ADITYA BIRLA
HINDALCO

Letter No: AAP/E&S/EC/2021/743 Date: 26/11/2021

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

Sub: Submission of Six Monthly Compliance from April' 21 to September' 21.

Ref: Environmental Clearance Letter No: J-11011/136/2009-IA.I (I), dated 29/11/2012, J-11011/136/2009-IA.II (I), dated 14/06/2013, J-11011/136/2009-IA.II (I), dated 14/08/2018 & J-11011/136/2009-IA.I (I) dated 20/07/2020

Dear Sir,

As a part of the compliance to the Environmental Clearance accorded by MoEF&CC 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' 21 to September' 21.

Kindly acknowledge receipt of the reports.

Thanking You

Yours faithfully
For Aditya Aluminium

Sameer Nayak

(Sameer Nayak)
President & Unit Head

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

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Corporate ID No.: L27020MH1958PLC011238

Aditya Aluminium: Six Monthly EC Compliance from April 2021– September 2021

Name of the Project	:	M/s. Aditya Aluminium (A Division of Hindalco Industries Ltd.) at village: Lapanga, Tehsil: Rengali, District: Sambalpur (Odisha).
Environment Clearance Letter No and date	:	J-11011/136/2009-IA.I(1), Dated 29th November 2012, EC amendment dated 14th June 2013,14th Aug 2018 & 20th July 2020. For 7,20,000 TPA ALUMINIUM SMELTER & 1650 MW CAPTIVE POWER PLANT.
Period of Compliance Report	:	April 2021 to September 2021

<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 is being 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.
We have kept an option of importing Alumina in case of any shortage in supply from the above source.</td></tr>
<tr><td>iii)</td><td>The gaseous emissions (PM, SO_2, 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 from April’ 21 to September’ 21 in Anode baking Furnace stacks of stated below
<table>
<tr><td rowspan="2">Stack attached to</td><td colspan="3">PM Emission (mg/Nm3)</td></tr>
<tr><td>(Min)</td><td>(Max)</td><td>(Avg)</td></tr>
<tr><td>FTC # 1</td><td>8.3</td><td>14.1</td><td>11.45</td></tr>
<tr><td>FTC # 2</td><td>13.4</td><td>19.7</td><td>16.65</td></tr>
</table>
The monitoring report of Fume treatment Plant stacks is attached as Annexure-1.</td></tr>
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<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/Nm^3.</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 from April’ 21 to September’ 21 is stated below:
<table>
<tr><th rowspan="2">Stack attached to</th><th colspan="3">Particulte Fluoride Emission (mg/Nm3)</th></tr>
<tr><th>(Min)</th><th>(Max)</th><th>(Avg)</th></tr>
<tr><td>GTC # 1</td><td>0.12</td><td>0.13</td><td>0.12</td></tr>
<tr><td>GTC # 2</td><td>0.12</td><td>0.14</td><td>0.13</td></tr>
</table>
The average fugitive particulate fluoride emission from pot rooms during April’ 21 to September’ 21 is 0.09 kg/ton of metal produced.

The monitoring reports of Gas Treatment Centre stacks is attached as Annexure-2.</td>
</tr>
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<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>
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<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.

Online Roof Top Monitoring analyzer installed for Fugitive fluoride (HF) monitoring in potrooms, the concentartion of hydrogen fluoride(HF) varies between 0.207 mg/m3 to 0.298 mg/m3 and average is 0.257 mg/m3 during April’ 21 to September’ 21. The daily average emission report during these period is attached as Annexure-3.
Forage fluoride analysis around the smelter is being carriedout on quarterly basis and the</td>
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<td>concentration of the forage fluoride (analysed in September 2021) are listed below:

<table>
<tr><th>Location</th><th>Species</th><th>Fluoride (in ppm)</th></tr>
<tr><td>Bomaloi</td><td>Oryza Sativa, Murraya Koenigii</td><td>1.58</td></tr>
<tr><td>Gurupali</td><td>Aegle marmelos</td><td>1.25</td></tr>
<tr><td>Plant Site</td><td>Dalbergia Sissoo, Roxb Pongame oil tree</td><td>1.86</td></tr>
<tr><td>Thelkolai</td><td>Cynodon dactylon Syzygium cumini</td><td>1.74</td></tr>
<tr><td>Gumukarma</td><td>Bambuso ideade Cynodon dactylon</td><td>1.48</td></tr>
<tr><td>Ghichamura</td><td>Mimusops elengi</td><td>0.96</td></tr>
<tr><td>Tileimal</td><td>Aegle marmelos Cynodon dactylon</td><td>1.22</td></tr>
<tr><td>Lapanga</td><td>Azadirachta Indica Oryza Sativa</td><td>1.46</td></tr>
<tr><td>Jangala</td><td>Oryza Sativa, Solanum Melongena</td><td>1.21</td></tr>
<tr><td>Bhadrapali</td><td>Cynodon dactylon, Solanum lycopersicum</td><td>1.40</td></tr>
</table>

Dry scrubbing system is being provided as gas treatment centre (GTC) to each of the pots in the pot room to control fugitive emission.</td>
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<td>vii)</td>
<td>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.</td>
<td>Electrostatic Precipitators (ESP) of adequate efficiency is installed in Captive Power Plant (CPP) to restrict particulate emissions within 50 mg/Nm^3.

Two nos. of Gas Treatment Centre (GTC) provided and connected to each 180 pots. Besides, Bag filters installed in all the material handling & transfer points in Smelter. Fume treatment centre (FTC) provided to each Anode Baking Furnaces to treat the tar fumes, dust, gaseous and particulate fluorides generated during Anode Baking.

The standards prescribed by the Ministry/ CPCB/ SPCB is being adhered.

The results of the stack emission from the CPP units from April’ 21 to September’ 21 is stated below:
<table>
<tr><td rowspan="2">CPP Stack</td><td colspan="3">PM Emission (mg/Nm3)</td></tr>
<tr><td>(Min)</td><td>(Max)</td><td>(Avg)</td></tr>
<tr><td>CPP 1</td><td>38.3</td><td>45.6</td><td>42.18</td></tr>
<tr><td>CPP 2</td><td>41.7</td><td>44.8</td><td>43.38</td></tr>
</table>
</td>
</tr>
</table>

		<table><tr><td>CPP 3</td><td>39.2</td><td>42.2</td><td>41.1</td></tr><tr><td>CPP 4</td><td>38.8</td><td>45.8</td><td>42.72</td></tr><tr><td>CPP 5</td><td>39.7</td><td>45.3</td><td>42.82</td></tr><tr><td>CPP 6</td><td>41.0</td><td>43.2</td><td>42.12</td></tr></table>
viii)	Provision for installation of FGD shall be provided for future use.	Space has been kept for installation of FGD. The Consent to Establish for the Semi dry FGD project has been issued by OSPCB on 18/12/2020. The construction of Semi dry FGD in Unit-6 of CPP is under progress. Commisioning is expected in April'22.
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. Continuous emission monitoring system (CEMS) installed for monitoring of SO_2, NOx, and PM in all the stacks of CPP and the velocity of the exit flue gas is being maintained above 22 m/s.
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 4th year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.	Ash generated is being utilized by means of supplying to M/s Ultratech Cements, Jharsuguda, M/s ACC, Bargarh and M/s OCL, Rajgangpur for cement manufacturing. Also we are supplying Ash to the brick manufactures, used in own fly ash brick units and utilizing for development of low lying areas with ash inside the Plant premises with the 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 efforrts being made for achiving target ash utilization as stated below: ➢ Increase supply to Cement Plants like M/s Ultratech, Jharsuguda unit; M/s ACC, Bargarh Unit; M/s OCL, Rajgangpur Unit ➢ Use in own ash brick unit installed inside the plant & increased supply to the local brick manufacturing Units ➢ Low lying area development, ash dyke

<table>
<tr><td></td><td></td><td>raising and road making inside and outside the plant premises
➢ A dedicated team is working to explore more areas of Ash utilization like Road making, Abandoned mines/quarry filling, infrastructure projects etc.

Started Fly ash dispatched thorugh BOXN Wagon in Rakes to various cement manufacturing units for cement making, this has resulted increase in ash utilization.

The status of ash utilization for the period from April’ 21 to September’ 21 is stated below:
<table><tr><td>April’ 21 to Sept’ 21</td><td>Quantity in MT</td></tr><tr><td>Total ash generated</td><td>738321.0</td></tr><tr><td>Total Ash Utilised</td><td>585279.2</td></tr><tr><td>Utilization (%)</td><td>79.27%</td></tr></table>Details of the ash utilization from April’ 21 to Sept’ 21 is attached as annexure- 4.</td></tr>
<tr><td>xii)</td><td>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, Pb etc) 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.</td><td>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 Dsiposal (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-5.

The ash filling in the low lying area inside the plant premises is being carriedout in line with the guideline for disposal/utilization of fly ash for reclamation of Low Lying Areas and in stowing of Abandoned mines/Quarries. (Ref: CPCB guideline published in March 2019).</td></tr>
<tr><td>xiii)</td><td>Fluoride (as F) consumption shall be less than 10 kg/ton of Aluminium produced as specified by the CREP.</td><td>The specific fluoride (as F) consumption for the period April’ 21 to Sept’ 21 is 8.14 kg/ton of Aluminium produced.</td></tr>
<tr><td>xiv)</td><td>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</td><td>Anode butts generated from the pots is being cleaned and recycled completely for making green anode in green anode plant.

The Carbon part of SPL is being supplied to M/s Green Energy Limited, Sambalpur for</td></tr>
</table>

	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.	reprocessing/detoxification and in this way the carbon part is completely recycled. M/s Ramky Enviro Pvt. Ltd has established the facility for detoxification and disposal as per the protocol given by CPCB in its CHW-TSDF at kanchichuhan, Dist- Jajpur site. M/s Ramky has started lifting the refractory part of SPL for the trial run permission given by OSPCB. Around 10976 MT SPL Refractory part and 1316 MT Carbon part is in stock till end of September-2021 and kept inside the well-ventilated permanent covered sheds for disposal to CHW-TSDF/Actual users. We are awaiting for OSPCB Consent/ Permission to M/S Ramky Enviro Pvt Ltd. For regular lifting of SPL Refractory materials to their CHW-TSDF. Besides, we are also exploring the option for co-processing of SPL in cement plants. We have applied for issue of Consent to Establish(CTE) for the proposed SPL Crushing & Screening Unit at Aditya Aluminium. The crushed SPL will be supplied to authorized Cement Plants for co-processing in cement kiln. 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 done in the inhouse dross processing unit and the residue generated is sent to OSPCB authorized reprocessing for menufacture of Alum/synthetic slag. STP is in operation at township & Plant area separately, the sludge generated is being used for gardening/greenbelt development. The used oil and batteries are being sold/supplied to authorized recyclers/reprocessors only.
xv)	As proposed, spent pot lining waste shall also be provided to cement and steel industries for further utilization.	The Carbon part of SPL is being supplied to the OSPCB authorized recycler M/s Green Energy Resources, Sambalpur. We have applied for issue of Consent to

		Establish(CTE) for the proposed SPL Crushing & Screening Unit at Aditya Aluminium. The crushed SPL will be supplied to authorized Cement Plants for co-processing in cement kiln.
xvi)	Ash pond shall be lined with HDP/LDPE lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached. Ash pond water shall be recirculated and reused.	The ash pond is provided with HDPE liner and adequate safety measures have been taken to minimize the risk to the ash dyke. The ash disposal through HCSD system to the ash pond started from January 2017. The decanted water from the ash pond is being completely recycled and reused for ash disposal. The ash pond and water decantation system is constructed in line with the design & drawings provided by NIT-Rourkela. The assessment of safety, strength and stability of ash dyke has been checked by Dr. CR Patra of NIT Rourkela and at present condition it is found, the dyke is stable,safe and has sufficient material strength.
xvii)	Cycle of concentration (CoC) of 5.0 shall be adopted.	We are maintaing the average CoC of cooling tower above 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 two nos new piezometer wells near ash pond areas and the analysis report is enclosed as Annexure-6. Monitoring of heavy metals (Hg, Cr, As, Pb) around the Ash pond area is being carried and record maintained. Please refer annexure-5 for the analysis report.
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 (SLF) has not yet been established inside the plant. Therefore, ground water quality monitoring shall be carried out after establishment of the SLF.
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	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 reused/reutilized in the process of CPP.

	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.	Separate Sewage Treatment Plant (STP) is installed @ capacity 25 m^3/hr for Smelter & Captive Power Plant, STP of 300 KLD capacity is installed at Township area and the treated water being used for greenbelt development.
xxi)	No effluent shall be discharged outside the premises of smelter during non-monsoon period and shall be discharged during the monsoon period only after treatment and meeting the norms of the OSPCB/CPCB.	We are operating a Double Stage Reverse Osmosis based effluent treatment plant (ETP) of 300 m^3/hr capacity and therefore no effluent water is being discharged to outside without treatment from Smelter.
xxii)	Greenbelt of adequate width and density around the project site shall be developed in 33% area in consultation with the DFO as per the CPCB guidelines having density of 2,000 trees/Ha.	Aditya Aluminium has developed Greenbelt over an area of 1001 acres inside the plant, ash pond area and township areas. Around 6,36,500 saplings planted till September 2021.
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 utilised for gardening purposes. A rain water harvesting scheme has been submitted to CGWA for approval vide our 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 mentioned in the R&R plan 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-7.
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 Enviornment policy has been revised and approved by the Board in 30 June 2020. The copy of the revised environment policy is attached as annexure-8.

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 being complied. (Status of implementation is enclosed as annexure-9).
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 September 2021 is Rs 54.30 Crores. The details of the expenditure made under Enterpise Social Commitment (ESC) till September 2021 is attached as annexure-10.
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.	The construction activities are completed after the plant is installed & commissioned. However, in case of any construction & maintainance activities from time to time we are providing all necessary infrastructure and facilities to the workers as per rules & guidelines.
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 is already submitted to MoEF. The organizational structure of Corporate Sustainability cell is being revised and the modified one will be submitted after the formal structure is published by Hindalco Management.
	GENERAL CONDITIONS	
i)	The project authorities must strictly adhere to the stipulations made by the OSPCB and the State Government.	We have been following the stipulations made by OSPCB and the State Government. The compliance to CTO conditions is being submitted to OSPCB as per requirement.
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	We have noted and accepted the stipulated condition.

	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.	
iv)	At least four number of ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO_2 and NO_x are anticipated in consultation with the OSPCB. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and Orissa State Pollution Control Board once in Six months.	Installation of four (04) CAAQMStations completed and commissioned. Data connectivity established with the servers of OSPCB and CPCB. Installation of the continuous stack emission monitoring system in all the major stacks completed. All the CAAQMS & CEMS synchronized with the webserver of the SPCB & CPCB. 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 being 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 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-11.
ix)	Requisite fund shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to	Requisite fund was allocated and has been spent towards capital cost and recurring cost/annum is also allotted & spent for

	implement the conditions stipulated by the Ministry of Environment & Forests as well the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to Regional Office of the Ministry at Bhubaneswar. The funds so provided shall not be diverted for any other purpose.	environment pollution control measures & environmental management in each year.
x)	A copy of the clearance letter shall be send by the proponent to concerned Panchayat, Zillaparishad/Municipality corporation, urban local boby and the local NGO, if any from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter also be put on the web site of the company by the proponent.	Copy of the clearance letter has already been communicated to all concerned as mentioned in the condition. Scanned copy of the letter is also displayed in our official website.
xi)	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitoring data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF at Bhubaneswar. The respective zonal office of CPCB and SPCB. The criteria pollutant levels namely' PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	The status of compliance to the EC conditions is being submitted to the Regional office of the MOEF regularly on 1stJune and 1stDec respectively with a copy to CPCB & OSPCB and the same is being uploaded into the Company website. (http://www.hindalco.com/sustainability/regulatory-compliances). 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. Before 1st June and 1st December every year. The monitoring data carried out through NABL Accredited Laboratory in respect of AAQ, water, soil, noise etc is enclosed as Annexure-12.
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	The environmental statement for each financial year ending 31st March in Form-V is being submitted to the concerned authorities of SPCB and MoEF. Last environmental statement report for the FY-2020-21 has been submitted vide our letter no. AA/E&S/EC/2021/688, dated

	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.	28.05.2021.
xiv)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at website of the Ministry of Environment & Forest at http/www.envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office at Bhubaneswar.	Information to Public has been made through 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 of the Project is completed on 17th September 2012 and Construction activities for Phase-I completed and in operating 360 pots out of 360 pots in Smleter and 6 units (6x150 MW) in CPP.
Sr. No.	**EC Amendmnet Additional Conditions**	**Compliance Status**
i)	The project proponent shall develop in-house facilities for treatment of Spent Pot Lining (SPL) generated in the Aluminium smelter. Meanwhile, Refractory part may be sent to CHWTSDF as per the provisions of Hazardous and Other Waste Amendment Rules, 2016.	We have applied for issue of Consent to Establish(CTE) for the proposed SPL Crushing & Screening Unit at Aditya Aluminium. The crushed SPL will be supplied to authorized Cement Plants for co-processing in cement kiln.
ii)	The PP shall ensure 100% utilization of Fly ash generated.	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, using in own fly ash brick units and utilizing for development of low lying areas inside the Plant premises with the 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. Besides, we are also exploring other modes/areas for more ash utilization. Please refer to Annexure-4 for ash utilization from April'21 to Sept' 21. Started Fly ash dispatched thorugh BOXN

<table>
<tr><td></td><td></td><td>Wagon in Rakes to various cement manufacturing units for cement making, this has resulted increase in ash utilization.

The status of ash utilization for the period from April' 21 to September' 21 is stated below:

<table><tr><td>April' 21 to Sept' 21</td><td>Quantity in MT</td></tr><tr><td>Total ash generated</td><td>738321.0</td></tr><tr><td>Total Ash Utilised</td><td>585279.2</td></tr><tr><td>Utilization (%)</td><td>79.27%</td></tr></table></td></tr>
<tr><td>iii)</td><td>All the measures proposed during the presentation and application shall be implemented.</td><td>We have noted and will be implemented.</td></tr>
<tr><td>iv)</td><td>Sale of baked anodes; sale of bath material; and sale of molten metal is permitted following the provisions of Hazardous and Other Waste Management Rules, 2016, applicable if any.</td><td>We have noted and accepted.</td></tr>
<tr><td>v)</td><td>The project proponent shall develop in-house facilities for treatment of SPL in 2 to 3 years.</td><td>Carbon part is being suppied to M/s Green Energy Resureces for detoxification and reuse as carbon fuel. Refractory part started dispatching to CHW-TSDF of M/s Ramky at Jajpur, Odisha for detoxification and disposal in the CHW-TSDF.

We are in the process of exploring suitable technology for treatment and areas of utilization(co-processing in cement plants). We have applied for issue of Consent to Establish(CTE) for the proposed SPL Crushing & Screening Unit at Aditya Aluminium. The crushed SPL will be supplied to authorized Cement Plants for co-processing in cement kiln.</td></tr>
<tr><td>vi)</td><td>All the conditions prescribed in the environmental clearance letter No.J-11011/136/2009-IA-II(I) dated 29.11.2012 shall be strictly complied with.</td><td>It is being Complied.</td></tr>
<tr><td>vii)</td><td>The Project Proponent shall take fresh environment clearance in case of any change in the scope of the project.</td><td>There is no change in the scope of the project.</td></tr>
</table>

Encl: As above

Sameer Nayak

(Authorised 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, amendment dated 14 June 2013, 14 Aug 2018 & 20 July 2020 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- Aegle marmelo, Albizia lebbeck, Albizia procera, Alstonia scholaris, Annona squamosa, Artocarpus heterophyllus, Azadirachta indica, Bauhinia alba, Butea monosperma, Bauhinia purpurea, Cassia fistula, Dalbergia sissoo, Delonix regia, Ficus benghalensis, Ficus religiosa, Madhuca indica, Mangifera indica, Peltophorum ferrugineum, Pongamia pinnata, Syzygium cumini, Tectona grandis, Terminalia arjuna, Terminalia bellirica, Terminalia bellirica, Termanilia catappa, Thevetia peruviana, Mimusops elangi, Psidium gujava, Samanea saman, Anthocephalus kadamba, Casia seamea, Acasia , Neerium oleander, Anacardium occidentale etc
5	a) Species: (trees/shrubs/grasses/climbers)	Aegle marmelo, Albizia lebbeck, Albizia procera, Alstonia scholaris, Annona squamosa, Artocarpus heterophyllus, Azadirachta indica, Bauhinia alba, Butea monosperma, Bauhinia purpurea, Cassia fistula, Dalbergia sissoo, Delonix regia, Ficus benghalensis, Ficus religiosa, Madhuca indica, Mangifera indica, Peltophorum ferrugineum, Pongamia pinnata, Syzygium cumini, Tectona grandis, Terminalia arjuna, Terminalia bellirica, Terminalia bellirica, Termanilia catappa, Thevetia peruviana, Mimusops elangi, Psidium gujava, Samanea saman, Anthocephalus kadamba, Casia seamea, Acasia , Neerium oleander, Anacardium occidentale etc species available.
	b) Major prevalent species of each type:	Anthocephallus cadambaTerminalia arjuna, Peltoferrumferrugenium, Gmelina arboria, AlberziaLebbeck, Delonix regiaetc are the prevalent species found. Butea monosperma, Madhuca indica etc
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	1001 acres covered under greenbelt till September 2021.
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 941 acres of land has been covered under greenbelt and the remaining area will be completed by next year.				

b) Plantation details (category wise &methodology used)

Year of plantation	Species Planted	Spacing	Height attained	Total area covered	Area still available
2010-11 & 2011-12	Aegle marmelo, Albizia lebbeck, Albizia procera, Alstonia scholaris, Annona squamosa, Artocarpus heterophyllus, Azadirachta indica, Bauhinia alba, Butea monosperma, Bauhinia purpurea, Cassia fistula, Dalbergia sissoo, Delonix regia, Ficus benghalensis, Ficus religiosa, Madhuca indica, Mangifera indica, Peltophorum ferrugineum, Pongamia pinnata, Syzygium cumini, Tectona grandis, Terminalia arjuna, Terminalia bellirica, Terminalia bellirica, Termanilia catappa, Thevetia peruviana, Mimusops elangi, Psidium gujava, Samanea saman, Anthocephalus kadamba, Casia seamea, Acasia , Neerium oleander, Anacardium occidentale etc	2*2	32'-36'	14.7 Ha	Plantation is being done in phased manner.
2012-13		3*3	25'-27'	38.2 Ha	
2013-14		3*3	22'-25'	11.2 Ha	
2014-15		3*3	20'-22'	16.8 Ha	
2015-16		4*4	18'-20'	24.36 Ha	
2016-17		2*2	16'-19'	20.0 Ha	
2017-18		2*2	14'-17'	46.8 Ha	
2018-19		2*2	11'-13'	45.0 Ha	
2019-20		2*2	8'- 10'	82.96 Ha	
2020-21		2*2	4'-5'	80.94 Ha	
2021-22 (Till September 21)		2*2	2'-3'	24.28 Ha	
Total				405.2 Ha or 1001 Acres	

c) Survival of Plantation:

Total Plantation (No.)	6,36,500
Survival (No.)	5,72,850
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	2010-11	81,62,000	81,62,000.00	245.00
2	2011-12			
3	2012-13	46,21,600	46,21,600.00	121.00
4	2013-14	13,62,500	13,62,500.00	121.00
5	2014-15	18,53,000	18,53,000.00	115.00
6	2015-16	18,65,000	18,65,000	109.00
7	2016-17	49,00,000	49,00,000	100.00
8	2017-18	68,00,000	68,00,000	71.00
9	2018-19	70,00,000	70,00,000	77.00
10	2019-20	70,00,000	72,00,000	84.00
11	2020-21	75,00,000	75,00,000	70.00
12	2021-22	85,00,000	3800000	63.00 (Till Sept'21)

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.

Sameer Nayak

(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 : 63
   b) Employment given so far : 60

6. Rehabilitation & Resettlement details: Total Displaced Persons Numbers – 430

a	No. of families rehabilitated				
i	Name of the Site	Aditya Aluminium			
ii	Families rehabilitated	SC	ST	OTH	Total
		08	368	18	394
b	Families yet to be rehabilitated				
i	Name of the Site(s)	Aditya Aluminium			
ii	No. of families (Total - 430)	SC	ST	OTH	Total
		00	22	14	36

7. Any other information : NIL

Sameer Nayak

(Authorised Signatory)

Ref : Envlab/21/ R-0145 **Date : 03.05.2021**

STACK EMISSION MONITORING REPORT FOR APRIL-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.04.2021
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.04.2021 TO 26.04.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	**-**	106.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	**-**	12.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	119542.5
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	738.6
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	13.5
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	**-**	298.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	**-**	88.3
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride as F	mg/Nm^3	Calculation	-	0.55
Fluoride Emission	Kg/T	Calculation	**0.1**	0.0016
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

Reviewed By

Approved By

Ref : Envlab/21/ R-0146 **Date : 03.05.2021**

STACK EMISSION MONITORING REPORT FOR APRIL-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.04.2021
3. Sampling Location : **ST-8: Stack attached to ABF-2 - FTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.04.2021 TO 26.04.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	95.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	11.8
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	69254.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	737.8
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	18.0
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	279.4
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	83.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.44
Total Fluoride as F	mg/Nm^3	Calculation	-	0.58
Fluoride Emission	Kg/T	Calculation	**0.1**	0.0010
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.

Reviewed By

Approved By

Ref : Envlab/21/R- 1054 **Date : 01.06.2021**

STACK EMISSION MONITORING REPORT FOR MAY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.05.2021
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 26.05.2021 TO 28.05.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	**-**	97.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	**-**	12.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	114320.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	734.2
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	14.14
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	**-**	314.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	**-**	86.3
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.44
Total Fluoride as F	mg/Nm^3	Calculation	-	0.57
Fluoride Emission	Kg/T	Calculation	**-**	0.0016
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: ND: Not Detected

Reviewed By

Approved By

Ref : Envlab/21/R- 1055 **Date : 01.06.2021**

STACK EMISSION MONITORING REPORT FOR MAY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.05.2021
3. Sampling Location : **ST-8: Stack attached to ABF-2 - FTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 26.05.2021 TO 28.05.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	96.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	11.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	63992.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	732.3
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	16.6
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	288.3
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	85.6
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.44
Total Fluoride as F	mg/Nm^3	Calculation	-	0.58
Fluoride Emission	Kg/T	Calculation	-	0.0009
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: ND: Not Detected.

Reviewed By

Approved By

Ref : VCSPL/21/R-2094 **Date : 30.06.2021**

STACK EMISSION MONITORING REPORT FOR JUNE-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 18.06.2021
3. Sampling Location : **ST-7: Stack attached to FTC-1 (ABF-1)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 19.06.2021 TO 21.06.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	99.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	13.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	121284.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	734.9
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	12.7
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	308.4
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	83.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm^3	Calculation	-	0.52
Fluoride Emission	Kg/T	Calculation	-	0.0015
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: BDL: Below Detection Limit.

Reviewed By **Approved By**

Ref : VCSPL/21/R-2095 **Date : 30.06.2021**

STACK EMISSION MONITORING REPORT FOR JUNE-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 18.06.2021
3. Sampling Location : **ST-8: Stack attached to FTC-2 (ABF-2)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 19.06.2021 TO 21.06.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	104.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	11.9
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	65285.3
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	732.8
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	18.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	294.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	82.2
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride as F	mg/Nm^3	Calculation	-	0.55
Fluoride Emission	Kg/T	Calculation	-	0.0009
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: BDL: Below Detection Limit.

Reviewed By **Approved By**

Ref : Envlab/21/R- 3165 **Date : 31.07.2021**

STACK EMISSION MONITORING REPORT FOR JULY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 26.07.2021
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.07.2021 TO 29.07.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	**-**	101.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	**-**	12.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	113457.3
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	740.2
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	8.9
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	**-**	311.8
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	**-**	80.3
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.39
Total Fluoride as F	mg/Nm^3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	**-**	0.0014
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: ND: Not Detected

Reviewed By

Approved By

Ref : Envlab/21/R- 3166 **Date : 31.07.2021**

STACK EMISSION MONITORING REPORT FOR JULY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 26.07.2021
3. Sampling Location : **ST-8: Stack attached to ABF-2 - FTC-2**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.07.2021 TO 29.07.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	104.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	12.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	68681.9
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	739.5
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	13.4
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	284.8
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	80.4
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride as F	mg/Nm^3	Calculation	-	0.54
Fluoride Emission	Kg/T	Calculation	-	0.0009
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: ND: Not Detected.

Reviewed By

Approved By

Ref : Envlab/21/R- 4012 **Date : 31.08.2021**

STACK EMISSION MONITORING REPORT FOR AUGUST-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.08.2021
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.08.2021 TO 28.08.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	**-**	102.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	**-**	12.8
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	122508.5
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	741.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	8.3
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	**-**	329.4
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	**-**	83.5
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride as F	mg/Nm^3	Calculation	-	0.53
Fluoride Emission	Kg/T	Calculation	**-**	0.0016
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: ND: Not Detected

Reviewed By

Approved By

Ref : Envlab/21/R- 4013 **Date : 31.08.2021**

STACK EMISSION MONITORING REPORT FOR AUGUST-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.08.2021
3. Sampling Location : **ST-8: Stack attached to ABF-2 - FTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.08.2021 TO 28.08.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	105.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	12.4
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	71865.5
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	740.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	14.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	298.8
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	78.6
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.44
Total Fluoride as F	mg/Nm^3	Calculation	-	0.55
Fluoride Emission	Kg/T	Calculation	-	0.0009
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: ND: Not Detected.

Reviewed By

Approved By

Ref : Envlab/21/R-4614 Date :30.09.2021

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 22.09.2021
3. Sampling Location : **ST-7: Stack attached to FTC-1 (ABF-1)**
4. Name of sampling Instrument: Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.09.2021 TO 25.09.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	105.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	11.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	106094.4
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	736.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	11.2
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	348.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	85.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm^3	Calculation	-	0.53
Fluoride Emission	Kg/T	Calculation	-	0.0013
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: BDL: Below Detection Limit.

Reviewed By *Approved By*

Ref : Envlab/21/R-4615 Date :30.09.2021

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 21.09.2021
3. Sampling Location : **ST-8: Stack attached to FTC-2 (ABF-2)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 22.09.2021 TO 25.09.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	109.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	12.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	67158.5
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	734.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	19.7
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	309.2
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	81.5
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.44
Total Fluoride as F	mg/Nm^3	Calculation	-	0.58
Fluoride Emission	Kg/T	Calculation	-	0.0009
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: BDL: Below Detection Limit.

Reviewed By *Approved By*

Ref : Envlab/21/ R-0143 **Date : 03.05.2021**

STACK EMISSION MONITORING REPORT FOR APRIL-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 26.04.2021
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.04.2021 TO 29.04.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Protocol	Permissible Limit	Results
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	114.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.6
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2028127.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	736.6
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	3.2
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C:2017	-	87.7
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	60.2
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode Method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode Method	-	0.40
Total Fluoride	mg/Nm^3	Calculation	-	0.52
Fluoride Emission	Kg/T	Calculation	**0.3**	0.051

Reviewed By

Approved By

Ref : Envlab/21/ R-0144 **Date : 03.05.2021**

STACK EMISSION MONITORING REPORT FOR APRIL-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.04.2021
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.04.2021 TO 26.04.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-10
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	**-**	110.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	**-**	8.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1908278.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	739.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	3.6
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	**-**	85.6
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	**-**	61.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride	mg/Nm^3	Calculation	-	0.53
Specific Fluoride	Kg/T	Calculation	**0.3**	0.049

Reviewed By

Approved By

Ref : Envlab/21/R- 1052 **Date : 01.06.2021**

STACK EMISSION MONITORING REPORT FOR MAY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.05.2021
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.05.2021 TO 27.05.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Protocol	Permissible Limit	Results
				ST-9
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	107.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.7
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2088316.4
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	731.6
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	2.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C:2017	-	84.5
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	56.2
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode Method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode Method	-	0.42
Total Fluoride	mg/Nm^3	Calculation	-	0.54
Fluoride Emission	Kg/T	Calculation	-	0.054

Reviewed By

Approved By

Ref : Envlab/21/R- 1053 **Date : 01.06.2021**

STACK EMISSION MONITORING REPORT FOR MAY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.05.2021
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 26.05.2021 TO 28.05.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-10
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	**-**	99.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	**-**	7.9
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1935637.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	732.1
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	3.9
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	**-**	80.2
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	**-**	63.6
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride	mg/Nm^3	Calculation	-	0.55
Fluoride Emission	Kg/T	Calculation	**-**	0.051

Reviewed By

Approved By

Ref : VCSPL/21/R-2096 **Date : 30.06.2021**

STACK EMISSION MONITORING REPORT FOR JUNE-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.06.2021
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.06.2021 TO 26.06.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of POT in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-9
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	107.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.8
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	2041013.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	732.2
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	2.45
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	81.7
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	52.7
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride	mg/Nm^3	Calculation	-	0.54
Fluoride Emission	Kg/T	Calculation	-	0.053

Reviewed By **Approved By**

Ref : VCSPL/21/R-2097 **Date : 30.06.2021**

STACK EMISSION MONITORING REPORT FOR JUNE-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.06.2021
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.06.2021 TO 26.06.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of POT in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Protocol	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-10
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	102.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1876269.5
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	732.6
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	7.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	76.5
Oxides of Nitrogen as NOx	mg/Nm^3	EPA Method 7E	-	60.6
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride	mg/Nm^3	Calculation	-	0.54
Fluoride Emission	Kg/T	Calculation	-	0.049

Reviewed By **Approved By**

Ref : Envlab/21/R- 3167 **Date : 31.07.2021**

STACK EMISSION MONITORING REPORT FOR JULY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 27.07.2021
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 28.07.2021 TO 30.07.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Protocol	Permissible Limit	Results
				ST-9
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	108.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.8
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2067129.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	732.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	3.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C:2017	-	82.3
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	51.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode Method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode Method	-	0.43
Total Fluoride	mg/Nm^3	Calculation	-	0.56
Fluoride Emission	Kg/T	Calculation	-	0.056

Reviewed By

Approved By

Ref : Envlab/21/R- 3168 **Date : 31.07.2021**

STACK EMISSION MONITORING REPORT FOR JULY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 26.07.2021
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.07.2021 TO 30.07.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-10
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	**-**	102.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	**-**	8.3
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1958659.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	733.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	4.2
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	**-**	73.2
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	**-**	61.4
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride	mg/Nm^3	Calculation	-	0.54
Fluoride Emission	Kg/T	Calculation	**-**	0.051

Reviewed By

Approved By

Ref : Envlab/21/R- 4014 **Date : 31.08.2021**

STACK EMISSION MONITORING REPORT FOR AUGUST-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.08.2021
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.08.2021 TO 28.08.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Protocol	Permissible Limit	Results
				ST-9
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	107.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	7.9
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1857694.6
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	737.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	5.0
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C:2017	-	88.6
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	48.3
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode Method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode Method	-	0.39
Total Fluoride	mg/Nm^3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	-	0.045

Reviewed By

Approved By

Ref : Envlab/21/R- 4015 **Date : 31.08.2021**

STACK EMISSION MONITORING REPORT FOR AUGUST-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 26.08.2021
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 27.08.2021 TO 30.08.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-10
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	**-**	101.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	**-**	7.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1794947.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	734.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	6.7
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	**-**	81.4
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	**-**	62.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.43
Total Fluoride	mg/Nm^3	Calculation	-	0.56
Fluoride Emission	Kg/T	Calculation	**-**	0.048

Reviewed By

Approved By

Ref : Envlab/21/R-4616 Date :30.09.2021

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 16.09.2021
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 17.09.2021 TO 21.09.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of POT in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-9
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	103.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	7.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1760821.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	734.1
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	7.7
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	85.8
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	51.2
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride	mg/Nm^3	Calculation	-	0.55
Fluoride Emission	Kg/T	Calculation	-	0.046

Reviewed By

Approved By

Ref : Envlab/21/R-4617 Date :30.09.2021

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.09.2021
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 21.09.2021 TO 23.09.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of POT in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-10
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (Reaff 2008)	-	109.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.4
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1995694.4
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	733.3
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	9.3
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	83.5
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	65.1
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.45
Total Fluoride	mg/Nm3	Calculation	-	0.58
Fluoride Emission	Kg/T	Calculation	-	0.056

Reviewed By

Approved By

Annexure-3

POTROOM ONLINE FUGITIVE MONITORING(HF) REPORT April '21 TO September'21

Apr-21		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
		01-04-21	02-04-21	03-04-21	04-04-21	05-04-21	06-04-21	07-04-21	08-04-21	09-04-21	10-04-21	11-04-21	12-04-21	13-04-21	14-04-21	15-04-21	16-04-21	17-04-21	18-04-21	19-04-21	20-04-21	21-04-21	22-04-21	23-04-21	24-04-21	25-04-21	26-04-21	27-04-21	28-04-21	29-04-21	30-04-21		
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.149	0.261	0.167	0.304	0.304	0.188	0.25	0.21	0.078	0.223	0.099	0.242	0.158	0.217	0.277	0.202	0.149	0.189	0.208	0.115	0.17	0.211	0.268	0.079	0.197	0.324	0.244	0.375	0.369	0.304		0.218
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.269	0.205	0.41	0.47	0.47	0.31	0.396	0.419	0.23	0.384	0.397	0.406	0.447	0.391	0.475	0.345	0.323	0.218	0.516	0.239	0.408	0.183	0.336	0.062	0.193	0.417	0.306	0.256	0.332	0.264		0.336
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.244	0.336	0.269	0.237	0.237	0.244	0.151	0.239	0.267	0.297	0.193	0.366	0.232	0.419	0.369	0.296	0.381	0.283	0.174	0.222	0.301	0.296	0.391	0.149	0.127	0.315	0.355	0.296	0.282	0.365		0.278
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.059	0.291	0.199	0.129	0.129	0.08	0.1	0.22	0.394	0.19	0.199	0.107	0.115	0.223	0.174	0.109	0.143	0.176	0.057	0.152	0.091	0.203	0.208	0.084	0.163	0.209	0.193	0.13	0.164	0.195		0.163
																															Monthly Average(ppm)		0.249
																															Monthly Average (mg/M3)		0.207

May-21		Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Avg. in PPM
		01-05-21	02-05-21	03-05-21	04-05-21	05-05-21	06-05-21	07-05-21	08-05-21	09-05-21	10-05-21	11-05-21	12-05-21	13-05-21	14-05-21	15-05-21	16-05-21	17-05-21	18-05-21	19-05-21	20-05-21	21-05-21	22-05-21	23-05-21	24-05-21	25-05-21	26-05-21	27-05-21	28-05-21	29-05-21	30-05-21	31-05-21	
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.305	0.287	0.316	0.207	0.286	0.291	0.18	0.356	0.282	0.351	0.182	0.329	0.184	0.334	0	0.217	0.345	0.238	0.34	0.392	0.371	0.458	0.206	0.43	0.338	0.088	0.051	0.321	0.334	0.319	0.317	0.279
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.519	0.565	0.472	0.474	0.604	0.555	0.446	0.547	0.599	0.579	0.226	0.44	0.333	0.436	0.482	0.219	0.166	0.015	0.267	0.246	0.49	0.272	0.232	0.492	0.413	0.027	0.116	0.566	0.478	0.345	0.34	0.386
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.377	0.358	0.622	0.53	0.662	0.541	0.271	0.535	0.409	0.541	0.437	0.459	0.439	0.449	0.503	0.32	0.438	0.227	0.28	0.431	0.511	0.373	0.174	0.454	0.543	0.196	0.244	0.717	0.432	0.517	0.325	0.430
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.179	0.362	0.217	0.265	0.34	0.295	0.154	0.199	0.229	0.257	0.143	0.095	0.081	0.121	0.329	0.272	0.211	0.195	0.176	0.273	0.261	0.144	0.131	0.084	0.115	0.07	0.225	0.488	0.262	0.192	0.246	0.213
																															Monthly Average(ppm)		0.327
																															Monthly Average (mg/M3)		0.272

Jun-21		Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday		Avg. in PPM
		01-06-21	02-06-21	03-06-21	04-06-21	05-06-21	06-06-21	07-06-21	08-06-21	09-06-21	10-06-21	11-06-21	12-06-21	13-06-21	14-06-21	15-06-21	16-06-21	17-06-21	18-06-21	19-06-21	20-06-21	21-06-21	22-06-21	23-06-21	24-06-21	25-06-21	26-06-21	27-06-21	28-06-21	29-06-21	30-06-21		
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.293	0.253	0.305	0.317	0.136	0.261	0.177	0.219	0.205	0.288	0.111	0.225	0.251	0.141	0.186	0.189	0.231	0.096	0.143	0.219	0.205	0.179	0.358	0.226	0.216	0.218	0.156	0.175	0.311	0.241		0.218
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.316	0.248	0.323	0.268	0.071	0.492	0.344	0.376	0.316	0.447	0.242	0.349	0.161	0.478	0.317	0.211	0.149	0.211	0.173	0.257	0.032	0.119	0.252	0.272	0.203	0.347	0.286	0.18	0.332	0.274		0.268
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.415	0.486	0.528	0.611	0.4	0.573	0.472	0.548	0.499	0.626	0.452	0.576	0.617	0.468	0.489	0.474	0.482	0.565	0.616	0.685	0.48	0.587	0.448	0.661	0.545	0.654	0.773	0.435	0.639	0.656		0.549
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.043	0.191	0.123	0.215	0.238	0.167	0.308	0.179	0.166	0.265	0.151	0	0.004	0	0.448	0.118	0.595	0.343	0.339	0.158	0.573	0.161	0.053	0.077	0.12	0.782	0.59	0.244	0.339	0.379		0.246
																															Monthly Average(ppm)		0.320
																															Monthly Average (mg/M3)		0.266

Jul-21		Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Avg. in PPM
		01-07-21	02-07-21	03-07-21	04-07-21	05-07-21	06-07-21	07-07-21	08-07-21	09-07-21	10-07-21	11-07-21	12-07-21	13-07-21	14-07-21	15-07-21	16-07-21	17-07-21	18-07-21	19-07-21	20-07-21	21-07-21	22-07-21	23-07-21	24-07-21	25-07-21	26-07-21	27-07-21	28-07-21	29-07-21	30-07-21	31-07-21	
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.336	0.211	0.209	0.154	0.245	0.305	0.185	0.175	0.217	0.285	0.336	0.204	0.134	0.276	0.359	0.27	0.192	0.166	0.206	0.118	0.203	0.115	0.112	0.118	0.211	0.247	0.184	0.149	0.234	0.142	0.127	0.207
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.364	0.237	0.273	0.18	0.235	0.313	0.079	0.231	0.206	0.357	0.29	0.345	0.122	0.356	0.481	0.379	0.291	0.092	0.281	0.146	0.168	0.161	0.123	0.218	0.135	0.383	0.269	0.219	0.322	0.26	0.232	0.250
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.453	0.59	0.651	0.598	0.485	0.603	0.439	0.699	0.559	0.696	0.578	0.711	0.633	0.752	0.687	0.704	0.549	0.581	0.588	0.421	0.386	0.463	0.383	0.545	0.648	0.799	0.704	0.488	0.703	0.546	0.725	0.592
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.335	0.304	0.325	0.139	0.216	0.188	0.303	0.307	0.407	0.387	0.389	0.258	0.196	0.142	0.152	0.116	0.273	0.296	0.182	0.227	0.238	0.101	0.166	0.193	0.389	0.521	0.121	0.334	0.575	0.569	0.494	0.285
																															Monthly Average(ppm)		0.334
																															Monthly Average (mg/M3)		0.278

Aug-21		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
		01-08-21	02-08-21	03-08-21	04-08-21	05-08-21	06-08-21	07-08-21	08-08-21	09-08-21	10-08-21	11-08-21	12-08-21	13-08-21	14-08-21	15-08-21	16-08-21	17-08-21	18-08-21	19-08-21	20-08-21	21-08-21	22-08-21	23-08-21	24-08-21	25-08-21	26-08-21	27-08-21	28-08-21	29-08-21	30-08-21	31-08-21	
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.182	0.338	0.267	0.258	0.271	0.248	0.232	0.263	0.222	0.199	0.222	0.172	0.135	0.112	0.241	0.19	0.143	0.083	0.0652	0.1	0.067	0.135	0.107	0.107	0.134	0.116	0.115	0.104	0.128	0.09	0.088	0.166
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.368	0.304	0.316	0.315	0.324	0.329	0.3	0.217	0.376	0.279	0.41	0.24	0.314	0.201	0.402	0.29	0.345	0.142	0.246	0.254	0.254	0.3	0.22	0.213	0.263	0.216	0.356	0.241	0.468	0.516	0.419	0.304
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.799	0.635	0.681	0.478	0.719	0.588	0.654	0.677	0.659	0.697	0.711	0.595	0.691	0.599	0.811	0.629	0.691	0.653	0.684	0.59	0.691	0.663	0.595	0.448	0.551	0.56	0.528	0.454	0.732	0.699	0.649	0.639
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.253	0.643	0.298	0.177	0.211	0.24	0.167	0.124	0.196	0.452	0.418	0.338	0.298	0.417	0.43	0.5	0.263	0.394	0.322	0.3	0.179	0.296	0.398	0.512	0.311	0.368	0.231	0.212	0.211	0.639	0.221	0.323
																															Monthly Average(ppm)		0.358
																															Monthly Average (mg/M3)		0.298

Sep-21		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
		01-09-21	02-09-21	03-09-21	04-09-21	05-09-21	06-09-21	07-09-21	08-09-21	09-09-21	10-09-21	11-09-21	12-09-21	13-09-21	14-09-21	15-09-21	16-09-21	17-09-21	18-09-21	19-09-21	20-09-21	21-09-21	22-09-21	23-09-21	24-09-21	25-09-21	26-09-21	27-09-21	28-09-21	29-09-21	30-09-21		
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.075	0.058	0.105	0.099	0.106	0.059	0.082	0.089	0.119	0.0805	0.089	0.083	0.034	0.011	0.070	0.060	0.065	0.059	0.039	0.068	0.074	0.091	0.091	0.072	0.088	0.302	0.083	0.051	0.068	0.038		0.080
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.342	0.477	0.376	0.419	0.277	0.352	0.349	0.385	0.377	0.396	0.228	0.315	0.141	0.104	0.41	0.169	0.119	0.14	0.076	0.131	0.103	0.157	0.161	0.167	0.102	0.269	0.124	0.136	0.106	0.12		0.234
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.572	0.685	0.606	0.69	0.591	0.686	0.658	0.823	0.758	0.727	0.56	0.552	0.44	0.445	0.27	0.354	0.329	0.229	0.164	0.247	0.31	0.291	0.356	0.301	0.301	0.413	0.286	0.225	0.264	0.259		0.446
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.129	0.174	0.467	0.251	0.428	0.373	0.619	0.233	0.553	0.324	0.284	0.184	0.211	0.108	0.58	0.282	0.358	0.226	0.178	0.258	0.197	0.196	0.246	0.199	0.406	0.262	0.364	0.205	0.298	0.188		0.293
																															Monthly Average(ppm)		0.263
																															Monthly Average (mg/M3)		0.219

ANNEXURE-4

NAME OF THE INDUSTRY:- ADITYA ALUMINIUM

STATUS OF UTILIZATION OF COAL ASH (FLY ASH AND BOTTOM ASH), From April 2021 - September 2021

Sl. No.	Month	Year	Coal Consumption (MT)	Power Installed Capacity (MW)	Power Generated (MW)	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 UTCL, M/s ACC Ltd & M/s DBCL) in (MT)	Mine Void Filling (MT)	Utilization in Embankment / Dyke Raising (MT)	Road Making (MT)	Low Lying area filling/land development (MT)	Aggregates (MT)	Agriculture/Horticulture Sector (MT)	Sent to Ash Pond through HCSD & stock in Ash Silo	Ash Utilized from Previous Stock in Ash Pond (MT)	Ash Utilized from Current Month generation (MT) (Col. 20=Sum of col. 10 to 17)	Total Ash Utilized (MT) (Col. 21=Col. 19+ Col.20)	% of ash Utilization (Col. 22=Col. 21/ Col.8*100)	Remarks
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	April	2021	317657.1	900	644.94	114357.2	6018.80	120376.00	Dry ash is being supplied to Cement Plants, fly ash Brick units and in low lying area development and remaining ash is being send through HCSD system to ash pond.	6925.69	73224.55	0	0	0	5106.16	0	0	35119.6	17720.00	85256.4	102976.40	85.55	17720 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
2	May	2021	332671.6	900	645.83	117981.5	6209.55	124191		8331.49	71753.08	0	0	0	5316.82	0	0	38789.6	9840.0	85401.4	95241.4	76.69	9840 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
3	June	2021	316237.5	900	644.07	110903.0	5837	116740		7850.26	75898.95	0	0	0	4715.16	0	0	28275.6	17513.6	88464.4	105978.0	90.78	17513.67 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
4	Jul	2021	332487.2	900	645.91	115389.9	6073.15	121463		7789.16	56100.16	0	0	0	4925.02	0	0	52648.7	19329.6	68814.3	88144.0	72.57	19329.63 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
5	Aug	2021	342094.3	900	644.95	117642.3	6191.7	123834		10365.67	72158	0	0	0	4834.89	0	0	36475.4	4617.0	87358.6	91975.6	74.27	4617 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
6	Sep	2021	344919.3	900	642.93	126808	4909	131717		8186.68	80556	0	0	0	4909.44	0	0	38064.9	7311.7	93652.1	100963.8	76.65	7311.72 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
	Total		1986066.9			703081.8	35239.2	738321.0		49449.0	429690.7	0.0	0.0	0.0	29807.5	0.0	0.0	229373.8	76332.0	508947.2	585279.2	79.27	

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Laboratory Services: Environment Lab, Food Lab, Material Lab, Soil Lab, Mineral Lab & Microbiology Lab

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Ref : Envlab/21/R-6285 Date : 2/11/21

FLY ASH ANALYSIS REPORT JUNE 2021

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 : 04.06.2021
4. Date of Analysis : 05.06.2021 TO 09.06.2021
5. Sample Collected By : VCSPL Representative in presence of Aditya Aluminium Representative.

Sl. No.	Parameters	Unit	Analysis Results FA-01	Unit	Analysis Results FA-01
Chemical Analysis					
1	Na_2O	%	0.24	mg/kg	2400
2	MgO	%	0.96	mg/kg	9600
3	Al_2O_3	%	21.8	mg/kg	218000
4	SiO_2	%	51.2	mg/kg	512000
5	P_2O_5	%	0.028	mg/kg	280
6	SO_3	%	2.4	mg/kg	24000
7	K_2O	%	0.088	mg/kg	880
8	CaO	%	4.6	mg/kg	46000
9	TiO_2	%	--	mg/kg	
10	MnO	%	0.22	mg/kg	2200
11	Fe_2O_3	%	9.6	mg/kg	96000
Heavy Metals Analysis					
1	Mercury as Hg	%	<0.001	mg/kg	<0.001
2	Arsenic as As	%	<0.001	mg/kg	<0.001
3	Lead as Pb	%	0.019	mg/kg	190
4	Chromium as Cr	%	< 0.002	mg/kg	< 0.002
5	Vanadium as V	%	<0.001	mg/kg	<0.001
6	Iron as Fe	%	5.6	mg/kg	56000
7	Cobalt as Co	%	<0.001	mg/kg	<0.001
8	Copper as Cu	%	0.061	mg/kg	610
9	Nickel as Ni	%	0.088	mg/kg	880
10	Zinc as Zn	%	0.054	mg/kg	540
11	Strontium as Sr	%	--	mg/kg	--
12	Barium as Ba	%	<0.001	mg/kg	<0.001

Visiontek Consultancy Services Pvt. Ltd. — Prepared by

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- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref : Envlab/21/R-6286 Date : 02/11/21

BOTTOM ASH ANALYSIS REPORT-JUNE 2021

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 : 04.06.2021
4. Date of Analysis : 05.06.2021 TO 09.06.2021
5. Sample Collected By : VCSPL Representative in presence of Aditya Aluminium Representative.

Sl. No.	Parameters	Unit	Analysis Results BA-01	Unit	Analysis Results BA-01
Chemical Analysis					
1	Na_2O	%	0.31	mg/kg	3100
2	MgO	%	2.4	mg/kg	24000
3	Al_2O_3	%	28.4	mg/kg	284000
4	SiO_2	%	59.1	mg/kg	591000
5	P_2O_5	%	0.022	mg/kg	220
6	SO_3	%	1.18	mg/kg	11800
7	K_2O	%	0.92	mg/kg	9200
8	CaO	%	3.21	mg/kg	32100
9	TiO_2	%	--	mg/kg	
10	MnO	%	0.26	mg/kg	2600
11	Fe_2O_3	%	6.6	mg/kg	66000
Heavy Metals Analysis					
1	Mercury as Hg	%	<0.001	mg/kg	<0.001
2	Arsenic as As	%	<0.001	mg/kg	<0.001
3	Lead as Pb	%	0.017	mg/kg	170
4	Chromium as Cr	%	< 0.002	mg/kg	< 0.002
5	Vanadium as V	%	<0.001	mg/kg	<0.001
6	Iron as Fe	%	5.1	mg/kg	51000
7	Cobalt as Co	%	<0.001	mg/kg	<0.001
8	Copper as Cu	%	0.058	mg/kg	580
9	Nickel as Ni	%	0.082	mg/kg	820
10	Zinc as Zn	%	0.051	mg/kg	510
11	Strontium as Sr	%	--	mg/kg	--
12	Barium as Ba	%	<0.001	mg/kg	<0.001

Prepare by:

Verified by:

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga ,Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/401
Date : 01.07.2021
Sample No. : MSKGL/ED/2020-21/06/00471
Sample Description : Surface Water
Sampling Location : Decantation Pond
Date of sampling : 08.06.2021

ANALYSIS RESULT

SL. No.	Test Parameters	Unit	Standards	Test Method / Specification	Result
			Inland Surface		
1.	pH value at 26°C	---	5.5 to 9.0	APHA(23rd Edtn.)4500-H*	7.42
2.	Turbidity	N.T.U	----	APHA(23rd Edtn.)2130B	3.0
3.	Total Dissolved Solids (as TDS)	mg/l	----	APHA(23rd Edtn.)2540C	645.0
4.	Calcium (as Ca)	mg/l	----	APHA(23rd Edtn.)3500 Ca B	106.0
5.	Iron (as Fe)	mg/l	3.0	APHA(23rd Edtn.)3500 Fe B	0.17
6.	Magnesium (as Mg)	mg/l	----	APHA(23rd Edtn.)3500 Mg B	41.0
7.	Sulphate (as SO4)	mg/l	----	APHA(23rd Edtn.)4500-SO4 E	378.0
8.	Alkalinity (as CaCO3)	mg/l	----	APHA(23rd Edtn.)2130B	80.0
9.	Lead (as Pb)	mg/l	1.0	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.005)
10.	Mercury (as Hg)	mg/l	0.01	IS 3025(Part 48)-1994	BDL(DL:0.001)
11.	Arsenic (as As)	mg/l	0.2	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.005)
12.	Total Chromium (as Cr)	mg/l	2.0	APHA(23rd Edtn.)3111 D 2017	BDL(DL:0.01)
13.	Sodium (as Na)	mg/l	----	APHA(23rd Edtn.)3500 Na B	48.0
14.	Potassium (as K)	mg/l	----	APHA(23rd Edtn.)3500 K B	11.0
15.	Zinc (as Zn)	mg/l	5.0	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.02)
16.	Total Suspended Solids (as TSS)	mg/l	100.0	APHA(23rd Edtn.)2540D	12.0
17.	Conductivity	us/cm	----	APHA(23rd Edtn.)2510B	977.0
18.	Phosphate (as PO4)	mg/l	----	APHA(23rd Edtn.)4500-P D	BDL(DL:0.15)

Prepared By:-

MITRA S.K. PRIVATE LIMITED

For Mitra S.K. Private Limited

Authorised Signatory

Mitra S. K. Private Limited

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IRC Village, Nayapalli
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[CIN: U51909WB1956PTC023037]

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga ,Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/652
Date : 01.07.2021
Sample No. : MSKGL/ED/2020-21/06/00472
Sample Description : Surface Water
Sampling Location : Ash Pond
Date of sampling : 08.06.2021

ANALYSIS RESULT

SL. No.	Test Parameters	Unit	Standards	Test Method / Specification	Result
			Inland Surface		
1.	pH value at 26°C	---	5.5 to 9.0	APHA(23rd Edtn.)4500-H*	7.58
2.	Turbidity	N.T.U	----	APHA(23rd Edtn.)2130B	11.0
3.	Total Dissolved Solids (as TDS)	mg/l	----	APHA(23rd Edtn.)2540C	984.0
4.	Calcium (as Ca)	mg/l	----	APHA(23rd Edtn.)3500 Ca B	176.0
5.	Iron (as Fe)	mg/l	3.0	APHA(23rd Edtn.)3500 Fe B	0.16
6.	Magnesium (as Mg)	mg/l	----	APHA(23rd Edtn.)3500 Mg B	60.0
7.	Sulphate (as SO4)	mg/l	----	APHA(23rd Edtn.)4500-SO4 E	561.0
8.	Alkalinity (as CaCO3)	mg/l	----	APHA(23rd Edtn.)2130B	25.0
9.	Lead (as Pb)	mg/l	1.0	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.005)
10.	Mercury (as Hg)	mg/l	0.01	IS 3025(Part 48)-1994	BDL(DL:0.001)
11.	Arsenic (as As)	mg/l	0.2	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.005)
12.	Total Chromium (as Cr)	mg/l	2.0	APHA(23rd Edtn.)3111 D 2017	BDL(DL:0.01)
13.	Sodium (as Na)	mg/l	----	APHA(23rd Edtn.)3500 Na B	125.0
14.	Potassium (as K)	mg/l	----	APHA(23rd Edtn.)3500 K B	39.0
15.	Zinc (as Zn)	mg/l	5.0	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.02)
16.	Total Suspended Solids (as TSS)	mg/l	100.0	APHA(23rd Edtn.)2540D	26.0
17.	Conductivity	us/cm	----	APHA(23rd Edtn.)2510B	1514.0
18.	Phosphate (as PO4)	mg/l	----	APHA(23rd Edtn.)4500-P D	0.64

Prepared By:-

MITRA S.K. PRIVATE LIMITED

For Mitra S.K. Private Limited

Authorized Signatory

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/653
Date : 01.07.2021
Sample No. : MSKGL/ED/2020-21/06/00473
Sample Description : Ground Water
Sampling Location : Piezometric Borewell-1 (Near Ash Pond)
Date of Sampling : 08.06.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement (Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.5
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	125.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	16.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	12.0
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.05)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	4.0
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.4)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	BDL(DL:1.0)
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	56.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.01)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.001)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	14.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	186.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	76.0

Report Prepared by:

MITRA S.K. PRIVATE LIMITED

Mitra S. K. Private Limited

Authorized Signatory

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[CIN: U51909WB1956PTC023037]

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/654
Date : 01.07.2021
Sample No. : MSKGL/ED/2020-21/06/00474
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-2 (Near Proposed Ash Pond)
Date of Sampling : 08.06.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^{0}C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.07
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	63.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	12.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	12.0
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.005)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	2.0
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.4)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	BDL(DL:1.0)
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	40.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	5.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	95.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	38.0

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/655
Date : 01.07.2021
Sample No. : MSKGL/ED/2020-21/06/00475
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-3 (Near RR Colony)
Date of Sampling : 08.06.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.16
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	185.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	28.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	59.0
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.005)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	4.8
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.4)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	13.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	90.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	23.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	280.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	38.0

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/656
Date : 01.07.2021
Sample No. : MSKGL/ED/2020-21/06/00476
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-4 (Bomaloi Village)
Date of Sampling : 08.06.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^{0}C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.03
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	140.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	12.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	24.0
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.05)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	6.0
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.04)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	9.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	56.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	21.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	212.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	2.0
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	78.0

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga ,Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/800
Date : 26.10.2021
Sample No. : MSKGL/ED/2020-21/09/00234
Sample Description : Surface Water
Sampling Location : Decantation Pond
Date of sampling : 30.09.2021

ANALYSIS RESULT

SL. No.	Test Parameters	Unit	Standards	Test Method / Specification	Result
			Inland Surface		
1.	pH value at 26°C	---	5.5 to 9.0	APHA(23rd Edtn.)4500-H+	7.08
2.	Turbidity	N.T.U	----	APHA(23rd Edtn.)2130B	2.6
3.	Total Dissolved Solids (as TDS)	mg/l	----	APHA(23rd Edtn.)2540C	612.0
4.	Calcium (as Ca)	mg/l	----	APHA(23rd Edtn.)3500 Ca B	85.0
5.	Iron (as Fe)	mg/l	3.0	APHA(23rd Edtn.)3500 Fe B	0.23
6.	Magnesium (as Mg)	mg/l	----	APHA(23rd Edtn.)3500 Mg B	33.0
7.	Sulphate (as SO4)	mg/l	----	APHA(23rd Edtn.)4500-SO4 E	302.0
8.	Alkalinity (as CaCO3)	mg/l	----	APHA(23rd Edtn.)2130B	35.0
9.	Lead (as Pb)	mg/l	1.0	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.005)
10.	Mercury (as Hg)	mg/l	0.01	IS 3025(Part 48)-1994	BDL(DL:0.001)
11.	Arsenic (as As)	mg/l	0.2	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.005)
12.	Total Chromium (as Cr)	mg/l	2.0	APHA(23rd Edtn.)3111 D 2017	BDL(DL:0.01)
13.	Sodium (as Na)	mg/l	----	APHA(23rd Edtn.)3500 Na B	44.0
14.	Potassium (as K)	mg/l	----	APHA(23rd Edtn.)3500 K B	8.5
15.	Zinc (as Zn)	mg/l	5.0	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.02)
16.	Total Suspended Solids (as TSS)	mg/l	100.0	APHA(23rd Edtn.)2540D	BDL(DL:2.5)
17.	Conductivity	us/cm	----	APHA(23rd Edtn.)2510B	980.0
18.	Phosphate (as PO4)	mg/l	----	APHA(23rd Edtn.)4500-P D	0.18

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga ,Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/801
Date : 26.10.2021
Sample No. : MSKGL/ED/2020-21/09/00233
Sample Description : Surface Water
Sampling Location : Ash Pond
Date of sampling : 30.09.2021

ANALYSIS RESULT

SL. No.	Test Parameters	Unit	Standards	Test Method / Specification	Result
			Inland Surface		
1.	pH value at 26°C	---	5.5 to 9.0	APHA(23rd Edtn.)4500-H+	7.77
2.	Turbidity	N.T.U	----	APHA(23rd Edtn.)2130B	7.5
3.	Total Dissolved Solids (as TDS)	mg/l	----	APHA(23rd Edtn.)2540C	723.0
4.	Calcium (as Ca)	mg/l	----	APHA(23rd Edtn.)3500 Ca B	107.0
5.	Iron (as Fe)	mg/l	3.0	APHA(23rd Edtn.)3500 Fe B	0.1
6.	Magnesium (as Mg)	mg/l	----	APHA(23rd Edtn.)3500 Mg B	25.0
7.	Sulphate (as SO4)	mg/l	----	APHA(23rd Edtn.)4500-SO4 E	289.0
8.	Alkalinity (as CaCO3)	mg/l	----	APHA(23rd Edtn.)2130B	14.0
9.	Lead (as Pb)	mg/l	1.0	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.005)
10.	Mercury (as Hg)	mg/l	0.01	IS 3025(Part 48)-1994	BDL(DL:0.001)
11.	Arsenic (as As)	mg/l	0.2	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.005)
12.	Total Chromium (as Cr)	mg/l	2.0	APHA(23rd Edtn.)3111 D 2017	BDL(DL:0.01)
13.	Sodium (as Na)	mg/l	----	APHA(23rd Edtn.)3500 Na B	52.0
14.	Potassium (as K)	mg/l	----	APHA(23rd Edtn.)3500 K B	24.0
15.	Zinc (as Zn)	mg/l	5.0	APHA(23rd Edtn.)3120B 2017	BDL(DL:0.02)
16.	Total Suspended Solids (as TSS)	mg/l	100.0	APHA(23rd Edtn.)2540D	BDL(DL:2.5)
17.	Conductivity	us/cm	----	APHA(23rd Edtn.)2510B	1120.0
18.	Phosphate (as PO4)	mg/l	----	APHA(23rd Edtn.)4500-P D	0.29

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/802
Date : 26.10.2021
Sample No. : MSKGL/ED/2020-21/09/00240
Sample Description : Ground Water
Sampling Location : Piezometric Borewell-1 (Near Ash Pond)
Date of Sampling : 30.09.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement (Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.2
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	150.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	15.1
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	6.2
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.12
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	7.2
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.4)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	BDL(DL:1.0)
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	68.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.01)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.001)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	14.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	225.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	67.0

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/803
Date : 26.10.2021
Sample No. : MSKGL/ED/2020-21/09/00241
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-2 (Near Proposed Ash Pond)
Date of Sampling : 30.09.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	6.92
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	73.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	6.2
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	14.0
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.005)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	3.1
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.4)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	BDL(DL:1.0)
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	28.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	5.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	120.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	16.0

Report Prepared by:

MITRA S.K. PRIVATE LIMITED BBSR

Mitra S. K. Private Limited

Authorized Signatory

Mitra S. K. Private Limited

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[CIN: U51909WB1956PTC023037]

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/804
Date : 26.10.2021
Sample No. : MSKGL/ED/2020-21/09/00242
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-3 (Near RR Colony)
Date of Sampling : 30.09.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.1
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	292.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	41.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	60.0
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.2
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	5.1
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.4)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	28.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	124.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	28.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	475.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	120.0

Report Prepared by:

MITRA S.K. PRIVATE LIMITED BBSR

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/805
Date : 26.10.2021
Sample No. : MSKGL/ED/2020-21/09/00243
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-4 (Bomaloi Village)
Date of Sampling : 30.09.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^{0}C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.69
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	129.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	18.2
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	17.0
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.26
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	8.8
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.04)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	26.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	76.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	7.4
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	214.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	2.1
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	68.0

Report Prepared by:

MITRA S.K. PRIVATE LIMITED BBSR

Mitra S. K. Private Limited

Authorized Signatory

Annexure-07

Compliance Status from April 21 to September 21

COMPLIANCE TO CREP GUIDELINES FOR SMELTER

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. The average total fluoride emission for the period April 21 to September 21 is 0.14 Kg/Ton of metal production.
3	Fluoride consumption in the smelter should be limited to 10 kg/ton of aluminium produced	The specific fluoride (as F) consumption for the period April'21 to Sept'21 is 8.14 kg/ton of metal produced.
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.
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 Carbon part of SPL is being supplied to M/s Green Energy Limited, Sambalpur for reprocessing/detoxification and in this way the carbon part is completely recycled.
6	The SPL should be disposed in secured landfill.	M/s Ramky Enviro Pvt. Ltd has established the facility for detoxification and disposal as per the protocol given by CPCB in its CHW-TSDF at kanchichuhan, Dist- Jajpur site. M/s Ramky has started lifting the refractory part of SPL for the trial run permission given by OSPCB. Around 10976 MT SPL Refractory part and 1316 MT Carbon part is in stock till end of September- 2021 and kept inside the well-ventilated permanent covered sheds for disposal to CHW-TSDF/Actual users. We are awaiting for OSPCB Consent/ Permission to M/S Ramky Enviro Pvt Ltd. For regular lifting of SPL Refractory materials to their CHW-TSDF. Besides, we are also

		exploring the option for co-processing of SPL in cement plants. We have applied for issue of Consent to Establish(CTE) for the proposed SPL Crushing & Screening Unit at Aditya Aluminium. The crushed SPL will be supplied to authorized Cement Plants for co-processing in cement kiln.
7	Achieving particulate matter limit of 50 mg/Nm3 in anode baking furnace	It is being Complied with.

COMPLIANCE TO CREP GUIDELINES FOR CPP

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. PM emission is 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 by MOEF.
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 for captive power plant has been published by MOEF&CC. Monthly monitoring report is being submitted to SPCB.
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 * 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	Not Applicable
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 ash brick manufacturing units 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.	Complied

Annexure-07

Compliance Status from April 21 to September 21

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 & practices and Pollution Prevention approach.

To achieve this, we shall:

- Continue to comply with all applicable legal and other 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 minimize waste generation and strengthen the practices for management of wastes.
- Work in partnership with regulatory authorities, relevant suppliers, contractors, distributors and logistics partners and all other stakeholders, as applicable, to understand and initiate improvement actions.
- Engage with internal and external stakeholders including key business partners such as joint venture partners, licensees and outsourcing partners and wider communities, to broaden our understanding of environmental priorities and initiate actions on key environmental challenges.
- Adapt environmental performance over life cycle as an important input to the decision-making processes in the organization.
- Raise environmental awareness at all levels of our operations, through training and effective communication, participation and consultation.
- Communicate this Policy within the Organization. Develop and follow appropriate communication system to inform other stakeholders, as applicable, about our environmental commitment and performance.
- Conduct environmental, health and safety due diligence before undergoing any mergers and acquisitions.

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

SATISH PAI
MANAGING DIRECTOR

Date : 30 June 2020

Annexure-09

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

Sl. No.	POINTS RAISED	COMPLIANCE STATUS
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 been providing opportunity for ITI studies in Polytechnic Rengali. Students are trained 2 year ITI course. Vocational training like Beautician and Tailoring has been instituted last month
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 5,89,500 saplings inside the factory premises till Sep 2021. 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 Sarpanch, villagers, opinion makers and well-wishers 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 through tankers, into the project affected villages in coordination with RWSS, BDO and Sarpanch of every Gram Panchayats in peak summer.
7	The industry should make necessary arrangement to provide round the clock doctors for better medical service in the Lapanga area.	The industry has been very actively contributing the greater causes of Health Opened up Eye Healthcare Unit at Rengali, COVID restoration and awareness program at all villages. Conducted Pulse Polio facilitation in coordination with CHC Laida for children, Adolescent healthcare and Nutrition programs

		conducted in the villages. First Aid centre has facility to local areas for free treatment by reputed doctors is on. Provided free treatment facility to more than 1545 nos of 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 getting water from the Hirakud Reservoir to meets the all the requirements of the Industry.
9	The industry should give financial support to grow small scale industries in the localities.	The industry is supporting farmers to grow the livelihood of the villagers as per their CSR policy. However, many training programs have been conducted for self-employment such as Spice units, Oil Processing units and paper cup making units, Vegetable farming, Phenol making, Hand wash making, Tailoring, avenue Plantation & various social/health awareness programs, saving programs, to the 120 nos of SHGs and 7 Farmers Group adopted by Industry.
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 tournaments at different villages every year as a part of promoting Rural sports. The football grounds are maintained every year by industry.
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 - 10

Expense incurred under Enterprise Social Commitment till Sep 2021:

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 March 19	4.65	
7	CSR expenses in & around Aditya Aluminium including Hirakud areas during April 2019 to March 2020	0.62	
8	CSR expenses in & around Aditya Aluminium including Hirakud areas during April 2020 to Mar 2021	5.31	
9	CSR expenses in & around Aditya Aluminium including Hirakud areas during April 2021 to Sep 2021	1.76	
Total Expense		54.30	

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 0.38 MTPA and CPP of 900 MW) is proposed to be spent over a period of 39 years from the year 2017.


CSR

Organogram

Bipul Chatterjee
JB 5
Vice President
Corporate CSR Head

Dr. Vivekanand Mishra
JB 5
Vice President
Head HR

Sweta Upadhayay
JB- 8
Senior Manager Head CSR & RR

Manoranjan Behera
JB- 10
Asst. Manager

CSR Manpower
- ❑ 2 On Payroll
- ❑ 5 Contractual Manpower

Contractual Manpower

Chandan Dash
Team Lead
Field Coordinator

Rakesh Barik
Field Coordinator

Debi Priya
Field Coordinator

Paresh Jena
Field Coordinator

Tapan Behera
Field Coordinator
(MIS)

CSR VISION

"To actively contribute to the social and economic development of the underserved communities, lifting the burden of poverty, and helping bring in inclusive growth in sink with the UN Sustainable Development Goals. In so doing, build a better, sustainable way of life for the weaker sections of society and raise the country's Human Development Index".

Mrs. Rajashree Birla

SUSTAINABILITY VISION

"The Aditya Birla Group endeavors to become the leading Indian conglomerate for sustainable business practices across its global operations,"

Mr. Kumar Mangalam Birla

OUR FOCUS AREAS

EDUCATION

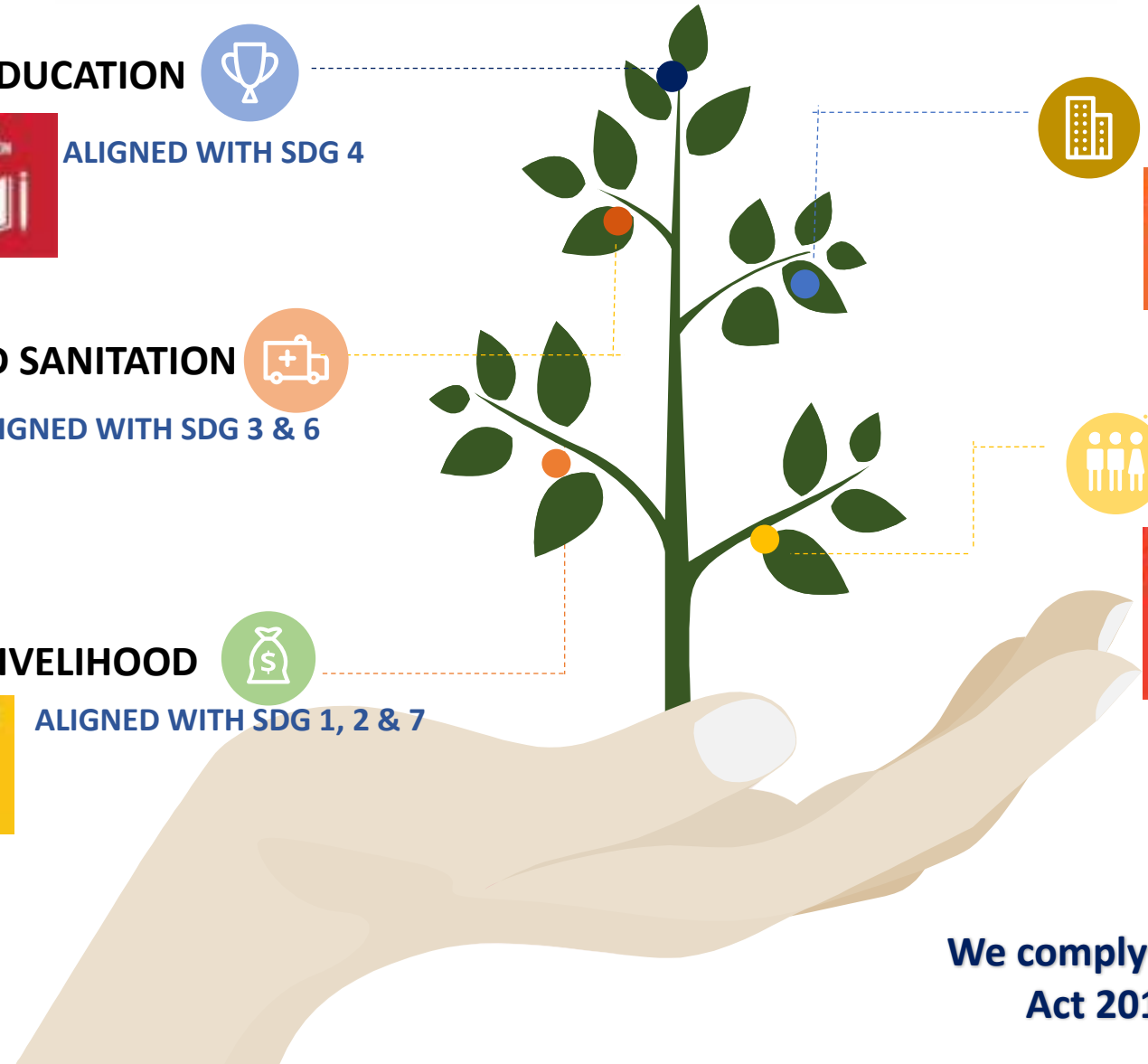
ALIGNED WITH SDG 4

HEALTH AND SANITATION

ALIGNED WITH SDG 3 & 6

SUSTAINABLE LIVELIHOOD

ALIGNED WITH SDG 1, 2 & 7



INFRASTRUCTURE DEVELOPMENT

ALIGNED WITH SDG 9

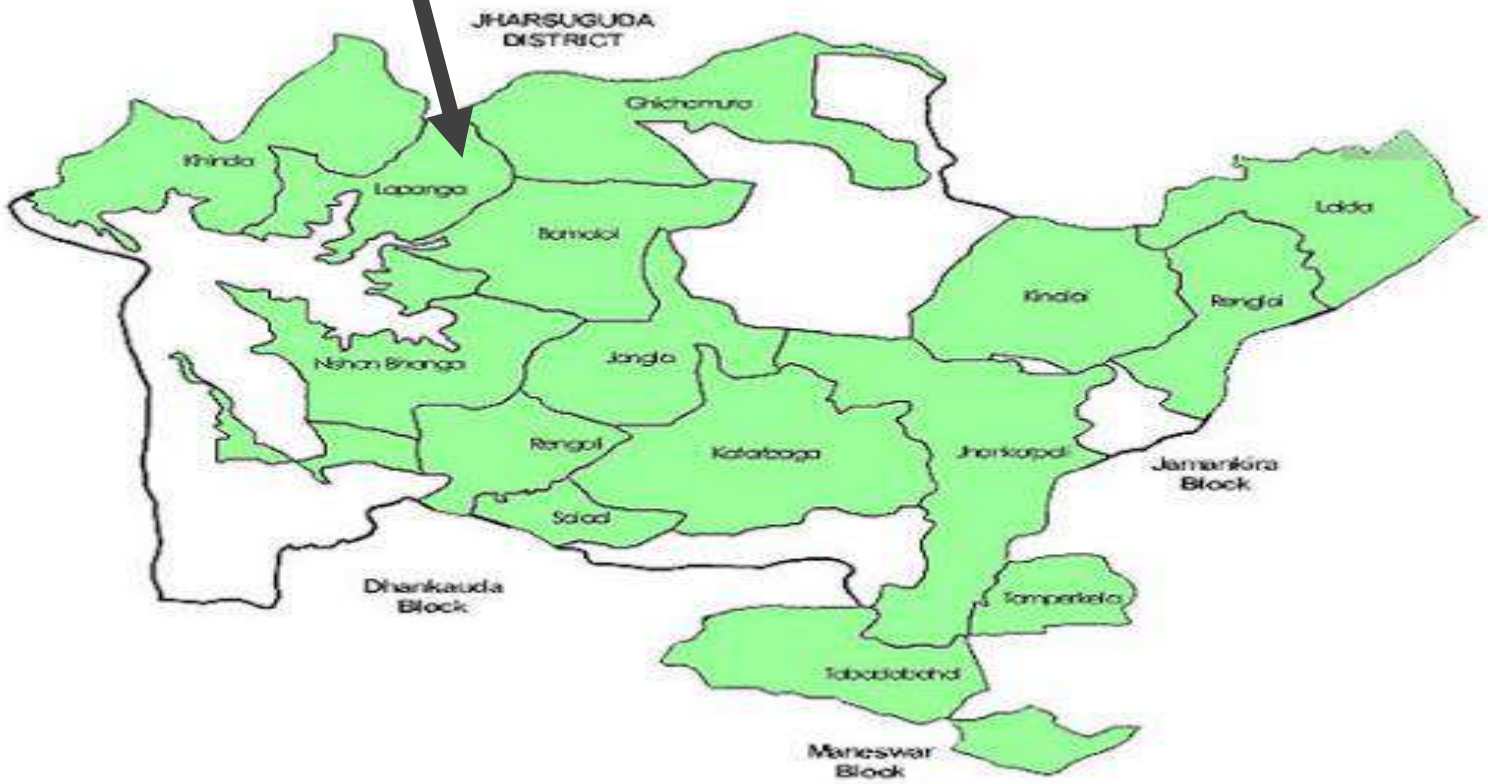
SOCIAL ISSUES

ALIGNED WITH SDG 5 & 10

We comply to CSR Guideline of Companies Act 2013 Schedule VII Section 135

OUR PRESENCE

Block : Rengāli
Geographical Location: Sambalpur, Orissa, India, Asia
Geographical Coordinates: 21° 38' 0" North, 84° 3' 0" East



Rengali Block	
No. of GPs	15
No. of Villages	69
Population	25000
No. of Core GPs	6
No. of Core Villages	12
Population of Core Villages	4800
No. of periphery villages	28
Population of Periphery villages	42940

Highlights – Q2- 2021

1. Celebration of World Breast Feeding Week under Project Suposhan
2. Inauguration of Bitumen Road and Training Centre in Ludhapalli RR Colony
3. Inauguration of Katarbagga Shiva temple
4. Foundation Stone laying ceremony for Ludhapalli Temple
5. Roof Repair work completed in Pondoloi
6. Free Eye screening camp for Truck Drivers through Eicher and Trilochan Netralaya
7. SHGs initiated Piggery, Duck rearing and Pisciculture, mushroom as lucrative income generation activity
8. Free Eye Screening camps is being organised for Government officials at their place of work like Police station, Block Office, Primary Health Centre , Fire Station etc.
9. Conducted 2 days AIDS awareness and Train the Trainer under ELM in association with OSACS and HLFPPT
10. Celebration of Independence Day in Community

Sanjibini Producer Group in Model Village Naikpada

HIGHLIGHTS- Q2-2021

3 Months Mushroom Production (In Progress)				
Mushroom Village	Beneficiaries	Production in Kg	Price in ₹	Sale in ₹
Orampada	2	30	200	6000
Dhorropani	4	17	200	3400
Khadiapalli	2	178	200	35600
Tilemal	2	228	200	45600
Derba	1	75	200	15000
Pitapalli	1	4	200	800
Total	12	532		106400

Mushrooming Prosperity & Empowerment

An Aditya Aluminium CSR Initiative

Aditya Aluminium's Project Saksham lives up to its name, adds sparkle to women's lives in Sambalpur

HIGHLIGHTS Q2 2021

World Breast Feeding Week under Project Suposhan

- The awareness programs were organized at 6 villages quiz contest, interactive session Q&A and audio-visual presentation disseminating message on Breastfeeding.
- Resource person for the event were Dr. Debasmita Senapati MBBS and Pediatrist and Dr. Snigdha Swapnica MBBS from Aditya Aluminium, ASHA did, ANM didi, Ananwadi didi in each GP/ village
- The malnourished children, anemic girls and women are most vulnerable group of our intervention villages were identified
- 75 nutrition kit has been given to the participants.

HIGHLIGHTS Q2 2021

Aditya Aluminium Inaugurated Road & Training Centre in RR Ludhapali Colony

On August 11, an Inaugural Ceremony was organized at Ludhapali R & R Colony under Jangala GP.

Bitumen Road has been laid in the Colony connecting all pada through approach road and colony to the main road.

A training centre has been constructed and set up in the Colony to provide skill training and upskilling opportunity like tailoring, Motor binding Mobile repair etc to women and youths under Project Swawlambh.

The training centre is a steppingstone to create livelihood opportunity and enhance per capita income of the displaced families.

The women have received residential school uniform order from ORMAS Sambalpur and Anganwadi Uniform Order is in pipeline

HIGHLIGHTS- Q2-2021

Shiva Temple Inauguration

Aditya inaugurated Shiva Temple in Katarbagga village of Katabagga GP.

The temple is centre of community solidarity and rendezvous.

The villagers expressed happiness with the ongoing CSR work.

HIGHLIGHTS-Q2- 2021

EYE SCREENING CAMP FOR GOVERNMENT OFFICIALS UNDER VISION CENTRE PROJECT

Vision Centre is a State of Art fully digitalized affordable eye healthcare centre

The Centre provides eye care outreach benefit to villages through Eye screening camps.

Eye Screening camps is being organised for Government officials at their place of work like Police station, Block Office, Primary Health Centre , Fire Station etc.

This is being very much appreciated as taking timeout of work during busy schedule gets eye health neglected.

DUCK REARING Income Generation Activity Project SAKSHAM

- Duckling Status at Orampada.
  - No of Beneficiary: 12
  - No of Duckling Purchased: 300
  - Mortality- 175
  - Alive: 125
  - Collaboration: Block Veterinary Department

Farmer Adopting Integrated Farming – Project Samridhi

- In FY 2020-21 more than 25 farmers were taken on exposure visit to witness Organic and Integrated farming
- 12 farmers have adopted integrated farming and
- We are developing them as Model Farmers on the footstep of Tata's " Lakhpati Kisan Yojana"

Eye Screening for Drivers

- Aditya facilitated Eye Screening Camp for Truck Drivers in Plant
- More than 50 truck Drivers were benefitted
- It was organized in association with Eicher and Trilochan Netralaya

AIDS Awareness and Training Session

- Contractual workers provided masters trainer training for AIDS Awareness
- Partner – Odisha State AIDS Control Society and HLFPPT
- More than 100 people trained in 2 days workshop

Sweetcorn Cultivation Promotion as Cash Crop

- Sweet Corn Seed bought by women SHGs and Farmers : 10 kg
- Total Acre of Land: 7 acres (pilot)
- Farmers benefitted: 02
- SHG Members engaged: 27
- Villages Covered: 07

Sabuj Urja- Project Ujala

- 50 Solar Lights First Lot received for RR Colony.
- 18 solar lights repaired and installed

NEWSCLIPPING Q2 2021

- World Breast Feeding Week under Project Suposhan
- Inauguration of RR Infrastructure and Training Centre
- Independence Day Celebration

World Breastfeeding Week 2021 Celebrated by Aditya Aluminum company, Lapanga

Sambalpur (Ramakant Biswal, TCT) Breastfeeding is very important for both mothers and babies and every year from August 1 to 7 celebrated as Breastfeeding Week around the world. To address a number of health issues, such as malnutrition and anemia, the district health committee and the Department of Integrated Child Development have launched a series of awareness programs on public health.

More than 104 pregnant women, children and adolescent girls from Bonuloi, Jangla and Gichamura panchayats have been included in the

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ଆଦିତ୍ୟ ଆଲୁମିନାରେ ସ୍ତନ୍ୟପାନ ସପ୍ତାହ

Regional

Aditya Aluminum Company inaugurates the developmental work

Sambalpur (Ramakant Biswal, TCT) On behalf of the Aditya Aluminum company in Lapanga the local Jangala panchayat under Ludhapali R&R colony has been working on various improvements such as the concreting of all the roads from the Kataibaga main road to the colony, as well as the permanent sewing center for the growth of women's livelihoods. The event, which was inaugurated on the occasion, was attended by hundreds of people, including the Chief of Human Resources, Dr. Vivekananda Mishra, Head of the Department of Environmental Development, Mrs. Sweta Upadhyay, attended the inauguration of all the programs.

आदित्य एलुमिनियम परियोजना द्वारा विकास कार्यक्रमों का उद्घाटन

नवभारत

नवभारत

आदित्य एलुमिनियम ने मनाया स्वतंत्रता दिवस

HIGHLIGHTS

- COVID – Zero Deaths in the villages, 24000+ mask distributed, 100+awareness camps, Temporary Medical Centres supported, facilitated 1000+ test at Government centre
- Launch of Vision Centre Project in Rengali to provide affordable Eye Health Care
- Launch Project Swawlambh for providing skill training to youths in the vicinity villages
- 22 new Self Help Groups formed; 277 women involved in Income Generation Activity
- Skill Training to 20 youths and Placement to 7 youths till date
- 15 events for Stakeholder Engagement including Women's Day with 500 SHG women and District level Government representatives
- More than 50 times print and online media presence at State and Local News

PLAN FY 2021-22

- ❑ Start Integrated Health Program including Mobile Medical Van and upgrade health infrastructure
- ❑ Bring 100 acres of unirrigated land under irrigation through Check Dams and Irrigation Channel
- ❑ Skill Training to 500 Youths and 100% placement / engagement/ self employment opportunity
- ❑ Involve 70% women from 100 Self Help Group in Income Generation Activity

AWARDS AND RECOGNITIONS : FY20- 21

- **ADITYA ALUMINIUM**
  - **Fame Excellence Platinum Award 2020** for Excellence in Best Practices to Fight Against COVID 19
  - **India CSR Award** under the category of Women Empowerment for Project SAKSHAM
  - **Appreciation Letter** from Block Administration for COVID

OFFICE OF THE PANCHAYAT SAMITI, RENGALI

To

Mr. Kailash Pandey, Unit Head,
Aditya Aluminium , Lapanga,
Sambalpur

I would like to express my sincere admiration for the effort put by your company for the containment of the spread of COVID-19. Starting from creating awareness among the public, distribution of mask, soap, sanitizing public places, distribution of mattress and personal hygienic kits at the IMK, your entire management team have worked immensely.

We appreciate your hard work done in last six months to fight against the Pandemic.

Thanking You

Block Development Officer
Rengali

ADITYA BIRLA
HINDALCO

thank you

Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envfab/21/R-6295

Date: 02/11/21

METEOROLOGICAL DATA FOR THE MONTH OF SEPTEMBER 2021

1. Name of the Industry :M/s Hindalco Industries Limited
Unit-Aditya Aluminium, Lapanga, Sambalpur
2. Data Collected By: Automatic Weather Station

Date	Temperature(°C)		Relative Humidity (%)		Wind Speed m/sec		Wind	Rain fall
	Max	Min	Max	Min	Max	Min	Direction	(mm)
1-Sep-21	26.1	22.8	83.3	69.0	2.2	1.52	ESE	5
2-Sep-21	26.1	22.2	81.2	62.0	2.4	1.2	E	3
3-Sep-21	26.9	23.6	77.0	62.0	1.5	1.5	E	5
4-Sep-21	27.3	24.1	74.6	65.0	2.2	1.1	ESE	0
5-Sep-21	26.9	23.8	79.3	62.0	0.9	0.2	ENE	0
6-Sep-21	28.3	24.1	76.3	71.8	1.2	1.1	SE	0
7-Sep-21	28.6	23.6	73.7	70.8	1.9	1.2	SW	0
8-Sep-21	29.2	23.2	71.5	70.6	1.5	1.0	SW	0
9-Sep-21	29.9	24.8	71.4	66.2	2.5	1.9	SW	0
10-Sep-21	29.5	24.6	71.7	64.8	3.0	1.4	SW	3
11-Sep-21	29.1	23.2	75.1	62.6	2.0	1.2	SW	6
12-Sep-21	29.0	23.4	75.9	62.8	0.9	1.6	SW	4
13-Sep-21	29.3	25.1	74.2	66.9	0.5	0.2	SW	39
14-Sep-21	29.0	22.6	75.0	67.2	0.6	0.1	SW	17
15-Sep-21	29.5	23.4	73.0	68.2	0.6	0.4	SW	76
16-Sep-21	29.3	23.8	76.2	69.4	0.9	0.5	SW	0
17-Sep-21	28.6	24.2	79.0	68.8	1.9	1.1	SW	2
18-Sep-21	26.5	24.9	84.0	66.2	1.5	1.0	SW	0
19-Sep-21	26.5	23.8	83.0	69.6	2.2	1.2	SW	3
20-Sep-21	26.3	22.9	84.8	71.2	1.5	1.1	SW	6
21-Sep-21	28.2	23.4	79.6	70.6	2.2	1.8	SW	0
22-Sep-21	29.2	26.2	71.9	69.2	2.1	1.9	SW	0
23-Sep-21	29.3	21.9	74.6	72.2	2.1	1.9	SW	0
24-Sep-21	27.8	22.8	82.9	68.4	1.8	1.2	SW	0
25-Sep-21	28.1	23.2	80.0	62.6	1.4	1.1	SW	0
26-Sep-21	28.0	22.4	79.6	63.2	0.7	0.2	SW	0
27-Sep-21	28.7	24.8	79.9	62.9	0.7	0.52	SW	0
28-Sep-21	29.0	23.2	79.7	63.4	1.3	1.0	ESE	0
29-Sep-21	28.3	22.4	77.0	62.8	2.2	0.6	WSW	2
30-Sep-21	26.1	23.8	83.3	63.2	2.2	1.2	NE	2

Visiontek Consultancy Services Pvt. Ltd. BBSR Reviewed by

Visiontek Consultancy Services Pvt. Ltd. BBSR Approved by

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India , Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

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- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref : Envlab/21/R6296 Date : 02/11/21

METEROLOGICAL ANALYSIS REPORT JUNE 2021

1. Name of Industry : M/s Hindalco Industries Limited
2. Data Collected By : Unit-Aditya Aluminium, Lapanga, Sambalpur
   Automatic Weather Monitoring Station

Date	Temperature(°C)		Relative Humidity (%)		Wind Speed m/sec		Wind	Rain fall
	Max	Min	Max	Min	Max	Min	Direction	(mm)
1-Jun-21	36.3	32.0	58.2	52.6	1.3	1.0	SW	2
2-Jun-21	35.5	30.8	60.8	50.6	1.2	1.0	SW	1.7
3-Jun-21	30.8	31.2	58.9	51.8	1.4	1.0	SW	2.1
4-Jun-21	32.7	30.6	65	50.6	1.5	1.0	SW	C 8
5-Jun-21	34	30.2	66.3	50.2	1.9	0.8	SW	2.7
6-Jun-21	35.3	30.1	59.8	50.6	2.1	1.2	SW	0.8
7-Jun-21	34	30.3	60	50.8	3.8	1.6	SW	1.5
8-Jun-21	32.8	30.2	60.7	51.2	0.8	0.1	SW	0.3
9-Jun-21	30.8	24.6	58.9	51.6	1.4	0.8	NW	2.1
10-Jun-21	26.8	21.8	59	51.8	0.2	0.1	SW	0
11-Jun-21	28.7	22.6	52	52.2	0.8	0.2	E	0
12-Jun-21	24.8	20.2	48	50.2	1.7	1.1	NE	0
13-Jun-21	25.6	20.4	52	52.8	0.2	0.1	SE	0
14-Jun-21	26.5	20.8	58	50.6	0.2	0.1	E	0
15-Jun-21	23.6	20.6	45	40.8	0.3	0.1	WSW	0
16-Jun-21	20.3	19.8	57	52.2	0.3	0.1	WSW	0
17-Jun-21	23.4	19.6	62	58.1	0.1	0	SW	0
18-Jun-21	25.7	18.9	62	56.0	0.1	0	SW	0
19-Jun-21	25.6	18.8	63	54.8	0.1	0	SW	0
20-Jun-21	24.9	18.2	70	62.6	1	0.8	W	0
21-Jun-21	25.4	20.2	50	44.2	2.5	1.2	W	0
22-Jun-21	24.6	20.4	60	56.8	1.5	1.0	W	0
23-Jun-21	23.5	20.8	80	72.2	1	0.8	W	0
24-Jun-21	23.2	20.2	70	66.4	1.9	1.0	SW	0
25-Jun-21	24.1	21.2	54	51.2	1.3	1.0	SW	0
26-Jun-21	24.5	20.8	49	42.2	0.3	0.1	SE	0
27-Jun-21	26.9	20.6	49	40.8	0.2	0.1	S	0
28-Jun-21	24.5	20.6	45	40.6	1.1	0.8	S	0
29-Jun-21	25.2	20.2	45	41.2	0.3	0.1	SW	0
30-Jun-21	25.4	20.8	49	41.1	0.2	0.1	S	0

Visiontek Consultancy Services Pvt. Ltd. BBSR

Visiontek Consultancy Services Pvt. Ltd. BBSR

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India, Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Ref : Envlab/21/R-4277 **Date : 02.11.2021**

AMBIENT AIR QUALITY MONITORING REPORT APRIL 2021 TO JUNE 2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling Location : **Monitoring Station No.- AAQMS-1 :Gumkarma**
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 ($\mu g/m^3$)
05.04.2021	48.6	29.2	15.8	16.8	< 4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2021	49.2	29.5	15.6	16.6	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2021	50.8	30.5	15.2	16.2	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2021	51.2	30.7	15.4	16.8	4.8	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2021	51.6	31	14.8	16.9	5.3	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2021	52.4	31.4	14.6	17.2	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2021	52.8	31.7	14.9	17.4	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2021	53.8	32.3	15.2	17.6	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.05.2021	54.8	32.9	15.6	18.2	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
06.05.2021	55.6	33.4	16.1	18.8	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.05.2021	56.8	34.1	16.6	18.6	<4.0.	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
13.05.2021	55.2	33.1	16.2	18.2	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.05.2021	55.8	33.5	16.3	19.2	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
20.05.2021	56.8	34.1	16.4	19.6	4.8	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.05.2021	56.9	34.1	16.2	19.8	5.2	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
27.05.2021	56.8	34.1	16.5	19.2	5.6	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2021	55.8	36.2	16.3	19.6	5.8	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.06.2021	55.2	33.1	15.8	19.6	5.8	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2021	58.8	35.3	15.2	19.2	<4.0	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.06.2021	59.2	35.5	15.6	18.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.06.2021	58.2	34.9	15.2	18.9	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.06.2021	58.4	35	14.8	18.2	5.4	0.2	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.06.2021	57.6	34.6	14.6	18.6	5.6	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.06.2021	57.4	34.4	14.4	18.8	5.2	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.06.2021	55.2	33.1	14.8	18.4	5.1	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2021	54.8	35.2	14.9	18.6	5.6	0.38	<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**	**--**
Average	**55.0**	**33.2**	**15.5**	**18.3**	**5.4**	**0.32**	**<20.0**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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/m^3, NO_X< 9 µg/m^3,O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3,CO-<0.1

Prepared by: **Verified by:**

Ref : Envlab/21/R-4278 **Date : 02.11.2021**

AMBIENT AIR QUALITY MONITORING REPORT APRIL 2021 TO JUNE 2021

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

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.04.2021	44.8	26.9	8.8	13.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2021	44.6	26.8	8.6	13.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2021	44.8	26.9	8.4	13.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2021	44.2	26.5	8.2	13.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2021	44.1	26.5	8.1	13.8	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2021	43.2	25.9	8.9	13.9	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2021	43.8	26.3	8.8	13.2	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2021	44.6	26.8	8.9	13.6	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.05.2021	44.8	26.9	10.2	13.8	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
06.05.2021	45.2	27.1	10.6	14	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.05.2021	45.6	27.4	10.4	14.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
13.05.2021	45.8	27.5	10.2	14.6	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.05.2021	46.6	28	10.1	14.8	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
20.05.2021	46.8	28.1	10.4	14.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.05.2021	47.2	28.3	11.2	15.2	<4.0	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
27.05.2021	47.4	28.4	11.6	15.6	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2021	46.8	28.2	10.8	154	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.06.2021	48.1	28.9	10.8	15.8	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2021	48.6	29.2	10.6	16.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.06.2021	48.8	29.3	10.2	16.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.06.2021	49.2	29.5	10.4	16.1	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.06.2021	48.8	29.3	10.6	16.2	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.06.2021	48.2	28.9	11.2	14.8	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.06.2021	49.1	29.5	11.4	15.2	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.06.2021	49.2	29.5	11.8	15.6	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2021	50.6	28.8	13.2	15.2	<4.0	0.36	<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	**46.6**	**27.9**	**10.2**	**20.0**	**<4**	**0.27**	**<20**	**<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

Prepared by: **Verified by:**

Ref : Envlab/21/R-4279 **Date : 02.11.2021**

AMBIENT AIR QUALITY MONITORING REPORT APRIL 2021 TO JUNE 2021

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

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.04.2021	48.8	29.3	13.1	15.2	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2021	48.6	29.2	13.2	15.8	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2021	48.2	28.9	13.6	15.6	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2021	47.4	28.4	13.5	16.4	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2021	47.2	28.3	13.2	16.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2021	46.8	28.1	13.1	17.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2021	46.6	28	13	17.4	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2021	46.2	27.7	13.5	17.8	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.05.2021	46.9	28.1	13.2	17.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
06.05.2021	45.2	27.1	13.3	17.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.05.2021	45.8	27.5	13.3	18.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
13.05.2021	45.6	27.4	13.4	18.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.05.2021	45.8	27.5	13.6	18.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
20.05.2021	59.8	35.9	13.8	18.9	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.05.2021	46.6	28	13.2	19.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
27.05.2021	46.8	28.1	13.1	19.6	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2021	50.6	28.4	13.6	19.4	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.06.2021	49.2	29.5	12.8	19.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2021	49.6	29.8	12.6	20.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.06.2021	48.8	29.3	12.4	20.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.06.2021	48.2	28.9	11.8	20.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.06.2021	48.4	29	12.6	21.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.06.2021	47.6	28.6	12.2	21.4	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.06.2021	47.8	28.7	12.8	21.2	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.06.2021	46.6	28	12.9	21.2	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2021	47.2	28.4	13.2	20.8	<4.0	0.21	<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**	**--**
Average	**47.9**	**28.7**	**13.1**	**18.7**	**<4**	**0.25**	**<20.0**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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

Prepared by: **Verified by:**

Ref : Envlab/21/R-4280 **Date : 02.11.2021**

AMBIENT AIR QUALITY MONITORING REPORT APRIL 2021 TO JUNE 2021

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

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.04.2021	46.6	30.4	19.4	24.8	4.6	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2021	44.4	30.8	18.2	22.6	4.8	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2021	49.8	31.1	19.8	22.2	4.9	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2021	51.2	31.3	19.2	23.8	5.6	0.42	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2021	48.9	31.7	17.6	24.9	6.4	0.44	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2021	53.6	32.2	19.1	25.6	5.2	0.45	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2021	52.8	32.3	18.4	24.8	5.1	0.46	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2021	54.2	33.1	18.5	25.2	<4.0	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.05.2021	57.1	33.4	17.2	25.6	<4.0	0.39	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
06.05.2021	59.2	33.7	17.8	27.8	5.1	0.41	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.05.2021	63.8	33.5	19.6	26.6	5.2	0.46	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
13.05.2021	67.6	32.8	18.2	26.8	5.5	0.43	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.05.2021	71.2	32.5	17.6	25.6	<4.0	0.44	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
20.05.2021	76.8	32.9	18.8	29.8	<4.0	0.45	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.05.2021	69.6	32.2	17.2	27.3	4.8	0.43	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
27.05.2021	65.8	32.3	16.4	25.9	6.6	0.44	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2021	66.8	34.6	16.8	26.2	6.9	0.46	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.06.2021	63.2	32.5	18.6	25.1	5.6	0.42	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2021	69.2	33.1	19.2	24.4	4.2	0.41	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.06.2021	62.6	34	20.4	23.2	4.4	0.39	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.06.2021	56.8	34.1	19.5	24.8	<4.0	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.06.2021	53.6	30.4	18.1	25.6	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.06.2021	51.8	30.5	18.4	25.2	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.06.2021	52.4	30.8	18.2	25.6	<4.0	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.06.2021	46.6	31	17.1	23.8	<4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2021	50.8	32.8	17.8	24.6	<4.0	0.36	<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**	**--**
Average	**57.9**	**32.3**	**18.4**	**25.3**	**5.3**	**0.40**	**<20**	**<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 Chromatograp hy 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

Prepared by: **Verified by:**

Ref : Envlab/21/R-4281 **Date : 02.11.2021**

AMBIENT AIR QUALITY MONITORING REPORT APRIL 2021 TO JUNE 2021

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

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.04.2021	49.6	29.8	14.2	21.8	4.4	<0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2021	49.2	29.5	14.6	21.6	4.3	<0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2021	48.8	29.3	14.8	21.6	4.4	<0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2021	48.4	29	15.4	21.8	< 4.0	<0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2021	48.5	29.1	15.6	20.6	< 4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2021	49.2	29.5	15.8/	20.2	< 4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2021	49.6	29.8	16.2	20.8	< 4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2021	50.2	30.1	16.8	21.6	< 4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.05.2021	50.6	30.4	17.2	21.4	< 4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
06.05.2021	50.8	30.5	17.6	22.8	< 4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.05.2021	51.2	30.7	17.8	23.6	< 4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
13.05.2021	51.4	30.8	18.4	23.8	< 4.0	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.05.2021	51.2	30.7	18.2	24.6	< 4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
20.05.2021	51.1	30.7	18.1	24.8	< 4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.05.2021	50.8	30.5	17.6	25.2	< 4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
27.05.2021	50.2	30.1	17.2	25.6	< 4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2021	51.8	30.8	17.9	24.9	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.06.2021	50.6	30.4	17.4	25.8	< 4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2021	50.8	30.5	16.8	26.6	< 4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.06.2021	50.2	30.1	16.6	26.4	< 4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.06.2021	50.6	30.4	16.2	26.2	< 4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.06.2021	50.4	30.2	16.1	24.8	< 4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.06.2021	50.2	30.1	15.9	23.6	< 4.0	<0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.06.2021	45.9	27.5	15.8	23.8	< 4.0	<0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.06.2021	46.2	27.7	15.2	22.6	< 4.0	<0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2021	48.2	27.8	15.6	23.4	<4.0	0.36	<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**	**--**
Average	**49.8**	**29.8**	**16.5**	**23.5**	**4.4**	**0.33**	**<20**	**<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

Prepared by: **Verified by:**

Ref : Envlab/21/R-4282 **Date : 02.11.2021**

AMBIENT AIR QUALITY MONITORING REPORT APRIL 2021 TO JUNE 2021

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												
	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NOx (µg/m3)	O3 (µg/m3)	CO (mg/m3)	NH3 (µg/m3)	C6H6 (µg/m3)	BaP (ng/m3)	Ni (ng/m3)	Pb (µg/m3)	As (ng/m3)	F (µg/m3)
05.04.2021	47.4	28.4	17.4	20.8	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2021	46.8	28.1	17.8	20.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2021	46.6	28.0	18.2	20.8	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2021	45.8	27.5	18.4	20.4	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2021	44.6	26.8	18.8	20.6	4.3	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2021	44.8	26.9	19.2	20.8	4.6	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2021	44.2	26.5	19.6	21.4	4.8	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2021	44.6	26.8	19.8	21.2	4.6	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.05.2021	43.8	26.3	18.9	21.2	4.8	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
06.05.2021	43.8	26.3	18.8	20.9	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.05.2021	42.6	25.6	19.2	20.6	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
13.05.2021	42.8	25.7	19.1	20.2	<4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.05.2021	41.6	25.0	18.4	21.4	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
20.05.2021	41.2	24.7	18.6	22.6	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.05.2021	40.8	24.5	18.9	22.8	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
27.05.2021	40.6	24.4	20.6	21.6	4.6	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2021	41.8	24.6	20.8	21.9	5.2	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.06.2021	41.8	25.1	20.1	21.2	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2021	41.6	25.0	20.4	20.8	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.06.2021	41.8	25.1	20.6	20.6	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.06.2021	41.2	24.7	20.2	20.1	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.06.2021	48.6	29.2	21.4	20.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.06.2021	49.2	29.5	21.6	20.4	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.06.2021	49.6	29.8	21.8	19.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.06.2021	48.4	29	21.6	19.8	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2021	49.6	28.8	21.8	20.4	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	**100**	**60**	**80**	**80**	**100**	**4**	**400**	**05**	**01**	**20**	**1.0**	**06**	**--**
Average	**44.4**	**26.6**	**19.7**	**20.9**	**4.7**	**0.28**	**<20**	**<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/m^3, NO_X< 9 µg/m^3, O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3, CO-<0.1 mg/m^3

Prepared by: **Verified by:**

Ref : Envlab/21/R-4283 **Date : 02.11.2021**

AMBIENT AIR QUALITY MONITORING REPORT APRIL 2021 TO JUNE 2021

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												
	PM10 (µg/m^3)	PM2.5 (µg/m^3)	SO2 (µg/m^3)	NOx (µg/m^3)	O3 (µg/m^3)	CO (mg/m^3)	NH3 (µg/m^3)	C6H6 (µg/m^3)	BaP (ng/m^3)	Ni (ng/m^3)	Pb (µg/m^3)	As (ng/m^3)	F (µg/m^3)
05.04.2021	44.6	26.8	15.6	21.6	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2021	45.8	26.3	15.8	21.8	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2021	43.6	26.2	15.4	22.4	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2021	47.2	26.5	15.9	22.6	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2021	48.4	26.6	16.2	23.8	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2021	51.2	27.1	16.6	23.6	<4.0	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2021	50.6	27.4	16.8	24.2	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2021	52.6	28	16.6	24.8	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.05.2021	56.8	28.1	16.2	25.2	<4.0	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
06.05.2021	57.2	28.3	17.4	25.6	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.05.2021	57.8	28.7	17.6	24.6	<4.0	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
13.05.2021	60.4	29	17.8	24.6	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.05.2021	63.8	29.3	18.2	24.2	<4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
20.05.2021	66.2	29.5	18.6	23.8	<4.0	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.05.2021	65.6	29.8	18.9	23.4	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
27.05.2021	61.6	29.2	19.6	23.6	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2021	60.9	28.9	19.4	24.8	<4.0	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.06.2021	58.2	28.9	19.4	24.2	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2021	56.2	28.3	19.2	24.8	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.06.2021	52.8	28.1	18.8	24.4	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.06.2021	53.4	27.8	18.4	22.6	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.06.2021	50.8	27.5	18.6	23.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.06.2021	48.4	27.2	18.2	23.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.06.2021	45.2	27.1	18.1	24.2	<4.0	0..31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.06.2021	46.1	27.7	18.2	24.6	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2021	48.8	29.4	18.9	23.8	<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**	**--**
Average	**53.6**	**28.0**	**17.7**	**23.9**	**<4**	**0.3028**	**<20.0**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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/m^3, NO_X< 9 µg/m^3,O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^{3}CO-<0.1 mg/m^3

Prepared by: **Verified by:**

Ref : Envlab/21/R-4284 **Date : 02.11.2021**

AMBIENT AIR QUALITY MONITORING REPORT APRIL 2021 TO JUNE 2021

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

Date	PARAMETERS												
	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NOx (µg/m3)	O3 (µg/m3)	CO (mg/m3)	NH3 (µg/m3)	C6H6 (µg/m3)	BaP (ng/m3)	Ni (ng/m3)	Pb (µg/m3)	As (ng/m3)	F (µg/m3)
05.04.2021	58.4	35	19.6	23.8	8.2	0.44	23.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.04.2021	58.6	35.2	19.2	23.6	8.6	0.48	22.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.04.2021	58.4	35	19.4	24.4	8.1	0.44	22.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.04.2021	54.2	32.5	19.2	24.8	8.4	0.46	22.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.04.2021	54.6	32.8	19.8	25.2	8.4	0.48	22.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.04.2021	55.2	33.1	19.2	25.6	8.6	0.49	21.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.04.2021	55.8	33.5	19.6	26.8	8.8	0.51	21.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.04.2021	54.2	32.5	19.8	26.6	8.1	0.52	21.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.05.2021	54.6	32.8	19.6	26.9	8.2	0.54	20.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
06.05.2021	53.8	32.3	19.8	27.2	8.3	0.58	20.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.05.2021	55.2	33.1	18.4	27.8	8.6	0.62	20.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
13.05.2021	55.6	33.4	18.2	28.2	8.2	0.66	20.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.05.2021	55.8	33.5	17.8	28.8	8.8	0.64	21.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
20.05.2021	59.2	35.5	17.6	28.6	8.4	0.66	21.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.05.2021	55.2	33.1	18.4	29.4	8.5	0.62	21.9	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
27.05.2021	56.8	34.1	18.8	29.6	8.8	0.61	22.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.05.2021	59.4	34.6	18.9	30.6	8.9	0.64	23.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
01.06.2021	57.4	34.4	19.2	29.2	9.1	0.64	22.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
04.06.2021	57.8	34.7	19.6	28.8	9.2	0.62	23.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.06.2021	56.8	34.1	20.8	28.6	9.6	0.66	23.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
11.06.2021	55.4	33.2	21.6	28.8	9.2	0.58	24.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.06.2021	55.6	33.4	21.8	28.6	9.4	0.59	24.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
18.06.2021	55.8	33.5	22.4	28.2	9.2	0.55	25.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.06.2021	56.2	33.7	22.6	28.6	9.3	0.51	25.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
25.06.2021	56.8	34.1	23.2	28.2	9.2	0.52	26.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.06.2021	58.7	35.6	24.8	28.8	9.8	0.62	25.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
NAAQ Standard	**100**	**60**	**80**	**80**	**100**	**4**	**400**	**05**	**01**	**20**	**1.0**	**06**	**--**
Average	**56.4**	**33.8**	**20.0**	**27.5**	**8.8**	**0.56**	**22.8**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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/m^3, NO_X< 9 µg/m^3, O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3 CO-<0.1 mg/m^3

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Ref: Envlab/21/R-6298 Date : 02/11/21

SURFACE WATER QUALITY ANALYSIS REPORT JUNE 2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling location : **SW-1:**Hirakud Reservoir;**SW-2:**Lapanga Pond; **SW-3:**Matwadinadi –U/S, **SW-4:**Bamloi Pond; **SW-5:** Bhedan river
3. Date of sampling : 14.06.2021
4. Date of analysis : 15.06.2021 TO 21.06.2021
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 at 25°C	APHA 4500H$^+$ B	--	6.0-9.0	7.4	7.3	7.5	7.4	7.5
2	Colour	APHA 2120 B, C	Hazen	300	CL	CL	CL	CL	CL
3	Taste	APHA 2160 C	--	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	APHA 2150 B	--	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	APHA 2130 B	NTU	--	4.2	4.1	4.6	4.8	5.1
6	Total Dissolved Solids	APHA 2540 C	mg/l	1500	121	184	114	172	130
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	66	82	56	80	62
8	Total Alkalinity	APHA 2320 B	mg/l	--	60	72	56	80	62
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	17.4	23.8	16.8	21.9	18.2
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	5.4	6.1	3.8	5.6	3.8
11	Residual, free Chlorine	APHA 4500Cl, B	mg/l	--	ND	ND	ND	ND	ND
12	Boron (as B)	APHA 4500B, B	mg/l	--	<0.01	<0.01	<0.01	<0.01	<0.01
13	Chloride (as Cl)	APHA 4500Cl$^-$B	mg/l	600	22	30	24	28	26
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	16.8	42.7	15.8	50.8	18.2
15	Fluoride (as F)	APHA 4500F$^-$C	mg/l	1.5	0.24	0.52	0.28	0.44	0.38
16	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	50	1.42	3.61	1.38	3.8	1.42
17	Sodium as Na	APHA3500-Na	mg/l	--	9.2	10.8	9.8	12.6	9.8
18	Potassium as K	APHA 3500-K	mg/l	--	2.2	3.2	3.1	4.2	1.8
19	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.005	<0.001	<0.001	<0.001	<0.001	<0.001
20	Cyanide (as CN)	APHA 4500 CN$^-$ C,D	mg/l	0.05	ND	ND	ND	ND	ND
21	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	1	<0.2	<0.2	<0.2	<0.2	<0.2
22	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001
23	Arsenic (as As)	APHA 3114 B	mg/l	0.2	<0.001	<0.001	<0.001	<0.001	<0.001
24	Copper (as Cu)	APHA 3111 B,C	mg/l	1.5	<0.05	<0.05	<0.05	<0.05	<0.05
25	Lead (as Pb)	APHA 3111 B,C	mg/l	0.1	<0.001	<0.001	<0.001	<0.001	<0.001
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	--	<0.005	<0.005	<0.005	<0.005	<0.005
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.5	0.04	0.11	0.05	0.12	0.06
28	Chromium (as Cr^{+6})	APHA 3500Cr B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
29	Selenium (as Se)	APHA 3114 B	mg/l	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
30	Zinc (as Zn)	APHA 3111 B,C	mg/l	15	<0.05	<0.05	<0.05	<0.05	<0.05
31	Aluminium as(Al)	APHA 3500Al B	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
33	Mineral Oil	APHA 5220 B	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
34	Pesticides	APHA 6630 B,C	mg/l	--	Absent	Absent	Absent	Absent	Absent
35	E Coli	APHA 9221-F	MPN/ 100 ml	--	Absent	Absent	Absent	Absent	Absent
36	Total Coliforms	APHA9221-B	MPN/ 100 ml	5000	280	330	320	480	360

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

Prepared by:

Verified by:

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&
Microbiology Lab

Ref: Envlab/21/R-6299 Date : 02/11/21

SURFACE WATER QUALITY ANALYSIS REPORT JUNE 2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling location : **SW-6:** Bhedan River Near Katikela;**SW-7**:Matwadinadi-D/S; **SW-8:** Hirakud Reservoir Near Gurupali village; **SW-9:** Salepali village; **SW-10:** Sanamal.
3. Date of sampling : 14.06.2021
4. Date of analysis : 15.06.2021 TO 21.06.2021
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

Sl. No.	Parameter	Testing Methods	Unit	Standards as per IS-2296:1992 Class –'C'	Analysis Results				
					SW-6	SW-7	SW-8	SW-9	SW-10
1	pH at 25°C	APHA 4500H⁺ B	--	6.0-9.0	7.5	7.3	7.4	7.5	7.4
2	Colour	APHA 2120 B, C	Hazen	300	CL	CL	CL	CL	CL
3	Taste	APHA 2160 C	--	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	APHA 2150 B	--	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6	Turbidity	APHA 2130 B	NTU	--	3.2	3.1	3.8	3.6	4.2
7	Total Dissolved Solids	APHA 2540 C	mg/l	1500	118	132	124	118	158
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	54	62	60	52	62
9	Total Alkalinity	APHA 2320 B	mg/l	--	68	56	62	60	66
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	15.8	20.8	18.4	15.6	17.8
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	3.6	4.8	5.4	4.4	3.8
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	22	38	22	24	28
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	18.4	18.6	17.8	12.9	18.4
16	Fluoride (as F)	APHA 4500F⁻C	mg/l	1.5	0.28	0.38	0.36	0.31	0.31
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	50	3.4	2.8	2.6	3.2	4.2
18	Sodium as Na	APHA 3500-K	mg/l	--	10.2	9.8	9.4	9.6	9.8
19	Potassium as K	APHA3500-Na	mg/l	--	3.2	2.8	2.6	3.2	3.1
20	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.005	<0.001	<0.001	<0.001	<0.001	<0.001
21	Cyanide (as CN)	APHA 4500 CN⁻ C,D	mg/l	0.05	ND	ND	ND	ND	ND
22	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	1.0	<0.2	<0.2	<0.2	<0.2	<0.2
23	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001
24	Arsenic (as As)	APHA 3114 B	mg/l	0.2	<0.001	<0.001	<0.001	<0.001	<0.001
25	Copper (as Cu)	APHA 3111 B,C	mg/l	1.5	<0.05	<0.05	<0.05	<0.05	<0.05
26	Lead (as Pb)	APHA 3111 B,C	mg/l	0.1	<0.001	<0.001	<0.001	<0.001	<0.001
27	Manganese (as Mn)	APHA 3500Mn B	mg/l	--	<0.005	<0.005	<0.005	<0.005	<0.005
28	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.5	0.04	0.05	0.06	0.04	0.05
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	350	440	480	460	510

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

Prepared by: Verified by:

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Ref: Lab/21/R-6259 Date: 02/11/21

GROUND WATER QUALITY ANALYSIS REPORT JUNE 21

1. Name of Industry : **M/sHindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga.**
2. Sampling location : **GW-1:** Lapanga Village; **GW-2:** Pandoloi Village; **GW-3:**Bamloi Village; **GW-4:** Tilaimal Village
3. Date of sampling : 15.06.2021
4. Date of analysis : 16.06.2021 TO 23.06.2021
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Result			
				Acceptable Limit	Permissible Limit	GW-1	GW-2	GW-3	GW-4
1	pH Value	APHA 4500H$^+$ B	--	6.5-8.5	No Relaxation	7.1	7.3	7.6	7.2
2	Colour	APHA 2120 B, C	Hazen	5	15	CL	CL	CL	CL
3	Taste	APHA 2160 C	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	APHA 2150 B	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	APHA 2130 B	NTU	1	5	<1.0	<1.0	<1.0	<1.0
6	Total Dissolved Solids	APHA 2540 C	mg/l	500	2000	224	190	196	194
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	600	84	78	80	78
8	Total Alkalinity	APHA 2320 B	mg/l	200	600	90	88	92	88
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	200	23.2	24.6	25.2	22.8
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	100	6.2	5.2	5.4	5.1
11	Residual, free Chlorine	APHA 4500Cl, B	mg/l	0.2	1	ND	ND	ND	ND
12	Boron (as B)	APHA 4500B, B	mg/l	0.5	2.4	<0.01	<0.01	<0.01	<0.01
13	Chloride (as Cl)	APHA 4500Cl$^-$ B	mg/l	250	1000	23.6	23.2	27.8	24.6
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	6.8	6.4	5.8	7.2
15	Fluoride (as F)	APHA 4500F$^-$ C	mg/l	1.0	1.5	0.31	0.28	0.24	0.38
16	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	45	No Relaxation	2.8	3.6	2.8	3.2
17	Sodium as Na	APHA3500-Na	mg/l	--	--	14.8	13.2	13.8	11.8
18	Potassium as K	APHA 3500-K	mg/l	--	--	3.1	3.6	4.2	4.6
19	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.001	0.002	<0.001	<0.001	<0.001	<0.001
20	Cyanide (as CN)	APHA 4500 CN$^-$ C,D	mg/l	0.05	No Relaxation	ND	ND	ND	ND
21	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	0.2	1.0	<0.2	<0.2	<0.2	<0.2
22	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	No Relaxation	<0.001	<0.001	<0.001	<0.001
23	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
24	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	1.5	<0.001	<0.001	<0.001	<0.001
25	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	0.3	<0.001	<0.001	<0.001	<0.001
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.3	No Relaxation	0.12	0.20	0.15	0.17
28	Chromium (as Cr)	APHA 3500Cr B	mg/l	0.05	No Relaxation	<0.05	<0.05	<0.05	<0.05
29	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
30	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	15	<0.05	<0.05	<0.05	<0.05
31	Aluminium as(Al)	APHA 3500Al B	mg/l	0.03	0.2	<0.001	<0.001	<0.001	<0.001
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	No Relaxation	<0.001	<0.001	<0.001	<0.001
33	Mineral Oil	APHA 5220 B	mg/l	0.5	No Relaxation	<0.001	<0.001	<0.001	<0.001
34	Pesticides	APHA 6630 B,C	µg/l	Absent	--	Absent	Absent	Absent	Absent
35	E.Coli	APHA 9221-F	MPN/ 100 ml	Shall not be detectable in any 100 ml sample	--	Absent	Absent	Absent	Absent
36	Total Coliforms	APHA9221-B	MPN/ 100 ml	Shall not be detectable in any 100 ml sample	--	<1.1	<1.1	<1.1	<1.1

Note: CL: Colourless, Agreeable, ND: Not Detected.

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- Waste Management Services

Laboratory Services
Environment Lab
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Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/21/R-6290 Date: 02/11/21

GROUND WATER QUALITY ANALYSIS REPORTJUNE 21

1. Name of Industry : **M/sHindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga.**
2. Sampling location : **GW-5:** Thelkoloi Village; **GW-6:** Ghichamura Village; **GW-7:** Gumkarama Village; **GW-8:** Chaltikra Village.
3. Date of sampling : 15.06.2021
4. Date of analysis : 16.06.2021 TO 23.06.2021
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Result			
				Acceptable Limit	Permissible Limit	GW-5	GW-6	GW-7	GW-8
1	pH Value	APHA 4500H^+ B	--	6.5-8.5	No Relaxation	7.28	7.18	7.32	7.12
2	Colour	APHA 2120 B, C	Hazen	5	15	CL	CL	CL	CL
3	Taste	APHA 2160 C	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	APHA 2150 B	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	APHA 2130 B	NTU	1	5	<1.0	<1.0	<1.0	<1.0
6	Total Dissolved Solids	APHA 2540 C	mg/l	500	2000	214	192	216	190
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	600	74	82	76	78
8	Total Alkalinity	APHA 2320 B	mg/l	200	600	80	84	78	82
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	200	22.40	23.60	21.80	22.80
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	100	5.20	5.40	5.80	5.60
11	Residual, free Chlorine	APHA 4500Cl, B	mg/l	0.2	1	ND	ND	ND	ND
12	Boron (as B)	APHA 4500B, B	mg/l	0.5	2.4	<0.01	<0.01	<0.01	<0.01
13	Chloride (as Cl)	APHA 4500Cl^- B	mg/l	250	1000	20.8	27.4	23.4	25.8
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	7.4	6.4	6.2	5.8
15	Fluoride (as F)	APHA 4500F^- C	mg/l	1.0	1.5	0.28	0.28	0.32	0.27
16	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	0.5	2.4	2.8	3.2	3.1	2.6
17	Sodium as Na	APHA3500-Na	mg/l	--	--	11.2	11.8	12.6	13.2
18	Potassium as K	APHA 3500-K	mg/l	--	--	4.8	5.6	5.2	5.1
19	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.001	0.002	<0.001	<0.001	<0.001	<0.001
20	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	No Relaxation	ND	ND	ND	ND
21	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	0.2	1.0	<0.2	<0.2	<0.2	<0.2
22	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	No Relaxation	<0.001	<0.001	<0.001	<0.001
23	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
24	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	1.5	<0.001	<0.001	<0.001	<0.001
25	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	0.3	<0.001	<0.001	<0.001	<0.001
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.3	No Relaxation	0.12	0.14	0.2	0.16
28	Chromium (as Cr)	APHA 3500Cr B	mg/l	0.05	No Relaxation	<0.05	<0.05	<0.05	<0.05
29	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
30	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	15	<0.05	<0.05	<0.05	<0.05
31	Aluminium as(Al)	APHA 3500Al B	mg/l	0.03	0.2	<0.001	<0.001	<0.001	<0.001
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	No Relaxation	<0.001	<0.001	<0.001	<0.001
33	Mineral Oil	APHA 5220 B	mg/l	0.5	No Relaxation	<0.001	<0.001	<0.001	<0.001
34	Pesticides	APHA 6630 B,C	µg/l	Absent	--	Absent	Absent	Absent	Absent
35	E.Coli	APHA 9221-F	MPN/ 100 ml	Shall not be detectable in any 100 ml sample	--	Absent	Absent	Absent	Absent
36	Total Coliforms	APHA9221-B	MPN/ 100 ml	Shall not be detectable in any 100 ml sample	--	<1.1	<1.1	<1.1	<1.1

Note: CL: Colorless, A: Agreeable, ND: Not Detected.

Prepared By

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- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref : Envnlab/21/R-6291 Date : 02/11/21

GROUND WATER QUALITY ANALYSIS REPORT JUNE 2021

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling Location : **GW-1:Near** Ash Pond
3. Date of Sampling : 08.06.2021
4. Date of Analysis : 09.06.2021 TO 14.06.2021
5. Sample Collected By : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Results
				Permissible Limit	Permissible Limit	GW-1
1.	pH Value	APHA 4500 H^+ B	--	6.5-8.5	No Relaxation	7.3
2.	Turbidity	APHA 2130B	NTU	1	5	0.7
3.	Total Hardness(as $CaCO_3$)	APHA 2340 C	mg/l	200	600	82.0
4.	Iron (as Fe)	APHA 3500 Fe B	mg/l	0.3	No Relaxation	0.20
5.	Chloride (as Cl)	APHA 4500 Cl^- B	mg/l	250	1000	30.0
6.	Dissolved Solids	APHA 2540 C	mg/l	500	2000	210.0
7.	Calcium (as Ca)	APHA 3500 Ca B	mg/l	75	200	25.4
8.	Magnesium (as Mg)	APHA 3500 Mg B	mg/l	30	100	5.8
9.	Copper (as Cu)	APHA 3111Cu B	mg/l	0.05	1.5	<0.001
10.	Sodium (as Na)	APHA 3500Na B	mg/l	--	--	14.2
11.	Potassium (as K)	APHA 3500 K B	mg/l	--	--	3.8
12.	Manganese (as Mn)	APHA 3111 B	mg/l	0.1	0.3	<0.005
13.	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	6.2
14	Nitrate (as NO_3)	APHA 4500 NO_3^- B	mg/l	45	No Relaxation	0.6
15.	Fluoride (as F)	APHA 4500 F^- D	mg/l	1	1.5	0.32
16.	Phenolic Compounds (as C_6H_5OH)	APHA 5530 C	mg/l	0.001	0.002	<0.001
17.	Mercury (as Hg)	APHA 3112B	mg/l	0.001	No Relaxation	<0.001
18.	Cadmium (as Cd)	APHA 3111 B	mg/l	0.003	No Relaxation	<0.001
19.	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
20	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
21.	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	No Relaxation	BDL
22.	Lead (as Pb)	APHA 3111 B	mg/l	0.01	No Relaxation	<0.001
23.	Zinc (as Zn)	APHA 3111 B	mg/l	5	15	<0.005
24.	Chromium (as Cr)	APHA 3500 Cr B	mg/l	0.05	No Relaxation	<0.005
25.	Alkalinity	APHA 2320 B	mg/l	200	600	80.0
26.	Aluminium as(Al)	APHA 3500 Al B	mg/l	0.03	0.2	<0.001
27.	Boron (as B)	APHA 4500 B	mg/l	0.5	2.4	<0.001

Note : BDL -Below Detection Limit

Prepared By: Verified By:

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
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Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envnlabs/21/R-6292 Date: 02/11/21

GROUND WATER QUALITY ANALYSIS REPORT JUNE 2021

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling Location : **GW-2:Near** Proposed Pond
3. Date of Sampling : 08.06.2021
4. Date of Analysis : 09.06.2021 TO 14.06.2021
5. Sample Collected By : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Results
				Permissible Limit	Permissible Limit	GW-2
1.	pH Value	APHA 4500 H^+ B	--	6.5-8.5	No Relaxation	7.2
2.	Turbidity	APHA 2130B	NTU	1	5	0.8
3.	Total Hardness(as $CaCO_3$)	APHA 2340 C	mg/l	200	600	60.0
4.	Iron (as Fe)	APHA 3500 Fe B	mg/l	0.3	No Relaxation	0.17
5.	Chloride (as Cl)	APHA 4500 Cl^- B	mg/l	250	1000	22.0
6.	Dissolved Solids	APHA 2540 C	mg/l	500	2000	128.0
7.	Calcium (as Ca)	APHA 3500 Ca B	mg/l	75	200	16.8
8.	Magnesium (as Mg)	APHA 3500 Mg B	mg/l	30	100	3.8
9.	Copper (as Cu)	APHA 3111Cu B	mg/l	0.05	1.5	<0.001
10.	Sodium (as Na)	APHA 3500Na B	mg/l	--	--	8.2
11.	Potassium (as K)	APHA 3500 K B	mg/l	--	--	3.2
12.	Manganese (as Mn)	APHA 3111 B	mg/l	0.1	0.3	<0.005
13.	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	2.8
14	Nitrate (as NO_3)	APHA 4500 NO_3^- B	mg/l	45	No Relaxation	0.5
15.	Fluoride (as F)	APHA 4500 F^- D	mg/l	1	1.5	0.24
16.	Phenolic Compounds (as C_6H_5OH)	APHA 5530 C	mg/l	0.001	0.002	<0.001
17.	Mercury (as Hg)	APHA 3112B	mg/l	0.001	No Relaxation	<0.001
18.	Cadmium (as Cd)	APHA 3111 B	mg/l	0.003	No Relaxation	<0.001
19.	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
20	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
21.	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	No Relaxation	BDL
22.	Lead (as Pb)	APHA 3111 B	mg/l	0.01	No Relaxation	<0.001
23.	Zinc (as Zn)	APHA 3111 B	mg/l	5	15	<0.005
24.	Chromium (as Cr)	APHA 3500 Cr B	mg/l	0.05	No Relaxation	<0.005
25.	Alkalinity	APHA 2320 B	mg/l	200	600	62.0
26.	Aluminium as(Al)	APHA 3500 Al B	mg/l	0.03	0.2	<0.001
27.	Boron (as B)	APHA 4500 B	mg/l	0.5	2.4	<0.001

Note : BDL-Below Detection Limit

Visiontek Consultancy Services Pvt. Ltd.

Recommended By:

Visiontek Consultancy Services Pvt. Ltd.

Verified By:

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
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Ref: Enwlab/21/R-6293 Date: 02/11/21

GROUND WATER QUALITY ANALYSIS REPORT JUNE 2021

1.Name of Industry : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2.Sampling Location : **GW-3:**Near RR Colony
3.Date of Sampling : 08.06.2021
4.Date of Analysis : 09.06.2021 TO 14.06.2021
5.Sample Collected By : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Results
				Permissible Limit	Permissible Limit	GW-3
1.	pH Value	APHA 4500 H^+ B	--	6.5-8.5	No Relaxation	7.1
2.	Turbidity	APHA 2130B	NTU	1	5	0.6
3.	Total Hardness(as $CaCO_3$)	APHA 2340 C	mg/l	200	600	74.0
4.	Iron (as Fe)	APHA 3500 Fe B	mg/l	0.3	No Relaxation	0.20
5.	Chloride (as Cl)	APHA 4500 Cl^- B	mg/l	250	1000	26.0
6.	Dissolved Solids	APHA 2540 C	mg/l	500	2000	170.0
7.	Calcium (as Ca)	APHA 3500 Ca B	mg/l	75	200	23.2
8.	Magnesium (as Mg)	APHA 3500 Mg B	mg/l	30	100	4.9
9.	Copper (as Cu)	APHA 3111Cu B	mg/l	0.05	1.5	<0.001
10.	Sodium (as Na)	APHA 3500Na B	mg/l	--	--	8.6
11.	Potassium (as K)	APHA 3500 K B	mg/l	--	--	3.3
12.	Manganese (as Mn)	APHA 3111 B	mg/l	0.1	0.3	<0.005
13.	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	4.4
14	Nitrate (as NO_3)	APHA 4500 NO_3^- B	mg/l	45	No Relaxation	0.4
15.	Fluoride (as F)	APHA 4500 F^- D	mg/l	1	1.5	0.26
16.	Phenolic Compounds (as C_6H_5OH)	APHA 5530 C	mg/l	0.001	0.002	<0.001
17.	Mercury (as Hg)	APHA 3112B	mg/l	0.001	No Relaxation	<0.001
18.	Cadmium (as Cd)	APHA 3111 B	mg/l	0.003	No Relaxation	<0.001
19.	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
20	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
21.	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	No Relaxation	BDL
22.	Lead (as Pb)	APHA 3111 B	mg/l	0.01	No Relaxation	<0.001
23.	Zinc (as Zn)	APHA 3111 B	mg/l	5	15	<0.005
24.	Chromium (as Cr)	APHA 3500 Cr B	mg/l	0.05	No Relaxation	<0.005
25.	Alkalinity	APHA 2320 B	mg/l	200	600	48.0
26.	Aluminium as(Al)	APHA 3500 Al B	mg/l	0.03	0.2	<0.001
27.	Boron (as B)	APHA 4500 B	mg/l	0.5	2.4	<0.001

Note : BDL-Below Detection Limit

Prepared By

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Mineral Lab
&
Microbiology Lab

Ref: Envlab/21/R-6294 Date: 02/11/21

GROUND WATER QUALITY ANALYSIS REPORT JUNE 2021

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling location : **GW-4:** Bomaloi Village.
3. Date of sampling : 08.06.2021
4. Date of analysis : 09.06.2021 TO 14.06.2021
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Results
				Permissible Limit	Permissible Limit	GW-4
1.	pH Value	APHA 4500 H^+ B	--	6.5-8.5	No Relaxation	7.1
2.	Turbidity	APHA 2130B	NTU	1	5	0.8
3.	Total Hardness(as $CaCO_3$)	APHA 2340 C	mg/l	200	600	72.0
4.	Iron (as Fe)	APHA 3500 Fe B	mg/l	0.3	No Relaxation	0.16
5.	Chloride (as Cl)	APHA 4500 Cl^- B	mg/l	250	1000	28.0
6.	Dissolved Solids	APHA 2540 C	mg/l	500	2000	176.0
7.	Calcium (as Ca)	APHA 3500 Ca B	mg/l	75	200	21.8
8.	Magnesium (as Mg)	APHA 3500 Mg B	mg/l	30	100	4.6
9.	Copper (as Cu)	APHA 3111Cu B	mg/l	0.05	1.5	<0.001
10.	Sodium (as Na)	APHA 3500Na B	mg/l	--	--	9.6
11.	Potassium (as K)	APHA 3500 K B	mg/l	--	--	2.8
12.	Manganese (as Mn)	APHA 3111 B	mg/l	0.1	0.3	<0.005
13.	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	4.6
14	Nitrate (as NO_3)	APHA 4500 NO_3^- B	mg/l	45	No Relaxation	0.4
15.	Fluoride (as F)	APHA 4500 F^- D	mg/l	1	1.5	0.24
16.	Phenolic Compounds (as C_6H_5OH)	APHA 5530 C	mg/l	0.001	0.002	<0.001
17.	Mercury (as Hg)	APHA 3112B	mg/l	0.001	No Relaxation	<0.001
18.	Cadmium (as Cd)	APHA 3111 B	mg/l	0.003	No Relaxation	<0.001
19.	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
20	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
21.	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	No Relaxation	BDL
22.	Lead (as Pb)	APHA 3111 B	mg/l	0.01	No Relaxation	<0.001
23.	Zinc (as Zn)	APHA 3111 B	mg/l	5	15	<0.005
24.	Chromium (as Cr)	APHA 3500 Cr B	mg/l	0.05	No Relaxation	<0.005
25.	Alkalinity	APHA 2320 B	mg/l	200	600	78.0
26.	Aluminium as(Al)	APHA 3500 Al B	mg/l	0.03	0.2	<0.001
27.	Boron (as B)	APHA 4500 B	mg/l	0.5	2.4	<0.001

Note : BDL- Below Detection Limit

Visiontek Consultancy Services Pvt. Ltd. BBSR

Prepared By:

Visiontek Consultancy Services Pvt. Ltd. BBSR

Verified By:

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
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Ref : Envlab/21 | R-6514 Date 02/11/21

GROUND WATER LEVEL ANALYSIS REPORT- SEPTEMBER 2021

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sample Location : **GWL1**: Near Ash Pond
3. Monitored By : VCSPL representative

SL.No	Date of Sampling	Name of the Location	Unit	Analysis Result
1.	22.09.2021	Near Ash Pond	mt/bgl	1.29

Reviewed By

Approved By

Ref: Envlab/21/R-6515

Date: 02/11/21

GROUND WATER LEVEL ANALYSIS REPORT- SEPTEMBER 2021

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sample Location : **GWL2**: Near Proposed Ash Pond
3. Monitored By : VCSPL representative

SL.No	Date of Sampling	Name of the Location	Unit	Analysis Result
1.	22.09.2021	Near Proposed Ash Pond	mt/bgl	6.02

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed By

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved By

Ref: Envlab/21/R-656 Date: 02/11/21

GROUND WATER LEVEL ANALYSIS REPORT- SEPTEMBER 2021

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sample Location : **GWL3**: Near RR Colony
3. Monitored By : VCSPL Representative

SL.No	Date of Sampling	Name of the Location	Unit	Analysis Result
1.	22.09.2021	Near RR Colony	mt/bgl	6.28

Visiontek Consultancy Services Pvt. Ltd. BBSR Reviewed By

Visiontek Consultancy Services Pvt. Ltd. BBSR Approved By

Ref: Enwlab/21/R-6517 Date: 02/11/21

GROUND WATER LEVEL ANALYSIS REPORT- SEPTEMBER 2021

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sample Location : **GWL4**: Near Bamloi Village
3. Monitored By : VCSPL Representative

SL.No	Date of Sampling	Name of the Location	Unit	Analysis Result
1.	22.09.2021	Near Bamloi Village	mt/bgl	1.68

Reviewed By

Approved By

Ref: Envlab/21/R-6518 Date: 02/11/21

Ground Water Level (Heavy Metals) Analysis Report-September 2021

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sample Location : **GWL1: Near Ash Pond**
3. Monitored By : VCSPL Representative

Sl. No.	Parameters	Test Method	Unit	Standard	GWL-1
					22.09.2021
1	Mercury as Hg	APHA 3112 B	mg/l	0.001	<0.001
2	Arsenic as As	APHA 3111 B	mg/l	0.01	<0.005
3	Lead as Pb	APHA 3111 B	mg/l	0.01	<0.005
4	Chromium as Cr	APHA 3111 B	mg/l	0.05	<0.01

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Ref : Envlab/21/R-6512 Date : 02/11/21

SOIL QUALITY ANALYSIS REPORT JUNE-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 15.06.2021
3. Sampling Location : **S-1:** Project Site; **S-2:** Thelkoloi; **S-3:** Ghichamura; **S-4:** Lapanga; **S-5:** Bamloi
4. Date of Analysis : 16.06.2021 TO 23.06.2021
5. Sample Collected By : VCSPL representative in Presence of Aditya Aluminium representative

Sl.No.	Parameters	Unit	S-1	S-2	S-3	S-4	S-5
1	P^H at 25°C	--	6.94	7.24	7.18	7.12	7.19
2	Conductivity at 25°C	--	134.6	124.6	119.6	140.2	123.8
3	Soil Texture	--	Sandy Loamy	Clay Loamy	Clay Loamy	Sandy Loamy	Sandy Loamy
4	Sand	%	40.6	28.8	31.8	41.2	40.87
5	Silt	%	14.6	25.2	21.8	21.6	18.2
6	Clay	%	48.8	54.6	46.2	50.2	44.8
7	Bulk Density	gm/cc	1.58	1.42	1.48	1.52	1.54
8	Exchangeable Calcium as Ca	%	49.6	44	52.3	48.28	53.7
9	Exchangeable Magnesium as Mg	%	52.2	50.8	54.2	53.2	54.0
10	Available Sodium as Na	%	0.018	0.024	0.023	0.032	0.028
11	Available Potassium as K	%	0.059	0.052	0.058	0.046	0.054
12	Available phosphorous as P	%	0.028	0.031	0.028	0.023	0.026
13	Available Nitrogen as N	%	0.28	0.34	0.29	0.32	0.36
14	Organic Matter	%	3.8	4.1	4.6	4.2	4.4
15	Organic Carbon as OC	%	1.8	1.52	1.68	1.74	1.62
16	Water soluble Chlorides as Cl	%	0.31	0.34	0.28	0.26	0.34
17	Water soluble Sulphates as SO_4	%	0.19	0.21	0.25	0.32	0.26
18	Sodium Absorption Ratio	%	0.19	0.21	0.14	0.13	0.12
19	Aluminium as Al	%	0.00006	0.00015	0.00016	0.00018	0.00016
20	Total Iron as Fe	%	0.089	0.042	0.046	0.072	0.076
21	Manganese as Mn	%	0.019	0.0024	0.0026	0.0038	0.0028
22	Boron as B	%	0.00019	0.00025	0.00028	0.00002	0.00029
23	Zinc as Zn	%	0.00038	0.00036	0.00034	0.00028	0.00026
24	Silica as SiO_2	%	6.9	6.1	7.1	6.8	6.6
25	Ferric Oxide as Fe_2O_3	%	0.046	0.044	0.043	0.036	0.031
26	Calcium Oxide as CaO	%	31.6	30.8	29.4	29.2	28.4
27	Magnesium Oxide as MgO	%	26.6	25.6	24.8	23.6	25.2
28	Aluminium Oxide as Al_2O_3	%	0.0009	0.00014	0.00031	0.00034	0.00041
29	Iron Oxide as FeO	%	0.054	0.024	0.062	0.038	0.039
30	Manganese Oxide as MnO	%	0.0059	0.0026	0.0018	0.0026	0.0049
31	Potassium Oxide as K_2O	%	0.0532	0.0411	0.0406	0.0504	0.0501
32	Phosphorus Oxide as P_2O_5	%	0.0088	0.0082	0.0086	0.0077	0.0096
33	Fluoride as F	%	0.0004	0.00028	0.00040	0.00044	0.0006

ND: Not Detected

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Ref: Envlab/21/R-6513 Date : 02/11/21

SOIL QUALITY ANALYSIS REPORT JUNE-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 15.06.2021
3. Sampling Location : **S-6:** Tileimal; **S-7:** Jangala; **S-8:** Gurupali; **S-9:** Gumkarama; **S-10:** Bhadarpali.
4. Date of Analysis : 16.06.2021 TO 23.06.2021
5. Sample Collected By : VCSPL representative in Presence of Aditya Aluminium representative

Sl.No.	Parameters	Unit	S-6	S-7	S-8	S-9	S-10
1	P^H at 25°C	--	7.18	7.16	7.11	7.24	7.02
2	Conductivity at 25°C	--	138.0	130.2	121.4	119.9	118.2
3	Soil Texture	--	Clay Loamy	Sandy Loamy	Sandy Loamy	Sandy Loamy	Clay Loamy
4	Sand	%	25.2	30.8	34.6	40.8	28.4
5	Silt	%	13.8	13.6	21.2	20.8	23.4
6	Clay	%	61	55.6	44.2	38.4	48.2
7	Bulk Density	gm/cc	1.64	1.52	1.42	1.46	1.54
8	Exchangeable Calcium as Ca	%	47.4	39.6	46.8	46.2	45.2
9	Exchangeable Magnesium as Mg	%	53.6	58.2	60.6	62.8	61.4
10	Available Sodium as Na	%	0.026	0.024	0.032	0.031	0.028
11	Available Potassium as K	%	0.054	0.046	0.043	0.045	0.058
12	Available phosphorous as P	%	0.024	0.017	0.024	0.031	0.029
13	Available Nitrogen as N	%	0.38	0.36	0.32	0.24	0.26
14	Organic Matter	%	4.9	4.4	4.2	4.1	4.4
15	Organic Carbon as OC	%	1.59	1.94	1.91	1.88	1.94
16	Water soluble Chlorides as Cl	%	0.31	0.28	0.19	0.24	0.22
17	Water soluble Sulphates as SO_4	%	0.19	0.24	0.16	0.19	0.14
18	Sodium Absorption Ratio	%	0.16	0.15	0.19	0.15	0.18
19	Aluminium as Al	%	0.00018	0.00019	0.00024	0.00022	0.00023
20	Total Iron as Fe	%	0.064	0.072	0.051	0.046	0.044
21	Manganese as Mn	%	0.0031	0.0032	0.0034	0.0028	0.0034
22	Boron as B	%	0.00029	0.00036	0.00042	0.00041	0.00032
23	Zinc as Zn	%	0.00025	0.00031	0.00021	0.00016	0.00024
24	Silica as SiO_2	%	7.6	7.2	6.9	7.4	7.1
25	Ferric Oxide as Fe_2O_3	%	0.029	0.031	0.034	0.040	0.041
26	Calcium Oxide as CaO	%	28.8	32.4	30.8	37.4	34
27	Magnesium Oxide as MgO	%	25.2	31.9	31.6	31.2	31.2
28	Aluminium Oxide as Al_2O_3	%	0.00044	0.00042	0.00032	0.00024	0.00042
29	Iron Oxide as FeO	%	0.0198	0.0191	0.0194	0.0218	0.0214
30	Manganese Oxide as MnO	%	0.0022	0.0024	0.0024	0.0026	0.0025
31	Potassium Oxide as K_2O	%	0.0424	0.0434	0.0518	0.0451	0.0516
32	Phosphorus Oxide as P_2O_5	%	0.0098	0.0094	0.0112	0.0102	0.0094
33	Fluoride as F	%	0.00048	0.00042	0.00038	0.00031	0.00026

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Ref : Envlab/21/R-6297 Date : 02/11/21

NOISE MONITORING REPORT MAY-21

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)) MAY 2021

TIME (6.00AM to 9.00PM)	N1:Gumkarma	N2:Ghichamura	N3:Bomaloi	N4:Tileimal	N5:Thelkoli	N6:Khadiapali	N7:Kapilas	N8:Phulchanghal
	11.05.2021	11.05.2021	11.05.2021	12.05.2021	12.05.2021	12.05.2021	(13.05.2021)	13.05.2021
06.00am	41.6	40.6	41.6	40.6	45.8	43.8	41.8	43.6
07.00am	42.6	41.9	41.2	40.8	48.8	44.6	46.6	47.2
08.00am	44.6	42.6	43.8	42.8	49.2	44.8	44.6	47.6
09.00am	44.8	42.8	44.6	43.6	49.6	45.6	49.2	51.8
10.00am	44.9	43.6	48.2	43.8	50.2	46.8	52.8	53.2
11.00am	45.2	43.8	50.6	44.6	50.8	47.2	49.6	48.6
12.00 noon	45.6	44.8	51.2	44.8	50.9	47.8	45.8	47.2
01.00pm	46.8	45.2	51.6	43.6	51.2	48.6	44.4	48.8
02.00pm	48.2	45.6	50.8	43.8	52.8	49.4	45.2	48.6
03.00pm	48.9	46.8	50.2	45.2	52.6	50.6	45.6	45.8
04.00pm	50.6	47.2	50.6	45.6	52.8	50.8	54.8	44.2
05.00pm	50.8	47.8	50.4	46.6	53.6	51.4	53.6	44.1
06.00pm	51.6	48.8	50.8	46.8	52.2	52.8	46.8	49.2
07.00pm	51.4	48.8	50.6	44.2	52.6	53.6	44.6	46.2
08.00pm	52.2	44.6	50.2	43.2	50.6	53.8	40.6	45.6
09.00pm	45.2	43.2	50.8	40.6	50.2	51.6	42.8	44.2
Average	**47.2**	**44.9**	**48.6**	**43.8**	**50.9**	**48.9**	**46.8**	**47.4**
Standard as per CPCB	55							

Night time Noise monitoring results (Noise Level in dB (A)) MAY 2021

TIME (10.00PM to 5.00AM)	N1:Gumkarma	N2:Ghichamura	N3:Bomaloi	N4:Tileimal	N5:Thelkoli	N6:Khadiapali	N7:Kapilas	N8:Phulchanghal
	11.05.2021	11.05.2021	11.05.2021	12.05.2021	12.05.2021	12.05.2021	(13.05.2021)	13.05.2021
10.00pm	47.8	44.6	48.8	44.6	52.8	44.2	44.4	44.3
11.00pm	45.6	43.8	51	43.8	50.6	46.8	43.9	44.1
12.00 Midnight	42.8	43.2	46.2	43.1	44.8	43.6	43.6	43.6
01.00am	42.6	42.8	42.8	42.6	41.6	42.8	42.8	43.2
02.00am	43.2	42.2	42.2	42.2	42.2	40.6	42.2	42.8
03.00am	41.8	41.8	40.8	41.8	40.8	41.8	40.9	42.1
04.00am	40.8	41.6	42.3	40.9	41.6	40.9	40.6	43.6
05.00am	44.6	41.8	43.4	42.6	42.6	43.4	41.8	43.8
Average	**43.7**	**42.7**	**44.6**	**42.7**	**44.6**	**43.0**	**42.5**	**43.4**
Standard as per CPCB	45							

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Ref: Envlab/21/R-6287 Date: 02/11/21

FORAGE FLUORIDE ANALYSIS REPORT SEPTEMBER- 2021

1	Name of Industry	:	**M/s Hindalco Industries Ltd, (Unit-Aditya Aluminium); Lapanga**
2	Date of Sampling	:	14.09.2021 & 15.09.2021
3	Date of Analysis	:	16.09.2021 TO 18.09.2021
4	Name of the Sample	:	Vegetation Sample
5	Sampling Location	:	Bomaloi, Guripalli, Plant Gate, Thelkolai, Gumukarma, Ghichamura , Tileimal&Lapanga

Date of Sampling	Name of the Location	Type of Species	Scientific Name	Method of Analysis	Result (PPM)
14.09.2021	Bomaloi	Rice Plant, Curry Tree leaf	*Oryza Sativa,MurrayaKoenigii*	AOAC 975.04	1.58
14.09.2021	Gurupali	Bela Tree	*Aegle marmelos*	AOAC 975.04	1.25
14.09.2021	Plant Site	Sisoo Tree, Karanja Tree	*DalbergiaSissooRoxb Pongame oil tree*	AOAC 975.04	1.86
14.09.2021	Thelkolai	Duba Grass, Jammu Tree	*Cynodondactylon Syzygiumcumini*	AOAC 975.04	1.74
14.09.2021	Gumukarma	Bamboo Tree, Duba Grass	*Bambusoideade Cynodondactylon*	AOAC 975.04	1.48
15.09.2021	Ghichamura	Baulakoli Tree, badhial Tree	*Mimusopselengi*	AOAC 975.04	0.96
15.09.2021	Tileimal	Bela tree, Duba Tree	*Aegle marmelos Cynodondactylon*	AOAC 975.04	1.22
15.09.2021	Lapanga	Neem tree, Rice Plant	*AzadirachtaIndica Oryza Sativa*	AOAC 975.04	1.46
15.09.2021	Jangala	Rice Plant, Brinjal Leaf	*Oryza Sativa, SolanumMelongena*	AOAC 975.04	1.21
15.09.2021	Bhadrapali	DubaGrass,Tomato Leaf	*Cynodondactylon, Solanumlycopersicum*	AOAC 975.04	1.40

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Ref: Envlab/21/R-6288 Date: 02/11/21

FORAGE FLUORIDE ANALYSIS REPORT JUNE 2021

1	Name of Industry	:	**M/s Hindalco Industries Ltd, (Unit-Aditya Aluminium); Lapanga**
2	Date of Sampling	:	15.06.2021 & 16.06.2021
3	Date of Analysis	:	17.06.2021 TO 19.06.2021
4	Name of the Sample	:	Vegetation Sample
5	Sampling Location	:	Bomaloi, Guripalli, Plant Gate, Thelkolai, Gumukarma, Ghichamura , Tileimal&Lapanga

Date of Sampling	Name of the Location	Type of Species	Scientific Name	Method of Analysis	Result (PPM)
15.06.2021	Bomaloi	Rice Plant, Curry Tree leaf	*Oryza Sativa,MurrayaKoenigi i*	AOAC 975.04	1.26
15.06.2021	Gurupali	Bela Tree	*Aegle marmelos*	AOAC 975.04	1.10
15.06.2021	Plant Site	Sisoo Tree, Karanja Tree	*DalbergiaSissooRoxb Pongame oil tree*	AOAC 975.04	1.61
15.06.2021	Thelkolai	Duba Grass, Jammu Tree	*Cynodondactylon Syzygiumcumini*	AOAC 975.04	1.42
15.06.2021	Gumukarma	Bamboo Tree, Duba Grass	*Bambusoideade Cynodondactylon*	AOAC 975.04	1.33
16.06.2021	Ghichamura	Baulakoli Tree, badhial Tree	*Mimusopselengi*	AOAC 975.04	1.02
16.06.2021	Tileimal	Bela tree, Duba Tree	*Aegle marmelos Cynodondactylon*	AOAC 975.04	1.25
16.06.2021	Lapanga	Neem tree, Rice Plant	*AzadirachtaIndica Oryza Sativa*	AOAC 975.04	1.38
16.06.2021	Jangala	Rice Plant, Brinjal Leaf	*Oryza Sativa, SolanumMelongena*	AOAC 975.04	1.12
16.06.2021	Bhadrapali	DubaGrass,Tomato Leaf	*Cynodondactylon, Solanumlycopersicum*	AOAC 975.04	1.28

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