ADITYA BIRLA

HINDALCO

Letter Ref.: AA/E&S/EC/2018/410

Date: 27/11/2018

To,

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

Sub: Submission of Six Monthly Compliance from April - 2018 to September - 2018.

Ref: Environmental Clearance Letter No.J-11011/136/2009-IA.I(1), dated 29.11.2012 & J-11011/136/2009-IA.II(1), dated 14 June 2013.

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 April – 2018 to September – 2018.

Kindly acknowledge receipt of the reports.

Thanking you,

Yours Faithfully,
For Aditya Aluminium

(Kailash Nath Pandey)
President & Unit Head

Encl.: As Above

Copy for kind information to :

1. The Member Secretary, SPCB, Bhubaneswar
2. The Regional Director, Zonal Office of CPCB, Kolkata
3. The Regional Officer, SPCB, Sambalpur

Hindalco Industries Limited
Aditya Aluminium: At/P.O.: Lapanga - 768 212, District: Sambalpur, Odisha, India
T: +91 663 2536 247 | Fax: +91 663 2536 499 | E: hindalco@adityabirla.com | W: www.hindalco.com
Registered Office: Ahura Centre, 1st Floor, B-Wing, Mahakali Caves Road, Andheri (East), Mumbai 400 093
Tel: +91 22 6691 7000 | Fax: + 91 222 6691 7001
Corporate ID No.: L27020MH1958PLC011238

(Six Monthly Compliance: April 2018 – September 2018)

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 & J-11011/136/2009-IA.II (1), Dated 14 June 2013 From MOEF, GOI.

<table>
<tr><th>Sr. No.</th><th>Specific Conditions</th><th>Compliance</th></tr>
<tr><td>i)</td><td>The streams passing through the project site shall not be disturbed w.r.t their quantity and quality of flow</td><td>The streams passing through the project site is not being disturbed.</td></tr>
<tr><td>ii)</td><td>Alumina shall be obtained from those refineries, which have been accorded environmental clearance by the Ministry of Environment and Forests.</td><td>Alumina will be obtained from refineries which have been accorded environmental clearance. At Present, the Alumina is being obtained from Utkal Alumina International Limited (UAIL), Rayagada Distt. and it has been accorded environmental clearance from MoEFCC.</td></tr>
<tr><td>iii)</td><td>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.</td><td>Online Monitoring equipments have been installed at the outlet of following stacks for monitoring of particulate matter and gaseous emissions. The online data has been connected to the Servers of OSPCB and CPCB.

a) Smelter GTC 1 & 2- 2 Nos.
b) Smelter FTC 1 & 2 - 2 Nos.
c) CPP Unit 1 to 6 - 6 Nos.

Particulate matter emission from the bake oven does not exceed the prescribed limit of 50 mg/Nm3. The summarized monitoring report w.r.t. particulate matter emission in bake oven stacks of stated below

<table>
<tr><th>Stack attached to</th><th>PM (mg/Nm3) (Min)</th><th>PM (mg/Nm3) (Max)</th><th>PM (mg/Nm3) (Avg)</th></tr>
<tr><td>FTC 1</td><td>7.6</td><td>11.2</td><td>8.7</td></tr>
<tr><td>FTC 2</td><td>8.6</td><td>9.5</td><td>9.2</td></tr>
</table>

The stack monitoting report of Fume treatment system is attached as annexure-1.</td></tr>
</table>

<table>
<tr>
<td>iv)</td>
<td>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.</td>
<td>Online monitoring equipment at Gas Treatment Centre (GTC) and Fume Treatment Centre (FTC) installed for monitoring of Hydrogen Fluoride (HF), Particulate Matter (PM). The particulate fluoride emission from the gas treatment system is within the prescribed standard. The summarized report is stated below:
<table>
<tr><th>Stack attached to</th><th>Particulte Fluoride (mg/Nm3) (Min)</th><th>Particulte Fluoride (mg/Nm3) (Max)</th><th>Particulte Fluoride (mg/Nm3) (Avg)</th></tr>
<tr><td>GTC 1</td><td>0.1</td><td>0.18</td><td>0.13</td></tr>
<tr><td>GTC 2</td><td>0.16</td><td>0.2</td><td>0.17</td></tr>
</table>
The average fugitive fluoride emission from pot rooms during april 18 to Sept 18 is 0.93 mg/Nm3.

The monitoring report of stack emission from Gas Treatment Centre stacks is attached as Annexure-2.</td>
</tr>
<tr>
<td>v)</td>
<td>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.</td>
<td>The poly aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) are being monitored on quarterly basis and found within the standard. (Ref: Annexure 1).</td>
</tr>
<tr>
<td>vi)</td>
<td>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 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.</td>
<td>Fume Extraction Centre (FTC) in Anode Baking furnace, Gas Treatment Plant (GTC) in potlines and bag filters in raw material handling, GAP, Anode Baking, Roding areas, bath recycling, carbon recycling area, butts recycling area, cathode sealing shop etc in smelter area and coal handing, ash handling plant in captive power plant is installed to control fugitive dust emissions.

HF analyzer installed for Fugitive fluoride monitoring in potrooms for monitoring of Hydrogen Fluoride, the monitoring results attached as Annexure-3. Forage analysis around the smelter is being monitored on quarterly basis and the analysis report is attached as Annexure-4.

Dry scrubbing system provided in gas treatment centre (GTC) to control fugitive emission.</td>
</tr>
</table>

vii)	Electrostatic Precipitators (ESP) will be provided to Captive Power Plant (CPP) to control particulate emissions below 50 mg/Nm3. The company shall provide bag filters, dry scrubbing system and dust suppression system to control all the emissions including fluoride emissions from all melting and casting units. Tar, Dust and fluoride in the fumes shall be controlled in baking furnace by providing dry scrubber. The emissions shall conform to the standards prescribed by the Ministry CPCB/SPCB whichever is more stringent.	Electrostatic Precipitators(ESP) of adequate efficiency is installed in Captive Power Plant (CPP) to restrict particulate emissions below 50 mg/Nm^3. Gas Treatment Centres (GTC) installed attached to each pots in potrooms, 180 nos of pots connected to each GTCs. Bag filters installed in all the material handling & transfer points in Smelter. Fume treatment centre (FTC) installed in Anode Baking Furnace 1 & 2 to treat the tar fumes, dust, gaseous and particulate fluorides in the fumes generated from Anode Baking Furnace. The standards prescribed by the Ministry/ CPCB/ SPCB is being adhered.
viii)	Provision for installation of FGD shall be provided for future use.	Provisional Space has been kept for installation of FGDin future, if required.
ix)	Three tri-flue and one bi-flue stack of 275 m height with flue gas velocity not less than 22 m/s shall be installed and provided with continuous online monitoring equipment's for SO_2, NO_x, and PM_{10}.	Two (02) numbers of tri-flue stacks of 275 m height is installed in phase-I, another two nos. of stacks will be installed during Phase-II construction activities. Continuous emission monitoring system (CEMS) installed for monitoring of SO_2, NOx, and PM in all the units of CPP.
x)	Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	Dust extraction systems (DE) and Dry fog dust suppression (DFDS) 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 4^{th} year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.	Ash generated is being utilized by means of supplying to M/s Ultratech Cements, Jharsuguda, M/s ACC, Bargarh and M/s OCL, Rajgangpur for cement manufacturing. Also we are supplying Ash to the brick manufactures and utilizing it for development of low lying areas with ash inside the Plant with prior approval of SPCB, Odisha. The low-lying areas is being filled-up with Ash as per the Guideline for Reclamation Low Lying Areas and Abandoned Quarries with Ash of SPCB, Odisha. The Ash utilization in 2014-15, 2015-16, 2016-17 was 100%. In the year 2017-18 we have achived 73.1% ash utilization. We have prepared the action plan to achive 100% ash utilization in coming years. The action plan is briefly stated below:

		• Increase supply to Cement Plants like M/s Ultratech, Jharsuguda unit; M/s ACC, Bargarh Unit; M/s OCL, Rajgangpur Unit by 80 to 90%. • Installation of brick manufacturing Unit. Presently, the unit is commissioned and running. • Increased Supply to the local brick manufacturing Units (expecting to be doubled) • We have constituted a Team for exploring more areas of Ash utilization like Road making, Abandoned mines/quarry filling, infrastructure projects etc. The Collector & DM, Sambalpur has been requested to provide us permission for filling of abandoned mines and voids available in the region. Status of ash utilization from April 18 to Sept 18 is enclosed as Annexure-5.
xii)	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized ash shall be disposed-off in the ash pond in the form of slurry. Mercury and other heavy metals (Ag, Hg, Cr, Pbetc) will be monitored in the bottom ash and also in the effluent emanating from the existing ash pond. No ash shall be disposed-off in low laying area.	Fly ash & bottom ash are collected in dry form and 3x2500 MT Fly ash silo and 1x3000 MT bottom ash silo have been installed. We are exploring maximum utilization of Ash and unutilized ash is being dischatged to the Ash pond through High Concentration Slurry Dsipsoal (HCSD) system, which is the most environment friendly conveying system at present. Monitoring of Mercury and other heavy metals (Ag, Hg, Cr, Pb etc) is being done for the fly ash and bottom ash. The analysis report is enclosed as Annexure-6. The ash filling in the low lying area inside the plant premises is being in line with the guideline for Reclamation Low Lying Areas and Abandoned Quarries with Ash after receipt of permission from SPCB, Odisha. Reclamation of low lying area and abandoned quarries with ash generated from thermal power plants is an acceptable method of utilization under the fly ash utilization of MOEFCC, GOI. (Ref: SPCB Resolution vide letter no. 11047/IND-IV-PCP-FARC-120, dated: 21/08/2017.).
xiii)	Fluoride (as F) consumption shall be less than 10 kg/ton of Aluminium produced as specified	The specific fluoride (as F) consumption for the period April 18 to Sept 18 is 9.28 kg/ton of

	by the CREP.	Aluminium produced.
xiv)	Anode butts generated from the pots shall be cleaned and recycled to the Anode Plant. The spent pot lining generated from the smelter shall be properly treated in spent pot lining treatment plant to remove fluoride and cyanide and disposed-off in secured landfill. The location and design of the land fill site shall be approved by the SPCB as per the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008. Leachate collection facilities shall be provided to the secured land fill facilities (SLF). The dross shall be recycled in the cast house. STP sludge shall be utilized as manure for greenbelt development. All the used oil and batteries shall be sold to the authorized recyclers/ re-processors.	Anode butts generated from the pots is being cleaned and recycled completely for making gren anode in green anode plant. The spent pot lining generated from the smelter is having two parts, Carbon and Refractory. Carbon part is being supplied to M/s Green Energy Limited, Sambalpur for reprocessing and utilization, in this way the carbon part is completely recycled. The Refractory part (12.79 MT) is supplied to CHWTSDF of M/s Ramky Enviro in Jajpur district of Odisha state for joint trial in presence of CPCB & SPCB and Industries. The trial has been completed and we understand that Protocol has been issued to M/s Ramky for safe disposal in secured landfill area. M/s Ramky is likely to lift the refractory SPL soon after fulfilling the terms & conditions specified in the Protocol. The location and design of the land fill site has been prepared as per the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and approved from SPCB. The dross recycling is being started since July'17 in the in-house dross recycling unit after receipt of required clerances from CPCB & SPCB. STP is commissioned and is in operation at township & Plant area separately, the sludge is being used for greenbelt development. The used oil and batteries are being sold to authorized recyclers/reprocessors.
xv)	As proposed, spent pot lining waste shall also be provided to cement and steel industries for further utilization.	The Carbon part of the SPL which is being supposed to be sent to Cement and Steel Industries, we are supplying to M/s Green Energy Resources for detoxification and complete ecycling.
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	The ash disposal area has been studied by the Experts of NIT-Rourkela. The ash pond and water decantation system is constructed in line with the design & drawings provided by NIT. The ash pond is provided with HDPE liner and adequate safety measures has been taken to

	recirculated and reused.	avoid any kind of dyke breach. The ash disposal through HCSD system to the ash pond started from January 2017. The decanted water from the ash pond recycled back to ther plant for reuse in ash disposal.
xvii)	Cycle of concentration (CoC) of 5.0 shall be adopted.	Water Balance of CPP is being optimized and presently we are maintaing the CoC > 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 water quality is not adversely affected due to the project.	Regular monitoring of ground water is being carriedout through establishing a network of existing wells and constructing a new piezometer well around the ash pond area. The ground water analysis report is enclosed as Annexure-7. Monitoring of heavy metals (Hg, Cr, As, Pb) around the Ash pond area is being carried and record maintained. The analysis report of the ground water quality around the ash pond area is mentioned in annexure-8.
xix)	Regular ground water monitoring shall be carried out by installing peizometers all around the secured land fill site in consultation with the SPCB, Central Ground Water Authority and State Ground Water Board and data submitted to the Ministry's Regional Office and SPCB.	Secured landfill site has not yet been established inside the plant. Ground water quality 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.
xx)	Total water requirement for the expansion from Hirakud Reservoir shall not exceed 5,200 m3/hr and prior permission for the existing and proposed expansion shall be obtained from the concerned department before commissioning of the plant. All the effluent including from the cooling tower and de-mineralization plant shall be treated in the effluent treatment plant and treated effluent shall be recycled/reutilized in the process in smelter and CPP and also for fire protection, dust suppression, greenbelt development etc. Domestic effluent shall be treated in sewage treatment plant (STP) and treated domestic waste water will be used for greenbelt development.	No additional fresh water will be sourced from Hirakud Reservoir for the proposed expansion. The water requirement estimated for the expansion is within 52.73 cusec, as approved. The Effluent from the cooling towers and de-mineralization plant is being treated in Double Stage RO based effluent treatment plant and is being recycled/reutilized in the process of CPP. Separate Sewage Treatment Plant (STP) is installed @ capacity 25 m^3/hr for Smelter & Captive Power Plant, STP of 300 KLD capacity is installed at Township area and the treated water being used for greenbelt development.
xxi)	No effluent shall be discharged outside the premises of smelter during non-monsoon period and shall be discharged during the	We are operating a Double Stage Reverse Osmosis based effluent treatment plant (ETP) of 300 m^3/hr capacity and therefore no

	monsoon period only after treatment and meeting the norms of the OSPCB/CPCB.	effluent water is being discharged to outside without treatment from Smelter.
xxii)	Greenbelt of adequate width and density around the project site shall be developed in 33% area in consultation with the DFO as per the CPCB guidelines having density of 2,000 trees/Ha.	Aditya Aluminium has developed Greenbelt over 536 acres inside the Core plant & Township areas. Around 3,80,500 saplings planted till Sept 2018. The action plan for achiving 33% greenbelt is attached as annexure - 9).
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 recharging arrangement is being made in the township buildings, besides a rain water harvesting pond is being established inside the township area which is being utilsed for gardening purposes. A rain water scheme submitted to CGWA for approval vide letter no. AA/E&F/EC/2016/131, dated 09/04/2016.
xxv)	Rehabilitation and Resettlement Action Plan as prepared and submitted to the State Govt. shall be implemented as per the R & R Policy of the State Government. All the recommendations mentioned in the R&R Plan shall be strictly followed including suitable employment and other facilities to all the oustees.	Rehabilitation and Resettlement Action Plan is being implemented as per the R & R policy, 2006 of the State Govt. All the recommendations are being followed/complied.
xxvi)	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium Sector shall be strictly implemented.	All the conditions of CREP guideline for Aluminium sector is being followed. The point wise compliance to the CREP guideline is attached as Annexure-10
xxvii)	The company shall adopt well laid down corporate policy and identified and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with environmental clearance, environmental laws and regulations.	The company has adopted a well laid down Corporate Environment Policy. The Environment Policy is being revised in 19th November 2016 approved by the Board of Directors. Copy of the revised Environment Policy is attached as annexure -11.
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. (Status of implementation is enclosed as annexure-12).

xxix)	At least 5% of the total cost of the project shall be earmarked for towards the Enterprise Social Commitment and item-wise details along with time bound action plan should be prepared and submitted to the Ministry's office at Bhubaneswar. Implementation of such program should be ensured accordingly in a time bound manner.	The expenses under Enterpise Social Commitment (ESC) till September2018 is Rs 43.81 Crores. The details of the expenditure made under Enterpise Social Commitment (ESC) till September 2018 is attached as annexure-13.
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 in manufacturing Plants & communication of Policy as regards Corporate Environment already submitted to MoEF.
	GENERAL CONDITIONS	
i)	The project authorities must strictly adhere to the stipulations made by the OSPCB and the State Government.	We will follow the stipulations made by OSPCB and the State Government.
ii)	No further expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	We will not carry out any expansion or modification in the plant without prior approval of MoEFCC.
iii)	The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The SPCB may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location.	We have noted and accepted the stipulated condition.
iv)	At least four number of ambient air quality monitoring stations shall be established in the downward direction as well as where	Installation of four (04) CAAQMStations completed and commissioned. Data connectivity established with the servers of

	maximum ground level concentration of SPM, SO_2 and NO_x are anticipated in consultation with the OSPCB. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and Orissa State Pollution Control Board once in Six months.	OSPCB and CPCB. Installation of the continuous stack emission monitoring syatem in all the major stacks completed.All the CAAQMS & CEMS synchronized with the webserver of the SPCBwithURL http:// 117.239.117.27/ ospcbrtdas/&CPCB withURL http:// 113.19.81.38/ cpcbrtdas/respectively. The six-monthly compliance along with the monitoring data is being submitted to the concerned authorities regularly.
v)	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (daytime) and 70 dBA (nighttime).	The overall noise levels in and around the plant area is within the prescribed standards and it is made possible by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The overall noise level is within the standard, regular monitoring is being done. All necessary PPEs are provided to the workers and engineers working in the factory.
vi)	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	Occupational Health Surveillance of the workers is being done as per the Factories Act.
vii)	The company shall develop surface water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	The company has developed surface water harvesting structures to the tune of 22 lakhs cum to store water in the lean season and it will harvest the rain water during rainy season in the same reservoirs.
viii)	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA report. Further the company must undertake socio-economic development activities in the surrounding villages like community development progammes, drinking water supply and health care etc.	We have noted and accepted all the conditions and will comply in a time bound manner. The economic development activities are going on regularly as a part of our corporate social responsibility. A team of personnel are working dedicatedly for peripheral development work like conducting health camps, community developed programmes, formation SHG groups, supply of drinking water and other common infrastructural development works. Details of the CSR, R&R activities undertaken is attached as Annexure-14.
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	Requisite fund has been spent & allotted towards capital cost and recurring cost/annum for environment pollution control measures and the fund will not be diverted for any other expenditure.

	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.	
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 to the EC conditions is being submitted to the Regional office of the MOEF regularly on 1stJune and 1stDec respectivelywith a copy to CPCB & OSPCB and the same is being uploaded into the Company website. All the stack emission and ambient air monitoring stations are synchronized with the webserver of the SPCB & CPCB. The online monitoring data w.r.t. stack emission, ambient air quality and effluent water quality is being electrocically displayed at main entrance gate for information to the public.
xii)	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitoring data (both in hard & soft copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Offices of CPCB and the SPCB. The Regional office of this Ministry at Bhubaneswar. CPCB/SPCB shall monitor the stipulated conditions.	We are submitting the six monthly compliance reports of the stipulated environmental conditions (both in hard & soft copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Offices of CPCB and the SPCB. The monitoring data in respect of AAQ, water, soil, noise etc is enclosed as *Annexure-15*.
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	Information to Public has been madethrough

	that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at website of the Ministry of Environment & Forest at http/www.envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office at Bhubaneswar.	advertisement of the environmental clearance in two widely circulated daily newspapers i.e. "The New Indian Express" on 04-12-2012 & "The Samaja" on 05-12-2012, within seven days of receiving the clearance letter. The copy of the advertisement was submitted to the Ministry's Regional Office at Bhubaneswar vide our office letter no. AAP/E&F/786, dated 07-12-2012.
xv)	The authorities shall inform the regional office as well as the Ministry, the date of financial closure and final approval of the project by the 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 Construction activities for Phase-I completed for 0.36 MTPA Smelter and 6x150 MW CPP and operating 360 pots out of 360 pots in Smleter and 6 units (6x150 MW) in CPP.

Encl: As above

(Authorized Signatory)

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

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

1	a) Name of the Project	Aditya Aluminium (A Unit of Hindalco Industries Limited)
	b) Envt. /Forest Clearance Nos.	i. Env Clearance vide letter No: J-11011/136/2009-IA-I(I), Dated 29/11/2012 & J-11011/136/2009-IA.II (1), Dated 14 June 2013. ii. Forest Clearance vide letter No: 8-27/2009-FC, 10.02.2011
2	Location/ Block/ Sub-Divn./ Dist/ State	Aditya Aluminium (A Div. of Hindalco Industries Limited) At/Po- Lapanga, Dist- Sambalpur Pin - 768 212, Odisha6
3	Address for communication	Aditya Aluminium (A Div. of Hindalco Industries Limited) At/Po- Lapanga, Dist- Sambalpur Pin - 768 212, Odisha
4	Existing vegetation in the area/ region	At present several types of vegetation available in the area, however some of the names mentioned as follows- Terminalia arjuna; Pongamia pinnata; Gmelina arboria; Anthocephallus cadamba; Dalbergia latifolia; Azadiracta indica; Albizzia Lebbeck; Delonix regia; Ailanthus exelsa,Cassea siamea; Cassia fistula, etc
5	a) Species: (trees/shrubs/grasses/climbers)	Terminalia arjuna; Pongamia pinnata; Gmelina arboria; Anthocephallus cadamba; Dalbergia latifolia; Azadiracta indica; Albizzia Lebbeck; Delonix regia; Ailanthus exelsa,Cassea siamea; Cassia fistula, etc trees species available.
	b) Major prevalent species of each type:	Anthocephallus cadambaTerminalia arjuna, Peltoferrum ferrugenium, Gmelina arboria, Alberzia Lebbeck, Delonix regia etc are the prevalent species found.
6	Land coverage by the project:	1347.35 Ha
	a. Name and number of tree/species felled	2002 no's of trees felled through OFDC, Sambalpur (CKL) Division.
	b. Name and number of plant species still available in the area	Plant species and number will be counted after completion of all the project activities and will be submitted to your good office
	c. By protecting the area will indigenous stock come up	Nil
	d. Extent of greenbelt developed	536.15 acres covered under greenbelt till September 2018.
7	Plantations required to be carried out as per	
	a) Conditions of Environmental Clearance in Ha/Nos.	33% of total project area
	b) Conditions of Forest Act (c) Clearance in Ha/Nos.	25 % of total project area
	c. Voluntarily in Ha/Nos.	NA

8. Details of plantation
   a) Total area available for plantation
      In each category

Greenbelt	Dumps	Back filled area	Road sides	Block plantation
The 33% of the project area will be covered under greenbelt/green cover and the plant. The phase- I facilities completed and Phase-II construction work not started. Till date 536.`15 acres of land has been covered under greenbelt and balance will be covered in phased manner.				

b) Plantation details (category wise & methodology used)

Year of plantation	Species Planted	Spacing	Height attained	Total area covered	Area still available
2010 & 2011	Terminalia arjuna; Pongamia pinnata; Gmelina arboria; Anthocephallus cadamba; Dalbergia latifolia; Azadiracta indica; Albizzia Lebbeck; Delonix regia; Ailanthus exelsa, Cassea siamea; Cassia fistula, etc	2*2	26'-29'	14.7 Ha	Plantation is being done in phased manner.
2012		3*3	19'-23'	38.2 Ha	
2013		3*3	16'-20'	11.2 Ha	
2014		3*3	14'-16'	16.8 Ha	
2015		4*4	12'-14'	24.36 Ha	
2016		2*2	9'-12'	20.0 Ha	
2017		2*2	5'-7'	46.8 Ha	
2018		2*2	2'- 3'	45 Ha	

c) Survival of Plantation:

Total Plantation (No.)	3, 80,500
Survival (No.)	3,42,450
Survival rate	Approx 90%

9. Agency carrying out plantation and maintenance: NA

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

Sl. No.	Year	Fund allocated (Rs)	Expenditure made (Rs)	Average cost of each surviving plant in Rs.
1	2010	81,62,000	81,62,000.00	245.00
2	2011			
3	2012	46,21,600	46,21,600.00	121.00
4	2013	13,62,500	13,62,500.00	121.00
5	2014	18,53,000	18,53,000.00	115.00
6	2015	18,65,000	18,65,000	109.00
7	2016	49,00,000	49,00,000	100.00
8	2017	68,00,000	68,00,000	71.00
9	2018 (till Sep 2018)	70,00,000	41,000,00	41.00

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

Forest officials from Divisional Forest Office, Sambalpur and Forest Renge Office, Rengali are visiting to our location at periodic intervals and giving their technical guidance from time to time. Joint Director/Director of Regional Office of MoEF&CC, Bhubaneswar also visit our plant site periodically.

12. Remarks/ any other information :

Indigenous species have been planted as per the Guideline of CPCB.

(Signature)

Report-II

PROFORMA FOR PROVIDING INFORMATION ON REHABILITATION

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

Families affected	SC	ST	OTH	TOTAL
	-	-	-	1450

3. Compensation package offered per family:

State/ Centre norms	Project package
As per the R&R Policy 2006, Govt. of Odisha	As per the R&R Policy 2006 and 2013, Govt. of Odisha. Aditya Aluminium follows the RR Policy and subsequent Compensation Revision also.

4. Budget estimate for rehabilitation :

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

5. Employment details

   a) Total employment to be provided : 68
   b) Employment given so far : 59

6. Rehabilitation & Resettlement details : Total Displaced Persons Numbers - 433

a	No. of families rehabilitated				
i	Name of the Site	Aditya Aluminium			
ii	Families rehabilitated	SC	ST	OTH	Total
		08	387	18	413
b	Families yet to be rehabilitated				
i	Name of the Site(s)	Aditya Aluminium			
ii	No. of families (Total -433)	SC	ST	OTH	Total
		00	19	1	20

7. Any other information : Nil

(Signature)

Annexure -07

Visiontek Consultancy Services Pvt. Ltd.
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ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Enwfab/18/R-837 *Date:* 05/05/18

STACK EMISSION MONITORING REPORT FOR APRIL-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.04.2018
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 30.04.2018 TO 03.05.2018

	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-7
Stack Temperature	^0C	Stack Sampler	-	110
Velocity of Flue Gas	m/sec	Stack Sampler	-	10.65
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	101767
Barometric Pressure	mm of Hg	Barometer	-	741
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	11.25
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	-	284.16
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	67.85
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.18
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm^3	Calculation	-	0.58
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

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

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

Ref.: Enwlab/18/R-838 Date: 05/05/18

STACK EMISSION MONITORING REPORT FOR APRIL-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.04.2018
3. Sampling Location : **ST-8: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 30.04.2018 TO 03.05.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^0C	Stack Sampler	-	108.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	10.25
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	97962.0
Barometric Pressure	mm of Hg	Barometer	-	742.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	8.69
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	-	196.24
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	105.04
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.17
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm^3	Calculation	-	0.57
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

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

Visiontek Consultancy Services Pvt. Ltd.
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ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/18/R-4207

Date: 4/06/18

STACK EMISSION MONITORING REPORT FOR MAY-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 26.05.2018
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 28.05.2018 TO 04.06.2018

	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-7
Stack Temperature	^0C	Stack Sampler	-	116.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	10.15
Quantity of Gas Flow	m^3/hr	Stack Sampler	-	46102.0
Barometric Pressure	mm of Hg	Barometer	-	742.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	10.06
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	-	291.54
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	42.65
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.5
Total Fluoride as F	mg/Nm^3	Calculation	-	0.63
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	ND
Poly Aromatic Hydrocarbon as PAHs	mg/Nm3	Gas Chromatography	-	ND

Note: ND: Not Detected.

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

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, Visit us at:

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

Ref.: Envlab/18/K-4208

Date: 4/06/18

STACK EMISSION MONITORING REPORT FOR MAY-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 26.05.2018
3. Sampling Location : **ST-8: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 28.05.2018 TO 04.06.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^0C	Stack Sampler	-	113.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	10.36
Quantity of Gas Flow	m^3/hr	Stack Sampler	-	44011.0
Barometric Pressure	mm of Hg	Barometer	-	742.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	9.54
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	-	158.65
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	115.21
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.19
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.28
Total Fluoride as F	mg/Nm^3	Calculation	-	0.47
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, Visit us at:

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OHSAS 18001 : 2007

Ref.: Envlab/18/R-5555 Date: 05/07/18

STACK EMISSION MONITORING REPORT FOR JUNE-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.06.2018
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : *VCSPL Representative in presence of Aditya Aluminium Representative*
6. Date of Analysis : 28.06.2018 TO 02.07.2018

	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results ST-1
Stack Temperature	^0C	Stack Sampler	-	112
Velocity of Flue Gas	m/sec	Stack Sampler	-	9.89
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	94014
Barometric Pressure	mm of Hg	Barometer	-	741
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	7.86
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	-	241.65
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	52.65
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.15
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm^3	Calculation	-	0.55
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.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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

Ref.: Envlab/18/R-5556 *Date:* 05/07/18

STACK EMISSION MONITORING REPORT FOR JUNE-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.06.2018
3. Sampling Location : **ST-8: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 28.06.2018 TO 02.07.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-2
Stack Temperature	^0C	Stack Sampler	-	112
Velocity of Flue Gas	m/sec	Stack Sampler	-	10.42
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	59835
Barometric Pressure	mm of Hg	Barometer	-	742
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	50	9.28
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	-	211.96
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	134.87
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.16
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.30
Total Fluoride as F	mg/Nm^3	Calculation	-	0.46
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel.: +91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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ISO 9001 : 2008
OHSAS 18001 : 2007

Ref. [illegible] *Date:* 04.08.2018

STACK EMISSION MONITORING REPORT FOR JULY-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium): Lapanga**
2. Date of Sampling : 31.07.2018
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vanadium Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representatives
6. Date of Analysis : 27.07.2018 TO 31.07.2018

	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results ST-1
Stack Temperature	°C	Stack Sampler	-	113
Velocity of Flue Gas	m/sec	Stack Sampler	-	9.82
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	9221.1
Barometric Pressure	mm of Hg	Barometer		731
Concentration of Particulate Matter as PM	mg/Nm	Gravimetric	50	8.1
Sulphur dioxide as SO_2	mg/Nm	IPA- Thorin method	-	216.3
Oxides of Nitrogen as NO_x	mg/Nm	Modified Jacob & Hochheiser (Na-Arsenite)	-	51.5
Particulate Fluoride	mg/Nm	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm	Ion Electrode method	-	0.30
Total Fluoride as F	mg/Nm	Calculation	-	0.40
Tar Fumes	mg/Nm	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbons as PAHs	mg/Nm	Gas Chromatographic	-	ND

Note: ND- Not Detected

For Visiontek Consultancy Services Pvt. Ltd.

Ref: [illegible] *Date:* [illegible]

STACK EMISSION MONITORING REPORT FOR JULY-2018

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium): Lapanga
2. Date of Sampling : 24.07.2018
3. Sampling Location : ST-8: Stack attached to ABF II - FTC - 2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.07.2018 TO 31.07.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results ST-2
Stack Temperature	°C	Stack Sampler	-	124
Velocity of Flue Gas	m/sec	Stack Sampler	-	10.34
Quantity of Gas Flow	Nm³/Hr	Stack Sampler	-	58954
Barometric Pressure	mm of Hg	Barometer	-	732
Concentration of Particulate Matter as PM	mg/Nm³	Gravimetric	50	9.16
Sulphur dioxide as SO	mg/Nm³	IPA-2 Iodometric method	-	320.3
Oxides of Nitrogen as NO	mg/Nm³	Modified Jacob & Hochheiser (Na-Arsenite)	-	128.6
Particulate Fluoride	mg/Nm³	Distillation Followed by Ion Electrode method	-	0.2
Gaseous Fluoride	mg/Nm³	Ion Electrode method	-	0.34
Total Fluoride as F	mg/Nm³	Calculation	-	0.54
Tar Fumes	mg/Nm³	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbons as PAH's	µg/Nm³	Gas Chromatography		ND

Note: ND: Not Detected

For Vishvesh Consultancy Services Pvt. Ltd

Visiontek Consultancy Services Pvt. Ltd.
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ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/18/R-8546 Date: 30/08/18

STACK EMISSION MONITORING REPORT FOR AUGUST-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 13.08.2018
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 14.08.2018 TO 18.08.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results ST-1
Stack Temperature	^0C	Stack Sampler	-	111.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	9.87
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	93894.0
Barometric Pressure	mm of Hg	Barometer	-	742.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	7.9
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	-	239.1
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	52.4
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.47
Total Fluoride as F	mg/Nm^3	Calculation	-	0.59
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.
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ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/18/R-8547 *Date:* 30/08/18

STACK EMISSION MONITORING REPORT FOR AUGUST-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 13.08.2018
3. Sampling Location : **ST-8: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 14.08.2018 TO 18.08.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results ST-2
Stack Temperature	^0C	Stack Sampler	-	110.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	10.32
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	59380.0
Barometric Pressure	mm of Hg	Barometer	-	742.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	9.20
Sulphur dioxide as SO_2	mg/Nm^3	IPA- Thorin method	-	220.4
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	123.6
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.18
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride as F	mg/Nm^3	Calculation	-	0.57
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

Ref.: Envlab/18/R-8668 *Date:* 03/10/18

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 27.09.2018
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 29.09.2018 TO 01.10.2018

	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-7
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (Reaff 2008)	-	112
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	9.83
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	93569
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	742
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	7.6
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	245.6
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	53.6
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.49
Total Fluoride as F	mg/Nm^3	Calculation	-	0.63
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.

VISIONTEK CONSULTANCY SERVICES PVT

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.
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ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/18/R-8669 *Date:* 03/10/18

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 27.09.2018
3. Sampling Location : **ST-8: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 29.09.2018 TO 01.10.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	111
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	10.2
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	58536
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	742
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	9.3
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	234
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	125
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.17
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.43
Total Fluoride as F	mg/Nm^3	Calculation	-	0.60
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

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For Visiontek Consultancy Services Pvt. Ltd.

Annexure - 02

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

Ref.: Envlab/18/R-839 *Date:* 05/05/18

STACK EMISSION MONITORING REPORT FOR APRIL-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.04.2018
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 30.04.2018 TO 03.05.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-9
Stack Temperature	^0C	Stack Sampler	-	105.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	8.47
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	2084094.0
Barometric Pressure	mm of Hg	Barometer	-	746.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	11.25
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	-	83.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	ND
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.16
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.46
Total Fluoride	mg/Nm^3	Calculation	-	0.62

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

Visiontek Consultancy Services Pvt. Ltd.
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ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/18/R-840 *Date:* 05/05/18

STACK EMISSION MONITORING REPORT FOR APRIL-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.04.2018
3. Sampling Location : **ST-10: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 30.04.2018 TO 03.05.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results ST-10
Stack Temperature	^0C	Stack Sampler	-	102.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	8.86
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	2208709.0
Barometric Pressure	mm of Hg	Barometer	-	745.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	6.58
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	-	79.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	ND
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.15
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.46
Total Fluoride	mg/Nm^3	Calculation	-	0.61

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

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontekin@gmail.com, Visit us at: www.vcspl.org

Visiontek Consultancy Services Pvt. Ltd.
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ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/18/R-4209 Date: 05/06/18

STACK EMISSION MONITORING REPORT FOR MAY-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 29.05.2018
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 30.05.2018 TO 04.06.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-9
Stack Temperature	^0C	Stack Sampler	-	114.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	8.65
Quantity of Gas Flow	M^3/sec	Stack Sampler	-	954865.0
Barometric Pressure	Mm of Hg	Barometer	-	745.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	10.24
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	-	67.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	42.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.5
Total Fluoride	mg/Nm^3	Calculation	-	0.64
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

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

Plot No.-M-22&23. Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek.in@gmail.com, Visit us at: www.vcsl.org

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

Ref.: Enwlab/18/R-4210 *Date:* 05/06/18

STACK EMISSION MONITORING REPORT FOR MAY-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 29.05.2018
3. Sampling Location : **ST-10: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 30.05.2018 TO 04.06.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results ST-10
Stack Temperature	^0C	Stack Sampler	-	108.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	8.13
Quantity of Gas Flow	M^3/sec	Stack Sampler	-	926008.0
Barometric Pressure	Mm of Hg	Barometer	-	746.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	6.17
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	-	57.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	43.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.19
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.43
Total Fluoride	mg/Nm^3	Calculation	-	0.62
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

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

Ref.: Envlab/18/R-5557 *Date:* 05/07/18

STACK EMISSION MONITORING REPORT FOR JUNE-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 27.06.2018
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 28.06.2018 TO 02.07.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-1
Stack Temperature	^0C	Stack Sampler	-	118
Velocity of Flue Gas	m/sec	Stack Sampler	-	8.34
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	2009477
Barometric Pressure	mm of Hg	Barometer	-	746
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	8.96
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	-	51
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	47
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.16
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.46
Total Fluoride	mg/Nm^3	Calculation	-	0.62

VISIONTEK CONSULTANCY SERVICES PVT LTD

For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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

Ref.: Envlab/18/R-5558 Date: 05/07/18

STACK EMISSION MONITORING REPORT FOR JUNE-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 27.06.2018
3. Sampling Location : **ST-10: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 28.06.2018 TO 02.07.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results ST-2
Stack Temperature	^0C	Stack Sampler	-	112
Velocity of Flue Gas	m/sec	Stack Sampler	-	8.13
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	1980413
Barometric Pressure	mm of Hg	Barometer	-	745
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	7.96
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	-	49
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	38
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.20
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.35
Total Fluoride	mg/Nm^3	-Calculation	-	0.55

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For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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ISO 14001 : 2015
OHSAS 18001 : 2007

Ref.: Env/Vtk/18/R- 5563 Date: 04.08.2018

STACK EMISSION MONITORING REPORT FOR JULY-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium): Lapanga**
2. Date of Sampling : 23.07.2018
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS-2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representatives
6. Date of Analysis : 27.07.2018 TO 31.07.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-1
Stack Temperature	^{0}C	Stack Sampler	-	115
Velocity of Flue Gas	m/sec	Stack Sampler	-	8.71
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	212823
Barometric Pressure	mm of Hg	Barometer	-	716
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	50	9.34
Sulphur dioxide as SO$_2$	mg/Nm^3	IPA-Thorin method	-	56
Oxides of Nitrogen as NO$_x$	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	41
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.79
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.48
Total Fluoride	mg/Nm^3	Calculation	-	0.67

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.
(An Enviro Engineering Consulting Cell)

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

Ref: Fovlab/18/R- 5564 *Date:* 04.08.2018

STACK EMISSION MONITORING REPORT FOR JULY-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium): Lapanga**
2. Date of Sampling : 23.07.2018
3. Sampling Location : **ST-10: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.07.2018 TO 31.07.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results ST-2
Stack Temperature	^0C	Stack Sampler	-	109
Velocity of Flue Gas	m/sec	Stack Sampler	-	8.27
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	2049796
Barometric Pressure	mm of Hg	Barometer	-	745
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	50	6.9
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	-	51
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	36
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.21
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.39
Total Fluoride	mg/Nm^3	Calculation	-	0.60

For Visiontek Consultancy Services Pvt. Ltd.

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

Ref.: Envlab/18/R-8548 *Date:* 30/08/18

STACK EMISSION MONITORING REPORT FOR AUGUST-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 10.08.2018
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 14.08.2018 TO 18.08.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-1
Stack Temperature	^0C	Stack Sampler	-	114.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	8.82
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	2153933.0
Barometric Pressure	mm of Hg	Barometer	-	746.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	**50**	9.42
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	-	59.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	43.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.22
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.46
Total Fluoride	mg/Nm^3	Calculation	-	0.68

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref.: Envlab/2018/R-8549 *Date:* 30/08/18

STACK EMISSION MONITORING REPORT FOR AUGUST-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 10.08.2018
3. Sampling Location : **ST-10: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 14.08.2018 TO 18.08.2018

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results ST-2
Stack Temperature	^0C	Stack Sampler	-	111.0
Velocity of Flue Gas	m/sec	Stack Sampler	-	8.42
Quantity of Gas Flow	Nm^3/Hr	Stack Sampler	-	2062966.0
Barometric Pressure	mm of Hg	Barometer	-	745.0
Concentration of Particulate Matter as PM	mg/Nm^3	Gravimetric	50	6.3
Sulphur dioxide as SO_2	mg/Nm^3	IPA-Thorin method	-	53.0
Oxides of Nitrogen as NO_x	mg/Nm^3	Modified Jacob & Hochheiser (Na-Arsenite)	-	41.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.21
Gascous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride	mg/Nm^3	Calculation	-	0.62

For Visiontek Consultancy Services Pvt. Ltd.

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

Ref.: Envlab/18/R-8782 Date: 03.10.18

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 28.09.2018
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 29.09.2018 TO 01.10.2018

Parameters	Unit of Measurement	Protocol	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-9
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	104.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.85
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2225631.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	746
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	50	7.67
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	63.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	41.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.23
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.46
Total Fluoride	mg/Nm^3	Calculation	-	0.69

For Visiontek Consultancy Services Pvt. Ltd.

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

Ref.: Envt/Adity/18/R-6753

Date: 03-10-18

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 28.09.2018
3. Sampling Location : **ST-10: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 29.09.2018 TO 01.10.2018

Parameters	Unit of Measurement	Protocol	Emission Prescribe Standard (OSPCB)	Analysis Results ST-10
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	104.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2127990.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	745
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	7.02
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	59.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	42.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.23
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.44
Total Fluoride	mg/Nm^3	Calculation	-	0.67

For *Visiontek Consultancy Services Pvt. Ltd.*

Annexure - 3

POTROOM ONLINE FUGITIVE MONITORING(HF) REPORT APRIL'18 TO SEPTEMBER'18

APRIL'18		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Avg. in PPM
		01-04-18	02-04-18	03-04-18	04-04-18	05-04-18	06-04-18	07-04-18	08-04-18	09-04-18	10-04-18	11-04-18	12-04-18	13-04-18	14-04-18	15-04-18	16-04-18	17-04-18	18-04-18	19-04-18	20-04-18	21-04-18	22-04-18	23-04-18	24-04-18	25-04-18	26-04-18	27-04-18	28-04-18	29-04-18	30-04-18	
FUGITIVE EMISSION CHP1 (B001-B090) HF	PPM	0.217	0.455	0.343	0.302	0.392	0.345	0.43	0.316	0.369	0.343	0.377	0.283	0.39	0.376	0.526	0.333	0.303	0.369	0.499	0.355	0.409	0.321	0.484	0.427	0.376	0.27	0.387	0.399	0.247	0.22	0.362
FUGITIVE EMISSION CHP2 (B091-B180) HF	PPM	0.179	0.402	0.441	0.24	0.235	0.211	0.325	0.334	0.211	0.247	0.23	0.467	0.216	0.288	0.244	0.214	0.185	0.217	0.143	0.16	0.101	0.105	0.155	0.153	0.119	0.073	0.123	0.098	0.112	0.142	0.212
FUGITIVE EMISSION CHP3 (A091-A180) HF	PPM	0.091	0.072	0.153	0.11	0.125	0.171	0.251	0.256	0.198	0.217	0.231	0.082	0.123	0.15	0.71	0.119	0.097	0.113	0.111	0.179	0.215	0.044	0.011	0.106	0.105	0.092	0.109	0.098	0.102	0.023	0.132
FUGITIVE EMISSION CHP4 (A001-A090) HF	PPM	0.173	0.234	0.371	0.182	0.148	0.162	0.174	0.237	0.272	0.217	0.087	0.016	0.23	0.032	0.129	0.195	0.115	0.163	0.052	0.175	0.048	0	0	0.115	0.089	0.007	0.094	0.081	0.12	0.256	0.146
																														Monthly Average(ppm)		0.213
																														Monthly Average (mg/M3)		0.177

MAY'18		Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Avg. in PPM
		01-05-18	02-05-18	03-05-18	04-05-18	05-05-18	06-05-18	07-05-18	08-05-18	09-05-18	10-05-18	11-05-18	12-05-18	13-05-18	14-05-18	15-05-18	16-05-18	17-05-18	18-05-18	19-05-18	20-05-18	21-05-18	22-05-18	23-05-18	24-05-18	25-05-18	26-05-18	27-05-18	28-05-18	29-05-18	30-05-18	31-05-18	
FUGITIVE EMISSION CHP1 (B001-B090) HF	PPM	0.255	0.363	0.361	0.385	0.388	0.322	0.43	0.282	0.434	0.307	0.161	0.319	0.372	0.181	0.424	0.384	0.242	0.341	0.363	0.221	0.308	0.095	0.251	0.076	0.135	0.449	0.322	0.288	0.332	0.277	0.162	0.298
FUGITIVE EMISSION CHP2 (B091-B180) HF	PPM	0.168	0.126	0.235	0.109	0.079	0.048	0.035	0.037	0.056	0.042	0.097	0.079	0.092	0.183	0.11	0.363	0.095	0.26	0.142	0.095	0.102	0.125	0.13	0.087	0.15	0.072	0.091	0.214	0.058	0.102	0.12	0.113
FUGITIVE EMISSION CHP3 (A091-A180) HF	PPM	0.182	0.08	0.137	0.127	0.142	0.108	0.163	0.189	0.131	0.167	0.18	0.264	0.183	0.103	0.234	0.302	0.199	0.059	0.096	0.122	0.331	0.211	0.281	0.08	0.201	0.113	0.118	0.18	0.051	0.045	0.115	0.158
FUGITIVE EMISSION CHP4 (A001-A090) HF	PPM	0.243	0.251	0.276	0.169	0.002	0	0	0	0	0.521	0.166	0.148	0.242	0	0.111	0.352	0.165	0	0.213	0.095	0.014	0.082	0.09	0.062	0.083	0.252	0.272	0.23	0.084	0.111	0.056	0.138
																														Monthly Average(ppm)			0.177
																														Monthly Average (mg/M3)			0.147

JUNE'18		Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Avg. in PPM
		01-06-18	02-06-18	03-06-18	04-06-18	05-06-18	06-06-18	07-06-18	08-06-18	09-06-18	10-06-18	11-06-18	12-06-18	13-06-18	14-06-18	15-06-18	16-06-18	17-06-18	18-06-18	19-06-18	20-06-18	21-06-18	22-06-18	23-06-18	24-06-18	25-06-18	26-06-18	27-06-18	28-06-18	29-06-18	30-06-18	
FUGITIVE EMISSION CHP1 (B001-B090) HF	PPM	0.217	0.3	0.29	0.227	0.122	0.158	0.326	0.194	0.221	0.147	0.183	0.142	0.162	0.281	0.201	0.31	0.228	0.337	0.264	0.342	0.235	0.349	0.379	0.384	0.404	0.366	0.191	0.333	0.291	0.345	0.265
FUGITIVE EMISSION CHP2 (B091-B180) HF	PPM	0.151	0.085	0.084	0.076	0.124	0.037	0.057	0.064	0.085	0.072	0.075	0.046	0.072	0.055	0.061	0.024	0.088	0.024	0.033	0.037	0.044	0.112	0.044	0.053	0.051	0.123	0.085	0.209	0.151	0.105	0.076
FUGITIVE EMISSION CHP3 (A091-A180) HF	PPM	0.089	0.072	0.147	0.121	0.156	0.157	0.102	0.093	0.217	0.05	0.094	0.113	0.182	0.16	0.191	0.114	0.189	0.148	0.146	0.103	0.139	0.274	0.126	0.201	0.254	0.119	0.044	0.143	0.167	0.169	0.142
FUGITIVE EMISSION CHP4 (A001-A090) HF	PPM	0.048	0.142	0.239	0.244	0.169	0.399	0.149	0.1	0.099	0.116	0.106	0.164	0	0.372	0.377	0.261	0.299	0.177	0.237	0.279	0.285	0.217	0.367	0.401	0.506	0.095	0	0.013	0	0.224	0.210
																														Monthly Average(ppm)			0.173
																														Monthly Average (mg/M3)			0.144

JULY'18		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Avg. in PPM
		01-07-18	02-07-18	03-07-18	04-07-18	05-07-18	06-07-18	07-07-18	08-07-18	09-07-18	10-07-18	11-07-18	12-07-18	13-07-18	14-07-18	15-07-18	16-07-18	17-07-18	18-07-18	19-07-18	20-07-18	21-07-18	22-07-18	23-07-18	24-07-18	25-07-18	26-07-18	27-07-18	28-07-18	29-07-18	30-07-18	31-07-18	
FUGITIVE EMISSION CHP1 (B001-B090) HF	PPM	0.278	0.299	0.165	0.339	0.305	0.39	0.295	0.431	0.348	0.225	0.358	0.3	0.332	0.276	0.314	0.143	0.077	0.231	0.329	0.491	0.176	0.198	0	0	0	0	0	0	0	0	0	0.203
FUGITIVE EMISSION CHP2 (B091-B180) HF	PPM	0.132	0.174	0.288	0.188	0.211	0.13	0.226	0.298	0.309	0.242	0.335	0.286	0.338	0.328	0.335	0.229	0.318	0.262	0.341	0.325	0.363	0.235	0	0	0	0	0	0	0	0	0	0.191
FUGITIVE EMISSION CHP3 (A091-A180) HF	PPM	0.191	0.195	0.159	0.196	0.204	0.256	0.215	0.128	0.237	0.218	0.238	0.117	0.263	0.111	0.013	0.08	0.121	0.121	0.276	0.261	0.033	0.125	0	0	0	0	0	0	0	0	0	0.121
FUGITIVE EMISSION CHP4 (A001-A090) HF	PPM	0.221	0.185	0.02	0.096	0.046	0.286	0.105	0.127	0.116	0.122	0.153	0.117	0.019	0.012	0.073	0.0223	0	0.093	0.013	0.089	0	0.068	0	0	0	0	0	0	0	0	0	0.062
																														Monthly Average(ppm)			0.144
																														Monthly Average (mg/M3)			0.120

AUGUST'18		Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Avg. in PPM
		01-08-18	02-08-18	03-08-18	04-08-18	05-08-18	06-08-18	07-08-18	08-08-18	09-08-18	10-08-18	11-08-18	12-08-18	13-08-18	14-08-18	15-08-18	16-08-18	17-08-18	18-08-18	19-08-18	20-08-18	21-08-18	22-08-18	23-08-18	24-08-18	25-08-18	26-08-18	27-08-18	28-08-18	29-08-18	30-08-18	31-08-18	
FUGITIVE EMISSION CHP1 (B001-B090) HF	PPM	0.105	0.087	0.074	0.309	0.166	0.115	0.054	0.055	0.134	0.209	0.159	0.092	0.135	0.151	0.055	0.392	0.143	0.157	0.164	0.083	0.227	0.219	0.26	0.224	0.178	0.159	0.08	0.106	0.164	0.184	0.136	0.154
FUGITIVE EMISSION CHP2 (B091-B180) HF	PPM	0	0	0	0.048	0.136	0.014	0.037	0.006	0.039	0.198	0.21	0.164	0.179	0.156	0.188	0.449	0.248	0.26	0.212	0.145	0.24	0.29	0.22	0.292	0.208	0.198	0.226	0.22	0.258	0.249	0.142	0.169
FUGITIVE EMISSION CHP3 (A091-A180) HF	PPM	0	0	0	0.333	0.127	0.075	0.047	0.074	0.124	0.146	0.125	0.092	0.057	0.015	0.011	0.335	0.307	0.353	0.295	0.28	0.535	0.518	0.658	0.547	0.353	0.252	0.293	0.272	0.456	0.512	0.262	0.241
FUGITIVE EMISSION CHP4 (A001-A090) HF	PPM	0	0	0	0.343	0.176	0	0	0	0.124	0.080	0.111	0.094	0.083	0.073	0.084	0	0.052	0.018	0.084	0	0.151	0	0.004	0	0	0	0	0	0.101	0.046	0	0.050
																														Monthly Average(ppm)			0.153
																														Monthly Average (mg/M3)			0.128

SEPTEMBER'18		Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Avg. in PPM
		01-09-18	02-09-18	03-09-18	04-09-18	05-09-18	06-09-18	07-09-18	08-09-18	09-09-18	10-09-18	11-09-18	12-09-18	13-09-18	14-09-18	15-09-18	16-09-18	17-09-18	18-09-18	19-09-18	20-09-18	21-09-18	22-09-18	23-09-18	24-09-18	25-09-18	26-09-18	27-09-18	28-09-18	29-09-18	30-09-18	
FUGITIVE EMISSION CHP1 (B001-B090) HF	PPM	0.164	0.148	0.193	0.252	0.143	0.186	0.14	0.367	0.340	0.418	0.32	0.309	0.476	0.261	0.373	0.327	0.329	0.284	0.361	0.147	0.081	0.151	0.163	0.221	0.176	0.189	0.263	0.163	0.264	0.15		0.242
FUGITIVE EMISSION CHP2 (B091-B180) HF	PPM	0.236	0.205	0.237	0.333	0.357	0.334	0.345	0.42	0.385	0.365	0.335	0.314	0.409	0.331	0.451	0.329	0.394	0.368	0.478	0.327	0.416	0.375	0.184	0.328	0.171	0.271	0.211	0.395	0.278	0.173		0.316
FUGITIVE EMISSION CHP3 (A091-A180) HF	PPM	0.389	0.306	0.471	0.449	0.279	0.105	0.324	0.343	0.483	0.575	0.441	0.555	0.538	0.459	0.366	0.232	0.464	0.484	0.428	0.249	0.38	0.422	0.181	0.322	0.218	0.165	0.146	0.172	0.14	0.132		0.333
FUGITIVE EMISSION CHP4 (A001-A090) HF	PPM	0	0.015	0.022	0.083	0	0.151	0.453	0.423	0.265	0.219	0.283	0.238	0.172	0.217	0.252	0.283	0.476	0.199	0.19	0.273	0.228	0.228	0.184	0.107	0.097	0.166	0.199	0.183	0.162	0.117		0.193
																														Monthly Average(ppm)			0.271
																														Monthly Average (mg/M3)			0.226

Annexure - 4

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

Ref: Envlab/18/R-9297 Date: 07.03.18

FORAGE ANALYSIS REPORT

1.	Name of Industry	:	**M/s Hindalco Industries Ltd. (Unit- Aditya Aluminium); Lapanga**
2.	Date of Sampling	:	01.03.2018
3.	Nature of Sample	:	Vegetation Sample
4.	Sampling Locations	:	Thelkoli; Lapanga; Gurupali; Jangala; Bhadarpali; Bamloi; Tilaimal; Gumkarama; Ghichamura; Plant site.
5.	Sample collected by	:	VCSPL Representative in Presence of Aditya Aluminum Representative
6.	Date of Analysis	:	03.03.2018 to 05.03.2018

Sl. No.	Date of Sampling	Name of the Location	Type of Species	Method of Analysis	Results (ppm)
					Fluoride
1	01.03.2018	Thelkoli	Brinjal leaf (Solanum Melongena)	AOAC 975.04	1.08
2	01.03.2018	Lapanga	Tomato Leaf (Solanum lycopersicum)	AOAC 975.04	0.87
3	01.03.2018	Gurupali	Onion leaf (Allium Sepa)	AOAC 975.04	0.75
4	01.03.2018	Jangala	Flat Lima Beans leaf (Phaseolus Vulgaris)	AOAC 975.04	1.2
5	01.03.2018	Bhadarpali	Kosala Saga (Amaranthus Leaves)	AOAC 975.04	1.2
6	01.03.2018	Bomaloi	Charoli leaf (Buchanania lanzan)	AOAC 975.04	1.4
7	01.03.2018	Tileimal	Flat Lima Beans leaf (Phaseolus Vulgaris)	AOAC 975.04	0.8
8	01.03.2018	Gumkarma	Brinjal leaf (Solanum Melongena)	AOAC 975.04	1.05
9	01.03.2018	Ghichamura	Cabbage (Brassica Oleracea)	AOAC 975.04	1.1
10	01.03.2018	Plant site	Bamboo leaf (Bambusa Vulgaris)	AOAC 975.04	1.2

For *Visiontek Consultancy Services Private Limited*

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekinfo@yahoo.co.in, visiontek@gmail.com, Visit us at:

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

Ref.: tcsplab/18/R-9299 *Date:* 09.09.18

FORAGE ANALYSIS REPORT

1.	Name of Industry	:	**M/s Hindalco Industries Ltd, (Unit- Aditya Aluminium); Lapanga**
2.	Date of Sampling	:	03.09.2018 to 04.09.2018
3.	Nature of Sample	:	Vegetation Sample
4.	Sampling Locations	:	Thelkoli: Lapanga; Gurupali; Jangala; Bhadarpali; Bamloi; Tilaimal; Gumkarama; Ghichamura; Plant site.
5.	Sample collected by	:	VCSPL Representative in Presence of Aditya Aluminum Representative
6.	Date of Analysis	:	05.09.2018 to 08.09.2018

Sl. No.	Date of Sampling	Name of the Location	Type of Species	Method of Analysis	Results (ppm)
					Fluoride
1	03.09.2018	Thelkoli	Brinjal leaf (Solanum Melongena)	AOAC 975.04	1.3
2	03.09.2018	Lapanga	Tomato Leaf (Solanum lycopersicum)	AOAC 975.04	0.9
3	03.09.2018	Gurupali	Onion leaf (Allium Sepa)	AOAC 975.04	0.6
4	03.09.2018	Jangala	Flat Lima Beans leaf (Phaseolus Vulgaris)	AOAC 975.04	1.0
5	03.09.2018	Bhadarpali	Kosala Saga (Amaranthus Leaves)	AOAC 975.04	1.1
6	04.09.2018	Bomaloi	Charoli leaf (Buchanania lanzan)	AOAC 975.04	1.3
7	04.09.2018	Tileimal	Flat Lima Beans leaf (Phaseolus Vulgaris)	AOAC 975.04	0.8
8	04.09.2018	Gumkarma	Brinjal leaf (Solanum Melongena)	AOAC 975.04	1.0
9	04.09.2018	Ghichamura	Cabbage (Brassica Oleracea)	AOAC 975.04	0.9
10	04.09.2018	Plant site	Bamboo leaf (Bambusa Vulgaris)	AOAC 975.04	1.1

For *Visiontek Consultancy Services Private Limited*

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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

Ref.: Envlab/18/R-9298 Date: 10.06.18

FORAGE ANALYSIS REPORT

1.	Name of Industry	:	**M/s Hindalco Industries Ltd, (Unit- Aditya Aluminium); Lapanga**
2.	Date of Sampling	:	04.06.2018 to 05.06.2018
3.	Nature of Sample	:	Vegetation Sample
4.	Sampling Locations	:	Thelkoli; Lapanga; Gurupali; Jangala; Bhadarpali; Bamloi; Tilaimal; Gumkarama; Ghichamura; Plant site.
5.	Sample collected by	:	VCSPL Representative in Presence of Aditya Aluminum Representative
6.	Date of Analysis	:	06.06.2018 to 09.06.2018

Sl. No.	Date of Sampling	Name of the Location	Type of Species	Method of Analysis	Results (ppm)
					Fluoride
1	04.06.2018	Thelkoli	Brinjal leaf (Solanum Melongena)	AOAC 975.04	1.0
2	04.06.2018	Lapanga	Tomato Leaf (Solanum lycopersicum)	AOAC 975.04	0.9
3	04.06.2018	Gurupali	Onion leaf (Allium Sepa)	AOAC 975.04	0.75
4	04.06.2018	Jangala	Flat Lima Beans leaf (Phaseolus Vulgaris)	AOAC 975.04	1.0
5	04.06.2018	Bhadarpali	Kosala Saga (Amaranthus Leaves)	AOAC 975.04	1.3
6	05.06.2018	Bomaloi	Charoli leaf (Buchanania lanzan)	AOAC 975.04	1.1
7	05.06.2018	Tileimal	Flat Lima Beans leaf (Phaseolus Vulgaris)	AOAC 975.04	0.65
8	05.06.2018	Gumkarma	Brinjal leaf (Solanum Melongena)	AOAC 975.04	1.3
9	05.06.2018	Ghichamura	Cabbage (Brassica Oleracea)	AOAC 975.04	1.2
10	05.06.2018	Plant site	Bamboo leaf (Bambusa Vulgaris)	AOAC 975.04	1.4

For *Visiontek Consultancy Services Private Limited*

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

Annexure - 5

ANNEXURE-I

NAME OF THE INDUSTRY:- ADITYA ALUMINIUM

SATUS OF UTILIZATION OF COAL ASH (FLY ASH AND BOTTOM ASH), From April'18 to September'18

nth	Year	Coal Consumption (MT)	Power Installed Capacity (MWH)	Power Generated (MWH)	Qunatity of Fly Ash generated (MT)	Quantity of Bottom Ash generated (MT)	Total Ash Generated (MT)	Disposal Method	Brick Manufacturing (MT)	Supplied to cement industries (M/s Ultratech, M/s ACC & M/s OCL) in (MT)	Mine Void Filling (MT)	Utilization in Embankment/Dyke Raising (MT)	Road Making (MT)	Low Lying area filling/land development (MT)	Through HCSD to Ash Pond	Aggregates (MT)	Agriculture/Horticulture Sector (MT)	Total Ash Utilized (MT)	% of utilization
ril	2018	302433.56	900	648.35	108873.6037	4536.400156	113410.0039	Dry ash is being supplied to Cement Plants, fly ash Bricks unit and in low lying area development and remaining ash disposed through HCSD system to ash pond.	0	101705.15	0	8500	0	6857.21	4838	0	0	117072.36	103.23
ay	2018	340674	900	653.84	128065.17	5373.55	134338.72	Dry ash is being supplied to Cement Plants, fly ash Bricks unit and in low lying area development and remaining ash disposed through HCSD system to ash pond.	0	80078.12	0	0	0	15718.05	33681.00	0	0	95796.17	71.31
ne	2018	327524	900	654.79	120898.90	5037.45	125936.35	Dry ash is being supplied to Cement Plants, fly ash Bricks unit and in low lying area development and remaining ash disposed through HCSD system to ash pond.	125.75	67288.63	0	0	0	16586.76	41935.00	0	0	84001.14	66.70
y	2018	332187	900	654.51	115266.50	4802.77	120069.27	Dry ash is being supplied to Cement Plants, fly ash Bricks unit and in low lying area development and remaining ash disposed through HCSD system to ash pond.	40.45	75008.91	0	0	0	20251.09	21053.00	0	0	95300.45	79.37
ust	2018	342163	900	656	119795.27	4991.47	124786.74	Dry ash is being supplied to Cement Plants, fly ash Bricks unit and in low lying area development and remaining ash disposed through HCSD system to ash pond.	0	59129.41	0	0	0	13659.51	51997.83	0	0	72788.92	58.33
18	2018	350955	900	699.77	123954.17	5164.76	129118.93	Dry ash is being supplied to Cement Plants, fly ash Bricks unit and in low lying area development and remaining ash disposed through HCSD system to ash pond.	0	65320.82	0	0	0	18345.71	44035.00	0	0	83666.53429	64.80
	Total	**1995936.56**			**717753.61**	**29906.40**	**747660.02**		**166.2**	**448541.04**	**0**	**8500**	**0**	**91428.33**	**197549.83**	**0.00**	**0.00**	**548625.57**	**73.38**

Annexure - 06

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

Ref.: Envfab/18/R-9300 *Date:* 05/07/18

ASH ANALYSIS REPORT

1.	Name of Industry	: **M/s Hindalco Industries Limited (Unit- Aditya Aluminium), Lapanga.**
2.	Sampling Location	: **FA-01:** CPP Fly Ash Silo
3.	Date of Sampling	: 06.06.2018
4.	Date of Analysis	: 07.06.2018 to 13.06.2018
5.	Sample Collected By	: VCSPL Representative in presence of Aditya Aluminium Representative.

Sl. No.	Parameters	Unit	Analysis Results
			FA-01
A.	**Chemical Analysis**		
1	Na_2O	%	0.16
2	MgO	%	0.88
3	Al_2O_3	%	22.4
4	SiO_2	%	51.7
5	P_2O_5	%	0.017
6	SO_3	%	1.2
7	K_2O	%	0.73
8	CaO	%	3.4
9	TiO_2	%	ND
10	MnO	%	0.12
11	Fe_2O_3	%	7.1
B.	**Heavy Metals Analysis**		
1	Hg	PPM	110.0
2	As	PPM	ND
3	Pb	PPM	ND
4	Cr	PPM	4400.0
5	V	PPM	ND
6	Fe	PPM	600.0
7	Co	PPM	870.0
8	Cu	PPM	510.0
9	Ni	PPM	ND
10	Zn	PPM	ND
11	Sr	PPM	ND
12	Ba	PPM	ND

For Visiontek Consultancy Services Pvt. Ltd.

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

Ref.: Envlab/18/R-9309 *Date:* 05/07/18

ASH ANALYSIS REPORT

1. Name of Industry : **M/s Hindalco Industries Limited (Unit- Aditya Aluminium), Lapanga.**
2. Sampling Location : **BA-01:** CPP Bottom Ash Silo
3. Date of Sampling : 06.06.2018
4. Date of Analysis : 07.06.2018 to 13.06.2018
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	%	0.17
2	MgO	%	1.3
3	Al_2O_3	%	22.7
4	SiO_2	%	55.1
5	P_2O_5	%	0.013
6	SO_3	%	1.3
7	K_2O	%	0.81
8	CaO	%	3.2
9	TiO_2	%	ND
10	MnO	%	0.11
11	Fe_2O_3	%	7.2
B. Heavy Metals Analysis			
1	Hg	PPM	ND
2	As	PPM	ND
3	Pb	PPM	210.0
4	Cr	PPM	ND
5	V	PPM	ND
6	Fe	PPM	5200.0
7	Co	PPM	ND
8	Cu	PPM	390.0
9	Ni	PPM	860.0
10	Zn	PPM	600.0
11	Sr	PPM	ND
12	Ba	PPM	ND

For Visiontek Consultancy Services Pvt. Ltd.

Annexure - 7

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001 : 2015
ISO 14001 : 2015
OHSAS 18001 : 2007

Ref: Envlab/18/R - 9320

Date: 06/07/18

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:** Dhamal Village, **GW-5:** Thelkoloi Village; **GW-6:** Gaichamuta Village, **GW-7:** Gumkarama Village, **GW-8:** Chaltikra Village
3. Date of sampling — 06.06.2018
4. Date of analysis — 07.06.2018 to 12.06.2018
5. Sample collected by — VCSPL Representative in presence of Aditya Aluminium Representative

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS - 10500:2012	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8
1	pH Value	APHA 4500H B	--	6.5-8.5	7.1	6.8	6.5	7.2	6.9	7.1	7.3	7.1
2	Colour	APHA 2120 B, C	Hazen	5	2	3	2	3	2	2	3	2
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	APHA2510 B	µs/cm	--	151.3	121.2	130.4	36.7	191.2	134.5	169.5	162.3
6	Turbidity	APHA 2130 B	NTU	1	<2	<2	<2	<2	<2	<2	<2	<2
7	Total Dissolved Solids	APHA 2540 C	mg/l	500	304.0	175.2	181.5	186.2	201.4	179.5	202.4	188.1
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	74.0	63.0	59.0	44.0	72.0	49.0	58.0	58.0
9	Total Alkalinity	APHA 2320 B	mg/l	200	61.0	58.0	59.2	43.0	54.0	60.0	59.0	53.0
10	Calcium (as Ca++)	APHA 3500Ca B	mg/l	75	21.62	15.7	16.8	11.2	18.5	13.7	17.4	15.9
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	4.1	5.2	4.9	3.8	6.1	3.5	5.6	4.9
12	Residual, free Chlorine	APHA 4500Cl B	mg/l	0.2	ND	ND	ND	ND	ND	ND	ND	ND
13	Boron (as B)	APHA 4500B, B	mg/l	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
14	Chloride (as Cl)	APHA 4500Cl B	mg/l	250	17.0	18.0	21.0	17.0	22.0	18.0	19.0	15.0
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	8.1	4.6	6.1	7.1	7.2	6.2	7.2	7.1
16	Fluoride (as F)	APHA 4500F C	mg/l	1.0	0.28	0.23	0.37	0.21	0.31	0.25	0.27	0.24
17	Nitrate (as NO_3)	APHA 4500 NO_3 B	mg/l	45	2.1	1.3	1.8	1.9	2.3	2	2.2	2.1
18	Sodium as Na	APHA3500-Na	mg/l	--	5	4.7	5.2	4.2	5.4	4.2	4.4	4.8
19	Potassium as K	APHA 3500-K	mg/l	--	2	1	1.1	0.4	1.0	0.8	1.2	1.1
20	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.001	<0.001	0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001
21	Cyanide (as CN)	APHA 4500 CN C,D	mg/l	0.05	ND	ND	ND	ND	ND	ND	ND	ND
22	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	0.2
23	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
24	Arsenic (as As)	APHA 3114 B	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
25	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
26	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
27	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
28	Iron (as Fe)	APHA 3500Fe B	mg/l	0.3	0.21	0.27	0.25	0.24	0.27	0.21	0.22	0.25
29	Chromium (as Cr)	APHA 3500Cr B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
30	Selenium (as Se)	APHA 3114 B	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
31	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
32	Aluminium as (Al)	APHA 3500Al B	mg/l	0.03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
33	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
34	Mineral Oil	APHA 5220 B	mg/l	0.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
35	Pesticides	APHA 6630 B,C	mg/l	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
36	E-Coli	APHA 9221-F	MPN/100 ml	Shall not be detectable in any 100 ml sample	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
37	Total Coliforms	APHA9221-B	MPN/100 ml	Shall not be detectable in any 100 ml sample	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

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

For Visiontek Consultancy Services Pvt. Ltd.

Annexure - 8

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

Ref.: Envlab/18/R-9859 04/10/18

GROUND WATER QUALITY ANALYSIS REPORT

1. Name of Industry : M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur
2. Sampling location : GW-1:Ash Pond area Near Bore Well

3. Date of sampling : 17.09.2018
4. Date of analysis : 18.09.2018 TO 24.09.2018
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Standard as per IS -10500:2012	Testing Method	Analysis Results
					GW-1
1.	pH Value	--	6.5-8.5	APHA 4500 H^+ B	7.1
2.	Turbidity	NTU	5	APHA 2130B	0.37
3.	Conductivity	µs/cm	--	APHA 2510 B	251
4.	Total Hardness (as $CaCO_3$)	mg/l	200	APHA 2340 C	17.0
5.	Iron (as Fe)	mg/l	0.3	APHA 3500 Fe B	0.079
6.	Chloride (as Cl)	mg/l	250	APHA 4500 Cl^- B	31.2
7.	Dissolved Solids	mg/l	500	APHA 2540 C	148.0
8.	Calcium (as Ca)	mg/l	75	APHA 3500 Ca B	22.4
9.	Magnesium (as Mg)	mg/l	30	APHA 3500 Mg B	4.7
10.	Copper (as Cu)	mg/l	0.05	APHA 3111Cu B	<0.001
11.	Sodium (as Na)	mg/l	--	APHA 3500Na B	<0.001
12.	Potassium (as K)	mg/l	--	APHA 3500 K B	<0.001
13.	Manganese (as Mn)	mg/l	0.1	APHA 3111 B	<0.005
14	Sulphate (as SO_4)	mg/l	200	APHA 4500 SO_4^{2-} E	5.1
15.	Nitrate (as NO_3)	mg/l	45	APHA 4500 NO_3^- B	0.48
16.	Fluoride (as F)	mg/l	1.0	APHA 4500 F^- D	0.43
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	0.001	APHA 5530 C	<0.001
18.	Mercury (as Hg)	mg/l	0.001	APHA 3112B	<0.001
19.	Cadmium (as Cd)	mg/l	0.003	APHA 3111 B	<0.001
20	Selenium (as Se)	mg/l	0.01	APHA 3114 B	<0.001
21.	Arsenic (as As)	mg/l	0.01	APHA 3114 B	<0.001
22.	Cyanide (as CN)	mg/l	0.05	APHA 4500 CN C,D	ND
23.	Lead (as Pb)	mg/l	0.01	APHA 3111 B	<0.001
24.	Zinc (as Zn)	mg/l	5.0	APHA 3111 B	<0.005
25.	Chromium (as Cr)	mg/l	0.05	APHA 3500 Cr B	<0.005
26.	Alkalinity	mg/l	200	APHA 2320 B	38.0
27.	Aluminium as(Al)	mg/l	0.03	APHA 3500 Al B	<0.001
28.	Boron (as B)	mg/l	0.5	APHA 4500 B	<0.001

Note : ND: Not Detected ,BDL (Below detection limit)

For Visiontek Consultancy Services Pvt.Ltd

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

Envlab/18/R-9803 09/10/18

Ref.:

GROUND WATER QUALITY ANALYSIS REPORT

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-2:** Ash Disposal Site inside the plant Dug well
3. Date of sampling : 17.09.2018
4. Date of analysis : 18.09.2018 TO 24.09.2018
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Standard as per IS -10500:2012	Testing Method	Analysis Results GW-2
1.	pH Value	--	6.5-8.5	APHA 4500 H+ B	7.4
2.	Turbidity	NTU	5	APHA 2130B	0.35
3.	Conductivity	µs/cm	--	APHA 2510 B	241
4.	Total Hardness (as $CaCO_3$)	mg/l	200	APHA 2340 C	12.0
5.	Iron (as Fe)	mg/l	0.3	APHA 3500 Fe B	0.071
6.	Chloride (as Cl)	mg/l	250	APHA 4500 Cl- B	33.2
7.	Dissolved Solids	mg/l	500	APHA 2540 C	108.4
8.	Calcium (as Ca)	mg/l	75	APHA 3500 Ca B	7.4
9.	Magnesium (as Mg)	mg/l	30	APHA 3500 Mg B	0.71
10.	Copper (as Cu)	mg/l	0.05	APHA 3111Cu B	BDL
11.	Sodium (as Na)	mg/l	--	APHA 3500Na B	BDL
12.	Potassium (as K)	mg/l	--	APHA 3500 K B	BDL
13.	Manganese (as Mn)	mg/l	0.1	APHA 3111 B	BDL
14	Sulphate (as SO_4)	mg/l	200	APHA 4500 SO_4^{2-} E	2.3
15.	Nitrate (as NO_3)	mg/l	45	APHA 4500 NO_3^- B	0.21
16.	Fluoride (as F)	mg/l	1.0	APHA 4500 F- D	0.38
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	0.001	APHA 5530 C	BDL
18.	Mercury (as Hg)	mg/l	0.001	APHA 3112B	BDL
19.	Cadmium (as Cd)	mg/l	0.003	APHA 3111 B	BDL
20	Selenium (as Se)	mg/l	0.01	APHA 3114 B	BDL
21.	Arsenic (as As)	mg/l	0.01	APHA 3114 B	BDL
22.	Cyanide (as CN)	mg/l	0.05	APHA 4500 CN C,D	ND
23.	Lead (as Pb)	mg/l	0.01	APHA 3111 B	BDL
24.	Zinc (as Zn)	mg/l	5.0	APHA 3111 B	BDL
25.	Chromium (as Cr)	mg/l	0.05	APHA 3500 Cr B	0.004
26.	Alkalinity	mg/l	200	APHA 2320 B	37.0
27.	Aluminium as(Al)	mg/l	0.03	APHA 3500 Al B	BDL
28.	Boron (as B)	mg/l	0.5	APHA 4500 B	BDL

Note : ND: Not Detected , BDL (Below detection limit)

For **Visiontek Consultancy Services Pvt.Ltd**

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at :

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

Ref.: Envlab/18/R-4909

Date: 04/10/18

GROUND WATER QUALITY ANALYSIS REPORT

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-3:** Ash Pond area Bore well
3. Date of sampling : 17.09.2018
4. Date of analysis : 18.09.2018 TO 24.09.2018
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Standard as per IS -10500:2012	Testing Method	Analysis Results DW-3
1.	pH Value	--	6.5-8.5	APHA 4500 H+ B	7.3
2.	Turbidity	NTU	5	APHA 2130B	0.31
3.	Conductivity	µs/cm	--	APHA 2510 B	257
4.	Total Hardness (as $CaCO_3$)	mg/l	200	APHA 2340 C	11.0
5.	Iron (as Fe)	mg/l	0.3	APHA 3500 Fe B	0.08
6.	Chloride (as Cl)	mg/l	250	APHA 4500 Cl- B	33.9
7.	Dissolved Solids	mg/l	500	APHA 2540 C	117
8.	Calcium (as Ca)	mg/l	75	APHA 3500 Ca B	7.1
9.	Magnesium (as Mg)	mg/l	30	APHA 3500 Mg B	0.4
10.	Copper (as Cu)	mg/l	0.05	APHA 3111Cu B	BDL
11.	Sodium (as Na)	mg/l	--	APHA 3500Na B	BDL
12.	Potassium (as K)	mg/l	--	APHA 3500 K B	BDL
13.	Manganese (as Mn)	mg/l	0.1	APHA 3111 B	BDL
14	Sulphate (as SO_4)	mg/l	200	APHA 4500 SO_4^{2-} E	4.0
15.	Nitrate (as NO_3)	mg/l	45	APHA 4500 NO_3 B	0.39
16.	Fluoride (as F)	mg/l	1.0	APHA 4500 F- D	0.31
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	0.001	APHA 5530 C	BDL
18.	Mercury (as Hg)	mg/l	0.001	APHA 3112B	BDL
19.	Cadmium (as Cd)	mg/l	0.003	APHA 3111 B	BDL
20	Selenium (as Se)	mg/l	0.01	APHA 3114 B	BDL
21.	Arsenic (as As)	mg/l	0.01	APHA 3114 B	BDL
22.	Cyanide (as CN)	mg/l	0.05	APHA 4500 CN- C,D	BDL
23.	Lead (as Pb)	mg/l	0.01	APHA 3111 B	BDL
24.	Zinc (as Zn)	mg/l	5.0	APHA 3111 B	BDL
25.	Chromium (as Cr)	mg/l	- 0.05	APHA 3500 Cr B	0.007
26.	Alkalinity	mg/l	200	APHA 2320 B	36.0
27.	Aluminium as(Al)	mg/l	0.03	APHA 3500 Al B	BDL
28.	Boron (as B)	mg/l	0.5	APHA 4500 B C	BDL

Note : ND: Not Detected , BDL (Below detection limit)

For Visiontek Consultancy Services Pvt.Ltd

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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

Ref.: Envlab/1818R-9309(1) *Date:* 04/10/18

GROUND WATER QUALITY ANALYSIS REPORT

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-4**: Ash Pond area Bore well (Bamaloi)
3. Date of sampling : 17.09.2018
4. Date of analysis : 18.09.2018 TO 24.09.2018
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Standard as per IS -10500:2012	Testing Method	Analysis Results
					DW-4
1.	pH Value	--	6.5-8.5	APHA 4500 H+ B	7.2
2.	Turbidity	NTU	5	APHA 2130B	0.39
3.	Conductivity	µs/cm	--	APHA 2510 B	251
4.	Total Hardness (as $CaCO_3$)	mg/l	200	APHA 2340 C	10.0
5.	Iron (as Fe)	mg/l	0.3	APHA 3500 Fe B	0.09
6.	Chloride (as Cl)	mg/l	250	APHA 4500 Cl- B	31.9
7.	Dissolved Solids	mg/l	500	APHA 2540 C	111
8.	Calcium (as Ca)	mg/l	75	APHA 3500 Ca B	6.7
9.	Magnesium (as Mg)	mg/l	30	APHA 3500 Mg B	0.5
10.	Copper (as Cu)	mg/l	0.05	APHA 3111Cu B	BDL
11.	Sodium (as Na)	mg/l	--	APHA 3500Na B	BDL
12.	Potassium (as K)	mg/l	--	APHA 3500 K B	BDL
13.	Manganese (as Mn)	mg/l	0.1	APHA 3111 B	BDL
14	Sulphate (as SO_4)	mg/l	200	APHA 4500 SO_4^{2-} E	4.3
15.	Nitrate (as NO_3)	mg/l	45	APHA 4500 NO_3^- B	0.31
16.	Fluoride (as F)	mg/l	1.0	APHA 4500 F- D	0.21
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	0.001	APHA 5530 C	BDL
18.	Mercury (as Hg)	mg/l	0.001	APHA 3112B	BDL
19.	Cadmium (as Cd)	mg/l	0.003	APHA 3111 B	BDL
20	Selenium (as Se)	mg/l	0.01	APHA 3114 B	BDL
21.	Arsenic (as As)	mg/l	0.01	APHA 3114 B	BDL
22.	Cyanide (as CN)	mg/l	0.05	APHA 4500 CN- C,D	BDL
23.	Lead (as Pb)	mg/l	0.01	APHA 3111 B	BDL
24.	Zinc (as Zn)	mg/l	5.0	APHA 3111 B	BDL
25.	Chromium (as Cr)	mg/l	0.05	APHA 3500 Cr B	0.008
26.	Alkalinity	mg/l	200	APHA 2320 B	31.0
27.	Aluminium as(Al)	mg/l	0.03	APHA 3500 Al B	BDL
28.	Boron (as B)	mg/l	0.5	APHA 4500-B	BDL

Note : ND: Not Detected , BDL (Below detection limit)

For Visiontek Consultancy Services Pvt.Ltd

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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

Enlab/Ms/R-9305 Ref.:

05/07/18

GROUND WATER QUALITY ANALYSIS REPORT

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-1:**Ash Pond area (Bore Well)
3. Date of sampling : 12.06.2018
4. Date of analysis : 13.06.2018 TO 16.06.2018
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Standard as per IS -10500:2012	Testing Method	Analysis Results
					GW-1
1	pH Value	--	6.5-8.5	APHA 4500 H+ B	7.4
2.	Turbidity	NTU	5	APHA 2130B	0.25
3.	Conductivity	µs/cm	--	APHA 2510 B	254
4.	Total Hardness (as $CaCO_3$)	mg/l	200	APHA 2340 C	19.0
5.	Iron (as Fe)	mg/l	0.3	APHA 3500 Fe B	0.085
6.	Chloride (as Cl)	mg/l	250	APHA 4500 Cl- B	36.14
7.	Dissolved Solids	mg/l	500	APHA 2540 C	147.0
8.	Calcium (as Ca)	mg/l	75	APHA 3500 Ca B	22.1
9.	Magnesium (as Mg)	mg/l	30	APHA 3500 Mg B	5.4
10.	Copper (as Cu)	mg/l	0.05	APHA 3111Cu B	<0.001
11.	Sodium (as Na)	mg/l	--	APHA 3500Na B	<0.001
12.	Potassium (as K)	mg/l	--	APHA 3500 K B	<0.001
13.	Manganese (as Mn)	mg/l	0.1	APHA 3111 B	<0.005
14	Sulphate (as SO_4)	mg/l	200	APHA 4500 SO_4^{2-} E	5.6
15.	Nitrate (as NO_3)	mg/l	45	APHA 4500 NO_3^- B	0.51
16.	Fluoride (as F)	mg/l	1.0	APHA 4500 F- D	0.42
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	0.001	APHA 5530 C	<0.001
18.	Mercury (as Hg)	mg/l	0.001	APHA 3112B	<0.001
19.	Cadmium (as Cd)	mg/l	0.003	APHA 3111 B	<0.001
20	Selenium (as Se)	mg/l	0.01	APHA 3114 B	<0.001
21.	Arsenic (as As)	mg/l	0.01	APHA 3114 B	<0.001
22.	Cyanide (as CN)	mg/l	0.05	APHA 4500 CN- C,D	ND
23.	Lead (as Pb)	mg/l	0.01	APHA 3111 B	<0.001
24.	Zinc (as Zn)	mg/l	5.0	APHA 3111 B	<0.005
25.	Chromium (as Cr)	mg/l	0.05	APHA 3500 Cr B	<0.005
26.	Alkalinity	mg/l	200	APHA 2320 B	41.0
27.	Aluminium as(Al)	mg/l	0.03	APHA 3500 Al B	<0.001
28.	Boron (as B)	mg/l	0.5	APHA 4500 B	<0.001

Note : ND: Not Detected ,BDL (Below detection limit)

For Visiontek Consultancy Services Pvt.Ltd

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/18/R-9306 Dt 6/7/18

GROUND WATER QUALITY ANALYSIS REPORT

Name of Industry : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
Sampling location : **GW-2:** Ash Disposal Site inside the plant Dug well
Date of sampling : 12.06.2018
Date of analysis : 13.06.2018 TO 16.06.2018
Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Standard as per IS -10500:2012	Testing Method	Analysis Results GW-2
1.	pH Value	--	6.5-8.5	APHA 4500 H B	7.1
2.	Turbidity	NTU	5	APHA 2130B	0.23
3.	Conductivity	µs/cm	--	APHA 2510 B	246
4.	Total Hardness (as $CaCO_3$)	mg/l	200	APHA 2340 C	11.0
5.	Iron (as Fe)	mg/l	0.3	APHA 3500 Fe B	0.073
6.	Chloride (as Cl)	mg/l	250	APHA 4500 Cl B	34.1
7.	Dissolved Solids	mg/l	500	APHA 2540 C	101.2
8.	Calcium (as Ca)	mg/l	75	APHA 3500 Ca B	8.6
9.	Magnesium (as Mg)	mg/l	30	APHA 3500 Mg B	0.76
10.	Copper (as Cu)	mg/l	0.05	APHA 3111Cu B	BDL
11.	Sodium (as Na)	mg/l	--	APHA 3500Na B	BDL
12.	Potassium (as K)	mg/l	--	APHA 3500 K B	BDL
13.	Manganese (as Mn)	mg/l	0.1	APHA 3111 B	BDL
14	Sulphate (as SO_4)	mg/l	200	APHA 4500 SO_4^{2-} E	2.1
15.	Nitrate (as NO_3)	mg/l	45	APHA 4500 NO_3 B	0.39
16.	Fluoride (as F)	mg/l	1.0	APHA 4500 F D	0.41
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	0.001	APHA 5530 C	BDL
18.	Mercury (as Hg)	mg/l	0.001	APHA 3112B	BDL
19.	Cadmium (as Cd)	mg/l	0.003	APHA 3111 B	BDL
20	Selenium (as Se)	mg/l	0.01	APHA 3114 B	BDL
21.	Arsenic (as As)	mg/l	0.01	APHA 3114 B	BDL
22.	Cyanide (as CN)	mg/l	0.05	APHA 4500 CN C,D	ND
23.	Lead (as Pb)	mg/l	0.01	APHA 3111 B	BDL
24.	Zinc (as Zn)	mg/l	5.0	APHA 3111 B	BDL
25.	Chromium (as Cr)	mg/l	0.05	APHA 3500 Cr B	0.005
26.	Alkalinity	mg/l	200	APHA 2320 B	39.0
27.	Aluminium as(Al)	mg/l	0.03	APHA 3500 Al B	BDL
28.	Boron (as B)	mg/l	0.5	APHA 4500 B	BDL

Note : ND: Not Detected , BDL (Below detection limit)

For Visiontek Consultancy Services Pvt.Ltd

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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Enwfab/18/R-9307

Ref.:

GROUND WATER QUALITY ANALYSIS REPORT

Date: 25/07/18

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-3:** Ash Pond area Bore well
3. Date of sampling : 12.06.2018
4. Date of analysis : 13.06.2018 TO 16.06.2018
5. Sample collected by : VCSPL Representative

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

Note : ND: Not Detected , BDL (Below detection limit)

For **Visiontek Consultancy Services Pvt.Ltd**

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
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Enlab/18/R – 9307 (1)

Ref.:

GROUND WATER QUALITY ANALYSIS REPORT

Date: 05/07/18

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-4:** Ash Pond area Bore well
3. Date of sampling : 12.06.2018
4. Date of analysis : 13.06.2018 TO 16.06.2018
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Standard as per IS -10500:2012	Testing Method	Analysis Results DW-4
1.	pH Value	--	6.5-8.5	APHA 4500 H^+ B	7.0
2.	Turbidity	NTU	5	APHA 2130B	0.22
3.	Conductivity	µs/cm	--	APHA 2510 B	256.6
4.	Total Hardness (as $CaCO_3$)	mg/l	200	APHA 2340 C	12.0
5.	Iron (as Fe)	mg/l	0.3	APHA 3500 Fe B	0.08
6.	Chloride (as Cl)	mg/l	250	APHA 4500 Cl^- B	37.2
7.	Dissolved Solids	mg/l	500	APHA 2540 C	110.7
8.	Calcium (as Ca)	mg/l	75	APHA 3500 Ca B	7.4
9.	Magnesium (as Mg)	mg/l	30	APHA 3500 Mg B	0.6
10.	Copper (as Cu)	mg/l	0.05	APHA 3111Cu B	BDL
11.	Sodium (as Na)	mg/l	--	APHA 3500Na B	BDL
12.	Potassium (as K)	mg/l	--	APHA 3500 K B	BDL
13.	Manganese (as Mn)	mg/l	0.1	APHA 3111 B	BDL
14	Sulphate (as SO_4)	mg/l	200	APHA 4500 SO_4^{2-} E	3.2
15.	Nitrate (as NO_3)	mg/l	45	APHA 4500 NO_3^- B	0.30
16.	Fluoride (as F)	mg/l	1.0	APHA 4500 F^- D	0.24
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	0.001	APHA 5530 C	BDL
18.	Mercury (as Hg)	mg/l	0.001	APHA 3112B	BDL
19.	Cadmium (as Cd)	mg/l	0.003	APHA 3111 B	BDL
20	Selenium (as Se)	mg/l	0.01	APHA 3114 B	BDL
21.	Arsenic (as As)	mg/l	0.01	APHA 3114 B	BDL
22.	Cyanide (as CN)	mg/l	0.05	APHA 4500 CN^- C,D	BDL
23.	Lead (as Pb)	mg/l	0.01	APHA 3111 B	BDL
24.	Zinc (as Zn)	mg/l	5.0	APHA 3111 B	BDL
25.	Chromium (as Cr)	mg/l	0.05	APHA 3500 Cr B	0.007
26.	Alkalinity	mg/l	200	APHA 2320 B	31.0
27.	Aluminium as(Al)	mg/l	0.03	APHA 3500 Al B	BDL
28.	Boron (as B)	mg/l	0.5	APHA 4500 B	BDL

Note : ND: Not Detected , BDL (Below detection limit)

For **Visiontek Consultancy Services Pvt.Ltd**

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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Ref.: Envlab/18/R-9308 05/04/18

GROUND WATER QUALITY ANALYSIS REPORT

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-1:**Ash Pond area (Bore Well)
3. Date of sampling : 15.03.2018
4. Date of analysis : 16.03.2018 TO 21.03.2018
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Standard as per IS -10500:2012	Testing Method	Analysis Results
					GW-1
1.	pH Value	--	6.5-8.5	APHA 4500 H^+ B	7.5
2.	Turbidity	NTU	5	APHA 2130B	0.32
3.	Conductivity	µs/cm	--	APHA 2510 B	256.4
4.	Total Hardness (as $CaCO_3$)	mg/l	200	APHA 2340 C	21.0
5.	Iron (as Fe)	mg/l	0.3	APHA 3500 Fe B	0.092
6.	Chloride (as Cl)	mg/l	250	APHA 4500 Cl^- B	37.2
7.	Dissolved Solids	mg/l	500	APHA 2540 C	167.0
8.	Calcium (as Ca)	mg/l	75	APHA 3500 Ca B	22.3
9.	Magnesium (as Mg)	mg/l	30	APHA 3500 Mg B	5.2
10.	Copper (as Cu)	mg/l	0.05	APHA 3111Cu B	<0.001
11.	Sodium (as Na)	mg/l	--	APHA 3500Na B	<0.001
12.	Potassium (as K)	mg/l	--	APHA 3500 K B	<0.001
13.	Manganese (as Mn)	mg/l	0.1	APHA 3111 B	<0.005
14	Sulphate (as SO_4)	mg/l	200	APHA 4500 SO_4^{2-} E	6.76
15.	Nitrate (as NO_3)	mg/l	45	APHA 4500 NO_3^- B	0.59
16.	Fluoride (as F)	mg/l	1.0	APHA 4500 F^- D	0.47
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	0.001	APHA 5530 C	<0.001
18.	Mercury (as Hg)	mg/l	0.001	APHA 3112B	<0.001
19.	Cadmium (as Cd)	mg/l	0.003	APHA 3111 B	<0.001
20	Selenium (as Se)	mg/l	0.01	APHA 3114 B	<0.001
21.	Arsenic (as As)	mg/l	0.01	APHA 3114 B	<0.001
22.	Cyanide (as CN)	mg/l	0.05	APHA 4500 CN^- C,D	ND
23.	Lead (as Pb)	mg/l	0.01	APHA 3111 B	<0.001
24.	Zinc (as Zn)	mg/l	5.0	APHA 3111 B	<0.005
25.	Chromium (as Cr)	mg/l	0.05	APHA 3500 Cr B	<0.005
26.	Alkalinity	mg/l	200	APHA 2320 B	45.0
27.	Aluminium as(Al)	mg/l	0.03	APHA 3500 Al B	<0.001
28.	Boron (as B)	mg/L	0.5	APHA 4500 B	<0.001

Note : ND: Not Detected

For Visiontek Consultancy Services Pvt.Ltd

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Enc/Lab/18/R-9364 Ref.:

05/04/18

GROUND WATER QUALITY ANALYSIS REPORT

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-2:** Ash Disposal Site inside the plant Dug well
3. Date of sampling : 15.03.2018
4. Date of analysis : 16.03.2018 TO 21.03.2018
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Standard as per IS -10500:2012	Testing Method	Analysis Results
					GW-2
1.	pH Value	--	6.5-8.5	APHA 4500 H^+ B	7.2
2.	Turbidity	NTU	5	APHA 2130B	0.18
3.	Conductivity	µs/cm	--	APHA 2510 B	241.36
4.	Total Hardness (as $CaCO_3$)	mg/l	200	APHA 2340 C	12.0
5.	Iron (as Fe)	mg/l	0.3	APHA 3500 Fe B	0.081
6.	Chloride (as Cl^-)	mg/l	250	APHA 4500 Cl^- B	36.2
7.	Dissolved Solids	mg/l	500	APHA 2540 C	106.2
8.	Calcium (as Ca)	mg/l	75	APHA 3500 Ca B	9.46
9.	Magnesium (as Mg)	mg/l	30	APHA 3500 Mg B	0.81
10.	Copper (as Cu)	mg/l	0.05	APHA 3111Cu B	BDL
11.	Sodium (as Na)	mg/l	--	APHA 3500Na B	BDL
12.	Potassium (as K)	mg/l	--	APHA 3500 K B	BDL
13.	Manganese (as Mn)	mg/l	0.1	APHA 3111 B	BDL
14	Sulphate (as SO_4)	mg/l	200	APHA 4500 SO_4^{2-} E	2.42
15.	Nitrate (as NO_3)	mg/l	45	APHA 4500 NO_3^- B	0.28
16.	Fluoride (as F)	mg/l	1.0	APHA 4500 F^- D	0.46
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	0.001	APHA 5530 C	BDL
18.	Mercury (as Hg)	mg/l	0.001	APHA 3112B	BDL
19.	Cadmium (as Cd)	mg/l	0.003	APHA 3111 B	BDL
20	Selenium (as Se)	mg/l	0.01	APHA 3114 B	BDL
21.	Arsenic (as As)	mg/l	0.01	APHA 3114 B	BDL
22.	Cyanide (as CN)	mg/l	0.05	APHA 4500 CN C,D	ND
23.	Lead (as Pb)	mg/l	0.01	APHA 3111 B	BDL
24.	Zinc (as Zn)	mg/l	5.0	APHA 3111 B	BDL
25.	Chromium (as Cr)	mg/l	0.05	APHA 3500 Cr B	0.006
26.	Alkalinity	mg/l	200	APHA 2320 B	44.0
27.	Aluminium as(Al)	mg/l	0.03	APHA 3500 Al B	BDL
28.	Boron (as B)	mg/l	0.5	APHA 4500 B	BDL

Note : ND: Not Detected , BDL (Below detection limit)

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

For **Visiontek Consultancy Services Pvt.Ltd**

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017965
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at:

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Ref.: enspol/18/R-9810 Date: 05/04/18

GROUND WATER QUALITY ANALYSIS REPORT

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-3:** Ash Pond area Bore well
3. Date of sampling : 15.03.2018
4. Date of analysis : 16.03.2018 TO 21.03.2018
5. Sample collected by : VCSPL Representative

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

Note : ND: Not Detected , BDL (Below detection limit)

For Visiontek Consultancy Services Pvt.Ltd

Plot No.-M-22&23, Chandka Indostrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017965
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at: ...

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

Envlab/18/R-9311

Ref.:

GROUND WATER QUALITY ANALYSIS REPORT

Date: 05/04/18

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-4:** Ash Pond area Bore well (Bamaloi)
3. Date of sampling : 15.03.2018
4. Date of analysis : 16.03.2018 TO 21.03.2018
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Unit	Standard as per IS -10500:2012	Testing Method	Analysis Results DW-4
1.	pH Value	--	**6.5-8.5**	APHA 4500 H⁺ B	7.1
2.	Turbidity	NTU	**5**	APHA 2130B	0.21
3.	Conductivity	µs/cm	--	APHA 2510 B	262.6
4.	Total Hardness (as $CaCO_3$)	mg/l	**200**	APHA 2340 C	11.0
5.	Iron (as Fe)	mg/l	**0.3**	APHA 3500 Fe B	0.08
6.	Chloride (as Cl)	mg/l	**250**	APHA 4500 Cl⁻ B	33.4
7.	Dissolved Solids	mg/l	**500**	APHA 2540 C	113.5
8.	Calcium (as Ca)	mg/l	**75**	APHA 3500 Ca B	7.08
9.	Magnesium (as Mg)	mg/l	**30**	APHA 3500 Mg B	0.6
10.	Copper (as Cu)	mg/l	**0.05**	APHA 3111Cu B	BDL
11.	Sodium (as Na)	mg/l	--	APHA 3500Na B	BDL
12.	Potassium (as K)	mg/l	--	APHA 3500 K B	BDL
13.	Manganese (as Mn)	mg/l	**0.1**	APHA 3111 B	BDL
14	Sulphate (as SO_4)	mg/l	**200**	APHA 4500 SO_4^{2-} E	3.5
15.	Nitrate (as NO_3)	mg/l	**45**	APHA 4500 NO_3^- B	0.28
16.	Fluoride (as F)	mg/l	**1.0**	APHA 4500 F⁻ D	0.34
17.	Phenolic Compounds (as C_6H_5OH)	mg/l	**0.001**	APHA 5530 C	BDL
18.	Mercury (as Hg)	mg/l	**0.001**	APHA 3112B	BDL
19.	Cadmium (as Cd)	mg/l	**0.003**	APHA 3111 B	BDL
20	Selenium (as Se)	mg/l	**0.01**	APHA 3114 B	BDL
21.	Arsenic (as As)	mg/l	**0.01**	APHA 3114 B	BDL
22.	Cyanide (as CN)	mg/l	**0.05**	APHA 4500 CN^- C,D	BDL
23.	Lead (as Pb)	mg/l	**0.01**	APHA 3111 B	BDL
24.	Zinc (as Zn)	mg/l	**5.0**	APHA 3111 B	BDL
25.	Chromium (as Cr)	mg/l	**0.05**	APHA 3500 Cr B	0.007
26.	Alkalinity	mg/l	**200**	APHA 2320 B	31.0
27.	Aluminium as(Al)	mg/l	**0.03**	APHA 3500 Al B	BDL
28.	Boron (as B)	mg/l	**0.5**	APHA 4500 B	BDL

Note : ND: Not Detected , BDL (Below detection limit)

For Visiontek Consultancy Services Pvt.Ltd

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at :

Annexure – 9

ACTION PLAN FOR ACHIEVING 33% GREEN BELT DEVELOPMENT

Besides the bio-aesthetic value, the objective of greenbelt development is to reduce the effects of pollutants, arresting movement of dust. A composition of fast growing tall, medium, small trees will make the greenbelt functionally viable.

Land description:

	Area in Hectare	Area in Acre
Total area:	1347.35	3327.95
Greenbelt area	444.62	1098.21
Total area covered so far	217.04	536.3
Remaining area for green belt development	227.58	562.35

Year	Area (Ha)	Area (Acres)	No of sapling to be planted
2019-20	40	98.8	1,00,000
2020-21	45	111.2	1,12,000
2021-22	45	111.2	1,12,000
2022-23	45	111.2	1,12,000
2023-24	52.58	129.9	1,30,000
Total	272.58		5,66,000

Selection of species:

Species which have proven ability to withstand the factory premises & suggested by the Divisional Forest Office, Sambalpur. A guideline for developing greenbelt by Central Pollution Control Board has also been considered. The fast growing species are:

1. Albizzia lebbeck (Siris)
2. Azadirachta indica (Neem)
3. Dalbergia sissoo (Shisham)
4. Pongamia pinnata (Karanj)
5. Peltophorrum ferrugineum (Radhachuda)
6. Delonix regia (Gulmohar)
7. Samanea saman (Bada chakunda)
8. Casia seamia (Rani chakunda)
9. Bauhinia sp. (kanchana)
10. Tecoma gaudichaudi (Tecoma)
11. Thevetia nerifolia (Kaniara)
12. Nerium oleander (Karabira)
13. Ceasalpinea puchirima (ceasalpinea

Annexure-10

COMPLIANCE TO CREP GUIDELINES FOR SMELTER

Compliance Status up to September 2018

Sr. No.	Particulars	Compliance
1	Environmental clearance for new smelters to be given by MoEF only with pre-baked technology	Smelter design is based on pre-baked technology only.
2	Fluoride emissions should be limited to 0.8 kg/ton of aluminium production and dry scrubbing of fluorides	Fluoride emissions is being controlled by installing GTC & FTC below 0.8 kg/ton of aluminium metal produced.
3	Fluoride consumption in the smelter should be limited to 10 kg/ton of aluminium produced	Fluoride consumption (as F) is 9.28 kg/ton of aluminium production.
4	The fluoride in forage should be limited to Average of 12 consecutive months - 40 ppm Average of 2 consecutive months - 60 ppm One month - 80 ppm Regular monitoring data to be submitted to SPCB and CPCB.	Forage fluoride is being monitored on quarterly basis as a part of post project monitoring activities. The monitored data is being regularly submitted to SPCB and CPCB. (Please Ref: Annexure-4)
5	The average life of the pots should be 2500 days. The possibility of using the SPL in cement or steel industry after recovery of aluminium fluoride should be explored.	The plant is designed for longer life of pots. SPL generated is being supplied (carbon part) to authorised reprocessors. The trial has been completed for disposal of Refractory part of SPL and we understand that Protocol has been issued to M/s Ramky for safe disposal in secured landfill area. M/s Ramky is establishing its facility for treatment and disposal of SPL Refractory part in its CHW-TSDF. Till that time we have stored it under covered shed.
6	The SPL should be disposed in secured landfill.	The spent pot lining generated from the smelter is having two parts. Carbon part is being supplied to M/s Green Energy Limited, Sambalpur for reprocessing and utilization, in this way the carbon part is completely recycled. Refractory part will be disposed to CHW-TSDF.
7	Achieving particulate matter limit of 50 mg/Nm3 in anode baking furnace	It is being Complied

COMPLIANCE TO CREP GUIDELINES FOR CPP

Compliance Status upto Sept 2018

Sr. No.	Conditions	Compliance
1	Implementation of Environmental Standards (emission & effluent) in non- compliant* Power Plants (31 & 27) - Submission of action plan: June 30, 2003 - Placement of order for Pollution of control equipment: September, 2003 - Installation & commission: December 31, 2005	Not Applicable
2	For existing thermal power plants, a feasibility study shall be carried out by Central Electricity Authority (CEA) to examine possibility to reduce the particulate matter emissions to 100 mg/Nm3. The studies shall also suggest the road map to meet 100 mg/Nm3. The studies shall also suggest the road map to meet 100 mg/Nm3 wherever found feasible. CEA shall submit the report by March 2004.	Not Applicable
3	New / expansion power projects to be accorded environmental clearance on or after1.4.1.2003 shall meet the limit of 100 mg/Nm3 for particulate matter.	Complied. SPM emission well below stipulated limit of 50 mg/Nm3
4	Development of SO_2 & NO_X emission standards for coal based plants by December 2003. - New/ expansion power projects shall meet the limit of SO_2 & NO_X w.e.f. 1.1.2005. - Existing power plants shall meet the limit of SO2 & NOX w.e.f.1.1.2006.	Standard for SO_2 & NOx has been published.
5	Install/activate opacity meters/ continuous monitoring system in all the units by December 31, 2004 with proper calibration system.	Continuous monitoring system installed in the stacks attached to Power Plant for monitoring of PM, SO_2 & NOx.
6	Development of guidelines/ standards for mercury and other toxic heavy metals emissions by December 2003.	Standard for Hg emission has been published by MOEF&CC.
7	Review of stack height requirement and guidelines for power plants based on micro meteorological data by June 2003	Guideline has been published for stack height by MOEFCC in this regard.
8	Implementation of use of beneficiated coal as per GOI Notification: Power plants will sign fuel supply agreement (FSA) to meet the requirement as per the matrix prepared by CEA for compliance of the notification as short term measure. Options/mechanism for setting up of coal washeries as a long term measure	Not Applicable

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

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, will strive to continually improve our environmental performance for sustainable operations and responsible growth globally, by integrating sound environmental systems and practices.

To achieve this, we shall :

- Continue to 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 up and reviewing targets and measuring, monitoring and reporting their progress.
- Allocate sufficient resources such as organisational structure, technology and funds for implementation of the policy and for regular monitoring of performance.
- Adopt pollution prevention approach for 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 programmes, 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 the principles of waste prevention, reduction, reuse, recycling and recovery to minimise waste generation and strengthen the practices for management of wastes.
- Work in partnership with regulatory authorities, relevant suppliers, contractors and all stakeholders, as applicable, to understand and initiate improvement actions.
- Adapt environmental performance over life cycle as an important input to the decision-making processes in the organisation.
- 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 the 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.

Satish Pai

Satish Pai
Managing Director

19th November 2016

HINDALCO INDUSTRIES LIMITED

POINT-WISE COMPLIANCE TO THE POINTS RAISED DURING PUBLIC HEARING OF ADITYA ALUMINIUM

Sl. No.	POINTS RAISED	COMPLIANCE
1	The Project Proponent should provide employment to the locals on priority basis.	The industry has already provided employment to the locals based on the eligibility in the ongoing projects and they are committed to do so in the proposed expansion project.
2	The Industry should establish an ITI training centre to train the young people in technical field so as to enable them for getting suitable employment in the plant.	The industry has proposed to upgrade the existing ITI at Rengali to facilitate the training programme for the project affected people for the technical jobs.
3	The Industry should carry out massive plantation in the vacant spaces of the surrounding villages, R.R colony etc. Trees which are not under the purview of the core plant area are to be protected and minimum 25% of the project area to be made green cover.	The industry has already planted 3, 80,500 saplings inside the factory premises till FY 18-19. Also, the industry has started plantation in the vacant spaces of the surrounding R.R. Colony and have distributed saplings to the villagers in the plant surrounding villages.
4	The Industry should inform the Public about the air pollution control measures to be adopted in the proposed plant for control of air pollution and also proactive measures to be taken by the company for control of rise in ambient temperature. Pollution measurement machines to be installed in every villages and pollution control committees to be formed to regulate the pollution.	The industry has installed ESPs, Bag filters etc to control air pollution. Greenbelt development and selecting the best environment friendly technology & equipment's for Smelter and Power plants are some of the proactive measures taken by the Company. Online ambient air quality monitoring stations are being installed inside the plant area for information on real time information on different pollutants.
5	The Project Proponent should inform the public about the peripheral developmental works to be carried out in future.	Peripheral developmental works are being carried out in consultation with the Gram Panchayat and villagers as per the CSR guideline.
6	The industry should make necessary arrangements for provision of drinking water in the affected area.	The industry has been supplying drinking water by tankers, into the project affected villages in coordination with district Administration and Gram Panchayats
7	The industry should make necessary arrangement to provide round the clock doctors for better medical service in the Lapanga area.	The industry has already conducted 93 health camps and more than 19,000 patients have received free treatment by reputed doctors till date. We have already opened First Aid Centre at Lapanga for local people with free treatment, medicine and consultation.
8	The Industry should make alternate arrangement to source water instead of deep bore wells in & around the project area.	The industry is receiving water from the Hirakud Reservoir to meets its requirement and Govt. of Odisha has approved for the same.
9	The industry should give financial support	The industry has assured to give support to grow

	to grow small scale industries in the localities.	the livelihood of the villagers as per their CSR policy. However, many training programs have been conducted for self-employment such as Mushroom cultivation, Vegetable farming, Phenol making, Tailoring, Poultry, Kitchen garden & various social/health awareness programs, Money saving programs, etc., are being imparted to DP families.
10	The industry should pay financial support for each local traditional festival to villagers. Cremation ground should be provided in each village. Alternate Football ground to be provided to Bomaloi villagers as the company is occupying the existing football ground.	We are already providing financial support for each local Traditional festival to the villagers. We have already constructed one football ground at Bomaloi. We conduct football tournament at different villages.
11	The industry should provide community toilets at the surrounding affected villages. Special care to be taken for physical handicapped persons in the affected areas	We have already provided Toilets to each house in village pitapali & community toilets in village Bomaloi & Tileimal. Physically challenged people are continuously supported by the company.

Annexure - 13

Expense incurred under Enterprise Social Commitment till Sept 2018:

Sl. Nos.	Description	Amount Spent (In Crores)	Remarks
1	G D Birla Medical Research and Education Foundation for School at Kurki	20.25	
2	Land taken on Lease from IDCO for School at Kurki	9.10	
3	Sponsorship of Kalinga Lancers in Indian Hockey league Fy15, Fy16 & Fy17	4.50	
4	CSR expenses in & around Aditya Aluminium including Hirakud areas in FY17	7.61	
5	Sponsorship for Asian Athletic Championship 2017	0.50	
6	CSR expenses in & around Aditya Aluminium including Hirakud areas during April 18 to Sept 18	1.85	
Total Expense		43.81	

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

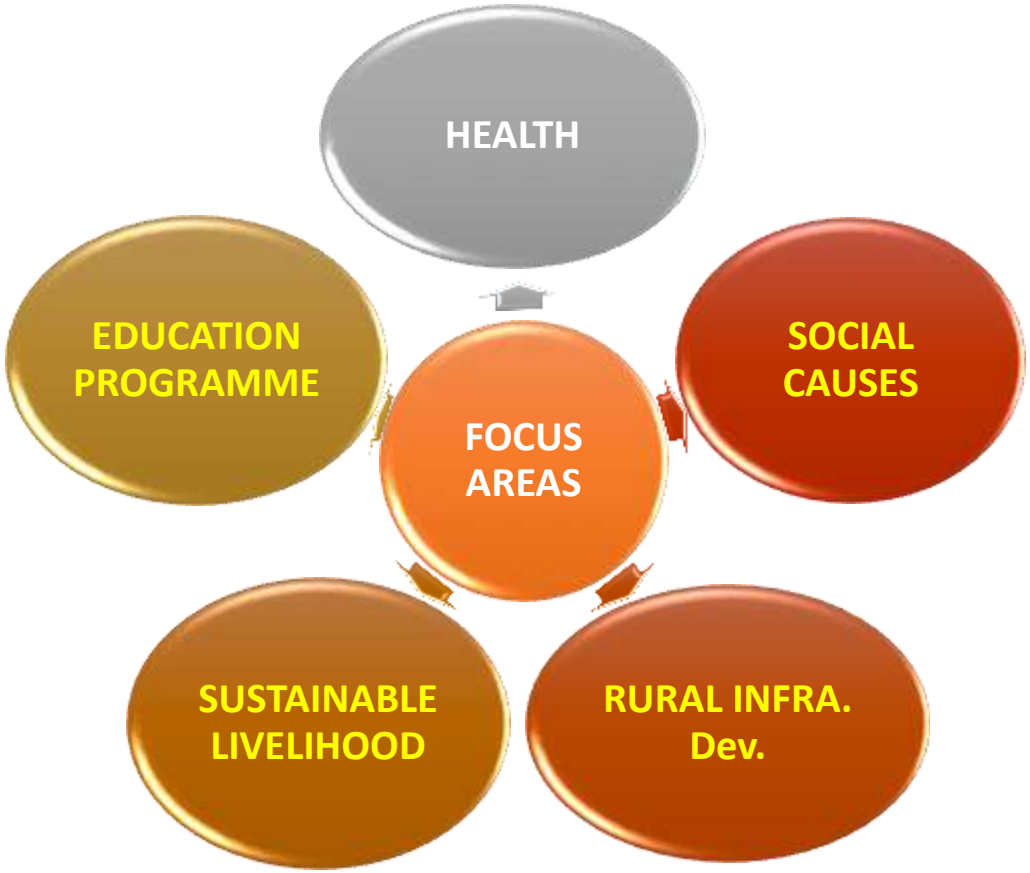
a) Infrastructure development in villages around the Project area.
b) Drinking Water supply facilities.
c) Green cover development in collaboration with State Govt. departments.
d) Football play ground or mini stadium in Bomaloi village, as stated in the minutes of Public consultation held before environmental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

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

CSR INITIATIVES (FY 2018-19)

UNIT: ADITYA ALUMINIUM

Key Focus Areas of CSR



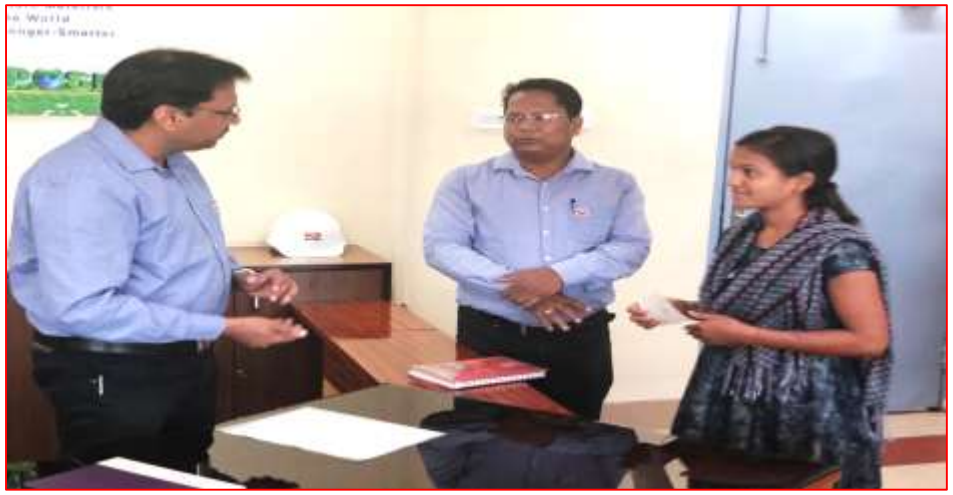
Reaching …

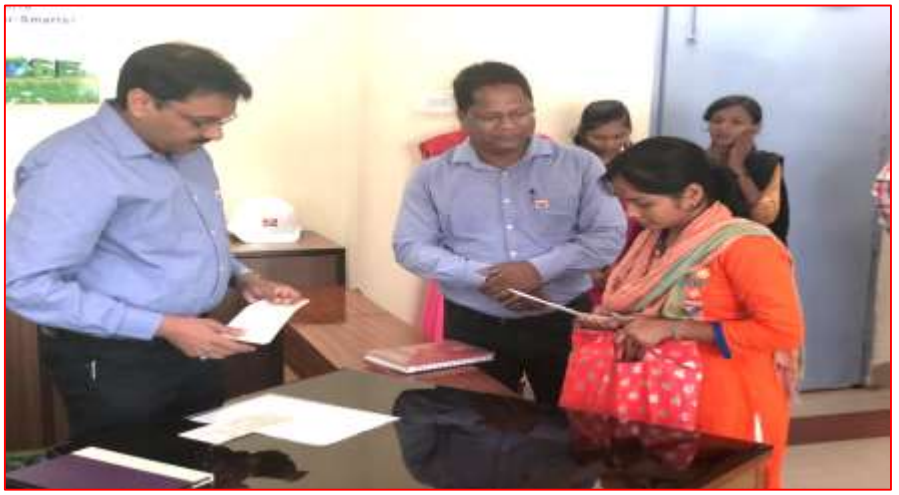
- Villages - 22
- Population - 22500
- Blocks - 2
- District - Sambalpur

Expenses Status of Aditya Aluminium CSR

Aditya Aluminium CSR Expenses Dash Board 2005 - 2018			
Sl. No	**Year**	**Total CSR Expenses (Rs in lakhs)**	**Remarks**
1	2005	2.4	Completed
2	2006	2.826	Completed
3	2007	1.1	Completed
4	2008	3.585	Completed
5	2009-10	654.19	Completed
6	2010-11	128.09	Completed
7	2011-12	91.29	Completed
8	2012-13	165.49	Completed
9	2013-14	114.455	Completed
10	2014-15	182.65	Completed
11	2015-16	626.18	Completed
12	2016-17	236	Completed
13	2017-18	325	Completed
14	2018-19	141	Ongoing
Grand Total		**2674.256**	

CSR ACTIVITIES





RURAL EDUCATION:

There are 7 nos of periphery village poor students got scholarship for higher education.

RURAL EDUCATION

- There are 214 nos of student got school bags in 5 Govt. schools
- There are 5 nos of periphery village Anganwadi have got benefitted with assets and play materials

Anganwadi children playing with toys

Anganwadi Support program includes utensils and game items


School support program –Distribution of school bags to Govt. Schools around the periphery of Aditya Aluminium

RURAL EDUCATION:

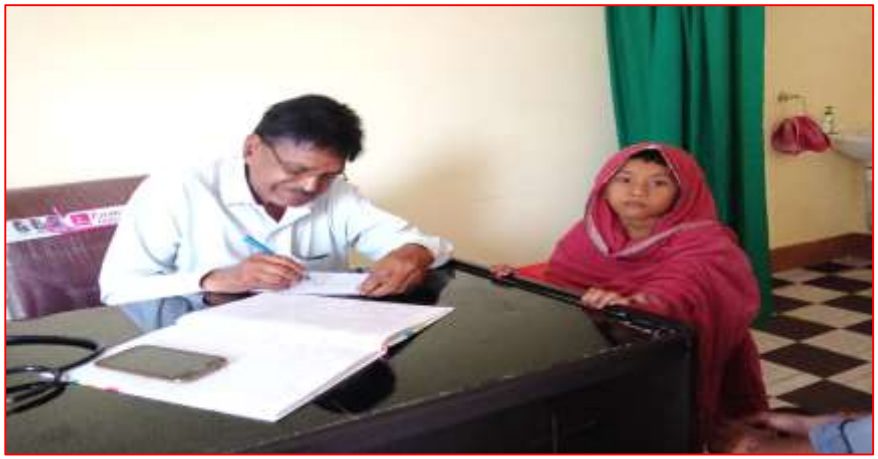
There are 638 nos of student got school bags in 11 Govt. schools
There is one of periphery village Anganwadi have got benefitted with assets and play materials

FREE COACHING CENTERS AT LUDHPALI AND PONDALOI

FOUR STUDENTS JOINED ITI FOR DIPLOMA ENGINEERING AT KIIT UNIVERSITY, BHUBANESWAR

CSR ACTIVITIES

Free Treatment at Lapanga First AID



Free Cataract Eye Check Up Camp at Lapanga Gram Panchayat Office

RURAL HEALTH:

There are 112 nos patients have availed first aid service at Lapanga First Aid center and Cataract Eye Camp at Lapanga GP

RURAL EDUCATION

- There are 94 nos of patients have been examined this month first Aid center at Lapanga.
- Program on Malaria, Dengue and Diarrhea at Thelkoloi.

TREATMENT AT FIRST AID CENTER

Malaria, Dengue and Diarrhea(MDD) Block level Coordination Meeting

SUPPORT TO PULSE POLIO PROGRAM CONDUCTED IN VILLAGES

SUPPLY OF DRINKING WATER TO 75 VILLAGES

RURAL LIVELIHOOD

- There are 51 nos of SHGs comprising of 559 nos of members in 18 villages
- There are programs for exposure to District marketing of SHGs products by DSMS, DRDA Sambalpur.

MEGA TRAINING PROGRAM ARRANGED FOR SELF HELP GROUP IN BOMALOI GP

SHGs who are actively participating in meetings

Phenyls and hand wash are moved to RRL for testing.

RURAL LIVELIHOOD:

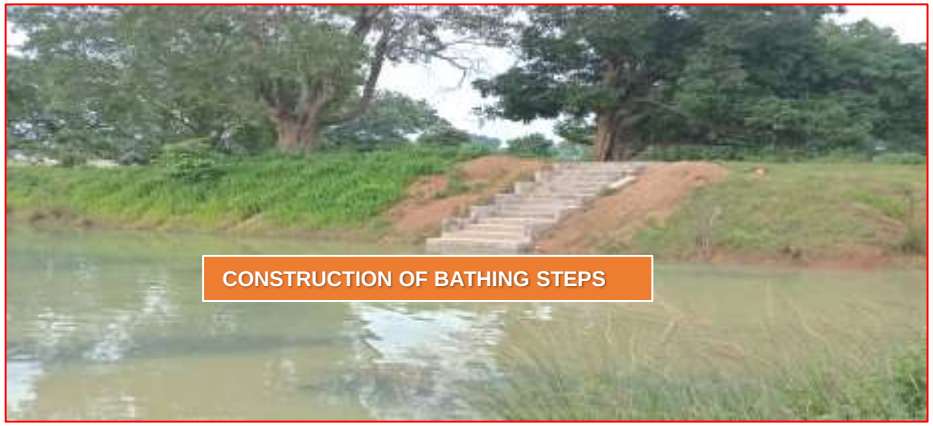
- There are 51 nos of SHGs comprising of 559 nos of members in 18 villages
- There are training programs for exposure to District marketing of SHGs products by DSMS, DRDA Sambalpur.

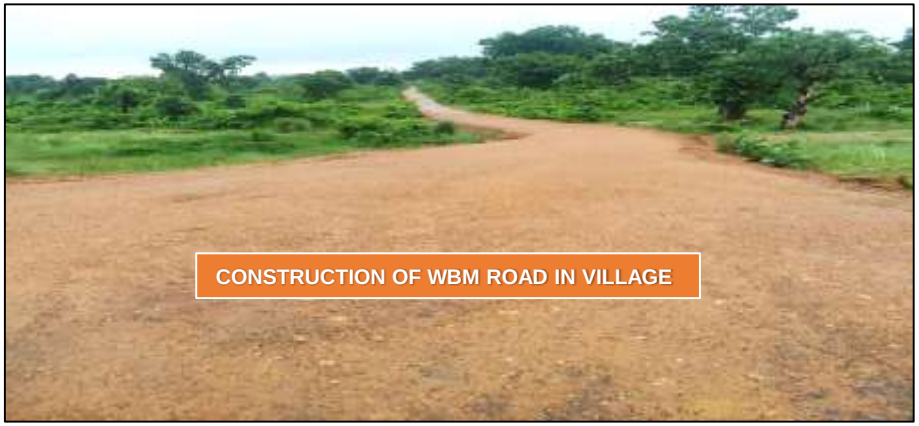
MEGA TRAINING PROGRAM ARRANGED FOR SELF HELP GROUP AT DRDA SAMBALPUR AND IN VILLAGES

TWO DAY MARKETING AND PRODUCT DEVELOPMENT TRAINING PROGRAM OF SHG WOMEN AT KBK CHIPLIMA

RURAL INFRASTRUCTURE DEVELOPMENT

- There are 7 nos of Pond excavation was done in this year Rs 83 Lakhs.
- There are 6 nos of bathing steps have been constructed in village ponds
- Connecting road to Gopkani village and Hadumunda to Rohidashpada village Rs 99 lakh
- Lapanga to Khadiapali CC Road repairing.





SOCIAL ISSUES

6 NOS PCR VEHICLE FLAG OFF FOR SAMBALPUR DISTRICT

PARI RATH PROGRAM AT LAPANGA GP

INAUGURATION OF FIRST AID CENTER AT LAPANGA

SWEETS DISTRIBUTION ON 15TH AUGUST-INDEPENDENCE DAY

Thank You.

Annexure-15

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref.: Envlab/18/R-9312

Date: 06/07/18

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2018	52.3	18.3	4.6	10.2	< 4	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2018	51.4	17.2	5.1	8.6	<4	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2018	49.3	21.3	4.8	9.7	<4	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2018	53.7	17.6	5.2	8.9	<4	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2018	54.1	21.2	4.6	7.6	<4	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2018	56.1	22.8	5.3	9.7	<4	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2018	49.7	23.3	5.2	10.1	<4	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2018	54.7	21.8	4.7	11.2	<4	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.05.2018	56.2	27.1	4.4	10.9	<4	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.05.2018	55.4	28.2	4.9	8.8	<4	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.05.2018	47.2	23.4	6.4	10.6	<4	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.05.2018	51.4	24.3	4.7	9.3	<4	0.47	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.05.2018	47.1	25.9	5.3	8.9	<4	0.37	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.05.2018	53.5	21.2	5.1	9.2	<4	0.51	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.05.2018	58.4	26.4	4.7	18.7	<4	0.49	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.05.2018	55.3	24.2	5.1	18.6	<4	0.45	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.05.2018	54.4	26.6	5.9	17.4	<4	0.43	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2018	57.3	29.4	4.6	19.1	<4	0.46	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2018	56.4	21.2	5.4	11.4	<4	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.06.2018	61.2	27.5	5.1	16.7	<4	0.44	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.06.2018	49.8	29.2	4.7	15.4	<4	0.37	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.06.2018	53.3	31.5	5.3	14.8	<4	0.39	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.06.2018	52.6	27.2	4.1	12.7	<4	0.43	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.06.2018	54.2	29.3	5.2	15.7	<4	0.47	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.06.2018	51.2	32.1	4.6	16.3	<4	0.52	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2018	57.2	33.2	5.1	14.8	<4	0.48	<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	53.59	25.05	5.0	12.51	< 4	0.40	< 20.0	<0.001	<0.002	<0.01	<0.001	<0.001	< 0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

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

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref.: Envlab/18/R-9313 *Date:* 26/07/18

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling Location : **Monitoring Station No.-** [illegible]
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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2018	39.2	21.2	<4.0	8.4	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2018	41.2	23.1	<4.0	6.8	<4.0	0.10	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2018	45.2	19.4	3.1	10.2	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2018	51.3	22.3	4.2	9.4	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2018	44.4	20.3	5.1	6.8	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2018	51.2	22.2	6.3	7.2	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2018	49.3	23.8	6.1	8.3	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2018	51.8	26.1	8.7	7.3	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.05.2018	56.3	29.1	7.5	8.6	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.05.2018	54.3	25.4	6.1	8.2	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.05.2018	51.2	22.4	5.3	10.1	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.05.2018	53.4	31.2	3.8	7.2	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.05.2018	48.1	29.3	4.8	8.4	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.05.2018	47.6	26.4	6.2	5.6	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.05.2018	53.2	27.4	5.4	8.2	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.05.2018	59.6	26.2	4.6	9.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.05.2018	52.6	31.7	6.9	8.5	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2018	57.2	39.8	5.3	9.3	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2018	59.3	32.5	6.2	8.1	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.06.2018	49.8	28.2	7.1	7.9	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.06.2018	56.2	29.8	6.4	11.2	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.06.2018	53.6	34.2	5.6	10.1	<4.0	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.06.2018	57.4	38.3	4.8	12.3	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.06.2018	56.3	27.1	6.9	11.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.06.2018	54.5	31.2	7.1	12.2	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2018	56.4	33.7	5.7	9.7	<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	51.95	27.78	5.80	8.87	<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	Zirconium SPADNS Method

BDL Values: SO_2< 4 µg/m³, NO_x< 9 µg/m³, O_3<4 µg/m³, Ni<0.01 ng/m³, As< 0.001 ng/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Pb<0.001 µg/m³, F<0.01µg/m³CO-<0.1 mg/m

VISIONTEK CONSULTANCY SERVICES PVT. LTD. ★ ODISHA

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

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

Ref: Envlab/18/R – 9314

AMBIENT AIR QUALITY MONITORING REPORT

Date: 06/07/18

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium): Lapanga**
2. Sampling Location : **Monitoring Station No.-** [illegible]
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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2018	38.2	21.2	4.3	8.2	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2018	41.2	17.6	5.8	9.3	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2018	39.2	19.3	6.4	8.5	<4.0	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2018	41.1	17.2	<4.0	7.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2018	37.4	21.4	<4.0	6.4	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2018	36.4	20.1	5.9	9.1	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2018	42.5	22.3	4.8	8.1	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2018	37.2	24.1	<4.0	7.7	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.05.2018	42.3	27.4	5.1	8.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.05.2018	45.2	25.3	4.8	6.4	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.05.2018	38.4	24.7	7.3	8.4	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.05.2018	41.2	22.5	4.3	5.9	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.05.2018	44.2	21.5	6.2	4.8	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.05.2018	43.4	28.4	7.5	9.8	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.05.2018	42.8	29.2	<4.0	8.7	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.05.2018	57.4	32.2	4.7	9.1	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.05.2018	43.4	25.6	<4.0	9.2	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2018	57.4	31.2	5.9	8.8	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2018	41.1	29.6	5.1	6.9	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.06.2018	43.2	25.1	4.3	7.8	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.06.2018	44.5	27.4	4.1	6.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.06.2018	47.1	28.4	5.7	5.9	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.06.2018	39.7	21.2	6.4	10.2	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.06.2018	43.2	27.3	4.7	11.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.06.2018	45.2	21.3	6.1	12.1	<4.0	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2018	42.8	19.7	5.6	9.6	<4.0	0.26	<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	42.91	31.23	5.48	8.25	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

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

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref.: tcvfab/18/R-9315 Date: 06/07/18

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling Location : **Monitoring Station No.-** [illegible]
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 ($\mu g/m^3$)
04.04.2018	42.1	18.2	6.5	12.4	<4.0	0.11	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2018	40.4	24.5	7.2	15.3	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2018	43.1	21.4	8.4	17.5	<4.0	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2018	44.6	24.3	5.7	10.4	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2018	39.2	21.2	9.3	11.2	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2018	38.2	17.8	8.2	12.7	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2018	47.6	20.2	6.4	10.4	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2018	56.4	21.9	7.6	11.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.05.2018	44.2	16.1	8.3	10.5	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.05.2018	39.5	15.4	6.7	11.6	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.05.2018	51.4	21.2	7.6	12.9	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.05.2018	62.7	26.2	5.7	13.4	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.05.2018	59.2	25.6	6.2	15.6	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.05.2018	46.6	23.4	7.6	10.4	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.05.2018	49.2	21.2	8.1	12.6	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.05.2018	45.2	19.7	5.8	11.3	<4.0	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.05.2018	39.7	16.2	8.4	10.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2018	51.3	24.6	7.5	14.6	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2018	48.5	19.7	7.2	10.4	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.06.2018	46.2	21.2	6.6	12.2	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.06.2018	45.5	18.6	7.2	13.6	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.06.2018	49.3	26.4	6.4	12.7	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.06.2018	58.2	29.2	6.1	13.5	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.06.2018	37.3	24.5	5.6	14.6	<4.0	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.06.2018	44.6	21.5	6.8	11.8	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2018	48.9	20.7	7.4	12.5	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Quarterly Average	46.89	21.57	7.10	12.53	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

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

VISIONTEK CONSULTANCY SERVICES PVT LTD

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

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

Ref.: Envpak/18/R – 9316

Date: 06/04/18

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2018	45.6	21.4	4.8	13.2	< 4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2018	47.2	25.2	3.6	11.4	< 4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2018	45.9	21.6	5.7	10.1	< 4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2018	53.4	19.5	5.1	9.9	< 4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2018	51.6	26.4	5.2	12.4	< 4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2018	49.7	27.9	4.9	16.7	< 4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2018	54.4	26.4	6.4	11.5	< 4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2018	56.7	21.6	5.7	12.3	< 4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.05.2018	51.2	19.8	6.6	12.6	< 4.0	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.05.2018	47.9	26.7	5.8	11.2	< 4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.05.2018	56.1	22.7	7.1	10.6	< 4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.05.2018	49.2	21.8	6.4	13.4	< 4.0	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.05.2018	51.7	22.5	5.8	11.3	< 4.0	0.30	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.05.2018	46.2	23.7	6.1	12.7	< 4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.05.2018	52.8	26.5	6.4	11.3	< 4.0	0.41	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.05.2018	47.9	22.8	5.8	10.3	< 4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.05.2018	53.2	26.8	6.1	11.1	< 4.0	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2018	52.4	27.9	4.8	12.3	< 4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2018	47.7	21.6	5.3	9.9	< 4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.06.2018	52.4	26.7	5.9	11.3	< 4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.06.2018	47.9	23.4	6.2	10.7	< 4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.06.2018	53.4	24.6	5.8	12.4	< 4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.06.2018	48.8	22.7	4.9	10.5	< 4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.06.2018	56.6	25.6	9.4	11.3	< 4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.06.2018	55.3	22.7	7.3	12.2	< 4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2018	49.7	27.3	8.4	13.1	< 4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Quarterly Average	50.96	24.07	5.98	11.76	< 4.0	0.31	< 20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

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

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

Ref.: Envlab/18/R-984 Date: 26/07/18

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2018	49.2	21.3	4.2	8.2	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2018	48.5	19.4	6.1	9.5	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2018	47.9	18.4	5.3	7.5	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2018	49.5	21.2	5.2	6.9	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2018	48.8	19.7	6.1	11.2	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2018	50.7	16.4	5.4	8.5	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2018	52.1	24.1	4.9	10.1	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2018	42.5	21.3	5.3	11.3	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.05.2018	49	22.4	6.1	9.6	<4.0	0.20	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.05.2018	52.6	27.1	5.8	12.4	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.05.2018	53.4	29.1	4.9	10.5	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.05.2018	51.5	31.1	5.3	11.3	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.05.2018	49.2	27.5	6.4	9.4	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.05.2018	49.8	26.1	7.2	12.1	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.05.2018	51.6	33.4	6.5	8.6	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.05.2018	56.7	31.6	5.8	7.6	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.05.2018	62.7	27.2	5.6	6.9	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2018	59.1	25.4	4.6	9.5	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2018	39.4	22.4	6.1	12.1	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.06.2018	44.2	26.7	7.2	10.5	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.06.2018	49.4	17.4	5.9	12.9	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.06.2018	43.7	19.4	6.2	11.6	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.06.2018	47.4	21.8	4.9	16.4	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.06.2018	46.2	22.4	6.7	13.1	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.06.2018	45.9	19.7	7.3	11.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2018	49.2	21.4	6.9	12.8	<4.0	0.26	<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	47.93	23.61	5.84	10.45	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

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

For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at: www.visiontek.in

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref: tvcl/ab/18/R-938 Date: 06/04/18

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2018	42.3	21.2	4.3	8.5	<4.0	0.10	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2018	49.1	22.5	5.8	9.1	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2018	51.2	22.7	6.5	10.2	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2018	46.5	26.4	6.1	11.5	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2018	51.2	21.2	6.3	12.1	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2018	49.3	19.8	5.6	13.2	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2018	43.5	19.6	4.9	12.4	<4.0	0.11	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2018	48.7	21.6	6.7	9.2	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.05.2018	39.5	22.5	5.9	11.2	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.05.2018	55.4	27.3	7.1	13.4	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.05.2018	46.5	23.4	5.9	11.2	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.05.2018	38.5	22.1	5.2	10.4	<4.0	0.10	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.05.2018	46.5	21.2	6.8	11.8	<4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.05.2018	48.8	22.5	5.4	12.1	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.05.2018	49.9	27.7	4.9	10.4	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.05.2018	49.1	31.4	6.5	9.3	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.05.2018	53.2	29.1	5.4	11.4	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2018	59.2	24.6	5.9	10.4	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2018	41.9	26.7	6.6	11.5	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.06.2018	48.2	24.7	6.2	10.7	<4.0	0.11	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.06.2018	42.5	27.8	7.1	11.9	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.06.2018	51.2	26.7	8.2	13.4	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.06.2018	46.2	25.7	6.2	13.5	<4.0	0.12	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.06.2018	45.8	29.1	7.1	10.7	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.06.2018	43.2	27.3	6.7	11.6	<4.0	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2018	46.8	25.6	7.3	12.7	<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	47.47	24.63	6.18	11.30	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium - SPADNS Method

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

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ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/18/R-9819

Date: 06/04/18

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) Enviroteeh, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

Date	PARAMETERS												
	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2018	42.1	25.4	5.1	11.3	4.2	0.41	24.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2018	39.5	26.1	4.3	12.8	4.1	0.36	24.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2018	546.2	24.8	4.9	11.9	4.3	0.44	22.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2018	43.1	29.4	5.3	17.5	5.2	0.38	24.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2018	38.7	22.5	4.9	16.4	6.1	0.33	22.7	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2018	38.7	26.4	5.2	12.4	4.3	0.41	21.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2018	39.5	21.4	4.9	12.6	4.7	0.47	22.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2018	42.7	27.5	6.8	11.5	6.1	0.29	25.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.05.2018	42.6	23.4	6.1	12.4	5.3	0.33	23.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.05.2018	41.7	26.7	5.8	9.8	4.7	0.27	27.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.05.2018	38.7	25.4	4.9	11.5	5.3	0.23	23.7	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.05.2018	39.2	31.8	5.4	16.2	4.8	0.31	24.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.05.2018	40.2	28.7	4.7	13.4	4.2	0.32	25.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.05.2018	38.7	26.4	4.8	12.2	6.4	0.28	24.7	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.05.2018	48.4	27.2	6.1	11.7	4.9	0.27	26.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.05.2018	39.2	25.4	5.9	14.2	5.1	0.24	22.9	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.05.2018	53.2	26.7	4.8	12.3	5.3	0.34	22.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2018	45.4	29.1	8.2	11.4	5.7	0.27	23.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2018	36.4	31.5	6.4	10.7	4.9	0.29	25.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.06.2018	42.5	26.7	6.7	15.8	5.1	0.31	24.7	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.06.2018	41.2	25.7	5.9	11.6	5.7	0.32	26.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.06.2018	46.2	31.2	6.2	12.7	6.1	0.33	21.7	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.06.2018	43.1	26.4	5.5	12.6	5.3	0.31	26.7	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.06.2018	42.7	31.4	6.7	12.4	4.7	0.35	27.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.06.2018	45.4	27.5	7.2	10.5	6.1	0.31	25.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2018	39.1	29.6	6.3	12.6	5.3	0.33	27.3	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	**100**	**60**	**80**	**80**	**100**	**4**	**400**	**05**	**01**	**20**	**1.0**	**06**	**--**
Quarterly Average	**61.32**	**27.09**	**5.73**	**12.71**	**5.15**	**0.33**	**24.38**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Gaeke method**	**Modified Jacob & Hochheiser (Na-Arsenite)**	**Chemical Method**	**NDIR Spectroscopy**	**Indo phenol blue method**	**Absorption & Desorption followed by GC analysis**	**Solvent extraction followed by Gas Chromatography analysis**	**AAS method after sampling**	**AAS method after sampling**	**AAS method after sampling**	**Zirconium SPADNS Method**

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

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref.: Envlab/18/K-9321

Date: 26/07/18

METEOROLOGICAL DATA FOR JUNE-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga .**
2. Sampling Location : **Near Raw Water Reservoir**
3. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative.

Date	Temperature(°C)		Relative Humidity (%)		Wind Speed m/sec		Wind Direction	Rain fall (mm)
	Max	Min	Max	Min	Max	Min		
01-06-2018	36.60	26.20	80.10	32.40	1.2	0.0	SE	0
02-06-2018	36.70	25.90	80.10	28.70	1.4	0.0	NE	0
03-08-2018	37.80	23.30	82.30	26.00	1.3	0.0	NE	4.8
04-06-2018	36.70	23.60	84.00	27.60	1.4	0.0	NNE	0.2
05-06-2018	37.90	27.30	79.70	27.60	1.2	0.0	E	0
06-06-2018	37.30	26.80	81.80	32.00	1.4	0.0	ENE	0
07-06-2018	36.60	27.60	81.80	35.00	1.1	0.0	NE	0
08-06-2018	34.30	24.70	88.00	44.20	1.3	0.0	NW	3.1
09-06-2018	32.00	25.40	91.70	50.80	2.50	0.0	N	2.1
10-06-2018	33.10	23.70	97.20	50.40	1.11	0.0	NWN	30.4
11-06-2018	33.30	24.80	96.40	37.20	1.11	0.0	NE	24.3
12-06-2018	33.80	23.70	95.50	44.50	1.11	0.0	NNE	20.2
13-06-2018	31.30	23.90	90.70	61.20	1.67	0.0	E	10.1
14-06-2018	36.10	25.40	76.90	39.40	2.22	0.0	W	0
15-06-2018	37.80	27.90	64.70	23.0	3.06	0.0	NE	0
16-06-2018	38.00	28.40	55.10	26.00	3.06	0.0	NW	0
17-06-2018	38.80	28.50	56.70	19.00	2.5	0.0	SW	0
18-06-2018	38.70	28.60	50.30	26.00	3.06	0.0	SE	0
19-06-2018	36.90	27.60	64.70	33.20	2.22	0.0	NE	0
20-06-2018	38.00	29.00	58.10	30.10	3.06	0.0	NE	0
21-06-2018	38.00	26.40	83.80	34.20	3.06	0.0	NE	0
22-06-2018	33.80	25.80	86.70	42.70	2.22	0.0	NNE	0
23-06-2018	35.90	26.60	82.80	34.60	3.33	0.0	NNE	0
24-06-2018	34.90	28.30	67.20	38.00	1.11	0.0	N	0
25-06-2018	35.00	27.80	72.70	40.00	1.67	0.0	N	0
26-06-2018	31.10	25.20	86.00	51.20	1.11	0.0	SE	0
27-06-2018	27.60	25.00	87.30	71.20	0.83	0.0	NE	0.4
28-06-2018	29.80	25.10	88.70	56.00	0.00	0.0	W	2.4
29-06-2018	30.70	24.20	95.80	48.30	0.00	0.0	NNE	0.7
30-06-2018	34.40	25.60	88.70	39.40	1.8	0.0	W	4.9

For Visiontek Consultancy Services Pvt. Ltd.

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

Ref: tcvsfab/18/R-9328 Date: 06/07/18

METEOROLOGICAL DATA FOR APRIL-2018

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga .**
2. Sampling Location : **Near Raw Water Reservoir**
3. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative.

Date	Temperature(°C)		Relative Humidity (%)		Wind Speed m/sec		Wind Direction	Rain fall (mm)
	Max	Min	Max	Min	Max	Min		
01-04-2018	35.20	23.40	79.60	9.40	2.2	0.0	SW	0.2
02-04-2018	35.30	14.10	79.60	19.00	1.67	0.0	SW	0
03-04-2018	36.60	22.60	82.00	16.40	1.67	0.0	SW	0
04-04-2018	36.30	23.40	76.50	19.00	3.8	0.0	NE	46.9
05-04-2018	36.80	21.50	61.20	19.00	1.4	0.0	W	0
06-04-2018	37.10	23.20	74.10	27.60	2.1	0.0	WSW	5.9
07-04-2018	35.70	22.60	76.90	19.00	3.1	0.0	WSW	0
08-04-2018	34.10	23.90	60.90	26.00	1.2	0.0	WSW	0
09-04-2018	35.10	24.10	82.70	28.30	1.4	0.0	W	1.4
10-04-2018	35.60	22.90	77.30	26.00	1.1	0.0	NE	0
11-04-2018	36.60	25.60	72.50	19.00	1.3	0.0	SW	0
12-04-2018	36.20	25.20	62.80	5.90	1.3	0.0	SW	0
13-04-2018	36.30	24.40	65.00	19.00	1.8	0.0	S	0
14-04-2018	36.80	24.80	51.40	19.00	1.1	0.0	SW	0.2
15-04-2018	37.20	23.20	62.10	18.20	1.3	0.0	SWS	0
16-04-2018	38.00	25.60	51.50	19.00	1.8	0.0	SE	0
17-04-2018	38.40	22.00	95.50	19.00	2.2	0.0	SE	8.4
18-04-2018	39.70	23.30	83.20	17.30	1.3	0.0	E	0
19-04-2018	40.7	25.80	85.60	11.20	1.1	0.0	SW	0
20-04-2018	40.40	26.40	68.20	9.40	1.2	0.0	S	0
21-04-2018	40.80	9.50	68.20	10.30	1.2	0.0	S	0
22-04-2018	41.10	26.80	49.10	9.40	1.4	0.0	SW	0
23-04-2018	40.40	26.20	46.00	14.70	2.7	0.0	W	0
24-04-2018	38.70	25.10	56.30	10.30	2.4	0.0	SW	0
25-04-2018	39.30	24.90	52.70	5.90	3.1	0.0	W	0
26-04-2018	40.90	24.70	57.90	5.90	1.8	0.0	SE	0
27-04-2018	37.30	25.70	66.20	19.00	2.1	0.0	W	0
28-04-2018	37.60	22.90	78.20	27.00	1.5	0.0	SW	4
29-04-2018	36.10	21.90	80.80	29.70	2.2	0.0	SW	19.6
30-04-2018	38.00	20.20	98.90	28.00	1.6	0.0	SW	14.1

For *Visiontek Consultancy Services Pvt. Ltd.*

VISIONTEK CONSULTANCY SERVICES PVT LTD

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref.: Envlab/18/R-9312 Date: 06/07/18

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)) June-2018

TIME (6.00AM to 10.00PM)	N1:Gumkarma (07.06.2018)	N2:Ghichamura (07.06.2018)	N3:Bomaloi (09.06.2018)	N4:Tileimal (09.06.2018)	N5:Thelkoli (11.06.2018)	N6:Lapanga (11.06.2018)	N7:Lapanga Railway Station (16.06.2018)	N8:Jangala (16.06.2018)
06.00am	42.1	29.6	33.1	36.2	57.4	47.6	53.4	31.2
07.00am	44.6	32.4	42.3	42.1	61.3	45.8	52.1	33.5
08.00am	50.9	36.1	43.1	41.7	62.7	51.2	63.1	42.1
09.00am	53.4	39.2	52.4	42.3	66.8	57.6	62.6	47.2
10.00am	60.2	41.2	53.2	45.2	67.4	53.8	61.2	41.7
11.00am	54.8	38.4	52.1	43.7	62.7	52.4	57.6	41.2
12.00 noon	44.2	39.2	49.6	39.6	58.4	49.4	53.2	39.2
01.00pm	41.7	33.5	44.8	36.7	51.3	47.8	51.2	33.6
02.00pm	47.2	31.4	46.2	38.5	52.4	46.7	48.3	33.1
03.00pm	51.3	33.2	46.7	37.3	51.5	51.2	51.7	31.6
04.00pm	58.9	41.2	51.4	52.1	60.4	51.8	63.2	33.4
05.00pm	64.3	41.9	53.4	53.2	63.7	61.3	64.1	42.3
06.00pm	62.1	50.4	57.1	51.7	66.5	60.2	61.7	51.5
07.00pm	57.2	57.2	53.1	51.7	66.1	63.1	65.2	42.4
08.00pm	56.3	44.1	52.7	46.4	61.3	56.7	60.7	39.2
09.00pm	52.2	40.3	49.2	41.3	61.3	52.7	55.4	33.9
Average	52.59	39.33	48.78	43.73	60.7	53.08	57.79	38.57
Standard as per CPCB	75							

Night time Noise monitoring results (Noise Level in dB (A)) June-2018

TIME (10.00PM to 6.00AM)	N1:Gumkarma (07.06.2018)	N2:Ghichamura (07.06.2018)	N3:Bomaloi (09.06.2018)	N4:Tileimal (09.06.2018)	N5:Thelkoli (11.06.2018)	N6:Lapanga (11.06.2018)	N7:Lapanga Railway Station (16.06.2018)	N8:Jangala (16.06.2018)
10.00pm	42.2	32.1	28.1	28.7	51.2	41.5	46.4	25.1
11.00pm	35.7	27.2	30.3	27.5	47.1	37.2	43.1	23.1
12.00 midnight	33.9	24.1	27.1	25.1	44.1	29.5	37.6	20.3
01.00am	31.4	21.7	23.4	23.7	40.2	29.2	32.3	20.2
02.00am	33.8	27.1	24.5	24.5	38.1	27.1	31.2	20.4
03.00am	36.7	23.5	23.1	23.1	33.5	25.2	33.1	20.1
04.00am	35.2	24.2	23.5	27.4	37.1	23.2	32.1	20.3
05.00am	36.5	23.1	24.1	25.4	41.3	24.1	33.1	22.5
Average	35.68	25.38	25.51	25.68	41.58	29.60	36.11	21.50
Standard as per CPCB	70							

VISIONTEK CONSULTANCY SERVICES PVT LTD

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

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

Ref.: Envlab/18/R-9393 Date: 05/07/18

SOIL QUALITY ANALYSIS REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium): Lapanga
2. Date of Sampling : 06.06.2018
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 : 07.06.2018 to 13.06.2018
5. Sample Collected By : VCSPL representative in Presence of Aditya Aluminium representative

Sl.No.	Parameters	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10
1	pH	6.1	5.7	5.9	5.6	5.7	5.8	5.9	5.8	6.1	5.7
2	Conductivity	102.8	91.2	88.6	96.7	97.1	89.2	79.1	78.8	81.4	78.1
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	37.1	17.8	31.2	40.2	41.2	17.1	34.3	33.2	41.4	19.2
5	Silt	10.1	21.4	17.9	18.2	13.4	17.6	11.4	17.8	16.7	19.5
6	Clay	41.5	60.2	44.1	36.2	41.4	60.7	43.2	42.1	46.2	61.3
7	Bulk Density (gm/cc)	1.21	1.23	1.31	1.32	1.37	1.38	1.31	1.27	1.33	1.37
8	Exchangeable Calcium as Ca (%)	33.1	31.0	44.0	34.7	42.0	37.9	39.2	41.8	42.2	39.0
9	Exchangeable Magnesium as Mg (%)	45.1	54.3	51.2	54.3	56.1	49.2	57.2	61.3	62.4	58.4
10	Available Sodium as Na(%)	0.018	0.021	0.019	0.022	0.024	0.023	0.024	0.027	0.022	0.027
11	Available Potassium as K (%)	0.051	0.056	0.057	0.061	0.059	0.057	0.053	0.063	0.052	0.057
12	Available phosphorous as P (%)	0.017	0.022	0.027	0.019	0.018	0.018	0.016	0.021	0.016	0.021
13	Available Nitrogen as N (%)	0.18	0.21	0.17	0.18	0.13	0.17	0.24	0.14	0.18	0.17
14	Organic Matter (%)	2.5	2.8	3.1	2.7	2.9	2.7	3.1	3.2	3.1	3.2
15	Organic Carbon (%)	1.4	1.6	1.5	1.63	1.4	1.37	1.7	1.81	1.79	1.67
16	Water soluble Chlorides as Cl (%)	0.19	0.27	0.19	0.26	0.21	0.19	0.23	0.27	0.24	0.21
17	Water soluble Sulphates as SO_4 (%)	0.18	0.24	0.27	0.30	0.29	0.27	0.19	0.17	0.19	0.18
18	Sodium Absorption Ratio (%)	0.167	0.129	0.125	0.141	0.139	0.147	0.152	0.149	0.166	0.149
19	Aluminium as Al (%)	0.0002	0.00007	0.00006	0.00007	0.00008	0.00006	0.00007	0.00005	0.000004	0.000006
20	Total Iron as Fe (%)	0.087	0.033	0.04	0.07	0.06	0.04	0.05	0.03	0.02	0.027
21	Manganese as Mn (%)	0.005	0.0011	0.0017	0.0021	0.009	0.0017	0.0018	0.0014	0.0016	0.0014
22	Boron as B (%)	0.00005	0.00014	0.00017	0.00021	0.00019	0.00017	0.00024	0.00018	0.00015	0.00012
23	Zinc as Zn (%)	0.00021	0.00019	0.00014	0.00012	0.00011	0.00012	0.00017	0.00015	0.00013	0.00015
24	SiO_2 (%)	6.1	5.4	6.1	6.2	6.2	6.3	6.7	5.7	6.2	5.7
25	Fe_2O_3(%)	0.06	0.03	0.025	0.025	0.015	0.017	0.021	0.026	0.024	0.026
26	CaO (%)	24.1	24.1	26.5	25.4	26.2	24.2	30.1	33.1	29.2	27.8
27	MgO (%)	27.1	31.4	30.1	33.2	32.1	28.6	31.3	31.6	33.1	27.9
28	Al_2O_3 (%)	0.00004	0.00005	0.000041	0.000045	0.000037	0.000051	0.000038	0.000029	0.000041	0.000038
29	FeO (%)	0.081	0.0252	0.031	0.015	0.022	0.0242	0.0251	0.0284	0.0224	0.034487
30	MnO (%)	0.0061	0.0014	0.0015	0.0022	0.0058	0.0017	0.0016	0.0021	0.0018	0.0019
31	K_2O (%)	0.04881	0.0463	0.0421	0.0473	0.052	0.0401	0.044	0.0540	0.048	0.0523
32	P_2O_5 (%)	0.0078	0.0075	0.0101	0.0080	0.0082	0.0082	0.0091	0.0102	0.0061	0.0072
33	Fluoride as F (%)	0.0012	0.00036	0.00031	0.00041	0.00054	0.00036	0.00026	0.00027	0.00021	0.00012

ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.

VISIONTEK CONSULTANCY SERVICES PVT LTD

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at: www.visiontek.org

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(An Enviro Engineering Consulting Cell)

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

Ref.: Envlab/18/R-9294 Date: 05/07/18

SURFACE WATER QUALITY ANALYSIS REPORT

1	Name of Industry	:	**M/sHindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2	Sampling location	:	**SW-1:**Hirakud Reservoir,**SW-2:**Lapanga Pond; **SW-3:**Matwadmadi -U/S, **SW-4:**Bamloi Pond; **SW-5:**Bheden river
3	Date of sampling	:	06.06.2018
4	Date of analysis	:	07.06.2018 to 13.06.2018
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	7.3	7.1	7.2	7.4	7.2
2	Colour	APHA 2120 B, C	Hazen	300	CL	CL	CL	CL	CL
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	APHA2510-B	µs/cm	--	92.2	94.1	82.4	91.4	83.1
6	Turbidity	APHA 2130 B	NTU	--	2.1	3.5	2.2	4.1	2.3
7	Total Dissolved Solids	APHA 2540 C	mg/l	1500	119.0	124.0	111.0	121.0	107.0
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	51.0	53.0	57.0	62.0	47.0
9	Total Alkalinity	APHA 2320 B	mg/l	--	41.0	43.0	42.0	51.0	47.0
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	10.4	12.1	13.2	16.4	12.1
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	6.1	4.3	5.3	2.9	3.7
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	0.02
14	Chloride (as Cl)	APHA 4500Cl B	mg/l	600	21.0	24.6	19.0	20.0	17.9
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	9.1	8.2	9.7	8.1	8.4
16	Fluoride (as F)	APHA 4500F⁻ C	mg/l	1.5	0.11	0.23	0.27	0.22	0.19
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	50	1.1	1.3	1.1	1.2	1.2
18	Sodium as Na	APHA3500-Na	mg/l	--	11.7	12.1	11.3	10.3	9.5
19	Potassium as K	APHA 3500-K	mg/l	--	0.8	0.81	1.2	0.94	0.87
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	0.19	0.23	0.22	0.20	0.17
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	421	510	620	111	436

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

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For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 2582017905

E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at: www.visiontek.in

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

Ref.: Envlab/18/R-9295

SURFACE WATER QUALITY ANALYSIS REPORT

Date: 08/07/18

1.	Name of Industry	:	**M/sHindalco Industries Ltd (Unit- Aditya Aluminium). Lapanga**
2.	Sampling location	:	**SW-6:** Bheden river near Katikela.**SW-7** Matwadinadi-D/S.**SW-8:** Hirakud reservoir near Gurupali village. **SW-9:** Salepali village. **SW-10:** Sanamal
6.	Date of sampling	:	06.06.2018
7.	Date of analysis	:	07.06.2018 to 13.06.2018
3.	Sample collected by	:	VCSPL Representative in presence of Aditya Aluminium Representative

Sl. No.	Parameter	Testing Methods	Unit	Standards as per IS-2296:1992 Class -'C'	Analysis Results				
					SW-6	SW-7	SW-8	SW-9	SW-10
1	pH Value	APHA 4500H+ B	--	6.0-9.0	7.1	6.8	7.1	7.4	7.6
2	Colour	APHA 2120 B, C	Hazen	300	CL	CL	CL	CL	CL
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	APHA2510-B	µs/cm	--	95.1	92.7	101.3	101.4	102.6
6	Turbidity	APHA 2130 B	NTU	--	2.4	3.1	2.2	2.8	3.1
7	Total Dissolved Solids	APHA 2540 C	mg/l	1500	119.0	121.0	136.0	124.0	136.0
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	51.0	58.0	57.0	51.0	57.0
9	Total Alkalinity	APHA 2320 B	mg/l	--	46.0	51.0	47.0	49.0	47.0
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	14.8	16.5	17.01	14.8	16.4
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	4.1	4.2	4.8	3.9	3.5
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	17.0	19.1	21.0	23.0	21.0
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	6.6	8.1	8.7	8.5	9.3
16	Fluoride (as F)	APHA 4500F- C	mg/l	1.5	0.22	0.27	0.26	0.28	0.19
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	50	2.3	2.5	2.6	2.1	2.8
18	Sodium as Na	APHA 3500-K	mg/l	--	10.1	9.9	11.1	11.4	12.4
19	Potassium as K	APHA3500-Na	mg/l	--	0.91	0.82	1.2	1.1	1.3
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	0.21	0.32	0.24	0.23	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	517	436	486	434	624

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

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E-mail : visiontekin@yahoo.co.in, visiontek@gmail.com, Visit us at: www.vcspl.org

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