.0	<9.0	<4.0	0.11	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.11.2016	38.2	18.6	<4.0	<9.0	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.11.2016	42.6	20.7	4.2	9.6	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.11.2016	39.7	19.2	<4.0	9.2	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.11.2016	43.4	21.4	4.4	9.7	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.11.2016	38.7	18.8	<4.0	9.5	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.11.2016	41.6	20.3	<4.0	9.4	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.11.2016	44.7	21.5	4.3	9.8	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.12.2016	42.8	20.1	<4.0	9.6	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.12.2016	46.4	21.8	4.4	10.4	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.12.2016	44.8	21.4	4.3	10.6	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.12.2016	43.2	21.2	<4.0	9.8	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.12.2016	41.8	19.6	<4.0	9.6	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.12.2016	46.4	22.2	4.2	10.3	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.12.2016	44.1	20.9	4.4	10.6	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.12.2016	42.3	20.4	<4.0	9.6	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.12.2016	45.1	21.3	4.6	10.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.01.2017	46.5	22.7	4.6	10.8	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.01.2017	44.2	22.4	4.3	10.4	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.01.2017	42.8	20.8	<4.0	9.7	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.01.2017	46.7	22.6	4.5	10.3	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.01.2017	45.4	22.2	4.4	10.5	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.01.2017	43.2	20.8	<4.0	10.1	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.01.2017	40.5	19.6	<4.0	9.5	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.01.2017	43.7	21.3	<4.0	9.7	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.01.2017	46.2	22.8	4.6	10.4	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Quarterly Average	43.1	20.8	4.2	9.91	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromating raphy analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Value: SO_2< 4 µg/m³, NO_x< 9 µg/m³, O_3<4 µg/m³, Ni<0.01 ng/m³, As<0.001 ng/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Pb<0.001 µg/m³, F<0.01 µg/m³ CO<0.1 mg/m³

For Visiontek Consultancy Services Pvt. Ltd.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

"Committed For The Better Environment"

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ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref:- VCSPL/17/R-375

Date:- 03.02.2017

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium): Lapanga**
2. Sampling Location : **Monitoring Station No.- AAQMS-6 (Phulchanghal)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
03.11.2016	38.9	18.8	<4.0	9.8	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.11.2016	44.5	21.7	4.4	10.2	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.11.2016	48.2	23.6	4.8	10.8	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.11.2016	46.9	23.1	4.6	10.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.11.2016	50.6	24.8	4.7	11.2	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.11.2016	52.7	25.8	4.5	10.3	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.11.2016	49.2	24.2	4.3	9.9	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.11.2016	51.9	25.5	4.6	10.7	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.12.2016	48.7	23.2	4.4	10.1	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.12.2016	52.4	25.4	4.6	10.5	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.12.2016	50.6	23.9	4.8	11.2	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.12.2016	49.5	24.2	4.5	10.6	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.12.2016	46.8	23.4	4.3	10.8	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.12.2016	51.7	25.5	4.6	11.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.12.2016	53.4	25.9	4.4	10.3	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.12.2016	50.2	24.3	4.7	10.8	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.12.2016	54.6	26.2	4.9	11.1	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.01.2017	55.6	27.2	4.8	11.4	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.01.2017	51.4	25.4	4.6	11.5	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.01.2017	48.6	24.5	4.2	10.8	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.01.2017	52.4	25.7	4.4	11.1	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.01.2017	56.5	27.8	4.7	11.6	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.01.2017	49.2	24.6	4.4	10.6	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.01.2017	53.4	26.1	4.6	10.8	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.01.2017	50.6	25.2	4.7	11.4	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.01.2017	54.5	26.8	4.9	11.8	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Quarterly Average	50.5	24.7	4.6	10.8	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values: SO_2< 4 $\mu g/m^3$, NO_2< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01$\mu g/m^3$, CO<0.1 mg/m^3

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

Visiontek Consultancy Services Pvt.Ltd.

(An Enviro Engineering Consulting Cell)

ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/17/R-374

Date.: 03.02.2017

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sampling Location : Monitoring Station No.- AAQMS-5 (Kapalas)
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
03.11.2016	42.8	20.8	4.8	10.2	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.11.2016	47.6	23.4	5.1	11.5	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.11.2016	52.4	25.7	5.5	11.8	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.11.2016	55.6	27.4	5.9	12.1	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.11.2016	50.8	24.6	5.2	11.6	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.11.2016	54.6	27.1	5.7	12.2	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.11.2016	51.6	25.4	5.4	11.8	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.11.2016	53.8	26.2	5.6	12.4	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.12.2016	55.6	27.8	5.3	12.5	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.12.2016	58.2	28.6	5.8	13.3	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.12.2016	52.7	26.4	5.6	13.5	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.12.2016	56.9	27.2	5.9	14.1	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.12.2016	54.1	26.5	5.4	13.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.12.2016	59.4	28.9	5.8	14.1	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.12.2016	61.6	30.6	6.1	14.6	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.12.2016	57.7	28.4	5.9	14.4	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.12.2016	60.8	30.2	6.2	14.8	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.01.2017	58.2	28.6	6.3	14.5	<4.0	0.30	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.01.2017	63.4	31.2	6.5	14.9	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.01.2017	60.7	30.1	6.1	14.6	<4.0	0.30	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.01.2017	58.1	28.8	5.6	13.8	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.01.2017	56.4	27.5	5.4	13.9	<4.0	0.30	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.01.2017	59.2	29.6	5.7	13.7	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.01.2017	60.8	29.8	5.9	14.4	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.01.2017	55.6	27.1	5.5	12.8	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.01.2017	59.7	29.6	5.8	13.2	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Quarterly Average	56.1	27.6	5.7	13.2	<4.0	0.25	< 20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values: SO_2< 4 $\mu g/m^3$, NO_x< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01$\mu g/m^3$ CO<0.1 mg/m^3

For Visiontek Consultancy Services Pvt. Ltd.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

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(An Enviro Engineering Consulting Cell)

ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref: VCSPL/17/R-377

Date 03.02.2017

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sampling Location : Monitoring Station No.- AAQMS-8 (Thelkolai)
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
03.11.2016	53.6	28.1	4.8	11.1	4.8	0.22	24.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.11.2016	47.5	24.8	4.2	10.2	4.1	0.18	21.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.11.2016	52.1	27.4	4.5	10.9	4.6	0.20	25.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.11.2016	60.6	31.4	4.9	11.6	5.1	0.23	23.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.11.2016	58.7	30.5	5.4	12.1	5.2	0.24	27.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.11.2016	63.2	32.8	5.6	12.8	5.6	0.26	29.5	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.11.2016	57.9	30.4	5.5	12.4	5.4	0.24	24.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.11.2016	60.5	31.8	5.7	12.7	5.8	0.26	27.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.12.2016	63.2	32.4	5.5	12.8	5.7	0.26	26.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.12.2016	61.4	31.9	6.1	14.4	6.6	0.28	27.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.12.2016	59.2	30.5	5.8	14.1	6.4	0.27	24.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.12.2016	62.5	31.8	6.2	14.6	6.8	0.28	26.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.12.2016	63.2	33.2	5.6	13.8	6.2	0.27	28.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.12.2016	60.9	30.4	5.9	14.2	6.6	0.29	25.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.12.2016	68.4	35.2	6.3	14.9	7.2	0.30	27.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.12.2016	69.2	36.7	5.7	14.6	7.4	0.28	28.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.12.2016	63.6	34.1	6.4	15.4	7.8	0.31	26.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.01.2017	65.8	33.8	6.3	15.6	8.1	0.32	25.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.01.2017	61.4	31.6	5.9	15.4	7.7	0.3	27.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.01.2017	68.7	36.4	6.2	16.1	8.4	0.32	24.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.01.2017	70.8	36.8	6.5	16.4	8.5	0.33	26.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.01.2017	66.2	34.3	5.7	15.5	7.8	0.31	29.5	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.01.2017	60.7	31.1	5.5	14.8	7.6	0.27	30.5	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.01.2017	57.9	29.7	5.8	15.7	7.7	0.29	28.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.01.2017	64.4	33.2	6.1	16.1	8.2	0.32	27.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.01.2017	68.6	35.6	6.4	16.5	8.5	0.3	28.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Quarterly Average	61.9	32.1	5.7	14.0	6.7	0.28	26.7	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatographic analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values: SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01$\mu g/m^3$ CO<0.1 mg/m^3

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

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ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/17/R-376

Date.: 03.02.2017

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sampling Location : Monitoring Station No.- AAQMS-7 (Khadiapali)
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
03.11.2016	49.9	24.9	<4.0	9.2	<4.0	0.11	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.11.2016	52.3	26.4	<4.0	9.5	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.11.2016	56.7	28.6	<4.0	9.4	<4.0	0.11	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.11.2016	60.9	30.3	4.3	9.8	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.11.2016	55.8	28.3	<4.0	9.6	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.11.2016	54.3	27.3	<4.0	9.2	<4.0	0.11	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.11.2016	58.2	29.4	4.2	9.7	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.11.2016	59.7	30	4.4	9.9	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.12.2016	56.6	28.4	<4.0	9.5	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.12.2016	59.7	30	4.3	9.9	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.12.2016	63.3	31.6	4.8	10.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.12.2016	55.7	27.8	4.6	10.6	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.12.2016	54.6	27.3	<4.0	10.2	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.12.2016	58.8	29.5	<4.0	9.6	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.12.2016	57.9	28.9	<4.0	9.2	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.12.2016	61.9	31.6	4.5	9.8	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.12.2016	60.6	30.4	4.7	10.4	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.01.2017	57.6	28.7	<4.0	9.7	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.01.2017	60.2	30.3	4.4	10.5	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.01.2017	62.3	31.6	4.6	10.8	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.01.2017	58.5	29.8	4.2	9.9	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.01.2017	56.7	28.7	<4.0	9.4	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.01.2017	59.7	29.8	<4.0	9.6	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.01.2017	63.3	32	4.5	10.3	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.01.2017	58.8	29.4	4.2	10.1	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.01.2017	60.6	29.9	4.7	10.5	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Quarterly Average	58.2	29.2	4.2	9.9	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values. SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01$\mu g/m^3$, CO<0.1 mg/m^3

For Visiontek Consultancy Services Pvt. Ltd.

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Ref.:VCSPL/16/R-273

Date.:30.12.2016

SURFACE WATER QUALITY ANALYSIS REPORT

1. Name of Industry : M/sHindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sampling location : SW-6: Bhodan river near Katkela;SW-7:Manwadinadi-D/S;SW-8: Hirakud reservoir near Ganapali village; SW-9: Salepali village; SW-10: Sasmal.
6. Date of sampling : 06.12.2016
7. Date of analysis : 07.12.2016 to 13.12.2016
3. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative.

Sl. No.	Parameter	Testing Methods	Unit	Standards as per IS:2296:1992 Class – 'C'	Analysis Results				
					SW-6	SW-7	SW-8	SW-9	SW-10
1	pH Value	APHA 4500H$^+$ B	--	6.0-9.0	7.2	6.9	7.0	7.2	7.0
2	Colour	APHA 2120 B, C	Hazen	300	3	2	CL	2	2
3	Taste	APHA 2160 C	--	--	AL	AL	AL	AL	AL
4	Odour	APHA 2150 B	--	--	UO	UO	UO	UO	UO
5	Conductivity	APHA2510-B	µs/cm	--	95.4	93.8	106.2	100.6	104.2
6	Turbidity	APHA 2130 B	NTU	--	2.2	3.4	2.0	2.6	3.6
7	Total Dissolved Solids	APHA 2540 C	mg/l	1500	112.0	118.0	126.0	114.0	126.0
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	56.0	64.0	58.0	52.0	60.0
9	Total Alkalinity	APHA 2320 B	mg/l	--	50.0	52.0	44.0	46.0	40.0
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	15.2	17.6	16.03	15.2	17.6
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	4.38	4.8	4.38	3.4	3.9
12	Residual, free Chlorine	APHA 4500Cl, B	mg/l	--	ND	ND	ND	ND	ND
13	Boron (as B)	APHA 4500B, B	mg/l	--	<0.01	<0.01	<0.01	<0.01	<0.01
14	Chloride (as Cl)	APHA 4500Cl B	mg/l	600	19.0	20.0	22.0	21.0	23.0
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	6.1	8.2	8.0	8.1	9.6
16	Fluoride (as F)	APHA 4500F C	mg/l	1.5	0.20	0.24	0.20	0.23	0.18
17	Nitrate (as NO_3)	APHA 4500 NO_3 E	mg/l	50	2.1	2.4	2.3	2.4	2.6
18	Sodium as Na	APHA 3500-K	mg/l	--	10.5	9.8	12.1	11.9	13.4
19	Potassium as K	APHA3500-Na	mg/l	--	0.98	0.96	1.0	1.2	1.1
20	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.005	<0.001	<0.001	<0.001	<0.001	<0.001
21	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	ND	ND	ND	ND	ND
22	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	1.0	<0.2	<0.2	<0.2	<0.2	<0.2
23	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001
24	Arsenic (as As)	APHA 3114 B	mg/l	0.2	<0.001	<0.001	<0.001	<0.001	<0.001
25	Copper (as Cu)	APHA 3111 B,C	mg/l	1.5	<0.05	<0.05	<0.05	<0.05	<0.05
26	Lead (as Pb)	APHA 3111 B,C	mg/l	0.1	<0.001	<0.001	<0.001	<0.001	<0.001
27	Manganese (as Mn)	APHA 3500Mn B	mg/l	--	<0.005	<0.005	<0.005	<0.005	<0.005
28	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.5	0.24	0.30	0.20	0.2	0.21
29	Chromium (as Cr^{+6})	APHA 3500Cr B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
30	Selenium (as Se)	APHA 3114 B	mg/l	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
31	Zinc (as Zn)	APHA 3111 B,C	mg/l	15	<0.05	<0.05	<0.05	<0.05	<0.05
32	Aluminium as(Al)	APHA 3500Al B	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
33	Mercury (as Hg)	APHA 3500 Hg	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
34	Mineral Oil	APHA 5220 B	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
35	Pesticides	APHA 6630 B,C	mg/l	--	Absent	Absent	Absent	Absent	Absent
36	E.Coli	APHA 9221-F	MPN/100 ml	--	Absent	Absent	Absent	Absent	Absent
37	Total Coliforms	APHA9221-B	MPN/100 ml	5000	500	420	456	400	640

Note: CL:Colourless, AL:Agreeable, UO:Unobjectionable, ND: Not detected

For Visiontek Consultancy Services Pvt. Ltd.

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Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

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ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref:..VCSPL/16/R - 272

Date:.30.12.2016

SURFACE WATER QUALITY ANALYSIS REPORT

1. Name of Industry : **M/sHindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling location : SW-1:Hirakud Reservoir;SW-2:Lapanga Pond; SW-3:Mauvadinadi - U/S, SW-4:Bamloi Pond; SW-5:Bheden river.
3. Date of sampling : 06.12.2016
4. Date of analysis : 07.12.2016 to 13.12.2016
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

Sl. No	Parameter	Testing Methods	Unit	Standards as per IS-2296:1992 Class -'C'	Analysis Results				
					SW-1	SW-2	SW-3	SW-4	SW-5
1	pH Value	APHA 4500H+B	–	6.0-9.0	7.1	7.3	7.0	7.2	7.1
2	Colour	APHA 2120 B, C	Hazen	300	CL	2.2	2.3	3	2.5
3	Taste	APHA 2160 C	–	–	AL	AL	AL	AL	AL
4	Odour	APHA 2150 B	–	–	UO	UO	UO	UO	UO
5	Conductivity	APHA2510-B	µs/cm	–	92.6	94.8	80.5	92.2	84.2
6	Turbidity	APHA 2130 B	NTU	–	2.4	3.0	2.0	4.0	2.1
7	Total Dissolved Solids	APHA 2540 C	mg/l	1500	114.0	130.0	106.0	122.0	104.0
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	–	52.0	50.0	52.0	60.0	42.0
9	Total Alkalinity	APHA 2320 B	mg/l	–	48.0	44.0	40.0	52.0	40.0
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	–	10.42	12.8	13.6	17.6	12.8
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	–	6.3	4.38	4.38	3.9	2.4
12	Residual, free Chlorine	APHA 4500Cl, B	mg/l	–	ND	ND	ND	ND	ND
13	Boron (as B)	APHA 4500B, B	mg/l	–	<0.01	<0.01	<0.01	<0.01	<0.01
14	Chloride (as Cl)	APHA 4500Cl B	mg/l	600	20.0	22.0	14.0	21.0	19.0
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	9.2	8.0	9.0	8.2	8.0
16	Fluoride (as F)	APHA 4500F C	mg/l	1.5	0.13	0.22	0.24	0.20	0.18
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	50	1.2	1.6	1.4	1.5	1.4
18	Sodium as Na	APHA3500-Na	mg/l	–	12.9	11.6	10.2	11.2	9.3
19	Potassium as K	APHA 3500-K	mg/l	–	0.9	0.88	1.0	0.92	0.85
20	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.005	<0.001	<0.001	<0.001	<0.001	<0.001
21	Cyanide (as CN)	APHA 4500 CN- C,D	mg/l	0.05	ND	ND	ND	ND	ND
22	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	1.0	<0.2	<0.2	<0.2	<0.2	<0.2
23	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001
24	Arsenic (as As)	APHA 3114 B	mg/l	0.2	<0.001	<0.001	<0.001	<0.001	<0.001
25	Copper (as Cu)	APHA 3111 B,C	mg/l	1.5	<0.05	<0.05	<0.05	<0.05	<0.05
26	Lead (as Pb)	APHA 3111 B,C	mg/l	0.1	<0.001	<0.001	<0.001	<0.001	<0.001
27	Manganese (as Mn)	APHA 3500Mn B	mg/l	–	<0.005	<0.005	<0.005	<0.005	<0.005
28	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.5	0.22	0.26	0.24	0.21	0.19
29	Chromium (as Cr^{+6})	APHA 3500Cr B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
30	Selenium (as Se)	APHA 3114 B	mg/l	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
31	Zinc (as Zn)	APHA 3111 B,C	mg/l	15	<0.05	<0.05	<0.05	<0.05	<0.05
32	Aluminium as(Al)	APHA 3500Al B	mg/l	–	<0.001	<0.001	<0.001	<0.001	<0.001
33	Mercury (as Hg)	APHA 3500 Hg	mg/l	–	<0.001	<0.001	<0.001	<0.001	<0.001
34	Mineral Oil	APHA 5220 B	mg/l	–	<0.001	<0.001	<0.001	<0.001	<0.001
35	Pesticides	APHA 6630 B,C	mg/l	–	Absent	Absent	Absent	Absent	Absent
36	E.Coli	APHA 9221-F	MPN/100 ml	–	Absent	Absent	Absent	Absent	Absent
37	Total Coliforms	APHA9221-B	MPN/100 ml	5000	420	540	600	410	460

Note: CL:Colourless, AL:Agreeable, UO:Unobjectionable, ND: Not detected

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

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ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/17/R - 877

Date: 04.05.2017

GROUND WATER QUALITY ANALYSIS REPORT

1. Name of Industry : M/sHindalco Industries Ltd (Unit- Aditya Aluminium): Lapanga.
2. Sampling location : GW-1: Ash Disposal Site near Bomalai (Bore Well)
   GW-2: Ash Disposal Site Inside the plant premises (Dug well)
   GW-3: Ash Pond area (Bore Well)
3. Date of sampling : 11.04.2017
4. Date of analysis : 12.04.2017 to18.04.2017
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representatives

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS -10500:2012	Analysis Results		
					GW-1	GW-2	GW-3
1	pH Value	APHA 4500 H+B	–	6.5- 8.5	7.2	6.8	7.1
2	Turbidity	APHA 2130 B	NTU	1	0.7	0.1	0.2
3	Conductivity	APHA2510 B	µs/cm	–	254	234	251
4	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	21	22	18
5	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.3	0.08	0.09	0.081
6	Chloride (as Cl)	APHA 4500Cl B	mg/l	250	35.2	36.8	28.9
7	Total Dissolved Solids	APHA 2540 C	mg/l	500	124	115	120
8	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	20.04	16.8	16.0
9	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	4.8	5.3	4.4
10	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	<0.001	<0.001	<0.001
11	Sodium as Na	APHA3500-Na	mg/l	–	<0.01	<0.01	<0.01
12	Potassium as K	APHA 3500-K	mg/l	–	<0.01	<0.01	<0.01
13	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	<0.005	<0.005	<0.005
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	4.2	4.9	5.6
15	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	45	0.2	0.6	0.5
16	Fluoride (as F)	APHA 4500F C	mg/l	1.0	0.3	0.4	0.4
17	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.001	<0.001	<0.001	<0.001
18	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	<0.001	<0.001	<0.001
19	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	<0.001	<0.001	<0.001
20	Selenium (as Se)	APHA 3114 B	mg/l	0.01	<0.001	<0.001	<0.001
21	Arsenic (as As)	APHA 3114 B	mg/l	0.01	<0.001	<0.001	<0.001
22	Cyanide (as CN)	APHA 4500 CN C,D	mg/l	0.05	ND	ND	ND
23	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	<0.001	<0.001	<0.001
24	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	<0.05	<0.05	<0.05
25	Chromium (as Cr)	APHA 3500Cr B	mg/l	0.05	<0.005	<0.005	<0.005
26	Total Alkalinity	APHA 2320 B	mg/l	200	42.0	47.0	35.0
27	Aluminium as(Al)	APHA 3500Al B	mg/l	0.03	<0.001	<0.001	<0.001
28	Boron (as B)	APHA 4500B, B	mg/l	0.5	<0.01	<0.01	<0.01

Note: ND: Not Detected

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

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ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCS.PL/16/R-274

Date.: 30.12.2016

GROUND WATER QUALITY ANALYSIS REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga.**
2. Sampling location : GW-1: Lapanga Village; GW-2: Pandini Village; GW-3:Bamloi Village; GW-4: Tilaimal Village; GW-5: Thelkoloi Village; GW-6: Ghichamura Village; GW-7: Gunkarama Village; GW-8: Chahikra Village.
3. Date of sampling : 06.12.2016
4. Date of analysis : 07.12.2016 to13.12.2016
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS : 10500:2012	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8
1	pH Value	APHA 4500H+ B	–	6.5-8.5	7.2	6.8	7.1	7.0	6.8	7.2	7.4	7.0
2	Colour	APHA 2120 B, C	Hazen	5	CL	CL	CL	CL	CL	CL	CL	CL
3	Taste	APHA 2160 C	–	Agreeable	AL	AL	AL	AL	AL	AL	AL	AL
4	Odour	APHA 2150 B	–	UO	UO	UO	UO	UO	UO	UO	UO	UO
5	Conductivity	APHA2510-B	µs/cm	–	138.2	122.1	132.5	136.9	164.4	136.2	170.8	164.4
6	Turbidity	APHA 2130 B	NTU	1	<2	<2	<2	<2	<2	<2	<2	<2
7	Total Dissolved Solids	APHA 2540 C	mg/l	500	203.0	176.4	180.6	200.2	206.2	172.6	200.1	184.2
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	70.0	64.0	58.0	46.0	76.0	48.0	70.0	54.0
9	Total Alkalinity	APHA 2320 B	mg/l	200	62.0	57.0	52.0	46.0	58.0	61.0	58.0	54.0
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	20.04	16.8	16.0	12.8	19.2	12.8	19.2	14.4
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	4.9	5.3	4.4	3.4	6.8	3.9	5.3	4.3
12	Residual, free Chlorine	APHA 4500Cl, B	mg/l	0.2	ND	ND	ND	ND	ND	ND	ND	ND
13	Boron (as B)	APHA 4500B, B	mg/l	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01
14	Chloride (as Cl)	APHA 4500Cl B	mg/l	250	19.0	16.0	22.0	18.0	20.0	16.0	20.0	16.0
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	8.2	4.9	6.6	7.2	7.4	6.4	7.5	7.0
16	Fluoride (as F)	APHA 4500F C	mg/l	1.0	0.5	0.4	0.4	0.25	0.39	0.25	0.4	0.4
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	45	2.2	1.6	2.0	1.8	2.1	1.9	2.0	1.8
18	Sodium as Na	APHA3500-Na	mg/l	–	15.2	10.8	10.2	12.6	11.5	12.9	12.9	13.1
19	Potassium as K	APHA 3500-K	mg/l	–	1.1	1.0	1.0	0.96	1.2	0.9	1.1	1.0
20	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Cyanide (as CN)	APHA 4500-CN C,D	mg/l	0.05	ND	ND	ND	ND	ND	ND	ND	ND
22	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
23	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
24	Arsenic (as As)	APHA 3114 B	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
25	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
26	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
27	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
28	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.3	0.22	0.20	0.26	0.23	0.28	0.32	0.26	0.22
29	Chromium (as Cr)	APHA 3500Cr B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
30	Selenium (as Se)	APHA 3114 B	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
31	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
32	Aluminium as(Al)	APHA 3500 Al B	mg/l	0.03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
33	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
34	Mineral Oil	APHA 5220 D	mg/l	0.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
35	Pesticides	APHA 6630 B,C	mg/l	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
36	E.Coli	APHA 9221-F	MPN/100 ml	Shall not be detectable in any 100 ml sample	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
37	Total Coliforms	APHA9221-B	MPN/100 ml	Shall not be detectable in any 100 ml sample	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

Note: CL: Colourless, AL: Agreeable, UO: Unobjectionable, ND: Not Detected

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Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

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ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/16/R-275

Date.: 30.12.2016

SOIL QUALITY ANALYSIS REPORT

1.	Name of Industry	:	M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2.	Date of Sampling	:	06.12.2016
3.	Sampling Location	:	S-1: Project Site; S-2: Thelkoloi; S-3: Ghichamura; S-4: Lapanga; S-5: Bamloi;S-6: Tileimal; S-7: Jangala; S-8: Gumpali; S-9: Gumkarama; S-10: Bhadarpali
4.	Date of Analysis	:	07.12.2016 to 13.12.2016
5.	Sample Collected By	:	VCSPL representative in Presence of Aditya Aluminium representative

Sl.No.	Parameters	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10
1	pH	6.2	5.6	5.8	5.4	5.5	5.8	5.4	5.4	5.2	5.3
2	Conductivity	100.8	92.3	81.6	90.8	96.7	85.4	78.2	76.9	83.9	75.2
3	Soil Texture	Sandy Loamy	Clay Loamy	Clay Loamy	Sandy Loamy	Sandy Loamy	Clay Loamy	Sandy Loamy	Sandy Loamy	Sandy Loamy	Clay Loamy
4	Sand	40.2	12.6	36.8	41.8	42.9	14.9	37.5	41.6	42.8	14.8
5	Silt	10.9	20.8	12.5	14.6	10.3	19.1	14.0	11.9	12.5	17.9
6	Clay	42.6	62.1	45.2	35.4	40.2	61.8	40.4	40.2	42.3	62.6
7	Bulk Density (gm/cc)	1.26	1.24	1.32	1.36	1.4	1.3	1.36	1.2	1.3	1.35
8	Exchangeable Calcium as Ca (%)	30.2	36.0	40.0	38.8	41.0	34.0	40.9	42.6	40.8	38.0
9	Exchangeable Magnesium as Mg (%)	46.2	56.8	50.5	56.9	55.2	48.6	58.6	64.8	63.9	50.2
10	Available Sodium as Na(%)	0.019	0.022	0.018	0.026	0.021	0.019	0.026	0.021	0.024	0.02
11	Available Potassium as K (%)	0.056	0.054	0.059	0.06	0.062	0.05	0.057	0.062	0.054	0.052
12	Available phosphorous as P (%)	0.014	0.019	0.021	0.016	0.017	0.018	0.015	0.02	0.015	0.02
13	Available Nitrogen as N (%)	0.16	0.22	0.14	0.19	0.12	0.10	0.23	0.13	0.16	0.15
14	Organic Matter (%)	2.62	2.83	3.2	2.5	2.8	2.6	3.0	3.1	3.15	3.0
15	Organic Carbon (%)	1.45	1.62	1.7	1.6	1.42	1.58	1.25	1.91	1.8	1.64
16	Water soluble Chlorides as Cl (%)	0.12	0.24	0.15	0.21	0.26	0.18	0.20	0.26	0.20	0.23
17	Water soluble Sulphates as SO_4 (%)	0.19	0.2	0.18	0.16	0.19	0.22	0.18	0.16	0.15	0.18
18	Sodium Absorption Ratio (%)	0.150	0.121	0.123	0.146	0.149	0.142	0.152	0.146	0.136	0.139
19	Aluminium as Al (%)	0.0002	0.00006	0.00005	0.00008	0.00004	0.00006	0.00007	0.00005	0.00004	0.00006
20	Total Iron as Fe (%)	0.08	0.02	0.06	0.03	0.04	0.03	0.028	0.038	0.02	0.023
21	Manganese as Mn (%)	0.004	0.0018	0.0019	0.0022	0.006	0.0014	0.0016	0.0012	0.0014	0.0016
22	Boron as B (%)	0.000030	0.00017	0.00019	0.00022	0.00018	0.00019	0.00023	0.00016	0.00012	0.00018
23	Zinc as Zn (%)	0.00026	0.00018	0.00013	0.00010	0.00014	0.00011	0.00018	0.00011	0.00012	0.00014
24	SiO_2 (%)	6.42	5.68	6.15	6.1	6.31	6.05	6.12	5.82	6.12	5.60
25	Fe_2O_3(%)	0.062	0.021	0.028	0.019	0.018	0.015	0.022	0.021	0.019	0.023
26	CaO (%)	24.8	29.2	28.6	28.5	27.5	24.8	31.4	30.2	28.4	26.9
27	MgO (%)	27.8	32.5	30.4	31.8	31.2	26.4	34.2	37.5	36.8	29.6
28	Al_2O_3 (%)	0.00004	0.0000502	0.0000441	0.0000452	0.000036	0.000058	0.000042	0.000028	0.000044	0.000032
29	FeO (%)	0.082	0.0251	0.032	0.012	0.0210	0.0232	0.0232	0.0286	0.0223	0.0248
30	MnO (%)	0.0062	0.0013	0.0018	0.0020	0.0002	0.0011	0.0014	0.0026	0.0011	0.0017
31	K_2O (%)	0.0488	0.0464	0.0424	0.0472	0.050	0.0402	0.046	0.0541	0.042	0.0521
32	P_2O_5 (%)	0.0081	0.0070	0.0108	0.0081	0.0084	0.0086	0.0095	0.0106	0.0062	0.0075
33	Fluoride as F (%)	0.0012	ND	ND	0.00048	0.00084	0.00076	ND	ND	ND	ND

ND: Not Detected.

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OHSAS 18001:2007

Ref.: VCSPL/16/R-276

Date.: 30.12.2016

NOISE MONITORING REPORT

1. **Name of Industry** :**M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Monitored By : VCSPL representative in presence of Aditya Aluminium representative

Daytime Noise monitoring results (Noise Level in dB (A)) Dec-2016

TIME (6.00AM to 10.00PM)	N1:Gumkarma (07.12.2016)	N2:Ghichamura (07.12.2016)	N3:Bomaloi (07.12.2016)	N4:Tileimal (07.12.2016)	N5:Thelkoli (07.12.2016)	N6:Lapanga (07.12.2016)	N7:Lapanga Railway Station (07.12.2016)	N8:Jangala (07.12.2016)
06.00am	42.9	30.5	34.5	36.4	59.2	48.6	50.8	33.8
07.00am	44.5	33.7	40.2	40.2	62.8	46.9	54.4	36.4
08.00am	50.8	38.2	45.4	43.9	64.8	51.4	62.7	40.9
09.00am	53.6	41.6	55.8	46.4	70.2	58.2	66.5	46.4
10.00am	60.6	44.9	57.4	49.8	64.6	54.9	62.8	45.8
11.00am	55.4	40.2	50.2	41.5	60.4	51.6	58.4	42.4
12.00 noon	43.2	36.8	48.1	38.2	56.2	48.2	54.8	36.9
01.00pm	40.9	34.9	43.5	34.9	52.9	42.9	50.4	32.5
02.00pm	42.5	32.8	45.8	37.2	51.8	44.6	49.2	30.2
03.00pm	52.7	34.6	47.3	39.8	50.6	52.4	54.5	32.6
04.00pm	62.4	42.5	50.9	50.4	62.4	50.9	60.4	34.9
05.00pm	70.9	48.2	54.6	54.8	66.8	60.6	66.2	40.1
06.00pm	62.2	51.5	59.2	57.2	70.2	62.4	62.8	50.6
07.00pm	58.7	54.8	56.8	54.9	64.7	60.7	64.4	44.2
08.00pm	56.9	49.2	54.2	49.5	62.4	55.9	61.9	36.2
09.00pm	50.4	41.7	46.7	42.6	60.8	50.2	56.7	34.9
Average	**53.0**	**41.0**	**49.4**	**44.9**	**61.3**	**52.5**	**58.6**	**38.7**
Standard as per CPCB	75							

Night time Noise monitoring results (Noise Level in dB (A)) Dec-2016

TIME (10.00PM to 6.00AM)	N1:Gumkarma (07.12.2016)	N2:Ghichamura (07.12.2016)	N3:Bomaloi (07.12.2016)	N4:Tileimal (07.12.2016)	N5:Thelkoli (07.12.2016)	N6:Lapanga (07.12.2016)	N7:Lapanga Railway Station (07.12.2016)	N8:Jangala (07.12.2016)
10.00pm	42.6	30.5	32.5	30.5	55.4	44.6	50.6	26.2
11.00pm	36.8	28.7	30.2	28.4	50.2	36.4	47.2	24.6
12.00 midnight	34.2	23.3	28.6	26.8	48.6	28.8	36.5	22.8
01.00am	32.9	22.6	24.2	22.2	41.4	26.6	34.2	21.9
02.00am	34.6	22.2	23.9	21.6	40.6	25.7	32.8	21.6
03.00am	32.8	21.8	22.4	21.2	38.8	24.4	30.6	21.2
04.00am	36.4	23.9	24.8	22.8	42.6	24.0	34.2	22.4
05.00am	38.2	24.5	25.6	23.8	41.8	28.2	35.2	22.6
Average	**36.1**	**24.7**	**26.5**	**24.7**	**44.9**	**29.8**	**37.7**	**22.9**
Standard as per CPCB	70							

For Visiontek Consultancy Services Pvt. Ltd.

Plot No-108,District Centre,Chandrasekharpur,Bhubaneswar-16,Tel-91-674-2744594, 3250790
Email:visiontekin@gmail.com,visiontekin@yahoo.co.in,visiontek@vcspl.org, Visit us at: www.vcspl.org

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