ADITYA BIRLA
HINDALCO

Letter No: AAP/E&F/EC/2016/138 Date: 30/05/2016

To

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

Sub: Submission of Six Monthly Compliance from October'15 to March' 16.
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'15 to March' 16.

Kindly acknowledge receipt of the reports.

Thanking You

Yours faithfully
For Aditya Aluminium

Bibhu Prasad 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

ADITYA ALUMINIUM
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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 MoEF.
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 gaseous emissions etc. a) GTC- 2 Nos. b) FTC - 2 Nos. c) CPP - 5 Nos.
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).
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-1.***
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. Fugitive Fluoride emissions from the pot room	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

	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.	plant in captive power plant is installed to control fugitive dust emissions. HF analyzer for Fugitive fluoride monitoring in potroom has been installed in each pot rooms for monitoring of Hydrogen Fluoride. Forage around the smelter is being monitored on quarterly basis report enclosed as **Annexure-2.** Dry scrubbing system in GTC is installed in smelter 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 99.98% efficiency is installed in Captive Power Plant (CPP) to restrict particulate emissions below 50 mg/Nm^3. Gas Treatment Centre (GTC) and bag filters are provided in all material handling & transfer points. Fume treatment plant (FTP) is 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.	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. Continuous monitoring equipment is installed for monitoring of SO_2, NOx, and PM at unit # 1, 2, 3, 4 & 5 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.	Presently, 100% of Ash generated is being utilized by means of supplying to M/s Ultratech Cements, Jharsuguda, M/s OCL, Bargarh for cement manufacturing and in Road construction of Sambalpur-Rourkela SH expansion worksby L&T. Remaining ash is being utilized for filling the low lying areas inside the Plant with prior approval of SPCB and subsequently utilized for development of greenbelt. Status of utilization of Ash from Oct 15 to Mar 16 is enclosed as ***Annexure-3.***

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 as 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 being collected in dry formandSilos of adequate capacity have been installed. The unutilized ash will be stored in ash disposal area through high concentration slurry disposal (HCSD) system. Monitoring of Mercury and other heavy metals (Ag, Hg, Cr, Pbetc) is being done for fly ash and bottom ash. Bottom ash analysis report is enclosed as ***Annexure-4.***
xiii)	Fluoride (as F) consumption shall be less than 10 kg/ton of Aluminium produced as specified by the CREP.	Fluoride consumption is maintained within the standard.
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. After generatation of the spent pot lining (SPL) from the smelter, it will be properly treated before disposal in the secured landfill/ supplied to CHWTSDF. However, efforts are being made for utilization of SPL in the cement kilns of different units of Ultratech Cements Ltd. 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. Dross will be sold to the authorized recyclers/reprocessors and we are in the process of establishment dross recycling unit inside the plant. Application submitted to SPCB to issue the consent to establish and to CPCB for issue of permission under Rule-11 of the Hazardoous Waste Managemet rule for utilization of Dross. STP is commissioned at township and sludge is being used for greenbelt development. The used oil is being sold to authorized recyclers and batteries kept for selling to the authorized recyclers/reprocessors.
xv)	As proposed, spent pot lining waste shall also be provided to cement and steel industries for further utilization.	SPL is 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 the refractory part of the SPL is developed by M/s Ramky Enviro Pvt. Ltd

		at it CHW-TSDF, Sukinda, Jajpur.
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.	No ash is being is disposed off in the designated ash pond at present. All precautionary measures are being taken so that no leachate from the ash pond takes place, and adequate safety measures area also being implemented.
xvii)	Cycle of concentration (CoC) of 5.0 shall be adopted.	Water Balance of CPP is being optimized gradually, so as to maintain a CoC of 5.
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 done at baseline locations of EIA report enclosed as ***Annexure-5***. Monitoring of heavy metals (Hg, Cr, As, Pb) around the Ash pond area will be carried out as soon as it is in operation and records will be maintained and compared with the baseline data.
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.	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 and 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 will not exceed 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 and other areas. Separate Sewage Treatment Plant (STP) is installed @ capacity 25 m^3/hr for Smelter & Captive Power Plant. The 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.
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 already started development of Greenbelt inside the Core plant & Township areas. Around 1,27,000 saplings planted and a Central Nursery has been established inside the project area having a capacity to raise1 lakhs saplings.
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 is being made in buildings of township area and a storage space is planned in township area for rain water recharge.
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.
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 policy. The Corporate Environment Policy is approved by the Board of Directors and already submitted to MoEF, copy of the approved environment policy is enclosed as ***Annexure-6***.
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. Budget is not a constraint for implementation of the commitments.
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	As the expansion will be carried out in two phases i.e. Aluminium Smelter from 0.26 MTPA to 0.36 MTPA & Captive Power Plant from 650 MW to 900 MW in phase-I and later

	and submitted to the Ministry's office at Bhubaneswar. Implementation of such program should be ensured accordingly in a time bound manner.	upgradation will be made for smelter to 0.72 MTPA and Captive Power Plant to 1650 MW in phase II. The details of the CSR activities undertaken upto September 2015 are attached as ***Annexure- 7***.
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 facilitiesare 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 and 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 MoEF.
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,	Installation of four (04) CAAQMS completed and commissioned. All the stack emission and ambient air monitoring stations synchronized with the

	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.	webserver of the SPCBwithURL http://117.239.117.27/ospcbrtdas/&CPCB withURL http://113.19.81.38/cpcbrtdas/respectively. The six-monthly compliance 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 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. Details of the CSR, R&R activities undertaken is attached as *Annexure-7*. 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.
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 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 displayedin 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 is being submitted to the Regional office of the MOEF regularly on 1st June and 1st Dec respectively. The monitoring is being done for ambient air quality, Ambient Noise, Water, Soil and Meteorological etc at all the baseline locations after operation of the plant. Installation of continuous stack emission monitoring equipment's completed and commissioned. Four (04) CAAQMS installed and commissioned. All the stack emission and ambient air monitoring stations synchronized with the webserver of the SPCB & CPCB.
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-8*.
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	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

	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.	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 concerned authorities and the date of commencing the land development work.	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 operation of Phase-1 is under progress. Four Units(5 x 150 MW) of CPP and 360, out of 360 Pots are in operation.

Encl: As above

(Authorized Signatory)

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

Ref.: VCSPL/16/R-015 Date.: 05.01.2016

STATIONARY EMISSION MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 15.12.2015
3. Sampling Location : **ST-1: Stack attached to ABF I -FTC 1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL in presence of Aditya Aluminium representative
6. Date of Analysis : 20.12.2015 to 21.12.2015

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	110.0
Velocity of Flue Gas	m/sec	Stack Sampler	11.2
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	4.5
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)	32.0
Particulate Fluoride	mg/Nm^3	Gravimetric	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.54
Total Fluoride as F	mg/Nm^3	Calculation	0.68
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.

Ref.: VCSPL/16/R-016 Date: 05.01.2016

STATIONARY EMISSION MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 15.12.2015
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 in presence of Aditya Aluminium representative
6. Date of Analysis : 20.12.2015 to 21.12.2015

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	105.0
Velocity of Flue Gas	m/sec	Stack Sampler	9.5
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	5.2
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)	44.0
Particulate Fluoride	mg/Nm^3	Gravimetric	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.32
Total Fluoride as F	mg/Nm^3	Calculation	0.43
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-376

Date.: 05.04.2016

STACK EMISSION MONITORING REPORT FOR MARCH-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 18.03.2016
3. Sampling Location : **ST-1: Stack attached to ABF I -FTC 1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL in presence of Aditya Aluminium representative
6. Date of Analysis : 19.03.2016 to 21.03.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-1
Stack Temperature	^0C	Stack Sampler	101.0
Velocity of Flue Gas	m/sec	Stack Sampler	12.23
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	5.2
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	51.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	28.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.62
Total Fluoride as F	mg/Nm^3	Calculation	0.76
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-377 Date.: 08.04.2016

STACK EMISSION MONITORING REPORT FOR MARCH-2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 18.03.2016
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 in presence of Aditya Aluminium representative
6. Date of Analysis : 19.03.2016 to 21.03.2016

Parameters	Unit of Measurement	Methodology	Analysis Results
			ST-2
Stack Temperature	^0C	Stack Sampler	84.0
Velocity of Flue Gas	m/sec	Stack Sampler	8.51
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	6.5
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)	40.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	0.48
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.

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-041

Date.: 08.01.2016

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 : 06.01.2016 to 08.01.2016

Sl. No.	Date of Sampling	Name of the Location	Type of Species	Fluoride
				ppm
1	**04.01.2016**	**FF-1:**Gumkarma	Grass	2.5
2	**04.01.2016**	**FF-2**:Ghichamura	Grass	2.8
3	**04.01.2016**	**FF-3:**Bamaloi	Dalbergiasisoo	4.6
4	**05.01.2016**	**FF-4:**Tilaimal	Azadirachtaindica	8.2
5	**05.01.2016**	**FF-5:**Lapanga	Albiziaprocera	6.9
6	**05.01.2016**	**FF-6:**Gurupali	Grass	1.5

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/15/R-761

Date: 07.11.2015

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 : 06.11.2015 to 07.11.2015

Sl. No.	Date of Sampling	Name of the Location	Type of Species	Fluoride
				ppm
1	**02.11.2015**	**FF-1:**Gumkarma	Grass	2.5
2	**02.11.2015**	**FF-2**:Ghichamura	Grass	1.8
3	**02.11.2015**	**FF-3:**Bamaloi	Dalbergiasisoo	6.8
4	**03.11.2015**	**FF-4:**Tilaimal	Azadirachtaindica	3.1
5	**03.11.2015**	**FF-5:**Lapanga	Albiziaprocera	5.5
6	**03.11.2015**	**FF-6:**Gurupali	Grass	2.0

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

For Visiontek Consultancy Services Pvt. Ltd.

ANNEXURE-I

NAME OF THE INDUSTRY:- Aditya Aluminium

SATUS OF UTILIZATION OF COAL ASH (FLY ASH AND BOTTOM ASH), For the Month of:- Oct 2015 - March 2016

Sl. No.	Month	Year	Coal Consumption (Million Tonne)	Power Installed Capacity	Power Generated MWH	Qunatity of Fly Ash generated (MT)	Quantity of Bottom Ash generated (MT)	Total Ash Generated	Disposal Method	Brick manufacturing (MT)	Supplied to cement industries (M/s Ultratech & M/s OCL)	Mine Void Filling(MT)	Utilization in Embankment/Dyke Raising(MT)	Road Making	Land development	Low Lying area filling/land development	Aggregates	Agriculture/Horticulture Sector	Total Ash Utilized (MT)	% of utilization
1	Oct	2015	230813	600	438.62	90102.43	3754.27	93856.69	Dry disposal	0	65525.58	0	0	3578.27	0	24752.84	0	0	93856.69	100.00
2	Nov	2015	246699	600	486.00	99799.84	4158.33	103958.17	Dry disposal	0	60306.87	0	0	7361.41	0	36289.83	0	0	103958.11	100.00
3	Dec	2015	273572	600	531.95	108442.06	4518.42	112960.48	Dry disposal	0	86291.71	0	0	3958.49	0	22710.27	0	0	112960.47	100.00
4	Jan	2016	299369.8	600	572.035	119264.7	4969.36	124234.06	Dry disposal	0	102878.08	0	0	4243.39	0	17112.59	0	0	124234.06	100.00
5	Feb	2016	302209	750	596.121	123220.77	5134.2	128354.97	Dry disposal	0	93648.09	0	0	3955.15	0	30751.73	0	0	128354.97	100.00
6	Mar	2016	324414	750	585.995	137074.07	5711.42	142785.49	Dry disposal	0	100028.85	0	0	4642.5	0	38114.14	0	0	142785.49	100.00
		Total	**1677077**			**677904**	**28246**	**706150**		**0**	**508679**	**0**	**0**	**27739**	**0**	**169731**	**0**	**0**	**706150**	**100**

Visiontek Consultancy Services Pvt.Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref.: VCSPL/15/R – 384

Date.: 29.12.2015

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**: Pandiol Village; **GW-3:**Bamloi Village; **GW-4:** Tilaimal Village; **GW-5:** Thelkoloi Village; **GW-6:** Ghichamura Village; **GW-7:** Gumkarama Village; **GW-8:** Chaltikra Village.
3. Date of sampling : 22.12.2015
4. Date of analysis : 23.12.2015 to 29.12.2015
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS - 10500:1991	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**	7.0	6.9	6.8	6.9	6.9	7.0	7.1	7.1
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	--	**U/O**	U/O	U/O	U/O	U/O	U/O	U/O	U/O	U/O
5	Conductivity	APHA 2510-B	µs/cm	--	160.5	126.8	134.7	139.8	167.5	138.6	171.5	170.3
6	Turbidity	APHA 2130 B	NTU	**5**	<2	<2	<2	<2	<2	<2	<2	<2
7	Total Dissolved Solids	APHA 2540 C	mg/l	**500**	216.0	178.0	184.0	202.0	210.0	181.0	214.0	186.0
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	**300**	74.0	60.0	56.0	52.0	74.0	50.0	68.0	60.0
9	Total Alkalinity	APHA 2320 B	mg/l	**200**	68.0	59.0	54.0	48.0	62.0	48.0	52.0	57.0
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	**75**	22.4	12.8	12.0	13.6	20.8	12.8	15.2	11.2
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	**30**	4.4	6.8	6.3	4.4	5.3	4.4	7.3	7.8
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	**1**	<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**	21.0	14.0	19.0	20.0	18.0	17.0	22.0	19.0
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	**200**	8.9	5.9	7.0	7.5	8.0	6.34	7.92	7.2
16	Fluoride (as F)	APHA 4500F^- C	mg/l	**1.0**	0.09	0.08	0.06	0.08	0.11	0.05	0.08	0.08
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	**45**	2.6	1.9	2.1	2.1	2.3	2.1	2.2	2.14
18	Sodium as Na	APHA3500-Na	mg/l	--	14.1	11.6	11.1	13.4	12.8	13.6	14.8	13.3
19	Potassium as K	APHA 3500-K	mg/l	--	1.3	1.1	0.92	0.98	1.24	1.0	1.15	1.12
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	**0.01**	<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	**0.05**	<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	**0.05**	<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**	0.26	0.25	0.23	0.28	0.26	0.27	0.28	0.26
29	Chromium (as Cr^{+6})	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	**0.01**	<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.

B. K. Mishra, B.Sc. Engg. (Chem)
GOVT. ANALYST
(GAZETTE NO. 224, 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/15/R-383

Date.: 29.12.2015

BOTTOM 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 : 22.12.2015
4. Date of Analysis : 23.12.2015 to 29.12.2015
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	%	0.12
2	MgO	%	1.13
3	Al_2O_3	%	22.5
4	SiO_2	%	56.6
5	P_2O_5	%	0.016
6	SO_3	%	1.15
7	K_2O	%	0.86
8	CaO	%	3.96
9	TiO_2	%	--
10	MnO	%	0.15
11	Fe_2O_3	%	7.7
B.	**Heavy Metals Analysis**		
1	Hg	%	<0.001
2	As	%	<0.001
3	Pb	%	0.024
4	Cr	%	< 0.002
5	V	%	<0.001
6	Fe	%	5.2
7	Co	%	<0.001
8	Cu	%	0.044
9	Ni	%	0.079
10	Zn	%	0.06
11	Sr	%	--
12	Ba	%	<0.001

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

ADITYA BIRLA
HINDALCO

HINDALCO MANAGEMENT FRAMEWORK
excellence by design

ENVIRONMENT POLICY

We, at Hindalco Industries Limited, operating across the process chain from mining to semi-fabricated products in non-ferrous metals, strive to continually improve the environmental performance for sustainable operations and responsible growth globally, by integrating sound environmental system and practices.

To achieve this, we shall

- Comply with all applicable legal requirements on environment.
- Continually improve environmental performance by strengthening the Environmental Management System conforming to National / International Standards, including setting and reviewing targets and measuring, monitoring and reporting their progress.
- Allocate sufficient resources such as organizational structure, technology and funds for implementation of the policy and regular monitoring of its performance.
- Adopt pollution prevention approach in all our processes, enhance material efficiency and achieve high productivity.
- Conserve key resources like electricity, coal, water, oil and raw materials by promoting efficient technologies and manufacturing process improvements, water conservation program and efficient use of raw materials.
- Adopt energy efficient and cleaner technologies based on techno-economic viability, appropriate to the region in which we operate and in line with our growth and diversification plans.
- Promote principles of waste prevention, reduction, reuse, recycling and recovery to minimize waste generation and strengthen practices for management of wastes.
- Work in partnership with regulatory authorities, relevant suppliers, contractors and all stakeholders, as applicable, to meet the requirements of this Policy.
- Adapt environmental performance over life cycle as an important input in the decision process of the organization.
- Raise environmental awareness at all levels of our operations through training and effective communication, participation and consultation.
- Develop and follow appropriate communication system to inform stakeholders, as applicable, about our environmental commitment and performance.

This policy shall be made available to all employees, suppliers, customers, community and other stakeholders, as appropriate.

D Bhattacharya

11th December 2014

D.Bhattacharya
Managing Director

HINDALCO INDUSTRIES LIMITED

ADITYA ALUMINIUM LAPANGA SAMBALPUR

RR & CSR

"Half Yearly Report"

ADITYA ALUMINIUM LAPANGA SAMBALPUR

Scope of work …

- Villages - 23
- Population - 23,500
- Blocks - 2
- District - Sambalpur


Get together with community


SHG product display

Aditya Aluminium CSR Expenses Dash Board 2005 - 2016

Sl. No	Year	CSR Expenses year wise	Remarks
1	2005	240,000	Completed
2	2006	133,600	Completed
3	2007	110,000	Completed
4	2008	358,479	Completed
5	2009-10	65,418,975	Completed
6	2010-11	12,808,666	Completed
7	2011-12	9,128,786	Completed
8	2012-13	16,241,048	Completed
9	2013-14	11,445,539	Completed
10	2014-15	14,632,199	Completed
11	2015-16	6,26,17000	Completed
Grand Total		**130,517,292**	

ADITYA ALUMINIUM LAPANGA SAMBALPUR

ADITYA CSR Focus Areas:

- Education
- Health
- Sustainable Livelihood (Focus on Women Empowerment)
- Infrastructural development
- Social Issues (Special Support for Sports & Cultural activities)

ADITYA ALUMINIUM LAPANGA SAMBALPUR

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ADITYA ALUMINIUM LAPANGA SAMBALPUR

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ADITYA ALUMINIUM LAPANGA SAMBALPUR

ADITYA CSR Focus Areas:

- Education
- Health
- Sustainable Livelihood (Focus on Women Empowerment)
- Infrastructural development
- Social Issues (Special Support for Sports & Cultural activities)

ADITYA ALUMINIUM LAPANGA SAMBALPUR

SUSTAINABLE LIVELIHOOD

EY ACHIEVEMENTS

Non farm & Skill Based Income Generation Program	: IGP training, SHG strengthening, Phenyl, Mushroom, Fish, Poultry, mixture, badi etc. covering 549 nos of SHG member
Natural Resource Conservation & Non-conventional energy	:Provided 29 nos of solar street light in 7 hamlet covering 1050 beneficiaries.
Low Smoke Stove with Solar Home Lights	:There are 175 nos of SHG women got benefitted out of 35 nos of solar home light and low-smoke cooking stove.
Sewing Machine Distribution for better Livelihood	:Facilitated 70 nos of Rural women with Sewing machines for better livelihood of rural women.

Namkeen Making Training

Solar Street Light Installation

Low-Smoke Stove distribution

ADITYA ALUMINIUM LAPANGA SAMBALPUR

RR & CSR

"Half Yearly Report"

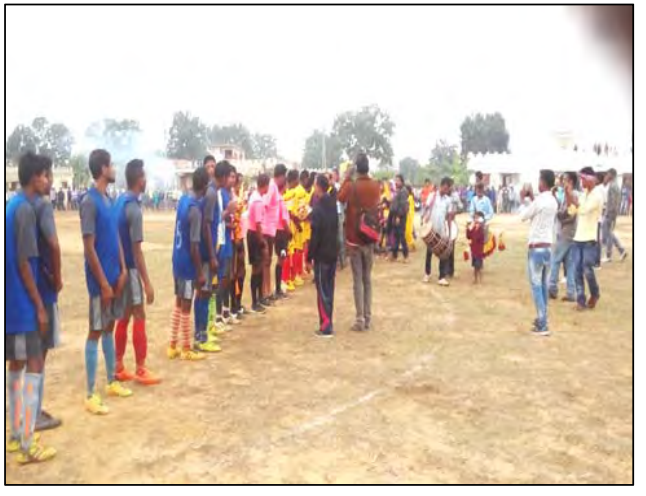
ADITYA ALUMINIUM LAPANGA SAMBALPUR

SOCIAL ISSUES

EY ACHIEVEMENTS

Disaster relief programs	:Flood situation management program in Sambalpur city covering 1295 beneficiaries
Promotion of Heritage/culture/sports	:Supporting rural sports, culture and festivals in 23 villages covering more than 22000 population.
Social events minimize causes of poverty	:Pressure cooker distributed to 1250 beneficiaries
Awareness program	:Awareness program on Anti-dowry, widow remarriage, Blind Believes, Disaster Management, Snake bite, Water management and many more covering more than 2500 beneficiaries

Pressure Cooker Distribution



Friendly Football Match

Awareness Program on AIDS

ADITYA ALUMINIUM LAPANGA SAMBALPUR

CSR Expenses & Activities Till March 2015-16

Focus Area	Total Beneficiaries	Total Expenses
EDUCATION	15095	1656000
HEALTH	143501	56033000
LIVELIHOOD PROMOTION	6648	1508000
RURAL INFRASTRUCTURE	7926	2205000
SOCIAL CAUSES	15520	1215000
GRAND TOTAL	**188690**	**62617000**

ADITYA ALUMINIUM LAPANGA SAMBALPUR

Aditya Aluminium CSR expenses for the Year 2015-16

Project Activities	2015-16			
	Unit:			
	Total spend Rs/-in Lakhs	Programme	Overheads	Population Reached
	Amount	Expenses		
	Rs. (in lacs)	Rs. (in lacs)	Rs. (in lacs)	(Nos)
Education				
Pre school education	0.000	0.000	0.00	0
School Education Program	7.000	7.000	0.00	7900
Education support programs	2.630	2.630	0.00	5806
Vocational and Technical Education	0.000	0.000	0.00	0
School Infrastructure	4.800	4.800	0.00	1350
Others	2.130	2.130	0.00	39
Sub Total-Education	**16.560**	**16.560**	**0.00**	**15095**
Health				
Preventive Health Care	37.720	37.720	0.00	16189
Curative Health Care program	1.670	1.670	0.00	144
Reproductive and Child Health	1.450	1.450	0.00	1687
Quality / Support Program	0.480	0.480	0.00	475
Health Infrastructure	517.000	517.000	0.00	125000
Others if any	2.010	2.010	0.00	6
SubTotal-Health	**560.330**	**560.330**	**0.00**	**143501**

ADITYA ALUMINIUM LAPANGA SAMBALPUR

Project Activities	2015-16			
	Unit:			
	Total spend Rs/-in Lakhs	Programme	Overheads	Population Reached
	Amount	Expenses		
	Rs. (in lacs)	Rs. (in lacs)	Rs. (in lacs)	(Nos)
Sustainable Livelihood				
Agriculture and Farm Based	1.860	1.860	0.00	269
Animal Husbandry Based	0.530	0.530	0.00	2517
Non farm & Skills Based Income generation Program	4.130	4.130	0.00	1881
Natural Resource conservation programs & Non conventional Energy	6.550	6.550	0.00	1975
Livelihood Infrastructure	0.000	0.000	0.00	0
Others	2.010	2.010	0.00	6
Sub Total-Sustainable Livelihood	**15.080**	**15.080**	**0.00**	**6648**
Infrastructure				
Rural Infrastructure Development other than for the purpose of Health /Education /Livelihood	22.050	22.050	0.00	7926
SubTotal-Infrastructure	**22.050**	**22.050**	**0.000**	**7926**
Social Development Projects				
Institutional building & strengthening	0.480	0.480	0.00	322
Support to development organizations	0.000	0.000	0.00	0
Social Security	2.510	2.510	0.00	100
Awareness programmes	0.360	0.360	0.00	1270
Social Events to minimise causes of poverty	4.830	4.830	0.00	602
Promotion of heritage/culture/Sports	1.960	1.960	0.00	13220
Disaster Relief Programmes	0.000	0.000	0.00	0
Others if any	2.01	2.01	0.00	6
Sub Total- Social development Projects	**12.150**	**12.150**	**0.00**	**15520**
Salary/ Overheads	0.000	0.00	0.000	0
Grand Total	**626.170**	**626.170**	**0.000**	**188690**

ADITYA ALUMINIUM LAPANGA SAMBALPUR

EDUCATION

EY ACHIEVEMENTS

Pre School Education	- 4673 students have been treated for Polio vaccination since 2014 -16 in coordination wi government Odisha
School Education program	- School Transport, Drawing Competition, Celebration of National Days, Distribution of Stationaries to 999 students in 07 schools and other activities facilitating 4243 students in periphery villages.
Education Support program	- Provided 1000 nos of school bags to the poor students in the periphery schools. Conducte school. Children sports were conducted in 6 schools and 11 Anganwadi.

School Sports Award Ceremony

School Toilet for Girls

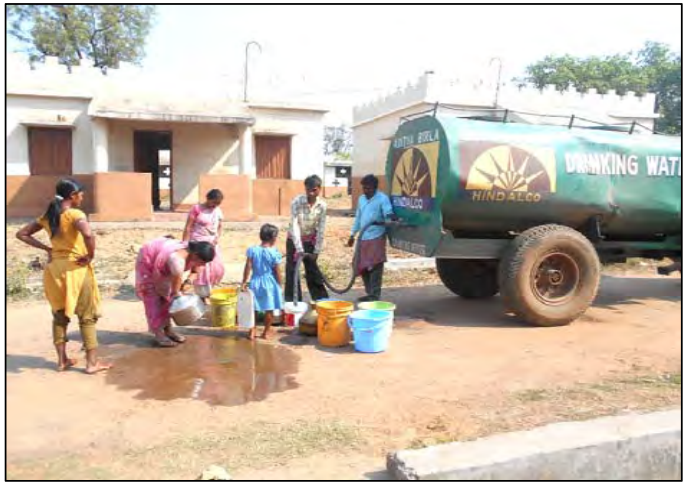
Scholarship to Girl Students

ADITYA ALUMINIUM LAPANGA SAMBALPUR

HEALTH

KEY ACHIEVEMENTS

- **Preventive Healthcare** - Awareness camp on Adolescent Girl health, Immunization, Tuberculosis, Dengue, Malaria, etc.
  - Organising Mega blood donation Camps
- **Curative Healthcare** -Running Community Dispensary covering 03 Gram Panchayats
  -School health care program in govt. schools with whole body checkup and Blood Grouping covering , 1297 school children and health card distribution
- **Health Infrastructure** -Supply of drinking water through 120 tankers daily covering 121 hamlets facilitating 13100 population



Drinking Water Supply

School Health Care

Mega Blood Donation Camp

ADITYA ALUMINIUM LAPANGA SAMBALPUR

SUSTAINABLE LIVELIHOOD

KEY ACHIEVEMENTS

- **Non farm & Skill Based Income Generation Program** : IGP training, SHG strengthening, Phenyl, Mushroom, Fish, Poultry, mixture, badi etc. covering 549 nos of SHG member
- **Natural Resource Conservation & Non-conventional energy**:Provided 29 nos of solar street light in 7 hamlet covering 1050 beneficiaries.
- **Low Smoke Stove with Solar Home Lights** :There are 175 nos of SHG women got benefitted out of 35 nos of solar home light and low-smoke cooking stove.
- **Sewing Machine Distribution for better Livelihood** :Facilitated 70 nos of Rural women with Sewing machines for better livelihood of rural women.

Namkeen Making Training

Solar Street Light Installation

Low-Smoke Stove distribution

ADITYA ALUMINIUM LAPANGA SAMBALPUR

RR & CSR

"Half Yearly Report"

ADITYA ALUMINIUM LAPANGA SAMBALPUR

SOCIAL ISSUES

KEY ACHIEVEMENTS

- **Disaster relief programs** :Flood situation management program in Sambalpur city covering 1295 beneficiaries
- **Promotion of Heritage/culture/sports** :Supporting rural sports, culture and festivals in 23 villages covering more than 22000 population.
- **Social events minimize causes of poverty** :Pressure cooker distributed to 1250 beneficiaries
- **Awareness program** :Awareness program on Anti-dowry, widow remarriage, Blind Believes, Disaster Management, Snake bite, Water management and many more covering more than 2500 beneficiaries

Pressure Cooker Distribution

Friendly Football Match

Awareness Program on AIDS

ADITYA ALUMINIUM LAPANGA SAMBALPUR

SOCIAL ISSUES

KEY ACHIEVEMENTS

- **Disaster relief programs** :Flood situation management program in Sambalpur city covering 1295 beneficiaries
- **Promotion of Heritage/culture/sports** :Supporting rural sports, culture and festivals in 23 villages covering more than 22000 population.
- **Social events minimize causes of poverty** :Pressure cooker distributed to 1250 beneficiaries
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Pressure Cooker Distribution

Friendly Football Match

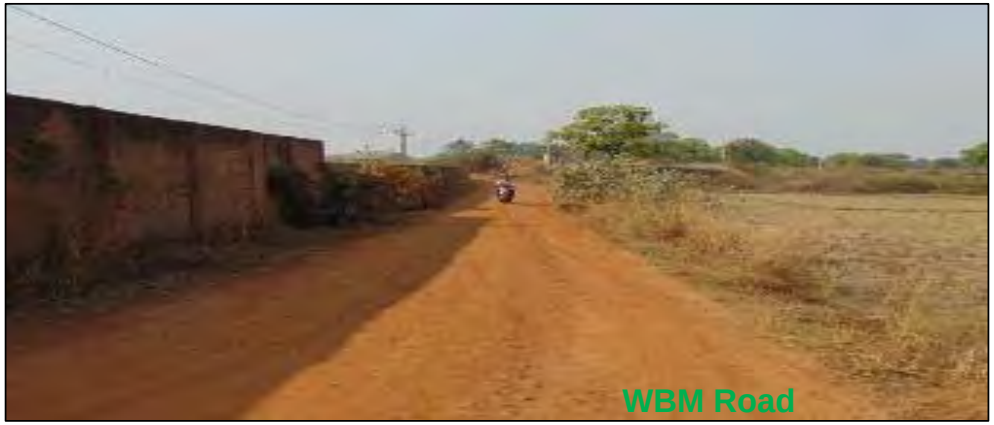
Awareness Program on AIDS

ADITYA ALUMINIUM LAPANGA SAMBALPUR

RURAL INFRASTRUCTURE

KEY ACHIEVEMENTS

- **Infrastructure development :** Infrastructure developments relates to rural connectivity and facilities to mitigate the needs of the people. We have constructed Bituminous, WBM, Murrom Roads, Village Temples, Mandap, School Classrooms, Ponds, Tube-wells and many more.



ADITYA ALUMINIUM LAPANGA SAMBALPUR

Resettlement & Rehabilitation

Details of DP status as on 31st March 2016

Sl. No	Village	Hamlet	No of DPs as on 01.01.2012	Shifting Status upto July 2015	Shifted to RR Colony	Shifted by Self Relocation	Balance DP to shift	Opted for Job	Training done and in Job	Bal DP for Training	CILE Paid	CILE Applied for	RR Benefit given to shifted DPs Y/N	Remark
1	**Derba**	Dhudkabahal	**45**	**45**	43	2	0	**13**	9	4	32	0	Y	*1 DP done 2yrs ITI but seriously ill and 3are still studying
2	**Tileimal**	Situpada	**16**	**16**	9	7	0	**2**	2	0	14	0	Y	
		Mareipada	**24**	**24**	13	11	0	**1**	1	0	23	0	Y	
3	**Bomaloi**	Biripada	**15**	**15**	15	0	0	**3**	3	0	12	0	Y	
		Mundapada	**35**	**35**	32	3	0	**3**	3	0	31	1	Y	
		Nuapada	**82**	**61**	59	2	**6**	**20**	7	13	11	24	Y	**A)** 01 DP Ms. Para Kisan, D/o Krushna Kisan Married before shifting). **B)** 14 DP excluded from the list (4 opted for job) **C)** 10 DP will be going for training in Sep'15 and 01 DP is doing course at their own expenses
4	**Katarbaga**	Bhalududia	**147**	**147**	138	9	**0**	**21**	20	1	126	1	Y	1 DP will pass out ITI in Sep'15
5	**Jangala**	Parekhapada-1	**19**	**4**	4	0	**15**	4	0	4	4	0	Y	
		Parekhapada-2	**14**	**14**	14	0	**0**	0	0	0	0	13	Y	
		Khamaripada	**12**	**3**	3		**9**	5	1	4	2	0	Y	
6	**Bhoipalli**	Bhoipali	**12**	**8**	7	1	**4**	0	0	0	2	5	Y	
7	**Ludhapalli**	Ludhapali	**12**	**12**	11	1	**0**	0	0	0	10	2	Y	CILE already approved, but to be deposited at Spl. LAO office
	Total		**433**	**384**	**348**	**36**	**34**	**72**	***46**	**26**	**267**	**46**		

Updated DP List from District Administration is still awaited

THANK YOU

Visiontek Consultancy Services Pvt.Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref.: VCSPL/15/R-385

Date.: 29.12.2015

SURFACE WATER QUALITY ANALYSIS REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling location : **SW-1:** Hirakud Reservoir; **SW-2:** Lapanga Pond; **SW-3:** Matwadinadi, **SW-4:**Bamloi Pond; **SW-5:** Bhedan river.
3. Date of sampling : 22.12.2015
4. Date of analysis : 23.12.2015 to 29.12.2015
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**	7.2	7.1	7.1	7.0	7.23
2	Colour	APHA 2120 B, C	Hazen	**300**	CL	3	2	4	2
3	Taste	APHA 2160 C	--	--	AL	AL	AL	AL	AL
4	Odour	APHA 2150 B	--	--	U/O	U/O	U/O	U/O	U/O
5	Conductivity	APHA 2510-B	µs/cm	--	98.4	96.8	88.1	96.5	82.5
6	Turbidity	APHA 2130 B	NTU	--	2.2	3.2	2.2	5.1	2.3
7	Total Dissolved Solids	APHA 2540 C	mg/l	**1500**	120.0	123.0	118.0	132.0	119.0
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	56.0	54.0	50.0	62.0	46.0
9	Total Alkalinity	APHA 2320 B	mg/l	--	52.0	49.0	43.0	54.0	42.0
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	13.6	12.8	11.2	14.4	11.2
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	5.3	5.3	5.3	6.3	4.4
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**	23.0	26.0	17.0	19.0	17.0
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	**400**	10.4	8.8	9.3	8.8	8.5
16	Fluoride (as F)	APHA 4500F^- C	mg/l	**1.5**	0.17	0.2	0.21	0.23	0.2
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	**50**	1.4	1.76	1.6	1.8	1.6
18	Sodium as Na	APHA3500-Na	mg/l	--	13.6	12.7	10.4	11.8	9.8
19	Potassium as K	APHA 3500-K	mg/l	--	1.1	0.92	0.94	0.88	0.76
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	0.26	0.23	0.24	0.2
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**	440	560	630	420	470

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

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

Visiontek Consultancy Services Pvt.Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref.: VCSPL/IE/R-886

Date.: 29.12.2015

SURFACE WATER QUALITY ANALYSIS REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling location : **SW-6:** Bhedan river near Katikela; **SW-7**:Matwadinadi-D/s ;**SW-8:** Hirakud reservoir near Gurupali village; **SW-9:** Salepali village; **SW-10:** Sanamal.
3. Date of sampling : 22.12.2015
4. Date of analysis : 23.12.2015 to 29.12.2015
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-6	SW-7	SW-8	SW-9	SW-10
1	pH Value	APHA 4500H^+ B	--	6.0-9.0	7.1	7.0	7.2	7.1	7.1
2	Colour	APHA 2120 B, C	Hazen	300	2	3	CL	2	3
3	Taste	APHA 2160 C	--	--	AL	AL	AL	AL	AL
4	Odour	APHA 2150 B	--	--	U/O	U/O	U/O	U/O	U/O
5	Conductivity	APHA 2510-B	µs/cm	--	97.5	95.6	110.2	103.6	110.2
6	Turbidity	APHA 2130 B	NTU	--	2.4	3.6	2.2	2.8	3.9
7	Total Dissolved Solids	APHA 2540 C	mg/l	1500	115.0	119.0	129.0	118.0	122.0
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	58.0	62.0	54.0	56.0	58.0
9	Total Alkalinity	APHA 2320 B	mg/l	--	52.0	55.0	48.0	45.0	47.0
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	14.4	16.8	15.2	13.6	14.4
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	5.3	4.9	3.9	5.3	5.3
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	21.0	20.0	23.0	25.0
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	6.5	8.6	8.4	8.7	9.6
16	Fluoride (as F)	APHA 4500F^- C	mg/l	1.5	0.22	0.28	0.24	0.25	0.2
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	50	2.72	2.7	2.66	2.8	2.74
18	Sodium as Na	APHA 3500-K	mg/l	--	11.8	10.1	13.4	12.8	15.6
19	Potassium as K	APHA3500-Na	mg/l	--	1.0	0.94	1.24	1.33	1.28
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	0.26	0.33	0.22	0.25	0.27
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	510	450	470	410	670

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

B. K. Mishra, B.Sc. Engg. (Chem)
GOVT. ANALYST
(GAZETTE NO. 694 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-081

SOIL QUALITY ANALYSIS REPORT

Date: 05.08.2016

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 17.12.2015
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:** Gurupali; S-9: Gumkarama; **S-10:** Bhadarpali.
4. Date of Analysis : 18.12.2015 to 24.12.2015
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	5.6	5.7	5.6	5.5	5.8	5.7	5.7	5.6	5.5	5.5
2	Conductivity	102.4	96.4	83.4	90.1	99.6	86.7	80.4	78.8	88.6	79.6
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	42.24	13.8	38.44	43.52	45.92	15.44	38.98	43.78	44.21	15.78
5	Silt	12.82	20.48	13.56	15.46	11.24	18.28	15.72	12.24	13.46	18.46
6	Clay	43.52	64.12	46.48	37.91	41.24	64.35	43.45	41.72	40.06	64.14
7	Bulk Density (gm/cc)	1.39	1.28	1.36	1.4	1.42	1.32	1.38	1.4	1.41	1.32
8	Exchangeable Calcium as Ca (%)	35.0	39.0	41.0	42.5	40.0	36.0	42.0	44.0	41.0	39.0
9	Exchangeable Magnesium as Mg (%)	48.36	58.2	52.46	57.38	55.74	49.18	59.02	65.57	65.57	51.64
10	Available Sodium as Na(%)	0.021	0.02	0.018	0.023	0.023	0.022	0.024	0.024	0.022	0.021
11	Available Potassium as K (%)	0.062	0.059	0.054	0.058	0.065	0.052	0.065	0.068	0.06	0.066
12	Available phosphorous as P (%)	0.018	0.016	0.022	0.019	0.019	0.02	0.021	0.022	0.016	0.018
13	Available Nitrogen as N (%)	0.14	0.2	0.18	0.16	0.16	0.18	0.2	0.19	0.18	0.16
14	Organic Matter (%)	2.72	2.98	3.14	2.68	2.72	2.88	3.2	3.14	3.24	3.1
15	Organic Carbon (%)	1.58	1.73	1.82	1.55	1.58	1.67	1.86	1.82	1.88	1.8
16	Water soluble Chlorides as Cl (%)	0.18	0.22	0.2	0.19	0.21	0.22	0.23	0.22	0.23	0.21
17	Water soluble Sulphates as SO_4 (%)	0.21	0.18	0.2	0.18	0.15	0.19	0.2	0.17	0.2	0.16
18	Sodium Absorption Ratio (%)	0.141	0.125	0.114	0.141	0.144	0.146	0.147	0.141	0.131	0.136
19	Aluminium as Al (%)	0.0001	0.00008	0.00007	0.00007	0.00005	0.00008	0.00006	0.00004	0.00006	0.00005
20	Total Iron as Fe (%)	0.1	0.03	0.04	0.02	0.025	0.028	0.03	0.035	0.028	0.03
21	Manganese as Mn (%)	0.005	0.0014	0.0016	0.0018	0.005	0.0012	0.0012	0.0015	0.001	0.0011
22	Boron as B (%)	0.000036	0.00012	0.00014	0.00016	0.00021	0.0002	0.00022	0.00018	0.00014	0.00016
23	Zinc as Zn (%)	0.00028	0.00015	0.00011	0.00012	0.00015	0.00012	0.00016	0.00012	0.00013	0.00011
24	SiO_2 (%)	6.68	5.72	6.28	6.24	6.36	5.98	5.96	5.92	6.08	5.88
25	Fe_2O_3 (%)	0.066	0.02	0.026	0.013	0.017	0.018	0.02	0.023	0.018	0.02
26	CaO (%)	25.2	28.08	29.52	30.6	28.8	25.92	30.24	31.68	29.52	28.08
27	MgO (%)	29.0	34.92	31.47	34.42	33.44	29.5	35.41	39.34	39.34	30.98
28	Al_2O_3 (%)	0.00006	0.0000528	0.0000462	0.0000462	0.000033	0.000053	0.00004	0.000026	0.00004	0.000033
29	FeO (%)	0.085	0.0255	0.034	0.017	0.0213	0.0238	0.0255	0.0298	0.0238	0.0255
30	MnO (%)	0.0065	0.0018	0.0021	0.0023	0.0065	0.0016	0.0016	0.002	0.0013	0.0014
31	K_2O (%)	0.0496	0.0472	0.0432	0.0464	0.052	0.0416	0.052	0.0544	0.048	0.0528
32	P_2O_5 (%)	0.0083	0.0074	0.0101	0.0087	0.0087	0.0092	0.0097	0.0101	0.0074	0.0083
33	Fluoride as F (%)	0.0018	0.001	ND	0.00052	0.0009	0.00084	ND	ND	0.00072	ND

ND: Not Detected.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

*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/15/R – 384

Date.: 29.12.2015

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**: Pandiol Village; **GW-3:**Bamloi Village; **GW-4:** Tilaimal Village; **GW-5:** Thelkoloi Village; **GW-6:** Ghichamura Village; **GW-7:** Gumkarama Village; **GW-8:** Chaltikra Village.
3. Date of sampling : 22.12.2015
4. Date of analysis : 23.12.2015 to 29.12.2015
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS - 10500:1991	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**	7.0	6.9	6.8	6.9	6.9	7.0	7.1	7.1
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	--	**U/O**	U/O	U/O	U/O	U/O	U/O	U/O	U/O	U/O
5	Conductivity	APHA 2510-B	µs/cm	--	160.5	126.8	134.7	139.8	167.5	138.6	171.5	170.3
6	Turbidity	APHA 2130 B	NTU	**5**	<2	<2	<2	<2	<2	<2	<2	<2
7	Total Dissolved Solids	APHA 2540 C	mg/l	**500**	216.0	178.0	184.0	202.0	210.0	181.0	214.0	186.0
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	**300**	74.0	60.0	56.0	52.0	74.0	50.0	68.0	60.0
9	Total Alkalinity	APHA 2320 B	mg/l	**200**	68.0	59.0	54.0	48.0	62.0	48.0	52.0	57.0
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	**75**	22.4	12.8	12.0	13.6	20.8	12.8	15.2	11.2
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	**30**	4.4	6.8	6.3	4.4	5.3	4.4	7.3	7.8
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	**1**	<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**	21.0	14.0	19.0	20.0	18.0	17.0	22.0	19.0
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	**200**	8.9	5.9	7.0	7.5	8.0	6.34	7.92	7.2
16	Fluoride (as F)	APHA 4500F^- C	mg/l	**1.0**	0.09	0.08	0.06	0.08	0.11	0.05	0.08	0.08
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	**45**	2.6	1.9	2.1	2.1	2.3	2.1	2.2	2.14
18	Sodium as Na	APHA3500-Na	mg/l	--	14.1	11.6	11.1	13.4	12.8	13.6	14.8	13.3
19	Potassium as K	APHA 3500-K	mg/l	--	1.3	1.1	0.92	0.98	1.24	1.0	1.15	1.12
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	**0.01**	<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	**0.05**	<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	**0.05**	<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**	0.26	0.25	0.23	0.28	0.26	0.27	0.28	0.26
29	Chromium (as Cr^{+6})	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	**0.01**	<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.

B. K. Mishra, B.Sc. Engg. (Chem)
GOVT. ANALYST
(GAZETTE NO. 224, Dt. 12.04.2013)

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/16/R-072

Date.: 05.02.2016

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 ($\mu g/m^3$)
02.11.2015	61.8	29.8	9.6	15.2	<4.0	0.30	33.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2015	68.2	36.2	10.2	16.8	<4.0	0.32	31.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2015	57.4	30.6	9.5	16.6	<4.0	0.28	34.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2015	55.9	27.2	9.1	15.3	<4.0	0.24	30.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2015	64.5	35.4	10.2	17.4	4.8	0.28	28.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2015	72.8	42.5	11.8	18.2	5.8	0.29	26.9	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2015	76.6	40.1	12.2	18.8	6.6	0.32	29.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2015	67.3	38.3	11.1	16.9	6.1	0.28	32.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2015	70.5	40.5	11.5	17.4	6.8	0.30	30.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2015	71.5	39.4	11.8	19.1	6.2	0.31	29.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2015	74.6	42.2	11.2	18.5	6.6	0.29	27.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2015	73.4	40.8	12.2	19.8	6.4	0.32	25.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2015	66.8	34.5	10.6	16.3	5.1	0.28	27.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2015	48.6	24.1	9.8	13.4	<4.0	0.24	29.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2015	50.4	25.2	10.2	13.8	<4.0	0.25	30.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2015	52.5	26.4	10.6	14.5	<4.0	0.25	24.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2015	60.1	31.1	11.2	15.8	<4.0	0.26	25.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2015	64.5	33.7	11.7	17.1	4.8	0.28	27.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.01.2016	68.2	36.5	10.8	20.4	5.2	0.29	24.5	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.01.2016	70.2	37.8	10.5	19.6	5.6	0.31	25.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.01.2016	66.9	34.6	10.2	20.2	5.8	0.32	27.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.01.2016	71.4	39.2	11.4	21.4	6.1	0.34	25.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.01.2016	69.2	36.4	11.5	20.8	5.8	0.32	26.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.01.2016	64.7	33.8	10.8	21.6	6.2	0.35	23.7	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.01.2016	65.5	34.1	10.6	21.3	6.4	0.34	24.5	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.01.2016	68.3	35.4	10.4	20.8	5.9	0.32	25.6	<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	65.45	34.84	10.80	17.96	<5.32	0.3	27.94	<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**	**Ion Selective method after sampling**

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

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ISO 9001: 2008
OHSAS 18001:2007

Ref.: VCSPL/16/R-073 Date: 05.02.2016

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 ($\mu g/m^3$)
02.11.2015	62.8	30.2	9.1	16.6	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2015	59.4	28.6	8.7	16.2	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2015	61.7	30.4	8.8	15.8	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2015	65.2	31.6	8.5	16.3	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2015	59.8	28.6	8.2	15.5	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2015	63.7	31.7	8.6	16.2	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2015	66.1	32.5	9.4	17.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2015	60.2	31.2	9.2	17.5	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2015	56.4	28.6	8.5	16.8	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2015	63.6	32.7	8.7	17.2	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2015	60.6	31.8	9.2	17.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2015	55.8	28.4	7.6	14.8	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2015	51.4	26.7	6.8	12.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2015	43.8	20.5	5.9	11.1	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2015	41.7	19.4	5.6	10.2	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2015	46.8	22.2	5.8	10.8	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2015	49.5	23.6	6.7	12.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2015	52.8	25.7	7.2	14.4	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.01.2016	61.5	30.8	6.8	15.6	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.01.2016	56.7	28.6	6.2	15.2	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.01.2016	64.2	33.8	6.7	16.1	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.01.2016	58.9	30.4	6.4	15.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.01.2016	63.4	31.5	6.2	14.8	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.01.2016	55.8	27.6	6.6	15.6	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.01.2016	58.2	30.8	6.2	14.8	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.01.2016	63.4	33.1	5.9	14.6	<4.0	0.2	<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**	**05**	--
Quarterly Average	57.82	28.88	7.44	15.07	<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**	**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**	**Ion Selective method after sampling**

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

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OHSAS 18001:2007

Ref.: VCSPL/16/R-074

Date.: 05.02.2016

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 ($\mu g/m^3$)
02.11.2015	50.2	24.8	5.2	11.8	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2015	52.4	25.8	5.5	12.2	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2015	55.6	27.2	5.4	12.4	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2015	53.7	26.8	5.5	12.8	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2015	51.8	25.5	5.1	12.5	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2015	49.6	24.6	4.7	11.8	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2015	54.2	26.2	4.8	12.1	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2015	55.1	27.4	5.2	12.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2015	50.8	31.5	5.4	12.9	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2015	53.8	26.2	5.5	13.2	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2015	57.2	27.2	6.1	13.8	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2015	52.9	25.6	5.4	13.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2015	54.8	26.7	5.8	13.8	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2015	55.6	26.4	5.6	13.4	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2015	42.8	20.5	4.3	11.8	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2015	50.6	24.2	4.8	11.5	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2015	52.8	25.5	5.4	12.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2015	55.7	27.4	5.5	12.8	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.01.2016	59.2	28.4	5.4	12.8	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.01.2016	54.8	26.2	5.2	12.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.01.2016	58.2	28.1	5.8	13.5	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.01.2016	60.4	29.4	5.6	13.2	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.01.2016	57.3	28.6	5.2	12.6	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.01.2016	52.4	25.8	5.1	12.5	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.01.2016	56.4	27.5	5.5	12.8	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.01.2016	55.8	27.4	5.1	12.4	<4.0	0.16	<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	54.0	26.57	5.31	12.68	<4.0	0.16	<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**	**Ion Selective method after sampling**

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

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*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/16/R-075 Date.: 05.02.2016

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 (Bomaloi)**
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 ($\mu g/m^3$)
02.11.2015	44.2	21.9	4.5	10.3	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2015	41.6	20.5	<4.0	10.1	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2015	47.3	23.6	4.4	10.5	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2015	48.6	23.8	4.8	10.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2015	50.4	24.9	5.2	11.4	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2015	52.5	25.8	5.5	11.1	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2015	49.6	24.2	5.1	11.5	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2015	47.5	23.4	4.8	10.8	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2015	51.6	25.9	5.3	11.4	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2015	53.4	26.4	5.6	11.8	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2015	54.5	26.8	5.8	12.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2015	50.8	25.1	5.2	11.6	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2015	55.2	27.2	5.7	12.5	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2015	49.5	23.6	4.8	11.1	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2015	39.4	18.2	4.2	10.2	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2015	45.2	22.5	4.7	10.5	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2015	48.9	24.3	5.2	11.8	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2015	51.6	25.8	5.6	12.1	<4.0	0.2	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.01.2016	51.4	26.2	5.4	12.8	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.01.2016	48.8	23.8	5.1	12.4	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.01.2016	47.2	23.3	5.3	12.6	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.01.2016	49.6	24.1	5.4	12.8	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.01.2016	52.4	25.8	5.6	12.2	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.01.2016	50.8	25.2	5.1	12.4	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.01.2016	53.7	26.3	4.7	11.3	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.01.2016	54.6	27.4	5.4	11.8	<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	49.63	24.46	<5.14	11.54	<4.0	0.17	<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	Ion Selective method after sampling

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

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

Ref.: VCSPL/16/R-076

Date.: 05.02.2016

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 (Kapulas)**
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 ($\mu g/m^3$)
02.11.2015	46.2	23.7	4.6	9.8	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2015	44.8	22.6	4.8	10.4	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2015	45.5	23.3	5.2	10.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2015	49.1	25.1	5.4	10.8	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2015	46.3	22.8	4.9	10.2	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2015	48.5	24.4	5.5	11.2	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2015	49.4	24.5	5.6	11.8	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2015	48.8	23.8	5.2	11.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2015	49.5	24.2	5.7	12.4	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2015	50.6	26.4	5.8	12.6	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2015	54.3	27.3	5.6	13.2	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2015	50.2	26.1	5.5	13.4	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2015	53.4	26.6	5.9	13.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2015	51.6	25.6	5.2	12.8	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2015	42.8	20.9	4.8	11.1	<4.0	0.2	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2015	46.2	22.8	5.2	11.6	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2015	50.6	24.9	5.5	11.9	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2015	53.7	26.6	5.7	12.5	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.01.2016	49.8	24.8	5.3	13.1	<4.0	0.2	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.01.2016	53.6	27.5	5.8	14.5	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.01.2016	50.8	26.1	5.2	13.9	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.01.2016	47.4	23.6	4.9	12.2	<4.0	0.2	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.01.2016	49.2	25.2	5.1	12.5	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.01.2016	52.4	26.3	5.3	12.3	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.01.2016	55.6	27.8	5.8	13.6	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.01.2016	54.7	27.3	5.9	13.8	<4.0	0.23	<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	49.81	25.01	5.36	12.20	<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**	**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**	**Ion Selective method after sampling**

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

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

Ref.: VCSPL/16/R-077

Date.: 05.02.2016

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 ($\mu g/m^3$)
02.11.2015	48.8	24.6	4.6	11.4	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2015	46.5	23.3	4.5	11.5	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2015	51.4	25.4	5.5	11.8	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2015	53.5	26.3	5.2	11.3	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2015	50.8	25.1	5.3	11.8	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2015	54.6	26.5	5.8	12.5	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2015	52.8	25.8	5.5	12.4	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2015	56.8	27.8	5.9	12.6	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2015	53.5	26.5	6.1	13.2	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2015	55.4	27.4	6.3	13.3	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2015	53.8	21.2	5.6	12.8	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2015	56.6	27.5	5.8	13.2	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2015	51.2	26.4	5.2	12.1	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2015	49.6	24.5	4.9	10.8	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2015	42.8	20.8	4.5	10.5	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2015	47.5	23.2	4.6	10.6	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2015	52.1	26.2	5.5	11.6	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2015	53.7	26.8	5.8	11.9	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.01.2016	52.2	25.8	5.3	11.2	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.01.2016	50.7	24.9	5.1	10.8	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.01.2016	49.3	24.1	4.9	10.6	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.01.2016	46.8	22.6	4.8	11.5	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.01.2016	51.2	25.3	5.3	11.8	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.01.2016	53.8	26.7	5.6	12.4	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.01.2016	55.6	28.4	5.8	12.8	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.01.2016	52.7	25.9	5.2	12.2	<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	51.68	25.35	5.33	11.87	<4.0	0.16	<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**	**Ion Selective method after sampling**

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

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

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

Ref.: VCSPL/16/R-078 Date.: 05.02.2016

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 ($\mu g/m^3$)
02.11.2015	55.7	27.2	7.8	14.6	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2015	56.2	27.8	7.6	15.2	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2015	61.4	31.3	8.2	15.8	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2015	63.8	33.1	8.4	15.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2015	59.2	30.4	8.6	16.1	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2015	52.8	26.6	7.5	14.8	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2015	60.2	31.6	7.8	15.3	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2015	63.4	32.9	8.5	15.9	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2015	56.9	28.7	7.9	14.8	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2015	55.6	28.2	8.1	15.2	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2015	59.2	30.5	8.3	15.7	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2015	62.4	32.5	8.7	16.6	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2015	58.5	29.8	8.4	16.5	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2015	48.2	23.4	6.4	11.1	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2015	43.5	21.6	5.9	10.2	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2015	47.5	23.2	6.2	11.6	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2015	53.2	26.9	6.8	12.5	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2015	56.7	28.8	7.6	13.8	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.01.2016	53.8	27.9	6.4	13.9	<4.0	0.2	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.01.2016	50.4	26.1	6.1	13.5	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.01.2016	49.5	25.2	5.6	13.2	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.01.2016	52.7	26.3	5.9	13.7	<4.0	0.2	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.01.2016	47.6	23.4	5.7	14.1	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.01.2016	54.2	26.8	6.2	14.5	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.01.2016	56.5	28.1	6.4	14.2	<4.0	0.2	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.01.2016	51.8	25.3	5.8	13.5	<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	55.03	27.83	7.18	14.30	<4.0	0.19	<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**	**Ion Selective method after sampling**

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

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

*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-079

Date.: 02.02.2016

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 ($\mu g/m^3$)
02.11.2015	59.5	30.2	10.4	15.5	<4.0	0.18	21.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2015	64.1	33.4	9.9	15.1	<4.0	0.17	22.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2015	58.2	28.8	9.2	15.8	<4.0	0.18	20.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2015	60.4	30.2	9.6	16.1	<4.0	0.2	22.5	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2015	56.4	28.2	9.8	15.7	5.6	0.19	24.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2015	66.1	34.8	10.2	17.6	6.1	0.22	25.5	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2015	70.2	37.8	10.4	18.1	6.4	0.23	23.8	<0.001	<0.002	<0.01	<0.001	0.8	<0.01
26.11.2015	63.4	33.8	9.9	16.4	5.8	0.21	22.5	<0.001	<0.002	<0.01	<0.001	0.7	<0.01
30.11.2015	67.5	35.6	10.3	16.8	5.2	0.22	23.7	<0.001	<0.002	<0.01	<0.001	0.9	<0.01
03.12.2015	64.5	33.4	10.6	17.5	5.7	0.24	25.1	<0.001	<0.002	<0.01	<0.001	1.2	<0.01
07.12.2015	70.4	38.3	10.1	16.6	5.5	0.23	23.5	<0.001	<0.002	<0.01	<0.001	1.3	<0.01
10.12.2015	65.6	33.3	9.6	17.3	4.9	0.21	24.5	<0.001	<0.002	<0.01	<0.001	1.5	<0.01
14.12.2015	60.7	31.9	9.3	16.5	4.8	0.20	26.1	<0.001	<0.002	<0.01	<0.001	1.4	<0.01
17.12.2015	50.4	24.6	7.5	13.4	4.4	0.18	22.2	<0.001	<0.002	<0.01	<0.001	1.6	<0.01
21.12.2015	44.6	21.5	6.9	11.8	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	1.8	<0.01
24.12.2015	48.8	23.4	7.1	12.4	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	1.7	<0.01
28.12.2015	55.6	27.2	7.8	13.7	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	1.6	<0.01
31.12.2015	60.2	31.6	8.6	14.9	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	1.8	<0.01
04.01.2016	64.2	32.9	7.5	14.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	1.8	<0.01
07.01.2016	56.7	28.4	7.2	14.4	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	1.9	<0.01
11.01.2016	58.1	29.6	7.6	15.2	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	2.1	<0.01
14.01.2016	54.5	27.8	7.1	15.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	2.2	<0.01
18.01.2016	57.3	30.1	7.3	15.6	<4.0	0.2	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.01.2016	61.2	31.2	7.7	15.8	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.01.2016	63.6	32.4	7.8	16.2	4.8	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.01.2016	65.4	33.6	8.2	16.5	5.2	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	1.5	<0.01
NAAQ Standard	**100**	**60**	**80**	**80**	**100**	**4**	**400**	**05**	**01**	**20**	**1.0**	**06**	–
Quarterly Average	60.29	30.92	8.75	15.57	<4.63	0.20	<21.85	<0.001	<0.002	<0.01	<0.001	<1.02	<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**	**Ion Selective method after sampling**

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

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

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-080

Date.: 05.02.2016

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-2015

TIME (6.00AM to 10.00PM)	N1:Gumkarma (04.12.2015)	N2:Ghichamura (04.12.2015)	N3:Bomaloi (08.12.2015)	N4:Tileimal (08.12.2015)	N5:Thelkoli (11.12.2015)	N6:Lapanga (11.12.2015)	N7:Lapanga Railway Station (15.12.2015)	N8:Jangala (15.12.2015)
06.00am	43.8	31.8	36.8	34.2	57.9	45.2	52.5	30.5
07.00am	46.7	35.9	40.8	36.8	63.2	48.4	56.2	33.8
08.00am	52.4	40.6	46.5	45.6	68.4	50.8	63.4	41.6
09.00am	56.8	46.2	57.5	50.8	71.4	56.2	67.1	47.5
10.00am	61.4	45.1	58.0	48.4	64.9	55.5	60.4	48.1
11.00am	52.1	42.8	51.3	40.5	60.2	52.1	57.2	43.4
12.00 noon	40.8	35.2	46.9	37.1	58.6	45.3	52.1	35.2
01.00pm	41.2	33.5	42.1	35.7	54.1	41.4	45.6	33.6
02.00pm	45.6	34.1	44.8	36.8	53.1	46.5	48.2	30.4
03.00pm	53.7	35.6	46.2	40.7	55.4	53.2	56.4	31.2
04.00pm	64.6	43.4	52.4	51.2	63.5	56.7	62.8	36.8
05.00pm	70.5	50.6	56.7	56.4	71.4	62.5	68.4	42.6
06.00pm	64.6	54.5	61.2	59.7	73.1	65.8	69.9	51.6
07.00pm	60.7	56.2	57.2	55.6	66.8	63.5	65.7	46.2
08.00pm	55.9	48.1	52.5	46.1	65.5	54.2	62.4	37.0
09.00pm	51.4	40.2	45.6	43.4	60.1	49.4	56.5	34.5
Average	53.9	42.1	49.8	44.9	63.0	52.9	59.1	39.0
Standard as per CPCB	75							

Night time Noise monitoring results (Noise Level in dB (A)) Dec-2015

TIME (10.00PM to 6.00AM)	N1:Gumkarma (04.12.2015)	N2:Ghichamura (04.12.2015)	N3:Bomaloi (08.12.2015)	N4:Tileimal (08.12.2015)	N5:Thelkoli (11.12.2015)	N6:Lapanga (11.12.2015)	N7:Lapanga Railway Station (15.12.2015)	N8:Jangala (15.12.2015)
10.00pm	40.2	23.8	28.4	24.0	52.0	30.5	43.5	23.0
11.00pm	39.5	23.6	26.3	23.9	50.5	28.4	40.6	22.9
12.00 midnight	38.0	23.2	25.4	23.4	42.8	26.5	35.2	22.7
01.00am	36.0	22.8	25.1	23.2	42.9	25.0	34.5	22.4
02.00am	35.0	22.4	24.4	22.8	40.2	25.0	34.0	22.0
03.00am	34.0	22.0	24.0	22.7	40.0	24.0	34.0	21.4
04.00am	34.2	21.9	23.6	22.5	40.0	24.0	34.2	22.1
05.00am	34.5	21.7	23.1	22.4	41.2	26.0	35.5	22.0
Average	36.4	22.7	25.0	23.1	43.7	26.2	36.4	22.3
Standard as per CPCB	70							

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

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